



Jon Ritter

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12/03/2015

Melanie Bachman
Acting Executive Director
Connecticut Siting Counsel
10 Franklin Square
New Britain, CT 06051

Re: **Notice of Exempt Modification**
168 Catoona Lane, Stamford, CT
41.05284 / -73.56314

Dear Ms. Bachman:

T-Mobile Northeast, LLC (T-Mobile) currently maintains six (6) antennas at the Two-Hundred Sixty Five foot (265') level of the existing Three-Hundred (300') foot tower (with a total height of 301' in the CD's) at 168 Catoona Lane, Stamford, CT. The tower is owned by American Tower Corporation. The property is also owned by American Tower. T-Mobile now intends to add Three (3) new 700MHz antennas and two (2) fiber cables. These antennas would be installed at the Two-Hundred Sixty Five (265') foot level of the tower. T-Mobile also intends to remove one (1) Fiber cable that currently exists on the tower.

This facility was not originally approved by the Connecticut Siting Council and after speaking with Norman Cole of the Land Use Bureau it was determined that the City does not retain records for the approval of the tower. After a discussion of the type of modification T-Mobile is proposing he agreed that there are no conditions from the City on the tower that would prevent the proposed work.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73 a copy of this letter is being sent to the Chief Elected Official, David Martin, Mayor, for the City of Stamford, as well as the property owner and the tower owner.

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

- 1) The proposed modification will not result in an increase in the height of the existing structure.
- 2) The modifications will not require an extension of the site boundary.
- 3) The proposed modification will not increase the noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
- 4) The operation and replacement of 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 Northeast LLC 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,

Jon Ritter

On behalf of American Tower Corporation
c/o Tower Resource Management, Inc.
16 Chestnut Street, Suite 420
Foxboro, MA 02035
774-264-0016
ccody@trmcom.com

cc: **Chief Elected Official, Mayor, David Martin, City of Stamford**
American Tower Corporation
American Tower Corporation

Exhibit 1

Site Plan

Exhibit 2

Power Density Report

Exhibit 3

Structural Analysis

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

T-Mobile Existing Facility

Site ID: CT11007A

Stamford AT&T
168 Catoona Lane
Stamford, CT 06902

November 30, 2015

EBI Project Number: 6215006138

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	8.43 %

November 30, 2015

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

Emissions Analysis for Site: **CT11007A – Stamford AT&T**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **168 Catoona Lane, Stamford, CT**, for the purpose of determining whether the emissions from the Proposed T-Mobile Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01 and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The number of $\mu\text{W}/\text{cm}^2$ 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 ($\mu\text{W}/\text{cm}^2$). The general population exposure limit for the 700 MHz Band is approximately 467 $\mu\text{W}/\text{cm}^2$, and the general population exposure limit for the PCS and AWS bands is 1000 $\mu\text{W}/\text{cm}^2$. 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 **168 Catoona Lane, Stamford, 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 / UMTS 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 **Ericsson AIR21 (B4A/B2P & B2A/B4P)** 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 **Ericsson AIR21 (B4A/B2P & B2A/B4P)** have a maximum gain of **15.9 dBd** at their 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 **265 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.



T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	Ericsson AIR21 B4A/B2P	Make / Model:	Ericsson AIR21 B4A/B2P	Make / Model:	Ericsson AIR21 B4A/B2P
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	265	Height (AGL):	265	Height (AGL):	265
Frequency Bands	2100 MHz (AWS)	Frequency Bands	2100 MHz (AWS)	Frequency Bands	2100 MHz (AWS)
Channel Count	2	Channel Count	2	# PCS Channels:	2
Total TX Power:	120	Total TX Power:	120	# AWS Channels:	120
ERP (W):	4,668.54	ERP (W):	4,668.54	ERP (W):	4,668.54
Antenna A1 MPE%	0.25	Antenna B1 MPE%	0.25	Antenna C1 MPE%	0.25
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):	265	Height (AGL):	265	Height (AGL):	265
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:	120	Total TX Power:	120	Total TX Power:	120
ERP (W):	4,668.54	ERP (W):	4,668.54	ERP (W):	4,668.54
Antenna A2 MPE%	0.25	Antenna B2 MPE%	0.25	Antenna C2 MPE%	0.25
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):	265	Height (AGL):	265	Height (AGL):	265
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):	865.21	ERP (W):	865.21	ERP (W):	865.21
Antenna A3 MPE%	0.10	Antenna B3 MPE%	0.10	Antenna C3 MPE%	0.10

Site Composite MPE%	
Carrier	MPE%
T-Mobile (Per Sector Max)	0.60 %
XM Satellite Radio	0.10 %
Bell Industries	0.06 %
LoJack	0.04 %
US Treasury	0.05 %
USA Mobility	0.19 %
Sensus (CL&P)	0.06 %
MediaFLO	4.20 %
AT&T	0.28 %
Nextel	0.15
Marcus	0.44
Clearwire	0.05
Sprint	0.90
SNET Paging	0.18
Rescue 21	0.41
MetroPCS	0.72
Site Total MPE %:	8.43 %

T-Mobile Sector 1 Total:	0.60 %
T-Mobile Sector 2 Total:	0.60 %
T-Mobile Sector 3 Total:	0.60 %
Site Total:	8.43 %

T-Mobile Per Sector Contributions (Max Sector Value)

T-Mobile _per sector	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu\text{W}/\text{cm}^2$)	Frequency (MHz)	Allowable MPE ($\mu\text{W}/\text{cm}^2$)	Calculated % MPE
T-Mobile 2100 MHz (AWS) LTE	2	2334.27	265	2.50	2100	1000	0.25 %
T-Mobile 1900 MHz (PCS) GSM/UMTS	2	1167.14	265	1.25	1900	1000	0.13 %
T-Mobile 2100 MHz (AWS) UMTS	2	1167.14	265	1.25	2100	1000	0.13 %
T-Mobile 700 MHz LTE	1	865.21	265	0.46	700	467	0.10 %
						Total:	0.60%

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:	0.60 %
Sector 2:	0.60 %
Sector 3 :	0.60 %
T-Mobile Per Sector Maximum:	0.60 %
Site Total:	8.43 %
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **8.43%** 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.



Scott Heffernan
RF Engineering Director

EBI Consulting
21 B Street
Burlington, MA 01803



Structural Analysis Report

Structure : 300 ft Self Supported AT&T TAG Tower
ATC Site Name : Stamford (Katoona), CT
ATC Site Number : 88018
Engineering Number : 63541021
Proposed Carrier : T-Mobile
Carrier Site Name : Stamford AT&T
Carrier Site Number : CT11007A
Site Location : Catoona Lane
Stamford, CT 06902-4573
41.052825,-73.563047
County : Fairfield
Date : November 20, 2015
Max Usage : 99%
Result : Pass

Reviewed by:
William Garrett, PE
Chief Engineer

Prepared By:
Robert D. Barrett, E.I.
Structural Engineer I

Robert D. Barrett



Nov 20 2015 1:54 PM

COA: PEC.0001553



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Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 300 ft self supported AT&T tag tower to reflect the change in loading by T-Mobile.

Supporting Documents

Tower Drawings	CSEI Analysis, ATC Eng. #73123451, dated September 28, 2005
Foundation Drawing	Rose, Chulkoff, and Rose Job #C67229, dated August 9, 1967
Geotechnical Report	Rose, Chulkoff, and Rose Job #C67229, dated August 9, 1967
Modifications	ATC Eng. #42439132, dated September 26, 2008 ATC Eng. #44209632, dated December 2, 2009

Analysis

The tower was analyzed using Power Line Systems, Inc.'s tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/EIA-222.

Basic Wind Speed:	85 mph (Fastest Mile)
Basic Wind Speed w/ Ice:	74 mph (Fastest Mile)w/ 1/2" radial ice concurrent
Code:	ANSI/TIA/EIA-222-F / 2003 IBC , Sec. 1609.1.1, Exception (5) & Sec. 3108.4 w/ 2005 CT Supplement & 2009 CT Amendment

Conclusion

Based on the analysis results, the structure meets the requirements per the applicable codes listed above. The tower and foundation can support the equipment as described in this report.

If you have any questions or require additional information, please contact American Tower via email at Engineering@americantower.com. Please include the American Tower site name, site number, and engineering number in the subject line for any questions.

Existing and Reserved Equipment

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
300.0	306.0	1	3' HP Dish	Platform w/ Handrails	(1) 1/2" Coax	--
	300.0	3	Horizon Compact		(5) 7/8" Coax	Clearwire
		3	DragonWave A-ANT-18G-2-C			
	335.0	1	TX RX Systems 101-68-10-X-03N		(2) 1 1/4" Coax	Marcus Comm.
	317.0	1	16' Omni			
	311.0	1	Radio/ODU			
		1	4' Std. Dish			
	320.0	1	16' Omni		(1) 7/8" Coax	UNITed Wireless Holdings
270.0	276.0	1	Dielectric TLP-08M-2E	Side Arm	(1) 3 1/8" HL	Qualcomm
269.0	275.0	1	ADD090	Side Arm	(2) 7/8" Coax	US Dept Of Homeland Security
265.0	272.0	2	Til-Tek TA-2350-DAB	Side Arms	(1) 1 5/8" Coax (1) EW20	Sirius XM Radio
	265.0	3	RFS ATMAA1412D-1A20	Sector Frames	(12) 1 5/8" Coax	T-Mobile
		3	Ericsson AIR 21, 1.3 M, B2A B4P			
		3	Ericsson AIR 21, 1.3M, B4A B2P			
240.0	250.0	1	Sinclair SC281-L	Side Arms	(2) 7/8" Coax	US Dept Of Homeland Security
	245.0	1	Sinclair SC381-HL			
235.0	235.0	6	LGP LGP21903	Sector Frames	(2) 0.74" 8 AWG 7 (1) 0.28" RG-6	AT&T Mobility
		3	Raycap DC2-48-60-0-9E			
		6	Powerwave LGP21401			
		6	Ericsson RRUS A2			
		1	Raycap FC12-PC6-10E			
		3	Ericsson RRUS E2 B29			
		6	Ericsson RRUS 12 w/ Solar Shield			
		3	Ericsson RRUS-32			
		3	Ericsson RRUS-11			
		3	Powerwave 7770.00			
		9	Andrew SBNHH-1D65A			
		-	-		(13) 1 5/8" Coax (1) 2" conduit	
224.0	222.0	12	Decibel DB844H90E-XY	Sector Frames	(15) 1 5/8" Coax	Sprint Nextel
200.0	201.0	2	TX RX Systems 101-68-10-X-03N	Side Arms	(2) 1 1/4" Coax	Marcus Comm.
	210.0	1	Sinclair SC281-L		(1) 7/8" Coax	US Dept Of Homeland Security
189.0	193.0	1	30" x 30" Reflector	Leg	-	Town Of Stanford
178.0	183.0	3	Antel BCD-87010 ____	Side Arms	(3) 7/8" Coax	Spok Holdings
171.0	175.0	1	24" x 24" Junction Box	T-Arms	(2) 2" conduit	Clearwire
167.0	171.0	3	NextNet BTS-2500		(6) 5/16" Coax	
		3	Argus LLPX310R		(1) 2" conduit	
160.0	161.0	6	Kathrein 800 10504	Leg	(12) 1 5/8" Coax	Metro PCS
	160.0	18	RCU		(2) 3/8" Coax	

Existing and Reserved Equipment (Continued)

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
150.0	150.0	3	Alcatel-Lucent ALU 800MHz External Notch Filter	Sector Frames	(4) 1 1/4" Hybriflex (1) 1/2" Coax	Sprint Nextel
		3	Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield			
		3	RFS IBC1900HB-2			
		3	Alcatel-Lucent 800MHz RRH			
		6	Alcatel-Lucent 1900MHz RRH			
		3	RFS APXVTM14-C-I20			
		3	RFS APXVSPP18-C-A20			
137.0	142.0	1	Antel BCD-87010 ____ 4°	Stand-Off	(1) 7/8" Coax	Sensus USA
120.0	120.0	1	Channel Master Type 120	Leg	(1) 1/2" Coax	Spok Holdings
100.0	100.0	1	TX RX Systems 101-68-10-X-03N	Side Arm	(1) 1 1/4" Coax	Marcus Comm.
92.0	92.0	3	Alcatel-Lucent RRH2X60-1900A-4R	Sector Frames	(2) 1 5/8" Hybriflex	Verizon
		3	Alcatel-Lucent RRH2x60 700			
		3	Alcatel-Lucent RRH2X60-AWS Band 4			
		2	RFS DB-T1-6Z-8AB-0Z			
		6	Antel WWX063X19G00			
		4	CSS X7C-FRO-660			
		2	CSS X7C-FRO-640-V			
24.0	22.0	1	Til-Tek TA-2324-LHCP	Leg	-	Sirius XM Radio
6.0	6.0	1	Trimble Acutime 2000	Leg	(1) 1/2" Coax (1) 1/4" Coax	Spok Holdings
		1	Channel Master Type 120			

Equipment to be Removed

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
265.0	265.0	-	-	-	(1) 1 1/4" Fiber	T-Mobile

Proposed Equipment

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
265.0	265.0	3	Ericsson RRUS 11 B12	Sector Frames	(2) 7/8" Fiber	T-Mobile
		3	Andrew LNX-6515DS-VTM			

¹Mount elevation is defined as height above bottom of steel structure to the bottom of mount, RAD elevation is defined as center of antenna above ground level (AGL).

Install proposed coax stacked on top of existing T-Mobile coax.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Legs	89%	Pass
Diagonals	98%	Pass
Truss Diagonals	99%	Pass
Horizontals	95%	Pass
Truss Horizontals	85%	Pass
Anchor Bolts*	84%	Pass

*Includes a factor of safety of 2 or greater.

Foundations*

Reaction Component	Analysis Reactions	% of Usage
Uplift (Kips)	384.5	91%
Axial (Kips)	494.6	8%

*Includes a factor of safety of 2 or greater.

The structure base reactions resulting from this analysis were found to be acceptable through analysis based on geotechnical and foundation information, therefore no modification or reinforcement of the foundation will be required.



Standard Conditions

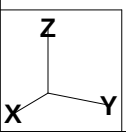
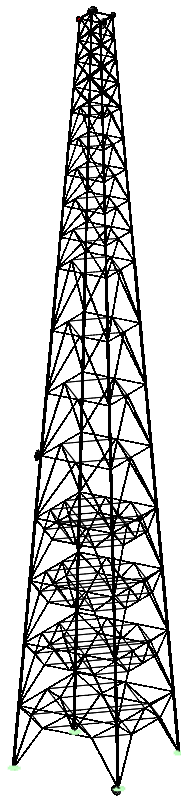
All engineering services are performed on the basis that the information used is current and correct. This information may consist of, but is not necessary limited, to:

- Information supplied by the client regarding the structure itself, antenna, mounts and feed line loading on the structure and its components, or other relevant information.
- Information from drawings in the possession of American Tower Corporation, or generated by field inspections or measurements of the structure.

It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we assume that all structures were constructed in accordance with the drawings and specifications and that their capacity has not significantly changed from the "as new" condition.

Unless explicitly agreed by both the client and American Tower Corporation, all services will be performed in accordance with the current revision of ANSI/TIA -222. The design basic wind speed will be determined based on the minimum basic wind speed as prescribed in ANSI/TIA-222. Although every effort is taken to ensure that the loading considered is adequate to meet the requirements of all applicable regulatory entities, we can provide no assurance to meet any other local and state codes or requirements. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes, the client shall specify the exact requirement.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. A.T. Engineering Service, PLLC is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.



Section Label	Top Z (ft)	Bottom Z (ft)	Joint Z Count	Member Count	Top Width (ft)		Bottom Width (ft)	Gross Area (ft²)	Face Adj Factor	Face Adj Factor	Dead Load Factor
291.4-309.8	309.8090	291.4280	8	29	9.06	10.06	81.76	1.1676	1.1676	1.4081	
282.8-291.4	291.4280	282.8480	8	16	9.06	11.12	90.84	1.2156	1.2156	1.4501	
272.7-282.8	282.8480	272.6780	8	16	11.12	12.37	119.43	1.1966	1.1966	1.4366	
262.5-272.7	272.6780	262.5080	12	24	12.37	13.63	132.19	1.2636	1.2636	1.4446	

250.0-262.5	262.500	250.000	16	24	13.63	15.17	179.95	1.2010	1.2010	1.441
237.5-250.0	250.000	237.500	16	24	15.17	15.17	199.22	1.2070	1.2070	1.449
225.0-237.5	250.000	225.000	16	24	16.71	18.25	218.49	1.2130	1.2130	1.456
212.5-225.0	225.000	212.500	16	24	18.25	19.79	237.76	1.2190	1.2190	1.463
200.0-212.5	212.500	200.000	16	24	19.79	21.33	257.03	1.2250	1.2250	1.470
175.0-200.0	200.000	175.000	16	24	21.33	24.42	271.87	1.2320	1.2320	1.478
150.0-175.0	175.000	150.000	16	24	24.42	27.50	286.96	1.2570	1.2570	1.509
125.0-150.0	150.000	125.000	16	24	27.50	30.58	276.04	1.2660	1.2660	1.519
100.0-125.0	125.000	100.000	16	24	30.58	33.67	265.13	1.2750	1.2750	1.535
75.00-100.0	100.000	75.000	36	76	33.67	36.75	880.21	1.2240	1.2240	1.469
50.00-75.00	75.000	50.000	36	76	36.75	39.83	957.29	1.2290	1.2290	1.475
25.00-50.00	50.000	25.000	32	68	39.83	42.92	1034.38	1.2340	1.2340	1.481
0.000-25.00	25.000	0.000	20	40	42.92	46.00	1111.46	1.2520	1.2520	1.503

*** Overall summary for all load cases - Usage = Maximum Stress / Allowable Stress

Printed capacities are based on the allowable EIA stress increase for wind load cases.

Printed capacities do not include the strength factor entered for each load case.

The Group Summary reports on the member and load case that resulted in maximum usage which may not necessarily be the same as that which produces maximum force.

Group Summary (Compression Portion):

Group Label	Group Desc.	Angle Type	Angle Size	Steel Strength	Max Usage	Max Usage Control	Max Usage Control	Comp. Force	Comp. Control	L/R	Comp. Connect.	Comp. Connect.	Comp. RLY	RLX	RLZ	L/R	KL/R	Length	Curve	No. Comp.	No. Of Bolts
				(ksi)	%		Comp %	(kips)				Shear Capacity (kips)	Bearing Capacity (kips)					(ft)			
Leg S1	L 8" x 8" x 1.125"	SAE	8X8X1.13	36.0	89.19	Comp	89.19	L 1P -422.278	W 45	300.572	0.000	0.000	0.281	0.281	0.281	54.28	54.28	25.095	1	0	
Leg S2	L 8" x 8" x 1.125"	SAE	8X8X1.13	36.0	89.19	Comp	89.19	L 2P -361.367	W 45	300.572	0.000	0.000	0.281	0.281	0.281	54.28	54.28	25.095	1	0	
Leg S3	L 8" x 8" x 1.125"	SAE	8X8X1.13	36.0	77.26	Comp	77.26	L 3P -309.637	W 45	300.572	0.000	0.000	0.281	0.281	0.281	54.28	54.28	25.095	1	0	
Leg S4	L 8" x 8" x 1"	SAE	8X8X1	36.0	78.88	Comp	78.88	L 4P -254.673	W 45	269.490	0.000	0.000	0.281	0.281	0.281	54.28	54.28	25.095	1	0	
Leg S5	L 8" x 8" x 0.875"	SAE	8X8X0.88	36.0	89.02	Comp	89.02	L 5P -243.320	W 45	225.521	0.000	0.000	0.333	0.333	0.333	63.53	63.53	25.095	1	0	
Leg S6	L 8" x 8" x 0.75"	SAE	8X8X0.75	36.0	65.55	Comp	65.55	L 6P -197.112	W 45	195.467	0.000	0.000	0.333	0.333	0.333	63.53	63.53	25.095	1	0	
Leg S7	L 8" x 8" x 0.75"	SAE	8X8X0.75	36.0	59.01	Comp	59.01	L 7P -153.784	W 45	195.467	0.000	0.000	0.333	0.333	0.333	63.53	63.53	25.095	1	0	
Leg S8	L 8" x 8" x 0.625"	SAE	8X8X0.63	36.0	52.07	Comp	52.07	L 8X -113.993	W 45	164.199	0.000	0.000	0.333	0.333	0.333	63.53	63.53	25.095	1	0	
Leg S9	L 6" x 6" x 0.75"	SAE	6X6X0.75	36.0	65.55	Comp	65.55	L 9X -94.633	W 45	143.521	0.000	0.000	0.500	0.500	0.500	64.35	64.35	12.547	1	0	
Leg S10	L 6" x 6" x 0.75"	SAE	6X6X0.75	36.0	39.60	Comp	39.60	L 10X -75.778	W 45	143.521	0.000	0.000	0.500	0.500	0.500	64.35	64.35	12.547	1	0	
Leg S11	L 6" x 6" x 0.5625"	SAE	6X6X0.56	36.0	40.02	Comp	40.02	L 11X -58.528	W 45	109.689	0.000	0.000	0.500	0.500	0.500	63.80	63.80	12.547	1	0	
Leg S12	L 6" x 6" x 0.5625"	SAE	6X6X0.56	36.0	29.59	Comp	29.59	L 12X -46.988	W 45	109.689	0.000	0.000	0.500	0.500	0.500	63.80	63.80	12.547	1	0	
Leg S13	L 6" x 6" x 0.4375"	SAE	6X6X0.44	36.0	25.15	Comp	25.15	L 13X -29.036	W 45	86.587	0.000	0.000	0.500	0.500	0.500	63.80	63.80	12.547	1	0	
Leg S14	L 5" x 5" x 0.4375"	SAE	5X5X0.44	36.0	23.01	Comp	23.01	L 14X -22.084	W 45	71.997	0.000	0.000	0.500	0.500	0.500	62.12	62.12	10.209	1	0	
Leg S15	L 5" x 5" x 0.4375"	SAE	5X5X0.44	36.0	14.88	Comp	14.88	L 15X -14.284	W 45	71.997	0.000	0.000	0.500	0.500	0.500	62.12	62.12	10.209	1	0	
Leg S16	L 5" x 5" x 0.3125"	SAE	5X5X0.31	36.0	10.26	Comp	10.26	L 16X -9.411	W 45	54.905	0.000	0.000	0.500	0.500	0.500	51.99	51.99	8.613	1	0	
Leg S17	L 5" x 5" x 0.3125"	SAE	5X5X0.31	36.0	4.50	Comp	4.50	L 17X -3.2974	W 45	54.905	0.000	0.000	0.500	0.500	0.500	51.99	51.99	8.613	1	0	
Diag S1	B/B L3"x4"x0.3125"	DAS	4X3X0.31	36.0	91.92	Comp	91.92	D 2X -50.565	W 90	41.258	0.000	0.000	0.310	0.310	0.310	124.63	122.85	21.768	6	0	
Diag S2	B/B L2.5"x3.5"x0.25"	DAS	3.5X2.5X0.25	36.0	66.38	Comp	66.38	D 4X -55.758	W 90	32.896	0.000	0.000	0.333	0.333	0.333	111.84	111.84	20.553	1	0	
Diag S3	B/B L2.5"x3.5"x0.25"	DAS	3.5X2.5X0.25	36.0	65.55	Comp	65.55	D 6X -56.022	W 90	33.631	0.000	0.000	0.333	0.333	0.333	109.96	109.96	20.297	1	0	
Diag S4	B/B L2.5"x3.5"x0.25"	DAS	3.5X2.5X0.25	36.0	88.98	Comp	88.98	D 8X -58.985	W 90	33.631	0.000	0.000	0.333	0.333	0.333	109.96	109.96	20.297	1	0	
Diag S5	B/B L3"x4"x0.25"	DAS	4X3X0.25	36.0	88.58	Comp	88.58	D 9P -34.987	W 90	30.369	0.000	0.000	0.333	0.333	0.333	134.71	129.05	30.178	6	0	
Diag S6	B/B L3"x4"x0.25"	DAS	4X3X0.25	36.0	61.72	Comp	61.72	D 11X -34.224	W 90	31.411	0.000	0.000	0.333	0.333	0.333	127.55	124.64	29.346	6	0	
Diag S7	B/B L3"x4"x0.25"	DAS	4X3X0.25	36.0	71.09	Comp	71.09	D 13X -30.781	W 90	32.473	0.000	0.000	0.333	0.333	0.333	127.55	124.64	28.573	6	0	
Diag S8	B/B L3.5"x3.5"x0.25"	DAS	3.5X3.5X0.25	36.0	74.72	Comp	74.72	D 15X -28.672	W 90	28.782	0.000	0.000	0.333	0.333	0.333	140.29	132.43	27.864	6	0	
Diag S9	B/B L2.5"x2.5"x0.25"	DAS	2.5X2.5X0.25	36.0	38.74	Comp	38.74	D 17X -16.284	W 90	31.523	0.000	0.000	0.310	0.310	0.310	94.33	94.33	16.451	1	0	
Diag S10	B/B L2.5"x2.5"x0.25"	DAS	2.5X2.5X0.25	36.0	67.71	Comp	67.71	D 19X -15.222	W 90	18.600	0.000	0.000	0.500	0.500	0.500	160.96	145.19	15.962	6	0	
Diag S11	B/B L2.5"x2.5"x0.25"	DAL	2.5X2X0.25	36.0	88.98	Comp	88.98	D 21X -14.884	W 90	11.882	0.000	0.000	0.480	0.480	0.480	159.92	163.61	15.495	6	0	
Diag S12	B/B L2.5"x2.5"x0.25"	DAL	2.5X2X0.25	36.0	78.35	Comp	78.35	D 23X -10.955	W 90	11.680	0.000	0.000	0.500	0.500	0.500	193.21	165.03	15.954	6	0	
Diag S13	B/B L2.5"x2.5"x0.25"	DAL	2.5X2X0.25	36.0	69.16	Comp	69.16	D 25X -11.209	W 90	12.156	0.000	0.000	0.500	0.500	0.500	167.90	161.76	14.641	6	0	
Diag S14	L 3.5" x 3.5" x 0.25"	SAE	3.5X3.5X0.25	36.0	31.11	Comp	31.11	D 28X -5.210	W 90	12.559	0.000	0.000	0.520	0.520	0.520	148.50	141.76	16.516	5	0	
Diag S15	L 3.5" x 3.5" x 0.25"	SAE	3.5X3.5X0.25	36.0	21.36	Comp	21.36	D 30X -3.936	W 90	13.822	0.000	0.000	0.500	0.500	0.500	139.80	135.12	15.548	5	0	
Diag S16	L 3" x 3" x 0.25"	SAE	3X3X0.25	36.0	17.38	Comp	17.38	D 32X -17.269	W 90	12.612	0.000	0.000	0.500	0.500	0.500	147.30	141.76	14.638	5	0	
Diag S17	L 3" x 3" x 0.25"	SAE	3X3X0.25	36.0	13.06	Comp	13.06	D 34X -2.149	W 90	12.402	0.000	0.000	0.520	0.520	0.520	135.27	131.68	12.834	5	0	
Horiz 1	B/B L3.5"x2.5"x0.25"	DAL	3.5X2.5X0.25	36.0	94.76	Comp	94.76	H 1P -40.798	W 90	32.284	0.000	0.000	0.480	0.480	0.480	113.39	113.39	21.458	1	0	
Horiz 2	B/B L3.5"x2.5"x0.25"	DAL	3.5X2.5X0.25	36.0	68.53	Comp	68.53	H 3P -42.387	W 90	40.387	0.000	0.000	0.500	0.500	0.500	73.89	73.89	13.278	1	0	
Horiz 3	B/B L3.5"x2.5"x0.25"	DAL	3.5X2.5X0.25	36.0	61.82	Comp	61.82	H 5P -38.689	W 90	46.889	0.000	0.000	0.500	0.500	0.500	108.82	108.82	11.722	1	0	
Horiz 4	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	36.0	92.74	Comp	92.74	H 7P -37.063	W 90	29.976	0.000	0.000	0.470	0.470	0.470	112.02	112.02	12.222	1	0	
Horiz 5	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	36.0	91.46	Comp	91.46	H 9X -17.459	W 90	14.318	0.000	0.000	0.500	0.500	0.500	194.18	165.02	15.292	6	0	
Horiz 6	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	36.0	70.82	Comp	70.82	H 11P -17.722	W 90	16.651	0.000	0.000	0.500	0.500	0.500	174.60	168.58	15.750	6	0	
Horiz 7	B/B L2.5"x2.5"x0.25"	DAS	2.5X2.5X0.25	36.0	73.08	Comp	73.08	H 13P -12.976	W 90	13.318	0.000	0.000	0.500	0.500	0.500	190.51	163.36	12.208	6	0	
Horiz 8	B/B L2.5"x2.5"x0.25"	DAS	2.5X2.5X0.25	36.0	54.28	Comp	54.28	H 15P -11.653	W 90	16.102	0.000	0.000	0.500	0.500	0.500	166.45	148.57	10.667	6	0	
Horiz 9	B/B L2.5"x2.5"x0.25"	DAS	2.5X2.5X0.25	36.0	48.50	Comp	48.50	H 17P -9.629	W 90	17.834	0.000	0.000	0.500	0.500	0.500	154.42	141.17	9.896	6	0	
Horiz 10	B/B L2.5"x2.5"x0.25"	DAS	2.5X2.5X0.25	36.0	32.69	Comp	32.69	H 19P -8.657	W 90	19.861	0.000	0.000	0.500	0.500	0.500	133.77	133.77	7.125	6	0	
Horiz 11	B/B L2.5"x2.5"x0.25"	DAS	2.5X2.5X0.25	36.0	26.94	Comp	26.94	H 21P -7.993	W 90	22.254	0.000	0.000	0.500	0.500	0.500	130.36	126.37	8.354	6	0	
Horiz 12	B/B L2.5"x2.5"x0.25"	DAS	2.5X2.5X0.25	36.0	16.53	Comp	16.53	H 23P -5.520	W 90	25.037	0.000	0.000	0.500	0.500	0.500	118.34	118.34	7.453	1	0	
Horiz 13	B/B L2.5"x2.5"x0.25"	DAS	2.5X2.5X0.25	36.0	10.63	Comp	10.63	H 25X -2.602	W 90	28.949	0.000	0.000	0.500	0.500	0.500	118.34	118.34	7.453	1	0	
Horiz 14	L 3" x 2.5" x 0.25"	SAU	3X2.5X0.25	36.0	18.63	Comp	18.63	H 28P -0.867	W 90	6.118	0.000	0.000	0.500	0.500	0.500	174.82	172.37	5.516	1	0	
Horiz 15	L 3" x 2.5" x 0.25"	SAU	3X2.5X0.25	36.0	10.63	Tens	10.63	H 30P -1.487	W 90	12.773	0.000	0.000	0.500	0.500	0.500	174.82	172.37	5.516	1	0	
Horiz 16	L 3" x 2.5" x 0.25"	SAU	3X2.5X0.25	36.0	1.88	Tens	1.87	H 32P -0.123	W 90	8.609	0.000	0.000	0.500	0.500	0.500	160.29	150.74	10.058	5	0	
Horiz 17	CHx11.5	CHN	CHx11.5	36.0	1.42	Comp	1.42	H 33P -0.372	W 90	19.649	0.000	0.000	0.500	0.500	0.500	172.80	160.27	9.000	5	0	
LD 1	B/B L4"x3"x0.25"	DAL	4X3X0.25	36.0	99.09	Comp	99.09	L 3X -53.373	W 90	19.058	0.000	0.000	0.820	0.820	0.820	127.87	127.87	12.834	1	0	
LD 2	B/B L4"x3"x0.25"	DAL	4X3X0.25	36.0	99.09	Comp	99.09	L 3X -53.373	W 90	19.058	0.000	0.000	0.820	0.820	0.820	127.87	127.87	12.834	1	0	
LD 3	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	56.79	Comp	56.79	L 7X -26.958	W 45	16.111	0.000	0.000	0.870	0.870	0.870	153.35	140.51	11.516	6	0	
LD 4	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	99.49	Comp	99.49	L 9X -36.560	W 90	27.586	0.000	0.000	0.860	0.860	0.860	180.21	160.21	8.164	1	0	
LD 5	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	99.49	Comp	99.49	L 9X -36.560	W 90	27.586	0.000	0.000	0.860	0.860							

LD 7	B/B L3"x3"x0.25"	DAE	3X3X0.25	36.0	70.60	Comp	30.55	LD 14Y	25.337	W -45	62.208	0.000	0.000	0.000	10.941	0 0.000	0
LD 8	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	99.44	Comp	53.34	LD 15P	32.719	W -90	46.008	0.000	0.000	0.000	8.040	0 0.000	0
LD 9	B/B L3"x2"x0.25"	DAL	3X2X0.25	36.0	99.01	Comp	58.94	LD 17X	40.399	W -90	51.408	0.000	0.000	0.000	9.334	0 0.000	0
LD 10	B/B L3"x3"x0.25"	DAE	3X3X0.25	36.0	65.87	Comp	30.53	LD 20Y	25.324	W -45	62.208	0.000	0.000	0.000	10.386	0 0.000	0
LD 11	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	36.0	98.14	Comp	52.87	LD 21P	32.433	W -90	46.008	0.000	0.000	0.000	7.905	0 0.000	0
LD 12	B/B L2.5"x2.5"x0.375"	DAE	2.5X2.5X0.38	36.0	82.95	Comp	39.59	LD 23X	39.566	W -90	74.952	0.000	0.000	0.000	9.005	0 0.000	0
LH 1	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	36.0	53.27	Comp	17.19	LH 2X	13.022W	90 Ice	56.808	0.000	0.000	0.000	21.458	0 0.000	0
LH 2	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	36.0	65.33	Comp	37.16	LH 4Y	28.147	W -45	56.808	0.000	0.000	0.000	10.806	0 0.000	0
LH 3	B/B L2.5"x3"x0.375"	DAS	3X2.5X0.38	36.0	85.11	Comp	24.84	LH 6Y	27.473	W -45	82.944	0.000	0.000	0.000	10.003	0 0.000	0
LH 4	B/B L3.5"x3.5"x0.25"	DAE	3.5X3.5X0.25	36.0	75.45	Comp	27.12	LH 8Y	26.398	W -45	73.008	0.000	0.000	0.000	9.200	0 0.000	0
DUM 1	Dummy Bracing Member	DUM	0.1X0.1X1	36.0	0.00		0.00	BR 11X	1.097	W -45	0.216	0.000	0.000	0.000	19.445	0 0.000	0

*** Maximum Stress Summary for Each Load Case

Summary of Maximum Usages by Load Case:

Load Case	Maximum Usage %	Element Label	Element Type
W 0	98.15	LD 10P	Angle
W 180	98.53	LD 10Y	Angle
W 45	91.99	LD 1P	Angle
W -45	94.27	LD 1X	Angle
W 90	99.30	LD 15P	Angle
W -90	99.44	LD 15X	Angle
W 0 Ice	92.41	LD 10P	Angle
W 180 Ice	92.97	LD 10Y	Angle
W 45 Ice	88.64	H 2X	Angle
W -45 Ice	92.35	H 2Y	Angle
W 90 Ice	93.38	LD 9P	Angle
W -90 Ice	93.71	LD 9X	Angle

*** Weight of structure (lbs):
Weight of Angles*Section DLF: 143635.5
Weight of Equipment: 1109.0
Total: 144744.5

*** End of Report

Site #: 88018		Engineer: RDB		Windspeed: No Ice: 85 mph		Ice: 74 mph		Taper: -0.123333		Taper Change: 300	
Name: Stamford (Katina), CT		Date: 11/20/15		Carrier: T-Mobile				FW @ Base: 46		FW @ Top: 9	
										ft	
										ft	

NOTES

Types:

1: Built up Horiz. w/ A

2: Built up Horiz. w/ M

A: Typical A brace

X: Typical X brace

Drop: Use only for types 1 & 2

Sections: 17

Legs

Site No.:	88018
Engineer:	RDB
Date:	11/20/2015
Carrier:	T-Mobile

When inputting thickness values, include all decimal places.

Tower Section #	Section Elevations (ft)	Type of Shape ^[1]	Diameter or Length (in)	Thickness ^[2] (in)	F _y (ksi)
1	0.000-25.00	L	8	1.125	36
2	25.00-50.00	L	8	1.125	36
3	50.00-75.00	L	8	1.125	36
4	75.00-100.0	L	8	1	36
5	100.0-125.0	L	8	0.875	36
6	125.0-150.0	L	8	0.875	36
7	150.0-175.0	L	8	0.75	36
8	175.0-200.0	L	8	0.625	36
9	200.0-212.5	L	6	0.75	36
10	212.5-225.0	L	6	0.75	36
11	225.0-237.5	L	6	0.5625	36
12	237.5-250.0	L	6	0.5625	36
13	250.0-262.5	L	6	0.4375	36
14	262.5-272.7	L	5	0.4375	36
15	272.7-282.8	L	5	0.4375	36
16	282.8-291.4	L	5	0.3125	36
17	291.4-300.0	L	5	0.3125	36

Notes:

^[1] Type of Leg Shape: **R** = Round or **P** = Bent Plate or **S** = Schifflerized Angle. **L** = Even Leg

^[2] For Solid Round Leg Shapes Thickness Equals Zero.

^[3] Adjust for Bent Plate Leg Shapes.

Diagonals

Site No.:	88018
Engineer:	RDB
Date:	11/20/2015
Carrier:	T-Mobile

When inputting thickness values, include all decimal places.

Tower Section #	Section Elevations (ft)	Type of Shape ^[1]	Diameter ^[2] (in)	Web Length ^[3] (in)	Flange Length ^[3] (in)	Thickness (in)	F _y (ksi)	Is Diag. Tension Only? (Y/N)
1	0.000-25.00	2L		3	4	0.3125	36	
2	25.00-50.00	2L		3	3.5	0.25	36	
3	50.00-75.00	2L		2.5	3.5	0.25	36	
4	75.00-100.0	2L		2.5	3.5	0.25	36	
5	100.0-125.0	2L		3	4	0.25	36	
6	125.0-150.0	2L		3	4	0.25	36	
7	150.0-175.0	2L		3	4	0.25	36	
8	175.0-200.0	2L		3.5	3.5	0.25	36	
9	200.0-212.5	2L		2.5	2.5	0.25	36	
10	212.5-225.0	2L		2.5	2.5	0.25	36	
11	225.0-237.5	2L		2.5	2	0.25	36	
12	237.5-250.0	2L		2.5	2	0.25	36	
13	250.0-262.5	2L		2.5	2	0.25	36	
14	262.5-272.7	L		3.5	3.5	0.25	36	
15	272.7-282.8	L		3.5	3.5	0.25	36	
16	282.8-291.4	L		3	3	0.25	36	
17	291.4-300.0	L		3	3	0.25	36	

Notes:

^[1] Type of Diagonal Shape: **R** = Round, **L** = Single-Angle or **2L** = Double-Angle.

^[2] Applies to Pipes and Solid Round Shapes only. For Solid Round Shapes Thickness Equals Zero.

^[3] Applies to Single-Angle and Double-Angle Shapes only.

^[4] Applies to Double-Angle Shapes only.

^[5] Applies to Single-Angle Shapes only.

Horizontals

Site No.:	88018
Engineer:	RDB
Date:	11/20/2015
Carrier:	T-Mobile

When inputting thickness values, include all decimal places.

Tower Section #	Section Elevations (ft)	Type of Shape ^[1]	Diameter ^[2] (in)	Web Length ^[3] (in)	Flange Length ^[3] (in)	Thickness (in)	F _y (ksi)	
1	0.000-25.00	2L		3.5	2.5	0.25	36	
2	25.00-50.00	2L		3.5	2.5	0.25	36	
3	50.00-75.00	2L		3.5	2.5	0.25	36	
4	75.00-100.0	2L		3	2.5	0.25	36	
5	100.0-125.0	2L		3	2.5	0.25	36	
6	125.0-150.0	2L		3	2.5	0.25	36	
7	150.0-175.0	2L		2.5	2.5	0.25	36	
8	175.0-200.0	2L		2.5	2.5	0.25	36	
9	200.0-212.5	2L		2.5	2.5	0.25	36	
10	212.5-225.0	2L		2.5	2.5	0.25	36	
11	225.0-237.5	2L		2.5	2.5	0.25	36	
12	237.5-250.0	2L		2.5	2.5	0.25	36	
13	250.0-262.5	2L		2.5	2.5	0.25	36	
14	262.5-272.7	L		3	2.5	0.25	36	
15	272.7-282.8	2L		3	2.5	0.25	36	
16	282.8-291.4	L		3	2.5	0.25	36	
17	291.4-300.0	C		8	11.5		36	

Notes:

^[1] Type of Horizontal Shape: **R** = Round, **L** = Single-Angle, **2L** = Double-Angle, **C** = Channel, **W** = W Shape

^[2] Applies to Pipes and Solid Round Shapes only. For Solid Round Shapes Thickness Equals Zero.

^[3] Applies to Single-Angle and Double-Angle Shapes only.

^[4] Applies to Double-Angle Shapes only.

^[5] Applies to Single-Angle Shapes only.

Built-up Diagonals

Site No.:	88018
Engineer:	RDB
Date:	11/20/2015
Carrier:	T-Mobile

When inputting thickness values, include all decimal places.

Input diags. from left to center & from base section upward.

Tower Built-up Diag. #	Section Elevations (ft)	Type of Shape ^[1]	Diameter ^[2] (in)	Web Length ^[3] (in)	Flange Length ^[3] (in)	Thickness (in)	F _y (ksi)
1	0.000-25.00	2L		3	2	0.25	36
2	0.000-25.00	2L		4	3	0.25	36
3	25.00-50.00	2L		2.5	2	0.25	36
4	25.00-50.00	2L		2.5	2	0.25	36
5	25.00-50.00	2L		3	3	0.25	36
6	50.00-75.00	2L		3	3	0.25	36
7	50.00-75.00	2L		2.5	2	0.25	36
8	50.00-75.00	2L		3	2	0.25	36
9	75.00-100.0	2L		3	3	0.25	36
10	75.00-100.0	2L		2.5	2	0.25	36
11	75.00-100.0	2L		2.5	2.5	0.375	36

Notes:

^[1] Type of Diagonal Shape: **R** = Round, **L** = Single-Angle or **2L** = Double-Angle.

^[2] Applies to Pipes and Solid Round Shapes only. For Solid Round Shapes Thickness Equals Zero.

^[3] Applies to Single-Angle and Double-Angle Shapes only.

^[4] Applies to Double-Angle Shapes only.

^[5] Applies to Single-Angle Shapes only.

Built-up Horizontals

Site No.:	88018
Engineer:	RDB
Date:	11/20/2015
Carrier:	T-Mobile

When inputting thickness values, include all decimal places.

Tower Section #	Section Elevations (ft)	Type of Shape ^[1]	Diameter ^[2] (in)	Web Length ^[3] (in)	Flange Length ^[3] (in)	Thickness (in)	F _y (ksi)	Is Horiz. Tension Only? (Y/N)
1	0.000-25.00	2L		2.5	3	0.25	36	Y
2	25.00-50.00	2L		2.5	3	0.25	36	
3	50.00-75.00	2L		2.5	3	0.375	36	
4	75.00-100.0	2L		3.5	3.5	0.25	36	

Notes:

^[1] Type of Horizontal Shape: **R** = Round, **L** = Single-Angle or **2L** = Double-Angle.

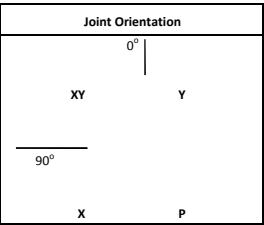
^[2] Applies to Pipes and Solid Round Shapes only. For Solid Round Shapes Thickness Equals Zero.

^[3] Applies to Single-Angle and Double-Angle Shapes only.

^[4] Applies to Double-Angle Shapes only.

^[5] Applies to Single-Angle Shapes only.

Site No.:	88018
Engineer:	RDB
Date:	11/20/15
Carrier:	T-Mobile

Dish Types		Joint Orientation	
S	Standard		
R	Standard w/ Radome		
H	High Performance		
G	Grid		

Dish Elevation (ft)	Dish Dia. (ft)	Dish Angle (deg)	Dish Type	Joint Orientation	Equipment Label	Attach Label	Equipment Property Set	EIA Antenna Orientation Angle

Description	From (ft)	To (ft)	Quantity	Shape	Width or Diameter (in)	Perimeter (in)	Unit Weight (lb/ft)	Part of Face Solidity Ratio (Yes/No)	Include in Wind Load (Yes/No)
LADDER	0	300	1	Flat	1	4.0	6	No	Yes
Short Ladder1	8.3333	33.3333	2	Flat	1	4.0	6	Yes	No
Short Ladder2	8.3333	33.3333	2	Flat	1	4.0	6	Yes	No
WG1	5	300	1	Flat	1	4.0	6	Yes	No
WG2	5	160	1	Flat	1	4.0	6	Yes	Yes
WG3	5	272	1	Flat	1	4.0	6	Yes	No
Clearwire1	5	300	5	Round	1.09	3.4	0.33	Yes	Yes
MC1	5	300	2	Round	1.55	4.9	0.63	No	Yes
UWH1	5	300	1	Round	1.09	3.4	0.33	No	Yes
UNK1	5	300	1	Round	0.63	2.0	0.15	No	Yes
QualComm1	5	270	1	Round	3.13	9.8	3.04	No	Yes
USDOHS1	5	269	2	Round	1.09	3.4	0.33	Yes	Yes
Sirus1	5	265	1	Round	5.02	15.8	1.85	Yes	No
Sirus2	5	265	1	Round	1.98	6.2	0.82	Yes	No
T-Mobile1	5	265	1	Flat	7.92	27.7	9.84	Yes	No
T-Mobile2	5	265	2	Round	0.88	2.8	0.88	Yes	No
USDOHS2	5	240	2	Round	1.09	3.4	0.33	Yes	Yes
AT&T1	5	235	2	Round	0.74	2.3	0.74	Yes	No
AT&T2	5	235	1	Round	0.28	0.9	0.03	Yes	No
AT&T3	5	231	1	Flat	11.88	35.6	10.66	Yes	No
AT&T4	5	231	1	Round	2.38	7.5	3.65	Yes	No
Sprint1	5	224	1	Flat	9.9	31.7	12.3	Yes	Yes
MC2	5	200	2	Round	1.55	4.9	0.63	No	Yes
USDOHS3	5	200	1	Round	1.09	3.4	0.33	Yes	Yes
Spok1	5	178	3	Round	1.09	3.4	0.33	No	Yes
Clearwire2	5	171	1	Flat	2.38	14.3	7.3	Yes	Yes
Clearwire3	5	167	6	Round	0.31	1.0	0.05	Yes	Yes
Clearwire4	5	167	1	Round	2.38	7.5	3.65	Yes	Yes
Metro1	5	160	1	Flat	11.88	31.7	9.84	Yes	No
Metro2	5	160	2	Round	0.44	1.4	0.08	Yes	No
Sprint2	5	150	4	Round	1.54	4.8	1	Yes	Yes
Sprint3	5	150	1	Round	0.63	2.0	0.15	Yes	Yes
Sensus1	5	137	1	Round	1.09	3.4	0.33	No	Yes
Spok2	5	120	1	Round	0.63	2.0	0.15	No	Yes
MC3	5	100	1	Round	1.55	4.9	0.63	No	Yes
Verizon1	5	92	2	Round	1.98	6.2	1.3	No	Yes
Spok3	5	6	1	Round	0.63	2.0	0.15	No	Yes
Spok4	5	6	1	Round	0.34	1.1	0.06	No	Yes

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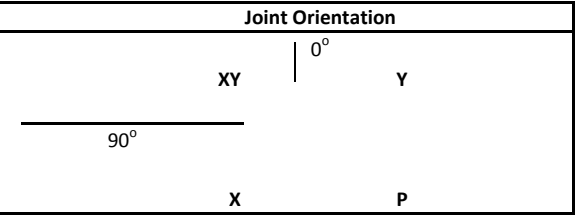
Description	From	To	Quantity	Face # (1-4, A-D)	Coax Width (in)	Considered Coax Shape (Block / Flat / Ind)	% Exposed	Spacing (in)	Shape (Round/Flat)	Block Width (# coax)	Block Depth (# coax)	Perimeter (in)	Unit Weight (lb/ft)	In Face Zone (Yes/No)	Include in Wind Load (Yes/No)
LADDER	0	300	1	B	1	Flat	100	0	Flat	1	1	4.0	6	No	No
Short Ladder1	8.3333	33.3333	2	1	1	Flat	100		Flat	2	1	4.0	6	Yes	No
Short Ladder2	8.3333	33.3333	2	3	1	Flat	100	0	Flat	2	1	4.0	6	Yes	No
							100							No	No
WG1	5	300	1	1	1	Flat	100	0	Flat	1	1	4.0	6	Yes	No
WG2	5	160	1	2	1	Flat	100		Flat	1	1	4.0	6	Yes	Yes
WG3	5	272	1	1	1	Flat	100	0	Flat	1	1	4.0	6	Yes	No
Clearwire1	5	300	5	2	1.09	Ind	100		Round	5	1	3.4	0.33	Yes	Yes
MC1	5	300	2	B	1.55	Ind	100	0	Round	2	1	4.9	0.63	No	Yes
UWH1	5	300	1	B	1.09	Ind	100		Round	1	1	3.4	0.33	No	Yes
UNK1	5	300	1	B	0.63	Ind	100	0	Round	1	1	2.0	0.15	No	Yes
QualComm1	5	270	1	B	3.13	Ind	100		Round	1	1	9.8	3.04	No	Yes
USDOHS1	5	269	2	2	1.09	Ind	100	0	Round	2	1	3.4	0.33	Yes	Yes
Sirus1	5	265	1	4	5.02	Ind	100		Round	1	1	15.8	1.85	Yes	No
Sirus2	5	265	1	4	1.98	Ind	100	0	Round	1	1	6.2	0.82	Yes	No
T-Mobile1	5	265	12	3	1.98	Block	33	0	Flat	4	3	27.7	9.84	Yes	No
T-Mobile2	5	265	2	4	0.88	Ind	100	0	Round	2	1	2.8	0.88	Yes	No
USDOHS2	5	240	2	2	1.09	Ind	100		Round	2	1	3.4	0.33	Yes	Yes
AT&T1	5	235	2	1	0.74	Ind	100	0	Round	2	1	2.3	0.74	Yes	No
AT&T2	5	235	1	1	0.28	Ind	100		Round	1	1	0.9	0.03	Yes	No
AT&T3	5	231	13	1	1.98	Block	46	0	Flat	6	3	35.6	10.66	Yes	No
AT&T4	5	231	1	1	2.38	Ind	100		Round	1	1	7.5	3.65	Yes	No
Sprint1	5	224	15	2	1.98	Block	33	0	Flat	5	3	31.7	12.3	Yes	Yes
MC2	5	200	2	B	1.55	Ind	100		Round	2	1	4.9	0.63	No	Yes
USDOHS3	5	200	1	2	1.09	Ind	100	0	Round	1	1	3.4	0.33	Yes	Yes
Spok1	5	178	3	B	1.09	Ind	100		Round	3	1	3.4	0.33	No	Yes
Clearwire2	5	171	2	2	2.38	Block	50	0	Flat	1	2	14.3	7.3	Yes	Yes
Clearwire3	5	167	6	2	0.31	Ind	100		Round	6	1	1.0	0.05	Yes	Yes
Clearwire4	5	167	1	2	2.38	Ind	100	0	Round	1	1	7.5	3.65	Yes	Yes
Metro1	5	160	12	1	1.98	Block	50	0	Flat	6	2	31.7	9.84	Yes	No
Metro2	5	160	2	1	0.44	Ind	100	0	Round	2	1	1.4	0.08	Yes	No
Sprint2	5	150	4	2	1.54	Ind	100		Round	4	1	4.8	1	Yes	Yes
Sprint3	5	150	1	2	0.63	Ind	100	0	Round	1	1	2.0	0.15	Yes	Yes
Sensus1	5	137	1	B	1.09	Ind	100		Round	1	1	3.4	0.33	No	Yes
Spok2	5	120	1	B	0.63	Ind	100	0	Round	1	1	2.0	0.15	No	Yes
MC3	5	100	1	B	1.55	Ind	100		Round	1	1	4.9	0.63	No	Yes
Verizon1	5	92	2	B	1.98	Ind	100	0	Round	2	1	6.2	1.3	No	Yes
Spok3	5	6	1	B	0.63	Ind	100		Round	1	1	2.0	0.15	No	Yes
Spok4	5	6	1	B	0.34	Ind	100	0	Round	1	1	1.1	0.06	No	Yes

Coax & Dishes

Dish Types	
S	Standard
R	Standard w/ Radome
H	High Performance
G	Grid

Dish Elevation (ft)	Dish Dia. (ft)	Dish Angle (deg)	Dish Type	Joint Orientation
300	2	0	H	Y
300	2	90	H	XY
300	2	180	H	X
300	4	270	S	P
300	3	0	H	XY
120	4	90	S	X
24	2	235	R	P
6	4	180	S	P

Equipment Label	Attach Label	Equipment Property Set	EIA Antenna Orientation Angle (deg)
2' HP 1 @ 300'	17Y	2 ft HP Dish	0
2' HP 2 @ 300'	17XY	2 ft HP Dish	90
2' HP 3 @ 300'	17X	2 ft HP Dish	180
4' STD 4 @ 300'	17P	4 ft STD Dish	270
3' HP 5 @ 300'	17XY	3 ft HP Dish	0
4' STD 6 @ 120'	5X	4 ft STD Dish	90
2' RAD 7 @ 24'	1P	2 ft RAD Dish	235
4' STD 8 @ 6'	0P	4 ft STD Dish	180



Site #:	88018
Name:	T-Mobile

Engineer:	RDB
Date:	11/20/15

Member Label	Group Label	Section Label	Symmetry Code	Origin Joint	End Joint	Ecc. Code	Rest. Code	Ratio RLX	Ratio RLY	Ratio RLZ	
L 1	Leg S1		XY-Symmetry	0P	1P		1	4	0.2812	0.2812	0.2812
L 2	Leg S2		XY-Symmetry	1P	2P		1	4	0.2812	0.2812	0.2812
L 3	Leg S3		XY-Symmetry	2P	3P		1	4	0.2812	0.2812	0.2812
L 4	Leg S4		XY-Symmetry	3P	4P		1	4	0.2812	0.2812	0.2812
L 5	Leg S5		XY-Symmetry	4P	5P		1	4	0.333333333	0.333333333	0.333333333
L 6	Leg S6		XY-Symmetry	5P	6P		1	4	0.333333333	0.333333333	0.333333333
L 7	Leg S7		XY-Symmetry	6P	7P		1	4	0.333333333	0.333333333	0.333333333
L 8	Leg S8		XY-Symmetry	7P	8P		1	4	0.333333333	0.333333333	0.333333333
L 9	Leg S9		XY-Symmetry	8P	9P		1	4	0.5	0.5	0.5
L 10	Leg S10		XY-Symmetry	9P	10P		1	4	0.5	0.5	0.5
L 11	Leg S11		XY-Symmetry	10P	11P		1	4	0.5	0.5	0.5
L 12	Leg S12		XY-Symmetry	11P	12P		1	4	0.5	0.5	0.5
L 13	Leg S13		XY-Symmetry	12P	13P		1	4	0.5	0.5	0.5
L 14	Leg S14		XY-Symmetry	13P	14P		1	4	0.5	0.5	0.5
L 15	Leg S15		XY-Symmetry	14P	15P		1	4	0.5	0.5	0.5
L 16	Leg S16		XY-Symmetry	15P	16P		1	4	0.5	0.5	0.5
L 17	Leg S17		XY-Symmetry	16P	17P		1	4	0.5	0.5	0.5
D 1	Diag S1		XY-Symmetry	0P	H2P		1	6	0.31	0.92	0.31
D 2	Diag S1		XY-Symmetry	0P	H1P		1	6	0.31	0.92	0.31
D 3	Diag S2		XY-Symmetry	1P	H6P		1	6	0.31	0.62	0.31
D 4	Diag S2		XY-Symmetry	1P	H5P		1	6	0.31	0.62	0.31
D 5	Diag S3		XY-Symmetry	2P	H10P		1	6	0.333333333	0.667	0.333333333
D 6	Diag S3		XY-Symmetry	2P	H9P		1	6	0.333333333	0.667	0.333333333
D 7	Diag S4		XY-Symmetry	3P	H14P		1	6	0.333333333	0.667	0.333333333
D 8	Diag S4		XY-Symmetry	3P	H13P		1	6	0.333333333	0.667	0.333333333
D 9	Diag S5		XY-Symmetry	4P	A9P		1	6	0.333333333	0.666666667	0.333333333
D 10	Diag S5		XY-Symmetry	4P	A10P		1	6	0.333333333	0.666666667	0.333333333
D 11	Diag S6		XY-Symmetry	5P	A11P		1	6	0.333333333	0.666666667	0.333333333
D 12	Diag S6		XY-Symmetry	5P	A12P		1	6	0.333333333	0.666666667	0.333333333
D 13	Diag S7		XY-Symmetry	6P	A13P		1	6	0.333333333	0.666666667	0.333333333
D 14	Diag S7		XY-Symmetry	6P	A14P		1	6	0.333333333	0.666666667	0.333333333
D 15	Diag S8		XY-Symmetry	7P	A15P		1	6	0.333333333	0.666666667	0.333333333
D 16	Diag S8		XY-Symmetry	7P	A16P		1	6	0.333333333	0.666666667	0.333333333
D 17	Diag S9		XY-Symmetry	8P	A17P		1	6	0.32	0.59	0.32
D 18	Diag S9		XY-Symmetry	8P	A18P		1	6	0.32	0.59	0.32
D 19	Diag S10		XY-Symmetry	9P	A19P		1	6	0.5	1	0.5
D 20	Diag S10		XY-Symmetry	9P	A20P		1	6	0.5	1	0.5
D 21	Diag S11		XY-Symmetry	10P	A21P		1	6	0.48	0.96	0.58
D 22	Diag S11		XY-Symmetry	10P	A22P		1	6	0.48	0.96	0.58
D 23	Diag S12		XY-Symmetry	11P	A23P		1	6	0.5	1	0.5
D 24	Diag S12		XY-Symmetry	11P	A24P		1	6	0.5	1	0.5
D 25	Diag S13		XY-Symmetry	12P	A25P		1	6	0.5	1	0.5
D 26	Diag S13		XY-Symmetry	12P	A26P		1	6	0.5	1	0.5
D 27	Diag S14		XY-Symmetry	13P	14Y		2	5	0.52	0.75	0.52
D 28	Diag S14		XY-Symmetry	13P	14X		2	5	0.52	0.75	0.52
D 29	Diag S15		XY-Symmetry	14P	15Y		2	5	0.52	0.75	0.52
D 30	Diag S15		XY-Symmetry	14P	15X		2	5	0.52	0.75	0.52
D 31	Diag S16		XY-Symmetry	15P	16Y		2	5	0.52	0.75	0.52
D 32	Diag S16		XY-Symmetry	15P	16X		2	5	0.52	0.75	0.52
D 33	Diag S17		XY-Symmetry	16P	17Y		2	5	0.52	0.75	0.52
D 34	Diag S17		XY-Symmetry	16P	17X		2	5	0.52	0.75	0.52
H 1	Horiz 1		XY-Symmetry	1P	A1P		1	6	0.48	0.48	0.48
H 2	Horiz 1		XY-Symmetry	1P	A2P		1	6	0.48	0.48	0.48
H 3	Horiz 2		XY-Symmetry	2P	A3P		1	6	0.5	0.5	0.5
H 4	Horiz 2		XY-Symmetry	2P	A4P		1	6	0.5	0.5	0.5
H 5	Horiz 3		XY-Symmetry	3P	A5P		1	6	0.5	0.5	0.5
H 6	Horiz 3		XY-Symmetry	3P	A6P		1	6	0.5	0.5	0.5
H 7	Horiz 4		XY-Symmetry	4P	A7P		1	6	0.47	0.94	0.47
H 8	Horiz 4		XY-Symmetry	4P	A8P		1	6	0.47	0.94	0.47
H 9	Horiz 5		XY-Symmetry	5P	A9P		1	6	1	1	1
H 10	Horiz 5		XY-Symmetry	5P	A10P		1	6	1	1	1
H 11	Horiz 6		XY-Symmetry	6P	A11P		1	6	1	1	1

Member Label	Group Label	Section Label	Symmetry Code	Origin Joint	End Joint	Ecc. Code	Rest. Code	Ratio RLX	Ratio RLY	Ratio RLZ
H 12	Horiz 6		XY-Symmetry	6P	A12P		1 6	1	1	1
H 13	Horiz 7		XY-Symmetry	7P	A13P		1 6	1	1	1
H 14	Horiz 7		XY-Symmetry	7P	A14P		1 6	1	1	1
H 15	Horiz 8		XY-Symmetry	8P	A15P		1 6	1	1	1
H 16	Horiz 8		XY-Symmetry	8P	A16P		1 6	1	1	1
H 17	Horiz 9		XY-Symmetry	9P	A17P		1 6	1	1	1
H 18	Horiz 9		XY-Symmetry	9P	A18P		1 6	1	1	1
H 19	Horiz 10		XY-Symmetry	10P	A19P		1 6	1	1	1
H 20	Horiz 10		XY-Symmetry	10P	A20P		1 6	1	1	1
H 21	Horiz 11		XY-Symmetry	11P	A21P		1 6	1	1	1
H 22	Horiz 11		XY-Symmetry	11P	A22P		1 6	1	1	1
H 23	Horiz 12		XY-Symmetry	12P	A23P		1 6	1	1	1
H 24	Horiz 12		XY-Symmetry	12P	A24P		1 6	1	1	1
H 25	Horiz 13		XY-Symmetry	13P	A25P		1 6	1	1	1
H 26	Horiz 13		XY-Symmetry	13P	A26P		1 6	1	1	1
H 27	Horiz 14		Y-Symmetry	14P	14X		3 5	0.5	1	0.5
H 28	Horiz 14		X-Symmetry	14P	14Y		3 5	0.5	1	0.5
H 29	Horiz 15		Y-Symmetry	15P	15X		1 6	0.5	1	0.5
H 30	Horiz 15		X-Symmetry	15P	15Y		1 6	0.5	1	0.5
H 31	Horiz 16		Y-Symmetry	16P	16X		3 5	0.5	1	0.5
H 32	Horiz 16		X-Symmetry	16P	16Y		3 5	0.5	1	0.5
H 33	Horiz 17		Y-Symmetry	17P	17X		3 5	0.5	1	0.5
H 34	Horiz 17		X-Symmetry	17P	17Y		3 5	0.5	1	0.5
H 37	Horiz 2		Y-Symmetry	A3P	A3X		1 5	1	1	1
H 38	Horiz 2		X-Symmetry	A4P	A4Y		1 5	1	1	1
H 39	Horiz 3		Y-Symmetry	A5P	A5X		1 5	1	1	1
H 40	Horiz 3		X-Symmetry	A6P	A6Y		1 5	1	1	1
H 41	Horiz 4		Y-Symmetry	A7P	A7X		1 5	1	1	1
H 42	Horiz 4		X-Symmetry	A8P	A8Y		1 5	1	1	1
LH 1	LH 1		Y-Symmetry	H1P	H1X		1 6	0.5	1	0.5
LH 2	LH 1		X-Symmetry	H2P	H2Y		1 6	0.5	1	0.5
LH 3	LH 2		XY-Symmetry	H5P	H7P		1 6	1	2	1
LH 4	LH 2		XY-Symmetry	H6P	H8P		1 6	1	2	1
LH 5	LH 3		XY-Symmetry	H9P	H11P		1 6	1	2	1
LH 6	LH 3		XY-Symmetry	H10P	H12P		1 6	1	2	1
LH 7	LH 4		XY-Symmetry	H13P	H15P		1 6	0.998	1.995	0.998
LH 8	LH 4		XY-Symmetry	H14P	H16P		1 6	0.998	1.995	0.998
LD 1	LD 1		XY-Symmetry	H1P	1P		1 6	0.85	0.85	0.85
LD 2	LD 1		XY-Symmetry	H2P	1P		1 6	0.85	0.85	0.85
LD 3	LD 2		XY-Symmetry	H1P	A1P		1 6	0.82	0.82	0.82
LD 4	LD 2		XY-Symmetry	H2P	A2P		1 6	0.82	0.82	0.82
LD 7	LD 4		XY-Symmetry	H5P	2P		1 6	0.87	0.87	0.87
LD 8	LD 4		XY-Symmetry	H6P	2P		1 6	0.87	0.87	0.87
LD 9	LD 5		XY-Symmetry	H5P	A3P		1 6	0.8	0.8	0.8
LD 10	LD 5		XY-Symmetry	H6P	A4P		1 6	0.8	0.8	0.8
LD 11	LD 6		XY-Symmetry	A3P	H7P		1 6	0.84	0.84	0.84
LD 12	LD 6		XY-Symmetry	A4P	H8P		1 6	0.84	0.84	0.84
LD 13	LD 7		XY-Symmetry	H9P	3P		1 6	0.865	0.865	0.865
LD 14	LD 7		XY-Symmetry	H10P	3P		1 6	0.865	0.865	0.865
LD 15	LD 8		XY-Symmetry	H9P	A5P		1 6	0.82	0.82	0.82
LD 16	LD 8		XY-Symmetry	H10P	A6P		1 6	0.82	0.82	0.82
LD 17	LD 9		XY-Symmetry	A5P	H11P		1 6	0.82	0.82	0.82
LD 18	LD 9		XY-Symmetry	A6P	H12P		1 6	0.82	0.82	0.82
LD 19	LD 10		XY-Symmetry	H13P	4P		1 6	0.86	0.86	0.86
LD 20	LD 10		XY-Symmetry	H14P	4P		1 6	0.86	0.86	0.86
LD 21	LD 11		XY-Symmetry	H13P	A7P		1 6	0.82	0.82	0.82
LD 22	LD 11		XY-Symmetry	H14P	A8P		1 6	0.82	0.82	0.82
LD 23	LD 12		XY-Symmetry	A7P	H15P		1 6	0.85	0.85	0.85
LD 24	LD 12		XY-Symmetry	A8P	H16P		1 6	0.85	0.85	0.85
BR 1	DUM 1		XY-Symmetry	A1P	A2P		1 4	1	1	1

Member Label	Group Label	Section Label	Symmetry Code	Origin Joint	End Joint	Ecc. Code	Rest. Code	Ratio RLX	Ratio RLY	Ratio RLZ
BR 3	DUM 1		XY-Symmetry	A3P	A4P	1	4	1	1	1
BR 4	DUM 1		XY-Symmetry	A3P	A4XY	1	4	1	1	1
BR 5	DUM 1		XY-Symmetry	A5P	A6P	1	4	1	1	1
BR 6	DUM 1		XY-Symmetry	A5P	A6XY	1	4	1	1	1
BR 7	DUM 1		XY-Symmetry	A7P	A8P	1	4	1	1	1
BR 8	DUM 1		XY-Symmetry	A7P	A8XY	1	4	1	1	1
BR 9	DUM 1		XY-Symmetry	A9P	A10P	1	4	1	1	1
BR 11	DUM 1		XY-Symmetry	A11P	A12P	1	4	1	1	1
BR 13	DUM 1		XY-Symmetry	A13P	A14P	1	4	1	1	1
BR 15	DUM 1		XY-Symmetry	A15P	A16P	1	4	1	1	1
BR 17	DUM 1		XY-Symmetry	A17P	A18P	1	4	1	1	1
BR 19	DUM 1		XY-Symmetry	A19P	A20P	1	4	1	1	1
BR 21	DUM 1		XY-Symmetry	A21P	A22P	1	4	1	1	1
BR 23	DUM 1		XY-Symmetry	A23P	A24P	1	4	1	1	1
BR 25	DUM 1		XY-Symmetry	A25P	A26P	1	4	1	1	1
BR 61	DUM 1		XY-Symmetry	H1P	H2P	1	4	1	1	1
BR 62	DUM 1		XY-Symmetry	H1P	H2XY	1	4	1	1	1
BR 64	DUM 1		XY-Symmetry	H5P	H6P	1	4	1	1	1
BR 65	DUM 1		XY-Symmetry	H5P	H6XY	1	4	1	1	1
BR 66	DUM 1		XY-Symmetry	H7P	H8P	1	4	1	1	1
BR 67	DUM 1		XY-Symmetry	H9P	H10P	1	4	1	1	1
BR 68	DUM 1		XY-Symmetry	H9P	H10XY	1	4	1	1	1
BR 69	DUM 1		XY-Symmetry	H11P	H12P	1	4	1	1	1
BR 70	DUM 1		XY-Symmetry	H13P	H14P	1	4	1	1	1
BR 71	DUM 1		XY-Symmetry	H13P	H14XY	1	4	1	1	1
BR 72	DUM 1		XY-Symmetry	H15P	H16P	1	4	1	1	1

Point Loads

Tower Height:	300	ft
Gh:	1.09	
Wind Speed:	85.00	
Wind Speed (Ice):	73.95	
Radial Ice Diameter:	0.5	in

Site No.:	88018
Engineer:	RDB
Date:	11/20/2015
Carrier:	T-Mobile

KS-15676 Horn Antennas: ~128 ft²

No.	Carrier	Elevation (ft)	Quantity	Number of Azimuths	Model	Height (in)	Width (in)	Depth (in)	Weight (lbs/ea)	Flat/Round (F/R)	Reduction Factor	C _A A _c (ft²/ea)	Weight (k/ea)	H/W	C _A	q _z (psf)	q _z (Ice) (psf)
1		300	1	1	-	0.01	0.01	0.01	0.01	R	0.001			1.00	0.80	34.75	26.30
			1	4	Platform						1.000	55.00	4.00	-	-	-	-
2		283	1	4	-	0.01	0.01	0.01	0.01	R	0.001			1.00	0.80	34.18	25.87
			1	4	Catwalk						1.000	40.00	2.75	-	-	-	-
3		212.5	1	3	-	0.01	0.01	0.01	0.01	R	0.001			1.00	0.80	31.49	23.83
			1	3	Platform						1.000	50.00	3.00	-	-	-	-
4		100	1	3	-	0.01	0.01	0.01	0.01	R	0.001			1.00	0.80	25.39	19.22
			1	3	Platform						1.000	50.00	3.00	-	-	-	-
5	Clearwire Marcus Comm.	300	1	1	Horizon Compact	4.7	9.3	9.3	10.6	R	1.000			0.51	0.80	34.75	26.30
			1	1	Radio/ODU						0.500	1.87	0.03	-	-	-	-
6	United/Marcus Marcus Comm.	300	2	2	16' Omni	192	3	3	55	R	1.000			64.00	1.20	34.75	26.30
			1	1	101-68-10-X-03N						1.000	5.53	0.07	-	-	-	-
7	Qualcomm Qualcomm	270	1	1	TLP-08M-2E	146.4	10.5	10.5	130	R	1.000			13.94	0.95	33.72	25.52
			1	1	Side Arm						1.000	5.20	0.15	-	-	-	-
8	US DOHS -	269	1	1	ADD090	78.7	31.5	31.5	88.2	F	1.000			2.50	1.40	33.68	25.50
			1	1	-						1.000	0.00	0.00	-	-	-	-
9	Sirius Sirius	265	2	2	TA-2350-DAB	70	2.3	2.3	15	R	1.000			30.43	1.20	33.54	25.39
			2	2	Side Arm						0.900	5.20	0.15	-	-	-	-
10	T-Mobile T-Mobile	265	3	3	ATMAA1412D-1A20	12	10	4	13	F	0.500			1.20	1.40	33.54	25.39
			3	3	RRUS 11 B12						0.500	3.25	0.05	-	-	-	-
11	T-Mobile T-Mobile	265	3	3	AIR 21, 1.3 M, B2A B4P	56	12	8	83	F	0.690			4.67	1.40	33.54	25.39
			3	3	AIR 21, 1.3M, B4A B2P						0.690	6.58	0.08	-	-	-	-
12	T-Mobile T-Mobile	265	3	3	LNx-6515DS-VTM	96.3	11.9	7.1	51.3	F	0.700			8.09	1.44	33.54	25.39
			3	3	Sector Frame						0.670	17.90	0.40	-	-	-	-
13	US DOHS US DOHS	240	1	1	SC381-HL	148.3	4.5	4.5	47	R	1.000			32.96	1.20	32.60	24.68
			1	1	SC281-L						1.000	10.46	0.08	-	-	-	-
14	US DOHS US DOHS	240	1	1	-	0.01	0.01	0.01	0.01	R	0.001			1.00	0.80	32.60	24.68
			2	2	Side Arm						0.900	5.20	0.15	-	-	-	-
15	AT&T Mobility AT&T Mobility	235	3	3	7770	55	11	5	35	F	0.640			5.00	1.40	32.41	24.53
			3	3	Sector Frame						0.670	14.40	0.40	-	-	-	-
16																	
17	AT&T Mobility AT&T Mobility	235	9	3	SBNHH-1D65A	55	11.9	7.1	40.9	F	0.670			4.62	1.40	32.41	24.53
			1	3	37 BOB, Diplexer, TTA, RET						0.500	84.00	1.20	-	-	-	-
18	Sprint Nextel Sprint Nextel	224	12	3	Decibel DB844H90E-XY	48	6.5	8	14	F	0.730			7.38	1.41	31.97	24.20
			3	3	Sector Frame						0.670	17.90	0.40	-	-	-	-
19	US DOHS US DOHS	200	1	1	Sinclair SC281-L	251	5	5	79	R	1.000			50.20	1.20	30.95	23.43
			1	1	Side Arm						1.000	5.20	0.15	-	-	-	-
20	Marcus Comm. Marcus Comm.	200	2	2	TX RX 101-68-10-X-03N	189.6	3.5	3.5	70	R	1.000			54.17	1.20	30.95	23.43
			2	2	Side Arm						0.900	5.20	0.15	-	-	-	-
21	Town of Stamford Town of Stamford	189	1	1	-	0.01	0.01	0.01	0.01	R	0.001			1.00	0.80	30.45	23.05
			1	1	30" x 30" Reflector						1.000	8.75	0.03	-	-	-	-
22	Spok Holdings Spok Holdings	178	3	3	BCD-87010 ____	134	2.6	2.6	26.5	R	1.000			51.54	1.20	29.94	22.66
			3	3	Side Arm						0.670	5.20	0.15	-	-	-	-
23	Clearwire Clearwire	171	3	3	24" x 24" Junction Box	24	24	8	20	F	0.670			1.00	1.40	29.59	22.40
			1	1	-						1.000	0.01	0.01	-	-	-	-
24	Clearwire Clearwire	167	3	3	BTS-2500	19.3	11.3	5.1	35	F	0.670			1.71	1.40	29.40	22.25
			3	3	LLPX310R						0.620	4.83	0.03	-	-	-	-
25	Clearwire Clearwire	167	1	1	-	0.01	0.01	0.01	0.01	R	0.001			1.00	0.80	29.40	22.25
			3	3	T-Arm						0.670	5.20	0.15	-	-	-	-
26	Metro PCS Metro PCS	160	18	3	RCU (Remote Control Unit)	8	2	2	1	R	0.500			4.00	0.80	29.04	21.98
			6	3	800 10504						0.670	3.35	0.02	-	-	-	-
27	Sprint Nextel Sprint Nextel	150	3	3	APXVTM14-C-I20	56.3	12.6	6.3	52.9	F	0.650			4.47	1.40	28.51	21.58
			1	3	18 RRH						0.500	50.70	0.78	-	-	-	-
28	Sprint Nextel Sprint Nextel	150	3	3	APXVSP18-C-A20	72	11.8	7	57	F	0.680			6.10	1.40	28.51	21.58
			3	3	Sector Frame						0.670	17.90	0.40	-	-	-	-
29	Senus Senus	137	1	1	BCD-87010 ____ 4"	134	2.6	2.6	26.5	R	1.000			51.54	1.20	27.78	21.03
			1	1	Side Arm						1.000	5.20	0.15	-	-	-	-
30	Marcus Comm. Marcus Comm.	100	1	1	101-68-10-X-03N	189.6	3.5	3.5	70	R	1.000			54.17	1.20	25.39	19.22
			1	1	Side Arm						1.000	5.20	0.15	-	-	-	-

31	Verizon	92	6	3	WWX063X19G00	75	12.1	7	32.7	F	0.680			6.20	1.40	24.79	18.76
	Verizon		4	3	X7C-FRO-660 (35 Lbs)						0.670	10.22	0.04	-	-		
32	Verizon	92	3	3	X7C-FRO-640-V	72	18.8	9.1	42.4	F	0.640			3.83	1.40	24.79	18.76
	Verizon		1	3	11 RET, BOB						0.500	36.61	0.56	-	-		
33	Verizon	92	1	1	-	0.01	0.01	0.01	0.01	R	0.001			1.00	0.80	24.79	18.76
	Verizon		1	3	Sector Frame						0.670	17.90	0.40	-	-		
34	Spok Holdings	6	1	1	Acutime 2000	5	6.1	6.1	1.3	F	1.000			0.82	1.40	18.50	14.00
	Spok Holdings		1	1	-						1.000	0.00	0.00	-	-		
35																	
36																	
37																	
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No.	Elevation (ft)	C _A A _c (ft²)	C _A A _c (Ice) (ft²)	Force (k)	Force (Ice) (k)	Weight (k)	Weight (Ice) (k)		Σ Force (k)	Σ Force (Ice) (k)		Σ Weight (k)	Σ Weight (Ice) (k)
1	300	0.00	0.00	0.000	0.000	0.000	0.000		2.08	2.12		4.00	5.20
		55.00	74.25	2.079	2.124	4.000	5.200						
2	283	0.00	0.00	0.000	0.000	0.000	0.000		1.49	1.52		2.75	3.58
		40.00	54.00	1.487	1.519	2.750	3.575						
3	212.5	0.00	0.00	0.000	0.000	0.000	0.000		1.71	1.75		3.00	3.90
		50.00	67.50	1.713	1.750	3.000	3.900						
4	100	0.00	0.00	0.000	0.000	0.000	0.000		1.38	1.41		3.00	3.90
		50.00	67.50	1.381	1.411	3.000	3.900						
5	300	0.24	0.33	0.009	0.009	0.011	0.017		0.04	0.05		0.04	0.06
		0.94	1.26	0.035	0.036	0.030	0.039						
6	300	9.60	12.87	0.363	0.368	0.110	0.198		0.57	0.58		0.18	0.29
		5.53	7.47	0.209	0.214	0.070	0.091						
7	270	10.19	11.23	0.374	0.312	0.130	0.239		0.56	0.51		0.28	0.43
		5.20	7.02	0.191	0.195	0.150	0.195						
8	269	24.10	25.18	0.883	0.698	0.088	0.286		0.88	0.70		0.09	0.29
		0.00	0.00	0.000	0.000	0.000	0.000						
9	265	2.68	3.91	0.098	0.108	0.030	0.056		0.44	0.46		0.33	0.45
		9.36	12.64	0.341	0.349	0.300	0.390						
10	265	1.75	2.09	0.064	0.058	0.039	0.062		0.24	0.24		0.19	0.26
		4.88	6.58	0.178	0.182	0.152	0.198						
11	265	13.52	14.91	0.493	0.412	0.249	0.375		0.99	0.92		0.49	0.69
		13.62	18.39	0.497	0.508	0.245	0.318						
12	265	24.01	26.29	0.876	0.726	0.154	0.351		2.19	2.07		1.35	1.91
		35.98	48.57	1.313	1.341	1.200	1.560						
13	240	5.56	6.84	0.197	0.184	0.047	0.096		0.57	0.56		0.13	0.20

Foundation

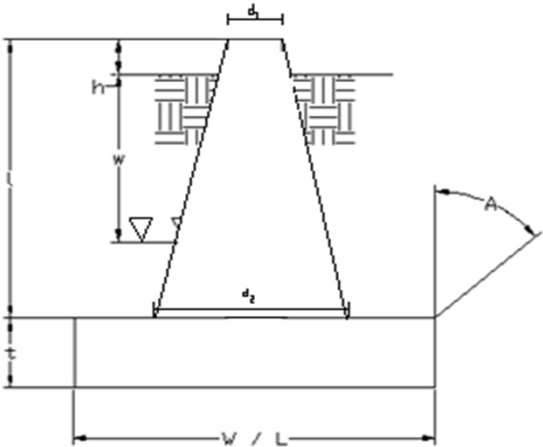
Design Loads (Unfactored)

Compression/Leg:	494.61 k
Uplift/Leg:	384.50 k

Face Width @ Top of Pier (d ₁):	4.00 ft
Face Width @ Bottom of Pier (d ₂):	8.00 ft
Total Length of Pier (l):	8.00 ft
Height of Pedestal Above Ground (h):	0.50 ft
Width of Pad (W):	18.00 ft
Length of Pad (L):	18.00 ft
Thickness of Pad (t):	3.00 ft
Water Table Depth (w):	99 ft
Unit Weight of Concrete:	150.0 pcf
Unit Weight of Soil (Above Water Table):	110.0 pcf
Unit Weight of Soil (Below Water Table):	55.0 pcf
Friction Angle of Uplift (A):	20 °
Allowable Compressive Bearing Pressure:	20000 psf

Volume Pier (Total):	298.67	ft ³
Volume Pad (Total):	972.00	ft ³
Volume Soil (Total):	2935.41	ft ³
Volume Pier (Buoyant):	0.00	ft ³
Volume Pad (Buoyant):	0.00	ft ³
Volume Soil (Buoyant):	0.00	ft ³
Weight Pier:	44.80	k
Weight Pad:	145.80	k
Weight Soil:	322.89	k

Site No.:	88018
Engineer:	RDB
Date:	11/20/15
Carrier:	T-Mobile



Uplift Check

TIA Case 1:	$\frac{\text{Wt. Soil} + \text{Wt. Concrete}}{1.5}$
TIA Case 2:	$\frac{\text{Wt. Soil} + \text{Wt. Concrete}}{2.0 \quad 1.25}$

	Allowable Uplift (k)	Ratio	Result
TIA Case 1:	451.68	0.85	OK
TIA Case 2:	423.28	0.91	OK

Axial Check

Allowable Axial:	$\text{Allowable Bearing Pressure} * W * L$
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	Allowable Axial (k)	Ratio	Result
	6480.00	0.08	OK

Anchor Bolt Check

Bolt Description	Allowable Uplift (k)	Ratio	Result
(6) 2 1/4" A36	456.61	0.84	OK



*T-Mobile Northeast, LLC, a subsidiary of T-MOBILE USA, Inc.
15 Commerce Way – Suite B
Norton, MA 02766*

Sent VIA USPS Certified Mail

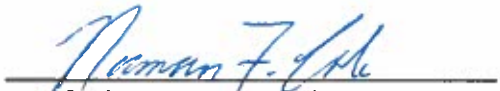
December 16, 2015

Stamford Government Center
Attn: Stamford Connecticut Land Use Bureau Chief, Norman Cole, AICP
Stamford Government Center
888 Washington Blvd.
Stamford, CT 06901

Re: Confirmation of Telecom Facility Tower Documentation
Site Number: CT11007A
Site Address: 168 Catoona Lane, Stamford CT

Dear Mr. Cole,

This letter is to confirm that The City of Stamford has no records of when the Wireless Communications Facility located on 168 Catoona Lane, Stamford, CT (41.05284 / -73.56314) was constructed. Please sign and date below to indicate this is in fact true.


Stamford Connecticut Land Use Bureau Chief, Norman Cole, AICP

12-17-15
Date

Sincerely,

Craig Cody

Craig Cody
Site Acquisition Agent for T-Mobile Northeast, LLC
T-Mobile MW Project



Convergent Network Solutions
Tower Resource Management
16 Chestnut Street, Suite 420
Foxborough, MA 02035
Mobile: 774-264-0016
Fax: 774-215-5423
Email: CCody@trmcom.com

Site Number: CT11007A
Market: Connecticut