



AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure : 240 ft Self Supported Tower
GTP Site Name : Tartaglia, CT
GTP Site Number : CT-5035
Engineering Number : 64303126
Proposed Carrier : T-Mobile
Carrier Site Name : Tartaglia (Connecticut)
Carrier Site Number : CT11680A
Site Location : 1000 Trumbull Avenue
Bridgeport, CT 06606-0000
41.21884900, -73.20170100
County : Fairfield
Date : January 7, 2016
Max Usage : 97%
Result : Pass

Reviewed by:
Scott Wirgau, PE
Structural Team Leader

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

Robert D. Barrett



Jan 11 2016 4:19 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 240 ft self supported tower to reflect the change in loading by T-Mobile.

Supporting Documents

Tower Drawings	Rohn Drawing #C880400RI, dated March 3, 1988
Foundation Drawing	Mapping by FDH Project #10-12269E N1, dated January 17, 2011
Geotechnical Report	Soiltesting Job #G96-1987-87, dated January 6, 1988
Modifications	Centek Job #10001.CO78, dated December 6, 2010 GlenMartin Drawing #GM-07602, dated February 21, 2013

Analysis

The tower was analyzed using American Tower Corporation's tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/TIA-222.

Basic Wind Speed:	110 mph (3-Second Gust)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 3/4" radial ice concurrent
Code:	ANSI/TIA-222-G / 2003 IBC w/ 2005 CT Supplement & 2009 CT Amendment
Structure Class:	II
Exposure Category:	C
Topographic Category:	1
Spectral Response:	$S_s = 0.21$, $S_1 = 0.06$
Site Class:	D - Stiff Soil

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					
240.0	240.0	1	10' Omni	Empty Side Arm	(1) 1" Conduit (1) 1 1/4" Coax	--
		1	Beacon			
		1	Lightning Rod			
230.0	230.0	2	8' Omni	Side Arms	(2) 7/8" Coax	--
223.0	223.0	1	12' Omni	Side Arm	(1) 1 1/4" Coax	
202.0	202.0	3	Ericsson KRY 112 144-1	Sector Frames	(7) 1 5/8" Coax	T-Mobile
		3	Ericsson AIR21 B4A/B2P			
		3	Ericsson AIR21 B2A/B4P			
196.0	196.0	1	3' Yagi	Leg	(1) 7/8" Coax	--
187.0	187.0	2	2' HP Dish	Leg	(4) 1/2" Coax	Clearwire
		1	Andrew VHLP800-11-DW1			
180.6	180.6	3	DragonWave A-ANT-11G-2C	Sector Frames	(6) 5/16" Coax (3) 1 1/4" Hybriflex (3) 1/2" Ethernet (2) 2" Conduit (1) 1.625" Hybrid	Sprint Nextel
		3	RFS APXVTM14-C-I20			
		3	Alcatel-Lucent TD-RRH8x20-25			
		1	PCTEL GPS-TMG-HR-26NCM			
		3	Samsung DAP Heads			
		3	Argus LLPX310R			
		3	Alcatel-Lucent 800MHz 2/50W			
		6	Alcatel-Lucent 1900MHz 2x40W			
		1	RFS APXV9ERR18-C-A20			
		2	RFS APXVSPP18-C-A20			
174.0	174.0	2	Andrew 950F65T4E-M	Leg	(6) 1 5/8" Coax	--
		4	5' x 5" x 2" Panel			
165.0	165.0	1	20' Omni	Sector Frames	(2) 0.39" Fiber Trunk (4) 0.78" 8 AWG 6 (12) 1 5/8" Coax	AT&T Mobility
		9	Powerwave LGP21401			
		3	CCI DTMAPB7819VG12A			
		12	Powerwave LGP21901			
		3	Commscope SBNHH-1D65A			
		3	Powerwave P65-16-XLH-RR			
		2	Raycap DC6-48-60-18-8F			
		3	Powerwave 7770			
		3	Ericsson RRUS-32			
		6	Ericsson RRUS 11			
		6	Powerwave 7020			
152.0	155.0	6	Andrew CBC78-DF	Sector Frames	(12) 1 5/8" Coax (2) 1 5/8" Hybrid	Verizon
		2	RFS DB-T1-6Z-8AB-OZ			
		3	ALU RH_2x60-PCS			
		3	ALU RH_2x60-700			
		3	ALU RH_2x60-AWS			
		3	Kathrein 800 10734V01			
		6	Commscope HBXX-6516DS-A2M			
		3	Antel BXA-80063/6BF			



Existing and Reserved Equipment (Continued)

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
140.0	140.0	3	Small Side Lights	Leg	-	--
118.0	118.0	1	10' Omni	Side Arm	(1) 7/8" Coax	
108.0	108.0	1	10' Omni	Side Arm	(1) 1 1/4" Coax	
80.0	80.0	-	-	Empty Side Arm	-	
22.0	22.0	1	3' Dish	Leg	(1) 0.24" Cat 5	
20.0	20.0	1	GPS	Leg	(1) 1/2" Coax	Verizon
8.0	8.0	1	GPS	Side Arm	(1) 1/2" Coax	T-Mobile

Equipment to be Removed

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
212.0	212.0	6	Andrew HBX-6516DS-VTM	Sector Frames	(12) 1 5/8" Coax (1) Waveguide	Metro PCS

Proposed Equipment

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
202.0	202.0	3	Ericsson RRUS-11	Sector Frames	-	T-Mobile
		3	Commscope 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).

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Legs	49%	Pass
Diagonals	97%	Pass
Horizontals	91%	Pass
Anchor Bolts*	45%	Pass
Leg Bolts	42%	Pass

*Includes a factor of safety of 2 or greater

Foundations*

Reaction Component	Analysis Reactions	% of Usage
Uplift (Kips)	321.0	71%
Axial (Kips)	382.3	66%

*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.

Deflection, Twist and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Twist (°)	Sway (Rotation) (°)
202.0	Commscope LNX-6515DS-VTM	T-Mobile	0.117		0.043
	Ericsson RRUS-11				
187.0	2' HP Dish	Clearwire	0.109	0.011	0.044
	2' HP Dish				
	Andrew VHLP800-11-DW1				
180.6	DragonWave A-ANT-11G-2C	Sprint Nextel	0.102		
	DragonWave A-ANT-11G-2C				
	DragonWave A-ANT-11G-2C				
22.0	3' Dish	--	0.008	0.002	0.023

*Deflection, Twist and Sway was evaluated considering a design wind speed of 60 mph (3-Second Gust) per ANSI/TIA-222-G



Standard Conditions

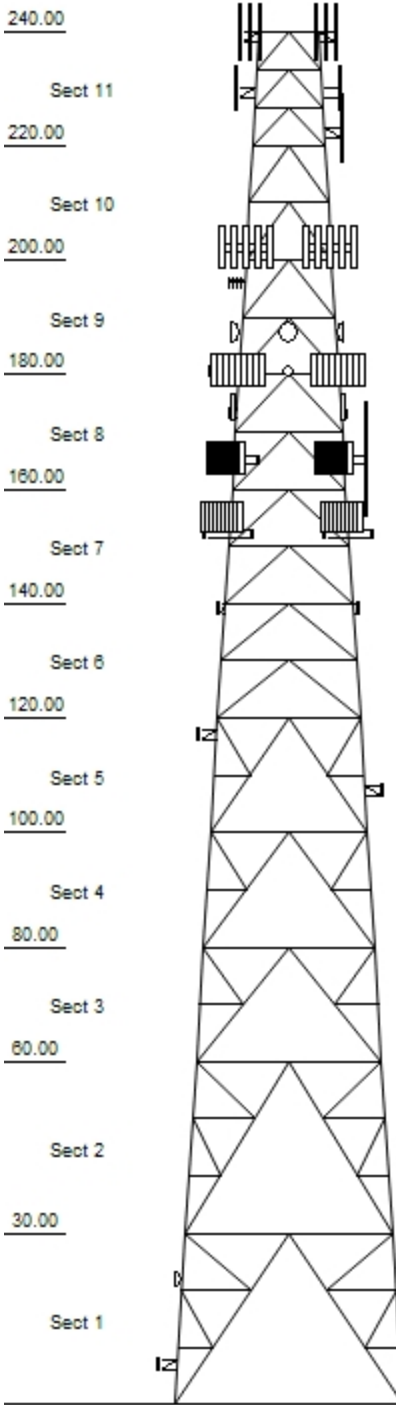
All engineering services are performed on the basis that the information used is current and correct. This information may consist of, but is not necessary limited, to:

- 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.



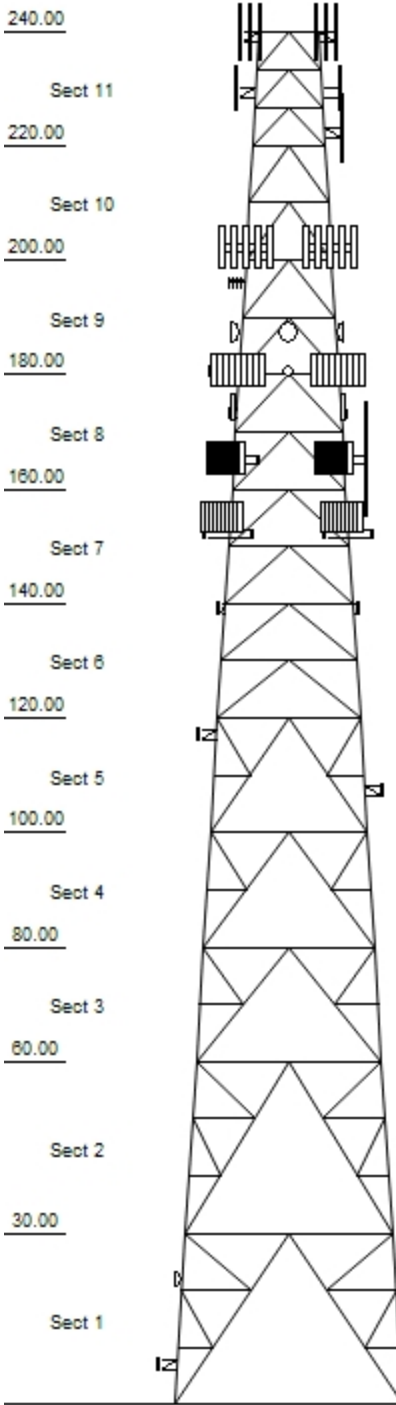
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 Loads: 110 mph no ice
 50 mph w / 3/4" radial ice
 Site Class: D Ss: 0.21 S1: 0.06
 60 mph Serviceability

Uplift 320.99 k Moment 12,144.38 Moment Ice 3,158.18 k-ft
 Vert 382.28 k Tot Down 103.78 k Tot Down Ice 249.49 k
 Horiz 55.05 k Tot Shear 92.99 k Tot Shear Ice 24.51 k

Job Information			
Tower : CT-5035	Location : Tartaglia, CT	Base Width : 40.33 ft	
Code : ANSI/TIA-222-G	Shape : Triangle	Top Width : 10.93 ft	
Client : T- Mobile			

Sections Properties			
Section	Leg Members	Diagonal Members	Horizontal Members
1	PX 50 ksi 10" DIA PIPE	PST 50 ksi 3" DIA PIPE	PST 50 ksi 3-1/2" DIA PIPE
2 - 3	PX 50 ksi 10" DIA PIPE	PST 50 ksi 3" DIA PIPE	PST 50 ksi 3" DIA PIPE
4	PX 50 ksi 8" DIA PIPE	PST 50 ksi 3" DIA PIPE	PST 50 ksi 3" DIA PIPE
5	PX 50 ksi 8" DIA PIPE	PST 50 ksi 2-1/2" DIA PIPE	PST 50 ksi 2-1/2" DIA PIPE
6	PX 50 ksi 8" DIA PIPE	PST 50 ksi 3" DIA PIPE	PST 50 ksi 2-1/2" DIA PIPE
7 - 8	PX 50 ksi 8" DIA PIPE	PST 50 ksi 2-1/2" DIA PIPE	PST 50 ksi 2-1/2" DIA PIPE
9 - 10	PX 50 ksi 8" DIA PIPE	PST 50 ksi 2-1/2" DIA PIPE	PST 50 ksi 2" DIA PIPE
11	PX 50 ksi 8" DIA PIPE	PST 50 ksi 2" DIA PIPE	PST 50 ksi 2" DIA PIPE

Discrete Appurtenance			
Elev (ft)	Type	Qty	Description
240.00	Straight Arm	1	Empty Round Side Arm
240.00	Whip	1	10' Omni
240.00	Whip	1	Beacon
240.00	Whip	1	Lightning Rod
230.00	Whip	1	8' Omni
230.00	Whip	1	8' Omni
230.00	Straight Arm	3	Round Side Arm
223.00	Straight Arm	1	Round Side Arm
223.00	Whip	1	12' Omni
202.00	Panel	3	Ericsson RRUS-11
202.00	Panel	3	Commscope LNX-6515DS-VTM
202.00	Panel	3	Ericsson KRY 112 144-1
202.00	Panel	3	Ericsson AR21 B4/B2P
202.00	Panel	3	Ericsson AR21 B2/B4P
202.00	Mounting Frame	3	Round Sector Frame
196.00	Yagi	1	3' Yagi
187.00	Dish	1	2' HP Dish
187.00	Dish	1	2' HP Dish
187.00	Dish	1	Andrew VHLP800-11-DW1
180.60	Dish	1	DragonWave A-ANT-11G-2C
180.60	Dish	1	DragonWave A-ANT-11G-2C
180.60	Panel	3	RFS APXVTM14-C-I20
180.60	Panel	3	Alcatel-Lucent TD-RRH8x20-25
180.60	Panel	1	PCTEL GPS-TMG-HR-26NCM
180.60	Dish	1	DragonWave A-ANT-11G-2C
180.60	Panel	3	Samsung DAP Heads
180.60	Panel	3	Argus LLPX310R
180.60	Panel	3	Alcatel-Lucent 800 MHz 2/50W
180.60	Panel	6	Alcatel-Lucent 1900 MHz 2x40W
180.60	Panel	1	RFS APXV9ERR18-C-A20
180.60	Panel	2	RFS APXVSP18-C-A20
180.60	Mounting Frame	3	Flat Light Sector Frame
174.00	Panel	2	Andrew 950F65T4E-M
174.00	Panel	4	5' x 5" x 2" Panel
165.00	Panel	9	Powerwave LGP21401
165.00	Panel	3	CCI DTMABP7819VG12A
165.00	Panel	12	Powerwave LGP21901
165.00	Panel	3	Commscope SBNHH-1D65A
165.00	Panel	3	Powerwave P65-16-XLH-RR
165.00	Panel	1	Raycap DC6-48-60-18-8F
165.00	Mounting Frame	3	Round Sector Frame
165.00	Whip	1	20' Omni
165.00	Panel	3	Powerwave 7770
165.00	Panel	3	Ericsson RRUS-32
165.00	Panel	6	Ericsson RRUS 11
165.00	Panel	1	Raycap DC6-48-60-18-8F
165.00	Panel	6	Powerwave 7020
152.00	Panel	6	Andrew CBC78-DF
152.00	Panel	2	RFS DB-T1-6Z-8AB-0Z
152.00	Panel	3	ALU RH_2x60-PCS



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Job Information		
Tower : CT-5035	Location : Tartaglia, CT	
Code : ANSI/TIA-222-G	Shape : Triangle	Base Width : 40.33 ft
Client : T- Mobile		Top Width : 10.93 ft

152.00	Panel	3	ALU RH 2x60-700
152.00	Panel	3	ALU RH 2x60-AWS
152.00	Panel	3	Kathrein 800 10734V01
152.00	Panel	6	Commscope HBXX-6516DS-A2M
152.00	Mounting Frame	3	Flat Light Sector Frame
152.00	Panel	3	Antel BXA-80063/6BF
140.00	Whip	3	Small Side Lights
118.00	Straight Arm	1	Round Side Arm
118.00	Whip	1	10' Omni
108.00	Straight Arm	1	Round Side Arm
108.00	Whip	1	10' Omni
80.00	Straight Arm	1	Empty Round Side Arm
22.00	Dish	1	3' Dish
20.00	Whip	1	GPS
8.00	Straight Arm	1	Round Side Arm
8.00	Whip	1	GPS

Linear Appurtenance

Elev (ft)		Qty	Description
From	To		
0.000	240.00	1	1" Conduit
0.000	240.00	1	1 1/4" Coax
0.000	230.00	2	7/8" Coax
0.000	223.00	1	1 1/4" Coax
0.000	202.00	1	Waveguide
0.000	202.00	7	1 5/8" Coax
0.000	196.00	1	7/8" Coax
0.000	187.00	4	1/2" Coax
0.000	180.60	1	Waveguide
0.000	180.60	6	5/16" Coax
0.000	180.60	2	2" Conduit
0.000	180.60	3	1/2" Ethernet
0.000	180.60	1	1.625" Hybrid
0.000	180.60	3	1 1/4" Hybriflex
0.000	174.00	1	Waveguide
0.000	174.00	6	1 5/8" Coax
0.000	165.00	1	Waveguide
0.000	165.00	12	1 5/8" Coax
0.000	165.00	1	1 1/4" Coax
0.000	165.00	2	0.78" 8 AWG 6
0.000	165.00	2	0.78" 8 AWG 6
0.000	165.00	1	0.39" Fiber Trunk
0.000	165.00	1	0.39" Fiber Trunk
0.000	152.00	1	Waveguide
0.000	152.00	1	1 5/8" Hybrid
0.000	152.00	1	1 5/8" Hybrid
0.000	152.00	12	1 5/8" Coax
0.000	118.00	1	7/8" Coax
0.000	108.00	1	1 1/4" Coax
0.000	22.000	1	0.24" Cat 5
0.000	20.000	1	1/2" Coax
0.000	8.000	1	1/2" Coax

Uplift 320.99 k Moment 12,144.38 Moment Ice 3,158.18 k-ft
 Vert 382.28 k Tot Down 103.78 k Tot Down Ice 249.49 k
 Horiz 55.05 k Tot Shear 92.99 k Tot Shear Ice 24.51 k

Site Number: CT-5035

Code: ANSI/TIA-222-G

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Site Name: Tartaglia, CT

Engineering Number: 64303126

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Customer: T- Mobile

Analysis Parameters

Location:	Fairfield County, CT		
Code:	ANSI/TIA-222-G	Height (ft):	240
Shape:	Triangle	Base Elevation (ft):	0.00
Tower Manufacturer:	Rohn	Bottom Face Width (ft):	40.33
Tower Type:	Self Support	Top Face Width (ft):	10.93

Ice & Wind Parameters

Structure Class:	II	Design Windspeed Without Ice:	110 mph
Exposure Category:	C	Design Windspeed With Ice:	50 mph
Topographic Category:	1	Operational Windspeed:	60 mph
Crest Height:	0.0 ft	Design Ice Thickness:	0.75 in

Seismic Parameters

Analysis Method:	Equivalent Modal Analysis & Equivalent Lateral Force Methods				
Site Class:	D - Stiff Soil				
Period Based on Rayleigh Method (sec):	0.68				
T_L (sec):	6	p:	1.3	C_s :	0.051
S_s :	0.207	S_1 :	0.065	$C_{s, Max}$:	0.051
F_a :	1.600	F_v :	2.400	$C_{s, Min}$:	0.030
S_{ds} :	0.221	S_{d1} :	0.104		

Load Cases

1.2D + 1.6W Normal	110 mph Normal to Face with No Ice
1.2D + 1.6W 60 deg	110 mph 60 degree with No Ice
1.2D + 1.6W 90 deg	110 mph 90 degree with No Ice
0.9D + 1.6W Normal	110 mph Normal to Face with No Ice (Reduced DL)
0.9D + 1.6W 60 deg	110 mph 60 deg with No Ice (Reduced DL)
0.9D + 1.6W 90 deg	110 mph 90 deg with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi Normal	50 mph Normal with 0.75 in Radial Ice
1.2D + 1.0Di + 1.0Wi 60 deg	50 mph 60 degree with 0.75 in Radial Ice
1.2D + 1.0Di + 1.0Wi 90 deg	50 mph 90 degree with 0.75 in Radial Ice
(1.2 + 0.2Sds) * DL + E Normal	Seismic Normal
(1.2 + 0.2Sds) * DL + E 60 deg	Seismic 60 degree
(1.2 + 0.2Sds) * DL + E 90 deg	Seismic 90 degree
(0.9 - 0.2Sds) * DL + E Normal	Seismic (Reduced DL) Normal
(0.9 - 0.2Sds) * DL + E 60 deg	Seismic (Reduced DL) 60 degree
(0.9 - 0.2Sds) * DL + E 90 deg	Seismic (Reduced DL) 90 degree
1.0D + 1.0W Service Normal	Serviceability - 60 mph Wind Normal
1.0D + 1.0W Service 60 deg	Serviceability - 60 mph Wind 60 degree
1.0D + 1.0W Service 90 deg	Serviceability - 60 mph Wind 90 degree

Site Number: CT-5035

Code: ANSI/TIA-222-G

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Site Name: Tartaglia, CT

Engineering Number: 64303126

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Customer: T- Mobile

Tower Loading

Discrete Appurtenance Properties 1.2D + 1.6W

Elevation (ft)	Description	Qty	Wt. (lb)	EPA (sf)	Length (ft)	Width (in)	Depth (in)	K _a	Orient. Factor	Vert. Ecc.(ft)	M _u (lb-ft)	Q _z (psf)	F _a (WL) (lb)	P _a (DL) (lb)
240.0	Lightning Rod	1	10	1.0	4.0	3.0	3.0	1.00	1.00	0.0	0.0	40.07	54	14
240.0	10' Omni	1	25	3.0	10.0	3.0	3.0	1.00	1.00	0.0	0.0	40.07	163	36
240.0	Beacon	1	70	4.5	3.0	18.0	18.0	1.00	1.00	0.0	0.0	40.07	245	101
240.0	Empty Round Side	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	40.07	283	216
230.0	8' Omni	1	40	2.4	8.0	4.0	4.0	1.00	1.00	0.0	0.0	39.71	130	58
230.0	8' Omni	1	40	2.4	8.0	3.0	3.0	1.00	1.00	0.0	0.0	39.71	130	58
230.0	Round Side Arm	3	150	5.2	0.0	0.0	0.0	1.00	0.67	0.0	0.0	39.71	564	648
223.0	12' Omni	1	40	3.6	12.0	4.0	4.0	1.00	1.00	0.0	0.0	39.45	193	58
223.0	Round Side Arm	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	39.45	279	216
202.0	Ericsson KRY 112	3	11	0.4	0.6	6.1	2.7	0.80	0.50	0.0	0.0	38.64	26	48
202.0	Ericsson RRUS-11	3	51	2.8	1.6	17.0	7.2	0.80	0.50	0.0	0.0	38.64	176	219
202.0	Ericsson AIR21	3	90	6.1	4.7	12.0	8.0	0.80	0.71	0.0	0.0	38.64	542	389
202.0	Ericsson AIR21	3	90	6.1	4.7	12.1	7.9	0.80	0.70	0.0	0.0	38.64	538	389
202.0	Commscope LNX-	3	50	11.4	8.0	11.9	7.1	0.80	0.70	0.0	0.0	38.64	1011	217
202.0	Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.67	0.0	0.0	38.64	1141	1296
196.0	3' Yagi	1	10	3.0	3.0	36.0	3.0	1.00	1.00	0.0	0.0	38.40	156	14
187.0	2' HP Dish	1	90	4.0	2.0	0.0	0.0	1.00	0.79	0.0	0.0	38.02	162	130
187.0	2' HP Dish	1	90	4.0	2.0	0.0	0.0	1.00	0.97	0.0	0.0	38.02	199	130
187.0	Andrew VHLP800-11-	1	121	16.7	4.1	0.0	0.0	1.00	1.00	0.0	0.0	38.02	864	174
180.6	PCTEL GPS-TMG-HR-	1	1	0.1	0.4	3.2	3.2	0.80	1.00	0.0	0.0	37.74	4	1
180.6	Samsung DAP Heads	3	33	1.8	1.4	11.6	5.3	0.80	0.50	0.0	0.0	37.74	112	143
180.6	Alcatel-Lucent 800	3	64	2.4	1.6	13.0	12.2	0.80	0.50	0.0	0.0	37.74	148	276
180.6	Alcatel-Lucent 1900	6	44	3.8	1.9	17.3	13.0	0.80	0.50	0.0	0.0	37.74	472	380
180.6	Argus LLPX310R	3	29	4.3	3.5	11.8	4.5	0.80	0.63	0.0	0.0	37.74	333	124
180.6	DragonWave A-ANT-	1	27	4.7	2.2	0.0	0.0	0.80	0.61	0.0	0.0	37.74	117	39
180.6	DragonWave A-ANT-	1	27	4.7	2.2	0.0	0.0	0.80	1.00	0.0	0.0	37.74	193	39
180.6	DragonWave A-ANT-	1	27	4.7	2.2	0.0	0.0	0.80	0.55	0.0	0.0	37.74	106	39
180.6	Alcatel-Lucent TD-	3	70	4.7	2.2	18.6	6.7	0.80	0.67	0.0	0.0	37.74	390	302
180.6	RFS APXVTM14-C-I20	3	56	6.3	4.7	12.6	6.3	0.80	0.66	0.0	0.0	37.74	515	242
180.6	RFS APXVSPP18-C-	2	57	8.0	6.0	11.8	7.0	0.80	0.71	0.0	0.0	37.74	468	164
180.6	RFS APXV9ERR18-C-	1	62	8.0	6.0	11.8	7.9	0.80	0.71	0.0	0.0	37.74	234	89
180.6	Flat Light Sector	3	400	17.9	0.0	0.0	0.0	0.75	0.67	0.0	0.0	37.74	1385	1728
174.0	5' x 5" x 2" Panel	4	30	3.3	5.0	5.0	2.0	1.00	0.74	0.0	0.0	37.44	491	173
174.0	Andrew 950F65T4E-	2	16	4.8	5.0	11.0	7.0	1.00	0.90	0.0	0.0	37.44	435	45
165.0	Powerwave	12	6	0.2	0.5	4.0	3.0	0.80	0.50	0.0	0.0	37.03	48	95
165.0	Powerwave 7020	6	2	0.4	0.4	8.3	2.4	0.80	0.50	0.0	0.0	37.03	48	19
165.0	CCI	3	19	1.0	0.9	10.6	3.8	0.80	0.50	0.0	0.0	37.03	59	83
165.0	Powerwave	9	14	1.1	1.2	9.2	2.6	0.80	0.50	0.0	0.0	37.03	199	183
165.0	Raycap DC6-48-60-	1	20	1.1	2.0	9.7	9.7	0.80	1.00	0.0	0.0	37.03	45	29
165.0	Raycap DC6-48-60-	1	20	1.1	2.0	9.7	9.7	0.80	1.00	0.0	0.0	37.03	45	29
165.0	Ericsson RRUS-32	3	51	2.7	2.2	12.1	6.8	0.80	0.50	0.0	0.0	37.03	163	219
165.0	Ericsson RRUS 11	6	51	2.8	1.6	17.0	7.2	0.80	0.50	0.0	0.0	37.03	337	438
165.0	Powerwave 7770	3	35	5.5	4.6	11.0	5.0	0.80	0.65	0.0	0.0	37.03	432	151
165.0	Commscope SBNHH-	3	41	5.9	4.6	11.9	7.1	0.80	0.69	0.0	0.0	37.03	490	177
165.0	20' Omni	1	55	6.0	20.0	4.0	4.0	0.80	1.00	0.0	0.0	37.03	242	79
165.0	Powerwave P65-16-	3	53	8.1	6.0	12.0	6.0	0.80	0.67	0.0	0.0	37.03	658	229
165.0	Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.67	0.0	0.0	37.03	1093	1296
152.0	Andrew CBC78-DF	6	7	0.4	0.7	5.9	2.6	0.80	0.50	3.0	161.0	36.54	54	57
152.0	ALU RH_2x60-PCS	3	46	1.8	1.6	11.2	8.2	0.80	0.50	3.0	329.2	36.54	110	199
152.0	ALU RH_2x60-AWS	3	44	1.9	1.7	11.2	7.3	0.80	0.50	3.0	336.4	36.54	112	190
152.0	ALU RH_2x60-700	3	57	2.2	1.8	12.0	9.0	0.80	0.50	3.0	386.5	36.54	129	247
152.0	RFS DB-T1-6Z-8AB-	2	7	4.8	2.0	24.0	10.0	0.80	0.50	3.0	572.5	36.54	191	19
152.0	Commscope HBXX-	6	31	5.4	4.2	12.0	6.5	0.80	0.67	3.0	2598.9	36.54	866	264
152.0	Kathrein 800	3	24	5.7	4.4	11.9	3.9	0.80	0.62	3.0	1257.9	36.54	419	105

Site Number: CT-5035

Code: ANSI/TIA-222-G

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Site Name: Tartaglia, CT

Engineering Number: 64303126

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Customer: T- Mobile

Tower Loading

152.0	Antel BXA-80063/6BF	3	19	7.3	5.7	11.2	5.3	0.80	0.66	3.0	1717.0	36.54	572	83
152.0	Flat Light Sector	3	400	17.9	0.0	0.0	0.0	0.75	0.67	0.0	0.0	36.39	1336	1728
140.0	Small Side Lights	3	45	2.0	1.0	8.0	8.0	1.00	1.00	0.0	0.0	35.77	292	194
118.0	10' Omni	1	8	0.1	1.0	2.0	2.0	1.00	1.00	0.0	0.0	34.50	6	12
118.0	Round Side Arm	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	34.50	244	216
108.0	10' Omni	1	8	0.1	1.0	2.0	2.0	1.00	1.00	0.0	0.0	33.87	6	12
108.0	Round Side Arm	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	33.87	240	216
80.00	Empty Round Side	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	31.79	225	216
22.00	3' Dish	1	100	6.1	3.0	0.0	0.0	1.00	0.64	0.0	0.0	24.23	129	144
20.00	GPS	1	10	1.0	1.0	9.0	6.0	1.00	1.00	0.0	0.0	23.75	32	14
8.00	GPS	1	10	1.0	1.0	9.0	6.0	1.00	1.00	0.0	0.0	22.38	30	14
8.00	Round Side Arm	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	22.38	158	216
Totals		168	10671	732.7										

Discrete Appurtenance Properties 0.9D + 1.6W

Elevation (ft)	Description	Qty	Wt. (lb)	EPA (sf)	Length (ft)	Width (in)	Depth (in)	K _a	Orient. Factor	Vert. Ecc.(ft)	M _u (lb-ft)	Q _z (psf)	F _a (WL) (lb)	P _a (DL) (lb)
240.0	Lightning Rod	1	10	1.0	4.0	3.0	3.0	1.00	1.00	0.0	0.0	40.07	54	8
240.0	10' Omni	1	25	3.0	10.0	3.0	3.0	1.00	1.00	0.0	0.0	40.07	163	20
240.0	Beacon	1	70	4.5	3.0	18.0	18.0	1.00	1.00	0.0	0.0	40.07	245	57
240.0	Empty Round Side	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	40.07	283	122
230.0	8' Omni	1	40	2.4	8.0	4.0	4.0	1.00	1.00	0.0	0.0	39.71	130	32
230.0	8' Omni	1	40	2.4	8.0	3.0	3.0	1.00	1.00	0.0	0.0	39.71	130	32
230.0	Round Side Arm	3	150	5.2	0.0	0.0	0.0	1.00	0.67	0.0	0.0	39.71	564	365
223.0	12' Omni	1	40	3.6	12.0	4.0	4.0	1.00	1.00	0.0	0.0	39.45	193	32
223.0	Round Side Arm	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	39.45	279	122
202.0	Ericsson KRY 112	3	11	0.4	0.6	6.1	2.7	0.80	0.50	0.0	0.0	38.64	26	27
202.0	Ericsson RRUS-11	3	51	2.8	1.6	17.0	7.2	0.80	0.50	0.0	0.0	38.64	176	123
202.0	Ericsson AIR21	3	90	6.1	4.7	12.0	8.0	0.80	0.71	0.0	0.0	38.64	542	219
202.0	Ericsson AIR21	3	90	6.1	4.7	12.1	7.9	0.80	0.70	0.0	0.0	38.64	538	219
202.0	Commscope LNX-	3	50	11.4	8.0	11.9	7.1	0.80	0.70	0.0	0.0	38.64	1011	122
202.0	Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.67	0.0	0.0	38.64	1141	729
196.0	3' Yagi	1	10	3.0	3.0	36.0	3.0	1.00	1.00	0.0	0.0	38.40	156	8
187.0	2' HP Dish	1	90	4.0	2.0	0.0	0.0	1.00	0.79	0.0	0.0	38.02	162	73
187.0	2' HP Dish	1	90	4.0	2.0	0.0	0.0	1.00	0.97	0.0	0.0	38.02	199	73
187.0	Andrew VHLP800-11-	1	121	16.7	4.1	0.0	0.0	1.00	1.00	0.0	0.0	38.02	864	98
180.6	PCTEL GPS-TMG-HR-	1	1	0.1	0.4	3.2	3.2	0.80	1.00	0.0	0.0	37.74	4	0
180.6	Samsung DAP Heads	3	33	1.8	1.4	11.6	5.3	0.80	0.50	0.0	0.0	37.74	112	80
180.6	Alcatel-Lucent 800	3	64	2.4	1.6	13.0	12.2	0.80	0.50	0.0	0.0	37.74	148	156
180.6	Alcatel-Lucent 1900	6	44	3.8	1.9	17.3	13.0	0.80	0.50	0.0	0.0	37.74	472	214
180.6	Argus LLPX310R	3	29	4.3	3.5	11.8	4.5	0.80	0.63	0.0	0.0	37.74	333	69
180.6	DragonWave A-ANT-	1	27	4.7	2.2	0.0	0.0	0.80	0.61	0.0	0.0	37.74	117	22
180.6	DragonWave A-ANT-	1	27	4.7	2.2	0.0	0.0	0.80	1.00	0.0	0.0	37.74	193	22
180.6	DragonWave A-ANT-	1	27	4.7	2.2	0.0	0.0	0.80	0.55	0.0	0.0	37.74	106	22
180.6	Alcatel-Lucent TD-	3	70	4.7	2.2	18.6	6.7	0.80	0.67	0.0	0.0	37.74	390	170
180.6	RFS APXVTM14-C-I20	3	56	6.3	4.7	12.6	6.3	0.80	0.66	0.0	0.0	37.74	515	136
180.6	RFS APXVSP18-C-	2	57	8.0	6.0	11.8	7.0	0.80	0.71	0.0	0.0	37.74	468	92
180.6	RFS APXV9ERR18-C-	1	62	8.0	6.0	11.8	7.9	0.80	0.71	0.0	0.0	37.74	234	50
180.6	Flat Light Sector	3	400	17.9	0.0	0.0	0.0	0.75	0.67	0.0	0.0	37.74	1385	972
174.0	5' x 5" x 2" Panel	4	30	3.3	5.0	5.0	2.0	1.00	0.74	0.0	0.0	37.44	491	97
174.0	Andrew 950F65T4E-	2	16	4.8	5.0	11.0	7.0	1.00	0.90	0.0	0.0	37.44	435	25
165.0	Powerwave	12	6	0.2	0.5	4.0	3.0	0.80	0.50	0.0	0.0	37.03	48	53
165.0	Powerwave 7020	6	2	0.4	0.4	8.3	2.4	0.80	0.50	0.0	0.0	37.03	48	11
165.0	CCI	3	19	1.0	0.9	10.6	3.8	0.80	0.50	0.0	0.0	37.03	59	47
165.0	Powerwave	9	14	1.1	1.2	9.2	2.6	0.80	0.50	0.0	0.0	37.03	199	103

Tower Loading

165.0	Raycap DC6-48-60-	1	20	1.1	2.0	9.7	9.7	0.80	1.00	0.0	0.0	37.03	45	16
165.0	Raycap DC6-48-60-	1	20	1.1	2.0	9.7	9.7	0.80	1.00	0.0	0.0	37.03	45	16
165.0	Ericsson RRUS-32	3	51	2.7	2.2	12.1	6.8	0.80	0.50	0.0	0.0	37.03	163	123
165.0	Ericsson RRUS 11	6	51	2.8	1.6	17.0	7.2	0.80	0.50	0.0	0.0	37.03	337	246
165.0	Powerwave 7770	3	35	5.5	4.6	11.0	5.0	0.80	0.65	0.0	0.0	37.03	432	85
165.0	Commscope SBNHH-	3	41	5.9	4.6	11.9	7.1	0.80	0.69	0.0	0.0	37.03	490	99
165.0	20' Omni	1	55	6.0	20.0	4.0	4.0	0.80	1.00	0.0	0.0	37.03	242	45
165.0	Powerwave P65-16-	3	53	8.1	6.0	12.0	6.0	0.80	0.67	0.0	0.0	37.03	658	129
165.0	Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.67	0.0	0.0	37.03	1093	729
152.0	Andrew CBC78-DF	6	7	0.4	0.7	5.9	2.6	0.80	0.50	3.0	161.0	36.54	54	32
152.0	ALU RH_2x60-PCS	3	46	1.8	1.6	11.2	8.2	0.80	0.50	3.0	329.2	36.54	110	112
152.0	ALU RH_2x60-AWS	3	44	1.9	1.7	11.2	7.3	0.80	0.50	3.0	336.4	36.54	112	107
152.0	ALU RH_2x60-700	3	57	2.2	1.8	12.0	9.0	0.80	0.50	3.0	386.5	36.54	129	139
152.0	RFS DB-T1-6Z-8AB-	2	7	4.8	2.0	24.0	10.0	0.80	0.50	3.0	572.5	36.54	191	11
152.0	Commscope HBXX-	6	31	5.4	4.2	12.0	6.5	0.80	0.67	3.0	2598.9	36.54	866	149
152.0	Kathrein 800	3	24	5.7	4.4	11.9	3.9	0.80	0.62	3.0	1257.9	36.54	419	59
152.0	Antel BXA-80063/6BF	3	19	7.3	5.7	11.2	5.3	0.80	0.66	3.0	1717.0	36.54	572	47
152.0	Flat Light Sector	3	400	17.9	0.0	0.0	0.0	0.75	0.67	0.0	0.0	36.39	1336	972
140.0	Small Side Lights	3	45	2.0	1.0	8.0	8.0	1.00	1.00	0.0	0.0	35.77	292	109
118.0	10' Omni	1	8	0.1	1.0	2.0	2.0	1.00	1.00	0.0	0.0	34.50	6	6
118.0	Round Side Arm	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	34.50	244	122
108.0	10' Omni	1	8	0.1	1.0	2.0	2.0	1.00	1.00	0.0	0.0	33.87	6	6
108.0	Round Side Arm	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	33.87	240	122
80.00	Empty Round Side	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	31.79	225	122
22.00	3' Dish	1	100	6.1	3.0	0.0	0.0	1.00	0.64	0.0	0.0	24.23	129	81
20.00	GPS	1	10	1.0	1.0	9.0	6.0	1.00	1.00	0.0	0.0	23.75	32	8
8.00	GPS	1	10	1.0	1.0	9.0	6.0	1.00	1.00	0.0	0.0	22.38	30	8
8.00	Round Side Arm	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	22.38	158	122
Totals		168	10671	732.7										

Discrete Appurtenance Properties 1.2D + 1.0Di + 1.0Wi

Elevation (ft)	Description	Qty	Ice Wt (lb)	Ice EPA (sf)	Length (ft)	Width (in)	Depth (in)	K _a	Orient. Factor	Vert. Ecc.(ft)	M _u (lb-ft)	Q _z (psf)	F _a (WL) (lb)	P _a (DL) (lb)
240.0	Lightning Rod	1	70	1.9	4.0	3.0	3.0	1.00	1.00	0.0	0.0	8.28	14	86
240.0	10' Omni	1	167	6.0	10.0	3.0	3.0	1.00	1.00	0.0	0.0	8.28	42	206
240.0	Beacon	1	294	4.2	3.0	18.0	18.0	1.00	1.00	0.0	0.0	8.28	29	369
240.0	Empty Round Side	1	227	8.0	0.0	0.0	0.0	1.00	1.00	0.0	0.0	8.28	57	308
230.0	8' Omni	1	179	4.9	8.0	4.0	4.0	1.00	1.00	0.0	0.0	8.20	34	224
230.0	8' Omni	1	154	4.5	8.0	3.0	3.0	1.00	1.00	0.0	0.0	8.20	31	195
230.0	Round Side Arm	3	227	8.0	0.0	0.0	0.0	1.00	0.67	0.0	0.0	8.20	113	923
223.0	12' Omni	1	242	8.4	12.0	4.0	4.0	1.00	1.00	0.0	0.0	8.15	58	300
223.0	Round Side Arm	1	226	8.0	0.0	0.0	0.0	1.00	1.00	0.0	0.0	8.15	56	307
202.0	Ericsson KRY 112	3	28	0.6	0.6	6.1	2.7	0.80	0.50	0.0	0.0	7.98	5	109
202.0	Ericsson RRUS-11	3	140	3.5	1.6	17.0	7.2	0.80	0.50	0.0	0.0	7.98	28	539
202.0	Ericsson AIR21	3	264	7.2	4.7	12.0	8.0	0.80	0.71	0.0	0.0	7.98	83	1015
202.0	Ericsson AIR21	3	264	7.2	4.7	12.1	7.9	0.80	0.70	0.0	0.0	7.98	82	1015
202.0	Commscope LNX-	3	321	13.1	8.0	11.9	7.1	0.80	0.70	0.0	0.0	7.98	150	1193
202.0	Round Sector Frame	3	677	31.4	0.0	0.0	0.0	0.75	0.67	0.0	0.0	7.98	321	2655
196.0	3' Yagi	1	102	9.4	3.0	36.0	3.0	1.00	1.00	0.0	0.0	7.93	63	125
187.0	2' HP Dish	1	225	5.1	2.0	0.0	0.0	1.00	0.79	0.0	0.0	7.85	27	292
187.0	2' HP Dish	1	225	5.1	2.0	0.0	0.0	1.00	0.97	0.0	0.0	7.85	33	292
187.0	Andrew VHLP800-11-	1	466	19.2	4.1	0.0	0.0	1.00	1.00	0.0	0.0	7.85	128	589
180.6	PCTEL GPS-TMG-HR-	1	11	0.3	0.4	3.2	3.2	0.80	1.00	0.0	0.0	7.80	2	14
180.6	Samsung DAP Heads	3	86	2.1	1.4	11.6	5.3	0.80	0.50	0.0	0.0	7.80	17	334
180.6	Alcatel-Lucent 800	3	156	2.7	1.6	13.0	12.2	0.80	0.50	0.0	0.0	7.80	21	608

Site Number: CT-5035

Code: ANSI/TIA-222-G

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Site Name: Tartaglia, CT

Engineering Number: 64303126

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Customer: T- Mobile

Tower Loading

180.6	Alcatel-Lucent 1900	6	172	4.0	1.9	17.3	13.0	0.80	0.50	0.0	0.0	7.80	64	1300
180.6	Argus LLPX310R	3	138	5.2	3.5	11.8	4.5	0.80	0.63	0.0	0.0	7.80	52	518
180.6	DragonWave A-ANT-	1	126	6.0	2.2	0.0	0.0	0.80	0.61	0.0	0.0	7.80	19	158
180.6	DragonWave A-ANT-	1	126	6.0	2.2	0.0	0.0	0.80	1.00	0.0	0.0	7.80	32	158
180.6	DragonWave A-ANT-	1	126	6.0	2.2	0.0	0.0	0.80	0.55	0.0	0.0	7.80	17	158
180.6	Alcatel-Lucent TD-	3	164	6.7	2.2	18.6	6.7	0.80	0.67	0.0	0.0	7.80	72	640
180.6	RFS APXVTM14-C-I20	3	204	8.5	4.7	12.6	6.3	0.80	0.66	0.0	0.0	7.80	90	774
180.6	RFS APXVSP18-C-	2	260	9.3	6.0	11.8	7.0	0.80	0.71	0.0	0.0	7.80	70	651
180.6	RFS APXV9ERR18-C-	1	274	9.3	6.0	11.8	7.9	0.80	0.71	0.0	0.0	7.80	35	343
180.6	Flat Light Sector	3	705	33.2	0.0	0.0	0.0	0.75	0.67	0.0	0.0	7.80	332	2827
174.0	5' x 5" x 2" Panel	4	108	4.3	5.0	5.0	2.0	1.00	0.74	0.0	0.0	7.74	84	546
174.0	Andrew 950F65T4E-	2	181	7.2	5.0	11.0	7.0	1.00	0.90	0.0	0.0	7.74	86	442
165.0	Powerwave	12	18	0.4	0.5	4.0	3.0	0.80	0.50	0.0	0.0	7.65	13	277
165.0	Powerwave 7020	6	18	0.6	0.4	8.3	2.4	0.80	0.50	0.0	0.0	7.65	10	132
165.0	CCI	3	53	1.4	0.9	10.6	3.8	0.80	0.50	0.0	0.0	7.65	11	205
165.0	Powerwave	9	48	1.6	1.2	9.2	2.6	0.80	0.50	0.0	0.0	7.65	37	546
165.0	Raycap DC6-48-60-	1	101	2.5	2.0	9.7	9.7	0.80	1.00	0.0	0.0	7.65	13	125
165.0	Raycap DC6-48-60-	1	101	2.5	2.0	9.7	9.7	0.80	1.00	0.0	0.0	7.65	13	125
165.0	Ericsson RRUS-32	3	115	3.7	2.2	12.1	6.8	0.80	0.50	0.0	0.0	7.65	29	451
165.0	Ericsson RRUS 11	6	137	3.5	1.6	17.0	7.2	0.80	0.50	0.0	0.0	7.65	54	1060
165.0	Powerwave 7770	3	170	6.6	4.6	11.0	5.0	0.80	0.65	0.0	0.0	7.65	67	638
165.0	Commscope SBNHH-	3	199	7.0	4.6	11.9	7.1	0.80	0.69	0.0	0.0	7.65	75	746
165.0	20' Omni	1	373	15.2	20.0	4.0	4.0	0.80	1.00	0.0	0.0	7.65	79	461
165.0	Powerwave P65-16-	3	245	9.4	6.0	12.0	6.0	0.80	0.67	0.0	0.0	7.65	99	919
165.0	Round Sector Frame	3	669	31.0	0.0	0.0	0.0	0.75	0.67	0.0	0.0	7.65	304	2623
152.0	Andrew CBC78-DF	6	24	0.7	0.7	5.9	2.6	0.80	0.50	3.0	31.5	7.55	11	181
152.0	ALU RH_2x60-PCS	3	100	2.7	1.6	11.2	8.2	0.80	0.50	3.0	63.2	7.55	21	393
152.0	ALU RH_2x60-AWS	3	112	2.5	1.7	11.2	7.3	0.80	0.50	3.0	56.8	7.55	19	434
152.0	ALU RH_2x60-700	3	139	2.8	1.8	12.0	9.0	0.80	0.50	3.0	64.4	7.55	21	541
152.0	RFS DB-T1-6Z-8AB-	2	150	5.7	2.0	24.0	10.0	0.80	0.50	3.0	87.4	7.55	29	364
152.0	Commscope HBXX-	6	244	7.9	4.2	12.0	6.5	0.80	0.67	3.0	491.9	7.55	164	1803
152.0	Kathrein 800	3	153	6.7	4.4	11.9	3.9	0.80	0.62	3.0	192.7	7.55	64	570
152.0	Antel BXA-80063/6BF	3	189	8.5	5.7	11.2	5.3	0.80	0.66	3.0	259.2	7.55	86	694
152.0	Flat Light Sector	3	702	33.0	0.0	0.0	0.0	0.75	0.67	0.0	0.0	7.52	318	2814
140.0	Small Side Lights	3	86	0.9	1.0	8.0	8.0	1.00	1.00	0.0	0.0	7.39	16	341
118.0	10' Omni	1	21	0.4	1.0	2.0	2.0	1.00	1.00	0.0	0.0	7.13	2	27
118.0	Round Side Arm	1	221	7.8	0.0	0.0	0.0	1.00	1.00	0.0	0.0	7.13	48	301
108.0	10' Omni	1	20	0.4	1.0	2.0	2.0	1.00	1.00	0.0	0.0	7.00	2	26
108.0	Round Side Arm	1	220	7.8	0.0	0.0	0.0	1.00	1.00	0.0	0.0	7.00	46	300
80.00	Empty Round Side	1	218	7.7	0.0	0.0	0.0	1.00	1.00	0.0	0.0	6.57	43	298
22.00	3' Dish	1	245	7.1	3.0	0.0	0.0	1.00	0.64	0.0	0.0	5.01	19	318
20.00	GPS	1	38	0.8	1.0	9.0	6.0	1.00	1.00	0.0	0.0	4.91	4	49
8.00	GPS	1	38	0.8	1.0	9.0	6.0	1.00	1.00	0.0	0.0	4.62	3	49
8.00	Round Side Arm	1	208	7.4	0.0	0.0	0.0	1.00	1.00	0.0	0.0	4.62	29	286
Totals		168	29791	1091.6										

Discrete Appurtenance Properties 1.0D + 1.0W Service

Elevation (ft)	Description	Qty	Wt. (lb)	EPA (sf)	Length (ft)	Width (in)	Depth (in)	K _a	Orient. Factor	Vert. Ecc.(ft)	M _u (lb-ft)	Q _z (psf)	F _a (WL) (lb)	P _a (DL) (lb)
240.0	Lightning Rod	1	10	1.0	4.0	3.0	3.0	1.00	1.00	0.0	0.0	11.92	10	10
240.0	10' Omni	1	25	3.0	10.0	3.0	3.0	1.00	1.00	0.0	0.0	11.92	30	25
240.0	Beacon	1	70	4.5	3.0	18.0	18.0	1.00	1.00	0.0	0.0	11.92	46	70
240.0	Empty Round Side	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	11.92	53	150
230.0	8' Omni	1	40	2.4	8.0	4.0	4.0	1.00	1.00	0.0	0.0	11.81	24	40
230.0	8' Omni	1	40	2.4	8.0	3.0	3.0	1.00	1.00	0.0	0.0	11.81	24	40

Site Number: CT-5035

Code: ANSI/TIA-222-G

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Site Name: Tartaglia, CT

Engineering Number: 64303126

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Customer: T- Mobile

Tower Loading

230.0	Round Side Arm	3	150	5.2	0.0	0.0	0.0	1.00	0.67	0.0	0.0	11.81	105	450
223.0	12' Omni	1	40	3.6	12.0	4.0	4.0	1.00	1.00	0.0	0.0	11.74	36	40
223.0	Round Side Arm	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	11.74	52	150
202.0	Ericsson KRY 112	3	11	0.4	0.6	6.1	2.7	0.80	0.50	0.0	0.0	11.50	5	33
202.0	Ericsson RRUS-11	3	51	2.8	1.6	17.0	7.2	0.80	0.50	0.0	0.0	11.50	33	152
202.0	Ericsson AIR21	3	90	6.1	4.7	12.0	8.0	0.80	0.71	0.0	0.0	11.50	101	270
202.0	Ericsson AIR21	3	90	6.1	4.7	12.1	7.9	0.80	0.70	0.0	0.0	11.50	100	270
202.0	Commscope LNX-	3	50	11.4	8.0	11.9	7.1	0.80	0.70	0.0	0.0	11.50	188	151
202.0	Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.67	0.0	0.0	11.50	212	900
196.0	3' Yagi	1	10	3.0	3.0	36.0	3.0	1.00	1.00	0.0	0.0	11.42	29	10
187.0	2' HP Dish	1	90	4.0	2.0	0.0	0.0	1.00	0.79	0.0	0.0	11.31	30	90
187.0	2' HP Dish	1	90	4.0	2.0	0.0	0.0	1.00	0.97	0.0	0.0	11.31	37	90
187.0	Andrew VHLP800-11-	1	121	16.7	4.1	0.0	0.0	1.00	1.00	0.0	0.0	11.31	161	121
180.6	PCTEL GPS-TMG-HR-	1	1	0.1	0.4	3.2	3.2	0.80	1.00	0.0	0.0	11.23	1	1
180.6	Samsung DAP Heads	3	33	1.8	1.4	11.6	5.3	0.80	0.50	0.0	0.0	11.23	21	99
180.6	Alcatel-Lucent 800	3	64	2.4	1.6	13.0	12.2	0.80	0.50	0.0	0.0	11.23	27	192
180.6	Alcatel-Lucent 1900	6	44	3.8	1.9	17.3	13.0	0.80	0.50	0.0	0.0	11.23	88	264
180.6	Argus LLPX310R	3	29	4.3	3.5	11.8	4.5	0.80	0.63	0.0	0.0	11.23	62	86
180.6	DragonWave A-ANT-	1	27	4.7	2.2	0.0	0.0	0.80	0.61	0.0	0.0	11.23	22	27
180.6	DragonWave A-ANT-	1	27	4.7	2.2	0.0	0.0	0.80	1.00	0.0	0.0	11.23	36	27
180.6	DragonWave A-ANT-	1	27	4.7	2.2	0.0	0.0	0.80	0.55	0.0	0.0	11.23	20	27
180.6	Alcatel-Lucent TD-	3	70	4.7	2.2	18.6	6.7	0.80	0.67	0.0	0.0	11.23	72	210
180.6	RFS APXVTM14-C-I20	3	56	6.3	4.7	12.6	6.3	0.80	0.66	0.0	0.0	11.23	96	168
180.6	RFS APXVSPP18-C-	2	57	8.0	6.0	11.8	7.0	0.80	0.71	0.0	0.0	11.23	87	114
180.6	RFS APXV9ERR18-C-	1	62	8.0	6.0	11.8	7.9	0.80	0.71	0.0	0.0	11.23	43	62
180.6	Flat Light Sector	3	400	17.9	0.0	0.0	0.0	0.75	0.67	0.0	0.0	11.23	258	1200
174.0	5' x 5" x 2" Panel	4	30	3.3	5.0	5.0	2.0	1.00	0.74	0.0	0.0	11.14	91	120
174.0	Andrew 950F65T4E-	2	16	4.8	5.0	11.0	7.0	1.00	0.90	0.0	0.0	11.14	81	31
165.0	Powerwave	12	6	0.2	0.5	4.0	3.0	0.80	0.50	0.0	0.0	11.02	9	66
165.0	Powerwave 7020	6	2	0.4	0.4	8.3	2.4	0.80	0.50	0.0	0.0	11.02	9	13
165.0	CCI	3	19	1.0	0.9	10.6	3.8	0.80	0.50	0.0	0.0	11.02	11	58
165.0	Powerwave	9	14	1.1	1.2	9.2	2.6	0.80	0.50	0.0	0.0	11.02	37	127
165.0	Raycap DC6-48-60-	1	20	1.1	2.0	9.7	9.7	0.80	1.00	0.0	0.0	11.02	8	20
165.0	Raycap DC6-48-60-	1	20	1.1	2.0	9.7	9.7	0.80	1.00	0.0	0.0	11.02	8	20
165.0	Ericsson RRUS-32	3	51	2.7	2.2	12.1	6.8	0.80	0.50	0.0	0.0	11.02	30	152
165.0	Ericsson RRUS 11	6	51	2.8	1.6	17.0	7.2	0.80	0.50	0.0	0.0	11.02	63	304
165.0	Powerwave 7770	3	35	5.5	4.6	11.0	5.0	0.80	0.65	0.0	0.0	11.02	80	105
165.0	Commscope SBNHH-	3	41	5.9	4.6	11.9	7.1	0.80	0.69	0.0	0.0	11.02	91	123
165.0	20' Omni	1	55	6.0	20.0	4.0	4.0	0.80	1.00	0.0	0.0	11.02	45	55
165.0	Powerwave P65-16-	3	53	8.1	6.0	12.0	6.0	0.80	0.67	0.0	0.0	11.02	122	159
165.0	Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.67	0.0	0.0	11.02	203	900
152.0	Andrew CBC78-DF	6	7	0.4	0.7	5.9	2.6	0.80	0.50	3.0	29.9	10.87	10	40
152.0	ALU RH_2x60-PCS	3	46	1.8	1.6	11.2	8.2	0.80	0.50	3.0	61.2	10.87	20	138
152.0	ALU RH_2x60-AWS	3	44	1.9	1.7	11.2	7.3	0.80	0.50	3.0	62.5	10.87	21	132
152.0	ALU RH_2x60-700	3	57	2.2	1.8	12.0	9.0	0.80	0.50	3.0	71.9	10.87	24	172
152.0	RFS DB-T1-6Z-8AB-	2	7	4.8	2.0	24.0	10.0	0.80	0.50	3.0	106.5	10.87	35	13
152.0	Commscope HBXX-	6	31	5.4	4.2	12.0	6.5	0.80	0.67	3.0	483.3	10.87	161	184
152.0	Kathrein 800	3	24	5.7	4.4	11.9	3.9	0.80	0.62	3.0	233.9	10.87	78	73
152.0	Antel BXA-80063/6BF	3	19	7.3	5.7	11.2	5.3	0.80	0.66	3.0	319.3	10.87	106	58
152.0	Flat Light Sector	3	400	17.9	0.0	0.0	0.0	0.75	0.67	0.0	0.0	10.83	248	1200
140.0	Small Side Lights	3	45	2.0	1.0	8.0	8.0	1.00	1.00	0.0	0.0	10.64	54	135
118.0	10' Omni	1	8	0.1	1.0	2.0	2.0	1.00	1.00	0.0	0.0	10.27	1	8
118.0	Round Side Arm	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	10.27	45	150
108.0	10' Omni	1	8	0.1	1.0	2.0	2.0	1.00	1.00	0.0	0.0	10.08	1	8
108.0	Round Side Arm	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	10.08	45	150
80.00	Empty Round Side	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	9.46	42	150
22.00	3' Dish	1	100	6.1	3.0	0.0	0.0	1.00	0.64	0.0	0.0	7.21	24	100
20.00	GPS	1	10	1.0	1.0	9.0	6.0	1.00	1.00	0.0	0.0	7.07	6	10
8.00	GPS	1	10	1.0	1.0	9.0	6.0	1.00	1.00	0.0	0.0	6.66	6	10

Site Number: CT-5035

Code: ANSI/TIA-222-G

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Site Name: Tartaglia, CT

Engineering Number: 64303126

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Customer: T-Mobile

Tower Loading

8.00	Round Side Arm	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	6.66	29	150
	Totals	168	10671	732.7										

Site Number: CT-5035

Code: ANSI/TIA-222-G

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Site Name: Tartaglia, CT

Engineering Number: 64303126

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Customer: T- Mobile

Tower Loading

Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Description	Qty	Width (in)	Weight (lb/ft)	Pct In Block	Spread On Faces	Bundling Arrangement	Cluster Dia (in)	Out Of Zone	Spacing (in)	Orientation Factor	Ka Override
0.00	240.0	1 1/4" Coax	1	1.55	0.63	0	2	Individual	0.00	N	1.00	1.00	0.01
0.00	240.0	1" Conduit	1	1.30	1.68	0	2	Individual	0.00	N	1.00	1.00	0.01
0.00	230.0	7/8" Coax	2	1.09	0.33	0	3	Individual	0.00	N	1.00	1.00	0.01
0.00	223.0	1 1/4" Coax	1	1.55	0.63	0	2	Individual	0.00	N	1.00	1.00	0.01
0.00	202.0	1 5/8" Coax	7	1.98	0.82	0	3	Individual	0.00	N	1.00	1.00	0.00
0.00	202.0	Waveguide	1	1.50	6.00	0	3	Individual	0.00	N	1.00	1.00	0.00
0.00	196.0	7/8" Coax	1	1.09	0.33	0	3	Individual	0.00	N	1.00	1.00	0.01
0.00	187.0	1/2" Coax	4	0.63	0.15	0	1	Individual	0.00	N	1.00	1.00	0.01
0.00	180.6	1 1/4" Hybriflex	3	1.54	1.00	67	2	Block	0.00	N	0.25	1.00	0.55
0.00	180.6	1.625" Hybrid	1	1.63	1.61	0	2	Individual	0.00	N	1.00	1.00	0.01
0.00	180.6	1/2" Ethernet	3	0.50	0.14	0	2	Individual	0.00	N	1.00	1.00	0.01
0.00	180.6	2" Conduit	2	2.38	3.65	0	1	Individual	0.00	N	1.00	1.00	0.00
0.00	180.6	5/16" Coax	6	0.32	0.04	0	2	Individual	0.00	N	1.00	1.00	0.28
0.00	180.6	Waveguide	1	1.50	6.00	0	2	Individual	0.00	N	1.00	1.00	0.00
0.00	174.0	1 5/8" Coax	6	1.98	0.82	0	1	Individual	0.00	N	1.00	1.00	0.28
0.00	174.0	Waveguide	1	1.50	6.00	0	1	Individual	0.00	N	1.00	1.00	0.00
0.00	165.0	0.39" Fiber Trunk	1	0.39	0.06	0	3	Individual	0.00	N	1.00	1.00	0.01
0.00	165.0	0.39" Fiber Trunk	1	0.39	0.06	0	3	Individual	0.00	N	1.00	1.00	0.01
0.00	165.0	0.78" 8 AWG 6	2	0.78	0.59	0	Lin App	Individual	0.00	N	1.00	1.00	0.01
0.00	165.0	0.78" 8 AWG 6	2	0.78	0.59	0	Lin App	Individual	0.00	N	1.00	1.00	0.01
0.00	165.0	1 1/4" Coax	1	1.55	0.63	0	2	Individual	0.00	N	1.00	1.00	0.01
0.00	165.0	1 5/8" Coax	12	1.98	0.82	50	3	Block	0.00	N	0.25	1.00	0.54
0.00	165.0	Waveguide	1	1.50	6.00	0	3	Individual	0.00	N	1.00	1.00	0.00
0.00	152.0	1 5/8" Coax	12	1.98	0.82	50	3	Block	0.00	N	0.25	1.00	0.54
0.00	152.0	1 5/8" Hybrid	1	1.98	1.30	0	3	Individual	0.00	N	1.00	1.00	0.00
0.00	152.0	1 5/8" Hybrid	1	1.98	1.30	0	3	Individual	0.00	N	1.00	1.00	0.01
0.00	152.0	Waveguide	1	1.50	6.00	0	3	Individual	0.00	N	1.00	1.00	0.00
0.00	118.0	7/8" Coax	1	1.09	0.33	0	2	Individual	0.00	N	1.00	1.00	0.01
0.00	108.0	1 1/4" Coax	1	1.55	0.63	0	2	Individual	0.00	N	1.00	1.00	0.01
0.00	22.00	0.24" Cat 5	1	0.24	0.04	0	Lin App	Individual	0.00	N	1.00	1.00	0.01
0.00	20.00	1/2" Coax	1	0.63	0.15	0	3	Individual	0.00	N	1.00	1.00	0.01
0.00	8.00	1/2" Coax	1	0.63	0.15	0	3	Individual	0.00	N	1.00	1.00	0.00

Site Number: CT-5035

Code: ANSI/TIA-222-G

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Site Name: Tartaglia, CT

Engineering Number: 64303126

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Customer: T- Mobile

Force/Stress Summary

Section: 1		1		Bot Elev (ft): 0.00				Height (ft): 30.000								
		Pu	Len	Bracing %			Fy	Phic	Pn	Num	Shear		Bear		Use	
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	(kip)	(kip)	%	Controls
LEG	PX - 10" DIA PIPE	-330.38	1.2D + 1.6W	30.08	33	33	33	32.8	50.0	669.65	0	0	0.00	0.00	49	Member X
HORIZ	PST - 3-1/2" DIA PIP	-17.92	1.2D + 1.6W 90	18.29	100	100	100	163.8	50.0	22.56	2	0	0.00	42.31	79	Member X
DIAG	PST - 3" DIA PIPE	-35.35	1.2D + 1.6W 90	36.16	32	32	32	0.0	0.0	41.40	3	0	0.00	60.65	85	User Input

		Pu	Len	Fy	Fu	Phit	Pn	Num	Num	Shear	Bear	Use	Controls
Max Tension Member		(kip)	Load Case	(ksi)	(ksi)	(kip)	Bolts	Holes	(kip)	(kip)	%		
LEG	PX - 10" DIA PIPE	275.02	0.9D + 1.6W 60	50	65	724.50	0	0	0.00	0.00	37		Member
HORIZ	PST - 3-1/2" DIA PIP	18.51	1.2D + 1.6W 90	50	65	120.60	2	0	0.00	33.93	54		Bolt Bear
DIAG	PST - 3" DIA PIPE	33.32	1.2D + 1.6W 90	50	65	100.35	3	0	0.00	52.65	63		Bolt Bear

Max Splice Forces		Pu	Load Case	phiRnt	Use	Num	Bolt Type
		(kip)		(kip)	%	Bolts	
Top Tension		273.11	0.9D + 1.6W 60	0.00	0	0	
Top Compression		328.40	1.2D + 1.6W	0.00	0		
Bot Tension		325.02	0.9D + 1.6W 60	726.84	45	12	1" A193-B7
Bot Compression		383.41	1.2D + 1.6W	0.00	0		

Section: 2		2		Bot Elev (ft): 30.00				Height (ft): 30.000								
		Pu	Len	Bracing %			Fy	Phic	Pn	Num	Shear		Bear		Use	
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	(kip)	(kip)	%	Controls
LEG	PX - 10" DIA PIPE	-271.26	1.2D + 1.6W	30.08	33	33	33	32.8	50.0	669.65	0	0	0.00	0.00	40	Member X
HORIZ	PST - 3" DIA PIPE	-17.31	1.2D + 1.6W 90	16.41	96	96	96	163.0	50.0	18.95	2	0	0.00	40.44	91	Member X
DIAG	PST - 3" DIA PIPE	-38.54	1.2D + 1.6W 90	35.15	31	31	31	112.7	50.0	39.62	3	0	0.00	60.65	97	Member X

		Pu	Len	Fy	Fu	Phit	Pn	Num	Num	Shear	Bear	Use	Controls
Max Tension Member		(kip)	Load Case	(ksi)	(ksi)	(kip)	Bolts	Holes	(kip)	(kip)	%		
LEG	PX - 10" DIA PIPE	222.82	0.9D + 1.6W 60	50	65	724.50	0	0	0.00	0.00	30		Member
HORIZ	PST - 3" DIA PIPE	18.17	1.2D + 1.6W 90	50	65	100.35	2	0	0.00	32.43	56		Bolt Bear
DIAG	PST - 3" DIA PIPE	35.97	1.2D + 1.6W 90	50	65	100.35	3	0	0.00	52.65	68		Bolt Bear

Max Splice Forces		Pu	Load Case	phiRnt	Use	Num	Bolt Type
		(kip)		(kip)	%	Bolts	
Top Tension		221.01	0.9D + 1.6W 60	0.00	0	0	
Top Compression		269.35	1.2D + 1.6W	0.00	0		
Bot Tension		273.11	0.9D + 1.6W 60	654.24	42	12	1 A325
Bot Compression		328.40	1.2D + 1.6W	0.00	0		

Site Number: CT-5035

Code: ANSI/TIA-222-G

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Force/Stress Summary

Section: 3		3		Bot Elev (ft): 60.00				Height (ft): 20.000						
		Pu	Len	Bracing %			Fy	Phic Pn	Num	Shear	Bear	Use		
Max Compression Member		(kip)	(ft)	X	Y	Z	(ksi)	(kip)	Boles	Holes	(kip)	(kip)	%	Controls
LEG	PX - 10" DIA PIPE	-230.71	20.05	50	50	50	33.1	50.0	668.58	0	0	0.00	0.00	34 Member X
HORIZ	PST - 3" DIA PIPE	-15.83	15.16	100	100	100	156.9	50.0	20.47	2	0	0.00	40.44	77 Member X
DIAG	PST - 3" DIA PIPE	-28.45	25.88	48	48	48	128.5	50.0	30.49	3	0	0.00	50.54	93 Member X

		Pu	Fy	Fu	Phit Pn	Num	Num	Shear	Bear	Use	Controls	
Max Tension Member		(kip)	(ksi)	(ksi)	(kip)	Boles	Holes	(kip)	(kip)	%		
LEG	PX - 10" DIA PIPE	188.80	50	65	724.50	0	0	0.00	0.00	26	Member	
HORIZ	PST - 3" DIA PIPE	16.62	50	65	100.35	2	0	0.00	32.43	51	Bolt Bear	
DIAG	PST - 3" DIA PIPE	26.50	50	65	100.35	3	0	0.00	43.80	60	Bolt Bear	

Max Splice Forces		Pu	phiRnt	Use	Num	Bolt Type	
		(kip)	(kip)	%	Boles		
Top Tension		187.12	0.00	0	0		
Top Compression		228.94	0.00	0			
Bot Tension		221.01	654.24	34	12	1 A325	
Bot Compression		269.35	0.00	0			

Section: 4		4		Bot Elev (ft): 80.00				Height (ft): 20.000						
		Pu	Len	Bracing %			Fy	Phic Pn	Num	Shear	Bear	Use		
Max Compression Member		(kip)	(ft)	X	Y	Z	(ksi)	(kip)	Boles	Holes	(kip)	(kip)	%	Controls
LEG	PX - 8" DIA PIPE	-191.36	20.06	50	50	50	41.8	50.0	506.95	0	0	0.00	0.00	37 Member X
HORIZ	PST - 3" DIA PIPE	-14.57	13.83	100	100	100	143.2	50.0	24.58	2	0	0.00	40.44	59 Member X
DIAG	PST - 3" DIA PIPE	-27.26	25.11	48	48	48	124.7	50.0	32.40	3	0	0.00	50.54	84 Member X

		Pu	Fy	Fu	Phit Pn	Num	Num	Shear	Bear	Use	Controls	
Max Tension Member		(kip)	(ksi)	(ksi)	(kip)	Boles	Holes	(kip)	(kip)	%		
LEG	PX - 8" DIA PIPE	154.57	50	65	576.00	0	0	0.00	0.00	26	Member	
HORIZ	PST - 3" DIA PIPE	14.95	50	65	100.35	2	0	0.00	32.43	46	Bolt Bear	
DIAG	PST - 3" DIA PIPE	25.57	50	65	100.35	3	0	0.00	43.80	58	Bolt Bear	

Max Splice Forces		Pu	phiRnt	Use	Num	Bolt Type	
		(kip)	(kip)	%	Boles		
Top Tension		152.96	0.00	0	0		
Top Compression		189.71	0.00	0			
Bot Tension		187.12	654.24	29	12	1 A325	
Bot Compression		228.94	0.00	0			

Site Number: CT-5035

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Force/Stress Summary

Section: 5		5		Bot Elev (ft): 100.0				Height (ft): 20.000								
		Pu		Len	Bracing %			Fy	Phic	Pn	Num	Num	Shear	Bear	Use	
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	(kip)	(kip)	%	Controls
LEG	PX - 8" DIA PIPE	-150.80	1.2D + 1.6W	20.05	50	50	50	41.8	50.0	507.00	0	0	0.00	0.00	29	Member X
HORIZ	PST - 2-1/2" DIA PIP	-13.46	1.2D + 1.6W 90	12.58	98	98	98	156.3	50.0	15.75	2	0	0.00	38.00	85	Member X
DIAG	PST - 2-1/2" DIA PIP	-27.29	1.2D + 1.6W 90	24.33	48	48	48	0.0	0.0	28.20	3	0	0.00	47.50	96	User Input

Max Tension Member		Pu		Fy	Fu	Phit	Pn	Num	Num	Shear	Bear	Use	
		(kip)	Load Case	(ksi)	(ksi)	(kip)	Bolts	Holes		(kip)	(kip)	%	Controls
LEG	PX - 8" DIA PIPE	118.80	0.9D + 1.6W 60	50	65	576.00	0	0		0.00	0.00	20	Member
HORIZ	PST - 2-1/2" DIA PIP	14.21	1.2D + 1.6W 90	50	65	76.68	2	0		0.00	30.48	46	Bolt Bear
DIAG	PST - 2-1/2" DIA PIP	25.73	1.2D + 1.6W 90	50	65	76.68	3	0		0.00	41.17	62	Bolt Bear

Max Splice Forces		Pu		phiRnt	Use	Num	
		(kip)	Load Case	(kip)	%	Bolts	Bolt Type
Top Tension		117.38	0.9D + 1.6W 60	0.00	0	0	
Top Compression		149.31	1.2D + 1.6W	0.00	0		
Bot Tension		152.96	0.9D + 1.6W 60	654.24	23	12	1 A325
Bot Compression		189.71	1.2D + 1.6W	0.00	0		

Section: 6		6		Bot Elev (ft): 120.0				Height (ft): 20.000								
		Pu		Len	Bracing %			Fy	Phic	Pn	Num	Num	Shear	Bear	Use	
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	(kip)	(kip)	%	Controls
LEG	PX - 8" DIA PIPE	-130.27	1.2D + 1.6W	10.03	100	100	100	41.8	50.0	507.00	0	0	0.00	0.00	25	Member X
HORIZ	PST - 2-1/2" DIA PIP	-12.46	0.9D + 1.6W 90	11.96	100	100	100	151.6	50.0	16.75	2	0	0.00	31.67	74	Member X
DIAG	PST - 3" DIA PIPE	-17.67	1.2D + 1.6W 90	16.08	96	96	96	159.7	50.0	19.75	3	0	0.00	50.54	89	Member X

Max Tension Member		Pu		Fy	Fu	Phit	Pn	Num	Num	Shear	Bear	Use	
		(kip)	Load Case	(ksi)	(ksi)	(kip)	Bolts	Holes		(kip)	(kip)	%	Controls
LEG	PX - 8" DIA PIPE	98.02	1.2D + 1.6W 60	50	65	576.00	0	0		0.00	0.00	17	Member
HORIZ	PST - 2-1/2" DIA PIP	13.10	1.2D + 1.6W 90	50	65	76.68	2	0		0.00	25.33	51	Bolt Bear
DIAG	PST - 3" DIA PIPE	16.67	0.9D + 1.6W 90	50	65	100.35	3	0		0.00	43.80	38	Bolt Bear

Max Splice Forces		Pu		phiRnt	Use	Num	
		(kip)	Load Case	(kip)	%	Bolts	Bolt Type
Top Tension		83.30	0.9D + 1.6W 60	0.00	0	0	
Top Compression		109.27	1.2D + 1.6W	0.00	0		
Bot Tension		117.38	0.9D + 1.6W 60	436.16	27	8	1 A325
Bot Compression		149.31	1.2D + 1.6W	0.00	0		

Site Number: CT-5035

Code: ANSI/TIA-222-G

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Force/Stress Summary

Section: 7		7		Bot Elev (ft): 140.0				Height (ft): 20.000							
		Pu	Len	Bracing %			Fy	Phic	Pn	Num	Shear	Bear	Use		
Max Compression Member		(kip)	(ft)	X	Y	Z	(ksi)	(kip)	Bolts	Holes	(kip)	(kip)	%	Controls	
	Load Case														
LEG	PX - 8" DIA PIPE	-90.89	10.03	100	100	100	50.0	507.00	0	0	0.00	0.00	17	Member X	
HORIZ	PST - 2-1/2" DIA PIP	-10.74	10.71	100	100	100	50.0	20.89	2	0	0.00	31.67	51	Member X	
DIAG	PST - 2-1/2" DIA PIP	-16.03	15.12	100	100	100	0.0	23.40	3	0	0.00	47.50	68	User Input	

		Pu	Fy	Fu	Phit	Pn	Num	Num	Shear	Bear	Use		
Max Tension Member		(kip)	(ksi)	(ksi)	(kip)	Bolts	Holes	(kip)	(kip)	(kip)	%	Controls	
	Load Case												
LEG	PX - 8" DIA PIPE	64.51	50	65	576.00	0	0	0.00	0.00	11		Member	
HORIZ	PST - 2-1/2" DIA PIP	11.30	50	65	76.68	2	0	0.00	25.33	44		Bolt Bear	
DIAG	PST - 2-1/2" DIA PIP	15.03	50	65	76.68	3	0	0.00	41.17	36		Bolt Bear	

Max Splice Forces		Pu	phiRnt	Use	Num	Bolt Type	
	Load Case	(kip)	(kip)	%	Bolts		
Top Tension	0.9D + 1.6W 60	52.40	0.00	0	0		
Top Compression	1.2D + 1.6W 90	71.39	0.00	0			
Bot Tension	0.9D + 1.6W 60	83.30	436.16	19	8	1 A325	
Bot Compression	1.2D + 1.6W 90	109.27	0.00	0			

Section: 8		8		Bot Elev (ft): 160.0				Height (ft): 20.000							
		Pu	Len	Bracing %			Fy	Phic	Pn	Num	Shear	Bear	Use		
Max Compression Member		(kip)	(ft)	X	Y	Z	(ksi)	(kip)	Bolts	Holes	(kip)	(kip)	%	Controls	
	Load Case														
LEG	PX - 8" DIA PIPE	-56.71	10.03	100	100	100	50.0	507.00	0	0	0.00	0.00	11	Member X	
HORIZ	PST - 2-1/2" DIA PIP	-7.26	9.464	100	100	100	50.0	26.77	2	0	0.00	31.67	27	Member X	
DIAG	PST - 2-1/2" DIA PIP	-11.61	14.20	96	96	96	50.0	12.88	3	0	0.00	47.50	90	Member X	

		Pu	Fy	Fu	Phit	Pn	Num	Num	Shear	Bear	Use		
Max Tension Member		(kip)	(ksi)	(ksi)	(kip)	Bolts	Holes	(kip)	(kip)	(kip)	%	Controls	
	Load Case												
LEG	PX - 8" DIA PIPE	41.19	50	65	576.00	0	0	0.00	0.00	7		Member	
HORIZ	PST - 2-1/2" DIA PIP	7.69	50	65	76.68	2	0	0.00	25.33	30		Bolt Bear	
DIAG	PST - 2-1/2" DIA PIP	10.83	50	65	76.68	3	0	0.00	41.17	26		Bolt Bear	

Max Splice Forces		Pu	phiRnt	Use	Num	Bolt Type	
	Load Case	(kip)	(kip)	%	Bolts		
Top Tension	0.9D + 1.6W 60	28.56	0.00	0	0		
Top Compression	1.2D + 1.6W 90	41.99	0.00	0			
Bot Tension	0.9D + 1.6W 60	52.40	436.16	12	8	1 A325	
Bot Compression	1.2D + 1.6W 90	71.39	0.00	0			

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Force/Stress Summary

Section: 9		9		Bot Elev (ft): 180.0				Height (ft): 20.000								
		Pu		Len	Bracing %			Fy	Phic	Pn	Num	Shear		Bear	Use	
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	(kip)	(kip)	%	Controls
LEG	PX - 8" DIA PIPE	-30.88	1.2D + 1.6W	10.03	100	100	100	41.8	50.0	507.00	0	0	0.00	0.00	6	Member X
HORIZ	PST - 2" DIA PIPE	-4.48	1.2D + 1.6W 90	8.214	100	100	100	125.2	50.0	15.41	2	0	0.00	24.02	29	Member X
DIAG	PST - 2-1/2" DIA PIP	-7.82	1.2D + 1.6W 90	13.35	100	100	100	169.2	50.0	13.45	3	0	0.00	47.50	58	Member X

		Pu		Fy	Fu	Phit	Pn	Num	Num	Shear	Bear	Use	Controls
Max Tension Member		(kip)	Load Case	(ksi)	(ksi)	(kip)	Bolts	Holes		(kip)	(kip)	%	
LEG	PX - 8" DIA PIPE	19.49	1.2D + 1.6W 60	50	65	576.00	0	0	0.00	0.00	3		Member
HORIZ	PST - 2" DIA PIPE	4.76	1.2D + 1.6W 90	50	65	48.15	2	0	0.00	19.22	24		Bolt Bear
DIAG	PST - 2-1/2" DIA PIP	7.24	1.2D + 1.6W 90	50	65	76.68	3	0	0.00	41.17	17		Bolt Bear

Max Splice Forces		Pu		phiRnt	Use	Num	Bolt Type	
		(kip)	Load Case	(kip)	%	Bolts		
Top Tension		12.70	0.9D + 1.6W 60	0.00	0	0		
Top Compression		20.92	1.2D + 1.6W	0.00	0			
Bot Tension		28.56	0.9D + 1.6W 60	436.16	7	8	1 A325	
Bot Compression		41.99	1.2D + 1.6W	0.00	0			

Section: 10		10		Bot Elev (ft): 200.0				Height (ft): 20.000								
		Pu		Len	Bracing %			Fy	Phic	Pn	Num	Shear		Bear	Use	
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	(kip)	(kip)	%	Controls
LEG	PX - 8" DIA PIPE	-14.01	1.2D + 1.6W	10.02	100	100	100	41.8	50.0	507.06	0	0	0.00	0.00	2	Member X
HORIZ	PST - 2" DIA PIPE	-2.13	1.2D + 1.6W 90	7.026	100	100	100	107.1	50.0	20.80	2	0	0.00	24.02	10	Member X
DIAG	PST - 2-1/2" DIA PIP	-4.38	1.2D + 1.6W 90	12.55	100	100	100	159.1	50.0	15.20	3	0	0.00	47.50	28	Member X

		Pu		Fy	Fu	Phit	Pn	Num	Num	Shear	Bear	Use	Controls
Max Tension Member		(kip)	Load Case	(ksi)	(ksi)	(kip)	Bolts	Holes		(kip)	(kip)	%	
LEG	PX - 8" DIA PIPE	7.74	1.2D + 1.6W 60	50	65	576.00	0	0	0.00	0.00	1		Member
HORIZ	PST - 2" DIA PIPE	2.35	1.2D + 1.6W 90	50	65	48.15	2	0	0.00	19.22	12		Bolt Bear
DIAG	PST - 2-1/2" DIA PIP	3.87	1.2D + 1.6W 90	50	65	76.68	3	0	0.00	41.17	9		Bolt Bear

Max Splice Forces		Pu		phiRnt	Use	Num	Bolt Type	
		(kip)	Load Case	(kip)	%	Bolts		
Top Tension		3.82	0.9D + 1.6W 60	0.00	0	0		
Top Compression		7.89	1.2D + 1.6W	0.00	0			
Bot Tension		12.70	0.9D + 1.6W 60	436.16	3	8	1 A325	
Bot Compression		20.92	1.2D + 1.6W	0.00	0			

Site Number: CT-5035
 Site Name: Tartaglia, CT
 Customer: T- Mobile

Code: ANSI/TIA-222-G
 Engineering Number: 64303126

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Force/Stress Summary

Section: 11 11		Bot Elev (ft): 220.0		Height (ft): 20.000								
Max Compression Member		Pu (kip)	Load Case	Len (ft)	Bracing % X Y Z	Fy (ksi)	PhiC Pn Num (kip) Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
LEG	PX - 8" DIA PIPE	-4.66	1.2D + 1.6W	6.68	100 100 100	27.8	50.0 544.30	0	0	0.00	0.00	0 Member X
HORIZ	PST - 2" DIA PIPE	-1.15	1.2D + 1.6W	6.130	100 100 100	93.5	50.0 25.42	2	0	0.00	24.02	4 Member X
DIAG	PST - 2" DIA PIPE	-2.31	1.2D + 1.6W 90	9.288	100 100 100	141.6	50.0 12.05	3	0	0.00	36.04	19 Member X
Max Tension Member		Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	PhiT Pn Num (kip) Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls	
LEG	PX - 8" DIA PIPE	1.48	1.2D + 1.6W 60	50	65	576.00	0	0	0.00	0.00	0 Member	
HORIZ	PST - 2" DIA PIPE	1.40	1.2D + 1.6W 90	50	65	48.15	2	0	0.00	19.22	7 Bolt Bear	
DIAG	PST - 2" DIA PIPE	1.96	1.2D + 1.6W 90	50	65	48.15	3	0	0.00	31.23	6 Bolt Bear	
Max Splice Forces		Pu (kip)	Load Case	phiRnt (kip)	Use %	Num Bolts	Bolt Type					
Top Tension		0.00		0.00	0	0						
Top Compression		0.80	1.2D + 1.0Di +	0.00	0							
Bot Tension		3.82	0.9D + 1.6W 60	436.16	1	8	1 A325					
Bot Compression		7.89	1.2D + 1.6W	0.00	0							

Site Name: Tartaglia, CT
 Site Number: CT-5035
 Engineering Number: 64303126
 Engineer: R. Barrett
 Date: 1/7/2016

Program Last Updated: 5/13/2014
 American Tower Corporation

Design Base Loads (Factored) per TIA-222-G

Foundation Mapped:	Y
Moment (M_u):	0.0 k-ft
Shear/Leg (V_u):	55.1 k
Compression/Leg (P_u):	382.3 k
Uplift/Leg (T_u):	321.0 k
Tower Type (GT / SST):	SST
Diameter of Prismatic Portion of Pier (d):	0.0 ft
Depth to Base of Foundation (l + t - h):	6.1 ft
Pier Height Above Ground (h):	0.00 ft
Length / Width of Pad (w):	22.0 ft
Thickness of Pad (t):	6.10 ft
Depth Below Ground Surface to Water Table (w):	99.0 ft
Unit Weight of Concrete:	150.0 pcf
Unit Weight of Water:	62.4 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 from Top of Pad:	30 Degrees
Friction Angle of Uplift from Base of Pad:	30 Degrees
Uplift Angle Started at Top or Base of Pad (T/B):	T
Ultimate Skin Friction:	0 psf
Ultimate Compressive Bearing Pressure:	3000 psf
Capacity Increase (Due to Transient Loads):	1.00
Bearing Strength Reduction Factor (ϕ_s):	0.75
Uplift Strength Reduction Factor (ϕ_s):	0.75

Axial Capacities and Design Moment

Considering Uplift Starting at Top of Pad

Volume of Concrete:	4044.4 ft ³
Depth to Uplift Starting Point:	0.0 ft
Soil Volume Above Mat:	0.0 ft ³
Soil Volume Around Mat Edges:	0.0 ft ³
Soil Volume Around Mat Corners:	0.0 ft ³
Volume of Soil:	0.0 ft ³
Weight of Concrete (Bouyancy Considered):	606.7 k
Nominal Uplift Capacity per Leg ($\phi_s T_n$):	455.0 k
Nominal Compressive Capacity per Leg ($\phi_s P_n$):	1089.0 k
P_u :	720.6 k
$T_u / \phi_s T_n$:	0.71 Result: OK
$P_u / \phi_s P_n$:	0.66 Result: OK

