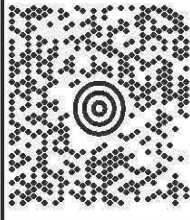


1 OF 1

1.0 LBS LTR

JENNIFER SMITH  
CENTERLINE COMMUNICATIONS  
23 BROADVIEW EST  
BRISTOL VT 05443

**SHIP TO:**  
MELANIE A. BACHMAN  
CONNECTICUT SITTING COUNCIL  
10 FRANKLIN SQUARE  
NEW BRITAIN CT 06051-2655

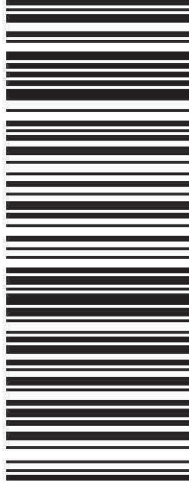


**CT 067 9-06**



**UPS NEXT DAY AIR SAVER 1P**

TRACKING #: 1Z 9Y4 503 13 0617 3691



BILLING: P/P

Reference # 1: BRIDGEPORT

CS 22.0.18. WNTNV50.13.0A 03/2022<sup>SM</sup>



TM

March 25, 2022

Melanie A. Bachman  
Executive Director  
Connecticut Siting Council  
10 Franklin Square  
New Britain, CT 06051

Re: Notice of Exempt Modifications – AT&T Site CT5093  
Telecommunications ATC Site 383598  
1000 Trumbull Ave., Bridgeport, CT 06606

Dear Melanie:

New Cingular Wireless, PCS, LLC (dba AT&T) currently maintains antennas on a wireless telecommunications facility on an existing American Tower Corporation (ATC) telecommunications tower at the referenced address. AT&T desires to modify its existing equipment as described in the attached Construction Drawings:

Remove (12) antennas, (3) RRHs, (3) TMAs, (6) Diplexers, and (6) Triplexers.

Install (12) antennas, (2) Squid, (3) RRHs, and (3) Cables.

Existing (12) RRHs, (2) squids, (3) Fiber, and (7) DC trunks to remain.

Ground work includes removal of (6) diplexers, (6) triplexers, decomm UMTS; installation of (1) 5216, (2) XMU, (1) Fronthall Gateway, and (1) 6630 + IDLE. 3 RRHs to remain.

Please accept this letter as notification pursuant to R.C.S.A §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 was sent to the following parties:

Mayor Joseph P. Ganim  
City of Bridgeport  
Margaret E. Morton Government Center  
999 Broad Street  
Bridgeport, CT 06604

Dennis Buckley  
Zoning Administrator  
City Hall  
45 Lyon Terrace  
Room 210  
Bridgeport, CT 06604

Property Owner:  
Global Tower Assets LLC  
(DBA American Tower Corp)  
10 Presidential Way  
Woburn, MA 01801

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

1. The proposed modifications will not result in an increase in the height of the existing structure.
2. The proposed modifications will not require an extension of the site boundary.
3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the modified facility will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commissions safety standard. Please see the RF Report attached.
5. The proposed modifications will not cause an ineligible change or alternation in the physical or environmental characteristics of the site.
6. The existing structure and its foundation can support the proposed loading. Please see the structural analysis attached.

For the foregoing reasons, AT&T 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).

Please let me know if anything further would be helpful in your review.

Kind Regards,

*Jennille Smith*

Jennille Smith  
*Site Acquisition Consultant – Agent for AT&T*  
*Centerline Communications LLC*  
750 West Center St. Ste 301  
West Bridgewater, MA 02379  
774-409-5807

Enclosures: Exhibit 1 – Construction Drawings  
Exhibit 2 – Property Card and GIS  
Exhibit 3 – Structural Analysis  
Exhibit 4 – Mount Analysis  
Exhibit 5 – RF Emissions Report  
Exhibit 6 – Prior CSC Decisions  
Exhibit 7 – Delivery Confirmations

Cc:

Mayor Joseph P. Ganim  
City of Bridgeport  
Margaret E. Morton Government Center  
999 Broad Street  
Bridgeport, CT 06604

Dennis Buckley  
Zoning Administrator  
City Hall  
45 Lyon Terrace  
Room 210  
Bridgeport, CT 06604

Property Owner:  
Global Tower Assets LLC  
(DBA American Tower Corp)  
10 Presidential Way  
Woburn, MA 01801



# EXHIBIT 1











**Dewberry®**  
 Dewberry Engineers Inc.  
 89 SUMMER STREET  
 SUITE 700  
 BRIDGEPORT, CT 06610  
 PHONE: 860.381.3400  
 FAX: 860.381.3400

REV.	DESCRIPTION	BY	DATE
A	PRELIM	MR	12/14/21

ATC SITE NUMBER:  
 383598  
 ATC SITE NAME:  
 TARTAGLIA  
 AT&T MOBILITY SITE NAME:  
 BRIDGPORT BEARDSLEY  
 SITE ADDRESS:  
 1000 TRUMBULL AVENUE  
 BRIDGEPORT, CT 06606

SEAL:

**PRELIMINARY:  
 NOT FOR  
 CONSTRUCTION**

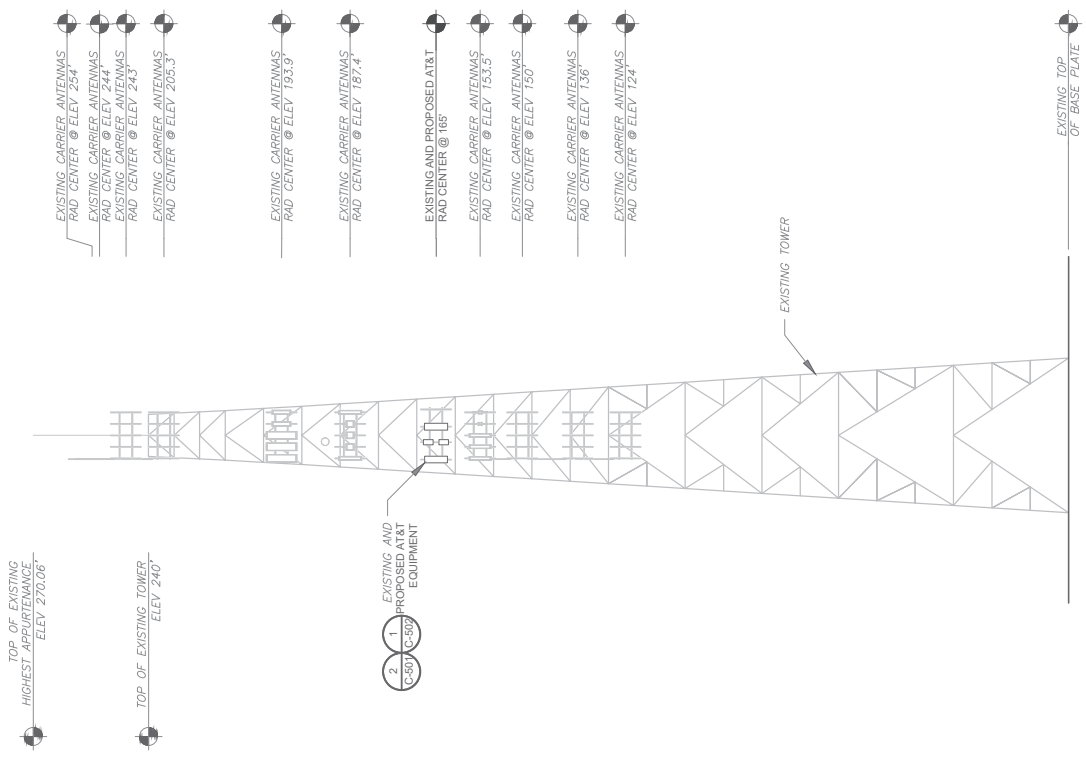


DATE DRAWN	12/09/21
ATC JOB NO.	1362699_C3
CUSTOMER ID.	CT5093
CUSTOMER #.	10070948

**TOWER ELEVATION**

SHEET NUMBER:	C-201	REVISION:	A
---------------	-------	-----------	---

ATC IS ANALYZING THE ANTENNA MOUNT UNDER A SEPARATE PROJECT. CONSTRUCTION IS NOT BEING PERMITTED UNTIL THE PROJECT IS COMPLETE AND INDICATES THE ADDITIONAL LOADING DOES NOT OVERSTRESS THE MOUNT.



**TOWER NOTE:**  
 1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM WITH THE PROJECT MANAGER THAT THEY HAVE THE MOST RECENT VERSION OF THE STRUCTURAL ANALYSIS BEFORE COMMENCING CONSTRUCTION. ALL ANTENNAS AND APERTURES SHOWN ON THIS DRAWING ARE SHOWN BASED ON THE STRUCTURAL ANALYSIS. WHERE APPLICABLE, ALL NEW ANTENNAS, EQUIPMENT, MOUNTS, CABLING, ETC. SHALL BE PERMITTED TO BE INSTALLED IN ACCORDANCE WITH LOCAL REQUIREMENTS AND/OR OTHER LOCAL REQUIREMENTS. TOWER ELEVATIONS ARE MEASURED FROM TOP OF BASE PLATE TO MATCH STRUCTURAL ANALYSIS. ELEVATIONS DO NOT REFLECT TOWER ELEVATION DEFLECTION MAY NOT REFLECT ALL EQUIPMENT INCLUDED IN STRUCTURAL ANALYSIS. REFER TO STRUCTURAL ANALYSIS FOR FULL TOWER LOADING.

1 TOWER ELEVATION  
 SCALE: N.T.S.





REV.	DESCRIPTION	BY	DATE
A	PRELIM	MR	12/14/21

ATC SITE NUMBER:  
**383598**

ATC SITE NAME:  
**TARTAGLIA**

AT&T MOBILITY SITE NAME:  
**BRIDGPORT BEARDSLEY**

SITE ADDRESS:  
 1000 TRUMBULL AVENUE  
 BRIDGEPORT, CT 06606

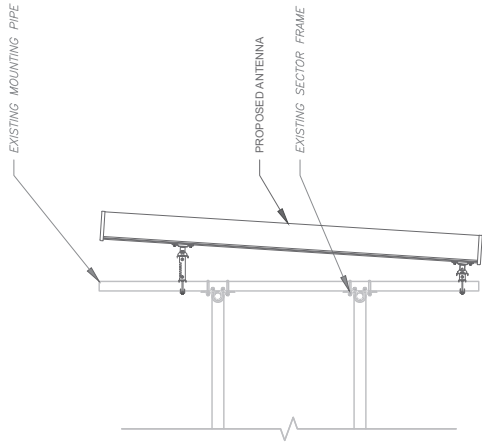
**PRELIMINARY:  
 NOT FOR  
 CONSTRUCTION**

**AT&T**

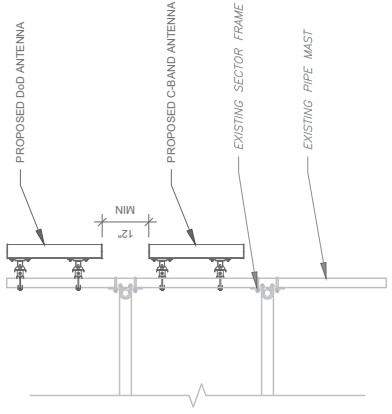
DATE DRAWN:	12/09/21
ATC JOB NO.:	13682699_G3
CUSTOMER ID.:	CT5093
CUSTOMER #.:	10070948

**CONSTRUCTION  
 DETAILS**

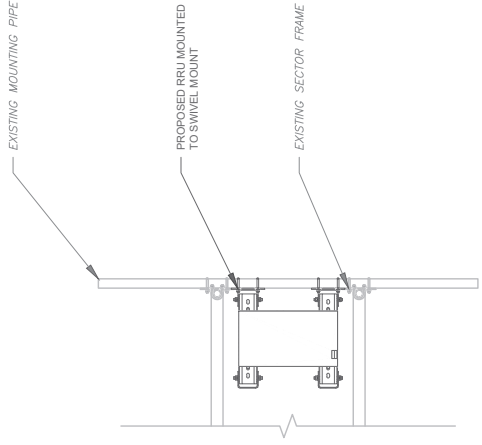
SHEET NUMBER:	<b>C-501</b>
REVISION:	-



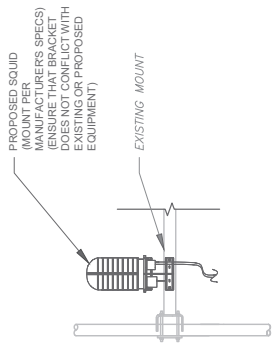
1 ANTENNA DETAIL  
 SCALE: N.T.S.



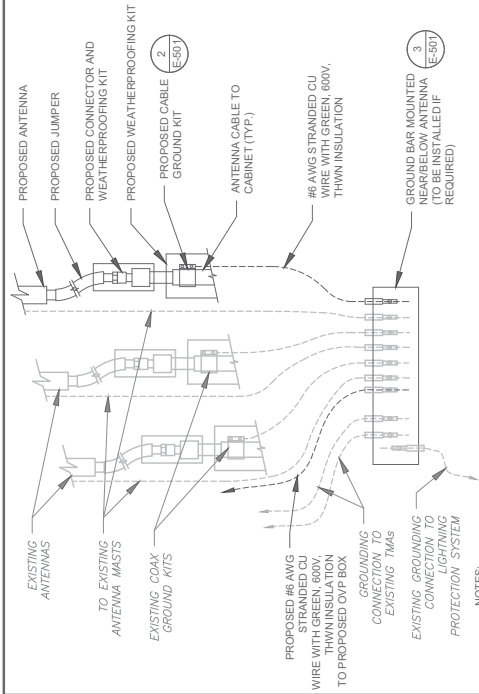
2 PROPOSED 5G ANTENNA MOUNTING DETAIL - TYPICAL  
 SCALE: N.T.S.



3 PROPOSED RRU MOUNTING DETAIL - TYPICAL  
 SCALE: N.T.S.

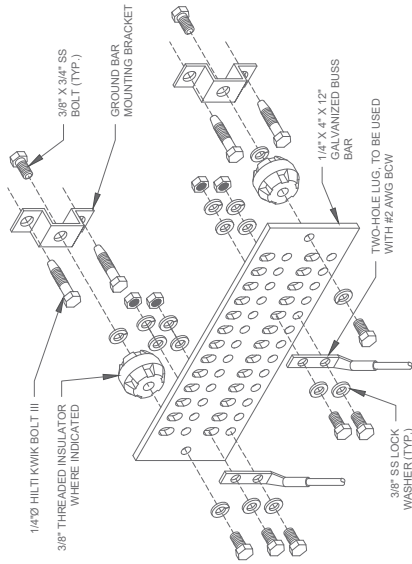


4 PROPOSED SQUID MOUNTING  
 SCALE: N.T.S.



- NOTES:**
- THIS DETAIL IS INTENDED TO SHOW THE GENERAL GROUNDING REQUIREMENTS. SLIGHT ADJUSTMENTS MAY BE REQUIRED BASED ON EXISTING SITE CONDITIONS. THE CONTRACTOR SHALL MAKE FIELD ADJUSTMENTS AS NEEDED AND INFORM THE CONSTRUCTION MANAGER OF ANY CONFLICTS.
  - SITE GROUNDING SHALL COMPLY WITH AT&T GROUNDING STANDARDS, LATEST EDITION, AND COMPLY WITH AT&T GROUNDING CHECKLIST, LATEST VERSION, WHEN NATIONAL AND LOCAL GROUNDING CODES ARE MORE STRINGENT THEY SHALL GOVERN.

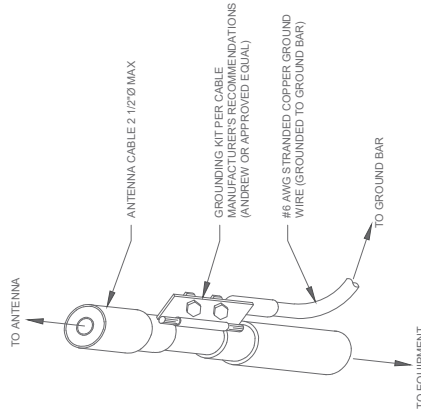
**1** TYPICAL ANTENNA GROUNDING DIAGRAM  
SCALE: N.T.S.



**GROUND BAR NOTES**

- GROUND KITS COME WITH ALL HARDWARE: NUTS, BOLTS, WASHERS, ETC. EXCEPT THE STRUCTURAL MOUNTING MEMBERS.
- GROUND BAR SHALL BE BOLTED TO STRUCTURAL MEMBER OR ANCHORED TO CONCRETE SLAB W/ HILTI KWIK BOLT III.

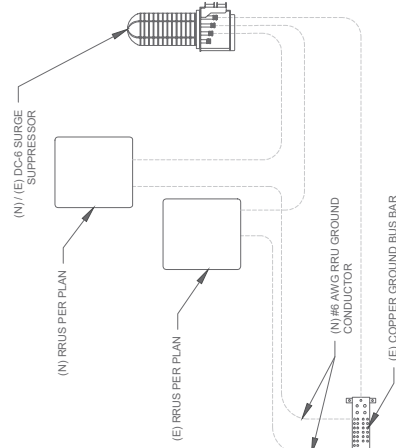
**4** MAIN GROUND BAR DETAIL  
SCALE: N.T.S.



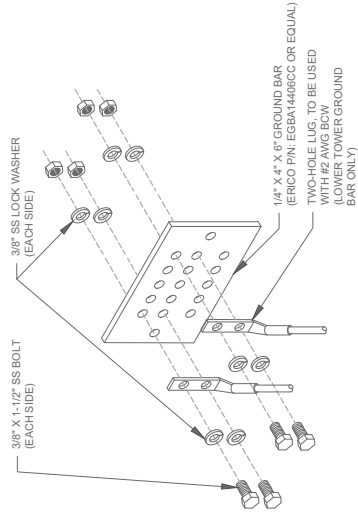
**GROUND KIT NOTES:**

- DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
- GROUND WIRE SHALL BE SECURED TO GROUNDING KIT (ANDREW PART NUMBER 221213) AND INSTALL TAPE PER MANUFACTURER'S SPECIFICATIONS.

**2** CABLE GROUND KIT CONNECTION DETAIL  
SCALE: N.T.S.



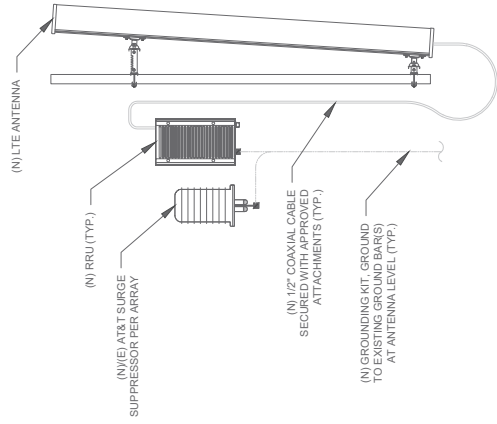
**5** RRU GROUNDING  
SCALE: N.T.S.



**GROUND BAR NOTES:**

- GROUND BAR KITS COME WITH ALL HARDWARE: NUTS, BOLTS, WASHERS, ETC. EXCEPT THE STRUCTURAL MOUNTING MEMBERS.
- GROUND BAR TO BE BONDED DIRECTLY TO TOWER.

**3** TOWER GROUND BAR DETAIL  
SCALE: N.T.S.



**6** ANTENNA/RRU GROUNDING  
SCALE: N.T.S.

**AMERICAN TOWER**

**Dewberry**  
Dewberry Engineers Inc.  
99 SUMMER STREET  
SUITE 700  
BRIDGEPORT, CT 06690  
PHONE: 860.381.6910  
FAX: 860.381.3400  
FAX: 817.665.3310

REV.	DESCRIPTION	BY	DATE
A	PRELIM	MR	12/14/21

ATC SITE NUMBER:  
**383598**

ATC SITE NAME:  
**TARTAGLIA**

AT&T MOBILITY SITE NAME:  
**BRIDGPORT BEARDSLEY**

SITE ADDRESS:  
1000 TRUMBULL AVENUE  
BRIDGEPORT, CT 06606

SEAL:

**PRELIMINARY:  
NOT FOR  
CONSTRUCTION**

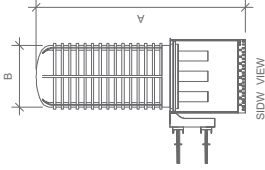
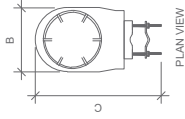


DATE DRAWN:	12/09/21
ATC JOB NO.:	1362699_03
CUSTOMER ID.:	CT5093
CUSTOMER #.:	10070948

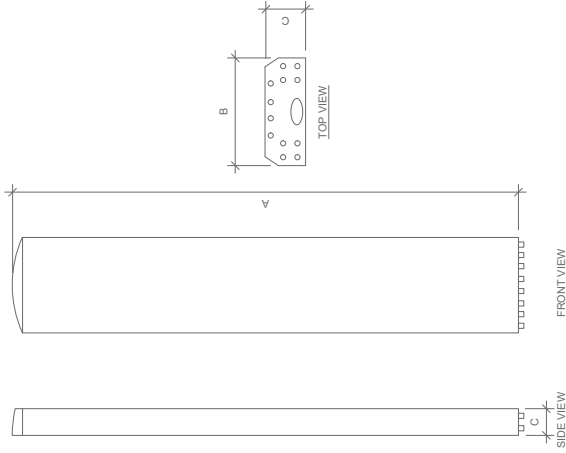
**GROUNDING DETAILS**

SHEET NUMBER:	<b>E-501</b>	REVISION:	<b>A</b>
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RAYCAP SPECIFICATIONS			
RAYCAP MODEL	A	B	WEIGHT (LBS)
DC9-48-60-24-8C-EV	31.4"	18.3"	16.0



ANTENNA SPECIFICATIONS			
ANTENNA MODEL	A	B	WEIGHT (LBS)
OD6616-7	72"	22"	130.0
AIR6448 N7TD	30.4"	15.9"	81.6
DIMP65R-B U6DA	71.2"	20.7"	78.4

AT&T MOBILITY SITE NAME:  
**BRIDGPORT BEARDSLEY**  
 SITE ADDRESS:  
 1000 TRUMBULL AVENUE  
 BRIDGEPORT, CT 06606

ATC SITE NUMBER:  
**383598**  
 ATC SITE NAME:  
**TARTAGLIA**



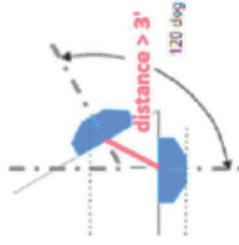
DATE DRAWN: 12/09/21  
 ATC JOB NO: 13682689\_C3  
 CUSTOMER ID: CT5093  
 CUSTOMER #: 10070948

**SUPPLEMENTAL**

SHEET NUMBER:  
**R-601**

# RF REQUIREMENTS FOR 700 B14 FIRSTNET, 700 B12, 700D B29 ANTENNA SEPARATION

- Horizontal separation (side to side of antenna):  $\geq 3'$
- Vertical separation (between the tips of the antennas):  $> 3'$
- Inter-sector separation:  $> 3'$  between the center of the antenna backplanes.



- Please note additional horizontal separation may be required if B14 antennas azimuth are different from others or antennas are severely angled with respect to the mount.
- Typical 3' horizontal separation can tolerate skew angle up to  $6^\circ$ .



ATC SITE NUMBER:  
383598

ATC SITE NAME:  
TARTAGLIA

AT&T MOBILITY SITE NAME:  
BRIDGEPORT BEARDSLEY  
SITE ADDRESS:  
1000 TRUMBULL AVENUE  
BRIDGEPORT, CT 06606



DATE DRAWN: 12/09/21  
ATC JOB NO.: T3682689\_C3  
CUSTOMER ID: CT5093  
CUSTOMER #: 10070948

SUPPLEMENTAL

SHEET NUMBER:  
R-602

NOTE: THIS SHEET CREATED BY OTHERS AND PROVIDED  
BY REQUEST OF CUSTOMER WITHOUT EDIT.



ATC SITE NUMBER:  
383598  
ATC SITE NAME:  
TARTAGLIA  
AT&T MOBILITY SITE NAME:  
BRIDGPORT BEARDSLEY  
SITE ADDRESS:  
1000 TRUMBULL AVENUE  
BRIDGEPORT, CT 06606



DATE DRAWN	12/09/21
ATC JOB NO.	1362699_C3
CUSTOMER ID.	CT5093
CUSTOMER #.	10070948

SUPPLEMENTAL

SHEET NUMBER:  
R-603

PENDING MOUNT ANALYSIS

NOTE: THIS SHEET WAS CREATED BY OTHERS AND PROVIDED AT THE REQUEST OF THE CUSTOMER WITHOUT EDIT. PLEASE REFERENCE THE MOUNT ANALYSIS REPORT FOR COMPLETE MOUNT ANALYSIS CALCULATIONS AND DETAILS. SUPPLEMENTAL PAGES INCLUDED IN THE CONSTRUCTION DRAWINGS ARE FOR REFERENCE ONLY. GENERAL CONTRACTOR IS TO VERIFY THEY HAVE THE MOST RECENT MOUNT ANALYSIS PRIOR TO CONSTRUCTION.

1 MOUNT ANALYSIS



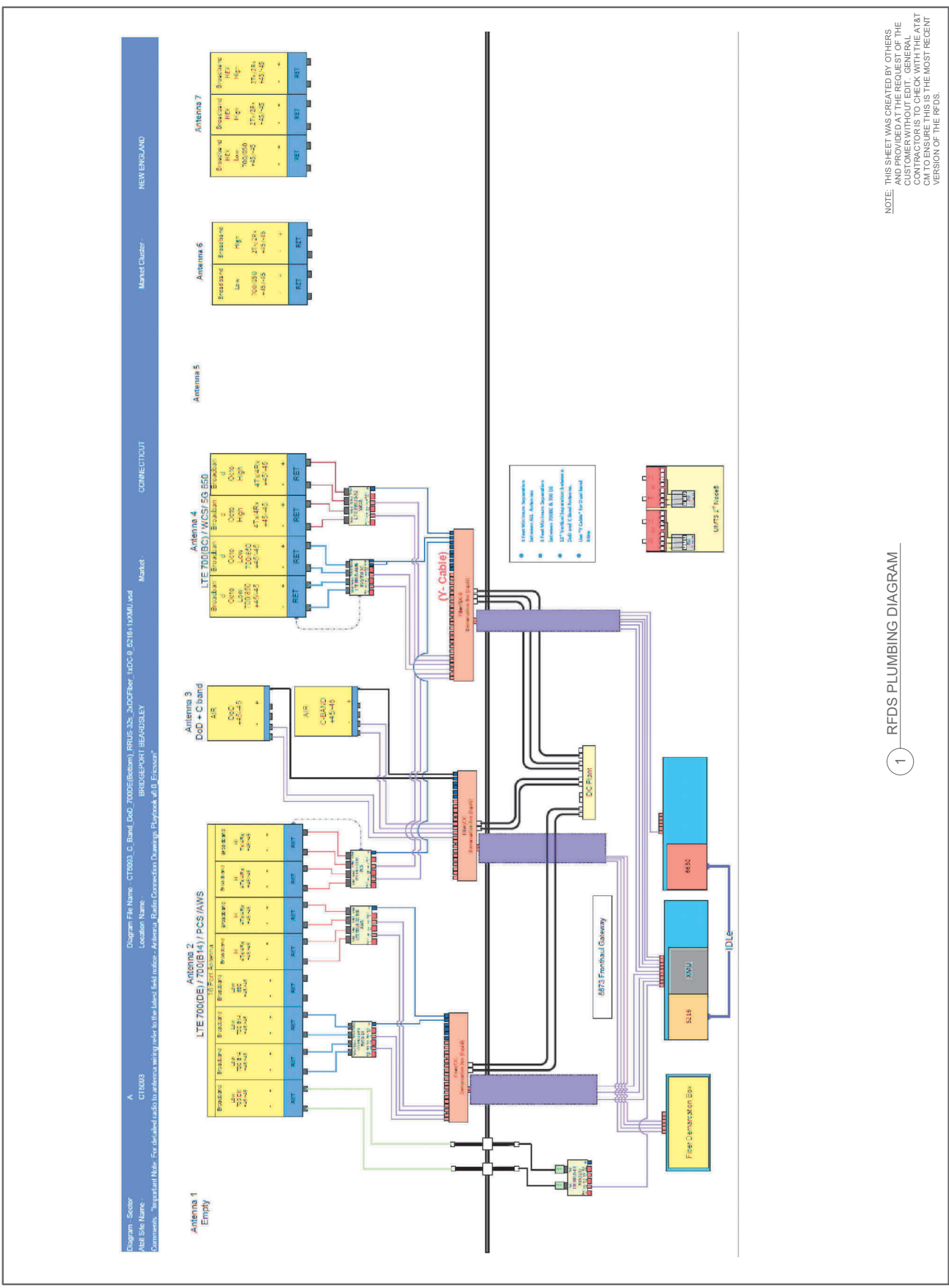
AMERICAN TOWER  
**Dewberry®**  
 Dewberry Engineers Inc.  
 89 SUMMER STREET  
 SUITE 700  
 BRIDGEPORT, MA 02140  
 PHONE: 617.693.3400  
 FAX: 617.695.3310

ATC SITE NUMBER:  
 383598  
 ATC SITE NAME:  
 TARTAGLIA  
 AT&T MOBILITY SITE NAME:  
 BRIDGPORT BEARDSLEY  
 SITE ADDRESS:  
 1000 TRUMBULL AVENUE  
 BRIDGEPORT, CT 06606



DATE DRAWN: 12/09/21  
 ATC JOB NO.: 13682689\_G3  
 CUSTOMER ID: CT5093  
 CUSTOMER #: 10070948

SUPPLEMENTAL  
 SHEET NUMBER:  
**R-604**



NOTE: THIS SHEET WAS CREATED BY OTHERS AND IS PROVIDED AS IS. THE USER OF THIS SHEET SHALL BE RESPONSIBLE FOR VERIFYING THE INFORMATION IS CORRECT AND COMPLETE. THE CONTRACTOR IS TO CHECK WITH THE AT&T CM TO ENSURE THIS IS THE MOST RECENT VERSION OF THE RFDS.

## EXHIBIT 2



# 1000 TRUMBULL AV

**Location** 1000 TRUMBULL AV

**Mblu** 82/ 2778/ 61/B /

**Acct#** RT-0049550

**Owner** GLOBAL TOWER ASSETS LLC

**Assessment** \$393,250

**Appraisal** \$561,770

**PID** 32253

**Building Count** 1

## Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2021	\$78,060	\$483,710	\$561,770

Assessment			
Valuation Year	Improvements	Land	Total
2021	\$54,650	\$338,600	\$393,250

## Owner of Record

**Owner** GLOBAL TOWER ASSETS LLC

**Sale Price** \$0

**Co-Owner**

**Certificate**

**Address** 10 PRESIDENTIAL WAY  
WOBURN, MA 01801

**Book & Page** 9695/0074

**Sale Date** 09/13/2017

**Instrument** 04

## Ownership History

Ownership History					
Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
GLOBAL TOWER ASSETS LLC	\$0		9695/0074	04	09/13/2017
GLOBAL TOWER ASSETS LLC	\$0		9500/0294	03	09/14/2016
CELL TOWER LEASE ACQUISITION LLC	\$0		7342/0302	03	01/23/2007
UNISON SITE MANAGEMENT LLC	\$1,925,000		7342/0299	03	01/23/2007
TARTAGLIA REMO	\$700,000		3018/0317		07/06/1992

## Building Information

**Building 1 : Section 1**

**Year Built:**

**Building Photo**

**Living Area:** 0  
**Replacement Cost:** \$0  
**Building Percent Good:**  
**Replacement Cost**  
**Less Depreciation:** \$0



(http://images.vgsi.com/photos2/BridgeportCTPhotos/\0125\IMG\_3283\_12

**Building Layout**

Building Layout (ParcelSketch.ashx?pid=32253&bid=32253)

Building Sub-Areas (sq ft)	<u>Legend</u>
No Data for Building Sub-Areas	

Building Attributes	
Field	Description
Style	Outbuildings
Model	
Grade:	
Stories:	
Occupancy:	
Exterior Wall 1:	
Exterior Wall 2:	
Roof Structure:	
Roof Cover:	
Interior Wall 1:	
Interior Wall 2:	
Interior Flr 1:	
Interior Flr 2:	
Heat Fuel:	
Heat Type:	
AC Type:	
Total Bedrooms	
Total Full Baths	
Total Half Baths	
Total Xtra Fixtrs:	
Total Rooms	
Bath Style:	
Kitchen Style:	
Num Kitchens	
Fireplaces	
Fin Bsmt Area	
Fin Bsmt Quality	
Num Park	
Bsmt Garages	
.	

**Extra Features**

Extra Features	<u>Legend</u>

No Data for Extra Features

## Land

### Land Use

**Use Code** 200V  
**Description** Commercial Lnd  
**Zone** RA  
**Neighborhood** 21  
**Alt Land Appr Category** No

### Land Line Valuation

**Size (Acres)** 3.05  
**Frontage** 0  
**Depth** 0  
**Assessed Value** \$338,600  
**Appraised Value** \$483,710

## Outbuildings

Outbuildings						Legend
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
FN5	Fence 10'			616.00 LF	\$6,470	1
PAV2	Paving Conc			40.00 SF	\$120	1
TWR	Tower			240.00 LF	\$49,920	1
SHD1	Shed	MS	Masonry	1200.00 SF	\$12,240	1
SHD1	Shed	MS	Masonry	432.00 SF	\$4,410	1
SHD1	Shed	MS	Masonry	240.00 SF	\$2,450	1
SHD1	Shed	MS	Masonry	240.00 SF	\$2,450	1

## Valuation History

Appraisal			
Valuation Year	Improvements	Land	Total
2021	\$78,060	\$483,710	\$561,770
2020	\$78,060	\$483,710	\$561,770
2019	\$75,820	\$367,620	\$443,440

Assessment			
Valuation Year	Improvements	Land	Total
2021	\$54,650	\$338,600	\$393,250
2020	\$54,650	\$338,600	\$393,250
2019	\$53,090	\$257,330	\$310,420



# EXHIBIT 3





**AMERICAN TOWER®**  
CORPORATION

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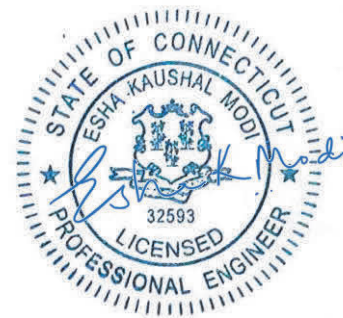
## Structural Analysis Report

**Structure** : 240 ft Self Support Tower  
**ATC Site Name** : Tartaglia,CT  
**ATC Site Number** : 383598  
**Engineering Number** : 13682699\_C3\_05  
**Proposed Carrier** : AT&T MOBILITY  
**Carrier Site Name** : MRCTB051560  
**Carrier Site Number** : N/A  
**Site Location** : 1000 Trumbull Avenue  
Bridgeport, CT 06606  
41.2196, -73.2013  
**County** : Fairfield  
**Date** : December 2, 2021  
**Max Usage** : 97%  
**Result** : Pass

Prepared By:

Tanner Putman  
Structural Engineer

Reviewed By:



Authorized by "EOR"  
03 Dec 2021 09:08:22

**COA : PEC.0001553**



## Table of Contents

Introduction .....	3
Supporting Documents.....	3
Analysis.....	3
Conclusion .....	3
Existing and Reserved Equipment .....	4
Equipment to be Removed.....	5
Proposed Equipment.....	5
Structure Usages .....	6
Foundations.....	6
Deflection, Twist and Sway* .....	6
Standard Conditions.....	7
Calculations .....	Attached

## Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 240 ft Self Support tower to reflect the change in loading by AT&T MOBILITY.

## Supporting Documents

<b>Tower Drawings</b>	Rohn Drawing #C880400RI, dated March 3, 1988
<b>Foundation Drawing</b>	Mapping by FDH Project #10-12269E N1, dated January 17, 2011
<b>Geotechnical Report</b>	Soiltesting Job #G96-1987-87, dated January 6, 1988
<b>Modifications</b>	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.

<b>Basic Wind Speed:</b>	119 mph (3-second gust)
<b>Basic Wind Speed w/ Ice:</b>	50 mph (3-second gust) w/ 1.00" radial ice concurrent
<b>Code:</b>	ANSI/TIA-222-H / 2015 IBC / 2018 Connecticut State Building Code
<b>Exposure Category:</b>	C
<b>Risk Category:</b>	II
<b>Topographic Factor Procedure:</b>	Method 1
<b>Topographic Category:</b>	1
<b>Crest Height (H):</b>	0 ft
<b>Crest Length (L):</b>	0 ft
<b>Spectral Response:</b>	$S_s = 0.21, S_i = 0.05$
<b>Site Class:</b>	D - Stiff Soil - Default

\*\*Wind load and Ice thickness have been reduced by applicable existing structure load modification factors in accordance with TIA-222-H, Annex S.

## 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](mailto: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**

Elev. <sup>1</sup> (ft)	Qty	Equipment	Mount Type	Lines	Carrier
256.0	1	Generic 8' Yagi	Side Arm	-	OTHER
245.0	1	Generic 10' Omni	Side Arm	(1) 1 1/4" Coax	
240.0	1	Dielectric DCR-L1 w/ Radome	Leg	(1) 1 5/8" Coax	RED WOLF BROADCASTING
234.0	2	Generic 8' Omni	Side Arm	(2) 7/8" Coax	OTHER
229.0	1	Generic 12' Omni	Side Arm	(1) 1 1/4" Coax	
223.0	-	-	Empty Side Arm	-	
202.0	3	Ericsson AIR 32 B66AA B2P	Sector Frame	(2) 1 1/4" Hybriflex Cable (3) 1 5/8" Hybriflex	T-MOBILE
	3	Ericsson Air6449 B41			
	3	Ericsson RRUS 4415 B25			
	3	RFS APXVAARR24_43-U-NA20			
	3	Ericsson Radio 4449 B71 B85A			
181.0	3	Nokia 2.5G MAA - AAHC(64T64R)	Sector Frame	(1) 1.7" (43.2mm) Hybrid (3) 1 1/4" (1.25"-31.8mm) Fiber (1) 1 1/4" Hybriflex Cable (3) 1/2" Coax (2) 2" conduit (6) 5/16" (0.31"-7.9mm) Coax	SPRINT NEXTEL
180.0	3	Alcatel-Lucent 800 MHz RRH			
	6	Alcatel-Lucent 1900MHz RRH			
	3	Argus LLPX310R			
	1	Generic 24" x 24" Junction Box			
	3	Generic 2' Std. Dish			
	2	RFS APXVSP18-C-A20			
	1	RFS APXV9ERR18-C-A20			
3	Motorola DAP Vx				
165.0	3	Andrew SBNHH-1D65A	Sector Frame	(6) 1 5/8" Coax (1) 2" conduit	AT&T MOBILITY
	3	Powerwave Allgon 7770.00			
	3	Ericsson RRUS 4478 B14			
	2	Raycap DC6-48-60-18-8F (23.5" Height)			
155.0	3	Commscope CBC78T-DS-43-2X	Sector Frame with Reinforcement	(6) 1 5/8" Coax (3) 1 5/8" Hybriflex	VERIZON WIRELESS
	3	Samsung Outdoor CBRS 20W RRH –Clip-on Antenna			
	3	Samsung Outdoor CBRS 20W RRH			
	6	Commscope JAHH-65B-R3B			
	3	Samsung B5/B13 RRH-BR04C			
	3	Samsung MT6407-77A			
	2	Raycap RxxDC-3315-PF-48			
	3	Samsung B2/B66A RRH-BR049			
3	Amphenol Antel BXA-80063-6BF-EDIN-X				
145.0	1	Commscope RDIDC-9181-PF-48	Sector Frame	(1) 1.75" (44.5mm) Hybrid	DISH WIRELESS L.L.C.
	3	Fujitsu TA08025-B604			
	3	Fujitsu TA08025-B605			
	3	JMA Wireless MX08FRO665-21			
132.0	1	Generic 4' Yagi	Side Arm	(1) 1 1/4" Coax	OTHER
123.0	1	Generic 10' Omni	Side Arm	(1) 7/8" Coax	
98.0	1	Generic 4' Yagi	Side Arm	(1) 1 1/4" Coax	
80.0	-	-	Empty Side Arm	-	

**Equipment to be Removed**

Elev. <sup>1</sup> (ft)	Qty	Equipment	Mount Type	Lines	Carrier
165.0	3	Kathrein Scala 80010965	-	(2) 0.39" (10mm) Fiber Trunk (6) 0.78" (19.7mm) 8 AWG 6 (6) 1 5/8" Coax (1) 2" conduit	AT&T MOBILITY
	12	Powerwave Allgon LGP21901			
	1	Commscope WCS-IMFQ-AMT			
	6	Powerwave Allgon 7020.00 Dual Band RET			
	3	CCI DTMAP7819VG12A			
	3	Quintel QS66512-3 (112 lbs.)			
	1	Raycap DC6-48-60-18-8F (23.5" Height)			
	3	Ericsson RRUS 4426 B66			
	3	Ericsson RRUS 32 (50.8 lbs)			
	3	Ericsson RRUS 32 B2			
	3	Ericsson Radio 4449			
	9	Powerwave Allgon LGP21401			

**Proposed Equipment**

Elev. <sup>1</sup> (ft)	Qty	Equipment	Mount Type	Lines	Carrier
167.0	3	Ericsson AIR 6449 n77D	Sector Frame	(3) 0.40" (10.3mm) Fiber (4) 0.82" (20.8mm) 8 AWG 6 (3) 0.92" (23.4mm) Cable	AT&T MOBILITY
165.0	3	CCI DMP65R-BU6DA			
	3	Quintel QD6616-7			
	3	Ericsson RRUS 4415 B25			
	3	Ericsson RRUS 4449 B5, B12			
	3	Ericsson RRUS 32 B66A			
	3	Ericsson RRUS 32 B30			
	1	Raycap DC9-48-60-24-8C-EV			
163.0	3	Ericsson AIR 6419 N77G			

<sup>1</sup> Contracted elevations are shown for appurtenances within contracted installation tolerances. Appurtenances outside of contract limits are shown at installed elevations.

Install proposed lines alongside existing AT&T MOBILITY lines.

## Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Legs	43%	Pass
Diagonals	97%	Pass
Horizontals	87%	Pass
Anchor Bolts	49%	Pass
Leg Bolts	36%	Pass

## Foundations

Reaction Component	Analysis Reactions	% of Usage
Uplift (Kips)	274.0	89%
Axial (Kips)	340.6	1%

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) (°)
180.0	Generic 2' Std. Dish	SPRINT NEXTEL	0.124	0.004	0.052
167.0	Ericsson AIR 6449 n77D	AT&T MOBILITY	0.115	0.004	0.052
165.0	CCI DMP65R-BU6DA		0.106	0.004	0.053
	Ericsson RRUS 32 B30				
	Ericsson RRUS 32 B66A				
	Ericsson RRUS 4415 B25				
	Ericsson RRUS 4449 B5, B12				
	Quintel QD6616-7				
	Raycap DC9-48-60-24-8C-EV				
	CCI DMP65R-BU6DA				
	Ericsson RRUS 32 B30				
	Ericsson RRUS 32 B66A				
Ericsson RRUS 4415 B25					
Ericsson RRUS 4449 B5, B12					
Quintel QD6616-7					
Raycap DC9-48-60-24-8C-EV					
163.0	Ericsson AIR 6419 N77G	0.106	0.004	0.053	
145.0	Commscope RDIDC-9181-PF-48	DISH WIRELESS L.L.C.	0.087	0.004	0.052
	Fujitsu TA08025-B604				
	Fujitsu TA08025-B605				
	JMA Wireless MX08FRO665-21				

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

## **Standard Conditions**

All engineering services performed by A.T. Engineering Service, PLLC are prepared on the basis that the information used is current and correct. This information may consist of, but is not limited to the following:

- Information supplied by the client regarding antenna, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Service, PLLC

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.

All assets of American Tower Corporation, its affiliates, and subsidiaries (collectively “American Tower”) are inspected at regular intervals. Based upon these inspections and in the absence of information to the contrary, American Tower assumes that all structures were constructed in accordance with the drawings and specifications.

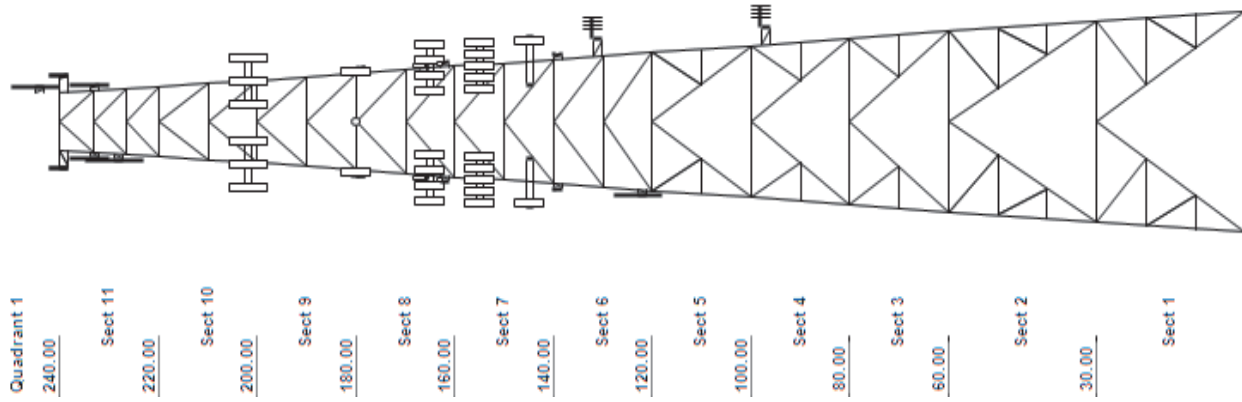
Unless explicitly agreed by both the client and A.T. Engineering Service, PLLC, all services will be performed in accordance with the current revision of ANSI/TIA-222.

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 supplied herein.



Asset: 383598, Tartaglia  
 Client: AT&T MOBILITY  
 Code: ANS/TIA-222-H

Height : 240 ft  
 Base Width : 40.33 ft  
 Shape : Triangle



**SITE PARAMETERS**  
 Nominal Wind : 115.99 mph wind with no ic Exposure : C Site Class : D  
 Ice Wind: 48.73 mph wind with 0.850" Topo Method: Method 1 Risk Cat : II  
 Service Wind : 60 mph Serviceability Topo Feature : S<sub>s</sub> : 0.211 S<sub>i</sub> : 0.054

SECTION PROPERTIES		
Section	Leg Members	Horizontal Members
1	PX 50 ksi 10" DIA PIP	PST 50 ksi 3" DIA PIPE
2 - 3	PX 50 ksi 10" DIA PIP	PST 50 ksi 3" DIA PIPE
4	PX 50 ksi 8" DIA PIPE	PST 50 ksi 3" DIA PIPE
5	PX 50 ksi 8" DIA PIPE	PST 50 ksi 2-1/2" DIA PIPE
6	PX 50 ksi 8" 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
9 - 10	PX 50 ksi 8" DIA PIPE	PST 50 ksi 2" DIA PIPE
11	PX 50 ksi 8" DIA PIPE	PST 50 ksi 2" DIA PIPE

**REDUNDANT SECONDARY BRACING**

Section	Sub Diag 1	Sub Horiz 1	Sub Diag 2	Sub Horiz 2	Sub Diag 3	Sub Horiz 3
1	P1-1/2" DIA PIPE	P1-1/2" DIA PI	P2-1/2" DIA PIPE	P2" DIA PIPE	-	-
2	P1-1/2" DIA PIPE	P1-1/2" DIA PI	P2" DIA PIPE	P2" DIA PIPE	-	-
3-4	P2" DIA PIPE	P1-1/2" DIA PI	-	-	-	-
5	P1-1/2" DIA PIPE	P1-1/2" DIA PI	-	-	-	-
6-11	-	-	-	-	-	-

**DISCRETE APPURTENANCE**

Elev (ft)	Type	Qty	Description
256.00	YAGI	1	Generic 8' Yagi
245.00	OMNI	1	Generic 10' Omni
240.00	OMNI	1	Lightning Rod
240.00	OMNI	1	Beacon
240.00	Other	1	Dielectric DCR-L1 w/ Radome
240.00	Side Arm	2	Generic Round Side Arm
234.00	OMNI	2	Generic 8' Omni
230.00	T-Arm	1	Round Side Arm
229.00	OMNI	1	Generic 12' Omni
223.00	T-Arm	1	Round Side Arm
223.00	T-Arm	1	Empty Flat Side Arm
202.00	PANEL	3	Ericsson Air6449 B41
202.00	PANEL	3	RFS APXVAARR24_43-U-NA20
202.00	PANEL	3	Ericsson AIR 32 B66AA B2P
202.00	RRU/RRH	3	Ericsson Radio 4449 B71 B85A
202.00	RRU/RRH	3	Ericsson RRU 4415 B25
202.00	Sector Frame	3	Generic Round Sector Frame
183.00	Sector Frame	3	Flat Light Sector Frame
183.00	T-Arm	3	Side Arms
181.00	PANEL	3	Nokia 2.5G MAA - AAHC(64T64R)
180.00	BOB/SSB	1	Generic 24" x 24" Junction Box
180.00	DISH-STANDARD	3	Generic 2' Std. Dish
180.00	PANEL	1	RFS APXV9ERR18-C-A20
180.00	PANEL	2	RFS APXVSP18-C-A20
180.00	PANEL	3	Argus LLPX310R
180.00	RRU/RRH	3	Alcatel-Lucent 800 MHz RRH
180.00	RRU/RRH	3	Motorola DAP Vx

Asset: 383598, Tartaglia  
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 Code: ANS/TIA-222-H

Height : 240 ft  
 Base Width : 40.33 ft  
 Shape : Triangle

DISCRETE APPURTENANCE

Elev (ft)	Type	Qty	Description
180.00	RRU/RRH	6	Alcatel-Lucent 1900MHz RRH
167.00	PANEL	3	Ericsson AIR 6449 n77D
165.00	BOB/SSB	1	Raycap DC9-48-60-24-8C-EV
165.00	BOB/SSB	2	Raycap DC6-48-60-18-8F (23.5"
165.00	PANEL	3	CCI DMP65R-BU6DA
165.00	PANEL	3	Quintel QD6616-7
165.00	PANEL	3	Powerwave Allgon 7770.00
165.00	PANEL	3	Andrew SBNHH-1D65A
165.00	RRU/RRH	3	Ericsson RRUS 32 B66A
165.00	RRU/RRH	3	Ericsson RRUS 32 B30
165.00	RRU/RRH	3	Ericsson RRUS 4449 B5, B12
165.00	RRU/RRH	3	Ericsson RRUS 4478 B14
165.00	RRU/RRH	3	Ericsson RRUS 4415 B25
165.00	Sector Frame	3	Generic Round Sector Frame
163.00	PANEL	3	Ericsson AIR 6419 N77G
155.00	BOB/SSB	2	Raycap RxxDC-3315-PF-48
155.00	DIPLEXER/DUAL COUPLER	3	Commscope CBC78T-DS-43-2X
155.00	Mount Reinforcement	1	Generic Mount Reinforcement
155.00	PANEL	3	Samsung MT6407-77A
155.00	PANEL	3	Amphenol Antel BXA-80063-6BF-E
155.00	PANEL	3	Samsung Outdoor CBRS 20W RRH --
155.00	PANEL	6	Commscope JAHH-65B-R3B
155.00	RRU/RRH	3	Samsung Outdoor CBRS 20W RRH
155.00	RRU/RRH	3	Samsung B5/B13 RRH-BR04C
155.00	RRU/RRH	3	Samsung B2/B66A RRH-BR049
155.00	Sector Frame	3	Flat Light Sector Frame
145.00	BOB/SSB	1	Commscope RDIDC-9181-PF-48
145.00	PANEL	3	JMA Wireless MX08FRO665-21
145.00	RRU/RRH	3	Fujitsu TA08025-B605
145.00	RRU/RRH	3	Fujitsu TA08025-B604
145.00	Sector Frame	3	Generic Flat Light Sector Fram
140.00	OMNI	3	Small Side Lights
132.00	T-Arm	1	Flat Side Arm
132.00	YAGI	1	Generic 4' Yagi
123.00	OMNI	1	Generic 10' Omni
118.00	T-Arm	1	Round Side Arm
108.00	T-Arm	1	Round Side Arm
98.00	T-Arm	1	Flat Side Arm
98.00	YAGI	1	Generic 4' Yagi
80.00	T-Arm	1	Empty Round Side Arm
8.00	T-Arm	1	Round Side Arm

LINEAR APPURTENANCE

Elev (ft)	From	To	Qty	Description
0.00	245.00	1	1	1 1/4" Coax
0.00	243.00	1	1	1 5/8" Coax
0.00	240.00	1	1	Waveguide
0.00	234.00	2	2	7/8" Coax
0.00	229.00	1	1	1 1/4" Coax
0.00	202.00	1	1	Waveguide
0.00	202.00	3	3	1 5/8" Hybriflex
0.00	202.00	2	2	1 1/4" Hybriflex Cable

Asset: 383598, Tartaglia  
 Client: AT&T MOBILITY  
 Code: ANS/TIA-222-H

Height : 240 ft  
 Base Width : 40.33 ft  
 Shape : Triangle

**LINEAR APPURTENANCE**

Elev (ft)		Qty	Description
From	To		
0.00	183.00	1	Waveguide
0.00	181.00	1	1.7" (43.2mm) Hybrid
0.00	180.00	6	5/16" (0.31"-7.9mm) Coax
0.00	180.00	2	2" conduit
0.00	180.00	3	1/2" Coax
0.00	180.00	1	1 1/4" Hybriflex Cable
0.00	180.00	3	1 1/4" (1.25"-31.8mm) Fiber
0.00	174.00	1	Waveguide
0.00	165.00	1	Waveguide
0.00	165.00	1	2" conduit
0.00	165.00	6	1 5/8" Coax
0.00	165.00	3	0.92" (23.4mm) Cable
0.00	165.00	4	0.82" (20.8mm) 8 AWG 6
0.00	165.00	3	0.40" (10.3mm) Fiber
0.00	155.00	1	Waveguide
0.00	155.00	3	1 5/8" Hybriflex
0.00	155.00	6	1 5/8" Coax
0.00	145.00	1	Waveguide
0.00	145.00	1	1.75" (44.5mm) Hybrid
0.00	132.00	1	1 1/4" Coax
0.00	123.00	1	7/8" Coax
0.00	98.00	1	1 1/4" Coax

**GLOBAL BASE FOUNDATION DESIGN LOADS**

Load Case	Moment (k-ft)	Vertical (kip)	Horizontal (kip)
DL+WL	10570.86	113.88	81.3
DL+WL+IL	3540.49	185.41	28.39

**INDIVIDUAL BASE FOUNDATION DESIGN LOADS**

Vertical (kip)	Uplift (kip)	Horizontal (kip)
340.58	273.95	48.83

Asset: 383598, Tartaglia  
Client: AT&T MOBILITY  
Code: ANS/TIA-222-H

Height: 240 ft  
Base Width: 40.33 ft  
Shape: Triangle

## ANALYSIS PARAMETERS

<b>Location:</b>	Fairfield County, CT	<b>Height:</b>	240 ft
<b>Type and Shape:</b>	Self Support, Triangle	<b>Base Elevation:</b>	0.00 ft
<b>Manufacturer:</b>	Rohn	<b>Bottom Face Width:</b>	40.33 ft
<b>Kd</b>	0.85	<b>Top Face Width:</b>	10.93 ft
<b>Ke:</b>	0.99	<b>Anchor Bolt Detail Type:</b>	c

## ICE &amp; WIND PARAMETERS

<b>Exposure Category:</b>	C	<b>Design Wind Speed Without Ice:</b>	116 mph
<b>Risk Category:</b>	II	<b>Design Wind Speed with Ice:</b>	49 mph
<b>Topographic Factor Procedure:</b>	Method 1	<b>Operational Windspeed:</b>	60 mph
<b>Topographic Category:</b>	Flat	<b>Design Ice Thickness:</b>	0.85 in
<b>Crest Height:</b>	0 ft	<b>HMSL:</b>	212 ft

## SEISMIC PARAMETERS

<b>Analysis Method:</b>	Equivalent Lateral Force Method		
<b>Site Class:</b>	D - Stiff Soil	<b>Period Based on Rayleigh Method (sec):</b>	0.72
<b>T<sub>L</sub> (sec):</b>	6	<b>P:</b>	1.3
<b>S<sub>s</sub>:</b>	0.211	<b>S<sub>1</sub>:</b>	0.054
<b>F<sub>a</sub>:</b>	1.600	<b>F<sub>v</sub>:</b>	2.400
<b>S<sub>ds</sub>:</b>	0.225	<b>S<sub>d1</sub>:</b>	0.086
		<b>C<sub>s</sub>:</b>	0.040
		<b>C<sub>s, Max</sub>:</b>	0.040
		<b>C<sub>s, Min</sub>:</b>	0.030

## LOAD CASES

1.2D + 1.0W Normal	115.99 mph wind with no ice
1.2D + 1.0W 60°	115.99 mph wind with no ice
1.2D + 1.0W 90°	115.99 mph wind with no ice
0.9D + 1.0W Normal	115.99 mph wind with no ice
0.9D + 1.0W 60°	115.99 mph wind with no ice
0.9D + 1.0W 90°	115.99 mph wind with no ice
1.2D + 1.0Di + 1.0Wi Normal	48.73 mph wind with 0.850" radial ice
1.2D + 1.0Di + 1.0Wi 60°	48.73 mph wind with 0.850" radial ice
1.2D + 1.0Di + 1.0Wi 90°	48.73 mph wind with 0.850" radial ice
1.2D + 1.0Ev + 1.0Eh Normal	Seismic
1.2D + 1.0Ev + 1.0Eh 60°	Seismic
1.2D + 1.0Ev + 1.0Eh 90°	Seismic
0.9D - 1.0Ev + 1.0Eh Normal	Seismic (Reduced DL)
0.9D - 1.0Ev + 1.0Eh 60°	Seismic (Reduced DL)
0.9D - 1.0Ev + 1.0Eh 90°	Seismic (Reduced DL)
1.0D + 1.0W Service Normal	60 mph Wind with No Ice
1.0D + 1.0W Service 60°	60 mph Wind with No Ice
1.0D + 1.0W Service 90°	60 mph Wind with No Ice

## TOWER LOADING

Discrete Appurtenance Properties 1.2D + 1.0W

Elev (ft)	Description	Qty	Wt. (lb)	EPA Length (sf)	Length (ft)	Width (in)	Depth (in)	K <sub>a</sub>	Orient Factor	Vert Ecc (ft)	M <sub>u</sub> (lb-ft)	Q <sub>z</sub> (psf)	F <sub>a</sub> (WL) (lb)	P <sub>a</sub> (DL) (lb)
256.0	Generic 8' Yagi	1	30	12.0	8.0	60.0	3.0	1.00	1.00	0.0	0.00	44.81	457	36
245.0	Generic 10' Omni	1	25	3.0	10.0	3.0	3.0	1.00	1.00	0.0	0.00	44.40	113	30
240.0	Lightning Rod	1	10	1.0	4.0	3.0	3.0	1.00	1.00	0.0	0.00	44.21	38	12
240.0	Dielectric DCR-L1 w/ Radome	1	18	1.8	0.0	0.0	0.0	1.00	1.00	3.0	203.45	44.33	68	22
240.0	Beacon	1	70	4.5	3.0	18.0	18.0	1.00	1.00	0.0	0.00	44.21	169	84
240.0	Generic Round Side Arm	2	188	5.2	0.0	0.0	0.0	0.90	0.90	0.0	0.00	44.21	317	450
234.0	Generic 8' Omni	2	25	2.4	8.0	3.0	3.0	1.00	1.00	0.0	0.00	43.97	179	60
230.0	Round Side Arm	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.00	43.82	194	180
229.0	Generic 12' Omni	1	40	3.6	12.0	3.0	3.0	1.00	1.00	0.0	0.00	43.77	134	48
223.0	Round Side Arm	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.00	43.53	192	180
223.0	Empty Flat Side Arm	1	150	6.3	0.0	0.0	0.0	1.00	1.00	0.0	0.00	43.53	233	180
202.0	Ericsson Radio 4449 B71 B85A	3	75	1.6	1.3	13.2	10.5	0.80	0.50	0.0	0.00	42.63	72	270
202.0	Ericsson RRUS 4415 B25	3	46	1.8	1.4	13.4	5.9	0.80	0.50	0.0	0.00	42.63	80	166
202.0	Ericsson Air6449 B41	3	104	5.7	2.8	20.6	8.6	0.80	0.63	0.0	0.00	42.63	311	374
202.0	Ericsson AIR 32 B66AA B2P	3	109	6.9	4.9	12.9	8.7	0.80	0.71	0.0	0.00	42.63	424	392
202.0	Generic Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.75	0.0	0.00	42.63	881	1080
202.0	RFS APXVAARR24_43-U-NA20	3	128	20.2	8.0	24.0	8.7	0.80	0.63	0.0	0.00	42.63	1109	460
183.0	Side Arms	3	560	8.5	0.0	0.0	0.0	1.00	0.67	0.0	0.00	41.76	606	2016
183.0	Flat Light Sector Frame	3	400	17.9	0.0	0.0	0.0	0.75	0.67	0.0	0.00	41.76	958	1440
181.0	Nokia 2.5G MAA - AAHC(64T64R)	3	104	4.2	2.1	19.7	9.6	0.80	0.64	0.0	0.00	41.66	229	373
180.0	Motorola DAP Vx	3	27	1.6	2.1	7.6	5.5	0.80	0.50	0.0	0.00	41.61	70	95
180.0	Alcatel-Lucent 800 MHz RRH	3	53	2.1	1.6	13.0	10.8	0.80	0.50	0.0	0.00	41.61	91	191
180.0	Alcatel-Lucent 1900MHz RRH	6	44	3.3	1.9	13.0	17.0	0.80	0.50	0.0	0.00	41.61	277	317
180.0	Argus LLPX310R	3	29	4.3	3.5	11.8	4.5	0.80	0.63	0.0	0.00	41.61	230	103
180.0	Generic 24" x 24" Junction Box	1	20	4.8	2.0	24.0	8.0	0.80	1.00	0.0	0.00	41.61	136	24
180.0	Generic 2' Std. Dish	3	14	5.2	2.0	24.0	0.0	1.00	1.00	0.0	0.00	41.61	555	50
180.0	RFS APXVSP18-C-A20	2	57	8.0	6.0	11.8	7.0	0.80	0.77	0.0	0.00	41.61	350	137
180.0	RFS APXV9ERR18-C-A20	1	62	8.0	6.0	11.8	7.9	0.80	1.00	0.0	0.00	41.61	227	74
167.0	Ericsson AIR 6449 n77D	3	82	4.0	2.5	15.9	8.1	0.80	0.65	0.0	0.00	40.96	219	294
165.0	Raycap DC6-48-60-18-8F (23.5"	2	20	1.3	2.0	9.7	9.7	0.80	0.50	0.0	0.00	40.86	35	48
165.0	Ericsson RRUS 4415 B25	3	46	1.8	1.4	13.4	5.9	0.80	0.50	0.0	0.00	40.86	77	166
165.0	Ericsson RRUS 4478 B14	3	60	1.8	1.4	13.4	7.7	0.80	0.50	0.0	0.00	40.86	77	216
165.0	Ericsson RRUS 4449 B5, B12	3	71	2.0	1.5	13.2	9.4	0.80	0.50	0.0	0.00	40.86	82	256
165.0	Ericsson RRUS 32 B66A	3	51	2.7	2.3	12.0	7.0	0.80	0.67	0.0	0.00	40.86	152	183
165.0	Ericsson RRUS 32 B30	3	60	2.7	2.3	12.1	7.0	0.80	0.67	0.0	0.00	40.86	153	216
165.0	Raycap DC9-48-60-24-8C-EV	1	16	4.8	2.6	18.3	10.2	0.80	1.00	0.0	0.00	40.86	133	19
165.0	Powerwave Allgon 7770.00	3	35	5.5	4.6	11.0	5.0	0.80	0.65	0.0	0.00	40.86	298	126
165.0	Andrew SBNHH-1D65A	3	41	5.9	4.6	11.9	7.1	0.80	0.69	0.0	0.00	40.86	338	147
165.0	CCI DMP65R-BU6DA	3	79	12.7	5.9	20.7	7.7	0.80	0.63	0.0	0.00	40.86	667	286
165.0	Generic Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.75	0.0	0.00	40.86	844	1080
165.0	Quintel QD6616-7	3	130	51.4	6.0	22.0	9.6	0.80	0.64	0.0	0.00	40.86	2742	468
163.0	Ericsson AIR 6419 N77G	3	70	3.9	1.3	30.0	6.7	0.80	0.57	0.0	0.00	40.75	186	252
155.0	Commscope CBC78T-DS-43-2X	3	21	0.6	0.8	6.9	6.4	0.80	0.50	0.0	0.00	40.32	23	75
155.0	Samsung Outdoor CBRS 20W RRH	3	19	0.9	1.0	8.5	4.1	0.80	0.50	0.0	0.00	40.32	35	67
155.0	Samsung Outdoor CBRS 20W RRH -	3	4	0.9	1.0	8.7	1.4	0.80	0.50	0.0	0.00	40.32	37	16
155.0	Samsung B5/B13 RRH-BR04C	3	70	1.9	1.3	15.0	8.1	0.80	0.50	0.0	0.00	40.32	77	253
155.0	Samsung B2/B66A RRH-BR049	3	84	1.9	1.3	15.0	10.0	0.80	0.50	0.0	0.00	40.32	77	304
155.0	Raycap RxxDC-3315-PF-48	2	21	2.5	1.6	15.7	10.3	0.80	0.67	0.0	0.00	40.32	92	51
155.0	Samsung MT6407-77A	3	82	4.7	2.9	16.1	5.5	0.80	0.61	0.0	0.00	40.32	236	294
155.0	Amphenol Antel BXA-80063-6BF-E	3	19	7.3	5.7	11.2	5.3	0.80	0.66	0.0	0.00	40.32	394	69
155.0	Generic Mount Reinforcement	1	200	7.5	0.0	0.0	0.0	1.00	1.00	0.0	0.00	40.32	257	240
155.0	Commscope JAHH-65B-R3B	6	61	9.1	6.0	13.8	8.2	0.80	0.69	0.0	0.00	40.32	1034	436
155.0	Flat Light Sector Frame	3	400	17.9	0.0	0.0	0.0	0.75	0.67	0.0	0.00	40.32	925	1440
145.0	Commscope RDIDC-9181-PF-48	1	22	1.9	1.3	14.0	8.0	0.80	1.00	0.0	0.00	39.76	50	26
145.0	Fujitsu TA08025-B605	3	75	2.0	1.3	15.0	9.1	0.80	0.50	0.0	0.00	39.76	80	270
145.0	Fujitsu TA08025-B604	3	64	2.0	1.3	15.0	7.9	0.80	0.50	0.0	0.00	39.76	80	230
145.0	JMA Wireless MX08FRO665-21	3	65	12.5	6.0	20.0	8.0	0.80	0.64	0.0	0.00	39.76	648	232
145.0	Generic Flat Light Sector Fram	3	400	17.9	0.0	0.0	0.0	0.75	0.75	0.0	0.00	39.76	1021	1440
140.0	Small Side Lights	3	45	2.0	1.0	8.0	8.0	1.00	1.00	0.0	0.00	39.47	201	162
132.0	Generic 4' Yagi	1	15	4.9	4.0	48.0	3.0	1.00	1.00	0.0	0.00	38.98	162	18
132.0	Flat Side Arm	1	150	6.3	0.0	0.0	0.0	1.00	1.00	0.0	0.00	38.98	209	180
123.0	Generic 10' Omni	1	25	3.0	10.0	3.0	3.0	1.00	1.00	0.0	0.00	38.41	98	30
118.0	Round Side Arm	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.00	38.07	168	180
108.0	Round Side Arm	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.00	37.37	165	180
98.0	Generic 4' Yagi	1	15	4.9	4.0	48.0	3.0	1.00	1.00	0.0	0.00	36.61	152	18
98.0	Flat Side Arm	1	150	6.3	0.0	0.0	0.0	1.00	1.00	0.0	0.00	36.61	196	180

Elev (ft)	Description	Qty	Wt. (lb)	EPA Length (sf)	Length (ft)	Width (in)	Depth (in)	K <sub>a</sub>	Orient Factor	Vert Ecc (ft)	M <sub>u</sub> (lb-ft)	Q <sub>z</sub> (psf)	F <sub>a</sub> (WL) (lb)	P <sub>a</sub> (DL) (lb)
80.0	Empty Round Side Arm	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.00	35.08	155	180
8.0	Round Side Arm	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.00	24.69	109	180
Totals		159	16,126	1056.2									21,384	19,352

TOWER LOADING

Discrete Appurtenance Properties 0.9D + 1.0W

Elev (ft)	Description	Qty	Wt. (lb)	EPA Length (sf)	Length (ft)	Width (in)	Depth (in)	K <sub>a</sub>	Orient Factor	Vert Ecc (ft)	M <sub>u</sub> (lb-ft)	Q <sub>z</sub> (psf)	F <sub>a</sub> (WL) (lb)	P <sub>a</sub> (DL) (lb)
256.0	Generic 8' Yagi	1	30	12.0	8.0	60.0	3.0	1.00	1.00	0.0	0.00	44.81	457	27
245.0	Generic 10' Omni	1	25	3.0	10.0	3.0	3.0	1.00	1.00	0.0	0.00	44.40	113	22
240.0	Lightning Rod	1	10	1.0	4.0	3.0	3.0	1.00	1.00	0.0	0.00	44.21	38	9
240.0	Dielectric DCR-L1 w/ Radome	1	18	1.8	0.0	0.0	0.0	1.00	1.00	3.0	203.45	44.33	68	16
240.0	Beacon	1	70	4.5	3.0	18.0	18.0	1.00	1.00	0.0	0.00	44.21	169	63
240.0	Generic Round Side Arm	2	188	5.2	0.0	0.0	0.0	0.90	0.90	0.0	0.00	44.21	317	338
234.0	Generic 8' Omni	2	25	2.4	8.0	3.0	3.0	1.00	1.00	0.0	0.00	43.97	179	45
230.0	Round Side Arm	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.00	43.82	194	135
229.0	Generic 12' Omni	1	40	3.6	12.0	3.0	3.0	1.00	1.00	0.0	0.00	43.77	134	36
223.0	Round Side Arm	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.00	43.53	192	135
223.0	Empty Flat Side Arm	1	150	6.3	0.0	0.0	0.0	1.00	1.00	0.0	0.00	43.53	233	135
202.0	Ericsson Radio 4449 B71 B85A	3	75	1.6	1.3	13.2	10.5	0.80	0.50	0.0	0.00	42.63	72	202
202.0	Ericsson RRUS 4415 B25	3	46	1.8	1.4	13.4	5.9	0.80	0.50	0.0	0.00	42.63	80	124
202.0	Ericsson Air6449 B41	3	104	5.7	2.8	20.6	8.6	0.80	0.63	0.0	0.00	42.63	311	281
202.0	Ericsson AIR 32 B66AA B2P	3	109	6.9	4.9	12.9	8.7	0.80	0.71	0.0	0.00	42.63	424	294
202.0	Generic Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.75	0.0	0.00	42.63	881	810
202.0	RFS APXVAARR24_43-U-NA20	3	128	20.2	8.0	24.0	8.7	0.80	0.63	0.0	0.00	42.63	1109	345
183.0	Side Arms	3	560	8.5	0.0	0.0	0.0	1.00	0.67	0.0	0.00	41.76	606	1512
183.0	Flat Light Sector Frame	3	400	17.9	0.0	0.0	0.0	0.75	0.67	0.0	0.00	41.76	958	1080
181.0	Nokia 2.5G MAA - AAHC(64T64R)	3	104	4.2	2.1	19.7	9.6	0.80	0.64	0.0	0.00	41.66	229	280
180.0	Motorola DAP Vx	3	27	1.6	2.1	7.6	5.5	0.80	0.50	0.0	0.00	41.61	70	72
180.0	Alcatel-Lucent 800 MHz RRH	3	53	2.1	1.6	13.0	10.8	0.80	0.50	0.0	0.00	41.61	91	143
180.0	Alcatel-Lucent 1900MHz RRH	6	44	3.3	1.9	13.0	17.0	0.80	0.50	0.0	0.00	41.61	277	238
180.0	Argus LLPX310R	3	29	4.3	3.5	11.8	4.5	0.80	0.63	0.0	0.00	41.61	230	77
180.0	Generic 24" x 24" Junction Box	1	20	4.8	2.0	24.0	8.0	0.80	1.00	0.0	0.00	41.61	136	18
180.0	Generic 2' Std. Dish	3	14	5.2	2.0	24.0	0.0	1.00	1.00	0.0	0.00	41.61	555	38
180.0	RFS APXVSP18-C-A20	2	57	8.0	6.0	11.8	7.0	0.80	0.77	0.0	0.00	41.61	350	103
180.0	RFS APXV9ERR18-C-A20	1	62	8.0	6.0	11.8	7.9	0.80	1.00	0.0	0.00	41.61	227	56
167.0	Ericsson AIR 6449 n77D	3	82	4.0	2.5	15.9	8.1	0.80	0.65	0.0	0.00	40.96	219	220
165.0	Raycap DC6-48-60-18-8F (23.5"	2	20	1.3	2.0	9.7	9.7	0.80	0.50	0.0	0.00	40.86	35	36
165.0	Ericsson RRUS 4415 B25	3	46	1.8	1.4	13.4	5.9	0.80	0.50	0.0	0.00	40.86	77	124
165.0	Ericsson RRUS 4478 B14	3	60	1.8	1.4	13.4	7.7	0.80	0.50	0.0	0.00	40.86	77	162
165.0	Ericsson RRUS 4449 B5, B12	3	71	2.0	1.5	13.2	9.4	0.80	0.50	0.0	0.00	40.86	82	192
165.0	Ericsson RRUS 32 B66A	3	51	2.7	2.3	12.0	7.0	0.80	0.67	0.0	0.00	40.86	152	137
165.0	Ericsson RRUS 32 B30	3	60	2.7	2.3	12.1	7.0	0.80	0.67	0.0	0.00	40.86	153	162
165.0	Raycap DC9-48-60-24-8C-EV	1	16	4.8	2.6	18.3	10.2	0.80	1.00	0.0	0.00	40.86	133	14
165.0	Powerwave Allgon 7770.00	3	35	5.5	4.6	11.0	5.0	0.80	0.65	0.0	0.00	40.86	298	94
165.0	Andrew SBNHH-1D65A	3	41	5.9	4.6	11.9	7.1	0.80	0.69	0.0	0.00	40.86	338	110
165.0	CCI DMP65R-BU6DA	3	79	12.7	5.9	20.7	7.7	0.80	0.63	0.0	0.00	40.86	667	214
165.0	Generic Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.75	0.0	0.00	40.86	844	810
165.0	Quintel QD6616-7	3	130	51.4	6.0	22.0	9.6	0.80	0.64	0.0	0.00	40.86	2742	351
163.0	Ericsson AIR 6419 N77G	3	70	3.9	1.3	30.0	6.7	0.80	0.57	0.0	0.00	40.75	186	189
155.0	Commscope CBC78T-DS-43-2X	3	21	0.6	0.8	6.9	6.4	0.80	0.50	0.0	0.00	40.32	23	56
155.0	Samsung Outdoor CBRS 20W RRH	3	19	0.9	1.0	8.5	4.1	0.80	0.50	0.0	0.00	40.32	35	50
155.0	Samsung Outdoor CBRS 20W RRH -	3	4	0.9	1.0	8.7	1.4	0.80	0.50	0.0	0.00	40.32	37	12
155.0	Samsung B5/B13 RRH-BR04C	3	70	1.9	1.3	15.0	8.1	0.80	0.50	0.0	0.00	40.32	77	190
155.0	Samsung B2/B66A RRH-BR049	3	84	1.9	1.3	15.0	10.0	0.80	0.50	0.0	0.00	40.32	77	228
155.0	Raycap RxxDC-3315-PF-48	2	21	2.5	1.6	15.7	10.3	0.80	0.67	0.0	0.00	40.32	92	39
155.0	Samsung MT6407-77A	3	82	4.7	2.9	16.1	5.5	0.80	0.61	0.0	0.00	40.32	236	220
155.0	Amphenol Antel BXA-80063-6BF-E	3	19	7.3	5.7	11.2	5.3	0.80	0.66	0.0	0.00	40.32	394	52
155.0	Generic Mount Reinforcement	1	200	7.5	0.0	0.0	0.0	1.00	1.00	0.0	0.00	40.32	257	180
155.0	Commscope JAHH-65B-R3B	6	61	9.1	6.0	13.8	8.2	0.80	0.69	0.0	0.00	40.32	1034	327
155.0	Flat Light Sector Frame	3	400	17.9	0.0	0.0	0.0	0.75	0.67	0.0	0.00	40.32	925	1080
145.0	Commscope RDIDC-9181-PF-48	1	22	1.9	1.3	14.0	8.0	0.80	1.00	0.0	0.00	39.76	50	20
145.0	Fujitsu TA08025-B605	3	75	2.0	1.3	15.0	9.1	0.80	0.50	0.0	0.00	39.76	80	202
145.0	Fujitsu TA08025-B604	3	64	2.0	1.3	15.0	7.9	0.80	0.50	0.0	0.00	39.76	80	173
145.0	JMA Wireless MX08FRO665-21	3	65	12.5	6.0	20.0	8.0	0.80	0.64	0.0	0.00	39.76	648	174
145.0	Generic Flat Light Sector Fram	3	400	17.9	0.0	0.0	0.0	0.75	0.75	0.0	0.00	39.76	1021	1080
140.0	Small Side Lights	3	45	2.0	1.0	8.0	8.0	1.00	1.00	0.0	0.00	39.47	201	122

Elev (ft)	Description	Qty	Wt. (lb)	EPA (sf)	Length (ft)	Width (in)	Depth (in)	K <sub>a</sub>	Orient Factor	Vert Ecc (ft)	M <sub>u</sub> (lb-ft)	Q <sub>z</sub> (psf)	F <sub>a</sub> (WL) (lb)	P <sub>a</sub> (DL) (lb)
132.0	Generic 4' Yagi	1	15	4.9	4.0	48.0	3.0	1.00	1.00	0.0	0.00	38.98	162	14
132.0	Flat Side Arm	1	150	6.3	0.0	0.0	0.0	1.00	1.00	0.0	0.00	38.98	209	135
123.0	Generic 10' Omni	1	25	3.0	10.0	3.0	3.0	1.00	1.00	0.0	0.00	38.41	98	22
118.0	Round Side Arm	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.00	38.07	168	135
108.0	Round Side Arm	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.00	37.37	165	135
98.0	Generic 4' Yagi	1	15	4.9	4.0	48.0	3.0	1.00	1.00	0.0	0.00	36.61	152	14
98.0	Flat Side Arm	1	150	6.3	0.0	0.0	0.0	1.00	1.00	0.0	0.00	36.61	196	135
80.0	Empty Round Side Arm	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.00	35.08	155	135
8.0	Round Side Arm	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.00	24.69	109	135
Totals		159	16,126	1056.2									21,384	14,514

TOWER LOADING

Discrete Appurtenance Properties 1.2D + 1.0Di + 1.0Wi

Elev (ft)	Description	Qty	Ice Wt (lb)	Ice EPA (sf)	Length (ft)	Width (in)	Depth (in)	K <sub>a</sub>	Orient Factor	Vert Ecc (ft)	M <sub>u</sub> (lb-ft)	Q <sub>z</sub> (psf)	F <sub>a</sub> (WL) (lb)	P <sub>a</sub> (DL) (lb)
256.0	Generic 8' Yagi	1	231	31.8	8.0	60.0	3.0	1.00	1.00	0.0	0.00	7.91	214	237
245.0	Generic 10' Omni	1	70	5.1	10.0	3.0	3.0	1.00	1.00	0.0	0.00	7.84	34	75
240.0	Lightning Rod	1	38	1.5	4.0	3.0	3.0	1.00	1.00	0.0	0.00	7.80	10	40
240.0	Dielectric DCR-L1 w/ Radome	1	62	3.7	0.0	0.0	0.0	1.00	1.00	3.0	73.12	7.82	24	65
240.0	Beacon	1	189	3.7	3.0	18.0	18.0	1.00	1.00	0.0	0.00	7.80	25	203
240.0	Generic Round Side Arm	2	242	6.8	0.0	0.0	0.0	0.90	0.90	0.0	0.00	7.80	73	558
234.0	Generic 8' Omni	2	61	4.0	8.0	3.0	3.0	1.00	1.00	0.0	0.00	7.76	53	132
230.0	Round Side Arm	1	193	6.8	0.0	0.0	0.0	1.00	1.00	0.0	0.00	7.73	45	223
229.0	Generic 12' Omni	1	94	6.1	12.0	3.0	3.0	1.00	1.00	0.0	0.00	7.73	40	102
223.0	Round Side Arm	1	193	6.8	0.0	0.0	0.0	1.00	1.00	0.0	0.00	7.68	44	223
223.0	Empty Flat Side Arm	1	193	7.7	0.0	0.0	0.0	1.00	1.00	0.0	0.00	7.68	51	223
202.0	Ericsson Radio 4449 B71 B85A	3	110	2.1	1.3	13.2	10.5	0.80	0.50	0.0	0.00	7.52	16	375
202.0	Ericsson RRUS 4415 B25	3	75	2.4	1.4	13.4	5.9	0.80	0.50	0.0	0.00	7.52	18	251
202.0	Ericsson Air6449 B41	3	183	6.6	2.8	20.6	8.6	0.80	0.63	0.0	0.00	7.52	64	612
202.0	Ericsson AIR 32 B66AA B2P	3	206	8.2	4.9	12.9	8.7	0.80	0.71	0.0	0.00	7.52	89	683
202.0	Generic Round Sector Frame	3	514	24.0	0.0	0.0	0.0	0.75	0.75	0.0	0.00	7.52	259	1722
202.0	RFS APXVAARR24_43-U-NA20	3	356	22.4	8.0	24.0	8.7	0.80	0.63	0.0	0.00	7.52	217	1145
183.0	Side Arms	3	829	12.6	0.0	0.0	0.0	1.00	0.67	0.0	0.00	7.37	158	2824
183.0	Flat Light Sector Frame	3	573	26.6	0.0	0.0	0.0	0.75	0.67	0.0	0.00	7.37	251	1959
181.0	Nokia 2.5G MAA - AAHC(64T64R)	3	168	5.0	2.1	19.7	9.6	0.80	0.64	0.0	0.00	7.35	48	567
180.0	Motorola DAP Vx	3	53	2.2	2.1	7.6	5.5	0.80	0.50	0.0	0.00	7.34	17	175
180.0	Alcatel-Lucent 800 MHz RRH	3	95	2.7	1.6	13.0	10.8	0.80	0.50	0.0	0.00	7.34	20	318
180.0	Alcatel-Lucent 1900MHz RRH	6	107	3.9	1.9	13.0	17.0	0.80	0.50	0.0	0.00	7.34	59	693
180.0	Argus LLPX310R	3	80	5.2	3.5	11.8	4.5	0.80	0.63	0.0	0.00	7.34	49	258
180.0	Generic 24" x 24" Junction Box	1	86	5.6	2.0	24.0	8.0	0.80	1.00	0.0	0.00	7.34	28	90
180.0	Generic 2' Std. Dish	3	46	6.1	2.0	24.0	0.0	1.00	1.00	0.0	0.00	7.34	115	146
180.0	RFS APXVSP18-C-A20	2	156	9.6	6.0	11.8	7.0	0.80	0.77	0.0	0.00	7.34	74	335
180.0	RFS APXV9ERR18-C-A20	1	166	9.6	6.0	11.8	7.9	0.80	1.00	0.0	0.00	7.34	48	179
167.0	Ericsson AIR 6449 n77D	3	141	4.8	2.5	15.9	8.1	0.80	0.65	0.0	0.00	7.23	46	472
165.0	Raycap DC6-48-60-18-8F (23.5"	2	50	1.6	2.0	9.7	9.7	0.80	0.50	0.0	0.00	7.21	8	108
165.0	Ericsson RRUS 4415 B25	3	74	2.4	1.4	13.4	5.9	0.80	0.50	0.0	0.00	7.21	17	249
165.0	Ericsson RRUS 4478 B14	3	91	2.4	1.4	13.4	7.7	0.80	0.50	0.0	0.00	7.21	17	310
165.0	Ericsson RRUS 4449 B5, B12	3	108	2.5	1.5	13.2	9.4	0.80	0.50	0.0	0.00	7.21	18	365
165.0	Ericsson RRUS 32 B66A	3	92	3.4	2.3	12.0	7.0	0.80	0.67	0.0	0.00	7.21	33	307
165.0	Ericsson RRUS 32 B30	3	102	3.4	2.3	12.1	7.0	0.80	0.67	0.0	0.00	7.21	34	341
165.0	Raycap DC9-48-60-24-8C-EV	1	89	5.6	2.6	18.3	10.2	0.80	1.00	0.0	0.00	7.21	28	93
165.0	Powerwave Allgon 7770.00	3	100	6.7	4.6	11.0	5.0	0.80	0.65	0.0	0.00	7.21	64	320
165.0	Andrew SBNHH-1D65A	3	118	7.1	4.6	11.9	7.1	0.80	0.69	0.0	0.00	7.21	72	378
165.0	CCI DMP65R-BU6DA	3	226	14.3	5.9	20.7	7.7	0.80	0.63	0.0	0.00	7.21	132	725
165.0	Generic Round Sector Frame	3	509	23.8	0.0	0.0	0.0	0.75	0.75	0.0	0.00	7.21	246	1707
165.0	Quintel QD6616-7	3	296	57.5	6.0	22.0	9.6	0.80	0.64	0.0	0.00	7.21	541	966
163.0	Ericsson AIR 6419 N77G	3	123	4.7	1.3	30.0	6.7	0.80	0.57	0.0	0.00	7.19	39	412
155.0	Commscope CBC78T-DS-43-2X	3	33	0.8	0.8	6.9	6.4	0.80	0.50	0.0	0.00	7.12	6	112
155.0	Samsung Outdoor CBRS 20W RRH	3	32	1.2	1.0	8.5	4.1	0.80	0.50	0.0	0.00	7.12	9	108
155.0	Samsung Outdoor CBRS 20W RRH -	3	15	1.3	1.0	8.7	1.4	0.80	0.50	0.0	0.00	7.12	9	47
155.0	Samsung B5/B13 RRH-BR04C	3	103	2.4	1.3	15.0	8.1	0.80	0.50	0.0	0.00	7.12	17	351
155.0	Samsung B2/B66A RRH-BR049	3	121	2.4	1.3	15.0	10.0	0.80	0.50	0.0	0.00	7.12	17	413
155.0	Raycap RxxDC-3315-PF-48	2	67	3.1	1.6	15.7	10.3	0.80	0.67	0.0	0.00	7.12	20	142
155.0	Samsung MT6407-77A	3	139	5.6	2.9	16.1	5.5	0.80	0.61	0.0	0.00	7.12	49	467
155.0	Amphenol Antel BXA-80063-6BF-E	3	101	8.8	5.7	11.2	5.3	0.80	0.66	0.0	0.00	7.12	84	315
155.0	Generic Mount Reinforcement	1	310	11.8	0.0	0.0	0.0	1.00	1.00	0.0	0.00	7.12	71	350



Elev (ft)	Description	Qty	Ice Wt (lb)	Ice EPA (sf)	Length (ft)	Width (in)	Depth (in)	K <sub>a</sub>	Orient Factor	Vert Ecc (ft)	M <sub>u</sub> (lb-ft)	Q <sub>z</sub> (psf)	F <sub>a</sub> (WL) (lb)	P <sub>a</sub> (DL) (lb)
155.0	Commscope JAHH-65B-R3B	6	175	10.7	6.0	13.8	8.2	0.80	0.69	0.0	0.00	7.12	214	1126
155.0	Flat Light Sector Frame	3	571	26.5	0.0	0.0	0.0	0.75	0.67	0.0	0.00	7.12	241	1953
145.0	Commscope RDIDC-9181-PF-48	1	54	2.4	1.3	14.0	8.0	0.80	1.00	0.0	0.00	7.02	11	58
145.0	Fujitsu TA08025-B605	3	110	2.5	1.3	15.0	9.1	0.80	0.50	0.0	0.00	7.02	18	375
145.0	Fujitsu TA08025-B604	3	97	2.5	1.3	15.0	7.9	0.80	0.50	0.0	0.00	7.02	18	328
145.0	JMA Wireless MX08FRO665-21	3	208	14.1	6.0	20.0	8.0	0.80	0.64	0.0	0.00	7.02	129	664
145.0	Generic Flat Light Sector Fram	3	568	26.3	0.0	0.0	0.0	0.75	0.75	0.0	0.00	7.02	265	1945
140.0	Small Side Lights	3	65	0.7	1.0	8.0	8.0	1.00	1.00	0.0	0.00	6.97	12	222
132.0	Generic 4' Yagi	1	96	12.1	4.0	48.0	3.0	1.00	1.00	0.0	0.00	6.88	71	99
132.0	Flat Side Arm	1	191	7.7	0.0	0.0	0.0	1.00	1.00	0.0	0.00	6.88	45	221
123.0	Generic 10' Omni	1	67	5.0	10.0	3.0	3.0	1.00	1.00	0.0	0.00	6.78	29	72
118.0	Round Side Arm	1	190	6.7	0.0	0.0	0.0	1.00	1.00	0.0	0.00	6.72	38	220
108.0	Round Side Arm	1	189	6.7	0.0	0.0	0.0	1.00	1.00	0.0	0.00	6.60	37	219
98.0	Generic 4' Yagi	1	93	11.9	4.0	48.0	3.0	1.00	1.00	0.0	0.00	6.46	65	96
98.0	Flat Side Arm	1	189	7.6	0.0	0.0	0.0	1.00	1.00	0.0	0.00	6.46	42	219
80.0	Empty Round Side Arm	1	188	6.6	0.0	0.0	0.0	1.00	1.00	0.0	0.00	6.19	35	218
8.0	Round Side Arm	1	183	6.4	0.0	0.0	0.0	1.00	1.00	0.0	0.00	4.36	24	213
Totals		159	28,492	1379.2									5019	31,717

TOWER LOADING

Discrete Appurtenance Properties 1.0D + 1.0W Service

Elev (ft)	Description	Qty	Wt. (lb)	EPA (sf)	Length (ft)	Width (in)	Depth (in)	K <sub>a</sub>	Orient Factor	Vert Ecc (ft)	M <sub>u</sub> (lb-ft)	Q <sub>z</sub> (psf)	F <sub>a</sub> (WL) (lb)	P <sub>a</sub> (DL) (lb)
256.0	Generic 8' Yagi	1	30	12.0	8.0	60.0	3.0	1.00	1.00	0.0	0.00	11.99	122	30
245.0	Generic 10' Omni	1	25	3.0	10.0	3.0	3.0	1.00	1.00	0.0	0.00	11.88	30	25
240.0	Lightning Rod	1	10	1.0	4.0	3.0	3.0	1.00	1.00	0.0	0.00	11.83	10	10
240.0	Dielectric DCR-L1 w/ Radome	1	18	1.8	0.0	0.0	0.0	1.00	1.00	3.0	54.44	11.86	18	18
240.0	Beacon	1	70	4.5	3.0	18.0	18.0	1.00	1.00	0.0	0.00	11.83	45	70
240.0	Generic Round Side Arm	2	188	5.2	0.0	0.0	0.0	0.90	0.90	0.0	0.00	11.83	85	375
234.0	Generic 8' Omni	2	25	2.4	8.0	3.0	3.0	1.00	1.00	0.0	0.00	11.77	48	50
230.0	Round Side Arm	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.00	11.72	52	150
229.0	Generic 12' Omni	1	40	3.6	12.0	3.0	3.0	1.00	1.00	0.0	0.00	11.71	36	40
223.0	Round Side Arm	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.00	11.65	51	150
223.0	Empty Flat Side Arm	1	150	6.3	0.0	0.0	0.0	1.00	1.00	0.0	0.00	11.65	62	150
202.0	Ericsson Radio 4449 B71 B85A	3	75	1.6	1.3	13.2	10.5	0.80	0.50	0.0	0.00	11.41	19	225
202.0	Ericsson RRUS 4415 B25	3	46	1.8	1.4	13.4	5.9	0.80	0.50	0.0	0.00	11.41	21	138
202.0	Ericsson Air6449 B41	3	104	5.7	2.8	20.6	8.6	0.80	0.63	0.0	0.00	11.41	83	312
202.0	Ericsson AIR 32 B66AA B2P	3	109	6.9	4.9	12.9	8.7	0.80	0.71	0.0	0.00	11.41	114	327
202.0	Generic Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.75	0.0	0.00	11.41	236	900
202.0	RFS APXVAARR24_43-U-NA20	3	128	20.2	8.0	24.0	8.7	0.80	0.63	0.0	0.00	11.41	297	384
183.0	Side Arms	3	560	8.5	0.0	0.0	0.0	1.00	0.67	0.0	0.00	11.17	162	1680
183.0	Flat Light Sector Frame	3	400	17.9	0.0	0.0	0.0	0.75	0.67	0.0	0.00	11.17	256	1200
181.0	Nokia 2.5G MAA - AAHC(64T64R)	3	104	4.2	2.1	19.7	9.6	0.80	0.64	0.0	0.00	11.15	61	311
180.0	Motorola DAP Vx	3	27	1.6	2.1	7.6	5.5	0.80	0.50	0.0	0.00	11.13	19	80
180.0	Alcatel-Lucent 800 MHz RRH	3	53	2.1	1.6	13.0	10.8	0.80	0.50	0.0	0.00	11.13	24	159
180.0	Alcatel-Lucent 1900MHz RRH	6	44	3.3	1.9	13.0	17.0	0.80	0.50	0.0	0.00	11.13	74	264
180.0	Argus LLPX310R	3	29	4.3	3.5	11.8	4.5	0.80	0.63	0.0	0.00	11.13	61	86
180.0	Generic 24" x 24" Junction Box	1	20	4.8	2.0	24.0	8.0	0.80	1.00	0.0	0.00	11.13	36	20
180.0	Generic 2' Std. Dish	3	14	5.2	2.0	24.0	0.0	1.00	1.00	0.0	0.00	11.13	148	42
180.0	RFS APXVSP18-C-A20	2	57	8.0	6.0	11.8	7.0	0.80	0.77	0.0	0.00	11.13	94	114
180.0	RFS APXV9ERR18-C-A20	1	62	8.0	6.0	11.8	7.9	0.80	1.00	0.0	0.00	11.13	61	62
167.0	Ericsson AIR 6449 n77D	3	82	4.0	2.5	15.9	8.1	0.80	0.65	0.0	0.00	10.96	59	245
165.0	Raycap DC6-48-60-18-8F (23.5")	2	20	1.3	2.0	9.7	9.7	0.80	0.50	0.0	0.00	10.93	9	40
165.0	Ericsson RRUS 4415 B25	3	46	1.8	1.4	13.4	5.9	0.80	0.50	0.0	0.00	10.93	21	138
165.0	Ericsson RRUS 4478 B14	3	60	1.8	1.4	13.4	7.7	0.80	0.50	0.0	0.00	10.93	21	180
165.0	Ericsson RRUS 4449 B5, B12	3	71	2.0	1.5	13.2	9.4	0.80	0.50	0.0	0.00	10.93	22	213
165.0	Ericsson RRUS 32 B66A	3	51	2.7	2.3	12.0	7.0	0.80	0.67	0.0	0.00	10.93	41	152
165.0	Ericsson RRUS 32 B30	3	60	2.7	2.3	12.1	7.0	0.80	0.67	0.0	0.00	10.93	41	180
165.0	Raycap DC9-48-60-24-8C-EV	1	16	4.8	2.6	18.3	10.2	0.80	1.00	0.0	0.00	10.93	36	16
165.0	Powerwave Allgon 7770.00	3	35	5.5	4.6	11.0	5.0	0.80	0.65	0.0	0.00	10.93	80	105
165.0	Andrew SBNHH-1D65A	3	41	5.9	4.6	11.9	7.1	0.80	0.69	0.0	0.00	10.93	91	123
165.0	CCI DMP65R-BU6DA	3	79	12.7	5.9	20.7	7.7	0.80	0.63	0.0	0.00	10.93	179	238
165.0	Generic Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.75	0.0	0.00	10.93	226	900
165.0	Quintel QD6616-7	3	130	51.4	6.0	22.0	9.6	0.80	0.64	0.0	0.00	10.93	734	390
163.0	Ericsson AIR 6419 N77G	3	70	3.9	1.3	30.0	6.7	0.80	0.57	0.0	0.00	10.90	50	210

Elev (ft)	Description	Qty	Wt. (lb)	EPA Length (sf)	Length (ft)	Width (in)	Depth (in)	K <sub>a</sub>	Orient Factor	Vert Ecc (ft)	M <sub>u</sub> (lb-ft)	Q <sub>z</sub> (psf)	F <sub>a</sub> (WL) (lb)	P <sub>a</sub> (DL) (lb)
155.0	Commscope CBC78T-DS-43-2X	3	21	0.6	0.8	6.9	6.4	0.80	0.50	0.0	0.00	10.79	6	62
155.0	Samsung Outdoor CBRS 20W RRH	3	19	0.9	1.0	8.5	4.1	0.80	0.50	0.0	0.00	10.79	9	56
155.0	Samsung Outdoor CBRS 20W RRH -	3	4	0.9	1.0	8.7	1.4	0.80	0.50	0.0	0.00	10.79	10	13
155.0	Samsung B5/B13 RRH-BR04C	3	70	1.9	1.3	15.0	8.1	0.80	0.50	0.0	0.00	10.79	21	211
155.0	Samsung B2/B66A RRH-BR049	3	84	1.9	1.3	15.0	10.0	0.80	0.50	0.0	0.00	10.79	21	253
155.0	Raycap RxxDC-3315-PF-48	2	21	2.5	1.6	15.7	10.3	0.80	0.67	0.0	0.00	10.79	25	43
155.0	Samsung MT6407-77A	3	82	4.7	2.9	16.1	5.5	0.80	0.61	0.0	0.00	10.79	63	245
155.0	Amphenol Antel BXA-80063-6BF-E	3	19	7.3	5.7	11.2	5.3	0.80	0.66	0.0	0.00	10.79	105	58
155.0	Generic Mount Reinforcement	1	200	7.5	0.0	0.0	0.0	1.00	1.00	0.0	0.00	10.79	69	200
155.0	Commscope JAHH-65B-R3B	6	61	9.1	6.0	13.8	8.2	0.80	0.69	0.0	0.00	10.79	277	364
155.0	Flat Light Sector Frame	3	400	17.9	0.0	0.0	0.0	0.75	0.67	0.0	0.00	10.79	247	1200
145.0	Commscope RDIDC-9181-PF-48	1	22	1.9	1.3	14.0	8.0	0.80	1.00	0.0	0.00	10.64	14	22
145.0	Fujitsu TA08025-B605	3	75	2.0	1.3	15.0	9.1	0.80	0.50	0.0	0.00	10.64	21	225
145.0	Fujitsu TA08025-B604	3	64	2.0	1.3	15.0	7.9	0.80	0.50	0.0	0.00	10.64	21	192
145.0	JMA Wireless MX08FRO665-21	3	65	12.5	6.0	20.0	8.0	0.80	0.64	0.0	0.00	10.64	173	194
145.0	Generic Flat Light Sector Fram	3	400	17.9	0.0	0.0	0.0	0.75	0.75	0.0	0.00	10.64	273	1200
140.0	Small Side Lights	3	45	2.0	1.0	8.0	8.0	1.00	1.00	0.0	0.00	10.56	54	135
132.0	Generic 4' Yagi	1	15	4.9	4.0	48.0	3.0	1.00	1.00	0.0	0.00	10.43	43	15
132.0	Flat Side Arm	1	150	6.3	0.0	0.0	0.0	1.00	1.00	0.0	0.00	10.43	56	150
123.0	Generic 10' Omni	1	25	3.0	10.0	3.0	3.0	1.00	1.00	0.0	0.00	10.28	26	25
118.0	Round Side Arm	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.00	10.19	45	150
108.0	Round Side Arm	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.00	10.00	44	150
98.0	Generic 4' Yagi	1	15	4.9	4.0	48.0	3.0	1.00	1.00	0.0	0.00	9.80	41	15
98.0	Flat Side Arm	1	150	6.3	0.0	0.0	0.0	1.00	1.00	0.0	0.00	9.80	52	150
80.0	Empty Round Side Arm	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.00	9.39	41	150
8.0	Round Side Arm	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.00	6.61	29	150
Totals		159	16,126	1056.2									5,722	16,126

TOWER LOADING

Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Description	Qty	Width (in)	Weight (lb/ft)	% In Wind	Spread On Faces	Bundling	Cluster Dia (in)	Out of Zone	Spacing (in)	Orient Factor	K <sub>a</sub> Override
0.0	245.0	1 1/4" Coax	1	1.55	0.63	100	1	Individual	0.00	N	1.00	1.00	0.00
0.0	243.0	1 5/8" Coax	1	1.98	0.82	100	1	Individual	0.00	N	1.00	1.00	0.00
0.0	240.0	Waveguide	1	1.50	6.00	100	1	Individual	0.00	N	1.00	1.00	0.00
0.0	234.0	7/8" Coax	2	1.09	0.33	100	1	Individual	0.00	N	1.00	1.00	0.00
0.0	229.0	1 1/4" Coax	1	1.55	0.63	100	1	Individual	0.00	N	1.00	1.00	0.00
0.0	202.0	1 5/8" Hybriflex	3	1.98	1.30	100	2	Individual	0.00	N	1.00	1.00	0.00
0.0	202.0	1 1/4" Hybriflex Cable	2	1.54	1.00	100	2	Individual	0.00	N	1.00	1.00	0.00
0.0	202.0	Waveguide	1	1.50	6.00	100	2	Individual	0.00	N	1.00	1.00	0.00
0.0	183.0	Waveguide	1	1.50	6.00	100	2	Individual	0.00	N	1.00	1.00	0.00
0.0	181.0	1.7" (43.2mm) Hybrid	1	1.70	1.78	100	2	Individual	0.00	N	1.00	1.00	0.00
0.0	180.0	1 1/4" Hybriflex Cable	1	1.54	1.00	100	2	Individual	0.00	N	1.00	1.00	0.00
0.0	180.0	2" conduit	2	2.38	3.65	100	2	Individual	0.00	N	1.00	1.00	0.00
0.0	180.0	1/2" Coax	3	0.63	0.15	67	2	Block	0.00	N	1.00	1.00	0.00
0.0	180.0	5/16" (0.31"-7.9mm) Coax	6	0.31	0.05	50	2	Block	0.00	N	1.00	1.00	0.00
0.0	180.0	1 1/4" (1.25"- 31.8mm) Fiber	3	1.25	1.05	100	2	Individual	0.00	N	1.00	1.00	0.00
0.0	174.0	Waveguide	1	1.50	6.00	100	1	Individual	0.00	N	1.00	1.00	0.00
0.0	165.0	2" conduit	1	2.38	3.65	100	1	Individual	0.00	N	1.00	1.00	0.00
0.0	165.0	1 5/8" Coax	6	1.98	0.82	100	1	Individual	0.00	N	1.00	1.00	0.00
0.0	165.0	0.82" (20.8mm) 8 AWG 6	4	0.82	0.62	100	1	Individual	0.00	N	1.00	1.00	0.00
0.0	165.0	0.40" (10.3mm) Fiber	3	0.40	0.09	100	1	Individual	0.00	N	1.00	1.00	0.00
0.0	165.0	0.92" (23.4mm) Cable	3	0.92	0.89	100	1	Individual	0.00	N	1.00	1.00	0.00
0.0	165.0	Waveguide	1	1.50	6.00	100	1	Individual	0.00	N	1.00	1.00	0.00
0.0	155.0	1 5/8" Coax	6	1.98	0.82	100	1	Individual	0.00	N	1.00	1.00	0.00
0.0	155.0	1 5/8" Hybriflex	2	1.98	1.30	100	1	Individual	0.00	N	1.00	1.00	0.00
0.0	155.0	Waveguide	1	1.50	6.00	100	1	Individual	0.00	N	1.00	1.00	0.00
0.0	155.0	1 5/8" Hybriflex	1	1.98	1.30	100	1	Individual	0.00	N	1.00	1.00	0.00
0.0	145.0	1.75" (44.5mm) Hybrid	1	1.75	2.72	100	3	Individual	0.00	N	1.00	1.00	0.00
0.0	145.0	Waveguide	1	2.00	6.00	100	3	Individual	0.00	N	1.00	1.00	0.00
0.0	132.0	1 1/4" Coax	1	1.55	0.63	100	3	Individual	0.00	N	1.00	1.00	0.00
0.0	123.0	7/8" Coax	1	1.09	0.33	100	1	Individual	0.00	N	1.00	1.00	0.00
0.0	98.0	1 1/4" Coax	1	1.55	0.63	100	3	Individual	0.00	N	1.00	1.00	0.00

SECTION FORCES

1.2D + 1.0W Normal  
115.99 mph wind with no ice

Gust Response Factor (Gh): 0.85  
Wind Importance Factor (Iw): 1.00

Sect #	Elev (ft)	Qz (psf)	A <sub>r</sub> (sf)	A <sub>r</sub> (sf)	Ice A <sub>r</sub> (sf)	e	C <sub>r</sub>	D <sub>r</sub>	D <sub>r</sub>	T <sub>iz</sub> (in)	A <sub>e</sub> (sf)	EPA <sub>a</sub> (sf)	EPA <sub>ai</sub> (sf)	Wt. (lb)	Ice Wt (lb)	F <sub>st</sub> (lb)	F <sub>a</sub> (lb)	Force (lb)
11	230	43.82	0.000	45.353	0.00	0.179	2.67	1.00	1.00	0.0	22.58	60.21	0.00	4730	0	2242	369	2611
10	210	42.98	0.000	45.187	0.00	0.153	2.76	1.00	1.00	0.0	21.88	60.41	0.00	4935	0	2207	478	2686
9	190	42.09	0.000	46.842	0.00	0.137	2.82	1.00	1.00	0.0	22.55	63.63	0.00	5372	0	2277	933	3210
8	170	41.11	0.000	50.084	0.00	0.128	2.86	1.00	1.00	0.0	24.29	69.39	0.00	6639	0	2425	1972	4397
7	150	40.04	0.000	57.359	0.00	0.130	2.85	1.00	1.00	0.0	28.04	79.87	0.00	8160	0	2718	3361	6080
6	130	38.86	0.000	57.395	0.00	0.116	2.90	1.00	1.00	0.0	28.35	82.18	0.00	8492	0	2714	3657	6371
5	110	37.51	0.000	63.059	0.00	0.116	2.90	1.00	1.00	0.0	30.75	89.19	0.00	8380	0	2844	3590	6434
4	90	35.96	0.000	57.777	0.00	0.097	2.98	1.00	1.00	0.0	28.05	83.46	0.00	8283	0	2551	3493	6044
3	70	34.11	0.000	66.406	0.00	0.102	2.96	1.00	1.00	0.0	31.82	94.04	0.00	9277	0	2726	3318	6044
2	45	31.08	0.000	113.831	0.00	0.107	2.94	1.00	1.00	0.0	55.68	163.56	0.00	14477	0	4321	4535	8856
1	15	24.69	0.000	120.618	0.00	0.102	2.96	1.00	1.00	0.0	57.80	170.80	0.00	15782	0	3585	3603	7188
														94,528	0			59,921

1.2D + 1.0W 60°  
115.99 mph wind with no ice

Gust Response Factor (Gh): 0.85  
Wind Importance Factor (Iw): 1.00

Sect #	Elev (ft)	Qz (psf)	A <sub>r</sub> (sf)	A <sub>r</sub> (sf)	Ice A <sub>r</sub> (sf)	e	C <sub>r</sub>	D <sub>r</sub>	D <sub>r</sub>	T <sub>iz</sub> (in)	A <sub>e</sub> (sf)	EPA <sub>a</sub> (sf)	EPA <sub>ai</sub> (sf)	Wt. (lb)	Ice Wt (lb)	F <sub>st</sub> (lb)	F <sub>a</sub> (lb)	Force (lb)
11	230	43.82	0.000	45.353	0.00	0.179	2.67	0.80	1.00	0.0	22.58	60.21	0.00	4730	0	2242	369	2611
10	210	42.98	0.000	45.187	0.00	0.153	2.76	0.80	1.00	0.0	21.88	60.41	0.00	4935	0	2207	478	2686
9	190	42.09	0.000	46.842	0.00	0.137	2.82	0.80	1.00	0.0	22.55	63.63	0.00	5372	0	2277	933	3210
8	170	41.11	0.000	50.084	0.00	0.128	2.86	0.80	1.00	0.0	24.29	69.39	0.00	6639	0	2425	1972	4397
7	150	40.04	0.000	57.359	0.00	0.130	2.85	0.80	1.00	0.0	28.04	79.87	0.00	8160	0	2718	3361	6080
6	130	38.86	0.000	57.395	0.00	0.116	2.90	0.80	1.00	0.0	28.35	82.18	0.00	8492	0	2714	3657	6371
5	110	37.51	0.000	63.059	0.00	0.116	2.90	0.80	1.00	0.0	30.75	89.19	0.00	8380	0	2844	3590	6434
4	90	35.96	0.000	57.777	0.00	0.097	2.98	0.80	1.00	0.0	28.05	83.46	0.00	8283	0	2551	3493	6044
3	70	34.11	0.000	66.406	0.00	0.102	2.96	0.80	1.00	0.0	31.82	94.04	0.00	9277	0	2726	3318	6044
2	45	31.08	0.000	113.831	0.00	0.107	2.94	0.80	1.00	0.0	55.68	163.56	0.00	14477	0	4321	4535	8856
1	15	24.69	0.000	120.618	0.00	0.102	2.96	0.80	1.00	0.0	58.57	173.10	0.00	15782	0	3633	3603	7237
														94,528	0			59,969

1.2D + 1.0W 90°  
115.99 mph wind with no ice

Gust Response Factor (Gh): 0.85  
Wind Importance Factor (Iw): 1.00

Sect #	Elev (ft)	Qz (psf)	A <sub>r</sub> (sf)	A <sub>r</sub> (sf)	Ice A <sub>r</sub> (sf)	e	C <sub>r</sub>	D <sub>r</sub>	D <sub>r</sub>	T <sub>iz</sub> (in)	A <sub>e</sub> (sf)	EPA <sub>a</sub> (sf)	EPA <sub>ai</sub> (sf)	Wt. (lb)	Ice Wt (lb)	F <sub>st</sub> (lb)	F <sub>a</sub> (lb)	Force (lb)
11	230	43.82	0.000	45.353	0.00	0.179	2.67	0.85	1.00	0.0	22.58	60.21	0.00	4730	0	2242	369	2611
10	210	42.98	0.000	45.187	0.00	0.153	2.76	0.85	1.00	0.0	21.88	60.41	0.00	4935	0	2207	478	2686
9	190	42.09	0.000	46.842	0.00	0.137	2.82	0.85	1.00	0.0	22.55	63.63	0.00	5372	0	2277	933	3210
8	170	41.11	0.000	50.084	0.00	0.128	2.86	0.85	1.00	0.0	24.29	69.39	0.00	6639	0	2425	1972	4397
7	150	40.04	0.000	57.359	0.00	0.130	2.85	0.85	1.00	0.0	28.04	79.87	0.00	8160	0	2718	3361	6080
6	130	38.86	0.000	57.395	0.00	0.116	2.90	0.85	1.00	0.0	28.35	82.18	0.00	8492	0	2714	3657	6371
5	110	37.51	0.000	63.059	0.00	0.116	2.90	0.85	1.00	0.0	30.75	89.19	0.00	8380	0	2844	3590	6434
4	90	35.96	0.000	57.777	0.00	0.097	2.98	0.85	1.00	0.0	28.05	83.46	0.00	8283	0	2551	3493	6044
3	70	34.11	0.000	66.406	0.00	0.102	2.96	0.85	1.00	0.0	31.82	94.04	0.00	9277	0	2726	3318	6044
2	45	31.08	0.000	113.831	0.00	0.107	2.94	0.85	1.00	0.0	55.68	163.56	0.00	14477	0	4321	4535	8856
1	15	24.69	0.000	120.618	0.00	0.102	2.96	0.85	1.00	0.0	58.57	173.10	0.00	15782	0	3633	3603	7237
														94,528	0			59,969

0.9D + 1.0W Normal  
115.99 mph wind with no ice

Gust Response Factor (Gh): 0.85  
Wind Importance Factor (Iw): 1.00

SECTION FORCES

Sect #	Elev (ft)	Q <sub>Z</sub> (psf)	A <sub>r</sub> (sf)	A <sub>r</sub> (sf)	Ice A <sub>r</sub> (sf)	e	C <sub>r</sub>	D <sub>r</sub>	D <sub>r</sub>	T <sub>iz</sub> (in)	A <sub>e</sub> (sf)	EPA <sub>a</sub> (sf)	EPA <sub>ai</sub> (sf)	Wt. (lb)	Ice Wt (lb)	F <sub>st</sub> (lb)	F <sub>a</sub> (lb)	Force (lb)	
11	230	43.82	0.000	45.353	0.00	0.179	2.67	1.00	1.00	0.0	22.58	60.21	0.00	3547	0	2242	369	2611	
10	210	42.98	0.000	45.187	0.00	0.153	2.76	1.00	1.00	0.0	21.88	60.41	0.00	3702	0	2207	478	2686	
9	190	42.09	0.000	46.842	0.00	0.137	2.82	1.00	1.00	0.0	22.55	63.63	0.00	4029	0	2277	933	3210	
8	170	41.11	0.000	50.084	0.00	0.128	2.86	1.00	1.00	0.0	24.29	69.39	0.00	4979	0	2425	1972	4397	
7	150	40.04	0.000	57.359	0.00	0.130	2.85	1.00	1.00	0.0	28.04	79.87	0.00	6120	0	2718	3361	6080	
6	130	38.86	0.000	57.395	0.00	0.116	2.90	1.00	1.00	0.0	28.35	82.18	0.00	6369	0	2714	3657	6371	
5	110	37.51	0.000	63.059	0.00	0.116	2.90	1.00	1.00	0.0	30.75	89.19	0.00	6285	0	2844	3590	6434	
4	90	35.96	0.000	57.777	0.00	0.097	2.98	1.00	1.00	0.0	28.05	83.46	0.00	6213	0	2551	3493	6044	
3	70	34.11	0.000	66.406	0.00	0.102	2.96	1.00	1.00	0.0	31.82	94.04	0.00	6958	0	2726	3318	6044	
2	45	31.08	0.000	113.831	0.00	0.107	2.94	1.00	1.00	0.0	55.68	163.56	0.00	10857	0	4321	4535	8856	
1	15	24.69	0.000	120.618	0.00	0.102	2.96	1.00	1.00	0.0	58.57	173.10	0.00	11837	0	3633	3603	7237	
															70,896	0			59,969

0.9D + 1.0W 60°  
115.99 mph wind with no ice

Gust Response Factor (Gh): 0.85  
Wind Importance Factor (Iw): 1.00

Sect #	Elev (ft)	Q <sub>Z</sub> (psf)	A <sub>r</sub> (sf)	A <sub>r</sub> (sf)	Ice A <sub>r</sub> (sf)	e	C <sub>r</sub>	D <sub>r</sub>	D <sub>r</sub>	T <sub>iz</sub> (in)	A <sub>e</sub> (sf)	EPA <sub>a</sub> (sf)	EPA <sub>ai</sub> (sf)	Wt. (lb)	Ice Wt (lb)	F <sub>st</sub> (lb)	F <sub>a</sub> (lb)	Force (lb)	
11	230	43.82	0.000	45.353	0.00	0.179	2.67	0.80	1.00	0.0	22.58	60.21	0.00	3547	0	2242	369	2611	
10	210	42.98	0.000	45.187	0.00	0.153	2.76	0.80	1.00	0.0	21.88	60.41	0.00	3702	0	2207	478	2686	
9	190	42.09	0.000	46.842	0.00	0.137	2.82	0.80	1.00	0.0	22.55	63.63	0.00	4029	0	2277	933	3210	
8	170	41.11	0.000	50.084	0.00	0.128	2.86	0.80	1.00	0.0	24.29	69.39	0.00	4979	0	2425	1972	4397	
7	150	40.04	0.000	57.359	0.00	0.130	2.85	0.80	1.00	0.0	28.04	79.87	0.00	6120	0	2718	3361	6080	
6	130	38.86	0.000	57.395	0.00	0.116	2.90	0.80	1.00	0.0	28.35	82.18	0.00	6369	0	2714	3657	6371	
5	110	37.51	0.000	63.059	0.00	0.116	2.90	0.80	1.00	0.0	30.75	89.19	0.00	6285	0	2844	3590	6434	
4	90	35.96	0.000	57.777	0.00	0.097	2.98	0.80	1.00	0.0	28.05	83.46	0.00	6213	0	2551	3493	6044	
3	70	34.11	0.000	66.406	0.00	0.102	2.96	0.80	1.00	0.0	31.82	94.04	0.00	6958	0	2726	3318	6044	
2	45	31.08	0.000	113.831	0.00	0.107	2.94	0.80	1.00	0.0	55.68	163.56	0.00	10857	0	4321	4535	8856	
1	15	24.69	0.000	120.618	0.00	0.102	2.96	0.80	1.00	0.0	58.57	173.10	0.00	11837	0	3633	3603	7237	
															70,896	0			59,969

0.9D + 1.0W 90°  
115.99 mph wind with no ice

Gust Response Factor (Gh): 0.85  
Wind Importance Factor (Iw): 1.00

Sect #	Elev (ft)	Q <sub>Z</sub> (psf)	A <sub>r</sub> (sf)	A <sub>r</sub> (sf)	Ice A <sub>r</sub> (sf)	e	C <sub>r</sub>	D <sub>r</sub>	D <sub>r</sub>	T <sub>iz</sub> (in)	A <sub>e</sub> (sf)	EPA <sub>a</sub> (sf)	EPA <sub>ai</sub> (sf)	Wt. (lb)	Ice Wt (lb)	F <sub>st</sub> (lb)	F <sub>a</sub> (lb)	Force (lb)	
11	230	43.82	0.000	45.353	0.00	0.179	2.67	0.85	1.00	0.0	22.58	60.21	0.00	3547	0	2242	369	2611	
10	210	42.98	0.000	45.187	0.00	0.153	2.76	0.85	1.00	0.0	21.88	60.41	0.00	3702	0	2207	478	2686	
9	190	42.09	0.000	46.842	0.00	0.137	2.82	0.85	1.00	0.0	22.55	63.63	0.00	4029	0	2277	933	3210	
8	170	41.11	0.000	50.084	0.00	0.128	2.86	0.85	1.00	0.0	24.29	69.39	0.00	4979	0	2425	1972	4397	
7	150	40.04	0.000	57.359	0.00	0.130	2.85	0.85	1.00	0.0	28.04	79.87	0.00	6120	0	2718	3361	6080	
6	130	38.86	0.000	57.395	0.00	0.116	2.90	0.85	1.00	0.0	28.35	82.18	0.00	6369	0	2714	3657	6371	
5	110	37.51	0.000	63.059	0.00	0.116	2.90	0.85	1.00	0.0	30.75	89.19	0.00	6285	0	2844	3590	6434	
4	90	35.96	0.000	57.777	0.00	0.097	2.98	0.85	1.00	0.0	28.05	83.46	0.00	6213	0	2551	3493	6044	
3	70	34.11	0.000	66.406	0.00	0.102	2.96	0.85	1.00	0.0	31.82	94.04	0.00	6958	0	2726	3318	6044	
2	45	31.08	0.000	113.831	0.00	0.107	2.94	0.85	1.00	0.0	55.68	163.56	0.00	10857	0	4321	4535	8856	
1	15	24.69	0.000	120.618	0.00	0.102	2.96	0.85	1.00	0.0	58.57	173.10	0.00	11837	0	3633	3603	7237	
															70,896	0			59,969

1.2D + 1.0Di + 1.0Wi Normal  
48.73 mph wind with 0.850" radial ice

Gust Response Factor (Gh): 0.85  
Wind Importance Factor (Iw): 1.00  
Ice Importance Factor: 1.00  
Ice Dead Load Factor: 1.00

Sect #	Elev (ft)	Q <sub>Z</sub> (psf)	A <sub>r</sub> (sf)	A <sub>r</sub> (sf)	Ice A <sub>r</sub> (sf)	e	C <sub>r</sub>	D <sub>r</sub>	D <sub>r</sub>	T <sub>iz</sub> (in)	A <sub>e</sub> (sf)	EPA <sub>a</sub> (sf)	EPA <sub>ai</sub> (sf)	Wt. (lb)	Ice Wt (lb)	F <sub>st</sub> (lb)	F <sub>a</sub> (lb)	Force (lb)
11	230	7.73	0.000	67.581	22.23	0.264	2.40	1.00	1.00	1.0	40.41	96.87	22.23	7144	2414	637	180	816
10	210	7.59	0.000	65.068	19.88	0.218	2.54	1.00	1.00	1.0	38.08	96.64	19.88	7314	2379	623	246	869
9	190	7.43	0.000	67.820	20.98	0.196	2.61	1.00	1.00	1.0	39.39	102.82	20.98	8235	2862	649	469	1118
8	170	7.26	0.000	72.228	22.14	0.182	2.66	1.00	1.00	1.0	41.81	111.06	22.14	10715	4076	685	1037	1722
7	150	7.07	0.000	77.759	25.61	0.174	2.68	1.00	1.00	1.0	47.91	128.60	25.61	14197	6037	773	1782	2555

SECTION FORCES

Sect #	Elev (ft)	Q <sub>Z</sub> (psf)	A <sub>r</sub> (sf)	A <sub>r</sub> (sf)	Ice A <sub>r</sub> (sf)	e	C <sub>r</sub>	D <sub>r</sub>	D <sub>r</sub>	T <sub>iz</sub> (in)	A <sub>e</sub> (sf)	EPA <sub>a</sub> (sf)	EPA <sub>ai</sub> (sf)	Wt. (lb)	Ice Wt (lb)	F <sub>st</sub> (lb)	F <sub>a</sub> (lb)	Force (lb)	
6	130	6.86	0.000	81.778	24.38	0.165	2.72	1.00	1.00	1.0	47.16	128.17	24.38	14494	6002	747	1914	2661	
5	110	6.62	0.000	78.482	20.03	0.144	2.79	1.00	1.00	1.0	47.39	132.45	20.03	14852	6472	745	1906	2652	
4	90	6.35	0.000	76.261	18.48	0.128	2.86	1.00	1.00	0.9	43.50	124.22	18.48	14042	5759	670	1864	2535	
3	70	6.02	0.000	85.071	18.66	0.130	2.85	1.00	1.00	0.9	48.53	138.07	18.66	15104	5827	707	1743	2450	
2	45	5.49	0.000	137.693	23.86	0.128	2.85	1.00	1.00	0.9	78.28	223.32	23.86	23433	8956	1041	2332	3374	
1	15	4.36	0.000	136.326	24.35	0.115	2.90	1.00	1.00	0.8	82.37	239.22	24.35	24165	8383	886	1775	2661	
															153,695	59,167			23,413

1.2D + 1.0Di + 1.0Wi 60° Gust Response Factor (Gh): 0.85 Ice Importance Factor: 1.00  
 48.73 mph wind with 0.850" radial ice Wind Importance Factor (Iw): 1.00 Ice Dead Load Factor: 1.00

Sect #	Elev (ft)	Q <sub>Z</sub> (psf)	A <sub>r</sub> (sf)	A <sub>r</sub> (sf)	Ice A <sub>r</sub> (sf)	e	C <sub>r</sub>	D <sub>r</sub>	D <sub>r</sub>	T <sub>iz</sub> (in)	A <sub>e</sub> (sf)	EPA <sub>a</sub> (sf)	EPA <sub>ai</sub> (sf)	Wt. (lb)	Ice Wt (lb)	F <sub>st</sub> (lb)	F <sub>a</sub> (lb)	Force (lb)	
11	230	7.73	0.000	67.581	22.23	0.264	2.40	0.80	1.00	1.0	40.41	96.87	22.23	7144	2414	637	180	816	
10	210	7.59	0.000	65.068	19.88	0.218	2.54	0.80	1.00	1.0	38.08	96.64	19.88	7314	2379	623	246	869	
9	190	7.43	0.000	67.820	20.98	0.196	2.61	0.80	1.00	1.0	39.39	102.82	20.98	8235	2862	649	469	1118	
8	170	7.26	0.000	72.228	22.14	0.182	2.66	0.80	1.00	1.0	41.81	111.06	22.14	10715	4076	685	1037	1722	
7	150	7.07	0.000	77.759	25.61	0.174	2.68	0.80	1.00	1.0	47.91	128.60	25.61	14197	6037	773	1782	2555	
6	130	6.86	0.000	81.778	24.38	0.165	2.72	0.80	1.00	1.0	47.16	128.17	24.38	14494	6002	747	1914	2661	
5	110	6.62	0.000	78.482	20.03	0.144	2.79	0.80	1.00	1.0	47.39	132.45	20.03	14852	6472	745	1906	2652	
4	90	6.35	0.000	76.261	18.48	0.128	2.86	0.80	1.00	0.9	43.50	124.22	18.48	14042	5759	670	1864	2535	
3	70	6.02	0.000	85.071	18.66	0.130	2.85	0.80	1.00	0.9	48.53	138.07	18.66	15104	5827	707	1743	2450	
2	45	5.49	0.000	137.693	23.86	0.128	2.85	0.80	1.00	0.9	78.28	223.32	23.86	23433	8956	1041	2332	3374	
1	15	4.36	0.000	136.326	24.35	0.115	2.90	0.80	1.00	0.8	82.37	239.22	24.35	24165	8383	886	1775	2661	
															153,695	59,167			23,413

1.2D + 1.0Di + 1.0Wi 90° Gust Response Factor (Gh): 0.85 Ice Importance Factor: 1.00  
 48.73 mph wind with 0.850" radial ice Wind Importance Factor (Iw): 1.00 Ice Dead Load Factor: 1.00

Sect #	Elev (ft)	Q <sub>Z</sub> (psf)	A <sub>r</sub> (sf)	A <sub>r</sub> (sf)	Ice A <sub>r</sub> (sf)	e	C <sub>r</sub>	D <sub>r</sub>	D <sub>r</sub>	T <sub>iz</sub> (in)	A <sub>e</sub> (sf)	EPA <sub>a</sub> (sf)	EPA <sub>ai</sub> (sf)	Wt. (lb)	Ice Wt (lb)	F <sub>st</sub> (lb)	F <sub>a</sub> (lb)	Force (lb)	
11	230	7.73	0.000	67.581	22.23	0.264	2.40	0.85	1.00	1.0	40.41	96.87	22.23	7144	2414	637	180	816	
10	210	7.59	0.000	65.068	19.88	0.218	2.54	0.85	1.00	1.0	38.08	96.64	19.88	7314	2379	623	246	869	
9	190	7.43	0.000	67.820	20.98	0.196	2.61	0.85	1.00	1.0	39.39	102.82	20.98	8235	2862	649	469	1118	
8	170	7.26	0.000	72.228	22.14	0.182	2.66	0.85	1.00	1.0	41.81	111.06	22.14	10715	4076	685	1037	1722	
7	150	7.07	0.000	77.759	25.61	0.174	2.68	0.85	1.00	1.0	47.91	128.60	25.61	14197	6037	773	1782	2555	
6	130	6.86	0.000	81.778	24.38	0.165	2.72	0.85	1.00	1.0	47.16	128.17	24.38	14494	6002	747	1914	2661	
5	110	6.62	0.000	78.482	20.03	0.144	2.79	0.85	1.00	1.0	47.39	132.45	20.03	14852	6472	745	1906	2652	
4	90	6.35	0.000	76.261	18.48	0.128	2.86	0.85	1.00	0.9	43.50	124.22	18.48	14042	5759	670	1864	2535	
3	70	6.02	0.000	85.071	18.66	0.130	2.85	0.85	1.00	0.9	48.53	138.07	18.66	15104	5827	707	1743	2450	
2	45	5.49	0.000	137.693	23.86	0.128	2.85	0.85	1.00	0.9	78.28	223.32	23.86	23433	8956	1041	2332	3374	
1	15	4.36	0.000	136.326	24.35	0.115	2.90	0.85	1.00	0.8	82.37	239.22	24.35	24165	8383	886	1775	2661	
															153,695	59,167			23,413

1.0D + 1.0W Service Normal Gust Response Factor (Gh): 0.85  
 60 mph Wind with No Ice Wind Importance Factor (Iw): 1.00

Sect #	Elev (ft)	Q <sub>Z</sub> (psf)	A <sub>r</sub> (sf)	A <sub>r</sub> (sf)	Ice A <sub>r</sub> (sf)	e	C <sub>r</sub>	D <sub>r</sub>	D <sub>r</sub>	T <sub>iz</sub> (in)	A <sub>e</sub> (sf)	EPA <sub>a</sub> (sf)	EPA <sub>ai</sub> (sf)	Wt. (lb)	Ice Wt (lb)	F <sub>st</sub> (lb)	F <sub>a</sub> (lb)	Force (lb)
11	230	11.72	0.000	45.353	0.00	0.179	2.67	1.00	1.00	0.0	25.16	67.10	0.00	3941	0	669	99	767
10	210	11.50	0.000	45.187	0.00	0.153	2.76	1.00	1.00	0.0	24.73	68.26	0.00	4113	0	667	128	795
9	190	11.26	0.000	46.842	0.00	0.137	2.82	1.00	1.00	0.0	25.60	72.23	0.00	4477	0	691	250	941
8	170	11.00	0.000	50.084	0.00	0.128	2.86	1.00	1.00	0.0	27.49	78.52	0.00	5532	0	734	528	1262
7	150	10.72	0.000	57.359	0.00	0.130	2.85	1.00	1.00	0.0	31.63	90.10	0.00	6800	0	821	899	1720
6	130	10.40	0.000	57.395	0.00	0.116	2.90	1.00	1.00	0.0	31.83	92.28	0.00	7077	0	815	979	1794
5	110	10.04	0.000	63.059	0.00	0.116	2.90	1.00	1.00	0.0	34.72	100.70	0.00	6984	0	859	961	1820
4	90	9.62	0.000	57.777	0.00	0.097	2.98	1.00	1.00	0.0	31.99	95.18	0.00	6903	0	779	935	1713
3	70	9.13	0.000	66.406	0.00	0.102	2.96	1.00	1.00	0.0	35.30	104.31	0.00	7731	0	809	888	1697
2	45	8.32	0.000	113.831	0.00	0.107	2.94	1.00	1.00	0.0	62.23	182.80	0.00	12064	0	1292	1214	2506

SECTION FORCES

Sect #	Elev (ft)	Q <sub>Z</sub> (psf)	A <sub>r</sub> (sf)	A <sub>r</sub> (sf)	Ice A <sub>r</sub> (sf)	e	C <sub>r</sub>	D <sub>r</sub>	D <sub>r</sub>	T <sub>iz</sub> (in)	A <sub>e</sub> (sf)	EPA <sub>a</sub> (sf)	EPA <sub>ai</sub> (sf)	Wt. (lb)	Ice Wt (lb)	F <sub>st</sub> (lb)	F <sub>a</sub> (lb)	Force (lb)
1	15	6.61	0.000	120.618	0.00	0.102	2.96	1.00	1.00	0.0	65.85	194.62	0.00	13152	0	1093	964	2057
														78,773	0			17,073

1.0D + 1.0W Service 60°  
60 mph Wind with No Ice

Gust Response Factor (Gh): 0.85  
Wind Importance Factor (Iw): 1.00

Sect #	Elev (ft)	Q <sub>Z</sub> (psf)	A <sub>r</sub> (sf)	A <sub>r</sub> (sf)	Ice A <sub>r</sub> (sf)	e	C <sub>r</sub>	D <sub>r</sub>	D <sub>r</sub>	T <sub>iz</sub> (in)	A <sub>e</sub> (sf)	EPA <sub>a</sub> (sf)	EPA <sub>ai</sub> (sf)	Wt. (lb)	Ice Wt (lb)	F <sub>st</sub> (lb)	F <sub>a</sub> (lb)	Force (lb)
11	230	11.72	0.000	45.353	0.00	0.179	2.67	0.80	1.00	0.0	25.16	67.10	0.00	3941	0	669	99	767
10	210	11.50	0.000	45.187	0.00	0.153	2.76	0.80	1.00	0.0	24.73	68.26	0.00	4113	0	667	128	795
9	190	11.26	0.000	46.842	0.00	0.137	2.82	0.80	1.00	0.0	25.60	72.23	0.00	4477	0	691	250	941
8	170	11.00	0.000	50.084	0.00	0.128	2.86	0.80	1.00	0.0	27.49	78.52	0.00	5532	0	734	528	1262
7	150	10.72	0.000	57.359	0.00	0.130	2.85	0.80	1.00	0.0	31.63	90.10	0.00	6800	0	821	899	1720
6	130	10.40	0.000	57.395	0.00	0.116	2.90	0.80	1.00	0.0	31.83	92.28	0.00	7077	0	815	979	1794
5	110	10.04	0.000	63.059	0.00	0.116	2.90	0.80	1.00	0.0	34.72	100.70	0.00	6984	0	859	961	1820
4	90	9.62	0.000	57.777	0.00	0.097	2.98	0.80	1.00	0.0	31.99	95.18	0.00	6903	0	779	935	1713
3	70	9.13	0.000	66.406	0.00	0.102	2.96	0.80	1.00	0.0	35.30	104.31	0.00	7731	0	809	888	1697
2	45	8.32	0.000	113.831	0.00	0.107	2.94	0.80	1.00	0.0	62.23	182.80	0.00	12064	0	1292	1214	2506
1	15	6.61	0.000	120.618	0.00	0.102	2.96	0.80	1.00	0.0	65.85	194.62	0.00	13152	0	1093	964	2057
														78,773	0			17,073

1.0D + 1.0W Service 90°  
60 mph Wind with No Ice

Gust Response Factor (Gh): 0.85  
Wind Importance Factor (Iw): 1.00

Sect #	Elev (ft)	Q <sub>Z</sub> (psf)	A <sub>r</sub> (sf)	A <sub>r</sub> (sf)	Ice A <sub>r</sub> (sf)	e	C <sub>r</sub>	D <sub>r</sub>	D <sub>r</sub>	T <sub>iz</sub> (in)	A <sub>e</sub> (sf)	EPA <sub>a</sub> (sf)	EPA <sub>ai</sub> (sf)	Wt. (lb)	Ice Wt (lb)	F <sub>st</sub> (lb)	F <sub>a</sub> (lb)	Force (lb)
11	230	11.72	0.000	45.353	0.00	0.179	2.67	0.85	1.00	0.0	25.16	67.10	0.00	3941	0	669	99	767
10	210	11.50	0.000	45.187	0.00	0.153	2.76	0.85	1.00	0.0	24.73	68.26	0.00	4113	0	667	128	795
9	190	11.26	0.000	46.842	0.00	0.137	2.82	0.85	1.00	0.0	25.60	72.23	0.00	4477	0	691	250	941
8	170	11.00	0.000	50.084	0.00	0.128	2.86	0.85	1.00	0.0	27.49	78.52	0.00	5532	0	734	528	1262
7	150	10.72	0.000	57.359	0.00	0.130	2.85	0.85	1.00	0.0	31.63	90.10	0.00	6800	0	821	899	1720
6	130	10.40	0.000	57.395	0.00	0.116	2.90	0.85	1.00	0.0	31.83	92.28	0.00	7077	0	815	979	1794
5	110	10.04	0.000	63.059	0.00	0.116	2.90	0.85	1.00	0.0	34.72	100.70	0.00	6984	0	859	961	1820
4	90	9.62	0.000	57.777	0.00	0.097	2.98	0.85	1.00	0.0	31.99	95.18	0.00	6903	0	779	935	1713
3	70	9.13	0.000	66.406	0.00	0.102	2.96	0.85	1.00	0.0	35.30	104.31	0.00	7731	0	809	888	1697
2	45	8.32	0.000	113.831	0.00	0.107	2.94	0.85	1.00	0.0	62.23	182.80	0.00	12064	0	1292	1214	2506
1	15	6.61	0.000	120.618	0.00	0.102	2.96	0.85	1.00	0.0	65.85	194.62	0.00	13152	0	1093	964	2057
														78,773	0			17,073



**EQUIVALENT LATERAL FORCE METHOD**

Spectral Response Acceleration for Short Period ( $S_S$ ):	0.21
Spectral Response Acceleration at 1.0 Second Period ( $S_1$ ):	0.05
Long-Period Transition Period ( $T_L$ – Seconds):	6
Importance Factor ( $I_e$ ):	1.00
Site Coefficient $F_a$ :	1.60
Site Coefficient $F_v$ :	2.40
Response Modification Coefficient (R):	3.00
Design Spectral Response Acceleration at Short Period ( $S_{ds}$ ):	0.22
Design Spectral Response Acceleration at 1.0 Second Period ( $S_{d1}$ ):	0.09
Seismic Response Coefficient ( $C_s$ ):	0.04
Upper Limit $C_s$ :	0.04
Lower Limit $C_s$ :	0.03
Period based on Rayleigh Method (sec):	0.72
Redundancy Factor ( $\rho$ ):	1.30
Seismic Force Distribution Exponent (k):	1.11
Total Unfactored Dead Load:	94.90 k
Seismic Base Shear (E):	4.95 k

**SEISMIC**

Load Case: 0.9D - 1.0Ev + 1.0Eh

Seismic

Section	Height Above Base (ft)	Weight (lb)	$W_z$ (lb-ft)	$C_{vx}$	Horizontal Force (lb)	Vertical Force (lb)
11	230.00	3,941	1,640,222	0.088	433	3,370
10	210.00	4,113	1,547,286	0.083	409	3,516
9	190.00	4,477	1,507,291	0.080	398	3,828
8	170.00	5,532	1,646,512	0.088	435	4,730
7	150.00	6,800	1,761,433	0.094	465	5,814
6	130.00	7,077	1,564,145	0.084	413	6,050
5	110.00	6,984	1,282,539	0.068	339	5,971
4	90.00	6,903	1,014,749	0.054	268	5,902
3	70.00	7,731	860,053	0.046	227	6,610
2	45.00	12,064	822,173	0.044	217	10,314
1	15.00	13,152	265,047	0.014	70	11,245
Generic 8' Yagi	240.00	30	13,088	0.001	3	26
Generic 10' Omni	240.00	25	10,907	0.001	3	21
Lightning Rod	240.00	10	4,363	0.000	1	9
Dielectric DCR-L1 w/ Radome	240.00	18	7,853	0.000	2	15
Beacon	240.00	70	30,538	0.002	8	60
Generic Round Side Arm	240.00	375	163,599	0.009	43	321
Generic 8' Omni	234.00	50	21,209	0.001	6	43
Round Side Arm	230.00	150	62,422	0.003	16	128
Generic 12' Omni	229.00	40	16,566	0.001	4	34
Round Side Arm	223.00	150	60,319	0.003	16	128
Empty Flat Side Arm	223.00	150	60,319	0.003	16	128
Ericsson Radio 4449 B71 B85A	202.00	225	81,079	0.004	21	192
Ericsson RRUS 4415 B25	202.00	138	49,728	0.003	13	118
Ericsson Air6449 B41	202.00	312	112,430	0.006	30	267
Ericsson AIR 32 B66AA B2P	202.00	327	117,835	0.006	31	280
Generic Round Sector Frame	202.00	900	324,316	0.017	86	769
RFS APXVAARR24_43-U-NA20	202.00	384	138,267	0.007	37	328
Side Arms	183.00	1,680	542,571	0.029	143	1,436
Flat Light Sector Frame	183.00	1,200	387,551	0.021	102	1,026
Nokia 2.5G MAA - AAHC(64T64R)	181.00	311	99,160	0.005	26	266



Motorola DAP Vx	180.00	80	25,209	0.001	7	68	
Alcatel-Lucent 800 MHz RRH	180.00	159	50,418	0.003	13	136	
Alcatel-Lucent 1900MHz RRH	180.00	264	83,712	0.004	22	226	
Argus LLPX310R	180.00	86	27,207	0.002	7	73	
Generic 24" x 24" Junction Box	180.00	20	6,342	0.000	2	17	
Generic 2' Std. Dish	180.00	42	13,318	0.001	4	36	
RFS APXVSP18-C-A20	180.00	114	36,149	0.002	10	97	
RFS APXV9ERR18-C-A20	180.00	62	19,660	0.001	5	53	
Ericsson AIR 6449 n77D	167.00	245	71,432	0.004	19	209	
Raycap DC6-48-60-18-8F (23.5" Height)	165.00	40	11,517	0.001	3	34	
Ericsson RRUS 4415 B25	165.00	138	39,733	0.002	10	118	
Ericsson RRUS 4478 B14	165.00	180	51,740	0.003	14	154	
Ericsson RRUS 4449 B5, B12	165.00	213	61,328	0.003	16	182	
Ericsson RRUS 32 B66A	165.00	152	43,793	0.002	12	130	
Ericsson RRUS 32 B30	165.00	180	51,826	0.003	14	154	
Raycap DC9-48-60-24-8C-EV	165.00	16	4,607	0.000	1	14	
Powerwave Allgon 7770.00	165.00	105	30,232	0.002	8	90	
Andrew SBNHH-1D65A	165.00	123	35,328	0.002	9	105	
CCI DMP65R-BU6DA	165.00	238	68,583	0.004	18	204	
Generic Round Sector Frame	165.00	900	259,131	0.014	68	769	
Quintel QD6616-7	165.00	390	112,290	0.006	30	333	
Ericsson AIR 6419 N77G	163.00	210	59,652	0.003	16	180	
Commscope CBC78T-DS-43-2X	155.00	62	16,682	0.001	4	53	
Samsung Outdoor CBRS 20W RRH	155.00	56	14,990	0.001	4	48	
Samsung Outdoor CBRS 20W RRH –Clip-on Antenna	155.00	13	3,546	0.000	1	11	
Samsung B5/B13 RRH-BR04C	155.00	211	56,655	0.003	15	180	
Samsung B2/B66A RRH-BR049	155.00	253	68,019	0.004	18	216	
Raycap RxxDC-3315-PF-48	155.00	43	11,498	0.001	3	37	
Samsung MT6407-77A	155.00	245	65,762	0.004	17	209	
Amphenol Antel BXA-80063-6BF-EDIN-X	155.00	58	15,473	0.001	4	49	
Generic Mount Reinforcement	155.00	200	53,727	0.003	14	171	
Commscope JAHH-65B-R3B	155.00	364	97,676	0.005	26	311	
Flat Light Sector Frame	155.00	1,200	322,363	0.017	85	1,026	
Commscope RDIDC-9181-PF-48	145.00	22	5,464	0.000	1	19	
Fujitsu TA08025-B605	145.00	225	56,134	0.003	15	192	
Fujitsu TA08025-B604	145.00	192	47,826	0.003	13	164	
JMA Wireless MX08FRO665-21	145.00	194	48,275	0.003	13	165	
Generic Flat Light Sector Frame	145.00	1,200	299,381	0.016	79	1,026	
Small Side Lights	140.00	135	32,395	0.002	9	115	
Generic 4' Yagi	132.00	15	3,372	0.000	1	13	
Flat Side Arm	132.00	150	33,720	0.002	9	128	
Generic 10' Omni	123.00	25	5,197	0.000	1	21	
Round Side Arm	118.00	150	29,778	0.002	8	128	
Round Side Arm	108.00	150	26,992	0.001	7	128	
Generic 4' Yagi	98.00	15	2,423	0.000	1	13	
Flat Side Arm	98.00	150	24,235	0.001	6	128	
Empty Round Side Arm	80.00	150	19,351	0.001	5	128	
Round Side Arm	8.00	150	1,505	0.000	0	128	
<b>Totals</b>			<b>94,900</b>	<b>18,741,214</b>	<b>1.000</b>	<b>4,948</b>	<b>81,138</b>

**SEISMIC**

Load Case: 1.2D + 1.0Ev + 1.0Eh

Seismic

Section	Height Above Base (ft)	Weight (lb)	W <sub>2</sub> (lb-ft)	C <sub>v</sub>	Horizontal Force (lb)	Vertical Force (lb)
11	230.00	3,941	1,640,222	0.088	433	4,907
10	210.00	4,113	1,547,286	0.083	409	5,120
9	190.00	4,477	1,507,291	0.080	398	5,574
8	170.00	5,532	1,646,512	0.088	435	6,888
7	150.00	6,800	1,761,433	0.094	465	8,466
6	130.00	7,077	1,564,145	0.084	413	8,811
5	110.00	6,984	1,282,539	0.068	339	8,695
4	90.00	6,903	1,014,749	0.054	268	8,594
3	70.00	7,731	860,053	0.046	227	9,625
2	45.00	12,064	822,173	0.044	217	15,020
1	15.00	13,152	265,047	0.014	70	16,374
Generic 8' Yagi	240.00	30	13,088	0.001	3	37
Generic 10' Omni	240.00	25	10,907	0.001	3	31
Lightning Rod	240.00	10	4,363	0.000	1	12

Dielectric DCR-L1 w/ Radome	240.00	18	7,853	0.000	2	22
Beacon	240.00	70	30,538	0.002	8	87
Generic Round Side Arm	240.00	375	163,599	0.009	43	467
Generic 8' Omni	234.00	50	21,209	0.001	6	62
Round Side Arm	230.00	150	62,422	0.003	16	187
Generic 12' Omni	229.00	40	16,566	0.001	4	50
Round Side Arm	223.00	150	60,319	0.003	16	187
Empty Flat Side Arm	223.00	150	60,319	0.003	16	187
Ericsson Radio 4449 B71 B85A	202.00	225	81,079	0.004	21	280
Ericsson RRUS 4415 B25	202.00	138	49,728	0.003	13	172
Ericsson Air6449 B41	202.00	312	112,430	0.006	30	388
Ericsson AIR 32 B66AA B2P	202.00	327	117,835	0.006	31	407
Generic Round Sector Frame	202.00	900	324,316	0.017	86	1,121
RFS APXVAARR24_43-U-NA20	202.00	384	138,267	0.007	37	478
Side Arms	183.00	1,680	542,571	0.029	143	2,092
Flat Light Sector Frame	183.00	1,200	387,551	0.021	102	1,494
Nokia 2.5G MAA - AAHC(64T64R)	181.00	311	99,160	0.005	26	387
Motorola DAP Vx	180.00	80	25,209	0.001	7	99
Alcatel-Lucent 800 MHz RRH	180.00	159	50,418	0.003	13	198
Alcatel-Lucent 1900MHz RRH	180.00	264	83,712	0.004	22	329
Argus LLPX310R	180.00	86	27,207	0.002	7	107
Generic 24" x 24" Junction Box	180.00	20	6,342	0.000	2	25
Generic 2' Std. Dish	180.00	42	13,318	0.001	4	52
RFS APXVSP18-C-A20	180.00	114	36,149	0.002	10	142
RFS APXV9ERR18-C-A20	180.00	62	19,660	0.001	5	77
Ericsson AIR 6449 n77D	167.00	245	71,432	0.004	19	305
Raycap DC6-48-60-18-8F (23.5" Height)	165.00	40	11,517	0.001	3	50
Ericsson RRUS 4415 B25	165.00	138	39,733	0.002	10	172
Ericsson RRUS 4478 B14	165.00	180	51,740	0.003	14	224
Ericsson RRUS 4449 B5, B12	165.00	213	61,328	0.003	16	265
Ericsson RRUS 32 B66A	165.00	152	43,793	0.002	12	189
Ericsson RRUS 32 B30	165.00	180	51,826	0.003	14	224
Raycap DC9-48-60-24-8C-EV	165.00	16	4,607	0.000	1	20
Powerwave Allgon 7770.00	165.00	105	30,232	0.002	8	131
Andrew SBNHH-1D65A	165.00	123	35,328	0.002	9	153
CCI DMP65R-BU6DA	165.00	238	68,583	0.004	18	297
Generic Round Sector Frame	165.00	900	259,131	0.014	68	1,121
Quintel QD6616-7	165.00	390	112,290	0.006	30	486
Ericsson AIR 6419 N77G	163.00	210	59,652	0.003	16	261
Commscope CBC78T-DS-43-2X	155.00	62	16,682	0.001	4	77
Samsung Outdoor CBRS 20W RRH	155.00	56	14,990	0.001	4	69
Samsung Outdoor CBRS 20W RRH -Clip-on Antenna	155.00	13	3,546	0.000	1	16
Samsung B5/B13 RRH-BR04C	155.00	211	56,655	0.003	15	263
Samsung B2/B66A RRH-BR049	155.00	253	68,019	0.004	18	315
Raycap RxxDC-3315-PF-48	155.00	43	11,498	0.001	3	53
Samsung MT6407-77A	155.00	245	65,762	0.004	17	305
Amphenol Antel BXA-80063-6BF-EDIN-X	155.00	58	15,473	0.001	4	72
Generic Mount Reinforcement	155.00	200	53,727	0.003	14	249
Commscope JAHH-65B-R3B	155.00	364	97,676	0.005	26	453
Flat Light Sector Frame	155.00	1,200	322,363	0.017	85	1,494
Commscope RDIDC-9181-PF-48	145.00	22	5,464	0.000	1	27
Fujitsu TA08025-B605	145.00	225	56,134	0.003	15	280
Fujitsu TA08025-B604	145.00	192	47,826	0.003	13	239
JMA Wireless MX08FRO665-21	145.00	194	48,275	0.003	13	241
Generic Flat Light Sector Frame	145.00	1,200	299,381	0.016	79	1,494
Small Side Lights	140.00	135	32,395	0.002	9	168
Generic 4' Yagi	132.00	15	3,372	0.000	1	19
Flat Side Arm	132.00	150	33,720	0.002	9	187
Generic 10' Omni	123.00	25	5,197	0.000	1	31
Round Side Arm	118.00	150	29,778	0.002	8	187
Round Side Arm	108.00	150	26,992	0.001	7	187
Generic 4' Yagi	98.00	15	2,423	0.000	1	19
Flat Side Arm	98.00	150	24,235	0.001	6	187
Empty Round Side Arm	80.00	150	19,351	0.001	5	187
Round Side Arm	8.00	150	1,505	0.000	0	187
Totals		94,900	18,741,214	1.000	4,948	118,151

FORCE/STRESS SUMMARY

Section 1 – Base 0.0 (ft) and Height 30.00 (ft)

Max Compression	Pu		Len (ft)	Bracing %				F'y (ksi)	Φc Pn (kip)	Shear		Bear		# Bolt	# Hole	Use %	Controls
	(kip)	Load Case		ΦR <sub>nv</sub> (kip)	ΦR <sub>n</sub> (kip)	X	Y			Z	KL/R						
L PX - 10" DIA PIPE	-294.46	1.2D + 1.0W N	30.078	33	33	33	32.81	50.0	669.65	0.00	0.00	0	0	43	Member X		
H PST - 3-1/2" DIA PIPE	-15.60	1.2D + 1.0W 90°	18.292	100	100	100	163.80	50.0	22.56	0.00	42.31	2	0	69	Member X		
D PST - 3" DIA PIPE	-31.21	1.2D + 1.0W 90°	36.164	33	33	33	0.00	0.0	41.40	0.00	60.65	3	0	75	User Input		

Max Tension Member	Pu		Fy (ksi)	Fu (ksi)	Φc Pn (kip)	Shear		Bear		Blk Shear		# Bolt	# Hole	Use %	Controls
	(kip)	Load Case				ΦR <sub>nv</sub> (kip)	ΦR <sub>n</sub> (kip)	Φt Pn (kip)							
L PX - 10" DIA PIPE	233.95	0.9D + 1.0W 60°	50.0	65	724.50	0.00	0.00	0	0	32	Member				
H PST - 3-1/2" DIA PIPE	16.42	1.2D + 1.0W 90°	50.0	65	120.60	0.00	33.93	0.00	2	0	48	Bolt Bear			
D PST - 3" DIA PIPE	29.09	1.2D + 1.0W 90°	50.0	65	100.35	0.00	52.65	0.00	3	0	55	Bolt Bear			

Max Splice Forces	Pu		ΦR <sub>nt</sub> (kip)	Use %	Num Bolts	Bolt Type
	(kip)	Load Case				
Top Tension	232.29	0.9D + 1.0W 60°	0.00	0	0	
Bot Tension	277.67	0.9D + 1.0W 60°	681.46	17	12	1" A193-B7
Bot Compression	341.32	1.2D + 1.0W N	763.24	49	0	

Section 2 – Base 30.0 (ft) and Height 30.00 (ft)

Max Compression	Pu		Len (ft)	Bracing %				F'y (ksi)	Φc Pn (kip)	Shear		Bear		# Bolt	# Hole	Use %	Controls
	(kip)	Load Case		ΦR <sub>nv</sub> (kip)	ΦR <sub>n</sub> (kip)	X	Y			Z	KL/R						
L PX - 10" DIA PIPE	-241.54	1.2D + 1.0W N	30.078	33	33	33	32.81	50.0	669.65	0.00	0.00	0	0	36	Member X		
H PST - 3" DIA PIPE	-15.29	0.9D + 1.0W 90°	16.417	100	100	100	169.83	50.0	17.47	0.00	40.44	2	0	87	Member X		
D PST - 3" DIA PIPE	-34.28	1.2D + 1.0W 90°	35.153	33	33	33	120.01	50.0	34.98	0.00	60.65	3	0	97	Member X		

Max Tension Member	Pu		Fy (ksi)	Fu (ksi)	Φc Pn (kip)	Shear		Bear		Blk Shear		# Bolt	# Hole	Use %	Controls
	(kip)	Load Case				ΦR <sub>nv</sub> (kip)	ΦR <sub>n</sub> (kip)	Φt Pn (kip)							
L PX - 10" DIA PIPE	188.40	0.9D + 1.0W 60°	50.0	65	724.50	0.00	0.00	0	0	26	Member				
H PST - 3" DIA PIPE	16.08	1.2D + 1.0W 90°	50.0	65	100.35	0.00	32.43	0.00	2	0	49	Bolt Bear			
D PST - 3" DIA PIPE	31.80	0.9D + 1.0W 90°	50.0	65	100.35	0.00	52.65	0.00	3	0	60	Bolt Bear			

Max Splice Forces	Pu		ΦR <sub>nt</sub> (kip)	Use %	Num Bolts	Bolt Type
	(kip)	Load Case				
Top Tension	186.80	0.9D + 1.0W 60°	0.00	0	0	
Bot Tension	232.29	0.9D + 1.0W 60°	654.20	36	12	1 A325

Section 3 – Base 60.0 (ft) and Height 20.00 (ft)

Max Compression	Pu		Len (ft)	Bracing %				F'y (ksi)	Φc Pn (kip)	Shear		Bear		# Bolt	# Hole	Use %	Controls
	(kip)	Load Case		ΦR <sub>nv</sub> (kip)	ΦR <sub>n</sub> (kip)	X	Y			Z	KL/R						
L PX - 10" DIA PIPE	-205.17	1.2D + 1.0W N	20.052	50	50	50	33.14	50.0	668.58	0.00	0.00	0	0	30	Member X		
H PST - 3" DIA PIPE	-13.99	0.9D + 1.0W 90°	15.167	100	100	100	156.89	50.0	20.47	0.00	40.44	2	0	68	Member X		
D PST - 3" DIA PIPE	-25.15	1.2D + 1.0W 90°	25.885	50	50	50	133.89	50.0	28.10	0.00	50.54	3	0	89	Member X		

Max Tension Member	Pu		Fy (ksi)	Fu (ksi)	Φc Pn (kip)	Shear		Bear		Blk Shear		# Bolt	# Hole	Use %	Controls
	(kip)	Load Case				ΦR <sub>nv</sub> (kip)	ΦR <sub>n</sub> (kip)	Φt Pn (kip)							
L PX - 10" DIA PIPE	152.57	1.2D + 1.0W 60°	50.0	65	724.50	0.00	0.00	0	0	21	Member				
H PST - 3" DIA PIPE	14.73	1.2D + 1.0W 90°	50.0	65	100.35	0.00	32.43	0.00	2	0	45	Bolt Bear			
D PST - 3" DIA PIPE	23.39	0.9D + 1.0W 90°	50.0	65	100.35	0.00	43.80	0.00	3	0	53	Bolt Bear			

Max Splice Forces	Pu		ΦR <sub>nt</sub> (kip)	Use %	Num Bolts	Bolt Type
	(kip)	Load Case				
Top Tension	157.51	0.9D + 1.0W 60°	0.00	0	0	

**FORCE/STRESS SUMMARY**

Bot Tension 186.80 0.9D + 1.0W 60° 654.20 29 12 1 A325

Section 4 – Base 80.0 (ft) and Height 20.00 (ft)

Max Compression	Pu (kip)	Load Case	Len (ft)	Bracing %			KL/R	F'y (ksi)	Φc Pn (kip)	Shear	Bear	# Bolt	# Hole	Use %	Controls
				ΦRnv (kip)	ΦRn (kip)										
L PX - 8" DIA PIPE	-169.84	1.2D + 1.0W N	20.059	50	50	50	41.79	50.0	506.95	0.00	0.00	0	0	33	Member X
H PST - 3" DIA PIPE	-12.90	1.2D + 1.0W 90°	13.839	100	100	100	143.16	50.0	24.58	0.00	40.44	2	0	52	Member X
D PST - 3" DIA PIPE	-24.28	1.2D + 1.0W 90°	25.112	50	50	50	129.89	50.0	29.86	0.00	50.54	3	0	81	Member X

Max Tension Member	Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	Φc Pn (kip)	ΦRnv (kip)	ΦRn (kip)	Shear	Bear	Blk Shear	# Bolt	# Hole	Use %	Controls
								ΦRnv (kip)	ΦRn (kip)	Φt Pn (kip)				
L PX - 8" DIA PIPE	128.91	0.9D + 1.0W 60°	50.0	65	576.00	0.00	0.00	0.00	0.00	0.00	0	0	22	Member
H PST - 3" DIA PIPE	13.37	1.2D + 1.0W 90°	50.0	65	100.35	0.00	32.43	0.00	32.43	0.00	2	0	41	Bolt Bear
D PST - 3" DIA PIPE	22.55	1.2D + 1.0W 90°	50.0	65	100.35	0.00	43.80	0.00	43.80	0.00	3	0	51	Bolt Bear

Max Splice Forces	Pu (kip)	Load Case	ΦRnt (kip)	Use %	Num Bolts	Bolt Type
Top Tension	127.49	0.9D + 1.0W 60°	0.00	0	0	
Bot Tension	157.51	0.9D + 1.0W 60°	654.20	24	12	1 A325

Section 5 – Base 100.0 (ft) and Height 20.00 (ft)

Max Compression	Pu (kip)	Load Case	Len (ft)	Bracing %			KL/R	F'y (ksi)	Φc Pn (kip)	Shear	Bear	# Bolt	# Hole	Use %	Controls
				ΦRnv (kip)	ΦRn (kip)										
L PX - 8" DIA PIPE	-133.36	1.2D + 1.0W N	20.052	50	50	50	41.78	50.0	507.00	0.00	0.00	0	0	26	Member X
H PST - 2-1/2" DIA PIPE	-11.98	0.9D + 1.0W 90°	12.589	100	100	100	159.52	50.0	15.13	0.00	38.00	2	0	79	Member X
D PST - 2-1/2" DIA PIPE	-24.33	1.2D + 1.0W 90°	24.332	50	50	50	0.00	0.0	28.20	0.00	47.50	3	0	86	User Input

Max Tension Member	Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	Φc Pn (kip)	ΦRnv (kip)	ΦRn (kip)	Shear	Bear	Blk Shear	# Bolt	# Hole	Use %	Controls
								ΦRnv (kip)	ΦRn (kip)	Φt Pn (kip)				
L PX - 8" DIA PIPE	92.58	1.2D + 1.0W 60°	50.0	65	576.00	0.00	0.00	0.00	0.00	0.00	0	0	16	Member
H PST - 2-1/2" DIA PIPE	12.66	1.2D + 1.0W 90°	50.0	65	76.68	0.00	30.48	0.00	30.48	0.00	2	0	41	Bolt Bear
D PST - 2-1/2" DIA PIPE	22.64	1.2D + 1.0W 90°	50.0	65	76.68	0.00	41.17	0.00	41.17	0.00	3	0	55	Bolt Bear

Max Splice Forces	Pu (kip)	Load Case	ΦRnt (kip)	Use %	Num Bolts	Bolt Type
Top Tension	96.32	0.9D + 1.0W 60°	0.00	0	0	
Bot Tension	127.49	0.9D + 1.0W 60°	436.14	29	8	1 A325

Section 6 – Base 120.0 (ft) and Height 20.00 (ft)

Max Compression	Pu (kip)	Load Case	Len (ft)	Bracing %			KL/R	F'y (ksi)	Φc Pn (kip)	Shear	Bear	# Bolt	# Hole	Use %	Controls
				ΦRnv (kip)	ΦRn (kip)										
L PX - 8" DIA PIPE	-114.75	1.2D + 1.0W N	10.026	100	100	100	41.78	50.0	507.00	0.00	0.00	0	0	22	Member X
H PST - 2-1/2" DIA PIPE	-11.10	0.9D + 1.0W 90°	11.964	100	100	100	151.60	50.0	16.75	0.00	31.67	2	0	66	Member X
D PST - 3" DIA PIPE	-15.78	1.2D + 1.0W 90°	16.081	100	100	100	166.36	50.0	18.20	0.00	50.54	3	0	86	Member X

Max Tension Member	Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	Φc Pn (kip)	ΦRnv (kip)	ΦRn (kip)	Shear	Bear	Blk Shear	# Bolt	# Hole	Use %	Controls
								ΦRnv (kip)	ΦRn (kip)	Φt Pn (kip)				
L PX - 8" DIA PIPE	82.77	0.9D + 1.0W 60°	50.0	65	576.00	0.00	0.00	0.00	0.00	0.00	0	0	14	Member
H PST - 2-1/2" DIA PIPE	11.74	1.2D + 1.0W 90°	50.0	65	76.68	0.00	25.33	0.00	25.33	0.00	2	0	46	Bolt Bear
D PST - 3" DIA PIPE	14.65	1.2D + 1.0W 90°	50.0	65	100.35	0.00	43.80	0.00	43.80	0.00	3	0	33	Bolt Bear

Max Splice Forces	Pu (kip)	Load Case	ΦRnt (kip)	Use %	Num Bolts	Bolt Type
Top Tension	66.58	0.9D + 1.0W 60°	0.00	0	0	
Bot Tension	96.32	0.9D + 1.0W 60°	436.14	22	8	1 A325

FORCE/STRESS SUMMARY

Section 7 – Base 140.0 (ft) and Height 20.00 (ft)

Max Compression	Pu (kip) Load Case		Len (ft)	Bracing %			KL/R	F <sub>y</sub> (ksi)	Φ <sub>c</sub> P <sub>n</sub> (kip)	ΦR <sub>nv</sub> (kip)	ΦR <sub>n</sub> (kip)	Shear		Bear		# Bolt	# Hole	Use %	Controls
	X	Y		Z	Φ <sub>t</sub> P <sub>n</sub> (kip)	ΦR <sub>n</sub> (kip)													
L PX - 8" DIA PIPE	-79.56	1.2D + 1.0W N	10.026	100	100	100	41.78	50.0	507.00	0.00	0.00	0	0	15	Member X				
H PST - 2-1/2" DIA PIPE	-9.24	0.9D + 1.0W 90°	10.714	100	100	100	135.76	50.0	20.89	0.00	31.67	2	0	44	Member X				
D PST - 2-1/2" DIA PIPE	-13.83	1.2D + 1.0W 90°	15.123	100	100	100	0.00	0.0	23.40	0.00	47.50	3	0	59	User Input				

Max Tension Member	Pu (kip) Load Case		F <sub>y</sub> (ksi)	F <sub>u</sub> (ksi)	Φ <sub>c</sub> P <sub>n</sub> (kip)	ΦR <sub>nv</sub> (kip)	ΦR <sub>n</sub> (kip)	Φ <sub>t</sub> P <sub>n</sub> (kip)	Shear		Bear		# Bolt	# Hole	Use %	Controls
	X	Y							Z	Φ <sub>t</sub> P <sub>n</sub> (kip)	ΦR <sub>n</sub> (kip)					
L PX - 8" DIA PIPE	54.02	0.9D + 1.0W 60°	50.0	65	576.00	0.00	0.00	0	0	9	Member					
H PST - 2-1/2" DIA PIPE	9.79	1.2D + 1.0W 90°	50.0	65	76.68	0.00	25.33	0.00	2	0	38	Bolt Bear				
D PST - 2-1/2" DIA PIPE	12.81	1.2D + 1.0W 90°	50.0	65	76.68	0.00	41.17	0.00	3	0	31	Bolt Bear				

Max Splice Forces	Pu (kip)	Load Case	ΦR <sub>nt</sub> (kip)	Use %	Num Bolts	Bolt Type
Top Tension	38.98	0.9D + 1.0W 60°	0.00	0	0	
Bot Tension	66.58	0.9D + 1.0W 60°	436.14	15	8	1 A325

Section 8 – Base 160.0 (ft) and Height 20.00 (ft)

Max Compression	Pu (kip) Load Case		Len (ft)	Bracing %			KL/R	F <sub>y</sub> (ksi)	Φ <sub>c</sub> P <sub>n</sub> (kip)	ΦR <sub>nv</sub> (kip)	ΦR <sub>n</sub> (kip)	Shear		Bear		# Bolt	# Hole	Use %	Controls
	X	Y		Z	Φ <sub>t</sub> P <sub>n</sub> (kip)	ΦR <sub>n</sub> (kip)													
L PX - 8" DIA PIPE	-49.16	1.2D + 1.0W N	10.026	100	100	100	41.78	50.0	507.00	0.00	0.00	0	0	9	Member X				
H PST - 2-1/2" DIA PIPE	-5.42	1.2D + 1.0W 90°	9.464	100	100	100	119.92	50.0	26.77	0.00	31.67	2	0	20	Member X				
D PST - 2-1/2" DIA PIPE	-8.85	1.2D + 1.0W 90°	14.209	100	100	100	180.06	50.0	11.87	0.00	47.50	3	0	74	Member X				

Max Tension Member	Pu (kip) Load Case		F <sub>y</sub> (ksi)	F <sub>u</sub> (ksi)	Φ <sub>c</sub> P <sub>n</sub> (kip)	ΦR <sub>nv</sub> (kip)	ΦR <sub>n</sub> (kip)	Φ <sub>t</sub> P <sub>n</sub> (kip)	Shear		Bear		# Bolt	# Hole	Use %	Controls
	X	Y							Z	Φ <sub>t</sub> P <sub>n</sub> (kip)	ΦR <sub>n</sub> (kip)					
L PX - 8" DIA PIPE	29.69	1.2D + 1.0W 60°	50.0	65	576.00	0.00	0.00	0	0	5	Member					
H PST - 2-1/2" DIA PIPE	5.84	1.2D + 1.0W 90°	50.0	65	76.68	0.00	25.33	0.00	2	0	23	Bolt Bear				
D PST - 2-1/2" DIA PIPE	8.06	1.2D + 1.0W 90°	50.0	65	76.68	0.00	41.17	0.00	3	0	19	Bolt Bear				

Max Splice Forces	Pu (kip)	Load Case	ΦR <sub>nt</sub> (kip)	Use %	Num Bolts	Bolt Type
Top Tension	22.71	0.9D + 1.0W 60°	0.00	0	0	
Bot Tension	38.98	0.9D + 1.0W 60°	436.14	9	8	1 A325

Section 9 – Base 180.0 (ft) and Height 20.00 (ft)

Max Compression	Pu (kip) Load Case		Len (ft)	Bracing %			KL/R	F <sub>y</sub> (ksi)	Φ <sub>c</sub> P <sub>n</sub> (kip)	ΦR <sub>nv</sub> (kip)	ΦR <sub>n</sub> (kip)	Shear		Bear		# Bolt	# Hole	Use %	Controls
	X	Y		Z	Φ <sub>t</sub> P <sub>n</sub> (kip)	ΦR <sub>n</sub> (kip)													
L PX - 8" DIA PIPE	-28.16	1.2D + 1.0W N	10.026	100	100	100	41.78	50.0	507.00	0.00	0.00	0	0	5	Member X				
H PST - 2" DIA PIPE	-3.34	1.2D + 1.0W 90°	8.214	100	100	100	125.24	50.0	15.41	0.00	24.02	2	0	21	Member X				
D PST - 2-1/2" DIA PIPE	-5.97	1.2D + 1.0W 90°	13.351	100	100	100	169.18	50.0	13.45	0.00	47.50	3	0	44	Member X				

Max Tension Member	Pu (kip) Load Case		F <sub>y</sub> (ksi)	F <sub>u</sub> (ksi)	Φ <sub>c</sub> P <sub>n</sub> (kip)	ΦR <sub>nv</sub> (kip)	ΦR <sub>n</sub> (kip)	Φ <sub>t</sub> P <sub>n</sub> (kip)	Shear		Bear		# Bolt	# Hole	Use %	Controls
	X	Y							Z	Φ <sub>t</sub> P <sub>n</sub> (kip)	ΦR <sub>n</sub> (kip)					
L PX - 8" DIA PIPE	17.78	0.9D + 1.0W 60°	50.0	65	576.00	0.00	0.00	0	0	3	Member					
H PST - 2" DIA PIPE	3.63	1.2D + 1.0W 90°	50.0	65	48.15	0.00	19.22	0.00	2	0	18	Bolt Bear				
D PST - 2-1/2" DIA PIPE	5.37	1.2D + 1.0W 90°	50.0	65	76.68	0.00	41.17	0.00	3	0	13	Bolt Bear				

Max Splice Forces	Pu (kip)	Load Case	ΦR <sub>nt</sub> (kip)	Use %	Num Bolts	Bolt Type
Top Tension	11.06	0.9D + 1.0W 60°	0.00	0	0	
Bot Tension	22.71	0.9D + 1.0W 60°	436.14	5	8	1 A325

FORCE/STRESS SUMMARY

Section 10 – Base 200.0 (ft) and Height 20.00 (ft)

Max Compression	Pu		Len (ft)	Bracing %				F <sub>y</sub> (ksi)	Shear			Bear		# Bolt	# Hole	Use %	Controls
	(kip)	Load Case		X	Y	Z	KL/R		Φ <sub>c</sub> P <sub>n</sub> (kip)	Φ <sub>R<sub>nv</sub></sub> (kip)	Φ <sub>R<sub>n</sub></sub> (kip)						
L PX - 8" DIA PIPE	-13.38	1.2D + 1.0W N	10.021	100	100	100	41.75	50.0	507.06	0.00	0.00	0	0	2	Member X		
H PST - 2" DIA PIPE	-1.68	1.2D + 1.0W N	7.026	100	100	100	107.13	50.0	20.80	0.00	24.02	2	0	8	Member X		
D PST - 2-1/2" DIA PIPE	-3.87	1.2D + 1.0W 90°	12.558	100	100	100	159.12	50.0	15.20	0.00	47.50	3	0	25	Member X		

Max Tension Member	Pu		F <sub>y</sub> (ksi)	F <sub>u</sub> (ksi)	Φ <sub>c</sub> P <sub>n</sub> (kip)	Shear			Bear		Blk Shear Φ <sub>t</sub> P <sub>n</sub> (kip)	# Bolt	# Hole	Use %	Controls
	(kip)	Load Case				Φ <sub>R<sub>nv</sub></sub> (kip)	Φ <sub>R<sub>n</sub></sub> (kip)								
L PX - 8" DIA PIPE	6.88	1.2D + 1.0W 60°	50.0	65	576.00	0.00	0.00	0	0	0	0	0	1	Member	
H PST - 2" DIA PIPE	2.07	1.2D + 1.0W 90°	50.0	65	48.15	0.00	19.22	0.00	2	0	10	Bolt Bear			
D PST - 2-1/2" DIA PIPE	3.35	1.2D + 1.0W 90°	50.0	65	76.68	0.00	41.17	0.00	3	0	8	Bolt Bear			

Max Splice Forces	Pu (kip)	Load Case	Φ <sub>R<sub>nt</sub></sub> (kip)	Use %	Num Bolts	Bolt Type
Top Tension	3.66	0.9D + 1.0W 60°	0.00	0	0	
Bot Tension	11.06	0.9D + 1.0W 60°	436.14	3	8	1 A325

Section 11 – Base 220.0 (ft) and Height 20.00 (ft)

Max Compression	Pu		Len (ft)	Bracing %				F <sub>y</sub> (ksi)	Shear			Bear		# Bolt	# Hole	Use %	Controls
	(kip)	Load Case		X	Y	Z	KL/R		Φ <sub>c</sub> P <sub>n</sub> (kip)	Φ <sub>R<sub>nv</sub></sub> (kip)	Φ <sub>R<sub>n</sub></sub> (kip)						
L PX - 8" DIA PIPE	-4.90	1.2D + 1.0W N	6.678	100	100	100	27.82	50.0	544.30	0.00	0.00	0	0	0	Member X		
H PST - 2" DIA PIPE	-1.07	1.2D + 1.0W 90°	6.13	100	100	100	93.47	50.0	25.42	0.00	24.02	2	0	4	Member X		
D PST - 2" DIA PIPE	-2.08	1.2D + 1.0W 90°	9.288	100	100	100	141.61	50.0	12.05	0.00	36.04	3	0	17	Member X		

Max Tension Member	Pu		F <sub>y</sub> (ksi)	F <sub>u</sub> (ksi)	Φ <sub>c</sub> P <sub>n</sub> (kip)	Shear			Bear		Blk Shear Φ <sub>t</sub> P <sub>n</sub> (kip)	# Bolt	# Hole	Use %	Controls
	(kip)	Load Case				Φ <sub>R<sub>nv</sub></sub> (kip)	Φ <sub>R<sub>n</sub></sub> (kip)								
L PX - 8" DIA PIPE	0.02	1.2D + 1.0W N	50.0	65	576.00	0.00	0.00	0	0	0	0	0	0	Member	
H PST - 2" DIA PIPE	1.19	1.2D + 1.0W 60°	50.0	65	48.15	0.00	19.22	0.00	2	0	6	Bolt Bear			
D PST - 2" DIA PIPE	1.71	1.2D + 1.0W 90°	50.0	65	48.15	0.00	31.23	0.00	3	0	5	Bolt Bear			

Max Splice Forces	Pu (kip)	Load Case	Φ <sub>R<sub>nt</sub></sub> (kip)	Use %	Num Bolts	Bolt Type
Bot Tension	3.66	0.9D + 1.0W 60°	436.14	1	8	1 A325

DETAILED REACTIONS

Load Case	Radius (ft)	Elevation (ft)	Azimuth (deg)	Node	*(-) Uplift and (+) Down		
					*Fx (kip)	*Fy (kip)	*Fz (kip)
1.2D + 1.0W Normal	23.29	0.00	0	1	0.00	340.58	-48.83
	23.29	0.00	120	1a	12.99	-113.35	-16.21
	23.29	0.00	240	1b	-12.99	-113.35	-16.21
1.2D + 1.0W 60°	23.29	0.00	0	1	-7.27	189.28	-26.28
	23.29	0.00	120	1a	-26.39	189.27	6.85
	23.29	0.00	240	1b	-36.75	-264.68	-21.22
1.2D + 1.0W 90°	23.29	0.00	0	1	-8.56	37.96	-3.54
	23.29	0.00	120	1a	-39.15	300.05	17.83
	23.29	0.00	240	1b	-33.59	-224.13	-14.29
0.9D + 1.0W Normal	23.29	0.00	0	1	0.00	330.90	-47.96
	23.29	0.00	120	1a	13.75	-122.74	-16.67
	23.29	0.00	240	1b	-13.75	-122.74	-16.67
0.9D + 1.0W 60°	23.29	0.00	0	1	-7.28	179.68	-25.39
	23.29	0.00	120	1a	-25.63	179.67	6.39
	23.29	0.00	240	1b	-37.51	-273.95	-21.65
0.9D + 1.0W 90°	23.29	0.00	0	1	-8.57	28.47	-2.66
	23.29	0.00	120	1a	-38.38	290.37	17.38
	23.29	0.00	240	1b	-34.35	-233.43	-14.72
1.2D + 1.0Di + 1.0Wi Normal	23.29	0.00	0	1	0.00	163.17	-21.46
	23.29	0.00	120	1a	0.66	11.12	-3.46
	23.29	0.00	240	1b	-0.66	11.12	-3.46
1.2D + 1.0Di + 1.0Wi 60°	23.29	0.00	0	1	-2.64	112.48	-13.56
	23.29	0.00	120	1a	-13.06	112.48	4.50
	23.29	0.00	240	1b	-8.88	-39.55	-5.13
1.2D + 1.0Di + 1.0Wi 90°	23.29	0.00	0	1	-3.06	61.80	-5.64
	23.29	0.00	120	1a	-17.51	149.58	8.36
	23.29	0.00	240	1b	-7.81	-25.97	-2.72
1.2D + 1.0Ev + 1.0Eh Normal	23.29	0.00	0	1	0.00	60.51	-6.54
	23.29	0.00	120	1a	-2.12	26.06	0.82
	23.29	0.00	240	1b	2.12	26.06	0.82
1.2D + 1.0Ev + 1.0Eh 60°	23.29	0.00	0	1	-0.35	49.02	-5.11
	23.29	0.00	120	1a	-4.60	49.02	2.25
	23.29	0.00	240	1b	0.71	14.58	0.41
1.2D + 1.0Ev + 1.0Eh 90°	23.29	0.00	0	1	-0.40	37.54	-3.68
	23.29	0.00	120	1a	-5.43	57.43	2.91
	23.29	0.00	240	1b	0.94	17.66	0.78
0.9D - 1.0Ev + 1.0Eh Normal	23.29	0.00	0	1	0.00	48.72	-5.39
	23.29	0.00	120	1a	-1.13	14.31	0.25
	23.29	0.00	240	1b	1.13	14.31	0.25
0.9D - 1.0Ev + 1.0Eh 60°	23.29	0.00	0	1	-0.35	37.25	-3.96
	23.29	0.00	120	1a	-3.60	37.25	1.68
	23.29	0.00	240	1b	-0.29	2.84	-0.17
0.9D - 1.0Ev + 1.0Eh 90°	23.29	0.00	0	1	-0.40	25.78	-2.53
	23.29	0.00	120	1a	-4.43	45.65	2.33
	23.29	0.00	240	1b	-0.06	5.92	0.20
1.0D + 1.0W Service Normal	23.29	0.00	0	1	0.00	116.12	-15.69
	23.29	0.00	120	1a	1.94	-10.61	-3.53
	23.29	0.00	240	1b	-1.94	-10.61	-3.53
1.0D + 1.0W Service 60°	23.29	0.00	0	1	-2.07	73.88	-9.32
	23.29	0.00	120	1a	-9.11	73.87	2.87
	23.29	0.00	240	1b	-8.53	-52.85	-4.92
1.0D + 1.0W Service 90°	23.29	0.00	0	1	-2.40	31.63	-2.95
	23.29	0.00	120	1a	-12.71	104.80	5.96
	23.29	0.00	240	1b	-7.65	-41.53	-3.02

Max Uplift: 273.95 (kip)      Moment Ice: 3540.49 (kip-ft)      Moment: 10570.86 (kip-ft)  
 Max Down: 340.58 (kip)      Total Down Ice: 185.41 (kip)      Total Down: 113.88 (kip)  
 Max Shear: 48.83 (kip)      Total Shear Ice: 28.39 (kip)      Total Shear: 81.3(kip)

1.2D + 1.0W Normal



## DEFLECTIONS AND ROTATIONS

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)	Resultant (deg)
1.2D + 1.0W Normal 115.99 mph wind with no ice	80.00	0.1363	0.0075	0.1279	0.1281
1.2D + 1.0W Normal 115.99 mph wind with no ice	100.00	0.1867	0.0098	0.1671	0.1674
1.2D + 1.0W Normal 115.99 mph wind with no ice	120.00	0.2506	0.0106	0.1807	0.1808
1.2D + 1.0W Normal 115.99 mph wind with no ice	130.00	0.2815	0.0104	0.1769	0.1772
1.2D + 1.0W Normal 115.99 mph wind with no ice	140.00	0.3134	0.0109	0.1870	0.187
1.2D + 1.0W Normal 115.99 mph wind with no ice	160.00	0.3813	0.0111	0.1895	0.1897
1.2D + 1.0W Normal 115.99 mph wind with no ice	170.00	0.4133	0.0107	0.1847	0.1847
1.2D + 1.0W Normal 115.99 mph wind with no ice	180.00	0.4459	0.0109	0.1853	0.1856
1.2D + 1.0W Normal 115.99 mph wind with no ice	200.00	0.5104	0.0107	0.1830	0.183
1.2D + 1.0W Normal 115.99 mph wind with no ice	220.00	0.5733	0.0103	0.1803	0.1803
1.2D + 1.0W Normal 115.99 mph wind with no ice	226.67	0.5942	0.0102	0.1791	0.1791
1.2D + 1.0W Normal 115.99 mph wind with no ice	233.33	0.6149	0.0100	0.1761	0.1763
1.2D + 1.0W Normal 115.99 mph wind with no ice	240.00	0.6354	0.0099	0.1757	0.176
1.2D + 1.0W 60° 115.99 mph wind with no ice	80.00	0.1365	-0.0084	0.1276	0.1277
1.2D + 1.0W 60° 115.99 mph wind with no ice	100.00	0.1867	-0.0112	0.1669	0.1672
1.2D + 1.0W 60° 115.99 mph wind with no ice	120.00	0.2507	-0.0124	0.1810	0.181
1.2D + 1.0W 60° 115.99 mph wind with no ice	130.00	0.2816	-0.0124	0.1766	0.1768
1.2D + 1.0W 60° 115.99 mph wind with no ice	140.00	0.3134	-0.0132	0.1874	0.1874
1.2D + 1.0W 60° 115.99 mph wind with no ice	160.00	0.3814	-0.0139	0.1899	0.1899
1.2D + 1.0W 60° 115.99 mph wind with no ice	170.00	0.4133	-0.0137	0.1849	0.1849
1.2D + 1.0W 60° 115.99 mph wind with no ice	180.00	0.4459	-0.0141	0.1855	0.1855
1.2D + 1.0W 60° 115.99 mph wind with no ice	200.00	0.5104	-0.0144	0.1832	0.1832
1.2D + 1.0W 60° 115.99 mph wind with no ice	220.00	0.5733	-0.0145	0.1804	0.1804
1.2D + 1.0W 60° 115.99 mph wind with no ice	226.67	0.5942	-0.0144	0.1790	0.179
1.2D + 1.0W 60° 115.99 mph wind with no ice	233.33	0.6149	-0.0144	0.1764	0.1765
1.2D + 1.0W 60° 115.99 mph wind with no ice	240.00	0.6353	-0.0144	0.1749	0.175
1.2D + 1.0W 90° 115.99 mph wind with no ice	80.00	0.1365	-0.0097	0.1278	0.1281
1.2D + 1.0W 90° 115.99 mph wind with no ice	100.00	0.1868	-0.0129	0.1672	0.1677
1.2D + 1.0W 90° 115.99 mph wind with no ice	120.00	0.2507	-0.0144	0.1808	0.1809
1.2D + 1.0W 90° 115.99 mph wind with no ice	130.00	0.2816	-0.0144	0.1767	0.1773
1.2D + 1.0W 90° 115.99 mph wind with no ice	140.00	0.3135	-0.0154	0.1870	0.1872
1.2D + 1.0W 90° 115.99 mph wind with no ice	160.00	0.3815	-0.0161	0.1897	0.1898
1.2D + 1.0W 90° 115.99 mph wind with no ice	170.00	0.4134	-0.0159	0.1842	0.1843
1.2D + 1.0W 90° 115.99 mph wind with no ice	180.00	0.446	-0.0163	0.1853	0.1856
1.2D + 1.0W 90° 115.99 mph wind with no ice	200.00	0.5105	-0.0167	0.1829	0.1831
1.2D + 1.0W 90° 115.99 mph wind with no ice	220.00	0.5733	-0.0168	0.1801	0.1803
1.2D + 1.0W 90° 115.99 mph wind with no ice	226.67	0.5942	-0.0168	0.1787	0.1789
1.2D + 1.0W 90° 115.99 mph wind with no ice	233.33	0.6149	-0.0168	0.1763	0.1765
1.2D + 1.0W 90° 115.99 mph wind with no ice	240.00	0.6353	-0.0168	0.1746	0.175
0.9D + 1.0W Normal 115.99 mph wind with no ice	80.00	0.1363	0.0075	0.1277	0.128
0.9D + 1.0W Normal 115.99 mph wind with no ice	100.00	0.1866	0.0098	0.1669	0.1672
0.9D + 1.0W Normal 115.99 mph wind with no ice	120.00	0.2504	0.0106	0.1806	0.1806
0.9D + 1.0W Normal 115.99 mph wind with no ice	130.00	0.2813	0.0104	0.1767	0.177
0.9D + 1.0W Normal 115.99 mph wind with no ice	140.00	0.3131	0.0109	0.1868	0.1868
0.9D + 1.0W Normal 115.99 mph wind with no ice	160.00	0.381	0.0111	0.1893	0.1895
0.9D + 1.0W Normal 115.99 mph wind with no ice	170.00	0.413	0.0107	0.1845	0.1845
0.9D + 1.0W Normal 115.99 mph wind with no ice	180.00	0.4455	0.0109	0.1852	0.1854
0.9D + 1.0W Normal 115.99 mph wind with no ice	200.00	0.51	0.0107	0.1828	0.1828
0.9D + 1.0W Normal 115.99 mph wind with no ice	220.00	0.5728	0.0103	0.1802	0.1802
0.9D + 1.0W Normal 115.99 mph wind with no ice	226.67	0.5937	0.0101	0.1789	0.1789
0.9D + 1.0W Normal 115.99 mph wind with no ice	233.33	0.6143	0.0100	0.1760	0.1762
0.9D + 1.0W Normal 115.99 mph wind with no ice	240.00	0.6348	0.0099	0.1755	0.1757
0.9D + 1.0W 60° 115.99 mph wind with no ice	80.00	0.1364	-0.0084	0.1274	0.1277
0.9D + 1.0W 60° 115.99 mph wind with no ice	100.00	0.1866	-0.0112	0.1668	0.1671
0.9D + 1.0W 60° 115.99 mph wind with no ice	120.00	0.2505	-0.0124	0.1807	0.1808
0.9D + 1.0W 60° 115.99 mph wind with no ice	130.00	0.2814	-0.0124	0.1763	0.1767
0.9D + 1.0W 60° 115.99 mph wind with no ice	140.00	0.3132	-0.0132	0.1871	0.1871
0.9D + 1.0W 60° 115.99 mph wind with no ice	160.00	0.381	-0.0139	0.1896	0.1897
0.9D + 1.0W 60° 115.99 mph wind with no ice	170.00	0.413	-0.0136	0.1847	0.1847
0.9D + 1.0W 60° 115.99 mph wind with no ice	180.00	0.4455	-0.0141	0.1853	0.1853
0.9D + 1.0W 60° 115.99 mph wind with no ice	200.00	0.51	-0.0143	0.1830	0.183
0.9D + 1.0W 60° 115.99 mph wind with no ice	220.00	0.5728	-0.0144	0.1802	0.1802
0.9D + 1.0W 60° 115.99 mph wind with no ice	226.67	0.5937	-0.0144	0.1788	0.1789
0.9D + 1.0W 60° 115.99 mph wind with no ice	233.33	0.6144	-0.0144	0.1762	0.1763



DEFLECTIONS AND ROTATIONS

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)	Resultant (deg)
0.9D + 1.0W 60° 115.99 mph wind with no ice	240.00	0.6348	-0.0144	0.1747	0.1748
0.9D + 1.0W 90° 115.99 mph wind with no ice	80.00	0.1364	-0.0097	0.1277	0.128
0.9D + 1.0W 90° 115.99 mph wind with no ice	100.00	0.1867	-0.0129	0.1671	0.1676
0.9D + 1.0W 90° 115.99 mph wind with no ice	120.00	0.2506	-0.0144	0.1805	0.1807
0.9D + 1.0W 90° 115.99 mph wind with no ice	130.00	0.2814	-0.0144	0.1765	0.1771
0.9D + 1.0W 90° 115.99 mph wind with no ice	140.00	0.3133	-0.0153	0.1868	0.187
0.9D + 1.0W 90° 115.99 mph wind with no ice	160.00	0.3812	-0.0161	0.1894	0.1896
0.9D + 1.0W 90° 115.99 mph wind with no ice	170.00	0.413	-0.0158	0.1839	0.1841
0.9D + 1.0W 90° 115.99 mph wind with no ice	180.00	0.4456	-0.0163	0.1851	0.1854
0.9D + 1.0W 90° 115.99 mph wind with no ice	200.00	0.5101	-0.0167	0.1827	0.1829
0.9D + 1.0W 90° 115.99 mph wind with no ice	220.00	0.5728	-0.0168	0.1800	0.1801
0.9D + 1.0W 90° 115.99 mph wind with no ice	226.67	0.5937	-0.0168	0.1785	0.1787
0.9D + 1.0W 90° 115.99 mph wind with no ice	233.33	0.6143	-0.0168	0.1761	0.1763
0.9D + 1.0W 90° 115.99 mph wind with no ice	240.00	0.6348	-0.0168	0.1743	0.1748
1.2D + 1.0Di + 1.0Wi Normal 48.73 mph wind with 0.850" radial ice	80.00	0.0488	0.0024	0.0429	0.043
1.2D + 1.0Di + 1.0Wi Normal 48.73 mph wind with 0.850" radial ice	100.00	0.0652	0.0031	0.0548	0.0549
1.2D + 1.0Di + 1.0Wi Normal 48.73 mph wind with 0.850" radial ice	120.00	0.0857	0.0033	0.0576	0.0577
1.2D + 1.0Di + 1.0Wi Normal 48.73 mph wind with 0.850" radial ice	130.00	0.0954	0.0031	0.0556	0.0557
1.2D + 1.0Di + 1.0Wi Normal 48.73 mph wind with 0.850" radial ice	140.00	0.1053	0.0033	0.0584	0.0584
1.2D + 1.0Di + 1.0Wi Normal 48.73 mph wind with 0.850" radial ice	160.00	0.1262	0.0033	0.0588	0.0589
1.2D + 1.0Di + 1.0Wi Normal 48.73 mph wind with 0.850" radial ice	170.00	0.1361	0.0031	0.0572	0.0572
1.2D + 1.0Di + 1.0Wi Normal 48.73 mph wind with 0.850" radial ice	180.00	0.1461	0.0032	0.0575	0.0576
1.2D + 1.0Di + 1.0Wi Normal 48.73 mph wind with 0.850" radial ice	200.00	0.166	0.0031	0.0568	0.0569
1.2D + 1.0Di + 1.0Wi Normal 48.73 mph wind with 0.850" radial ice	220.00	0.1855	0.0030	0.0561	0.0562
1.2D + 1.0Di + 1.0Wi Normal 48.73 mph wind with 0.850" radial ice	226.67	0.192	0.0029	0.0559	0.0559
1.2D + 1.0Di + 1.0Wi Normal 48.73 mph wind with 0.850" radial ice	233.33	0.1984	0.0029	0.0550	0.0551
1.2D + 1.0Di + 1.0Wi Normal 48.73 mph wind with 0.850" radial ice	240.00	0.2047	0.0028	0.0550	0.0551
1.2D + 1.0Di + 1.0Wi 60° 48.73 mph wind with 0.850" radial ice	80.00	0.0501	-0.0028	0.0433	0.0433
1.2D + 1.0Di + 1.0Wi 60° 48.73 mph wind with 0.850" radial ice	100.00	0.0664	-0.0036	0.0546	0.0546
1.2D + 1.0Di + 1.0Wi 60° 48.73 mph wind with 0.850" radial ice	120.00	0.0868	-0.0039	0.0579	0.0579
1.2D + 1.0Di + 1.0Wi 60° 48.73 mph wind with 0.850" radial ice	130.00	0.0964	-0.0039	0.0558	0.0558
1.2D + 1.0Di + 1.0Wi 60° 48.73 mph wind with 0.850" radial ice	140.00	0.1063	-0.0041	0.0587	0.0587
1.2D + 1.0Di + 1.0Wi 60° 48.73 mph wind with 0.850" radial ice	160.00	0.127	-0.0043	0.0591	0.0591
1.2D + 1.0Di + 1.0Wi 60° 48.73 mph wind with 0.850" radial ice	170.00	0.137	-0.0042	0.0576	0.0576
1.2D + 1.0Di + 1.0Wi 60° 48.73 mph wind with 0.850" radial ice	180.00	0.1469	-0.0043	0.0577	0.0577
1.2D + 1.0Di + 1.0Wi 60° 48.73 mph wind with 0.850" radial ice	200.00	0.1667	-0.0044	0.0571	0.0571
1.2D + 1.0Di + 1.0Wi 60° 48.73 mph wind with 0.850" radial ice	220.00	0.1861	-0.0045	0.0563	0.0563
1.2D + 1.0Di + 1.0Wi 60° 48.73 mph wind with 0.850" radial ice	226.67	0.1926	-0.0045	0.0558	0.0558
1.2D + 1.0Di + 1.0Wi 60° 48.73 mph wind with 0.850" radial ice	233.33	0.1989	-0.0045	0.0552	0.0552
1.2D + 1.0Di + 1.0Wi 60° 48.73 mph wind with 0.850" radial ice	240.00	0.2053	-0.0045	0.0549	0.0549
1.2D + 1.0Di + 1.0Wi 90° 48.73 mph wind with 0.850" radial ice	80.00	0.0498	-0.0032	0.0432	0.0432
1.2D + 1.0Di + 1.0Wi 90° 48.73 mph wind with 0.850" radial ice	100.00	0.0661	-0.0042	0.0547	0.0548
1.2D + 1.0Di + 1.0Wi 90° 48.73 mph wind with 0.850" radial ice	120.00	0.0865	-0.0045	0.0578	0.0578
1.2D + 1.0Di + 1.0Wi 90° 48.73 mph wind with 0.850" radial ice	130.00	0.0962	-0.0045	0.0557	0.0557
1.2D + 1.0Di + 1.0Wi 90° 48.73 mph wind with 0.850" radial ice	140.00	0.106	-0.0048	0.0586	0.0586
1.2D + 1.0Di + 1.0Wi 90° 48.73 mph wind with 0.850" radial ice	160.00	0.1268	-0.0049	0.0590	0.059
1.2D + 1.0Di + 1.0Wi 90° 48.73 mph wind with 0.850" radial ice	170.00	0.1367	-0.0049	0.0574	0.0575
1.2D + 1.0Di + 1.0Wi 90° 48.73 mph wind with 0.850" radial ice	180.00	0.1467	-0.0050	0.0576	0.0576
1.2D + 1.0Di + 1.0Wi 90° 48.73 mph wind with 0.850" radial ice	200.00	0.1665	-0.0051	0.0570	0.057
1.2D + 1.0Di + 1.0Wi 90° 48.73 mph wind with 0.850" radial ice	220.00	0.1859	-0.0052	0.0562	0.0562
1.2D + 1.0Di + 1.0Wi 90° 48.73 mph wind with 0.850" radial ice	226.67	0.1924	-0.0052	0.0557	0.0558
1.2D + 1.0Di + 1.0Wi 90° 48.73 mph wind with 0.850" radial ice	233.33	0.1988	-0.0052	0.0551	0.0552
1.2D + 1.0Di + 1.0Wi 90° 48.73 mph wind with 0.850" radial ice	240.00	0.2051	-0.0052	0.0547	0.0548
1.2D + 1.0Ev + 1.0Eh Normal Seismic	80.00	0.0092	0.0006	0.0104	0.0104
1.2D + 1.0Ev + 1.0Eh Normal Seismic	100.00	0.0133	0.0008	0.0139	0.014
1.2D + 1.0Ev + 1.0Eh Normal Seismic	120.00	0.0187	0.0010	0.0160	0.016
1.2D + 1.0Ev + 1.0Eh Normal Seismic	130.00	0.0215	0.0010	0.0160	0.016
1.2D + 1.0Ev + 1.0Eh Normal Seismic	140.00	0.0244	0.0011	0.0173	0.0174
1.2D + 1.0Ev + 1.0Eh Normal Seismic	160.00	0.0307	0.0011	0.0185	0.0185
1.2D + 1.0Ev + 1.0Eh Normal Seismic	170.00	0.0339	0.0012	0.0187	0.0188
1.2D + 1.0Ev + 1.0Eh Normal Seismic	180.00	0.0372	0.0012	0.0189	0.019
1.2D + 1.0Ev + 1.0Eh Normal Seismic	200.00	0.0438	0.0012	0.0190	0.0191
1.2D + 1.0Ev + 1.0Eh Normal Seismic	220.00	0.0504	0.0012	0.0185	0.0185
1.2D + 1.0Ev + 1.0Eh Normal Seismic	226.67	0.0525	0.0012	0.0183	0.0183
1.2D + 1.0Ev + 1.0Eh Normal Seismic	233.33	0.0546	0.0011	0.0179	0.0179
1.2D + 1.0Ev + 1.0Eh Normal Seismic	240.00	0.0567	0.0011	0.0177	0.0177
1.2D + 1.0Ev + 1.0Eh 60° Seismic	80.00	0.0092	0.0006	0.0105	0.0105
1.2D + 1.0Ev + 1.0Eh 60° Seismic	100.00	0.0132	0.0008	0.0140	0.014

DEFLECTIONS AND ROTATIONS

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)	Resultant (deg)
1.2D + 1.0Ev + 1.0Eh 60° Seismic	120.00	0.0187	0.0010	0.0161	0.0161
1.2D + 1.0Ev + 1.0Eh 60° Seismic	130.00	0.0214	0.0010	0.0160	0.016
1.2D + 1.0Ev + 1.0Eh 60° Seismic	140.00	0.0244	0.0011	0.0174	0.0174
1.2D + 1.0Ev + 1.0Eh 60° Seismic	160.00	0.0307	0.0011	0.0187	0.0187
1.2D + 1.0Ev + 1.0Eh 60° Seismic	170.00	0.0339	0.0012	0.0189	0.0189
1.2D + 1.0Ev + 1.0Eh 60° Seismic	180.00	0.0372	0.0012	0.0190	0.019
1.2D + 1.0Ev + 1.0Eh 60° Seismic	200.00	0.0438	0.0012	0.0192	0.0192
1.2D + 1.0Ev + 1.0Eh 60° Seismic	220.00	0.0504	0.0012	0.0186	0.0186
1.2D + 1.0Ev + 1.0Eh 60° Seismic	226.67	0.0525	0.0012	0.0183	0.0183
1.2D + 1.0Ev + 1.0Eh 60° Seismic	233.33	0.0546	0.0011	0.0180	0.018
1.2D + 1.0Ev + 1.0Eh 60° Seismic	240.00	0.0567	0.0011	0.0179	0.0179
1.2D + 1.0Ev + 1.0Eh 90° Seismic	80.00	0.0092	-0.0007	0.0105	0.0105
1.2D + 1.0Ev + 1.0Eh 90° Seismic	100.00	0.0133	-0.0010	0.0140	0.014
1.2D + 1.0Ev + 1.0Eh 90° Seismic	120.00	0.0187	-0.0011	0.0160	0.016
1.2D + 1.0Ev + 1.0Eh 90° Seismic	130.00	0.0215	-0.0011	0.0160	0.016
1.2D + 1.0Ev + 1.0Eh 90° Seismic	140.00	0.0244	-0.0012	0.0173	0.0174
1.2D + 1.0Ev + 1.0Eh 90° Seismic	160.00	0.0307	-0.0013	0.0186	0.0186
1.2D + 1.0Ev + 1.0Eh 90° Seismic	170.00	0.0339	-0.0013	0.0188	0.0189
1.2D + 1.0Ev + 1.0Eh 90° Seismic	180.00	0.0372	-0.0014	0.0190	0.019
1.2D + 1.0Ev + 1.0Eh 90° Seismic	200.00	0.0438	-0.0014	0.0191	0.0192
1.2D + 1.0Ev + 1.0Eh 90° Seismic	220.00	0.0504	-0.0013	0.0186	0.0186
1.2D + 1.0Ev + 1.0Eh 90° Seismic	226.67	0.0525	-0.0013	0.0183	0.0183
1.2D + 1.0Ev + 1.0Eh 90° Seismic	233.33	0.0546	-0.0013	0.0180	0.018
1.2D + 1.0Ev + 1.0Eh 90° Seismic	240.00	0.0567	-0.0013	0.0179	0.0179
0.9D - 1.0Ev + 1.0Eh Normal Seismic (Reduced DL)	80.00	0.0092	0.0006	0.0103	0.0103
0.9D - 1.0Ev + 1.0Eh Normal Seismic (Reduced DL)	100.00	0.0132	0.0008	0.0139	0.0139
0.9D - 1.0Ev + 1.0Eh Normal Seismic (Reduced DL)	120.00	0.0187	0.0010	0.0159	0.0159
0.9D - 1.0Ev + 1.0Eh Normal Seismic (Reduced DL)	130.00	0.0214	0.0010	0.0160	0.016
0.9D - 1.0Ev + 1.0Eh Normal Seismic (Reduced DL)	140.00	0.0243	0.0011	0.0173	0.0173
0.9D - 1.0Ev + 1.0Eh Normal Seismic (Reduced DL)	160.00	0.0306	0.0011	0.0184	0.0185
0.9D - 1.0Ev + 1.0Eh Normal Seismic (Reduced DL)	170.00	0.0339	0.0012	0.0187	0.0187
0.9D - 1.0Ev + 1.0Eh Normal Seismic (Reduced DL)	180.00	0.0371	0.0012	0.0189	0.0189
0.9D - 1.0Ev + 1.0Eh Normal Seismic (Reduced DL)	200.00	0.0438	0.0012	0.0190	0.019
0.9D - 1.0Ev + 1.0Eh Normal Seismic (Reduced DL)	220.00	0.0503	0.0012	0.0185	0.0185
0.9D - 1.0Ev + 1.0Eh Normal Seismic (Reduced DL)	226.67	0.0525	0.0011	0.0183	0.0183
0.9D - 1.0Ev + 1.0Eh Normal Seismic (Reduced DL)	233.33	0.0546	0.0011	0.0178	0.0179
0.9D - 1.0Ev + 1.0Eh Normal Seismic (Reduced DL)	240.00	0.0566	0.0011	0.0176	0.0177
0.9D - 1.0Ev + 1.0Eh 60° Seismic (Reduced DL)	80.00	0.0091	0.0006	0.0104	0.0104
0.9D - 1.0Ev + 1.0Eh 60° Seismic (Reduced DL)	100.00	0.0132	0.0008	0.0139	0.0139
0.9D - 1.0Ev + 1.0Eh 60° Seismic (Reduced DL)	120.00	0.0186	0.0010	0.0160	0.016
0.9D - 1.0Ev + 1.0Eh 60° Seismic (Reduced DL)	130.00	0.0214	0.0010	0.0160	0.016
0.9D - 1.0Ev + 1.0Eh 60° Seismic (Reduced DL)	140.00	0.0243	0.0011	0.0173	0.0173
0.9D - 1.0Ev + 1.0Eh 60° Seismic (Reduced DL)	160.00	0.0306	0.0011	0.0186	0.0186
0.9D - 1.0Ev + 1.0Eh 60° Seismic (Reduced DL)	170.00	0.0339	0.0012	0.0188	0.0188
0.9D - 1.0Ev + 1.0Eh 60° Seismic (Reduced DL)	180.00	0.0371	0.0012	0.0190	0.019
0.9D - 1.0Ev + 1.0Eh 60° Seismic (Reduced DL)	200.00	0.0438	0.0012	0.0191	0.0191
0.9D - 1.0Ev + 1.0Eh 60° Seismic (Reduced DL)	220.00	0.0503	0.0012	0.0186	0.0186
0.9D - 1.0Ev + 1.0Eh 60° Seismic (Reduced DL)	226.67	0.0525	0.0011	0.0183	0.0183
0.9D - 1.0Ev + 1.0Eh 60° Seismic (Reduced DL)	233.33	0.0546	0.0011	0.0179	0.0179
0.9D - 1.0Ev + 1.0Eh 60° Seismic (Reduced DL)	240.00	0.0566	0.0011	0.0178	0.0178
0.9D - 1.0Ev + 1.0Eh 90° Seismic (Reduced DL)	80.00	0.0092	-0.0007	0.0104	0.0104
0.9D - 1.0Ev + 1.0Eh 90° Seismic (Reduced DL)	100.00	0.0132	-0.0010	0.0139	0.0139
0.9D - 1.0Ev + 1.0Eh 90° Seismic (Reduced DL)	120.00	0.0186	-0.0011	0.0160	0.016
0.9D - 1.0Ev + 1.0Eh 90° Seismic (Reduced DL)	130.00	0.0214	-0.0011	0.0160	0.016
0.9D - 1.0Ev + 1.0Eh 90° Seismic (Reduced DL)	140.00	0.0243	-0.0012	0.0173	0.0173
0.9D - 1.0Ev + 1.0Eh 90° Seismic (Reduced DL)	160.00	0.0306	-0.0013	0.0185	0.0185
0.9D - 1.0Ev + 1.0Eh 90° Seismic (Reduced DL)	170.00	0.0339	-0.0013	0.0188	0.0188
0.9D - 1.0Ev + 1.0Eh 90° Seismic (Reduced DL)	180.00	0.0371	-0.0014	0.0190	0.019
0.9D - 1.0Ev + 1.0Eh 90° Seismic (Reduced DL)	200.00	0.0438	-0.0014	0.0191	0.0191
0.9D - 1.0Ev + 1.0Eh 90° Seismic (Reduced DL)	220.00	0.0503	-0.0013	0.0185	0.0186
0.9D - 1.0Ev + 1.0Eh 90° Seismic (Reduced DL)	226.67	0.0525	-0.0013	0.0182	0.0183
0.9D - 1.0Ev + 1.0Eh 90° Seismic (Reduced DL)	233.33	0.0546	-0.0013	0.0179	0.0179
0.9D - 1.0Ev + 1.0Eh 90° Seismic (Reduced DL)	240.00	0.0566	-0.0013	0.0177	0.0178
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	80.00	0.0382	0.0021	0.0357	0.0358
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	100.00	0.0521	0.0027	0.0467	0.0467
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	120.00	0.07	0.0030	0.0503	0.0504
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	130.00	0.0786	0.0029	0.0493	0.0494
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	140.00	0.0874	0.0031	0.0520	0.0521

DEFLECTIONS AND ROTATIONS

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)	Resultant (deg)
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	160.00	0.1063	0.0031	0.0529	0.053
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	170.00	0.1153	0.0030	0.0515	0.0515
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	180.00	0.1244	0.0030	0.0518	0.0519
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	200.00	0.1424	0.0030	0.0511	0.0512
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	220.00	0.16	0.0029	0.0504	0.0504
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	226.67	0.1659	0.0029	0.0501	0.0501
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	233.33	0.1717	0.0028	0.0492	0.0493
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	240.00	0.1774	0.0028	0.0492	0.0492
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	80.00	0.0382	-0.0023	0.0357	0.0357
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	100.00	0.0522	-0.0031	0.0465	0.0465
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	120.00	0.07	-0.0034	0.0505	0.0505
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	130.00	0.0786	-0.0035	0.0493	0.0493
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	140.00	0.0874	-0.0037	0.0523	0.0523
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	160.00	0.1064	-0.0039	0.0531	0.0531
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	170.00	0.1153	-0.0038	0.0518	0.0518
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	180.00	0.1244	-0.0039	0.0519	0.0519
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	200.00	0.1424	-0.0040	0.0513	0.0513
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	220.00	0.1601	-0.0040	0.0505	0.0505
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	226.67	0.1659	-0.0040	0.0501	0.0501
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	233.33	0.1717	-0.0040	0.0494	0.0494
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	240.00	0.1774	-0.0040	0.0490	0.049
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	80.00	0.0382	-0.0027	0.0357	0.0358
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	100.00	0.0522	-0.0036	0.0466	0.0467
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	120.00	0.07	-0.0040	0.0504	0.0504
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	130.00	0.0786	-0.0040	0.0493	0.0494
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	140.00	0.0874	-0.0043	0.0522	0.0523
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	160.00	0.1064	-0.0045	0.0530	0.0531
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	170.00	0.1153	-0.0044	0.0515	0.0516
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	180.00	0.1244	-0.0045	0.0519	0.0519
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	200.00	0.1425	-0.0046	0.0512	0.0513
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	220.00	0.16	-0.0046	0.0504	0.0505
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	226.67	0.1659	-0.0046	0.0500	0.05
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	233.33	0.1717	-0.0046	0.0493	0.0494
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	240.00	0.1774	-0.0046	0.0489	0.049

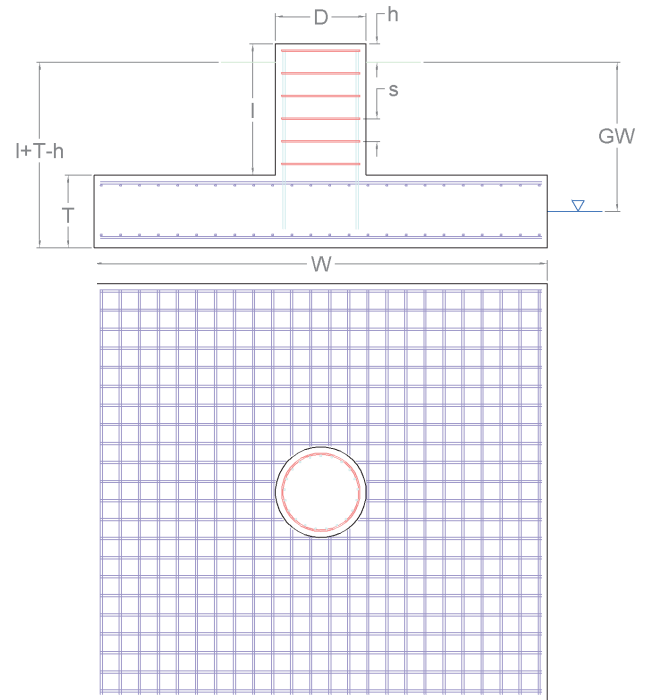
## Pad & Pier Foundation Analysis (ANSI/TIA-222-H)

### Foundation & Soil Parameters

Ignore Rebar?		Y	
Pier Diameter	<i>D</i>	1.00	ft
Pier Height Above Ground	<i>h</i>	0.5	ft
Pad Base Depth	<i>l+T-h</i>	5.6	ft
Pad Width	<i>W</i>	22.0	ft
Pad Thickness	<i>T</i>	6.1	ft
Water Table Depth [BGL]	<i>GW</i>	99	ft
Unit Weight of Concrete		150	pcf
Unit Weight of Soil Above Water Table		140.0	pcf
Unit Weight of Water		62.4	pcf
Unit Weight of Soil [Submerged]		77.6	pcf
Cohesion		13,979	psf
Friction Angle		0	°
Ultimate Skin Friction		0	psf
Ultimate Bearing Pressure		95,574	psf
Conical Failure Angle		30	°
Soil Uplift at _____ of Pad		Top	
Capacity Increase (Transient Loads)		1.00	
Bearing Strength Reduction Factor, $\phi_s$		0.75	
Uplift Strength Reduction Factor, $\phi_s$		0.75	

### Reactions

Moment, $M_u$	0.0	k-ft
Shear, $V_u$	48.8	k
Compression, $P_u$	340.6	k
Uplift, $T_u$	274.0	k



### Soil Axial Capacities and Design Moment

Weight of Concrete [Buoyancy Considered]	442.9	k
Weight of Soil [Buoyancy Considered]	0.0	k
Skin Friction Resistance	0.0	k
Controlling Failure Mode	Top	
Nominal Uplift Capacity per Leg, $\phi_s T_n$	307.4	k
$T_u / \phi_s T_n$	89.1%	
Compressive Force, $P_u$	376.1	k
Nominal Compressive Capacity per Leg, $\phi_s P_n$	34,693.4	k
$P_u / \phi_s P_n$	1.1%	
Inflection Point [BGL]	1.2	ft
Design Moment at Inflection Point, $M_u$	48.4	k-ft



# EXHIBIT 4





**AMERICAN TOWER®**  
CORPORATION

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## Mount Analysis Report


**ATC Site Name** : Tartaglia, CT  
**ATC Site Number** : 383598  
**Engineering Number** : 13682699\_C8\_07  
**Mount Elevation** : 165 ft  
**Carrier** : AT&T Mobility  
**Carrier Site Name** : MRCTB051560  
**Carrier Site Number** : N/A  
**Site Location** : 1000 Trumbull Avenue  
Bridgeport, CT 6606  
41.21959076 , -73.20129723  
**County** : Fairfield  
**Date** : February 28, 2022  
**Max Usage** : 49%  
**Result** : Contingent Pass

Prepared By:  
Garrett Williams  
Structural Engineer I

*Garrett Williams*

Reviewed By:



Authorized by "EOR"  
28 Feb 2022 07:28:16 

COA: PEC.0001553



**Table of Contents**

Introduction ..... 1

Supporting Documents..... 1

Analysis ..... 1

Conclusion ..... 1

Application Loading..... 2

Structure Usages..... 2

Mount Layout ..... 3

Equipment Layout ..... 4

Standard Conditions..... 6

Calculations ..... Attached



## Introduction

The purpose of this report is to summarize results of the mount analysis performed for AT&T Mobility at 165 ft.

## Supporting Documents

<b>Specifications Sheet</b>	Site Pro 1 VFA14-WLL-30120, dated June 29, 2018
<b>Radio Frequency Data Sheet</b>	RFDS ID #10070948, dated October 25, 2021

## Analysis

This mount was analyzed using American Tower Corporation's Mount Analysis Program and RISA-3D

<b>Basic Wind Speed:</b>	119 mph (3-Second Gust)
<b>Basic Wind Speed w/ Ice:</b>	50 mph (3-Second Gust) w/ 1.00" radial ice concurrent
<b>Codes:</b>	ANSI/TIA-222-H
<b>Exposure Category:</b>	C
<b>Risk Category:</b>	II
<b>Topographic Factor Procedure:</b>	Method 2
<b>Feature:</b>	Flat
<b>Crest Height (H):</b>	0 ft
<b>Crest Length (L):</b>	0 ft
<b>Spectral Response:</b>	Ss = 0.211, S1 = 0.054
<b>Site Class:</b>	D - Stiff Soil
<b>Live Loads:</b>	Lm = 500 lbs, Lv = 250 lbs

## Conclusion

Based on the analysis results, the antenna mount meets the requirements per the applicable codes listed above provided the modifications listed below are completed:

- Analysis is based on new Site Pro 1 VFA14-WLL-30120 (CEQ.53332) sector frames.
- Install P2 (2.375" x 126") antenna mounting pipe(s) (Mount Pipe F & G) with Site Pro 1 SCX7-U (ANT.16985 or approved equivalent) crossover plate kits.
- No structural failures were addressed with the noted contingencies. Contingencies address Carrier's antenna spacing requirements.

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





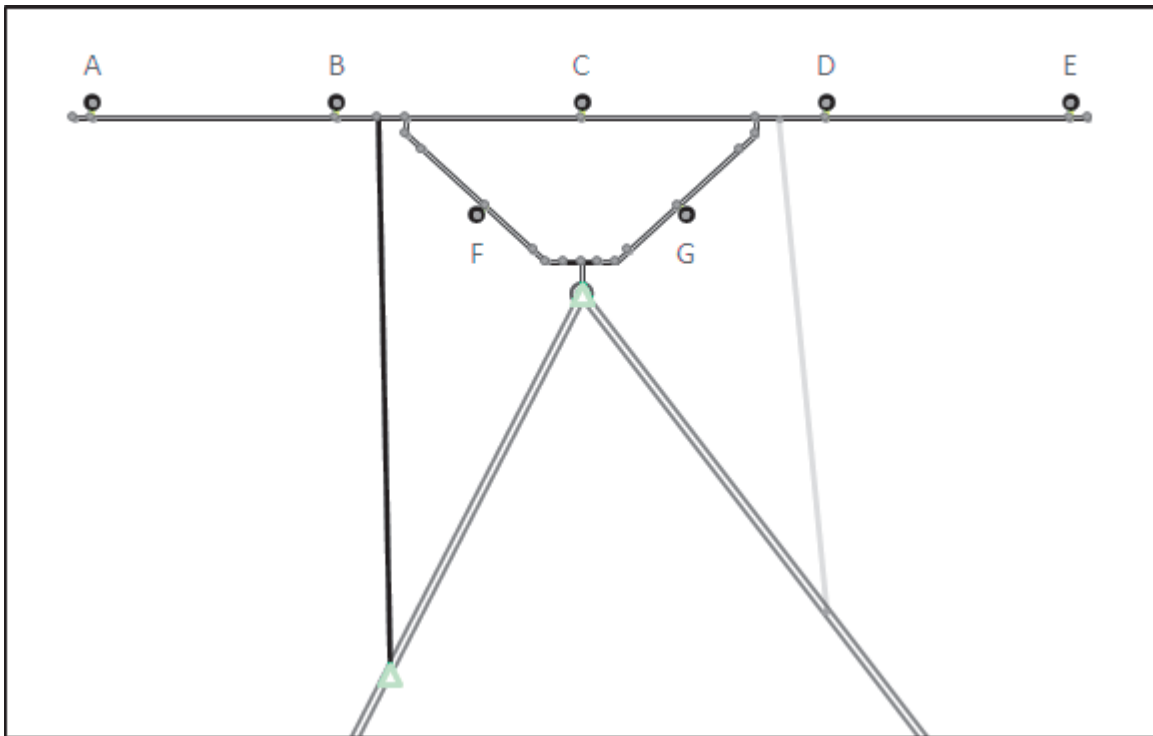
**Application Loading**

Mount Centerline (ft)	Equipment Centerline (ft)	Qty	Equipment Manufacturer & Model
165.0	167.0	3	Ericsson AIR 6449 n77D
	165.0	3	Quintel QD6616-7
		3	Powerwave Allgon 7770
		3	CCI DMP65R-BU6DA
		3	Andrew SBNHH-1D65A
		1	Raycap DC9-48-60-24-8C-EV
		1	Raycap DC6-48-60-18-8F (23.5" Height)
		1	Raycap DC6-48-60-18-8F (23.5" Height)
		3	Ericsson RRUS 32 B30
		3	Ericsson RRUS 32 B66A
		3	Ericsson RRUS 4415 B25
		3	Ericsson RRUS 4478 B14
		3	Ericsson RRUS 4449 B5, B12
		163.0	3

**Structure Usages**

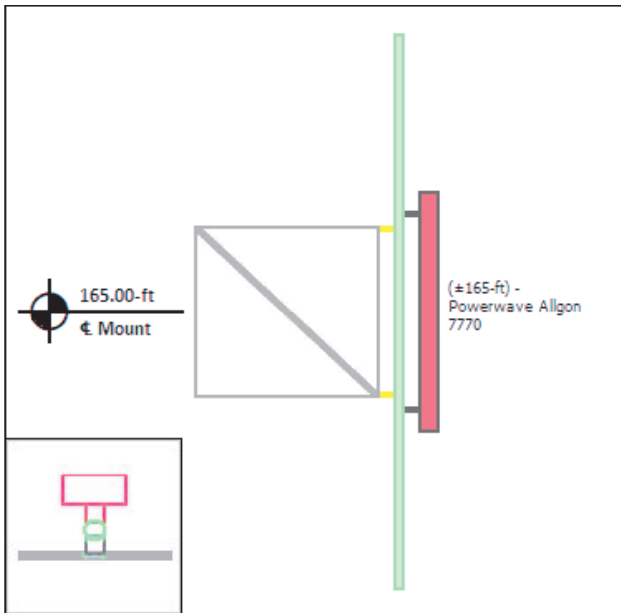
Structural Component	Controlling Usage	Pass/Fail
Horizontals	49%	Pass
Verticals	46%	Pass
Diagonals	21%	Pass
Tie-Backs	12%	Pass
Mount Pipes	18%	Pass

Mount Layout

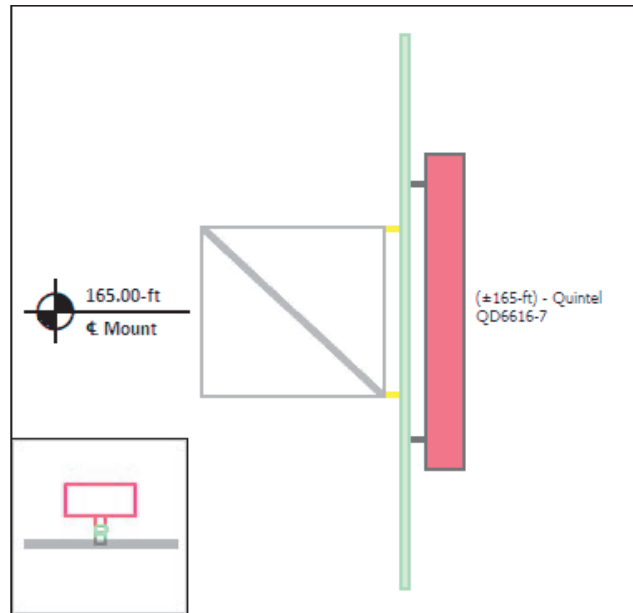


**Equipment Layout**

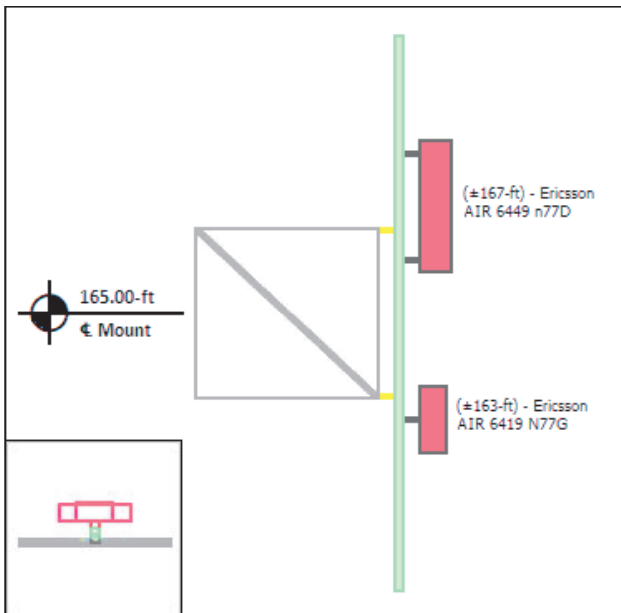
**Mount Pipe A**



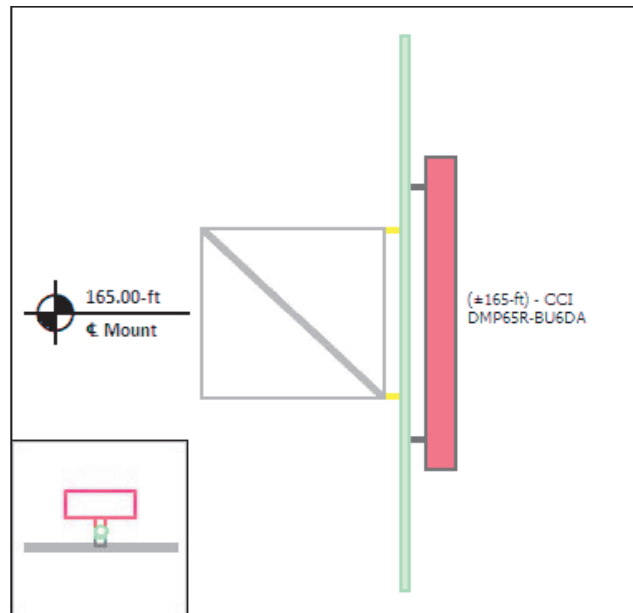
**Mount Pipe B**



**Mount Pipe C**

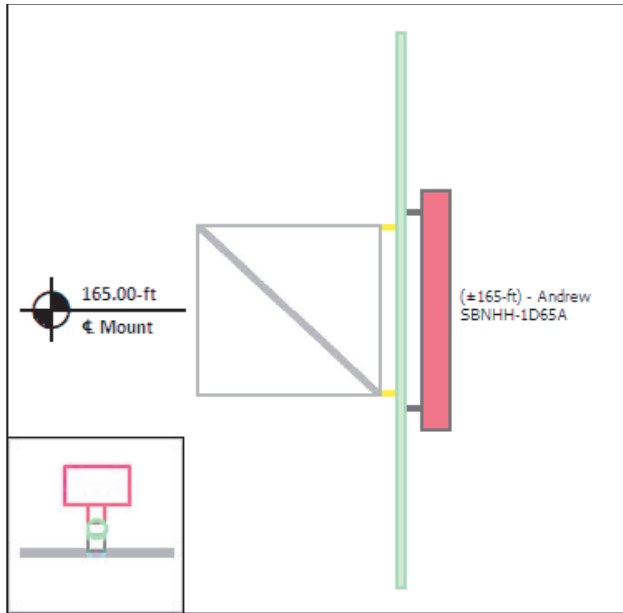


**Mount Pipe D**

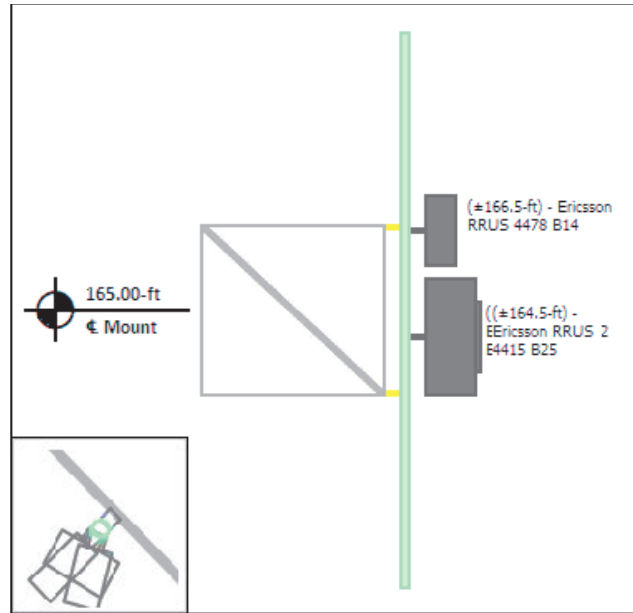


**Equipment Layout Cont'd.**

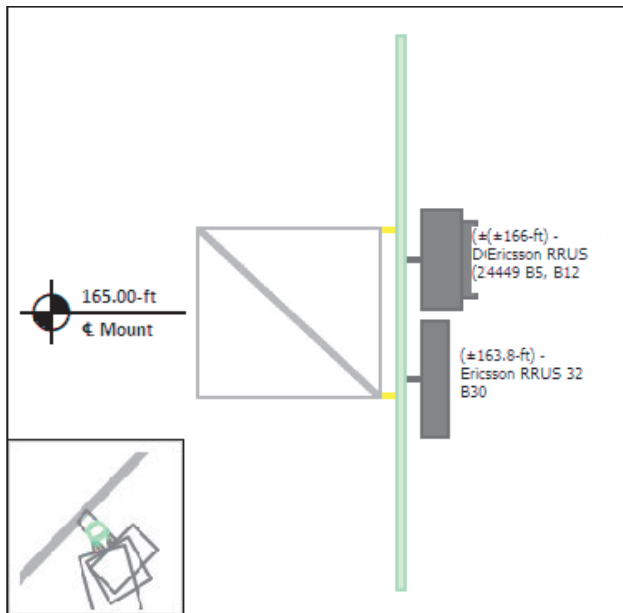
**Mount Pipe E**



**Mount Pipe F**



**Mount Pipe G**





### **Standard Conditions**

All engineering services performed by A.T. Engineering Service, PLLC are prepared on the basis that the information used is current and correct. This information may consist of, but is not limited to the following:

- Information supplied by the client regarding equipment, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Service, PLLC

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.

American Tower assumes that all structures were constructed in accordance with the drawings and specifications.

All connections are to be verified for condition and tightness by the installation contractor preceding any changes to the appurtenance mounting system and/or equipment attached to it.

Unless explicitly agreed by both the client and A.T. Engineering Service, PLLC, all services will be performed in accordance with the current revision of ANSI/TIA-222.

Installation of all equipment and steel should be confirmed not to cause tower conflicts nor impede the tower climbing pegs.

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 supplied herein.



Site Number: 383598  
 Project Number: 13682699\_C8\_07  
 Carrier: AT&T Mobility  
 Mount Elevation: 165 ft  
 Date: 2/28/2022

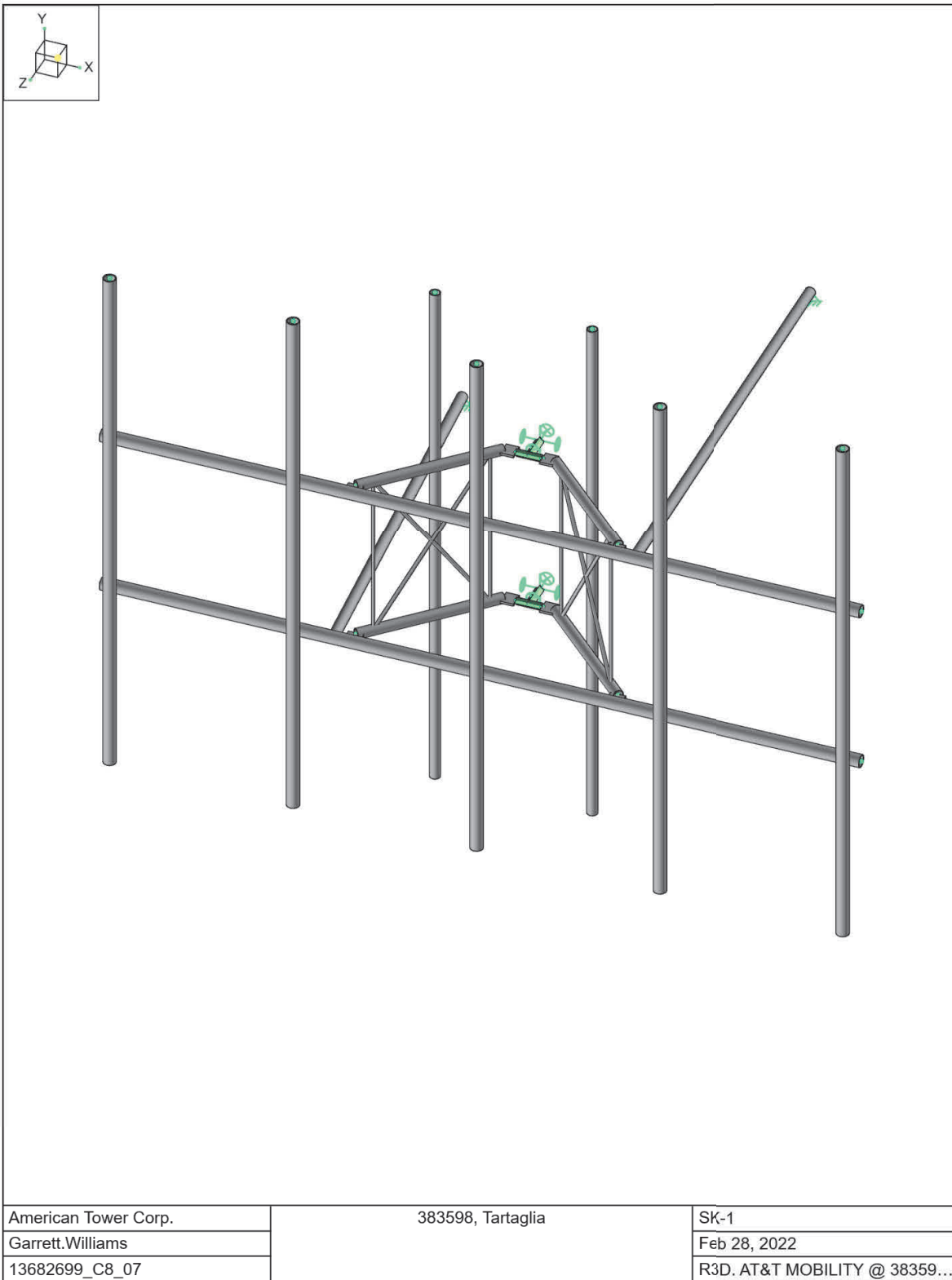
## Mount Analysis Force Calculations

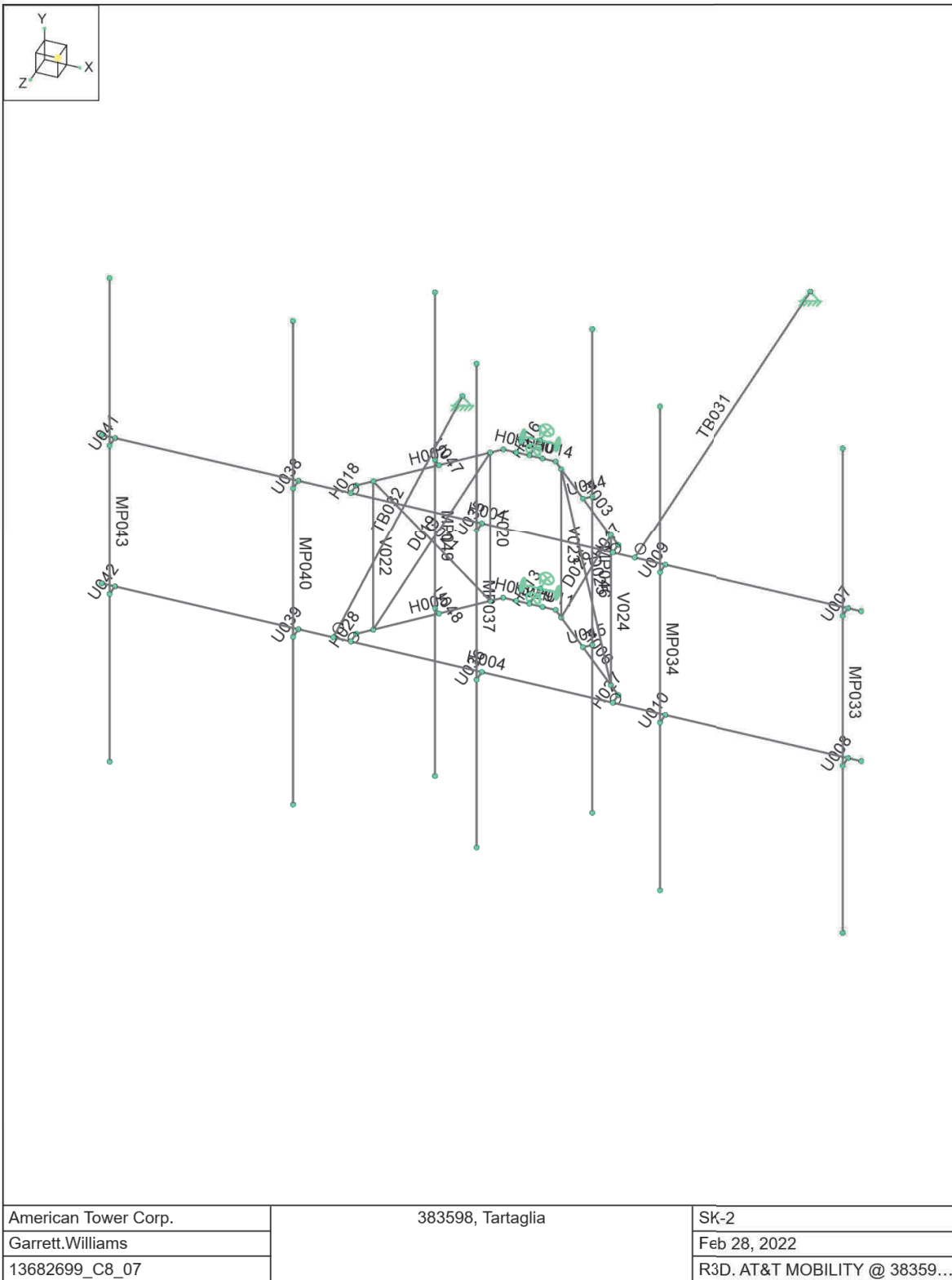
Wind & Ice Load Calculations			
Velocity Pressure Coefficient	$K_z$	1.41	
Topographic Factor	$K_{zt}$	1.00	
Rooftop Wind Speed-up Factor	$K_s$	1.00	
Shielding Factor	$K_a$	0.90	
Ground Elevation Factor	$K_e$	0.99	
Wind Direction Probability Factor	$K_d$	0.95	
Basic Wind Speed	$V$	119	mph
Velocity Pressure	$q_z$	48.1	psf
Height Escalation Factor	$K_{iz}$	1.17	
Thickness of Radial Glaze Ice	$T_{iz}$	1.17	in

Seismic Load Calculations			
Short Period DSRAP	$S_{Ds}$	0.225	
1 Second DSRAP	$S_{D1}$	0.086	
Importance Factor	$I$	1.0	
Response Modification Coefficient	$R$	2.0	
Seismic Response Coefficient	$C_s$	0.113	
Amplification Factor	$A$	1.0	
Total Weight	$W$	1570.7	lbs
Total Shear Force	$V_s$	176.8	lbs
Horizontal Seismic Load	$E_h$	176.8	lbs
Vertical Seismic Load	$E_v$	70.7	lbs

Antenna Calculations (Elevations per Application/RFDS)*								
Equipment	Height	Width	Depth	Weight	$EPA_N$	$EPA_T$	$EPA_{Ni}$	$EPA_{Ti}$
Model #	in	in	in	lbs	sqft	sqft	sqft	sqft
Ericsson AIR 6449 n77D	30.4	15.9	8.1	81.6	4.03	1.34	4.98	1.86
Quintel QD6616-7	72.0	22.0	9.6	130.0	13.58	2.88	15.52	3.70
Powerwave Allgon 7770	55.0	11.0	5.0	35.0	5.51	1.34	6.97	2.06
CCI DMP65R-BU6DA	71.2	20.7	7.7	79.4	12.71	2.28	14.62	3.08
Andrew SBNHH-1D65A	55.0	11.9	7.1	40.9	5.88	1.63	7.35	2.26
Raycap DC9-48-60-24-8C-EV	31.4	18.3	10.2	16.0	N/A	N/A	N/A	N/A
Raycap DC6-48-60-18-8F (23.5" Height)	23.5	9.7	9.7	20.0	1.90	1.90	2.60	2.60
Raycap DC6-48-60-18-8F (23.5" Height)	23.5	9.7	9.7	20.0	N/A	N/A	N/A	N/A
Ericsson RRUS 32 B30	27.2	12.1	7.0	60.0	2.74	1.67	3.56	2.42
Ericsson RRUS 32 B66A	27.2	12.0	7.0	50.7	2.72	1.67	3.53	2.42
Ericsson RRUS 4415 B25	16.5	13.4	5.9	46.0	1.84	0.82	2.47	1.31
Ericsson RRUS 4478 B14	16.5	13.4	7.7	59.9	1.84	1.06	2.47	1.58
Ericsson RRUS 4449 B5, B12	17.9	13.2	9.4	71.0	1.97	1.40	2.62	1.98
Ericsson AIR 6419 N77G	15.7	30.0	6.7	70.0	3.93	0.37	4.87	0.57

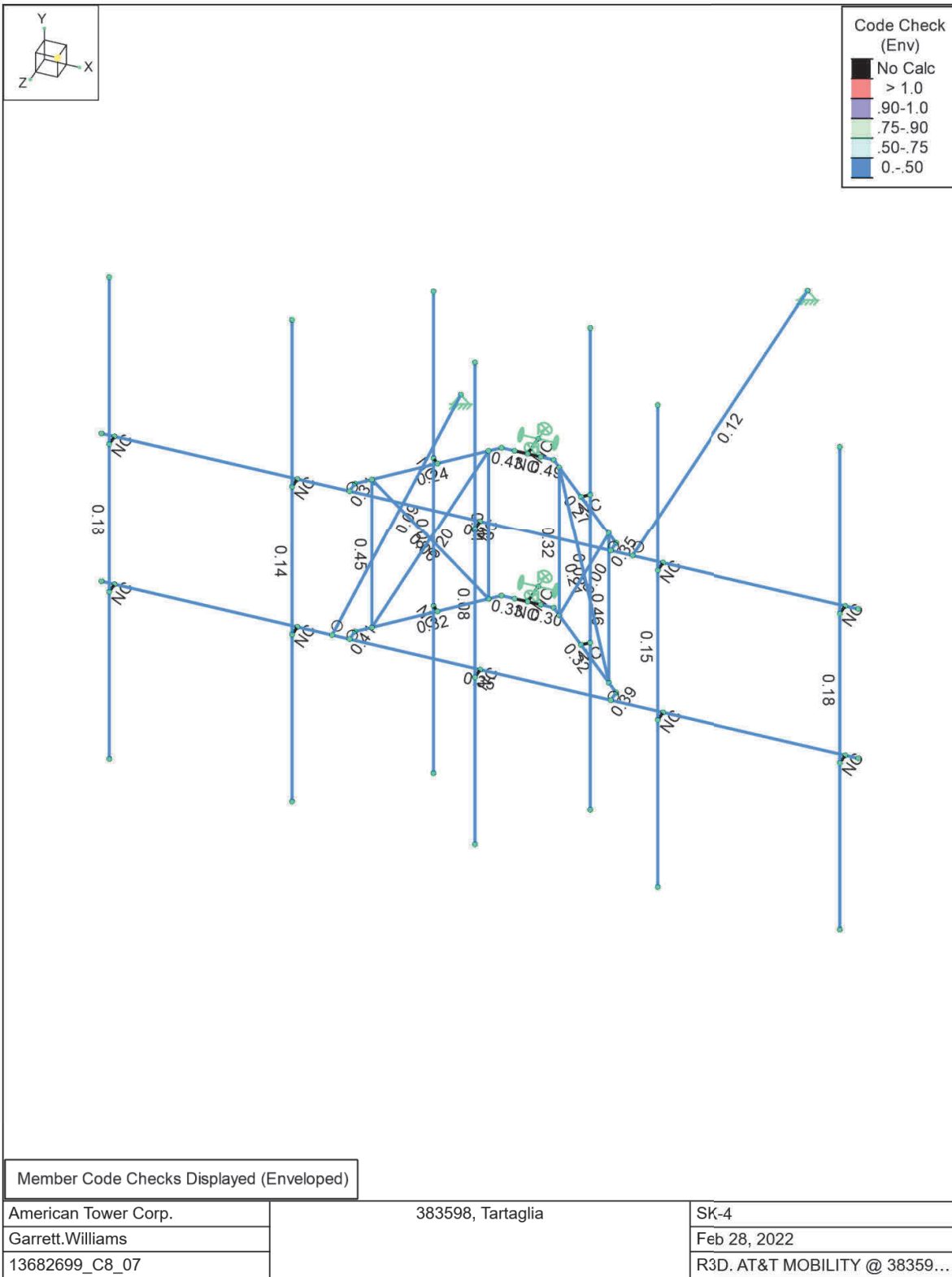
\* Equipment with EPA values N/A were not considered in the mount analysis

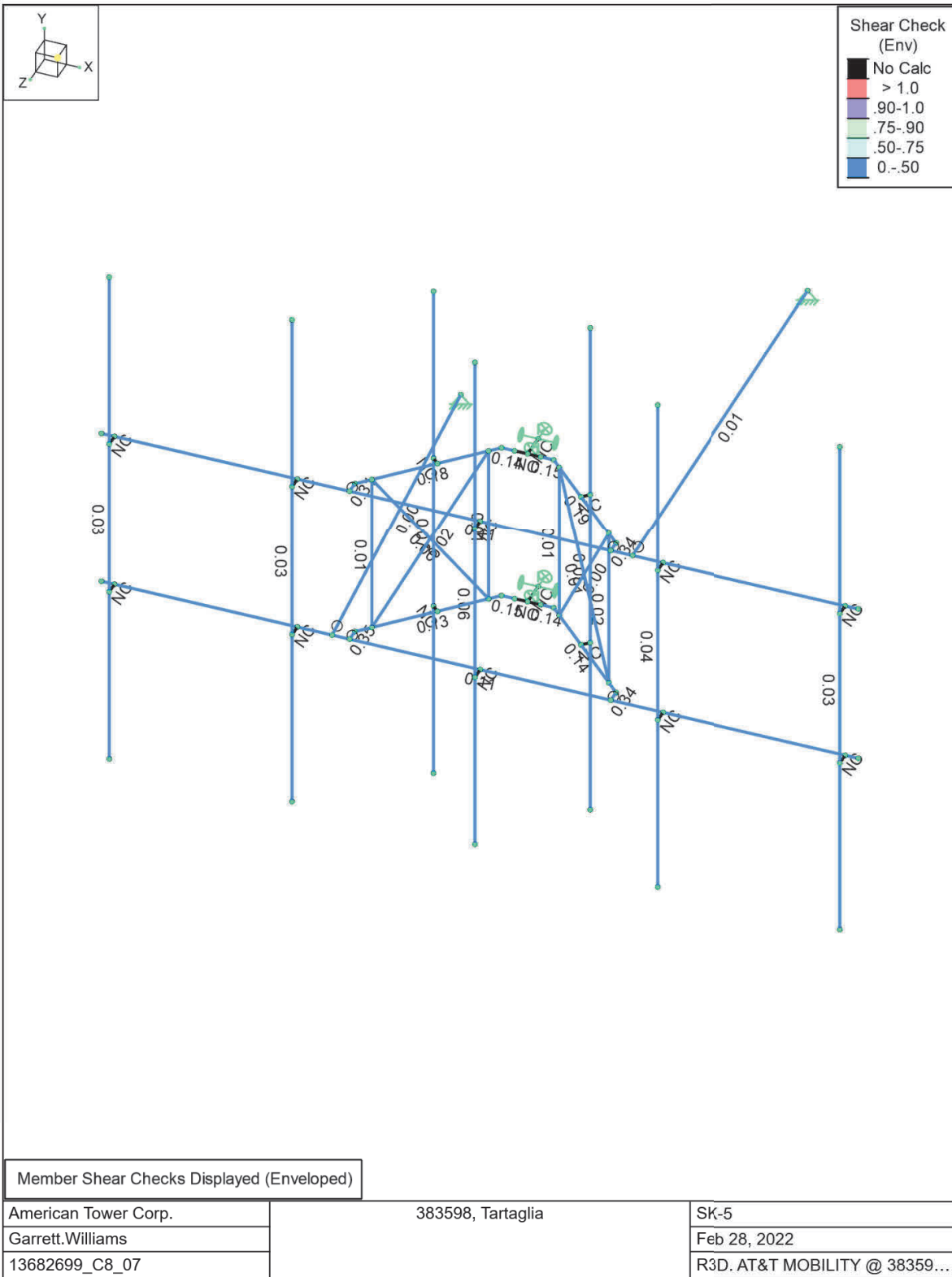














Company : American Tower Corp.  
 Designer : Garrett.Williams  
 Job Number : 13682699\_C8\_07  
 Model Name : 383598, Tartaglia

2/28/2022  
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 Checked By : -

**Basic Load Cases**

	BLC Description	Category	Y Gravity	Nodal	Point	Distributed
1	D	DL	-1		17	
2	Di	IL			17	31
3	W 0	WL			17	50
4	W 30	WL			34	95
5	W 60	WL			34	95
6	W 90	WL			17	45
7	W 120	WL			34	95
8	W 150	WL			34	95
9	W 180	WL			17	50
10	W 210	WL			34	95
11	W 240	WL			34	95
12	W 270	WL			17	45
13	W 300	WL			34	95
14	W 330	WL			34	95
15	Wi 0	WL			17	50
16	Wi 30	WL			34	95
17	Wi 60	WL			34	95
18	Wi 90	WL			17	45
19	Wi 120	WL			34	95
20	Wi 150	WL			34	95
21	Wi 180	WL			17	50
22	Wi 210	WL			34	95
23	Wi 240	WL			34	95
24	Wi 270	WL			17	45
25	Wi 300	WL			34	95
26	Wi 330	WL			34	95
27	Ws 0	WL			17	50
28	Ws 30	WL			34	95
29	Ws 60	WL			34	95
30	Ws 90	WL			17	45
31	Ws 120	WL			34	95
32	Ws 150	WL			34	95
33	Ws 180	WL			17	50
34	Ws 210	WL			34	95
35	Ws 240	WL			34	95
36	Ws 270	WL			17	45
37	Ws 300	WL			34	95
38	Ws 330	WL			34	95
39	Ev -Y	ELY				31
40	Eh -Z	ELZ				31
41	Eh -X	ELX				31
42	Lv (1)	LL			1	
43	Lv (2)	LL			1	
44	Lv (3)	LL			1	
45	Lv (4)	LL			1	
46	Lv (5)	LL			1	
47	Lv (6)	LL			1	
48	Lv (7)	LL		1		
49	Lv (8)	LL		1		
50	Lm (1)	LL		1		
51	Lm (2)	LL		1		
52	Lm (3)	LL		1		
53	Lm (4)	LL		1		
54	Lm (5)	LL		1		
55	Lm (6)	LL		1		



Company : American Tower Corp.  
 Designer : Garrett.Williams  
 Job Number : 13682699\_C8\_07  
 Model Name : 383598, Tartaglia

2/28/2022  
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 Checked By : -

**Basic Load Cases (Continued)**

BLC Description	Category	Y Gravity	Nodal	Point	Distributed
56 Lm (7)	LL		1		

**Node Boundary Conditions**

Node Label	X [lb/in]	Y [lb/in]	Z [lb/in]	X Rot [k-in/rad]	Z Rot [k-in/rad]
1 N001	Reaction	Reaction	Reaction	Reaction	Reaction
2 N006	Reaction	Reaction	Reaction	Reaction	Reaction
3 N042	Reaction	Reaction	Reaction		
4 N043	Reaction	Reaction	Reaction		

**Member Primary Data**

Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1 H001	N003	N002		PIPE 2.5	Beam	None	A53 Gr. B	Typical
2 H002	N024	N004		PIPE 2.0	Beam	None	A53 Gr. B	Typical
3 H003	N023	N005		PIPE 2.0	Beam	None	A53 Gr. B	Typical
4 H004	N008	N007		PIPE 2.5	Beam	None	A53 Gr. B	Typical
5 H005	N021	N009		PIPE 2.0	Beam	None	A53 Gr. B	Typical
6 H006	N020	N010		PIPE 2.0	Beam	None	A53 Gr. B	Typical
7 U007	N011	N013		(2) 1/2 U-Bolts	Beam	None	SAE J429 Gr. 2	Typical
8 U008	N014	N015		(2) 1/2 U-Bolts	Beam	None	SAE J429 Gr. 2	Typical
9 U009	N012	N016		(2) 1/2 U-Bolts	Beam	None	SAE J429 Gr. 2	Typical
10 U010	N017	N018		(2) 1/2 U-Bolts	Beam	None	SAE J429 Gr. 2	Typical
11 H011	N039	N020	90	PL3.5x0.5	Beam	None	A36	Typical
12 H012	N040	N021	90	PL3.5x0.5	Beam	None	A36	Typical
13 H013	N006	N019		RIGID	None	None	RIGID	Typical
14 H014	N037	N023	90	PL3.5x0.5	Beam	None	A36	Typical
15 H015	N038	N024	90	PL3.5x0.5	Beam	None	A36	Typical
16 H016	N001	N022		RIGID	None	None	RIGID	Typical
17 H017	N005	N026	90	PL3.5x0.5	Beam	None	A36	Typical
18 H018	N004	N025	90	PL3.5x0.5	Beam	None	A36	Typical
19 D019	N030	N027		SR 0.75	Column	None	A36	Typical
20 V020	N027	N028		SR 0.625	Column	None	A36	Typical
21 D021	N028	N029		SR 0.75	Column	None	A36	Typical
22 V022	N029	N030		SR 0.625	Column	None	A36	Typical
23 V023	N031	N032		SR 0.625	Column	None	A36	Typical
24 V024	N033	N034		SR 0.625	Column	None	A36	Typical
25 D025	N034	N031		SR 0.75	Column	None	A36	Typical
26 D026	N032	N033		SR 0.75	Column	None	A36	Typical
27 H027	N010	N036	90	PL3.5x0.5	Beam	None	A36	Typical
28 H028	N009	N035	90	PL3.5x0.5	Beam	None	A36	Typical
29 H029	N039	N040		RIGID	None	None	RIGID	Typical
30 H030	N037	N038		RIGID	None	None	RIGID	Typical
31 TB031	N042	N041		PIPE 2.0	Beam	None	A53 Gr. B	Typical
32 TB032	N043	N044		PIPE 2.0	Beam	None	A53 Gr. B	Typical
33 MP033	N045	N046		PIPE 2.5	Column	None	A53 Gr. B	Typical
34 MP034	N047	N048		PIPE 2.5	Column	None	A53 Gr. B	Typical
35 U035	N049	N050		(2) 1/2 U-Bolts	Beam	None	SAE J429 Gr. 2	Typical
36 U036	N051	N052		(2) 1/2 U-Bolts	Beam	None	SAE J429 Gr. 2	Typical
37 MP037	N053	N054		PIPE 2.5	Column	None	A53 Gr. B	Typical
38 U038	N055	N057		(2) 1/2 U-Bolts	Beam	None	SAE J429 Gr. 2	Typical
39 U039	N058	N059		(2) 1/2 U-Bolts	Beam	None	SAE J429 Gr. 2	Typical
40 MP040	N060	N061		PIPE 2.5	Column	None	A53 Gr. B	Typical
41 U041	N056	N062		(2) 1/2 U-Bolts	Beam	None	SAE J429 Gr. 2	Typical
42 U042	N063	N064		(2) 1/2 U-Bolts	Beam	None	SAE J429 Gr. 2	Typical



Company : American Tower Corp.  
 Designer : Garrett.Williams  
 Job Number : 13682699\_C8\_07  
 Model Name : 383598, Tartaglia

2/28/2022  
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 Checked By : -

**Member Primary Data (Continued)**

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
43	MP043	N065	N066		PIPE 2.5	Column	None	A53 Gr. B	Typical
44	U044	N067	N068		(2) 1/2 U-Bolts	Beam	None	A36	Typical
45	U045	N069	N070		(2) 1/2 U-Bolts	Beam	None	A36	Typical
46	MP046	N071	N072		PIPE 2.0	Column	None	A53 Gr. B	Typical
47	U047	N073	N074		(2) 1/2 U-Bolts	Beam	None	A36	Typical
48	U048	N075	N076		(2) 1/2 U-Bolts	Beam	None	A36	Typical
49	MP049	N077	N078		PIPE 2.0	Column	None	A53 Gr. B	Typical

**Member Advanced Data**

	Label	J Release	T/C Only	Physical	Deflection Ratio Options	Activation	Seismic DR
1	H001			Yes	N/A		None
2	H002			Yes	N/A		None
3	H003			Yes	N/A		None
4	H004			Yes	N/A		None
5	H005			Yes	N/A		None
6	H006			Yes	N/A		None
7	U007			Yes	N/A	Exclude	None
8	U008			Yes	N/A	Exclude	None
9	U009			Yes	N/A	Exclude	None
10	U010			Yes	N/A	Exclude	None
11	H011			Yes	N/A		None
12	H012			Yes	N/A		None
13	H013			Yes	** NA **		None
14	H014			Yes	N/A		None
15	H015			Yes	N/A		None
16	H016			Yes	** NA **		None
17	H017	BenPIN		Yes	N/A		None
18	H018	BenPIN		Yes	N/A		None
19	D019		Tension Only	Yes	** NA **		None
20	V020			Yes	** NA **		None
21	D021		Tension Only	Yes	** NA **		None
22	V022			Yes	** NA **		None
23	V023			Yes	** NA **		None
24	V024			Yes	** NA **		None
25	D025		Tension Only	Yes	** NA **		None
26	D026		Tension Only	Yes	** NA **		None
27	H027	BenPIN		Yes	N/A		None
28	H028	BenPIN		Yes	N/A		None
29	H029			Yes	** NA **		None
30	H030			Yes	** NA **		None
31	TB031	BenPIN		Yes	N/A		None
32	TB032	BenPIN		Yes	N/A		None
33	MP033			Yes	** NA **		None
34	MP034			Yes	** NA **		None
35	U035			Yes	N/A	Exclude	None
36	U036			Yes	N/A	Exclude	None
37	MP037			Yes	** NA **		None
38	U038			Yes	N/A	Exclude	None
39	U039			Yes	N/A	Exclude	None
40	MP040			Yes	** NA **		None
41	U041			Yes	N/A	Exclude	None
42	U042			Yes	N/A	Exclude	None
43	MP043			Yes	** NA **		None
44	U044			Yes	N/A	Exclude	None
45	U045			Yes	N/A	Exclude	None



Company : American Tower Corp.  
 Designer : Garrett.Williams  
 Job Number : 13682699 C8 07  
 Model Name : 383598, Tartaglia

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**Member Advanced Data (Continued)**

	Label	J Release	T C Only	Physical	Deflection Ratio Options	Activation	Seismic DR
46	MP046			Yes	NA		None
47	U047			Yes	N A	Exclude	None
48	U048			Yes	N A	Exclude	None
49	MP049			Yes	NA		None

**Hot Rolled Steel Design Parameters**

	Label	Shape	Length in	Lb y-y in	Lb - in	Lcomp top in	L-Torque in	K y-y	K -	Function
1	H001	PIPE 2.5	174			Lbyy		1	1	Lateral
2	H002	PIPE 2.0	33.941			Lbyy		0.8	1	Lateral
3	H003	PIPE 2.0	33.941			Lbyy		0.8	1	Lateral
4	H004	PIPE 2.5	174			Lbyy		1	1	Lateral
5	H005	PIPE 2.0	33.941			Lbyy		0.8	1	Lateral
6	H006	PIPE 2.0	33.941			Lbyy		0.8	1	Lateral
7	U007	(2) 1 2 U-Bolts	3			Lbyy		0.5	0.5	Lateral
8	U008	(2) 1 2 U-Bolts	3			Lbyy		0.5	0.5	Lateral
9	U009	(2) 1 2 U-Bolts	3			Lbyy		0.5	0.5	Lateral
10	U010	(2) 1 2 U-Bolts	3			Lbyy		0.5	0.5	Lateral
11	H011	PL3.5x0.5	3			Lbyy		2.1	2.1	Lateral
12	H012	PL3.5x0.5	3			Lbyy		2.1	2.1	Lateral
13	H014	PL3.5x0.5	3			Lbyy		2.1	2.1	Lateral
14	H015	PL3.5x0.5	3			Lbyy		2.1	2.1	Lateral
15	H017	PL3.5x0.5	3			Lbyy		2.1	2.1	Lateral
16	H018	PL3.5x0.5	3			Lbyy		2.1	2.1	Lateral
17	D019	SR 0.75	47.434			Lbyy		0.65	0.65	Lateral
18	V020	SR 0.625	39			Lbyy		0.65	0.65	Lateral
19	D021	SR 0.75	47.434			Lbyy		0.65	0.65	Lateral
20	V022	SR 0.625	39			Lbyy		0.65	0.65	Lateral
21	V023	SR 0.625	39			Lbyy		0.65	0.65	Lateral
22	V024	SR 0.625	39			Lbyy		0.65	0.65	Lateral
23	D025	SR 0.75	47.434			Lbyy		0.65	0.65	Lateral
24	D026	SR 0.75	47.434			Lbyy		0.65	0.65	Lateral
25	H027	PL3.5x0.5	3			Lbyy		2.1	2.1	Lateral
26	H028	PL3.5x0.5	3			Lbyy		2.1	2.1	Lateral
27	TB031	PIPE 2.0	105.019			Lbyy		1	1	Lateral
28	TB032	PIPE 2.0	93.343			Lbyy		1	1	Lateral
29	MP033	PIPE 2.5	126	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
30	MP034	PIPE 2.5	126	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
31	U035	(2) 1 2 U-Bolts	3			Lbyy		0.5	0.5	Lateral
32	U036	(2) 1 2 U-Bolts	3			Lbyy		0.5	0.5	Lateral
33	MP037	PIPE 2.5	126	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
34	U038	(2) 1 2 U-Bolts	3			Lbyy		0.5	0.5	Lateral
35	U039	(2) 1 2 U-Bolts	3			Lbyy		0.5	0.5	Lateral
36	MP040	PIPE 2.5	126	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
37	U041	(2) 1 2 U-Bolts	3			Lbyy		0.5	0.5	Lateral
38	U042	(2) 1 2 U-Bolts	3			Lbyy		0.5	0.5	Lateral
39	MP043	PIPE 2.5	126	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
40	U044	(2) 1 2 U-Bolts	2.121			Lbyy		0.5	0.5	Lateral
41	U045	(2) 1 2 U-Bolts	2.121			Lbyy		0.5	0.5	Lateral
42	MP046	PIPE 2.0	126	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
43	U047	(2) 1 2 U-Bolts	2.121			Lbyy		0.5	0.5	Lateral
44	U048	(2) 1 2 U-Bolts	2.121			Lbyy		0.5	0.5	Lateral
45	MP049	PIPE 2.0	126	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral





Company : American Tower Corp.  
 Designer : Garrett.Williams  
 Job Number : 13682699 C8 07  
 Model Name : 383598, Tartaglia

2 28 2022  
 6:00:05 PM  
 Checked By : -

**Hot Rolled Steel Properties**

	Label	E psi	G psi	Nu	Therm. Coeff. 1e <sup>5</sup> F <sup>-1</sup>	Density lb ft <sup>3</sup>	Yield psi	Ry	Fu psi	Rt
1	A53 Gr. B	2.9e+07	1.115e+07	0.3	0.65	490	35000	1.6	60000	1.2
2	SAE J429 Gr. 2	2.9e+07	1.115e+07	0.3	0.65	490	57000	1.1	74000	1.1
3	A36	2.9e+07	1.115e+07	0.3	0.65	490	36000	1.5	58000	1.2

**Envelope Node Reactions**

Node Label	X lb	LC	Y lb	LC	Z lb	LC	MX lb-ft	LC	MY lb-ft	LC	MZ lb-ft	LC
1 N001 max	1495.505	122	2211.112	36	1124.21	15	-409.105	18	0	153	397.632	76
2 min	-1591.363	80	790.998	18	-2795.018	9	-1183.521	36	0	1	-362.846	118
3 N006 max	1535.946	72	1238.444	30	2629.702	13	-237.866	16	0	153	198.337	76
4 min	-1441.612	126	446.391	24	-987.162	19	-689.601	34	0	1	-179.954	118
5 N042 max	28.947	5	40.773	30	1516.966	12	0	153	0	153	0	153
6 min	-28.553	23	13.306	24	-1513.578	18	0	1	0	1	0	1
7 N043 max	148.787	4	36.254	34	1415.97	4	0	153	0	153	0	153
8 min	-148.508	22	11.789	15	-1413.4	22	0	1	0	1	0	1
9 Totals: max	2865.83	16	3521.699	26	3678.493	2						
10 min	-2865.83	22	1276.439	20	-3678.493	20						

**Envelope AISC 15TH (360-16): LRFD Member Steel Code Checks**

Member	Shape	Code Check	Loc in	LC	Shear	Check	Loc in	Dir	LC	phi	Pnc	lb	phi	Pnt	lb	phi	Mn	y-y	lb-ft	phi	Mn	-	lb-ft	Cb	Eqn
1	H001	PIPE 2.5	0.352	58	9	0.107	52.562	12	10819.554	50715	3596.25	3596.25	1.723	H1-1b											
2	H002	PIPE 2.0	0.241	30.052	118	0.178	0	128	29191.323	32130	1871.625	1871.625	1.823	H1-1b											
3	H003	PIPE 2.0	0.266	30.052	78	0.185	0	80	29191.323	32130	1871.625	1871.625	1.823	H1-1b											
4	H004	PIPE 2.5	0.349	119.625	2	0.106	119.625	10	10819.554	50715	3596.25	3596.25	1.947	H1-1b											
5	H005	PIPE 2.0	0.32	29.698	128	0.13	30.052	107	29191.323	32130	1871.625	1871.625	2.356	H1-1b											
6	H006	PIPE 2.0	0.316	29.698	76	0.136	30.052	88	29191.323	32130	1871.625	1871.625	2.358	H1-1b											
7	H011	PL3.5x0.5	0.298	0	130	0.141	0	y 26	51289.202	56700	590.625	4134.375	1.731	H1-1b											
8	H012	PL3.5x0.5	0.326	0	129	0.149	3	y 10	51289.202	56700	590.625	4134.375	1.65	H1-1b											
9	H014	PL3.5x0.5	0.491	0	77	0.154	3	y 36	51289.202	56700	590.625	4134.375	1.653	H1-1b											
10	H015	PL3.5x0.5	0.428	0	122	0.145	0	y 33	51289.202	56700	590.625	4134.375	1.876	H1-1b											
11	H017	PL3.5x0.5	0.346	0	78	0.337	0	y 80	51289.202	56700	590.625	4134.375	1.667	H1-1b											
12	H018	PL3.5x0.5	0.307	0	118	0.314	3	y 124	51289.202	56700	590.625	4134.375	1.667	H1-1b											
13	D019	SR 0.75	0.201	47.434	118	0.017	0	2	3691.013	14313.882	178.924	178.924	2.558	H1-1a											
14	V020	SR 0.625	0.306	39	118	0.014	0	8	2633.14	9940.196	103.544	103.544	2.261	H1-1a											
15	D021	SR 0.75	0	47.434	153	0	47.434	153	3691.013	14313.882	178.924	178.924	1	H1-1a											
16	V022	SR 0.625	0.447	39	118	0.014	39	2	2633.14	9940.196	103.544	103.544	2.265	H1-1a											
17	V023	SR 0.625	0.317	0	77	0.014	39	2	2633.14	9940.196	103.544	103.544	2.281	H1-1a											
18	V024	SR 0.625	0.459	39	72	0.015	0	9	2633.14	9940.196	103.544	103.544	2.234	H1-1a											
19	D025	SR 0.75	0.208	47.434	76	0.011	47.434	8	3691.013	14313.882	178.924	178.924	2.499	H1-1a											
20	D026	SR 0.75	0	47.434	153	0	47.434	153	3691.013	14313.882	178.924	178.924	1	H1-1a											
21	H027	PL3.5x0.5	0.393	0	77	0.34	3	y 70	51289.202	56700	590.625	4134.375	1.667	H1-1b											
22	H028	PL3.5x0.5	0.406	0	128	0.349	0	y 126	51289.202	56700	590.625	4134.375	1.667	H1-1b											
23	TB031	PIPE 2.0	0.118	0	12	0.005	105.019	5	12826.143	32130	1871.625	1871.625	1.136	H1-1b											
24	TB032	PIPE 2.0	0.092	0	4	0.004	93.343	11	15554.065	32130	1871.625	1871.625	1.136	H1-1b											
25	MP033	PIPE 2.5	0.178	44.625	80	0.029	81.375	71	34640.718	50715	3596.25	3596.25	3	H1-1b											
26	MP034	PIPE 2.5	0.146	81.375	71	0.036	44.625	13	34640.718	50715	3596.25	3596.25	2.265	H1-1b											
27	MP037	PIPE 2.5	0.077	44.625	8	0.056	49.875	8	34640.718	50715	3596.25	3596.25	2.27	H1-1b											
28	MP040	PIPE 2.5	0.143	81.375	126	0.035	81.375	9	34640.718	50715	3596.25	3596.25	3	H1-1b											
29	MP043	PIPE 2.5	0.178	44.625	122	0.029	44.625	123	34640.718	50715	3596.25	3596.25	2.269	H1-1b											
30	MP046	PIPE 2.0	0.075	81.375	133	0.053	81.375	2	18380.609	32130	1871.625	1871.625	2.371	H1-1b											
31	MP049	PIPE 2.0	0.075	81.375	149	0.067	81.375	9	18380.609	32130	1871.625	1871.625	3	H1-1b											



# EXHIBIT 5





# Radio Frequency Safety Survey Report Prediction (RFSSRP)

## AT&T Wireless Monopole Facility

<p><b><u>Site ID:</u></b> CT5093 <b><u>Site Name:</u></b> BRIDGEPORT BEARDSLEY <b><u>Address:</u></b> 1320 CHOPSEY HILL ROAD, BRIDGEPORT, CT 06606 <b><u>Latitude:</u></b> 41.219392 <b><u>Longitude:</u></b> -73.202199 <b><u>USID:</u></b> 5794 <b><u>FA:</u></b> 10070948</p>	<p><b><u>Prepared for:</u></b> American Tower</p> <p><b><u>Pace ID:</u></b> MRCTB051619, MRCTB051560, MRCTB052311 <b><u>Report Writer:</u></b> Katrina Styx <b><u>Date:</u></b> March 18, 2022 <b><u>Report Reviewer:</u></b> Yasir Alqadhili</p>
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### **Statement of Compliance**

AT&T will be compliant with FCC Regulations upon installation of recommended mitigation measures.

## TABLE OF CONTENTS

<b>1.0 GENERAL SUMMARY</b> .....	3
<b>1.1 SITE SUMMARY</b> .....	3
<b>2.0 SITE SCALE MAP</b> .....	5
<b>2.1 C-BAND ANALYSIS</b> .....	6
<b>3.0 ANTENNA INVENTORY</b> .....	7
<b>4.0 PREDICTED EMISSION LEVELS AND DISCUSSION</b> .....	10
<b>5.0 EMISSIONS DIAGRAMS</b> .....	11
<b>6.0 STATEMENT OF COMPLIANCE</b> .....	14
<b>6.1 STATEMENT OF AT&amp;T MOBILITY COMPLIANCE</b> .....	14
<b>6.2 RECOMMENDATIONS</b> .....	14
<b>7.0 FALL ARREST AND PARAPET INFORMATION</b> .....	15
<b>APPENDIX A: RF SIGNAGE</b> .....	16
<b>APPENDIX B: FCC GUIDELINES AND EMISSIONS THRESHOLD LIMITS</b> .....	17
<b>APPENDIX C: CALCULATION METHODOLOGY</b> .....	19
<b>APPENDIX D: LATERAL COMPLIANCE MATRICES</b> .....	21
<b>APPENDIX E: CERTIFICATIONS</b> .....	23
<b>APPENDIX F: PROPRIETARY STATEMENT</b> .....	24

## 1.0 GENERAL SUMMARY

Centerline Communications, LLC (“Centerline”) has been contracted to provide a Radio Frequency (RF) Analysis for the following AT&T Mobility wireless monopole facility to determine whether the facility is in compliance with federal standards and regulations regarding RF emissions. This analysis includes theoretical emissions calculations, for all equipment for AT&T Mobility.

### 1.1 SITE SUMMARY

Analysis Site Data	
Site USID:	5794
Site FA#:	10070948
Site Name:	BRIDGEPORT BEARDSLEY
Site Address:	1320 CHOPSEY HILL ROAD, BRIDGEPORT CT 06606
Site Latitude:	41.219392
Site Longitude:	-73.202199
Facility Type:	Monopole
Compliance Summary	
Compliance Status:	Compliant Upon Mitigation Installation
Maximum Modeled AT&T MPE% on Walking Surface (General Public Limit):	1.63%
Maximum Modeled AT&T MPE% at Ground Level (General Public Limit):	1.63%
Site Survey Data	
Is Access Locked or Controlled? :	Unknown
Lock or Control Measures if Present:	Unknown
Parapet Height:	N/A
Site Data Information	
CD:	AT&T, CT5093, ATC, 383598 (13682699) AE(CD).REVA.pdf
RFDS:	NEW-ENGLAND_CONNECTICUT_CT5093_2021-5G-NR- Radio_5G-NR-1SR- CBAND_mh705r_2051A0Z8RV_10070948_5794_03-02-2021_Final- Approved_v4.00.pdf



Signage and barriers are the primary means of mitigating access to accessible areas of exposure. Below is a summary of existing and recommended signage at this AT&T facility.

Existing Signage and Barriers (AT&T Sectors)										
Location	Information	Notice	Notice 2	Caution	Caution 2	Caution 2B	Caution 2C	Warning	Warning 2	Barriers
Access 1	0	0	0	0	0	0	0	0	0	0

Recommended Signage and Barriers (AT&T Sectors) – Actions that MUST be Taken							
Location	Notice 2	Caution 2	Caution 2B	Caution 2C	Warning 2	Barriers	
Access 1	0	0	1	0	0	0	

Final Compliant Configuration (AT&T Sectors) – All Mitigation Items that MUST be in Place										
Location	Information	Notice	Notice 2	Caution	Caution 2	Caution 2B	Caution 2C	Warning	Warning 2	Barriers
Access 1	0	0	0	0	0	1	0	0	0	0

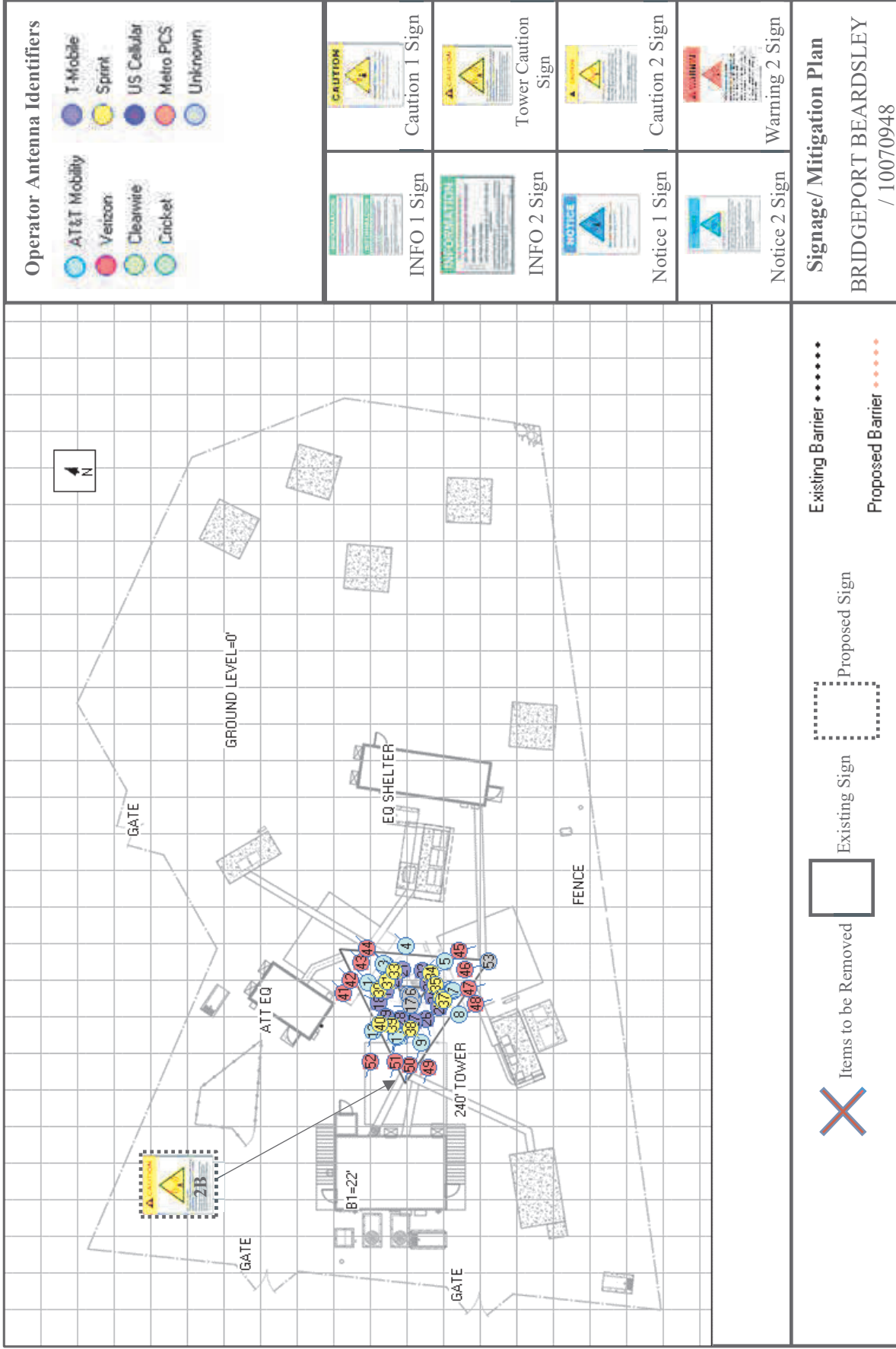
**Access:**

- Install (1) Caution 2B sign at the base of the tower.

**Notes:**

- Spare antennas have been omitted from this report.
- Available photos could not confirm the presence of existing signage. As a worst-case scenario, it is presumed no signage is in place.
- Access signage should be installed on any climbing points accessible from the ground.

2.0 SITE SCALE MAP





### 2.1 C-BAND ANALYSIS

- The 6449 antennas do not cause excess MPE on any adjacent building. All adjacent buildings are > 13 feet below the 6449 antennas.





3.0 ANTENNA INVENTORY

ANT ID	Operator	Antenna Make	Antenna Model	Type	Freq (MHz)	TPO (Watts)	# of TX	Azimuth (°)	BW (°)	Gain (dBD)	Total ERP (Watts)	Length (ft.)	Antenna Z Value (ft.) AGL**
1	AT&T	QUINTEL	QD6616-7 V1	Panel	700	40.00	2	30	65	11.7526	1197.71	6.0	162.0
1	AT&T	QUINTEL	QD6616-7 V1	Panel	700	40.00	4	30	65	11.7526	2395.41	6.0	162.0
1	AT&T	QUINTEL	QD6616-7 V1	Panel	1900	40.00	4	30	63	15.2682	5381.95	6.0	162.0
1	AT&T	QUINTEL	QD6616-7 V1	Panel	2100	40.00	4	30	58	15.4013	5549.45	6.0	162.0
2	AT&T	ERICSSON	AIR6449	Panel	3700	108.40	1	30	11	23.55	24548.74	2.8	161.6
3	AT&T	ERICSSON	AIR6419	Panel	3450	54.20	1	30	13	22.85	10447.19	2.4	165.8
3	AT&T	ERICSSON	AIR6419	Panel	3450	54.00	1	30	13	22.85	10408.63	2.4	165.8
4	AT&T	CCI	DMP65R-BU6D	Panel	700	40.00	4	30	63	11.35	2183.33	5.9	162.0
4	AT&T	CCI	DMP65R-BU6D	Panel	850	40.00	4	30	70	11.35	2183.33	5.9	162.0
4	AT&T	CCI	DMP65R-BU6D	Panel	2300	25.00	4	30	49	15.25	3349.65	5.9	162.0
5	AT&T	QUINTEL	QD6616-7 V1	Panel	700	40.00	2	150	64	11.9938	1266.11	6.0	162.0
5	AT&T	QUINTEL	QD6616-7 V1	Panel	700	40.00	4	150	64	11.9938	2532.21	6.0	162.0
5	AT&T	QUINTEL	QD6616-7 V1	Panel	1900	40.00	4	150	65	15.1381	5223.12	6.0	162.0
5	AT&T	QUINTEL	QD6616-7 V1	Panel	2100	40.00	4	150	56	15.4987	5675.32	6.0	162.0
6	AT&T	ERICSSON	AIR6449	Panel	3700	108.40	1	150	11	23.55	24548.74	2.8	161.6
7	AT&T	ERICSSON	AIR6419	Panel	3450	54.20	1	150	13	22.85	10447.19	2.4	165.8
7	AT&T	ERICSSON	AIR6419	Panel	3450	54.00	1	150	13	22.85	10408.63	2.4	165.8
8	AT&T	CCI	DMP65R-BU6D	Panel	700	40.00	4	150	64	11.65	2339.48	5.9	162.0
8	AT&T	CCI	DMP65R-BU6D	Panel	850	40.00	4	150	70	11.35	2183.33	5.9	162.0
8	AT&T	CCI	DMP65R-BU6D	Panel	2300	25.00	4	150	49	15.25	3349.65	5.9	162.0
9	AT&T	QUINTEL	QD6616-7 V1	Panel	700	40.00	2	270	65	11.7526	1197.71	6.0	162.0
9	AT&T	QUINTEL	QD6616-7 V1	Panel	700	40.00	4	270	65	11.7526	2395.41	6.0	162.0
9	AT&T	QUINTEL	QD6616-7 V1	Panel	1900	40.00	4	270	65	15.1381	5223.12	6.0	162.0
9	AT&T	QUINTEL	QD6616-7 V1	Panel	2100	40.00	4	270	56	15.4987	5675.32	6.0	162.0



10	AT&T	ERICSSON	AIR6449	Panel	3700	108.40	1	270	11	23.55	24548.74	2.8	161.6
11	AT&T	ERICSSON	AIR6419	Panel	3450	54.20	1	270	13	22.85	10447.19	2.4	165.8
11	AT&T	ERICSSON	AIR6419	Panel	3450	54.00	1	270	13	22.85	10408.63	2.4	165.8
12	AT&T	CCI	DMP65R-BU6D	Panel	700	40.00	4	270	63	11.35	2183.33	5.9	162.0
12	AT&T	CCI	DMP65R-BU6D	Panel	850	40.00	4	270	70	11.35	2183.33	5.9	162.0
12	AT&T	CCI	DMP65R-BU6D	Panel	2300	25.00	4	270	49	15.25	30.00	5.9	162.0
13	Unknown	GENERIC	OMNI 6FT	Omni	850	25.00	1	0	360	5.96	98.61	6.0	240.0
14	Unknown	GENERIC	OMNI 6FT	Omni	850	25.00	1	0	360	5.96	98.61	6.0	240.0
15	Unknown	GENERIC	OMNI 6FT	Omni	850	25.00	1	0	360	5.96	98.61	6.0	202.3
16	Unknown	GENERIC	OMNI 6FT	Omni	850	25.00	1	0	360	5.96	98.61	6.0	202.3
17	Unknown	GENERIC	YAGI 2FT	Panel	700	6.46	1	340	60	11.1	83.18	2.0	253.0
18	T-Mobile	GENERIC	PANEL 6FT	Panel	1900	60.00	2	10	66	15.84	4604.49	6.0	190.9
19	T-Mobile	GENERIC	PANEL 6FT	Panel	600	60.00	2	10	68	12.33	2052.02	6.0	190.9
20	T-Mobile	GENERIC	PANEL 6FT	Panel	700	60.00	2	10	68	12.33	2052.02	6.0	190.9
21	T-Mobile	GENERIC	PANEL 6FT	Panel	2100	60.00	2	10	66	15.84	4604.49	6.0	190.9
22	T-Mobile	GENERIC	PANEL 6FT	Panel	1900	60.00	2	120	66	15.84	4604.49	6.0	190.9
23	T-Mobile	GENERIC	PANEL 6FT	Panel	600	60.00	2	120	68	12.33	2052.02	6.0	190.9
24	T-Mobile	GENERIC	PANEL 6FT	Panel	700	60.00	2	120	68	12.33	2052.02	6.0	190.9
25	T-Mobile	GENERIC	PANEL 6FT	Panel	2100	60.00	2	120	66	15.84	4604.49	6.0	190.9
26	T-Mobile	GENERIC	PANEL 6FT	Panel	1900	60.00	2	240	66	15.84	4604.49	6.0	190.9
27	T-Mobile	GENERIC	PANEL 6FT	Panel	600	60.00	2	240	68	12.33	2052.02	6.0	190.9
28	T-Mobile	GENERIC	PANEL 6FT	Panel	700	60.00	2	240	68	12.33	2052.02	6.0	190.9
29	T-Mobile	GENERIC	PANEL 6FT	Panel	2100	60.00	2	240	66	15.84	4604.49	6.0	190.9
30	Sprint	GENERIC	PANEL 6FT	Panel	862	40.00	2	30	66	12.62	1462.48	6.0	184.4
31	Sprint	GENERIC	PANEL 6FT	Panel	1900	60.00	2	30	66	15.84	4604.49	6.0	184.4
32	Sprint	GENERIC	PANEL 6FT	Panel	2500	34.70	1	30	60	14.49	975.73	6.0	184.4
33	Sprint	GENERIC	MICROWAVE 1FT	Microwave	23000	0.10	1	30	1.7	38.55	716.14	1.0	189.5
34	Sprint	GENERIC	PANEL 6FT	Panel	862	40.00	2	150	66	12.62	1462.48	6.0	184.4
35	Sprint	GENERIC	PANEL 6FT	Panel	1900	60.00	2	150	66	15.84	4604.49	6.0	184.4



36	Sprint	GENERIC	PANEL 6FT	Panel	2500	34.70	1	150	60	14.49	975.73	6.0	184.4
37	Sprint	GENERIC	MICROWAVE 1FT	Microwave	23000	0.10	1	150	1.7	38.55	716.14	1.0	189.5
38	Sprint	GENERIC	PANEL 6FT	Panel	862	40.00	2	270	66	12.62	1462.48	6.0	184.4
39	Sprint	GENERIC	PANEL 6FT	Panel	1900	60.00	2	270	66	15.84	4604.49	6.0	184.4
40	Sprint	GENERIC	PANEL 6FT	Panel	2500	34.70	1	270	60	14.49	975.73	6.0	184.4
41	Verizon	GENERIC	PANEL 6FT	Panel	850	40.00	4	30	66	12.62	2924.96	6.0	150.5
42	Verizon	GENERIC	PANEL 6FT	Panel	1900	40.00	4	30	66	15.84	6139.32	6.0	150.5
43	Verizon	GENERIC	PANEL 6FT	Panel	2100	40.00	4	30	63	16.39	6968.19	6.0	150.5
44	Verizon	GENERIC	PANEL 6FT	Panel	700	40.00	4	30	68	12.33	2736.02	6.0	150.5
45	Verizon	GENERIC	PANEL 6FT	Panel	850	40.00	4	150	66	12.62	2924.96	6.0	150.5
46	Verizon	GENERIC	PANEL 6FT	Panel	1900	40.00	4	150	66	15.84	6139.32	6.0	150.5
47	Verizon	GENERIC	PANEL 6FT	Panel	2100	40.00	4	150	63	16.39	6968.19	6.0	150.5
48	Verizon	GENERIC	PANEL 6FT	Panel	700	40.00	4	150	68	12.33	2736.02	6.0	150.5
49	Verizon	GENERIC	PANEL 6FT	Panel	850	40.00	4	270	66	12.62	2924.96	6.0	150.5
50	Verizon	GENERIC	PANEL 6FT	Panel	1900	40.00	4	270	66	15.84	6139.32	6.0	150.5
51	Verizon	GENERIC	PANEL 6FT	Panel	2100	40.00	4	270	63	16.39	6968.19	6.0	150.5
52	Verizon	GENERIC	PANEL 6FT	Panel	700	40.00	4	270	68	12.33	2736.02	6.0	150.5
53	Unknown	GENERIC	OMNI 6FT	Omni	850	25.00	1	0	360	5.96	98.61	6.0	133.0

Table 1: Total Site Data Table (\*AGL = Above Ground Level)

Note: Z Value represents the bottom tip height of the antenna

75% TDD Cycle is assumed for all 4G/5G antennas

C-Band antennas were calculated using AT&T's preferred conservative power reduction factor of 0.32

#### 4.0 PREDICTED EMISSION LEVELS AND DISCUSSION

All calculations performed based upon the data listed for this facility have produced results that are within allowable limits for General Population limits for exposure to RF emissions as specified by federal standards.

AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document states that microwave dishes are compliant if they are mounted 20 feet or greater above any accessible walking or working surface.

Maximum Predicted MPE* Level on Site:	% of MPE Limit:	Location:
Accessible <b>General Population</b> MPE Limits:	<b>1.63%</b>	<b>Sector A</b>
Accessible <b>Occupational</b> MPE Limits:	<b>0.33%</b>	

Ground Level Assessment:	% of MPE Limit:
Ground Level <b>General Population</b> MPE Limits:	<b>1.63%</b>
Ground Level <b>Occupational</b> MPE Limits:	<b>0.33%</b>

Sector A: Transmitting over Ground Level	% of MPE Limit:	**Distance from Antenna:
Accessible <b>General Population</b> MPE Limits:	<b>1.63%</b>	<b>0</b>
Accessible <b>Occupational</b> MPE Limits:	<b>0.33%</b>	<b>0</b>

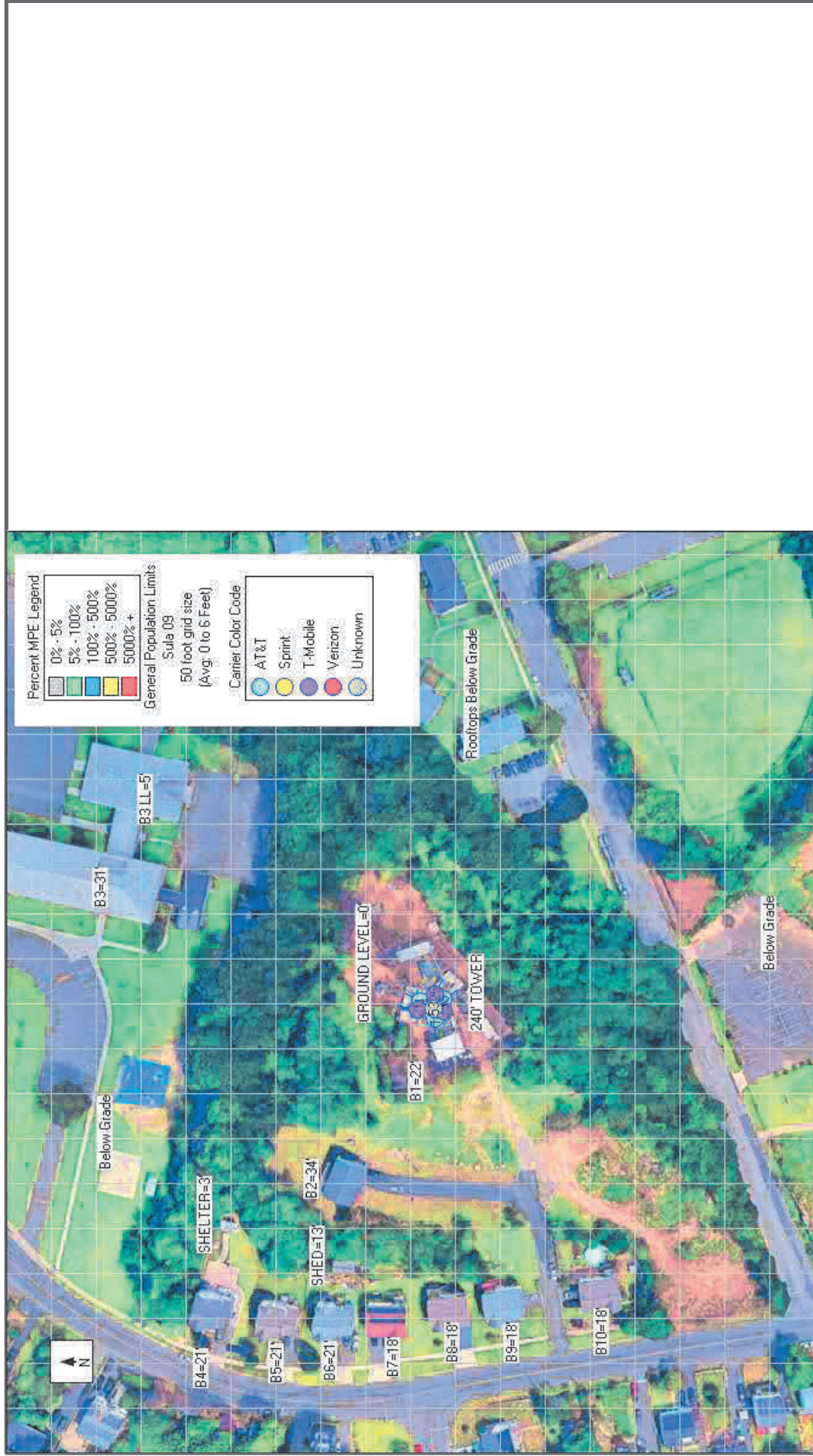
Sector B: Transmitting over Ground Level	% of MPE Limit:	**Distance from Antenna:
Accessible <b>General Population</b> MPE Limits:	<b>1.51%</b>	<b>0</b>
Accessible <b>Occupational</b> MPE Limits:	<b>0.30%</b>	<b>0</b>

Sector C: Transmitting over Ground Level	% of MPE Limit:	**Distance from Antenna:
Accessible <b>General Population</b> MPE Limits:	<b>1.12%</b>	<b>0</b>
Accessible <b>Occupational</b> MPE Limits:	<b>0.22%</b>	<b>0</b>

*\*MPE maximum calculations were based on all antennas onsite*

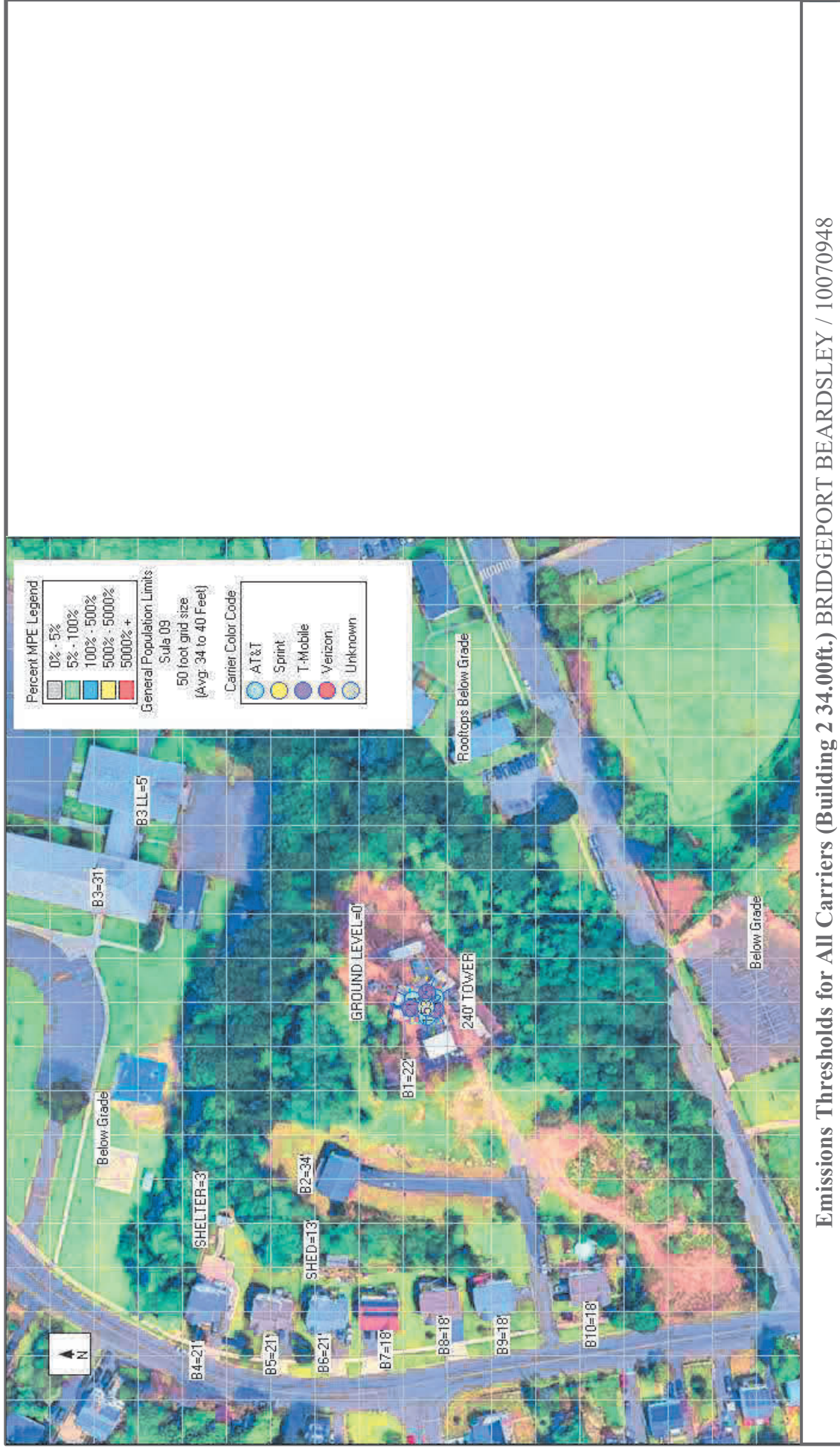
*\*\*Distance from Antenna is the distance that the MPE limits are exceeded from the front face of the antenna, outward across an accessible area.*

5.0 EMISSIONS DIAGRAMMS

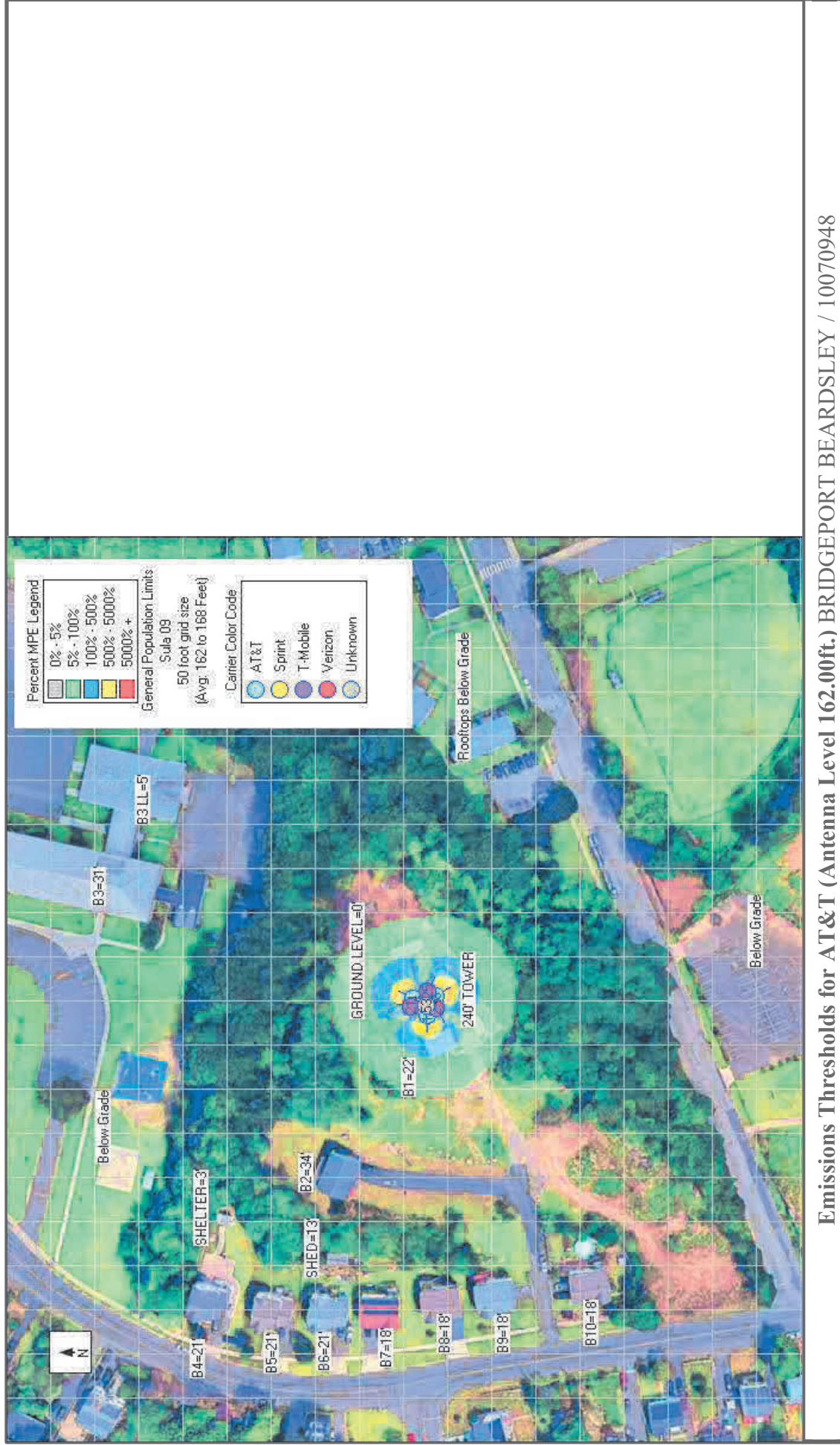


Emissions Thresholds for All Carriers (Ground Level 0.00ft.) BRIDGEPORT BEARDSLEY / 10070948





Emissions Thresholds for All Carriers (Building 2 34.00ft.) BRIDGEPORT BEARDSLEY / 10070948



Emissions Thresholds for AT&T (Antenna Level 162.00ft.) BRIDGEPORT BEARDSLEY / 10070948



## 6.0 STATEMENT OF COMPLIANCE

Centerline conducted worst case modeling to determine whether the monopole facility located at 1320 CHOPSEY HILL ROAD in BRIDGEPORT, Connecticut is in compliance with FCC Regulations.

## 6.1 STATEMENT OF AT&T MOBILITY COMPLIANCE

Based on the information analyzed, AT&T will be compliant with FCC Regulations once the mitigation measures recommended in this report are implemented.

## 6.2 RECOMMENDATIONS

Existing Signage and Barriers (AT&T Sectors)										
Location	Information	Notice	Notice 2	Caution	Caution 2	Caution 2B	Caution 2C	Warning	Warning 2	Barriers
Access 1	0	0	0	0	0	0	0	0	0	0

Recommended Signage and Barriers (AT&T Sectors) – Actions that MUST be Taken							
Location	Notice 2	Caution 2	Caution 2B	Caution 2C	Warning 2	Barriers	
Access 1	0	0	1	0	0	0	

Final Compliant Configuration (AT&T Sectors) – All Mitigation Items that MUST be in Place										
Location	Information	Notice	Notice 2	Caution	Caution 2	Caution 2B	Caution 2C	Warning	Warning 2	Barriers
Access 1	0	0	0	0	0	1	0	0	0	0

### Access:

- Install (1) Caution 2B sign at the base of the tower.

### Notes:

- Spare antennas have been omitted from this report.
- Available photos could not confirm the presence of existing signage. As a worst-case scenario, it is presumed no signage is in place.
- Access signage should be installed on any climbing points accessible from the ground.









## 7.0 FALL ARREST AND PARAPET INFORMATION

As per AT&T barrier policy, rooftop edges that are protected with a 39-inch parapet wall or guardrail are safe for work activity within six (6) feet of the edge. OSHA has stated that an existing 39-inch guardrail or parapet provides sufficient protection for employees. The height of the top rail or equivalent component of guardrail systems in new construction shall be at least 42 inches above the walking or working surface. It should also be noted that the height of the parapet or guardrail may be reduced to no less than 30 inches at any point provided the sum of the depth (horizontal distance) of the top edge, and the height of the top edge (vertical distance from the work surface to the top edge of the top member, is at least 48 inches. If there is no reason for working atop the roof, then edge protection is not required. In addition, workers may use personnel lifts or temporary fall protection measures to perform work within 6 feet of the roof edge in place of permanent edge protection. Reference: 29 CFR 1910.28, 29 CFR 1910.23 (NPRM-1990); OSHA Letters of Interpretation 2/9/83 and 3/8/9



APPENDIX A: RF SIGNAGE

AT&T RF Signage

Sign	Description	Sign	Description
	<p><b>Information 1 Sign</b> Gives guidelines on how to proceed and who to contact regarding areas that may exceed either the FCC’s General Population or Occupational emissions limits.</p>		<p><b>Caution 2C Sign</b> Gives specific information on how to proceed and who to contact regarding antennas that are façade mounted, concealed or on stand-alone structures.</p>
	<p><b>Blue Notice 1 Sign</b> Used to alert individuals that they are entering an area that may exceed the FCC’s General Population emissions limit. Must be positioned such that persons approaching from any angle have ample warning to avoid the marked areas.</p>		<p><b>Blue Notice 2 Sign</b> Used to alert individuals that they are entering an area that may exceed the FCC’s General Population emissions limits. To be used on barriers or antenna sectors as a hybrid of the Information 1 and Blue Notice 1 signs.</p>
	<p><b>Yellow Caution 1 Sign-Rooftop</b> Used to inform individuals that they are entering an area that may exceed the FCC’s Occupational emissions limit. Must be positioned such that persons approaching from any angle have ample warning to avoid the marked areas.</p>		<p><b>Yellow Caution 2 Sign-Rooftop</b> Used to alert individuals that they are entering an area that may exceed the FCC’s Occupational emissions limit. To be used on barriers or antenna sectors as a hybrid of the Information 1 and Yellow Caution 1 signs.</p>
	<p><b>Yellow Caution 2B Sign- Tower</b> Used to inform individuals that they are entering an area that may exceed the FCC’s Occupational emissions limits. Must be placed at the base of the tower to warn tower climbers of potential for exposure.</p>		<p><b>Warning 2 Sign</b> Used to inform individuals that they are entering an area that may exceed the FCC’s Occupational emissions limit by a factor of 10 or greater. Must be positioned such that persons approaching from any angle have ample warning to avoid the marked areas.</p>

## APPENDIX B: FCC GUIDELINES AND EMISSIONS THRESHOLD LIMITS

All power density values used in this report were 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 and 800 MHz Bands is approximately  $467 \mu\text{W}/\text{cm}^2$  and  $567 \mu\text{W}/\text{cm}^2$  respectively, and the general population exposure limit for the 1900 MHz PCS and 2100 MHz 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, have been properly trained in RF safety 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, have been trained in RF safety and can exercise control over his or her exposure by leaving the area or by some other appropriate means. The Occupational/Controlled exposure limits all utilized frequency bands is five (5) times the FCC's General Public / Uncontrolled exposure limit.

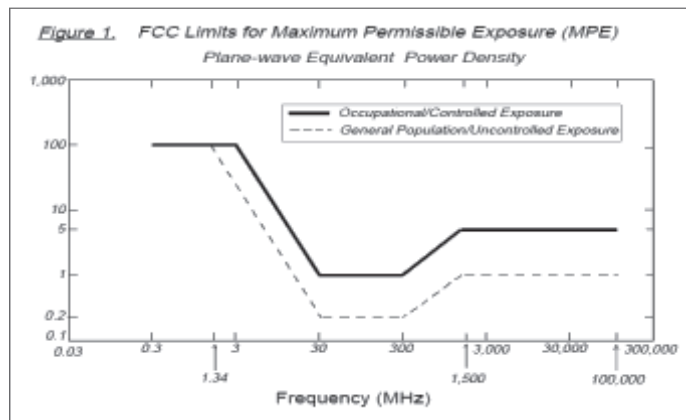
The FCC Mandates that if a site is found to be out of compliance with regard to emissions that any system operator contributing 5% or more to areas exceeding the FCC's allowable limits will be responsible for bringing the site into compliance.

Additional details can be found in FCC OET 65.

Table 1: Limits for Maximum Permissible Exposure (MPE)				
(A) Limits for Occupational/Controlled Exposure				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm <sup>2</sup> )	Averaging Time [E] <sup>2</sup> , [H] <sup>2</sup> , or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f <sup>2</sup> )*	6
30-300	61.4	0.163	1.0	6
300-1,500	--	--	f/300	6
1,500-100,000	--	--	5	6
(B) Limits for General Public/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm <sup>2</sup> )	Averaging Time [E] <sup>2</sup> , [H] <sup>2</sup> , or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f <sup>2</sup> )*	30
30-300	27.5	0.073	0.2	30
300-1,500	--	--	f/1,500	30
1,500-100,000	--	--	1.0	30

f = Frequency in (MHz)

\* Plane-wave equivalent power density



## APPENDIX C: CALCULATION METHODOLOGY

Centerline Communications, LLC has performed theoretical modeling using Waterford Consultants' RoofMaster™ 2020 Version 25.12.15.2021 which uses a cylindrical model for conservative power density predictions within the near field of the antenna where the antenna pattern has not truly formed yet. Within this area power density values tend to decrease based upon an inverse distance function. At the point where it is appropriate for modeling to change from near-field calculations to far-field calculations the power decreases inversely with the square of the distance. This modeling technique is accurate with low antenna centerlines, such as rooftops, where persons can get close to the antennas and pass through fields in close proximity.

The diagrams listed with "Farfield Overlay" have Sula09 spatial averaging calculations active for all non-C-Band antennas, while simultaneously having Far field calculations active for AT&T C-Band antennas.

The modeling is based on worst-case assumptions for the number of antennas and transmitter power. No losses were included in the power calculations unless they were specifically provided for the project.

## FAR FIELD MODEL

In OET-65, a far field model is presented to calculate the spatial peak power density. The RoofMaster™ implementation of this model incorporates antenna manufacturer's horizontal and vertical pattern data to determine the power density in all directions. Power density is calculated as follows:

$$S = \frac{13.05 P_{in} G}{R^2} \frac{\mu W}{cm^2}$$

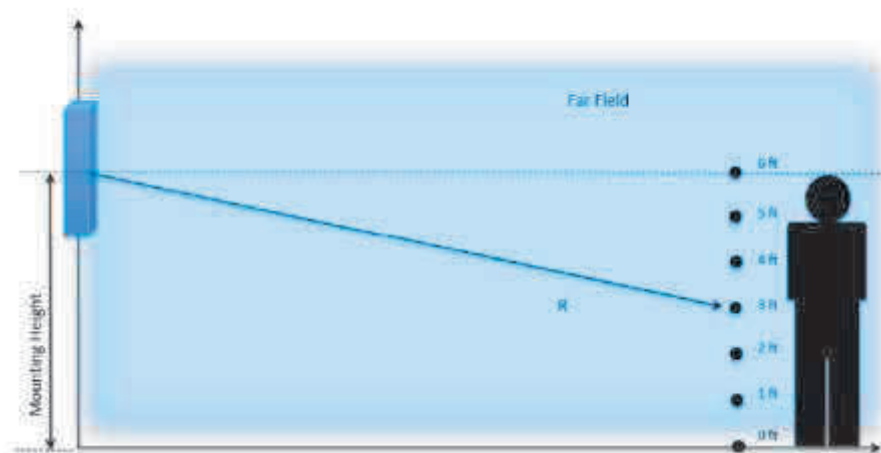
- Does not include 100% reflection factor
- Pin is Watts
- R is meters to study point
- G is gain to study point as specified in manufacturer horizontal and vertical patterns

A worst-case prediction is described in OET-65 where field strength may double due to 100% reflection of the incoming radiation. Considering an EPA recommendation that a multiplier of 1.6 is a more realistically representation of this effect is rewritten as follow:

$$S_{FF} = \frac{33.4 \cdot P_{in} \cdot G_{dBd}}{R^2} \quad (\mu W/cm^2)$$

This model yields the power density at a single point in space. In order to determine the spatial power density for comparison to the FCC limits, the average of several points calculated within the human profile (0 to 6 feet) must be conducted.

RoofMaster™ calculates seven power density values between 0 and 6 feet above the specified study plane and performs a linear spatial average.



Predicted power densities are displayed as a percentage of the applicable FCC standards.

APPENDIX D: LATERAL COMPLIANCE MATRICES

AEQY or AEQU Bot. Tip Height	1st Region-Compliant Area From Antenna	Area Exceeding FCC GP Limits- Lateral Distance (ft)	Width of Area Exceeding Limit- Lateral Distance (ft)	Power Reduction (dB)
0 - 5 ft	0		40	>15
6 ft	0		39	14
7 ft	0		36	7
8 ft	0-14	8 - 40	30	4
9 ft	0-13	15 - 35	18	1
10 ft	0-12	NA	N/A	0

Matrix - 1 (0° Mechanical Tilt)

* AEQY & AEQU COMBINED Bot. Tip Height	1st Region-Compliant Area From Antenna	Area Exceeding FCC GP Limits- Lateral Distance (ft)	Width of Area Exceeding Limit- Lateral Distance (ft)	Power Reduction (dB)
0 - 6 ft	0		57	>15
6 ft	0		56	14
7 ft	0		54	8
8 ft	0		49	4
9 ft	0-14	14 - 56	40	2
10 ft	0-13	26 - 51	23	1
11 ft	0-12	N/A	N/A	0

Matrix - 1 (0° Mechanical Tilt)

AIR6449 or AIR6416 Bot. Tip Height	1st Region-Compliant Area From Antenna	Area Exceeding FCC GP Limits- Lateral Distance (ft)	Width of Area Exceeding Limit- Lateral Distance (ft)	Power Reduction (dB)
0 - 7.5 ft	0		70	>15
8 ft	0		69	10
9 ft	0		68	7
10 ft	0		67	6
11 ft	0		65	5
12 ft	0-13	13 - 57	61	4
13 ft	0-11	17 - 55	57	3
14 ft	0-10	23 - 53	49	2
15 ft	0-9	29 - 50	37	1
>16 ft	0-8	NA	N/A	0

Matrix - 1 (0° Mechanical Tilt)

* AIR6449 & AIR6416 COMBINED Bot. Tip Height	1st Region-Compliant Area From Antenna	Area Exceeding FCC GP Limits- Lateral Distance (ft)	Width of Area Exceeding Limit- Lateral Distance (ft)	Power Reduction (dB)
0 - 7.5 ft	0		96	>15
8 ft	0		98	10
9 ft	0		97	8
10 ft	0		97	7
11 ft	0		96	6
12 ft	0		93	5
13 ft	0-7	7 - 81	91	4
14 ft	0-10	19 - 81	88	4
15 ft	0-10	22 - 79	87	3
16 ft	0-10	27 - 77	78	2
17 ft	0-10	23 - 75	70	2
18 ft	0-10	39 - 72	57	1
19 ft	0-10	47 - 67	40	1
20 ft	0-10	N/A	N/A	0

Matrix - 1 (0° Mechanical Tilt)

**Power Reduction Formula for Reducing Maximum Safety Distance Length**

$$(\mathbf{R}_{\text{reduced}}/\mathbf{R}_{\text{max}}) = 0.99 * (\mathbf{P}_{\text{reduced}}/\mathbf{P}_{\text{max}})$$

$$\mathbf{P}_{\text{max}} = 200\text{W (Nominal Peak power of AEQK)}$$

$$\mathbf{R}_{\text{max}} = \text{Lateral Compliance Distance of AEQK}$$

$$\mathbf{P}_{\text{reduced}} = ?$$

$$\mathbf{R}_{\text{reduced}} = \text{Actual Lateral Distance between AEQK and Bldg. X}$$



## APPENDIX E: CERTIFICATIONS

I, Katrina Styx, preparer of this report certify that I am fully trained and aware of the Rules and Regulations of both the Federal Communications Commissions (FCC) and the Occupational Safety and Health Administration (OSHA) with regard to Human Exposure to Radio Frequency Radiation. I have been trained in the procedures and requirements outlined in AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document.

Katrina Styx

3/18/2022

I, Yasir Alqadhili, reviewer and approver of this report certify that I am fully trained and aware of the Rules and Regulations of both the Federal Communications Commissions (FCC) and the Occupational Safety and Health Administration (OSHA) with regard to Human Exposure to Radio Frequency Radiation. I have been trained in the procedures and requirements outlined in AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document.

Yasir Alqadhili

3/18/2022



## **APPENDIX F: PROPRIETARY STATEMENT**

This report was prepared for the use of AT&T Mobility, LLC to meet requirements specified in AT&T's corporate RF safety guidelines. It was performed in accordance with generally accepted practices of other consultants undertaking similar studies at the same time and in the same locale under like circumstances. The conclusions provided by Centerline Communications, LLC are based solely on the information provided by AT&T Mobility and all observations in this report are valid on the date of the investigation. Any additional information that becomes available concerning the site should be provided to Centerline Communications, LLC so that our conclusions may be revised and modified, if necessary. This report has been prepared in accordance with Standard Conditions for Engagement and authorized proposal, both of which are integral parts of this report. No other warranty, expressed or implied, is made.

# EXHIBIT 6





# STATE OF CONNECTICUT

## CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

Phone: (860) 827-2935 Fax: (860) 827-2950

E-Mail: [siting.council@ct.gov](mailto:siting.council@ct.gov)

[www.ct.gov/csc](http://www.ct.gov/csc)

September 21, 2015

Kenneth C. Baldwin, Esq.  
Robinson & Cole LLP  
280 Trumbull Street  
Hartford, CT 06103-3597

RE: **EM-VER-015-150828** – Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 1000 Trumbull Avenue, Bridgeport, Connecticut.

Dear Attorney Baldwin:

The Connecticut Siting Council (Council) hereby acknowledges your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies with the following conditions:

- Any deviation from the proposed modification as specified in this notice and supporting materials with the Council shall render this acknowledgement invalid;
- Any material changes to this modification as proposed shall require the filing of a new notice with the Council;
- Within 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;
- Any nonfunctioning antenna and associated antenna mounting equipment on this facility owned and operated by Cellco shall be removed within 60 days of the date the antenna ceased to function;
- The validity of this action shall expire one year from the date of this letter; and
- The applicant may file a request for an extension of time beyond the one year deadline provided that such request is submitted to the Council not less than 60 days prior to the expiration.

The proposed modifications including the placement of all necessary equipment and shelters within the tower compound are to be implemented as specified here and in your notice dated August 27, 2015. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site by any dimension, increase noise levels at the tower site boundary by six decibels or more, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standards adopted by the Federal Communications Commission pursuant to Section 704 of the Telecommunications Act of 1996 and by the state Department of Energy and Environmental Protection pursuant to Connecticut General Statutes § 22a-162. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below state and federal standards applicable to the frequencies now used on this tower.



This decision is under the exclusive jurisdiction of the Council. Please be advised that the validity of this action shall expire one year from the date of this letter. Any additional change to this facility will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Thank you for your attention and cooperation.

Very truly yours,



Melanie A. Bachman  
Acting Executive Director

MAB/CH/lm

- c: The Honorable Bill Finch, Mayor, City of Bridgeport  
Parag Agrawal, Planning Director, City of Bridgeport  
David Kooris, Director, Office of Planning and Economic Development, City of Bridgeport  
American Tower Corporation  
Cell Tower Lease Acquisition LLC



# STATE OF CONNECTICUT

## CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

Phone: (860) 827-2935 Fax: (860) 827-2950

E-Mail: [siting.council@ct.gov](mailto:siting.council@ct.gov)

[www.ct.gov/csc](http://www.ct.gov/csc)

May 7, 2018

Tyler Ramsden, Site Acquisition  
Centerline Communications, LLC  
95 Ryan Drive, Suite 1  
Raynham, MA 02767

RE: **EM-CING-015-180322** - New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 1000 Trumbull Avenue, Bridgeport, Connecticut.

Dear Mr. Ramsden:

The Connecticut Siting Council (Council) hereby acknowledges your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies with the following conditions:

1. Any deviation from the proposed modification as specified in this notice and supporting materials with the Council shall render this acknowledgement invalid;
2. Any material changes to this modification as proposed shall require the filing of a new notice with the Council;
3. Within 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;
4. Any nonfunctioning antenna and associated antenna mounting equipment on this facility owned and operated by New Cingular Wireless shall be removed within 60 days of the date the antenna ceased to function;
5. The validity of this action shall expire one year from the date of this letter; and
6. The applicant may file a request for an extension of time beyond the one year deadline provided that such request is submitted to the Council not less than 60 days prior to the expiration.

The proposed modifications including the placement of all necessary equipment and shelters within the tower compound are to be implemented as specified here and in your notice dated March 21, 2018, and additional information received on April 10, 2018. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site by any dimension, increase noise levels at the tower site boundary by six decibels or more, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standards adopted by the Federal Communications Commission pursuant to Section 704 of the Telecommunications Act of 1996 and by the state Department of Energy and Environmental Protection pursuant to Connecticut General Statutes § 22a-162. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below state and federal standards applicable to the frequencies now used on this tower.

This decision is under the exclusive jurisdiction of the Council. Please be advised that the validity of this action shall expire one year from the date of this letter. Any additional change to this facility will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such



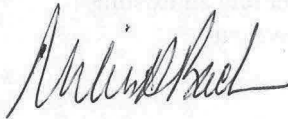
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notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Thank you for your attention and cooperation.

Sincerely,



Melanie A. Bachman  
Executive Director

MAB/CMW/laf

- c: The Honorable Joseph P. Ganim, Mayor, City of Bridgeport  
Kimberly G. Staley, Chief Administrative Officer  
Thomas F. Gill, Director of Planning & Economic Development  
American Tower Corporation, Tower and Property Owner



# STATE OF CONNECTICUT

## CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

Phone: (860) 827-2935 Fax: (860) 827-2950

E-Mail: [siting.council@ct.gov](mailto:siting.council@ct.gov)

[www.ct.gov/csc](http://www.ct.gov/csc)

February 26, 2018

Kenneth C. Baldwin, Esq.  
Robinson & Cole LLP  
280 Trumbull Street  
Hartford, Connecticut 06103-3597

RE: **EM-VER-015-180205** - Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 1000 Trumbull Avenue, Bridgeport, Connecticut.

Dear Attorney Baldwin:

The Connecticut Siting Council (Council) hereby acknowledges your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies with the following conditions:

1. Any deviation from the proposed modification as specified in this notice and supporting materials with the Council shall render this acknowledgement invalid;
2. Any material changes to this modification as proposed shall require the filing of a new notice with the Council;
3. Within 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;
4. Any nonfunctioning antenna and associated antenna mounting equipment on this facility owned and operated by Verizon shall be removed within 60 days of the date the antenna ceased to function;
5. The validity of this action shall expire one year from the date of this letter; and
6. The applicant may file a request for an extension of time beyond the one year deadline provided that such request is submitted to the Council not less than 60 days prior to the expiration.

The proposed modifications including the placement of all necessary equipment and shelters within the tower compound are to be implemented as specified here and in your notice dated February 1, 2018. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site by any dimension, increase noise levels at the tower site boundary by six decibels or more, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standards adopted by the Federal Communications Commission pursuant to Section 704 of the Telecommunications Act of 1996 and by the state Department of Energy and Environmental Protection pursuant to Connecticut General Statutes § 22a-162. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below state and federal standards applicable to the frequencies now used on this tower.

This decision is under the exclusive jurisdiction of the Council. Please be advised that the validity of this action shall expire one year from the date of this letter. Any additional change to this facility will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent

with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Thank you for your attention and cooperation.

Sincerely,



Melanie A. Bachman  
Executive Director

MAB/CMW/cg

- c: The Honorable Joseph P. Ganim, Mayor, City of Bridgeport  
Kimberly G. Staley, Chief Administrative Officer,  
Thomas F. Gill, Director of Planning & Economic Development, City of Bridgeport  
American Tower Corporation, Tower Owner  
Global Tower Assets, LLC, Property Owner





# STATE OF CONNECTICUT

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[www.ct.gov/csc](http://www.ct.gov/csc)

February 4, 2019

David Hoogasian  
Project Manager  
Network Building & Consulting, LLC  
100 Apollo Drive, Suite 303  
Chelmsford, MA 01824

RE: **EM-ATC-015-190111** – American Tower Corporation, Inc. (ATC) notice of intent to modify an existing telecommunications facility located at 1000 Trumbull Avenue, Bridgeport, Connecticut.

Dear Mr. Hoogasian:

The Connecticut Siting Council (Council) hereby acknowledges your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies with the following conditions:

1. Any deviation from the proposed modification as specified in this notice and supporting materials with the Council shall render this acknowledgement invalid;
2. Any material changes to this modification as proposed shall require the filing of a new notice with the Council;
3. Within 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;
4. The validity of this action shall expire one year from the date of this letter; and
5. The applicant may file a request for an extension of time beyond the one year deadline provided that such request is submitted to the Council not less than 60 days prior to the expiration.

The proposed modifications including the placement of all necessary equipment and shelters within the tower compound are to be implemented as specified here and in your notice dated December 28, 2018. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site by any dimension, increase noise levels at the tower site boundary by six decibels or more, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standards adopted by the Federal Communications Commission pursuant to Section 704 of the Telecommunications Act of 1996 and by the state Department of Energy and Environmental Protection pursuant to Connecticut General Statutes § 22a-162. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below state and federal standards applicable to the frequencies now used on this tower.

This decision is under the exclusive jurisdiction of the Council. Please be advised that the validity of this action shall expire one year from the date of this letter. Any additional change to this facility will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent



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with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Thank you for your attention and cooperation.

Sincerely,



Melanie A. Bachman  
Executive Director

MAB/FOC/emr

- c: The Honorable Joseph P. Ganim, Mayor, City of Bridgeport
- Kimberly G. Staley, Chief Administrative Officer, City of Bridgeport
- Thomas F. Gill, Director of Planning & Economic Development, City of Bridgeport





# STATE OF CONNECTICUT

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[www.ct.gov/csc](http://www.ct.gov/csc)

February 11, 2019

Michael Gentile  
Site Acquisition  
Centerline Communications, LLC  
750 West Center Street, Suite 301  
West Bridgewater, MA 02739

RE: **EM-CING-015-190123** – New Cingular Wireless notice of intent to modify an existing telecommunications facility located at 1000 Trumbull Avenue, Bridgeport, Connecticut.

Dear Mr. Gentile:

The Connecticut Siting Council (Council) hereby acknowledges your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies with the following conditions:

1. Prior to AT&T's antenna installation, the proposed mount modifications shall be installed in accordance with the Mount Analysis prepared by Hudson Design Group, dated November 29, 2018 and signed and stamped by Daniel Hamm;
2. Within 45 days following completion of equipment installations, AT&T shall provide documentation that its installation complied with the recommendations of the Mount Analysis;
3. Any deviation from the proposed modification as specified in this notice and supporting materials with the Council shall render this acknowledgement invalid;
4. Any material changes to this modification as proposed shall require the filing of a new notice with the Council;
5. Within 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;
6. Any nonfunctioning antenna and associated antenna mounting equipment on this facility owned and operated by New Cingular Wireless shall be removed within 60 days of the date the antenna ceased to function;
7. The validity of this action shall expire one year from the date of this letter; and
8. The applicant may file a request for an extension of time beyond the one year deadline provided that such request is submitted to the Council not less than 60 days prior to the expiration.

The proposed modifications including the placement of all necessary equipment and shelters within the tower compound are to be implemented as specified here and in your notice dated January 22, 2019. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site by any dimension, increase noise levels at the tower site boundary by six decibels or more, and increase the total radio frequencies electromagnetic radiation power density measured

at the tower site boundary to or above the standards adopted by the Federal Communications Commission pursuant to Section 704 of the Telecommunications Act of 1996 and by the state Department of Energy and Environmental Protection pursuant to Connecticut General Statutes § 22a-162. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below state and federal standards applicable to the frequencies now used on this tower.

This decision is under the exclusive jurisdiction of the Council. Please be advised that the validity of this action shall expire one year from the date of this letter. Any additional change to this facility will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Thank you for your attention and cooperation.

Sincerely,



Melanie A. Bachman  
Executive Director

MAB/FOC/emr

- c: The Honorable Joseph P. Ganim, Mayor, City of Bridgeport  
Kimberly G. Staley, Chief Administrative Officer, City of Bridgeport  
Thomas F. Gill, Director of Planning & Economic Development, City of Bridgeport  
American Tower Corporation, Tower and Property Owner



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Web Site: [www.ct.gov/csc](http://www.ct.gov/csc)

**VIA ELECTRONIC MAIL**

June 8, 2020

Alex Murshteyn  
Site Acquisition Consultant  
Centerline Communications LLC  
750 West Center Street  
Suite 301  
W Bridgewater, MA 02379-1518

RE: **EM-VER-015-200518** – Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 1000 Trumbull Avenue, Bridgeport, Connecticut.

Dear Mr. Murshteyn:

The Connecticut Siting Council (Council) hereby acknowledges your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies with the following conditions:

1. Prior to Verizon's antenna installation, the antenna mount modifications shall be installed in accordance with the Mount Analysis prepared by American Tower Corporation, dated March 3, 2020 and stamped and signed by Esha Kaushal Modi;
2. Within 45 days following completion of equipment installation, Verizon shall provide documentation certified by a Professional Engineer that its installation complied with the recommendations of the Mount Analysis;
3. Any deviation from the proposed modification as specified in this notice and supporting materials with the Council shall render this acknowledgement invalid;
4. Any material changes to this modification as proposed shall require the filing of a new notice with the Council;
5. Within 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;
6. Any nonfunctioning antenna and associated antenna mounting equipment on this facility owned and operated by Verizon shall be removed within 60 days of the date the antenna ceased to function;
7. The validity of this action shall expire one year from the date of this letter; and
8. The applicant may file a request for an extension of time beyond the one year deadline provided that such request is submitted to the Council not less than 60 days prior to the expiration.

The proposed modifications including the placement of all necessary equipment and shelters within the tower compound are to be implemented as specified here and in your notice dated May 15, 2020. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site by any dimension, increase noise levels at the tower site boundary by six decibels or more, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standards adopted by the Federal Communications Commission pursuant to Section 704 of the Telecommunications Act of 1996 and by the state Department of Energy and Environmental Protection pursuant to Connecticut General Statutes § 22a-162. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below state and federal standards applicable to the frequencies now used on this tower.

This decision is under the exclusive jurisdiction of the Council. Please be advised that the validity of this action shall expire one year from the date of this letter. Any additional change to this facility will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Thank you for your attention and cooperation.

Sincerely,

*s/ Melanie A. Bachman*

Melanie A. Bachman  
Executive Director

MAB/IN/emr

c: The Honorable Joseph P. Ganim, Mayor, City of Bridgeport  
Janene Hawkins, Chief Administrative Officer, City of Bridgeport  
Thomas F. Gill, Director of Planning & Economic Development, City of Bridgeport



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Web Site: [portal.ct.gov/csc](http://portal.ct.gov/csc)

VIA ELECTRONIC MAIL

July 12, 2021

Eric Breun  
Transcend Wireless  
10 Industrial Avenue, Suite 3  
Mahwah, NJ 07430

RE: **EM-T-MOBILE-015-210614** - T-Mobile notice of intent to modify an existing telecommunications facility located at 1000 Trumbull Avenue (a/k/a 1320 Chopsey Hill Road), Bridgeport, Connecticut.

Dear Mr. Breun:

The Connecticut Siting Council (Council) hereby acknowledges your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies with the following conditions:

1. Prior to T-Mobile's antenna installation, the antenna mount modifications shall be installed in accordance with the Mount Analysis prepared by CLS Engineering, PLLC, dated March 23, 2021 and stamped and signed by Tyler M. Barker;
2. Within 45 days following completion of equipment installation, T-Mobile shall provide documentation certified by a Professional Engineer that its installation complied with the recommendations of the Mount Analysis;
3. Any deviation from the proposed modification as specified in this notice and supporting materials with the Council shall render this acknowledgement invalid;
4. Any material changes to this modification as proposed shall require the filing of a new notice with the Council;
5. The Council shall be notified in writing at least two weeks prior to the commencement of site construction activities;
6. Within 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;
7. Any nonfunctioning antenna and associated antenna mounting equipment on this facility owned and operated by T-Mobile shall be removed within 60 days of the date the antenna ceased to function;
8. The validity of this action shall expire one year from the date of this letter; and
9. The applicant may file a request for an extension of time beyond the one year deadline provided that such request is submitted to the Council not less than 60 days prior to the expiration.



The proposed modifications including the placement of all necessary equipment and shelters within the tower compound are to be implemented as specified here and in your notice dated June 11, 2021. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site by any dimension, increase noise levels at the tower site boundary by six decibels or more, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standards adopted by the Federal Communications Commission pursuant to Section 704 of the Telecommunications Act of 1996 and by the state Department of Energy and Environmental Protection pursuant to Connecticut General Statutes § 22a-162. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below state and federal standards applicable to the frequencies now used on this tower.

This decision is under the exclusive jurisdiction of the Council. Please be advised that the validity of this action shall expire one year from the date of this letter. Any additional change to this facility will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Thank you for your attention and cooperation.

Sincerely,

*s/ Melanie A. Bachman*

Melanie A. Bachman  
Executive Director

MAB/FOC/emr

c: The Honorable Joseph P. Ganim, Mayor, City of Bridgeport ([mayor@bridgeportct.gov](mailto:mayor@bridgeportct.gov))





STATE OF CONNECTICUT  
*CONNECTICUT SITING COUNCIL*

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Web Site: [portal.ct.gov/csc](http://portal.ct.gov/csc)

VIA ELECTRONIC MAIL

September 29, 2021

M.J. Umali, Senior Site Acquisition Specialist  
Centerline Communications, LLC  
750 W Center St, Suite 301  
West Bridgewater, MA 02379  
[mumali@clinellc.com](mailto:mumali@clinellc.com)

RE: **EM-VER-015-210819** – Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 1000 Trumbull Avenue (a/k/a Chopsey Hill Road), Bridgeport, Connecticut.

Dear M. J. Umali:

The Connecticut Siting Council (Council) hereby denies your request to modify the above-referenced existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies.

This exempt modification request was submitted to the Council on August 19, 2021. Council staff reviewed this request for completeness and had identified a deficiency that was more fully described in a notice of incompleteness letter to the requesting entity dated August 25, 2021, and recommended that a valid filing fee check in the amount of \$625.00 be submitted by September 25, 2021. To date the Council has not received the required filing fee.

Thus, the proposed modification is not in compliance with the exemption criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies and is hereby denied.

Sincerely,

A handwritten signature in black ink, appearing to read 'Melanie Bachman', written over a light blue circular stamp.

Melanie Bachman  
Executive Director

Enclosure: Council Incomplete Letter, dated August 25, 2021

MAB/laf



STATE OF CONNECTICUT  
*CONNECTICUT SITING COUNCIL*

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Web Site: [portal.ct.gov/csc](http://portal.ct.gov/csc)

VIA ELECTRONIC MAIL

August 25, 2021

M.J. Umali, Senior Site Acquisition Specialist  
Centerline Communications, LLC  
750 W Center St, Suite 301  
West Bridgewater, MA 02379  
[mumali@clinellc.com](mailto:mumali@clinellc.com)

RE: **EM-VER-015-210819** – Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 1000 Trumbull Avenue (a/k/a Chopsey Hill Road), Bridgeport, Connecticut.

Dear M. J. Umali:

The Connecticut Siting Council (Council) received a notice of intent to modify the above-referenced facility on August 19, 2021.

According to Section 16-50j-71 of the Regulations of Connecticut State Agencies, "...any modification, as defined in Section 16-50j-2a of the Regulations of Connecticut State Agencies, to an existing tower site, except as specified in Sections 16-50j-72 and 16-50j-88 of the Regulations of Connecticut State Agencies, may have a substantial adverse environmental effect."

The Council is not able to process or accept this request for exempt modification as the filing fee check #27475 was returned by the bank for stop payment. A copy of the documentation received from the bank is attached.

Therefore, the exempt modification request is incomplete at this time. The Council recommends that a valid filing fee check in the amount of \$625 be submitted by September 25, 2021. If additional time is needed to submit the requested filing fee, please submit a written request for an extension of time prior to September 25, 2021.

This notice of incompleteness shall have the effect of tolling the Federal Communications Commission (FCC) 60-day timeframe in accordance with Paragraph 217 of the FCC Wireless Infrastructure Report and Order issued on October 21, 2014 (FCC 14-153).

Thank you for your attention to this matter. Should you have any questions, please feel free to contact me at 860-827-2951.

Sincerely,

Melanie Bachman  
Executive Director

Enclosure: Copy of Check #27475

MAB/laf

# EXHIBIT 7

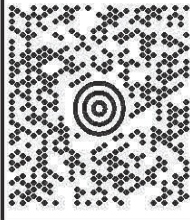


1 OF 1

1.0 LBS LTR

JENNILLE SMITH  
CENTERLINE COMMUNICATIONS  
23 BROADVIEW EST  
BRISTOL VT 05443

**SHIP TO:**  
LAND MANAGEMENT  
7814287250  
AMERICAN TOWER CORPORATION  
10 PRESIDENTIAL WAY  
**WOBURN MA 01801-1053**

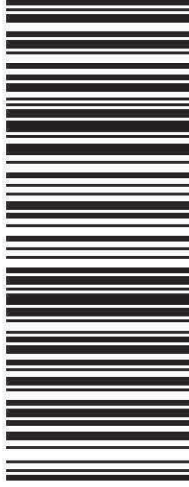


**MA 018 9-04**



**UPS NEXT DAY AIR SAVER 1P**

TRACKING #: 1Z 9Y4 503 13 0385 7716



BILLING: P/P

Reference # 1: BRIDGEPORT

CS 22.0.18. WNTNV50.13.0A 03/2022<sup>SM</sup>

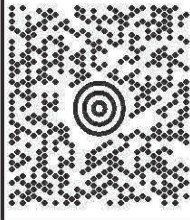


JENNILLE SMITH  
CENTERLINE COMMUNICATIONS  
23 BROADVIEW EST  
BRISTOL VT 05443

**SHIP TO:**  
MAYOR JOSEPH P GANIM  
CITY OF BRIDGEPORT  
999 BROAD STREET  
**BRIDGEPORT CT 06604-4320**

**1 OF 1**

**1.0 LBS LTR**

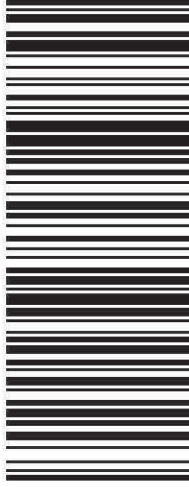


**CT 066 9-04**



**UPS NEXT DAY AIR SAVER 1P**

TRACKING #: 1Z 9Y4 503 13 0589 8740



BILLING: P/P



Reference # 1: BRIDGEPORT

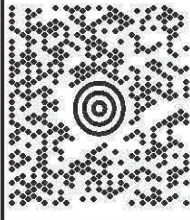
CS 22.0.18. WNTNV50.13.0A 03/2022<sup>SM</sup>

1 OF 1

1.0 LBS LTR

JENNIFER SMITH  
CENTERLINE COMMUNICATIONS  
23 BROADVIEW EST  
BRISTOL VT 05443

**SHIP TO:**  
DENNIS BUCKLEY ZONING ADMINISTRATOR  
CITY OF BRIDGEPORT - CITY HALL  
45 LYON TERRACE ROOM 210  
**BRIDGEPORT CT 06604-4023**

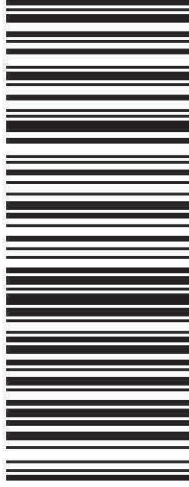


**CT 066 9-04**



**UPS NEXT DAY AIR SAVER 1P**

TRACKING #: 1Z 9Y4 503 13 0564 9750



BILLING: P/P



Reference # 1: BRIDGEPORT

CS 22.0.18. WNTNV50.13.0A 03/2022<sup>SM</sup>