

10 INDUSTRIAL AVE,  
SUITE 3  
MAHWAH NJ 07430  
PHONE: 201.684.0055  
FAX: 201.684.0066



June 11, 2021

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

RE: Notice of Exempt Modification  
1320 Chopsey Hill Road, Bridgeport, CT 06606 (also known as 1000 Trumbull Ave)  
Latitude: 41.21961800  
Longitude: -73.20121300  
T-Mobile Site#: CT11680A – Anchor

Dear Ms. Bachman:

T-Mobile currently maintains nine (9) antennas at the 202-foot level of the existing 240-foot self support tower at 1320 Chopsey Hill Road in Bridgeport, CT (also known as 1000 Trumbull Ave). The 240-foot self support tower is owned by American Towers. The property is owned by Gayle Duvaughn (NHB Associates LLC). T-Mobile now intends to remove three (3) existing antennas and add three (3) new L2500/N2500 MHz antennas. The new antennas will be installed at the same 202-foot level of the tower. The new antennas support 5G services and would be installed at the 202-foot level of the tower.

**Planned Modifications:**

**Tower:**

**Remove**

- (6) 1 5/8" Coax Cables
- (1) 9x18 HCS Hybrid Cables
- (3) KRY 112 TTAs

**Remove and Replace:**

- (3) AIR 21 B2A B4P Antennas for (3) AIR6449 B41 Antennas

**Install New:**

- (2) 1 1/4" Coax Cables
- (2) 6x12 HCS AWG Hybrid Cables
- (3) RRUs 4415 B25

Existing to Remain:

- (3) AIR 32 B66A B2A Antennas
- (3) APXVAARR24\_43-U-NA20 Antennas

**Ground:**

Install New:

- (1) Enclosure 6160 Cabinet
- (1) B160 Battery Cabinet

Remove:

- (3) S8000 Cabinets

This tower was originally approved by the Connecticut Siting Council on June 25, 2002 through Petition No. 512. T-Mobile has been approved for subsequent modifications at their facility. This proposed modification complies with the original approval.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Mayor Joseph Ganim, Elected Official, and Dennis Buckley, Zoning Administrator, as well as the Tower Owner and the Property Owner.

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

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

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

Sincerely,

**Eric Breun**

Transcend Wireless  
Cell: 201-658-7728

Email: [ebreun@transcendwireless.com](mailto:ebreun@transcendwireless.com)

Attachments

cc: Joseph Ganim - Mayor of Bridgeport

Dennis Buckley - Zoning Administrator

American Tower - Tower Owner

Gayle Duvaughn - Property Owner

ERIC BREUN  
2016587728  
10 INDUSTRIAL AVE  
MAHWAH NJ 07430

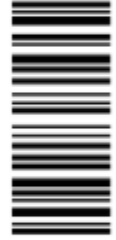
1 LBS

1 OF 1

**SHIP TO:**  
DENNIS BUCKLEY  
ROOM 210  
45 LYON TERRACE  
**BRIDGEPORT CT 06604**



**CT 066 9-04**



**UPS GROUND**

TRACKING #: 1Z V25 742 43 9634 3725



BILLING: P/P

Reference #1: CT11680A

XOL 21.05.18 NV49 23.0A.06/2021\*



TM

ERIC BREUN  
2016587728  
10 INDUSTRIAL AVE  
MAHWAH NJ 07430

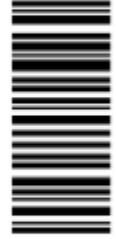
1 LBS

1 OF 1

**SHIP TO:**  
AMERICAN TOWER CORPORATION  
10 PRESIDENTIAL WAY  
**WOBURN MA 01801**



**MA 018 9-04**



**UPS GROUND**

TRACKING #: 1Z V25 742 43 9147 6510



BILLING: P/P

Reference #1: CT11680A

XOL 21.05.18 NV49 23.0A.06/2021\*



TM



ERIC BREUN  
2016587728  
10 INDUSTRIAL AVENUE  
MAHWAH NJ 07430

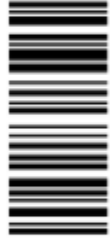
1 LBS

1 OF 1

**SHIP TO:**  
GAYLE DUVAUGHN  
1320 CHOPSEY HILL ROAD  
**BRIDGEPORT CT 06606**

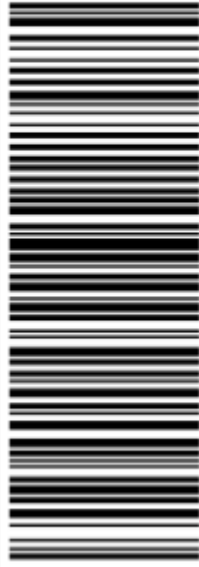


**CT 066 9-04**



**UPS GROUND**

TRACKING #: 1Z J99 TL0 43 0000 1015



BILLING: P/P

Reference #1: CT11680A

XOL 21.05.18 NV45 23.0A.06/2021\*



TM

ERIC BREUN  
2016587728  
10 INDUSTRIAL AVE  
MAHWAH NJ 07430

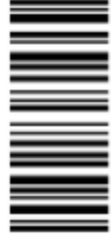
1 LBS

1 OF 1

**SHIP TO:**  
MAYOR JOSEPH GANIM  
999 BROAD STREET  
**BRIDGEPORT CT 06604**



**CT 066 9-04**



**UPS GROUND**

TRACKING #: 1Z V25 742 43 9881 3731



BILLING: P/P

Reference #1: CT11680A

XOL 21.05.18 NV45 23.0A.06/2021\*



TM

Petition 512 (& EM-Marcus-015-020521)  
VoiceStream Wireless  
Bridgeport, Connecticut  
Staff Report  
June 20, 2002

On June 19, 2002, Connecticut Siting Council members Brian O'Neill and Edward Wilensky and Council staff David Martin met at the site of a telecommunications tower located at 1330 Chopsey Hill Road, 1000 Trumbull Avenue in Bridgeport. Also in attendance were Stephen Humes, Edward Pietrasz, and Haider Syed representing VoiceStream Wireless and Stephen Howard representing Marcus Communications. Melanie Howlett, an assistant city attorney with the City of Bridgeport, came to the site later during the field review.

This site is the subject of two filings pending before the Council. One filing is Petition 512, which is a request from VoiceStream Wireless to install up to 12 antennas and 6 amplifiers at the 202-foot level of the existing 240-foot lattice tower and to add three equipment cabinets on a 12' x 12' concrete pad within the existing, fenced in base compound. This is a revision of VoiceStream's original request (submitted 5/18/01), which sought to extend the tower an additional 20 feet to the 260-foot level.

The second filing is from Marcus Communications, which seeks to install two dish antennas with diameters of 3 and 4 feet at the 237-foot level of the tower, one receive antenna at the top of the tower with a centerline height of 247 feet, and two transmit whip antennas at the 217-foot level. Marcus would add its ground equipment to a fenced enclosure next to an existing equipment shelter.

This tower is located in an area that is predominantly residential. There are single family homes on Chopsey Hill Road to the west of the site and multifamily units to the east. There is a school on adjacent property north of the tower and a small park across Trumbull Avenue to the south. The equipment compound at the base of the tower is well-screened from surrounding properties by woods.

Most of the discussion during the field review centered on the structural analyses submitted by the two companies. The structural analysis, prepared by Paul J. Ford and Company, originally submitted by Marcus concluded that the tower needed reinforcement to adequately support the proposed additional antennas and included drawings of recommended reinforcements.

The VoiceStream analysis, prepared by Tectonic Engineering Consultants, concluded that the tower's structure could accommodate the additional VoiceStream antennas. This conclusion was based on a previous Tectonic inspection of the tower, which found evidence that reinforcements had been made to the tower. In a structural analysis dated September 8, 2000 submitted for an exempt modification notice from Verizon (EM-VER-015-010126), Tectonic stated, "Each of the K-bracing members in the sections from 0' to 30', 100' to 120', and 140' to 150' are reinforced with a single 2 ½" equal leg angle welded to their entire length." This observation was based on a tower inspection made on August 29, 2000. The firm also inspected the tower for an AT&T exempt modification notice (TS-AT&T-015-990913) and referred to reinforced members in its structural analysis dated September 2, 1999. The reinforcements appear to have been made prior to Tectonic's first inspection of the tower in 1998 or 1999. No detailed design drawings are available of the reinforcements.

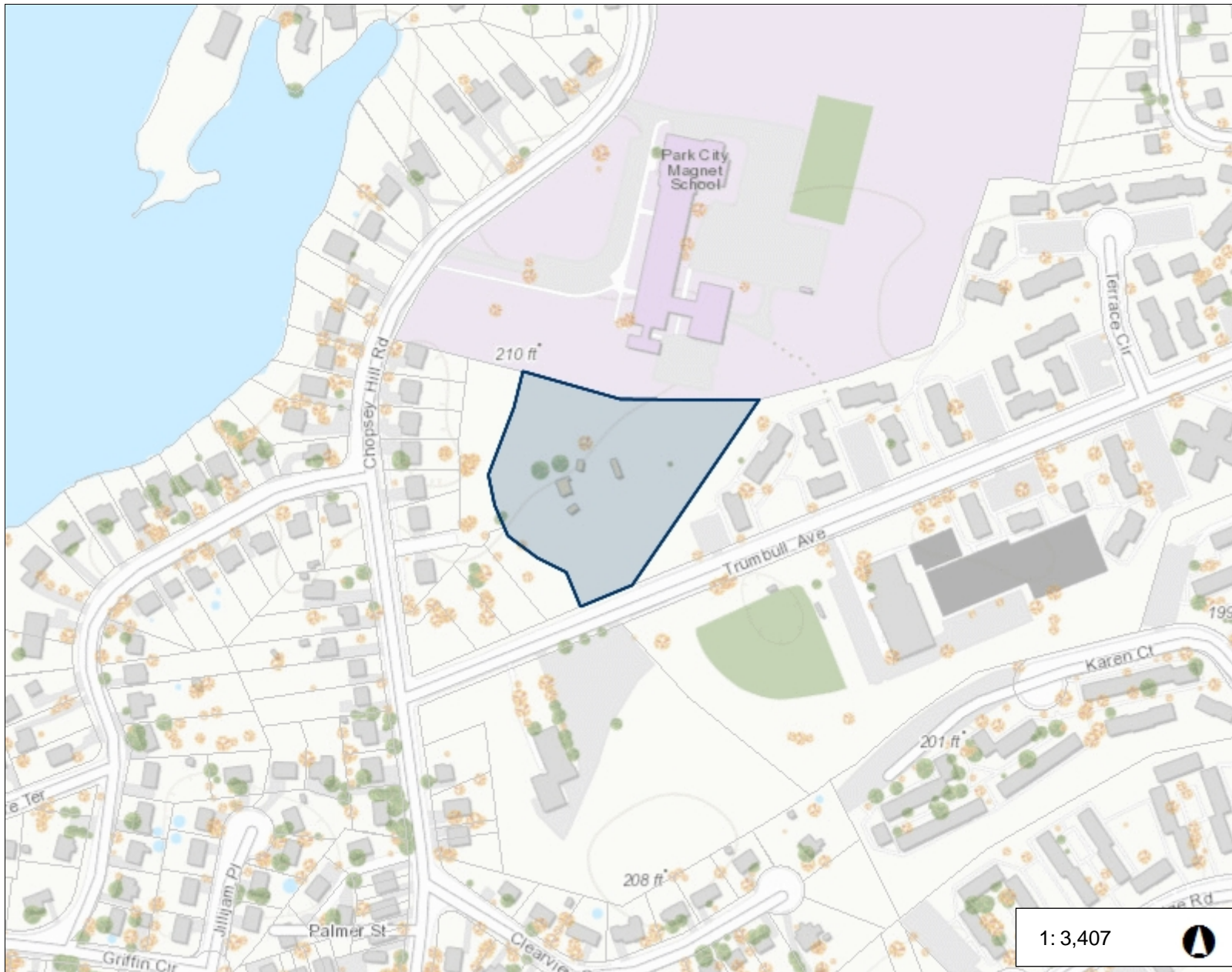
At the time of the site review, the representatives of both companies stated that they believed the tower had been reinforced recently. Stephen Howard of Marcus indicated that his company would be submitting a revised structural analysis that would conclude the tower could adequately support both companies' proposed antennas if the reinforcements have been made.

On June 21, 2002, Marcus submitted an updated structural analysis from Paul J. Ford and Company. The new analysis takes into consideration the reinforcements observed by Tectonic. Without the specific details of the reinforcing, however, Ford cannot determine if the reinforcements are adequate to support the proposed antennas. Ford concludes that if the reinforcing is adequate then the tower can support Marcus's antennas. If the reinforcing is not adequate, then the tower needs additional modifications as proposed in Ford's original structural analysis.



With regard to the Marcus filing, Melanie Howlett expressed some concern about the variance height of the tower as set by the city's zoning board of appeals. Her concern was that Marcus's antennas at the top of the tower did not extend beyond the variance height, which would not necessarily coincide with the height of the tower. In the file of a previous exempt modification notification, a letter from Melanie Howlett dated 10/15/99 states that the variance height of this tower is 250 feet.

There was also discussion about antennas on the tower that were inactive and could be removed. However, in a discussion with staff member Martin, Isabelle Tartaglia, who manages the tower, stated that some inactive antennas were removed recently and the antennas currently on the tower are all active. Ms. Tartaglia also confirmed that the beacons at the top of the tower are operating — she had the bulbs changed four months ago.

Given the uncertainty of the existing reinforcements' capacity to adequately support the proposed antenna loads, the Council, as a condition of approval, should require the applicants to verify the structural adequacy of the tower with the existing reinforcements in place. If the existing reinforcements are found to be inadequate to support the proposed additional antennas, the applicants should be further required to design and install any additional reinforcements needed to make the tower structurally capable of supporting the proposed antennas prior to their installation. The Council should also require the submittal of the conclusions of any additional structural investigation and the drawings of any modifications that might be found to be necessary.



Legend

-  Parcel Label
-  Parcels

567.8 0 283.90 567.8 Feet

WGS\_1984\_Web\_Mercator\_Auxiliary\_Sphere  
Created by Greater Bridgeport Regional Council

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

THIS MAP IS NOT TO BE USED FOR NAVIGATION



CURRENT OWNER		TOPO	UTILITIES	STRT / ROAD	LOCATION	CURRENT ASSESSMENT				6015 BRIDGEPORT, CT							
GAYLE DUVAUGHN & GAYLE						Description	Code	Appraised	Assessed								
1320 CHOPSEY HILL RD						Res Land	1-1	96,420	67,490	VISION							
						Res Dwell	1-3	207,250	145,080								
BRIDGEPORT CT 06606		SUPPLEMENTAL DATA															
		Alt Prcl ID 2778--61N-----		Special Dis													
		Census Tr Heart Abstract 500:500 Freeze															
		GIS ID 2778-61N		Assoc Pid#		Total		303,670	212,570								
RECORD OF OWNERSHIP		BK-VOL/PAGE	SALE DATE	Q/U	V/I	SALE PRICE	VC	PREVIOUS ASSESSMENTS (HISTORY)									
GAYLE DUVAUGHN & GAYLE		10310 56	11-12-2020	Q	I	350,000	00	Year	Code	Assessed	Year	Code	Assessed				
NHB ASSOCIATES LLC		10066 38	07-25-2019	U	V	150,000	25	2020	1-1	67,490	2019	5-1	38,850				
MTM CLASSIC HOMES BUILDERS LTD		0000 0000	01-01-2000	U	V	0			1-3	145,080	2018	5-1	38,850				
		Total						Total		212570	Total		38850				
EXEMPTIONS			OTHER ASSESSMENTS				This signature acknowledges a visit by a Data Collector or Assessor										
Year	Code	Description	Amount	Code	Description	Number	Amount	Comm Int									
		Total				0.00											
ASSESSING NEIGHBORHOOD																	
Nbhd		Nbhd Name		B		Tracing		Batch									
021																	
NOTES																	
TRUMBULL AVE CELL TOWER ON ABUTTED LOT  MAP VOL 56 PAGE 79 =IMPROVEMENT LOCATION																	
BUILDING PERMIT RECORD																	
Permit Id	Issue Date	Type	Description	Amount	Insp Date	% Comp	Date Comp	Comments	Date	Id	Type	Is	Cd	Purpost/Result			
182219	12-13-2019	NC		143,000	09-10-2020	100	08-13-2020	C/O 7364	10-01-2020	RK	07		12	Change - Map Filed			
173319	10-25-2019	FD		20,000	09-10-2020	100	08-13-2020	FOUNDATION ONLY - NO C/	10-01-2020	MVS	01	6	33	DataMailer - Drive By revie			
									09-10-2020	KH	02		P	Permit Activity			
									07-22-2008	TH			90	Res Field Review			
									05-07-2008	JG	01		99	Vacant Lot Insp			
									09-01-2005	EC			P	Permit Activity			
LAND LINE VALUATION SECTION																	
B	Use Code	Description	Zone	Land Type	Land Units	Unit Price	Size Adj	Site Index	Cond.	Nbhd.	Nbhd. Adj	Notes	Location Adjustment	Adj Unit P	Land Value		
1	101	Single Family			13,516 SF	6.34	1.00000	5	0.90	21	1.250	Cl		1.0000	7.13	96,420	
Total Card Land Units					13,516 SF	Parcel Total Land Area					0.3103	Total Land Value					96,420

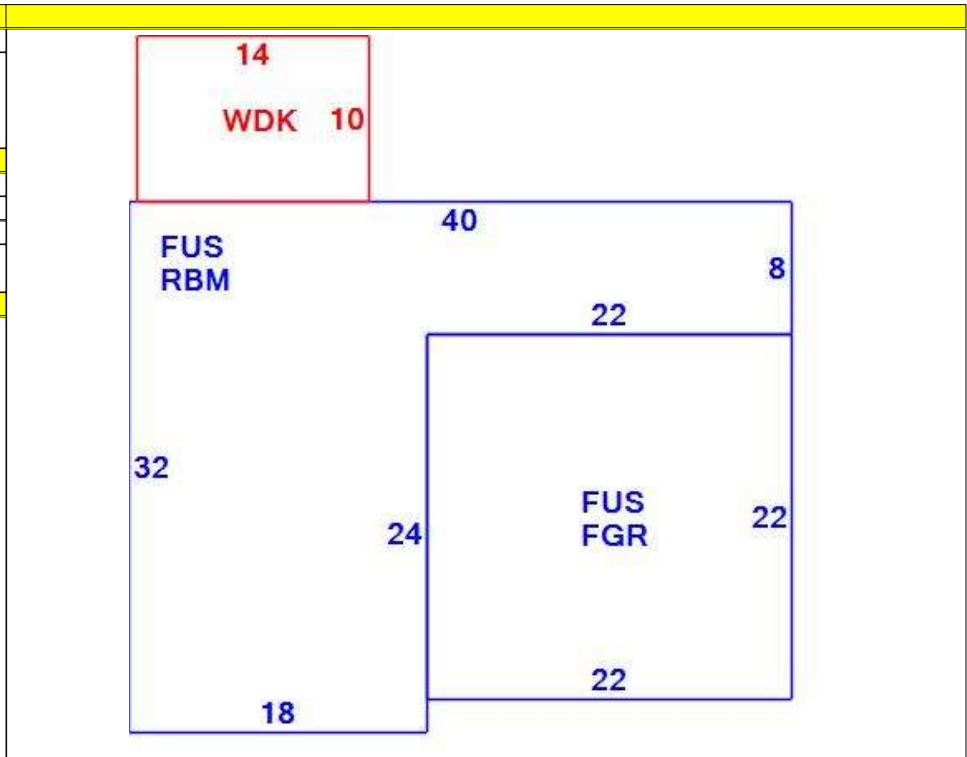


CONSTRUCTION DETAIL			CONSTRUCTION DETAIL (CONTINUED)		
Element	Cd	Description	Element	Cd	Description
Style:	108	High Ranch			
Model	01	Residential			
Grade:	11	B			
Stories:	2				
Occupancy:	1				
Exterior Wall 1:	25	Vinyl Siding			
Exterior Wall 2:					
Roof Structure:	03	Gable			
Roof Cover:	03	Asphalt Shingl			
Interior Wall 1:	05	Drywall			
Interior Wall 2:					
Interior Flr 1:	12	Hardwood			
Interior Flr 2:					
Heat Fuel:	04	Gas			
Heat Type:	04	Forced Air			
AC Type:	03	Central			
Total Bedrooms	4	4 Bedrooms			
Total Full Baths	3				
Total Half Baths					
Total Xtra Fixtrs					
Total Rooms	7				
Bath Style:	02	Average			
Kitchen Style:	02	Average			
Fireplaces					
Fin Bsmt Area	752				
Fin Bsmt Qualit	4	Living Area			
Bsmt Garages					

CONDO DATA			
Parcel Id	C	Owne	
		B	S
Adjust Type	Code	Description	Factor%
Condo Flr			
Condo Unit			

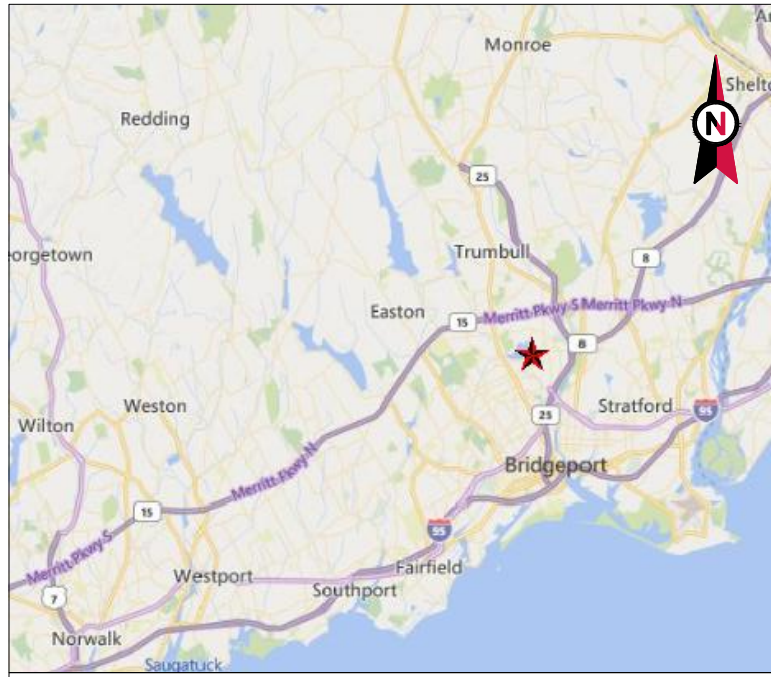
COST / MARKET VALUATION	
Building Value New	230,281
Year Built	2020
Effective Year Built	
Depreciation Code	G
Remodel Rating	
Year Remodeled	
Depreciation %	0
Functional Obsol	
External Obsolescence	10
Trend Factor	1.000
Condition	
Condition %	
Percent Good	90
RCNLD	207,250
Dep % Ovr	
Dep Ovr Comment	
Misc Imp Ovr	
Misc Imp Ovr Comment	
Cost to Cure Ovr	
Cost to Cure Ovr Comment	



OB - OUTBUILDING & YARD ITEMS(L) / XF - BUILDING EXTRA FEATURES(B)										
Code	Description	L/B	Units	Unit Price	Yr Blt	Cond. Cd	% Gd	Grade	Grade Adj.	Appr. Value

BUILDING SUB-AREA SUMMARY SECTION						
Code	Description	Living Area	Floor Area	Eff Area	Unit Cost	Undeprec Value
FGR	Garage	0	484	169	50.04	24,217
FUS	Finished Upper Story	1,236	1,236	1,236	143.30	177,117
RBM	Raised Basement	0	752	188	35.82	26,940
WDK	Wood Deck	0	140	14	14.33	2,006
Ttl Gross Liv / Lease Area		1,236	2,612	1,607		230,280





VICINITY MAP



**AMERICAN TOWER®**

ATC SITE NAME: TARTAGLIA  
 ATC SITE NUMBER: 383598  
 T-MOBILE SITE NAME: BRIDGEPORT NORTH  
 T-MOBILE SITE NUMBER: CT11680A  
 SITE ADDRESS: 1000 TRUMBULL AVENUE  
 BRIDGEPORT, CT 06606



LOCATION MAP

**T-MOBILE ANCHOR ANTENNA AMENDMENT PLAN  
 67D5A997DB OUTDOOR CONFIGURATION**

COMPLIANCE CODE	PROJECT SUMMARY	PROJECT DESCRIPTION	SHEET INDEX				
ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNMENT AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.  1. INTERNATIONAL BUILDING CODE (IBC) 2. NATIONAL ELECTRIC CODE (NEC) 3. LOCAL BUILDING CODE 4. CITY/COUNTY ORDINANCES	<u>SITE ADDRESS:</u> 1000 TRUMBULL AVENUE BRIDGEPORT, CT 06606 COUNTY: FAIRFIELD  <u>GEOGRAPHIC COORDINATES:</u> LATITUDE: 41.2196 LONGITUDE: -73.20128611 GROUND ELEVATION: 212' AMSL	THE PROPOSED PROJECT INCLUDES MODIFYING GROUND BASED AND TOWER MOUNTED EQUIPMENT AS INDICATED PER BELOW: <u>TOWER WORK:</u> REMOVE (3) ANTENNA(s), (3) TTA(s), (1) 9X18 HCS HYBRID CABLE(s), AND (6) 1-5/8" COAX CABLE(s)  INSTALL (3) ANTENNA(s), (3) RRU(s), MOUNT MODIFICATION(s), (2) 1-1/4" COAX CABLE(s), AND (3) HYBRID TRUNK 6/24 4AWG CABLE(s)  EXISTING (6) ANTENNA(s), (3) RRU(s), AND (2) 6X12 HCS AWG HYBRID CABLE(s) TO REMAIN  <u>GROUND WORK:</u> REMOVE (3) S8000 CABINETS  INSTALL (1) ENCLOSURE 6160 CABINET AND (1) B160 BATTERY CABINET  EXISTING (1) RBS 6131 CABINET TO BE RELOCATED	SHEET NO:	DESCRIPTION:	REV:	DATE:	BY:
	<u>PROJECT TEAM</u>	<u>PROJECT NOTES</u>	G-001	TITLE SHEET	0	06/10/21	JP
	<u>TOWER OWNER:</u> AMERICAN TOWER 10 PRESIDENTIAL WAY WOBURN, MA 01801  <u>ENGINEER:</u> ATC TOWER SERVICES, LLC 3500 REGENCY PKWY STE 100 CARY, NC 27518  <u>PROPERTY OWNER:</u> 1000 TRUMBULL AVENUE BRIDGEPORT, CT 06606	<u>APPLICANT:</u> T-MOBILE NORTHEAST LLC  1. THE FACILITY IS UNMANNED. 2. A TECHNICIAN WILL VISIT THE SITE APPROXIMATELY ONCE A MONTH FOR ROUTINE INSPECTION AND MAINTENANCE. 3. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT LAND DISTURBANCE OR EFFECT OF STORM WATER DRAINAGE. 4. NO SANITARY SEWER, POTABLE WATER OR TRASH DISPOSAL IS REQUIRED. 5. HANDICAP ACCESS IS NOT REQUIRED.	G-002	GENERAL NOTES	0	06/10/21	JP
<u>UTILITY COMPANIES</u>  POWER COMPANY: UNKNOWN PHONE: UNKNOWN  TELEPHONE COMPANY: UNKNOWN PHONE: UNKNOWN	<u>PROJECT LOCATION DIRECTIONS</u> FROM DOWNTOWN NEW HAVEN CT START OUT GOING NORTHEAST ON CHURCH ST TOWARD WALL ST. CHURCH ST BECOMES WHITNEY AVE. TURN RIGHT ONTO TRUMBULL ST. TURN SLIGHT LEFT TO TAKE THE I-91 S/I-91 N RAMP. MERGE ONTO I-91 S TOWARD I-95/N.Y.CITY/NEW LONDON. KEEP RIGHT TOWARD NY CITY. MERGE ONTO I-95 S VIA THE EXIT ON THE LEFT TOWARD NY CITY. TAKE EXIT 38 TOWARD CT-15/MERRITT PKWY/W CROSS PKWY. MERGE ONTO MILFORD PKWY. MERGE ONTO MERRITT PARKWAY/CT-15 S VIA EXIT 3B ON THE LEFT TOWARD NY CITY. MERGE ONTO CT-8 S VIA EXIT 52 TOWARD BRIDGEPORT. TAKE THE CT-127/WHITE PLAINS ROAD EXIT, EXIT 7. TURN SLIGHT LEFT ONTO OLD TOWN RD. OLD TOWN RD BECOMES TRUMBULL AVE. TURN RIGHT ONTO CHOPSEY HILL RD. 1336 CHOPSEY HILL RD, BRIDGEPORT, CT 06606-2422, 1336 CHOPSEY HILL RD IS ON THE RIGHT. DRIVE BETWEEN HOUSES TO TOWER SITE	C-101	DETAILED SITE PLAN	0	06/10/21	JP	
<b>811</b> Know what's below. Call before you dig.			C-102	DETAILED GROUND PLAN	0	06/10/21	JP
			C-201	TOWER ELEVATION	0	06/10/21	JP
			C-401	ANTENNA INFORMATION & SCHEDULE	0	06/10/21	JP
			C-501	CONSTRUCTION DETAILS	0	06/10/21	JP
			E-501	GROUNDING DETAILS	0	06/10/21	JP
			R-601	SUPPLEMENTAL			
			R-602	SUPPLEMENTAL			
			R-603	SUPPLEMENTAL			
			R-604	SUPPLEMENTAL			
			R-605	SUPPLEMENTAL			

**AMERICAN TOWER®**  
 A.T. ENGINEERING SERVICE, PLLC  
 3500 REGENCY PARKWAY  
 SUITE 100  
 CARY, NC 27518  
 PHONE: (919) 468-0112  
 COA: PEC.0001553

THE USE AND PUBLICATION OF THESE DRAWINGS SHALL BE RESTRICTED TO THE ORIGINAL SITE FOR WHICH THEY ARE PREPARED. ANY USE OR DISCLOSURE OTHER THAN THAT WHICH RELATES TO AMERICAN TOWER OR THE SPECIFIED CARRIER IS STRICTLY PROHIBITED. NEITHER THE ARCHITECT NOR THE ENGINEER WILL BE PROVIDING ON-SITE CONSTRUCTION REVIEW OF THIS PROJECT. CONTRACTOR(S) MUST VERIFY ALL DIMENSIONS AND ADVISE AMERICAN TOWER OR THE SPECIFIED CARRIER OF ANY DISCREPANCIES. ANY PRIOR ISSUANCE OF THIS DRAWING IS SUPERSEDED BY THE LATEST VERSION.

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	JP	06/10/21

ATC SITE NUMBER:  
 383598  
  
 ATC SITE NAME:  
 TARTAGLIA  
  
 T-MOBILE SITE NAME:  
 BRIDGEPORT NORTH  
  
 SITE ADDRESS:  
 1000 TRUMBULL AVENUE  
 BRIDGEPORT, CT 06606



Authorized by "EOR"  
 10 Jun 2021 05:54:57  
 T-Mobile eesign

DATE DRAWN:	06/10/21
ATC JOB NO:	13337501_G3
CUSTOMER ID:	BRIDGEPORT NORTH
CUSTOMER #:	CT11680A

**TITLE SHEET**

SHEET NUMBER:  
**G-001**

REVISION:  
**0**



**GENERAL CONSTRUCTION NOTES:**

1. OWNER FURNISHED MATERIALS, T-MOBILE "THE COMPANY" WILL PROVIDE AND THE CONTRACTOR WILL INSTALL
  - A. BTS EQUIPMENT FRAME (PLATFORM) AND ICEBRIDGE SHELTER (GROUND BUILD/CO-LOCATE ONLY)
  - B. AC/TELCO INTERFACE BOX (PPC)
  - C. ICE BRIDGE (CABLE TRAY WITH COVER) (GROUND BUILD/CO-LOCATE ONLY, GC TO FURNISH AND INSTALL FOR ROOFTOP INSTALLATION)
  - D. TOWERS, MONOPOLES
  - E. TOWER LIGHTING
  - F. GENERATORS & LIQUID PROPANE TANK
  - G. ANTENNA STANDARD BRACKETS, FRAMES AND PIPES FOR MOUNTING
  - H. ANTENNAS (INSTALLED BY OTHERS)
  - I. TRANSMISSION LINE
  - J. TRANSMISSION LINE JUMPERS
  - K. TRANSMISSION LINE CONNECTORS WITH WEATHERPROOFING KITS
  - L. TRANSMISSION LINE GROUND KITS
  - M. HANGERS
  - N. HOISTING GRIPS
  - O. BTS EQUIPMENT
2. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL OTHER MATERIALS FOR THE COMPLETE INSTALLATION OF THE SITE INCLUDING, BUT NOT LIMITED TO, SUCH MATERIALS AS FENCING, STRUCTURAL STEEL SUPPORTING SUB-FRAME FOR PLATFORM, ROOFING LABOR AND MATERIALS, GROUNDING RINGS, GROUNDING WIRES, COPPER-CLAD OR XIT CHEMICAL GROUND ROD(S), BUSS BARS, TRANSFORMERS AND DISCONNECT SWITCHES WHERE APPLICABLE, TEMPORARY ELECTRICAL POWER, CONDUIT, LANDSCAPING COMPOUND STONE, CRANES, CORE DRILLING, SLEEPERS AND RUBBER MATTING, REBAR, CONCRETE CAISSONS, PADS AND/OR AUGER MOUNTS, MISCELLANEOUS FASTENERS, CABLE TRAYS, NON-STANDARD ANTENNA FRAMES AND ALL OTHER MATERIAL AND LABOR REQUIRED TO COMPLETE THE JOB ACCORDING TO THE DRAWINGS AND SPECIFICATIONS. IT IS THE POSITION OF T-MOBILE TO APPLY FOR PERMITTING AND CONTRACTOR RESPONSIBLE FOR PICKUP AND PAYMENT OF REQUIRED PERMITS.
3. ALL WORK SHALL CONFORM TO ALL CURRENT APPLICABLE FEDERAL, STATE, AND LOCAL CODES, INCLUDING ANSIEIA/TIA-222, AND COMPLY WITH ATC CONSTRUCTION SPECIFICATIONS.
4. CONTRACTOR SHALL CONTACT LOCAL 811 FOR IDENTIFICATION OF UNDERGROUND UTILITIES PRIOR TO START OF CONSTRUCTION.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL REQUIRED INSPECTIONS.
6. ALL DIMENSIONS TO, OF, AND ON EXISTING BUILDINGS, DRAINAGE STRUCTURES, AND SITE IMPROVEMENTS SHALL BE VERIFIED IN FIELD BY CONTRACTOR WITH ALL DISCREPANCIES REPORTED TO THE ENGINEER.
7. DO NOT CHANGE SIZE OR SPACING OF STRUCTURAL ELEMENTS.
8. DETAILS SHOWN ARE TYPICAL; SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS UNLESS OTHERWISE NOTED.
9. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY WHICH SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
10. CONTRACTOR SHALL BRACE STRUCTURES UNTIL ALL STRUCTURAL ELEMENTS NEEDED FOR STABILITY ARE INSTALLED. THESE ELEMENTS ARE AS FOLLOWS: LATERAL BRACING, ANCHOR BOLTS, ETC.
11. CONTRACTOR SHALL DETERMINE EXACT LOCATION OF EXISTING UTILITIES, GROUNDS DRAINS, DRAIN PIPES, VENTS, ETC. BEFORE COMMENCING WORK.
12. INCORRECTLY FABRICATED, DAMAGED, OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE T-MOBILE REP PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH REMEDIAL ACTION SHALL REQUIRE WRITTEN APPROVAL BY THE T-MOBILE REP PRIOR TO PROCEEDING.
13. EACH CONTRACTOR SHALL COOPERATE WITH THE T-MOBILE REP, AND COORDINATE HIS WORK WITH THE WORK OF OTHERS.
14. CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED BY CONSTRUCTION OF THIS PROJECT TO MATCH EXISTING PRE-CONSTRUCTION CONDITIONS TO THE SATISFACTION OF THE T-MOBILE CONSTRUCTION MANAGER.
15. ALL CABLE/CONDUIT ENTRY/EXIT PORTS SHALL BE WEATHERPROOFED DURING INSTALLATION USING A SILICONE SEALANT.
16. WHERE EXISTING CONDITIONS DO NOT MATCH THOSE SHOWN IN THIS PLAN SET, CONTRACTOR SHALL NOTIFY THE T-MOBILE REP AND ENGINEER OF RECORD IMMEDIATELY.
17. CONTRACTOR SHALL ENSURE ALL SUBCONTRACTORS ARE PROVIDED WITH A COMPLETE AND CURRENT SET OF DRAWINGS AND SPECIFICATIONS FOR THIS PROJECT.
18. CONTRACTOR SHALL REMOVE ALL RUBBISH AND DEBRIS FROM THE SITE AT THE END OF EACH DAY.
19. CONTRACTOR SHALL COORDINATE WORK SCHEDULE WITH AMERICAN TOWER CORPORATION (ATC) AND TAKE PRECAUTIONS TO MINIMIZE IMPACT AND DISRUPTION OF OTHER OCCUPANTS OF THE FACILITY.
20. CONTRACTOR SHALL FURNISH T-MOBILE AND AMERICAN TOWER CORPORATION (ATC) WITH A PDF MARKED UP AS-BUILT SET OF DRAWINGS UPON COMPLETION OF WORK.
21. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH T-MOBILE REP TO DETERMINE WHAT, IF ANY, ITEMS WILL BE PROVIDED. ALL ITEMS NOT PROVIDED SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR. CONTRACTOR WILL INSTALL ALL ITEMS PROVIDED.

22. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH T-MOBILE REP TO DETERMINE IF ANY PERMITS WILL BE OBTAINED BY CONTRACTOR. ALL REQUIRED PERMITS NOT OBTAINED BY T-MOBILE MUST BE OBTAINED, AND PAID FOR, BY THE CONTRACTOR.
23. CONTRACTOR SHALL INSTALL ALL SITE SIGNAGE IN ACCORDANCE WITH T-MOBILE SPECIFICATIONS AND REQUIREMENTS.
24. CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS TO T-MOBILE FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
25. ALL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND LOCATED ACCORDING TO T-MOBILE SPECIFICATIONS, AND AS SHOWN IN THESE PLANS.
26. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
27. CONTRACTOR SHALL NOTIFY T-MOBILE REP A MINIMUM OF 48 HOURS IN ADVANCE OF POURING CONCRETE OR BACKFILLING ANY UNDERGROUND UTILITIES, FOUNDATIONS OR SEALING ANY WALL, FLOOR OR ROOF PENETRATIONS FOR ENGINEERING REVIEW AND APPROVAL.
28. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SAFETY INCLUDING COMPLIANCE WITH ALL APPLICABLE OSHA STANDARDS AND RECOMMENDATIONS AND SHALL PROVIDE ALL NECESSARY SAFETY DEVICES INCLUDING PPE AND PPM AND CONSTRUCTION DEVICES SUCH AS WELDING AND FIRE PREVENTION, TEMPORARY SHORING, SCAFFOLDING, TRENCH BOXES/SLOPING, BARRIERS, ETC.
29. THE CONTRACTOR SHALL PROTECT AT HIS OWN EXPENSE, ALL EXISTING FACILITIES AND SUCH OF HIS NEW WORK LIABLE TO INJURY DURING THE CONSTRUCTION PERIOD. ANY DAMAGE CAUSED BY NEGLIGENCE ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, OR BY THE ELEMENTS DUE TO NEGLIGENCE ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, EITHER TO THE EXISTING WORK, OR TO HIS WORK OR THE WORK OF ANY OTHER CONTRACTOR, SHALL BE REPAIRED AT HIS EXPENSE TO THE OWNER'S SATISFACTION.
30. ALL WORK SHALL BE INSTALLED IN A FIRST CLASS, NEAT AND WORKMANLIKE MANNER BY MECHANICS SKILLED IN THE TRADE INVOLVED. THE QUALITY OF WORKMANSHIP SHALL BE SUBJECT TO THE APPROVAL OF THE T-MOBILE REP. ANY WORK FOUND BY THE T-MOBILE REP TO BE OF INFERIOR QUALITY AND/OR WORKMANSHIP SHALL BE REPLACED AND/OR REWORKED AT CONTRACTOR EXPENSE UNTIL APPROVAL IS OBTAINED.
31. IN ORDER TO ESTABLISH STANDARDS OF QUALITY AND PERFORMANCE, ALL TYPES OF MATERIALS LISTED HEREINAFTER BY MANUFACTURER'S NAMES AND/OR MANUFACTURER'S CATALOG NUMBER SHALL BE PROVIDED BY THESE MANUFACTURERS AS SPECIFIED.
32. T-MOBILE FURNISHED EQUIPMENT SHALL BE PICKED-UP AT THE T-MOBILE WAREHOUSE, NO LATER THAN 48HR AFTER BEING NOTIFIED INSURED, STORED, UNCRATE, PROTECTED AND INSTALLED BY THE CONTRACTOR WITH ALL APPURTENANCES REQUIRED TO PLACE THE EQUIPMENT IN OPERATION, READY FOR USE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE EQUIPMENT AFTER PICKING IT UP.
33. T-MOBILE OR HIS ARCHITECT/ENGINEER RESERVES THE RIGHT TO REJECT ANY EQUIPMENT OR MATERIALS WHICH, IN HIS OWN OPINION ARE NOT IN COMPLIANCE WITH THE CONTRACT DOCUMENTS, EITHER BEFORE OR AFTER INSTALLATION AND THE EQUIPMENT SHALL BE REPLACED WITH EQUIPMENT CONFORMING TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS BY THE CONTRACTOR AT NO COST TO T-MOBILE OR THEIR ARCHITECT/ENGINEER.

**SPECIAL CONSTRUCTION**

**ANTENNA INSTALLATION NOTES:**

1. WORK INCLUDED:
  - A. ANTENNA AND COAXIAL CABLES ARE FURNISHED BY T-MOBILE UNDER A SEPARATE CONTRACT. THE CONTRACTOR SHALL ASSIST ANTENNA INSTALLATION CONTRACTOR IN TERMS OF COORDINATION AND SITE ACCESS. ERECTION SUBCONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF PERSONNEL AND
  - B. INSTALL ANTENNA AS INDICATE ON DRAWINGS AND T-MOBILE SPECIFICATIONS.
  - C. INSTALL GALVANIZED STEEL ANTENNA MOUNTS AS INDICATED ON DRAWINGS
  - D. INSTALL FURNISHED GALVANIZED STEEL OR ALUMINUM WAVEGUIDE.
  - E. CONTRACTOR SHALL PROVIDE FOUR (4) SETS OF SWEEP TESTS USING ANRITZU-PACKARD 8713B RF SCALAR NETWORK ANALYZER. SUBMIT FREQUENCY DOMAIN REFLECTOMETER(FDR) TESTS RESULTS TO THE PROJECT MANAGER. SWEEP TESTS SHALL BE AS PER ATTACHED RFS "MINIMUM FIELD TESTING RECOMMENDED FOR ANTENNA AND HELIAX COAXIAL CABLE SYSTEMS" DATED 10/5/93. TESTING SHALL BE PERFORMED BY AN INDEPENDENT TESTING SERVICE AND BE BOUND AND SUBMITTED WITHIN ONE WEEK OF WORK COMPLETION.
  - F. INSTALL COAXIAL CABLES AND TERMINATING BETWEEN ANTENNAS AND EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS. WEATHERPROOF ALL CONNECTIONS BETWEEN THE ANTENNA AND EQUIPMENT PER MANUFACTURER'S REQUIREMENTS. TERMINATE ALL COAXIAL CABLE THREE (3) FEET IN EXCESS OF ENTRY PORT LOCATION UNLESS OTHERWISE STATED.
  - G. ANTENNA AND COAXIAL CABLE GROUNDING:

2. ALL EXTERIOR #6 GREED GROUND WIRE "DAISY CHAIN" CONNECTIONS ARE TO BE WEATHER SEALED WITH RFS CONNECTORS/SPLICE WEATHERPROOFING KIT #221213 OR EQUAL.
3. ALL COAXIAL CABLE GROUNDING KITS ARE TO BE INSTALLED ON STRAIGHT RUNS OF COAXIAL CABLE (NOT WITHIN BENDS)

**ALL DISCREPANCIES FROM WHAT IS SHOWN ON THESE CONSTRUCTION DRAWINGS SHALL BE COMMUNICATED TO ATC ENGINEERING IMMEDIATELY FOR CORRECTION OR RE-DESIGN. FAILURE TO COMMUNICATE DIRECTLY WITH ATC ENGINEERING OR ANY CHANGES FROM THE DESIGN CONDUCTED WITHOUT PRIOR APPROVAL FROM ATC ENGINEERING SHALL BE THE SOLE RESPONSIBILITY OF THE GENERAL CONTRACTOR.**



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REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	JP	06/10/21

ATC SITE NUMBER:  
**383598**

ATC SITE NAME:  
**TARTAGLIA**

T-MOBILE SITE NAME:  
**BRIDGEPORT NORTH**

SITE ADDRESS:  
1000 TRUMBULL AVENUE  
BRIDGEPORT, CT 06606

SEAL:



Authorized by "EOR"  

 10 Jun 2021 05:54:57

DATE DRAWN:	06/10/21
ATC JOB NO:	13337501_G3
CUSTOMER ID:	BRIDGEPORT NORTH
CUSTOMER #:	CT11680A

**GENERAL NOTES**

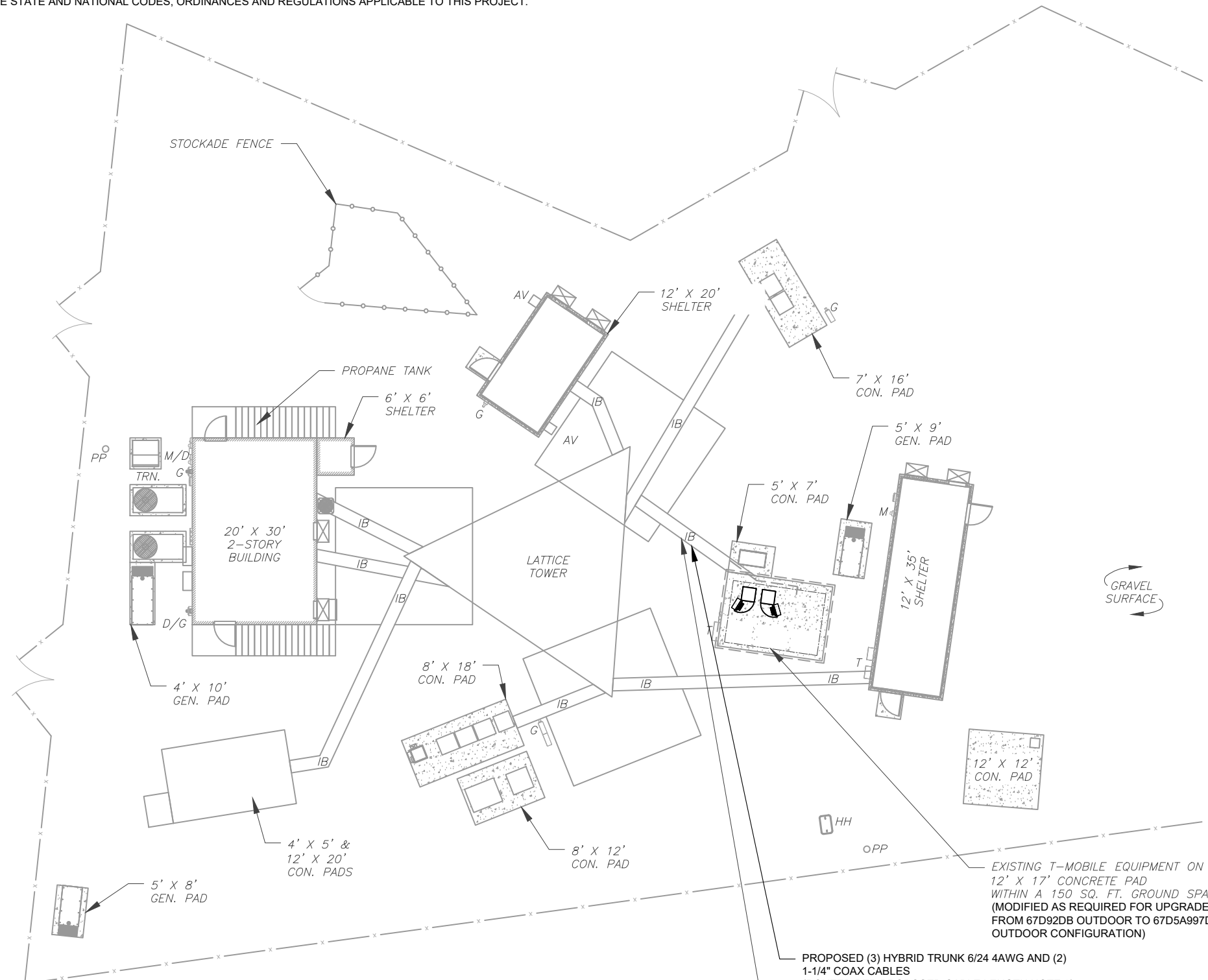
SHEET NUMBER: <b>G-002</b>	REVISION: <b>0</b>
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**SITE PLAN NOTES:**

1. THIS SITE PLAN REPRESENTS THE BEST PRESENT KNOWLEDGE AVAILABLE TO THE ENGINEER AT THE TIME OF THIS DESIGN. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO CONSTRUCTION AND VERIFY ALL EXISTING CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT.
2. ICE BRIDGE, CABLE LADDER, COAX PORT, AND COAX CABLE ARE SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL CONFIRM THE EXACT LOCATION OF ALL PROPOSED AND EXISTING EQUIPMENT AND STRUCTURES DEPICTED ON THIS PLAN. BEFORE UTILIZING EXISTING CABLE SUPPORTS, COAX PORTS, INSTALLING NEW PORTS OR ANY OTHER EQUIPMENT, CONTRACTOR SHALL VERIFY ALL ASPECTS OF THE COMPONENTS MEET THE ATC SPECIFICATIONS.
3. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE T-MOBILE REPRESENTATIVE AND LOCAL UTILITY COMPANY FOR THE INSTALLATION OF CONDUITS, CONDUCTORS, BREAKERS, DISCONNECTS, OR ANY OTHER EQUIPMENT REQUIRED FOR ELECTRICAL SERVICE. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH LATEST EDITION OF THE STATE AND NATIONAL CODES, ORDINANCES AND REGULATIONS APPLICABLE TO THIS PROJECT.

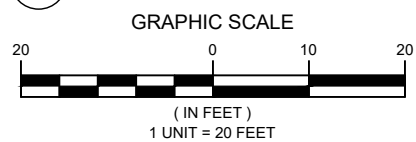
LEGEND	
⊗	GROUNDING TEST WELL
ATS	AUTOMATIC TRANSFER SWITCH
B	BOLLARD
CSC	CELL SITE CABINET
D	DISCONNECT
E	ELECTRICAL
F	FIBER
GEN	GENERATOR
G	GENERATOR RECEPTACAL
HH, V	HAND HOLE, VAULT
IB	ICE BRIDGE
K	KENTROX BOX
LC	LIGHTING CONTROL
M	METER
PB	PULL BOX
PP	POWER POLE
T	TELCO
TRN	TRANSFORMER
—x—	CHAINLINK FENCE



**PROPOSED CABLE LENGTH:**

1. ESTIMATED LENGTH OF PROPOSED CABLE IS **255'**. ESTIMATED LENGTH OF CABLE WAS PROVIDED BY CUSTOMER OR CALCULATED BY ADDING THE RAD CENTER AND THE DISTANCE FROM THE SHELTER ENTRY PLATE TO THE TOWER (ALONG THE ICE BRIDGE) AND A SAFETY FACTOR MEASUREMENT OF 15% (OF THE TWO PREVIOUS VALUES). CDS DEFER TO GREATEST CABLE LENGTH.
2. ROUTE PROPOSED CABLES ALONG SAME PATH AS EXISTING CABLES AND IN ACCORDANCE WITH STRUCTURAL ANALYSIS. WHERE POSSIBLE UTILIZE EXISTING CABLE SUPPORT STRUCTURES AS PROVIDED FOR CARRIER TO ADEQUATELY SECURE CABLES, USING EITHER APPROPRIATELY SIZED STAINLESS STEEL SNAP-INS OR MOUNTING HARDWARE AND BRACKETS AS SPECIFIED BY CABLE MANUFACTURER. OTHERWISE, ATTACH CABLES TO HORIZONTAL OR DIAGONAL TOWER MEMBERS USING PROPOSED STAINLESS STEEL ADAPTERS (DO NOT ATTACH TO TOWER LEG).

**1 DETAILED SITE PLAN**



PROPOSED (3) HYBRID TRUNK 6/24 4AWG AND (2) 1-1/4" COAX CABLES (ROUTED PER PROPOSED CABLE LENGTH NOTE 2) (REFER TO PROPOSED CABLE LENGTH NOTE ON THIS PAGE)

EXISTING (2) 6X12 HCS AWG HYBRID CABLES (TO REMAIN)  
(6) 1-5/8" COAX CABLES AND (1) 9X18 HCS HYBRID CABLE (TO BE REMOVED)

EXISTING T-MOBILE EQUIPMENT ON A 12' X 17" CONCRETE PAD WITHIN A 150 SQ. FT. GROUND SPACE (MODIFIED AS REQUIRED FOR UPGRADE FROM 67D92DB OUTDOOR TO 67D5A997DB OUTDOOR CONFIGURATION)



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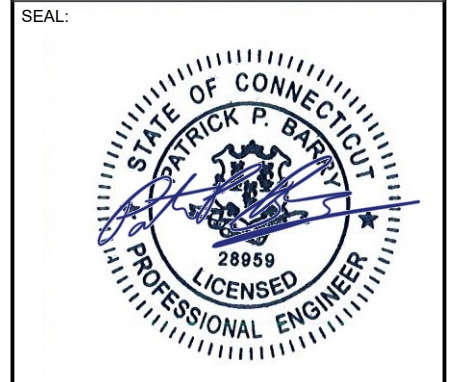
REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	JP	06/10/21

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**383598**

ATC SITE NAME:  
**TARTAGLIA**

T-MOBILE SITE NAME:  
**BRIDGEPORT NORTH**

SITE ADDRESS:  
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BRIDGEPORT, CT 06606



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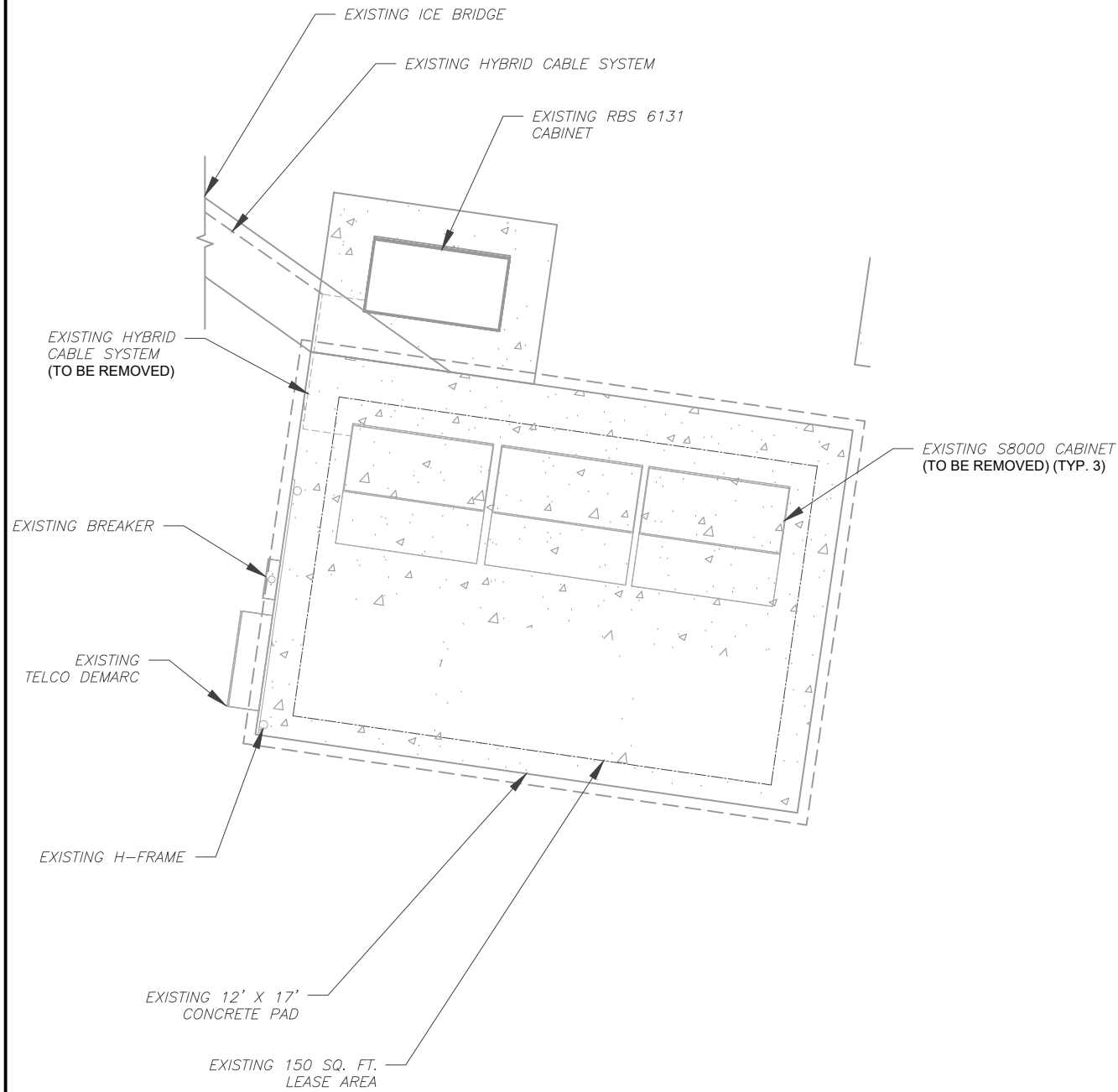
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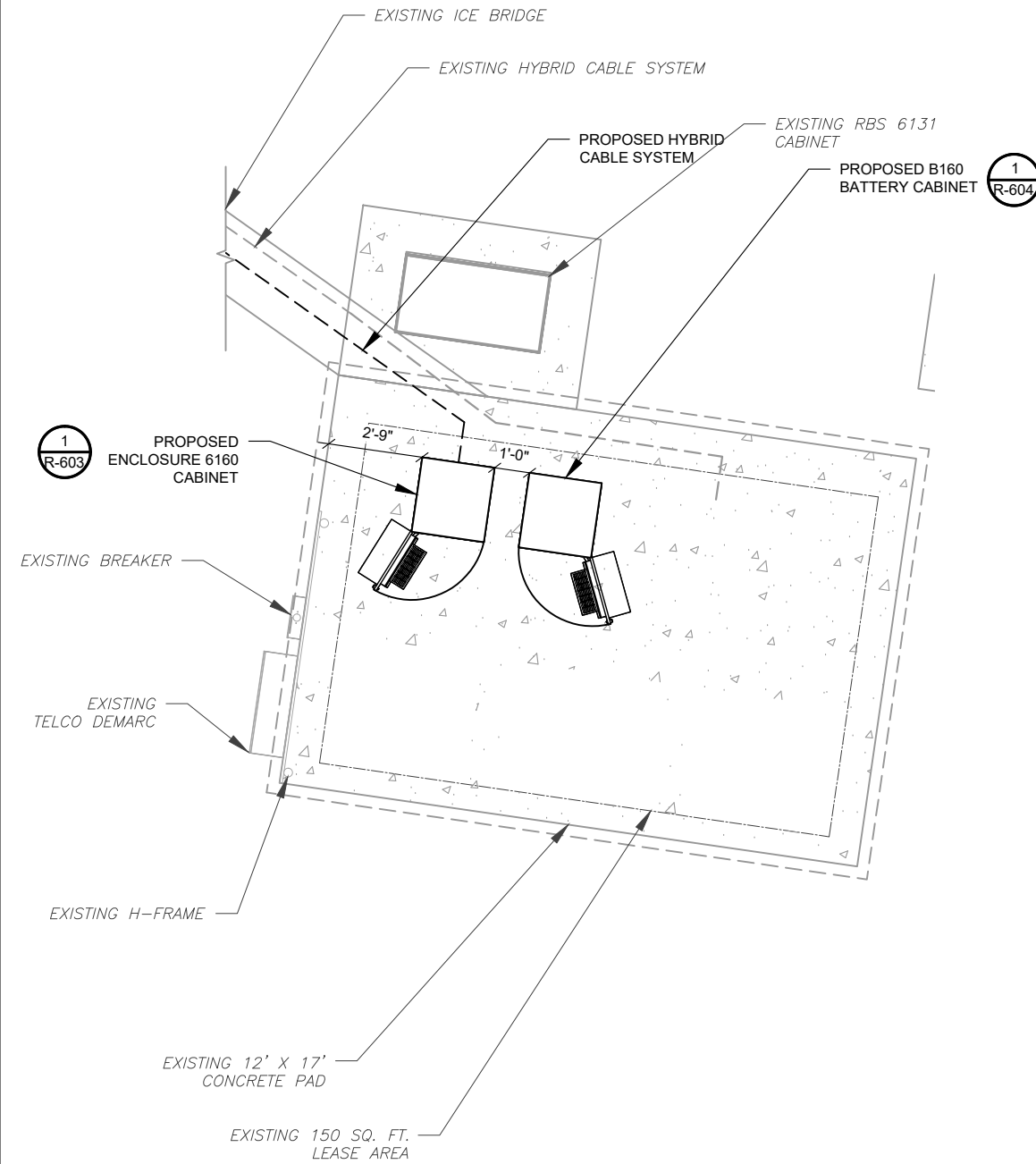
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**SITE PLAN NOTES:**

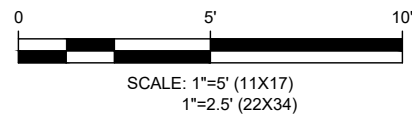
1. CONTRACTOR TO VERIFY THERE IS NO LIVE AAV FIBER RUNNING THROUGH EXISTING DEAD EQUIPMENT. IF SO, THIS WILL NEED TO BE RERUN THROUGH CONDUIT PRIOR TO REMOVING DEAD 2G (6201 CABS) EQUIPMENT.
2. REMOVE EXISTING 2G CABINETS, AND POWER / TELCO WHIPS ASSOCIATED WITH THE DEAD EQUIPMENT IF APPLICABLE.
3. ALL OPEN PORTS NEED TO BE SEALED / WEATHERPROOFED PROPERLY
4. ALL UNNEEDED / EXCESS EQUIPMENT AND GARBAGE TO BE REMOVED FROM EQUIPMENT AREA. DISPOSE OF MATERIALS PROPERLY OFF SITE.



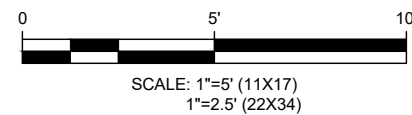
T-MOBILE CM APPROVAL REQUIRED BEFORE INSTALLING CABINETS



1 EXISTING GROUND EQUIPMENT LAYOUT



2 PROPOSED GROUND EQUIPMENT LAYOUT



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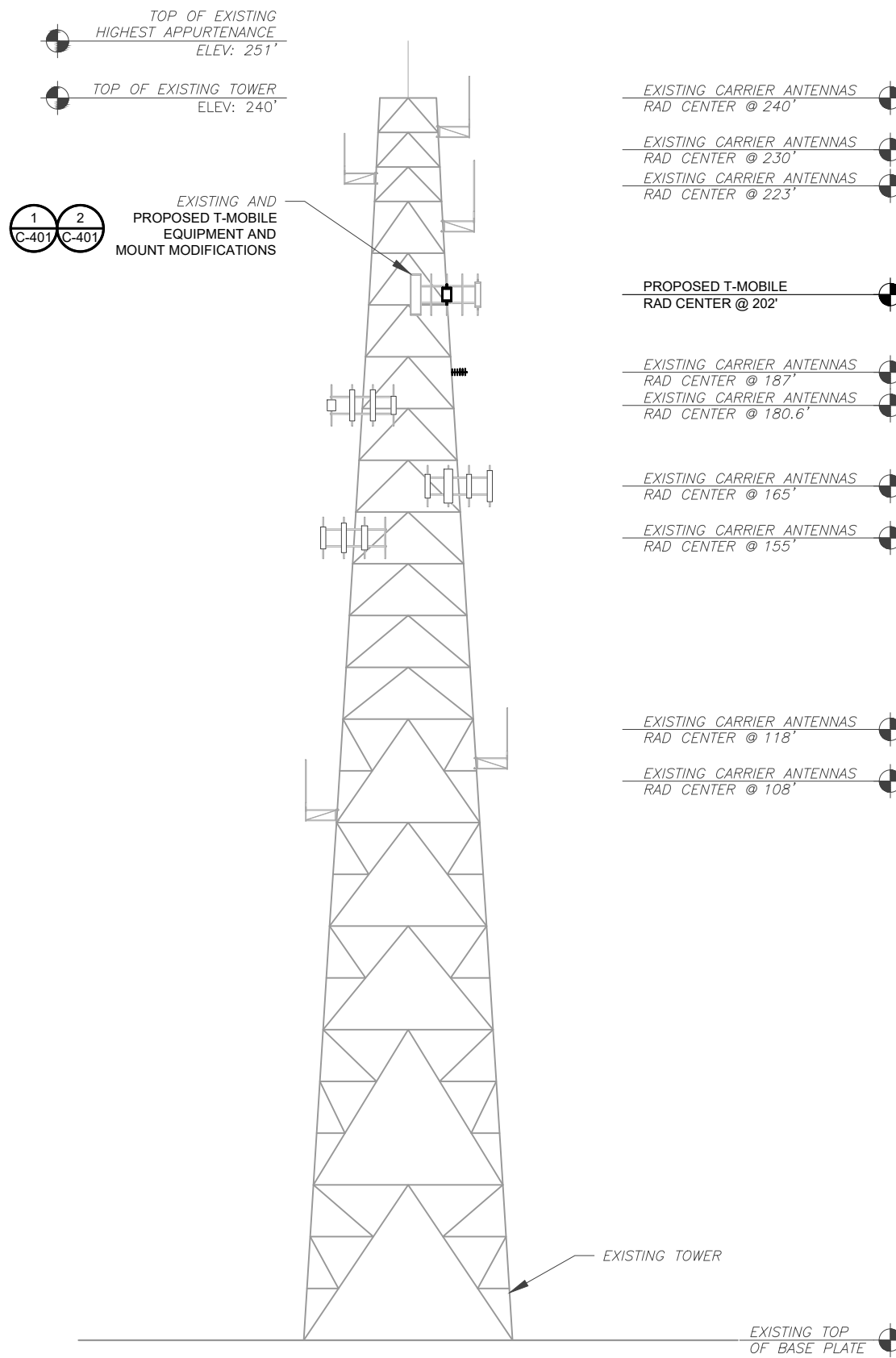
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**DETAILED GROUND PLAN**

SHEET NUMBER:	REVISION:
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PER MOUNT ANALYSIS COMPLETED BY AMERICAN TOWER CORPORATION, DATED 02/16/21, THE EXISTING MOUNT CAN NOT ADEQUATELY SUPPORT THE PROPOSED LOADING. A MOUNT MODIFICATION DESIGN SHALL BE COMPLETED AND MODIFICATION MUST BE INSTALLED PRIOR TO THE INSTALLATION OF THE PROPOSED ANTENNAS AND OTHER EQUIPMENT

- TOWER NOTE:**
- 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 WORK. EXISTING AND PROPOSED TOWER APPURTENANCES, MOUNTS, AND ANTENNAS ARE SHOWN BASED ON THE STRUCTURAL ANALYSIS.
  - WHERE APPLICABLE, ALL NEW ANTENNAS, EQUIPMENT, MOUNTS, CABLING, ETC. SHALL BE PAINTED/SOCKED TO MATCH EXISTING EQUIPMENT IN ACCORDANCE WITH FAA, JURISDICTION, AND/OR OTHER LOCAL REQUIREMENTS.
  - ROUTE PROPOSED CABLES ALONG SAME PATH AS EXISTING CABLES AND IN ACCORDANCE WITH STRUCTURAL ANALYSIS. WHERE POSSIBLE UTILIZE EXISTING CABLE SUPPORT STRUCTURES AS PROVIDED FOR CARRIER TO ADEQUATELY SECURE CABLES, USING EITHER APPROPRIATELY SIZED STAINLESS STEEL SNAP-INS OR MOUNTING HARDWARE AND BRACKETS AS SPECIFIED BY CABLE MANUFACTURER. OTHERWISE, ATTACH CABLES TO HORIZONTAL OR DIAGONAL TOWER MEMBERS USING PROPOSED STAINLESS STEEL ADAPTERS (DO NOT ATTACH TO TOWER LEG).
  - TOWER ELEVATIONS ARE MEASURED FROM TOP OF BASE PLATE TO MATCH STRUCTURAL ANALYSIS. ELEVATIONS DO NOT REFLECT TRUE ABOVE GROUND LEVEL (A.G.L.)

**1 TOWER ELEVATION**  
 SCALE: N.T.S.



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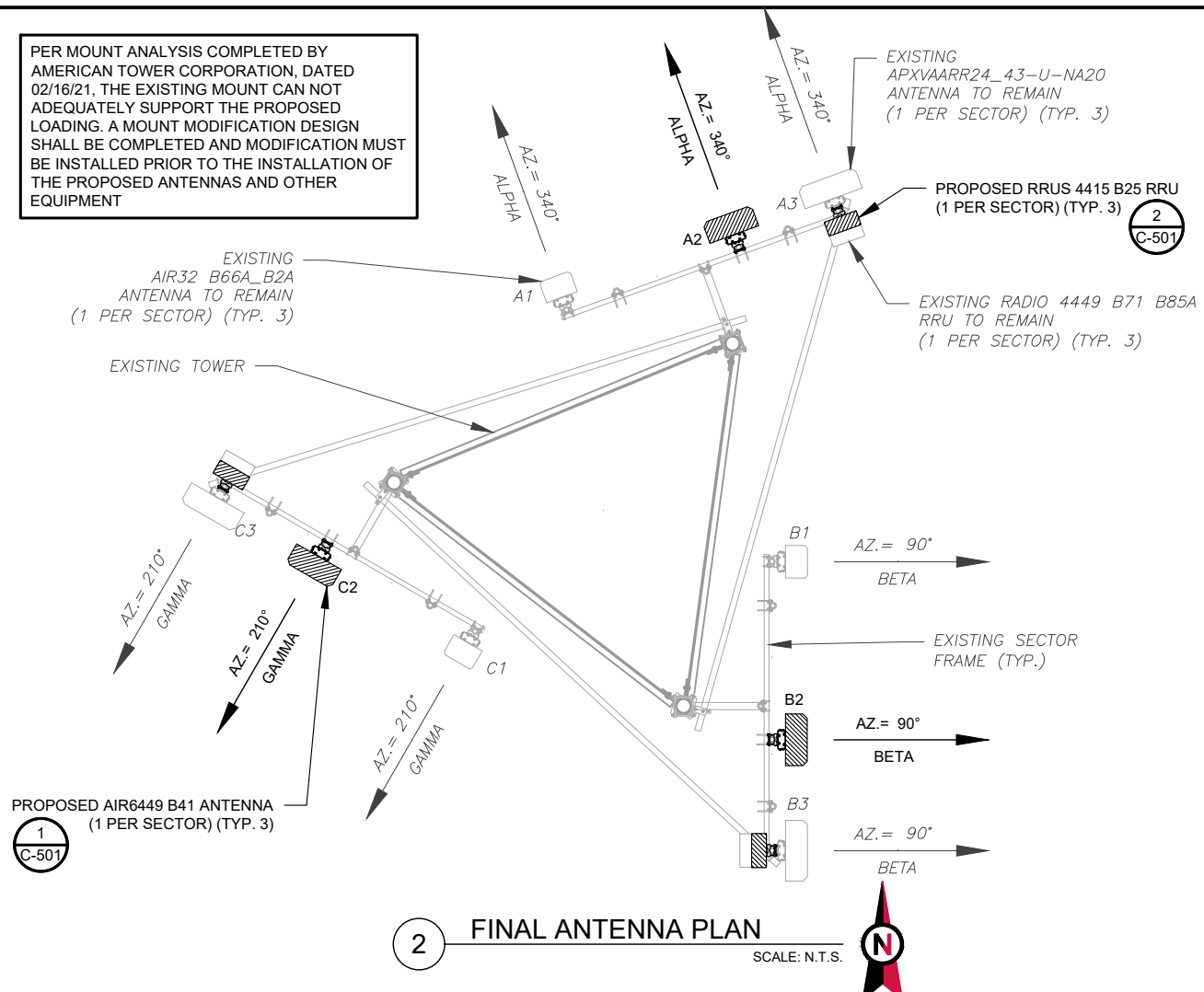
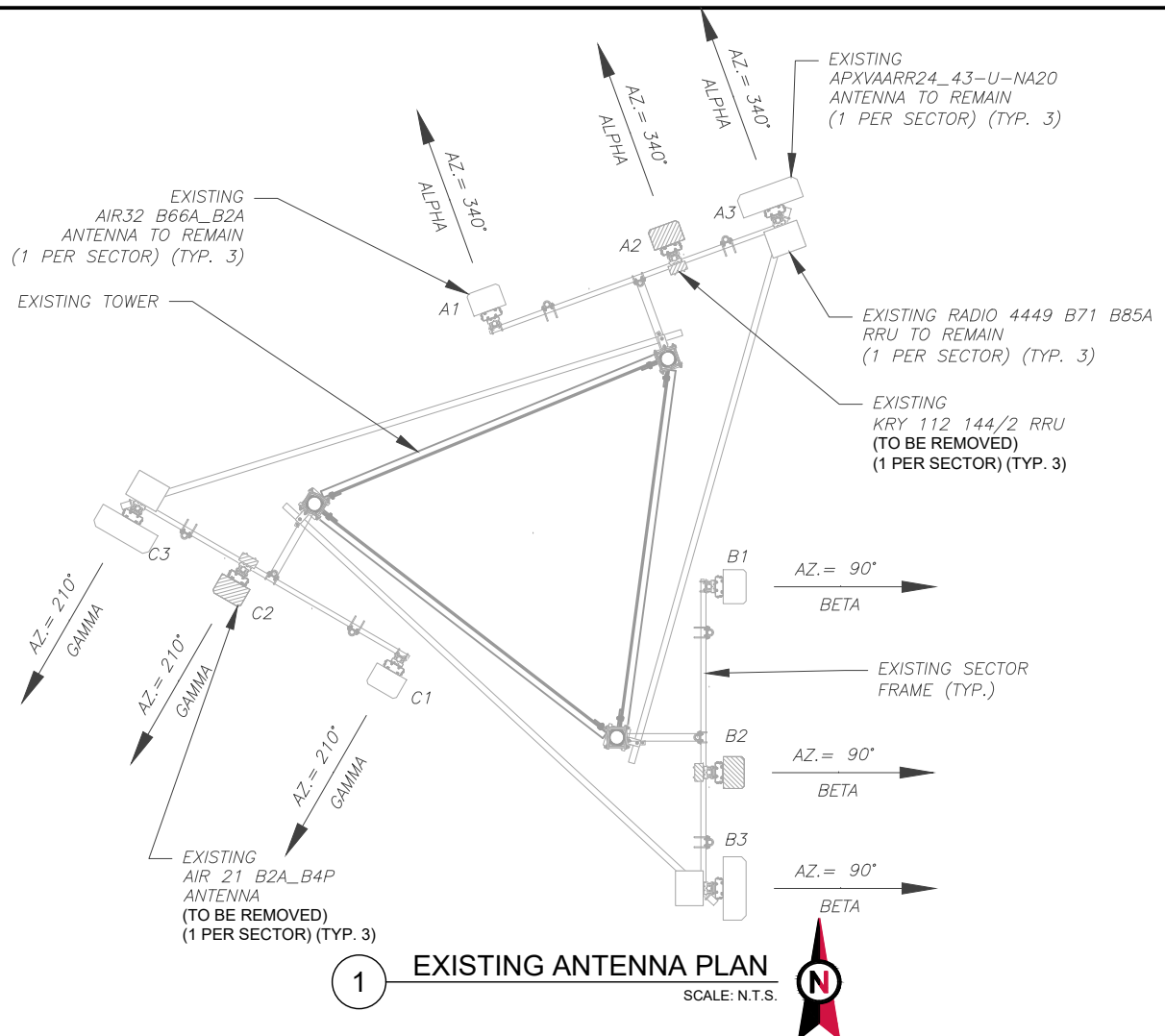
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DATE DRAWN:	06/10/21
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CUSTOMER ID:	BRIDGEPORT NORTH
CUSTOMER #:	CT11680A

**TOWER ELEVATION**

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EXISTING ANTENNA SCHEDULE									
LOCATION		ANTENNA SUMMARY					NON ANTENNA SUMMARY		
SECTOR	RAD	AZ	POS	ANTENNA	BAND	MECH/ELEC D-TILT	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT	STATUS
ALPHA	202'	340°	A1	AIR32 B66A_B2A	L2100/L1900	-	RMN	-	RMV
			A2	AIR 21 B2A_B4P	G1900/U2100	-	RMV	KRY 112 144/2	RMV
			A3	APXVAARR24_43-U-NA20	L700/L600/N600	-	RMN	RADIO 4449 B71 B85A	RMN
BETA	202'	90°	B1	AIR32 B66A_B2A	L2100/L1900	-	RMN	-	RMV
			B2	AIR 21 B2A_B4P	G1900/U2100	-	RMV	KRY 112 144/2	RMV
			B3	APXVAARR24_43-U-NA20	L700/L600/N600	-	RMN	RADIO 4449 B71 B85A	RMN
GAMMA	202'	210°	C1	AIR32 B66A_B2A	L2100/L1900	-	RMN	-	RMV
			C2	AIR 21 B2A_B4P	G1900/U2100	-	RMV	KRY 112 144/2	RMV
			C3	APXVAARR24_43-U-NA20	L700/L600/N600	-	RMN	RADIO 4449 B71 B85A	RMN

**NOTES**

- CONFIRM WITH T-MOBILE REP FOR APPLICABLE UPDATES/REVISIONS AND MOST RECENT RFDS FOR NSN CONFIGURATION (CONFIG). GC TO CAP ALL UNUSED PORTS.
- CONFIRM SPACING OF PROPOSED EQUIP DOES NOT CAUSE TOWER CONFLICTS NOR IMPEDE TOWER CLIMBING PEGS.

**STATUS ABBREVIATIONS**

RMV: TO BE REMOVED  
RMN: TO REMAIN  
REL: TO BE RELOCATED  
ADD: TO BE ADDED

FINAL ANTENNA SCHEDULE									
LOCATION		ANTENNA SUMMARY					NON ANTENNA SUMMARY		
SECTOR	RAD	AZ	POS	ANTENNA	BAND	MECH/ELEC D-TILT	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT	STATUS
ALPHA	202'	340°	A1	AIR32 B66A_B2A	L2100/G1900/L1900	0°/-	RMN	-	-
			A2	AIR6449 B41	L2500/N2500	0°/-	ADD	-	-
			A3	APXVAARR24_43-U-NA20	L700/L600/N600/L1900	0°/-	RMN	RRUS 4415 B25 RADIO 4449 B71 B85A	ADD RMN
BETA	202'	90°	B1	AIR32 B66A_B2A	L2100/G1900/L1900	0°/-	RMN	-	-
			B2	AIR6449 B41	L2500/N2500	0°/-	ADD	-	-
			B3	APXVAARR24_43-U-NA20	L700/L600/N600/L1900	0°/-	RMN	RRUS 4415 B25 RADIO 4449 B71 B85A	ADD RMN
GAMMA	202'	210°	C1	AIR32 B66A_B2A	L2100/G1900/L1900	0°/-	RMN	-	-
			C2	AIR6449 B41	L2500/N2500	0°/-	ADD	-	-
			C3	APXVAARR24_43-U-NA20	L700/L600/N600/L1900	0°/-	RMN	RRUS 4415 B25 RADIO 4449 B71 B85A	ADD RMN

**CABLE LENGTHS FOR JUMPERS**

JUNCTION BOX TO RRU: 15'  
RRU TO ANTENNA: 10'

EXISTING FIBER DISTRIBUTION/OVP BOX		EXISTING CABLING SUMMARY		
MODEL NUMBER	STATUS	COAX	HYBRID	STATUS
-	-	(6) 1-5/8"	9X18 HCS	RMV
-	-	-	(2) 6X12 HCS AWG	RMN

**3 EQUIPMENT SCHEDULES**

FINAL FIBER DISTRIBUTION / OVP BOX		FINAL CABLING SUMMARY		
MODEL NUMBER	STATUS	COAX	HYBRID	STATUS
-	-	(2) 1-1/4"	(3) HYBRID TRUNK 6/24 4AWG	ADD
-	-	-	(2) 6X12 HCS AWG	RMN

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3500 REGENCY PARKWAY  
SUITE 100  
CARY, NC 27518  
PHONE: (919) 468-0112  
COA: PEC.0001553

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REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	JP	06/10/21
1			
2			

ATC SITE NUMBER:  
**383598**

ATC SITE NAME:  
**TARTAGLIA**

T-MOBILE SITE NAME:  
**BRIDGEPORT NORTH**

SITE ADDRESS:  
1000 TRUMBULL AVENUE  
BRIDGEPORT, CT 06606

SEAL:

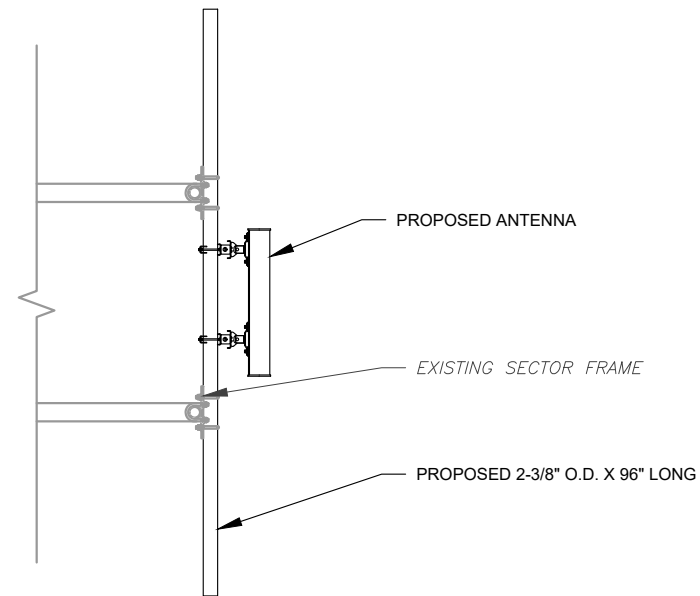
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10 Jun 2021 05:54:58

DATE DRAWN:	06/10/21
ATC JOB NO:	13337501_G3
CUSTOMER ID:	BRIDGEPORT NORTH
CUSTOMER #:	CT11680A

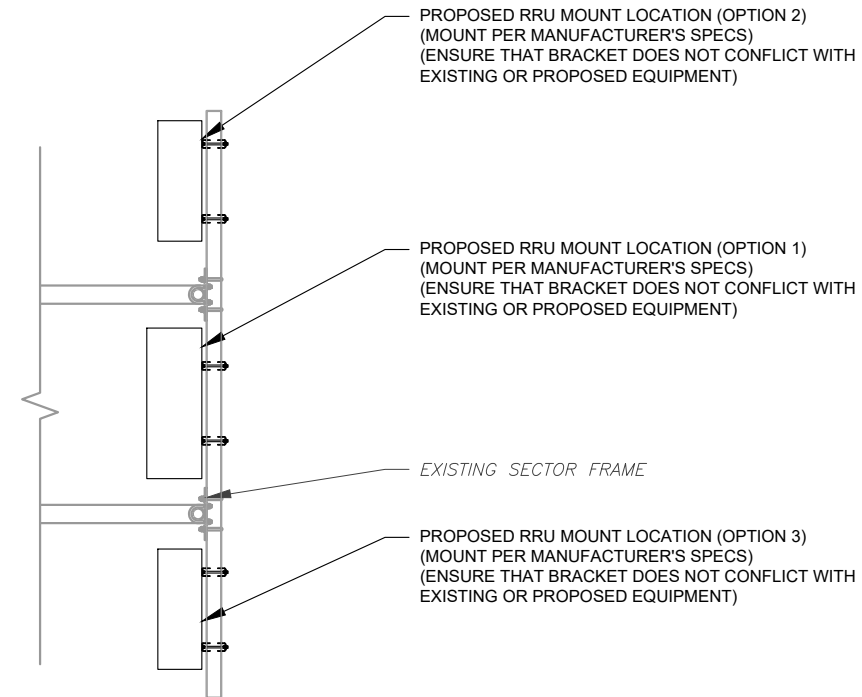
**ANTENNA INFORMATION & SCHEDULE**

SHEET NUMBER:  
**C-401**

REVISION:  
**0**



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



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



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REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	JP	06/10/21

ATC SITE NUMBER:  
383598

ATC SITE NAME:  
TARTAGLIA

T-MOBILE SITE NAME:  
BRIDGEPORT NORTH

SITE ADDRESS:  
1000 TRUMBULL AVENUE  
BRIDGEPORT, CT 06606

SEAL:



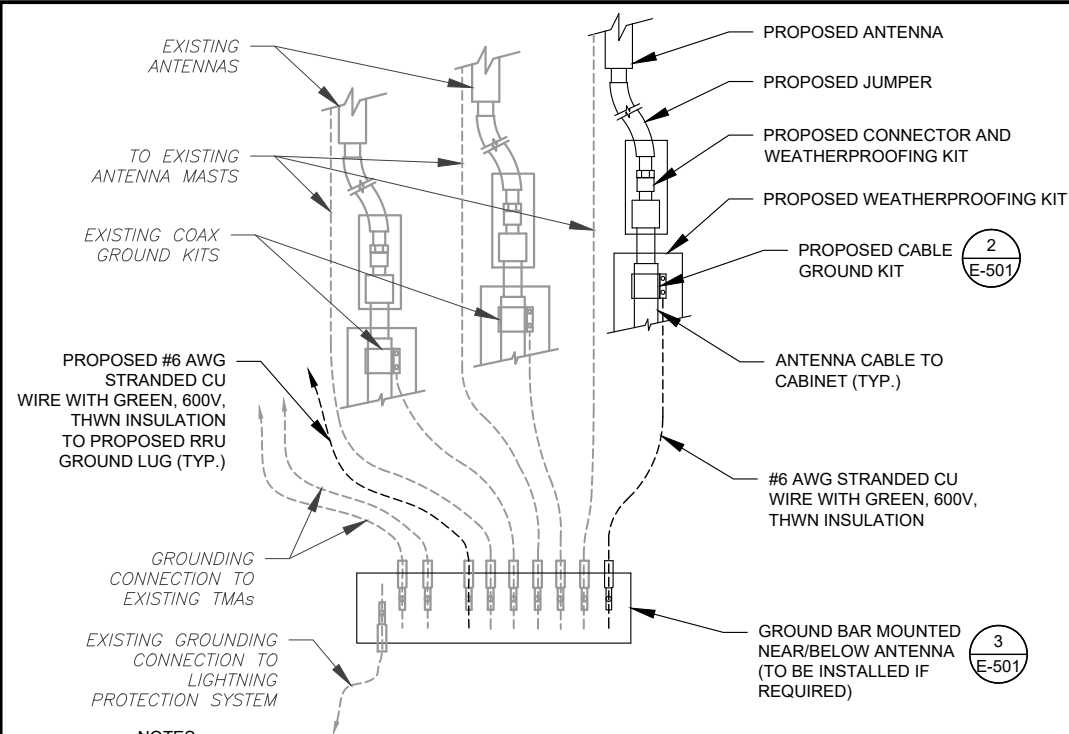
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10 Jun 2021 05:54:58

DATE DRAWN:	06/10/21
ATC JOB NO:	13337501_G3
CUSTOMER ID:	BRIDGEPORT NORTH
CUSTOMER #:	CT11680A

**CONSTRUCTION  
DETAILS**

SHEET NUMBER: **C-501**      REVISION: **0**

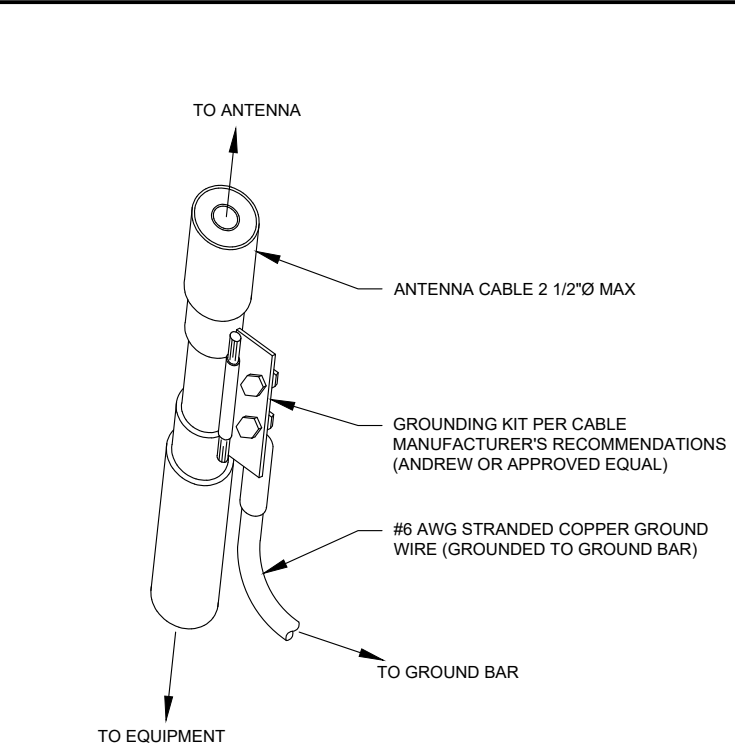
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**NOTES:**

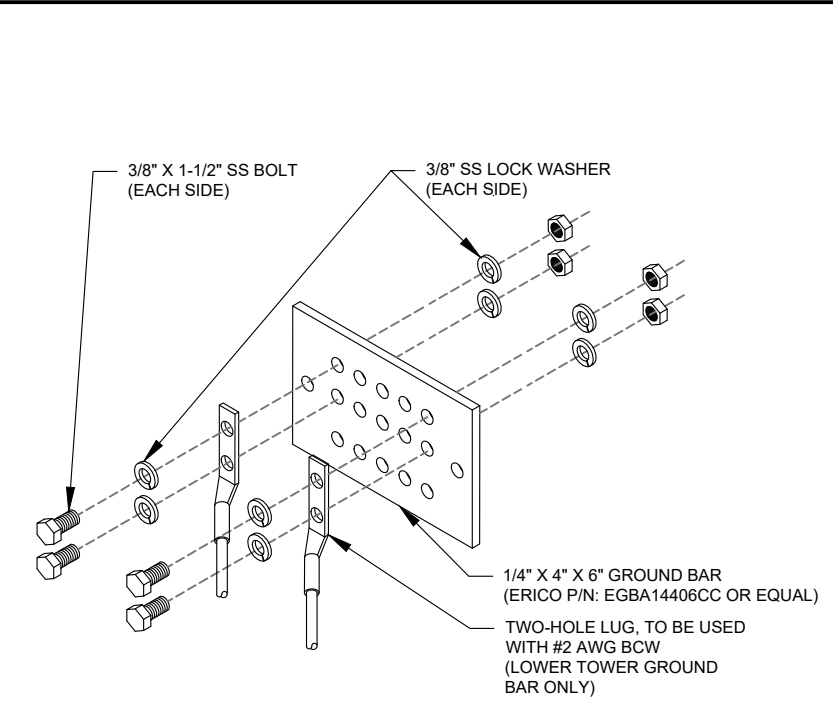
1. THIS DETAIL IS INTENDED TO SHOW THE GENERAL GROUNDING REQUIREMENTS. SLIGHT ADJUSTMENTS MAY BE REQUIRED BASED ON EXISTING SITE CONDITIONS. THE CONTRACTOR SHALL MAKE FIELD ADJUSTMENTS AS NEEDED AND INFORM THE CONSTRUCTION MANAGER OF ANY CONFLICTS.
2. SITE GROUNDING SHALL COMPLY WITH T-MOBILE GROUNDING STANDARDS, LATEST EDITION, AND COMPLY WITH T-MOBILE 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 KIT NOTES:**
1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
  2. CONTRACTOR SHALL PROVIDE WEATHERPROOFING KIT (ANDREW PART NUMBER 221213) AND INSTALL/TAPE PER MANUFACTURER'S SPECIFICATIONS.

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



- GROUND BAR NOTES:**
1. GROUND BAR KITS COME WITH ALL HARDWARE, NUTS, BOLTS, WASHERS, ETC. EXCEPT THE STRUCTURAL MOUNTING MEMBER(S).
  2. GROUND BAR TO BE BONDED DIRECTLY TO TOWER.

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

**ELECTRICAL NOTES:**

1. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE T-MOBILE REPRESENTATIVE AND LOCAL UTILITY COMPANY FOR THE INSTALLATION OF CONDUITS, CONDUCTORS, BREAKERS, DISCONNECTS, OR ANY OTHER EQUIPMENT REQUIRED FOR ELECTRICAL SERVICE. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH LATEST EDITION OF THE STATE AND NATIONAL CODES, ORDINANCES AND REGULATIONS APPLICABLE TO THIS PROJECT.
2. ATC HAS NOT VERIFIED ANY EXISTING T-MOBILE GROUND EQUIPMENT OR ELECTRICAL LOADING. PROPOSED WORK BASED ON INSTALLATION CONFIGURATION PROVIDED BY T-MOBILE. CONTRACTOR TO VERIFY EXISTING T-MOBILE PANEL HAS SUFFICIENT SPACE FOR PROPOSED BREAKER. PROPOSED CABLE AND CONDUIT SHALL BE MINIMUM SIZE PER BELOW:
3. FOR SPECIFIC CABINET/ANCILLARY EQUIPMENT WIRING REQUIREMENTS, THE T-MOBILE CONTRACTOR SHOULD REFERENCE THE T-MOBILE DESIGN DOCUMENTS FOR THIS CURRENT PROJECT CONFIGURATION, IN ACCORDANCE WITH LOCAL JURISDICTION REQUIREMENTS & NEC STANDARDS & PRACTICES.

OCPD SIZE	WIRE SIZE	GROUND SIZE	CONDUIT SIZE
80A/2P	2#3 AWG	#8 AWG	1-1/4"
100/2P	2#2 AWG	#8 AWG	1-1/4"
125A/2P	2#1 AWG	#8 AWG	1-1/2"
150A/2P	2#1/0 AWG	#8 AWG	1-1/2"

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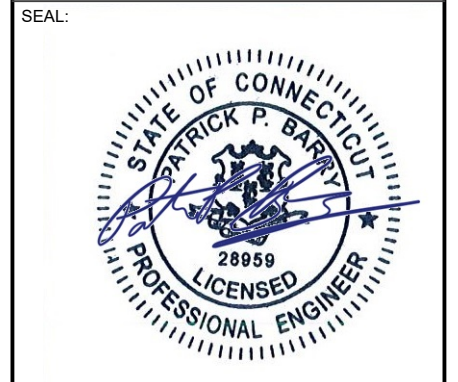
REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	JP	06/10/21

ATC SITE NUMBER:  
**383598**

ATC SITE NAME:  
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SITE ADDRESS:  
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BRIDGEPORT, CT 06606



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 10 Jun 2021 05:54:58  
 T-Mobile design

DATE DRAWN:	06/10/21
ATC JOB NO:	13337501_G3
CUSTOMER ID:	BRIDGEPORT NORTH
CUSTOMER #:	CT11680A

**GROUNDING DETAILS**

SHEET NUMBER:	REVISION:
<b>E-501</b>	<b>0</b>



Proposed RAN Equipment			
Template: 07D5A997DB Outdoor			
Enclosure	1	2	3
Enclosure Type	RBS 6131	Enclosure 6160	B160
Baseband	DUW30 (x 2) DUW20 G1900 L2100 L1900	BB 6630 L2100 L700 L600 N800 BB 6630 L2500 BB 6648 N2500	
Hybrid Cable System	Ericsson 6x12 HCS *Select Length & AWG* Ericsson 6x12 HCS *Select AWG & Length*	Ericsson Hybrid Trunk 6/24 4AWG 80m (x 3) PSU 4813	
Multiplexer	XMU		
Radio	RU22 (x 6)		
Transport System		CSR IXRe V2 (Gen2)	

**RAN Scope of Work:**

U2100 will be decommissioned. Cabinet radios will become unused.

Remove all Nortel Cabinets ([3] at the site)

Add (1) Enclosure 6160.

Add (1) Battery Cabinet B160.

Add (1) IXRe Router to new Enclosure 6160.

Add (1) BB6630 for L2500 to new Enclosure 6160.

Add (1) BB6648 for N2500 to new Enclosure 6160.

Add (1) PSU4813 Voltage Booster to new Enclosure 6160.

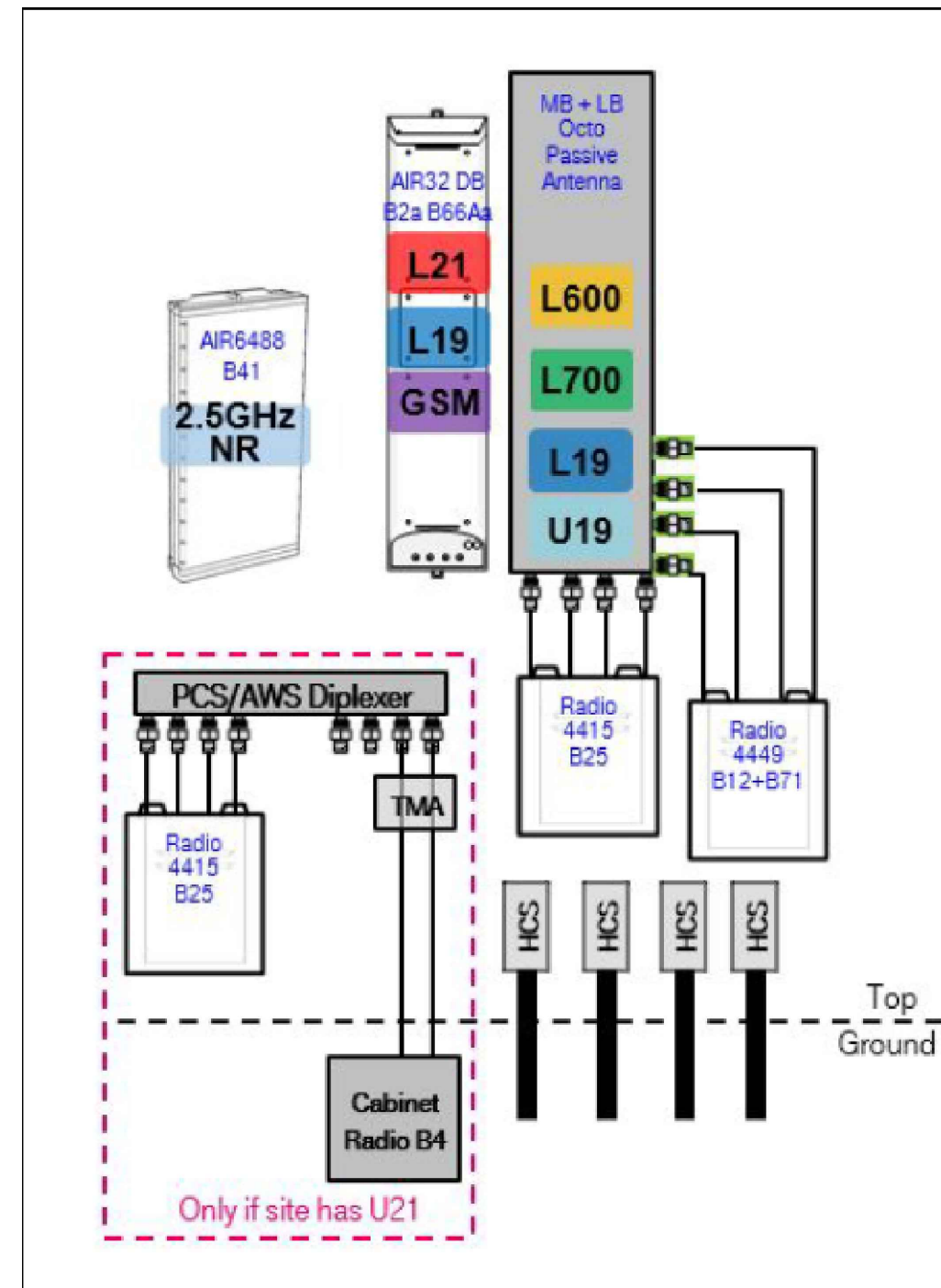
Existing: (12) Coaxial Lines; (1) 9X18 HCS; (2) 6X12 HCS.

Remove all coaxial lines.

Remove 9X18 HCS.

Add (3) 6X24 HCS ([1] per sector) terminating at the Enclosure 6160. Connect DC for the AIR6449 B41 to the PSU4813 Voltage Booster.

1 **CABINET CONFIGURATION**  
SCALE: NOT TO SCALE



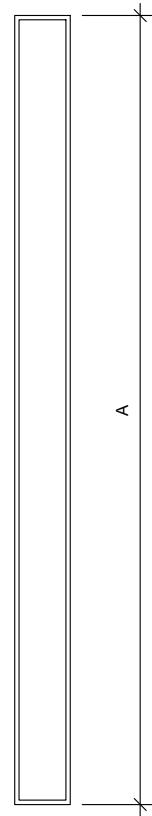
2 **ANTENNA CONFIGURATION**  
SCALE: NOT TO SCALE

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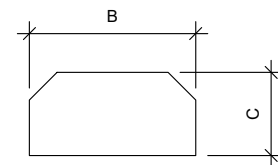
SUPPLEMENTAL

SHEET NUMBER: **R-601** REVISION: **0**





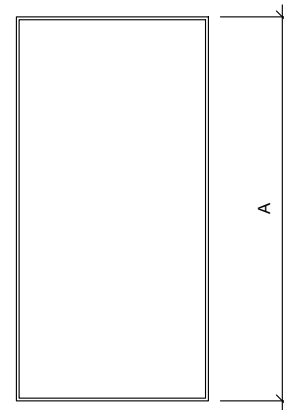
FRONT VIEW



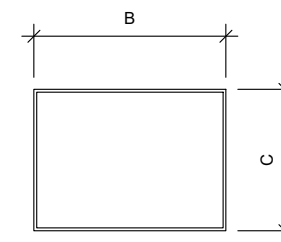
TOP VIEW

**1 ANTENNA SPECIFICATIONS**  
FOR ILLUSTRATIVE PURPOSES ONLY - NOT TO SCALE

ANTENNA SPECIFICATIONS				
ANTENNA MODEL	A	B	C	WEIGHT (LBS)
AIR6449 B41	33.1"	20.6"	8.6"	104.0



FRONT VIEW



TOP VIEW

**2 RRU SPECIFICATIONS**  
FOR ILLUSTRATIVE PURPOSES ONLY - NOT TO SCALE

RRU SPECIFICATIONS				
RRU MODEL	A	B	C	WEIGHT (LBS)
RRUS 4415 B25	16.5"	13.4"	5.9"	46.0

SUPPLEMENTAL

SHEET NUMBER: **R-602** REVISION: **0**



# Enclosure 6160 AC

The Enclosure 6160 is a multi-purpose site cabinet designed to support a multitude of equipment such as ERS Baseband, Transport, Li-Ion battery and 3PP vendor equipment. It also provides a highly capable power system and battery back-up - all in a streamlined design and minimized footprint to support cost efficient expansion of mobile broadband.

Being an all-in-one enclosure, the Enclosure 6160 is a very fitting choice for all types of sites where the capacity need is large or room for future expansion is needed. It is ideally used for modernizing existing sites or in greenfield scenarios to match both current and future needs.

With a robust design, IP65 compliance and a sealed Heat Exchanger (HEX) climate system the Enclosure 6160 ensures optimal environmental protection of the active equipment - enabling them for a long-lasting service. The complete system is also integrated and verified for the entire Ericsson Radio System and ensures best-in-class service.

The power system offers 31,5kW of power in total and provides 24kW of -48V DC power for both internal and external consumers.

The equipment space allows 19U of rack space ensuring well enough capacity for existing need and future expansion.

One of the main advantages of the Enclosure 6160 is its default integration with ENM - allowing for advanced remote monitoring and control such a fault management (alarms), inventory management and performance measurements. The cabinet also provides an open O&M interface for integration to 3PP O&M systems.



## Preliminary technical specification for Enclosure 6160 AC

### CAPACITY

Rack space user equipment	19U (19" rack)
Hardware capabilities	Power and CPRI support for multi-standard remote radios (RRU or AIR) ERS Baseband and Transport units Li-Ion batteries 3PP equipment Additional power feed available as option

### MECHANICAL SPECIFICATION

Weight	145 kg (excluding active equipment) 320 lbs (excluding active equipment)
Dimension (H x W x D)	1600 x 650 x 650 mm (incl. Base frame) 63 x 26 x 26 in. (incl. Base frame)
Base frame height	150 mm 6 in.
Mounting position	Ground
Enclosure material	Aluminum
Color	Power paint NCS 2002-B
Door	Front access
Rack type	19" (IEC 60297-3-100)
Locking type	Pad lock or Cylinder

### POWER SYSTEM

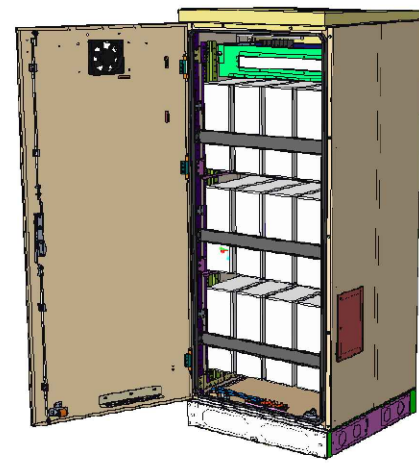
Input voltage	3P+N+PE: 346/200-415/240 VAC 2P+N+PE: 208/120-220/127 VAC 1P+N+PE: 200-250 VAC
Input power	<33kW
Output load (-48VDC)	24kW
Total capacity (-48VDC)	31.5kW
AC SPD	Class 2/Type 2
DC SPD	Class 2/Type 2
PSU Slots	9x
Service outlet	Optional
Priority load	8x Circuit Breaker
LLVD 1	6x Circuit Breaker
LLVD 2	6x Circuit Breaker
CB ratings	3A / 5A / 10A / 15A / 20A / 25A / 30A / 40A / 50A / 60A / 80A / 100A
Battery Interface	2x Circuit Breaker
Battery Circuit Breaker rating	125A 2pol (200A)
PSU capacity	3500W

SUPPLEMENTAL

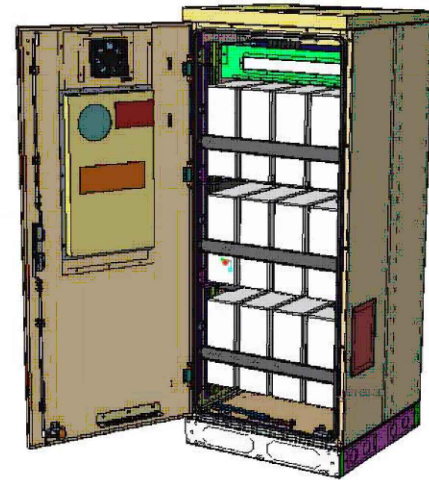
SHEET NUMBER: <b>R-603</b>	REVISION: <b>0</b>
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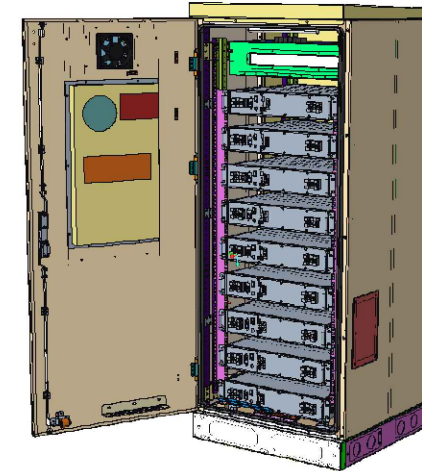
# Enclosure B160



Enclosure B160  
AirCon + VRLA



Enclosure B160  
AirCon + Li-Ion



Enclosure B160  
Convection Cooling  
+ VRLA

PA1 | 2019-02-03 | Ericsson Confidential | Page 1

# Enclosure B160

## Capacity

- VRLA 12V: 100Ah / 150Ah / 170Ah / 190Ah / 210Ah
- Li-Ion: 24U 19" / 23"
- Sodium-Nickel: 3x FIAMM

## Electrical specification

- DC Output: -48VDC/200A
- Battery breakers: 2x 125/2p
- Alarms: Door open, Climate failure, MCB Connection

## Mechanical specification

- Weight: 134kg
- Dimensions: 63 x 26 x 26 in. (incl. Base frame)
- Base frame height: 6 in.
- Material: Galvanized steel (180g/m<sup>2</sup>)
- Color: Powder paint NCS 2002-B
- Door: Front access
- Locking type: Pad lock / cylinder

## Environmental specification

- Ingress protection: VRLA/Sodium IP44  
Li-Ion IP55
  - Relative humidity: 15-100%
- ## Climate system
- Air Conditioner
  - Fan type: DC
  - Cooling capacity: 500W @L35/L35
  - Convection cooling
  - Emergency fan

PA1 | 2019-02-03 | Ericsson Confidential | Page 2

SUPPLEMENTAL

SHEET NUMBER:

R-604

REVISION:

0

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This report was prepared for American Tower Corporation by



## Antenna Mount Analysis Report

**ATC Site Name** : Tartaglia  
**ATC Asset Number** : 383598  
**Engineering Number** : 13337501\_C8\_01  
**Mount Elevation** : 201 ft  
**Carrier** : T-Mobile  
**Carrier Site Name** : Bridgeport North  
**Carrier Site Number** : CT11680A  
**Site Location** : 1000 Trumbull Avenue  
 Bridgeport, CT 06606  
 41.2196000, -73.20128611  
**County** : Fairfield  
**Date** : February 16, 2021  
**Max Usage** : 162%  
**Result** : Fail

Prepared By:  
Snehitha Narava  
CLS Engineering PLLC

Reviewed By:  
Tyler M. Barker, P.E.  
CLS Engineering PLLC



Tyler M. Barker  
 CLS Engineering PLLC  
 PE # 32402 Exp. 1/31/2021  
 COA # PEC.001833 Exp. 8/14/2022  
 02/16/2021  
 Digitally signed  
 by Tyler M.  
 Barker PE  
 Date:  
 2021.02.16  
 15:12:18-05'00'

### Introduction

The proposed equipment is to be mounted to the existing T-Frames. This proposed mounting configuration was analyzed using RISA-3D, a commercially available finite element analysis software package. A selection of input and output from our analysis is attached to the end of this report.

### Supporting Documents

<b>Structural Data</b>	Site Photos dated August 13, 2020
<b>Previous Analyses</b>	Structural Analysis by American Tower Corporation, Eng. #13192904_C3_01, dated February 06, 2020
<b>Loading Data</b>	ATC Application, Project #13337501 T-Mobile RFDS, Site ID #CT11680A, Version 6.00, dated January 19, 2021

### Analysis

<b>Codes</b>	TIA-222-H
<b>Basic Wind Speed</b>	119 mph, $V_{ult}$ (3-Second Gust)
<b>Basic Wind Speed w/ Ice</b>	50 mph (3-Second Gust) w/ 1" Radial Ice (Escalating)
<b>Exposure Category</b>	C
<b>Max. Topographic Factor, <math>K_{zt}</math></b>	1.00
<b>Risk Category</b>	II
<b>Maintenance Live Load</b>	$L_M$ : 500 lb
<b>Spectral Response</b>	$S_s$ : 0.21; $S_1$ : 0.05; Site Class: D

### Conclusion

Based on the analysis, the antenna mount does not meet the requirements per the applicable codes listed above. The mount can support equipment as described in this report after the modifications listed below are completed:

- Reinforce standoff horizontals
- Reinforce stiff arm connection to tower member

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

SUPPLEMENTAL

SHEET NUMBER:  
R-605

REVISION:  
0

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.





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This report was prepared for American Tower Corporation by

**CLS ENGINEERING**  
PLLC

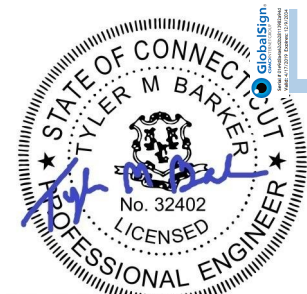
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## Antenna Mount Modification Report

**ATC Site Name** : Tartaglia  
**ATC Asset Number** : 383598  
**Engineering Number** : 13337501\_C9\_04  
**Mount Elevation** : 201 ft  
**Carrier** : T-Mobile  
**Carrier Site Name** : Bridgeport North  
**Carrier Site Number** : CT11680A  
**Site Location** : 1000 Trumbull Avenue  
Bridgeport, CT 06606  
41.2196000, -73.20128611  
**County** : Fairfield  
**Date** : March 23, 2021  
**Max Usage** : 57%  
**Result** : Pass (Pending Mods)

Prepared By:  
Snehitha Narava  
CLS Engineering PLLC

Reviewed By:  
Tyler M. Barker, P.E.  
CLS Engineering PLLC



Digitally signed  
by Tyler M.  
Barker PE  
Date: 2021.03.23  
21:16:15-04'00'

Tyler M. Barker  
CLS Engineering PLLC  
PE # 32402 Exp. 1/31/2021  
COA # PEC.001833 Exp. 8/14/2022  
03/23/2021

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Equipment Layout Plan View .....5

Equipment Layout Front Elevation View .....6

Standard Conditions .....7

Calculations ..... Attached

**Introduction**

The proposed equipment is to be mounted to the existing T-Frames. This proposed mounting configuration was analyzed using RISA-3D, a commercially available finite element analysis software package. A selection of input and output from our analysis is attached to the end of this report.

**Supporting Documents**

<b>Structural Data</b>	Site Photos dated August 13, 2020
<b>Previous Analyses</b>	Mount Analysis by CLS Engineering for American Tower Corporation, Eng. #13337501_C8_01, dated February 16, 2021 Structural Analysis by American Tower Corporation, Eng. #13192904_C3_01, dated February 06, 2020
<b>Loading Data</b>	ATC Application, Project #13337501 T-Mobile RFDS, Site ID #CT11680A, Version 6.00, dated January 19, 2021

**Analysis**

<b>Codes</b>	TIA-222-H
<b>Basic Wind Speed</b>	119 mph, $V_{ult}$ (3-Second Gust)
<b>Basic Wind Speed w/ Ice</b>	50 mph (3-Second Gust) w/ 1" Radial Ice (Escalating)
<b>Exposure Category</b>	C
<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>Risk Category</b>	II
<b>Maintenance Live Load</b>	$L_M$ : 500 lb
<b>Spectral Response</b>	$S_5$ : 0.21; $S_1$ : 0.05; Site Class: D

## **Conclusion**

Based on the analysis, the antenna mount meets the requirements per the applicable codes listed above. The mounting configuration considered in this analysis will be capable of supporting the referenced loading pursuant to referenced standards once the referenced modifications are installed.

### **This analysis incorporates modifications per CLS Engineering PLLC, dated March 23, 2021.**

- **Install (1) proposed face horizontal pipe at each sector frame mount (3 total) as shown. Connect to all antenna mount pipes with Site Pro 1 SCX1-K crossover plate (15 total).**
- **Install (1) Site Pro 1 SFR-K-L at each sector frame mount (3 total) as shown. Connect to proposed face horizontal pipe. Field-cut proposed angles as required. Maintain minimum bolt edge distance.**
- **Remove existing stiff arms and install (2) proposed stiff arms per sector (6 total) as shown. Use (2) 20'-0" long pipe 2 STD in lieu of Site Pro 1 P2126 included in the proposed stiff arm kit at each sector (6 total). Connect to nearest adjacent tower leg with Site Pro 1 DCP KIT. Connect to proposed face horizontal with Site Pro 1 DCP KITS provided in the proposed stiff arm kit. Field-cut proposed pipes as required.**
- **Relocate equipment, as required, to facilitate installation of proposed modifications on mount.**

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.



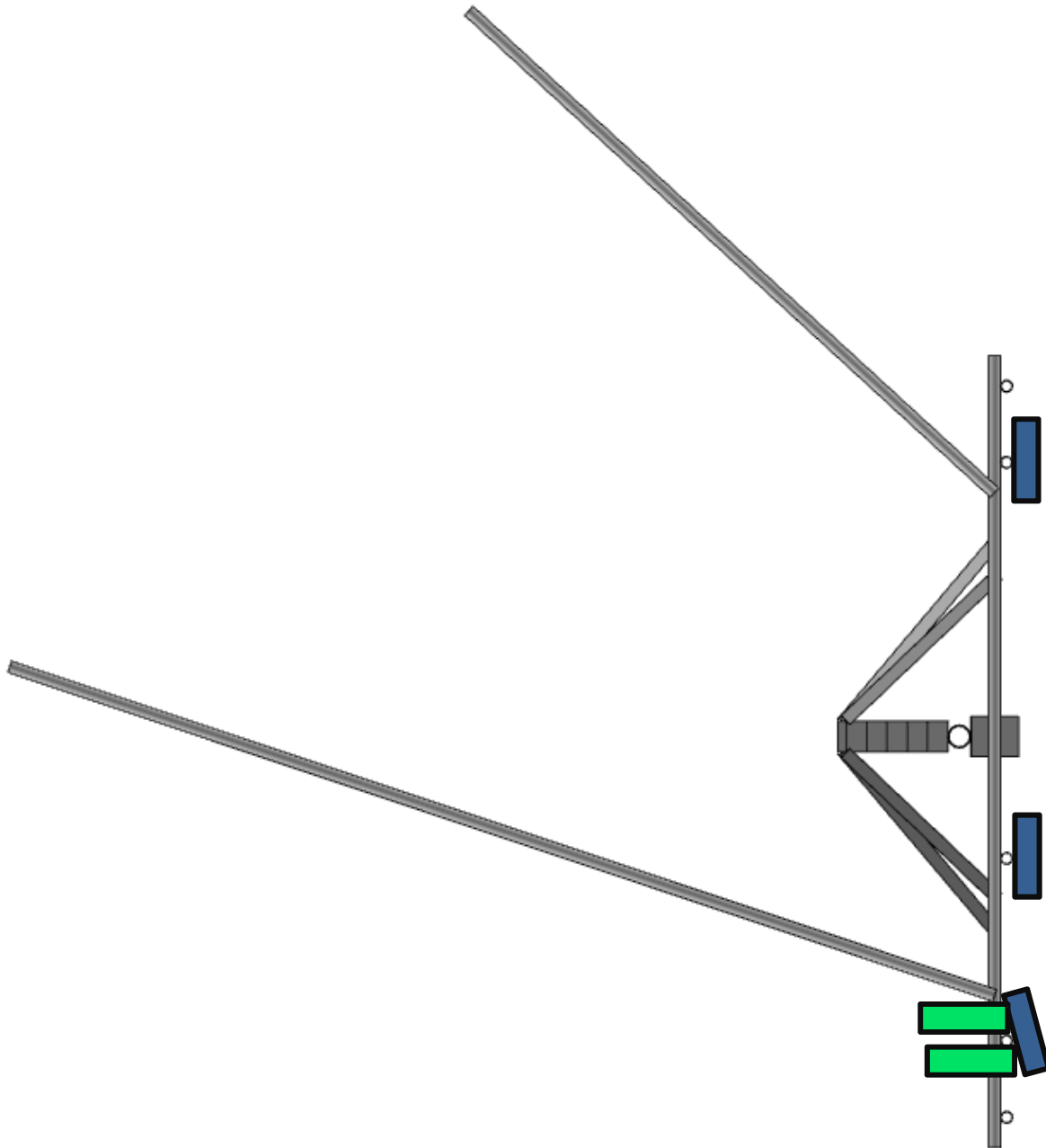
**Antenna Loading**

Elevation (ft)		Antennas	
Mount	Rad.	#	Name
201.0	202.0	3	RFS Celwave APXVAARR24_43-U-NA20
		3	Ericsson AIR 32 B66AA B2P
		3	Ericsson AIR6449 B41
		3	Ericsson RRUS 4415 B25
		3	Ericsson RADIO 4449 B71/B85A

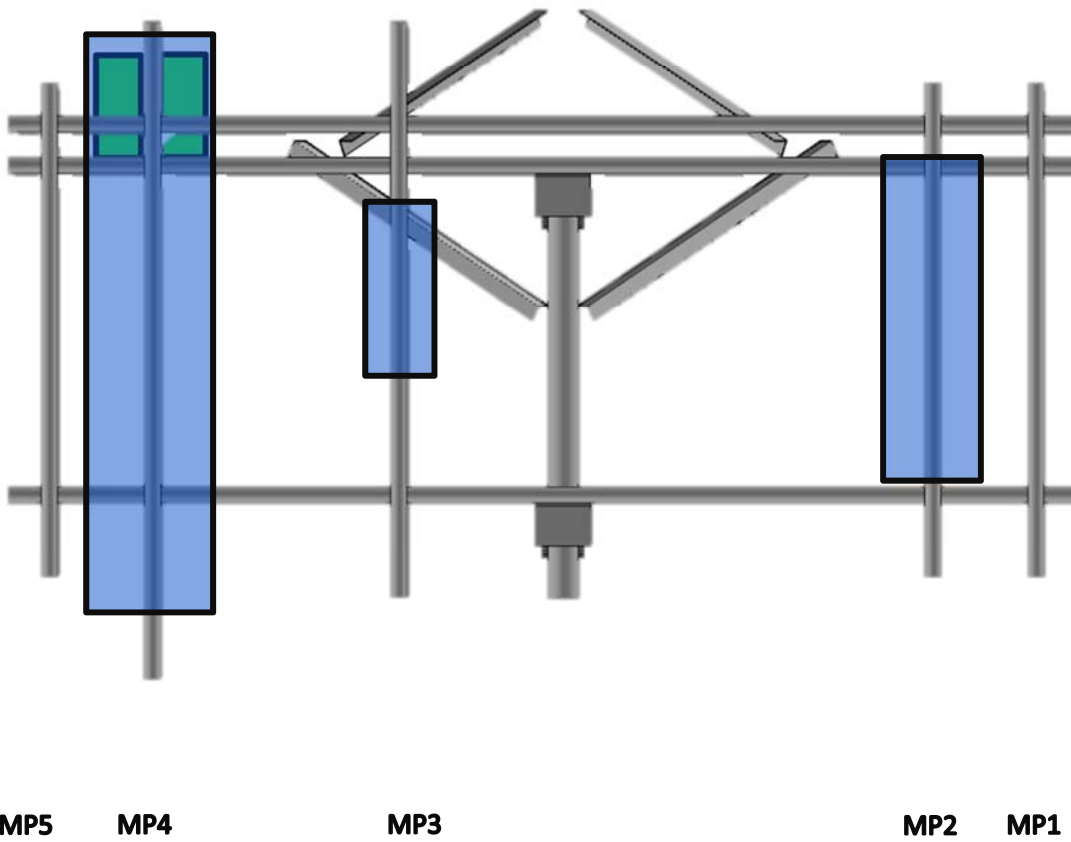
**Structure Usages**

Structural Component	Controlling Usage	Pass/Fail
Face Horizontals	57%	Pass
Stiff Arms	50%	Pass
Mod Face Pipe	46%	Pass
Mount Pipes	37%	Pass
Mount to Tower Connections	33%	Pass
Stand-Off Horizontals	30%	Pass
Reinforcement Members	15%	Pass

Equipment Layout Plan View



Equipment Layout Front Elevation View



### **Standard Conditions**

This analysis is inclusive of the antenna supporting frames/mounts and all recorded connections that will support the equipment listed in this report. It considers only the theoretical capacity of structural components and it is not a condition assessment. The validity of the analysis may be dependent on the accuracy of structural information supplied by others. The client is responsible for verifying this information. If any provided information is revised after completion of this analysis, CLS Engineering PLLC should be notified immediately to revise results.

This analysis assumes the following:

1. The tower or other superstructure and mounts (if existing) were properly constructed as per the original design and have been properly maintained in accordance with applicable code standards.
2. Member sizes and strengths are accurate as supplied or are assumed as stated in the calculations.
3. In the absence of sufficient design information, all welds and connections are assumed to develop at least the capacity of the connected member, unless otherwise stated in this analysis.
4. All prior structural modifications, if any, are assumed to be correctly installed and fully effective.
5. The loading configuration is complete and accurate as supplied and/or as modeled in the previous analysis. All appurtenances are assumed to be properly installed and supported as per manufacturer requirements.
6. Some conservative assumptions may be used regarding appurtenances and their projected areas based on careful interpretation of data supplied, previous experience and standard industry practice.

All opinions and conclusions are considered accurate to a reasonable degree of engineering certainty based upon the evidence available at the time of the report. All opinions and conclusions contained herein are subject to revision based upon receipt of new or updated information. All services are provided exercising a level of care and diligence equivalent to the standard of our profession. No warranty or guarantee, either expressed or implied, is offered. All services are confidential in nature and this report will not be released to any other party without the client's consent. The use of this analysis is limited to the expressed purpose for which it was commissioned and it may not be reused, copied or disseminated for any other purpose without consent from CLS Engineering PLLC.

All services were performed, results obtained and recommendations made in accordance with generally accepted engineering principles and practices. CLS Engineering PLLC is not responsible for the conclusions, opinions or recommendations made by others based on the information supplied in this analysis.

It is not possible to have the fully detailed information necessary to perform a complete and thorough analysis of every structural sub-component of an existing structure. The structural analysis by CLS Engineering PLLC verifies the adequacy of the primary members of the structure. CLS Engineering PLLC provides a limited scope of service in that we cannot verify the adequacy of every weld, bolt, gusset, etc.

### Project & Site Information

CLS Project ID		41124-13337501_C9_04-02-MOD
Client Information	Carrier Name	T-Mobile
	Client Name	American Tower
	Site #	383598
	Site Name	Tartaglia
	Application #	13337501_C9_04
Site Location	Address	1000 Trumbull Avenue, Bridgeport, CT 066066
	County	Fairfield
	GPS	41.2196000, -73.20128611
	Elevation AMSL (ft)	200.8

### Mount & Supporting Structure

Mount Configuration	Mount Type	T-Frames
Nominal AGL Elevations (ft)	Mount Elevation	201
	Default Antenna Rad	202
Supporting Structure	Structure Type	Self-Supporting Tower
	Height (TOS) (ft)	240

### Wind & Ice Loading

TIA Standard	TIA-222-H
Building Code	
Basic Wind Speed, V (bare)	119.0 mph
Basic Wind Speed, V (ice)	50.0 mph
Design Ice Thickness, t <sub>i</sub>	1.00 in

### Replacement Summary

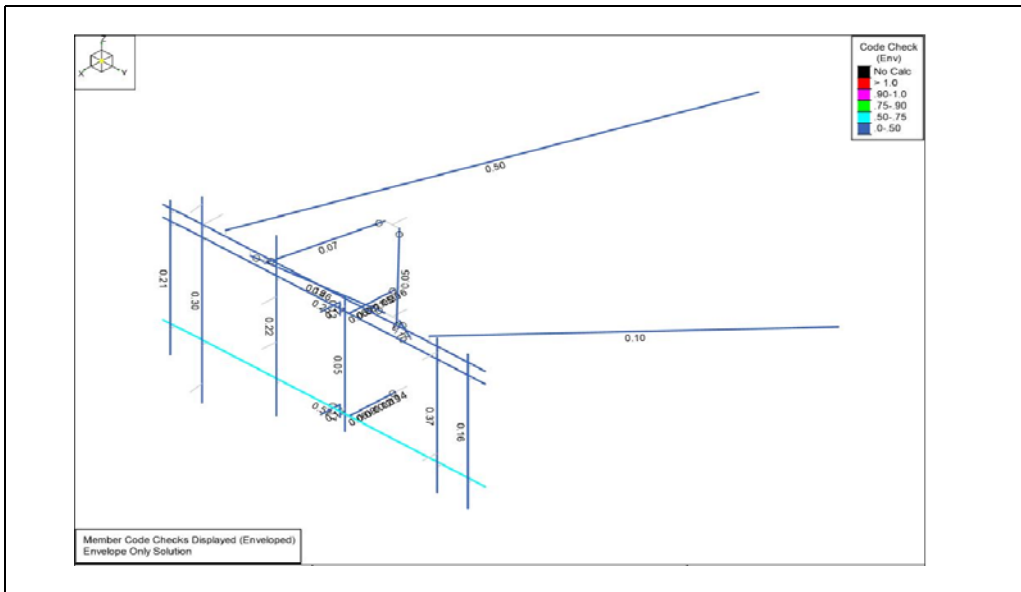
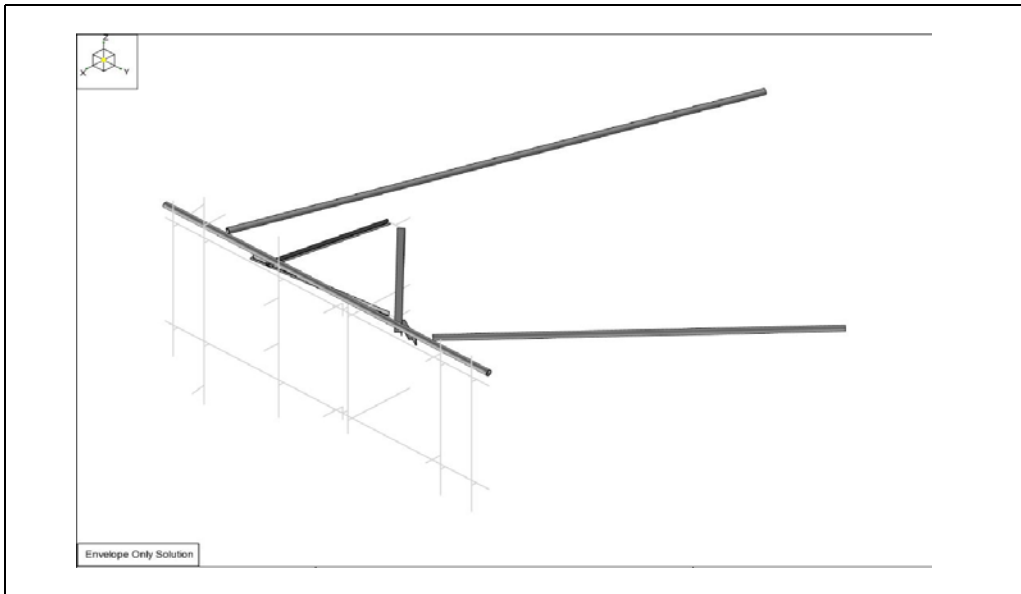
(3) Site Pro VFA12-HD (or equivalent)	\$30,000
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### Mod Summary

Install (1) proposed Face Horizontal Pipe at each sector (3 total).	\$ 1,875
Install (1) proposed Dual Sector Frame Stabilizer Kit at each sector (3 total).	\$ 7,500
Install (2) proposed Stiff Arm Kits at each sector (6 total).	\$ 3,750
	\$ -
	\$ -
	\$ -
	\$ -
	\$ -
	\$ -

### Cost Estimate

Post Mod Usage	57%	Cost + Mobilization	\$ 15,125
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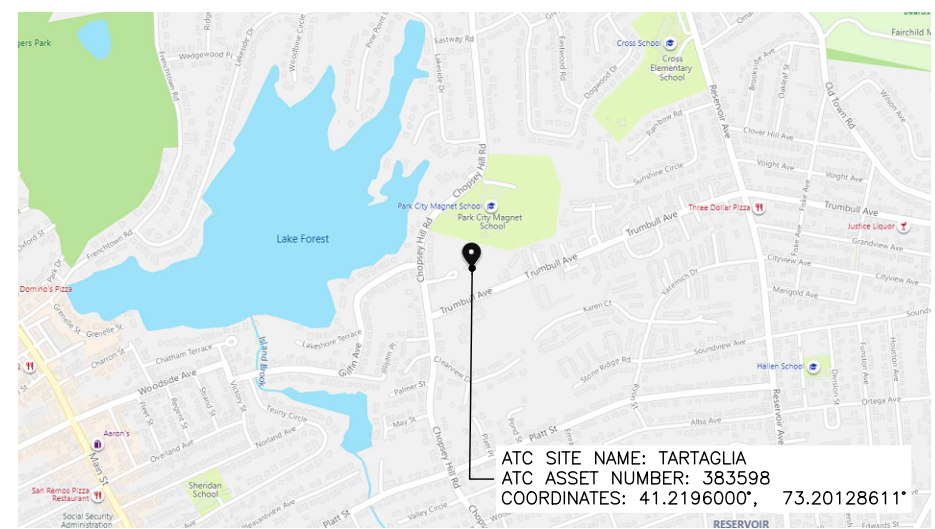


**CARRIER SITE NAME:** BRIDGEPORT NORTH  
**CARRIER SITE NUMBER:** CT11680A  
**ATC SITE NAME:** TARTAGLIA  
**ATC ASSET NUMBER:** 383598  
**ENGINEERING NUMBER:** 13337501\_C9\_04  
**STRUCTURE TYPE:** 240'-0" SELF-SUPPORTING TOWER  
**PROJECT SCOPE:** MOUNT REINFORCEMENT



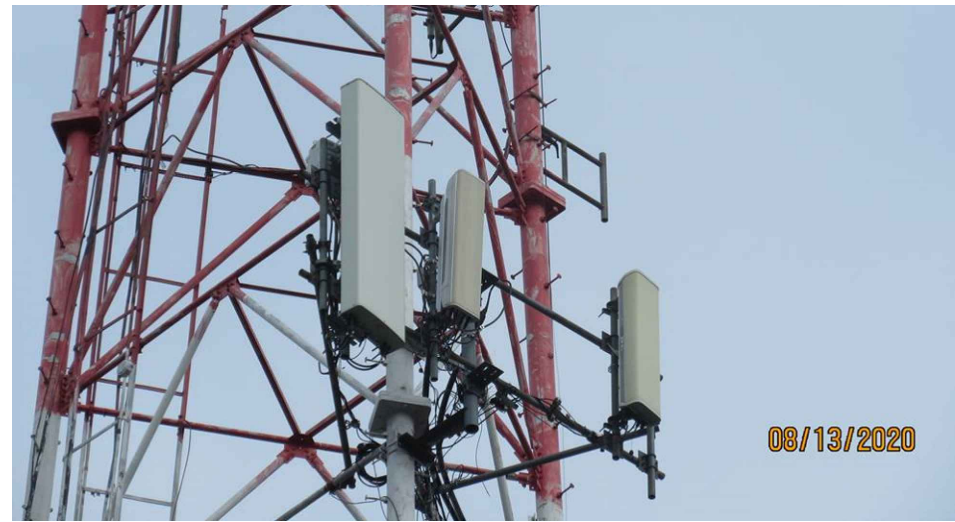
CLS ENGINEERING PROJECT ID:  
 41124-383598-13337501-TMOANC2020CT11680A  
 COA# PEC.001833 EXP. 08/14/2021

**LOCATION MAP**



ATC SITE NAME: TARTAGLIA  
 ATC ASSET NUMBER: 383598  
 COORDINATES: 41.2196000°, 73.20128611°

**STRUCTURE ELEVATION PHOTOGRAPH**



**DRAWING INDEX**

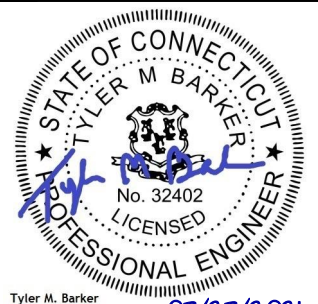
SHEET	SHEET DESCRIPTION	REV
T-1	TITLE SHEET & DRAWING INDEX	0
GN-1	STRUCTURAL NOTES	0
IN-2	MODIFICATION INSPECTION NOTES	0
S-1	MOUNT VIEWS & MODIFICATION SCHEDULE	0
S-2	MODIFICATION DETAIL VIEWS	0
S-3	EQUIPMENT RELOCATION PHOTOGRAPH	0

**REVISIONS**

REV.	DATE	DESCRIPTION	INITIALS
A	03/23/21	PRELIMINARY ISSUE	HRP
0	03/23/21	FOR CONSTRUCTION	CWD

**SCOPE OF WORK**

- THIS MODIFICATION PLAN HAS BEEN DESIGNED UTILIZING THE STRUCTURAL ANALYSIS BY CLS ENGINEERING, REPORT #41124-13337501\_C9\_03-02-MOD, DATED MARCH 23, 2021.
- FULL MODIFICATION SCHEDULE CAN BE FOUND ON S-1.
- CONTRACTOR SHALL SCHEDULE A SITE VISIT TO CONFIRM ALL EXISTING STRUCTURE DIMENSIONS, SITE CONSTRAINTS, PROPOSED REINFORCING DIMENSIONS, THE CLEARANCES OF THE PROPOSED REINFORCING, EXISTING FOUNDATION INFORMATION, EXISTING SITE UTILITIES, AND ALL OTHER INFORMATION NECESSARY TO PERFORM THE WORK ON THESE DRAWINGS IN ORDER TO ELIMINATE THE RISK OF RFIS ONCE CONSTRUCTION AND FABRICATION HAVE BEGUN. THE CONTRACTOR SHALL NOT BEGIN FABRICATION OR CONSTRUCTION PRIOR TO PERFORMING THIS SITE VISIT AND VALIDATING THE INFORMATION ON THESE DRAWINGS AND ANY ADDITIONAL INFORMATION THE CONTRACTOR NEEDS TO PERFORM THE WORK.
- THE CONTRACTOR SHALL PERFORM THIS PRE-CONSTRUCTION WORK AND REPORT ALL DISCREPANCIES TO THE CUSTOMER AND THE ENGINEER OF RECORD OR BE LIABLE FOR THE LABOR & MATERIALS FOR DISCREPANCIES NOT CAUGHT BY THE CONTRACTOR'S DUE DILIGENCE SITE VISIT.



Tyler M. Barker  
 CLS Engineering PLLC  
 PE # 32402 Exp. 1/31/2021  
 COA # PEC.001833 Exp. 8/14/2022

PE# 32402 EXP: 1/31/2022

**ATC SITE NAME:**

TARTAGLIA  
 ATC ASSET#: CT11680A  
 1000 TRUMBULL AVENUE  
 BRIDGEPORT, CT 066066

**SHEET TITLE**

TITLE SHEET &  
 DRAWING INDEX

**SHEET NUMBER**

T-1

**DRIVING DIRECTIONS**

**DEPART FROM IGOR I SIKORSKY MEMORIAL AIRPORT:**  
 DEPART AND HEAD TOWARD GREAT MEADOW RD, IN 174 FT TURN RIGHT ONTO GREAT MEADOW RD, IN 118 FT KEEP LEFT TO STAY ON GREAT MEADOW RD, IN 0.2 MI BEAR RIGHT ONTO CT-113/LORDSHIP BLVD, IN 0.5 MI TURN LEFT TO STAY ON CT-113/LORDSHIP BLVD, IN 1.1 MI TAKE THE RAMP ON THE LEFT FOR I-95 SOUTH AND HEAD TOWARD NY CITY, IN 1.9 MI AT EXIT 27A, HEAD RIGHT ON THE RAMP FOR CT-25/CT-8 TOWARD TRUMBULL/WATERBURY, IN 2.5 MI AT EXIT 5, HEAD RIGHT ON THE RAMP TOWARD BOSTON AVE/NORTH AVE, IN 0.2 MI KEEP STRAIGHT TO GET ONTO RAMP, IN 390 FT MERGE ONTO CHOPSEY HILL RD, IN 0.3 MI KEEP RIGHT TO STAY ON CHOPSEY HILL RD, IN 459 FT KEEP LEFT TO STAY ON CHOPSEY HILL RD, IN 0.2 MI KEEP LEFT TO STAY ON CHOPSEY HILL RD, IN 0.6 MI TURN RIGHT, IN 292 FT ARRIVE AT YOUR DESTINATION ON THE RIGHT.

**PROJECT TEAM**

**ENGINEER/ARCHITECT:**  
 CLS ENGINEERING, PLLC.  
 319 CHAPANOKE ROAD, SUITE 118  
 RALEIGH, NC 27603  
 (405) 348-5460

**APPLICANT/CUSTOMER:**  
 T-MOBILE  
 12920 SE 38TH STREET  
 BELLEVUE, WA 98006

**STRUCTURE OWNER:**  
 AMERICAN TOWER  
 10 PRESIDENTIAL WAY  
 WOBURN, MA 1801  
 SEAN O'BRIEN  
 (781) 926-6980

**OWNER SITE NAME:**  
 TARTAGLIA

**OWNER SITE NUMBER:**  
 383598

**PROJECT INFORMATION**

<b>STRUCTURE TYPE:</b>	SELF-SUPPORTING TOWER
<b>STRUCTURE HEIGHT:</b>	240'-0"
<b>LATITUDE:</b>	41.2196000° (NAD 83)
<b>LONGITUDE:</b>	73.20128611° (NAD 83)
<b>ADDRESS:</b>	383598 - TARTAGLIA 1000 TRUMBULL AVENUE BRIDGEPORT, CT 066066
<b>COUNTY:</b>	FAIRFIELD
<b>CODE JURISDICTION:</b>	CITY OF BRIDGEPORT
<b>GROUND ELEVATION:</b>	201' AMSL

**ONE CALL**



**CALL CONNECTICUT ONE-CALL  
 3 DAYS BEFORE YOU DIG  
 811 OR 1-800-922-4455**

**DO NOT SCALE DRAWINGS**

CONTRACTOR SHALL VERIFY ALL PLANS, EXISTING DIMENSIONS, CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT OR ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR THE SAME.



## GENERAL NOTES

- THESE MODIFICATIONS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE GOVERNING PROVISIONS OF TIA/EIA-222, ASCE 7, AWS, ACI, AND AISC. MATERIALS AND SERVICES PROVIDED BY THE CONTRACTOR SHALL CONFORM TO THE ABOVE-MENTIONED CODES AND THE CONTRACT SPECIFICATIONS.
- ALL MATERIALS UTILIZED FOR THIS PROJECT MUST BE NEW AND FREE OF ANY DEFECTS.
- ALL PRODUCT OR MATERIAL SUBSTITUTIONS PROPOSED BY THE CONTRACTOR SHALL BE APPROVED IN WRITING BY THE ENGINEER. CONTRACTOR SHALL PROVIDE DOCUMENTATION TO ENGINEER SUITABLE TO DETERMINE IF SUBSTITUTE IS ACCEPTABLE FOR USE AND MEETS THE ORIGINAL DESIGN CRITERIA. DIFFERENCES FROM THE ORIGINAL DESIGN, INCLUDING MAINTENANCE, REPAIR AND REPLACEMENT, SHALL BE NOTED. ESTIMATES OF COSTS/CREDITS ASSOCIATED WITH THE SUBSTITUTION (INCLUDING RE-DESIGN COSTS AND COSTS TO SUB-CONTRACTORS) SHALL BE PROVIDED TO THE ENGINEER. CONTRACTOR SHALL PROVIDE ADDITIONAL DOCUMENTATION AND/OR SPECIFICATIONS TO THE ENGINEER AS REQUESTED.
- PROVIDE STRUCTURAL STEEL SHOP DRAWING(S) TO THE ENGINEER OF RECORD FOR APPROVAL PRIOR TO FABRICATION.
- UNLESS NOTED OTHERWISE, ALL NEW MEMBERS AND REINFORCING SHALL MAINTAIN THE EXISTING MEMBER WORK LINES AND NOT INTRODUCE ECCENTRICITIES INTO THE STRUCTURE.
- ANY CONTRACTOR-CAUSED DAMAGE TO PROPERTY OF THE LAND OWNER, PROPERTY OF THE STRUCTURE OWNER, PROPERTY OF THE CUSTOMER, SITE FENCING OR GATES, ANY AND ALL UTILITY AND/OR SERVICE LINES, SHOWN OR NOT SHOWN ON THE PLANS, SHALL BE REPAIRED OR REPLACED AT THE SOLE COST OF THE CONTRACTOR AND SHALL BE ACCOMPLISHED BY THE CONTRACTOR OR SUBCONTRACTOR AS APPROVED BY THE ENGINEER OF RECORD AND LAND OWNER. DAMAGE TO EQUIPMENT OR PROPERTY OF ANY KIND BELONGING TO OTHER COMPANIES (BESIDES THE INDICATED CUSTOMER) SHALL BE ADDRESSED BY THE CONTRACTOR WITH THE COMPANIES THAT OWN THE DAMAGED ITEMS.

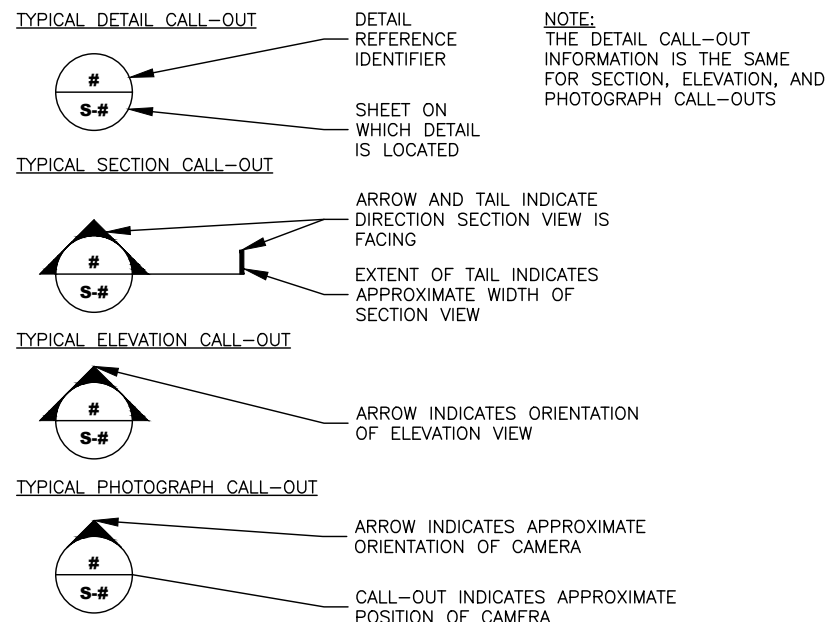
## STRUCTURAL STEEL NOTES

- STRUCTURAL STEEL SHALL COMPLY WITH THE FOLLOWING SPECIFICATIONS:
  - STRUCTURAL STEEL SHAPES, PLATES AND BARS (EXCEPT W-SHAPES)- ASTM A36, Fy=36 KSI
  - PIPES - ASTM A53, GRADE B, Fy=35 KSI
  - HSS-SHAPES - ASTM A500, GRADE B, Fy=42 KSI (ROUND)  
Fy=46 KSI (SQUARE & RECTANGULAR)
  - ANCHOR & ALL-THREAD RODS - ASTM F1554, GRADE 55
  - STRUCTURAL BOLTS 1/2"Ø AND LARGER - ASTM A325
  - STRUCTURAL BOLTS SMALLER THAN 1/2"Ø - DIMENSIONS: ASME B18.2.1  
MATERIAL: SAE J429 GRADE 5 | THREADING: ASME B1.1, UNC, CLASS 2A | FINISH: HOT-DIP GALVANIZED OR ZINC-PLATED
  - SHEET METAL SCREWS - DIMENSIONS: ASME B18.6.3  
MATERIAL: SAE J933 | FINISH: HOT-DIP GALVANIZED OR ZINC-PLATED
  - NUTS FOR BOLTS/ALL-THREAD - ASTM A563 (THREADING TO MATCH BOLT)
  - WASHERS FOR BOLTS/ALL-THREAD - ASTM F436
  - W & WT SHAPES - ASTM A36, Fy=36 KSI  
ALTERNATE SPEC: ASTM A992 (IF OTHER SPEC IS UNAVAILABLE)
- STRUCTURAL BOLTS SHALL CONFORM TO THIS NOTE. ALL BOLT HOLES SHALL BE STANDARD SIZE BOLT HOLES PER AISC 360, UNLESS OTHERWISE NOTED. ALL HOLES SHALL BE SHOP DRILLED OR SUB-PUNCHED AND REAMED. BURNING OF HOLES IS NOT PERMITTED. WHERE SLOTTED OR OVERSIZE HOLES ARE SPECIFIED ON THE DRAWINGS, EXTRA-THICK ASTM F436 PLATE WASHERS SHALL BE USED (5/16" MINIMUM THICKNESS) WITH A DIAMETER SUITABLE TO COVER THE EXTENTS OF THE SLOT OR HOLE. BOLTS SHALL BE HEAVY-HEX WHERE AVAILABLE IN THE SIZE AND GRADE SPECIFIED, OTHERWISE BOLTS SHALL BE HEX HEAD CAP SCREWS.
- ALL STEEL HARDWARE, INCLUDING ADHESIVE OR EMBEDDED ANCHOR BOLTS AND THEIR ACCESSORIES, SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A153 (EXCEPT BOLTS SMALLER THAN 1/2" SHALL CONFORM TO FE/ZN 3 AT PER ASTM F1941 WHERE HOT-DIP GALVANIZED BOLTS ARE NOT AVAILABLE). ALL STEEL MEMBERS, INCLUDING WELDMENTS, SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A123. REPAIR DAMAGE TO GALVANIZED COATINGS USING ASTM A780 PROCEDURES WITH A ZINC RICH PAINT (SUCH AS ZRC GALVILITE) FOR GALVANIZING DAMAGED BY HANDLING, TRANSPORTING, CUTTING, WELDING, OR BOLTING. DO NOT HEAT SURFACES TO WHICH REPAIR PAINT HAS BEEN APPLIED. CALL OUT HOLES REQUIRED FOR HOT-DIP GALVANIZING ON SHOP DRAWINGS.
- WELDING SHALL BE IN ACCORDANCE WITH AWS D1.1 "STRUCTURAL WELDING CODE - STEEL". WELD ELECTRODES SHALL BE E70XX. UNLESS OTHERWISE NOTED, PROVIDE CONTINUOUS FILLET WELDS WITH MINIMUM SIZE OF 3/16 INCH OR OF A SIZE EQUAL TO THE THICKNESS OF THE THINNER MATERIAL BEING JOINED (WHICHEVER IS LESS). FOR ACUTE OR OBTUSE JOINT ANGLES, THE FILLET WELD LEG SIZE SHALL BE ADJUSTED AS REQUIRED TO MAINTAIN THE EFFECTIVE THROAT OF A 3/16 INCH FILLET WELD IN A 90° JOINT. ALL WELD SIZES SHOWN IN INCHES.
- PRIOR TO WELDING, THE CONTRACTOR SHALL SUBMIT CERTIFICATION FOR EACH WELDER STATING THE TYPE OF WELDING AND POSITIONS QUALIFIED FOR, THE CODE AND PROCEDURE QUALIFIED UNDER, DATE QUALIFIED, AND THE FIRM AND INDIVIDUAL CERTIFYING THE QUALIFICATION TESTS. THIS INFORMATION SHALL BE SUBMITTED TO THE MODIFICATION INSPECTOR (SEE SHEET S-003) AS WELL AS ANY THIRD-PARTY CERTIFIED WELD INSPECTOR (CWI).
- MEMBERS SHALL BE SHOP-FABRICATED AND WELDED TO THE EXTENT PRACTICABLE IN ORDER TO REDUCE FIELD INSTALLATION COSTS.

## CONTRACTOR NOTES

- PRIOR TO BEGINNING CONSTRUCTION, ALL CONTRACTORS AND SUBCONTRACTORS MUST ACKNOWLEDGE IN WRITING TO STRUCTURE OWNER THAT THEY HAVE OBTAINED, UNDERSTAND, AND WILL FOLLOW STRUCTURE OWNER STANDARDS OF PRACTICE, CONSTRUCTION GUIDELINES, ALL SITE AND STRUCTURE/TOWER SAFETY PROCEDURES, ALL PRODUCT LIMITATIONS AND INSTALLATION PROCEDURES USED ON SITE, AND PROPOSED MODIFICATIONS DESCRIBED. RECEIPT OF ACKNOWLEDGEMENT MUST OCCUR PRIOR TO BEGINNING CONSTRUCTION OR CLIMBING. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO PROVIDE THIS DOCUMENTATION FOR STRUCTURE OWNER ON COMPANY LETTERHEAD AND THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO OBTAIN THIS DOCUMENTATION FROM ANY SUBCONTRACTORS (ON SUBCONTRACTOR LETTERHEAD) AND DELIVER IT TO THE STRUCTURE OWNER.
- IF THE CONTRACTOR DISCOVERS ANY EXISTING CONDITIONS THAT ARE NOT REPRESENTED ON THESE DRAWINGS, OR ANY CONDITIONS THAT WOULD INTERFERE WITH THE INSTALLATION OF THE MODIFICATIONS, THE ENGINEER OF RECORD SHALL BE CONTACTED IMMEDIATELY TO EVALUATE THE SIGNIFICANCE OF THE DEVIATION.
- THE CONTRACTOR SHALL SOLICIT AND HIRE THE SERVICES OF A QUALIFIED MODIFICATION INSPECTOR PRIOR TO BEGINNING CONSTRUCTION. THE MODIFICATION INSPECTOR MAY BE AN EMPLOYEE OF THE CONTRACTOR'S FIRM, HOWEVER THE INSPECTOR'S ONLY DUTIES SHALL BE INSPECTION, TESTING, AND REPORT CREATION AS REQUIRED ON THE "MODIFICATION INSPECTION NOTES" SHEET. THE INSPECTOR SHALL BE QUALIFIED AS A REGISTERED PROFESSIONAL ENGINEER (PE) OR AS AN ENGINEERING INTERN (EI) OR ENGINEER IN TRAINING (EIT) UNDER THE SUPERVISION OF A REGISTERED PROFESSIONAL ENGINEER (PE). IT IS ALSO ACCEPTABLE FOR THE CONTRACTOR TO SUBCONTRACT THE MODIFICATION INSPECTOR DUTIES TO A THIRD PARTY FIRM MEETING THE ABOVE REQUIREMENTS.
- THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD AND TOWER OWNER OF THE PLANNED CONSTRUCTION & INSPECTION SCHEDULE, AS WELL AS ANY CHANGES TO THE SCHEDULE, WITHIN TWO BUSINESS DAYS OF THE COMPLETION OF THE SCHEDULE OR SCHEDULE REVISION BOTH PRIOR TO BEGINNING CONSTRUCTION AND DURING CONSTRUCTION AS THE SCHEDULE CHANGES. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD WHEN PHASES OF CONSTRUCTION HAVE BEEN MOVED UP AND SHALL GIVE THE ENGINEER ADEQUATE NOTICE SO THAT THE ENGINEER OF RECORD MAY, AT THEIR DISCRETION, INSPECT PORTIONS OF THE WORK THAT ARE DEEMED CRITICAL TO THE INTEGRITY OF THE STRUCTURE. FAILURE TO PROVIDE THIS NOTICE MAY RESULT IN REJECTION OF THE CONTRACTOR'S WORK. THE CONTRACTOR SHALL ALSO NOTIFY THE ENGINEER OF RECORD AND THE STRUCTURE OWNER WHEN THE WORK HAS BEEN COMPLETED WITHIN 2 BUSINESS DAYS OF THE COMPLETION OF THE WORK AND ASSOCIATED MODIFICATION INSPECTIONS & TESTING.
- IT IS ASSUMED THAT ANY STRUCTURAL MODIFICATION WORK SPECIFIED ON THESE PLANS WILL BE ACCOMPLISHED BY KNOWLEDGEABLE WORKMEN WITH TOWER CONSTRUCTION EXPERIENCE. THIS INCLUDES PROVIDING THE NECESSARY CERTIFICATIONS TO THE STRUCTURE OWNER AND ENGINEER INCLUDING BUT NOT LIMITED TO TOWER CLIMBER AND RESCUE CLIMBER CERTIFICATIONS, QUALIFIED WELDER CERTIFICATES, CERTIFIED WELDING INSPECTOR CREDENTIALS, ET CETERA.
- THESE DRAWINGS DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION METHODS, MEANS, TECHNIQUES, SEQUENCES AND PROCEDURES.
- CONTRACTOR SHALL WORK WITHIN THE LIMITS OF THE STRUCTURE OWNER'S PROPERTY OR LEASE AREA AND APPROVED EASEMENTS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY WORK IS WITHIN THESE BOUNDARIES. CONTRACTOR SHALL EMPLOY A SURVEYOR AS REQUIRED. ANY WORK OUTSIDE THESE BOUNDARIES SHALL BE APPROVED IN WRITING BY THE LAND OWNER PRIOR TO MOBILIZATION. CONSTRUCTION STAKING AND BOUNDARY MARKING IS THE RESPONSIBILITY OF THE CONTRACTOR.

## SYMBOLS AND CALL-OUTS



## STANDARD ABBREVIATIONS

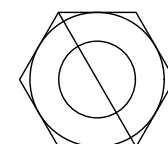
AFF	ABOVE FINISHED FLOOR	LONG	LONGITUDINAL
ARCH	ARCHITECT, -URAL	MAS	MASONRY
BLDG	BUILDING	MATL	MATERIAL
BOD	BOTTOM OF DECK	MAX	MAXIMUM
BOT	BOTTOM	MECH	MECHANICAL
BRCG	BRACING	MFR	MANUFACTURER
BRDG	BRIDGING	MIN	MINIMUM
C	CHANNEL	MOD	MODIFICATION
CL	CENTER LINE	MPH	MILES PER HOUR
CLR	CLEAR	MRI	MEAN RECURRENCE INTERVAL
CMU	CONCRETE MASONRY UNIT	#	NUMBER
CONC	CONCRETE	NTS	NOT TO SCALE
CONT	CONTINUOUS	OC	ON CENTER
DIA (OR) Ø	DIAMETER	OPH	OPPOSITE HAND
DWGS	DRAWINGS	OPNG	OPENING
EA	EACH	PC	PIECE
EL	ELEVATION	PL	PLATE
EQ, EQUIV	EQUAL, EQUIVALENT	PSF	POUNDS PER SQUARE FOOT
EW	EACH WAY	PSI	POUNDS PER SQUARE INCH
EXIST	EXISTING	REF	REFERENCE
' OR FT	FEET (DIMENSION)	REINF	REINFORCE/REINFORCEMENT
f'c	COMPRESSIVE STRESS	REQD	REQUIRED
FDN	FOUNDATION	REV	REVISION
FTG	FOOTING	SF	SQUARE FEET
GALV	GALVANIZED	SIM	SIMILAR
HORIZ	HORIZONTAL	SR	SOLID ROUND (SHAPE)
HSS	HOLLOW STRUCTURAL SHAPES	STD	STANDARD
		T&B	TOP AND BOTTOM
KIP	KILOPOUNDS (1000 LBS PER UNIT)	THK	THICKNESS
		TOF	TOP OF FOOTING
KSI	KIPS PER SQUARE INCH	TOM	TOP OF MASONRY
" OR IN	INCH	TOS	TOP OF STEEL
L	ANGLE	TYP	TYPICAL
LB	POUND	UON	UNLESS OTHERWISE NOTED
LLH	LONG LEG HORIZONTAL	VERT	VERTICAL
LLV	LONG LEG VERTICAL	W/	WITH

## BOLT TIGHTENING PROCEDURE

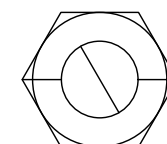
- TIGHTEN BOLTS BY AISC "TURN OF THE NUT" METHOD USING THE CHART BELOW:
  - BOLT LENGTHS UP TO AND INCLUDING FOUR DIAMETERS:  
+1/3 TURN BEYOND SNUG TIGHT
  - BOLT LENGTHS OVER FOUR AND UP TO EIGHT DIAMETERS:  
+1/2 TURN BEYOND SNUG TIGHT
  - BOLT LENGTHS OVER EIGHT AND UP TO TWELVE DIAMETERS:  
+2/3 TURN BEYOND SNUG TIGHT
- SPLICE BOLTS SUBJECT TO DIRECT TENSION SHALL BE INSTALLED AND TIGHTENED AS PER SECTION 8(d)(1) OF THE AISC MANUAL OF STEEL CONSTRUCTION. THE INSTALLATION PROCEDURE IS AS FOLLOWS:

"FASTENERS SHALL BE INSTALLED IN PROPERLY ALIGNED HOLES AND BE TIGHTENED BY ONE OF THE METHODS DESCRIBED IN SUBSECTION 8(d)(1) THROUGH 8(d)(4).

8(d)(1) TURN-OF-THE-NUT TIGHTENING. BOLTS SHALL BE INSTALLED IN ALL HOLES OF THE CONNECTION AND BROUGHT TO A SNUG TIGHT CONDITION. SNUG TIGHT IS DEFINED AS THE TIGHTNESS THAT EXISTS WHEN THE PLIES OF A JOINT ARE IN FIRM CONTACT. THIS MAY BE OBTAINED BY A FEW IMPACTS OF AN IMPACT WRENCH OR THE FULL EFFORT OF A MAN USING AN ORDINARY SPUD WRENCH. SNUG TIGHTENING SHALL PROGRESS SYSTEMATICALLY...UNTIL ALL THE BOLTS ARE SIMULTANEOUSLY SNUG TIGHT AND THE CONNECTION IS FULLY COMPACTED. FOLLOWING THIS INITIAL OPERATION, ALL BOLTS IN THE CONNECTION SHALL BE TIGHTENED FURTHER BY THE APPLICABLE AMOUNT OF ROTATION SPECIFIED ABOVE. DURING THE TIGHTENING OPERATION, THERE SHALL BE NO ROTATION OF THE PART NOT TURNED BY THE WRENCH. TIGHTENING SHALL PROGRESS SYSTEMATICALLY.

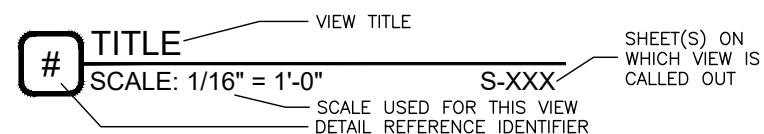


BEFORE 1/3 TURN



AFTER 1/3 TURN

## SECTION / ELEVATION / DETAIL VIEW CALLOUTS



T-Mobile



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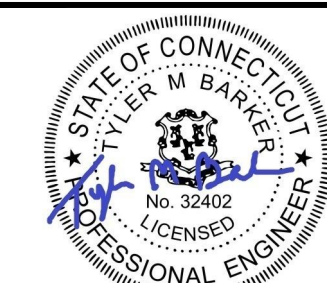
319 CHAPANOKE ROAD, SUITE 118, RALEIGH, NC 27603  
PH: (405)348-5460 FAX: (405)341-4625

CLS ENGINEERING PROJECT ID:  
41124-383598-13337501-TMOANC2020CT11680A

COA# PEC.001833 EXP. 08/14/2021

### REVISIONS

REV.	DATE	DESCRIPTION	INITIALS
A	03/23/21	PRELIMINARY ISSUE	HRP
0	03/23/21	FOR CONSTRUCTION	CWD



Tyler M. Barker  
CLS Engineering PLLC  
PE # 32402 Exp. 1/31/2021  
COA # PEC.001833 Exp. 8/14/2022

PE# 32402 EXP: 1/31/2022

ATC SITE NAME:

TARTAGLIA

ATC ASSET#: CT11680A

1000 TRUMBULL AVENUE  
BRIDGEPORT, CT 06606

SHEET TITLE

STRUCTURAL NOTES

SHEET NUMBER

**GN-1**

### PRE-CONSTRUCTION INSPECTION CHECKLIST

CONSTRUCTION AND/OR INSTALLATION INSPECTIONS REQUIRED FOR REPORT? (CHECK=YES, BLANK=NO)	INSPECTION REPORT ITEM
√	MODIFICATION INSPECTION CHECKLIST
√	SHOP DRAWINGS APPROVED BY ENGINEER OF RECORD (LATEST REVISION)
√	FABRICATION INSPECTION
	FABRICATOR'S CERTIFIED WELD INSPECTOR (CWI)
	FABRICATOR'S QUALIFIED PERSONNEL FOR WELDING
√	MATERIAL TEST REPORT(S) / MILL CERTIFICATE(S)
	FABRICATOR'S NON-DESTRUCTIVE TESTING (NDT) TECHNICIAN
√	PACKING SLIPS FOR STRUCTURAL MATERIALS

### CONSTRUCTION INSPECTION CHECKLIST

CONSTRUCTION AND/OR INSTALLATION INSPECTIONS REQUIRED FOR REPORT? (CHECK=YES, BLANK=NO)	INSPECTION REPORT ITEM
√	CONSTRUCTION INSPECTIONS
	FOUNDATION INSPECTIONS
	CONCRETE COMPRESSIVE STRENGTH AND SLUMP TESTING RESULTS/CERTIFICATES
	ADHESIVE ANCHOR ROD(S) INSTALLATION INSPECTION
	BASE PLATE GROUT INSPECTION
	THIRD-PARTY CERTIFIED WELD INSPECTION (INCLUDING IBC SPECIAL INSPECTIONS)
	SOIL EXCAVATION - DENSITY TESTING, COMPACTION INSPECTION/VERIFICATION, USE OF SUITABLE FILL
√	GALVANIZING REPAIR MATERIAL PREPARATION, INSPECTION, & PAINT APPLICATION
	GUY WIRE (RE-)TENSION REPORT AND INSPECTION
√	PRIME CONTRACTOR'S AS-BUILT DOCUMENTS (SIGNED & DATED)

### POST-CONSTRUCTION INSPECTION CHECKLIST

CONSTRUCTION AND/OR INSTALLATION INSPECTIONS REQUIRED FOR REPORT? (CHECK=YES, BLANK=NO)	INSPECTION REPORT ITEM
√	MODIFICATION INSPECTOR'S ISSUE LIST (INCLUDING CORRECTIVE ACTIONS TAKEN) AND/OR REDLINED RECORD DRAWINGS
	POST-INSTALLED ADHESIVE ANCHOR ROD PULL-OUT TESTING
√	PHOTOGRAPHS OF MODIFICATIONS (INCLUDE PHOTOS OF BOTH SIDES OF WELDED OR BOLTED CONNECTIONS, OF OVERALL AND DETAIL VIEWS OF INSTALLED MODIFICATIONS, AND BEFORE/AFTER PHOTOS OF ANY ISSUES IDENTIFIED BY THE INSPECTOR)

### GENERAL NOTES

1. THE POST-MODIFICATION INSPECTION IS A VISUAL EXAMINATION OF STRUCTURE MODIFICATIONS AND A REVIEW OF ANY REQUIRED CONSTRUCTION INSPECTIONS, TESTING, AND OTHER DATA TO VERIFY THAT THE MODIFICATIONS ARE INSTALLED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AS DESIGNED BY THE ENGINEER OF RECORD. THE CONTRACT DOCUMENTS INCLUDE THESE MODIFICATION DRAWINGS, ANY PROJECT SPECIFICATIONS REFERENCED TO IN THE PROJECT NOTES OR OTHERWISE PROVIDED WITH THE DRAWINGS, AND OTHER DOCUMENTS OR DRAWINGS PROVIDED WITH THE MODIFICATION DRAWINGS WITH THE INTENT THAT THEY BE USED AS A DESIGN AID OR GUIDELINE FOR CONSTRUCTION.
2. THE POST-MODIFICATION INSPECTION SHALL CONFIRM INSTALLATION CONFIGURATION AND WORKMANSHIP ONLY AND IS NOT A QUALITATIVE REVIEW OF THE ENGINEERING ASPECTS OF THE DESIGN OR THE DESIGN DRAWINGS. THE MODIFICATION INSPECTOR IS NOT TAKING OWNERSHIP OF THE MODIFICATION DESIGN IN THE PERFORMANCE OF THEIR DUTIES. OWNERSHIP OF THE MODIFICATION DESIGN'S EFFECTIVENESS AND INTENT, AS WELL AS ALL ASSOCIATED RISK, LIES WITH THE ENGINEER OF RECORD AT ALL TIMES.
3. TO ENSURE THAT THE REQUIREMENTS OF THE POST-MODIFICATION INSPECTION ARE MET, IT IS ESSENTIAL THAT COORDINATION BETWEEN THE PRIME CONTRACTOR AND THE MODIFICATION INSPECTOR BEGIN AS SOON AS THE PROJECT IS FUNDED AND WORK ENTERS THE PLANNING STAGE. THE PRIME CONTRACTOR AND MODIFICATION INSPECTOR SHALL BE PROACTIVE IN IDENTIFYING CONSTRUCTION ISSUES AND COMMUNICATING THESE ISSUES TO EACH OTHER AND TO THE ENGINEER OF RECORD AND STRUCTURE OWNER & CUSTOMER, AS REQUIRED.

### INSPECTION AND REPORT RECOMMENDATIONS

1. THE FOLLOWING ARE PROVIDED WITH THE INTENT OF ENHANCING THE EFFECTIVENESS OF THE MODIFICATION INSPECTION AND IMPROVING THE EFFICIENCY OF THE PROCESS OF COLLECTING AND COMPILING THE INFORMATION INTO A USABLE REPORT:
  - 1.1. IT IS RECOMMENDED THAT THE PRIME CONTRACTOR PROVIDE THE MODIFICATION INSPECTOR AT LEAST 5 BUSINESS DAYS NOTICE FOR WHEN THE SITE WILL BE READY FOR THE MODIFICATION INSPECTION.
  - 1.2. THE PRIME CONTRACTOR AND THE MODIFICATION INSPECTOR SHALL COORDINATE CLOSELY THROUGHOUT THE ENTIRE PROJECT.
  - 1.3. THE PRIME CONTRACTOR AND MODIFICATION INSPECTOR SHALL BOTH BE PRESENT DURING THE INITIAL INSPECTION IN ORDER TO ALLOW FOR THE REMEDIATION OF DEFICIENCIES DURING THE INSPECTION, AS PRACTICABLE. IT MAY BE PREFERABLE TO KEEP WORK CREWS AND THEIR EQUIPMENT ON-SITE TO REMEDIATE DEFICIENCIES DURING INSPECTIONS.

### INSPECTION RESCHEDULING AND CANCELLATION

1. IF THE PRIME CONTRACTOR AND MODIFICATION INSPECTOR HAVE AGREED UPON A TIME AND DATE FOR A GIVEN INSPECTION AND EITHER PARTY RESCHEDULES OR CANCELS THE INSPECTION, THE STRUCTURE OWNER SHALL NOT BE RESPONSIBLE FOR COSTS, FEES, LOST DEPOSITS, OR OTHER EXPENSES INCURRED BY THE PRIME CONTRACTOR, THEIR SUBCONTRACTOR(S), OR THE MODIFICATION INSPECTOR DUE TO THESE SCHEDULING CHANGES. EXCEPTIONS MAY BE MADE IN THE EVENT OF UNCONTROLLABLE SITUATIONS SUCH AS NATURAL DISASTERS, SEVERE WEATHER, OR OTHER CONDITIONS THAT COMPROMISE THE SAFETY OF THE PARTIES INVOLVED.

### REMEDATION OF FAILING INSPECTION

1. IN THE EVENT THAT ANY PORTION OF THE MODIFICATION WORK IS DETERMINED TO BE UNSATISFACTORY BY THE MODIFICATION INSPECTOR, THE PRIME CONTRACTOR SHALL WORK WITH THE MODIFICATION INSPECTOR TO CREATE A PLAN OF ACTION THAT WILL EITHER:
  - 1.1. REPAIR THE DEFICIENT WORK TO SATISFACTORY CONDITION AND INCLUDE A SUBSEQUENT RE-INSPECTION OF THE WORK TO VERIFY THAT IT IS SATISFACTORY
  - 1.2. OR, WITH THE PERMISSION OF THE STRUCTURE OWNER AND/OR CUSTOMER, THE PRIME CONTRACTOR MAY WORK WITH THE ENGINEER OF RECORD TO REVIEW THE AS-BUILT CONDITION OF THE MODIFICATION TO DETERMINE IF IT IS STRUCTURALLY ACCEPTABLE. IF THIS ACTION IS NOT ACCEPTABLE TO ANY PARTY, THE PRIME CONTRACTOR SHALL PROCEED TO REPAIR THE DEFICIENT WORK TO A SATISFACTORY CONDITION.

### MODIFICATION INSPECTOR'S RESPONSIBILITIES

1. THE MODIFICATION INSPECTOR SHALL CONTACT THE PRIME CONTRACTOR AS SOON AS THEY HAVE RECEIVED A PURCHASE ORDER OR PAYMENT FOR THIS INSPECTION. THE MODIFICATION INSPECTOR SHALL REVIEW THE REQUIREMENTS OF THE INSPECTION CHECKLIST, SHALL WORK WITH THE PRIME CONTRACTOR TO DEVELOP A SCHEDULE OF NECESSARY ON-SITE INSPECTIONS, AND SHALL DISCUSS ANY SITE-SPECIFIC INSPECTION REQUIREMENTS OR OTHER CONCERNS.
2. THE MODIFICATION INSPECTOR IS RESPONSIBLE FOR COLLECTING ALL PRIME CONTRACTOR INSPECTION AND TEST REPORTS (INCLUDING THOSE OF ASSIGNED SUB-CONTRACTORS), SHALL REVIEW THE REPORTS FOR COMPLIANCE WITH THE CONTRACT DOCUMENTS, SHALL CONDUCT THE NECESSARY ON-SITE INSPECTIONS, AND SHALL COMPIL AND SUBMIT THE MODIFICATION INSPECTION REPORT.

### PRIME CONTRACTOR'S RESPONSIBILITIES

1. THE PRIME CONTRACTOR SHALL CONTACT THE MODIFICATION INSPECTOR AS SOON AS THEY HAVE RECEIVED A PURCHASE ORDER OR PAYMENT FOR THE MODIFICATION INSTALLATION OR PROJECT. THE PRIME CONTRACTOR SHALL REVIEW THE REQUIREMENTS OF THE MODIFICATION INSPECTION CHECKLIST, SHALL WORK WITH THE MODIFICATION INSPECTOR TO DEVELOP A SCHEDULE TO CONDUCT ON-SITE INSPECTIONS, AND SHALL DISCUSS SPECIFIC INSPECTION AND TESTING REQUIREMENTS WITH THE MODIFICATION INSPECTOR IN DETAIL TO OBTAIN A FULL UNDERSTANDING OF THE REQUIRED INSPECTIONS AND TESTING.
2. THE PRIME CONTRACTOR SHALL PERFORM AND RECORD THE TESTING AND INSPECTION RESULTS IN ACCORDANCE WITH THE REQUIREMENTS OF THE MODIFICATION INSPECTION CHECKLIST.

### PHOTOGRAPHY REQUIREMENTS

1. THE PRIME CONTRACTOR AND MODIFICATION INSPECTOR SHALL, BETWEEN THE EFFORTS OF BOTH PARTIES AND THEIR EMPLOYED PERSONNEL, PROVIDE PHOTOGRAPHS WITH THE INSPECTION REPORT TO INCLUDE THE FOLLOWING:
  - a. GENERAL SITE PHOTOGRAPHS PRE-CONSTRUCTION
  - b. MODIFICATION INSTALLATION PHOTOGRAPHS DURING CONSTRUCTION/ERECTION OPERATIONS AND INSPECTIONS
    - b.1. RAW MATERIALS
    - b.2. PHOTOS OF DETAILED WORK REQUIRED ON THE DRAWINGS (CONNECTIONS, WELDMENTS, FIELD-FABRICATED MEMBERS, ETC)
    - b.3. WELD PREPARATION AND COMPLETED WELD INSPECTION (INCLUDING A FILLET WELD SIZE GAUGE, AS APPLICABLE)
    - b.4. BOLT INSTALLATION AND TORQUE/PRE-TENSION.
    - b.5. FINAL INSTALLED CONDITION (AFTER DEFICIENT CONDITIONS, IF ANY, ARE REMEDIATED).
    - b.6. REPAIR OF SURFACE COATINGS (INCLUDING GALVANIZING AND/OR PAINT COATING)
  - c. POST-MODIFICATION PHOTOGRAPHS OF THE SITE & WORK.
  - d. PHOTOGRAPHS OF THE FINAL STATE OF THE SITE AT CONCLUSION OF THE WORK BY THE PRIME CONTRACTOR, ASSOCIATED SUBCONTRACTORS, AND THE MODIFICATION INSPECTOR.
  - e. OTHER PHOTOS MAY BE INCLUDED AT PRIME CONTRACTOR & MODIFICATION INSPECTOR'S DISCRETION.

NOTE: PHOTOS OF MODIFICATIONS INSTALLED ON THE STRUCTURE ABOVE AN ELEVATION OF 20 FT SHALL REQUIRE PHOTOS TAKEN FROM THE STRUCTURE AS WELL AS OVERALL PHOTOGRAPHS OF THE MODIFICATIONS TAKEN FROM THE GROUND.

### OWNER INSPECTIONS

1. THE STRUCTURE OWNER MAY CONDUCT INSPECTIONS TO VERIFY THE QUALITY AND COMPLETENESS OF THE PREVIOUSLY COMPLETED MODIFICATION INSPECTION REPORTS FOR THE MODIFICATION INSTALLATION WORK.
2. INSPECTIONS MAY BE COMPLETED BY A 3RD-PARTY FIRM OF THE STRUCTURE OWNER'S CHOOSING AFTER A MODIFICATION PROJECT IS COMPLETED AND A PASSING MODIFICATION INSPECTION REPORT IS ISSUED.

T-Mobile



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 319 CHAPANOKE ROAD, SUITE 118, RALEIGH, NC 27603  
 PH: (405)348-5460 FAX: (405)341-4625

CLS ENGINEERING PROJECT ID:  
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 COA# PEC.001833 EXP. 08/14/2021

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 CLS Engineering PLLC  
 PE # 32402 Exp. 1/31/2021  
 COA # PEC.001833 Exp. 8/14/2022

PE# 32402 EXP: 1/31/2022

#### ATC SITE NAME:

TARTAGLIA

ATC ASSET#: CT11680A

1000 TRUMBULL AVENUE  
 BRIDGEPORT, CT 06606

#### SHEET TITLE

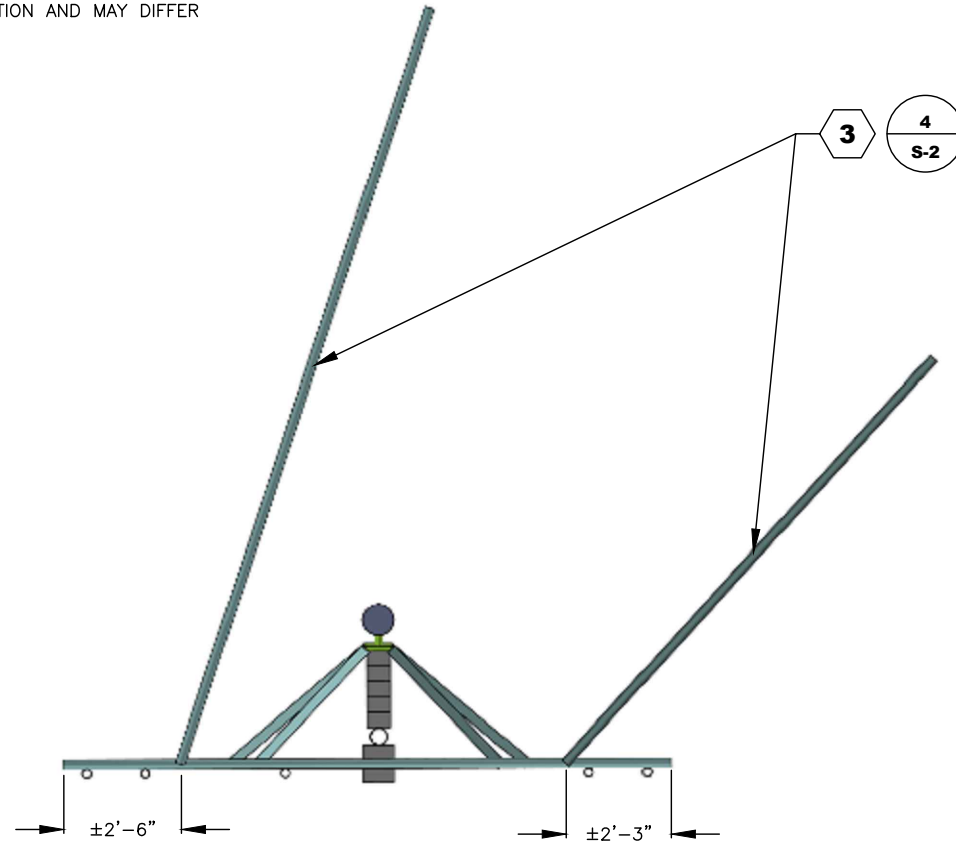
MODIFICATION  
 INSPECTION NOTES

#### SHEET NUMBER

IN-1



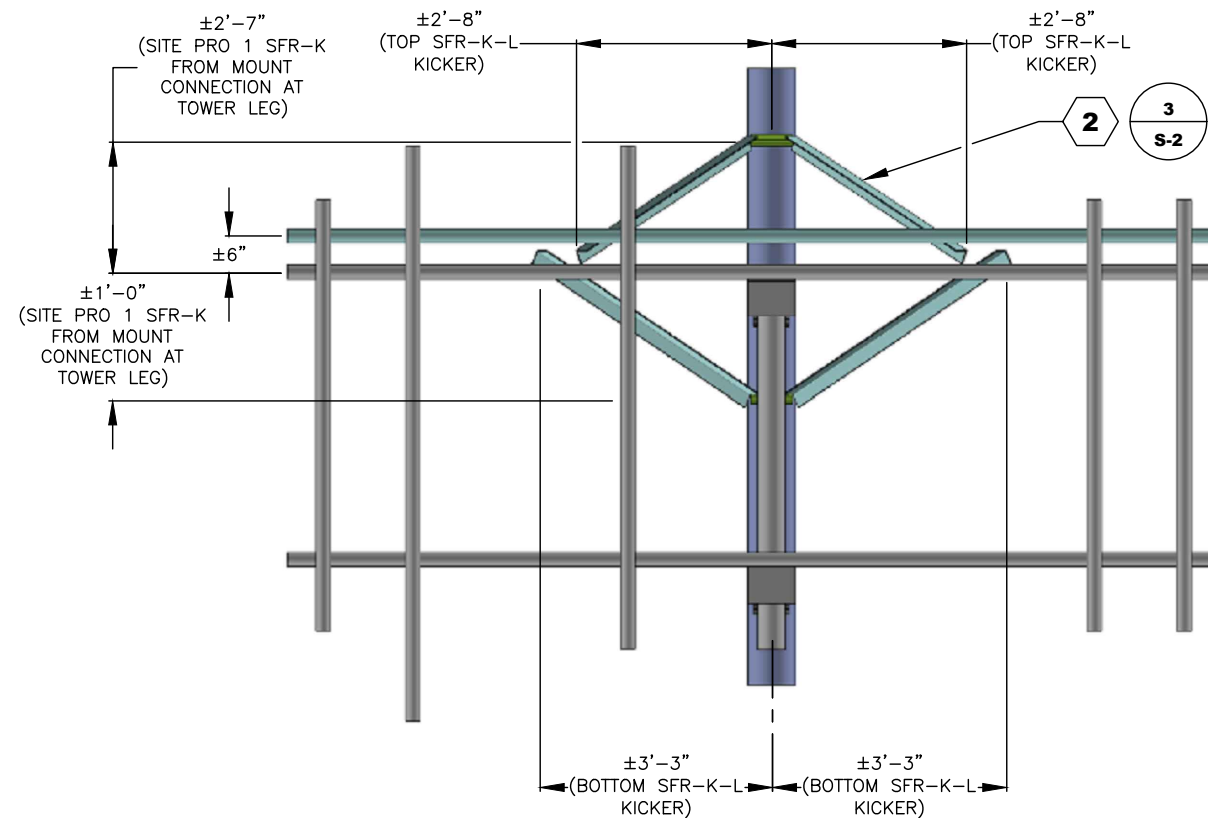
NOTE:  
EXISTING MOUNT SHOWN IS REPRESENTATIVE  
TO ILLUSTRATE MODIFICATION AND MAY DIFFER  
SLIGHTLY ON SITE.



### 1 MOUNT - PLAN VIEW

SCALE: N.T.S.

NOTE:  
STIFF ARMS NOT SHOWN FOR CLARITY.



### 2 MOUNT - FRONT ELEVATION VIEW

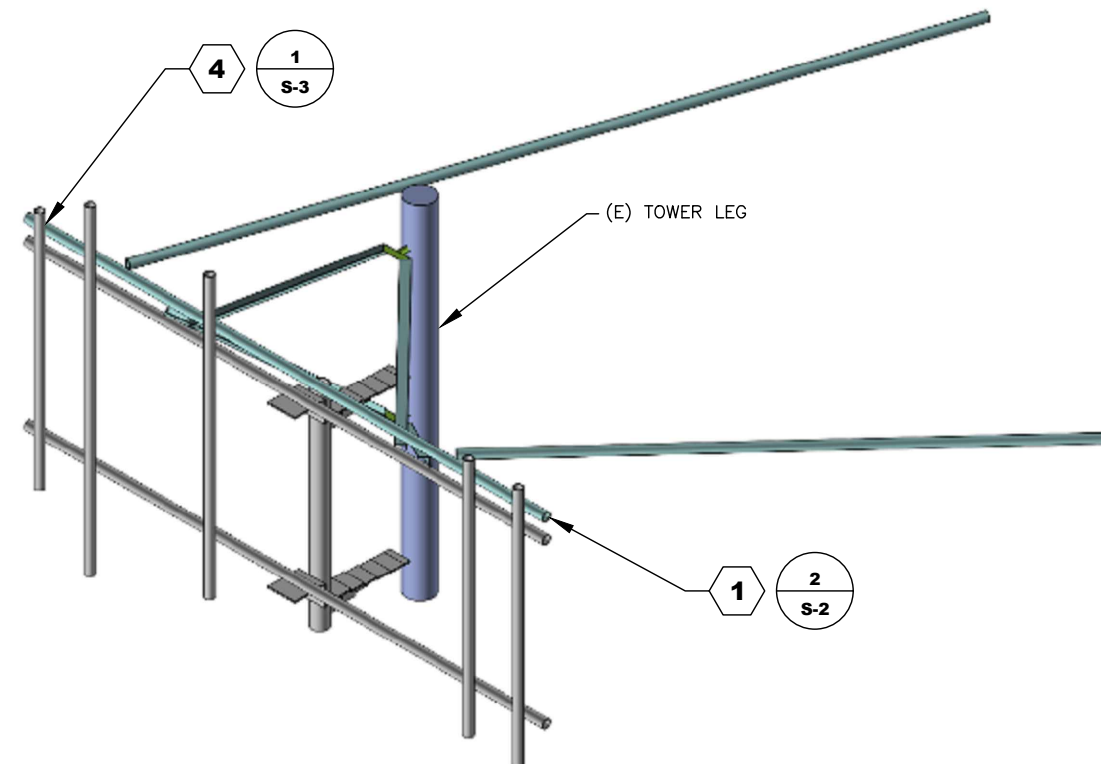
SCALE: N.T.S.

### CONSTRUCTION NOTES

- SCOPE OF WORK MUST BE COMPLETED AT WIND SPEEDS < 20 MPH.
- ALL DIMENSIONS ARE APPROXIMATE. CONTRACTOR SHOULD FIELD VERIFY ALL DIMENSIONS BEFORE FABRICATION OF STEEL AND COMMENCEMENT OF WORK. FIELD CUT MEMBERS AS REQUIRED.
- ALL HARDWARE FOR SITE PRO 1 SFR-K-L CONNECTION TO TOWER LEG AND SITE PRO 1 PUCK CONNECTION TO PROPOSED HORIZONTAL PIPE SHOULD BE INSTALLED WITH "TURN OF THE NUT" METHOD (RE: GN-1).

### MODIFICATION SCHEDULE

LABEL	ELEVATION	SCOPE	MATERIAL	NOTES
1	±201'-0"	INSTALL (1) PROPOSED FACE HORIZONTAL PIPE AT EACH SECTOR FRAME MOUNT (3 TOTAL) AS SHOWN. CONNECT TO ALL ANTENNA MOUNT PIPES WITH SITE PRO 1 SCX1-K CROSSOVER PLATE (15 TOTAL).	PIPE 2 STD X 13'-0" LONG SITE PRO 1 SCX1-K	S-1 S-2
2	±201'-0"	INSTALL (1) SITE PRO 1 SFR-K-L AT EACH SECTOR FRAME MOUNT (3 TOTAL) AS SHOWN. CONNECT TO PROPOSED FACE HORIZONTAL PIPE. <b>FIELD-CUT PROPOSED ANGLES AS REQUIRED. MAINTAIN MINIMUM BOLT EDGE DISTANCE.</b>	SITE PRO 1 SFR-K-L	S-1 S-2
3	±201'-0"	REMOVE EXISTING STIFF ARMS AND INSTALL (2) PROPOSED STIFF ARMS PER SECTOR (6 TOTAL) AS SHOWN. USE (2) 20'-0" LONG PIPE 2 STD IN LIEU OF THE SITE PRO 1 P2126 INCLUDED IN THE PROPOSED STIFF ARM KIT AT EACH SECTOR (6 TOTAL). CONNECT TO NEAREST ADJACENT TOWER LEG WITH SITE PRO 1 DCP KIT. CONNECT TO PROPOSED FACE HORIZONTAL WITH SITE PRO 1 DCP KITS PROVIDED IN THE PROPOSED STIFF ARM KIT. <b>FIELD-CUT PROPOSED PIPES AS REQUIRED.</b>	PIPE 2 STD X 20'-0" LONG SITE PRO 1 SPTB	S-1 S-2
4	±201'-0"	RELOCATE EQUIPMENT, AS REQUIRED, TO FACILITATE INSTALLATION OF PROPOSED MODIFICATIONS ON MOUNT.	-	S-1 S-3



### 3 MOUNT - ISOMETRIC VIEW

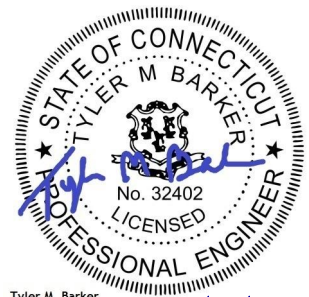
SCALE: N.T.S.



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PE# 32402 EXP: 1/31/2022

ATC SITE NAME:

TARTAGLIA

ATC ASSET#: CT11680A

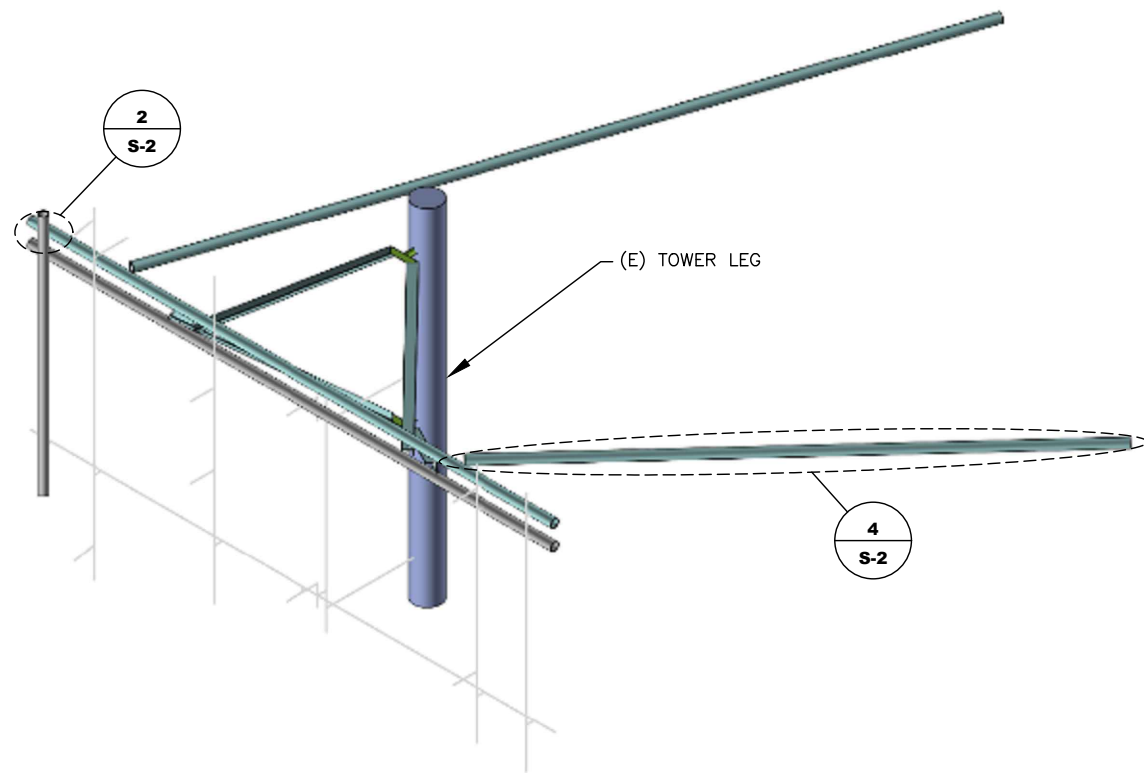
1000 TRUMBULL AVENUE  
BRIDGEPORT, CT 066066

SHEET TITLE

MOUNT VIEWS &  
MODIFICATION SCHEDULE

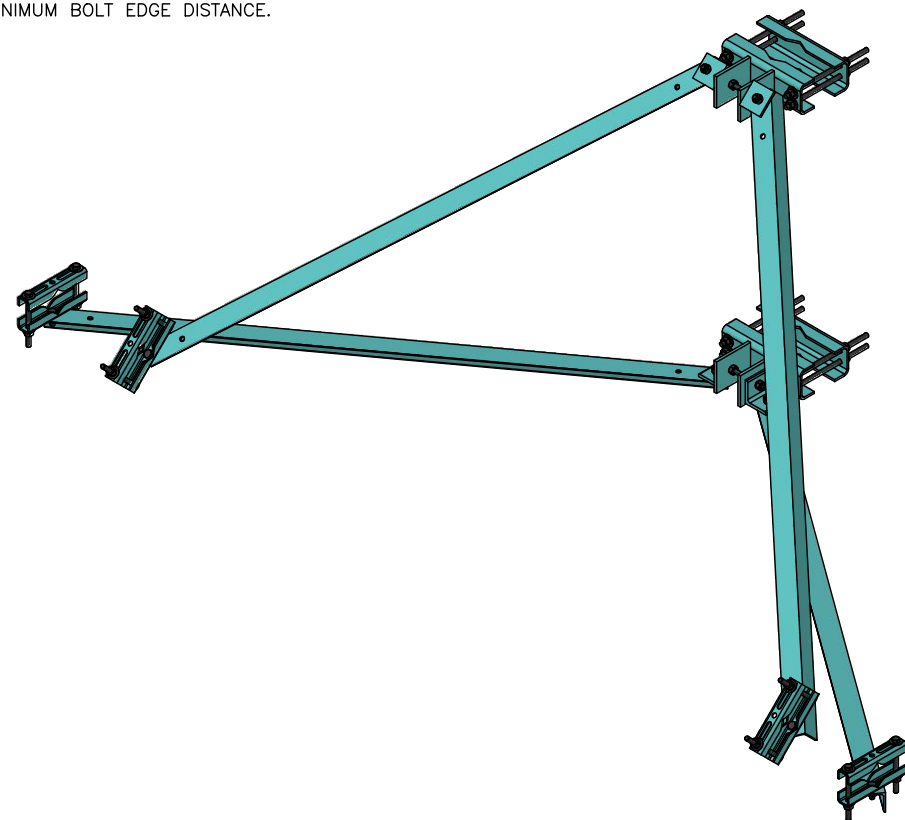
SHEET NUMBER

S-1

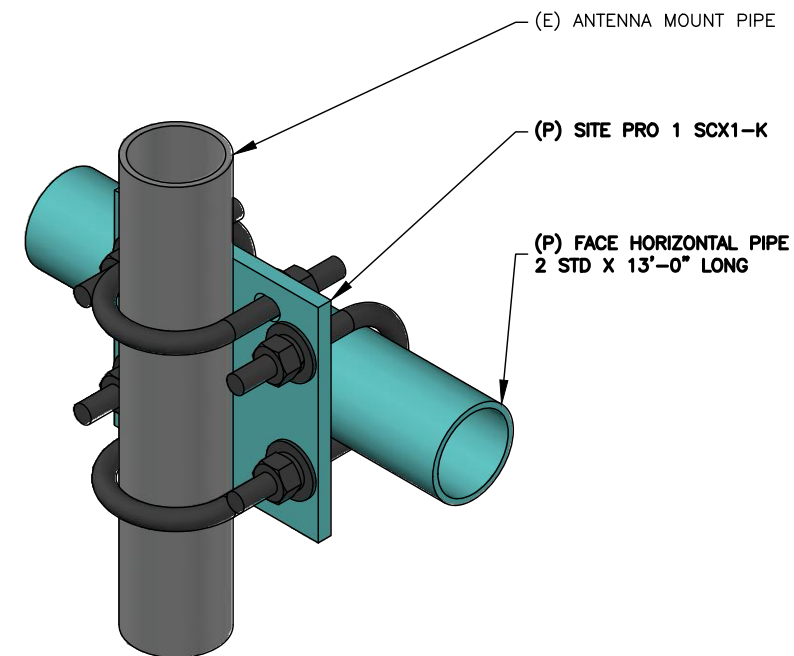


**1** MOUNT MOD - ISOMETRIC VIEW  
SCALE: N.T.S.

NOTE:  
FIELD-CUT PROPOSED ANGLES AS REQUIRED.  
MAINTAIN MINIMUM BOLT EDGE DISTANCE.

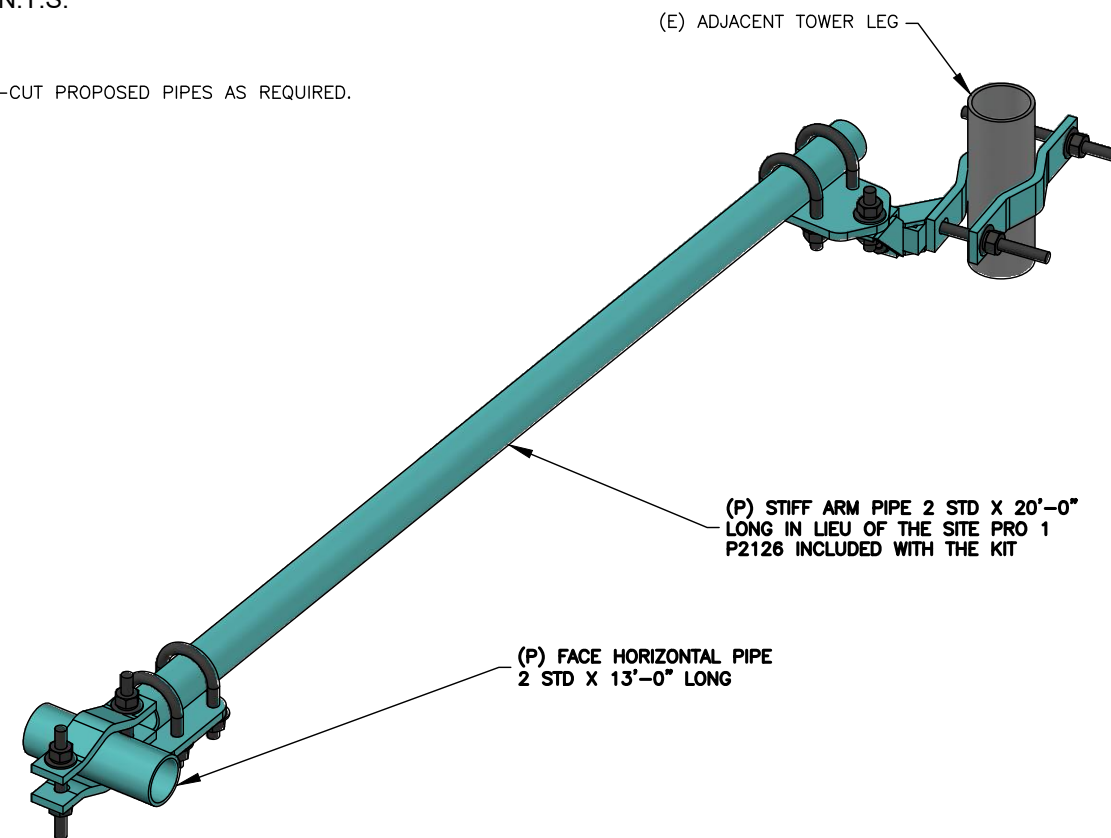


**3** SITE PRO 1 SFR-K-L  
SCALE: N.T.S.



**2** SITE PRO 1 SCX1-K  
SCALE: N.T.S.

NOTE:  
FIELD-CUT PROPOSED PIPES AS REQUIRED.



**4** SITE PRO 1 SPTB  
SCALE: N.T.S.

T-Mobile



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ATC SITE NAME:

TARTAGLIA

ATC ASSET#: CT11680A

1000 TRUMBULL AVENUE  
BRIDGEPORT, CT 066066

SHEET TITLE

MODIFICATION DETAIL  
VIEWS

SHEET NUMBER

**S-2**

C:\USERS\CRAIG.DUNN\DOWNLOADS\41124-383598-13337501-TMOANC2020CT11680A.DWG - CLS PROJECT ID: 41124-383598-13337501-TMOANC2020CT11680A

RELOCATE EQUIPMENT, AS  
REQUIRED, TO FACILITATE  
INSTALLATION OF PROPOSED  
MODIFICATIONS ON THE MOUNT.



**1 EQUIPMENT RELOCATION PHOTOGRAPH**

SCALE: N.T.S.



319 CHAPANOKE ROAD, SUITE 118, RALEIGH, NC 27603  
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ATC SITE NAME:

TARTAGLIA

ATC ASSET#: CT11680A

1000 TRUMBULL AVENUE  
BRIDGEPORT, CT 066066

SHEET TITLE

EQUIPMENT RELOCATION  
PHOTOGRAPH

SHEET NUMBER

**S-3**

C:\USERS\CRAIG.DUNN\DOWNLOADS\41124-383598-13337501-TMOANC2020CT11680A.DWG - CLS PROJECT ID: 41124-383598-13337501-TMOANC2020CT11680A

Wind & Ice Loading			
Nominal Mount Elevation (AGL), $z_{mount}$	201 ft	$K_a$	0.90
Nominal Rad Elevation (AGL), $z_{rad}$	202 ft	$K_d$	0.95
Elevation AMSL (ft)	201 ft	$K_e$	0.99
TIA Standard	H	$K_z$	1.47
Basic Wind Speed, $V_{ult}$ (bare)	119 mph	$K_{zt}$	1.00
Basic Wind Speed, $V$ (ice)	50 mph	$K_s$	1.00
Design Ice Thickness, $t_i$	1 in	$t_{iz}$	1.20 in
Exposure Category	C	$G_h$	1.00
Risk Category	II	$q_z$ (bare)	50.1 psf
Seismic Response Coeff., $C_s$	0.11	$q_z$ (ice)	8.8 psf

Live Loading	
At Mount Pipes, $L_M$	500 lb
Joint Labels Considered	1_M1
	1_M2
	1_M3
	1_M4
	1_M5

Section Set Label	Shape Label	$F_A$ (lb/ft)		Ice Wt. (lb/ft)
		Bare	Ice	
Standoff T-1	WT 1	45.11	2.51	9.89
Standoff T-2	WT 2	45.11	2.51	8.73
Standoff T-3	WT 3	45.11	2.51	7.56
Standoff T-4	WT 4	45.11	2.51	6.40
Standoff T-5	WT 5	45.11	6.69	10.54
Standoff Plate	0.38 X 6 Plate	45.11	6.70	7.70
Standoff Pipe	PIPE_4.0	20.30	5.49	8.34
Face Horizontal	PIPE_2.0	10.71	3.80	5.23
MOUNT_PIPE_2.0	PIPE_2.0	10.71	3.80	5.23
Face Connection	PL 8x.375	60.15	8.29	9.56
MOD_SFR-K	L2.5x2.5x3	18.80	2.16	6.29
MOD_Face Pipe	PIPE_2.0	10.71	3.80	5.23
MOD_Stiff arms	PIPE_2.0	10.71	3.80	5.23

Appurtenances																									
Appurtenance Model	Status	Azimuth Offset (°, °)	Rad Elev. Override (ft)	Swap Width & Depth	Area Factor		Qty.	Total Qty. Override	0° Joints		Height (in)	Width (in)	Depth (in)	Weight (Bare) (lb)	Shape	Weight of Ice (lb)	$EPA_A$ (Bare) (ft²)		$EPA_A$ (Ice) (ft²)		$F_A$ (Bare) (lb)		$F_A$ (Ice) (lb)		
					Front	Side			0°	1							2	N	T	N	T	N	T	N	T
APXVAARR24_43-U-NA20		-10		<input type="checkbox"/>			1	3	1_A4T	1_A4B	95.9	24	8.7	153.3	Generic	269.91	14.67	5.32	16.49	6.93	662.46	240.24	131.48	55.22	
AIR6449 B41				<input type="checkbox"/>			1	3	1_A3T	1_A3B	33.1	20.6	8.6	104	Flat	93.77	5.68	2.49	6.80	3.34	256.59	112.47	54.23	26.63	
AIR 32 B66AA B2P				<input type="checkbox"/>			1	3	1_A2T	1_A2B	59.25	12.87	8.66	136.7	Generic	114.11	3.86	2.51	4.75	3.35	174.31	113.35	37.84	26.70	
RRUS 4415 B25				<input checked="" type="checkbox"/>	0.75	0.5	1	3	1_R4TT		14.96	13.19	5.39	44	Flat	29.80	0.51	0.82	0.84	1.13	22.99	37.13	6.73	8.99	
RADIO 4449 B71/B85A				<input checked="" type="checkbox"/>	0.75	0.5	1	3	1_R4TT		14.96	13.19	10.51	74.95	Flat	41.40	0.98	0.82	1.40	1.13	44.38	37.13	11.16	8.99	

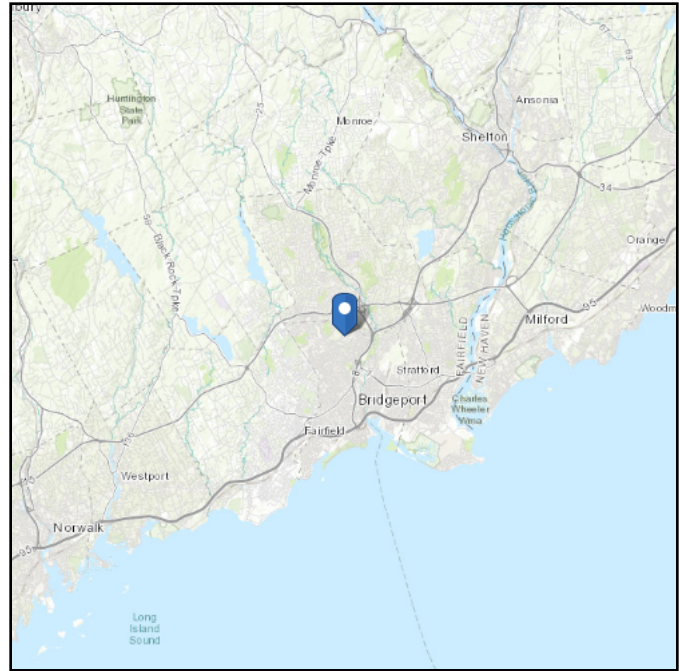
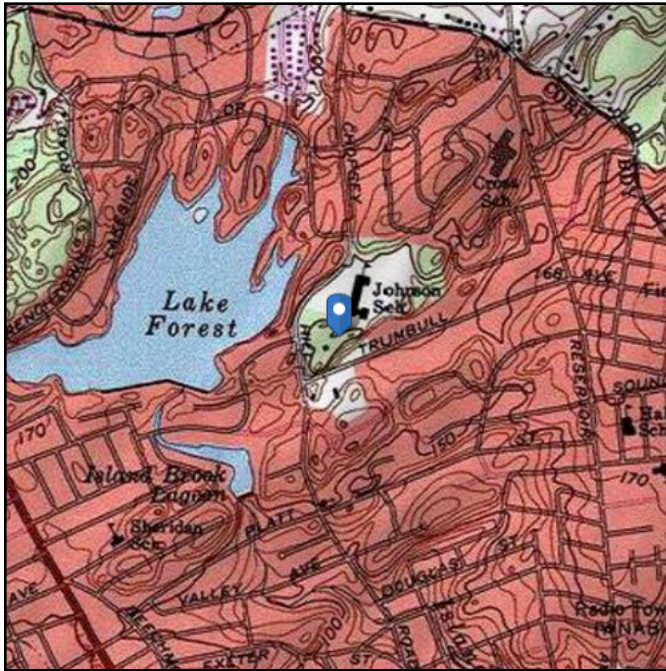


# ASCE 7 Hazards Report

**Address:**  
No Address at This Location

**Standard:** ASCE/SEI 7-16  
**Risk Category:** II  
**Soil Class:** D - Default (see Section 11.4.3)

**Elevation:** 200.8 ft (NAVD 88)  
**Latitude:** 41.2196  
**Longitude:** -73.201286



## Wind

### Results:

Wind Speed:	119 Vmph
10-year MRI	75 Vmph
25-year MRI	85 Vmph
50-year MRI	90 Vmph
100-year MRI	98 Vmph

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2

Date Accessed: Tue Feb 16 2021

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-16 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

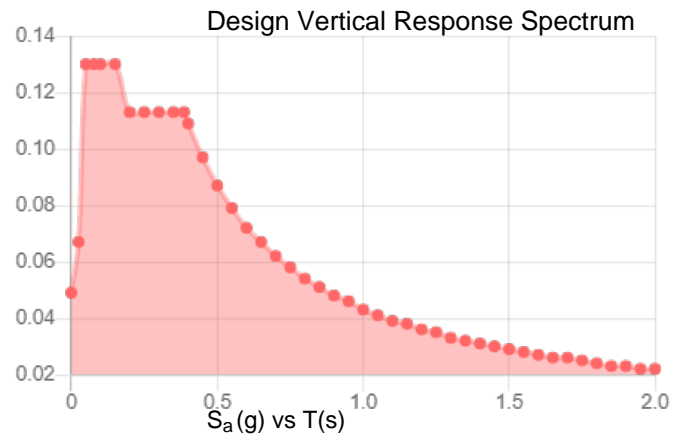
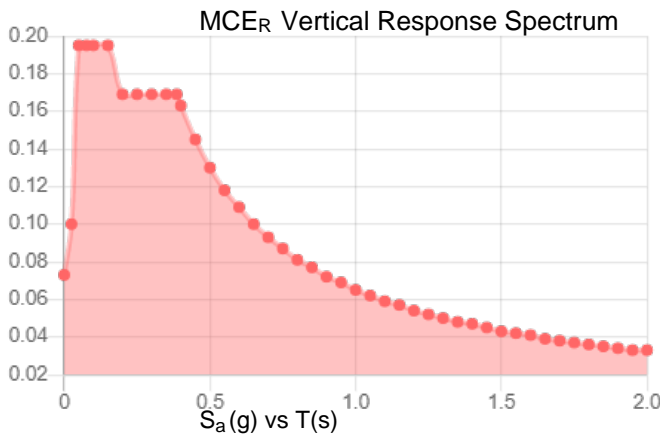
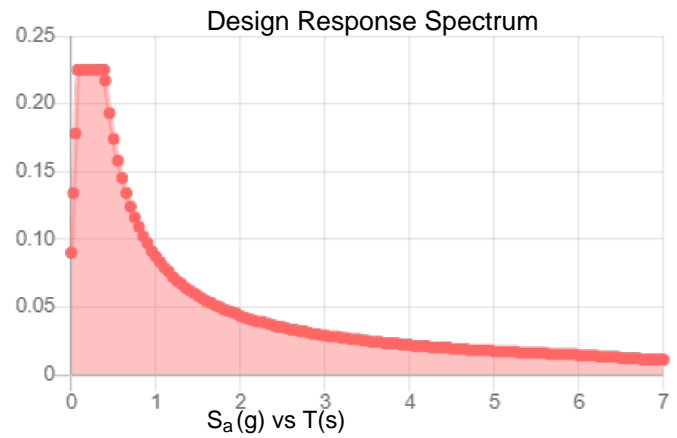
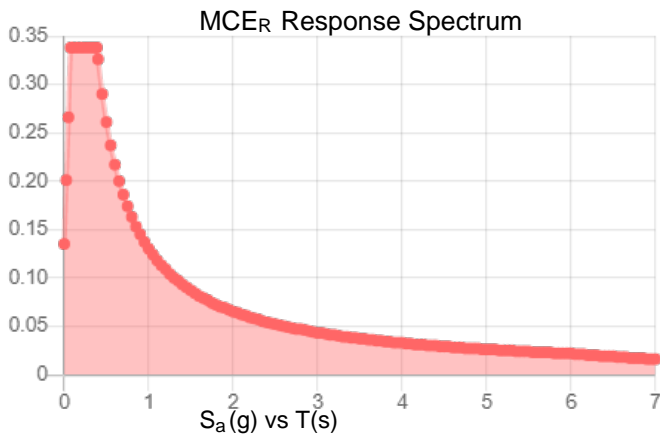
Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

**Site Soil Class:** D - Default (see Section 11.4.3)

**Results:**

$S_s$ :	0.211	$S_{D1}$ :	0.087
$S_1$ :	0.054	$T_L$ :	6
$F_a$ :	1.6	PGA :	0.12
$F_v$ :	2.4	PGA <sub>M</sub> :	0.187
$S_{MS}$ :	0.338	$F_{PGA}$ :	1.56
$S_{M1}$ :	0.13	$I_e$ :	1
$S_{DS}$ :	0.225	$C_v$ :	0.722

**Seismic Design Category** B



**Data Accessed:**

Tue Feb 16 2021

**Date Source:**

USGS Seismic Design Maps based on ASCE/SEI 7-16 and ASCE/SEI 7-16 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-16 Ch. 21 are available from USGS.

## Ice

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### Results:

Ice Thickness: 1.00 in.

Concurrent Temperature: 15 F

Gust Speed: 50 mph

**Data Source:** Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8

**Date Accessed:** Tue Feb 16 2021

Ice thicknesses on structures in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

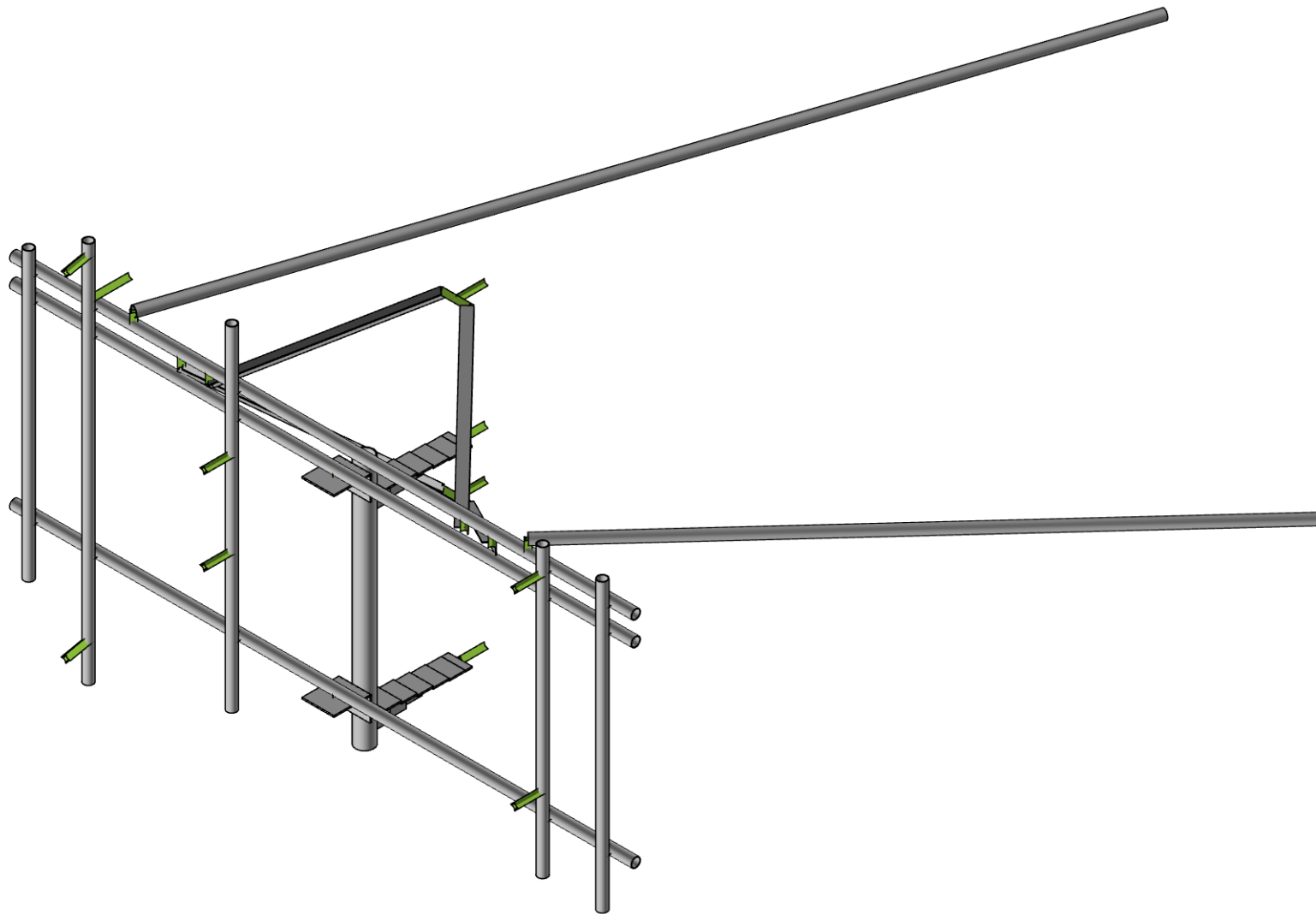
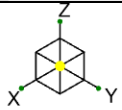
Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 500-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

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Envelope Only Solution

Telamon CLS

SN

41124-13337501\_C9\_04-02-MOD

41124-13337501\_C9\_04-Tartaglia

Rendered

SK-1

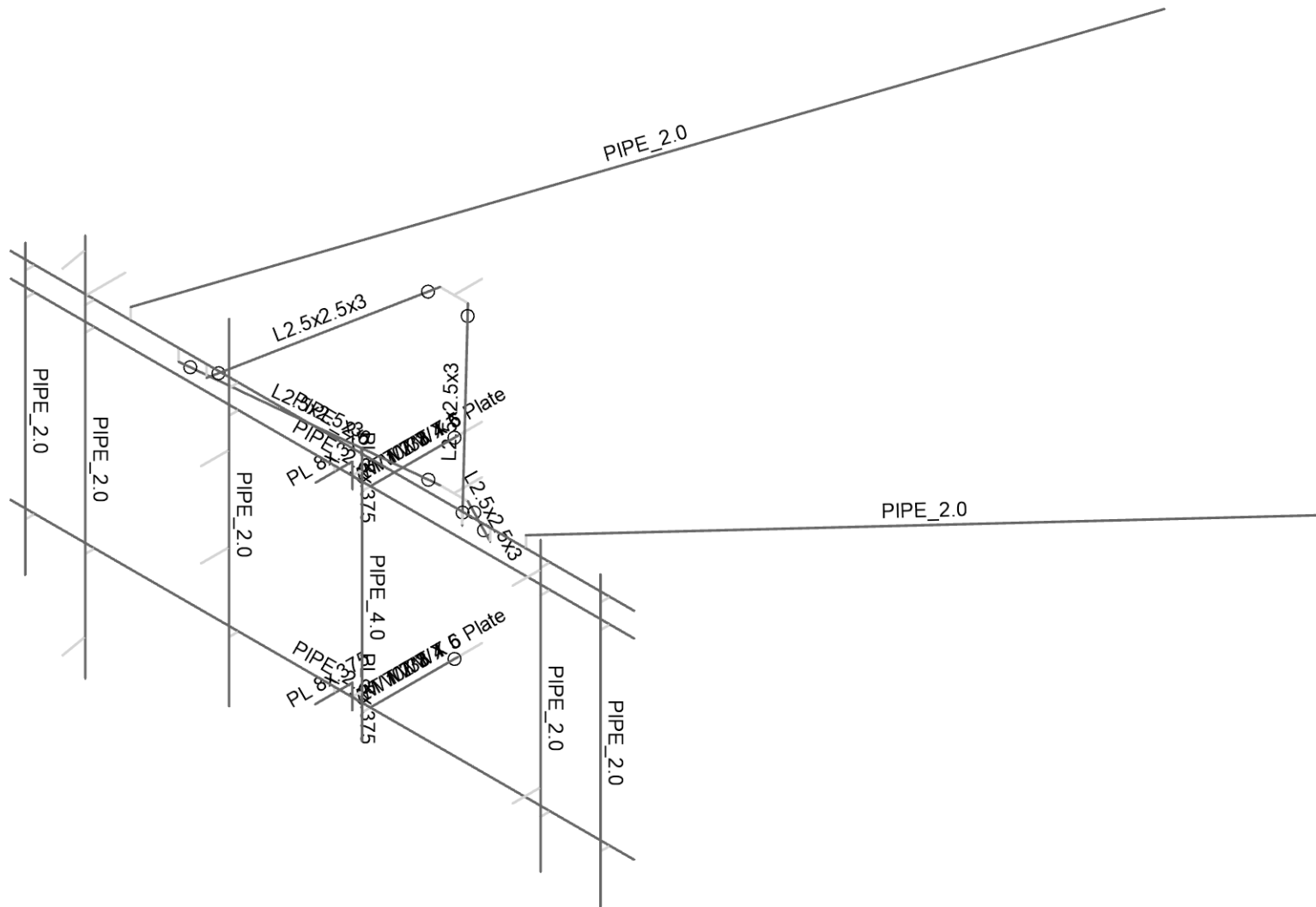
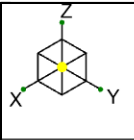
Mar 24, 2021

41124-13337501\_C9\_04-02-MOD.r3d







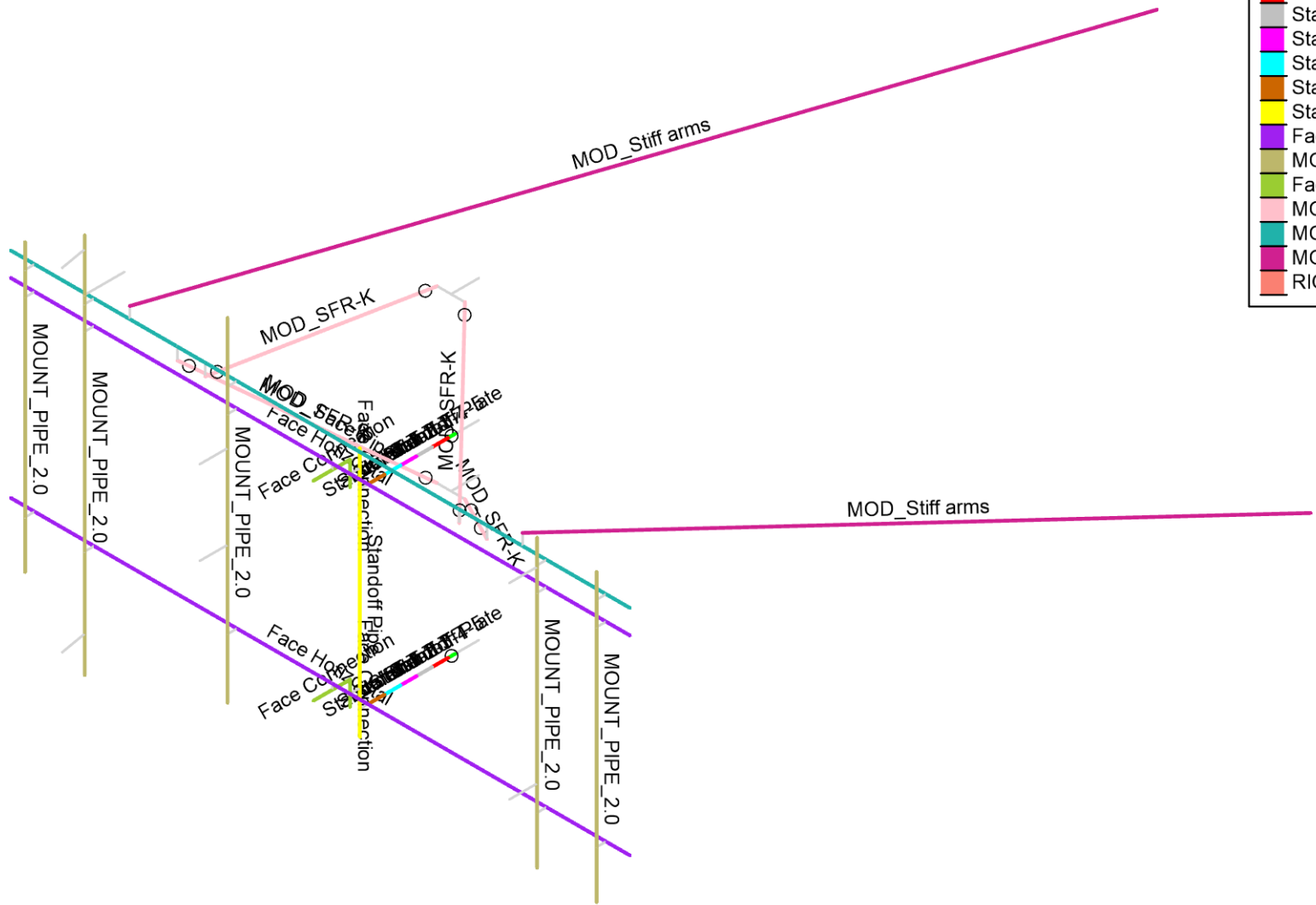
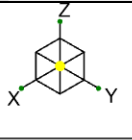


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41124-13337501_C9_04-02-MOD

41124-13337501_C9_04-Tartaglia
Member Shapes

SK-3.1
Mar 24, 2021
41124-13337501_C9_04-02-MOD.r3d



Section Sets	
na	na
Standoff Plate	Standoff Plate
Standoff T-5	Standoff T-5
Standoff T-4	Standoff T-4
Standoff T-3	Standoff T-3
Standoff T-2	Standoff T-2
Standoff T-1	Standoff T-1
Standoff Pipe	Standoff Pipe
Face Horizontal	Face Horizontal
MOUNT_PIPE_2.0	MOUNT_PIPE_2.0
Face Connection	Face Connection
MOD_SFR-K	MOD_SFR-K
MOD_Face Pipe	MOD_Face Pipe
MOD_Stiff arms	MOD_Stiff arms
RIGID	RIGID

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SN

41124-13337501\_C9\_04-02-MOD

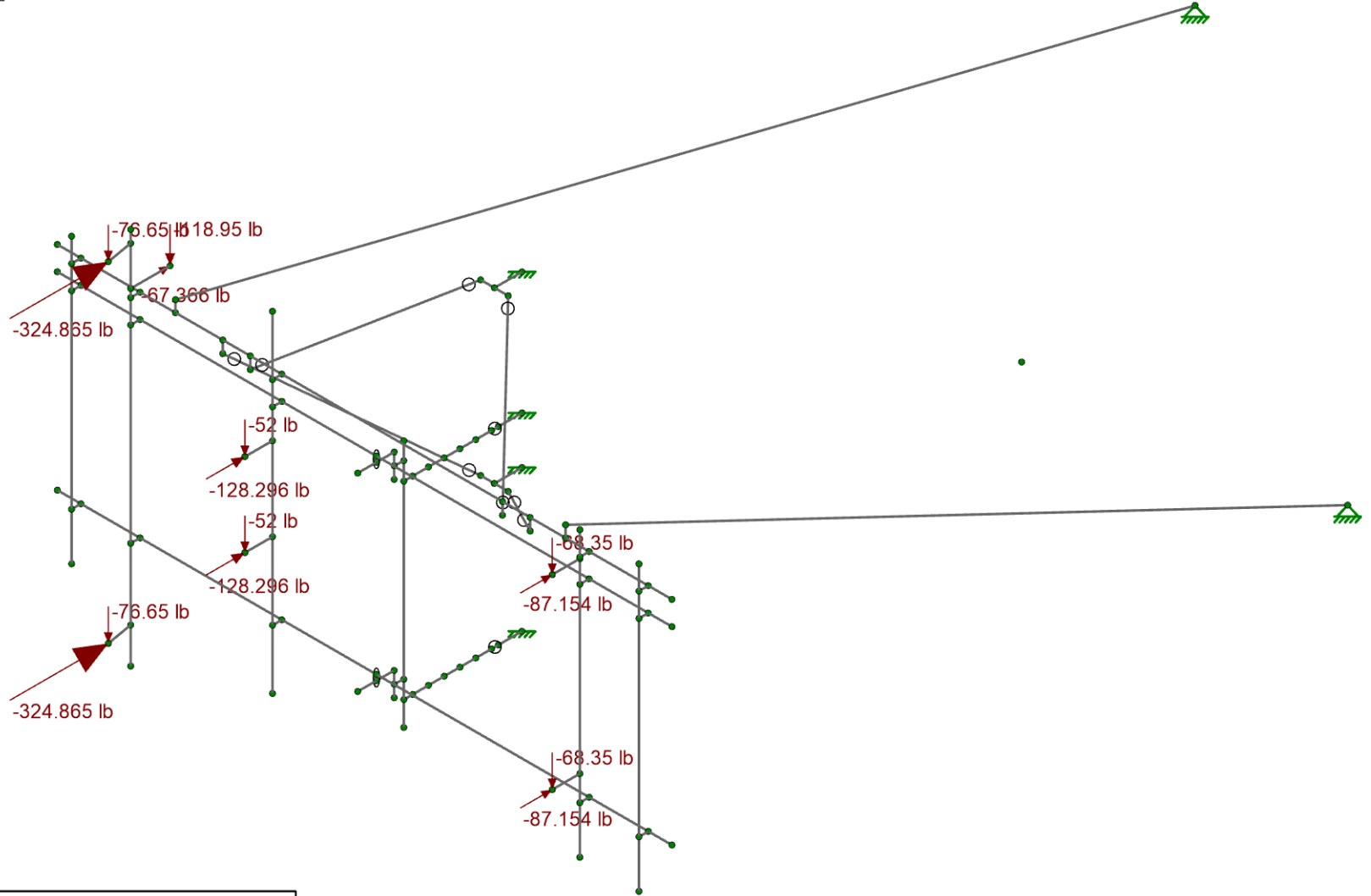
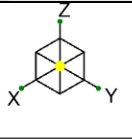
41124-13337501\_C9\_04-Tartaglia

Section Sets

SK-4

Mar 24, 2021

41124-13337501\_C9\_04-02-MOD.r3d



Loads: LC 1, DISPLAY (1.0D + 1.0W\_0)  
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SN

41124-13337501\_C9\_04-02-MOD

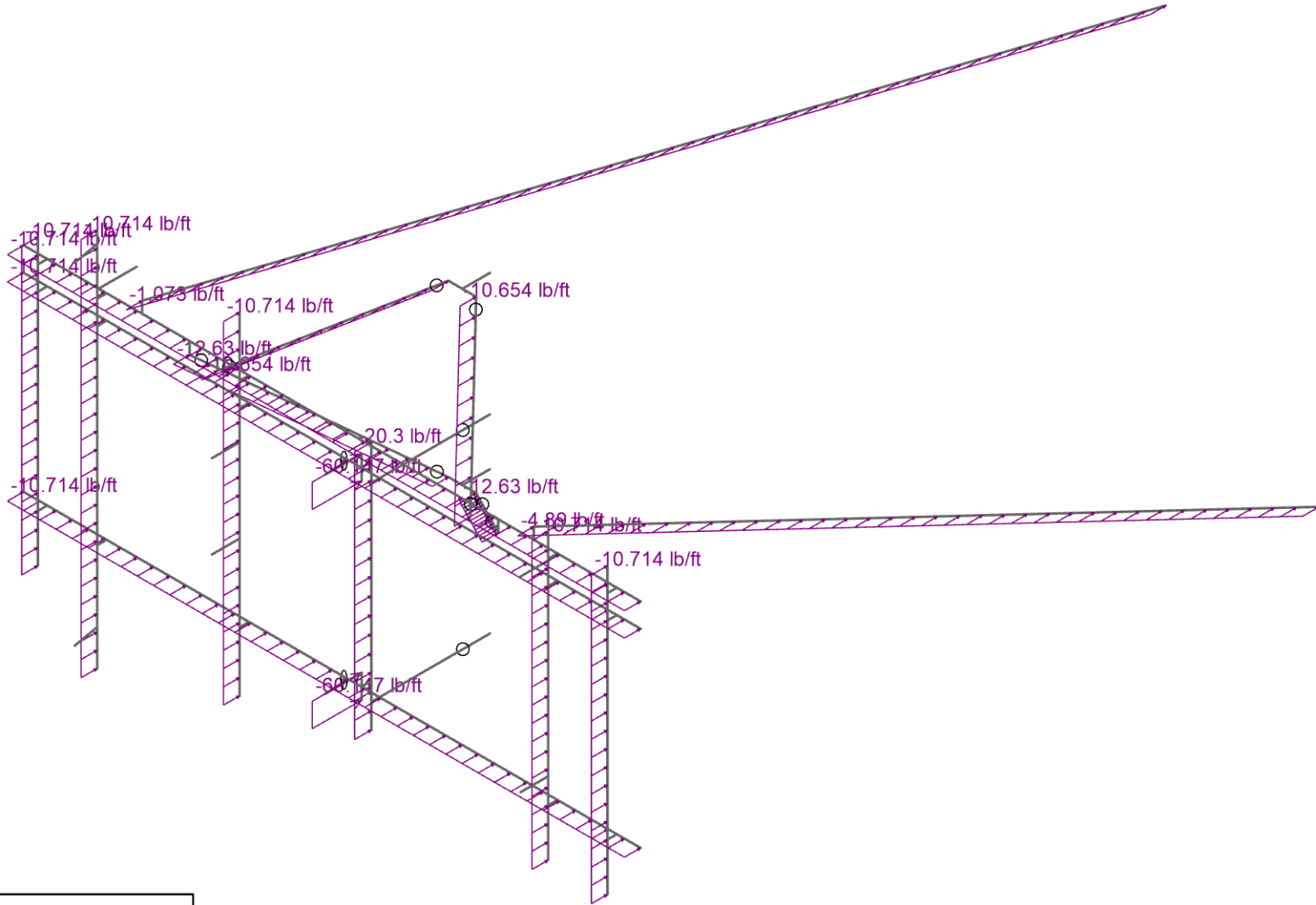
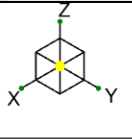
41124-13337501\_C9\_04-Tartaglia

Joint Loads – Dead and Normal Wind

SK-5

Mar 24, 2021

41124-13337501\_C9\_04-02-MOD.r3d



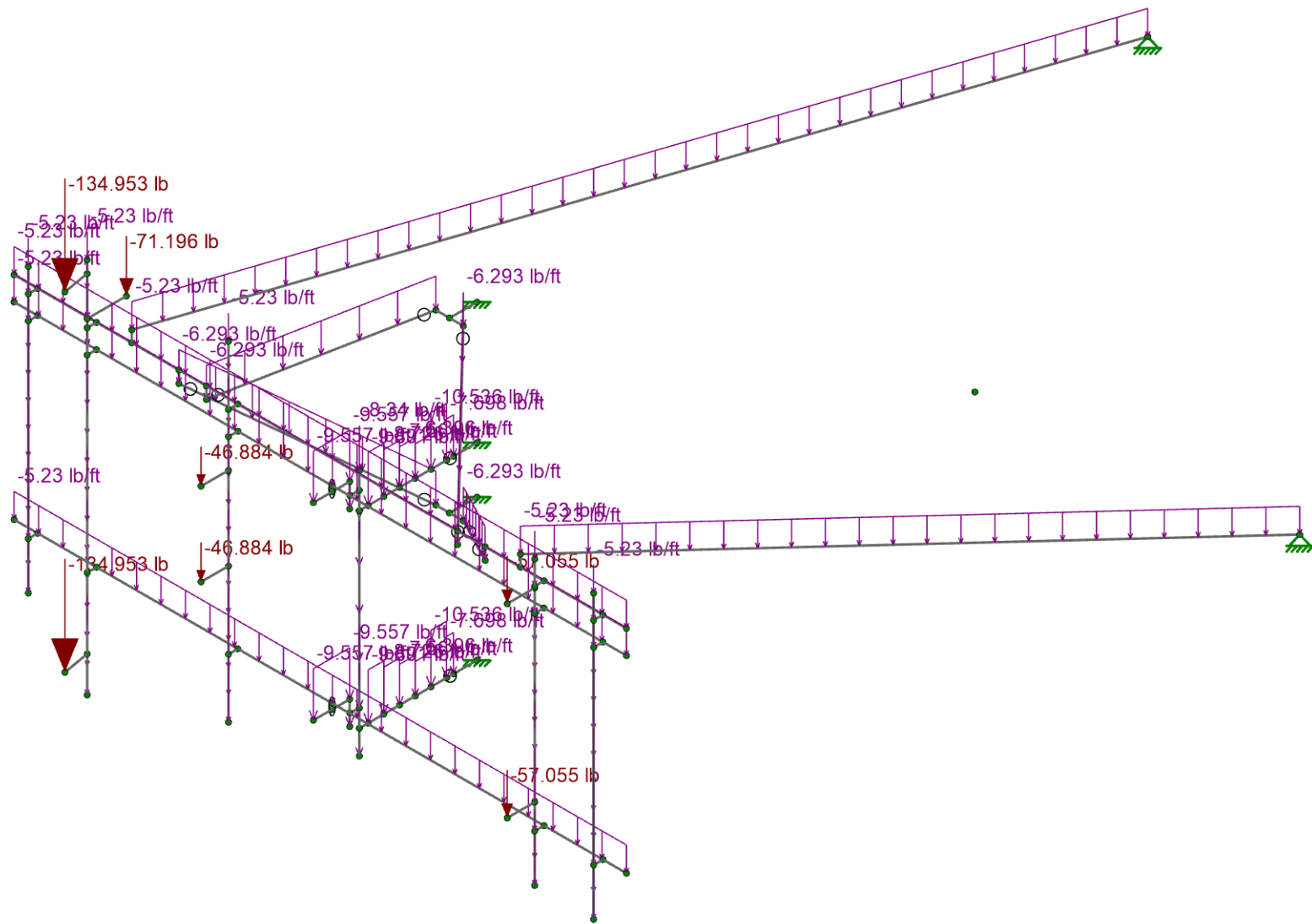
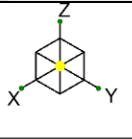
Loads: BLC 5, Structure Wind 0  
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SN
41124-13337501_C9_04-02-MOD

41124-13337501_C9_04-Tartaglia
Distributed Load – Normal Wind

SK-6
Mar 24, 2021
41124-13337501_C9_04-02-MOD.r3d





Loads: BLC 2, Ice Dead  
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SN

41124-13337501\_C9\_04-02-MOD

41124-13337501\_C9\_04-Tartaglia

Ice Dead Loads

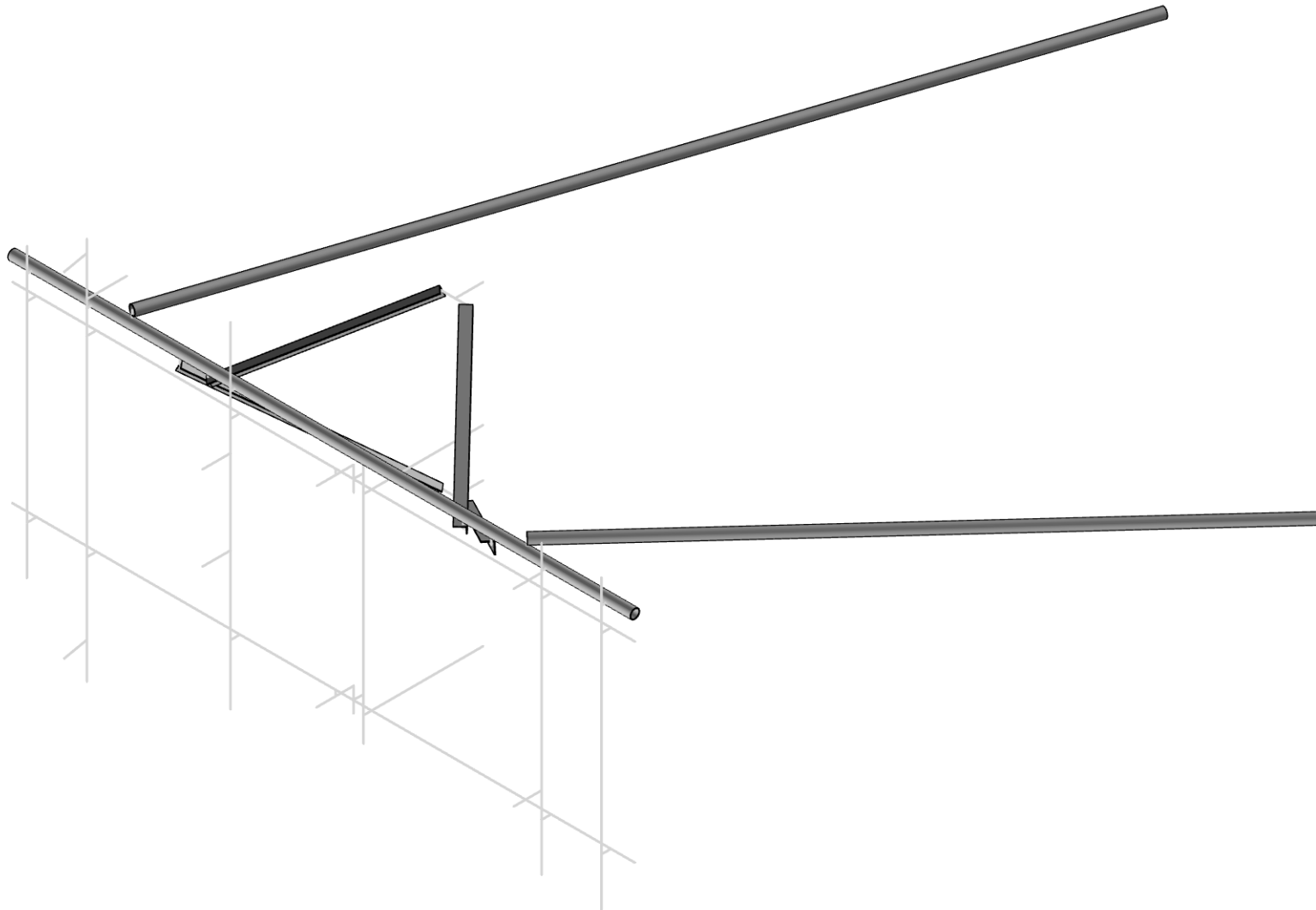
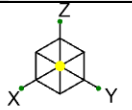
SK-7

Mar 24, 2021

41124-13337501\_C9\_04-02-MOD.r3d







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SN

41124-13337501\_C9\_04-02-MOD

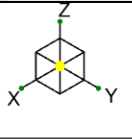
41124-13337501\_C9\_04-Tartaglia

Proposed Modification - Rendered

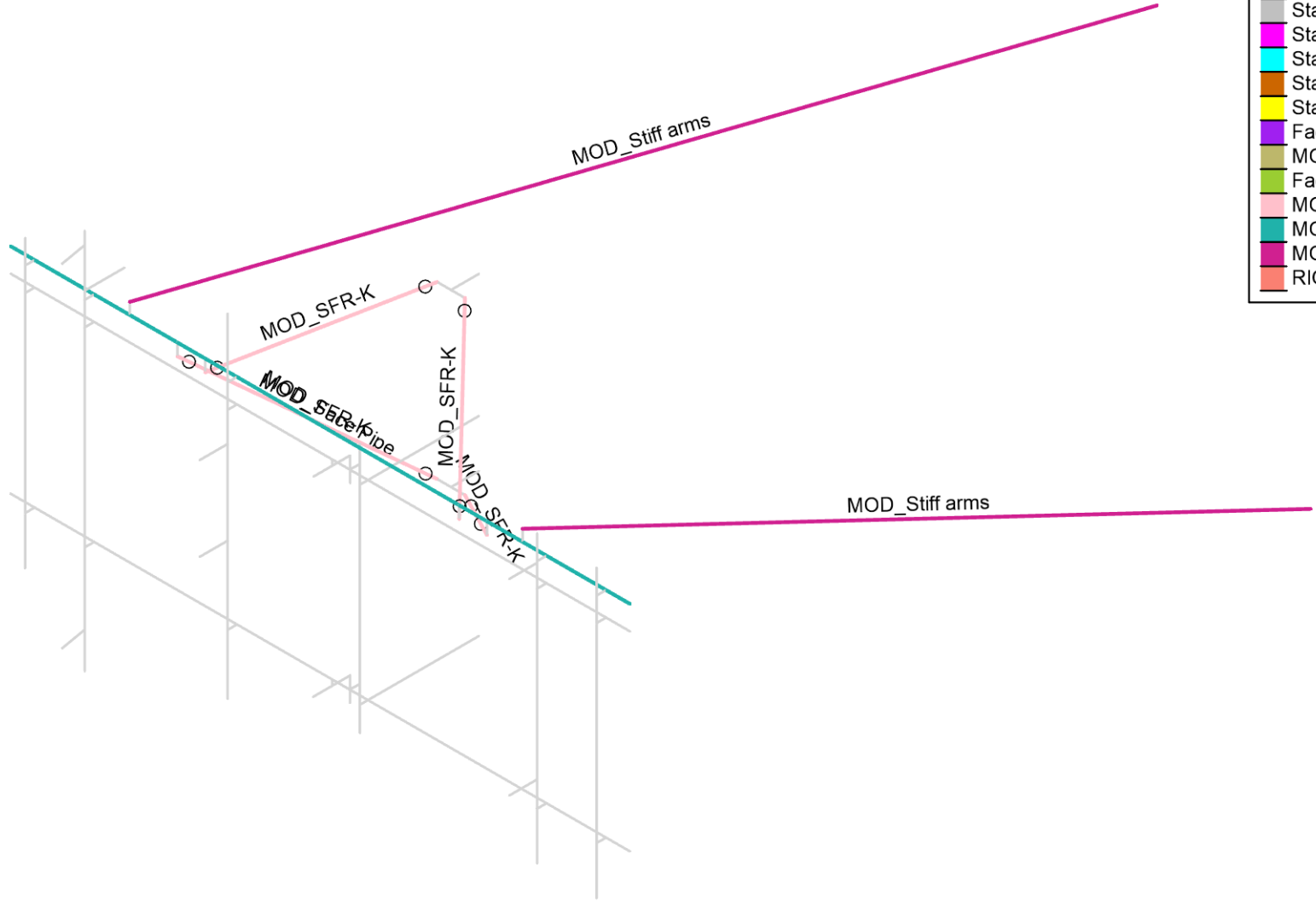
SK-10

Mar 24, 2021

41124-13337501\_C9\_04-02-MOD.r3d



Section Sets	
na	na
Standoff Plate	Standoff Plate
Standoff T-5	Standoff T-5
Standoff T-4	Standoff T-4
Standoff T-3	Standoff T-3
Standoff T-2	Standoff T-2
Standoff T-1	Standoff T-1
Standoff Pipe	Standoff Pipe
Face Horizontal	Face Horizontal
MOUNT_PIPE_2.0	MOUNT_PIPE_2.0
Face Connection	Face Connection
MOD_SFR-K	MOD_SFR-K
MOD_Face Pipe	MOD_Face Pipe
MOD_Stiff arms	MOD_Stiff arms
RIGID	RIGID



Envelope Only Solution

Telamon CLS	41124-13337501_C9_04-Tartaglia	SK-11
SN		Mar 24, 2021
41124-13337501_C9_04-02-MOD	Proposed Modification - Section Sets	41124-13337501_C9_04-02-MOD.r3d

**Basic Load Cases**

	BLC Description	Category	Z Gravity	Nodal	Distributed
1	Dead	DL	-1	8	
2	Ice Dead	RL		8	31
5	Structure Wind 0°	None			17
6	Structure Wind 30°	None			62
7	Structure Wind 45°	None			62
8	Structure Wind 60°	None			62
9	Structure Wind 90°	None			28
10	Structure Wind 120°	None			62
11	Structure Wind 135°	None			62
12	Structure Wind 150°	None			62
13	Structure Wind 180°	None			17
14	Structure Wind 210°	None			62
15	Structure Wind 225°	None			62
16	Structure Wind 240°	None			62
17	Structure Wind 270°	None			28
18	Structure Wind 300°	None			62
19	Structure Wind 315°	None			62
20	Structure Wind 330°	None			62
21	Structure Wind w/ Ice 0°	None			17
22	Structure Wind w/ Ice 30°	None			62
23	Structure Wind w/ Ice 45°	None			62
24	Structure Wind w/ Ice 60°	None			62
25	Structure Wind w/ Ice 90°	None			28
26	Structure Wind w/ Ice 120°	None			62
27	Structure Wind w/ Ice 135°	None			62
28	Structure Wind w/ Ice 150°	None			62
29	Structure Wind w/ Ice 180°	None			17
30	Structure Wind w/ Ice 210°	None			62
31	Structure Wind w/ Ice 225°	None			62
32	Structure Wind w/ Ice 240°	None			62
33	Structure Wind w/ Ice 270°	None			28
34	Structure Wind w/ Ice 300°	None			62
35	Structure Wind w/ Ice 315°	None			62
36	Structure Wind w/ Ice 330°	None			62
37	Antenna Wind 0°	None		8	
38	Antenna Wind 30°	None		16	
39	Antenna Wind 45°	None		16	
40	Antenna Wind 60°	None		16	
41	Antenna Wind 90°	None		8	
42	Antenna Wind 120°	None		16	
43	Antenna Wind 135°	None		16	
44	Antenna Wind 150°	None		16	
45	Antenna Wind 180°	None		8	
46	Antenna Wind 210°	None		16	
47	Antenna Wind 225°	None		16	
48	Antenna Wind 240°	None		16	
49	Antenna Wind 270°	None		8	
50	Antenna Wind 300°	None		16	
51	Antenna Wind 315°	None		16	
52	Antenna Wind 330°	None		16	
53	Antenna Wind w/ Ice 0°	None		8	
54	Antenna Wind w/ Ice 30°	None		16	
55	Antenna Wind w/ Ice 45°	None		16	
56	Antenna Wind w/ Ice 60°	None		16	
57	Antenna Wind w/ Ice 90°	None		8	
58	Antenna Wind w/ Ice 120°	None		16	
59	Antenna Wind w/ Ice 135°	None		16	
60	Antenna Wind w/ Ice 150°	None		16	



**Basic Load Cases (Continued)**

	BLC Description	Category	Z Gravity	Nodal	Distributed
61	Antenna Wind w/ Ice 180°	None		8	
62	Antenna Wind w/ Ice 210°	None		16	
63	Antenna Wind w/ Ice 225°	None		16	
64	Antenna Wind w/ Ice 240°	None		16	
65	Antenna Wind w/ Ice 270°	None		8	
66	Antenna Wind w/ Ice 300°	None		16	
67	Antenna Wind w/ Ice 315°	None		16	
68	Antenna Wind w/ Ice 330°	None		16	
69	Seismic X	ELX		8	31
70	Seismic Y	ELY		8	31
71	Seismic Z	ELZ		8	31
72	Maintenance Live 500 (1)	OL1		1	
73	Maintenance Live 500 (2)	OL2		1	
74	Maintenance Live 500 (3)	OL3		1	
75	Maintenance Live 500 (4)	OL4		1	
76	Maintenance Live 500 (5)	OL5		1	

**Load Combinations**

	Description	Solve	PDelta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	DISPLAY (1.0D + 1.0W 0°)	Yes	Y	DL	1	37	1				
2	1.4D	Yes	Y	DL	1.4						
3	1.2D + 1.0W 0°	Yes	Y	DL	1.2	5	1	37	1		
4	1.2D + 1.0W 30°	Yes	Y	DL	1.2	6	1	38	1		
5	1.2D + 1.0W 45°	Yes	Y	DL	1.2	7	1	39	1		
6	1.2D + 1.0W 60°	Yes	Y	DL	1.2	8	1	40	1		
7	1.2D + 1.0W 90°	Yes	Y	DL	1.2	9	1	41	1		
8	1.2D + 1.0W 120°	Yes	Y	DL	1.2	10	1	42	1		
9	1.2D + 1.0W 135°	Yes	Y	DL	1.2	11	1	43	1		
10	1.2D + 1.0W 150°	Yes	Y	DL	1.2	12	1	44	1		
11	1.2D + 1.0W 180°	Yes	Y	DL	1.2	13	-1	45	-1		
12	1.2D + 1.0W 210°	Yes	Y	DL	1.2	14	-1	46	-1		
13	1.2D + 1.0W 225°	Yes	Y	DL	1.2	15	-1	47	-1		
14	1.2D + 1.0W 240°	Yes	Y	DL	1.2	16	-1	48	-1		
15	1.2D + 1.0W 270°	Yes	Y	DL	1.2	17	-1	49	-1		
16	1.2D + 1.0W 300°	Yes	Y	DL	1.2	18	-1	50	-1		
17	1.2D + 1.0W 315°	Yes	Y	DL	1.2	19	-1	51	-1		
18	1.2D + 1.0W 330°	Yes	Y	DL	1.2	20	-1	52	-1		
19	1.2D + 1.0Di + 1.0Wi 0°	Yes	Y	DL	1.2	21	1	53	1	RL	1
20	1.2D + 1.0Di + 1.0Wi 30°	Yes	Y	DL	1.2	22	1	54	1	RL	1
21	1.2D + 1.0Di + 1.0Wi 45°	Yes	Y	DL	1.2	23	1	55	1	RL	1
22	1.2D + 1.0Di + 1.0Wi 60°	Yes	Y	DL	1.2	24	1	56	1	RL	1
23	1.2D + 1.0Di + 1.0Wi 90°	Yes	Y	DL	1.2	25	1	57	1	RL	1
24	1.2D + 1.0Di + 1.0Wi 120°	Yes	Y	DL	1.2	26	1	58	1	RL	1
25	1.2D + 1.0Di + 1.0Wi 135°	Yes	Y	DL	1.2	27	1	59	1	RL	1
26	1.2D + 1.0Di + 1.0Wi 150°	Yes	Y	DL	1.2	28	1	60	1	RL	1
27	1.2D + 1.0Di + 1.0Wi 180°	Yes	Y	DL	1.2	29	-1	61	-1	RL	1
28	1.2D + 1.0Di + 1.0Wi 210°	Yes	Y	DL	1.2	30	-1	62	-1	RL	1
29	1.2D + 1.0Di + 1.0Wi 225°	Yes	Y	DL	1.2	31	-1	63	-1	RL	1
30	1.2D + 1.0Di + 1.0Wi 240°	Yes	Y	DL	1.2	32	-1	64	-1	RL	1
31	1.2D + 1.0Di + 1.0Wi 270°	Yes	Y	DL	1.2	33	-1	65	-1	RL	1
32	1.2D + 1.0Di + 1.0Wi 300°	Yes	Y	DL	1.2	34	-1	66	-1	RL	1
33	1.2D + 1.0Di + 1.0Wi 315°	Yes	Y	DL	1.2	35	-1	67	-1	RL	1
34	1.2D + 1.0Di + 1.0Wi 330°	Yes	Y	DL	1.2	36	-1	68	-1	RL	1
35	1.2D + 1.0Ev + 1.0Eh 0°	Yes	Y	DL	1.245	ELX	-1	ELY			
36	1.2D + 1.0Ev + 1.0Eh 30°	Yes	Y	DL	1.245	ELX	-0.866	ELY	0.5		
37	1.2D + 1.0Ev + 1.0Eh 45°	Yes	Y	DL	1.245	ELX	-0.707	ELY	0.707		
38	1.2D + 1.0Ev + 1.0Eh 60°	Yes	Y	DL	1.245	ELX	-0.5	ELY	0.866		
39	1.2D + 1.0Ev + 1.0Eh 90°	Yes	Y	DL	1.245	ELX		ELY	1		

**Load Combinations (Continued)**

	Description	Solve	PDelta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
40	1.2D + 1.0Ev + 1.0Eh 120°	Yes	Y	DL	1.245	ELX	0.5	ELY	0.866		
41	1.2D + 1.0Ev + 1.0Eh 135°	Yes	Y	DL	1.245	ELX	0.707	ELY	0.707		
42	1.2D + 1.0Ev + 1.0Eh 150°	Yes	Y	DL	1.245	ELX	0.866	ELY	0.5		
43	1.2D + 1.0Ev + 1.0Eh 180°	Yes	Y	DL	1.245	ELX	1	ELY			
44	1.2D + 1.0Ev + 1.0Eh 210°	Yes	Y	DL	1.245	ELX	0.866	ELY	-0.5		
45	1.2D + 1.0Ev + 1.0Eh 225°	Yes	Y	DL	1.245	ELX	0.707	ELY	-0.707		
46	1.2D + 1.0Ev + 1.0Eh 240°	Yes	Y	DL	1.245	ELX	0.5	ELY	-0.866		
47	1.2D + 1.0Ev + 1.0Eh 270°	Yes	Y	DL	1.245	ELX		ELY	-1		
48	1.2D + 1.0Ev + 1.0Eh 300°	Yes	Y	DL	1.245	ELX	-0.5	ELY	-0.866		
49	1.2D + 1.0Ev + 1.0Eh 315°	Yes	Y	DL	1.245	ELX	-0.707	ELY	-0.707		
50	1.2D + 1.0Ev + 1.0Eh 330°	Yes	Y	DL	1.245	ELX	-0.866	ELY	-0.5		
51	0.9D - 1.0Ev + 1.0Eh 0°	Yes	Y	DL	0.855	ELX	-1	ELY			
52	0.9D - 1.0Ev + 1.0Eh 30°	Yes	Y	DL	0.855	ELX	-0.866	ELY	0.5		
53	0.9D - 1.0Ev + 1.0Eh 45°	Yes	Y	DL	0.855	ELX	-0.707	ELY	0.707		
54	0.9D - 1.0Ev + 1.0Eh 60°	Yes	Y	DL	0.855	ELX	-0.5	ELY	0.866		
55	0.9D - 1.0Ev + 1.0Eh 90°	Yes	Y	DL	0.855	ELX		ELY	1		
56	0.9D - 1.0Ev + 1.0Eh 120°	Yes	Y	DL	0.855	ELX	0.5	ELY	0.866		
57	0.9D - 1.0Ev + 1.0Eh 135°	Yes	Y	DL	0.855	ELX	0.707	ELY	0.707		
58	0.9D - 1.0Ev + 1.0Eh 150°	Yes	Y	DL	0.855	ELX	0.866	ELY	0.5		
59	0.9D - 1.0Ev + 1.0Eh 180°	Yes	Y	DL	0.855	ELX	1	ELY			
60	0.9D - 1.0Ev + 1.0Eh 210°	Yes	Y	DL	0.855	ELX	0.866	ELY	-0.5		
61	0.9D - 1.0Ev + 1.0Eh 225°	Yes	Y	DL	0.855	ELX	0.707	ELY	-0.707		
62	0.9D - 1.0Ev + 1.0Eh 240°	Yes	Y	DL	0.855	ELX	0.5	ELY	-0.866		
63	0.9D - 1.0Ev + 1.0Eh 270°	Yes	Y	DL	0.855	ELX		ELY	-1		
64	0.9D - 1.0Ev + 1.0Eh 300°	Yes	Y	DL	0.855	ELX	-0.5	ELY	-0.866		
65	0.9D - 1.0Ev + 1.0Eh 315°	Yes	Y	DL	0.855	ELX	-0.707	ELY	-0.707		
66	0.9D - 1.0Ev + 1.0Eh 330°	Yes	Y	DL	0.855	ELX	-0.866	ELY	-0.5		
67	1.2D + 1.5Lm 1 + 1.0Wm 0°	Yes	Y	DL	1.2	5	0.067	37	0.067	OL1	1.5
68	1.2D + 1.5Lm 1 + 1.0Wm 30°	Yes	Y	DL	1.2	6	0.067	38	0.067	OL1	1.5
69	1.2D + 1.5Lm 1 + 1.0Wm 45°	Yes	Y	DL	1.2	7	0.067	39	0.067	OL1	1.5
70	1.2D + 1.5Lm 1 + 1.0Wm 60°	Yes	Y	DL	1.2	8	0.067	40	0.067	OL1	1.5
71	1.2D + 1.5Lm 1 + 1.0Wm 90°	Yes	Y	DL	1.2	9	0.067	41	0.067	OL1	1.5
72	1.2D + 1.5Lm 1 + 1.0Wm 120°	Yes	Y	DL	1.2	10	0.067	42	0.067	OL1	1.5
73	1.2D + 1.5Lm 1 + 1.0Wm 135°	Yes	Y	DL	1.2	11	0.067	43	0.067	OL1	1.5
74	1.2D + 1.5Lm 1 + 1.0Wm 150°	Yes	Y	DL	1.2	12	0.067	44	0.067	OL1	1.5
75	1.2D + 1.5Lm 1 + 1.0Wm 180°	Yes	Y	DL	1.2	13	-0.067	45	-0.067	OL1	1.5
76	1.2D + 1.5Lm 1 + 1.0Wm 210°	Yes	Y	DL	1.2	14	-0.067	46	-0.067	OL1	1.5
77	1.2D + 1.5Lm 1 + 1.0Wm 225°	Yes	Y	DL	1.2	15	-0.067	47	-0.067	OL1	1.5
78	1.2D + 1.5Lm 1 + 1.0Wm 240°	Yes	Y	DL	1.2	16	-0.067	48	-0.067	OL1	1.5
79	1.2D + 1.5Lm 1 + 1.0Wm 270°	Yes	Y	DL	1.2	17	-0.067	49	-0.067	OL1	1.5
80	1.2D + 1.5Lm 1 + 1.0Wm 300°	Yes	Y	DL	1.2	18	-0.067	50	-0.067	OL1	1.5
81	1.2D + 1.5Lm 1 + 1.0Wm 315°	Yes	Y	DL	1.2	19	-0.067	51	-0.067	OL1	1.5
82	1.2D + 1.5Lm 1 + 1.0Wm 330°	Yes	Y	DL	1.2	20	-0.067	52	-0.067	OL1	1.5
83	1.2D + 1.5Lm 2 + 1.0Wm 0°	Yes	Y	DL	1.2	5	0.067	37	0.067	OL2	1.5
84	1.2D + 1.5Lm 2 + 1.0Wm 30°	Yes	Y	DL	1.2	6	0.067	38	0.067	OL2	1.5
85	1.2D + 1.5Lm 2 + 1.0Wm 45°	Yes	Y	DL	1.2	7	0.067	39	0.067	OL2	1.5
86	1.2D + 1.5Lm 2 + 1.0Wm 60°	Yes	Y	DL	1.2	8	0.067	40	0.067	OL2	1.5
87	1.2D + 1.5Lm 2 + 1.0Wm 90°	Yes	Y	DL	1.2	9	0.067	41	0.067	OL2	1.5
88	1.2D + 1.5Lm 2 + 1.0Wm 120°	Yes	Y	DL	1.2	10	0.067	42	0.067	OL2	1.5
89	1.2D + 1.5Lm 2 + 1.0Wm 135°	Yes	Y	DL	1.2	11	0.067	43	0.067	OL2	1.5
90	1.2D + 1.5Lm 2 + 1.0Wm 150°	Yes	Y	DL	1.2	12	0.067	44	0.067	OL2	1.5
91	1.2D + 1.5Lm 2 + 1.0Wm 180°	Yes	Y	DL	1.2	13	-0.067	45	-0.067	OL2	1.5
92	1.2D + 1.5Lm 2 + 1.0Wm 210°	Yes	Y	DL	1.2	14	-0.067	46	-0.067	OL2	1.5
93	1.2D + 1.5Lm 2 + 1.0Wm 225°	Yes	Y	DL	1.2	15	-0.067	47	-0.067	OL2	1.5
94	1.2D + 1.5Lm 2 + 1.0Wm 240°	Yes	Y	DL	1.2	16	-0.067	48	-0.067	OL2	1.5
95	1.2D + 1.5Lm 2 + 1.0Wm 270°	Yes	Y	DL	1.2	17	-0.067	49	-0.067	OL2	1.5
96	1.2D + 1.5Lm 2 + 1.0Wm 300°	Yes	Y	DL	1.2	18	-0.067	50	-0.067	OL2	1.5
97	1.2D + 1.5Lm 2 + 1.0Wm 315°	Yes	Y	DL	1.2	19	-0.067	51	-0.067	OL2	1.5

**Load Combinations (Continued)**

	Description	Solve	PDelta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
98	1.2D + 1.5Lm 2 + 1.0Wm 330°	Yes	Y	DL	1.2	20	-0.067	52	-0.067	OL2	1.5
99	1.2D + 1.5Lm 3 + 1.0Wm 0°	Yes	Y	DL	1.2	5	0.067	37	0.067	OL3	1.5
100	1.2D + 1.5Lm 3 + 1.0Wm 30°	Yes	Y	DL	1.2	6	0.067	38	0.067	OL3	1.5
101	1.2D + 1.5Lm 3 + 1.0Wm 45°	Yes	Y	DL	1.2	7	0.067	39	0.067	OL3	1.5
102	1.2D + 1.5Lm 3 + 1.0Wm 60°	Yes	Y	DL	1.2	8	0.067	40	0.067	OL3	1.5
103	1.2D + 1.5Lm 3 + 1.0Wm 90°	Yes	Y	DL	1.2	9	0.067	41	0.067	OL3	1.5
104	1.2D + 1.5Lm 3 + 1.0Wm 120°	Yes	Y	DL	1.2	10	0.067	42	0.067	OL3	1.5
105	1.2D + 1.5Lm 3 + 1.0Wm 135°	Yes	Y	DL	1.2	11	0.067	43	0.067	OL3	1.5
106	1.2D + 1.5Lm 3 + 1.0Wm 150°	Yes	Y	DL	1.2	12	0.067	44	0.067	OL3	1.5
107	1.2D + 1.5Lm 3 + 1.0Wm 180°	Yes	Y	DL	1.2	13	-0.067	45	-0.067	OL3	1.5
108	1.2D + 1.5Lm 3 + 1.0Wm 210°	Yes	Y	DL	1.2	14	-0.067	46	-0.067	OL3	1.5
109	1.2D + 1.5Lm 3 + 1.0Wm 225°	Yes	Y	DL	1.2	15	-0.067	47	-0.067	OL3	1.5
110	1.2D + 1.5Lm 3 + 1.0Wm 240°	Yes	Y	DL	1.2	16	-0.067	48	-0.067	OL3	1.5
111	1.2D + 1.5Lm 3 + 1.0Wm 270°	Yes	Y	DL	1.2	17	-0.067	49	-0.067	OL3	1.5
112	1.2D + 1.5Lm 3 + 1.0Wm 300°	Yes	Y	DL	1.2	18	-0.067	50	-0.067	OL3	1.5
113	1.2D + 1.5Lm 3 + 1.0Wm 315°	Yes	Y	DL	1.2	19	-0.067	51	-0.067	OL3	1.5
114	1.2D + 1.5Lm 3 + 1.0Wm 330°	Yes	Y	DL	1.2	20	-0.067	52	-0.067	OL3	1.5
115	1.2D + 1.5Lm 4 + 1.0Wm 0°	Yes	Y	DL	1.2	5	0.067	37	0.067	OL4	1.5
116	1.2D + 1.5Lm 4 + 1.0Wm 30°	Yes	Y	DL	1.2	6	0.067	38	0.067	OL4	1.5
117	1.2D + 1.5Lm 4 + 1.0Wm 45°	Yes	Y	DL	1.2	7	0.067	39	0.067	OL4	1.5
118	1.2D + 1.5Lm 4 + 1.0Wm 60°	Yes	Y	DL	1.2	8	0.067	40	0.067	OL4	1.5
119	1.2D + 1.5Lm 4 + 1.0Wm 90°	Yes	Y	DL	1.2	9	0.067	41	0.067	OL4	1.5
120	1.2D + 1.5Lm 4 + 1.0Wm 120°	Yes	Y	DL	1.2	10	0.067	42	0.067	OL4	1.5
121	1.2D + 1.5Lm 4 + 1.0Wm 135°	Yes	Y	DL	1.2	11	0.067	43	0.067	OL4	1.5
122	1.2D + 1.5Lm 4 + 1.0Wm 150°	Yes	Y	DL	1.2	12	0.067	44	0.067	OL4	1.5
123	1.2D + 1.5Lm 4 + 1.0Wm 180°	Yes	Y	DL	1.2	13	-0.067	45	-0.067	OL4	1.5
124	1.2D + 1.5Lm 4 + 1.0Wm 210°	Yes	Y	DL	1.2	14	-0.067	46	-0.067	OL4	1.5
125	1.2D + 1.5Lm 4 + 1.0Wm 225°	Yes	Y	DL	1.2	15	-0.067	47	-0.067	OL4	1.5
126	1.2D + 1.5Lm 4 + 1.0Wm 240°	Yes	Y	DL	1.2	16	-0.067	48	-0.067	OL4	1.5
127	1.2D + 1.5Lm 4 + 1.0Wm 270°	Yes	Y	DL	1.2	17	-0.067	49	-0.067	OL4	1.5
128	1.2D + 1.5Lm 4 + 1.0Wm 300°	Yes	Y	DL	1.2	18	-0.067	50	-0.067	OL4	1.5
129	1.2D + 1.5Lm 4 + 1.0Wm 315°	Yes	Y	DL	1.2	19	-0.067	51	-0.067	OL4	1.5
130	1.2D + 1.5Lm 4 + 1.0Wm 330°	Yes	Y	DL	1.2	20	-0.067	52	-0.067	OL4	1.5
131	1.2D + 1.5Lm 5 + 1.0Wm 0°	Yes	Y	DL	1.2	5	0.067	37	0.067	OL5	1.5
132	1.2D + 1.5Lm 5 + 1.0Wm 30°	Yes	Y	DL	1.2	6	0.067	38	0.067	OL5	1.5
133	1.2D + 1.5Lm 5 + 1.0Wm 45°	Yes	Y	DL	1.2	7	0.067	39	0.067	OL5	1.5
134	1.2D + 1.5Lm 5 + 1.0Wm 60°	Yes	Y	DL	1.2	8	0.067	40	0.067	OL5	1.5
135	1.2D + 1.5Lm 5 + 1.0Wm 90°	Yes	Y	DL	1.2	9	0.067	41	0.067	OL5	1.5
136	1.2D + 1.5Lm 5 + 1.0Wm 120°	Yes	Y	DL	1.2	10	0.067	42	0.067	OL5	1.5
137	1.2D + 1.5Lm 5 + 1.0Wm 135°	Yes	Y	DL	1.2	11	0.067	43	0.067	OL5	1.5
138	1.2D + 1.5Lm 5 + 1.0Wm 150°	Yes	Y	DL	1.2	12	0.067	44	0.067	OL5	1.5
139	1.2D + 1.5Lm 5 + 1.0Wm 180°	Yes	Y	DL	1.2	13	-0.067	45	-0.067	OL5	1.5
140	1.2D + 1.5Lm 5 + 1.0Wm 210°	Yes	Y	DL	1.2	14	-0.067	46	-0.067	OL5	1.5
141	1.2D + 1.5Lm 5 + 1.0Wm 225°	Yes	Y	DL	1.2	15	-0.067	47	-0.067	OL5	1.5
142	1.2D + 1.5Lm 5 + 1.0Wm 240°	Yes	Y	DL	1.2	16	-0.067	48	-0.067	OL5	1.5
143	1.2D + 1.5Lm 5 + 1.0Wm 270°	Yes	Y	DL	1.2	17	-0.067	49	-0.067	OL5	1.5
144	1.2D + 1.5Lm 5 + 1.0Wm 300°	Yes	Y	DL	1.2	18	-0.067	50	-0.067	OL5	1.5
145	1.2D + 1.5Lm 5 + 1.0Wm 315°	Yes	Y	DL	1.2	19	-0.067	51	-0.067	OL5	1.5
146	1.2D + 1.5Lm 5 + 1.0Wm 330°	Yes	Y	DL	1.2	20	-0.067	52	-0.067	OL5	1.5

**Hot Rolled Steel Properties**

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e <sup>5</sup> F <sup>-1</sup> ]	Density [k/ft <sup>3</sup> ]	Yield [ksi]	Ry	Fu [ksi]	Rt
1	A36 Gr.36	29000	11154	0.3	0.65	0.49	36	1.5	58	1.2
2	A572 Gr.50	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
3	A992	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	0.3	0.65	0.527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	0.3	0.65	0.527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	0.3	0.65	0.49	35	1.6	60	1.2

**Hot Rolled Steel Properties (Continued)**

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e <sup>5</sup> F <sup>-1</sup> ]	Density [k/ft <sup>3</sup> ]	Yield [ksi]	Ry	Fu [ksi]	Rt
7	A1085	29000	11154	0.3	0.65	0.49	50	1.4	65	1.3

**Hot Rolled Steel Section Sets**

	Label	Shape	Type	Design List	Material	Design Rule	Area [in <sup>2</sup> ]	Iyy [in <sup>4</sup> ]	Izz [in <sup>4</sup> ]	J [in <sup>4</sup> ]
1	Standoff Plate	0.38 X 6 Plate	Beam	RECT	A36 Gr.36	Typical	2.28	0.027	6.84	0.105
2	Standoff T-5	WT 5	Beam	W Tee	A36 Gr.36	Typical	2.484	6.753	0.087	0.117
3	Standoff T-4	WT 4	Beam	W Tee	A36 Gr.36	Typical	2.953	6.758	0.91	0.139
4	Standoff T-3	WT 3	Beam	W Tee	A36 Gr.36	Typical	3.422	6.764	3.34	0.161
5	Standoff T-2	WT 2	Beam	W Tee	A36 Gr.36	Typical	3.891	6.769	7.995	0.183
6	Standoff T-1	WT 1	Beam	W Tee	A36 Gr.36	Typical	4.359	6.775	15.387	0.205
7	Standoff Pipe	PIPE 4.0	Column	Pipe	A53 Gr.B	Typical	2.96	6.82	6.82	13.6
8	Face Horizontal	PIPE 2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	0.627	0.627	1.25
9	Stiff Arm	PIPE 1.5	Beam	Pipe	A53 Gr.B	Typical	0.749	0.293	0.293	0.586
10	MOUNT_PIPE_2.0	PIPE 2.0	None	None	A53 Gr.B	Typical	1.02	0.627	0.627	1.25
11	Face Connection	PL 8x.375	Beam	None	A36 Gr.36	Typical	3	0.035	16	0.136
12	MOD_SFR-K	L2.5x2.5x3	Beam	None	A36 Gr.36	Typical	0.901	0.535	0.535	0.011
13	MOD_Face Pipe	PIPE 2.0	Beam	HSS Pipe	A53 Gr.B	Typical	1.02	0.627	0.627	1.25
14	MOD_Stiff arms	PIPE 2.0	Beam	HSS Pipe	A53 Gr.B	Typical	1.02	0.627	0.627	1.25

**Hot Rolled Steel Design Parameters**

	Label	Shape	Length [in]	Lb y-y [in]	Lb z-z [in]	Function
1	M2	Standoff T-1	4			Lateral
2	M3	Standoff T-2	4			Lateral
3	M4	Standoff T-3	4			Lateral
4	M5	Standoff T-4	4			Lateral
5	M6	Standoff T-5	4			Lateral
6	M7	Standoff Plate	1.75			Lateral
7	M18	Standoff T-1	4			Lateral
8	M19	Standoff T-2	4			Lateral
9	M20	Standoff T-3	4			Lateral
10	M21	Standoff T-4	4			Lateral
11	M22	Standoff T-5	4			Lateral
12	M23	Standoff Plate	1.75			Lateral
13	M30	Standoff Pipe	63			Lateral
14	M18A	Face Horizontal	156	81	78	Lateral
15	M19A	Face Horizontal	156	81	78	Lateral
16	A_MP1_S	MOUNT_PIPE_2.0	72			Lateral
17	A_MP2_S	MOUNT_PIPE_2.0	72			Lateral
18	A_MP3_S	MOUNT_PIPE_2.0	84			Lateral
19	A_MP4_S	MOUNT_PIPE_2.0	96			Lateral
20	A_MP5_S	MOUNT_PIPE_2.0	72			Lateral
21	M48	Face Connection	9.25			Lateral
22	M49	Face Connection	6			Lateral
23	M51	Face Connection	6			Lateral
24	M56	Face Connection	9.25			Lateral
25	M61	MOD_SFR-K	45.495			Lateral
26	M62	MOD_SFR-K	45.495			Lateral
27	M69	MOD_SFR-K	52.276			Lateral
28	M70	MOD_SFR-K	52.276			Lateral
29	M72	MOD_Face Pipe	156	81	78	Lateral
30	M78	MOD_Stiff arms	204.559			Lateral
31	M79	MOD_Stiff arms	140.504			Lateral

**Member Advanced Data**

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
1	M1			Yes	** NA **	None
2	M2			Yes		None

**Member Advanced Data (Continued)**

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
3	M3			Yes		None
4	M4			Yes		None
5	M5			Yes		None
6	M6			Yes		None
7	M7		OOOXO	Yes		None
8	M17			Yes	** NA **	None
9	M18			Yes		None
10	M19			Yes		None
11	M20			Yes		None
12	M21			Yes		None
13	M22			Yes		None
14	M23		OOOXO	Yes		None
15	M30			Yes	** NA **	None
16	M18A			Yes		None
17	M19A			Yes		None
18	M42			Yes	** NA **	None
19	M43			Yes	** NA **	None
20	RI2			Yes	** NA **	None
21	RI1			Yes	** NA **	None
22	A MP1_S			Yes	** NA **	None
23	RI12			Yes	** NA **	None
24	RI11			Yes	** NA **	None
25	A MP2_S			Yes	** NA **	None
26	RI13			Yes	** NA **	None
27	RI14			Yes	** NA **	None
28	RI22			Yes	** NA **	None
29	RI21			Yes	** NA **	None
30	A MP3_S			Yes	** NA **	None
31	RI23			Yes	** NA **	None
32	RI24			Yes	** NA **	None
33	RI32			Yes	** NA **	None
34	RI31			Yes	** NA **	None
35	A MP4_S			Yes	** NA **	None
36	RI33			Yes	** NA **	None
37	RI35			Yes	** NA **	None
38	RI42			Yes	** NA **	None
39	RI41			Yes	** NA **	None
40	A MP5_S			Yes	** NA **	None
41	M47	OOOXOO		Yes	** NA **	None
42	M48			Yes	Default	None
43	M49			Yes	Default	None
44	M50			Yes	** NA **	None
45	M51			Yes	Default	None
46	M54			Yes	** NA **	None
47	M55	OOOXOO		Yes	** NA **	None
48	M56			Yes	Default	None
49	M57			Yes	** NA **	None
50	M58			Yes	** NA **	None
51	M64			Yes	** NA **	None
52	M65			Yes	** NA **	None
53	M59			Yes	** NA **	None
54	M60			Yes	** NA **	None
55	M66			Yes	** NA **	None
56	M61	BenPIN	BenPIN	Yes	Default	None
57	M67			Yes	** NA **	None
58	M62	BenPIN	BenPIN	Yes	Default	None
59	M68			Yes	** NA **	None
60	M69	BenPIN	BenPIN	Yes	Default	None

**Member Advanced Data (Continued)**

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
61	M70	BenPIN	BenPIN	Yes	Default	None
62	M63			Yes	** NA **	None
63	M71			Yes	** NA **	None
64	M72			Yes	Default	None
65	M73			Yes	** NA **	None
66	M74			Yes	** NA **	None
67	M75			Yes	** NA **	None
68	M76			Yes	** NA **	None
69	M77			Yes	** NA **	None
70	M78			Yes	Default	None
71	M79			Yes	Default	None

**Node Boundary Conditions**

	Node Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot [k-ft/rad]	Y Rot [k-ft/rad]	Z Rot [k-ft/rad]
1	TOWERLEG	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	N72A	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	N100	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
4	N110	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
5	N114	Reaction	Reaction	Reaction			
6	N115	Reaction	Reaction	Reaction			

**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	TOWERLEG	max	108.804	145	446.264	16	233.68	11	2.82	76	38.315	3	1229.068	17
2		min	-155.492	73	-510.028	8	-76.631	3	-2.821	132	-116.84	11	-1418.871	9
3	N72A	max	825.448	3	433.781	15	160.749	121	1.627	8	8.611	145	1196.616	16
4		min	-675.686	11	-502.613	7	-17.221	145	-1.31	16	-80.374	121	-1412.859	8
5	N110	max	1646.486	19	478.202	80	1356.204	34	93.669	81	-251.769	11	162.577	80
6		min	470.605	11	-1097.922	136	436.338	11	-215.997	137	-790.713	34	-371.661	136
7	N100	max	-432.296	63	1045.956	145	854.266	23	128.456	73	-165.716	63	290.896	145
8		min	-1286.303	23	-663.036	73	284.298	63	-202.983	145	-498.051	23	-184.889	73
9	N114	max	192.778	6	354.689	15	49.77	28	0	146	0	146	0	146
10		min	-368.136	14	-195.383	7	13.361	4	0	1	0	1	0	1
11	N115	max	987.558	18	399.067	11	67.601	27	0	146	0	146	0	146
12		min	-1224.08	10	-324.174	3	12.193	3	0	1	0	1	0	1
13	Totals:	max	2352.416	3	1779.63	16	2516.511	34						
14		min	-2352.424	11	-1779.63	8	882.781	57						

**Envelope AISC 15th (360-16): LRFD 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 z-z [lb-ft]	Cb	Eqn
1	M19A	PIPE 2.0	0.568	81.284	3	0.333	56.653		3	18606.359	32130	1871.625	1871.625	3	H1-1b
2	M78	PIPE 2.0	0.501	0	18	0.012	0		16	3385.097	32130	1871.625	1871.625	2.865	H1-1a
3	M72	PIPE 2.0	0.458	134.653	88	0.3	48.442		26	18606.359	32130	1871.625	1871.625	3	H1-1b
4	A_MP2_S	PIPE 2.0	0.371	6.063	72	0.21	6.063		81	20866.733	32130	1871.625	1871.625	2.762	H1-1b
5	A_MP4_S	PIPE 2.0	0.301	69.221	3	0.247	15.158		140	14916.096	32130	1871.625	1871.625	2.587	H1-1b
6	M22	WT 5	0.297	0	10	0.034	4	y	11	74400.121	80493.75	9171.827	491.438	1.065	H1-1b
7	M18A	PIPE 2.0	0.253	21.347	3	0.163	21.347		11	18606.359	32130	1871.625	1871.625	2.525	H1-1b
8	A_MP3_S	PIPE 2.0	0.218	68.968	3	0.294	68.968		11	17855.085	32130	1871.625	1871.625	1.606	H3-6
9	A_MP5_S	PIPE 2.0	0.206	12.126	3	0.104	12.126		11	20866.733	32130	1871.625	1871.625	1.792	H1-1b
10	M6	WT 5	0.189	0	80	0.022	4	y	121	74400.121	80493.75	9171.827	491.438	1.083	H1-1b
11	M51	PL 8x.375	0.167	3	3	0.33	3	y	8	82685.633	97200	759.375	16200	1.447	H1-1b
12	M23	0.38 X 6 Plate	0.164	0	9	0.018	1.75	y	8	72888.858	73872	584.82	9234	1.026	H1-1b
13	A_MP1_S	PIPE 2.0	0.158	12.126	71	0.042	12.126		4	20866.733	32130	1871.625	1871.625	1.786	H1-1b
14	M21	WT 4	0.152	0	10	0.016	4	y	11	88647.382	95681.25	9290.479	2191.42	1.077	H1-1b
15	M48	PL 8x.375	0.151	4.771	11	0.056	4.771	y	4	66181	97200	759.375	16200	3	H1-1b
16	M69	L2.5x2.5x3	0.148	26.413	138	0.026	52.276	y	11	15715.655	29192.4	872.574	1677.743	1.136	H2-1
17	M7	0.38 X 6 Plate	0.141	0	8	0.02	1.75	y	8	72888.858	73872	584.82	9234	1.025	H1-1b



**Envelope AISC 15th (360-16): LRFD Steel Code Checks (Continued)**

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 z-z [lb-ft]	Cb	Eqn	
18	M56	PL 8x.375	0.125	9.25	3	0.062	4.771	y	88	66181	97200	759.375	16200	3	H1-1b
19	M49	PL 8x.375	0.12	3	11	0.187	3	y	10	82685.633	97200	759.375	16200	1.629	H1-1b
20	M5	WT 4	0.12	4	8	0.013	4	z	8	88647.382	95681.25	9290.479	2191.42	1.072	H1-1b
21	M20	WT 3	0.108	4	9	0.011	4	z	9	100832.042	110868.75	9409.13	5317.783	1.094	H1-1b
22	M79	PIPE 2.0	0.103	73.95	9	0.007	0		17	7175.1	32130	1871.625	1871.625	1.199	H1-1b
23	M70	L2.5x2.5x3	0.101	25.863	81	0.014	52.276	y	12	15715.655	29192.4	872.574	1677.743	1.136	H2-1
24	M4	WT 3	0.096	4	8	0.013	4	z	8	100832.042	110868.75	9409.13	5317.783	1.086	H1-1b
25	M19	WT 2	0.084	4	9	0.011	4	z	9	109850.628	126056.25	9527.784	9699.147	1.093	H1-1b
26	M3	WT 2	0.076	4	8	0.012	4	z	8	109850.628	126056.25	9527.784	9699.147	1.086	H1-1b
27	M61	L2.5x2.5x3	0.07	22.748	17	0.017	45.495	y	10	18263.282	29192.4	872.574	1734.532	1.136	H2-1
28	M18	WT 1	0.062	4	9	0.011	4	z	9	114906.515	141243.75	9646.436	15242.321	1.073	H1-1b
29	M2	WT 1	0.058	4	8	0.012	4	z	8	114906.515	141243.75	9646.436	15242.321	1.065	H1-1b
30	M62	L2.5x2.5x3	0.052	22.748	6	0.01	45.495	y	13	18263.282	29192.4	872.574	1734.532	1.136	H2-1
31	M30	PIPE 4.0	0.047	52.058	11	0.046	56.7		10	85371.279	93240	10631.25	10631.25	1.886	H1-1b

# **BOLTED CONNECTION ROTATIONAL SLIP RESISTANCE** **AT M42 (MOUNT TO TOWER LEG CONNECTION)**

v. 2017.11.20

DESIGN LOADS	
Factored Moment, $M_u$ (lb-ft)	1418.871

BOLT PROPERTIES	
Bolt Type	Thru Bolts
# of Bolts	4
Hole Type	Standard
Bolt Grade	A307
Bolt Diameter, $d$ (in)	0.625
Leg Width, $W_{leg}$ (in)	8
Bolt Torque Override, $T$ (lb-ft)	50
Bolt Pretension Stress Override (ksi)	
Bolt Ultimate Strength, $F_u$ (ksi)	60
Specified Torque, $T$ (lb-ft)	50.00
Clamping Force per Bolt, $P_u$ (lb)	4800.00
Bolt Pretension Stress (ksi)	15.65
Tensile Strength per Bolt, $\phi P_n$ (lb)	10354.37
Slip Resistance per Bolt, $\phi M_n$ (lb-ft)	1084.80
Total Slip Resistance, $\phi M_n$ (lb-ft)	4339.20
Connection Slip Usage, $M_u / \phi M_n$	<b>0.33</b>

FACTORS	
Nut Factor, $K$	0.20
$\phi_{(BOLT\ TENSION)}$	0.75
$\phi_{(SLIP-CRITICAL)}$	1.00
Mean Slip Coefficient, $\mu$	0.30
Installed Pretension Ratio, $D_u$	1.13

Rule-of-thumb estimate  
 AISC 15th, J3.6  
 AISC 15th, J3.8  
 AISC 15th, J3.8  
 AISC 15th, J3.8

Using Torque Override



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CORPORATION

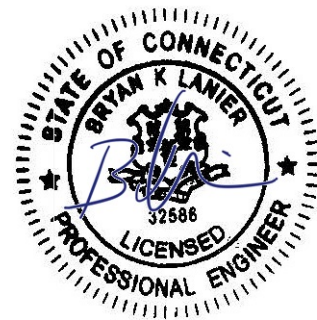
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## Structural Analysis Report

**Structure** : 240 ft Self Supported Tower  
**ATC Site Name** : Tartaglia, CT  
**ATC Asset Number** : 383598  
**Engineering Number** : 13337501\_C3\_02  
**Proposed Carrier** : T-MOBILE  
**Carrier Site Name** : Bridgeport North  
**Carrier Site Number** : CT11680A  
**Site Location** : 1000 Trumbull Avenue  
Bridgeport, CT 06606  
41.219600,-73.201300  
**County** : Fairfield  
**Date** : March 26, 2021  
**Max Usage** : 100%  
**Result** : Pass

Prepared By:  
Johnny Munoz-Cedeno, E.I.  
Structural Engineer

Reviewed By:



Authorized by "EOR"  
27 Mar 2021 09:13:49

COA: PEC.0001553



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## Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 240 ft self supported tower to reflect the change in loading by T-MOBILE.

## Supporting Documents

<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 ATC Project #13337501_C9_04, dated March 23, 2021 (Pending)
<b>Mount Analysis</b>	ATC Project #13337501_C8_01, dated February 16, 2021

## 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" 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>Spectral Response:</b>	$S_s = 0.21, S_1 = 0.05$
<b>Site Class:</b>	D - Stiff Soil

## Conclusion

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

If you have any questions or require additional information, please contact American Tower via email at [Engineering@americantower.com](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	Antenna	Mount Type	Lines	Carrier
256.0	1	Generic 8' Yagi	Leg	-	OTHER
245.0	1	Generic 10' Omni	Leg	(1) 1 1/4" Coax	
240.0	1	Dielectric DCR-L1 w/ Radome	-	(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	1	Generic Empty Mount	Side Arm	-	
202.0	3	Ericsson AIR 32 B66AA B2P	Sector Frame	(2) 1 1/4" Hybriflex Cable	T-MOBILE
	3	RFS APXVAARR24_43-U-NA20		(1) 1 5/8" Hybriflex	
181.0	3	Nokia 2.5G MAA - AAHC(64T64R)	Low Profile Platform	(1) 1.7" (43.2mm) Hybrid	SPRINT NEXTEL
180.0	6	Alcatel-Lucent 1900MHz RRH	Leg	(3) 1 1/4" (1.25"-31.8mm) Fiber	
	2	RFS APXVSP18-C-A20			
	3	Alcatel-Lucent 800 MHz RRH			
	3	Generic 2' Std. Dish			
	1	RFS APXV9ERR18-C-A20	Sector Frame	(3) 1/2" Coax	
	1	Generic 24" x 24" Junction Box	Leg	(2) 2" conduit	
	3	Argus LLPX310R		(6) 5/16" (0.31"-7.9mm) Coax	
165.0	3	Kathrein Scala 80010965	Sector Frame	(6) 0.39" (10mm) Fiber Trunk (8) 0.78" (19.7mm) 8 AWG 6 (12) 1 5/8" Coax (2) 2" conduit	AT&T MOBILITY
	3	Quintel QS66512-3 (112 lbs.)			
	3	Andrew SBNHH-1D65A			
	3	Powerwave Allgon 7770.00			
	3	Ericsson Radio 4449			
	3	Ericsson RRUS 32 B2			
	3	Ericsson RRUS 32 (50.8 lbs)			
	3	Ericsson RRUS 4426 B66			
	3	Raycap DC6-48-60-18-8F (23.5" Height)			
	9	Powerwave Allgon LGP21401			
	1	Commscope WCS-IMFQ-AMT			
	3	CCI DTMAP7819VG12A			
	6	Powerwave Allgon 7020.00 Dual Band RET			
	12	Powerwave Allgon LGP21901			
3	Ericsson RRUS 4478 B14				
155.0	3	Samsung B5/B13 RRH-BR04C	Sector Frame	(6) 1 5/8" Coax (8) 1 5/8" Hybriflex	VERIZON WIRELESS
	3	Samsung B2/B66A RRH-BR049			
	2	Raycap RxxDC-3315-PF-48			
	3	Amphenol Antel BXA-80063-6BF-EDIN-X			
	3	Samsung Outdoor CBRS 20W RRH			
	3	Samsung Outdoor CBRS 20W RRH –Clip-on Antenna			
	6	Commscope JAHH-65B-R3B			
3	Commscope CBC78T-DS-43-2X				
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	





**Equipment to be Removed**

Elev. <sup>1</sup> (ft)	Qty	Antenna	Mount Type	Lines	Carrier
202.0	3	Ericsson KRY 112 144/2	-	(6) 1 5/8" Coax	T-MOBILE
	3	Ericsson Air 3246 B66			
	3	Ericsson Radio 4449 B12,B71			

**Proposed Equipment**

Elev. <sup>1</sup> (ft)	Qty	Antenna	Mount Type	Lines	Carrier
202.0	3	Ericsson Radio 4449 B71 B85A	Sector Frame with Modifications	(2) 1 5/8" Hybriflex	T-MOBILE
	3	Ericsson RRUS 4415 B25			
	3	Ericsson Air6449 B41			

<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 T-MOBILE lines.

**Structure Usages**

Structural Component	Controlling Usage	Pass/Fail
Legs	44%	Pass
Diagonals	100%	Pass
Horizontals	89%	Pass
Anchor Bolts	50%	Pass
Leg Bolts	36%	Pass

**Foundations**

Reaction Component	Analysis Reactions	% of Usage
Uplift (Kips)	279.2	91%
Axial (Kips)	344.2	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) (°)
202.0	Ericsson Radio 4449 B71 B85A	T-MOBILE	0.137	0.020	0.051
	Ericsson RRUS 4415 B25				
	Ericsson Air6449 B41				
180.0	Generic 2' Std. Dish	SPRINT NEXTEL	0.120	0.018	

\*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

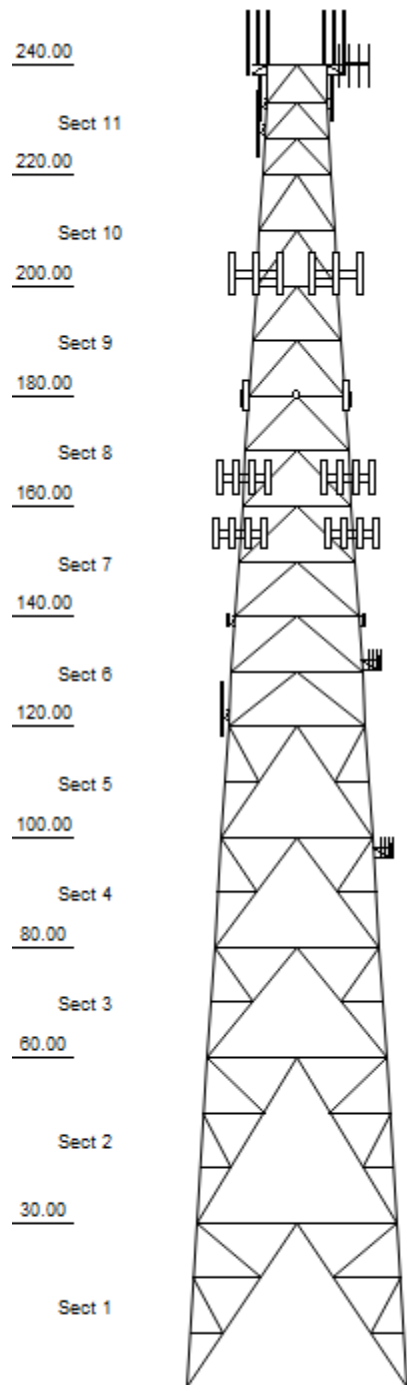
It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete.

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.

Quadrant 1



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Loads: 119 mph no ice  
50 mph w/ 1" radial ice  
Site Class: D Ss: 0.21 S1: 0.05  
60 mph Serviceability

### Job Information

<b>Client : T-MOBILE</b>		
<b>Tower : 383598</b>	<b>Location : Tartaglia, CT</b>	<b>Base Width : 40.33 ft</b>
<b>Code : ANSI/TIA-222-H</b>	<b>Topo Method: Method 1</b>	<b>Top Width : 10.93 ft</b>
<b>Risk Cat : II</b>	<b>Topo: 1</b>	<b>Tower Ht : 240.00 ft</b>
	<b>Exposure : C</b>	<b>Shape : Triangle</b>

### Sections Properties

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

### 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 PIPE	P2-1/2" DIA PIPE	P2" DIA PIPE	-	-
2	P1-1/2" DIA PIPE	P1-1/2" DIA PIPE	P2" DIA PIPE	P2" DIA PIPE	-	-
3 - 4	P2" DIA PIPE	P1-1/2" DIA PIPE	-	-	-	-
5	P1-1/2" DIA PIPE	P1-1/2" DIA PIPE	-	-	-	-
6 - 11	-	-	-	-	-	-

### Discrete Appurtenance

Elev (ft)	Type	Qty	Description
240.00	Whip	1	Generic 10' Omni
240.00	Yagi	1	Generic 8' Yagi
240.00	Straight Arm	1	Round Side Arm
240.00	Mounting Frame	1	Round Sector Frame
240.00	Other	1	Dielectric DCR-L1 w/ Radome
240.00	Whip	1	Beacon
240.00	Whip	1	Lightning Rod
234.00	Whip	2	Generic 8' Omni
230.00	Straight Arm	1	Round Side Arm
229.00	Whip	1	Generic 12' Omni
223.00	Straight Arm	1	Empty Flat Side Arm
223.00	Straight Arm	1	Round Side Arm
223.00	Other	1	Generic Empty Mount
202.00	Mounting Frame	3	Round Sector Frame
202.00	Panel	3	RFS APXVAARR24_43-U-NA20
202.00	Panel	3	Ericsson AIR 32 B66AA B2P
202.00	Panel	3	Ericsson Air6449 B41
202.00		3	Ericsson RRUS 4415 B25
202.00		3	Ericsson Radio 4449 B71 B85A
183.00	Mounting Frame	3	Flat Light Sector Frame
183.00	Straight Arm	3	Side Arms
181.00	Panel	3	Nokia 2.5G MAA - AAHC(64T64R)
180.00	Panel	1	RFS APXV9ERR18-C-A20
180.00	Panel	2	RFS APXVSP18-C-A20
180.00	Dish	3	Generic 2' Std. Dish
180.00		1	Generic 24" x 24" Junction Box
180.00	Panel	3	Argus LLPX310R
180.00		6	Alcatel-Lucent 1900MHz RRH
180.00		3	Alcatel-Lucent 800 MHz RRH
180.00		3	Motorola DAP Vx
165.00	Mounting Frame	3	Round Sector Frame
165.00	Panel	3	Kathrein Scala 80010965
165.00	Panel	3	Quintel QS66512-3 (112 lbs.)
165.00	Panel	3	Andrew SBNHH-1D65A
165.00	Panel	3	Powerwave Allgon 7770.00

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Job Information		
Client : T-MOBILE		
Tower : 383598	Location : Tartaglia, CT	Base Width : 40.33 ft
Code : ANSI/TIA-222-H	Topo Method: Method 1	Top Width : 10.93 ft
Risk Cat : II	Topo: 1	Tower Ht : 240.00 ft
	Exposure : C	Shape : Triangle

165.00	3	Ericsson Radio 4449
165.00	3	Ericsson RRUS 32 B2
165.00	3	Ericsson RRUS 32 (50.8 lbs)
165.00	3	Ericsson RRUS 4478 B14
165.00	3	Ericsson RRUS 4426 B66
165.00	3	Raycap DC6-48-60-18-8F (23.5"
165.00	9	Powerwave Allgon LGP21401
165.00	1	Commscope WCS-IMFQ-AMT
165.00	3	CCI DTMAP7819VG12A
165.00	6	Powerwave Allgon 7020.00 Dual
165.00	12	Powerwave Allgon LGP21901
155.00	3	Mounting Frame Flat Light Sector Frame
155.00	6	Panel Commscope JAHH-65B-R3B
155.00	3	Panel Amphenol Antel BXA-80063-6BF-E
155.00	2	Raycap RxxDC-3315-PF-48
155.00	3	Samsung B2/B66A RRH-BR049
155.00	3	Samsung B5/B13 RRH-BR04C
155.00	3	Panel Samsung Outdoor CBRS 20W
155.00	3	Samsung Outdoor CBRS 20W
155.00	3	Commscope CBC78T-DS-43-2X
140.00	3	Whip Small Side Lights
132.00	1	Straight Arm Flat Side Arm
132.00	1	Yagi Generic 4' Yagi
123.00	1	Whip Generic 10' Omni
118.00	1	Straight Arm Round Side Arm
108.00	1	Straight Arm Round Side Arm
98.00	1	Straight Arm Flat Side Arm
98.00	1	Yagi Generic 4' Yagi
80.00	1	Straight Arm Empty Round Side Arm
8.00	1	Straight Arm Round Side Arm

### Linear Appurtenance

Elev (ft)		Qty	Description
From	To		
0.00	245.00	1	1 1/4" Coax
0.00	243.00	1	1 5/8" Coax
0.00	240.00	1	Waveguide
0.00	234.00	2	7/8" Coax
0.00	229.00	1	1 1/4" Coax
0.00	202.00	1	Waveguide
0.00	202.00	2	1 5/8" Hybriflex
0.00	202.00	1	1 5/8" Hybriflex
0.00	202.00	2	1 1/4" Hybriflex Cab
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)
0.00	180.00	2	2" conduit
0.00	180.00	3	1/2" Coax
0.00	180.00	1	1 1/4" Hybriflex Cab
0.00	180.00	3	1 1/4" (1.25"- 31.8m
0.00	174.00	1	Waveguide
0.00	165.00	1	Waveguide
0.00	165.00	2	2" conduit
0.00	165.00	12	1 5/8" Coax
0.00	165.00	6	0.78" (19.7mm) 8 AWG
0.00	165.00	4	0.39" (10mm) Fiber T
0.00	165.00	2	0.39" (10mm) Fiber T
0.00	164.00	2	0.78" (19.7mm) 8 AWG
0.00	155.00	1	Waveguide
0.00	155.00	8	1 5/8" Hybriflex
0.00	155.00	6	1 5/8" Coax

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Job Information		
Client : T-MOBILE		
Tower : 383598	Location : Tartaglia, CT	Base Width : 40.33 ft
Code : ANSI/TIA-222-H	Topo Method: Method 1	Top Width : 10.93 ft
Risk Cat : II	Topo: 1	Tower Ht : 240.00 ft
	Exposure : C	Shape : Triangle

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	10,734.27	110.65	83.62
DL + WL + IL	3,758.09	198.85	30.19

Individual Base Foundation Design Loads		
Vertical (kip)	Uplift (kip)	Horizontal (kip)
344.20	279.21	49.96



Site Number: 383598

Code: ANSI/TIA-222-H

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Site Name: Tartaglia, CT

Engineering Number: 13337501\_C3\_02

3/26/2021 9:37:18 AM

Customer: T-MOBILE

### Analysis Parameters

Location:	Fairfield County, CT	Height (ft):	240
Code:	ANSI/TIA-222-H	Base Elevation (ft):	0.00
Shape:	Triangle	Bottom Face Width (ft):	40.33
Tower Manufacturer:	Rohn	Top Face Width (ft):	10.93
Tower Type:	Self Support	Anchor Bolt Detail Type	c
Kd:	0.85		
Ke:	0.99		

### Ice & Wind Parameters

Exposure Category:	C	Design Windspeed Without Ice:	119 mph
Risk Category:	II	Design Windspeed With Ice:	50 mph
Topographic Factor Procedure:	Method 1	Operational Windspeed:	60 mph
Topographic Category:	1	Design Ice Thickness:	1.00 in
Crest Height:	0 ft	HMSL:	200.00 ft

### Seismic Parameters

Analysis Method:	Equivalent Lateral Force Method		
Site Class:	D - Stiff Soil		
Period Based on Rayleigh Method (sec):	0.71		
$T_L$ (sec):	6	p:	1.3
$S_S$ :	0.211	$S_1$ :	0.054
$F_a$ :	1.600	$F_v$ :	2.400
$S_{ds}$ :	0.225	$S_{d1}$ :	0.086
		$C_S$ :	0.040
		$C_S$ , Max:	0.040
		$C_S$ , Min:	0.030

### Load Cases

1.2D + 1.0W Normal	119 mph Normal with No Ice
1.2D + 1.0W 60 deg	119 mph 60 degree with No Ice
1.2D + 1.0W 90 deg	119 mph 90 degree with No Ice
0.9D + 1.0W Normal	119 mph Normal with No Ice (Reduced DL)
0.9D + 1.0W 60 deg	119 mph 60 deg with No Ice (Reduced DL)
0.9D + 1.0W 90 deg	119 mph 90 deg with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi Normal	50 mph Normal with 1.00 in Radial Ice
1.2D + 1.0Di + 1.0Wi 60 deg	50 mph 60 deg with 1.00 in Radial Ice
1.2D + 1.0Di + 1.0Wi 90 deg	50 mph 90 deg with 1.00 in Radial Ice
1.2D + 1.0Ev + 1.0Eh Normal	Seismic Normal
1.2D + 1.0Ev + 1.0Eh 60 deg	Seismic 60 deg
1.2D + 1.0Ev + 1.0Eh 90 deg	Seismic 90 deg
0.9D - 1.0Ev + 1.0Eh Normal	Seismic (Reduced DL) Normal
0.9D - 1.0Ev + 1.0Eh 60 deg	Seismic (Reduced DL) 60 deg
0.9D - 1.0Ev + 1.0Eh 90 deg	Seismic (Reduced DL) 90 deg
1.0D + 1.0W Service Normal	Serviceability - 60 mph Wind Normal
1.0D + 1.0W Service 60 deg	Serviceability - 60 mph Wind 60 deg
1.0D + 1.0W Service 90 deg	Serviceability - 60 mph Wind 90 deg

Tower LoadingDiscrete Appurtenance Properties 1.2D + 1.0W

Elevation (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)
240.0	Lightning Rod	1	10	1.0	4.0	3.0	3.0	1.00	1.00	0.0	0.0	46.55	40	12
240.0	Dielectric DCR-L1 w/	1	18	1.8	0.0	0.0	0.0	1.00	1.00	3.0	214.2	46.68	71	22
240.0	Generic 10' Omni	1	25	3.0	10.0	3.0	3.0	1.00	1.00	5.0	596.1	46.76	119	30
240.0	Beacon	1	70	4.5	3.0	18.0	18.0	1.00	1.00	0.0	0.0	46.55	178	84
240.0	Round Side Arm	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	46.55	206	180
240.0	Generic 8' Yagi	1	30	12.0	8.0	60.0	3.0	1.00	1.00	11.0	5272.9	47.00	479	36
240.0	Round Sector Frame	1	300	14.4	0.0	0.0	0.0	1.00	1.00	0.0	0.0	46.55	570	360
234.0	Generic 8' Omni	2	25	2.4	8.0	3.0	3.0	1.00	1.00	0.0	0.0	46.31	189	60
230.0	Round Side Arm	1	150	5.2	0.0	0.0	0.0	1.00	0.67	0.0	0.0	46.14	137	180
229.0	Generic 12' Omni	1	40	3.6	12.0	3.0	3.0	1.00	1.00	0.0	0.0	46.10	141	48
223.0	Generic Empty Mount	1	0	0.0	0.0	0.0	0.0	1.00	1.00	0.0	0.0	45.84	0	0
223.0	Round Side Arm	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	45.84	203	180
223.0	Empty Flat Side Arm	1	150	6.3	0.0	0.0	0.0	1.00	1.00	0.0	0.0	45.84	245	180
202.0	Ericsson Radio 4449	3	75	1.6	1.3	13.2	10.5	0.80	0.50	0.0	0.0	44.89	76	270
202.0	Ericsson RRUS 4415	3	46	1.8	1.4	13.4	5.9	0.80	0.50	0.0	0.0	44.89	84	166
202.0	Ericsson Air6449	3	104	5.7	2.8	20.6	8.6	0.80	0.63	0.0	0.0	44.89	328	374
202.0	Ericsson AIR 32	3	109	6.9	4.9	12.9	8.7	0.80	0.71	0.0	0.0	44.89	447	392
202.0	Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.67	0.0	0.0	44.89	828	1080
202.0	RFS	3	128	20.2	8.0	24.0	8.7	0.80	0.63	0.0	0.0	44.89	1168	460
183.0	Side Arms	3	560	8.5	0.0	0.0	0.0	1.00	0.67	0.0	0.0	43.97	639	2016
183.0	Flat Light Sector	3	400	17.9	0.0	0.0	0.0	0.75	0.67	0.0	0.0	43.97	1009	1440
181.0	Nokia 2.5G MAA -	3	104	4.2	2.1	19.7	9.6	0.80	0.64	0.0	0.0	43.87	241	373
180.0	Motorola DAP Vx	3	27	1.6	2.1	7.6	5.5	0.80	0.50	0.0	0.0	43.82	73	95
180.0	Alcatel-Lucent 800	3	53	2.1	1.6	13.0	10.8	0.80	0.50	0.0	0.0	43.82	95	191
180.0	Alcatel-Lucent	6	44	3.3	1.9	13.0	17.0	0.80	0.50	0.0	0.0	43.82	291	317
180.0	Argus LLPX310R	3	29	4.3	3.5	11.8	4.5	0.80	0.63	0.0	0.0	43.82	242	103
180.0	Generic 24" x 24"	1	20	4.8	2.0	24.0	8.0	0.80	1.00	0.0	0.0	43.82	143	24
180.0	Generic 2' Std. Dish	3	14	5.2	2.0	24.0	0.0	1.00	1.00	0.0	0.0	43.82	584	50
180.0	RFS APXVSP18-C-	2	57	8.0	6.0	11.8	7.0	0.80	0.77	0.0	0.0	43.82	368	137
180.0	RFS APXV9ERR18-C-	1	62	8.0	6.0	11.8	7.9	0.80	1.00	0.0	0.0	43.82	239	74
165.0	Powerwave Allgon	12	6	0.2	0.3	6.0	3.0	0.80	0.50	0.0	0.0	43.02	35	79
165.0	Powerwave Allgon	6	2	0.3	0.4	8.3	2.4	0.80	0.50	0.0	0.0	43.02	30	16
165.0	CCI	3	19	1.0	0.9	11.0	3.8	0.80	0.50	0.0	0.0	43.02	43	69
165.0	Commscope WCS-	1	30	1.0	0.9	10.6	6.9	0.80	0.50	0.0	0.0	43.02	14	35
165.0	Powerwave Allgon	9	14	1.1	1.2	9.2	2.6	0.80	0.50	0.0	0.0	43.02	145	152
165.0	Raycap DC6-48-60-	3	20	1.3	2.0	9.7	9.7	0.80	0.50	0.0	0.0	43.02	55	72
165.0	Ericsson RRUS 4426	3	48	1.6	1.3	13.2	5.8	0.80	0.50	0.0	0.0	43.02	72	174
165.0	Ericsson RRUS 4478	3	60	1.8	1.4	13.4	7.7	0.80	0.50	0.0	0.0	43.02	81	216
165.0	Ericsson RRUS 32	3	51	2.7	2.2	12.1	6.7	0.80	0.50	0.0	0.0	43.02	118	183
165.0	Ericsson RRUS 32 B2	3	53	2.7	2.3	12.1	7.0	0.80	0.50	0.0	0.0	43.02	120	191
165.0	Ericsson Radio 4449	3	85	3.5	2.3	15.0	10.0	0.80	0.50	0.0	0.0	43.02	154	306
165.0	Powerwave Allgon	3	35	5.5	4.6	11.0	5.0	0.80	0.65	0.0	0.0	43.02	314	126
165.0	Andrew SBNHH-	3	41	5.9	4.6	11.9	7.1	0.80	0.69	0.0	0.0	43.02	356	147
165.0	Quintel QS66512-3	3	112	8.1	6.0	12.0	9.6	0.80	0.74	0.0	0.0	43.02	528	403
165.0	Kathrein Scala	3	98	13.8	6.6	20.0	6.9	0.80	0.62	0.0	0.0	43.02	752	351
165.0	Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.67	0.0	0.0	43.02	794	1080
155.0	Commscope	3	21	0.6	0.8	6.9	6.4	0.80	0.50	0.0	0.0	42.46	24	75
155.0	Samsung Outdoor	3	19	0.9	1.0	8.5	4.1	0.80	0.50	0.0	0.0	42.46	37	67
155.0	Samsung Outdoor	3	4	0.9	1.0	8.7	1.4	0.80	0.50	0.0	0.0	42.46	39	16
155.0	Samsung B5/B13	3	70	1.9	1.3	15.0	8.1	0.80	0.50	0.0	0.0	42.46	81	253
155.0	Samsung B2/B66A	3	84	1.9	1.3	15.0	10.0	0.80	0.50	0.0	0.0	42.46	81	304
155.0	Raycap RxxDC-3315-	2	21	2.5	1.6	15.7	10.3	0.80	0.67	0.0	0.0	42.46	97	51
155.0	Amphenol Antel BXA-	3	19	7.3	5.7	11.2	5.3	0.80	0.66	0.0	0.0	42.46	415	69
155.0	Commscope JAHH-	6	61	9.1	6.0	13.8	8.2	0.80	0.69	0.0	0.0	42.46	1089	436

### Tower Loading

155.0	Flat Light Sector	3	400	17.9	0.0	0.0	0.0	0.75	0.67	0.0	0.0	42.46	974	1440
140.0	Small Side Lights	3	45	2.0	1.0	8.0	8.0	1.00	1.00	0.0	0.0	41.56	212	162
132.0	Generic 4' Yagi	1	15	4.9	4.0	48.0	3.0	1.00	1.00	0.0	0.0	41.05	171	18
132.0	Flat Side Arm	1	150	6.3	0.0	0.0	0.0	1.00	1.00	0.0	0.0	41.05	220	180
123.0	Generic 10' Omni	1	25	3.0	10.0	3.0	3.0	1.00	1.00	0.0	0.0	40.44	103	30
118.0	Round Side Arm	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	40.09	177	180
108.0	Round Side Arm	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	39.35	174	180
98.00	Generic 4' Yagi	1	15	4.9	4.0	48.0	3.0	1.00	1.00	0.0	0.0	38.55	161	18
98.00	Flat Side Arm	1	150	6.3	0.0	0.0	0.0	1.00	1.00	0.0	0.0	38.55	206	180
80.00	Empty Round Side	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	36.94	163	180
8.00	Round Side Arm	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	26.00	115	180
Totals		168	13796	807.3									17585	16555

### Discrete Appurtenance Properties 0.9D + 1.0W

Elevation (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)
240.0	Lightning Rod	1	10	1.0	4.0	3.0	3.0	1.00	1.00	0.0	0.0	46.55	40	9
240.0	Dielectric DCR-L1 w/	1	18	1.8	0.0	0.0	0.0	1.00	1.00	3.0	214.2	46.68	71	16
240.0	Generic 10' Omni	1	25	3.0	10.0	3.0	3.0	1.00	1.00	5.0	596.1	46.76	119	23
240.0	Beacon	1	70	4.5	3.0	18.0	18.0	1.00	1.00	0.0	0.0	46.55	178	63
240.0	Round Side Arm	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	46.55	206	135
240.0	Generic 8' Yagi	1	30	12.0	8.0	60.0	3.0	1.00	1.00	11.0	5272.9	47.00	479	27
240.0	Round Sector Frame	1	300	14.4	0.0	0.0	0.0	1.00	1.00	0.0	0.0	46.55	570	270
234.0	Generic 8' Omni	2	25	2.4	8.0	3.0	3.0	1.00	1.00	0.0	0.0	46.31	189	45
230.0	Round Side Arm	1	150	5.2	0.0	0.0	0.0	1.00	0.67	0.0	0.0	46.14	137	135
229.0	Generic 12' Omni	1	40	3.6	12.0	3.0	3.0	1.00	1.00	0.0	0.0	46.10	141	36
223.0	Generic Empty Mount	1	0	0.0	0.0	0.0	0.0	1.00	1.00	0.0	0.0	45.84	0	0
223.0	Round Side Arm	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	45.84	203	135
223.0	Empty Flat Side Arm	1	150	6.3	0.0	0.0	0.0	1.00	1.00	0.0	0.0	45.84	245	135
202.0	Ericsson Radio 4449	3	75	1.6	1.3	13.2	10.5	0.80	0.50	0.0	0.0	44.89	76	203
202.0	Ericsson RRUS 4415	3	46	1.8	1.4	13.4	5.9	0.80	0.50	0.0	0.0	44.89	84	124
202.0	Ericsson Air6449	3	104	5.7	2.8	20.6	8.6	0.80	0.63	0.0	0.0	44.89	328	281
202.0	Ericsson AIR 32	3	109	6.9	4.9	12.9	8.7	0.80	0.71	0.0	0.0	44.89	447	294
202.0	Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.67	0.0	0.0	44.89	828	810
202.0	RFS	3	128	20.2	8.0	24.0	8.7	0.80	0.63	0.0	0.0	44.89	1168	345
183.0	Side Arms	3	560	8.5	0.0	0.0	0.0	1.00	0.67	0.0	0.0	43.97	639	1512
183.0	Flat Light Sector	3	400	17.9	0.0	0.0	0.0	0.75	0.67	0.0	0.0	43.97	1009	1080
181.0	Nokia 2.5G MAA -	3	104	4.2	2.1	19.7	9.6	0.80	0.64	0.0	0.0	43.87	241	280
180.0	Motorola DAP Vx	3	27	1.6	2.1	7.6	5.5	0.80	0.50	0.0	0.0	43.82	73	72
180.0	Alcatel-Lucent 800	3	53	2.1	1.6	13.0	10.8	0.80	0.50	0.0	0.0	43.82	95	143
180.0	Alcatel-Lucent	6	44	3.3	1.9	13.0	17.0	0.80	0.50	0.0	0.0	43.82	291	238
180.0	Argus LLPX310R	3	29	4.3	3.5	11.8	4.5	0.80	0.63	0.0	0.0	43.82	242	77
180.0	Generic 24" x 24"	1	20	4.8	2.0	24.0	8.0	0.80	1.00	0.0	0.0	43.82	143	18
180.0	Generic 2' Std. Dish	3	14	5.2	2.0	24.0	0.0	1.00	1.00	0.0	0.0	43.82	584	38
180.0	RFS APXVSP18-C-	2	57	8.0	6.0	11.8	7.0	0.80	0.77	0.0	0.0	43.82	368	103
180.0	RFS APXV9ERR18-C-	1	62	8.0	6.0	11.8	7.9	0.80	1.00	0.0	0.0	43.82	239	56
165.0	Powerwave Allgon	12	6	0.2	0.3	6.0	3.0	0.80	0.50	0.0	0.0	43.02	35	59
165.0	Powerwave Allgon	6	2	0.3	0.4	8.3	2.4	0.80	0.50	0.0	0.0	43.02	30	12
165.0	CCI	3	19	1.0	0.9	11.0	3.8	0.80	0.50	0.0	0.0	43.02	43	52
165.0	Commscope WCS-	1	30	1.0	0.9	10.6	6.9	0.80	0.50	0.0	0.0	43.02	14	27
165.0	Powerwave Allgon	9	14	1.1	1.2	9.2	2.6	0.80	0.50	0.0	0.0	43.02	145	114
165.0	Raycap DC6-48-60-	3	20	1.3	2.0	9.7	9.7	0.80	0.50	0.0	0.0	43.02	55	54
165.0	Ericsson RRUS 4426	3	48	1.6	1.3	13.2	5.8	0.80	0.50	0.0	0.0	43.02	72	131
165.0	Ericsson RRUS 4478	3	60	1.8	1.4	13.4	7.7	0.80	0.50	0.0	0.0	43.02	81	162
165.0	Ericsson RRUS 32	3	51	2.7	2.2	12.1	6.7	0.80	0.50	0.0	0.0	43.02	118	137

### Tower Loading

165.0	Ericsson RRUS 32 B2	3	53	2.7	2.3	12.1	7.0	0.80	0.50	0.0	0.0	43.02	120	143
165.0	Ericsson Radio 4449	3	85	3.5	2.3	15.0	10.0	0.80	0.50	0.0	0.0	43.02	154	230
165.0	Powerwave Allgon	3	35	5.5	4.6	11.0	5.0	0.80	0.65	0.0	0.0	43.02	314	95
165.0	Andrew SBNHH-	3	41	5.9	4.6	11.9	7.1	0.80	0.69	0.0	0.0	43.02	356	110
165.0	Quintel QS66512-3	3	112	8.1	6.0	12.0	9.6	0.80	0.74	0.0	0.0	43.02	528	302
165.0	Kathrein Scala	3	98	13.8	6.6	20.0	6.9	0.80	0.62	0.0	0.0	43.02	752	264
165.0	Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.67	0.0	0.0	43.02	794	810
155.0	Commscope	3	21	0.6	0.8	6.9	6.4	0.80	0.50	0.0	0.0	42.46	24	56
155.0	Samsung Outdoor	3	19	0.9	1.0	8.5	4.1	0.80	0.50	0.0	0.0	42.46	37	50
155.0	Samsung Outdoor	3	4	0.9	1.0	8.7	1.4	0.80	0.50	0.0	0.0	42.46	39	12
155.0	Samsung B5/B13	3	70	1.9	1.3	15.0	8.1	0.80	0.50	0.0	0.0	42.46	81	190
155.0	Samsung B2/B66A	3	84	1.9	1.3	15.0	10.0	0.80	0.50	0.0	0.0	42.46	81	228
155.0	Raycap RxxDC-3315-	2	21	2.5	1.6	15.7	10.3	0.80	0.67	0.0	0.0	42.46	97	39
155.0	Amphenol Antel BXA-	3	19	7.3	5.7	11.2	5.3	0.80	0.66	0.0	0.0	42.46	415	52
155.0	Commscope JAHH-	6	61	9.1	6.0	13.8	8.2	0.80	0.69	0.0	0.0	42.46	1089	327
155.0	Flat Light Sector	3	400	17.9	0.0	0.0	0.0	0.75	0.67	0.0	0.0	42.46	974	1080
140.0	Small Side Lights	3	45	2.0	1.0	8.0	8.0	1.00	1.00	0.0	0.0	41.56	212	122
132.0	Generic 4' Yagi	1	15	4.9	4.0	48.0	3.0	1.00	1.00	0.0	0.0	41.05	171	14
132.0	Flat Side Arm	1	150	6.3	0.0	0.0	0.0	1.00	1.00	0.0	0.0	41.05	220	135
123.0	Generic 10' Omni	1	25	3.0	10.0	3.0	3.0	1.00	1.00	0.0	0.0	40.44	103	23
118.0	Round Side Arm	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	40.09	177	135
108.0	Round Side Arm	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	39.35	174	135
98.00	Generic 4' Yagi	1	15	4.9	4.0	48.0	3.0	1.00	1.00	0.0	0.0	38.55	161	14
98.00	Flat Side Arm	1	150	6.3	0.0	0.0	0.0	1.00	1.00	0.0	0.0	38.55	206	135
80.00	Empty Round Side	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	36.94	163	135
8.00	Round Side Arm	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	26.00	115	135
Totals		168	13796	807.3									17585	12416

### Discrete Appurtenance Properties 1.2D + 1.0Di + 1.0Wi

Elevation (ft)	Description	Qty	Ice Wt (lb)	Ice EPA (sf)	Length (ft)	Width (in)	Depth (in)	K <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)
240.0	Lightning Rod	1	44	1.6	4.0	3.0	3.0	1.00	1.00	0.0	0.0	8.22	11	46
240.0	Dielectric DCR-L1 w/	1	69	4.0	0.0	0.0	0.0	1.00	1.00	3.0	83.9	8.24	28	73
240.0	Generic 10' Omni	1	78	5.5	10.0	3.0	3.0	1.00	1.00	5.0	193.3	8.25	39	83
240.0	Beacon	1	212	3.8	3.0	18.0	18.0	1.00	1.00	0.0	0.0	8.22	27	226
240.0	Round Side Arm	1	201	7.1	0.0	0.0	0.0	1.00	1.00	0.0	0.0	8.22	50	231
240.0	Generic 8' Yagi	1	266	35.3	8.0	60.0	3.0	1.00	1.00	11.0	2737.2	8.30	249	272
240.0	Round Sector Frame	1	556	25.9	0.0	0.0	0.0	1.00	1.00	0.0	0.0	8.22	181	616
234.0	Generic 8' Omni	2	68	4.3	8.0	3.0	3.0	1.00	1.00	0.0	0.0	8.17	60	145
230.0	Round Side Arm	1	201	7.1	0.0	0.0	0.0	1.00	0.67	0.0	0.0	8.15	33	231
229.0	Generic 12' Omni	1	103	6.6	12.0	3.0	3.0	1.00	1.00	0.0	0.0	8.14	46	111
223.0	Generic Empty Mount	1	0	0.0	0.0	0.0	0.0	1.00	1.00	0.0	0.0	8.09	0	0
223.0	Round Side Arm	1	201	7.1	0.0	0.0	0.0	1.00	1.00	0.0	0.0	8.09	49	231
223.0	Empty Flat Side Arm	1	201	8.0	0.0	0.0	0.0	1.00	1.00	0.0	0.0	8.09	55	231
202.0	Ericsson Radio 4449	3	116	2.2	1.3	13.2	10.5	0.80	0.50	0.0	0.0	7.93	18	393
202.0	Ericsson RRUS 4415	3	80	2.5	1.4	13.4	5.9	0.80	0.50	0.0	0.0	7.93	20	266
202.0	Ericsson Air6449	3	197	6.8	2.8	20.6	8.6	0.80	0.63	0.0	0.0	7.93	69	654
202.0	Ericsson AIR 32	3	223	8.4	4.9	12.9	8.7	0.80	0.71	0.0	0.0	7.93	97	734
202.0	Round Sector Frame	3	552	25.7	0.0	0.0	0.0	0.75	0.67	0.0	0.0	7.93	261	1835
202.0	RFS	3	396	22.8	8.0	24.0	8.7	0.80	0.63	0.0	0.0	7.93	232	1266
183.0	Side Arms	3	877	13.3	0.0	0.0	0.0	1.00	0.67	0.0	0.0	7.76	176	2966
183.0	Flat Light Sector	3	604	28.1	0.0	0.0	0.0	0.75	0.67	0.0	0.0	7.76	280	2051
181.0	Nokia 2.5G MAA -	3	180	5.1	2.1	19.7	9.6	0.80	0.64	0.0	0.0	7.74	52	602
180.0	Motorola DAP Vx	3	58	2.3	2.1	7.6	5.5	0.80	0.50	0.0	0.0	7.74	18	190
180.0	Alcatel-Lucent 800	3	103	2.8	1.6	13.0	10.8	0.80	0.50	0.0	0.0	7.74	22	341

Tower Loading

180.0	Alcatel-Lucent	6	118	4.1	1.9	13.0	17.0	0.80	0.50	0.0	0.0	7.74	64	759
180.0	Argus LLPX310R	3	90	5.4	3.5	11.8	4.5	0.80	0.63	0.0	0.0	7.74	54	286
180.0	Generic 24" x 24"	1	98	5.8	2.0	24.0	8.0	0.80	1.00	0.0	0.0	7.74	30	102
180.0	Generic 2' Std. Dish	3	51	6.3	2.0	24.0	0.0	1.00	1.00	0.0	0.0	7.74	124	163
180.0	RFS APXVSP18-C-	2	174	9.9	6.0	11.8	7.0	0.80	0.77	0.0	0.0	7.74	80	370
180.0	RFS APXV9ERR18-C-	1	185	9.9	6.0	11.8	7.9	0.80	1.00	0.0	0.0	7.74	52	197
165.0	Powerwave Allgon	12	11	0.4	0.3	6.0	3.0	0.80	0.50	0.0	0.0	7.60	13	141
165.0	Powerwave Allgon	6	9	0.6	0.4	8.3	2.4	0.80	0.50	0.0	0.0	7.60	9	57
165.0	CCI	3	36	1.4	0.9	11.0	3.8	0.80	0.50	0.0	0.0	7.60	11	120
165.0	Commscope WCS-	1	52	1.4	0.9	10.6	6.9	0.80	0.50	0.0	0.0	7.60	4	58
165.0	Powerwave Allgon	9	31	1.6	1.2	9.2	2.6	0.80	0.50	0.0	0.0	7.60	37	302
165.0	Raycap DC6-48-60-	3	55	1.7	2.0	9.7	9.7	0.80	0.50	0.0	0.0	7.60	13	178
165.0	Ericsson RRUS 4426	3	78	2.2	1.3	13.2	5.8	0.80	0.50	0.0	0.0	7.60	17	264
165.0	Ericsson RRUS 4478	3	97	2.4	1.4	13.4	7.7	0.80	0.50	0.0	0.0	7.60	19	326
165.0	Ericsson RRUS 32	3	99	3.5	2.2	12.1	6.7	0.80	0.50	0.0	0.0	7.60	27	326
165.0	Ericsson RRUS 32 B2	3	102	3.5	2.3	12.1	7.0	0.80	0.50	0.0	0.0	7.60	27	338
165.0	Ericsson Radio 4449	3	153	4.4	2.3	15.0	10.0	0.80	0.50	0.0	0.0	7.60	34	510
165.0	Powerwave Allgon	3	118	6.2	4.6	11.0	5.0	0.80	0.65	0.0	0.0	7.60	62	376
165.0	Andrew SBNHH-	3	131	7.3	4.6	11.9	7.1	0.80	0.69	0.0	0.0	7.60	78	419
165.0	Quintel QS66512-3	3	245	10.0	6.0	12.0	9.6	0.80	0.74	0.0	0.0	7.60	115	803
165.0	Kathrein Scala	3	276	15.9	6.6	20.0	6.9	0.80	0.62	0.0	0.0	7.60	152	886
165.0	Round Sector Frame	3	546	25.5	0.0	0.0	0.0	0.75	0.67	0.0	0.0	7.60	248	1817
155.0	Commscope	3	35	0.9	0.8	6.9	6.4	0.80	0.50	0.0	0.0	7.50	7	119
155.0	Samsung Outdoor	3	35	1.3	1.0	8.5	4.1	0.80	0.50	0.0	0.0	7.50	10	115
155.0	Samsung Outdoor	3	16	1.3	1.0	8.7	1.4	0.80	0.50	0.0	0.0	7.50	10	52
155.0	Samsung B5/B13	3	109	2.5	1.3	15.0	8.1	0.80	0.50	0.0	0.0	7.50	19	368
155.0	Samsung B2/B66A	3	127	2.5	1.3	15.0	10.0	0.80	0.50	0.0	0.0	7.50	19	432
155.0	Raycap RxxDC-3315-	2	75	3.2	1.6	15.7	10.3	0.80	0.67	0.0	0.0	7.50	22	158
155.0	Amphenol Antel BXA-	3	116	9.0	5.7	11.2	5.3	0.80	0.66	0.0	0.0	7.50	91	358
155.0	Commscope JAHH-	6	196	11.0	6.0	13.8	8.2	0.80	0.69	0.0	0.0	7.50	231	1247
155.0	Flat Light Sector	3	601	28.0	0.0	0.0	0.0	0.75	0.67	0.0	0.0	7.50	269	2043
140.0	Small Side Lights	3	69	0.7	1.0	8.0	8.0	1.00	1.00	0.0	0.0	7.34	13	235
132.0	Generic 4' Yagi	1	110	13.4	4.0	48.0	3.0	1.00	1.00	0.0	0.0	7.25	83	113
132.0	Flat Side Arm	1	198	7.9	0.0	0.0	0.0	1.00	1.00	0.0	0.0	7.25	49	228
123.0	Generic 10' Omni	1	74	5.3	10.0	3.0	3.0	1.00	1.00	0.0	0.0	7.14	32	79
118.0	Round Side Arm	1	197	7.0	0.0	0.0	0.0	1.00	1.00	0.0	0.0	7.08	42	227
108.0	Round Side Arm	1	196	6.9	0.0	0.0	0.0	1.00	1.00	0.0	0.0	6.95	41	226
98.00	Generic 4' Yagi	1	107	13.1	4.0	48.0	3.0	1.00	1.00	0.0	0.0	6.81	76	110
98.00	Flat Side Arm	1	196	7.9	0.0	0.0	0.0	1.00	1.00	0.0	0.0	6.81	45	226
80.00	Empty Round Side	1	195	6.9	0.0	0.0	0.0	1.00	1.00	0.0	0.0	6.52	38	225
8.00	Round Side Arm	1	189	6.6	0.0	0.0	0.0	1.00	1.00	0.0	0.0	4.59	26	219
Totals		168	26612	1137.6									4465	29371

Discrete Appurtenance Properties 1.0D + 1.0W Service

Elevation (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)
240.0	Lightning Rod	1	10	1.0	4.0	3.0	3.0	1.00	1.00	0.0	0.0	11.83	10	10
240.0	Dielectric DCR-L1 w/	1	18	1.8	0.0	0.0	0.0	1.00	1.00	3.0	54.5	11.87	18	18
240.0	Generic 10' Omni	1	25	3.0	10.0	3.0	3.0	1.00	1.00	5.0	151.6	11.89	30	25
240.0	Beacon	1	70	4.5	3.0	18.0	18.0	1.00	1.00	0.0	0.0	11.83	45	70
240.0	Round Side Arm	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	11.83	52	150
240.0	Generic 8' Yagi	1	30	12.0	8.0	60.0	3.0	1.00	1.00	11.0	1340.5	11.95	122	30
240.0	Round Sector Frame	1	300	14.4	0.0	0.0	0.0	1.00	1.00	0.0	0.0	11.83	145	300
234.0	Generic 8' Omni	2	25	2.4	8.0	3.0	3.0	1.00	1.00	0.0	0.0	11.77	48	50
230.0	Round Side Arm	1	150	5.2	0.0	0.0	0.0	1.00	0.67	0.0	0.0	11.73	35	150

### Tower Loading

229.0	Generic 12' Omni	1	40	3.6	12.0	3.0	3.0	1.00	1.00	0.0	0.0	11.72	36	40
223.0	Generic Empty Mount	1	0	0.0	0.0	0.0	0.0	1.00	1.00	0.0	0.0	11.65	0	0
223.0	Round Side Arm	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	11.65	52	150
223.0	Empty Flat Side Arm	1	150	6.3	0.0	0.0	0.0	1.00	1.00	0.0	0.0	11.65	62	150
202.0	Ericsson Radio 4449	3	75	1.6	1.3	13.2	10.5	0.80	0.50	0.0	0.0	11.41	19	225
202.0	Ericsson RRUS 4415	3	46	1.8	1.4	13.4	5.9	0.80	0.50	0.0	0.0	11.41	21	138
202.0	Ericsson Air6449	3	104	5.7	2.8	20.6	8.6	0.80	0.63	0.0	0.0	11.41	83	312
202.0	Ericsson AIR 32	3	109	6.9	4.9	12.9	8.7	0.80	0.71	0.0	0.0	11.41	114	327
202.0	Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.67	0.0	0.0	11.41	211	900
202.0	RFS	3	128	20.2	8.0	24.0	8.7	0.80	0.63	0.0	0.0	11.41	297	384
183.0	Side Arms	3	560	8.5	0.0	0.0	0.0	1.00	0.67	0.0	0.0	11.18	162	1680
183.0	Flat Light Sector	3	400	17.9	0.0	0.0	0.0	0.75	0.67	0.0	0.0	11.18	256	1200
181.0	Nokia 2.5G MAA -	3	104	4.2	2.1	19.7	9.6	0.80	0.64	0.0	0.0	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	0.0	11.14	19	80
180.0	Alcatel-Lucent 800	3	53	2.1	1.6	13.0	10.8	0.80	0.50	0.0	0.0	11.14	24	159
180.0	Alcatel-Lucent	6	44	3.3	1.9	13.0	17.0	0.80	0.50	0.0	0.0	11.14	74	264
180.0	Argus LLPX310R	3	29	4.3	3.5	11.8	4.5	0.80	0.63	0.0	0.0	11.14	61	86
180.0	Generic 24" x 24"	1	20	4.8	2.0	24.0	8.0	0.80	1.00	0.0	0.0	11.14	36	20
180.0	Generic 2' Std. Dish	3	14	5.2	2.0	24.0	0.0	1.00	1.00	0.0	0.0	11.14	149	42
180.0	RFS APXVSP18-C-	2	57	8.0	6.0	11.8	7.0	0.80	0.77	0.0	0.0	11.14	94	114
180.0	RFS APXV9ERR18-C-	1	62	8.0	6.0	11.8	7.9	0.80	1.00	0.0	0.0	11.14	61	62
165.0	Powerwave Allgon	12	6	0.2	0.3	6.0	3.0	0.80	0.50	0.0	0.0	10.94	9	66
165.0	Powerwave Allgon	6	2	0.3	0.4	8.3	2.4	0.80	0.50	0.0	0.0	10.94	8	13
165.0	CCI	3	19	1.0	0.9	11.0	3.8	0.80	0.50	0.0	0.0	10.94	11	58
165.0	Commscope WCS-	1	30	1.0	0.9	10.6	6.9	0.80	0.50	0.0	0.0	10.94	4	30
165.0	Powerwave Allgon	9	14	1.1	1.2	9.2	2.6	0.80	0.50	0.0	0.0	10.94	37	127
165.0	Raycap DC6-48-60-	3	20	1.3	2.0	9.7	9.7	0.80	0.50	0.0	0.0	10.94	14	60
165.0	Ericsson RRUS 4426	3	48	1.6	1.3	13.2	5.8	0.80	0.50	0.0	0.0	10.94	18	145
165.0	Ericsson RRUS 4478	3	60	1.8	1.4	13.4	7.7	0.80	0.50	0.0	0.0	10.94	21	180
165.0	Ericsson RRUS 32	3	51	2.7	2.2	12.1	6.7	0.80	0.50	0.0	0.0	10.94	30	152
165.0	Ericsson RRUS 32 B2	3	53	2.7	2.3	12.1	7.0	0.80	0.50	0.0	0.0	10.94	31	159
165.0	Ericsson Radio 4449	3	85	3.5	2.3	15.0	10.0	0.80	0.50	0.0	0.0	10.94	39	255
165.0	Powerwave Allgon	3	35	5.5	4.6	11.0	5.0	0.80	0.65	0.0	0.0	10.94	80	105
165.0	Andrew SBNHH-	3	41	5.9	4.6	11.9	7.1	0.80	0.69	0.0	0.0	10.94	91	123
165.0	Quintel QS66512-3	3	112	8.1	6.0	12.0	9.6	0.80	0.74	0.0	0.0	10.94	134	336
165.0	Kathrein Scala	3	98	13.8	6.6	20.0	6.9	0.80	0.62	0.0	0.0	10.94	191	293
165.0	Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.67	0.0	0.0	10.94	202	900
155.0	Commscope	3	21	0.6	0.8	6.9	6.4	0.80	0.50	0.0	0.0	10.79	6	62
155.0	Samsung Outdoor	3	19	0.9	1.0	8.5	4.1	0.80	0.50	0.0	0.0	10.79	9	56
155.0	Samsung Outdoor	3	4	0.9	1.0	8.7	1.4	0.80	0.50	0.0	0.0	10.79	10	13
155.0	Samsung B5/B13	3	70	1.9	1.3	15.0	8.1	0.80	0.50	0.0	0.0	10.79	21	211
155.0	Samsung B2/B66A	3	84	1.9	1.3	15.0	10.0	0.80	0.50	0.0	0.0	10.79	21	253
155.0	Raycap RxxDC-3315-	2	21	2.5	1.6	15.7	10.3	0.80	0.67	0.0	0.0	10.79	25	43
155.0	Amphenol Antel BXA-	3	19	7.3	5.7	11.2	5.3	0.80	0.66	0.0	0.0	10.79	106	58
155.0	Commscope JAHH-	6	61	9.1	6.0	13.8	8.2	0.80	0.69	0.0	0.0	10.79	277	364
155.0	Flat Light Sector	3	400	17.9	0.0	0.0	0.0	0.75	0.67	0.0	0.0	10.79	248	1200
140.0	Small Side Lights	3	45	2.0	1.0	8.0	8.0	1.00	1.00	0.0	0.0	10.57	54	135
132.0	Generic 4' Yagi	1	15	4.9	4.0	48.0	3.0	1.00	1.00	0.0	0.0	10.44	43	15
132.0	Flat Side Arm	1	150	6.3	0.0	0.0	0.0	1.00	1.00	0.0	0.0	10.44	56	150
123.0	Generic 10' Omni	1	25	3.0	10.0	3.0	3.0	1.00	1.00	0.0	0.0	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	0.0	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	0.0	10.00	44	150
98.00	Generic 4' Yagi	1	15	4.9	4.0	48.0	3.0	1.00	1.00	0.0	0.0	9.80	41	15
98.00	Flat Side Arm	1	150	6.3	0.0	0.0	0.0	1.00	1.00	0.0	0.0	9.80	52	150
80.00	Empty Round Side	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	9.39	42	150
8.00	Round Side Arm	1	150	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.0	6.61	29	150



Site Number: 383598

Code: ANSI/TIA-222-H

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Site Name: Tartaglia, CT

Engineering Number: 13337501\_C3\_02

3/26/2021 9:37:18 AM

Customer: T-MOBILE

### Tower Loading

Totals                    168    13796    807.3

4471    13796

### Tower Loading

#### Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Description	Qty	Width (in)	Weight (lb/ft)	Pct In Block	Spread On Faces	Bundling Arrangement	Cluster Dia (in)	Out Of Zone	Spacing (in)	Orientation Factor	Ka Override
0.00	245.0	1 1/4" Coax	1	1.55	0.63	100	1	Individual	0.00	N	1.00	1.00	0.00
0.00	243.0	1 5/8" Coax	1	1.98	0.82	100	1	Individual	0.00	N	1.00	1.00	0.00
0.00	240.0	Waveguide	1	1.50	6.00	100	1	Individual	0.00	N	1.00	1.00	0.00
0.00	234.0	7/8" Coax	2	1.09	0.33	100	1	Individual	0.00	N	1.00	1.00	0.00
0.00	229.0	1 1/4" Coax	1	1.55	0.63	100	1	Individual	0.00	N	1.00	1.00	0.00
0.00	202.0	1 1/4" Hybriflex	2	1.54	1.00	100	2	Individual	0.00	N	1.00	1.00	0.00
0.00	202.0	1 5/8" Hybriflex	1	1.98	1.30	100	2	Individual	0.00	N	1.00	1.00	0.00
0.00	202.0	1 5/8" Hybriflex	2	1.98	1.30	100	2	Individual	0.00	N	1.00	1.00	0.00
0.00	202.0	Waveguide	1	1.50	6.00	100	2	Individual	0.00	N	1.00	1.00	0.00
0.00	183.0	Waveguide	1	1.50	6.00	100	2	Individual	0.00	N	1.00	1.00	0.00
0.00	181.0	1.7" (43.2mm)	1	1.70	1.78	100	2	Individual	0.00	N	1.00	1.00	0.00
0.00	180.0	1 1/4" (1.25"-	3	1.25	1.05	100	2	Individual	0.00	N	1.00	1.00	0.00
0.00	180.0	1 1/4" Hybriflex	1	1.54	1.00	100	2	Individual	0.00	N	1.00	1.00	0.00
0.00	180.0	1/2" Coax	3	0.63	0.15	100	2	Individual	0.00	N	1.00	1.00	0.01
0.00	180.0	2" conduit	2	2.38	3.65	100	2	Individual	0.00	N	1.00	1.00	0.00
0.00	180.0	5/16" (0.31"-	6	0.31	0.05	50	2	Block	0.00	N	1.00	1.00	0.00
0.00	174.0	Waveguide	1	1.50	6.00	100	1	Individual	0.00	N	1.00	1.00	0.00
0.00	165.0	0.39" (10mm) Fiber	2	0.39	0.06	100	1	Block	0.00	N	1.00	1.00	0.00
0.00	165.0	0.39" (10mm) Fiber	4	0.39	0.06	100	1	Individual	0.00	N	1.00	1.00	0.00
0.00	165.0	0.78" (19.7mm) 8	6	0.78	0.59	50	1	Block	0.00	N	1.00	1.00	0.00
0.00	165.0	1 5/8" Coax	12	1.98	0.82	50	1	Block	0.00	N	1.00	1.00	0.00
0.00	165.0	2" conduit	2	2.38	3.65	50	1	Block	0.00	N	1.00	1.00	0.00
0.00	165.0	Waveguide	1	1.50	6.00	100	1	Individual	0.00	N	1.00	1.00	0.00
0.00	164.0	0.78" (19.7mm) 8	2	0.78	0.59	100	1	Individual	0.00	N	1.00	1.00	0.00
0.00	155.0	1 5/8" Coax	6	1.98	0.82	100	1	Individual	0.00	N	1.00	1.00	0.00
0.00	155.0	1 5/8" Hybriflex	8	1.98	1.30	100	1	Individual	0.00	N	1.00	1.00	0.00
0.00	155.0	Waveguide	1	1.50	6.00	100	1	Individual	0.00	N	1.00	1.00	0.00
0.00	132.0	1 1/4" Coax	1	1.55	0.63	100	3	Individual	0.00	N	1.00	1.00	0.00
0.00	123.0	7/8" Coax	1	1.09	0.33	100	1	Individual	0.00	N	1.00	1.00	0.00
0.00	98.00	1 1/4" Coax	1	1.55	0.63	100	3	Individual	0.00	N	1.00	1.00	0.00

### Section Forces

LoadCase 1.2D + 1.0W Normal

119 mph Normal with No Ice

Gust Response Factor (Gh): 0.85

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q <sub>z</sub> (psf)	A <sub>f</sub> (sf)	A <sub>r</sub> (sf)	Ice A <sub>r</sub> (sf)	e	C <sub>f</sub>	D <sub>f</sub>	D <sub>r</sub>	T <sub>iz</sub> (in)	A <sub>e</sub> (sf)	EPA <sub>a</sub> (sf)	EPA <sub>bi</sub> (sf)	Wt. (lb)	Ice Wt. (lb)	F <sub>st</sub> (lb)	F <sub>a</sub> (lb)	Force (lb)
11	230.00	46.14	0.000	45.353	0.000	0.179	2.67	1.00	1.00	0.0	22.58	60.21	0.00	4730	0	2361	388	2750
10	210.00	45.26	0.000	45.187	0.000	0.153	2.76	1.00	1.00	0.0	21.88	60.41	0.00	4935	0	2324	504	2828
9	190.00	44.32	0.000	46.842	0.000	0.137	2.82	1.00	1.00	0.0	22.55	63.63	0.00	5372	0	2397	983	3380
8	170.00	43.29	0.000	50.084	0.000	0.127	2.86	1.00	1.00	0.0	24.29	69.39	0.00	6687	0	2553	2114	4668
7	150.00	42.17	0.000	57.359	0.000	0.130	2.85	1.00	1.00	0.0	28.04	79.87	0.00	8422	0	2863	4204	7067
6	130.00	40.92	0.000	57.395	0.000	0.116	2.90	1.00	1.00	0.0	28.31	82.08	0.00	8636	0	2855	4440	7295
5	110.00	39.50	0.000	56.861	0.000	0.105	2.95	1.00	1.00	0.0	27.07	79.74	0.00	8141	0	2677	4349	7026
4	90.00	37.87	0.000	57.777	0.000	0.097	2.98	1.00	1.00	0.0	28.05	83.46	0.00	8428	0	2686	4223	6909
3	70.00	35.92	0.000	66.406	0.000	0.102	2.96	1.00	1.00	0.0	31.82	94.04	0.00	9421	0	2871	4011	6882
2	45.00	32.73	0.000	98.555	0.000	0.092	3.00	1.00	1.00	0.0	46.70	139.88	0.00	13701	0	3891	5482	9373
1	15.00	26.00	0.000	114.52	0.000	0.097	2.98	1.00	1.00	0.0	54.02	160.77	0.00	15622	0	3553	4356	7909
														94095	0			66088

LoadCase 1.2D + 1.0W 60 deg

119 mph 60 degree with No Ice

Gust Response Factor (Gh): 0.85

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q <sub>z</sub> (psf)	A <sub>f</sub> (sf)	A <sub>r</sub> (sf)	Ice A <sub>r</sub> (sf)	e	C <sub>f</sub>	D <sub>f</sub>	D <sub>r</sub>	T <sub>iz</sub> (in)	A <sub>e</sub> (sf)	EPA <sub>a</sub> (sf)	EPA <sub>bi</sub> (sf)	Wt. (lb)	Ice Wt. (lb)	F <sub>st</sub> (lb)	F <sub>a</sub> (lb)	Force (lb)
11	230.00	46.14	0.000	45.353	0.000	0.179	2.67	0.80	1.00	0.0	22.58	60.21	0.00	4730	0	2361	388	2750
10	210.00	45.26	0.000	45.187	0.000	0.153	2.76	0.80	1.00	0.0	21.88	60.41	0.00	4935	0	2324	504	2828
9	190.00	44.32	0.000	46.842	0.000	0.137	2.82	0.80	1.00	0.0	22.55	63.63	0.00	5372	0	2397	983	3380
8	170.00	43.29	0.000	50.084	0.000	0.127	2.86	0.80	1.00	0.0	24.29	69.39	0.00	6687	0	2553	2114	4668
7	150.00	42.17	0.000	57.359	0.000	0.130	2.85	0.80	1.00	0.0	28.04	79.87	0.00	8422	0	2863	4204	7067
6	130.00	40.92	0.000	57.395	0.000	0.116	2.90	0.80	1.00	0.0	28.31	82.08	0.00	8636	0	2855	4440	7295
5	110.00	39.50	0.000	56.861	0.000	0.105	2.95	0.80	1.00	0.0	27.07	79.74	0.00	8141	0	2677	4349	7026
4	90.00	37.87	0.000	57.777	0.000	0.097	2.98	0.80	1.00	0.0	28.05	83.46	0.00	8428	0	2686	4223	6909
3	70.00	35.92	0.000	66.406	0.000	0.102	2.96	0.80	1.00	0.0	31.82	94.04	0.00	9421	0	2871	4011	6882
2	45.00	32.73	0.000	98.555	0.000	0.092	3.00	0.80	1.00	0.0	46.70	139.88	0.00	13701	0	3891	5482	9373
1	15.00	26.00	0.000	114.52	0.000	0.097	2.98	0.80	1.00	0.0	54.99	163.66	0.00	15622	0	3617	4356	7973
														94095	0			66151

LoadCase 1.2D + 1.0W 90 deg

119 mph 90 degree with No Ice

Gust Response Factor (Gh): 0.85

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q <sub>z</sub> (psf)	A <sub>f</sub> (sf)	A <sub>r</sub> (sf)	Ice A <sub>r</sub> (sf)	e	C <sub>f</sub>	D <sub>f</sub>	D <sub>r</sub>	T <sub>iz</sub> (in)	A <sub>e</sub> (sf)	EPA <sub>a</sub> (sf)	EPA <sub>bi</sub> (sf)	Wt. (lb)	Ice Wt. (lb)	F <sub>st</sub> (lb)	F <sub>a</sub> (lb)	Force (lb)
11	230.00	46.14	0.000	45.353	0.000	0.179	2.67	0.85	1.00	0.0	22.58	60.21	0.00	4730	0	2361	388	2750
10	210.00	45.26	0.000	45.187	0.000	0.153	2.76	0.85	1.00	0.0	21.88	60.41	0.00	4935	0	2324	504	2828
9	190.00	44.32	0.000	46.842	0.000	0.137	2.82	0.85	1.00	0.0	22.55	63.63	0.00	5372	0	2397	983	3380
8	170.00	43.29	0.000	50.084	0.000	0.127	2.86	0.85	1.00	0.0	24.29	69.39	0.00	6687	0	2553	2114	4668
7	150.00	42.17	0.000	57.359	0.000	0.130	2.85	0.85	1.00	0.0	28.04	79.87	0.00	8422	0	2863	4204	7067
6	130.00	40.92	0.000	57.395	0.000	0.116	2.90	0.85	1.00	0.0	28.31	82.08	0.00	8636	0	2855	4440	7295
5	110.00	39.50	0.000	56.861	0.000	0.105	2.95	0.85	1.00	0.0	27.07	79.74	0.00	8141	0	2677	4349	7026
4	90.00	37.87	0.000	57.777	0.000	0.097	2.98	0.85	1.00	0.0	28.05	83.46	0.00	8428	0	2686	4223	6909
3	70.00	35.92	0.000	66.406	0.000	0.102	2.96	0.85	1.00	0.0	31.82	94.04	0.00	9421	0	2871	4011	6882

Site Number: 383598

Code:

ANSI/TIA-222-H

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Site Name: Tartaglia, CT

Engineering Number: 13337501\_C3\_02

3/26/2021 9:37:18 AM

Customer: T-MOBILE

### Section Forces

2	45.00	32.73	0.000	98.555	0.000	0.092	3.00	0.85	1.00	0.0	46.70	139.88	0.00	13701	0	3891	5482	9373
1	15.00	26.00	0.000	114.52	0.000	0.097	2.98	0.85	1.00	0.0	54.99	163.66	0.00	15622	0	3617	4356	7973
														94095	0			66151

#### LoadCase 0.9D + 1.0W Normal

#### 119 mph Normal with No Ice (Reduced DL)

Gust Response Factor (Gh): 0.85

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q <sub>z</sub> (psf)	A <sub>f</sub> (sf)	A <sub>r</sub> (sf)	Ice A <sub>r</sub> (sf)	e	C <sub>f</sub>	D <sub>f</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	230.00	46.14	0.000	45.353	0.000	0.179	2.67	1.00	1.00	0.0	22.58	60.21	0.00	3547	0	2361	388	2750
10	210.00	45.26	0.000	45.187	0.000	0.153	2.76	1.00	1.00	0.0	21.88	60.41	0.00	3702	0	2324	504	2828
9	190.00	44.32	0.000	46.842	0.000	0.137	2.82	1.00	1.00	0.0	22.55	63.63	0.00	4029	0	2397	983	3380
8	170.00	43.29	0.000	50.084	0.000	0.127	2.86	1.00	1.00	0.0	24.29	69.39	0.00	5015	0	2553	2114	4668
7	150.00	42.17	0.000	57.359	0.000	0.130	2.85	1.00	1.00	0.0	28.04	79.87	0.00	6316	0	2863	4204	7067
6	130.00	40.92	0.000	57.395	0.000	0.116	2.90	1.00	1.00	0.0	28.31	82.08	0.00	6477	0	2855	4440	7295
5	110.00	39.50	0.000	56.861	0.000	0.105	2.95	1.00	1.00	0.0	27.07	79.74	0.00	6106	0	2677	4349	7026
4	90.00	37.87	0.000	57.777	0.000	0.097	2.98	1.00	1.00	0.0	28.05	83.46	0.00	6321	0	2686	4223	6909
3	70.00	35.92	0.000	66.406	0.000	0.102	2.96	1.00	1.00	0.0	31.82	94.04	0.00	7066	0	2871	4011	6882
2	45.00	32.73	0.000	98.555	0.000	0.092	3.00	1.00	1.00	0.0	46.70	139.88	0.00	10276	0	3891	5482	9373
1	15.00	26.00	0.000	114.52	0.000	0.097	2.98	1.00	1.00	0.0	54.99	163.66	0.00	11716	0	3617	4356	7973
														70571	0			66151

#### LoadCase 0.9D + 1.0W 60 deg

#### 119 mph 60 deg with No Ice (Reduced DL)

Gust Response Factor (Gh): 0.85

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q <sub>z</sub> (psf)	A <sub>f</sub> (sf)	A <sub>r</sub> (sf)	Ice A <sub>r</sub> (sf)	e	C <sub>f</sub>	D <sub>f</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	230.00	46.14	0.000	45.353	0.000	0.179	2.67	0.80	1.00	0.0	22.58	60.21	0.00	3547	0	2361	388	2750
10	210.00	45.26	0.000	45.187	0.000	0.153	2.76	0.80	1.00	0.0	21.88	60.41	0.00	3702	0	2324	504	2828
9	190.00	44.32	0.000	46.842	0.000	0.137	2.82	0.80	1.00	0.0	22.55	63.63	0.00	4029	0	2397	983	3380
8	170.00	43.29	0.000	50.084	0.000	0.127	2.86	0.80	1.00	0.0	24.29	69.39	0.00	5015	0	2553	2114	4668
7	150.00	42.17	0.000	57.359	0.000	0.130	2.85	0.80	1.00	0.0	28.04	79.87	0.00	6316	0	2863	4204	7067
6	130.00	40.92	0.000	57.395	0.000	0.116	2.90	0.80	1.00	0.0	28.31	82.08	0.00	6477	0	2855	4440	7295
5	110.00	39.50	0.000	56.861	0.000	0.105	2.95	0.80	1.00	0.0	27.07	79.74	0.00	6106	0	2677	4349	7026
4	90.00	37.87	0.000	57.777	0.000	0.097	2.98	0.80	1.00	0.0	28.05	83.46	0.00	6321	0	2686	4223	6909
3	70.00	35.92	0.000	66.406	0.000	0.102	2.96	0.80	1.00	0.0	31.82	94.04	0.00	7066	0	2871	4011	6882
2	45.00	32.73	0.000	98.555	0.000	0.092	3.00	0.80	1.00	0.0	46.70	139.88	0.00	10276	0	3891	5482	9373
1	15.00	26.00	0.000	114.52	0.000	0.097	2.98	0.80	1.00	0.0	54.99	163.66	0.00	11716	0	3617	4356	7973
														70571	0			66151

#### LoadCase 0.9D + 1.0W 90 deg

#### 119 mph 90 deg with No Ice (Reduced DL)

Gust Response Factor (Gh): 0.85

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q <sub>z</sub> (psf)	A <sub>f</sub> (sf)	A <sub>r</sub> (sf)	Ice A <sub>r</sub> (sf)	e	C <sub>f</sub>	D <sub>f</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	230.00	46.14	0.000	45.353	0.000	0.179	2.67	0.85	1.00	0.0	22.58	60.21	0.00	3547	0	2361	388	2750
10	210.00	45.26	0.000	45.187	0.000	0.153	2.76	0.85	1.00	0.0	21.88	60.41	0.00	3702	0	2324	504	2828
9	190.00	44.32	0.000	46.842	0.000	0.137	2.82	0.85	1.00	0.0	22.55	63.63	0.00	4029	0	2397	983	3380
8	170.00	43.29	0.000	50.084	0.000	0.127	2.86	0.85	1.00	0.0	24.29	69.39	0.00	5015	0	2553	2114	4668

Site Number: 383598

Code:

ANSI/TIA-222-H

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Site Name: Tartaglia, CT

Engineering Number: 13337501\_C3\_02

3/26/2021 9:37:18 AM

Customer: T-MOBILE

### Section Forces

7	150.00	42.17	0.000	57.359	0.000	0.130	2.85	0.85	1.00	0.0	28.04	79.87	0.00	6316	0	2863	4204	7067
6	130.00	40.92	0.000	57.395	0.000	0.116	2.90	0.85	1.00	0.0	28.31	82.08	0.00	6477	0	2855	4440	7295
5	110.00	39.50	0.000	56.861	0.000	0.105	2.95	0.85	1.00	0.0	27.07	79.74	0.00	6106	0	2677	4349	7026
4	90.00	37.87	0.000	57.777	0.000	0.097	2.98	0.85	1.00	0.0	28.05	83.46	0.00	6321	0	2686	4223	6909
3	70.00	35.92	0.000	66.406	0.000	0.102	2.96	0.85	1.00	0.0	31.82	94.04	0.00	7066	0	2871	4011	6882
2	45.00	32.73	0.000	98.555	0.000	0.092	3.00	0.85	1.00	0.0	46.70	139.88	0.00	10276	0	3891	5482	9373
1	15.00	26.00	0.000	114.52	0.000	0.097	2.98	0.85	1.00	0.0	54.99	163.66	0.00	11716	0	3617	4356	7973
														70571	0			66151

### LoadCase 1.2D + 1.0Di + 1.0Wi Normal

### 50 mph Normal with 1.00 in Radial Ice

Gust Response Factor (Gh): 0.85

Ice Dead Load Factor :1.00

Ice Importance Factor :1.00

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q <sub>z</sub> (psf)	A <sub>f</sub> (sf)	A <sub>r</sub> (sf)	Ice A <sub>r</sub> (sf)	e	C <sub>f</sub>	D <sub>f</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	230.00	8.15	0.000	71.503	26.15	0.278	2.36	1.00	1.00	1.2	43.01	101.30	26.15	7699	2969	701	205	907
10	210.00	7.99	0.000	68.577	23.39	0.229	2.50	1.00	1.00	1.2	40.27	100.76	23.39	7856	2921	684	282	967
9	190.00	7.82	0.000	71.522	24.68	0.206	2.58	1.00	1.00	1.2	41.65	107.27	24.68	8897	3525	713	537	1250
8	170.00	7.64	0.000	76.135	26.05	0.192	2.62	1.00	1.00	1.2	44.16	115.85	26.05	11786	5100	753	1092	1845
7	150.00	7.44	0.000	82.279	30.13	0.184	2.65	1.00	1.00	1.2	50.61	134.12	30.13	16489	8067	849	2000	2849
6	130.00	7.22	0.000	86.081	28.68	0.173	2.69	1.00	1.00	1.1	49.71	133.59	28.69	16575	7939	820	2135	2955
5	110.00	6.97	0.000	75.818	23.56	0.139	2.81	1.00	1.00	1.1	45.84	128.98	23.56	16238	8097	765	2147	2911
4	90.00	6.69	0.000	79.522	21.74	0.133	2.84	1.00	1.00	1.1	45.37	128.65	21.75	16053	7625	731	2079	2810
3	70.00	6.34	0.000	88.365	21.95	0.135	2.83	1.00	1.00	1.1	50.42	142.52	21.96	17110	7688	768	1945	2713
2	45.00	5.78	0.000	126.62	28.07	0.118	2.89	1.00	1.00	1.0	71.94	208.12	28.07	24461	10760	1022	2635	3657
1	15.00	4.59	0.000	134.52	28.64	0.114	2.91	1.00	1.00	0.9	81.34	236.73	28.65	26320	10698	924	1987	2911
														169484	75389			25774

### LoadCase 1.2D + 1.0Di + 1.0Wi 60 deg

### 50 mph 60 deg with 1.00 in Radial Ice

Gust Response Factor (Gh): 0.85

Ice Dead Load Factor :1.00

Ice Importance Factor :1.00

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q <sub>z</sub> (psf)	A <sub>f</sub> (sf)	A <sub>r</sub> (sf)	Ice A <sub>r</sub> (sf)	e	C <sub>f</sub>	D <sub>f</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	230.00	8.15	0.000	71.503	26.15	0.278	2.36	0.80	1.00	1.2	43.01	101.30	26.15	7699	2969	701	205	907
10	210.00	7.99	0.000	68.577	23.39	0.229	2.50	0.80	1.00	1.2	40.27	100.76	23.39	7856	2921	684	282	967
9	190.00	7.82	0.000	71.522	24.68	0.206	2.58	0.80	1.00	1.2	41.65	107.27	24.68	8897	3525	713	537	1250
8	170.00	7.64	0.000	76.135	26.05	0.192	2.62	0.80	1.00	1.2	44.16	115.85	26.05	11786	5100	753	1092	1845
7	150.00	7.44	0.000	82.279	30.13	0.184	2.65	0.80	1.00	1.2	50.61	134.12	30.13	16489	8067	849	2000	2849
6	130.00	7.22	0.000	86.081	28.68	0.173	2.69	0.80	1.00	1.1	49.71	133.59	28.69	16575	7939	820	2135	2955
5	110.00	6.97	0.000	75.818	23.56	0.139	2.81	0.80	1.00	1.1	45.84	128.98	23.56	16238	8097	765	2147	2911
4	90.00	6.69	0.000	79.522	21.74	0.133	2.84	0.80	1.00	1.1	45.37	128.65	21.75	16053	7625	731	2079	2810
3	70.00	6.34	0.000	88.365	21.95	0.135	2.83	0.80	1.00	1.1	50.42	142.52	21.96	17110	7688	768	1945	2713
2	45.00	5.78	0.000	126.62	28.07	0.118	2.89	0.80	1.00	1.0	71.94	208.12	28.07	24461	10760	1022	2635	3657
1	15.00	4.59	0.000	134.52	28.64	0.114	2.91	0.80	1.00	0.9	81.34	236.73	28.65	26320	10698	924	1987	2911
														169484	75389			25774

### Section Forces

LoadCase 1.2D + 1.0Di + 1.0Wi 90 deg

50 mph 90 deg with 1.00 in Radial Ice

Gust Response Factor (Gh): 0.85

Ice Dead Load Factor :1.00

Ice Importance Factor :1.00

Wind Importance Factor (Iw) : 1.00

Section Elev. (ft)	Q <sub>z</sub> (psf)	A <sub>f</sub> (sf)	A <sub>r</sub> (sf)	Ice A <sub>r</sub> (sf)	e	C <sub>f</sub>	D <sub>f</sub>	D <sub>r</sub>	T <sub>iz</sub> (in)	A <sub>e</sub> (sf)	EPA <sub>a</sub> (sf)	EPA <sub>bi</sub> (sf)	Wt. (lb)	Ice Wt. (lb)	F <sub>st</sub> (lb)	F <sub>a</sub> (lb)	Force (lb)
11 230.00	8.15	0.000	71.503	26.15	0.278	2.36	0.85	1.00	1.2	43.01	101.30	26.15	7699	2969	701	205	907
10 210.00	7.99	0.000	68.577	23.39	0.229	2.50	0.85	1.00	1.2	40.27	100.76	23.39	7856	2921	684	282	967
9 190.00	7.82	0.000	71.522	24.68	0.206	2.58	0.85	1.00	1.2	41.65	107.27	24.68	8897	3525	713	537	1250
8 170.00	7.64	0.000	76.135	26.05	0.192	2.62	0.85	1.00	1.2	44.16	115.85	26.05	11786	5100	753	1092	1845
7 150.00	7.44	0.000	82.279	30.13	0.184	2.65	0.85	1.00	1.2	50.61	134.12	30.13	16489	8067	849	2000	2849
6 130.00	7.22	0.000	86.081	28.68	0.173	2.69	0.85	1.00	1.1	49.71	133.59	28.69	16575	7939	820	2135	2955
5 110.00	6.97	0.000	75.818	23.56	0.139	2.81	0.85	1.00	1.1	45.84	128.98	23.56	16238	8097	765	2147	2911
4 90.00	6.69	0.000	79.522	21.74	0.133	2.84	0.85	1.00	1.1	45.37	128.65	21.75	16053	7625	731	2079	2810
3 70.00	6.34	0.000	88.365	21.95	0.135	2.83	0.85	1.00	1.1	50.42	142.52	21.96	17110	7688	768	1945	2713
2 45.00	5.78	0.000	126.62	28.07	0.118	2.89	0.85	1.00	1.0	71.94	208.12	28.07	24461	10760	1022	2635	3657
1 15.00	4.59	0.000	134.52	28.64	0.114	2.91	0.85	1.00	0.9	81.34	236.73	28.65	26320	10698	924	1987	2911
													169484	75389			25774

LoadCase 1.0D + 1.0W Service Normal

Serviceability - 60 mph Wind Normal

Gust Response Factor (Gh): 0.85

Wind Importance Factor (Iw) : 1.00

Section Elev. (ft)	Q <sub>z</sub> (psf)	A <sub>f</sub> (sf)	A <sub>r</sub> (sf)	Ice A <sub>r</sub> (sf)	e	C <sub>f</sub>	D <sub>f</sub>	D <sub>r</sub>	T <sub>iz</sub> (in)	A <sub>e</sub> (sf)	EPA <sub>a</sub> (sf)	EPA <sub>bi</sub> (sf)	Wt. (lb)	Ice Wt. (lb)	F <sub>st</sub> (lb)	F <sub>a</sub> (lb)	Force (lb)
11 230.00	11.73	0.000	45.353	0.000	0.179	2.67	1.00	1.00	0.0	25.16	67.10	0.00	3941	0	669	99	768
10 210.00	11.51	0.000	45.187	0.000	0.153	2.76	1.00	1.00	0.0	24.73	68.26	0.00	4113	0	668	128	796
9 190.00	11.27	0.000	46.842	0.000	0.137	2.82	1.00	1.00	0.0	25.60	72.23	0.00	4477	0	692	250	942
8 170.00	11.01	0.000	50.084	0.000	0.127	2.86	1.00	1.00	0.0	27.49	78.52	0.00	5572	0	735	538	1272
7 150.00	10.72	0.000	57.359	0.000	0.130	2.85	1.00	1.00	0.0	31.63	90.10	0.00	7018	0	821	1069	1890
6 130.00	10.40	0.000	57.395	0.000	0.116	2.90	1.00	1.00	0.0	31.83	92.27	0.00	7197	0	816	1129	1945
5 110.00	10.04	0.000	56.861	0.000	0.105	2.95	1.00	1.00	0.0	31.16	91.77	0.00	6784	0	783	1106	1889
4 90.00	9.63	0.000	57.777	0.000	0.097	2.98	1.00	1.00	0.0	31.99	95.18	0.00	7023	0	779	1074	1852
3 70.00	9.13	0.000	66.406	0.000	0.102	2.96	1.00	1.00	0.0	35.30	104.31	0.00	7851	0	810	1020	1829
2 45.00	8.32	0.000	98.555	0.000	0.092	3.00	1.00	1.00	0.0	53.48	160.19	0.00	11417	0	1133	1394	2527
1 15.00	6.61	0.000	114.52	0.000	0.097	2.98	1.00	1.00	0.0	62.36	185.60	0.00	13018	0	1043	1107	2150
													78413	0			17859

LoadCase 1.0D + 1.0W Service 60 deg

Serviceability - 60 mph Wind 60 deg

Gust Response Factor (Gh): 0.85

Wind Importance Factor (Iw) : 1.00

Section Elev. (ft)	Q <sub>z</sub> (psf)	A <sub>f</sub> (sf)	A <sub>r</sub> (sf)	Ice A <sub>r</sub> (sf)	e	C <sub>f</sub>	D <sub>f</sub>	D <sub>r</sub>	T <sub>iz</sub> (in)	A <sub>e</sub> (sf)	EPA <sub>a</sub> (sf)	EPA <sub>bi</sub> (sf)	Wt. (lb)	Ice Wt. (lb)	F <sub>st</sub> (lb)	F <sub>a</sub> (lb)	Force (lb)
11 230.00	11.73	0.000	45.353	0.000	0.179	2.67	0.80	1.00	0.0	25.16	67.10	0.00	3941	0	669	99	768
10 210.00	11.51	0.000	45.187	0.000	0.153	2.76	0.80	1.00	0.0	24.73	68.26	0.00	4113	0	668	128	796
9 190.00	11.27	0.000	46.842	0.000	0.137	2.82	0.80	1.00	0.0	25.60	72.23	0.00	4477	0	692	250	942
8 170.00	11.01	0.000	50.084	0.000	0.127	2.86	0.80	1.00	0.0	27.49	78.52	0.00	5572	0	735	538	1272
7 150.00	10.72	0.000	57.359	0.000	0.130	2.85	0.80	1.00	0.0	31.63	90.10	0.00	7018	0	821	1069	1890
6 130.00	10.40	0.000	57.395	0.000	0.116	2.90	0.80	1.00	0.0	31.83	92.27	0.00	7197	0	816	1129	1945
5 110.00	10.04	0.000	56.861	0.000	0.105	2.95	0.80	1.00	0.0	31.16	91.77	0.00	6784	0	783	1106	1889
4 90.00	9.63	0.000	57.777	0.000	0.097	2.98	0.80	1.00	0.0	31.99	95.18	0.00	7023	0	779	1074	1852



Site Number: 383598

Code: ANSI/TIA-222-H

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Site Name: Tartaglia, CT

Engineering Number: 13337501\_C3\_02

3/26/2021 9:37:18 AM

Customer: T-MOBILE

### Section Forces

3	70.00	9.13	0.000	66.406	0.000	0.102	2.96	0.80	1.00	0.0	35.30	104.31	0.00	7851	0	810	1020	1829
2	45.00	8.32	0.000	98.555	0.000	0.092	3.00	0.80	1.00	0.0	53.48	160.19	0.00	11417	0	1133	1394	2527
1	15.00	6.61	0.000	114.52	0.000	0.097	2.98	0.80	1.00	0.0	62.36	185.60	0.00	13018	0	1043	1107	2150
														78413	0			17859

LoadCase 1.0D + 1.0W Service 90 deg

Serviceability - 60 mph Wind 90 deg

Gust Response Factor (Gh): 0.85

Wind Importance Factor (Iw) : 1.00

Section	Elev. (ft)	Q <sub>z</sub> (psf)	A <sub>f</sub> (sf)	A <sub>r</sub> (sf)	Ice A <sub>r</sub> (sf)	e	C <sub>f</sub>	D <sub>f</sub>	D <sub>r</sub>	T <sub>iz</sub> (in)	A <sub>e</sub> (sf)	EPA <sub>a</sub> (sf)	EPA <sub>bi</sub> (sf)	Wt. (lb)	Ice Wt. (lb)	F <sub>st</sub> (lb)	F <sub>a</sub> (lb)	Force (lb)
11	230.00	11.73	0.000	45.353	0.000	0.179	2.67	0.85	1.00	0.0	25.16	67.10	0.00	3941	0	669	99	768
10	210.00	11.51	0.000	45.187	0.000	0.153	2.76	0.85	1.00	0.0	24.73	68.26	0.00	4113	0	668	128	796
9	190.00	11.27	0.000	46.842	0.000	0.137	2.82	0.85	1.00	0.0	25.60	72.23	0.00	4477	0	692	250	942
8	170.00	11.01	0.000	50.084	0.000	0.127	2.86	0.85	1.00	0.0	27.49	78.52	0.00	5572	0	735	538	1272
7	150.00	10.72	0.000	57.359	0.000	0.130	2.85	0.85	1.00	0.0	31.63	90.10	0.00	7018	0	821	1069	1890
6	130.00	10.40	0.000	57.395	0.000	0.116	2.90	0.85	1.00	0.0	31.83	92.27	0.00	7197	0	816	1129	1945
5	110.00	10.04	0.000	56.861	0.000	0.105	2.95	0.85	1.00	0.0	31.16	91.77	0.00	6784	0	783	1106	1889
4	90.00	9.63	0.000	57.777	0.000	0.097	2.98	0.85	1.00	0.0	31.99	95.18	0.00	7023	0	779	1074	1852
3	70.00	9.13	0.000	66.406	0.000	0.102	2.96	0.85	1.00	0.0	35.30	104.31	0.00	7851	0	810	1020	1829
2	45.00	8.32	0.000	98.555	0.000	0.092	3.00	0.85	1.00	0.0	53.48	160.19	0.00	11417	0	1133	1394	2527
1	15.00	6.61	0.000	114.52	0.000	0.097	2.98	0.85	1.00	0.0	62.36	185.60	0.00	13018	0	1043	1107	2150
														78413	0			17859

### Equivalent Lateral Force Method

Spectral Response Acceleration for Short Period ( $S_s$ ):	0.21
Spectral Response Acceleration at 1.0 Second Period ( $S_{d1}$ ):	0.05
Long-Period Transition Period ( $T_L$ - Seconds):	6
Importance Factor ( $I_p$ ):	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 ( $S_{ds}$ ):	0.23
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):	0.71
Redundancy Factor (p):	1.30
Seismic Force Distribution Exponent (k):	1.11
Total Unfactored Dead Load:	92.21 k
Seismic Base Shear (E):	4.85 k

LoadCase 1.2D + 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	1,612,15	0.090	436	4,907
10	210.00	4,113	1,521,25	0.085	412	5,120
9	190.00	4,477	1,482,39	0.083	401	5,574
8	170.00	5,572	1,631,59	0.091	442	6,938
7	150.00	7,018	1,789,35	0.100	484	8,738
6	130.00	7,197	1,566,32	0.087	424	8,960
5	110.00	6,784	1,227,49	0.069	332	8,447
4	90.00	7,023	1,017,77	0.057	276	8,744
3	70.00	7,851	861,726	0.048	233	9,775
2	45.00	11,417	768,772	0.043	208	14,215
1	15.00	13,018	260,103	0.015	70	16,208
Lightning Rod	240.00	10	4,287	0.000	1	12
Dielectric DCR-L1 w/ Radome	240.00	18	7,717	0.000	2	22
Generic 10' Omni	240.00	25	10,719	0.001	3	31
Beacon	240.00	70	30,012	0.002	8	87
Round Side Arm	240.00	150	64,311	0.004	17	187
Generic 8' Yagi	240.00	30	12,862	0.001	3	37
Round Sector Frame	240.00	300	128,622	0.007	35	374
Generic 8' Omni	234.00	50	20,845	0.001	6	62
Round Side Arm	230.00	150	61,354	0.003	17	187
Generic 12' Omni	229.00	40	16,283	0.001	4	50
Generic Empty Mount	223.00	0	0	0.000	0	0
Round Side Arm	223.00	150	59,293	0.003	16	187
Empty Flat Side Arm	223.00	150	59,293	0.003	16	187
Ericsson Radio 4449 B71 B85A	202.00	225	79,724	0.004	22	280

Equivalent Lateral Force Method

Ericsson RRUS 4415 B25	202.00	138	48,898	0.003	13	172
Ericsson Air6449 B41	202.00	312	110,551	0.006	30	388
Ericsson AIR 32 B66AA B2P	202.00	327	115,866	0.006	31	407
Round Sector Frame	202.00	900	318,898	0.018	86	1,121
RFS APXVAARR24_43-U-NA20	202.00	384	135,957	0.008	37	478
Side Arms	183.00	1,680	533,674	0.030	144	2,092
Flat Light Sector Frame	183.00	1,200	381,196	0.021	103	1,494
Nokia 2.5G MAA - AAHC(64T64R)	181.00	311	97,537	0.005	26	387
Motorola DAP Vx	180.00	79	24,797	0.001	7	99
Alcatel-Lucent 800 MHz RRH	180.00	159	49,594	0.003	13	198
Alcatel-Lucent 1900MHz RRH	180.00	264	82,344	0.005	22	329
Argus LLPX310R	180.00	86	26,762	0.001	7	107
Generic 24" x 24" Junction Box	180.00	20	6,238	0.000	2	25
Generic 2' Std. Dish	180.00	42	13,100	0.001	4	52
RFS APXVSP18-C-A20	180.00	114	35,558	0.002	10	142
RFS APXV9ERR18-C-A20	180.00	62	19,338	0.001	5	77
Powerwave Allgon LGP21901	165.00	66	18,697	0.001	5	82
Powerwave Allgon 7020.00 Dual Band	165.00	13	3,739	0.000	1	16
CCI DTMAPB7819VG12A	165.00	58	16,318	0.001	4	72
Commscope WCS-IMFQ-AMT	165.00	30	8,357	0.000	2	37
Powerwave Allgon LGP21401	165.00	127	35,950	0.002	10	158
Raycap DC6-48-60-18-8F (23.5" Height)	165.00	60	16,998	0.001	5	75
Ericsson RRUS 4426 B66	165.00	145	41,134	0.002	11	181
Ericsson RRUS 4478 B14	165.00	180	50,908	0.003	14	224
Ericsson RRUS 32 (50.8 lbs)	165.00	152	43,174	0.002	12	190
Ericsson RRUS 32 B2	165.00	159	45,044	0.003	12	198
Ericsson Radio 4449	165.00	255	72,240	0.004	20	317
Powerwave Allgon 7770.00	165.00	105	29,746	0.002	8	131
Andrew SBNHH-1D65A	165.00	123	34,760	0.002	9	153
Quintel QS66512-3 (112 lbs.)	165.00	336	95,187	0.005	26	418
Kathrein Scala 80010965	165.00	293	82,949	0.005	22	365
Round Sector Frame	165.00	900	254,966	0.014	69	1,121
Commscope CBC78T-DS-43-2X	155.00	62	16,417	0.001	4	77
Samsung Outdoor CBRS 20W RRH	155.00	56	14,752	0.001	4	69
Samsung Outdoor CBRS 20W RRH -Clip-	155.00	13	3,490	0.000	1	16
Samsung B5/B13 RRH-BR04C	155.00	211	55,756	0.003	15	263
Samsung B2/B66A RRH-BR049	155.00	253	66,939	0.004	18	315
Raycap RxxDC-3315-PF-48	155.00	43	11,315	0.001	3	53
Amphenol Antel BXA-80063-6BF-EDIN-X	155.00	58	15,228	0.001	4	72
Commscope JAHH-65B-R3B	155.00	364	96,125	0.005	26	453
Flat Light Sector Frame	155.00	1,200	317,244	0.018	86	1,494
Small Side Lights	140.00	135	31,891	0.002	9	168
Generic 4' Yagi	132.00	15	3,320	0.000	1	19
Flat Side Arm	132.00	150	33,202	0.002	9	187
Generic 10' Omni	123.00	25	5,118	0.000	1	31
Round Side Arm	118.00	150	29,330	0.002	8	187
Round Side Arm	108.00	150	26,594	0.001	7	187
Generic 4' Yagi	98.00	15	2,388	0.000	1	19
Flat Side Arm	98.00	150	23,885	0.001	6	187
Empty Round Side Arm	80.00	150	19,083	0.001	5	187
Round Side Arm	8.00	150	1,496	0.000	0	187

92,209      17,918,326      1.000      4,851      114,801

### Equivalent Lateral Force Method

LoadCase 0.9D - 1.0Ev + 1.0Eh

Seismic (Reduced DL)

Section	Height Above Base (ft)	Weight (lb)	W <sub>z</sub> (lb-ft)	C <sub>Vx</sub>	Horizontal Force (lb)	Vertical Force (lb)
11	230.00	3,941	1,612,15	0.090	436	3,370
10	210.00	4,113	1,521,25	0.085	412	3,516
9	190.00	4,477	1,482,39	0.083	401	3,828
8	170.00	5,572	1,631,59	0.091	442	4,764
7	150.00	7,018	1,789,35	0.100	484	6,001
6	130.00	7,197	1,566,32	0.087	424	6,153
5	110.00	6,784	1,227,49	0.069	332	5,801
4	90.00	7,023	1,017,77	0.057	276	6,005
3	70.00	7,851	861,726	0.048	233	6,713
2	45.00	11,417	768,772	0.043	208	9,762
1	15.00	13,018	260,103	0.015	70	11,130
Lightning Rod	240.00	10	4,287	0.000	1	9
Dielectric DCR-L1 w/ Radome	240.00	18	7,717	0.000	2	15
Generic 10' Omni	240.00	25	10,719	0.001	3	21
Beacon	240.00	70	30,012	0.002	8	60
Round Side Arm	240.00	150	64,311	0.004	17	128
Generic 8' Yagi	240.00	30	12,862	0.001	3	26
Round Sector Frame	240.00	300	128,622	0.007	35	256
Generic 8' Omni	234.00	50	20,845	0.001	6	43
Round Side Arm	230.00	150	61,354	0.003	17	128
Generic 12' Omni	229.00	40	16,283	0.001	4	34
Generic Empty Mount	223.00	0	0	0.000	0	0
Round Side Arm	223.00	150	59,293	0.003	16	128
Empty Flat Side Arm	223.00	150	59,293	0.003	16	128
Ericsson Radio 4449 B71 B85A	202.00	225	79,724	0.004	22	192
Ericsson RRUS 4415 B25	202.00	138	48,898	0.003	13	118
Ericsson Air6449 B41	202.00	312	110,551	0.006	30	267
Ericsson AIR 32 B66AA B2P	202.00	327	115,866	0.006	31	280
Round Sector Frame	202.00	900	318,898	0.018	86	769
RFS APXVAARR24_43-U-NA20	202.00	384	135,957	0.008	37	328
Side Arms	183.00	1,680	533,674	0.030	144	1,436
Flat Light Sector Frame	183.00	1,200	381,196	0.021	103	1,026
Nokia 2.5G MAA - AAHC(64T64R)	181.00	311	97,537	0.005	26	266
Motorola DAP Vx	180.00	79	24,797	0.001	7	68
Alcatel-Lucent 800 MHz RRH	180.00	159	49,594	0.003	13	136
Alcatel-Lucent 1900MHz RRH	180.00	264	82,344	0.005	22	226
Argus LLPX310R	180.00	86	26,762	0.001	7	73
Generic 24" x 24" Junction Box	180.00	20	6,238	0.000	2	17
Generic 2' Std. Dish	180.00	42	13,100	0.001	4	36
RFS APXVSP18-C-A20	180.00	114	35,558	0.002	10	97
RFS APXV9ERR18-C-A20	180.00	62	19,338	0.001	5	53
Powerwave Allgon LGP21901	165.00	66	18,697	0.001	5	56
Powerwave Allgon 7020.00 Dual Band	165.00	13	3,739	0.000	1	11
CCI DTMABP7819VG12A	165.00	58	16,318	0.001	4	49
Commscope WCS-IMFQ-AMT	165.00	30	8,357	0.000	2	25
Powerwave Allgon LGP21401	165.00	127	35,950	0.002	10	108
Raycap DC6-48-60-18-8F (23.5" Height)	165.00	60	16,998	0.001	5	51
Ericsson RRUS 4426 B66	165.00	145	41,134	0.002	11	124
Ericsson RRUS 4478 B14	165.00	180	50,908	0.003	14	154
Ericsson RRUS 32 (50.8 lbs)	165.00	152	43,174	0.002	12	130

Site Number: 383598

Code: ANSI/TIA-222-H

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Site Name: Tartaglia, CT

Engineering Number: 13337501\_C3\_02

3/26/2021 9:37:18 AM

Customer: T-MOBILE

Equivalent Lateral Force Method

Ericsson RRUS 32 B2	165.00	159	45,044	0.003	12	136
Ericsson Radio 4449	165.00	255	72,240	0.004	20	218
Powerwave Allgon 7770.00	165.00	105	29,746	0.002	8	90
Andrew SBNHH-1D65A	165.00	123	34,760	0.002	9	105
Quintel QS66512-3 (112 lbs.)	165.00	336	95,187	0.005	26	287
Kathrein Scala 80010965	165.00	293	82,949	0.005	22	250
Round Sector Frame	165.00	900	254,966	0.014	69	769
Commscope CBC78T-DS-43-2X	155.00	62	16,417	0.001	4	53
Samsung Outdoor CBRS 20W RRH	155.00	56	14,752	0.001	4	48
Samsung Outdoor CBRS 20W RRH -Clip-	155.00	13	3,490	0.000	1	11
Samsung B5/B13 RRH-BR04C	155.00	211	55,756	0.003	15	180
Samsung B2/B66A RRH-BR049	155.00	253	66,939	0.004	18	216
Raycap RxxDC-3315-PF-48	155.00	43	11,315	0.001	3	37
Amphenol Antel BXA-80063-6BF-EDIN-X	155.00	58	15,228	0.001	4	49
Commscope JAHH-65B-R3B	155.00	364	96,125	0.005	26	311
Flat Light Sector Frame	155.00	1,200	317,244	0.018	86	1,026
Small Side Lights	140.00	135	31,891	0.002	9	115
Generic 4' Yagi	132.00	15	3,320	0.000	1	13
Flat Side Arm	132.00	150	33,202	0.002	9	128
Generic 10' Omni	123.00	25	5,118	0.000	1	21
Round Side Arm	118.00	150	29,330	0.002	8	128
Round Side Arm	108.00	150	26,594	0.001	7	128
Generic 4' Yagi	98.00	15	2,388	0.000	1	13
Flat Side Arm	98.00	150	23,885	0.001	6	128
Empty Round Side Arm	80.00	150	19,083	0.001	5	128
Round Side Arm	8.00	150	1,496	0.000	0	128
		92,209	17,918,326	1.000	4,851	78,837

### Force/Stress Summary

Section: 1		1		Bot Elev (ft): 0.00				Height (ft): 30.000							
		Pu (kip)	Load Case	Len (ft)	Bracing %			F'y (ksi)	Phic (kip)	Pn Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
<b>Max Compression Member</b>															
LEG	PX - 10" DIA PIPE	-296.61	1.2D + 1.0W Normal	30.08	33	33	33	32.8	50.0	669.65	0	0	0.00	0.00	44 Member X
HORIZ	PST - 3-1/2" DIA PIP	-16.29	0.9D + 1.0W 90 deg	18.29	100	100	100	163.8	50.0	22.56	2	0	0.00	42.31	72 Member X
DIAG	PST - 3" DIA PIPE	-32.27	1.2D + 1.0W 90 deg	36.16	33	33	33	0.0	0.0	41.40	3	0	0.00	60.65	77 User Input
<b>Max Tension Member</b>															
		Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	Phit (kip)	Pn Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Blk Shear phit Pn (kip)	Use %	Controls		
LEG	PX - 10" DIA PIPE	237.66	0.9D + 1.0W 60 deg	50	65	724.50	0	0	0.00	0.00			32 Member		
HORIZ	PST - 3-1/2" DIA PIP	16.90	1.2D + 1.0W 90 deg	50	65	120.60	2	0	0.00	33.93		0.00	49 Bolt Bear		
DIAG	PST - 3" DIA PIPE	30.18	1.2D + 1.0W 90 deg	50	65	100.35	3	0	0.00	52.65		0.00	57 Bolt Bear		
<b>Max Splice Forces</b>															
		Pu (kip)	Load Case	phiRnt (kip)	Use %	Num Bolts	Bolt Type								
Top Tension		235.94	0.9D + 1.0W 60 deg	0.00	0	0									
Top Compression		294.80	1.2D + 1.0W Normal	0.00	0										
Bot Tension		282.99	0.9D + 1.0W 60 deg	681.46	18	12	1" A193-B7								
Bot Compression		345.03	1.2D + 1.0W Normal	763.24	50										

Section: 2		2		Bot Elev (ft): 30.00				Height (ft): 30.000							
		Pu (kip)	Load Case	Len (ft)	Bracing %			F'y (ksi)	Phic (kip)	Pn Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
<b>Max Compression Member</b>															
LEG	PX - 10" DIA PIPE	-242.48	1.2D + 1.0W Normal	30.08	33	33	33	32.8	50.0	669.65	0	0	0.00	0.00	36 Member X
HORIZ	PST - 3" DIA PIPE	-15.57	1.2D + 1.0W 90 deg	16.41	100	100	100	169.8	50.0	17.47	2	0	0.00	40.44	89 Member X
DIAG	PST - 3" DIA PIPE	-35.16	1.2D + 1.0W 90 deg	35.15	33	33	33	120.0	50.0	34.98	3	0	0.00	60.65	100 Member X
<b>Max Tension Member</b>															
		Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	Phit (kip)	Pn Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Blk Shear phit Pn (kip)	Use %	Controls		
LEG	PX - 10" DIA PIPE	190.59	0.9D + 1.0W 60 deg	50	65	724.50	0	0	0.00	0.00			26 Member		
HORIZ	PST - 3" DIA PIPE	16.50	1.2D + 1.0W 90 deg	50	65	100.35	2	0	0.00	32.43		0.00	50 Bolt Bear		
DIAG	PST - 3" DIA PIPE	32.81	0.9D + 1.0W 90 deg	50	65	100.35	3	0	0.00	52.65		0.00	62 Bolt Bear		
<b>Max Splice Forces</b>															
		Pu (kip)	Load Case	phiRnt (kip)	Use %	Num Bolts	Bolt Type								
Top Tension		188.96	0.9D + 1.0W 60 deg	0.00	0	0									
Top Compression		240.74	1.2D + 1.0W Normal	0.00	0										
Bot Tension		235.94	0.9D + 1.0W 60 deg	654.20	36	12	1 A325								
Bot Compression		0.00		0.00	0										



### Force/Stress Summary

Section: 3		3		Bot Elev (ft): 60.00				Height (ft): 20.000								
		Pu (kip)	Load Case	Len (ft)	Bracing %			F'y (ksi)	Phic Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Blk Shear phiT Pn (kip)	Use %	Controls
<b>Max Compression Member</b>																
LEG	PX - 10" DIA PIPE	-205.50	1.2D + 1.0W Normal	20.05	50	50	50	33.1	50.0	668.58	0	0	0.00	0.00	30	Member X
HORIZ	PST - 3" DIA PIPE	-14.19	0.9D + 1.0W 90 deg	15.16	100	100	100	156.9	50.0	20.47	2	0	0.00	40.44	69	Member X
DIAG	PST - 3" DIA PIPE	-25.71	1.2D + 1.0W 90 deg	25.88	50	50	50	133.9	50.0	28.10	3	0	0.00	50.54	91	Member X
<b>Max Tension Member</b>																
LEG	PX - 10" DIA PIPE	160.37	0.9D + 1.0W 60 deg	50	65	724.50	0	0	0.00	0.00				22	Member	
HORIZ	PST - 3" DIA PIPE	14.95	1.2D + 1.0W 90 deg	50	65	100.35	2	0	0.00	32.43			0.00	46	Bolt Bear	
DIAG	PST - 3" DIA PIPE	23.69	1.2D + 1.0W 90 deg	50	65	100.35	3	0	0.00	43.80			0.00	54	Bolt Bear	
<b>Max Splice Forces</b>																
		Pu (kip)	Load Case		phiRnt (kip)	Use %	Num Bolts	Bolt Type								
	Top Tension	158.88	0.9D + 1.0W 60 deg		0.00	0	0									
	Top Compression	203.91	1.2D + 1.0W Normal		0.00	0										
	Bot Tension	188.96	0.9D + 1.0W 60 deg		654.20	29	12	1 A325								
	Bot Compression	0.00			0.00	0										

Section: 4		4		Bot Elev (ft): 80.00				Height (ft): 20.000								
		Pu (kip)	Load Case	Len (ft)	Bracing %			F'y (ksi)	Phic Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Blk Shear phiT Pn (kip)	Use %	Controls
<b>Max Compression Member</b>																
LEG	PX - 8" DIA PIPE	-170.01	1.2D + 1.0W Normal	20.06	50	50	50	41.8	50.0	506.95	0	0	0.00	0.00	33	Member X
HORIZ	PST - 3" DIA PIPE	-12.83	1.2D + 1.0W 90 deg	13.83	100	100	100	143.2	50.0	24.58	2	0	0.00	40.44	52	Member X
DIAG	PST - 3" DIA PIPE	-24.41	1.2D + 1.0W 90 deg	25.11	50	50	50	129.9	50.0	29.86	3	0	0.00	50.54	81	Member X
<b>Max Tension Member</b>																
LEG	PX - 8" DIA PIPE	130.18	0.9D + 1.0W 60 deg	50	65	576.00	0	0	0.00	0.00				22	Member	
HORIZ	PST - 3" DIA PIPE	13.29	1.2D + 1.0W 90 deg	50	65	100.35	2	0	0.00	32.43			0.00	40	Bolt Bear	
DIAG	PST - 3" DIA PIPE	22.86	0.9D + 1.0W 90 deg	50	65	100.35	3	0	0.00	43.80			0.00	52	Bolt Bear	
<b>Max Splice Forces</b>																
		Pu (kip)	Load Case		phiRnt (kip)	Use %	Num Bolts	Bolt Type								
	Top Tension	128.77	0.9D + 1.0W 60 deg		0.00	0	0									
	Top Compression	168.55	1.2D + 1.0W Normal		0.00	0										
	Bot Tension	158.88	0.9D + 1.0W 60 deg		654.20	24	12	1 A325								
	Bot Compression	0.00			0.00	0										

### Force/Stress Summary

Section: 5		5		Bot Elev (ft): 100.0				Height (ft): 20.000							
		Pu (kip)	Load Case	Len (ft)	Bracing %			F'y (ksi)	Phic Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
<b>Max Compression Member</b>															
LEG	PX - 8" DIA PIPE	-134.21	1.2D + 1.0W Normal	20.05	50	50	50	41.8	50.0	507.00	0	0	0.00	0.00	26 Member X
HORIZ	PST - 2-1/2" DIA PIP	-11.55	1.2D + 1.0W 90 deg	12.58	100	100	100	159.5	50.0	15.13	2	0	0.00	38.00	76 Member X
DIAG	PST - 2-1/2" DIA PIP	-23.87	1.2D + 1.0W 90 deg	24.33	50	50	50	0.0	0.0	28.20	3	0	0.00	47.50	84 User Input
<b>Max Tension Member</b>															
		Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	Phit Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Blk Shear phit Pn (kip)	Use %	Controls		
LEG	PX - 8" DIA PIPE	99.46	0.9D + 1.0W 60 deg	50	65	576.00	0	0	0.00	0.00		17	Member		
HORIZ	PST - 2-1/2" DIA PIP	12.32	1.2D + 1.0W 90 deg	50	65	76.68	2	0	0.00	30.48	0.00	40	Bolt Bear		
DIAG	PST - 2-1/2" DIA PIP	22.23	1.2D + 1.0W 90 deg	50	65	76.68	3	0	0.00	41.17	0.00	54	Bolt Bear		
<b>Max Splice Forces</b>															
		Pu (kip)	Load Case	phiRnt (kip)	Use %	Num Bolts	Bolt Type								
Top Tension		98.25	0.9D + 1.0W 60 deg	0.00	0	0									
Top Compression		132.92	1.2D + 1.0W Normal	0.00	0										
Bot Tension		128.77	0.9D + 1.0W 60 deg	436.14	30	8	1 A325								
Bot Compression		0.00		0.00	0										

Section: 6		6		Bot Elev (ft): 120.0				Height (ft): 20.000							
		Pu (kip)	Load Case	Len (ft)	Bracing %			F'y (ksi)	Phic Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
<b>Max Compression Member</b>															
LEG	PX - 8" DIA PIPE	-116.32	1.2D + 1.0W Normal	10.03	100	100	100	41.8	50.0	507.00	0	0	0.00	0.00	22 Member X
HORIZ	PST - 2-1/2" DIA PIP	-10.45	1.2D + 1.0W 90 deg	11.96	100	100	100	151.6	50.0	16.75	2	0	0.00	31.67	62 Member X
DIAG	PST - 3" DIA PIPE	-15.17	1.2D + 1.0W 90 deg	16.08	100	100	100	166.4	50.0	18.20	3	0	0.00	50.54	83 Member X
<b>Max Tension Member</b>															
		Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	Phit Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Blk Shear phit Pn (kip)	Use %	Controls		
LEG	PX - 8" DIA PIPE	81.05	1.2D + 1.0W 60 deg	50	65	576.00	0	0	0.00	0.00		14	Member		
HORIZ	PST - 2-1/2" DIA PIP	11.19	1.2D + 1.0W 90 deg	50	65	76.68	2	0	0.00	25.33	0.00	44	Bolt Bear		
DIAG	PST - 3" DIA PIPE	14.02	1.2D + 1.0W 90 deg	50	65	100.35	3	0	0.00	43.80	0.00	32	Bolt Bear		
<b>Max Splice Forces</b>															
		Pu (kip)	Load Case	phiRnt (kip)	Use %	Num Bolts	Bolt Type								
Top Tension		70.15	0.9D + 1.0W 60 deg	0.00	0	0									
Top Compression		98.46	1.2D + 1.0W Normal	0.00	0										
Bot Tension		98.25	0.9D + 1.0W 60 deg	436.14	23	8	1 A325								
Bot Compression		0.00		0.00	0										

### Force/Stress Summary

Section: 7		7		Bot Elev (ft): 140.0				Height (ft): 20.000								
		Pu		Len	Bracing %			F'y	Phic Pn	Num	Num	Shear	Bear	Use		
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	(kip)	(kip)	%	Controls
LEG	PX - 8" DIA PIPE	-83.18	1.2D + 1.0W Normal	10.03	100	100	100	41.8	50.0	507.00	0	0	0.00	0.00	16	Member X
HORIZ	PST - 2-1/2" DIA PIP	-8.84	1.2D + 1.0W 90 deg	10.71	100	100	100	135.8	50.0	20.89	2	0	0.00	31.67	42	Member X
DIAG	PST - 2-1/2" DIA PIP	-13.53	1.2D + 1.0W 90 deg	15.12	100	100	100	0.0	0.0	23.40	3	0	0.00	47.50	57	User Input

		Pu		Fy	Fu	Phit Pn	Num	Num	Shear	Bear	Blk Shear	Use		
Max Tension Member		(kip)	Load Case	(ksi)	(ksi)	(kip)	Bolts	Holes	phiRnv	phiRn	phit Pn	(kip)	%	Controls
LEG	PX - 8" DIA PIPE	53.82	1.2D + 1.0W 60 deg	50	65	576.00	0	0	0.00	0.00			9	Member
HORIZ	PST - 2-1/2" DIA PIP	9.48	1.2D + 1.0W 90 deg	50	65	76.68	2	0	0.00	25.33	0.00		37	Bolt Bear
DIAG	PST - 2-1/2" DIA PIP	12.47	1.2D + 1.0W 90 deg	50	65	76.68	3	0	0.00	41.17	0.00		30	Bolt Bear

Max Splice Forces		Pu		phiRnt	Use	Num	Bolt Type	
		(kip)	Load Case	(kip)	%	Bolts		
Top Tension		42.98	0.9D + 1.0W 60 deg	0.00	0	0		
Top Compression		66.32	1.2D + 1.0W Normal	0.00	0			
Bot Tension		70.15	0.9D + 1.0W 60 deg	436.14	16	8	1 A325	
Bot Compression		0.00		0.00	0			

Section: 8		8		Bot Elev (ft): 160.0				Height (ft): 20.000								
		Pu		Len	Bracing %			F'y	Phic Pn	Num	Num	Shear	Bear	Use		
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	(kip)	(kip)	%	Controls
LEG	PX - 8" DIA PIPE	-53.04	1.2D + 1.0W Normal	10.03	100	100	100	41.8	50.0	507.00	0	0	0.00	0.00	10	Member X
HORIZ	PST - 2-1/2" DIA PIP	-5.67	1.2D + 1.0W 90 deg	9.464	100	100	100	119.9	50.0	26.77	2	0	0.00	31.67	21	Member X
DIAG	PST - 2-1/2" DIA PIP	-9.23	1.2D + 1.0W 90 deg	14.20	100	100	100	180.1	50.0	11.87	3	0	0.00	47.50	77	Member X

		Pu		Fy	Fu	Phit Pn	Num	Num	Shear	Bear	Blk Shear	Use		
Max Tension Member		(kip)	Load Case	(ksi)	(ksi)	(kip)	Bolts	Holes	phiRnv	phiRn	phit Pn	(kip)	%	Controls
LEG	PX - 8" DIA PIPE	35.53	0.9D + 1.0W 60 deg	50	65	576.00	0	0	0.00	0.00			6	Member
HORIZ	PST - 2-1/2" DIA PIP	6.10	1.2D + 1.0W 90 deg	50	65	76.68	2	0	0.00	25.33	0.00		24	Bolt Bear
DIAG	PST - 2-1/2" DIA PIP	8.44	1.2D + 1.0W 90 deg	50	65	76.68	3	0	0.00	41.17	0.00		20	Bolt Bear

Max Splice Forces		Pu		phiRnt	Use	Num	Bolt Type	
		(kip)	Load Case	(kip)	%	Bolts		
Top Tension		25.43	0.9D + 1.0W 60 deg	0.00	0	0		
Top Compression		40.99	1.2D + 1.0W Normal	0.00	0			
Bot Tension		42.98	0.9D + 1.0W 60 deg	436.14	10	8	1 A325	
Bot Compression		0.00		0.00	0			

### Force/Stress Summary

Section: 9		9		Bot Elev (ft): 180.0				Height (ft): 20.000								
		Pu (kip)	Load Case	Len (ft)	Bracing %			F'y (ksi)	Phic Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Blk Shear phiT Pn (kip)	Use %	Controls
<b>Max Compression Member</b>																
LEG	PX - 8" DIA PIPE	-31.09	1.2D + 1.0W Normal	10.03	100	100	100	41.8	50.0	507.00	0	0	0.00	0.00	6 Member X	
HORIZ	PST - 2" DIA PIPE	-3.58	1.2D + 1.0W 90 deg	8.214	100	100	100	125.2	50.0	15.41	2	0	0.00	24.02	23 Member X	
DIAG	PST - 2-1/2" DIA PIP	-6.35	1.2D + 1.0W 90 deg	13.35	100	100	100	169.2	50.0	13.45	3	0	0.00	47.50	47 Member X	
<b>Max Tension Member</b>																
LEG	PX - 8" DIA PIPE	18.57	1.2D + 1.0W 60 deg	50	65	576.00	0	0	0.00	0.00				3 Member		
HORIZ	PST - 2" DIA PIPE	3.87	1.2D + 1.0W 90 deg	50	65	48.15	2	0	0.00	19.22			0.00	20 Bolt Bear		
DIAG	PST - 2-1/2" DIA PIP	5.83	0.9D + 1.0W 90 deg	50	65	76.68	3	0	0.00	41.17			0.00	14 Bolt Bear		
<b>Max Splice Forces</b>																
		Pu (kip)	Load Case		phiRnt (kip)	Use %	Num Bolts	Bolt Type								
	Top Tension	12.79	0.9D + 1.0W 60 deg		0.00	0	0									
	Top Compression	22.31	1.2D + 1.0W Normal		0.00	0										
	Bot Tension	25.43	0.9D + 1.0W 60 deg		436.14	6	8	1 A325								
	Bot Compression	0.00			0.00	0										

Section: 10		10		Bot Elev (ft): 200.0				Height (ft): 20.000								
		Pu (kip)	Load Case	Len (ft)	Bracing %			F'y (ksi)	Phic Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Blk Shear phiT Pn (kip)	Use %	Controls
<b>Max Compression Member</b>																
LEG	PX - 8" DIA PIPE	-15.42	1.2D + 1.0W Normal	10.02	100	100	100	41.8	50.0	507.06	0	0	0.00	0.00	3 Member X	
HORIZ	PST - 2" DIA PIPE	-2.05	1.2D + 1.0W 90 deg	7.026	100	100	100	107.1	50.0	20.80	2	0	0.00	24.02	9 Member X	
DIAG	PST - 2-1/2" DIA PIP	-4.23	1.2D + 1.0W 90 deg	12.55	100	100	100	159.1	50.0	15.20	3	0	0.00	47.50	27 Member X	
<b>Max Tension Member</b>																
LEG	PX - 8" DIA PIPE	8.14	1.2D + 1.0W 60 deg	50	65	576.00	0	0	0.00	0.00				1 Member		
HORIZ	PST - 2" DIA PIPE	2.28	1.2D + 1.0W 90 deg	50	65	48.15	2	0	0.00	19.22			0.00	11 Bolt Bear		
DIAG	PST - 2-1/2" DIA PIP	3.72	1.2D + 1.0W 90 deg	50	65	76.68	3	0	0.00	41.17			0.00	9 Bolt Bear		
<b>Max Splice Forces</b>																
		Pu (kip)	Load Case		phiRnt (kip)	Use %	Num Bolts	Bolt Type								
	Top Tension	4.39	0.9D + 1.0W 60 deg		0.00	0	0									
	Top Compression	9.48	1.2D + 1.0W Normal		0.00	0										
	Bot Tension	12.79	0.9D + 1.0W 60 deg		436.14	3	8	1 A325								
	Bot Compression	0.00			0.00	0										

Site Number: 383598  
 Site Name: Tartaglia, CT  
 Customer: T-MOBILE

Code: ANSI/TIA-222-H  
 Engineering Number: 13337501\_C3\_02

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### Force/Stress Summary

Section: 11		11		Bot Elev (ft): 220.0				Height (ft): 20.000							
Max Compression Member		Pu (kip)	Load Case	Len (ft)	Bracing %			F'y (ksi)	Phic (kip)	Pn Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Use %	Controls
LEG	PX - 8" DIA PIPE	-6.20	1.2D + 1.0W Normal	6.68	100	100	100	27.8	50.0	544.30	0	0	0.00	0.00	1 Member X
HORIZ	PST - 2" DIA PIPE	-1.27	0.9D + 1.0W 90 deg	6.130	100	100	100	93.5	50.0	25.42	2	0	0.00	24.02	5 Member X
DIAG	PST - 2" DIA PIPE	-2.35	1.2D + 1.0W 90 deg	9.288	100	100	100	141.6	50.0	12.05	3	0	0.00	36.04	19 Member X

Max Tension Member		Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	Phit (kip)	Pn Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Blk Shear phit Pn (kip)	Use %	Controls
LEG	PX - 8" DIA PIPE	0.62	1.2D + 1.0W Normal	50	65	576.00	0	0	0.00	0.00		0	Member
HORIZ	PST - 2" DIA PIPE	1.46	1.2D + 1.0W 90 deg	50	65	48.15	2	0	0.00	19.22	0.00	7	Bolt Bear
DIAG	PST - 2" DIA PIPE	1.98	1.2D + 1.0W 90 deg	50	65	48.15	3	0	0.00	31.23	0.00	6	Bolt Bear

Max Splice Forces		Pu (kip)	Load Case	phiRnt (kip)	Use %	Num Bolts	Bolt Type
Top Tension		0.00		0.00	0	0	
Top Compression		0.97	1.2D + 1.0Di + 1.0Wi	0.00	0		
Bot Tension		4.39	0.9D + 1.0W 60 deg	436.14	1	8	1 A325
Bot Compression		0.00		0.00	0		

### Detailed Reactions

Load Case	Radius (ft)	Elevation (ft)	Azimuth (deg)	Node	FX (kip)	FY (kip)	FZ (kip)	(-) = Uplift (+) = Down
<b>1.2D + 1.0W Normal</b>	23.29	00.00	0	1	0.00	344.20	-49.96	
	23.29	00.00	120	1a	13.44	-116.77	-16.83	
	23.29	00.00	240	1b	-13.44	-116.77	-16.83	
<b>1.2D + 1.0W 60 deg</b>	23.29	00.00	0	1	-7.58	190.56	-26.81	
	23.29	00.00	120	1a	-27.00	190.30	6.84	
	23.29	00.00	240	1b	-37.90	-270.20	-21.88	
<b>1.2D + 1.0W 90 deg</b>	23.29	00.00	0	1	-8.92	36.88	-3.46	
	23.29	00.00	120	1a	-40.07	302.75	18.16	
	23.29	00.00	240	1b	-34.69	-228.99	-14.70	
<b>0.9D + 1.0W Normal</b>	23.29	00.00	0	1	0.00	334.80	-49.11	
	23.29	00.00	120	1a	14.18	-125.90	-17.29	
	23.29	00.00	240	1b	-14.18	-125.90	-17.29	
<b>0.9D + 1.0W 60 deg</b>	23.29	00.00	0	1	-7.59	181.23	-25.94	
	23.29	00.00	120	1a	-26.25	180.97	6.40	
	23.29	00.00	240	1b	-38.64	-279.21	-22.30	
<b>0.9D + 1.0W 90 deg</b>	23.29	00.00	0	1	-8.93	27.66	-2.59	
	23.29	00.00	120	1a	-39.32	293.35	17.72	
	23.29	00.00	240	1b	-35.43	-238.02	-15.13	
<b>1.2D + 1.0Di + 1.0Wi Normal</b>	23.29	00.00	0	1	0.00	173.88	-22.89	
	23.29	00.00	120	1a	0.63	12.49	-3.65	
	23.29	00.00	240	1b	-0.63	12.49	-3.65	
<b>1.2D + 1.0Di + 1.0Wi 60 deg</b>	23.29	00.00	0	1	-2.81	120.08	-14.49	
	23.29	00.00	120	1a	-13.96	119.95	4.81	
	23.29	00.00	240	1b	-9.38	-41.18	-5.41	
<b>1.2D + 1.0Di + 1.0Wi 90 deg</b>	23.29	00.00	0	1	-3.27	66.28	-6.07	
	23.29	00.00	120	1a	-18.68	159.31	8.92	
	23.29	00.00	240	1b	-8.24	-26.74	-2.85	
<b>1.2D + 1.0Ev + 1.0Eh Normal M1</b>	23.29	00.00	0	1	0.00	59.02	-6.40	
	23.29	00.00	120	1a	-2.07	25.16	0.80	
	23.29	00.00	240	1b	2.07	25.16	0.80	
<b>1.2D + 1.0Ev + 1.0Eh 60 deg M1</b>	23.29	00.00	0	1	-0.34	47.73	-5.00	
	23.29	00.00	120	1a	-4.50	47.73	2.20	
	23.29	00.00	240	1b	0.68	13.88	0.39	
<b>1.2D + 1.0Ev + 1.0Eh 90 deg M1</b>	23.29	00.00	0	1	-0.39	36.45	-3.59	
	23.29	00.00	120	1a	-5.31	55.99	2.84	
	23.29	00.00	240	1b	0.91	16.90	0.75	
<b>0.9D - 1.0Ev + 1.0Eh Normal M1</b>	23.29	00.00	0	1	0.00	47.58	-5.27	
	23.29	00.00	120	1a	-1.09	13.75	0.24	
	23.29	00.00	240	1b	1.09	13.75	0.24	
<b>0.9D - 1.0Ev + 1.0Eh 60 deg M1</b>	23.29	00.00	0	1	-0.34	36.30	-3.87	
	23.29	00.00	120	1a	-3.52	36.30	1.64	
	23.29	00.00	240	1b	-0.29	2.48	-0.17	
<b>0.9D - 1.0Ev + 1.0Eh 90 deg M1</b>	23.29	00.00	0	1	-0.39	25.03	-2.47	
	23.29	00.00	120	1a	-4.34	44.56	2.28	

Site Number: 383598

Code:

ANSI/TIA-222-H

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Site Name: Tartaglia, CT

Engineering Number: 13337501\_C3\_02

3/26/2021 9:37:18 AM

Customer: T-MOBILE

	<b>23.29</b>	<b>00.00</b>	<b>240</b>	<b>1b</b>	<b>-0.07</b>	<b>5.50</b>	<b>0.19</b>
<b>1.0D + 1.0W Service Normal</b>	<b>23.29</b>	<b>00.00</b>	<b>0</b>	<b>1</b>	<b>0.00</b>	<b>112.42</b>	<b>-15.33</b>
	<b>23.29</b>	<b>00.00</b>	<b>120</b>	<b>1a</b>	<b>1.88</b>	<b>-10.10</b>	<b>-3.48</b>
	<b>23.29</b>	<b>00.00</b>	<b>240</b>	<b>1b</b>	<b>-1.88</b>	<b>-10.10</b>	<b>-3.48</b>
<b>1.0D + 1.0W Service 60 deg</b>	<b>23.29</b>	<b>00.00</b>	<b>0</b>	<b>1</b>	<b>-2.05</b>	<b>71.58</b>	<b>-9.11</b>
	<b>23.29</b>	<b>00.00</b>	<b>120</b>	<b>1a</b>	<b>-8.91</b>	<b>71.51</b>	<b>2.78</b>
	<b>23.29</b>	<b>00.00</b>	<b>240</b>	<b>1b</b>	<b>-8.34</b>	<b>-50.88</b>	<b>-4.81</b>
<b>1.0D + 1.0W Service 90 deg</b>	<b>23.29</b>	<b>00.00</b>	<b>0</b>	<b>1</b>	<b>-2.38</b>	<b>30.74</b>	<b>-2.88</b>
	<b>23.29</b>	<b>00.00</b>	<b>120</b>	<b>1a</b>	<b>-12.42</b>	<b>101.40</b>	<b>5.81</b>
	<b>23.29</b>	<b>00.00</b>	<b>240</b>	<b>1b</b>	<b>-7.49</b>	<b>-39.92</b>	<b>-2.93</b>

Max Uplift:	279.21 (kip)	Moment Ice:	3,758.09 (kip-ft)	Moment:	10,734.27 (kip-ft)	1.2D + 1.0W Normal
Max Down:	344.20 (kip)	Total Down Ice:	198.85 (kip)	Total Down:	110.65 (kip)	
Max Shear:	49.96 (kip)	Total Shear Ice:	30.19 (kip)	Total Shear:	83.62 (kip)	



### Deflections and Rotations

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)	Resultant (deg)
119 mph Normal with No Ice	80.00	0.139	0.0059	0.1301	0.1302
119 mph Normal with No Ice	100.00	0.190	0.0105	0.1682	0.1685
119 mph Normal with No Ice	120.00	0.254	0.0165	0.1815	0.1822
119 mph Normal with No Ice	130.00	0.284	0.0202	0.1772	0.1784
119 mph Normal with No Ice	140.00	0.316	0.0229	0.1888	0.1901
119 mph Normal with No Ice	160.00	0.384	0.0293	0.1942	0.1964
119 mph Normal with No Ice	180.00	0.451	0.0362	0.1934	0.1968
119 mph Normal with No Ice	200.00	0.517	0.0431	0.1917	0.1964
119 mph Normal with No Ice	220.00	0.582	0.0502	0.1896	0.1962
119 mph Normal with No Ice	226.67	0.604	0.0527	0.1881	0.1954
119 mph Normal with No Ice	233.33	0.625	0.0552	0.1847	0.1928
119 mph Normal with No Ice	240.00	0.647	0.0567	0.2005	0.2084
119 mph 60 degree with No Ice	80.00	0.139	-0.0213	0.1288	0.1296
119 mph 60 degree with No Ice	100.00	0.190	-0.0304	0.1665	0.1680
119 mph 60 degree with No Ice	120.00	0.254	-0.0380	0.1800	0.1824
119 mph 60 degree with No Ice	130.00	0.284	-0.0411	0.1753	0.1784
119 mph 60 degree with No Ice	140.00	0.316	-0.0453	0.1870	0.1906
119 mph 60 degree with No Ice	160.00	0.384	-0.0524	0.1919	0.1970
119 mph 60 degree with No Ice	180.00	0.450	-0.0592	0.1902	0.1971
119 mph 60 degree with No Ice	200.00	0.516	-0.0659	0.1883	0.1973
119 mph 60 degree with No Ice	220.00	0.581	-0.0725	0.1859	0.1974
119 mph 60 degree with No Ice	226.67	0.602	-0.0746	0.1845	0.1969
119 mph 60 degree with No Ice	233.33	0.624	-0.0768	0.1829	0.1963
119 mph 60 degree with No Ice	240.00	0.645	-0.0782	0.1747	0.1894
119 mph 90 degree with No Ice	80.00	0.139	-0.0254	0.1285	0.1303
119 mph 90 degree with No Ice	100.00	0.190	-0.0363	0.1657	0.1690
119 mph 90 degree with No Ice	120.00	0.254	-0.0456	0.1791	0.1826
119 mph 90 degree with No Ice	130.00	0.284	-0.0494	0.1744	0.1790
119 mph 90 degree with No Ice	140.00	0.316	-0.0544	0.1859	0.1908
119 mph 90 degree with No Ice	160.00	0.384	-0.0631	0.1906	0.1975
119 mph 90 degree with No Ice	180.00	0.450	-0.0714	0.1888	0.1986
119 mph 90 degree with No Ice	200.00	0.516	-0.0796	0.1866	0.1991
119 mph 90 degree with No Ice	220.00	0.581	-0.0876	0.1842	0.2002
119 mph 90 degree with No Ice	226.67	0.602	-0.0902	0.1826	0.2003
119 mph 90 degree with No Ice	233.33	0.623	-0.0929	0.1820	0.2008
119 mph 90 degree with No Ice	240.00	0.644	-0.0946	0.1649	0.1860
119 mph Normal with No Ice (Reduced DL)	80.00	0.139	0.0060	0.1299	0.1300
119 mph Normal with No Ice (Reduced DL)	100.00	0.190	0.0105	0.1680	0.1683
119 mph Normal with No Ice (Reduced DL)	120.00	0.253	0.0165	0.1813	0.1820
119 mph Normal with No Ice (Reduced DL)	130.00	0.284	0.0202	0.1770	0.1782
119 mph Normal with No Ice (Reduced DL)	140.00	0.316	0.0229	0.1885	0.1899
119 mph Normal with No Ice (Reduced DL)	160.00	0.384	0.0293	0.1940	0.1962
119 mph Normal with No Ice (Reduced DL)	180.00	0.450	0.0362	0.1932	0.1966
119 mph Normal with No Ice (Reduced DL)	200.00	0.517	0.0431	0.1915	0.1962
119 mph Normal with No Ice (Reduced DL)	220.00	0.581	0.0503	0.1894	0.1960
119 mph Normal with No Ice (Reduced DL)	226.67	0.603	0.0527	0.1880	0.1952
119 mph Normal with No Ice (Reduced DL)	233.33	0.625	0.0552	0.1845	0.1926
119 mph Normal with No Ice (Reduced DL)	240.00	0.646	0.0567	0.2003	0.2082
119 mph 60 deg with No Ice (Reduced DL)	80.00	0.139	-0.0213	0.1286	0.1295
119 mph 60 deg with No Ice (Reduced DL)	100.00	0.190	-0.0304	0.1663	0.1679
119 mph 60 deg with No Ice (Reduced DL)	120.00	0.253	-0.0380	0.1798	0.1822
119 mph 60 deg with No Ice (Reduced DL)	130.00	0.284	-0.0411	0.1751	0.1782
119 mph 60 deg with No Ice (Reduced DL)	140.00	0.316	-0.0452	0.1867	0.1903
119 mph 60 deg with No Ice (Reduced DL)	160.00	0.384	-0.0524	0.1917	0.1967
119 mph 60 deg with No Ice (Reduced DL)	180.00	0.450	-0.0592	0.1900	0.1969

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Code:

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Site Name: Tartaglia, CT

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119 mph 60 deg with No Ice (Reduced DL)	200.00	0.516	-0.0659	0.1881	0.1971
119 mph 60 deg with No Ice (Reduced DL)	220.00	0.580	-0.0725	0.1857	0.1972
119 mph 60 deg with No Ice (Reduced DL)	226.67	0.602	-0.0746	0.1843	0.1968
119 mph 60 deg with No Ice (Reduced DL)	233.33	0.623	-0.0768	0.1827	0.1961
119 mph 60 deg with No Ice (Reduced DL)	240.00	0.644	-0.0782	0.1745	0.1892
119 mph 90 deg with No Ice (Reduced DL)	80.00	0.139	-0.0254	0.1284	0.1302
119 mph 90 deg with No Ice (Reduced DL)	100.00	0.190	-0.0363	0.1655	0.1689
119 mph 90 deg with No Ice (Reduced DL)	120.00	0.253	-0.0456	0.1789	0.1825
119 mph 90 deg with No Ice (Reduced DL)	130.00	0.284	-0.0494	0.1742	0.1788
119 mph 90 deg with No Ice (Reduced DL)	140.00	0.315	-0.0544	0.1856	0.1906
119 mph 90 deg with No Ice (Reduced DL)	160.00	0.384	-0.0631	0.1904	0.1973
119 mph 90 deg with No Ice (Reduced DL)	180.00	0.449	-0.0713	0.1886	0.1984
119 mph 90 deg with No Ice (Reduced DL)	200.00	0.516	-0.0795	0.1864	0.1989
119 mph 90 deg with No Ice (Reduced DL)	220.00	0.580	-0.0876	0.1840	0.2001
119 mph 90 deg with No Ice (Reduced DL)	226.67	0.601	-0.0902	0.1824	0.2001
119 mph 90 deg with No Ice (Reduced DL)	233.33	0.623	-0.0929	0.1818	0.2007
119 mph 90 deg with No Ice (Reduced DL)	240.00	0.643	-0.0946	0.1647	0.1858
50 mph Normal with 1.00 in Radial Ice	80.00	0.052	0.0041	0.0458	0.0460
50 mph Normal with 1.00 in Radial Ice	100.00	0.069	0.0068	0.0583	0.0587
50 mph Normal with 1.00 in Radial Ice	120.00	0.091	0.0100	0.0615	0.0623
50 mph Normal with 1.00 in Radial Ice	130.00	0.101	0.0118	0.0594	0.0605
50 mph Normal with 1.00 in Radial Ice	140.00	0.111	0.0133	0.0629	0.0643
50 mph Normal with 1.00 in Radial Ice	160.00	0.133	0.0167	0.0643	0.0664
50 mph Normal with 1.00 in Radial Ice	180.00	0.155	0.0201	0.0641	0.0672
50 mph Normal with 1.00 in Radial Ice	200.00	0.177	0.0235	0.0638	0.0680
50 mph Normal with 1.00 in Radial Ice	220.00	0.198	0.0270	0.0633	0.0688
50 mph Normal with 1.00 in Radial Ice	226.67	0.205	0.0282	0.0628	0.0689
50 mph Normal with 1.00 in Radial Ice	233.33	0.212	0.0295	0.0616	0.0683
50 mph Normal with 1.00 in Radial Ice	240.00	0.220	0.0302	0.0697	0.0759
50 mph 60 deg with 1.00 in Radial Ice	80.00	0.053	-0.0095	0.0457	0.0463
50 mph 60 deg with 1.00 in Radial Ice	100.00	0.070	-0.0137	0.0574	0.0584
50 mph 60 deg with 1.00 in Radial Ice	120.00	0.092	-0.0173	0.0608	0.0624
50 mph 60 deg with 1.00 in Radial Ice	130.00	0.102	-0.0189	0.0586	0.0607
50 mph 60 deg with 1.00 in Radial Ice	140.00	0.112	-0.0208	0.0620	0.0645
50 mph 60 deg with 1.00 in Radial Ice	160.00	0.134	-0.0244	0.0632	0.0666
50 mph 60 deg with 1.00 in Radial Ice	180.00	0.156	-0.0278	0.0625	0.0672
50 mph 60 deg with 1.00 in Radial Ice	200.00	0.177	-0.0312	0.0621	0.0681
50 mph 60 deg with 1.00 in Radial Ice	220.00	0.198	-0.0346	0.0614	0.0691
50 mph 60 deg with 1.00 in Radial Ice	226.67	0.205	-0.0357	0.0609	0.0691
50 mph 60 deg with 1.00 in Radial Ice	233.33	0.212	-0.0369	0.0607	0.0696
50 mph 60 deg with 1.00 in Radial Ice	240.00	0.219	-0.0376	0.0573	0.0670
50 mph 90 deg with 1.00 in Radial Ice	80.00	0.053	-0.0111	0.0455	0.0458
50 mph 90 deg with 1.00 in Radial Ice	100.00	0.070	-0.0160	0.0572	0.0587
50 mph 90 deg with 1.00 in Radial Ice	120.00	0.091	-0.0203	0.0604	0.0625
50 mph 90 deg with 1.00 in Radial Ice	130.00	0.101	-0.0221	0.0581	0.0608
50 mph 90 deg with 1.00 in Radial Ice	140.00	0.112	-0.0244	0.0615	0.0647
50 mph 90 deg with 1.00 in Radial Ice	160.00	0.134	-0.0285	0.0626	0.0671
50 mph 90 deg with 1.00 in Radial Ice	180.00	0.155	-0.0326	0.0618	0.0683
50 mph 90 deg with 1.00 in Radial Ice	200.00	0.177	-0.0366	0.0613	0.0696
50 mph 90 deg with 1.00 in Radial Ice	220.00	0.198	-0.0406	0.0606	0.0712
50 mph 90 deg with 1.00 in Radial Ice	226.67	0.205	-0.0419	0.0600	0.0718
50 mph 90 deg with 1.00 in Radial Ice	233.33	0.212	-0.0432	0.0603	0.0726
50 mph 90 deg with 1.00 in Radial Ice	240.00	0.219	-0.0441	0.0522	0.0663
Seismic Normal M1	80.00	0.009	0.0006	0.0102	0.0102
Seismic Normal M1	100.00	0.013	0.0008	0.0137	0.0137
Seismic Normal M1	120.00	0.018	0.0009	0.0156	0.0157
Seismic Normal M1	130.00	0.021	0.0010	0.0158	0.0158
Seismic Normal M1	140.00	0.024	0.0010	0.0171	0.0171
Seismic Normal M1	160.00	0.030	0.0011	0.0183	0.0184
Seismic Normal M1	180.00	0.037	0.0012	0.0189	0.0189
Seismic Normal M1	200.00	0.043	0.0012	0.0190	0.0190
Seismic Normal M1	220.00	0.050	0.0012	0.0185	0.0185

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Seismic Normal M1	226.67	0.052	0.0011	0.0182	0.0182
Seismic Normal M1	233.33	0.054	0.0011	0.0178	0.0178
Seismic Normal M1	240.00	0.056	0.0011	0.0176	0.0177
Seismic 60 deg M1	80.00	0.009	-0.0006	0.0103	0.0103
Seismic 60 deg M1	100.00	0.013	-0.0008	0.0137	0.0137
Seismic 60 deg M1	120.00	0.018	-0.0009	0.0157	0.0157
Seismic 60 deg M1	130.00	0.021	-0.0010	0.0159	0.0159
Seismic 60 deg M1	140.00	0.024	-0.0010	0.0172	0.0172
Seismic 60 deg M1	160.00	0.030	-0.0011	0.0185	0.0185
Seismic 60 deg M1	180.00	0.037	-0.0012	0.0189	0.0189
Seismic 60 deg M1	200.00	0.043	-0.0012	0.0191	0.0191
Seismic 60 deg M1	220.00	0.050	-0.0012	0.0186	0.0186
Seismic 60 deg M1	226.67	0.052	-0.0011	0.0182	0.0182
Seismic 60 deg M1	233.33	0.054	-0.0011	0.0179	0.0179
Seismic 60 deg M1	240.00	0.056	-0.0011	0.0178	0.0178
Seismic 90 deg M1	80.00	0.009	-0.0007	0.0103	0.0103
Seismic 90 deg M1	100.00	0.013	-0.0009	0.0137	0.0137
Seismic 90 deg M1	120.00	0.018	-0.0011	0.0157	0.0157
Seismic 90 deg M1	130.00	0.021	-0.0011	0.0158	0.0159
Seismic 90 deg M1	140.00	0.024	-0.0012	0.0171	0.0172
Seismic 90 deg M1	160.00	0.030	-0.0013	0.0184	0.0184
Seismic 90 deg M1	180.00	0.037	-0.0014	0.0189	0.0189
Seismic 90 deg M1	200.00	0.043	-0.0014	0.0191	0.0191
Seismic 90 deg M1	220.00	0.050	-0.0013	0.0185	0.0185
Seismic 90 deg M1	226.67	0.052	-0.0013	0.0182	0.0182
Seismic 90 deg M1	233.33	0.054	-0.0013	0.0179	0.0179
Seismic 90 deg M1	240.00	0.056	-0.0013	0.0178	0.0178
Seismic (Reduced DL) Normal M1	80.00	0.009	0.0006	0.0101	0.0102
Seismic (Reduced DL) Normal M1	100.00	0.013	0.0008	0.0136	0.0136
Seismic (Reduced DL) Normal M1	120.00	0.018	0.0009	0.0156	0.0156
Seismic (Reduced DL) Normal M1	130.00	0.021	0.0010	0.0157	0.0158
Seismic (Reduced DL) Normal M1	140.00	0.024	0.0010	0.0170	0.0171
Seismic (Reduced DL) Normal M1	160.00	0.030	0.0011	0.0183	0.0183
Seismic (Reduced DL) Normal M1	180.00	0.037	0.0012	0.0188	0.0189
Seismic (Reduced DL) Normal M1	200.00	0.043	0.0012	0.0189	0.0190
Seismic (Reduced DL) Normal M1	220.00	0.050	0.0012	0.0184	0.0185
Seismic (Reduced DL) Normal M1	226.67	0.052	0.0011	0.0182	0.0182
Seismic (Reduced DL) Normal M1	233.33	0.054	0.0011	0.0178	0.0178
Seismic (Reduced DL) Normal M1	240.00	0.056	0.0011	0.0176	0.0176
Seismic (Reduced DL) 60 deg M1	80.00	0.009	-0.0006	0.0102	0.0102
Seismic (Reduced DL) 60 deg M1	100.00	0.013	-0.0008	0.0136	0.0136
Seismic (Reduced DL) 60 deg M1	120.00	0.018	-0.0009	0.0157	0.0157
Seismic (Reduced DL) 60 deg M1	130.00	0.021	-0.0010	0.0158	0.0158
Seismic (Reduced DL) 60 deg M1	140.00	0.024	-0.0010	0.0171	0.0171
Seismic (Reduced DL) 60 deg M1	160.00	0.030	-0.0011	0.0184	0.0184
Seismic (Reduced DL) 60 deg M1	180.00	0.037	-0.0012	0.0189	0.0189
Seismic (Reduced DL) 60 deg M1	200.00	0.043	-0.0012	0.0190	0.0190
Seismic (Reduced DL) 60 deg M1	220.00	0.050	-0.0012	0.0185	0.0185
Seismic (Reduced DL) 60 deg M1	226.67	0.052	-0.0011	0.0182	0.0182
Seismic (Reduced DL) 60 deg M1	233.33	0.054	-0.0011	0.0179	0.0179
Seismic (Reduced DL) 60 deg M1	240.00	0.056	-0.0011	0.0177	0.0177
Seismic (Reduced DL) 90 deg M1	80.00	0.009	-0.0007	0.0102	0.0102
Seismic (Reduced DL) 90 deg M1	100.00	0.013	-0.0009	0.0136	0.0136
Seismic (Reduced DL) 90 deg M1	120.00	0.018	-0.0011	0.0156	0.0157
Seismic (Reduced DL) 90 deg M1	130.00	0.021	-0.0011	0.0158	0.0158
Seismic (Reduced DL) 90 deg M1	140.00	0.024	-0.0012	0.0171	0.0171
Seismic (Reduced DL) 90 deg M1	160.00	0.030	-0.0013	0.0184	0.0184
Seismic (Reduced DL) 90 deg M1	180.00	0.037	-0.0014	0.0189	0.0189
Seismic (Reduced DL) 90 deg M1	200.00	0.043	-0.0014	0.0190	0.0190
Seismic (Reduced DL) 90 deg M1	220.00	0.050	-0.0013	0.0185	0.0185
Seismic (Reduced DL) 90 deg M1	226.67	0.052	-0.0013	0.0182	0.0182
Seismic (Reduced DL) 90 deg M1	233.33	0.054	-0.0013	0.0178	0.0178

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Site Name: Tartaglia, CT

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Customer: T-MOBILE

Seismic (Reduced DL) 90 deg M1	240.00	0.056	-0.0013	0.0177	0.0177
Serviceability - 60 mph Wind Normal	80.00	0.037	0.0014	0.0346	0.0346
Serviceability - 60 mph Wind Normal	100.00	0.050	0.0025	0.0447	0.0448
Serviceability - 60 mph Wind Normal	120.00	0.067	0.0040	0.0481	0.0483
Serviceability - 60 mph Wind Normal	130.00	0.076	0.0050	0.0471	0.0473
Serviceability - 60 mph Wind Normal	140.00	0.084	0.0056	0.0501	0.0504
Serviceability - 60 mph Wind Normal	160.00	0.102	0.0073	0.0516	0.0521
Serviceability - 60 mph Wind Normal	180.00	0.120	0.0090	0.0514	0.0522
Serviceability - 60 mph Wind Normal	200.00	0.137	0.0107	0.0510	0.0521
Serviceability - 60 mph Wind Normal	220.00	0.155	0.0126	0.0504	0.0519
Serviceability - 60 mph Wind Normal	226.67	0.160	0.0132	0.0500	0.0517
Serviceability - 60 mph Wind Normal	233.33	0.166	0.0138	0.0491	0.0510
Serviceability - 60 mph Wind Normal	240.00	0.172	0.0142	0.0531	0.0550
Serviceability - 60 mph Wind 60 deg	80.00	0.037	-0.0056	0.0344	0.0345
Serviceability - 60 mph Wind 60 deg	100.00	0.050	-0.0080	0.0442	0.0445
Serviceability - 60 mph Wind 60 deg	120.00	0.067	-0.0100	0.0478	0.0484
Serviceability - 60 mph Wind 60 deg	130.00	0.076	-0.0108	0.0466	0.0473
Serviceability - 60 mph Wind 60 deg	140.00	0.084	-0.0119	0.0497	0.0505
Serviceability - 60 mph Wind 60 deg	160.00	0.102	-0.0138	0.0511	0.0522
Serviceability - 60 mph Wind 60 deg	180.00	0.120	-0.0156	0.0506	0.0522
Serviceability - 60 mph Wind 60 deg	200.00	0.137	-0.0174	0.0502	0.0522
Serviceability - 60 mph Wind 60 deg	220.00	0.154	-0.0191	0.0495	0.0521
Serviceability - 60 mph Wind 60 deg	226.67	0.160	-0.0197	0.0491	0.0520
Serviceability - 60 mph Wind 60 deg	233.33	0.166	-0.0203	0.0487	0.0517
Serviceability - 60 mph Wind 60 deg	240.00	0.171	-0.0206	0.0466	0.0499
Serviceability - 60 mph Wind 90 deg	80.00	0.037	-0.0065	0.0343	0.0345
Serviceability - 60 mph Wind 90 deg	100.00	0.050	-0.0093	0.0441	0.0448
Serviceability - 60 mph Wind 90 deg	120.00	0.067	-0.0117	0.0476	0.0484
Serviceability - 60 mph Wind 90 deg	130.00	0.075	-0.0126	0.0464	0.0474
Serviceability - 60 mph Wind 90 deg	140.00	0.084	-0.0139	0.0494	0.0505
Serviceability - 60 mph Wind 90 deg	160.00	0.102	-0.0161	0.0507	0.0523
Serviceability - 60 mph Wind 90 deg	180.00	0.119	-0.0182	0.0503	0.0526
Serviceability - 60 mph Wind 90 deg	200.00	0.137	-0.0203	0.0498	0.0527
Serviceability - 60 mph Wind 90 deg	220.00	0.154	-0.0223	0.0490	0.0529
Serviceability - 60 mph Wind 90 deg	226.67	0.160	-0.0230	0.0486	0.0529
Serviceability - 60 mph Wind 90 deg	233.33	0.166	-0.0237	0.0484	0.0530
Serviceability - 60 mph Wind 90 deg	240.00	0.171	-0.0241	0.0441	0.0491

### Maximum Reactions Summary

Anchor Group	Vertical (kip)				Horizontal (kip)		Moment (kip-ft)	
	DL+WL	DL+WL+IL	UpLift	Shear	DL+WL	DL+WL+IL	DL+WL	DL+WL+IL
Base	110.65	198.85	344.20	49.96	83.62	30.19	10734.27	3758.09

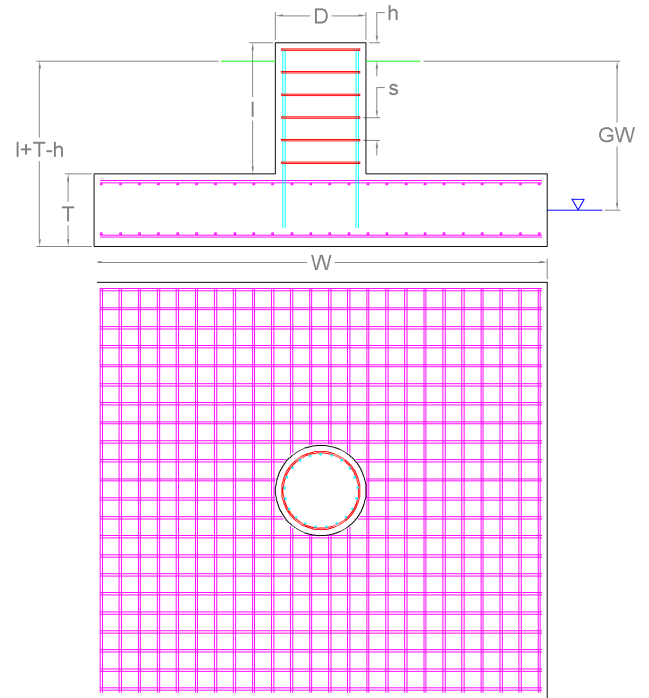
## Pad & Pier Foundation Analysis (ANSI/TIA-222-H)

### Foundation & Soil Parameters

Ignore Rebar?		Y	
Pier Diameter	$D$	1.00	ft
Pier Height Above Ground	$h$	0.5	ft
Pad Base Depth	$l+T-h$	5.6	ft
Pad Width	$W$	22.0	ft
Pad Thickness	$T$	6.1	ft
Water Table Depth [BGL]	$GW$	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, $V_u$	50.0	k
Compression, $P_u$	344.2	k
Uplift, $T_u$	279.2	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
$T_u / \phi_s T_n$	90.8%	
Compressive Force, $P_u$	379.7	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]	1.3	ft
Design Moment at Inflection Point, $M_u$	51.5	k-ft



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

T-Mobile Existing Facility

Site ID: CT11680A

Bridgeport North  
1320 Chopsey Hill Road  
Bridgeport, Connecticut 06606

**May 3, 2021**

**EBI Project Number: 6221002113**

Site Compliance Summary	
Compliance Status:	<b>COMPLIANT</b>
Site total MPE% of FCC general population allowable limit:	<b>13.21%</b>

May 3, 2021

T-Mobile

Attn: Jason Overbey, RF Manager  
35 Griffin Road South  
Bloomfield, Connecticut 06002

Emissions Analysis for Site: CT11680A - Bridgeport North

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **1320 Chopsey Hill Road in Bridgeport, Connecticut** for the purpose of determining whether the emissions from the Proposed T-Mobile Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01 and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ( $\mu\text{W}/\text{cm}^2$ ). The number of  $\mu\text{W}/\text{cm}^2$  calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits; therefore, it is necessary to report results and limits in terms of percent MPE rather than power density.

All results were compared to the FCC (Federal Communications Commission) radio frequency exposure rules, 47 CFR 1.1307(b)(1) – (b)(3), to determine compliance with the Maximum Permissible Exposure (MPE) limits for General Population/Uncontrolled environments as defined below.

General population/uncontrolled exposure limits apply to situations in which the general population 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 population 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 limits for the 600 MHz and 700 MHz frequency bands are approximately  $400 \mu\text{W}/\text{cm}^2$  and  $467 \mu\text{W}/\text{cm}^2$ , respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 11 GHz frequency bands is  $1000 \mu\text{W}/\text{cm}^2$ . Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.



Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Additional details can be found in FCC OET 65.

## **CALCULATIONS**

Calculations were done for the proposed T-Mobile Wireless antenna facility located at 1320 Chopsey Hill Road in Bridgeport, Connecticut using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report, the sample point is the top of a 6-foot person standing at the base of the tower. For power density calculations, the broadcast footprint of the AIR6449 antenna has been considered. Due to the beamforming nature of this antenna, the actual beam locations vary depending on demand and are narrow in nature. Using the broadcast footprint accounts for the potential location of beams at any given time.

For all calculations, all equipment was calculated using the following assumptions:

- 1) 2 LTE channels (600 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 2) 1 NR channel (600 MHz Band) was considered for each sector of the proposed installation. This Channel has a transmit power of 80 Watts.
- 3) 2 LTE channels (700 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 4) 4 GSM channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 5) 4 LTE channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

- 6) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.
- 7) 1 LTE channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 120 Watts.
- 8) 1 NR channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 120 Watts.
- 9) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.
- 10) For the following calculations, the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 11) The antennas used in this modeling are the Ericsson AIR 32 for the 1900 MHz / 1900 MHz / 2100 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz channel(s), the RFS APXVAARR24\_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz channel(s) in Sector A, the Ericsson AIR 32 for the 1900 MHz / 1900 MHz / 2100 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz channel(s), the RFS APXVAARR24\_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz channel(s) in Sector B, the Ericsson AIR 32 for the 1900 MHz / 1900 MHz / 2100 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz channel(s), the RFS APXVAARR24\_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz channel(s) in Sector C. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

- 12) The antenna mounting height centerline of the proposed antennas is 202 feet above ground level (AGL).
- 13) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.
- 14) All calculations were done with respect to uncontrolled / general population threshold limits.

## T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	Ericsson AIR 32	Make / Model:	Ericsson AIR 32	Make / Model:	Ericsson AIR 32
Frequency Bands:	1900 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 1900 MHz / 2100 MHz
Gain:	15.35 dBd / 15.35 dBd / 15.85 dBd	Gain:	15.35 dBd / 15.35 dBd / 15.85 dBd	Gain:	15.35 dBd / 15.35 dBd / 15.85 dBd
Height (AGL):	202 feet	Height (AGL):	202 feet	Height (AGL):	202 feet
Channel Count:	8	Channel Count:	8	Channel Count:	8
Total TX Power (W):	360 Watts	Total TX Power (W):	360 Watts	Total TX Power (W):	360 Watts
ERP (W):	12,841.53	ERP (W):	12,841.53	ERP (W):	12,841.53
Antenna A1 MPE %:	1.20%	Antenna B1 MPE %:	1.20%	Antenna C1 MPE %:	1.20%
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449
Frequency Bands:	2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz
Gain:	17.3 dBd / 17.3 dBd	Gain:	17.3 dBd / 17.3 dBd	Gain:	17.3 dBd / 17.3 dBd
Height (AGL):	202 feet	Height (AGL):	202 feet	Height (AGL):	202 feet
Channel Count:	2	Channel Count:	2	Channel Count:	2
Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts
ERP (W):	12,888.76	ERP (W):	12,888.76	ERP (W):	12,888.76
Antenna A2 MPE %:	1.21%	Antenna B2 MPE %:	1.21%	Antenna C2 MPE %:	1.21%
Antenna #:	3	Antenna #:	3	Antenna #:	3
Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20
Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz
Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd
Height (AGL):	202 feet	Height (AGL):	202 feet	Height (AGL):	202 feet
Channel Count:	7	Channel Count:	7	Channel Count:	7
Total TX Power (W):	320 Watts	Total TX Power (W):	320 Watts	Total TX Power (W):	320 Watts
ERP (W):	8,466.41	ERP (W):	8,466.41	ERP (W):	8,466.41
Antenna A3 MPE %:	1.32%	Antenna B3 MPE %:	1.32%	Antenna C3 MPE %:	1.32%

Site Composite MPE %	
Carrier	MPE %
T-Mobile (Max at Sector A):	3.73%
Marcus	0.27%
AT&T	3.85%
Red Star	0.06%
Metrocall	0.42%
Clinton Tower	0.43%
AAT	0.39%
Nextel/Clearwire	0.21%
Verizon	1.01%
Sprint	2.32%
Metro PCS	0.52%
<b>Site Total MPE % :</b>	<b>13.21%</b>

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	3.73%
T-Mobile Sector B Total:	3.73%
T-Mobile Sector C Total:	3.73%
Site Total MPE % :	13.21%

### T-Mobile Maximum MPE Power Values (Sector A)

T-Mobile Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ( $\mu\text{W}/\text{cm}^2$ )	Frequency (MHz)	Allowable MPE ( $\mu\text{W}/\text{cm}^2$ )	Calculated % MPE
T-Mobile 1900 MHz GSM	4	1028.30	202.0	3.85	1900 MHz GSM	1000	0.38%
T-Mobile 1900 MHz LTE	2	2056.61	202.0	3.85	1900 MHz LTE	1000	0.38%
T-Mobile 2100 MHz LTE	2	2307.55	202.0	4.32	2100 MHz LTE	1000	0.43%
T-Mobile 2500 MHz LTE	1	6444.38	202.0	6.03	2500 MHz LTE	1000	0.60%
T-Mobile 2500 MHz NR	1	6444.38	202.0	6.03	2500 MHz NR	1000	0.60%
T-Mobile 600 MHz LTE	2	591.73	202.0	1.11	600 MHz LTE	400	0.28%
T-Mobile 600 MHz NR	1	1577.94	202.0	1.48	600 MHz NR	400	0.37%
T-Mobile 700 MHz LTE	2	648.82	202.0	1.21	700 MHz LTE	467	0.26%
T-Mobile 1900 MHz LTE	2	2203.69	202.0	4.12	1900 MHz LTE	1000	0.41%
						<b>Total:</b>	<b>3.73%</b>

• NOTE: Totals may vary by approximately 0.01% due to summation of remainders in calculations.

## Summary

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

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

T-Mobile Sector	Power Density Value (%)
Sector A:	3.73%
Sector B:	3.73%
Sector C:	3.73%
T-Mobile Maximum MPE % (Sector A):	3.73%
Site Total:	13.21%
Site Compliance Status:	<b>COMPLIANT</b>

The anticipated composite MPE value for this site assuming all carriers present is **13.21%** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

FCC guidelines state that if a site is found to be out of compliance (over allowable thresholds), that carriers over a 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite values calculated were well within the allowable 100% threshold standard per the federal government.

<b>RAN Template:</b> 67D5A997DB Outdoor	<b>A&amp;L Template:</b> 67D5997DB_2xAIR+1OP
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### Section 1 - Site Information

**Site ID:** CT11680A  
**Status:** Draft  
**Version:** 6  
**Project Type:** Anchor  
**Approved:** Not Approved  
**Approved By:** Not Approved  
**Last Modified:** 1/19/2021 6:33:17 PM  
**Last Modified By:** Dominic.Kallas2@T-Mobile.com

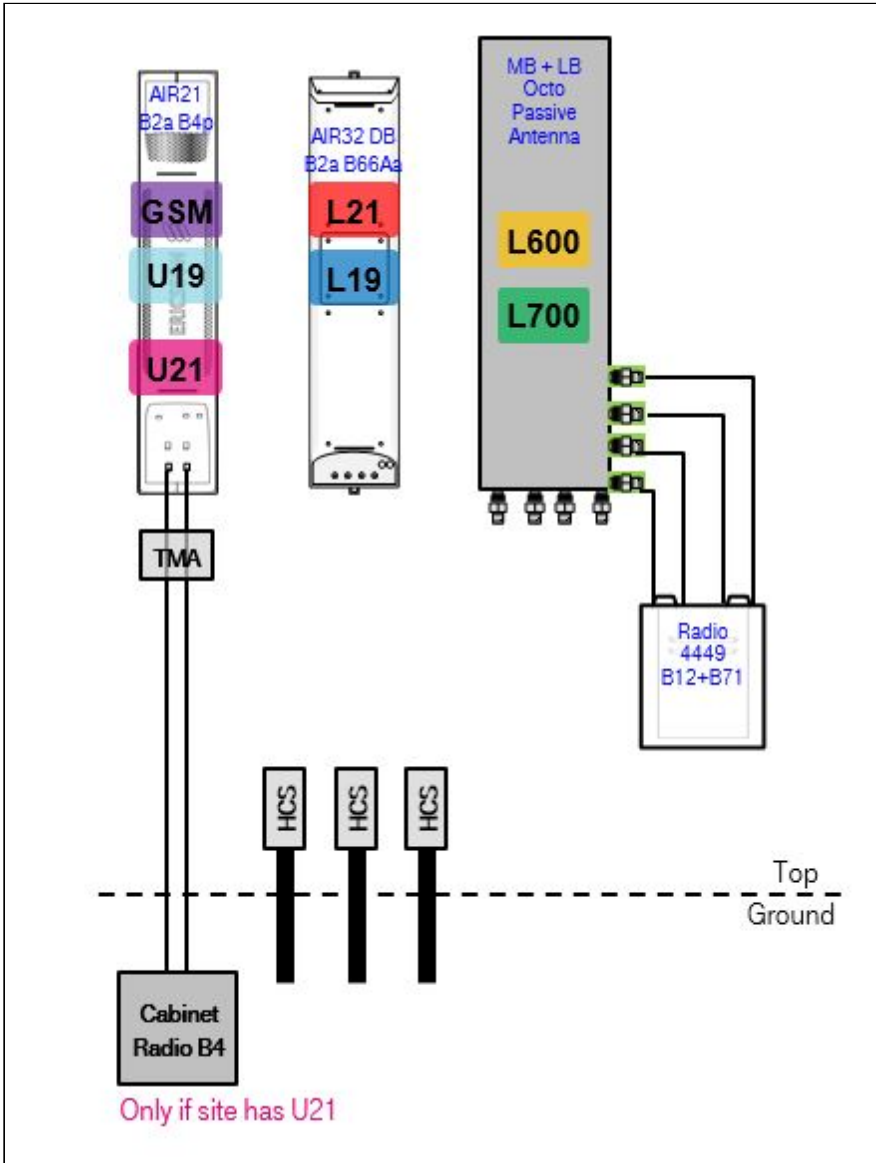
**Site Name:** Bridgeport North  
**Site Class:** Self Support Tower  
**Site Type:** Structure Non Building  
**Plan Year:** 2020  
**Market:** CONNECTICUT CT  
**Vendor:** Ericsson  
**Landlord:** Remo Tartaglia

**Latitude:** 41.21961800  
**Longitude:** -73.20121300  
**Address:** 1320 Chopsey Hill Road  
**City, State:** Bridgeport, CT  
**Region:** NORTHEAST

<b>RAN Template:</b> 67D5A997DB Outdoor		<b>AL Template:</b> 67D5997DB_2xAIR+1OP		
<b>Sector Count:</b> 3	<b>Antenna Count:</b> 9	<b>Coax Line Count:</b> 0	<b>TMA Count:</b> 0	<b>RRU Count:</b> 6

### Section 2 - Existing Template Images

67D92DB\_2xAIR+1OP.JPG

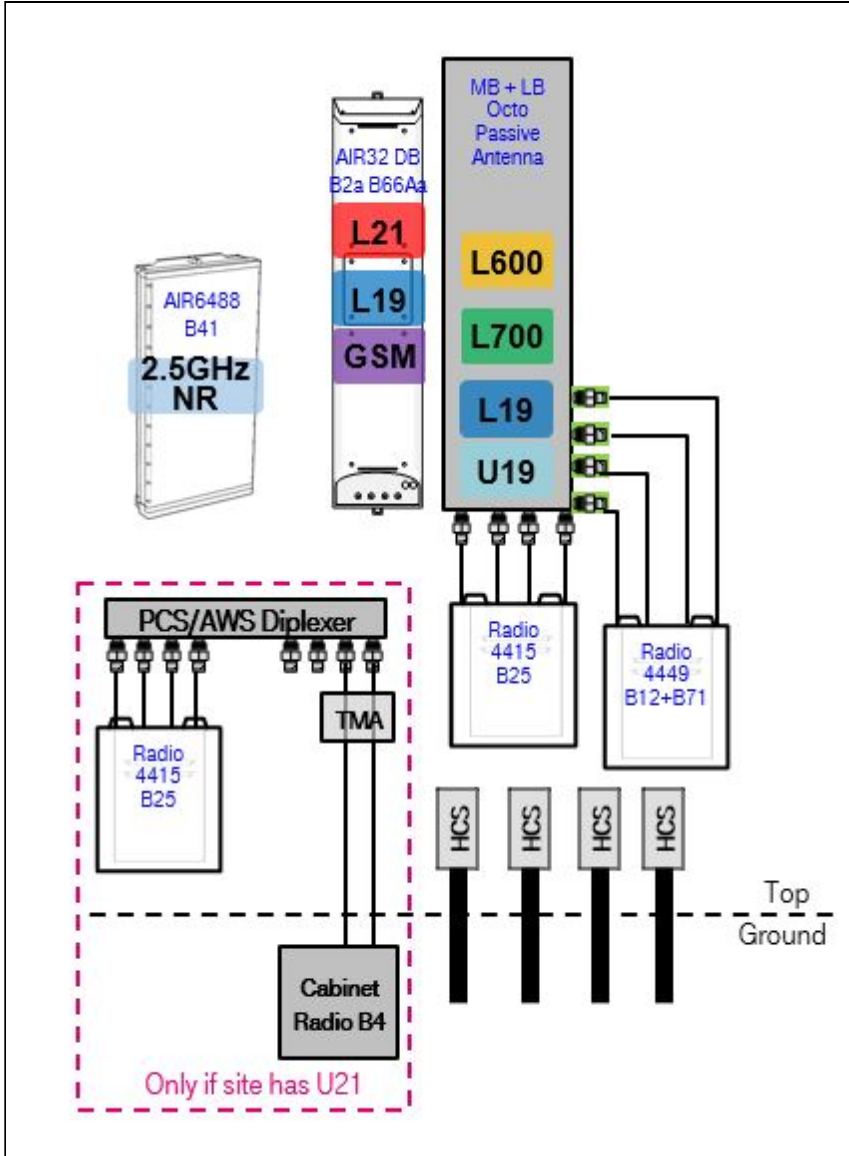


Notes:



Section 3 - Proposed Template Images

67D5997DB\_2xAIR+1OP.JPG



Notes:

**Section 4 - Siteplan Images**

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<b>RAN Template:</b> 67D5A997DB Outdoor	<b>A&amp;L Template:</b> 67D5997DB_2xAIR+1OP
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### Section 5 - RAN Equipment

#### Existing RAN Equipment

Template: 67D92DB Outdoor

Enclosure	1	2
Enclosure Type	RBS 6131	Ancillary Equipment (Ericsson)
Baseband	DUW30 DUW30 U2100 DUG20 G1900 BB 6630 L2100 L1900 BB 6630 L700 L600 N600	
Hybrid Cable System		Ericsson 9x18 HCS *Select Length* Ericsson 6x12 HCS *Select Length & AWG* Ericsson 6x12 HCS *Select AWG & Length*
Multiplexer	XMU	
Radio	RU22 (x 6) U2100	

#### Proposed RAN Equipment

Template: 67D5A997DB Outdoor

Enclosure	1	2	3
Enclosure Type	RBS 6131	Enclosure 6160	B160
Baseband	DUW30 (x 2) DUG20 G1900 BB 6630 L2100 L1900 BB 6630 L700 L600 N600	BB 6630 L2500 BB 6648 N2500	
Hybrid Cable System	Ericsson 6x12 HCS *Select Length & AWG* Ericsson 6x12 HCS *Select AWG & Length*	Ericsson Hybrid Trunk 6/24 4AWG 80m (x 3) PSU 4813	
Multiplexer	XMU		
Radio	RU22 (x 6)		
Transport System		CSR IXRe V2 (Gen2)	

**RAN Scope of Work:**

U2100 will be decommissioned. Cabinet radios will become unused.

Remove all Nortel Cabinets ([3] at the site)

Add (1) Enclosure 6160.

Add (1) Battery Cabinet B160.

Add (1) iXRe Router to new Enclosure 6160.

Add (1) BB6630 for L2500 to new Enclosure 6160.

Add (1) BB6648 for N2500 to new Enclosure 6160.

Add (1) PSU4813 Voltage Booster to new Enclosure 6160.

Existing: (12) Coaxial Lines; (1) 9X18 HCS; (2) 6X12 HCS.

Remove all coaxial lines.

Remove 9X18 HCS.

Add (3) 6X24 HCS ([1] per sector) terminating at the Enclosure 6160. Connect DC for the AIR6449 B41 to the PSU4813 Voltage Booster.

<b>RAN Template:</b> 67D5A997DB Outdoor	<b>A&amp;L Template:</b> 67D5997DB_2xAIR+1OP
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Section 6 - A&L Equipment

Existing Template: 67D92DB\_2xAIR+1OP  
 Proposed Template: 67D5997DB\_2xAIR+1OP

Sector 1 (Existing) view from behind										
Coverage Type	A - Outdoor Macro									
Antenna	1			2			3			
Antenna Model	Ericsson - AIR32 KRD901146-1_B66A_B2A (Octo)			Ericsson - AIR21 KRC118023-1_B2A_B4P (Quad)			RFS - APXVAARR24_43-U-NA20 (Octo)			
Azimuth	340			340			340			
M. Tilt										
Height	202			202			202			
Ports	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10
Active Tech.	L2100	L2100	L1900	L1900	G1900	U2100	L700 L600 N600	L700 L600 N600		
Dark Tech.										
Restricted Tech.										
Decomm. Tech.										
E. Tilt										
Cables						Generic Feeder Coax (x2) Coax Jumper (x2)	Coax Jumper (x2)	Coax Jumper (x2)		
TMAS						Generic Twin Style 1B - AWS (AtAntenna)				
Diplexers / Combiners										
Radio							Radio 4449 B71+B8 5 (At Antenna)			
Sector Equipment										
<b>Unconnected Equipment:</b>										
<b>Scope of Work:</b>										

<b>RAN Template:</b> 67D5A997DB Outdoor	<b>A&amp;L Template:</b> 67D5997DB_2xAIR+1OP
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Sector 1 (Proposed) view from behind												
Coverage Type	A - Outdoor Macro											
Antenna	1				2				3			
Antenna Model	Ericsson - AIR32 KRD901146-1_B66A_B2A (Octo)				Ericsson - AIR6449 B41 (Active Antenna - Massive MIMO)				RFS - APXVAARR24_43-U-NA20 (Octo)			
Azimuth	340				340				340			
M. Tilt	0				0				0			
Height	202				202				202			
Ports	P1	P2	P3	P4	P5		P6		P7	P8	P9	P10
Active Tech.	L2100	L2100	G1900 L1900	L1900	L2500	N2500	L2500	N2500	L700 L600 N600	L700 L600 N600	L1900	L1900
Dark Tech.												
Restricted Tech.												
Decomm. Tech.												
E. Tilt												
Cables	Fiber Jumper	Fiber Jumper	Fiber Jumper	Fiber Jumper	Fiber Jumper (x2)		Fiber Jumper (x2)		Coax Jumper (x2) Fiber Jumper	Coax Jumper (x2) Fiber Jumper	Coax Jumper (x2) Fiber Jumper	Coax Jumper (x2) Fiber Jumper
TMA's												
Diplexers / Combiners												
Radio									Radio 4449 B71+B8 5 (At Antenna)	SHARED Radio 4449 B71+B8 5 (At Antenna)	Radio 4415 B25 (At Antenna)	SHARED Radio 4415 B25 (At Antenna)
Sector Equipment												

**Unconnected Equipment:**

**Scope of Work:**

Remove AIR21 B2A/B4P from Position 2.

Remove AWS TMA from Position 2.

Remove all Coaxial Lines.

Install (1) AIR6449 B41 for L2500 and N2500 in Position 2.

Move GSM to AIR32 Dual Band antenna in Position 1. GSM will share B2 radios with L1900 1st Carrier.

Add (1) Radio 4415 B25 for L1900 2nd Carrier to Position 3 at antenna, and connect its ports to the Mid-Band ports of the Octo Antenna.

Ensure RET control is enabled for all technology layers according to the Design Documents.

\*A dashed border indicates shared equipment. Any connected equipment is denoted with the SHARED keyword.

<b>RAN Template:</b> 67D5A997DB Outdoor	<b>A&amp;L Template:</b> 67D5997DB_2xAIR+1OP
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Sector 2 (Existing) view from behind										
Coverage Type	A - Outdoor Macro									
Antenna	1			2			3			
Antenna Model	Ericsson - AIR32 KRD901146-1_B66A_B2A (Octo)			Ericsson - AIR21 KRC118023-1_B2A_B4P (Quad)			RFS - APXVAARR24_43-U-NA20 (Octo)			
Azimuth	90			90			90			
M. Tilt										
Height	202			202			202			
Ports	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10
Active Tech.	L2100	L2100	L1900	L1900	G1900	U2100	L700 L600 N600	L700 L600 N600		
Dark Tech.										
Restricted Tech.										
Decomm. Tech.										
E. Tilt										
Cables						Generic Feeder Coax (x2) Coax Jumper (x2)	Coax Jumper (x2)	Coax Jumper (x2)		
TMA's						Generic Twin Style 1B - AWS (AtAntenna)				
Diplexers / Combiners										
Radio							Radio 4449 B71+B8 5 (At Antenna)			
Sector Equipment										
<b>Unconnected Equipment:</b>										
<b>Scope of Work:</b>										

<b>RAN Template:</b> 67D5A997DB Outdoor	<b>A&amp;L Template:</b> 67D5997DB_2xAIR+1OP
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Sector 2 (Proposed) view from behind												
Coverage Type	A - Outdoor Macro											
Antenna	1				2				3			
Antenna Model	Ericsson - AIR32 KRD901146-1_B66A_B2A (Octo)				Ericsson - AIR6449 B41 (Active Antenna - Massive MIMO)				RFS - APXVAARR24_43-U-NA20 (Octo)			
Azimuth	90				90				90			
M. Tilt	0				0				0			
Height	202				202				202			
Ports	P1	P2	P3	P4	P5		P6		P7	P8	P9	P10
Active Tech.	L2100	L2100	G1900 L1900	L1900	L2500	N2500	L2500	N2500	L700 L600 N600	L700 L600 N600	L1900	L1900
Dark Tech.												
Restricted Tech.												
Decomm. Tech.												
E. Tilt												
Cables	Fiber Jumper	Fiber Jumper	Fiber Jumper	Fiber Jumper	Fiber Jumper (x2)		Fiber Jumper (x2)		Coax Jumper (x2) Fiber Jumper	Coax Jumper (x2) Fiber Jumper	Coax Jumper (x2) Fiber Jumper	Coax Jumper (x2) Fiber Jumper
TMA's												
Diplexers / Combiners												
Radio									Radio 4449 B71+B8 5 (At Antenna)	SHARED Radio 4449 B71+B8 5 (At Antenna)	Radio 4415 B25 (At Antenna)	SHARED Radio 4415 B25 (At Antenna)
Sector Equipment												

**Unconnected Equipment:**

**Scope of Work:**

Remove AIR21 B2A/B4P from Position 2.

Remove AWS TMA from Position 2.

Remove all Coaxial Lines.

Install (1) AIR6449 B41 for L2500 and N2500 in Position 2.

Move GSM to AIR32 Dual Band antenna in Position 1. GSM will share B2 radios with L1900 1st Carrier.

Add (1) Radio 4415 B25 for L1900 2nd Carrier to Position 3 at antenna, and connect its ports to the Mid-Band ports of the Octo Antenna.

Ensure RET control is enabled for all technology layers according to the Design Documents.

\*A dashed border indicates shared equipment. Any connected equipment is denoted with the SHARED keyword.

<b>RAN Template:</b> 67D5A997DB Outdoor	<b>A&amp;L Template:</b> 67D5997DB_2xAIR+1OP
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Sector 3 (Existing) view from behind										
Coverage Type	A - Outdoor Macro									
Antenna	1			2			3			
Antenna Model	Ericsson - AIR32 KRD901146-1_B66A_B2A (Octo)			Ericsson - AIR21 KRC118023-1_B2A_B4P (Quad)			RFS - APXVAARR24_43-U-NA20 (Octo)			
Azimuth	210			210			210			
M. Tilt										
Height	202			202			202			
Ports	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10
Active Tech.	L2100	L2100	L1900	L1900	G1900	U2100	L700 L600 N600	L700 L600 N600		
Dark Tech.										
Restricted Tech.										
Decomm. Tech.										
E. Tilt										
Cables						Generic Feeder Coax (x2) Coax Jumper (x2)	Coax Jumper (x2)	Coax Jumper (x2)		
TMA's						Generic Twin Style 1B - AWS (AtAntenna)				
Diplexers / Combiners										
Radio							Radio 4449 B71+B8 5 (At Antenna)			
Sector Equipment										
<b>Unconnected Equipment:</b>										
<b>Scope of Work:</b>										



<b>RAN Template:</b> 67D5A997DB Outdoor	<b>A&amp;L Template:</b> 67D5997DB_2xAIR+1OP
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Sector 3 (Proposed) view from behind												
Coverage Type	A - Outdoor Macro											
Antenna	1				2				3			
Antenna Model	Ericsson - AIR32 KRD901146-1_B66A_B2A (Octo)				Ericsson - AIR6449 B41 (Active Antenna - Massive MIMO)				RFS - APXVAARR24_43-U-NA20 (Octo)			
Azimuth	210				210				210			
M. Tilt	0				0				0			
Height	202				202				202			
Ports	P1	P2	P3	P4	P5		P6		P7	P8	P9	P10
Active Tech.	L2100	L2100	G1900 L1900	L1900	L2500	N2500	L2500	N2500	L700 L600 N600	L700 L600 N600	L1900	L1900
Dark Tech.												
Restricted Tech.												
Decomm. Tech.												
E. Tilt												
Cables	Fiber Jumper	Fiber Jumper	Fiber Jumper	Fiber Jumper	Fiber Jumper (x2)		Fiber Jumper (x2)		Coax Jumper (x2) Fiber Jumper	Coax Jumper (x2) Fiber Jumper	Coax Jumper (x2) Fiber Jumper	Coax Jumper (x2) Fiber Jumper
TMA's												
Diplexers / Combiners												
Radio									Radio 4449 B71+B8 5 (At Antenna)	SHARED Radio 4449 B71+B8 5 (At Antenna)	Radio 4415 B25 (At Antenna)	SHARED Radio 4415 B25 (At Antenna)
Sector Equipment												

**Unconnected Equipment:**

**Scope of Work:**

Remove AIR21 B2A/B4P from Position 2.

Remove AWS TMA from Position 2.

Remove all Coaxial Lines.

Install (1) AIR6449 B41 for L2500 and N2500 in Position 2.

Move GSM to AIR32 Dual Band antenna in Position 1. GSM will share B2 radios with L1900 1st Carrier.

Add (1) Radio 4415 B25 for L1900 2nd Carrier to Position 3 at antenna, and connect its ports to the Mid-Band ports of the Octo Antenna.

Ensure RET control is enabled for all technology layers according to the Design Documents.

\*A dashed border indicates shared equipment. Any connected equipment is denoted with the SHARED keyword.

<b>RAN Template:</b> 67D5A997DB Outdoor	<b>A&amp;L Template:</b> 67D5997DB_2xAIR+1OP
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**Section 7 - Power Systems Equipment**

**Existing Power Systems Equipment**

----- This section is intentionally blank. -----

**Proposed Power Systems Equipment**