

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



September 30th, 2022

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

RE: Notice of Exempt Modification  
180A Bayberry Lane, Westport, CT 06880  
Latitude: 41.1716492  
Longitude: -73.32860551  
T-Mobile Site#: CT11323A - Anchor / Sprint Consolidation

Dear Ms. Bachman:

T-Mobile currently maintains nine (9) antennas at the 87-foot level of the existing 140-foot monopole tower at 180A Bayberry Lane in Westport, CT. Sprint currently maintains nine (9) antennas at the 132-foot level of the tower. The 140-foot monopole tower is owned and operated by American Tower. The property is also owned by American Tower. T-Mobile now intends to remove all existing Sprint equipment from the 132-foot level and all existing T-Mobile equipment at the 88-foot level. T-Mobile will then install nine (9) antennas at the 130-foot level. These antennas will support 5G services.

**Planned Modifications:**

**Tower:**

Install New:

- (3) Ericsson AIR 6419 B41 Antennas
- (3) Commscope VV-65A-R1 Antennas
- (3) RFS APXVAALL24 Antennas
- (3) Radio 4460 B25 B66
- (3) Radio 4480 B71 B85
- (4) 1.99" Hybrid Cables

To Be Removed:

- (9) Sprint Antennas
- (3) Sprint RRUs
- Other associated Sprint equipment

(9) T-Mobile antennas  
(3) T-Mobile RRUs  
Other associated T-Mobile equipment

**Ground:**

Install (1) 6160 Power Enclosure, and (1) B160 Battery Rack, (1) RP 6651, (1) PSU 4813, and (1) CSR IXRE.  
Remove (2) RBS 6102 Cabinets, (2) DUW30, (6) RU22 Radios.

This facility was originally approved by the Council in Docket No. 45 on September 14, 1984. This modification will not break any of the conditions set forth in this 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 First Selectwoman Jennifer Tooker, Elected Official, and Laurie Montagna, Zoning Official, as well as the tower and 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**

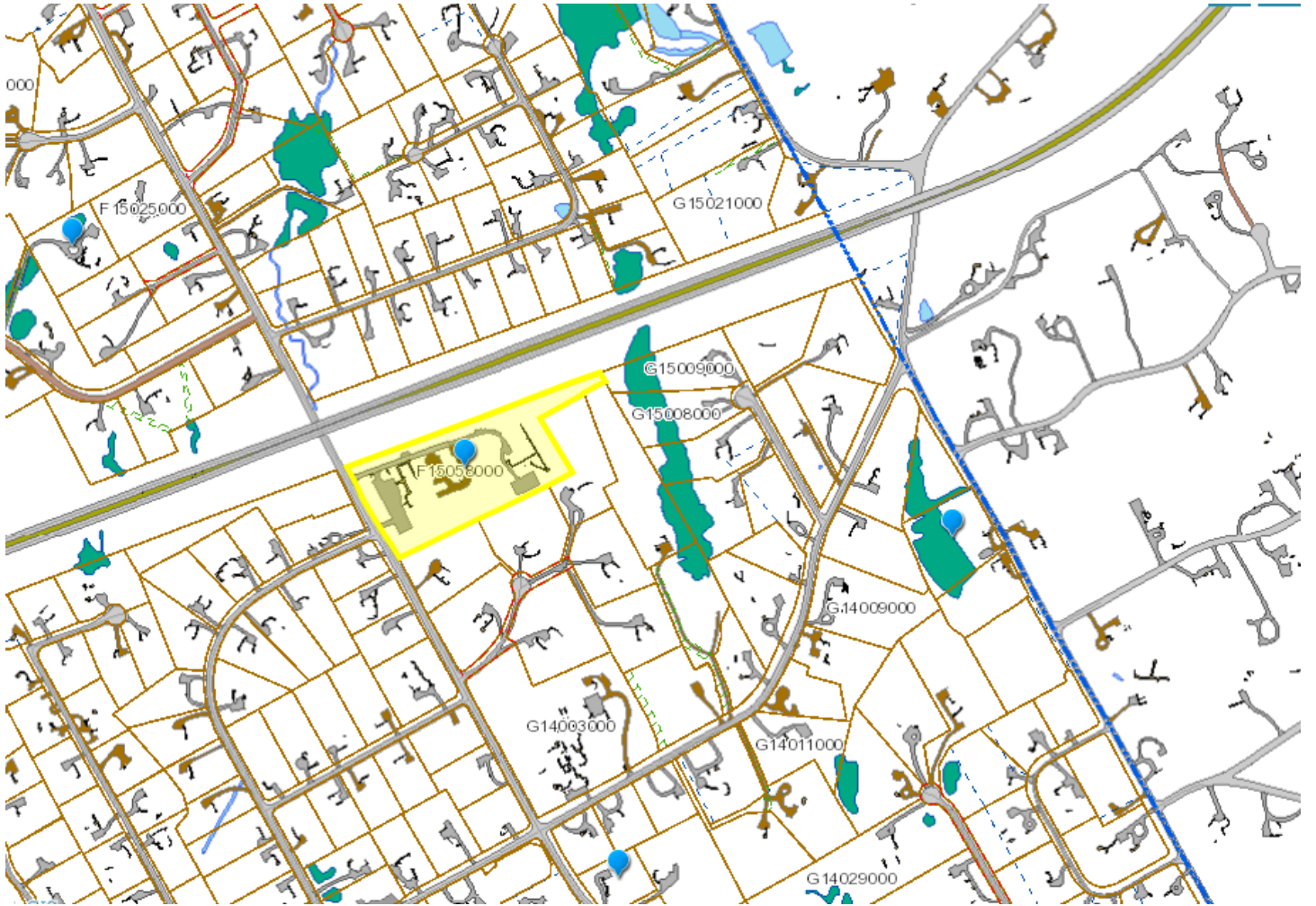
Transcend Wireless

Cell: 201-658-7728

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

Attachments

cc: Jennifer Tooker - First Selectwoman of Westport  
Laurie Montagna - Zoning Official of Westport  
American Tower - Property / Tower Owner



ERIC BREUN  
2016587728  
1 INTERNATIONAL BLVD.  
MAHWAH NJ 07495

1 LBS

DWT: 18.12.1

1 OF 1

**SHIP TO:**  
FIRST SELECTWOMAN  
JENNIFER TOOKER  
110 MYRTLE AVENUE  
WESTPORT CT 06880



**CT 066 9-02**



**UPS GROUND**

TRACKING #: 1Z V25 742 03 9981 9255



BILLING: P/P

Reference #1: CT11323A

XOL 22.08.10

NV95 35.0A 08/2022\*



TM

ERIC BREUN  
2016587728  
1 INTERNATIONAL BLVD.  
MAHWAH NJ 07495

1.0 LBS LTR

1 OF 1

**SHIP TO:**  
CONTACTS MANAGEMENT  
AMERICAN TOWER CORPORATION  
10 PRESIDENTIAL WAY  
WOBBURN MA 01801



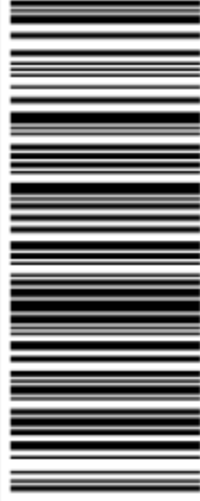
**MA 018 9-04**



**UPS 2ND DAY AIR**

**2**

TRACKING #: 1Z V25 742 02 9630 9241



BILLING: P/P

Reference #1: CT11323A

XOL 22.08.10

NV95 35.0A 08/2022\*



TM

**Hello, your package has been delivered.**

**Delivery Date:** Thursday, 08/25/2022

**Delivery Time:** 11:17 AM

**Signed by:** RICH

**TRANSCEND WIRELESS**

**Tracking Number:** [1ZV257420399819255](#)

**Ship To:** JENNIFER TOOKER  
110 MYRTLE AVENUE  
WESTPORT, CT 06880  
US

**Number of Packages:** 1

**UPS Service:** UPS Ground

**Package Weight:** 1.0 LBS

**Reference Number:** [CT11323A](#)

**Hello, your package has been delivered.**

**Delivery Date:** Thursday, 08/25/2022

**Delivery Time:** 11:17 AM

**Signed by:** RICH

**TRANSCEND WIRELESS**

**Tracking Number:** [1ZV257420391345558](#)

**Ship To:** LAURIE MONTAGNA  
110 MYRTLE AVENUE  
WESTPORT, CT 06880  
US

**Number of Packages:** 1

**UPS Service:** UPS Ground

**Package Weight:** 1.0 LBS

**Reference Number:** [CT11323A](#)

**Hello, your package has been delivered.**

**Delivery Date:** Thursday, 08/25/2022

**Delivery Time:** 11:34 AM

**Signed by:** ANCRI

## **TRANSCEND WIRELESS**

**Tracking Number:** [1ZV257420296309241](#)

**Ship To:** AMERICAN TOWER CORPORATION  
10 PRESIDENTIAL WAY  
WOBURN, MA 01801  
US

**Number of Packages:** 1

**UPS Service:** UPS 2nd Day Air®

**Package Weight:** 1.0 LBS

**Reference Number:** [CT11323A](#)

CONSTRUCTION DETAIL						CONSTRUCTION DETAIL (CONTINUED)					
Element	Cd	Description				Element	Cd	Description			
Style:	94	Outbuildings				Fireplaces					
Model	00	Vacant				Ceiling Height					
Grade:						Elevator					
Stories:						<b>CONDO DATA</b>					
Occupancy						Parcel Id		C		Own	
Exterior Wall 1									B		S
Exterior Wall 2						Adjust Type	Code	Description	Factor%		
Roof Structure:						Condo Flr					
Roof Cover						Condo Unit					
Interior Wall 1						<b>COST / MARKET VALUATION</b>					
Interior Wall 2						Building Value New					
Interior Flr 1						Year Built					
Interior Flr 2						Effective Year Built					
Heat Fuel						Depreciation Code					
Heat Type:						Remodel Rating					
AC Type:						Year Remodeled					
Total Bedrooms						Depreciation %					
Total Bthrms:						Functional Obsol					
Total Half Baths						External Obsol					
Total Xtra Fixtrs						Trend Factor	1				
Total Rooms:						Condition					
Bath Style:						Condition %					
Kitchen Style:						Percent Good					
Kitchens						Cns Sect Rcnld					
Whirlpool Tubs						Dep % Ovr					
Hot Tubs						Dep Ovr Comment					
Sauna (SF Area)						Misc Imp Ovr					
Fin Basement						Misc Imp Ovr Comment					
Fin Bsmt Qual						Cost to Cure Ovr					
Bsmt. Garages						Cost to Cure Ovr Comment					
Interior Cond											
Fireplaces											
Ceiling Height											

No Sketch

OB - OUTBUILDING & YARD ITEMS(L) / XF - BUILDING EXTRA FEATURES(B)												
Code	Descript	Sub	Sub Ty	L/B	Units	Unit Pric	Yr Blt	Cond. C	% Gd	Grade	Grade A	Appr. V
CELL	Cell on	TW		L	6	328000.	2010		100	2	0.75	1,267,7
CB3	PerCast			L	360	350.00	2010	6	75	3	1.00	94,500
CB3	PerCast			L	440	350.00	2010	6	75	3	1.00	115,50
FN4	Fence 8			L	200	21.40	2010	5	60		0.00	2,600
CB3	PerCast			L	144	350.00	2010	6	75	3	1.00	37,800
CB3	PerCast			L	220	350.00	2010	6	75	3	1.00	57,800

BUILDING SUB-AREA SUMMARY SECTION							
Code	Description	Living Area	Floor Area	Eff Area	Unit Cost	Undeprec Value	
Ttl Gross Liv / Lease Area		0	0				0



CURRENT OWNER		TOPO	UTILITIES	STRT / ROAD	LOCATION	CURRENT ASSESSMENT				
AMERICAN TOWERS, INC. PROPERTY TAX DEPT PO BOX 723597						Description	Code	Appraised	Assessed	6158  WESTPORT, CT
ATLANTA GA 31139						UTL OUTBL	4-3	1,575,900	1,103,290	
<b>SUPPLEMENTAL DATA</b>										
1		Alt Prcl ID F1558CELL	Historic ID		Lift Hse Asking \$					
		Census WestportC	Survey Ma		Assoc Pid#					
		GIS ID F15058000								
						Total		1,575,900	1,103,290	

**VISION**

RECORD OF OWNERSHIP		BK-VOL/PAGE	SALE DATE	Q/U	V/I	SALE PRICE	VC	PREVIOUS ASSESSMENTS (HISTORY)					
AMERICAN TOWERS, INC.		0000 0000	10-01-2010	U	I	0		Year	Code	Assessed	Year	Code	Assessed
								2021	4-3	1,103,290	2020	4-3	1,103,290
								Total		1,103,290	Total		1,103,290

EXEMPTIONS			OTHER ASSESSMENTS				APPRAISED VALUE SUMMARY					
Year	Code	Description	Amount	Code	Description	Number	Amount	Comm Int	This signature acknowledges a visit by a Data Collector or Assessor			
									Appraised Bldg. Value (Card) 0			
									Appraised Xf (B) Value (Bldg) 0			
									Appraised Ob (B) Value (Bldg) 1,575,900			
									Appraised Land Value (Bldg) 0			
									Special Land Value 0			
									Total Appraised Parcel Value 1,575,900			
									Valuation Method C			
									Total Appraised Parcel Value 1,575,900			

BUILDING PERMIT RECORD								VISIT / CHANGE HISTORY						
Permit Id	Issue Date	Type	Description	Amount	Insp Date	% Comp	Date Comp	Comments	Date	Id	Type	Is	Cd	Purpost/Result
									06-30-2020	JW			19	Field Review
									03-02-2020	VA			60	Mailer Sent
									03-05-2018	BAA			74	BAA - Elected Not To Cond
									03-16-2015	BAA			50	BAA Change

LAND LINE VALUATION SECTION																
B	Use Code	Description	Zone	Land	Land Units	Unit Price	Size Adj	Site Index	Cond.	Nbhd.	Nbhd. Adj	Notes	Location Adjustment	Adj Unit P	Land Value	
1	435	Cell Site Vac Lnd	AAA		0 SF	0.00	1.00000		1.00		1.000		0.0000		0	
Total Card Land Units					0 SF	Parcel Total Land Area					0	Total Land Value				0



DOCKET NO. 45

AN APPLICATION SUBMITTED BY THE SOUTHERN NEW ENGLAND TELEPHONE COMPANY FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED FOR THE CONSTRUCTION, MAINTENANCE, AND OPERATION OF FACILITIES TO PROVIDE CELLULAR SERVICE IN FAIRFIELD COUNTY. : CONNECTICUT SITING COUNCIL : September 14, 1984

DECISION AND ORDER

Pursuant to the foregoing opinion, the Council hereby directs that a certificate of environmental compatibility and public need as required by section 16-50k of the General Statutes of Connecticut, revisions of 1958, revised to 1983, as amended, be issued to the Southern New England Telephone Company for the construction, operation, and maintenance of a telecommunications tower and associated equipment to provide cellular service at each of the following sites:

Kaechele Place, Bridgeport, Connecticut;  
Connecticut Avenue, Norwalk, Connecticut;  
Nells Rock Road, Shelton, Connecticut;  
Newfield Avenue, Stamford, Connecticut; and  
Bayberry Lane, (former Nike site), Westport, Connecticut.

The facilities shall be constructed, operated, and maintained as specified in the Council's record on this matter, and subject to the following conditions:

1. The towers shall be no taller than necessary to provide the proposed service, and in no event shall exceed
  - a) 167' at the Bridgeport site,
  - b) 167' at the Norwalk site,
  - c) 189.5' at the Shelton site,
  - d) 167' at the Stamford site,
  - e) 117' at the Westport site;
2. A fence not lower than eight feet shall surround each tower and its associated equipment;
3. The applicant or its successor shall notify the Council if and when directional antennas or any other equipment is added to any of these facilities;

4. The applicant or its successor shall permit, in accordance with representations made by it during the proceeding, public or private entities to share space on the facilities, for due consideration received, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing;
5. Unless necessary to comply with condition number six, below, no lights shall be installed on any of these towers;
6. The facilities shall be constructed in accordance with all applicable federal, state, and municipal laws and regulations;
7. The applicant shall submit a development and management plan (D&M) for the Bridgeport, Stamford, and Westport sites pursuant to sections 16-50j-85 through 16-50j-87 of the regulations of state agencies, except that irrelevant items in section 16-50j-86 need only be identified as such. The D&M plans shall include appropriate evergreen screening of the sites, erosion control measures, reseeding plans, and tree removal plans. The applicant shall consult with the Stamford Environmental Protection Board in the preparation of a drainage and erosion control plan for the Stamford tower. The applicant shall comply with the reporting requirements of section 16-50j-87 for all sites;
8. Construction activities shall take place during daylight working hours;
9. This decision and order shall be void and the towers and associated equipment approved herein shall be dismantled and

removed, or reapplication for any new use shall be made to the Connecticut Siting Council before any such new use is made, if the towers do not provide or permanently cease to provide cellular service following completion of construction;

10. This decision and order shall be void if all construction authorized is not completed within three years of the issuance of this decision.

Pursuant to section 16-50p of the General Statutes, we hereby direct that a copy of the opinion and decision and order be served on each person listed below. A notice of the issuance shall be published in the Bridgeport Post, the Norwalk Hour, the Stamford Advocate, and the Shelton Suburban News, and the Westport News.

The parties to this proceeding are

The Southern New England Telephone Company (Applicant)  
Room 314  
227 Church Street  
New Haven, Connecticut 06506

Attention: Mr. Peter J. Tyrrell (its attorney)  
Senior Attorney

Rolnick Observatory represented by:  
52 Sawyer Road  
Fairfield, Connecticut  
Frederick H. Bump  
Director

Mr. Adam Norton  
40 Highland Road  
Westport, Connecticut 06880

Representative John Wayne Fox (service waived)  
13 Apple Tree Drive  
Stamford, Connecticut 06906

---

Mr. George C. Lenfest  
4 Highland Road  
Westport, Connecticut

Mr. William Seiden  
First Selectman  
Town of Westport  
110 Myrtle Avenue  
P.O. Box 549  
Westport, Connecticut 06881

Mr. Arthur L. Schimel  
174 Bayberry Lane  
Westport, Connecticut

Mr. Seymour Bendremer  
11 Apache Trail  
Westport, Connecticut

Ms. Gladys Floch  
32 Woody Lane  
Westport, Connecticut

Ms. Helen S. Cohen  
15 Highland Road  
Westport, Connecticut (service waived)

Mr. Jack Braverman  
226 Bayberry Lane  
Westport, Connecticut

Mr. Kevin Gavin  
191 Bayberry Lane  
Westport, Connecticut (service waived)

Mr. A.B. Beiser  
12 Highland Road  
Westport, Connecticut

Mr. Edward V. Polusky  
4 Hooper Road  
Westport, Connecticut (service waived)

Ms. Lois Schine

represented by:

Mary D. Mix, Esquire  
830 Post Road - East  
Suite 100  
Westport, Connecticut 06880

Mr. Allen Witt  
3 Apache Trail  
Westport, Connecticut

Ms. Gayle Shiller  
5 Apache Trail  
Westport, Connecticut (service waived)

Mrs. Ronnie Hammer  
3 Hooper Road  
Westport, Connecticut

Mr. Paul Rosenblatt  
7 Apache Trail  
Westport, Connecticut

(service waived)

Mr. Henry J. Wolfson  
179 Bayberry Lane  
Westport, Connecticut

(service waived)

Mr. Melvin H. Barr  
Planning Director  
Town of Westport  
110 Myrtle Avenue  
P.O. Box 549  
Westport, Connecticut 06881

(service waived)

Mr. Mark Infeld  
6 Apache Trail  
Westport, Connecticut

(service waived)

Ms. Barbara Saipe  
Representative Town  
Meeting Member  
District #8  
Town Hall  
P.O. Box 549  
Westport, Connecticut 06881

(service waived)

Ms. Peggy Goldenberg  
201 Bayberry Lane  
Westport, Connecticut

(service waived)

Ms. Martha Hauhuth  
Board of Selectman  
Town Hall  
P.O. Box 549  
Westport, Connecticut 06881

(service waived)

Ms. Meg Coffee  
32 Otter Trail  
Westport, Connecticut

(service waived)



STATE OF CONNECTICUT

)

COUNTY OF HARTFORD


:

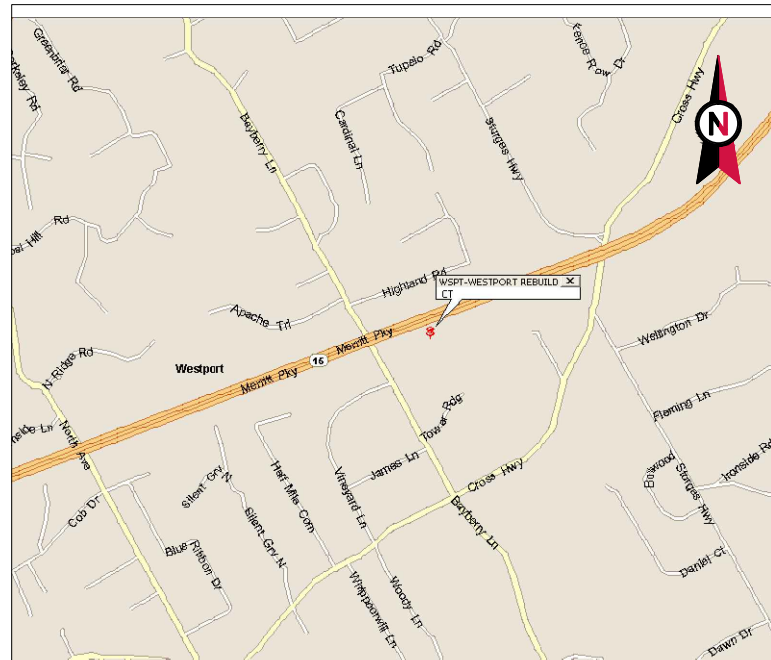
)

ss. New Britain, September 14, 1984

I hereby certify that the foregoing is a true and correct copy of the decision and order issued by the Connecticut Siting Council, State of Connecticut.

ATTEST:

  
Christopher S. Wood, Executive Director  
Connecticut Siting Council



VICINITY MAP



**AMERICAN TOWER®**

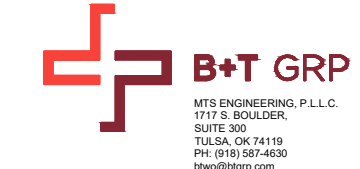
ATC SITE NAME: WSPT-WESTPORT REBUILD CT  
 ATC SITE NUMBER: 310968  
 T-MOBILE SITE NAME: CT323/SS TOWER REBUILIC  
 T-MOBILE SITE NUMBER: CT11323A  
 SITE ADDRESS: 180A BAYBERRY LANE  
 WESTPORT, CT 06880-2844



LOCATION MAP

**T-MOBILE ANCHOR AMENDMENT PLAN  
 67E5D998E 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> 180A BAYBERRY LANE WESTPORT, CT 06880-2844 COUNTY: FAIRFIELD  <u>GEOGRAPHIC COORDINATES:</u> LATITUDE: 41.1716492 LONGITUDE: -73.32860551 GROUND ELEVATION: 306' AMSL	THE PROPOSED PROJECT INCLUDES MODIFYING GROUND BASED AND TOWER MOUNTED EQUIPMENT AS INDICATED PER BELOW: <u>TOWER WORK:</u> REMOVE (1) EXISTING ANTENNA MOUNTING PLATFORM (@130' RC) (9) ANTENNA(S), (3) RRH(S), (3) TMA(S), (12) COAX CABLE(S), (1) 9X18 HCS AND (2) 6X12 HCS 6AWG INSTALL (1) NEW ANTENNA MOUNTING PLATFORM W/ HANDRAIL KIT (@130' RC), (9) ANTENNA(S), (6) RRH(S), (1) 6/24 4AWG HYBRID TRUNK AND (2) 6X12 HCS HYBRID TRUNK CABLE(S) <u>GROUND WORK:</u> REMOVE (2) DUW30 FROM RBS 6131 CABINET, (6) RU22 RADIO FROM RBS 6131 CABINET AND (2) RBS 6102 CABINET INSTALL (1) 6160 AC V1 CABINET, B160 BATTERY CABINET, RP 6651 IN 6160 CABINET, PSU 4813 vR4A (Kit) VOLTAGE BOOSTER IN 6160 CABINET AND CSR IxRe V2 (Gen2) IN 6160 CABINET EXISTING (1) RBS 6131 CABINE, (1) DUG20 IN RBS 6131 CABINET, (2) BB 6630 IN RBS 6131 CABINET TO REMAIN	SHEET NO: G-001 G-002 C-101 C-102 C-201 C-401 C-501 E-501 R-601 R-602 R-603 R-604 R-605 R-606 R-607 R-608 R-609 R-610 R-611	DESCRIPTION: TITLE SHEET GENERAL NOTES DETAILED SITE PLAN DETAILED GROUND PLAN TOWER ELEVATION ANTENNA INFORMATION & SCHEDULE CONSTRUCTION DETAILS GROUNDING DETAILS SUPPLEMENTAL SUPPLEMENTAL SUPPLEMENTAL SUPPLEMENTAL SUPPLEMENTAL SUPPLEMENTAL SUPPLEMENTAL SUPPLEMENTAL SUPPLEMENTAL	REV: 0 0 0 0 0 0 0 0 0 0 - - - - - - - - -	DATE: 8/15/22 8/15/22 8/15/22 8/15/22 8/15/22 8/15/22 8/15/22 8/15/22 8/15/22 8/15/22 - - - - - - - -	BY: KJG KJG KJG KJG KJG KJG KJG KJG KJG KJG - - - - - - - -
	<u>PROJECT TEAM</u>  <u>TOWER OWNER:</u> AMERICAN TOWER 10 PRESIDENTIAL WAY WOBURN, MA 01801  <u>ENGINEER:</u> MTS ENGINEERING, P.L.L.C. 1717 S. BOULDER, SUITE 300 TULSA, OK 74119  <u>PROPERTY OWNER:</u> WESTPORT TOWN OF, NIKE SITE 110 MYRTLE AVE WESTPORT, CT 06880	<u>PROJECT NOTES</u> 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. 6. THE PROJECT DEPICTED IN THESE PLANS QUALIFIES AS AN ELIGIBLE FACILITIES REQUEST ENTITLED TO EXPEDITED REVIEW UNDER 47 U.S.C. § 1455(A) AS A MODIFICATION OF AN EXISTING WIRELESS TOWER THAT INVOLVES THE COLLOCATION, REMOVAL, AND/OR REPLACEMENT OF TRANSMISSION EQUIPMENT THAT IS NOT A SUBSTANTIAL CHANGE UNDER CFR § 1.61000 (B)(7).	<u>PROJECT LOCATION DIRECTIONS</u>  FROM HARTFORD TAKE I-91 SOUTH TO MERRITT PKWY SOUTH. TAKE EXIT 42 AND TURN RIGHT OFF EXIT. AT FORK STAY LEFT AND TURN LEFT AT STOP SIGN ONTO EASTON ROAD. FOLLOW EASTON TO BAYBERRY LANE AND TURN RIGHT. GO UNDER MERRITT OVERPASS AND TURN LEFT INTO TOWN COMPLEX. TOWER IS UP HILL JUST PASS ACCESS GATE.				



REV.	DESCRIPTION	BY	DATE
A	PRELIMS	KJG	3/9/22
B	PRELIMS	YMK	7/1/22
0	CONSTRUCTION	KJG	8/15/22

ATC SITE NUMBER:  
310968  
  
 ATC SITE NAME:  
WSPT-WESTPORT REBUILD CT  
  
 T-MOBILE SITE NAME:  
CT323/SS TOWER REBUILIC  
  
 SITE ADDRESS:  
180A BAYBERRY LANE  
WESTPORT, CT 06880-2844

SEAL:

MTS ENGINEERING P.L.L.C.  
 BER:2386985  
 Expires 3/31/23

**T-Mobile**

DATE DRAWN:	8/11/22
ATC JOB NO:	13764586_G3
CUSTOMER ID:	CT323/SS TOWER REBUILIC
CUSTOMER #:	CT11323A

**TITLE SHEET**

SHEET NUMBER: <b>G-001</b>	REVISION: <b>0</b>
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**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 ANSI/EIA/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.

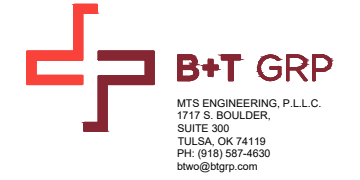
COAXIAL CABLE (NOT WITHIN BENDS)

**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.
  - B. INSTALL ANTENNAS AS INDICATED 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 GREEN 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

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.



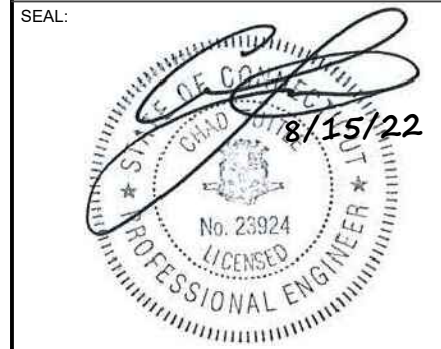
REV.	DESCRIPTION	BY	DATE
A	PRELIMS	KJG	3/9/22
B	PRELIMS	YMK	7/1/22
0	CONSTRUCTION	KJG	8/15/22

ATC SITE NUMBER:  
**310968**

ATC SITE NAME:  
**WSPT-WESTPORT REBUILD CT**

T-MOBILE SITE NAME:  
**CT323/SS TOWER REBUILIC**

SITE ADDRESS:  
180A BAYBERRY LANE  
WESTPORT, CT 06880-2844



MTS ENGINEERING P.L.L.C.  
BER:2386985  
Expires 3/31/23

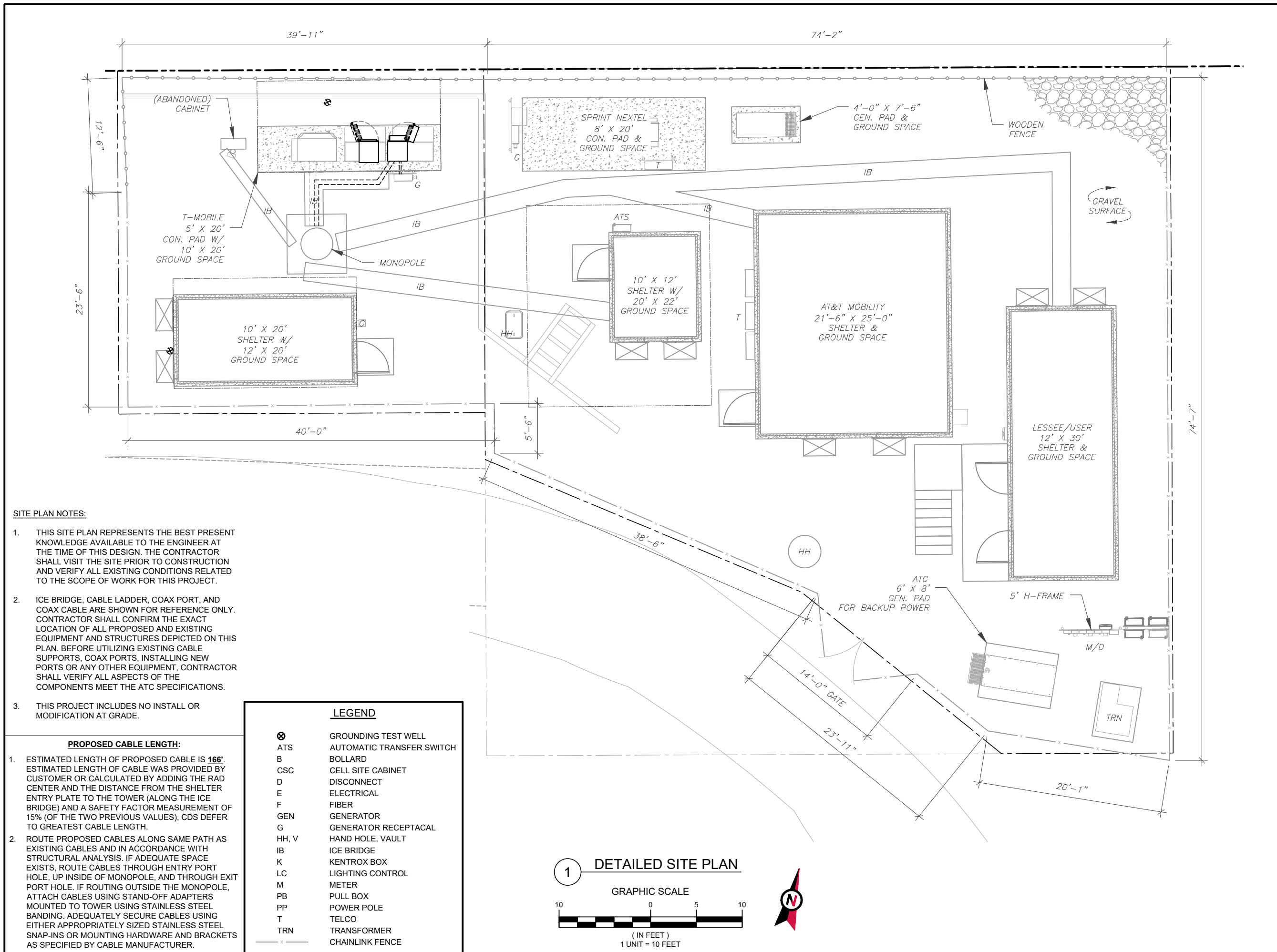


DATE DRAWN:	8/11/22
ATC JOB NO:	13764586_G3
CUSTOMER ID:	CT323/SS TOWER REBUILIC
CUSTOMER #:	CT11323A

**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. THIS PROJECT INCLUDES NO INSTALL OR MODIFICATION AT GRADE.

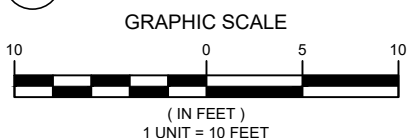
**PROPOSED CABLE LENGTH:**

1. ESTIMATED LENGTH OF PROPOSED CABLE IS 166'. 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. IF ADEQUATE SPACE EXISTS, ROUTE CABLES THROUGH ENTRY PORT HOLE, UP INSIDE OF MONOPOLE, AND THROUGH EXIT PORT HOLE. IF ROUTING OUTSIDE THE MONOPOLE, ATTACH CABLES USING STAND-OFF ADAPTERS MOUNTED TO TOWER USING STAINLESS STEEL BANDING. ADEQUATELY SECURE CABLES USING EITHER APPROPRIATELY SIZED STAINLESS STEEL SNAP-INS OR MOUNTING HARDWARE AND BRACKETS AS SPECIFIED BY CABLE MANUFACTURER.

**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
- - -	CHAINLINK FENCE

**1 DETAILED SITE PLAN**



**B+T GRP**  
 MTS ENGINEERING, P.L.L.C.  
 1717 S. BOULDER,  
 SUITE 300  
 TULSA, OK 74119  
 PH: (918) 587-4630  
 btw@btgrp.com

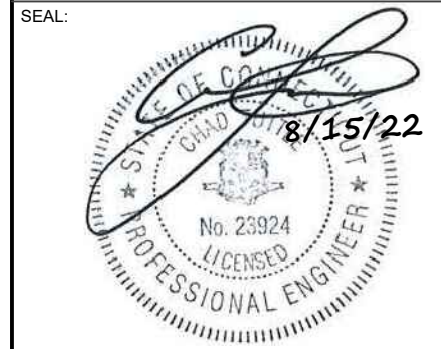
REV.	DESCRIPTION	BY	DATE
A	PRELIMS	KJG	3/9/22
B	PRELIMS	YMK	7/1/22
0	CONSTRUCTION	KJG	8/15/22

ATC SITE NUMBER:  
**310968**

ATC SITE NAME:  
**WSPT-WESTPORT REBUILD CT**

T-MOBILE SITE NAME:  
**CT323/SS TOWER REBUILIC**

SITE ADDRESS:  
 180A BAYBERRY LANE  
 WESTPORT, CT 06880-2844



MTS ENGINEERING P.L.L.C.  
 BER:2386985  
 Expires 3/31/23



DATE DRAWN:	8/11/22
ATC JOB NO:	13764586_G3
CUSTOMER ID:	CT323/SS TOWER REBUILIC
CUSTOMER #:	CT11323A

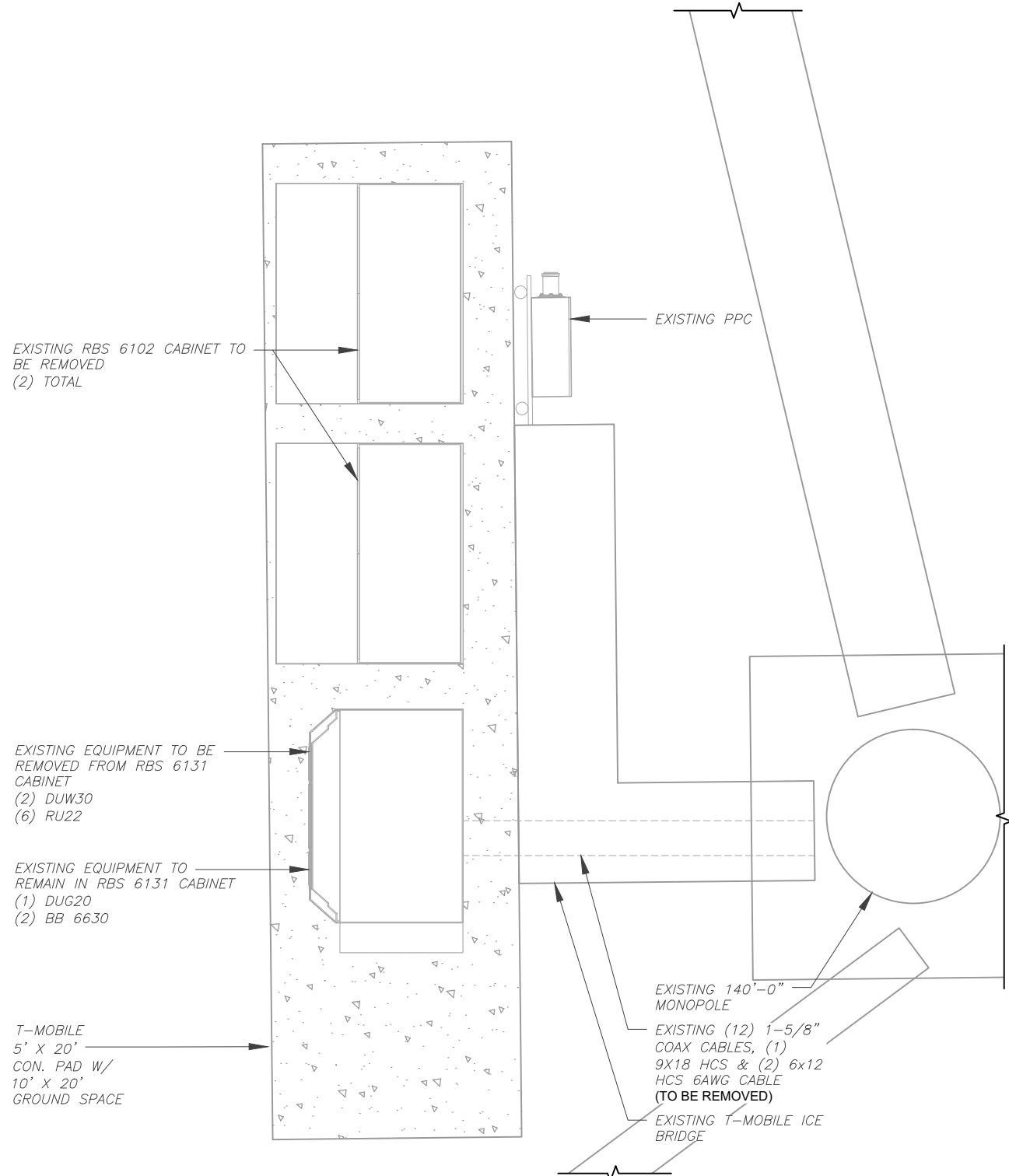
**DETAILED SITE PLAN**

SHEET NUMBER:	REVISION:
<b>C-101</b>	<b>0</b>

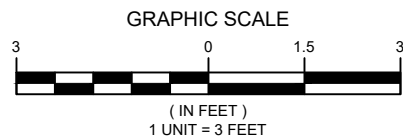
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**SITE PLAN NOTES:**

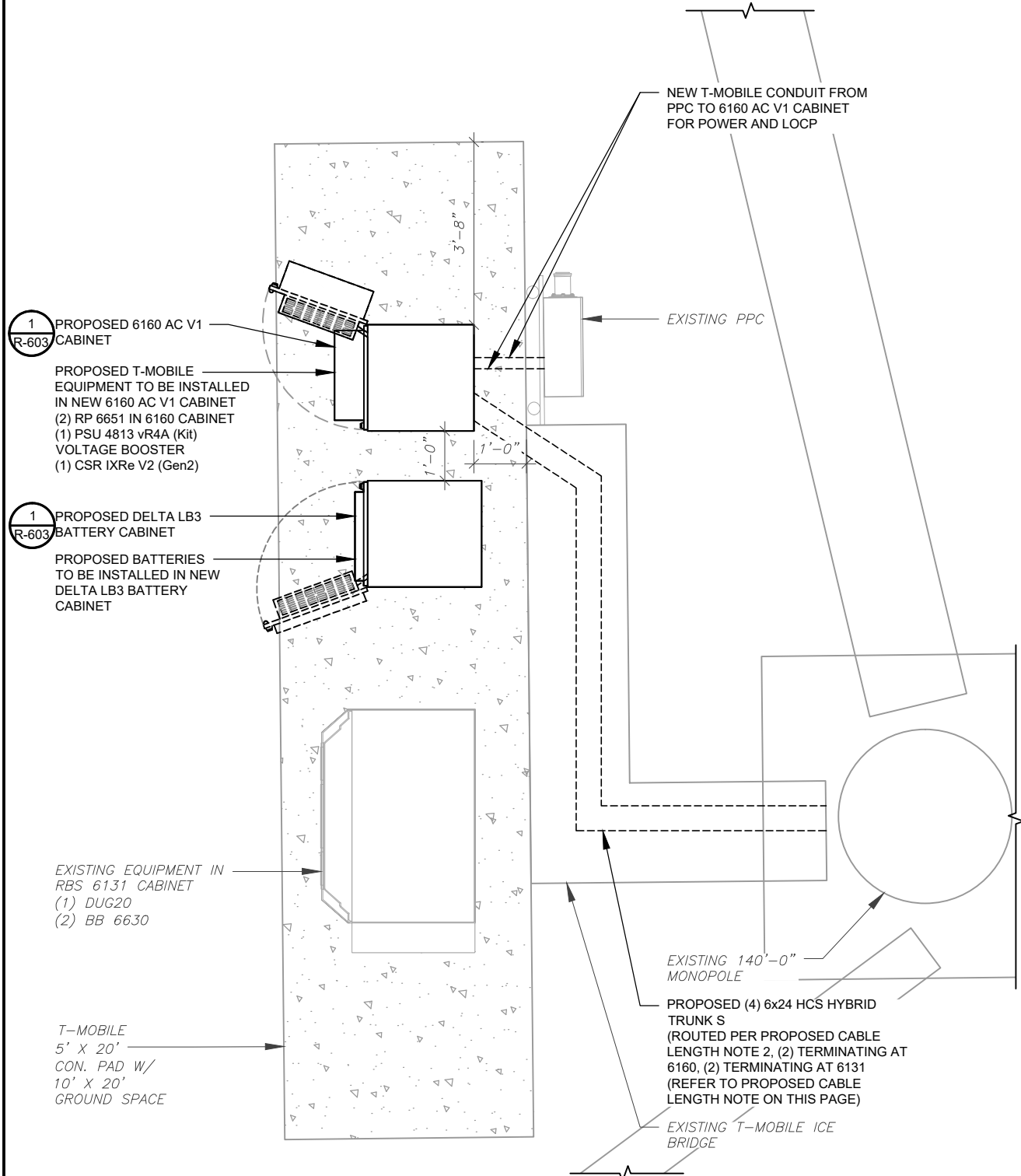
1. CONTRACTOR TO VERIFY THERE IS NO LIVE AAV FIBER RUNNING THROUGH EXISTING DEAD EQUIPMENT. IF SO, THIS WILL NEED TO BE RERUN THROUGH CONDUIT PRIOR TO REMOVING DEAD 2G (6201 CABS) EQUIPMENT.
2. ALL OPEN PORTS NEED TO BE SEALED / WEATHERPROOFED PROPERLY
3. ALL UNNEEDED / EXCESS EQUIPMENT AND GARBAGE TO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



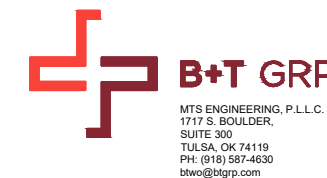
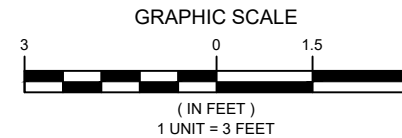
**1** EXISTING GROUND EQUIPMENT LAYOUT



T-MOBILE CM APPROVAL REQUIRED BEFORE INSTALLING CABINETS.  
ALL ABOVE GROUND CONDUIT MUST BE RGS.  
ALL PVC CONDUIT MUST BE BURIED.



**2** PROPOSED GROUND EQUIPMENT LAYOUT



REV.	DESCRIPTION	BY	DATE
A	PRELIMS	KJG	3/9/22
B	PRELIMS	YMK	7/1/22
0	CONSTRUCTION	KJG	8/15/22

ATC SITE NUMBER:  
**310968**

ATC SITE NAME:  
**WSPT-WESTPORT REBUILD CT**

T-MOBILE SITE NAME:  
**CT323/SS TOWER REBUILIC**

SITE ADDRESS:  
180A BAYBERRY LANE  
WESTPORT, CT 06880-2844



MTS ENGINEERING P.L.L.C.  
BER:2386985  
Expires 3/31/23

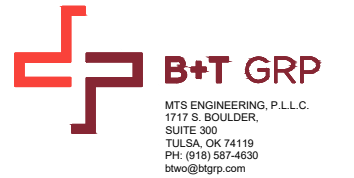


DATE DRAWN:	8/11/22
ATC JOB NO:	13764586_G3
CUSTOMER ID:	CT323/SS TOWER REBUILIC
CUSTOMER #:	CT11323A

**DETAILED GROUND PLAN**

SHEET NUMBER:	REVISION:
<b>C-102</b>	<b>0</b>

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REV.	DESCRIPTION	BY	DATE
A	PRELIMS	KJG	3/9/22
B	PRELIMS	YMK	7/1/22
Δ	CONSTRUCTION	KJG	8/15/22

ATC SITE NUMBER:  
**310968**

ATC SITE NAME:  
**WSPT-WESTPORT REBUILD CT**

T-MOBILE SITE NAME:  
**CT323/SS TOWER REBUILIC**

SITE ADDRESS:  
180A BAYBERRY LANE  
WESTPORT, CT 06880-2844



MTS ENGINEERING P.L.L.C.  
BER:2386985  
Expires 3/31/23

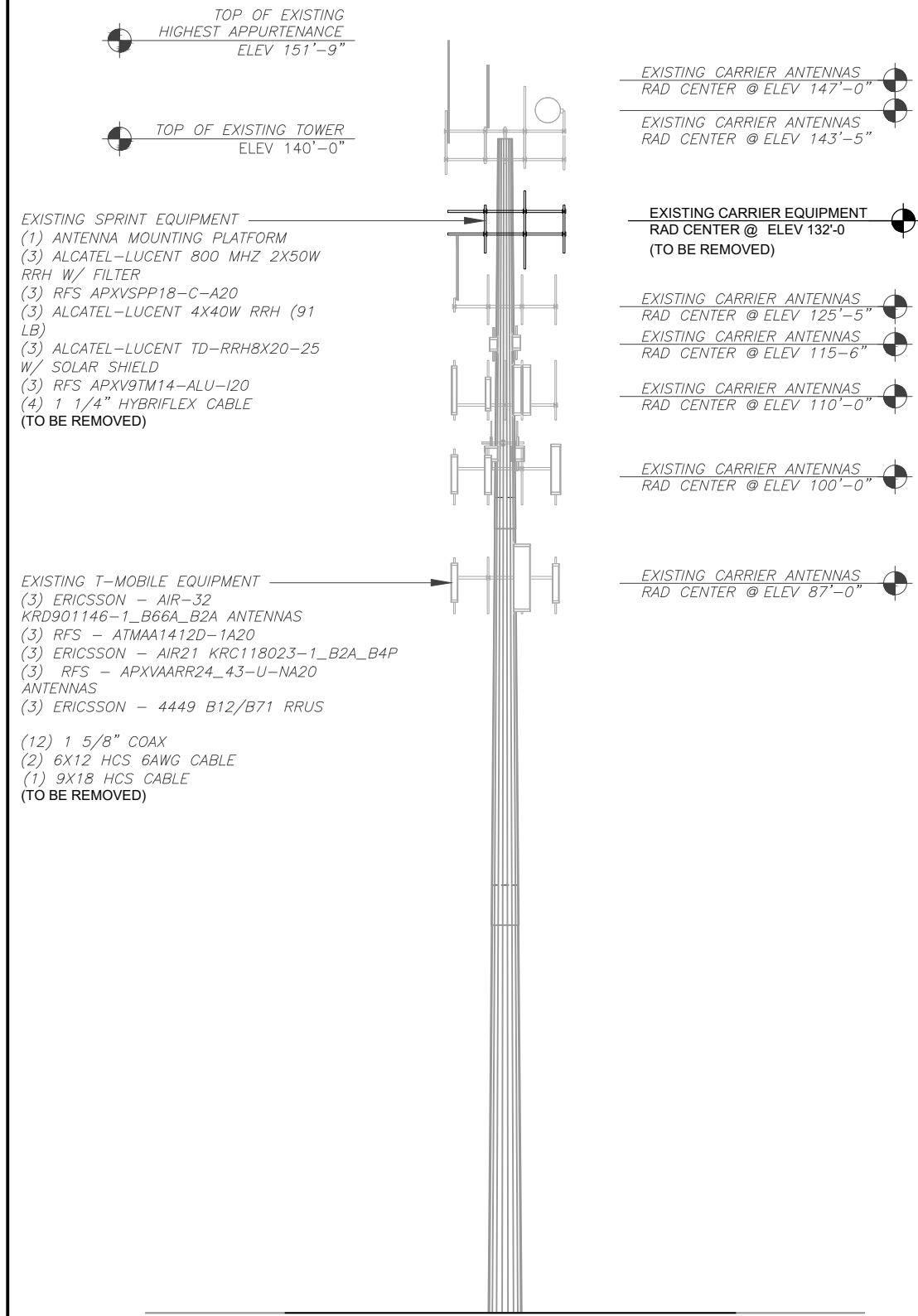


DATE DRAWN:	8/11/22
ATC JOB NO:	13764586_G3
CUSTOMER ID:	CT323/SS TOWER REBUILIC
CUSTOMER #:	CT11323A

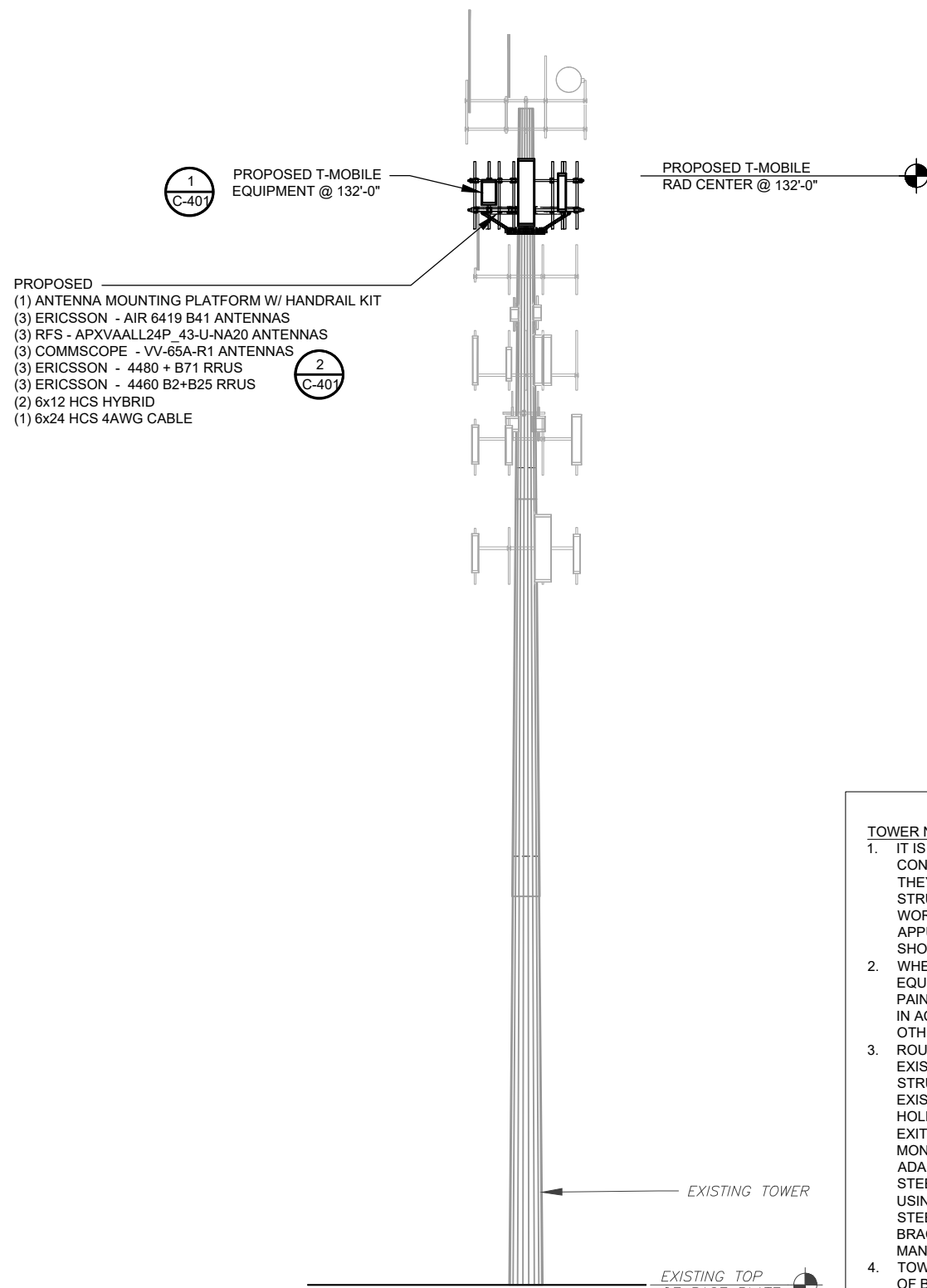
**TOWER ELEVATION**

SHEET NUMBER:	REVISION:
<b>C-201</b>	<b>0</b>

PER MOUNT ANALYSIS COMPLETED BY AMERICAN TOWER CORP, DATED 04/14/22, THE EXISTING MOUNT CAN NOT ADEQUATELY SUPPORT THE PROPOSED LOADING. THE MOUNT REPLACEMENT PROPOSED IN THE MOUNT ANALYSIS, INCLUDED AT THE END OF THIS PLAN SET, MUST BE INSTALLED PRIOR TO THE INSTALLATION OF THE PROPOSED ANTENNAS AND OTHER EQUIPMENT.



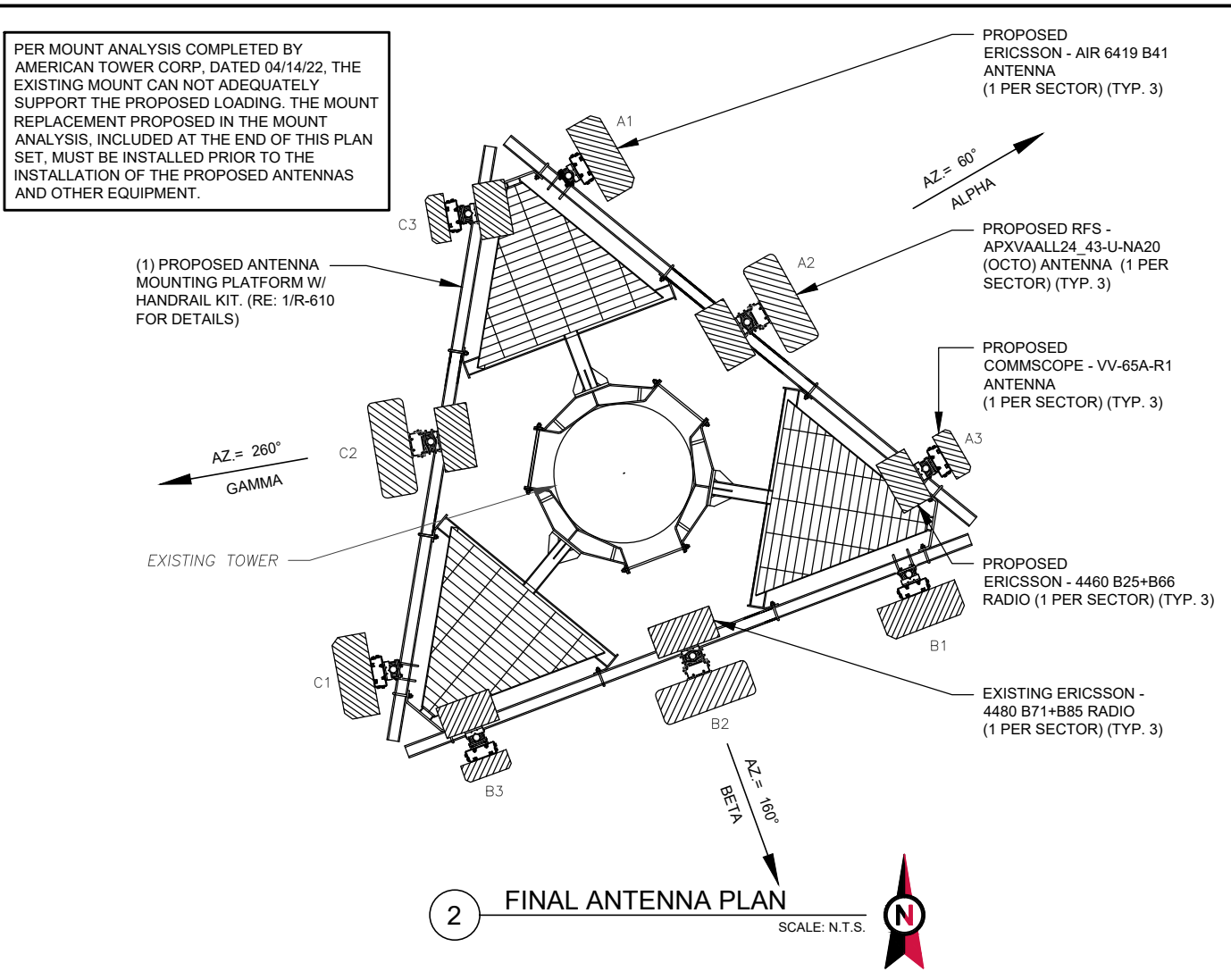
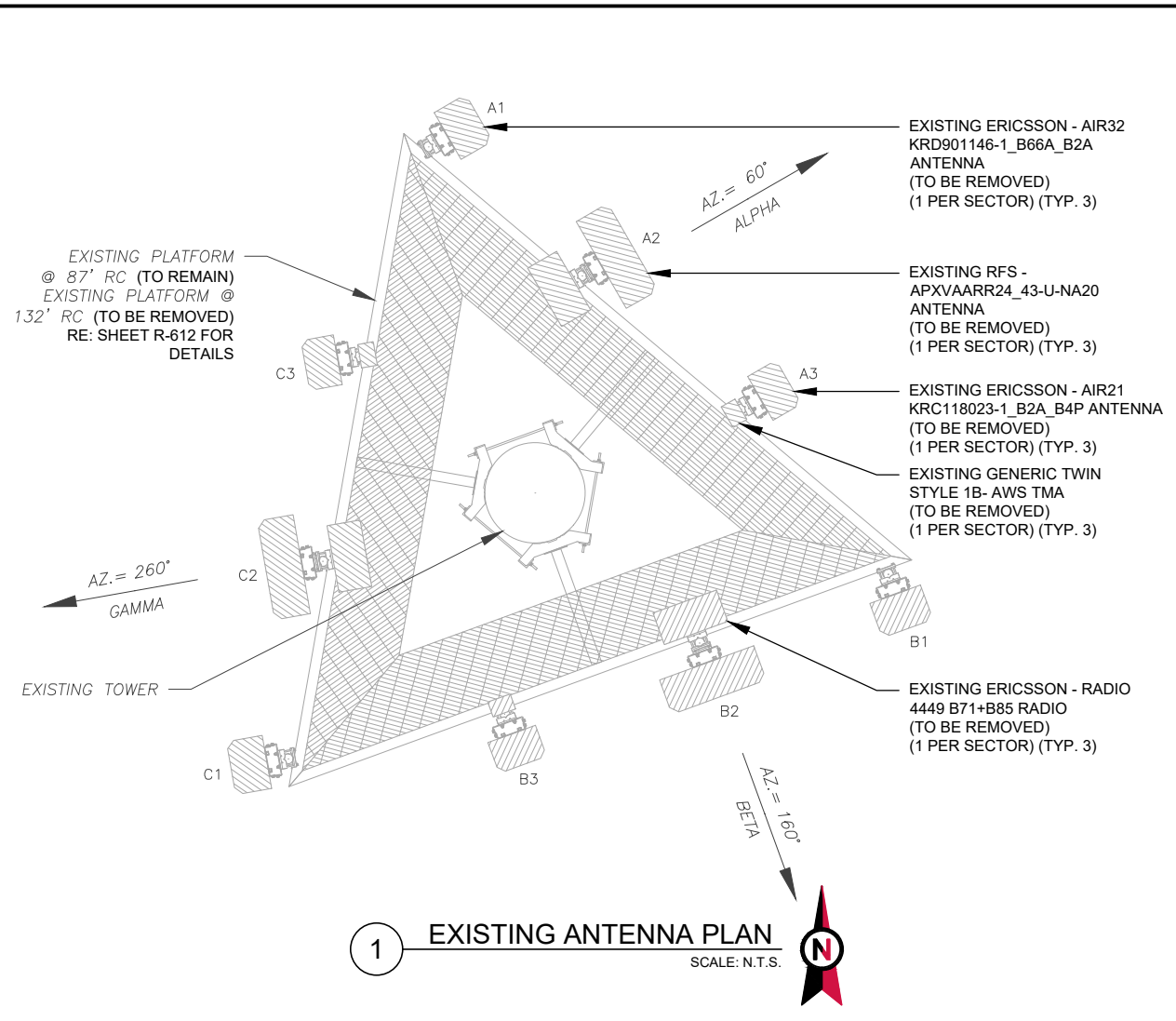
**1** EXISTING TOWER ELEVATION  
SCALE: N.T.S.



**2** PROPOSED TOWER ELEVATION  
SCALE: N.T.S.

- 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. IF ADEQUATE SPACE EXISTS, ROUTE CABLES THROUGH ENTRY PORT HOLE, UP INSIDE OF MONOPOLE, AND THROUGH EXIT PORT HOLE. IF ROUTING OUTSIDE THE MONOPOLE, ATTACH CABLES USING STAND-OFF ADAPTERS MOUNTED TO TOWER USING STAINLESS STEEL BANDING. ADEQUATELY SECURE CABLES USING EITHER APPROPRIATELY SIZED STAINLESS STEEL SNAP-INS OR MOUNTING HARDWARE AND BRACKETS AS SPECIFIED BY CABLE MANUFACTURER.
  - TOWER ELEVATIONS ARE MEASURED FROM TOP OF BASE PLATE TO MATCH STRUCTURAL ANALYSIS. ELEVATIONS DO NOT REFLECT TRUE ABOVE GROUND LEVEL (A.G.L.)
  - TOWER ELEVATION DEPICTION MAY NOT REFLECT ALL EQUIPMENT INCLUDED IN STRUCTURAL ANALYSIS. REFER TO STRUCTURAL ANALYSIS FOR FULL TOWER LOADING.

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PER MOUNT ANALYSIS COMPLETED BY AMERICAN TOWER CORP, DATED 04/14/22. THE EXISTING MOUNT CAN NOT ADEQUATELY SUPPORT THE PROPOSED LOADING. THE MOUNT REPLACEMENT PROPOSED IN THE MOUNT ANALYSIS, INCLUDED AT THE END OF THIS PLAN SET, MUST BE INSTALLED PRIOR TO THE INSTALLATION OF THE PROPOSED ANTENNAS AND OTHER EQUIPMENT.

1 EXISTING ANTENNA PLAN SCALE: N.T.S.

2 FINAL ANTENNA PLAN SCALE: N.T.S.

EXISTING ANTENNA SCHEDULE								
LOCATION		ANTENNA SUMMARY					NON ANTENNA SUMMARY	
SECTOR	RAD	AZ	POS	ANTENNA	BAND	MECH/ELEC D-TILT	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT
ALPHA	87°	60°	A1	ERICSSON - AIR32 KRD901146-1_B66A_B2A	L2100/L1900	0° / -	RMV	-
			A2	RFS - APXVAARR24_43-U-NA20	L700/L600/N600	0° / -	RMV	(1) ERICSSON - RADIO 4449 B71+B85
			A3	ERICSSON - AIR21 KRC118023-1_B2A_B4P	G1900/U2100/U1900	0° / -	RMV	(1) GENERIC TWIN STYLE 1B-AWS
BETA	87°	160°	B1	ERICSSON - AIR32 KRD901146-1_B66A_B2A	L2100/L1900	0° / -	RMV	-
			B2	RFS - APXVAARR24_43-U-NA20	L700/L600/N600	0° / -	RMV	(1) ERICSSON - RADIO 4449 B71+B85
			B3	ERICSSON - AIR21 KRC118023-1_B2A_B4P	G1900/U2100/U1900	0° / -	RMV	(1) GENERIC TWIN STYLE 1B-AWS
GAMMA	87°	260°	C1	ERICSSON - AIR32 KRD901146-1_B66A_B2A	L2100/L1900	0° / -	RMV	-
			C2	RFS - APXVAARR24_43-U-NA20	L700/L600/N600	0° / -	RMV	(1) ERICSSON - RADIO 4449 B71+B85
			C3	ERICSSON - AIR21 KRC118023-1_B2A_B4P	G1900/U2100/U1900	0° / -	RMV	(1) GENERIC TWIN STYLE 1B-AWS

**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

**CABLE LENGTHS FOR JUMPERS**

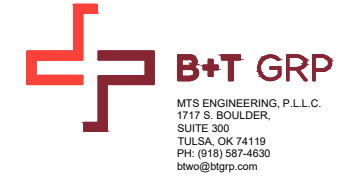
JUNCTION BOX TO RRU: 15'  
 RRU TO ANTENNA: 10'

FINAL ANTENNA SCHEDULE								
LOCATION		ANTENNA SUMMARY					NON ANTENNA SUMMARY	
SECTOR	RAD	AZ	POS	ANTENNA	BAND	MECH/ELEC D-TILT	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT
ALPHA	130°	60°	A1	ERICSSON - AIR 6419 B41	L2500/N2500	0° / -	ADD	-
			A2	RFS - APXVAALL24_43-U-NA20	L700/L600/N600	0° / -	ADD	(1) ERICSSON - RADIO 4480 B71+B85
			A3	COMMSCOPE - VV-65A-R1	L2100/L1900/G1900	0° / -	ADD	(1) ERICSSON - RADIO 4460 B25+B66
BETA	130°	160°	B1	ERICSSON - AIR 6419 B41	L2500/N2500	0° / -	ADD	-
			B2	RFS - APXVAALL24_43-U-NA20	L700/L600/N600	0° / -	ADD	(1) ERICSSON - RADIO 4480 B71+B85
			B3	COMMSCOPE - VV-65A-R1	L2100/L1900/G1900	0° / -	ADD	(1) ERICSSON - RADIO 4460 B25+B66
GAMMA	130°	260°	C1	ERICSSON - AIR 6419 B41	L2500/N2500	0° / -	ADD	-
			C2	RFS - APXVAALL24_43-U-NA20	L700/L600/N600	0° / -	ADD	(1) ERICSSON - RADIO 4480 B71+B85
			C3	COMMSCOPE - VV-65A-R1	L2100/L1900/G1900	0° / -	ADD	(1) ERICSSON - RADIO 4460 B25+B66

EXISTING FIBER DISTRIBUTION/OVP BOX		EXISTING CABLING SUMMARY		
MODEL NUMBER	STATUS	COAX	HYBRID	STATUS
-	-	(12) 1-5/8"	(1) 9X18 HCS	RMV
-	-	-	(2) 6X12 HCS 6AWG	RMV

3 EQUIPMENT SCHEDULES

FINAL FIBER DISTRIBUTION / OVP BOX		FINAL CABLING SUMMARY		
MODEL NUMBER	STATUS	COAX	HYBRID	STATUS
-	-	-	(4) HYBRID TRUNK 6/24 4AWG	ADD



REV.	DESCRIPTION	BY	DATE
A	PRELIMS	KJG	3/9/22
B	PRELIMS	YMK	7/1/22
0	CONSTRUCTION	KJG	8/15/22

ATC SITE NUMBER:  
310968

ATC SITE NAME:  
WSPT-WESTPORT REBUILD CT

T-MOBILE SITE NAME:  
CT323/SS TOWER REBUILIC

SITE ADDRESS:  
180A BAYBERRY LANE  
WESTPORT, CT 06880-2844

SEAL:

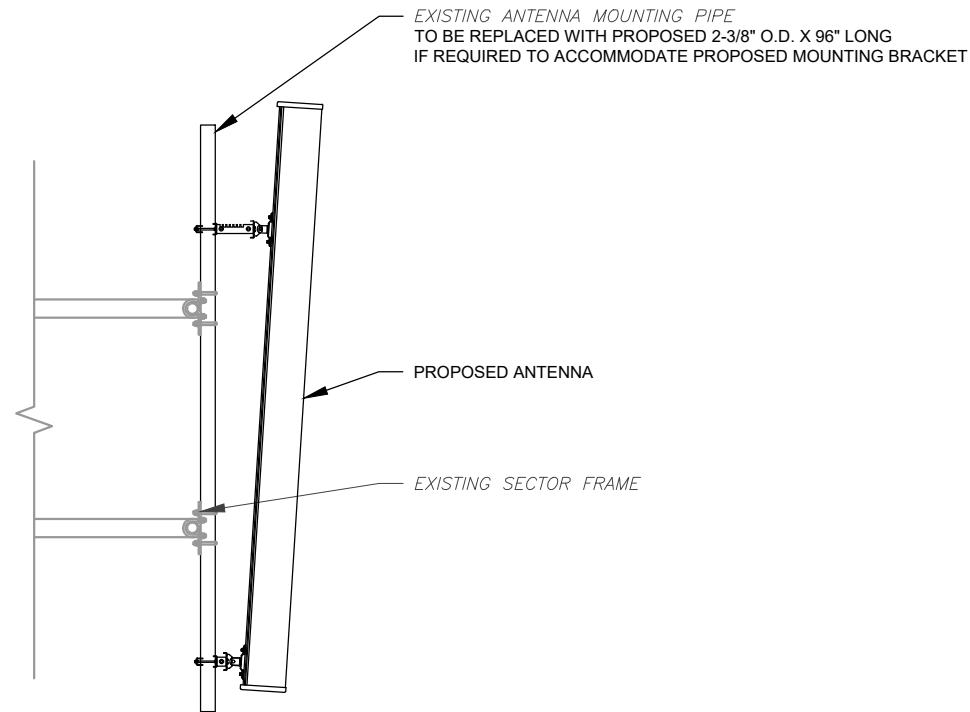
MTS ENGINEERING P.L.L.C.  
BER:2386985  
Expires 3/31/23



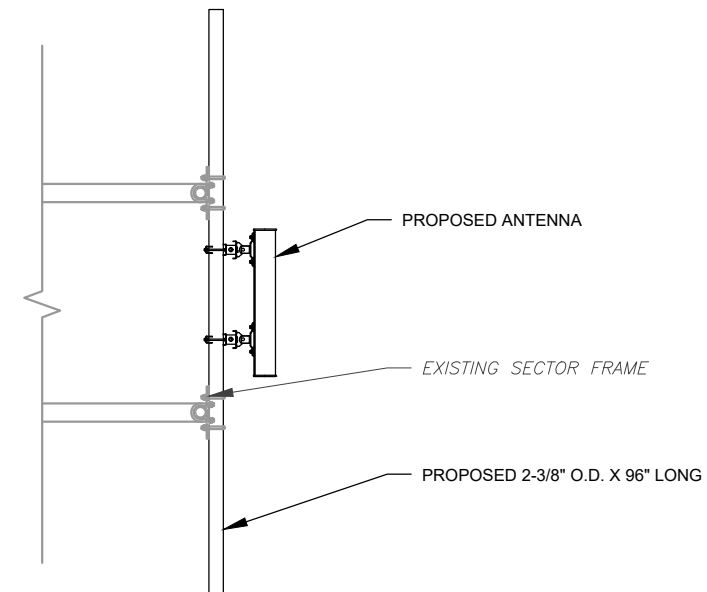
DATE DRAWN:	8/11/22
ATC JOB NO:	13764586_G3
CUSTOMER ID:	CT323/SS TOWER REBUILIC
CUSTOMER #:	CT11323A

ANTENNA INFORMATION & SCHEDULE	
SHEET NUMBER:	REVISION:
C-401	0

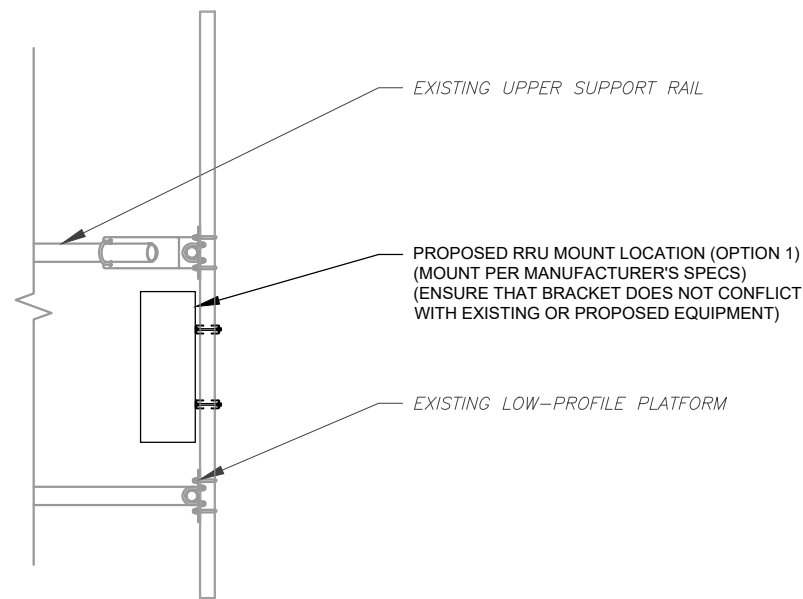
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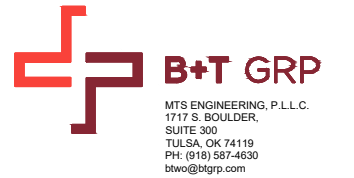
1 PROPOSED ANTENNA MOUNTING DETAIL - TYPICAL  
SCALE: NOT TO SCALE



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



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



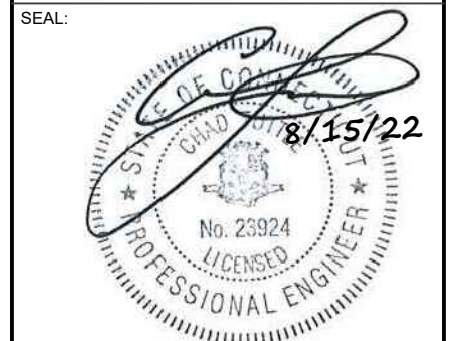
REV.	DESCRIPTION	BY	DATE
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B	PRELIMS	YMK	7/1/22
0	CONSTRUCTION	KJG	8/15/22

ATC SITE NUMBER:  
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ATC SITE NAME:  
WSPT-WESTPORT REBUILD CT

T-MOBILE SITE NAME:  
CT323/SS TOWER REBUILIC

SITE ADDRESS:  
180A BAYBERRY LANE  
WESTPORT, CT 06880-2844



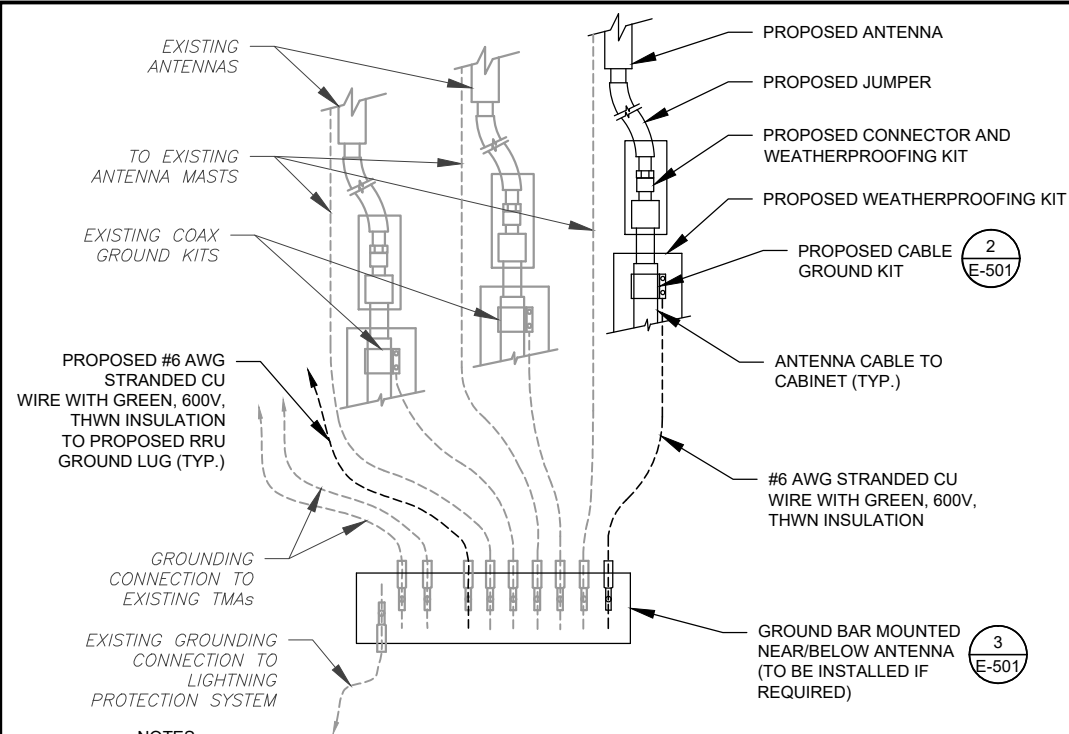
MTS ENGINEERING P.L.L.C.  
BER:2386985  
Expires 3/31/23



DATE DRAWN:	8/11/22
ATC JOB NO:	13764586_G3
CUSTOMER ID:	CT323/SS TOWER REBUILIC
CUSTOMER #:	CT11323A

CONSTRUCTION  
DETAILS

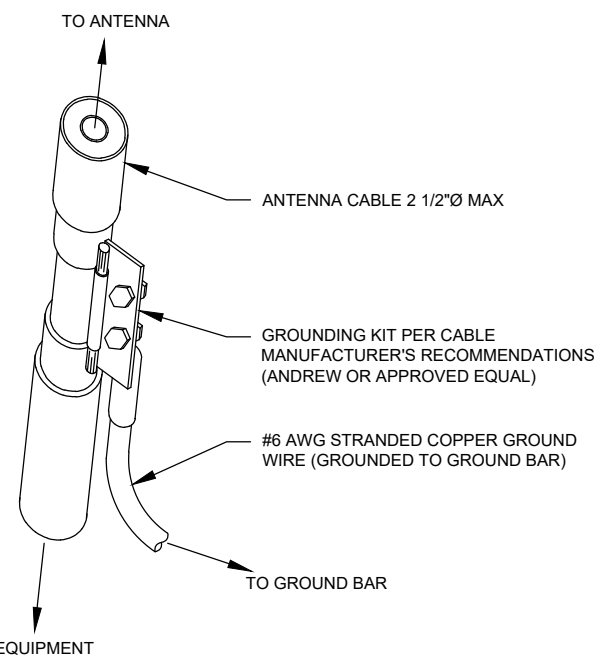
SHEET NUMBER:	REVISION:
C-501	0



**NOTES:**

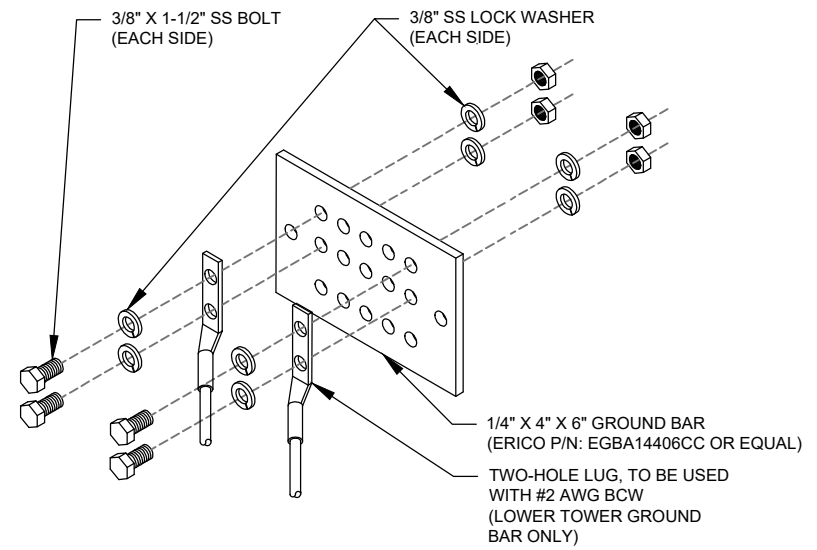
1. THIS DETAIL IS INTENDED TO SHOW THE GENERAL GROUNDING REQUIREMENTS. SLIGHT ADJUSTMENTS MAY BE REQUIRED BASED ON EXISTING SITE CONDITIONS. THE CONTRACTOR SHALL MAKE FIELD ADJUSTMENTS AS NEEDED AND INFORM THE CONSTRUCTION MANAGER OF ANY CONFLICTS.
2. SITE GROUNDING SHALL COMPLY WITH T-MOBILE GROUNDING 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.

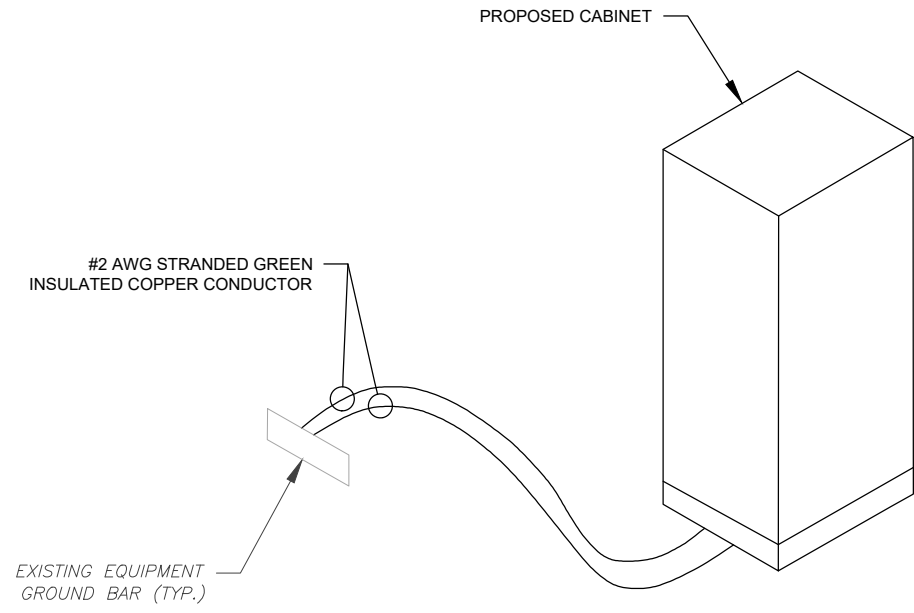
**3 TOWER GROUND BAR DETAIL**  
SCALE: N.T.S.

**ELECTRICAL NOTES:**

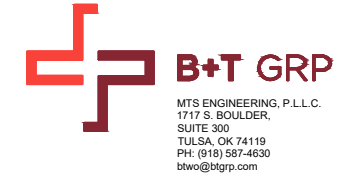
1. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE T-MOBILE REPRESENTATIVE AND LOCAL UTILITY COMPANY FOR THE INSTALLATION OF CONDUITS, CONDUCTORS, BREAKERS, DISCONNECTS, OR ANY OTHER EQUIPMENT REQUIRED FOR ELECTRICAL SERVICE. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH 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 IN CHART.
3. FOR SPECIFIC CABINET / ANCILLARY EQUIPMENT WIRING REQUIREMENTS, THE T-MOBILE CONTRACTOR SHOULD REFERENCE DESIGN DOCUMENTS PROVIDED BY T-MOBILE 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"

**4 ELECTRICAL NOTES**



**5 CABINET GROUNDING DETAIL**  
SCALE: N.T.S.



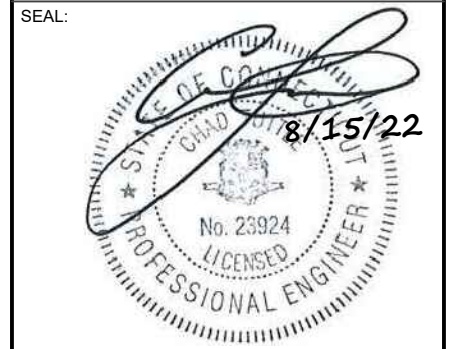
REV.	DESCRIPTION	BY	DATE
A	PRELIMS	KJG	3/9/22
B	PRELIMS	YMK	7/1/22
0	CONSTRUCTION	KJG	8/15/22

ATC SITE NUMBER:  
**310968**

ATC SITE NAME:  
**WSPT-WESTPORT REBUILD CT**

T-MOBILE SITE NAME:  
**CT323/SS TOWER REBUILIC**

SITE ADDRESS:  
180A BAYBERRY LANE  
WESTPORT, CT 06880-2844



MTS ENGINEERING P.L.L.C.  
BER:2386985  
Expires 3/31/23



DATE DRAWN:	8/11/22
ATC JOB NO:	13764586_G3
CUSTOMER ID:	CT323/SS TOWER REBUILIC
CUSTOMER #:	CT11323A

**GROUNDING DETAILS**

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

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<b>RAN Template:</b> 67E5D998E Outdoor	<b>A&amp;L Template:</b> 67E5998E_1xAIR+1OP+1QP
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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 U1800 (DECOMMISSIONED) DUW30 U2100 DUG20 G1900 BB 6630 L2100 L1900 BB 6630 L700 L800 N800	
Hybrid Cable System	Ericsson 6x18 HCS 40m Ericsson 6x12 HCS 6AWG 40m (x 2)	
Radio	RU22 (x 6) U2100	

Proposed RAN Equipment			
Template: 67E5D998E Outdoor			
Enclosure	1	2	3
Enclosure Type	RBS 6131	Ancillary Equipment (Ericsson)	Enclosure 6160 AC V1
Baseband	DUG20 G1900 BB 6630 L700 L800 N800 BB 6630 L2100 L1900		RP 6651 N2500 L2500
Hybrid Cable System		Ericsson Hybrid Trunk 6/24 4AWG 50m (x 2)	PSU 4813 vR4A (Kit) (x 2) Ericsson Hybrid Trunk 6/24 4AWG 50m (x 2)
Transport System			CSR IXRe V2 (Gen2)

**RAN Scope of Work:**

Remove and return cabinet Radios from existing cabinet 6131.  
 Remove Nortel cabinets.  
 Add (1) Enclosure 6160.  
 Add (1) iXRe Router to new Enclosure 6160.  
 Add (1) RP 6651 for L2500/N2500 to new Enclosure 6160.  
 Add (2) PSU4813 Voltage Booster to new Enclosure 6160.  
 Add (1) Battery Cabinet 6160.  
 Existing: (1) 6x18, (2) 6x12  
 Remove all Coax, remove (1) 6x18, (2) 6x12  
 Add (2) 6x24 HCS terminating at the Enclosure 6160 and (2) 6x24 terminating at 6131. Connect DC for the AIR6419 B41 to the PSU4813 Voltage Booster.

**1 CABINET CONFIGURATION**

<b>RAN Template:</b> 67E5D998E Outdoor	<b>A&amp;L Template:</b> 67E5998E_1xAIR+1OP+1QP
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**Sector 1 (Proposed) view from behind**

Coverage Type	A - Outdoor Macro							
Antenna	1		2		3			
Antenna Model	AIR 6419 B41 (Active Antenna - Massive MIMO)		RFS - APXVAALL24_43-U-NA20 (Octo)		Commscope_VV-65A-R1 (Quad)			
Azimuth	60		60		60			
M. Tilt	0		0		0			
Height	130		130		130			
Ports	P1	P2	P3	P4	P5	P6	P7	P8
Active Tech.	N2500 L2500	N2500 L2500	L700 L800 N800	L700 L800 N800			L2100 L1900 G1900	L2100 L1900 G1900
Dark Tech.								
Restricted Tech.								
Decomm. Tech.								
E. Tilt								
Cables	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 4480 B71+B85 (At Antenna)	SHARED Radio 4480 B71+B85 (At Antenna)			Radio 4480 B25+B66 (At Antenna)	SHARED Radio 4480 B25+B66 (At Antenna)
Sector Equipment								

**Unconnected Equipment:**

**Scope of Work:**

Use Sprint RAD center at 130 feet.  
 Remove all TMA's.  
 Remove all Coaxial Lines if existing.  
 Replace AIR32 with (1) AIR6419 B41 for L2500 and N2500 in Position 1.  
 Replace existing octo with APXVAALL24 in Position 2.  
 Replace existing Radio 4449 with Radio 4480 B71+B85 for L600, L700 and N800 in Position 2 at antenna.  
 Replace AIR21 with (1) Commscope VV-65A-R1 in Position 3  
 Add (1) Radio 4480 B25+B66 for L2100, L1900 (Both carriers), and GSM to Position 3 at antenna.

**2 ANTENNA CONFIGURATION**

**SUPPLEMENTAL**



STANDARD CONDUIT USE TABLE

CONDUIT TYPE	USE CASE	LOCATION	USE CASE EXAMPLE
RMC (METALLIC)	AC, DC COMM	ABOVE GROUND	ABOVE GROUND PPC TO SSC
PVC	AC POWER	UNDERGROUND	UNDERGROUND PPC TO SSC OR BACKHAUL TRANSPORT HUB TO SSC
LFMC	AC, DC, COMM	MAX 6' PER CONDUIT RUN, ABOVE GROUND ONLY	TIGHT LOCATIONS BETWEEN HUB AND CONDUIT BUT NOT TO BE USED WHERE IT CAN BE STEPPED ON
EMT	INDOOR AC, DC COMM	INDOOR NOT EXPOSED TO THE OUTDOOR ENVIRONMENT (MUST BE DRY)	CIRCUIT PANEL TO JUNCTION BOX
LFNC	GROUND WIRE	CONCEALING AND PROTECTING BTCW RISERS ONLY	GROUND RING TO MGB OR SSC

EXCEPTION CONDUIT USE TABLE

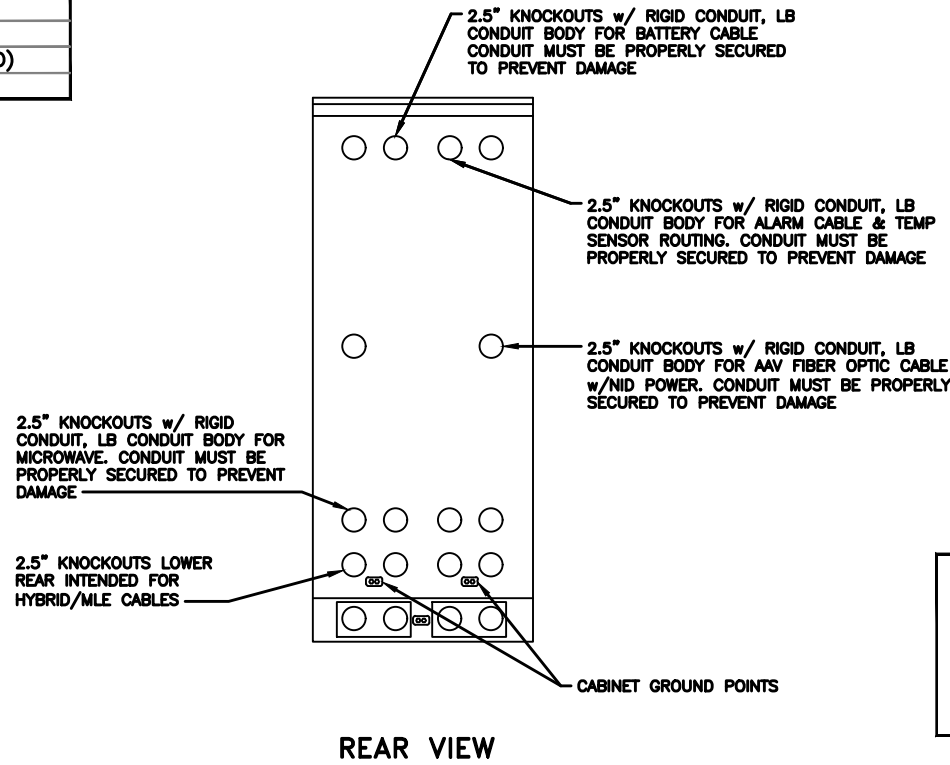
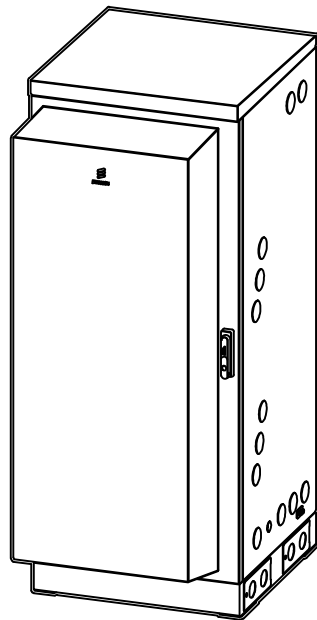
CONDUIT TYPE	USE CASE	LOCATION	USE CASE EXAMPLE
EMT (NOT PREFERRED)	OUTDOOR DC, COMM	OUTDOOR WHEN USED WITH WATERTIGHT HUBS ONLY	BETWEEN EQUIPMENT AND BATTERY CABINET OR EQUIPMENT TO EQUIPMENT CABINETS FOR INTER CABINET CONNECTION
RMC NONMETALLIC (ALUMINUM)	OUTDOOR/INDOOR PER NEC GUIDLINES	ABOVE GROUND	MAT BE USED AS A LOWER COST ALTERNATIVE TO METALLIC RMC, MUST MEET OR EXCEED FEDERAL SPEC: WW-C-540C, UL-6A, ANSI C80.5, NEC 344.10 (A) ALLOWS THE USE OF EITHER ALUMINUM OR GALVANIZED FITTINGS

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

SUPPLEMENTAL

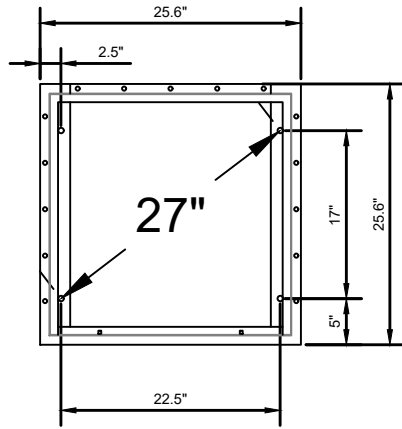
SHEET NUMBER: <b>R-602</b>	REVISION: -
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MANUFACTURER:	ERICSSON
MODEL:	6160 SITE SUPPORT CABINET
DIMENSIONS:	63" x 25.6" x 33.6" (H x W x D)
WEIGHT:	373 LBS



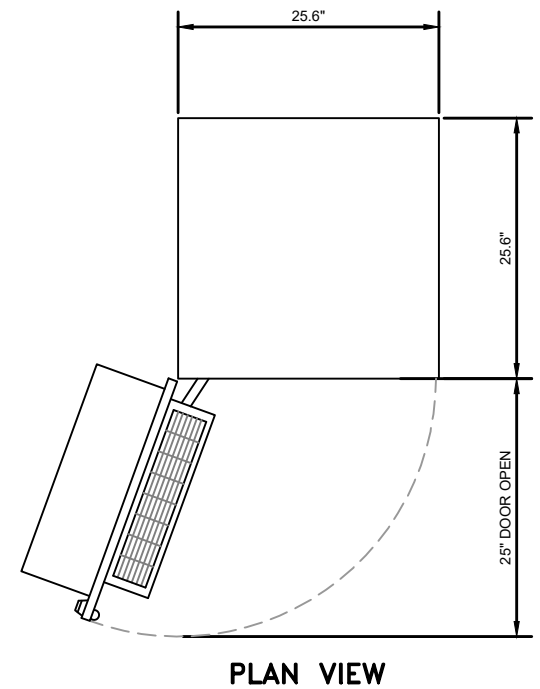
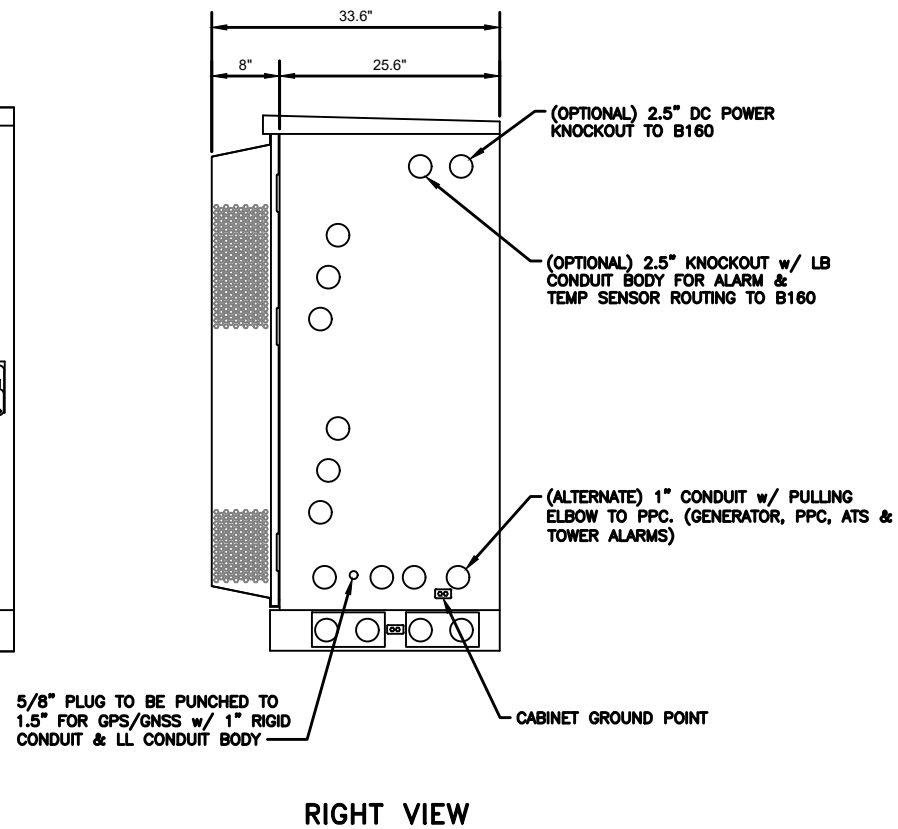
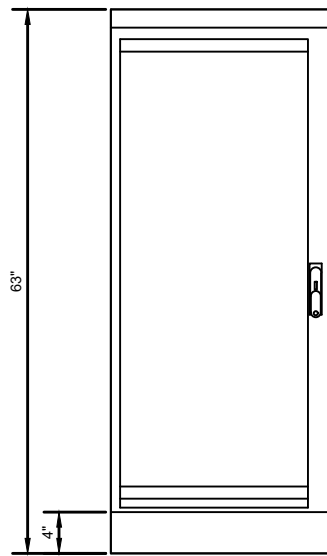
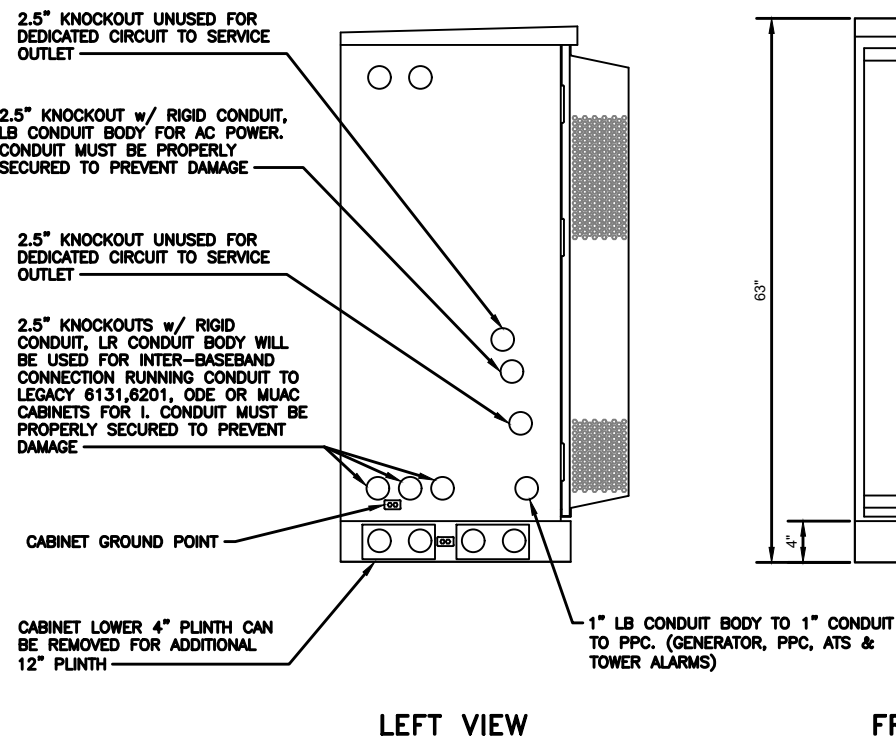
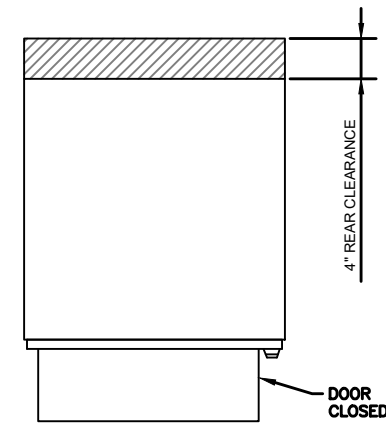
**NOTE:**

- CORRECT KNOCKOUT TOOL REQUIRED FOR PUNCHING KNOCKOUTS. DO NOT DRILL THROUGH KNOCKOUTS
- CONDUIT MUST BE PROPERLY SECURED TO PREVENT DAMAGE TO CABINETS AND OR CABLING



**GROUNDING NOTE:**

"CABINET GROUNDING TO USE A SINGLE, #2 BTCW CONDUCTOR, W/ 2-HOLE, 1" C-C, LONG BARREL, WINDOW LUG, IN 3/4" LFNC TO GROUND RING. PLINTH GROUNDING IS NOT REQUIRED."





### From the World Leader in VRLA Battery Technology

Designed for durability in Telecommunications and Electric Utility applications, the GNB Industrial Power MARATHON® M12V180FT Battery provides high performance and reliability in long duration discharge applications. The location of the terminals on the front (vs. the top) of the battery greatly facilitates the installation and maintenance of the product when placed in a cabinet enclosure or on a standard relay rack tray. The MARATHON® M12V180FT Battery highlights another example of GNB Industrial Power's extensive experience and world wide leadership in VRLA technology.

### "Designed in" Quality Manufacturing

Quality manufacturing processes for the MARATHON® M12V180FT Battery incorporates the industry's most advanced technologies including: an automated helium leak detection system, a computer controlled "fill by weight" acid filler, and a temperature controlled water bath formation process. Each and every unit is capacity tested.

### High Performance MARATHON® M12V180FT Features

- **Patented "Diamond Side-Wall" Design** maintains structural integrity in higher operating temperatures
- **Durable Flame Retardant Polypropylene Container and Cover** complies with UL94 V-0; 28% L.O.I.
- **Carry Handles** facilitates ease of installation
- **High-Compression Absorbent Glass Mat (AGM) Technology** ensures greater than 99% recombination efficiency
- **Integrated Flash Arrestor** ultrasonically welded into cover for secure and safe protection
- **10 Year Design Life** in float applications @ 25°C (77°F); 12 year @ 20°C (68°F)
- **Superior Lead-Tin-Calcium Positive Alloy** helps to resist corrosion
- **Higher Vent Opening Pressure** minimizes unnecessary gassing; one-way self resealing device
- **Front Accessible Copper Alloy, 6 mm, Female Terminals** ensures low resistance, high integrity connections
- **"Easy On\Easy Off" Terminal Post Protector** provides added safety
- **Wider Bushing** allows access for larger probes
- **Footprint Ready** fits in all standard 23" Relay Rack Applications
- **Compliance:** Designed in accordance with IEC 60896-21/-22
- **No Transport Restrictions:** Complies with IATA/ICAO Special Provision A67; DOT-CFR Title 49; IMDG Amendment 34-08

### Applications

The MARATHON® M12V180FT Battery incorporates GNB Industrial Power's advanced VRLA technology designed for long life and high performance in:

#### Telecommunications

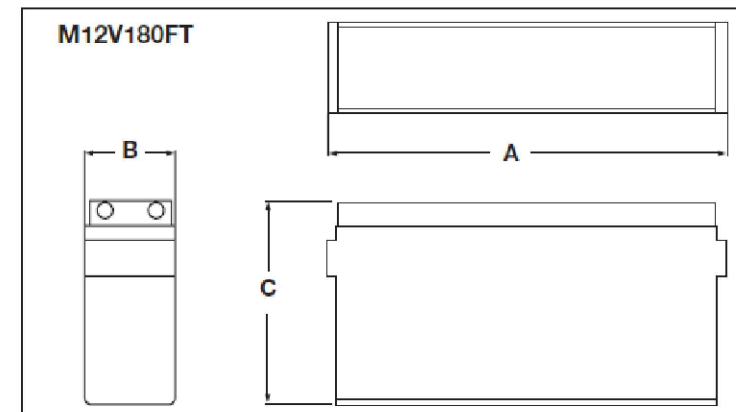
- Distributed Power
- PCS
- Cellular
- Broadband

#### Electric Utility

- Switchgear Control Power
- Communications



Model Number	Voltage	Capacity (AH)		Nominal Dimensions						Nominal Weight	
		8 hr to 1.75 VPC @ 25°C	10 hr to 1.80 VPC @ 20°C	Inches			Millimeters			lbs.	Kg
				A	B	C	A	B	C		
M12V180FT	12	180	175	22.00	4.90	12.50	559	124	318	133	60



### Float Voltage & Charging

Constant Voltage charging is recommended

Recommended float voltage: 2.27 VPC @ 25°C (77°F)

Float Voltage Range: 2.25 to 2.30 VPC @ 25°C (77°F)

Equalize Voltage: 2.35 VPC for 24 Hours or 2.40 VPC for 12 Hours

### Marathon® M12V180FT Electrical Data

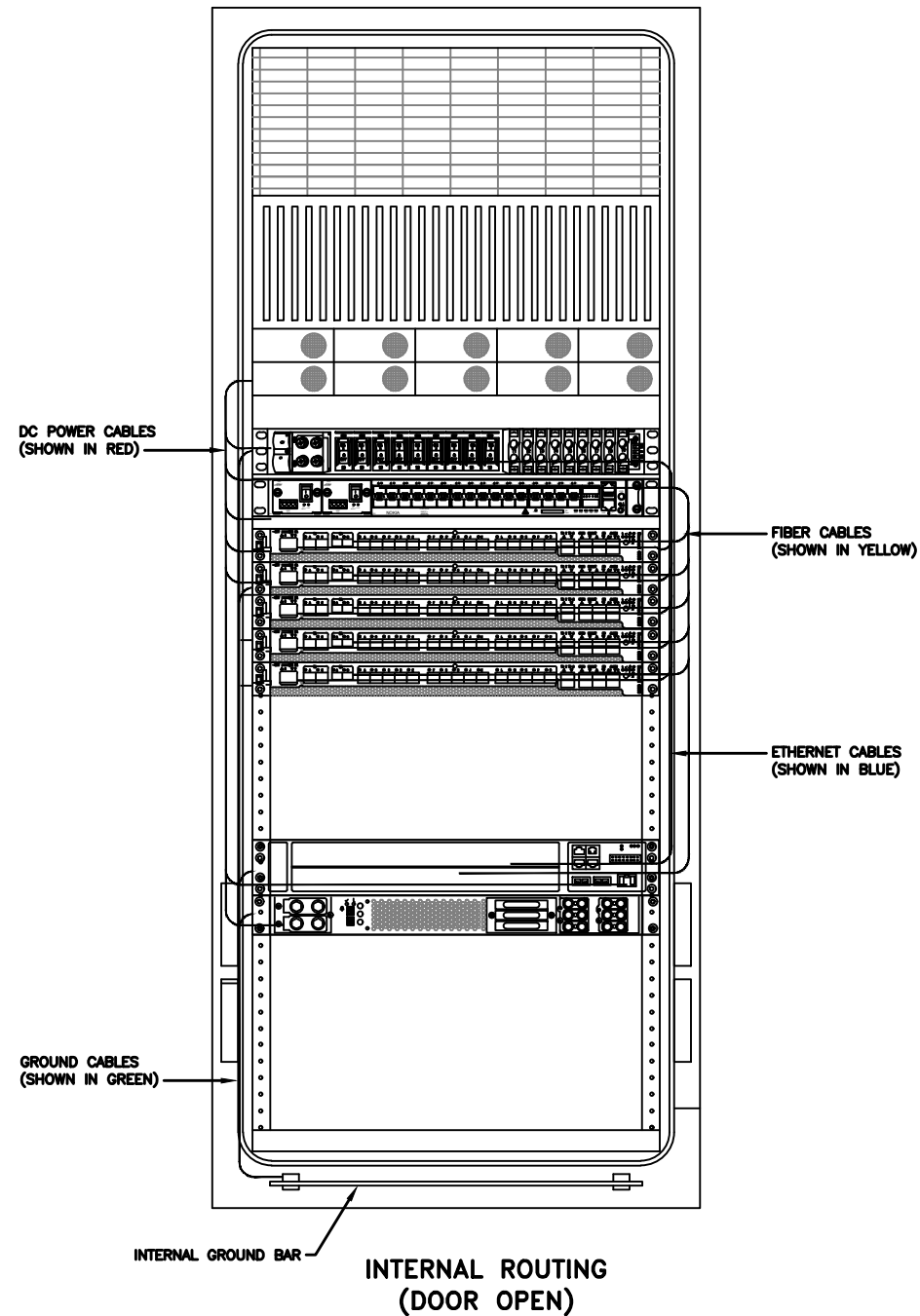
Model Number	Short Circuit Current Amps	Internal Resistance (mOhms)
M12V180FT	4147	3.0

NOTE: Design and/or specifications subject to change without notice. If questions arise, contact your local GNB Industrial Power sales representative for clarification

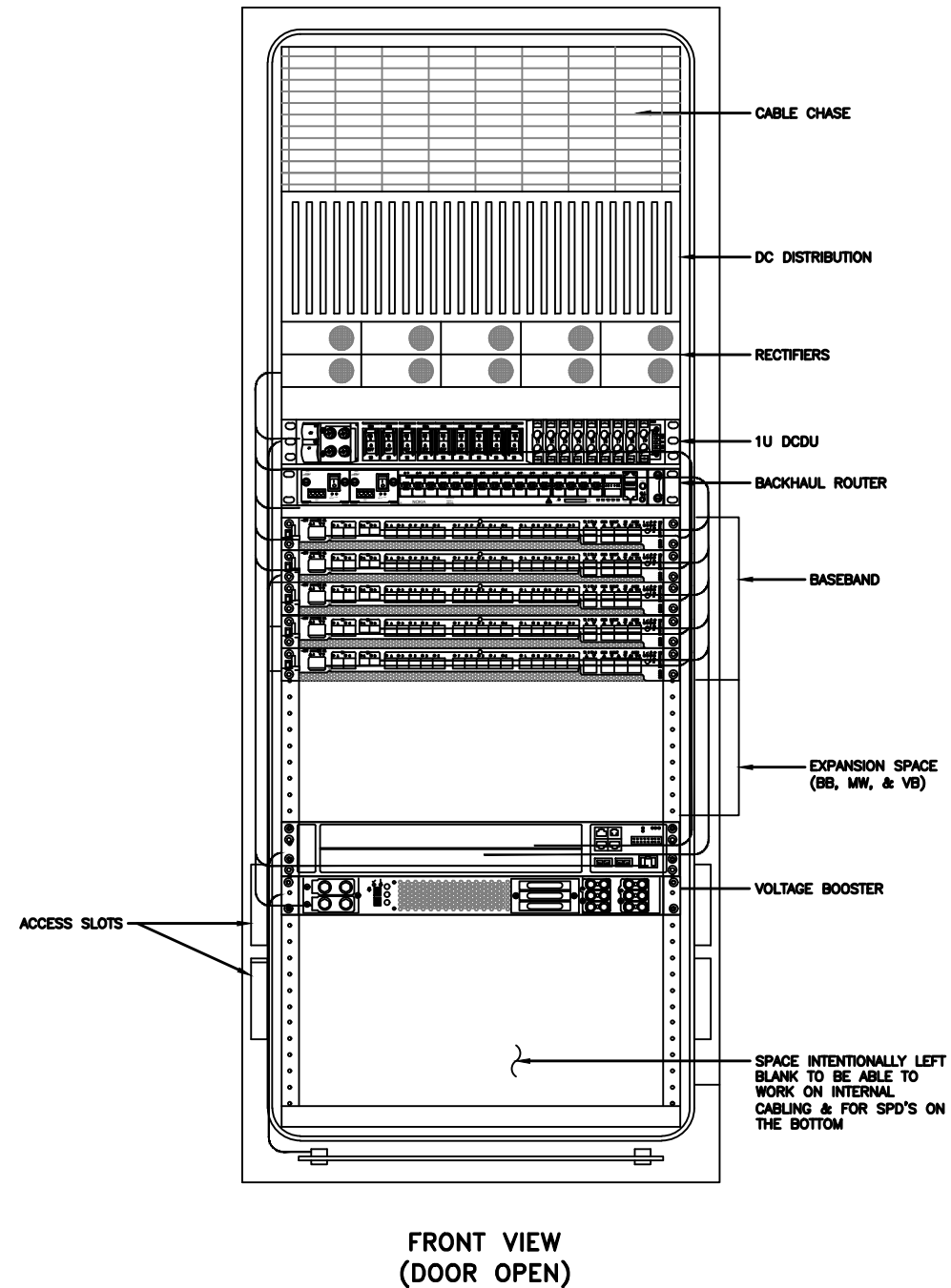
### Marathon M12V180FT Performance Specifications

Amperes @ 25° (77°F)

End Voltage Per Cell	Time															
	24 hr	20 hr	12 hr	10 hr	9 hr	8 hr	7 hr	6 hr	5 hr	4 hr	3 hr	2.5 hr	2 hr	1.5 hr	1 hr	0.5 hr
1.94 Final Volts Per Cell	6.4	7.6	12.2	14.4	15.9	17.7	20.0	22.5	26.1	31.2	39.4	45.6	54.6	69.1	89.8	134.0
1.92 Final Volts Per Cell	6.8	8.0	12.9	15.3	16.9	18.9	21.1	23.8	27.6	33.1	41.9	48.6	58.9	73.1	96.1	144.5
1.90 Final Volts Per Cell	7.1	8.4	13.6	16.1	17.8	19.9	22.0	24.9	28.9	34.8	44.0	51.2	61.5	76.6	101.7	154.6
1.87 Final Volts Per Cell	7.5	8.9	14.3	16.9	18.6	20.8	23.5	26.5	30.6	36.5	45.8	52.8	63.0	79.0	108.7	167.9
1.85 Final Volts Per Cell	7.7	9.1	14.6	17.3	19.1	21.3	24.1	27.1	31.3	37.4	47.1	54.4	65.0	81.7	112.7	175.2
1.83 Final Volts Per Cell	7.9	9.3	14.9	17.6	19.5	21.7	24.5	27.6	31.9	38.2	48.0	55.6	66.5	83.8	115.9	181.5
1.81 Final Volts Per Cell	7.9	9.4	15.1	17.9	19.7	22.0	24.9	27.9	32.3	38.7	48.8	56.6	67.6	85.3	118.2	186.4
1.80 Final Volts Per Cell	8.0	9.4	15.2	18.0	19.8	22.1	25.0	28.0	32.5	39.0	49.1	56.8	68.0	85.8	119.1	188.5
1.78 Final Volts Per Cell	8.0	9.5	15.3	18.1	20.0	22.3	25.2	28.2	32.7	39.2	49.5	57.4	68.7	86.7	120.3	191.9
1.75 Final Volts Per Cell	8.1	9.6	15.4	18.3	20.2	22.5	25.5	28.4	33.0	39.5	49.9	57.9	69.4	87.6	121.7	194.5



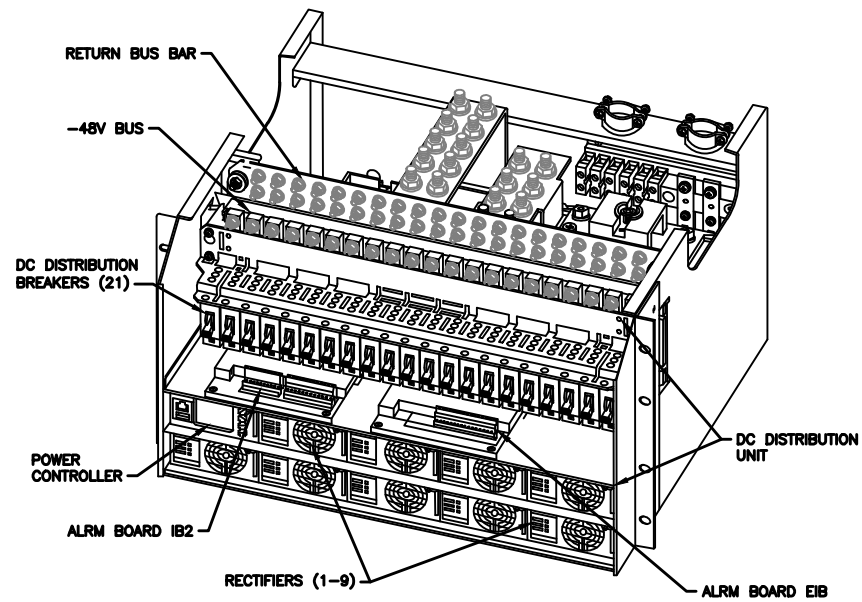
RACK ASSIGNMENTS	
RU SLOTS	DESCRIPTION
1	DC DISTRIBUTION
2	
3	
4	
5	RECTIFIER SHELF
6	
7	FIBER BOX
8	DCDU
9	BACKHAUL ROUTER
10	
11	1ST BASEBAND
12	2ND BASEBAND
13	3RD BASEBAND
14	4TH BASEBAND
15	5TH BASEBAND
16	EXPANSION
17	
18	
19	EXPANSION / LEGACY BASEBAND / VOLTAGE BOOSTER
20	
21	VOLTAGE BOOSTER
22	
23	OPEN SPACE FOR SPD ACCESS
24	
25	



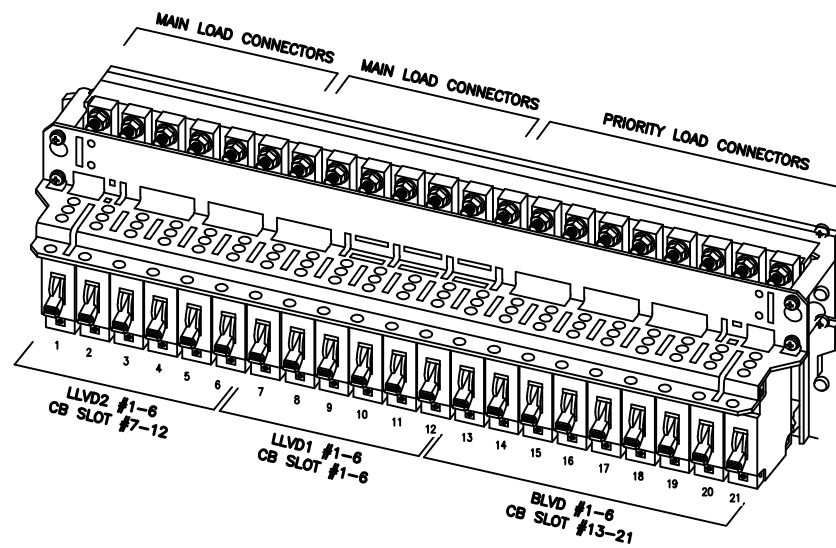
**NOTE:**  
THIS IS FOR REFERENCE ONLY, CHECK  
FOR SPECIFIC DETAIL IN T-MOBILE  
CABINET SPECIFIC INSTALLATION GUIDES

Breaker Allocation for E6160				
CB SLOT	Ckt #	w/ DCU Prior to availability of the 4460 and 4480	w/ DCU Later Design Post-4460 and Post-4480	w/ DCU 4 and 6 Sector designs
1	1	Router PS-2*/Future		Radio 4460 B25/66 ζ-1
2	2	Future		Radio 4460 B25/66 ζ-2
3	LVD1	PSU 4813 feeding B25/66 α, β and γ (AIR 1641s)		PSU 4813 feeding B41-δ & B71/12-δ (Air 6449s and Radio 4480s)
4	47.0V			
5	5	PSU 4813 feeding B41 α, β and γ (Air 6449s)		
6	6			
7	LVD2	1	PSU 4813 feeding B71/12 α, β and γ (Radio 4449s)	PSU 4813 feeding B71/12 α, β and γ (Radio 4480s)
8		2		
9	45.1V	3	Future	Radio 4460 B25/66 δ-1
10		4	Future	Radio 4460 B25/66 δ-2
11		5	Future	Radio 4460 B25/66 ε-1
12		6	Future	Radio 4460 B25/66 ε-2
13	BLVD	1	Router PS-1	
14		2	Radio 4415 B25/66 α	Radio 4460 B25/66 α-1
15		3	Radio 4415 B25/66 β	Radio 4460 B25/66 α-2
16		4	Radio 4415 B25/66 γ	Radio 4460 B25/66 β-1
17		5	PSU 4813 feeding B2/25 α, β and γ (Radio 4424s)	Radio 4460 B25/66 β-2
18		6		Radio 4460 B25/66 γ-1
19		7	Future	Radio 4460 B25/66 γ-2
20		8	DCDU	
21		9	AAV	

Sector Identification  
α = Alpha, β = Beta, γ = Gamma, δ = Delta, ε = Epsilon, ζ = Zeta

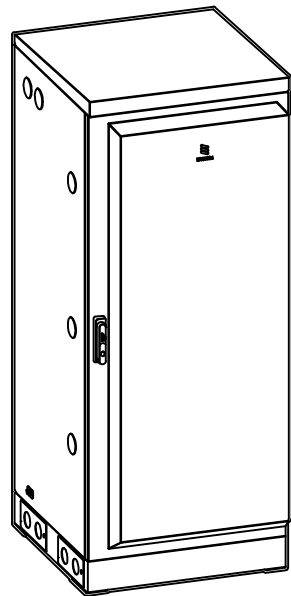


**POWER SUBRACK**



**DC DISTRIBUTION**

MANUFACTURER:	ERICSSON
MODEL:	B160 BATTERY CABINET
DIMENSIONS:	63" x 25.6" x 29.5" (H x W x D)
WEIGHT:	295 LBS (WITHOUT BATTERIES)



2.5" KNOCKOUTS w/ RIGID CONDUIT, LB CONDUIT BODY FOR ALARM CABLE & TEMP SENSOR ROUTING. CONDUIT MUST BE PROPERLY SECURED TO PREVENT DAMAGE

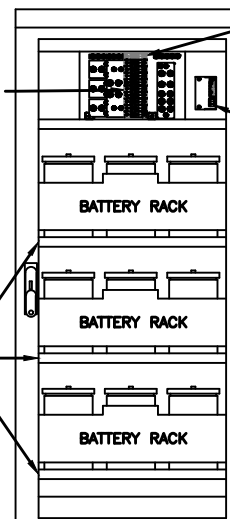
CABINET GROUND POINTS

REAR VIEW

2.5" KNOCKOUTS w/ RIGID CONDUIT, LB CONDUIT BODY FOR BATTERY CABLE CONDUIT MUST BE PROPERLY SECURED TO PREVENT DAMAGE

3 x 300A BREAKERS

BATTERY VIBRATION MOUNTS



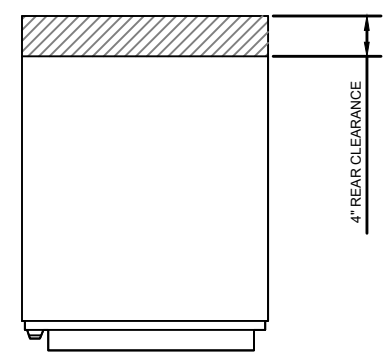
25A AUX BREAKERS, FANS, LIGHTS, ETC.

ALARM BOX, PRELABELED

FRONT VIEW (DOOR OPEN)

3X BATTERY SHELVES, UP TO 200A HR, w/ PREINSTALLED HEATERS

NOTE:  
 • CORRECT KNOCKOUT TOOL REQUIRED FOR PUNCHING KNOCKOUTS. DO NOT DRILL THROUGH KNOCKOUTS  
 • CONDUIT MUST BE PROPERLY SECURED TO PREVENT DAMAGE TO CABINETS AND OR CABLING

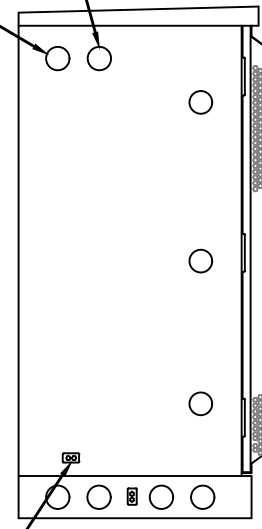


4" REAR CLEARANCE

GROUNDING NOTE:  
 "CABINET GROUNDING TO USE A SINGLE, #2 BTCW CONDUCTOR, W/ 2-HOLE, 1" C-C, LONG BARREL, WINDOW LUG, IN 3/4" LFNC TO GROUND RING. PLINTH GROUNDING IS NOT REQUIRED."

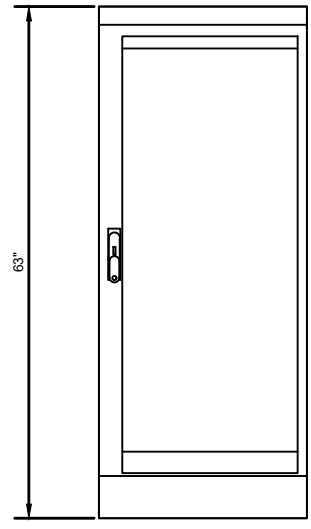
(OPTIONAL) 2.5" KNOCKOUTS FOR ALARM & TEMP SENSOR ROUTING TO 6160

(OPTIONAL) 2.5" DC POWER KNOCKOUTS TO 6160

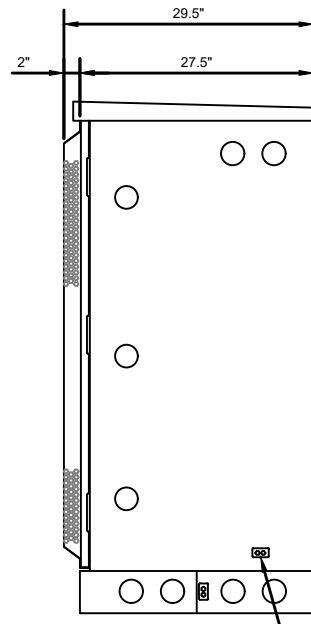


CABINET GROUND POINT

LEFT VIEW

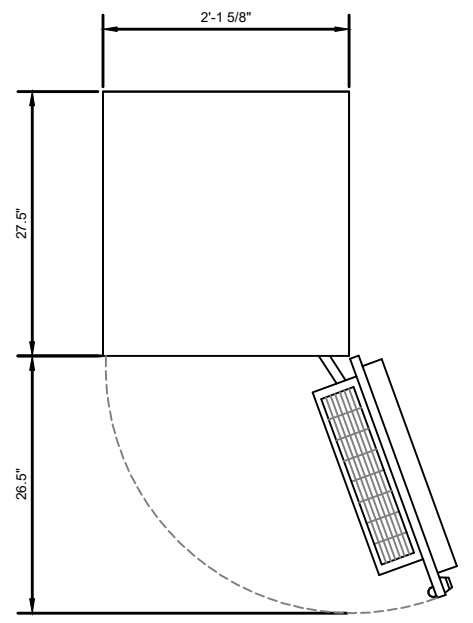


FRONT VIEW



CABINET GROUND POINT

RIGHT VIEW



PLAN VIEW

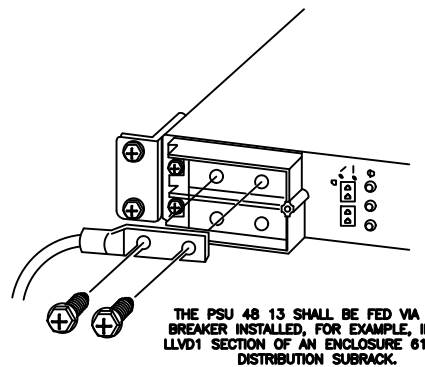
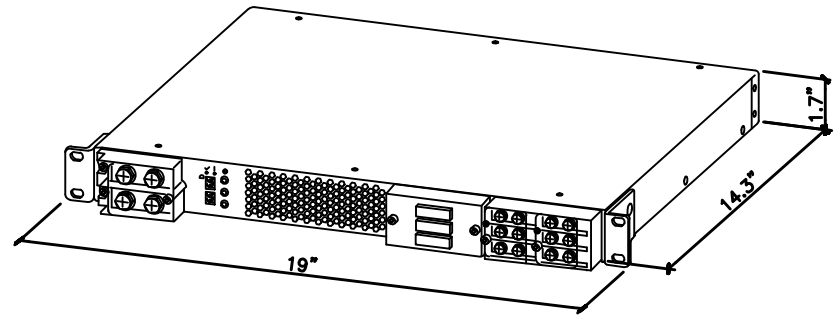
B160 ERICSSON SITE SUPPORT BATTERY CABINET

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

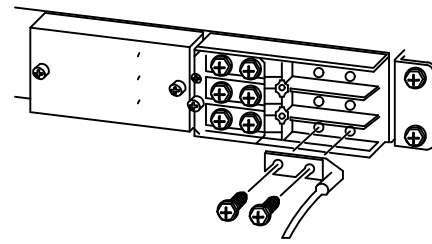
SUPPLEMENTAL	
SHEET NUMBER: <b>R-607</b>	REVISION: -

MANUFACTURER: ERICSSON  
 MODEL: PSU 48 13  
 WEIGHT: 17.1 LBS  
 DIMENSIONS: 19"x 1.7"x 14.3"

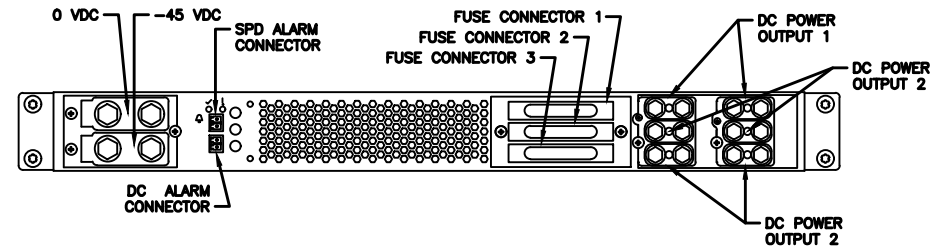
NEEDED INSTALL KIT (PICK 1)  
 34133 PSU4813 INSTALL KIT FOR RBS61XX  
 34134 PSU4813 INSTALL KIT FOR PBC6200  
 34135 PSU4813 INSTALL KIT FOR 6X60/RBS6230



THE PSU 48 13 SHALL BE FED VIA 200A BREAKER INSTALLED, FOR EXAMPLE, IN THE LVD1 SECTION OF AN ENCLOSURE 6160 DC DISTRIBUTION SUBRACK.



CONNECT -58 VDC DISTRIBUTION CABLE TO TERMINAL AT THE RIGHT, WHICH WILL BE FED TO RRU/AIR AT THE OTHER END.



1 SKU# 34132 - PSU 48 13

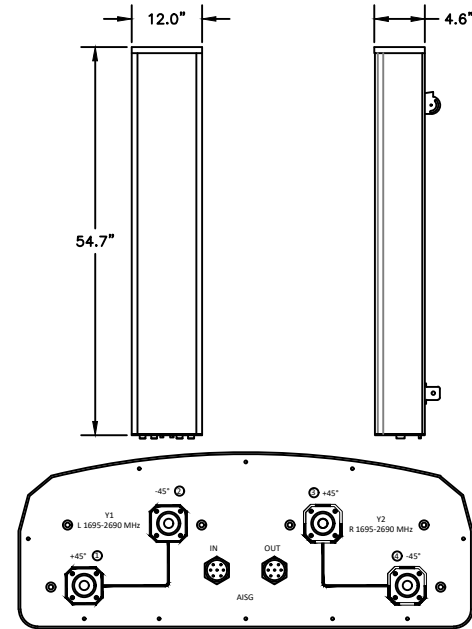
SCALE: N.T.S.

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

SUPPLEMENTAL

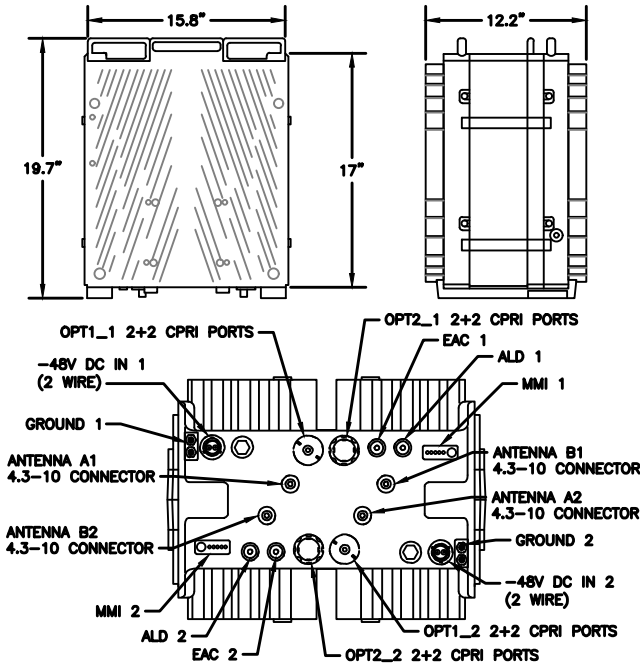
SHEET NUMBER: <b>R-608</b>	REVISION: -
-------------------------------	----------------

MANUFACTURER:	COMMSCOPE
MODEL:	VV-65A-R1
DIMENSIONS:	54.7" x 12.1" x 4.6" (H x W x D)
WEIGHT:	24.7 LB
INTERFACE:	4-PORT 4.3-10 FEMALE
MOUNTING KIT:	600899A-2 (INCLUDED) WEIGHT: 8.6 LB



1 34401 - COMMSCOPE VV-65A-R1  
SCALE: N.T.S.

MANUFACTURER:	ERICSSON
MODEL:	4460 RADIO B2/25 B66 (KRC 161 912/3)
DIMENSIONS:	19.7" x 15.8" x 12.2" (H" x W" x D")
WEIGHT:	109 LBS
BRACKET WEIGHT:	4.8 LBS (ERS HEAVY #SXX1255993/1)

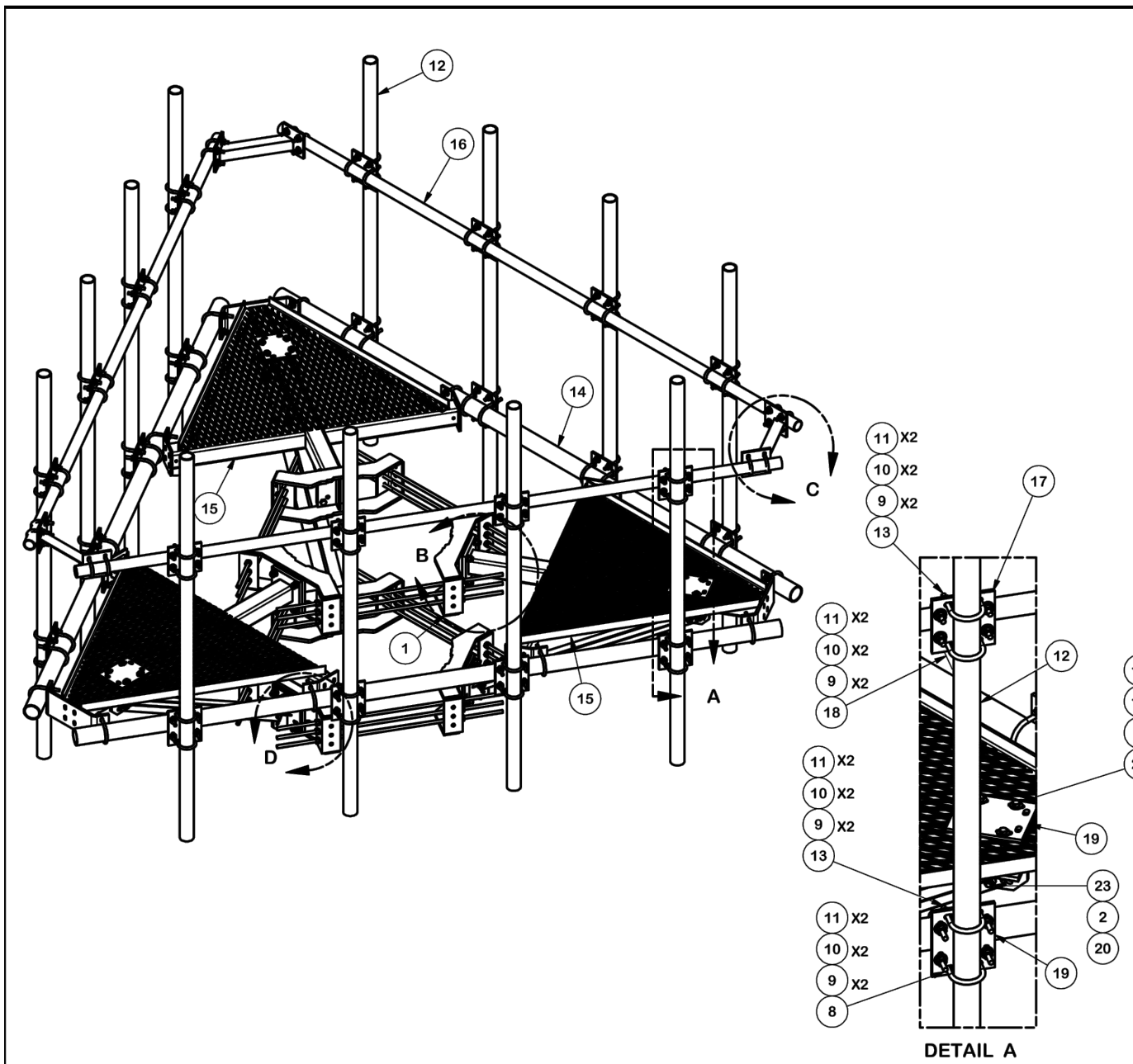


2 34373 - ERICSSON 4460 RADIO B2/25 B66  
SCALE: N.T.S.

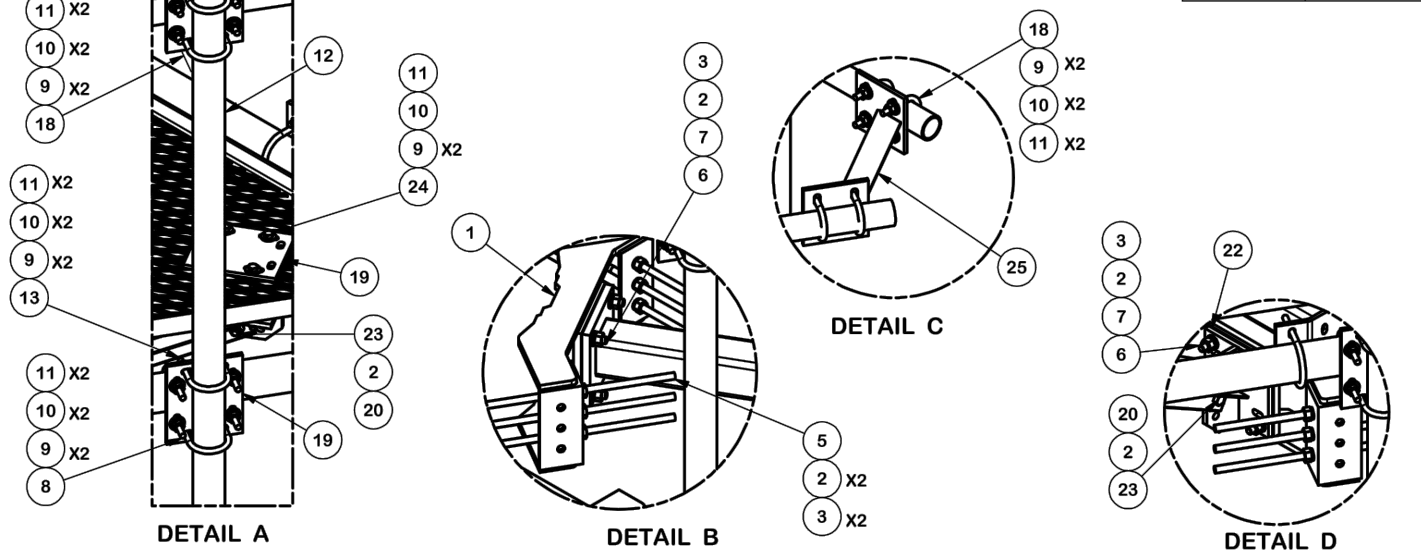
SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-609	-





PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	6	X-LWRM	RING MOUNT WELDMENT		68.81	412.85
2	66	G58LW	5/8" HDG LOCKWASHER		0.03	1.72
3	60	A58NUT	5/8" HDG A325 HEX NUT		0.13	7.79
4	18	G58R-24	5/8" x 24" THREADED ROD (HDG.)		2.09	37.63
5	18	G58R-48	5/8" x 48" THREADED ROD (HDG.)		4.18	75.27
6	24	A58234	5/8" x 2-3/4" HDG A325 HEX BOLT	2 3/4 in	0.36	8.54
7	24	A58FW	5/8" HDG A325 FLATWASHER		0.03	0.82
8	36	X-UB1306	1/2" X 3-5/8" X 6" X 3" U-BOLT (HDG.)		0.83	29.82
9	264	G12FW	1/2" HDG USS FLATWASHER	3/32 in	0.03	9.00
10	252	G12LW	1/2" HDG LOCKWASHER	1/8 in	0.01	3.50
11	252	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	18.05
12	12	P3096	2-7/8" OD X 96" SCH 40 GALVANIZED PIPE	96 in	49.24	590.88
13	48	X-UB1300	1/2" X 3" X 5" X 2" U-BOLT (HDG.)		0.67	32.11
14	3	P3150	3-1/2" X 150" (3" SCH 40) GALVANIZED PIPE	150 in	94.80	284.40
15	3	X-SV196	LOW PROFILE PLATFORM CORNER		212.10	636.31
16	3	P2150	2-3/8" O.D. X 150" SCH 40 GALVANIZED PIPE	150 in	45.77	137.31
17	12	SCX2	CROSSOVER PLATE	7 in	4.80	57.56
18	36	X-UB1212	1/2" X 2-1/2" X 4-1/2" X 2" U-BOLT (HDG.)		0.60	21.50
19	15	SCX4	CROSSOVER PLATE	8 1/2 in	6.02	90.32
20	6	G58NUT	5/8" HDG HEAVY 2H HEX NUT		0.13	0.78
21	6	X-253993	PLATFORM REINFORCEMENT KIT ANGLE	52 25/32 in	14.33	85.99
22	6	X-TBW	T-BRACKET WELDMENT		13.60	81.60
23	6	G5802	5/8" x 2" HDG HEX BOLT GR5		0.27	1.62
24	12	G12065	1/2" x 6-1/2" HDG HEX BOLT GR5 FULL THREAD	5 1/2 in	0.41	4.91
25	3	X-AHCP	ANGLE HANDRAIL CORNER PLATE		12.92	38.76
					TOTAL WT. #	2669.03



REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
B	CHANGED X-253992 TO X-TBW		CEK	9/20/2018
A	REPLACED HCP WITH X-AHCP	4488	CEK	7/14/2014

**TOLERANCE NOTES**  
 TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:  
 SAWED, SHEARED AND GAS CUT EDGES ( $\pm 0.030"$ )  
 DRILLED AND GAS CUT HOLES ( $\pm 0.030"$ ) - NO CONING OF HOLES  
 LASER CUT EDGES AND HOLES ( $\pm 0.010"$ ) - NO CONING OF HOLES  
 BENDS ARE  $\pm 1/2$  DEGREE  
 ALL OTHER MACHINING ( $\pm 0.030"$ )  
 ALL OTHER ASSEMBLY ( $\pm 0.060"$ )

PROPRIETARY NOTE:  
 THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.

DESCRIPTION  
**12' 6" LOW PROFILE PLATFORM  
 WITH TWELVE 2-7/8" ANTENNA MOUNTING  
 PIPES, AND HANDRAIL**

CPD NO. 4488  
 DRAWN BY CEK 3/24/2014  
 ENG. APPROVAL  
 CLASS 81 SUB 02  
 DRAWING USAGE CUSTOMER  
 CHECKED BY BMC 7/14/2014

**SITE PRO 1**  
 A valmont COMPANY

Locations:  
 New York, NY  
 Atlanta, GA  
 Los Angeles, CA  
 Plymouth, IN  
 Salem, OR  
 Dallas, TX

Engineering Support Team:  
 1-888-753-7446

PART NO. **RMQP-4096-HK**  
 DWG. NO. **RMQP-4096-HK**

PAGE 1 OF 3

1 PROPOSED ANTENNA MOUNTING PLATFORM W/ HANDRAIL KIT  
 SCALE: N.T.S.

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

SUPPLEMENTAL

SHEET NUMBER: **R-610**  
 REVISION: -

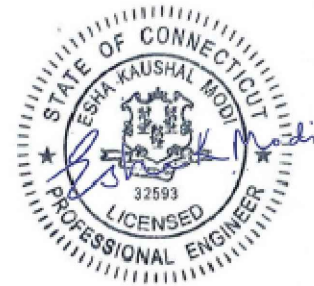


## Mount Analysis Report

ATC Site Name : WSPT-WESTPORT REBUILD CT, CT  
 ATC Site Number : 310968  
 Engineering Number : 13764586\_C8\_04  
 Mount Elevation : 132 ft  
 Carrier : T-Mobile  
 Carrier Site Name : CT323/SS Tower Rebuilic  
 Carrier Site Number : CT11323A  
 Site Location : 180A Bayberry Lane  
 Westport, CT 06880-2844  
 41.1716492, -73.32860551  
 County : Fairfield  
 Date : April 14, 2022  
 Max Usage : 76%  
 Result : Pass

Prepared By:  
 Kyle Sammarco  
 Structural Engineer I

Reviewed By:



Authorized by "EOR"  
 14 Apr 2022 11:01:48 cosign

COA: PEC.0001553

### Introduction

The purpose of this report is to summarize results of the mount analysis performed for T-Mobile at 132 ft.

### Supporting Documents

Specifications Sheet	Site Pro 1 RMQP-4096-HK, dated September 20, 2018
Radio Frequency Data Sheet	RFDS ID #CT11323A, dated March 22, 2022
Reference Photos	Site photos from 2021

### Analysis

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

Basic Wind Speed:	118 mph (3-Second Gust)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 1.00" radial ice concurrent
Codes:	ANSI/TIA-222-H
Exposure Category:	B
Risk Category:	II
Topographic Factor Procedure:	Method 2
Feature:	Flat
Crest Height (H):	0 ft
Crest Length (L):	0 ft
Spectral Response:	Ss = 0.227, S1 = 0.056
Site Class:	D - Stiff Soil
Live Loads:	Lm = 500 lbs

\* Based on experience, it has been determined that the Lv load cases will not control over Lm load cases in platform mount analyses. Therefore, these load cases have been excluded from this analysis.

### Conclusion

Based on the analysis results, the antenna mount meets the requirements per the applicable codes listed above. The mount can support the equipment as described in this report.

- Analysis is based on new Site Pro 1 RMQP-4096-HK platform or approved equivalent.

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.



**AMERICAN TOWER®**  
CORPORATION

---

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Westport, CT 06880-2844  
41.1716492 , -73.32860551  
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**Max Usage** : 76%  
**Result** : Pass

Prepared By:  
Kyle Sammarco  
Structural Engineer I

Reviewed By:



Authorized by "EOR"  
14 Apr 2022 11:01:48

**COA: PEC.0001553**



**Table of Contents**

Introduction ..... 1

Supporting Documents ..... 1

Analysis ..... 1

Conclusion ..... 1

Application Loading ..... 2

Structure Usages ..... 2

Mount Layout ..... 3

Equipment Layout ..... 4

Standard Conditions ..... 7

Calculations ..... Attached



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<b>Risk Category:</b>	II
<b>Topographic Factor Procedure:</b>	Method 2
<b>Feature:</b>	Flat
<b>Crest Height (H):</b>	0 ft
<b>Crest Length (L):</b>	0 ft
<b>Spectral Response:</b>	$S_s = 0.227$ , $S_1 = 0.056$
<b>Site Class:</b>	D - Stiff Soil
<b>Live Loads:</b>	$L_m = 500$ lbs

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## Conclusion

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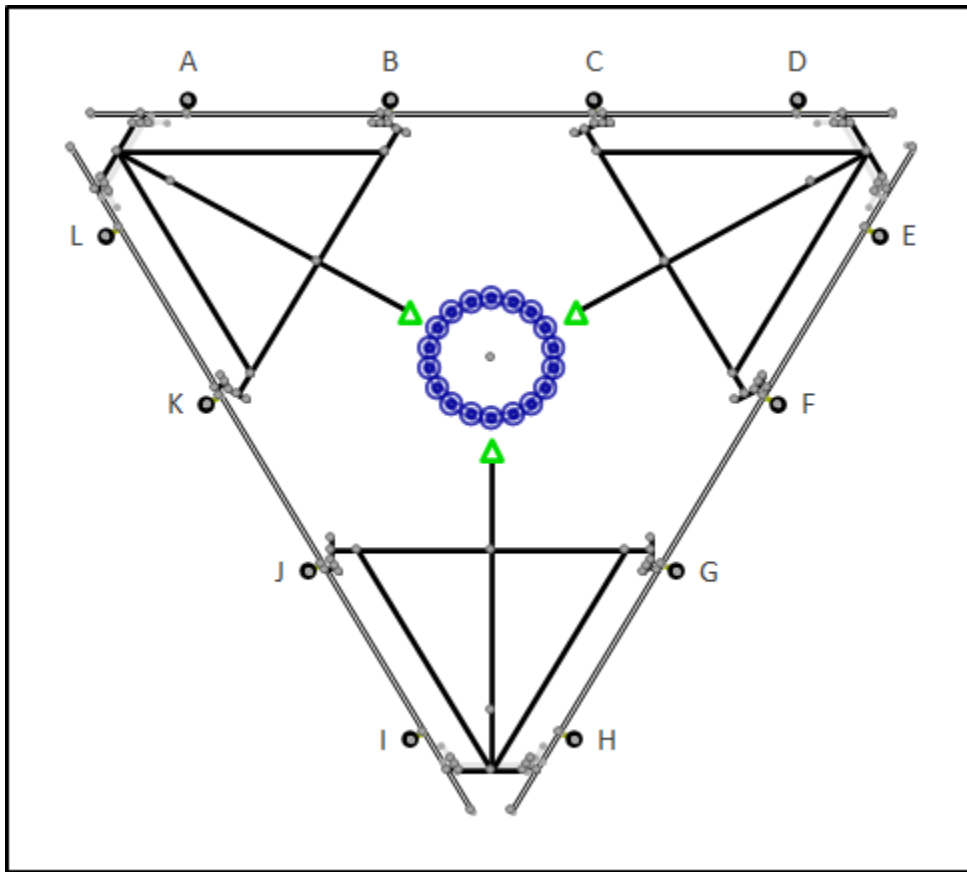
**Application Loading**

Mount Centerline (ft)	Equipment Centerline (ft)	Qty	Equipment Manufacturer & Model
132.0	132.0	3	RFS APXVAALL24 43-U-NA20
		3	Commscope VV-65A-R1
		3	Ericsson AIR 6419 B41
		3	Ericsson 4480 BAND 71
		3	Ericsson 4460 BAND 2/25

**Structure Usages**

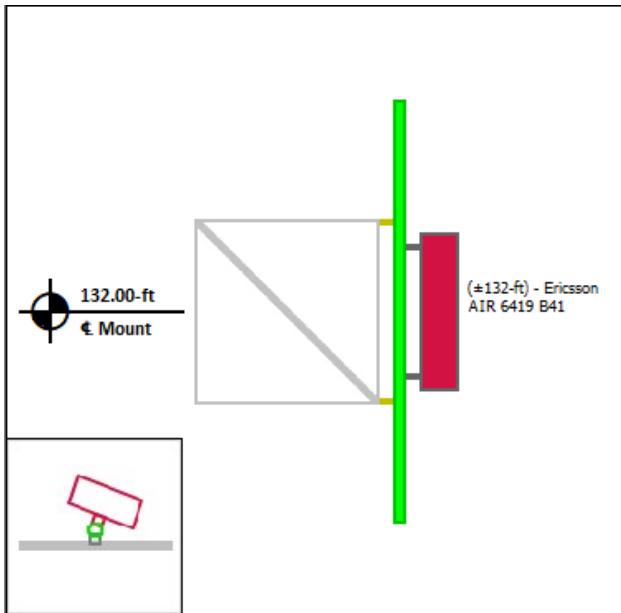
Structural Component	Controlling Usage	Pass/Fail
Horizontals	76%	Pass
Tie-Backs	12%	Pass
Mount Pipes	28%	Pass
Connection Check	26%	Pass

**Mount Layout**

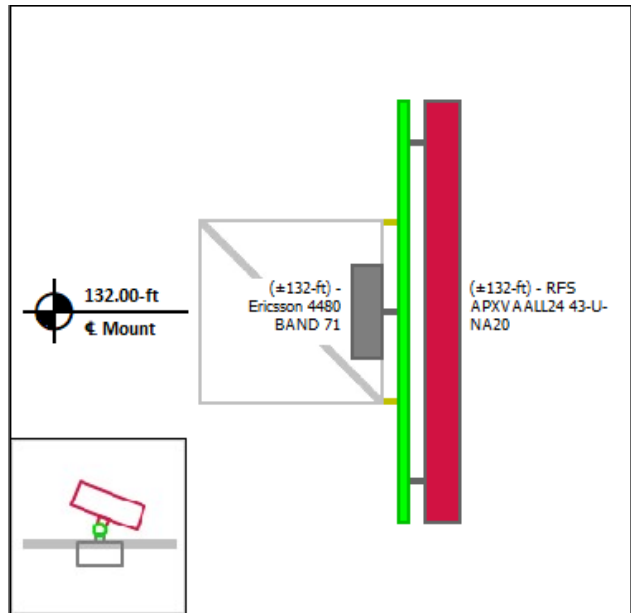


**Equipment Layout**

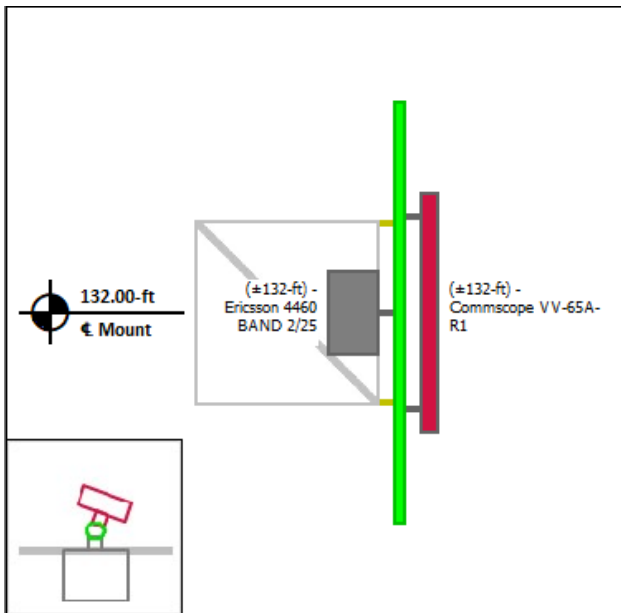
**Mount Pipe A**



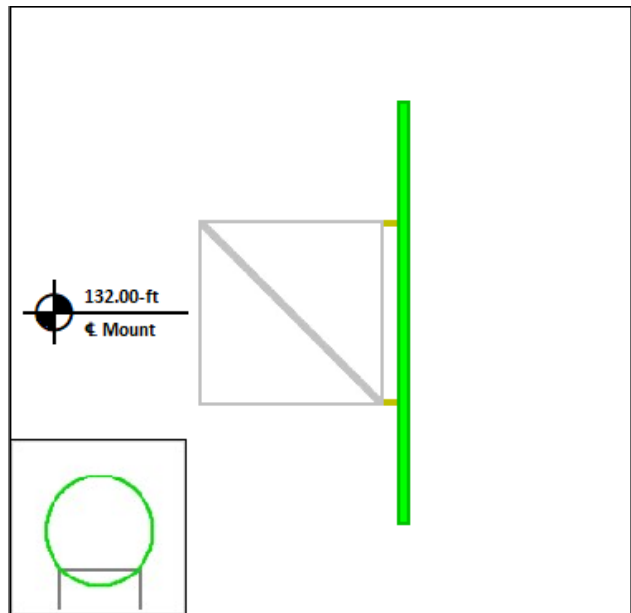
**Mount Pipe B**



**Mount Pipe C**



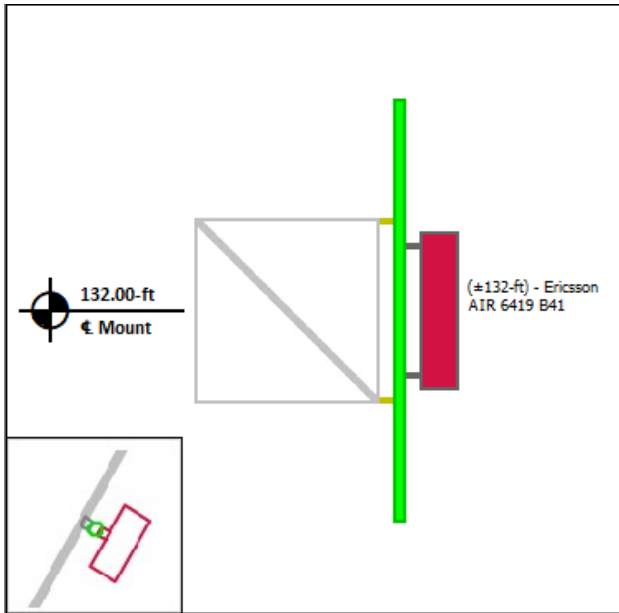
**Mount Pipe D**



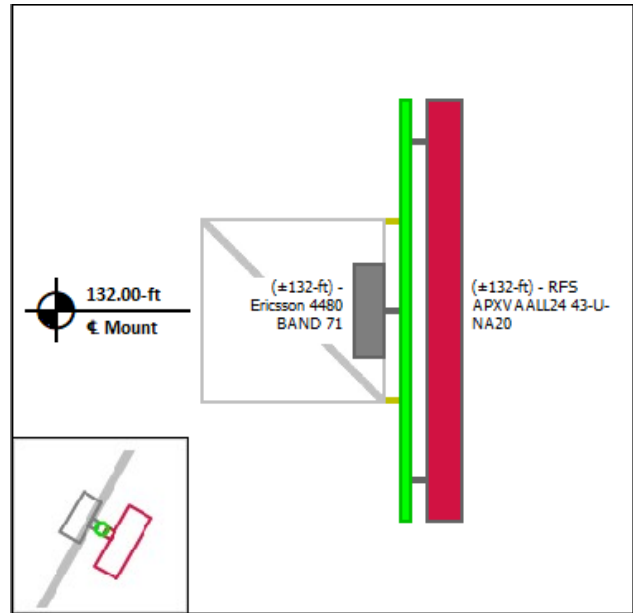


**Equipment Layout Cont'd.**

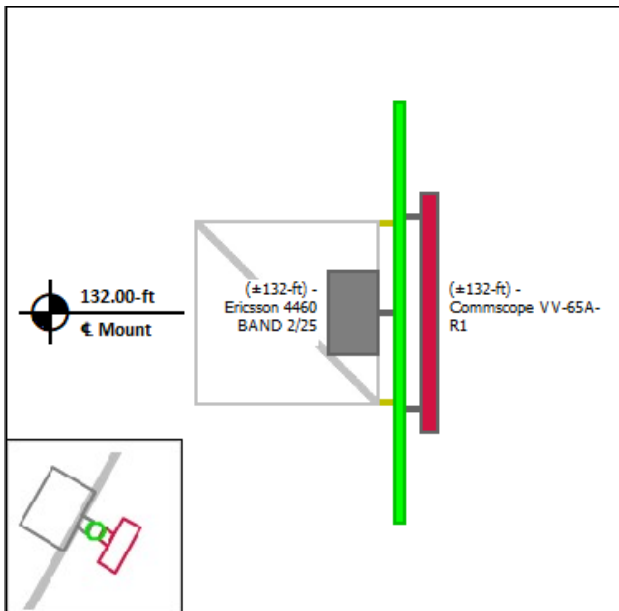
**Mount Pipe E**



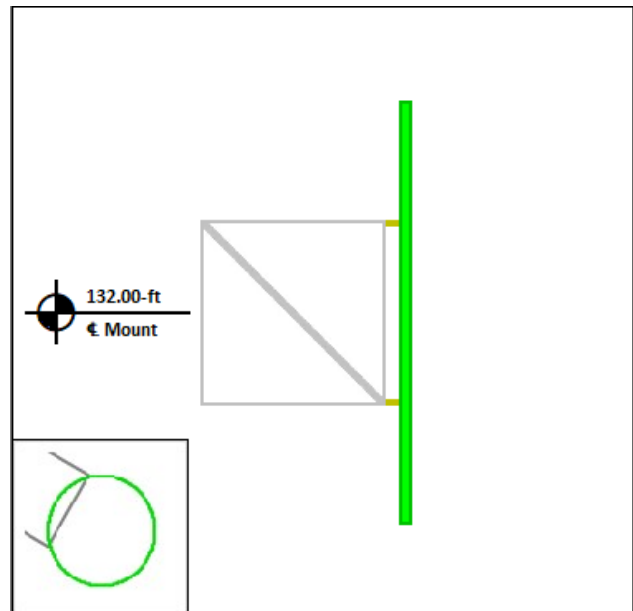
**Mount Pipe F**



**Mount Pipe G**

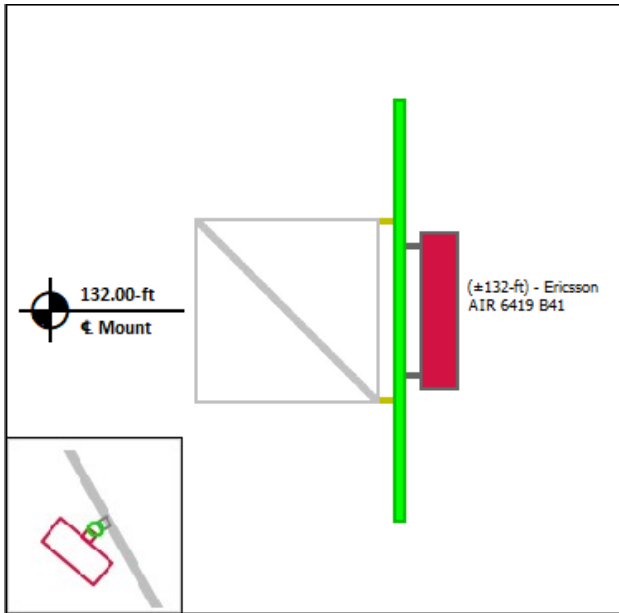


**Mount Pipe H**

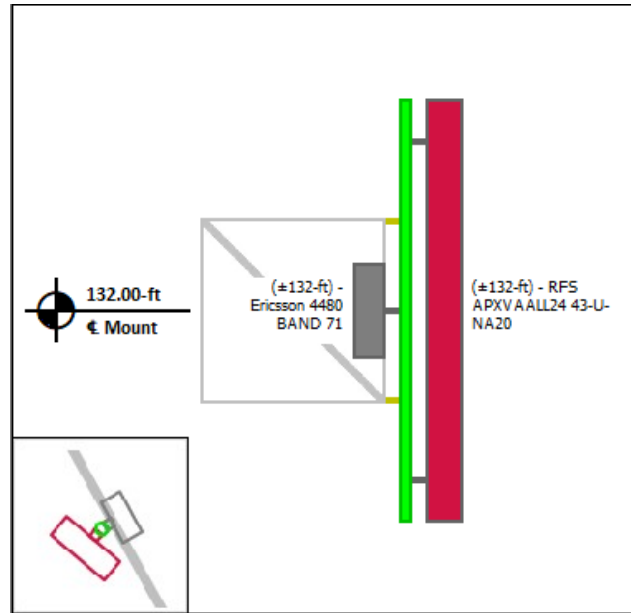


**Equipment Layout Cont'd.**

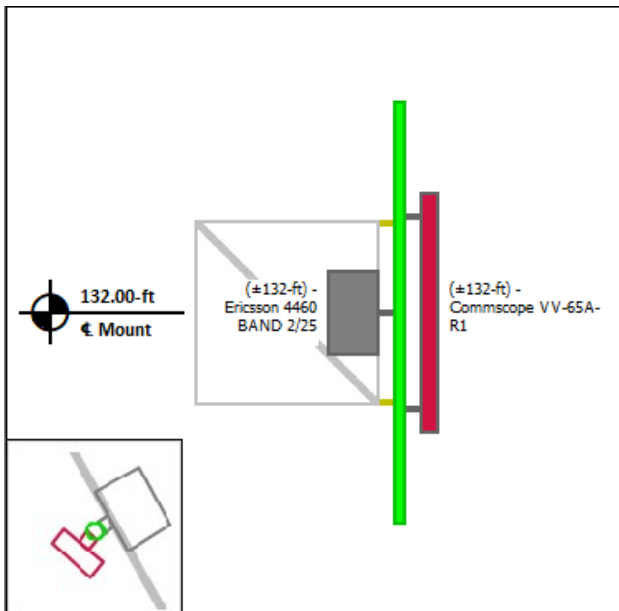
**Mount Pipe I**



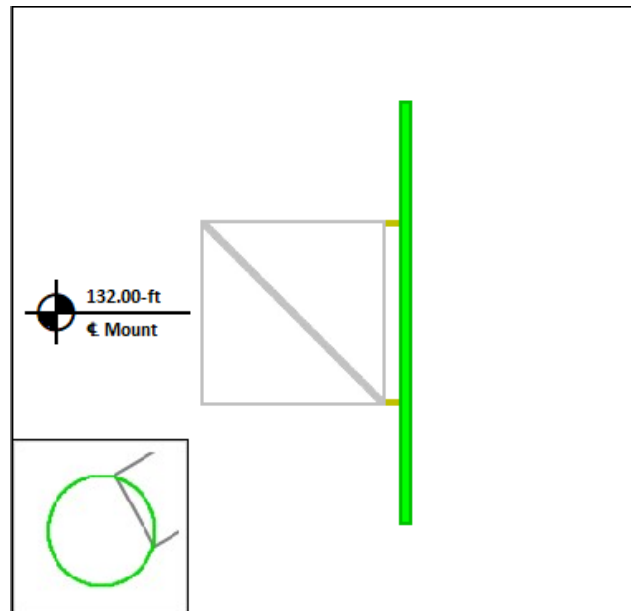
**Mount Pipe J**



**Mount Pipe K**



**Mount Pipe L**





### **Standard Conditions**

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

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

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

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

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

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

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

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



**Site Number:** 310968  
**Project Number:** 13764586\_C8\_04  
**Carrier:** T-Mobile  
**Mount Elevation:** 132 ft  
**Date:** 4/14/2022

## Mount Analysis Force Calculations

Wind & Ice Load Calculations			
Velocity Pressure Coefficient	$K_z$	1.07	
Topographic Factor	$K_{zt}$	1.00	
Rooftop Wind Speed-up Factor	$K_s$	1.00	
Shielding Factor	$K_a$	0.90	
Ground Elevation Factor	$K_e$	0.99	
Wind Direction Probability Factor	$K_d$	0.95	
Basic Wind Speed	$V$	118	mph
Velocity Pressure	$q_z$	35.9	psf
Height Escalation Factor	$K_{iz}$	1.15	
Thickness of Radial Glaze Ice	$T_{iz}$	1.15	in

Seismic Load Calculations			
Short Period DSRAP	$S_{D5}$	0.242	
1 Second DSRAP	$S_{D1}$	0.090	
Importance Factor	$I$	1.0	
Response Modification Coefficient	$R$	2.0	
Seismic Response Coefficient	$C_s$	0.121	
Amplification Factor	$A$	1.0	
Total Weight	$W$	2908.4	lbs
Total Shear Force	$V_s$	352.1	lbs
Horizontal Seismic Load	$E_h$	352.1	lbs
Vertical Seismic Load	$E_v$	140.8	lbs

Antenna Calculations (Elevations per Application/RFDS)*									
Equipment	Height	Width	Depth	Weight	$EPA_N$	$EPA_T$	$EPA_{Ni}$	$EPA_{Ti}$	
Model #	in	in	in	lbs	sqft	sqft	sqft	sqft	
RFS APXVAALL24 43-U-NA20	95.9	24.0	8.5	122.8	20.24	3.40	22.71	4.42	
Commscope VV-65A-R1	54.7	12.1	4.6	23.8	5.93	1.42	7.35	2.22	
Ericsson AIR 6419 B41	36.3	20.9	9.0	83.3	6.32	1.82	7.46	2.43	
Ericsson 4480 BAND 71	22.0	15.7	7.5	81.0	2.88	1.40	3.64	2.02	
Ericsson 4460 BAND 2/25	19.6	15.7	12.1	109.0	2.56	1.98	3.28	2.63	

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

## Mount-to-Tower Connection Analysis

### Applied Loads from RISA 3D

Controlling Load Combination		12	
Node Label		N002	
Force in X	F <sub>x</sub>	-1224.6	lbs
Force in Y	F <sub>y</sub>	643.7	lbs
Force in Z	F <sub>z</sub>	4767.2	lbs
Moment about X	M <sub>x</sub>	1092.9	lb-ft
Moment about Y	M <sub>y</sub>	1115.8	lb-ft
Moment about Z	M <sub>z</sub>	802.7	lb-ft

### Bolt Shear and Tensile Capacity

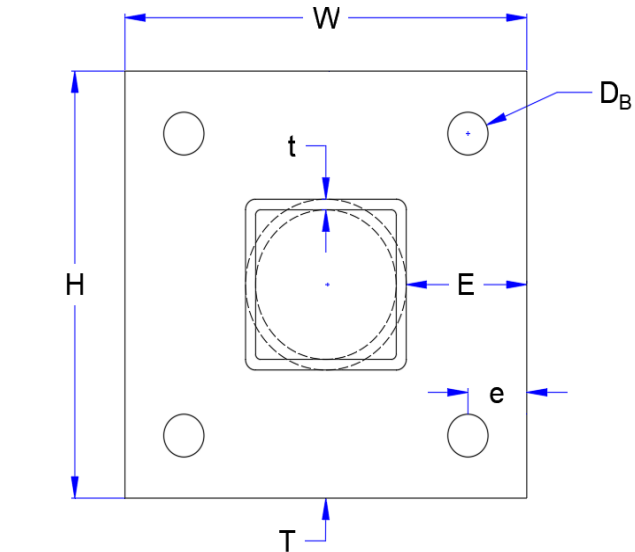
Bolt Quantity	n	4	
Bolt Diameter	D <sub>B</sub>	5/8	in
Bolt Edge Distance	e	1	in
Bolt Grade		A325	
Bolt F <sub>y</sub>	F <sub>yB</sub>	92	ksi
Bolt F <sub>u</sub>	F <sub>uB</sub>	120	ksi
Applied Shear	V <sub>u</sub>	0.49	k
Applied Tension	T <sub>u</sub>	3.40	k
Tensile Strength	φT <sub>n</sub>	20.3	k
Interaction Capacity	(T <sub>u</sub> +V <sub>u</sub> )/φT <sub>n</sub>	19%	Pass

### Plate Flexural Capacity

Plate Height	H	8	in
Plate Width	W	8	in
Plate Thickness	T	1/2	in
Plate Grade		A36	
Plate F <sub>y</sub>	F <sub>yP</sub>	36	ksi
Plate F <sub>u</sub>	F <sub>uP</sub>	58	ksi
Shear Capacity	φV <sub>n</sub>	26.9	k
Applied Moment	M <sub>u</sub>	6.8	k-in
Flexural Strength	φM <sub>n</sub>	26.1	k-in
Flexural Capacity	M <sub>u</sub> /φM <sub>n</sub>	26%	Pass

### Prying Action Considerations

Moment Arm	b	1.00	in
Effective Moment Arm	b'	0.69	in
Tributary Length	ρ	2.75	in
Effective Edge Distance	a'	1.31	in

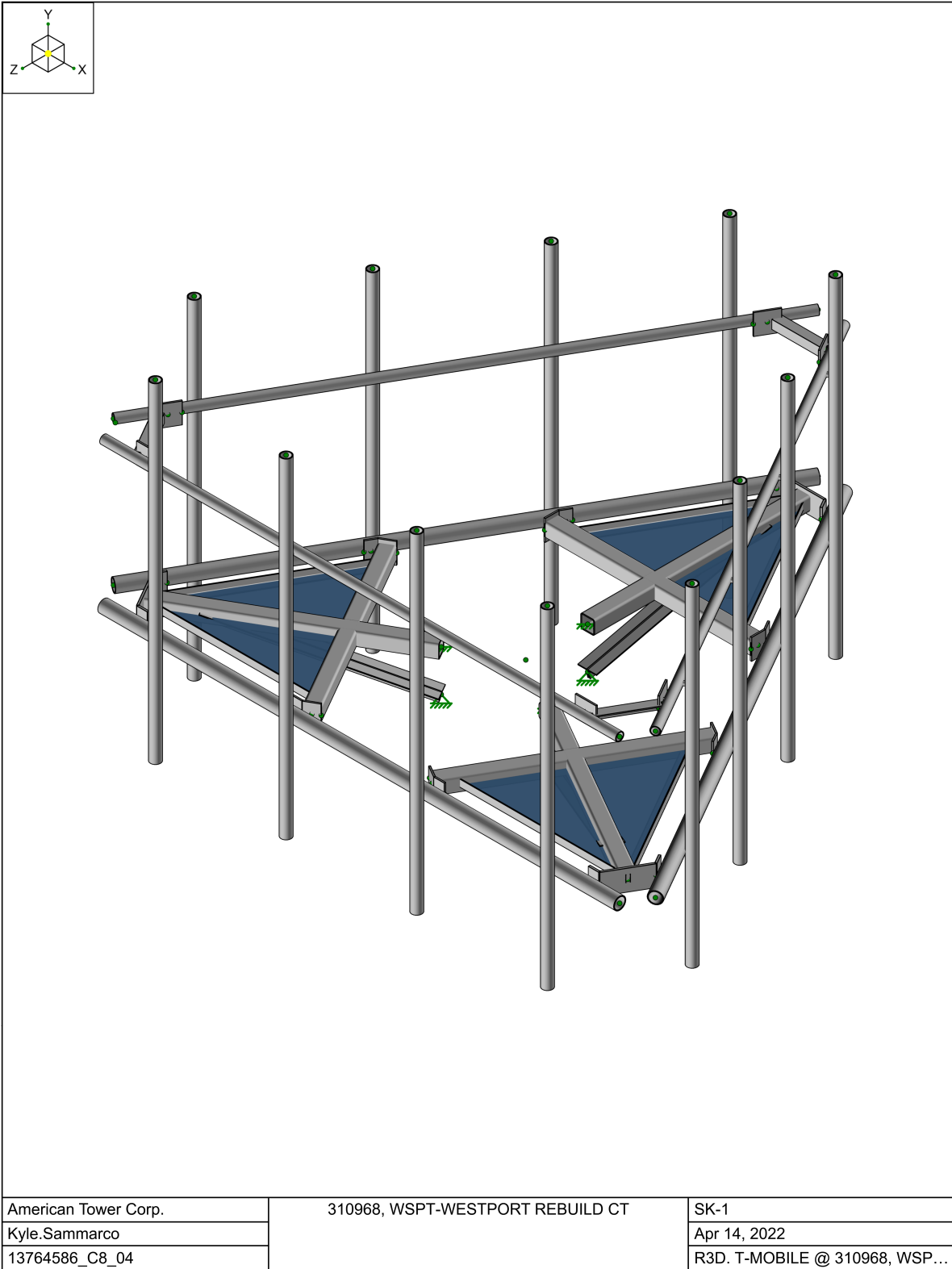


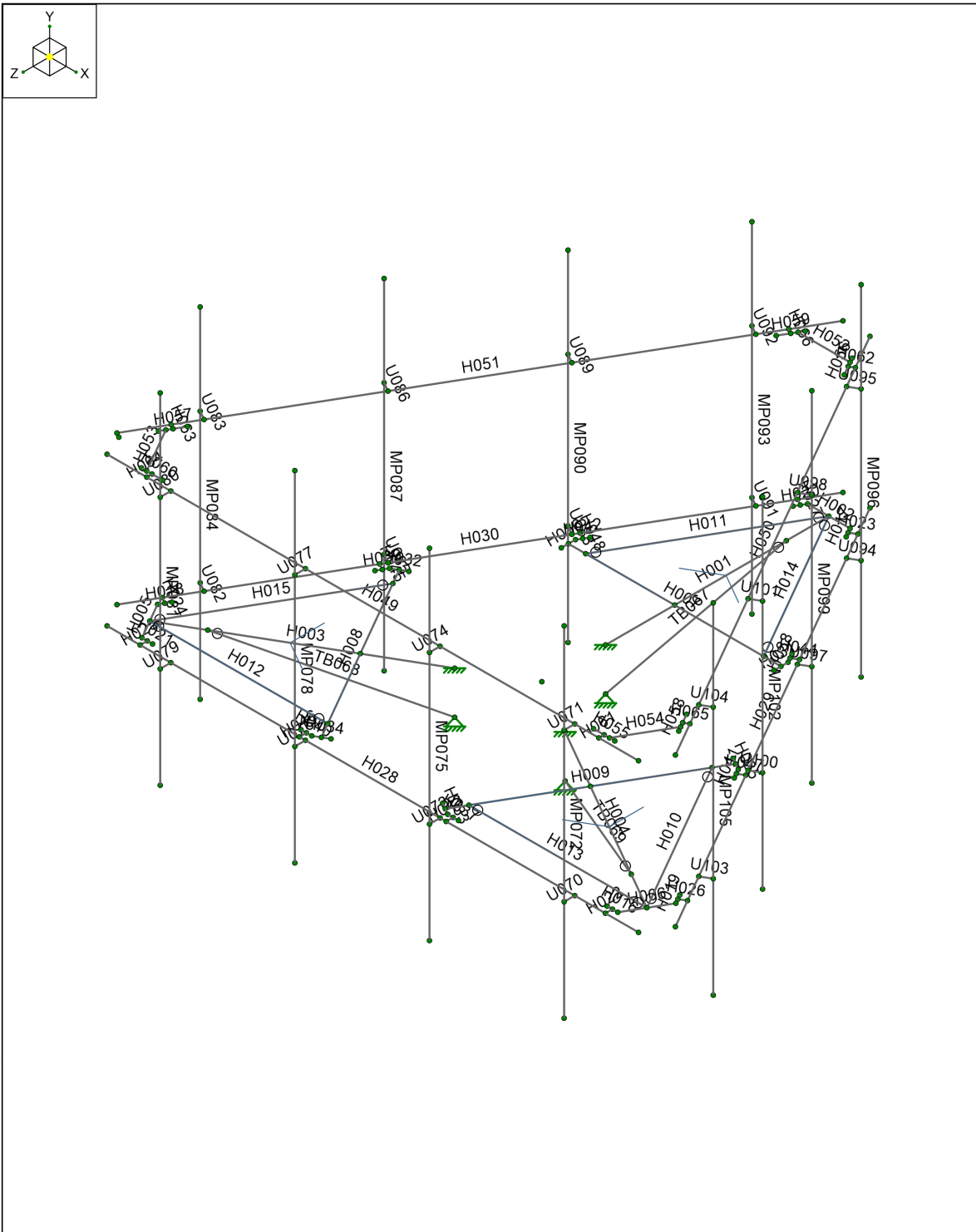
### Weld and Base Metal Capacity

Standoff Type		Tube
Standoff Member		HSS4x4x4
Member Edge Distance	E	2 in
Member Width	w	4 in
Member Thickness	t	0.250 in
Member Grade		A53 Gr. B
Member F <sub>y</sub>	F <sub>yM</sub>	35 ksi
Member F <sub>u</sub>	F <sub>uM</sub>	60 ksi
Weld Size	a	1/4 in
Weld Length	l	16.0 in
Applied Load	P <sub>u</sub>	6.8 k
Weld Strength	φR <sub>n</sub>	44.5 k
Weld Capacity	P <sub>u</sub> /φR <sub>n</sub>	15% Pass

Minimum Base Metal Thickness	0.206	in
Controlling Base Metal Thickness	0.250	in
Base Metal Result		Acceptable

Minimum Thickness	t <sub>min</sub>	0.19	in
No Prying Thickness	t <sub>np</sub>	0.26	in
Min Bolt Strength Thickness	t <sub>c</sub>	0.62	k-in
Prying Action Bolt Tension	T <sub>up</sub>	0.00	k

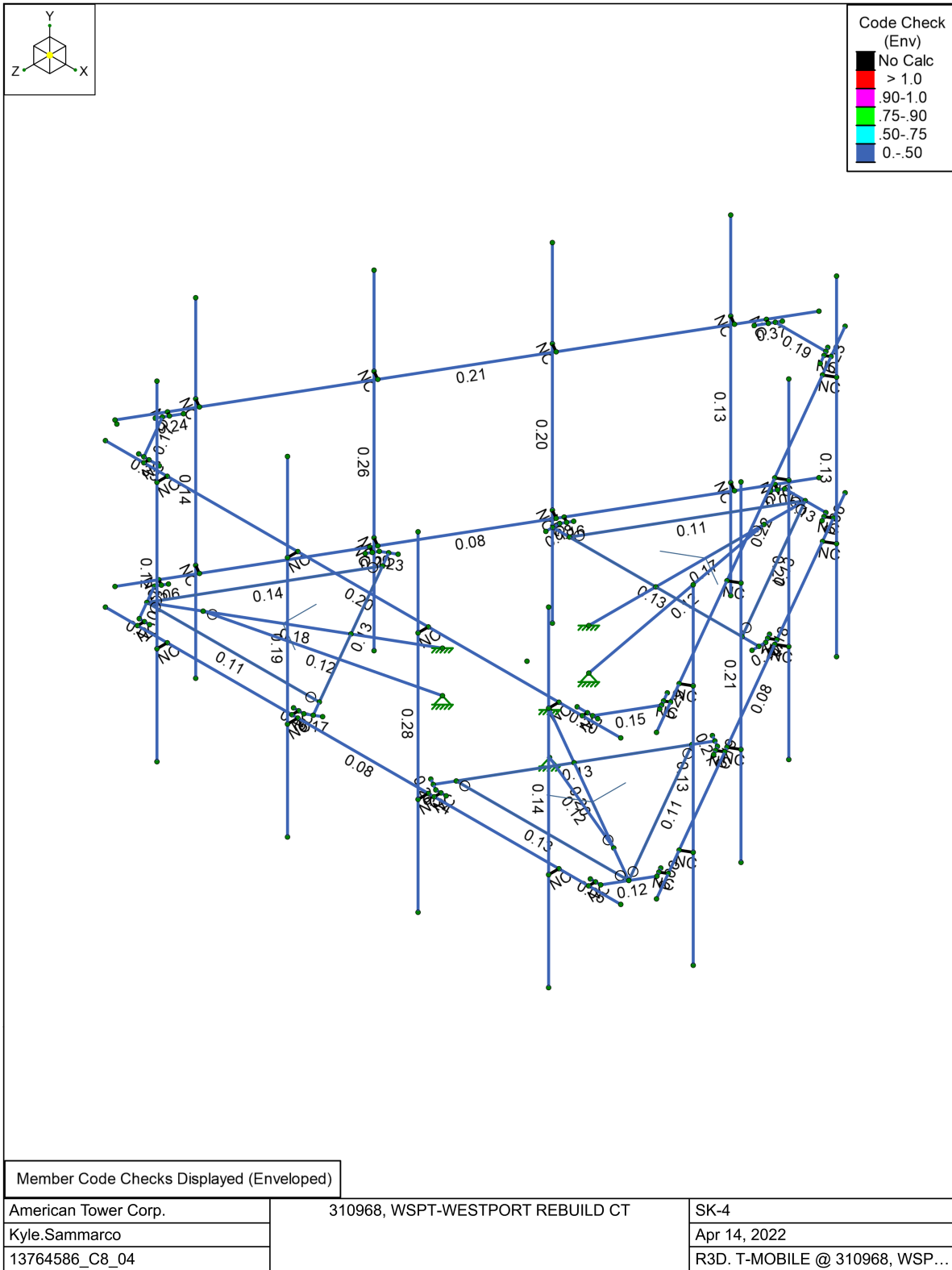


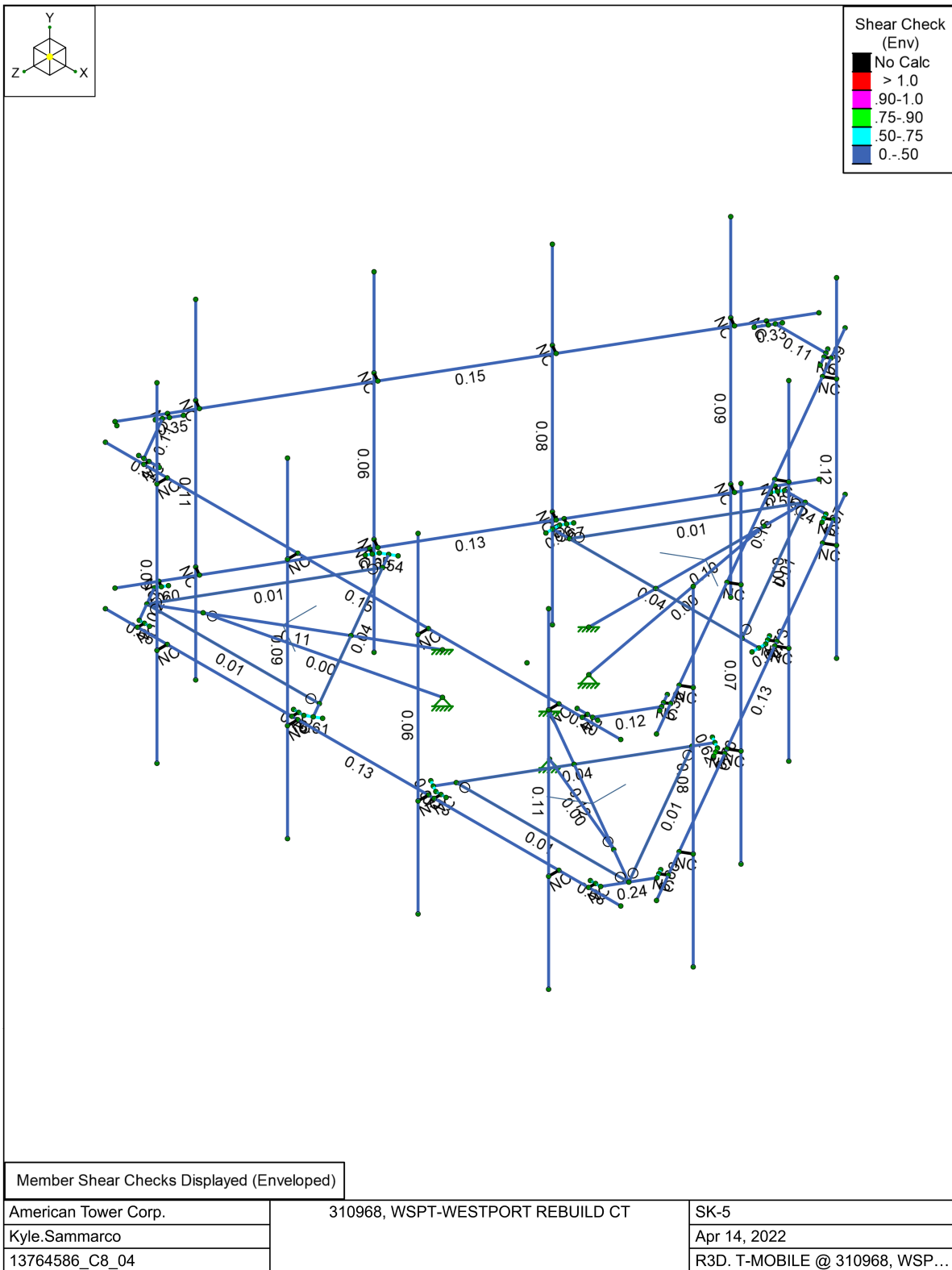


American Tower Corp.	310968, WSPT-WESTPORT REBUILD CT	SK-2
Kyle.Sammarco		Apr 14, 2022
13764586_C8_04		R3D. T-MOBILE @ 310968, WSP...











**Basic Load Cases**

	BLC Description	Category	Y Gravity	Nodal	Point	Distributed	Surface(Plate/Wall)
1	D	DL	-1		24		
2	Di	IL			24	63	3
3	W 0	WL			24	105	
4	W 30	WL			48	210	
5	W 60	WL			48	210	
6	W 90	WL			24	108	
7	W 120	WL			48	210	
8	W 150	WL			48	210	
9	W 180	WL			24	105	
10	W 210	WL			48	210	
11	W 240	WL			48	210	
12	W 270	WL			24	108	
13	W 300	WL			48	210	
14	W 330	WL			48	210	
15	Wi 0	WL			24	105	
16	Wi 30	WL			48	210	
17	Wi 60	WL			48	210	
18	Wi 90	WL			24	108	
19	Wi 120	WL			48	210	
20	Wi 150	WL			48	210	
21	Wi 180	WL			24	105	
22	Wi 210	WL			48	210	
23	Wi 240	WL			48	210	
24	Wi 270	WL			24	108	
25	Wi 300	WL			48	210	
26	Wi 330	WL			48	210	
27	Ws 0	WL			24	105	
28	Ws 30	WL			48	210	
29	Ws 60	WL			48	210	
30	Ws 90	WL			24	108	
31	Ws 120	WL			48	210	
32	Ws 150	WL			48	210	
33	Ws 180	WL			24	105	
34	Ws 210	WL			48	210	
35	Ws 240	WL			48	210	
36	Ws 270	WL			24	108	
37	Ws 300	WL			48	210	
38	Ws 330	WL			48	210	
39	Ev -Y	ELY				63	
40	Eh -Z	ELZ				63	
41	Eh -X	ELX				63	
42	Lm (1)	LL		1			
43	Lm (2)	LL		1			
44	Lm (3)	LL		1			
45	Lm (4)	LL		1			
46	Lm (5)	LL		1			
47	Lm (6)	LL		1			
48	Lm (7)	LL		1			
49	Lm (8)	LL		1			
50	Lm (9)	LL		1			
51	Lm (10)	LL		1			
52	Lm (11)	LL		1			
53	Lm (12)	LL		1			



Company : American Tower Corp.  
 Designer : Kyle.Sammarco  
 Job Number : 13764586\_C8\_04  
 Model Name : 310968, WSPT-WESTPORT REB...

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**Node Boundary Conditions**

	Node Label	X [lb/in]	Y [lb/in]	Z [lb/in]	X Rot [k-in/rad]	Y Rot [k-in/rad]	Z Rot [k-in/rad]
1	N002	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	N006	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	N007	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
4	N120	Reaction	Reaction	Reaction			
5	N121	Reaction	Reaction	Reaction			
6	N122	Reaction	Reaction	Reaction			

**Member Primary Data**

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	H001	N002	N003		HSS4X4X4	Beam	None	A500 Gr. B [SQR]	Typical
2	H002	N004	N005		PL6X0.5	Beam	None	A36	Typical
3	H003	N006	N012		HSS4X4X4	Beam	None	A500 Gr. B [SQR]	Typical
4	H004	N007	N013		HSS4X4X4	Beam	None	A500 Gr. B [SQR]	Typical
5	H005	N008	N010		PL6X0.5	Beam	None	A36	Typical
6	H006	N009	N011		PL6X0.5	Beam	None	A36	Typical
7	H007	N015	N016		HSS4X4X4	Beam	None	A500 Gr. B [SQR]	Typical
8	H008	N021	N023		HSS4X4X4	Beam	None	A500 Gr. B [SQR]	Typical
9	H009	N022	N024		HSS4X4X4	Beam	None	A500 Gr. B [SQR]	Typical
10	H010	N033	N013		L2X2X3	Beam	None	A36	Typical
11	H011	N034	N003		L2X2X3	Beam	None	A36	Typical
12	H012	N029	N012		L2X2X3	Beam	None	A36	Typical
13	H013	N030	N013	270	L2X2X3	Beam	None	A36	Typical
14	H014	N031	N003	270	L2X2X3	Beam	None	A36	Typical
15	H015	N032	N012	270	L2X2X3	Beam	None	A36	Typical
16	H016	N009	N036		PL6X0.5	Beam	None	A36	Typical
17	H017	N004	N042		PL6X0.5	Beam	None	A36	Typical
18	H018	N008	N043		PL6X0.5	Beam	None	A36	Typical
19	H019	N011	N048		PL6X0.5	Beam	None	A36	Typical
20	H020	N005	N049		PL6X0.5	Beam	None	A36	Typical
21	H021	N010	N037		PL6X0.5	Beam	None	A36	Typical
22	H022	N038	N040		(1) 1/2 U-Bolt	Beam	None	SAE J429 Gr. 2	Typical
23	H023	N044	N050		(1) 1/2 U-Bolt	Beam	None	SAE J429 Gr. 2	Typical
24	H024	N045	N051		(1) 1/2 U-Bolt	Beam	None	SAE J429 Gr. 2	Typical
25	H025	N039	N041		(1) 1/2 U-Bolt	Beam	None	SAE J429 Gr. 2	Typical
26	H026	N046	N052		(1) 1/2 U-Bolt	Beam	None	SAE J429 Gr. 2	Typical
27	H027	N047	N053		(1) 1/2 U-Bolt	Beam	None	SAE J429 Gr. 2	Typical
28	H028	N017	N018		PIPE_3.0	Beam	None	A53 Gr. B	Typical
29	H029	N025	N027		PIPE_3.0	Beam	None	A53 Gr. B	Typical
30	H030	N026	N028		PIPE_3.0	Beam	None	A53 Gr. B	Typical
31	H031	N054	N055		PL6X0.375	Beam	None	A36	Typical
32	H032	N056	N058		PL6X0.375	Beam	None	A36	Typical
33	H033	N057	N059		PL6X0.375	Beam	None	A36	Typical
34	H034	N060	N062		PL6X0.375	Beam	None	A36	Typical
35	H035	N061	N063		PL6X0.375	Beam	None	A36	Typical
36	H036	N064	N035		PL6X0.375	Beam	None	A36	Typical
37	H037	N059	N065		PL6X0.375	Beam	None	A36	Typical
38	H038	N055	N071		PL6X0.375	Beam	None	A36	Typical
39	H039	N058	N072		PL6X0.375	Beam	None	A36	Typical
40	H040	N062	N066		PL6X0.375	Beam	None	A36	Typical
41	H041	N063	N073		PL6X0.375	Beam	None	A36	Typical
42	H042	N035	N074		PL6X0.375	Beam	None	A36	Typical
43	H043	N067	N069		(1) 1/2 U-Bolt	Beam	None	SAE J429 Gr. 2	Typical
44	H044	N075	N079		(1) 1/2 U-Bolt	Beam	None	SAE J429 Gr. 2	Typical
45	H045	N076	N080		(1) 1/2 U-Bolt	Beam	None	SAE J429 Gr. 2	Typical



Company : American Tower Corp.  
 Designer : Kyle.Sammarco  
 Job Number : 13764586\_C8\_04  
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**Member Primary Data (Continued)**

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
46	H046	N068	N070		(1) 1/2 U-Bolt	Beam	None	SAE J429 Gr. 2	Typical
47	H047	N077	N081		(1) 1/2 U-Bolt	Beam	None	SAE J429 Gr. 2	Typical
48	H048	N078	N082		(1) 1/2 U-Bolt	Beam	None	SAE J429 Gr. 2	Typical
49	H049	N083	N084		PIPE 2.0	Beam	None	A53 Gr. B	Typical
50	H050	N085	N087		PIPE 2.0	Beam	None	A53 Gr. B	Typical
51	H051	N086	N088		PIPE 2.0	Beam	None	A53 Gr. B	Typical
52	H052	N094	N095	90	L2.5X2.5X4	Beam	None	A36	Typical
53	H053	N091	N092	90	L2.5X2.5X4	Beam	None	A36	Typical
54	H054	N090	N093	90	L2.5X2.5X4	Beam	None	A36	Typical
55	H055	N096	N099		PL6X0.375	Beam	None	A36	Typical
56	H056	N097	N100		PL6X0.375	Beam	None	A36	Typical
57	H057	N098	N101		PL6X0.375	Beam	None	A36	Typical
58	H058	N103	N106		PL6X0.375	Beam	None	A36	Typical
59	H059	N104	N107		PL6X0.375	Beam	None	A36	Typical
60	H060	N102	N105		PL6X0.375	Beam	None	A36	Typical
61	H061	N108	N114		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
62	H062	N109	N115		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
63	H063	N110	N116		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
64	H064	N111	N117		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
65	H065	N112	N118		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
66	H066	N113	N119		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
67	TB067	N120	N123		LL2.5X2.5X3X3	Column	None	A36	Typical
68	TB068	N121	N124		LL2.5X2.5X3X3	Column	None	A36	Typical
69	TB069	N122	N125		LL2.5X2.5X3X3	Column	None	A36	Typical
70	U070	N126	N138		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
71	U071	N139	N140		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
72	MP072	N141	N142		PIPE 2.5	Column	None	A53 Gr. B	Typical
73	U073	N128	N143		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
74	U074	N144	N145		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
75	MP075	N146	N147		PIPE 2.5	Column	None	A53 Gr. B	Typical
76	U076	N129	N148		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
77	U077	N149	N150		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
78	MP078	N151	N152		PIPE 2.5	Column	None	A53 Gr. B	Typical
79	U079	N127	N153		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
80	U080	N154	N155		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
81	MP081	N156	N157		PIPE 2.5	Column	None	A53 Gr. B	Typical
82	U082	N131	N158		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
83	U083	N159	N160		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
84	MP084	N161	N162		PIPE 2.5	Column	None	A53 Gr. B	Typical
85	U085	N133	N163		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
86	U086	N164	N165		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
87	MP087	N166	N167		PIPE 2.5	Column	None	A53 Gr. B	Typical
88	U088	N135	N168		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
89	U089	N169	N170		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
90	MP090	N171	N172		PIPE 2.5	Column	None	A53 Gr. B	Typical
91	U091	N137	N173		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
92	U092	N174	N175		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
93	MP093	N176	N177		PIPE 2.5	Column	None	A53 Gr. B	Typical
94	U094	N130	N178		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
95	U095	N179	N180		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
96	MP096	N181	N182		PIPE 2.5	Column	None	A53 Gr. B	Typical
97	U097	N132	N183		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
98	U098	N184	N185		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
99	MP099	N186	N187		PIPE 2.5	Column	None	A53 Gr. B	Typical
100	U100	N134	N188		(2) 1/2 U-BOLTS	Beam	None	A36	Typical



Company : American Tower Corp.  
 Designer : Kyle.Sammarco  
 Job Number : 13764586\_C8\_04  
 Model Name : 310968, WSPT-WESTPORT REB...

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**Member Primary Data (Continued)**

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
101	U101	N189	N190		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
102	MP102	N191	N192		PIPE 2.5	Column	None	A53 Gr. B	Typical
103	U103	N136	N193		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
104	U104	N194	N195		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
105	MP105	N196	N197		PIPE 2.5	Column	None	A53 Gr. B	Typical

**Member Advanced Data**

	Label	I Release	J Release	Physical	Deflection Ratio Options	Activation	Seismic DR
1	H001			Yes	N/A		None
2	H002			Yes	N/A		None
3	H003			Yes	N/A		None
4	H004			Yes	N/A		None
5	H005			Yes	N/A		None
6	H006			Yes	N/A		None
7	H007			Yes	N/A		None
8	H008			Yes	N/A		None
9	H009			Yes	N/A		None
10	H010	BenPIN	BenPIN	Yes	N/A		None
11	H011	BenPIN	BenPIN	Yes	N/A		None
12	H012	BenPIN	BenPIN	Yes	N/A		None
13	H013	BenPIN	BenPIN	Yes	N/A		None
14	H014	BenPIN	BenPIN	Yes	N/A		None
15	H015	BenPIN	BenPIN	Yes	N/A		None
16	H016			Yes	N/A		None
17	H017			Yes	N/A		None
18	H018			Yes	N/A		None
19	H019			Yes	N/A		None
20	H020			Yes	N/A		None
21	H021			Yes	N/A		None
22	H022			Yes	Default	Exclude	None
23	H023			Yes	Default	Exclude	None
24	H024			Yes	Default	Exclude	None
25	H025			Yes	Default	Exclude	None
26	H026			Yes	Default	Exclude	None
27	H027			Yes	Default	Exclude	None
28	H028			Yes	N/A		None
29	H029			Yes	N/A		None
30	H030			Yes	N/A		None
31	H031			Yes	N/A		None
32	H032			Yes	N/A		None
33	H033			Yes	N/A		None
34	H034			Yes	N/A		None
35	H035			Yes	N/A		None
36	H036			Yes	N/A		None
37	H037			Yes	N/A		None
38	H038			Yes	N/A		None
39	H039			Yes	N/A		None
40	H040			Yes	N/A		None
41	H041			Yes	N/A		None
42	H042			Yes	N/A		None
43	H043			Yes	Default	Exclude	None
44	H044			Yes	Default	Exclude	None
45	H045			Yes	Default	Exclude	None
46	H046			Yes	Default	Exclude	None
47	H047			Yes	Default	Exclude	None



Company : American Tower Corp.  
 Designer : Kyle.Sammarco  
 Job Number : 13764586\_C8\_04  
 Model Name : 310968, WSPT-WESTPORT REB...

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**Member Advanced Data (Continued)**

	Label	I Release	J Release	Physical	Deflection Ratio Options	Activation	Seismic DR
48	H048			Yes	Default	Exclude	None
49	H049			Yes	N/A		None
50	H050			Yes	N/A		None
51	H051			Yes	N/A		None
52	H052			Yes	N/A		None
53	H053			Yes	N/A		None
54	H054			Yes	N/A		None
55	H055			Yes	N/A		None
56	H056			Yes	N/A		None
57	H057			Yes	N/A		None
58	H058			Yes	N/A		None
59	H059			Yes	N/A		None
60	H060			Yes	N/A		None
61	H061			Yes	N/A	Exclude	None
62	H062			Yes	N/A	Exclude	None
63	H063			Yes	N/A	Exclude	None
64	H064			Yes	N/A	Exclude	None
65	H065			Yes	N/A	Exclude	None
66	H066			Yes	N/A	Exclude	None
67	TB067		BenPIN	Yes	** NA **		None
68	TB068		BenPIN	Yes	** NA **		None
69	TB069		BenPIN	Yes	** NA **		None
70	U070			Yes	N/A	Exclude	None
71	U071			Yes	N/A	Exclude	None
72	MP072			Yes	** NA **		None
73	U073			Yes	N/A	Exclude	None
74	U074			Yes	N/A	Exclude	None
75	MP075			Yes	** NA **		None
76	U076			Yes	N/A	Exclude	None
77	U077			Yes	N/A	Exclude	None
78	MP078			Yes	** NA **		None
79	U079			Yes	N/A	Exclude	None
80	U080			Yes	N/A	Exclude	None
81	MP081			Yes	** NA **		None
82	U082			Yes	N/A	Exclude	None
83	U083			Yes	N/A	Exclude	None
84	MP084			Yes	** NA **		None
85	U085			Yes	N/A	Exclude	None
86	U086			Yes	N/A	Exclude	None
87	MP087			Yes	** NA **		None
88	U088			Yes	N/A	Exclude	None
89	U089			Yes	N/A	Exclude	None
90	MP090			Yes	** NA **		None
91	U091			Yes	N/A	Exclude	None
92	U092			Yes	N/A	Exclude	None
93	MP093			Yes	** NA **		None
94	U094			Yes	N/A	Exclude	None
95	U095			Yes	N/A	Exclude	None
96	MP096			Yes	** NA **		None
97	U097			Yes	N/A	Exclude	None
98	U098			Yes	N/A	Exclude	None
99	MP099			Yes	** NA **		None
100	U100			Yes	N/A	Exclude	None
101	U101			Yes	N/A	Exclude	None
102	MP102			Yes	** NA **		None



Company : American Tower Corp.  
 Designer : Kyle.Sammarco  
 Job Number : 13764586\_C8\_04  
 Model Name : 310968, WSPT-WESTPORT REB...

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**Member Advanced Data (Continued)**

	Label	I Release	J Release	Physical	Deflection Ratio Options	Activation	Seismic DR
103	U103			Yes	N/A	Exclude	None
104	U104			Yes	N/A	Exclude	None
105	MP105			Yes	** NA **		None

**Hot Rolled Steel Design Parameters**

	Label	Shape	Length [in]	Lb y-y [in]	Lb z-z [in]	Lcomp top [in]	L-Torque [in]	K y-y	K z-z	Function
1	H001	HSS4X4X4	63				Lbyy	1	1	Lateral
2	H002	PL6X0.5	12				Lbyy	0.65	0.65	Lateral
3	H003	HSS4X4X4	63				Lbyy	1	1	Lateral
4	H004	HSS4X4X4	63				Lbyy	1	1	Lateral
5	H005	PL6X0.5	12				Lbyy	0.65	0.65	Lateral
6	H006	PL6X0.5	12				Lbyy	0.65	0.65	Lateral
7	H007	HSS4X4X4	60				Lbyy	0.65	0.65	Lateral
8	H008	HSS4X4X4	60				Lbyy	0.65	0.65	Lateral
9	H009	HSS4X4X4	60				Lbyy	0.65	0.65	Lateral
10	H010	L2X2X3	50.229				Lbyy	1	1	Lateral
11	H011	L2X2X3	50.229				Lbyy	1	1	Lateral
12	H012	L2X2X3	50.229				Lbyy	1	1	Lateral
13	H013	L2X2X3	50.229				Lbyy	1	1	Lateral
14	H014	L2X2X3	50.229				Lbyy	1	1	Lateral
15	H015	L2X2X3	50.229				Lbyy	1	1	Lateral
16	H016	PL6X0.5	3				Lbyy	1	1	Lateral
17	H017	PL6X0.5	3				Lbyy	1	1	Lateral
18	H018	PL6X0.5	3				Lbyy	1	1	Lateral
19	H019	PL6X0.5	3				Lbyy	1	1	Lateral
20	H020	PL6X0.5	3				Lbyy	1	1	Lateral
21	H021	PL6X0.5	3				Lbyy	1	1	Lateral
22	H022	(1) 1/2 U-Bolt	2				Lbyy	0.65	0.65	Lateral
23	H023	(1) 1/2 U-Bolt	2				Lbyy	0.65	0.65	Lateral
24	H024	(1) 1/2 U-Bolt	2				Lbyy	0.65	0.65	Lateral
25	H025	(1) 1/2 U-Bolt	2				Lbyy	0.65	0.65	Lateral
26	H026	(1) 1/2 U-Bolt	2				Lbyy	0.65	0.65	Lateral
27	H027	(1) 1/2 U-Bolt	2				Lbyy	0.65	0.65	Lateral
28	H028	PIPE 3.0	149.998				Lbyy	1	1	Lateral
29	H029	PIPE 3.0	149.998				Lbyy	1	1	Lateral
30	H030	PIPE 3.0	149.998				Lbyy	1	1	Lateral
31	H031	PL6X0.375	4				Lbyy	0.65	0.65	Lateral
32	H032	PL6X0.375	4				Lbyy	0.65	0.65	Lateral
33	H033	PL6X0.375	4				Lbyy	0.65	0.65	Lateral
34	H034	PL6X0.375	4				Lbyy	0.65	0.65	Lateral
35	H035	PL6X0.375	4				Lbyy	0.65	0.65	Lateral
36	H036	PL6X0.375	4				Lbyy	0.65	0.65	Lateral
37	H037	PL6X0.375	3				Lbyy	1	1	Lateral
38	H038	PL6X0.375	3				Lbyy	1	1	Lateral
39	H039	PL6X0.375	3				Lbyy	1	1	Lateral
40	H040	PL6X0.375	3				Lbyy	1	1	Lateral
41	H041	PL6X0.375	3				Lbyy	1	1	Lateral
42	H042	PL6X0.375	3				Lbyy	1	1	Lateral
43	H043	(1) 1/2 U-Bolt	1.965				Lbyy	0.65	0.65	Lateral
44	H044	(1) 1/2 U-Bolt	1.965				Lbyy	0.65	0.65	Lateral
45	H045	(1) 1/2 U-Bolt	1.965				Lbyy	0.65	0.65	Lateral
46	H046	(1) 1/2 U-Bolt	1.965				Lbyy	0.65	0.65	Lateral
47	H047	(1) 1/2 U-Bolt	1.965				Lbyy	0.65	0.65	Lateral
48	H048	(1) 1/2 U-Bolt	1.965				Lbyy	0.65	0.65	Lateral
49	H049	PIPE 2.0	149.998				Lbyy	0.65	0.65	Lateral





**Hot Rolled Steel Design Parameters (Continued)**

	Label	Shape	Length [in]	Lb y-y [in]	Lb z-z [in]	Lcomp top [in]	L-Torque [in]	K y-y	K z-z	Function
50	H050	PIPE 2.0	149.998			Lbyy		0.65	0.65	Lateral
51	H051	PIPE 2.0	149.998			Lbyy		0.65	0.65	Lateral
52	H052	L2.5X2.5X4	14.71			Lbyy		0.65	0.65	Lateral
53	H053	L2.5X2.5X4	14.71			Lbyy		0.65	0.65	Lateral
54	H054	L2.5X2.5X4	14.71			Lbyy		0.65	0.65	Lateral
55	H055	PL6X0.375	6			Lbyy		0.65	0.65	Lateral
56	H056	PL6X0.375	6			Lbyy		0.65	0.65	Lateral
57	H057	PL6X0.375	6			Lbyy		0.65	0.65	Lateral
58	H058	PL6X0.375	6			Lbyy		0.65	0.65	Lateral
59	H059	PL6X0.375	6			Lbyy		0.65	0.65	Lateral
60	H060	PL6X0.375	6			Lbyy		0.65	0.65	Lateral
61	H061	(2) 1/2 U-BOLTS	1.5			Lbyy		0.65	0.65	Lateral
62	H062	(2) 1/2 U-BOLTS	1.5			Lbyy		0.65	0.65	Lateral
63	H063	(2) 1/2 U-BOLTS	1.5			Lbyy		0.65	0.65	Lateral
64	H064	(2) 1/2 U-BOLTS	1.5			Lbyy		0.65	0.65	Lateral
65	H065	(2) 1/2 U-BOLTS	1.5			Lbyy		0.65	0.65	Lateral
66	H066	(2) 1/2 U-BOLTS	1.5			Lbyy		0.65	0.65	Lateral
67	TB067	LL2.5X2.5X3X3	52.393			Lbyy		1	1	Lateral
68	TB068	LL2.5X2.5X3X3	52.393			Lbyy		1	1	Lateral
69	TB069	LL2.5X2.5X3X3	52.393			Lbyy		1	1	Lateral
70	U070	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
71	U071	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
72	MP072	PIPE 2.5	96	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
73	U073	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
74	U074	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
75	MP075	PIPE 2.5	96	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
76	U076	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
77	U077	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
78	MP078	PIPE 2.5	96	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
79	U079	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
80	U080	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
81	MP081	PIPE 2.5	96	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
82	U082	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
83	U083	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
84	MP084	PIPE 2.5	96	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
85	U085	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
86	U086	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
87	MP087	PIPE 2.5	96	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
88	U088	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
89	U089	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
90	MP090	PIPE 2.5	96	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
91	U091	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
92	U092	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
93	MP093	PIPE 2.5	96	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
94	U094	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
95	U095	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
96	MP096	PIPE 2.5	96	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
97	U097	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
98	U098	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
99	MP099	PIPE 2.5	96	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
100	U100	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
101	U101	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
102	MP102	PIPE 2.5	96	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
103	U103	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
104	U104	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral



Company : American Tower Corp.  
 Designer : Kyle.Sammarco  
 Job Number : 13764586\_C8\_04  
 Model Name : 310968, WSPT-WESTPORT REB...

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**Hot Rolled Steel Design Parameters (Continued)**

Label	Shape	Length [in]	Lb y-y [in]	Lb z-z [in]	Lcomp top [in]	L-Torque [in]	K y-y	K z-z	Function	
105	MP105	PIPE 2.5	96	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral

**Hot Rolled Steel Properties**

Label	E [psi]	G [psi]	Nu	Therm. Coeff. [1e <sup>-5</sup> F <sup>-1</sup> ]	Density [lb/ft <sup>3</sup> ]	Yield [psi]	Ry	Fu [psi]	Rt
1 A500 Gr. B [SQR]	2.9e+07	1.115e+07	0.3	0.65	527	46000	1.4	58000	1.3
2 A36	2.9e+07	1.115e+07	0.3	0.65	490	36000	1.5	58000	1.2
3 SAE J429 Gr. 2	2.9e+07	1.115e+07	0.3	0.65	490	57000	1.1	74000	1.1
4 A53 Gr. B	2.9e+07	1.115e+07	0.3	0.65	490	35000	1.6	60000	1.2

**Envelope Node Reactions**

Node Label	X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1 N002	max 1573.247	5	1193.144	26	7170.183	2	1775.692	26	1798.959	11	855.237	11
2	min -1572.546	11	358.592	20	-3682.036	20	152.967	20	-1795.82	17	-746.123	17
3 N006	max 6268.457	6	1192.946	30	1693.231	24	417.782	14	1889.381	3	-8.734	23
4	min -3247.591	24	359.656	24	-3437.094	6	-1283.523	92	-1886.187	21	-1650.79	29
5 N007	max 2261.424	17	1191.872	34	1916.525	14	430.361	14	2302.143	7	1546.335	192
6	min -5281.561	11	363.119	16	-3658.763	8	-1396.07	80	-2298.482	25	-21.745	18
7 N120	max 28.324	17	1279.276	158	1126.496	20	0	205	0	205	0	205
8	min -28.285	23	-254.991	20	-5388.408	158	0	1	0	1	0	1
9 N121	max 971.51	24	1279.218	114	2693.847	114	0	205	0	205	0	205
10	min -4666.234	114	-254.142	24	-558.166	24	0	1	0	1	0	1
11 N122	max 4636.389	70	1271.178	70	2676.601	70	0	205	0	205	0	205
12	min -459.902	16	-114.866	16	-262.725	16	0	1	0	1	0	1
13 Totals:	max 5184.392	17	6862.6	31	5605.175	2						
14	min -5184.392	23	2601.248	25	-5605.175	8						

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

Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[in]	DirL	Cphi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-y [lb-ft]	phi*Mn z-z [lb-ft]	Cb	Eqn
1 H001	HSS4X4X4	0.172	0	11	0.104	0	z	1124317.885	139518	16180.5	16180.5	3	H1-1b
2 H002	PL6X0.5	0.131	6	8	0.237	6	y	683348.625	97200	1012.5	12150	1.069	H1-1b
3 H003	HSS4X4X4	0.177	0	3	0.106	0	z	3124317.885	139518	16180.5	16180.5	3	H1-1b
4 H004	HSS4X4X4	0.203	0	7	0.115	0	z	7124317.885	139518	16180.5	16180.5	3	H1-1b
5 H005	PL6X0.5	0.127	6	12	0.219	6	y	283348.625	97200	1012.5	12150	1.061	H1-1b
6 H006	PL6X0.5	0.116	6	3	0.241	6	y	283348.625	97200	1012.5	12150	1.339	H1-1b
7 H007	HSS4X4X4	0.128	30	37	0.042	4.375	z	13133484.923	139518	16180.5	16180.5	1.335	H1-1b
8 H008	HSS4X4X4	0.128	30	29	0.042	4.375	z	5133484.923	139518	16180.5	16180.5	1.335	H1-1b
9 H009	HSS4X4X4	0.128	30	33	0.042	4.375	z	8133484.923	139518	16180.5	16180.5	1.335	H1-1b
10 H010	L2X2X3	0.113	25.638	23	0.008	50.229	z	79724.796	23392.8	557.717	1072.365	1.136	H2-1
11 H011	L2X2X3	0.115	25.638	15	0.008	50.229	z	119724.796	23392.8	557.717	1072.365	1.136	H2-1
12 H012	L2X2X3	0.11	25.638	19	0.008	50.229	z	39724.796	23392.8	557.717	1072.365	1.136	H2-1
13 H013	L2X2X3	0.135	25.115	20	0.008	50.229	y	29724.796	23392.8	557.717	1072.365	1.136	H2-1
14 H014	L2X2X3	0.134	25.115	24	0.008	50.229	y	69724.796	23392.8	557.717	1072.365	1.136	H2-1
15 H015	L2X2X3	0.136	25.638	17	0.008	50.229	y	99724.796	23392.8	557.717	1072.365	1.136	H2-1
16 H016	PL6X0.5	0.055	0	5	0.684	0	y	895014.386	97200	1012.5	12150	1.438	H1-1b
17 H017	PL6X0.5	0.057	0	8	0.673	0	y	1295014.386	97200	1012.5	12150	1.596	H1-1b
18 H018	PL6X0.5	0.062	0	12	0.598	0	y	495014.386	97200	1012.5	12150	1.553	H1-1b
19 H019	PL6X0.5	0.057	0	3	0.664	0	y	1295014.386	97200	1012.5	12150	1.937	H1-1b
20 H020	PL6X0.5	0.069	0	8	0.567	0	y	495014.386	97200	1012.5	12150	1.71	H1-1b
21 H021	PL6X0.5	0.065	0	12	0.646	0	y	895014.386	97200	1012.5	12150	1.746	H1-1b
22 H028	PIPE 3.0	0.084	93.749	6	0.131	95.311	8	28251.28	65205	5748.75	5748.75	2.472	H1-1b
23 H029	PIPE 3.0	0.081	18.75	165	0.129	95.311	12	28251.28	65205	5748.75	5748.75	2.796	H1-1b
24 H030	PIPE 3.0	0.081	18.75	110	0.125	95.311	4	28251.28	65205	5748.75	5748.75	2.802	H1-1b



Company : American Tower Corp.  
 Designer : Kyle.Sammarco  
 Job Number : 13764586\_C8\_04  
 Model Name : 310968, WSPT-WESTPORT REB...

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

Member	Shape	Code Check	Loc[in]	LC	Shear	Check	Loc[in]	Dir	C	Pnc [lb]	phi*Mn [lb]	phi*Mn y-y [lb-ft]	phi*Mn z-z [lb-ft]	Cb	Eqn
25	H031	PL6X0.375	0.204	2	11	0.605	2	y	6	70719.442	72900	569.531	9112.5	1.353	H1-1b
26	H032	PL6X0.375	0.229	2	3	0.544	2	y	10	70719.442	72900	569.531	9112.5	1.353	H1-1b
27	H033	PL6X0.375	0.257	2	7	0.608	2	y	2	70719.442	72900	569.531	9112.5	1.351	H1-1b
28	H034	PL6X0.375	0.168	2	9	0.614	2	y	2	70719.442	72900	569.531	9112.5	1.35	H1-1b
29	H035	PL6X0.375	0.205	2	13	0.622	2	y	6	70719.442	72900	569.531	9112.5	1.348	H1-1b
30	H036	PL6X0.375	0.178	2	5	0.556	2	y	11	70719.442	72900	569.531	9112.5	1.35	H1-1b
31	H037	PL6X0.375	0.237	1.5	7	0.733	0	y	8	70011.374	72900	569.531	9112.5	1.705	H1-1b
32	H038	PL6X0.375	0.181	1.5	11	0.73	0	y	12	70011.374	72900	569.531	9112.5	1.734	H1-1b
33	H039	PL6X0.375	0.204	1.5	3	0.651	0	y	4	70011.374	72900	569.531	9112.5	1.729	H1-1b
34	H040	PL6X0.375	0.152	1.5	3	0.746	0	y	8	70011.374	72900	569.531	9112.5	1.544	H1-1b
35	H041	PL6X0.375	0.193	1.5	13	0.757	0	y	12	70011.374	72900	569.531	9112.5	1.711	H1-1b
36	H042	PL6X0.375	0.16	1.5	5	0.668	0	y	4	70011.374	72900	569.531	9112.5	1.745	H1-1b
37	H049	PIPE 2.0	0.197	54.687	8	0.15	12.5	z	2	14560.293	32130	1871.625	1871.625	2.926	H1-1b
38	H050	PIPE 2.0	0.22	54.687	13	0.157	18.75	z	13	14560.293	32130	1871.625	1871.625	3	H1-1b
39	H051	PIPE 2.0	0.207	54.687	4	0.148	18.75	z	4	14560.293	32130	1871.625	1871.625	2.912	H1-1b
40	H052	L2.5X2.5X4	0.194	14.71	13	0.107	14.71	z	5	37765.457	38556	1113.554	2537.388	1.5	H2-1
41	H053	L2.5X2.5X4	0.167	14.71	5	0.11	14.71	z	9	37765.457	38556	1113.554	2537.388	1.5	H2-1
42	H054	L2.5X2.5X4	0.154	0	2	0.116	14.71	z	13	37765.457	38556	1113.554	2537.388	1.5	H2-1
43	H055	PL6X0.375	0.199	3	13	0.404	1.5	y	2	68085.235	72900	569.531	9112.5	1.466	H1-1b
44	H056	PL6X0.375	0.227	1.5	4	0.389	1.5	y	6	68085.235	72900	569.531	9112.5	1.515	H1-1b
45	H057	PL6X0.375	0.239	1.5	7	0.35	1.5	y	9	68085.235	72900	569.531	9112.5	1.533	H1-1b
46	H058	PL6X0.375	0.295	1.5	8	0.361	3	y	12	68085.235	72900	569.531	9112.5	1.519	H1-1b
47	H059	PL6X0.375	0.366	1.5	13	0.326	3	y	5	68085.235	72900	569.531	9112.5	1.387	H1-1b
48	H060	PL6X0.375	0.332	1.5	4	0.343	3	y	8	68085.235	72900	569.531	9112.5	1.519	H1-1b
49	TB067	LL2.5X2.5X3X3	0.124	0	158	0.002	52.393	y	27	44498.405	58320	3954.307	2549.586	1	H1-1b*
50	TB068	LL2.5X2.5X3X3	0.124	0	114	0.002	52.393	y	28	44498.405	58320	3954.307	2549.586	1.136	H1-1b*
51	TB069	LL2.5X2.5X3X3	0.124	0	70	0.002	52.393	y	33	44498.405	58320	3954.307	2549.586	1.136	H1-1b*
52	MP072	PIPE 2.5	0.143	67	12	0.112	67	z	8	32594.036	50715	3596.25	3596.25	3	H1-1b
53	MP075	PIPE 2.5	0.277	67	13	0.057	67	z	9	32594.036	50715	3596.25	3596.25	1.788	H1-1b
54	MP078	PIPE 2.5	0.191	67	2	0.088	67	z	7	32594.036	50715	3596.25	3596.25	2.306	H1-1b
55	MP081	PIPE 2.5	0.115	67	4	0.091	67	z	7	32594.036	50715	3596.25	3596.25	2.379	H1-1b
56	MP084	PIPE 2.5	0.137	67	8	0.115	67	z	4	32594.036	50715	3596.25	3596.25	2.079	H1-1b
57	MP087	PIPE 2.5	0.264	67	10	0.058	67	z	5	32594.036	50715	3596.25	3596.25	1.727	H1-1b
58	MP090	PIPE 2.5	0.198	67	11	0.08	67	z	3	32594.036	50715	3596.25	3596.25	3	H1-1b
59	MP093	PIPE 2.5	0.129	67	12	0.088	67	z	4	32594.036	50715	3596.25	3596.25	3	H1-1b
60	MP096	PIPE 2.5	0.126	67	2	0.122	67	z	13	32594.036	50715	3596.25	3596.25	2.261	H1-1b
61	MP099	PIPE 2.5	0.269	67	6	0.066	67	z	13	32594.036	50715	3596.25	3596.25	1.579	H1-1b
62	MP102	PIPE 2.5	0.209	67	7	0.073	67	z	11	32594.036	50715	3596.25	3596.25	1.64	H1-1b
63	MP105	PIPE 2.5	0.133	67	8	0.084	67	z	12	32594.036	50715	3596.25	3596.25	1.371	H1-1b



**AMERICAN TOWER®**  
CORPORATION

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## Structural Analysis Report

**Structure** : 140 ft Monopole  
**ATC Site Name** : WSPT-WESTPORT REBUILD CT,CT  
**ATC Site Number** : 310968  
**Engineering Number** : 13764586\_C3\_05  
**Proposed Carrier** : T-MOBILE  
**Carrier Site Name** : CT323/SS Tower Rebuilic  
**Carrier Site Number** : CT11323A  
**Site Location** : 180A Bayberry Lane  
Westport, CT 06880-2844  
41.1716, -73.3286  
**County** : Fairfield  
**Date** : April 21, 2022  
**Max Usage** : 79%  
**Result** : Pass

Prepared By:

Daniel K. Sheek  
Structural Engineer I

Reviewed By:



Authorized by "EOR"  
22 Apr 2022 09:23:09

**COA : PEC.0001553**



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## Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 140 ft Monopole to reflect the change in loading by T-MOBILE.

## Supporting Documents

<b>Tower Drawings</b>	PJF, Penn Summit Job #29204-0171, dated July 1, 2004
<b>Foundation Drawing</b>	PJF, Penn Summit Job #29204-0171, dated June 10, 2004
<b>Geotechnical Report</b>	GeoTechnologies Project #1-02-1190-EA, dated September 23, 2002
<b>Mount Analysis</b>	ATC Project #13764586_C8_04, dated April 14, 2022

## 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>	118 mph (3-second gust)
<b>Basic Wind Speed w/ Ice:</b>	50 mph (3-second gust) w/ 1.00" radial ice concurrent
<b>Code:</b>	ANSI/TIA-222-H / 2015 IBC / 2018 Connecticut State Building Code
<b>Exposure Category:</b>	B
<b>Risk Category:</b>	II
<b>Topographic Factor Procedure:</b>	Method 1
<b>Topographic Category:</b>	1
<b>Crest Height (H):</b>	0 ft
<b>Crest Length (L):</b>	0 ft
<b>Spectral Response:</b>	$S_s = 0.23$ , $S_i = 0.06$
<b>Site Class:</b>	D - Stiff Soil - Default

## Conclusion

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

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

**Existing and Reserved Equipment**

Elev. <sup>1</sup> (ft)	Qty	Equipment	Mount Type	Lines	Carrier
147.0	3	dbSpectra DS7C09P36U-D	Triangular Platform with Handrails	(6) 1 5/8" Coax (2) 3/8" Coax (4) 7/8" Coax (1) 1/2" Coax (1) EW90	TOWN OF WESTPORT
143.4	1	Generic 12' Omni			
	1	Generic 12' Omni			
142.8	2	Generic 8' Omni			
142.6	1	Generic 6' FM antenna			
141.0	1	Generic 12' Dipole			
140.0	1	TX RX Systems 432F-83W-01-C-110/110R/48/48R			
	1	RFS SC3-W100AB			
138.0	1	Generic 6' Omni	Triangular Low Profile Platform	(4) 1 1/4" Hybriflex Cable	SPRINT NEXTEL
130.0	3	Alcatel-Lucent 800 MHz 2X50W RRH w/ Filter			
	3	Alcatel-Lucent 4x40W RRH (91 lb)			
	3	RFS APXVSP18-C-A20			
	3	RFS APXV9TM14-ALU-I20*			
125.4	1	Generic 9' Omni	Triangular Low Profile Platform	(2) 1 1/4" Coax (1) 1/2" Coax	EVERSOURCE ENERGY
115.5	2	Diamond X50A	Leg	(2) 1/2" Coax	SENET, INC.
114.9	1	RFS DB-C1-12C-24AB-0Z	Triangular Platform with Handrails	(2) 1 1/4" Hybriflex Cable (12) 1 5/8" Coax (1) 1 5/8" Hybriflex	VERIZON WIRELESS
111.3	3	Alcatel-Lucent B13 RRH4x30-4R			
110.1	3	Alcatel-Lucent B25 RRH4x30			
110.0	3	Nokia AirScale RRH 4T4R B5 160W AHCA			
	3	Commscope CBC78T-DS-43-2X			
	3	Alcatel-Lucent RRH 2X60-1900			
	6	Commscope JAHH-65B-R3B			
	3	Antel BXA-70080/6CF			
110.0	2	RFS DB-T1-6Z-8AB-0Z			
	3	Amphenol Antel BXA-171063/8CF			
	3	Alcatel-Lucent B66a RRH4x45 (AWS-3)			
103.8	3	Ericsson RRUS 32 B2	Triangular Low Profile Platform	(1) 0.39" (10mm) Fiber Trunk (4) 0.78" (19.7mm) 8 AWG 6 (4) 2" conduit (3) 0.40" (10.3mm) Fiber (4) 0.92" (23.4mm) Cable (18) 1 5/8" Coax (2) 3/8" (0.38"-9.5mm) RET Control Cable	AT&T MOBILITY
103.6	1	Raycap DC6-48-60-18-8F ("Squid")			
102.2	3	Ericsson RRUS-11 (50 lbs.)			
102.0	3	Ericsson Air 6449 B77D			
100.1	3	CCI HPA-65R-BUU-H6			
100.0	3	Ericsson RRUS 4478 B14			
	3	Ericsson RRUS 4449 B5, B12			
	3	Ericsson RRUS 4426 B66			
	1	Raycap DC6-48-60-18-8F ("Squid")			
	3	Ericsson RRUS 32 B2			
	3	CCI DMP65R-BU8D			
	3	CCI TPA-65R-BU6DA-K			
99.7	6	Powerwave Allgon 7770.00			
	12	Powerwave Allgon LGP21401			
98.6	3	Ericsson AIR 6419 B77G			
77.0	3	Fujitsu TA08025-B604			
	3	Fujitsu TA08025-B605			
	1	Raycap RDIDC-9181-PF-48			
77.0	3	JMA Wireless MX08FRO665-21			

**Equipment to be Removed**

Elev. <sup>1</sup> (ft)	Qty	Equipment	Mount Type	Lines	Carrier
87.0	3	RFS ATMAA1412D-1A20	-	(2) 1 1/4" (1.25"-31.8mm) Fiber (1) 1 5/8" (1.63"-41.3mm) Fiber (12) 1 5/8" Coax	T-MOBILE
	3	Ericsson Radio 4449 B12,B71			
	3	RFS APXVAARR24_43-U-NA20			
	3	Ericsson AIR32 B66Aa/B2a			
	3	Ericsson AIR 21, 1.3M, B4A B2P			

**Proposed Equipment**

Elev. <sup>1</sup> (ft)	Qty	Equipment	Mount Type	Lines	Carrier
132.0	3	Ericsson 4460 BAND 2/25	Triangular Platform with Handrails	(4) 1.99" (50.7mm) Hybrid	T-MOBILE
	3	Ericsson 4480 BAND 71			
	3	Commscope VV-65A-R1			
	3	Ericsson AIR 6419 B41			
	3	RFS APXVAALL24 43-U-NA20			

<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 inside the pole shaft.



### Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	70%	Pass
Shaft	79%	Pass
Base Plate	27%	Pass

### Foundations

Reaction Component	Original Design Reactions	Factored Design Reactions*	Analysis Reactions	% of Design
Moment (Kips-Ft)	3550.0	4792.5	3184.3	66%
Shear (Kips)	35.0	47.2	29.9	63%

\* The design reactions are factored by 1.35 per ANSI/TIA-222-H, Sec. 15.6.2

The structure base reactions resulting from this analysis are acceptable when compared to those shown on the original structure drawings, therefore no modification or reinforcement of the foundation will be required.

### Deflection and Sway\*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
140.0	RFS SC3-W100AB	TOWN OF WESTPORT	1.758	1.340
132.0	RFS APXVAALL24 43-U-NA20	T-MOBILE	1.572	1.330
	Commscope VV-65A-R1			
	Ericsson AIR 6419 B41			
	Ericsson 4460 BAND 2/25			
	Ericsson 4480 BAND 71			

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

## **Standard Conditions**

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

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

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

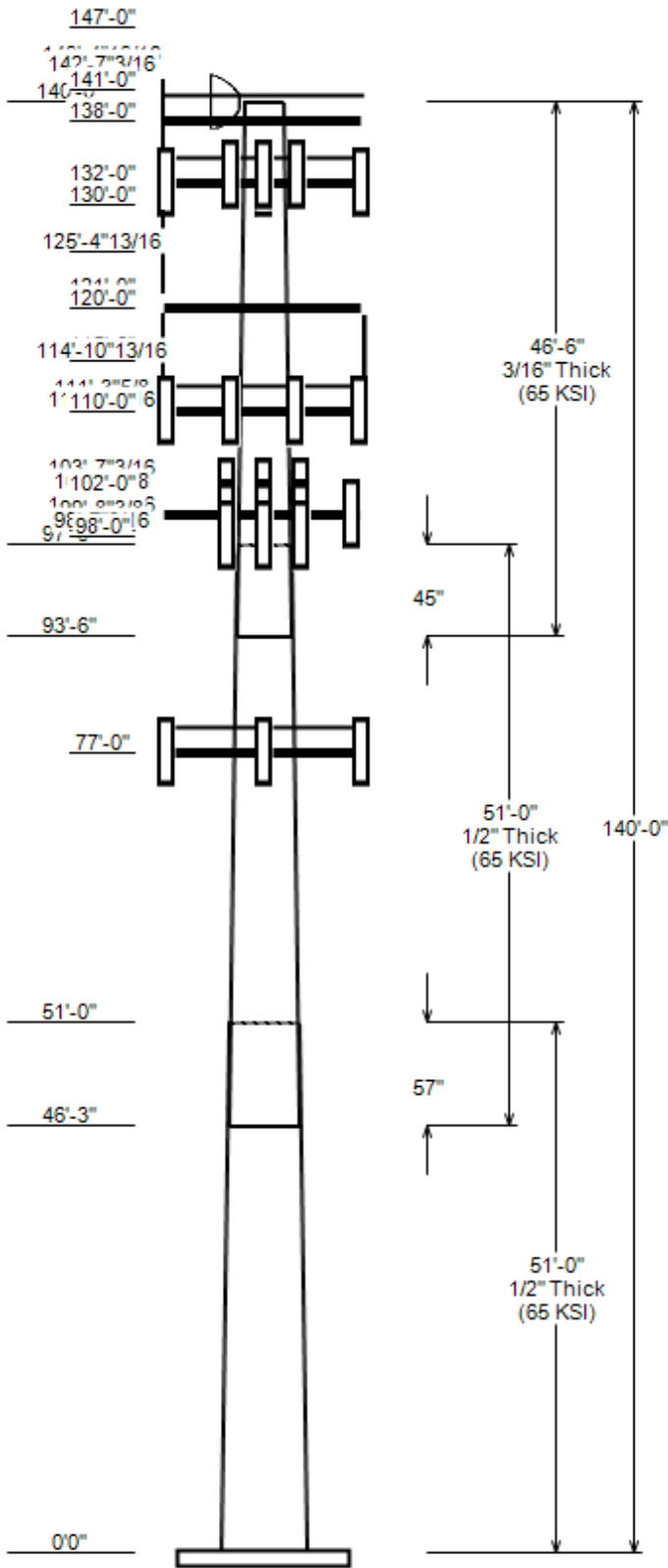
All assets of American Tower Corporation, its affiliates, and subsidiaries (collectively “American Tower”) are inspected at regular intervals. Based upon these inspections and in the absence of information to the contrary, American Tower assumes that all structures were constructed in accordance with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

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

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

Asset : 310968, WSPT-WESTPORT REBUILD CT  
 Client : T-MOBILE  
 Code : ANSI/TIA-222-H

Height : 140 ft  
 Base Width : 47.13  
 Shape : 18 Sides



**SITE PARAMETERS**

**Nominal Wind:** 118 mph wind with no ice **Topo Category:** 1  
**Ice Wind:** 50 mph wind with 1" radial **Topo Method:** Method 1  
**Base Elev (ft):** 0.00 **Taper :** 0.20000 (in/ft) **Topo Feature:**  
**Structure Class:** II **Exposure :** B **S<sub>s</sub> :** 0.227 **S<sub>1</sub> :** 0.056

**SECTION PROPERTIES**

Shaft Section	Length (ft)	Diameter (in)		Thick Joint (in)	Type	Overlap Length (in)	Shape	Steel Grade (ksi)
		Across Flats Top	Across Flats Bottom					
1	51.000	36.93	47.13	0.500		0.000	18 Sides	65
2	51.000	28.68	38.88	0.500	Slip Joint	57.000	18 Sides	65
3	46.500	20.50	29.80	0.188	Slip Joint	45.000	18 Sides	65

**DISCRETE APPURTENANCE**

Attach Elev (ft)	Force Elev (ft)	Qty	Description
147.0	147.0	3	dbSpectra DS7C09P36U-D
143.4	143.4	1	Generic 12' Omni
143.4	143.4	1	Generic 12' Omni
142.8	142.8	2	Generic 8' Omni
142.6	142.6	1	Generic 6' FM antenna
141.0	141.0	1	Generic 12' Dipole
140.0	140.0	1	TX RX Systems 432F-83W-01-C-11
140.0	140.0	1	RFS SC3-W100AB
138.0	138.0	1	Generic 6' Omni
138.0	138.0	1	Generic Flat Platform with Han
132.0	132.0	3	Ericsson 4460 BAND 2/25
132.0	132.0	3	Ericsson 4480 BAND 71
132.0	132.0	3	Commscope VV-65A-R1
132.0	132.0	3	Ericsson AIR 6419 B41
132.0	132.0	3	RFS APXVAALL24 43-U-NA20
132.0	132.0	1	Site Pro 1 RMQP-496-HK
130.0	132.8	3	Alcatel-Lucent 800 MHz 2X50W R
130.0	132.9	3	Alcatel-Lucent 4x40W RRH (91 I
130.0	133.6	3	Alcatel-Lucent TD-RRH8x20-25 w
130.0	132.7	3	RFS APXV9TM14-ALU-I20*
130.0	132.0	3	RFS APXVSP18-C-A20
125.4	125.4	1	Generic 9' Omni
121.0	123.0	1	Andrew DB586
120.0	120.0	1	Generic Round Low Profile Plat
115.5	115.5	2	Diamond X50A
114.9	114.9	1	RFS DB-C1-12C-24AB-0Z
111.3	111.3	3	Alcatel-Lucent B13 RRH4x30-4R
110.1	110.1	3	Alcatel-Lucent B25 RRH4x30
110.0	110.0	3	Commscope CBC78T-DS-43-2X
110.0	110.0	3	Nokia AirScale RRH 4T4R B5 160
110.0	110.0	3	Alcatel-Lucent RRH 2X60-1900
110.0	110.0	3	Alcatel-Lucent B66a RRH4x45 (A
110.0	110.0	3	Amphenol Antel BXA-171063/8CF
110.0	110.0	2	RFS DB-T1-6Z-8AB-0Z
110.0	110.0	3	Antel BXA-70080/6CF
110.0	110.0	6	Commscope JAHH-65B-R3B
110.0	110.0	1	Generic Round Platform with Ha
103.8	103.8	3	Ericsson RRUS 32 B2
103.6	103.6	1	Raycap DC6-48-60-18-8F ("Squid
102.2	102.2	3	Ericsson RRUS-11 (50 lbs.)
102.0	102.0	3	Ericsson Air 6449 B77D
100.1	100.1	3	CCI HPA-65R-BUU-H6
100.0	100.0	1	Raycap DC6-48-60-18-8F ("Squid
100.0	100.0	3	Ericsson RRUS 4426 B66

**JOB INFORMATION**

Asset : 310968, WSPT-WESTPORT REBUILD CT  
 Client : T-MOBILE  
 Code : ANSI/TIA-222-H

Height : 140 ft  
 Base Width : 47.13  
 Shape : 18 Sides

**DISCRETE APPURTENANCE**

Attach Elev (ft)	Force Elev (ft)	Qty	Description
100.0	100.0	3	Ericsson RRUS 4449 B5, B12
100.0	100.0	3	Ericsson RRUS 4478 B14
100.0	100.0	3	Ericsson RRUS 32 B2
100.0	100.0	2	Raycap DC9-48-60-24-8C-EV
100.0	100.0	3	CCI TPA-65R-BU6DA-K
100.0	100.0	3	CCI DMP65R-BU8D
100.0	100.0	1	Generic Flat Low Profile Platf
99.7	99.7	6	Powerwave Allgon 7770.00
98.6	98.6	12	Powerwave Allgon LGP21401
98.0	98.0	3	Ericsson AIR 6419 B77G
77.0	77.0	1	Raycap RDIDC-9181-PF-48
77.0	77.0	3	Fujitsu TA08025-B605
77.0	77.0	3	Fujitsu TA08025-B604
77.0	77.0	3	JMA Wireless MX08FRO665-21
77.0	77.0	1	Generic Flat Platform with Han

**LINEAR APPURTENANCE**

Elev From (ft)	Elev To (ft)	Description	Exp To Wind
0.0	147.0	1 5/8" Coax	No
0.0	142.6	7/8" Coax	No
0.0	142.6	3/8" Coax	No
0.0	142.6	1 5/8" Coax	No
0.0	140.0	EW90	No
0.0	140.0	1/2" Coax	No
0.0	132.0	1.99" (50.7mm) Hybrid	No
0.0	130.0	1 1/4" Hybriflex Cable	No
0.0	121.0	1/2" Coax	No
0.0	121.0	1 1/4" Coax	No
0.0	115.6	1/2" Coax	No
0.0	114.7	1 1/4" Hybriflex Cable	No
0.0	110.0	1 5/8" Hybriflex	No
0.0	110.0	1 5/8" Coax	No
0.0	110.0	1 5/8" Coax	No
0.0	110.0	1 1/4" Hybriflex Cable	No
0.0	103.6	2" conduit	No
0.0	103.6	0.78" (19.7mm) 8 AWG 6	No
0.0	103.6	0.39" (10mm) Fiber Trunk	No
0.0	100.0	3/8" (0.38"- 9.5mm) RET Control Cable	No
0.0	100.0	3/8" (0.38"- 9.5mm) RET Control Cable	No
0.0	100.0	2" conduit	No
0.0	100.0	1 5/8" Coax	No
0.0	100.0	1 5/8" Coax	No
0.0	100.0	0.92" (23.4mm) Cable	No
0.0	100.0	0.78" (19.7mm) 8 AWG 6	No
0.0	100.0	0.40" (10.3mm) Fiber	No
0.0	77.0	1.75" (44.5mm) Hybrid	No

**LOAD CASES**

1.2D + 1.0W Normal	118 mph wind with no ice
0.9D + 1.0W Normal	118 mph wind with no ice
1.2D + 1.0Di + 1.0Wi Nor	50 mph wind with 1" radial ice
1.2D + 1.0Ev + 1.0Eh Nor	Seismic
0.9D - 1.0Ev + 1.0Eh Nor	Seismic (Reduced DL)
1.0D + 1.0W Service Norm	60 mph Wind with No Ice

**REACTIONS**

Load Case	Moment (kip-ft)	Shear (Kip)	Axial (Kip)
1.2D + 1.0W Normal	3184.28	29.94	61.62

JOB INFORMATION

Asset : 310968, WSPT-WESTPORT REBUILD CT  
 Client : T-MOBILE  
 Code : ANSI/TIA-222-H

Height : 140 ft  
 Base Width : 47.13  
 Shape : 18 Sides

**REACTIONS**

<b>Load Case</b>	<b>Moment (kip-ft)</b>	<b>Shear (Kip)</b>	<b>Axial (Kip)</b>
0.9D + 1.0W Normal	3134.81	29.91	46.20
1.2D + 1.0Di + 1.0Wi Normal	833.57	7.80	80.17
1.2D + 1.0Ev + 1.0Eh Normal	177.76	1.55	62.16
0.9D - 1.0Ev + 1.0Eh Normal	174.18	1.55	42.40
1.0D + 1.0W Service Normal	729.79	6.92	51.40

**DISH DEFLECTIONS**

<b>Load Case</b>	<b>Attach Elev (ft)</b>	<b>Deflection (in)</b>	<b>Rotation (deg)</b>
1.0D + 1.0W Service Normal	140.00	21.103	1.341

ASSET: 310968, WSPT-WESTPORT REBUILD CT  
CUSTOMER: T-MOBILE

CODE: ANSI/TIA-222-H  
ENG NO: 13764586\_C3\_05

### ANALYSIS PARAMETERS

<b>Location:</b>	Fairfield County,CT	<b>Height:</b>	140 ft
<b>Type and Shape:</b>	Taper, 18 Sides	<b>Base Diameter:</b>	47.13 in
<b>Manufacturer:</b>	Undetermined	<b>Top Diameter:</b>	20.50 in
<b>K<sub>d</sub> (non-service):</b>	0.95	<b>Taper:</b>	0.2000 in/ft
<b>K<sub>e</sub>:</b>	0.99	<b>Rotation:</b>	0.000°

### ICE & WIND PARAMETERS

<b>Exposure Category:</b>	B	<b>Design Wind Speed w/o Ice:</b>	118 mph
<b>Risk Category:</b>	II	<b>Design Wind Speed w/Ice:</b>	50 mph
<b>Topo Factor Procedure:</b>	Method 1	<b>Operational Wind Speed:</b>	60 mph
<b>Topographic Category:</b>	1	<b>Design Ice Thickness:</b>	1.00 in
<b>Crest Height:</b>	0 ft	<b>HMSL:</b>	250.00 ft

### SEISMIC PARAMETERS

<b>Analysis Method:</b>	Equivalent Lateral Force Method		
<b>Site Class:</b>	D - Stiff Soil	<b>Period Based on Rayleigh Method (sec):</b>	2.55
<b>T<sub>L</sub> (sec):</b>	6	<b>P:</b>	1
<b>S<sub>s</sub>:</b>	0.227	<b>S<sub>1</sub>:</b>	0.056
<b>F<sub>a</sub>:</b>	1.600	<b>F<sub>v</sub>:</b>	2.400
<b>S<sub>ds</sub>:</b>	0.242	<b>S<sub>dt</sub>:</b>	0.090
		<b>C<sub>s</sub>:</b>	0.030
		<b>C<sub>s</sub> Max:</b>	0.030
		<b>C<sub>s</sub> Min:</b>	0.030

### LOAD CASES

1.2D + 1.0W Normal	118 mph wind with no ice
0.9D + 1.0W Normal	118 mph wind with no ice
1.2D + 1.0Di + 1.0Wi Normal	50 mph wind with 1" radial ice
1.2D + 1.0Ev + 1.0Eh Normal	Seismic
0.9D - 1.0Ev + 1.0Eh Normal	Seismic (Reduced DL)
1.0D + 1.0W Service Normal	60 mph Wind with No Ice

SHAFT SECTION PROPERTIES

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint len (in)	Weight (lb)	Bottom						Top							
							Dia (in)	Elev (ft)	Area (in <sup>2</sup> )	Ix (in <sup>4</sup> )	W/t Ratio	D/t Ratio	Dia (in)	Elev (in)	Area (in <sup>2</sup> )	Ix (in <sup>4</sup> )	W/t Ratio	D/t Ratio	Taper (in/ft)	
1-18	51.00	0.5000	65		0.00	11,437	47.13	0.000	74.00	20,328.7	14.86	94.26	36.93	51.00	57.81	9,692.3	11.26	73.86	0.2000	
2-18	51.00	0.5000	65	Slip	57.00	9,165	38.88	46.250	60.90	11,333.7	11.95	77.76	28.68	97.25	44.71	4,485.1	8.35	57.35	0.2000	
3-18	46.50	0.1875	65	Slip	45.00	2,351	29.80	93.500	17.62	1,952.7	26.26	158.94	20.50	140.00	12.09	630.1	17.52	109.33	0.2000	
Shaft Weight						22,953														

DISCRETE APPURTENANCE PROPERTIES

Attach Elev (ft)	Description	Qty	Ka	Vert Ecc (ft)	No Ice			Ice		
					Weight (lb)	EPAA (sf)	Orientation Factor	Weight (lb)	EPAA (sf)	Orientation Factor
147.00	dbSpectra DS7C09P36U-D	3	0.75	0.000	70.00	3.550	1.00	130.81	6.896	1.00
143.40	Generic 12' Omni	1	0.75	0.000	40.00	3.600	1.00	100.19	6.448	1.00
143.40	Generic 12' Omni	1	0.75	0.000	40.00	3.600	1.00	100.19	6.448	1.00
142.80	Generic 8' Omni	2	0.75	0.000	25.00	2.400	1.00	65.44	4.221	1.00
142.60	Generic 6' FM antenna	1	0.75	0.000	30.00	13.450	1.00	481.31	16.500	1.00
141.00	Generic 12' Dipole	1	0.75	0.000	40.00	4.510	1.00	128.40	9.255	1.00
140.00	TX RX Systems 432F-83W-01-C-11	1	0.75	0.000	18.00	1.500	1.00	49.28	2.039	1.00
140.00	RFS SC3-W100AB	1	0.75	0.000	40.00	10.737	1.00	223.95	12.007	1.00
138.00	Generic Flat Platform with Han	1	1.00	0.000	2500.00	42.400	1.00	3675.61	56.279	1.00
138.00	Generic 6' Omni	1	1.00	0.000	25.00	1.760	1.00	55.51	2.592	1.00
132.00	Site Pro 1 RMQP-496-HK	1	1.00	0.000	1799.00	35.860	1.00	2707.57	51.830	1.00
132.00	RFS APXVAALL24 43-U-NA20	3	0.75	0.000	122.80	20.243	0.63	379.50	22.687	0.63
132.00	Ericsson AIR 6419 B41	3	0.75	0.000	83.30	6.322	0.63	183.04	7.437	0.63
132.00	Commscope VV-65A-R1	3	0.75	0.000	23.80	5.928	0.63	101.19	7.324	0.63
132.00	Ericsson 4480 BAND 71	3	0.75	0.000	81.00	2.878	0.67	131.17	3.618	0.67
132.00	Ericsson 4460 BAND 2/25	3	0.75	0.000	109.00	2.564	0.67	167.25	3.259	0.67
130.00	RFS APXV9TM14-ALU-I20*	3	0.80	2.700	55.10	6.342	0.66	145.61	7.774	0.66
130.00	Alcatel-Lucent TD-RRH8x20-25 w	3	0.80	3.600	70.00	4.046	0.61	132.13	4.919	0.61
130.00	Alcatel-Lucent 4x40W RRH (91 I	3	0.80	2.900	91.00	3.287	0.72	162.97	4.071	0.72
130.00	Alcatel-Lucent 800 MHz 2X50W R	3	0.80	2.800	64.00	2.058	0.67	114.65	2.688	0.67
130.00	RFS APXVSP18-C-A20	3	0.80	2.000	57.00	8.024	0.69	170.39	9.858	0.69
125.40	Generic 9' Omni	1	0.80	0.000	25.00	2.700	1.00	69.91	4.832	1.00
121.00	Andrew DB586	1	1.00	2.000	8.30	0.740	1.00	12.08	1.077	1.00
120.00	Generic Round Low Profile Plat	1	1.00	0.000	1875.00	21.700	1.00	2403.08	34.219	1.00
115.50	Diamond X50A	2	1.00	0.000	2.30	1.120	1.00	3.24	2.284	1.00
114.90	RFS DB-C1-12C-24AB-0Z	1	0.75	0.000	32.00	4.056	1.00	114.54	4.942	1.00
111.30	Alcatel-Lucent B13 RRH4x30-4R	3	0.75	0.000	57.80	2.140	0.67	102.50	2.787	0.67
110.10	Alcatel-Lucent B25 RRH4x30	3	0.75	0.000	53.00	2.120	0.67	92.10	2.763	0.67
110.00	Generic Round Platform with Ha	1	1.00	0.000	2500.00	27.200	1.00	3546.58	42.995	1.00
110.00	Commscope JAHH-65B-R3B	6	0.75	0.000	60.60	9.113	0.69	191.32	10.906	0.69
110.00	Antel BXA-70080/6CF	3	0.75	0.000	18.00	5.836	0.72	99.20	7.373	0.72
110.00	RFS DB-T1-6Z-8AB-0Z	2	0.75	0.000	44.00	4.800	0.72	125.32	5.718	0.72
110.00	Amphenol Antel BXA-171063/8CF	3	0.75	0.000	10.50	2.900	0.67	53.99	3.963	0.67
110.00	Alcatel-Lucent RRH 2X60-1900	3	0.75	0.000	39.60	1.876	0.50	75.07	2.481	0.50
110.00	Alcatel-Lucent B66a RRH4x45 (A	3	0.75	0.000	67.00	2.660	0.67	112.81	3.402	0.67
110.00	Commscope CBC78T-DS-43-2X	3	0.75	0.000	20.70	0.552	0.50	34.98	0.880	0.50
110.00	Nokia AirScale RRH 4T4R B5 160	3	0.75	0.000	35.30	1.286	0.50	60.71	1.772	0.50
103.80	Ericsson RRUS 32 B2	3	0.80	0.000	53.00	2.743	0.67	100.35	3.496	0.67
103.60	Raycap DC6-48-60-18-8F ("Squid	1	0.80	0.000	31.80	1.470	1.00	71.49	1.919	1.00
102.20	Ericsson RRUS-11 (50 lbs.)	3	0.80	0.000	50.00	2.566	0.67	93.82	3.239	0.67
102.00	Ericsson Air 6449 B77D	3	0.80	0.000	81.60	4.028	0.65	147.64	4.911	0.65
100.10	CCI HPA-65R-BUU-H6	3	0.80	0.000	51.00	9.658	0.69	191.75	11.436	0.69
100.00	Generic Flat Low Profile Platf	1	1.00	0.000	1875.00	26.100	1.00	2394.44	38.345	1.00
100.00	CCI DMP65R-BU8D	3	0.80	0.000	95.70	17.871	0.63	313.70	20.235	0.63
100.00	CCI TPA-65R-BU6DA-K	3	0.80	0.000	79.60	15.270	0.60	271.63	17.105	0.60
100.00	Raycap DC9-48-60-24-8C-EV	2	0.80	0.000	16.00	4.788	0.75	98.80	5.731	0.75
100.00	Ericsson RRUS 32 B2	3	0.80	0.000	53.00	2.743	0.67	100.17	3.493	0.67
100.00	Ericsson RRUS 4478 B14	3	0.80	0.000	59.40	2.021	0.67	98.76	2.626	0.67
100.00	Ericsson RRUS 4449 B5, B12	3	0.80	0.000	71.00	1.969	0.50	112.34	2.567	0.50
100.00	Raycap DC6-48-60-18-8F ("Squid	1	0.80	0.000	31.80	1.470	1.00	71.37	1.918	1.00
100.00	Ericsson RRUS 4426 B66	3	0.80	0.000	48.40	1.650	0.50	77.03	2.195	0.50
99.70	Powerwave Allgon 7770.00	6	0.80	0.000	35.00	5.508	0.65	107.86	6.871	0.65
98.60	Powerwave Allgon LGP21401	12	0.80	0.000	14.10	1.104	0.50	30.08	1.561	0.50
98.00	Ericsson AIR 6419 B77G	3	0.80	0.000	66.10	3.797	0.65	128.19	4.640	0.65
77.00	Raycap RDIDC-9181-PF-48	1	0.75	0.000	21.90	1.867	1.00	57.42	2.429	1.00
77.00	Fujitsu TA08025-B605	3	0.75	0.000	75.00	1.962	0.50	114.10	2.536	0.50
77.00	Fujitsu TA08025-B604	3	0.75	0.000	63.90	1.962	0.50	100.30	2.536	0.50

ASSET: 310968, WSPT-WESTPORT REBUILD CT  
 CUSTOMER: T-MOBILE

CODE: ANSI/TIA-222-H  
 ENG NO: 13764586\_C3\_05

**DISCRETE APPURTENANCE PROPERTIES**

Attach Elev (ft)	Description	Qty	Ka	Vert Ecc (ft)	No Ice			Ice		
					Weight (lb)	EPAA (sf)	Orientation Factor	Weight (lb)	EPAA (sf)	Orientation Factor
77.00	JMA Wireless MX08FRO665-21	3	0.75	0.000	64.50	12.489	0.64	224.92	14.243	0.64
77.00	Generic Flat Platform with Han	1	1.00	0.000	2500.00	42.400	1.00	3608.74	55.489	1.00
<b>Totals</b>		Num Loadings: 59		150	20,473.50			36,187.61		

**LINEAR APPURTENANCE PROPERTIES**

Load Case Azimuth (deg) : \_

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Dia (in)	Coax Wt (lb/ft)	Flat	Max Coax/ Row	Dist Between Rows(in)	Dist Between Cols(in)	Azimuth (deg)	Dist From Face (in)	Exposed To Wind	Carrier
0.00	147.00	3	1 5/8" Coax	1.98	0.82	N	0	0	0	0	0	N	TOWN OF WESTP
0.00	142.60	4	7/8" Coax	1.09	0.33	N	0	0	0	0	0	N	TOWN OF WESTP
0.00	142.60	3	1 5/8" Coax	1.98	0.82	N	0	0	0	0	0	N	TOWN OF WESTP
0.00	142.60	2	3/8" Coax	0.44	0.08	N	0	0	0	0	0	N	TOWN OF WESTP
0.00	140.00	1	1/2" Coax	0.63	0.15	N	0	0	0	0	0	N	TOWN OF WESTP
0.00	140.00	1	EW90	1.32	0.32	N	0	0	0	0	0	N	TOWN OF WESTP
0.00	132.00	4	1.99" (50.7mm) Hybrid	1.99	1.9	N	0	0	0	0	0	N	T-MOBILE
0.00	130.00	4	1 1/4" Hybriflex Cabl	1.54	1	N	0	0	0	0	0	N	SPRINT NEXTEL
0.00	121.00	2	1 1/4" Coax	1.55	0.63	N	0	0	0	0	0	N	EVERSOURCE EN
0.00	121.00	1	1/2" Coax	0.63	0.15	N	0	0	0	0	0	N	EVERSOURCE EN
0.00	115.60	2	1/2" Coax	0.63	0.15	N	0	0	0	0	0	N	SENET, INC.
0.00	114.70	1	1 1/4" Hybriflex Cabl	1.54	1	N	0	0	0	0	0	N	VERIZON WIREL
0.00	110.00	6	1 5/8" Coax	1.98	0.82	N	0	0	0	0	0	N	VERIZON WIREL
0.00	110.00	6	1 5/8" Coax	1.98	0.82	N	0	0	0	0	0	N	VERIZON WIREL
0.00	110.00	1	1 1/4" Hybriflex Cabl	1.54	1	N	0	0	0	0	0	N	VERIZON WIREL
0.00	110.00	1	1 5/8" Hybriflex	1.98	1.3	N	0	0	0	0	0	N	VERIZON WIREL
0.00	103.60	2	0.78" (19.7mm) 8 AWG	0.78	0.59	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	103.60	1	0.39" (10mm) Fiber Tr	0.39	0.06	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	103.60	1	2" conduit	2.38	3.65	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	100.00	12	1 5/8" Coax	1.98	0.82	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	100.00	6	1 5/8" Coax	1.98	0.82	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	100.00	4	0.92" (23.4mm) Cable	0.92	0.89	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	100.00	3	0.40" (10.3mm) Fiber	0.4	0.09	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	100.00	3	2" conduit	2.38	3.65	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	100.00	2	0.78" (19.7mm) 8 AWG	0.78	0.59	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	100.00	1	3/8" (0.38"- 9.5mm) R	0.38	0.23	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	100.00	1	3/8" (0.38"- 9.5mm) R	0.38	0.23	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	77.00	1	1.75" (44.5mm) Hybrid	1.75	2.72	N	0	0	0	0	0	N	DISH WIRELESS



SEGMENT PROPERTIES

(Max Len: 5.ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in <sup>2</sup> )	Ix (in <sup>4</sup> )	W/t Ratio	D/t Ratio	Fy (ksi)	S (in <sup>3</sup> )	Z (in <sup>3</sup> )	Weight (lb)
0.00		0.5000	47.130	73.999	20,328.70	14.86	94.26	82.6	849.6	0.0	0.0
5.00		0.5000	46.130	72.412	19,048.50	14.50	92.26	82.6	813.3	0.0	1,245.5
10.00		0.5000	45.130	70.825	17,823.20	14.15	90.26	82.6	777.9	0.0	1,218.5
15.00		0.5000	44.129	69.237	16,651.50	13.80	88.26	82.6	743.2	0.0	1,191.5
20.00		0.5000	43.129	67.650	15,532.40	13.45	86.26	82.6	709.3	0.0	1,164.5
25.00		0.5000	42.129	66.063	14,464.60	13.09	84.26	82.6	676.2	0.0	1,137.5
30.00		0.5000	41.129	64.476	13,446.80	12.74	82.26	82.6	644.0	0.0	1,110.5
35.00		0.5000	40.129	62.889	12,478.00	12.39	80.26	82.6	612.5	0.0	1,083.5
40.00		0.5000	39.129	61.301	11,556.90	12.04	78.26	82.6	581.7	0.0	1,056.5
45.00		0.5000	38.128	59.714	10,682.20	11.68	76.26	82.6	551.8	0.0	1,029.5
46.25	Bot - Section 2	0.5000	37.878	59.317	10,470.70	11.59	75.76	82.6	544.5	0.0	253.1
50.00		0.5000	37.128	58.127	9,852.80	11.33	74.26	82.6	522.7	0.0	1,518.9
51.00	Top - Section 1	0.5000	37.928	59.396	10,512.60	11.61	75.86	82.6	545.9	0.0	399.9
55.00		0.5000	37.128	58.127	9,852.70	11.33	74.26	82.6	522.7	0.0	799.8
60.00		0.5000	36.128	56.539	9,067.40	10.98	72.26	82.6	494.3	0.0	975.5
65.00		0.5000	35.128	54.952	8,325.00	10.62	70.26	82.6	466.8	0.0	948.5
70.00		0.5000	34.127	53.365	7,624.30	10.27	68.25	82.6	440.0	0.0	921.4
75.00		0.5000	33.127	51.778	6,964.00	9.92	66.25	82.6	414.1	0.0	894.4
77.00		0.5000	32.727	51.143	6,711.00	9.78	65.45	82.6	403.9	0.0	350.2
80.00		0.5000	32.127	50.190	6,343.00	9.57	64.25	82.6	388.9	0.0	517.2
85.00		0.5000	31.127	48.603	5,760.00	9.21	62.25	82.6	364.5	0.0	840.4
90.00		0.5000	30.127	47.016	5,214.00	8.86	60.25	82.6	340.9	0.0	813.4
93.50	Bot - Section 3	0.5000	29.427	45.905	4,853.00	8.61	58.85	82.6	324.8	0.0	553.3
95.00		0.5000	29.127	45.429	4,703.50	8.51	58.25	82.6	318.1	0.0	322.6
97.25	Top - Section 2	0.1875	29.052	17.177	1,808.10	25.56	154.94	71.3	122.6	0.0	477.6
98.00		0.1875	28.901	17.088	1,780.00	25.42	154.14	71.5	121.3	0.0	43.7
98.60		0.1875	28.781	17.016	1,757.80	25.30	153.50	71.6	120.3	0.0	34.8
99.70		0.1875	28.561	16.885	1,717.50	25.10	152.33	71.9	118.4	0.0	63.4
100.00		0.1875	28.501	16.850	1,706.70	25.04	152.01	71.9	117.9	0.0	17.2
100.10		0.1875	28.481	16.838	1,703.00	25.02	151.90	72	117.8	0.0	5.7
102.00		0.1875	28.101	16.612	1,635.30	24.66	149.87	72.4	114.6	0.0	108.1
102.20		0.1875	28.061	16.588	1,628.30	24.63	149.66	72.4	114.3	0.0	11.3
103.60		0.1875	27.781	16.421	1,579.70	24.36	148.17	72.7	112.0	0.0	78.6
103.80		0.1875	27.741	16.397	1,572.90	24.32	147.95	72.8	111.7	0.0	11.2
105.00		0.1875	27.501	16.255	1,532.10	24.10	146.67	73.1	109.7	0.0	66.7
110.00		0.1875	26.501	15.659	1,369.90	23.16	141.34	74.2	101.8	0.0	271.5
110.10		0.1875	26.481	15.647	1,366.80	23.14	141.23	74.2	101.7	0.0	5.3
111.30		0.1875	26.241	15.505	1,329.70	22.91	139.95	74.4	99.8	0.0	63.6
114.90		0.1875	25.521	15.076	1,222.40	22.24	136.11	75.2	94.3	0.0	187.3
115.00		0.1875	25.501	15.064	1,219.50	22.22	136.00	75.3	94.2	0.0	5.1
115.50		0.1875	25.401	15.005	1,205.10	22.12	135.47	75.4	93.4	0.0	25.6
120.00		0.1875	24.501	14.469	1,080.60	21.28	130.67	76.4	86.9	0.0	225.7
121.00		0.1875	24.301	14.350	1,054.20	21.09	129.60	76.6	85.4	0.0	49.0
125.00		0.1875	23.501	13.874	952.70	20.34	125.34	77.5	79.8	0.0	192.1
125.40		0.1875	23.421	13.826	942.90	20.26	124.91	77.6	79.3	0.0	18.9
130.00		0.1875	22.500	13.278	835.20	19.40	120.00	78.6	73.1	0.0	212.1
132.00		0.1875	22.100	13.040	791.10	19.02	117.87	79	70.5	0.0	89.6
135.00		0.1875	21.500	12.683	727.90	18.46	114.67	79.7	66.7	0.0	131.3
138.00		0.1875	20.900	12.326	668.10	17.89	111.47	80.4	63.0	0.0	127.7
140.00		0.1875	20.500	12.088	630.10	17.52	109.33	80.8	60.5	0.0	83.1

Totals: 22,952.3

Load Case: 1.2D + 1.0W Normal	118 mph wind with no ice	26 Iterations
Gust Response Factor: 1.10		
Dead load Factor: 1.20		
Wind Load Factor: 1.00		

**CALCULATED FORCES**

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-61.62	-29.94	-0.09	-3,184.3	0.00	3,184.28	5,497.77	1,298.68	5,470.20	5,259.85	0	0	0.617
5.00	-59.58	-29.80	-0.09	-3,034.6	0.00	3,034.58	5,379.84	1,270.83	5,238.09	5,035.45	0.12	-0.22	0.614
10.00	-57.57	-29.65	-0.09	-2,885.6	0.00	2,885.59	5,261.92	1,242.97	5,011.02	4,815.96	0.46	-0.44	0.611
15.00	-55.60	-29.50	-0.09	-2,737.3	0.00	2,737.34	5,144.00	1,215.12	4,788.97	4,601.35	1.04	-0.66	0.606
20.00	-53.66	-29.35	-0.09	-2,589.8	0.00	2,589.84	5,026.07	1,187.26	4,571.96	4,391.63	1.86	-0.89	0.601
25.00	-51.75	-29.19	-0.09	-2,443.1	0.00	2,443.11	4,908.15	1,159.41	4,359.97	4,186.81	2.91	-1.12	0.595
30.00	-49.87	-29.02	-0.09	-2,297.2	0.00	2,297.18	4,790.23	1,131.55	4,153.02	3,986.88	4.21	-1.35	0.587
35.00	-48.03	-28.84	-0.09	-2,152.1	0.00	2,152.07	4,672.31	1,103.69	3,951.10	3,791.84	5.76	-1.59	0.579
40.00	-46.22	-28.64	-0.09	-2,007.9	0.00	2,007.87	4,554.38	1,075.84	3,754.22	3,601.69	7.55	-1.83	0.568
45.00	-44.49	-28.49	-0.09	-1,864.6	0.00	1,864.65	4,436.46	1,047.98	3,562.36	3,416.43	9.59	-2.06	0.557
46.25	-44.02	-28.39	-0.09	-1,829.0	0.00	1,829.04	4,406.98	1,041.02	3,515.18	3,370.88	10.14	-2.13	0.553
50.00	-41.83	-28.23	-0.09	-1,722.6	0.00	1,722.57	4,318.54	1,020.13	3,375.54	3,236.07	11.88	-2.31	0.543
51.00	-41.21	-28.12	-0.09	-1,694.3	0.00	1,694.34	4,412.85	1,042.41	3,524.56	3,379.93	12.37	-2.36	0.511
55.00	-39.82	-27.89	-0.09	-1,581.9	0.00	1,581.89	4,318.52	1,020.12	3,375.50	3,236.03	14.43	-2.55	0.499
60.00	-38.13	-27.60	-0.09	-1,442.5	0.00	1,442.46	4,200.59	992.27	3,193.71	3,060.56	17.21	-2.77	0.481
65.00	-36.48	-27.31	-0.09	-1,304.4	0.00	1,304.44	4,082.67	964.41	3,016.95	2,889.98	20.23	-2.98	0.461
70.00	-34.86	-27.01	-0.09	-1,167.9	0.00	1,167.88	3,964.75	936.55	2,845.22	2,724.29	23.46	-3.19	0.438
75.00	-33.30	-26.76	-0.09	-1,032.8	0.00	1,032.84	3,846.82	908.70	2,678.53	2,563.49	26.92	-3.4	0.412
77.00	-29.06	-24.15	-0.09	-979.3	0.00	979.31	3,799.65	897.56	2,613.26	2,500.54	28.36	-3.48	0.400
80.00	-28.15	-23.90	-0.09	-906.9	0.00	906.87	3,728.90	880.84	2,516.86	2,407.59	30.59	-3.6	0.385
85.00	-26.67	-23.56	-0.09	-787.4	0.00	787.38	3,610.98	852.99	2,360.23	2,256.57	34.46	-3.79	0.357
90.00	-25.24	-23.25	-0.09	-669.6	0.00	669.58	3,493.05	825.13	2,208.63	2,110.45	38.52	-3.97	0.325
93.50	-24.26	-23.06	-0.09	-588.2	-0.01	588.20	3,410.51	805.63	2,105.50	2,011.07	41.48	-4.09	0.300
95.00	-23.74	-22.92	-0.09	-553.6	-0.01	553.62	3,375.13	797.28	2,062.06	1,969.22	42.77	-4.14	0.289
97.25	-22.97	-22.79	-0.09	-502.0	-0.01	502.04	1,102.89	301.46	785.89	655.89	44.74	-4.21	0.792
98.00	-22.62	-22.52	-0.09	-485.0	-0.01	484.95	1,099.71	299.89	777.74	650.58	45.4	-4.24	0.772
98.60	-22.32	-22.28	-0.09	-471.4	-0.01	471.44	1,097.14	298.64	771.26	646.33	45.94	-4.28	0.755
99.70	-21.93	-21.59	-0.09	-446.9	-0.01	446.94	1,092.40	296.34	759.43	638.55	46.93	-4.36	0.725
100.00	-18.36	-17.87	-0.09	-440.5	-0.01	440.46	1,091.10	295.71	756.22	636.43	47.21	-4.39	0.713
100.10	-18.20	-17.23	-0.09	-438.7	-0.01	438.67	1,090.66	295.50	755.16	635.72	47.3	-4.39	0.710
102.00	-17.69	-16.92	-0.09	-405.9	-0.01	405.93	1,082.30	291.53	735.01	622.32	49.08	-4.53	0.672
102.20	-17.49	-16.72	-0.09	-402.5	-0.01	402.54	1,081.40	291.12	732.90	620.91	49.27	-4.54	0.668
103.60	-17.28	-16.63	-0.09	-379.1	-0.01	379.13	1,075.12	288.19	718.25	611.05	50.61	-4.64	0.640
103.80	-17.08	-16.42	-0.09	-375.8	-0.01	375.81	1,074.21	287.77	716.17	609.65	50.81	-4.65	0.636
105.00	-16.91	-16.27	-0.09	-356.1	-0.01	356.11	1,068.74	285.27	703.75	601.22	51.99	-4.73	0.611
110.00	-12.42	-12.65	-0.09	-274.8	-0.01	274.75	1,045.19	274.82	653.15	566.30	57.1	-5.02	0.499
110.10	-12.22	-12.48	-0.09	-273.5	-0.01	273.49	1,044.71	274.61	652.16	565.60	57.2	-5.03	0.497
111.30	-11.91	-12.22	-0.09	-258.5	-0.01	258.51	1,038.88	272.10	640.31	557.28	58.47	-5.1	0.477
114.90	-11.56	-11.98	-0.09	-214.5	-0.01	214.53	1,020.97	264.58	605.41	532.42	62.38	-5.28	0.416
115.00	-11.55	-11.96	-0.09	-213.3	-0.01	213.34	1,020.46	264.37	604.45	531.74	62.49	-5.28	0.415
115.50	-11.50	-11.75	-0.09	-207.4	-0.01	207.36	1,017.93	263.33	599.68	528.30	63.05	-5.31	0.406
120.00	-8.95	-10.52	-0.09	-154.5	-0.01	154.50	994.55	253.93	557.63	497.61	68.14	-5.5	0.321
121.00	-8.86	-10.36	0.00	-143.9	0.00	143.92	989.22	251.84	548.50	490.84	69.3	-5.54	0.304
125.00	-8.54	-10.21	0.00	-102.5	0.00	102.49	967.45	243.48	512.70	463.98	73.99	-5.67	0.231
125.40	-8.49	-9.99	0.00	-98.4	0.00	98.40	965.23	242.65	509.19	461.32	74.46	-5.68	0.224
130.00	-7.09	-8.16	0.00	-48.4	0.00	48.44	939.16	233.04	469.66	430.94	79.99	-5.79	0.121
132.00	-3.67	-4.10	0.00	-32.1	0.00	32.13	927.52	228.86	452.97	417.90	82.42	-5.82	0.081
135.00	-3.50	-3.93	0.00	-19.8	0.00	19.82	909.69	222.59	428.50	398.55	86.08	-5.84	0.054
138.00	-0.51	-1.71	0.00	-8.0	0.00	8.05	891.44	216.32	404.72	379.46	89.75	-5.86	0.022
140.00	0.00	-1.65	0.00	-4.6	0.00	4.62	879.04	212.15	389.23	366.89	92.2	-5.87	0.013

Load Case: 0.9D + 1.0W Normal	118 mph wind with no ice	25 Iterations
Gust Response Factor: 1.10		
Dead load Factor: 0.90		
Wind Load Factor: 1.00		

**CALCULATED FORCES**

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-46.20	-29.91	-0.09	-3,134.8	0.00	3,134.81	5,497.77	1,298.68	5,470.20	5,259.85	0	0	0.605
5.00	-44.65	-29.71	-0.09	-2,985.3	0.00	2,985.26	5,379.84	1,270.83	5,238.09	5,035.45	0.11	-0.21	0.602
10.00	-43.12	-29.50	-0.09	-2,836.7	0.00	2,836.73	5,261.92	1,242.97	5,011.02	4,815.96	0.46	-0.43	0.598
15.00	-41.61	-29.30	-0.09	-2,689.2	0.00	2,689.22	5,144.00	1,215.12	4,788.97	4,601.35	1.03	-0.65	0.593
20.00	-40.13	-29.09	-0.09	-2,542.7	0.00	2,542.73	5,026.07	1,187.26	4,571.96	4,391.63	1.83	-0.88	0.588
25.00	-38.67	-28.89	-0.09	-2,397.3	0.00	2,397.26	4,908.15	1,159.41	4,359.97	4,186.81	2.87	-1.1	0.581
30.00	-37.24	-28.68	-0.09	-2,252.8	0.00	2,252.81	4,790.23	1,131.55	4,153.02	3,986.88	4.14	-1.33	0.573
35.00	-35.83	-28.46	-0.09	-2,109.4	0.00	2,109.43	4,672.31	1,103.69	3,951.10	3,791.84	5.66	-1.56	0.565
40.00	-34.45	-28.22	-0.09	-1,967.2	0.00	1,967.15	4,554.38	1,075.84	3,754.22	3,601.69	7.42	-1.79	0.554
45.00	-33.14	-28.05	-0.09	-1,826.0	0.00	1,826.05	4,436.46	1,047.98	3,562.36	3,416.43	9.42	-2.03	0.543
46.25	-32.78	-27.93	-0.09	-1,791.0	0.00	1,790.99	4,406.98	1,041.02	3,515.18	3,370.88	9.96	-2.09	0.539
50.00	-31.12	-27.76	-0.09	-1,686.2	0.00	1,686.25	4,318.54	1,020.13	3,375.54	3,236.07	11.67	-2.26	0.529
51.00	-30.65	-27.64	-0.09	-1,658.5	0.00	1,658.48	4,412.85	1,042.41	3,524.56	3,379.93	12.15	-2.31	0.498
55.00	-29.59	-27.38	-0.09	-1,547.9	0.00	1,547.94	4,318.52	1,020.12	3,375.50	3,236.03	14.17	-2.5	0.486
60.00	-28.30	-27.08	-0.09	-1,411.0	0.00	1,411.04	4,200.59	992.27	3,193.71	3,060.56	16.9	-2.71	0.469
65.00	-27.04	-26.77	-0.09	-1,275.6	0.00	1,275.64	4,082.67	964.41	3,016.95	2,889.98	19.86	-2.93	0.449
70.00	-25.82	-26.46	-0.09	-1,141.8	0.00	1,141.78	3,964.75	936.55	2,845.22	2,724.29	23.03	-3.13	0.426
75.00	-24.64	-26.21	-0.09	-1,009.5	0.00	1,009.50	3,846.82	908.70	2,678.53	2,563.49	26.42	-3.33	0.401
77.00	-21.48	-23.65	-0.09	-957.1	0.00	957.08	3,799.65	897.56	2,613.26	2,500.54	27.83	-3.41	0.389
80.00	-20.78	-23.39	-0.09	-886.1	0.00	886.14	3,728.90	880.84	2,516.86	2,407.59	30.01	-3.53	0.374
85.00	-19.67	-23.05	-0.09	-769.2	0.00	769.17	3,610.98	852.99	2,360.23	2,256.57	33.81	-3.72	0.347
90.00	-18.58	-22.75	-0.09	-653.9	0.00	653.90	3,493.05	825.13	2,208.63	2,110.45	37.79	-3.89	0.316
93.50	-17.85	-22.57	-0.09	-574.3	0.00	574.27	3,410.51	805.63	2,105.50	2,011.07	40.69	-4.01	0.292
95.00	-17.45	-22.43	-0.09	-540.4	0.00	540.42	3,375.13	797.28	2,062.06	1,969.22	41.96	-4.06	0.280
97.25	-16.87	-22.31	-0.09	-490.0	0.00	489.95	1,102.89	301.46	785.89	655.89	43.88	-4.13	0.768
98.00	-16.61	-22.04	-0.09	-473.2	-0.01	473.21	1,099.71	299.89	777.74	650.58	44.53	-4.15	0.748
98.60	-16.39	-21.80	-0.09	-460.0	-0.01	459.99	1,097.14	298.64	771.26	646.33	45.06	-4.2	0.732
99.70	-16.10	-21.12	-0.09	-436.0	-0.01	436.01	1,092.40	296.34	759.43	638.55	46.03	-4.28	0.703
100.00	-13.49	-17.47	-0.09	-429.7	-0.01	429.68	1,091.10	295.71	756.22	636.43	46.3	-4.3	0.691
100.10	-13.37	-16.83	-0.09	-427.9	-0.01	427.93	1,090.66	295.50	755.16	635.72	46.39	-4.3	0.689
102.00	-12.99	-16.52	-0.09	-396.0	-0.01	395.95	1,082.30	291.53	735.01	622.32	48.13	-4.43	0.651
102.20	-12.84	-16.32	-0.09	-392.6	-0.01	392.64	1,081.40	291.12	732.90	620.91	48.32	-4.45	0.647
103.60	-12.68	-16.23	-0.09	-369.8	-0.01	369.79	1,075.12	288.19	718.25	611.05	49.64	-4.54	0.620
103.80	-12.53	-16.02	-0.09	-366.5	-0.01	366.54	1,074.21	287.77	716.17	609.65	49.83	-4.55	0.616
105.00	-12.40	-15.86	-0.09	-347.3	-0.01	347.32	1,068.74	285.27	703.75	601.22	50.98	-4.63	0.592
110.00	-9.08	-12.34	-0.09	-268.0	-0.01	268.02	1,045.19	274.82	653.15	566.30	55.99	-4.92	0.484
110.10	-8.94	-12.17	-0.09	-266.8	-0.01	266.79	1,044.71	274.61	652.16	565.60	56.09	-4.92	0.482
111.30	-8.70	-11.90	-0.09	-252.2	-0.01	252.18	1,038.88	272.10	640.31	557.28	57.33	-4.99	0.463
114.90	-8.44	-11.67	-0.09	-209.3	-0.01	209.32	1,020.97	264.58	605.41	532.42	61.16	-5.17	0.403
115.00	-8.43	-11.65	-0.09	-208.2	-0.01	208.16	1,020.46	264.37	604.45	531.74	61.27	-5.17	0.402
115.50	-8.39	-11.43	-0.09	-202.3	-0.01	202.33	1,017.93	263.33	599.68	528.30	61.81	-5.19	0.393
120.00	-6.50	-10.27	-0.09	-150.9	-0.01	150.88	994.55	253.93	557.63	497.61	66.8	-5.38	0.311
121.00	-6.44	-10.10	0.00	-140.6	0.00	140.55	989.22	251.84	548.50	490.84	67.93	-5.42	0.294
125.00	-6.20	-9.96	0.00	-100.1	0.00	100.14	967.45	243.48	512.70	463.98	72.52	-5.55	0.224
125.40	-6.16	-9.74	0.00	-96.2	0.00	96.15	965.23	242.65	509.19	461.32	72.98	-5.56	0.216
130.00	-5.15	-7.95	0.00	-47.3	0.00	47.34	939.16	233.04	469.66	430.94	78.39	-5.66	0.117
132.00	-2.67	-3.99	0.00	-31.4	0.00	31.45	927.52	228.86	452.97	417.90	80.77	-5.69	0.078
135.00	-2.55	-3.82	0.00	-19.5	0.00	19.47	909.69	222.59	428.50	398.55	84.35	-5.72	0.052
138.00	-0.34	-1.69	0.00	-8.0	0.00	8.01	891.44	216.32	404.72	379.46	87.94	-5.74	0.022
140.00	0.00	-1.65	0.00	-4.6	0.00	4.62	879.04	212.15	389.23	366.89	90.34	-5.74	0.013

Load Case: 1.2D + 1.0Di + 1.0Wi Normal	50 mph wind with 1" radial ice		25 Iterations
Gust Response Factor: 1.10	Ice Dead Load Factor	1.00	
Dead load Factor: 1.20			Ice Importance Factor 1.00
Wind Load Factor: 1.00			

**CALCULATED FORCES**

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-80.17	-7.80	-0.02	-833.6	0.00	833.57	5,497.77	1,298.68	5,470.20	5,259.85	0	0	0.173
5.00	-78.01	-7.77	-0.02	-794.6	0.00	794.57	5,379.84	1,270.83	5,238.09	5,035.45	0.03	-0.06	0.172
10.00	-75.86	-7.73	-0.02	-755.7	0.00	755.74	5,261.92	1,242.97	5,011.02	4,815.96	0.12	-0.11	0.171
15.00	-73.73	-7.69	-0.02	-717.1	0.00	717.10	5,144.00	1,215.12	4,788.97	4,601.35	0.27	-0.17	0.170
20.00	-71.63	-7.65	-0.02	-678.6	0.00	678.64	5,026.07	1,187.26	4,571.96	4,391.63	0.49	-0.23	0.169
25.00	-69.57	-7.61	-0.02	-640.4	0.00	640.38	4,908.15	1,159.41	4,359.97	4,186.81	0.76	-0.29	0.167
30.00	-67.54	-7.57	-0.02	-602.3	0.00	602.31	4,790.23	1,131.55	4,153.02	3,986.88	1.1	-0.35	0.165
35.00	-65.54	-7.53	-0.02	-564.4	0.00	564.45	4,672.31	1,103.69	3,951.10	3,791.84	1.51	-0.42	0.163
40.00	-63.58	-7.47	-0.02	-526.8	0.00	526.82	4,554.38	1,075.84	3,754.22	3,601.69	1.98	-0.48	0.160
45.00	-61.65	-7.43	-0.02	-489.4	0.00	489.45	4,436.46	1,047.98	3,562.36	3,416.43	2.51	-0.54	0.157
46.25	-61.18	-7.41	-0.02	-480.2	0.00	480.15	4,406.98	1,041.02	3,515.18	3,370.88	2.66	-0.56	0.156
50.00	-58.83	-7.36	-0.02	-452.4	0.00	452.37	4,318.54	1,020.13	3,375.54	3,236.07	3.11	-0.6	0.153
51.00	-58.21	-7.33	-0.02	-445.0	0.00	445.01	4,412.85	1,042.41	3,524.56	3,379.93	3.24	-0.62	0.145
55.00	-56.70	-7.27	-0.02	-415.7	0.00	415.67	4,318.52	1,020.12	3,375.50	3,236.03	3.78	-0.67	0.142
60.00	-54.85	-7.20	-0.02	-379.3	0.00	379.31	4,200.59	992.27	3,193.71	3,060.56	4.51	-0.73	0.137
65.00	-53.03	-7.11	-0.02	-343.3	0.00	343.34	4,082.67	964.41	3,016.95	2,889.98	5.3	-0.78	0.132
70.00	-51.25	-7.03	-0.02	-307.8	0.00	307.77	3,964.75	936.55	2,845.22	2,724.29	6.15	-0.84	0.126
75.00	-49.51	-6.96	-0.02	-272.6	0.00	272.62	3,846.82	908.70	2,678.53	2,563.49	7.06	-0.89	0.119
77.00	-43.64	-6.33	-0.02	-258.7	0.00	258.71	3,799.65	897.56	2,613.26	2,500.54	7.44	-0.91	0.115
80.00	-42.63	-6.25	-0.02	-239.7	0.00	239.73	3,728.90	880.84	2,516.86	2,407.59	8.02	-0.95	0.111
85.00	-40.98	-6.16	-0.02	-208.5	0.00	208.46	3,610.98	852.99	2,360.23	2,256.57	9.04	-1	0.104
90.00	-39.37	-6.07	-0.02	-177.7	0.00	177.68	3,493.05	825.13	2,208.63	2,110.45	10.11	-1.04	0.096
93.50	-38.27	-6.01	-0.02	-156.4	0.00	156.45	3,410.51	805.63	2,105.50	2,011.07	10.89	-1.08	0.089
95.00	-37.69	-5.97	-0.02	-147.4	0.00	147.43	3,375.13	797.28	2,062.06	1,969.22	11.23	-1.09	0.086
97.25	-36.84	-5.93	-0.02	-134.0	0.00	134.00	1,102.89	301.46	785.89	655.89	11.74	-1.11	0.238
98.00	-36.31	-5.87	-0.02	-129.6	0.00	129.56	1,099.71	299.89	777.74	650.58	11.92	-1.11	0.233
98.60	-35.84	-5.80	-0.02	-126.0	0.00	126.04	1,097.14	298.64	771.26	646.33	12.06	-1.13	0.228
99.70	-35.04	-5.64	-0.02	-119.7	0.00	119.66	1,092.40	296.34	759.43	638.55	12.32	-1.15	0.220
100.00	-29.32	-4.75	-0.02	-118.0	0.00	117.97	1,091.10	295.71	756.22	636.43	12.39	-1.15	0.212
100.10	-28.80	-4.61	-0.02	-117.5	0.00	117.49	1,090.66	295.50	755.16	635.72	12.42	-1.16	0.211
102.00	-28.05	-4.53	-0.02	-108.7	0.00	108.74	1,082.30	291.53	735.01	622.32	12.89	-1.19	0.201
102.20	-27.74	-4.48	-0.02	-107.8	0.00	107.83	1,081.40	291.12	732.90	620.91	12.94	-1.2	0.200
103.60	-27.46	-4.45	-0.02	-101.6	0.00	101.56	1,075.12	288.19	718.25	611.05	13.29	-1.22	0.192
103.80	-27.13	-4.40	-0.02	-100.7	0.00	100.67	1,074.21	287.77	716.17	609.65	13.34	-1.23	0.191
105.00	-26.95	-4.36	-0.02	-95.4	0.00	95.39	1,068.74	285.27	703.75	601.22	13.65	-1.25	0.184
110.00	-19.89	-3.41	-0.02	-73.6	0.00	73.59	1,045.19	274.82	653.15	566.30	15	-1.32	0.149
110.10	-19.60	-3.37	-0.02	-73.2	0.00	73.25	1,044.71	274.61	652.16	565.60	15.03	-1.33	0.148
111.30	-19.13	-3.29	-0.02	-69.2	0.00	69.21	1,038.88	272.10	640.31	557.28	15.37	-1.34	0.143
114.90	-18.58	-3.23	-0.02	-57.4	0.00	57.36	1,020.97	264.58	605.41	532.42	16.4	-1.39	0.126
115.00	-18.56	-3.22	-0.02	-57.0	0.00	57.04	1,020.46	264.37	604.45	531.74	16.43	-1.39	0.126
115.50	-18.49	-3.15	-0.02	-55.4	0.00	55.43	1,017.93	263.33	599.68	528.30	16.57	-1.4	0.123
120.00	-15.30	-2.79	-0.02	-41.2	0.00	41.25	994.55	253.93	557.63	497.61	17.92	-1.45	0.098
121.00	-15.17	-2.74	0.00	-38.4	0.00	38.45	989.22	251.84	548.50	490.84	18.23	-1.46	0.094
125.00	-14.71	-2.69	0.00	-27.5	0.00	27.49	967.45	243.48	512.70	463.98	19.47	-1.5	0.075
125.40	-14.60	-2.62	0.00	-26.4	0.00	26.41	965.23	242.65	509.19	461.32	19.59	-1.5	0.072
130.00	-11.97	-2.16	0.00	-13.5	0.00	13.47	939.16	233.04	469.66	430.94	21.05	-1.53	0.044
132.00	-6.13	-1.14	0.00	-9.2	0.00	9.15	927.52	228.86	452.97	417.90	21.7	-1.54	0.029
135.00	-5.85	-1.09	0.00	-5.7	0.00	5.71	909.69	222.59	428.50	398.55	22.67	-1.55	0.021
138.00	-1.62	-0.51	0.00	-2.5	0.00	2.46	891.44	216.32	404.72	379.46	23.64	-1.55	0.008
140.00	0.00	-0.46	0.00	-1.4	0.00	1.44	879.04	212.15	389.23	366.89	24.29	-1.55	0.004

Load Case: 1.0D + 1.0W Service Normal	60 mph Wind with No Ice	24 Iterations
Gust Response Factor: 1.10		
Dead load Factor: 1.00		
Wind Load Factor: 1.00		

**CALCULATED FORCES**

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-51.40	-6.92	-0.02	-729.8	0.00	729.79	5,497.77	1,298.68	5,470.20	5,259.85	0	0	0.148
5.00	-49.79	-6.88	-0.02	-695.2	0.00	695.18	5,379.84	1,270.83	5,238.09	5,035.45	0.03	-0.05	0.147
10.00	-48.20	-6.84	-0.02	-660.8	0.00	660.79	5,261.92	1,242.97	5,011.02	4,815.96	0.11	-0.1	0.146
15.00	-46.64	-6.79	-0.02	-626.6	0.00	626.62	5,144.00	1,215.12	4,788.97	4,601.35	0.24	-0.15	0.145
20.00	-45.11	-6.75	-0.02	-592.6	0.00	592.65	5,026.07	1,187.26	4,571.96	4,391.63	0.43	-0.2	0.144
25.00	-43.61	-6.71	-0.02	-558.9	0.00	558.90	4,908.15	1,159.41	4,359.97	4,186.81	0.67	-0.26	0.142
30.00	-42.13	-6.66	-0.02	-525.4	0.00	525.37	4,790.23	1,131.55	4,153.02	3,986.88	0.97	-0.31	0.141
35.00	-40.68	-6.61	-0.02	-492.1	0.00	492.06	4,672.31	1,103.69	3,951.10	3,791.84	1.32	-0.36	0.139
40.00	-39.26	-6.56	-0.02	-459.0	0.00	458.99	4,554.38	1,075.84	3,754.22	3,601.69	1.73	-0.42	0.136
45.00	-37.86	-6.53	-0.02	-426.2	0.00	426.18	4,436.46	1,047.98	3,562.36	3,416.43	2.2	-0.47	0.133
46.25	-37.52	-6.50	-0.02	-418.0	0.00	418.02	4,406.98	1,041.02	3,515.18	3,370.88	2.32	-0.49	0.133
50.00	-35.73	-6.46	-0.02	-393.6	0.00	393.64	4,318.54	1,020.13	3,375.54	3,236.07	2.72	-0.53	0.130
51.00	-35.25	-6.43	-0.02	-387.2	0.00	387.18	4,412.85	1,042.41	3,524.56	3,379.93	2.83	-0.54	0.123
55.00	-34.16	-6.38	-0.02	-361.4	0.00	361.45	4,318.52	1,020.12	3,375.50	3,236.03	3.3	-0.58	0.120
60.00	-32.82	-6.31	-0.02	-329.6	0.00	329.55	4,200.59	992.27	3,193.71	3,060.56	3.94	-0.63	0.116
65.00	-31.51	-6.24	-0.02	-298.0	0.00	298.00	4,082.67	964.41	3,016.95	2,889.98	4.63	-0.68	0.111
70.00	-30.22	-6.17	-0.02	-266.8	0.00	266.79	3,964.75	936.55	2,845.22	2,724.29	5.37	-0.73	0.106
75.00	-28.96	-6.12	-0.02	-235.9	0.00	235.94	3,846.82	908.70	2,678.53	2,563.49	6.16	-0.78	0.100
77.00	-25.34	-5.52	-0.02	-223.7	0.00	223.71	3,799.65	897.56	2,613.26	2,500.54	6.49	-0.8	0.096
80.00	-24.61	-5.46	-0.02	-207.2	0.00	207.15	3,728.90	880.84	2,516.86	2,407.59	7	-0.82	0.093
85.00	-23.42	-5.38	-0.02	-179.8	0.00	179.85	3,610.98	852.99	2,360.23	2,256.57	7.89	-0.87	0.086
90.00	-22.26	-5.31	-0.02	-152.9	0.00	152.94	3,493.05	825.13	2,208.63	2,110.45	8.82	-0.91	0.079
93.50	-21.46	-5.27	-0.02	-134.4	0.00	134.35	3,410.51	805.63	2,105.50	2,011.07	9.49	-0.94	0.073
95.00	-21.04	-5.24	-0.02	-126.4	0.00	126.44	3,375.13	797.28	2,062.06	1,969.22	9.79	-0.95	0.070
97.25	-20.40	-5.21	-0.02	-114.7	0.00	114.66	1,102.89	301.46	785.89	655.89	10.24	-0.96	0.194
98.00	-20.11	-5.15	-0.02	-110.8	0.00	110.75	1,099.71	299.89	777.74	650.58	10.39	-0.97	0.189
98.60	-19.86	-5.09	-0.02	-107.7	0.00	107.66	1,097.14	298.64	771.26	646.33	10.51	-0.98	0.185
99.70	-19.51	-4.93	-0.02	-102.1	0.00	102.06	1,092.40	296.34	759.43	638.55	10.74	-1	0.178
100.00	-16.33	-4.08	-0.02	-100.6	0.00	100.58	1,091.10	295.71	756.22	636.43	10.8	-1	0.173
100.10	-16.17	-3.94	-0.02	-100.2	0.00	100.17	1,090.66	295.50	755.16	635.72	10.83	-1	0.173
102.00	-15.74	-3.86	-0.02	-92.7	0.00	92.69	1,082.30	291.53	735.01	622.32	11.23	-1.04	0.164
102.20	-15.57	-3.82	-0.02	-91.9	0.00	91.92	1,081.40	291.12	732.90	620.91	11.27	-1.04	0.163
103.60	-15.41	-3.80	-0.02	-86.6	0.00	86.58	1,075.12	288.19	718.25	611.05	11.58	-1.06	0.156
103.80	-15.23	-3.75	-0.02	-85.8	0.00	85.82	1,074.21	287.77	716.17	609.65	11.63	-1.06	0.155
105.00	-15.13	-3.71	-0.02	-81.3	0.00	81.32	1,068.74	285.27	703.75	601.22	11.9	-1.08	0.150
110.00	-11.18	-2.89	-0.02	-62.8	0.00	62.76	1,045.19	274.82	653.15	566.30	13.07	-1.15	0.122
110.10	-11.01	-2.85	-0.02	-62.5	0.00	62.47	1,044.71	274.61	652.16	565.60	13.09	-1.15	0.121
111.30	-10.75	-2.79	-0.02	-59.0	0.00	59.05	1,038.88	272.10	640.31	557.28	13.38	-1.16	0.116
114.90	-10.45	-2.73	-0.02	-49.0	0.00	49.02	1,020.97	264.58	605.41	532.42	14.28	-1.21	0.102
115.00	-10.45	-2.73	-0.02	-48.8	0.00	48.75	1,020.46	264.37	604.45	531.74	14.3	-1.21	0.102
115.50	-10.40	-2.68	-0.02	-47.4	0.00	47.38	1,017.93	263.33	599.68	528.30	14.43	-1.21	0.100
120.00	-8.22	-2.41	-0.02	-35.3	0.00	35.33	994.55	253.93	557.63	497.61	15.59	-1.26	0.079
121.00	-8.14	-2.37	0.00	-32.9	0.00	32.91	989.22	251.84	548.50	490.84	15.86	-1.27	0.075
125.00	-7.88	-2.33	0.00	-23.4	0.00	23.44	967.45	243.48	512.70	463.98	16.93	-1.3	0.059
125.40	-7.83	-2.28	0.00	-22.5	0.00	22.51	965.23	242.65	509.19	461.32	17.04	-1.3	0.057
130.00	-6.53	-1.86	0.00	-11.1	0.00	11.08	939.16	233.04	469.66	430.94	18.31	-1.32	0.033
132.00	-3.37	-0.94	0.00	-7.4	0.00	7.36	927.52	228.86	452.97	417.90	18.86	-1.33	0.021
135.00	-3.22	-0.90	0.00	-4.6	0.00	4.55	909.69	222.59	428.50	398.55	19.7	-1.34	0.015
138.00	-0.56	-0.40	0.00	-1.9	0.00	1.86	891.44	216.32	404.72	379.46	20.54	-1.34	0.006
140.00	0.00	-0.38	0.00	-1.1	0.00	1.07	879.04	212.15	389.23	366.89	21.1	-1.34	0.003

**EQUIVALENT LATERAL FORCES METHOD ANALYSIS**

(Based on ASCE7-16 Chapters 11, 12 and 15)

Spectral Response Acceleration for Short Period ( $S_S$ ):	0.227
Spectral Response Acceleration at 1.0 Second Period ( $S_1$ ):	0.056
Long-Period Transition Period ( $T_L$ – Seconds):	6
Importance Factor ( $I_e$ ):	1.000
Site Coefficient $F_a$ :	1.600
Site Coefficient $F_v$ :	2.400
Response Modification Coefficient (R):	1.500
Design Spectral Response Acceleration at Short Period ( $S_{ds}$ ):	0.242
Design Spectral Response Acceleration at 1.0 Second Period ( $S_{d1}$ ):	0.090
Seismic Response Coefficient ( $C_s$ ):	0.030
Upper Limit $C_s$ :	0.030
Lower Limit $C_s$ :	0.030
Period based on Rayleigh Method (sec):	2.550
Redundancy Factor ( $\rho$ ):	1.000
Seismic Force Distribution Exponent ( $k$ ):	2.000
Total Unfactored Dead Load:	51.400 k
Seismic Base Shear (E):	1.540 k

**1.2D + 1.0Ev + 1.0Eh Normal Seismic**

Segment	Height Above Base (ft)	Weight (lb)	$W_z$ (lb-ft)	$C_{vx}$	Horizontal Force (lb)	Vertical Force (lb)
49	139	97	1,871	0.005	7	121
48	136.5	148	2,762	0.007	11	185
47	133.5	152	2,707	0.007	11	190
46	131	118	2,034	0.005	8	148
45	127.7	297	4,845	0.012	19	371
44	125.2	26	411	0.001	2	33
43	123	266	4,024	0.010	16	332
42	120.5	69	1,001	0.003	4	86
41	117.75	315	4,370	0.011	17	393
40	115.25	36	474	0.001	2	45
39	114.95	7	94	0.000	0	9
38	113.1	263	3,369	0.009	13	329
37	110.7	89	1,091	0.003	4	111
36	110.05	7	90	0.000	0	9
35	107.5	438	5,063	0.013	20	547
34	104.4	107	1,162	0.003	5	133
33	103.7	18	192	0.000	1	22
32	102.9	132	1,399	0.004	6	165
31	102.1	19	197	0.000	1	24
30	101.05	181	1,845	0.005	7	226
29	100.05	10	96	0.000	0	12
28	99.85	38	379	0.001	2	47
27	99.15	140	1,374	0.004	5	175
26	98.3	76	739	0.002	3	95
25	97.625	96	913	0.002	4	120
24	96.125	634	5,856	0.015	23	791
23	94.25	427	3,790	0.010	15	533
22	91.75	796	6,702	0.017	27	994
21	87.5	1,160	8,884	0.023	35	1,449
20	82.5	1,187	8,082	0.021	32	1,482
19	78.5	725	4,470	0.012	18	906
18	76	494	2,856	0.007	11	617
17	72.5	1,255	6,597	0.017	26	1,567
16	67.5	1,282	5,841	0.015	23	1,600

Segment	Height Above Base (ft)	Weight (lb)	W <sub>z</sub> (lb-ft)	C <sub>vx</sub>	Horizontal Force (lb)	Vertical Force (lb)
15	62.5	1,309	5,113	0.013	20	1,634
14	57.5	1,336	4,417	0.011	18	1,668
13	53	1,088	3,057	0.008	12	1,359
12	50.5	472	1,204	0.003	5	589
11	48.125	1,789	4,144	0.011	16	2,234
10	45.625	343	715	0.002	3	429
9	42.5	1,390	2,511	0.006	10	1,735
8	37.5	1,417	1,993	0.005	8	1,769
7	32.5	1,444	1,525	0.004	6	1,803
6	27.5	1,471	1,112	0.003	4	1,836
5	22.5	1,498	758	0.002	3	1,870
4	17.5	1,525	467	0.001	2	1,904
3	12.5	1,552	243	0.001	1	1,938
2	7.5	1,579	89	0.000	0	1,971
1	2.5	1,606	10	0.000	0	2,005
dbSpectra DS7C09P36U-D	140	210	4,116	0.011	16	262
Generic 12' Omni	140	40	784	0.002	3	50
Generic 12' Omni	140	40	784	0.002	3	50
Generic 8' Omni	140	50	980	0.002	4	62
Generic 6' FM antenna	140	30	588	0.002	2	37
Generic 12' Dipole	140	40	784	0.002	3	50
TX RX Systems 432F-83W-01-C-110/110R/48/48R	140	18	353	0.001	1	22
RFS SC3-W100AB	140	40	784	0.002	3	50
Generic 6' Omni	138	25	476	0.001	2	31
Generic Flat Platform with Handrails	138	2,500	47,610	0.122	189	3,121
Generic Flat Platform with Handrails	77	2,500	14,822	0.038	59	3,121
Ericsson 4460 BAND 2/25	132	327	5,698	0.015	23	408
Ericsson 4480 BAND 71	132	243	4,234	0.011	17	303
Commscope VV-65A-R1	132	71	1,244	0.003	5	89
Ericsson AIR 6419 B41	132	250	4,354	0.011	17	312
RFS APXVAALL24 43-U-NA20	132	368	6,419	0.016	25	460
Site Pro 1 RMQP-496-HK	132	1,799	31,346	0.081	124	2,246
Alcatel-Lucent 800 MHz 2X50W RRH w/ Filter	130	192	3,245	0.008	13	240
Alcatel-Lucent 4x40W RRH (91 lb)	130	273	4,614	0.012	18	341
Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield	130	210	3,549	0.009	14	262
RFS APXV9TM14-ALU-I20*	130	165	2,794	0.007	11	206
RFS APXVSPP18-C-A20	130	171	2,890	0.007	11	213
Generic 9' Omni	125.4	25	393	0.001	2	31
Andrew DB586	121	8	122	0.000	0	10
Generic Round Low Profile Platform	120	1,875	27,000	0.069	107	2,341
Diamond X50A	115.5	5	61	0.000	0	6
RFS DB-C1-12C-24AB-0Z	114.9	32	422	0.001	2	40
Alcatel-Lucent B13 RRH4x30-4R	111.3	173	2,148	0.006	9	216
Alcatel-Lucent B25 RRH4x30	110.1	159	1,927	0.005	8	198
Commscope CBC78T-DS-43-2X	110	62	751	0.002	3	78
Nokia AirScale RRH 4T4R B5 160W AHCA	110	106	1,281	0.003	5	132
Alcatel-Lucent RRH 2X60-1900	110	119	1,437	0.004	6	148
Alcatel-Lucent B66a RRH4x45 (AWS-3)	110	201	2,432	0.006	10	251
Amphenol Antel BXA-171063/8CF	110	32	381	0.001	2	39
RFS DB-T1-6Z-8AB-0Z	110	88	1,065	0.003	4	110
Antel BXA-70080/6CF	110	54	653	0.002	3	67
Commscope JAHH-65B-R3B	110	364	4,400	0.011	17	454
Generic Round Platform with Handrails	110	2,500	30,250	0.078	120	3,121
Ericsson RRUS 32 B2	103.8	159	1,713	0.004	7	198
Ericsson RRUS 32 B2	100	159	1,590	0.004	6	198
Raycap DC6-48-60-18-8F ("Squid")	103.6	32	341	0.001	1	40
Raycap DC6-48-60-18-8F ("Squid")	100	32	318	0.001	1	40
Ericsson RRUS-11 (50 lbs.)	102.2	150	1,567	0.004	6	187
Ericsson Air 6449 B77D	102	245	2,547	0.007	10	306
CCI HPA-65R-BUU-H6	100.1	153	1,533	0.004	6	191
Ericsson RRUS 4426 B66	100	145	1,452	0.004	6	181
Ericsson RRUS 4449 B5, B12	100	213	2,130	0.006	8	266
Ericsson RRUS 4478 B14	100	178	1,782	0.005	7	222
Raycap DC9-48-60-24-8C-EV	100	32	320	0.001	1	40
CCI TPA-65R-BU6DA-K	100	239	2,388	0.006	9	298
CCI DMP65R-BU8D	100	287	2,871	0.007	11	358
Generic Flat Low Profile Platform	100	1,875	18,750	0.048	74	2,341
Powerwave Allgon 7770.00	99.7	210	2,087	0.005	8	262
Powerwave Allgon LGP21401	98.6	169	1,645	0.004	7	211

Segment	Height Above Base (ft)	Weight (lb)	W <sub>z</sub> (lb-ft)	C <sub>vx</sub>	Horizontal Force (lb)	Vertical Force (lb)
Ericsson AIR 6419 B77G	98	198	1,904	0.005	8	248
Raycap RDIDC-9181-PF-48	77	22	130	0.000	1	27
Fujitsu TA08025-B605	77	225	1,334	0.003	5	281
Fujitsu TA08025-B604	77	192	1,137	0.003	5	239
JMA Wireless MX08FRO665-21	77	194	1,147	0.003	5	242
		51,400	388,815	0.999	1,542	64,170

**0.9D - 1.0Ev + 1.0Eh Normal Seismic (Reduced DL)**

Segment	Height Above Base (ft)	Weight (lb)	W <sub>z</sub> (lb-ft)	C <sub>vx</sub>	Horizontal Force (lb)	Vertical Force (lb)
49	139	97	1,871	0.005	7	82
48	136.5	148	2,762	0.007	11	126
47	133.5	152	2,707	0.007	11	129
46	131	118	2,034	0.005	8	101
45	127.7	297	4,845	0.012	19	253
44	125.2	26	411	0.001	2	22
43	123	266	4,024	0.010	16	226
42	120.5	69	1,001	0.003	4	59
41	117.75	315	4,370	0.011	17	268
40	115.25	36	474	0.001	2	30
39	114.95	7	94	0.000	0	6
38	113.1	263	3,369	0.009	13	224
37	110.7	89	1,091	0.003	4	76
36	110.05	7	90	0.000	0	6
35	107.5	438	5,063	0.013	20	373
34	104.4	107	1,162	0.003	5	91
33	103.7	18	192	0.000	1	15
32	102.9	132	1,399	0.004	6	113
31	102.1	19	197	0.000	1	16
30	101.05	181	1,845	0.005	7	154
29	100.05	10	96	0.000	0	8
28	99.85	38	379	0.001	2	32
27	99.15	140	1,374	0.004	5	119
26	98.3	76	739	0.002	3	65
25	97.625	96	913	0.002	4	82
24	96.125	634	5,856	0.015	23	540
23	94.25	427	3,790	0.010	15	363
22	91.75	796	6,702	0.017	27	678
21	87.5	1,160	8,884	0.023	35	988
20	82.5	1,187	8,082	0.021	32	1,011
19	78.5	725	4,470	0.012	18	618
18	76	494	2,856	0.007	11	421
17	72.5	1,255	6,597	0.017	26	1,069
16	67.5	1,282	5,841	0.015	23	1,092
15	62.5	1,309	5,113	0.013	20	1,115
14	57.5	1,336	4,417	0.011	18	1,138
13	53	1,088	3,057	0.008	12	927
12	50.5	472	1,204	0.003	5	402
11	48.125	1,789	4,144	0.011	16	1,524
10	45.625	343	715	0.002	3	292
9	42.5	1,390	2,511	0.006	10	1,184
8	37.5	1,417	1,993	0.005	8	1,207
7	32.5	1,444	1,525	0.004	6	1,230
6	27.5	1,471	1,112	0.003	4	1,253
5	22.5	1,498	758	0.002	3	1,276
4	17.5	1,525	467	0.001	2	1,299
3	12.5	1,552	243	0.001	1	1,322
2	7.5	1,579	89	0.000	0	1,345
1	2.5	1,606	10	0.000	0	1,368
dbSpectra DS7C09P36U-D	140	210	4,116	0.011	16	179
Generic 12' Omni	140	40	784	0.002	3	34
Generic 12' Omni	140	40	784	0.002	3	34



Segment	Height Above Base (ft)	Weight (lb)	W <sub>z</sub> (lb-ft)	C <sub>vx</sub>	Horizontal Force (lb)	Vertical Force (lb)
Generic 8' Omni	140	50	980	0.002	4	43
Generic 6' FM antenna	140	30	588	0.002	2	26
Generic 12' Dipole	140	40	784	0.002	3	34
TX RX Systems 432F-83W-01-C-110/110R/48/48R	140	18	353	0.001	1	15
RFS SC3-W100AB	140	40	784	0.002	3	34
Generic 6' Omni	138	25	476	0.001	2	21
Generic Flat Platform with Handrails	138	2,500	47,610	0.122	189	2,129
Generic Flat Platform with Handrails	77	2,500	14,822	0.038	59	2,129
Ericsson 4460 BAND 2/25	132	327	5,698	0.015	23	278
Ericsson 4480 BAND 71	132	243	4,234	0.011	17	207
Commscope VV-65A-R1	132	71	1,244	0.003	5	61
Ericsson AIR 6419 B41	132	250	4,354	0.011	17	213
RFS APXVAALL24 43-U-NA20	132	368	6,419	0.016	25	314
Site Pro 1 RMQP-496-HK	132	1,799	31,346	0.081	124	1,532
Alcatel-Lucent 800 MHz 2X50W RRH w/ Filter	130	192	3,245	0.008	13	164
Alcatel-Lucent 4x40W RRH (91 lb)	130	273	4,614	0.012	18	232
Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield	130	210	3,549	0.009	14	179
RFS APXV9TM14-ALU-I20*	130	165	2,794	0.007	11	141
RFS APXVSPP18-C-A20	130	171	2,890	0.007	11	146
Generic 9' Omni	125.4	25	393	0.001	2	21
Andrew DB586	121	8	122	0.000	0	7
Generic Round Low Profile Platform	120	1,875	27,000	0.069	107	1,597
Diamond X50A	115.5	5	61	0.000	0	4
RFS DB-C1-12C-24AB-0Z	114.9	32	422	0.001	2	27
Alcatel-Lucent B13 RRH4x30-4R	111.3	173	2,148	0.006	9	148
Alcatel-Lucent B25 RRH4x30	110.1	159	1,927	0.005	8	135
Commscope CBC78T-DS-43-2X	110	62	751	0.002	3	53
Nokia AirScale RRH 4T4R B5 160W AHCA	110	106	1,281	0.003	5	90
Alcatel-Lucent RRH 2X60-1900	110	119	1,437	0.004	6	101
Alcatel-Lucent B66a RRH4x45 (AWS-3)	110	201	2,432	0.006	10	171
Amphenol Antel BXA-171063/8CF	110	32	381	0.001	2	27
RFS DB-T1-6Z-8AB-0Z	110	88	1,065	0.003	4	75
Antel BXA-70080/6CF	110	54	653	0.002	3	46
Commscope JAHH-65B-R3B	110	364	4,400	0.011	17	310
Generic Round Platform with Handrails	110	2,500	30,250	0.078	120	2,129
Ericsson RRUS 32 B2	103.8	159	1,713	0.004	7	135
Ericsson RRUS 32 B2	100	159	1,590	0.004	6	135
Raycap DC6-48-60-18-8F ("Squid")	103.6	32	341	0.001	1	27
Raycap DC6-48-60-18-8F ("Squid")	100	32	318	0.001	1	27
Ericsson RRUS-11 (50 lbs.)	102.2	150	1,567	0.004	6	128
Ericsson Air 6449 B77D	102	245	2,547	0.007	10	208
CCI HPA-65R-BUU-H6	100.1	153	1,533	0.004	6	130
Ericsson RRUS 4426 B66	100	145	1,452	0.004	6	124
Ericsson RRUS 4449 B5, B12	100	213	2,130	0.006	8	181
Ericsson RRUS 4478 B14	100	178	1,782	0.005	7	152
Raycap DC9-48-60-24-8C-EV	100	32	320	0.001	1	27
CCI TPA-65R-BU6DA-K	100	239	2,388	0.006	9	203
CCI DMP65R-BU8D	100	287	2,871	0.007	11	244
Generic Flat Low Profile Platform	100	1,875	18,750	0.048	74	1,597
Powerwave Allgon 7770.00	99.7	210	2,087	0.005	8	179
Powerwave Allgon LGP21401	98.6	169	1,645	0.004	7	144
Ericsson AIR 6419 B77G	98	198	1,904	0.005	8	169
Raycap RDIDC-9181-PF-48	77	22	130	0.000	1	19
Fujitsu TA08025-B605	77	225	1,334	0.003	5	192
Fujitsu TA08025-B604	77	192	1,137	0.003	5	163
JMA Wireless MX08FRO665-21	77	194	1,147	0.003	5	165
		51,400	388,815	0.999	1,542	43,771

1.2D + 1.0Ev + 1.0Eh Normal Seismic

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
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Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-62.16	-1.55	0.00	-177.76	0.00	177.76	5,497.77	1,298.68	5,470	5,259.85	0.00	0.00	0.05
5.00	-60.19	-1.56	0.00	-170.03	0.00	170.03	5,379.84	1,270.83	5,238	5,035.45	0.01	-0.01	0.05
10.00	-58.25	-1.57	0.00	-162.23	0.00	162.23	5,261.92	1,242.97	5,011	4,815.96	0.03	-0.02	0.05
15.00	-56.35	-1.58	0.00	-154.37	0.00	154.37	5,144.00	1,215.12	4,789	4,601.35	0.06	-0.04	0.05
20.00	-54.48	-1.59	0.00	-146.47	0.00	146.47	5,026.07	1,187.26	4,572	4,391.63	0.10	-0.05	0.04
25.00	-52.64	-1.59	0.00	-138.52	0.00	138.52	4,908.15	1,159.41	4,360	4,186.81	0.16	-0.06	0.04
30.00	-50.84	-1.60	0.00	-130.55	0.00	130.55	4,790.23	1,131.55	4,153	3,986.88	0.24	-0.08	0.04
35.00	-49.07	-1.60	0.00	-122.56	0.00	122.56	4,672.31	1,103.69	3,951	3,791.84	0.32	-0.09	0.04
40.00	-47.33	-1.60	0.00	-114.56	0.00	114.56	4,554.38	1,075.84	3,754	3,601.69	0.43	-0.10	0.04
45.00	-46.91	-1.60	0.00	-106.58	0.00	106.58	4,436.46	1,047.98	3,562	3,416.43	0.54	-0.12	0.04
46.25	-44.67	-1.59	0.00	-104.58	0.00	104.58	4,406.98	1,041.02	3,515	3,370.88	0.57	-0.12	0.04
50.00	-44.08	-1.58	0.00	-98.63	0.00	98.63	4,318.54	1,020.13	3,376	3,236.07	0.67	-0.13	0.04
51.00	-42.72	-1.57	0.00	-97.05	0.00	97.05	4,412.85	1,042.41	3,525	3,379.93	0.70	-0.13	0.04
55.00	-41.06	-1.56	0.00	-90.75	0.00	90.75	4,318.52	1,020.12	3,376	3,236.03	0.81	-0.14	0.04
60.00	-39.42	-1.55	0.00	-82.95	0.00	82.95	4,200.59	992.27	3,194	3,060.56	0.97	-0.16	0.04
65.00	-37.82	-1.53	0.00	-75.22	0.00	75.22	4,082.67	964.41	3,017	2,889.98	1.14	-0.17	0.04
70.00	-36.25	-1.50	0.00	-67.60	0.00	67.60	3,964.75	936.55	2,845	2,724.29	1.33	-0.18	0.03
75.00	-35.64	-1.49	0.00	-60.08	0.00	60.08	3,846.82	908.70	2,679	2,563.49	1.53	-0.19	0.03
77.00	-30.82	-1.39	0.00	-57.10	0.00	57.10	3,799.65	897.56	2,613	2,500.54	1.61	-0.20	0.03
80.00	-29.34	-1.36	0.00	-52.93	0.00	52.93	3,728.90	880.84	2,517	2,407.59	1.73	-0.21	0.03
85.00	-27.89	-1.32	0.00	-46.15	0.00	46.15	3,610.98	852.99	2,360	2,256.57	1.96	-0.22	0.03
90.00	-26.90	-1.30	0.00	-39.54	0.00	39.54	3,493.05	825.13	2,209	2,110.45	2.19	-0.23	0.03
93.50	-26.36	-1.28	0.00	-35.01	0.00	35.01	3,410.51	805.63	2,106	2,011.07	2.36	-0.23	0.03
95.00	-25.57	-1.26	0.00	-33.09	0.00	33.09	3,375.13	797.28	2,062	1,969.22	2.43	-0.24	0.02
97.25	-25.45	-1.25	0.00	-30.26	0.00	30.26	1,102.89	301.46	786	655.89	2.54	-0.24	0.07
98.00	-25.11	-1.24	0.00	-29.32	0.00	29.32	1,099.71	299.89	778	650.58	2.58	-0.24	0.07
98.60	-24.72	-1.23	0.00	-28.58	0.00	28.58	1,097.14	298.64	771	646.33	2.61	-0.25	0.07
99.70	-24.41	-1.22	0.00	-27.22	0.00	27.22	1,092.40	296.34	759	638.55	2.67	-0.25	0.07
100.00	-20.46	-1.08	0.00	-26.86	0.00	26.86	1,091.10	295.71	756	636.43	2.69	-0.25	0.06
100.10	-20.04	-1.06	0.00	-26.75	0.00	26.75	1,090.66	295.50	755	635.72	2.69	-0.25	0.06
102.00	-19.71	-1.05	0.00	-24.73	0.00	24.73	1,082.30	291.53	735	622.32	2.79	-0.26	0.06
102.20	-19.36	-1.04	0.00	-24.52	0.00	24.52	1,081.40	291.12	733	620.91	2.80	-0.26	0.06
103.60	-19.30	-1.04	0.00	-23.06	0.00	23.06	1,075.12	288.19	718	611.05	2.88	-0.27	0.06
103.80	-18.96	-1.03	0.00	-22.86	0.00	22.86	1,074.21	287.77	716	609.65	2.89	-0.27	0.06
105.00	-18.42	-1.01	0.00	-21.62	0.00	21.62	1,068.74	285.27	704	601.22	2.96	-0.27	0.05
110.00	-14.01	-0.82	0.00	-16.58	0.00	16.58	1,045.19	274.82	653	566.30	3.26	-0.29	0.04
110.10	-13.70	-0.81	0.00	-16.50	0.00	16.50	1,044.71	274.61	652	565.60	3.26	-0.29	0.04
111.30	-13.15	-0.78	0.00	-15.53	0.00	15.53	1,038.88	272.10	640	557.28	3.34	-0.30	0.04
114.90	-13.10	-0.78	0.00	-12.71	0.00	12.71	1,020.97	264.58	605	532.42	3.56	-0.31	0.04
115.00	-13.06	-0.78	0.00	-12.63	0.00	12.63	1,020.46	264.37	604	531.74	3.57	-0.31	0.04
115.50	-12.66	-0.76	0.00	-12.24	0.00	12.24	1,017.93	263.33	600	528.30	3.60	-0.31	0.04
120.00	-10.24	-0.64	0.00	-8.81	0.00	8.81	994.55	253.93	558	497.61	3.90	-0.32	0.03
121.00	-9.89	-0.62	0.00	-8.17	0.00	8.17	989.22	251.84	548	490.84	3.97	-0.32	0.03
125.00	-9.86	-0.62	0.00	-5.69	0.00	5.69	967.45	243.48	513	463.98	4.24	-0.33	0.02
125.40	-9.46	-0.60	0.00	-5.44	0.00	5.44	965.23	242.65	509	461.32	4.27	-0.33	0.02
130.00	-8.05	-0.51	0.00	-2.69	0.00	2.69	939.16	233.04	470	430.94	4.59	-0.33	0.02
132.00	-4.04	-0.27	0.00	-1.66	0.00	1.66	927.52	228.86	453	417.90	4.73	-0.34	0.01
135.00	-3.86	-0.26	0.00	-0.85	0.00	0.85	909.69	222.59	428	398.55	4.94	-0.34	0.01
138.00	-0.58	-0.04	0.00	-0.08	0.00	0.08	891.44	216.32	405	379.46	5.15	-0.34	0.00
140.00	0.00	-0.04	0.00	0.00	0.00	0.00	879.04	212.15	389	366.89	5.29	-0.34	0.00

**0.9D - 1.0Ev + 1.0Eh Normal Seismic (Reduced DL)**

**CALCULATED FORCES**

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-42.40	-1.55	0.00	-174.18	0.00	174.18	5,497.77	1,298.68	5,470	5,259.85	0.00	0.00	0.04
5.00	-41.06	-1.55	0.00	-166.46	0.00	166.46	5,379.84	1,270.83	5,238	5,035.45	0.01	-0.01	0.04
10.00	-39.74	-1.56	0.00	-158.69	0.00	158.69	5,261.92	1,242.97	5,011	4,815.96	0.03	-0.02	0.04
15.00	-38.44	-1.57	0.00	-150.88	0.00	150.88	5,144.00	1,215.12	4,789	4,601.35	0.06	-0.04	0.04
20.00	-37.16	-1.57	0.00	-143.05	0.00	143.05	5,026.07	1,187.26	4,572	4,391.63	0.10	-0.05	0.04
25.00	-35.91	-1.57	0.00	-135.20	0.00	135.20	4,908.15	1,159.41	4,360	4,186.81	0.16	-0.06	0.04
30.00	-34.68	-1.57	0.00	-127.33	0.00	127.33	4,790.23	1,131.55	4,153	3,986.88	0.23	-0.07	0.04
35.00	-33.47	-1.57	0.00	-119.46	0.00	119.46	4,672.31	1,103.69	3,951	3,791.84	0.32	-0.09	0.04
40.00	-32.29	-1.57	0.00	-111.60	0.00	111.60	4,554.38	1,075.84	3,754	3,601.69	0.42	-0.10	0.04
45.00	-31.99	-1.57	0.00	-103.77	0.00	103.77	4,436.46	1,047.98	3,562	3,416.43	0.53	-0.11	0.04
46.25	-30.47	-1.55	0.00	-101.81	0.00	101.81	4,406.98	1,041.02	3,515	3,370.88	0.56	-0.12	0.04
50.00	-30.07	-1.55	0.00	-95.99	0.00	95.99	4,318.54	1,020.13	3,376	3,236.07	0.66	-0.13	0.04

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
51.00	-29.14	-1.54	0.00	-94.43	0.00	94.43	4,412.85	1,042.41	3,525	3,379.93	0.68	-0.13	0.04
55.00	-28.00	-1.52	0.00	-88.28	0.00	88.28	4,318.52	1,020.12	3,376	3,236.03	0.80	-0.14	0.03
60.00	-26.89	-1.51	0.00	-80.65	0.00	80.65	4,200.59	992.27	3,194	3,060.56	0.95	-0.15	0.03
65.00	-25.80	-1.49	0.00	-73.11	0.00	73.11	4,082.67	964.41	3,017	2,889.98	1.12	-0.17	0.03
70.00	-24.73	-1.46	0.00	-65.68	0.00	65.68	3,964.75	936.55	2,845	2,724.29	1.30	-0.18	0.03
75.00	-24.31	-1.45	0.00	-58.37	0.00	58.37	3,846.82	908.70	2,679	2,563.49	1.49	-0.19	0.03
77.00	-21.02	-1.35	0.00	-55.46	0.00	55.46	3,799.65	897.56	2,613	2,500.54	1.57	-0.19	0.03
80.00	-20.01	-1.32	0.00	-51.40	0.00	51.40	3,728.90	880.84	2,517	2,407.59	1.69	-0.20	0.03
85.00	-19.02	-1.29	0.00	-44.80	0.00	44.80	3,610.98	852.99	2,360	2,256.57	1.91	-0.21	0.03
90.00	-18.34	-1.26	0.00	-38.38	0.00	38.38	3,493.05	825.13	2,209	2,110.45	2.13	-0.22	0.02
93.50	-17.98	-1.24	0.00	-33.97	0.00	33.97	3,410.51	805.63	2,106	2,011.07	2.30	-0.23	0.02
95.00	-17.44	-1.22	0.00	-32.10	0.00	32.10	3,375.13	797.28	2,062	1,969.22	2.37	-0.23	0.02
97.25	-17.36	-1.22	0.00	-29.36	0.00	29.36	1,102.89	301.46	786	655.89	2.48	-0.24	0.06
98.00	-17.13	-1.21	0.00	-28.45	0.00	28.45	1,099.71	299.89	778	650.58	2.52	-0.24	0.06
98.60	-16.86	-1.19	0.00	-27.72	0.00	27.72	1,097.14	298.64	771	646.33	2.55	-0.24	0.06
99.70	-16.65	-1.18	0.00	-26.41	0.00	26.41	1,092.40	296.34	759	638.55	2.60	-0.24	0.06
100.00	-13.95	-1.05	0.00	-26.06	0.00	26.06	1,091.10	295.71	756	636.43	2.62	-0.25	0.05
100.10	-13.67	-1.03	0.00	-25.95	0.00	25.95	1,090.66	295.50	755	635.72	2.63	-0.25	0.05
102.00	-13.44	-1.02	0.00	-23.99	0.00	23.99	1,082.30	291.53	735	622.32	2.72	-0.25	0.05
102.20	-13.20	-1.01	0.00	-23.78	0.00	23.78	1,081.40	291.12	733	620.91	2.74	-0.25	0.05
103.60	-13.16	-1.01	0.00	-22.37	0.00	22.37	1,075.12	288.19	718	611.05	2.81	-0.26	0.05
103.80	-12.94	-1.00	0.00	-22.17	0.00	22.17	1,074.21	287.77	716	609.65	2.82	-0.26	0.05
105.00	-12.56	-0.98	0.00	-20.97	0.00	20.97	1,068.74	285.27	704	601.22	2.89	-0.27	0.05
110.00	-9.55	-0.80	0.00	-16.08	0.00	16.08	1,045.19	274.82	653	566.30	3.18	-0.28	0.04
110.10	-9.34	-0.78	0.00	-16.00	0.00	16.00	1,044.71	274.61	652	565.60	3.18	-0.28	0.04
111.30	-8.97	-0.76	0.00	-15.06	0.00	15.06	1,038.88	272.10	640	557.28	3.25	-0.29	0.04
114.90	-8.94	-0.76	0.00	-12.32	0.00	12.32	1,020.97	264.58	605	532.42	3.47	-0.30	0.03
115.00	-8.91	-0.76	0.00	-12.25	0.00	12.25	1,020.46	264.37	604	531.74	3.48	-0.30	0.03
115.50	-8.64	-0.74	0.00	-11.87	0.00	11.87	1,017.93	263.33	600	528.30	3.51	-0.30	0.03
120.00	-6.98	-0.62	0.00	-8.54	0.00	8.54	994.55	253.93	558	497.61	3.80	-0.31	0.02
121.00	-6.75	-0.60	0.00	-7.92	0.00	7.92	989.22	251.84	548	490.84	3.86	-0.31	0.02
125.00	-6.72	-0.60	0.00	-5.51	0.00	5.51	967.45	243.48	513	463.98	4.13	-0.32	0.02
125.40	-6.45	-0.58	0.00	-5.27	0.00	5.27	965.23	242.65	509	461.32	4.16	-0.32	0.02
130.00	-5.49	-0.50	0.00	-2.61	0.00	2.61	939.16	233.04	470	430.94	4.47	-0.33	0.01
132.00	-2.76	-0.26	0.00	-1.61	0.00	1.61	927.52	228.86	453	417.90	4.61	-0.33	0.01
135.00	-2.63	-0.25	0.00	-0.83	0.00	0.83	909.69	222.59	428	398.55	4.81	-0.33	0.01
138.00	-0.40	-0.04	0.00	-0.08	0.00	0.08	891.44	216.32	405	379.46	5.02	-0.33	0.00
140.00	0.00	-0.04	0.00	0.00	0.00	0.00	879.04	212.15	389	366.89	5.16	-0.33	0.00

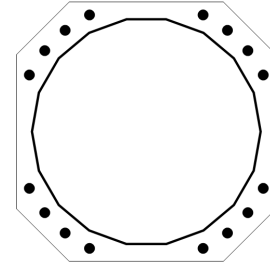
ANALYSIS SUMMARY

Load Case	Reactions						Max Usage	
	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Elev (ft)	Interaction Ratio
1.2D + 1.0W Normal	29.94	0.00	61.62	0.01	0.09	3184.28	97.25	0.79
0.9D + 1.0W Normal	29.91	0.00	46.20	0.01	0.09	3134.81	97.25	0.77
1.2D + 1.0Di + 1.0Wi Normal	7.80	0.00	80.17	0.00	0.02	833.57	97.25	0.24
1.2D + 1.0Ev + 1.0Eh Normal	1.60	0.00	62.16	0.00	0.00	177.76	97.25	0.07
0.9D - 1.0Ev + 1.0Eh Normal	1.57	0.00	42.40	0.00	0.00	174.18	97.25	0.06
1.0D + 1.0W Service Normal	6.92	0.00	51.40	0.00	0.02	729.79	97.25	0.19

**BASE PLATE ANALYSIS @ 0 FT**

**PLATE PARAMETERS (ID# 4059)**

Width:	54	in
Shape:	Square	
Thickness:	3.25	in
Grade:	A572-50	
Yield Strength:	50	ksi
Tensile Strength:	65	ksi
Clip Length:	11	in
Rod Detail Type:	d	
Clear Distance:	3	in
Base Weld Size:	0.125	in
Orientation Offset:	-	°
Analysis Type:	Plastic	
Neutral Axis:	224	°



**ANCHOR ROD PARAMETERS**

Class	Arrangement	Quantity	Diameter (in)	Circle (in)	Grade	Fy (ksi)	Fu (ksi)	Spacing (in)	Offset (°)
Original [ID# 6041]	Cluster	16	2.25	54	A615-75	75	100	6	-

**ANCHOR ROD GEOMETRY AND APPLIED LOADS --- ORIGINAL (16) 2.25"Ø [ID 6041]**

Position	Radians	X (in)	Y (in)	Moment Arm (in)	Inertia (in <sup>4</sup> )	Axial Load (k)	Shear Load (k)
1	0.452	24.29	11.79	7.980	207.648	164.19	2.99
2	0.674	21.09	16.86	2.402	19.582	164.19	3.14
3	0.897	16.86	21.09	-3.293	36.065	-148.78	3.12
4	1.119	11.79	24.29	-8.827	253.895	-148.78	2.96
5	2.023	-11.79	24.29	-24.417	1937.010	-148.78	0.98
6	2.245	-16.86	21.09	-25.575	2125.077	-148.78	0.30
7	2.467	-21.09	16.86	-25.476	2108.593	-148.78	0.40
8	2.690	-24.29	11.79	-24.123	1890.763	-148.78	1.08
9	3.594	-24.29	-11.79	-7.980	207.649	-148.78	2.99
10	3.816	-21.09	-16.86	-2.402	19.582	-148.78	3.14
11	4.038	-16.86	-21.09	3.293	36.066	164.19	3.12
12	4.260	-11.79	-24.29	8.827	253.895	164.19	2.96
13	5.164	11.79	-24.29	24.417	1937.011	164.19	0.98
14	5.387	16.86	-21.09	25.575	2125.077	164.19	0.30
15	5.609	21.09	-16.86	25.476	2108.594	164.19	0.40
16	5.831	24.29	-11.79	24.123	1890.764	164.19	1.08

**REACTION DISTRIBUTION**

Component	ID	Moment Mu (k-ft)	Axial Load Pu (k)	Shear Vu (k)	Moment Factor
Pole	47.13"Ø x 0.5" (18 Sides)	3184.3	61.62	29.94	1.000
Bolt Group	Original (16) 2.25"Ø	3184.3	-	29.94	1.000
<b>TOTALS</b>		<b>3184.28</b>	<b>61.62</b>	<b>29.94</b>	

ASSET: 310968, WSPT-WESTPORT REBUILD CT  
 CUSTOMER: DISH WIRELESS L.L.C.

CODE: ANSI/TIA-222-H  
 ENG NO: 13709691

**COMPONENT PROPERTIES**

Component	ID	Gross Area (in <sup>2</sup> )	Net Area (in <sup>2</sup> )	Individual Inertia (in <sup>4</sup> )	Moment of Inertia (in <sup>4</sup> )	Threads/in
Pole	47.13"ø x 0.5" (18 Sides)	72.8749	-	-	19813.12	-
Bolt Group	Original (16) 2.25"ø	3.9761	3.2477	0.8393	17157.27	4.5

**EXTERNAL BASE PLATE BEND LINE ANALYSIS @ 0 FT**

**POLE PROPERTIES**

Flat-to-Flat Diameter: 47.26 in  
 Point-to-Point Diameter: 47.98 in  
 Flat Width: 8.332 in  
 Flat Radians: 0.349 rad

**PLATE PROPERTIES**

Neutral Axis: 224 °  
 Bend Line Lower Limit: rad  
 Bend Line Upper Limit: -0.147 rad

Bend Line	Chord Length (in)	Additional Length (in)	Section Modulus (in <sup>3</sup> )	Applied Moment Mu (k-in)	Moment Capacity φMn (k-in)	Ratio
Flat	29.113	0.00	76.875	946.2	3459.4	0.274
Corner	28.384	0.00	74.950	678.0	3372.8	0.201

**PLASTIC ANCHOR ROD ANALYSIS**

Class	Group Quantity	Rod Diameter (in)	Applied Axial Load Pu (k)	Applied Shear Load Vu (k)	Compressive Capacity φPn (k)	Ratio
Original	16	2.25	164.2	3.1	243.6	0.700

<b>RAN Template:</b> 67E5D998E Outdoor	<b>A&amp;L Template:</b> 67E5998E_1xAIR+1OP+1QP
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CT11323A\_Anchor\_4

Print Name: Preliminary (RFDS\_for\_Scoping)  
 PORs: Replacement\_Colo Consolidation  
 Anchor\_Phase 3

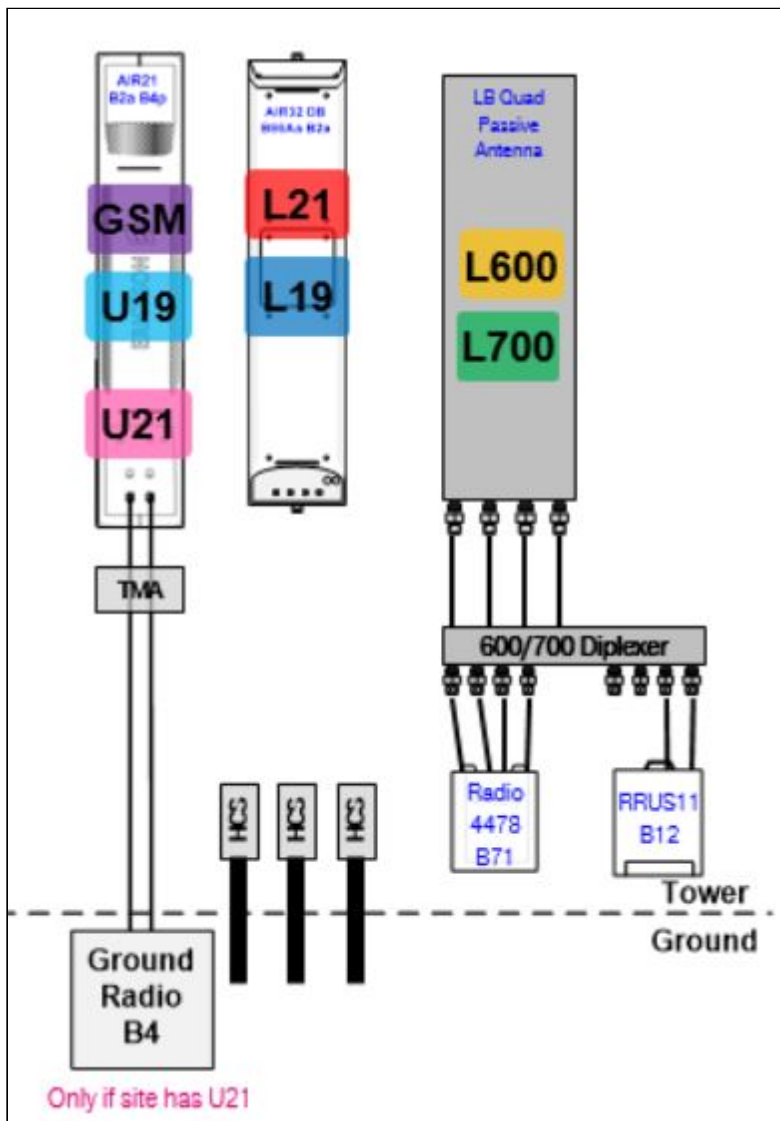
Section 1 - Site Information

<b>Site ID:</b> CT11323A	<b>Site Name:</b> CT323/SS Tower Rebuild	<b>Latitude:</b> 41.17167000
<b>Status:</b> Final	<b>Site Class:</b> Self Support Tower	<b>Longitude:</b> -73.32881000
<b>Version:</b> 4	<b>Site Type:</b> Structure Non Building	<b>Address:</b> 180-182 Bayberry Lane
<b>Project Type:</b> Anchor	<b>Plan Year:</b> 2022	<b>City, State:</b> Westport, CT
<b>Approved:</b> 3/22/2022 10:39:42 AM	<b>Market:</b> CONNECTICUT CT	<b>Region:</b> NORTHEAST
<b>Approved By:</b> Pratik.Patil30@T-Mobile.com	<b>Vendor:</b> Ericsson	
<b>Last Modified:</b> 3/22/2022 10:39:42 AM	<b>Landlord:</b> Spectrasite	
<b>Last Modified By:</b> Pratik.Patil30@T-Mobile.com		

<b>RAN Template:</b> 67E5D998E Outdoor		<b>AL Template:</b> 67E5998E_1xAIR+1OP+1QP		
<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

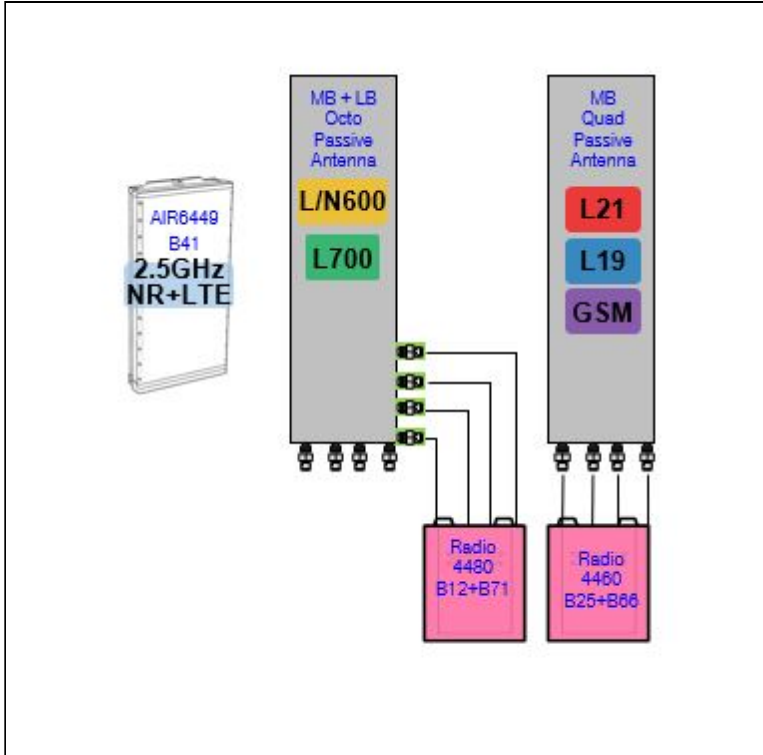
6792DB.JPG



Notes:

Section 3 - Proposed Template Images

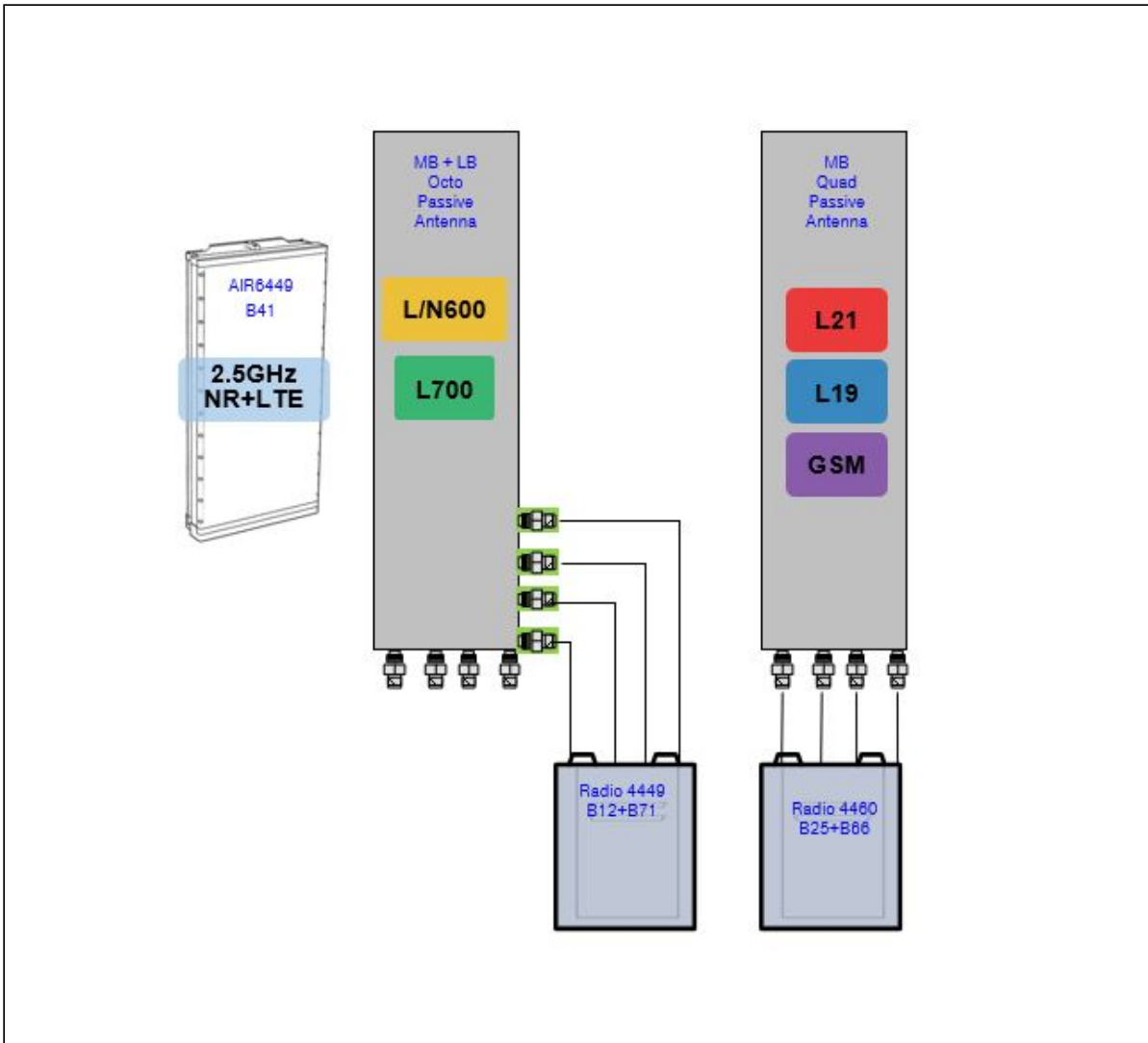
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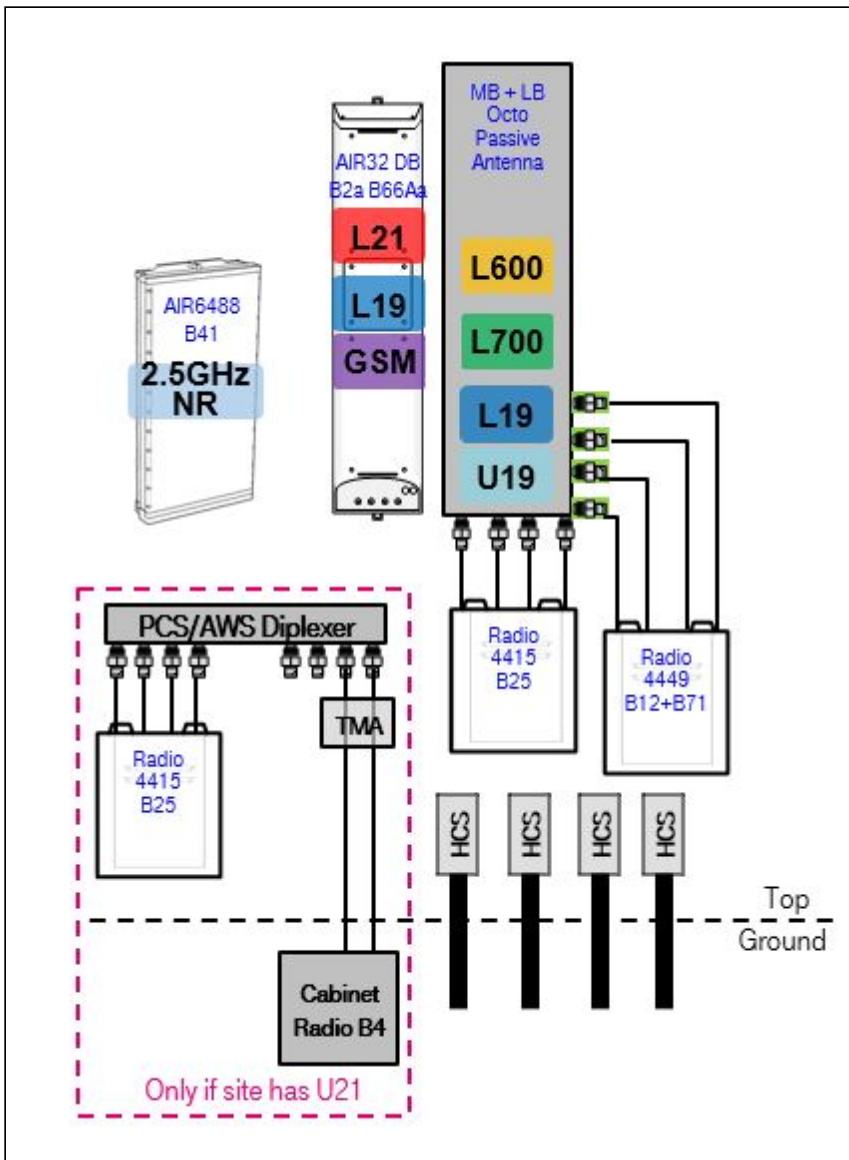
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Notes:

67D5997DB\_2xAIR+1OP.JPG



Notes:

Section 4 - Siteplan Images

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<b>RAN Template:</b> 67E5D998E Outdoor	<b>A&amp;L Template:</b> 67E5998E_1xAIR+1OP+1QP
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Section 5 - RAN Equipment

Existing RAN Equipment

Template: 67D92DB Outdoor

Enclosure	1	2
<b>Enclosure Type</b>	RBS 6131	Ancillary Equipment (Ericsson)
<b>Baseband</b>	DUW30 U1900 (DECOMMISSIONED)	DUW30 U2100
	DUG20 G1900	BB 6630 L2100 L1900
		BB 6630 L700 L600 N600
<b>Hybrid Cable System</b>		Ericsson 9x18 HCS 40m Ericsson 6x12 HCS 6AWG 40m (x 2)
<b>Radio</b>	RU22 (x 6) U2100	

Proposed RAN Equipment

Template: 67E5D998E Outdoor

Enclosure	1	2	3	4
<b>Enclosure Type</b>	RBS 6131	Ancillary Equipment (Ericsson)	Enclosure 6160 AC V1	B160
<b>Baseband</b>	DUG20 G1900	BB 6630 L700 L600 N600	BB 6630 L2100 L1900	RP 6651 N2500 L2500
<b>Hybrid Cable System</b>		Ericsson Hybrid Trunk 6/24 4AWG 50m (x 2)	PSU 4813 vR4A (Kit) (x 2) Ericsson Hybrid Trunk 6/24 4AWG 50m (x 2)	
<b>Transport System</b>			CSR IXRe V2 (Gen2)	

RAN Scope of Work:

- Remove and return cabinet Radios form existing cabinet 6131.
- Remove Nortel cabinets.
- Add (1) Enclosure 6160.
- Add (1) iXRe Router to new Enclosure 6160.
- Add (1) RP 6651 for L2500/N2500 to new Enclosure 6160.
- Add (2) PSU4813 Voltage Booster to new Enclosure 6160.
- Add (1) Battery Cabinet B160.
- Existing : (1) 9x18, (2) 6x12
- Remove all Coax, remove (1) 9x18, (2) 6x12
- Add (2) 6X24 HCS terminating at the Enclosure 6160 and (2) 6x24 terminating at 6131. Connect DC for the AIR6419 B41 to the PSU4813 Voltage Booster.

<b>RAN Template:</b> 67E5D998E Outdoor	<b>A&amp;L Template:</b> 67E5998E_1xAIR+1OP+1QP
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Section 6 - A&L Equipment

Existing Template: 6792DB\_2xAIR+1QP  
 Proposed Template: 67E5998E\_1xAIR+1OP+1QP

Sector 1 (Existing) view from behind

<b>Coverage Type</b>	A - Outdoor Macro									
<b>Antenna</b>	1			2				3		
<b>Antenna Model</b>	Ericsson - AIR32 KRD901146-1_B66A_B2A (Octo)			RFS - APXVAARR24_43-U-NA20 (Octo)				Ericsson - AIR21 KRC118023-1_B2A_B4P (Quad)		
<b>Azimuth</b>	60			60				60		
<b>M. Tilt</b>	0			0				0		
<b>Height</b>	87			87				87		
<b>Ports</b>	<b>P1</b>	<b>P2</b>	<b>P3</b>	<b>P4</b>	<b>P5</b>	<b>P6</b>	<b>P7</b>	<b>P8</b>	<b>P9</b>	<b>P10</b>
<b>Active Tech.</b>	L2100	L2100	L1900	L1900	L700 L600 N600	L700 L600 N600			G1900	U2100
<b>Dark Tech.</b>										
<b>Restricted Tech.</b>										
<b>Decomm. Tech.</b>									U1900	
<b>E. Tilt</b>										
<b>Cables</b>	Fiber Jumper		Fiber Jumper		JUMPER 6' SUREFLEX DIN MALE-DIN MALE - 6 ft. (x2)	JUMPER 6' SUREFLEX DIN MALE-DIN MALE (x2)				1 5/8in AVA COAX CABLE FIRE RETARDENT - 125 ft. (x2) JUMPER 6' SUREFLEX DIN MALE-DIN MALE (x2)
<b>TMA's</b>										Generic Twin Style 1B - AWS (AtAntenna)
<b>Diplexers / Combiners</b>										
<b>Radio</b>					Radio 4449 B71+B8 5 (At Antenna)					
<b>Sector Equipment</b>										

Unconnected Equipment:

Scope of Work:

<b>RAN Template:</b> 67E5D998E Outdoor	<b>A&amp;L Template:</b> 67E5998E_1xAIR+1OP+1QP
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Sector 1 (Proposed) view from behind										
Coverage Type	A - Outdoor Macro									
Antenna	1		2				3			
Antenna Model	AIR 6419 B41 (Active Antenna - Massive MIMO)		RFS - APXVAALL24_43-U-NA20 (Octo)				Commscope_VV-65A-R1 (Quad)			
Azimuth	60		60				60			
M. Tilt	0		0				0			
Height	130		130				130			
Ports	P1		P2		P3	P4	P5	P6	P7	P8
Active Tech.	N2500	L2500	N2500	L2500	L700	L700			L2100	L1900
Dark Tech.					L600	L600			G1900	
Restricted Tech.					N600	N600				G1900
Decomm. Tech.										
E. Tilt										
Cables	Fiber Jumper (x2)		Fiber Jumper (x2)		Coax Jumper (x2)	Coax Jumper (x2)			Coax Jumper (x2)	Coax Jumper (x2)
TMA's					Fiber Jumper	Fiber Jumper			Fiber Jumper	Fiber Jumper
Diplexers / Combiners										
Radio					Radio 4480 B71+B85 (At Antenna)	SHARED Radio 4480 B71+B85 (At Antenna)			Radio 4460 B25+B66 (At Antenna)	SHARED Radio 4460 B25+B66 (At Antenna)
Sector Equipment										

**Unconnected Equipment:**

**Scope of Work:**

Use Sprint RAD center at 130 feet.  
 Remove all TMA's.  
 Remove all Coaxial Lines if existing.  
 Replace AIR32 with (1) AIR6419 B41 for L2500 and N2500 in Position 1.  
 Replace existing octo with APXVAALL24 in Position 2.  
 Replace existing Radio 4449 with Radio 4480 B71+B85 for L600, L700 and N600 in Position 2 at antenna.  
 Replace AIR21 with (1) Commscope VV-65A-R1 in Position 3  
 Add (1) Radio 4460 B25+B66 for L2100, L1900 (Both carriers), and GSM to Position 3 at antenna.

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

<b>RAN Template:</b> 67E5D998E Outdoor	<b>A&amp;L Template:</b> 67E5998E_1xAIR+1OP+1QP
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CT11323A\_Anchor\_4

Print Name: Preliminary (RFDS\_for\_Scoping)  
 PORs: Replacement\_Colo Consolidation  
 Anchor\_Phase 3

Sector 2 (Existing) view from behind										
<b>Coverage Type</b>	A - Outdoor Macro									
<b>Antenna</b>	1			2				3		
<b>Antenna Model</b>	Ericsson - AIR32 KRD901146-1_B66A_B2A (Octo)			RFS - APXVAARR24_43-U-NA20 (Octo)				Ericsson - AIR21 KRC118023-1_B2A_B4P (Quad)		
<b>Azimuth</b>	160			160				160		
<b>M. Tilt</b>	0			0				0		
<b>Height</b>	87			87				87		
<b>Ports</b>	<b>P1</b>	<b>P2</b>	<b>P3</b>	<b>P4</b>	<b>P5</b>	<b>P6</b>	<b>P7</b>	<b>P8</b>	<b>P9</b>	<b>P10</b>
<b>Active Tech.</b>	L2100	L2100	L1900	L1900	L700 L600 N600	L700 L600 N600			G1900	U2100
<b>Dark Tech.</b>										
<b>Restricted Tech.</b>										
<b>Decomm. Tech.</b>									U1900	
<b>E. Tilt</b>										
<b>Cables</b>	Fiber Jumper		Fiber Jumper		JUMPE R 6' SUREF LEX DIN MALE-DIN MALE - 6 ft. (x2)	JUMPE R 6' SUREF LEX DIN MALE-DIN MALE - 6 ft. (x2)				1 5/8In AVA COAX CABLE FIRE RETARDENT - 125 ft. (x2) JUMPER 6' SUREFLEX DIN MALE-DIN MALE (x2)
<b>TMA's</b>										Generic Twin Style 1B - AWS (AtAntenna)
<b>Diplexers / Combiners</b>										
<b>Radio</b>					Radio 4449 B71+B8 5 (At Antenna )					
<b>Sector Equipment</b>										
<b>Unconnected Equipment:</b>										
<b>Scope of Work:</b>										

<b>RAN Template:</b> 67E5D998E Outdoor	<b>A&amp;L Template:</b> 67E5998E_1xAIR+1OP+1QP
---	--

Sector 2 (Proposed) view from behind										
Coverage Type	A - Outdoor Macro									
Antenna	1		2				3			
Antenna Model	AIR 6419 B41 (Active Antenna - Massive MIMO)		RFS - APXVAALL24_43-U-NA20 (Octo)				Commscope_VV-65A-R1 (Quad)			
Azimuth	160		160				160			
M. Tilt	0		0				0			
Height	130		130				130			
Ports	P1		P2		P3	P4	P5	P6	P7	P8
Active Tech.	L2500	N2500	L2500	N2500	L700	L700			L2100	L1900
Dark Tech.					L600	L600			G1900	
Restricted Tech.					N600	N600				G1900
Decomm. Tech.										
E. Tilt										
Cables	Fiber Jumper (x2)		Fiber Jumper (x2)		Coax Jumper (x2)	Coax Jumper (x2)			Coax Jumper (x2)	Coax Jumper (x2)
TMA's					Fiber Jumper	Fiber Jumper			Fiber Jumper	Fiber Jumper
Diplexers / Combiners										
Radio					Radio 4480 B71+B85 (At Antenna)	SHARED Radio 4480 B71+B85 (At Antenna)			Radio 4460 B25+B66 (At Antenna)	SHARED Radio 4460 B25+B66 (At Antenna)
Sector Equipment										

**Unconnected Equipment:**

**Scope of Work:**

Use Sprint RAD center at 130 feet.  
 Remove all TMA's.  
 Remove all Coaxial Lines if existing.  
 Replace AIR32 with (1) AIR6419 B41 for L2500 and N2500 in Position 1.  
 Replace existing octo with APXVAALL24 in Position 2.  
 Replace existing Radio 4449 with Radio 4480 B71+B85 for L600, L700 and N600 in Position 2 at antenna.  
 Replace AIR21 with (1) Commscope VV-65A-R1 in Position 3  
 Add (1) Radio 4460 B25+B66 for L2100, L1900 (Both carriers), and GSM to Position 3 at antenna.

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



<b>RAN Template:</b> 67E5D998E Outdoor	<b>A&amp;L Template:</b> 67E5998E_1xAIR+1OP+1QP
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CT11323A\_Anchor\_4

Print Name: Preliminary (RFDS\_for\_Scoping)  
 PORs: Replacement\_Colo Consolidation  
 Anchor\_Phase 3

Sector 3 (Existing) view from behind											
Coverage Type	A - Outdoor Macro										
Antenna	1			2				3			
Antenna Model	Ericsson - AIR32 KRD901146-1_B66A_B2A (Octo)			RFS - APXVAARR24_43-U-NA20 (Octo)				Ericsson - AIR21 KRC118023-1_B2A_B4P (Quad)			
Azimuth	260			260				260			
M. Tilt	0			0				0			
Height	87			87				87			
Ports	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	
Active Tech.	L2100	L2100	L1900	L1900	L700 L600 N600	L700 L600 N600			G1900	U2100	
Dark Tech.											
Restricted Tech.											
Decomm. Tech.									U1900		
E. Tilt											
Cables	Fiber Jumper		Fiber Jumper		JUMPE R 6' SUREF LEX DIN MALE-DIN MALE - 6 ft. (x2)	JUMPE R 6' SUREF LEX DIN MALE-DIN MALE - 6 ft. (x2)				1 5/8In AVA COAX CABLE FIRE RETARDENT - 125 ft. (x2) JUMPER 6' SUREFLEX DIN MALE-DIN MALE (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> 67E5D998E Outdoor	<b>A&amp;L Template:</b> 67E5998E_1xAIR+1OP+1QP
---	--

Sector 3 (Proposed) view from behind										
Coverage Type	A - Outdoor Macro									
Antenna	1		2				3			
Antenna Model	AIR 6419 B41 (Active Antenna - Massive MIMO)		RFS - APXVAALL24_43-U-NA20 (Octo)				Commscope_VV-65A-R1 (Quad)			
Azimuth	260		260				260			
M. Tilt	0		0				0			
Height	130		130				130			
Ports	P1		P2		P3	P4	P5	P6	P7	P8
Active Tech.	L2500	N2500	L2500	N2500	L700	L700			L2100	L1900
Dark Tech.					L600	L600			G1900	
Restricted Tech.					N600	N600				G1900
Decomm. Tech.										
E. Tilt										
Cables	Fiber Jumper (x2)		Fiber Jumper (x2)		Coax Jumper (x2)	Coax Jumper (x2)			Coax Jumper (x2)	Coax Jumper (x2)
TMA's					Fiber Jumper	Fiber Jumper			Fiber Jumper	Fiber Jumper
Diplexers / Combiners										
Radio			Radio 4480 B71+B85 (At Antenna)	SHARED Radio 4480 B71+B85 (At Antenna)					Radio 4460 B25+B66 (At Antenna)	SHARED Radio 4460 B25+B66 (At Antenna)
Sector Equipment										

**Unconnected Equipment:**

**Scope of Work:**

Use Sprint RAD center at 130 feet.  
 Remove all TMA's.  
 Remove all Coaxial Lines if existing.  
 Replace AIR32 with (1) AIR6419 B41 for L2500 and N2500 in Position 1.  
 Replace existing octo with APXVAALL24 in Position 2.  
 Replace existing Radio 4449 with Radio 4480 B71+B85 for L600, L700 and N600 in Position 2 at antenna.  
 Replace AIR21 with (1) Commscope VV-65A-R1 in Position 3  
 Add (1) Radio 4460 B25+B66 for L2100, L1900 (Both carriers), and GSM to Position 3 at antenna.

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

<b>RAN Template:</b> 67E5D998E Outdoor	<b>A&amp;L Template:</b> 67E5998E_1xAIR+1OP+1QP
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<b>Section 7 - Power Systems Equipment</b>
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<b>Existing Power Systems Equipment</b>
----- This section is intentionally blank. -----

<b>Proposed Power Systems Equipment</b>	
<b>Enclosure</b>	1
<b>Enclosure Type</b>	Enclosure 6160 AC V1

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

T-Mobile Existing Facility

Site ID: CT11323A

CT323/SS Tower Rebuild  
180A Bayberry Lane  
Westport, Connecticut 06880

**May 15, 2022**

**EBI Project Number: 6222003121**

Site Compliance Summary	
Compliance Status:	<b>COMPLIANT</b>
Site total MPE% of FCC general population allowable limit:	<b>35.88%</b>

May 15, 2022

T-Mobile

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

Emissions Analysis for Site: CT11323A - CT323/SS Tower Rebuild

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **180A Bayberry Lane** in **Westport, 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 180A Bayberry Lane in Westport, 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 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) 2 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 Traffic channel (LTE 1C and 2C BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 60 Watts.
- 8) 1 LTE Broadcast channel (LTE 1C and 2C BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 20 Watts.
- 9) 1 NR Traffic channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 120 Watts.
- 10) 1 NR Broadcast channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 40 Watts.
- 11) 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.
- 12) 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.
- 13) The antennas used in this modeling are the Ericsson AIR 6419 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s), the RFS APXVAALL24\_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz channel(s), the Commscope VV-65A-RI for the 1900 MHz / 1900 MHz / 2100 MHz channel(s) in Sector A, the Ericsson AIR 6419 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s), the RFS APXVAALL24\_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz channel(s), the Commscope VV-65A-RI for the 1900 MHz / 1900 MHz / 2100 MHz channel(s) in Sector B, the Ericsson AIR 6419 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s), the RFS APXVAALL24\_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz channel(s), the Commscope VV-65A-RI for the 1900 MHz / 1900 MHz / 2100 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.

- 14) The antenna mounting height centerline of the proposed antennas is 132 feet above ground level (AGL).
- 15) 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.
- 16) 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 6419	Make / Model:	Ericsson AIR 6419	Make / Model:	Ericsson AIR 6419
Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz
Gain:	22.05 dBd / 15.55 dBd / 22.05 dBd / 15.55 dBd	Gain:	22.05 dBd / 15.55 dBd / 22.05 dBd / 15.55 dBd	Gain:	22.05 dBd / 15.55 dBd / 22.05 dBd / 15.55 dBd
Height (AGL):	132 feet	Height (AGL):	132 feet	Height (AGL):	132 feet
Channel Count:	4	Channel Count:	4	Channel Count:	4
Total TX Power (W):	240.00 Watts	Total TX Power (W):	240.00 Watts	Total TX Power (W):	240.00 Watts
ERP (W):	31,011.95	ERP (W):	31,011.95	ERP (W):	31,011.95
Antenna A1 MPE %:	7.02%	Antenna B1 MPE %:	7.02%	Antenna C1 MPE %:	7.02%
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	RFS APXVAALL24_43-UNA20	Make / Model:	RFS APXVAALL24_43-UNA20	Make / Model:	RFS APXVAALL24_43-UNA20
Frequency Bands:	600 MHz / 600 MHz / 700 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz
Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd
Height (AGL):	132 feet	Height (AGL):	132 feet	Height (AGL):	132 feet
Channel Count:	5	Channel Count:	5	Channel Count:	5
Total TX Power (W):	200.00 Watts	Total TX Power (W):	200.00 Watts	Total TX Power (W):	200.00 Watts
ERP (W):	4,151.83	ERP (W):	4,151.83	ERP (W):	4,151.83
Antenna A2 MPE %:	2.24%	Antenna B2 MPE %:	2.24%	Antenna C2 MPE %:	2.24%
Antenna #:	3	Antenna #:	3	Antenna #:	3
Make / Model:	Commscope VV-65A-RI	Make / Model:	Commscope VV-65A-RI	Make / Model:	Commscope VV-65A-RI
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:	15.55 dBd / 15.55 dBd / 16.05 dBd	Gain:	15.55 dBd / 15.55 dBd / 16.05 dBd	Gain:	15.55 dBd / 15.55 dBd / 16.05 dBd
Height (AGL):	132 feet	Height (AGL):	132 feet	Height (AGL):	132 feet
Channel Count:	8	Channel Count:	8	Channel Count:	8
Total TX Power (W):	360.00 Watts	Total TX Power (W):	360.00 Watts	Total TX Power (W):	360.00 Watts
ERP (W):	13,446.73	ERP (W):	13,446.73	ERP (W):	13,446.73
Antenna A3 MPE %:	3.05%	Antenna B3 MPE %:	3.05%	Antenna C3 MPE %:	3.05%

Site Composite MPE %	
Carrier	MPE %
T-Mobile (Max at Sector A):	12.31%
Verizon	16.72%
Westport Fire Dept	0.01%
AT&T	5.03%
Various Others	1.81%
<b>Site Total MPE % :</b>	<b>35.88%</b>

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	12.31%
T-Mobile Sector B Total:	12.31%
T-Mobile Sector C Total:	12.31%
<b>Site Total MPE % :</b>	<b>35.88%</b>

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 2500 MHz LTE IC & 2C Traffic	1	9619.47	132.0	21.78	2500 MHz LTE IC & 2C Traffic	1000	2.18%
T-Mobile 2500 MHz LTE IC & 2C Broadcast	1	717.84	132.0	1.63	2500 MHz LTE IC & 2C Broadcast	1000	0.16%
T-Mobile 2500 MHz NR Traffic	1	19238.94	132.0	43.57	2500 MHz NR Traffic	1000	4.36%
T-Mobile 2500 MHz NR Broadcast	1	1435.69	132.0	3.25	2500 MHz NR Broadcast	1000	0.33%
T-Mobile 600 MHz LTE	2	591.73	132.0	2.68	600 MHz LTE	400	0.67%
T-Mobile 600 MHz NR	1	1577.94	132.0	3.57	600 MHz NR	400	0.89%
T-Mobile 700 MHz LTE	2	695.22	132.0	3.15	700 MHz LTE	467	0.67%
T-Mobile 1900 MHz GSM	4	1076.77	132.0	9.75	1900 MHz GSM	1000	0.98%
T-Mobile 1900 MHz LTE	2	2153.53	132.0	9.75	1900 MHz LTE	1000	0.98%
T-Mobile 2100 MHz LTE	2	2416.30	132.0	10.94	2100 MHz LTE	1000	1.09%
						<b>Total:</b>	<b>12.31%</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:	12.31%
Sector B:	12.31%
Sector C:	12.31%
T-Mobile Maximum MPE % (Sector A):	12.31%
Site Total:	35.88%
Site Compliance Status:	<b>COMPLIANT</b>

The anticipated composite MPE value for this site assuming all carriers present is **35.88%** 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.