NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

Northeast Site Solutions
Denise Sabo
4 Angela's Way, Burlington CT 06013
203-435-3640
denise@northeastsitesolutions.com

March 31, 2022

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

RE: Exempt Modification Application
1925-1931 East Main Street, Torrington CT 06790
Latitude: 41. 822991
Longitude: -73.077199
Site#: CT01499-S-SBA_CT11536A_SBA/T-Mobile

Dear Ms. Bachman:

T-Mobile is requesting to file an exempt modification for an existing tower located at 1925-1931 East Main Street, Torrington CT 06790. T-Mobile currently maintains six (6) antenna at the 131-foot level of the existing 153-foot tower. The property is owned by TEP Incorporated, and the tower is owned by SBA T-Mobile now intends to replace (3) existing antenna with (3) new antenna and add three (3) new antenna. The new antennas would be installed at the 131-foot level of the tower. This modification includes B2, B5 hardware that is both 4G (LTE), and **5G** capable. Antenna mount modifications will be completed as per attached Tower Engineering Solutions mount analysis dated January 26, 2022.

T-Mobile Planned Modifications:
Remove:
(3) KRY112 144/2 TMA*
(3) KRY112 489/2*

Remove and Replace:
(3) EMS RR90-17-XXDP antenna (Remove) – (3) AIR6449 B41 2500MHz antenna (Replace)

Install New:
(3) Commscope VV-65A-R1 1900/2100MHz antenna
(3) RRU 4460 B25+B66A

Existing to Remain:
(3) RFS APXVAALL24 600/700MHz antenna
(3) RRU 4449

*Equipment listed for entitlement purposed only

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This facility was approved by the City of Torrington on August 16, 2000. Please see attached.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies§ 16- SOj-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.SA. § 16-SOj-73, a copy of this letter is being sent to Elinor Carbone, Mayor and Jeremy Leifert, City Planner, as well as the property owner and the tower 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, Verizon Wireless 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,

Denise Sabo
Mobile: 203-435-3640
Fax: 413-521-0558
Office: 4 Angela's Way, Burlington CT 06013
Email: denise@northeastsitesolutions.com

NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

Attachments
cc: Elinor Carbone, Mayor
City of Torrington
140 Main Street
Torrington CT 06790

Jeremy Leifert, City Planner
City of Torrington
140 Main Street
Torrington CT 06790

TEP Incorporated, Property Owner
PO BOX 876
Torrington, CT 06790

SBA – Tower Owner

Exhibit A

Original Facility Approval

City Of Torrington

PLANNING AND ZONING COMMISSION
140 Main Street • Room 311
Torrington, CT 06790

Tel.: (860) 489-2220
Fax: (860) 489-2550

August 16, 2000

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Thomas Flynn, III
SBA, Inc., and Sprint PCS
49 Leavenworth Street - Suite 200
Waterbury, CT 06702

Re: Special Exception 00-20 and Site Plan 00-21
Applicant: SBA, Inc., and Sprint PCS;
Location: 1925 East Main Street, Torrington, CT
Proposal: Construct 155' telecommunication facility and associated equipment area.

Dear Mr. Flynn:

This is to confirm that at its August 9, 2000 meeting, the Planning and Zoning Commission approved the above referenced proposal with the following conditions:

The application is modified to allow for construction of a 155' expandable monopole wireless telecommunications tower and associated improvements. Structural work shall be performed on the tower to support vertical expansion to 163' should expansion be required in the future to accommodate co-location at this site. The tower is to be located 30 feet closer to the rear property line (northerly direction) and to be located in full compliance with fall zone setback requirements. The 155' height is to be adjusted downward for any increase in elevation gained by moving the tower toward the rear of the property. The recording mylar Site Plan will be modified to include these changes and the certified letter of approval containing all conditions of approval shall be reproduced and included on the recording mylar Site Plan. The lease area from the property owner T.E.P. Inc, must include the area of the proposed tower and full radius of the fall zone.

The 155' monopole wireless telecommunications tower and associated improvements are approved with the following conditions:

1. Per Section A 12.0 of the Regulations, the special exception shall be valid for 15 years. At the end of this time period, the tower shall be removed by Sprint Spectrum LP d/b/a Sprint PCS or SBA, Inc., a new special exception permit shall be required.

2. Per Section A 4.4.1 of the Regulations, the applicant must provide a plan for the handling of any hazardous materials using best management practices. If any hazardous materials are to be used on site, there shall be provisions for full containment of such materials. An enclosed containment area shall be provided with a sealed floor, designed to contain at least 110% of the volume of hazardous materials stored or used on the site. A 110% containment area specifically designed for the Sprint back up batteries shall be installed.

3. Per Section A 9.0. of the Regulations, within 90 days of beginning operations, the applicant shall submit existing measurements of radio frequency radiation (RFR) from the facility, signed and sealed by an RF Engineer, stating that the RFR measurements are accurate and below the maximum permissible exposure (MPE) limits as established by the FCC guidelines. The report shall be submitted to the office of the City Planner. This information shall be provided on an annual basis thereafter.

4. As offered by the applicant during the public hearing process, space shall be made available, at no charge, for municipal services equipment.

5. Per Section A 10.3 of the Regulations. the applicant shall submit a bond in an amount sufficient to cover the costs of removal of the regulated facility in the event the City must remove the facility. The bond amount must be approved by the City Engineer in a form acceptable to the Torrington Corporation Counsel.

6. As recommended by Torrington Fire Chief the applicant shall install a secure Knox-brand lock box on the exterior of the fence near the main entrance to allow the Fire Department quick access. The driveway must be maintained in all weather conditions in order to allow emergency access.

7. The area within the existing parking lot which is part of the fall zone perimeter will be cordoned off using 6" concrete filled bollards 48" height 48" on center which will act as a barrier to vehicular traffic.

8. The Landscaping plan will be revised to include both a stockade fence and 3 white pines 6'-8' in height planted 6' OC to screen the dumpster area and to contain debris from the lands N/F Daniel & Gina Masciarelli.

9. The applicant shall submit a bond estimate to be reviewed and approved by the City Planner for the proposed landscaping. A bond in a form acceptable to the Corporation Counsel be shall posted prior to issuance of the Zoning Permit. 25% of the posted bond shall remain in place for one year after the landscaping plan has been fully implemented to ensure successful growth of the plantings.

10. The applicant shall apply for a grading permit prior to issuance of the Zoning Permit and post the required bond for erosion and sedimentation in an amount approved by the City Engineer and in a form acceptable to the Corporation Counsel.

Enclosed please find three copies of the completed Certification of Special Exception form. Take all three copies to the City Clerk's Office where they will time stamp and record on the City Land Records one copy. Deliver one copy to the Planning and Zoning Department and retain one copy for your records.

Your Special Exception approval does not take effect until it is recorded on the Land Records. You can obtain a Zoning Permit only after the Certification is filed and certain conditions are complied with.

The applicant shall provide the Planning and Zoning Office with a recording mylar and three paper copies of the approved plan.

If you have any questions regarding this matter, please contact me.

Sincerely,

Martin J. Connor, AICP
City Planner

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@po.state.ct.us
Web Site: www.state.ct.us/csc/index.htm

October 15, 2003

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

RE: **EM-VER-143-031001-B** - Cellco Partnership d/b/a Verizon Wireless, notice of intent to modify an existing telecommunications facility located at 1925-1931 East Main Street, Torrington, Connecticut.

Dear Attorney Baldwin:

At a public meeting held on October 14, 2003, the Connecticut Siting Council (Council) acknowledged your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies with the condition that the modifications recommended in the Structural Analysis Report prepared by Daniel Blakeman (dated September 9, 2003) be implemented as part of the antenna installation.

The proposed modifications are to be implemented as specified here and in your notice dated October 1, 2003. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site, increase noise levels at the tower site boundary by six decibels, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to General Statutes § 22a-162. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on this tower.

This decision is under the exclusive jurisdiction of the Council. Any additional change to this facility will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Any deviation from this format may result in the Council implementing enforcement proceedings pursuant to General Statutes § 16-50u including, without limitation, imposition of expenses resulting from such failure and of civil penalties in an amount not less than one thousand dollars per day for each day of construction or operation in material violation.

Thank you for your attention and cooperation.

Very truly yours,

Pamela B. Katz, P.E.
Chairman

PBK/laf

c: Honorable Owen J. Quinn, Jr., Mayor, City of Torrington
Martin Connor, City Planner, City of Torrington
Sheila R. Becker, Regional Director of Compliance, SBA, Inc.
Thomas J. Regan, Esq., Brown Rudnick Berlack Israels
Thomas F. Flynn III, Nextel Communications
Stephen J. Humes, Esq., LeBoeuf, Lamb, Greene & MacRae

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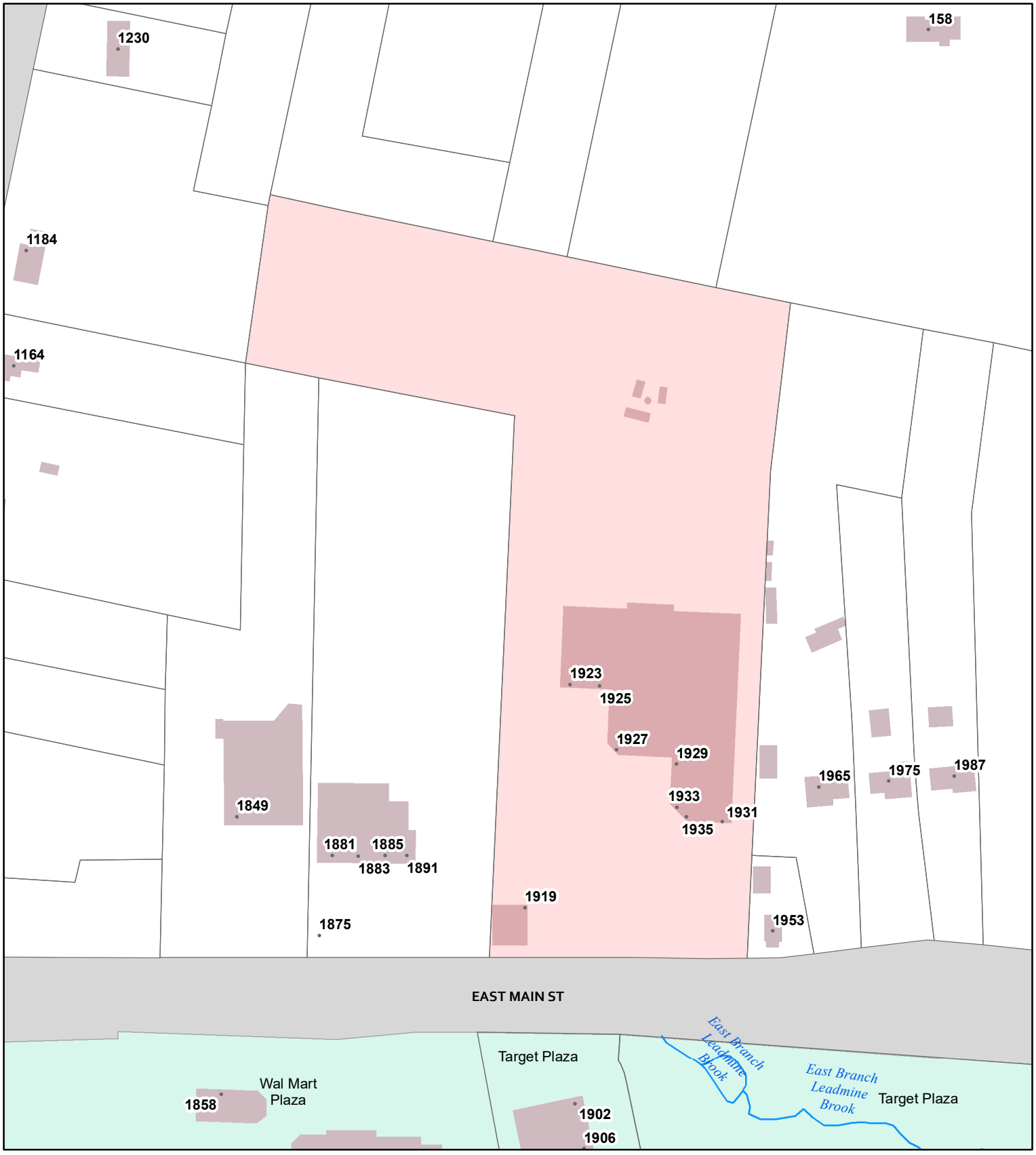
Exhibit B

Property Card

City of Torrington, Connecticut - Assessment Parcel Map

Map/Block/Lot 247-002-024 **Address:** 247-002-024



Map Produced: January 2021

Approximate Scale: 1 inch = 177 feet

The Assessor’s office is responsible for the maintenance of records on the ownership of properties. Assessments are computed at 70% of the estimated market value of real property at the time of the last revaluation which was 2019.

Information on the Property Records for the Municipality of Torrington was last updated on 9/13/2021.

Property Summary Information

- Parcel Data And Values
- Building
- Outbuildings
- Sales
- Permits

Parcel Information

Location:	1927 E MAIN ST	Property Use:	Retail	Primary Use:	Neighborhood Shopping Center
Unique ID:	5571	Map Block Lot:	247/002/024	Acres:	9.39
490 Acres:	0.00	Zone:	LB	Volume / Page:	0697/0859
Developers Map / Lot:	5047/4913	Census:	H		

Value Information

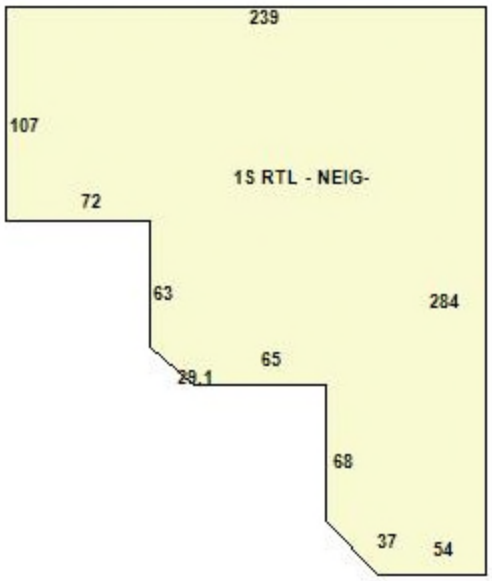
	Appraised Value	Assessed Value
Land	1,311,818	918,280
Buildings	2,594,519	1,816,160
Detached Outbuildings	221,273	154,890
Total	4,127,610	2,889,330

Owner's Information

Owner's Data

TEP INCORPORATED
PO BOX 876
TORRINGTON CT 06790

Building 1



Category:	Retail	Use:	Neighborhood Shopping Center	GLA:	46,307
Stories:	1.00	Construction:	Masonry and Wood Frame	Year Built:	1994
Heating:	FHA Non Duct	Fuel:	Gas	Cooling Percent:	100
Siding:	Concrete Block	Roof Material:	Asphalt	Beds/Units:	0

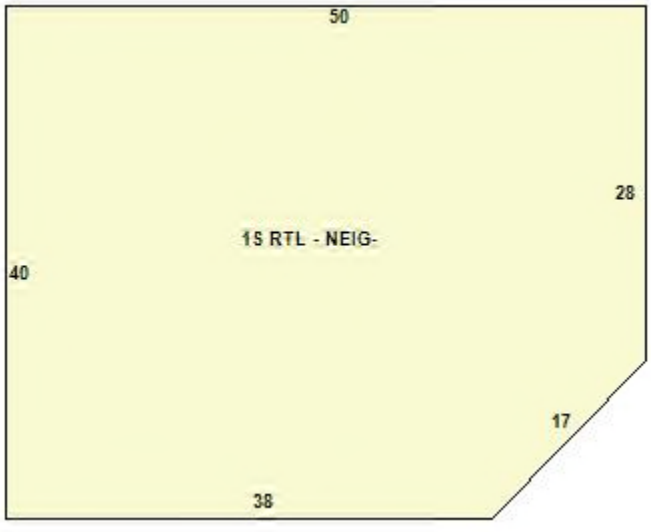
Special Features

Mezzanine Finished Area	950

Mezzanine Unfinished Area	950
Wet Sprinklers	46200

Attached Components

Building 2



Category:	Retail	Use:	Neighborhood Shopping Center	GLA:	1,926
Stories:	1.00	Construction:	Reinforced Concrete	Year Built:	2006

Heating:	FHA	Fuel:	Gas	Cooling Percent:	100
Siding:	Concrete Block	Roof Material:	Asphalt	Beds/Units:	0

Special Features

Attached Components

Detached Outbuildings

Type:	Year Built:	Length:	Width:	Area:
Canopy	1994	0.00	0.00	1,834
Canopy	2006	0.00	0.00	404
Fencing	1994	0.00	0.00	240
Loading Dock Cov	1994	0.00	0.00	480
Loading Dock Un	1994	0.00	0.00	80
Concrete Patio	1994	0.00	0.00	220
Paving	1994	0.00	0.00	122,022
Poles	1994	0.00	0.00	7
Frame Shed	1994	0.00	0.00	600
Frame Shed	1994	0.00	0.00	200

Owner History - Sales

Owner Name	Volume	Page	Sale Date	Deed Type	Sale Price
TEP INCORPORATED	0697	0859	04/20/1999		$0
PERGOLA HEATHER A	0697	0857	04/20/1999		$0
TEP INCORPORATED	0599	0410	05/27/1994		$699,000

Building Permits

Permit Number	Permit Type	Date Opened	Reason
	Building	12/31/2020	3 NEW CELL ANTENNAS & ASSOC EQUIP
20-125 Z	Commercial	12/11/2020	3 NEW CELL ANTENNAS
20-44 EL	Electrical	02/12/2020	NEW 2" PVC CONDUIT-FIBER OPTIC CARE UNDERGROUND/ATTACH TO T-MOBILE NEW CABINET=PP
19-951	Building	05/29/2019	CELL TOWER MODIFICATION- 6 ANTENNAS/REMOTE HEADS= PP

Permit Number	Permit Type	Date Opened	Reason
18-1934	Electrical	10/17/2018	ELECTRICAL
17-1935	Certificate of Completion	10/10/2017	CERT OF COMPL- REPL ANTENNA PANELS/HEADS- VERIZON
17-1850	Building	09/27/2017	REMOVE & REPLACE 2 WALL SIGNS/ 1 PYLON FACE
17-1849	Electrical	09/27/2017	FINAL ELEC FOR SIGNS
17-1082	Certificate of Completion	06/14/2017	CERT OF COMPL-MODIFY AT&T ANTENNA & REPL 3 RADIO HEADS
17-882	Building	05/23/2017	AT&T SIGNAGE & 3 LETTER SETS/1 PYLON SIGN =PP
17-441	Commercial	04/07/2017	VERIZON- REPL PANELS WITH NEW MODELS/REMOTE RADIO HEADS=PP
17-425 Z	Commercial	03/30/2017	REPL EXISTING ANTENNAS WITH NEW MODELS
17-345	Building	03/16/2017	MODIFY AT&T ANTENNA SITE- REPL 3 REMOTE RADIO UNITS
17-341 Z	Commercial	03/10/2017	ANTENNA MODIFICATION ON EXISTING TOWER
16-1966	Electrical	10/14/2016	DISCONNECT EXHAUST FAN/ADD QUAD OUTLET & REWIRE GFI & LIGHT SWITCH
16-1954	Plumbing	10/13/2016	REM TOILET & INSTALL 15 X 15 SINK
16-1389	Building	08/01/2016	REMOVE 1 TOILET & SINK IN RESTROOM/TURN INTO DRAW ROOM/COUNTER & SINK
15-2412	Building	12/23/2015	REPL ANTENNA PANELS & ADD REMOTE RADIO HEADS= PP
15-1825	Certificate of Completion	10/07/2015	CERT OF COMPL- MAINTENANCE/NEW FLAT PLATE REINFORCEMENT
15-1353	Building	08/12/2015	INSTALL NEW FLAT PLATE REINFORCEMENT & MAINTENANCE= PP
15-760	Building	05/22/2015	ADD 3 NEW ANTENNA/MODUALS/CABLES/ETC=PP
14-1909	Building	09/23/2014	AWNING FOR OUTER SEATING AREA=PP
14-1752 Z	Residential	08/27/2014	23 X 20 CANOPY OVER DINING AREA
14-1369	Building	07/11/2014	ADD 3 CELL ANTENNAS & ASSOC EQUIP= PP
13-5588	Building	08/13/2013	SWAP OUT ANTENNA @CELL TOWER
12-3174	Building	01/04/2013	INSTALL 3 NEW ANTENNAS & SUPPORT EQUIP/I NEW CABINET IN EXISTING SHELTER
12-3032	Commercial	12/07/2012	REPL 6 ANTENNA W/3 NEW & EQUIP CABINETS=PP
12-2968	Commercial	11/27/2012	REPL 6 ANTENNAS W/ NEW
12-1056	Mechanical	04/18/2012	6 FT HOOD/EXHAUST FAN FOR HIBACHI TABLE
12-470	Commercial	03/13/2012	ADD 1 NEW HIBACHI GRIDDLE
11-807	Commercial	07/21/2011	10 PEDICURE CHAIRS/2 MASSAGE ROOMS/1 BATH
11-1174	Certificate of Completion	07/15/2011	CERT OF COMPL-BLOOD DRAWING OFFICE
11-808	Commercial	06/01/2011	64' PARTITION WALL
11-771	Commercial	05/26/2011	OFFICE FITOUT- BLOOD DRAWING OFFICE
11-364	Commercial	04/08/2011	REPL EXISTING PANEL ANTENNA

Permit Number	Permit Type	Date Opened	Reason
10-1094	Certificate of Completion	07/02/2010	WALK IN COOLER/CHECKOUT COUNTER DRY SPRINKLERS
10-1003	Commercial	06/22/2010	ADD 3 DRY SPRINKLERS AND RELOCATE 3 SPRINKLERS
10-183	Commercial	03/17/2010	NEON WALL SIGN & PANEL FACE REPLCMNT
09-1397	Certificate of Completion	08/12/2009	CHG USE FROM AIG OFFICE TO H&R BLOCK OFFICE
07-000436	Commercial	04/12/2007	WALL SIGN
06-1133CO	Certificate of Occupancy	11/16/2006	NEW BLDG
06-1277CO	Certificate of Occupancy	11/16/2006	CINGULAR WIRELESS IN NEW BLDG
06-1277	Commercial	07/28/2006	TENANT FIT OUT
06-1133	Commercial	07/13/2006	CONSTRUCT NEW BLDG
06-458CO	Certificate of Occupancy	05/08/2006	CO PERMIT #06-458
06-458	Commercial	03/31/2006	INTERIOR ALTERATIONS
05-80	Commercial	04/07/2005	FREE-STANDING ATM
04-470	Commercial	09/16/2004	INT PARTITIONS - VERIZON
04-208A	Commercial	05/28/2004	INTERIOR ALTERATIONS
04-172A	Commercial	05/12/2004	WORK ON FOUNDATION - CHINESE REST
04-92	Commercial	04/06/2004	INSTALL PRE-FAB SHELTER & ANTENNAE (1925 E MAIN)
04-37	Commercial	02/10/2004	INT FRAMING
03-582	Commercial	11/24/2003	WIRELESS FACILITY
02-300	Commercial	07/18/2002	TOWER MODIFICATION
02-05	Commercial	01/10/2002	NEW ANTENNAE
00-416	Commercial	12/14/2000	CONCRETE PAD FOR TELECOM TOWER
00-402	Commercial	11/29/2000	ADD ANTENNAE TO TOWER
00-326	Commercial	09/14/2000	TELECOM TOWER
04-037CO	Certificate of Occupancy		04-037 CO ISSUED

Google Map

Unique Id: 5571

Location: 1927 E MAIN ST

MBL: 247/ 002/ 024

Primary Use:

	Neighborhood Sh
Zone:	LB
Acres:	9.39
Appraised Value:	$4,127,610
Assessed Value:	$2,889,330

Back To Search

Print View

Information Published With Permission From The Assessor

To Top

Exhibit C

Construction Drawings

SPECIAL CONSTRUCTION NOTE:
GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL ANTENNA MOUNT STRUCTURAL AUGMENTS (STRUCTURAL MODIFICATIONS) AT T-MOBILE'S RAD/VERTICAL EQUIPMENT SPACE PER RECOMMENDATIONS FROM SBA-PROVIDED ANTENNA MOUNT STRUCTURAL ANALYSIS AND ANY SUPPLEMENTAL CONSTRUCTION DRAWINGS (PROVIDED BY OTHERS).

TORRINGTON/RT 202/RT 183

1925-1931 EAST MAIN STREET
TORRINGTON, CT 06790
LICHFIELD COUNTY

SITE NO.: CT11536A

SITE TYPE: 153'± MONOPOLE

RF DESIGN GUIDELINE: 67D5A998E ODE+6160

SCOPE OF WORK

REMOVE:
- 3 ANTENNAS
- 6 TMAs
- 3 RRUS
- ALL COAX CABLES

INSTALL:
- 6 ANTENNAS
- 3 RRUs
- 1 B160 BATTERY CABINET
- 1 6160 CABINET
- 1 SLACKBOX
- 3 HYBRID CABLES
- 1 GENERATOR
- 1 ATS

SITE NOTES

1. THIS IS AN UNMANNED AND RESTRICTED ACCESS TELECOMMUNICATION FACILITY, AND IS NOT FOR HUMAN HABITATION. IT WILL BE USED FOR THE TRANSMISSION OF RADIO SIGNAL FOR THE PURPOSE OF PROVIDING PUBLIC CELLULAR SERVICE.
   - ADA COMPLIANCE NOT REQUIRED.
   - POTABLE WATER OR SANITARY SERVICE IS NOT REQUIRED.
   - NO OUTDOOR STORAGE OR ANY SOLID WASTE RECEPTACLES REQUIRED.
2. CONTRACTOR SHALL VERIFY ALL PLANS, EXISTING DIMENSIONS, AND CONDITIONS ON JOB SITE. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT/ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK. FAILURE TO NOTIFY THE ARCHITECT/ENGINEER PLACE THE RESPONSIBILITY ON THE CONTRACTOR TO CORRECT THE DISCREPANCIES AT THE CONTRACTOR'S EXPENSE.
3. NEW CONSTRUCTION WILL CONFORM TO ALL APPLICABLE CODES AND ORDINANCES.
   - BUILDING CODE: 2018 CONNECTICUT STATE BUILDING CODE
   - ELECTRICAL CODE: 2017 NATIONAL ELECTRICAL CODE
   - STRUCTURAL CODE: TIA/EIA-222-G STRUCTURAL STANDARDS FOR ANTENNA SUPPORTING STRUCTURES AND ANTENNAS.

APPROVALS

PROJECT MANAGER:	DATE:	ZONING/SITE ACQ.:	DATE:
CONSTRUCTION:	DATE:	OPERATIONS:	DATE:
RF ENGINEERING:	DATE:	TOWER OWNER:	DATE:

T-MOBILE TECHNICIAN SITE SAFETY NOTES

LOCATION	SPECIAL RESTRICTIONS
SECTOR A:	ACCESS BY CERTIFIED CLIMBER
SECTOR B:	ACCESS BY CERTIFIED CLIMBER
SECTOR C:	ACCESS BY CERTIFIED CLIMBER
GPS/LMU:	UNRESTRICTED
RADIO CABINETS:	UNRESTRICTED
PPC DISCONNECT:	UNRESTRICTED
MAIN CIRCUIT D/C:	UNRESTRICTED
NIU/T DEMARC:	UNRESTRICTED
OTHER/SPECIAL:	NONE

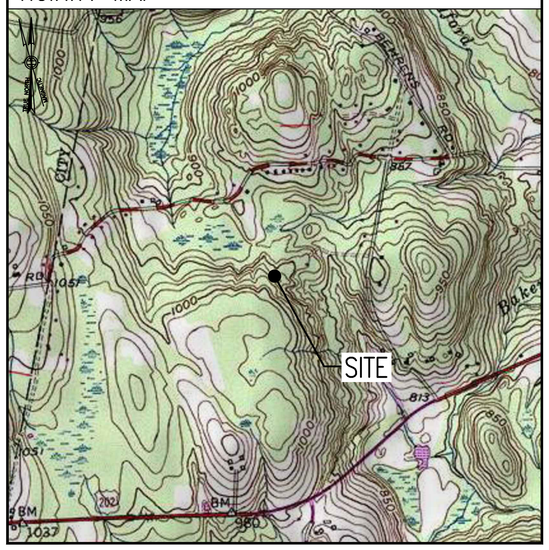
GENERAL NOTES

1. THE CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK. THE WORK PERFORMED ON THE PROJECT AND THE MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES.
2. THE ARCHITECT/ENGINEER HAVE MADE EVERY EFFORT TO SET FORTH IN THE CONSTRUCTION AND CONTRACT DOCUMENTS THE COMPLETE SCOPE OF WORK. THE CONTRACTOR BIDDING THE JOB IS NEVERTHELESS CAUTIONED THAT MINOR OMISSIONS OR ERRORS IN THE DRAWINGS AND OR SPECIFICATIONS SHALL NOT EXCUSE SAID CONTRACTOR FROM COMPLETING THE PROJECT AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS.
3. THE CONTRACTOR OR BIDDER SHALL BEAR THE RESPONSIBILITY OF NOTIFYING (IN WRITING) THE OMNIPOINT REPRESENTATIVE OF ANY CONFLICTS, ERRORS, OR OMISSIONS PRIOR TO THE SUBMISSION OF CONTRACTOR'S PROPOSAL OR PERFORMANCE OF WORK. IN THE EVENT OF DISCREPANCIES THE CONTRACTOR SHALL PRICE THE MORE COSTLY OR EXTENSIVE WORK, UNLESS DIRECTED IN WRITING OTHERWISE.
4. THE SCOPE OF WORK SHALL INCLUDE FURNISHING ALL MATERIALS, EQUIPMENT, LABOR AND ALL OTHER MATERIALS AND LABOR DEEMED NECESSARY TO COMPLETE THE WORK/PROJECT AS DESCRIBED HEREIN.
5. THE CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO THE SUBMISSION OF BIDS OR PERFORMING WORK TO FAMILIARIZE HIMSELF WITH THE FIELD CONDITIONS AND TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
6. THE CONTRACTOR SHALL OBTAIN AUTHORIZATION TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED BY THE CONSTRUCTION DRAWINGS/CONTRACT DOCUMENTS.
7. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO THE MANUFACTURER'S/VENDOR'S SPECIFICATIONS UNLESS NOTED OTHERWISE OR WHERE LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.
8. THE CONTRACTOR SHALL PROVIDE A FULL SET OF CONSTRUCTION DOCUMENTS AT THE SITE UPDATED WITH THE LATEST REVISIONS AND ADDENDUMS OR CLARIFICATIONS AVAILABLE FOR THE USE BY ALL PERSONNEL INVOLVED WITH THE PROJECT.
9. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
10. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY CONSTRUCTION CONTROL SURVEYS, ESTABLISHING AND MAINTAINING ALL LINES AND GRADES REQUIRED TO CONSTRUCT ALL IMPROVEMENTS AS SHOWN HEREIN.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS WHICH MAY BE REQUIRED FOR THE WORK BY THE ARCHITECT/ENGINEER, THE STATE, COUNTY OR LOCAL GOVERNMENT AUTHORITY.
12. THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS, EASEMENTS, PAVING, CURBING, ETC. DURING CONSTRUCTION. UPON COMPLETION OF WORK, THE CONTRACTOR SHALL REPAIR ANY DAMAGE THAT MAY HAVE OCCURRED DUE TO CONSTRUCTION ON OR ABOUT THE PROPERTY.
13. THE CONTRACTOR SHALL KEEP THE GENERAL WORK AREA CLEAN AND HAZARD FREE DURING CONSTRUCTION AND DISPOSE OF ALL DIRT, DEBRIS, RUBBISH AND REMOVE EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY. PREMISES SHALL BE LEFT IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST, OR SMUDGES OF ANY NATURE.
14. THE CONTRACTOR SHALL COMPLY WITH ALL OSHA REQUIREMENTS AS THEY APPLY TO THIS PROJECT.
15. THE CONTRACTOR SHALL NOTIFY THE PROJECT OWNER'S REPRESENTATIVE WHERE A CONFLICT OCCURS ON ANY OF THE CONTRACT DOCUMENTS. THE CONTRACTOR IS NOT TO ORDER MATERIAL OR CONSTRUCT ANY PORTION OF THE WORK THAT IS IN CONFLICT UNTIL CONFLICT IS RESOLVED BY THE LESSEE/LICENSEE REPRESENTATIVE.
16. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, PROPERTY LINES, ETC. ON THE JOB.
17. ALL UNDERGROUND UTILITY INFORMATION WAS DETERMINED FROM SURFACE INVESTIGATIONS AND EXISTING PLANS OF RECORD. THE CONTRACTOR SHALL LOCATE ALL UNDERGROUND UTILITIES IN THE FIELD PRIOR TO ANY SITE WORK.

AT LEAST 72 HOURS PRIOR TO DIGGING, THE CONTRACTOR IS REQUIRED TO CALL DIG SAFE AT 811

VICINITY MAP

SCALE: 1" = 1000'-0"



DIRECTIONS

MERGE ONTO I-495 NORTH TOWARD MANSFIELD/MARLBORO. TAKE EXIT 58 TOWARD I-90 WEST. MERGE ONTO I-90 WEST. TAKE EXIT. 78 TOWARD I-84. CONTINUE ONTO I-84. TAKE EXIT 39 TOWARD FARMINGTON/CT-4. CONTINUE ONTO STATE HWY 508. TURN RIGHT ONTO CT-177 NORTH. SLIGHT LEFT ONTO CT-4 WEST. CONTINUE ONTO CT-179 NORTH TURN RIGHT ONTO BRIDGE STREET. TURN LEFT ONTO CT-179 NORTH. TURN ONTO US-202 WEST. TURN RIGHT. SITE IS LOCATED ON THE RIGHT HAND SIDE.

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DO NOT SCALE DRAWINGS

CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE PROJECT OWNER'S REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

PROJECT SUMMARY

SITE NUMBER:	CT11536A
SITE NAME:	TORRINGTON/RT 202/RT 183
SBA SITE NUMBER:	CT01499-S
SBA SITE NAME:	TORRINGTON
SITE ADDRESS:	1925-1931 EAST MAIN STREET TORRINGTON, CT 06790
PROPERTY OWNER:	TEP INC. PO BOX 876 TORRINGTON, CT 06790
TOWER OWNER:	SBA TOWERS, LLC 8501 CONGRESS AVENUE BOCA RATON, FL 33487 PHONE: 561-226-9523
COUNTY:	LICHFIELD
ZONING DISTRICT:	LB (LOCAL BUSINESS)
STRUCTURE TYPE:	MONOPOLE
STRUCTURE HEIGHT:	153'±
APPLICANT:	T-MOBILE NORTHEAST LLC 15 COMMERCE WAY, SUITE B NORTON, MA 02766
ARCHITECT:	CHAPPELL ENGINEERING ASSOCIATES, LLC. 201 BOSTON POST ROAD WEST, SUITE 101 MARLBOROUGH, MA 01752
STRUCTURAL ENGINEER:	CHAPPELL ENGINEERING ASSOCIATES, LLC. 201 BOSTON POST ROAD WEST, SUITE 101 MARLBOROUGH, MA 01752
SITE CONTROL POINT:	LATITUDE: N.41.823259° N41°49'23.73" LONGITUDE W.73.076721° W73°04'36.20"

SPECIAL ZONING NOTE:
BASED ON INFORMATION PROVIDED BY T-MOBILE REGULATORY COMPLIANCE PROFESSIONALS AND LEGAL COUNSEL, THIS TELECOMMUNICATIONS EQUIPMENT DEPLOYMENT IS CONSIDERED AN ELIGIBLE FACILITY UNDER THE MIDDLE CLASS TAX RELIEF AND JOB CREATION ACT OF 2012, 47 USC 1455(A), SECTION 6409(A), AND IS SUBJECT TO AN ELIGIBLE FACILITY REQUEST, EXPEDITED REVIEW, AND LIMITED/PARTIAL ZONING PRE-EMPTION FOR LOCAL DISCRETIONARY PERMITS (VARIANCE, SPECIAL PERMIT, SITE PLAN REVIEW, OR ADMINISTRATIVE REVIEW).

T-MOBILE NORTHEAST LLC
15 COMMERCE WAY, SUITE B
NORTON, MA 02766
(508) 286-2700

SBA COMMUNICATIONS CORP.
134 FLANDERS ROAD, SUITE 125
WESTBOROUGH, MA 01581
(508) 251-0720

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil ·Structural ·Land Surveying
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST, SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

STATE OF CONNECTICUT
JAMES M. FITZGERALD
No. 25997
LICENSED
PROFESSIONAL CIVIL ENGINEER
3/29/22

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
2	03/28/22	REVISED CONSTRUCTION	JRV
1	01/19/22	ISSUED FOR CONSTRUCTION	JRV
0	01/06/22	ISSUED FOR REVIEW	JRV

SITE NUMBER:
CT11536A

SITE ADDRESS:
1925-1931 EAST MAIN STREET
TORRINGTON, CT 06790

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

1815.386

GENERAL NOTES:

1. FOR THE PURPOSE OF CONSTRUCTION DRAWINGS, THE FOLLOWING DEFINITIONS SHALL APPLY:
   CONTRACTOR – T–MOBILE
   SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
   OWNER – T–MOBILE
   OEM – ORIGINAL EQUIPMENT MANUFACTURER

2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.

3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK.

4. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL, STATE AND FEDERAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.

5. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.

6. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.

7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.

8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CONTRACTOR.

9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER, T1 CABLES AND GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR AND/OR LANDLORD PRIOR TO CONSTRUCTION.

10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.

11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY.

12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION AND RETURN DISTURBED AREAS TO ORIGINAL CONDITIONS.

13. THE SUBCONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE SUBCONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.

14. SUBCONTRACTOR SHALL NOTIFY CHAPPELL ENGINEERING ASSOCIATES, LLC 48 HOURS IN ADVANCE OF POURING CONCRETE OR BACKFILLING TRENCHES, SEALING ROOF AND WALL PENETRATIONS AND POST DOWNS, FINISHING NEW WALLS OR FINAL ELECTRICAL CONNECTIONS FOR ENGINEERING REVIEW.

15. CONSTRUCTION SHALL COMPLY WITH ALL T–MOBILE STANDARDS AND SPECIFICATIONS.

16. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.

17. THE EXISTING CELL SITES ARE IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.

18. IF THE EXISTING CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.

SITE WORK GENERAL NOTES:

1. THE SUBCONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.

2. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY ENGINEERS. EXTREME CAUTION SHOULD BE USED BY THE SUBCONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. SUBCONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING AND EXCAVATION.

3. ALL SITE WORK SHALL BE AS INDICATED ON THE DRAWINGS AND PROJECT SPECIFICATIONS.

4. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.

5. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE BTS EQUIPMENT AND TOWER AREAS.

6. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.

7. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.

8. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF ENGINEERING, OWNER AND/OR LOCAL UTILITIES.

9. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE AND STABILIZED TO PREVENT EROSION AS SPECIFIED IN THE PROJECT SPECIFICATIONS.

10. SUBCONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.

11. THE SUBCONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE T–MOBILE SPECIFICATION FOR SITE SIGNAGE.

CONCRETE AND REINFORCING STEEL NOTES:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST–IN–PLACE CONCRETE.

2. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS, UNLESS NOTED OTHERWISE. A HIGHER STRENGTH (4000PSI) MAY BE USED. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 381 CODE REQUIREMENTS

3. REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE. SPLICES SHALL BE CLASS "B" AND ALL HOOKS SHALL BE STANDARD, UNO.

4. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:
   CONCRETE CAST AGAINST EARTH.....3 IN.
   CONCRETE EXPOSED TO EARTH OR WEATHER:
   #6 AND LARGER .....2 IN.
   #5 AND SMALLER & WWF .....1½ IN.
   CONCRETE NOT EXPOSED TO EARTH OR WEATHER OR NOT CAST AGAINST THE GROUND:
   SLAB AND WALL .....¾ IN.
   BEAMS AND COLUMNS .....1½ IN.

5. A CHAMFER ¾" SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNO, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

6. INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHORS SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO THE MANUFACTURERS RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR CONTRACTOR APPROVAL WHEN DRILLING HOLES IN CONCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE PERFORMED IN ORDER TO MAINTAIN MANUFACTURER'S MAXIMUM ALLOWABLE LOADS. ALL EXPANSION/WEDGE ANCHORS SHALL BE STAINLESS STEEL OR HOT DIPPED GALVANIZED. EXPANSION BOLTS SHALL BE PROVIDED BY SIMPSON OR APPROVED EQUAL.

7. CONCRETE CYLINDER TIES ARE NOT REQUIRED FOR SLAB ON GRADE WHEN CONCRETE IS LESS THAN 50 CUBIC YARDS (IBC1905.6.2.3) IN THAT EVENT THE FOLLOWING RECORDS SHALL BE PROVIDED BY THE CONCRETE SUPPLIER;
   (A) RESULTS OF CONCRETE CYLINDER TEST PERFORMED AT THE SUPPLIERS PLANT.
   (B) CERTIFICATION OF MINIMUM COMPRESSIVE STRENGTH FOR THE CONCRETE GRADE SUPPLIED.
FOR GREATER THAN 50 CUBIC YARDS THE GC SHALL PERFORM THE CONCRETE CYLINDER TEST.

8. AS AN ALTERNATIVE TO ITEM 7. TEST CYLINDERS SHALL BE TAKEN INITIALLY AND THEREAFTER FOR EVERY 50 YARDS OF CONCRETE FROM EACH DIFFERENT BATCH PLANT.

9. EQUIPMENT SHALL NOT BE PLACED ON NEW PADS FOR SEVEN DAYS AFTER PAD IS POURED, UNLESS IT IS VERIFIED BY CYLINDER TESTS THAT COMPRESSIVE STRENGTH HAS BEEN ATTAINED.

STRUCTURAL STEEL NOTES:

1. ALL STEEL WORK SHALL BE PAINTED OR GALVANIZED IN ACCORDANCE WITH THE DRAWINGS AND T–MOBILE SPECIFICATIONS UNLESS OTHERWISE NOTED. STRUCTURAL STEEL SHALL BE ASTM–A–36 UNLESS OTHERWISE NOTED ON THE SITE SPECIFIC DRAWINGS. STEEL DESIGN, INSTALLATION AND BOLTING SHALL BE IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) "MANUAL OF STEEL CONSTRUCTION".

2. ALL WELDING SHALL BE PERFORMED USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND AWS D1.1. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION", 9TH EDITION. PAINTED SURFACES SHALL BE TOUCHED UP.

3. BOLTED CONNECTIONS SHALL USE BEARING TYPE ASTM A325 BOLTS (¾"ø) AND SHALL HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE. ALL BOLTS SHALL BE GALVANIZED OR STAINLESS STEEL.

4. NON–STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE ⅝" DIA. ASTM A 307 BOLTS (GALV) UNLESS NOTED OTHERWISE.

5. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ENGINEER REVIEW & APPROVAL ON PROJECTS REQUIRING STRUCTURAL STEEL

6. ALL STRUCTURAL STEEL WORK SHALL BE DONE IN ACCORDANCE WITH AISC SPECIFICATIONS.

SOIL COMPACTION NOTES FOR SLAB ON GRADE:

1. EXCAVATE AS REQUIRED TO REMOVE VEGETATION AND TOPSOIL TO EXPOSE NATURAL SUBGRADE AND PLACE CRUSHED STONE AS REQUIRED.

2. COMPACTION CERTIFICATION: AN INSPECTION AND WRITTEN CERTIFICATION BY A QUALIFIED GEOTECHNICAL TECHNICIAN OR ENGINEER IS ACCEPTABLE.

3. AS AN ALTERNATE TO INSPECTION AND WRITTEN CERTIFICATION, THE "UNDISTURBED SOIL" BASE SHALL BE COMPACTED WITH "COMPACTION EQUIPMENT", LISTED BELOW, TO AT LEAST 90% MODIFIED PROCTOR MAXIMUM DENSITY PER ASTM D 1557 METHOD C.

4. COMPACTED SUBBASE SHALL BE UNIFORM AND LEVELED. PROVIDE 6" MINIMUM CRUSHED STONE OR GRAVEL COMPACTED IN 3" LIFTS ABOVE COMPACTED SOIL. GRAVEL SHALL BE NATURAL OR CRUSHED WITH 100% PASSING #1 SIEVE.

5. AS AN ALTERNATE TO ITEMS 2 AND 3, THE SUBGRADE SOILS WITH 5 PASSES OR A MEDIUM SIZED VIBRATORY PLATE COMPACTOR (SUCH AS BOMAG BPR 30/38) OR HAND–OPERATED SINGLE DRUM VIBRATORY ROLLER (SUCH AS BOMAG BW 55E). AND SOFT AREAS THAT ARE ENCOUNTERED SHOULD BE REMOVED AND REPLACED WITH A WELL–GRADED GRANULAR FILL AND COMPACTED AS STATED ABOVE.

COMPACTION EQUIPMENT:

1. HAND OPERATED DOUBLE DRUN, VIBRATORY ROLLER, VIBRATORY PLATE COMPACTOR OR JUMPING JACK COMPACTOR.

CONSTRUCTION NOTES:

1. FIELD VERIFICATION:
SUBCONTRACTOR SHALL FIELD VERIFY SCOPE OF WORK, T–MOBILE ANTENNA PLATFORM LOCATION AND UTILITY TRENCHWORK.

2. COORDINATION OF WORK:
SUBCONTRACTOR SHALL COORDINATE RF WORK AND PROCEDURES WITH CONTRACTOR.

3. CABLE LADDER RACK:
SUBCONTRACTOR SHALL FURNISH AND INSTALL CABLE LADDER RACK, CABLE TRAY AND/OR ICE BRIDGE, AND CONDUIT AS REQUIRED TO SUPPORT CABLES TO THE NEW BTS LOCATION.

ELECTRICAL INSTALLATION NOTES:

1. WIRING, RACEWAY, AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC AND TELCORDIA.

2. SUBCONTRACTOR SHALL MODIFY OR INSTALL CABLE TRAY SYSTEM AS REQUIRED TO SUPPORT RF AND TRANSPORT CABLING TO THE NEW BTS EQUIPMENT. SUBCONTRACTOR SHALL SUBMIT MODIFICATIONS TO CONTRACTOR FOR APPROVAL.

3. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC AND TELCORDIA.

4. CABLES SHALL NOT BE ROUTED THROUGH LADDER–STYLE CABLE TRAY RUNGS.

5. EACH END OF EVERY POWER, GROUNDING, AND T1 CONDUCTOR AND CABLE SHALL BE LABELED WITH COLOR–CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2 INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC AND OSHA, AND MATCH INSTALLATION REQUIREMENTS.

6. POWER PHASE CONDUCTORS (I.E., HOTS) SHALL BE LABELED WITH COLOR–CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, ½ INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). PHASE CONDUCTOR COLOR CODES SHALL CONFORM WITH THE NEC AND OSHA.

7. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS. ALL EQUIPMENT SHALL BE LABELED WITH THEIR VOLTAGE RATING, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING, AND BRANCH CIRCUIT ID NUMBERS (I.E., PANELBOARD AND CIRCUIT ID'S).

8. PANELBOARDS (ID NUMBERS) AND INTERNAL CIRCUIT BREAKERS (CIRCUIT ID NUMBERS) SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS.

9. ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.

10. POWER, CONTROL, AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE CONDUCTOR (#34 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN–2, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.

11. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE CONDUCTOR (#6 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN–2 GREEN INSULATION, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.

12. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED OUTDOORS, OR BELOW GRADE, SHALL BE SINGLE CONDUCTOR #2 AWG SOLID TINNED COPPER CABLE, UNLESS OTHERWISE SPECIFIED.

13. POWER AND CONTROL WIRING, NOT IN TUBING OR CONDUIT, SHALL BE MULTI–CONDUCTOR, TYPE TC CABLE (#34 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN–2, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; WITH OUTER JACKET; LISTED OR LABELED FOR THE LOCATION USED, UNLESS OTHERWISE SPECIFIED.

14. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP–STYLE, COMPRESSION WIRE LUGS AND WIRENUTS BY HARGER (OR EQUAL). LUGS AND WIRENUTS SHALL BE RATED FOR OPERATION AT NO LESS THAN 75°C (90°C IF AVAILABLE).

15. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.

16. NEW RACEWAY OR CABLE TRAY WILL MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.

17. ELECTRICAL METALLIC TUBING (EMT) OR RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80 FOR LOCATIONS SUBJECT TO PHYSICAL DAMAGE) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.

18. ELECTRICAL METALLIC TUBING (EMT), ELECTRICAL NONMETALLIC TUBING (ENT), OR RIGID NONMETALLIC CONDUIT (RIGID PVC, SCHEDULE 40) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.

19. GALVANIZED STEEL INTERMEDIATE METALLIC CONDUIT (IMC) SHALL BE USED FOR OUTDOOR LOCATIONS ABOVE GRADE.

20. RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80) SHALL BE USED UNDERGROUND; DIRECT BURIED, IN AREAS OF OCCASIONAL LIGHT VEHICLE TRAFFIC OR ENCASED IN REINFORCED CONCRETE IN AREAS OF HEAVY VEHICLE TRAFFIC.

21. LIQUID–TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID–TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.

22. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION–TYPE AND APPROVED FOR THE LOCATION USED. SETSCREW FITTINGS ARE NOT ACCEPTABLE.

23. CABINETS, BOXES AND WIREWAYS SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.

24. CABINETS, BOXES AND WIREWAYS TO MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.

25. WIREWAYS SHALL BE EPOXY–COATED (GRAY) AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARD; SHALL BE PANDUIT TYPE E (OR EQUAL); AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.

26. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES, AND PULL BOXES SHALL BE GALVANIZED OR EPOXY–COATED SHEET STEEL, SHALL MEET OR EXCEED UL 50, AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.

27. METAL RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY–COATED, OR NON–CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.

28. NONMETALLIC RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.

29. THE SUBCONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CONTRACTOR BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.

30. THE SUBCONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD AGAINST LIFE AND PROPERTY.

31. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE LOCAL CODES.

32. CONDUIT ROUTINGS ARE SCHEMATIC. SUBCONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED.

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STATE OF CONNECTICUT
JAMES M. FITZGERALD
No. 25997
LICENSED
PROFESSIONAL CIVIL ENGINEER
3/29/22

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
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0	01/06/22	ISSUED FOR REVIEW	JRV

SITE NUMBER:
CT11536A

SITE ADDRESS:
1925-1931 EAST MAIN STREET
TORRINGTON, CT 06790

SHEET TITLE
GENERAL NOTES

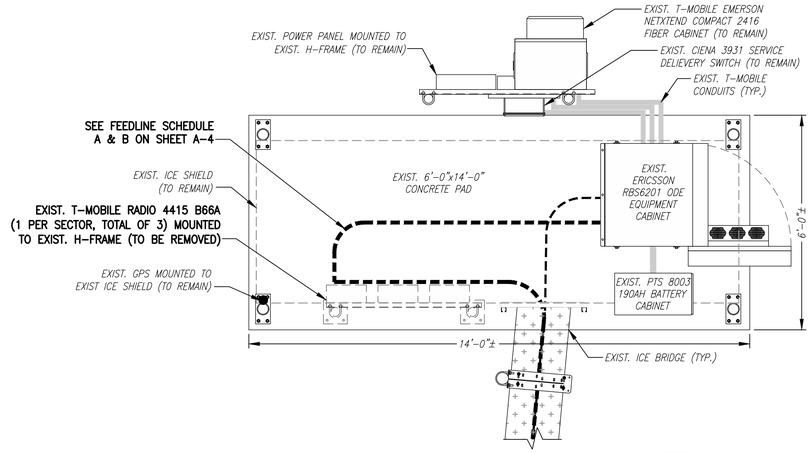
SHEET NUMBER
GN-1

1815.386

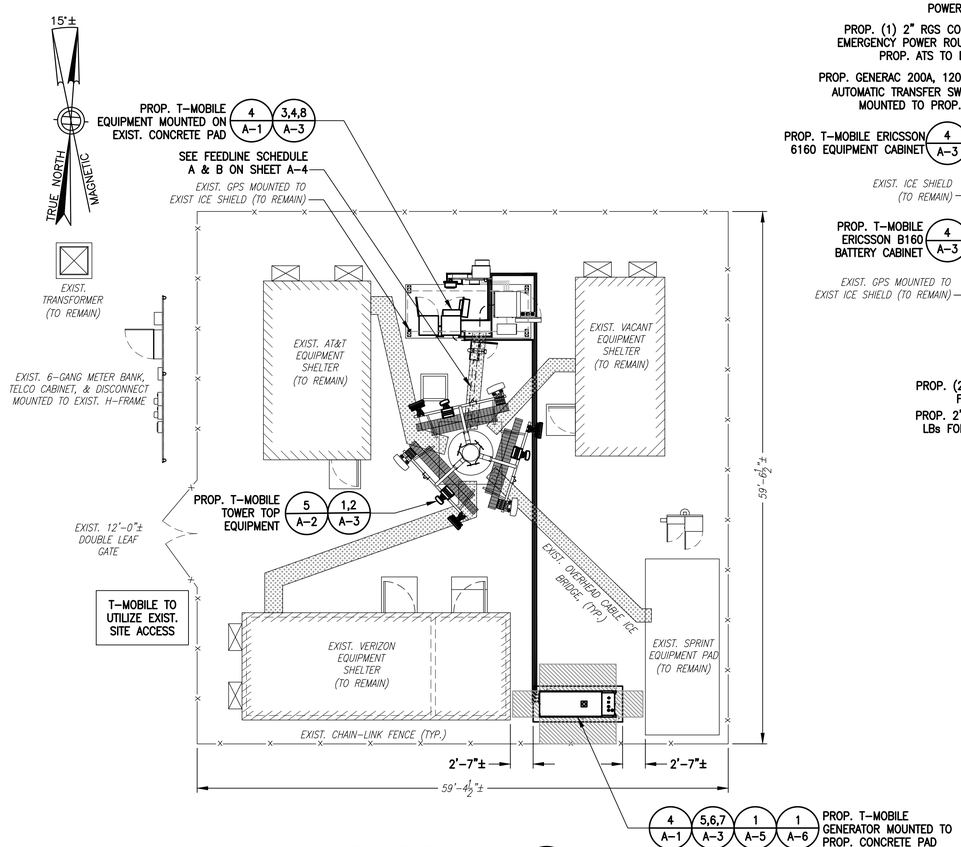
SPECIAL PRE-CONSTRUCTION WORK NOTE (SBA-PROVIDED TOWER STRUCTURAL ANALYSIS SPECIAL EQUIPMENT INSTALLATION REQUIREMENTS):
GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL SPECIAL OR SUPPLEMENTAL ADDITIONAL TOWER-MOUNTED EQUIPMENT PER RECOMMENDATIONS FROM SBA-PROVIDED TOWER STRUCTURAL ANALYSIS FOR ANY SPECIAL SHIELDING OF TOWER TOP EQUIPMENT AND FOR ANY SPECIAL FEEDLINE BUNDLING OR RELOCATION.

SPECIAL CONSTRUCTION NOTE:
GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL ANTENNA MOUNT STRUCTURAL AUGMENTS (STRUCTURAL MODIFICATIONS) AT T-MOBILE'S RAD/VERTICAL EQUIPMENT SPACE PER RECOMMENDATIONS FROM SBA-PROVIDED ANTENNA MOUNT STRUCTURAL ANALYSIS AND ANY SUPPLEMENTAL CONSTRUCTION DRAWINGS (PROVIDED BY OTHERS).

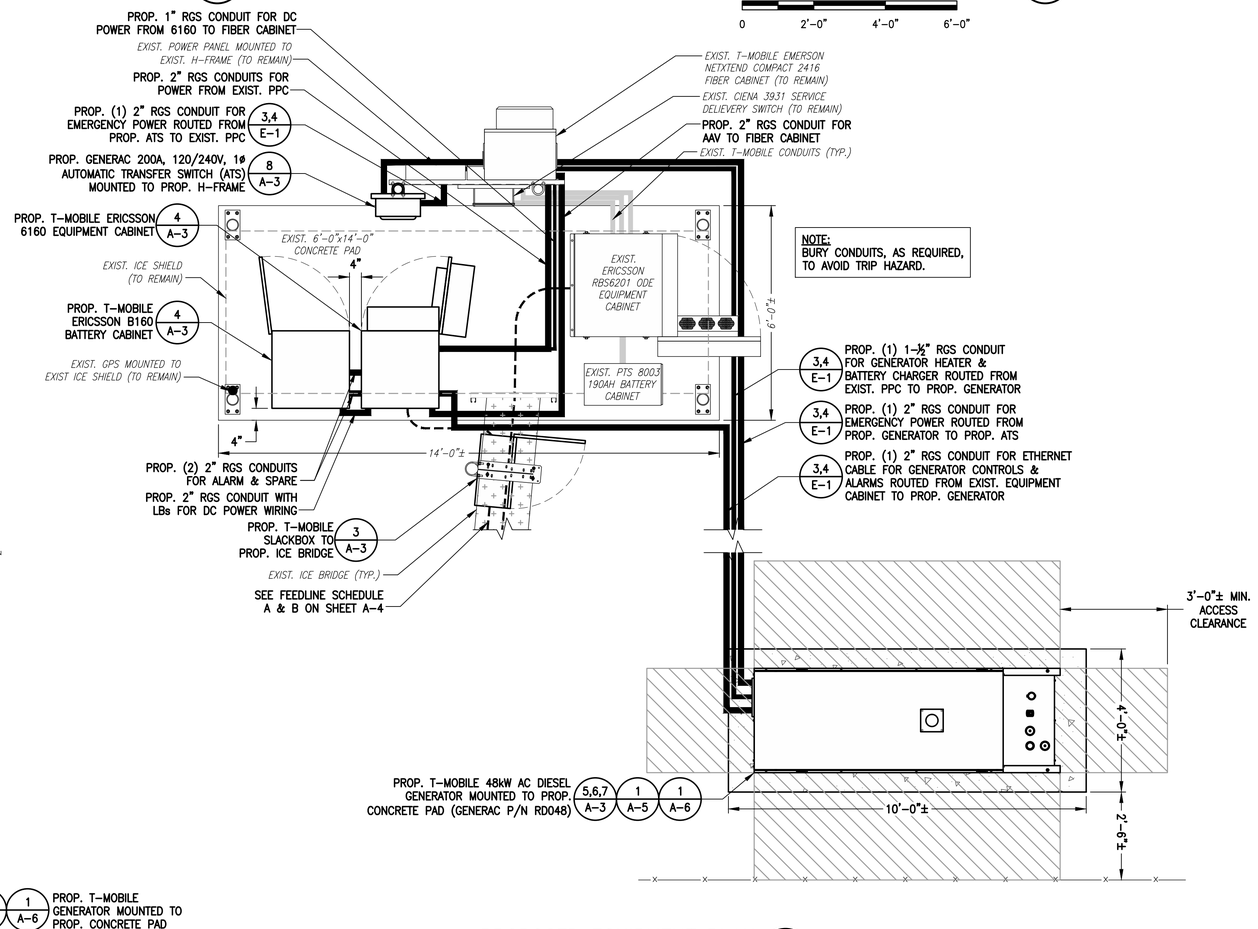
EXISTING EQUIPMENT PHOTO (2 / A-1)
SCALE: N.T.S.



EXISTING EQUIPMENT PLAN (3 / A-1)
SCALE: 1/2" = 1'-0"
0 2'-0" 4'-0" 6'-0"



COMPOUND PLAN (1 / A-1)
SCALE: 1" = 8'-0"
0 8'-0" 16'-0 24'-0"



PROPOSED EQUIPMENT PLAN (4 / A-1)
SCALE: 1/2" = 1'-0"
0 2'-0" 4'-0" 6'-0"

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STATE OF CONNECTICUT ★ JAMES M. FITZGERALD ★ No. 25937 LICENSED PROFESSIONAL CIVIL ENGINEER
3/29/22

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SITE ADDRESS:
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TORRINGTON, CT 06790

SHEET TITLE
COMPOUND & EQUIPMENT PLANS

SHEET NUMBER
A-1

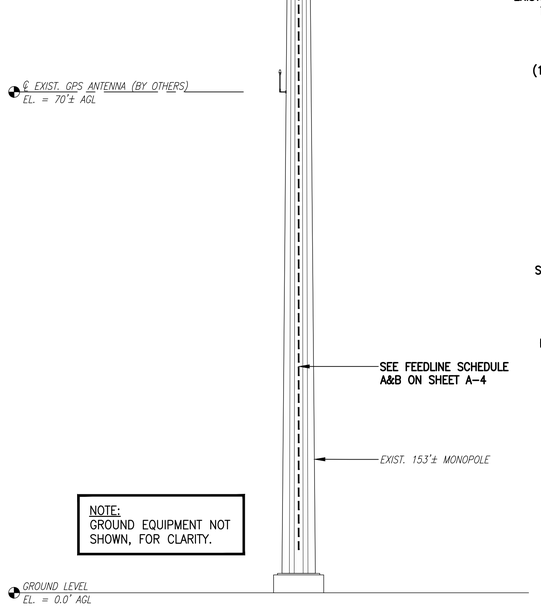
1815.386

SPECIAL PRE-CONSTRUCTION WORK NOTE (SBA-PROVIDED TOWER STRUCTURAL ANALYSIS SPECIAL EQUIPMENT INSTALLATION REQUIREMENTS):
GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL SPECIAL OR SUPPLEMENTAL ADDITIONAL TOWER-MOUNTED EQUIPMENT PER RECOMMENDATIONS FROM SBA-PROVIDED TOWER STRUCTURAL ANALYSIS FOR ANY SPECIAL SHIELDING OF TOWER TOP EQUIPMENT AND FOR ANY SPECIAL FEEDLINE BUNDLING OR RELOCATION.

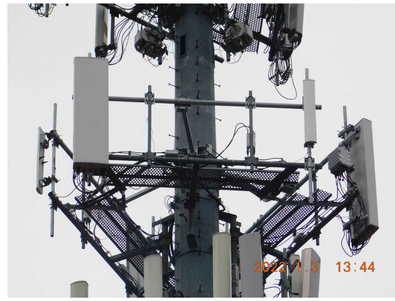
RAD CENTER NOTE:
T-MOBILE RAD CENTER SHOWN IN RED TEXT BASED ON SBA-PROVIDED CO-LOCATION APPLICATION, EQUIPMENT DATABASE, AND STRUCTURAL ANALYSIS. THE SBA-PROVIDED ANTENNA RAD CENTER SHALL SUPERSEDE ANY CONFLICTING INFORMATION DERIVED FROM THE T-MOBILE RFDS.

SPECIAL CONSTRUCTION NOTE:
GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL ANTENNA MOUNT STRUCTURAL AUGMENTS (STRUCTURAL MODIFICATIONS) AT T-MOBILE'S RAD/VERTICAL EQUIPMENT SPACE PER RECOMMENDATIONS FROM SBA-PROVIDED ANTENNA MOUNT STRUCTURAL ANALYSIS AND ANY SUPPLEMENTAL CONSTRUCTION DRAWINGS (PROVIDED BY OTHERS).

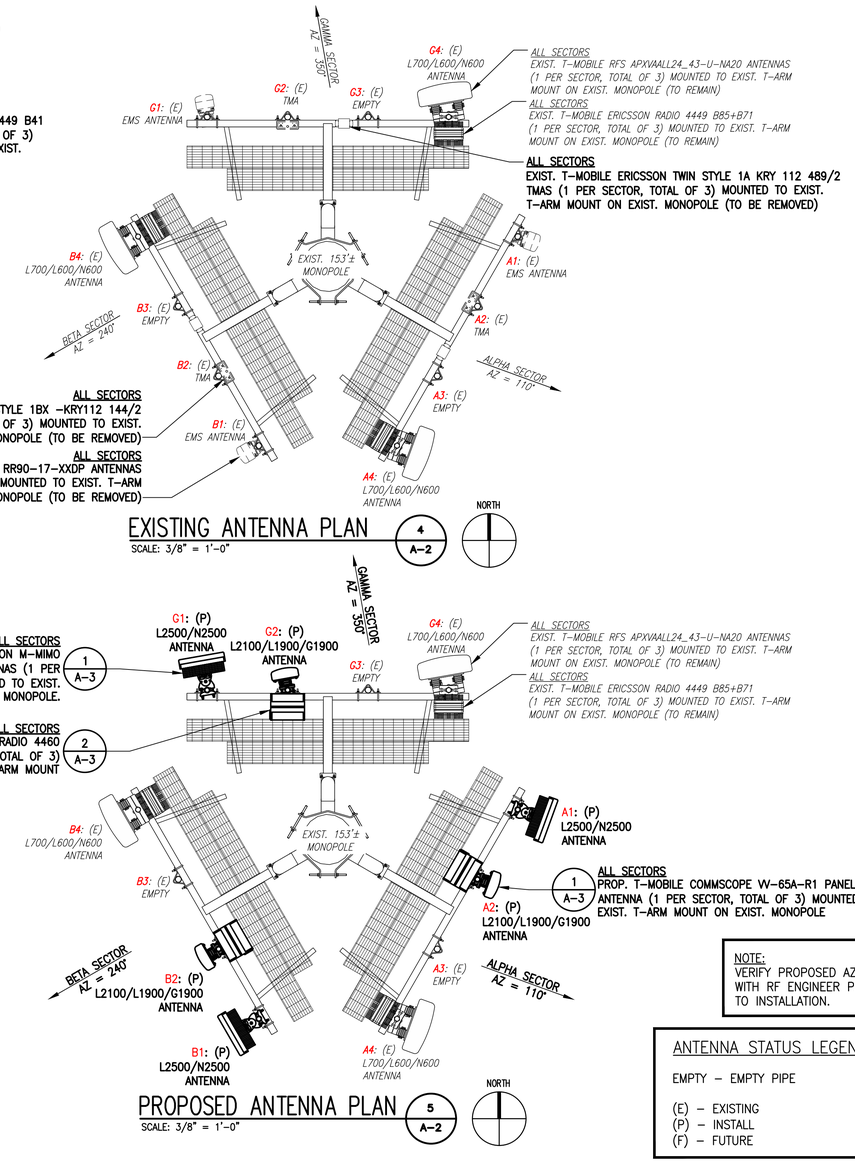
EXISTING TOWER PHOTO (1 / A-2)
SCALE: N.T.S.



TOWER ELEVATION (2 / A-2)
SCALE: 1" =10'-0"
0 10' 20' 30'



EXISTING ANTENNA PHOTO (3 / A-2)
SCALE: N.T.S.



EXISTING ANTENNA PLAN (4 / A-2)
SCALE: 3/8" = 1'-0"

PROPOSED ANTENNA PLAN (5 / A-2)
SCALE: 3/8" = 1'-0"

ANTENNA STATUS LEGEND:
EMPTY – EMPTY PIPE
(E) – EXISTING
(P) – INSTALL
(F) – FUTURE

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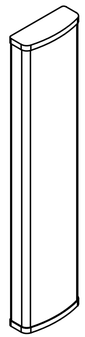
TORRINGTON, CT 06790

SHEET TITLE
TOWER ELEVATIONS & ANTENNA PLANS

SHEET NUMBER
A-2

1815.386



COMMSCOPE VV-65A-R1 ANTENNA

DIMENSIONS: 54.7"H x 12.1"W x 4.6"D
WEIGHT: 23.8 lbs
QUANTITY: 1 PER SECTOR, TOTAL OF 3

ERICSSON M-MIMO AIR6449 B41 ANTENNA

DIMENSIONS: 33.1"H x 20.5"W x 8.3"D
WEIGHT: 103.0 lbs
QUANTITY: 1 PER SECTOR, TOTAL OF 3

ERICSSON RADIO 4460 B25+B66

DIMENSIONS: 17.0"H x 15.1"W x 11.9"D
WEIGHT: 104.0 lbs
QUANTITY: 1 PER SECTOR, TOTAL OF 3

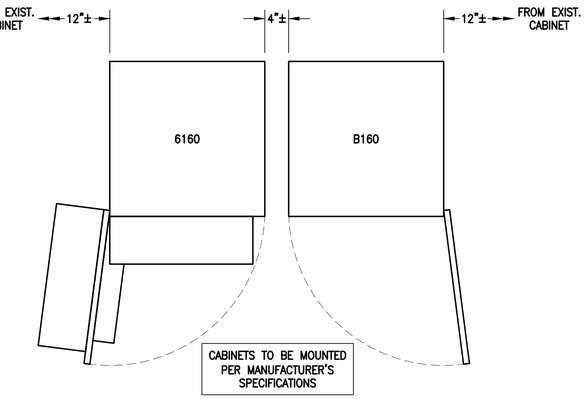
ANTENNA DETAILS (1 / A-3)
SCALE: N.T.S.

RADIO DETAILS (2 / A-3)
SCALE: N.T.S.

SLACKBOX – HOFFMAN 32FH91 NEMA 3R ENCLOSURE

DIMENSIONS: 24.0"H x 24.0"W x 12.0"D
QUANTITY: TOTAL OF 1

SSC DETAILS (3 / A-3)
SCALE: N.T.S.



ERICSSON 6160 SITE SUPPORT CABINET

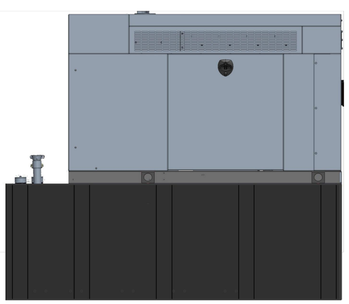
DIMENSIONS: 63.25"H x 26.0"W x 34.0"D
WEIGHT: 680.0 lbs
QUANTITY: TOTAL OF 1

ERICSSON B160 BATTERY CABINET

DIMENSIONS: 63.25"H x 26.0"W x 26.0"D
WEIGHT: 1771.0 lbs
QUANTITY: TOTAL OF 1

EQUIPMENT DETAIL (4 / A-3)
SCALE: N.T.S.

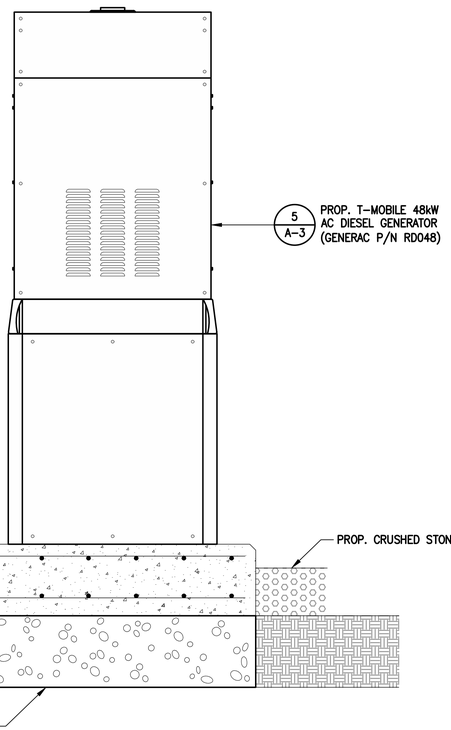
NOTE:
GENERATOR DIESEL TANK TO BE FILLED BY CONTRACTOR



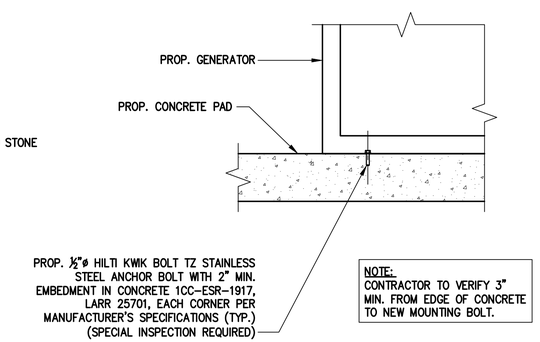
GENERAC RD048 48kW AC DIESEL GENERATOR

DIMENSIONS: 103.4"L x 35.0"W x 90.0"H
WEIGHT: 2,954 lbs
QUANTITY: TOTAL OF 1

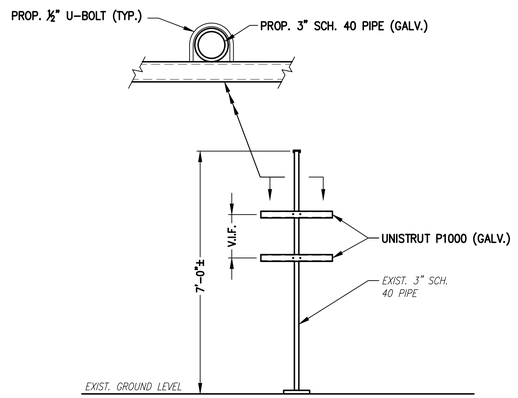
GENERATOR DETAIL (5 / A-3)
SCALE: N.T.S.



GENERATOR PAD DETAIL (6 / A-3)
SCALE: NTS



GENERATOR MOUNTING DETAIL (7 / A-3)
SCALE: N.T.S.



H-FRAME DETAIL (8 / A-3)
SCALE: N.T.S.

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SHEET TITLE
SITE DETAILS

SHEET NUMBER
A-3

1815.386

FINAL ANTENNA CONFIGURATION

SECTOR		ANTENNA	RAD CENTER	AZIMUTH (TRUE NORTH)	MECHANICAL DOWNTILT	ELECTRICAL DOWNTILT	BAND	TMA/RADIOS	SIGNAL CABLES
ALPHA	A1	**ERICSSON M-MIMO AIR6449 B41**	**131'± AGL**	**110°**	**0°**	**2°**	**L2500/N2500**	**–**	*(2) 1-5/8" (6x12) HCS FIBER CABLE* **(3) 2" (6x24) HCS FIBER CABLES**
	A2	**COMMSCOPE VV-65A-R1**	**131'± AGL**	**110°**	**0°**	**2°**	**L2100/L1900/G1900**	**RADIO 4460 B25+B66**	
	A3	*EMPTY PIPE*	–	–	–	–	–	–	
	A4	*RFS APXVAALL24_43-U-NA20*	*131'± AGL*	*110°*	*0°*	*2°*	*L700/L600/N600*	*RADIO 4449 B71+B85*	
BETA	B1	**ERICSSON M-MIMO AIR6449 B41**	**131'± AGL**	**240°**	**0°**	**2°**	**L2500/N2500**	**–**	
	B2	**COMMSCOPE VV-65A-R1**	**131'± AGL**	**240°**	**0°**	**2°**	**L2100/L1900/G1900**	**RADIO 4460 B25+B66**	
	B3	*EMPTY PIPE*	–	–	–	–	–	–	
	B4	*RFS APXVAALL24_43-U-NA20*	*131'± AGL*	*240°*	*0°*	*2°*	*L700/L600/N600*	*RADIO 4449 B71+B85*	
GAMMA	G1	**ERICSSON M-MIMO AIR6449 B41**	**131'± AGL**	**350°**	**0°**	**2°**	**L2500/N2500**	**–**	
	G2	**COMMSCOPE VV-65A-R1**	**131'± AGL**	**350°**	**0°**	**2°**	**L2100/L1900/G1900**	**RADIO 4460 B25+B66**	
	G3	*EMPTY PIPE*	–	–	–	–	–	–	
	G4	*RFS APXVAALL24_43-U-NA20*	*131'± AGL*	*350°*	*0°*	*2°*	*L700/L600/N600*	*RADIO 4449 B71+B85*	

CABLE NOTE: ALL EXISTING 1-5/8" COAX CABLES TO BE REMOVED. SEE FEEDLINE SCHEDULE A & B BELOW.

NOTE: RFDS REV4 – 12/10/21

FEEDLINE SCHEDULE

SCHEDULE	FEEDLINES		LOCATION
A	*EXISTING TO REMAIN:*	*(1) 1/2" COAX CABLE FOR GPS ANTENNA* *(2) 1-5/8" (6x12) HCS FIBER CABLE*	**ROUTED PER STRUCTURAL ANALYSIS**
	EXISTING TO BE REMOVED:	*ALL 1-5/8" COAX CABLES*	
B	**PROPOSED:**	**(3) 2" (6x24) HCS FIBER CABLES**	

NOTE:
EXISTING T-MOBILE EQUIPMENT FEEDLINE INVENTORY BASED ON OBSERVED FIELD CONDITIONS. RFDS AND FEEDLINE LEASING ENTITLEMENTS MAY DIFFER.

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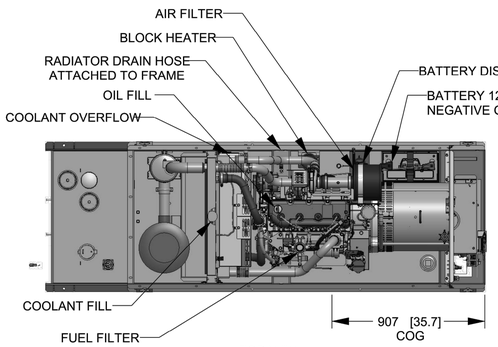
SHEET TITLE
ANTENNA & FEEDLINE CHARTS

SHEET NUMBER
A-4

1815.386

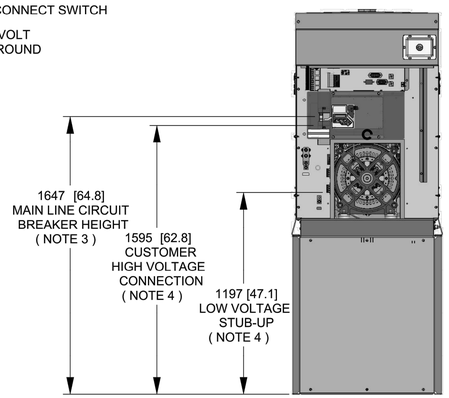
SH	REV	WINDCHILL VERSION	
1/2	A	A.1	



TOP VIEW
(SHOWN WITH ENCLOSURE REMOVED)

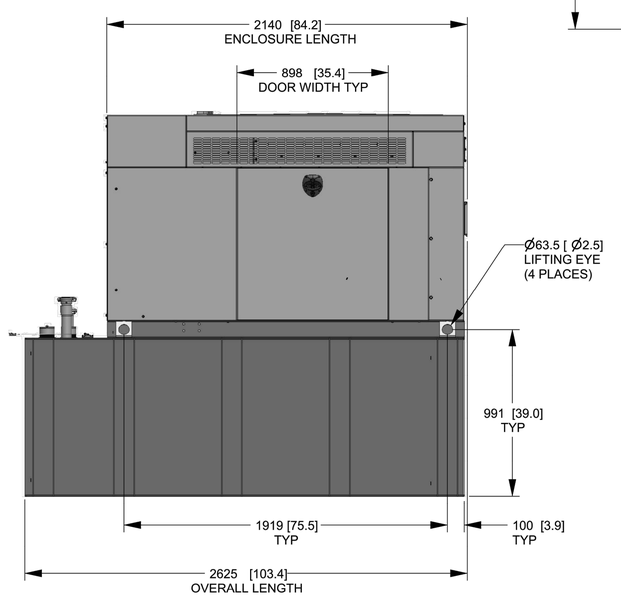
WEIGHT DATA WITH EMPTY BASETANK (SEE NOTE 6)	
GENERATOR AS SHOWN	1,322 [2,915]
WITH WOODEN SHIPPING SKID	1,340 [2,954]

WEIGHT: KG [LBS]
DIMENSIONS: MM [INCH]

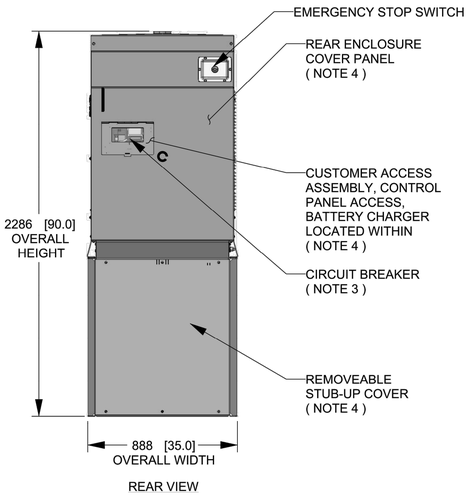


REAR VIEW
(SHOWN WITH REAR COVER PANEL REMOVED)

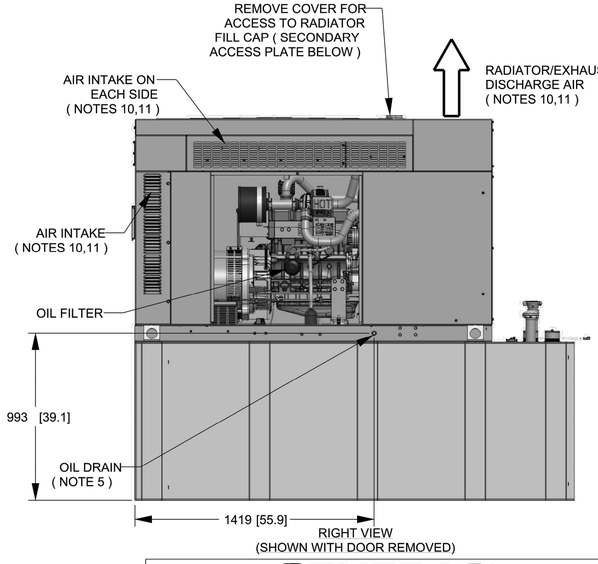
NOTES:
1. THIS UNIT MUST BE INSTALLED IN ACCORDANCE WITH CURRENT APPLICABLE NFPA 37 AND NFPA 70 STANDARDS AS WELL AS ANY OTHER FEDERAL, STATE, AND LOCAL CODES.
2. BATTERY (12 VOLT NEGATIVE GROUND SYSTEM).
3. CONTROL PANEL / CIRCUIT BREAKER INFORMATION:
   - MAIN LINE CIRCUIT BREAKER 200 AMPS.
   - SEE SPECIFICATION SHEET OR OWNERS MANUAL.
   - ACCESSIBLE THROUGH CUSTOMER ACCESS ASSEMBLY DOOR ON REAR OF GENERATOR.
   - CONTROL PANEL INCLUDES INTEGRATED BATTERY CHARGER.
4. REMOVE THE REAR STUB-UP AND REAR ENCLOSURE COVER PANEL TO ACCESS THE STUB-UP AREAS AS FOLLOWS:
   - HIGH VOLTAGE CONNECTION INCLUDING AC LOAD LEAD CONDUIT CONNECTION, NEUTRAL CONNECTION, AND BATTERY CHARGER 120 VOLT AC (0.5 AMP MAX) CONNECTION.
   - LOW VOLTAGE CONNECTION INCLUDING TRANSFER SWITCH CONTROL WIRES.
5. ENGINE SERVICE CONNECTIONS:
   OIL DRAIN = 1/2" NPT
   RADIATOR DRAIN = HOSE CLAMPED TO FRAME
6. CENTER OF GRAVITY AND WEIGHT MAY CHANGE DUE TO UNIT OPTIONS.
7. BOTTOM OF GENERATOR SET MUST BE ENCLOSED TO PREVENT PEST INTRUSION AND RECIRCULATION OF DISCHARGE AIR AND/OR IMPROPER COOLING AIR FLOW.
8. REFERENCE OWNERS MANUAL FOR LIFTING WARNINGS.
9. MOUNTING BOLTS OR STUDS TO MOUNTING SURFACE SHALL BE 5/8-11 GRADE 5 (USE STANDARD SAE TORQUE SPECS)
10. MUST ALLOW FREE FLOW OF INTAKE AIR, DISCHARGE AIR AND EXHAUST. SEE SPEC SHEET FOR MINIMUM AIR FLOW AND MAXIMUM RESTRICTION REQUIREMENTS.
11. GENERATOR MUST BE INSTALLED SUCH THAT FRESH COOLING AIR IS AVAILABLE AND THAT DISCHARGE AIR FROM RADIATOR IS NOT RECIRCULATED. RECOMMENDED MINIMUM PERIMETER (3FT) AND VERTICAL OVER EXHAUST (5FT) CLEARANCE FOR SITE LOCATION.
12. GENERATOR MUST BE GROUNDED.



LEFT VIEW



REAR VIEW



RIGHT VIEW
(SHOWN WITH DOOR REMOVED)

DRAWING CREATED FROM PRO/ENGINEER 3D FILE. ECO MODIFICATION TO BE APPLIED TO SOLID MODEL ONLY.

INSTALLATION DRAWING

ELECTRONICALLY APPROVED
INSIDE WINDCHILL

GENERAC

TITLE
INSTALL D3.4L G16
48KW Y06 EXT

ISSUE DATE: 8/8/18

SIZE	CAGE NO	DWG NO	REV
B	N/A	10000041950	A

SCALE 0.035 | WT-KG SEE ABOVE | SHEET 1 of 2

GENERATOR SPECIFICATIONS 1
SCALE: N.T.S.

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201 BOSTON POST ROAD WEST, SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

STATE OF CONNECTICUT
JAMES M. FITZGERALD
No. 25997
LICENSED
PROFESSIONAL CIVIL ENGINEER
3/29/22

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
2	03/28/22	REVISED CONSTRUCTION	JRV
1	01/19/22	ISSUED FOR CONSTRUCTION	JRV
0	01/06/22	ISSUED FOR REVIEW	JRV

SITE NUMBER:
CT11536A

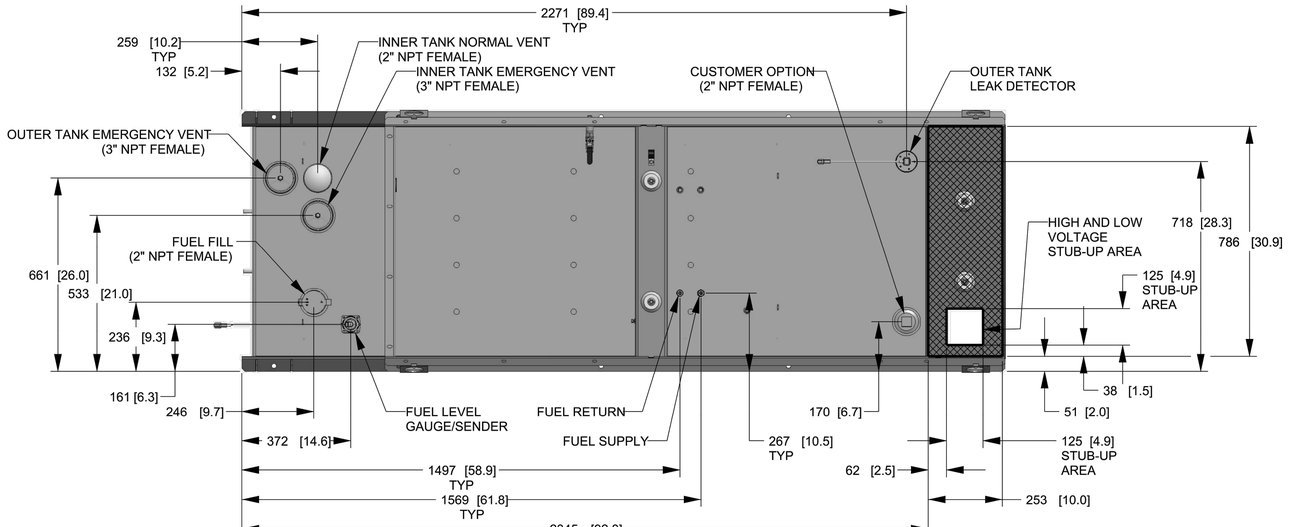
SITE ADDRESS:
1925-1931 EAST MAIN STREET
TORRINGTON, CT 06790

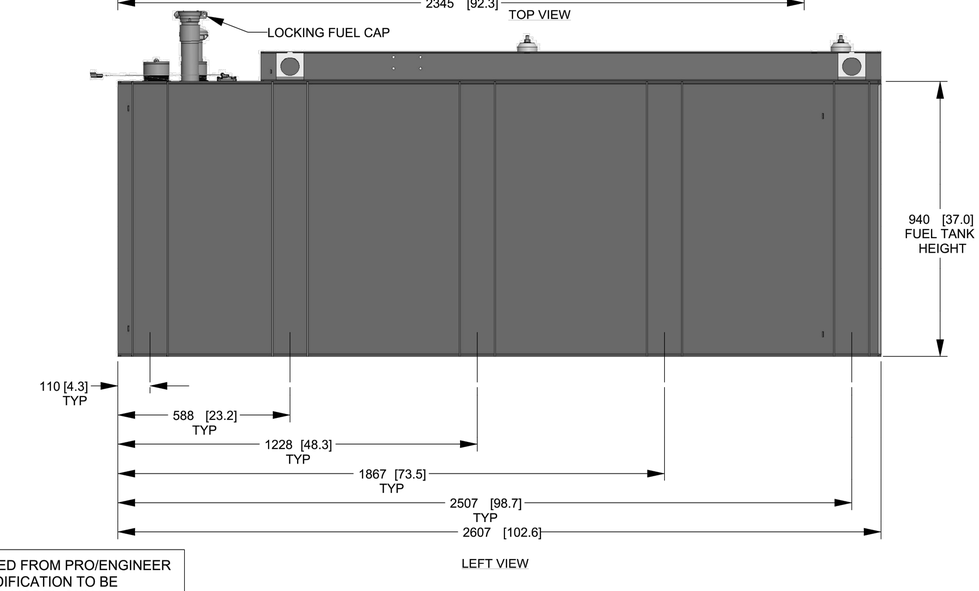
SHEET TITLE
GENERATOR SPECIFICATIONS 1

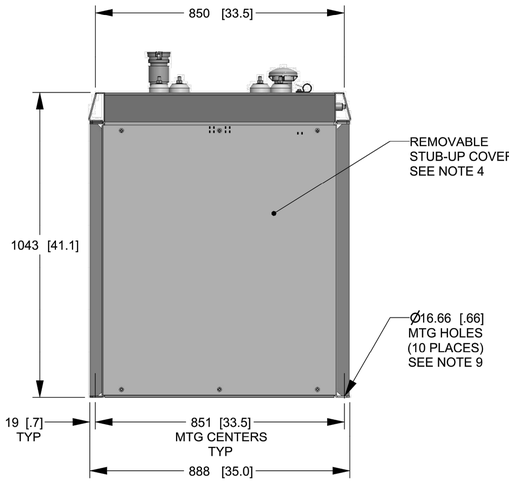
SHEET NUMBER
A-5

1815.386

SH	REV	WINDCHILL VERSION	
2/2	A	A.1	







FUEL TANK	
TOTAL CAPACITY	908 [240]
USABLE CAPACITY	867 [229]

CAPACITY: LITER [GALLON]
DIMENSIONS: MM [INCH]

TANK IS LISTED TO UL142 AND ULC5601

NOTE: STUB-UP AREA FOR HIGH AND LOW VOLTAGE CONNECTIONS, CIRCUIT BREAKER, NEUTRAL AND CUSTOMER CONNECTION OPENING.

DRAWING CREATED FROM PRO/ENGINEER 3D FILE. ECO MODIFICATION TO BE APPLIED TO SOLID MODEL ONLY.

INSTALLATION DRAWING

ELECTRONICALLY APPROVED
INSIDE WINDCHILL

GENERAC

TITLE
INSTALL D3.4L G16
48KW Y06 EXT

ISSUE DATE: 8/8/18

SIZE	CAGE NO	DWG NO	REV
B	N/A	10000041950	A

SCALE 0.060 | WT-KG SEE ABOVE | SHEET 2 of 2

GENERATOR SPECIFICATIONS 1
SCALE: N.T.S. A-6

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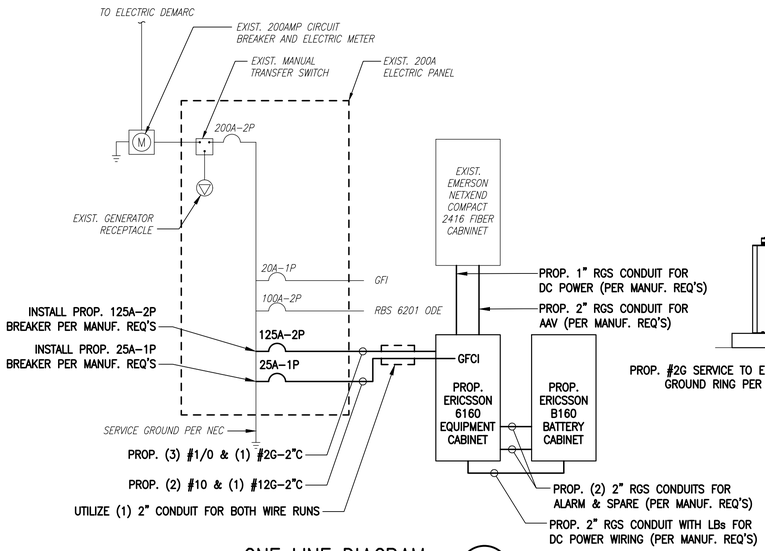
SHEET TITLE
GENERATOR SPECIFICATIONS 2

SHEET NUMBER
A-6

1815.386

EXISTING POWER PANEL PHOTOS (1 / E-1)

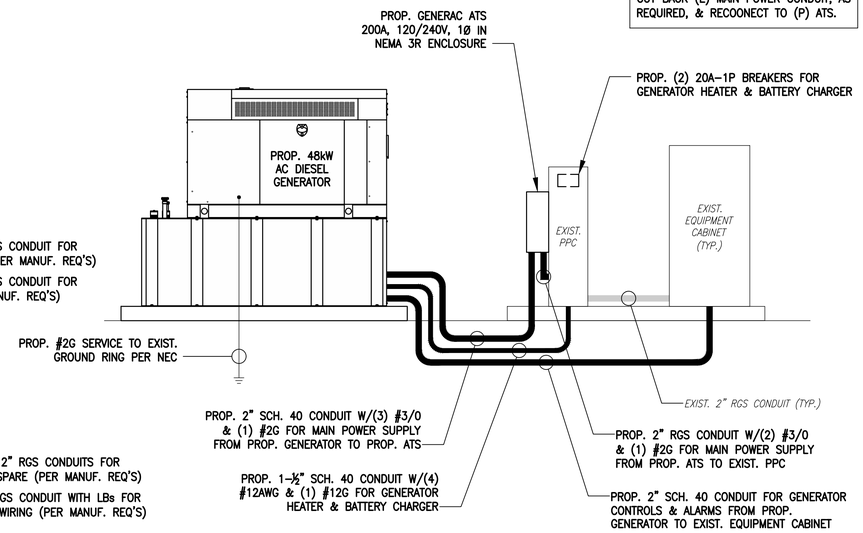
SCALE: NOT TO SCALE



ONE LINE DIAGRAM (2 / E-1)

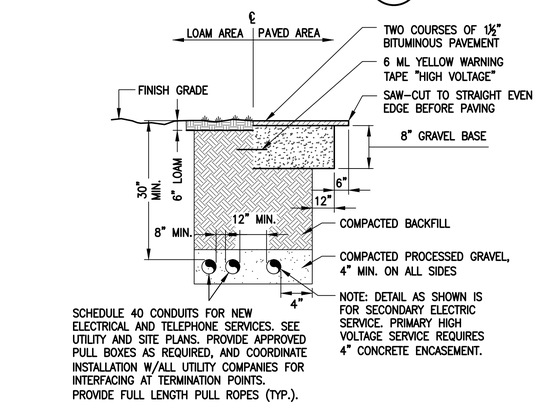
SCALE: NOT TO SCALE

NOTE:
CUT BACK (E) MAIN POWER CONDUIT, AS REQUIRED, & RECOONECT TO (P) ATS.



ONE-LINE POWER DIAGRAM (3 / E-1)

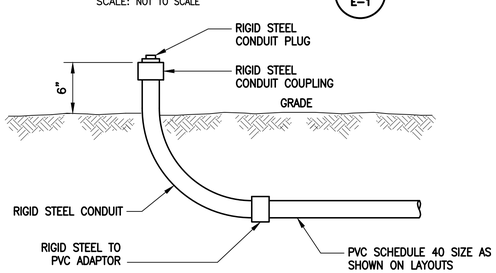
SCALE: NOT TO SCALE



SCHEDULE 40 CONDUITS FOR NEW ELECTRICAL AND TELEPHONE SERVICES. SEE UTILITY AND SITE PLANS. PROVIDE APPROVED PULL BOXES AS REQUIRED, AND COORDINATE INSTALLATION W/ALL UTILITY COMPANIES FOR INTERFACING AT TERMINATION POINTS. PROVIDE FULL LENGTH PULL ROPES (TYP.).

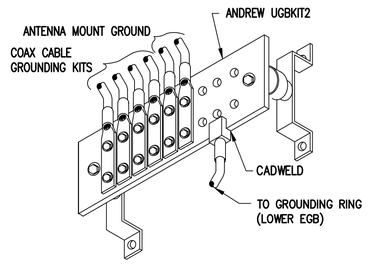
BURIED CONDUIT DETAIL (4 / E-1)

SCALE: NOT TO SCALE



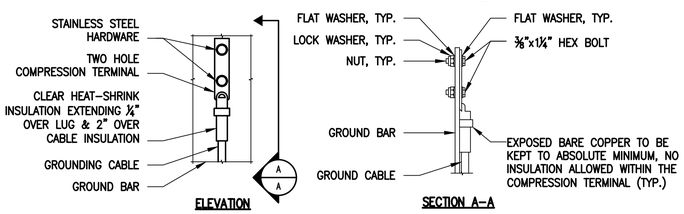
TYPICAL CONDUIT STUB-UP DETAIL (5 / E-1)

SCALE: NONE



GROUND BAR (EGB) (6 / E-1)

SCALE: NOT TO SCALE



ELEVATION — SECTION A-A

NOTES:
1. "DOUBLING UP" OR "STACKING" OF CONNECTION IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.
3. CADWELL DOWNLEADS FROM UPPER EGB, LOWER EGB AND MGB.

TYPICAL GROUND BAR CONNECTIONS DETAIL (7 / E-1)

SCALE: NOT TO SCALE

ELECTRICAL AND GROUNDING NOTES

1. ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES.
2. ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED PER SPECIFICATION REQUIREMENTS.
3. THE ELECTRICAL WORK INCLUDES ALL LABOR AND MATERIAL DESCRIBED BY DRAWINGS AND SPECIFICATION INCLUDING INCIDENTAL WORK TO PROVIDE COMPLETE OPERATING AND APPROVED ELECTRICAL SYSTEM.
4. GENERAL CONTRACTOR SHALL PAY FEES FOR PERMITS, AND IS RESPONSIBLE FOR OBTAINING SAID PERMITS AND COORDINATION OF INSPECTIONS.
5. ELECTRICAL AND TELCO WIRING OUTSIDE A BUILDING AND EXPOSED TO WEATHER SHALL BE IN WATER TIGHT GALVANIZED RIGID STEEL CONDUITS OR SCHEDULE 80 PVC (AS PERMITTED BY CODE) AND WHERE REQUIRED IN LIQUID TIGHT FLEXIBLE METAL OR NONMETALLIC CONDUITS.
6. BURIED CONDUIT SHALL BE SCHEDULE 40 PVC.
7. ELECTRICAL WIRING SHALL BE COPPER WITH TYPE XHHW, THWN, OR THHNINSULATION.
8. RUN ELECTRICAL CONDUIT OR CABLE BETWEEN ELECTRICAL UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE PPC AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE. COORDINATE INSTALLATION WITH UTILITY COMPANY.
9. RUN TELCO CONDUIT OR CABLE BETWEEN TELEPHONE UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE TELCO CABINET AND BTS CABINET AS INDICATED ON THIS DRAWING PROVIDE FULL LENGTH PULL ROPE IN INSTALLED TELCO CONDUIT. PROVIDE GREENLEE CONDUIT MEASURING TAPE AT EACH END.
10. WHERE CONDUIT BETWEEN BTS AND PROJECT OWNER CELL SITE PPC AND BETWEEN BTS AND PROJECT OWNER CELL SITE TELCO SERVICE CABINET ARE UNDERGROUND USE PVC, SCHEDULE 40 CONDUIT. ABOVE THE GROUND PORTION OF THESE CONDUITS SHALL BE PVC CONDUIT.
11. ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.
12. PPC SUPPLIED BY PROJECT OWNER.
13. GROUNDING SHALL COMPLY WITH NEC ART. 250. ADDITIONALLY, GROUNDING, BONDING AND LIGHTNING PROTECTION SHALL BE DONE IN ACCORDANCE WITH "T-MOBILE BTS SITE GROUNDING STANDARDS".
14. GROUND COAXIAL CABLE SHIELDS MINIMUM AT BOTH ENDS USING MANUFACTURERS COAX CABLE GROUNDING KITS SUPPLIED BY PROJECT OWNER.
15. USE #6 COPPER STRANDED WIRE WITH GREEN COLOR INSULATION FOR ABOVE GRADE GROUNDING (UNLESS OTHERWISE SPECIFIED) AND #2 SOLID TINNED BARE COPPER WIRE FOR BELOW GRADE GROUNDING AS INDICATED ON THE DRAWING.
16. ALL GROUND CONNECTIONS TO BE BURNDY HYGROUND COMPRESSION TYPE CONNECTORS OR CADWELD EXOTHERMIC WELD. DO NOT ALLOW BARE COPPER WIRE TO BE IN CONTACT WITH GALVANIZED STEEL.
17. ROUTE GROUNDING CONDUCTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE, EXCEPT AS OTHERWISE INDICATED. GROUNDING LEADS SHOULD NEVER BE BENT AT RIGHT ANGLE. ALWAYS MAKE AT LEAST 12" RADIUS BENDS. #6 WIRE CAN BE BENT AT 6" RADIUS WHEN NECESSARY. BOND ANY METAL OBJECTS WITHIN 6 FEET OF PROJECT OWNER EQUIPMENT OR CABINET TO MASTER GROUND BAR OR GROUNDING RING.
18. CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO HOLE COMPRESSION TYPE COPPER LUGS. APPLY OXIDE INHIBITING COMPOUND TO ALL LOCATIONS.
19. APPLY OXIDE INHIBITING COMPOUND TO ALL COMPRESSION TYPE GROUND CONNECTIONS.
20. CONTRACTOR SHALL PROVIDE AND INSTALL OMNI DIRECTIONAL ELECTRONIC MARKER SYSTEM (EMS) BALLS OVER EACH GROUND ROD AND BONDING POINT BETWEEN EXIST. TOWER/ MONOPOLE GROUNDING RING AND EQUIPMENT GROUNDING RING.
21. CONTRACTOR SHALL TEST COMPLETED GROUND SYSTEM AND RECORD RESULTS FOR PROJECT CLOSE-OUT DOCUMENTATION. 5 OHMNS MINIMUM RESISTANCE REQUIRED.
22. CONTRACTOR SHALL CONDUCT ANTENNA, COAX, AND LNA RETURN-LOSS AND DISTANCE- TO-FAULT MEASUREMENTS (SWEEP TESTS) AND RECORD RESULTS FOR PROJECT CLOSE OUT.

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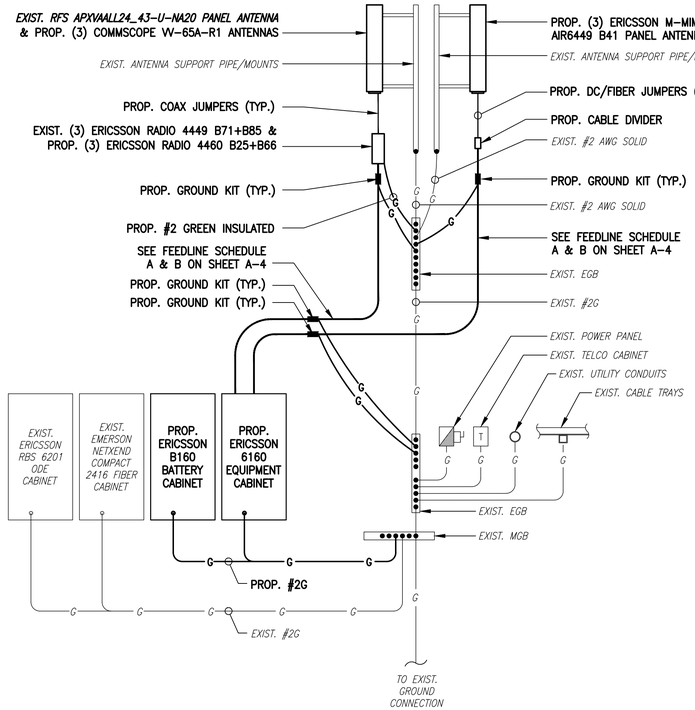
TORRINGTON, CT 06790

SHEET TITLE
ELECTRIC & GROUNDING DETAILS 1 OF 2

SHEET NUMBER
E-1

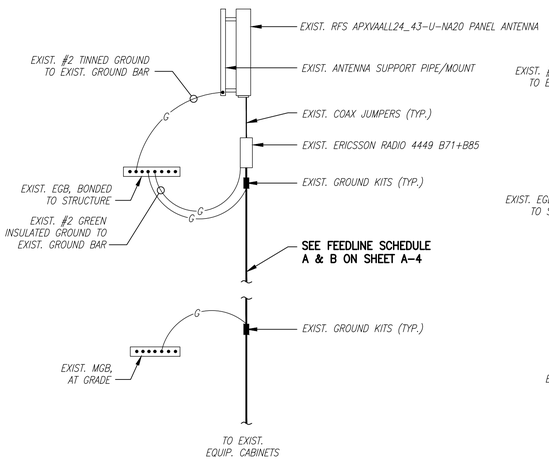
1815.386



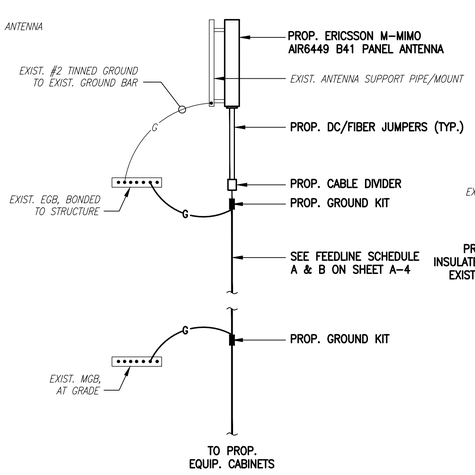
GROUNDING RISER DIAGRAM

SCALE: NOT TO SCALE

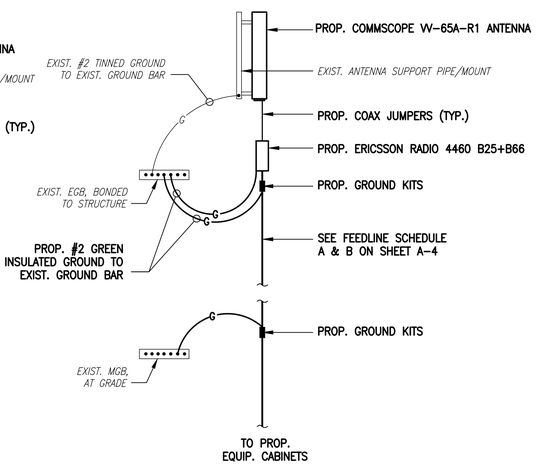
1 / E-2



L700/L600/N600 ANTENNA



L2500/N2500 ANTENNA



L2100/L1900/G1900 ANTENNA

COAX CABLE CONNECTION AND GROUNDING DETAIL

SCALE: NOT TO SCALE

2 / E-2

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TORRINGTON, CT 06790

SHEET TITLE
ELECTRIC & GROUNDING DETAILS 2 OF 2

SHEET NUMBER
E-2

1815.386

Exhibit D

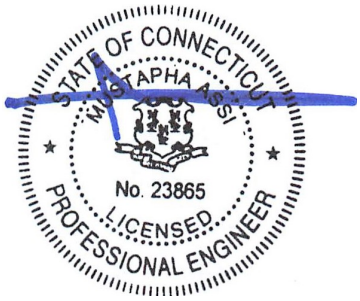
Structural Analysis Report

Tower Engineering Solutions
Phone (972) 483-0607, Fax (972) 975-9615
1320 Greenway Drive, Suite 600, Irving, Texas 75038

Structural Analysis Report

Existing 153 ft Nudd Corporation Monopole
Customer Name: SBA Communications Corp
Customer Site Number: CT01499-S
Customer Site Name: Torrington
Carrier Name: T-Mobile (App#: 183634-1)
Carrier Site ID / Name: CT11536A / Torrington
Site Location: 1925-1931 East Main Street
Torrington, Connecticut
Litchfield County
Latitude: 41.822991
Longitude: -73.077199

Exp. 01/31/2024



02/07/2022

Analysis Result:

Max Structural Usage: 73.6% [Pass]

Max Foundation Usage: 66.7% [Pass]

Additional Usage Caused by New Mount/Mount Modification: N/A

Report Prepared By: Bishal Pandit

Introduction

The purpose of this report is to summarize the analysis results on the 153 ft Nudd Corporation Monopole to support the proposed antennas and transmission lines in addition to those currently installed. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Tower Drawings	Fred A. Nudd Corporation (Project No. 7783) original design drawings dated August 18, 2000
Foundation Drawing	Fred A. Nudd Corporation (Project No. 7783) foundation design drawings dated August 18, 2000
Geotechnical Report	Jaworski Geotech, Inc., Project # 99335G, Dated 11/3/1999
Modification Drawings	Vertical Structures, Inc., Site: Torrington, CT, Dated 9/9/2003 FDH Engineering, Inc. (Project No. 15BFJD1400) Modification Drawings for a 153' Monopole dated March 10, 2015
Mount Analysis	TES, Project# 122883, Dated: 01/26/2022

Analysis Criteria

The rigorous analysis was performed in accordance with the requirements and stipulations of the TIA-222-G-2**.** In accordance with this standard, the structure was analyzed using **TESPoles,** a proprietary analysis software. The program considers the structure as an elastic 3-D model with second-order effects and temperature effects incorporated in the analysis. The analysis was performed using multiple wind directions.

Wind Speed Used in the Analysis:	Ultimate Design Wind Speed V_{ult} = 120 mph (3-Sec. Gust)/ Nominal Design Wind Speed V_{asd} = 93.0 mph (3-Sec. Gust)
Wind Speed with Ice:	40 mph (3-Sec. Gust) with 3/4" radial ice concurrent
Operational Wind Speed:	60 mph + 0" Radial ice
Standard/Codes:	TIA-222-G-2 / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	C
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft
Seismic Parameters:	S_S = 0.181, S_1 = 0.065

This structural analysis is based upon the tower being classified as a Structure Class II; however, if a different classification is required subsequent to the date hereof, the tower classification will be changed to meet such requirement and a new structural analysis will be run.

Existing Antennas, Mounts and Transmission Lines

The table below summarizes the antennas, mounts and transmission lines that were considered in the analysis as existing on the tower.

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	153.0	3	ALU 1900 MHz RRUs	Low Profile Platform	(4) 1 1/4"	Sprint*
2		3	ALU 800 MHz Filters			
3		3	ALU 800 MHz RRUs			
4		4	RFS ACU-A20-N RETs			
5		3	RFS APXVSPP18-C-A20 - Panel			
6		3	RFS APXVTM14-C-I20 - Panel			
7		3	TD-RRH8x20-25 RRHs			
-	131.0	3	EMS RR90-17-XXDP	Low Profile Platform w/ (1) MetroSite Heavy Collar Mount (MS-H1436) (1) MetroSite Support Rail Kit (MS-HR35-18) (1) MetroSite Rotatable T-Arm Kit (MS-TAW-350RO) (6) 2" Antenna Mount Pipes (PX2375-10)	(12) 1 5/8" (1) 1 5/8"Fiber	T-Mobile
-		3	RFS APXVAARR24_43-U-NA20			
-		3	Ericsson KRY 112 144/1			
-		3	Ericsson KRY 112 489/2			
-		3	Ericsson Radio 4449 B71+B12			
15	123.0	3	Samsung - MT6407-77A - Panel	Low Profile Platform with (3) Andrew 2" SBS	(16) 1 5/8" (2) 1 5/8" Fiber	Verizon
16		6	CommScope - SBNHH-1D65B - Panel			
17		6	Antel - LPA-80063-6CF-EDIN-5 - Panel			
18		3	B2/B66A RRH-BR049 (RFV01U-D1A)			
19		3	B5/B13 RRH-BR04C (RFV01U-D2A)			
20		2	RFS DB-T1-6Z-8AB-0Z			
21	110.0	1	10' Omni	(1) Standoff	(1) 1/2"	Torrington PD
22	95.0	3	Powerwave 7770	(3) Sector Frame Commscope P/N MTC3615	(12) 1 5/8" (2) 1/2" Fiber (4) 3/4" DC	AT&T
23		2	KMW AM-X-CW-16-65-00T-RET			
24		1	Kathrein 800 10764 K			
25		4	Cci HPA-65R-BUU-H6			
26		2	Andrew SBNHH-1D65A			
27		6	Powerwave LGP17201 TMA			
28		6	Powerwave LGP21901 Diplexer			
29		3	PolyPhaser 1000860			
30		3	Ericsson RRUS 11			
31		3	Ericsson RRUS 12			
32		3	Ericsson 4426 B66			
33		3	Ericsson RRUS32			
34		3	Ericsson RRUS E2			
35		3	Ericsson RRUS A2			
36		2	Raycap DC6-48-60-18-8F			
37	70.0	1	GPS	(1) Standoff	(1) 1/2"	Unknown

* Sprint's equipment at 153' has been terminated but not removed. Thus, they are considered in this analysis.

Proposed Carrier's Final Configuration of Antennas, Mounts and Transmission Lines

Information pertaining to the proposed carrier's final configuration of antennas and transmission lines was provided by SBA Communications Corp. The proposed antennas and lines are listed below.

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
8	131.0	3	Ericsson AIR6449 B41 - Panel	(3) T-Arms w/ (1) MetroSite Heavy Collar Mount (MS-H1436) (1) MetroSite Support Rail Kit (MS-HR35-18) (1) MetroSite Rotatable T-Arm Kit (MS-TAW-350RO) (6) 2" Antenna Mount Pipes (PX2375-10) *	(2) 1 5/8" Fiber (8) 1 5/8" Coax (2) 1.90" Fiber	T-Mobile
9		3	RFS APXVAALL24_43-U-NA20 - Panel			
10		3	Commscope VV-65A-R1 - Panel			
11		3	Ericsson KRY 112 144/1 - TMAs			
12		3	Ericsson KRY 112 489/2 - TMAs			
13		3	Ericsson 4449 B71 + B85 - RRU			
14		3	Ericsson 4460 B25 + B66 - RRU			

* Mount info as per TES MA Project# 122883.

See the attached coax layout for the line placement considered in the analysis.

Analysis Results

The results of the structural analysis, performed for the wind and ice loading and antenna equipment as defined above, are summarized as the following:

	Pole shafts	Anchor Bolts	Base Plate
Max. Usage:	**73.6%**	**63.8%**	**61.1%**
Pass/Fail	**Pass**	**Pass**	**Pass**

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Analysis Reactions	3838.5	36.6	49.0

The foundation has been investigated using the supplied documents and soils report and was found adequate. Therefore, no modification to the foundation will be required.

Operational Condition (Rigidity):

Operational characteristics of the tower are found to be within the limits prescribed by TIA-222 for the installed antennas. The maximum twist/sway at the elevation of the proposed equipment is 1.0793 degrees under the operational wind speed as specified in the Analysis Criteria.

Conclusions

Based on the analysis results, the existing structure and its foundation were found to be **adequate** to safely support the existing and proposed equipment and meet the minimum requirements per the TIA-222 Standard under the design basic wind speed as specified in the Analysis Criteria.

Standard Conditions

1. This analysis was performed based on the information supplied to **(TES) Tower Engineering Solutions, LLC.** Verification of the information provided was not included in the Scope of Work for **TES**. The accuracy of the analysis is dependent on the accuracy of the information provided.

2. The structural analysis was performance based upon the evidence available at the time of this report. All information provided by the client is considered to be accurate.

3. The analyses will be performed based on the codes as specified by the client or based on the best knowledge of the engineering staff of **TES**. In the absence of information to the contrary, all work will be performed in accordance with the latest relevant revision of ANSI/TIA-222. If wind speed and/or ice loads are different from the minimum values recommended by the ANSI/TIA-222 standard or other codes, **TES** should be notified in writing and the applicable minimum values provided by the client.

4. The configuration of the existing mounts, antennas, coax and other appurtenances were supplied by the customer for the current structural analysis. **TES** has not visited the tower site to verify the adequacy of the information provided. If there is any discrepancy found in the report regarding the existing conditions, **TES** should be notified immediately to evaluate the effect of the discrepancy on the analysis results.

5. The client will assume responsibility for rework associated with the differences in initially provided information, including tower and foundation information, existing and/or proposed equipment and transmission lines.

6. If a feasibility analysis was performed, final acceptance of changed conditions shall be based upon a rigorous structural analysis.

Usage Diagram - Max Ratio 73.59% at 45.0ft

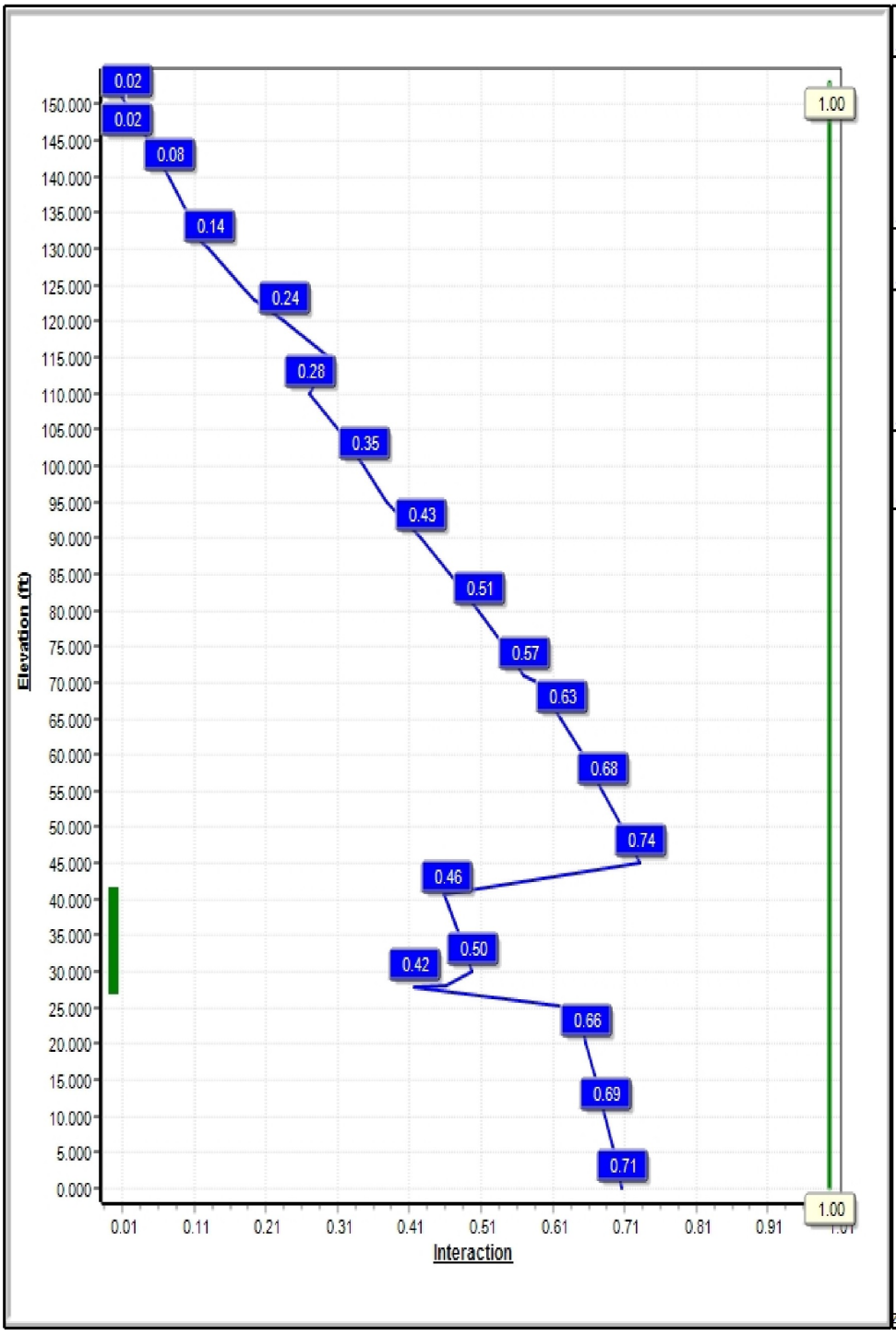
Structure:	CT01499-S-SBA	**Code:**	EIA/TIA-222-G	2/7/2022
Site Name:	Torrington	**Exposure:**	C	
Height:	153.00 (ft)	**Gh:**	1.1	
Base Elev:	0.000 (ft)			Page: 1

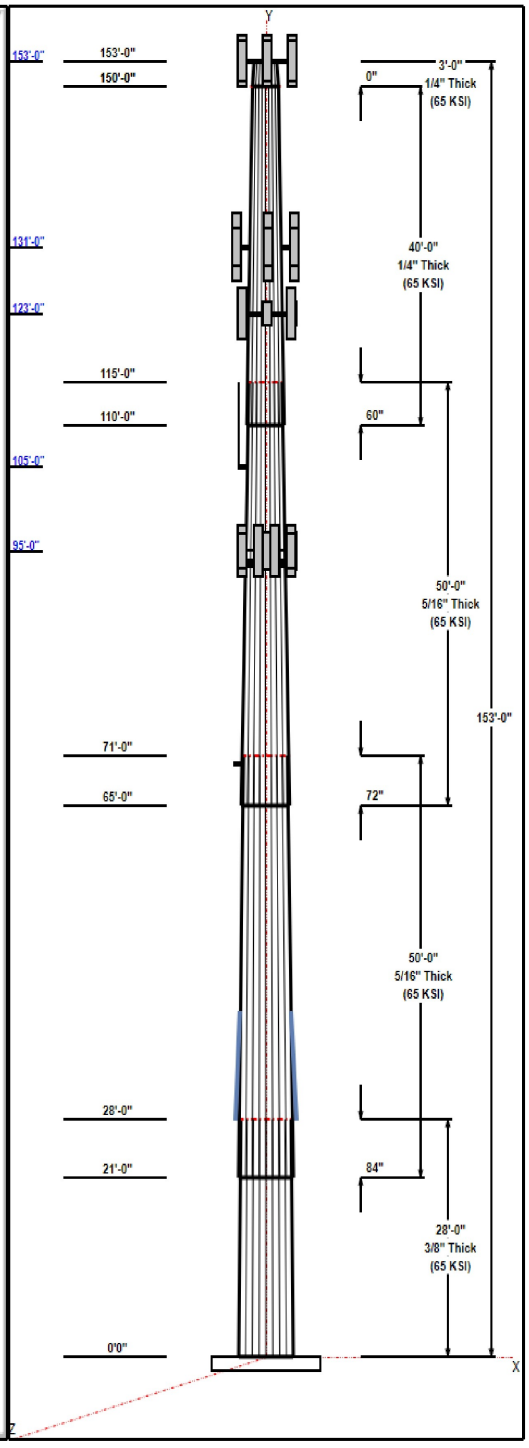
Tower Engineering Solutions

Dead Load Factor:	1.20
Wind Load Factor:	1.60

Load Case : 1.2D + 1.6W 93 mph Wind

Iterations: 22





Structure: CT01499-S-SBA

Type: Tapered
Site Name: Torrington
Height: 153.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.24673

2/7/2022

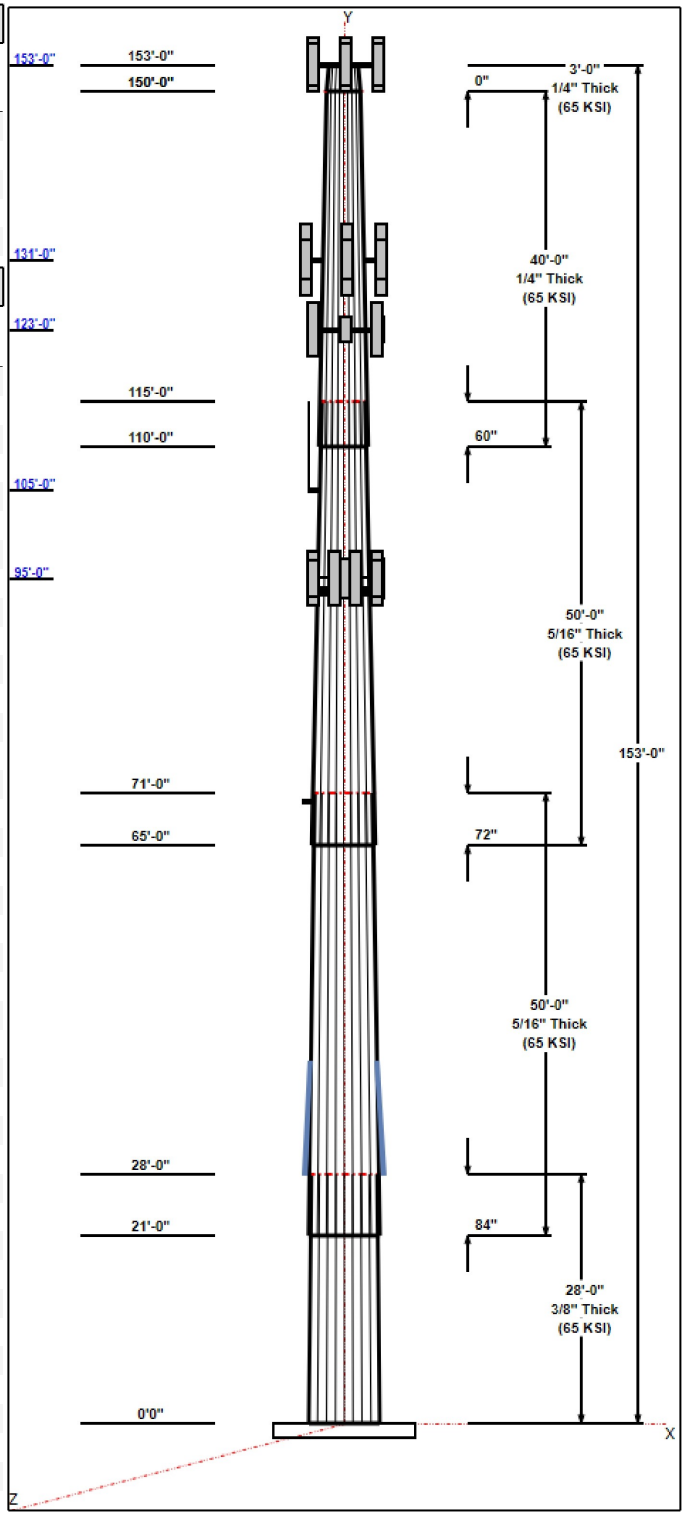
Tower Engineering Solutions

Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	28.00	53.09	60.00	0.375		0.24673	65
2	50.00	43.11	55.44	0.313	Slip	0.24673	65
3	50.00	32.88	45.21	0.313	Slip	0.24673	65
4	40.00	24.74	34.61	0.250	Slip	0.24673	65
5	3.00	24.00	24.74	0.250	Butt	0.24673	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
153.00	153.00	3	APXVTM14-C-I20	Sprint
153.00	153.00	3	APXVSPP18-C-A20	Sprint
153.00	153.00	3	1900 MHz RRUs	Sprint
153.00	153.00	3	800 MHz RRUs	Sprint
153.00	153.00	3	800 MHz Filters	Sprint
153.00	153.00	4	ACU-A20-N	Sprint
153.00	153.00	3	TD-RRH8x20-25	Sprint
153.00	153.00	1	Low Profile Platform	Sprint
153.00	153.00	1	Lightning Rod	
131.00	131.00	3	AIR6449 B41	T-Mobile
131.00	131.00	3	APXVAALL24_43-U-NA20	T-Mobile
131.00	131.00	3	VV-65A-R1	T-Mobile
131.00	131.00	3	4449 B71 + B85	T-Mobile
131.00	131.00	3	4460 B25 + B66	T-Mobile
131.00	131.00	3	T-Arms	T-Mobile
131.00	131.00	1	(3) T-Arm Kit	T-Mobile
131.00	131.00	3	KRY 112 144/1	T-Mobile
131.00	131.00	3	KRY 112 489/2	T-Mobile
123.00	123.00	3	MT6407-77A	Verizon
123.00	123.00	6	SBNHH-1D65B	Verizon
123.00	123.00	6	LPA-80063-6CF-EDIN-5	Verizon
123.00	123.00	3	B2/B66A RRH-BR049	Verizon
123.00	123.00	3	B5/B13 RRH-BR04C	Verizon
123.00	123.00	2	RFS DB-T1-6Z-8AB-0Z	Verizon
123.00	123.00	1	Low Profile Platform	Verizon
105.00	110.00	1	10' Omni	Torrington PD
105.00	105.00	1	Standoff	Torrington PD
95.00	95.00	4	HPA-65R-BUU-H6	AT&T
95.00	95.00	3	7770	AT&T
95.00	95.00	2	SBNH-1D65A	AT&T
95.00	95.00	2	AM-X-CW-16-65-00T-RET	AT&T
95.00	95.00	6	LGP17201	AT&T
95.00	95.00	6	LGP21901	AT&T
95.00	95.00	3	RRUS-11	AT&T
95.00	95.00	3	RRUS-12	AT&T
95.00	95.00	3	RRUS-A2	AT&T
95.00	95.00	3	RRUS-32	AT&T
95.00	95.00	3	RRUS-E2	AT&T
95.00	95.00	3	1000860	AT&T
95.00	95.00	2	Raycap/Squid	AT&T
95.00	95.00	3	Sector Frame	AT&T
95.00	95.00	1	800 10764	AT&T
95.00	95.00	3	4426 B66	AT&T
70.00	70.00	1	GPS	Unknown



70.00	70.00	1	Standoff	Unknown

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	153.00	Inside	1 1/4" Coax	Sprint
0.00	153.00	Outside	Safety Cable	
0.00	131.00	Inside	1 5/8" Fiber	T-Mobile
0.00	131.00	Inside	1 5/8" Coax	T-Mobile
0.00	131.00	Inside	1.90" Fiber	T-Mobile
0.00	123.00	Inside	1 5/8" Coax	Verizon
0.00	123.00	Inside	1 5/8" Coax	Verizon
0.00	123.00	Inside	1 5/8" Fiber	Verizon
0.00	105.00	Inside	1/2" Coax	Torrington PD
0.00	95.00	Outside	1 5/8" Coax	AT&T
0.00	95.00	Outside	1/2" Fiber	AT&T
0.00	95.00	Outside	3/4" DC	AT&T
24.25	44.25	Outside	1.25" Reinforcing plate	

Anchor Bolts

Qty	Specifications	Grade (ksi)	Arrangement
18	2.00" F1554 105	105.0	Radial

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
1.5000	73.0	50.0	Round

Reactions

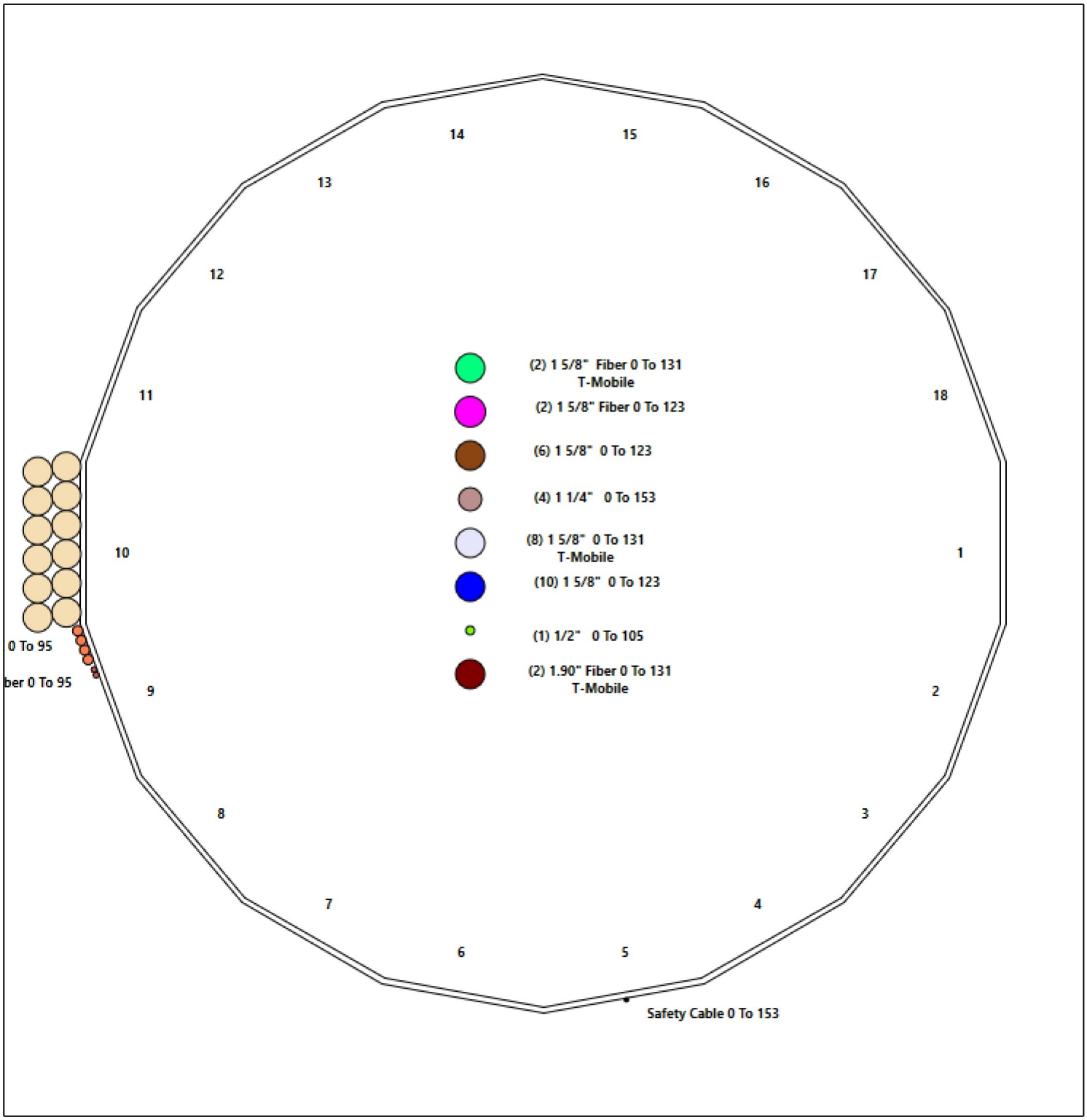
Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 93 mph Wind	3838.5	36.6	49.0
0.9D + 1.6W 93 mph Wind	3808.5	36.6	36.7
1.2D + 1.0Di + 1.0Wi 40 mph Wind	726.6	7.0	81.3
1.2D + 1.0E	103.6	0.9	49.0
0.9D + 1.0E	102.7	0.9	36.8
1.0D + 1.0W 60 mph Wind	994.1	9.5	40.9

Structure: CT01499-S-SBA - Coax Line Placement

Type: Monopole
Site Name: Torrington
Height: 153.00 (ft)

2/7/2022

Tower Engineering Solutions



Shaft Properties

Structure:	CT01499-S-SBA		**Code:**	TIA-222-G	2/7/2022
Site Name:	Torrington		**Exposure:**	C	
Height:	153.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	B - Competent Rock	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 5

Tower Engineering Solutions

Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	18	28.000	0.3750	65		0.00	6,370
2	18	50.000	0.3125	65	Slip	84.00	8,262
3	18	50.000	0.3125	65	Slip	72.00	6,536
4	18	40.000	0.2500	65	Slip	60.00	3,178
5	18	3.000	0.2500	65	Flange	0.00	195
					Total Shaft Weight:		**24,542**

	Bottom						Top						
Sec. No.	**Dia (in)**	**Elev (ft)**	**Area (sqin)**	**Ix (in^4)**	**W/t Ratio**	**D/t Ratio**	**Dia (in)**	**Elev (ft)**	**Area (sqin)**	**Ix (in^4)**	**W/t Ratio**	**D/t Ratio**	**Taper**
1	60.00	0.00	70.97	31875.78	26.80	160.00	53.09	28.00	62.74	22030.0	23.55	141.5	0.246732
2	55.44	21.00	54.68	20998.34	29.87	177.42	43.11	71.00	42.45	9821.08	22.91	137.9	0.246732
3	45.21	65.00	44.53	11343.08	24.10	144.68	32.88	115.00	32.30	4326.93	17.14	105.2	0.246732
4	34.61	110.0	27.26	4066.53	23.00	138.44	24.74	150.00	19.43	1472.52	16.04	98.96	0.246732
5	24.74	150.0	19.43	1472.52	16.04	98.96	24.00	153.00	18.84	1343.00	15.52	96.00	0.246732

Additional Steel

							Intermediate Connectors		Termination Connectors			
Elev From (ft)	**Elev To (ft)**	**Qty**	**Description**	**Fy (ksi)**	**Fu (ksi)**	**Offset (in)**	**Description**	**Spacing (in)**	**Description**	**Spacing (in)**	**Lower Qty**	**Upper Qty**
27.75	40.75	3	PLT 8"x1.25"(1.25Hole)	65	80	0.00	AJM20&sleeve	18.00	AJM20&sleeve	3.00	14	14

Load Summary

Structure:	CT01499-S-SBA	**Code:**	TIA-222-G	2/7/2022	
Site Name:	Torrington	**Exposure:**	C		
Height:	153.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 6	

Tower Engineering Solutions

Discrete Appurtenances

				No Ice			Ice				
No.	Elev (ft)	Description	Qty	Weight (lb)	CaAa (sf)	CaAa Factor	Weight (lb)	CaAa (sf)	CaAa Factor	Hor. Ecc. (ft)	Vert Ecc (ft)
1	153.00	APXVTM14-C-I20	3	56.00	6.34	0.79	216.79	7.456	0.79	0.00	0.00
2	153.00	APXVSPP18-C-A20	3	57.00	8.02	0.83	230.19	10.819	0.83	0.00	0.00
3	153.00	1900 MHz RRUs	3	44.00	3.80	0.88	153.38	5.193	0.88	0.00	0.00
4	153.00	800 MHz RRUs	3	53.00	2.49	0.92	127.11	3.636	0.92	0.00	0.00
5	153.00	800 MHz Filters	3	8.80	0.78	0.69	26.48	1.428	0.69	0.00	0.00
6	153.00	ACU-A20-N	4	1.00	0.14	0.90	5.30	0.437	0.90	0.00	0.00
7	153.00	TD-RRH8x20-25	3	70.00	4.05	0.69	180.73	4.865	0.69	0.00	0.00
8	153.00	Low Profile Platform	1	1200.00	25.00	1.00	2249.20	45.984	1.00	0.00	0.00
9	153.00	Lightning Rod	1	5.00	0.50	1.00	25.98	2.249	1.00	0.00	0.00
10	131.00	AIR6449 B41	3	103.00	5.65	0.71	238.27	6.588	0.71	0.00	0.00
11	131.00	APXVAALL24_43-U-NA20	3	122.80	20.24	0.73	544.04	22.114	0.73	0.00	0.00
12	131.00	VV-65A-R1	3	23.81	7.90	0.74	160.07	6.950	0.74	0.00	0.00
13	131.00	4449 B71 + B85	3	75.00	1.97	0.67	133.37	2.532	0.67	0.00	0.00
14	131.00	4460 B25 + B66	3	104.00	2.85	0.67	171.69	3.515	0.67	0.00	0.00
15	131.00	T-Arms	3	350.00	8.00	0.75	591.04	14.887	0.75	0.00	0.00
16	131.00	(3) T-Arm Kit	1	500.00	16.50	1.00	1085.39	32.409	1.00	0.00	0.00
17	131.00	KRY 112 144/1	3	11.00	0.41	0.67	21.64	0.879	0.67	0.00	0.00
18	131.00	KRY 112 489/2	3	16.10	0.70	0.67	38.13	1.336	0.67	0.00	0.00
19	123.00	MT6407-77A	3	79.40	4.69	0.70	196.11	5.618	0.70	0.00	0.00
20	123.00	SBNHH-1D65B	6	40.60	8.08	0.83	237.50	9.345	0.83	0.00	0.00
21	123.00	LPA-80063-6CF-EDIN-5	6	27.00	9.76	0.93	283.34	12.459	0.93	0.00	0.00
22	123.00	B2/B66A RRH-BR049	3	84.40	1.87	0.67	159.10	2.431	0.67	0.00	0.00
23	123.00	B5/B13 RRH-BR04C (RFV01U-D2A)	3	70.30	1.87	0.67	137.95	2.431	0.67	0.00	0.00
24	123.00	RFS DB-T1-6Z-8AB-0Z	2	18.90	4.80	0.71	137.60	5.786	0.71	0.00	0.00
25	123.00	Low Profile Platform	1	1200.00	25.00	1.00	2226.55	45.531	1.00	0.00	0.00
26	105.00	10' Omni	1	25.00	3.00	1.00	98.39	6.480	1.00	0.00	5.00
27	105.00	Standoff	1	40.00	2.63	1.00	117.47	8.390	1.00	0.00	0.00
28	95.00	HPA-65R-BUU-H6	4	51.00	9.66	0.90	286.30	10.962	0.90	0.00	0.00
29	95.00	7770	3	35.00	5.50	0.73	162.83	6.515	0.73	0.00	0.00
30	95.00	SBNH-1D65A	2	38.40	5.38	0.90	159.53	7.275	0.90	0.00	0.00
31	95.00	AM-X-CW-16-65-00T-RET	2	41.80	8.02	0.75	196.85	10.689	0.75	0.00	0.00
32	95.00	LGP17201	6	31.00	1.95	1.00	67.51	2.902	1.00	0.00	0.00
33	95.00	LGP21901	6	5.50	0.23	0.75	12.85	0.582	0.75	0.00	0.00
34	95.00	RRUS-11	3	55.00	4.42	0.68	140.94	5.853	0.68	0.00	0.00
35	95.00	RRUS-12	3	60.00	3.15	0.67	130.99	4.350	0.67	0.00	0.00
36	95.00	RRUS-A2	3	21.20	1.86	0.62	55.70	2.790	0.62	0.00	0.00
37	95.00	RRUS-32	3	77.00	3.87	0.87	184.52	4.068	0.87	0.00	0.00
38	95.00	RRUS-E2	3	57.30	2.81	0.70	139.69	3.455	0.70	0.00	0.00
39	95.00	1000860	3	2.00	0.06	1.00	4.59	0.260	1.00	0.00	0.00
40	95.00	Raycap/Squid	2	31.80	1.47	0.90	90.86	2.139	0.90	0.00	0.00
41	95.00	Sector Frame	3	500.00	17.50	0.75	1166.92	30.805	0.75	0.00	0.00
42	95.00	800 10764	1	40.80	5.88	0.75	162.62	7.927	0.75	0.00	0.00
43	95.00	4426 B66	3	48.50	1.15	0.73	85.30	1.601	0.73	0.00	0.00
44	70.00	GPS	1	10.00	1.00	1.00	37.17	1.660	1.00	0.00	0.00
45	70.00	Standoff	1	40.00	2.63	1.00	114.39	8.161	1.00	0.00	0.00
		Totals:	**127**	**10,709.03**			**28,253.17**				

Discrete Appurtenances

No.	Elev (ft)	Description	Qty	No Ice Weight (lb)	No Ice CaAa (sf)	No Ice CaAa Factor	Ice Weight (lb)	Ice CaAa (sf)	Ice CaAa Factor	Hor. Ecc. (ft)	Vert Ecc (ft)

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	153.00	(4) 1 1/4" Coax	0.00	Inside
0.00	153.00	(1) Safety Cable	0.38	Outside
0.00	131.00	(2) 1 5/8" Fiber	0.00	Inside
0.00	131.00	(8) 1 5/8" Coax	0.00	Inside
0.00	131.00	(2) 1.90" Fiber	0.00	Inside
0.00	123.00	(6) 1 5/8" Coax	0.00	Inside
0.00	123.00	(10) 1 5/8" Coax	0.00	Inside
0.00	123.00	(2) 1 5/8" Fiber	0.00	Inside
0.00	105.00	(1) 1/2" Coax	0.00	Inside
0.00	95.00	(12) 1 5/8" Coax	3.96	Outside
0.00	95.00	(2) 1/2" Fiber	0.38	Outside
0.00	95.00	(4) 3/4" DC	0.75	Outside
24.25	44.25	(3) 1.25" Reinforcing plate	1.25	Outside

Shaft Section Properties

Structure:	CT01499-S-SBA	**Code:**	TIA-222-G	2/7/2022	
Site Name:	Torrington	**Exposure:**	C		
Height:	153.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 8	

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Increment Length: **5 (ft)**

											Additional Reinforcing			
Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fy (ksi)	Fb (ksi)	Weight (lb)	Area (in^2)	Ixp (in^4)	Iyp (in^4)	Weight (lb)
0.00		0.3750	60.000	70.966	31875.8	26.80	160.00	65	70	0.0				
5.00		0.3750	58.766	69.498	29937.9	26.22	156.71	65	71	1194.9				
10.00		0.3750	57.533	68.029	28080.1	25.64	153.42	65	71	1169.9				
15.00		0.3750	56.299	66.561	26300.9	25.06	150.13	65	72	1145.0				
20.00		0.3750	55.065	65.093	24598.5	24.48	146.84	65	73	1120.0				
21.00	Bot - Section 2	0.3750	54.819	64.799	24267.0	24.37	146.18	65	73	221.0				
25.00		0.3750	53.832	63.625	22971.1	23.90	143.55	65	73	1611.6				
27.75	RB1	0.3750	53.153	62.817	22107.5	23.58	141.74	65	74	1091.0	30.00	11437.3	11437.3	280.7
28.00	Top - Section 1	0.3125	53.717	52.968	19086.0	28.90	171.89	65	67	98.5	30.00	11411.9	11411.9	25.5
30.00		0.3125	53.223	52.479	18561.8	28.62	170.31	65	68	358.8	30.00	11209.4	11209.4	204.2
35.00		0.3125	51.989	51.255	17293.5	27.92	166.37	65	69	882.5	30.00	10711.1	10711.1	510.5
40.00		0.3125	50.756	50.032	16084.3	27.23	162.42	65	69	861.6	30.00	10224.2	10224.2	510.5
40.75	RT1	0.3125	50.571	49.848	15908.0	27.12	161.83	65	69	127.5	30.00	10152.1	10152.1	76.6
45.00		0.3125	49.522	48.808	14932.9	26.53	158.47	65	70	713.4				
50.00		0.3125	48.288	47.584	13837.7	25.84	154.52	65	71	820.0				
55.00		0.3125	47.055	46.361	12797.4	25.14	150.58	65	72	799.2				
60.00		0.3125	45.821	45.137	11810.7	24.44	146.63	65	73	778.4				
65.00	Bot - Section 3	0.3125	44.587	43.914	10876.0	23.75	142.68	65	73	757.6				
70.00		0.3125	43.354	42.690	9991.9	23.05	138.73	65	74	1484.0				
71.00	Top - Section 2	0.3125	43.732	43.065	10257.7	23.27	139.94	65	74	291.8				
75.00		0.3125	42.745	42.086	9574.0	22.71	136.78	65	75	579.5				
80.00		0.3125	41.511	40.863	8763.0	22.01	132.84	65	76	705.6				
85.00		0.3125	40.278	39.639	7999.1	21.32	128.89	65	76	684.8				
90.00		0.3125	39.044	38.416	7281.0	20.62	124.94	65	77	664.0				
95.00		0.3125	37.810	37.192	6607.2	19.92	120.99	65	78	643.2				
100.00		0.3125	36.577	35.968	5976.3	19.23	117.05	65	79	622.4				
105.00		0.3125	35.343	34.745	5386.9	18.53	113.10	65	80	601.6				
110.00	Bot - Section 4	0.3125	34.109	33.521	4837.6	17.84	109.15	65	80	580.7				
115.00	Top - Section 3	0.2500	33.376	26.284	3644.0	22.13	133.50	65	75	1015.4				
120.00		0.2500	32.142	25.306	3251.9	21.26	128.57	65	76	438.9				
123.00		0.2500	31.402	24.718	3030.7	20.74	125.61	65	77	255.3				
125.00		0.2500	30.908	24.327	2888.9	20.39	123.63	65	77	166.9				
130.00		0.2500	29.675	23.348	2554.0	19.52	118.70	65	78	405.6				
131.00		0.2500	29.428	23.152	2490.3	19.35	117.71	65	79	79.1				
135.00		0.2500	28.441	22.369	2246.1	18.65	113.76	65	79	309.8				
140.00		0.2500	27.208	21.390	1963.9	17.78	108.83	65	80	372.3				
145.00		0.2500	25.974	20.411	1706.4	16.91	103.90	65	82	355.6				
150.00	Top - Section 4	0.2500	24.740	19.432	1472.5	16.04	98.96	65	83	338.9				
150.00	Bot - Section 5	0.2500	24.740	19.432	1472.5	16.04	98.96	65	83					
153.00		0.2500	24.000	18.845	1343.0	15.52	96.00	65	83	195.4				
								Total Weight		**24541.5**				**1607.9**

Wind Loading - Shaft

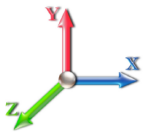
Structure:	CT01499-S-SBA	**Code:**	TIA-222-G	2/7/2022	
Site Name:	Torrington	**Exposure:**	C		
Height:	153.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 9	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 22

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	17.879	19.67	435.32	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	17.879	19.67	426.37	0.650	0.000	5.00	25.125	16.33	513.9	0.0	1433.9
10.00		1.00	0.85	17.879	19.67	417.42	0.650	0.000	5.00	24.603	15.99	503.2	0.0	1403.9
15.00		1.00	0.85	17.879	19.67	408.47	0.650	0.000	5.00	24.081	15.65	492.5	0.0	1373.9
20.00		1.00	0.90	18.971	20.87	411.53	0.650	0.000	5.00	23.559	15.31	511.3	0.0	1344.0
21.00	Bot - Section 2	1.00	0.91	19.166	21.08	411.80	0.650	0.000	1.00	4.649	3.02	101.9	0.0	265.2
25.00		1.00	0.95	19.883	21.87	411.87	0.657 *	0.000	4.00	18.599	12.21	427.4	0.0	1933.9
27.75	RB1	1.00	0.97	20.325	22.36	411.18	0.696 *	0.000	2.75	12.593	8.77	313.6	0.0	1309.2
28.00	Top - Section 1	1.00	0.97	20.363	22.40	411.09	0.698 *	0.000	0.25	1.137	0.79	28.4	0.0	118.2
30.00		1.00	0.98	20.661	22.73	415.11	0.696 *	0.000	2.00	9.049	6.30	229.1	0.0	430.6
35.00		1.00	1.01	21.343	23.48	412.12	0.700 *	0.000	5.00	22.257	15.59	585.5	0.0	1059.0
40.00		1.00	1.04	21.951	24.15	408.04	0.706 *	0.000	5.00	21.735	15.35	593.0	0.0	1034.0
40.75	RT1	1.00	1.05	22.037	24.24	407.34	0.710 *	0.000	0.75	3.215	2.28	88.5	0.0	152.9
45.00		1.00	1.07	22.502	24.75	403.08	0.704 *	0.000	4.25	17.998	12.68	502.1	0.0	856.0
50.00		1.00	1.09	23.007	25.31	397.43	0.670 *	0.000	5.00	20.692	13.86	561.2	0.0	984.0
55.00		1.00	1.12	23.473	25.82	391.18	0.675 *	0.000	5.00	20.170	13.62	562.7	0.0	959.0
60.00		1.00	1.14	23.907	26.30	384.43	0.681 *	0.000	5.00	19.648	13.38	563.2	0.0	934.0
65.00	Bot - Section 3	1.00	1.16	24.313	26.74	377.24	0.687 *	0.000	5.00	19.126	13.15	562.6	0.0	909.1
70.00	Appurtenance(s)	1.00	1.17	24.696	27.17	369.68	0.694 *	0.000	5.00	18.868	13.09	569.1	0.0	1780.8
71.00	Top - Section 2	1.00	1.18	24.770	27.25	368.12	0.698 *	0.000	1.00	3.711	2.59	112.9	0.0	350.2
75.00		1.00	1.19	25.057	27.56	367.14	0.698 *	0.000	4.00	14.635	10.21	450.5	0.0	695.4
80.00		1.00	1.21	25.400	27.94	358.98	0.704 *	0.000	5.00	17.824	12.55	561.2	0.0	846.8
85.00		1.00	1.22	25.726	28.30	350.54	0.712 *	0.000	5.00	17.302	12.32	557.7	0.0	821.8
90.00		1.00	1.24	26.037	28.64	341.85	0.720 *	0.000	5.00	16.780	12.08	553.6	0.0	796.8
95.00	Appurtenance(s)	1.00	1.25	26.336	28.97	332.94	0.728 *	0.000	5.00	16.258	11.84	548.9	0.0	771.8
100.00		1.00	1.27	26.621	29.28	323.82	0.650	0.000	5.00	15.736	10.23	479.3	0.0	746.8
105.00	Appurtenance(s)	1.00	1.28	26.896	29.59	314.51	0.650	0.000	5.00	15.214	9.89	468.1	0.0	721.9
110.00	Bot - Section 4	1.00	1.29	27.161	29.88	305.02	0.650	0.000	5.00	14.693	9.55	456.5	0.0	696.9
115.00	Top - Section 3	1.00	1.30	27.416	30.16	295.37	0.650	0.000	5.00	14.382	9.35	451.1	0.0	1218.5
120.00		1.00	1.32	27.663	30.43	290.08	0.650	0.000	5.00	13.860	9.01	438.6	0.0	526.6
123.00	Appurtenance(s)	1.00	1.32	27.807	30.59	284.13	0.650	0.000	3.00	8.066	5.24	256.6	0.0	306.4
125.00		1.00	1.33	27.902	30.69	280.14	0.650	0.000	2.00	5.273	3.43	168.3	0.0	200.3
130.00		1.00	1.34	28.133	30.95	270.07	0.650	0.000	5.00	12.816	8.33	412.5	0.0	486.7
131.00	Appurtenance(s)	1.00	1.34	28.179	31.00	268.05	0.650	0.000	1.00	2.501	1.63	80.6	0.0	94.9
135.00		1.00	1.35	28.358	31.19	259.88	0.650	0.000	4.00	9.794	6.37	317.7	0.0	371.8
140.00		1.00	1.36	28.576	31.43	249.56	0.650	0.000	5.00	11.772	7.65	384.8	0.0	446.7
145.00		1.00	1.37	28.788	31.67	239.12	0.650	0.000	5.00	11.250	7.31	370.5	0.0	426.7
150.00	Top - Section 4	1.00	1.38	28.994	31.89	228.58	0.650	0.000	5.00	10.728	6.97	355.8	0.0	406.7
153.00	Appurtenance(s)	1.00	1.38	29.115	32.03	222.21	0.650	0.000	3.00	6.187	4.02	206.1	0.0	234.4
								Totals:	**153.00**			**15,340.6**		**29,449.8**

* Cf Adjusted by Linear Load Ra Effect

Discrete Appurtenance Forces

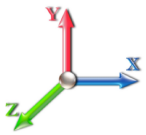
Structure:	CT01499-S-SBA	**Code:**	TIA-222-G	2/7/2022	
Site Name:	Torrington	**Exposure:**	C		
Height:	153.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 10	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 22

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	153.00	800 MHz RRUs	3	29.115	32.026	0.83	0.90	6.19	190.80	0.000	0.000	316.94	0.00	0.00
2	153.00	APXVTM14-C-I20	3	29.115	32.026	0.71	0.90	13.52	201.60	0.000	0.000	692.96	0.00	0.00
3	153.00	APXVSPP18-C-A20	3	29.115	32.026	0.75	0.90	17.97	205.20	0.000	0.000	920.97	0.00	0.00
4	153.00	1900 MHz RRUs	3	29.115	32.026	0.79	0.90	9.03	158.40	0.000	0.000	462.66	0.00	0.00
5	153.00	Lightning Rod	1	29.115	32.026	1.00	1.00	0.50	6.00	0.000	0.000	25.62	0.00	0.00
6	153.00	800 MHz Filters	3	29.115	32.026	0.62	0.90	1.45	31.68	0.000	0.000	74.46	0.00	0.00
7	153.00	ACU-A20-N	4	29.115	32.026	0.81	0.90	0.45	4.80	0.000	0.000	23.24	0.00	0.00
8	153.00	TD-RRH8x20-25	3	29.115	32.026	0.62	0.90	7.55	252.00	0.000	0.000	386.63	0.00	0.00
9	153.00	Low Profile Platform	1	29.115	32.026	1.00	1.00	25.00	1440.00	0.000	0.000	1281.05	0.00	0.00
10	131.00	VV-65A-R1	3	28.179	30.997	0.59	0.80	14.03	85.72	0.000	0.000	695.83	0.00	0.00
11	131.00	APXVAALL24_43-U-NA20	3	28.179	30.997	0.58	0.80	35.46	442.08	0.000	0.000	1758.65	0.00	0.00
12	131.00	4449 B71 + B85	3	28.179	30.997	0.54	0.80	3.17	270.00	0.000	0.000	157.10	0.00	0.00
13	131.00	AIR6449 B41	3	28.179	30.997	0.57	0.80	9.63	370.80	0.000	0.000	477.48	0.00	0.00
14	131.00	KRY 112 144/1	3	28.179	30.997	0.54	0.80	0.66	39.60	0.000	0.000	32.70	0.00	0.00
15	131.00	4460 B25 + B66	3	28.179	30.997	0.54	0.80	4.58	374.40	0.000	0.000	227.28	0.00	0.00
16	131.00	T-Arms	3	28.179	30.997	0.56	0.75	13.50	1260.00	0.000	0.000	669.53	0.00	0.00
17	131.00	(3) T-Arm Kit	1	28.179	30.997	0.75	0.75	12.38	600.00	0.000	0.000	613.73	0.00	0.00
18	131.00	KRY 112 489/2	3	28.179	30.997	0.54	0.80	1.13	57.96	0.000	0.000	55.82	0.00	0.00
19	123.00	Low Profile Platform	1	27.807	30.588	1.00	1.00	25.00	1440.00	0.000	0.000	1223.52	0.00	0.00
20	123.00	RFS DB-T1-6Z-8AB-0Z	2	27.807	30.588	0.57	0.80	5.45	45.36	0.000	0.000	266.87	0.00	0.00
21	123.00	B5/B13 RRH-BR04C	3	27.807	30.588	0.54	0.80	3.01	253.08	0.000	0.000	147.16	0.00	0.00
22	123.00	B2/B66A RRH-BR049	3	27.807	30.588	0.54	0.80	3.01	303.84	0.000	0.000	147.16	0.00	0.00
23	123.00	LPA-80063-6CF-EDIN-5	6	27.807	30.588	0.74	0.80	43.57	194.40	0.000	0.000	2132.29	0.00	0.00
24	123.00	MT6407-77A	3	27.807	30.588	0.56	0.80	7.88	285.84	0.000	0.000	385.62	0.00	0.00
25	123.00	SBNHH-1D65B	6	27.807	30.588	0.66	0.80	32.19	292.32	0.000	0.000	1575.44	0.00	0.00
26	105.00	Standoff	1	26.896	29.586	1.00	1.00	2.63	48.00	0.000	0.000	124.50	0.00	0.00
27	105.00	10' Omni	1	27.161	29.877	1.00	1.00	3.00	30.00	0.000	5.000	143.41	0.00	717.05
28	95.00	LGP17201	6	26.336	28.969	0.80	0.80	9.36	223.20	0.000	0.000	433.84	0.00	0.00
29	95.00	RRUS-11	3	26.336	28.969	0.54	0.80	7.21	198.00	0.000	0.000	334.35	0.00	0.00
30	95.00	LGP21901	6	26.336	28.969	0.60	0.80	0.83	39.60	0.000	0.000	38.38	0.00	0.00
31	95.00	RRUS-12	3	26.336	28.969	0.54	0.80	5.07	216.00	0.000	0.000	234.78	0.00	0.00
32	95.00	AM-X-CW-16-65-00T-RET	2	26.336	28.969	0.60	0.80	9.62	100.32	0.000	0.000	446.08	0.00	0.00
33	95.00	SBNH-1D65A	2	26.336	28.969	0.72	0.80	7.75	92.16	0.000	0.000	359.09	0.00	0.00
34	95.00	7770	3	26.336	28.969	0.58	0.80	9.64	126.00	0.000	0.000	446.63	0.00	0.00
35	95.00	HPA-65R-BUU-H6	4	26.336	28.969	0.72	0.80	27.82	244.80	0.000	0.000	1289.51	0.00	0.00
36	95.00	RRUS-32	3	26.336	28.969	0.70	0.80	8.08	277.20	0.000	0.000	374.54	0.00	0.00
37	95.00	RRUS-A2	3	26.336	28.969	0.50	0.80	2.77	76.32	0.000	0.000	128.28	0.00	0.00
38	95.00	RRUS-E2	3	26.336	28.969	0.56	0.80	4.72	206.28	0.000	0.000	218.81	0.00	0.00
39	95.00	1000860	3	26.336	28.969	1.00	1.00	0.18	7.20	0.000	0.000	8.34	0.00	0.00
40	95.00	Raycap/Squid	2	26.336	28.969	0.72	0.80	2.12	76.32	0.000	0.000	98.11	0.00	0.00
41	95.00	Sector Frame	3	26.336	28.969	0.56	0.75	29.53	1800.00	0.000	0.000	1368.79	0.00	0.00
42	95.00	800 10764	1	26.336	28.969	0.60	0.80	3.53	48.96	0.000	0.000	163.52	0.00	0.00
43	95.00	4426 B66	3	26.336	28.969	0.58	0.80	2.01	174.60	0.000	0.000	93.39	0.00	0.00
44	70.00	Standoff	1	24.696	27.165	1.00	1.00	2.63	48.00	0.000	0.000	114.31	0.00	0.00
45	70.00	GPS	1	24.696	27.165	1.00	1.00	1.00	12.00	0.000	0.000	43.46	0.00	0.00
							Totals:		**12,850.84**			**21,212.85**		

Total Applied Force Summary

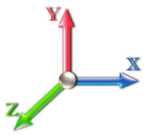
Structure:	CT01499-S-SBA	**Code:**	TIA-222-G	2/7/2022	
Site Name:	Torrington	**Exposure:**	C		
Height:	153.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 11	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 22

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		513.90	1718.98	0.00	0.00
10.00		503.22	1689.00	0.00	0.00
15.00		492.54	1659.02	0.00	0.00
20.00		511.28	1629.05	0.00	0.00
21.00		101.94	322.21	0.00	0.00
25.00		427.39	2161.99	0.00	0.00
27.75		313.64	1465.96	0.00	0.00
28.00		28.44	132.45	0.00	0.00
30.00		229.14	544.61	0.00	0.00
35.00		585.50	1344.03	0.00	0.00
40.00		593.02	1319.05	0.00	0.00
40.75		88.51	195.70	0.00	0.00
45.00		502.09	1098.36	0.00	0.00
50.00		561.18	1269.08	0.00	0.00
55.00		562.74	1244.10	0.00	0.00
60.00		563.15	1219.12	0.00	0.00
65.00		562.56	1194.14	0.00	0.00
70.00	(2) attachments	726.84	2125.89	0.00	0.00
71.00		112.92	407.18	0.00	0.00
75.00		450.46	923.47	0.00	0.00
80.00		561.23	1131.85	0.00	0.00
85.00		557.68	1106.87	0.00	0.00
90.00		553.55	1081.89	0.00	0.00
95.00	(50) attachments	6585.33	4963.86	0.00	0.00
100.00		479.25	946.72	0.00	0.00
105.00	(2) attachments	736.05	999.74	0.00	717.05
110.00		456.53	895.80	0.00	0.00
115.00		451.09	1417.45	0.00	0.00
120.00		438.63	725.56	0.00	0.00
123.00	(24) attachments	6134.65	3240.59	0.00	0.00
125.00		168.30	234.62	0.00	0.00
130.00		412.48	572.55	0.00	0.00
131.00	(25) attachments	4768.73	3612.67	0.00	0.00
135.00		317.72	385.74	0.00	0.00
140.00		384.84	464.18	0.00	0.00
145.00		370.51	444.20	0.00	0.00
150.00		355.85	424.21	0.00	0.00
153.00	(24) attachments	4390.59	2735.41	0.00	0.00
	Totals:	**36,553.46**	**49,047.31**	**0.00**	**717.05**

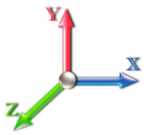
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01499-S-SBA	**Code:**	TIA-222-G	2/7/2022	
Site Name:	Torrington	**Exposure:**	C		
Height:	153.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 12	

Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 22

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.091	0.000	17.879	0.00	1.64
5.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.091	0.000	17.879	0.00	74.88
5.00	1/2" Fiber	Yes	5.00	0.000	0.38	0.16	0.00	0.091	0.000	17.879	0.00	0.72
5.00	3/4" DC	Yes	5.00	0.000	0.75	0.31	0.00	0.091	0.000	17.879	0.00	9.60
10.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.093	0.000	17.879	0.00	1.64
10.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.093	0.000	17.879	0.00	74.88
10.00	1/2" Fiber	Yes	5.00	0.000	0.38	0.16	0.00	0.093	0.000	17.879	0.00	0.72
10.00	3/4" DC	Yes	5.00	0.000	0.75	0.31	0.00	0.093	0.000	17.879	0.00	9.60
15.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.095	0.000	17.879	0.00	1.64
15.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.095	0.000	17.879	0.00	74.88
15.00	1/2" Fiber	Yes	5.00	0.000	0.38	0.16	0.00	0.095	0.000	17.879	0.00	0.72
15.00	3/4" DC	Yes	5.00	0.000	0.75	0.31	0.00	0.095	0.000	17.879	0.00	9.60
20.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.097	0.000	18.971	0.00	1.64
20.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.097	0.000	18.971	0.00	74.88
20.00	1/2" Fiber	Yes	5.00	0.000	0.38	0.16	0.00	0.097	0.000	18.971	0.00	0.72
20.00	3/4" DC	Yes	5.00	0.000	0.75	0.31	0.00	0.097	0.000	18.971	0.00	9.60
21.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.098	0.000	19.166	0.00	0.33
21.00	1 5/8" Coax	Yes	1.00	0.000	3.96	0.33	0.00	0.098	0.000	19.166	0.00	14.98
21.00	1/2" Fiber	Yes	1.00	0.000	0.38	0.03	0.00	0.098	0.000	19.166	0.00	0.14
21.00	3/4" DC	Yes	1.00	0.000	0.75	0.06	0.00	0.098	0.000	19.166	0.00	1.92
25.00	Safety Cable	Yes	4.00	0.000	0.38	0.13	0.00	0.103	1.010	19.883	0.00	1.31
25.00	1 5/8" Coax	Yes	4.00	0.000	3.96	1.32	0.00	0.103	1.010	19.883	0.00	59.90
25.00	1/2" Fiber	Yes	4.00	0.000	0.38	0.13	0.00	0.103	1.010	19.883	0.00	0.58
25.00	3/4" DC	Yes	4.00	0.000	0.75	0.25	0.00	0.103	1.010	19.883	0.00	7.68
25.00	1.25" Reinforcing	Yes	0.75	0.000	1.25	0.08	0.00	0.103	1.010	19.883	0.00	0.00
27.75	Safety Cable	Yes	2.75	0.000	0.38	0.09	0.00	0.124	1.071	20.325	0.00	0.90
27.75	1 5/8" Coax	Yes	2.75	0.000	3.96	0.91	0.00	0.124	1.071	20.325	0.00	41.18
27.75	1/2" Fiber	Yes	2.75	0.000	0.38	0.09	0.00	0.124	1.071	20.325	0.00	0.40
27.75	3/4" DC	Yes	2.75	0.000	0.75	0.17	0.00	0.124	1.071	20.325	0.00	5.28
27.75	1.25" Reinforcing	Yes	2.75	0.000	1.25	0.29	0.00	0.124	1.071	20.325	0.00	0.00
28.00	Safety Cable	Yes	0.25	0.000	0.38	0.01	0.00	0.125	1.074	20.363	0.00	0.08
28.00	1 5/8" Coax	Yes	0.25	0.000	3.96	0.08	0.00	0.125	1.074	20.363	0.00	3.74
28.00	1/2" Fiber	Yes	0.25	0.000	0.38	0.01	0.00	0.125	1.074	20.363	0.00	0.04
28.00	3/4" DC	Yes	0.25	0.000	0.75	0.02	0.00	0.125	1.074	20.363	0.00	0.48
28.00	1.25" Reinforcing	Yes	0.25	0.000	1.25	0.03	0.00	0.125	1.074	20.363	0.00	0.00
30.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.124	1.071	20.661	0.00	0.66
30.00	1 5/8" Coax	Yes	2.00	0.000	3.96	0.66	0.00	0.124	1.071	20.661	0.00	29.95
30.00	1/2" Fiber	Yes	2.00	0.000	0.38	0.06	0.00	0.124	1.071	20.661	0.00	0.29
30.00	3/4" DC	Yes	2.00	0.000	0.75	0.13	0.00	0.124	1.071	20.661	0.00	3.84
30.00	1.25" Reinforcing	Yes	2.00	0.000	1.25	0.21	0.00	0.124	1.071	20.661	0.00	0.00
35.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.126	1.077	21.343	0.00	1.64
35.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.126	1.077	21.343	0.00	74.88
35.00	1/2" Fiber	Yes	5.00	0.000	0.38	0.16	0.00	0.126	1.077	21.343	0.00	0.72
35.00	3/4" DC	Yes	5.00	0.000	0.75	0.31	0.00	0.126	1.077	21.343	0.00	9.60
35.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.126	1.077	21.343	0.00	0.00
40.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.129	1.086	21.951	0.00	1.64
40.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.129	1.086	21.951	0.00	74.88

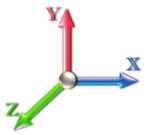
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01499-S-SBA	**Code:**	TIA-222-G	2/7/2022	
Site Name:	Torrington	**Exposure:**	C		
Height:	153.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 13	

Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 22

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
40.00	1/2" Fiber	Yes	5.00	0.000	0.38	0.16	0.00	0.129	1.086	21.951	0.00	0.72
40.00	3/4" DC	Yes	5.00	0.000	0.75	0.31	0.00	0.129	1.086	21.951	0.00	9.60
40.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.129	1.086	21.951	0.00	0.00
40.75	Safety Cable	Yes	0.75	0.000	0.38	0.02	0.00	0.131	1.092	22.037	0.00	0.25
40.75	1 5/8" Coax	Yes	0.75	0.000	3.96	0.25	0.00	0.131	1.092	22.037	0.00	11.23
40.75	1/2" Fiber	Yes	0.75	0.000	0.38	0.02	0.00	0.131	1.092	22.037	0.00	0.11
40.75	3/4" DC	Yes	0.75	0.000	0.75	0.05	0.00	0.131	1.092	22.037	0.00	1.44
40.75	1.25" Reinforcing	Yes	0.75	0.000	1.25	0.08	0.00	0.131	1.092	22.037	0.00	0.00
45.00	Safety Cable	Yes	4.25	0.000	0.38	0.13	0.00	0.128	1.084	22.502	0.00	1.39
45.00	1 5/8" Coax	Yes	4.25	0.000	3.96	1.40	0.00	0.128	1.084	22.502	0.00	63.65
45.00	1/2" Fiber	Yes	4.25	0.000	0.38	0.13	0.00	0.128	1.084	22.502	0.00	0.61
45.00	3/4" DC	Yes	4.25	0.000	0.75	0.27	0.00	0.128	1.084	22.502	0.00	8.16
45.00	1.25" Reinforcing	Yes	3.50	0.000	1.25	0.36	0.00	0.128	1.084	22.502	0.00	0.00
50.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.110	1.030	23.007	0.00	1.64
50.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.110	1.030	23.007	0.00	74.88
50.00	1/2" Fiber	Yes	5.00	0.000	0.38	0.16	0.00	0.110	1.030	23.007	0.00	0.72
50.00	3/4" DC	Yes	5.00	0.000	0.75	0.31	0.00	0.110	1.030	23.007	0.00	9.60
55.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.113	1.039	23.473	0.00	1.64
55.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.113	1.039	23.473	0.00	74.88
55.00	1/2" Fiber	Yes	5.00	0.000	0.38	0.16	0.00	0.113	1.039	23.473	0.00	0.72
55.00	3/4" DC	Yes	5.00	0.000	0.75	0.31	0.00	0.113	1.039	23.473	0.00	9.60
60.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.116	1.048	23.907	0.00	1.64
60.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.116	1.048	23.907	0.00	74.88
60.00	1/2" Fiber	Yes	5.00	0.000	0.38	0.16	0.00	0.116	1.048	23.907	0.00	0.72
60.00	3/4" DC	Yes	5.00	0.000	0.75	0.31	0.00	0.116	1.048	23.907	0.00	9.60
65.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.119	1.058	24.313	0.00	1.64
65.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.119	1.058	24.313	0.00	74.88
65.00	1/2" Fiber	Yes	5.00	0.000	0.38	0.16	0.00	0.119	1.058	24.313	0.00	0.72
65.00	3/4" DC	Yes	5.00	0.000	0.75	0.31	0.00	0.119	1.058	24.313	0.00	9.60
70.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.123	1.068	24.696	0.00	1.64
70.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.123	1.068	24.696	0.00	74.88
70.00	1/2" Fiber	Yes	5.00	0.000	0.38	0.16	0.00	0.123	1.068	24.696	0.00	0.72
70.00	3/4" DC	Yes	5.00	0.000	0.75	0.31	0.00	0.123	1.068	24.696	0.00	9.60
71.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.125	1.074	24.770	0.00	0.33
71.00	1 5/8" Coax	Yes	1.00	0.000	3.96	0.33	0.00	0.125	1.074	24.770	0.00	14.98
71.00	1/2" Fiber	Yes	1.00	0.000	0.38	0.03	0.00	0.125	1.074	24.770	0.00	0.14
71.00	3/4" DC	Yes	1.00	0.000	0.75	0.06	0.00	0.125	1.074	24.770	0.00	1.92
75.00	Safety Cable	Yes	4.00	0.000	0.38	0.13	0.00	0.125	1.074	25.057	0.00	1.31
75.00	1 5/8" Coax	Yes	4.00	0.000	3.96	1.32	0.00	0.125	1.074	25.057	0.00	59.90
75.00	1/2" Fiber	Yes	4.00	0.000	0.38	0.13	0.00	0.125	1.074	25.057	0.00	0.58
75.00	3/4" DC	Yes	4.00	0.000	0.75	0.25	0.00	0.125	1.074	25.057	0.00	7.68
80.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.128	1.084	25.400	0.00	1.64
80.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.128	1.084	25.400	0.00	74.88
80.00	1/2" Fiber	Yes	5.00	0.000	0.38	0.16	0.00	0.128	1.084	25.400	0.00	0.72
80.00	3/4" DC	Yes	5.00	0.000	0.75	0.31	0.00	0.128	1.084	25.400	0.00	9.60
85.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.132	1.095	25.726	0.00	1.64
85.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.132	1.095	25.726	0.00	74.88

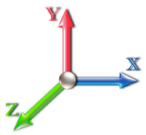
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01499-S-SBA	**Code:**	TIA-222-G	2/7/2022	
Site Name:	Torrington	**Exposure:**	C		
Height:	153.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 14	

Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 22

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
85.00	1/2" Fiber	Yes	5.00	0.000	0.38	0.16	0.00	0.132	1.095	25.726	0.00	0.72
85.00	3/4" DC	Yes	5.00	0.000	0.75	0.31	0.00	0.132	1.095	25.726	0.00	9.60
90.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.136	1.107	26.037	0.00	1.64
90.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.136	1.107	26.037	0.00	74.88
90.00	1/2" Fiber	Yes	5.00	0.000	0.38	0.16	0.00	0.136	1.107	26.037	0.00	0.72
90.00	3/4" DC	Yes	5.00	0.000	0.75	0.31	0.00	0.136	1.107	26.037	0.00	9.60
95.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.140	1.121	26.336	0.00	1.64
95.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.140	1.121	26.336	0.00	74.88
95.00	1/2" Fiber	Yes	5.00	0.000	0.38	0.16	0.00	0.140	1.121	26.336	0.00	0.72
95.00	3/4" DC	Yes	5.00	0.000	0.75	0.31	0.00	0.140	1.121	26.336	0.00	9.60
100.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.010	0.000	26.621	0.00	1.64
105.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.010	0.000	26.896	0.00	1.64
110.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.011	0.000	27.161	0.00	1.64
115.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.011	0.000	27.416	0.00	1.64
120.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.011	0.000	27.663	0.00	1.64
123.00	Safety Cable	Yes	3.00	0.000	0.38	0.10	0.00	0.012	0.000	27.807	0.00	0.98
125.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.012	0.000	27.902	0.00	0.66
130.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.012	0.000	28.133	0.00	1.64
131.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.013	0.000	28.179	0.00	0.33
135.00	Safety Cable	Yes	4.00	0.000	0.38	0.13	0.00	0.013	0.000	28.358	0.00	1.31
140.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.013	0.000	28.576	0.00	1.64
145.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.014	0.000	28.788	0.00	1.64
150.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.015	0.000	28.994	0.00	1.64
153.00	Safety Cable	Yes	3.00	0.000	0.38	0.10	0.00	0.015	0.000	29.115	0.00	0.98
										Totals:	**0.0**	**1,668.9**

Calculated Forces

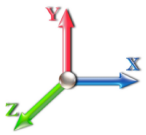
Structure:	CT01499-S-SBA	**Code:**	TIA-222-G	2/7/2022	
Site Name:	Torrington	**Exposure:**	C		
Height:	153.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 15	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 22

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 Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-48.99	-36.63	0.00	-3838.5	0.00	3838.50	4463.02	2231.51	10951.4	5483.88	0.00	0.000	0.000	0.711
5.00	-47.17	-36.25	0.00	-3655.3	0.00	3655.37	4413.36	2206.68	10604.1	5309.95	0.09	-0.167	0.000	0.699
10.00	-45.37	-35.87	0.00	-3474.1	0.00	3474.14	4361.89	2180.94	10257.6	5136.44	0.36	-0.337	0.000	0.687
15.00	-43.61	-35.50	0.00	-3294.7	0.00	3294.77	4308.61	2154.31	9912.23	4963.48	0.80	-0.508	0.000	0.674
20.00	-41.93	-35.05	0.00	-3117.2	0.00	3117.28	4253.53	2126.77	9568.22	4791.22	1.43	-0.681	0.000	0.661
21.00	-41.55	-35.01	0.00	-3082.2	0.00	3082.23	4242.30	2121.15	9499.61	4756.87	1.58	-0.717	0.000	0.658
25.00	-39.32	-34.63	0.00	-2942.2	0.00	2942.21	4196.65	2098.33	9225.87	4619.79	2.24	-0.859	0.000	0.647
27.75	-37.83	-34.33	0.00	-2846.9	0.00	2846.98	4164.60	2082.30	9038.39	4525.91	2.76	-0.957	0.000	0.421
28.00	-37.68	-34.32	0.00	-2838.3	0.00	2838.39	3213.57	1606.78	7065.87	3538.19	2.81	-0.963	0.000	0.465
30.00	-37.09	-34.13	0.00	-2769.7	0.00	2769.76	3199.34	1599.67	6969.21	3489.78	3.23	-1.011	0.000	0.503
35.00	-35.68	-33.60	0.00	-2599.0	0.00	2599.09	3162.51	1581.26	6727.41	3368.71	4.35	-1.139	0.000	0.484
40.00	-34.33	-33.03	0.00	-2431.0	0.00	2431.08	3123.88	1561.94	6485.64	3247.64	5.62	-1.267	0.000	0.465
40.75	-34.10	-32.97	0.00	-2406.3	0.00	2406.31	3117.93	1558.96	6449.39	3229.49	5.82	-1.287	0.000	0.462
40.75	-34.10	-32.97	0.00	-2406.3	0.00	2406.31	3117.93	1558.96	6449.39	3229.49	5.82	-1.287	0.000	0.462
45.00	-32.92	-32.54	0.00	-2266.1	0.00	2266.18	3083.44	1541.72	6244.17	3126.72	7.01	-1.395	0.000	0.736
50.00	-31.55	-32.06	0.00	-2103.5	0.00	2103.50	3041.20	1520.60	6003.26	3006.09	8.59	-1.603	0.000	0.711
55.00	-30.21	-31.57	0.00	-1943.2	0.00	1943.21	2997.16	1498.58	5763.21	2885.89	10.38	-1.811	0.000	0.684
60.00	-28.90	-31.07	0.00	-1785.3	0.00	1785.38	2951.32	1475.66	5524.28	2766.24	12.39	-2.018	0.000	0.656
65.00	-27.62	-30.56	0.00	-1630.0	0.00	1630.04	2903.67	1451.83	5286.75	2647.30	14.61	-2.224	0.000	0.626
70.00	-25.46	-29.80	0.00	-1477.2	0.00	1477.24	2854.22	1427.11	5050.90	2529.20	17.05	-2.427	0.000	0.593
71.00	-25.01	-29.72	0.00	-1447.4	0.00	1447.44	2869.57	1434.79	5123.02	2565.32	17.56	-2.469	0.000	0.573
75.00	-24.02	-29.30	0.00	-1328.5	0.00	1328.58	2829.16	1414.58	4935.24	2471.29	19.70	-2.630	0.000	0.547
80.00	-22.82	-28.76	0.00	-1182.0	0.00	1182.09	2777.01	1388.51	4702.41	2354.70	22.56	-2.816	0.000	0.511
85.00	-21.66	-28.21	0.00	-1038.3	0.00	1038.31	2723.06	1361.53	4471.94	2239.29	25.60	-2.996	0.000	0.472
90.00	-20.53	-27.66	0.00	-897.26	0.00	897.26	2667.31	1333.66	4244.12	2125.22	28.84	-3.168	0.000	0.430
95.00	-15.89	-20.85	0.00	-758.96	0.00	758.96	2609.76	1304.88	4019.22	2012.60	32.24	-3.330	0.000	0.383
100.00	-14.92	-20.35	0.00	-654.73	0.00	654.73	2550.40	1275.20	3797.52	1901.58	35.81	-3.482	0.000	0.350
105.00	-13.92	-19.59	0.00	-552.26	0.00	552.26	2489.24	1244.62	3579.29	1792.30	39.54	-3.626	0.000	0.314
110.00	-13.01	-19.10	0.00	-454.32	0.00	454.32	2426.28	1213.14	3364.80	1684.90	43.40	-3.759	0.000	0.275
115.00	-11.59	-18.58	0.00	-358.81	0.00	358.81	1783.00	891.50	2427.68	1215.65	47.40	-3.879	0.000	0.302
120.00	-10.87	-18.11	0.00	-265.91	0.00	265.91	1739.91	869.95	2280.12	1141.75	51.52	-3.981	0.000	0.240
123.00	-8.06	-11.77	0.00	-211.58	0.00	211.58	1713.19	856.59	2192.59	1097.92	54.04	-4.044	0.000	0.198
125.00	-7.83	-11.59	0.00	-188.04	0.00	188.04	1695.01	847.51	2134.69	1068.93	55.75	-4.082	0.000	0.181
130.00	-7.28	-11.15	0.00	-130.07	0.00	130.07	1648.31	824.16	1991.67	997.31	60.06	-4.160	0.000	0.135
131.00	-4.02	-6.13	0.00	-118.93	0.00	118.93	1638.75	819.38	1963.38	983.15	60.93	-4.174	0.000	0.123
135.00	-3.65	-5.79	0.00	-94.41	0.00	94.41	1599.81	799.90	1851.33	927.04	64.45	-4.222	0.000	0.104
140.00	-3.21	-5.37	0.00	-65.47	0.00	65.47	1549.50	774.75	1713.96	858.25	68.90	-4.273	0.000	0.078
145.00	-2.79	-4.97	0.00	-38.61	0.00	38.61	1497.39	748.69	1579.82	791.09	73.39	-4.311	0.000	0.051
150.00	-2.40	-4.58	0.00	-13.75	0.00	13.75	1443.48	721.74	1449.20	725.68	77.91	-4.333	0.000	0.021
150.00	-2.40	-4.58	0.00	-13.75	0.00	13.75	1443.48	721.74	1449.20	725.68	77.91	-4.333	0.000	0.021
153.00	0.00	-4.39	0.00	0.00	0.00	0.00	1400.09	700.04	1362.73	682.38	80.63	-4.337	0.000	0.000

Wind Loading - Shaft

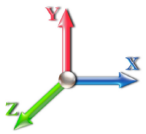
Structure:	CT01499-S-SBA	**Code:**	TIA-222-G	2/7/2022	
Site Name:	Torrington	**Exposure:**	C		
Height:	153.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 16	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 22

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	17.879	19.67	435.32	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	17.879	19.67	426.37	0.650	0.000	5.00	25.125	16.33	513.9	0.0	1075.4
10.00		1.00	0.85	17.879	19.67	417.42	0.650	0.000	5.00	24.603	15.99	503.2	0.0	1052.9
15.00		1.00	0.85	17.879	19.67	408.47	0.650	0.000	5.00	24.081	15.65	492.5	0.0	1030.5
20.00		1.00	0.90	18.971	20.87	411.53	0.650	0.000	5.00	23.559	15.31	511.3	0.0	1008.0
21.00	Bot - Section 2	1.00	0.91	19.166	21.08	411.80	0.650	0.000	1.00	4.649	3.02	101.9	0.0	198.9
25.00		1.00	0.95	19.883	21.87	411.87	0.657 *	0.000	4.00	18.599	12.21	427.4	0.0	1450.4
27.75	RB1	1.00	0.97	20.325	22.36	411.18	0.696 *	0.000	2.75	12.593	8.77	313.6	0.0	981.9
28.00	Top - Section 1	1.00	0.97	20.363	22.40	411.09	0.698 *	0.000	0.25	1.137	0.79	28.4	0.0	88.6
30.00		1.00	0.98	20.661	22.73	415.11	0.696 *	0.000	2.00	9.049	6.30	229.1	0.0	322.9
35.00		1.00	1.01	21.343	23.48	412.12	0.700 *	0.000	5.00	22.257	15.59	585.5	0.0	794.2
40.00		1.00	1.04	21.951	24.15	408.04	0.706 *	0.000	5.00	21.735	15.35	593.0	0.0	775.5
40.75	RT1	1.00	1.05	22.037	24.24	407.34	0.710 *	0.000	0.75	3.215	2.28	88.5	0.0	114.7
45.00		1.00	1.07	22.502	24.75	403.08	0.704 *	0.000	4.25	17.998	12.68	502.1	0.0	642.0
50.00		1.00	1.09	23.007	25.31	397.43	0.670 *	0.000	5.00	20.692	13.86	561.2	0.0	738.0
55.00		1.00	1.12	23.473	25.82	391.18	0.675 *	0.000	5.00	20.170	13.62	562.7	0.0	719.3
60.00		1.00	1.14	23.907	26.30	384.43	0.681 *	0.000	5.00	19.648	13.38	563.2	0.0	700.5
65.00	Bot - Section 3	1.00	1.16	24.313	26.74	377.24	0.687 *	0.000	5.00	19.126	13.15	562.6	0.0	681.8
70.00	Appurtenance(s)	1.00	1.17	24.696	27.17	369.68	0.694 *	0.000	5.00	18.868	13.09	569.1	0.0	1335.6
71.00	Top - Section 2	1.00	1.18	24.770	27.25	368.12	0.698 *	0.000	1.00	3.711	2.59	112.9	0.0	262.6
75.00		1.00	1.19	25.057	27.56	367.14	0.698 *	0.000	4.00	14.635	10.21	450.5	0.0	521.6
80.00		1.00	1.21	25.400	27.94	358.98	0.704 *	0.000	5.00	17.824	12.55	561.2	0.0	635.1
85.00		1.00	1.22	25.726	28.30	350.54	0.712 *	0.000	5.00	17.302	12.32	557.7	0.0	616.3
90.00		1.00	1.24	26.037	28.64	341.85	0.720 *	0.000	5.00	16.780	12.08	553.6	0.0	597.6
95.00	Appurtenance(s)	1.00	1.25	26.336	28.97	332.94	0.728 *	0.000	5.00	16.258	11.84	548.9	0.0	578.9
100.00		1.00	1.27	26.621	29.28	323.82	0.650	0.000	5.00	15.736	10.23	479.3	0.0	560.1
105.00	Appurtenance(s)	1.00	1.28	26.896	29.59	314.51	0.650	0.000	5.00	15.214	9.89	468.1	0.0	541.4
110.00	Bot - Section 4	1.00	1.29	27.161	29.88	305.02	0.650	0.000	5.00	14.693	9.55	456.5	0.0	522.7
115.00	Top - Section 3	1.00	1.30	27.416	30.16	295.37	0.650	0.000	5.00	14.382	9.35	451.1	0.0	913.9
120.00		1.00	1.32	27.663	30.43	290.08	0.650	0.000	5.00	13.860	9.01	438.6	0.0	395.0
123.00	Appurtenance(s)	1.00	1.32	27.807	30.59	284.13	0.650	0.000	3.00	8.066	5.24	256.6	0.0	229.8
125.00		1.00	1.33	27.902	30.69	280.14	0.650	0.000	2.00	5.273	3.43	168.3	0.0	150.2
130.00		1.00	1.34	28.133	30.95	270.07	0.650	0.000	5.00	12.816	8.33	412.5	0.0	365.0
131.00	Appurtenance(s)	1.00	1.34	28.179	31.00	268.05	0.650	0.000	1.00	2.501	1.63	80.6	0.0	71.2
135.00		1.00	1.35	28.358	31.19	259.88	0.650	0.000	4.00	9.794	6.37	317.7	0.0	278.8
140.00		1.00	1.36	28.576	31.43	249.56	0.650	0.000	5.00	11.772	7.65	384.8	0.0	335.0
145.00		1.00	1.37	28.788	31.67	239.12	0.650	0.000	5.00	11.250	7.31	370.5	0.0	320.0
150.00	Top - Section 4	1.00	1.38	28.994	31.89	228.58	0.650	0.000	5.00	10.728	6.97	355.8	0.0	305.1
153.00	Appurtenance(s)	1.00	1.38	29.115	32.03	222.21	0.650	0.000	3.00	6.187	4.02	206.1	0.0	175.8
								Totals:	**153.00**			**15,340.6**		**22,087.4**

* Cf Adjusted by Linear Load Ra Effect

Discrete Appurtenance Forces

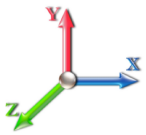
Structure:	CT01499-S-SBA	**Code:**	TIA-222-G	2/7/2022	
Site Name:	Torrington	**Exposure:**	C		
Height:	153.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 17	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 22

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	153.00	800 MHz RRUs	3	29.115	32.026	0.83	0.90	6.19	143.10	0.000	0.000	316.94	0.00	0.00
2	153.00	APXVTM14-C-I20	3	29.115	32.026	0.71	0.90	13.52	151.20	0.000	0.000	692.96	0.00	0.00
3	153.00	APXVSPP18-C-A20	3	29.115	32.026	0.75	0.90	17.97	153.90	0.000	0.000	920.97	0.00	0.00
4	153.00	1900 MHz RRUs	3	29.115	32.026	0.79	0.90	9.03	118.80	0.000	0.000	462.66	0.00	0.00
5	153.00	Lightning Rod	1	29.115	32.026	1.00	1.00	0.50	4.50	0.000	0.000	25.62	0.00	0.00
6	153.00	800 MHz Filters	3	29.115	32.026	0.62	0.90	1.45	23.76	0.000	0.000	74.46	0.00	0.00
7	153.00	ACU-A20-N	4	29.115	32.026	0.81	0.90	0.45	3.60	0.000	0.000	23.24	0.00	0.00
8	153.00	TD-RRH8x20-25	3	29.115	32.026	0.62	0.90	7.55	189.00	0.000	0.000	386.63	0.00	0.00
9	153.00	Low Profile Platform	1	29.115	32.026	1.00	1.00	25.00	1080.00	0.000	0.000	1281.05	0.00	0.00
10	131.00	VV-65A-R1	3	28.179	30.997	0.59	0.80	14.03	64.29	0.000	0.000	695.83	0.00	0.00
11	131.00	APXVAALL24_43-U-NA20	3	28.179	30.997	0.58	0.80	35.46	331.56	0.000	0.000	1758.65	0.00	0.00
12	131.00	4449 B71 + B85	3	28.179	30.997	0.54	0.80	3.17	202.50	0.000	0.000	157.10	0.00	0.00
13	131.00	AIR6449 B41	3	28.179	30.997	0.57	0.80	9.63	278.10	0.000	0.000	477.48	0.00	0.00
14	131.00	KRY 112 144/1	3	28.179	30.997	0.54	0.80	0.66	29.70	0.000	0.000	32.70	0.00	0.00
15	131.00	4460 B25 + B66	3	28.179	30.997	0.54	0.80	4.58	280.80	0.000	0.000	227.28	0.00	0.00
16	131.00	T-Arms	3	28.179	30.997	0.56	0.75	13.50	945.00	0.000	0.000	669.53	0.00	0.00
17	131.00	(3) T-Arm Kit	1	28.179	30.997	0.75	0.75	12.38	450.00	0.000	0.000	613.73	0.00	0.00
18	131.00	KRY 112 489/2	3	28.179	30.997	0.54	0.80	1.13	43.47	0.000	0.000	55.82	0.00	0.00
19	123.00	Low Profile Platform	1	27.807	30.588	1.00	1.00	25.00	1080.00	0.000	0.000	1223.52	0.00	0.00
20	123.00	RFS DB-T1-6Z-8AB-0Z	2	27.807	30.588	0.57	0.80	5.45	34.02	0.000	0.000	266.87	0.00	0.00
21	123.00	B5/B13 RRH-BR04C	3	27.807	30.588	0.54	0.80	3.01	189.81	0.000	0.000	147.16	0.00	0.00
22	123.00	B2/B66A RRH-BR049	3	27.807	30.588	0.54	0.80	3.01	227.88	0.000	0.000	147.16	0.00	0.00
23	123.00	LPA-80063-6CF-EDIN-5	6	27.807	30.588	0.74	0.80	43.57	145.80	0.000	0.000	2132.29	0.00	0.00
24	123.00	MT6407-77A	3	27.807	30.588	0.56	0.80	7.88	214.38	0.000	0.000	385.62	0.00	0.00
25	123.00	SBNHH-1D65B	6	27.807	30.588	0.66	0.80	32.19	219.24	0.000	0.000	1575.44	0.00	0.00
26	105.00	Standoff	1	26.896	29.586	1.00	1.00	2.63	36.00	0.000	0.000	124.50	0.00	0.00
27	105.00	10' Omni	1	27.161	29.877	1.00	1.00	3.00	22.50	0.000	5.000	143.41	0.00	717.05
28	95.00	LGP17201	6	26.336	28.969	0.80	0.80	9.36	167.40	0.000	0.000	433.84	0.00	0.00
29	95.00	RRUS-11	3	26.336	28.969	0.54	0.80	7.21	148.50	0.000	0.000	334.35	0.00	0.00
30	95.00	LGP21901	6	26.336	28.969	0.60	0.80	0.83	29.70	0.000	0.000	38.38	0.00	0.00
31	95.00	RRUS-12	3	26.336	28.969	0.54	0.80	5.07	162.00	0.000	0.000	234.78	0.00	0.00
32	95.00	AM-X-CW-16-65-00T-RET	2	26.336	28.969	0.60	0.80	9.62	75.24	0.000	0.000	446.08	0.00	0.00
33	95.00	SBNH-1D65A	2	26.336	28.969	0.72	0.80	7.75	69.12	0.000	0.000	359.09	0.00	0.00
34	95.00	7770	3	26.336	28.969	0.58	0.80	9.64	94.50	0.000	0.000	446.63	0.00	0.00
35	95.00	HPA-65R-BUU-H6	4	26.336	28.969	0.72	0.80	27.82	183.60	0.000	0.000	1289.51	0.00	0.00
36	95.00	RRUS-32	3	26.336	28.969	0.70	0.80	8.08	207.90	0.000	0.000	374.54	0.00	0.00
37	95.00	RRUS-A2	3	26.336	28.969	0.50	0.80	2.77	57.24	0.000	0.000	128.28	0.00	0.00
38	95.00	RRUS-E2	3	26.336	28.969	0.56	0.80	4.72	154.71	0.000	0.000	218.81	0.00	0.00
39	95.00	1000860	3	26.336	28.969	1.00	1.00	0.18	5.40	0.000	0.000	8.34	0.00	0.00
40	95.00	Raycap/Squid	2	26.336	28.969	0.72	0.80	2.12	57.24	0.000	0.000	98.11	0.00	0.00
41	95.00	Sector Frame	3	26.336	28.969	0.56	0.75	29.53	1350.00	0.000	0.000	1368.79	0.00	0.00
42	95.00	800 10764	1	26.336	28.969	0.60	0.80	3.53	36.72	0.000	0.000	163.52	0.00	0.00
43	95.00	4426 B66	3	26.336	28.969	0.58	0.80	2.01	130.95	0.000	0.000	93.39	0.00	0.00
44	70.00	Standoff	1	24.696	27.165	1.00	1.00	2.63	36.00	0.000	0.000	114.31	0.00	0.00
45	70.00	GPS	1	24.696	27.165	1.00	1.00	1.00	9.00	0.000	0.000	43.46	0.00	0.00
							Totals:		**9,638.13**			**21,212.85**		

Total Applied Force Summary

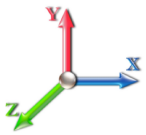
Structure:	CT01499-S-SBA		**Code:**	TIA-222-G	2/7/2022
Site Name:	Torrington		**Exposure:**	C	
Height:	153.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	B - Competent Rock	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 18

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 22

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		513.90	1289.24	0.00	0.00
10.00		503.22	1266.75	0.00	0.00
15.00		492.54	1244.27	0.00	0.00
20.00		511.28	1221.78	0.00	0.00
21.00		101.94	241.66	0.00	0.00
25.00		427.39	1621.49	0.00	0.00
27.75		313.64	1099.47	0.00	0.00
28.00		28.44	99.33	0.00	0.00
30.00		229.14	408.45	0.00	0.00
35.00		585.50	1008.02	0.00	0.00
40.00		593.02	989.28	0.00	0.00
40.75		88.51	146.78	0.00	0.00
45.00		502.09	823.77	0.00	0.00
50.00		561.18	951.81	0.00	0.00
55.00		562.74	933.08	0.00	0.00
60.00		563.15	914.34	0.00	0.00
65.00		562.56	895.60	0.00	0.00
70.00	(2) attachments	726.84	1594.42	0.00	0.00
71.00		112.92	305.39	0.00	0.00
75.00		450.46	692.60	0.00	0.00
80.00		561.23	848.89	0.00	0.00
85.00		557.68	830.15	0.00	0.00
90.00		553.55	811.41	0.00	0.00
95.00	(50) attachments	6585.33	3722.90	0.00	0.00
100.00		479.25	710.04	0.00	0.00
105.00	(2) attachments	736.05	749.81	0.00	717.05
110.00		456.53	671.85	0.00	0.00
115.00		451.09	1063.09	0.00	0.00
120.00		438.63	544.17	0.00	0.00
123.00	(24) attachments	6134.65	2430.44	0.00	0.00
125.00		168.30	175.96	0.00	0.00
130.00		412.48	429.42	0.00	0.00
131.00	(25) attachments	4768.73	2709.50	0.00	0.00
135.00		317.72	289.30	0.00	0.00
140.00		384.84	348.14	0.00	0.00
145.00		370.51	333.15	0.00	0.00
150.00		355.85	318.16	0.00	0.00
153.00	(24) attachments	4390.59	2051.56	0.00	0.00
	Totals:	**36,553.46**	**36,785.48**	**0.00**	**717.05**

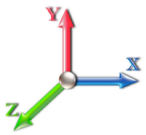
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01499-S-SBA	**Code:**	TIA-222-G	2/7/2022	
Site Name:	Torrington	**Exposure:**	C		
Height:	153.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 19	

Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 22

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.091	0.000	17.879	0.00	1.23
5.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.091	0.000	17.879	0.00	56.16
5.00	1/2" Fiber	Yes	5.00	0.000	0.38	0.16	0.00	0.091	0.000	17.879	0.00	0.54
5.00	3/4" DC	Yes	5.00	0.000	0.75	0.31	0.00	0.091	0.000	17.879	0.00	7.20
10.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.093	0.000	17.879	0.00	1.23
10.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.093	0.000	17.879	0.00	56.16
10.00	1/2" Fiber	Yes	5.00	0.000	0.38	0.16	0.00	0.093	0.000	17.879	0.00	0.54
10.00	3/4" DC	Yes	5.00	0.000	0.75	0.31	0.00	0.093	0.000	17.879	0.00	7.20
15.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.095	0.000	17.879	0.00	1.23
15.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.095	0.000	17.879	0.00	56.16
15.00	1/2" Fiber	Yes	5.00	0.000	0.38	0.16	0.00	0.095	0.000	17.879	0.00	0.54
15.00	3/4" DC	Yes	5.00	0.000	0.75	0.31	0.00	0.095	0.000	17.879	0.00	7.20
20.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.097	0.000	18.971	0.00	1.23
20.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.097	0.000	18.971	0.00	56.16
20.00	1/2" Fiber	Yes	5.00	0.000	0.38	0.16	0.00	0.097	0.000	18.971	0.00	0.54
20.00	3/4" DC	Yes	5.00	0.000	0.75	0.31	0.00	0.097	0.000	18.971	0.00	7.20
21.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.098	0.000	19.166	0.00	0.25
21.00	1 5/8" Coax	Yes	1.00	0.000	3.96	0.33	0.00	0.098	0.000	19.166	0.00	11.23
21.00	1/2" Fiber	Yes	1.00	0.000	0.38	0.03	0.00	0.098	0.000	19.166	0.00	0.11
21.00	3/4" DC	Yes	1.00	0.000	0.75	0.06	0.00	0.098	0.000	19.166	0.00	1.44
25.00	Safety Cable	Yes	4.00	0.000	0.38	0.13	0.00	0.103	1.010	19.883	0.00	0.98
25.00	1 5/8" Coax	Yes	4.00	0.000	3.96	1.32	0.00	0.103	1.010	19.883	0.00	44.93
25.00	1/2" Fiber	Yes	4.00	0.000	0.38	0.13	0.00	0.103	1.010	19.883	0.00	0.43
25.00	3/4" DC	Yes	4.00	0.000	0.75	0.25	0.00	0.103	1.010	19.883	0.00	5.76
25.00	1.25" Reinforcing	Yes	0.75	0.000	1.25	0.08	0.00	0.103	1.010	19.883	0.00	0.00
27.75	Safety Cable	Yes	2.75	0.000	0.38	0.09	0.00	0.124	1.071	20.325	0.00	0.68
27.75	1 5/8" Coax	Yes	2.75	0.000	3.96	0.91	0.00	0.124	1.071	20.325	0.00	30.89
27.75	1/2" Fiber	Yes	2.75	0.000	0.38	0.09	0.00	0.124	1.071	20.325	0.00	0.30
27.75	3/4" DC	Yes	2.75	0.000	0.75	0.17	0.00	0.124	1.071	20.325	0.00	3.96
27.75	1.25" Reinforcing	Yes	2.75	0.000	1.25	0.29	0.00	0.124	1.071	20.325	0.00	0.00
28.00	Safety Cable	Yes	0.25	0.000	0.38	0.01	0.00	0.125	1.074	20.363	0.00	0.06
28.00	1 5/8" Coax	Yes	0.25	0.000	3.96	0.08	0.00	0.125	1.074	20.363	0.00	2.81
28.00	1/2" Fiber	Yes	0.25	0.000	0.38	0.01	0.00	0.125	1.074	20.363	0.00	0.03
28.00	3/4" DC	Yes	0.25	0.000	0.75	0.02	0.00	0.125	1.074	20.363	0.00	0.36
28.00	1.25" Reinforcing	Yes	0.25	0.000	1.25	0.03	0.00	0.125	1.074	20.363	0.00	0.00
30.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.124	1.071	20.661	0.00	0.49
30.00	1 5/8" Coax	Yes	2.00	0.000	3.96	0.66	0.00	0.124	1.071	20.661	0.00	22.46
30.00	1/2" Fiber	Yes	2.00	0.000	0.38	0.06	0.00	0.124	1.071	20.661	0.00	0.22
30.00	3/4" DC	Yes	2.00	0.000	0.75	0.13	0.00	0.124	1.071	20.661	0.00	2.88
30.00	1.25" Reinforcing	Yes	2.00	0.000	1.25	0.21	0.00	0.124	1.071	20.661	0.00	0.00
35.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.126	1.077	21.343	0.00	1.23
35.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.126	1.077	21.343	0.00	56.16
35.00	1/2" Fiber	Yes	5.00	0.000	0.38	0.16	0.00	0.126	1.077	21.343	0.00	0.54
35.00	3/4" DC	Yes	5.00	0.000	0.75	0.31	0.00	0.126	1.077	21.343	0.00	7.20
35.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.126	1.077	21.343	0.00	0.00
40.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.129	1.086	21.951	0.00	1.23
40.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.129	1.086	21.951	0.00	56.16

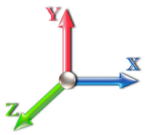
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01499-S-SBA	**Code:**	TIA-222-G	2/7/2022	
Site Name:	Torrington	**Exposure:**	C		
Height:	153.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 20	

Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 22

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
40.00	1/2" Fiber	Yes	5.00	0.000	0.38	0.16	0.00	0.129	1.086	21.951	0.00	0.54
40.00	3/4" DC	Yes	5.00	0.000	0.75	0.31	0.00	0.129	1.086	21.951	0.00	7.20
40.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.129	1.086	21.951	0.00	0.00
40.75	Safety Cable	Yes	0.75	0.000	0.38	0.02	0.00	0.131	1.092	22.037	0.00	0.18
40.75	1 5/8" Coax	Yes	0.75	0.000	3.96	0.25	0.00	0.131	1.092	22.037	0.00	8.42
40.75	1/2" Fiber	Yes	0.75	0.000	0.38	0.02	0.00	0.131	1.092	22.037	0.00	0.08
40.75	3/4" DC	Yes	0.75	0.000	0.75	0.05	0.00	0.131	1.092	22.037	0.00	1.08
40.75	1.25" Reinforcing	Yes	0.75	0.000	1.25	0.08	0.00	0.131	1.092	22.037	0.00	0.00
45.00	Safety Cable	Yes	4.25	0.000	0.38	0.13	0.00	0.128	1.084	22.502	0.00	1.04
45.00	1 5/8" Coax	Yes	4.25	0.000	3.96	1.40	0.00	0.128	1.084	22.502	0.00	47.74
45.00	1/2" Fiber	Yes	4.25	0.000	0.38	0.13	0.00	0.128	1.084	22.502	0.00	0.46
45.00	3/4" DC	Yes	4.25	0.000	0.75	0.27	0.00	0.128	1.084	22.502	0.00	6.12
45.00	1.25" Reinforcing	Yes	3.50	0.000	1.25	0.36	0.00	0.128	1.084	22.502	0.00	0.00
50.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.110	1.030	23.007	0.00	1.23
50.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.110	1.030	23.007	0.00	56.16
50.00	1/2" Fiber	Yes	5.00	0.000	0.38	0.16	0.00	0.110	1.030	23.007	0.00	0.54
50.00	3/4" DC	Yes	5.00	0.000	0.75	0.31	0.00	0.110	1.030	23.007	0.00	7.20
55.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.113	1.039	23.473	0.00	1.23
55.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.113	1.039	23.473	0.00	56.16
55.00	1/2" Fiber	Yes	5.00	0.000	0.38	0.16	0.00	0.113	1.039	23.473	0.00	0.54
55.00	3/4" DC	Yes	5.00	0.000	0.75	0.31	0.00	0.113	1.039	23.473	0.00	7.20
60.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.116	1.048	23.907	0.00	1.23
60.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.116	1.048	23.907	0.00	56.16
60.00	1/2" Fiber	Yes	5.00	0.000	0.38	0.16	0.00	0.116	1.048	23.907	0.00	0.54
60.00	3/4" DC	Yes	5.00	0.000	0.75	0.31	0.00	0.116	1.048	23.907	0.00	7.20
65.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.119	1.058	24.313	0.00	1.23
65.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.119	1.058	24.313	0.00	56.16
65.00	1/2" Fiber	Yes	5.00	0.000	0.38	0.16	0.00	0.119	1.058	24.313	0.00	0.54
65.00	3/4" DC	Yes	5.00	0.000	0.75	0.31	0.00	0.119	1.058	24.313	0.00	7.20
70.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.123	1.068	24.696	0.00	1.23
70.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.123	1.068	24.696	0.00	56.16
70.00	1/2" Fiber	Yes	5.00	0.000	0.38	0.16	0.00	0.123	1.068	24.696	0.00	0.54
70.00	3/4" DC	Yes	5.00	0.000	0.75	0.31	0.00	0.123	1.068	24.696	0.00	7.20
71.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.125	1.074	24.770	0.00	0.25
71.00	1 5/8" Coax	Yes	1.00	0.000	3.96	0.33	0.00	0.125	1.074	24.770	0.00	11.23
71.00	1/2" Fiber	Yes	1.00	0.000	0.38	0.03	0.00	0.125	1.074	24.770	0.00	0.11
71.00	3/4" DC	Yes	1.00	0.000	0.75	0.06	0.00	0.125	1.074	24.770	0.00	1.44
75.00	Safety Cable	Yes	4.00	0.000	0.38	0.13	0.00	0.125	1.074	25.057	0.00	0.98
75.00	1 5/8" Coax	Yes	4.00	0.000	3.96	1.32	0.00	0.125	1.074	25.057	0.00	44.93
75.00	1/2" Fiber	Yes	4.00	0.000	0.38	0.13	0.00	0.125	1.074	25.057	0.00	0.43
75.00	3/4" DC	Yes	4.00	0.000	0.75	0.25	0.00	0.125	1.074	25.057	0.00	5.76
80.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.128	1.084	25.400	0.00	1.23
80.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.128	1.084	25.400	0.00	56.16
80.00	1/2" Fiber	Yes	5.00	0.000	0.38	0.16	0.00	0.128	1.084	25.400	0.00	0.54
80.00	3/4" DC	Yes	5.00	0.000	0.75	0.31	0.00	0.128	1.084	25.400	0.00	7.20
85.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.132	1.095	25.726	0.00	1.23
85.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.132	1.095	25.726	0.00	56.16

Linear Appurtenance Segment Forces (Factored)

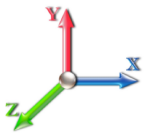
Structure:	CT01499-S-SBA	**Code:**	TIA-222-G	2/7/2022	
Site Name:	Torrington	**Exposure:**	C		
Height:	153.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 21	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 22

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
85.00	1/2" Fiber	Yes	5.00	0.000	0.38	0.16	0.00	0.132	1.095	25.726	0.00	0.54
85.00	3/4" DC	Yes	5.00	0.000	0.75	0.31	0.00	0.132	1.095	25.726	0.00	7.20
90.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.136	1.107	26.037	0.00	1.23
90.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.136	1.107	26.037	0.00	56.16
90.00	1/2" Fiber	Yes	5.00	0.000	0.38	0.16	0.00	0.136	1.107	26.037	0.00	0.54
90.00	3/4" DC	Yes	5.00	0.000	0.75	0.31	0.00	0.136	1.107	26.037	0.00	7.20
95.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.140	1.121	26.336	0.00	1.23
95.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.140	1.121	26.336	0.00	56.16
95.00	1/2" Fiber	Yes	5.00	0.000	0.38	0.16	0.00	0.140	1.121	26.336	0.00	0.54
95.00	3/4" DC	Yes	5.00	0.000	0.75	0.31	0.00	0.140	1.121	26.336	0.00	7.20
100.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.010	0.000	26.621	0.00	1.23
105.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.010	0.000	26.896	0.00	1.23
110.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.011	0.000	27.161	0.00	1.23
115.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.011	0.000	27.416	0.00	1.23
120.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.011	0.000	27.663	0.00	1.23
123.00	Safety Cable	Yes	3.00	0.000	0.38	0.10	0.00	0.012	0.000	27.807	0.00	0.74
125.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.012	0.000	27.902	0.00	0.49
130.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.012	0.000	28.133	0.00	1.23
131.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.013	0.000	28.179	0.00	0.25
135.00	Safety Cable	Yes	4.00	0.000	0.38	0.13	0.00	0.013	0.000	28.358	0.00	0.98
140.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.013	0.000	28.576	0.00	1.23
145.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.014	0.000	28.788	0.00	1.23
150.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.015	0.000	28.994	0.00	1.23
153.00	Safety Cable	Yes	3.00	0.000	0.38	0.10	0.00	0.015	0.000	29.115	0.00	0.74
										Totals:	**0.0**	**1,251.7**

Calculated Forces

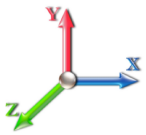
Structure:	CT01499-S-SBA	**Code:**	TIA-222-G	2/7/2022	
Site Name:	Torrington	**Exposure:**	C		
Height:	153.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 22	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 22

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 Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-36.73	-36.61	0.00	-3808.4	0.00	3808.46	4463.02	2231.51	10951.4	5483.88	0.00	0.000	0.000	0.703
5.00	-35.34	-36.19	0.00	-3625.4	0.00	3625.43	4413.36	2206.68	10604.1	5309.95	0.09	-0.166	0.000	0.691
10.00	-33.97	-35.79	0.00	-3444.4	0.00	3444.46	4361.89	2180.94	10257.6	5136.44	0.35	-0.334	0.000	0.679
15.00	-32.62	-35.38	0.00	-3265.5	0.00	3265.53	4308.61	2154.31	9912.23	4963.48	0.80	-0.504	0.000	0.666
20.00	-31.34	-34.91	0.00	-3088.6	0.00	3088.62	4253.53	2126.77	9568.22	4791.22	1.42	-0.676	0.000	0.652
21.00	-31.05	-34.86	0.00	-3053.7	0.00	3053.70	4242.30	2121.15	9499.61	4756.87	1.56	-0.711	0.000	0.650
25.00	-29.36	-34.47	0.00	-2914.2	0.00	2914.27	4196.65	2098.33	9225.87	4619.79	2.22	-0.851	0.000	0.638
27.75	-28.24	-34.16	0.00	-2819.4	0.00	2819.49	4164.60	2082.30	9038.39	4525.91	2.74	-0.949	0.000	0.415
28.00	-28.12	-34.15	0.00	-2810.9	0.00	2810.95	3213.57	1606.78	7065.87	3538.19	2.79	-0.955	0.000	0.459
30.00	-27.67	-33.95	0.00	-2742.6	0.00	2742.65	3199.34	1599.67	6969.21	3489.78	3.20	-1.002	0.000	0.496
35.00	-26.59	-33.41	0.00	-2572.8	0.00	2572.89	3162.51	1581.26	6727.41	3368.71	4.32	-1.129	0.000	0.477
40.00	-25.58	-32.83	0.00	-2405.8	0.00	2405.86	3123.88	1561.94	6485.64	3247.64	5.57	-1.255	0.000	0.458
40.75	-25.40	-32.76	0.00	-2381.2	0.00	2381.24	3117.93	1558.96	6449.39	3229.49	5.77	-1.275	0.000	0.456
40.75	-25.40	-32.76	0.00	-2381.2	0.00	2381.24	3117.93	1558.96	6449.39	3229.49	5.77	-1.275	0.000	0.456
45.00	-24.49	-32.31	0.00	-2242.0	0.00	2242.00	3083.44	1541.72	6244.17	3126.72	6.95	-1.382	0.000	0.725
50.00	-23.44	-31.81	0.00	-2080.4	0.00	2080.45	3041.20	1520.60	6003.26	3006.09	8.51	-1.588	0.000	0.700
55.00	-22.41	-31.30	0.00	-1921.4	0.00	1921.42	2997.16	1498.58	5763.21	2885.89	10.28	-1.794	0.000	0.674
60.00	-21.41	-30.78	0.00	-1764.9	0.00	1764.93	2951.32	1475.66	5524.28	2766.24	12.27	-1.999	0.000	0.646
65.00	-20.43	-30.26	0.00	-1611.0	0.00	1611.02	2903.67	1451.83	5286.75	2647.30	14.48	-2.202	0.000	0.616
70.00	-18.80	-29.51	0.00	-1459.7	0.00	1459.72	2854.22	1427.11	5050.90	2529.20	16.89	-2.403	0.000	0.584
71.00	-18.45	-29.41	0.00	-1430.2	0.00	1430.22	2869.57	1434.79	5123.02	2565.32	17.40	-2.444	0.000	0.564
75.00	-17.69	-28.99	0.00	-1312.5	0.00	1312.56	2829.16	1414.58	4935.24	2471.29	19.52	-2.603	0.000	0.538
80.00	-16.78	-28.44	0.00	-1167.6	0.00	1167.62	2777.01	1388.51	4702.41	2354.70	22.34	-2.787	0.000	0.502
85.00	-15.90	-27.89	0.00	-1025.4	0.00	1025.42	2723.06	1361.53	4471.94	2239.29	25.36	-2.965	0.000	0.464
90.00	-15.04	-27.34	0.00	-885.97	0.00	885.97	2667.31	1333.66	4244.12	2125.22	28.55	-3.135	0.000	0.423
95.00	-11.63	-20.58	0.00	-749.29	0.00	749.29	2609.76	1304.88	4019.22	2012.60	31.92	-3.295	0.000	0.377
100.00	-10.90	-20.09	0.00	-646.36	0.00	646.36	2550.40	1275.20	3797.52	1901.58	35.46	-3.445	0.000	0.344
105.00	-10.15	-19.34	0.00	-545.19	0.00	545.19	2489.24	1244.62	3579.29	1792.30	39.14	-3.587	0.000	0.309
110.00	-9.47	-18.86	0.00	-448.51	0.00	448.51	2426.28	1213.14	3364.80	1684.90	42.97	-3.718	0.000	0.270
115.00	-8.40	-18.35	0.00	-354.21	0.00	354.21	1783.00	891.50	2427.68	1215.65	46.92	-3.836	0.000	0.297
120.00	-7.87	-17.89	0.00	-262.44	0.00	262.44	1739.91	869.95	2280.12	1141.75	50.99	-3.937	0.000	0.235
123.00	-5.86	-11.61	0.00	-208.77	0.00	208.77	1713.19	856.59	2192.59	1097.92	53.49	-3.999	0.000	0.194
125.00	-5.68	-11.43	0.00	-185.55	0.00	185.55	1695.01	847.51	2134.69	1068.93	55.17	-4.036	0.000	0.177
130.00	-5.27	-11.00	0.00	-128.39	0.00	128.39	1648.31	824.16	1991.67	997.31	59.44	-4.114	0.000	0.132
131.00	-2.91	-6.05	0.00	-117.39	0.00	117.39	1638.75	819.38	1963.38	983.15	60.30	-4.127	0.000	0.121
135.00	-2.64	-5.71	0.00	-93.21	0.00	93.21	1599.81	799.90	1851.33	927.04	63.78	-4.175	0.000	0.102
140.00	-2.32	-5.30	0.00	-64.66	0.00	64.66	1549.50	774.75	1713.96	858.25	68.18	-4.225	0.000	0.077
145.00	-2.01	-4.91	0.00	-38.14	0.00	38.14	1497.39	748.69	1579.82	791.09	72.62	-4.263	0.000	0.050
150.00	-1.72	-4.53	0.00	-13.59	0.00	13.59	1443.48	721.74	1449.20	725.68	77.09	-4.284	0.000	0.020
150.00	-1.72	-4.53	0.00	-13.59	0.00	13.59	1443.48	721.74	1449.20	725.68	77.09	-4.284	0.000	0.020
153.00	0.00	-4.39	0.00	0.00	0.00	0.00	1400.09	700.04	1362.73	682.38	79.78	-4.288	0.000	0.000

Wind Loading - Shaft

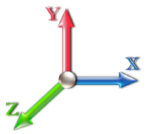
Structure:	CT01499-S-SBA	**Code:**	TIA-222-G	2/7/2022	
Site Name:	Torrington	**Exposure:**	C		
Height:	153.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 23	

Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 40 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 21

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	3.308	3.64	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	3.308	3.64	0.00	1.200	1.242	5.00	26.160	31.39	114.2	466.9	1900.8
10.00		1.00	0.85	3.308	3.64	0.00	1.200	1.331	5.00	25.712	30.85	112.3	490.9	1894.8
15.00		1.00	0.85	3.308	3.64	0.00	1.200	1.386	5.00	25.236	30.28	110.2	500.9	1874.9
20.00		1.00	0.90	3.509	3.86	0.00	1.200	1.427	5.00	24.748	29.70	114.6	504.9	1848.9
21.00	Bot - Section 2	1.00	0.91	3.546	3.90	0.00	1.200	1.434	1.00	4.888	5.87	22.9	101.0	366.2
25.00		1.00	0.95	3.678	4.05	0.00	1.212 *	1.459	4.00	19.572	23.73	96.0	408.8	2342.7
27.75	RB1	1.00	0.97	3.760	4.14	0.00	1.285 *	1.474	2.75	13.269	17.06	70.5	280.6	1589.8
28.00	Top - Section 1	1.00	0.97	3.767	4.14	0.00	1.288 *	1.476	0.25	1.198	1.54	6.4	25.5	143.7
30.00		1.00	0.98	3.822	4.20	0.00	1.286 *	1.486	2.00	9.544	12.27	51.6	203.7	634.2
35.00		1.00	1.01	3.948	4.34	0.00	1.293 *	1.509	5.00	23.515	30.40	132.0	505.6	1564.6
40.00		1.00	1.04	4.061	4.47	0.00	1.304 *	1.529	5.00	23.010	30.00	134.0	500.8	1534.8
40.75	RT1	1.00	1.05	4.077	4.48	0.00	1.310 *	1.532	0.75	3.407	4.46	20.0	75.0	227.9
45.00		1.00	1.07	4.163	4.58	0.00	1.300 *	1.547	4.25	19.094	24.83	113.7	420.7	1276.7
50.00		1.00	1.09	4.256	4.68	0.00	1.237 *	1.564	5.00	21.995	27.20	127.3	488.3	1472.3
55.00		1.00	1.12	4.342	4.78	0.00	1.247 *	1.579	5.00	21.485	26.79	128.0	480.9	1439.9
60.00		1.00	1.14	4.423	4.86	0.00	1.258 *	1.592	5.00	20.975	26.38	128.3	472.9	1406.9
65.00	Bot - Section 3	1.00	1.16	4.498	4.95	0.00	1.269 *	1.605	5.00	20.463	25.97	128.5	464.4	1373.5
70.00	Appurtenance(s)	1.00	1.17	4.569	5.03	0.00	1.281 *	1.617	5.00	20.216	25.90	130.1	461.8	2242.6
71.00	Top - Section 2	1.00	1.18	4.582	5.04	0.00	1.289 *	1.619	1.00	3.981	5.13	25.9	92.0	442.2
75.00		1.00	1.19	4.635	5.10	0.00	1.289 *	1.628	4.00	15.721	20.26	103.3	362.0	1057.4
80.00		1.00	1.21	4.699	5.17	0.00	1.300 *	1.639	5.00	19.190	24.95	129.0	442.9	1289.7
85.00		1.00	1.22	4.759	5.24	0.00	1.314 *	1.649	5.00	18.676	24.54	128.5	433.0	1254.7
90.00		1.00	1.24	4.817	5.30	0.00	1.329 *	1.658	5.00	18.162	24.14	127.9	422.7	1219.5
95.00	Appurtenance(s)	1.00	1.25	4.872	5.36	0.00	1.345 *	1.667	5.00	17.648	23.73	127.2	412.2	1184.0
100.00		1.00	1.27	4.925	5.42	0.00	1.200	1.676	5.00	17.133	20.56	111.4	401.5	1148.3
105.00	Appurtenance(s)	1.00	1.28	4.976	5.47	0.00	1.200	1.684	5.00	16.618	19.94	109.1	390.5	1112.4
110.00	Bot - Section 4	1.00	1.29	5.025	5.53	0.00	1.200	1.692	5.00	16.102	19.32	106.8	379.3	1076.2
115.00	Top - Section 3	1.00	1.30	5.072	5.58	0.00	1.200	1.699	5.00	15.798	18.96	105.8	373.3	1591.8
120.00		1.00	1.32	5.117	5.63	0.00	1.200	1.707	5.00	15.282	18.34	103.2	361.7	888.4
123.00	Appurtenance(s)	1.00	1.32	5.144	5.66	0.00	1.200	1.711	3.00	8.921	10.71	60.6	212.8	519.2
125.00		1.00	1.33	5.162	5.68	0.00	1.200	1.714	2.00	5.844	7.01	39.8	140.0	340.3
130.00		1.00	1.34	5.204	5.72	0.00	1.200	1.720	5.00	14.250	17.10	97.9	338.2	824.9
131.00	Appurtenance(s)	1.00	1.34	5.213	5.73	0.00	1.200	1.722	1.00	2.788	3.35	19.2	67.2	162.1
135.00		1.00	1.35	5.246	5.77	0.00	1.200	1.727	4.00	10.945	13.13	75.8	261.0	632.7
140.00		1.00	1.36	5.286	5.81	0.00	1.200	1.733	5.00	13.217	15.86	92.2	314.1	760.8
145.00		1.00	1.37	5.325	5.86	0.00	1.200	1.739	5.00	12.700	15.24	89.3	301.8	728.5
150.00	Top - Section 4	1.00	1.38	5.364	5.90	0.00	1.200	1.745	5.00	12.183	14.62	86.3	289.4	696.1
153.00	Appurtenance(s)	1.00	1.38	5.386	5.92	0.00	1.200	1.749	3.00	7.061	8.47	50.2	169.1	403.6
								Totals:	**153.00**			**3,529.9**		**42,468.2**

* Cf Adjusted by Linear Load Ra Effect

Discrete Appurtenance Forces

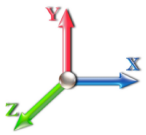
Structure:	CT01499-S-SBA	**Code:**	TIA-222-G	2/7/2022	
Site Name:	Torrington	**Exposure:**	C		
Height:	153.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 24	

Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 40 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 21

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	153.00	800 MHz RRUs	3	5.386	5.925	0.83	0.90	9.03	349.82	0.000	0.000	53.51	0.00	0.00
2	153.00	APXVTM14-C-I20	3	5.386	5.925	0.71	0.90	15.90	683.98	0.000	0.000	94.22	0.00	0.00
3	153.00	APXVSPP18-C-A20	3	5.386	5.925	0.75	0.90	24.25	576.28	0.000	0.000	143.65	0.00	0.00
4	153.00	1900 MHz RRUs	3	5.386	5.925	0.79	0.90	12.34	392.94	0.000	0.000	73.10	0.00	0.00
5	153.00	Lightning Rod	1	5.386	5.925	1.00	1.00	2.25	20.98	0.000	0.000	13.32	0.00	0.00
6	153.00	800 MHz Filters	3	5.386	5.925	0.62	0.90	2.66	69.71	0.000	0.000	15.76	0.00	0.00
7	153.00	ACU-A20-N	4	5.386	5.925	0.81	0.90	1.42	16.82	0.000	0.000	8.39	0.00	0.00
8	153.00	TD-RRH8x20-25	3	5.386	5.925	0.62	0.90	9.06	584.18	0.000	0.000	53.70	0.00	0.00
9	153.00	Low Profile Platform	1	5.386	5.925	1.00	1.00	45.98	2189.20	0.000	0.000	272.44	0.00	0.00
10	131.00	VV-65A-R1	3	5.213	5.734	0.59	0.80	12.34	494.48	0.000	0.000	70.78	0.00	0.00
11	131.00	APXVAALL24_43-U-NA20	3	5.213	5.734	0.58	0.80	38.74	1705.80	0.000	0.000	222.16	0.00	0.00
12	131.00	4449 B71 + B85	3	5.213	5.734	0.54	0.80	4.07	275.30	0.000	0.000	23.34	0.00	0.00
13	131.00	AIR6449 B41	3	5.213	5.734	0.57	0.80	11.23	681.52	0.000	0.000	64.37	0.00	0.00
14	131.00	KRY 112 144/1	3	5.213	5.734	0.54	0.80	1.41	62.21	0.000	0.000	8.10	0.00	0.00
15	131.00	4460 B25 + B66	3	5.213	5.734	0.54	0.80	5.65	511.45	0.000	0.000	32.41	0.00	0.00
16	131.00	T-Arms	3	5.213	5.734	0.56	0.75	25.12	1773.13	0.000	0.000	144.05	0.00	0.00
17	131.00	(3) T-Arm Kit	1	5.213	5.734	0.75	0.75	24.31	1035.39	0.000	0.000	139.38	0.00	0.00
18	131.00	KRY 112 489/2	3	5.213	5.734	0.54	0.80	2.15	104.86	0.000	0.000	12.32	0.00	0.00
19	123.00	Low Profile Platform	1	5.144	5.659	1.00	1.00	45.53	2166.55	0.000	0.000	257.64	0.00	0.00
20	123.00	RFS DB-T1-6Z-8AB-0Z	2	5.144	5.659	0.57	0.80	6.57	228.56	0.000	0.000	37.19	0.00	0.00
21	123.00	B5/B13 RRH-BR04C	3	5.144	5.659	0.54	0.80	3.91	456.04	0.000	0.000	22.12	0.00	0.00
22	123.00	B2/B66A RRH-BR049	3	5.144	5.659	0.54	0.80	3.91	527.93	0.000	0.000	22.12	0.00	0.00
23	123.00	LPA-80063-6CF-EDIN-5	6	5.144	5.659	0.74	0.80	55.61	1283.07	0.000	0.000	314.70	0.00	0.00
24	123.00	MT6407-77A	3	5.144	5.659	0.56	0.80	9.44	635.96	0.000	0.000	53.41	0.00	0.00
25	123.00	SBNHH-1D65B	6	5.144	5.659	0.66	0.80	37.23	1473.72	0.000	0.000	210.67	0.00	0.00
26	105.00	Standoff	1	4.976	5.473	1.00	1.00	8.39	102.47	0.000	0.000	45.92	0.00	0.00
27	105.00	10' Omni	1	5.025	5.527	1.00	1.00	6.48	81.69	0.000	5.000	35.82	0.00	179.08
28	95.00	LGP17201	6	4.872	5.359	0.80	0.80	13.93	376.87	0.000	0.000	74.65	0.00	0.00
29	95.00	RRUS-11	3	4.872	5.359	0.54	0.80	9.55	378.73	0.000	0.000	51.19	0.00	0.00
30	95.00	LGP21901	6	4.872	5.359	0.60	0.80	2.09	70.48	0.000	0.000	11.22	0.00	0.00
31	95.00	RRUS-12	3	4.872	5.359	0.54	0.80	6.99	365.36	0.000	0.000	37.48	0.00	0.00
32	95.00	AM-X-CW-16-65-00T-RET	2	4.872	5.359	0.60	0.80	12.83	317.43	0.000	0.000	68.74	0.00	0.00
33	95.00	SBNH-1D65A	2	4.872	5.359	0.72	0.80	10.48	261.83	0.000	0.000	56.14	0.00	0.00
34	95.00	7770	3	4.872	5.359	0.58	0.80	11.41	509.48	0.000	0.000	61.17	0.00	0.00
35	95.00	HPA-65R-BUU-H6	4	4.872	5.359	0.72	0.80	31.57	1185.99	0.000	0.000	169.19	0.00	0.00
36	95.00	RRUS-32	3	4.872	5.359	0.70	0.80	8.49	599.75	0.000	0.000	45.52	0.00	0.00
37	95.00	RRUS-A2	3	4.872	5.359	0.50	0.80	4.15	149.21	0.000	0.000	22.25	0.00	0.00
38	95.00	RRUS-E2	3	4.872	5.359	0.56	0.80	5.80	453.46	0.000	0.000	31.10	0.00	0.00
39	95.00	1000860	3	4.872	5.359	1.00	1.00	0.78	12.58	0.000	0.000	4.18	0.00	0.00
40	95.00	Raycap/Squid	2	4.872	5.359	0.72	0.80	3.08	159.05	0.000	0.000	16.50	0.00	0.00
41	95.00	Sector Frame	3	4.872	5.359	0.56	0.75	51.98	3200.75	0.000	0.000	278.58	0.00	0.00
42	95.00	800 10764	1	4.872	5.359	0.60	0.80	4.76	134.28	0.000	0.000	25.49	0.00	0.00
43	95.00	4426 B66	3	4.872	5.359	0.58	0.80	2.81	285.00	0.000	0.000	15.03	0.00	0.00
44	70.00	Standoff	1	4.569	5.025	1.00	1.00	8.16	99.39	0.000	0.000	41.01	0.00	0.00
45	70.00	GPS	1	4.569	5.025	1.00	1.00	1.66	31.17	0.000	0.000	8.34	0.00	0.00
							Totals:		**27,074.88**			**3,462.37**		

Total Applied Force Summary

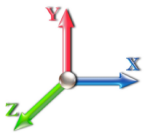
Structure:	CT01499-S-SBA	**Code:**	TIA-222-G	2/7/2022	
Site Name:	Torrington	**Exposure:**	C		
Height:	153.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 25	

Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 40 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 21

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		114.21	2379.09	0.00	0.00
10.00		112.26	2388.34	0.00	0.00
15.00		110.18	2378.06	0.00	0.00
20.00		114.64	2359.20	0.00	0.00
21.00		22.88	468.55	0.00	0.00
25.00		96.00	2761.05	0.00	0.00
27.75		70.54	1895.38	0.00	0.00
28.00		6.40	171.49	0.00	0.00
30.00		51.59	857.47	0.00	0.00
35.00		132.04	2127.59	0.00	0.00
40.00		134.00	2102.15	0.00	0.00
40.75		20.02	313.14	0.00	0.00
45.00		113.70	1756.49	0.00	0.00
50.00		127.33	2007.46	0.00	0.00
55.00		127.95	1977.87	0.00	0.00
60.00		128.33	1947.48	0.00	0.00
65.00		128.48	1916.40	0.00	0.00
70.00	(2) attachments	179.49	2918.35	0.00	0.00
71.00		25.86	551.28	0.00	0.00
75.00		103.28	1495.25	0.00	0.00
80.00		128.97	1838.93	0.00	0.00
85.00		128.49	1805.88	0.00	0.00
90.00		127.89	1772.44	0.00	0.00
95.00	(50) attachments	1095.61	10198.91	0.00	0.00
100.00		111.38	1367.85	0.00	0.00
105.00	(2) attachments	190.88	1516.23	0.00	179.08
110.00		106.80	1295.13	0.00	0.00
115.00		105.77	1810.90	0.00	0.00
120.00		103.23	1107.65	0.00	0.00
123.00	(24) attachments	978.42	7422.70	0.00	0.00
125.00		39.82	382.84	0.00	0.00
130.00		97.90	931.40	0.00	0.00
131.00	(25) attachments	736.09	6827.56	0.00	0.00
135.00		75.79	663.33	0.00	0.00
140.00		92.22	799.17	0.00	0.00
145.00		89.27	767.05	0.00	0.00
150.00		86.25	734.79	0.00	0.00
153.00	(24) attachments	778.29	5310.76	0.00	0.00
	Totals:	**6,992.24**	**81,325.59**	**0.00**	**179.08**

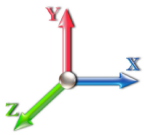
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01499-S-SBA	**Code:**	TIA-222-G	2/7/2022	
Site Name:	Torrington	**Exposure:**	C		
Height:	153.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 26	

Load Case: 1.2D + 1.0Di + 1.0Wi 40 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 21

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	Safety Cable	Yes	5.00	0.000	0.38	1.19	0.00	0.091	0.000	3.308	0.00	12.93
5.00	1 5/8" Coax	Yes	5.00	0.000	3.96	2.69	0.00	0.091	0.000	3.308	0.00	218.70
5.00	1/2" Fiber	Yes	5.00	0.000	0.38	1.19	0.00	0.091	0.000	3.308	0.00	13.94
5.00	3/4" DC	Yes	5.00	0.000	0.75	1.35	0.00	0.091	0.000	3.308	0.00	34.45
10.00	Safety Cable	Yes	5.00	0.000	0.38	1.27	0.00	0.093	0.000	3.308	0.00	14.46
10.00	1 5/8" Coax	Yes	5.00	0.000	3.96	2.76	0.00	0.093	0.000	3.308	0.00	228.34
10.00	1/2" Fiber	Yes	5.00	0.000	0.38	1.27	0.00	0.093	0.000	3.308	0.00	15.60
10.00	3/4" DC	Yes	5.00	0.000	0.75	1.42	0.00	0.093	0.000	3.308	0.00	36.89
15.00	Safety Cable	Yes	5.00	0.000	0.38	1.31	0.00	0.095	0.000	3.308	0.00	15.46
15.00	1 5/8" Coax	Yes	5.00	0.000	3.96	2.81	0.00	0.095	0.000	3.308	0.00	234.34
15.00	1/2" Fiber	Yes	5.00	0.000	0.38	1.31	0.00	0.095	0.000	3.308	0.00	16.68
15.00	3/4" DC	Yes	5.00	0.000	0.75	1.47	0.00	0.095	0.000	3.308	0.00	38.45
20.00	Safety Cable	Yes	5.00	0.000	0.38	1.35	0.00	0.097	0.000	3.509	0.00	16.21
20.00	1 5/8" Coax	Yes	5.00	0.000	3.96	2.84	0.00	0.097	0.000	3.509	0.00	238.78
20.00	1/2" Fiber	Yes	5.00	0.000	0.38	1.35	0.00	0.097	0.000	3.509	0.00	17.49
20.00	3/4" DC	Yes	5.00	0.000	0.75	1.50	0.00	0.097	0.000	3.509	0.00	39.62
21.00	Safety Cable	Yes	1.00	0.000	0.38	0.27	0.00	0.098	0.000	3.546	0.00	3.27
21.00	1 5/8" Coax	Yes	1.00	0.000	3.96	0.57	0.00	0.098	0.000	3.546	0.00	47.91
21.00	1/2" Fiber	Yes	1.00	0.000	0.38	0.27	0.00	0.098	0.000	3.546	0.00	3.53
21.00	3/4" DC	Yes	1.00	0.000	0.75	0.30	0.00	0.098	0.000	3.546	0.00	7.96
25.00	Safety Cable	Yes	4.00	0.000	0.38	1.10	0.00	0.103	1.010	3.678	0.00	13.46
25.00	1 5/8" Coax	Yes	4.00	0.000	3.96	2.29	0.00	0.103	1.010	3.678	0.00	193.85
25.00	1/2" Fiber	Yes	4.00	0.000	0.38	1.10	0.00	0.103	1.010	3.678	0.00	14.52
25.00	3/4" DC	Yes	4.00	0.000	0.75	1.22	0.00	0.103	1.010	3.678	0.00	32.45
25.00	1.25" Reinforcing	Yes	0.75	0.000	1.25	0.26	0.00	0.103	1.010	3.678	0.00	5.44
27.75	Safety Cable	Yes	2.75	0.000	0.38	0.76	0.00	0.124	1.071	3.760	0.00	9.42
27.75	1 5/8" Coax	Yes	2.75	0.000	3.96	1.58	0.00	0.124	1.071	3.760	0.00	134.20
27.75	1/2" Fiber	Yes	2.75	0.000	0.38	0.76	0.00	0.124	1.071	3.760	0.00	10.16
27.75	3/4" DC	Yes	2.75	0.000	0.75	0.85	0.00	0.124	1.071	3.760	0.00	22.56
27.75	1.25" Reinforcing	Yes	2.75	0.000	1.25	0.96	0.00	0.124	1.071	3.760	0.00	20.20
28.00	Safety Cable	Yes	0.25	0.000	0.38	0.07	0.00	0.125	1.074	3.767	0.00	0.86
28.00	1 5/8" Coax	Yes	0.25	0.000	3.96	0.14	0.00	0.125	1.074	3.767	0.00	12.21
28.00	1/2" Fiber	Yes	0.25	0.000	0.38	0.07	0.00	0.125	1.074	3.767	0.00	0.93
28.00	3/4" DC	Yes	0.25	0.000	0.75	0.08	0.00	0.125	1.074	3.767	0.00	2.05
28.00	1.25" Reinforcing	Yes	0.25	0.000	1.25	0.09	0.00	0.125	1.074	3.767	0.00	1.84
30.00	Safety Cable	Yes	2.00	0.000	0.38	0.56	0.00	0.124	1.071	3.822	0.00	6.94
30.00	1 5/8" Coax	Yes	2.00	0.000	3.96	1.16	0.00	0.124	1.071	3.822	0.00	98.11
30.00	1/2" Fiber	Yes	2.00	0.000	0.38	0.56	0.00	0.124	1.071	3.822	0.00	7.49
30.00	3/4" DC	Yes	2.00	0.000	0.75	0.62	0.00	0.124	1.071	3.822	0.00	16.54
30.00	1.25" Reinforcing	Yes	2.00	0.000	1.25	0.70	0.00	0.124	1.071	3.822	0.00	14.84
35.00	Safety Cable	Yes	5.00	0.000	0.38	1.42	0.00	0.126	1.077	3.948	0.00	17.80
35.00	1 5/8" Coax	Yes	5.00	0.000	3.96	2.91	0.00	0.126	1.077	3.948	0.00	247.84
35.00	1/2" Fiber	Yes	5.00	0.000	0.38	1.42	0.00	0.126	1.077	3.948	0.00	19.21
35.00	3/4" DC	Yes	5.00	0.000	0.75	1.57	0.00	0.126	1.077	3.948	0.00	42.05
35.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	1.78	0.00	0.126	1.077	3.948	0.00	37.87
40.00	Safety Cable	Yes	5.00	0.000	0.38	1.43	0.00	0.129	1.086	4.061	0.00	18.21
40.00	1 5/8" Coax	Yes	5.00	0.000	3.96	2.92	0.00	0.129	1.086	4.061	0.00	250.09

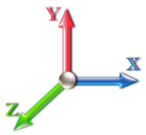
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01499-S-SBA	**Code:**	TIA-222-G	2/7/2022	
Site Name:	Torrington	**Exposure:**	C		
Height:	153.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 27	

Load Case: 1.2D + 1.0Di + 1.0Wi 40 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 21

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
40.00	1/2" Fiber	Yes	5.00	0.000	0.38	1.43	0.00	0.129	1.086	4.061	0.00	19.64
40.00	3/4" DC	Yes	5.00	0.000	0.75	1.59	0.00	0.129	1.086	4.061	0.00	42.66
40.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	1.80	0.00	0.129	1.086	4.061	0.00	38.54
40.75	Safety Cable	Yes	0.75	0.000	0.38	0.22	0.00	0.131	1.092	4.077	0.00	2.74
40.75	1 5/8" Coax	Yes	0.75	0.000	3.96	0.44	0.00	0.131	1.092	4.077	0.00	37.56
40.75	1/2" Fiber	Yes	0.75	0.000	0.38	0.22	0.00	0.131	1.092	4.077	0.00	2.96
40.75	3/4" DC	Yes	0.75	0.000	0.75	0.24	0.00	0.131	1.092	4.077	0.00	6.41
40.75	1.25" Reinforcing	Yes	0.75	0.000	1.25	0.27	0.00	0.131	1.092	4.077	0.00	5.80
45.00	Safety Cable	Yes	4.25	0.000	0.38	1.23	0.00	0.128	1.084	4.163	0.00	15.79
45.00	1 5/8" Coax	Yes	4.25	0.000	3.96	2.50	0.00	0.128	1.084	4.163	0.00	214.29
45.00	1/2" Fiber	Yes	4.25	0.000	0.38	1.23	0.00	0.128	1.084	4.163	0.00	17.03
45.00	3/4" DC	Yes	4.25	0.000	0.75	1.36	0.00	0.128	1.084	4.163	0.00	36.73
45.00	1.25" Reinforcing	Yes	3.50	0.000	1.25	1.27	0.00	0.128	1.084	4.163	0.00	27.40
50.00	Safety Cable	Yes	5.00	0.000	0.38	1.46	0.00	0.110	1.030	4.256	0.00	18.91
50.00	1 5/8" Coax	Yes	5.00	0.000	3.96	2.95	0.00	0.110	1.030	4.256	0.00	253.93
50.00	1/2" Fiber	Yes	5.00	0.000	0.38	1.46	0.00	0.110	1.030	4.256	0.00	20.40
50.00	3/4" DC	Yes	5.00	0.000	0.75	1.62	0.00	0.110	1.030	4.256	0.00	43.72
55.00	Safety Cable	Yes	5.00	0.000	0.38	1.47	0.00	0.113	1.039	4.342	0.00	19.22
55.00	1 5/8" Coax	Yes	5.00	0.000	3.96	2.97	0.00	0.113	1.039	4.342	0.00	255.60
55.00	1/2" Fiber	Yes	5.00	0.000	0.38	1.47	0.00	0.113	1.039	4.342	0.00	20.73
55.00	3/4" DC	Yes	5.00	0.000	0.75	1.63	0.00	0.113	1.039	4.342	0.00	44.18
60.00	Safety Cable	Yes	5.00	0.000	0.38	1.49	0.00	0.116	1.048	4.423	0.00	19.51
60.00	1 5/8" Coax	Yes	5.00	0.000	3.96	2.98	0.00	0.116	1.048	4.423	0.00	257.14
60.00	1/2" Fiber	Yes	5.00	0.000	0.38	1.49	0.00	0.116	1.048	4.423	0.00	21.04
60.00	3/4" DC	Yes	5.00	0.000	0.75	1.64	0.00	0.116	1.048	4.423	0.00	44.61
65.00	Safety Cable	Yes	5.00	0.000	0.38	1.50	0.00	0.119	1.058	4.498	0.00	19.78
65.00	1 5/8" Coax	Yes	5.00	0.000	3.96	2.99	0.00	0.119	1.058	4.498	0.00	258.57
65.00	1/2" Fiber	Yes	5.00	0.000	0.38	1.50	0.00	0.119	1.058	4.498	0.00	21.32
65.00	3/4" DC	Yes	5.00	0.000	0.75	1.65	0.00	0.119	1.058	4.498	0.00	45.01
70.00	Safety Cable	Yes	5.00	0.000	0.38	1.51	0.00	0.123	1.068	4.569	0.00	20.03
70.00	1 5/8" Coax	Yes	5.00	0.000	3.96	3.00	0.00	0.123	1.068	4.569	0.00	259.91
70.00	1/2" Fiber	Yes	5.00	0.000	0.38	1.51	0.00	0.123	1.068	4.569	0.00	21.60
70.00	3/4" DC	Yes	5.00	0.000	0.75	1.66	0.00	0.123	1.068	4.569	0.00	45.38
71.00	Safety Cable	Yes	1.00	0.000	0.38	0.30	0.00	0.125	1.074	4.582	0.00	4.02
71.00	1 5/8" Coax	Yes	1.00	0.000	3.96	0.60	0.00	0.125	1.074	4.582	0.00	52.03
71.00	1/2" Fiber	Yes	1.00	0.000	0.38	0.30	0.00	0.125	1.074	4.582	0.00	4.33
71.00	3/4" DC	Yes	1.00	0.000	0.75	0.33	0.00	0.125	1.074	4.582	0.00	9.09
75.00	Safety Cable	Yes	4.00	0.000	0.38	1.21	0.00	0.125	1.074	4.635	0.00	16.21
75.00	1 5/8" Coax	Yes	4.00	0.000	3.96	2.41	0.00	0.125	1.074	4.635	0.00	208.93
75.00	1/2" Fiber	Yes	4.00	0.000	0.38	1.21	0.00	0.125	1.074	4.635	0.00	17.48
75.00	3/4" DC	Yes	4.00	0.000	0.75	1.34	0.00	0.125	1.074	4.635	0.00	36.59
80.00	Safety Cable	Yes	5.00	0.000	0.38	1.52	0.00	0.128	1.084	4.699	0.00	20.49
80.00	1 5/8" Coax	Yes	5.00	0.000	3.96	3.02	0.00	0.128	1.084	4.699	0.00	262.35
80.00	1/2" Fiber	Yes	5.00	0.000	0.38	1.52	0.00	0.128	1.084	4.699	0.00	22.09
80.00	3/4" DC	Yes	5.00	0.000	0.75	1.68	0.00	0.128	1.084	4.699	0.00	46.07
85.00	Safety Cable	Yes	5.00	0.000	0.38	1.53	0.00	0.132	1.095	4.759	0.00	20.71
85.00	1 5/8" Coax	Yes	5.00	0.000	3.96	3.02	0.00	0.132	1.095	4.759	0.00	263.47

Linear Appurtenance Segment Forces (Factored)

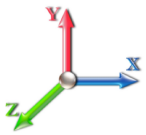
Structure:	CT01499-S-SBA	**Code:**	TIA-222-G	2/7/2022	
Site Name:	Torrington	**Exposure:**	C		
Height:	153.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 28	

Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 40 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 21

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
85.00	1/2" Fiber	Yes	5.00	0.000	0.38	1.53	0.00	0.132	1.095	4.759	0.00	22.32
85.00	3/4" DC	Yes	5.00	0.000	0.75	1.69	0.00	0.132	1.095	4.759	0.00	46.38
90.00	Safety Cable	Yes	5.00	0.000	0.38	1.54	0.00	0.136	1.107	4.817	0.00	20.91
90.00	1 5/8" Coax	Yes	5.00	0.000	3.96	3.03	0.00	0.136	1.107	4.817	0.00	264.54
90.00	1/2" Fiber	Yes	5.00	0.000	0.38	1.54	0.00	0.136	1.107	4.817	0.00	22.54
90.00	3/4" DC	Yes	5.00	0.000	0.75	1.69	0.00	0.136	1.107	4.817	0.00	46.68
95.00	Safety Cable	Yes	5.00	0.000	0.38	1.55	0.00	0.140	1.121	4.872	0.00	21.11
95.00	1 5/8" Coax	Yes	5.00	0.000	3.96	3.04	0.00	0.140	1.121	4.872	0.00	265.55
95.00	1/2" Fiber	Yes	5.00	0.000	0.38	1.55	0.00	0.140	1.121	4.872	0.00	22.75
95.00	3/4" DC	Yes	5.00	0.000	0.75	1.70	0.00	0.140	1.121	4.872	0.00	46.97
100.00	Safety Cable	Yes	5.00	0.000	0.38	1.55	0.00	0.010	0.000	4.925	0.00	21.30
105.00	Safety Cable	Yes	5.00	0.000	0.38	1.56	0.00	0.010	0.000	4.976	0.00	21.48
110.00	Safety Cable	Yes	5.00	0.000	0.38	1.57	0.00	0.011	0.000	5.025	0.00	21.65
115.00	Safety Cable	Yes	5.00	0.000	0.38	1.57	0.00	0.011	0.000	5.072	0.00	21.82
120.00	Safety Cable	Yes	5.00	0.000	0.38	1.58	0.00	0.011	0.000	5.117	0.00	21.98
123.00	Safety Cable	Yes	3.00	0.000	0.38	0.95	0.00	0.012	0.000	5.144	0.00	13.24
125.00	Safety Cable	Yes	2.00	0.000	0.38	0.63	0.00	0.012	0.000	5.162	0.00	8.85
130.00	Safety Cable	Yes	5.00	0.000	0.38	1.59	0.00	0.012	0.000	5.204	0.00	22.29
131.00	Safety Cable	Yes	1.00	0.000	0.38	0.32	0.00	0.013	0.000	5.213	0.00	4.46
135.00	Safety Cable	Yes	4.00	0.000	0.38	1.28	0.00	0.013	0.000	5.246	0.00	17.95
140.00	Safety Cable	Yes	5.00	0.000	0.38	1.60	0.00	0.013	0.000	5.286	0.00	22.57
145.00	Safety Cable	Yes	5.00	0.000	0.38	1.61	0.00	0.014	0.000	5.325	0.00	22.71
150.00	Safety Cable	Yes	5.00	0.000	0.38	1.61	0.00	0.015	0.000	5.364	0.00	22.85
153.00	Safety Cable	Yes	3.00	0.000	0.38	0.97	0.00	0.015	0.000	5.386	0.00	13.76
										Totals:	**0.0**	**6,704.8**

Calculated Forces

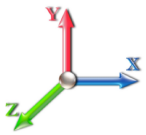
Structure:	CT01499-S-SBA	**Code:**	TIA-222-G	2/7/2022	
Site Name:	Torrington	**Exposure:**	C		
Height:	153.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 29	

Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 40 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 21

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 Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-81.32	-7.01	0.00	-726.60	0.00	726.60	4463.02	2231.51	10951.4	5483.88	0.00	0.000	0.000	0.151
5.00	-78.94	-6.94	0.00	-691.53	0.00	691.53	4413.36	2206.68	10604.1	5309.95	0.02	-0.032	0.000	0.148
10.00	-76.55	-6.87	0.00	-656.81	0.00	656.81	4361.89	2180.94	10257.6	5136.44	0.07	-0.064	0.000	0.145
15.00	-74.17	-6.80	0.00	-622.45	0.00	622.45	4308.61	2154.31	9912.23	4963.48	0.15	-0.096	0.000	0.143
20.00	-71.81	-6.71	0.00	-588.45	0.00	588.45	4253.53	2126.77	9568.22	4791.22	0.27	-0.129	0.000	0.140
21.00	-71.34	-6.70	0.00	-581.74	0.00	581.74	4242.30	2121.15	9499.61	4756.87	0.30	-0.136	0.000	0.139
25.00	-68.57	-6.63	0.00	-554.93	0.00	554.93	4196.65	2098.33	9225.87	4619.79	0.42	-0.162	0.000	0.136
27.75	-66.68	-6.56	0.00	-536.70	0.00	536.70	4164.60	2082.30	9038.39	4525.91	0.52	-0.181	0.000	0.089
28.00	-66.50	-6.56	0.00	-535.06	0.00	535.06	3213.57	1606.78	7065.87	3538.19	0.53	-0.182	0.000	0.098
30.00	-65.64	-6.53	0.00	-521.94	0.00	521.94	3199.34	1599.67	6969.21	3489.78	0.61	-0.191	0.000	0.106
35.00	-63.51	-6.41	0.00	-489.31	0.00	489.31	3162.51	1581.26	6727.41	3368.71	0.82	-0.215	0.000	0.102
40.00	-61.41	-6.29	0.00	-457.25	0.00	457.25	3123.88	1561.94	6485.64	3247.64	1.06	-0.239	0.000	0.098
40.75	-61.10	-6.28	0.00	-452.53	0.00	452.53	3117.93	1558.96	6449.39	3229.49	1.10	-0.243	0.000	0.098
40.75	-61.10	-6.28	0.00	-452.53	0.00	452.53	3117.93	1558.96	6449.39	3229.49	1.10	-0.243	0.000	0.098
45.00	-59.34	-6.19	0.00	-425.86	0.00	425.86	3083.44	1541.72	6244.17	3126.72	1.32	-0.263	0.000	0.155
50.00	-57.33	-6.09	0.00	-394.92	0.00	394.92	3041.20	1520.60	6003.26	3006.09	1.62	-0.302	0.000	0.150
55.00	-55.35	-5.99	0.00	-364.48	0.00	364.48	2997.16	1498.58	5763.21	2885.89	1.96	-0.341	0.000	0.145
60.00	-53.39	-5.88	0.00	-334.55	0.00	334.55	2951.32	1475.66	5524.28	2766.24	2.34	-0.380	0.000	0.139
65.00	-51.48	-5.78	0.00	-305.13	0.00	305.13	2903.67	1451.83	5286.75	2647.30	2.76	-0.419	0.000	0.133
70.00	-48.56	-5.59	0.00	-276.26	0.00	276.26	2854.22	1427.11	5050.90	2529.20	3.22	-0.457	0.000	0.126
71.00	-48.00	-5.58	0.00	-270.67	0.00	270.67	2869.57	1434.79	5123.02	2565.32	3.31	-0.465	0.000	0.122
75.00	-46.51	-5.49	0.00	-248.35	0.00	248.35	2829.16	1414.58	4935.24	2471.29	3.72	-0.495	0.000	0.117
80.00	-44.67	-5.37	0.00	-220.91	0.00	220.91	2777.01	1388.51	4702.41	2354.70	4.25	-0.529	0.000	0.110
85.00	-42.86	-5.25	0.00	-194.06	0.00	194.06	2723.06	1361.53	4471.94	2239.29	4.83	-0.563	0.000	0.102
90.00	-41.08	-5.13	0.00	-167.82	0.00	167.82	2667.31	1333.66	4244.12	2125.22	5.43	-0.595	0.000	0.094
95.00	-30.90	-3.94	0.00	-142.19	0.00	142.19	2609.76	1304.88	4019.22	2012.60	6.07	-0.626	0.000	0.082
100.00	-29.53	-3.82	0.00	-122.50	0.00	122.50	2550.40	1275.20	3797.52	1901.58	6.74	-0.654	0.000	0.076
105.00	-28.01	-3.63	0.00	-103.20	0.00	103.20	2489.24	1244.62	3579.29	1792.30	7.44	-0.681	0.000	0.069
110.00	-26.72	-3.52	0.00	-85.05	0.00	85.05	2426.28	1213.14	3364.80	1684.90	8.17	-0.706	0.000	0.061
115.00	-24.91	-3.40	0.00	-67.47	0.00	67.47	1783.00	891.50	2427.68	1215.65	8.92	-0.728	0.000	0.069
120.00	-23.80	-3.29	0.00	-50.48	0.00	50.48	1739.91	869.95	2280.12	1141.75	9.70	-0.748	0.000	0.058
123.00	-16.39	-2.21	0.00	-40.61	0.00	40.61	1713.19	856.59	2192.59	1097.92	10.17	-0.760	0.000	0.047
125.00	-16.01	-2.17	0.00	-36.19	0.00	36.19	1695.01	847.51	2134.69	1068.93	10.49	-0.767	0.000	0.043
130.00	-15.08	-2.06	0.00	-25.33	0.00	25.33	1648.31	824.16	1991.67	997.31	11.30	-0.782	0.000	0.035
131.00	-8.26	-1.24	0.00	-23.26	0.00	23.26	1638.75	819.38	1963.38	983.15	11.47	-0.785	0.000	0.029
135.00	-7.60	-1.15	0.00	-18.32	0.00	18.32	1599.81	799.90	1851.33	927.04	12.13	-0.794	0.000	0.025
140.00	-6.80	-1.05	0.00	-12.56	0.00	12.56	1549.50	774.75	1713.96	858.25	12.96	-0.804	0.000	0.019
145.00	-6.03	-0.95	0.00	-7.31	0.00	7.31	1497.39	748.69	1579.82	791.09	13.81	-0.811	0.000	0.013
150.00	-5.30	-0.85	0.00	-2.56	0.00	2.56	1443.48	721.74	1449.20	725.68	14.66	-0.815	0.000	0.007
150.00	-5.30	-0.85	0.00	-2.56	0.00	2.56	1443.48	721.74	1449.20	725.68	14.66	-0.815	0.000	0.007
153.00	0.00	-0.78	0.00	0.00	0.00	0.00	1400.09	700.04	1362.73	682.38	15.18	-0.816	0.000	0.000

Seismic Segment Forces (Factored)

Structure:	CT01499-S-SBA	**Code:**	TIA-222-G	2/7/2022	
Site Name:	Torrington	**Exposure:**	C		
Height:	153.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 30	

Tower Engineering Solutions

Load Case:	1.2D + 1.0E							**Iterations**	19
Gust Response Factor	1.10				**Sds**	0.12		**Ss**	0.18
Dead Load Factor	1.20	**Seismic Load Factor**	1.00		**Sd1**	0.04		**S1**	0.07
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.40		**SA**	0.02	**Seismic Importance Factor**		1.00

Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1194.9	0.00	0.03	0.02	15.70	
10.00		1169.9	0.01	0.05	0.03	21.70	
15.00		1144.9	0.02	0.06	0.04	24.20	
20.00		1119.9	0.03	0.07	0.04	25.14	
21.00	Bot - Section 2	221.00	0.04	0.07	0.04	5.00	
25.00		1611.6	0.05	0.07	0.04	37.40	
27.75	RB1	1090.9	0.06	0.07	0.04	25.67	
28.00	Top - Section 1	98.49	0.06	0.07	0.04	2.32	
30.00		358.81	0.07	0.07	0.04	8.53	
35.00		882.46	0.10	0.07	0.04	21.49	
40.00		861.64	0.13	0.07	0.03	21.50	
40.75	RT1	127.45	0.13	0.07	0.03	3.19	
45.00		713.37	0.16	0.07	0.03	18.16	
50.00		820.00	0.20	0.06	0.02	21.02	
55.00		799.19	0.24	0.06	0.02	20.06	
60.00		778.37	0.29	0.05	0.01	18.15	
65.00	Bot - Section 3	757.55	0.34	0.04	0.01	14.86	
70.00	Appurtenance(s)	1534.0	0.40	0.02	0.01	20.61	
71.00	Top - Section 2	291.81	0.41	0.02	0.01	3.47	
75.00		579.50	0.45	0.00	0.01	2.75	
80.00		705.64	0.52	-0.02	0.01	-3.82	
85.00		684.82	0.58	-0.05	0.01	-10.39	
90.00		664.01	0.65	-0.07	0.02	-15.06	
95.00	Appurtenance(s)	3898.9	0.73	-0.10	0.04	-105.29	
100.00		622.37	0.81	-0.11	0.06	-17.39	
105.00	Appurtenance(s)	666.55	0.89	-0.12	0.08	-17.08	
110.00	Bot - Section 4	580.73	0.98	-0.11	0.12	-11.74	
115.00	Top - Section 3	1015.4	1.07	-0.09	0.17	-12.02	
120.00		438.87	1.16	-0.03	0.23	-0.23	
123.00	Appurtenance(s)	2601.0	1.22	0.03	0.27	19.94	
125.00		166.89	1.26	0.07	0.30	2.29	
130.00		405.56	1.36	0.22	0.40	12.56	
131.00	Appurtenance(s)	2996.2	1.39	0.26	0.42	104.20	
135.00		309.79	1.47	0.43	0.51	15.88	
140.00		372.25	1.58	0.73	0.65	27.80	
145.00		355.60	1.70	1.11	0.81	36.02	
150.00	Top - Section 4	338.95	1.82	1.62	1.01	44.48	
153.00	Appurtenance(s)	2270.7	1.89	1.98	1.14	342.40	
	Totals:	**35,250.5**				**743.5**	**Total Wind:** **36,553.5**

Calculated Forces

Structure:	CT01499-S-SBA	**Code:**	TIA-222-G	2/7/2022	
Site Name:	Torrington	**Exposure:**	C		
Height:	153.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 31	

IES Tower Engineering Solutions

Load Case: 1.2D + 1.0E

Iterations 19

Gust Response Factor	1.10			**Sds**	0.12			**Ss**	0.18
Dead Load Factor	1.20	**Seismic Load Factor**	1.00	**Sd1**	0.04			**S1**	0.07
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.40	**SA**	0.02	**Seismic Importance Factor**			1.00

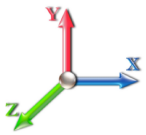
Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-49.05	-0.94	0.00	-103.61	0.00	103.61	4463.02	2231.51	10951.4	5483.88		0.00	0.00	0.030
5.00	-47.33	-0.93	0.00	-98.92	0.00	98.92	4413.36	2206.68	10604.1	5309.95		0.00	0.00	0.029
10.00	-45.64	-0.91	0.00	-94.30	0.00	94.30	4361.89	2180.94	10257.6	5136.44		0.01	-0.01	0.029
15.00	-43.98	-0.89	0.00	-89.76	0.00	89.76	4308.61	2154.31	9912.23	4963.48		0.02	-0.01	0.028
20.00	-42.35	-0.86	0.00	-85.33	0.00	85.33	4253.53	2126.77	9568.22	4791.22		0.04	-0.02	0.028
21.00	-42.03	-0.86	0.00	-84.47	0.00	84.47	4242.30	2121.15	9499.61	4756.87		0.04	-0.02	0.028
25.00	-39.87	-0.82	0.00	-81.03	0.00	81.03	4196.65	2098.33	9225.87	4619.79		0.06	-0.02	0.027
27.75	-38.40	-0.80	0.00	-78.77	0.00	78.77	4164.60	2082.30	9038.39	4525.91		0.07	-0.03	0.018
28.00	-38.27	-0.80	0.00	-78.57	0.00	78.57	3213.57	1606.78	7065.87	3538.19		0.08	-0.03	0.019
30.00	-37.72	-0.79	0.00	-76.98	0.00	76.98	3199.34	1599.67	6969.21	3489.78		0.09	-0.03	0.021
35.00	-36.38	-0.77	0.00	-73.03	0.00	73.03	3162.51	1581.26	6727.41	3368.71		0.12	-0.03	0.021
40.00	-35.06	-0.75	0.00	-69.19	0.00	69.19	3123.88	1561.94	6485.64	3247.64		0.15	-0.03	0.020
40.75	-34.86	-0.75	0.00	-68.62	0.00	68.62	3117.93	1558.96	6449.39	3229.49		0.16	-0.04	0.020
40.75	-34.86	-0.75	0.00	-68.62	0.00	68.62	3117.93	1558.96	6449.39	3229.49		0.16	-0.04	0.020
45.00	-33.77	-0.73	0.00	-65.45	0.00	65.45	3083.44	1541.72	6244.17	3126.72		0.19	-0.04	0.032
50.00	-32.50	-0.71	0.00	-61.80	0.00	61.80	3041.20	1520.60	6003.26	3006.09		0.23	-0.04	0.031
55.00	-31.25	-0.69	0.00	-58.25	0.00	58.25	2997.16	1498.58	5763.21	2885.89		0.28	-0.05	0.031
60.00	-30.03	-0.68	0.00	-54.78	0.00	54.78	2951.32	1475.66	5524.28	2766.24		0.34	-0.06	0.030
65.00	-28.84	-0.66	0.00	-51.39	0.00	51.39	2903.67	1451.83	5286.75	2647.30		0.40	-0.06	0.029
70.00	-26.71	-0.64	0.00	-48.07	0.00	48.07	2854.22	1427.11	5050.90	2529.20		0.47	-0.07	0.028
71.00	-26.31	-0.64	0.00	-47.42	0.00	47.42	2869.57	1434.79	5123.02	2565.32		0.49	-0.07	0.028
75.00	-25.38	-0.64	0.00	-44.86	0.00	44.86	2829.16	1414.58	4935.24	2471.29		0.55	-0.08	0.027
80.00	-24.25	-0.64	0.00	-41.66	0.00	41.66	2777.01	1388.51	4702.41	2354.70		0.63	-0.08	0.026
85.00	-23.14	-0.64	0.00	-38.45	0.00	38.45	2723.06	1361.53	4471.94	2239.29		0.73	-0.09	0.026
90.00	-22.06	-0.64	0.00	-35.24	0.00	35.24	2667.31	1333.66	4244.12	2125.22		0.82	-0.10	0.025
95.00	-17.10	-0.64	0.00	-32.03	0.00	32.03	2609.76	1304.88	4019.22	2012.60		0.93	-0.10	0.022
100.00	-16.15	-0.64	0.00	-28.85	0.00	28.85	2550.40	1275.20	3797.52	1901.58		1.04	-0.11	0.022
105.00	-15.15	-0.64	0.00	-25.67	0.00	25.67	2489.24	1244.62	3579.29	1792.30		1.16	-0.12	0.020
110.00	-14.26	-0.64	0.00	-22.48	0.00	22.48	2426.28	1213.14	3364.80	1684.90		1.28	-0.12	0.019
115.00	-12.84	-0.63	0.00	-19.31	0.00	19.31	1783.00	891.50	2427.68	1215.65		1.41	-0.13	0.023
120.00	-12.11	-0.63	0.00	-16.13	0.00	16.13	1739.91	869.95	2280.12	1141.75		1.55	-0.13	0.021
123.00	-8.87	-0.61	0.00	-14.23	0.00	14.23	1713.19	856.59	2192.59	1097.92		1.63	-0.14	0.018
125.00	-8.64	-0.60	0.00	-13.02	0.00	13.02	1695.01	847.51	2134.69	1068.93		1.69	-0.14	0.017
130.00	-8.06	-0.59	0.00	-10.00	0.00	10.00	1648.31	824.16	1991.67	997.31		1.84	-0.15	0.015
131.00	-4.45	-0.48	0.00	-9.41	0.00	9.41	1638.75	819.38	1963.38	983.15		1.87	-0.15	0.012
135.00	-4.07	-0.46	0.00	-7.50	0.00	7.50	1599.81	799.90	1851.33	927.04		2.00	-0.15	0.011
140.00	-3.60	-0.43	0.00	-5.19	0.00	5.19	1549.50	774.75	1713.96	858.25		2.16	-0.16	0.008
145.00	-3.16	-0.40	0.00	-3.03	0.00	3.03	1497.39	748.69	1579.82	791.09		2.32	-0.16	0.006
150.00	-2.73	-0.35	0.00	-1.05	0.00	1.05	1443.48	721.74	1449.20	725.68		2.49	-0.16	0.003
150.00	-2.73	-0.35	0.00	-1.05	0.00	1.05	1443.48	721.74	1449.20	725.68		2.49	-0.16	0.003
153.00	0.00	-0.34	0.00	0.00	0.00	0.00	1400.09	700.04	1362.73	682.38		2.59	-0.16	0.000

Seismic Segment Forces (Factored)

Structure:	CT01499-S-SBA	**Code:**	TIA-222-G	2/7/2022	
Site Name:	Torrington	**Exposure:**	C		
Height:	153.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 32	

IES Tower Engineering Solutions

Load Case: 0.9D + 1.0E



Gust Response Factor	1.10			**Sds**	0.12	**Iterations**	19		
Dead Load Factor	0.90	**Seismic Load Factor**	1.00	**Sd1**	0.04	**Ss**	0.18		
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.40	**SA**	0.02	**S1**	0.07		
						Seismic Importance Factor	1.00		

Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1194.9	0.00	0.03	0.02	15.70	
10.00		1169.9	0.01	0.05	0.03	21.70	
15.00		1144.9	0.02	0.06	0.04	24.20	
20.00		1119.9	0.03	0.07	0.04	25.14	
21.00	Bot - Section 2	221.00	0.04	0.07	0.04	5.00	
25.00		1611.6	0.05	0.07	0.04	37.40	
27.75	RB1	1090.9	0.06	0.07	0.04	25.67	
28.00	Top - Section 1	98.49	0.06	0.07	0.04	2.32	
30.00		358.81	0.07	0.07	0.04	8.53	
35.00		882.46	0.10	0.07	0.04	21.49	
40.00		861.64	0.13	0.07	0.03	21.50	
40.75	RT1	127.45	0.13	0.07	0.03	3.19	
45.00		713.37	0.16	0.07	0.03	18.16	
50.00		820.00	0.20	0.06	0.02	21.02	
55.00		799.19	0.24	0.06	0.02	20.06	
60.00		778.37	0.29	0.05	0.01	18.15	
65.00	Bot - Section 3	757.55	0.34	0.04	0.01	14.86	
70.00	Appurtenance(s)	1534.0	0.40	0.02	0.01	20.61	
71.00	Top - Section 2	291.81	0.41	0.02	0.01	3.47	
75.00		579.50	0.45	0.00	0.01	2.75	
80.00		705.64	0.52	-0.02	0.01	-3.82	
85.00		684.82	0.58	-0.05	0.01	-10.39	
90.00		664.01	0.65	-0.07	0.02	-15.06	
95.00	Appurtenance(s)	3898.9	0.73	-0.10	0.04	-105.29	
100.00		622.37	0.81	-0.11	0.06	-17.39	
105.00	Appurtenance(s)	666.55	0.89	-0.12	0.08	-17.08	
110.00	Bot - Section 4	580.73	0.98	-0.11	0.12	-11.74	
115.00	Top - Section 3	1015.4	1.07	-0.09	0.17	-12.02	
120.00		438.87	1.16	-0.03	0.23	-0.23	
123.00	Appurtenance(s)	2601.0	1.22	0.03	0.27	19.94	
125.00		166.89	1.26	0.07	0.30	2.29	
130.00		405.56	1.36	0.22	0.40	12.56	
131.00	Appurtenance(s)	2996.2	1.39	0.26	0.42	104.20	
135.00		309.79	1.47	0.43	0.51	15.88	
140.00		372.25	1.58	0.73	0.65	27.80	
145.00		355.60	1.70	1.11	0.81	36.02	
150.00	Top - Section 4	338.95	1.82	1.62	1.01	44.48	
153.00	Appurtenance(s)	2270.7	1.89	1.98	1.14	342.40	
	Totals:	**35,250.5**				**743.5**	**Total Wind:** **36,553.5**

Calculated Forces

Structure:	CT01499-S-SBA	**Code:**	TIA-222-G	2/7/2022	
Site Name:	Torrington	**Exposure:**	C		
Height:	153.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 33	

Tower Engineering Solutions

Load Case: 0.9D + 1.0E

Iterations 19

Gust Response Factor	1.10			**Sds**	0.12			**Ss**	0.18
Dead Load Factor	0.90	**Seismic Load Factor**	1.00	**Sd1**	0.04			**S1**	0.07
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.40	**SA**	0.02			**Seismic Importance Factor**	1.00

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 Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-36.79	-0.94	0.00	-102.71	0.00	102.71	4463.02	2231.51	10951.4	5483.88		0.00	0.00	0.027
5.00	-35.50	-0.92	0.00	-98.03	0.00	98.03	4413.36	2206.68	10604.1	5309.95		0.00	0.00	0.027
10.00	-34.23	-0.90	0.00	-93.41	0.00	93.41	4361.89	2180.94	10257.6	5136.44		0.01	-0.01	0.026
15.00	-32.98	-0.88	0.00	-88.88	0.00	88.88	4308.61	2154.31	9912.23	4963.48		0.02	-0.01	0.026
20.00	-31.76	-0.86	0.00	-84.47	0.00	84.47	4253.53	2126.77	9568.22	4791.22		0.04	-0.02	0.025
21.00	-31.52	-0.86	0.00	-83.61	0.00	83.61	4242.30	2121.15	9499.61	4756.87		0.04	-0.02	0.025
25.00	-29.90	-0.82	0.00	-80.19	0.00	80.19	4196.65	2098.33	9225.87	4619.79		0.06	-0.02	0.024
27.75	-28.80	-0.79	0.00	-77.94	0.00	77.94	4164.60	2082.30	9038.39	4525.91		0.07	-0.03	0.016
28.00	-28.70	-0.79	0.00	-77.74	0.00	77.74	3213.57	1606.78	7065.87	3538.19		0.08	-0.03	0.018
30.00	-28.29	-0.78	0.00	-76.15	0.00	76.15	3199.34	1599.67	6969.21	3489.78		0.09	-0.03	0.019
35.00	-27.28	-0.76	0.00	-72.23	0.00	72.23	3162.51	1581.26	6727.41	3368.71		0.12	-0.03	0.019
40.00	-26.30	-0.74	0.00	-68.42	0.00	68.42	3123.88	1561.94	6485.64	3247.64		0.15	-0.03	0.018
40.75	-26.15	-0.74	0.00	-67.86	0.00	67.86	3117.93	1558.96	6449.39	3229.49		0.16	-0.03	0.018
40.75	-26.15	-0.74	0.00	-67.86	0.00	67.86	3117.93	1558.96	6449.39	3229.49		0.16	-0.03	0.018
45.00	-25.32	-0.72	0.00	-64.71	0.00	64.71	3083.44	1541.72	6244.17	3126.72		0.19	-0.04	0.029
50.00	-24.37	-0.70	0.00	-61.10	0.00	61.10	3041.20	1520.60	6003.26	3006.09		0.23	-0.04	0.028
55.00	-23.44	-0.69	0.00	-57.57	0.00	57.57	2997.16	1498.58	5763.21	2885.89		0.28	-0.05	0.028
60.00	-22.53	-0.67	0.00	-54.14	0.00	54.14	2951.32	1475.66	5524.28	2766.24		0.34	-0.06	0.027
65.00	-21.63	-0.66	0.00	-50.79	0.00	50.79	2903.67	1451.83	5286.75	2647.30		0.40	-0.06	0.027
70.00	-20.04	-0.64	0.00	-47.51	0.00	47.51	2854.22	1427.11	5050.90	2529.20		0.47	-0.07	0.026
71.00	-19.73	-0.63	0.00	-46.88	0.00	46.88	2869.57	1434.79	5123.02	2565.32		0.48	-0.07	0.025
75.00	-19.04	-0.63	0.00	-44.35	0.00	44.35	2829.16	1414.58	4935.24	2471.29		0.55	-0.08	0.025
80.00	-18.19	-0.63	0.00	-41.19	0.00	41.19	2777.01	1388.51	4702.41	2354.70		0.63	-0.08	0.024
85.00	-17.36	-0.63	0.00	-38.04	0.00	38.04	2723.06	1361.53	4471.94	2239.29		0.72	-0.09	0.023
90.00	-16.55	-0.63	0.00	-34.87	0.00	34.87	2667.31	1333.66	4244.12	2125.22		0.81	-0.10	0.023
95.00	-12.82	-0.63	0.00	-31.71	0.00	31.71	2609.76	1304.88	4019.22	2012.60		0.92	-0.10	0.021
100.00	-12.11	-0.63	0.00	-28.57	0.00	28.57	2550.40	1275.20	3797.52	1901.58		1.03	-0.11	0.020
105.00	-11.36	-0.63	0.00	-25.43	0.00	25.43	2489.24	1244.62	3579.29	1792.30		1.14	-0.11	0.019
110.00	-10.69	-0.63	0.00	-22.29	0.00	22.29	2426.28	1213.14	3364.80	1684.90		1.27	-0.12	0.018
115.00	-9.63	-0.63	0.00	-19.15	0.00	19.15	1783.00	891.50	2427.68	1215.65		1.40	-0.13	0.021
120.00	-9.08	-0.63	0.00	-16.01	0.00	16.01	1739.91	869.95	2280.12	1141.75		1.53	-0.13	0.019
123.00	-6.65	-0.60	0.00	-14.13	0.00	14.13	1713.19	856.59	2192.59	1097.92		1.62	-0.14	0.017
125.00	-6.48	-0.60	0.00	-12.93	0.00	12.93	1695.01	847.51	2134.69	1068.93		1.67	-0.14	0.016
130.00	-6.05	-0.59	0.00	-9.94	0.00	9.94	1648.31	824.16	1991.67	997.31		1.82	-0.14	0.014
131.00	-3.34	-0.47	0.00	-9.35	0.00	9.35	1638.75	819.38	1963.38	983.15		1.85	-0.15	0.012
135.00	-3.05	-0.46	0.00	-7.45	0.00	7.45	1599.81	799.90	1851.33	927.04		1.98	-0.15	0.010
140.00	-2.70	-0.43	0.00	-5.16	0.00	5.16	1549.50	774.75	1713.96	858.25		2.14	-0.15	0.008
145.00	-2.37	-0.39	0.00	-3.01	0.00	3.01	1497.39	748.69	1579.82	791.09		2.30	-0.16	0.005
150.00	-2.05	-0.35	0.00	-1.04	0.00	1.04	1443.48	721.74	1449.20	725.68		2.46	-0.16	0.003
150.00	-2.05	-0.35	0.00	-1.04	0.00	1.04	1443.48	721.74	1449.20	725.68		2.46	-0.16	0.003
153.00	0.00	-0.34	0.00	0.00	0.00	0.00	1400.09	700.04	1362.73	682.38		2.56	-0.16	0.000

Wind Loading - Shaft

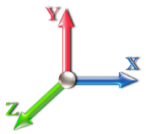
Structure:	CT01499-S-SBA	**Code:**	TIA-222-G	2/7/2022	
Site Name:	Torrington	**Exposure:**	C		
Height:	153.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 34	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 21

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	7.442	8.19	280.85	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	7.442	8.19	275.08	0.650	0.000	5.00	25.125	16.33	133.7	0.0	1194.9
10.00		1.00	0.85	7.442	8.19	269.30	0.650	0.000	5.00	24.603	15.99	130.9	0.0	1169.9
15.00		1.00	0.85	7.442	8.19	263.53	0.650	0.000	5.00	24.081	15.65	128.1	0.0	1145.0
20.00		1.00	0.90	7.896	8.69	265.50	0.650	0.000	5.00	23.559	15.31	133.0	0.0	1120.0
21.00	Bot - Section 2	1.00	0.91	7.978	8.78	265.68	0.650	0.000	1.00	4.649	3.02	26.5	0.0	221.0
25.00		1.00	0.95	8.276	9.10	265.73	0.657 *	0.000	4.00	18.599	12.21	111.2	0.0	1611.6
27.75	RB1	1.00	0.97	8.460	9.31	265.27	0.696 *	0.000	2.75	12.593	8.77	81.6	0.0	1091.0
28.00	Top - Section 1	1.00	0.97	8.476	9.32	265.22	0.698 *	0.000	0.25	1.137	0.79	7.4	0.0	98.5
30.00		1.00	0.98	8.600	9.46	267.81	0.696 *	0.000	2.00	9.049	6.30	59.6	0.0	358.8
35.00		1.00	1.01	8.883	9.77	265.88	0.700 *	0.000	5.00	22.257	15.59	152.3	0.0	882.5
40.00		1.00	1.04	9.137	10.05	263.25	0.706 *	0.000	5.00	21.735	15.35	154.3	0.0	861.6
40.75	RT1	1.00	1.05	9.173	10.09	262.80	0.710 *	0.000	0.75	3.215	2.28	23.0	0.0	127.5
45.00		1.00	1.07	9.366	10.30	260.05	0.704 *	0.000	4.25	17.998	12.68	130.6	0.0	713.4
50.00		1.00	1.09	9.576	10.53	256.40	0.670 *	0.000	5.00	20.692	13.86	146.0	0.0	820.0
55.00		1.00	1.12	9.770	10.75	252.37	0.675 *	0.000	5.00	20.170	13.62	146.4	0.0	799.2
60.00		1.00	1.14	9.951	10.95	248.02	0.681 *	0.000	5.00	19.648	13.38	146.5	0.0	778.4
65.00	Bot - Section 3	1.00	1.16	10.120	11.13	243.38	0.687 *	0.000	5.00	19.126	13.15	146.3	0.0	757.6
70.00	Appurtenance(s)	1.00	1.17	10.279	11.31	238.50	0.694 *	0.000	5.00	18.868	13.09	148.0	0.0	1484.0
71.00	Top - Section 2	1.00	1.18	10.310	11.34	237.50	0.698 *	0.000	1.00	3.711	2.59	29.4	0.0	291.8
75.00		1.00	1.19	10.430	11.47	236.87	0.698 *	0.000	4.00	14.635	10.21	117.2	0.0	579.5
80.00		1.00	1.21	10.572	11.63	231.60	0.704 *	0.000	5.00	17.824	12.55	146.0	0.0	705.6
85.00		1.00	1.22	10.708	11.78	226.15	0.712 *	0.000	5.00	17.302	12.32	145.1	0.0	684.8
90.00		1.00	1.24	10.838	11.92	220.55	0.720 *	0.000	5.00	16.780	12.08	144.0	0.0	664.0
95.00	Appurtenance(s)	1.00	1.25	10.962	12.06	214.80	0.728 *	0.000	5.00	16.258	11.84	142.8	0.0	643.2
100.00		1.00	1.27	11.081	12.19	208.92	0.650	0.000	5.00	15.736	10.23	124.7	0.0	622.4
105.00	Appurtenance(s)	1.00	1.28	11.195	12.31	202.91	0.650	0.000	5.00	15.214	9.89	121.8	0.0	601.6
110.00	Bot - Section 4	1.00	1.29	11.305	12.44	196.79	0.650	0.000	5.00	14.693	9.55	118.8	0.0	580.7
115.00	Top - Section 3	1.00	1.30	11.412	12.55	190.56	0.650	0.000	5.00	14.382	9.35	117.3	0.0	1015.4
120.00		1.00	1.32	11.514	12.67	187.15	0.650	0.000	5.00	13.860	9.01	114.1	0.0	438.9
123.00	Appurtenance(s)	1.00	1.32	11.574	12.73	183.31	0.650	0.000	3.00	8.066	5.24	66.7	0.0	255.3
125.00		1.00	1.33	11.614	12.78	180.74	0.650	0.000	2.00	5.273	3.43	43.8	0.0	166.9
130.00		1.00	1.34	11.710	12.88	174.24	0.650	0.000	5.00	12.816	8.33	107.3	0.0	405.6
131.00	Appurtenance(s)	1.00	1.34	11.729	12.90	172.93	0.650	0.000	1.00	2.501	1.63	21.0	0.0	79.1
135.00		1.00	1.35	11.803	12.98	167.66	0.650	0.000	4.00	9.794	6.37	82.7	0.0	309.8
140.00		1.00	1.36	11.894	13.08	161.01	0.650	0.000	5.00	11.772	7.65	100.1	0.0	372.3
145.00		1.00	1.37	11.982	13.18	154.27	0.650	0.000	5.00	11.250	7.31	96.4	0.0	355.6
150.00	Top - Section 4	1.00	1.38	12.068	13.27	147.47	0.650	0.000	5.00	10.728	6.97	92.6	0.0	338.9
153.00	Appurtenance(s)	1.00	1.38	12.119	13.33	143.36	0.650	0.000	3.00	6.187	4.02	53.6	0.0	195.4
								Totals:	**153.00**			**3,990.8**		**24,541.5**

* Cf Adjusted by Linear Load Ra Effect

Discrete Appurtenance Forces

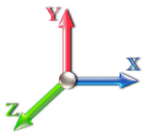
Structure:	CT01499-S-SBA	**Code:**	TIA-222-G	2/7/2022	
Site Name:	Torrington	**Exposure:**	C		
Height:	153.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 35	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 21

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	153.00	800 MHz RRUs	3	12.119	13.330	0.83	0.90	6.19	159.00	0.000	0.000	82.45	0.00	0.00
2	153.00	APXVTM14-C-I20	3	12.119	13.330	0.71	0.90	13.52	168.00	0.000	0.000	180.27	0.00	0.00
3	153.00	APXVSPP18-C-A20	3	12.119	13.330	0.75	0.90	17.97	171.00	0.000	0.000	239.59	0.00	0.00
4	153.00	1900 MHz RRUs	3	12.119	13.330	0.79	0.90	9.03	132.00	0.000	0.000	120.36	0.00	0.00
5	153.00	Lightning Rod	1	12.119	13.330	1.00	1.00	0.50	5.00	0.000	0.000	6.67	0.00	0.00
6	153.00	800 MHz Filters	3	12.119	13.330	0.62	0.90	1.45	26.40	0.000	0.000	19.37	0.00	0.00
7	153.00	ACU-A20-N	4	12.119	13.330	0.81	0.90	0.45	4.00	0.000	0.000	6.05	0.00	0.00
8	153.00	TD-RRH8x20-25	3	12.119	13.330	0.62	0.90	7.55	210.00	0.000	0.000	100.58	0.00	0.00
9	153.00	Low Profile Platform	1	12.119	13.330	1.00	1.00	25.00	1200.00	0.000	0.000	333.26	0.00	0.00
10	131.00	VV-65A-R1	3	11.729	12.902	0.59	0.80	14.03	71.43	0.000	0.000	181.02	0.00	0.00
11	131.00	APXVAALL24_43-U-NA20	3	11.729	12.902	0.58	0.80	35.46	368.40	0.000	0.000	457.50	0.00	0.00
12	131.00	4449 B71 + B85	3	11.729	12.902	0.54	0.80	3.17	225.00	0.000	0.000	40.87	0.00	0.00
13	131.00	AIR6449 B41	3	11.729	12.902	0.57	0.80	9.63	309.00	0.000	0.000	124.21	0.00	0.00
14	131.00	KRY 112 144/1	3	11.729	12.902	0.54	0.80	0.66	33.00	0.000	0.000	8.51	0.00	0.00
15	131.00	4460 B25 + B66	3	11.729	12.902	0.54	0.80	4.58	312.00	0.000	0.000	59.13	0.00	0.00
16	131.00	T-Arms	3	11.729	12.902	0.56	0.75	13.50	1050.00	0.000	0.000	174.17	0.00	0.00
17	131.00	(3) T-Arm Kit	1	11.729	12.902	0.75	0.75	12.38	500.00	0.000	0.000	159.66	0.00	0.00
18	131.00	KRY 112 489/2	3	11.729	12.902	0.54	0.80	1.13	48.30	0.000	0.000	14.52	0.00	0.00
19	123.00	Low Profile Platform	1	11.574	12.732	1.00	1.00	25.00	1200.00	0.000	0.000	318.29	0.00	0.00
20	123.00	RFS DB-T1-6Z-8AB-0Z	2	11.574	12.732	0.57	0.80	5.45	37.80	0.000	0.000	69.42	0.00	0.00
21	123.00	B5/B13 RRH-BR04C	3	11.574	12.732	0.54	0.80	3.01	210.90	0.000	0.000	38.28	0.00	0.00
22	123.00	B2/B66A RRH-BR049	3	11.574	12.732	0.54	0.80	3.01	253.20	0.000	0.000	38.28	0.00	0.00
23	123.00	LPA-80063-6CF-EDIN-5	6	11.574	12.732	0.74	0.80	43.57	162.00	0.000	0.000	554.71	0.00	0.00
24	123.00	MT6407-77A	3	11.574	12.732	0.56	0.80	7.88	238.20	0.000	0.000	100.32	0.00	0.00
25	123.00	SBNHH-1D65B	6	11.574	12.732	0.66	0.80	32.19	243.60	0.000	0.000	409.85	0.00	0.00
26	105.00	Standoff	1	11.195	12.315	1.00	1.00	2.63	40.00	0.000	0.000	32.39	0.00	0.00
27	105.00	10' Omni	1	11.305	12.436	1.00	1.00	3.00	25.00	0.000	5.000	37.31	0.00	186.54
28	95.00	LGP17201	6	10.962	12.058	0.80	0.80	9.36	186.00	0.000	0.000	112.86	0.00	0.00
29	95.00	RRUS-11	3	10.962	12.058	0.54	0.80	7.21	165.00	0.000	0.000	86.98	0.00	0.00
30	95.00	LGP21901	6	10.962	12.058	0.60	0.80	0.83	33.00	0.000	0.000	9.98	0.00	0.00
31	95.00	RRUS-12	3	10.962	12.058	0.54	0.80	5.07	180.00	0.000	0.000	61.08	0.00	0.00
32	95.00	AM-X-CW-16-65-00T-RET	2	10.962	12.058	0.60	0.80	9.62	83.60	0.000	0.000	116.05	0.00	0.00
33	95.00	SBNH-1D65A	2	10.962	12.058	0.72	0.80	7.75	76.80	0.000	0.000	93.42	0.00	0.00
34	95.00	7770	3	10.962	12.058	0.58	0.80	9.64	105.00	0.000	0.000	116.19	0.00	0.00
35	95.00	HPA-65R-BUU-H6	4	10.962	12.058	0.72	0.80	27.82	204.00	0.000	0.000	335.46	0.00	0.00
36	95.00	RRUS-32	3	10.962	12.058	0.70	0.80	8.08	231.00	0.000	0.000	97.43	0.00	0.00
37	95.00	RRUS-A2	3	10.962	12.058	0.50	0.80	2.77	63.60	0.000	0.000	33.37	0.00	0.00
38	95.00	RRUS-E2	3	10.962	12.058	0.56	0.80	4.72	171.90	0.000	0.000	56.92	0.00	0.00
39	95.00	1000860	3	10.962	12.058	1.00	1.00	0.18	6.00	0.000	0.000	2.17	0.00	0.00
40	95.00	Raycap/Squid	2	10.962	12.058	0.72	0.80	2.12	63.60	0.000	0.000	25.52	0.00	0.00
41	95.00	Sector Frame	3	10.962	12.058	0.56	0.75	29.53	1500.00	0.000	0.000	356.09	0.00	0.00
42	95.00	800 10764	1	10.962	12.058	0.60	0.80	3.53	40.80	0.000	0.000	42.54	0.00	0.00
43	95.00	4426 B66	3	10.962	12.058	0.58	0.80	2.01	145.50	0.000	0.000	24.29	0.00	0.00
44	70.00	Standoff	1	10.279	11.307	1.00	1.00	2.63	40.00	0.000	0.000	29.74	0.00	0.00
45	70.00	GPS	1	10.279	11.307	1.00	1.00	1.00	10.00	0.000	0.000	11.31	0.00	0.00
							Totals:		**10,709.03**			**5,518.43**		

Total Applied Force Summary

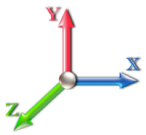
Structure:	CT01499-S-SBA		**Code:**	TIA-222-G	2/7/2022
Site Name:	Torrington		**Exposure:**	C	
Height:	153.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	B - Competent Rock	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 36

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 21

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		133.69	1432.48	0.00	0.00
10.00		130.91	1407.50	0.00	0.00
15.00		128.13	1382.52	0.00	0.00
20.00		133.01	1357.54	0.00	0.00
21.00		26.52	268.51	0.00	0.00
25.00		111.18	1801.66	0.00	0.00
27.75		81.59	1221.64	0.00	0.00
28.00		7.40	110.37	0.00	0.00
30.00		59.61	453.84	0.00	0.00
35.00		152.31	1120.02	0.00	0.00
40.00		154.27	1099.21	0.00	0.00
40.75		23.02	163.09	0.00	0.00
45.00		130.62	915.30	0.00	0.00
50.00		145.99	1057.57	0.00	0.00
55.00		146.40	1036.75	0.00	0.00
60.00		146.50	1015.93	0.00	0.00
65.00		146.35	995.12	0.00	0.00
70.00	(2) attachments	189.08	1771.58	0.00	0.00
71.00		29.38	339.32	0.00	0.00
75.00		117.19	769.56	0.00	0.00
80.00		146.00	943.21	0.00	0.00
85.00		145.08	922.39	0.00	0.00
90.00		144.00	901.57	0.00	0.00
95.00	(50) attachments	1713.14	4136.55	0.00	0.00
100.00		124.68	788.94	0.00	0.00
105.00	(2) attachments	191.48	833.12	0.00	186.54
110.00		118.76	746.50	0.00	0.00
115.00		117.35	1181.21	0.00	0.00
120.00		114.11	604.64	0.00	0.00
123.00	(24) attachments	1595.90	2700.49	0.00	0.00
125.00		43.78	195.51	0.00	0.00
130.00		107.31	477.13	0.00	0.00
131.00	(25) attachments	1240.56	3010.56	0.00	0.00
135.00		82.65	321.45	0.00	0.00
140.00		100.12	386.82	0.00	0.00
145.00		96.39	370.17	0.00	0.00
150.00		92.57	353.51	0.00	0.00
153.00	(24) attachments	1142.19	2279.51	0.00	0.00
	Totals:	**9,509.23**	**40,872.76**	**0.00**	**186.54**

Linear Appurtenance Segment Forces (Factored)

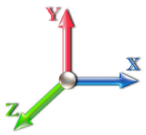
Structure:	CT01499-S-SBA	**Code:**	TIA-222-G	2/7/2022	
Site Name:	Torrington	**Exposure:**	C		
Height:	153.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 37	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 21

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.091	0.000	7.442	0.00	1.37
5.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.091	0.000	7.442	0.00	62.40
5.00	1/2" Fiber	Yes	5.00	0.000	0.38	0.16	0.00	0.091	0.000	7.442	0.00	0.60
5.00	3/4" DC	Yes	5.00	0.000	0.75	0.31	0.00	0.091	0.000	7.442	0.00	8.00
10.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.093	0.000	7.442	0.00	1.37
10.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.093	0.000	7.442	0.00	62.40
10.00	1/2" Fiber	Yes	5.00	0.000	0.38	0.16	0.00	0.093	0.000	7.442	0.00	0.60
10.00	3/4" DC	Yes	5.00	0.000	0.75	0.31	0.00	0.093	0.000	7.442	0.00	8.00
15.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.095	0.000	7.442	0.00	1.37
15.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.095	0.000	7.442	0.00	62.40
15.00	1/2" Fiber	Yes	5.00	0.000	0.38	0.16	0.00	0.095	0.000	7.442	0.00	0.60
15.00	3/4" DC	Yes	5.00	0.000	0.75	0.31	0.00	0.095	0.000	7.442	0.00	8.00
20.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.097	0.000	7.896	0.00	1.37
20.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.097	0.000	7.896	0.00	62.40
20.00	1/2" Fiber	Yes	5.00	0.000	0.38	0.16	0.00	0.097	0.000	7.896	0.00	0.60
20.00	3/4" DC	Yes	5.00	0.000	0.75	0.31	0.00	0.097	0.000	7.896	0.00	8.00
21.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.098	0.000	7.978	0.00	0.27
21.00	1 5/8" Coax	Yes	1.00	0.000	3.96	0.33	0.00	0.098	0.000	7.978	0.00	12.48
21.00	1/2" Fiber	Yes	1.00	0.000	0.38	0.03	0.00	0.098	0.000	7.978	0.00	0.12
21.00	3/4" DC	Yes	1.00	0.000	0.75	0.06	0.00	0.098	0.000	7.978	0.00	1.60
25.00	Safety Cable	Yes	4.00	0.000	0.38	0.13	0.00	0.103	1.010	8.276	0.00	1.09
25.00	1 5/8" Coax	Yes	4.00	0.000	3.96	1.32	0.00	0.103	1.010	8.276	0.00	49.92
25.00	1/2" Fiber	Yes	4.00	0.000	0.38	0.13	0.00	0.103	1.010	8.276	0.00	0.48
25.00	3/4" DC	Yes	4.00	0.000	0.75	0.25	0.00	0.103	1.010	8.276	0.00	6.40
25.00	1.25" Reinforcing	Yes	0.75	0.000	1.25	0.08	0.00	0.103	1.010	8.276	0.00	0.00
27.75	Safety Cable	Yes	2.75	0.000	0.38	0.09	0.00	0.124	1.071	8.460	0.00	0.75
27.75	1 5/8" Coax	Yes	2.75	0.000	3.96	0.91	0.00	0.124	1.071	8.460	0.00	34.32
27.75	1/2" Fiber	Yes	2.75	0.000	0.38	0.09	0.00	0.124	1.071	8.460	0.00	0.33
27.75	3/4" DC	Yes	2.75	0.000	0.75	0.17	0.00	0.124	1.071	8.460	0.00	4.40
27.75	1.25" Reinforcing	Yes	2.75	0.000	1.25	0.29	0.00	0.124	1.071	8.460	0.00	0.00
28.00	Safety Cable	Yes	0.25	0.000	0.38	0.01	0.00	0.125	1.074	8.476	0.00	0.07
28.00	1 5/8" Coax	Yes	0.25	0.000	3.96	0.08	0.00	0.125	1.074	8.476	0.00	3.12
28.00	1/2" Fiber	Yes	0.25	0.000	0.38	0.01	0.00	0.125	1.074	8.476	0.00	0.03
28.00	3/4" DC	Yes	0.25	0.000	0.75	0.02	0.00	0.125	1.074	8.476	0.00	0.40
28.00	1.25" Reinforcing	Yes	0.25	0.000	1.25	0.03	0.00	0.125	1.074	8.476	0.00	0.00
30.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.124	1.071	8.600	0.00	0.55
30.00	1 5/8" Coax	Yes	2.00	0.000	3.96	0.66	0.00	0.124	1.071	8.600	0.00	24.96
30.00	1/2" Fiber	Yes	2.00	0.000	0.38	0.06	0.00	0.124	1.071	8.600	0.00	0.24
30.00	3/4" DC	Yes	2.00	0.000	0.75	0.13	0.00	0.124	1.071	8.600	0.00	3.20
30.00	1.25" Reinforcing	Yes	2.00	0.000	1.25	0.21	0.00	0.124	1.071	8.600	0.00	0.00
35.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.126	1.077	8.883	0.00	1.37
35.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.126	1.077	8.883	0.00	62.40
35.00	1/2" Fiber	Yes	5.00	0.000	0.38	0.16	0.00	0.126	1.077	8.883	0.00	0.60
35.00	3/4" DC	Yes	5.00	0.000	0.75	0.31	0.00	0.126	1.077	8.883	0.00	8.00
35.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.126	1.077	8.883	0.00	0.00
40.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.129	1.086	9.137	0.00	1.37
40.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.129	1.086	9.137	0.00	62.40

Linear Appurtenance Segment Forces (Factored)

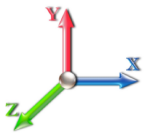
Structure:	CT01499-S-SBA	**Code:**	TIA-222-G	2/7/2022	
Site Name:	Torrington	**Exposure:**	C		
Height:	153.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 38	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 21

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
40.00	1/2" Fiber	Yes	5.00	0.000	0.38	0.16	0.00	0.129	1.086	9.137	0.00	0.60
40.00	3/4" DC	Yes	5.00	0.000	0.75	0.31	0.00	0.129	1.086	9.137	0.00	8.00
40.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.129	1.086	9.137	0.00	0.00
40.75	Safety Cable	Yes	0.75	0.000	0.38	0.02	0.00	0.131	1.092	9.173	0.00	0.20
40.75	1 5/8" Coax	Yes	0.75	0.000	3.96	0.25	0.00	0.131	1.092	9.173	0.00	9.36
40.75	1/2" Fiber	Yes	0.75	0.000	0.38	0.02	0.00	0.131	1.092	9.173	0.00	0.09
40.75	3/4" DC	Yes	0.75	0.000	0.75	0.05	0.00	0.131	1.092	9.173	0.00	1.20
40.75	1.25" Reinforcing	Yes	0.75	0.000	1.25	0.08	0.00	0.131	1.092	9.173	0.00	0.00
45.00	Safety Cable	Yes	4.25	0.000	0.38	0.13	0.00	0.128	1.084	9.366	0.00	1.16
45.00	1 5/8" Coax	Yes	4.25	0.000	3.96	1.40	0.00	0.128	1.084	9.366	0.00	53.04
45.00	1/2" Fiber	Yes	4.25	0.000	0.38	0.13	0.00	0.128	1.084	9.366	0.00	0.51
45.00	3/4" DC	Yes	4.25	0.000	0.75	0.27	0.00	0.128	1.084	9.366	0.00	6.80
45.00	1.25" Reinforcing	Yes	3.50	0.000	1.25	0.36	0.00	0.128	1.084	9.366	0.00	0.00
50.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.110	1.030	9.576	0.00	1.37
50.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.110	1.030	9.576	0.00	62.40
50.00	1/2" Fiber	Yes	5.00	0.000	0.38	0.16	0.00	0.110	1.030	9.576	0.00	0.60
50.00	3/4" DC	Yes	5.00	0.000	0.75	0.31	0.00	0.110	1.030	9.576	0.00	8.00
55.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.113	1.039	9.770	0.00	1.37
55.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.113	1.039	9.770	0.00	62.40
55.00	1/2" Fiber	Yes	5.00	0.000	0.38	0.16	0.00	0.113	1.039	9.770	0.00	0.60
55.00	3/4" DC	Yes	5.00	0.000	0.75	0.31	0.00	0.113	1.039	9.770	0.00	8.00
60.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.116	1.048	9.951	0.00	1.37
60.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.116	1.048	9.951	0.00	62.40
60.00	1/2" Fiber	Yes	5.00	0.000	0.38	0.16	0.00	0.116	1.048	9.951	0.00	0.60
60.00	3/4" DC	Yes	5.00	0.000	0.75	0.31	0.00	0.116	1.048	9.951	0.00	8.00
65.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.119	1.058	10.120	0.00	1.37
65.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.119	1.058	10.120	0.00	62.40
65.00	1/2" Fiber	Yes	5.00	0.000	0.38	0.16	0.00	0.119	1.058	10.120	0.00	0.60
65.00	3/4" DC	Yes	5.00	0.000	0.75	0.31	0.00	0.119	1.058	10.120	0.00	8.00
70.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.123	1.068	10.279	0.00	1.37
70.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.123	1.068	10.279	0.00	62.40
70.00	1/2" Fiber	Yes	5.00	0.000	0.38	0.16	0.00	0.123	1.068	10.279	0.00	0.60
70.00	3/4" DC	Yes	5.00	0.000	0.75	0.31	0.00	0.123	1.068	10.279	0.00	8.00
71.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.125	1.074	10.310	0.00	0.27
71.00	1 5/8" Coax	Yes	1.00	0.000	3.96	0.33	0.00	0.125	1.074	10.310	0.00	12.48
71.00	1/2" Fiber	Yes	1.00	0.000	0.38	0.03	0.00	0.125	1.074	10.310	0.00	0.12
71.00	3/4" DC	Yes	1.00	0.000	0.75	0.06	0.00	0.125	1.074	10.310	0.00	1.60
75.00	Safety Cable	Yes	4.00	0.000	0.38	0.13	0.00	0.125	1.074	10.430	0.00	1.09
75.00	1 5/8" Coax	Yes	4.00	0.000	3.96	1.32	0.00	0.125	1.074	10.430	0.00	49.92
75.00	1/2" Fiber	Yes	4.00	0.000	0.38	0.13	0.00	0.125	1.074	10.430	0.00	0.48
75.00	3/4" DC	Yes	4.00	0.000	0.75	0.25	0.00	0.125	1.074	10.430	0.00	6.40
80.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.128	1.084	10.572	0.00	1.37
80.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.128	1.084	10.572	0.00	62.40
80.00	1/2" Fiber	Yes	5.00	0.000	0.38	0.16	0.00	0.128	1.084	10.572	0.00	0.60
80.00	3/4" DC	Yes	5.00	0.000	0.75	0.31	0.00	0.128	1.084	10.572	0.00	8.00
85.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.132	1.095	10.708	0.00	1.37
85.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.132	1.095	10.708	0.00	62.40

Linear Appurtenance Segment Forces (Factored)

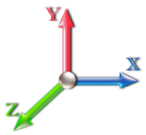
Structure:	CT01499-S-SBA	**Code:**	TIA-222-G	2/7/2022	
Site Name:	Torrington	**Exposure:**	C		
Height:	153.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 39	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 21

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
85.00	1/2" Fiber	Yes	5.00	0.000	0.38	0.16	0.00	0.132	1.095	10.708	0.00	0.60
85.00	3/4" DC	Yes	5.00	0.000	0.75	0.31	0.00	0.132	1.095	10.708	0.00	8.00
90.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.136	1.107	10.838	0.00	1.37
90.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.136	1.107	10.838	0.00	62.40
90.00	1/2" Fiber	Yes	5.00	0.000	0.38	0.16	0.00	0.136	1.107	10.838	0.00	0.60
90.00	3/4" DC	Yes	5.00	0.000	0.75	0.31	0.00	0.136	1.107	10.838	0.00	8.00
95.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.140	1.121	10.962	0.00	1.37
95.00	1 5/8" Coax	Yes	5.00	0.000	3.96	1.65	0.00	0.140	1.121	10.962	0.00	62.40
95.00	1/2" Fiber	Yes	5.00	0.000	0.38	0.16	0.00	0.140	1.121	10.962	0.00	0.60
95.00	3/4" DC	Yes	5.00	0.000	0.75	0.31	0.00	0.140	1.121	10.962	0.00	8.00
100.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.010	0.000	11.081	0.00	1.37
105.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.010	0.000	11.195	0.00	1.37
110.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.011	0.000	11.305	0.00	1.37
115.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.011	0.000	11.412	0.00	1.37
120.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.011	0.000	11.514	0.00	1.37
123.00	Safety Cable	Yes	3.00	0.000	0.38	0.10	0.00	0.012	0.000	11.574	0.00	0.82
125.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.012	0.000	11.614	0.00	0.55
130.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.012	0.000	11.710	0.00	1.37
131.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.013	0.000	11.729	0.00	0.27
135.00	Safety Cable	Yes	4.00	0.000	0.38	0.13	0.00	0.013	0.000	11.803	0.00	1.09
140.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.013	0.000	11.894	0.00	1.37
145.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.014	0.000	11.982	0.00	1.37
150.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.015	0.000	12.068	0.00	1.37
153.00	Safety Cable	Yes	3.00	0.000	0.38	0.10	0.00	0.015	0.000	12.119	0.00	0.82
										Totals:	**0.0**	**1,390.8**

Calculated Forces

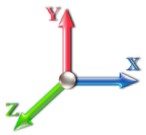
Structure:	CT01499-S-SBA	**Code:**	TIA-222-G	2/7/2022	
Site Name:	Torrington	**Exposure:**	C		
Height:	153.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 40	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 21

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 Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-40.87	-9.52	0.00	-994.06	0.00	994.06	4463.02	2231.51	10951.4	5483.88	0.00	0.000	0.000	0.190
5.00	-39.43	-9.42	0.00	-946.43	0.00	946.43	4413.36	2206.68	10604.1	5309.95	0.02	-0.043	0.000	0.187
10.00	-38.01	-9.32	0.00	-899.34	0.00	899.34	4361.89	2180.94	10257.6	5136.44	0.09	-0.087	0.000	0.184
15.00	-36.63	-9.21	0.00	-852.75	0.00	852.75	4308.61	2154.31	9912.23	4963.48	0.21	-0.132	0.000	0.180
20.00	-35.26	-9.09	0.00	-806.68	0.00	806.68	4253.53	2126.77	9568.22	4791.22	0.37	-0.176	0.000	0.177
21.00	-34.99	-9.08	0.00	-797.59	0.00	797.59	4242.30	2121.15	9499.61	4756.87	0.41	-0.186	0.000	0.176
25.00	-33.19	-8.98	0.00	-761.26	0.00	761.26	4196.65	2098.33	9225.87	4619.79	0.58	-0.222	0.000	0.173
27.75	-31.96	-8.90	0.00	-736.56	0.00	736.56	4164.60	2082.30	9038.39	4525.91	0.71	-0.248	0.000	0.112
28.00	-31.85	-8.90	0.00	-734.34	0.00	734.34	3213.57	1606.78	7065.87	3538.19	0.73	-0.249	0.000	0.124
30.00	-31.39	-8.85	0.00	-716.54	0.00	716.54	3199.34	1599.67	6969.21	3489.78	0.84	-0.262	0.000	0.134
35.00	-30.27	-8.71	0.00	-672.29	0.00	672.29	3162.51	1581.26	6727.41	3368.71	1.13	-0.295	0.000	0.129
40.00	-29.17	-8.56	0.00	-628.75	0.00	628.75	3123.88	1561.94	6485.64	3247.64	1.45	-0.328	0.000	0.124
40.75	-29.00	-8.54	0.00	-622.33	0.00	622.33	3117.93	1558.96	6449.39	3229.49	1.51	-0.333	0.000	0.123
40.75	-29.00	-8.54	0.00	-622.33	0.00	622.33	3117.93	1558.96	6449.39	3229.49	1.51	-0.333	0.000	0.123
45.00	-28.08	-8.43	0.00	-586.02	0.00	586.02	3083.44	1541.72	6244.17	3126.72	1.82	-0.361	0.000	0.197
50.00	-27.02	-8.30	0.00	-543.89	0.00	543.89	3041.20	1520.60	6003.26	3006.09	2.22	-0.415	0.000	0.190
55.00	-25.97	-8.17	0.00	-502.40	0.00	502.40	2997.16	1498.58	5763.21	2885.89	2.69	-0.469	0.000	0.183
60.00	-24.95	-8.04	0.00	-461.55	0.00	461.55	2951.32	1475.66	5524.28	2766.24	3.21	-0.522	0.000	0.175
65.00	-23.95	-7.90	0.00	-421.37	0.00	421.37	2903.67	1451.83	5286.75	2647.30	3.78	-0.575	0.000	0.167
70.00	-22.18	-7.71	0.00	-381.85	0.00	381.85	2854.22	1427.11	5050.90	2529.20	4.41	-0.628	0.000	0.159
71.00	-21.84	-7.68	0.00	-374.14	0.00	374.14	2869.57	1434.79	5123.02	2565.32	4.55	-0.639	0.000	0.153
75.00	-21.06	-7.58	0.00	-343.40	0.00	343.40	2829.16	1414.58	4935.24	2471.29	5.10	-0.680	0.000	0.146
80.00	-20.11	-7.43	0.00	-305.53	0.00	305.53	2777.01	1388.51	4702.41	2354.70	5.84	-0.728	0.000	0.137
85.00	-19.19	-7.29	0.00	-268.36	0.00	268.36	2723.06	1361.53	4471.94	2239.29	6.63	-0.775	0.000	0.127
90.00	-18.28	-7.15	0.00	-231.90	0.00	231.90	2667.31	1333.66	4244.12	2125.22	7.46	-0.819	0.000	0.116
95.00	-14.17	-5.39	0.00	-196.15	0.00	196.15	2609.76	1304.88	4019.22	2012.60	8.34	-0.861	0.000	0.103
100.00	-13.38	-5.26	0.00	-169.22	0.00	169.22	2550.40	1275.20	3797.52	1901.58	9.27	-0.901	0.000	0.094
105.00	-12.54	-5.06	0.00	-142.74	0.00	142.74	2489.24	1244.62	3579.29	1792.30	10.23	-0.938	0.000	0.085
110.00	-11.80	-4.94	0.00	-117.44	0.00	117.44	2426.28	1213.14	3364.80	1684.90	11.23	-0.972	0.000	0.075
115.00	-10.62	-4.80	0.00	-92.75	0.00	92.75	1783.00	891.50	2427.68	1215.65	12.27	-1.003	0.000	0.082
120.00	-10.01	-4.68	0.00	-68.73	0.00	68.73	1739.91	869.95	2280.12	1141.75	13.33	-1.030	0.000	0.066
123.00	-7.34	-3.04	0.00	-54.68	0.00	54.68	1713.19	856.59	2192.59	1097.92	13.99	-1.046	0.000	0.054
125.00	-7.14	-2.99	0.00	-48.60	0.00	48.60	1695.01	847.51	2134.69	1068.93	14.43	-1.055	0.000	0.050
130.00	-6.67	-2.88	0.00	-33.63	0.00	33.63	1648.31	824.16	1991.67	997.31	15.54	-1.076	0.000	0.038
131.00	-3.68	-1.58	0.00	-30.75	0.00	30.75	1638.75	819.38	1963.38	983.15	15.77	-1.079	0.000	0.034
135.00	-3.36	-1.50	0.00	-24.41	0.00	24.41	1599.81	799.90	1851.33	927.04	16.68	-1.092	0.000	0.028
140.00	-2.98	-1.39	0.00	-16.93	0.00	16.93	1549.50	774.75	1713.96	858.25	17.83	-1.105	0.000	0.022
145.00	-2.61	-1.29	0.00	-9.99	0.00	9.99	1497.39	748.69	1579.82	791.09	18.99	-1.115	0.000	0.014
150.00	-2.26	-1.19	0.00	-3.56	0.00	3.56	1443.48	721.74	1449.20	725.68	20.16	-1.120	0.000	0.006
150.00	-2.26	-1.19	0.00	-3.56	0.00	3.56	1443.48	721.74	1449.20	725.68	20.16	-1.120	0.000	0.006
153.00	0.00	-1.14	0.00	0.00	0.00	0.00	1400.09	700.04	1362.73	682.38	20.87	-1.121	0.000	0.000

Final Analysis Summary

Structure:	CT01499-S-SBA	**Code:**	TIA-222-G	2/7/2022	
Site Name:	Torrington	**Exposure:**	C		
Height:	153.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 41	

Tower Engineering Solutions

Reactions

Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)
1.2D + 1.6W 93 mph Wind	36.6	0.00	48.99	0.00	0.00	3838.50
0.9D + 1.6W 93 mph Wind	36.6	0.00	36.73	0.00	0.00	3808.46
1.2D + 1.0Di + 1.0Wi 40 mph Wind	7.0	0.00	81.32	0.00	0.00	726.60
1.2D + 1.0E	0.9	0.00	49.05	0.00	0.00	103.61
0.9D + 1.0E	0.9	0.00	36.79	0.00	0.00	102.71
1.0D + 1.0W 60 mph Wind	9.5	0.00	40.87	0.00	0.00	994.06

Max Stresses

Load Case	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)	Elev (ft)	Stress Ratio
1.2D + 1.6W 93 mph Wind	-32.92	-32.54	0.00	-2266.1	0.00	-2266.1	3083.44	1541.7	6244.17	3126.72	45.00	0.736
0.9D + 1.6W 93 mph Wind	-24.49	-32.31	0.00	-2242.0	0.00	-2242.0	3083.44	1541.7	6244.17	3126.72	45.00	0.725
1.2D + 1.0Di + 1.0Wi 40 mph Wind	-59.34	-6.19	0.00	-425.86	0.00	-425.86	3083.44	1541.7	6244.17	3126.72	45.00	0.155
1.2D + 1.0E	-33.77	-0.73	0.00	-65.45	0.00	-65.45	3083.44	1541.7	6244.17	3126.72	45.00	0.032
0.9D + 1.0E	-25.32	-0.72	0.00	-64.71	0.00	-64.71	3083.44	1541.7	6244.17	3126.72	45.00	0.029
1.0D + 1.0W 60 mph Wind	-28.08	-8.43	0.00	-586.02	0.00	-586.02	3083.44	1541.7	6244.17	3126.72	45.00	0.197

Additional Steel Summary

			Intermediate Connectors			Lower Termination				Upper Termination				Max Member			
Elev From (ft)	Elev To (ft)	Member	VQ/I (lb/in)	Vu (kips)	phi Vn (kips)	MQ/I (kips)	phi Vn (kips)	Num Reqd	Num Actual	MQ/I (kips)	phi Vn (kips)	Num Reqd	Num Actual	Pu (kips)	phi Pn (kips)	phi Tn (kips)	Ratio
27.8	40.8	(3) PLT-8"x1.25"(1.25Hole)	327.8	5.90	37.1	280.2	37.1	8	14	287.1	37.1	8	14	304.07	551.4	501.56	0.606

Monopole Mat Foundation Design

			Date: 2/7/2022
Customer Name:	T-Mobile	**TIA Standard:**	TIA-222-G
Site Name:		**Structure Height (Ft.):**	153
Site Number:	CT01499-S-SBA	**Engineer Name:**	J. Tibbetts
Engr. Number:	123292	**Engineer Login ID:**	

Foundation Info Obtained from: Drawings/Calculations

Structure Type: Monopole

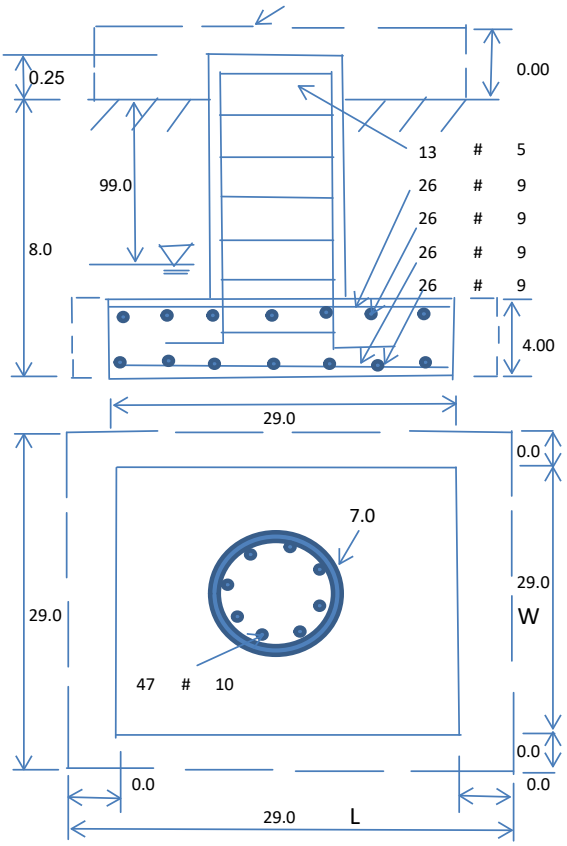
Analysis or Design? Analysis

Base Reactions (Factored):

Axial Load (Kips):	49.0	Shear Force (Kips):	36.6
Uplift Force (Kips):	0.0	Moment (Kips-ft):	3838.5
Allowable overstress %:	5.0%		

Foundation Geometries:

		Mods required -Yes/No ?:	No
Diameter of Pier (ft.):	7.0	Depth of Base BG (ft.):	8.0
Pier Height A. G. (ft.):	0.25	Thickness of Pad (ft):	4.00
Length of Pad (ft.):	29	Width of Pad (ft.):	29
Final Length of pad (ft)	29.0	Final width of pad (ft):	29.0



Material Properties and Reabr Info:

Concrete Strength (psi):	4000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield (ksi):	60	
Vertical Rebar Size #:	10	Tie / Stirrup Size #:	5	
Qty. of Vertical Rebars:	47	Tie Spacing (in):	8.0	
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	9	
Concrete Cover (in.):	3	Unit Weight of Concrete:	150.0	pcf

Rebar at the bottom of the concrete pad:

Qty. of Rebar in Pad (L):	26	Qty. of Rebar in Pad (W):	26

Rebar at the top of the concrete pad:

Qty. of Rebar in Pad (L):	26	Qty. of Rebar in Pad (W):	26
Apply 1.35 factor for e/w Per G:	1.35		

Soil Design Parameters:

Soil Unit Weight (pcf):	125.0	Soil Buoyant Weight:	50.0	Pcf		
Water Table B.G.S. (ft):	99.0	Unit Weight of Water:	62.4	pcf	Angle from Top of Pad:	30
Ultimate Bearing Pressure (psf):	4000	Ultimate Skin Friction:	0	Psf	Angle from Bottm of Pad:	25
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	Yes		Angle from Bottm of Pad:	25
Consider soil hor. resist. for OTM.:	Yes	Reduction factor on the maximum soil bearing pressure:			1.00	

Foundation Analysis and Design: Uplift Strength Reduction Factor: 0.75 — Compression Strength Reduction Factor: 0.75

Total Dry Soil Volume (cu. Ft.):	3210.06	Total Dry Soil Weight (Kips):	401.26
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	401.26	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	3527.56	Total Dry Concrete Weight (Kips):	529.13
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00
Total Effective Concrete Weight (Kips):	529.13	Total Vertical Load on Base (Kips):	979.39

Check Soil Capacities:

					Load/ Capacity Ratio	
Calculated Maxium Net Soil Pressure under the base (psf):	1798	<	Allowable Factored Soil Bearing (psf):	3000	0.60	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	12852.1	>	Design Factored Momont (kips-ft):	3724	0.29	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	3.45	OK!				

Check the capacities of Reinforceing Concrete:

Strength reduction factor (Flexure and axial tension):	0.90		Strength reduction factor (Shear):	0.75		
Strength reduction factor (Axial compresion):	0.65		Wind Load Factor on Concrete Design:	1.00		
					Load/ Capacity Ratio	
(1) Concrete Pier:						
Vertical Steel Rebar Area (sq. in./each):	1.27		Tie / Stirrup Area (sq. in./each):	0.31		
Calculated Moment Capacity (Mn,Kips-Ft):	9363.3	>	Design Factored Moment (Mu, Kips-F	3994.1	0.43	OK!
Calculated Shear Capacity (Kips):	838.2	>	Design Factored Shear (Kips):	36.6	0.04	OK!
Calculated Tension Capacity (Tn, Kips):	3223.3	>	Design Factored Tension (Tu Kips):	0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	9692.3	>	Design Factored Axial Load (Pu Kips):	49.0	0.01	OK!
Moment & Axial Strength Combination:	0.43	OK!	Check Tie Spacing (Design/Required):		0.6667	OK!
Pier Reinforcement Ratio:	0.011		Reinforcement Ratio is satisfied per ACI			
(2).Concrete Pad:						
One-Way Design Shear Capacity (L-Direction, Kips):	1467.1	>	One-Way Factored Shear (L-D. Kips):	241.1	0.16	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	1467.1	>	One-Way Factored Shear (W-D., Kips)	241.1	0.16	OK!
One-Way Design Shear Capacity (Corner-Corner. Kips):	1346.0	>	One-Way Factored Shear (C-C, Kips):	211.2	0.16	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0017	OK!	Lower Steel Pad Reinf. Ratio (W-Direc	0.0017		
Lower Steel Pad Moment Capacity (L-Direction. Kips-ft):	5122.1	>	Moment at Bottom (L-Dir. K-Ft):	1705.7	0.33	OK!
Lower Steel Pad Moment Capacity (W-Direction. Kips-ft):	5122.1	>	Moment at Bottom (W-Dir. K-Ft):	1705.7	0.33	OK!
Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):	7221.2	>	Moment at Bottom (C-C Dir. K-Ft):	2412.2	0.33	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0017	OK!	Upper Steel Reinf. Ratio (W-Dir.):	0.0017		
Upper Steel Pad Moment Capacity (L-Direc. Kips-ft):	5122.1	>	Moment at the top (L-Dir K-Ft):	671.1	0.13	OK!
Upper Steel Pad Moment Capacity (W-Direc. Kips-ft):	5122.1	>	Moment at the top (W-Dir K-Ft):	671.1	0.13	OK!
Upper Steel Pad Moment Capacity (Corner-Corner. K-ft):	7221.2	>	Moment at the top (C-C Dir. K-Ft):	627.0	0.09	OK!
(3).Check Punching Shear Capacity due to Moment in the Pier:						
Moment transferred by punching shear:	1535.4	k-ft.	Max. factored shear stress v_{u_CD}:		3.5	Psi
Max. factored shear stress v_{u_AB}:	7.5	Psi	Factored shear Strength ϕv_n:		189.7	Psi
Max. factored shear stress v_u:	7.5	Psi	Check Usage of Punching Shear Capacity:		0.04	OK!

Exhibit E

Mount Analysis

Tower Engineering Solutions
Phone (972) 483-0607, Fax (972) 975-9615
1320 Greenway Drive, Suite 600, Irving, Texas 75038

Antenna Mount Analysis Report

Existing 153-Ft Monopole Tower

Customer Name: SBA Communications Corp

Customer Site Number: CT01499-S-SBA / Torrington

Customer Site Name: Torrington

Carrier Name: T-Mobile (App#: 183634, V#1)

Carrier Site ID / Name: CT11536A / Torrington

Site Location: 1925-1931 East Main Street

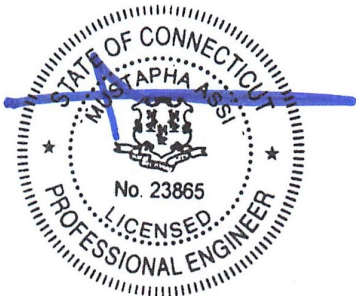
Torrington, Connecticut

Litchfield County

Latitude: 41.822991

Longitude: -73.077199

Exp. 01/31/2024



01/26/2022

Analysis Result:

Max Structural Usage: 74.5% [Pass]

Report Prepared By: Osuba Gurung

Introduction

The purpose of this report is to summarize the analysis results on the (3) Modified T arms at 131.00' elevation to support the proposed antenna configuration. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Mount Drawings	Mount mapping info by Full Metal Tower Services, Site name: Torrington, Dated 04/27/2019
Antenna Loading	SBA, Application #: 183634, v1, Dated 01/25/2022
Modification Drawings	TES Job no. 81226, Dated 07/22/2019

Analysis Criteria

Basic Wind Speed Used in the Analysis: V_{ULT} = 120 mph (3-Sec. Gust) / Equivalent to
V_{ASD} = 93 mph (3-Sec. Gust)
Basic Wind Speed with Ice: 50 mph (3-Sec. Gust) with 1" radial ice concurrent
Operational Wind Speed: 30 mph +0" Radial ice
Standard/Codes: ANSI/TIA/EIA 222-G
Exposure Category: C
Structure Class: II
Topographic Category: 1
Crest Height (Ft): 0

The site is a Risk Category II structure per IBC Table 1604.5. This site does not support emergency communication equipment for first responders such as fire departments, police, hospitals, ambulance services or any of the facilities listed for Risk Categories III and IV. The scope of work detailed in this structural analysis does not include items that are a part of emergency service as the 911 or essential facility service of an emergency response system.

Mount Information

(3) Modified T arms at 131.00' elevation

Final Antenna Configuration

3 Ericsson AIR6449 B41
3 RFS APXVAALL24-43-U-NA20
3 Commscope VV-65A-R1
3 Ericsson KRY 112 144/1*
3 Ericsson KRY 112 489/2*
3 Ericsson 4449 B71 + B85
3 Ericsson 4460 B25 + B66

* Equipment to be flush mounted directly to the Face horizontal. They are not included in the antenna placement diagrams.

In addition to the proposed equipment loading, a 500 lb serviceability load was also considered in this analysis in accordance with TIA requirements.

Analysis Results

Our calculations have determined that under design wind load the existing mounts will be structurally adequate to support the proposed antenna configuration. The maximum structural usage is 74.5%, which occurs in the Support rail. The proposed equipment must be installed as stipulated in the Final Antenna Configuration section of this report. The analysis results are void if the proposed equipment is not installed in accordance with this report.

Attachments

1. Mount Photos
2. Antenna Placement Diagram
3. Mount Mapping Information
4. Analysis Calculations
5. Modification Drawings

Standard Conditions

1. The loading configuration as analyzed in this report is as provided from the customer. Any deviation from this design shall be communicated to TES to verify deviation will not adversely impact the analysis.

2. The analysis is based on the presumption that the antenna mount members and components along with any existing reinforcement items have been correctly and properly designed, manufactured, installed and maintained.

3. All the existing structural members were assumed to be in good condition with no physical damage or deterioration associated with corrosion. The mount analysis is not a condition assessment of the mount.

4. The mount analysis was performed in accordance with the loading provided, and if applicable the modification required to support the additional loading.

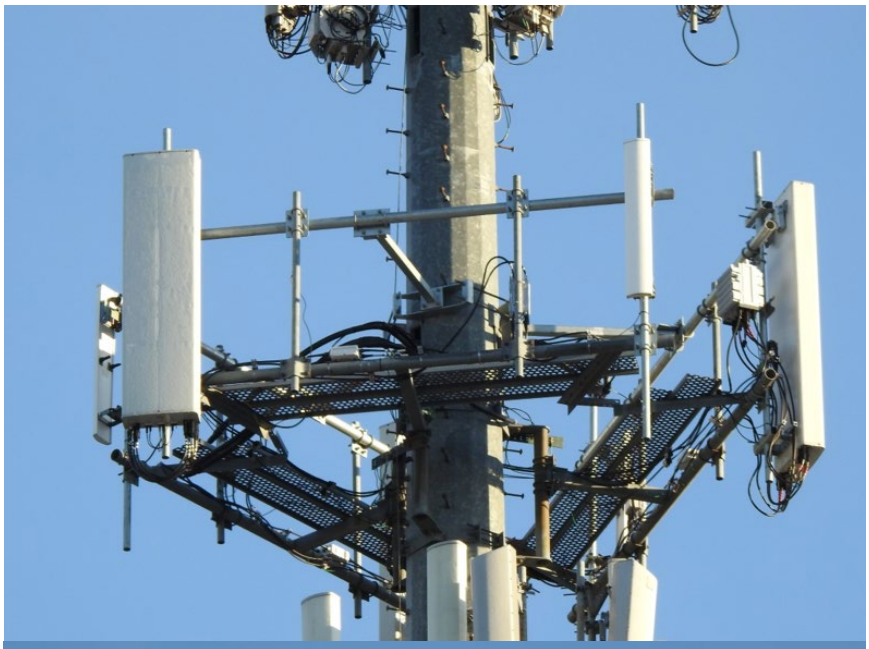
5. If the mount is modified, installation must adhere to the configuration communicated in the modification drawings.

6. The modification drawings are not intended to convey means or methods. These are the responsibility of the installing contractor.

7. Rigging plan review is available if the contractor requires for a construction class IV or other if required. Review fee would apply.

8. The mount modification package was created based upon information provided for the mount loading. The underlying tower is assumed to provide support and sufficient rigidity to support the mount loads as a tower analysis was not part of the mount analysis.

9. TES is not responsible for modifications to climbing facilities unless communicated to TES in writing.



Structure: CT01499-S-SBA - Torrington

Sector: A

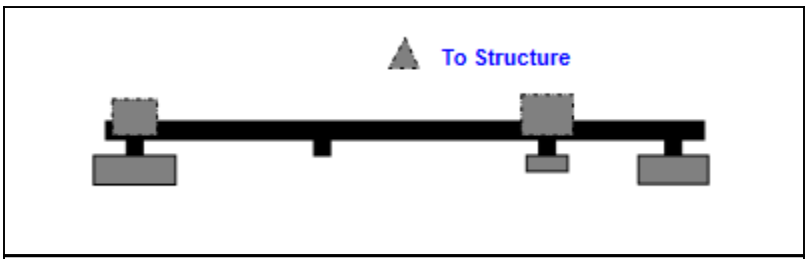
Structure Type: Monopole

Mount Elev: 131.00

1/26/2022

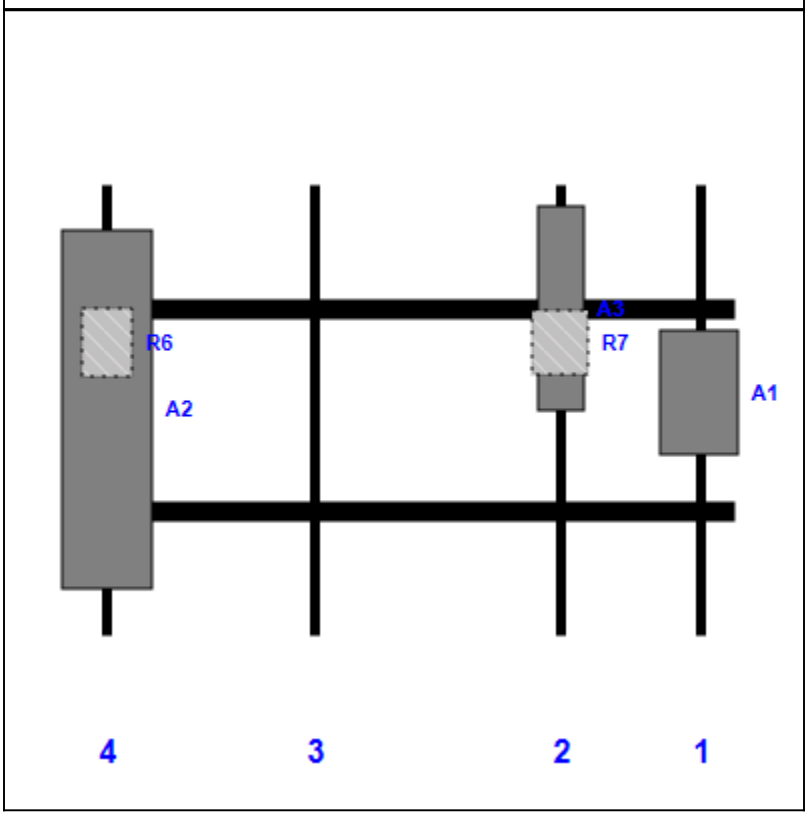
Tower Engineering Solutions

Plan View



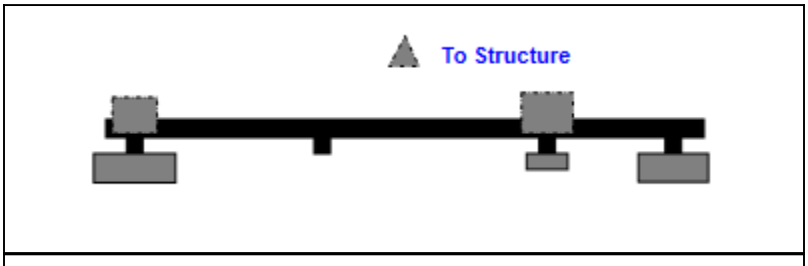
Front View

Looking Toward Structure



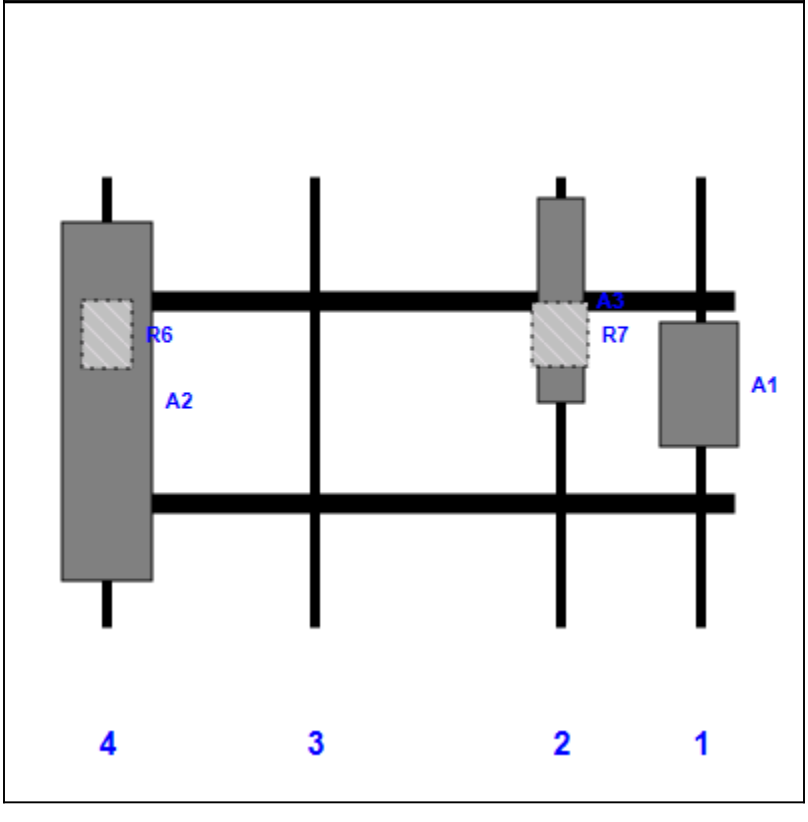
Ref #	Model	Height (in)	Width (in)	H Dist Left	Pipe #	Pipe Pos V	Pos	From Top	H Offset	Status	Validation
A1	AIR6449 B41	33.10	20.50	167.00	1	a	Front	55.50			
A3	VV-65A-R1	54.72	12.08	130.00	2	a	Front	33.00			
R7	4460 B25 + B66	17.00	15.10	130.00	2	a	Behind	42.00			
A2	APXVAALL24-43-U-NA20	95.90	24.00	9.00	4	a	Front	60.00			
R6	4449 B71 + B85	17.90	13.10	9.00	4	a	Behind	42.00			

Plan View



Front View

Looking Toward Structure



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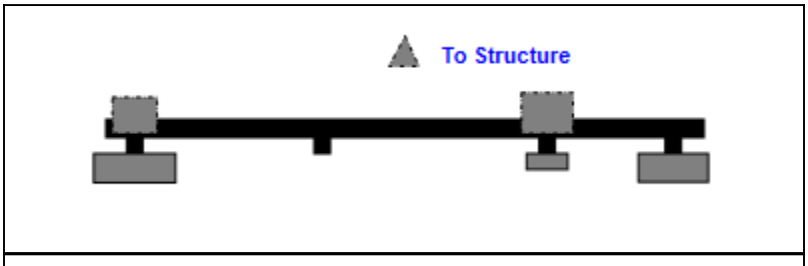
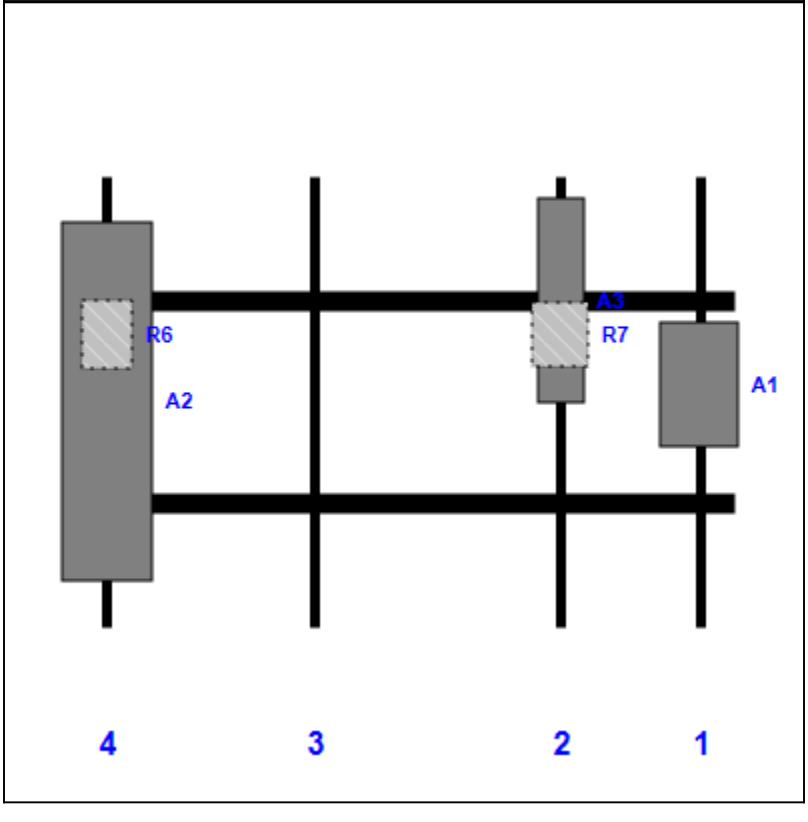
A2	APXVAALL24-43-U-NA20	95.90	24.00	9.00	4	a	Front	60.00			
R6	4449 B71 + B85	17.90	13.10	9.00	4	a	Behind	42.00			

Plan View



Front View

Looking Toward Structure



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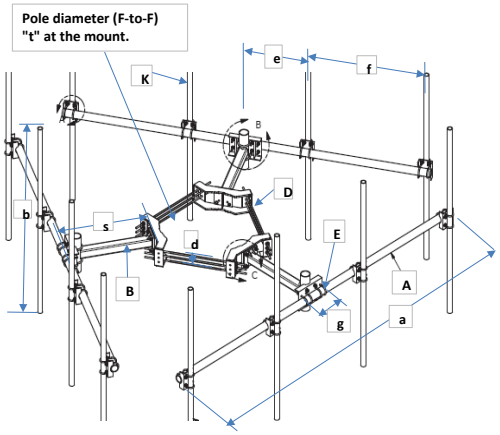
A3	VV-65A-R1	54.72	12.08	130.00	2	a	Front	33.00			
R7	4460 B25 + B66	17.00	15.10	130.00	2	a	Behind	42.00			
A2	APXVAALL24-43-U-NA20	95.90	24.00	9.00	4	a	Front	60.00			
R6	4449 B71 + B85	17.90	13.10	9.00	4	a	Behind	42.00			

Antenna Mount Type "MT-Z" Mapping Form (PATENT PENDING)

FCC # 1218025

Tower Owner:	SBA Communications	**Mapping Date:**	4/27/19
Site Name:	Torrington	**Structure Type:**	Monopole
Site Number or ID:	CT01499-S-SBA	**Structure Height (Ft.):**	154
Mapping Contractor:	Full Metal Tower Services	**Mount Height (Ft.):**	129.6



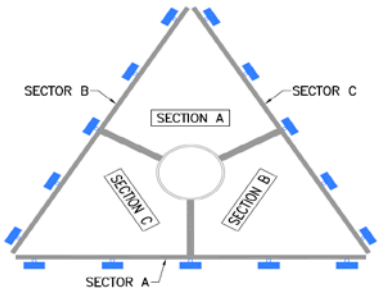
Geometries (Unit: inches)

a	176	**e**		**j**		**o**		**s**	45
b	84	**f**		**k**		**p**		**t**	27
c		**g**		**m**		**q**		**u ***	48
d	4	**h**		**n**		**r**		**v ***	84

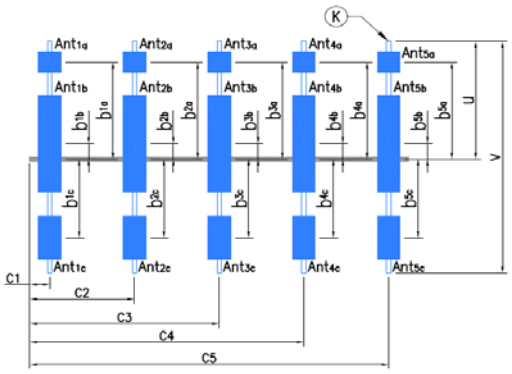
Members/Bolts (Unit: inches) — *** - See Ant. Layout for "u", "v" and member "K" (pipe)**

Items	Member	Lx (O.D.)	Ly (I.D.)	T	Items	Member	Lx (O.D.)	Ly (I.D.)	T
A	4.0 OD x 0.226 Pipe	4	3.548	0.226	**F**				
B	Tubing 4x4x1/4	4	4	0.25	**G**				
C					**H**				
D	5/8" Bolt	18			**J**				
E	1/2" Bolt	U-Bolt			**K* (pipe)**	2.375 OD x 0.154 Pipe	2.375	2.067	0.154

Distance from top of main platform member to lowest tip of ant./eqpt. of Carrier above. (N/A if > 10 ft.)	N/A
Distance from top of main platform member to highest tip of ant./eqpt. of Carrier below. (N/A if > 10 ft.)	6.5'
Please enter the infomation below if members can't be found from the drop down lists	
See photos for more details on the connection configuration between mount and tower	
Grating angles are L4x4x1/4	



Climbing ladder is Located at Section C, at 260° Degree Azimuth



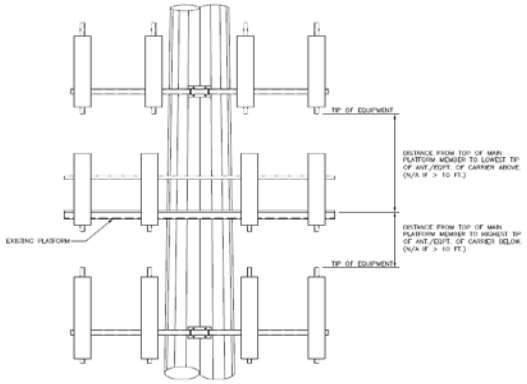
Antenna Layout

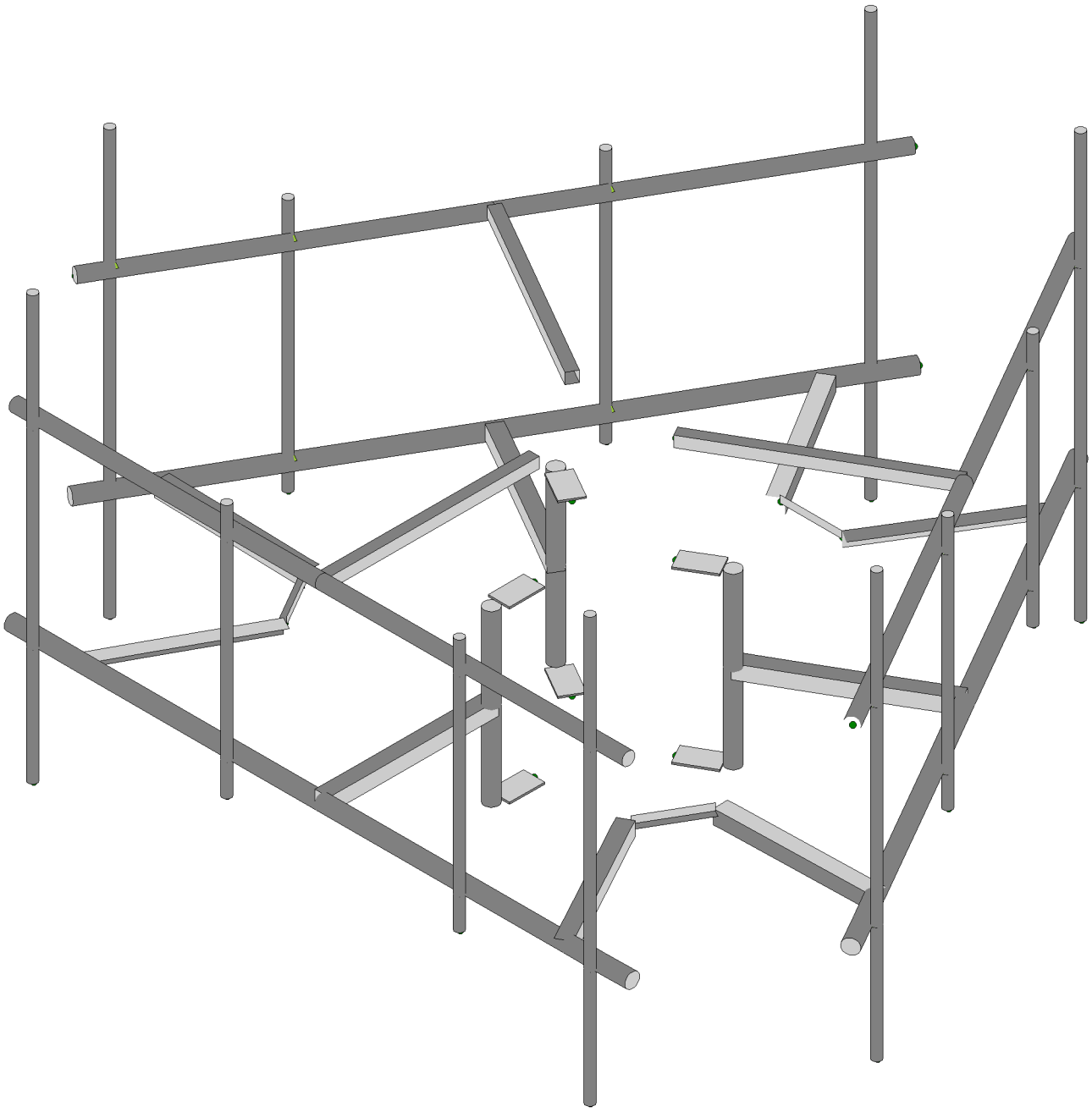
Ants. Items	Enter antenna model. If not labled, enter "Unknown". If no antenna at specified location, enter "N/A". If antennas and the locations are the same on all three sectors, only enter one sector.	Mounting Locations (Unit: inches)							Photos of antennas
	Antenna Models if Known	Width (in.)	Depth (in.)	Height (in.)	Coax Size and Qty	Vertical Distances"b_{1a}, b_{2a}, b_{3a}, b_{1b}...." (In.)	Horiz. offset (Use "-" if Ant. is inside)	Horiz. offset "C_1, C_2, C_3, C_4, C_5" (in.)	Photo Numbers
	Sector A								
Ant_{1a}								164	
Ant_{1b}	Antenna A	7	3.5	53	1/2" (2)	+6"	6	16	
Ant_{1c}	TMA A	7	3.5	12	1/2" (2)	+12"		16	
Ant_{2a}								12	
Ant_{2b}									
Ant_{2c}									
Ant_{3a}									
Ant_{3b}									
Ant_{3c}									
Ant_{4a}									
Ant_{4b}									
Ant_{4c}									
Ant_{5a}									
Ant_{5b}									
Ant_{5c}									
Are Ant same as sector A?		Yes	**Antennas on Sector B are the same as Sector A**						

Azimuth (Degree) of Each Sector and Climbing Information

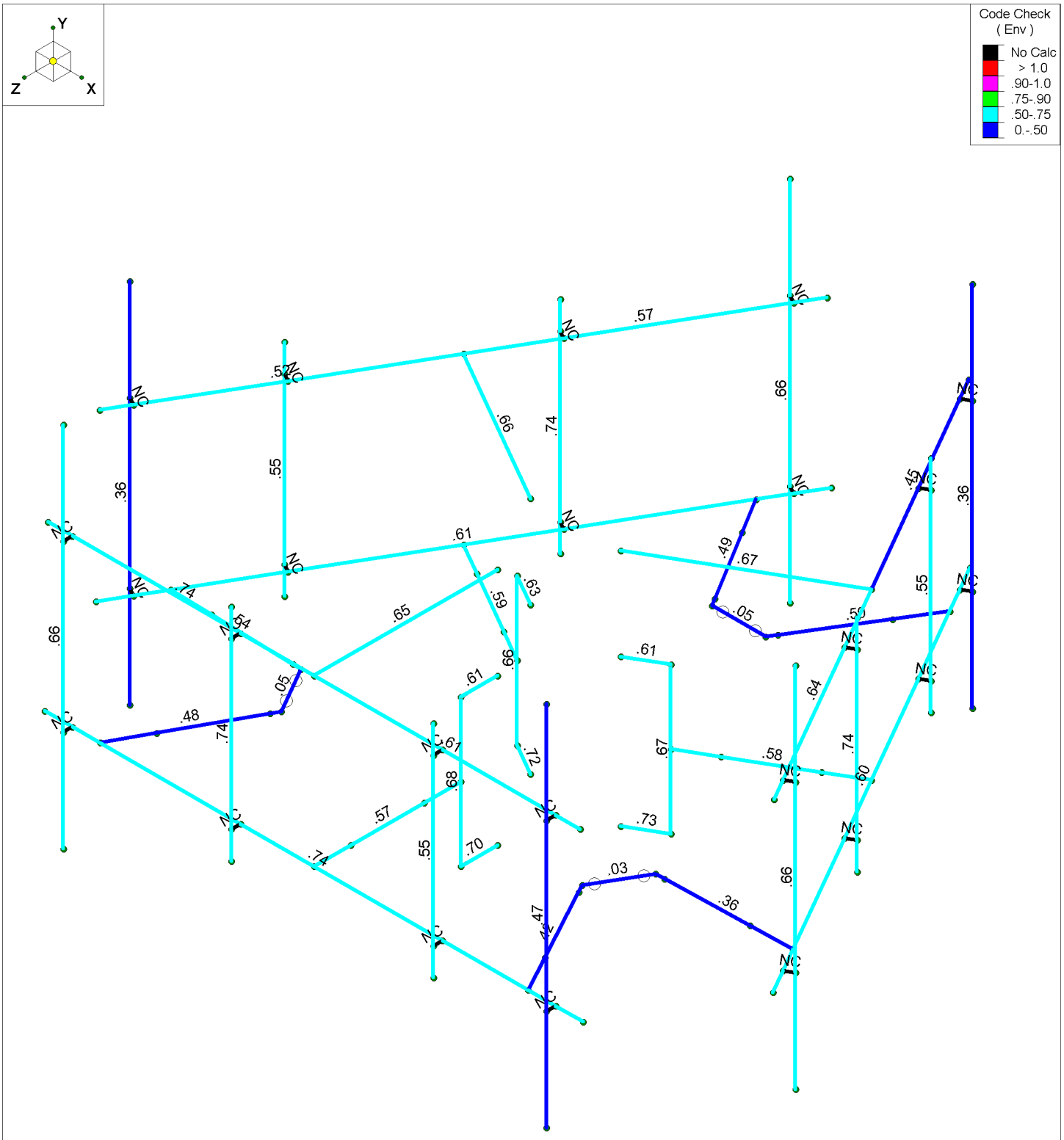
Sector A:	0°	Deg	
Sector B:	120°	Deg	
Sector C:	240°	Deg	
Climbing	260°	Deg	Located at Section C
Climbing Facility	Corrosion Type:		Minor corrosion observed
	Access:		Climbing path was unobstructed.
	Condition:		N/A

Are Ant same as sector A/B?	Same As A	**Antennas on Sector C are the same as Sector A**



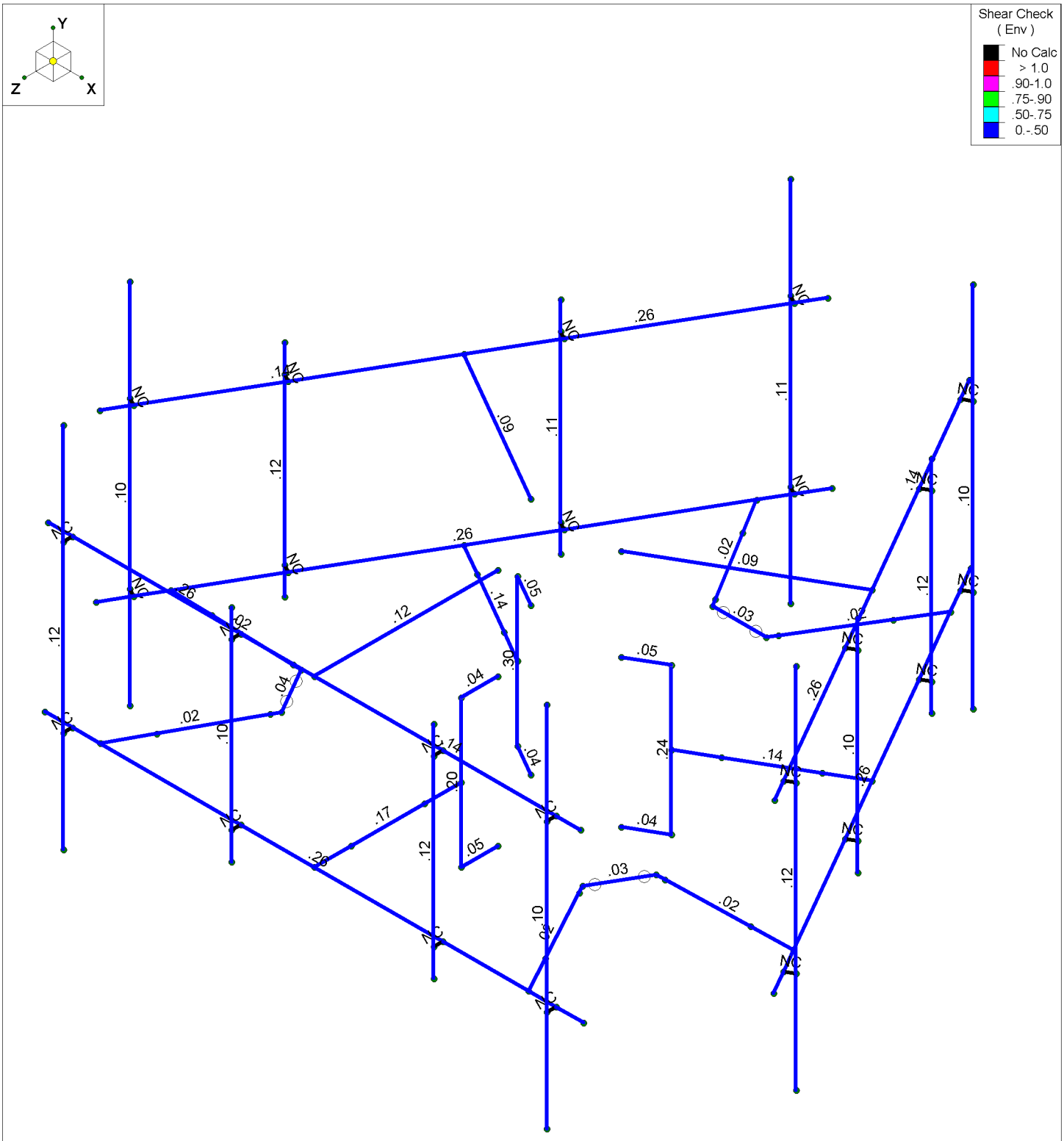


Tower Engineering Solutio...	CT01499-S-SBA_MT_LO_Loads Only_G	SK - 1
		Jan 26, 2022 at 2:32 PM
TES Project No. 122883		CT01499-S-SBA_122883_G_RISA_...



Member Code Checks Displayed (Enveloped)
Results for LC 1, 1.2D+1.6W (Front)

Tower Engineering Solutio...	CT01499-S-SBA_MT_LO_Loads Only_G	SK - 2
		Jan 26, 2022 at 2:33 PM
TES Project No. 122883		CT01499-S-SBA_122883_G_RISA_...



Member Shear Checks Displayed (Enveloped)
Results for LC 1, 1.2D+1.6W (Front)

Tower Engineering Solutio...	CT01499-S-SBA_MT_LO_Loads Only_G	SK - 3
		Jan 26, 2022 at 2:33 PM
TES Project No. 122883		CT01499-S-SBA_122883_G_RISA_...

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(P...
1	Antenna D	None					30			
2	Antenna Di	None					30			
3	Antenna W Front	None					30			
4	Antenna Wi Front	None					30			
5	Antenna W Side	None					30			
6	Antenna Wi Side	None					30			
7	Service Lm1	None					1			
8	Service Lm2	None					1			
9	Structure D	None		-1					3	
10	Structure Di	None						45		
11	Structure W Front	None						45		
12	Structure Wi Front	None						45		
13	Structure W Side	None						45		
14	Structure Wi Side	None						45		
15	BLC 9 Transient Area...	None						21		

Load Combinations

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
1	1.2D+1.6W (Front)	Yes	Y		1	1.2	9	1.2	3	1.6	11	1.6														
2	1.2D+1.6W (Back)	Yes	Y		1	1.2	9	1.2	3	-1.6	11	-1.6														
3	1.2D+1.6W (Left)	Yes	Y		1	1.2	9	1.2	5	1.6	13	1.6														
4	1.2D+1.6W (Right)	Yes	Y		1	1.2	9	1.2	5	-1.6	13	-1.6														
5	1.2D+1.0Di+1.0Wi (Front)	Yes	Y		1	1.2	9	1.2	2	1	10	1	4	1	12	1										
6	1.2D+1.0Di+1.0Wi (Back)	Yes	Y		1	1.2	9	1.2	2	1	10	1	4	-1	12	-1										
7	1.2D+1.0Di+1.0Wi (Left)	Yes	Y		1	1.2	9	1.2	2	1	10	1	6	1	14	1										
8	1.2D+1.0Di+1.0Wi (Right)	Yes	Y		1	1.2	9	1.2	2	1	10	1	6	-1	14	-1										
9	1.2D+1.5L1+.16W (Maintainance)	Yes	Y		1	1.2	9	1.2	7	1.5	3	.16	11	.16												
10	1.2D+1.5L2+.16W (Maintainance)	Yes	Y		1	1.2	9	1.2	8	1.5	3	.16	11	.16												
11	1.4D	Yes	Y		1	1.4	9	1.4																		

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design...	A [in2]	Iyy [in...	Izz [in...	J [in4]
1	Standoff Vertical	PIPE_3.5	Beam	Pipe	A53 Gr.B	Typical	2.5	4.52	4.52	9.04
2	Antenna Mount Pipe	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
3	Standoff Arm	HSS4X4X4	Beam	SquareTube	A500 Gr.B ...	Typical	3.37	7.8	7.8	12.8
4	Standoff Arm End Plate	PL1/2x6	Beam	RECT	A36 Gr.36	Typical	3	.063	9	.237
5	Face Horizontal	PIPE_3.5	Beam	Pipe	A53 Gr.B	Typical	2.5	4.52	4.52	9.04
6	Grating Angle	L4X4X4	Beam	Single Angle	A36 Gr.36	Typical	1.93	3	3	.044
7	New Support Rail	PIPE_3.0	Beam	Pipe	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
8	End Connection	L2x2x2	Beam	Single Angle	A36 Gr.36	Typical	.491	.189	.189	.003
9	New Rotatable T-Arm	HSS3X3X4	Beam	SquareTube	A500 Gr.B ...	Typical	2.44	3.02	3.02	5.08

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (/1E..	Density[k/ft...	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A992	29000	11154	.3	.65	.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	.3	.65	.527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	.3	.65	.527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	.3	.65	.49	35	1.6	60	1.2
7	A1085	29000	11154	.3	.65	.49	50	1.4	65	1.3

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N2	N12		90	Standoff Arm ...	Beam	RECT	A36 Gr.36	Typical
2	M2	N1	N11		90	Standoff Arm ...	Beam	RECT	A36 Gr.36	Typical
3	M3	N12	N11			Standoff Vertical	Beam	Pipe	A53 Gr.B	Typical
4	MP5A	N6	N5			Face Horizontal	Beam	Pipe	A53 Gr.B	Typical
5	M5	N4	N3			Standoff Arm	Beam	SquareTube	A500 Gr.B...	Typical
6	M6	N7	N9		90	Grating Angle	Beam	Single Angle	A36 Gr.36	Typical
7	M7	N8	N10		180	Grating Angle	Beam	Single Angle	A36 Gr.36	Typical
8	M8	N14	N16			New Support ...	Beam	Pipe	A53 Gr.B	Typical
9	M9	N15	N16			New Rotatable...	Beam	SquareTube	A500 Gr.B...	Typical
10	M10	N16	N13			New Support ...	Beam	Pipe	A53 Gr.B	Typical
11	M11	N20	N30		90	Standoff Arm ...	Beam	RECT	A36 Gr.36	Typical
12	M12	N19	N29		90	Standoff Arm ...	Beam	RECT	A36 Gr.36	Typical
13	M13	N30	N29			Standoff Vertical	Beam	Pipe	A53 Gr.B	Typical
14	MP5C	N24	N23			Face Horizontal	Beam	Pipe	A53 Gr.B	Typical
15	M15	N22	N21			Standoff Arm	Beam	SquareTube	A500 Gr.B...	Typical
16	M16	N25	N27		90	Grating Angle	Beam	Single Angle	A36 Gr.36	Typical
17	M17	N26	N28		180	Grating Angle	Beam	Single Angle	A36 Gr.36	Typical
18	M18	N32	N34			New Support ...	Beam	Pipe	A53 Gr.B	Typical
19	M19	N33	N34			New Rotatable...	Beam	SquareTube	A500 Gr.B...	Typical
20	M20	N34	N31			New Support ...	Beam	Pipe	A53 Gr.B	Typical
21	M21	N38	N48		90	Standoff Arm ...	Beam	RECT	A36 Gr.36	Typical
22	M22	N37	N47		90	Standoff Arm ...	Beam	RECT	A36 Gr.36	Typical
23	M23	N48	N47			Standoff Vertical	Beam	Pipe	A53 Gr.B	Typical
24	MP5B	N42	N41			Face Horizontal	Beam	Pipe	A53 Gr.B	Typical
25	M25	N40	N39			Standoff Arm	Beam	SquareTube	A500 Gr.B...	Typical
26	M26	N43	N45		90	Grating Angle	Beam	Single Angle	A36 Gr.36	Typical
27	M27	N44	N46		180	Grating Angle	Beam	Single Angle	A36 Gr.36	Typical
28	M28	N50	N52			New Support ...	Beam	Pipe	A53 Gr.B	Typical
29	M29	N51	N52			New Rotatable...	Beam	SquareTube	A500 Gr.B...	Typical
30	M30	N52	N49			New Support ...	Beam	Pipe	A53 Gr.B	Typical
31	M31	N46	N9			End Connection	Beam	Single Angle	A36 Gr.36	Typical
32	M32	N10	N27			End Connection	Beam	Single Angle	A36 Gr.36	Typical
33	M33	N28	N45			End Connection	Beam	Single Angle	A36 Gr.36	Typical
34	M34	N55	N56			RIGID	Beam	None	RIGID	DR1
35	M35	N57	N58			RIGID	Beam	None	RIGID	DR1
36	M36	N59	N60			RIGID	Beam	None	RIGID	DR1
37	M37	N61	N62			RIGID	Beam	None	RIGID	DR1
38	M38	N63	N64			RIGID	Beam	None	RIGID	DR1
39	M39	N65	N66			RIGID	Beam	None	RIGID	DR1

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
40	M40	N67	N68			RIGID	Beam	None	RIGID	DR1
41	M41	N69	N70			RIGID	Beam	None	RIGID	DR1
42	M42	N71	N72			RIGID	Beam	None	RIGID	DR1
43	M43	N73	N74			RIGID	Beam	None	RIGID	DR1
44	M44	N75	N76			RIGID	Beam	None	RIGID	DR1
45	M45	N77	N78			RIGID	Beam	None	RIGID	DR1
46	MP1A	N80	N79			Antenna Moun...	Beam	Pipe	A53 Gr.B	Typical
47	MP4A	N82	N81			Antenna Moun...	Beam	Pipe	A53 Gr.B	Typical
48	MP1C	N84	N83			Antenna Moun...	Beam	Pipe	A53 Gr.B	Typical
49	MP4C	N86	N85			Antenna Moun...	Beam	Pipe	A53 Gr.B	Typical
50	MP1B	N88	N87			Antenna Moun...	Beam	Pipe	A53 Gr.B	Typical
51	MP4B	N90	N89			Antenna Moun...	Beam	Pipe	A53 Gr.B	Typical
52	M52	N92	N96			RIGID	Beam	None	RIGID	DR1
53	M53	N91	N95			RIGID	Beam	None	RIGID	DR1
54	M54	N94	N98			RIGID	Beam	None	RIGID	DR1
55	M55	N93	N97			RIGID	Beam	None	RIGID	DR1
56	M56	N100	N104			RIGID	Beam	None	RIGID	DR1
57	M57	N99	N103			RIGID	Beam	None	RIGID	DR1
58	M58	N102	N106			RIGID	Beam	None	RIGID	DR1
59	M59	N101	N105			RIGID	Beam	None	RIGID	DR1
60	M60	N108	N112			RIGID	Beam	None	RIGID	DR1
61	M61	N107	N111			RIGID	Beam	None	RIGID	DR1
62	M62	N110	N114			RIGID	Beam	None	RIGID	DR1
63	M63	N109	N113			RIGID	Beam	None	RIGID	DR1
64	MP3A	N117	N115			Antenna Moun...	Beam	Pipe	A53 Gr.B	Typical
65	MP2A	N118	N116			Antenna Moun...	Beam	Pipe	A53 Gr.B	Typical
66	MP3C	N121	N119			Antenna Moun...	Beam	Pipe	A53 Gr.B	Typical
67	MP2C	N122	N120			Antenna Moun...	Beam	Pipe	A53 Gr.B	Typical
68	MP3B	N125	N123			Antenna Moun...	Beam	Pipe	A53 Gr.B	Typical
69	MP2B	N126	N124			Antenna Moun...	Beam	Pipe	A53 Gr.B	Typical

Member Advanced Data

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
1	M1				M3		Yes				None
2	M2				M3		Yes				None
3	M3						Yes				None
4	MP5A						Yes				None
5	M5						Yes				None
6	M6						Yes				None
7	M7						Yes				None
8	M8						Yes				None
9	M9						Yes				None
10	M10						Yes				None
11	M11				M3		Yes				None
12	M12				M3		Yes				None
13	M13						Yes				None
14	MP5C						Yes				None
15	M15						Yes				None
16	M16						Yes				None
17	M17						Yes				None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
18	M18						Yes				None
19	M19						Yes				None
20	M20						Yes				None
21	M21				M3		Yes				None
22	M22				M3		Yes				None
23	M23						Yes				None
24	MP5B						Yes				None
25	M25						Yes				None
26	M26						Yes				None
27	M27						Yes				None
28	M28						Yes				None
29	M29						Yes				None
30	M30						Yes				None
31	M31	BenPIN	BenPIN				Yes				None
32	M32	BenPIN	BenPIN				Yes				None
33	M33	BenPIN	BenPIN				Yes				None
34	M34						Yes				None
35	M35						Yes				None
36	M36						Yes				None
37	M37						Yes				None
38	M38						Yes				None
39	M39						Yes				None
40	M40						Yes				None
41	M41						Yes				None
42	M42						Yes				None
43	M43						Yes				None
44	M44						Yes				None
45	M45						Yes				None
46	MP1A						Yes				None
47	MP4A						Yes				None
48	MP1C						Yes				None
49	MP4C						Yes				None
50	MP1B						Yes				None
51	MP4B						Yes				None
52	M52						Yes				None
53	M53						Yes				None
54	M54						Yes				None
55	M55						Yes				None
56	M56						Yes				None
57	M57						Yes				None
58	M58						Yes				None
59	M59						Yes				None
60	M60						Yes				None
61	M61						Yes				None
62	M62						Yes				None
63	M63						Yes				None
64	MP3A						Yes				None
65	MP2A						Yes				None
66	MP3C						Yes				None
67	MP2C						Yes				None
68	MP3B						Yes				None
69	MP2B						Yes				None

Hot Rolled Steel Design Parameters

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[ft]	Lcomp bot[ft]	L-torqu...	Kyy	Kzz	Cb	Function
1	M1	Standoff Ar...	1			Lbyy			.65	.65		Lateral
2	M2	Standoff Ar...	1			Lbyy			.65	.65		Lateral
3	M3	Standoff Ve...	4			Lbyy			1	1		Lateral
4	MP5A	Face Horizo...	14.667	Segment	Segment	Lbyy			2.1	2.1		Lateral
5	M5	Standoff Arm	4			Lbyy						Lateral
6	M6	Grating Angle	3.646			Lbyy			2.1	2.1		Lateral
7	M7	Grating Angle	3.646			Lbyy			2.1	2.1		Lateral
8	M8	New Suppor...	7.25	Segment	Segment	Lbyy						Lateral
9	M9	New Rotata...	5			Lbyy						Lateral
10	M10	New Suppor...	7.25	Segment	Segment	Lbyy						Lateral
11	M11	Standoff Ar...	1			Lbyy			.65	.65		Lateral
12	M12	Standoff Ar...	1			Lbyy			.65	.65		Lateral
13	M13	Standoff Ve...	4			Lbyy			1	1		Lateral
14	MP5C	Face Horizo...	14.667	Segment	Segment	Lbyy			2.1	2.1		Lateral
15	M15	Standoff Arm	4			Lbyy						Lateral
16	M16	Grating Angle	3.646			Lbyy			2.1	2.1		Lateral
17	M17	Grating Angle	3.646			Lbyy			2.1	2.1		Lateral
18	M18	New Suppor...	7.25	Segment	Segment	Lbyy						Lateral
19	M19	New Rotata...	5			Lbyy						Lateral
20	M20	New Suppor...	7.25	Segment	Segment	Lbyy						Lateral
21	M21	Standoff Ar...	1			Lbyy			.65	.65		Lateral
22	M22	Standoff Ar...	1			Lbyy			.65	.65		Lateral
23	M23	Standoff Ve...	4			Lbyy			1	1		Lateral
24	MP5B	Face Horizo...	14.667	Segment	Segment	Lbyy			2.1	2.1		Lateral
25	M25	Standoff Arm	4			Lbyy						Lateral
26	M26	Grating Angle	3.646			Lbyy			2.1	2.1		Lateral
27	M27	Grating Angle	3.646			Lbyy			2.1	2.1		Lateral
28	M28	New Suppor...	7.25	Segment	Segment	Lbyy						Lateral
29	M29	New Rotata...	5			Lbyy						Lateral
30	M30	New Suppor...	7.25	Segment	Segment	Lbyy						Lateral
31	M31	End Connec...	1.465			Lbyy						Lateral
32	M32	End Connec...	1.465			Lbyy						Lateral
33	M33	End Connec...	1.465			Lbyy						Lateral
34	MP1A	Antenna Mo...	10			Lbyy						Lateral
35	MP4A	Antenna Mo...	10			Lbyy						Lateral
36	MP1C	Antenna Mo...	10			Lbyy						Lateral
37	MP4C	Antenna Mo...	10			Lbyy						Lateral
38	MP1B	Antenna Mo...	10			Lbyy						Lateral
39	MP4B	Antenna Mo...	10			Lbyy						Lateral
40	MP3A	Antenna Mo...	6			Lbyy						Lateral
41	MP2A	Antenna Mo...	6			Lbyy						Lateral
42	MP3C	Antenna Mo...	6			Lbyy						Lateral
43	MP2C	Antenna Mo...	6			Lbyy						Lateral
44	MP3B	Antenna Mo...	6			Lbyy						Lateral
45	MP2B	Antenna Mo...	6			Lbyy						Lateral

Joint Boundary Conditions

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
1	N2	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	N1	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	N11						
4	N12						
5	N15	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
6	N19	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
7	N20	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
8	N29						
9	N30						
10	N33	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
11	N37	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
12	N38	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
13	N47						
14	N48						
15	N51	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N2	max	524.743	4	1387.246	6	448.295	1	-.069	1	1.226	4	.022	4
2		min	-509.202	3	101.527	1	-2331.855	6	-.56	6	-1.271	3	-.023	3
3	N1	max	679.849	10	1548.036	5	3095.492	5	-.127	2	1.137	10	.024	9
4		min	-774.549	9	257.069	2	-131.2	2	-.62	5	-1.209	9	-.021	10
5	N15	max	690.853	4	1196.824	5	1248.442	1	-1.086	2	2.308	4	.659	10
6		min	-619.28	3	276.649	2	-1751.991	2	-3.957	5	-2.104	3	-.704	9
7	N19	max	2875.022	8	1539.472	8	54.631	1	.323	8	1.556	2	.526	8
8		min	-168.235	3	282.055	3	-1250.562	6	.05	3	-1.712	1	.126	3
9	N20	max	485.456	4	1375.903	7	1167.591	5	.279	7	1.795	2	.481	7
10		min	-2085.035	7	157.94	4	-344.01	2	.024	4	-1.868	1	.089	4
11	N33	max	1157.514	4	1190.147	8	979.232	1	1.749	5	3.105	2	3.572	6
12		min	-1628.994	3	309.324	3	-793.679	2	.481	2	-2.869	1	.953	1
13	N37	max	46.854	4	1536.688	7	136.207	1	.302	7	1.759	3	-.129	1
14		min	-2490.12	7	308.43	4	-1888.219	6	.057	4	-1.911	4	-.537	7
15	N38	max	1996.396	8	1367.647	8	1301.714	5	.285	8	1.98	3	-.089	3
16		min	-405.361	3	174.486	3	-418.114	2	.033	3	-2.047	4	-.474	5
17	N51	max	1547.372	4	1192.534	7	1077.263	1	2.251	7	3.242	3	-.972	1
18		min	-1154.668	3	301.346	4	-767.14	2	.441	4	-2.964	4	-3.28	6
19	Totals:	max	8027.043	4	11859.532	7	7929.785	1						
20		min	-8027.022	3	3900.02	4	-7929.782	2						

Envelope Member Section Forces

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
1	M1	1	max	448.295	1	508.976	3	-102.344	1	.022	4	.56	6	1.271	3
2			min	-2331.855	6	-524.474	4	-1372.953	6	-.023	3	.069	1	-1.226	4
3		2	max	448.295	1	498.644	3	-99.792	1	.022	4	.274	6	1.166	3
4			min	-2331.855	6	-514.142	4	-1366.275	6	-.023	3	.048	1	-1.118	4
5		3	max	448.295	1	488.312	3	-97.24	1	.022	4	.028	1	1.063	3
6			min	-2331.855	6	-503.81	4	-1359.597	6	-.023	3	-.029	2	-1.012	4
7		4	max	448.295	1	477.98	3	-94.688	1	.022	4	.008	1	.962	3
8			min	-2331.855	6	-493.478	4	-1352.919	6	-.023	3	-.292	6	-.908	4

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
9		5	max	448.295	1	467.648	3	-92.136	1	.022	4	-.012	1	.864	3
10			min	-2331.855	6	-483.146	4	-1346.241	6	-.023	3	-.573	6	-.806	4
11	M2	1	max	3095.492	5	775.093	9	-256.771	2	.024	9	.62	5	1.209	9
12			min	-131.2	2	-680.364	10	-1566.786	5	-.021	10	.127	2	-1.137	10
13		2	max	3095.492	5	775.093	9	-254.219	2	.024	9	.294	5	1.061	3
14			min	-131.2	2	-680.364	10	-1560.108	5	-.021	10	.074	2	-.996	10
15		3	max	3095.492	5	775.093	9	-251.667	2	.024	9	.021	2	.99	3
16			min	-131.2	2	-680.364	10	-1553.43	5	-.021	10	-.035	1	-.9	4
17		4	max	3095.492	5	775.093	9	-249.115	2	.024	9	-.031	2	.92	3
18			min	-131.2	2	-680.364	10	-1546.752	5	-.021	10	-.353	5	-.844	4
19		5	max	3095.492	5	775.093	9	-246.563	2	.024	9	-.082	2	.854	3
20			min	-131.2	2	-680.364	10	-1540.074	5	-.021	10	-.675	5	-.79	4
21	M3	1	max	-91.319	1	467.609	3	2332.064	6	.786	3	-.027	1	.023	3
22			min	-1360.535	6	-483.143	4	-448.14	1	-.726	4	-.798	6	-.022	4
23		2	max	-81.11	1	447.771	3	2324.367	6	.786	3	1.53	6	.451	4
24			min	-1332.669	6	-463.305	4	-428.303	1	-.726	4	-.465	1	-.435	3
25		3	max	1465.594	5	680.168	10	3081.746	5	.748	4	3.01	2	1.339	10
26			min	-731.802	2	-774.93	9	722.52	4	-.801	3	-5.247	5	-1.525	9
27		4	max	1493.459	5	680.168	10	3089.444	5	.748	4	.245	2	.659	10
28			min	236.652	2	-774.93	9	-111.725	2	-.801	3	-2.162	5	-.75	9
29		5	max	1521.325	5	680.168	10	3097.141	5	.748	4	.932	5	.024	9
30			min	246.86	2	-774.93	9	-131.563	2	-.801	3	.123	2	-.021	10
31	MP5A	1	max	0	11	0	11	0	11	0	11	0	11	0	11
32			min	0	1	0	1	0	1	0	1	0	1	0	1
33		2	max	596.267	7	-137.125	3	853.089	2	.256	1	2.086	2	.753	9
34			min	-26.731	4	-840.689	8	-888.724	1	-.553	2	-2.112	1	.145	4
35		3	max	1026.784	7	893.307	10	1169.663	1	.751	10	5.224	2	3.933	8
36			min	178.031	1	-1370.225	6	-1002.033	2	-1.4	8	-5.801	1	1.074	1
37		4	max	359.274	6	475.296	10	675.697	1	.394	10	.477	2	.597	10
38			min	-111.454	1	137.462	2	-668.61	2	.013	2	-.349	1	.041	4
39		5	max	0	11	0	11	0	11	0	11	0	11	0	11
40			min	0	1	0	1	0	1	0	1	0	1	0	1
41	M5	1	max	2270.217	1	-669.183	1	596.227	9	1.698	10	1.168	2	-.454	1
42			min	-1810.821	2	-2433.448	6	-524.392	4	-1.894	9	-1.424	9	-2.1	6
43		2	max	2270.217	1	-684.149	1	606.662	3	1.698	10	1.094	2	.425	5
44			min	-1810.821	2	-2470.895	6	-557.455	4	-1.894	9	-1.245	1	-.082	2
45		3	max	2270.217	1	-720.871	1	639.809	3	1.698	10	1.022	2	2.907	5
46			min	-1810.821	2	-2531.066	6	-590.535	4	-1.894	9	-1.087	1	.798	2
47		4	max	2270.217	1	-758.673	1	672.872	3	1.698	10	.951	2	5.449	5
48			min	-1810.821	2	-2591.35	6	-623.598	4	-1.894	9	-.929	1	1.664	1
49		5	max	2270.217	1	-769.631	1	705.607	3	1.698	10	1.587	3	8.033	5
50			min	-1810.821	2	-2627.587	6	-656.591	4	-1.894	9	-1.474	4	2.427	1
51	M6	1	max	314.569	4	321.224	3	-54.506	9	0	10	1.069	4	1.038	3
52			min	-320.446	3	-329.348	4	-135.814	8	-.001	9	-.854	3	-.874	4
53		2	max	301.948	4	344.521	3	-47.324	9	0	10	.814	4	.79	3
54			min	-307.826	3	-352.645	4	-111.877	8	-.001	9	-.674	3	-.689	4
55		3	max	289.328	4	366.752	3	-36.768	9	0	10	.548	4	.532	3
56			min	-295.205	3	-377.099	4	-84.85	8	-.001	9	-.474	3	-.484	4
57		4	max	276.707	4	390.049	3	-20.837	9	0	10	.276	4	.268	3
58			min	-282.585	3	-400.396	4	-52.165	8	-.001	9	-.25	3	-.256	4
59		5	max	264.087	4	413.17	3	.178	9	0	10	.001	9	.001	9
60			min	-269.964	3	-423.861	4	-14.509	8	-.001	9	0	10	0	10

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
61	M7	1	max	276.726	2	-51.344	2	367.95	1	0	10	.935	2	.777	2
62			min	-238.868	1	-134.058	5	-344.857	2	0	8	-.821	1	-1.002	1
63		2	max	264.105	2	-44.161	2	361.114	1	0	10	.684	2	.587	2
64			min	-226.247	1	-110.121	5	-338.02	2	0	8	-.62	1	-.733	1
65		3	max	251.485	2	-34.32	2	353.371	1	0	10	.442	2	.397	2
66			min	-213.627	1	-82.772	5	-332.264	2	0	8	-.418	1	-.475	1
67		4	max	238.864	2	-18.389	2	346.534	1	0	10	.213	2	.202	2
68			min	-201.006	1	-50.087	5	-325.427	2	0	8	-.213	1	-.229	1
69		5	max	226.244	2	2.442	2	339.463	1	0	10	0	10	0	8
70			min	-188.386	1	-12.295	5	-318.868	2	0	8	0	8	0	10
71	M8	1	max	0	11	0	11	0	11	0	11	0	11	0	11
72			min	0	1	0	1	0	1	0	1	0	1	0	1
73		2	max	189.182	3	-69.985	4	589.041	2	.688	2	.503	2	.123	4
74			min	-621.512	8	-638.894	7	-530.857	1	-.746	1	-.556	1	-.54	7
75		3	max	189.182	3	-85.306	4	620.503	2	.688	2	1.6	2	.701	8
76			min	-621.512	8	-683.676	7	-562.319	1	-.746	1	-1.546	1	.111	3
77		4	max	65.997	3	-63.822	2	855.229	2	.173	2	2.674	2	1.03	8
78			min	-1014.332	8	-440.768	5	-544.104	1	-1.178	5	-2.558	1	.257	3
79		5	max	65.997	3	-79.142	2	886.69	2	.173	2	4.253	2	1.867	5
80			min	-1014.332	8	-485.55	5	-575.566	1	-1.178	5	-3.572	1	.388	2
81	M9	1	max	1248.442	1	1192.311	5	617.888	3	.659	10	2.308	4	3.957	5
82			min	-1751.991	2	270.704	2	-689.27	4	-.704	9	-2.104	3	1.086	2
83		2	max	1248.442	1	1155.277	5	586.891	3	.659	10	1.466	4	2.49	5
84			min	-1751.991	2	257.309	2	-658.273	4	-.704	9	-1.351	3	.756	2
85		3	max	1248.442	1	1118.244	5	563.957	10	.659	10	.67	1	1.1	6
86			min	-1751.991	2	243.915	2	-627.277	4	-.704	9	-.637	3	.232	1
87		4	max	1248.442	1	1081.211	5	563.957	10	.659	10	.666	1	.146	2
88			min	-1751.991	2	230.52	2	-624.106	9	-.704	9	-.691	2	-.322	1
89		5	max	1248.442	1	1044.178	5	563.957	10	.659	10	1.066	10	-.134	2
90			min	-1751.991	2	217.125	2	-624.106	9	-.704	9	-1.062	9	-1.634	5
91	M10	1	max	4.132	4	556.69	5	669.495	1	.539	7	3.472	2	1.586	7
92			min	-774.818	10	143.549	2	-860.747	2	.005	4	-2.91	1	.409	4
93		2	max	4.132	4	511.908	5	638.034	1	.539	7	1.94	2	.63	7
94			min	-774.818	10	128.228	2	-829.285	2	.005	4	-1.725	1	.111	4
95		3	max	17.164	4	562.367	10	241.332	1	.068	3	.614	2	.776	10
96			min	-381.766	10	131.073	9	-273.924	2	-.082	9	-.609	1	.127	4
97		4	max	17.164	4	547.047	10	209.871	1	.068	3	.146	2	-.053	3
98			min	-381.766	10	115.753	9	-242.462	2	-.082	9	-.2	1	-.242	8
99		5	max	0	11	0	11	0	11	0	11	0	11	0	11
100			min	0	1	0	1	0	1	0	1	0	1	0	1
101	M11	1	max	298.76	4	547.735	1	-158.49	4	.023	2	.556	7	1.868	1
102			min	-2298.853	7	-546.882	2	-1361.839	7	-.025	1	.089	4	-1.795	2
103		2	max	294.286	4	539.986	1	-155.938	4	.023	2	.273	7	1.755	1
104			min	-2297.673	7	-539.133	2	-1355.161	7	-.025	1	.056	4	-1.682	2
105		3	max	289.812	4	532.237	1	-153.386	4	.023	2	.024	4	1.643	1
106			min	-2296.494	7	-531.384	2	-1348.484	7	-.025	1	-.025	3	-1.571	2
107		4	max	285.338	4	524.487	1	-150.834	4	.023	2	-.008	4	1.533	1
108			min	-2295.315	7	-523.635	2	-1341.806	7	-.025	1	-.289	7	-1.461	2
109		5	max	280.864	4	516.738	1	-148.282	4	.023	2	-.039	4	1.425	1
110			min	-2294.135	7	-515.885	2	-1335.128	7	-.025	1	-.568	7	-1.352	2
111	M12	1	max	3062.27	8	460.247	5	-282.039	3	.023	4	.617	8	1.712	1
112			min	-16.147	3	-308.501	3	-1558.028	8	-.02	3	.134	3	-1.556	2

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
113		2	max	3061.09	8	458.204	5	-279.487	3	.023	4	.293	8	1.635	1
114			min	-11.673	3	-305.918	3	-1551.35	8	-.02	3	.075	3	-1.498	2
115		3	max	3059.911	8	456.161	5	-276.935	3	.023	4	.018	3	1.559	1
116			min	-7.199	3	-303.335	3	-1544.672	8	-.02	3	-.031	4	-1.442	2
117		4	max	3058.731	8	454.119	5	-274.383	3	.023	4	-.04	3	1.485	1
118			min	-2.725	3	-300.752	3	-1537.994	8	-.02	3	-.351	8	-1.387	2
119		5	max	3057.552	8	452.076	5	-271.831	3	.023	4	-.097	3	1.413	1
120			min	1.749	3	-298.169	3	-1531.317	8	-.02	3	-.67	8	-1.334	2
121	M13	1	max	-147.732	4	2079.9	7	307.925	2	1.339	1	.394	7	.685	7
122			min	-1349.192	7	-464.542	4	-1157.882	5	-1.266	2	.052	4	.044	4
123		2	max	-137.524	4	2072.202	7	288.088	2	1.339	1	.365	2	.498	4
124			min	-1321.326	7	-444.704	4	-1150.185	5	-1.266	2	-.769	1	-1.391	7
125		3	max	1457.03	8	2855.842	8	-351.574	9	1.292	2	2.021	6	4.917	8
126			min	-677.682	3	628.992	1	-1226.31	6	-1.356	1	-1.91	5	-2.782	3
127		4	max	1484.895	8	2863.54	8	-.662	1	1.292	2	.791	6	2.057	8
128			min	261.638	3	-128.114	3	-1234.008	6	-1.356	1	-.107	1	-.251	3
129		5	max	1512.761	8	2871.237	8	19.176	1	1.292	2	-.088	3	-.113	3
130			min	271.846	3	-147.952	3	-1241.705	6	-1.356	1	-.448	8	-.81	8
131	MP5C	1	max	0	11	.017	6	.064	2	0	11	0	11	0	11
132			min	0	1	-.016	8	-.032	4	0	1	0	1	0	1
133		2	max	625.223	5	-121.334	1	813.872	3	.147	4	1.19	3	.753	8
134			min	-117.918	2	-842.442	6	-853.273	4	-.469	7	-1.286	2	.107	3
135		3	max	1066.711	5	362.581	1	730.44	3	.47	4	4.046	3	3.935	6
136			min	277.439	10	-1365.503	7	-1019.239	4	-1.407	7	-4.613	4	1.036	4
137		4	max	385.274	7	417.235	6	514.885	2	.304	8	.563	3	.222	5
138			min	-181.526	4	138.941	1	-488.735	1	.008	3	-.432	4	.033	3
139		5	max	0	11	0	7	0	11	0	11	0	11	0	11
140			min	0	1	-.014	1	-.05	3	0	1	0	1	0	1
141	M15	1	max	1921.834	4	-700.007	4	764.893	4	.345	1	.752	3	-.531	4
142			min	-1467.326	3	-2432.012	7	-662.688	3	-.944	6	-1.021	4	-2.091	7
143		2	max	1936.15	4	-714.973	4	773.158	4	.345	1	.441	1	.417	8
144			min	-1481.642	3	-2469.46	7	-671.082	3	-.944	6	-.558	2	-.042	3
145		3	max	1950.467	4	-752.044	4	781.532	4	.345	1	1.167	1	2.901	8
146			min	-1495.959	3	-2529.427	7	-679.348	3	-.944	6	-1.201	2	.809	3
147		4	max	1964.784	4	-789.846	4	789.797	4	.345	1	1.918	1	5.445	8
148			min	-1510.276	3	-2589.711	7	-689.391	3	-.944	6	-1.868	2	1.68	4
149		5	max	1979.1	4	-801.376	4	795.718	4	.345	1	2.695	1	8.044	6
150			min	-1524.592	3	-2625.466	7	-702.962	2	-.944	6	-2.559	2	2.474	4
151	M16	1	max	192.568	3	269.142	4	-56.529	9	0	10	.817	2	.786	4
152			min	-214.21	1	-263.696	3	-135.233	6	0	8	-.6	4	-.616	2
153		2	max	191.751	3	269.165	4	-49.346	9	0	10	.631	2	.578	4
154			min	-215.027	1	-263.718	3	-111.296	6	0	8	-.461	4	-.502	2
155		3	max	190.934	3	268.69	4	-38.819	9	0	10	.431	2	.384	1
156			min	-215.845	1	-278.066	2	-84.116	6	0	8	-.324	1	-.364	2
157		4	max	190.116	3	274.656	1	-22.888	9	0	10	.219	2	.196	1
158			min	-216.662	1	-308.177	2	-51.43	6	0	8	-.178	1	-.197	2
159		5	max	189.299	3	304.519	1	-1.729	11	0	10	0	8	0	8
160			min	-217.479	1	-338.542	2	-13.704	6	0	8	0	10	0	10
161	M17	1	max	308.655	1	-53.478	1	359.791	2	0	4	1.095	1	.925	1
162			min	-318.142	2	-135.325	6	-374.457	1	0	7	-.872	2	-1.065	2
163		2	max	295.217	1	-46.295	1	368.043	2	0	4	.819	1	.713	1
164			min	-304.704	2	-111.388	6	-382.709	1	0	7	-.672	2	-.795	2

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
165		3	max	281.779	1	-36.123	3	375.301	2	0	4	.542	1	.49	1
166			min	-291.266	2	-84.04	6	-392.033	1	0	7	-.463	2	-.526	2
167		4	max	268.341	1	-20.192	3	383.553	2	0	4	.268	1	.254	1
168			min	-277.828	2	-51.355	6	-400.286	1	0	7	-.24	2	-.259	2
169		5	max	254.903	1	.749	3	391.684	2	0	4	0	4	0	7
170			min	-264.39	2	-13.563	6	-408.641	1	0	7	0	7	0	4
171	M18	1	max	0	11	.017	2	.05	1	0	11	0	11	0	11
172			min	0	1	-.012	8	-.038	3	0	1	0	1	0	1
173		2	max	186.755	1	-52.725	2	497.417	3	.459	3	.333	3	.174	2
174			min	-616.71	6	-641.996	5	-443.776	4	-.52	4	-.383	4	-.55	5
175		3	max	200.378	1	-68.046	2	521.013	3	.459	3	1.256	3	.705	6
176			min	-622.399	6	-686.778	5	-467.372	4	-.52	4	-1.209	4	.094	1
177		4	max	80.548	1	-93.228	3	766.344	3	.009	1	2.195	3	1.034	6
178			min	-1016.504	6	-435.333	6	-453.738	4	-1.156	6	-2.091	4	.252	1
179		5	max	94.171	1	-108.548	3	789.94	3	.009	1	3.606	3	1.863	6
180			min	-1022.194	6	-480.115	6	-477.334	4	-1.156	6	-2.934	4	.439	1
181	M19	1	max	975.399	4	1184.953	8	695.467	1	.15	1	3.105	2	3.942	8
182			min	-1479.585	3	304.38	3	-771.034	2	-.327	6	-2.869	1	1.143	3
183		2	max	961.977	4	1147.92	8	672.219	1	.15	1	2.156	2	2.487	6
184			min	-1466.163	3	290.985	3	-747.786	2	-.327	6	-2.014	1	.769	1
185		3	max	948.555	4	1110.887	8	648.972	1	.15	1	1.235	2	1.097	7
186			min	-1452.741	3	277.591	3	-724.539	2	-.327	6	-1.188	1	.259	4
187		4	max	935.133	4	1073.853	8	625.724	1	.15	1	.344	2	.077	3
188			min	-1439.32	3	264.196	3	-701.292	2	-.327	6	-.391	1	-.293	8
189		5	max	921.711	4	1036.82	8	602.477	1	.15	1	.95	4	-.245	3
190			min	-1425.898	3	250.802	3	-678.044	2	-.327	6	-1.027	3	-1.613	8
191	M20	1	max	87.135	2	556.155	8	438.598	4	.549	5	2.579	3	1.592	8
192			min	-722.367	5	146.123	3	-636.793	3	-.049	2	-1.985	4	.365	3
193		2	max	73.512	2	511.373	8	415.002	4	.549	5	1.446	3	.631	5
194			min	-716.677	5	130.803	3	-613.197	3	-.049	2	-1.211	4	.1	2
195		3	max	46.817	2	419.532	6	164.111	4	.06	1	.457	3	.499	5
196			min	-341.952	5	133.015	2	-199.846	3	-.063	2	-.443	4	.131	2
197		4	max	33.194	2	374.75	6	140.515	4	.06	1	.116	3	-.061	1
198			min	-336.262	5	117.694	2	-176.25	3	-.063	2	-.181	8	-.24	6
199		5	max	0	11	0	7	0	5	0	11	0	11	0	11
200			min	0	1	-.01	1	-.048	3	0	1	0	1	0	1
201	M21	1	max	240.612	3	571.884	2	-174.925	3	.027	1	.553	8	2.047	4
202			min	-2277.509	8	-588.761	1	-1353.741	8	-.027	2	.094	3	-1.98	3
203		2	max	236.138	3	564.135	2	-172.373	3	.027	1	.272	8	1.964	4
204			min	-2276.33	8	-581.012	1	-1347.064	8	-.027	2	.058	3	-1.898	3
205		3	max	231.664	3	556.386	2	-169.821	3	.027	1	.022	3	1.882	4
206			min	-2275.15	8	-573.263	1	-1340.386	8	-.027	2	-.023	4	-1.817	3
207		4	max	227.19	3	548.637	2	-167.269	3	.027	1	-.013	3	1.8	4
208			min	-2273.971	8	-565.514	1	-1333.708	8	-.027	2	-.287	8	-1.736	3
209		5	max	222.716	3	540.887	2	-164.717	3	.027	1	-.048	3	1.719	4
210			min	-2272.792	8	-557.765	1	-1327.03	8	-.027	2	-.564	8	-1.656	3
211	M22	1	max	3043.403	7	477.322	6	-308.646	4	.025	2	.616	7	1.911	4
212			min	89.064	4	-380.919	1	-1555.168	7	-.024	1	.143	4	-1.759	3
213		2	max	3042.223	7	475.279	6	-306.094	4	.025	2	.293	7	1.86	4
214			min	93.538	4	-373.17	1	-1548.49	7	-.024	1	.079	4	-1.728	3
215		3	max	3041.044	7	473.237	6	-303.542	4	.025	2	.015	4	1.809	4
216			min	98.012	4	-365.421	1	-1541.813	7	-.024	1	-.029	3	-1.698	3

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
217		4	max	3039.864	7	471.194	6	-300.99	4	.025	2	-.048	4	1.758	4
218			min	102.486	4	-357.672	1	-1535.135	7	-.024	1	-.349	7	-1.668	3
219		5	max	3038.685	7	469.151	6	-298.438	4	.025	2	-.11	4	1.709	4
220			min	106.96	4	-349.923	1	-1528.457	7	-.024	1	-.669	7	-1.639	3
221	M23	1	max	-164.277	3	384.453	3	381.992	2	1.654	4	.387	5	-.057	3
222			min	-1340.936	8	-1990.956	8	-1292.573	5	-1.592	3	.052	3	-.685	8
223		2	max	-154.069	3	364.615	3	362.154	2	1.654	4	.425	2	1.302	8
224			min	-1313.07	8	-1983.258	8	-1284.876	5	-1.592	3	-.901	5	-.431	3
225		3	max	1454.246	7	-705.939	1	-402.464	10	1.616	3	3.275	6	2.623	4
226			min	-657.64	4	-2470.505	7	-1864.642	6	-1.669	4	-1.87	1	-4.16	7
227		4	max	1482.111	7	6.72	4	80.934	1	1.616	3	1.407	6	.147	4
228			min	288.013	4	-2478.203	7	-1872.339	6	-1.669	4	-.175	1	-1.686	7
229		5	max	1509.977	7	26.558	4	100.772	1	1.616	3	-.084	1	.796	7
230			min	298.221	4	-2485.9	7	-1880.036	6	-1.669	4	-.47	6	.131	4
231	MP5B	1	max	0	11	.016	7	.11	3	0	11	0	11	0	11
232			min	0	1	-.015	6	0	6	0	1	0	1	0	1
233		2	max	617.437	8	-121.367	2	606.95	1	.077	3	2.019	4	.749	6
234			min	-107.279	3	-843.269	5	-652.676	2	-.461	5	-2.124	3	.12	1
235		3	max	1047.516	8	379.528	4	1006.686	3	.469	2	3.974	4	3.93	5
236			min	245.747	9	-1367.718	8	-824.113	4	-1.415	5	-4.658	3	1.119	10
237		4	max	379.395	5	418.743	7	649.396	3	.297	6	.368	1	.222	6
238			min	-113.716	2	133.437	4	-625.882	4	.022	1	-.388	2	.03	1
239		5	max	0	11	0	7	0	7	0	11	0	11	0	11
240			min	0	1	-.013	4	-.039	2	0	1	0	1	0	1
241	M25	1	max	1794.014	3	-698.015	3	789.648	2	.3	4	1.093	4	-.546	3
242			min	-1294.495	4	-2430.304	5	-736.106	1	-.924	5	-1.276	3	-2.087	5
243		2	max	1808.331	3	-712.981	3	814.445	2	.3	4	1.635	4	.416	6
244			min	-1308.812	4	-2467.752	5	-760.854	1	-.924	5	-1.751	3	-.012	1
245		3	max	1822.648	3	-750.153	3	839.271	2	.3	4	2.188	4	2.903	6
246			min	-1323.129	4	-2527.406	5	-785.651	1	-.924	5	-2.23	3	.802	1
247		4	max	1836.964	3	-787.955	3	864.068	2	.3	4	2.75	4	5.45	6
248			min	-1337.445	4	-2587.69	5	-811.261	1	-.924	5	-2.717	3	1.654	1
249		5	max	1851.281	3	-799.745	3	887.332	2	.3	4	3.323	4	8.04	6
250			min	-1351.762	4	-2622.255	5	-836.058	1	-.924	5	-3.208	3	2.452	3
251	M26	1	max	319.577	1	367.858	2	-56.184	10	0	4	1.086	1	1.082	2
252			min	-307.718	2	-366.026	1	-135.685	5	0	7	-.896	2	-.891	1
253		2	max	306.139	1	376.111	2	-49.002	10	0	4	.812	1	.808	2
254			min	-294.28	2	-374.279	1	-111.748	5	0	7	-.69	2	-.688	1
255		3	max	292.702	1	383.253	2	-38.497	10	0	4	.537	1	.534	2
256			min	-280.842	2	-383.787	1	-84.734	5	0	7	-.475	2	-.474	1
257		4	max	279.264	1	391.506	2	-22.567	10	0	4	.265	1	.264	2
258			min	-267.404	2	-392.039	1	-52.048	5	0	7	-.246	2	-.245	1
259		5	max	265.826	1	399.548	2	-1.576	10	0	4	0	7	0	7
260			min	-253.966	2	-400.517	1	-14.396	5	0	7	0	4	0	4
261	M27	1	max	279.039	4	-52.987	4	426.115	3	0	10	1.189	4	1.021	4
262			min	-274.018	3	-135.23	7	-427.599	4	-.001	9	-1	3	-1.192	3
263		2	max	278.221	4	-45.805	4	426.137	3	0	10	.881	4	.777	4
264			min	-273.201	3	-111.293	7	-427.622	4	-.001	9	-.76	3	-.883	3
265		3	max	277.404	4	-36.207	4	424.858	3	0	10	.578	4	.528	4
266			min	-272.383	3	-84.005	7	-429.085	4	-.001	9	-.516	3	-.579	3
267		4	max	276.587	4	-20.276	4	424.88	3	0	10	.283	4	.27	4
268			min	-271.566	3	-51.319	7	-429.107	4	-.001	9	-.264	3	-.283	3

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
269		5	max	275.769	4	.443	4	424.499	3	0	10	0	10	.001	9
270			min	-270.749	3	-13.569	7	-429.564	4	-.001	9	-.001	9	0	10
271	M28	1	max	0	11	.017	3	.094	4	0	11	0	11	0	11
272			min	0	1	-.012	6	-.003	1	0	1	0	1	0	1
273		2	max	195.87	2	-53.97	1	449.756	4	.614	4	.435	4	.161	1
274			min	-619.488	5	-641.488	6	-386.765	3	-.642	3	-.495	3	-.546	6
275		3	max	209.493	2	-69.29	1	473.352	4	.614	4	1.272	4	.702	5
276			min	-625.178	5	-686.27	6	-410.361	3	-.642	3	-1.218	3	.103	2
277		4	max	102.045	2	-70.41	4	683.299	8	.185	4	2.026	4	1.034	7
278			min	-1023.212	5	-439.369	7	-339.46	3	-1.186	7	-1.907	3	.247	4
279		5	max	115.669	2	-85.73	4	693.154	8	.185	4	3.235	4	1.871	7
280			min	-1028.901	5	-484.151	7	-363.056	3	-1.186	7	-2.544	3	.389	4
281	M29	1	max	973.845	3	1187.329	7	735.592	2	.145	4	3.242	3	3.949	7
282			min	-1463.519	4	296.436	4	-800.434	1	-.32	7	-2.964	4	1.133	4
283		2	max	960.423	3	1150.296	7	712.344	2	.145	4	2.455	3	2.488	7
284			min	-1450.097	4	283.041	4	-777.186	1	-.32	7	-2.288	4	.771	4
285		3	max	947.001	3	1113.263	7	689.097	2	.145	4	1.678	3	1.097	8
286			min	-1436.676	4	269.646	4	-753.939	1	-.32	7	-1.622	4	.266	3
287		4	max	933.579	3	1076.23	7	665.849	2	.145	4	.911	3	.097	4
288			min	-1423.254	4	256.252	4	-730.691	1	-.32	7	-.965	4	-.295	7
289		5	max	920.157	3	1039.196	7	642.602	2	.145	4	.844	2	-.215	4
290			min	-1409.832	4	242.857	4	-707.444	1	-.32	7	-.979	1	-1.617	7
291	M30	1	max	100.506	1	553.063	7	544.91	3	.544	8	2.916	4	1.592	6
292			min	-726.141	6	160.471	4	-736.148	4	-.053	3	-2.391	3	.384	1
293		2	max	86.883	1	508.281	7	521.314	3	.544	8	1.603	4	.631	6
294			min	-720.452	6	145.151	4	-712.552	4	-.053	3	-1.424	3	.105	1
295		3	max	48.127	1	420.064	8	207.556	3	.064	2	.487	4	.498	8
296			min	-342.303	6	127.617	3	-232.623	4	-.063	1	-.512	3	.125	3
297		4	max	34.503	1	375.282	8	183.96	3	.064	2	.087	4	-.065	2
298			min	-336.614	6	112.297	3	-209.027	4	-.063	1	-.172	7	-.239	5
299		5	max	0	11	0	7	.002	8	0	11	0	11	0	11
300			min	0	1	-.01	4	-.033	1	0	1	0	1	0	1
301	M31	1	max	506.26	4	9.703	8	9.082	3	0	10	0	11	0	11
302			min	-507.078	3	1.469	1	-9.082	4	-.002	9	0	1	0	1
303		2	max	503.638	4	4.851	8	4.541	3	0	10	.003	7	.001	3
304			min	-504.457	3	.734	1	-4.541	4	-.002	9	-.001	4	-.003	8
305		3	max	501.016	4	0	11	0	11	0	10	.004	7	.002	3
306			min	-501.835	3	0	1	0	1	-.002	9	-.002	4	-.004	8
307		4	max	498.394	4	-.734	10	4.541	4	0	10	.003	7	.001	3
308			min	-499.213	3	-4.851	5	-4.541	3	-.002	9	-.001	4	-.003	8
309		5	max	495.772	4	-1.469	10	9.082	4	0	10	0	11	0	11
310			min	-496.591	3	-9.703	5	-9.082	3	-.002	9	0	1	0	1
311	M32	1	max	389.828	2	9.703	8	9.082	4	.001	10	0	11	0	11
312			min	-388.098	1	1.469	1	-9.082	3	-.001	8	0	1	0	1
313		2	max	387.206	2	4.851	8	4.541	4	.001	10	.003	8	.001	4
314			min	-385.476	1	.734	1	-4.541	3	-.001	8	-.001	3	-.003	7
315		3	max	384.585	2	0	11	0	11	.001	10	.004	8	.002	4
316			min	-382.854	1	0	1	0	1	-.001	8	-.002	3	-.004	7
317		4	max	381.963	2	-.734	10	4.541	3	.001	10	.003	8	.001	4
318			min	-380.232	1	-4.851	5	-4.541	4	-.001	8	-.001	3	-.003	7
319		5	max	379.341	2	-1.469	10	9.082	3	.001	10	0	11	0	11
320			min	-377.61	1	-9.703	5	-9.082	4	-.001	8	0	1	0	1

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
321	M33	1	max	477.812	1	9.703	8	12.11	2	0	4	0	11	0	11
322			min	-475.545	2	1.469	1	-12.11	1	-.001	7	0	1	0	1
323		2	max	477.812	1	4.851	8	6.055	2	0	4	.003	6	.002	2
324			min	-475.545	2	.734	1	-6.055	1	-.001	7	-.002	1	-.003	5
325		3	max	477.812	1	0	11	0	11	0	4	.004	6	.003	2
326			min	-475.545	2	0	1	0	1	-.001	7	-.003	1	-.004	5
327		4	max	477.812	1	-.734	10	6.055	1	0	4	.003	6	.002	2
328			min	-475.545	2	-4.851	5	-6.055	2	-.001	7	-.002	1	-.003	5
329		5	max	477.812	1	-1.469	10	12.11	1	0	4	0	11	0	11
330			min	-475.545	2	-9.703	5	-12.11	2	-.001	7	0	1	0	1
331	M34	1	max	218.842	1	180.772	5	26.445	3	-.171	3	.183	6	.086	2
332			min	-186.02	2	-371.759	10	-381.592	10	-.88	10	-.034	1	-.289	10
333		2	max	218.842	1	180.772	5	26.445	3	-.171	3	.165	6	.083	2
334			min	-186.02	2	-371.759	10	-381.592	10	-.88	10	-.04	1	-.266	10
335		3	max	218.842	1	180.772	5	26.445	3	-.171	3	.147	6	.08	2
336			min	-186.02	2	-371.759	10	-381.592	10	-.88	10	-.046	1	-.243	10
337		4	max	218.842	1	180.772	5	26.445	3	-.171	3	.129	6	.077	2
338			min	-186.02	2	-371.759	10	-381.592	10	-.88	10	-.052	1	-.219	10
339		5	max	218.842	1	180.772	5	26.445	3	-.171	3	.111	6	.074	2
340			min	-186.02	2	-371.759	10	-381.592	10	-.88	10	-.058	1	-.196	10
341	M35	1	max	179.199	1	537.063	10	381.692	10	-.19	9	.033	1	.082	9
342			min	-212.006	2	100.158	9	-17.319	4	-.852	10	-.184	6	-.068	3
343		2	max	179.199	1	537.063	10	381.692	10	-.19	9	.039	1	.076	9
344			min	-212.006	2	100.158	9	-17.319	4	-.852	10	-.165	6	-.095	10
345		3	max	179.199	1	537.063	10	381.692	10	-.19	9	.046	1	.069	9
346			min	-212.006	2	100.158	9	-17.319	4	-.852	10	-.147	6	-.129	10
347		4	max	179.199	1	537.063	10	381.692	10	-.19	9	.052	1	.063	9
348			min	-212.006	2	100.158	9	-17.319	4	-.852	10	-.129	6	-.162	10
349		5	max	179.199	1	537.063	10	381.692	10	-.19	9	.058	1	.057	9
350			min	-212.006	2	100.158	9	-17.319	4	-.852	10	-.111	6	-.196	10
351	M36	1	max	667.48	1	555.039	8	614.156	7	1.278	8	.054	1	.369	1
352			min	-608.521	2	-251.263	9	-156.416	4	0	3	-.231	6	-.439	2
353		2	max	667.48	1	555.039	8	614.156	7	1.278	8	.061	1	.361	1
354			min	-608.521	2	-251.263	9	-156.416	4	0	3	-.198	6	-.447	2
355		3	max	667.48	1	555.039	8	614.156	7	1.278	8	.068	1	.353	1
356			min	-608.521	2	-251.263	9	-156.416	4	0	3	-.165	6	-.455	2
357		4	max	667.48	1	555.039	8	614.156	7	1.278	8	.075	1	.345	1
358			min	-608.521	2	-251.263	9	-156.416	4	0	3	-.132	6	-.463	2
359		5	max	667.48	1	555.039	8	614.156	7	1.278	8	.082	1	.336	1
360			min	-608.521	2	-251.263	9	-156.416	4	0	3	-.121	2	-.471	2
361	M37	1	max	503.052	1	598.975	7	189.327	3	1.262	7	.236	8	.688	2
362			min	-562.012	2	57.21	4	-621.526	8	-.046	4	-.045	1	-.746	1
363		2	max	503.052	1	598.975	7	189.327	3	1.262	7	.198	6	.679	2
364			min	-562.012	2	57.21	4	-621.526	8	-.046	4	-.054	1	-.755	1
365		3	max	503.052	1	598.975	7	189.327	3	1.262	7	.165	6	.67	2
366			min	-562.012	2	57.21	4	-621.526	8	-.046	4	-.063	1	-.764	1
367		4	max	503.052	1	598.975	7	189.327	3	1.262	7	.132	2	.661	2
368			min	-562.012	2	57.21	4	-621.526	8	-.046	4	-.073	1	-.773	1
369		5	max	503.052	1	598.975	7	189.327	3	1.262	7	.121	2	.651	2
370			min	-562.012	2	57.21	4	-621.526	8	-.046	4	-.082	1	-.782	1
371	M38	1	max	189.619	4	179.387	8	25.714	1	-.163	1	.184	7	.096	3
372			min	-157.437	3	45.689	1	-334.907	6	-.663	6	-.034	4	-.141	4

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
373		2	max	189.619	4	179.387	8	25.714	1	-.163	1	.164	7	.093	3
374			min	-157.437	3	45.689	1	-334.907	6	-.663	6	-.035	4	-.144	4
375		3	max	189.619	4	179.387	8	25.714	1	-.163	1	.144	7	.089	3
376			min	-157.437	3	45.689	1	-334.907	6	-.663	6	-.035	4	-.147	4
377		4	max	189.619	4	179.387	8	25.714	1	-.163	1	.124	7	.086	3
378			min	-157.437	3	45.689	1	-334.907	6	-.663	6	-.035	4	-.15	4
379		5	max	189.619	4	179.387	8	25.714	1	-.163	1	.104	7	.082	3
380			min	-157.437	3	45.689	1	-334.907	6	-.663	6	-.036	4	-.154	4
381	M39	1	max	120.17	4	330.292	6	330.63	5	-.21	1	.018	2	.063	2
382			min	-152.49	3	102.836	2	-20.181	2	-.659	6	-.186	5	-.06	1
383		2	max	120.17	4	330.292	6	330.63	5	-.21	1	.017	2	.056	2
384			min	-152.49	3	102.836	2	-20.181	2	-.659	6	-.165	5	-.067	1
385		3	max	120.17	4	330.292	6	330.63	5	-.21	1	.016	2	.05	2
386			min	-152.49	3	102.836	2	-20.181	2	-.659	6	-.145	5	-.074	1
387		4	max	120.17	4	330.292	6	330.63	5	-.21	1	.024	4	.043	2
388			min	-152.49	3	102.836	2	-20.181	2	-.659	6	-.124	5	-.082	1
389		5	max	120.17	4	330.292	6	330.63	5	-.21	1	.036	4	.037	2
390			min	-152.49	3	102.836	2	-20.181	2	-.659	6	-.104	7	-.089	1
391	M40	1	max	509.86	4	558.394	6	615.006	5	1.283	6	.032	2	.262	4
392			min	-448.815	3	11.792	1	-184.694	2	-.044	1	-.231	5	-.335	3
393		2	max	509.86	4	558.394	6	615.006	5	1.283	6	.021	2	.26	4
394			min	-448.815	3	11.792	1	-184.694	2	-.044	1	-.193	5	-.349	3
395		3	max	509.86	4	558.394	6	615.006	5	1.283	6	.037	4	.257	4
396			min	-448.815	3	11.792	1	-184.694	2	-.044	1	-.159	7	-.362	3
397		4	max	509.86	4	558.394	6	615.006	5	1.283	6	.061	4	.255	4
398			min	-448.815	3	11.792	1	-184.694	2	-.044	1	-.13	7	-.376	3
399		5	max	509.86	4	558.394	6	615.006	5	1.283	6	.086	4	.253	4
400			min	-448.815	3	11.792	1	-184.694	2	-.044	1	-.122	3	-.39	3
401	M41	1	max	418.285	4	601.623	5	170.134	1	1.275	5	.251	7	.459	3
402			min	-479.392	3	39.982	2	-610.73	6	-.117	2	-.12	4	-.52	4
403		2	max	418.285	4	601.623	5	170.134	1	1.275	5	.213	7	.456	3
404			min	-479.392	3	39.982	2	-610.73	6	-.117	2	-.111	4	-.536	4
405		3	max	418.285	4	601.623	5	170.134	1	1.275	5	.177	3	.452	3
406			min	-479.392	3	39.982	2	-610.73	6	-.117	2	-.103	4	-.551	4
407		4	max	418.285	4	601.623	5	170.134	1	1.275	5	.15	3	.449	3
408			min	-479.392	3	39.982	2	-610.73	6	-.117	2	-.094	4	-.566	4
409		5	max	418.285	4	601.623	5	170.134	1	1.275	5	.122	3	.445	3
410			min	-479.392	3	39.982	2	-610.73	6	-.117	2	-.086	4	-.581	4
411	M42	1	max	149.531	3	180.741	7	26.791	2	-.164	2	.179	5	.091	1
412			min	-125.121	4	39.949	4	-334.449	5	-.663	7	-.003	3	-.113	2
413		2	max	149.531	3	180.741	7	26.791	2	-.164	2	.161	8	.087	1
414			min	-125.121	4	39.949	4	-334.449	5	-.663	7	-.015	3	-.116	2
415		3	max	149.531	3	180.741	7	26.791	2	-.164	2	.144	8	.084	1
416			min	-125.121	4	39.949	4	-334.449	5	-.663	7	-.026	3	-.119	2
417		4	max	149.531	3	180.741	7	26.791	2	-.164	2	.128	8	.08	1
418			min	-125.121	4	39.949	4	-334.449	5	-.663	7	-.038	3	-.122	2
419		5	max	149.531	3	180.741	7	26.791	2	-.164	2	.112	8	.076	1
420			min	-125.121	4	39.949	4	-334.449	5	-.663	7	-.05	3	-.125	2
421	M43	1	max	160.386	3	330.738	8	330.9	6	-.211	2	.048	3	.063	1
422			min	-184.794	4	97.537	3	-20.244	1	-.658	5	-.191	8	-.064	2
423		2	max	160.386	3	330.738	8	330.9	6	-.211	2	.049	3	.057	1
424			min	-184.794	4	97.537	3	-20.244	1	-.658	5	-.172	8	-.071	2

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
425		3	max	160.386	3	330.738	8	330.9	6	-.211	2	.049	3	.05	1
426			min	-184.794	4	97.537	3	-20.244	1	-.658	5	-.152	8	-.079	2
427		4	max	160.386	3	330.738	8	330.9	6	-.211	2	.05	3	.044	1
428			min	-184.794	4	97.537	3	-20.244	1	-.658	5	-.132	8	-.086	2
429		5	max	160.386	3	330.738	8	330.9	6	-.211	2	.05	3	.037	1
430			min	-184.794	4	97.537	3	-20.244	1	-.658	5	-.112	8	-.093	2
431	M44	1	max	550.786	3	557.327	5	612.003	6	1.29	5	.084	3	.196	3
432			min	-507.204	4	14.898	2	-169.964	1	-.071	2	-.24	8	-.232	4
433		2	max	550.786	3	557.327	5	612.003	6	1.29	5	.075	3	.182	3
434			min	-507.204	4	14.898	2	-169.964	1	-.071	2	-.203	8	-.24	1
435		3	max	550.786	3	557.327	5	612.003	6	1.29	5	.066	3	.168	3
436			min	-507.204	4	14.898	2	-169.964	1	-.071	2	-.166	8	-.269	5
437		4	max	550.786	3	557.327	5	612.003	6	1.29	5	.057	3	.165	2
438			min	-507.204	4	14.898	2	-169.964	1	-.071	2	-.129	8	-.304	5
439		5	max	550.786	3	557.327	5	612.003	6	1.29	5	.047	3	.164	2
440			min	-507.204	4	14.898	2	-169.964	1	-.071	2	-.102	4	-.339	5
441	M45	1	max	377.324	3	601.88	6	182.326	2	1.27	6	.243	5	.614	4
442			min	-421.042	4	40.299	1	-614.116	5	-.102	1	-.078	2	-.642	3
443		2	max	377.324	3	601.88	6	182.326	2	1.27	6	.205	5	.599	4
444			min	-421.042	4	40.299	1	-614.116	5	-.102	1	-.067	2	-.645	3
445		3	max	377.324	3	601.88	6	182.326	2	1.27	6	.167	5	.583	4
446			min	-421.042	4	40.299	1	-614.116	5	-.102	1	-.056	2	-.649	3
447		4	max	377.324	3	601.88	6	182.326	2	1.27	6	.128	5	.568	4
448			min	-421.042	4	40.299	1	-614.116	5	-.102	1	-.044	2	-.652	3
449		5	max	377.324	3	601.88	6	182.326	2	1.27	6	.102	4	.553	4
450			min	-421.042	4	40.299	1	-614.116	5	-.102	1	-.047	3	-.655	3
451	MP1A	1	max	0	11	.038	9	-.003	3	0	11	0	11	0	11
452			min	0	1	-.076	10	-.198	8	0	1	0	1	0	1
453		2	max	43.162	8	29.457	4	29.437	1	0	11	.037	1	.037	3
454			min	10.412	1	-29.471	3	-29.461	2	0	1	-.037	2	-.037	4
455		3	max	-17.262	9	384.962	10	84.79	10	.111	6	.057	2	.022	4
456			min	-454.53	10	84.804	9	-27.167	9	-.058	1	-.057	1	-.022	3
457		4	max	-10.413	10	29.467	3	29.462	2	0	11	.037	1	.037	3
458			min	-43.162	5	-29.453	4	-29.439	1	0	1	-.037	2	-.037	4
459		5	max	0	11	.079	10	.203	8	0	11	0	11	0	11
460			min	0	1	-.038	9	.005	3	0	1	0	1	0	1
461	MP4A	1	max	0	11	2.9	8	.652	1	0	11	0	11	0	11
462			min	0	1	-.211	10	-1.935	6	0	1	0	1	0	1
463		2	max	409.319	8	246.389	4	531.995	1	0	11	.791	1	.362	3
464			min	84.093	1	-246.16	3	-532.151	2	0	1	-.792	2	-.363	4
465		3	max	127.304	4	-119.291	4	133.319	5	.082	1	.316	1	.024	3
466			min	-346.041	9	-534.211	7	-47.533	2	-.121	2	-.314	2	-.021	4
467		4	max	-84.092	10	245.837	3	530.989	2	0	11	.788	1	.361	3
468			min	-409.319	5	-246.072	4	-530.831	1	0	1	-.789	2	-.362	4
469		5	max	0	11	.213	10	1.821	5	0	11	0	11	0	11
470			min	0	1	-2.626	7	-.354	2	0	1	0	1	0	1
471	MP1C	1	max	0	11	.01	1	.127	5	0	11	0	11	0	11
472			min	0	1	-.171	6	0	2	0	1	0	1	0	1
473		2	max	43.162	8	29.45	4	29.47	1	0	11	.037	1	.037	3
474			min	10.413	1	-29.464	3	-29.446	2	0	1	-.037	2	-.037	4
475		3	max	-19.806	2	-7.239	1	-74.777	2	.104	7	.036	2	.046	4
476			min	-75.806	6	-128.628	6	-267.98	5	-.036	4	-.034	1	-.045	3

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
477		4	max	-10.413	10	29.463	3	29.445	2	0	11	.037	1	.037	3
478			min	-43.162	5	-29.449	4	-29.469	1	0	1	-.037	2	-.037	4
479		5	max	0	11	.173	6	-.002	2	0	11	0	11	0	11
480			min	0	1	-.007	1	-.129	5	0	1	0	1	0	1
481	MP4C	1	max	0	11	.411	4	.366	1	0	11	0	11	0	11
482			min	0	1	-2.864	7	-2.129	6	0	1	0	1	0	1
483		2	max	409.319	8	460.42	4	317.705	1	0	11	.47	1	.684	3
484			min	84.092	1	-460.671	3	-317.818	2	0	1	-.47	2	-.684	4
485		3	max	144.248	2	376.298	8	414.328	5	.086	4	.092	3	.198	3
486			min	-82.231	1	40.28	1	58.97	2	-.122	3	-.09	4	-.2	4
487		4	max	-84.093	10	459.797	3	317.318	2	0	11	.468	1	.682	3
488			min	-409.319	5	-459.543	4	-317.196	1	0	1	-.469	2	-.681	4
489		5	max	0	11	2.841	8	1.674	7	0	11	0	11	0	11
490			min	0	1	-.212	3	-.021	2	0	1	0	1	0	1
491	MP1B	1	max	0	11	.177	8	.097	5	0	11	0	11	0	11
492			min	0	1	.01	3	-.017	2	0	1	0	1	0	1
493		2	max	43.162	8	29.465	4	29.464	1	0	11	.037	1	.037	3
494			min	10.412	1	-29.436	3	-29.463	2	0	1	-.037	2	-.037	4
495		3	max	-14.364	3	-33.595	1	241.902	5	.112	8	.027	2	.053	4
496			min	-76.938	8	-177.56	6	61.224	2	-.05	3	-.024	1	-.056	3
497		4	max	-10.412	10	29.438	3	29.46	2	0	11	.037	1	.037	3
498			min	-43.162	5	-29.467	4	-29.46	1	0	1	-.037	2	-.037	4
499		5	max	0	11	-.008	3	.013	4	0	11	0	11	0	11
500			min	0	1	-.184	8	-.09	7	0	1	0	1	0	1
501	MP4B	1	max	0	11	.692	4	3.153	5	0	11	0	11	0	11
502			min	0	1	-.983	7	-.161	2	0	1	0	1	0	1
503		2	max	409.319	8	460.7	4	317.781	1	0	11	.47	1	.684	3
504			min	84.093	1	-460.664	3	-317.499	2	0	1	-.469	2	-.684	4
505		3	max	143.485	1	189.658	8	-102.917	4	.047	3	.087	4	.224	3
506			min	-80.401	2	-52.12	3	-520.412	7	-.102	4	-.088	3	-.227	4
507		4	max	-84.093	10	459.742	3	317.033	2	0	11	.469	1	.682	3
508			min	-409.319	5	-459.771	4	-317.317	1	0	1	-.468	2	-.682	4
509		5	max	0	11	.365	8	.022	1	0	11	0	11	0	11
510			min	0	1	-.266	3	-3.101	6	0	1	0	1	0	1
511	M52	1	max	-50.262	1	32.899	4	-81.774	10	.877	7	.166	7	-.065	1
512			min	-456.802	6	-304.448	7	-396.565	6	.122	4	-.027	1	-1.034	6
513		2	max	-50.262	1	32.899	4	-81.774	10	.877	7	.142	7	-.064	1
514			min	-456.802	6	-304.448	7	-396.565	6	.122	4	-.033	1	-1.015	6
515		3	max	-50.262	1	32.899	4	-81.774	10	.877	7	.117	7	-.063	1
516			min	-456.802	6	-304.448	7	-396.565	6	.122	4	-.038	1	-.997	6
517		4	max	-50.262	1	32.899	4	-81.774	10	.877	7	.093	2	-.063	1
518			min	-456.802	6	-304.448	7	-396.565	6	.122	4	-.044	1	-.979	6
519		5	max	-50.262	1	32.899	4	-81.774	10	.877	7	.086	10	-.062	1
520			min	-456.802	6	-304.448	7	-396.565	6	.122	4	-.049	1	-.961	6
521	M53	1	max	442.327	8	409.013	7	423.555	7	.94	7	.037	4	-.152	3
522			min	87.025	3	-7.805	4	18.104	4	.121	4	-.175	7	-.96	8
523		2	max	442.327	8	409.013	7	423.555	7	.94	7	.038	4	-.165	3
524			min	87.025	3	-7.805	4	18.104	4	.121	4	-.148	7	-.982	8
525		3	max	442.327	8	409.013	7	423.555	7	.94	7	.04	4	-.178	3
526			min	87.025	3	-7.805	4	18.104	4	.121	4	-.122	7	-1.004	8
527		4	max	442.327	8	409.013	7	423.555	7	.94	7	.044	1	-.191	3
528			min	87.025	3	-7.805	4	18.104	4	.121	4	-.096	3	-1.027	8

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
529		5	max	442.327	8	409.013	7	423.555	7	.94	7	.049	1	-.204	3
530			min	87.025	3	-7.805	4	18.104	4	.121	4	-.086	10	-1.049	8
531	M54	1	max	364.761	1	55.745	1	392.885	10	-.216	9	-.035	1	-.028	1
532			min	-523.59	2	-191.999	10	13.258	4	-.865	10	-.203	6	-.557	6
533		2	max	364.761	1	55.745	1	392.885	10	-.216	9	-.027	1	-.031	1
534			min	-523.59	2	-191.999	10	13.258	4	-.865	10	-.182	6	-.559	6
535		3	max	364.761	1	55.745	1	392.885	10	-.216	9	-.019	1	-.035	1
536			min	-523.59	2	-191.999	10	13.258	4	-.865	10	-.161	8	-.561	6
537		4	max	364.761	1	55.745	1	392.885	10	-.216	9	-.011	1	-.038	1
538			min	-523.59	2	-191.999	10	13.258	4	-.865	10	-.142	8	-.562	6
539		5	max	364.761	1	55.745	1	392.885	10	-.216	9	0	3	-.041	1
540			min	-523.59	2	-191.999	10	13.258	4	-.865	10	-.123	8	-.564	6
541	M55	1	max	420.456	1	553.38	6	73.405	3	-.113	3	.223	8	-.036	4
542			min	-261.62	2	124.264	1	-400.608	8	-.895	10	-.017	3	-.494	7
543		2	max	420.456	1	553.38	6	73.405	3	-.113	3	.198	8	-.046	4
544			min	-261.62	2	124.264	1	-400.608	8	-.895	10	-.013	3	-.527	7
545		3	max	420.456	1	553.38	6	73.405	3	-.113	3	.173	8	-.057	4
546			min	-261.62	2	124.264	1	-400.608	8	-.895	10	-.008	3	-.561	7
547		4	max	420.456	1	553.38	6	73.405	3	-.113	3	.148	8	-.068	4
548			min	-261.62	2	124.264	1	-400.608	8	-.895	10	-.004	3	-.595	7
549		5	max	420.456	1	553.38	6	73.405	3	-.113	3	.123	8	-.078	4
550			min	-261.62	2	124.264	1	-400.608	8	-.895	10	0	3	-.629	7
551	M56	1	max	-35.37	4	65.787	2	-74.756	2	.881	5	.169	5	-.082	4
552			min	-460.564	7	-309.977	5	-393.348	7	.105	2	-.036	2	-1.035	7
553		2	max	-35.37	4	65.787	2	-74.756	2	.881	5	.145	5	-.073	4
554			min	-460.564	7	-309.977	5	-393.348	7	.105	2	-.041	2	-1.018	7
555		3	max	-35.37	4	65.787	2	-74.756	2	.881	5	.12	5	-.065	4
556			min	-460.564	7	-309.977	5	-393.348	7	.105	2	-.045	2	-1.002	7
557		4	max	-35.37	4	65.787	2	-74.756	2	.881	5	.107	1	-.056	4
558			min	-460.564	7	-309.977	5	-393.348	7	.105	2	-.05	2	-.985	7
559		5	max	-35.37	4	65.787	2	-74.756	2	.881	5	.099	1	-.048	4
560			min	-460.564	7	-309.977	5	-393.348	7	.105	2	-.055	2	-.969	7
561	M57	1	max	448.983	6	414.306	5	423.733	5	.943	5	.051	2	-.134	1
562			min	81.37	1	-40.447	2	13.424	2	.104	2	-.177	5	-.965	6
563		2	max	448.983	6	414.306	5	423.733	5	.943	5	.052	2	-.15	1
564			min	81.37	1	-40.447	2	13.424	2	.104	2	-.151	5	-.987	6
565		3	max	448.983	6	414.306	5	423.733	5	.943	5	.053	2	-.165	1
566			min	81.37	1	-40.447	2	13.424	2	.104	2	-.124	5	-1.009	6
567		4	max	448.983	6	414.306	5	423.733	5	.943	5	.054	2	-.18	1
568			min	81.37	1	-40.447	2	13.424	2	.104	2	-.111	1	-1.031	6
569		5	max	448.983	6	414.306	5	423.733	5	.943	5	.055	2	-.195	1
570			min	81.37	1	-40.447	2	13.424	2	.104	2	-.099	1	-1.053	6
571	M58	1	max	229.715	4	45.749	8	369.469	5	-.194	1	-.053	3	-.014	2
572			min	-388.986	3	-23.401	3	-29.953	3	-.767	6	-.2	7	-.562	5
573		2	max	229.715	4	45.749	8	369.469	5	-.194	1	-.048	4	-.015	2
574			min	-388.986	3	-23.401	3	-29.953	3	-.767	6	-.18	7	-.564	5
575		3	max	229.715	4	45.749	8	369.469	5	-.194	1	-.031	4	-.016	2
576			min	-388.986	3	-23.401	3	-29.953	3	-.767	6	-.16	6	-.566	5
577		4	max	229.715	4	45.749	8	369.469	5	-.194	1	-.014	4	-.017	2
578			min	-388.986	3	-23.401	3	-29.953	3	-.767	6	-.141	6	-.569	5
579		5	max	229.715	4	45.749	8	369.469	5	-.194	1	.002	4	-.018	2
580			min	-388.986	3	-23.401	3	-29.953	3	-.767	6	-.121	6	-.571	5

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
581	M59	1	max	366.238	4	551.871	7	99.85	1	-.111	1	.22	6	-.023	2
582			min	-206.936	3	138.337	4	-395.991	6	-.833	6	-.023	4	-.495	5
583		2	max	366.238	4	551.871	7	99.85	1	-.111	1	.195	6	-.033	2
584			min	-206.936	3	138.337	4	-395.991	6	-.833	6	-.018	4	-.529	5
585		3	max	366.238	4	551.871	7	99.85	1	-.111	1	.171	6	-.043	2
586			min	-206.936	3	138.337	4	-395.991	6	-.833	6	-.013	4	-.563	5
587		4	max	366.238	4	551.871	7	99.85	1	-.111	1	.146	6	-.053	2
588			min	-206.936	3	138.337	4	-395.991	6	-.833	6	-.008	4	-.597	5
589		5	max	366.238	4	551.871	7	99.85	1	-.111	1	.121	6	-.063	2
590			min	-206.936	3	138.337	4	-395.991	6	-.833	6	-.003	4	-.631	5
591	M60	1	max	-59.392	2	74.177	3	-64.939	3	.877	8	.173	8	-.168	3
592			min	-453.84	5	-309.088	8	-398.593	8	.115	3	-.058	3	-1.02	5
593		2	max	-59.392	2	74.177	3	-64.939	3	.877	8	.148	8	-.16	2
594			min	-453.84	5	-309.088	8	-398.593	8	.115	3	-.063	3	-1.004	5
595		3	max	-59.392	2	74.177	3	-64.939	3	.877	8	.136	4	-.148	2
596			min	-453.84	5	-309.088	8	-398.593	8	.115	3	-.067	3	-.988	5
597		4	max	-59.392	2	74.177	3	-64.939	3	.877	8	.127	4	-.137	2
598			min	-453.84	5	-309.088	8	-398.593	8	.115	3	-.071	3	-.973	5
599		5	max	-59.392	2	74.177	3	-64.939	3	.877	8	.118	4	-.125	2
600			min	-453.84	5	-309.088	8	-398.593	8	.115	3	-.075	3	-.957	5
601	M61	1	max	447.602	7	413.124	8	418.908	6	.937	8	.068	3	-.156	4
602			min	94.73	2	-48.635	3	28.459	3	.11	3	-.177	8	-.959	7
603		2	max	447.602	7	413.124	8	418.908	6	.937	8	.069	3	-.172	4
604			min	94.73	2	-48.635	3	28.459	3	.11	3	-.152	4	-.981	7
605		3	max	447.602	7	413.124	8	418.908	6	.937	8	.071	3	-.188	4
606			min	94.73	2	-48.635	3	28.459	3	.11	3	-.14	4	-1.003	7
607		4	max	447.602	7	413.124	8	418.908	6	.937	8	.073	3	-.203	4
608			min	94.73	2	-48.635	3	28.459	3	.11	3	-.129	4	-1.025	7
609		5	max	447.602	7	413.124	8	418.908	6	.937	8	.075	3	-.219	4
610			min	94.73	2	-48.635	3	28.459	3	.11	3	-.118	4	-1.047	7
611	M62	1	max	290.636	3	43.61	7	372.284	6	-.196	4	-.025	3	.031	3
612			min	-452.772	4	-24.884	4	-23.147	1	-.766	7	-.204	8	-.572	8
613		2	max	290.636	3	43.61	7	372.284	6	-.196	4	-.026	3	.029	3
614			min	-452.772	4	-24.884	4	-23.147	1	-.766	7	-.181	8	-.574	8
615		3	max	290.636	3	43.61	7	372.284	6	-.196	4	-.027	3	.026	3
616			min	-452.772	4	-24.884	4	-23.147	1	-.766	7	-.161	5	-.576	8
617		4	max	290.636	3	43.61	7	372.284	6	-.196	4	-.019	2	.023	3
618			min	-452.772	4	-24.884	4	-23.147	1	-.766	7	-.141	5	-.578	8
619		5	max	290.636	3	43.61	7	372.284	6	-.196	4	-.003	2	.021	3
620			min	-452.772	4	-24.884	4	-23.147	1	-.766	7	-.122	5	-.58	8
621	M63	1	max	305.231	3	549.797	8	92.466	4	-.127	4	.22	5	-.053	1
622			min	-143.094	4	137.344	3	-392.9	5	-.825	5	-.02	2	-.488	6
623		2	max	305.231	3	549.797	8	92.466	4	-.127	4	.196	5	-.064	1
624			min	-143.094	4	137.344	3	-392.9	5	-.825	5	-.014	2	-.522	6
625		3	max	305.231	3	549.797	8	92.466	4	-.127	4	.171	5	-.076	1
626			min	-143.094	4	137.344	3	-392.9	5	-.825	5	-.008	2	-.556	6
627		4	max	305.231	3	549.797	8	92.466	4	-.127	4	.147	5	-.087	1
628			min	-143.094	4	137.344	3	-392.9	5	-.825	5	-.002	2	-.589	6
629		5	max	305.231	3	549.797	8	92.466	4	-.127	4	.122	5	-.099	1
630			min	-143.094	4	137.344	3	-392.9	5	-.825	5	.003	2	-.623	6
631	MP3A	1	max	0	11	.066	8	.002	1	0	11	0	11	0	11
632			min	0	1	-.01	10	-.047	6	0	1	0	1	0	1

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
633		2	max	327.477	7	-71.708	4	447.244	6	.049	1	-.011	1	-.068	4
634			min	-26.883	4	-394.375	7	67.922	1	-.086	10	-.626	6	-.581	7
635		3	max	353.374	7	-54.04	4	442.298	8	.049	1	.104	1	.033	8
636			min	-20.636	4	-403.738	7	85.59	1	-.086	10	-.078	2	-.01	3
637		4	max	379.27	7	-36.371	4	442.298	8	.049	1	.717	8	.63	7
638			min	-14.388	4	-413.1	7	86.66	3	-.086	10	.139	3	.094	4
639		5	max	0	11	.009	10	.06	5	0	11	0	11	0	11
640			min	0	1	-.074	8	.002	2	0	1	0	1	0	1
641	MP2A	1	max	0	11	.058	9	-.009	3	0	11	0	11	0	11
642			min	0	1	-.137	7	-.502	8	0	1	0	1	0	1
643		2	max	212.217	10	391.027	10	279.779	6	.123	8	.002	1	.572	10
644			min	-34.438	1	98.248	9	-42.911	1	0	3	-.363	6	.139	3
645		3	max	218.464	10	391.027	10	270.417	6	.123	8	.066	2	.033	4
646			min	-28.19	1	98.248	9	-25.243	1	0	3	-.049	1	-.046	3
647		4	max	413.159	6	391.027	10	262.807	7	.123	8	.432	7	-.12	3
648			min	102.857	1	12.812	3	35.073	4	0	3	.033	1	-.601	10
649		5	max	0	11	.022	10	.061	8	0	11	0	11	0	11
650			min	0	1	-.01	9	.003	3	0	1	0	1	0	1
651	MP3C	1	max	0	11	-.001	4	.004	1	0	11	0	11	0	11
652			min	0	1	-.071	7	-.037	6	0	1	0	1	0	1
653		2	max	332.86	5	584.807	7	134.459	8	.055	2	.088	3	.817	7
654			min	-59.634	2	105.012	4	-23.169	3	-.099	1	-.218	8	.112	4
655		3	max	358.757	5	575.445	7	140.932	5	.055	2	.054	3	.029	3
656			min	-53.387	2	122.68	4	-40.076	2	-.099	1	-.052	4	-.065	6
657		4	max	384.653	5	566.866	5	150.294	5	.055	2	.21	5	-.237	1
658			min	-47.139	2	140.348	4	-57.744	2	-.099	1	-.073	2	-.914	6
659		5	max	0	11	.087	6	.035	6	0	11	0	11	0	11
660			min	0	1	.004	1	-.003	1	0	1	0	1	0	1
661	MP2C	1	max	0	11	.012	1	.345	5	0	11	0	11	0	11
662			min	0	1	-.419	6	.004	2	0	1	0	1	0	1
663		2	max	106.823	7	92.116	3	-91.556	2	.121	6	.604	7	.124	1
664			min	-20.104	4	-70.113	4	-435.254	5	-.003	4	.171	4	-.092	2
665		3	max	132.72	7	92.013	1	-109.224	2	.121	6	.033	2	.056	4
666			min	-13.856	4	-66.93	2	-425.892	5	-.003	4	-.051	1	-.064	3
667		4	max	411.645	7	92.133	4	-82.739	1	.121	6	-.181	4	.108	2
668			min	117.191	4	-70.13	3	-439.765	6	-.003	4	-.671	7	-.152	1
669		5	max	0	11	.048	6	-.001	2	0	11	0	11	0	11
670			min	0	1	-.001	1	-.046	5	0	1	0	1	0	1
671	MP3B	1	max	0	11	.012	8	.078	5	0	11	0	11	0	11
672			min	0	1	-.005	3	.002	2	0	1	0	1	0	1
673		2	max	331.765	8	9.617	2	-107.221	3	.075	3	.804	8	.051	2
674			min	-67.847	3	-197.502	5	-563.443	8	-.118	4	.112	3	-.269	5
675		3	max	357.662	8	9.617	2	-107.221	3	.075	3	.022	4	.062	3
676			min	-61.6	3	-197.502	5	-563.443	8	-.118	4	-.056	7	-.049	4
677		4	max	383.559	8	9.617	2	-107.221	3	.075	3	-.209	3	.33	7
678			min	-55.352	3	-197.502	5	-564.855	6	-.118	4	-.886	8	-.012	4
679		5	max	0	11	.001	1	-.002	4	0	11	0	11	0	11
680			min	0	1	-.02	6	-.092	7	0	1	0	1	0	1
681	MP2B	1	max	0	11	.464	6	.206	7	0	11	0	11	0	11
682			min	0	1	.018	3	-.024	4	0	1	0	1	0	1
683		2	max	104.641	8	-2.73	3	191.515	7	.122	5	.008	4	-.077	3
684			min	-21.354	3	-418.515	8	-9.549	4	.003	2	-.287	7	-.563	8

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
685		3	max	130.538	8	-20.398	3	191.515	7	.122	5	.035	2	.079	4
686			min	-15.106	3	-409.152	8	-9.549	4	.003	2	-.032	1	-.06	3
687		4	max	409.462	8	-92.295	4	202.834	5	.122	5	.288	7	.639	8
688			min	115.941	3	-396.214	7	-35.679	2	.003	2	-.021	4	.111	3
689		5	max	0	11	-.003	3	.004	4	0	11	0	11	0	11
690			min	0	1	-.06	8	-.022	5	0	1	0	1	0	1

Envelope AISC 14th(360-10): LRFD Steel Code Checks

	Member	Shape	Code Check	Loc[ft]	LC	Shear ...	Loc[ft]	Dir	LC	phi*Pnc ...	phi*Pnt [...	phi*Mn y...	phi*Mn z...	Cb	Eqn
1	M8	PIPE_3.0	.745	7.25	2	.260	7.25		5	63823.6...	65205	5.749	5.749	1....	H1-1b
2	MP5A	PIPE_3.5	.743	7.333	1	.257	7.333		8	73286.0...	78750	7.954	7.954	1....	H1-1b
3	MP3A	PIPE_2.0	.740	5.25	7	.103	5.25		7	20866.7...	32130	1.872	1.872	1....	H1-1b
4	MP3B	PIPE_2.0	.740	5.25	6	.105	.75		8	20866.7...	32130	1.872	1.872	1....	H1-1b
5	MP3C	PIPE_2.0	.740	5.25	5	.104	5.25		5	20866.7...	32130	1.872	1.872	1....	H1-1b
6	M12	PL1/2x6	.731	.833	8	.042	0	z	8	87357.4...	97200	1.012	12.15	1....	H1-1b
7	M22	PL1/2x6	.725	.833	6	.044	0	y	2	87357.4...	97200	1.012	12.15	1....	H1-1b
8	M2	PL1/2x6	.703	.833	5	.052	0	y	9	87357.4...	97200	1.012	12.15	1....	H1-1b
9	M3	PIPE_3.5	.676	2	5	.204	2		7	73777.5...	78750	7.954	7.954	1....	H1-1b
10	M13	PIPE_3.5	.670	2	8	.238	2		1	73777.5...	78750	7.954	7.954	1....	H1-1b
11	M19	HSS3X3X4	.670	0	6	.088	0	y	6	83064.9...	101016	8.556	8.556	2....	H1-1b
12	MP4C	PIPE_2.0	.663	7.188	8	.119	2.813		7	9836.597	32130	1.872	1.872	3....	H1-1b
13	M29	HSS3X3X4	.662	0	5	.088	0	y	7	83064.9...	101016	8.556	8.556	2....	H1-1b
14	M23	PIPE_3.5	.661	2	7	.299	2		4	73777.5...	78750	7.954	7.954	1....	H1-1b
15	MP4B	PIPE_2.0	.658	7.188	6	.112	2.813		5	9836.597	32130	1.872	1.872	4....	H1-1b
16	MP4A	PIPE_2.0	.657	7.188	5	.116	2.813		6	9836.597	32130	1.872	1.872	4....	H1-1b
17	M9	HSS3X3X4	.651	0	8	.119	0	z	9	83064.9...	101016	8.556	8.556	2....	H1-1b
18	M18	PIPE_3.0	.636	7.25	3	.261	7.25		6	63823.6...	65205	5.749	5.749	1....	H1-1b
19	M21	PL1/2x6	.632	.833	8	.051	0	y	2	87357.4...	97200	1.012	11.884	1....	H1-1b
20	M1	PL1/2x6	.613	.833	6	.043	0	y	3	87357.4...	97200	1.012	12.15	1....	H1-1b
21	M11	PL1/2x6	.612	0	5	.047	0	y	1	87357.4...	97200	1.012	12.15	1....	H1-1b
22	MP5B	PIPE_3.5	.610	7.333	3	.258	7.333		5	63184.4...	78750	7.954	7.954	1....	H1-1b
23	M10	PIPE_3.0	.610	0	2	.138	0		6	61066.3...	65205	5.749	5.749	2....	H1-1b
24	MP5C	PIPE_3.5	.598	7.333	4	.256	7.333		7	73286.0...	78750	7.954	7.954	1....	H1-1b
25	M25	HSS4X4X4	.587	4	8	.136	4	y	5	130481....	139518	16.181	16.181	2....	H1-1b
26	M15	HSS4X4X4	.583	4	5	.137	4	y	6	130481....	139518	16.181	16.181	2....	H1-1b
27	M5	HSS4X4X4	.571	4	7	.175	4	y	9	130481....	139518	16.181	16.181	2....	H1-1b
28	M28	PIPE_3.0	.567	7.25	4	.264	7.25		7	63823.6...	65205	5.749	5.749	2....	H1-1b
29	MP2A	PIPE_2.0	.549	5.25	8	.122	5.25		8	20866.7...	32130	1.872	1.872	1....	H1-1b
30	MP2C	PIPE_2.0	.548	5.25	6	.121	5.25		6	20866.7...	32130	1.872	1.872	1....	H1-1b
31	MP2B	PIPE_2.0	.546	5.25	5	.120	5.25		5	20866.7...	32130	1.872	1.872	1....	H1-1b
32	M27	L4X4X4	.540	0	4	.022	1.101	z	3	29442.6...	62532	3.138	6.715	1....	H2-1
33	M30	PIPE_3.0	.519	0	4	.142	0		8	61066.3...	65205	5.749	5.749	2....	H1-1b
34	M17	L4X4X4	.497	0	1	.021	3.646	z	1	29442.6...	62532	3.138	6.715	1....	H2-1
35	M26	L4X4X4	.490	0	1	.021	3.646	y	2	29442.6...	62532	3.138	6.715	1....	H2-1
36	M6	L4X4X4	.481	0	4	.022	3.646	y	4	29442.6...	62532	3.138	6.715	1....	H2-1
37	MP1A	PIPE_2.0	.475	7.188	10	.098	2.813		6	9836.597	32130	1.872	1.872	4....	H1-1b
38	M20	PIPE_3.0	.454	0	3	.141	0		5	61066.3...	65205	5.749	5.749	2....	H1-1b
39	M7	L4X4X4	.423	0	2	.019	0	z	1	29442.6...	62532	3.138	6.715	1....	H2-1
40	MP1C	PIPE_2.0	.363	7.188	6	.095	2.813		5	9836.597	32130	1.872	1.872	4....	H1-1b
41	MP1B	PIPE_2.0	.361	7.188	5	.100	2.813		8	9836.597	32130	1.872	1.872	4....	H1-1b

Envelope AISC 14th(360-10): LRFD Steel Code Checks (Continued)

	Member	Shape	Code Check	Loc[ft]	LC	Shear ...	Loc[ft]	Dir	LC	phi*Pnc ...	phi*Pnt [...	phi*Mn y...	phi*Mn z...	Cb	Eqn
42	M16	L4X4X4	.358	0	2	.018	3.646	y	2	29442.6...	62532	3.138	6.715	1....	H2-1
43	M33	L2x2x2	.047	.733	1	.035	0	y	7	13160.7...	15908.4	.403	.845	1....	H2-1
44	M31	L2x2x2	.046	.717	4	.043	1.465	y	9	13160.7...	15908.4	.403	.845	1....	H2-1
45	M32	L2x2x2	.032	.748	3	.035	1.465	y	8	13160.7...	15908.4	.403	.845	1....	H2-1

MODIFICATION AND DESIGN DRAWINGS FOR EXISTING ANTENNA MOUNTS EXISTING MONOPOLE TOWER

PROPOSED CARRIER: T-MOBILE

TOWER OWNER: SBA / TOWER OWNER SITE #: CT01499-S

CARRIER SITE #/NAME: CT11536A / TORRINGTON

COORDINATES (LATITUDE: 41.822991°, LONGITUDE: -73.077199°)

PLEASE NOTE THIS SET OF DRAWINGS ARE FOR INSTALLATION AND ASSEMBLY ONLY. FABRICATION DETAIL DRAWINGS ARE NOT PROVIDED AND MUST BE COMPLETED BY THE STEEL FABRICATOR SELECTED. TES CAN PROVIDE THE FABRICATION DETAIL DRAWINGS FOR AN ADDITIONAL FEE.

SHEET	SHEET TITLE	REV
T-1	TITLE SHEET	0
BOM	BILL OF MATERIALS	0
GN-1	GENERAL NOTES	0
A-1	ANTENNA MOUNT MODIFICATION DETAILS	0
A-2	ANTENNA MOUNT PHOTOS	0
D-1	STANDARD DETAILS	0
MS-HR35-18	METROSITE SUPPORT RAIL KIT	
MS-H1436	METROSITE HEAVY COLLAR MOUNT PLATE ASSEMBLY DETAIL	
MPHW-1	METROSITE HEAVY COLLAR MOUNT PLATE WELDMENT DETAIL	
MS-TAW-350RO	METROSITE ROTATABLE T-ARM KIT	

NOTE:

1. THE MODIFICATION DRAWINGS ARE BASED ON THE **TES** PROJECT NO. **77894**, DATED **06/20/19**.

TES
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BOCA RATON, FL 33487
(800)-487-SITE

TES JOB NO:
81226

CUSTOMER SITE NO:
CT01499-S-SBA

CUSTOMER SITE NAME:
TORRINGTON

1925-1931 EAST MAIN STREET
TORRINGTON, CT 06790

STATE OF CONNECTICUT
HANMING YOU
28931
LICENSED PROFESSIONAL ENGINEER

7/22/19

DRAWN BY: RK | CHECKED BY: KN/HMA

REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	RK	07/22/19

SHEET TITLE:
TITLE SHEET

SHEET NUMBER: T-1

REV #: 0

BILL OF MATERIALS

QUANTITY COUNTED	QUANTITY PROVIDED	PART NUMBER	DESCRIPTIONS	SHEET LIST	PIECE WEIGHT (LBS)	WEIGHT (LB)	NOTES
			MATERIAL & HARDWARE				
1	1	MS-H1436	METROSITE HEAVY COLLAR MOUNT ASSEMBLY	A-1, MS-H1436	138.0	138.0	Galvanized
1	1	MS-HR35-18	METROSITE SUPPORT RAIL KIT	A-1, MS-HR35-18	523.0	523.0	Galvanized
			FOLLOWING ITEMS ARE "CUSTOM" PARTS				
6	6	PX2375-10	2" PST (2.375" O.D. X 0.218" THK) X 10'-0" A53 GR-B	A-1	51.34	308.0	GALVANIZED
1	1	MS-TAW-350RO	METROSITE ROTATABLE T-ARM KIT	A-1	284.00	284.0	GALVANIZED
6	6	PL400-2375	PL 3/8" X 7 1/8" X 11" A36	D-1	8.50	51.0	GALVANIZED
12	13	MS02-625-250-400	RU-BOLT 5/8" X 2 1/2" I.W. X 4" I.L. A36 (OR EQUIV.)	D-1	1.17	16.0	(2) HHN & LKW-EA GALVANIZED
12	13	MS02-625-4625-700	RU-BOLT 5/8" X 4 5/8" I.W. X 7" I.L. A36 (OR EQUIV.)	D-1	1.60	21.8	(2) HHN & LKW-EA GALVANIZED

ALL METROSITE PARTS ARE AVAILABLE FROM METROSITE, LLC.

180 IND PARK BLVD COMMERCE, GA 30529
OFFICE: (706) 335-7045
FAX: (706) 335-7056

NOTE: ALL MATERIALS, WHICH WEREN'T LISTED IN THIS SHEET, ARE ASSUMED TO BE PROVIDED BY THE CONTRACTOR.

TOTAL WEIGHT (LBS) = **1341.9**

TES

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BOCA RATON, FL 33487
(800)-487-SITE

TES JOB NO:
81226

CUSTOMER SITE NO:
CT01499-S-SBA
CUSTOMER SITE NAME:
TORRINGTON
1925-1931 EAST MAIN STREET
TORRINGTON, CT 06790

DRAWN BY: RK | CHECKED BY: KN/HMA

REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	RK	07/22/19

SHEET TITLE:
BILL OF MATERIALS

SHEET NUMBER: BOM
REV #: 0

GENERAL NOTES

1. ALL WORK SHALL COMPLY WITH THE ANSI/TIA-222-G, ANSI/ASSP A10.48, AND ANY OTHER GOVERNING BUILDING CODES AND OSHA SAFETY REGULATIONS.
2. ALL WORK INDICATED ON THE DRAWINGS SHALL BE PERFORMED BY QUALIFIED CONTRACTORS EXPERIENCED IN TELECOMMUNICATIONS TOWER, POLE AND FOUNDATION CONSTRUCTION.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND FABRICATION OF ALL MISCELLANEOUS PARTS (SUCH AS SHIMS), TEMPORARY SUPPORTS, AND GUYINGS, ETC., PER ANSI/ASSP A10.48, TO COMPLETE THE ASSEMBLY AS SHOWN IN THE DRAWINGS.
4. CONTRACTOR SHALL PROCEED WITH THE INSTALLATION WORK CAREFULLY SO THE WORK WILL NOT DAMAGE ANY EXISTING CABLE, EQUIPMENT OR THE STRUCTURE.
5. THE USE OF GAS TORCH OR WELDER, ARE NOT ALLOWED ON ANY TOWER STRUCTURE WITHOUT THE CONSENT OF THE TOWER OWNER.
6. GENERALLY THE CONTRACTOR IS RESPONSIBLE TO CONDUCT AN ONSITE VISIT SURVEY OF THE JOB SITE AFTER AWARD, AND REPORT ANY ISSUES WITH THE SITE TO **TES** BEFORE PROCEEDING CONSTRUCTION.
7. IT IS THE RESPONSIBILITY OF THE GC TO VERIFY THAT THERE IS NO INTERFERENCES (WITH SAFETY CLIMB BRACKETS, TRANSMISSION LINES, ETC.) PRIOR TO MOBILIZATION AND INSTALLATION OF THESE MODIFICATIONS.
8. PLEASE NOTIFY TES IMMEDIATELY IF ANY INSTALLATION ISSUES OCCUR RELATED TO THIS DRAWING @ 972-483-0607 OR EMAIL-TESCONSTRUCTION@TESTOWER.US

FABRICATION

1. ALL STEEL SHALL MEET OR EXCEED THE MINIMUM STRENGTH AS SPECIFIED IN THE DRAWINGS. IF YIELD STRENGTH WAS NOT NOTED IN THE DRAWINGS, CONTRACTORS SHALL CONTACT TES FOR DIRECTION.
2. ALL FIELD CUT EDGES SHALL BE GROUND SMOOTH. ALL FIELD CUT AND DRILLED SURFACES SHALL BE REPAIRED WITH A MINIMUM OF TWO COATS OF ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURER'S RECOMMENDATIONS.

WELDING

1. ALL WELDING SHALL BE PERFORMED BY AWS CERTIFIED WELDERS AND IN ACCORDANCE WITH THE LATEST EDITION OF THE AWS WELDING CODE D1.1. ALL ELECTRODES TO BE LOW HYDROGEN, MATCHING FILLER METAL, PER AWS D1.1, UNO. (E70XX UNLESS NOTED OTHERWISE).
2. PRIOR TO FIELD WELDING GALVANIZED MATERIAL, CONTRACTOR SHALL GRIND OFF GALVANIZING APPROX. 0.5" BEYOND THE PROPOSED FIELD WELD SURFACES.
3. ALL WELDS SHALL BE INSPECTED VISUALLY. A MINIMUM OF 25% OF WELDS SHALL BE INSPECTED WITH DYE PENETRANT OR MAGNETIC PARTICLE TO MEET THE ACCEPTANCE CRITERIA OF AWS D1.1. 100% OF WELDS SHALL BE INSPECTED IF DEFECTS ARE FOUND.
4. WELD INSPECTIONS SHALL BE PERFORMED BY AN AWS CERTIFIED WELD INSPECTOR.
5. AFTER INSPECTION, ALL FIELD WELDED SURFACES SHALL BE REPAIRED WITH A MINIMUM OF TWO COATS OF ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURER'S RECOMMENDATIONS.

BOLTED ASSEMBLIES AND TIGHTENING OF CONNECTIONS

1. ALL HIGH STRENGTH BOLTS SHALL CONFORM TO THE PROVISIONS OF THE SPECIFICATIONS FOR STRUCTURAL JOINTS USING A325 OR A490 BOLTS AS APPROVED BY THE RCSC.
2. FLANGE BOLTS SHALL BE TIGHTENED BY THE AISC "TURN-OF-THE-NUT" METHOD. THE FOLLOWING TABLE SHOULD BE USED FOR THE "TURN-OF-THE-NUT" TIGHTENING.
3. SPLICE BOLTS AND ALL OTHER BOLTS IN BEARING TYPE CONNECTIONS SHALL BE TIGHTENED TO A SNUG-TIGHT CONDITION.
4. THE SNUG-TIGHT CONDITION IS DEFINED AS THE TIGHTNESS ATTAINED BY EITHER A FEW IMPACTS OF AN IMPACT WRENCH OR THE FULL EFFORT OF AN IRONWORKER WITH AN ORDINARY SPUD WRENCH TO BRING THE CONNECTED PLIES INTO FIRM CONTACT.
5. HB HOLLO-BOLT SHALL BE INSTALLED PER ICC ESR-3330 INSTRUCTIONS.

VERIFICATION AND INSPECTION

1. IF APPLICABLE, VERIFICATION INSPECTION TO BE PERFORMED SHALL BE IN ACCORDANCE TO IBC-2015 SECTION 1705 FOR STEEL CONSTRUCTION AND TABLE 1705.3 FOR CONCRETE CONSTRUCTION.

TABLE 8.2 NUT ROTATION FROM SNUG-TIGHT CONDITION FOR TURN-OF-NUT PRETENSIONING [a,b]

BOLT LENGTH [c]	DISPOSITION OF OUTER FACE OF BOLTED PARTS		
	BOTH FACES NORMAL TO BOLT AXIS	ONE FACE NORMAL TO BOLT AXIS, OTHER SLOPED NOT MORE THAN 1:20 [d]	BOTH FACES SLOPED NOT MORE THAN 1:20 FROM NORMAL TO BOLT AXIS [d]
NOT MORE THAN $4d_b$	1/3 TURN	1/2 TURN	2/3 TURN
MORE THAN $4d_b$ BUT NOT MORE THAN $8d_b$	1/2 TURN	2/3 TURN	5/6 TURN
MORE THAN $8d_b$ BUT NOT MORE THAN $12d_b$	2/3 TURN	5/6 TURN	1 TURN

[a] NUT ROTATION IS RELATIVE TO BOLT REGARDLESS OF THE ELEMENT (NUT OR BOLT) BEING TURNED. FOR REQUIRED NUT ROTATIONS OF 1/2 TURN AND LESS, THE TOLERANCE IS PLUS OR MINUS 30 DEGREES; FOR REQUIRED NUT ROTATIONS OF 2/3 TURN AND MORE, THE TOLERANCE IS PLUS OR MINUS 45 DEGREES.

[b] APPLICABLE ONLY TO JOINTS IN WHICH ALL MATERIAL WITHIN THE GRIP IS STEEL.

[c] WHEN THE BOLT LENGTH EXCEEDS $12d_b$, THE REQUIRED NUT ROTATION SHALL BE DETERMINED BY ACTUAL TESTING IN A SUITABLE TENSION CALIBRATOR THAT SIMULATES THE CONDITIONS OF SOLIDLY FITTING STEEL.

[d] BEVELED WASHER NOT USED.

SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS, JUNE 30, 2004 RESEARCH COUNCIL ON STRUCTURAL CONNECTIONS

INSTALLATION TORQUE REQUIRED FOR HOLLO BOLTS AND AJAX BOLTS:

1. HB12 HOLLO BOLT: 59 FT-LBS
2. HB16 HOLLO BOLT: 140 FT-LBS
3. HB20 HOLLO BOLT: 221 FT-LBS
4. M20 AJAX BOLT: 280 FT-LBS.

FIELD HOT WORK PLAN NOTES:

FOLLOWING GUIDELINES SHALL BE COMPLIED WITH:

1. CONTRACTOR'S RESPONSIBILITY TO COMPLETE A HOT WORK PLAN IF AWARDED PER CUSTOMER SPECIFICATIONS GUIDELINES FOR WELDING, CUTTING & SPARK PRODUCING WORK.
2. HAVE A FIRE PLAN APPROVED BY THE CUSTOMER AND THEIR SAFETY MANAGEMENT DEPT.
3. CONTRACTOR MUST OBTAIN THE CONTACT INFO OF THE LOCAL FIRE DEPARTMENT AND THE 911 ADDRESS OF THE TOWER SITE BEFORE CONSTRUCTION.
4. CONTRACTOR SHALL MAKE SURE THAT CELL PHONE COVERAGE IS AVAILABLE IN THE TOWER SITE. IF CELL COVERAGE IS NOT AVAILABLE, AN IMMEDIATE AVAILABLE MEANS OF DIRECT COMMUNICATION WITH THE FIRE DEPARTMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION START.
5. ALL CONSTRUCTION SHALL BE PERFORMED UNDER WIND SPEED LESS THAN 10 MPH ON THE GROUND LEVEL. IF WIND SPEED INCREASE, CONTRACTOR MUST DETERMINE IF CONSTRUCTION SHALL BE DISCONTINUED.
6. FIRE SUPPRESSION EQUIPMENT MUST BE MADE AVAILABLE ON SITE AND READY TO USE.
7. CONTRACTOR SHALL ASSIGN A FIRE WATCHER TO PERFORM FIRE-FIGHTING DUTIES.
8. ALL WELDERS SHALL BE AWS OR STATE CERTIFIED. THEY MUST ALSO BE EXPERIENCED IN WELDING ON GALVANIZED MATERIALS.
9. IF IT IS POSSIBLE, ALL EXISTING COAX NEAR WELDING AREA SHALL BE TEMPORARILY MOVED AWAY FROM THE WELDING AREA BEFORE WELDING THE PLATES.
10. PLEASE REPORT ANY FIELD ISSUE TO TES @ 972-483-0607.

TES
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SBA

5900 BROKEN SOUND PARKWAY, NW
BOCA RATON, FL 33487
(800)-487-SITE

TES JOB NO:
81226

CUSTOMER SITE NO:
CT01499-S-SBA
CUSTOMER SITE NAME:
TORRINGTON
1925-1931 EAST MAIN STREET
TORRINGTON, CT 06790

DRAWN BY: RK | CHECKED BY: KN/HMA

REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	RK	07/22/19

SHEET TITLE:
GENERAL NOTES

SHEET NUMBER: GN-1
REV #: 0

SCOPE OF WORK

1. A. REPLACE ALL EXISTING ANTENNA MOUNT PIPES WITH NEW 2" PX PIPES (10'-0" LONG) THEN RELOCATE EXISTING ANTENNAS TO NEW MOUNT PIPES (TYP). (2) PER SECTOR. EXISTING ANTENNA RAD CENTER TO BE MAINTAINED.

   B. INSTALL NEW CROSSOVER PLATE. (2) PER SECTOR. SEE SHEET D-1 FOR DETAILS.

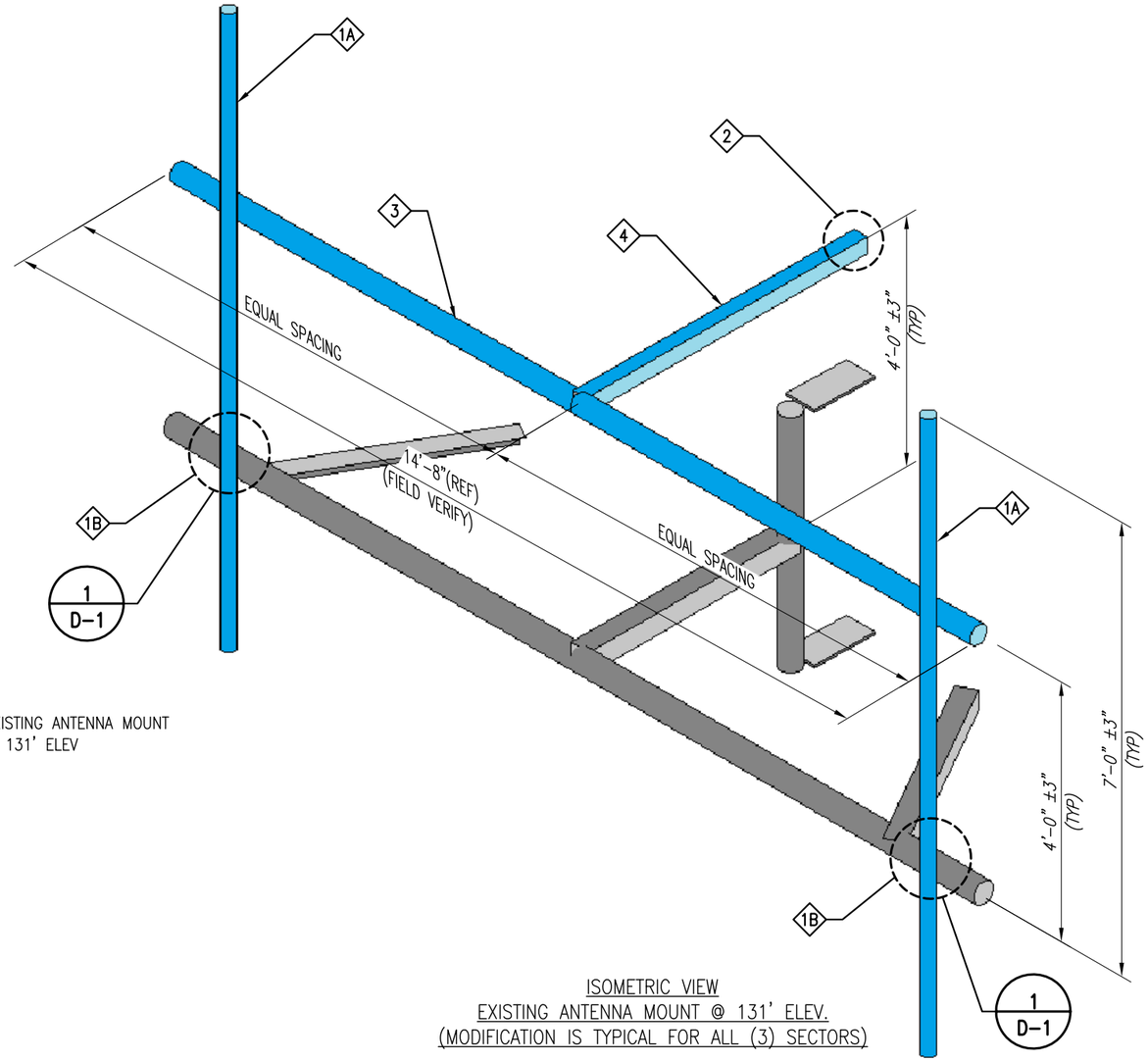
2. INSTALL NEW HEAVY COLLAR MOUNT (NOT SHOWN FOR CLARITY). SEE SHEET MS-H1436 FOR DETAILS.

3. INSTALL NEW SUPPORT RAIL KIT. SEE SHEET MS-HR35-18 FOR DETAILS.

4. INSTALL NEW ROTATABLE T-ARM KIT. SEE SHEET MS-TAW-350RO FOR DETAILS.

5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CLEAN-UP, REMOVAL AND DISPOSAL OF EXCESS MATERIALS USED AND REMOVED FROM THE STRUCTURE AT THE COMPLETION OF THE PROJECT.

PHOTO 1



ISOMETRIC VIEW
EXISTING ANTENNA MOUNT @ 131' ELEV.
(MODIFICATION IS TYPICAL FOR ALL (3) SECTORS)

GC NOTE:
1. **IT IS THE RESPONSIBILITY OF THE GC TO VERIFY THAT THERE IS NO INTERFERENCES WITH (PORT HOLES, SAFETY CLIMB BRACKETS, TRANSMISSION LINES, ETC.) PRIOR TO MOBILIZATION AND INSTALLATION OF THESE MODIFICATIONS.**
2. **PLEASE NOTIFY TES IMMEDIATELY IF ANY INSTALLATION ISSUES OCCUR RELATED TO THIS DRAWING @ 972-483-0607 OR EMAIL-TESCONSTRUCTION@TESTOWER.US**

NOTES:
1. TEMPORARILY RELOCATE ANY EXISTING COAX ATTACHED TO THE LEGS AND/OR ANY OTHER MEMBERS WHERE OBSTRUCTION WITH THE PROPOSED MODIFICATION MAY OCCUR.
2. WHEN FIELD CUTTING AND DRILLING ANGLES, USE SAME GAGE LINES AND EDGE DISTANCES AS INDICATED ON SHOP CUT AND DRILLED ENDS.
3. APPLY (2) COATS OF ZINC RICH GALVANIZING COMPOUND AS PER THE MANUFACTURER'S SPECIFICATIONS TO ALL FIELD CUT AND DRILLED AREAS.
4. **MEMBERS IN BLUE COLOR ARE NEW REINFORCEMENTS.**

ITEM NO.	QTY.	PART NO.	DESCRIPTIONS
1	6	PX2375-10	2" PST (2.375" O.D. X 0.218" THK) X 10'-0" A53 GR-B
2	1	MS-H1436	METROSITE HEAVY COLLAR MOUNT ASSEMBLY
3	1	MS-HR35-18	METROSITE SUPPORT RAIL KIT
4	1	MS-TAW-350RO	METROSITE ROTATABLE T-ARM KIT

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TES JOB NO: 81226

CUSTOMER SITE NO: CT01499-S-SBA

CUSTOMER SITE NAME: TORRINGTON

1925-1931 EAST MAIN STREET
TORRINGTON, CT 06790

DRAWN BY: RK | CHECKED BY: KN/HMA

REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	RK	07/22/19

SHEET TITLE:
ANTENNA MOUNT MODIFICATION DETAILS

SHEET NUMBER: A-1

REV #: 0

PHOTO 1

EXISTING EQUIPMENT MUST BE RELOCATED UP OR DOWN ALONG THE MEMBER TO ACCOMMODATE INSTALLATION OF MOUNT MODIFICATION

PHOTO 2

PHOTO 3

TES

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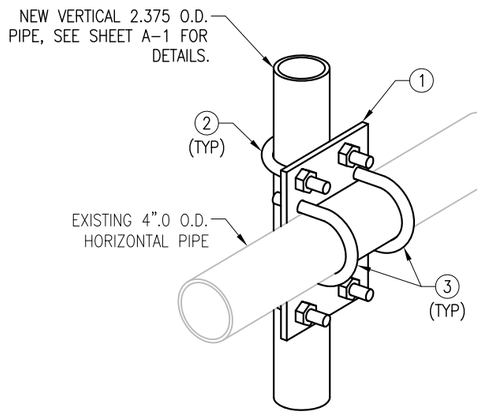
REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	RK	07/22/19

SHEET TITLE:

ANTENNA MOUNT PHOTOS

SHEET NUMBER: A-2

REV #: 0



1 / D-1 DETAIL

NOTES:
1. HOT-DIPPED GALVANIZED PER ASTM A123.
2. ALL HOLES ARE 11/16" DIA. U.N.O

ITEM NO.	QTY.	PART NO.	DESCRIPTIONS
1	6	PL400-2375	PL 3/8" X 7 1/8" X 11" A36
2	12	MS02-625-250-400	RU-BOLT 5/8" X 2 1/2" I.W. X 4" I.L. A36 (OR EQUIV.)
3	12	MS02-625-4625-700	RU-BOLT 5/8" X 4 5/8" I.W. X 7" I.L. A36 (OR EQUIV.)

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DRAWN BY: RK | CHECKED BY: KN/HMA

REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	RK	07/22/19

SHEET TITLE:
STANDARD DETAILS

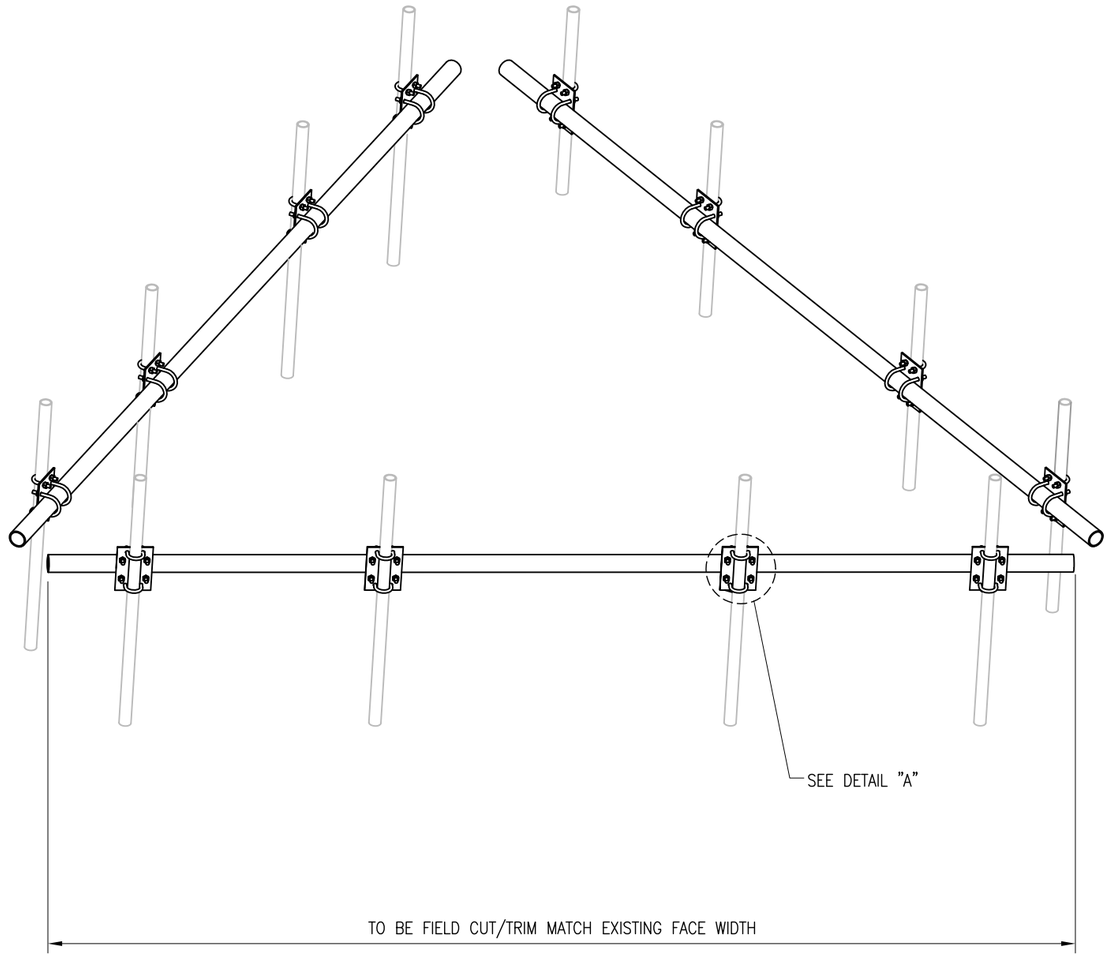
SHEET NUMBER: D-1

REV #: 0

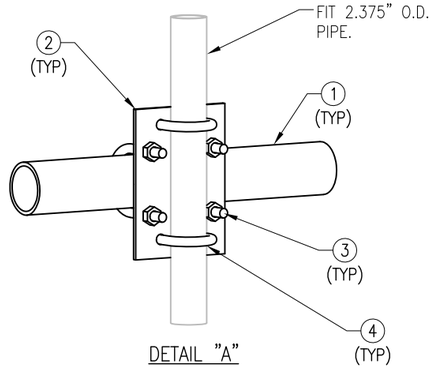
THE FOLLOWING DRAWINGS ARE INCLUDED FOR REFERENCE ONLY
PLEASE REFER TO THE INSTALLATION DRAWINGS FOR ACTUAL INSTALLATION DETAILS

MS-HR35-18

ITEM NO.	QTY.	PART NO.	DESCRIPTION	GRADE	SHEET #	WT
1	3	3PST-216	3" PST (3.50" O.D X .216" THICK) X 18'-0"	A53 GR-B	HR35-18	430.2
2	12	PL375-10	PL 3/8" X 7 1/8" X 10"	A36	TAF-1	92.4
3	24	MS02-625-3625-600	RU-BOLT 5/8" X 3 5/8" I.W. X 6" I.L. A36 (OR EQUIV.)	A36	RBC-1	--
4	24	MS02-625-250-400	RU-BOLT 5/8" X 2 1/2" I.W. X 4" I.L. A36 (OR EQUIV.)	A36	RBC-1	--
					GALVANIZED WT	523



ELEVATION VIEW



DETAIL "A"

NOTES:
1. ALL HOLES ARE 11/16" DIA. U.N.O
2. HOT-DIPPED GALVANIZED PER ASTM A123.

THIRD ANGLE PROJECTION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE FINISH

STANDARD SHEET TOLERANCES

DECIMALS	ANGLES
.X ± 0.1	± 1°
.XX ± 0.02	FRACTIONS
.XXX ± 0.005	± 1/32

APPROVAL / SIGNATURES		DATE
DRAWN BY	XXX	05/12/17
REVIEWED	XXX	-
APPROVED	XXX	-

METROSITE FABRICATORS LLC
180 INDUSTRIAL PARK BLVD.
COMMERCE GA 30529

TITLE
MS-HR35-18
SUPPORT RAIL KIT

SIZE	DWG NO	REV
B	MS-HR35-18	0

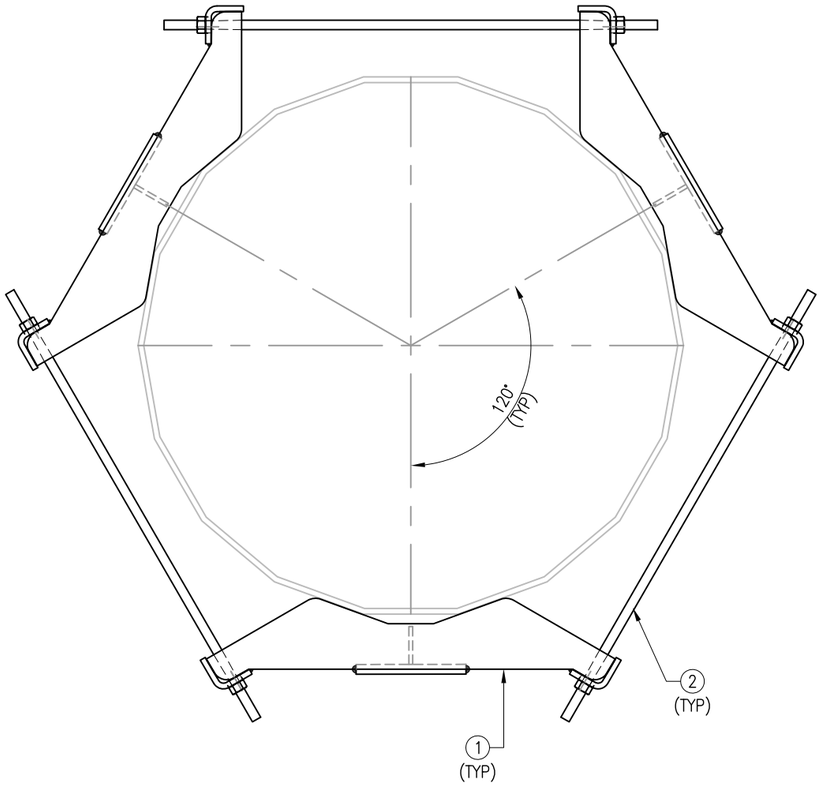
SCALE -

SHEET 1 OF 1

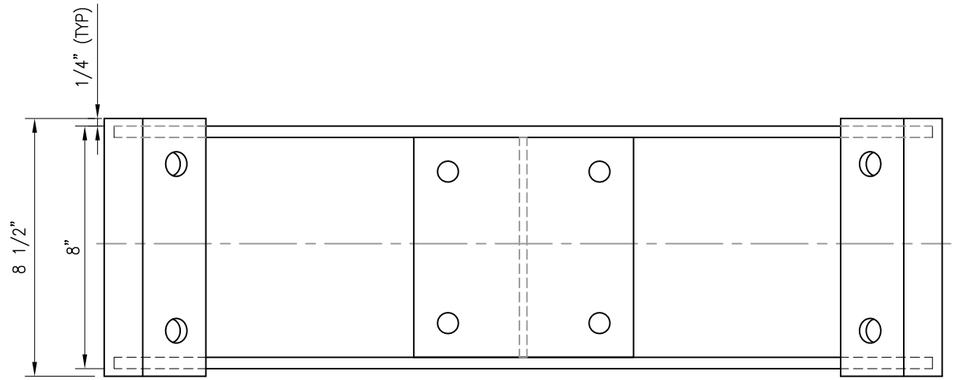
NOTE:
1) FITS 12" DIA TO 32" DIA.

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	3	MPHW-1	MOUNT PLATE WELDMENT A36
2	6	---	THREADED ROD 3/4" X 2'-4 3/4" W/ 2 HHN & LW EA A36

GALVANIZED WEIGHT: 136.7 LBS



TOP VIEW



FRONT VIEW

THIRD ANGLE PROJECTION

METROSITE FABRICATORS LLC
180 INDUSTRIAL PARK BLVD.
COMMERCE GA 30529

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE FINISH

STANDARD SHEET TOLERANCES

DECIMALS	ANGLES
.X ± 0.1	± 1°
.XX ± 0.02	FRACTIONS
.XXX ± 0.005	± 1/32

APPROVAL / SIGNATURES		DATE
DRAWN BY	XXX	05/12/17
REVIEWED	XXX	-
APPROVED	XXX	-

TITLE
HEAVY COLLAR MOUNT PLATE
ASSEMBLY DETAIL MS-H1436

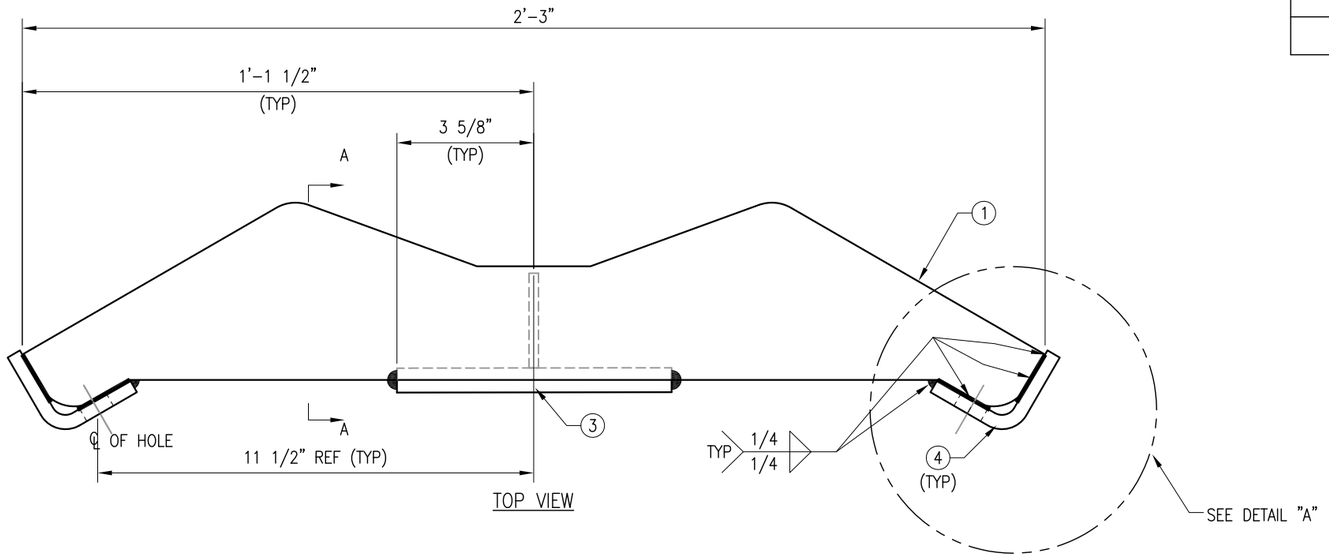
SIZE	DWG NO	REV
B	MS-H1436	1

SCALE -

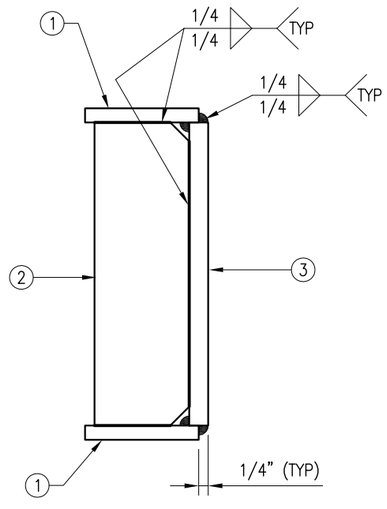
SHEET 1 OF 1

NOTES:
1. HOT-DIPPED GALVANIZED PER ASTM A123.
2. WELD TYPE: E70XX.

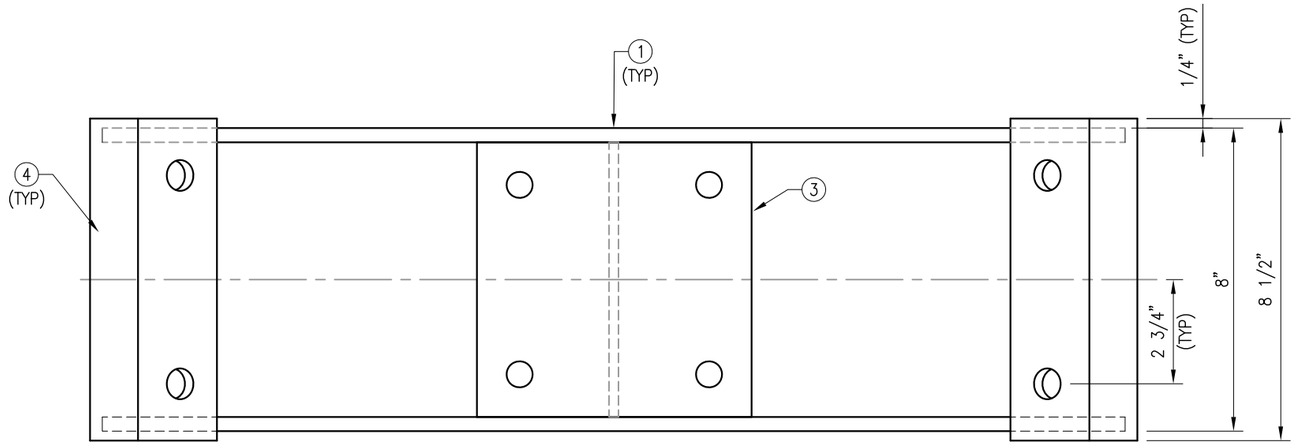
MPHW-1 WELDMENT						
ITEM NO.	QTY.	PART NO.	DESCRIPTION	GRADE	SHEET #	WT
1	2	PL-4	PL 3/8" X 5 3/8" X 2'-3"	A36	F-2	18.8
2	1	PL-5	PL 3/8" X 2 1/2" X 0'-7 1/4"	A36	F-2	1.9
3	1	PL-6	PL 1/2" X 7 1/4" X 0'-7 1/4"	A36	F-2	7.5
4	2	PL-7	PL 3/8" x 4 3/8" x 8 1/2"	A36	F-2	7.8
					BLACK WT	36
					GALVANIZED WT	38



TOP VIEW

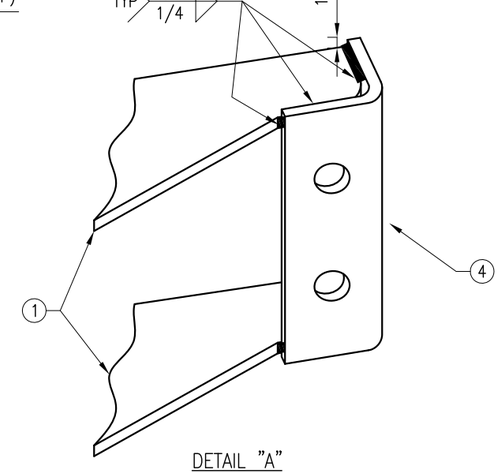


SECTION "A-A"



FRONT VIEW

MPW-1 WELDMENT



DETAIL "A"

THIRD ANGLE PROJECTION

METROSITE FABRICATORS LLC
180 INDUSTRIAL PARK BLVD.
COMMERCE GA 30529

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE FINISH

STANDARD SHEET TOLERANCES

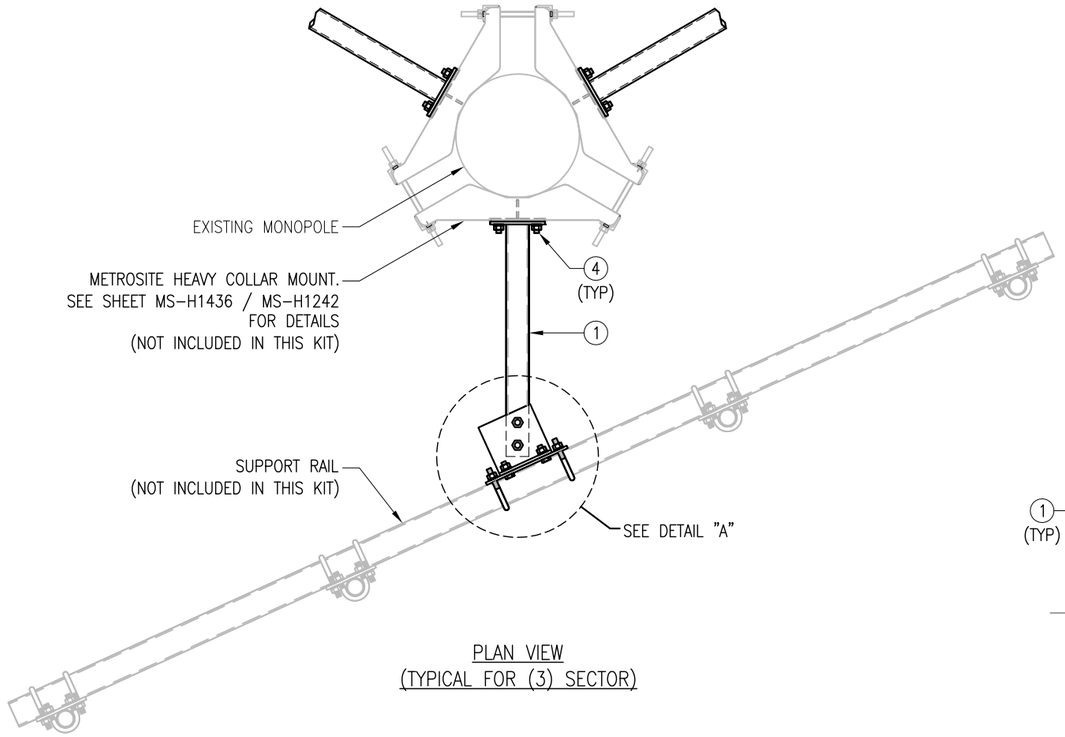
DECIMALS	ANGLES
.X ± 0.1	± 1°
.XX ± 0.02	FRACTIONS
.XXX ± 0.005	± 1/32

APPROVAL / SIGNATURES		DATE
DRAWN BY	XXX	05/12/17
REVIEWED	XXX	-
APPROVED	XXX	-

TITLE
HEAVY COLLAR MOUNT PLATE WELDMENT DETAIL

SIZE	DWG NO	REV
B	MPHW-1	0

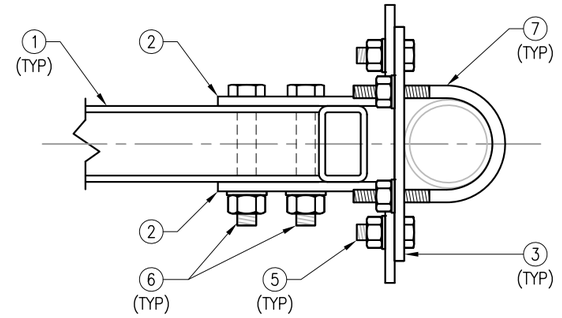
SCALE - SHEET 1 OF 1



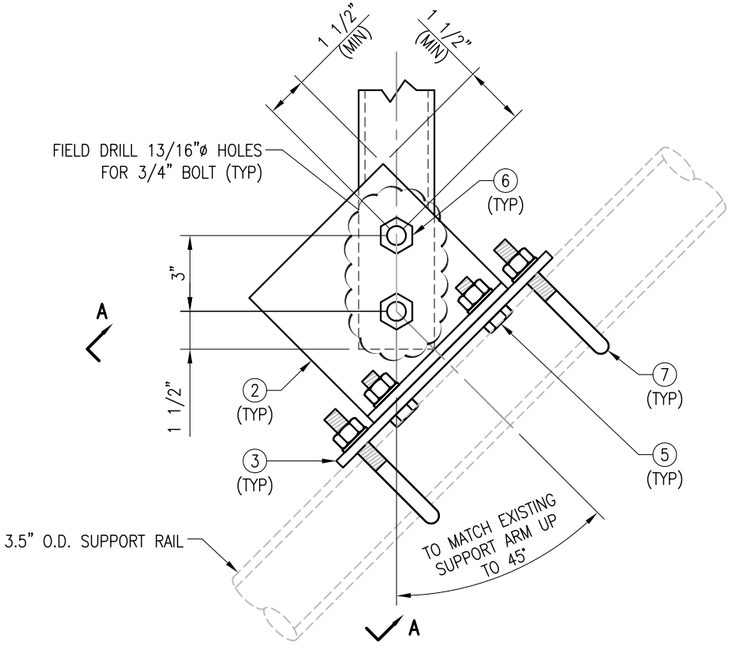
PLAN VIEW
(TYPICAL FOR (3) SECTOR)

MS-TAW-350RO

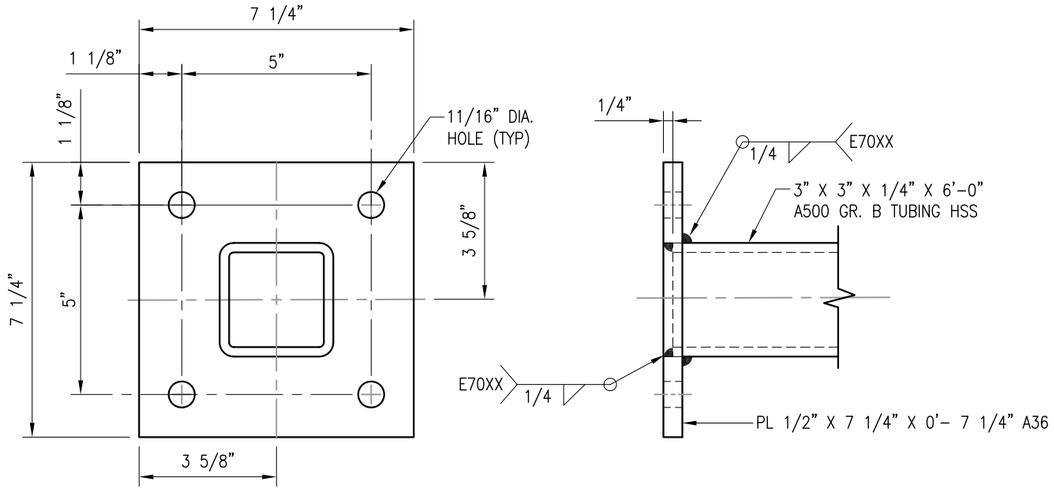
ITEM NO.	QTY.	PART NO.	DESCRIPTION	GRADE	SHEET #	WT
1	3	TAW-6	T-ARM WELDMENT	A36	TAW-6	192
2	6	TARM-CPL-750	PL 3/8" X 7 1/2" X 9 7/16" A36 BENT PLATE	A36	BK-5	47.4
3	3	TARM-CPL-1175	PL 3/8" X 9 1/4" X 11 3/4"	A36	BK-5	36.3
4	12	---	BOLT 5/8" X 2 1/4" A325 W/ HHN & LKW EA.	A325	---	--
5	12	---	BOLT 5/8" X 2" A325 W/ HHN & LKW EA.	A325	---	--
6	6	---	BOLT 3/4" X 5" A325 W/ HHN & LKW EA.	A325	---	--
7	6	MS02-625-3625-600	RU-BOLT 5/8" X 3 5/8" I.W. X 6" I.L. A36 (OR EQUIV.)	---	RBC-1	8.7
					GALVANIZED WT	284



SECTION "A-A"



DETAIL "A"



FRONT VIEW

TAW-6 WELDMENT

SIDE VIEW

NOTES:
1. HOT-DIPPED GALVANIZED PER ASTM A123.
2. ALL HOLES ARE 11/16" DIA. U.N.O

THIRD ANGLE PROJECTION

METROSITE FABRICATORS LLC
180 INDUSTRIAL PARK BLVD.
COMMERCE GA 30529

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
AND INCLUDE FINISH

STANDARD SHEET TOLERANCES

DECIMALS	ANGLES
.X ± 0.1	± 1°
.XX ± 0.02	FRACTIONS
.XXX ± 0.005	± 1/32

CONFIDENTIAL
ALL INFORMATION ON THIS DOCUMENT IS
PROPERTY OF METROSITE FABRICATORS LLC

APPROVAL / SIGNATURES		DATE
DRAWN BY	XXX	11/19/18
REVIEWED	XXX	-
APPROVED	XXX	-

TITLE

ROTATABLE T-ARM KIT

SIZE	DWG NO	REV
B	MS-TAW-350RO	1

SCALE - SHEET 1 OF 1

Exhibit F

Power Density/RF Emissions Report

Radio Frequency Emissions Analysis Report

February 16, 2022

Centerline Communications on behalf of T-Mobile

Site Name: Torrington/Rt 202/Rt 183
Site Address: 1925-1931 East Main Street, Torrington, CT 06790

Site Compliance Summary

Compliance Status:	Compliant
Carrier MPE% of FCC General Population Allowable Limit:	7.48338700%
Composite MPE% of FCC General Population Allowable Limit:	7.62865900%

750 West Center St. Suite 301 | West Bridgewater, MA 02379

February 16, 2022

T-Mobile

Emissions Analysis for Site: **Torrington/Rt 202/Rt 183**

Centerline Communications, LLC ("Centerline") was directed to analyze the proposed T-Mobile facility to be located a monopole near **1925-1931 East Main Street, Torrington CT 06790** for the purpose of determining whether the emissions from the proposed facility 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 (µW/cm2). The number of $\mu W/cm^2$ 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.

Population exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limits for the 600 MHz is 400 $\mu W/cm^2$, the 700 MHz is 467 $\mu W/cm^2$, the 1900 MHz, 2100 MHz, and 2500 MHz bands is 1000 $\mu W/cm^2$.

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, 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 performed for the proposed facility using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing focused omnidirectional antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. This is a very conservative estimate since the gain reduction in actual applications is typically greater than 10 dB in the direction of ground immediately surrounding the facility. Real world emissions values from this facility are expected to be lower than values listed in this report at ground level. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

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. All power values expressed and analyzed are maximum power levels expected to be used on all radios.

RRH #	Frequency Band	Technology	Channel Count	Transmit Power per Channel (W)
1	2500	LTE	1	90
1	2500	NR	1	90
1	2500	LTE	1	30
1	2500	NR	1	30
2	1900	GSM	1	15
3	1900	LTE	2	140
3	2100	LTE	2	140
4	700	LTE	4	40
4	600	LTE	2	40
4	600	NR	2	30
5	2500	LTE	1	90
5	2500	NR	1	90
5	2500	LTE	1	30
5	2500	NR	1	30
6	1900	GSM	1	15
7	1900	LTE	2	140
7	2100	LTE	2	140
8	700	LTE	4	40

8	600	LTE	2	40
8	600	NR	2	30
9	2500	LTE	1	90
9	2500	NR	1	90
9	2500	LTE	1	30
9	2500	NR	1	30
10	1900	GSM	1	15
11	1900	LTE	2	140
11	2100	LTE	2	140
12	700	LTE	4	40
12	600	LTE	2	40
12	600	NR	2	30
13	700	LTE	4	40
14	1900	LTE	4	40
13	850	LTE	4	40
14	2100	LTE	4	40
15	2300	LTE	4	25
16	3840	NR	1	67.78
17	700	LTE	4	40
18	1900	LTE	4	40
17	850	LTE	4	40
18	2100	LTE	4	40
19	2300	LTE	4	25
20	3840	NR	1	67.78
21	700	LTE	4	40
22	1900	LTE	4	40
21	850	LTE	4	40
22	2100	LTE	4	40
23	2300	LTE	4	25
24	3840	NR	1	67.78
25	1900	LTE	2	40
25	1900	LTE	2	40
25	1900	LTE	2	40
26	1900	LTE	2	40
26	1900	LTE	2	40
26	1900	LTE	2	40
27	1900	LTE	2	40

27	1900	LTE	2	40
27	1900	LTE	2	40
29	700	LTE	2	40
29	850	LTE	2	40
30	1900	LTE	4	40
29	700	LTE	2	40
29	850	LTE	2	40
30	2100	LTE	4	40
31	3700	NR	4	50
32	3550	CBRS	4	5
33	28000	NR	1	3.165
34	700	LTE	2	40
34	850	LTE	2	40
35	1900	LTE	4	40
34	700	LTE	2	40
34	850	LTE	2	40
35	2100	LTE	4	40
36	3700	NR	4	50
37	3550	CBRS	4	5
38	28000	NR	1	3.165
39	700	LTE	2	40
39	850	LTE	2	40
40	1900	LTE	4	40
39	700	LTE	2	40
39	850	LTE	2	40
40	2100	LTE	4	40
41	3700	NR	4	50
42	3550	CBRS	4	5
43	28000	NR	1	3.165
44	1900	CDMA	1	100
44	1900	LTE	1	100
45	850	LTE	1	90
46	2500	LTE	1	120
47	1900	CDMA	1	100
47	1900	LTE	1	100
48	850	LTE	1	90
49	2500	LTE	1	120

50	1900	CDMA	1	100
50	1900	LTE	1	100
51	850	LTE	1	90
52	2500	LTE	1	120

Table 1: Channel Data Table

For each sector the following channel counts, frequency bands and power levels were utilized as shown in *Table 1*.

The following antennas listed in Table 2 were used in the modeling for transmission in the 600 MHz, 700 MHz, 1900 MHz, 2100 MHz, and 2500 MHz frequency bands. This is based on information from the carrier with regard to anticipated antenna selection.

Sector	Antenna Number	Make / Model	Centerline (ft)
A	1	ERICSSON SON_AIR6449 2500	131.2
A	1	ERICSSON SON_AIR6449 2500 NR	131.2
A	1	ERICSSON AIR6449 LTE BrM	131.2
A	1	ERICSSON AIR6449 NR BrM 02DT	131.2
A	2	COMMSCOPE VV-65A-R1B	131.2
A	2	COMMSCOPE VV-65A-R1B	131.2
A	2	COMMSCOPE VV-65A-R1B	131.2
A	3	RFS APXVAALL24 43-U-NA20	131.2
A	3	RFS APXVAALL24 43-U-NA20	131.2
A	3	RFS APXVAALL24 43-U-NA20	131.2
B	4	ERICSSON SON_AIR6449 2500	131.2
B	4	ERICSSON SON_AIR6449 2500 NR	131.2
B	4	ERICSSON AIR6449 LTE BrM	131.2
B	4	ERICSSON AIR6449 NR BrM 02DT	131.2
B	5	COMMSCOPE VV-65A-R1B	131.2
B	5	COMMSCOPE VV-65A-R1B	131.2
B	5	COMMSCOPE VV-65A-R1B	131.2
B	6	RFS APXVAALL24 43-U-NA20	131.2
B	6	RFS APXVAALL24 43-U-NA20	131.2
B	6	RFS APXVAALL24 43-U-NA20	131.2
C	7	ERICSSON SON_AIR6449 2500	131.2
C	7	ERICSSON SON_AIR6449 2500 NR	131.2
C	7	ERICSSON AIR6449 LTE BrM	131.2
C	7	ERICSSON AIR6449 NR BrM 02DT	131.2
C	8	COMMSCOPE VV-65A-R1B	131.2
C	8	COMMSCOPE VV-65A-R1B	131.2
C	8	COMMSCOPE VV-65A-R1B	131.2
C	9	RFS APXVAALL24 43-U-NA20	131.2
C	9	RFS APXVAALL24 43-U-NA20	131.2
C	9	RFS APXVAALL24 43-U-NA20	131.2
A	10	GENERIC PANEL	94.7
A	10	GENERIC PANEL	94.7
A	11	GENERIC PANEL	94.7
A	11	GENERIC PANEL	94.7

A	12	GENERIC PANEL	94.7
A	13	GENERIC PANEL	94.7
B	14	GENERIC PANEL	94.7
B	14	GENERIC PANEL	94.7
B	15	GENERIC PANEL	94.7
B	15	GENERIC PANEL	94.7
B	16	GENERIC PANEL	94.7
B	17	GENERIC PANEL	94.7
C	18	GENERIC PANEL	94.7
C	18	GENERIC PANEL	94.7
C	19	GENERIC PANEL	94.7
C	19	GENERIC PANEL	94.7
C	20	GENERIC PANEL	94.7
C	21	GENERIC PANEL	94.7
A	22	GENERIC PANEL	109.6
A	23	GENERIC PANEL	109.6
A	24	GENERIC PANEL	109.6
B	25	GENERIC PANEL	109.6
B	26	GENERIC PANEL	109.6
B	27	GENERIC PANEL	109.6
C	28	GENERIC PANEL	109.6
C	29	GENERIC PANEL	109.6
C	30	GENERIC PANEL	109.6
A	31	GENERIC PANEL	122.9
A	31	GENERIC PANEL	122.9
A	31	GENERIC PANEL	122.9
A	32	GENERIC PANEL	122.9
A	32	GENERIC PANEL	122.9
A	32	GENERIC PANEL	122.9
A	33	GENERIC PANEL	122.9
A	34	GENERIC PANEL	122.9
A	35	GENERIC PANEL	122.9
B	36	GENERIC PANEL	122.9
B	36	GENERIC PANEL	122.9
B	36	GENERIC PANEL	122.9
B	37	GENERIC PANEL	122.9
B	37	GENERIC PANEL	122.9
B	37	GENERIC PANEL	122.9

B	38	GENERIC PANEL	122.9
B	39	GENERIC PANEL	122.9
B	40	GENERIC PANEL	122.9
C	41	GENERIC PANEL	122.9
C	41	GENERIC PANEL	122.9
C	41	GENERIC PANEL	122.9
C	42	GENERIC PANEL	122.9
C	42	GENERIC PANEL	122.9
C	42	GENERIC PANEL	122.9
C	43	GENERIC PANEL	122.9
C	44	GENERIC PANEL	122.9
C	45	GENERIC PANEL	122.9
A	46	GENERIC PANEL	152.8
A	46	GENERIC PANEL	152.8
A	46	GENERIC PANEL	152.8
A	47	GENERIC PANEL	152.8
B	48	GENERIC PANEL	152.8
B	48	GENERIC PANEL	152.8
B	48	GENERIC PANEL	152.8
B	49	GENERIC PANEL	152.8
C	50	GENERIC PANEL	152.8
C	50	GENERIC PANEL	152.8
C	50	GENERIC PANEL	152.8
C	51	GENERIC PANEL	152.8

Table 2: Antenna Data

All calculations were done with respect to uncontrolled / general population threshold limits.

Results

Per the calculations completed for the proposed T-Mobile configurations *Table 3* shows resulting emissions power levels and percentages of the FCC's allowable general population limit.

ID	Make / Model	Frequency Band	Gain (dBd)	Centerline (ft)	Channel Count	TX Power (W)	ERP (W)	MPE %
T-Mobile A 1	ERICSSON SON_AIR6449	2500	22.35	131.2	1	90	15461.1755	1.302540000
T-Mobile A 1	ERICSSON SON_AIR6449	2500	22.35	131.2	1	90	15461.1755	1.302540000
T-Mobile A 1	ERICSSON SON_AIR6449	2500	15.15	131.2	1	30	982.0221	0.000003000
T-Mobile A 1	ERICSSON SON_AIR6449	2500	15.15	131.2	1	30	982.0221	0.000003000
T-Mobile A 2	COMMSCOPE VV-65A-R1B	1900	15.25	131.2	1	15	502.4482	0.000002000
T-Mobile A 2	COMMSCOPE VV-65A-R1B	1900	15.25	131.2	2	140	9379.0323	0.000032000
T-Mobile A 2	COMMSCOPE VV-65A-R1B	2100	15.87	131.2	2	140	10818.2754	0.000031000
T-Mobile A 3	RFS APXVAALL24 43-U-NA20	700	13.65	131.2	4	40	3707.8314	0.000034000
T-Mobile A 3	RFS APXVAALL24 43-U-NA20	600	12.95	131.2	2	40	1577.9382	0.000018000
T-Mobile A 3	RFS APXVAALL24 43-U-NA20	600	12.95	131.2	2	30	1183.4536	0.000013000
T-Mobile B 4	ERICSSON SON_AIR6449	2500	22.35	131.2	1	90	15461.1755	1.302534000
T-Mobile B 4	ERICSSON SON_AIR6449	2500	22.35	131.2	1	90	15461.1755	1.302534000
T-Mobile B 4	ERICSSON SON_AIR6449	2500	15.15	131.2	1	30	982.0221	0.000003000
T-Mobile B 4	ERICSSON SON_AIR6449	2500	15.15	131.2	1	30	982.0221	0.000003000
T-Mobile B 5	COMMSCOPE VV-65A-R1B	1900	15.25	131.2	1	15	502.4482	0.000002000
T-Mobile B 5	COMMSCOPE VV-65A-R1B	1900	15.25	131.2	2	140	9379.0323	0.000032000
T-Mobile B 5	COMMSCOPE VV-65A-R1B	2100	15.87	131.2	2	140	10818.2754	0.000031000
T-Mobile B 6	RFS APXVAALL24 43-U-NA20	700	13.65	131.2	4	40	3707.8314	0.000034000
T-Mobile B 6	RFS APXVAALL24 43-U-NA20	600	12.95	131.2	2	40	1577.9382	0.000018000
T-Mobile B 6	RFS APXVAALL24 43-U-NA20	600	12.95	131.2	2	30	1183.4536	0.000013000
T-Mobile C 7	ERICSSON SON_AIR6449	2500	22.35	131.2	1	90	15461.1755	1.136439000
T-Mobile C 7	ERICSSON SON_AIR6449	2500	22.35	131.2	1	90	15461.1755	1.136439000
T-Mobile C 7	ERICSSON SON_AIR6449	2500	15.15	131.2	1	30	982.0221	0.000002000
T-Mobile C 7	ERICSSON SON_AIR6449	2500	15.15	131.2	1	30	982.0221	0.000002000
T-Mobile C 8	COMMSCOPE VV-65A-R1B	1900	15.25	131.2	1	15	502.4482	0.000001000
T-Mobile C 8	COMMSCOPE VV-65A-R1B	1900	15.25	131.2	2	140	9379.0323	0.000020000
T-Mobile C 8	COMMSCOPE VV-65A-R1B	2100	15.87	131.2	2	140	10818.2754	0.000020000
T-Mobile C 9	RFS APXVAALL24 43-U-NA20	700	13.65	131.2	4	40	3707.8314	0.000020000
T-Mobile C 9	RFS APXVAALL24 43-U-NA20	600	12.95	131.2	2	40	1577.9382	0.000014000
T-Mobile C 9	RFS APXVAALL24 43-U-NA20	600	12.95	131.2	2	30	1183.4536	0.000010000
							T-Mobile MPE%	**7.48338700%**
AT&T A 10	GENERIC PANEL	700	12.33	94.7	4	40	2736.0245	0.000062000
AT&T A 10	GENERIC PANEL	1900	15.84	94.7	4	40	6139.3159	0.000030000
AT&T A 11	GENERIC PANEL	850	12.62	94.7	4	40	2924.9603	0.000052000
AT&T A 11	GENERIC PANEL	2100	16.39	94.7	4	40	6968.1900	0.000031000
AT&T A 12	GENERIC PANEL	2300	16.22	94.7	4	25	4187.9357	0.000020000
AT&T A 13	GENERIC PANEL	3840	22.65	94.7	1	67.78	12476.7526	0.000208000
AT&T B 14	GENERIC PANEL	700	12.33	94.7	4	40	2736.0245	0.000061000
AT&T B 14	GENERIC PANEL	1900	15.84	94.7	4	40	6139.3159	0.000029000
AT&T B 15	GENERIC PANEL	850	12.62	94.7	4	40	2924.9603	0.000052000
AT&T B 15	GENERIC PANEL	2100	16.39	94.7	4	40	6968.1900	0.000031000
AT&T B 16	GENERIC PANEL	2300	16.22	94.7	4	25	4187.9357	0.000020000
AT&T B 17	GENERIC PANEL	3840	22.65	94.7	1	67.78	12476.7526	0.000208000
AT&T C 18	GENERIC PANEL	700	12.33	94.7	4	40	2736.0245	0.000036000
AT&T C 18	GENERIC PANEL	1900	15.84	94.7	4	40	6139.3159	0.000017000
AT&T C 19	GENERIC PANEL	850	12.62	94.7	4	40	2924.9603	0.000028000
AT&T C 19	GENERIC PANEL	2100	16.39	94.7	4	40	6968.1900	0.000021000
AT&T C 20	GENERIC PANEL	2300	16.22	94.7	4	25	4187.9357	0.000006000

AT&T C 21	GENERIC PANEL	3840	22.65	94.7	1	67.78	12476.7526	0.000205000
							AT&T MPE%	**0.00111700%**
Torrington A 22	GENERIC PANEL	1900	15.84	109.6	2	40	3069.6580	0.000011000
Torrington A 23	GENERIC PANEL	1900	15.84	109.6	2	40	3069.6580	0.000011000
Torrington A 24	GENERIC PANEL	1900	15.84	109.6	2	40	3069.6580	0.000011000
Torrington B 25	GENERIC PANEL	1900	15.84	109.6	2	40	3069.6580	0.000011000
Torrington B 26	GENERIC PANEL	1900	15.84	109.6	2	40	3069.6580	0.000011000
Torrington B 27	GENERIC PANEL	1900	15.84	109.6	2	40	3069.6580	0.000011000
Torrington C 28	GENERIC PANEL	1900	15.84	109.6	2	40	3069.6580	0.000006000
Torrington C 29	GENERIC PANEL	1900	15.84	109.6	2	40	3069.6580	0.000006000
Torrington C 30	GENERIC PANEL	1900	15.84	109.6	2	40	3069.6580	0.000006000
							Torrington MPE%	**0.00008400%**
Verizon A 31	GENERIC PANEL	700	12.33	122.9	2	40	1368.0123	0.000018000
Verizon A 31	GENERIC PANEL	850	12.62	122.9	2	40	1462.4802	0.000015000
Verizon A 31	GENERIC PANEL	1900	15.84	122.9	4	40	6139.3159	0.000017000
Verizon A 32	GENERIC PANEL	700	12.33	122.9	2	40	1368.0123	0.000018000
Verizon A 32	GENERIC PANEL	850	12.62	122.9	2	40	1462.4802	0.000015000
Verizon A 32	GENERIC PANEL	2100	16.39	122.9	4	40	6968.1900	0.000018000
Verizon A 33	GENERIC PANEL	3700	23.05	122.9	4	50	40367.3273	0.000125000
Verizon A 34	GENERIC PANEL	3550	10.55	122.9	4	5	227.0022	0.000007000
Verizon A 35	GENERIC PANEL	28000	22.85	122.9	1	3.165	610.0616	0.050591000
Verizon B 36	GENERIC PANEL	700	12.33	122.9	2	40	1368.0123	0.000018000
Verizon B 36	GENERIC PANEL	850	12.62	122.9	2	40	1462.4802	0.000015000
Verizon B 36	GENERIC PANEL	1900	15.84	122.9	4	40	6139.3159	0.000017000
Verizon B 37	GENERIC PANEL	700	12.33	122.9	2	40	1368.0123	0.000018000
Verizon B 37	GENERIC PANEL	850	12.62	122.9	2	40	1462.4802	0.000015000
Verizon B 37	GENERIC PANEL	2100	16.39	122.9	4	40	6968.1900	0.000018000
Verizon B 38	GENERIC PANEL	3700	23.05	122.9	4	50	40367.3273	0.000125000
Verizon B 39	GENERIC PANEL	3550	10.55	122.9	4	5	227.0022	0.000007000
Verizon B 40	GENERIC PANEL	28000	22.85	122.9	1	3.165	610.0616	0.050619000
Verizon C 41	GENERIC PANEL	700	12.33	122.9	2	40	1368.0123	0.000010000
Verizon C 41	GENERIC PANEL	850	12.62	122.9	2	40	1462.4802	0.000008000
Verizon C 41	GENERIC PANEL	1900	15.84	122.9	4	40	6139.3159	0.000010000
Verizon C 42	GENERIC PANEL	700	12.33	122.9	2	40	1368.0123	0.000010000
Verizon C 42	GENERIC PANEL	850	12.62	122.9	2	40	1462.4802	0.000008000
Verizon C 42	GENERIC PANEL	2100	16.39	122.9	4	40	6968.1900	0.000012000
Verizon C 43	GENERIC PANEL	3700	23.05	122.9	4	50	40367.3273	0.000106000
Verizon C 44	GENERIC PANEL	3550	10.55	122.9	4	5	227.0022	0.000004000
Verizon C 45	GENERIC PANEL	28000	22.85	122.9	1	3.165	610.0616	0.042141000
							Verizon MPE%	**0.14398500%**
Sprint A 46	GENERIC PANEL	1900	15.84	152.8	1	100	3837.0725	0.000007000
Sprint A 46	GENERIC PANEL	1900	15.84	152.8	1	100	3837.0725	0.000007000
Sprint A 46	GENERIC PANEL	850	12.62	152.8	1	90	1645.2902	0.000011000
Sprint A 47	GENERIC PANEL	2500	15.94	152.8	1	120	4711.7392	0.000009000
Sprint B 48	GENERIC PANEL	1900	15.84	152.8	1	100	3837.0725	0.000007000
Sprint B 48	GENERIC PANEL	1900	15.84	152.8	1	100	3837.0725	0.000007000
Sprint B 48	GENERIC PANEL	850	12.62	152.8	1	90	1645.2902	0.000011000
Sprint B 49	GENERIC PANEL	2500	15.94	152.8	1	120	4711.7392	0.000009000
Sprint C 50	GENERIC PANEL	1900	15.84	152.8	1	100	3837.0725	0.000004000
Sprint C 50	GENERIC PANEL	1900	15.84	152.8	1	100	3837.0725	0.000004000
Sprint C 50	GENERIC PANEL	850	12.62	152.8	1	90	1645.2902	0.000006000
Sprint C 51	GENERIC PANEL	2500	15.94	152.8	1	120	4711.7392	0.000004000
							Sprint MPE%	**0.00008600%**

Table 3: T-Mobile Antenna Inventory & Power Level

FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. *Table 4* below details a breakdown by frequency band and technology for the MPE power values for the maximum calculated T-Mobile sector(s).

Frequency Band	Technology	Centerline (ft.)	# of Channels	ERP W (Per Channel)	Total Power Density ($\mu W/cm^2$)	Allowable MPE ($\mu W/cm^2$)	MPE %
2500	LTE	131.2	1	15461.17548	13.0253980	1000	1.30254000
2500	NR	131.2	1	15461.17548	13.0253980	1000	1.30254000
2500	LTE	131.2	1	982.0220846	0.0000340	1000	0.00000300
2500	NR	131.2	1	982.0220846	0.0000340	1000	0.00000300
1900	GSM	131.2	1	502.4481587	0.0000170	1000	0.00000200
1900	LTE	131.2	2	4689.516148	0.0003170	1000	0.00003200
2100	LTE	131.2	2	5409.137679	0.0003050	1000	0.00003100
700	LTE	131.2	4	926.95786	0.0001610	467	0.00003400
600	LTE	131.2	2	788.9690944	0.0000700	400	0.00001800
600	NR	131.2	2	591.7268208	0.0000530	400	0.00001300
2500	LTE	131.2	1	15461.17548	13.0253420	1000	1.30253400
2500	NR	131.2	1	15461.17548	13.0253420	1000	1.30253400
2500	LTE	131.2	1	982.0220846	0.0000340	1000	0.00000300
2500	NR	131.2	1	982.0220846	0.0000340	1000	0.00000300
1900	GSM	131.2	1	502.4481587	0.0000170	1000	0.00000200
1900	LTE	131.2	2	4689.516148	0.0003220	1000	0.00003200
2100	LTE	131.2	2	5409.137679	0.0003130	1000	0.00003100
700	LTE	131.2	4	926.95786	0.0001610	467	0.00003400
600	LTE	131.2	2	788.9690944	0.0000720	400	0.00001800
600	NR	131.2	2	591.7268208	0.0000540	400	0.00001300
2500	LTE	131.2	1	15461.17548	11.3643860	1000	1.13643900
2500	NR	131.2	1	15461.17548	11.3643860	1000	1.13643900
2500	LTE	131.2	1	982.0220846	0.0000190	1000	0.00000200
2500	NR	131.2	1	982.0220846	0.0000190	1000	0.00000200
1900	GSM	131.2	1	502.4481587	0.0000110	1000	0.00000100
1900	LTE	131.2	2	4689.516148	0.0001980	1000	0.00002000
2100	LTE	131.2	2	5409.137679	0.0002020	1000	0.00002000
700	LTE	131.2	4	926.95786	0.0000910	467	0.00002000
600	LTE	131.2	2	788.9690944	0.0000550	400	0.00001400
600	NR	131.2	2	591.7268208	0.0000410	400	0.00001000
						T-Mobile MPE%	**7.48338700 %**

Table 4: T-Mobile Maximum Sector MPE Power Values

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:

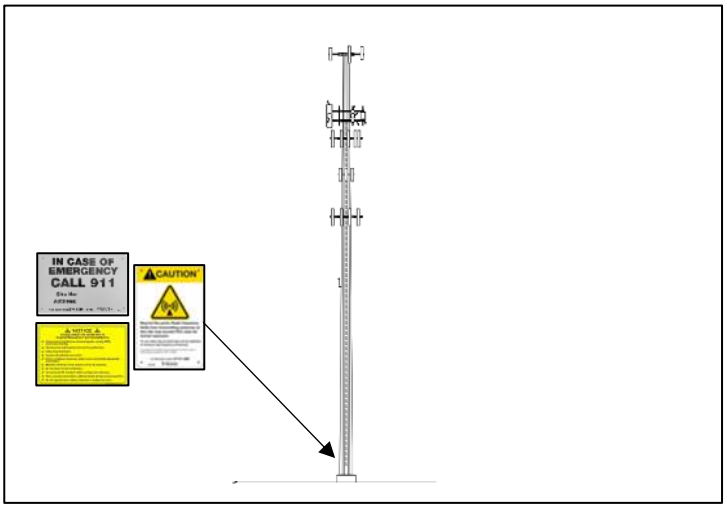
Carrier	Predicted MPE %
T-Mobile	7.48338700%
AT&T	0.00111700%
Torrington	0.00008400%
Verizon	0.14398500%
Sprint	0.00008600%
Composite	**7.62865900%**

Table 5: Total Predicted MPE(%) by Carrier

Signage Plan

The MPE levels predicted on site are within the FCC allowable MPE limits and no signage is necessary for compliance with FCC rules and regulations. However, T-Mobile internal guidelines require the following signage:

- Emergency Sign (Installed at the Base of the Monopole)
- Guideline Sign (Installed at the Base of the Monopole)
- Caution Sign (Installed at the Base of the Monopole)



Compliance Status:

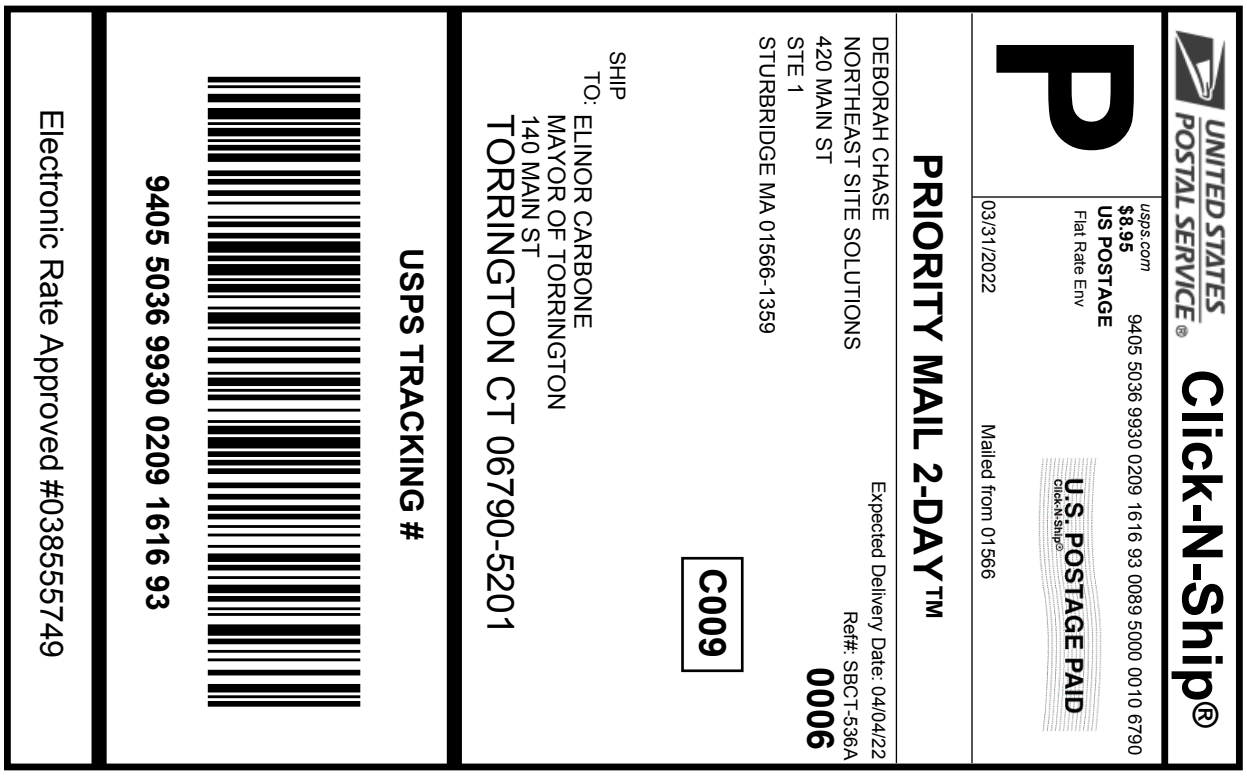
The anticipated composite MPE value for this site assuming all carriers present is **7.62865900%** of the allowable FCC established general population limit sampled at the ground level.

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.

Samuel Cosgrove
RF Compliance Consultant
Centerline Communications, LLC
750 West Center St. Suite 301
West Bridgewater, MA 02379

Exhibit G

Recipient Mailings



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Ref#: SBCT-536A

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MAYOR OF TORRINGTON
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TORRINGTON CT 06790-5201

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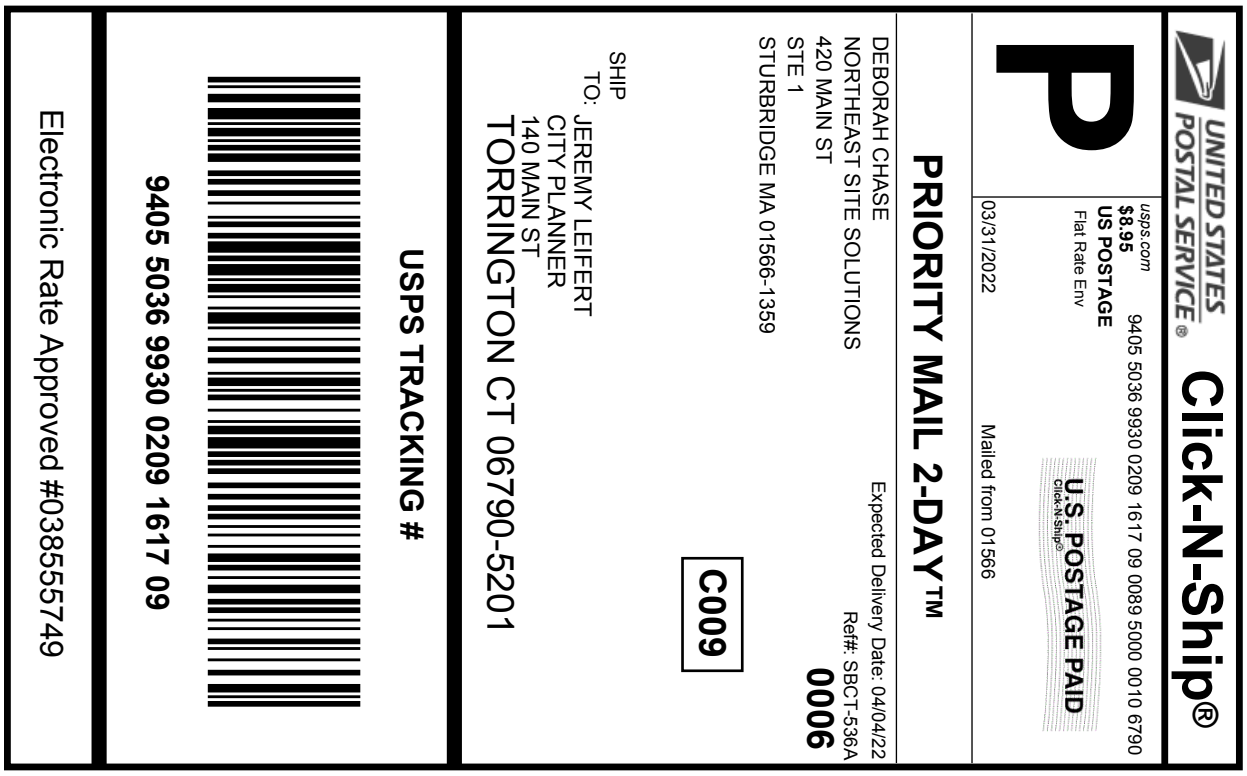

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From: DEBORAH CHASE
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STE 1
STURBRIDGE MA 01566-1359

Ref#: SBCT-536A

To: JEREMY LEIFERT
CITY PLANNER
140 MAIN ST
TORRINGTON CT 06790-5201

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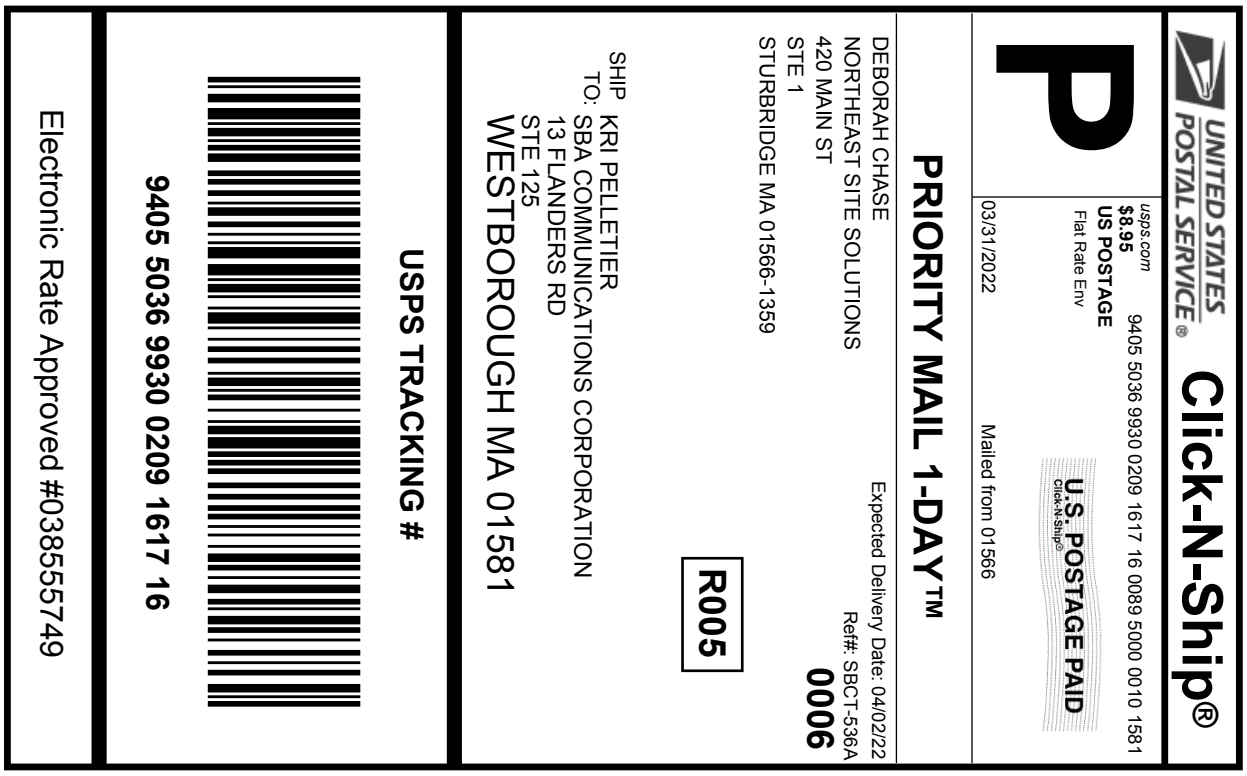

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Ship Date:	03/31/2022
Expected Delivery Date:	04/02/2022

Priority Mail® Postage:	**$8.95**
Total:	**$8.95**

From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
420 MAIN ST
STE 1
STURBRIDGE MA 01566-1359

Ref#: SBCT-536A

To: KRI PELLETIER
SBA COMMUNICATIONS CORPORATION
13 FLANDERS RD
STE 125
WESTBOROUGH MA 01581

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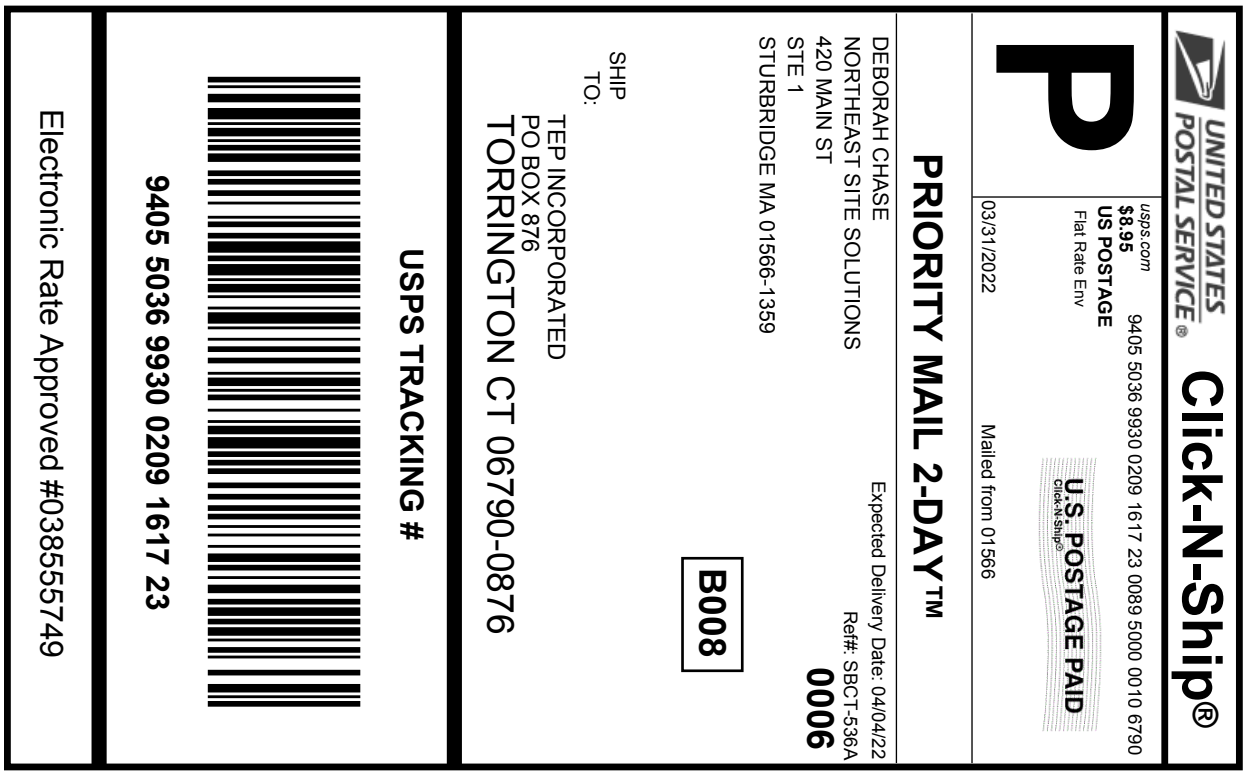

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Ship Date:	03/31/2022
Expected Delivery Date:	04/04/2022

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Total:	**$8.95**

From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
420 MAIN ST
STE 1
STURBRIDGE MA 01566-1359

Ref#: SBCT-536A

To: TEP INCORPORATED
PO BOX 876
TORRINGTON CT 06790-0876

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Product	Qty	Unit Price	Price
Prepaid Mail Torrington, CT 06790 Weight: 0 lb 8.20 oz Acceptance Date: Fri 04/01/2022 Tracking #: 9405 5036 9930 0209 1616 93	1		$0.00
Prepaid Mail Westborough, MA 01581 Weight: 0 lb 1.90 oz Acceptance Date: Fri 04/01/2022 Tracking #: 9405 5036 9930 0209 1617 16	1		$0.00
Prepaid Mail Torrington, CT 06790 Weight: 0 lb 8.20 oz Acceptance Date: Fri 04/01/2022 Tracking #: 9405 5036 9930 0209 1617 09	1		$0.00
Prepaid Mail Torrington, CT 06790 Weight: 0 lb 8.20 oz Acceptance Date: Fri 04/01/2022 Tracking #: 9405 5036 9930 0209 1617 23	1		$0.00

Grand Total: $0.00

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