NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

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

May 16, 2022

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

RE: Exempt Modification Application
208 Reed Road, Tolland, CT 06084
Latitude: 41.853227
Longitude: -72.405936
Site #: CT46129-A _CT11413D_SBA/T-Mobile

Dear Ms. Bachman:

T-Mobile is requesting to file an exempt modification for an existing tower located at 208 Reed Road, Tolland, CT 06084. T-Mobile currently maintains six (6) antennas at the 138-foot level of the existing 150-foot monopole tower. The property is owned by Reed Road Realty LLC, and the tower is owned by SBA. T-Mobile now intends to replace (3) antennas. The new antennas would be installed at the 138-foot level of the tower. This modification includes B2, B5 hardware that is both 4G (LTE), and 5G capable.

T-Mobile Planned Modifications:
Remove:
(3) Coax – 1-5/8"

Remove and Replace:
(3) EMS Antennas (REMOVE) - (3) ERICSSON AIR6449 B41 Antennas (REPLACE)

Install New:
(3) ERICSSON 4460 B25+B66 RRU
(2) HCS Fiber Cable 1.9"

Existing to Remain:
(3) RFS APXVAARR24-43-U-NA20 Antennas
(3) ERICSSON 4449 B71+B85 RRU
(1) HCS Fiber Cable 1.9"
(9) Coax – 1-5/8" *
(3) Twin TMAs – KRY 112 489/2 *
(3) Twin TMAs – KRY 112 144/1 *

*Equipment listed for entitlement purposed only

NORTHEAST SITE SOLUTIONS

Turnkey Wireless Development

The facility was approved by the Town of Tolland Planning & Zoning Commission on June 22, 1998. 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 Tammy Nuccio, Town Council Chair, Lisa Hancock, Interim Town Manager and David Corcoran, Director of Planning & Development for the Town of Tolland, 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, T-Mobile respectfully submits that the proposed modifications to the above referenced telecommunications facility constitute an exempt modification under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,

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: Tammy Nuccio, Town Council Chair
Town of Tolland
21 Tolland Green
Tolland, CT 06084

Lisa Hancock, Interim Town Manager
Town of Tolland
21 Tolland Green
Tolland, CT 06084

David Corcoran, Director of Planning & Development
Town of Tolland
21 Tolland Green
Tolland, CT 06084

Reed Road Realty LLC – Property Owner
70 Slater Road
Tolland, CT 06084

SBA - Tower Owner

Exhibit A

Original Facility Approval

4137

TOWN OF TOLLAND

NOTICE OF GRANTING A SPECIAL PERMIT

This is to certify that the Planning & Zoning Commission on **June 22, 1998** granted a SPECIAL PERMIT.

Description of the Premises: **208 Reed Road.**

Subdivision Name & Lot #, if applicable: N/A

Description in Tolland Land Records: Vol. 373 Page 95.

Section of Zoning Regulation(s) Involved: §170-93.

Nature of SPECIAL PERMIT: **Allowed an existing telecommunications tower to be increased in height from 127 ½ feet to a maximum of 150 feet as measured to grade. Antennas, as indicated on the approved plans are to be installed at approximately 144 feet (measured from the vertical center of the antenna array) and may not to exceed 150 feet.**

Owner(s) of Record: **Nextel Communications.**

Applicant (if other than owner): **Omnipoint Communications, Inc.**

Planning & Zoning Application number: #592.

PLANNING AND ZONING COMMISSION

By R. E. Blake

Ronald E. Blake, Town Planner
For the Planning & Zoning Commission
Endorsed: **June 25, 1998**

FILECLERK.FOR 062598/1423

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL
Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@ct.gov
Internet: ct.gov/csc

Daniel F. Caruso
Chairman

August 23, 2010

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

RE: **EM-VER-142-100802** - Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 208 Reed Road, Tolland, Connecticut.

Dear Attorney Baldwin:

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

The proposed modifications are to be implemented as specified here and in your notice dated August 2, 2010, including the placement of all necessary equipment and shelters within the tower compound. 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. Please be advised that the validity of this action shall expire one year from the date of this letter. Any additional change to this facility will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. 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,

Melanie Bachman
Acting Executive Director

MB/CDM/laf

c: The Honorable Frederick M. Daniels, Chairman Town Council, Town of Tolland
Steven R. Werbner, Town Manager, Town of Tolland
Linda Farmer, Town Planner, Town of Tolland
Thomas J. Regan, Esq., Brown Rudnick LLP (o/b/o TowerCo)

G:\EM\EM-VERIZON\Tolland\...ReedRd.DOC

Exhibit B

Property Card

208 REED ROAD

Sales Print Map It

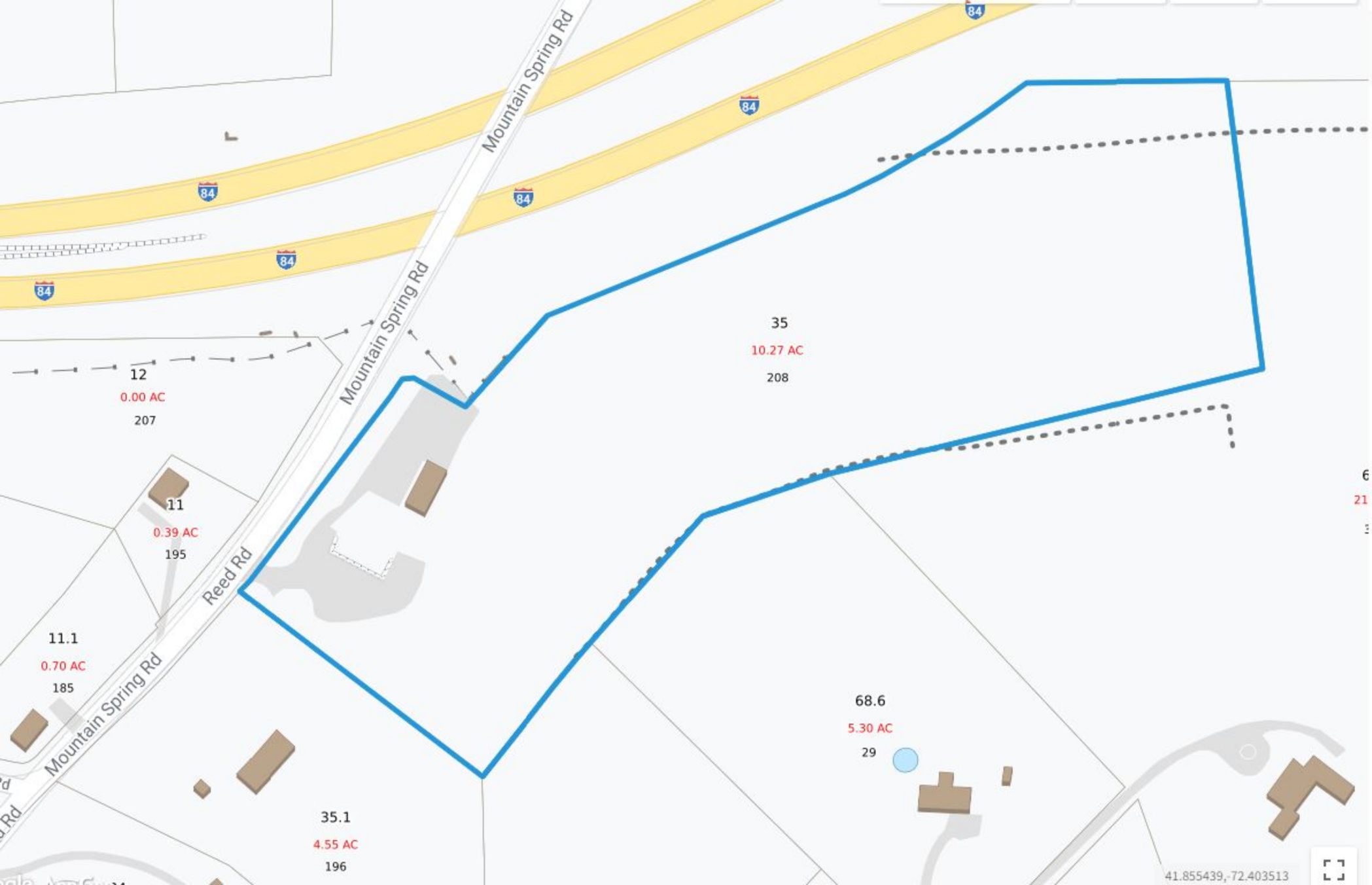
Location	208 REED ROAD	**Mblu**	26/ D/ 35/ /
Acct#	5393	**Owner**	REED ROAD REALTY LLC
Assessment	$347,700	**Appraisal**	$496,600
PID	4326	**Building Count**	1

Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2019	$52,800	$443,800	$496,600
Assessment			
Valuation Year	Improvements	Land	Total
2019	$37,000	$310,700	$347,700

Owner of Record

Owner	REED ROAD REALTY LLC	**Sale Price**	$310,000
Co-Owner		**Certificate**	
Address	70 SLATER RD TOLLAND, CT 06084	**Book & Page**	0995/0292
		Sale Date	10/26/2005
		Instrument	00



Advanced Search

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Showing 1-1 results. Scroll to see more.

208 REED ROAD
REED ROAD REALTY LLC
26/D/035

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).

TOLLAND/RT-84/X66_1

208 REED ROAD
TOLLAND, CT 06084
TOLLAND COUNTY

SITE NO.: CT11413D

SITE TYPE: 150'± MONOPOLE

RF DESIGN GUIDELINE: 67D5D998E ODE+6160

SCOPE OF WORK

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

INSTALL:
- 3 ANTENNAS
- 3 RRUs
- 1 6160 CABINET
- 1 B160 CABINET
- 1 SLACKBOX
- 2 HYBRID CABLES
- 1 150A-2P BREAKER
- 1 125A-2P BREAKER
- 1 25A-1P BREAKER

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

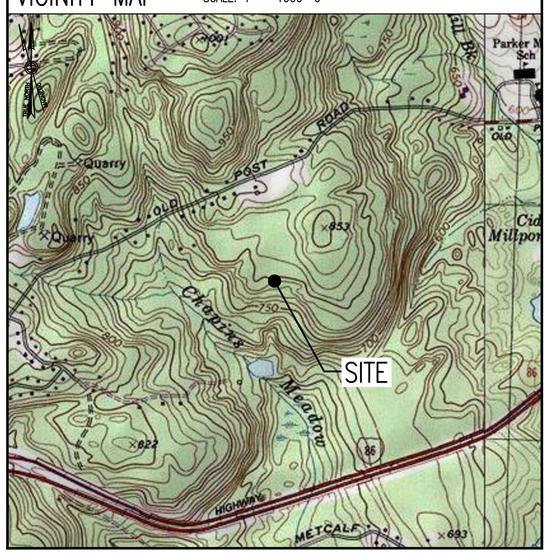
GENERAL NOTES

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

TURN LEFT ONTO S WASHINGTON ST. TURN RIGHT ONTO MA-123 E. TURN LEFT TO MERGE ONTO I-495 NORTH TOWARD MANSFIELD/MARLBORO. MERGE ONTO I-495 NORTH. TAKE EXIT 33B TO MERGE ONTO I-95 SOUTH. TAKE EXIT 5A TO MERGE ONTO RI-102 SOUTH TOWARD EXETER. TURN RIGHT ONTO RI-102 SOUTH. TURN RIGHT ONTO RI-165 WEST. CONTINUE ONTO CT-165 WEST. SLIGHT LEFT ONTO CT-165 WEST. TURN LEFT ONTO CT-201 SOUTH. TURN LEFT ONTO GILLIVER ROAD. SITE WILL BE ON THE RIGHT.

SHEET INDEX

SHT. NO.	DESCRIPTION	VER.
T-1	TITLE SHEET	0
GN-1	GENERAL NOTES	0
A-1	COMPOUND & EQUIPMENT PLAN	0
A-2	TOWER ELEVATIONS & ANTENNA PLAN	0
A-3	SITE DETAILS	0
E-1	ELECTRIC & GROUNDING DETAILS	0

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:	CT11413D
SITE NAME:	NL082/WIRELESS SOLUTIONS
SBA SITE NUMBER:	CT46129-A
SBA SITE NAME:	TOLLAND-REED RD
SITE ADDRESS:	208 REED ROAD TOLLAND, CT 06084
PROPERTY OWNER:	REED ROAD REALTY LLC. 70 SLATER ROAD TOLLAND, CT 06084
TOWER OWNER:	SBA 2012 TC ASSETS, LLC. 8501 CONGRESS AVENUE BOCA RATON, FL 33487 PHONE: 561-226-9523
COUNTY:	TOLLAND COUNTY
ZONING DISTRICT:	RDD (RESIDENTIAL DESIGN DISTRICT)
STRUCTURE TYPE:	MONOPOLE
STRUCTURE HEIGHT:	150'±
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: 41.853361° N41°51'12.0996" LONGITUDE: -72.406139° W72°24'22.1004"

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
CLEMENT J. SAJEK
No. 26876
LICENSED
PROFESSIONAL ENGINEER

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
0	04/18/22	ISSUED FOR REVIEW	JRV

SITE NUMBER:
CT11413D

SITE ADDRESS:
208 REED ROAD
TOLLAND, CT 06084

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

1815.476

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
CLEMENT J. SAJEK
No. 26876
LICENSED
PROFESSIONAL ENGINEER

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
0	04/18/22	ISSUED FOR REVIEW	JRV

SITE NUMBER:
CT11413D

SITE ADDRESS:
208 REED ROAD
TOLLAND, CT 06084

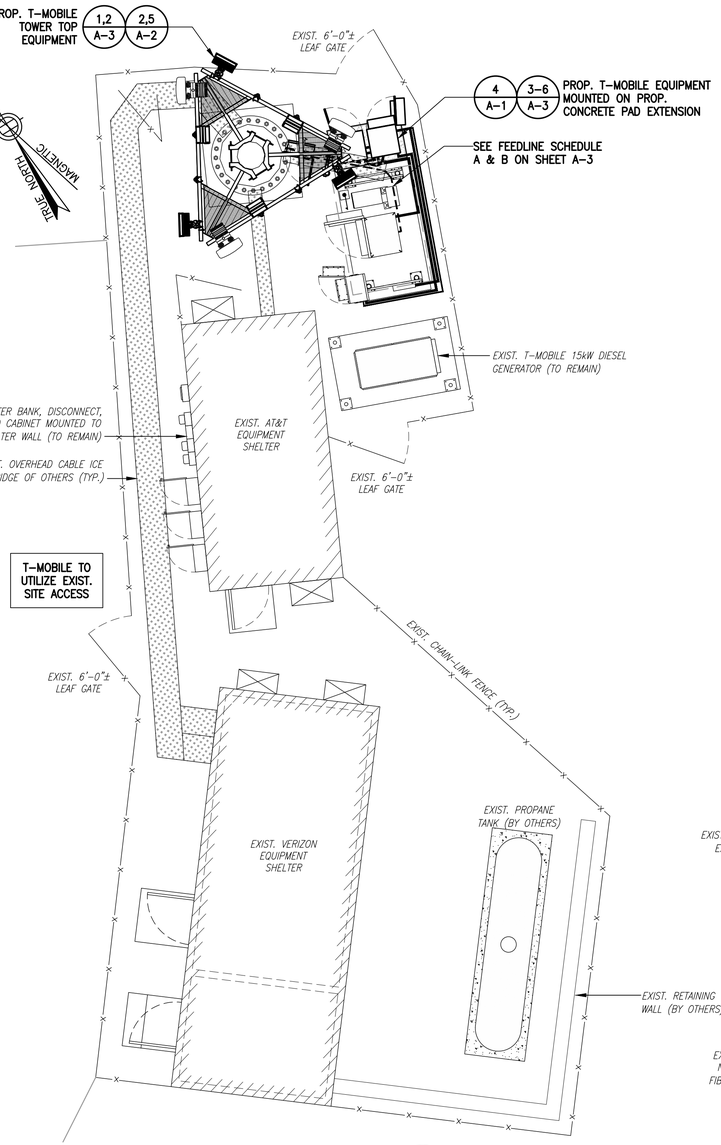
SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-1

1815.476

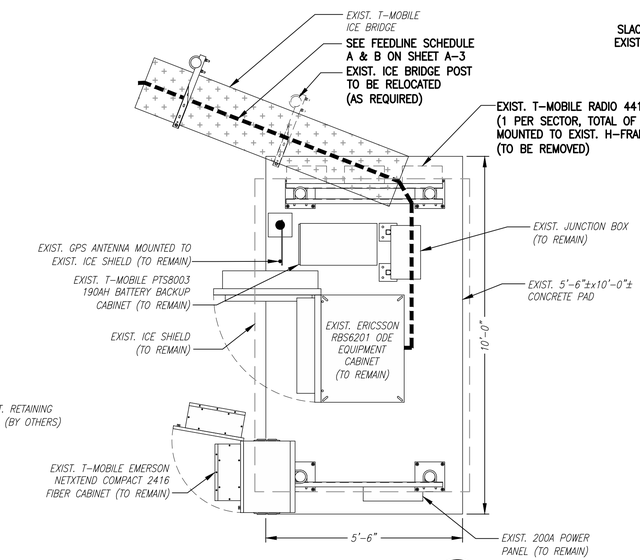
SPECIAL PRE-CONSTRUCTION WORK NOTE (SBA-PROVIDED TOWER STRUCTURAL ANALYSIS SPECIAL EQUIPMENT INSTALLATION REQUIREMENTS):
GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL SPECIAL OR SUPPLEMENTAL ADDITIONAL TOWER-MOUNTED EQUIPMENT PER RECOMMENDATIONS FROM SBA-PROVIDED TOWER STRUCTURAL ANALYSIS FOR ANY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

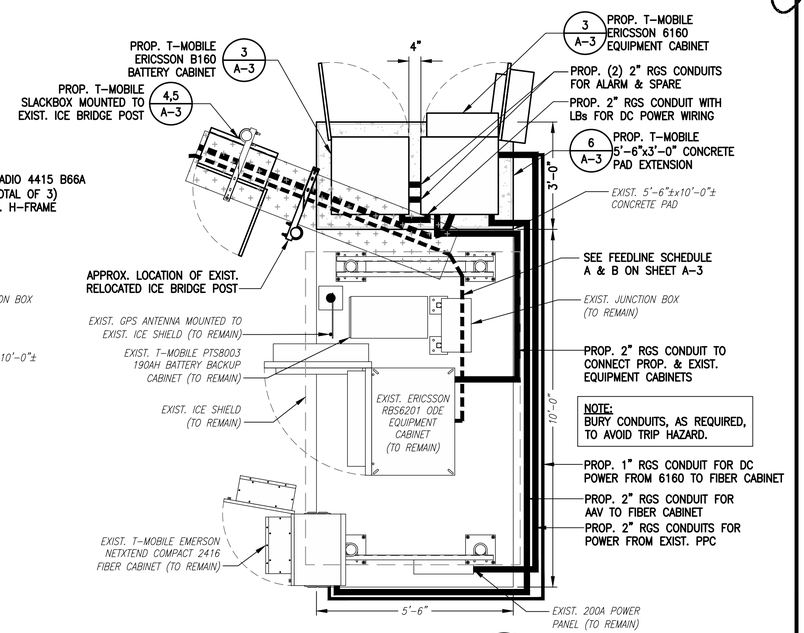


COMPOUND PLAN 1 A-1
SCALE: 3/16" = 1'-0"
0 5'-4" 10'-8" 16'-0"

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"



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

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SHEET TITLE
COMPOUND & EQUIPMENT PLANS

SHEET NUMBER
A-1

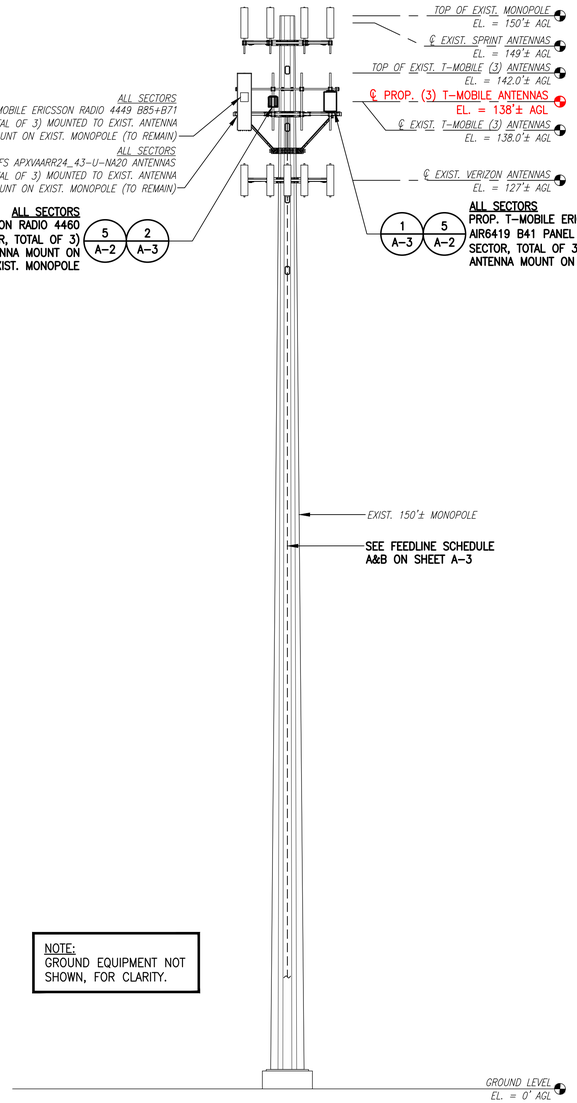
1815.476

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).

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.

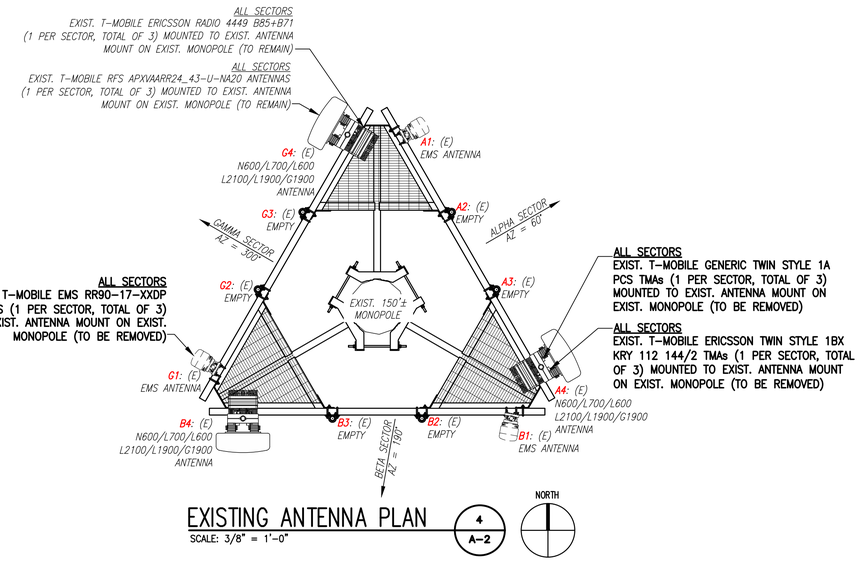
EXISTING TOWER PHOTO (1 / A-2)
SCALE: N.T.S.



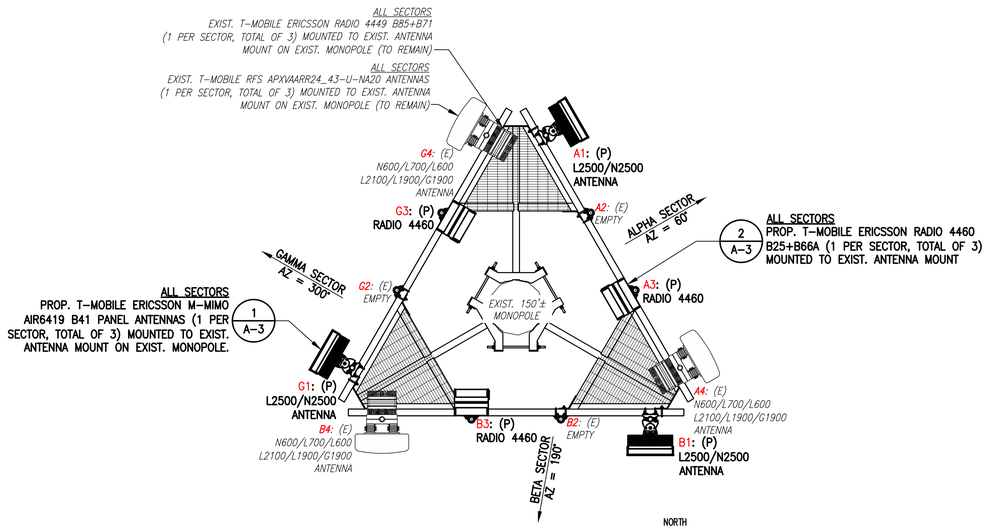
NOTE:
GROUND EQUIPMENT NOT SHOWN, FOR CLARITY.

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"
NORTH



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

ANTENNA STATUS LEGEND:

EMPTY – EMPTY PIPE

(E) – EXISTING
(P) – INSTALL
(F) – FUTURE

NOTE:
VERIFY PROPOSED AZIMUTHS WITH RF ENGINEER PRIOR TO INSTALLATION.

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SHEET TITLE
TOWER ELEVATIONS & ANTENNA PLANS

SHEET NUMBER
A-2

1815.476

FINAL ANTENNA CONFIGURATION

SECTOR		ANTENNA	RAD CENTER	AZIMUTH (TRUE NORTH)	MECHANICAL DOWNTILT	ELECTRICAL DOWNTILT	BAND	TMA/RADIOS	SIGNAL CABLES
ALPHA	A1	ERICSSON M-MIMO AIR6419 B41	138'± AGL	60°	0°	0°	L2500/N2500	–	(1) 1-⅝" (6x12) HCS FIBER CABLE (2) 2" (6x24) HCS FIBER CABLES
	A2	EMPTY PIPE	–	–	–	–	–	–	
	A3	EMPTY PIPE	–	–	–	–	–	–	
	A4	RFS APXVAARR24_43-U-NA20	138'± AGL	60°	0°	0°	L700/L600/N600 L2100/L1900/U1900	RADIO 4449 B71+B85 RADIO 4460 B25+B66	
BETA	B1	ERICSSON M-MIMO AIR6419 B41	138'± AGL	190°	0°	0°	L2500/N2500	–	
	B2	EMPTY PIPE	–	–	–	–	–	–	
	B3	EMPTY PIPE	–	–	–	–	–	–	
	B4	RFS APXVAARR24_43-U-NA20	138'± AGL	190°	0°	0°	L700/L600/N600 L2100/L1900/U1900	RADIO 4449 B71+B85 RADIO 4460 B25+B66	
GAMMA	G1	ERICSSON M-MIMO AIR6419 B41	138'± AGL	300°	0°	0°	L2500/N2500	–	
	G2	EMPTY PIPE	–	–	–	–	–	–	
	G3	EMPTY PIPE	–	–	–	–	–	–	
	G4	RFS APXVAARR24_43-U-NA20	138'± AGL	300°	0°	0°	L700/L600/N600 L2100/L1900/G1900	RADIO 4449 B71+B85 RADIO 4460 B25+B66	

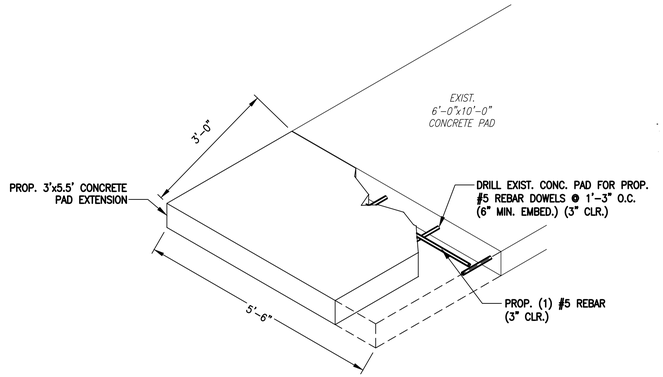
CABLE NOTE: ALL EXISTING COAX CABLES TO BE REMOVED. SEE FEEDLINE SCHEDULE A & B THIS SHEET.

NOTE: RFDS REV6 – 03/14/22

FEEDLINE SCHEDULE

SCHEDULE	FEEDLINES	LOCATION
A	EXISTING TO REMAIN: (1) ½" COAX CABLE FOR GPS ANTENNA (1) 1-⅝" (6x12) HCS FIBER CABLE EXISTING TO BE REMOVED: ALL COAX CABLES	ROUTED PER STRUCTURAL ANALYSIS
B	PROPOSED: (2) 2" (6x24) HCS FIBER CABLES	

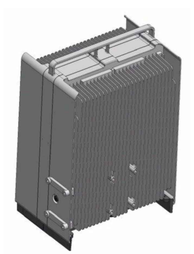
NOTE:
EXISTING T-MOBILE EQUIPMENT FEEDLINE INVENTORY BASED ON OBSERVED FIELD CONDITIONS. RFDS AND FEEDLINE LEASING ENTITLEMENTS MAY DIFFER.



CONCRETE PAD EXTENSION (6 / A-3)
SCALE: N.T.S.

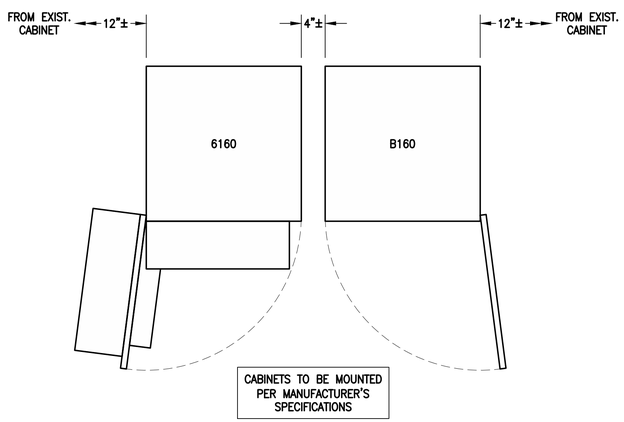
ERICSSON M-MIMO AIR6419 B41 ANTENNA
DIMENSIONS: 36.3"H x 20.9"W x 9.0"D
WEIGHT: 83.3 lbs
QUANTITY: 1 PER SECTOR, TOTAL OF 3

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



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

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



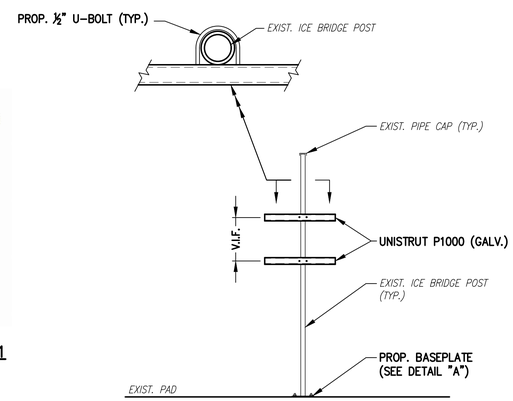
ERICSSON 6160 SITE SUPPORT CABINET
DIMENSIONS: 63.25"H x 26.0"W x 34.0"D
QUANTITY: TOTAL OF 1

ERICSSON B160 BATTERY CABINET
DIMENSIONS: 63.25"H x 26.0"W x 26.0"D
QUANTITY: TOTAL OF 1

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



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

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

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(508) 481-7400
www.chappellengineering.com

STATE OF CONNECTICUT
CLEMENT J. SAMEK
No. 26876
LICENSED PROFESSIONAL ENGINEER

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
0	04/18/22	ISSUED FOR REVIEW	JRV

SITE NUMBER:
CT11413D

SITE ADDRESS:
208 REED ROAD
TOLLAND, CT 06084

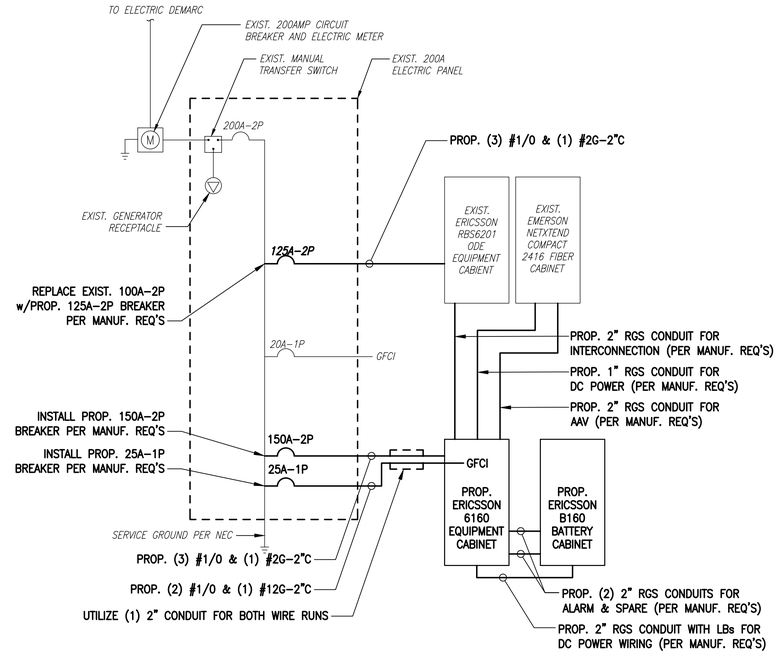
SHEET TITLE
SITE DETAILS

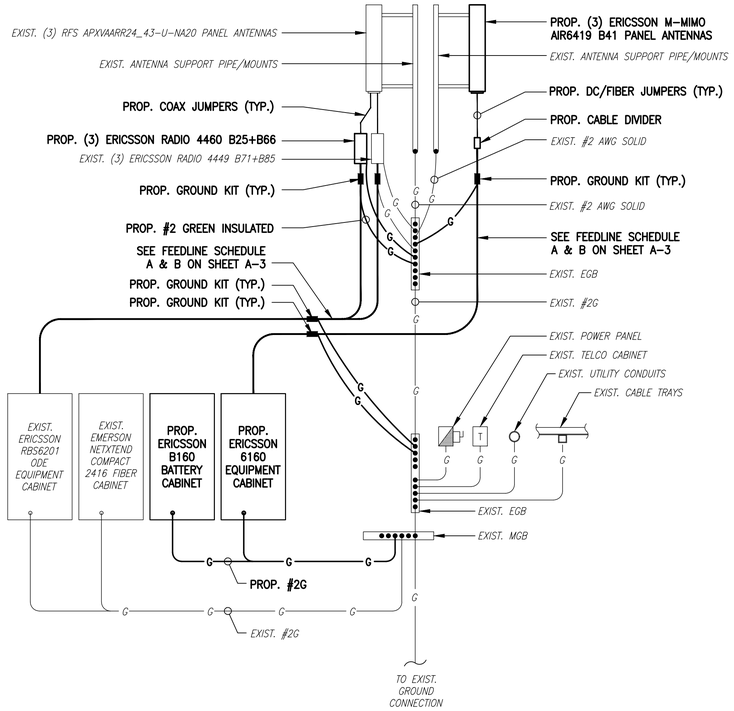
SHEET NUMBER
A-3

1815.476

EXISTING POWER PANEL PHOTOS (1 / E-1)

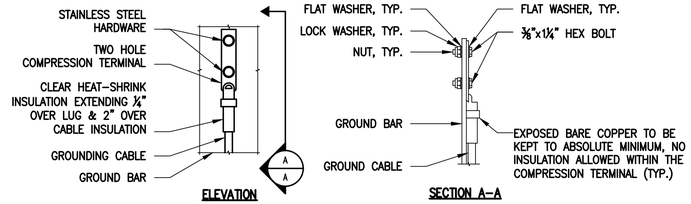
SCALE: NOT TO SCALE





GROUNDING RISER DIAGRAM (3 / E-1)

SCALE: NOT TO SCALE



ELEVATION

SECTION A-A

NOTES:

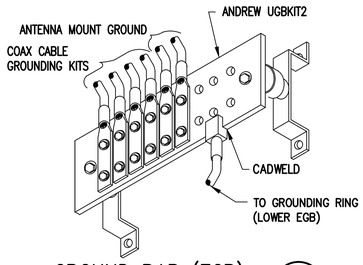
1. "DOUBLING UP" OR "STACKING" OF CONNECTION IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.
3. CADWELL DOWNLEADS FROM UPPER EGB, LOWER EGB AND MGB.

TYPICAL GROUND BAR CONNECTIONS DETAIL (4 / E-1)

SCALE: NOT TO SCALE

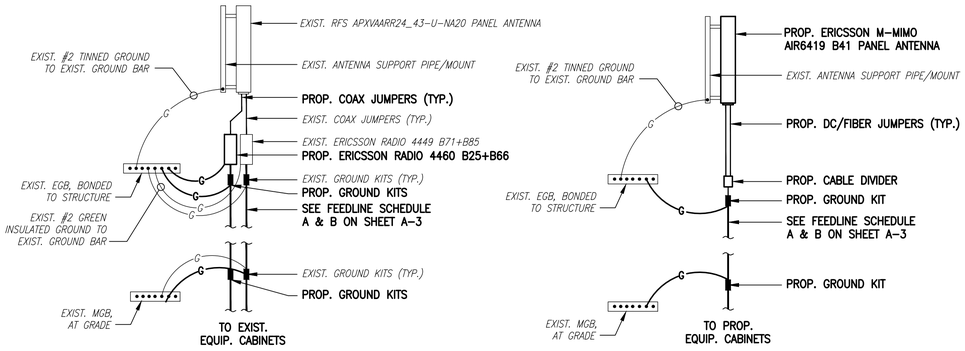
ONE LINE DIAGRAM (2 / E-1)

SCALE: NOT TO SCALE



GROUND BAR (EGB) (5 / E-1)

SCALE: NOT TO SCALE



L700/L600/N600
L1900/L2100/G1900 ANTENNA

L2500/N2500 ANTENNA

COAX CABLE CONNECTION AND GROUNDING DETAIL (6 / 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 THININSULATION.
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.

T-MOBILE NORTHEAST LLC
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CLEMENT J. SAJEK
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PROFESSIONAL ENGINEER

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
0	04/18/22	ISSUED FOR REVIEW	JRV

SITE NUMBER:
CT11413D

SITE ADDRESS:
208 REED ROAD
TOLLAND, CT 06084

SHEET TITLE
ELECTRIC & GROUNDING DETAILS

SHEET NUMBER
E-1

1815.476

Exhibit D

Structural Analysis Report

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

Structural Analysis Report

Existing 150 ft EEI Monopole
Customer Name: SBA Communications Corp
Customer Site Number: CT46129-A
Customer Site Name: Tolland-reed Rd
Carrier Name: T-Mobile (App#: 193216, V1)
Carrier Site ID / Name: CT11413D / Tolland
Site Location: 208 Reed Road
Tolland, Connecticut
Tolland County
Latitude: 41.853361
Longitude: -72.406139

Analysis Result:

Max Structural Usage: 53.6% [Pass]
Max Foundation Usage: 59.1% [Pass]
Additional Usage Caused by New Mount/Mount Modification: N/A

Report Prepared By: Mojdeh Sadeghzadeh

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

Structural Analysis Report

Existing 150 ft EEI Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT46129-A

Customer Site Name: Tolland-reed Rd

Carrier Name: T-Mobile (App#: 193216, V1)

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Tolland, Connecticut

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Analysis Result:

Max Structural Usage: 53.6% [Pass]

Max Foundation Usage: 59.1% [Pass]

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

Report Prepared By: Mojdeh Sadeghzadeh

Introduction

The purpose of this report is to summarize the analysis results on the 150 ft EEI 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	Structure design report prepared by EEI. job #:3238 dated 12/17/1997.
Foundation Drawing	Foundation report prepared by EEI. job #:3238 dated 12/17/1997.
Geotechnical Report	Geotechnical report prepared by APPLEID EARTH TECHNOLOGIES. dated 12/10/2007.
Modification Drawings	N/A
Mount Analysis	TES Project #127370, dated 04/07/2022.

Analysis Criteria

The feasibility 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} = 125 mph (3-Sec. Gust)/ Nominal Design Wind Speed V_{asd} = 97.0 mph (3-Sec. Gust)
Wind Speed with Ice:	50 mph (3-Sec. Gust) with 1" 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:	B
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft
Seismic Parameters:	S_S = 0.176, S_1 = 0.064

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	149.08	3	Scala - AP11-880/090/XP - Panel	Low Profile Platform	(15) 1 1/4"	Sprint*
2		9	Andrew - DB844H90E-XY - Panel			
-	138.0	3	RFS APXVAARR24_43-U-NA20	Sitepro RMQP-4096-HK (Low profile platform w/HRK & reinforcement kit)	(12) 1-5/8" Coax (1) 1-5/8" Fiber	T-Mobile
-		3	EMS RR90-17-00DPL2			
-		3	Ericsson KRY 112 489/2			
-		3	Ericsson KRY 112 144/1			
-		3	Ericsson Radio 4449 B71+B12			
-		3	Kathrein 782 11056			
10	127.0	3	Samsung RF440D-13A RRU	Modified Low Profile Platform (3) Commscope BSAMNT-SBS-1-2 (1) VZWSMART VZWSMART-PLK1 (1) VZWSMART VZWSMART-MSK10 (1) VZWSMART VZWSMART-MSK1	(11) 1 5/8" (2) 1 5/8" Hybrid	Verizon
11		3	Commscope SBNHH-1D65B - Panel			
12		3	Commscope SBNHH-1D65A - Panel			
13		3	Samsung MT6407-77A - Panel			
14		4	Antel LPA-80080/6CFx2 - Panel			
15		2	ANTEL LPA-80063/6CF-2 - Panel			
16		3	Samsung RF4439d-25A RRU			
17		1	Raycap DB-B1-6C-12AB-0Z			
18		6	RFS FD9R6004/2C-3L Diplexer			
19		1	RFS DB-T1-6Z-8AB-0Z			

*Sprint is Terminated, Equipment remains installed.

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
3	138.0	3	RFS APXVAARR24_43-U-NA20 - Panel	Sitepro RMQP-4096-HK (Low profile platform w/HRK & reinforcement kit)	(9) 1 5/8" Coax (1) 1 5/8" Fiber (2) 1.9" Fiber	T-Mobile**
4		3	Ericsson AIR6419 B41 - Panel			
5		3	Ericsson KRY 112 489/2 TMA's			
6		3	Ericsson KRY 112 144/1 TMA's			
7		3	Ericsson 4449 B71 + B85 RRUs			
8		3	Ericsson 4460 B25 + B66 RRUs			
9		3	Kathrein 782 11056 Bias Ts			

**(4) 1 5/8" coax outside the pole for T-Mobile.

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:	**48.2%**	**40.2%**	**53.6%**
Pass/Fail	**Pass**	**Pass**	**Pass**

Foundations

	Moment (Kip-Ft)	Shear (Kips)
Original Design Reactions	4611.0	39.0
Analysis Reactions	3194.5	31.1
Factored Reactions*	6224.9	52.7
% of Design Reactions	51.3%	59.1%

* Per section 15.5.1 of the TIA-222-G standard, factored reactions were obtained by multiplying a 1.35 factor to the original design reactions.

No foundation drawing is available for the analysis of the existing foundation. Since the reactions calculated from the current analysis are less than those indicated on the original structural deign drawing, the foundation are assumed to be adequate to resist the reactions from current analysis.

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 0.7984 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.

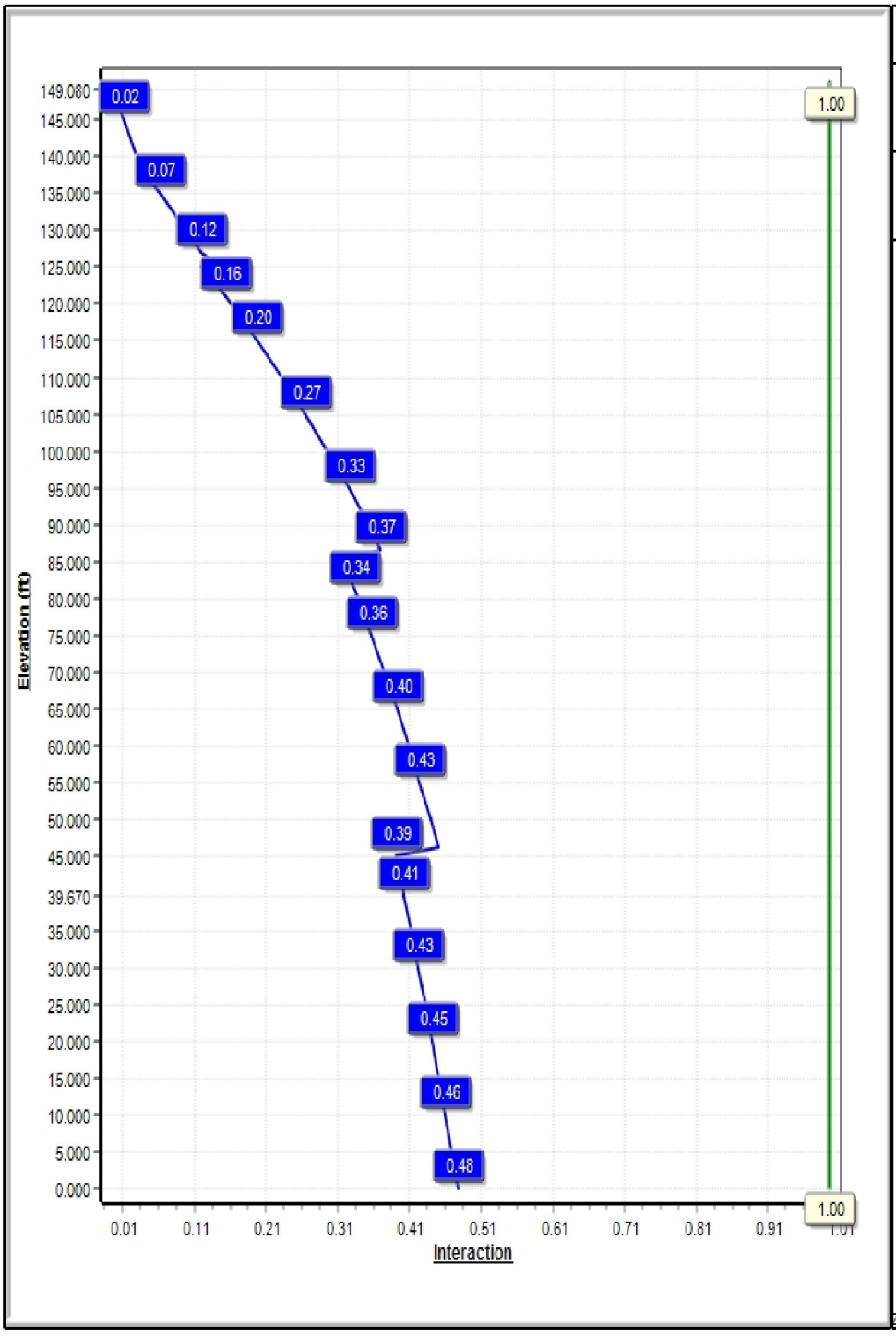
Usage Diagram - Max Ratio 48.19% at 0.0ft

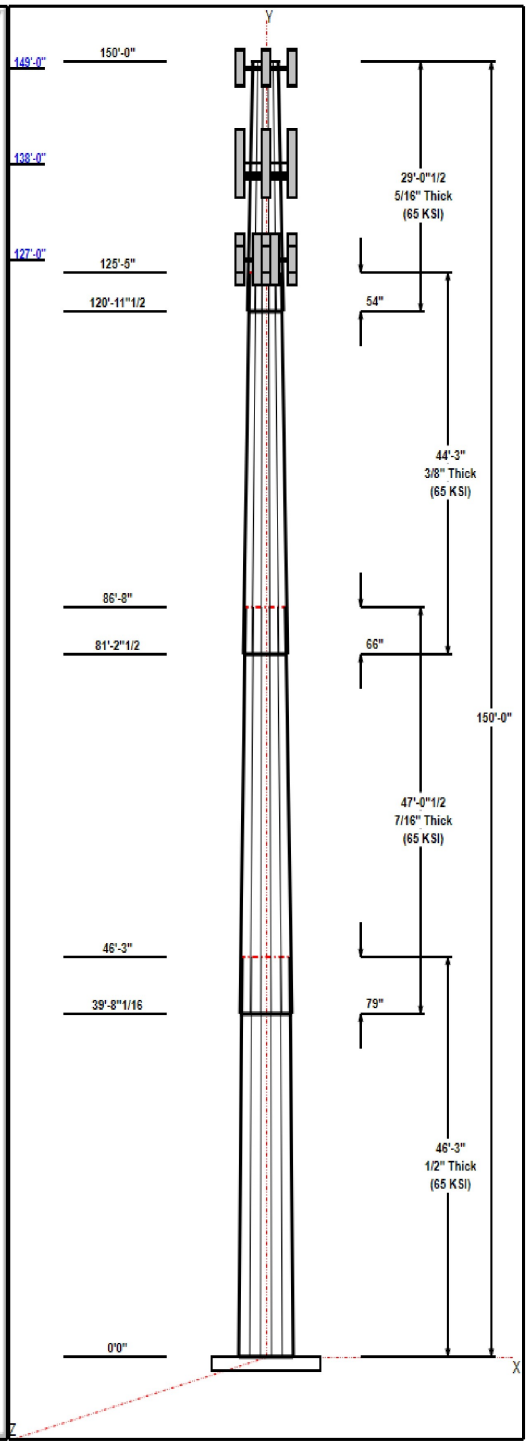
Structure:	CT46129-A-SBA	**Code:**	EIA/TIA-222-G	4/18/2022	
Site Name:	Tolland-reed Rd	**Exposure:**	B		
Height:	150.00 (ft)	**Gh:**	1.1		
Base Elev:	0.000 (ft)			Page: 1	

Tower Engineering Solutions

Dead Load Factor:	1.20	**Iterations:**	22
Wind Load Factor:	1.60		

Load Case : 1.2D + 1.6W 97 mph Wind





Structure: CT46129-A-SBA

Type: Tapered
Site Name: Tolland-reed Rd
Height: 150.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 12 Sided
Taper: 0.22340

4/18/2022

Tower Engineering Solutions

Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	46.25	45.67	56.00	0.500		0.22340	65
2	47.04	37.50	48.01	0.438	Slip	0.22340	65
3	44.25	29.60	39.48	0.375	Slip	0.22340	65
4	29.04	24.74	31.23	0.313	Slip	0.22340	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
149.08	149.08	9	DB844H90E-XY	Sprint
149.08	149.08	3	AP11-880/090/XP	Sprint
149.08	149.08	1	Low Profile Platform	Sprint
138.00	138.00	3	APXVAARR24_43-U-NA20	T-Mobile
138.00	138.00	1	RMQP-4096-HK Plat. +	T-Mobile
138.00	138.00	3	KRY 112 489/2	T-Mobile
138.00	138.00	3	KRY 112 144/1	T-Mobile
138.00	138.00	3	Kathrein 782 11056	T-Mobile
138.00	138.00	3	AIR6419 B41	T-Mobile
138.00	138.00	3	4449 B71 + B85	T-Mobile
138.00	138.00	3	4460 B25 + B66	T-Mobile
127.00	127.00	3	Commscope	Verizon
127.00	127.00	3	Commscope	Verizon
127.00	127.00	3	Samsung MT6407-77A	Verizon
127.00	127.00	4	Antel LPA-80080/6CFx2	Verizon
127.00	127.00	2	ANTEL LPA-80063/6CF-2	Verizon
127.00	127.00	3	Samsung RF4439d-25A	Verizon
127.00	127.00	1	Raycap	Verizon
127.00	127.00	6	RFS FD9R6004/2C-3L	Verizon
127.00	127.00	1	RFS DB-T1-6Z-8AB-0Z	Verizon
127.00	127.00	1	Low Profile Platform	Verizon
127.00	127.00	3	Samsung RF440D-13A	Verizon
127.00	127.00	1	Mod (Support rail)	Verizon

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	149.08	Inside	1 1/4" Coax	Sprint
0.00	138.00	Inside	1 5/8" Coax	T-Mobile
0.00	138.00	Outside	1 5/8" Coax	T-Mobile
0.00	138.00	Inside	1 5/8" Fiber	T-Mobile
0.00	138.00	Inside	1.9" Fiber	T-Mobile
0.00	127.00	Inside	1 5/8" Coax	Verizon
0.00	127.00	Inside	1 5/8" Hybrid	Verizon

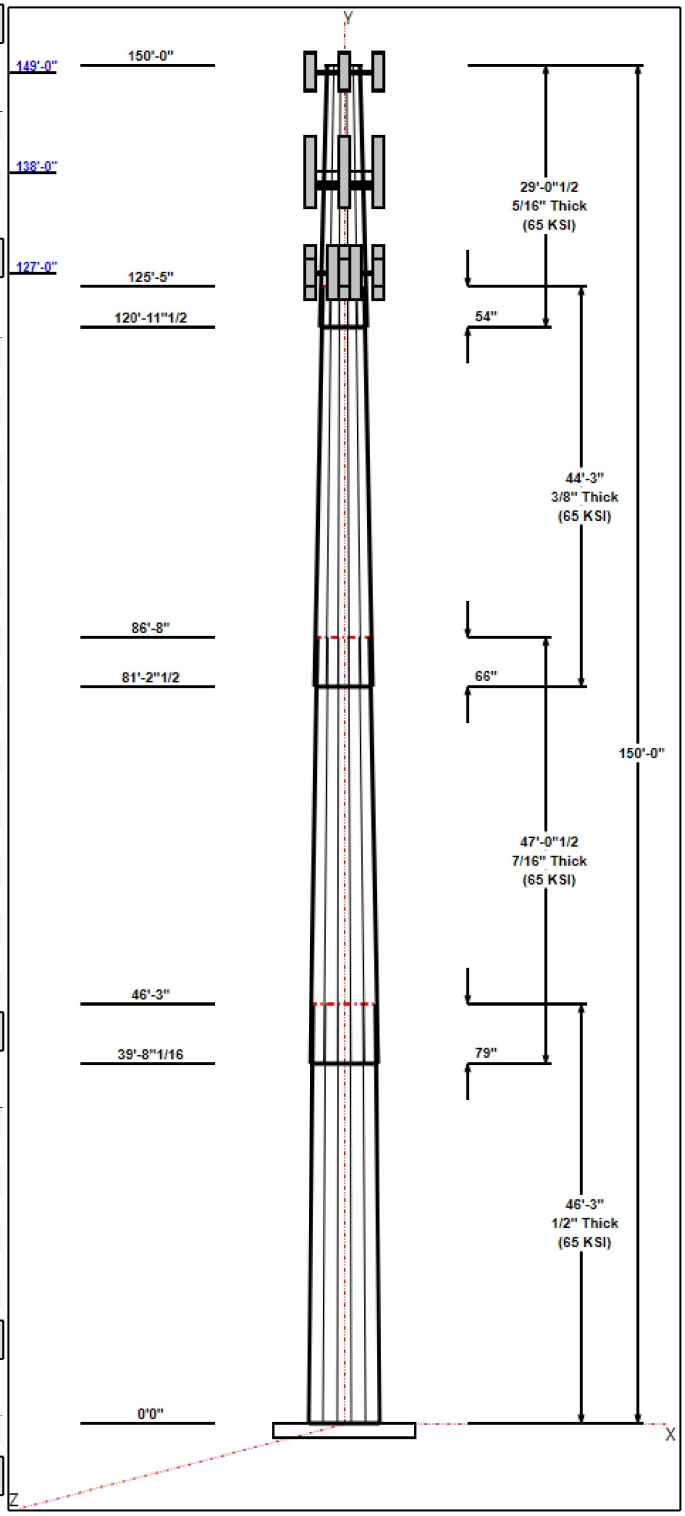
Anchor Bolts

Qty	Specifications	Grade (ksi)	Arrangement
24	2.25" 18J	75.0	Radial

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
2.2500	71.0	60.0	Round

Reactions



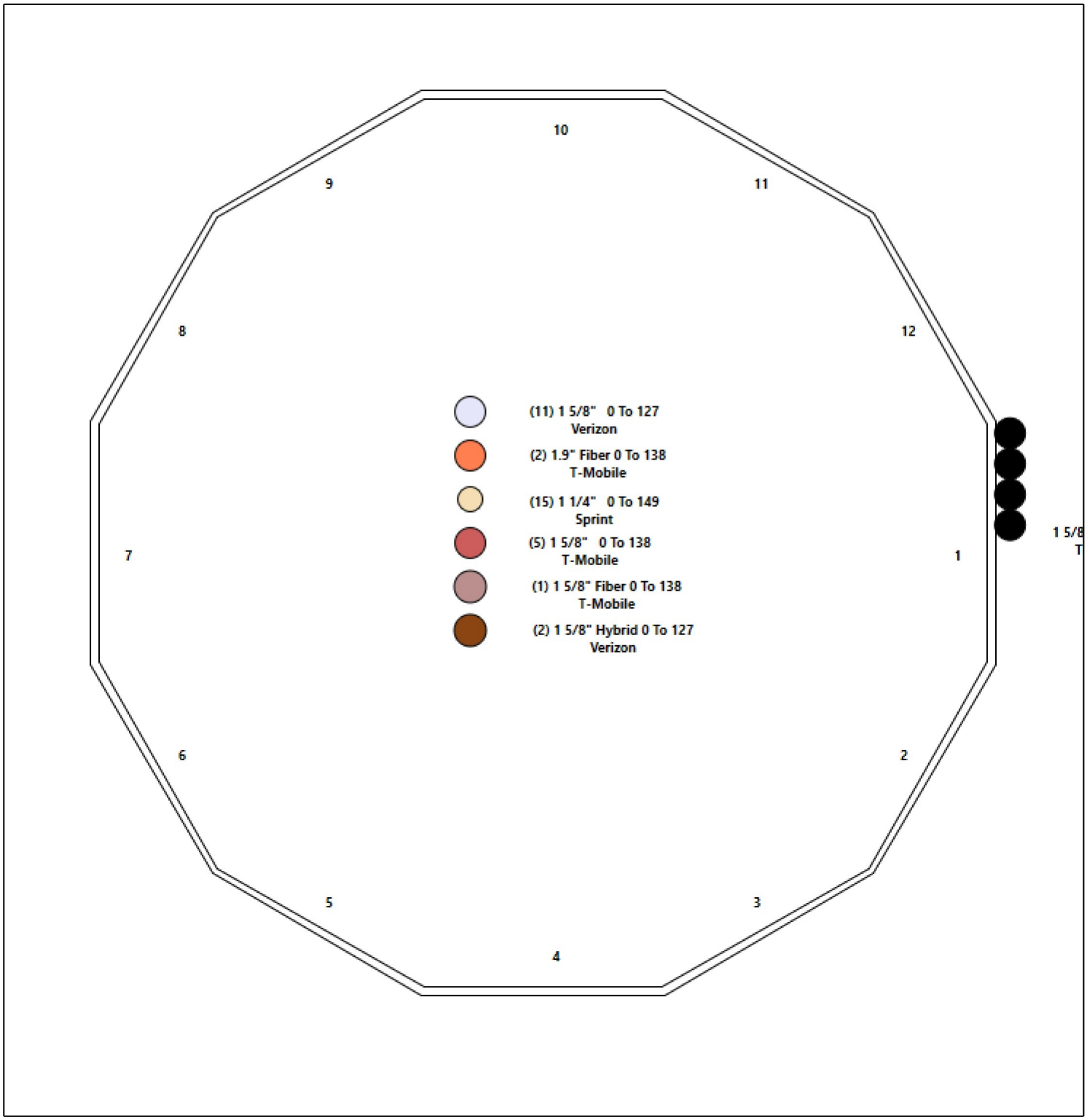
Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 97 mph Wind	3194.5	31.1	53.6
0.9D + 1.6W 97 mph Wind	3169.0	31.1	40.2
1.2D + 1.0Di + 1.0Wi 50 mph Wind	817.6	7.4	89.2
1.2D + 1.0E	214.3	1.9	53.6
0.9D + 1.0E	212.5	1.9	40.2
1.0D + 1.0W 60 mph Wind	760.1	7.4	44.7

Structure: CT46129-A-SBA - Coax Line Placement

Type: Monopole
Site Name: Tolland-reed Rd
Height: 150.00 (ft)

4/18/2022

Tower Engineering Solutions



Shaft Properties

Structure:	CT46129-A-SBA		**Code:**	TIA-222-G	4/18/2022
Site Name:	Tolland-reed Rd		**Exposure:**	B	
Height:	150.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
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	12	46.250	0.5000	65		0.00	12,754
2	12	47.040	0.4375	65	Slip	78.96	9,543
3	12	44.250	0.3750	65	Slip	66.00	6,212
4	12	29.040	0.3125	65	Slip	54.00	2,751
					Total Shaft Weight:		**31,260**

	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	56.00	0.00	89.36	35131.02	27.87	112.00	45.67	46.25	72.72	18936.3	22.33	91.34	0.223400
2	48.01	39.67	67.02	19362.54	27.26	109.74	37.50	86.71	52.22	9157.23	20.83	85.72	0.223400
3	39.48	81.21	47.22	9218.48	26.07	105.29	29.60	125.46	35.29	3846.04	19.00	78.93	0.223400
4	31.23	120.9	31.11	3794.91	24.63	99.93	24.74	150.00	24.58	1872.10	19.07	79.17	0.223400

Load Summary

Structure:	CT46129-A-SBA	**Code:**	TIA-222-G	4/18/2022	
Site Name:	Tolland-reed Rd	**Exposure:**	B		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 6	

TES 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	149.08	DB844H90E-XY	9	14.00	3.05	1.12	173.82	4.246	1.12	0.00	0.00
2	149.08	AP11-880/090/XP	3	17.60	4.83	0.72	189.65	6.166	0.72	0.00	0.00
3	149.08	Low Profile Platform	1	1200.00	25.00	1.00	2595.31	52.906	1.00	0.00	0.00
4	138.00	APXVAARR24_43-U-NA20	3	128.00	20.24	0.72	720.23	22.783	0.72	0.00	0.00
5	138.00	RMQP-4096-HK Plat. + HR/Kicker	1	2645.00	51.70	1.00	6307.21	02.285	1.00	0.00	0.00
6	138.00	KRY 112 489/2	3	15.40	0.65	0.82	38.70	1.459	0.82	0.00	0.00
7	138.00	KRY 112 144/1	3	11.00	0.41	0.70	25.26	1.038	0.70	0.00	0.00
8	138.00	Kathrein 782 11056	3	2.00	0.50	0.67	5.48	1.127	0.67	0.00	0.00
9	138.00	AIR6419 B41	3	83.30	4.00	0.76	243.62	5.108	0.76	0.00	0.00
10	138.00	4449 B71 + B85	3	75.00	1.97	0.67	153.23	2.723	0.67	0.00	0.00
11	138.00	4460 B25 + B66	3	104.00	2.85	0.67	194.72	3.742	0.67	0.00	0.00
12	127.00	Commscope SBNHH-1D65B	3	40.60	8.08	0.83	320.94	9.811	0.83	0.00	0.00
13	127.00	Commscope SBNHH-1D65A	3	33.50	5.88	0.83	254.39	7.326	0.83	0.00	0.00
14	127.00	Samsung MT6407-77A	3	79.40	4.69	0.70	246.60	5.950	0.70	0.00	0.00
15	127.00	Antel LPA-80080/6CFx2	4	21.00	4.33	1.70	292.37	5.923	1.70	0.00	0.00
16	127.00	ANTEL LPA-80063/6CF-2	2	27.00	9.60	0.94	421.99	11.407	0.94	0.00	0.00
17	127.00	Samsung RF4439d-25A RRU	3	75.00	1.87	0.67	183.14	2.644	0.67	0.00	0.00
18	127.00	Raycap DB-B1-6C-12AB-0Z	1	21.40	4.10	1.00	176.94	5.151	1.00	0.00	0.00
19	127.00	RFS FD9R6004/2C-3L Diplexer	6	3.10	0.37	0.62	13.63	0.968	0.62	0.00	0.00
20	127.00	RFS DB-T1-6Z-8AB-0Z	1	18.90	4.80	1.00	218.02	5.970	1.00	0.00	0.00
21	127.00	Low Profile Platform	1	1200.00	25.00	1.00	2573.13	52.462	1.00	0.00	0.00
22	127.00	Samsung RF440D-13A RRU	3	70.30	1.87	0.67	168.69	2.644	0.67	0.00	0.00
23	127.00	Mod (Support rail)	1	514.00	12.25	1.00	1313.89	27.949	1.00	0.00	0.00
		Totals:	**66**	**8,087.20**			**25,077.99**				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	149.08	(15) 1 1/4" Coax	0.00	Inside
0.00	138.00	(5) 1 5/8" Coax	0.00	Inside
0.00	138.00	(4) 1 5/8" Coax	2.00	Outside
0.00	138.00	(1) 1 5/8" Fiber	0.00	Inside
0.00	138.00	(2) 1.9" Fiber	0.00	Inside
0.00	127.00	(11) 1 5/8" Coax	0.00	Inside
0.00	127.00	(2) 1 5/8" Hybrid	0.00	Inside

Shaft Section Properties

Structure:	CT46129-A-SBA	**Code:**	TIA-222-G	4/18/2022	
Site Name:	Tolland-reed Rd	**Exposure:**	B		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 7	

Tower Engineering Solutions

Increment Length: **5 (ft)**

Elev (ft)	Description	Thick (in)	Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fpy (ksi)	S (in^3)	Weight (lb)
0.00		0.5000	56.000	89.355	35131.0	27.87	112.00	74.3	1211.	0.0
5.00		0.5000	54.883	87.557	33052.3	27.27	109.77	75.0	1163.	1505.0
10.00		0.5000	53.766	85.758	31057.2	26.67	107.53	75.6	1115.	1474.4
15.00		0.5000	52.649	83.960	29144.0	26.07	105.30	76.3	1069.	1443.8
20.00		0.5000	51.532	82.162	27311.1	25.47	103.06	76.9	1023.	1413.2
25.00		0.5000	50.415	80.363	25556.7	24.87	100.83	77.6	979.3	1382.6
30.00		0.5000	49.298	78.565	23879.1	24.28	98.60	78.2	935.8	1352.0
35.00		0.5000	48.181	76.766	22276.5	23.68	96.36	78.9	893.2	1321.4
39.67	Bot - Section 2	0.5000	47.138	75.087	20846.1	23.12	94.28	79.5	854.3	1206.5
40.00		0.5000	47.064	74.968	20747.4	23.08	94.13	79.5	851.6	159.5
45.00		0.5000	45.947	73.170	19289.8	22.48	91.89	80.2	811.0	2385.3
46.25	Top - Section 1	0.4375	46.543	64.951	17622.6	26.36	106.38	0.0	0.0	587.4
50.00		0.4375	45.705	63.771	16679.4	25.85	104.47	76.5	705.0	821.3
55.00		0.4375	44.588	62.197	15474.9	25.16	101.92	77.3	670.5	1071.6
60.00		0.4375	43.471	60.623	14329.8	24.48	99.36	78.0	636.8	1044.8
65.00		0.4375	42.354	59.050	13242.7	23.80	96.81	78.8	604.0	1018.1
70.00		0.4375	41.237	57.476	12211.9	23.11	94.26	79.5	572.1	991.3
75.00		0.4375	40.120	55.903	11236.1	22.43	91.70	80.3	541.0	964.5
80.00		0.4375	39.003	54.329	10313.8	21.74	89.15	81.0	510.8	937.7
81.21	Bot - Section 3	0.4375	38.733	53.948	10098.4	21.58	88.53	81.2	503.7	222.9
85.00		0.4375	37.886	52.756	9443.3	21.06	86.60	81.7	481.5	1290.5
86.71	Top - Section 2	0.3750	38.254	45.739	8376.6	25.19	102.01	0.0	0.0	572.9
90.00		0.3750	37.519	44.851	7898.4	24.66	100.05	77.8	406.7	507.1
95.00		0.3750	36.402	43.503	7207.0	23.87	97.07	78.7	382.5	751.6
100.00		0.3750	35.285	42.154	6557.3	23.07	94.09	79.6	359.0	728.7
105.00		0.3750	34.168	40.805	5947.8	22.27	91.11	80.4	336.3	705.7
110.00		0.3750	33.051	39.456	5377.2	21.47	88.14	81.3	314.3	682.8
115.00		0.3750	31.934	38.107	4844.4	20.67	85.16	81.9	293.1	659.8
120.00		0.3750	30.817	36.759	4348.0	19.88	82.18	81.9	272.6	636.9
120.96	Bot - Section 4	0.3750	30.603	36.500	4256.8	19.72	81.61	81.9	268.7	119.7
125.00		0.3750	29.700	35.410	3886.8	19.08	79.20	81.9	252.8	915.7
125.46	Top - Section 3	0.3125	30.222	30.097	3436.6	23.77	96.71	0.0	0.0	102.5
127.00		0.3125	29.878	29.750	3319.4	23.48	95.61	79.1	214.6	156.8
130.00		0.3125	29.208	29.076	3098.7	22.90	93.47	79.7	205.0	300.3
135.00		0.3125	28.091	27.952	2753.1	21.94	89.89	80.8	189.3	485.1
138.00		0.3125	27.421	27.278	2558.6	21.37	87.75	81.4	180.3	281.9
140.00		0.3125	26.974	26.828	2434.1	20.98	86.32	81.8	174.3	184.1
145.00		0.3125	25.857	25.704	2140.8	20.03	82.74	81.9	159.9	446.9
149.08		0.3125	24.946	24.787	1919.8	19.25	79.83	81.9	148.7	350.5
150.00		0.3125	24.740	24.580	1872.1	19.07	79.17	81.9	146.2	77.3
										31259.9

Wind Loading - Shaft

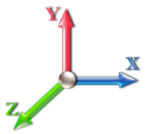
Structure:	CT46129-A-SBA	**Code:**	TIA-222-G	4/18/2022	
Site Name:	Tolland-reed Rd	**Exposure:**	B		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 8	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 97 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	0.70	16.018	17.62	392.09	1.000	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	16.018	17.62	384.27	1.000	0.000	5.00	23.916	23.92	674.2	0.0	1806.0
10.00		1.00	0.70	16.018	17.62	376.45	1.000	0.000	5.00	23.434	23.43	660.6	0.0	1769.3
15.00		1.00	0.70	16.018	17.62	368.63	1.000	0.000	5.00	22.952	22.95	647.0	0.0	1732.5
20.00		1.00	0.70	16.018	17.62	360.81	1.000	0.000	5.00	22.470	22.47	633.5	0.0	1695.8
25.00		1.00	0.70	16.018	17.62	352.98	1.000	0.000	5.00	21.988	21.99	619.9	0.0	1659.1
30.00		1.00	0.70	16.031	17.63	345.31	1.000	0.000	5.00	21.506	21.51	606.8	0.0	1622.4
35.00		1.00	0.73	16.753	18.43	345.00	1.000	0.000	5.00	21.025	21.02	619.9	0.0	1585.7
39.67	Bot - Section 2	1.00	0.76	17.364	19.10	343.62	1.000	0.000	4.67	19.202	19.20	586.8	0.0	1447.9
40.00		1.00	0.76	17.405	19.15	343.49	1.000	0.000	0.33	1.366	1.37	41.8	0.0	191.3
45.00		1.00	0.79	18.000	19.80	341.03	1.000	0.000	5.00	20.438	20.44	647.5	0.0	2862.4
46.25	Top - Section 1	1.00	0.79	18.142	19.96	340.29	1.000	0.000	1.25	5.034	5.03	160.7	0.0	704.8
50.00		1.00	0.81	18.551	20.41	344.38	1.000	0.000	3.75	14.922	14.92	487.2	0.0	985.5
55.00		1.00	0.83	19.063	20.97	340.57	1.000	0.000	5.00	19.475	19.47	653.4	0.0	1285.9
60.00		1.00	0.85	19.543	21.50	336.19	1.000	0.000	5.00	18.993	18.99	653.3	0.0	1253.8
65.00		1.00	0.87	19.995	21.99	331.32	1.000	0.000	5.00	18.511	18.51	651.4	0.0	1221.7
70.00		1.00	0.89	20.422	22.46	326.01	1.000	0.000	5.00	18.029	18.03	648.0	0.0	1189.5
75.00		1.00	0.91	20.829	22.91	320.32	1.000	0.000	5.00	17.547	17.55	643.3	0.0	1157.4
80.00		1.00	0.93	21.217	23.34	314.29	1.000	0.000	5.00	17.065	17.07	637.2	0.0	1125.3
81.21	Bot - Section 3	1.00	0.93	21.308	23.44	312.78	1.000	0.000	1.21	4.057	4.06	152.2	0.0	267.5
85.00		1.00	0.94	21.587	23.75	307.94	1.000	0.000	3.79	12.771	12.77	485.2	0.0	1548.6
86.71	Top - Section 2	1.00	0.95	21.711	23.88	305.71	1.000	0.000	1.71	5.672	5.67	216.7	0.0	687.5
90.00		1.00	0.96	21.943	24.14	307.46	1.000	0.000	3.29	10.754	10.75	415.3	0.0	608.5
95.00		1.00	0.97	22.284	24.51	300.62	1.000	0.000	5.00	15.943	15.94	625.3	0.0	901.9
100.00		1.00	0.99	22.613	24.87	293.54	1.000	0.000	5.00	15.462	15.46	615.4	0.0	874.4
105.00		1.00	1.00	22.931	25.22	286.23	1.000	0.000	5.00	14.980	14.98	604.6	0.0	846.9
110.00		1.00	1.02	23.238	25.56	278.72	1.000	0.000	5.00	14.498	14.50	592.9	0.0	819.3
115.00		1.00	1.03	23.535	25.89	271.02	1.000	0.000	5.00	14.016	14.02	580.6	0.0	791.8
120.00		1.00	1.04	23.823	26.20	263.13	1.000	0.000	5.00	13.534	13.53	567.5	0.0	764.3
120.96	Bot - Section 4	1.00	1.04	23.877	26.26	261.60	1.000	0.000	0.96	2.543	2.54	106.9	0.0	143.6
125.00		1.00	1.05	24.102	26.51	255.08	1.000	0.000	4.04	10.727	10.73	455.0	0.0	1098.8
125.46	Top - Section 3	1.00	1.05	24.127	26.54	254.33	1.000	0.000	0.46	1.201	1.20	51.0	0.0	123.0
127.00	Appurtenance(s)	1.00	1.06	24.212	26.63	257.19	1.000	0.000	1.54	3.992	3.99	170.1	0.0	188.2
130.00		1.00	1.07	24.374	26.81	252.26	1.000	0.000	3.00	7.646	7.65	328.0	0.0	360.3
135.00		1.00	1.08	24.638	27.10	243.93	1.000	0.000	5.00	12.358	12.36	535.9	0.0	582.2
138.00	Appurtenance(s)	1.00	1.08	24.793	27.27	238.86	1.000	0.000	3.00	7.184	7.18	313.5	0.0	338.3
140.00		1.00	1.09	24.895	27.38	235.45	1.000	0.000	2.00	4.693	4.69	205.6	0.0	220.9
145.00		1.00	1.10	25.146	27.66	226.83	1.000	0.000	5.00	11.395	11.39	504.3	0.0	536.3
149.08	Appurtenance(s)	1.00	1.11	25.346	27.88	219.71	1.000	0.000	4.08	8.941	8.94	398.9	0.0	420.6
150.00		1.00	1.11	25.391	27.93	218.09	1.000	0.000	0.92	1.972	1.97	88.1	0.0	92.7
								Totals:	**150.00**			**18,285.6**		**37,511.9**

Discrete Appurtenance Forces

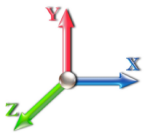
Structure:	CT46129-A-SBA	**Code:**	TIA-222-G	4/18/2022	
Site Name:	Tolland-reed Rd	**Exposure:**	B		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 9	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 97 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	149.08	AP11-880/090/XP	3	25.346	27.881	0.72	1.00	10.43	63.36	0.000	0.000	465.40	0.00	0.00
2	149.08	DB844H90E-XY	9	25.346	27.881	1.12	1.00	30.74	151.20	0.000	0.000	1371.47	0.00	0.00
3	149.08	Low Profile Platform	1	25.346	27.881	1.00	1.00	25.00	1440.00	0.000	0.000	1115.24	0.00	0.00
4	138.00	KRY 112 144/1	3	24.793	27.272	0.52	0.75	0.65	39.60	0.000	0.000	28.18	0.00	0.00
5	138.00	APXVAARR24_43-U-NA2	3	24.793	27.272	0.54	0.75	32.79	460.80	0.000	0.000	1430.77	0.00	0.00
6	138.00	RMQP-4096-HK Plat. +	1	24.793	27.272	1.00	1.00	51.70	3174.00	0.000	0.000	2255.97	0.00	0.00
7	138.00	KRY 112 489/2	3	24.793	27.272	0.61	0.75	1.20	55.44	0.000	0.000	52.33	0.00	0.00
8	138.00	4449 B71 + B85	3	24.793	27.272	0.50	0.75	2.97	270.00	0.000	0.000	129.59	0.00	0.00
9	138.00	Kathrein 782 11056	3	24.793	27.272	0.50	0.75	0.75	7.20	0.000	0.000	32.89	0.00	0.00
10	138.00	AIR6419 B41	3	24.793	27.272	0.57	0.75	6.84	299.88	0.000	0.000	298.47	0.00	0.00
11	138.00	4460 B25 + B66	3	24.793	27.272	0.50	0.75	4.30	374.40	0.000	0.000	187.48	0.00	0.00
12	127.00	Samsung RF440D-13A	3	24.212	26.633	0.54	0.80	3.01	253.08	0.000	0.000	128.13	0.00	0.00
13	127.00	Low Profile Platform	1	24.212	26.633	1.00	1.00	25.00	1440.00	0.000	0.000	1065.31	0.00	0.00
14	127.00	RFS DB-T1-6Z-8AB-0Z	1	24.212	26.633	1.00	1.00	4.80	22.68	0.000	0.000	204.54	0.00	0.00
15	127.00	RFS FD9R6004/2C-3L	6	24.212	26.633	0.50	0.80	1.10	22.32	0.000	0.000	46.92	0.00	0.00
16	127.00	Raycap	1	24.212	26.633	1.00	1.00	4.10	25.68	0.000	0.000	174.71	0.00	0.00
17	127.00	Samsung RF4439d-25A	3	24.212	26.633	0.54	0.80	3.01	270.00	0.000	0.000	128.13	0.00	0.00
18	127.00	ANTEL LPA-80063/6CF-2	2	24.212	26.633	0.75	0.80	14.44	64.80	0.000	0.000	615.26	0.00	0.00
19	127.00	Antel LPA-80080/6CFx2	4	24.212	26.633	1.36	0.80	23.56	100.80	0.000	0.000	1003.74	0.00	0.00
20	127.00	Samsung MT6407-77A	3	24.212	26.633	0.56	0.80	7.88	285.84	0.000	0.000	335.75	0.00	0.00
21	127.00	Commscope	3	24.212	26.633	0.66	0.80	11.71	120.60	0.000	0.000	499.12	0.00	0.00
22	127.00	Commscope	3	24.212	26.633	0.66	0.80	16.10	146.16	0.000	0.000	685.86	0.00	0.00
23	127.00	Mod (Support rail)	1	24.212	26.633	1.00	1.00	12.25	616.80	0.000	0.000	522.00	0.00	0.00
							Totals:		**9,704.64**			**12,777.27**		

Total Applied Force Summary

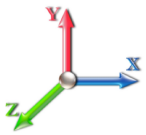
Structure:	CT46129-A-SBA		**Code:**	TIA-222-G	4/18/2022
Site Name:	Tolland-reed Rd		**Exposure:**	B	
Height:	150.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 10

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 97 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		674.21	2039.73	0.00	0.00
10.00		660.63	2003.02	0.00	0.00
15.00		647.05	1966.30	0.00	0.00
20.00		633.46	1929.58	0.00	0.00
25.00		619.88	1892.87	0.00	0.00
30.00		606.81	1856.15	0.00	0.00
35.00		619.92	1819.43	0.00	0.00
39.67		586.80	1666.19	0.00	0.00
40.00		41.84	206.77	0.00	0.00
45.00		647.50	3096.17	0.00	0.00
46.25		160.74	763.29	0.00	0.00
50.00		487.19	1160.84	0.00	0.00
55.00		653.38	1519.68	0.00	0.00
60.00		653.25	1487.55	0.00	0.00
65.00		651.41	1455.43	0.00	0.00
70.00		648.03	1423.30	0.00	0.00
75.00		643.27	1391.17	0.00	0.00
80.00		637.25	1359.04	0.00	0.00
81.21		152.16	324.06	0.00	0.00
85.00		485.23	1725.75	0.00	0.00
86.71		216.72	767.42	0.00	0.00
90.00		415.30	762.32	0.00	0.00
95.00		625.31	1135.71	0.00	0.00
100.00		615.37	1108.17	0.00	0.00
105.00		604.56	1080.63	0.00	0.00
110.00		592.94	1053.09	0.00	0.00
115.00		580.56	1025.56	0.00	0.00
120.00		567.46	998.02	0.00	0.00
120.96		106.88	188.47	0.00	0.00
125.00		455.03	1287.70	0.00	0.00
125.46		51.02	144.53	0.00	0.00
127.00	(31) attachments	5579.62	3628.93	0.00	0.00
130.00		328.01	451.46	0.00	0.00
135.00		535.89	734.08	0.00	0.00
138.00	(22) attachments	4729.15	5110.75	0.00	0.00
140.00		205.62	244.69	0.00	0.00
145.00		504.30	595.67	0.00	0.00
149.08	(13) attachments	3350.97	2123.62	0.00	0.00
150.00		88.12	92.73	0.00	0.00
	Totals:	**31,062.84**	**53,619.87**	**0.00**	**0.00**

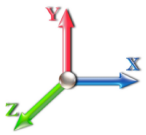
Linear Appurtenance Segment Forces (Factored)

Structure:	CT46129-A-SBA	**Code:**	TIA-222-G	4/18/2022	
Site Name:	Tolland-reed Rd	**Exposure:**	B		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 11	

Load Case: 1.2D + 1.6W 97 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	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.035	0.000	16.018	0.00	24.96
10.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.036	0.000	16.018	0.00	24.96
15.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.036	0.000	16.018	0.00	24.96
20.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.037	0.000	16.018	0.00	24.96
25.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.038	0.000	16.018	0.00	24.96
30.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.039	0.000	16.031	0.00	24.96
35.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.040	0.000	16.753	0.00	24.96
39.67	1 5/8" Coax	Yes	4.67	0.000	2.00	0.78	0.00	0.041	0.000	17.364	0.00	23.31
40.00	1 5/8" Coax	Yes	0.33	0.000	2.00	0.06	0.00	0.041	0.000	17.405	0.00	1.65
45.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.042	0.000	18.000	0.00	24.96
46.25	1 5/8" Coax	Yes	1.25	0.000	2.00	0.21	0.00	0.042	0.000	18.142	0.00	6.24
50.00	1 5/8" Coax	Yes	3.75	0.000	2.00	0.63	0.00	0.042	0.000	18.551	0.00	18.72
55.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.043	0.000	19.063	0.00	24.96
60.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.044	0.000	19.543	0.00	24.96
65.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.045	0.000	19.995	0.00	24.96
70.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.046	0.000	20.422	0.00	24.96
75.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.047	0.000	20.829	0.00	24.96
80.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.049	0.000	21.217	0.00	24.96
81.21	1 5/8" Coax	Yes	1.21	0.000	2.00	0.20	0.00	0.050	0.000	21.308	0.00	6.04
85.00	1 5/8" Coax	Yes	3.79	0.000	2.00	0.63	0.00	0.050	0.000	21.587	0.00	18.92
86.71	1 5/8" Coax	Yes	1.71	0.000	2.00	0.28	0.00	0.051	0.000	21.711	0.00	8.54
90.00	1 5/8" Coax	Yes	3.29	0.000	2.00	0.55	0.00	0.051	0.000	21.943	0.00	16.42
95.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.052	0.000	22.284	0.00	24.96
100.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.054	0.000	22.613	0.00	24.96
105.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.056	0.000	22.931	0.00	24.96
110.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.057	0.000	23.238	0.00	24.96
115.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.059	0.000	23.535	0.00	24.96
120.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.062	0.000	23.823	0.00	24.96
120.96	1 5/8" Coax	Yes	0.96	0.000	2.00	0.16	0.00	0.063	0.000	23.877	0.00	4.79
125.00	1 5/8" Coax	Yes	4.04	0.000	2.00	0.67	0.00	0.064	0.000	24.102	0.00	20.17
125.46	1 5/8" Coax	Yes	0.46	0.000	2.00	0.08	0.00	0.065	0.000	24.127	0.00	2.30
127.00	1 5/8" Coax	Yes	1.54	0.000	2.00	0.26	0.00	0.064	0.000	24.212	0.00	7.69
130.00	1 5/8" Coax	Yes	3.00	0.000	2.00	0.50	0.00	0.065	0.000	24.374	0.00	14.98
135.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.067	0.000	24.638	0.00	24.96
138.00	1 5/8" Coax	Yes	3.00	0.000	2.00	0.50	0.00	0.070	0.000	24.793	0.00	14.98
									Totals:		**0.0**	**688.9**

Calculated Forces

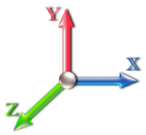
Structure:	CT46129-A-SBA	**Code:**	TIA-222-G	4/18/2022	
Site Name:	Tolland-reed Rd	**Exposure:**	B		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 12	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 97 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	-53.58	-31.12	0.00	-3194.4	0.00	3194.49	5976.93	2988.46	13678.8	6755.45	0.00	0.000	0.000	0.482
5.00	-51.48	-30.56	0.00	-3038.8	0.00	3038.88	5908.08	2954.04	13246.7	6542.05	0.07	-0.126	0.000	0.473
10.00	-49.41	-30.00	0.00	-2886.0	0.00	2886.09	5837.12	2918.56	12816.3	6329.51	0.27	-0.254	0.000	0.465
15.00	-47.38	-29.45	0.00	-2736.0	0.00	2736.07	5764.05	2882.03	12388.0	6117.98	0.60	-0.382	0.000	0.456
20.00	-45.39	-28.91	0.00	-2588.8	0.00	2588.81	5688.87	2844.43	11962.0	5907.62	1.07	-0.512	0.000	0.446
25.00	-43.44	-28.37	0.00	-2444.2	0.00	2444.28	5611.57	2805.78	11538.7	5698.56	1.68	-0.643	0.000	0.437
30.00	-41.53	-27.83	0.00	-2302.4	0.00	2302.44	5532.15	2766.08	11118.3	5490.95	2.43	-0.776	0.000	0.427
35.00	-39.66	-27.28	0.00	-2163.2	0.00	2163.27	5450.63	2725.31	10701.2	5284.94	3.31	-0.909	0.000	0.417
39.67	-37.97	-26.71	0.00	-2035.8	0.00	2035.88	5372.57	2686.29	10314.8	5094.09	4.26	-1.034	0.000	0.407
40.00	-37.73	-26.71	0.00	-2027.0	0.00	2027.07	5366.99	2683.49	10287.6	5080.67	4.33	-1.043	0.000	0.406
45.00	-34.61	-26.05	0.00	-1893.5	0.00	1893.53	5281.24	2640.62	9877.82	4878.29	5.50	-1.177	0.000	0.395
46.25	-33.82	-25.92	0.00	-1860.9	0.00	1860.97	4440.49	2220.24	8438.24	4167.33	5.81	-1.212	0.000	0.454
50.00	-32.61	-25.47	0.00	-1763.7	0.00	1763.78	4391.92	2195.96	8192.87	4046.15	6.81	-1.314	0.000	0.443
55.00	-31.05	-24.86	0.00	-1636.4	0.00	1636.42	4325.31	2162.66	7867.62	3885.52	8.26	-1.459	0.000	0.428
60.00	-29.51	-24.24	0.00	-1512.1	0.00	1512.11	4256.59	2128.30	7544.81	3726.10	9.87	-1.604	0.000	0.413
65.00	-28.02	-23.62	0.00	-1390.8	0.00	1390.89	4185.76	2092.88	7224.74	3568.03	11.62	-1.748	0.000	0.397
70.00	-26.56	-22.99	0.00	-1272.7	0.00	1272.79	4112.81	2056.41	6907.71	3411.46	13.53	-1.891	0.000	0.380
75.00	-25.14	-22.37	0.00	-1157.8	0.00	1157.82	4037.75	2018.88	6594.01	3256.53	15.59	-2.033	0.000	0.362
80.00	-23.77	-21.71	0.00	-1046.0	0.00	1046.00	3960.58	1980.29	6283.93	3103.40	17.79	-2.172	0.000	0.343
81.21	-23.43	-21.58	0.00	-1019.7	0.00	1019.72	3941.59	1970.79	6209.47	3066.62	18.35	-2.207	0.000	0.339
85.00	-21.69	-21.05	0.00	-937.94	0.00	937.94	3881.29	1940.65	5977.77	2952.20	20.14	-2.311	0.000	0.323
86.71	-20.91	-20.83	0.00	-901.94	0.00	901.94	3179.63	1589.82	4962.15	2450.62	20.98	-2.358	0.000	0.375
90.00	-20.12	-20.42	0.00	-833.41	0.00	833.41	3141.06	1570.53	4805.90	2373.45	22.64	-2.447	0.000	0.358
95.00	-18.97	-19.80	0.00	-731.28	0.00	731.28	3080.68	1540.34	4570.36	2257.13	25.27	-2.588	0.000	0.330
100.00	-17.85	-19.17	0.00	-632.31	0.00	632.31	3018.19	1509.10	4337.39	2142.08	28.06	-2.723	0.000	0.301
105.00	-16.76	-18.55	0.00	-536.45	0.00	536.45	2953.59	1476.79	4107.30	2028.44	30.98	-2.849	0.000	0.270
110.00	-15.70	-17.94	0.00	-443.70	0.00	443.70	2886.87	1443.44	3880.37	1916.37	34.02	-2.967	0.000	0.237
115.00	-14.68	-17.33	0.00	-354.03	0.00	354.03	2808.90	1404.45	3645.04	1800.15	37.19	-3.072	0.000	0.202
120.00	-13.70	-16.72	0.00	-267.40	0.00	267.40	2709.48	1354.74	3390.12	1674.25	40.46	-3.163	0.000	0.165
120.96	-13.50	-16.61	0.00	-251.35	0.00	251.35	2690.40	1345.20	3342.23	1650.60	41.09	-3.180	0.000	0.157
125.00	-12.24	-16.09	0.00	-184.25	0.00	184.25	2610.07	1305.03	3144.44	1552.92	43.81	-3.238	0.000	0.123
125.46	-12.09	-16.03	0.00	-176.84	0.00	176.84	2134.18	1067.09	2628.47	1298.10	44.12	-3.245	0.000	0.142
127.00	-8.78	-10.26	0.00	-152.15	0.00	152.15	2118.25	1059.12	2578.53	1273.44	45.17	-3.263	0.000	0.124
130.00	-8.34	-9.91	0.00	-121.37	0.00	121.37	2086.63	1043.32	2481.86	1225.70	47.23	-3.298	0.000	0.103
135.00	-7.63	-9.34	0.00	-71.80	0.00	71.80	2032.25	1016.13	2322.74	1147.11	50.71	-3.343	0.000	0.066
138.00	-2.81	-4.32	0.00	-43.78	0.00	43.78	1998.61	999.30	2228.56	1100.60	52.82	-3.361	0.000	0.041
140.00	-2.57	-4.10	0.00	-35.14	0.00	35.14	1975.75	987.88	2166.35	1069.88	54.23	-3.369	0.000	0.034
145.00	-2.01	-3.56	0.00	-14.63	0.00	14.63	1894.65	947.33	1989.39	982.48	57.76	-3.384	0.000	0.016
149.08	-0.09	-0.09	0.00	-0.09	0.00	0.09	1827.05	913.52	1849.12	913.21	60.66	-3.388	0.000	0.000
150.00	0.00	-0.09	0.00	0.00	0.00	0.00	1811.80	905.90	1818.20	897.94	61.31	-3.388	0.000	0.000

Wind Loading - Shaft

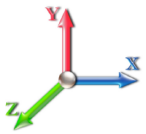
Structure:	CT46129-A-SBA	**Code:**	TIA-222-G	4/18/2022	
Site Name:	Tolland-reed Rd	**Exposure:**	B		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 13	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 97 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	0.70	16.018	17.62	392.09	1.000	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	16.018	17.62	384.27	1.000	0.000	5.00	23.916	23.92	674.2	0.0	1354.5
10.00		1.00	0.70	16.018	17.62	376.45	1.000	0.000	5.00	23.434	23.43	660.6	0.0	1326.9
15.00		1.00	0.70	16.018	17.62	368.63	1.000	0.000	5.00	22.952	22.95	647.0	0.0	1299.4
20.00		1.00	0.70	16.018	17.62	360.81	1.000	0.000	5.00	22.470	22.47	633.5	0.0	1271.9
25.00		1.00	0.70	16.018	17.62	352.98	1.000	0.000	5.00	21.988	21.99	619.9	0.0	1244.3
30.00		1.00	0.70	16.031	17.63	345.31	1.000	0.000	5.00	21.506	21.51	606.8	0.0	1216.8
35.00		1.00	0.73	16.753	18.43	345.00	1.000	0.000	5.00	21.025	21.02	619.9	0.0	1189.3
39.67	Bot - Section 2	1.00	0.76	17.364	19.10	343.62	1.000	0.000	4.67	19.202	19.20	586.8	0.0	1085.9
40.00		1.00	0.76	17.405	19.15	343.49	1.000	0.000	0.33	1.366	1.37	41.8	0.0	143.5
45.00		1.00	0.79	18.000	19.80	341.03	1.000	0.000	5.00	20.438	20.44	647.5	0.0	2146.8
46.25	Top - Section 1	1.00	0.79	18.142	19.96	340.29	1.000	0.000	1.25	5.034	5.03	160.7	0.0	528.6
50.00		1.00	0.81	18.551	20.41	344.38	1.000	0.000	3.75	14.922	14.92	487.2	0.0	739.1
55.00		1.00	0.83	19.063	20.97	340.57	1.000	0.000	5.00	19.475	19.47	653.4	0.0	964.4
60.00		1.00	0.85	19.543	21.50	336.19	1.000	0.000	5.00	18.993	18.99	653.3	0.0	940.3
65.00		1.00	0.87	19.995	21.99	331.32	1.000	0.000	5.00	18.511	18.51	651.4	0.0	916.2
70.00		1.00	0.89	20.422	22.46	326.01	1.000	0.000	5.00	18.029	18.03	648.0	0.0	892.2
75.00		1.00	0.91	20.829	22.91	320.32	1.000	0.000	5.00	17.547	17.55	643.3	0.0	868.1
80.00		1.00	0.93	21.217	23.34	314.29	1.000	0.000	5.00	17.065	17.07	637.2	0.0	844.0
81.21	Bot - Section 3	1.00	0.93	21.308	23.44	312.78	1.000	0.000	1.21	4.057	4.06	152.2	0.0	200.6
85.00		1.00	0.94	21.587	23.75	307.94	1.000	0.000	3.79	12.771	12.77	485.2	0.0	1161.4
86.71	Top - Section 2	1.00	0.95	21.711	23.88	305.71	1.000	0.000	1.71	5.672	5.67	216.7	0.0	515.6
90.00		1.00	0.96	21.943	24.14	307.46	1.000	0.000	3.29	10.754	10.75	415.3	0.0	456.4
95.00		1.00	0.97	22.284	24.51	300.62	1.000	0.000	5.00	15.943	15.94	625.3	0.0	676.5
100.00		1.00	0.99	22.613	24.87	293.54	1.000	0.000	5.00	15.462	15.46	615.4	0.0	655.8
105.00		1.00	1.00	22.931	25.22	286.23	1.000	0.000	5.00	14.980	14.98	604.6	0.0	635.2
110.00		1.00	1.02	23.238	25.56	278.72	1.000	0.000	5.00	14.498	14.50	592.9	0.0	614.5
115.00		1.00	1.03	23.535	25.89	271.02	1.000	0.000	5.00	14.016	14.02	580.6	0.0	593.8
120.00		1.00	1.04	23.823	26.20	263.13	1.000	0.000	5.00	13.534	13.53	567.5	0.0	573.2
120.96	Bot - Section 4	1.00	1.04	23.877	26.26	261.60	1.000	0.000	0.96	2.543	2.54	106.9	0.0	107.7
125.00		1.00	1.05	24.102	26.51	255.08	1.000	0.000	4.04	10.727	10.73	455.0	0.0	824.1
125.46	Top - Section 3	1.00	1.05	24.127	26.54	254.33	1.000	0.000	0.46	1.201	1.20	51.0	0.0	92.3
127.00	Appurtenance(s)	1.00	1.06	24.212	26.63	257.19	1.000	0.000	1.54	3.992	3.99	170.1	0.0	141.1
130.00		1.00	1.07	24.374	26.81	252.26	1.000	0.000	3.00	7.646	7.65	328.0	0.0	270.2
135.00		1.00	1.08	24.638	27.10	243.93	1.000	0.000	5.00	12.358	12.36	535.9	0.0	436.6
138.00	Appurtenance(s)	1.00	1.08	24.793	27.27	238.86	1.000	0.000	3.00	7.184	7.18	313.5	0.0	253.7
140.00		1.00	1.09	24.895	27.38	235.45	1.000	0.000	2.00	4.693	4.69	205.6	0.0	165.7
145.00		1.00	1.10	25.146	27.66	226.83	1.000	0.000	5.00	11.395	11.39	504.3	0.0	402.2
149.08	Appurtenance(s)	1.00	1.11	25.346	27.88	219.71	1.000	0.000	4.08	8.941	8.94	398.9	0.0	315.4
150.00		1.00	1.11	25.391	27.93	218.09	1.000	0.000	0.92	1.972	1.97	88.1	0.0	69.5
								Totals:	**150.00**			**18,285.6**		**28,133.9**

Discrete Appurtenance Forces

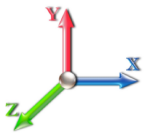
Structure:	CT46129-A-SBA	**Code:**	TIA-222-G	4/18/2022	
Site Name:	Tolland-reed Rd	**Exposure:**	B		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 14	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 97 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	149.08	AP11-880/090/XP	3	25.346	27.881	0.72	1.00	10.43	47.52	0.000	0.000	465.40	0.00	0.00
2	149.08	DB844H90E-XY	9	25.346	27.881	1.12	1.00	30.74	113.40	0.000	0.000	1371.47	0.00	0.00
3	149.08	Low Profile Platform	1	25.346	27.881	1.00	1.00	25.00	1080.00	0.000	0.000	1115.24	0.00	0.00
4	138.00	KRY 112 144/1	3	24.793	27.272	0.52	0.75	0.65	29.70	0.000	0.000	28.18	0.00	0.00
5	138.00	APXVAARR24_43-U-NA2	3	24.793	27.272	0.54	0.75	32.79	345.60	0.000	0.000	1430.77	0.00	0.00
6	138.00	RMQP-4096-HK Plat. +	1	24.793	27.272	1.00	1.00	51.70	2380.50	0.000	0.000	2255.97	0.00	0.00
7	138.00	KRY 112 489/2	3	24.793	27.272	0.61	0.75	1.20	41.58	0.000	0.000	52.33	0.00	0.00
8	138.00	4449 B71 + B85	3	24.793	27.272	0.50	0.75	2.97	202.50	0.000	0.000	129.59	0.00	0.00
9	138.00	Kathrein 782 11056	3	24.793	27.272	0.50	0.75	0.75	5.40	0.000	0.000	32.89	0.00	0.00
10	138.00	AIR6419 B41	3	24.793	27.272	0.57	0.75	6.84	224.91	0.000	0.000	298.47	0.00	0.00
11	138.00	4460 B25 + B66	3	24.793	27.272	0.50	0.75	4.30	280.80	0.000	0.000	187.48	0.00	0.00
12	127.00	Samsung RF440D-13A	3	24.212	26.633	0.54	0.80	3.01	189.81	0.000	0.000	128.13	0.00	0.00
13	127.00	Low Profile Platform	1	24.212	26.633	1.00	1.00	25.00	1080.00	0.000	0.000	1065.31	0.00	0.00
14	127.00	RFS DB-T1-6Z-8AB-0Z	1	24.212	26.633	1.00	1.00	4.80	17.01	0.000	0.000	204.54	0.00	0.00
15	127.00	RFS FD9R6004/2C-3L	6	24.212	26.633	0.50	0.80	1.10	16.74	0.000	0.000	46.92	0.00	0.00
16	127.00	Raycap	1	24.212	26.633	1.00	1.00	4.10	19.26	0.000	0.000	174.71	0.00	0.00
17	127.00	Samsung RF4439d-25A	3	24.212	26.633	0.54	0.80	3.01	202.50	0.000	0.000	128.13	0.00	0.00
18	127.00	ANTEL LPA-80063/6CF-2	2	24.212	26.633	0.75	0.80	14.44	48.60	0.000	0.000	615.26	0.00	0.00
19	127.00	Antel LPA-80080/6CFx2	4	24.212	26.633	1.36	0.80	23.56	75.60	0.000	0.000	1003.74	0.00	0.00
20	127.00	Samsung MT6407-77A	3	24.212	26.633	0.56	0.80	7.88	214.38	0.000	0.000	335.75	0.00	0.00
21	127.00	Commscope	3	24.212	26.633	0.66	0.80	11.71	90.45	0.000	0.000	499.12	0.00	0.00
22	127.00	Commscope	3	24.212	26.633	0.66	0.80	16.10	109.62	0.000	0.000	685.86	0.00	0.00
23	127.00	Mod (Support rail)	1	24.212	26.633	1.00	1.00	12.25	462.60	0.000	0.000	522.00	0.00	0.00
							Totals:		**7,278.48**			**12,777.27**		

Total Applied Force Summary

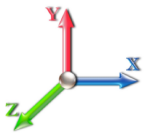
Structure:	CT46129-A-SBA		**Code:**	TIA-222-G	4/18/2022
Site Name:	Tolland-reed Rd		**Exposure:**	B	
Height:	150.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 15

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 97 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		674.21	1529.80	0.00	0.00
10.00		660.63	1502.26	0.00	0.00
15.00		647.05	1474.72	0.00	0.00
20.00		633.46	1447.19	0.00	0.00
25.00		619.88	1419.65	0.00	0.00
30.00		606.81	1392.11	0.00	0.00
35.00		619.92	1364.57	0.00	0.00
39.67		586.80	1249.64	0.00	0.00
40.00		41.84	155.08	0.00	0.00
45.00		647.50	2322.13	0.00	0.00
46.25		160.74	572.46	0.00	0.00
50.00		487.19	870.63	0.00	0.00
55.00		653.38	1139.76	0.00	0.00
60.00		653.25	1115.66	0.00	0.00
65.00		651.41	1091.57	0.00	0.00
70.00		648.03	1067.47	0.00	0.00
75.00		643.27	1043.38	0.00	0.00
80.00		637.25	1019.28	0.00	0.00
81.21		152.16	243.05	0.00	0.00
85.00		485.23	1294.31	0.00	0.00
86.71		216.72	575.56	0.00	0.00
90.00		415.30	571.74	0.00	0.00
95.00		625.31	851.78	0.00	0.00
100.00		615.37	831.13	0.00	0.00
105.00		604.56	810.47	0.00	0.00
110.00		592.94	789.82	0.00	0.00
115.00		580.56	769.17	0.00	0.00
120.00		567.46	748.51	0.00	0.00
120.96		106.88	141.35	0.00	0.00
125.00		455.03	965.78	0.00	0.00
125.46		51.02	108.40	0.00	0.00
127.00	(31) attachments	5579.62	2721.70	0.00	0.00
130.00		328.01	338.60	0.00	0.00
135.00		535.89	550.56	0.00	0.00
138.00	(22) attachments	4729.15	3833.07	0.00	0.00
140.00		205.62	183.52	0.00	0.00
145.00		504.30	446.75	0.00	0.00
149.08	(13) attachments	3350.97	1592.72	0.00	0.00
150.00		88.12	69.55	0.00	0.00
	Totals:	**31,062.84**	**40,214.90**	**0.00**	**0.00**

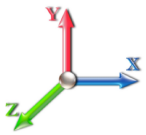
Linear Appurtenance Segment Forces (Factored)

Structure:	CT46129-A-SBA	**Code:**	TIA-222-G	4/18/2022	
Site Name:	Tolland-reed Rd	**Exposure:**	B		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 16	

Load Case: 0.9D + 1.6W 97 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	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.035	0.000	16.018	0.00	18.72
10.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.036	0.000	16.018	0.00	18.72
15.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.036	0.000	16.018	0.00	18.72
20.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.037	0.000	16.018	0.00	18.72
25.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.038	0.000	16.018	0.00	18.72
30.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.039	0.000	16.031	0.00	18.72
35.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.040	0.000	16.753	0.00	18.72
39.67	1 5/8" Coax	Yes	4.67	0.000	2.00	0.78	0.00	0.041	0.000	17.364	0.00	17.48
40.00	1 5/8" Coax	Yes	0.33	0.000	2.00	0.06	0.00	0.041	0.000	17.405	0.00	1.24
45.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.042	0.000	18.000	0.00	18.72
46.25	1 5/8" Coax	Yes	1.25	0.000	2.00	0.21	0.00	0.042	0.000	18.142	0.00	4.68
50.00	1 5/8" Coax	Yes	3.75	0.000	2.00	0.63	0.00	0.042	0.000	18.551	0.00	14.04
55.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.043	0.000	19.063	0.00	18.72
60.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.044	0.000	19.543	0.00	18.72
65.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.045	0.000	19.995	0.00	18.72
70.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.046	0.000	20.422	0.00	18.72
75.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.047	0.000	20.829	0.00	18.72
80.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.049	0.000	21.217	0.00	18.72
81.21	1 5/8" Coax	Yes	1.21	0.000	2.00	0.20	0.00	0.050	0.000	21.308	0.00	4.53
85.00	1 5/8" Coax	Yes	3.79	0.000	2.00	0.63	0.00	0.050	0.000	21.587	0.00	14.19
86.71	1 5/8" Coax	Yes	1.71	0.000	2.00	0.28	0.00	0.051	0.000	21.711	0.00	6.40
90.00	1 5/8" Coax	Yes	3.29	0.000	2.00	0.55	0.00	0.051	0.000	21.943	0.00	12.32
95.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.052	0.000	22.284	0.00	18.72
100.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.054	0.000	22.613	0.00	18.72
105.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.056	0.000	22.931	0.00	18.72
110.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.057	0.000	23.238	0.00	18.72
115.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.059	0.000	23.535	0.00	18.72
120.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.062	0.000	23.823	0.00	18.72
120.96	1 5/8" Coax	Yes	0.96	0.000	2.00	0.16	0.00	0.063	0.000	23.877	0.00	3.59
125.00	1 5/8" Coax	Yes	4.04	0.000	2.00	0.67	0.00	0.064	0.000	24.102	0.00	15.13
125.46	1 5/8" Coax	Yes	0.46	0.000	2.00	0.08	0.00	0.065	0.000	24.127	0.00	1.72
127.00	1 5/8" Coax	Yes	1.54	0.000	2.00	0.26	0.00	0.064	0.000	24.212	0.00	5.77
130.00	1 5/8" Coax	Yes	3.00	0.000	2.00	0.50	0.00	0.065	0.000	24.374	0.00	11.23
135.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.067	0.000	24.638	0.00	18.72
138.00	1 5/8" Coax	Yes	3.00	0.000	2.00	0.50	0.00	0.070	0.000	24.793	0.00	11.23
									Totals:		**0.0**	**516.7**

Calculated Forces

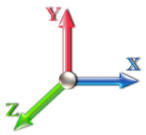
Structure:	CT46129-A-SBA	**Code:**	TIA-222-G	4/18/2022	
Site Name:	Tolland-reed Rd	**Exposure:**	B		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 17	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 97 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	-40.18	-31.11	0.00	-3168.9	0.00	3168.97	5976.93	2988.46	13678.8	6755.45	0.00	0.000	0.000	0.476
5.00	-38.58	-30.52	0.00	-3013.4	0.00	3013.44	5908.08	2954.04	13246.7	6542.05	0.07	-0.125	0.000	0.467
10.00	-37.02	-29.93	0.00	-2860.8	0.00	2860.86	5837.12	2918.56	12816.3	6329.51	0.27	-0.252	0.000	0.458
15.00	-35.48	-29.36	0.00	-2711.2	0.00	2711.20	5764.05	2882.03	12388.0	6117.98	0.60	-0.379	0.000	0.449
20.00	-33.97	-28.79	0.00	-2564.4	0.00	2564.42	5688.87	2844.43	11962.0	5907.62	1.07	-0.508	0.000	0.440
25.00	-32.50	-28.23	0.00	-2420.4	0.00	2420.48	5611.57	2805.78	11538.7	5698.56	1.67	-0.638	0.000	0.431
30.00	-31.05	-27.68	0.00	-2279.3	0.00	2279.34	5532.15	2766.08	11118.3	5490.95	2.41	-0.769	0.000	0.421
35.00	-29.63	-27.10	0.00	-2140.9	0.00	2140.96	5450.63	2725.31	10701.2	5284.94	3.28	-0.900	0.000	0.411
39.67	-28.36	-26.53	0.00	-2014.3	0.00	2014.39	5372.57	2686.29	10314.8	5094.09	4.23	-1.024	0.000	0.401
40.00	-28.18	-26.52	0.00	-2005.6	0.00	2005.64	5366.99	2683.49	10287.6	5080.67	4.30	-1.033	0.000	0.400
45.00	-25.83	-25.86	0.00	-1873.0	0.00	1873.05	5281.24	2640.62	9877.82	4878.29	5.45	-1.166	0.000	0.389
46.25	-25.23	-25.72	0.00	-1840.7	0.00	1840.72	4440.49	2220.24	8438.24	4167.33	5.76	-1.200	0.000	0.448
50.00	-24.32	-25.27	0.00	-1744.2	0.00	1744.27	4391.92	2195.96	8192.87	4046.15	6.74	-1.301	0.000	0.437
55.00	-23.13	-24.64	0.00	-1617.9	0.00	1617.94	4325.31	2162.66	7867.62	3885.52	8.18	-1.445	0.000	0.422
60.00	-21.97	-24.02	0.00	-1494.7	0.00	1494.72	4256.59	2128.30	7544.81	3726.10	9.77	-1.588	0.000	0.406
65.00	-20.84	-23.39	0.00	-1374.6	0.00	1374.63	4185.76	2092.88	7224.74	3568.03	11.51	-1.730	0.000	0.390
70.00	-19.74	-22.75	0.00	-1257.7	0.00	1257.71	4112.81	2056.41	6907.71	3411.46	13.40	-1.872	0.000	0.374
75.00	-18.67	-22.12	0.00	-1143.9	0.00	1143.95	4037.75	2018.88	6594.01	3256.53	15.44	-2.012	0.000	0.356
80.00	-17.64	-21.47	0.00	-1033.3	0.00	1033.35	3960.58	1980.29	6283.93	3103.40	17.62	-2.149	0.000	0.338
81.21	-17.38	-21.33	0.00	-1007.3	0.00	1007.37	3941.59	1970.79	6209.47	3066.62	18.17	-2.183	0.000	0.333
85.00	-16.07	-20.82	0.00	-926.52	0.00	926.52	3881.29	1940.65	5977.77	2952.20	19.94	-2.287	0.000	0.318
86.71	-15.48	-20.60	0.00	-890.92	0.00	890.92	3179.63	1589.82	4962.15	2450.62	20.77	-2.333	0.000	0.369
90.00	-14.89	-20.19	0.00	-823.16	0.00	823.16	3141.06	1570.53	4805.90	2373.45	22.41	-2.421	0.000	0.352
95.00	-14.02	-19.56	0.00	-722.23	0.00	722.23	3080.68	1540.34	4570.36	2257.13	25.02	-2.560	0.000	0.325
100.00	-13.17	-18.94	0.00	-624.44	0.00	624.44	3018.19	1509.10	4337.39	2142.08	27.77	-2.693	0.000	0.296
105.00	-12.35	-18.32	0.00	-529.76	0.00	529.76	2953.59	1476.79	4107.30	2028.44	30.66	-2.818	0.000	0.266
110.00	-11.56	-17.71	0.00	-438.17	0.00	438.17	2886.87	1443.44	3880.37	1916.37	33.68	-2.934	0.000	0.233
115.00	-10.79	-17.11	0.00	-349.62	0.00	349.62	2808.90	1404.45	3645.04	1800.15	36.81	-3.038	0.000	0.198
120.00	-10.06	-16.51	0.00	-264.09	0.00	264.09	2709.48	1354.74	3390.12	1674.25	40.04	-3.128	0.000	0.162
120.96	-9.92	-16.40	0.00	-248.24	0.00	248.24	2690.40	1345.20	3342.23	1650.60	40.67	-3.144	0.000	0.154
125.00	-8.97	-15.90	0.00	-181.97	0.00	181.97	2610.07	1305.03	3144.44	1552.92	43.36	-3.203	0.000	0.121
125.46	-8.86	-15.84	0.00	-174.66	0.00	174.66	2134.18	1067.09	2628.47	1298.10	43.66	-3.209	0.000	0.139
127.00	-6.45	-10.12	0.00	-150.26	0.00	150.26	2118.25	1059.12	2578.53	1273.44	44.70	-3.227	0.000	0.121
130.00	-6.13	-9.78	0.00	-119.89	0.00	119.89	2086.63	1043.32	2481.86	1225.70	46.74	-3.262	0.000	0.101
135.00	-5.60	-9.22	0.00	-70.99	0.00	70.99	2032.25	1016.13	2322.74	1147.11	50.18	-3.306	0.000	0.065
138.00	-2.05	-4.27	0.00	-43.33	0.00	43.33	1998.61	999.30	2228.56	1100.60	52.26	-3.323	0.000	0.040
140.00	-1.88	-4.06	0.00	-34.78	0.00	34.78	1975.75	987.88	2166.35	1069.88	53.66	-3.332	0.000	0.033
145.00	-1.46	-3.53	0.00	-14.49	0.00	14.49	1894.65	947.33	1989.39	982.48	57.15	-3.346	0.000	0.016
149.08	-0.06	-0.09	0.00	-0.08	0.00	0.08	1827.05	913.52	1849.12	913.21	60.01	-3.350	0.000	0.000
150.00	0.00	-0.09	0.00	0.00	0.00	0.00	1811.80	905.90	1818.20	897.94	60.66	-3.350	0.000	0.000

Wind Loading - Shaft

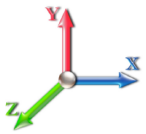
Structure:	CT46129-A-SBA	**Code:**	TIA-222-G	4/18/2022	
Site Name:	Tolland-reed Rd	**Exposure:**	B		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 18	

Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



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	0.70	4.256	4.68	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	4.256	4.68	0.00	1.200	1.656	5.00	25.296	30.35	142.1	606.3	2412.3
10.00		1.00	0.70	4.256	4.68	0.00	1.200	1.775	5.00	24.913	29.90	140.0	638.3	2407.6
15.00		1.00	0.70	4.256	4.68	0.00	1.200	1.848	5.00	24.492	29.39	137.6	652.2	2384.7
20.00		1.00	0.70	4.256	4.68	0.00	1.200	1.902	5.00	24.055	28.87	135.1	658.1	2353.9
25.00		1.00	0.70	4.256	4.68	0.00	1.200	1.945	5.00	23.609	28.33	132.6	659.4	2318.5
30.00		1.00	0.70	4.260	4.69	0.00	1.200	1.981	5.00	23.157	27.79	130.2	657.6	2280.0
35.00		1.00	0.73	4.451	4.90	0.00	1.200	2.012	5.00	22.701	27.24	133.4	653.6	2239.3
39.67	Bot - Section 2	1.00	0.76	4.614	5.07	0.00	1.200	2.037	4.67	20.787	24.94	126.6	605.6	2053.5
40.00		1.00	0.76	4.625	5.09	0.00	1.200	2.039	0.33	1.478	1.77	9.0	43.5	234.9
45.00		1.00	0.79	4.783	5.26	0.00	1.200	2.063	5.00	22.157	26.59	139.9	652.8	3515.2
46.25	Top - Section 1	1.00	0.79	4.820	5.30	0.00	1.200	2.069	1.25	5.465	6.56	34.8	162.7	867.6
50.00		1.00	0.81	4.929	5.42	0.00	1.200	2.085	3.75	16.225	19.47	105.6	483.7	1469.2
55.00		1.00	0.83	5.065	5.57	0.00	1.200	2.105	5.00	21.229	25.47	141.9	636.1	1922.0
60.00		1.00	0.85	5.193	5.71	0.00	1.200	2.123	5.00	20.762	24.91	142.3	626.5	1880.3
65.00		1.00	0.87	5.313	5.84	0.00	1.200	2.140	5.00	20.295	24.35	142.3	616.3	1837.9
70.00		1.00	0.89	5.426	5.97	0.00	1.200	2.156	5.00	19.826	23.79	142.0	605.5	1795.0
75.00		1.00	0.91	5.534	6.09	0.00	1.200	2.171	5.00	19.357	23.23	141.4	594.1	1751.5
80.00		1.00	0.93	5.637	6.20	0.00	1.200	2.185	5.00	18.886	22.66	140.5	582.3	1707.6
81.21	Bot - Section 3	1.00	0.93	5.662	6.23	0.00	1.200	2.188	1.21	4.499	5.40	33.6	140.2	407.7
85.00		1.00	0.94	5.736	6.31	0.00	1.200	2.198	3.79	14.160	16.99	107.2	440.3	1988.8
86.71	Top - Section 2	1.00	0.95	5.769	6.35	0.00	1.200	2.203	1.71	6.299	7.56	48.0	197.2	884.7
90.00		1.00	0.96	5.830	6.41	0.00	1.200	2.211	3.29	11.966	14.36	92.1	374.0	982.5
95.00		1.00	0.97	5.921	6.51	0.00	1.200	2.223	5.00	17.796	21.36	139.1	555.5	1457.4
100.00		1.00	0.99	6.008	6.61	0.00	1.200	2.234	5.00	17.324	20.79	137.4	542.3	1416.7
105.00		1.00	1.00	6.093	6.70	0.00	1.200	2.245	5.00	16.851	20.22	135.5	528.9	1375.7
110.00		1.00	1.02	6.174	6.79	0.00	1.200	2.256	5.00	16.378	19.65	133.5	515.2	1334.5
115.00		1.00	1.03	6.253	6.88	0.00	1.200	2.266	5.00	15.904	19.09	131.3	501.2	1293.0
120.00		1.00	1.04	6.330	6.96	0.00	1.200	2.276	5.00	15.431	18.52	128.9	487.0	1251.2
120.96	Bot - Section 4	1.00	1.04	6.344	6.98	0.00	1.200	2.277	0.96	2.908	3.49	24.4	93.0	236.6
125.00		1.00	1.05	6.404	7.04	0.00	1.200	2.285	4.04	12.265	14.72	103.7	389.3	1488.1
125.46	Top - Section 3	1.00	1.05	6.411	7.05	0.00	1.200	2.286	0.46	1.377	1.65	11.6	44.2	167.2
127.00	Appurtenance(s)	1.00	1.06	6.433	7.08	0.00	1.200	2.289	1.54	4.580	5.50	38.9	146.6	334.8
130.00		1.00	1.07	6.476	7.12	0.00	1.200	2.294	3.00	8.793	10.55	75.2	280.3	640.7
135.00		1.00	1.08	6.546	7.20	0.00	1.200	2.303	5.00	14.277	17.13	123.4	452.5	1034.6
138.00	Appurtenance(s)	1.00	1.08	6.588	7.25	0.00	1.200	2.308	3.00	8.338	10.01	72.5	266.1	604.4
140.00		1.00	1.09	6.615	7.28	0.00	1.200	2.311	2.00	5.463	6.56	47.7	175.0	395.9
145.00		1.00	1.10	6.681	7.35	0.00	1.200	2.319	5.00	13.327	15.99	117.5	422.4	958.6
149.08	Appurtenance(s)	1.00	1.11	6.735	7.41	0.00	1.200	2.326	4.08	10.522	12.63	93.5	334.5	755.1
150.00		1.00	1.11	6.746	7.42	0.00	1.200	2.327	0.92	2.329	2.79	20.7	74.9	167.6
								Totals:	**150.00**			**4,033.1**		**54,606.9**

Discrete Appurtenance Forces

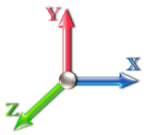
Structure:	CT46129-A-SBA	**Code:**	TIA-222-G	4/18/2022	
Site Name:	Tolland-reed Rd	**Exposure:**	B		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 19	

Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



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	149.08	AP11-880/090/XP	3	6.735	7.408	0.72	1.00	13.32	579.50	0.000	0.000	98.67	0.00	0.00
2	149.08	DB844H90E-XY	9	6.735	7.408	1.12	1.00	42.80	1589.59	0.000	0.000	317.03	0.00	0.00
3	149.08	Low Profile Platform	1	6.735	7.408	1.00	1.00	52.91	2535.31	0.000	0.000	391.93	0.00	0.00
4	138.00	KRY 112 144/1	3	6.588	7.246	0.52	0.75	1.64	73.07	0.000	0.000	11.85	0.00	0.00
5	138.00	APXVAARR24_43-U-NA2	3	6.588	7.246	0.54	0.75	36.91	2237.48	0.000	0.000	267.45	0.00	0.00
6	138.00	RMQP-4096-HK Plat. +	1	6.588	7.246	1.00	1.00	102.29	6081.21	0.000	0.000	741.20	0.00	0.00
7	138.00	KRY 112 489/2	3	6.588	7.246	0.61	0.75	2.69	110.34	0.000	0.000	19.51	0.00	0.00
8	138.00	4449 B71 + B85	3	6.588	7.246	0.50	0.75	4.10	334.89	0.000	0.000	29.74	0.00	0.00
9	138.00	Kathrein 782 11056	3	6.588	7.246	0.50	0.75	1.70	-28.25	0.000	0.000	12.31	0.00	0.00
10	138.00	AIR6419 B41	3	6.588	7.246	0.57	0.75	8.73	764.33	0.000	0.000	63.29	0.00	0.00
11	138.00	4460 B25 + B66	3	6.588	7.246	0.50	0.75	5.64	580.55	0.000	0.000	40.88	0.00	0.00
12	127.00	Samsung RF440D-13A	3	6.433	7.076	0.54	0.80	4.25	548.26	0.000	0.000	30.09	0.00	0.00
13	127.00	Low Profile Platform	1	6.433	7.076	1.00	1.00	52.46	2513.13	0.000	0.000	371.25	0.00	0.00
14	127.00	RFS DB-T1-6Z-8AB-0Z	1	6.433	7.076	1.00	1.00	5.97	221.80	0.000	0.000	42.24	0.00	0.00
15	127.00	RFS FD9R6004/2C-3L	6	6.433	7.076	0.50	0.80	2.88	71.67	0.000	0.000	20.37	0.00	0.00
16	127.00	Raycap	1	6.433	7.076	1.00	1.00	5.15	151.52	0.000	0.000	36.45	0.00	0.00
17	127.00	Samsung RF4439d-25A	3	6.433	7.076	0.54	0.80	4.25	594.42	0.000	0.000	30.09	0.00	0.00
18	127.00	ANTEL LPA-80063/6CF-2	2	6.433	7.076	0.75	0.80	17.16	854.78	0.000	0.000	121.40	0.00	0.00
19	127.00	Antel LPA-80080/6CFx2	4	6.433	7.076	1.36	0.80	32.22	1186.28	0.000	0.000	227.99	0.00	0.00
20	127.00	Samsung MT6407-77A	3	6.433	7.076	0.56	0.80	10.00	787.43	0.000	0.000	70.74	0.00	0.00
21	127.00	Commscope	3	6.433	7.076	0.66	0.80	14.59	783.26	0.000	0.000	103.27	0.00	0.00
22	127.00	Commscope	3	6.433	7.076	0.66	0.80	19.54	987.18	0.000	0.000	138.29	0.00	0.00
23	127.00	Mod (Support rail)	1	6.433	7.076	1.00	1.00	27.95	1930.69	0.000	0.000	197.78	0.00	0.00
							Totals:		**25,488.43**			**3,383.83**		

Total Applied Force Summary

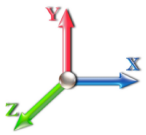
Structure:	CT46129-A-SBA		**Code:**	TIA-222-G	4/18/2022
Site Name:	Tolland-reed Rd		**Exposure:**	B	
Height:	150.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 20

Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



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		142.11	2720.35	0.00	0.00
10.00		139.96	2721.77	0.00	0.00
15.00		137.60	2702.82	0.00	0.00
20.00		135.14	2674.91	0.00	0.00
25.00		132.63	2641.81	0.00	0.00
30.00		130.21	2605.29	0.00	0.00
35.00		133.39	2566.31	0.00	0.00
39.67		126.59	2360.21	0.00	0.00
40.00		9.02	256.55	0.00	0.00
45.00		139.89	3845.02	0.00	0.00
46.25		34.77	950.11	0.00	0.00
50.00		105.56	1717.48	0.00	0.00
55.00		141.93	2254.18	0.00	0.00
60.00		142.31	2213.53	0.00	0.00
65.00		142.32	2172.14	0.00	0.00
70.00		142.01	2130.11	0.00	0.00
75.00		141.41	2087.51	0.00	0.00
80.00		140.54	2044.41	0.00	0.00
81.21		33.62	489.26	0.00	0.00
85.00		107.21	2244.70	0.00	0.00
86.71		47.97	1000.19	0.00	0.00
90.00		92.09	1205.05	0.00	0.00
95.00		139.09	1796.40	0.00	0.00
100.00		137.40	1756.36	0.00	0.00
105.00		135.52	1716.01	0.00	0.00
110.00		133.48	1675.36	0.00	0.00
115.00		131.28	1634.44	0.00	0.00
120.00		128.93	1593.27	0.00	0.00
120.96		24.35	302.25	0.00	0.00
125.00		103.68	1764.94	0.00	0.00
125.46		11.65	198.75	0.00	0.00
127.00	(31) attachments	1428.87	11070.78	0.00	0.00
130.00		75.17	797.41	0.00	0.00
135.00		123.37	1296.39	0.00	0.00
138.00	(22) attachments	1258.72	10915.23	0.00	0.00
140.00		47.70	419.69	0.00	0.00
145.00		117.54	1018.03	0.00	0.00
149.08	(13) attachments	901.17	5507.93	0.00	0.00
150.00		20.74	167.63	0.00	0.00
	Totals:	**7,416.93**	**89,234.59**	**0.00**	**0.00**

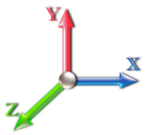
Linear Appurtenance Segment Forces (Factored)

Structure:	CT46129-A-SBA	**Code:**	TIA-222-G	4/18/2022	
Site Name:	Tolland-reed Rd	**Exposure:**	B		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 21	

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



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	1 5/8" Coax	Yes	5.00	0.000	2.00	2.21	0.00	0.035	0.000	4.256	0.00	99.26
10.00	1 5/8" Coax	Yes	5.00	0.000	2.00	2.31	0.00	0.036	0.000	4.256	0.00	105.42
15.00	1 5/8" Coax	Yes	5.00	0.000	2.00	2.37	0.00	0.036	0.000	4.256	0.00	109.30
20.00	1 5/8" Coax	Yes	5.00	0.000	2.00	2.42	0.00	0.037	0.000	4.256	0.00	112.20
25.00	1 5/8" Coax	Yes	5.00	0.000	2.00	2.45	0.00	0.038	0.000	4.256	0.00	114.53
30.00	1 5/8" Coax	Yes	5.00	0.000	2.00	2.48	0.00	0.039	0.000	4.260	0.00	116.49
35.00	1 5/8" Coax	Yes	5.00	0.000	2.00	2.51	0.00	0.040	0.000	4.451	0.00	118.19
39.67	1 5/8" Coax	Yes	4.67	0.000	2.00	2.36	0.00	0.041	0.000	4.614	0.00	111.71
40.00	1 5/8" Coax	Yes	0.33	0.000	2.00	0.17	0.00	0.041	0.000	4.625	0.00	7.90
45.00	1 5/8" Coax	Yes	5.00	0.000	2.00	2.55	0.00	0.042	0.000	4.783	0.00	121.04
46.25	1 5/8" Coax	Yes	1.25	0.000	2.00	0.64	0.00	0.042	0.000	4.820	0.00	30.34
50.00	1 5/8" Coax	Yes	3.75	0.000	2.00	1.93	0.00	0.042	0.000	4.929	0.00	91.70
55.00	1 5/8" Coax	Yes	5.00	0.000	2.00	2.59	0.00	0.043	0.000	5.065	0.00	123.40
60.00	1 5/8" Coax	Yes	5.00	0.000	2.00	2.60	0.00	0.044	0.000	5.193	0.00	124.44
65.00	1 5/8" Coax	Yes	5.00	0.000	2.00	2.62	0.00	0.045	0.000	5.313	0.00	125.41
70.00	1 5/8" Coax	Yes	5.00	0.000	2.00	2.63	0.00	0.046	0.000	5.426	0.00	126.31
75.00	1 5/8" Coax	Yes	5.00	0.000	2.00	2.64	0.00	0.047	0.000	5.534	0.00	127.17
80.00	1 5/8" Coax	Yes	5.00	0.000	2.00	2.65	0.00	0.049	0.000	5.637	0.00	127.98
81.21	1 5/8" Coax	Yes	1.21	0.000	2.00	0.64	0.00	0.050	0.000	5.662	0.00	31.02
85.00	1 5/8" Coax	Yes	3.79	0.000	2.00	2.02	0.00	0.050	0.000	5.736	0.00	97.59
86.71	1 5/8" Coax	Yes	1.71	0.000	2.00	0.91	0.00	0.051	0.000	5.769	0.00	44.12
90.00	1 5/8" Coax	Yes	3.29	0.000	2.00	1.76	0.00	0.051	0.000	5.830	0.00	85.19
95.00	1 5/8" Coax	Yes	5.00	0.000	2.00	2.69	0.00	0.052	0.000	5.921	0.00	130.16
100.00	1 5/8" Coax	Yes	5.00	0.000	2.00	2.70	0.00	0.054	0.000	6.008	0.00	130.83
105.00	1 5/8" Coax	Yes	5.00	0.000	2.00	2.70	0.00	0.056	0.000	6.093	0.00	131.46
110.00	1 5/8" Coax	Yes	5.00	0.000	2.00	2.71	0.00	0.057	0.000	6.174	0.00	132.07
115.00	1 5/8" Coax	Yes	5.00	0.000	2.00	2.72	0.00	0.059	0.000	6.253	0.00	132.66
120.00	1 5/8" Coax	Yes	5.00	0.000	2.00	2.73	0.00	0.062	0.000	6.330	0.00	133.23
120.96	1 5/8" Coax	Yes	0.96	0.000	2.00	0.52	0.00	0.063	0.000	6.344	0.00	25.60
125.00	1 5/8" Coax	Yes	4.04	0.000	2.00	2.21	0.00	0.064	0.000	6.404	0.00	108.09
125.46	1 5/8" Coax	Yes	0.46	0.000	2.00	0.25	0.00	0.065	0.000	6.411	0.00	12.31
127.00	1 5/8" Coax	Yes	1.54	0.000	2.00	0.84	0.00	0.064	0.000	6.433	0.00	41.27
130.00	1 5/8" Coax	Yes	3.00	0.000	2.00	1.65	0.00	0.065	0.000	6.476	0.00	80.58
135.00	1 5/8" Coax	Yes	5.00	0.000	2.00	2.75	0.00	0.067	0.000	6.546	0.00	134.81
138.00	1 5/8" Coax	Yes	3.00	0.000	2.00	1.65	0.00	0.070	0.000	6.588	0.00	81.06
										Totals:	**0.0**	**3,424.8**

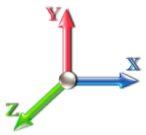
Calculated Forces

Structure:	CT46129-A-SBA	**Code:**	TIA-222-G	4/18/2022	
Site Name:	Tolland-reed Rd	**Exposure:**	B		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 22	

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



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	-89.23	-7.44	0.00	-817.60	0.00	817.60	5976.93	2988.46	13678.8	6755.45	0.00	0.000	0.000	0.136
5.00	-86.51	-7.35	0.00	-780.39	0.00	780.39	5908.08	2954.04	13246.7	6542.05	0.02	-0.032	0.000	0.134
10.00	-83.78	-7.25	0.00	-743.65	0.00	743.65	5837.12	2918.56	12816.3	6329.51	0.07	-0.065	0.000	0.132
15.00	-81.08	-7.16	0.00	-707.37	0.00	707.37	5764.05	2882.03	12388.0	6117.98	0.16	-0.098	0.000	0.130
20.00	-78.40	-7.07	0.00	-671.57	0.00	671.57	5688.87	2844.43	11962.0	5907.62	0.28	-0.132	0.000	0.127
25.00	-75.75	-6.97	0.00	-636.24	0.00	636.24	5611.57	2805.78	11538.7	5698.56	0.43	-0.166	0.000	0.125
30.00	-73.14	-6.88	0.00	-601.38	0.00	601.38	5532.15	2766.08	11118.3	5490.95	0.63	-0.201	0.000	0.123
35.00	-70.57	-6.78	0.00	-566.99	0.00	566.99	5450.63	2725.31	10701.2	5284.94	0.85	-0.235	0.000	0.120
39.67	-68.21	-6.66	0.00	-535.35	0.00	535.35	5372.57	2686.29	10314.8	5094.09	1.10	-0.268	0.000	0.118
40.00	-67.95	-6.67	0.00	-533.15	0.00	533.15	5366.99	2683.49	10287.6	5080.67	1.12	-0.271	0.000	0.118
45.00	-64.10	-6.54	0.00	-499.79	0.00	499.79	5281.24	2640.62	9877.82	4878.29	1.42	-0.306	0.000	0.115
46.25	-63.15	-6.52	0.00	-491.61	0.00	491.61	4440.49	2220.24	8438.24	4167.33	1.50	-0.315	0.000	0.132
50.00	-61.43	-6.44	0.00	-467.17	0.00	467.17	4391.92	2195.96	8192.87	4046.15	1.76	-0.342	0.000	0.129
55.00	-59.18	-6.32	0.00	-434.98	0.00	434.98	4325.31	2162.66	7867.62	3885.52	2.14	-0.381	0.000	0.126
60.00	-56.96	-6.20	0.00	-403.38	0.00	403.38	4256.59	2128.30	7544.81	3726.10	2.56	-0.419	0.000	0.122
65.00	-54.78	-6.08	0.00	-372.37	0.00	372.37	4185.76	2092.88	7224.74	3568.03	3.02	-0.458	0.000	0.117
70.00	-52.65	-5.96	0.00	-341.97	0.00	341.97	4112.81	2056.41	6907.71	3411.46	3.52	-0.496	0.000	0.113
75.00	-50.56	-5.83	0.00	-312.19	0.00	312.19	4037.75	2018.88	6594.01	3256.53	4.06	-0.534	0.000	0.108
80.00	-48.52	-5.69	0.00	-283.05	0.00	283.05	3960.58	1980.29	6283.93	3103.40	4.64	-0.572	0.000	0.103
81.21	-48.02	-5.67	0.00	-276.17	0.00	276.17	3941.59	1970.79	6209.47	3066.62	4.79	-0.581	0.000	0.102
85.00	-45.78	-5.55	0.00	-254.69	0.00	254.69	3881.29	1940.65	5977.77	2952.20	5.26	-0.610	0.000	0.098
86.71	-44.78	-5.51	0.00	-245.20	0.00	245.20	3179.63	1589.82	4962.15	2450.62	5.48	-0.622	0.000	0.114
90.00	-43.57	-5.43	0.00	-227.08	0.00	227.08	3141.06	1570.53	4805.90	2373.45	5.92	-0.647	0.000	0.110
95.00	-41.77	-5.29	0.00	-199.96	0.00	199.96	3080.68	1540.34	4570.36	2257.13	6.62	-0.685	0.000	0.102
100.00	-40.01	-5.16	0.00	-173.49	0.00	173.49	3018.19	1509.10	4337.39	2142.08	7.35	-0.722	0.000	0.094
105.00	-38.30	-5.02	0.00	-147.70	0.00	147.70	2953.59	1476.79	4107.30	2028.44	8.13	-0.757	0.000	0.086
110.00	-36.62	-4.89	0.00	-122.58	0.00	122.58	2886.87	1443.44	3880.37	1916.37	8.94	-0.789	0.000	0.077
115.00	-34.99	-4.75	0.00	-98.14	0.00	98.14	2808.90	1404.45	3645.04	1800.15	9.78	-0.818	0.000	0.067
120.00	-33.39	-4.61	0.00	-74.39	0.00	74.39	2709.48	1354.74	3390.12	1674.25	10.65	-0.844	0.000	0.057
120.96	-33.09	-4.58	0.00	-69.97	0.00	69.97	2690.40	1345.20	3342.23	1650.60	10.82	-0.848	0.000	0.055
125.00	-31.33	-4.46	0.00	-51.45	0.00	51.45	2610.07	1305.03	3144.44	1552.92	11.55	-0.864	0.000	0.045
125.46	-31.13	-4.45	0.00	-49.40	0.00	49.40	2134.18	1067.09	2628.47	1298.10	11.63	-0.866	0.000	0.053
127.00	-20.08	-2.85	0.00	-42.55	0.00	42.55	2118.25	1059.12	2578.53	1273.44	11.91	-0.871	0.000	0.043
130.00	-19.28	-2.77	0.00	-33.99	0.00	33.99	2086.63	1043.32	2481.86	1225.70	12.46	-0.881	0.000	0.037
135.00	-17.99	-2.63	0.00	-20.15	0.00	20.15	2032.25	1016.13	2322.74	1147.11	13.39	-0.894	0.000	0.026
138.00	-7.10	-1.20	0.00	-12.27	0.00	12.27	1998.61	999.30	2228.56	1100.60	13.96	-0.899	0.000	0.015
140.00	-6.68	-1.14	0.00	-9.87	0.00	9.87	1975.75	987.88	2166.35	1069.88	14.33	-0.901	0.000	0.013
145.00	-5.66	-1.01	0.00	-4.15	0.00	4.15	1894.65	947.33	1989.39	982.48	15.28	-0.905	0.000	0.007
149.08	-0.17	-0.02	0.00	-0.02	0.00	0.02	1827.05	913.52	1849.12	913.21	16.05	-0.906	0.000	0.000
150.00	0.00	-0.02	0.00	0.00	0.00	0.00	1811.80	905.90	1818.20	897.94	16.23	-0.906	0.000	0.000

Seismic Segment Forces (Factored)

Structure:	CT46129-A-SBA	**Code:**	TIA-222-G	4/18/2022	
Site Name:	Tolland-reed Rd	**Exposure:**	B		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 23	

Tower Engineering Solutions

Load Case:	1.2D + 1.0E							**Iterations**	20
Gust Response Factor	1.10				**Sds**	0.19		**Ss**	0.18
Dead Load Factor	1.20	**Seismic Load Factor**	1.00		**Sd1**	0.10		**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.42		**SA**	0.04	**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		1504.9	0.00	0.03	0.02	23.33	
10.00		1474.3	0.01	0.05	0.03	34.05	
15.00		1443.7	0.02	0.06	0.04	38.98	
20.00		1413.1	0.03	0.07	0.04	41.10	
25.00		1382.5	0.05	0.07	0.04	41.91	
30.00		1351.9	0.08	0.07	0.04	42.22	
35.00		1321.3	0.10	0.07	0.04	42.35	
39.67	Bot - Section 2	1206.5	0.13	0.07	0.03	39.54	
40.00		159.45	0.13	0.07	0.03	5.23	
45.00		2385.3	0.17	0.07	0.03	79.59	
46.25	Top - Section 1	587.37	0.18	0.07	0.03	19.64	
50.00		821.27	0.21	0.06	0.02	27.41	
55.00		1071.6	0.25	0.05	0.02	34.74	
60.00		1044.8	0.30	0.04	0.01	31.28	
65.00		1018.0	0.35	0.03	0.01	25.88	
70.00		991.28	0.41	0.01	0.01	18.39	
75.00		964.51	0.47	-0.01	0.01	9.11	
80.00		937.74	0.54	-0.03	0.01	-1.04	
81.21	Bot - Section 3	222.91	0.55	-0.04	0.01	-0.83	
85.00		1290.4	0.61	-0.06	0.02	-15.04	
86.71	Top - Section 2	572.89	0.63	-0.06	0.02	-8.56	
90.00		507.09	0.68	-0.08	0.03	-10.37	
95.00		751.62	0.76	-0.10	0.04	-19.53	
100.00		728.67	0.84	-0.12	0.07	-19.84	
105.00		705.73	0.93	-0.12	0.10	-16.72	
110.00		682.78	1.02	-0.11	0.14	-10.35	
115.00		659.83	1.11	-0.06	0.19	-1.04	
120.00		636.88	1.21	0.01	0.26	10.88	
120.96	Bot - Section 4	119.66	1.23	0.03	0.28	2.54	
125.00		915.69	1.31	0.14	0.35	37.38	
125.46	Top - Section 3	102.52	1.32	0.15	0.36	4.43	
127.00	Appurtenance(s)	2964.1	1.35	0.20	0.39	153.39	
130.00		300.26	1.42	0.32	0.45	20.93	
135.00		485.14	1.53	0.58	0.58	50.35	
138.00	Appurtenance(s)	4183.0	1.60	0.78	0.67	530.24	
140.00		184.11	1.65	0.93	0.73	26.36	
145.00		446.89	1.77	1.39	0.92	83.98	
149.08	Appurtenance(s)	1729.2	1.87	1.86	1.10	395.20	
150.00		77.27	1.89	1.98	1.14	18.41	
	Totals:	**39,347.1**				**1,785.5**	**Total Wind:** **31,062.8**

Calculated Forces

Structure:	CT46129-A-SBA	**Code:**	TIA-222-G	4/18/2022	
Site Name:	Tolland-reed Rd	**Exposure:**	B		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 24	

Tower Engineering Solutions

Load Case:	1.2D + 1.0E							**Iterations**	20
Gust Response Factor	1.10			**Sds**	0.19			**Ss**	0.18
Dead Load Factor	1.20	**Seismic Load Factor**	1.00	**Sd1**	0.10			**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.42	**SA**	0.04	**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	-53.62	-1.89	0.00	-214.34	0.00	214.34	5976.93	2988.46	13678.8	6755.45		0.00	0.00	0.041
5.00	-51.58	-1.88	0.00	-204.88	0.00	204.88	5908.08	2954.04	13246.7	6542.05		0.00	-0.01	0.040
10.00	-49.58	-1.85	0.00	-195.50	0.00	195.50	5837.12	2918.56	12816.3	6329.51		0.02	-0.02	0.039
15.00	-47.61	-1.82	0.00	-186.26	0.00	186.26	5764.05	2882.03	12388.0	6117.98		0.04	-0.03	0.039
20.00	-45.68	-1.78	0.00	-177.17	0.00	177.17	5688.87	2844.43	11962.0	5907.62		0.07	-0.03	0.038
25.00	-43.79	-1.75	0.00	-168.26	0.00	168.26	5611.57	2805.78	11538.7	5698.56		0.11	-0.04	0.037
30.00	-41.93	-1.71	0.00	-159.54	0.00	159.54	5532.15	2766.08	11118.3	5490.95		0.16	-0.05	0.037
35.00	-40.11	-1.67	0.00	-150.99	0.00	150.99	5450.63	2725.31	10701.2	5284.94		0.22	-0.06	0.036
39.67	-38.44	-1.63	0.00	-143.19	0.00	143.19	5372.57	2686.29	10314.8	5094.09		0.29	-0.07	0.035
40.00	-38.24	-1.63	0.00	-142.65	0.00	142.65	5366.99	2683.49	10287.6	5080.67		0.29	-0.07	0.035
45.00	-35.14	-1.55	0.00	-134.50	0.00	134.50	5281.24	2640.62	9877.82	4878.29		0.37	-0.08	0.034
46.25	-34.38	-1.53	0.00	-132.57	0.00	132.57	4440.49	2220.24	8438.24	4167.33		0.40	-0.08	0.040
50.00	-33.22	-1.51	0.00	-126.82	0.00	126.82	4391.92	2195.96	8192.87	4046.15		0.46	-0.09	0.039
55.00	-31.70	-1.48	0.00	-119.28	0.00	119.28	4325.31	2162.66	7867.62	3885.52		0.57	-0.10	0.038
60.00	-30.21	-1.45	0.00	-111.89	0.00	111.89	4256.59	2128.30	7544.81	3726.10		0.68	-0.11	0.037
65.00	-28.75	-1.43	0.00	-104.65	0.00	104.65	4185.76	2092.88	7224.74	3568.03		0.80	-0.12	0.036
70.00	-27.33	-1.41	0.00	-97.53	0.00	97.53	4112.81	2056.41	6907.71	3411.46		0.93	-0.13	0.035
75.00	-25.94	-1.40	0.00	-90.48	0.00	90.48	4037.75	2018.88	6594.01	3256.53		1.08	-0.14	0.034
80.00	-24.58	-1.40	0.00	-83.48	0.00	83.48	3960.58	1980.29	6283.93	3103.40		1.24	-0.16	0.033
81.21	-24.26	-1.40	0.00	-81.78	0.00	81.78	3941.59	1970.79	6209.47	3066.62		1.28	-0.16	0.033
85.00	-22.53	-1.40	0.00	-76.47	0.00	76.47	3881.29	1940.65	5977.77	2952.20		1.41	-0.17	0.032
86.71	-21.76	-1.40	0.00	-74.08	0.00	74.08	3179.63	1589.82	4962.15	2450.62		1.47	-0.17	0.037
90.00	-21.00	-1.40	0.00	-69.47	0.00	69.47	3141.06	1570.53	4805.90	2373.45		1.59	-0.18	0.036
95.00	-19.86	-1.40	0.00	-62.47	0.00	62.47	3080.68	1540.34	4570.36	2257.13		1.78	-0.19	0.034
100.00	-18.75	-1.40	0.00	-55.46	0.00	55.46	3018.19	1509.10	4337.39	2142.08		1.98	-0.20	0.032
105.00	-17.67	-1.40	0.00	-48.45	0.00	48.45	2953.59	1476.79	4107.30	2028.44		2.20	-0.21	0.030
110.00	-16.62	-1.40	0.00	-41.45	0.00	41.45	2886.87	1443.44	3880.37	1916.37		2.43	-0.22	0.027
115.00	-15.59	-1.40	0.00	-34.45	0.00	34.45	2808.90	1404.45	3645.04	1800.15		2.67	-0.23	0.025
120.00	-14.60	-1.38	0.00	-27.46	0.00	27.46	2709.48	1354.74	3390.12	1674.25		2.92	-0.24	0.022
120.96	-14.41	-1.38	0.00	-26.13	0.00	26.13	2690.40	1345.20	3342.23	1650.60		2.97	-0.24	0.021
125.00	-13.12	-1.34	0.00	-20.55	0.00	20.55	2610.07	1305.03	3144.44	1552.92		3.18	-0.25	0.018
125.46	-12.98	-1.34	0.00	-19.93	0.00	19.93	2134.18	1067.09	2628.47	1298.10		3.20	-0.25	0.021
127.00	-9.35	-1.17	0.00	-17.87	0.00	17.87	2118.25	1059.12	2578.53	1273.44		3.28	-0.25	0.018
130.00	-8.90	-1.14	0.00	-14.37	0.00	14.37	2086.63	1043.32	2481.86	1225.70		3.44	-0.26	0.016
135.00	-8.16	-1.09	0.00	-8.65	0.00	8.65	2032.25	1016.13	2322.74	1147.11		3.72	-0.26	0.012
138.00	-3.05	-0.54	0.00	-5.37	0.00	5.37	1998.61	999.30	2228.56	1100.60		3.88	-0.26	0.006
140.00	-2.81	-0.51	0.00	-4.30	0.00	4.30	1975.75	987.88	2166.35	1069.88		3.99	-0.27	0.005
145.00	-2.21	-0.42	0.00	-1.75	0.00	1.75	1894.65	947.33	1989.39	982.48		4.27	-0.27	0.003
149.08	-0.09	-0.02	0.00	-0.02	0.00	0.02	1827.05	913.52	1849.12	913.21		4.50	-0.27	0.000
150.00	0.00	-0.02	0.00	0.00	0.00	0.00	1811.80	905.90	1818.20	897.94		4.55	-0.27	0.000

Seismic Segment Forces (Factored)

Structure:	CT46129-A-SBA	**Code:**	TIA-222-G	4/18/2022	
Site Name:	Tolland-reed Rd	**Exposure:**	B		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 25	

Tower Engineering Solutions

Load Case:	0.9D + 1.0E							**Iterations**	20
Gust Response Factor	1.10				**Sds**	0.19		**Ss**	0.18
Dead Load Factor	0.90	**Seismic Load Factor**	1.00		**Sd1**	0.10		**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.42		**SA**	0.04	**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		1504.9	0.00	0.03	0.02	23.33	
10.00		1474.3	0.01	0.05	0.03	34.05	
15.00		1443.7	0.02	0.06	0.04	38.98	
20.00		1413.1	0.03	0.07	0.04	41.10	
25.00		1382.5	0.05	0.07	0.04	41.91	
30.00		1351.9	0.08	0.07	0.04	42.22	
35.00		1321.3	0.10	0.07	0.04	42.35	
39.67	Bot - Section 2	1206.5	0.13	0.07	0.03	39.54	
40.00		159.45	0.13	0.07	0.03	5.23	
45.00		2385.3	0.17	0.07	0.03	79.59	
46.25	Top - Section 1	587.37	0.18	0.07	0.03	19.64	
50.00		821.27	0.21	0.06	0.02	27.41	
55.00		1071.6	0.25	0.05	0.02	34.74	
60.00		1044.8	0.30	0.04	0.01	31.28	
65.00		1018.0	0.35	0.03	0.01	25.88	
70.00		991.28	0.41	0.01	0.01	18.39	
75.00		964.51	0.47	-0.01	0.01	9.11	
80.00		937.74	0.54	-0.03	0.01	-1.04	
81.21	Bot - Section 3	222.91	0.55	-0.04	0.01	-0.83	
85.00		1290.4	0.61	-0.06	0.02	-15.04	
86.71	Top - Section 2	572.89	0.63	-0.06	0.02	-8.56	
90.00		507.09	0.68	-0.08	0.03	-10.37	
95.00		751.62	0.76	-0.10	0.04	-19.53	
100.00		728.67	0.84	-0.12	0.07	-19.84	
105.00		705.73	0.93	-0.12	0.10	-16.72	
110.00		682.78	1.02	-0.11	0.14	-10.35	
115.00		659.83	1.11	-0.06	0.19	-1.04	
120.00		636.88	1.21	0.01	0.26	10.88	
120.96	Bot - Section 4	119.66	1.23	0.03	0.28	2.54	
125.00		915.69	1.31	0.14	0.35	37.38	
125.46	Top - Section 3	102.52	1.32	0.15	0.36	4.43	
127.00	Appurtenance(s)	2964.1	1.35	0.20	0.39	153.39	
130.00		300.26	1.42	0.32	0.45	20.93	
135.00		485.14	1.53	0.58	0.58	50.35	
138.00	Appurtenance(s)	4183.0	1.60	0.78	0.67	530.24	
140.00		184.11	1.65	0.93	0.73	26.36	
145.00		446.89	1.77	1.39	0.92	83.98	
149.08	Appurtenance(s)	1729.2	1.87	1.86	1.10	395.20	
150.00		77.27	1.89	1.98	1.14	18.41	
	Totals:	**39,347.1**				**1,785.5**	**Total Wind:** **31,062.8**

Calculated Forces

Structure:	CT46129-A-SBA	**Code:**	TIA-222-G	4/18/2022	
Site Name:	Tolland-reed Rd	**Exposure:**	B		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 26	

Tower Engineering Solutions

Load Case:	0.9D + 1.0E							**Iterations**	20
Gust Response Factor	1.10			**Sds**	0.19			**Ss**	0.18
Dead Load Factor	0.90	**Seismic Load Factor**	1.00	**Sd1**	0.10			**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.42	**SA**	0.04	**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	-40.21	-1.89	0.00	-212.50	0.00	212.50	5976.93	2988.46	13678.8	6755.45		0.00	0.00	0.038
5.00	-38.68	-1.87	0.00	-203.05	0.00	203.05	5908.08	2954.04	13246.7	6542.05		0.00	-0.01	0.038
10.00	-37.18	-1.84	0.00	-193.68	0.00	193.68	5837.12	2918.56	12816.3	6329.51		0.02	-0.02	0.037
15.00	-35.71	-1.81	0.00	-184.46	0.00	184.46	5764.05	2882.03	12388.0	6117.98		0.04	-0.03	0.036
20.00	-34.26	-1.77	0.00	-175.41	0.00	175.41	5688.87	2844.43	11962.0	5907.62		0.07	-0.03	0.036
25.00	-32.84	-1.74	0.00	-166.54	0.00	166.54	5611.57	2805.78	11538.7	5698.56		0.11	-0.04	0.035
30.00	-31.45	-1.70	0.00	-157.86	0.00	157.86	5532.15	2766.08	11118.3	5490.95		0.16	-0.05	0.034
35.00	-30.08	-1.66	0.00	-149.37	0.00	149.37	5450.63	2725.31	10701.2	5284.94		0.22	-0.06	0.034
39.67	-28.83	-1.62	0.00	-141.63	0.00	141.63	5372.57	2686.29	10314.8	5094.09		0.29	-0.07	0.033
40.00	-28.68	-1.62	0.00	-141.09	0.00	141.09	5366.99	2683.49	10287.6	5080.67		0.29	-0.07	0.033
45.00	-26.36	-1.54	0.00	-133.01	0.00	133.01	5281.24	2640.62	9877.82	4878.29		0.37	-0.08	0.032
46.25	-25.78	-1.52	0.00	-131.08	0.00	131.08	4440.49	2220.24	8438.24	4167.33		0.39	-0.08	0.037
50.00	-24.91	-1.49	0.00	-125.39	0.00	125.39	4391.92	2195.96	8192.87	4046.15		0.46	-0.09	0.037
55.00	-23.77	-1.46	0.00	-117.92	0.00	117.92	4325.31	2162.66	7867.62	3885.52		0.56	-0.10	0.036
60.00	-22.66	-1.43	0.00	-110.61	0.00	110.61	4256.59	2128.30	7544.81	3726.10		0.67	-0.11	0.035
65.00	-21.56	-1.41	0.00	-103.45	0.00	103.45	4185.76	2092.88	7224.74	3568.03		0.79	-0.12	0.034
70.00	-20.50	-1.39	0.00	-96.40	0.00	96.40	4112.81	2056.41	6907.71	3411.46		0.93	-0.13	0.033
75.00	-19.45	-1.38	0.00	-89.45	0.00	89.45	4037.75	2018.88	6594.01	3256.53		1.07	-0.14	0.032
80.00	-18.43	-1.38	0.00	-82.53	0.00	82.53	3960.58	1980.29	6283.93	3103.40		1.22	-0.15	0.031
81.21	-18.19	-1.38	0.00	-80.85	0.00	80.85	3941.59	1970.79	6209.47	3066.62		1.26	-0.16	0.031
85.00	-16.90	-1.38	0.00	-75.61	0.00	75.61	3881.29	1940.65	5977.77	2952.20		1.39	-0.16	0.030
86.71	-16.32	-1.38	0.00	-73.24	0.00	73.24	3179.63	1589.82	4962.15	2450.62		1.45	-0.17	0.035
90.00	-15.75	-1.38	0.00	-68.70	0.00	68.70	3141.06	1570.53	4805.90	2373.45		1.57	-0.18	0.034
95.00	-14.90	-1.38	0.00	-61.78	0.00	61.78	3080.68	1540.34	4570.36	2257.13		1.76	-0.19	0.032
100.00	-14.07	-1.38	0.00	-54.86	0.00	54.86	3018.19	1509.10	4337.39	2142.08		1.96	-0.20	0.030
105.00	-13.25	-1.38	0.00	-47.94	0.00	47.94	2953.59	1476.79	4107.30	2028.44		2.18	-0.21	0.028
110.00	-12.46	-1.38	0.00	-41.02	0.00	41.02	2886.87	1443.44	3880.37	1916.37		2.40	-0.22	0.026
115.00	-11.69	-1.38	0.00	-34.11	0.00	34.11	2808.90	1404.45	3645.04	1800.15		2.64	-0.23	0.023
120.00	-10.95	-1.37	0.00	-27.20	0.00	27.20	2709.48	1354.74	3390.12	1674.25		2.89	-0.24	0.020
120.96	-10.80	-1.37	0.00	-25.89	0.00	25.89	2690.40	1345.20	3342.23	1650.60		2.94	-0.24	0.020
125.00	-9.84	-1.33	0.00	-20.37	0.00	20.37	2610.07	1305.03	3144.44	1552.92		3.14	-0.25	0.017
125.46	-9.73	-1.32	0.00	-19.76	0.00	19.76	2134.18	1067.09	2628.47	1298.10		3.17	-0.25	0.020
127.00	-7.01	-1.16	0.00	-17.72	0.00	17.72	2118.25	1059.12	2578.53	1273.44		3.25	-0.25	0.017
130.00	-6.67	-1.13	0.00	-14.26	0.00	14.26	2086.63	1043.32	2481.86	1225.70		3.41	-0.25	0.015
135.00	-6.12	-1.08	0.00	-8.59	0.00	8.59	2032.25	1016.13	2322.74	1147.11		3.68	-0.26	0.010
138.00	-2.29	-0.53	0.00	-5.34	0.00	5.34	1998.61	999.30	2228.56	1100.60		3.84	-0.26	0.006
140.00	-2.11	-0.51	0.00	-4.27	0.00	4.27	1975.75	987.88	2166.35	1069.88		3.95	-0.26	0.005
145.00	-1.66	-0.42	0.00	-1.74	0.00	1.74	1894.65	947.33	1989.39	982.48		4.23	-0.27	0.003
149.08	-0.07	-0.02	0.00	-0.02	0.00	0.02	1827.05	913.52	1849.12	913.21		4.46	-0.27	0.000
150.00	0.00	-0.02	0.00	0.00	0.00	0.00	1811.80	905.90	1818.20	897.94		4.51	-0.27	0.000

Wind Loading - Shaft

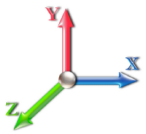
Structure:	CT46129-A-SBA	**Code:**	TIA-222-G	4/18/2022	
Site Name:	Tolland-reed Rd	**Exposure:**	B		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 27	

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	0.70	6.129	6.74	242.53	1.000	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	6.129	6.74	237.69	1.000	0.000	5.00	23.916	23.92	161.2	0.0	1505.0
10.00		1.00	0.70	6.129	6.74	232.85	1.000	0.000	5.00	23.434	23.43	158.0	0.0	1474.4
15.00		1.00	0.70	6.129	6.74	228.02	1.000	0.000	5.00	22.952	22.95	154.7	0.0	1443.8
20.00		1.00	0.70	6.129	6.74	223.18	1.000	0.000	5.00	22.470	22.47	151.5	0.0	1413.2
25.00		1.00	0.70	6.129	6.74	218.34	1.000	0.000	5.00	21.988	21.99	148.2	0.0	1382.6
30.00		1.00	0.70	6.134	6.75	213.59	1.000	0.000	5.00	21.506	21.51	145.1	0.0	1352.0
35.00		1.00	0.73	6.410	7.05	213.40	1.000	0.000	5.00	21.025	21.02	148.2	0.0	1321.4
39.67	Bot - Section 2	1.00	0.76	6.644	7.31	212.55	1.000	0.000	4.67	19.202	19.20	140.3	0.0	1206.5
40.00		1.00	0.76	6.659	7.33	212.47	1.000	0.000	0.33	1.366	1.37	10.0	0.0	159.5
45.00		1.00	0.79	6.887	7.58	210.95	1.000	0.000	5.00	20.438	20.44	154.8	0.0	2385.3
46.25	Top - Section 1	1.00	0.79	6.941	7.64	210.49	1.000	0.000	1.25	5.034	5.03	38.4	0.0	587.4
50.00		1.00	0.81	7.098	7.81	213.02	1.000	0.000	3.75	14.922	14.92	116.5	0.0	821.3
55.00		1.00	0.83	7.294	8.02	210.66	1.000	0.000	5.00	19.475	19.47	156.2	0.0	1071.6
60.00		1.00	0.85	7.477	8.22	207.95	1.000	0.000	5.00	18.993	18.99	156.2	0.0	1044.8
65.00		1.00	0.87	7.650	8.42	204.94	1.000	0.000	5.00	18.511	18.51	155.8	0.0	1018.1
70.00		1.00	0.89	7.814	8.60	201.66	1.000	0.000	5.00	18.029	18.03	155.0	0.0	991.3
75.00		1.00	0.91	7.969	8.77	198.14	1.000	0.000	5.00	17.547	17.55	153.8	0.0	964.5
80.00		1.00	0.93	8.118	8.93	194.41	1.000	0.000	5.00	17.065	17.07	152.4	0.0	937.7
81.21	Bot - Section 3	1.00	0.93	8.153	8.97	193.47	1.000	0.000	1.21	4.057	4.06	36.4	0.0	222.9
85.00		1.00	0.94	8.260	9.09	190.48	1.000	0.000	3.79	12.771	12.77	116.0	0.0	1290.5
86.71	Top - Section 2	1.00	0.95	8.307	9.14	189.10	1.000	0.000	1.71	5.672	5.67	51.8	0.0	572.9
90.00		1.00	0.96	8.396	9.24	190.18	1.000	0.000	3.29	10.754	10.75	99.3	0.0	507.1
95.00		1.00	0.97	8.526	9.38	185.95	1.000	0.000	5.00	15.943	15.94	149.5	0.0	751.6
100.00		1.00	0.99	8.652	9.52	181.57	1.000	0.000	5.00	15.462	15.46	147.2	0.0	728.7
105.00		1.00	1.00	8.774	9.65	177.05	1.000	0.000	5.00	14.980	14.98	144.6	0.0	705.7
110.00		1.00	1.02	8.891	9.78	172.41	1.000	0.000	5.00	14.498	14.50	141.8	0.0	682.8
115.00		1.00	1.03	9.005	9.91	167.64	1.000	0.000	5.00	14.016	14.02	138.8	0.0	659.8
120.00		1.00	1.04	9.115	10.03	162.76	1.000	0.000	5.00	13.534	13.53	135.7	0.0	636.9
120.96	Bot - Section 4	1.00	1.04	9.136	10.05	161.82	1.000	0.000	0.96	2.543	2.54	25.6	0.0	119.7
125.00		1.00	1.05	9.222	10.14	157.78	1.000	0.000	4.04	10.727	10.73	108.8	0.0	915.7
125.46	Top - Section 3	1.00	1.05	9.231	10.15	157.32	1.000	0.000	0.46	1.201	1.20	12.2	0.0	102.5
127.00	Appurtenance(s)	1.00	1.06	9.264	10.19	159.09	1.000	0.000	1.54	3.992	3.99	40.7	0.0	156.8
130.00		1.00	1.07	9.326	10.26	156.04	1.000	0.000	3.00	7.646	7.65	78.4	0.0	300.3
135.00		1.00	1.08	9.427	10.37	150.88	1.000	0.000	5.00	12.358	12.36	128.1	0.0	485.1
138.00	Appurtenance(s)	1.00	1.08	9.486	10.43	147.75	1.000	0.000	3.00	7.184	7.18	75.0	0.0	281.9
140.00		1.00	1.09	9.525	10.48	145.64	1.000	0.000	2.00	4.693	4.69	49.2	0.0	184.1
145.00		1.00	1.10	9.621	10.58	140.31	1.000	0.000	5.00	11.395	11.39	120.6	0.0	446.9
149.08	Appurtenance(s)	1.00	1.11	9.698	10.67	135.90	1.000	0.000	4.08	8.941	8.94	95.4	0.0	350.5
150.00		1.00	1.11	9.715	10.69	134.90	1.000	0.000	0.92	1.972	1.97	21.1	0.0	77.3
								Totals:	**150.00**			**4,372.7**		**31,259.9**

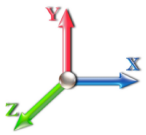
Discrete Appurtenance Forces

Structure:	CT46129-A-SBA	**Code:**	TIA-222-G	4/18/2022	
Site Name:	Tolland-reed Rd	**Exposure:**	B		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 28	

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	149.08	AP11-880/090/XP	3	9.698	10.668	0.72	1.00	10.43	52.80	0.000	0.000	111.29	0.00	0.00
2	149.08	DB844H90E-XY	9	9.698	10.668	1.12	1.00	30.74	126.00	0.000	0.000	327.96	0.00	0.00
3	149.08	Low Profile Platform	1	9.698	10.668	1.00	1.00	25.00	1200.00	0.000	0.000	266.69	0.00	0.00
4	138.00	KRY 112 144/1	3	9.486	10.435	0.52	0.75	0.65	33.00	0.000	0.000	6.74	0.00	0.00
5	138.00	APXVAARR24_43-U-NA2	3	9.486	10.435	0.54	0.75	32.79	384.00	0.000	0.000	342.14	0.00	0.00
6	138.00	RMQP-4096-HK Plat. +	1	9.486	10.435	1.00	1.00	51.70	2645.00	0.000	0.000	539.48	0.00	0.00
7	138.00	KRY 112 489/2	3	9.486	10.435	0.61	0.75	1.20	46.20	0.000	0.000	12.51	0.00	0.00
8	138.00	4449 B71 + B85	3	9.486	10.435	0.50	0.75	2.97	225.00	0.000	0.000	30.99	0.00	0.00
9	138.00	Kathrein 782 11056	3	9.486	10.435	0.50	0.75	0.75	6.00	0.000	0.000	7.87	0.00	0.00
10	138.00	AIR6419 B41	3	9.486	10.435	0.57	0.75	6.84	249.90	0.000	0.000	71.37	0.00	0.00
11	138.00	4460 B25 + B66	3	9.486	10.435	0.50	0.75	4.30	312.00	0.000	0.000	44.83	0.00	0.00
12	127.00	Samsung RF440D-13A	3	9.264	10.190	0.54	0.80	3.01	210.90	0.000	0.000	30.64	0.00	0.00
13	127.00	Low Profile Platform	1	9.264	10.190	1.00	1.00	25.00	1200.00	0.000	0.000	254.75	0.00	0.00
14	127.00	RFS DB-T1-6Z-8AB-0Z	1	9.264	10.190	1.00	1.00	4.80	18.90	0.000	0.000	48.91	0.00	0.00
15	127.00	RFS FD9R6004/2C-3L	6	9.264	10.190	0.50	0.80	1.10	18.60	0.000	0.000	11.22	0.00	0.00
16	127.00	Raycap	1	9.264	10.190	1.00	1.00	4.10	21.40	0.000	0.000	41.78	0.00	0.00
17	127.00	Samsung RF4439d-25A	3	9.264	10.190	0.54	0.80	3.01	225.00	0.000	0.000	30.64	0.00	0.00
18	127.00	ANTEL LPA-80063/6CF-2	2	9.264	10.190	0.75	0.80	14.44	54.00	0.000	0.000	147.13	0.00	0.00
19	127.00	Antel LPA-80080/6CFx2	4	9.264	10.190	1.36	0.80	23.56	84.00	0.000	0.000	240.03	0.00	0.00
20	127.00	Samsung MT6407-77A	3	9.264	10.190	0.56	0.80	7.88	238.20	0.000	0.000	80.29	0.00	0.00
21	127.00	Commscope	3	9.264	10.190	0.66	0.80	11.71	100.50	0.000	0.000	119.36	0.00	0.00
22	127.00	Commscope	3	9.264	10.190	0.66	0.80	16.10	121.80	0.000	0.000	164.01	0.00	0.00
23	127.00	Mod (Support rail)	1	9.264	10.190	1.00	1.00	12.25	514.00	0.000	0.000	124.83	0.00	0.00
							Totals:		**8,087.20**			**3,055.46**		

Total Applied Force Summary

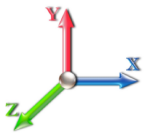
Structure:	CT46129-A-SBA		**Code:**	TIA-222-G	4/18/2022
Site Name:	Tolland-reed Rd		**Exposure:**	B	
Height:	150.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 29

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		161.23	1699.78	0.00	0.00
10.00		157.98	1669.18	0.00	0.00
15.00		154.73	1638.58	0.00	0.00
20.00		151.48	1607.99	0.00	0.00
25.00		148.23	1577.39	0.00	0.00
30.00		145.11	1546.79	0.00	0.00
35.00		148.24	1516.19	0.00	0.00
39.67		140.32	1388.49	0.00	0.00
40.00		10.01	172.31	0.00	0.00
45.00		154.84	2580.14	0.00	0.00
46.25		38.44	636.07	0.00	0.00
50.00		116.50	967.37	0.00	0.00
55.00		156.24	1266.40	0.00	0.00
60.00		156.21	1239.63	0.00	0.00
65.00		155.77	1212.85	0.00	0.00
70.00		154.97	1186.08	0.00	0.00
75.00		153.83	1159.31	0.00	0.00
80.00		152.39	1132.54	0.00	0.00
81.21		36.39	270.05	0.00	0.00
85.00		116.04	1438.13	0.00	0.00
86.71		51.82	639.51	0.00	0.00
90.00		99.31	635.26	0.00	0.00
95.00		149.53	946.42	0.00	0.00
100.00		147.15	923.47	0.00	0.00
105.00		144.57	900.53	0.00	0.00
110.00		141.79	877.58	0.00	0.00
115.00		138.83	854.63	0.00	0.00
120.00		135.70	831.68	0.00	0.00
120.96		25.56	157.06	0.00	0.00
125.00		108.81	1073.09	0.00	0.00
125.46		12.20	120.44	0.00	0.00
127.00	(31) attachments	1334.27	3024.11	0.00	0.00
130.00		78.44	376.22	0.00	0.00
135.00		128.15	611.74	0.00	0.00
138.00	(22) attachments	1130.89	4258.96	0.00	0.00
140.00		49.17	203.91	0.00	0.00
145.00		120.59	496.39	0.00	0.00
149.08	(13) attachments	801.33	1769.68	0.00	0.00
150.00		21.07	77.27	0.00	0.00
	Totals:	**7,428.14**	**44,683.23**	**0.00**	**0.00**

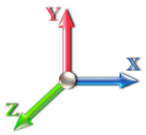
Linear Appurtenance Segment Forces (Factored)

Structure:	CT46129-A-SBA	**Code:**	TIA-222-G	4/18/2022	
Site Name:	Tolland-reed Rd	**Exposure:**	B		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 30	

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	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.035	0.000	6.129	0.00	20.80
10.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.036	0.000	6.129	0.00	20.80
15.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.036	0.000	6.129	0.00	20.80
20.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.037	0.000	6.129	0.00	20.80
25.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.038	0.000	6.129	0.00	20.80
30.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.039	0.000	6.134	0.00	20.80
35.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.040	0.000	6.410	0.00	20.80
39.67	1 5/8" Coax	Yes	4.67	0.000	2.00	0.78	0.00	0.041	0.000	6.644	0.00	19.43
40.00	1 5/8" Coax	Yes	0.33	0.000	2.00	0.06	0.00	0.041	0.000	6.659	0.00	1.37
45.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.042	0.000	6.887	0.00	20.80
46.25	1 5/8" Coax	Yes	1.25	0.000	2.00	0.21	0.00	0.042	0.000	6.941	0.00	5.20
50.00	1 5/8" Coax	Yes	3.75	0.000	2.00	0.63	0.00	0.042	0.000	7.098	0.00	15.60
55.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.043	0.000	7.294	0.00	20.80
60.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.044	0.000	7.477	0.00	20.80
65.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.045	0.000	7.650	0.00	20.80
70.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.046	0.000	7.814	0.00	20.80
75.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.047	0.000	7.969	0.00	20.80
80.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.049	0.000	8.118	0.00	20.80
81.21	1 5/8" Coax	Yes	1.21	0.000	2.00	0.20	0.00	0.050	0.000	8.153	0.00	5.03
85.00	1 5/8" Coax	Yes	3.79	0.000	2.00	0.63	0.00	0.050	0.000	8.260	0.00	15.77
86.71	1 5/8" Coax	Yes	1.71	0.000	2.00	0.28	0.00	0.051	0.000	8.307	0.00	7.11
90.00	1 5/8" Coax	Yes	3.29	0.000	2.00	0.55	0.00	0.051	0.000	8.396	0.00	13.69
95.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.052	0.000	8.526	0.00	20.80
100.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.054	0.000	8.652	0.00	20.80
105.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.056	0.000	8.774	0.00	20.80
110.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.057	0.000	8.891	0.00	20.80
115.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.059	0.000	9.005	0.00	20.80
120.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.062	0.000	9.115	0.00	20.80
120.96	1 5/8" Coax	Yes	0.96	0.000	2.00	0.16	0.00	0.063	0.000	9.136	0.00	3.99
125.00	1 5/8" Coax	Yes	4.04	0.000	2.00	0.67	0.00	0.064	0.000	9.222	0.00	16.81
125.46	1 5/8" Coax	Yes	0.46	0.000	2.00	0.08	0.00	0.065	0.000	9.231	0.00	1.91
127.00	1 5/8" Coax	Yes	1.54	0.000	2.00	0.26	0.00	0.064	0.000	9.264	0.00	6.41
130.00	1 5/8" Coax	Yes	3.00	0.000	2.00	0.50	0.00	0.065	0.000	9.326	0.00	12.48
135.00	1 5/8" Coax	Yes	5.00	0.000	2.00	0.83	0.00	0.067	0.000	9.427	0.00	20.80
138.00	1 5/8" Coax	Yes	3.00	0.000	2.00	0.50	0.00	0.070	0.000	9.486	0.00	12.48
									Totals:		**0.0**	**574.1**

Calculated Forces

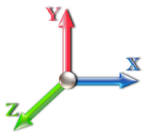
Structure:	CT46129-A-SBA	**Code:**	TIA-222-G	4/18/2022	
Site Name:	Tolland-reed Rd	**Exposure:**	B		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 31	

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	-44.68	-7.44	0.00	-760.14	0.00	760.14	5976.93	2988.46	13678.8	6755.45	0.00	0.000	0.000	0.120
5.00	-42.98	-7.30	0.00	-722.95	0.00	722.95	5908.08	2954.04	13246.7	6542.05	0.02	-0.030	0.000	0.118
10.00	-41.30	-7.16	0.00	-686.45	0.00	686.45	5837.12	2918.56	12816.3	6329.51	0.06	-0.060	0.000	0.116
15.00	-39.66	-7.03	0.00	-650.63	0.00	650.63	5764.05	2882.03	12388.0	6117.98	0.14	-0.091	0.000	0.113
20.00	-38.05	-6.89	0.00	-615.49	0.00	615.49	5688.87	2844.43	11962.0	5907.62	0.26	-0.122	0.000	0.111
25.00	-36.47	-6.76	0.00	-581.03	0.00	581.03	5611.57	2805.78	11538.7	5698.56	0.40	-0.153	0.000	0.108
30.00	-34.92	-6.63	0.00	-547.22	0.00	547.22	5532.15	2766.08	11118.3	5490.95	0.58	-0.184	0.000	0.106
35.00	-33.40	-6.50	0.00	-514.07	0.00	514.07	5450.63	2725.31	10701.2	5284.94	0.79	-0.216	0.000	0.103
39.67	-32.01	-6.36	0.00	-483.74	0.00	483.74	5372.57	2686.29	10314.8	5094.09	1.01	-0.246	0.000	0.101
40.00	-31.84	-6.36	0.00	-481.64	0.00	481.64	5366.99	2683.49	10287.6	5080.67	1.03	-0.248	0.000	0.101
45.00	-29.26	-6.20	0.00	-449.85	0.00	449.85	5281.24	2640.62	9877.82	4878.29	1.31	-0.280	0.000	0.098
46.25	-28.62	-6.17	0.00	-442.10	0.00	442.10	4440.49	2220.24	8438.24	4167.33	1.38	-0.288	0.000	0.113
50.00	-27.65	-6.06	0.00	-418.98	0.00	418.98	4391.92	2195.96	8192.87	4046.15	1.62	-0.312	0.000	0.110
55.00	-26.38	-5.91	0.00	-388.68	0.00	388.68	4325.31	2162.66	7867.62	3885.52	1.96	-0.347	0.000	0.106
60.00	-25.14	-5.76	0.00	-359.12	0.00	359.12	4256.59	2128.30	7544.81	3726.10	2.35	-0.381	0.000	0.102
65.00	-23.92	-5.61	0.00	-330.31	0.00	330.31	4185.76	2092.88	7224.74	3568.03	2.76	-0.415	0.000	0.098
70.00	-22.73	-5.46	0.00	-302.24	0.00	302.24	4112.81	2056.41	6907.71	3411.46	3.22	-0.449	0.000	0.094
75.00	-21.57	-5.31	0.00	-274.93	0.00	274.93	4037.75	2018.88	6594.01	3256.53	3.71	-0.483	0.000	0.090
80.00	-20.44	-5.16	0.00	-248.37	0.00	248.37	3960.58	1980.29	6283.93	3103.40	4.23	-0.516	0.000	0.085
81.21	-20.17	-5.12	0.00	-242.13	0.00	242.13	3941.59	1970.79	6209.47	3066.62	4.36	-0.524	0.000	0.084
85.00	-18.73	-5.00	0.00	-222.71	0.00	222.71	3881.29	1940.65	5977.77	2952.20	4.79	-0.549	0.000	0.080
86.71	-18.09	-4.95	0.00	-214.16	0.00	214.16	3179.63	1589.82	4962.15	2450.62	4.99	-0.560	0.000	0.093
90.00	-17.45	-4.85	0.00	-197.89	0.00	197.89	3141.06	1570.53	4805.90	2373.45	5.38	-0.581	0.000	0.089
95.00	-16.51	-4.70	0.00	-173.64	0.00	173.64	3080.68	1540.34	4570.36	2257.13	6.01	-0.615	0.000	0.082
100.00	-15.58	-4.55	0.00	-150.13	0.00	150.13	3018.19	1509.10	4337.39	2142.08	6.67	-0.647	0.000	0.075
105.00	-14.68	-4.40	0.00	-127.38	0.00	127.38	2953.59	1476.79	4107.30	2028.44	7.36	-0.677	0.000	0.068
110.00	-13.80	-4.26	0.00	-105.36	0.00	105.36	2886.87	1443.44	3880.37	1916.37	8.09	-0.705	0.000	0.060
115.00	-12.95	-4.11	0.00	-84.07	0.00	84.07	2808.90	1404.45	3645.04	1800.15	8.84	-0.730	0.000	0.051
120.00	-12.12	-3.97	0.00	-63.50	0.00	63.50	2709.48	1354.74	3390.12	1674.25	9.62	-0.752	0.000	0.042
120.96	-11.96	-3.94	0.00	-59.69	0.00	59.69	2690.40	1345.20	3342.23	1650.60	9.77	-0.755	0.000	0.041
125.00	-10.89	-3.82	0.00	-43.76	0.00	43.76	2610.07	1305.03	3144.44	1552.92	10.41	-0.769	0.000	0.032
125.46	-10.77	-3.81	0.00	-42.00	0.00	42.00	2134.18	1067.09	2628.47	1298.10	10.49	-0.771	0.000	0.037
127.00	-7.76	-2.44	0.00	-36.13	0.00	36.13	2118.25	1059.12	2578.53	1273.44	10.74	-0.775	0.000	0.032
130.00	-7.39	-2.35	0.00	-28.83	0.00	28.83	2086.63	1043.32	2481.86	1225.70	11.23	-0.784	0.000	0.027
135.00	-6.78	-2.22	0.00	-17.06	0.00	17.06	2032.25	1016.13	2322.74	1147.11	12.05	-0.794	0.000	0.018
138.00	-2.53	-1.03	0.00	-10.41	0.00	10.41	1998.61	999.30	2228.56	1100.60	12.56	-0.798	0.000	0.011
140.00	-2.33	-0.98	0.00	-8.36	0.00	8.36	1975.75	987.88	2166.35	1069.88	12.89	-0.800	0.000	0.009
145.00	-1.84	-0.85	0.00	-3.48	0.00	3.48	1894.65	947.33	1989.39	982.48	13.73	-0.804	0.000	0.005
149.08	-0.08	-0.02	0.00	-0.02	0.00	0.02	1827.05	913.52	1849.12	913.21	14.42	-0.805	0.000	0.000
150.00	0.00	-0.02	0.00	0.00	0.00	0.00	1811.80	905.90	1818.20	897.94	14.57	-0.805	0.000	0.000

Final Analysis Summary

Structure:	CT46129-A-SBA		**Code:**	TIA-222-G	4/18/2022
Site Name:	Tolland-reed Rd		**Exposure:**	B	
Height:	150.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 32

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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 97 mph Wind	31.1	0.00	53.58	0.00	0.00	3194.49
0.9D + 1.6W 97 mph Wind	31.1	0.00	40.18	0.00	0.00	3168.97
1.2D + 1.0Di + 1.0Wi 50 mph Wind	7.4	0.00	89.23	0.00	0.00	817.60
1.2D + 1.0E	1.9	0.00	53.62	0.00	0.00	214.34
0.9D + 1.0E	1.9	0.00	40.21	0.00	0.00	212.50
1.0D + 1.0W 60 mph Wind	7.4	0.00	44.68	0.00	0.00	760.14

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 97 mph Wind	-53.58	-31.12	0.00	-3194.4	0.00	-3194.4	5976.93	2988.4	13678.8	6755.45	0.00	0.482
0.9D + 1.6W 97 mph Wind	-40.18	-31.11	0.00	-3168.9	0.00	-3168.9	5976.93	2988.4	13678.8	6755.45	0.00	0.476
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-89.23	-7.44	0.00	-817.60	0.00	-817.60	5976.93	2988.4	13678.8	6755.45	0.00	0.136
1.2D + 1.0E	-53.62	-1.89	0.00	-214.34	0.00	-214.34	5976.93	2988.4	13678.8	6755.45	0.00	0.041
0.9D + 1.0E	-40.21	-1.89	0.00	-212.50	0.00	-212.50	5976.93	2988.4	13678.8	6755.45	0.00	0.038
1.0D + 1.0W 60 mph Wind	-44.68	-7.44	0.00	-760.14	0.00	-760.14	5976.93	2988.4	13678.8	6755.45	0.00	0.120

Base Plate Summary

Structure:	CT46129-A-SB		**Code:**	TIA-222-G	4/18/2022
Site Name:	Tolland-reed Rd		**Exposure:**	B	
Height:	150.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 33

Tower Engineering Solutions

Reactions	
Original Design	
Moment (kip-ft):	4611.00
Axial (kip):	39.00
Shear (kip):	39.00
Analysis (1.2D + 1.6W)	
Moment (kip-ft):	3194.49
Axial (kip):	53.58
Shear (kip):	31.12

Base Plate	
Yield (ksi):	60.00
Width (in):	71.00
Style:	Round
Polygon Sides:	0.00
Clip Length (in):	0.00
Effective Len (in):	12.53
Moment (kip-in):	459.05
Allow Stress (ksi):	81.00
Applied Stress (ksi):	43.74
Stress Ratio:	0.54

Anchor Bolts	
Bolt Circle:	65.00
Number Bolts:	24.00
Bolt Type:	2.25" 18J
Bolt Diameter (in):	2.25
Yield (ksi):	75.00
Ultimate (ksi):	100.00
Arrangement:	Radial
Cluster Dist (in):	0.00
Start Angle (deg):	0.00
Compression	
Force (kip):	102.01
Allowable (kip):	260.00
Ratio:	0.40
Tension	
Force (kip):	94.57
Allowable (kip):	260.00
Ratio:	0.37

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 Monopole Tower

Customer Name: SBA Communications Corp

Customer Site Number: CT46129-A-SBA

Customer Site Name: Tolland-reed Rd

Carrier Name: T-Mobile (App#: 193216, V1)

Carrier Site ID / Name: CT11413D / Tolland

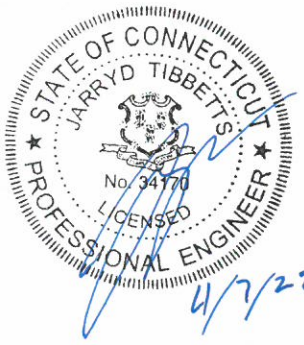
Site Location: 208 Reed Road

Tolland, Connecticut

Tolland County

Latitude: 41.853361

Longitude: -72.406139



Analysis Result:

Max Structural Usage: 79.3% [Pass]

Report Prepared By: Venkata Annamreddy

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

Antenna Mount Analysis Report

Existing Monopole Tower

Customer Name: SBA Communications Corp

Customer Site Number: CT46129-A-SBA

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Carrier Site ID / Name: CT11413D / Tolland

Site Location: 208 Reed Road

Tolland, Connecticut

Tolland County

Latitude: 41.853361

Longitude: -72.406139

Analysis Result:

Max Structural Usage: 79.3% [Pass]

Report Prepared By: Venkata Annamreddy

Introduction

The purpose of this report is to summarize the analysis results on the (1) Low profile platform w/HRK & Kicker kit Sitepro RMQP-4096-HK at 138.00' 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	Sitepro RMQP-4096-HK as per SBA: 193216, v1; dated: 4/6/2022
Antenna Loading	Provided by SBA, Application #:193216, v1; dated: 4/6/2022
Recent Mount Photos	Provided by SBA
Modification Drawings	N/A

Analysis Criteria

Basic Wind Speed Used in the Analysis: V_{ULT} = 125 mph (3-Sec. Gust) / Equivalent to
V_{ASD} = 97 mph (3-Sec. Gust)
Basic Wind Speed with Ice: 50 mph (3-Sec. Gust) with 1" radial ice concurrent
Operational Wind Speed: 60 mph +0" Radial ice
Standard/Codes: ANSI/TIA/EIA 222-G
Exposure Category: B
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

(1) Low profile platform w/HRK & Kicker kit [Sitepro RMQP-4096-HK] at 138.00' elevation

Final Antenna Configuration

3	RFS APXVAARR24_43-U-NA20
3	Ericsson KRY 112 489/2
3	Ericsson KRY 112 144/1
3	Kathrein 782 11056
3	Ericsson AIR6419 B41
3	Ericsson 4460 B25 + B66
3	Ericsson 4449 B71 + B85

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 79.3%, which occurs in the connection plate. 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.

NOTE: The (1) Sitepro RMQP-4096-HK appears to be installed on the existing tower, however, a mount mapping was neither provided nor performed at this site. Therefore, TES is not liable for any fit-up issues that maybe have been caused during or after the installation of the mount. TES assumes that the (1) Sitepro RMQP-4096-HK was installed per manufacturer's instructions and recommendations.

Attachments

1. Mount Photos
2. Antenna Placement Diagram
3. Analysis Calculations

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: CT46129-A-SBA - Tolland-reed Rd

Sector: A

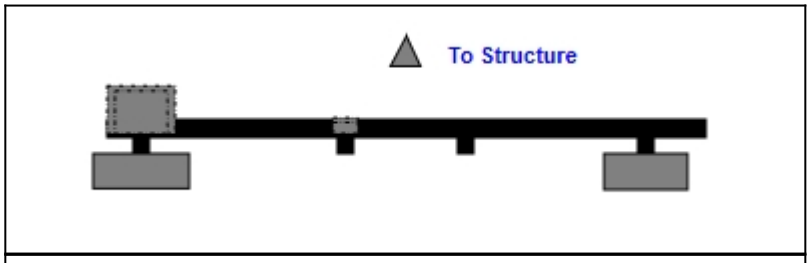
Structure Type: Monopole

Mount Elev: 138.00

4/6/2022

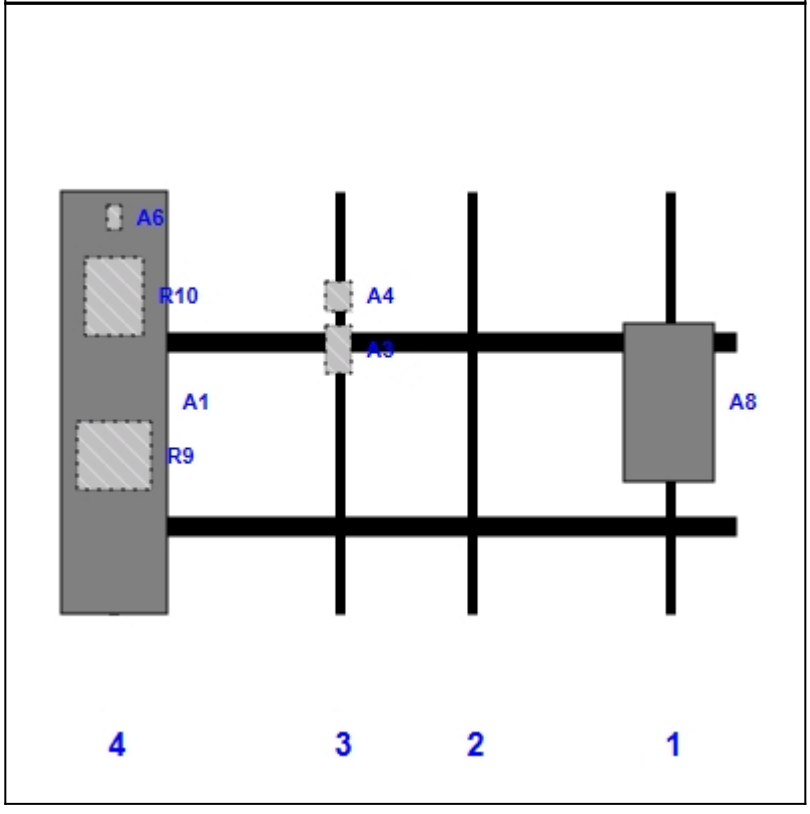
Tower Engineering Solutions

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
A8	AIR6419 B41	36.30	20.90	135.00	1	a	Front	48.00		Added	
A3	KRY 112 489/2	11.00	6.10	60.00	3	a	Behind	36.00		Retained	
A4	KRY 112 144/1	6.93	6.10	60.00	3	a	Behind	24.00		Retained	
A1	APXVAARR24_43-U-NA20	95.90	24.00	9.00	4	a	Front	48.00		Leased	
A6	782 11056	5.50	3.20	9.00	4	b	Behind	6.00		Retained	
R9	4460 B25 + B66	15.10	17.00	9.00	4	b	Behind	60.00		Added	
R10	4449 B71 + B85	17.90	13.10	9.00	4	b	Behind	24.00		Added	

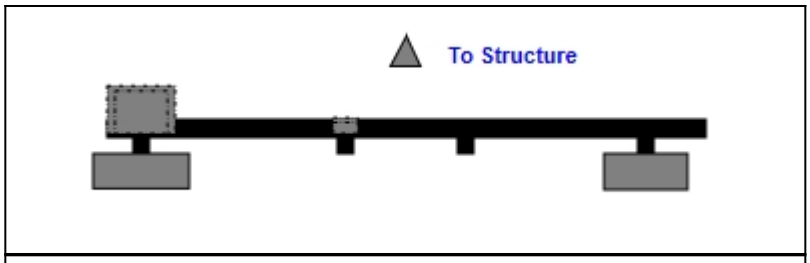
Structure: CT46129-A-SBA - Tolland-reed Rd

Sector: B
Structure Type: Monopole
Mount Elev: 138.00

4/6/2022

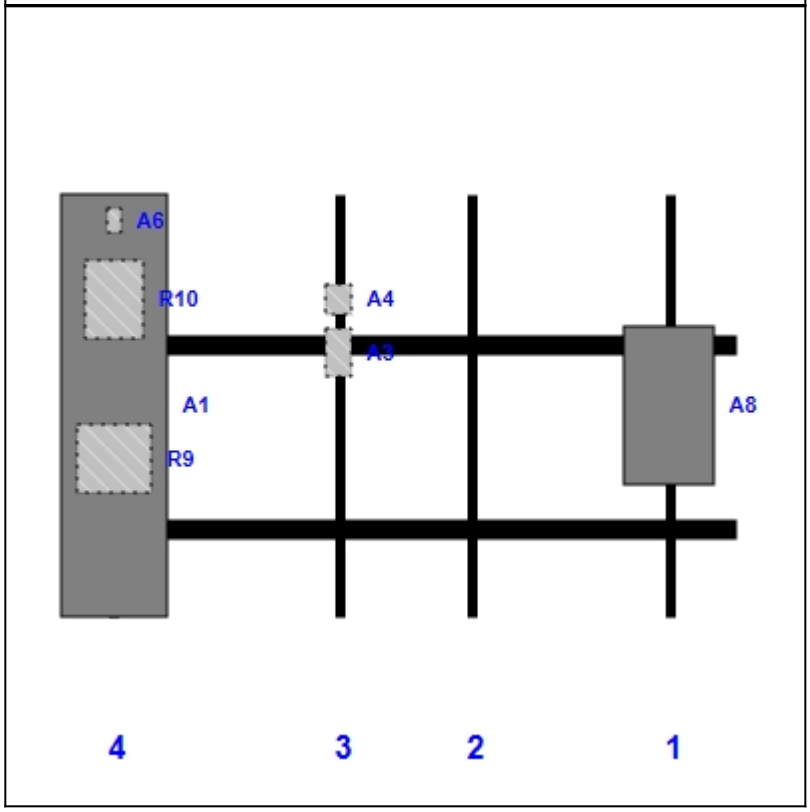
IES Tower Engineering Solutions

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
A8	AIR6419 B41	36.30	20.90	135.00	1	a	Front	48.00		Added	
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A1	APXVAARR24_43-U-NA20	95.90	24.00	9.00	4	a	Front	48.00		Leased	
A6	782 11056	5.50	3.20	9.00	4	b	Behind	6.00		Retained	
R9	4460 B25 + B66	15.10	17.00	9.00	4	b	Behind	60.00		Added	
R10	4449 B71 + B85	17.90	13.10	9.00	4	b	Behind	24.00		Added	

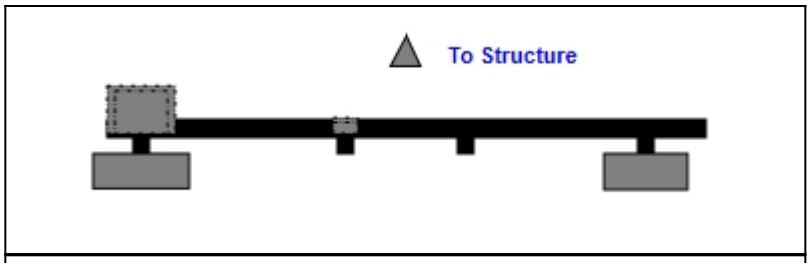
Structure: CT46129-A-SBA - Tolland-reed Rd

Sector: C
Structure Type: Monopole
Mount Elev: 138.00

4/6/2022

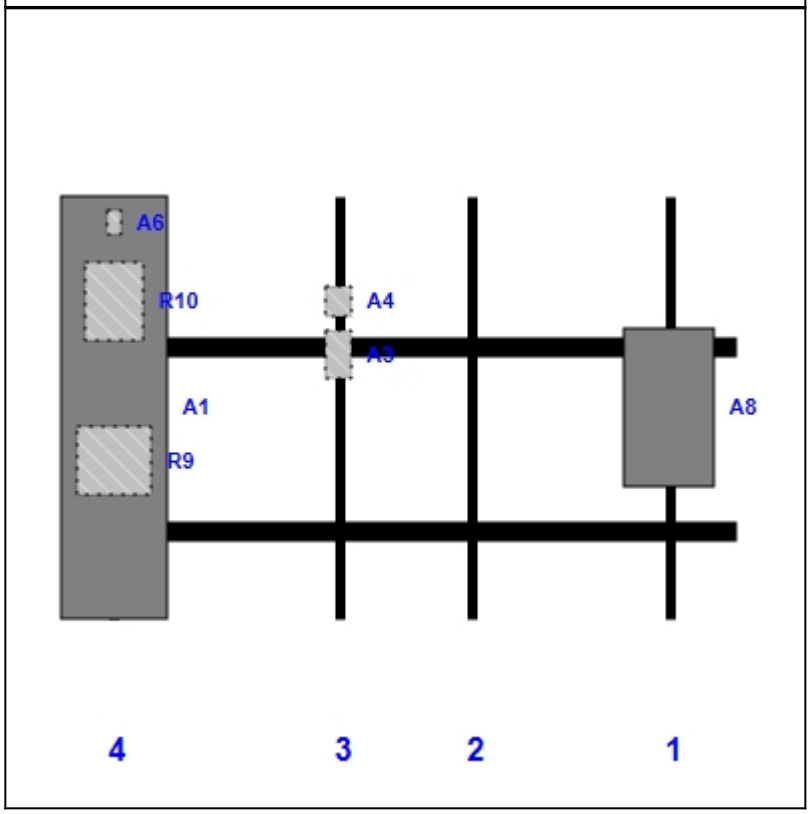
Tower Engineering Solutions

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
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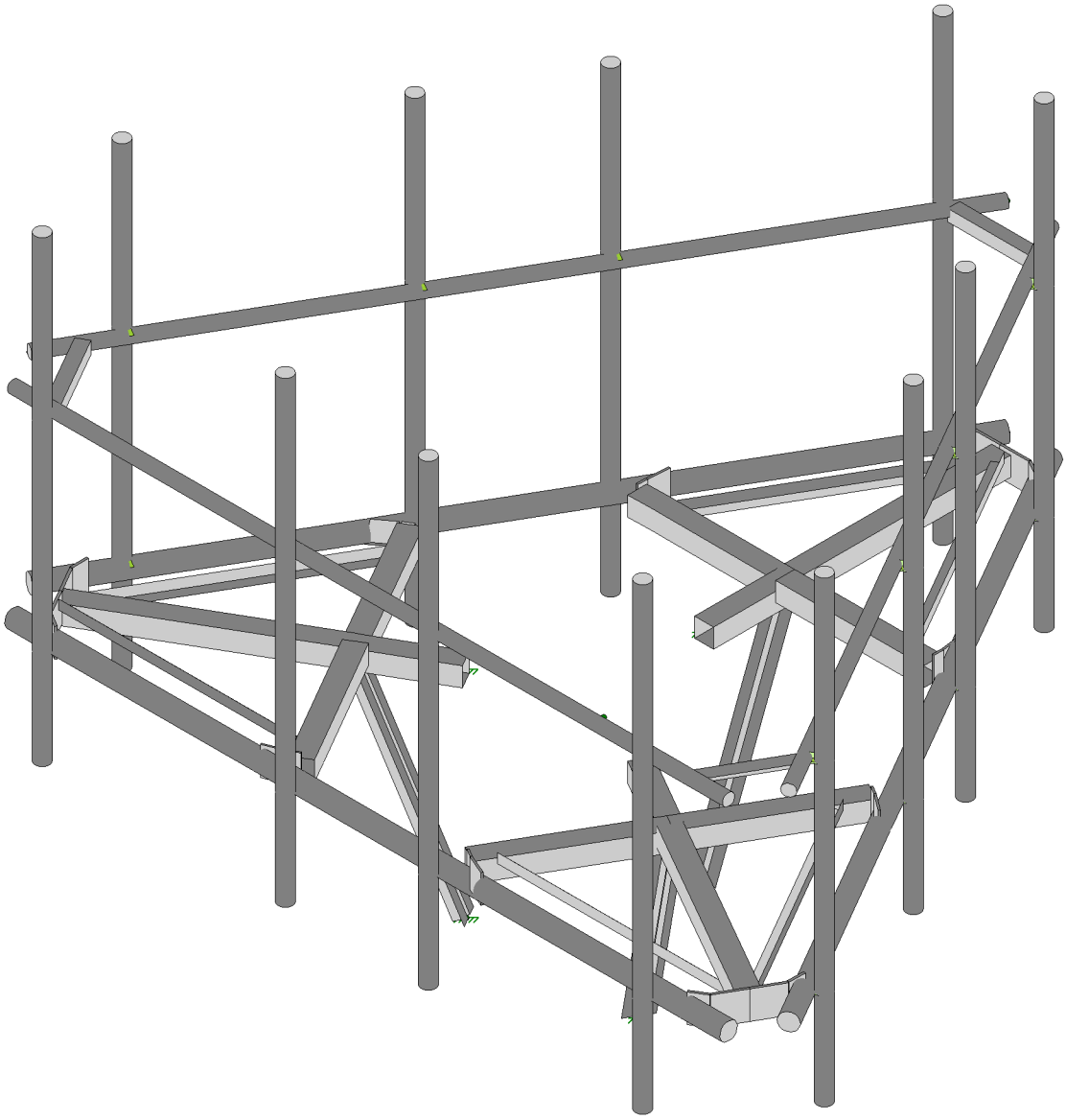
A3	KRY 112 489/2	11.00	6.10	60.00	3	a	Behind	36.00		Retained	
A4	KRY 112 144/1	6.93	6.10	60.00	3	a	Behind	24.00		Retained	
A1	APXVAARR24_43-U-NA20	95.90	24.00	9.00	4	a	Front	48.00		Leased	
A6	782 11056	5.50	3.20	9.00	4	b	Behind	6.00		Retained	
R9	4460 B25 + B66	15.10	17.00	9.00	4	b	Behind	60.00		Added	
R10	4449 B71 + B85	17.90	13.10	9.00	4	b	Behind	24.00		Added	



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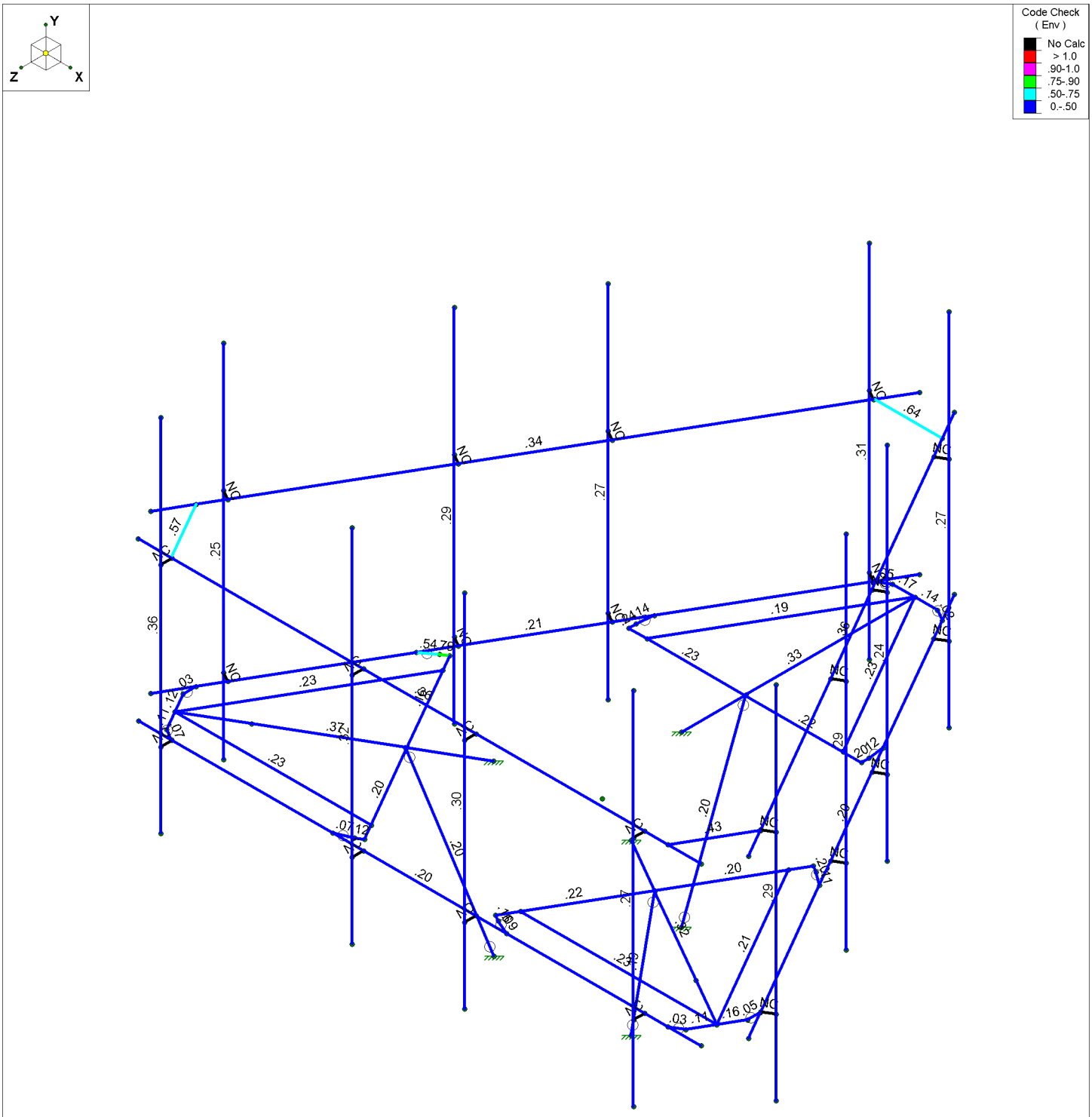
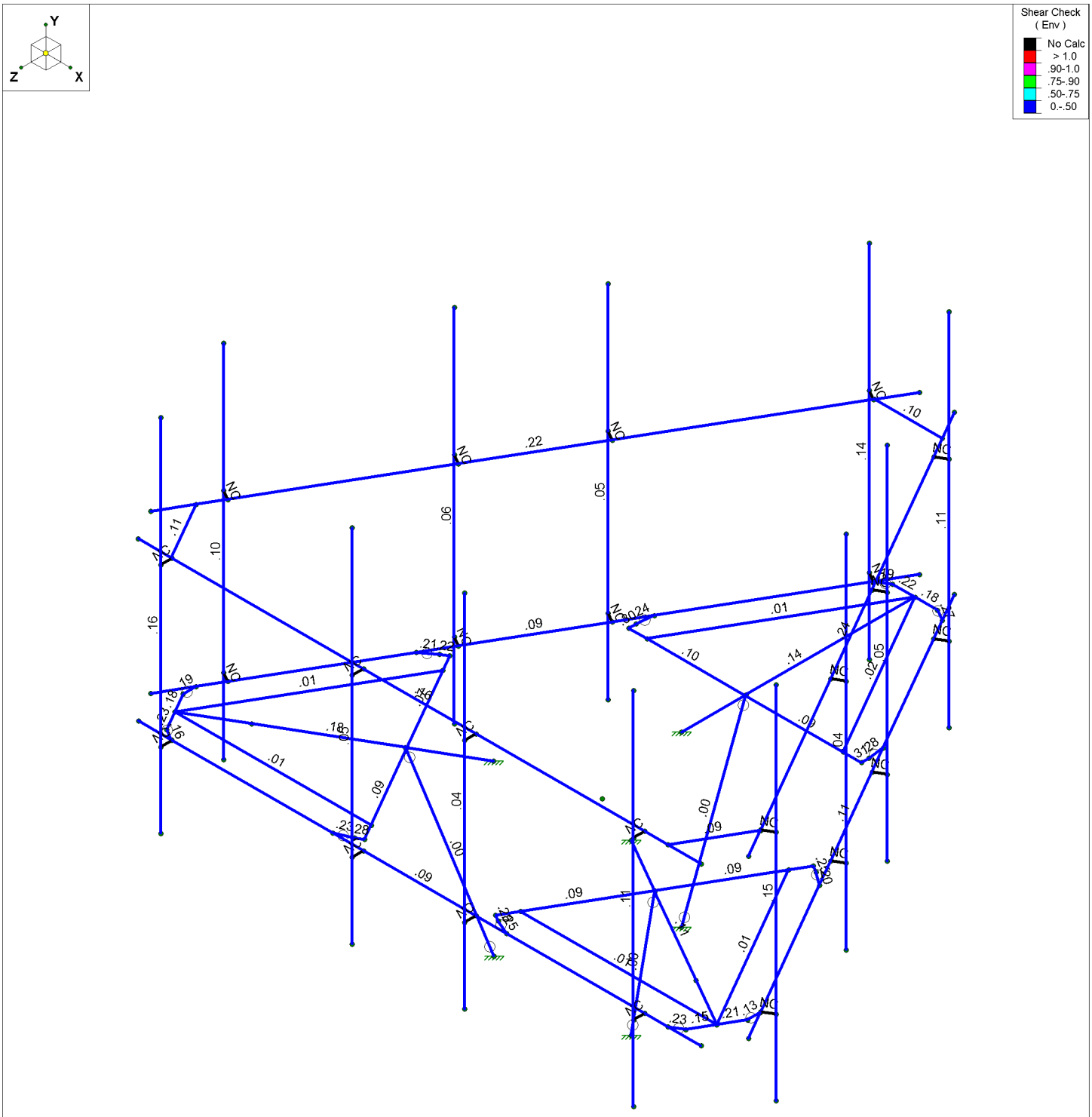
		Apr 6, 2022 at 4:38 PM
TES Project No. 127370		CT46129-A-SBA_127370_G_RISA_...



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



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

Tower Engineering Solutio...	CT46129-A-SBA_MT_LO_Loads Only_G	SK - 3
		Apr 6, 2022 at 4:39 PM
TES Project No. 127370		CT46129-A-SBA_127370_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					27			
2	Antenna Di	None					27			
3	Antenna W Front	None					27			
4	Antenna Wi Front	None					27			
5	Antenna W Side	None					27			
6	Antenna Wi Side	None					27			
7	Service Lm1	None					1			
8	Service Lm2	None					1			
9	Structure D	None		-1					3	
10	Structure Di	None						63	3	
11	Structure W Front	None						63		
12	Structure Wi Front	None						63		
13	Structure W Side	None						63		
14	Structure Wi Side	None						63		
15	BLC 9 Transient Area...	None						117		
16	BLC 10 Transient Are...	None						117		

Load Combinations

	Description	So..	P...	S...	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac...
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 (...	Yes	Y		1	1.2	9	1.2	2	1	10	1	4	1	12	1								
6	1.2D+1.0Di+1.0Wi (...	Yes	Y		1	1.2	9	1.2	2	1	10	1	4	-1	12	-1								
7	1.2D+1.0Di+1.0Wi (...	Yes	Y		1	1.2	9	1.2	2	1	10	1	6	1	14	1								
8	1.2D+1.0Di+1.0Wi (...	Yes	Y		1	1.2	9	1.2	2	1	10	1	6	-1	14	-1								
9	1.2D+1.5L1+.16W (...	Yes	Y		1	1.2	9	1.2	7	1.5	3	.16	11	.16										
10	1.2D+1.5L2+.16W (...	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																

Joint Coordinates and Temperatures

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
1	NP4	-6.248693	0.395833	4.052255	0	
2	NP1	6.251307	0.395833	4.052255	0	
3	CG	3e-6	0	0	0	
4	N57	-1.525645	0.395833	0.880833	0	
5	N56	0.001306	0.395833	-1.760626	0	
6	N55	1.525423	0.395833	0.879222	0	
7	N53	5.518027	0.395833	4.052255	0	
8	N51	1.934693	0.395833	4.052255	0	
9	N50	-1.932785	0.395833	4.052255	0	
10	N48	-5.516118	0.395833	4.052255	0	
11	N45	-6.267413	0.395833	2.750973	0	
12	N43	-4.475748	0.395833	-0.352283	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
13	N42	-2.542007	0.395833	-3.70162	0	
14	N40	-0.750342	0.395833	-6.804875	0	
15	N37	0.749411	0.395833	-6.806498	0	
16	N35	2.544372	0.395833	-3.697534	0	
17	N34	4.474346	0.395833	-0.354721	0	
18	N32	6.269307	0.395833	2.754243	0	
19	N30	0.000003	0.395833	-3.17336	0	
20	N29	2.180513	0.395833	-3.17336	0	
21	N28	-2.178604	0.395833	-3.17336	0	
22	N27	0.000003	0.395833	-6.948466	0	
23	N26	0.500954	0.395833	-6.948466	0	
24	N25	-0.499046	0.395833	-6.948466	0	
25	N24	2.584288	0.395833	-3.17336	0	
26	N23	-2.582379	0.395833	-3.17336	0	
27	N22	2.584288	0.395833	-3.340026	0	
28	N21	-2.582379	0.395833	-3.340026	0	
29	N20	2.748854	0.395833	1.585571	0	
30	N19	1.659075	0.395833	3.473123	0	
31	N18	3.838468	0.395833	-0.301696	0	
32	N17	6.018192	0.395833	3.473123	0	
33	N16	5.768027	0.395833	3.906422	0	
34	N15	6.268027	0.395833	3.040397	0	
35	N14	1.457023	0.395833	3.823089	0	
36	N13	4.040356	0.395833	-0.651376	0	
37	N12	1.60136	0.395833	3.906422	0	
38	N11	4.184693	0.395833	-0.568042	0	
39	N10	-2.74678	0.395833	1.585856	0	
40	N9	-3.83656	0.395833	-0.301696	0	
41	N8	-1.657001	0.395833	3.473409	0	
42	N7	-6.016118	0.395833	3.473409	0	
43	N6	-6.266118	0.395833	3.040397	0	
44	N5	-5.766118	0.395833	3.906422	0	
45	N4	-4.038447	0.395833	-0.651376	0	
46	N3	-1.455114	0.395833	3.823089	0	
47	N2	-4.182785	0.395833	-0.568042	0	
48	N1	-1.599451	0.395833	3.906422	0	
49	N145	0.001306	-3.354167	-1.760626	0	
50	N147	-4.933586	0.395833	2.848409	0	
51	N148	0.000003	0.395833	-3.198466	0	
52	N149	4.93566	0.395833	2.848123	0	
53	N158	-6.248693	3.895833	4.052256	0	
54	N161	6.251307	3.895833	4.052256	0	
55	N162	5.518027	3.895833	4.052256	0	
56	N163	-5.516118	3.895833	4.052256	0	
57	N164	-6.267414	3.895833	2.750973	0	
58	N165	-0.750342	3.895833	-6.804876	0	
59	N166	0.750348	3.895833	-6.804876	0	
60	N167	6.268371	3.895833	2.752621	0	
61	N71	-5.498693	3.895833	4.052256	0	
62	N72	-5.498693	6.729166	4.302256	0	
63	N73	-5.498693	-1.270834	4.302256	0	
64	N74	5.001307	6.729166	4.302256	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
65	N75	5.001307	-1.270834	4.302256	0	
66	N76	-1.249027	6.729166	4.302256	0	
67	N77	-1.249027	-1.270834	4.302256	0	
68	N78	1.25164	6.729166	4.302256	0	
69	N79A	1.25164	-1.270834	4.302256	0	
70	N104	-5.498693	0.395833	4.052255	0	
71	N105	5.001307	0.395833	4.052255	0	
72	N106	-1.249027	0.395833	4.052255	0	
73	N107	1.25164	0.395833	4.052255	0	
74	N108	5.001307	3.895833	4.052256	0	
75	N109	-1.249027	3.895833	4.052256	0	
76	N110	1.25164	3.895833	4.052256	0	
77	N112	1.010608	3.895833	-6.357386	0	
78	N119	6.633707	0.395833	3.385402	0	
79	N120	0.383707	0.395833	-7.439915	0	
80	N122	-0.385005	0.395833	-7.437658	0	
81	N123	-6.635005	0.395833	3.38766	0	
82	N120A	6.633707	3.895833	3.385402	0	
83	N121	0.383707	3.895833	-7.439915	0	
84	N123A	-0.385005	3.895833	-7.437658	0	
85	N124	-6.635005	3.895833	3.38766	0	
86	N119A	-1.5254	-3.354167	0.879181	0	
87	N120B	-2.769953	0.395833	1.599233	0	
88	N121A	1.524093	-3.354167	0.881444	0	
89	N122A	2.769953	0.395833	1.599233	0	
90	N123B	-5.498693	3.895833	4.302256	0	
91	N124A	-5.498693	0.395833	4.302255	0	
92	N125	5.001307	0.395833	4.302255	0	
93	N126	-1.249027	0.395833	4.302255	0	
94	N127	1.25164	0.395833	4.302255	0	
95	N128	5.001307	3.895833	4.302256	0	
96	N129	-1.249027	3.895833	4.302256	0	
97	N130	1.25164	3.895833	4.302256	0	
98	N100	6.258703	3.895833	2.735881	0	
99	N101	6.475209	6.729166	2.610881	0	
100	N102	6.475209	-1.270834	2.610881	0	
101	N103	1.225209	6.729166	-6.482386	0	
102	N104A	1.225209	-1.270834	-6.482386	0	
103	N105A	4.350376	6.729166	-1.069439	0	
104	N106A	4.350376	-1.270834	-1.069439	0	
105	N107A	3.100043	6.729166	-3.23508	0	
106	N108A	3.100043	-1.270834	-3.23508	0	
107	N109A	6.258703	0.395833	2.735881	0	
108	N110A	1.008703	0.395833	-6.357386	0	
109	N111	4.13387	0.395833	-0.944439	0	
110	N112A	2.883536	0.395833	-3.11008	0	
111	N114	4.13387	3.895833	-0.944439	0	
112	N115	2.883536	3.895833	-3.11008	0	
113	N116	6.475209	3.895833	2.610881	0	
114	N117	6.475209	0.395833	2.610881	0	
115	N118	1.225209	0.395833	-6.482386	0	
116	N119B	4.350376	0.395833	-1.069439	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
117	N120C	3.100043	0.395833	-3.23508	0	
118	N121B	1.225209	3.895833	-6.482386	0	
119	N122B	4.350376	3.895833	-1.069439	0	
120	N123C	3.100043	3.895833	-3.23508	0	
121	N124B	-0.760009	3.895833	-6.788136	0	
122	N125A	-0.976516	6.729166	-6.913136	0	
123	N126A	-0.976516	-1.270834	-6.913136	0	
124	N127A	-6.226516	6.729166	2.180131	0	
125	N128A	-6.226516	-1.270834	2.180131	0	
126	N129A	-3.101349	6.729166	-3.232817	0	
127	N130A	-3.101349	-1.270834	-3.232817	0	
128	N131	-4.351682	6.729166	-1.067176	0	
129	N132	-4.351682	-1.270834	-1.067176	0	
130	N133	-0.760009	0.395833	-6.788136	0	
131	N134	-6.010009	0.395833	2.305131	0	
132	N135	-2.884843	0.395833	-3.107817	0	
133	N136	-4.135176	0.395833	-0.942176	0	
134	N137	-6.010009	3.895833	2.305131	0	
135	N138	-2.884843	3.895833	-3.107817	0	
136	N139	-4.135176	3.895833	-0.942176	0	
137	N140	-0.976516	3.895833	-6.913136	0	
138	N141	-0.976516	0.395833	-6.913136	0	
139	N142	-6.226516	0.395833	2.180131	0	
140	N143	-3.101349	0.395833	-3.232817	0	
141	N144A	-4.351682	0.395833	-1.067176	0	
142	N145A	-6.226516	3.895833	2.180131	0	
143	N146A	-3.101349	3.895833	-3.232817	0	
144	N147A	-4.351682	3.895833	-1.067176	0	

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design ...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Footrails	PIPE_3.0	Beam	Pipe	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
2	Grating Angles	L2x2x3	Beam	Single Angle	A36 Gr.36	Typical	.722	.271	.271	.009
3	Handrails	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
4	Standoff Arm	HSS4X4X4	Beam	SquareTube	A500 Gr.46	Typical	3.37	7.8	7.8	12.8
5	Plan Bracing	HSS4X4X4	Beam	SquareTube	A500 Gr.46	Typical	3.37	7.8	7.8	12.8
6	Kickers	LL2.5x2.5x3x3	Beam	Double Angle (3/8 ...	A36 Gr.36	Typical	1.8	2.46	1.07	.023
7	Mount Pipes	PIPE_2.5	Beam	Pipe	A53 Gr.B	Typical	1.61	1.45	1.45	2.89
8	Footrail Connection Pl...	PL1/2x6	Beam	RECT	A36 Gr.36	Typical	3	.063	9	.237
9	Plan Bracing Connect...	PL3/8x6	Beam	RECT	A36 Gr.36	Typical	2.25	.026	6.75	.101
10	Handrail Corner Braces	L2.5x2.5x4	Beam	Single Angle	A36 Gr.36	Typical	1.19	.692	.692	.026

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N7	N5			Footrail Conne...	Beam	RECT	A36 Gr.36	Typical
2	M2	N7	N6			Footrail Conne...	Beam	RECT	A36 Gr.36	Typical
3	M3	N3	N1			Plan Bracing C...	Beam	RECT	A36 Gr.36	Typical
4	M4	N1	N50			Plan Bracing C...	Beam	RECT	A36 Gr.36	Typical
5	M5	N4	N2		90	Plan Bracing C...	Beam	RECT	A36 Gr.36	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
6	M6	N2	N43		90	Plan Bracing C...	Beam	RECT	A36 Gr.36	Typical
7	M7	N7	N9			Grating Angles	Beam	Single Angle	A36 Gr.36	Typical
8	M8	N7	N8		270	Grating Angles	Beam	Single Angle	A36 Gr.36	Typical
9	M9	N5	N48			Footrail Conne...	Beam	RECT	A36 Gr.36	Typical
10	M10	N6	N45			Footrail Conne...	Beam	RECT	A36 Gr.36	Typical
11	M11	N7	N57			Standoff Arm	Beam	SquareTube	A500 Gr.46	Typical
12	M12	N3	N10			Plan Bracing	Beam	SquareTube	A500 Gr.46	Typical
13	M13	N10	N4			Plan Bracing	Beam	SquareTube	A500 Gr.46	Typical
14	M14	N17	N15			Footrail Conne...	Beam	RECT	A36 Gr.36	Typical
15	M15	N17	N16			Footrail Conne...	Beam	RECT	A36 Gr.36	Typical
16	M16	N13	N11			Plan Bracing C...	Beam	RECT	A36 Gr.36	Typical
17	M17	N11	N34			Plan Bracing C...	Beam	RECT	A36 Gr.36	Typical
18	M18	N14	N12			Plan Bracing C...	Beam	RECT	A36 Gr.36	Typical
19	M19	N12	N51			Plan Bracing C...	Beam	RECT	A36 Gr.36	Typical
20	M20	N17	N19			Grating Angles	Beam	Single Angle	A36 Gr.36	Typical
21	M21	N17	N18		270	Grating Angles	Beam	Single Angle	A36 Gr.36	Typical
22	M22	N15	N32			Footrail Conne...	Beam	RECT	A36 Gr.36	Typical
23	M23	N16	N53			Footrail Conne...	Beam	RECT	A36 Gr.36	Typical
24	M24	N17	N55			Standoff Arm	Beam	SquareTube	A500 Gr.46	Typical
25	M25	N13	N20			Plan Bracing	Beam	SquareTube	A500 Gr.46	Typical
26	M26	N20	N14			Plan Bracing	Beam	SquareTube	A500 Gr.46	Typical
27	M27	N27	N25			Footrail Conne...	Beam	RECT	A36 Gr.36	Typical
28	M28	N27	N26			Footrail Conne...	Beam	RECT	A36 Gr.36	Typical
29	M29	N23	N21			Plan Bracing C...	Beam	RECT	A36 Gr.36	Typical
30	M30	N21	N42			Plan Bracing C...	Beam	RECT	A36 Gr.36	Typical
31	M31	N24	N22			Plan Bracing C...	Beam	RECT	A36 Gr.36	Typical
32	M32	N22	N35			Plan Bracing C...	Beam	RECT	A36 Gr.36	Typical
33	M33	N27	N29			Grating Angles	Beam	Single Angle	A36 Gr.36	Typical
34	M34	N27	N28		270	Grating Angles	Beam	Single Angle	A36 Gr.36	Typical
35	M35	N25	N40			Footrail Conne...	Beam	RECT	A36 Gr.36	Typical
36	M36	N26	N37			Footrail Conne...	Beam	RECT	A36 Gr.36	Typical
37	M37	N27	N56			Standoff Arm	Beam	SquareTube	A500 Gr.46	Typical
38	M38	N23	N30			Plan Bracing	Beam	SquareTube	A500 Gr.46	Typical
39	M39	N30	N24			Plan Bracing	Beam	SquareTube	A500 Gr.46	Typical
40	M40	N119	N120			Footrails	Beam	Pipe	A53 Gr.B	Typical
41	M41	N122	N123			Footrails	Beam	Pipe	A53 Gr.B	Typical
42	M42	NP4	NP1			Footrails	Beam	Pipe	A53 Gr.B	Typical
43	M140	N145	N148			Kickers	Beam	Double Angle (...	A36 Gr.36	Typical
44	M154	N158	N161			Handrails	Beam	Pipe	A53 Gr.B	Typical
45	M155	N120A	N121			Handrails	Beam	Pipe	A53 Gr.B	Typical
46	M156	N123A	N124			Handrails	Beam	Pipe	A53 Gr.B	Typical
47	M157	N163	N164		180	Handrail Corne...	Beam	Single Angle	A36 Gr.36	Typical
48	M158	N165	N166		180	Handrail Corne...	Beam	Single Angle	A36 Gr.36	Typical
49	M159	N167	N162		180	Handrail Corne...	Beam	Single Angle	A36 Gr.36	Typical
50	MP4A	N72	N73			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
51	MP1A	N74	N75			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
52	MP3A	N76	N77			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
53	MP2A	N78	N79A			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
54	M62	N119A	N120B			Kickers	Beam	Double Angle (...	A36 Gr.36	Typical
55	M63	N121A	N122A			Kickers	Beam	Double Angle (...	A36 Gr.36	Typical
56	M56	N123B	N71			RIGID	None	None	RIGID	Typical
57	M57	N124A	N104			RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
58	M58	N126	N106			RIGID	None	None	RIGID	Typical
59	M59	N129	N109			RIGID	None	None	RIGID	Typical
60	M60	N130	N110			RIGID	None	None	RIGID	Typical
61	M61	N107	N127			RIGID	None	None	RIGID	Typical
62	M62A	N125	N105			RIGID	None	None	RIGID	Typical
63	M63A	N128	N108			RIGID	None	None	RIGID	Typical
64	MP4C	N101	N102			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
65	MP1C	N103	N104A			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
66	MP3C	N105A	N106A			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
67	MP2C	N107A	N108A			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
68	M68	N116	N100			RIGID	None	None	RIGID	Typical
69	M69	N117	N109A			RIGID	None	None	RIGID	Typical
70	M70	N119B	N111			RIGID	None	None	RIGID	Typical
71	M71	N122B	N114			RIGID	None	None	RIGID	Typical
72	M72	N123C	N115			RIGID	None	None	RIGID	Typical
73	M73	N112A	N120C			RIGID	None	None	RIGID	Typical
74	M74	N118	N110A			RIGID	None	None	RIGID	Typical
75	M75	N121B	N112			RIGID	None	None	RIGID	Typical
76	MP4B	N125A	N126A			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
77	MP1B	N127A	N128A			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
78	MP3B	N129A	N130A			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
79	MP2B	N131	N132			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
80	M80	N140	N124B			RIGID	None	None	RIGID	Typical
81	M81	N141	N133			RIGID	None	None	RIGID	Typical
82	M82	N143	N135			RIGID	None	None	RIGID	Typical
83	M83	N146A	N138			RIGID	None	None	RIGID	Typical
84	M84	N147A	N139			RIGID	None	None	RIGID	Typical
85	M85	N136	N144A			RIGID	None	None	RIGID	Typical
86	M86	N142	N134			RIGID	None	None	RIGID	Typical
87	M87	N145A	N137			RIGID	None	None	RIGID	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						Yes				None
2	M2						Yes				None
3	M3						Yes				None
4	M4		BenPIN				Yes				None
5	M5						Yes				None
6	M6		BenPIN				Yes				None
7	M7						Yes				None
8	M8						Yes				None
9	M9		BenPIN				Yes				None
10	M10		BenPIN				Yes				None
11	M11						Yes				None
12	M12						Yes				None
13	M13						Yes				None
14	M14						Yes				None
15	M15						Yes				None
16	M16						Yes				None
17	M17		BenPIN				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		BenPIN				Yes				None
20	M20						Yes				None
21	M21						Yes				None
22	M22		BenPIN				Yes				None
23	M23		BenPIN				Yes				None
24	M24						Yes				None
25	M25						Yes				None
26	M26						Yes				None
27	M27						Yes				None
28	M28						Yes				None
29	M29						Yes				None
30	M30		BenPIN				Yes				None
31	M31						Yes				None
32	M32		BenPIN				Yes				None
33	M33						Yes				None
34	M34						Yes				None
35	M35		BenPIN				Yes				None
36	M36		BenPIN				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	M140	BenPIN	BenPIN				Yes				None
44	M154						Yes				None
45	M155						Yes				None
46	M156						Yes				None
47	M157						Yes				None
48	M158						Yes				None
49	M159						Yes				None
50	MP4A						Yes				None
51	MP1A						Yes				None
52	MP3A						Yes				None
53	MP2A						Yes				None
54	M62	BenPIN	BenPIN				Yes				None
55	M63	BenPIN	BenPIN				Yes				None
56	M56						Yes	** NA **			None
57	M57						Yes	** NA **			None
58	M58						Yes	** NA **			None
59	M59						Yes	** NA **			None
60	M60						Yes	** NA **			None
61	M61						Yes	** NA **			None
62	M62A						Yes	** NA **			None
63	M63A						Yes	** NA **			None
64	MP4C						Yes				None
65	MP1C						Yes				None
66	MP3C						Yes				None
67	MP2C						Yes				None
68	M68						Yes	** NA **			None
69	M69						Yes	** NA **			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...
70	M70						Yes	** NA **			None
71	M71						Yes	** NA **			None
72	M72						Yes	** NA **			None
73	M73						Yes	** NA **			None
74	M74						Yes	** NA **			None
75	M75						Yes	** NA **			None
76	MP4B						Yes				None
77	MP1B						Yes				None
78	MP3B						Yes				None
79	MP2B						Yes				None
80	M80						Yes	** NA **			None
81	M81						Yes	** NA **			None
82	M82						Yes	** NA **			None
83	M83						Yes	** NA **			None
84	M84						Yes	** NA **			None
85	M85						Yes	** NA **			None
86	M86						Yes	** NA **			None
87	M87						Yes	** NA **			None

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (/1E...	Density[k/ft...	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
2	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	58	1.2
3	A992	29000	11154	.3	.65	.49	50	1.1	58	1.2
4	A500 Gr.42	29000	11154	.3	.65	.49	42	1.3	58	1.1
5	A500 Gr.46	29000	11154	.3	.65	.49	46	1.2	58	1.1
6	A53 Gr.B	29000	11154	.3	.65	.49	35	1.5	58	1.2
7	Q235	29000	11154	.3	.65	.49	34	1.5	58	1.2
8	J429-Gr5	29000	11154	.3	.65	.49	92	1.5	120	1.2

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	Footrail Con...	.5			Lbyy			.65	.65		Lateral
2	M2	Footrail Con...	.5			Lbyy			.65	.65		Lateral
3	M3	Plan Bracin...	.167			Lbyy			.65	.65		Lateral
4	M4	Plan Bracin...	.364			Lbyy			.8	.8		Lateral
5	M5	Plan Bracin...	.167			Lbyy			.65	.65		Lateral
6	M6	Plan Bracin...	.364			Lbyy			.8	.8		Lateral
7	M7	Grating Ang...	4.359			Lbyy			.65	.65		Lateral
8	M8	Grating Ang...	4.359			Lbyy			.65	.65		Lateral
9	M9	Footrail Con...	.289			Lbyy			.8	.8		Lateral
10	M10	Footrail Con...	.289			Lbyy			.8	.8		Lateral
11	M11	Standoff Arm	5.185			Lbyy			2.1	2.1		Lateral
12	M12	Plan Bracing	2.583			Lbyy			.65	.65		Lateral
13	M13	Plan Bracing	2.583			Lbyy			.65	.65		Lateral
14	M14	Footrail Con...	.5			Lbyy			.65	.65		Lateral
15	M15	Footrail Con...	.5			Lbyy			.65	.65		Lateral
16	M16	Plan Bracin...	.167			Lbyy			.65	.65		Lateral
17	M17	Plan Bracin...	.36			Lbyy			.8	.8		Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[ft]	Lcomp bot[ft]	L-torqu...	Kyy	Kzz	Cb	Function
18	M18	Plan Bracin...	.167			Lbyy			.65	.65		Lateral
19	M19	Plan Bracin...	.364			Lbyy			.8	.8		Lateral
20	M20	Grating Ang...	4.359			Lbyy			.65	.65		Lateral
21	M21	Grating Ang...	4.359			Lbyy			.65	.65		Lateral
22	M22	Footrail Con...	.286			Lbyy			.8	.8		Lateral
23	M23	Footrail Con...	.289			Lbyy			.8	.8		Lateral
24	M24	Standoff Arm	5.188			Lbyy			2.1	2.1		Lateral
25	M25	Plan Bracing	2.583			Lbyy			.65	.65		Lateral
26	M26	Plan Bracing	2.584			Lbyy			.65	.65		Lateral
27	M27	Footrail Con...	.499			Lbyy			.65	.65		Lateral
28	M28	Footrail Con...	.501			Lbyy			.65	.65		Lateral
29	M29	Plan Bracin...	.167			Lbyy			.65	.65		Lateral
30	M30	Plan Bracin...	.364			Lbyy			.8	.8		Lateral
31	M31	Plan Bracin...	.167			Lbyy			.65	.65		Lateral
32	M32	Plan Bracin...	.36			Lbyy			.8	.8		Lateral
33	M33	Grating Ang...	4.36			Lbyy			.65	.65		Lateral
34	M34	Grating Ang...	4.359			Lbyy			.65	.65		Lateral
35	M35	Footrail Con...	.289			Lbyy			.8	.8		Lateral
36	M36	Footrail Con...	.286			Lbyy			.8	.8		Lateral
37	M37	Standoff Arm	5.188			Lbyy			2.1	2.1		Lateral
38	M38	Plan Bracing	2.582			Lbyy			.65	.65		Lateral
39	M39	Plan Bracing	2.584			Lbyy			.65	.65		Lateral
40	M40	Footrails	12.5			Lbyy			1	1		Lateral
41	M41	Footrails	12.5			Lbyy			1	1		Lateral
42	M42	Footrails	12.5			Lbyy			1	1		Lateral
43	M140	Kickers	4.016			Lbyy			1	1		Lateral
44	M154	Handrails	12.5			Lbyy			1	1		Lateral
45	M155	Handrails	12.5			Lbyy			1	1		Lateral
46	M156	Handrails	12.5			Lbyy			1	1		Lateral
47	M157	Handrail Co...	1.503			Lbyy			.65	.65		Lateral
48	M158	Handrail Co...	1.501			Lbyy			.65	.65		Lateral
49	M159	Handrail Co...	1.501			Lbyy			.65	.65		Lateral
50	MP4A	Mount Pipes	8			Lbyy			1	1		Lateral
51	MP1A	Mount Pipes	8			Lbyy			1	1		Lateral
52	MP3A	Mount Pipes	8			Lbyy			1	1		Lateral
53	MP2A	Mount Pipes	8			Lbyy			1	1		Lateral
54	M62	Kickers	4.016			Lbyy			1	1		Lateral
55	M63	Kickers	4.016			Lbyy			1	1		Lateral
56	MP4C	Mount Pipes	8			Lbyy			1	1		Lateral
57	MP1C	Mount Pipes	8			Lbyy			1	1		Lateral
58	MP3C	Mount Pipes	8			Lbyy			1	1		Lateral
59	MP2C	Mount Pipes	8			Lbyy			1	1		Lateral
60	MP4B	Mount Pipes	8			Lbyy			1	1		Lateral
61	MP1B	Mount Pipes	8			Lbyy			1	1		Lateral
62	MP3B	Mount Pipes	8			Lbyy			1	1		Lateral
63	MP2B	Mount Pipes	8			Lbyy			1	1		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	CG						
2	N56	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	N10						
4	N55	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
5	N57	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
6	N145	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
7	N119A	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
8	N121A	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	N56	max	1059.541	4	540.551	2	4662.532	1	.091	2	1.601	3	.541	3
2		min	-1068.735	3	-3798.154	5	-3002.66	2	-.322	5	-1.628	4	-.831	4
3	N55	max	2586.839	4	499.289	4	1135.763	1	.593	3	.547	2	.139	1
4		min	-3957.923	3	-3721.356	7	-1946.975	2	-.509	4	-.58	1	-.349	10
5	N57	max	3973.781	4	344.441	3	1616.245	1	.393	1	1.3	1	.931	6
6		min	-2535.178	3	-4229.541	8	-2448.563	2	-.71	2	-1.33	2	-.245	1
7	N145	max	34.969	4	8193.008	5	217.476	2	0	4	0	3	0	4
8		min	-36.679	3	-641.388	2	-3107.725	5	0	3	0	4	0	3
9	N119A	max	102.595	3	8178.476	8	1559.747	8	0	4	0	7	0	7
10		min	-2683.16	8	-398.938	3	-79.4	3	0	7	0	4	0	4
11	N121A	max	2590.039	7	7889.469	7	1499.285	7	0	3	0	3	0	3
12		min	-156.806	4	-561.679	4	-110.301	4	0	4	0	4	0	4
13	Totals:	max	5903.56	4	11395.997	6	5831.634	1						
14		min	-5903.687	3	3531.452	1	-5831.597	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	477.763	4	796.057	6	214.205	3	.163	8	.095	4	.574	6
2			min	-376.142	3	-302.416	1	-227.613	4	-.002	3	-.1	3	-.289	1
3		2	max	475.401	4	791.671	6	210.114	3	.163	8	.067	4	.479	2
4			min	-373.78	3	-304.051	1	-223.523	4	-.002	3	-.073	3	-.251	1
5		3	max	473.039	4	787.075	6	206.023	3	.163	8	.051	2	.391	2
6			min	-371.419	3	-305.747	1	-219.432	4	-.002	3	-.059	1	-.213	1
7		4	max	470.677	4	782.479	6	201.932	3	.163	8	.048	2	.303	2
8			min	-369.057	3	-307.443	1	-215.341	4	-.002	3	-.059	1	-.175	1
9		5	max	468.315	4	777.883	6	197.841	3	.163	8	.046	2	.215	2
10			min	-366.695	3	-309.138	1	-211.25	4	-.002	3	-.058	1	-.136	1
11	M2	1	max	198.533	2	437.554	4	152.51	4	.051	1	.086	3	.367	4
12			min	-148.849	1	-249.322	3	-140.047	3	-.133	6	-.089	4	-.256	3
13		2	max	196.171	2	435.919	4	148.419	4	.051	1	.069	3	.312	4
14			min	-146.487	1	-250.957	3	-135.956	3	-.133	6	-.07	4	-.224	3
15		3	max	193.809	2	434.223	4	144.328	4	.051	1	.052	3	.258	4
16			min	-144.125	1	-252.653	3	-131.865	3	-.133	6	-.052	4	-.193	3
17		4	max	191.447	2	432.528	4	140.237	4	.051	1	.036	3	.204	4
18			min	-141.763	1	-254.348	3	-127.774	3	-.133	6	-.034	4	-.161	3
19		5	max	189.085	2	430.832	4	136.146	4	.051	1	.02	3	.15	4
20			min	-139.401	1	-256.044	3	-123.683	3	-.133	6	-.017	4	-.129	3
21	M3	1	max	1253.688	1	1142.994	8	172.143	1	.054	2	.041	4	.595	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
22			min	-1164.109	2	-159.824	3	-149.624	2	-.109	5	-.049	3	-.085	3
23		2	max	1252.901	1	1141.79	8	173.506	1	.054	2	.035	4	.547	8
24			min	-1163.322	2	-160.207	3	-150.988	2	-.109	5	-.043	3	-.079	3
25		3	max	1252.114	1	1140.585	8	174.87	1	.054	2	.03	4	.499	8
26			min	-1162.535	2	-160.59	3	-152.351	2	-.109	5	-.036	3	-.072	3
27		4	max	1251.326	1	1139.38	8	176.233	1	.054	2	.024	4	.452	8
28			min	-1161.747	2	-160.972	3	-153.715	2	-.109	5	-.03	3	-.065	3
29		5	max	1250.539	1	1138.176	8	177.597	1	.054	2	.019	4	.404	8
30			min	-1160.96	2	-161.355	3	-155.078	2	-.109	5	-.024	3	-.059	3
31	M4	1	max	1262.418	1	1138.191	8	66.23	3	.073	2	.019	4	.412	8
32			min	-1171.064	2	-161.367	3	-52.955	4	-.097	1	-.024	3	-.059	3
33		2	max	1260.96	1	1135.339	8	65.592	3	.073	2	.014	4	.309	8
34			min	-1169.606	2	-162.267	3	-52.318	4	-.097	1	-.018	3	-.045	3
35		3	max	1259.503	1	1132.434	8	64.954	3	.073	2	.009	4	.205	8
36			min	-1168.149	2	-163.182	3	-51.68	4	-.097	1	-.012	3	-.03	3
37		4	max	1258.045	1	1129.528	8	64.317	3	.073	2	.005	4	.103	8
38			min	-1166.691	2	-164.097	3	-51.043	4	-.097	1	-.006	3	-.015	3
39		5	max	1256.588	1	1126.862	8	63.679	3	.073	2	0	11	0	11
40			min	-1165.234	2	-164.943	3	-50.405	4	-.097	1	0	1	0	1
41	M5	1	max	1358.981	3	640.784	4	32.229	3	.093	2	.445	8	.286	4
42			min	-1359.12	4	-611.326	3	-854.246	8	-.058	1	-.028	3	-.27	3
43		2	max	1358.194	3	641.239	4	32.612	3	.093	2	.409	8	.259	4
44			min	-1358.333	4	-611.78	3	-853.042	8	-.058	1	-.027	3	-.245	3
45		3	max	1357.407	3	641.693	4	32.994	3	.093	2	.374	8	.232	4
46			min	-1357.546	4	-612.235	3	-851.837	8	-.058	1	-.026	3	-.219	3
47		4	max	1356.62	3	642.148	4	33.377	3	.093	2	.338	8	.205	4
48			min	-1356.759	4	-612.69	3	-850.632	8	-.058	1	-.024	3	-.194	3
49		5	max	1355.832	3	642.602	4	33.76	3	.093	2	.303	8	.179	4
50			min	-1355.971	4	-613.144	3	-849.428	8	-.058	1	-.023	3	-.168	3
51	M6	1	max	1415.243	3	488.019	4	34.694	3	.086	3	.305	8	.179	4
52			min	-1419.165	4	-459.058	3	-842.856	8	-.071	4	-.013	3	-.168	3
53		2	max	1413.348	3	489.415	4	35.599	3	.086	3	.228	8	.134	4
54			min	-1417.27	4	-460.454	3	-839.985	8	-.071	4	-.01	3	-.126	3
55		3	max	1411.453	3	490.81	4	36.514	3	.086	3	.152	8	.09	4
56			min	-1415.375	4	-461.849	3	-837.079	8	-.071	4	-.007	3	-.084	3
57		4	max	1409.558	3	492.206	4	37.429	3	.086	3	.076	8	.045	4
58			min	-1413.479	4	-463.245	3	-834.174	8	-.071	4	-.003	3	-.042	3
59		5	max	1407.663	3	493.602	4	38.27	3	.086	3	0	11	0	11
60			min	-1411.584	4	-464.641	3	-831.528	8	-.071	4	0	1	0	1
61	M7	1	max	1883.092	4	57.537	6	19.177	4	0	2	-.003	1	.099	6
62			min	-1864.352	3	1.727	1	-18.287	3	0	1	-.047	8	-.035	1
63		2	max	1876.228	4	33.638	6	12.563	1	0	2	.008	1	.061	6
64			min	-1857.489	3	-3.889	1	-11.692	2	0	1	-.014	2	-.023	1
65		3	max	1869.365	4	10.973	2	8.6	1	0	2	.01	1	.046	6
66			min	-1850.625	3	-11.77	1	-7.729	2	0	1	-.01	2	-.009	1
67		4	max	1862.501	4	1.548	2	17.378	3	0	2	.009	3	.06	8
68			min	-1843.761	3	-41.213	5	-16.488	4	0	1	-.016	4	.008	3
69		5	max	1855.637	4	-5.722	2	29.266	3	0	2	.019	3	.101	7
70			min	-1836.897	3	-70.857	5	-28.377	4	0	1	-.063	8	.024	4
71	M8	1	max	1539.379	2	37.362	2	48.695	5	0	2	0	3	.033	2
72			min	-1639.422	1	-32.606	1	-4.038	2	0	1	-.04	8	-.063	8
73		2	max	1539.379	2	21.511	2	24.8	5	0	2	.008	3	.025	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
74			min	-1639.422	1	-16.755	1	-9.653	2	0	1	-.011	4	-.043	4
75		3	max	1539.379	2	9.981	9	11.049	1	0	2	.01	3	.013	3
76			min	-1639.422	1	-4.473	4	-17.528	2	0	1	-.008	4	-.037	8
77		4	max	1539.379	2	14.947	1	1.633	1	0	2	.005	1	-.005	1
78			min	-1639.422	1	-10.191	2	-51.401	6	0	1	-.013	8	-.063	6
79		5	max	1539.379	2	30.799	1	-5.637	1	0	2	.021	1	-.025	1
80			min	-1639.422	1	-26.042	2	-81.043	6	0	1	-.066	6	-.114	8
81	M9	1	max	511.244	4	777.604	6	206.094	1	.118	1	.046	2	.224	6
82			min	-416.718	3	-308.613	1	-163.443	2	-.078	2	-.058	1	-.09	1
83		2	max	509.87	4	775.274	6	203.738	1	.118	1	.034	2	.168	6
84			min	-415.344	3	-309.5	1	-161.087	2	-.078	2	-.043	1	-.067	1
85		3	max	508.496	4	772.944	6	201.382	1	.118	1	.023	2	.112	6
86			min	-413.97	3	-310.386	1	-158.731	2	-.078	2	-.029	1	-.045	1
87		4	max	507.122	4	770.615	6	199.027	1	.118	1	.011	2	.056	6
88			min	-412.595	3	-311.272	1	-156.376	2	-.078	2	-.014	1	-.023	1
89		5	max	505.747	4	768.285	6	196.671	1	.118	1	0	11	0	11
90			min	-411.221	3	-312.159	1	-154.02	2	-.078	2	0	1	0	1
91	M10	1	max	207.591	2	430.367	4	65.367	4	.102	1	.02	3	.124	4
92			min	-157.365	1	-256.151	3	-75.745	3	-.148	2	-.017	4	-.075	3
93		2	max	207.576	2	429.481	4	62.209	4	.102	1	.015	3	.093	4
94			min	-157.351	1	-257.037	3	-72.588	3	-.148	2	-.012	4	-.056	3
95		3	max	207.562	2	428.595	4	59.052	4	.102	1	.01	3	.062	4
96			min	-157.336	1	-257.924	3	-69.431	3	-.148	2	-.008	4	-.037	3
97		4	max	207.548	2	427.708	4	55.895	4	.102	1	.005	3	.031	4
98			min	-157.322	1	-258.81	3	-66.273	3	-.148	2	-.004	4	-.019	3
99		5	max	207.534	2	426.822	4	52.737	4	.102	1	0	11	0	11
100			min	-157.308	1	-259.696	3	-63.116	3	-.148	2	0	1	0	1
101	M11	1	max	2939.384	3	108.523	3	32.668	4	.657	2	.088	1	-.027	1
102			min	-2897.319	4	-1196.427	8	-29.008	3	-.502	1	-.091	2	-.403	6
103		2	max	2955.713	3	85.92	3	37.607	2	.657	2	.062	1	1.194	8
104			min	-2913.648	4	-1258.61	8	-33.868	1	-.502	1	-.06	2	-.201	3
105		3	max	2972.041	3	60.222	3	65.89	2	.657	2	.079	4	2.873	8
106			min	-2929.977	4	-1333.102	8	-62.151	1	-.502	1	-.073	3	-.296	3
107		4	max	2902.096	3	4280.362	8	928.691	2	1.038	6	.45	4	5.031	8
108			min	-4562.677	4	-326.094	3	-940.948	1	-.463	1	-.405	3	-.386	3
109		5	max	2918.425	3	4231.845	8	956.973	2	1.038	6	1.33	2	.049	3
110			min	-4579.005	4	-344.314	3	-969.23	1	-.463	1	-1.3	1	-.486	8
111	M12	1	max	150.209	2	159.482	3	1253.677	1	.085	3	.049	3	.054	2
112			min	-171.195	1	-1143.319	8	-1164.105	2	-.595	8	-.041	4	-.109	5
113		2	max	684.242	1	123.202	3	161.913	4	.062	3	.485	1	.613	8
114			min	-649.23	2	-1243.156	8	-155.956	3	-.699	8	-.464	2	-.098	3
115		3	max	692.377	1	112.672	3	147.822	4	.062	3	.392	1	1.425	8
116			min	-657.365	2	-1272.372	8	-141.865	3	-.699	8	-.368	2	-.174	3
117		4	max	700.512	1	101.423	3	142.13	2	.062	3	.302	1	2.257	8
118			min	-665.5	2	-1304.088	8	-136.375	1	-.699	8	-.275	2	-.243	3
119		5	max	708.648	1	91.583	3	137.433	2	.062	3	.216	1	3.109	8
120			min	-673.636	2	-1330.908	8	-131.678	1	-.699	8	-.184	2	-.305	3
121	M13	1	max	366.275	3	1038.324	8	161.087	3	.543	8	.38	3	2.419	8
122			min	-342.867	4	22.077	3	-177.032	4	-.02	3	-.382	4	-.091	3
123		2	max	358.14	3	1011.529	8	175.177	3	.543	8	.489	3	1.756	8
124			min	-334.732	4	12.244	3	-191.122	4	-.02	3	-.501	4	-.102	3
125		3	max	350.004	3	979.865	8	189.268	3	.543	8	.606	3	1.113	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
126			min	-326.596	4	1.009	3	-205.213	4	-.02	3	-.629	4	-.106	3
127		4	max	341.869	3	950.675	8	203.359	3	.543	8	.733	3	.49	8
128			min	-318.461	4	-9.513	3	-219.304	4	-.02	3	-.766	4	-.103	3
129		5	max	643.165	4	859.201	8	1360.213	4	.445	8	.27	3	.058	1
130			min	-609.067	3	-30.933	3	-1357.998	3	-.028	3	-.286	4	-.093	2
131	M14	1	max	499.686	2	768.472	7	159.574	1	.151	6	.115	3	.556	7
132			min	-397.508	1	-256.43	4	-174.369	2	-.017	1	-.12	4	-.242	4
133		2	max	497.325	2	764.088	7	158.211	1	.151	6	.094	3	.46	7
134			min	-395.148	1	-258.065	4	-173.006	2	-.017	1	-.101	4	-.21	4
135		3	max	494.965	2	759.506	7	156.848	1	.151	6	.073	3	.365	7
136			min	-392.788	1	-259.756	4	-171.644	2	-.017	1	-.081	4	-.178	4
137		4	max	492.605	2	754.925	7	155.486	1	.151	6	.053	3	.274	3
138			min	-390.427	1	-261.447	4	-170.281	2	-.017	1	-.063	4	-.145	4
139		5	max	490.244	2	750.343	7	154.123	1	.151	6	.033	3	.193	3
140			min	-388.067	1	-263.138	4	-168.918	2	-.017	1	-.045	4	-.112	4
141	M15	1	max	333.894	3	501.276	10	190.501	3	.068	2	.083	1	.354	10
142			min	-282.663	4	-247.56	1	-171.53	4	-.11	1	-.09	2	-.274	1
143		2	max	331.53	3	499.636	10	186.407	3	.068	2	.068	1	.291	10
144			min	-280.3	4	-249.2	1	-167.436	4	-.11	1	-.072	2	-.242	1
145		3	max	329.167	3	497.944	10	182.314	3	.068	2	.053	1	.229	10
146			min	-277.937	4	-250.892	1	-163.342	4	-.11	1	-.055	2	-.211	1
147		4	max	326.804	3	496.253	10	178.22	3	.068	2	.038	1	.178	2
148			min	-275.573	4	-252.583	1	-159.249	4	-.11	1	-.038	2	-.18	1
149		5	max	324.44	3	494.561	10	174.127	3	.068	2	.024	1	.14	2
150			min	-273.21	4	-254.275	1	-155.155	4	-.11	1	-.021	2	-.148	1
151	M16	1	max	1369.626	4	1140.209	7	274.597	4	.045	1	.083	3	.593	7
152			min	-1283.887	3	-90.545	4	-255.423	3	-.094	6	-.092	4	-.058	4
153		2	max	1368.839	4	1139.004	7	275.051	4	.045	1	.073	3	.546	7
154			min	-1283.1	3	-90.928	4	-255.877	3	-.094	6	-.081	4	-.055	4
155		3	max	1368.051	4	1137.8	7	275.506	4	.045	1	.062	3	.498	7
156			min	-1282.312	3	-91.311	4	-256.332	3	-.094	6	-.07	4	-.051	4
157		4	max	1367.264	4	1136.595	7	275.961	4	.045	1	.051	3	.451	7
158			min	-1281.525	3	-91.694	4	-256.786	3	-.094	6	-.058	4	-.047	4
159		5	max	1366.477	4	1135.39	7	276.415	4	.045	1	.041	3	.403	7
160			min	-1280.738	3	-92.077	4	-257.241	3	-.094	6	-.047	4	-.043	4
161	M17	1	max	1388.248	4	1135.431	7	126.711	4	.068	3	.041	3	.406	7
162			min	-1301.769	3	-91.647	4	-110.541	3	-.087	4	-.047	4	-.034	4
163		2	max	1386.374	4	1132.612	7	128.091	4	.068	3	.031	3	.304	7
164			min	-1299.895	3	-92.536	4	-111.921	3	-.087	4	-.035	4	-.025	4
165		3	max	1384.5	4	1129.739	7	129.471	4	.068	3	.021	3	.203	7
166			min	-1298.021	3	-93.441	4	-113.301	3	-.087	4	-.024	4	-.017	4
167		4	max	1382.627	4	1126.867	7	130.851	4	.068	3	.01	3	.101	7
168			min	-1296.147	3	-94.346	4	-114.681	3	-.087	4	-.012	4	-.009	4
169		5	max	1380.753	4	1124.221	7	132.231	4	.068	3	0	11	0	11
170			min	-1294.274	3	-95.185	4	-116.061	3	-.087	4	0	1	0	1
171	M18	1	max	940.543	1	1307.178	7	193.065	2	.111	1	.062	1	.683	7
172			min	-936.284	2	-36.865	4	-178.752	1	-.066	2	-.068	2	-.019	4
173		2	max	939.756	1	1305.974	7	194.429	2	.111	1	.055	1	.628	7
174			min	-935.496	2	-37.248	4	-180.115	1	-.066	2	-.06	2	-.017	4
175		3	max	938.968	1	1304.769	7	195.793	2	.111	1	.047	1	.574	7
176			min	-934.709	2	-37.631	4	-181.479	1	-.066	2	-.052	2	-.016	4
177		4	max	938.181	1	1303.564	7	197.156	2	.111	1	.039	1	.519	7

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
178			min	-933.922	2	-38.014	4	-182.843	1	-.066	2	-.044	2	-.014	4
179		5	max	937.394	1	1302.359	7	198.52	2	.111	1	.032	1	.465	7
180			min	-933.134	2	-38.397	4	-184.206	1	-.066	2	-.036	2	-.013	4
181	M19	1	max	951.89	1	1302.355	7	91.849	2	.107	1	.032	1	.472	7
182			min	-949.572	2	-38.477	4	-80.758	1	-.091	2	-.036	2	-.015	4
183		2	max	950.432	1	1299.358	7	95.18	2	.107	1	.024	1	.353	7
184			min	-948.115	2	-39.419	4	-84.09	1	-.091	2	-.027	2	-.011	4
185		3	max	948.975	1	1296.36	7	98.511	2	.107	1	.017	1	.235	7
186			min	-946.657	2	-40.36	4	-87.421	1	-.091	2	-.019	2	-.008	4
187		4	max	947.517	1	1293.432	7	101.843	2	.107	1	.008	1	.118	7
188			min	-945.2	2	-41.282	4	-90.753	1	-.091	2	-.009	2	-.004	4
189		5	max	946.06	1	1290.802	7	105.174	2	.107	1	0	11	0	11
190			min	-943.742	2	-42.118	4	-94.084	1	-.091	2	0	1	0	1
191	M20	1	max	1201.543	2	71.527	7	27.691	2	0	7	-.001	4	.127	7
192			min	-1200.583	1	3.339	10	-31.968	1	0	10	-.057	6	-.017	4
193		2	max	1201.543	2	47.99	7	11.84	2	0	7	.007	4	.074	7
194			min	-1200.583	1	-2.173	10	-16.117	1	0	10	-.017	7	-.018	4
195		3	max	1201.543	2	16.107	7	6.611	10	0	7	.01	4	.042	7
196			min	-1200.583	1	-10.087	10	-8.817	7	0	10	-.009	3	-.014	4
197		4	max	1201.543	2	3.651	3	15.585	1	0	7	.006	4	.039	10
198			min	-1200.583	1	-25.936	8	-19.863	2	0	10	-.009	3	-.004	4
199		5	max	1201.543	2	-3.684	3	31.436	1	0	7	.018	1	.064	10
200			min	-1200.583	1	-55.805	8	-35.714	2	0	10	-.051	6	0	2
201	M21	1	max	1632.192	3	22.516	3	50.658	6	0	1	0	1	.039	1
202			min	-1729.712	4	-18.356	4	-1.432	1	0	2	-.037	7	-.06	2
203		2	max	1625.328	3	13.258	1	26.747	6	0	1	.009	1	.024	1
204			min	-1722.848	4	-9.209	2	-7.051	1	0	2	-.01	2	-.04	10
205		3	max	1618.464	3	9.295	1	9.517	2	0	1	.012	5	.007	4
206			min	-1715.984	4	-5.245	2	-14.967	1	0	2	-.005	2	-.034	10
207		4	max	1611.6	3	17.305	4	.071	2	0	1	.009	4	-.003	4
208			min	-1709.12	4	-13.145	3	-50.042	5	0	2	-.013	3	-.048	7
209		5	max	1604.736	3	29.192	4	-7.207	2	0	1	.019	4	-.017	2
210			min	-1702.256	4	-25.032	3	-79.712	5	0	2	-.06	7	-.1	5
211	M22	1	max	509.281	2	749.943	7	162.363	4	.102	2	.033	3	.213	7
212			min	-413.584	1	-262.982	4	-123.223	3	-.072	1	-.045	4	-.076	4
213		2	max	509.267	2	747.64	7	159.242	4	.102	2	.025	3	.16	7
214			min	-413.57	1	-263.858	4	-120.101	3	-.072	1	-.033	4	-.057	4
215		3	max	509.253	2	745.336	7	156.12	4	.102	2	.016	3	.106	7
216			min	-413.556	1	-264.734	4	-116.98	3	-.072	1	-.022	4	-.038	4
217		4	max	509.239	2	743.033	7	152.999	4	.102	2	.008	3	.053	7
218			min	-413.542	1	-265.611	4	-113.858	3	-.072	1	-.011	4	-.019	4
219		5	max	509.225	2	740.729	7	149.877	4	.102	2	0	11	0	11
220			min	-413.528	1	-266.487	4	-110.737	3	-.072	1	0	1	0	1
221	M23	1	max	367.96	3	494.531	10	76.621	2	.128	2	.024	1	.143	10
222			min	-314.276	4	-254.243	1	-86.554	1	-.169	1	-.021	2	-.074	1
223		2	max	366.586	3	493.645	10	74.266	2	.128	2	.018	1	.107	10
224			min	-312.902	4	-255.129	1	-84.198	1	-.169	1	-.015	2	-.056	1
225		3	max	365.212	3	492.758	10	71.91	2	.128	2	.012	1	.071	10
226			min	-311.528	4	-256.016	1	-81.842	1	-.169	1	-.01	2	-.037	1
227		4	max	363.838	3	491.872	10	69.554	2	.128	2	.006	1	.036	10
228			min	-310.153	4	-256.902	1	-79.487	1	-.169	1	-.005	2	-.019	1
229		5	max	362.463	3	490.986	10	67.199	2	.128	2	0	11	0	11

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
230			min	-308.779	4	-257.788	1	-77.131	1	-.169	1	0	1	0	1
231	M24	1	max	2617.048	4	175.323	4	25.015	4	.519	3	.071	2	-.028	4
232			min	-2560.287	3	-985.483	7	-17.856	3	-.283	2	-.084	1	-.362	7
233		2	max	2633.385	4	152.961	4	17.037	1	.519	3	.089	4	.953	7
234			min	-2576.624	3	-1045.771	7	-9.918	2	-.283	2	-.09	3	-.241	4
235		3	max	2649.722	4	126.898	4	45.333	1	.519	3	.102	4	2.356	7
236			min	-2592.961	3	-1121.524	7	-38.215	2	-.283	2	-.096	3	-.424	4
237		4	max	2757.823	4	3771.932	7	548.107	1	.538	3	.598	4	4.525	7
238			min	-4353.412	3	-480.941	4	-556.784	2	-.537	4	-.549	3	-.548	4
239		5	max	2774.159	4	3723.5	7	576.403	1	.538	3	.58	1	.088	4
240			min	-4369.749	3	-499.14	4	-585.081	2	-.537	4	-.547	2	-.335	7
241	M25	1	max	258.994	3	89.647	4	1369.217	4	.058	4	.092	4	.045	1
242			min	-270.438	4	-1141.354	7	-1284.253	3	-.593	7	-.083	3	-.094	6
243		2	max	613.051	4	68.037	4	79.303	3	.052	4	.594	4	.659	7
244			min	-573.923	3	-1242.673	7	-75.947	4	-.689	7	-.571	3	-.138	4
245		3	max	621.185	4	57.514	4	65.214	3	.052	4	.55	4	1.471	7
246			min	-582.057	3	-1271.868	7	-61.858	4	-.689	7	-.524	3	-.179	4
247		4	max	629.319	4	46.291	4	51.125	3	.052	4	.515	4	2.302	7
248			min	-590.191	3	-1303.491	7	-47.769	4	-.689	7	-.487	3	-.213	4
249		5	max	637.453	4	36.468	4	38.491	2	.052	4	.488	4	3.153	7
250			min	-598.326	3	-1330.256	7	-35.315	1	-.689	7	-.458	3	-.239	4
251	M26	1	max	482.819	1	1470.428	7	125.199	4	.744	7	.25	1	3.509	7
252			min	-469.569	2	24.97	4	-127.073	3	-.007	4	-.256	2	.015	4
253		2	max	474.682	1	1443.657	7	139.291	4	.744	7	.294	1	2.568	7
254			min	-461.432	2	15.143	4	-141.166	3	-.007	4	-.301	2	.002	4
255		3	max	466.546	1	1412.052	7	153.384	4	.744	7	.34	1	1.645	7
256			min	-453.296	2	3.926	4	-155.259	3	-.007	4	-.349	2	-.004	4
257		4	max	458.41	1	1382.903	7	167.476	4	.744	7	.389	1	.751	6
258			min	-445.16	2	-6.585	4	-169.351	3	-.007	4	-.401	2	-.022	1
259		5	max	194.619	2	1308.145	7	936.385	2	.683	7	.062	1	.066	2
260			min	-177.354	1	-36.77	4	-940.461	1	-.019	4	-.068	2	-.111	1
261	M27	1	max	545.495	3	752.168	8	254.259	2	.155	7	.14	1	.553	8
262			min	-434.098	4	-204.354	3	-263.363	1	-.016	4	-.146	2	-.229	3
263		2	max	545.495	3	747.786	8	248.815	2	.155	7	.107	1	.459	8
264			min	-434.098	4	-205.987	3	-257.919	1	-.016	4	-.115	2	-.203	3
265		3	max	545.495	3	743.212	8	243.371	2	.155	7	.076	1	.366	8
266			min	-434.098	4	-207.676	3	-252.475	1	-.016	4	-.084	2	-.178	3
267		4	max	545.495	3	738.637	8	237.927	2	.155	7	.044	1	.28	4
268			min	-434.098	4	-209.365	3	-247.031	1	-.016	4	-.054	2	-.152	3
269		5	max	545.495	3	734.063	8	232.483	2	.155	7	.031	4	.206	4
270			min	-434.098	4	-211.053	3	-241.587	1	-.016	4	-.043	3	-.125	3
271	M28	1	max	311.436	1	350.295	3	244.801	1	.087	3	.12	2	.336	3
272			min	-264.739	2	-288.473	4	-227.479	2	-.129	4	-.127	1	-.318	4
273		2	max	311.436	1	348.653	3	239.336	1	.087	3	.092	2	.292	3
274			min	-264.739	2	-290.115	4	-222.014	2	-.129	4	-.097	1	-.282	4
275		3	max	311.436	1	346.958	3	233.871	1	.087	3	.065	2	.249	3
276			min	-264.739	2	-291.81	4	-216.549	2	-.129	4	-.067	1	-.245	4
277		4	max	311.436	1	345.262	3	228.406	1	.087	3	.038	2	.206	3
278			min	-264.739	2	-293.505	4	-211.084	2	-.129	4	-.038	1	-.209	4
279		5	max	311.436	1	343.567	3	222.941	1	.087	3	.012	2	.162	3
280			min	-264.739	2	-295.201	4	-205.62	2	-.129	4	-.01	1	-.172	4
281	M29	1	max	1063.937	2	1351.106	5	294.954	2	.067	4	.104	1	.707	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
282			min	-989.492	1	-86.573	2	-274.992	1	-.117	3	-.114	2	-.052	2
283		2	max	1063.937	2	1349.901	5	294.954	2	.067	4	.093	1	.651	5
284			min	-989.492	1	-86.956	2	-274.992	1	-.117	3	-.102	2	-.048	2
285		3	max	1063.937	2	1348.697	5	294.954	2	.067	4	.081	1	.595	5
286			min	-989.492	1	-87.339	2	-274.992	1	-.117	3	-.09	2	-.045	2
287		4	max	1063.937	2	1347.492	5	294.954	2	.067	4	.07	1	.538	5
288			min	-989.492	1	-87.722	2	-274.992	1	-.117	3	-.077	2	-.041	2
289		5	max	1063.937	2	1346.287	5	294.954	2	.067	4	.058	1	.482	5
290			min	-989.492	1	-88.105	2	-274.992	1	-.117	3	-.065	2	-.037	2
291	M30	1	max	1089.743	2	1346.312	5	178.988	2	.081	4	.058	1	.488	5
292			min	-1014.194	1	-87.99	2	-160.229	1	-.101	3	-.065	2	-.033	2
293		2	max	1089.305	2	1343.46	5	179.037	2	.081	4	.044	1	.365	5
294			min	-1013.757	1	-88.89	2	-160.278	1	-.101	3	-.049	2	-.025	2
295		3	max	1088.867	2	1340.555	5	179.086	2	.081	4	.029	1	.243	5
296			min	-1013.319	1	-89.805	2	-160.326	1	-.101	3	-.033	2	-.017	2
297		4	max	1088.43	2	1337.649	5	179.135	2	.081	4	.015	1	.122	5
298			min	-1012.881	1	-90.72	2	-160.375	1	-.101	3	-.016	2	-.008	2
299		5	max	1087.992	2	1334.982	5	179.183	2	.081	4	0	11	0	11
300			min	-1012.443	1	-91.566	2	-160.424	1	-.101	3	0	1	0	1
301	M31	1	max	956.504	2	1320.737	5	238.79	1	.132	4	.079	2	.686	5
302			min	-955.151	1	-77.425	2	-221.712	2	-.086	3	-.086	1	-.046	2
303		2	max	956.504	2	1319.532	5	238.79	1	.132	4	.07	2	.631	5
304			min	-955.151	1	-77.808	2	-221.712	2	-.086	3	-.076	1	-.043	2
305		3	max	956.504	2	1318.328	5	238.79	1	.132	4	.06	2	.576	5
306			min	-955.151	1	-78.191	2	-221.712	2	-.086	3	-.066	1	-.039	2
307		4	max	956.504	2	1317.123	5	238.79	1	.132	4	.051	2	.521	5
308			min	-955.151	1	-78.574	2	-221.712	2	-.086	3	-.056	1	-.036	2
309		5	max	956.504	2	1315.918	5	238.79	1	.132	4	.042	2	.466	5
310			min	-955.151	1	-78.957	2	-221.712	2	-.086	3	-.046	1	-.033	2
311	M32	1	max	975.017	2	1315.906	5	128.837	1	.116	4	.042	2	.471	5
312			min	-975.949	1	-78.867	2	-116.467	2	-.1	3	-.046	1	-.029	2
313		2	max	974.584	2	1312.943	5	128.885	1	.116	4	.031	2	.353	5
314			min	-975.516	1	-79.798	2	-116.515	2	-.1	3	-.035	1	-.022	2
315		3	max	974.151	2	1309.979	5	128.934	1	.116	4	.021	2	.235	5
316			min	-975.083	1	-80.729	2	-116.563	2	-.1	3	-.023	1	-.015	2
317		4	max	973.718	2	1307.074	5	128.982	1	.116	4	.01	2	.117	5
318			min	-974.65	1	-81.643	2	-116.612	2	-.1	3	-.012	1	-.007	2
319		5	max	973.286	2	1304.474	5	129.03	1	.116	4	0	11	0	11
320			min	-974.218	1	-82.469	2	-116.66	2	-.1	3	0	1	0	1
321	M33	1	max	1350.421	1	73.491	8	29.414	3	0	8	-.006	2	.133	8
322			min	-1344.511	2	3.458	3	-33.754	4	0	3	-.056	5	-.03	3
323		2	max	1343.555	1	49.638	8	17.527	3	0	8	.006	3	.072	8
324			min	-1337.645	2	-2.145	3	-21.867	4	0	3	-.017	8	-.013	3
325		3	max	1336.689	1	18.358	4	5.64	3	0	8	.01	3	.041	5
326			min	-1330.779	2	-10.025	3	-9.98	4	0	3	-.01	4	-.009	2
327		4	max	1329.823	1	8.921	4	7.588	2	0	8	.008	2	.036	5
328			min	-1323.913	2	-27.391	7	-12.015	1	0	3	-.011	1	-.002	2
329		5	max	1322.957	1	1.599	4	13.794	4	0	8	.008	4	.058	6
330			min	-1317.047	2	-57.215	7	-18.134	3	0	3	-.047	7	.011	4
331	M34	1	max	1346.746	1	32.72	4	54.477	7	0	4	-.005	2	.05	4
332			min	-1434.23	2	-29.79	3	-4.779	4	0	3	-.039	5	-.077	3
333		2	max	1339.884	1	20.83	4	30.648	7	0	4	.009	4	.024	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
334			min	-1427.369	2	-17.9	3	-10.375	4	0	3	-.012	3	-.039	3
335		3	max	1333.023	1	8.94	4	14.768	3	0	4	.012	8	.011	2
336			min	-1420.507	2	-6.011	3	-18.244	4	0	3	-.006	3	-.024	1
337		4	max	1326.161	1	11.442	2	5.349	3	0	4	.008	2	-.002	2
338			min	-1413.646	2	-8.541	1	-47.402	8	0	3	-.012	1	-.044	5
339		5	max	1319.3	1	17.769	3	-1.927	3	0	4	.012	3	-.015	3
340			min	-1406.784	2	-14.839	4	-77.065	8	0	3	-.056	8	-.091	8
341	M35	1	max	542.562	3	733.948	8	149.888	3	.145	3	.031	4	.211	8
342			min	-438.304	4	-210.581	3	-108.239	4	-.116	4	-.043	3	-.061	3
343		2	max	541.202	3	731.618	8	149.111	3	.145	3	.023	4	.158	8
344			min	-436.944	4	-211.467	3	-107.462	4	-.116	4	-.032	3	-.046	3
345		3	max	539.842	3	729.288	8	148.334	3	.145	3	.015	4	.105	8
346			min	-435.584	4	-212.353	3	-106.685	4	-.116	4	-.021	3	-.031	3
347		4	max	538.482	3	726.959	8	147.557	3	.145	3	.008	4	.053	8
348			min	-434.224	4	-213.24	3	-105.908	4	-.116	4	-.011	3	-.015	3
349		5	max	537.122	3	724.629	8	146.78	3	.145	3	0	11	0	11
350			min	-432.864	4	-214.126	3	-105.131	4	-.116	4	0	1	0	1
351	M36	1	max	380.716	1	343.873	3	39.751	1	.156	3	.012	2	.098	3
352			min	-332.107	2	-295.031	4	-46.589	2	-.198	4	-.01	1	-.085	4
353		2	max	379.371	1	342.997	3	37.398	1	.156	3	.009	2	.073	3
354			min	-330.762	2	-295.907	4	-44.236	2	-.198	4	-.007	1	-.064	4
355		3	max	378.026	1	342.12	3	35.045	1	.156	3	.006	2	.049	3
356			min	-329.417	2	-296.783	4	-41.883	2	-.198	4	-.005	1	-.043	4
357		4	max	376.682	1	341.244	3	32.691	1	.156	3	.003	2	.024	3
358			min	-328.073	2	-297.66	4	-39.529	2	-.198	4	-.002	1	-.021	4
359		5	max	375.337	1	340.367	3	30.338	1	.156	3	0	11	0	11
360			min	-326.728	2	-298.536	4	-37.176	2	-.198	4	0	1	0	1
361	M37	1	max	2891.781	2	177.547	2	16.998	3	.765	4	.022	3	-.053	3
362			min	-2844.077	1	-992.008	5	-11.588	4	-.527	3	-.031	4	-.365	5
363		2	max	2891.781	2	155.936	2	26.141	4	.765	4	.023	2	.958	5
364			min	-2844.077	1	-1052.294	5	-20.731	3	-.527	3	-.025	1	-.271	2
365		3	max	2891.781	2	130.231	2	63.871	4	.765	4	.037	4	2.37	5
366			min	-2844.077	1	-1126.804	5	-58.46	3	-.527	3	-.032	3	-.457	2
367		4	max	3002.66	2	3849.041	5	1020.883	4	.831	4	.28	4	4.638	5
368			min	-4662.532	1	-522.138	2	-1030.778	3	-.541	3	-.239	3	-.599	2
369		5	max	3002.66	2	3800.499	5	1058.613	4	.831	4	1.628	4	.091	2
370			min	-4662.532	1	-540.368	2	-1068.507	3	-.541	3	-1.601	3	-.322	5
371	M38	1	max	277.688	1	86.047	2	1063.633	2	.052	2	.114	2	.067	4
372			min	-291.78	2	-1352.033	5	-989.759	1	-.707	5	-.104	1	-.117	3
373		2	max	581.896	3	57.671	2	128.154	1	.04	2	.492	2	.772	5
374			min	-558.381	4	-1448.269	5	-128.03	2	-.795	5	-.47	1	-.096	2
375		3	max	581.896	3	47.141	2	109.373	1	.04	2	.416	2	1.716	5
376			min	-558.381	4	-1477.49	5	-109.249	2	-.795	5	-.394	1	-.13	2
377		4	max	581.896	3	35.889	2	105.024	4	.04	2	.351	2	2.681	5
378			min	-558.381	4	-1509.217	5	-104.494	3	-.795	5	-.329	1	-.156	2
379		5	max	581.896	3	26.049	2	105.024	4	.04	2	.299	2	3.664	5
380			min	-558.381	4	-1536.037	5	-104.494	3	-.795	5	-.277	1	-.176	2
381	M39	1	max	448.919	2	1485.247	5	102.873	2	.749	5	.159	2	3.563	5
382			min	-434.732	1	-21.118	2	-107.397	1	-.04	2	-.163	1	-.15	2
383		2	max	448.919	2	1458.409	5	121.668	2	.749	5	.232	2	2.612	5
384			min	-434.732	1	-30.964	2	-126.192	1	-.04	2	-.239	1	-.133	2
385		3	max	448.919	2	1426.692	5	140.463	2	.749	5	.317	2	1.68	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
386			min	-434.732	1	-42.215	2	-144.986	1	-.04	2	-.326	1	-.109	2
387		4	max	448.919	2	1397.512	5	159.257	2	.749	5	.413	2	.768	5
388			min	-434.732	1	-52.735	2	-163.781	1	-.04	2	-.426	1	-.079	2
389		5	max	240.594	1	1322.279	5	955.258	1	.686	5	.079	2	.086	3
390			min	-220.075	2	-76.954	2	-956.416	2	-.046	2	-.086	1	-.132	4
391	M40	1	max	0	11	.006	3	0	3	0	11	0	11	0	11
392			min	0	1	-.002	5	-.001	2	0	1	0	1	0	1
393		2	max	461.223	5	-.607	2	202.976	3	.375	4	.129	2	.404	7
394			min	-22.529	2	-576.178	5	-224.263	4	-.376	3	-.14	1	.054	4
395		3	max	1056.878	3	319.38	2	67.824	1	.084	4	.058	1	.365	7
396			min	-720.71	4	-364.226	1	-70.151	2	-.059	3	-.057	2	-.059	4
397		4	max	480.138	7	669.187	7	148.026	2	.152	1	.222	1	.364	5
398			min	-131.959	4	-149.421	4	-138.433	1	-.11	2	-.204	2	-.071	2
399		5	max	0	11	.002	7	.003	1	0	11	0	11	0	11
400			min	0	1	-.008	1	-.001	3	0	1	0	1	0	1
401	M41	1	max	0	11	.007	1	.001	4	0	11	0	11	0	11
402			min	0	1	-.002	8	-.001	2	0	1	0	1	0	1
403		2	max	444.008	8	31.771	3	158.66	1	.253	2	.131	1	.461	5
404			min	3.32	3	-593.197	8	-177.349	2	-.251	1	-.144	2	.058	3
405		3	max	1307.7	4	349.229	1	98.501	3	.103	2	.097	1	.293	8
406			min	-1026.43	3	-320.203	2	-104.565	4	-.064	1	-.105	2	-.03	3
407		4	max	432.171	1	517.897	5	104.052	3	.199	4	.044	2	.223	2
408			min	-252.388	2	-226.962	2	-91.621	4	-.165	3	-.037	4	-.13	1
409		5	max	0	11	.002	7	0	11	0	11	0	11	0	11
410			min	0	1	-.008	2	-.001	4	0	1	0	1	0	1
411	M42	1	max	0	11	0	11	0	11	0	11	0	11	0	11
412			min	0	1	0	1	0	1	0	1	0	1	0	1
413		2	max	448.215	6	-.591	1	187.59	2	.325	1	.225	4	.4	8
414			min	58.758	4	-555.89	6	-206.73	1	-.326	2	-.239	3	.05	1
415		3	max	1369.256	2	372.796	4	101.108	3	.075	3	.122	2	.362	6
416			min	-1037.427	1	-419.612	3	-103.849	4	-.046	4	-.124	1	-.065	1
417		4	max	478.491	6	642.514	8	161.514	1	.156	2	.251	3	.377	7
418			min	-141.751	1	-58.945	3	-151.737	2	-.111	1	-.234	4	-.116	4
419		5	max	0	11	0	11	0	11	0	11	0	11	0	11
420			min	0	1	0	1	0	1	0	1	0	1	0	1
421	M140	1	max	8762.554	5	37.115	1	36.511	4	0	3	0	11	0	11
422			min	-676.734	2	-26.547	2	-36.511	3	0	4	0	1	0	1
423		2	max	8737.098	5	18.557	1	18.255	4	0	3	.027	4	.02	2
424			min	-689.727	2	-13.273	2	-18.255	3	0	4	-.027	3	-.028	1
425		3	max	8711.642	5	0	11	0	11	0	3	.037	4	.027	2
426			min	-702.72	2	0	1	0	1	0	4	-.037	3	-.037	1
427		4	max	8686.186	5	13.273	2	18.255	3	0	3	.027	4	.02	2
428			min	-715.713	2	-18.557	1	-18.255	4	0	4	-.027	3	-.028	1
429		5	max	8660.73	5	26.547	2	36.511	3	0	3	0	11	0	11
430			min	-728.706	2	-37.115	1	-36.511	4	0	4	0	1	0	1
431	M154	1	max	0	11	0	11	0	11	0	11	0	11	0	11
432			min	0	1	0	1	0	1	0	1	0	1	0	1
433		2	max	326.155	3	131.17	4	58.445	3	.065	1	.136	1	.048	2
434			min	-536.478	4	-268.953	7	-57.43	4	-.055	2	-.143	2	-.039	1
435		3	max	-121.841	2	375.421	4	77.899	3	.048	2	.028	1	.07	6
436			min	-603.229	5	-405.199	3	-66.777	4	-.036	1	-.064	6	.011	4
437		4	max	321.888	4	231.294	8	84.072	3	.143	2	.101	3	.034	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
438			min	-610.229	3	-94.257	3	-68.896	4	-.122	1	-.098	4	-.04	1
439		5	max	0	11	0	11	0	11	0	11	0	11	0	11
440			min	0	1	0	1	0	1	0	1	0	1	0	1
441	M155	1	max	0	11	.009	4	.01	3	0	11	0	11	0	11
442			min	0	1	0	10	-.006	1	0	1	0	1	0	1
443		2	max	387.917	1	126.536	2	56.534	1	.084	4	.125	4	.056	3
444			min	-601.084	2	-271.062	5	-55.402	2	-.072	3	-.132	3	-.046	4
445		3	max	-83.253	1	310.356	2	66.813	1	.036	1	.042	4	.071	5
446			min	-623.67	6	-339.217	1	-56.677	2	-.025	2	-.066	3	.006	2
447		4	max	169.151	3	226.127	6	65.199	1	.128	3	.087	4	.038	3
448			min	-554.904	8	-67.316	1	-49.966	2	-.107	4	-.084	3	-.043	4
449		5	max	0	11	.003	3	.008	3	0	11	0	11	0	11
450			min	0	1	-.006	1	0	5	0	1	0	1	0	1
451	M156	1	max	0	11	.01	2	.004	1	0	11	0	11	0	11
452			min	0	1	0	7	-.008	4	0	1	0	1	0	1
453		2	max	318.368	4	116.836	1	44.098	4	.065	3	.124	3	.035	1
454			min	-519.924	3	-252.342	6	-44.208	3	-.053	4	-.13	4	-.026	2
455		3	max	10.831	4	345.535	1	65.339	4	.062	4	.043	3	.06	8
456			min	-545.08	7	-329.391	2	-57.307	3	-.054	3	-.067	4	.004	3
457		4	max	352.591	1	191.118	1	71.813	4	.125	4	.09	2	.029	4
458			min	-582.571	2	-113.06	2	-54.217	3	-.102	3	-.085	1	-.033	3
459		5	max	0	11	.001	5	.007	1	0	11	0	11	0	11
460			min	0	1	-.007	4	-.006	4	0	1	0	1	0	1
461	M157	1	max	356.678	1	726.499	1	601.361	2	.009	1	.128	2	.963	1
462			min	-455.65	2	-628.199	2	-562.036	1	-.009	2	-.205	1	-.855	2
463		2	max	359.635	1	728.325	1	603.068	2	.009	1	.121	2	.621	1
464			min	-458.608	2	-626.373	2	-563.743	1	-.009	2	-.161	1	-.529	2
465		3	max	362.593	1	730.15	1	604.775	2	.009	1	.115	2	.277	1
466			min	-461.565	2	-624.548	2	-565.451	1	-.009	2	-.117	1	-.202	2
467		4	max	365.55	1	731.975	1	606.483	2	.009	1	.111	2	.134	6
468			min	-464.522	2	-622.723	2	-567.158	1	-.009	2	-.074	1	-.073	3
469		5	max	368.508	1	733.801	1	608.19	2	.009	1	.151	8	.451	2
470			min	-467.48	2	-620.897	2	-568.866	1	-.009	2	-.04	3	-.413	1
471	M158	1	max	284.972	2	793.521	3	534.497	4	.008	3	.171	4	1.037	3
472			min	-374.752	1	-690.38	4	-497.014	3	-.008	4	-.248	3	-.927	4
473		2	max	284.972	2	795.344	3	534.497	4	.008	3	.13	4	.695	3
474			min	-374.752	1	-688.557	4	-497.014	3	-.008	4	-.17	3	-.602	4
475		3	max	284.972	2	797.167	3	534.497	4	.008	3	.09	4	.352	3
476			min	-374.752	1	-686.734	4	-497.014	3	-.008	4	-.09	3	-.278	4
477		4	max	284.972	2	798.99	3	534.497	4	.008	3	.081	5	.132	1
478			min	-374.752	1	-684.911	4	-497.014	3	-.008	4	-.038	2	-.079	2
479		5	max	284.972	2	800.813	3	534.497	4	.008	3	.154	5	.369	4
480			min	-374.752	1	-683.088	4	-497.014	3	-.008	4	-.046	2	-.336	3
481	M159	1	max	417.746	4	536.539	2	490.312	3	.009	4	.067	1	.746	2
482			min	-510.904	3	-432.517	1	-452.825	4	-.009	3	-.152	6	-.634	1
483		2	max	420.7	4	538.362	2	495.428	3	.009	4	.049	3	.52	2
484			min	-513.857	3	-430.694	1	-457.941	4	-.009	3	-.087	4	-.426	1
485		3	max	423.653	4	540.185	2	500.544	3	.009	4	.086	3	.293	2
486			min	-516.811	3	-428.871	1	-463.057	4	-.009	3	-.087	4	-.219	1
487		4	max	426.607	4	542.008	2	505.66	3	.009	4	.126	3	.183	3
488			min	-519.765	3	-427.048	1	-468.173	4	-.009	3	-.087	4	-.128	4
489		5	max	429.561	4	543.831	2	510.776	3	.009	4	.168	3	.411	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
490			min	-522.718	3	-425.225	1	-473.289	4	-.009	3	-.089	4	-.376	4
491	MP4A	1	max	0	11	.701	4	1.175	1	0	11	0	11	0	11
492			min	0	1	-.699	3	-1.496	6	0	1	0	1	0	1
493		2	max	587.897	8	271.792	4	508.949	1	0	11	.699	1	.319	3
494			min	161.172	1	-271.791	3	-509.031	2	0	1	-.7	2	-.319	4
495		3	max	754.096	2	80.3	1	202.042	8	.4	2	.223	1	.18	1
496			min	-567.795	1	-373.52	7	-78.314	3	-.38	1	-.26	2	-.16	2
497		4	max	892.044	2	137.599	4	202.042	8	.4	2	.304	8	.823	7
498			min	-429.847	1	-399.641	7	-78.314	3	-.38	1	-.047	3	-.284	4
499		5	max	0	11	.035	3	.78	6	0	11	0	11	0	11
500			min	0	1	-.808	8	-.182	1	0	1	0	1	0	1
501	MP1A	1	max	0	11	.03	4	.087	5	0	11	0	11	0	11
502			min	0	1	-.043	7	-.048	2	0	1	0	1	0	1
503		2	max	39.552	8	20.757	4	20.781	1	0	11	.021	1	.021	3
504			min	13.148	1	-20.759	3	-20.775	2	0	1	-.021	2	-.021	4
505		3	max	562.26	2	431.492	8	110.988	3	.236	1	.211	2	.215	4
506			min	-378.366	1	-199.839	3	-68.15	4	-.273	2	-.146	1	-.174	3
507		4	max	663.801	6	490.121	4	113.727	1	.236	1	.291	6	.309	3
508			min	-315.238	1	-283.338	3	-71.655	2	-.273	2	-.065	1	-.766	8
509		5	max	0	11	.055	7	.06	6	0	11	0	11	0	11
510			min	0	1	-.013	4	-.041	1	0	1	0	1	0	1
511	MP3A	1	max	0	11	.108	8	.183	1	0	11	0	11	0	11
512			min	0	1	-.047	3	-.212	6	0	1	0	1	0	1
513		2	max	69.465	8	26.182	4	37.26	1	0	11	.021	1	.021	3
514			min	23.261	1	-26.17	3	-37.267	2	0	1	-.021	2	-.021	4
515		3	max	460.782	8	435.963	4	126.147	1	.037	4	.11	1	.165	4
516			min	-73.607	3	-586.309	3	-116.436	2	-.032	3	-.066	2	-.245	3
517		4	max	500.334	8	456.69	4	146.874	1	.037	4	.383	1	.948	3
518			min	-60.459	3	-607.036	3	-137.163	2	-.032	3	-.319	2	-.728	4
519		5	max	0	11	.007	3	.081	6	0	11	0	11	0	11
520			min	0	1	-.031	8	-.046	1	0	1	0	1	0	1
521	MP2A	1	max	0	11	.031	4	.098	5	0	11	0	11	0	11
522			min	0	1	-.046	7	-.106	6	0	1	0	1	0	1
523		2	max	39.552	8	20.758	4	20.825	1	0	11	.021	1	.021	3
524			min	13.148	1	-20.762	3	-20.826	2	0	1	-.021	2	-.021	4
525		3	max	438.938	7	529.197	4	82.88	1	.083	1	.107	5	.199	4
526			min	-129.793	4	-457.279	3	-79.036	2	-.116	2	-.004	2	-.149	3
527		4	max	478.49	7	549.924	4	103.607	1	.083	1	.247	1	.786	3
528			min	-116.645	4	-478.006	3	-99.763	2	-.116	2	-.183	2	-.88	4
529		5	max	0	11	.014	7	.077	6	0	11	0	11	0	11
530			min	0	1	-.008	4	-.047	1	0	1	0	1	0	1
531	M62	1	max	8747.496	8	33.339	4	31.09	2	0	7	0	11	0	11
532			min	-418.523	3	-22.771	3	-31.09	1	0	4	0	1	0	1
533		2	max	8721.786	8	16.67	4	15.545	2	0	7	.023	2	.017	3
534			min	-430.793	3	-11.386	3	-15.545	1	0	4	-.023	1	-.025	4
535		3	max	8696.077	8	0	11	0	11	0	7	.031	2	.023	3
536			min	-443.062	3	0	1	0	1	0	4	-.031	1	-.033	4
537		4	max	8670.368	8	11.386	3	15.545	1	0	7	.023	2	.017	3
538			min	-455.331	3	-16.67	4	-15.545	2	0	4	-.023	1	-.025	4
539		5	max	8644.658	8	22.771	3	31.09	1	0	7	0	11	0	11
540			min	-467.6	3	-33.339	4	-31.09	2	0	4	0	1	0	1
541	M63	1	max	8437.945	7	33.366	3	31.126	1	0	3	0	11	0	11

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
542			min	-592.806	4	-22.797	4	-31.126	2	0	4	0	1	0	1
543		2	max	8412.238	7	16.683	3	15.563	1	0	3	.023	1	.017	4
544			min	-605.08	4	-11.399	4	-15.563	2	0	4	-.023	2	-.025	3
545		3	max	8386.53	7	0	11	0	11	0	3	.031	1	.023	4
546			min	-617.354	4	0	1	0	1	0	4	-.031	2	-.034	3
547		4	max	8360.823	7	11.399	4	15.563	2	0	3	.023	1	.017	4
548			min	-629.629	4	-16.683	3	-15.563	1	0	4	-.023	2	-.025	3
549		5	max	8335.115	7	22.797	4	31.126	2	0	3	0	11	0	11
550			min	-641.903	4	-33.366	3	-31.126	1	0	4	0	1	0	1
551	M56	1	max	589.6	1	565.094	2	83.149	1	.728	3	.4	2	.693	2
552			min	-697.266	2	-758.297	1	-370.216	6	-.52	4	-.38	1	-.844	1
553		2	max	589.6	1	565.094	2	83.149	1	.728	3	.383	2	.657	2
554			min	-697.266	2	-758.297	1	-370.216	6	-.52	4	-.375	1	-.797	1
555		3	max	589.6	1	565.094	2	83.149	1	.728	3	.366	2	.622	2
556			min	-697.266	2	-758.297	1	-370.216	6	-.52	4	-.369	1	-.749	1
557		4	max	589.6	1	565.094	2	83.149	1	.728	3	.348	2	.587	2
558			min	-697.266	2	-758.297	1	-370.216	6	-.52	4	-.364	1	-.702	1
559		5	max	589.6	1	565.094	2	83.149	1	.728	3	.331	2	.551	2
560			min	-697.266	2	-758.297	1	-370.216	6	-.52	4	-.359	1	-.655	1
561	M57	1	max	503.479	1	342.516	1	547.454	3	.903	7	.38	1	.309	1
562			min	-395.111	2	-1236.025	6	-351.438	4	-.09	4	-.4	2	-.503	2
563		2	max	503.479	1	342.516	1	547.454	3	.903	7	.375	1	.287	1
564			min	-395.111	2	-1236.025	6	-351.438	4	-.09	4	-.383	2	-.442	2
565		3	max	503.479	1	342.516	1	547.454	3	.903	7	.37	1	.266	1
566			min	-395.111	2	-1236.025	6	-351.438	4	-.09	4	-.365	2	-.381	2
567		4	max	503.479	1	342.516	1	547.454	3	.903	7	.365	1	.244	1
568			min	-395.111	2	-1236.025	6	-351.438	4	-.09	4	-.348	2	-.32	2
569		5	max	503.479	1	342.516	1	547.454	3	.903	7	.36	1	.223	1
570			min	-395.111	2	-1236.025	6	-351.438	4	-.09	4	-.33	2	-.259	2
571	M58	1	max	166.435	1	47.316	3	628.142	3	1.137	3	.032	3	.351	2
572			min	-156.528	2	-539.922	8	-475.917	4	-.866	4	-.037	4	-.418	1
573		2	max	166.435	1	47.316	3	628.142	3	1.137	3	.071	3	.361	2
574			min	-156.528	2	-539.922	8	-475.917	4	-.866	4	-.066	4	-.409	1
575		3	max	166.435	1	47.316	3	628.142	3	1.137	3	.11	3	.37	2
576			min	-156.528	2	-539.922	8	-475.917	4	-.866	4	-.096	4	-.4	1
577		4	max	166.435	1	47.316	3	628.142	3	1.137	3	.15	3	.379	2
578			min	-156.528	2	-539.922	8	-475.917	4	-.866	4	-.126	4	-.391	1
579		5	max	166.435	1	47.316	3	628.142	3	1.137	3	.189	3	.389	2
580			min	-156.528	2	-539.922	8	-475.917	4	-.866	4	-.156	4	-.382	1
581	M59	1	max	30.518	2	286.25	8	370.016	4	.967	3	.037	4	.119	2
582			min	-40.283	1	-131.619	3	-522.232	3	-.711	4	-.032	3	-.087	1
583		2	max	30.518	2	286.25	8	370.016	4	.967	3	.06	4	.115	2
584			min	-40.283	1	-131.619	3	-522.232	3	-.711	4	-.064	3	-.09	1
585		3	max	30.518	2	286.25	8	370.016	4	.967	3	.083	4	.111	2
586			min	-40.283	1	-131.619	3	-522.232	3	-.711	4	-.097	3	-.094	1
587		4	max	30.518	2	286.25	8	370.016	4	.967	3	.106	4	.107	2
588			min	-40.283	1	-131.619	3	-522.232	3	-.711	4	-.13	3	-.098	1
589		5	max	30.518	2	286.25	8	370.016	4	.967	3	.129	4	.103	2
590			min	-40.283	1	-131.619	3	-522.232	3	-.711	4	-.162	3	-.101	1
591	M60	1	max	36.621	2	359.887	7	488.241	4	.717	3	.083	1	.125	6
592			min	-40.771	1	-156.081	4	-414.044	3	-.851	4	-.116	2	-.071	1
593		2	max	36.621	2	359.887	7	488.241	4	.717	3	.083	1	.116	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
594			min	-40.771	1	-156.081	4	-414.044	3	-.851	4	-.112	2	-.075	1
595		3	max	36.621	2	359.887	7	488.241	4	.717	3	.084	1	.109	2
596			min	-40.771	1	-156.081	4	-414.044	3	-.851	4	-.108	2	-.078	1
597		4	max	36.621	2	359.887	7	488.241	4	.717	3	.1	4	.102	2
598			min	-40.771	1	-156.081	4	-414.044	3	-.851	4	-.12	3	-.082	1
599		5	max	36.621	2	359.887	7	488.241	4	.717	3	.131	4	.096	2
600			min	-40.771	1	-156.081	4	-414.044	3	-.851	4	-.146	3	-.085	1
601	M61	1	max	123.459	1	518.105	7	497.061	3	.932	3	.152	4	.243	2
602			min	-119.041	2	-103.501	4	-571.254	4	-1.05	4	-.166	3	-.24	1
603		2	max	123.459	1	518.105	7	497.061	3	.932	3	.116	4	.233	2
604			min	-119.041	2	-103.501	4	-571.254	4	-1.05	4	-.135	3	-.247	1
605		3	max	123.459	1	518.105	7	497.061	3	.932	3	.084	1	.223	2
606			min	-119.041	2	-103.501	4	-571.254	4	-1.05	4	-.108	2	-.254	1
607		4	max	123.459	1	518.105	7	497.061	3	.932	3	.083	1	.212	2
608			min	-119.041	2	-103.501	4	-571.254	4	-1.05	4	-.112	2	-.261	1
609		5	max	123.459	1	518.105	7	497.061	3	.932	3	.083	1	.202	2
610			min	-119.041	2	-103.501	4	-571.254	4	-1.05	4	-.116	2	-.268	1
611	M62A	1	max	136.978	1	303.127	1	304.656	3	.389	3	.273	2	.041	1
612			min	-88.692	2	-703.407	6	-509.295	4	-.912	8	-.236	1	-.314	6
613		2	max	136.978	1	303.127	1	304.656	3	.389	3	.259	2	.038	4
614			min	-88.692	2	-703.407	6	-509.295	4	-.912	8	-.235	1	-.273	7
615		3	max	136.978	1	303.127	1	304.656	3	.389	3	.244	2	.064	4
616			min	-88.692	2	-703.407	6	-509.295	4	-.912	8	-.233	1	-.242	7
617		4	max	136.978	1	303.127	1	304.656	3	.389	3	.229	2	.091	4
618			min	-88.692	2	-703.407	6	-509.295	4	-.912	8	-.231	1	-.211	7
619		5	max	136.978	1	303.127	1	304.656	3	.389	3	.214	2	.118	4
620			min	-88.692	2	-703.407	6	-509.295	4	-.912	8	-.229	1	-.198	3
621	M63A	1	max	198.12	1	487.188	2	396.44	8	.432	3	.236	1	.227	4
622			min	-246.338	2	-453.526	1	-96.015	3	-.713	4	-.273	2	-.213	3
623		2	max	198.12	1	487.188	2	396.44	8	.432	3	.235	1	.21	4
624			min	-246.338	2	-453.526	1	-96.015	3	-.713	4	-.259	2	-.198	3
625		3	max	198.12	1	487.188	2	396.44	8	.432	3	.233	1	.193	4
626			min	-246.338	2	-453.526	1	-96.015	3	-.713	4	-.244	2	-.183	3
627		4	max	198.12	1	487.188	2	396.44	8	.432	3	.231	1	.176	4
628			min	-246.338	2	-453.526	1	-96.015	3	-.713	4	-.229	2	-.168	3
629		5	max	198.12	1	487.188	2	396.44	8	.432	3	.229	1	.159	4
630			min	-246.338	2	-453.526	1	-96.015	3	-.713	4	-.214	2	-.152	3
631	MP4C	1	max	0	11	1.184	4	.902	5	0	11	0	11	0	11
632			min	0	1	-1.22	3	-.708	2	0	1	0	1	0	1
633		2	max	587.897	8	461.151	4	320.429	1	0	11	.413	1	.608	3
634			min	161.172	1	-461.186	3	-320.389	2	0	1	-.413	2	-.608	4
635		3	max	621.69	3	347.549	7	273.922	5	.372	3	.138	4	.356	3
636			min	-439.893	4	-99.205	4	-142.764	2	-.354	4	-.102	3	-.331	4
637		4	max	778.507	7	317.318	7	341.361	1	.372	3	.646	1	-.015	2
638			min	-301.944	4	7.893	4	-217.754	2	-.354	4	-.36	2	-.614	5
639		5	max	0	11	.855	7	.602	6	0	11	0	11	0	11
640			min	0	1	-.159	4	-.075	1	0	1	0	1	0	1
641	MP1C	1	max	0	11	.106	8	.038	1	0	11	0	11	0	11
642			min	0	1	-.047	3	-.043	6	0	1	0	1	0	1
643		2	max	39.552	8	20.785	4	20.765	1	0	11	.021	1	.021	3
644			min	13.148	1	-20.774	3	-20.766	2	0	1	-.021	2	-.021	4
645		3	max	736.827	3	142.062	4	150.139	4	.217	4	.135	3	.309	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
646			min	-552.339	4	-211.386	3	-405.259	7	-.254	3	-.13	4	-.386	3
647		4	max	799.955	3	273.063	4	150.139	4	.217	4	.17	4	.309	2
648			min	-489.21	4	-342.387	3	-405.259	7	-.254	3	-.766	7	-.248	1
649		5	max	0	11	.045	3	.014	2	0	11	0	11	0	11
650			min	0	1	-.061	8	-.062	5	0	1	0	1	0	1
651	MP3C	1	max	0	11	.168	4	.069	1	0	11	0	11	0	11
652			min	0	1	-.178	7	-.112	6	0	1	0	1	0	1
653		2	max	69.465	8	46.769	4	26.907	1	0	11	.021	1	.021	3
654			min	23.261	1	-46.774	3	-26.915	2	0	1	-.021	2	-.021	4
655		3	max	448.994	6	272.739	4	480.202	1	.041	3	.099	3	.12	1
656			min	-10.487	1	-188.312	3	-353.082	2	-.036	4	-.193	5	-.117	2
657		4	max	488.546	6	293.466	4	500.929	1	.041	3	.791	1	.394	3
658			min	2.662	1	-209.039	3	-373.809	2	-.036	4	-.628	2	-.559	4
659		5	max	0	11	.07	7	.023	8	0	11	0	11	0	11
660			min	0	1	-.043	4	-.018	3	0	1	0	1	0	1
661	MP2C	1	max	0	11	.118	8	.058	5	0	11	0	11	0	11
662			min	0	1	-.094	3	-.04	2	0	1	0	1	0	1
663		2	max	39.552	8	20.826	4	20.77	1	0	11	.021	1	.021	3
664			min	13.148	1	-20.821	3	-20.767	2	0	1	-.021	2	-.021	4
665		3	max	429.657	5	209.163	4	326.597	1	.049	4	.137	2	.026	1
666			min	-90.019	2	-242.662	3	-393.295	2	-.081	3	-.122	1	-.145	6
667		4	max	469.209	5	229.89	4	347.324	1	.049	4	.552	1	.453	3
668			min	-76.871	2	-263.389	3	-414.022	2	-.081	3	-.67	2	-.459	4
669		5	max	0	11	.051	7	.021	4	0	11	0	11	0	11
670			min	0	1	-.045	4	-.041	7	0	1	0	1	0	1
671	M68	1	max	552.735	4	431.335	3	230.785	4	.845	1	.372	3	.453	1
672			min	-655.024	3	-631.287	4	-426.535	3	-.633	2	-.354	4	-.609	2
673		2	max	552.735	4	431.335	3	230.785	4	.845	1	.346	3	.441	1
674			min	-655.024	3	-631.287	4	-426.535	3	-.633	2	-.34	4	-.585	2
675		3	max	552.735	4	431.335	3	230.785	4	.845	1	.319	3	.43	1
676			min	-655.024	3	-631.287	4	-426.535	3	-.633	2	-.325	4	-.56	2
677		4	max	552.735	4	431.335	3	230.785	4	.845	1	.292	3	.418	1
678			min	-655.024	3	-631.287	4	-426.535	3	-.633	2	-.311	4	-.535	2
679		5	max	552.735	4	431.335	3	230.785	4	.845	1	.266	3	.406	1
680			min	-655.024	3	-631.287	4	-426.535	3	-.633	2	-.297	4	-.51	2
681	M69	1	max	316.084	4	213.539	4	590.005	1	.919	5	.354	4	.348	4
682			min	-214.023	3	-1191.341	7	-392.756	2	-.085	2	-.372	3	-.532	3
683		2	max	316.084	4	213.539	4	590.005	1	.919	5	.371	4	.334	4
684			min	-214.023	3	-1191.341	7	-392.756	2	-.085	2	-.377	3	-.479	3
685		3	max	316.084	4	213.539	4	590.005	1	.919	5	.389	4	.321	4
686			min	-214.023	3	-1191.341	7	-392.756	2	-.085	2	-.381	3	-.426	3
687		4	max	316.084	4	213.539	4	590.005	1	.919	5	.406	4	.308	4
688			min	-214.023	3	-1191.341	7	-392.756	2	-.085	2	-.386	3	-.373	3
689		5	max	316.084	4	213.539	4	590.005	1	.919	5	.423	4	.294	4
690			min	-214.023	3	-1191.341	7	-392.756	2	-.085	2	-.39	3	-.319	3
691	M70	1	max	156.216	4	-15.594	1	574.021	1	1.043	1	.036	4	.317	3
692			min	-144.646	3	-528.067	6	-420.748	2	-.768	2	-.041	3	-.382	4
693		2	max	156.216	4	-15.594	1	574.021	1	1.043	1	.058	4	.333	3
694			min	-144.646	3	-528.067	6	-420.748	2	-.768	2	-.054	3	-.38	4
695		3	max	156.216	4	-15.594	1	574.021	1	1.043	1	.081	4	.349	3
696			min	-144.646	3	-528.067	6	-420.748	2	-.768	2	-.066	3	-.377	4
697		4	max	156.216	4	-15.594	1	574.021	1	1.043	1	.114	1	.364	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
698			min	-144.646	3	-528.067	6	-420.748	2	-.768	2	-.091	2	-.374	4
699		5	max	156.216	4	-15.594	1	574.021	1	1.043	1	.15	1	.38	3
700			min	-144.646	3	-528.067	6	-420.748	2	-.768	2	-.117	2	-.371	4
701	M71	1	max	11.709	3	274.467	6	332.022	2	.887	1	.041	3	.133	3
702			min	-23.277	4	-68.465	1	-485.272	1	-.628	2	-.036	4	-.101	4
703		2	max	11.709	3	274.467	6	332.022	2	.887	1	.049	3	.123	3
704			min	-23.277	4	-68.465	1	-485.272	1	-.628	2	-.053	4	-.098	4
705		3	max	11.709	3	274.467	6	332.022	2	.887	1	.057	3	.112	3
706			min	-23.277	4	-68.465	1	-485.272	1	-.628	2	-.071	4	-.096	4
707		4	max	11.709	3	274.467	6	332.022	2	.887	1	.074	2	.102	3
708			min	-23.277	4	-68.465	1	-485.272	1	-.628	2	-.098	1	-.094	4
709		5	max	11.709	3	274.467	6	332.022	2	.887	1	.095	2	.091	3
710			min	-23.277	4	-68.465	1	-485.272	1	-.628	2	-.128	1	-.091	4
711	M72	1	max	35.45	3	350.521	5	398.197	2	.567	1	.049	4	.115	7
712			min	-36.681	4	-116.377	2	-321.984	1	-.705	2	-.081	3	-.047	4
713		2	max	35.45	3	350.521	5	398.197	2	.567	1	.054	2	.101	3
714			min	-36.681	4	-116.377	2	-321.984	1	-.705	2	-.082	1	-.06	4
715		3	max	35.45	3	350.521	5	398.197	2	.567	1	.078	2	.103	3
716			min	-36.681	4	-116.377	2	-321.984	1	-.705	2	-.102	1	-.073	4
717		4	max	35.45	3	350.521	5	398.197	2	.567	1	.103	2	.106	3
718			min	-36.681	4	-116.377	2	-321.984	1	-.705	2	-.122	1	-.087	4
719		5	max	35.45	3	350.521	5	398.197	2	.567	1	.128	2	.109	3
720			min	-36.681	4	-116.377	2	-321.984	1	-.705	2	-.142	1	-.1	4
721	M73	1	max	108.815	4	508.726	5	393.71	1	.732	1	.146	2	.195	3
722			min	-107.051	3	-63.907	2	-469.863	2	-.855	2	-.16	1	-.193	4
723		2	max	108.815	4	508.726	5	393.71	1	.732	1	.117	2	.194	3
724			min	-107.051	3	-63.907	2	-469.863	2	-.855	2	-.135	1	-.21	4
725		3	max	108.815	4	508.726	5	393.71	1	.732	1	.087	2	.194	3
726			min	-107.051	3	-63.907	2	-469.863	2	-.855	2	-.111	1	-.226	4
727		4	max	108.815	4	508.726	5	393.71	1	.732	1	.058	2	.193	3
728			min	-107.051	3	-63.907	2	-469.863	2	-.855	2	-.086	1	-.243	4
729		5	max	108.815	4	508.726	5	393.71	1	.732	1	.049	4	.193	3
730			min	-107.051	3	-63.907	2	-469.863	2	-.855	2	-.081	3	-.259	4
731	M74	1	max	183.868	4	477.695	4	278.368	4	.282	4	.254	3	.038	2
732			min	-132.195	3	-811.974	3	-485.696	3	-.879	7	-.217	4	-.315	5
733		2	max	183.868	4	477.695	4	278.368	4	.282	4	.224	3	.044	2
734			min	-132.195	3	-811.974	3	-485.696	3	-.879	7	-.2	4	-.279	5
735		3	max	183.868	4	477.695	4	278.368	4	.282	4	.193	3	.05	2
736			min	-132.195	3	-811.974	3	-485.696	3	-.879	7	-.183	4	-.242	5
737		4	max	183.868	4	477.695	4	278.368	4	.282	4	.163	3	.057	2
738			min	-132.195	3	-811.974	3	-485.696	3	-.879	7	-.165	4	-.206	5
739		5	max	183.868	4	477.695	4	278.368	4	.282	4	.133	3	.09	3
740			min	-132.195	3	-811.974	3	-485.696	3	-.879	7	-.148	4	-.169	5
741	M75	1	max	115.033	2	661.304	3	409.818	7	.511	4	.217	4	.286	3
742			min	-157.751	1	-628.078	4	-126.633	4	-.799	3	-.254	3	-.271	4
743		2	max	115.033	2	661.304	3	409.818	7	.511	4	.21	4	.245	3
744			min	-157.751	1	-628.078	4	-126.633	4	-.799	3	-.233	3	-.232	4
745		3	max	115.033	2	661.304	3	409.818	7	.511	4	.202	4	.204	3
746			min	-157.751	1	-628.078	4	-126.633	4	-.799	3	-.213	3	-.193	4
747		4	max	115.033	2	661.304	3	409.818	7	.511	4	.194	4	.163	3
748			min	-157.751	1	-628.078	4	-126.633	4	-.799	3	-.192	3	-.154	4
749		5	max	115.033	2	661.304	3	409.818	7	.511	4	.186	4	.122	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
750			min	-157.751	1	-628.078	4	-126.633	4	-.799	3	-.171	3	-.115	4
751	MP4B	1	max	0	11	1.466	8	.89	1	0	11	0	11	0	11
752			min	0	1	-1.017	3	-.883	2	0	1	0	1	0	1
753		2	max	587.897	8	461.076	4	320.57	1	0	11	.413	1	.608	3
754			min	161.172	1	-460.984	3	-320.563	2	0	1	-.413	2	-.608	4
755		3	max	689.825	4	152.79	2	68.775	3	.34	4	.255	1	.016	3
756			min	-501.64	3	-141.593	1	-399.615	8	-.322	3	-.256	2	-.101	7
757		4	max	827.773	4	221.871	4	68.775	3	.34	4	.102	3	.33	3
758			min	-363.692	3	-210.524	3	-399.615	8	-.322	3	-.798	8	-.399	4
759		5	max	0	11	.309	7	.089	3	0	11	0	11	0	11
760			min	0	1	-.442	8	-.851	8	0	1	0	1	0	1
761	MP1B	1	max	0	11	.05	4	.03	1	0	11	0	11	0	11
762			min	0	1	-.065	7	-.079	6	0	1	0	1	0	1
763		2	max	39.552	8	20.777	4	20.757	1	0	11	.021	1	.021	3
764			min	13.148	1	-20.78	3	-20.766	2	0	1	-.021	2	-.021	4
765		3	max	633.044	1	66.295	2	410.099	1	.17	2	.302	2	.086	4
766			min	-417.494	2	-214.428	5	-303.893	2	-.197	1	-.374	1	-.05	3
767		4	max	706.126	5	66.295	2	509.432	1	.17	2	.545	1	.498	5
768			min	-354.366	2	-214.428	5	-403.227	2	-.197	1	-.405	2	-.146	2
769		5	max	0	11	.03	3	.048	6	0	11	0	11	0	11
770			min	0	1	-.065	8	-.025	1	0	1	0	1	0	1
771	MP3B	1	max	0	11	.167	8	.11	5	0	11	0	11	0	11
772			min	0	1	-.157	3	-.085	2	0	1	0	1	0	1
773		2	max	69.465	8	46.762	4	26.928	1	0	11	.021	1	.021	3
774			min	23.261	1	-46.759	3	-26.923	2	0	1	-.021	2	-.021	4
775		3	max	517.704	5	276.995	4	352.634	1	.046	1	.17	2	.154	6
776			min	-17.412	2	-228.956	3	-450.204	2	-.047	2	-.134	1	-.071	1
777		4	max	557.256	5	297.722	4	373.362	1	.046	1	.592	1	.513	3
778			min	-4.264	2	-249.683	3	-470.931	2	-.047	2	-.751	2	-.535	4
779		5	max	0	11	.038	3	.02	2	0	11	0	11	0	11
780			min	0	1	-.064	8	-.038	8	0	1	0	1	0	1
781	MP2B	1	max	0	11	.103	8	.052	1	0	11	0	11	0	11
782			min	0	1	-.079	3	-.077	6	0	1	0	1	0	1
783		2	max	39.552	8	20.811	4	20.779	1	0	11	.021	1	.021	3
784			min	13.148	1	-20.806	3	-20.784	2	0	1	-.021	2	-.021	4
785		3	max	291.893	6	173.144	2	458.3	1	.1	3	.096	2	.115	2
786			min	-115.084	1	-220.9	1	-394.784	2	-.134	4	-.157	1	-.097	1
787		4	max	331.445	6	173.144	2	479.027	1	.1	3	.78	1	.393	3
788			min	-101.935	1	-220.9	1	-415.511	2	-.134	4	-.714	2	-.28	4
789		5	max	0	11	.038	3	.024	6	0	11	0	11	0	11
790			min	0	1	-.071	8	-.02	1	0	1	0	1	0	1
791	M80	1	max	371.092	3	498.238	4	159.111	2	.849	4	.34	4	.749	4
792			min	-476.283	4	-694.431	3	-361.345	5	-.653	3	-.322	3	-.9	3
793		2	max	371.092	3	498.238	4	159.111	2	.849	4	.337	4	.717	4
794			min	-476.283	4	-694.431	3	-361.345	5	-.653	3	-.331	3	-.857	3
795		3	max	371.092	3	498.238	4	159.111	2	.849	4	.334	4	.686	4
796			min	-476.283	4	-694.431	3	-361.345	5	-.653	3	-.339	3	-.813	3
797		4	max	371.092	3	498.238	4	159.111	2	.849	4	.331	4	.655	4
798			min	-476.283	4	-694.431	3	-361.345	5	-.653	3	-.347	3	-.77	3
799		5	max	371.092	3	498.238	4	159.111	2	.849	4	.328	4	.624	4
800			min	-476.283	4	-694.431	3	-361.345	5	-.653	3	-.356	3	-.726	3
801	M81	1	max	497.719	3	276.701	3	552.522	4	.873	8	.322	3	.195	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
802			min	-392.724	4	-1230.349	8	-366.13	3	-.079	3	-.34	4	-.386	5
803		2	max	497.719	3	276.701	3	552.522	4	.873	8	.299	3	.2	2
804			min	-392.724	4	-1230.349	8	-366.13	3	-.079	3	-.305	4	-.344	1
805		3	max	497.719	3	276.701	3	552.522	4	.873	8	.276	3	.206	2
806			min	-392.724	4	-1230.349	8	-366.13	3	-.079	3	-.271	4	-.31	1
807		4	max	497.719	3	276.701	3	552.522	4	.873	8	.253	3	.212	2
808			min	-392.724	4	-1230.349	8	-366.13	3	-.079	3	-.236	4	-.275	1
809		5	max	497.719	3	276.701	3	552.522	4	.873	8	.27	2	.217	2
810			min	-392.724	4	-1230.349	8	-366.13	3	-.079	3	-.239	1	-.241	1
811	M82	1	max	143.164	3	-8.521	2	519.962	2	.921	2	.047	2	.293	4
812			min	-136.667	4	-596.773	5	-410.546	1	-.737	1	-.046	1	-.357	3
813		2	max	143.164	3	-8.521	2	519.962	2	.921	2	.079	2	.301	4
814			min	-136.667	4	-596.773	5	-410.546	1	-.737	1	-.072	1	-.344	3
815		3	max	143.164	3	-8.521	2	519.962	2	.921	2	.112	2	.308	4
816			min	-136.667	4	-596.773	5	-410.546	1	-.737	1	-.097	1	-.33	3
817		4	max	143.164	3	-8.521	2	519.962	2	.921	2	.144	2	.316	4
818			min	-136.667	4	-596.773	5	-410.546	1	-.737	1	-.123	1	-.317	3
819		5	max	143.164	3	-8.521	2	519.962	2	.921	2	.177	2	.323	4
820			min	-136.667	4	-596.773	5	-410.546	1	-.737	1	-.149	1	-.304	3
821	M83	1	max	22.028	1	343.209	5	321.84	1	.819	2	.046	1	.124	4
822			min	-31.876	2	-75.594	2	-431.197	2	-.625	1	-.047	2	-.086	3
823		2	max	22.028	1	343.209	5	321.84	1	.819	2	.066	1	.122	4
824			min	-31.876	2	-75.594	2	-431.197	2	-.625	1	-.074	2	-.094	3
825		3	max	22.028	1	343.209	5	321.84	1	.819	2	.086	1	.119	4
826			min	-31.876	2	-75.594	2	-431.197	2	-.625	1	-.101	2	-.102	3
827		4	max	22.028	1	343.209	5	321.84	1	.819	2	.106	1	.117	4
828			min	-31.876	2	-75.594	2	-431.197	2	-.625	1	-.128	2	-.11	3
829		5	max	22.028	1	343.209	5	321.84	1	.819	2	.127	1	.115	4
830			min	-31.876	2	-75.594	2	-431.197	2	-.625	1	-.154	2	-.118	3
831	M84	1	max	17.81	1	229.78	2	471.938	1	.671	2	.1	3	.098	4
832			min	-27.217	3	-141.491	1	-391.48	2	-.806	1	-.134	4	-.062	3
833		2	max	17.81	1	229.78	2	471.938	1	.671	2	.116	3	.089	4
834			min	-27.217	3	-141.491	1	-391.48	2	-.806	1	-.146	4	-.059	3
835		3	max	17.81	1	229.78	2	471.938	1	.671	2	.133	3	.08	4
836			min	-27.217	3	-141.491	1	-391.48	2	-.806	1	-.158	4	-.055	3
837		4	max	17.81	1	229.78	2	471.938	1	.671	2	.149	3	.083	1
838			min	-27.217	3	-141.491	1	-391.48	2	-.806	1	-.169	4	-.064	2
839		5	max	17.81	1	229.78	2	471.938	1	.671	2	.166	3	.092	1
840			min	-27.217	3	-141.491	1	-391.48	2	-.806	1	-.181	4	-.079	2
841	M85	1	max	99.153	3	370.96	6	463.299	2	.871	2	.176	3	.183	4
842			min	-88.633	4	-89.148	1	-543.642	1	-1.011	1	-.191	4	-.201	3
843		2	max	99.153	3	370.96	6	463.299	2	.871	2	.157	3	.171	4
844			min	-88.633	4	-89.148	1	-543.642	1	-1.011	1	-.177	4	-.201	3
845		3	max	99.153	3	370.96	6	463.299	2	.871	2	.138	3	.158	4
846			min	-88.633	4	-89.148	1	-543.642	1	-1.011	1	-.163	4	-.201	3
847		4	max	99.153	3	370.96	6	463.299	2	.871	2	.119	3	.146	4
848			min	-88.633	4	-89.148	1	-543.642	1	-1.011	1	-.149	4	-.2	3
849		5	max	99.153	3	370.96	6	463.299	2	.871	2	.1	3	.134	4
850			min	-88.633	4	-89.148	1	-543.642	1	-1.011	1	-.134	4	-.2	3
851	M86	1	max	156.748	2	342.143	2	402.101	2	.539	2	.197	1	.088	3
852			min	-109.61	1	-745.73	5	-544.561	1	-.837	1	-.17	2	-.331	8
853		2	max	156.748	2	342.143	2	402.101	2	.539	2	.201	4	.08	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
854			min	-109.61	1	-745.73	5	-544.561	1	-.837	1	-.184	3	-.287	8
855		3	max	156.748	2	342.143	2	402.101	2	.539	2	.206	4	.071	3
856			min	-109.61	1	-745.73	5	-544.561	1	-.837	1	-.198	3	-.242	8
857		4	max	156.748	2	342.143	2	402.101	2	.539	2	.211	4	.086	1
858			min	-109.61	1	-745.73	5	-544.561	1	-.837	1	-.213	3	-.198	8
859		5	max	156.748	2	342.143	2	402.101	2	.539	2	.216	4	.13	1
860			min	-109.61	1	-745.73	5	-544.561	1	-.837	1	-.227	3	-.203	2
861	M87	1	max	198.364	3	556.845	1	336.791	1	.62	2	.17	2	.302	1
862			min	-242.711	4	-493.862	2	-194.112	2	-.835	1	-.197	1	-.284	2
863		2	max	198.364	3	556.845	1	336.791	1	.62	2	.174	3	.267	1
864			min	-242.711	4	-493.862	2	-194.112	2	-.835	1	-.192	4	-.253	2
865		3	max	198.364	3	556.845	1	336.791	1	.62	2	.179	3	.232	1
866			min	-242.711	4	-493.862	2	-194.112	2	-.835	1	-.187	4	-.222	2
867		4	max	198.364	3	556.845	1	336.791	1	.62	2	.184	3	.198	1
868			min	-242.711	4	-493.862	2	-194.112	2	-.835	1	-.183	4	-.191	2
869		5	max	198.364	3	556.845	1	336.791	1	.62	2	.189	3	.163	1
870			min	-242.711	4	-493.862	2	-194.112	2	-.835	1	-.179	4	-.16	2

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

	Member	Shape	Code Check	Loc[...	LC	Shear Check	Loc[..	Dir	LC	phi*Pn...	phi*Pnt...	phi*Mn...	phi*Mn...	Cb	Eqn
1	M5	PL3/8x6	.793	0	8	.222	0	y	2	72340....	72900	.57	9.113	1...	H1-1b
2	M158	L2.5x2.5x4	.635	0	3	.103	1.501	y	3	37377....	38556	1.114	2.537	2...	H2-1
3	M157	L2.5x2.5x4	.573	0	1	.106	1.503	y	1	37374....	38556	1.114	2.537	2...	H2-1
4	M6	PL3/8x6	.543	0	8	.212	.364	y	3	68958....	72900	.57	9.113	1...	H1-1b
5	M159	L2.5x2.5x4	.428	0	2	.086	1.501	z	3	37377....	38556	1.114	2.537	1...	H2-1
6	M11	HSS4X4X4	.366	3.781	8	.184	3.781	y	6	84943....	139518	16.181	16.181	1...	H1-1b
7	M154	PIPE_2.0	.363	.781	3	.160	11.7...		2	6295.4...	32130	1.872	1.872	4...	H1-1b
8	M155	PIPE_2.0	.361	.781	1	.237	11.3...		3	6295.4...	32130	1.872	1.872	4...	H1-1b
9	MP4A	PIPE_2.5	.356	2.833	2	.161	2.833		2	30038....	50715	3.596	3.596	2...	H1-1b
10	M156	PIPE_2.0	.343	11.3...	1	.221	11.3...		1	6295.4...	32130	1.872	1.872	4...	H1-1b
11	M37	HSS4X4X4	.329	3.783	5	.139	3.783	y	8	84899....	139518	16.181	16.181	1...	H1-1b
12	M24	HSS4X4X4	.325	3.783	7	.109	3.783	y	7	84900....	139518	16.181	16.181	1...	H1-1b
13	MP3A	PIPE_2.5	.321	6.333	3	.050	6.333		3	30038....	50715	3.596	3.596	2...	H1-1b
14	MP4B	PIPE_2.5	.309	2.833	4	.139	2.833		4	30038....	50715	3.596	3.596	2...	H1-1b
15	MP2A	PIPE_2.5	.297	6.333	4	.045	6.333		3	30038....	50715	3.596	3.596	2...	H1-1b
16	MP3C	PIPE_2.5	.295	6.333	1	.039	6.333		1	30038....	50715	3.596	3.596	2...	H1-1b
17	MP4C	PIPE_2.5	.294	2.833	3	.149	2.833		3	30038....	50715	3.596	3.596	2...	H1-1b
18	MP2B	PIPE_2.5	.287	6.333	1	.058	6.333		4	30038....	50715	3.596	3.596	2...	H1-1b
19	MP1A	PIPE_2.5	.273	6.333	8	.107	2.833		2	30038....	50715	3.596	3.596	2...	H1-1b
20	MP1C	PIPE_2.5	.269	6.333	7	.113	6.333		3	30038....	50715	3.596	3.596	2...	H1-1b
21	MP3B	PIPE_2.5	.266	6.333	2	.048	6.333		2	30038....	50715	3.596	3.596	2...	H1-1b
22	MP1B	PIPE_2.5	.248	6.333	1	.098	6.333		1	30038....	50715	3.596	3.596	2...	H1-1b
23	MP2C	PIPE_2.5	.244	6.333	2	.051	6.333		3	30038....	50715	3.596	3.596	2...	H1-1b
24	M29	PL3/8x6	.238	0	1	.300	0	y	7	72340....	72900	.57	9.113	1...	H1-1b
25	M7	L2x2x3	.233	4.359	8	.011	4.359	y	7	15646....	23392.8	.558	1.143	1...	H2-1
26	M8	L2x2x3	.230	4.359	6	.013	4.359	z	6	15646....	23392.8	.558	1.198	2...	H2-1
27	M38	HSS4X4X4	.229	2.582	5	.098	2.582	y	5	13788...	139518	16.181	16.181	1...	H1-1b
28	M33	L2x2x3	.228	0	5	.015	0	y	8	15644....	23392.8	.558	1.183	1...	H2-1
29	M20	L2x2x3	.225	0	7	.015	0	y	7	15646....	23392.8	.558	1.186	1...	H2-1
30	M39	HSS4X4X4	.225	0	5	.094	0	y	5	13788...	139518	16.181	16.181	1...	H1-1b

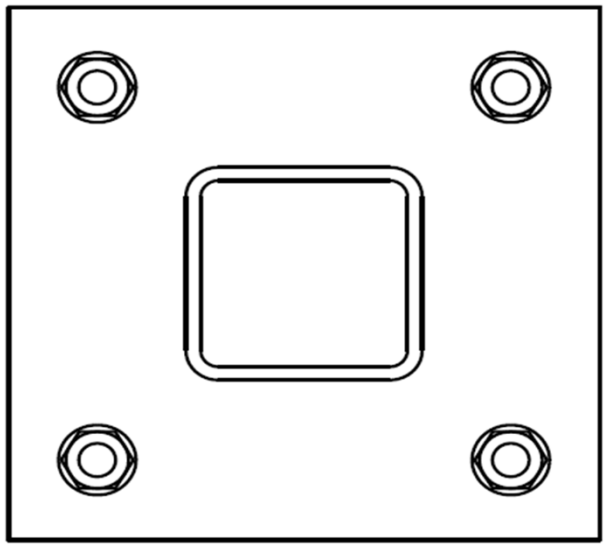
Envelope AISC 15th(360-16): LRFD Steel Code Checks (Continued)

	Member	Shape	Code Check	Loc[...	LC	Shear Check	Loc[..	Dir	LC	phi*Pn...	phi*Pnt..	phi*Mn...	phi*Mn..	Cb	Eqn
31	M26	HSS4X4X4	.218	0	7	.093	0	y	7	13788...	139518	16.181	16.181	1..	H1-1b
32	M41	PIPE_3.0	.211	4.297	8	.089	4.427		1	28250....	65205	5.749	5.749	2..	H1-1b
33	M21	L2x2x3	.208	4.359	3	.012	4.359	z	5	15646....	23392.8	.558	1.097	1..	H2-1
34	M31	PL3/8x6	.204	0	1	.314	0	y	4	72340....	72900	.57	9.113	1..	H1-1b
35	M25	HSS4X4X4	.201	2.583	7	.085	2.583	y	7	13788...	139518	16.181	16.181	1..	H1-1b
36	M16	PL3/8x6	.198	0	3	.254	0	y	6	72340....	72900	.57	9.113	1..	H1-1b
37	M140	LL2.5x2.5...	.196	0	5	.003	4.016	z	3	44721....	58320	3.954	2.55	1..	H1-1b*
38	M40	PIPE_3.0	.196	8.203	7	.112	4.427		3	28250....	65205	5.749	5.749	2..	H1-1b
39	M62	LL2.5x2.5...	.196	0	8	.002	4.016	z	1	44721....	58320	3.954	2.55	1..	H1-1b*
40	M42	PIPE_3.0	.195	8.203	6	.095	4.427		1	28250....	65205	5.749	5.749	2..	H1-1b
41	M12	HSS4X4X4	.195	2.583	8	.086	2.583	y	8	13788...	139518	16.181	16.181	1..	H1-1b
42	M63	LL2.5x2.5...	.189	0	7	.003	0	y	3	44721....	58320	3.954	2.55	1..	H1-1b*
43	M34	L2x2x3	.185	4.359	5	.011	4.359	z	8	15647....	23392.8	.558	1.198	2..	H2-1
44	M27	PL1/2x6	.169	0	1	.216	0	y	7	93548....	97200	1.012	12.15	1..	H1-1b
45	M18	PL3/8x6	.162	0	2	.278	0	y	5	72340....	72900	.57	9.113	1..	H1-1b
46	M13	HSS4X4X4	.158	0	8	.067	0	y	8	13788...	139518	16.181	16.181	1..	H1-1b
47	M14	PL1/2x6	.156	0	3	.213	0	y	6	93539....	97200	1.012	12.15	1..	H1-1b
48	M30	PL3/8x6	.143	0	1	.244	0	y	3	68958....	72900	.57	9.113	1..	H1-1b
49	M28	PL1/2x6	.140	0	1	.176	.501	y	4	93521....	97200	1.012	12.15	1..	H1-1b
50	M3	PL3/8x6	.122	0	4	.281	0	y	5	72340....	72900	.57	9.113	1..	H1-1b
51	M32	PL3/8x6	.120	0	1	.280	0	y	4	69044....	72900	.57	9.113	1..	H1-1b
52	M2	PL1/2x6	.119	0	4	.181	0	y	6	93535....	97200	1.012	12.15	1..	H1-1b
53	M15	PL1/2x6	.113	0	2	.150	.5	y	1	93530....	97200	1.012	12.15	1..	H1-1b
54	M1	PL1/2x6	.112	0	4	.231	0	y	8	93535....	97200	1.012	12.15	1..	H1-1b
55	M17	PL3/8x6	.109	0	3	.202	.36	y	4	69044....	72900	.57	9.113	1..	H1-1b
56	M19	PL3/8x6	.093	0	2	.248	0	y	1	68958....	72900	.57	9.113	1..	H1-1b
57	M4	PL3/8x6	.069	0	4	.227	0	y	1	68958....	72900	.57	9.113	1..	H1-1b
58	M9	PL1/2x6	.067	0	1	.161	.289	y	1	95322....	97200	1.012	12.15	1..	H1-1b
59	M22	PL1/2x6	.050	0	4	.134	0	y	2	95363....	97200	1.012	12.15	1..	H1-1b
60	M35	PL1/2x6	.050	0	3	.195	.289	y	3	95322....	97200	1.012	12.15	1..	H1-1b
61	M23	PL1/2x6	.030	0	1	.227	.289	y	1	95322....	97200	1.012	12.15	1..	H1-1b
62	M10	PL1/2x6	.028	0	4	.195	.289	y	2	95322....	97200	1.012	12.15	1..	H1-1b
63	M36	PL1/2x6	.017	0	2	.265	.286	y	4	95363....	97200	1.012	12.15	1..	H1-1b

TES Tower Engineering Solutions	Standoff Arm Flange Connection Check			Date: 4/6/2022
	Customer:	SBA	TIA Standard:	ANSI/TIA-222-G
	Carrier:	T-Mobile	Mount Elev. [ft]:	138
	Site Name:	Tolland-reed Rd	Engineer Name:	Venkata Annamreddy
	Site Number:	CT46129-A-SBA	Project #:	127370

NOTE: The calculations shown below are for a single representative load combination for example purposes. The results for all load combinations are presented in the Results Summary Table.

RISA Member Label =	M11	
I or J End?	J	
Load Combination # =	2	
Plate Width, Wp =	8	[In]
Plate Height, Hp =	8	[In]
Plate Thickness, tp =	0.625	[In]
Plate Fy =	36	[KSI]
Bolt Diameter, db =	0.625	[In]
Bolt Fu =	120	[KSI]
Bolt Horizontal Spacing, Sbh =	6	[In]
Bolt Vertical Spacing, Sbv =	6	[In]
Standoff Member Shape =	Rect Tube	
Member Width, Wm =	4	[In]
Member Depth, Dm =	4	[In]
Member Thickness, tm =	0.25	[In]
Standoff Weld Size =	0.1875	[In]
# Standoff Welds =	2	
Length of Stiffener, Ls =		[In]
Width of Stiffener, Ws =		[In]
Width of Notch, Wn =		[In]
Stiffener Dim 1, ds1 =		[In]
Stiffener Dim 2, ds2 =		[In]
Stiffener Fy =		[KSI]
Stiffener Weld Size =		[In]
# Stiffener Welds =		



Typical Connection Detail

NOTES

Standoff and Stiffener welds are assumed 0.1875 in.

Capacity Checks:

Max Bolt Shear =	1.264	[Kips]	
Bolt Shear Capacity =	13.81	[Kips]	
Max Bolt Shear Usage =	9.2%	PASS	
Max Bolt Tension =	2.41	[Kips]	
Bolt Tension Capacity =	20.34	[Kips]	
Max Bolt Tension Usage =	11.8%	PASS	
Max Bolt Interaction =	14.1%	PASS	
Max Plate Bending Moment =	4.27	[Kip-In]	
Length of Yield Line =	5.85	[In]	
Plate Moment Capacity =	18.51	[Kip-In]	
Max Plate Usage =	21.4%	PASS	
Max Weld Usage =	14.4%	PASS	

	Standoff Arm Flange Connection Check		Date
			4/6/2022
Customer:	SBA	TIA Standard:	ANSI/TIA-222-G
Carrier:	T-Mobile	Mount Elev. [ft]:	138
Site Name:	Tolland-reed Rd	Engineer Name:	Venkata Annamreddy
Site Number:	CT46129-A-SBA	Project #:	127370

Results Summary Table

Member Label	Member End	Load Combo #	Max Bolt Shear [K]	Max Bolt Tension [K]	Bolt Shear Check	Bolt Tension Check	Bolt Interaction Check	Plate Bending Check	Weld Check
M11	J	1	0.5412	0.9227	3.9%	4.5%	6.0%	8.2%	11.5%
M11	J	2	1.2638	2.4088	9.2%	11.8%	14.1%	21.4%	14.4%
M11	J	3	0.1559	0.0000	1.1%	0.0%	1.1%	0.0%	6.8%
M11	J	4	0.8780	1.8778	6.4%	9.2%	11.2%	16.7%	9.5%
M11	J	5	1.2575	1.1649	9.1%	5.7%	9.6%	10.4%	10.8%
M11	J	6	1.6476	1.7009	11.9%	8.4%	14.3%	15.1%	11.9%
M11	J	7	1.3109	0.8310	9.5%	4.1%	10.1%	7.4%	9.8%
M11	J	8	1.5552	1.5817	11.3%	7.8%	13.7%	14.1%	12.6%
M11	J	9	0.9708	0.8316	7.0%	4.1%	7.6%	7.4%	8.1%
M11	J	10	0.3768	0.3205	2.7%	1.6%	2.8%	2.9%	3.2%
M11	J	11	0.5129	0.4125	3.7%	2.0%	4.2%	3.7%	4.0%
M24	J	1	0.4188	0.3019	3.0%	1.5%	3.2%	2.7%	6.2%
M24	J	2	0.6643	1.3911	4.8%	6.8%	8.0%	12.4%	9.8%
M24	J	3	0.9595	1.4485	7.0%	7.1%	9.0%	12.9%	10.8%
M24	J	4	0.5325	0.0000	3.9%	0.0%	3.9%	0.0%	6.6%
M24	J	5	0.8329	0.9954	6.0%	4.9%	7.7%	8.9%	5.9%
M24	J	6	0.9352	1.2717	6.8%	6.3%	9.2%	11.3%	9.8%
M24	J	7	1.0020	1.2448	7.3%	6.1%	9.5%	11.1%	9.8%
M24	J	8	0.7881	0.6900	5.7%	3.4%	6.3%	6.1%	5.8%
M24	J	9	0.2403	0.2288	1.7%	1.1%	1.8%	2.0%	1.7%
M24	J	10	0.6916	0.7173	5.0%	3.5%	5.7%	6.4%	5.5%
M24	J	11	0.2927	0.3431	2.1%	1.7%	2.7%	3.1%	2.6%
M37	J	1	0.7886	1.6084	5.7%	7.9%	8.8%	14.3%	11.1%
M37	J	2	0.1511	0.0000	1.1%	0.0%	1.1%	0.0%	6.6%
M37	J	3	0.7170	1.7266	5.2%	8.5%	9.6%	15.4%	12.5%
M37	J	4	0.9878	2.0706	7.2%	10.2%	11.5%	18.4%	13.8%
M37	J	5	1.2306	1.2863	8.9%	6.3%	10.9%	11.4%	10.9%
M37	J	6	0.9757	0.6502	7.1%	3.2%	7.8%	5.8%	7.0%
M37	J	7	0.9939	1.3305	7.2%	6.5%	8.3%	11.8%	10.4%
M37	J	8	1.2532	1.4549	9.1%	7.2%	11.3%	12.9%	9.6%
M37	J	9	0.4054	0.3726	2.9%	1.8%	3.5%	3.3%	3.3%
M37	J	10	0.3403	0.3926	2.5%	1.9%	2.9%	3.5%	3.2%
M37	J	11	0.3939	0.3442	2.9%	1.7%	3.3%	3.1%	3.2%

Exhibit F

Power Density/RF Emissions Report

EBI Consulting

environmental | engineering | due diligence

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

T-Mobile Existing Facility

Site ID: CT11413D

Tolland/Rt-84/X66_1
208 Reed Road
Tolland, Connecticut 06084

May 10, 2022

EBI Project Number: 6222002983

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**23.99%**

May 10, 2022

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

Emissions Analysis for Site: CT11413D - Tolland/Rt-84/X66_1

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **208 Reed Road** in **Tolland, Connecticut** for the purpose of determining whether the emissions from the Proposed T-Mobile Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu W/cm^2$). 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.

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

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at 208 Reed Road in Tolland, Connecticut using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report, the sample point is the top of a 6-foot person standing at the base of the tower.

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

1) 2 LTE channels (600 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

2) 1 NR channel (600 MHz Band) was considered for each sector of the proposed installation. This Channel has a transmit power of 80 Watts.

3) 2 LTE channels (700 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

4) 4 GSM channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

5) 2 LTE channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

6) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

7) 1 LTE Traffic channel (LTE 1C and 2C BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 60 Watts.

8) 1 LTE Broadcast channel (LTE 1C and 2C BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 20 Watts.

9) 1 NR Traffic channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 120 Watts.

10) 1 NR Broadcast channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 40 Watts.

11) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.

12) For the following calculations, the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

13) The antennas used in this modeling are the Ericsson AIR 6419 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz channel(s) in Sector A, the Ericsson AIR 6419 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz channel(s) in Sector B, the Ericsson AIR 6419 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz channel(s) in Sector C. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used for all calculations. This value is a very conservative

estimate as gain reductions for these particular antennas are typically much higher in this direction.

14) The antenna mounting height centerline of the proposed antennas is 138 feet above ground level (AGL).

15) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

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

T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	Ericsson AIR 6419	Make / Model:	Ericsson AIR 6419	Make / Model:	Ericsson AIR 6419
Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz
Gain:	22.05 dBd / 15.55 dBd / 22.05 dBd / 15.55 dBd	Gain:	22.05 dBd / 15.55 dBd / 22.05 dBd / 15.55 dBd	Gain:	22.05 dBd / 15.55 dBd / 22.05 dBd / 15.55 dBd
Height (AGL):	138 feet	Height (AGL):	138 feet	Height (AGL):	138 feet
Channel Count:	4	Channel Count:	4	Channel Count:	4
Total TX Power (W):	240.00 Watts	Total TX Power (W):	240.00 Watts	Total TX Power (W):	240.00 Watts
ERP (W):	31,011.95	ERP (W):	31,011.95	ERP (W):	31,011.95
Antenna A1 MPE %:	**6.40%**	Antenna B1 MPE %:	**6.40%**	Antenna C1 MPE %:	**6.40%**
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20
Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz
Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd / 15.65 dBd / 16.35 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd / 15.65 dBd / 16.35 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd / 15.65 dBd / 16.35 dBd
Height (AGL):	138 feet	Height (AGL):	138 feet	Height (AGL):	138 feet
Channel Count:	13	Channel Count:	13	Channel Count:	13
Total TX Power (W):	560.00 Watts	Total TX Power (W):	560.00 Watts	Total TX Power (W):	560.00 Watts
ERP (W):	18,052.03	ERP (W):	18,052.03	ERP (W):	18,052.03
Antenna A2 MPE %:	**4.88%**	Antenna B2 MPE %:	**4.88%**	Antenna C2 MPE %:	**4.88%**

Site Composite MPE %	
Carrier	**MPE %**
T-Mobile (Max at Sector A):	11.28%
Verizon	12.71%
Site Total MPE % :	23.99%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	11.28%
T-Mobile Sector B Total:	11.28%
T-Mobile Sector C Total:	11.28%
Site Total MPE % :	23.99%

T-Mobile Maximum MPE Power Values (Sector A)

T-Mobile Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density (μW/cm²)	Frequency (MHz)	Allowable MPE (μW/cm²)	Calculated % MPE
T-Mobile 2500 MHz LTE 1C & 2C Traffic	1	9619.47	138.0	19.85	2500 MHz LTE 1C & 2C Traffic	1000	1.98%
T-Mobile 2500 MHz LTE 1C & 2C Broadcast	1	717.84	138.0	1.48	2500 MHz LTE 1C & 2C Broadcast	1000	0.15%
T-Mobile 2500 MHz NR Traffic	1	19238.94	138.0	39.70	2500 MHz NR Traffic	1000	3.97%
T-Mobile 2500 MHz NR Broadcast	1	1435.69	138.0	2.96	2500 MHz NR Broadcast	1000	0.30%
T-Mobile 600 MHz LTE	2	591.73	138.0	2.44	600 MHz LTE	400	0.61%
T-Mobile 600 MHz NR	1	1577.94	138.0	3.26	600 MHz NR	400	0.81%
T-Mobile 700 MHz LTE	2	648.82	138.0	2.68	700 MHz LTE	467	0.57%
T-Mobile 1900 MHz GSM	4	1101.85	138.0	9.09	1900 MHz GSM	1000	0.91%
T-Mobile 1900 MHz LTE	2	2203.69	138.0	9.09	1900 MHz LTE	1000	0.91%
T-Mobile 2100 MHz LTE	2	2589.11	138.0	10.68	2100 MHz LTE	1000	1.07%
						Total:	**11.28%**

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

Summary

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

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

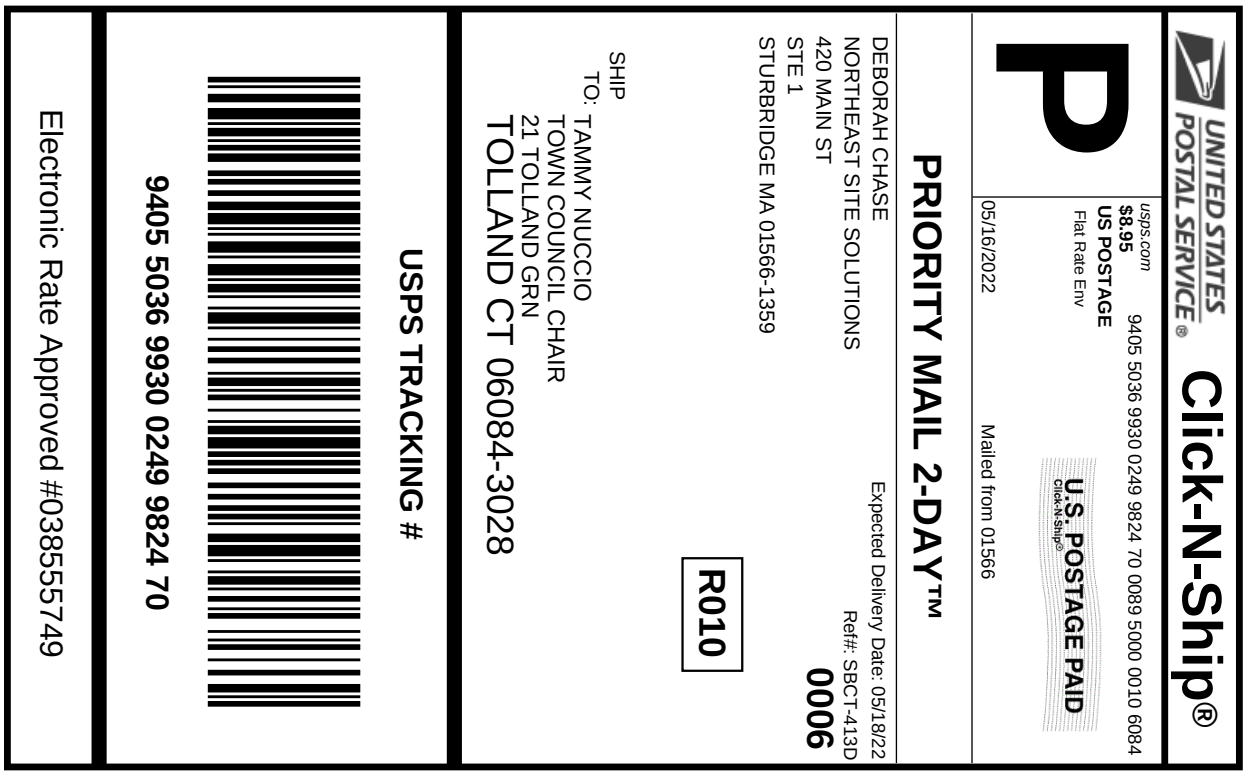
T-Mobile Sector	Power Density Value (%)
Sector A:	11.28%
Sector B:	11.28%
Sector C:	11.28%
T-Mobile Maximum MPE % (Sector A):	11.28%
Site Total:	23.99%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **23.99%** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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

Exhibit G

Recipient Mailings



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USPS TRACKING # :
9405 5036 9930 0249 9824 70

Trans. #:	563595831
Print Date:	05/16/2022
Ship Date:	05/16/2022
Expected Delivery Date:	05/18/2022

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-413D

To: TAMMY NUCCIO
TOWN COUNCIL CHAIR
21 TOLLAND GRN
TOLLAND CT 06084-3028

* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.

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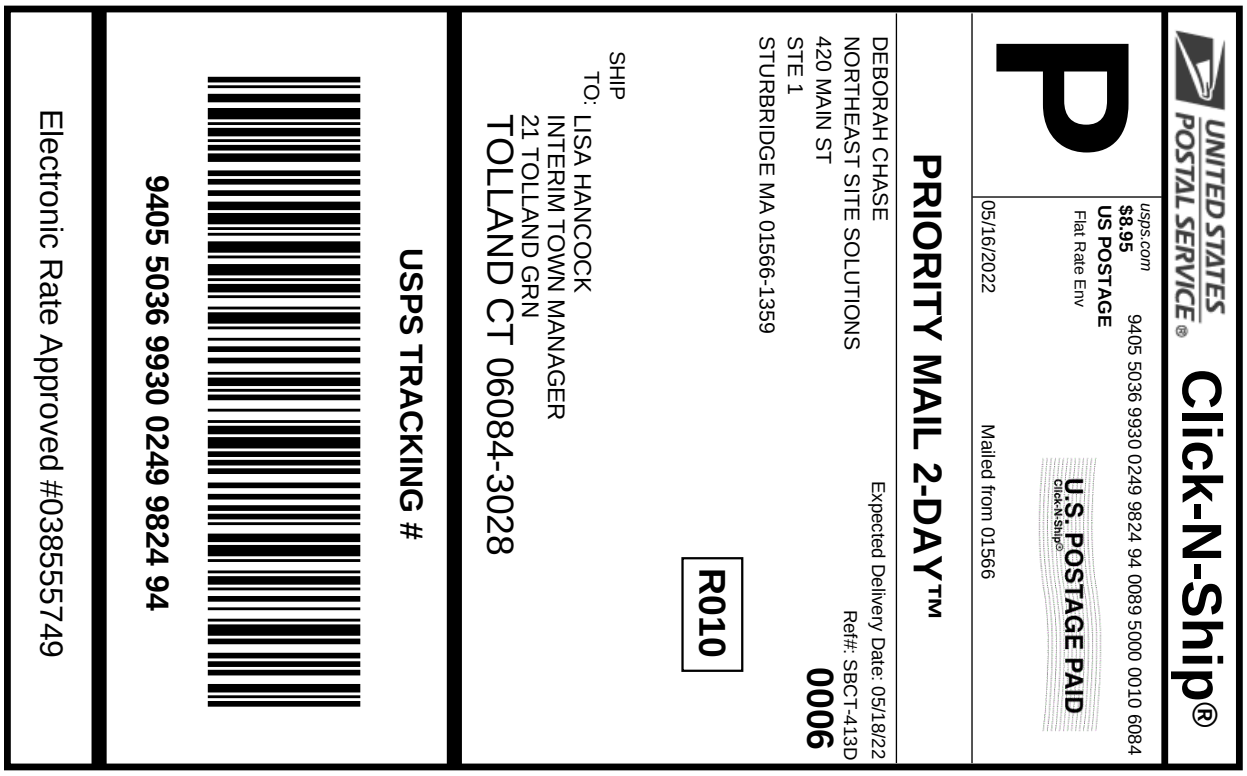

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Trans. #:	563595831
Print Date:	05/16/2022
Ship Date:	05/16/2022
Expected Delivery Date:	05/18/2022

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-413D

To: LISA HANCOCK
INTERIM TOWN MANAGER
21 TOLLAND GRN
TOLLAND CT 06084-3028

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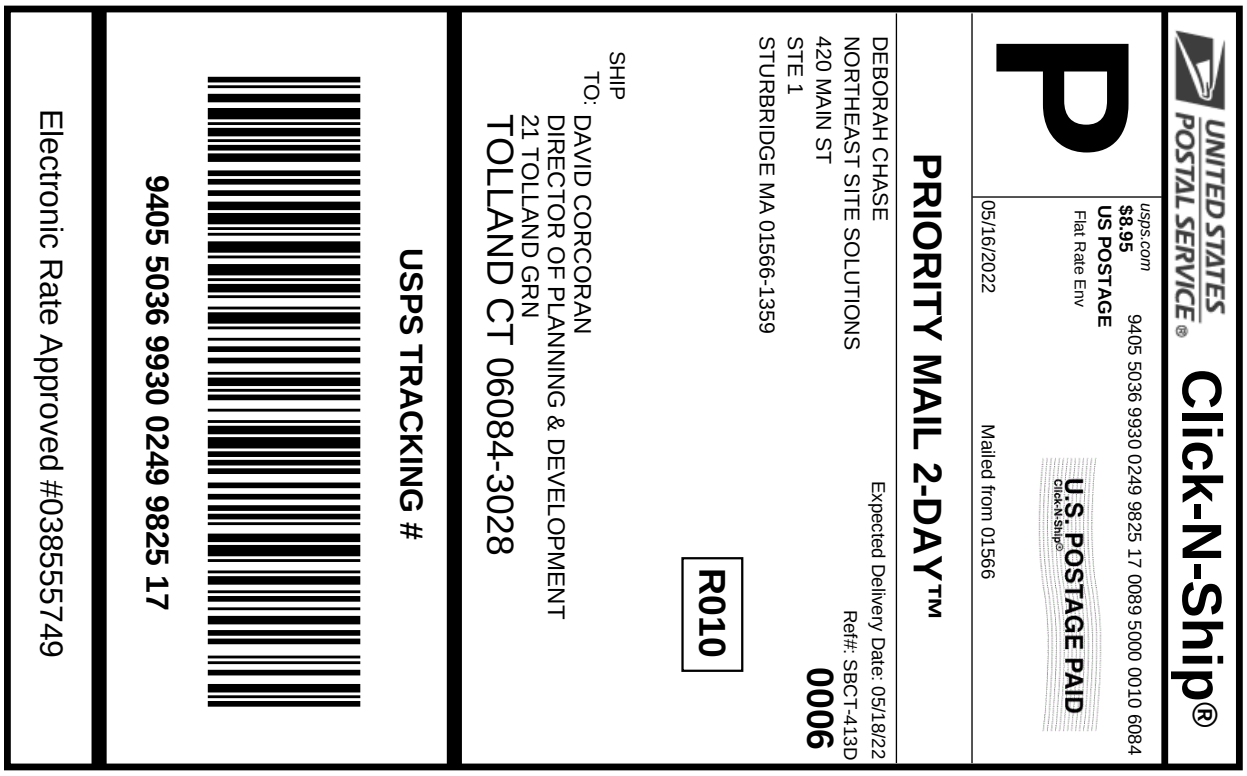

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Trans. #:	563595831
Print Date:	05/16/2022
Ship Date:	05/16/2022
Expected Delivery Date:	05/18/2022

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-413D

To: DAVID CORCORAN
DIRECTOR OF PLANNING & DEVELOPMENT
21 TOLLAND GRN
TOLLAND CT 06084-3028

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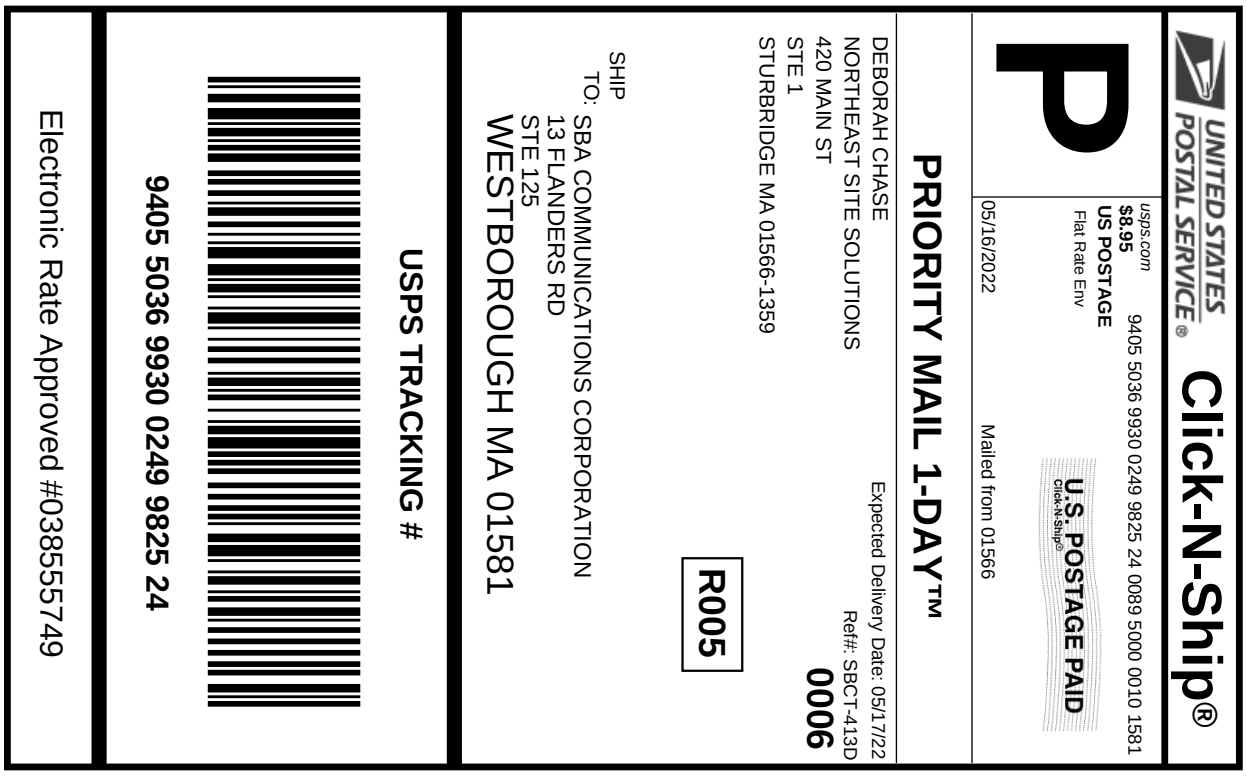

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Print Date:	05/16/2022
Ship Date:	05/16/2022
Expected Delivery Date:	05/17/2022

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-413D

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

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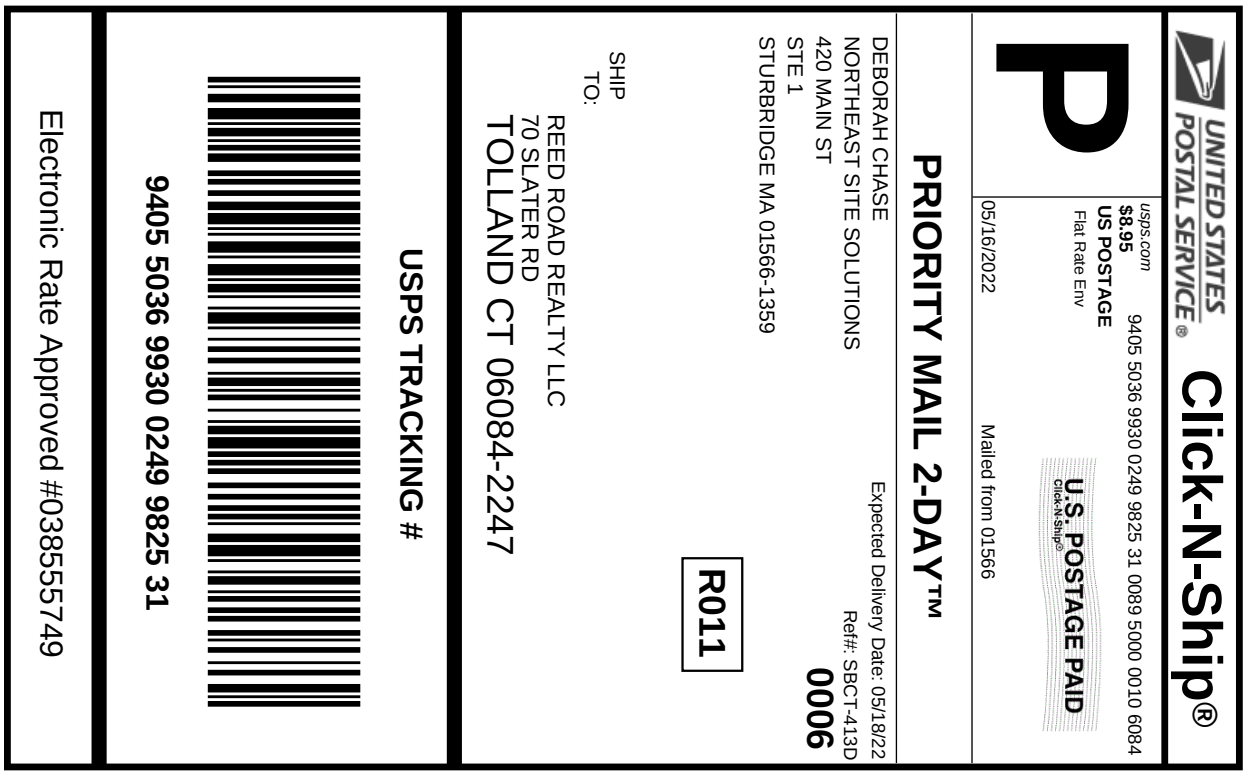

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Trans. #:	563595831
Print Date:	05/16/2022
Ship Date:	05/16/2022
Expected Delivery Date:	05/18/2022

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-413D

To: REED ROAD REALTY LLC
70 SLATER RD
TOLLAND CT 06084-2247

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CT11413D SBA TBD

UNITED STATES POSTAL SERVICE.

FARMINGTON
210 MAIN ST
FARMINGTON, CT 06032-9998
(800)275-8777

05/16/2022 03:28 PM

Product	Qty	Unit Price	Price
Prepaid Mail Westborough, MA 01581 Weight: 0 lb 2.00 oz Acceptance Date: Mon 05/16/2022 Tracking #: 9405 5036 9930 0249 9825 24	1		$0.00
Prepaid Mail Tolland, CT 06084 Weight: 0 lb 8.30 oz Acceptance Date: Mon 05/16/2022 Tracking #: 9405 5036 9930 0249 9824 70	1		$0.00
Prepaid Mail Tolland, CT 06084 Weight: 0 lb 8.30 oz Acceptance Date: Mon 05/16/2022 Tracking #: 9405 5036 9930 0249 9824 94	1		$0.00
Prepaid Mail Tolland, CT 06084 Weight: 0 lb 8.30 oz Acceptance Date: Mon 05/16/2022 Tracking #: 9405 5036 9930 0249 9825 17	1		$0.00
Prepaid Mail Tolland, CT 06084 Weight: 0 lb 8.30 oz Acceptance Date: Mon 05/16/2022 Tracking #: 9405 5036 9930 0249 9825 31	1		$0.00
Grand Total:			$0.00