NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

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

July 28, 2022

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

RE: Exempt Modification Application
48 Westchester Road, Colchester, CT 06415
Latitude: 41.590277
Longitude: -72.401388
Site #: CT02218-S_CT11338A_SBA/T-Mobile

Dear Ms. Bachman:

T-Mobile is requesting to file an exempt modification for an existing tower located 48 Westchester Road, Colchester, CT 06415. T-Mobile currently maintains six (6) antennas at the 177-foot level of the existing 180-foot monopole tower. The property is owned by Margus Properties LLC, and the tower is owned by SBA. T-Mobile now intends to replace three (3) antennas and add three (3) antennas. The new antennas would be installed at the 177-foot level of the tower. This modification includes B2, B5 hardware that is both 4G (LTE), and 5G capable. The existing platform mount will be replaced per the attached TES Mount Analysis dated June 27, 2022.

Remove:
(3) COAX – 1-5/8"
(3) ERICSSON 4415 B66A RRU

Remove and Replace:
(3) RFS APXV18-206516-C-A20 Antennas (REMOVE) - (3) ERICSSON AIR6449 B41 Antennas (REPLACE)

Install New:
(3) COMMSCOPE VV-65B-R1 Antennas
(3) ERICSSON 4460 B25+B66 RRU
(2) Hybrid Line – 1.9"

Existing to Remain:
(3) RFS APXVAALL24_43-U-NA20 Antennas
(3) ERICSSON 4449 B71+B85 RRU
(3) Hybrid Line – 1.9"
(3) KATHREIN TMAs *
(3) KATHREIN Bias T-s *
(5) COAX – 1-5/8" *

*Equipment shown for entitlement purposes only

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The facility was approved by the Town of Colchester Planning & Zoning Commission on November 3, 1999. 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 Andreas Bisbikos, First Selectman and Ariel Lago, Zoning Enforcement Officer for the Town of Colchester, 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: Andreas Bisbikos, First Selectman
Town of Colchester
127 Norwich Avenue
Colchester, CT 06415

Ariel Lago, Zoning Enforcement Officer
Town of Colchester
127 Norwich Avenue
Colchester, CT 06415

Margus Properties LLC – Property Owner
48 Westchester Road
Colchester, CT 06415

SBA - Tower Owner

Exhibit A

Original Facility Approval

Planning and Zoning
Planning Director
Town Engineer
Code Administration
Health Director
Building Official
Fire Marshal
Registered Sanitarian
Zoning Enforcement
Wetlands Enforcement

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

November 4, 1999

Ms. Esther McNany
SBA Inc.
125 Shaw Street
New London, CT 06320

RE: SDP#99-235, SBA/Omnipoint Communications, 48 Westchester Road, Communications Tower, Site Development Plan prepared by Goodkind & O'Dea Inc (Job#CT10125-018) dated 8/25/99 revised through 9/28/99

Dear Ms. McNany:

The above referenced site development plan was approved by the Zoning & Planning Commission at their regular meeting held November 3, 1999.

Per Section 12.10.1 of the Zoning Regulations, a bond in the amount of 25% of the total cost of site improvements must be posted prior to the endorsement of this plan and/or commencement of work. A bond estimate must be submitted to the Town Engineer for his review and approval.

If you have any questions, please call me at 537-7283.

Very truly yours,

Alicia Lathrop
Zoning Enforcement Officer

Exhibit B

Property Card

Town of Colchester, CT

Property Report

Map Block Lot 06-12/038-000 | PID 3133 | Building # 1 | Section # 1 | Account M0428100

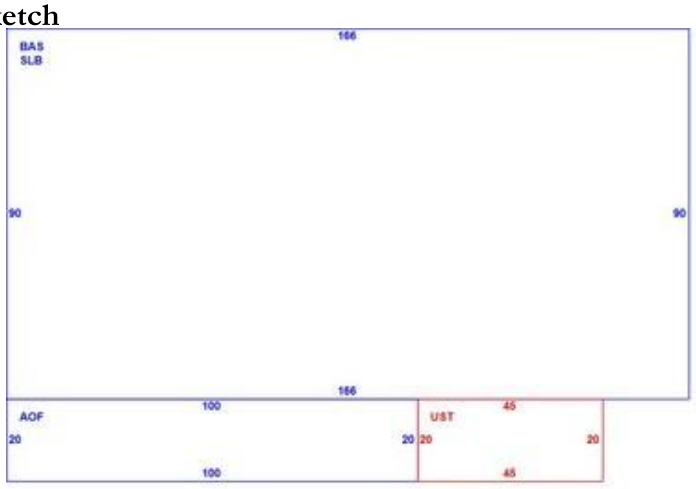
Property Information

Property Location	48 WESTCHESTER RD
Owner	MARGUS PROPERTIES LLC
Co-Owner	na
Mailing Address	48 WESTCHESTER RD COLCHESTER CT 06415
Land Use	4000 Factory MDL-96
Land Class	I
Zoning Code	I
Census Tract	

Neighborhood	
Acreage	22.69
Utilities	UNKNOWN
Lot Setting/Desc	UNKNOWN UNKNOWN
Additional Info	

Photo

Sketch



Primary Construction Details

Year Built	1989
Stories	1
Building Style	Pre-Eng Mfg
Building Use	Commercial
Building Condition	
Interior Floors 1	Concrete Slab
Interior Floors 2	Carpet
Total Rooms	
Basement Garages	
Occupancy	1.00
Building Grade	

Bedrooms	0
Full Bathrooms	0
Half Bathrooms	0
Extra Fixtures	0
Bath Style	
Kitchen Style	
Roof Style	Gable
Roof Cover	Enam Mtl Shing
AC Type	Partial
Fireplaces	0

Exterior Walls	Vinyl Siding
Exterior Walls 2	NA
Interior Walls	Drywall
Interior Walls 2	NA
Heating Type	Forced Air-Duc
Heating Fuel	Gas
Sq. Ft. Basement	
Fin BSMT Quality	
Extra Kitchens	

Report Created On 7/27/2022

Town of Colchester, CT

Property Report

Map Block Lot **06-12/038-000** | PID **3133** | Building # **1** | Section # **1** | Account **M0428100**

Valuation Summary

(Assessed value = 70% of Appraised Value)

Item	Appraised	Assessed
Buildings	397300	278100
Extras	19600	13700
Improvements		
Outbuildings	113600	79700
Land	786300	550400
Total	1316800	921900

Outbuilding and Extra Features

Type	Description
Shed Frame	2000 S.F.
Mezzanine-Unfn	3984 S.F.
Air Conditioning	2880 UNITS
Paving Asphalt	30000 S.F.
Lights (1)	2 UNITS
Shed Frame	500 S.F.
Shed Frame	192 S.F.
Garage Poor	400 S.F.
Garage	576 S.F.
Garage	1100 S.F.

Sub Areas

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
Office	2000	2000
First Floor	14940	14940
Slab	14940	0
Utility, Storage, Unfinished	900	0
Total Area		16940

Sales History

Owner of Record	Book/ Page	Sale Date	Sale Price
MARGUS PROPERTIES LLC	0374/0274	12/30/1994	0

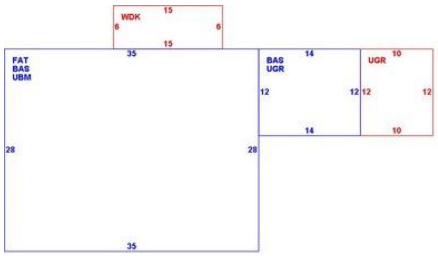
Report Created On **7/27/2022**

Town of Colchester, CT

Property Report | Map Block Lot 06-12/038-000 | PID 3133 | Building # 2 | Section # 1 | Account M0428100

Photo

Sketch



Primary Construction Details

Year Built	1950	Bedrooms	3 Bedrooms	Exterior Walls	Vinyl Siding
Stories	1	Full Bathrooms	1	Exterior Walls 2	NA
Building Style	Ranch	Half Bathrooms	0	Interior Walls	Drywall
Building Use	Residential	Extra Fixtures	0	Interior Walls 2	NA
Building Condition		Bath Style		Heating Type	Forced Air-Duc
Interior Floors 1	Vinyl/Resil.	Kitchen Style		Heating Fuel	Oil
Interior Floors 2	Carpet	Roof Style	Gable	Sq. Ft. Basement	
Total Rooms	6	Roof Cover	Asphalt	Fin BSMT Quality	
Basement Garages		AC Type	Wall Unit	Extra Kitchens	
Occupancy	1.00	Fireplaces	0		
Building Grade					

Sub Areas

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
First Floor	1148	1148
Attic, Finished	980	196
Basement, Unfinished	980	0
Bsmt Garage	288	0
Wood Deck	90	0

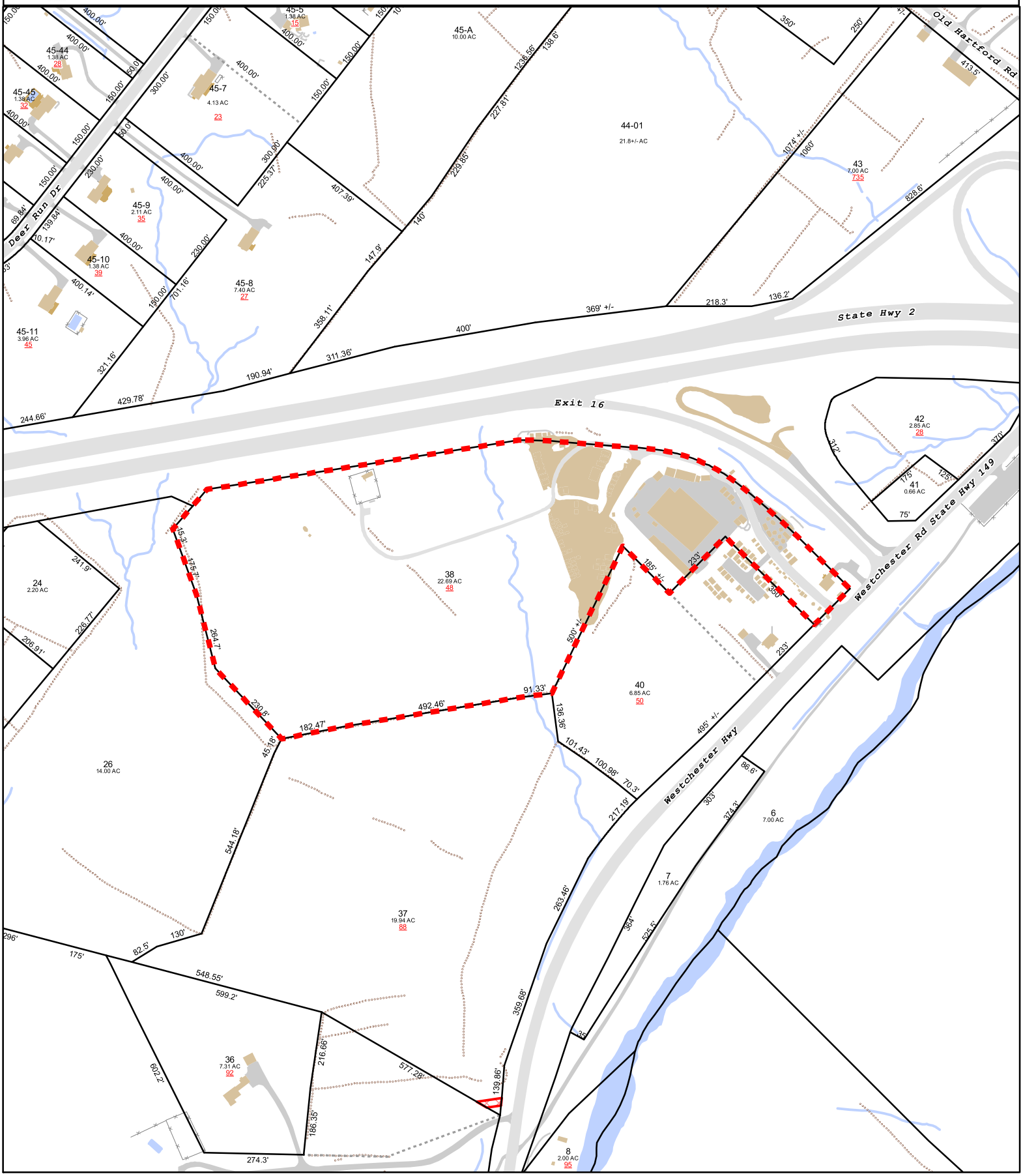
Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
Total Area		1344

Report Created On

Town of Colchester, Connecticut - Assessment Parcel Map

Parcel: 06-12-038-000

Address: 48 WESTCHESTER RD



Approximate Scale: 1 inch = 350 feet

0 180 360 540 720 Feet

Map Produced: April 2022 / Grand List: 2021

Exhibit C

Construction Drawings

SPECIAL CONSTRUCTION WORK NOTE (MONOPINE BRANCH PROTECTION):
NO MONOPINE BRANCHES ARE TO BE CUT, ALTERED, MOVED, REMOVED PERMANENTLY, OR TEMPORARILY RELOCATED FOR ANY REASON UNLESS PREVIOUSLY APPROVED IN WRITING BY SBA REGIONAL SITE MANAGER. FAILURE TO COMPLY WILL RESULT IN LIQUIDATED DAMAGES AND PENALTIES FROM SBA TO T-MOBILE.

ROUTE 2/COLCHESTER WEST/SBA

48 WESTCHESTER ROAD
COLCHESTER, CT 06415
NEW LONDON COUNTY

SITE NO.: CT11338A

SITE TYPE: 180'± MONOPOLE

RF DESIGN GUIDELINE: 67D5D998E ODE+6160

SCOPE OF WORK

REMOVE:
- 3 ANTENNAS
- 3 TMAS
- 3 RADIOS
- 1 LOW-PROFILE MOUNT
- ALL COAX CABLES

INSTALL:
- 6 ANTENNAS
- 3 RADIOS
- 1 LOW-PROFILE MOUNT
- 2 HYBRID CABLE
- 1 6160 EQUIPMENT CABINET
- 1 B160 BATTERY CABINET
- 1 SLACKBOX
- 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
SECTOR D:	ACCESS BY CERTIFIED CLIMBER
GPS/LMU:	UNRESTRICTED
RADIO CABINETS:	UNRESTRICTED
PPC DISCONNECT:	UNRESTRICTED
MAIN CIRCUIT D/C:	UNRESTRICTED
NIU/T DEMARC:	UNRESTRICTED
OTHER/SPECIAL:	NONE

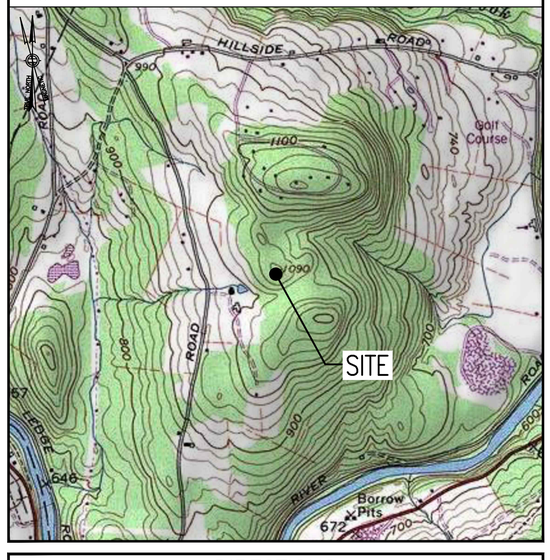
GENERAL NOTES

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

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

VICINITY MAP

SCALE: 1" = 1000'-0"



DIRECTIONS

MERGE ONTO I-495 NORTH TOWARD MANSFIELD/MARLBORO. TAKE EXIT 33B TO MERGE ONTO I-95 SOUTH. TAKE EXIT 38 FOR STATE 15 TOWARD MERRITT PARKWAY. TAKE EXIT ON LEFT TO MERGE ONTO CT-15 SOUTH. TAKE EXIT 46 TOWARD CT-59. KEEP RIGHT AT THE FORK TO MERGE ONTO CONGRESS STREET. TURN LEFT ONTO CT-59 NORTH. TURN RIGHT TO STAY ON CT-59 NORTH. TURN LEFT ONTO NORTH PARK AVENUE. CONTINUE ONTO NORTH STREET. SITE IS LOCATED ON THE RIGHT HAND SIDE.

SHEET INDEX

SHEET NO.	DESCRIPTION	REV. NO.
T-1	TITLE SHEET	1
GN-1	GENERAL NOTES	1
A-1	COMPOUND PLAN, EQUIPMENT PLANS & PHOTO	1
A-2	TOWER ELEVATION, ANTENNA PLANS & PHOTOS	1
A-3	SITE DETAILS	1
A-4	ANTENNA & FEEDLINE CHARTS	1
E-1	ELECTRIC & GROUNDING DETAILS & PHOTOS	1

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:	CT11338A
SITE NAME:	ROUTE 2/COLCHESTER WEST/SBA
SBA SITE NUMBER:	CT02218-S
SBA SITE NAME:	COLCHESTER
SITE ADDRESS:	48 WESTCHESTER ROAD COLCHESTER, CT 06415
PROPERTY OWNER:	MARGUS PROPERTIES LLC. C/O SBA TOWERS INC. 8051 CONGRESS AVE. BOCA RATON, FL 33487
TOWER OWNER:	SBA TOWERS, LLC 8501 CONGRESS AVENUE BOCA RATON, FL 33487 PHONE: 561-226-9523
COUNTY:	NEW LONDON COUNTY
ZONING DISTRICT:	AC/ID – ARTERIAL/COMM DISTRICT
STRUCTURE TYPE:	MONOPOLE
STRUCTURE HEIGHT:	180'
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: 41.590134° N41°35'24.4824" LONGITUDE: -72.401471° W72°24'05.2956"

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

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

STATE OF CONNECTICUT
JAMES M. FITZGERALD
No. 25997
LICENSED
PROFESSIONAL CIVIL ENGINEER
6/30/2022

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	06/30/22	ISSUED FOR CONSTRUCTION	JRV
0	06/21/22	ISSUED FOR REVIEW	JRV

SITE NUMBER:
CT11338A

SITE ADDRESS:
48 WESTCHESTER ROAD
COLCHESTER, CT 06415

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

1815.502

GENERAL NOTES:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

SITE WORK GENERAL NOTES:

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

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

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

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

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

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

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

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

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

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

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

CONCRETE AND REINFORCING STEEL NOTES:

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

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

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

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

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

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

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

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

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

STRUCTURAL STEEL NOTES:

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

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

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

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

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

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

SOIL COMPACTION NOTES FOR SLAB ON GRADE:

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

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

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

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

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

COMPACTION EQUIPMENT:

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

CONSTRUCTION NOTES:

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

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

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

ELECTRICAL INSTALLATION NOTES:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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STATE OF CONNECTICUT
JAMES M. FITZGERALD
No. 25937
LICENSED
PROFESSIONAL CIVIL ENGINEER
6/30/2022

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	06/30/22	ISSUED FOR CONSTRUCTION	JRV
0	06/21/22	ISSUED FOR REVIEW	JRV

SITE NUMBER:
CT11338A

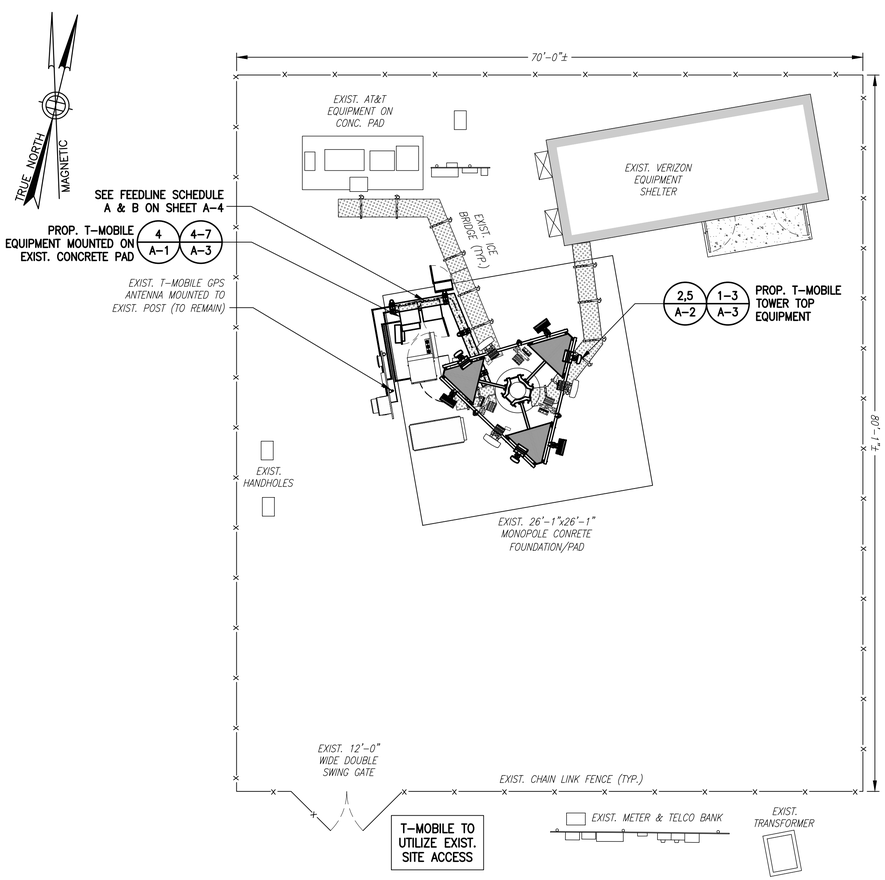
SITE ADDRESS:
48 WESTCHESTER ROAD
COLCHESTER, CT 06415

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-1

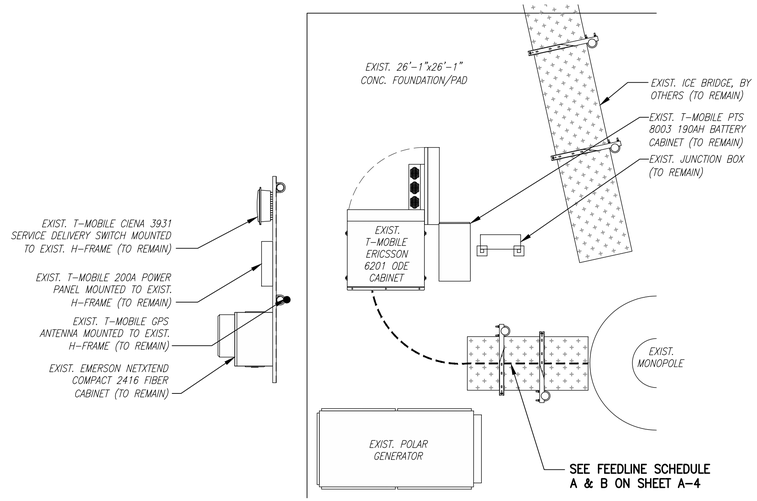
1815.502

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.

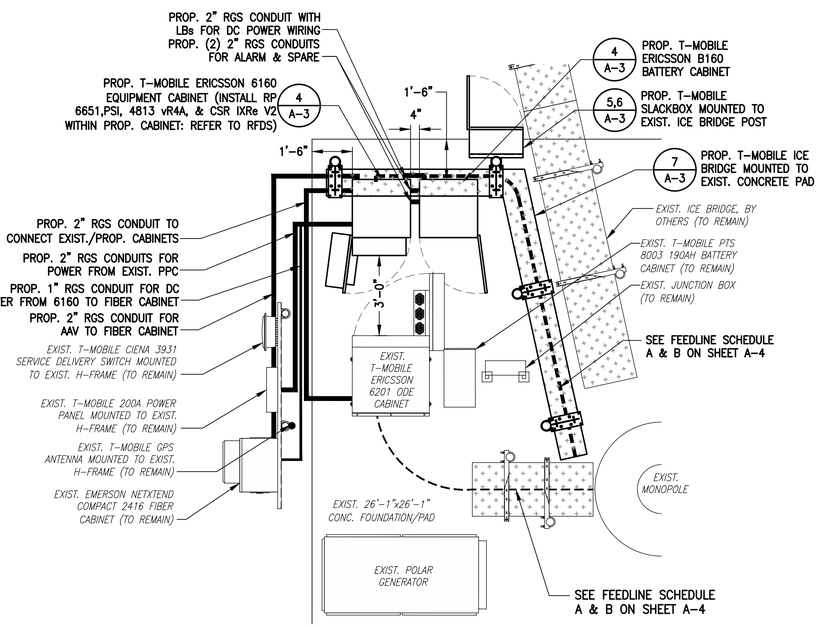


COMPOUND PLAN
1 / A-1
SCALE: 1" = 5'-0"
0 5'-0" 10'-0" 15'-0"

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



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



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

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SHEET TITLE
COMPOUND PLAN, EQUIPMENT PLANS & PHOTO

SHEET NUMBER
A-1

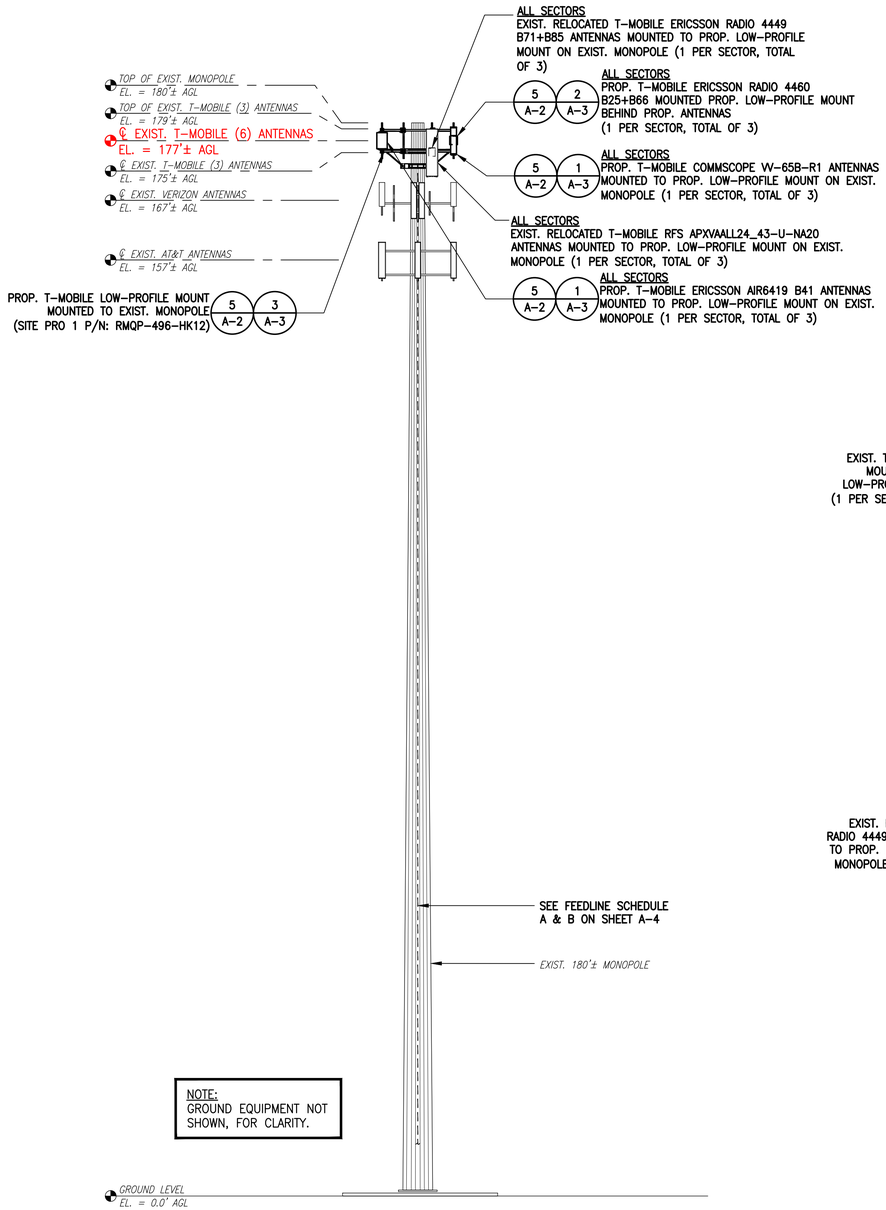
1815.502

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.

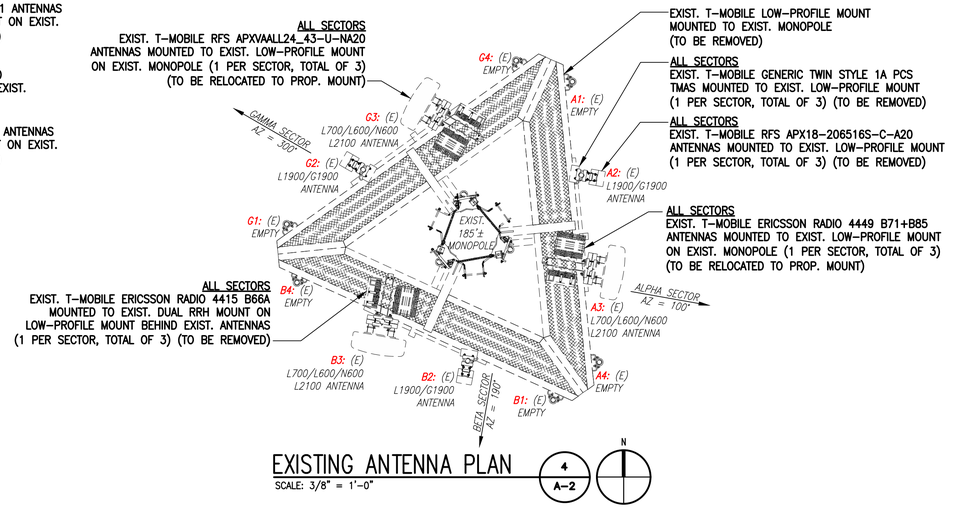
EXISTING TOWER PHOTO (1 / A-2)
SCALE: N.T.S.



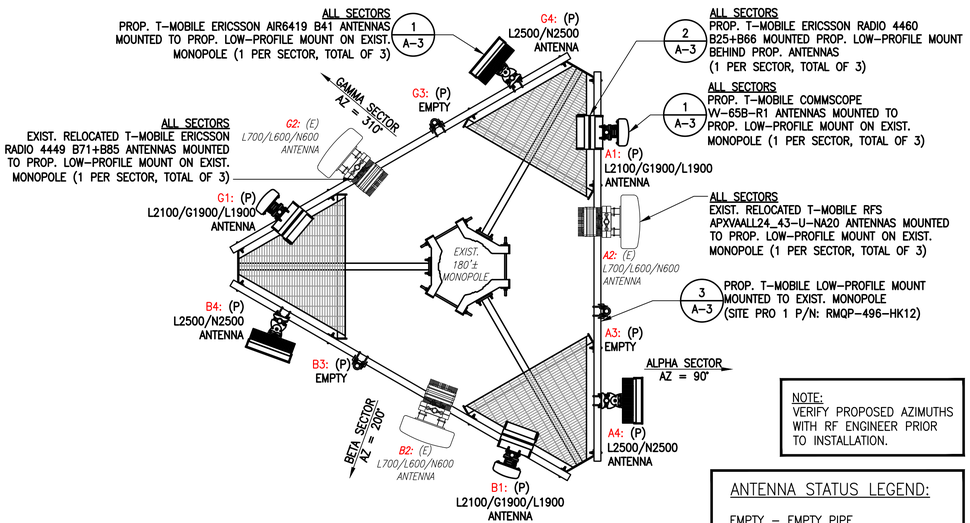
NOTE:
GROUND EQUIPMENT NOT SHOWN, FOR CLARITY.

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"



PROPOSED ANTENNA PLAN (5 / A-2)
SCALE: N.T.S.

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

ANTENNA STATUS LEGEND:

EMPTY – EMPTY PIPE

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

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TOWER ELEVATION, ANTENNA PLANS & PHOTOS

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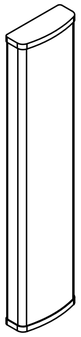
1815.502



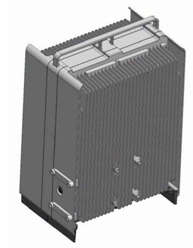
COMMSCOPE VV-65B-R1 ANTENNA

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

ERICSSON M-MIMO 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

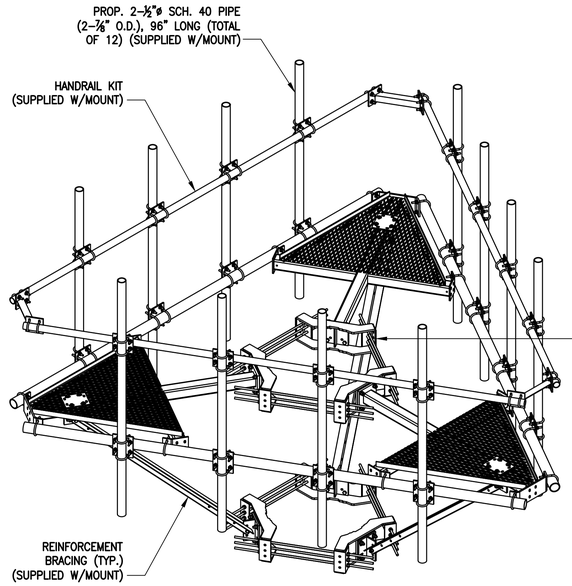
ANTENNA DETAILS (1 / A-3)
SCALE: N.T.S.



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

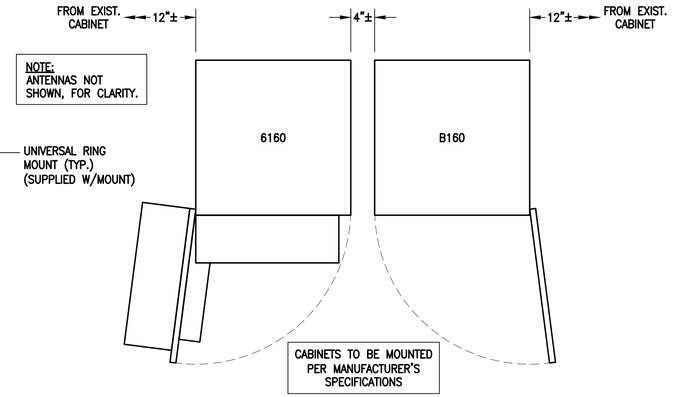
RADIO DETAIL (2 / A-3)
SCALE: N.T.S.



SITE-PRO 1 12'-6" LOW-PROFILE CO-LOCATION PLATFORM W/HANDRAIL KIT

PART NUMBER: RMQP-4096-HK
QUANTITY: TOTAL OF 1

ANTENNA MOUNT DETAIL (3 / A-3)
SCALE: N.T.S.



ERICSSON 6160 SITE SUPPORT CABINET

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

ERICSSON B160 BATTERY CABINET

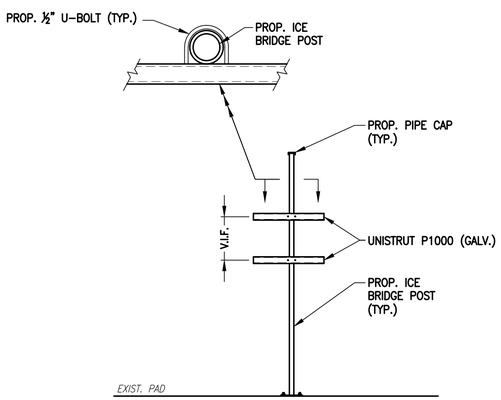
DIMENSIONS: 63.25"H x 26.0"W x 26.0"D
WEIGHT: 1771.0 lbs
QUANTITY: TOTAL OF 1

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

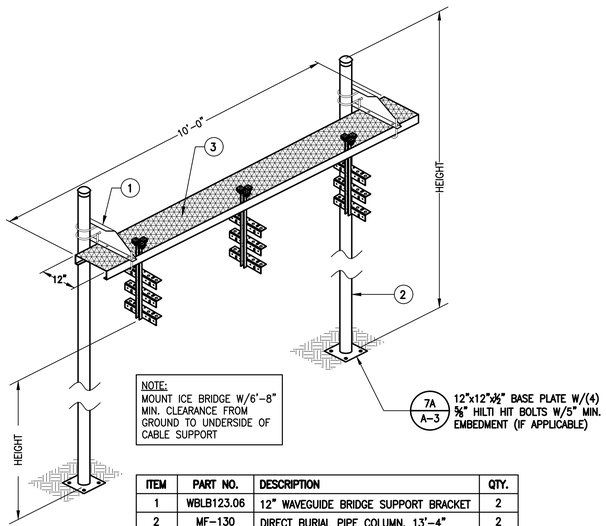
SLACKBOX - HOFFMAN 32FH91 NEMA 3R ENCLOSURE

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

SSC DETAILS (5 / A-3)
SCALE: N.T.S.

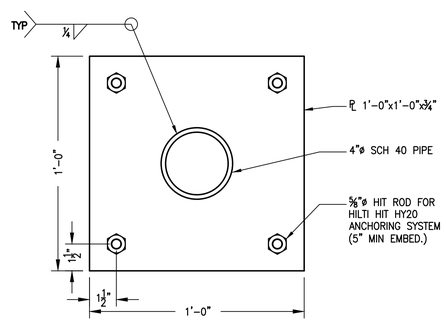


H-FRAME DETAIL (6 / A-3)
SCALE: N.T.S.



ITEM	PART NO.	DESCRIPTION	QTY.
1	WBLB123.06	12" WAVEGUIDE BRIDGE SUPPORT BRACKET	2
2	MF-130	DIRECT BURIAL PIPE COLUMN, 13'-4"	2
3	WB-CY110	12" SAFETY GRATING	1
4	WB-K110BH	HARDWARE KIT ITEM #5-16	1

CABLE BRIDGE DETAIL (7 / A-3)
SCALE: NTS



CABLE BRIDGE BASE PLATE (7A / A-3)
SCALE: NTS

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STATE OF CONNECTICUT ★ JAMES M. FITZGERALD ★ No. 25997 ★ LICENSED PROFESSIONAL CIVIL ENGINEER
6/30/2022

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	06/30/22	ISSUED FOR CONSTRUCTION	JRV
0	06/21/22	ISSUED FOR REVIEW	JRV

SITE NUMBER:
CT11338A

SITE ADDRESS:
48 WESTCHESTER ROAD
COLCHESTER, CT 06415

SHEET TITLE
SITE DETAILS

SHEET NUMBER
A-3

1815.502

FINAL ANTENNA CONFIGURATION

SECTOR		ANTENNA	RAD CENTER	AZIMUTH (TRUE NORTH)	MECHANICAL DOWNTILT	ELECTRICAL DOWNTILT	BAND	TMA/RADIOS	CABLES
ALPHA	A1	COMMSCOPE VV-65B-R1	177'± AGL	90°	0°	2°	L2100/L1900/G1900	ERICSSON RADIO 4460 B25+B66	EXIST. (3) 2" (6x24) HCS FIBER CABLE PROP. (2) 2" (6x24) HCS FIBER CABLES
	A2	*RFS APXVAALL24_43-U-NA20*	*177'± AGL*	90°	*0°*	*2°*	*L700/L600/N600*	*ERICSSON RADIO 4449 B71+B85*	
	A3	EMPTY PIPE	–	–	–	–	–	–	
	A4	ERICSSON M-MIMO AIR6419 B41	177'± AGL	90°	0°	2°	L2500/N2500	–	
BETA	B1	COMMSCOPE VV-65B-R1	177'± AGL	200°	0°	2°	L2100/L1900/G1900	ERICSSON RADIO 4460 B25+B66	
	B2	*RFS APXVAALL24_43-U-NA20*	*177'± AGL*	200°	*0°*	*2°*	*L700/L600/N600*	*ERICSSON RADIO 4449 B71+B85*	
	B3	EMPTY PIPE	–	–	–	–	–	–	
	B4	ERICSSON M-MIMO AIR6419 B41	177'± AGL	200°	0°	2°	L2500/N2500	–	
GAMMA	G1	COMMSCOPE VV-65B-R1	177'± AGL	310°	0°	2°	L2100/L1900/G1900	ERICSSON RADIO 4460 B25+B66	
	G2	*RFS APXVAALL24_43-U-NA20*	*177'± AGL*	310°	*0°*	*2°*	*L700/L600/N600*	*ERICSSON RADIO 4449 B71+B85*	
	G3	EMPTY PIPE	–	–	–	–	–	–	
	G4	ERICSSON M-MIMO AIR6419 B41	177'± AGL	310°	0°	2°	L2500/N2500	–	

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

NOTE: RFDS REV4 – 05/26/22

FEEDLINE SCHEDULE

SCHEDULE	FEEDLINES		LOCATION
A	*EXISTING TO REMAIN:*	*(1) ½" COAX FOR GPS ANTENNA* *(3) 2" (6x24) HCS FIBER CABLE*	ROUTED PER STRUCTURAL ANALYSIS
	EXISTING TO BE REMOVED:	*ALL COAX CABLES*	
B	PROPOSED:	(2) 2" (6x24) HCS FIBER CABLES (1) ½" COAX CABLE FOR GPS ANTENNA	

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

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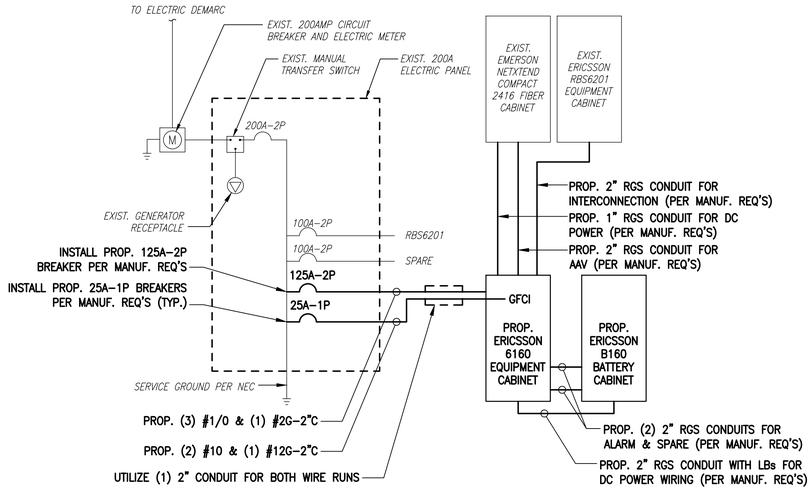
COLCHESTER, CT 06415

SHEET TITLE
ANTENNA & FEEDLINE CHARTS

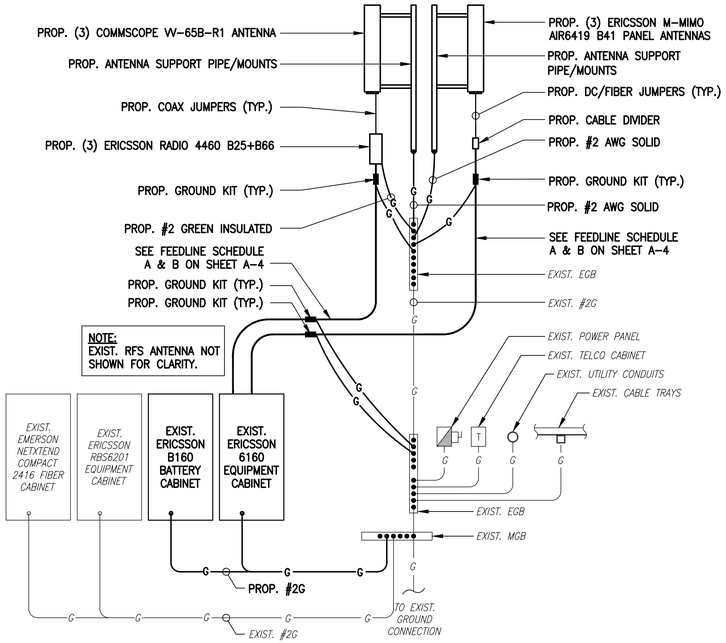
SHEET NUMBER
A-4

1815.502

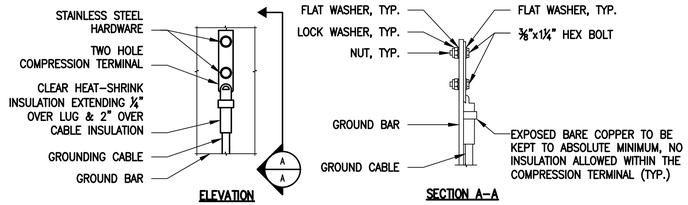
EXISTING POWER PANEL PHOTOS (1 / E-1)
SCALE: NOT TO SCALE



ONE LINE DIAGRAM (2 / E-1)
SCALE: NOT TO SCALE

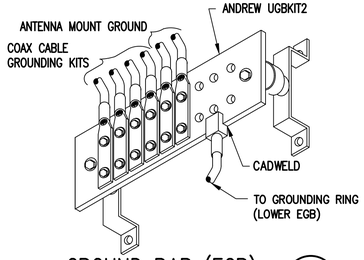


GROUNDING RISER DIAGRAM (3 / E-1)
SCALE: NOT TO SCALE

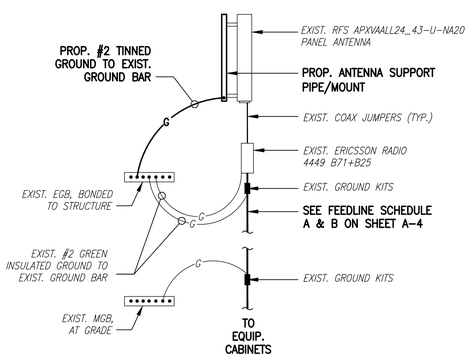


NOTES:
1. "DOUBLING UP" OR "STACKING" OF CONNECTION IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.
3. CADWELL DOWNLEADS FROM UPPER EGB, LOWER EGB AND MGB.

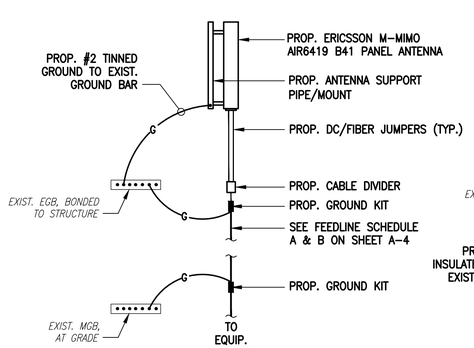
TYPICAL GROUND BAR CONNECTIONS DETAIL (4 / E-1)
SCALE: NOT TO SCALE



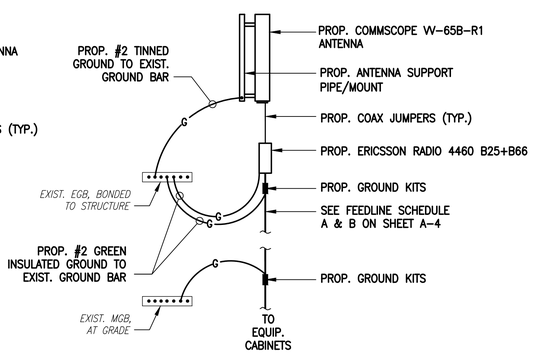
GROUND BAR (EGB) (5 / E-1)
SCALE: NOT TO SCALE



L700/L600/N600 ANTENNA



L2500/N2500 ANTENNA



L2100/G1900/L1900 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.

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CT11338A

SITE ADDRESS:
48 WESTCHESTER ROAD
COLCHESTER, CT 06415

SHEET TITLE
ELECTRIC & GROUNDING DETAILS & PHOTOS

SHEET NUMBER
E-1

1815.502

Exhibit D

Structural Analysis Report

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

Structural Analysis Report

Existing 180 ft Valmont Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT02218-S

Customer Site Name: Colchester2

Carrier Name: T-Mobile (App#: 200999-3)

Carrier Site ID / Name: CT11338A / Colchester

Site Location: 48 Westchester Road

Colchester, Connecticut

New London County

Latitude: 41.590161

Longitude: -72.401467

Analysis Result:

Max Structural Usage: 99.7% [Pass]

Max Foundation Usage: 86.0% [Pass]

Additional Usage Caused by New Mount/Mount Modification: +3.3%

Report Prepared By : Changzhi Zang

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

Structural Analysis Report

Existing 180 ft Valmont Monopole

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Customer Site Number: CT02218-S

Customer Site Name: Colchester2

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Site Location: 48 Westchester Road

Colchester, Connecticut

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Latitude: 41.590161

Longitude: -72.401467

Analysis Result:

Max Structural Usage: 99.7% [Pass]

Max Foundation Usage: 86.0% [Pass]

Additional Usage Caused by New Mount/Mount Modification: +3.3%

Report Prepared By : Changzhi Zang

Introduction

The purpose of this report is to summarize the analysis results on the 180 ft Valmont 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	Tower Drawings prepared by Valmont Microflect, Order # 19487-99 Dated 11/03/1999
Foundation Drawing	Foundation Drawing prepared byTowerkraftt, Project# 2985 Dated 11/04/1999
Geotechnical Report	JGI #99539G.dated 11/12/1999
Modification Drawings	N/A
Mount Analysis	T-Mobile MA by TES # 130556, dated 06/16/2022

Analysis Criteria

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

Wind Speed Used in the Analysis:	Ultimate Design Wind Speed V_{ult} = 135.0 mph (3-Sec. Gust)/ Nominal Design Wind Speed V_{asd} = 105.0 mph (3-Sec. Gust)
Wind Speed with Ice:	50 mph (3-Sec. Gust) with 3/4" radial ice concurrent
Operational Wind Speed:	60 mph + 0" Radial ice
Standard/Codes:	TIA-222-G-2 / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	C
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft
Seismic Parameters:	S_S = 0.176, S_1 = 0.062

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
-	177.0	3	RFS APXV18-206516S-C-A20- Panel	Low profile platform w/handrails & reinforcement kit Sitepro PRK-1245 & HRK12-U	(3) 1.9" Fiber (8) 1 5/8"	T-Mobile
-		3	RFS APXVAALL24_43-U-NA20 - Panel			
-		3	Ericsson KRY 112 489/2 TMA			
-		3	Ericsson 4449 B71 + B85 RRU			
-		3	Ericsson 4415 B66A RRU			
-		3	Kathrein 782 11056-Bias Ts			
8	167.0	6	Commscope SBNHH-1D65B - Panel	Platform w/ Hand Rails	(12) 1 5/8" (1) 1 5/8" Hybrid (1) 1-1/4" Hybrid (1) 1/2"	Verizon
9		2	Raycap RC2DC-3315-PF-48			
10		6	Antel LPA-80080-4CF-EDIN-0 - Panel			
11		3	Samsung VZS01 - Panel			
12		3	Samsung B5/B13 RRH-BR04C			
13		3	Samsung B2/B66A RRH-BR049			
14	157.0	3	Powerwave - 7770 - Panel	(1) Low Profile Platform	(12) 1 5/8" (2) ¾ DC (1) ½ Fiber	AT&T
15		2	CCI - DMP65R-BU4DA - Panel			
16		1	CCI - DMP65R-BU8DA - Panel			
17		2	CCI - HPA65R-BU4A - Panel			
18		1	CCI - HPA65R-BU8A - Panel			
19		3	4449 B5/B12			
20		3	8843 B2/B66A			
21		1	Raycap DC6-48-60-18-8F			
22	147.0	3	JMA Wireless MX08FRO665-21 - Panel	(1) Platform w/HRK Commscope MC-PK8-DSH	(1) 1.6" Hybrid	Dish Wireless
23		3	Fujitsu TA08025-B605 RRU			
24		3	Fujitsu TA08025-B604 RRU			
25		1	Raycap RDIDC-9181-PF-48-OVP			

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
1	177.0	3	RFS APXVAALL24_43-U-NA20 - Panel	Platform w/ Hand Rails [(1) RMQP-4096-HK Plat. + HR/Kicker]	(5) 1.9" Fiber (5) 1 5/8	T-Mobile
2		3	Ericsson AIR6419 B41 - Panel			
3		3	Commscope VV-65B-R1 - Panel			
4		3	Ericsson 4460 B25 + B66			
5		3	Ericsson KRY 112 489/2 TMA			
6		3	Ericsson 4449 B71 + B85 RRU			
7		3	Kathrein 782 11056-Bias Ts			

All transmission lines are considered running inside of the pole shafts.

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:	**99.7%**	**90.8%**	**70.9%**
Pass/Fail	**Pass**	**Pass**	**Pass**

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Analysis Reactions	6475.3	50.1	60.9

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

Operational Condition (Rigidity):

Operational characteristics of the tower are found to be within the limits prescribed by TIA-222 for the installed antennas. The maximum twist/sway at the elevation of the proposed equipment is 1.9074 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.

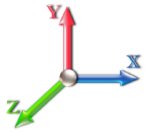
Usage Diagram - Max Ratio 99.72% at 53.0ft

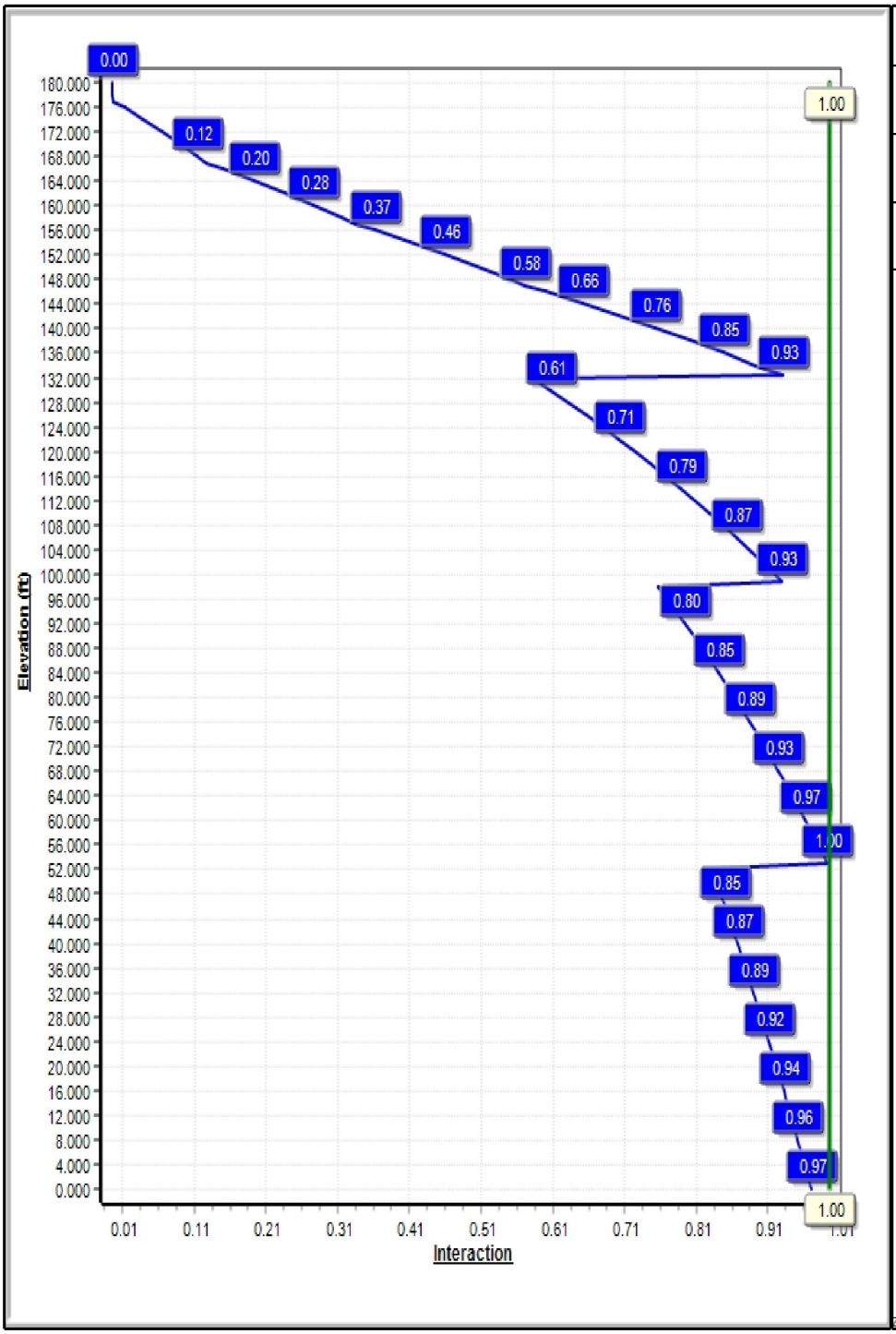
Structure:	CT02218-S-SBA	**Code:**	EIA/TIA-222-G	7/8/2022
Site Name:	Colchester2	**Exposure:**	C	
Height:	180.00 (ft)	**Gh:**	1.1	
Base Elev:	0.000 (ft)			Page: 1

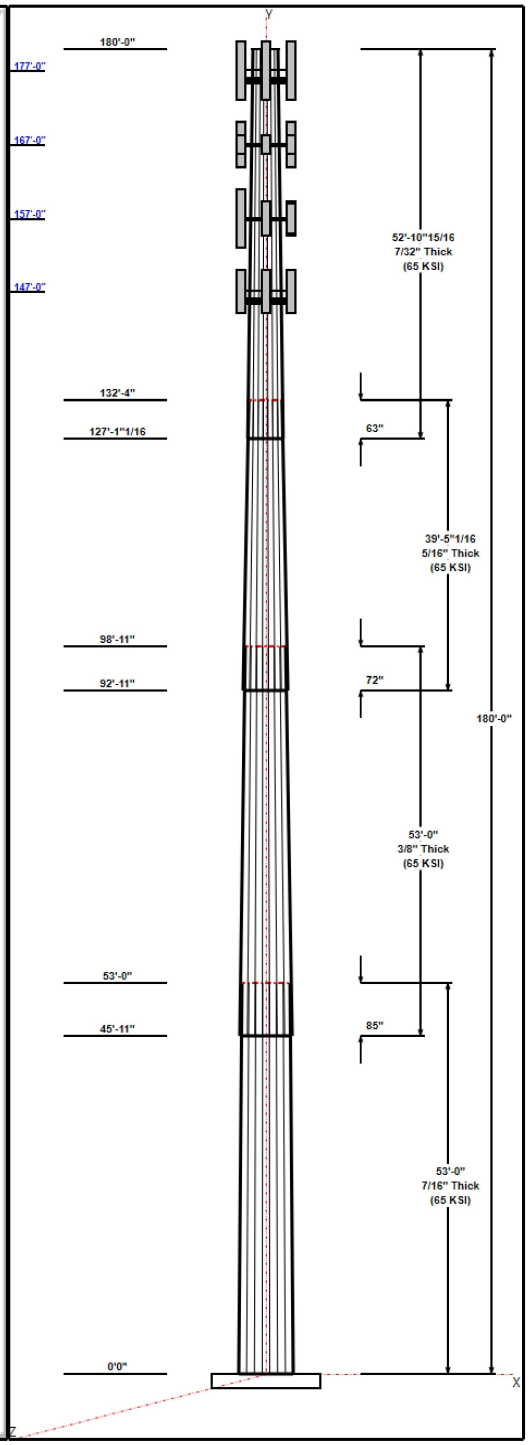
Tower Engineering Solutions

Dead Load Factor:	1.20	**Iterations:**	30
Wind Load Factor:	1.60		

Load Case : 1.2D + 1.6W 105 mph Wind







Structure: CT02218-S-SBA

Type: Tapered
Site Name: Colchester2
Height: 180.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 16 Sided
Taper: 0.20502

7/8/2022

Tower Engineering Solutions

Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	53.00	49.13	60.00	0.438		0.20502	65
2	53.00	40.47	51.34	0.375	Slip	0.20502	65
3	39.42	34.24	42.33	0.313	Slip	0.20502	65
4	52.91	24.91	35.76	0.219	Slip	0.20502	65

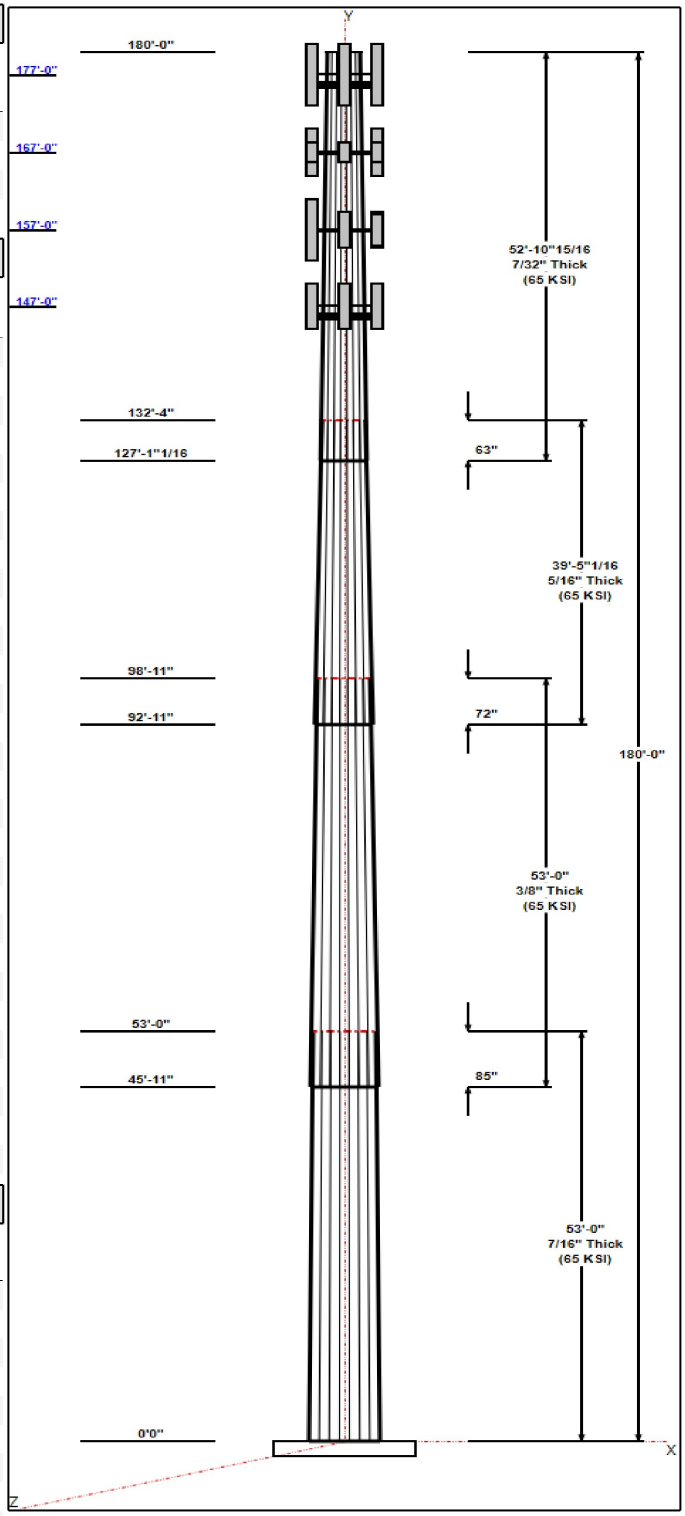
Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
177.00	177.00	3	782 11056	T-Mobile
177.00	177.00	3	RFS	T-Mobile
177.00	177.00	3	Ericsson KRY 112 489/2	T-Mobile
177.00	177.00	3	Ericsson 4449 B71 + B85	T-Mobile
177.00	177.00	3	Ericsson AIR6419 B41	T-Mobile
177.00	177.00	3	Commscope VV-65B-R1	T-Mobile
177.00	177.00	3	Ericsson 4460 B25 + B66	T-Mobile
177.00	177.00	1	RMQP-4096-HK Plat. +	T-Mobile
167.00	167.00	3	Samsung VZS01	Verizon
167.00	167.00	3	Samsung B5/B13	Verizon
167.00	167.00	6	Antel	Verizon
167.00	167.00	1	Platform w/ Hand Rails	Verizon
167.00	167.00	6	Commscope	Verizon
167.00	167.00	2	Raycap	Verizon
167.00	167.00	3	Samsung B2/B66A	Verizon
157.00	157.00	1	Low Profile	AT&T
157.00	157.00	3	7770	AT&T
157.00	157.00	2	DMP65R-BU4DA	AT&T
157.00	157.00	1	DMP65R-BU8DA	AT&T
157.00	157.00	2	HPA65R-BU4A	AT&T
157.00	157.00	1	HPA65R-BU8A	AT&T
157.00	157.00	3	4449 B5/B12	AT&T
157.00	157.00	3	8843 B2/B66A	AT&T
157.00	157.00	1	Raycap DC6-48-60-18-8F	AT&T
147.00	147.00	3	JMA Wireless	Dish Wireless
147.00	147.00	1	MC-PK8-DSH	Dish Wireless
147.00	147.00	3	Fujitsu TA08025-B605	Dish Wireless
147.00	147.00	3	Fujitsu TA08025-B604	Dish Wireless
147.00	147.00	1	Raycap	Dish Wireless

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	177.00	Inside	1 5/8" Coax	T-Mobile
0.00	177.00	Inside	1.9" Fiber	T-Mobile
0.00	167.00	Inside	1 5/8" Coax	Verizon
0.00	167.00	Inside	1 5/8" Hybrid	Verizon
0.00	167.00	Inside	1-1/4" Hybrid	Verizon
0.00	167.00	Inside	1/2" Coax	Verizon
0.00	157.00	Inside	1 5/8" Coax	AT&T
0.00	157.00	Inside	DC	AT&T
0.00	157.00	Inside	Fiber	AT&T
0.00	147.00	Inside	1.6" Hybrid	Dish Wireless

Anchor Bolts



Qty	Specifications	Grade (ksi)	Arrangement
20	2.25" 18J	75.0	Radial

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
2.7500	74.6	60.0	Polygon

Reactions

Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 105 mph Wind	6475.3	50.1	61.0
0.9D + 1.6W 105 mph Wind	6383.5	50.0	45.7
1.2D + 1.0Di + 1.0Wi 50 mph Wind	1501.3	11.4	90.4
1.2D + 1.0E	343.2	2.4	61.0
0.9D + 1.0E	337.9	2.4	45.8
1.0D + 1.0W 60 mph Wind	1313.5	10.2	50.8

Structure: CT02218-S-SBA - Coax Line Placement

Type: Monopole
Site Name: Colchester2
Height: 180.00 (ft)

7/8/2022

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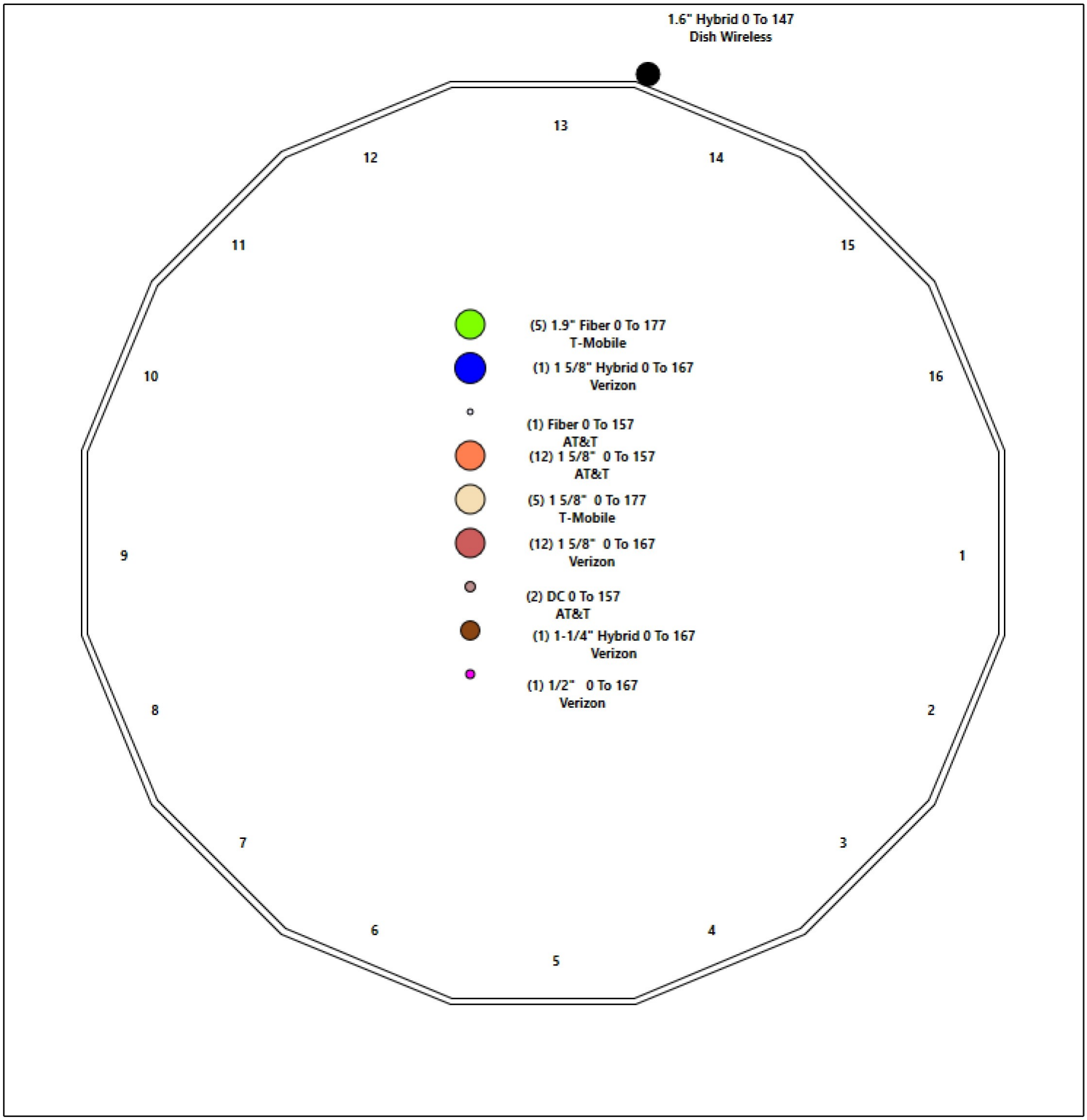

Shaft Properties

Structure:	CT02218-S-SBA		**Code:**	TIA-222-G	7/8/2022
Site Name:	Colchester2		**Exposure:**	C	
Height:	180.00 (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	16	53.000	0.4380	65		0.00	13,640
2	16	53.000	0.3750	65	Slip	85.00	9,822
3	16	39.420	0.3130	65	Slip	72.00	5,086
4	16	52.913	0.2190	65	Slip	63.00	3,788
					Total Shaft Weight:		**32,336**

	Bottom						Top						
Sec. No.	**Dia (in)**	**Elev (ft)**	**Area (sqin)**	**Ix (in^4)**	**W/t Ratio**	**D/t Ratio**	**Dia (in)**	**Elev (ft)**	**Area (sqin)**	**Ix (in^4)**	**W/t Ratio**	**D/t Ratio**	**Taper**
1	60.00	0.00	83.22	37298.12	25.66	136.99	49.13	53.00	68.04	20382.3	20.72	112.1	0.205022
2	51.34	45.92	60.96	20001.00	25.64	136.90	40.47	98.92	47.96	9740.99	19.88	107.9	0.205022
3	42.33	92.92	41.95	9354.08	25.31	135.23	34.24	132.34	33.88	4927.66	20.17	109.4	0.205022
4	35.76	127.0	24.83	3961.68	30.89	163.28	24.91	180.00	17.25	1328.51	21.03	113.7	0.205022

Load Summary

Structure:	CT02218-S-SBA	**Code:**	TIA-222-G	7/8/2022	
Site Name:	Colchester2	**Exposure:**	C		
Height:	180.00 (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	

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	177.00	782 11056	3	1.80	0.28	0.50	6.40	0.688	0.50	0.00	0.00
2	177.00	RFS APXVAALL24_43-U-NA20	3	128.00	20.24	0.70	553.81	22.173	0.70	0.00	0.00
3	177.00	Ericsson KRY 112 489/2 TMA	3	15.40	0.65	0.50	33.31	1.272	0.50	0.00	0.00
4	177.00	Ericsson 4449 B71 + B85 RRU	3	73.20	1.97	0.50	131.91	2.549	0.50	0.00	0.00
5	177.00	Ericsson AIR6419 B41	3	83.30	6.32	0.73	244.17	7.370	0.75	0.00	0.00
6	177.00	Commscope VV-65B-R1	3	29.50	7.90	0.74	206.97	9.202	0.74	0.00	0.00
7	177.00	Ericsson 4460 B25 + B66	3	104.00	2.14	0.50	168.51	2.755	0.50	0.00	0.00
8	177.00	RMQP-4096-HK Plat. + HR/Kicker	1	2669.00	50.00	1.00	5510.43	87.616	1.00	0.00	0.00
9	167.00	Samsung VZS01	3	87.10	4.30	0.69	199.59	5.194	0.69	0.00	0.00
10	167.00	Samsung B5/B13 RRH-BR04C	3	84.40	1.88	0.50	136.21	2.437	0.50	0.00	0.00
11	167.00	Antel LPA-80080-4CF-EDIN-0	6	12.00	2.61	1.70	149.23	3.473	1.70	0.00	0.00
12	167.00	Platform w/ Hand Rails (flat)	1	2000.00	40.00	1.00	4116.86	61.169	1.00	0.00	0.00
13	167.00	Commscope SBNHH-1D65B	6	40.00	8.16	0.83	245.75	9.475	0.83	0.00	0.00
14	167.00	Raycap RC2DC-3315-PF-48	2	32.00	3.79	0.80	147.95	4.755	0.80	0.00	0.00
15	167.00	Samsung B2/B66A RRH-BR049	3	70.30	1.88	0.50	119.46	2.437	0.50	0.00	0.00
16	157.00	Low Profile Platform-Round	1	1500.00	22.00	1.00	2814.90	39.742	1.00	0.00	0.00
17	157.00	7770	3	35.00	5.50	0.73	170.93	6.570	0.73	0.00	0.00
18	157.00	DMP65R-BU4DA	2	67.90	8.00	0.71	320.94	8.926	0.73	0.00	0.00
19	157.00	DMP65R-BU8DA	1	95.70	17.87	0.73	452.33	19.938	0.75	0.00	0.00
20	157.00	HPA65R-BU4A	2	28.70	4.96	0.85	135.65	5.534	0.87	0.00	0.00
21	157.00	HPA65R-BU8A	1	54.00	11.23	0.86	255.24	12.529	0.88	0.00	0.00
22	157.00	4449 B5/B12	3	71.00	1.97	0.50	124.62	2.520	0.50	0.00	0.00
23	157.00	8843 B2/B66A	3	72.00	1.64	0.50	119.06	2.139	0.50	0.00	0.00
24	157.00	Raycap DC6-48-60-18-8F	1	31.80	0.92	0.90	93.91	1.360	0.90	0.00	0.00
25	147.00	JMA Wireless MX08FRO665-21	3	64.50	12.49	0.74	354.78	13.952	0.74	0.00	0.00
26	147.00	MC-PK8-DSH	1	1727.00	37.59	1.00	3411.43	84.729	1.00	0.00	0.00
27	147.00	Fujitsu TA08025-B605 RRU	3	75.00	1.96	0.50	127.20	2.520	0.50	0.00	0.00
28	147.00	Fujitsu TA08025-B604 RRU	3	63.90	1.96	0.50	114.43	2.520	0.50	0.00	0.00
29	147.00	Raycap RDIDC-9181-PF-48-OVP	1	21.90	2.01	1.00	75.04	2.577	1.00	0.00	0.00
		Totals:	**74**	**11,843.80**			**28,743.15**				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	177.00	(5) 1 5/8" Coax	0.00	Inside
0.00	177.00	(5) 1.9" Fiber	0.00	Inside
0.00	167.00	(12) 1 5/8" Coax	0.00	Inside
0.00	167.00	(1) 1 5/8" Hybrid	0.00	Inside
0.00	167.00	(1) 1-1/4" Hybrid	0.00	Inside
0.00	167.00	(1) 1/2" Coax	0.00	Inside
0.00	157.00	(12) 1 5/8" Coax	0.00	Inside
0.00	157.00	(2) DC	0.00	Inside
0.00	157.00	(1) Fiber	0.00	Inside
0.00	147.00	(1) 1.6" Hybrid	1.60	Inside

Shaft Section Properties

Structure:	CT02218-S-SBA	**Code:**	TIA-222-G	7/8/2022	
Site Name:	Colchester2	**Exposure:**	C		
Height:	180.00 (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	

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Increment Length: **2 (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		0.4380	60.000	83.221	37298.1	25.66	136.99	73.5	1219.	0.0
2.00		0.4380	59.590	82.648	36533.1	25.47	136.05	73.8	1202.	564.4
4.00		0.4380	59.180	82.075	35778.6	25.28	135.11	74.0	1185.	560.5
6.00		0.4380	58.770	81.502	35034.6	25.10	134.18	74.2	1169.	556.6
8.00		0.4380	58.360	80.930	34300.9	24.91	133.24	74.4	1152.	552.7
10.00		0.4380	57.950	80.357	33577.6	24.73	132.31	74.6	1136.	548.8
12.00		0.4380	57.540	79.784	32864.5	24.54	131.37	74.8	1120.	544.9
14.00		0.4380	57.130	79.211	32161.6	24.35	130.43	75.0	1104.	541.0
16.00		0.4380	56.720	78.638	31468.7	24.17	129.50	75.2	1088.	537.1
18.00		0.4380	56.310	78.065	30785.9	23.98	128.56	75.4	1072.	533.2
20.00		0.4380	55.900	77.492	30113.1	23.79	127.62	75.6	1056.	529.3
22.00		0.4380	55.490	76.919	29450.1	23.61	126.69	75.9	1041.	525.4
24.00		0.4380	55.079	76.346	28796.9	23.42	125.75	76.1	1025.	521.5
26.00		0.4380	54.669	75.773	28153.5	23.24	124.82	76.3	1010.	517.6
28.00		0.4380	54.259	75.200	27519.7	23.05	123.88	76.5	994.9	513.7
30.00		0.4380	53.849	74.627	26895.5	22.86	122.94	76.7	979.7	509.8
32.00		0.4380	53.439	74.054	26280.8	22.68	122.01	76.9	964.7	505.9
34.00		0.4380	53.029	73.482	25675.5	22.49	121.07	77.1	949.7	502.0
36.00		0.4380	52.619	72.909	25079.6	22.31	120.14	77.3	934.9	498.1
38.00		0.4380	52.209	72.336	24493.0	22.12	119.20	77.5	920.2	494.2
40.00		0.4380	51.799	71.763	23915.7	21.93	118.26	77.8	905.7	490.3
42.00		0.4380	51.389	71.190	23347.4	21.75	117.33	78.0	891.2	486.4
44.00		0.4380	50.979	70.617	22788.3	21.56	116.39	78.2	876.8	482.5
45.92	Bot - Section 2	0.4380	50.586	70.068	22260.8	21.38	115.49	78.4	863.2	458.8
46.00		0.4380	50.569	70.044	22238.1	21.37	115.45	78.4	862.6	37.1
48.00		0.4380	50.159	69.471	21696.9	21.19	114.52	78.6	848.5	887.8
50.00		0.4380	49.749	68.898	21164.5	21.00	113.58	78.8	834.5	880.6
52.00		0.4380	49.339	68.325	20640.9	20.82	112.65	79.0	820.6	873.3
53.00	Top - Section 1	0.3750	49.884	59.225	18339.4	24.87	133.02	0.0	0.0	434.0
54.00		0.3750	49.679	58.980	18112.5	24.76	132.48	74.6	715.2	201.1
56.00		0.3750	49.269	58.489	17664.3	24.54	131.38	74.8	703.3	399.7
58.00		0.3750	48.859	57.999	17223.6	24.32	130.29	75.0	691.5	396.4
60.00		0.3750	48.449	57.508	16790.3	24.11	129.20	75.3	679.8	393.0
62.00		0.3750	48.039	57.018	16364.3	23.89	128.10	75.5	668.2	389.7
64.00		0.3750	47.629	56.527	15945.6	23.67	127.01	75.8	656.7	386.4
66.00		0.3750	47.219	56.037	15534.1	23.45	125.92	76.0	645.3	383.0
68.00		0.3750	46.808	55.546	15129.7	23.24	124.82	76.3	634.0	379.7
70.00		0.3750	46.398	55.056	14732.4	23.02	123.73	76.5	622.8	376.4
72.00		0.3750	45.988	54.565	14342.1	22.80	122.64	76.8	611.7	373.0
74.00		0.3750	45.578	54.075	13958.8	22.58	121.54	77.0	600.7	369.7
76.00		0.3750	45.168	53.584	13582.4	22.37	120.45	77.3	589.9	366.3
78.00		0.3750	44.758	53.093	13212.8	22.15	119.36	77.5	579.1	363.0
80.00		0.3750	44.348	52.603	12849.9	21.93	118.26	77.8	568.4	359.7
82.00		0.3750	43.938	52.112	12493.8	21.71	117.17	78.0	557.8	356.3
84.00		0.3750	43.528	51.622	12144.3	21.50	116.08	78.2	547.3	353.0
86.00		0.3750	43.118	51.131	11801.4	21.28	114.98	78.5	536.9	349.6
88.00		0.3750	42.708	50.641	11465.0	21.06	113.89	78.7	526.6	346.3
90.00		0.3750	42.298	50.150	11135.1	20.84	112.79	79.0	516.4	343.0
92.00		0.3750	41.888	49.660	10811.5	20.63	111.70	79.2	506.3	339.6
92.92	Bot - Section 3	0.3750	41.700	49.435	10665.4	20.53	111.20	79.3	501.7	154.5

Increment Length: **2 (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)
94.00		0.3750	41.478	49.169	10494.3	20.41	110.61	79.5	496.3	336.0
96.00		0.3750	41.068	48.679	10183.4	20.19	109.51	79.7	486.4	615.5
98.00		0.3750	40.658	48.188	9878.6	19.97	108.42	80.0	476.6	609.4
98.92	Top - Section 2	0.3130	41.096	40.720	8556.2	24.53	131.30	0.0	0.0	277.3
100.00		0.3130	40.874	40.499	8417.2	24.38	130.59	75.0	403.9	149.7
102.00		0.3130	40.464	40.089	8164.5	24.12	129.28	75.3	395.8	274.2
104.00		0.3130	40.054	39.680	7916.9	23.86	127.97	75.6	387.7	271.4
106.00		0.3130	39.644	39.270	7674.4	23.60	126.66	75.9	379.7	268.7
108.00		0.3130	39.234	38.861	7436.8	23.34	125.35	76.2	371.8	265.9
110.00		0.3130	38.824	38.452	7204.2	23.08	124.04	76.5	364.0	263.1
112.00		0.3130	38.414	38.042	6976.6	22.82	122.73	76.7	356.3	260.3
114.00		0.3130	38.003	37.633	6753.7	22.56	121.42	77.0	348.6	257.5
116.00		0.3130	37.593	37.223	6535.7	22.30	120.11	77.3	341.0	254.7
118.00		0.3130	37.183	36.814	6322.4	22.04	118.80	77.6	333.5	251.9
120.00		0.3130	36.773	36.405	6113.8	21.78	117.49	77.9	326.1	249.1
122.00		0.3130	36.363	35.995	5909.8	21.52	116.18	78.2	318.8	246.4
124.00		0.3130	35.953	35.586	5710.5	21.26	114.87	78.5	311.6	243.6
126.00		0.3130	35.543	35.176	5515.6	21.00	113.56	78.8	304.4	240.8
127.09	Bot - Section 4	0.3130	35.320	34.954	5411.6	20.85	112.84	79.0	300.5	129.7
128.00		0.3130	35.133	34.767	5325.3	20.74	112.25	79.1	297.3	185.3
130.00		0.3130	34.723	34.357	5139.3	20.48	110.94	79.4	290.3	402.3
132.00		0.3130	34.313	33.948	4957.8	20.21	109.63	79.7	283.4	397.6
132.34	Top - Section 3	0.2190	34.682	24.076	3612.5	29.91	158.37	0.0	0.0	66.5
134.00		0.2190	34.341	23.838	3506.3	29.60	156.81	69.1	200.3	135.6
136.00		0.2190	33.931	23.552	3381.4	29.23	154.94	69.5	195.5	161.3
138.00		0.2190	33.521	23.265	3259.5	28.85	153.06	69.9	190.7	159.3
140.00		0.2190	33.111	22.979	3140.6	28.48	151.19	70.3	186.1	157.4
142.00		0.2190	32.701	22.692	3024.6	28.11	149.32	70.8	181.4	155.4
144.00		0.2190	32.291	22.406	2911.5	27.74	147.45	71.2	176.9	153.5
146.00		0.2190	31.881	22.119	2801.3	27.37	145.57	71.6	172.4	151.5
147.00		0.2190	31.676	21.976	2747.2	27.18	144.64	71.8	170.1	75.0
148.00		0.2190	31.471	21.833	2693.8	26.99	143.70	72.0	167.9	74.5
150.00		0.2190	31.061	21.546	2589.2	26.62	141.83	72.5	163.5	147.6
152.00		0.2190	30.651	21.260	2487.3	26.25	139.96	72.9	159.2	145.7
154.00		0.2190	30.241	20.973	2388.1	25.88	138.08	73.3	154.9	143.7
156.00		0.2190	29.831	20.687	2291.6	25.50	136.21	73.7	150.7	141.8
157.00		0.2190	29.626	20.544	2244.3	25.32	135.28	73.9	148.6	70.1
158.00		0.2190	29.420	20.400	2197.7	25.13	134.34	74.1	146.5	69.7
160.00		0.2190	29.010	20.114	2106.4	24.76	132.47	74.6	142.4	137.9
162.00		0.2190	28.600	19.828	2017.7	24.39	130.60	75.0	138.4	135.9
164.00		0.2190	28.190	19.541	1931.5	24.01	128.72	75.4	134.4	134.0
166.00		0.2190	27.780	19.255	1847.8	23.64	126.85	75.8	130.5	132.0
167.00		0.2190	27.575	19.111	1806.8	23.45	125.91	76.0	128.5	65.3
168.00		0.2190	27.370	18.968	1766.5	23.27	124.98	76.2	126.6	64.8
170.00		0.2190	26.960	18.682	1687.7	22.90	123.11	76.7	122.8	128.1
172.00		0.2190	26.550	18.395	1611.2	22.52	121.23	77.1	119.0	126.2
174.00		0.2190	26.140	18.109	1537.1	22.15	119.36	77.5	115.3	124.2
176.00		0.2190	25.730	17.822	1465.3	21.78	117.49	77.9	111.7	122.3
177.00		0.2190	25.525	17.679	1430.3	21.59	116.55	78.1	109.9	60.4
178.00		0.2190	25.320	17.536	1395.8	21.41	115.62	78.3	108.1	59.9
180.00		0.2190	24.910	17.249	1328.5	21.03	113.74	78.8	104.6	118.4
										32335.6

Wind Loading - Shaft

Structure:	CT02218-S-SBA	**Code:**	TIA-222-G	7/8/2022	
Site Name:	Colchester2	**Exposure:**	C		
Height:	180.00 (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	

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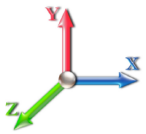
Load Case: 1.2D + 1.6W 105 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 30

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	22.791	25.07	493.51	0.750	0.000	0.00	0.000	0.00	0.0	0.0	0.0
2.00		1.00	0.85	22.791	25.07	490.14	0.750	0.000	2.00	10.161	7.62	305.7	0.0	677.3
4.00		1.00	0.85	22.791	25.07	486.76	0.750	0.000	2.00	10.091	7.57	303.6	0.0	672.6
6.00		1.00	0.85	22.791	25.07	483.39	0.750	0.000	2.00	10.022	7.52	301.5	0.0	667.9
8.00		1.00	0.85	22.791	25.07	480.02	0.750	0.000	2.00	9.952	7.46	299.4	0.0	663.3
10.00		1.00	0.85	22.791	25.07	476.65	0.750	0.000	2.00	9.882	7.41	297.3	0.0	658.6
12.00		1.00	0.85	22.791	25.07	473.27	0.750	0.000	2.00	9.813	7.36	295.2	0.0	653.9
14.00		1.00	0.85	22.791	25.07	469.90	0.750	0.000	2.00	9.743	7.31	293.1	0.0	649.2
16.00		1.00	0.86	23.072	25.38	469.40	0.750	0.000	2.00	9.673	7.25	294.6	0.0	644.5
18.00		1.00	0.88	23.652	26.02	471.82	0.750	0.000	2.00	9.604	7.20	299.8	0.0	639.9
20.00		1.00	0.90	24.182	26.60	473.61	0.750	0.000	2.00	9.534	7.15	304.3	0.0	635.2
22.00		1.00	0.92	24.672	27.14	474.87	0.750	0.000	2.00	9.464	7.10	308.2	0.0	630.5
24.00		1.00	0.94	25.128	27.64	475.70	0.750	0.000	2.00	9.395	7.05	311.6	0.0	625.8
26.00		1.00	0.95	25.555	28.11	476.15	0.750	0.000	2.00	9.325	6.99	314.6	0.0	621.2
28.00		1.00	0.97	25.957	28.55	476.28	0.750	0.000	2.00	9.255	6.94	317.1	0.0	616.5
30.00		1.00	0.98	26.337	28.97	476.13	0.750	0.000	2.00	9.186	6.89	319.3	0.0	611.8
32.00		1.00	1.00	26.697	29.37	475.73	0.750	0.000	2.00	9.116	6.84	321.2	0.0	607.1
34.00		1.00	1.01	27.040	29.74	475.10	0.750	0.000	2.00	9.046	6.78	322.9	0.0	602.4
36.00		1.00	1.02	27.367	30.10	474.27	0.750	0.000	2.00	8.977	6.73	324.3	0.0	597.8
38.00		1.00	1.03	27.681	30.45	473.26	0.750	0.000	2.00	8.907	6.68	325.4	0.0	593.1
40.00		1.00	1.04	27.981	30.78	472.08	0.750	0.000	2.00	8.837	6.63	326.4	0.0	588.4
42.00		1.00	1.05	28.270	31.10	470.76	0.750	0.000	2.00	8.767	6.58	327.2	0.0	583.7
44.00		1.00	1.06	28.548	31.40	469.29	0.750	0.000	2.00	8.698	6.52	327.8	0.0	579.0
45.92	Bot - Section 2	1.00	1.07	28.806	31.69	467.77	0.750	0.000	1.92	8.270	6.20	314.5	0.0	550.5
46.00		1.00	1.07	28.817	31.70	467.70	0.750	0.000	0.08	0.363	0.27	13.8	0.0	44.6
48.00		1.00	1.08	29.076	31.98	465.99	0.750	0.000	2.00	8.686	6.51	333.4	0.0	1065.4
50.00		1.00	1.09	29.327	32.26	464.17	0.750	0.000	2.00	8.616	6.46	333.5	0.0	1056.7
52.00		1.00	1.10	29.570	32.53	462.25	0.750	0.000	2.00	8.547	6.41	333.6	0.0	1048.0
53.00	Top - Section 1	1.00	1.11	29.689	32.66	461.26	0.750	0.000	1.00	4.247	3.19	166.4	0.0	520.7
54.00		1.00	1.11	29.806	32.79	467.29	0.750	0.000	1.00	4.230	3.17	166.4	0.0	241.3
56.00		1.00	1.12	30.035	33.04	465.21	0.750	0.000	2.00	8.407	6.31	333.3	0.0	479.7
58.00		1.00	1.13	30.258	33.28	463.05	0.750	0.000	2.00	8.337	6.25	333.0	0.0	475.7
60.00		1.00	1.14	30.475	33.52	460.80	0.750	0.000	2.00	8.268	6.20	332.6	0.0	471.7
62.00		1.00	1.14	30.686	33.75	458.48	0.750	0.000	2.00	8.198	6.15	332.1	0.0	467.6
64.00		1.00	1.15	30.892	33.98	456.09	0.750	0.000	2.00	8.128	6.10	331.5	0.0	463.6
66.00		1.00	1.16	31.092	34.20	453.63	0.750	0.000	2.00	8.059	6.04	330.7	0.0	459.6
68.00		1.00	1.17	31.288	34.42	451.11	0.750	0.000	2.00	7.989	5.99	330.0	0.0	455.6
70.00		1.00	1.17	31.480	34.63	448.52	0.750	0.000	2.00	7.919	5.94	329.1	0.0	451.6
72.00		1.00	1.18	31.667	34.83	445.88	0.750	0.000	2.00	7.850	5.89	328.1	0.0	447.6
74.00		1.00	1.19	31.850	35.04	443.18	0.750	0.000	2.00	7.780	5.84	327.1	0.0	443.6
76.00		1.00	1.19	32.030	35.23	440.43	0.750	0.000	2.00	7.710	5.78	326.0	0.0	439.6
78.00		1.00	1.20	32.205	35.43	437.62	0.750	0.000	2.00	7.641	5.73	324.8	0.0	435.6
80.00		1.00	1.21	32.377	35.62	434.77	0.750	0.000	2.00	7.571	5.68	323.6	0.0	431.6
82.00		1.00	1.21	32.546	35.80	431.87	0.750	0.000	2.00	7.501	5.63	322.3	0.0	427.6
84.00		1.00	1.22	32.712	35.98	428.93	0.750	0.000	2.00	7.432	5.57	320.9	0.0	423.6
86.00		1.00	1.23	32.874	36.16	425.94	0.750	0.000	2.00	7.362	5.52	319.5	0.0	419.6
88.00		1.00	1.23	33.034	36.34	422.91	0.750	0.000	2.00	7.292	5.47	318.0	0.0	415.6

Wind Loading - Shaft

Structure:	CT02218-S-SBA	**Code:**	TIA-222-G	7/8/2022	
Site Name:	Colchester2	**Exposure:**	C		
Height:	180.00 (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

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90.00	1.00	1.24	33.190	36.51	419.84	0.750	0.000	2.00	7.223	5.42	316.4	0.0	411.6
92.00	1.00	1.24	33.344	36.68	416.74	0.750	0.000	2.00	7.153	5.36	314.8	0.0	407.6
92.92 Bot - Section 3	1.00	1.25	33.414	36.76	415.30	0.750	0.000	0.92	3.255	2.44	143.6	0.0	185.5
94.00	1.00	1.25	33.496	36.85	413.59	0.750	0.000	1.08	3.886	2.91	171.8	0.0	403.2
96.00	1.00	1.25	33.644	37.01	410.41	0.750	0.000	2.00	7.120	5.34	316.2	0.0	738.6
98.00	1.00	1.26	33.791	37.17	407.20	0.750	0.000	2.00	7.050	5.29	314.5	0.0	731.3
98.92 Top - Section 2	1.00	1.26	33.857	37.24	405.71	0.750	0.000	0.92	3.208	2.41	143.4	0.0	332.7
100.00	1.00	1.27	33.935	37.33	410.23	0.750	0.000	1.08	3.773	2.83	169.0	0.0	179.6
102.00	1.00	1.27	34.077	37.48	406.96	0.750	0.000	2.00	6.911	5.18	310.9	0.0	329.1
104.00	1.00	1.28	34.216	37.64	403.66	0.750	0.000	2.00	6.841	5.13	309.0	0.0	325.7
106.00	1.00	1.28	34.354	37.79	400.33	0.750	0.000	2.00	6.772	5.08	307.1	0.0	322.4
108.00	1.00	1.29	34.489	37.94	396.97	0.750	0.000	2.00	6.702	5.03	305.1	0.0	319.0
110.00	1.00	1.29	34.623	38.08	393.58	0.750	0.000	2.00	6.632	4.97	303.1	0.0	315.7
112.00	1.00	1.30	34.754	38.23	390.17	0.750	0.000	2.00	6.563	4.92	301.1	0.0	312.3
114.00	1.00	1.30	34.884	38.37	386.72	0.750	0.000	2.00	6.493	4.87	299.0	0.0	309.0
116.00	1.00	1.31	35.012	38.51	383.25	0.750	0.000	2.00	6.423	4.82	296.9	0.0	305.7
118.00	1.00	1.31	35.138	38.65	379.75	0.750	0.000	2.00	6.353	4.77	294.7	0.0	302.3
120.00	1.00	1.32	35.263	38.79	376.23	0.750	0.000	2.00	6.284	4.71	292.5	0.0	299.0
122.00	1.00	1.32	35.386	38.92	372.68	0.750	0.000	2.00	6.214	4.66	290.3	0.0	295.6
124.00	1.00	1.32	35.507	39.06	369.11	0.750	0.000	2.00	6.144	4.61	288.0	0.0	292.3
126.00	1.00	1.33	35.627	39.19	365.52	0.750	0.000	2.00	6.075	4.56	285.7	0.0	288.9
127.09 Bot - Section 4	1.00	1.33	35.691	39.26	363.55	0.750	0.000	1.09	3.271	2.45	154.1	0.0	155.6
128.00	1.00	1.33	35.745	39.32	361.90	0.750	0.000	0.91	2.768	2.08	130.6	0.0	222.4
130.00	1.00	1.34	35.862	39.45	358.26	0.750	0.000	2.00	6.010	4.51	284.5	0.0	482.8
132.00	1.00	1.34	35.977	39.58	354.60	0.750	0.000	2.00	5.940	4.46	282.1	0.0	477.1
132.34 Top - Section 3	1.00	1.34	35.997	39.60	353.98	0.750	0.000	0.34	0.993	0.74	47.2	0.0	79.8
134.00	1.00	1.35	36.091	39.70	355.45	0.750	0.000	1.66	4.877	3.66	232.4	0.0	162.7
136.00	1.00	1.35	36.204	39.82	351.75	0.750	0.000	2.00	5.801	4.35	277.2	0.0	193.5
138.00	1.00	1.35	36.316	39.95	348.04	0.750	0.000	2.00	5.731	4.30	274.7	0.0	191.2
140.00	1.00	1.36	36.426	40.07	344.30	0.750	0.000	2.00	5.661	4.25	272.2	0.0	188.8
142.00	1.00	1.36	36.535	40.19	340.55	0.750	0.000	2.00	5.592	4.19	269.7	0.0	186.5
144.00	1.00	1.37	36.642	40.31	336.77	0.750	0.000	2.00	5.522	4.14	267.1	0.0	184.1
146.00	1.00	1.37	36.749	40.42	332.98	0.750	0.000	2.00	5.452	4.09	264.5	0.0	181.8
147.00 Appurtenance(s)	1.00	1.37	36.802	40.48	331.07	0.750	0.000	1.00	2.700	2.03	131.2	0.0	90.0
148.00	1.00	1.37	36.854	40.54	329.17	0.750	0.000	1.00	2.683	2.01	130.5	0.0	89.4
150.00	1.00	1.38	36.959	40.65	325.34	0.750	0.000	2.00	5.313	3.98	259.2	0.0	177.1
152.00	1.00	1.38	37.062	40.77	321.49	0.750	0.000	2.00	5.243	3.93	256.5	0.0	174.8
154.00	1.00	1.39	37.164	40.88	317.62	0.750	0.000	2.00	5.174	3.88	253.8	0.0	172.5
156.00	1.00	1.39	37.265	40.99	313.74	0.750	0.000	2.00	5.104	3.83	251.1	0.0	170.1
157.00 Appurtenance(s)	1.00	1.39	37.315	41.05	311.80	0.750	0.000	1.00	2.526	1.89	124.4	0.0	84.2
158.00	1.00	1.39	37.365	41.10	309.85	0.750	0.000	1.00	2.508	1.88	123.7	0.0	83.6
160.00	1.00	1.40	37.464	41.21	305.93	0.750	0.000	2.00	4.965	3.72	245.5	0.0	165.4
162.00	1.00	1.40	37.562	41.32	302.00	0.750	0.000	2.00	4.895	3.67	242.7	0.0	163.1
164.00	1.00	1.40	37.660	41.43	298.06	0.750	0.000	2.00	4.825	3.62	239.9	0.0	160.8
166.00	1.00	1.41	37.756	41.53	294.10	0.750	0.000	2.00	4.756	3.57	237.0	0.0	158.4
167.00 Appurtenance(s)	1.00	1.41	37.804	41.58	292.11	0.750	0.000	1.00	2.352	1.76	117.3	0.0	78.3
168.00	1.00	1.41	37.851	41.64	290.12	0.750	0.000	1.00	2.334	1.75	116.6	0.0	77.7
170.00	1.00	1.42	37.946	41.74	286.13	0.750	0.000	2.00	4.616	3.46	231.2	0.0	153.7
172.00	1.00	1.42	38.039	41.84	282.13	0.750	0.000	2.00	4.547	3.41	228.3	0.0	151.4
174.00	1.00	1.42	38.132	41.94	278.11	0.750	0.000	2.00	4.477	3.36	225.3	0.0	149.1
176.00	1.00	1.43	38.224	42.05	274.08	0.750	0.000	2.00	4.407	3.31	222.4	0.0	146.7
177.00 Appurtenance(s)	1.00	1.43	38.269	42.10	272.05	0.750	0.000	1.00	2.177	1.63	110.0	0.0	72.5
178.00	1.00	1.43	38.315	42.15	270.03	0.750	0.000	1.00	2.160	1.62	109.2	0.0	71.9
180.00	1.00	1.43	38.405	42.25	265.97	0.750	0.000	2.00	4.268	3.20	216.4	0.0	142.0
							Totals:	**180.00**			**26,665.9**		**38,802.8**

Discrete Appurtenance Forces

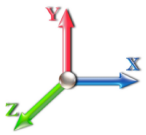
Structure:	CT02218-S-SBA	**Code:**	TIA-222-G	7/8/2022	
Site Name:	Colchester2	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 11	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 105 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 30

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	177.00	Ericsson 4460 B25 + B66	3	38.269	42.096	0.38	0.75	2.41	374.40	0.000	0.000	162.15	0.00	0.00
2	177.00	782 11056	3	38.269	42.096	0.38	0.75	0.32	6.48	0.000	0.000	21.22	0.00	0.00
3	177.00	Ericsson AIR6419 B41	3	38.269	42.096	0.55	0.75	10.35	299.88	0.000	0.000	697.26	0.00	0.00
4	177.00	Commscope VV-65B-R1	3	38.269	42.096	0.55	0.75	13.15	106.20	0.000	0.000	885.94	0.00	0.00
5	177.00	Ericsson 4449 B71 + B85	3	38.269	42.096	0.38	0.75	2.22	263.52	0.000	0.000	149.27	0.00	0.00
6	177.00	RMQP-4096-HK Plat. +	1	38.269	42.096	1.00	1.00	50.00	3202.80	0.000	0.000	3367.69	0.00	0.00
7	177.00	RFS	3	38.269	42.096	0.52	0.75	31.88	460.80	0.000	0.000	2147.11	0.00	0.00
8	177.00	Ericsson KRY 112 489/2	3	38.269	42.096	0.38	0.75	0.73	55.44	0.000	0.000	49.25	0.00	0.00
9	167.00	Platform w/ Hand Rails	1	37.804	41.584	1.00	1.00	40.00	2400.00	0.000	0.000	2661.37	0.00	0.00
10	167.00	Antel	6	37.804	41.584	1.27	0.75	19.97	86.40	0.000	0.000	1328.46	0.00	0.00
11	167.00	Samsung B2/B66A	3	37.804	41.584	0.38	0.75	2.11	253.08	0.000	0.000	140.72	0.00	0.00
12	167.00	Samsung B5/B13	3	37.804	41.584	0.38	0.75	2.11	303.84	0.000	0.000	140.72	0.00	0.00
13	167.00	Samsung VZS01	3	37.804	41.584	0.52	0.75	6.68	313.56	0.000	0.000	444.17	0.00	0.00
14	167.00	Raycap	2	37.804	41.584	0.60	0.75	4.55	76.80	0.000	0.000	302.60	0.00	0.00
15	167.00	Commscope	6	37.804	41.584	0.62	0.75	30.48	288.00	0.000	0.000	2027.80	0.00	0.00
16	157.00	DMP65R-BU8DA	1	37.315	41.047	0.58	0.80	10.39	114.84	0.000	0.000	682.57	0.00	0.00
17	157.00	Low Profile	1	37.315	41.047	1.00	1.00	22.00	1800.00	0.000	0.000	1444.85	0.00	0.00
18	157.00	7770	3	37.315	41.047	0.58	0.80	9.64	126.00	0.000	0.000	632.84	0.00	0.00
19	157.00	DMP65R-BU4DA	2	37.315	41.047	0.57	0.80	9.11	162.96	0.000	0.000	598.54	0.00	0.00
20	157.00	Raycap DC6-48-60-18-8F	1	37.315	41.047	0.72	0.80	0.66	38.16	0.000	0.000	43.50	0.00	0.00
21	157.00	HPA65R-BU4A	2	37.315	41.047	0.68	0.80	6.78	68.88	0.000	0.000	445.10	0.00	0.00
22	157.00	HPA65R-BU8A	1	37.315	41.047	0.69	0.80	7.74	64.80	0.000	0.000	508.60	0.00	0.00
23	157.00	4449 B5/B12	3	37.315	41.047	0.40	0.80	2.36	255.60	0.000	0.000	155.26	0.00	0.00
24	157.00	8843 B2/B66A	3	37.315	41.047	0.40	0.80	1.97	259.20	0.000	0.000	129.25	0.00	0.00
25	147.00	Raycap	1	36.802	40.482	0.75	0.75	1.51	26.28	0.000	0.000	97.64	0.00	0.00
26	147.00	Fujitsu TA08025-B604	3	36.802	40.482	0.38	0.75	2.21	230.04	0.000	0.000	142.82	0.00	0.00
27	147.00	Fujitsu TA08025-B605	3	36.802	40.482	0.38	0.75	2.21	270.00	0.000	0.000	142.82	0.00	0.00
28	147.00	MC-PK8-DSH	1	36.802	40.482	1.00	1.00	37.59	2072.40	0.000	0.000	2434.75	0.00	0.00
29	147.00	JMA Wireless	3	36.802	40.482	0.55	0.75	20.80	232.20	0.000	0.000	1346.97	0.00	0.00
							Totals:		**14,212.56**			**23,331.25**		

Total Applied Force Summary

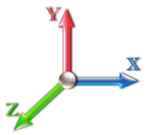
Structure:	CT02218-S-SBA	**Code:**	TIA-222-G	7/8/2022	
Site Name:	Colchester2	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 12	

TES Tower Engineering Solutions

Load Case: 1.2D + 1.6W 105 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 30

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
2.00		305.69	773.91	0.00	0.00
4.00		303.59	769.23	0.00	0.00
6.00		301.49	764.55	0.00	0.00
8.00		299.40	759.87	0.00	0.00
10.00		297.30	755.19	0.00	0.00
12.00		295.20	750.52	0.00	0.00
14.00		293.11	745.84	0.00	0.00
16.00		294.61	741.16	0.00	0.00
18.00		299.83	736.48	0.00	0.00
20.00		304.33	731.80	0.00	0.00
22.00		308.23	727.12	0.00	0.00
24.00		311.61	722.44	0.00	0.00
26.00		314.56	717.76	0.00	0.00
28.00		317.12	713.08	0.00	0.00
30.00		319.33	708.41	0.00	0.00
32.00		321.25	703.73	0.00	0.00
34.00		322.89	699.05	0.00	0.00
36.00		324.28	694.37	0.00	0.00
38.00		325.44	689.69	0.00	0.00
40.00		326.40	685.01	0.00	0.00
42.00		327.17	680.33	0.00	0.00
44.00		327.77	675.65	0.00	0.00
45.92		314.46	643.11	0.00	0.00
46.00		13.82	48.60	0.00	0.00
48.00		333.37	1161.98	0.00	0.00
50.00		333.55	1153.30	0.00	0.00
52.00		333.60	1144.61	0.00	0.00
53.00		166.44	569.05	0.00	0.00
54.00		166.41	289.64	0.00	0.00
56.00		333.32	576.27	0.00	0.00
58.00		333.00	572.27	0.00	0.00
60.00		332.59	568.26	0.00	0.00
62.00		332.07	564.26	0.00	0.00
64.00		331.45	560.25	0.00	0.00
66.00		330.75	556.24	0.00	0.00
68.00		329.96	552.24	0.00	0.00
70.00		329.08	548.23	0.00	0.00
72.00		328.12	544.23	0.00	0.00
74.00		327.09	540.22	0.00	0.00
76.00		325.99	536.22	0.00	0.00
78.00		324.81	532.21	0.00	0.00
80.00		323.57	528.20	0.00	0.00
82.00		322.27	524.20	0.00	0.00
84.00		320.90	520.19	0.00	0.00
86.00		319.47	516.19	0.00	0.00
88.00		317.98	512.18	0.00	0.00

Total Applied Force Summary

Structure:	CT02218-S-SBA		**Code:**	TIA-222-G	7/8/2022
Site Name:	Colchester2		**Exposure:**	C	
Height:	180.00 (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

IES Tower Engineering Solutions

90.00		316.43	508.17	0.00	0.00
92.00		314.83	504.17	0.00	0.00
92.92		143.57	229.74	0.00	0.00
94.00		171.80	455.50	0.00	0.00
96.00		316.20	835.25	0.00	0.00
98.00		314.47	827.91	0.00	0.00
98.92		143.37	377.00	0.00	0.00
100.00		168.99	231.97	0.00	0.00
102.00		310.86	425.68	0.00	0.00
104.00		308.99	422.33	0.00	0.00
106.00		307.07	418.99	0.00	0.00
108.00		305.11	415.65	0.00	0.00
110.00		303.10	412.30	0.00	0.00
112.00		301.06	408.96	0.00	0.00
114.00		298.97	405.62	0.00	0.00
116.00		296.85	402.27	0.00	0.00
118.00		294.69	398.93	0.00	0.00
120.00		292.49	395.59	0.00	0.00
122.00		290.26	392.24	0.00	0.00
124.00		287.98	388.90	0.00	0.00
126.00		285.68	385.55	0.00	0.00
127.09		154.12	208.08	0.00	0.00
128.00		130.59	266.48	0.00	0.00
130.00		284.49	579.39	0.00	0.00
132.00		282.10	573.71	0.00	0.00
132.34		47.19	96.02	0.00	0.00
134.00		232.36	243.06	0.00	0.00
136.00		277.22	290.12	0.00	0.00
138.00		274.73	287.78	0.00	0.00
140.00		272.21	285.44	0.00	0.00
142.00		269.67	283.10	0.00	0.00
144.00		267.09	280.76	0.00	0.00
146.00		264.49	278.42	0.00	0.00
147.00	(11) attachments	4296.18	2969.25	0.00	0.00
148.00		130.51	135.56	0.00	0.00
150.00		259.20	269.37	0.00	0.00
152.00		256.51	267.03	0.00	0.00
154.00		253.80	264.69	0.00	0.00
156.00		251.07	262.35	0.00	0.00
157.00	(17) attachments	4764.92	3020.74	0.00	0.00
158.00		123.72	113.71	0.00	0.00
160.00		245.52	225.66	0.00	0.00
162.00		242.70	223.32	0.00	0.00
164.00		239.87	220.98	0.00	0.00
166.00		237.01	218.64	0.00	0.00
167.00	(24) attachments	7163.19	3830.12	0.00	0.00
168.00		116.63	90.23	0.00	0.00
170.00		231.22	178.70	0.00	0.00
172.00		228.29	176.36	0.00	0.00
174.00		225.34	174.02	0.00	0.00
176.00		222.37	171.68	0.00	0.00
177.00	(22) attachments	7589.89	4854.48	0.00	0.00
178.00		109.25	71.90	0.00	0.00
180.00		216.36	142.04	0.00	0.00
	Totals:	**49,997.20**	**61,003.27**	**0.00**	**0.00**

Calculated Forces

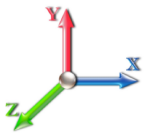
Structure:	CT02218-S-SBA	**Code:**	TIA-222-G	7/8/2022	
Site Name:	Colchester2	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 14	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 105 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 30

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	-60.96	-50.05	0.00	-6475.2	0.00	6475.29	5508.12	2754.06	13547.4	6725.55	0.00	0.000	0.000	0.974
2.00	-60.10	-49.85	0.00	-6375.1	0.00	6375.19	5485.87	2742.94	13399.2	6651.93	0.02	-0.098	0.000	0.970
4.00	-59.25	-49.64	0.00	-6275.5	0.00	6275.50	5463.41	2731.70	13251.1	6578.43	0.08	-0.197	0.000	0.965
6.00	-58.40	-49.44	0.00	-6176.2	0.00	6176.22	5440.72	2720.36	13103.3	6505.05	0.19	-0.296	0.000	0.961
8.00	-57.55	-49.24	0.00	-6077.3	0.00	6077.34	5417.82	2708.91	12955.7	6431.80	0.33	-0.395	0.000	0.956
10.00	-56.71	-49.03	0.00	-5978.8	0.00	5978.87	5394.71	2697.35	12808.5	6358.68	0.52	-0.495	0.000	0.951
12.00	-55.88	-48.83	0.00	-5880.8	0.00	5880.80	5371.37	2685.69	12661.4	6285.69	0.75	-0.596	0.000	0.946
14.00	-55.05	-48.62	0.00	-5783.1	0.00	5783.15	5347.82	2673.91	12514.7	6212.85	1.02	-0.697	0.000	0.941
16.00	-54.23	-48.42	0.00	-5685.9	0.00	5685.90	5324.05	2662.03	12368.3	6140.16	1.34	-0.798	0.000	0.937
18.00	-53.41	-48.20	0.00	-5589.0	0.00	5589.07	5300.07	2650.03	12222.2	6067.62	1.69	-0.900	0.000	0.932
20.00	-52.60	-47.98	0.00	-5492.6	0.00	5492.67	5275.87	2637.93	12076.4	5995.24	2.09	-1.002	0.000	0.926
22.00	-51.79	-47.75	0.00	-5396.7	0.00	5396.72	5251.44	2625.72	11930.9	5923.02	2.54	-1.105	0.000	0.921
24.00	-50.99	-47.52	0.00	-5301.2	0.00	5301.22	5226.81	2613.40	11785.8	5850.98	3.02	-1.209	0.000	0.916
26.00	-50.19	-47.28	0.00	-5206.1	0.00	5206.19	5201.95	2600.98	11641.0	5779.11	3.55	-1.312	0.000	0.911
28.00	-49.40	-47.03	0.00	-5111.6	0.00	5111.64	5176.88	2588.44	11496.6	5707.42	4.12	-1.417	0.000	0.905
30.00	-48.62	-46.79	0.00	-5017.5	0.00	5017.57	5151.59	2575.80	11352.6	5635.92	4.74	-1.521	0.000	0.900
32.00	-47.84	-46.53	0.00	-4924.0	0.00	4924.00	5126.08	2563.04	11208.9	5564.61	5.40	-1.627	0.000	0.895
34.00	-47.06	-46.28	0.00	-4830.9	0.00	4830.94	5100.36	2550.18	11065.7	5493.50	6.10	-1.732	0.000	0.889
36.00	-46.29	-46.02	0.00	-4738.3	0.00	4738.39	5074.42	2537.21	10922.9	5422.60	6.85	-1.838	0.000	0.883
38.00	-45.53	-45.75	0.00	-4646.3	0.00	4646.36	5048.26	2524.13	10780.5	5351.90	7.65	-1.945	0.000	0.878
40.00	-44.77	-45.49	0.00	-4554.8	0.00	4554.85	5021.88	2510.94	10638.5	5281.41	8.48	-2.051	0.000	0.872
42.00	-44.02	-45.22	0.00	-4463.8	0.00	4463.88	4995.29	2497.65	10497.0	5211.15	9.37	-2.159	0.000	0.866
44.00	-43.27	-44.94	0.00	-4373.4	0.00	4373.44	4968.48	2484.24	10355.9	5141.11	10.29	-2.266	0.000	0.860
45.92	-42.60	-44.64	0.00	-4287.3	0.00	4287.30	4942.58	2471.29	10221.1	5074.21	11.23	-2.370	0.000	0.854
46.00	-42.51	-44.67	0.00	-4283.5	0.00	4283.58	4941.45	2470.73	10215.3	5071.31	11.27	-2.375	0.000	0.854
48.00	-41.28	-44.37	0.00	-4194.2	0.00	4194.24	4914.21	2457.10	10075.1	5001.74	12.28	-2.483	0.000	0.847
50.00	-40.06	-44.06	0.00	-4105.5	0.00	4105.51	4886.75	2443.37	9935.52	4932.41	13.35	-2.592	0.000	0.841
52.00	-38.87	-43.73	0.00	-4017.4	0.00	4017.40	4859.07	2429.53	9796.37	4863.33	14.46	-2.701	0.000	0.834
53.00	-38.26	-43.57	0.00	-3973.6	0.00	3973.67	3967.43	1983.71	8109.29	4025.79	15.03	-2.756	0.000	0.997
54.00	-37.92	-43.45	0.00	-3930.1	0.00	3930.10	3957.53	1978.76	8055.31	3998.99	15.61	-2.811	0.000	0.993
56.00	-37.26	-43.17	0.00	-3843.2	0.00	3843.20	3937.57	1968.78	7947.52	3945.49	16.82	-2.933	0.000	0.984
58.00	-36.62	-42.88	0.00	-3756.8	0.00	3756.87	3917.39	1958.70	7839.99	3892.10	18.07	-3.056	0.000	0.975
60.00	-35.98	-42.60	0.00	-3671.1	0.00	3671.10	3897.00	1948.50	7732.70	3838.84	19.38	-3.179	0.000	0.966
62.00	-35.34	-42.31	0.00	-3585.9	0.00	3585.91	3876.39	1938.19	7625.69	3785.71	20.74	-3.302	0.000	0.957
64.00	-34.71	-42.02	0.00	-3501.2	0.00	3501.29	3855.56	1927.78	7518.96	3732.73	22.15	-3.425	0.000	0.947
66.00	-34.09	-41.73	0.00	-3417.2	0.00	3417.25	3834.51	1917.26	7412.51	3679.88	23.61	-3.548	0.000	0.938
68.00	-33.47	-41.44	0.00	-3333.7	0.00	3333.79	3813.25	1906.63	7306.37	3627.19	25.12	-3.672	0.000	0.928
70.00	-32.85	-41.15	0.00	-3250.9	0.00	3250.91	3791.77	1895.89	7200.54	3574.65	26.68	-3.796	0.000	0.919
72.00	-32.24	-40.85	0.00	-3168.6	0.00	3168.62	3770.07	1885.04	7095.04	3522.28	28.30	-3.920	0.000	0.909
74.00	-31.64	-40.56	0.00	-3086.9	0.00	3086.91	3748.16	1874.08	6989.87	3470.07	29.97	-4.044	0.000	0.898
76.00	-31.04	-40.26	0.00	-3005.8	0.00	3005.80	3726.03	1863.01	6885.05	3418.03	31.69	-4.168	0.000	0.888
78.00	-30.45	-39.96	0.00	-2925.2	0.00	2925.28	3703.68	1851.84	6780.58	3366.17	33.46	-4.292	0.000	0.878
80.00	-29.86	-39.67	0.00	-2845.3	0.00	2845.35	3681.11	1840.56	6676.48	3314.49	35.28	-4.416	0.000	0.867
82.00	-29.28	-39.37	0.00	-2766.0	0.00	2766.02	3658.33	1829.16	6572.76	3263.00	37.16	-4.541	0.000	0.856
84.00	-28.70	-39.07	0.00	-2687.2	0.00	2687.29	3635.33	1817.66	6469.43	3211.70	39.08	-4.665	0.000	0.845
86.00	-28.13	-38.77	0.00	-2609.1	0.00	2609.15	3612.11	1806.05	6366.51	3160.60	41.06	-4.789	0.000	0.834
88.00	-27.56	-38.47	0.00	-2531.6	0.00	2531.62	3588.67	1794.34	6263.99	3109.71	43.09	-4.913	0.000	0.822
90.00	-27.00	-38.17	0.00	-2454.6	0.00	2454.69	3565.02	1782.51	6161.91	3059.03	45.18	-5.037	0.000	0.810

Calculated Forces

Structure:	CT02218-S-SBA	**Code:**	TIA-222-G	7/8/2022	
Site Name:	Colchester2	**Exposure:**	C		
Height:	180.00 (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

92.00	-26.47	-37.85	0.00	-2378.3	0.00	2378.35	3541.15	1770.57	6060.25	3008.56	47.31	-5.160	0.000	0.798
92.92	-26.21	-37.71	0.00	-2343.6	0.00	2343.66	3530.13	1765.07	6013.81	2985.51	48.31	-5.217	0.000	0.793
94.00	-25.71	-37.54	0.00	-2302.8	0.00	2302.80	3517.06	1758.53	5959.04	2958.32	49.50	-5.284	0.000	0.786
96.00	-24.83	-37.21	0.00	-2227.7	0.00	2227.71	3492.76	1746.38	5858.29	2908.30	51.73	-5.407	0.000	0.774
98.00	-23.98	-36.85	0.00	-2153.3	0.00	2153.30	3468.23	1734.12	5758.01	2858.52	54.02	-5.529	0.000	0.761
98.92	-23.58	-36.70	0.00	-2119.5	0.00	2119.53	2742.07	1371.04	4616.42	2291.78	55.09	-5.586	0.000	0.934
100.00	-23.30	-36.55	0.00	-2079.7	0.00	2079.77	2732.96	1366.48	4575.83	2271.63	56.36	-5.652	0.000	0.925
102.00	-22.82	-36.25	0.00	-2006.6	0.00	2006.68	2715.97	1357.98	4501.05	2234.51	58.76	-5.790	0.000	0.907
104.00	-22.34	-35.95	0.00	-1934.1	0.00	1934.18	2698.76	1349.38	4426.51	2197.50	61.21	-5.928	0.000	0.889
106.00	-21.87	-35.66	0.00	-1862.2	0.00	1862.27	2681.34	1340.67	4352.19	2160.61	63.72	-6.064	0.000	0.871
108.00	-21.41	-35.36	0.00	-1790.9	0.00	1790.96	2663.69	1331.85	4278.13	2123.84	66.28	-6.199	0.000	0.852
110.00	-20.95	-35.06	0.00	-1720.2	0.00	1720.24	2645.83	1322.92	4204.32	2087.20	68.90	-6.334	0.000	0.833
112.00	-20.50	-34.76	0.00	-1650.1	0.00	1650.12	2627.76	1313.88	4130.77	2050.69	71.58	-6.467	0.000	0.813
114.00	-20.05	-34.47	0.00	-1580.5	0.00	1580.59	2609.46	1304.73	4057.51	2014.32	74.31	-6.599	0.000	0.793
116.00	-19.61	-34.17	0.00	-1511.6	0.00	1511.66	2590.95	1295.48	3984.53	1978.09	77.10	-6.729	0.000	0.772
118.00	-19.17	-33.87	0.00	-1443.3	0.00	1443.32	2572.22	1286.11	3911.86	1942.01	79.94	-6.858	0.000	0.751
120.00	-18.74	-33.58	0.00	-1375.5	0.00	1375.57	2553.28	1276.64	3839.50	1906.09	82.83	-6.984	0.000	0.730
122.00	-18.31	-33.28	0.00	-1308.4	0.00	1308.42	2534.11	1267.06	3767.46	1870.33	85.78	-7.109	0.000	0.707
124.00	-17.89	-32.98	0.00	-1241.8	0.00	1241.86	2514.73	1257.37	3695.76	1834.73	88.78	-7.232	0.000	0.685
126.00	-17.50	-32.68	0.00	-1175.8	0.00	1175.89	2495.13	1247.57	3624.40	1799.30	91.82	-7.353	0.000	0.661
127.09	-17.28	-32.52	0.00	-1140.3	0.00	1140.38	2484.39	1242.20	3585.78	1780.13	93.50	-7.417	0.000	0.648
128.00	-16.98	-32.38	0.00	-1110.6	0.00	1110.68	2475.32	1237.66	3553.40	1764.06	94.92	-7.471	0.000	0.637
130.00	-16.38	-32.05	0.00	-1045.9	0.00	1045.92	2455.29	1227.64	3482.76	1728.99	98.07	-7.587	0.000	0.612
132.00	-15.81	-31.72	0.00	-981.82	0.00	981.82	2435.04	1217.52	3412.51	1694.11	101.26	-7.699	0.000	0.587
132.34	-15.69	-31.67	0.00	-971.14	0.00	971.14	1489.26	744.63	2121.49	1053.20	101.80	-7.718	0.000	0.934
134.00	-15.42	-31.44	0.00	-918.46	0.00	918.46	1482.04	741.02	2090.19	1037.66	104.50	-7.809	0.000	0.897
136.00	-15.09	-31.16	0.00	-855.58	0.00	855.58	1473.16	736.58	2052.54	1018.97	107.79	-7.952	0.000	0.852
138.00	-14.77	-30.89	0.00	-793.25	0.00	793.25	1464.07	732.03	2014.90	1000.28	111.15	-8.091	0.000	0.805
140.00	-14.46	-30.61	0.00	-731.48	0.00	731.48	1454.76	727.38	1977.27	981.60	114.55	-8.224	0.000	0.757
142.00	-14.15	-30.33	0.00	-670.26	0.00	670.26	1445.23	722.61	1939.67	962.93	118.02	-8.351	0.000	0.708
144.00	-13.85	-30.06	0.00	-609.60	0.00	609.60	1435.48	717.74	1902.10	944.28	121.53	-8.472	0.000	0.657
146.00	-13.57	-29.77	0.00	-549.49	0.00	549.49	1425.52	712.76	1864.58	925.66	125.09	-8.585	0.000	0.605
147.00	-11.26	-25.09	0.00	-519.72	0.00	519.72	1420.45	710.23	1845.85	916.36	126.89	-8.639	0.000	0.576
148.00	-11.11	-24.96	0.00	-494.63	0.00	494.63	1415.33	707.67	1827.13	907.06	128.70	-8.692	0.000	0.554
150.00	-10.84	-24.68	0.00	-444.71	0.00	444.71	1404.94	702.47	1789.74	888.50	132.35	-8.791	0.000	0.509
152.00	-10.58	-24.40	0.00	-395.36	0.00	395.36	1394.32	697.16	1752.43	869.98	136.04	-8.883	0.000	0.463
154.00	-10.32	-24.12	0.00	-346.57	0.00	346.57	1383.49	691.74	1715.22	851.51	139.76	-8.968	0.000	0.416
156.00	-10.08	-23.84	0.00	-298.32	0.00	298.32	1372.44	686.22	1678.11	833.09	143.52	-9.045	0.000	0.367
157.00	-7.84	-18.67	0.00	-274.48	0.00	274.48	1366.83	683.41	1659.60	823.90	145.41	-9.081	0.000	0.340
158.00	-7.73	-18.53	0.00	-255.82	0.00	255.82	1361.17	680.58	1641.12	814.72	147.31	-9.114	0.000	0.320
160.00	-7.53	-18.26	0.00	-218.75	0.00	218.75	1349.68	674.84	1604.25	796.42	151.13	-9.176	0.000	0.281
162.00	-7.33	-17.99	0.00	-182.23	0.00	182.23	1337.98	668.99	1567.52	778.18	154.97	-9.230	0.000	0.240
164.00	-7.14	-17.73	0.00	-146.25	0.00	146.25	1326.06	663.03	1530.94	760.02	158.83	-9.276	0.000	0.199
166.00	-6.95	-17.46	0.00	-110.80	0.00	110.80	1313.92	656.96	1494.52	741.94	162.71	-9.314	0.000	0.155
167.00	-4.33	-9.77	0.00	-93.34	0.00	93.34	1307.77	653.89	1476.37	732.93	164.65	-9.330	0.000	0.131
168.00	-4.26	-9.64	0.00	-83.57	0.00	83.57	1301.57	650.78	1458.27	723.95	166.60	-9.344	0.000	0.119
170.00	-4.12	-9.39	0.00	-64.28	0.00	64.28	1289.00	644.50	1422.20	706.04	170.50	-9.367	0.000	0.094
172.00	-3.98	-9.13	0.00	-45.50	0.00	45.50	1276.21	638.10	1386.32	688.23	174.41	-9.386	0.000	0.069
174.00	-3.84	-8.88	0.00	-27.24	0.00	27.24	1263.20	631.60	1350.65	670.52	178.33	-9.399	0.000	0.044
176.00	-3.71	-8.64	0.00	-9.47	0.00	9.47	1249.98	624.99	1315.19	652.92	182.25	-9.406	0.000	0.018
177.00	-0.16	-0.36	0.00	-0.83	0.00	0.83	1243.29	621.64	1297.54	644.16	184.21	-9.406	0.000	0.001
178.00	-0.10	-0.24	0.00	-0.47	0.00	0.47	1236.54	618.27	1279.96	635.42	186.17	-9.407	0.000	0.001
180.00	0.00	-0.22	0.00	0.00	0.00	0.00	1222.88	611.44	1244.96	618.05	190.10	-9.407	0.000	0.000

Wind Loading - Shaft

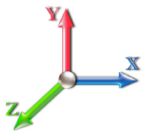
Structure:	CT02218-S-SBA	**Code:**	TIA-222-G	7/8/2022	
Site Name:	Colchester2	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 16	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 105 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 30

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	22.791	25.07	493.51	0.750	0.000	0.00	0.000	0.00	0.0	0.0	0.0
2.00		1.00	0.85	22.791	25.07	490.14	0.750	0.000	2.00	10.161	7.62	305.7	0.0	508.0
4.00		1.00	0.85	22.791	25.07	486.76	0.750	0.000	2.00	10.091	7.57	303.6	0.0	504.5
6.00		1.00	0.85	22.791	25.07	483.39	0.750	0.000	2.00	10.022	7.52	301.5	0.0	501.0
8.00		1.00	0.85	22.791	25.07	480.02	0.750	0.000	2.00	9.952	7.46	299.4	0.0	497.4
10.00		1.00	0.85	22.791	25.07	476.65	0.750	0.000	2.00	9.882	7.41	297.3	0.0	493.9
12.00		1.00	0.85	22.791	25.07	473.27	0.750	0.000	2.00	9.813	7.36	295.2	0.0	490.4
14.00		1.00	0.85	22.791	25.07	469.90	0.750	0.000	2.00	9.743	7.31	293.1	0.0	486.9
16.00		1.00	0.86	23.072	25.38	469.40	0.750	0.000	2.00	9.673	7.25	294.6	0.0	483.4
18.00		1.00	0.88	23.652	26.02	471.82	0.750	0.000	2.00	9.604	7.20	299.8	0.0	479.9
20.00		1.00	0.90	24.182	26.60	473.61	0.750	0.000	2.00	9.534	7.15	304.3	0.0	476.4
22.00		1.00	0.92	24.672	27.14	474.87	0.750	0.000	2.00	9.464	7.10	308.2	0.0	472.9
24.00		1.00	0.94	25.128	27.64	475.70	0.750	0.000	2.00	9.395	7.05	311.6	0.0	469.4
26.00		1.00	0.95	25.555	28.11	476.15	0.750	0.000	2.00	9.325	6.99	314.6	0.0	465.9
28.00		1.00	0.97	25.957	28.55	476.28	0.750	0.000	2.00	9.255	6.94	317.1	0.0	462.4
30.00		1.00	0.98	26.337	28.97	476.13	0.750	0.000	2.00	9.186	6.89	319.3	0.0	458.8
32.00		1.00	1.00	26.697	29.37	475.73	0.750	0.000	2.00	9.116	6.84	321.2	0.0	455.3
34.00		1.00	1.01	27.040	29.74	475.10	0.750	0.000	2.00	9.046	6.78	322.9	0.0	451.8
36.00		1.00	1.02	27.367	30.10	474.27	0.750	0.000	2.00	8.977	6.73	324.3	0.0	448.3
38.00		1.00	1.03	27.681	30.45	473.26	0.750	0.000	2.00	8.907	6.68	325.4	0.0	444.8
40.00		1.00	1.04	27.981	30.78	472.08	0.750	0.000	2.00	8.837	6.63	326.4	0.0	441.3
42.00		1.00	1.05	28.270	31.10	470.76	0.750	0.000	2.00	8.767	6.58	327.2	0.0	437.8
44.00		1.00	1.06	28.548	31.40	469.29	0.750	0.000	2.00	8.698	6.52	327.8	0.0	434.3
45.92	Bot - Section 2	1.00	1.07	28.806	31.69	467.77	0.750	0.000	1.92	8.270	6.20	314.5	0.0	412.9
46.00		1.00	1.07	28.817	31.70	467.70	0.750	0.000	0.08	0.363	0.27	13.8	0.0	33.4
48.00		1.00	1.08	29.076	31.98	465.99	0.750	0.000	2.00	8.686	6.51	333.4	0.0	799.0
50.00		1.00	1.09	29.327	32.26	464.17	0.750	0.000	2.00	8.616	6.46	333.5	0.0	792.5
52.00		1.00	1.10	29.570	32.53	462.25	0.750	0.000	2.00	8.547	6.41	333.6	0.0	786.0
53.00	Top - Section 1	1.00	1.11	29.689	32.66	461.26	0.750	0.000	1.00	4.247	3.19	166.4	0.0	390.6
54.00		1.00	1.11	29.806	32.79	467.29	0.750	0.000	1.00	4.230	3.17	166.4	0.0	181.0
56.00		1.00	1.12	30.035	33.04	465.21	0.750	0.000	2.00	8.407	6.31	333.3	0.0	359.7
58.00		1.00	1.13	30.258	33.28	463.05	0.750	0.000	2.00	8.337	6.25	333.0	0.0	356.7
60.00		1.00	1.14	30.475	33.52	460.80	0.750	0.000	2.00	8.268	6.20	332.6	0.0	353.7
62.00		1.00	1.14	30.686	33.75	458.48	0.750	0.000	2.00	8.198	6.15	332.1	0.0	350.7
64.00		1.00	1.15	30.892	33.98	456.09	0.750	0.000	2.00	8.128	6.10	331.5	0.0	347.7
66.00		1.00	1.16	31.092	34.20	453.63	0.750	0.000	2.00	8.059	6.04	330.7	0.0	344.7
68.00		1.00	1.17	31.288	34.42	451.11	0.750	0.000	2.00	7.989	5.99	330.0	0.0	341.7
70.00		1.00	1.17	31.480	34.63	448.52	0.750	0.000	2.00	7.919	5.94	329.1	0.0	338.7
72.00		1.00	1.18	31.667	34.83	445.88	0.750	0.000	2.00	7.850	5.89	328.1	0.0	335.7
74.00		1.00	1.19	31.850	35.04	443.18	0.750	0.000	2.00	7.780	5.84	327.1	0.0	332.7
76.00		1.00	1.19	32.030	35.23	440.43	0.750	0.000	2.00	7.710	5.78	326.0	0.0	329.7
78.00		1.00	1.20	32.205	35.43	437.62	0.750	0.000	2.00	7.641	5.73	324.8	0.0	326.7
80.00		1.00	1.21	32.377	35.62	434.77	0.750	0.000	2.00	7.571	5.68	323.6	0.0	323.7
82.00		1.00	1.21	32.546	35.80	431.87	0.750	0.000	2.00	7.501	5.63	322.3	0.0	320.7
84.00		1.00	1.22	32.712	35.98	428.93	0.750	0.000	2.00	7.432	5.57	320.9	0.0	317.7
86.00		1.00	1.23	32.874	36.16	425.94	0.750	0.000	2.00	7.362	5.52	319.5	0.0	314.7
88.00		1.00	1.23	33.034	36.34	422.91	0.750	0.000	2.00	7.292	5.47	318.0	0.0	311.7

Wind Loading - Shaft

Structure:	CT02218-S-SBA	**Code:**	TIA-222-G	7/8/2022	
Site Name:	Colchester2	**Exposure:**	C		
Height:	180.00 (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

90.00	1.00	1.24	33.190	36.51	419.84	0.750	0.000	2.00	7.223	5.42	316.4	0.0	308.7
92.00	1.00	1.24	33.344	36.68	416.74	0.750	0.000	2.00	7.153	5.36	314.8	0.0	305.7
92.92 Bot - Section 3	1.00	1.25	33.414	36.76	415.30	0.750	0.000	0.92	3.255	2.44	143.6	0.0	139.1
94.00	1.00	1.25	33.496	36.85	413.59	0.750	0.000	1.08	3.886	2.91	171.8	0.0	302.4
96.00	1.00	1.25	33.644	37.01	410.41	0.750	0.000	2.00	7.120	5.34	316.2	0.0	554.0
98.00	1.00	1.26	33.791	37.17	407.20	0.750	0.000	2.00	7.050	5.29	314.5	0.0	548.5
98.92 Top - Section 2	1.00	1.26	33.857	37.24	405.71	0.750	0.000	0.92	3.208	2.41	143.4	0.0	249.5
100.00	1.00	1.27	33.935	37.33	410.23	0.750	0.000	1.08	3.773	2.83	169.0	0.0	134.7
102.00	1.00	1.27	34.077	37.48	406.96	0.750	0.000	2.00	6.911	5.18	310.9	0.0	246.8
104.00	1.00	1.28	34.216	37.64	403.66	0.750	0.000	2.00	6.841	5.13	309.0	0.0	244.3
106.00	1.00	1.28	34.354	37.79	400.33	0.750	0.000	2.00	6.772	5.08	307.1	0.0	241.8
108.00	1.00	1.29	34.489	37.94	396.97	0.750	0.000	2.00	6.702	5.03	305.1	0.0	239.3
110.00	1.00	1.29	34.623	38.08	393.58	0.750	0.000	2.00	6.632	4.97	303.1	0.0	236.8
112.00	1.00	1.30	34.754	38.23	390.17	0.750	0.000	2.00	6.563	4.92	301.1	0.0	234.3
114.00	1.00	1.30	34.884	38.37	386.72	0.750	0.000	2.00	6.493	4.87	299.0	0.0	231.8
116.00	1.00	1.31	35.012	38.51	383.25	0.750	0.000	2.00	6.423	4.82	296.9	0.0	229.2
118.00	1.00	1.31	35.138	38.65	379.75	0.750	0.000	2.00	6.353	4.77	294.7	0.0	226.7
120.00	1.00	1.32	35.263	38.79	376.23	0.750	0.000	2.00	6.284	4.71	292.5	0.0	224.2
122.00	1.00	1.32	35.386	38.92	372.68	0.750	0.000	2.00	6.214	4.66	290.3	0.0	221.7
124.00	1.00	1.32	35.507	39.06	369.11	0.750	0.000	2.00	6.144	4.61	288.0	0.0	219.2
126.00	1.00	1.33	35.627	39.19	365.52	0.750	0.000	2.00	6.075	4.56	285.7	0.0	216.7
127.09 Bot - Section 4	1.00	1.33	35.691	39.26	363.55	0.750	0.000	1.09	3.271	2.45	154.1	0.0	116.7
128.00	1.00	1.33	35.745	39.32	361.90	0.750	0.000	0.91	2.768	2.08	130.6	0.0	166.8
130.00	1.00	1.34	35.862	39.45	358.26	0.750	0.000	2.00	6.010	4.51	284.5	0.0	362.1
132.00	1.00	1.34	35.977	39.58	354.60	0.750	0.000	2.00	5.940	4.46	282.1	0.0	357.8
132.34 Top - Section 3	1.00	1.34	35.997	39.60	353.98	0.750	0.000	0.34	0.993	0.74	47.2	0.0	59.8
134.00	1.00	1.35	36.091	39.70	355.45	0.750	0.000	1.66	4.877	3.66	232.4	0.0	122.0
136.00	1.00	1.35	36.204	39.82	351.75	0.750	0.000	2.00	5.801	4.35	277.2	0.0	145.1
138.00	1.00	1.35	36.316	39.95	348.04	0.750	0.000	2.00	5.731	4.30	274.7	0.0	143.4
140.00	1.00	1.36	36.426	40.07	344.30	0.750	0.000	2.00	5.661	4.25	272.2	0.0	141.6
142.00	1.00	1.36	36.535	40.19	340.55	0.750	0.000	2.00	5.592	4.19	269.7	0.0	139.9
144.00	1.00	1.37	36.642	40.31	336.77	0.750	0.000	2.00	5.522	4.14	267.1	0.0	138.1
146.00	1.00	1.37	36.749	40.42	332.98	0.750	0.000	2.00	5.452	4.09	264.5	0.0	136.4
147.00 Appurtenance(s)	1.00	1.37	36.802	40.48	331.07	0.750	0.000	1.00	2.700	2.03	131.2	0.0	67.5
148.00	1.00	1.37	36.854	40.54	329.17	0.750	0.000	1.00	2.683	2.01	130.5	0.0	67.1
150.00	1.00	1.38	36.959	40.65	325.34	0.750	0.000	2.00	5.313	3.98	259.2	0.0	132.8
152.00	1.00	1.38	37.062	40.77	321.49	0.750	0.000	2.00	5.243	3.93	256.5	0.0	131.1
154.00	1.00	1.39	37.164	40.88	317.62	0.750	0.000	2.00	5.174	3.88	253.8	0.0	129.3
156.00	1.00	1.39	37.265	40.99	313.74	0.750	0.000	2.00	5.104	3.83	251.1	0.0	127.6
157.00 Appurtenance(s)	1.00	1.39	37.315	41.05	311.80	0.750	0.000	1.00	2.526	1.89	124.4	0.0	63.1
158.00	1.00	1.39	37.365	41.10	309.85	0.750	0.000	1.00	2.508	1.88	123.7	0.0	62.7
160.00	1.00	1.40	37.464	41.21	305.93	0.750	0.000	2.00	4.965	3.72	245.5	0.0	124.1
162.00	1.00	1.40	37.562	41.32	302.00	0.750	0.000	2.00	4.895	3.67	242.7	0.0	122.3
164.00	1.00	1.40	37.660	41.43	298.06	0.750	0.000	2.00	4.825	3.62	239.9	0.0	120.6
166.00	1.00	1.41	37.756	41.53	294.10	0.750	0.000	2.00	4.756	3.57	237.0	0.0	118.8
167.00 Appurtenance(s)	1.00	1.41	37.804	41.58	292.11	0.750	0.000	1.00	2.352	1.76	117.3	0.0	58.7
168.00	1.00	1.41	37.851	41.64	290.12	0.750	0.000	1.00	2.334	1.75	116.6	0.0	58.3
170.00	1.00	1.42	37.946	41.74	286.13	0.750	0.000	2.00	4.616	3.46	231.2	0.0	115.3
172.00	1.00	1.42	38.039	41.84	282.13	0.750	0.000	2.00	4.547	3.41	228.3	0.0	113.5
174.00	1.00	1.42	38.132	41.94	278.11	0.750	0.000	2.00	4.477	3.36	225.3	0.0	111.8
176.00	1.00	1.43	38.224	42.05	274.08	0.750	0.000	2.00	4.407	3.31	222.4	0.0	110.0
177.00 Appurtenance(s)	1.00	1.43	38.269	42.10	272.05	0.750	0.000	1.00	2.177	1.63	110.0	0.0	54.4
178.00	1.00	1.43	38.315	42.15	270.03	0.750	0.000	1.00	2.160	1.62	109.2	0.0	53.9
180.00	1.00	1.43	38.405	42.25	265.97	0.750	0.000	2.00	4.268	3.20	216.4	0.0	106.5
							Totals:	**180.00**			**26,665.9**		**29,102.1**

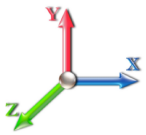
Discrete Appurtenance Forces

Structure:	CT02218-S-SBA	**Code:**	TIA-222-G	7/8/2022	
Site Name:	Colchester2	**Exposure:**	C		
Height:	180.00 (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	

Load Case: 0.9D + 1.6W 105 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 30

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	177.00	Ericsson 4460 B25 + B66	3	38.269	42.096	0.38	0.75	2.41	280.80	0.000	0.000	162.15	0.00	0.00
2	177.00	782 11056	3	38.269	42.096	0.38	0.75	0.32	4.86	0.000	0.000	21.22	0.00	0.00
3	177.00	Ericsson AIR6419 B41	3	38.269	42.096	0.55	0.75	10.35	224.91	0.000	0.000	697.26	0.00	0.00
4	177.00	Commscope VV-65B-R1	3	38.269	42.096	0.55	0.75	13.15	79.65	0.000	0.000	885.94	0.00	0.00
5	177.00	Ericsson 4449 B71 + B85	3	38.269	42.096	0.38	0.75	2.22	197.64	0.000	0.000	149.27	0.00	0.00
6	177.00	RMQP-4096-HK Plat. +	1	38.269	42.096	1.00	1.00	50.00	2402.10	0.000	0.000	3367.69	0.00	0.00
7	177.00	RFS	3	38.269	42.096	0.52	0.75	31.88	345.60	0.000	0.000	2147.11	0.00	0.00
8	177.00	Ericsson KRY 112 489/2	3	38.269	42.096	0.38	0.75	0.73	41.58	0.000	0.000	49.25	0.00	0.00
9	167.00	Platform w/ Hand Rails	1	37.804	41.584	1.00	1.00	40.00	1800.00	0.000	0.000	2661.37	0.00	0.00
10	167.00	Antel	6	37.804	41.584	1.27	0.75	19.97	64.80	0.000	0.000	1328.46	0.00	0.00
11	167.00	Samsung B2/B66A	3	37.804	41.584	0.38	0.75	2.11	189.81	0.000	0.000	140.72	0.00	0.00
12	167.00	Samsung B5/B13	3	37.804	41.584	0.38	0.75	2.11	227.88	0.000	0.000	140.72	0.00	0.00
13	167.00	Samsung VZS01	3	37.804	41.584	0.52	0.75	6.68	235.17	0.000	0.000	444.17	0.00	0.00
14	167.00	Raycap	2	37.804	41.584	0.60	0.75	4.55	57.60	0.000	0.000	302.60	0.00	0.00
15	167.00	Commscope	6	37.804	41.584	0.62	0.75	30.48	216.00	0.000	0.000	2027.80	0.00	0.00
16	157.00	DMP65R-BU8DA	1	37.315	41.047	0.58	0.80	10.39	86.13	0.000	0.000	682.57	0.00	0.00
17	157.00	Low Profile	1	37.315	41.047	1.00	1.00	22.00	1350.00	0.000	0.000	1444.85	0.00	0.00
18	157.00	7770	3	37.315	41.047	0.58	0.80	9.64	94.50	0.000	0.000	632.84	0.00	0.00
19	157.00	DMP65R-BU4DA	2	37.315	41.047	0.57	0.80	9.11	122.22	0.000	0.000	598.54	0.00	0.00
20	157.00	Raycap DC6-48-60-18-8F	1	37.315	41.047	0.72	0.80	0.66	28.62	0.000	0.000	43.50	0.00	0.00
21	157.00	HPA65R-BU4A	2	37.315	41.047	0.68	0.80	6.78	51.66	0.000	0.000	445.10	0.00	0.00
22	157.00	HPA65R-BU8A	1	37.315	41.047	0.69	0.80	7.74	48.60	0.000	0.000	508.60	0.00	0.00
23	157.00	4449 B5/B12	3	37.315	41.047	0.40	0.80	2.36	191.70	0.000	0.000	155.26	0.00	0.00
24	157.00	8843 B2/B66A	3	37.315	41.047	0.40	0.80	1.97	194.40	0.000	0.000	129.25	0.00	0.00
25	147.00	Raycap	1	36.802	40.482	0.75	0.75	1.51	19.71	0.000	0.000	97.64	0.00	0.00
26	147.00	Fujitsu TA08025-B604	3	36.802	40.482	0.38	0.75	2.21	172.53	0.000	0.000	142.82	0.00	0.00
27	147.00	Fujitsu TA08025-B605	3	36.802	40.482	0.38	0.75	2.21	202.50	0.000	0.000	142.82	0.00	0.00
28	147.00	MC-PK8-DSH	1	36.802	40.482	1.00	1.00	37.59	1554.30	0.000	0.000	2434.75	0.00	0.00
29	147.00	JMA Wireless	3	36.802	40.482	0.55	0.75	20.80	174.15	0.000	0.000	1346.97	0.00	0.00
							Totals:		**10,659.42**			**23,331.25**		

Total Applied Force Summary

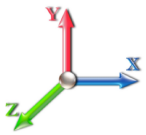
Structure:	CT02218-S-SBA	**Code:**	TIA-222-G	7/8/2022	
Site Name:	Colchester2	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 19	

TES Tower Engineering Solutions

Load Case: 0.9D + 1.6W 105 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 30

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
2.00		305.69	580.43	0.00	0.00
4.00		303.59	576.92	0.00	0.00
6.00		301.49	573.41	0.00	0.00
8.00		299.40	569.91	0.00	0.00
10.00		297.30	566.40	0.00	0.00
12.00		295.20	562.89	0.00	0.00
14.00		293.11	559.38	0.00	0.00
16.00		294.61	555.87	0.00	0.00
18.00		299.83	552.36	0.00	0.00
20.00		304.33	548.85	0.00	0.00
22.00		308.23	545.34	0.00	0.00
24.00		311.61	541.83	0.00	0.00
26.00		314.56	538.32	0.00	0.00
28.00		317.12	534.81	0.00	0.00
30.00		319.33	531.30	0.00	0.00
32.00		321.25	527.80	0.00	0.00
34.00		322.89	524.29	0.00	0.00
36.00		324.28	520.78	0.00	0.00
38.00		325.44	517.27	0.00	0.00
40.00		326.40	513.76	0.00	0.00
42.00		327.17	510.25	0.00	0.00
44.00		327.77	506.74	0.00	0.00
45.92		314.46	482.33	0.00	0.00
46.00		13.82	36.45	0.00	0.00
48.00		333.37	871.49	0.00	0.00
50.00		333.55	864.97	0.00	0.00
52.00		333.60	858.46	0.00	0.00
53.00		166.44	426.79	0.00	0.00
54.00		166.41	217.23	0.00	0.00
56.00		333.32	432.21	0.00	0.00
58.00		333.00	429.20	0.00	0.00
60.00		332.59	426.20	0.00	0.00
62.00		332.07	423.19	0.00	0.00
64.00		331.45	420.19	0.00	0.00
66.00		330.75	417.18	0.00	0.00
68.00		329.96	414.18	0.00	0.00
70.00		329.08	411.17	0.00	0.00
72.00		328.12	408.17	0.00	0.00
74.00		327.09	405.17	0.00	0.00
76.00		325.99	402.16	0.00	0.00
78.00		324.81	399.16	0.00	0.00
80.00		323.57	396.15	0.00	0.00
82.00		322.27	393.15	0.00	0.00
84.00		320.90	390.14	0.00	0.00
86.00		319.47	387.14	0.00	0.00
88.00		317.98	384.13	0.00	0.00

Total Applied Force Summary

Structure:	CT02218-S-SBA		**Code:**	TIA-222-G	7/8/2022
Site Name:	Colchester2		**Exposure:**	C	
Height:	180.00 (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

IES Tower Engineering Solutions

90.00		316.43	381.13	0.00	0.00
92.00		314.83	378.13	0.00	0.00
92.92		143.57	172.30	0.00	0.00
94.00		171.80	341.62	0.00	0.00
96.00		316.20	626.44	0.00	0.00
98.00		314.47	620.93	0.00	0.00
98.92		143.37	282.75	0.00	0.00
100.00		168.99	173.98	0.00	0.00
102.00		310.86	319.26	0.00	0.00
104.00		308.99	316.75	0.00	0.00
106.00		307.07	314.24	0.00	0.00
108.00		305.11	311.73	0.00	0.00
110.00		303.10	309.23	0.00	0.00
112.00		301.06	306.72	0.00	0.00
114.00		298.97	304.21	0.00	0.00
116.00		296.85	301.70	0.00	0.00
118.00		294.69	299.20	0.00	0.00
120.00		292.49	296.69	0.00	0.00
122.00		290.26	294.18	0.00	0.00
124.00		287.98	291.67	0.00	0.00
126.00		285.68	289.17	0.00	0.00
127.09		154.12	156.06	0.00	0.00
128.00		130.59	199.86	0.00	0.00
130.00		284.49	434.54	0.00	0.00
132.00		282.10	430.28	0.00	0.00
132.34		47.19	72.01	0.00	0.00
134.00		232.36	182.30	0.00	0.00
136.00		277.22	217.59	0.00	0.00
138.00		274.73	215.83	0.00	0.00
140.00		272.21	214.08	0.00	0.00
142.00		269.67	212.32	0.00	0.00
144.00		267.09	210.57	0.00	0.00
146.00		264.49	208.81	0.00	0.00
147.00	(11) attachments	4296.18	2226.94	0.00	0.00
148.00		130.51	101.67	0.00	0.00
150.00		259.20	202.03	0.00	0.00
152.00		256.51	200.27	0.00	0.00
154.00		253.80	198.52	0.00	0.00
156.00		251.07	196.77	0.00	0.00
157.00	(17) attachments	4764.92	2265.55	0.00	0.00
158.00		123.72	85.28	0.00	0.00
160.00		245.52	169.24	0.00	0.00
162.00		242.70	167.49	0.00	0.00
164.00		239.87	165.74	0.00	0.00
166.00		237.01	163.98	0.00	0.00
167.00	(24) attachments	7163.19	2872.59	0.00	0.00
168.00		116.63	67.67	0.00	0.00
170.00		231.22	134.02	0.00	0.00
172.00		228.29	132.27	0.00	0.00
174.00		225.34	130.51	0.00	0.00
176.00		222.37	128.76	0.00	0.00
177.00	(22) attachments	7589.89	3640.86	0.00	0.00
178.00		109.25	53.92	0.00	0.00
180.00		216.36	106.53	0.00	0.00
	Totals:	**49,997.20**	**45,752.46**	**0.00**	**0.00**

Calculated Forces

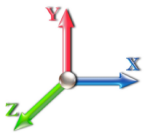
Structure:	CT02218-S-SBA	**Code:**	TIA-222-G	7/8/2022	
Site Name:	Colchester2	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 21	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 105 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 30

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	-45.71	-50.04	0.00	-6383.5	0.00	6383.55	5508.12	2754.06	13547.4	6725.55	0.00	0.000	0.000	0.958
2.00	-45.04	-49.81	0.00	-6283.4	0.00	6283.48	5485.87	2742.94	13399.2	6651.93	0.02	-0.097	0.000	0.953
4.00	-44.38	-49.58	0.00	-6183.8	0.00	6183.87	5463.41	2731.70	13251.1	6578.43	0.08	-0.194	0.000	0.948
6.00	-43.73	-49.35	0.00	-6084.7	0.00	6084.72	5440.72	2720.36	13103.3	6505.05	0.19	-0.291	0.000	0.944
8.00	-43.07	-49.12	0.00	-5986.0	0.00	5986.02	5417.82	2708.91	12955.7	6431.80	0.33	-0.389	0.000	0.939
10.00	-42.43	-48.89	0.00	-5887.7	0.00	5887.79	5394.71	2697.35	12808.5	6358.68	0.51	-0.488	0.000	0.934
12.00	-41.78	-48.66	0.00	-5790.0	0.00	5790.01	5371.37	2685.69	12661.4	6285.69	0.74	-0.587	0.000	0.929
14.00	-41.14	-48.43	0.00	-5692.6	0.00	5692.69	5347.82	2673.91	12514.7	6212.85	1.01	-0.686	0.000	0.924
16.00	-40.51	-48.20	0.00	-5595.8	0.00	5595.82	5324.05	2662.03	12368.3	6140.16	1.32	-0.786	0.000	0.919
18.00	-39.87	-47.97	0.00	-5499.4	0.00	5499.42	5300.07	2650.03	12222.2	6067.62	1.67	-0.886	0.000	0.914
20.00	-39.25	-47.72	0.00	-5403.4	0.00	5403.49	5275.87	2637.93	12076.4	5995.24	2.06	-0.987	0.000	0.909
22.00	-38.62	-47.47	0.00	-5308.0	0.00	5308.05	5251.44	2625.72	11930.9	5923.02	2.50	-1.088	0.000	0.904
24.00	-38.00	-47.22	0.00	-5213.1	0.00	5213.10	5226.81	2613.40	11785.8	5850.98	2.98	-1.190	0.000	0.899
26.00	-37.39	-46.96	0.00	-5118.6	0.00	5118.67	5201.95	2600.98	11641.0	5779.11	3.50	-1.292	0.000	0.893
28.00	-36.78	-46.69	0.00	-5024.7	0.00	5024.76	5176.88	2588.44	11496.6	5707.42	4.06	-1.394	0.000	0.888
30.00	-36.17	-46.43	0.00	-4931.3	0.00	4931.37	5151.59	2575.80	11352.6	5635.92	4.67	-1.497	0.000	0.882
32.00	-35.57	-46.16	0.00	-4838.5	0.00	4838.52	5126.08	2563.04	11208.9	5564.61	5.32	-1.601	0.000	0.877
34.00	-34.97	-45.88	0.00	-4746.2	0.00	4746.21	5100.36	2550.18	11065.7	5493.50	6.01	-1.705	0.000	0.871
36.00	-34.38	-45.60	0.00	-4654.4	0.00	4654.45	5074.42	2537.21	10922.9	5422.60	6.75	-1.809	0.000	0.865
38.00	-33.79	-45.32	0.00	-4563.2	0.00	4563.24	5048.26	2524.13	10780.5	5351.90	7.53	-1.913	0.000	0.860
40.00	-33.20	-45.04	0.00	-4472.5	0.00	4472.59	5021.88	2510.94	10638.5	5281.41	8.35	-2.018	0.000	0.854
42.00	-32.62	-44.76	0.00	-4382.5	0.00	4382.51	4995.29	2497.65	10497.0	5211.15	9.22	-2.124	0.000	0.848
44.00	-32.05	-44.47	0.00	-4293.0	0.00	4293.00	4968.48	2484.24	10355.9	5141.11	10.13	-2.229	0.000	0.842
45.92	-31.54	-44.16	0.00	-4207.7	0.00	4207.78	4942.58	2471.29	10221.1	5074.21	11.05	-2.331	0.000	0.836
46.00	-31.46	-44.18	0.00	-4204.1	0.00	4204.10	4941.45	2470.73	10215.3	5071.31	11.09	-2.335	0.000	0.836
48.00	-30.52	-43.87	0.00	-4115.7	0.00	4115.74	4914.21	2457.10	10075.1	5001.74	12.09	-2.442	0.000	0.829
50.00	-29.59	-43.55	0.00	-4028.0	0.00	4028.01	4886.75	2443.37	9935.52	4932.41	13.14	-2.549	0.000	0.823
52.00	-28.69	-43.22	0.00	-3940.9	0.00	3940.91	4859.07	2429.53	9796.37	4863.33	14.23	-2.656	0.000	0.817
53.00	-28.23	-43.06	0.00	-3897.7	0.00	3897.70	3967.43	1983.71	8109.29	4025.79	14.79	-2.710	0.000	0.976
54.00	-27.95	-42.92	0.00	-3854.6	0.00	3854.64	3957.53	1978.76	8055.31	3998.99	15.36	-2.764	0.000	0.971
56.00	-27.45	-42.63	0.00	-3768.7	0.00	3768.79	3937.57	1968.78	7947.52	3945.49	16.55	-2.884	0.000	0.963
58.00	-26.95	-42.33	0.00	-3683.5	0.00	3683.54	3917.39	1958.70	7839.99	3892.10	17.78	-3.004	0.000	0.954
60.00	-26.45	-42.03	0.00	-3598.8	0.00	3598.88	3897.00	1948.50	7732.70	3838.84	19.06	-3.124	0.000	0.945
62.00	-25.96	-41.73	0.00	-3514.8	0.00	3514.82	3876.39	1938.19	7625.69	3785.71	20.40	-3.245	0.000	0.936
64.00	-25.47	-41.43	0.00	-3431.3	0.00	3431.36	3855.56	1927.78	7518.96	3732.73	21.78	-3.365	0.000	0.926
66.00	-24.99	-41.13	0.00	-3348.5	0.00	3348.51	3834.51	1917.26	7412.51	3679.88	23.22	-3.486	0.000	0.917
68.00	-24.51	-40.82	0.00	-3266.2	0.00	3266.25	3813.25	1906.63	7306.37	3627.19	24.71	-3.607	0.000	0.907
70.00	-24.03	-40.52	0.00	-3184.6	0.00	3184.61	3791.77	1895.89	7200.54	3574.65	26.24	-3.729	0.000	0.898
72.00	-23.56	-40.22	0.00	-3103.5	0.00	3103.57	3770.07	1885.04	7095.04	3522.28	27.83	-3.850	0.000	0.888
74.00	-23.10	-39.91	0.00	-3023.1	0.00	3023.14	3748.16	1874.08	6989.87	3470.07	29.47	-3.972	0.000	0.878
76.00	-22.64	-39.61	0.00	-2943.3	0.00	2943.32	3726.03	1863.01	6885.05	3418.03	31.16	-4.093	0.000	0.868
78.00	-22.18	-39.30	0.00	-2864.1	0.00	2864.11	3703.68	1851.84	6780.58	3366.17	32.90	-4.215	0.000	0.857
80.00	-21.72	-38.99	0.00	-2785.5	0.00	2785.51	3681.11	1840.56	6676.48	3314.49	34.69	-4.337	0.000	0.847
82.00	-21.27	-38.69	0.00	-2707.5	0.00	2707.53	3658.33	1829.16	6572.76	3263.00	36.53	-4.458	0.000	0.836
84.00	-20.83	-38.38	0.00	-2630.1	0.00	2630.15	3635.33	1817.66	6469.43	3211.70	38.42	-4.580	0.000	0.825
86.00	-20.39	-38.07	0.00	-2553.3	0.00	2553.39	3612.11	1806.05	6366.51	3160.60	40.36	-4.701	0.000	0.814
88.00	-19.95	-37.77	0.00	-2477.2	0.00	2477.25	3588.67	1794.34	6263.99	3109.71	42.36	-4.822	0.000	0.803
90.00	-19.52	-37.46	0.00	-2401.7	0.00	2401.71	3565.02	1782.51	6161.91	3059.03	44.40	-4.944	0.000	0.791

Calculated Forces

Structure:	CT02218-S-SBA	**Code:**	TIA-222-G	7/8/2022	
Site Name:	Colchester2	**Exposure:**	C		
Height:	180.00 (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

IES Tower Engineering Solutions

92.00	-19.11	-37.14	0.00	-2326.7	0.00	2326.79	3541.15	1770.57	6060.25	3008.56	46.50	-5.064	0.000	0.779
92.92	-18.92	-37.01	0.00	-2292.7	0.00	2292.74	3530.13	1765.07	6013.81	2985.51	47.47	-5.120	0.000	0.774
94.00	-18.53	-36.83	0.00	-2252.6	0.00	2252.65	3517.06	1758.53	5959.04	2958.32	48.64	-5.186	0.000	0.767
96.00	-17.86	-36.50	0.00	-2178.9	0.00	2178.98	3492.76	1746.38	5858.29	2908.30	50.84	-5.306	0.000	0.755
98.00	-17.22	-36.15	0.00	-2105.9	0.00	2105.98	3468.23	1734.12	5758.01	2858.52	53.08	-5.426	0.000	0.742
98.92	-16.91	-36.00	0.00	-2072.8	0.00	2072.84	2742.07	1371.04	4616.42	2291.78	54.13	-5.481	0.000	0.911
100.00	-16.69	-35.85	0.00	-2033.8	0.00	2033.84	2732.96	1366.48	4575.83	2271.63	55.38	-5.546	0.000	0.902
102.00	-16.32	-35.55	0.00	-1962.1	0.00	1962.15	2715.97	1357.98	4501.05	2234.51	57.73	-5.681	0.000	0.885
104.00	-15.95	-35.24	0.00	-1891.0	0.00	1891.06	2698.76	1349.38	4426.51	2197.50	60.13	-5.815	0.000	0.867
106.00	-15.59	-34.94	0.00	-1820.5	0.00	1820.57	2681.34	1340.67	4352.19	2160.61	62.59	-5.948	0.000	0.849
108.00	-15.23	-34.64	0.00	-1750.6	0.00	1750.69	2663.69	1331.85	4278.13	2123.84	65.11	-6.081	0.000	0.831
110.00	-14.88	-34.34	0.00	-1681.4	0.00	1681.41	2645.83	1322.92	4204.32	2087.20	67.68	-6.212	0.000	0.812
112.00	-14.53	-34.04	0.00	-1612.7	0.00	1612.72	2627.76	1313.88	4130.77	2050.69	70.31	-6.342	0.000	0.793
114.00	-14.19	-33.74	0.00	-1544.6	0.00	1544.64	2609.46	1304.73	4057.51	2014.32	72.99	-6.471	0.000	0.773
116.00	-13.85	-33.44	0.00	-1477.1	0.00	1477.16	2590.95	1295.48	3984.53	1978.09	75.72	-6.598	0.000	0.753
118.00	-13.51	-33.15	0.00	-1410.2	0.00	1410.28	2572.22	1286.11	3911.86	1942.01	78.51	-6.724	0.000	0.732
120.00	-13.18	-32.85	0.00	-1343.9	0.00	1343.99	2553.28	1276.64	3839.50	1906.09	81.34	-6.848	0.000	0.711
122.00	-12.86	-32.55	0.00	-1278.2	0.00	1278.29	2534.11	1267.06	3767.46	1870.33	84.23	-6.970	0.000	0.689
124.00	-12.54	-32.26	0.00	-1213.1	0.00	1213.19	2514.73	1257.37	3695.76	1834.73	87.17	-7.090	0.000	0.667
126.00	-12.23	-31.96	0.00	-1148.6	0.00	1148.68	2495.13	1247.57	3624.40	1799.30	90.16	-7.208	0.000	0.644
127.09	-12.07	-31.80	0.00	-1113.9	0.00	1113.95	2484.39	1242.20	3585.78	1780.13	91.80	-7.271	0.000	0.631
128.00	-11.84	-31.66	0.00	-1084.9	0.00	1084.91	2475.32	1237.66	3553.40	1764.06	93.20	-7.324	0.000	0.620
130.00	-11.38	-31.34	0.00	-1021.6	0.00	1021.60	2455.29	1227.64	3482.76	1728.99	96.28	-7.436	0.000	0.596
132.00	-10.96	-31.02	0.00	-958.91	0.00	958.91	2435.04	1217.52	3412.51	1694.11	99.41	-7.546	0.000	0.571
132.34	-10.86	-30.97	0.00	-948.47	0.00	948.47	1489.26	744.63	2121.49	1053.20	99.94	-7.564	0.000	0.910
134.00	-10.65	-30.74	0.00	-896.95	0.00	896.95	1482.04	741.02	2090.19	1037.66	102.59	-7.653	0.000	0.873
136.00	-10.40	-30.46	0.00	-835.47	0.00	835.47	1473.16	736.58	2052.54	1018.97	105.81	-7.794	0.000	0.829
138.00	-10.15	-30.18	0.00	-774.55	0.00	774.55	1464.07	732.03	2014.90	1000.28	109.10	-7.929	0.000	0.783
140.00	-9.91	-29.91	0.00	-714.19	0.00	714.19	1454.76	727.38	1977.27	981.60	112.44	-8.059	0.000	0.736
142.00	-9.68	-29.63	0.00	-654.38	0.00	654.38	1445.23	722.61	1939.67	962.93	115.83	-8.183	0.000	0.688
144.00	-9.45	-29.35	0.00	-595.12	0.00	595.12	1435.48	717.74	1902.10	944.28	119.28	-8.300	0.000	0.638
146.00	-9.24	-29.07	0.00	-536.41	0.00	536.41	1425.52	712.76	1864.58	925.66	122.77	-8.411	0.000	0.588
147.00	-7.65	-24.51	0.00	-507.34	0.00	507.34	1420.45	710.23	1845.85	916.36	124.53	-8.464	0.000	0.560
148.00	-7.53	-24.37	0.00	-482.83	0.00	482.83	1415.33	707.67	1827.13	907.06	126.30	-8.515	0.000	0.539
150.00	-7.33	-24.10	0.00	-434.09	0.00	434.09	1404.94	702.47	1789.74	888.50	129.88	-8.612	0.000	0.495
152.00	-7.14	-23.82	0.00	-385.90	0.00	385.90	1394.32	697.16	1752.43	869.98	133.49	-8.702	0.000	0.450
154.00	-6.95	-23.55	0.00	-338.25	0.00	338.25	1383.49	691.74	1715.22	851.51	137.14	-8.785	0.000	0.403
156.00	-6.77	-23.28	0.00	-291.15	0.00	291.15	1372.44	686.22	1678.11	833.09	140.82	-8.860	0.000	0.356
157.00	-5.26	-18.23	0.00	-267.87	0.00	267.87	1366.83	683.41	1659.60	823.90	142.68	-8.895	0.000	0.330
158.00	-5.18	-18.09	0.00	-249.64	0.00	249.64	1361.17	680.58	1641.12	814.72	144.54	-8.928	0.000	0.311
160.00	-5.03	-17.83	0.00	-213.45	0.00	213.45	1349.68	674.84	1604.25	796.42	148.27	-8.987	0.000	0.272
162.00	-4.89	-17.57	0.00	-177.79	0.00	177.79	1337.98	668.99	1567.52	778.18	152.04	-9.040	0.000	0.233
164.00	-4.75	-17.31	0.00	-142.66	0.00	142.66	1326.06	663.03	1530.94	760.02	155.82	-9.086	0.000	0.192
166.00	-4.62	-17.05	0.00	-108.04	0.00	108.04	1313.92	656.96	1494.52	741.94	159.62	-9.122	0.000	0.150
167.00	-2.92	-9.52	0.00	-90.99	0.00	90.99	1307.77	653.89	1476.37	732.93	161.52	-9.138	0.000	0.127
168.00	-2.87	-9.40	0.00	-81.46	0.00	81.46	1301.57	650.78	1458.27	723.95	163.43	-9.151	0.000	0.115
170.00	-2.77	-9.15	0.00	-62.66	0.00	62.66	1289.00	644.50	1422.20	706.04	167.25	-9.175	0.000	0.091
172.00	-2.67	-8.90	0.00	-44.36	0.00	44.36	1276.21	638.10	1386.32	688.23	171.08	-9.193	0.000	0.067
174.00	-2.58	-8.66	0.00	-26.55	0.00	26.55	1263.20	631.60	1350.65	670.52	174.92	-9.205	0.000	0.042
176.00	-2.48	-8.42	0.00	-9.23	0.00	9.23	1249.98	624.99	1315.19	652.92	178.76	-9.212	0.000	0.016
177.00	-0.11	-0.35	0.00	-0.81	0.00	0.81	1243.29	621.64	1297.54	644.16	180.69	-9.213	0.000	0.001
178.00	-0.07	-0.23	0.00	-0.46	0.00	0.46	1236.54	618.27	1279.96	635.42	182.61	-9.213	0.000	0.001
180.00	0.00	-0.22	0.00	0.00	0.00	0.00	1222.88	611.44	1244.96	618.05	186.45	-9.213	0.000	0.000

Wind Loading - Shaft

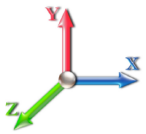
Structure:	CT02218-S-SBA	**Code:**	TIA-222-G	7/8/2022	
Site Name:	Colchester2	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 23	

Tower Engineering Solutions

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 29

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	5.168	5.68	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
2.00		1.00	0.85	5.168	5.68	0.00	1.200	1.133	2.00	10.539	12.65	71.9	174.0	851.3
4.00		1.00	0.85	5.168	5.68	0.00	1.200	1.215	2.00	10.496	12.60	71.6	185.5	858.1
6.00		1.00	0.85	5.168	5.68	0.00	1.200	1.265	2.00	10.443	12.53	71.2	192.0	860.0
8.00		1.00	0.85	5.168	5.68	0.00	1.200	1.302	2.00	10.386	12.46	70.9	196.4	859.7
10.00		1.00	0.85	5.168	5.68	0.00	1.200	1.331	2.00	10.326	12.39	70.4	199.5	858.1
12.00		1.00	0.85	5.168	5.68	0.00	1.200	1.356	2.00	10.265	12.32	70.0	201.9	855.8
14.00		1.00	0.85	5.168	5.68	0.00	1.200	1.377	2.00	10.202	12.24	69.6	203.7	852.9
16.00		1.00	0.86	5.232	5.76	0.00	1.200	1.395	2.00	10.138	12.17	70.0	205.0	849.6
18.00		1.00	0.88	5.363	5.90	0.00	1.200	1.412	2.00	10.074	12.09	71.3	206.0	845.9
20.00		1.00	0.90	5.483	6.03	0.00	1.200	1.427	2.00	10.010	12.01	72.5	206.8	842.0
22.00		1.00	0.92	5.595	6.15	0.00	1.200	1.440	2.00	9.944	11.93	73.4	207.3	837.9
24.00		1.00	0.94	5.698	6.27	0.00	1.200	1.453	2.00	9.879	11.85	74.3	207.7	833.5
26.00		1.00	0.95	5.795	6.37	0.00	1.200	1.465	2.00	9.813	11.78	75.1	207.9	829.0
28.00		1.00	0.97	5.886	6.47	0.00	1.200	1.476	2.00	9.747	11.70	75.7	207.9	824.4
30.00		1.00	0.98	5.972	6.57	0.00	1.200	1.486	2.00	9.681	11.62	76.3	207.9	819.7
32.00		1.00	1.00	6.054	6.66	0.00	1.200	1.495	2.00	9.614	11.54	76.8	207.7	814.8
34.00		1.00	1.01	6.132	6.74	0.00	1.200	1.504	2.00	9.548	11.46	77.3	207.4	809.9
36.00		1.00	1.02	6.206	6.83	0.00	1.200	1.513	2.00	9.481	11.38	77.7	207.1	804.9
38.00		1.00	1.03	6.277	6.90	0.00	1.200	1.521	2.00	9.414	11.30	78.0	206.7	799.7
40.00		1.00	1.04	6.345	6.98	0.00	1.200	1.529	2.00	9.347	11.22	78.3	206.2	794.6
42.00		1.00	1.05	6.410	7.05	0.00	1.200	1.537	2.00	9.280	11.14	78.5	205.6	789.3
44.00		1.00	1.06	6.474	7.12	0.00	1.200	1.544	2.00	9.212	11.05	78.7	205.0	784.0
45.92	Bot - Section 2	1.00	1.07	6.532	7.19	0.00	1.200	1.550	1.92	8.765	10.52	75.6	195.8	746.4
46.00		1.00	1.07	6.534	7.19	0.00	1.200	1.551	0.08	0.385	0.46	3.3	8.6	53.2
48.00		1.00	1.08	6.593	7.25	0.00	1.200	1.557	2.00	9.205	11.05	80.1	206.6	1271.9
50.00		1.00	1.09	6.650	7.32	0.00	1.200	1.564	2.00	9.137	10.96	80.2	205.8	1262.5
52.00		1.00	1.10	6.705	7.38	0.00	1.200	1.570	2.00	9.070	10.88	80.3	205.0	1253.0
53.00	Top - Section 1	1.00	1.11	6.732	7.41	0.00	1.200	1.573	1.00	4.509	5.41	40.1	102.3	623.1
54.00		1.00	1.11	6.759	7.43	0.00	1.200	1.576	1.00	4.492	5.39	40.1	102.1	343.4
56.00		1.00	1.12	6.811	7.49	0.00	1.200	1.581	2.00	8.934	10.72	80.3	203.3	683.0
58.00		1.00	1.13	6.861	7.55	0.00	1.200	1.587	2.00	8.866	10.64	80.3	202.4	678.1
60.00		1.00	1.14	6.910	7.60	0.00	1.200	1.592	2.00	8.799	10.56	80.3	201.5	673.1
62.00		1.00	1.14	6.958	7.65	0.00	1.200	1.598	2.00	8.731	10.48	80.2	200.5	668.1
64.00		1.00	1.15	7.005	7.71	0.00	1.200	1.603	2.00	8.663	10.40	80.1	199.5	663.1
66.00		1.00	1.16	7.050	7.76	0.00	1.200	1.608	2.00	8.595	10.31	80.0	198.4	658.1
68.00		1.00	1.17	7.095	7.80	0.00	1.200	1.612	2.00	8.527	10.23	79.9	197.4	653.0
70.00		1.00	1.17	7.138	7.85	0.00	1.200	1.617	2.00	8.458	10.15	79.7	196.3	647.9
72.00		1.00	1.18	7.181	7.90	0.00	1.200	1.622	2.00	8.390	10.07	79.5	195.2	642.8
74.00		1.00	1.19	7.222	7.94	0.00	1.200	1.626	2.00	8.322	9.99	79.3	194.1	637.7
76.00		1.00	1.19	7.263	7.99	0.00	1.200	1.631	2.00	8.254	9.90	79.1	192.9	632.5
78.00		1.00	1.20	7.303	8.03	0.00	1.200	1.635	2.00	8.186	9.82	78.9	191.7	627.3
80.00		1.00	1.21	7.342	8.08	0.00	1.200	1.639	2.00	8.117	9.74	78.7	190.5	622.1
82.00		1.00	1.21	7.380	8.12	0.00	1.200	1.643	2.00	8.049	9.66	78.4	189.3	616.9
84.00		1.00	1.22	7.418	8.16	0.00	1.200	1.647	2.00	7.981	9.58	78.1	188.1	611.7
86.00		1.00	1.23	7.454	8.20	0.00	1.200	1.651	2.00	7.912	9.49	77.9	186.8	606.4
88.00		1.00	1.23	7.491	8.24	0.00	1.200	1.655	2.00	7.844	9.41	77.6	185.6	601.1

Wind Loading - Shaft

Structure:	CT02218-S-SBA	**Code:**	TIA-222-G	7/8/2022	
Site Name:	Colchester2	**Exposure:**	C		
Height:	180.00 (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

IES Tower Engineering Solutions

90.00	1.00	1.24	7.526	8.28	0.00	1.200	1.658	2.00	7.775	9.33	77.2	184.3	595.8
92.00	1.00	1.24	7.561	8.32	0.00	1.200	1.662	2.00	7.707	9.25	76.9	183.0	590.5
92.92 Bot - Section 3	1.00	1.25	7.577	8.33	0.00	1.200	1.664	0.92	3.509	4.21	35.1	83.6	269.0
94.00	1.00	1.25	7.595	8.35	0.00	1.200	1.666	1.08	4.186	5.02	42.0	99.8	503.0
96.00	1.00	1.25	7.629	8.39	0.00	1.200	1.669	2.00	7.676	9.21	77.3	183.0	921.6
98.00	1.00	1.26	7.662	8.43	0.00	1.200	1.672	2.00	7.608	9.13	76.9	181.6	912.9
98.92 Top - Section 2	1.00	1.26	7.677	8.45	0.00	1.200	1.674	0.92	3.464	4.16	35.1	83.0	415.7
100.00	1.00	1.27	7.695	8.46	0.00	1.200	1.676	1.08	4.075	4.89	41.4	97.6	277.3
102.00	1.00	1.27	7.727	8.50	0.00	1.200	1.679	2.00	7.471	8.96	76.2	178.9	507.9
104.00	1.00	1.28	7.759	8.53	0.00	1.200	1.682	2.00	7.402	8.88	75.8	177.5	503.2
106.00	1.00	1.28	7.790	8.57	0.00	1.200	1.686	2.00	7.333	8.80	75.4	176.1	498.5
108.00	1.00	1.29	7.821	8.60	0.00	1.200	1.689	2.00	7.265	8.72	75.0	174.7	493.7
110.00	1.00	1.29	7.851	8.64	0.00	1.200	1.692	2.00	7.196	8.64	74.6	173.3	489.0
112.00	1.00	1.30	7.881	8.67	0.00	1.200	1.695	2.00	7.128	8.55	74.1	171.8	484.2
114.00	1.00	1.30	7.910	8.70	0.00	1.200	1.698	2.00	7.059	8.47	73.7	170.4	479.4
116.00	1.00	1.31	7.939	8.73	0.00	1.200	1.701	2.00	6.990	8.39	73.3	168.9	474.6
118.00	1.00	1.31	7.968	8.76	0.00	1.200	1.704	2.00	6.921	8.31	72.8	167.5	469.8
120.00	1.00	1.32	7.996	8.80	0.00	1.200	1.707	2.00	6.853	8.22	72.3	166.0	465.0
122.00	1.00	1.32	8.024	8.83	0.00	1.200	1.710	2.00	6.784	8.14	71.9	164.5	460.1
124.00	1.00	1.32	8.051	8.86	0.00	1.200	1.712	2.00	6.715	8.06	71.4	163.0	455.3
126.00	1.00	1.33	8.079	8.89	0.00	1.200	1.715	2.00	6.646	7.98	70.9	161.5	450.5
127.09 Bot - Section 4	1.00	1.33	8.093	8.90	0.00	1.200	1.717	1.09	3.582	4.30	38.3	87.3	242.9
128.00	1.00	1.33	8.105	8.92	0.00	1.200	1.718	0.91	3.029	3.63	32.4	73.9	296.3
130.00	1.00	1.34	8.132	8.95	0.00	1.200	1.720	2.00	6.583	7.90	70.7	160.4	643.2
132.00	1.00	1.34	8.158	8.97	0.00	1.200	1.723	2.00	6.515	7.82	70.2	158.8	635.9
132.34 Top - Section 3	1.00	1.34	8.163	8.98	0.00	1.200	1.723	0.34	1.090	1.31	11.7	26.7	106.4
134.00	1.00	1.35	8.184	9.00	0.00	1.200	1.726	1.66	5.356	6.43	57.9	130.8	293.5
136.00	1.00	1.35	8.210	9.03	0.00	1.200	1.728	2.00	6.377	7.65	69.1	155.8	349.3
138.00	1.00	1.35	8.235	9.06	0.00	1.200	1.731	2.00	6.308	7.57	68.6	154.2	345.4
140.00	1.00	1.36	8.260	9.09	0.00	1.200	1.733	2.00	6.239	7.49	68.0	152.6	341.5
142.00	1.00	1.36	8.285	9.11	0.00	1.200	1.736	2.00	6.170	7.40	67.5	151.1	337.5
144.00	1.00	1.37	8.309	9.14	0.00	1.200	1.738	2.00	6.101	7.32	66.9	149.5	333.6
146.00	1.00	1.37	8.333	9.17	0.00	1.200	1.741	2.00	6.033	7.24	66.4	147.9	329.7
147.00 Appurtenance(s)	1.00	1.37	8.345	9.18	0.00	1.200	1.742	1.00	2.990	3.59	32.9	73.5	163.6
148.00	1.00	1.37	8.357	9.19	0.00	1.200	1.743	1.00	2.973	3.57	32.8	73.1	162.6
150.00	1.00	1.38	8.381	9.22	0.00	1.200	1.745	2.00	5.895	7.07	65.2	144.7	321.8
152.00	1.00	1.38	8.404	9.24	0.00	1.200	1.748	2.00	5.826	6.99	64.6	143.1	317.9
154.00	1.00	1.39	8.427	9.27	0.00	1.200	1.750	2.00	5.757	6.91	64.0	141.5	313.9
156.00	1.00	1.39	8.450	9.30	0.00	1.200	1.752	2.00	5.688	6.83	63.4	139.8	309.9
157.00 Appurtenance(s)	1.00	1.39	8.462	9.31	0.00	1.200	1.753	1.00	2.818	3.38	31.5	69.5	153.7
158.00	1.00	1.39	8.473	9.32	0.00	1.200	1.754	1.00	2.801	3.36	31.3	69.1	152.7
160.00	1.00	1.40	8.495	9.34	0.00	1.200	1.757	2.00	5.550	6.66	62.2	136.6	302.0
162.00	1.00	1.40	8.518	9.37	0.00	1.200	1.759	2.00	5.481	6.58	61.6	134.9	298.0
164.00	1.00	1.40	8.540	9.39	0.00	1.200	1.761	2.00	5.412	6.49	61.0	133.3	294.0
166.00	1.00	1.41	8.561	9.42	0.00	1.200	1.763	2.00	5.343	6.41	60.4	131.6	290.0
167.00 Appurtenance(s)	1.00	1.41	8.572	9.43	0.00	1.200	1.764	1.00	2.646	3.17	29.9	65.4	143.7
168.00	1.00	1.41	8.583	9.44	0.00	1.200	1.765	1.00	2.628	3.15	29.8	65.0	142.7
170.00	1.00	1.42	8.604	9.46	0.00	1.200	1.767	2.00	5.205	6.25	59.1	128.3	282.0
172.00	1.00	1.42	8.626	9.49	0.00	1.200	1.769	2.00	5.136	6.16	58.5	126.6	278.0
174.00	1.00	1.42	8.647	9.51	0.00	1.200	1.771	2.00	5.067	6.08	57.8	124.9	274.0
176.00	1.00	1.43	8.667	9.53	0.00	1.200	1.773	2.00	4.998	6.00	57.2	123.2	269.9
177.00 Appurtenance(s)	1.00	1.43	8.678	9.55	0.00	1.200	1.774	1.00	2.473	2.97	28.3	61.2	133.7
178.00	1.00	1.43	8.688	9.56	0.00	1.200	1.775	1.00	2.456	2.95	28.2	60.8	132.7
180.00	1.00	1.43	8.709	9.58	0.00	1.200	1.777	2.00	4.860	5.83	55.9	119.8	261.9
							Totals:	**180.00**			**6,520.1**		**54,722.6**

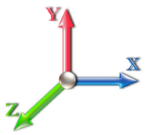
Discrete Appurtenance Forces

Structure:	CT02218-S-SBA	**Code:**	TIA-222-G	7/8/2022	
Site Name:	Colchester2	**Exposure:**	C		
Height:	180.00 (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	

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 29

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	177.00	Ericsson 4460 B25 + B66	3	8.678	9.546	0.38	0.75	3.10	501.94	0.000	0.000	29.59	0.00	0.00
2	177.00	782 11056	3	8.678	9.546	0.38	0.75	0.77	12.17	0.000	0.000	7.39	0.00	0.00
3	177.00	Ericsson AIR6419 B41	3	8.678	9.546	0.56	0.75	12.40	765.99	0.000	0.000	118.39	0.00	0.00
4	177.00	Commscope VV-65B-R1	3	8.678	9.546	0.55	0.75	15.32	638.60	0.000	0.000	146.26	0.00	0.00
5	177.00	Ericsson 4449 B71 + B85	3	8.678	9.546	0.38	0.75	2.87	264.44	0.000	0.000	27.37	0.00	0.00
6	177.00	RMQP-4096-HK Plat. +	1	8.678	9.546	1.00	1.00	87.62	5313.23	0.000	0.000	836.35	0.00	0.00
7	177.00	RFS	3	8.678	9.546	0.52	0.75	34.92	1738.23	0.000	0.000	333.36	0.00	0.00
8	177.00	Ericsson KRY 112 489/2	3	8.678	9.546	0.38	0.75	1.43	94.18	0.000	0.000	13.66	0.00	0.00
9	167.00	Platform w/ Hand Rails	1	8.572	9.429	1.00	1.00	61.17	3916.86	0.000	0.000	576.79	0.00	0.00
10	167.00	Antel	6	8.572	9.429	1.27	0.75	26.57	909.75	0.000	0.000	250.53	0.00	0.00
11	167.00	Samsung B2/B66A	3	8.572	9.429	0.38	0.75	2.74	365.76	0.000	0.000	25.85	0.00	0.00
12	167.00	Samsung B5/B13	3	8.572	9.429	0.38	0.75	2.74	353.68	0.000	0.000	25.85	0.00	0.00
13	167.00	Samsung VZS01	3	8.572	9.429	0.52	0.75	8.06	651.02	0.000	0.000	76.03	0.00	0.00
14	167.00	Raycap	2	8.572	9.429	0.60	0.75	5.71	258.70	0.000	0.000	53.81	0.00	0.00
15	167.00	Commscope	6	8.572	9.429	0.62	0.75	35.39	1522.50	0.000	0.000	333.70	0.00	0.00
16	157.00	DMP65R-BU8DA	1	8.462	9.308	0.60	0.80	11.90	420.47	0.000	0.000	110.75	0.00	0.00
17	157.00	Low Profile	1	8.462	9.308	1.00	1.00	39.74	2814.90	0.000	0.000	369.91	0.00	0.00
18	157.00	7770	3	8.462	9.308	0.58	0.80	11.51	533.80	0.000	0.000	107.14	0.00	0.00
19	157.00	DMP65R-BU4DA	2	8.462	9.308	0.58	0.80	10.44	511.43	0.000	0.000	97.17	0.00	0.00
20	157.00	Raycap DC6-48-60-18-8F	1	8.462	9.308	0.72	0.80	0.98	82.57	0.000	0.000	9.11	0.00	0.00
21	157.00	HPA65R-BU4A	2	8.462	9.308	0.70	0.80	7.70	46.79	0.000	0.000	71.70	0.00	0.00
22	157.00	HPA65R-BU8A	1	8.462	9.308	0.70	0.80	8.78	173.34	0.000	0.000	81.73	0.00	0.00
23	157.00	4449 B5/B12	3	8.462	9.308	0.40	0.80	3.02	375.67	0.000	0.000	28.14	0.00	0.00
24	157.00	8843 B2/B66A	3	8.462	9.308	0.40	0.80	2.57	364.38	0.000	0.000	23.89	0.00	0.00
25	147.00	Raycap	1	8.345	9.180	0.75	0.75	1.93	66.72	0.000	0.000	17.74	0.00	0.00
26	147.00	Fujitsu TA08025-B604	3	8.345	9.180	0.38	0.75	2.83	345.32	0.000	0.000	26.02	0.00	0.00
27	147.00	Fujitsu TA08025-B605	3	8.345	9.180	0.38	0.75	2.83	388.80	0.000	0.000	26.02	0.00	0.00
28	147.00	MC-PK8-DSH	1	8.345	9.180	1.00	1.00	84.73	3383.83	0.000	0.000	777.77	0.00	0.00
29	147.00	JMA Wireless	3	8.345	9.180	0.55	0.75	23.23	901.45	0.000	0.000	213.24	0.00	0.00
							Totals:		**27,716.51**			**4,815.29**		

Total Applied Force Summary

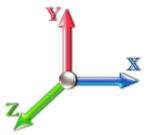
Structure:	CT02218-S-SBA	**Code:**	TIA-222-G	7/8/2022	
Site Name:	Colchester2	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 26	

Tower Engineering Solutions

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 29

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
2.00		71.89	947.94	0.00	0.00
4.00		71.60	954.73	0.00	0.00
6.00		71.24	956.58	0.00	0.00
8.00		70.85	956.27	0.00	0.00
10.00		70.44	954.74	0.00	0.00
12.00		70.02	952.41	0.00	0.00
14.00		69.59	949.51	0.00	0.00
16.00		70.02	946.19	0.00	0.00
18.00		71.32	942.53	0.00	0.00
20.00		72.45	938.61	0.00	0.00
22.00		73.44	934.46	0.00	0.00
24.00		74.30	930.13	0.00	0.00
26.00		75.06	925.65	0.00	0.00
28.00		75.73	921.02	0.00	0.00
30.00		76.32	916.28	0.00	0.00
32.00		76.83	911.43	0.00	0.00
34.00		77.28	906.49	0.00	0.00
36.00		77.66	901.46	0.00	0.00
38.00		78.00	896.36	0.00	0.00
40.00		78.28	891.19	0.00	0.00
42.00		78.52	885.95	0.00	0.00
44.00		78.72	880.66	0.00	0.00
45.92		75.58	838.96	0.00	0.00
46.00		3.32	57.24	0.00	0.00
48.00		80.11	1368.55	0.00	0.00
50.00		80.21	1359.12	0.00	0.00
52.00		80.28	1349.64	0.00	0.00
53.00		40.07	671.36	0.00	0.00
54.00		40.08	391.73	0.00	0.00
56.00		80.32	779.59	0.00	0.00
58.00		80.30	774.67	0.00	0.00
60.00		80.26	769.72	0.00	0.00
62.00		80.19	764.74	0.00	0.00
64.00		80.10	759.73	0.00	0.00
66.00		79.99	754.69	0.00	0.00
68.00		79.85	749.63	0.00	0.00
70.00		79.70	744.53	0.00	0.00
72.00		79.53	739.42	0.00	0.00
74.00		79.34	734.28	0.00	0.00
76.00		79.13	729.12	0.00	0.00
78.00		78.91	723.93	0.00	0.00
80.00		78.67	718.73	0.00	0.00
82.00		78.41	713.51	0.00	0.00
84.00		78.14	708.27	0.00	0.00
86.00		77.86	703.01	0.00	0.00
88.00		77.56	697.73	0.00	0.00

Total Applied Force Summary

Structure:	CT02218-S-SBA		**Code:**	TIA-222-G	7/8/2022
Site Name:	Colchester2		**Exposure:**	C	
Height:	180.00 (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

90.00		77.24	692.44	0.00	0.00
92.00		76.92	687.13	0.00	0.00
92.92		35.10	313.32	0.00	0.00
94.00		41.97	555.32	0.00	0.00
96.00		77.30	1018.21	0.00	0.00
98.00		76.95	1009.51	0.00	0.00
98.92		35.10	459.95	0.00	0.00
100.00		41.39	329.61	0.00	0.00
102.00		76.20	604.56	0.00	0.00
104.00		75.81	599.83	0.00	0.00
106.00		75.41	595.09	0.00	0.00
108.00		75.00	590.34	0.00	0.00
110.00		74.58	585.57	0.00	0.00
112.00		74.14	580.80	0.00	0.00
114.00		73.70	576.01	0.00	0.00
116.00		73.25	571.21	0.00	0.00
118.00		72.80	566.40	0.00	0.00
120.00		72.33	561.58	0.00	0.00
122.00		71.85	556.75	0.00	0.00
124.00		71.37	551.91	0.00	0.00
126.00		70.88	547.06	0.00	0.00
127.09		38.27	295.39	0.00	0.00
128.00		32.41	340.41	0.00	0.00
130.00		70.67	739.76	0.00	0.00
132.00		70.15	732.55	0.00	0.00
132.34		11.74	122.71	0.00	0.00
134.00		57.86	373.88	0.00	0.00
136.00		69.10	445.87	0.00	0.00
138.00		68.57	441.97	0.00	0.00
140.00		68.03	438.07	0.00	0.00
142.00		67.48	434.15	0.00	0.00
144.00		66.92	430.23	0.00	0.00
146.00		66.36	426.31	0.00	0.00
147.00	(11) attachments	1093.74	5298.00	0.00	0.00
148.00		32.80	208.71	0.00	0.00
150.00		65.21	414.06	0.00	0.00
152.00		64.63	410.11	0.00	0.00
154.00		64.04	406.15	0.00	0.00
156.00		63.45	402.19	0.00	0.00
157.00	(17) attachments	931.02	5523.15	0.00	0.00
158.00		31.32	182.81	0.00	0.00
160.00		62.24	362.22	0.00	0.00
162.00		61.63	358.24	0.00	0.00
164.00		61.01	354.25	0.00	0.00
166.00		60.38	350.25	0.00	0.00
167.00	(24) attachments	1372.51	8152.10	0.00	0.00
168.00		29.78	155.20	0.00	0.00
170.00		59.12	306.97	0.00	0.00
172.00		58.48	302.96	0.00	0.00
174.00		57.84	298.93	0.00	0.00
176.00		57.19	294.91	0.00	0.00
177.00	(22) attachments	1540.70	9474.94	0.00	0.00
178.00		28.17	132.66	0.00	0.00
180.00		55.87	261.88	0.00	0.00
	Totals:	**11,335.43**	**90,427.04**	**0.00**	**0.00**

Calculated Forces

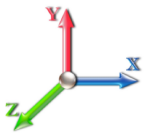
Structure:	CT02218-S-SBA	**Code:**	TIA-222-G	7/8/2022	
Site Name:	Colchester2	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 28	

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 29

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	-90.42	-11.35	0.00	-1501.3	0.00	1501.31	5508.12	2754.06	13547.4	6725.55	0.00	0.000	0.000	0.240
2.00	-89.47	-11.32	0.00	-1478.6	0.00	1478.60	5485.87	2742.94	13399.2	6651.93	0.00	-0.023	0.000	0.239
4.00	-88.51	-11.28	0.00	-1455.9	0.00	1455.97	5463.41	2731.70	13251.1	6578.43	0.02	-0.046	0.000	0.238
6.00	-87.55	-11.24	0.00	-1433.4	0.00	1433.41	5440.72	2720.36	13103.3	6505.05	0.04	-0.069	0.000	0.236
8.00	-86.59	-11.21	0.00	-1410.9	0.00	1410.93	5417.82	2708.91	12955.7	6431.80	0.08	-0.092	0.000	0.235
10.00	-85.63	-11.17	0.00	-1388.5	0.00	1388.52	5394.71	2697.35	12808.5	6358.68	0.12	-0.115	0.000	0.234
12.00	-84.68	-11.13	0.00	-1366.1	0.00	1366.19	5371.37	2685.69	12661.4	6285.69	0.17	-0.138	0.000	0.233
14.00	-83.72	-11.09	0.00	-1343.9	0.00	1343.93	5347.82	2673.91	12514.7	6212.85	0.24	-0.162	0.000	0.232
16.00	-82.77	-11.05	0.00	-1321.7	0.00	1321.74	5324.05	2662.03	12368.3	6140.16	0.31	-0.185	0.000	0.231
18.00	-81.82	-11.01	0.00	-1299.6	0.00	1299.63	5300.07	2650.03	12222.2	6067.62	0.39	-0.209	0.000	0.230
20.00	-80.88	-10.97	0.00	-1277.6	0.00	1277.61	5275.87	2637.93	12076.4	5995.24	0.49	-0.233	0.000	0.228
22.00	-79.94	-10.93	0.00	-1255.6	0.00	1255.67	5251.44	2625.72	11930.9	5923.02	0.59	-0.257	0.000	0.227
24.00	-79.01	-10.88	0.00	-1233.8	0.00	1233.82	5226.81	2613.40	11785.8	5850.98	0.70	-0.281	0.000	0.226
26.00	-78.08	-10.83	0.00	-1212.0	0.00	1212.05	5201.95	2600.98	11641.0	5779.11	0.82	-0.305	0.000	0.225
28.00	-77.15	-10.79	0.00	-1190.3	0.00	1190.38	5176.88	2588.44	11496.6	5707.42	0.96	-0.329	0.000	0.223
30.00	-76.23	-10.74	0.00	-1168.8	0.00	1168.81	5151.59	2575.80	11352.6	5635.92	1.10	-0.354	0.000	0.222
32.00	-75.32	-10.69	0.00	-1147.3	0.00	1147.34	5126.08	2563.04	11208.9	5564.61	1.25	-0.378	0.000	0.221
34.00	-74.41	-10.64	0.00	-1125.9	0.00	1125.96	5100.36	2550.18	11065.7	5493.50	1.42	-0.403	0.000	0.220
36.00	-73.50	-10.58	0.00	-1104.6	0.00	1104.69	5074.42	2537.21	10922.9	5422.60	1.59	-0.427	0.000	0.218
38.00	-72.60	-10.53	0.00	-1083.5	0.00	1083.53	5048.26	2524.13	10780.5	5351.90	1.78	-0.452	0.000	0.217
40.00	-71.71	-10.48	0.00	-1062.4	0.00	1062.47	5021.88	2510.94	10638.5	5281.41	1.97	-0.477	0.000	0.215
42.00	-70.82	-10.42	0.00	-1041.5	0.00	1041.52	4995.29	2497.65	10497.0	5211.15	2.18	-0.502	0.000	0.214
44.00	-69.93	-10.36	0.00	-1020.6	0.00	1020.68	4968.48	2484.24	10355.9	5141.11	2.39	-0.527	0.000	0.213
45.92	-69.09	-10.30	0.00	-1000.8	0.00	1000.82	4942.58	2471.29	10221.1	5074.21	2.61	-0.552	0.000	0.211
46.00	-69.03	-10.31	0.00	-999.96	0.00	999.96	4941.45	2470.73	10215.3	5071.31	2.62	-0.553	0.000	0.211
48.00	-67.66	-10.24	0.00	-979.34	0.00	979.34	4914.21	2457.10	10075.1	5001.74	2.86	-0.578	0.000	0.210
50.00	-66.30	-10.18	0.00	-958.86	0.00	958.86	4886.75	2443.37	9935.52	4932.41	3.10	-0.603	0.000	0.208
52.00	-64.94	-10.11	0.00	-938.50	0.00	938.50	4859.07	2429.53	9796.37	4863.33	3.36	-0.629	0.000	0.206
53.00	-64.27	-10.07	0.00	-928.39	0.00	928.39	3967.43	1983.71	8109.29	4025.79	3.50	-0.642	0.000	0.247
54.00	-63.88	-10.05	0.00	-918.32	0.00	918.32	3957.53	1978.76	8055.31	3998.99	3.63	-0.655	0.000	0.246
56.00	-63.09	-9.99	0.00	-898.22	0.00	898.22	3937.57	1968.78	7947.52	3945.49	3.91	-0.683	0.000	0.244
58.00	-62.31	-9.94	0.00	-878.23	0.00	878.23	3917.39	1958.70	7839.99	3892.10	4.20	-0.712	0.000	0.242
60.00	-61.54	-9.88	0.00	-858.36	0.00	858.36	3897.00	1948.50	7732.70	3838.84	4.51	-0.740	0.000	0.239
62.00	-60.77	-9.82	0.00	-838.61	0.00	838.61	3876.39	1938.19	7625.69	3785.71	4.82	-0.769	0.000	0.237
64.00	-60.01	-9.76	0.00	-818.98	0.00	818.98	3855.56	1927.78	7518.96	3732.73	5.15	-0.798	0.000	0.235
66.00	-59.25	-9.70	0.00	-799.47	0.00	799.47	3834.51	1917.26	7412.51	3679.88	5.49	-0.827	0.000	0.233
68.00	-58.50	-9.63	0.00	-780.08	0.00	780.08	3813.25	1906.63	7306.37	3627.19	5.85	-0.856	0.000	0.230
70.00	-57.75	-9.57	0.00	-760.81	0.00	760.81	3791.77	1895.89	7200.54	3574.65	6.21	-0.885	0.000	0.228
72.00	-57.01	-9.51	0.00	-741.66	0.00	741.66	3770.07	1885.04	7095.04	3522.28	6.59	-0.914	0.000	0.226
74.00	-56.27	-9.45	0.00	-722.64	0.00	722.64	3748.16	1874.08	6989.87	3470.07	6.98	-0.943	0.000	0.223
76.00	-55.54	-9.38	0.00	-703.75	0.00	703.75	3726.03	1863.01	6885.05	3418.03	7.38	-0.972	0.000	0.221
78.00	-54.81	-9.32	0.00	-684.98	0.00	684.98	3703.68	1851.84	6780.58	3366.17	7.79	-1.001	0.000	0.218
80.00	-54.09	-9.26	0.00	-666.34	0.00	666.34	3681.11	1840.56	6676.48	3314.49	8.22	-1.030	0.000	0.216
82.00	-53.37	-9.19	0.00	-647.83	0.00	647.83	3658.33	1829.16	6572.76	3263.00	8.66	-1.059	0.000	0.213
84.00	-52.66	-9.13	0.00	-629.44	0.00	629.44	3635.33	1817.66	6469.43	3211.70	9.11	-1.088	0.000	0.210
86.00	-51.95	-9.06	0.00	-611.19	0.00	611.19	3612.11	1806.05	6366.51	3160.60	9.57	-1.117	0.000	0.208
88.00	-51.25	-9.00	0.00	-593.07	0.00	593.07	3588.67	1794.34	6263.99	3109.71	10.04	-1.146	0.000	0.205
90.00	-50.56	-8.93	0.00	-575.07	0.00	575.07	3565.02	1782.51	6161.91	3059.03	10.53	-1.175	0.000	0.202

Calculated Forces

Structure:	CT02218-S-SBA	**Code:**	TIA-222-G	7/8/2022	
Site Name:	Colchester2	**Exposure:**	C		
Height:	180.00 (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	

IES Tower Engineering Solutions

92.00	-49.87	-8.86	0.00	-557.21	0.00	557.21	3541.15	1770.57	6060.25	3008.56	11.03	-1.204	0.000	0.199
92.92	-49.55	-8.83	0.00	-549.09	0.00	549.09	3530.13	1765.07	6013.81	2985.51	11.26	-1.218	0.000	0.198
94.00	-49.00	-8.80	0.00	-539.52	0.00	539.52	3517.06	1758.53	5959.04	2958.32	11.54	-1.233	0.000	0.196
96.00	-47.98	-8.72	0.00	-521.93	0.00	521.93	3492.76	1746.38	5858.29	2908.30	12.06	-1.262	0.000	0.193
98.00	-46.97	-8.64	0.00	-504.49	0.00	504.49	3468.23	1734.12	5758.01	2858.52	12.60	-1.291	0.000	0.190
98.92	-46.50	-8.60	0.00	-496.58	0.00	496.58	2742.07	1371.04	4616.42	2291.78	12.85	-1.304	0.000	0.234
100.00	-46.17	-8.57	0.00	-487.26	0.00	487.26	2732.96	1366.48	4575.83	2271.63	13.14	-1.320	0.000	0.231
102.00	-45.56	-8.51	0.00	-470.11	0.00	470.11	2715.97	1357.98	4501.05	2234.51	13.70	-1.352	0.000	0.227
104.00	-44.96	-8.44	0.00	-453.09	0.00	453.09	2698.76	1349.38	4426.51	2197.50	14.28	-1.384	0.000	0.223
106.00	-44.36	-8.38	0.00	-436.20	0.00	436.20	2681.34	1340.67	4352.19	2160.61	14.86	-1.416	0.000	0.218
108.00	-43.77	-8.31	0.00	-419.45	0.00	419.45	2663.69	1331.85	4278.13	2123.84	15.46	-1.448	0.000	0.214
110.00	-43.18	-8.25	0.00	-402.82	0.00	402.82	2645.83	1322.92	4204.32	2087.20	16.08	-1.479	0.000	0.209
112.00	-42.60	-8.18	0.00	-386.32	0.00	386.32	2627.76	1313.88	4130.77	2050.69	16.70	-1.510	0.000	0.205
114.00	-42.02	-8.12	0.00	-369.96	0.00	369.96	2609.46	1304.73	4057.51	2014.32	17.34	-1.541	0.000	0.200
116.00	-41.45	-8.05	0.00	-353.73	0.00	353.73	2590.95	1295.48	3984.53	1978.09	17.99	-1.572	0.000	0.195
118.00	-40.88	-7.98	0.00	-337.64	0.00	337.64	2572.22	1286.11	3911.86	1942.01	18.66	-1.602	0.000	0.190
120.00	-40.32	-7.91	0.00	-321.67	0.00	321.67	2553.28	1276.64	3839.50	1906.09	19.34	-1.631	0.000	0.185
122.00	-39.76	-7.85	0.00	-305.85	0.00	305.85	2534.11	1267.06	3767.46	1870.33	20.03	-1.661	0.000	0.179
124.00	-39.21	-7.78	0.00	-290.16	0.00	290.16	2514.73	1257.37	3695.76	1834.73	20.73	-1.689	0.000	0.174
126.00	-38.66	-7.71	0.00	-274.60	0.00	274.60	2495.13	1247.57	3624.40	1799.30	21.44	-1.718	0.000	0.168
127.09	-38.36	-7.67	0.00	-266.23	0.00	266.23	2484.39	1242.20	3585.78	1780.13	21.84	-1.733	0.000	0.165
128.00	-38.02	-7.64	0.00	-259.22	0.00	259.22	2475.32	1237.66	3553.40	1764.06	22.17	-1.745	0.000	0.162
130.00	-37.28	-7.56	0.00	-243.95	0.00	243.95	2455.29	1227.64	3482.76	1728.99	22.91	-1.772	0.000	0.156
132.00	-36.55	-7.48	0.00	-228.83	0.00	228.83	2435.04	1217.52	3412.51	1694.11	23.65	-1.798	0.000	0.150
132.34	-36.42	-7.47	0.00	-226.31	0.00	226.31	1489.26	744.63	2121.49	1053.20	23.78	-1.803	0.000	0.239
134.00	-36.05	-7.42	0.00	-213.88	0.00	213.88	1482.04	741.02	2090.19	1037.66	24.41	-1.824	0.000	0.231
136.00	-35.60	-7.36	0.00	-199.04	0.00	199.04	1473.16	736.58	2052.54	1018.97	25.18	-1.857	0.000	0.220
138.00	-35.16	-7.29	0.00	-184.33	0.00	184.33	1464.07	732.03	2014.90	1000.28	25.97	-1.890	0.000	0.208
140.00	-34.72	-7.23	0.00	-169.75	0.00	169.75	1454.76	727.38	1977.27	981.60	26.77	-1.921	0.000	0.197
142.00	-34.28	-7.16	0.00	-155.29	0.00	155.29	1445.23	722.61	1939.67	962.93	27.58	-1.950	0.000	0.185
144.00	-33.85	-7.10	0.00	-140.97	0.00	140.97	1435.48	717.74	1902.10	944.28	28.40	-1.978	0.000	0.173
146.00	-33.42	-7.03	0.00	-126.77	0.00	126.77	1425.52	712.76	1864.58	925.66	29.24	-2.004	0.000	0.160
147.00	-28.17	-5.75	0.00	-119.74	0.00	119.74	1420.45	710.23	1845.85	916.36	29.66	-2.017	0.000	0.151
148.00	-27.96	-5.72	0.00	-113.99	0.00	113.99	1415.33	707.67	1827.13	907.06	30.08	-2.029	0.000	0.145
150.00	-27.54	-5.65	0.00	-102.54	0.00	102.54	1404.94	702.47	1789.74	888.50	30.94	-2.052	0.000	0.135
152.00	-27.13	-5.58	0.00	-91.23	0.00	91.23	1394.32	697.16	1752.43	869.98	31.80	-2.073	0.000	0.124
154.00	-26.73	-5.51	0.00	-80.07	0.00	80.07	1383.49	691.74	1715.22	851.51	32.67	-2.092	0.000	0.113
156.00	-26.33	-5.44	0.00	-69.04	0.00	69.04	1372.44	686.22	1678.11	833.09	33.55	-2.110	0.000	0.102
157.00	-20.84	-4.31	0.00	-63.60	0.00	63.60	1366.83	683.41	1659.60	823.90	34.00	-2.118	0.000	0.092
158.00	-20.66	-4.28	0.00	-59.28	0.00	59.28	1361.17	680.58	1641.12	814.72	34.44	-2.126	0.000	0.088
160.00	-20.30	-4.21	0.00	-50.73	0.00	50.73	1349.68	674.84	1604.25	796.42	35.33	-2.140	0.000	0.079
162.00	-19.94	-4.14	0.00	-42.32	0.00	42.32	1337.98	668.99	1567.52	778.18	36.23	-2.153	0.000	0.069
164.00	-19.59	-4.06	0.00	-34.05	0.00	34.05	1326.06	663.03	1530.94	760.02	37.14	-2.164	0.000	0.060
166.00	-19.24	-3.99	0.00	-25.92	0.00	25.92	1313.92	656.96	1494.52	741.94	38.05	-2.173	0.000	0.050
167.00	-11.15	-2.31	0.00	-21.93	0.00	21.93	1307.77	653.89	1476.37	732.93	38.50	-2.176	0.000	0.038
168.00	-10.99	-2.28	0.00	-19.62	0.00	19.62	1301.57	650.78	1458.27	723.95	38.96	-2.180	0.000	0.036
170.00	-10.69	-2.21	0.00	-15.06	0.00	15.06	1289.00	644.50	1422.20	706.04	39.87	-2.185	0.000	0.030
172.00	-10.39	-2.14	0.00	-10.65	0.00	10.65	1276.21	638.10	1386.32	688.23	40.79	-2.189	0.000	0.024
174.00	-10.09	-2.07	0.00	-6.37	0.00	6.37	1263.20	631.60	1350.65	670.52	41.71	-2.192	0.000	0.018
176.00	-9.80	-2.00	0.00	-2.23	0.00	2.23	1249.98	624.99	1315.19	652.92	42.62	-2.194	0.000	0.011
177.00	-0.39	-0.10	0.00	-0.23	0.00	0.23	1243.29	621.64	1297.54	644.16	43.08	-2.194	0.000	0.001
178.00	-0.26	-0.07	0.00	-0.13	0.00	0.13	1236.54	618.27	1279.96	635.42	43.54	-2.194	0.000	0.000
180.00	0.00	-0.06	0.00	0.00	0.00	0.00	1222.88	611.44	1244.96	618.05	44.46	-2.194	0.000	0.000

Seismic Segment Forces (Factored)

Structure:	CT02218-S-SBA	**Code:**	TIA-222-G	7/8/2022	
Site Name:	Colchester2	**Exposure:**	C		
Height:	180.00 (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	

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Load Case:	1.2D + 1.0E							**Iterations**	27
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)**	0.29		**SA**	0.03	**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	
2.00		564.42	0.00	0.01	0.01	5.14	
4.00		560.52	0.00	0.02	0.01	8.66	
6.00		556.62	0.00	0.03	0.02	11.19	
8.00		552.72	0.00	0.04	0.02	13.06	
10.00		548.82	0.01	0.05	0.03	14.46	
12.00		544.92	0.01	0.05	0.03	15.51	
14.00		541.02	0.01	0.06	0.03	16.29	
16.00		537.12	0.01	0.06	0.04	16.87	
18.00		533.22	0.02	0.06	0.04	17.30	
20.00		529.33	0.02	0.07	0.04	17.60	
22.00		525.43	0.03	0.07	0.04	17.82	
24.00		521.53	0.03	0.07	0.04	17.97	
26.00		517.63	0.04	0.07	0.04	18.06	
28.00		513.73	0.05	0.07	0.04	18.12	
30.00		509.83	0.05	0.07	0.04	18.16	
32.00		505.93	0.06	0.07	0.04	18.17	
34.00		502.03	0.07	0.07	0.04	18.18	
36.00		498.13	0.08	0.07	0.04	18.19	
38.00		494.23	0.08	0.07	0.04	18.19	
40.00		490.34	0.09	0.07	0.04	18.19	
42.00		486.44	0.10	0.07	0.04	18.20	
44.00		482.54	0.11	0.07	0.04	18.20	
45.92	Bot - Section 2	458.77	0.12	0.07	0.03	17.44	
46.00		37.15	0.12	0.07	0.03	1.41	
48.00		887.81	0.13	0.07	0.03	34.01	
50.00		880.57	0.15	0.07	0.03	33.97	
52.00		873.34	0.16	0.07	0.03	33.90	
53.00	Top - Section 1	433.95	0.16	0.07	0.03	16.89	
54.00		201.11	0.17	0.07	0.03	7.85	
56.00		399.72	0.18	0.06	0.03	15.64	
58.00		396.38	0.20	0.06	0.02	15.53	
60.00		393.04	0.21	0.06	0.02	15.36	
62.00		389.71	0.22	0.06	0.02	15.15	
64.00		386.37	0.24	0.06	0.02	14.87	
66.00		383.03	0.25	0.05	0.02	14.51	
68.00		379.69	0.27	0.05	0.02	14.07	
70.00		376.35	0.29	0.05	0.01	13.52	
72.00		373.01	0.30	0.04	0.01	12.87	
74.00		369.68	0.32	0.04	0.01	12.09	
76.00		366.34	0.34	0.04	0.01	11.18	
78.00		363.00	0.35	0.03	0.01	10.14	
80.00		359.66	0.37	0.03	0.01	8.95	
82.00		356.32	0.39	0.02	0.01	7.63	
84.00		352.99	0.41	0.01	0.01	6.17	
86.00		349.65	0.43	0.01	0.01	4.59	

Seismic Segment Forces (Factored)

Structure:	CT02218-S-SBA	**Code:**	TIA-222-G	7/8/2022	
Site Name:	Colchester2	**Exposure:**	C		
Height:	180.00 (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	

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88.00		346.31	0.45	0.00	0.01	2.92	
90.00		342.97	0.47	-0.01	0.01	1.18	
92.00		339.63	0.49	-0.01	0.01	-0.58	
92.92	Bot - Section 3	154.55	0.50	-0.02	0.01	-0.64	
94.00		335.97	0.52	-0.02	0.01	-2.34	
96.00		615.54	0.54	-0.03	0.01	-7.49	
98.00		609.41	0.56	-0.04	0.01	-10.48	
98.92	Top - Section 2	277.27	0.57	-0.04	0.01	-5.38	
100.00		149.70	0.58	-0.05	0.01	-3.29	
102.00		274.22	0.61	-0.06	0.02	-7.22	
104.00		271.44	0.63	-0.06	0.02	-8.21	
106.00		268.65	0.66	-0.07	0.02	-9.05	
108.00		265.86	0.68	-0.08	0.03	-9.71	
110.00		263.08	0.71	-0.09	0.03	-10.21	
112.00		260.29	0.73	-0.10	0.04	-10.54	
114.00		257.51	0.76	-0.10	0.04	-10.71	
116.00		254.72	0.78	-0.11	0.05	-10.71	
118.00		251.93	0.81	-0.11	0.06	-10.57	
120.00		249.15	0.84	-0.12	0.07	-10.28	
122.00		246.36	0.87	-0.12	0.08	-9.85	
124.00		243.57	0.90	-0.12	0.09	-9.30	
126.00		240.79	0.93	-0.12	0.10	-8.62	
127.09	Bot - Section 4	129.66	0.94	-0.12	0.10	-4.44	
128.00		185.30	0.96	-0.12	0.11	-6.09	
130.00		402.32	0.99	-0.11	0.12	-11.82	
132.00		397.58	1.02	-0.11	0.14	-10.09	
132.34	Top - Section 3	66.46	1.02	-0.10	0.14	-1.64	
134.00		135.60	1.05	-0.09	0.16	-2.82	
136.00		161.26	1.08	-0.08	0.17	-2.54	
138.00		159.31	1.11	-0.06	0.19	-1.62	
140.00		157.36	1.14	-0.04	0.21	-0.63	
142.00		155.41	1.18	-0.02	0.24	0.41	
144.00		153.46	1.21	0.01	0.26	1.51	
146.00		151.51	1.24	0.05	0.29	2.67	
147.00	Appurtenance(s)	2434.1	1.26	0.07	0.30	52.74	
148.00		74.54	1.28	0.09	0.32	1.93	
150.00		147.61	1.31	0.14	0.35	5.12	
152.00		145.66	1.35	0.19	0.38	6.42	
154.00		143.71	1.38	0.25	0.41	7.76	
156.00		141.76	1.42	0.32	0.45	9.13	
157.00	Appurtenance(s)	2478.8	1.44	0.36	0.47	173.19	
158.00		69.66	1.46	0.40	0.49	5.26	
160.00		137.86	1.49	0.48	0.53	12.00	
162.00		135.91	1.53	0.58	0.58	13.48	
164.00		133.96	1.57	0.69	0.63	14.99	
166.00		132.01	1.61	0.80	0.68	16.53	
167.00	Appurtenance(s)	3166.6	1.63	0.86	0.71	418.24	
168.00		64.79	1.65	0.93	0.73	9.01	
170.00		128.11	1.69	1.07	0.79	19.67	
172.00		126.16	1.73	1.22	0.85	21.27	
174.00		124.21	1.77	1.39	0.92	22.89	
176.00		122.27	1.81	1.57	0.99	24.52	
177.00	Appurtenance(s)	4035.0	1.83	1.67	1.03	842.83	
178.00		59.91	1.85	1.77	1.06	13.02	
180.00		118.37	1.89	1.98	1.14	27.80	
	Totals:	**44,179.4**				**2,220.9**	**Total Wind:** **49,997.2**

Seismic Segment Forces (Factored)

Structure:	CT02218-S-SBA		**Code:**	TIA-222-G	7/8/2022
Site Name:	Colchester2		**Exposure:**	C	
Height:	180.00 (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

Calculated Forces

Structure:	CT02218-S-SBA	**Code:**	TIA-222-G	7/8/2022	
Site Name:	Colchester2	**Exposure:**	C		
Height:	180.00 (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	

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Load Case:	1.2D + 1.0E							**Iterations**	27
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)**	0.29	**SA**	0.03	**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	-61.00	-2.42	0.00	-343.19	0.00	343.19	5508.12	2754.06	13547.4	6725.55		0.00	0.00	0.062
2.00	-60.23	-2.42	0.00	-338.35	0.00	338.35	5485.87	2742.94	13399.2	6651.93		0.00	-0.01	0.062
4.00	-59.46	-2.42	0.00	-333.51	0.00	333.51	5463.41	2731.70	13251.1	6578.43		0.00	-0.01	0.062
6.00	-58.69	-2.41	0.00	-328.68	0.00	328.68	5440.72	2720.36	13103.3	6505.05		0.01	-0.02	0.061
8.00	-57.93	-2.40	0.00	-323.86	0.00	323.86	5417.82	2708.91	12955.7	6431.80		0.02	-0.02	0.061
10.00	-57.18	-2.39	0.00	-319.06	0.00	319.06	5394.71	2697.35	12808.5	6358.68		0.03	-0.03	0.061
12.00	-56.43	-2.38	0.00	-314.27	0.00	314.27	5371.37	2685.69	12661.4	6285.69		0.04	-0.03	0.061
14.00	-55.68	-2.37	0.00	-309.51	0.00	309.51	5347.82	2673.91	12514.7	6212.85		0.05	-0.04	0.060
16.00	-54.94	-2.36	0.00	-304.77	0.00	304.77	5324.05	2662.03	12368.3	6140.16		0.07	-0.04	0.060
18.00	-54.20	-2.35	0.00	-300.05	0.00	300.05	5300.07	2650.03	12222.2	6067.62		0.09	-0.05	0.060
20.00	-53.47	-2.33	0.00	-295.36	0.00	295.36	5275.87	2637.93	12076.4	5995.24		0.11	-0.05	0.059
22.00	-52.75	-2.32	0.00	-290.70	0.00	290.70	5251.44	2625.72	11930.9	5923.02		0.14	-0.06	0.059
24.00	-52.02	-2.31	0.00	-286.06	0.00	286.06	5226.81	2613.40	11785.8	5850.98		0.16	-0.06	0.059
26.00	-51.30	-2.29	0.00	-281.45	0.00	281.45	5201.95	2600.98	11641.0	5779.11		0.19	-0.07	0.059
28.00	-50.59	-2.28	0.00	-276.87	0.00	276.87	5176.88	2588.44	11496.6	5707.42		0.22	-0.08	0.058
30.00	-49.88	-2.26	0.00	-272.31	0.00	272.31	5151.59	2575.80	11352.6	5635.92		0.25	-0.08	0.058
32.00	-49.18	-2.25	0.00	-267.79	0.00	267.79	5126.08	2563.04	11208.9	5564.61		0.29	-0.09	0.058
34.00	-48.48	-2.23	0.00	-263.29	0.00	263.29	5100.36	2550.18	11065.7	5493.50		0.33	-0.09	0.057
36.00	-47.78	-2.22	0.00	-258.82	0.00	258.82	5074.42	2537.21	10922.9	5422.60		0.37	-0.10	0.057
38.00	-47.09	-2.21	0.00	-254.38	0.00	254.38	5048.26	2524.13	10780.5	5351.90		0.41	-0.10	0.057
40.00	-46.41	-2.19	0.00	-249.97	0.00	249.97	5021.88	2510.94	10638.5	5281.41		0.45	-0.11	0.057
42.00	-45.73	-2.18	0.00	-245.59	0.00	245.59	4995.29	2497.65	10497.0	5211.15		0.50	-0.12	0.056
44.00	-45.05	-2.16	0.00	-241.24	0.00	241.24	4968.48	2484.24	10355.9	5141.11		0.55	-0.12	0.056
45.92	-44.41	-2.14	0.00	-237.10	0.00	237.10	4942.58	2471.29	10221.1	5074.21		0.60	-0.13	0.056
46.00	-44.36	-2.15	0.00	-236.92	0.00	236.92	4941.45	2470.73	10215.3	5071.31		0.60	-0.13	0.056
48.00	-43.20	-2.11	0.00	-232.63	0.00	232.63	4914.21	2457.10	10075.1	5001.74		0.66	-0.13	0.055
50.00	-42.05	-2.08	0.00	-228.40	0.00	228.40	4886.75	2443.37	9935.52	4932.41		0.72	-0.14	0.055
52.00	-40.90	-2.05	0.00	-224.24	0.00	224.24	4859.07	2429.53	9796.37	4863.33		0.78	-0.15	0.055
53.00	-40.33	-2.03	0.00	-222.19	0.00	222.19	3967.43	1983.71	8109.29	4025.79		0.81	-0.15	0.065
54.00	-40.04	-2.03	0.00	-220.16	0.00	220.16	3957.53	1978.76	8055.31	3998.99		0.84	-0.15	0.065
56.00	-39.47	-2.01	0.00	-216.11	0.00	216.11	3937.57	1968.78	7947.52	3945.49		0.90	-0.16	0.065
58.00	-38.89	-2.00	0.00	-212.08	0.00	212.08	3917.39	1958.70	7839.99	3892.10		0.97	-0.17	0.064
60.00	-38.32	-1.99	0.00	-208.08	0.00	208.08	3897.00	1948.50	7732.70	3838.84		1.04	-0.17	0.064
62.00	-37.76	-1.98	0.00	-204.10	0.00	204.10	3876.39	1938.19	7625.69	3785.71		1.12	-0.18	0.064
64.00	-37.20	-1.96	0.00	-200.15	0.00	200.15	3855.56	1927.78	7518.96	3732.73		1.20	-0.19	0.063
66.00	-36.64	-1.95	0.00	-196.22	0.00	196.22	3834.51	1917.26	7412.51	3679.88		1.28	-0.19	0.063
68.00	-36.09	-1.94	0.00	-192.32	0.00	192.32	3813.25	1906.63	7306.37	3627.19		1.36	-0.20	0.062
70.00	-35.54	-1.93	0.00	-188.43	0.00	188.43	3791.77	1895.89	7200.54	3574.65		1.44	-0.21	0.062
72.00	-35.00	-1.92	0.00	-184.57	0.00	184.57	3770.07	1885.04	7095.04	3522.28		1.53	-0.22	0.062
74.00	-34.46	-1.91	0.00	-180.73	0.00	180.73	3748.16	1874.08	6989.87	3470.07		1.63	-0.22	0.061
76.00	-33.92	-1.90	0.00	-176.91	0.00	176.91	3726.03	1863.01	6885.05	3418.03		1.72	-0.23	0.061
78.00	-33.39	-1.89	0.00	-173.11	0.00	173.11	3703.68	1851.84	6780.58	3366.17		1.82	-0.24	0.060
80.00	-32.86	-1.89	0.00	-169.33	0.00	169.33	3681.11	1840.56	6676.48	3314.49		1.92	-0.25	0.060
82.00	-32.34	-1.88	0.00	-165.56	0.00	165.56	3658.33	1829.16	6572.76	3263.00		2.02	-0.25	0.060
84.00	-31.82	-1.88	0.00	-161.80	0.00	161.80	3635.33	1817.66	6469.43	3211.70		2.13	-0.26	0.059
86.00	-31.30	-1.87	0.00	-158.04	0.00	158.04	3612.11	1806.05	6366.51	3160.60		2.24	-0.27	0.059
88.00	-30.79	-1.87	0.00	-154.30	0.00	154.30	3588.67	1794.34	6263.99	3109.71		2.36	-0.27	0.058

Calculated Forces

Structure:	CT02218-S-SBA	**Code:**	TIA-222-G	7/8/2022	
Site Name:	Colchester2	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 34	

90.00	-30.28	-1.87	0.00	-150.55	0.00	150.55	3565.02	1782.51	6161.91	3059.03	2.47	-0.28	0.058
92.00	-29.77	-1.87	0.00	-146.81	0.00	146.81	3541.15	1770.57	6060.25	3008.56	2.59	-0.29	0.057
92.92	-29.54	-1.87	0.00	-145.09	0.00	145.09	3530.13	1765.07	6013.81	2985.51	2.65	-0.29	0.057
94.00	-29.09	-1.87	0.00	-143.07	0.00	143.07	3517.06	1758.53	5959.04	2958.32	2.72	-0.30	0.057
96.00	-28.25	-1.87	0.00	-139.32	0.00	139.32	3492.76	1746.38	5858.29	2908.30	2.84	-0.31	0.056
98.00	-27.43	-1.87	0.00	-135.57	0.00	135.57	3468.23	1734.12	5758.01	2858.52	2.97	-0.31	0.055
98.92	-27.05	-1.87	0.00	-133.85	0.00	133.85	2742.07	1371.04	4616.42	2291.78	3.03	-0.32	0.068
100.00	-26.82	-1.87	0.00	-131.83	0.00	131.83	2732.96	1366.48	4575.83	2271.63	3.10	-0.32	0.068
102.00	-26.39	-1.87	0.00	-128.08	0.00	128.08	2715.97	1357.98	4501.05	2234.51	3.24	-0.33	0.067
104.00	-25.97	-1.88	0.00	-124.33	0.00	124.33	2698.76	1349.38	4426.51	2197.50	3.38	-0.34	0.066
106.00	-25.55	-1.88	0.00	-120.58	0.00	120.58	2681.34	1340.67	4352.19	2160.61	3.52	-0.35	0.065
108.00	-25.13	-1.88	0.00	-116.82	0.00	116.82	2663.69	1331.85	4278.13	2123.84	3.67	-0.36	0.064
110.00	-24.72	-1.88	0.00	-113.07	0.00	113.07	2645.83	1322.92	4204.32	2087.20	3.82	-0.36	0.064
112.00	-24.31	-1.88	0.00	-109.31	0.00	109.31	2627.76	1313.88	4130.77	2050.69	3.98	-0.37	0.063
114.00	-23.90	-1.88	0.00	-105.54	0.00	105.54	2609.46	1304.73	4057.51	2014.32	4.14	-0.38	0.062
116.00	-23.50	-1.88	0.00	-101.78	0.00	101.78	2590.95	1295.48	3984.53	1978.09	4.30	-0.39	0.061
118.00	-23.10	-1.88	0.00	-98.01	0.00	98.01	2572.22	1286.11	3911.86	1942.01	4.46	-0.40	0.059
120.00	-22.71	-1.88	0.00	-94.24	0.00	94.24	2553.28	1276.64	3839.50	1906.09	4.63	-0.41	0.058
122.00	-22.31	-1.89	0.00	-90.47	0.00	90.47	2534.11	1267.06	3767.46	1870.33	4.81	-0.42	0.057
124.00	-21.93	-1.89	0.00	-86.70	0.00	86.70	2514.73	1257.37	3695.76	1834.73	4.98	-0.43	0.056
126.00	-21.54	-1.89	0.00	-82.93	0.00	82.93	2495.13	1247.57	3624.40	1799.30	5.16	-0.43	0.055
127.09	-21.33	-1.89	0.00	-80.88	0.00	80.88	2484.39	1242.20	3585.78	1780.13	5.26	-0.44	0.054
128.00	-21.06	-1.89	0.00	-79.16	0.00	79.16	2475.32	1237.66	3553.40	1764.06	5.35	-0.44	0.053
130.00	-20.48	-1.88	0.00	-75.39	0.00	75.39	2455.29	1227.64	3482.76	1728.99	5.53	-0.45	0.052
132.00	-19.91	-1.88	0.00	-71.62	0.00	71.62	2435.04	1217.52	3412.51	1694.11	5.72	-0.46	0.050
132.34	-19.81	-1.88	0.00	-70.99	0.00	70.99	1489.26	744.63	2121.49	1053.20	5.76	-0.46	0.081
134.00	-19.57	-1.88	0.00	-67.86	0.00	67.86	1482.04	741.02	2090.19	1037.66	5.92	-0.47	0.079
136.00	-19.28	-1.88	0.00	-64.09	0.00	64.09	1473.16	736.58	2052.54	1018.97	6.12	-0.48	0.076
138.00	-18.99	-1.89	0.00	-60.33	0.00	60.33	1464.07	732.03	2014.90	1000.28	6.32	-0.49	0.073
140.00	-18.71	-1.89	0.00	-56.56	0.00	56.56	1454.76	727.38	1977.27	981.60	6.53	-0.50	0.070
142.00	-18.42	-1.89	0.00	-52.79	0.00	52.79	1445.23	722.61	1939.67	962.93	6.74	-0.51	0.068
144.00	-18.14	-1.89	0.00	-49.01	0.00	49.01	1435.48	717.74	1902.10	944.28	6.95	-0.52	0.065
146.00	-17.86	-1.88	0.00	-45.24	0.00	45.24	1425.52	712.76	1864.58	925.66	7.17	-0.53	0.061
147.00	-14.90	-1.80	0.00	-43.36	0.00	43.36	1420.45	710.23	1845.85	916.36	7.28	-0.53	0.058
148.00	-14.76	-1.80	0.00	-41.56	0.00	41.56	1415.33	707.67	1827.13	907.06	7.39	-0.54	0.056
150.00	-14.49	-1.80	0.00	-37.96	0.00	37.96	1404.94	702.47	1789.74	888.50	7.62	-0.54	0.053
152.00	-14.22	-1.79	0.00	-34.36	0.00	34.36	1394.32	697.16	1752.43	869.98	7.85	-0.55	0.050
154.00	-13.96	-1.78	0.00	-30.79	0.00	30.79	1383.49	691.74	1715.22	851.51	8.08	-0.56	0.046
156.00	-13.70	-1.77	0.00	-27.22	0.00	27.22	1372.44	686.22	1678.11	833.09	8.32	-0.57	0.043
157.00	-10.68	-1.57	0.00	-25.45	0.00	25.45	1366.83	683.41	1659.60	823.90	8.44	-0.57	0.039
158.00	-10.56	-1.56	0.00	-23.89	0.00	23.89	1361.17	680.58	1641.12	814.72	8.56	-0.57	0.037
160.00	-10.34	-1.55	0.00	-20.76	0.00	20.76	1349.68	674.84	1604.25	796.42	8.80	-0.58	0.034
162.00	-10.11	-1.53	0.00	-17.67	0.00	17.67	1337.98	668.99	1567.52	778.18	9.04	-0.58	0.030
164.00	-9.89	-1.52	0.00	-14.60	0.00	14.60	1326.06	663.03	1530.94	760.02	9.29	-0.59	0.027
166.00	-9.67	-1.50	0.00	-11.56	0.00	11.56	1313.92	656.96	1494.52	741.94	9.54	-0.59	0.023
167.00	-5.85	-1.04	0.00	-10.06	0.00	10.06	1307.77	653.89	1476.37	732.93	9.66	-0.59	0.018
168.00	-5.76	-1.03	0.00	-9.02	0.00	9.02	1301.57	650.78	1458.27	723.95	9.78	-0.60	0.017
170.00	-5.58	-1.01	0.00	-6.96	0.00	6.96	1289.00	644.50	1422.20	706.04	10.03	-0.60	0.014
172.00	-5.40	-0.99	0.00	-4.94	0.00	4.94	1276.21	638.10	1386.32	688.23	10.29	-0.60	0.011
174.00	-5.23	-0.96	0.00	-2.96	0.00	2.96	1263.20	631.60	1350.65	670.52	10.54	-0.60	0.009
176.00	-5.06	-0.94	0.00	-1.04	0.00	1.04	1249.98	624.99	1315.19	652.92	10.79	-0.60	0.006
177.00	-0.21	-0.04	0.00	-0.10	0.00	0.10	1243.29	621.64	1297.54	644.16	10.92	-0.60	0.000
178.00	-0.14	-0.03	0.00	-0.06	0.00	0.06	1236.54	618.27	1279.96	635.42	11.04	-0.60	0.000
180.00	0.00	-0.03	0.00	0.00	0.00	0.00	1222.88	611.44	1244.96	618.05	11.29	-0.60	0.000

Seismic Segment Forces (Factored)

Structure:	CT02218-S-SBA	**Code:**	TIA-222-G	7/8/2022	
Site Name:	Colchester2	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 35	

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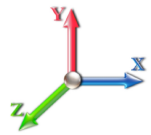
Load Case: 0.9D + 1.0E



Gust Response Factor	1.10			**Sds**	0.19	**Iterations**	27
Dead Load Factor	0.90	**Seismic Load Factor**	1.00	**Sd1**	0.10	**Ss**	0.18
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.29	**SA**	0.03	**S1**	0.06
						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	
2.00		564.42	0.00	0.01	0.01	5.14	
4.00		560.52	0.00	0.02	0.01	8.66	
6.00		556.62	0.00	0.03	0.02	11.19	
8.00		552.72	0.00	0.04	0.02	13.06	
10.00		548.82	0.01	0.05	0.03	14.46	
12.00		544.92	0.01	0.05	0.03	15.51	
14.00		541.02	0.01	0.06	0.03	16.29	
16.00		537.12	0.01	0.06	0.04	16.87	
18.00		533.22	0.02	0.06	0.04	17.30	
20.00		529.33	0.02	0.07	0.04	17.60	
22.00		525.43	0.03	0.07	0.04	17.82	
24.00		521.53	0.03	0.07	0.04	17.97	
26.00		517.63	0.04	0.07	0.04	18.06	
28.00		513.73	0.05	0.07	0.04	18.12	
30.00		509.83	0.05	0.07	0.04	18.16	
32.00		505.93	0.06	0.07	0.04	18.17	
34.00		502.03	0.07	0.07	0.04	18.18	
36.00		498.13	0.08	0.07	0.04	18.19	
38.00		494.23	0.08	0.07	0.04	18.19	
40.00		490.34	0.09	0.07	0.04	18.19	
42.00		486.44	0.10	0.07	0.04	18.20	
44.00		482.54	0.11	0.07	0.04	18.20	
45.92	Bot - Section 2	458.77	0.12	0.07	0.03	17.44	
46.00		37.15	0.12	0.07	0.03	1.41	
48.00		887.81	0.13	0.07	0.03	34.01	
50.00		880.57	0.15	0.07	0.03	33.97	
52.00		873.34	0.16	0.07	0.03	33.90	
53.00	Top - Section 1	433.95	0.16	0.07	0.03	16.89	
54.00		201.11	0.17	0.07	0.03	7.85	
56.00		399.72	0.18	0.06	0.03	15.64	
58.00		396.38	0.20	0.06	0.02	15.53	
60.00		393.04	0.21	0.06	0.02	15.36	
62.00		389.71	0.22	0.06	0.02	15.15	
64.00		386.37	0.24	0.06	0.02	14.87	
66.00		383.03	0.25	0.05	0.02	14.51	
68.00		379.69	0.27	0.05	0.02	14.07	
70.00		376.35	0.29	0.05	0.01	13.52	
72.00		373.01	0.30	0.04	0.01	12.87	
74.00		369.68	0.32	0.04	0.01	12.09	
76.00		366.34	0.34	0.04	0.01	11.18	
78.00		363.00	0.35	0.03	0.01	10.14	
80.00		359.66	0.37	0.03	0.01	8.95	
82.00		356.32	0.39	0.02	0.01	7.63	
84.00		352.99	0.41	0.01	0.01	6.17	
86.00		349.65	0.43	0.01	0.01	4.59	

Seismic Segment Forces (Factored)

Structure:	CT02218-S-SBA	**Code:**	TIA-222-G	7/8/2022	
Site Name:	Colchester2	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 36	

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88.00		346.31	0.45	0.00	0.01	2.92	
90.00		342.97	0.47	-0.01	0.01	1.18	
92.00		339.63	0.49	-0.01	0.01	-0.58	
92.92	Bot - Section 3	154.55	0.50	-0.02	0.01	-0.64	
94.00		335.97	0.52	-0.02	0.01	-2.34	
96.00		615.54	0.54	-0.03	0.01	-7.49	
98.00		609.41	0.56	-0.04	0.01	-10.48	
98.92	Top - Section 2	277.27	0.57	-0.04	0.01	-5.38	
100.00		149.70	0.58	-0.05	0.01	-3.29	
102.00		274.22	0.61	-0.06	0.02	-7.22	
104.00		271.44	0.63	-0.06	0.02	-8.21	
106.00		268.65	0.66	-0.07	0.02	-9.05	
108.00		265.86	0.68	-0.08	0.03	-9.71	
110.00		263.08	0.71	-0.09	0.03	-10.21	
112.00		260.29	0.73	-0.10	0.04	-10.54	
114.00		257.51	0.76	-0.10	0.04	-10.71	
116.00		254.72	0.78	-0.11	0.05	-10.71	
118.00		251.93	0.81	-0.11	0.06	-10.57	
120.00		249.15	0.84	-0.12	0.07	-10.28	
122.00		246.36	0.87	-0.12	0.08	-9.85	
124.00		243.57	0.90	-0.12	0.09	-9.30	
126.00		240.79	0.93	-0.12	0.10	-8.62	
127.09	Bot - Section 4	129.66	0.94	-0.12	0.10	-4.44	
128.00		185.30	0.96	-0.12	0.11	-6.09	
130.00		402.32	0.99	-0.11	0.12	-11.82	
132.00		397.58	1.02	-0.11	0.14	-10.09	
132.34	Top - Section 3	66.46	1.02	-0.10	0.14	-1.64	
134.00		135.60	1.05	-0.09	0.16	-2.82	
136.00		161.26	1.08	-0.08	0.17	-2.54	
138.00		159.31	1.11	-0.06	0.19	-1.62	
140.00		157.36	1.14	-0.04	0.21	-0.63	
142.00		155.41	1.18	-0.02	0.24	0.41	
144.00		153.46	1.21	0.01	0.26	1.51	
146.00		151.51	1.24	0.05	0.29	2.67	
147.00	Appurtenance(s)	2434.1	1.26	0.07	0.30	52.74	
148.00		74.54	1.28	0.09	0.32	1.93	
150.00		147.61	1.31	0.14	0.35	5.12	
152.00		145.66	1.35	0.19	0.38	6.42	
154.00		143.71	1.38	0.25	0.41	7.76	
156.00		141.76	1.42	0.32	0.45	9.13	
157.00	Appurtenance(s)	2478.8	1.44	0.36	0.47	173.19	
158.00		69.66	1.46	0.40	0.49	5.26	
160.00		137.86	1.49	0.48	0.53	12.00	
162.00		135.91	1.53	0.58	0.58	13.48	
164.00		133.96	1.57	0.69	0.63	14.99	
166.00		132.01	1.61	0.80	0.68	16.53	
167.00	Appurtenance(s)	3166.6	1.63	0.86	0.71	418.24	
168.00		64.79	1.65	0.93	0.73	9.01	
170.00		128.11	1.69	1.07	0.79	19.67	
172.00		126.16	1.73	1.22	0.85	21.27	
174.00		124.21	1.77	1.39	0.92	22.89	
176.00		122.27	1.81	1.57	0.99	24.52	
177.00	Appurtenance(s)	4035.0	1.83	1.67	1.03	842.83	
178.00		59.91	1.85	1.77	1.06	13.02	
180.00		118.37	1.89	1.98	1.14	27.80	
	Totals:	**44,179.4**				**2,220.9**	**Total Wind:** **49,997.2**

Seismic Segment Forces (Factored)

Structure:	CT02218-S-SBA	**Code:**	TIA-222-G	7/8/2022	
Site Name:	Colchester2	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 37	

Calculated Forces

Structure:	CT02218-S-SBA	**Code:**	TIA-222-G	7/8/2022	
Site Name:	Colchester2	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 38	

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Load Case: 0.9D + 1.0E

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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)**	0.29	**SA**	0.03			**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	-45.75	-2.42	0.00	-337.88	0.00	337.88	5508.12	2754.06	13547.4	6725.55		0.00	0.00	0.059
2.00	-45.17	-2.42	0.00	-333.04	0.00	333.04	5485.87	2742.94	13399.2	6651.93		0.00	-0.01	0.058
4.00	-44.59	-2.41	0.00	-328.21	0.00	328.21	5463.41	2731.70	13251.1	6578.43		0.00	-0.01	0.058
6.00	-44.02	-2.41	0.00	-323.38	0.00	323.38	5440.72	2720.36	13103.3	6505.05		0.01	-0.02	0.058
8.00	-43.45	-2.40	0.00	-318.57	0.00	318.57	5417.82	2708.91	12955.7	6431.80		0.02	-0.02	0.058
10.00	-42.88	-2.38	0.00	-313.78	0.00	313.78	5394.71	2697.35	12808.5	6358.68		0.03	-0.03	0.057
12.00	-42.32	-2.37	0.00	-309.01	0.00	309.01	5371.37	2685.69	12661.4	6285.69		0.04	-0.03	0.057
14.00	-41.76	-2.36	0.00	-304.26	0.00	304.26	5347.82	2673.91	12514.7	6212.85		0.05	-0.04	0.057
16.00	-41.21	-2.35	0.00	-299.54	0.00	299.54	5324.05	2662.03	12368.3	6140.16		0.07	-0.04	0.057
18.00	-40.65	-2.33	0.00	-294.85	0.00	294.85	5300.07	2650.03	12222.2	6067.62		0.09	-0.05	0.056
20.00	-40.10	-2.32	0.00	-290.18	0.00	290.18	5275.87	2637.93	12076.4	5995.24		0.11	-0.05	0.056
22.00	-39.56	-2.30	0.00	-285.55	0.00	285.55	5251.44	2625.72	11930.9	5923.02		0.13	-0.06	0.056
24.00	-39.02	-2.29	0.00	-280.94	0.00	280.94	5226.81	2613.40	11785.8	5850.98		0.16	-0.06	0.055
26.00	-38.48	-2.27	0.00	-276.36	0.00	276.36	5201.95	2600.98	11641.0	5779.11		0.19	-0.07	0.055
28.00	-37.94	-2.26	0.00	-271.81	0.00	271.81	5176.88	2588.44	11496.6	5707.42		0.22	-0.07	0.055
30.00	-37.41	-2.24	0.00	-267.29	0.00	267.29	5151.59	2575.80	11352.6	5635.92		0.25	-0.08	0.055
32.00	-36.88	-2.23	0.00	-262.80	0.00	262.80	5126.08	2563.04	11208.9	5564.61		0.28	-0.09	0.054
34.00	-36.36	-2.21	0.00	-258.35	0.00	258.35	5100.36	2550.18	11065.7	5493.50		0.32	-0.09	0.054
36.00	-35.84	-2.20	0.00	-253.92	0.00	253.92	5074.42	2537.21	10922.9	5422.60		0.36	-0.10	0.054
38.00	-35.32	-2.18	0.00	-249.52	0.00	249.52	5048.26	2524.13	10780.5	5351.90		0.40	-0.10	0.054
40.00	-34.81	-2.17	0.00	-245.16	0.00	245.16	5021.88	2510.94	10638.5	5281.41		0.45	-0.11	0.053
42.00	-34.30	-2.15	0.00	-240.83	0.00	240.83	4995.29	2497.65	10497.0	5211.15		0.49	-0.11	0.053
44.00	-33.79	-2.14	0.00	-236.52	0.00	236.52	4968.48	2484.24	10355.9	5141.11		0.54	-0.12	0.053
45.92	-33.31	-2.12	0.00	-232.43	0.00	232.43	4942.58	2471.29	10221.1	5074.21		0.59	-0.13	0.053
46.00	-33.27	-2.12	0.00	-232.25	0.00	232.25	4941.45	2470.73	10215.3	5071.31		0.59	-0.13	0.053
48.00	-32.40	-2.09	0.00	-228.02	0.00	228.02	4914.21	2457.10	10075.1	5001.74		0.65	-0.13	0.052
50.00	-31.53	-2.05	0.00	-223.85	0.00	223.85	4886.75	2443.37	9935.52	4932.41		0.70	-0.14	0.052
52.00	-30.67	-2.02	0.00	-219.74	0.00	219.74	4859.07	2429.53	9796.37	4863.33		0.76	-0.14	0.051
53.00	-30.25	-2.00	0.00	-217.72	0.00	217.72	3967.43	1983.71	8109.29	4025.79		0.79	-0.15	0.062
54.00	-30.03	-2.00	0.00	-215.72	0.00	215.72	3957.53	1978.76	8055.31	3998.99		0.83	-0.15	0.062
56.00	-29.60	-1.98	0.00	-211.72	0.00	211.72	3937.57	1968.78	7947.52	3945.49		0.89	-0.16	0.061
58.00	-29.17	-1.97	0.00	-207.75	0.00	207.75	3917.39	1958.70	7839.99	3892.10		0.96	-0.16	0.061
60.00	-28.74	-1.96	0.00	-203.81	0.00	203.81	3897.00	1948.50	7732.70	3838.84		1.03	-0.17	0.060
62.00	-28.32	-1.94	0.00	-199.90	0.00	199.90	3876.39	1938.19	7625.69	3785.71		1.10	-0.18	0.060
64.00	-27.90	-1.93	0.00	-196.01	0.00	196.01	3855.56	1927.78	7518.96	3732.73		1.17	-0.18	0.060
66.00	-27.48	-1.92	0.00	-192.14	0.00	192.14	3834.51	1917.26	7412.51	3679.88		1.25	-0.19	0.059
68.00	-27.07	-1.91	0.00	-188.31	0.00	188.31	3813.25	1906.63	7306.37	3627.19		1.33	-0.20	0.059
70.00	-26.66	-1.90	0.00	-184.49	0.00	184.49	3791.77	1895.89	7200.54	3574.65		1.42	-0.20	0.059
72.00	-26.25	-1.88	0.00	-180.70	0.00	180.70	3770.07	1885.04	7095.04	3522.28		1.51	-0.21	0.058
74.00	-25.84	-1.87	0.00	-176.93	0.00	176.93	3748.16	1874.08	6989.87	3470.07		1.60	-0.22	0.058
76.00	-25.44	-1.86	0.00	-173.18	0.00	173.18	3726.03	1863.01	6885.05	3418.03		1.69	-0.23	0.057
78.00	-25.04	-1.86	0.00	-169.46	0.00	169.46	3703.68	1851.84	6780.58	3366.17		1.79	-0.23	0.057
80.00	-24.64	-1.85	0.00	-165.74	0.00	165.74	3681.11	1840.56	6676.48	3314.49		1.88	-0.24	0.057
82.00	-24.25	-1.84	0.00	-162.05	0.00	162.05	3658.33	1829.16	6572.76	3263.00		1.99	-0.25	0.056
84.00	-23.86	-1.84	0.00	-158.36	0.00	158.36	3635.33	1817.66	6469.43	3211.70		2.09	-0.25	0.056
86.00	-23.47	-1.83	0.00	-154.69	0.00	154.69	3612.11	1806.05	6366.51	3160.60		2.20	-0.26	0.055
88.00	-23.09	-1.83	0.00	-151.02	0.00	151.02	3588.67	1794.34	6263.99	3109.71		2.31	-0.27	0.055

Calculated Forces

Structure:	CT02218-S-SBA	**Code:**	TIA-222-G	7/8/2022	
Site Name:	Colchester2	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 39	

90.00	-22.71	-1.83	0.00	-147.36	0.00	147.36	3565.02	1782.51	6161.91	3059.03	2.43	-0.28	0.055
92.00	-22.33	-1.83	0.00	-143.69	0.00	143.69	3541.15	1770.57	6060.25	3008.56	2.54	-0.28	0.054
92.92	-22.16	-1.83	0.00	-142.01	0.00	142.01	3530.13	1765.07	6013.81	2985.51	2.60	-0.29	0.054
94.00	-21.81	-1.83	0.00	-140.03	0.00	140.03	3517.06	1758.53	5959.04	2958.32	2.67	-0.29	0.054
96.00	-21.19	-1.83	0.00	-136.36	0.00	136.36	3492.76	1746.38	5858.29	2908.30	2.79	-0.30	0.053
98.00	-20.57	-1.83	0.00	-132.69	0.00	132.69	3468.23	1734.12	5758.01	2858.52	2.92	-0.31	0.052
98.92	-20.28	-1.83	0.00	-131.01	0.00	131.01	2742.07	1371.04	4616.42	2291.78	2.98	-0.31	0.065
100.00	-20.11	-1.83	0.00	-129.03	0.00	129.03	2732.96	1366.48	4575.83	2271.63	3.05	-0.31	0.064
102.00	-19.79	-1.83	0.00	-125.36	0.00	125.36	2715.97	1357.98	4501.05	2234.51	3.18	-0.32	0.063
104.00	-19.47	-1.84	0.00	-121.70	0.00	121.70	2698.76	1349.38	4426.51	2197.50	3.32	-0.33	0.063
106.00	-19.16	-1.84	0.00	-118.03	0.00	118.03	2681.34	1340.67	4352.19	2160.61	3.46	-0.34	0.062
108.00	-18.85	-1.84	0.00	-114.35	0.00	114.35	2663.69	1331.85	4278.13	2123.84	3.60	-0.35	0.061
110.00	-18.54	-1.84	0.00	-110.68	0.00	110.68	2645.83	1322.92	4204.32	2087.20	3.75	-0.36	0.060
112.00	-18.23	-1.84	0.00	-107.00	0.00	107.00	2627.76	1313.88	4130.77	2050.69	3.90	-0.37	0.059
114.00	-17.93	-1.84	0.00	-103.32	0.00	103.32	2609.46	1304.73	4057.51	2014.32	4.06	-0.37	0.058
116.00	-17.62	-1.84	0.00	-99.64	0.00	99.64	2590.95	1295.48	3984.53	1978.09	4.22	-0.38	0.057
118.00	-17.32	-1.84	0.00	-95.96	0.00	95.96	2572.22	1286.11	3911.86	1942.01	4.38	-0.39	0.056
120.00	-17.03	-1.84	0.00	-92.28	0.00	92.28	2553.28	1276.64	3839.50	1906.09	4.55	-0.40	0.055
122.00	-16.73	-1.84	0.00	-88.60	0.00	88.60	2534.11	1267.06	3767.46	1870.33	4.71	-0.41	0.054
124.00	-16.44	-1.84	0.00	-84.91	0.00	84.91	2514.73	1257.37	3695.76	1834.73	4.89	-0.42	0.053
126.00	-16.15	-1.84	0.00	-81.23	0.00	81.23	2495.13	1247.57	3624.40	1799.30	5.06	-0.43	0.052
127.09	-16.00	-1.84	0.00	-79.23	0.00	79.23	2484.39	1242.20	3585.78	1780.13	5.16	-0.43	0.051
128.00	-15.80	-1.84	0.00	-77.55	0.00	77.55	2475.32	1237.66	3553.40	1764.06	5.24	-0.43	0.050
130.00	-15.36	-1.84	0.00	-73.86	0.00	73.86	2455.29	1227.64	3482.76	1728.99	5.43	-0.44	0.049
132.00	-14.93	-1.84	0.00	-70.18	0.00	70.18	2435.04	1217.52	3412.51	1694.11	5.61	-0.45	0.048
132.34	-14.86	-1.84	0.00	-69.56	0.00	69.56	1489.26	744.63	2121.49	1053.20	5.65	-0.45	0.076
134.00	-14.68	-1.84	0.00	-66.50	0.00	66.50	1482.04	741.02	2090.19	1037.66	5.80	-0.46	0.074
136.00	-14.46	-1.84	0.00	-62.82	0.00	62.82	1473.16	736.58	2052.54	1018.97	6.00	-0.47	0.071
138.00	-14.24	-1.84	0.00	-59.14	0.00	59.14	1464.07	732.03	2014.90	1000.28	6.20	-0.48	0.069
140.00	-14.03	-1.84	0.00	-55.46	0.00	55.46	1454.76	727.38	1977.27	981.60	6.40	-0.49	0.066
142.00	-13.81	-1.84	0.00	-51.77	0.00	51.77	1445.23	722.61	1939.67	962.93	6.61	-0.50	0.063
144.00	-13.60	-1.84	0.00	-48.09	0.00	48.09	1435.48	717.74	1902.10	944.28	6.82	-0.51	0.060
146.00	-13.39	-1.84	0.00	-44.41	0.00	44.41	1425.52	712.76	1864.58	925.66	7.03	-0.52	0.057
147.00	-11.17	-1.77	0.00	-42.57	0.00	42.57	1420.45	710.23	1845.85	916.36	7.14	-0.52	0.054
148.00	-11.07	-1.76	0.00	-40.80	0.00	40.80	1415.33	707.67	1827.13	907.06	7.25	-0.53	0.053
150.00	-10.86	-1.76	0.00	-37.27	0.00	37.27	1404.94	702.47	1789.74	888.50	7.47	-0.53	0.050
152.00	-10.66	-1.75	0.00	-33.75	0.00	33.75	1394.32	697.16	1752.43	869.98	7.70	-0.54	0.046
154.00	-10.46	-1.74	0.00	-30.25	0.00	30.25	1383.49	691.74	1715.22	851.51	7.93	-0.55	0.043
156.00	-10.27	-1.73	0.00	-26.76	0.00	26.76	1372.44	686.22	1678.11	833.09	8.16	-0.56	0.040
157.00	-8.00	-1.54	0.00	-25.03	0.00	25.03	1366.83	683.41	1659.60	823.90	8.27	-0.56	0.036
158.00	-7.92	-1.53	0.00	-23.49	0.00	23.49	1361.17	680.58	1641.12	814.72	8.39	-0.56	0.035
160.00	-7.75	-1.52	0.00	-20.42	0.00	20.42	1349.68	674.84	1604.25	796.42	8.63	-0.57	0.031
162.00	-7.58	-1.51	0.00	-17.38	0.00	17.38	1337.98	668.99	1567.52	778.18	8.87	-0.57	0.028
164.00	-7.42	-1.49	0.00	-14.36	0.00	14.36	1326.06	663.03	1530.94	760.02	9.11	-0.58	0.024
166.00	-7.25	-1.47	0.00	-11.38	0.00	11.38	1313.92	656.96	1494.52	741.94	9.35	-0.58	0.021
167.00	-4.38	-1.03	0.00	-9.91	0.00	9.91	1307.77	653.89	1476.37	732.93	9.47	-0.58	0.017
168.00	-4.32	-1.02	0.00	-8.89	0.00	8.89	1301.57	650.78	1458.27	723.95	9.59	-0.58	0.016
170.00	-4.18	-1.00	0.00	-6.85	0.00	6.85	1289.00	644.50	1422.20	706.04	9.84	-0.59	0.013
172.00	-4.05	-0.97	0.00	-4.86	0.00	4.86	1276.21	638.10	1386.32	688.23	10.09	-0.59	0.010
174.00	-3.92	-0.95	0.00	-2.92	0.00	2.92	1263.20	631.60	1350.65	670.52	10.33	-0.59	0.007
176.00	-3.79	-0.92	0.00	-1.02	0.00	1.02	1249.98	624.99	1315.19	652.92	10.58	-0.59	0.005
177.00	-0.16	-0.04	0.00	-0.10	0.00	0.10	1243.29	621.64	1297.54	644.16	10.70	-0.59	0.000
178.00	-0.11	-0.03	0.00	-0.06	0.00	0.06	1236.54	618.27	1279.96	635.42	10.83	-0.59	0.000
180.00	0.00	-0.03	0.00	0.00	0.00	0.00	1222.88	611.44	1244.96	618.05	11.07	-0.59	0.000

Wind Loading - Shaft

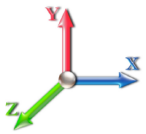
Structure:	CT02218-S-SBA	**Code:**	TIA-222-G	7/8/2022	
Site Name:	Colchester2	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 40	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 28

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	7.442	8.19	282.00	0.750	0.000	0.00	0.000	0.00	0.0	0.0	0.0
2.00		1.00	0.85	7.442	8.19	280.08	0.750	0.000	2.00	10.161	7.62	62.4	0.0	564.4
4.00		1.00	0.85	7.442	8.19	278.15	0.750	0.000	2.00	10.091	7.57	62.0	0.0	560.5
6.00		1.00	0.85	7.442	8.19	276.22	0.750	0.000	2.00	10.022	7.52	61.5	0.0	556.6
8.00		1.00	0.85	7.442	8.19	274.30	0.750	0.000	2.00	9.952	7.46	61.1	0.0	552.7
10.00		1.00	0.85	7.442	8.19	272.37	0.750	0.000	2.00	9.882	7.41	60.7	0.0	548.8
12.00		1.00	0.85	7.442	8.19	270.44	0.750	0.000	2.00	9.813	7.36	60.2	0.0	544.9
14.00		1.00	0.85	7.442	8.19	268.51	0.750	0.000	2.00	9.743	7.31	59.8	0.0	541.0
16.00		1.00	0.86	7.534	8.29	268.23	0.750	0.000	2.00	9.673	7.25	60.1	0.0	537.1
18.00		1.00	0.88	7.723	8.50	269.61	0.750	0.000	2.00	9.604	7.20	61.2	0.0	533.2
20.00		1.00	0.90	7.896	8.69	270.63	0.750	0.000	2.00	9.534	7.15	62.1	0.0	529.3
22.00		1.00	0.92	8.056	8.86	271.36	0.750	0.000	2.00	9.464	7.10	62.9	0.0	525.4
24.00		1.00	0.94	8.205	9.03	271.83	0.750	0.000	2.00	9.395	7.05	63.6	0.0	521.5
26.00		1.00	0.95	8.345	9.18	272.09	0.750	0.000	2.00	9.325	6.99	64.2	0.0	517.6
28.00		1.00	0.97	8.476	9.32	272.16	0.750	0.000	2.00	9.255	6.94	64.7	0.0	513.7
30.00		1.00	0.98	8.600	9.46	272.07	0.750	0.000	2.00	9.186	6.89	65.2	0.0	509.8
32.00		1.00	1.00	8.717	9.59	271.84	0.750	0.000	2.00	9.116	6.84	65.6	0.0	505.9
34.00		1.00	1.01	8.829	9.71	271.48	0.750	0.000	2.00	9.046	6.78	65.9	0.0	502.0
36.00		1.00	1.02	8.936	9.83	271.01	0.750	0.000	2.00	8.977	6.73	66.2	0.0	498.1
38.00		1.00	1.03	9.039	9.94	270.43	0.750	0.000	2.00	8.907	6.68	66.4	0.0	494.2
40.00		1.00	1.04	9.137	10.05	269.76	0.750	0.000	2.00	8.837	6.63	66.6	0.0	490.3
42.00		1.00	1.05	9.231	10.15	269.00	0.750	0.000	2.00	8.767	6.58	66.8	0.0	486.4
44.00		1.00	1.06	9.322	10.25	268.17	0.750	0.000	2.00	8.698	6.52	66.9	0.0	482.5
45.92	Bot - Section 2	1.00	1.07	9.406	10.35	267.30	0.750	0.000	1.92	8.270	6.20	64.2	0.0	458.8
46.00		1.00	1.07	9.410	10.35	267.26	0.750	0.000	0.08	0.363	0.27	2.8	0.0	37.1
48.00		1.00	1.08	9.494	10.44	266.28	0.750	0.000	2.00	8.686	6.51	68.0	0.0	887.8
50.00		1.00	1.09	9.576	10.53	265.24	0.750	0.000	2.00	8.616	6.46	68.1	0.0	880.6
52.00		1.00	1.10	9.656	10.62	264.14	0.750	0.000	2.00	8.547	6.41	68.1	0.0	873.3
53.00	Top - Section 1	1.00	1.11	9.694	10.66	263.58	0.750	0.000	1.00	4.247	3.19	34.0	0.0	434.0
54.00		1.00	1.11	9.733	10.71	267.02	0.750	0.000	1.00	4.230	3.17	34.0	0.0	201.1
56.00		1.00	1.12	9.807	10.79	265.84	0.750	0.000	2.00	8.407	6.31	68.0	0.0	399.7
58.00		1.00	1.13	9.880	10.87	264.60	0.750	0.000	2.00	8.337	6.25	68.0	0.0	396.4
60.00		1.00	1.14	9.951	10.95	263.32	0.750	0.000	2.00	8.268	6.20	67.9	0.0	393.0
62.00		1.00	1.14	10.020	11.02	261.99	0.750	0.000	2.00	8.198	6.15	67.8	0.0	389.7
64.00		1.00	1.15	10.087	11.10	260.62	0.750	0.000	2.00	8.128	6.10	67.6	0.0	386.4
66.00		1.00	1.16	10.153	11.17	259.22	0.750	0.000	2.00	8.059	6.04	67.5	0.0	383.0
68.00		1.00	1.17	10.217	11.24	257.78	0.750	0.000	2.00	7.989	5.99	67.3	0.0	379.7
70.00		1.00	1.17	10.279	11.31	256.30	0.750	0.000	2.00	7.919	5.94	67.2	0.0	376.4
72.00		1.00	1.18	10.340	11.37	254.79	0.750	0.000	2.00	7.850	5.89	67.0	0.0	373.0
74.00		1.00	1.19	10.400	11.44	253.25	0.750	0.000	2.00	7.780	5.84	66.8	0.0	369.7
76.00		1.00	1.19	10.459	11.50	251.67	0.750	0.000	2.00	7.710	5.78	66.5	0.0	366.3
78.00		1.00	1.20	10.516	11.57	250.07	0.750	0.000	2.00	7.641	5.73	66.3	0.0	363.0
80.00		1.00	1.21	10.572	11.63	248.44	0.750	0.000	2.00	7.571	5.68	66.0	0.0	359.7
82.00		1.00	1.21	10.627	11.69	246.78	0.750	0.000	2.00	7.501	5.63	65.8	0.0	356.3
84.00		1.00	1.22	10.681	11.75	245.10	0.750	0.000	2.00	7.432	5.57	65.5	0.0	353.0
86.00		1.00	1.23	10.734	11.81	243.40	0.750	0.000	2.00	7.362	5.52	65.2	0.0	349.6
88.00		1.00	1.23	10.787	11.87	241.66	0.750	0.000	2.00	7.292	5.47	64.9	0.0	346.3

Wind Loading - Shaft

Structure: CT02218-S-SBA | **Code:** TIA-222-G | 7/8/2022
Site Name: Colchester2 | **Exposure:** C
Height: 180.00 (ft) | **Crest Height:** 0.00
Base Elev: 0.000 (ft) | **Site Class:** D - Stiff Soil
Gh: 1.1 | **Topography:** 1 | **Struct Class:** II | Page: 41

IES Tower Engineering Solutions

90.00	1.00	1.24	10.838	11.92	239.91	0.750	0.000	2.00	7.223	5.42	64.6	0.0	343.0
92.00	1.00	1.24	10.888	11.98	238.14	0.750	0.000	2.00	7.153	5.36	64.3	0.0	339.6
92.92 Bot - Section 3	1.00	1.25	10.911	12.00	237.32	0.750	0.000	0.92	3.255	2.44	29.3	0.0	154.5
94.00	1.00	1.25	10.937	12.03	236.34	0.750	0.000	1.08	3.886	2.91	35.1	0.0	336.0
96.00	1.00	1.25	10.986	12.08	234.52	0.750	0.000	2.00	7.120	5.34	64.5	0.0	615.5
98.00	1.00	1.26	11.034	12.14	232.68	0.750	0.000	2.00	7.050	5.29	64.2	0.0	609.4
98.92 Top - Section 2	1.00	1.26	11.055	12.16	231.84	0.750	0.000	0.92	3.208	2.41	29.3	0.0	277.3
100.00	1.00	1.27	11.081	12.19	234.42	0.750	0.000	1.08	3.773	2.83	34.5	0.0	149.7
102.00	1.00	1.27	11.127	12.24	232.55	0.750	0.000	2.00	6.911	5.18	63.4	0.0	274.2
104.00	1.00	1.28	11.173	12.29	230.67	0.750	0.000	2.00	6.841	5.13	63.1	0.0	271.4
106.00	1.00	1.28	11.218	12.34	228.76	0.750	0.000	2.00	6.772	5.08	62.7	0.0	268.7
108.00	1.00	1.29	11.262	12.39	226.84	0.750	0.000	2.00	6.702	5.03	62.3	0.0	265.9
110.00	1.00	1.29	11.305	12.44	224.91	0.750	0.000	2.00	6.632	4.97	61.9	0.0	263.1
112.00	1.00	1.30	11.348	12.48	222.95	0.750	0.000	2.00	6.563	4.92	61.4	0.0	260.3
114.00	1.00	1.30	11.391	12.53	220.98	0.750	0.000	2.00	6.493	4.87	61.0	0.0	257.5
116.00	1.00	1.31	11.432	12.58	219.00	0.750	0.000	2.00	6.423	4.82	60.6	0.0	254.7
118.00	1.00	1.31	11.474	12.62	217.00	0.750	0.000	2.00	6.353	4.77	60.1	0.0	251.9
120.00	1.00	1.32	11.514	12.67	214.99	0.750	0.000	2.00	6.284	4.71	59.7	0.0	249.1
122.00	1.00	1.32	11.554	12.71	212.96	0.750	0.000	2.00	6.214	4.66	59.2	0.0	246.4
124.00	1.00	1.32	11.594	12.75	210.92	0.750	0.000	2.00	6.144	4.61	58.8	0.0	243.6
126.00	1.00	1.33	11.633	12.80	208.87	0.750	0.000	2.00	6.075	4.56	58.3	0.0	240.8
127.09 Bot - Section 4	1.00	1.33	11.654	12.82	207.75	0.750	0.000	1.09	3.271	2.45	31.5	0.0	129.7
128.00	1.00	1.33	11.672	12.84	206.80	0.750	0.000	0.91	2.768	2.08	26.7	0.0	185.3
130.00	1.00	1.34	11.710	12.88	204.72	0.750	0.000	2.00	6.010	4.51	58.1	0.0	402.3
132.00	1.00	1.34	11.748	12.92	202.63	0.750	0.000	2.00	5.940	4.46	57.6	0.0	397.6
132.34 Top - Section 3	1.00	1.34	11.754	12.93	202.27	0.750	0.000	0.34	0.993	0.74	9.6	0.0	66.5
134.00	1.00	1.35	11.785	12.96	203.11	0.750	0.000	1.66	4.877	3.66	47.4	0.0	135.6
136.00	1.00	1.35	11.822	13.00	201.00	0.750	0.000	2.00	5.801	4.35	56.6	0.0	161.3
138.00	1.00	1.35	11.858	13.04	198.88	0.750	0.000	2.00	5.731	4.30	56.1	0.0	159.3
140.00	1.00	1.36	11.894	13.08	196.74	0.750	0.000	2.00	5.661	4.25	55.6	0.0	157.4
142.00	1.00	1.36	11.930	13.12	194.60	0.750	0.000	2.00	5.592	4.19	55.0	0.0	155.4
144.00	1.00	1.37	11.965	13.16	192.44	0.750	0.000	2.00	5.522	4.14	54.5	0.0	153.5
146.00	1.00	1.37	12.000	13.20	190.27	0.750	0.000	2.00	5.452	4.09	54.0	0.0	151.5
147.00 Appurtenance(s)	1.00	1.37	12.017	13.22	189.18	0.750	0.000	1.00	2.700	2.03	26.8	0.0	75.0
148.00	1.00	1.37	12.034	13.24	188.09	0.750	0.000	1.00	2.683	2.01	26.6	0.0	74.5
150.00	1.00	1.38	12.068	13.27	185.91	0.750	0.000	2.00	5.313	3.98	52.9	0.0	147.6
152.00	1.00	1.38	12.102	13.31	183.71	0.750	0.000	2.00	5.243	3.93	52.3	0.0	145.7
154.00	1.00	1.39	12.135	13.35	181.50	0.750	0.000	2.00	5.174	3.88	51.8	0.0	143.7
156.00	1.00	1.39	12.168	13.39	179.28	0.750	0.000	2.00	5.104	3.83	51.2	0.0	141.8
157.00 Appurtenance(s)	1.00	1.39	12.185	13.40	178.17	0.750	0.000	1.00	2.526	1.89	25.4	0.0	70.1
158.00	1.00	1.39	12.201	13.42	177.06	0.750	0.000	1.00	2.508	1.88	25.2	0.0	69.7
160.00	1.00	1.40	12.233	13.46	174.82	0.750	0.000	2.00	4.965	3.72	50.1	0.0	137.9
162.00	1.00	1.40	12.265	13.49	172.57	0.750	0.000	2.00	4.895	3.67	49.5	0.0	135.9
164.00	1.00	1.40	12.297	13.53	170.32	0.750	0.000	2.00	4.825	3.62	49.0	0.0	134.0
166.00	1.00	1.41	12.328	13.56	168.06	0.750	0.000	2.00	4.756	3.57	48.4	0.0	132.0
167.00 Appurtenance(s)	1.00	1.41	12.344	13.58	166.92	0.750	0.000	1.00	2.352	1.76	23.9	0.0	65.3
168.00	1.00	1.41	12.360	13.60	165.78	0.750	0.000	1.00	2.334	1.75	23.8	0.0	64.8
170.00	1.00	1.42	12.390	13.63	163.50	0.750	0.000	2.00	4.616	3.46	47.2	0.0	128.1
172.00	1.00	1.42	12.421	13.66	161.22	0.750	0.000	2.00	4.547	3.41	46.6	0.0	126.2
174.00	1.00	1.42	12.451	13.70	158.92	0.750	0.000	2.00	4.477	3.36	46.0	0.0	124.2
176.00	1.00	1.43	12.481	13.73	156.61	0.750	0.000	2.00	4.407	3.31	45.4	0.0	122.3
177.00 Appurtenance(s)	1.00	1.43	12.496	13.75	155.46	0.750	0.000	1.00	2.177	1.63	22.4	0.0	60.4
178.00	1.00	1.43	12.511	13.76	154.30	0.750	0.000	1.00	2.160	1.62	22.3	0.0	59.9
180.00	1.00	1.43	12.540	13.79	151.98	0.750	0.000	2.00	4.268	3.20	44.2	0.0	118.4
							Totals:	**180.00**			**5,442.0**		**32,335.6**

Discrete Appurtenance Forces

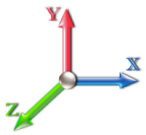
Structure:	CT02218-S-SBA	**Code:**	TIA-222-G	7/8/2022	
Site Name:	Colchester2	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 42	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 28

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	177.00	Ericsson 4460 B25 + B66	3	12.496	13.746	0.38	0.75	2.41	312.00	0.000	0.000	33.09	0.00	0.00
2	177.00	782 11056	3	12.496	13.746	0.38	0.75	0.32	5.40	0.000	0.000	4.33	0.00	0.00
3	177.00	Ericsson AIR6419 B41	3	12.496	13.746	0.55	0.75	10.35	249.90	0.000	0.000	142.30	0.00	0.00
4	177.00	Commscope VV-65B-R1	3	12.496	13.746	0.55	0.75	13.15	88.50	0.000	0.000	180.80	0.00	0.00
5	177.00	Ericsson 4449 B71 + B85	3	12.496	13.746	0.38	0.75	2.22	219.60	0.000	0.000	30.46	0.00	0.00
6	177.00	RMQP-4096-HK Plat. +	1	12.496	13.746	1.00	1.00	50.00	2669.00	0.000	0.000	687.28	0.00	0.00
7	177.00	RFS	3	12.496	13.746	0.52	0.75	31.88	384.00	0.000	0.000	438.19	0.00	0.00
8	177.00	Ericsson KRY 112 489/2	3	12.496	13.746	0.38	0.75	0.73	46.20	0.000	0.000	10.05	0.00	0.00
9	167.00	Platform w/ Hand Rails	1	12.344	13.578	1.00	1.00	40.00	2000.00	0.000	0.000	543.14	0.00	0.00
10	167.00	Antel	6	12.344	13.578	1.27	0.75	19.97	72.00	0.000	0.000	271.11	0.00	0.00
11	167.00	Samsung B2/B66A	3	12.344	13.578	0.38	0.75	2.11	210.90	0.000	0.000	28.72	0.00	0.00
12	167.00	Samsung B5/B13	3	12.344	13.578	0.38	0.75	2.11	253.20	0.000	0.000	28.72	0.00	0.00
13	167.00	Samsung VZS01	3	12.344	13.578	0.52	0.75	6.68	261.30	0.000	0.000	90.65	0.00	0.00
14	167.00	Raycap	2	12.344	13.578	0.60	0.75	4.55	64.00	0.000	0.000	61.75	0.00	0.00
15	167.00	Commscope	6	12.344	13.578	0.62	0.75	30.48	240.00	0.000	0.000	413.84	0.00	0.00
16	157.00	DMP65R-BU8DA	1	12.185	13.403	0.58	0.80	10.39	95.70	0.000	0.000	139.30	0.00	0.00
17	157.00	Low Profile	1	12.185	13.403	1.00	1.00	22.00	1500.00	0.000	0.000	294.87	0.00	0.00
18	157.00	7770	3	12.185	13.403	0.58	0.80	9.64	105.00	0.000	0.000	129.15	0.00	0.00
19	157.00	DMP65R-BU4DA	2	12.185	13.403	0.57	0.80	9.11	135.80	0.000	0.000	122.15	0.00	0.00
20	157.00	Raycap DC6-48-60-18-8F	1	12.185	13.403	0.72	0.80	0.66	31.80	0.000	0.000	8.88	0.00	0.00
21	157.00	HPA65R-BU4A	2	12.185	13.403	0.68	0.80	6.78	57.40	0.000	0.000	90.84	0.00	0.00
22	157.00	HPA65R-BU8A	1	12.185	13.403	0.69	0.80	7.74	54.00	0.000	0.000	103.80	0.00	0.00
23	157.00	4449 B5/B12	3	12.185	13.403	0.40	0.80	2.36	213.00	0.000	0.000	31.68	0.00	0.00
24	157.00	8843 B2/B66A	3	12.185	13.403	0.40	0.80	1.97	216.00	0.000	0.000	26.38	0.00	0.00
25	147.00	Raycap	1	12.017	13.219	0.75	0.75	1.51	21.90	0.000	0.000	19.93	0.00	0.00
26	147.00	Fujitsu TA08025-B604	3	12.017	13.219	0.38	0.75	2.21	191.70	0.000	0.000	29.15	0.00	0.00
27	147.00	Fujitsu TA08025-B605	3	12.017	13.219	0.38	0.75	2.21	225.00	0.000	0.000	29.15	0.00	0.00
28	147.00	MC-PK8-DSH	1	12.017	13.219	1.00	1.00	37.59	1727.00	0.000	0.000	496.89	0.00	0.00
29	147.00	JMA Wireless	3	12.017	13.219	0.55	0.75	20.80	193.50	0.000	0.000	274.89	0.00	0.00
							Totals:		**11,843.80**			**4,761.48**		

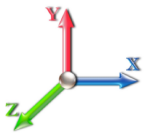
Total Applied Force Summary

Structure:	CT02218-S-SBA	**Code:**	TIA-222-G	7/8/2022	
Site Name:	Colchester2	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 43	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 28

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
2.00		62.38	644.93	0.00	0.00
4.00		61.96	641.03	0.00	0.00
6.00		61.53	637.13	0.00	0.00
8.00		61.10	633.23	0.00	0.00
10.00		60.67	629.33	0.00	0.00
12.00		60.25	625.43	0.00	0.00
14.00		59.82	621.53	0.00	0.00
16.00		60.12	617.63	0.00	0.00
18.00		61.19	613.73	0.00	0.00
20.00		62.11	609.83	0.00	0.00
22.00		62.90	605.93	0.00	0.00
24.00		63.59	602.04	0.00	0.00
26.00		64.20	598.14	0.00	0.00
28.00		64.72	594.24	0.00	0.00
30.00		65.17	590.34	0.00	0.00
32.00		65.56	586.44	0.00	0.00
34.00		65.90	582.54	0.00	0.00
36.00		66.18	578.64	0.00	0.00
38.00		66.42	574.74	0.00	0.00
40.00		66.61	570.84	0.00	0.00
42.00		66.77	566.94	0.00	0.00
44.00		66.89	563.04	0.00	0.00
45.92		64.17	535.93	0.00	0.00
46.00		2.82	40.50	0.00	0.00
48.00		68.03	968.32	0.00	0.00
50.00		68.07	961.08	0.00	0.00
52.00		68.08	953.85	0.00	0.00
53.00		33.97	474.21	0.00	0.00
54.00		33.96	241.37	0.00	0.00
56.00		68.02	480.23	0.00	0.00
58.00		67.96	476.89	0.00	0.00
60.00		67.87	473.55	0.00	0.00
62.00		67.77	470.21	0.00	0.00
64.00		67.64	466.88	0.00	0.00
66.00		67.50	463.54	0.00	0.00
68.00		67.34	460.20	0.00	0.00
70.00		67.16	456.86	0.00	0.00
72.00		66.96	453.52	0.00	0.00
74.00		66.75	450.18	0.00	0.00
76.00		66.53	446.85	0.00	0.00
78.00		66.29	443.51	0.00	0.00
80.00		66.04	440.17	0.00	0.00
82.00		65.77	436.83	0.00	0.00
84.00		65.49	433.49	0.00	0.00
86.00		65.20	430.15	0.00	0.00
88.00		64.89	426.82	0.00	0.00

Total Applied Force Summary

Structure:	CT02218-S-SBA		**Code:**	TIA-222-G	7/8/2022
Site Name:	Colchester2		**Exposure:**	C	
Height:	180.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 44

IES Tower Engineering Solutions

90.00		64.58	423.48	0.00	0.00
92.00		64.25	420.14	0.00	0.00
92.92		29.30	191.45	0.00	0.00
94.00		35.06	379.58	0.00	0.00
96.00		64.53	696.05	0.00	0.00
98.00		64.18	689.92	0.00	0.00
98.92		29.26	314.17	0.00	0.00
100.00		34.49	193.31	0.00	0.00
102.00		63.44	354.73	0.00	0.00
104.00		63.06	351.94	0.00	0.00
106.00		62.67	349.16	0.00	0.00
108.00		62.27	346.37	0.00	0.00
110.00		61.86	343.59	0.00	0.00
112.00		61.44	340.80	0.00	0.00
114.00		61.02	338.01	0.00	0.00
116.00		60.58	335.23	0.00	0.00
118.00		60.14	332.44	0.00	0.00
120.00		59.69	329.65	0.00	0.00
122.00		59.24	326.87	0.00	0.00
124.00		58.77	324.08	0.00	0.00
126.00		58.30	321.30	0.00	0.00
127.09		31.45	173.40	0.00	0.00
128.00		26.65	222.07	0.00	0.00
130.00		58.06	482.83	0.00	0.00
132.00		57.57	478.09	0.00	0.00
132.34		9.63	80.01	0.00	0.00
134.00		47.42	202.55	0.00	0.00
136.00		56.57	241.76	0.00	0.00
138.00		56.07	239.81	0.00	0.00
140.00		55.55	237.86	0.00	0.00
142.00		55.03	235.92	0.00	0.00
144.00		54.51	233.97	0.00	0.00
146.00		53.98	232.02	0.00	0.00
147.00	(11) attachments	876.77	2474.38	0.00	0.00
148.00		26.63	112.97	0.00	0.00
150.00		52.90	224.48	0.00	0.00
152.00		52.35	222.53	0.00	0.00
154.00		51.80	220.58	0.00	0.00
156.00		51.24	218.63	0.00	0.00
157.00	(17) attachments	972.43	2517.28	0.00	0.00
158.00		25.25	94.76	0.00	0.00
160.00		50.11	188.05	0.00	0.00
162.00		49.53	186.10	0.00	0.00
164.00		48.95	184.15	0.00	0.00
166.00		48.37	182.20	0.00	0.00
167.00	(24) attachments	1461.87	3191.77	0.00	0.00
168.00		23.80	75.19	0.00	0.00
170.00		47.19	148.91	0.00	0.00
172.00		46.59	146.96	0.00	0.00
174.00		45.99	145.01	0.00	0.00
176.00		45.38	143.07	0.00	0.00
177.00	(22) attachments	1548.96	4045.40	0.00	0.00
178.00		22.29	59.91	0.00	0.00
180.00		44.15	118.37	0.00	0.00
	Totals:	**10,203.51**	**50,836.06**	**0.00**	**0.00**

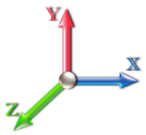
Calculated Forces

Structure:	CT02218-S-SBA	**Code:**	TIA-222-G	7/8/2022	
Site Name:	Colchester2	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 45	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 28

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	-50.83	-10.21	0.00	-1313.4	0.00	1313.46	5508.12	2754.06	13547.4	6725.55	0.00	0.000	0.000	0.205
2.00	-50.19	-10.17	0.00	-1293.0	0.00	1293.04	5485.87	2742.94	13399.2	6651.93	0.00	-0.020	0.000	0.204
4.00	-49.54	-10.12	0.00	-1272.7	0.00	1272.71	5463.41	2731.70	13251.1	6578.43	0.02	-0.040	0.000	0.203
6.00	-48.90	-10.08	0.00	-1252.4	0.00	1252.47	5440.72	2720.36	13103.3	6505.05	0.04	-0.060	0.000	0.202
8.00	-48.26	-10.03	0.00	-1232.3	0.00	1232.32	5417.82	2708.91	12955.7	6431.80	0.07	-0.080	0.000	0.201
10.00	-47.63	-9.99	0.00	-1212.2	0.00	1212.26	5394.71	2697.35	12808.5	6358.68	0.11	-0.100	0.000	0.199
12.00	-47.00	-9.94	0.00	-1192.2	0.00	1192.29	5371.37	2685.69	12661.4	6285.69	0.15	-0.121	0.000	0.198
14.00	-46.38	-9.90	0.00	-1172.4	0.00	1172.40	5347.82	2673.91	12514.7	6212.85	0.21	-0.141	0.000	0.197
16.00	-45.76	-9.85	0.00	-1152.6	0.00	1152.61	5324.05	2662.03	12368.3	6140.16	0.27	-0.162	0.000	0.196
18.00	-45.14	-9.80	0.00	-1132.9	0.00	1132.91	5300.07	2650.03	12222.2	6067.62	0.34	-0.182	0.000	0.195
20.00	-44.53	-9.76	0.00	-1113.3	0.00	1113.30	5275.87	2637.93	12076.4	5995.24	0.42	-0.203	0.000	0.194
22.00	-43.92	-9.71	0.00	-1093.7	0.00	1093.79	5251.44	2625.72	11930.9	5923.02	0.51	-0.224	0.000	0.193
24.00	-43.31	-9.66	0.00	-1074.3	0.00	1074.38	5226.81	2613.40	11785.8	5850.98	0.61	-0.245	0.000	0.192
26.00	-42.71	-9.61	0.00	-1055.0	0.00	1055.06	5201.95	2600.98	11641.0	5779.11	0.72	-0.266	0.000	0.191
28.00	-42.11	-9.55	0.00	-1035.8	0.00	1035.85	5176.88	2588.44	11496.6	5707.42	0.84	-0.287	0.000	0.190
30.00	-41.52	-9.50	0.00	-1016.7	0.00	1016.74	5151.59	2575.80	11352.6	5635.92	0.96	-0.308	0.000	0.188
32.00	-40.93	-9.45	0.00	-997.74	0.00	997.74	5126.08	2563.04	11208.9	5564.61	1.09	-0.330	0.000	0.187
34.00	-40.34	-9.39	0.00	-978.85	0.00	978.85	5100.36	2550.18	11065.7	5493.50	1.24	-0.351	0.000	0.186
36.00	-39.76	-9.34	0.00	-960.06	0.00	960.06	5074.42	2537.21	10922.9	5422.60	1.39	-0.373	0.000	0.185
38.00	-39.18	-9.28	0.00	-941.38	0.00	941.38	5048.26	2524.13	10780.5	5351.90	1.55	-0.394	0.000	0.184
40.00	-38.61	-9.23	0.00	-922.82	0.00	922.82	5021.88	2510.94	10638.5	5281.41	1.72	-0.416	0.000	0.182
42.00	-38.04	-9.17	0.00	-904.37	0.00	904.37	4995.29	2497.65	10497.0	5211.15	1.90	-0.438	0.000	0.181
44.00	-37.47	-9.11	0.00	-886.03	0.00	886.03	4968.48	2484.24	10355.9	5141.11	2.09	-0.459	0.000	0.180
45.92	-36.94	-9.05	0.00	-868.56	0.00	868.56	4942.58	2471.29	10221.1	5074.21	2.28	-0.480	0.000	0.179
46.00	-36.90	-9.06	0.00	-867.81	0.00	867.81	4941.45	2470.73	10215.3	5071.31	2.28	-0.481	0.000	0.179
48.00	-35.92	-8.99	0.00	-849.69	0.00	849.69	4914.21	2457.10	10075.1	5001.74	2.49	-0.503	0.000	0.177
50.00	-34.96	-8.93	0.00	-831.71	0.00	831.71	4886.75	2443.37	9935.52	4932.41	2.71	-0.525	0.000	0.176
52.00	-34.00	-8.86	0.00	-813.85	0.00	813.85	4859.07	2429.53	9796.37	4863.33	2.93	-0.547	0.000	0.174
53.00	-33.53	-8.83	0.00	-804.99	0.00	804.99	3967.43	1983.71	8109.29	4025.79	3.05	-0.559	0.000	0.208
54.00	-33.29	-8.80	0.00	-796.16	0.00	796.16	3957.53	1978.76	8055.31	3998.99	3.17	-0.570	0.000	0.208
56.00	-32.80	-8.75	0.00	-778.55	0.00	778.55	3937.57	1968.78	7947.52	3945.49	3.41	-0.595	0.000	0.206
58.00	-32.32	-8.69	0.00	-761.05	0.00	761.05	3917.39	1958.70	7839.99	3892.10	3.66	-0.619	0.000	0.204
60.00	-31.85	-8.63	0.00	-743.68	0.00	743.68	3897.00	1948.50	7732.70	3838.84	3.93	-0.644	0.000	0.202
62.00	-31.37	-8.57	0.00	-726.42	0.00	726.42	3876.39	1938.19	7625.69	3785.71	4.20	-0.669	0.000	0.200
64.00	-30.90	-8.51	0.00	-709.29	0.00	709.29	3855.56	1927.78	7518.96	3732.73	4.49	-0.694	0.000	0.198
66.00	-30.44	-8.45	0.00	-692.27	0.00	692.27	3834.51	1917.26	7412.51	3679.88	4.79	-0.719	0.000	0.196
68.00	-29.97	-8.39	0.00	-675.37	0.00	675.37	3813.25	1906.63	7306.37	3627.19	5.09	-0.744	0.000	0.194
70.00	-29.51	-8.33	0.00	-658.60	0.00	658.60	3791.77	1895.89	7200.54	3574.65	5.41	-0.769	0.000	0.192
72.00	-29.06	-8.27	0.00	-641.94	0.00	641.94	3770.07	1885.04	7095.04	3522.28	5.74	-0.794	0.000	0.190
74.00	-28.60	-8.21	0.00	-625.40	0.00	625.40	3748.16	1874.08	6989.87	3470.07	6.08	-0.819	0.000	0.188
76.00	-28.16	-8.15	0.00	-608.99	0.00	608.99	3726.03	1863.01	6885.05	3418.03	6.42	-0.845	0.000	0.186
78.00	-27.71	-8.09	0.00	-592.70	0.00	592.70	3703.68	1851.84	6780.58	3366.17	6.78	-0.870	0.000	0.184
80.00	-27.27	-8.03	0.00	-576.52	0.00	576.52	3681.11	1840.56	6676.48	3314.49	7.15	-0.895	0.000	0.181
82.00	-26.83	-7.96	0.00	-560.47	0.00	560.47	3658.33	1829.16	6572.76	3263.00	7.53	-0.920	0.000	0.179
84.00	-26.39	-7.90	0.00	-544.54	0.00	544.54	3635.33	1817.66	6469.43	3211.70	7.93	-0.945	0.000	0.177
86.00	-25.96	-7.84	0.00	-528.74	0.00	528.74	3612.11	1806.05	6366.51	3160.60	8.33	-0.970	0.000	0.174
88.00	-25.53	-7.78	0.00	-513.05	0.00	513.05	3588.67	1794.34	6263.99	3109.71	8.74	-0.996	0.000	0.172
90.00	-25.10	-7.72	0.00	-497.49	0.00	497.49	3565.02	1782.51	6161.91	3059.03	9.16	-1.021	0.000	0.170

Calculated Forces

Structure:	CT02218-S-SBA	**Code:**	TIA-222-G	7/8/2022
Site Name:	Colchester2	**Exposure:**	C	
Height:	180.00 (ft)	**Crest Height:**	0.00	
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil	
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 46

Tower Engineering Solutions

92.00	-24.68	-7.66	0.00	-482.05	0.00	482.05	3541.15	1770.57	6060.25	3008.56	9.59	-1.046	0.000	0.167
92.92	-24.49	-7.63	0.00	-475.03	0.00	475.03	3530.13	1765.07	6013.81	2985.51	9.80	-1.057	0.000	0.166
94.00	-24.11	-7.60	0.00	-466.77	0.00	466.77	3517.06	1758.53	5959.04	2958.32	10.04	-1.071	0.000	0.165
96.00	-23.41	-7.53	0.00	-451.58	0.00	451.58	3492.76	1746.38	5858.29	2908.30	10.49	-1.096	0.000	0.162
98.00	-22.72	-7.46	0.00	-436.52	0.00	436.52	3468.23	1734.12	5758.01	2858.52	10.96	-1.120	0.000	0.159
98.92	-22.41	-7.43	0.00	-429.68	0.00	429.68	2742.07	1371.04	4616.42	2291.78	11.17	-1.132	0.000	0.196
100.00	-22.21	-7.40	0.00	-421.64	0.00	421.64	2732.96	1366.48	4575.83	2271.63	11.43	-1.145	0.000	0.194
102.00	-21.85	-7.34	0.00	-406.85	0.00	406.85	2715.97	1357.98	4501.05	2234.51	11.92	-1.173	0.000	0.190
104.00	-21.50	-7.28	0.00	-392.17	0.00	392.17	2698.76	1349.38	4426.51	2197.50	12.41	-1.201	0.000	0.186
106.00	-21.15	-7.22	0.00	-377.62	0.00	377.62	2681.34	1340.67	4352.19	2160.61	12.92	-1.229	0.000	0.183
108.00	-20.80	-7.16	0.00	-363.19	0.00	363.19	2663.69	1331.85	4278.13	2123.84	13.44	-1.256	0.000	0.179
110.00	-20.45	-7.10	0.00	-348.87	0.00	348.87	2645.83	1322.92	4204.32	2087.20	13.98	-1.284	0.000	0.175
112.00	-20.11	-7.04	0.00	-334.68	0.00	334.68	2627.76	1313.88	4130.77	2050.69	14.52	-1.311	0.000	0.171
114.00	-19.77	-6.98	0.00	-320.60	0.00	320.60	2609.46	1304.73	4057.51	2014.32	15.08	-1.337	0.000	0.167
116.00	-19.43	-6.92	0.00	-306.65	0.00	306.65	2590.95	1295.48	3984.53	1978.09	15.64	-1.364	0.000	0.163
118.00	-19.10	-6.86	0.00	-292.81	0.00	292.81	2572.22	1286.11	3911.86	1942.01	16.22	-1.390	0.000	0.158
120.00	-18.77	-6.80	0.00	-279.09	0.00	279.09	2553.28	1276.64	3839.50	1906.09	16.81	-1.416	0.000	0.154
122.00	-18.44	-6.74	0.00	-265.49	0.00	265.49	2534.11	1267.06	3767.46	1870.33	17.40	-1.441	0.000	0.149
124.00	-18.12	-6.68	0.00	-252.01	0.00	252.01	2514.73	1257.37	3695.76	1834.73	18.01	-1.466	0.000	0.145
126.00	-17.79	-6.62	0.00	-238.65	0.00	238.65	2495.13	1247.57	3624.40	1799.30	18.63	-1.490	0.000	0.140
127.09	-17.62	-6.59	0.00	-231.45	0.00	231.45	2484.39	1242.20	3585.78	1780.13	18.97	-1.503	0.000	0.137
128.00	-17.40	-6.56	0.00	-225.44	0.00	225.44	2475.32	1237.66	3553.40	1764.06	19.26	-1.514	0.000	0.135
130.00	-16.91	-6.50	0.00	-212.32	0.00	212.32	2455.29	1227.64	3482.76	1728.99	19.90	-1.538	0.000	0.130
132.00	-16.44	-6.43	0.00	-199.32	0.00	199.32	2435.04	1217.52	3412.51	1694.11	20.55	-1.561	0.000	0.124
132.34	-16.35	-6.42	0.00	-197.16	0.00	197.16	1489.26	744.63	2121.49	1053.20	20.66	-1.564	0.000	0.198
134.00	-16.15	-6.38	0.00	-186.47	0.00	186.47	1482.04	741.02	2090.19	1037.66	21.21	-1.583	0.000	0.191
136.00	-15.91	-6.32	0.00	-173.72	0.00	173.72	1473.16	736.58	2052.54	1018.97	21.88	-1.612	0.000	0.181
138.00	-15.67	-6.27	0.00	-161.08	0.00	161.08	1464.07	732.03	2014.90	1000.28	22.56	-1.640	0.000	0.172
140.00	-15.43	-6.21	0.00	-148.55	0.00	148.55	1454.76	727.38	1977.27	981.60	23.25	-1.667	0.000	0.162
142.00	-15.19	-6.15	0.00	-136.13	0.00	136.13	1445.23	722.61	1939.67	962.93	23.96	-1.693	0.000	0.152
144.00	-14.96	-6.10	0.00	-123.82	0.00	123.82	1435.48	717.74	1902.10	944.28	24.67	-1.718	0.000	0.142
146.00	-14.72	-6.04	0.00	-111.62	0.00	111.62	1425.52	712.76	1864.58	925.66	25.40	-1.741	0.000	0.131
147.00	-12.28	-5.09	0.00	-105.58	0.00	105.58	1420.45	710.23	1845.85	916.36	25.76	-1.752	0.000	0.124
148.00	-12.16	-5.07	0.00	-100.49	0.00	100.49	1415.33	707.67	1827.13	907.06	26.13	-1.762	0.000	0.119
150.00	-11.94	-5.01	0.00	-90.35	0.00	90.35	1404.94	702.47	1789.74	888.50	26.87	-1.782	0.000	0.110
152.00	-11.72	-4.96	0.00	-80.33	0.00	80.33	1394.32	697.16	1752.43	869.98	27.63	-1.801	0.000	0.101
154.00	-11.50	-4.90	0.00	-70.42	0.00	70.42	1383.49	691.74	1715.22	851.51	28.38	-1.818	0.000	0.091
156.00	-11.28	-4.84	0.00	-60.62	0.00	60.62	1372.44	686.22	1678.11	833.09	29.15	-1.834	0.000	0.081
157.00	-8.79	-3.79	0.00	-55.78	0.00	55.78	1366.83	683.41	1659.60	823.90	29.53	-1.841	0.000	0.074
158.00	-8.70	-3.77	0.00	-51.98	0.00	51.98	1361.17	680.58	1641.12	814.72	29.92	-1.848	0.000	0.070
160.00	-8.51	-3.71	0.00	-44.45	0.00	44.45	1349.68	674.84	1604.25	796.42	30.70	-1.861	0.000	0.062
162.00	-8.33	-3.66	0.00	-37.03	0.00	37.03	1337.98	668.99	1567.52	778.18	31.48	-1.872	0.000	0.054
164.00	-8.14	-3.60	0.00	-29.72	0.00	29.72	1326.06	663.03	1530.94	760.02	32.27	-1.881	0.000	0.045
166.00	-7.96	-3.55	0.00	-22.51	0.00	22.51	1313.92	656.96	1494.52	741.94	33.06	-1.889	0.000	0.036
167.00	-4.82	-1.98	0.00	-18.96	0.00	18.96	1307.77	653.89	1476.37	732.93	33.45	-1.892	0.000	0.030
168.00	-4.75	-1.96	0.00	-16.97	0.00	16.97	1301.57	650.78	1458.27	723.95	33.85	-1.895	0.000	0.027
170.00	-4.60	-1.91	0.00	-13.06	0.00	13.06	1289.00	644.50	1422.20	706.04	34.64	-1.899	0.000	0.022
172.00	-4.45	-1.86	0.00	-9.24	0.00	9.24	1276.21	638.10	1386.32	688.23	35.44	-1.903	0.000	0.017
174.00	-4.31	-1.80	0.00	-5.53	0.00	5.53	1263.20	631.60	1350.65	670.52	36.24	-1.906	0.000	0.012
176.00	-4.17	-1.75	0.00	-1.92	0.00	1.92	1249.98	624.99	1315.19	652.92	37.04	-1.907	0.000	0.006
177.00	-0.18	-0.07	0.00	-0.17	0.00	0.17	1243.29	621.64	1297.54	644.16	37.43	-1.907	0.000	0.000
178.00	-0.12	-0.05	0.00	-0.10	0.00	0.10	1236.54	618.27	1279.96	635.42	37.83	-1.907	0.000	0.000
180.00	0.00	-0.04	0.00	0.00	0.00	0.00	1222.88	611.44	1244.96	618.05	38.63	-1.907	0.000	0.000

Final Analysis Summary

Structure:	CT02218-S-SBA	**Code:**	TIA-222-G	7/8/2022	
Site Name:	Colchester2	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 47	

Tower Engineering Solutions

Reactions

Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)
1.2D + 1.6W 105 mph Wind	50.1	0.00	60.96	0.00	0.00	6475.29
0.9D + 1.6W 105 mph Wind	50.0	0.00	45.71	0.00	0.00	6383.55
1.2D + 1.0Di + 1.0Wi 50 mph Wind	11.4	0.00	90.42	0.00	0.00	1501.31
1.2D + 1.0E	2.4	0.00	61.00	0.00	0.00	343.19
0.9D + 1.0E	2.4	0.00	45.75	0.00	0.00	337.88
1.0D + 1.0W 60 mph Wind	10.2	0.00	50.83	0.00	0.00	1313.46

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 105 mph Wind	-38.26	-43.57	0.00	-3973.6	0.00	-3973.6	3967.43	1983.7	8109.29	4025.79	53.00	0.997
0.9D + 1.6W 105 mph Wind	-28.23	-43.06	0.00	-3897.7	0.00	-3897.7	3967.43	1983.7	8109.29	4025.79	53.00	0.976
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-64.27	-10.07	0.00	-928.39	0.00	-928.39	3967.43	1983.7	8109.29	4025.79	53.00	0.247
1.2D + 1.0E	-19.81	-1.88	0.00	-70.99	0.00	-70.99	1489.26	744.63	2121.49	1053.20	132.34	0.081
0.9D + 1.0E	-14.86	-1.84	0.00	-69.56	0.00	-69.56	1489.26	744.63	2121.49	1053.20	132.34	0.076
1.0D + 1.0W 60 mph Wind	-33.53	-8.83	0.00	-804.99	0.00	-804.99	3967.43	1983.7	8109.29	4025.79	53.00	0.208

Base Plate Summary

Structure:	CT02218-S-SB		**Code:**	TIA-222-G	7/8/2022
Site Name:	Colchester2		**Exposure:**	C	
Height:	180.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 48

Tower Engineering Solutions

Reactions

Original Design

Moment (kip-ft):	5045.00
Axial (kip):	56.10
Shear (kip):	39.50

Analysis (1.2D + 1.6W)

Moment (kip-ft):	6475.29
Axial (kip):	60.96
Shear (kip):	50.05

Base Plate

Yield (ksi):	60.00
Width (in):	74.62
Style:	Polygon
Polygon Sides:	16.00
Clip Length (in):	0.00
Effective Len (in):	13.76
Moment (kip-in):	995.59
Allow Stress (ksi):	81.00
Applied Stress (ksi):	57.51
Stress Ratio:	0.71

Anchor Bolts

Bolt Circle:	68.62
Number Bolts:	20.00
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):	231.00
Allowable (kip):	260.00
Ratio:	0.91

Tension

Force (kip):	221.95
Allowable (kip):	260.00
Ratio:	0.87

Monopole Mat Foundation Design

			Date: 7/8/2022
Customer Name:	T-Mobile	**TIA Standard:**	TIA-222-G
Site Name:		**Structure Height (Ft.):**	180
Site Number:	CT02218-S-SBA	**Engineer Name:**	C. Zang
Engr. Number:	130847	**Engineer Login ID:**	

Foundation Info Obtained from: Drawings/Calculations

Structure Type: Monopole

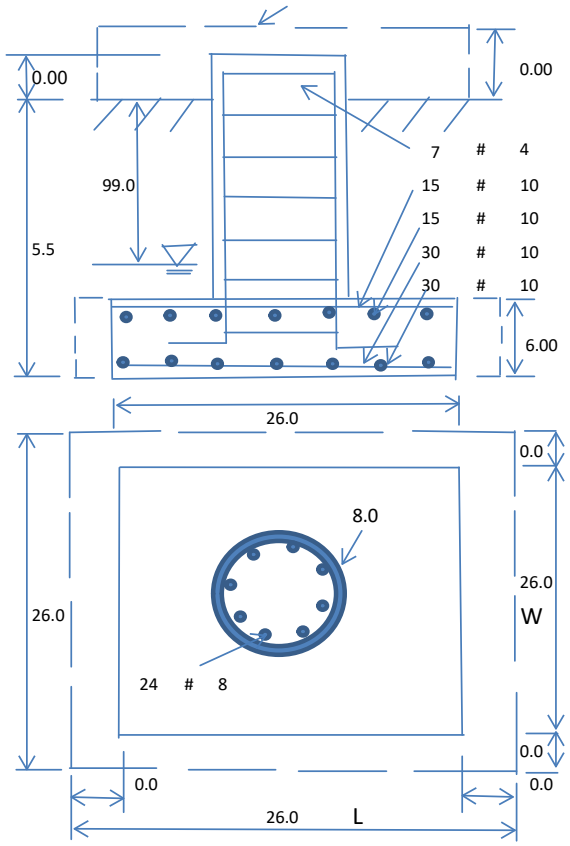
Analysis or Design? Analysis

Base Reactions (Factored):

Axial Load (Kips):	61.0	Shear Force (Kips):	50.1
Uplift Force (Kips):	0.0	Moment (Kips-ft):	6475.3
Allowable overstress %:	5.0%		

Foundation Geometries:

		Mods required -Yes/No ?:	No
Diameter of Pier (ft.):	8.0	Depth of Base BG (ft.):	5.5
Pier Height A. G. (ft.):		Thickness of Pad (ft):	6.00
Length of Pad (ft.):	26	Width of Pad (ft.):	26
Final Length of pad (ft)	26.0	Final width of pad (ft):	26.0



Material Properties and Reabr Info:

Concrete Strength (psi):	3000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield (ksi):	60	
Vertical Rebar Size #:	8	Tie / Stirrup Size #:	4	
Qty. of Vertical Rebars:	24	Tie Spacing (in):	12.0	
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	10	
Concrete Cover (in.):	3	Unit Weight of Concrete:	150.0	pcf

Rebar at the bottom of the concrete pad:

Qty. of Rebar in Pad (L):	30	Qty. of Rebar in Pad (W):	30

Rebar at the top of the concrete pad:

Qty. of Rebar in Pad (L):	15	Qty. of Rebar in Pad (W):	15
Apply 1.35 factor for e/w Per G:	1.35		

Soil Design Parameters:

Soil Unit Weight (pcf):	110.0	Soil Buoyant Weight:	50.0	Pcf		
Water Table B.G.S. (ft):	99.0	Unit Weight of Water:	62.4	pcf	Angle from Top of Pad:	30
Ultimate Bearing Pressure (psf):	12000	Ultimate Skin Friction:	0	Psf	Angle from Bottm of Pad:	25
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	No		Angle from Bottm of Pad:	25
Consider soil hor. resist. for OTM.:	No	Reduction factor on the maximum soil bearing pressure:	1.00			

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

Total Dry Soil Volume (cu. Ft.):	1.25	Total Dry Soil Weight (Kips):	0.14
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	0.14	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	4056.35	Total Dry Concrete Weight (Kips):	608.45
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00
Total Effective Concrete Weight (Kips):	608.45	Total Vertical Load on Base (Kips):	669.55

Check Soil Capacities:

					Load/ Capacity Ratio	
Calculated Maxium Net Soil Pressure under the base (psf):	4875	<	Allowable Factored Soil Bearing (psf):	9000	0.54	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	7913.0	>	Design Factored Momont (kips-ft):	6776	0.86	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	1.17	OK!				

Check the capacities of Reinforceing Concrete:

Strength reduction factor (Flexure and axial tension):	0.90	Strength reduction factor (Shear):	0.75
Strength reduction factor (Axial compresion):	0.65	Wind Load Factor on Concrete Design:	1.00

(2).Concrete Pad:

One-Way Design Shear Capacity (L-Direction, Kips):	1752.7	>	One-Way Factored Shear (L-D. Kips):	252.8	0.14	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	1752.7	>	One-Way Factored Shear (W-D., Kips)	252.8	0.14	OK!
One-Way Design Shear Capacity (Corner-Corner. Kips):	1171.2	>	One-Way Factored Shear (C-C, Kips):	259.0	0.22	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0018	OK!	Lower Steel Pad Reinf. Ratio (W-Direc	0.0018		
Lower Steel Pad Moment Capacity (L-Direction. Kips-ft):	11476.6	>	Moment at Bottom (L-Dir. K-Ft):	2092.8	0.18	OK!
Lower Steel Pad Moment Capacity (W-Direction. Kips-ft):	11476.6	>	Moment at Bottom (W-Dir. K-Ft):	2092.8	0.18	OK!
Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):	16133.5	>	Moment at Bottom (C-C Dir. K-Ft):	2959.7	0.18	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0009	OK!	Upper Steel Reinf. Ratio (W-Dir.):	0.0009		
Upper Steel Pad Moment Capacity (L-Direc. Kips-ft):	5799.9	>	Moment at the top (L-Dir K-Ft):	974.1	0.17	OK!
Upper Steel Pad Moment Capacity (W-Direc. Kips-ft):	5799.9	>	Moment at the top (W-Dir K-Ft):	974.1	0.17	OK!
Upper Steel Pad Moment Capacity (Corner-Corner. K-ft):	8178.0	>	Moment at the top (C-C Dir. K-Ft):	917.8	0.11	OK!

(3).Check Punching Shear Capacity due to Moment in the Pier:

Moment transferred by punching shear:	2590.1	k-ft.	Max. factored shear stress v_{u_CD}:	3.3	Psi
Max. factored shear stress v_{u_AB}:	5.7	Psi	Factored shear Strength ϕv_n:	164.3	Psi
Max. factored shear stress v_u:	5.7	Psi	Check Usage of Punching Shear Capacity:	0.03	OK!

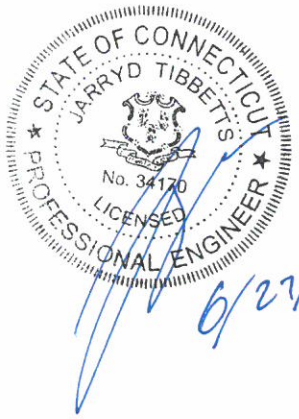
Exhibit E

Mount Analysis

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

Antenna Mount Analysis Report

Existing Monopole Tower
Customer Name: SBA Communications Corp
Customer Site Number: CT02218-S-SBA
Customer Site Name: Colchester2
Carrier Name: T-Mobile (App#: 200999, V2)
Carrier Site ID / Name: CT11338A / Colchester
Site Location: 48 Westchester Road
Colchester, Connecticut
New London County
Latitude: 41.590161
Longitude: -72.401467



Analysis Result:

Max Structural Usage: 51.1% [Pass]

Report Prepared By: Venkata Annamreddy

NOTE: The proposed mount (1) SitePro1 RMQP-4096-HK was assumed to be installed properly to the existing tower per the manufacturer's instructions. Tower Engineering Solutions, LLC is not liable for any fit-up issues during installation.

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: CT02218-S-SBA

Customer Site Name: Colchester2

Carrier Name: T-Mobile (App#: 200999, V2)

Carrier Site ID / Name: CT11338A / Colchester

Site Location: 48 Westchester Road

Colchester, Connecticut

New London County

Latitude: 41.590161

Longitude: -72.401467

Analysis Result:

Max Structural Usage: 51.1% [Pass]

Report Prepared By: Venkata Annamreddy

NOTE: The proposed mount (1) SitePro1 RMQP-4096-HK was assumed to be installed properly to the existing tower per the manufacturer's instructions. Tower Engineering Solutions, LLC is not liable for any fit-up issues during installation.

Introduction

The purpose of this report is to summarize the analysis results on the (1) SitePro1 RMQP-4096-HKat 177.00' elevation to support the proposed antenna configuration. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Mount Drawings	Mount info provided by SBA; Application #:200999, v2, dated:6/27/2022 [SitePro1 RMQP-4096-HK; Structural Drawing provided by Site Pro]
Antenna Loading	SBA, Application #:200999, v2, dated:6/27/2022
Modification Drawings	N/A

Analysis Criteria

Basic Wind Speed Used in the Analysis: V_{ULT} = 135 mph (3-Sec. Gust) / Equivalent to
V_{ASD} = 105 mph (3-Sec. Gust)
Basic Wind Speed with Ice: 50 mph (3-Sec. Gust) with 0.75" radial ice concurrent
Operational Wind Speed: 30 mph +0" Radial ice
Standard/Codes: ANSI/TIA/EIA 222-G / 2015 IBC
Exposure Category: C
Structure Class: II
Topographic Category: 1
Crest Height (Ft): 0

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

Mount Information

(1) SitePro1 RMQP-4096-HK at 177.00' elevation

Final Antenna Configuration

3	Ericsson AIR6419 B41
3	RFS APXVAALL24_43-U-NA20
3	Ericsson KRY 112 489/2
3	Ericsson 4449 B71 + B85
3	Ericsson 4460 B25 + B66
3	Kathrein Scala 782 11056
3	Commscope VV-65B-R1

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 proposed mounts will be structurally adequate to support the proposed antenna configuration. The maximum structural usage is 51.1%, which occurs in the mount pipe. 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 proposed mount (1) SitePro1 RMQP-4096-HK was assumed to be installed properly to the existing tower per the manufacturer's instructions. Tower Engineering Solutions, LLC is not liable for any fit-up issues during installation.

Attachments

1. Mount Assembly Drawing
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.

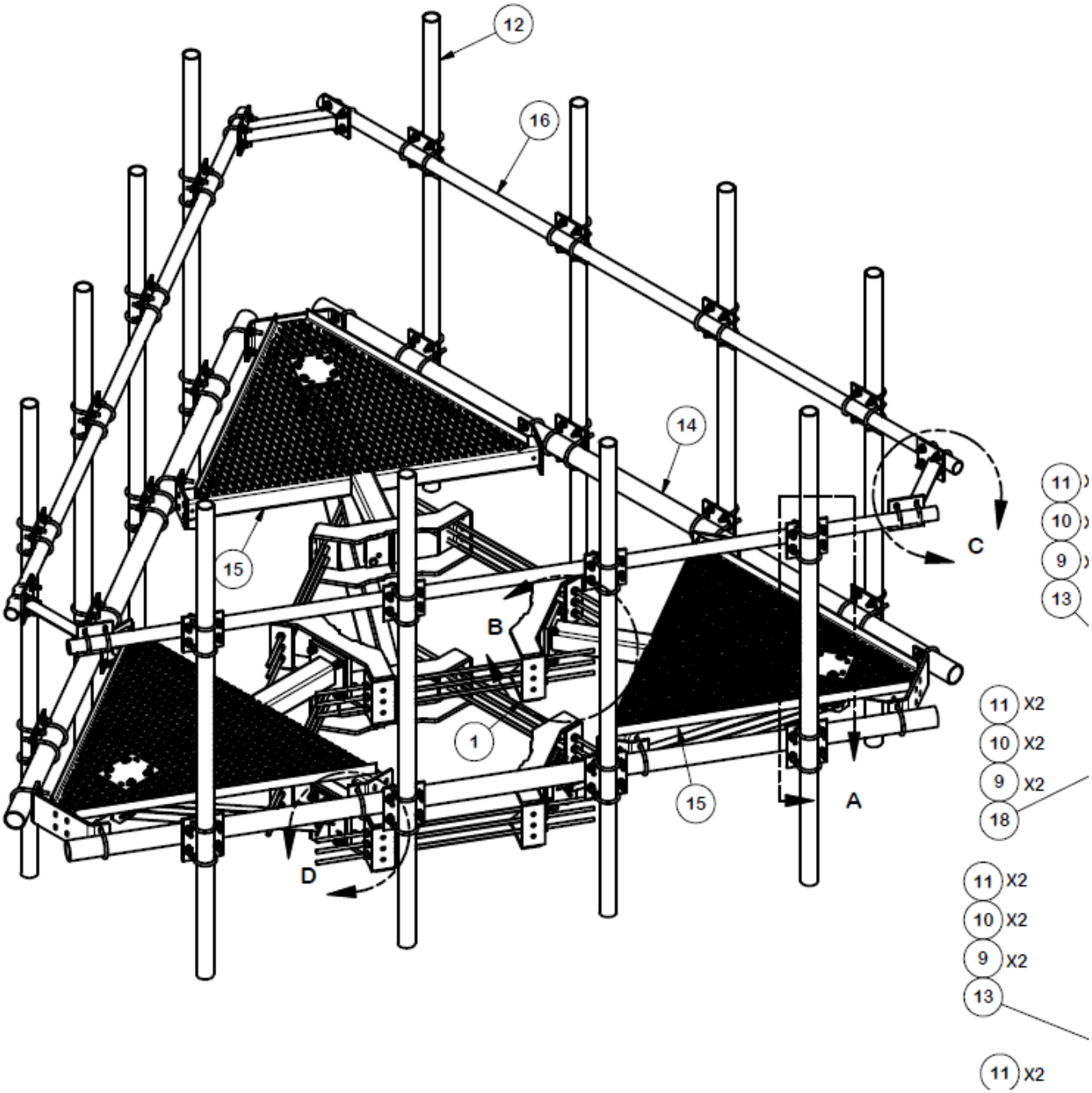
5. If the mount is modified, installation must adhere to the configuration communicated in the modification drawings.

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.


12
16
14
15
B
C
A
D
1
15
11
10
9
13
11 X2
10 X2
9 X2
18
11 X2
10 X2
9 X2
13
11 X2

Structure: CT02218-S-SBA - Colchester2

Sector: A

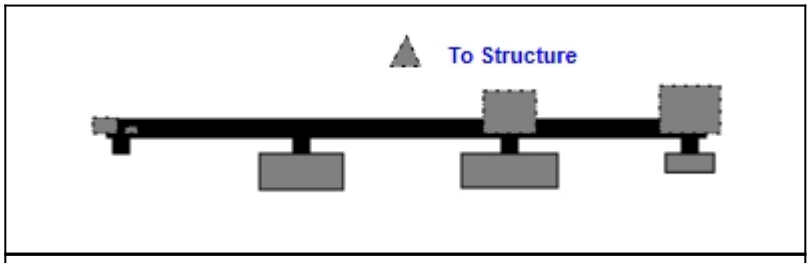
Structure Type: Monopole

Mount Elev: 177.00

6/27/2022

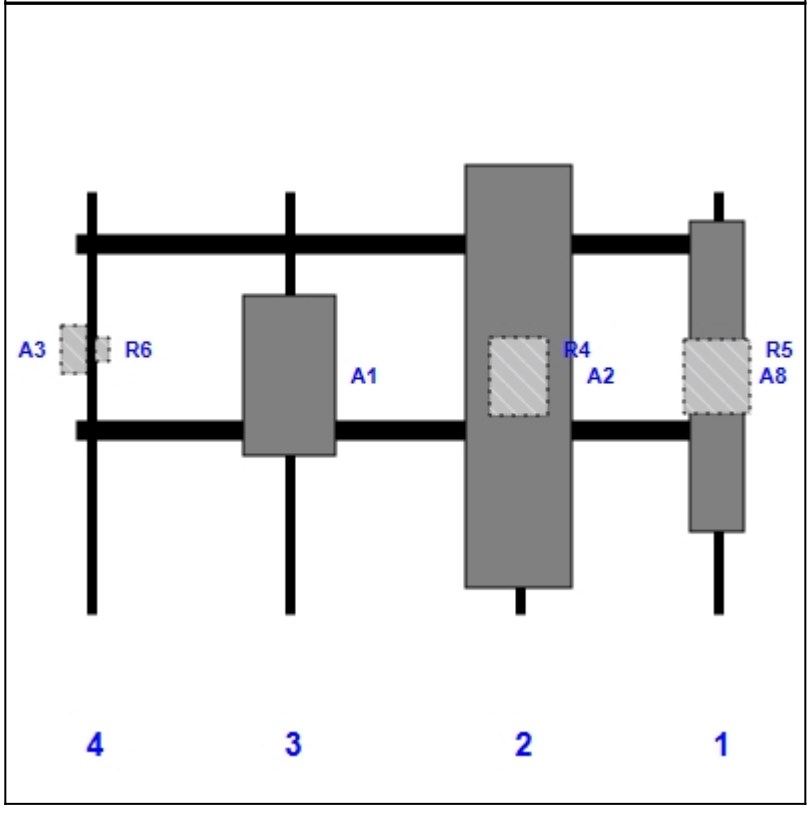
Tower Engineering Solutions

Plan View



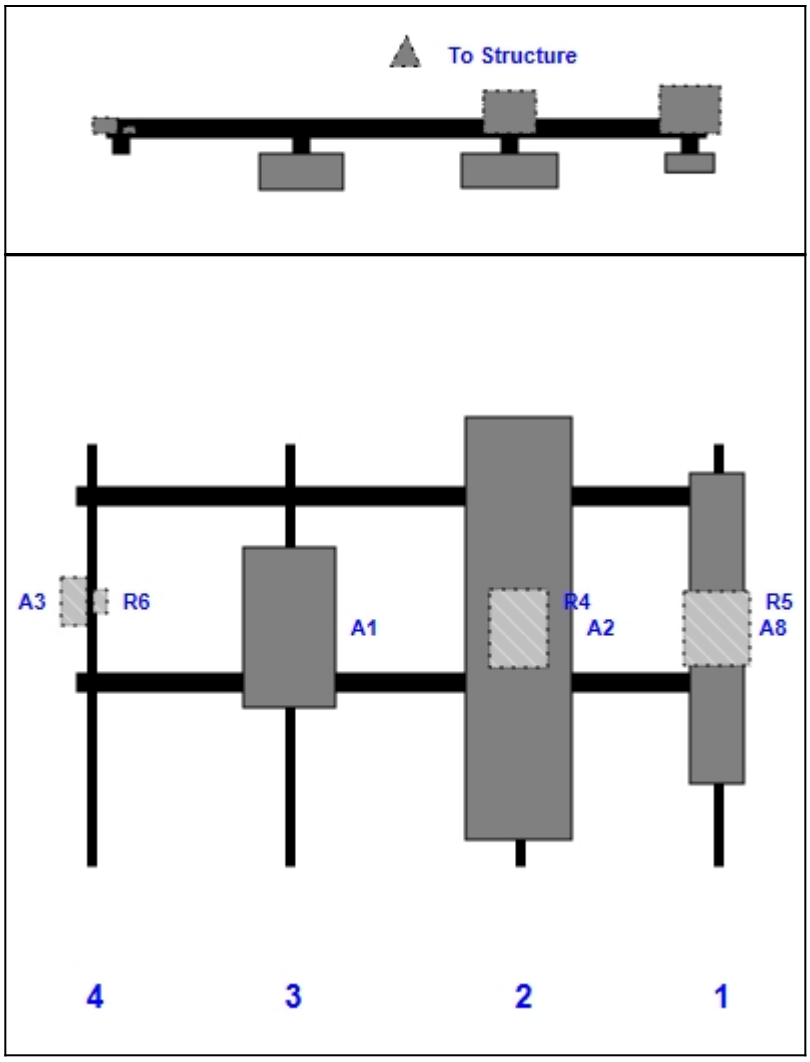
Front View

Looking Toward Structure



Ref	Model	Height (in)	Width (in)	H Dist Left	Pipe	Pipe Pos V	Pos	From Top	H Offset	Status	Validation
A8	VV-65B-R1	70.35	12.08	146.00	1	a	Front	42.00		Added	
R5	4460 B25 + B66	17.00	15.10	146.00	1	a	Behind	42.00		Added	
A2	APXVAALL24_43-U-NA20	95.90	24.00	101.00	2	a	Front	42.00		Retained	
R4	4449 B71 + B85	17.90	13.10	101.00	2	a	Behind	42.00		Retained	
A1	AIR6419 B41	36.30	20.90	49.00	3	a	Front	42.00		Added	
A3	KRY 112 489/2	11.00	6.10	4.00	4	a	Behind	36.00	-4.00	Retained	
R6	782 11056	5.50	3.20	4.00	4	a	Behind	36.00	2.50	Retained	

Plan View



Front View

Looking Toward Structure

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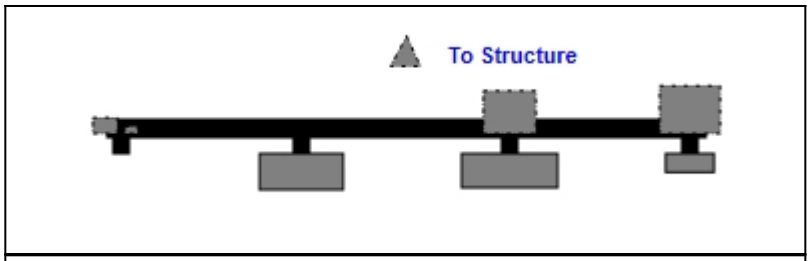
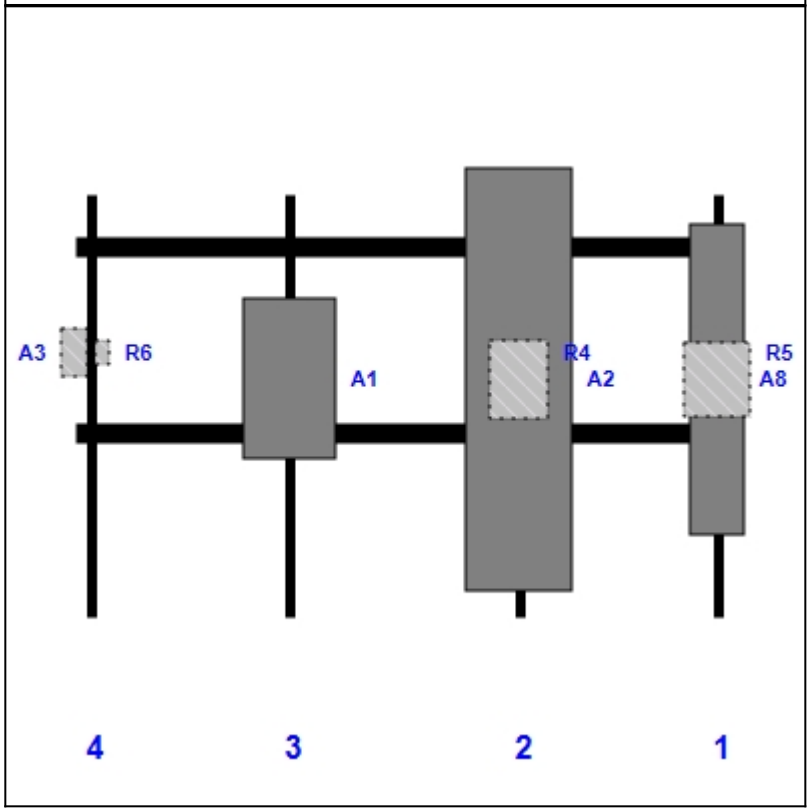
Plan View



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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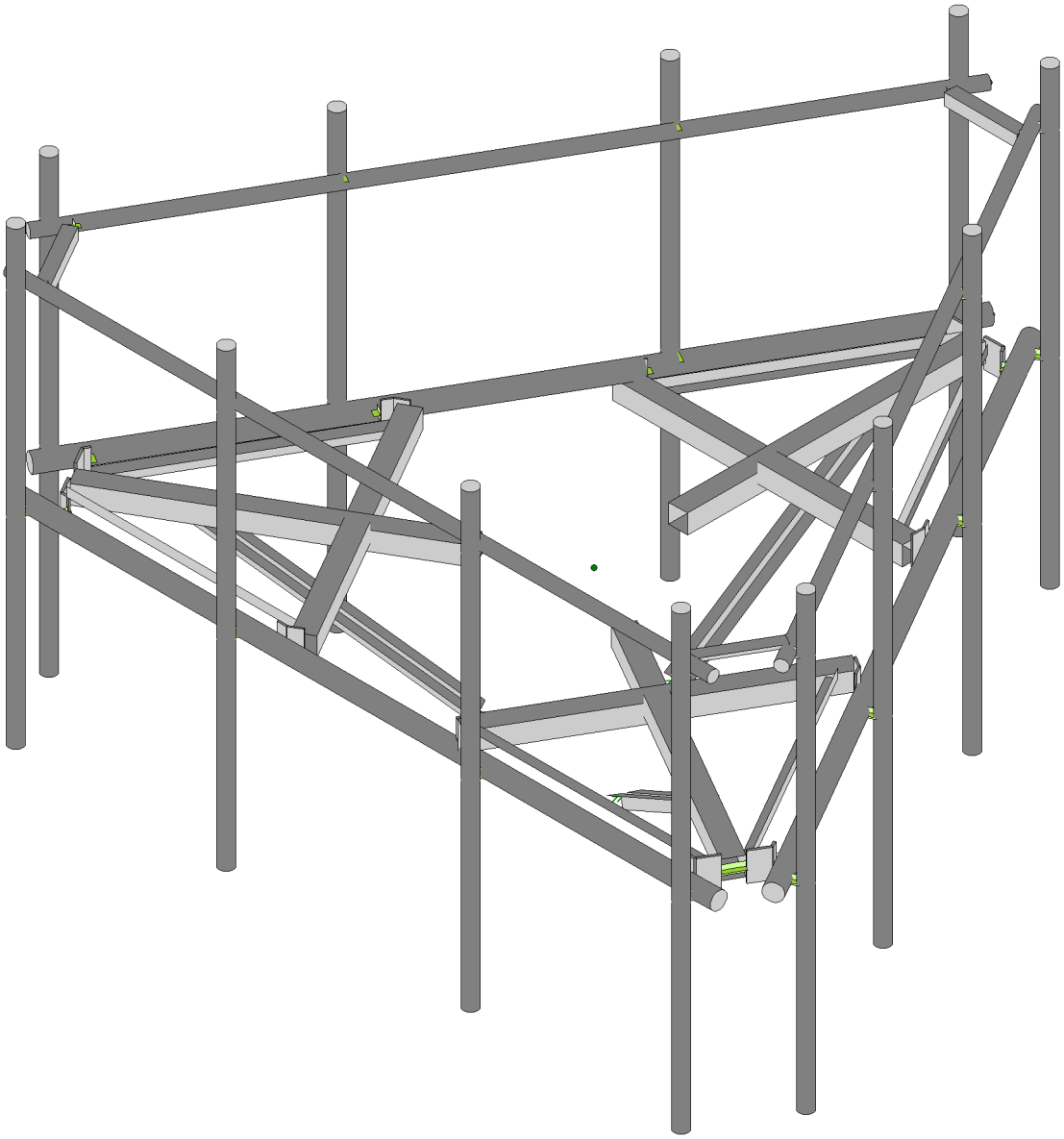
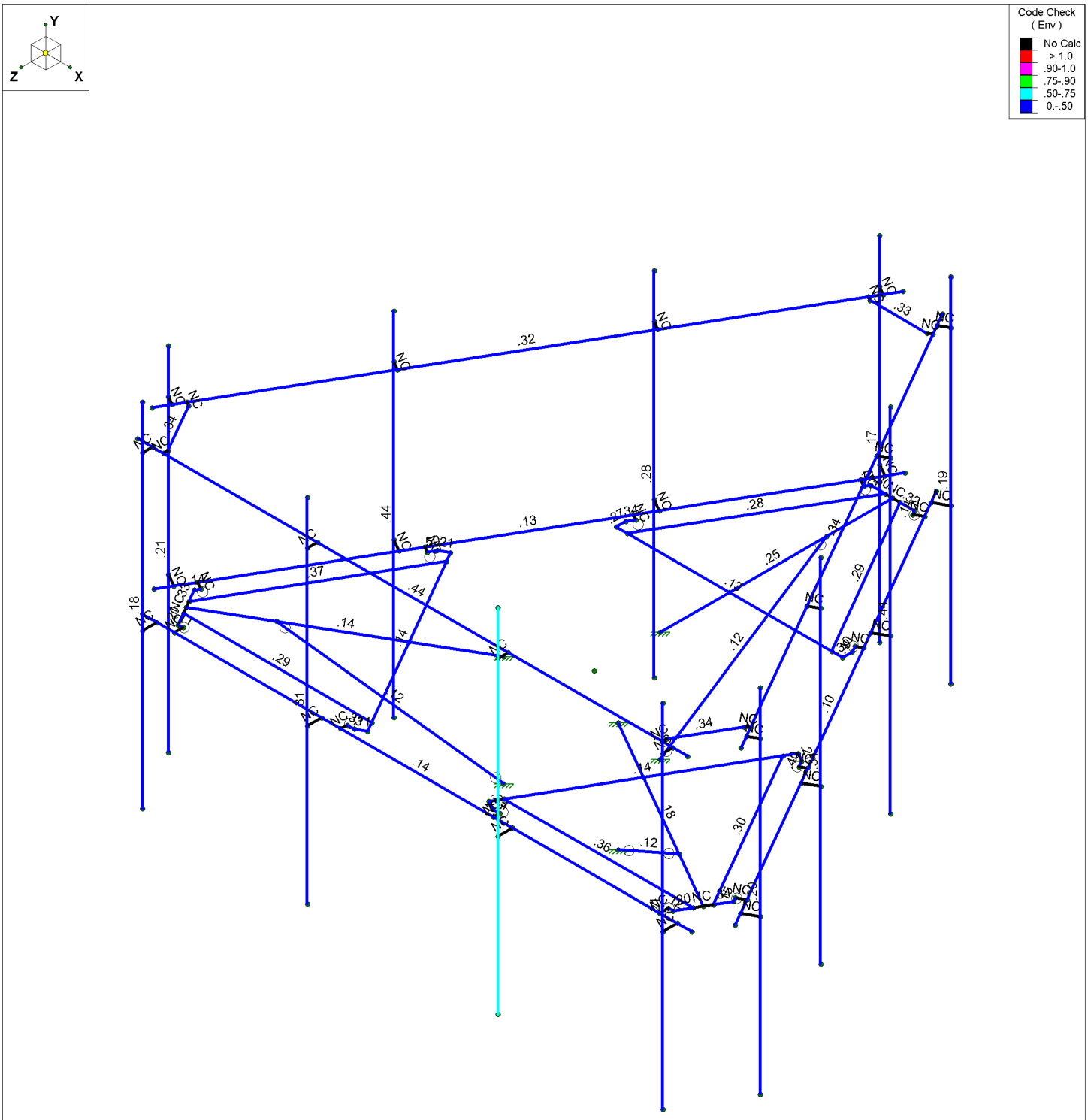
A2	APXVAALL24_43-U-NA20	95.90	24.00	101.00	2	a	Front	42.00		Retained	
R4	4449 B71 + B85	17.90	13.10	101.00	2	a	Behind	42.00		Retained	
A1	AIR6419 B41	36.30	20.90	49.00	3	a	Front	42.00		Added	
A3	KRY 112 489/2	11.00	6.10	4.00	4	a	Behind	36.00	-4.00	Retained	
R6	782 11056	5.50	3.20	4.00	4	a	Behind	36.00	2.50	Retained	

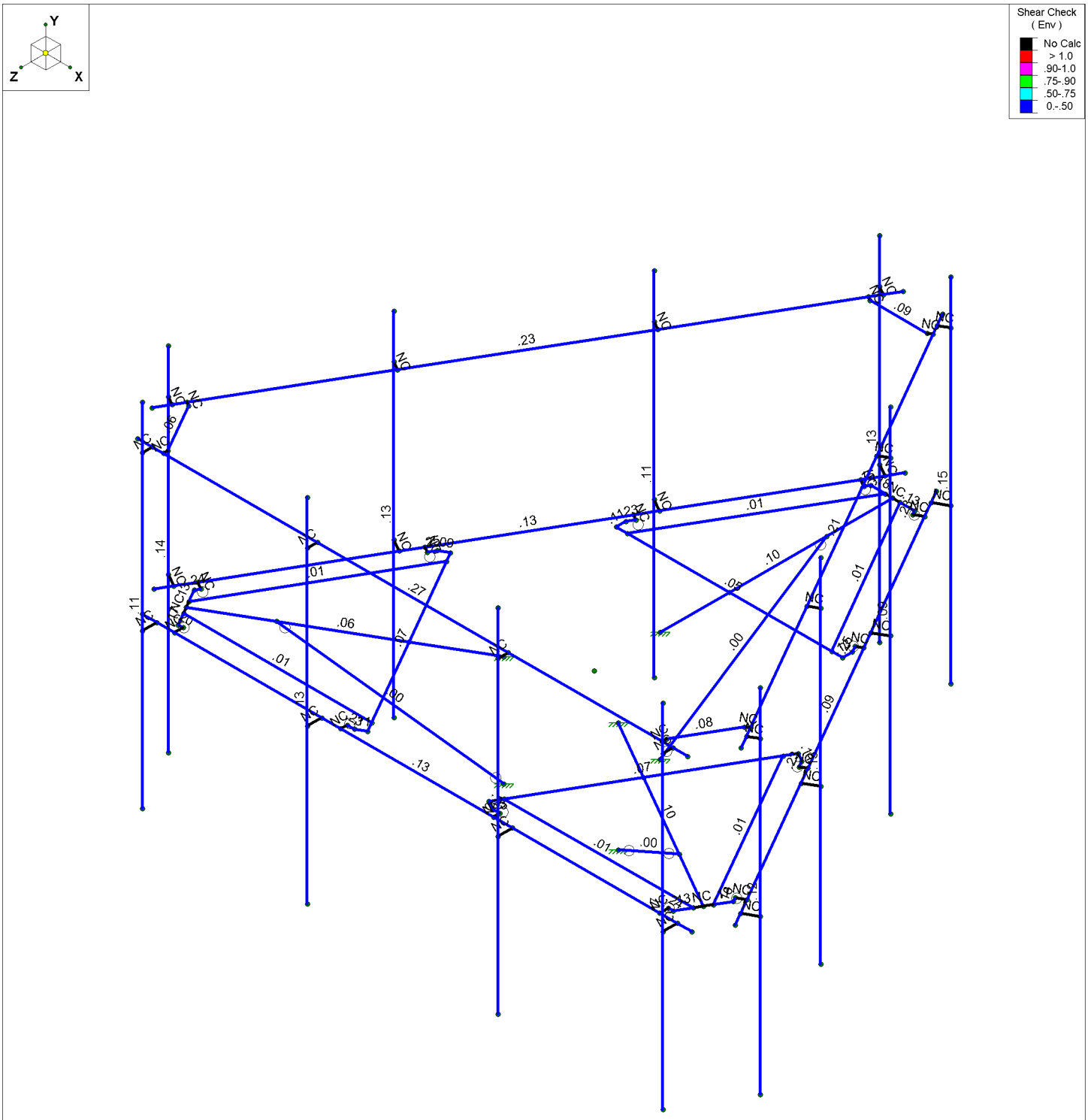


Tower Engineering Solutio...	CT02218-S-SBA_MT_LO_Loads Only_G	SK - 1
KW		June 27, 2022 at 3:47 PM
TES Project No. 130966		CT02218-S-SBA_130966_G_RISA_...



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

Tower Engineering Solutio...	CT02218-S-SBA_MT_LO_Loads Only_G	SK - 2
KW		June 27, 2022 at 3:48 PM
TES Project No. 130966		CT02218-S-SBA_130966_G_RISA_...



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

Tower Engineering Solutio...	CT02218-S-SBA_MT_LO_Loads Only_G	SK - 3
KW		June 27, 2022 at 3:48 PM
TES Project No. 130966		CT02218-S-SBA_130966_G_RISA_...

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribut...	Area(Me...	Surface(...
1	Antenna D	None					30			
2	Antenna Di	None					30			
3	Antenna W Front	None					30			
4	Antenna Wi Front	None					30			
5	Antenna W Side	None					30			
6	Antenna Wi Side	None					30			
7	Service Lm1	None					1			
8	Service Lm2	None					1			
9	Structure D	None		-1					3	
10	Structure Di	None						60	3	
11	Structure W Front	None						60		
12	Structure Wi Front	None						60		
13	Structure W Side	None						60		
14	Structure Wi Side	None						60		
15	BLC 9 Transient Area Loads	None						51		
16	BLC 10 Transient Area Loads	None						51		

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...	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	N1	0	0	0	0	
2	N2	0	0	-1.5	0	
3	N3	0	0	-3.078125	0	
4	N4	0	0	-6.786458	0	
5	N5	-2.572917	0	-3.078125	0	
6	N6	2.572917	0	-3.078125	0	
7	N7	-2.572917	0	-3.296875	0	
8	N8	2.572917	0	-3.296875	0	
9	N10	2.489584	0	-3.441213	0	
10	N11	-.5	0	-6.786458	0	
11	N12	.5	0	-6.786458	0	
12	N13	-.556	0	-6.689463	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
13	N14	.556	0	-6.689463	0	
14	N9	-2.489583	0	-3.441213	0	
15	N15	-2.322917	0	-3.078125	0	
16	N18	-0.166667	0	-6.786458	0	
17	N18A	2.322917	0	-3.078125	0	
18	N19	0.166667	0	-6.786458	0	
19	N19A	2.615879	0	-3.514129	0	
20	N20	0.72595	0	-6.787583	0	
21	N23	-2.615879	0	-3.514129	0	
22	N24	-0.72595	0	-6.787583	0	
23	N24A	-1.299038	0	.75	0	
24	N25	-2.665734	0	1.539063	0	
25	N26	-5.877245	0	3.393229	0	
26	N27	-1.379276	0	3.767274	0	
27	N28	-3.952193	0	-0.689149	0	
28	N29	-1.568719	0	3.876649	0	
29	N30	-4.141636	0	-0.579774	0	
30	N31	-4.22497	0	-0.435436	0	
31	N32	-5.627245	0	3.826242	0	
32	N33	-6.127245	0	2.960216	0	
33	N34	-5.515245	0	3.826242	0	
34	N35	-6.071245	0	2.863222	0	
35	N36	-1.735386	0	3.876649	0	
36	N37	-1.504276	0	3.550767	0	
37	N38	-5.793912	0	3.537567	0	
38	N39	-3.827193	0	-0.472642	0	
39	N40	-5.960579	0	3.248891	0	
40	N41	-4.351265	0	-0.508353	0	
41	N42	-6.241194	0	2.765101	0	
42	N43	-1.735386	0	4.022482	0	
43	N44	-5.515245	0	4.022482	0	
44	N46	1.299038	0	.75	0	
45	N47	2.665734	0	1.539063	0	
46	N48	5.877245	0	3.393229	0	
47	N49	3.952193	0	-0.689149	0	
48	N50	1.379276	0	3.767274	0	
49	N51	4.141636	0	-0.579774	0	
50	N52	1.568719	0	3.876649	0	
51	N53	1.735386	0	3.876649	0	
52	N54	6.127245	0	2.960216	0	
53	N55	5.627245	0	3.826242	0	
54	N56	6.071245	0	2.863222	0	
55	N57	5.515245	0	3.826242	0	
56	N58	4.224969	0	-0.435436	0	
57	N59	3.827193	0	-0.472642	0	
58	N60	5.960579	0	3.248891	0	
59	N61	1.504276	0	3.550767	0	
60	N62	5.793912	0	3.537567	0	
61	N63	1.735386	0	4.022482	0	
62	N64	5.515245	0	4.022482	0	
63	N65	4.351265	0	-0.508353	0	
64	N66	6.241194	0	2.765101	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
65	N65A	-6.25	0	4.022482	0	
66	N66A	6.25	0	4.022482	0	
67	N67	-5.916667	0	4.022482	0	
68	N68	-2.166667	0	4.022482	0	
69	N69	5.916667	0	4.022482	0	
70	N70	2.166667	0	4.022482	0	
71	N71	-5.916667	0	4.350607	0	
72	N72	-2.166667	0	4.350607	0	
73	N73	5.916667	0	4.350607	0	
74	N74	2.166667	0	4.350607	0	
75	N75	-6.25	3.5	4.12144	0	
76	N76	6.25	3.5	4.12144	0	
77	N77	-5.916667	3.5	4.12144	0	
78	N78	-2.166667	3.5	4.12144	0	
79	N79	5.916667	3.5	4.12144	0	
80	N80	2.166667	3.5	4.12144	0	
81	N81	-5.916667	3.5	4.350607	0	
82	N82	-2.166667	3.5	4.350607	0	
83	N83	5.916667	3.5	4.350607	0	
84	N84	2.166667	3.5	4.350607	0	
85	N85	-5.916667	4.5	4.350607	0	
86	N86	-2.166667	4.5	4.350607	0	
87	N87	5.916667	4.5	4.350607	0	
88	N88	2.166667	4.5	4.350607	0	
89	N89	-5.916667	-3.5	4.350607	0	
90	N90	-2.166667	-3.5	4.350607	0	
91	N91	5.916667	-3.5	4.350607	0	
92	N92	2.166667	-3.5	4.350607	0	
93	N94	6.608572	0	3.401418	0	
94	N95	0.358572	0	-7.4239	0	
95	N96	6.441905	0	3.112743	0	
96	N97	4.566905	0	-0.134852	0	
97	N98	0.525238	0	-7.135225	0	
98	N99	2.400238	0	-3.88763	0	
99	N100	6.72607	0	2.94868	0	
100	N101	4.85107	0	-0.298915	0	
101	N102	0.809403	0	-7.299287	0	
102	N103	2.684403	0	-4.051692	0	
103	N104	6.694272	3.5	3.351939	0	
104	N105	0.444272	3.5	-7.473379	0	
105	N106	6.527606	3.5	3.063264	0	
106	N107	4.652605	3.5	-0.184332	0	
107	N108	0.610939	3.5	-7.184704	0	
108	N109	2.485939	3.5	-3.937109	0	
109	N110	6.72607	3.5	2.94868	0	
110	N111	4.85107	3.5	-0.298915	0	
111	N112	0.809403	3.5	-7.299287	0	
112	N113	2.684403	3.5	-4.051692	0	
113	N114	6.72607	4.5	2.94868	0	
114	N115	4.85107	4.5	-0.298915	0	
115	N116	0.809403	4.5	-7.299287	0	
116	N117	2.684403	4.5	-4.051692	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
117	N118	6.72607	-3.5	2.94868	0	
118	N119	4.85107	-3.5	-0.298915	0	
119	N120	0.809403	-3.5	-7.299287	0	
120	N121	2.684403	-3.5	-4.051692	0	
121	N123	-0.358572	0	-7.4239	0	
122	N124	-6.608572	0	3.401418	0	
123	N125	-0.525238	0	-7.135225	0	
124	N126	-2.400238	0	-3.88763	0	
125	N127	-6.441905	0	3.112743	0	
126	N128	-4.566905	0	-0.134852	0	
127	N129	-0.809403	0	-7.299287	0	
128	N130	-2.684403	0	-4.051692	0	
129	N131	-6.72607	0	2.94868	0	
130	N132	-4.85107	0	-0.298915	0	
131	N133	-0.444272	3.5	-7.473379	0	
132	N134	-6.694272	3.5	3.351939	0	
133	N135	-0.610939	3.5	-7.184704	0	
134	N136	-2.485939	3.5	-3.937109	0	
135	N137	-6.527606	3.5	3.063264	0	
136	N138	-4.652605	3.5	-0.184332	0	
137	N139	-0.809403	3.5	-7.299287	0	
138	N140	-2.684403	3.5	-4.051692	0	
139	N141	-6.72607	3.5	2.94868	0	
140	N142	-4.85107	3.5	-0.298915	0	
141	N143	-0.809403	4.5	-7.299287	0	
142	N144	-2.684403	4.5	-4.051692	0	
143	N145	-6.72607	4.5	2.94868	0	
144	N146	-4.85107	4.5	-0.298915	0	
145	N147	-0.809403	-3.5	-7.299287	0	
146	N148	-2.684403	-3.5	-4.051692	0	
147	N149	-6.72607	-3.5	2.94868	0	
148	N150	-4.85107	-3.5	-0.298915	0	
149	N149A	-5.668667	3.5	4.12144	0	
150	N150A	-5.668667	3.5	4.022482	0	
151	N151	5.668667	3.5	4.12144	0	
152	N152	5.668667	3.5	4.022482	0	
153	N153	6.403605	3.5	2.848489	0	
154	N154	6.317905	3.5	2.897969	0	
155	N155	0.734939	3.5	-6.96993	0	
156	N156	0.649238	3.5	-6.920451	0	
157	N157	-0.734939	3.5	-6.96993	0	
158	N158	-0.649238	3.5	-6.920451	0	
159	N159	-6.403605	3.5	2.848489	0	
160	N160	-6.317905	3.5	2.897969	0	
161	N161	0	0	-5.286458	0	
162	N162	0	-2.5	-1.5	0	
163	N163	-4.578207	0	2.643229	0	
164	N164	-1.299038	-2.5	.75	0	
165	N165	4.578207	0	2.643229	0	
166	N166	1.299038	-2.5	.75	0	

Hot Rolled Steel Section Sets

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

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N2	N4			Standoff Arms	Beam	SquareTube	A500 Gr.B...	Typical
2	M2	N5	N6			Plan Bracing	Beam	SquareTube	A500 Gr.B...	Typical
3	M3	N5	N7			Plan Brace Co...	Beam	RECT	A36 Gr.36	Typical
4	M4	N7	N9			Plan Brace Co...	Beam	RECT	A36 Gr.36	Typical
5	M5	N6	N8			Plan Brace Co...	Beam	RECT	A36 Gr.36	Typical
6	M6	N8	N10			Plan Brace Co...	Beam	RECT	A36 Gr.36	Typical
7	M7	N18	N11			Bottom Corner...	Beam	RECT	A36 Gr.36	Typical
8	M8	N11	N13			Bottom Corner...	Beam	RECT	A36 Gr.36	Typical
9	M9	N19	N12			Bottom Corner...	Beam	RECT	A36 Gr.36	Typical
10	M10	N12	N14			Bottom Corner...	Beam	RECT	A36 Gr.36	Typical
11	M11	N15	N18			Grating Suppo...	Beam	Single Angle	A36 Gr.36	Typical
12	M12	N18A	N19		270	Grating Suppo...	Beam	Single Angle	A36 Gr.36	Typical
13	M13	N18	N19			RIGID	None	None	RIGID	Typical
14	M14	N14	N20			RIGID	None	None	RIGID	Typical
15	M15	N10	N19A			RIGID	None	None	RIGID	Typical
16	M16	N13	N24			RIGID	None	None	RIGID	Typical
17	M17	N9	N23			RIGID	None	None	RIGID	Typical
18	M18	N24A	N26			Standoff Arms	Beam	SquareTube	A500 Gr.B...	Typical
19	M19	N27	N28			Plan Bracing	Beam	SquareTube	A500 Gr.B...	Typical
20	M20	N27	N29			Plan Brace Co...	Beam	RECT	A36 Gr.36	Typical
21	M21	N29	N36			Plan Brace Co...	Beam	RECT	A36 Gr.36	Typical
22	M22	N28	N30			Plan Brace Co...	Beam	RECT	A36 Gr.36	Typical
23	M23	N30	N31			Plan Brace Co...	Beam	RECT	A36 Gr.36	Typical
24	M24	N38	N32			Bottom Corner...	Beam	RECT	A36 Gr.36	Typical
25	M25	N32	N34			Bottom Corner...	Beam	RECT	A36 Gr.36	Typical
26	M26	N40	N33			Bottom Corner...	Beam	RECT	A36 Gr.36	Typical
27	M27	N33	N35			Bottom Corner...	Beam	RECT	A36 Gr.36	Typical
28	M28	N37	N38			Grating Suppo...	Beam	Single Angle	A36 Gr.36	Typical
29	M29	N39	N40		270	Grating Suppo...	Beam	Single Angle	A36 Gr.36	Typical
30	M30	N38	N40			RIGID	None	None	RIGID	Typical
31	M31	N35	N42			RIGID	None	None	RIGID	Typical
32	M32	N31	N41			RIGID	None	None	RIGID	Typical
33	M33	N34	N44			RIGID	None	None	RIGID	Typical
34	M34	N36	N43			RIGID	None	None	RIGID	Typical
35	M35	N46	N48			Standoff Arms	Beam	SquareTube	A500 Gr.B...	Typical
36	M36	N49	N50			Plan Bracing	Beam	SquareTube	A500 Gr.B...	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
37	M37	N49	N51			Plan Brace Co...	Beam	RECT	A36 Gr.36	Typical
38	M38	N51	N58			Plan Brace Co...	Beam	RECT	A36 Gr.36	Typical
39	M39	N50	N52			Plan Brace Co...	Beam	RECT	A36 Gr.36	Typical
40	M40	N52	N53			Plan Brace Co...	Beam	RECT	A36 Gr.36	Typical
41	M41	N60	N54			Bottom Corner...	Beam	RECT	A36 Gr.36	Typical
42	M42	N54	N56			Bottom Corner...	Beam	RECT	A36 Gr.36	Typical
43	M43	N62	N55			Bottom Corner...	Beam	RECT	A36 Gr.36	Typical
44	M44	N55	N57			Bottom Corner...	Beam	RECT	A36 Gr.36	Typical
45	M45	N59	N60			Grating Suppo...	Beam	Single Angle	A36 Gr.36	Typical
46	M46	N61	N62		270	Grating Suppo...	Beam	Single Angle	A36 Gr.36	Typical
47	M47	N60	N62			RIGID	None	None	RIGID	Typical
48	M48	N57	N64			RIGID	None	None	RIGID	Typical
49	M49	N53	N63			RIGID	None	None	RIGID	Typical
50	M50	N56	N66			RIGID	None	None	RIGID	Typical
51	5	N58	N65			RIGID	None	None	RIGID	Typical
52	M52	N65A	N66A			Face Horizontals	Beam	Pipe	A53 Gr.B	Typical
53	M53	N75	N76			Support Rail	Beam	Pipe	A53 Gr.B	Typical
54	M54	N69	N73			RIGID	None	None	RIGID	Typical
55	M55	N79	N83			RIGID	None	None	RIGID	Typical
56	M56	N80	N84			RIGID	None	None	RIGID	Typical
57	M57	N70	N74			RIGID	None	None	RIGID	Typical
58	M58	N68	N72			RIGID	None	None	RIGID	Typical
59	M59	N78	N82			RIGID	None	None	RIGID	Typical
60	M60	N77	N81			RIGID	None	None	RIGID	Typical
61	M61	N67	N71			RIGID	None	None	RIGID	Typical
62	MP1A	N87	N91			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
63	MP2A	N88	N92			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
64	MP3A	N86	N90			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
65	MP4A	N85	N89			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
66	M66	N94	N95			Face Horizontals	Beam	Pipe	A53 Gr.B	Typical
67	M67	N104	N105			Support Rail	Beam	Pipe	A53 Gr.B	Typical
68	M68	N98	N102			RIGID	None	None	RIGID	Typical
69	M69	N108	N112			RIGID	None	None	RIGID	Typical
70	M70	N109	N113			RIGID	None	None	RIGID	Typical
71	M71	N99	N103			RIGID	None	None	RIGID	Typical
72	M72	N97	N101			RIGID	None	None	RIGID	Typical
73	M73	N107	N111			RIGID	None	None	RIGID	Typical
74	M74	N106	N110			RIGID	None	None	RIGID	Typical
75	M75	N96	N100			RIGID	None	None	RIGID	Typical
76	MP1C	N116	N120			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
77	MP2C	N117	N121			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
78	MP3C	N115	N119			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
79	MP4C	N114	N118			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
80	M80	N123	N124			Face Horizontals	Beam	Pipe	A53 Gr.B	Typical
81	M81	N133	N134			Support Rail	Beam	Pipe	A53 Gr.B	Typical
82	M82	N127	N131			RIGID	None	None	RIGID	Typical
83	M83	N137	N141			RIGID	None	None	RIGID	Typical
84	M84	N138	N142			RIGID	None	None	RIGID	Typical
85	M85	N128	N132			RIGID	None	None	RIGID	Typical
86	M86	N126	N130			RIGID	None	None	RIGID	Typical
87	M87	N136	N140			RIGID	None	None	RIGID	Typical
88	M88	N135	N139			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
89	M89	N125	N129			RIGID	None	None	RIGID	Typical
90	MP1B	N145	N149			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
91	MP2B	N146	N150			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
92	MP3B	N144	N148			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
93	MP4B	N143	N147			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
94	M94	N149A	N150A			RIGID	None	None	RIGID	Typical
95	M95	N151	N152			RIGID	None	None	RIGID	Typical
96	M96	N153	N154			RIGID	None	None	RIGID	Typical
97	M97	N155	N156			RIGID	None	None	RIGID	Typical
98	M98	N157	N158			RIGID	None	None	RIGID	Typical
99	M99	N159	N160			RIGID	None	None	RIGID	Typical
100	M100	N150A	N160		180	Top Corner Br...	Beam	Single Angle	A36 Gr.36	Typical
101	M101	N158	N156		180	Top Corner Br...	Beam	Single Angle	A36 Gr.36	Typical
102	M102	N154	N152		180	Top Corner Br...	Beam	Single Angle	A36 Gr.36	Typical
103	M103	N162	N161			Kickers	Beam	Double Angle (...	A36 Gr.36	Typical
104	M104	N164	N163			Kickers	Beam	Double Angle (...	A36 Gr.36	Typical
105	M105	N166	N165			Kickers	Beam	Double Angle (...	A36 Gr.36	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						Yes				None
5	M5						Yes				None
6	M6						Yes				None
7	M7						Yes				None
8	M8						Yes				None
9	M9						Yes				None
10	M10						Yes				None
11	M11						Yes				None
12	M12						Yes				None
13	M13						Yes	** NA **			None
14	M14		BenPIN				Yes	** NA **			None
15	M15		BenPIN				Yes	** NA **			None
16	M16		BenPIN				Yes	** NA **			None
17	M17		BenPIN				Yes	** NA **			None
18	M18						Yes				None
19	M19						Yes				None
20	M20						Yes				None
21	M21						Yes				None
22	M22						Yes				None
23	M23						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						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...
31	M31		BenPIN				Yes	** NA **			None
32	M32		BenPIN				Yes	** NA **			None
33	M33		BenPIN				Yes	** NA **			None
34	M34		BenPIN				Yes	** NA **			None
35	M35						Yes				None
36	M36						Yes				None
37	M37						Yes				None
38	M38						Yes				None
39	M39						Yes				None
40	M40						Yes				None
41	M41						Yes				None
42	M42						Yes				None
43	M43						Yes				None
44	M44						Yes				None
45	M45						Yes				None
46	M46						Yes				None
47	M47						Yes	** NA **			None
48	M48		BenPIN				Yes	** NA **			None
49	M49		BenPIN				Yes	** NA **			None
50	M50		BenPIN				Yes	** NA **			None
51	5		BenPIN				Yes	** NA **			None
52	M52						Yes				None
53	M53						Yes				None
54	M54						Yes	** NA **			None
55	M55						Yes	** NA **			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	MP1A						Yes				None
63	MP2A						Yes				None
64	MP3A						Yes				None
65	MP4A						Yes				None
66	M66						Yes				None
67	M67						Yes				None
68	M68						Yes	** NA **			None
69	M69						Yes	** NA **			None
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	MP1C						Yes				None
77	MP2C						Yes				None
78	MP3C						Yes				None
79	MP4C						Yes				None
80	M80						Yes				None
81	M81						Yes				None
82	M82						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...
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
88	M88						Yes	** NA **			None
89	M89						Yes	** NA **			None
90	MP1B						Yes				None
91	MP2B						Yes				None
92	MP3B						Yes				None
93	MP4B						Yes				None
94	M94						Yes	** NA **			None
95	M95						Yes	** NA **			None
96	M96						Yes	** NA **			None
97	M97						Yes	** NA **			None
98	M98						Yes	** NA **			None
99	M99						Yes	** NA **			None
100	M100						Yes				None
101	M101						Yes				None
102	M102						Yes				None
103	M103	BenPIN	BenPIN				Yes				None
104	M104	BenPIN	BenPIN				Yes				None
105	M105	BenPIN	BenPIN				Yes				None

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (/1E...	Density[k/ft...	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A992	29000	11154	.3	.65	.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	.3	.65	.527	42	1.4	58	1.3
5	A500 Gr.B RECT	29000	11154	.3	.65	.527	46	1.4	58	1.3
6	A500 Gr.C RND	29000	11154	.3	.65	.527	46	1.4	62	1.3
7	A500 Gr.C RECT	29000	11154	.3	.65	.527	50	1.4	62	1.3
8	A53 Gr.B	29000	11154	.3	.65	.49	35	1.6	60	1.2
9	A1085	29000	11154	.3	.65	.49	50	1.4	65	1.3
10	A913 Gr.65	29000	11154	.3	.65	.49	65	1.1	80	1.1

Hot Rolled Steel Design Parameters

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[ft]	Lcomp bot[ft]	L-torqu...	Kyy	Kzz	Cb	Function
1	M1	Standoff Ar...	5.286			Lbyy						Lateral
2	M2	Plan Bracing	5.146			Lbyy						Lateral
3	M3	Plan Brace ...	.219			Lbyy						Lateral
4	M4	Plan Brace ...	.167			Lbyy						Lateral
5	M5	Plan Brace ...	.219			Lbyy						Lateral
6	M6	Plan Brace ...	.167			Lbyy						Lateral
7	M7	Bottom Cor...	.333			Lbyy						Lateral
8	M8	Bottom Cor...	.112			Lbyy						Lateral
9	M9	Bottom Cor...	.333			Lbyy						Lateral
10	M10	Bottom Cor...	.112			Lbyy						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
11	M11	Grating Sup...	4.29			Lbyy						Lateral
12	M12	Grating Sup...	4.29			Lbyy						Lateral
13	M18	Standoff Ar...	5.286			Lbyy						Lateral
14	M19	Plan Bracing	5.146			Lbyy						Lateral
15	M20	Plan Brace ...	.219			Lbyy						Lateral
16	M21	Plan Brace ...	.167			Lbyy						Lateral
17	M22	Plan Brace ...	.219			Lbyy						Lateral
18	M23	Plan Brace ...	.167			Lbyy						Lateral
19	M24	Bottom Cor...	.333			Lbyy						Lateral
20	M25	Bottom Cor...	.112			Lbyy						Lateral
21	M26	Bottom Cor...	.333			Lbyy						Lateral
22	M27	Bottom Cor...	.112			Lbyy						Lateral
23	M28	Grating Sup...	4.29			Lbyy						Lateral
24	M29	Grating Sup...	4.29			Lbyy						Lateral
25	M35	Standoff Ar...	5.286			Lbyy						Lateral
26	M36	Plan Bracing	5.146			Lbyy						Lateral
27	M37	Plan Brace ...	.219			Lbyy						Lateral
28	M38	Plan Brace ...	.167			Lbyy						Lateral
29	M39	Plan Brace ...	.219			Lbyy						Lateral
30	M40	Plan Brace ...	.167			Lbyy						Lateral
31	M41	Bottom Cor...	.333			Lbyy						Lateral
32	M42	Bottom Cor...	.112			Lbyy						Lateral
33	M43	Bottom Cor...	.333			Lbyy						Lateral
34	M44	Bottom Cor...	.112			Lbyy						Lateral
35	M45	Grating Sup...	4.29			Lbyy						Lateral
36	M46	Grating Sup...	4.29			Lbyy						Lateral
37	M52	Face Horizo...	12.5			Lbyy						Lateral
38	M53	Support Rail	12.5			Lbyy						Lateral
39	MP1A	Mount Pipes	8			Lbyy						Lateral
40	MP2A	Mount Pipes	8			Lbyy						Lateral
41	MP3A	Mount Pipes	8			Lbyy						Lateral
42	MP4A	Mount Pipes	8			Lbyy						Lateral
43	M66	Face Horizo...	12.5			Lbyy						Lateral
44	M67	Support Rail	12.5			Lbyy						Lateral
45	MP1C	Mount Pipes	8			Lbyy						Lateral
46	MP2C	Mount Pipes	8			Lbyy						Lateral
47	MP3C	Mount Pipes	8			Lbyy						Lateral
48	MP4C	Mount Pipes	8			Lbyy						Lateral
49	M80	Face Horizo...	12.5			Lbyy						Lateral
50	M81	Support Rail	12.5			Lbyy						Lateral
51	MP1B	Mount Pipes	8			Lbyy						Lateral
52	MP2B	Mount Pipes	8			Lbyy						Lateral
53	MP3B	Mount Pipes	8			Lbyy						Lateral
54	MP4B	Mount Pipes	8			Lbyy						Lateral
55	M100	Top Corner ...	1.298			Lbyy						Lateral
56	M101	Top Corner ...	1.298			Lbyy						Lateral
57	M102	Top Corner ...	1.298			Lbyy						Lateral
58	M103	Kickers	4.537			Lbyy						Lateral
59	M104	Kickers	4.537			Lbyy						Lateral
60	M105	Kickers	4.537			Lbyy						Lateral

Joint Boundary Conditions

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
1	N46	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	N2	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	N24A	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
4	N162	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
5	N164	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
6	N166	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	N46	max	3625.566	4	595.045	8	3128.974	1	.156	1	2.408	2	.561	1
2		min	-6018.976	3	-34.962	3	-4516.233	2	-.63	6	-2.4	1	-.189	2
3	N2	max	2477.109	4	607.171	6	7528.497	1	.749	6	3.586	3	.52	3
4		min	-2475.246	3	-83.51	1	-4751.656	2	.057	1	-3.563	4	-.371	4
5	N24A	max	6666.616	4	599.303	7	2091.777	1	.339	4	1.321	1	-.006	9
6		min	-4277.509	3	-52.465	4	-3484.134	2	-.468	3	-1.298	2	-.768	5
7	N162	max	61.246	4	2915.586	5	172.341	2	0	11	0	2	0	5
8		min	-60.585	3	-120.305	2	-4330.868	5	0	1	0	5	0	2
9	N164	max	-50.608	3	2880.755	8	2144.062	8	0	4	0	3	0	3
10		min	-3701.06	8	21.708	3	3.806	3	0	3	0	4	0	4
11	N166	max	3697.039	7	2877.813	7	2142.084	7	0	1	0	1	0	1
12		min	65.27	4	32.882	4	12.253	4	0	2	0	2	0	2
13	Totals:	max	10430.792	4	9651.879	7	10415.343	1						
14		min	-10430.79	3	3537.848	4	-10415.34	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	4751.656	2	606.435	6	2475.697	4	.371	4	3.586	3	.749	6
2			min	-7528.497	1	-83.961	1	-2472.254	3	-.52	3	-3.563	4	.057	1
3		2	max	4751.656	2	565.812	6	2416.353	4	.371	4	.358	3	.181	1
4			min	-7528.497	1	-103.521	1	-2412.91	3	-.52	3	-.33	4	-.177	2
5		3	max	4745.367	2	-5.757	2	155.333	4	.39	4	.054	2	.739	1
6			min	-7456.546	1	-1196.71	5	-152.741	3	-.511	3	-.05	1	-.444	2
7		4	max	4502.866	2	1545.589	5	32.551	4	.39	4	.159	4	1.655	5
8			min	-4306.723	1	-191.168	2	-30.139	3	-.511	3	-.151	3	-.389	2
9		5	max	4502.866	2	1491.186	5	29.204	3	.39	4	.163	4	-.106	4
10			min	-4306.723	1	-215.209	2	-26.793	4	-.511	3	-.152	3	-.35	7
11	M2	1	max	425.971	3	-177.595	3	1393.034	2	-.043	2	.145	4	.039	6
12			min	-435.151	4	-640.535	5	-1375.742	1	-.272	5	-.145	3	-.01	1
13		2	max	927.172	3	-193.923	3	67.17	1	-.044	2	.314	2	.903	8
14			min	-917.43	4	-707.93	8	-101.604	2	-.272	5	-.329	1	.25	3
15		3	max	1283.76	4	821.036	5	102.998	3	.397	7	.504	2	1.935	5
16			min	-1272.706	3	-331.462	4	-79.421	4	-.125	4	-.538	1	.524	3
17		4	max	1283.76	4	763.607	5	102.998	3	.397	7	.476	2	.916	5
18			min	-1272.706	3	180.218	2	-74.853	4	.065	4	-.471	1	.2	2
19		5	max	576.57	4	691.601	5	1620.597	1	.388	7	.205	3	.04	4
20			min	-609.441	3	145.365	2	-1670.601	2	.072	4	-.196	4	-.053	3
21	M3	1	max	1393.078	2	640.179	5	431.123	4	.039	6	.145	3	.272	5
22			min	-1375.686	1	177.981	3	-430.137	3	-.01	1	-.145	4	.043	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
23		2	max	1393.078	2	638.928	5	427.44	4	.039	6	.122	3	.237	5
24			min	-1375.686	1	177.479	3	-426.454	3	-.01	1	-.122	4	.032	2
25		3	max	1393.078	2	637.676	5	423.756	4	.039	6	.099	3	.202	5
26			min	-1375.686	1	176.976	3	-422.77	3	-.01	1	-.099	4	.022	2
27		4	max	1393.078	2	636.425	5	420.073	4	.039	6	.089	1	.167	5
28			min	-1375.686	1	176.474	3	-419.087	3	-.01	1	-.092	2	.011	2
29		5	max	1393.078	2	635.174	5	416.389	4	.039	6	.083	1	.132	5
30			min	-1375.686	1	175.972	3	-415.403	3	-.01	1	-.086	2	0	2
31	M4	1	max	1261.378	2	635.52	5	777.342	4	.092	5	.083	1	.099	5
32			min	-1252.201	1	175.869	3	-785.254	3	.025	3	-.086	2	-.015	2
33		2	max	1260.163	2	634.566	5	775.237	4	.092	5	.107	1	.074	1
34			min	-1250.986	1	175.486	3	-783.149	3	.025	3	-.11	2	-.023	2
35		3	max	1258.947	2	633.613	5	773.132	4	.092	5	.132	1	.064	1
36			min	-1249.771	1	175.103	3	-781.044	3	.025	3	-.135	2	-.031	2
37		4	max	1257.732	2	632.659	5	771.027	4	.092	5	.156	1	.053	1
38			min	-1248.556	1	174.72	3	-778.939	3	.025	3	-.16	2	-.039	2
39		5	max	1256.517	2	631.706	5	768.922	4	.092	5	.181	1	.043	1
40			min	-1247.34	1	174.337	3	-776.835	3	.025	3	-.184	2	-.047	2
41	M5	1	max	1670.715	2	691.218	5	583.668	4	.053	3	.205	3	.388	7
42			min	-1620.49	1	145.992	2	-602.4	3	-.04	4	-.196	4	.072	4
43		2	max	1670.715	2	689.966	5	579.984	4	.053	3	.172	3	.352	7
44			min	-1620.49	1	145.489	2	-598.717	3	-.04	4	-.165	4	.057	4
45		3	max	1670.715	2	688.715	5	576.301	4	.053	3	.14	3	.315	7
46			min	-1620.49	1	144.987	2	-595.033	3	-.04	4	-.133	4	.042	4
47		4	max	1670.715	2	687.463	5	572.618	4	.053	3	.107	3	.279	7
48			min	-1620.49	1	144.484	2	-591.35	3	-.04	4	-.102	4	.026	4
49		5	max	1670.715	2	686.212	5	568.934	4	.053	3	.094	2	.243	7
50			min	-1620.49	1	143.982	2	-587.666	3	-.04	4	-.084	1	.011	4
51	M6	1	max	1490.198	2	686.5	5	1107.164	4	-.021	2	.094	2	.225	7
52			min	-1444.904	1	143.896	2	-1093.979	3	-.099	5	-.084	1	-.01	4
53		2	max	1488.983	2	685.547	5	1105.059	4	-.021	2	.125	2	.197	7
54			min	-1443.688	1	143.513	2	-1091.874	3	-.099	5	-.115	1	-.022	4
55		3	max	1487.767	2	684.593	5	1102.954	4	-.021	2	.156	2	.17	7
56			min	-1442.473	1	143.13	2	-1089.769	3	-.099	5	-.146	1	-.033	4
57		4	max	1486.552	2	683.64	5	1100.85	4	-.021	2	.187	2	.142	7
58			min	-1441.258	1	142.747	2	-1087.664	3	-.099	5	-.178	1	-.045	4
59		5	max	1485.337	2	682.687	5	1098.745	4	-.021	2	.218	2	.122	3
60			min	-1440.043	1	142.365	2	-1085.559	3	-.099	5	-.209	1	-.056	4
61	M7	1	max	539.308	1	529.806	5	530.163	2	.128	7	.28	1	.358	5
62			min	-500.547	2	-161.367	3	-516.104	1	-.017	4	-.287	2	-.057	2
63		2	max	539.308	1	527.63	5	524.55	2	.128	7	.237	1	.314	5
64			min	-500.547	2	-162.387	3	-510.491	1	-.017	4	-.243	2	-.045	2
65		3	max	539.308	1	525.453	5	518.937	2	.128	7	.195	1	.271	5
66			min	-500.547	2	-163.408	3	-504.878	1	-.017	4	-.2	2	-.032	2
67		4	max	539.308	1	523.277	5	513.325	2	.128	7	.153	1	.227	5
68			min	-500.547	2	-164.429	3	-499.266	1	-.017	4	-.157	2	-.019	2
69		5	max	539.308	1	521.1	5	507.712	2	.128	7	.112	1	.183	5
70			min	-500.547	2	-165.45	3	-493.653	1	-.017	4	-.114	2	-.006	2
71	M8	1	max	695.623	1	521.156	5	216.457	1	.033	3	.112	1	.19	5
72			min	-691.42	2	-165.004	3	-183.507	2	-.102	5	-.114	2	.037	4
73		2	max	694.807	1	520.425	5	216.928	1	.033	3	.118	1	.179	7
74			min	-690.603	2	-165.347	3	-183.979	2	-.102	5	-.119	2	.023	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
75		3	max	693.99	1	519.693	5	217.399	1	.033	3	.124	1	.169	7
76			min	-689.786	2	-165.69	3	-184.45	2	-.102	5	-.124	2	.009	4
77		4	max	693.174	1	518.962	5	217.871	1	.033	3	.13	1	.158	7
78			min	-688.97	2	-166.033	3	-184.922	2	-.102	5	-.13	2	-.005	4
79		5	max	692.357	1	518.231	5	218.342	1	.033	3	.136	1	.148	7
80			min	-688.153	2	-166.376	3	-185.393	2	-.102	5	-.135	2	-.019	4
81	M9	1	max	844.327	4	838.995	7	542.241	1	.018	3	.317	2	.505	5
82			min	-758.771	3	-141.103	4	-583.836	2	-.083	8	-.295	1	-.04	4
83		2	max	844.327	4	836.819	7	536.628	1	.018	3	.269	2	.435	5
84			min	-758.771	3	-142.124	4	-578.223	2	-.083	8	-.25	1	-.028	4
85		3	max	844.327	4	834.642	7	531.015	1	.018	3	.221	2	.365	5
86			min	-758.771	3	-143.145	4	-572.61	2	-.083	8	-.205	1	-.016	4
87		4	max	844.327	4	832.466	7	525.402	1	.018	3	.173	2	.296	5
88			min	-758.771	3	-144.166	4	-566.997	2	-.083	8	-.161	1	-.005	4
89		5	max	844.327	4	830.289	7	519.79	1	.018	3	.126	2	.227	5
90			min	-758.771	3	-145.187	4	-561.384	2	-.083	8	-.118	1	.008	4
91	M10	1	max	673.841	1	830.363	7	565.424	3	.162	7	.126	2	.172	5
92			min	-681.202	2	-143.665	4	-650.849	4	-.029	4	-.118	1	.056	2
93		2	max	673.025	1	829.631	7	564.01	3	.162	7	.128	2	.152	8
94			min	-680.386	2	-144.008	4	-649.435	4	-.029	4	-.121	1	.038	3
95		3	max	672.208	1	828.9	7	562.595	3	.162	7	.13	2	.134	8
96			min	-679.569	2	-144.351	4	-648.02	4	-.029	4	-.125	1	.019	3
97		4	max	671.392	1	828.169	7	561.181	3	.162	7	.131	2	.115	8
98			min	-678.752	2	-144.694	4	-646.606	4	-.029	4	-.128	1	0	3
99		5	max	670.575	1	827.438	7	559.766	3	.162	7	.133	2	.096	8
100			min	-677.936	2	-145.037	4	-645.191	4	-.029	4	-.132	1	-.02	3
101	M11	1	max	1750.239	1	17.051	8	38.539	4	0	4	.022	3	.013	2
102			min	-1804.565	2	-6.576	3	-27.885	3	0	7	-.029	4	-.025	1
103		2	max	1760.701	1	8.385	4	20.545	4	0	4	.008	2	0	2
104			min	-1815.028	2	-10.636	3	-9.892	3	0	7	-.006	1	-.009	5
105		3	max	1771.164	1	.589	4	16.725	5	0	4	.013	4	.016	1
106			min	-1825.49	2	-26.851	7	-2.409	2	0	7	-.011	3	-.006	2
107		4	max	1781.626	1	-6.177	4	26.095	3	0	4	.006	4	.056	5
108			min	-1835.953	2	-49.642	7	-15.442	4	0	7	-.014	3	0	2
109		5	max	1792.089	1	-10.896	4	44.089	3	0	4	-.004	2	.116	7
110			min	-1846.415	2	-66.138	7	-33.435	4	0	7	-.045	8	-.012	4
111	M12	1	max	1930.049	1	37.628	3	24.709	7	0	4	.023	4	.028	1
112			min	-2019.312	2	-30.662	4	-3.495	4	0	3	-.032	3	-.023	2
113		2	max	1940.511	1	20.599	1	10.84	3	0	4	.01	2	.01	5
114			min	-2029.774	2	-13.745	2	-7.556	4	0	3	-.007	1	-.002	2
115		3	max	1950.974	1	14.516	1	3.04	3	0	4	.014	3	.01	2
116			min	-2040.237	2	-7.661	2	-19.113	8	0	3	-.009	4	-.013	1
117		4	max	1961.436	1	23.319	4	-3.729	3	0	4	.008	3	.012	2
118			min	-2050.699	2	-16.352	3	-41.911	8	0	3	-.013	4	-.036	5
119		5	max	1971.899	1	41.312	4	-8.448	3	0	4	-.005	2	.021	3
120			min	-2061.162	2	-34.346	3	-58.408	8	0	3	-.038	7	-.086	8
121	M13	1	max	1440.482	1	135.56	2	2133.307	2	.223	7	.294	2	.414	5
122			min	-1420.71	2	-595.555	5	-2062.755	1	-.013	4	-.255	1	-.051	2
123		2	max	1440.482	1	135.534	2	2133.307	2	.223	7	.472	2	.463	5
124			min	-1420.71	2	-595.634	5	-2062.755	1	-.013	4	-.427	1	-.062	2
125		3	max	1444.674	1	897.031	5	2243.97	1	.223	7	.706	2	.696	5
126			min	-1420.71	2	-113.133	4	-2369.56	2	-.119	4	-.642	1	-.073	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
127		4	max	1444.674	1	896.952	5	2243.97	1	.02	3	.508	2	.622	5
128			min	-1418.329	2	-113.159	4	-2369.56	2	-.156	8	-.455	1	-.023	2
129		5	max	1444.674	1	896.874	5	2243.97	1	.02	3	.311	2	.547	5
130			min	-1418.329	2	-113.184	4	-2369.56	2	-.156	8	-.268	1	-.017	2
131	M14	1	max	647.562	4	827.431	7	671.722	1	.02	3	.133	2	.162	7
132			min	-557.258	3	-146.328	4	-677.426	2	-.096	8	-.132	1	-.029	4
133		2	max	647.562	4	827.431	7	671.722	1	.02	3	.1	2	.122	7
134			min	-557.258	3	-146.328	4	-677.426	2	-.096	8	-.099	1	-.022	4
135		3	max	647.562	4	827.431	7	671.722	1	.02	3	.066	2	.081	7
136			min	-557.258	3	-146.328	4	-677.426	2	-.096	8	-.066	1	-.014	4
137		4	max	647.562	4	827.431	7	671.722	1	.02	3	.033	2	.041	7
138			min	-557.258	3	-146.328	4	-677.426	2	-.096	8	-.033	1	-.007	4
139		5	max	647.562	4	827.431	7	671.722	1	.02	3	0	1	0	8
140			min	-557.258	3	-146.328	4	-677.426	2	-.096	8	0	3	0	1
141	M15	1	max	1091.765	4	682.199	5	1431.317	1	.122	3	.218	2	.099	5
142			min	-1092.328	3	142.284	2	-1495.101	2	-.056	4	-.209	1	.021	2
143		2	max	1091.765	4	682.199	5	1431.317	1	.122	3	.164	2	.075	5
144			min	-1092.328	3	142.284	2	-1495.101	2	-.056	4	-.157	1	.016	2
145		3	max	1091.765	4	682.199	5	1431.317	1	.122	3	.109	2	.05	5
146			min	-1092.328	3	142.284	2	-1495.101	2	-.056	4	-.104	1	.01	2
147		4	max	1091.765	4	682.199	5	1431.317	1	.122	3	.055	2	.025	5
148			min	-1092.328	3	142.284	2	-1495.101	2	-.056	4	-.052	1	.005	2
149		5	max	1091.765	4	682.199	5	1431.317	1	.122	3	0	4	0	7
150			min	-1092.328	3	142.284	2	-1495.101	2	-.056	4	0	1	0	3
151	M16	1	max	223.004	1	518.343	5	686.79	2	.148	7	.136	1	.102	5
152			min	-180.678	2	-166.56	3	-694.018	1	-.019	4	-.135	2	-.033	3
153		2	max	223.004	1	518.343	5	686.79	2	.148	7	.102	1	.076	5
154			min	-180.678	2	-166.56	3	-694.018	1	-.019	4	-.101	2	-.025	3
155		3	max	223.004	1	518.343	5	686.79	2	.148	7	.068	1	.051	5
156			min	-180.678	2	-166.56	3	-694.018	1	-.019	4	-.067	2	-.016	3
157		4	max	223.004	1	518.343	5	686.79	2	.148	7	.034	1	.025	5
158			min	-180.678	2	-166.56	3	-694.018	1	-.019	4	-.034	2	-.008	3
159		5	max	223.004	1	518.343	5	686.79	2	.148	7	0	3	0	4
160			min	-180.678	2	-166.56	3	-694.018	1	-.019	4	0	4	0	7
161	M17	1	max	772.955	3	631.169	5	1263.017	2	.047	2	.181	1	.092	5
162			min	-772.63	4	174.685	3	-1241.182	1	-.043	1	-.184	2	.025	3
163		2	max	772.955	3	631.169	5	1263.017	2	.047	2	.136	1	.069	5
164			min	-772.63	4	174.685	3	-1241.182	1	-.043	1	-.138	2	.019	3
165		3	max	772.955	3	631.169	5	1263.017	2	.047	2	.091	1	.046	5
166			min	-772.63	4	174.685	3	-1241.182	1	-.043	1	-.092	2	.013	3
167		4	max	772.955	3	631.169	5	1263.017	2	.047	2	.045	1	.023	5
168			min	-772.63	4	174.685	3	-1241.182	1	-.043	1	-.046	2	.006	3
169		5	max	772.955	3	631.169	5	1263.017	2	.047	2	0	3	0	8
170			min	-772.63	4	174.685	3	-1241.182	1	-.043	1	0	4	0	7
171	M18	1	max	4456.296	3	598.538	7	1370.923	2	.291	3	1.321	1	.742	7
172			min	-7229.601	4	-52.96	4	-1372.779	1	-.44	4	-1.298	2	.058	9
173		2	max	4430.6	3	557.914	7	1326.415	2	.291	3	1.231	3	.167	4
174			min	-7203.905	4	-72.519	4	-1328.271	1	-.44	4	-1.199	4	-.164	3
175		3	max	4388.553	3	-59.833	3	111.97	2	.244	2	.234	3	.668	4
176			min	-7092.992	4	-1183.744	8	-109.787	1	-.366	1	-.228	4	-.372	3
177		4	max	4332.37	3	1523.818	8	22.387	3	.244	2	.301	3	1.626	8
178			min	-4130.689	4	-102.558	3	-20.59	4	-.367	1	-.29	4	-.271	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
179		5	max	4306.673	3	1469.415	8	30.119	1	.244	2	.321	3	-.114	2
180			min	-4104.992	4	-126.599	3	-26.674	2	-.367	1	-.307	4	-.349	8
181	M19	1	max	153.963	1	-172.194	1	1516.022	1	-.053	1	.054	3	.037	7
182			min	-149.097	2	-642.609	6	-1495.138	2	-.269	6	-.052	4	-.012	9
183		2	max	1065.35	1	-197.268	1	211.024	4	-.053	1	.44	1	.904	6
184			min	-1041.048	2	-708.499	6	-247.999	3	-.27	6	-.454	2	.257	1
185		3	max	1364.578	3	818.185	8	251.251	4	.395	8	1.003	3	1.929	6
186			min	-1329.585	4	-259.256	3	-204.675	3	-.136	2	-1.032	4	.527	1
187		4	max	1339.565	3	760.756	8	207.927	4	.395	8	.744	3	.915	6
188			min	-1304.571	4	193.127	3	-179.385	3	.087	3	-.737	4	.2	1
189		5	max	219.174	2	688.611	8	2159.565	4	.389	8	.108	1	.024	2
190			min	-239.108	1	159.479	3	-2209.704	3	.079	3	-.097	2	-.038	1
191	M20	1	max	1515.922	1	642.321	6	150.509	2	.037	7	.052	4	.269	6
192			min	-1495.243	2	172.567	1	-152.527	1	-.012	9	-.054	3	.053	1
193		2	max	1514.327	1	641.069	6	147.747	2	.037	7	.05	4	.234	6
194			min	-1493.648	2	172.064	1	-149.765	1	-.012	9	-.052	3	.044	1
195		3	max	1512.732	1	639.818	6	144.984	2	.037	7	.048	4	.199	6
196			min	-1492.053	2	171.562	1	-147.002	1	-.012	9	-.05	3	.034	1
197		4	max	1511.137	1	638.567	6	142.221	2	.037	7	.046	4	.164	6
198			min	-1490.458	2	171.059	1	-144.24	1	-.012	9	-.049	3	.025	1
199		5	max	1509.542	1	637.315	6	139.459	2	.037	7	.045	4	.129	6
200			min	-1488.863	2	170.557	1	-141.477	1	-.012	9	-.047	3	.016	1
201	M21	1	max	1235.846	1	637.705	6	867.818	2	.092	6	.045	4	.096	6
202			min	-1220.37	2	170.089	1	-874.499	1	.025	1	-.047	3	.003	3
203		2	max	1235.846	1	636.752	6	865.011	2	.092	6	.07	2	.083	9
204			min	-1220.37	2	169.706	1	-871.693	1	.025	1	-.073	1	-.005	3
205		3	max	1235.846	1	635.799	6	862.205	2	.092	6	.106	2	.071	9
206			min	-1220.37	2	169.323	1	-868.886	1	.025	1	-.109	1	-.014	3
207		4	max	1235.846	1	634.845	6	859.398	2	.092	6	.142	2	.059	9
208			min	-1220.37	2	168.941	1	-866.08	1	.025	1	-.145	1	-.022	3
209		5	max	1235.846	1	633.892	6	856.592	2	.092	6	.177	2	.047	9
210			min	-1220.37	2	168.558	1	-863.273	1	.025	1	-.181	1	-.03	3
211	M22	1	max	2209.555	3	688.146	8	218.854	2	.038	1	.108	1	.389	8
212			min	-2159.706	4	160.211	3	-239.612	1	-.024	2	-.097	2	.079	3
213		2	max	2207.96	3	686.894	8	216.092	2	.038	1	.095	1	.352	8
214			min	-2158.111	4	159.709	3	-236.85	1	-.024	2	-.085	2	.07	3
215		3	max	2206.365	3	685.643	8	213.329	2	.038	1	.084	3	.314	8
216			min	-2156.516	4	159.206	3	-234.087	1	-.024	2	-.073	2	.061	3
217		4	max	2204.77	3	684.392	8	210.567	2	.038	1	.087	3	.277	8
218			min	-2154.921	4	158.704	3	-231.325	1	-.024	2	-.074	4	.053	3
219		5	max	2203.175	3	683.14	8	207.804	2	.038	1	.089	3	.239	8
220			min	-2153.326	4	158.201	3	-228.562	1	-.024	2	-.077	4	.044	3
221	M23	1	max	1882.145	3	683.532	8	1127.866	3	-.023	3	.089	3	.219	8
222			min	-1840.177	4	157.984	3	-1135.669	4	-.099	8	-.077	4	.027	2
223		2	max	1880.93	3	682.579	8	1125.761	3	-.023	3	.136	3	.191	8
224			min	-1838.962	4	157.601	3	-1133.564	4	-.099	8	-.124	4	.014	2
225		3	max	1879.714	3	681.625	8	1123.656	3	-.023	3	.183	3	.163	5
226			min	-1837.747	4	157.218	3	-1131.459	4	-.099	8	-.171	4	.002	2
227		4	max	1878.499	3	680.672	8	1121.551	3	-.023	3	.229	3	.136	5
228			min	-1836.531	4	156.835	3	-1129.355	4	-.099	8	-.219	4	-.011	2
229		5	max	1877.284	3	679.718	8	1119.446	3	-.023	3	.276	3	.108	5
230			min	-1835.316	4	156.453	3	-1127.25	4	-.099	8	-.266	4	-.023	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
231	M24	1	max	505.552	4	704.382	9	349.083	3	.125	5	.182	4	.405	9
232			min	-462.085	3	-218.718	1	-335.922	4	-.003	2	-.189	3	-.075	1
233		2	max	503.121	4	703.361	9	344.874	3	.125	5	.154	4	.346	9
234			min	-459.654	3	-219.739	1	-331.713	4	-.003	2	-.16	3	-.056	1
235		3	max	500.691	4	702.34	9	340.664	3	.125	5	.127	4	.287	9
236			min	-457.224	3	-220.76	1	-327.503	4	-.003	2	-.131	3	-.038	1
237		4	max	498.261	4	701.319	9	336.454	3	.125	5	.1	4	.229	9
238			min	-454.793	3	-221.78	1	-323.293	4	-.003	2	-.103	3	-.019	1
239		5	max	495.83	4	700.298	9	332.245	3	.125	5	.073	4	.182	6
240			min	-452.363	3	-222.801	1	-319.084	4	-.003	2	-.075	3	0	1
241	M25	1	max	523.95	4	700.318	9	268.495	4	.044	1	.073	4	.192	8
242			min	-514.202	3	-223.228	1	-227.031	3	-.137	9	-.075	3	.03	3
243		2	max	523.95	4	699.975	9	268.495	4	.044	1	.08	4	.179	8
244			min	-514.202	3	-223.571	1	-227.031	3	-.137	9	-.082	3	.029	3
245		3	max	523.95	4	699.632	9	268.495	4	.044	1	.088	4	.165	8
246			min	-514.202	3	-223.914	1	-227.031	3	-.137	9	-.088	3	.028	3
247		4	max	523.95	4	699.289	9	268.495	4	.044	1	.095	4	.155	5
248			min	-514.202	3	-224.257	1	-227.031	3	-.137	9	-.094	3	.013	2
249		5	max	523.95	4	698.946	9	268.495	4	.044	1	.103	4	.145	5
250			min	-514.202	3	-224.6	1	-227.031	3	-.137	9	-.101	3	-.002	2
251	M26	1	max	746.754	2	859.546	8	544.155	4	.029	4	.322	3	.514	8
252			min	-673.252	1	-206.262	3	-589.37	3	-.096	9	-.297	4	-.071	3
253		2	max	744.324	2	857.37	8	539.945	4	.029	4	.273	3	.442	8
254			min	-670.821	1	-207.282	3	-585.16	3	-.096	9	-.252	4	-.053	3
255		3	max	741.894	2	855.193	8	535.735	4	.029	4	.225	3	.371	8
256			min	-668.391	1	-208.303	3	-580.951	3	-.096	9	-.207	4	-.036	3
257		4	max	739.463	2	853.017	8	531.526	4	.029	4	.176	3	.3	8
258			min	-665.96	1	-209.324	3	-576.741	3	-.096	9	-.162	4	-.019	3
259		5	max	737.033	2	850.841	8	527.316	4	.029	4	.128	3	.229	8
260			min	-663.53	1	-210.345	3	-572.531	3	-.096	9	-.118	4	-.001	3
261	M27	1	max	579.612	2	850.662	8	436.245	1	.166	8	.128	3	.172	6
262			min	-575.338	1	-210.957	3	-514.447	2	-.042	3	-.118	4	.052	4
263		2	max	578.795	2	849.931	8	435.774	1	.166	8	.119	3	.152	7
264			min	-574.521	1	-211.3	3	-513.976	2	-.042	3	-.111	4	.03	4
265		3	max	577.979	2	849.199	8	435.302	1	.166	8	.11	3	.134	7
266			min	-573.705	1	-211.643	3	-513.504	2	-.042	3	-.104	4	.009	4
267		4	max	577.162	2	848.468	8	434.831	1	.166	8	.101	3	.121	9
268			min	-572.888	1	-211.986	3	-513.033	2	-.042	3	-.099	2	-.012	4
269		5	max	576.346	2	847.737	8	434.359	1	.166	8	.112	1	.111	9
270			min	-572.071	1	-212.329	3	-512.561	2	-.042	3	-.114	2	-.033	4
271	M28	1	max	1619.871	2	16.59	7	61.013	2	0	9	.034	1	.033	1
272			min	-1676.415	1	-3.249	4	-50.439	1	0	5	-.041	2	-.045	2
273		2	max	1619.797	2	5.012	3	36.936	2	0	9	.005	1	.01	9
274			min	-1676.341	1	-7.309	4	-26.362	1	0	5	-.003	2	-.009	6
275		3	max	1619.723	2	-2.783	3	16.688	6	0	9	.012	2	.015	4
276			min	-1676.267	1	-26.392	8	-2.285	1	0	5	-.01	1	-.005	3
277		4	max	1619.649	2	-9.55	3	21.792	1	0	9	.006	3	.055	8
278			min	-1676.193	1	-49.183	8	-11.218	2	0	5	-.014	4	.003	3
279		5	max	1619.575	2	-14.269	3	45.868	1	0	9	0	1	.11	5
280			min	-1676.119	1	-65.679	8	-35.295	2	0	5	-.047	6	.014	3
281	M29	1	max	2339.277	4	55.329	4	24.545	5	0	3	.033	3	.051	4
282			min	-2427.493	3	-48.557	3	-4.197	9	0	4	-.042	4	-.047	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
283		2	max	2349.666	4	37.207	4	10.073	5	0	3	.011	3	.014	4
284			min	-2437.882	3	-30.435	3	-8.257	9	0	4	-.008	4	-.009	3
285		3	max	2360.054	4	19.085	4	1.396	1	0	3	.011	5	.01	3
286			min	-2448.27	3	-12.313	3	-18.949	6	0	4	-.006	2	-.02	9
287		4	max	2370.443	4	11.904	2	-5.373	1	0	3	.007	1	.01	3
288			min	-2458.659	3	-4.954	1	-41.747	6	0	4	-.012	2	-.042	9
289		5	max	2380.831	4	23.931	3	-10.092	1	0	3	-.003	3	.006	1
290			min	-2469.047	3	-17.159	4	-58.243	6	0	4	-.039	8	-.082	6
291	M30	1	max	1186.688	4	196.41	1	1754.019	1	.216	5	.199	3	.42	9
292			min	-1169.698	3	-719.842	9	-1687.866	2	.026	2	-.16	4	-.055	1
293		2	max	1186.688	4	196.384	1	1754.019	1	.216	5	.339	1	.48	9
294			min	-1169.698	3	-719.868	9	-1687.866	2	.026	2	-.295	2	-.071	1
295		3	max	1187.296	4	918.056	8	2611.312	4	.216	5	.782	3	.708	8
296			min	-1169.698	3	-719.893	9	-2735.22	3	-.151	9	-.716	4	-.098	3
297		4	max	1187.296	4	917.978	8	2611.312	4	-.009	4	.554	3	.632	8
298			min	-1155.285	3	-192.742	3	-2735.22	3	-.151	9	-.498	4	-.082	3
299		5	max	1187.296	4	917.899	8	2611.312	4	-.009	4	.326	3	.555	8
300			min	-1155.285	3	-192.768	3	-2735.22	3	-.151	9	-.28	4	-.066	3
301	M31	1	max	514.528	2	847.923	8	578.375	2	.033	4	.112	1	.166	8
302			min	-432.121	1	-212.407	3	-570.149	1	-.111	9	-.114	2	-.042	3
303		2	max	514.528	2	847.923	8	578.375	2	.033	4	.084	1	.125	8
304			min	-432.121	1	-212.407	3	-570.149	1	-.111	9	-.085	2	-.031	3
305		3	max	514.528	2	847.923	8	578.375	2	.033	4	.056	1	.083	8
306			min	-432.121	1	-212.407	3	-570.149	1	-.111	9	-.057	2	-.021	3
307		4	max	514.528	2	847.923	8	578.375	2	.033	4	.028	1	.042	8
308			min	-432.121	1	-212.407	3	-570.149	1	-.111	9	-.028	2	-.01	3
309		5	max	514.528	2	847.923	8	578.375	2	.033	4	0	4	0	3
310			min	-432.121	1	-212.407	3	-570.149	1	-.111	9	0	1	0	4
311	M32	1	max	1137.959	3	678.995	8	1820.934	4	.108	5	.276	3	.099	8
312			min	-1110.946	4	156.721	3	-1893.396	3	-.023	2	-.266	4	.023	3
313		2	max	1137.959	3	678.995	8	1820.934	4	.108	5	.207	3	.074	8
314			min	-1110.946	4	156.721	3	-1893.396	3	-.023	2	-.199	4	.017	3
315		3	max	1137.959	3	678.995	8	1820.934	4	.108	5	.138	3	.05	8
316			min	-1110.946	4	156.721	3	-1893.396	3	-.023	2	-.133	4	.011	3
317		4	max	1137.959	3	678.995	8	1820.934	4	.108	5	.069	3	.025	8
318			min	-1110.946	4	156.721	3	-1893.396	3	-.023	2	-.066	4	.006	3
319		5	max	1137.959	3	678.995	8	1820.934	4	.108	5	0	4	0	4
320			min	-1110.946	4	156.721	3	-1893.396	3	-.023	2	0	3	0	8
321	M33	1	max	270.031	4	699.002	9	513.4	3	.145	5	.103	4	.137	9
322			min	-225.468	3	-224.446	1	-524.885	4	-.002	2	-.101	3	-.044	1
323		2	max	270.031	4	699.002	9	513.4	3	.145	5	.077	4	.103	9
324			min	-225.468	3	-224.446	1	-524.885	4	-.002	2	-.076	3	-.033	1
325		3	max	270.031	4	699.002	9	513.4	3	.145	5	.052	4	.069	9
326			min	-225.468	3	-224.446	1	-524.885	4	-.002	2	-.05	3	-.022	1
327		4	max	270.031	4	699.002	9	513.4	3	.145	5	.026	4	.034	9
328			min	-225.468	3	-224.446	1	-524.885	4	-.002	2	-.025	3	-.011	1
329		5	max	270.031	4	699.002	9	513.4	3	.145	5	0	3	0	9
330			min	-225.468	3	-224.446	1	-524.885	4	-.002	2	0	1	0	4
331	M34	1	max	867.311	1	633.051	6	1241.008	1	.03	3	.177	2	.092	6
332			min	-852.757	2	169.648	1	-1215.46	2	-.047	9	-.181	1	.025	1
333		2	max	867.311	1	633.051	6	1241.008	1	.03	3	.133	2	.069	6
334			min	-852.757	2	169.648	1	-1215.46	2	-.047	9	-.136	1	.019	1

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
335		3	max	867.311	1	633.051	6	1241.008	1	.03	3	.089	2	.046	6
336			min	-852.757	2	169.648	1	-1215.46	2	-.047	9	-.09	1	.012	1
337		4	max	867.311	1	633.051	6	1241.008	1	.03	3	.044	2	.023	6
338			min	-852.757	2	169.648	1	-1215.46	2	-.047	9	-.045	1	.006	1
339		5	max	867.311	1	633.051	6	1241.008	1	.03	3	0	4	0	6
340			min	-852.757	2	169.648	1	-1215.46	2	-.047	9	0	2	0	5
341	M35	1	max	4057.564	4	594.262	8	2120.954	1	.416	1	2.408	2	.739	8
342			min	-6827.016	3	-35.437	3	-2105.869	2	-.563	2	-2.4	1	.07	10
343		2	max	4031.867	4	553.638	8	2076.446	1	.416	1	.943	3	.153	3
344			min	-6801.319	3	-54.997	3	-2061.361	2	-.563	2	-.926	4	-.149	4
345		3	max	4013.887	4	-60.748	4	131.84	1	.355	1	.176	3	.657	3
346			min	-6717.624	3	-1183.327	7	-127.514	2	-.477	2	-.174	4	-.359	4
347		4	max	3974.625	4	1521.38	7	36.24	1	.355	1	.253	1	1.623	7
348			min	-3770.048	3	-92.078	4	-33.749	2	-.477	2	-.243	2	-.259	4
349		5	max	3948.928	4	1466.977	7	10.759	2	.355	1	.272	1	-.11	1
350			min	-3744.351	3	-116.119	4	-8.268	1	-.477	2	-.258	2	-.35	6
351	M36	1	max	263.466	2	-186.019	4	1628.519	4	-.041	4	.141	4	.039	8
352			min	-265.261	1	-641.428	7	-1614.005	3	-.272	7	-.137	3	-.01	3
353		2	max	842.034	4	-217.471	4	130.649	2	-.046	4	.588	4	.899	7
354			min	-809.418	3	-705.841	7	-165.631	1	-.271	7	-.6	3	.287	2
355		3	max	1758.366	1	819.074	7	186.296	2	.398	6	.746	4	1.931	7
356			min	-1733.887	2	-363.53	10	-151.19	1	-.097	1	-.8	3	.585	4
357		4	max	1733.353	1	761.645	7	194.963	4	.398	6	.537	1	.915	7
358			min	-1708.874	2	191.91	4	-162.974	3	.064	1	-.531	2	.212	4
359		5	max	451.649	1	689.04	7	2122.359	2	.391	6	.11	2	.027	1
360			min	-474.254	2	158.813	4	-2183.613	1	.064	1	-.099	1	-.04	2
361	M37	1	max	1628.846	4	641.011	7	265.756	1	.039	8	.137	3	.272	7
362			min	-1613.621	3	186.462	4	-263.021	2	-.01	3	-.141	4	.041	4
363		2	max	1627.251	4	639.759	7	262.993	1	.039	8	.128	3	.237	7
364			min	-1612.026	3	185.959	4	-260.259	2	-.01	3	-.132	4	.031	4
365		3	max	1625.656	4	638.508	7	260.231	1	.039	8	.12	3	.202	7
366			min	-1610.431	3	185.457	4	-257.496	2	-.01	3	-.124	4	.021	4
367		4	max	1624.061	4	637.257	7	257.468	1	.039	8	.111	3	.167	7
368			min	-1608.836	3	184.954	4	-254.734	2	-.01	3	-.115	4	.011	4
369		5	max	1622.466	4	636.005	7	254.706	1	.039	8	.102	3	.132	7
370			min	-1607.241	3	184.452	4	-251.971	2	-.01	3	-.106	4	0	4
371	M38	1	max	1479.811	4	636.42	7	672.334	3	.092	7	.102	3	.099	7
372			min	-1477.289	3	183.391	4	-664.846	4	.027	4	-.106	4	-.015	4
373		2	max	1478.596	4	635.466	7	670.229	3	.092	7	.13	3	.074	3
374			min	-1476.073	3	183.008	4	-662.741	4	.027	4	-.134	4	-.022	4
375		3	max	1477.381	4	634.513	7	668.124	3	.092	7	.158	3	.063	3
376			min	-1474.858	3	182.625	4	-660.637	4	.027	4	-.162	4	-.03	4
377		4	max	1476.166	4	633.559	7	666.019	3	.092	7	.186	3	.052	3
378			min	-1473.643	3	182.242	4	-658.532	4	.027	4	-.189	4	-.038	4
379		5	max	1474.951	4	632.606	7	663.914	3	.092	7	.213	3	.041	3
380			min	-1472.428	3	181.859	4	-656.427	4	.027	4	-.217	4	-.045	4
381	M39	1	max	2183.499	1	688.893	7	455.178	1	.04	2	.11	2	.391	6
382			min	-2122.462	2	159.261	4	-470.206	2	-.027	1	-.099	1	.064	1
383		2	max	2181.904	1	687.641	7	452.416	1	.04	2	.085	2	.354	6
384			min	-2120.867	2	158.759	4	-467.444	2	-.027	1	-.075	1	.052	1
385		3	max	2180.309	1	686.39	7	449.653	1	.04	2	.059	2	.317	6
386			min	-2119.272	2	158.256	4	-464.681	2	-.027	1	-.05	1	.04	1

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
387		4	max	2178.714	1	685.139	7	446.89	1	.04	2	.049	4	.28	6
388			min	-2117.677	2	157.754	4	-461.919	2	-.027	1	-.04	3	.028	1
389		5	max	2177.119	1	683.887	7	444.128	1	.04	2	.049	4	.243	6
390			min	-2116.082	2	157.251	4	-459.156	2	-.027	1	-.041	3	.016	1
391	M40	1	max	1665.141	1	684.039	7	1471.695	1	-.023	4	.049	4	.224	6
392			min	-1600.979	2	157.1	4	-1456.582	2	-.099	7	-.041	3	0	1
393		2	max	1665.141	1	683.086	7	1468.889	1	-.023	4	.072	4	.196	6
394			min	-1600.979	2	156.717	4	-1453.775	2	-.099	7	-.063	3	-.008	1
395		3	max	1665.141	1	682.132	7	1466.083	1	-.023	4	.121	1	.168	6
396			min	-1600.979	2	156.334	4	-1450.969	2	-.099	7	-.112	2	-.017	1
397		4	max	1665.141	1	681.179	7	1463.276	1	-.023	4	.182	1	.14	6
398			min	-1600.979	2	155.952	4	-1448.163	2	-.099	7	-.173	2	-.026	1
399		5	max	1665.141	1	680.225	7	1460.47	1	-.023	4	.243	1	.112	6
400			min	-1600.979	2	155.569	4	-1445.356	2	-.099	7	-.233	2	-.035	1
401	M41	1	max	457.935	3	565.974	3	592.856	4	.126	6	.316	3	.364	7
402			min	-420.912	4	-221.474	4	-576.154	3	-.009	1	-.324	4	-.086	4
403		2	max	460.365	3	564.953	3	588.646	4	.126	6	.268	3	.319	7
404			min	-423.342	4	-222.495	4	-571.945	3	-.009	1	-.275	4	-.068	4
405		3	max	462.796	3	563.933	3	584.437	4	.126	6	.22	3	.274	7
406			min	-425.773	4	-223.516	4	-567.735	3	-.009	1	-.226	4	-.049	4
407		4	max	465.226	3	562.912	3	580.227	4	.126	6	.173	3	.229	7
408			min	-428.203	4	-224.537	4	-563.525	3	-.009	1	-.177	4	-.031	4
409		5	max	467.656	3	561.891	3	576.017	4	.126	6	.126	3	.184	7
410			min	-430.633	4	-225.558	4	-559.316	3	-.009	1	-.129	4	-.012	4
411	M42	1	max	715.875	3	560.693	3	216.716	2	.045	4	.126	3	.193	6
412			min	-716.336	4	-226.857	4	-171.214	1	-.11	3	-.129	4	.025	1
413		2	max	715.059	3	560.35	3	216.245	2	.045	4	.13	3	.181	6
414			min	-715.519	4	-227.2	4	-170.743	1	-.11	3	-.132	4	.016	1
415		3	max	714.242	3	560.007	3	215.773	2	.045	4	.133	3	.169	6
416			min	-714.703	4	-227.543	4	-170.271	1	-.11	3	-.134	4	.008	1
417		4	max	713.426	3	559.664	3	215.302	2	.045	4	.137	3	.157	6
418			min	-713.886	4	-227.886	4	-169.8	1	-.11	3	-.137	4	-.001	1
419		5	max	712.609	3	559.321	3	214.83	2	.045	4	.14	3	.145	6
420			min	-713.07	4	-228.229	4	-169.328	1	-.11	3	-.14	4	-.01	1
421	M43	1	max	628.33	3	867.744	6	326.139	3	.036	2	.198	4	.517	6
422			min	-559.561	4	-270.565	1	-365.465	4	-.089	1	-.177	3	-.102	1
423		2	max	625.9	3	865.568	6	321.929	3	.036	2	.168	4	.445	6
424			min	-557.131	4	-271.586	1	-361.255	4	-.089	1	-.15	3	-.08	1
425		3	max	623.47	3	863.392	6	317.72	3	.036	2	.138	4	.373	6
426			min	-554.701	4	-272.606	1	-357.045	4	-.089	1	-.123	3	-.057	1
427		4	max	621.039	3	861.215	6	313.51	3	.036	2	.108	4	.301	6
428			min	-552.27	4	-273.627	1	-352.836	4	-.089	1	-.097	3	-.034	1
429		5	max	618.609	3	859.039	6	309.3	3	.036	2	.079	4	.23	6
430			min	-549.84	4	-274.648	1	-348.626	4	-.089	1	-.071	3	-.012	1
431	M44	1	max	576.782	3	859.021	6	505.602	2	.168	6	.079	4	.173	7
432			min	-577.335	4	-273.456	1	-593.293	1	-.054	1	-.071	3	.05	4
433		2	max	576.782	3	858.29	6	503.717	2	.168	6	.088	4	.153	5
434			min	-577.335	4	-273.799	1	-591.407	1	-.054	1	-.082	3	.028	2
435		3	max	576.782	3	857.558	6	501.831	2	.168	6	.096	4	.135	5
436			min	-577.335	4	-274.142	1	-589.521	1	-.054	1	-.092	3	.005	2
437		4	max	576.782	3	856.827	6	499.945	2	.168	6	.105	4	.117	5
438			min	-577.335	4	-274.485	1	-587.635	1	-.054	1	-.103	3	-.018	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
439		5	max	576.782	3	856.096	6	498.059	2	.168	6	.113	4	.102	1
440			min	-577.335	4	-274.828	1	-585.749	1	-.054	1	-.113	3	-.041	2
441	M45	1	max	1793.917	3	17.257	5	55.046	3	0	3	.029	4	.039	4
442			min	-1843.202	4	-7.441	2	-44.463	4	0	8	-.037	3	-.05	3
443		2	max	1804.305	3	9.228	1	36.924	3	0	3	.008	4	.006	4
444			min	-1853.59	4	-11.501	2	-26.342	4	0	8	-.006	3	-.011	3
445		3	max	1814.693	3	1.432	1	18.802	3	0	3	.01	1	.023	10
446			min	-1863.979	4	-27.058	6	-8.22	4	0	8	-.008	2	-.009	4
447		4	max	1825.082	3	-5.334	1	17.267	6	0	3	.007	1	.056	7
448			min	-1874.367	4	-49.85	6	-4.719	1	0	8	-.016	2	-.005	1
449		5	max	1835.47	3	-10.053	1	28.024	4	0	3	-.002	4	.114	6
450			min	-1884.756	4	-66.345	6	-17.442	3	0	8	-.046	7	-.004	1
451	M46	1	max	2307.322	2	59.21	2	24.147	8	0	1	.037	1	.041	2
452			min	-2407.296	1	-52.363	1	.583	3	0	2	-.045	2	-.037	1
453		2	max	2307.248	2	35.133	2	9.675	8	0	1	.007	1	.01	6
454			min	-2407.222	1	-28.286	1	-3.478	3	0	2	-.005	2	-.01	10
455		3	max	2307.174	2	11.545	6	-.954	4	0	1	.013	2	.008	4
456			min	-2407.148	1	-4.209	1	-18.548	7	0	2	-.009	1	-.011	3
457		4	max	2307.1	2	19.868	1	-7.722	4	0	1	.007	2	.004	4
458			min	-2407.073	1	-13.02	2	-41.347	7	0	2	-.012	1	-.034	7
459		5	max	2307.026	2	43.945	1	-12.441	4	0	1	-.001	1	-.002	2
460			min	-2406.999	1	-37.097	2	-57.843	7	0	2	-.04	6	-.081	5
461	M47	1	max	1367.639	3	205.803	4	2237.917	4	.222	6	.337	4	.419	7
462			min	-1341.911	4	-609.388	7	-2169.934	3	-.009	1	-.297	3	-.078	4
463		2	max	1367.639	3	205.778	4	2237.917	4	.222	6	.523	4	.47	7
464			min	-1341.911	4	-609.467	7	-2169.934	3	-.009	1	-.477	3	-.096	4
465		3	max	1367.639	3	924.598	6	2237.917	4	.222	6	.71	4	.71	6
466			min	-1342.02	4	-594.387	3	-2323.684	1	-.119	1	-.658	3	-.113	4
467		4	max	1361.04	3	924.519	6	2201.437	2	.021	2	.349	1	.633	6
468			min	-1342.02	4	-247.822	1	-2323.684	1	-.154	5	-.299	2	-.105	1
469		5	max	1361.04	3	924.441	6	2201.437	2	.021	2	.2	4	.556	6
470			min	-1342.02	4	-247.848	1	-2323.684	1	-.154	5	-.158	3	-.084	1
471	M48	1	max	585.514	1	856.119	6	578.108	3	.041	2	.113	4	.168	6
472			min	-498.226	2	-276.644	1	-576.116	4	-.102	1	-.113	3	-.054	1
473		2	max	585.514	1	856.119	6	578.108	3	.041	2	.085	4	.126	6
474			min	-498.226	2	-276.644	1	-576.116	4	-.102	1	-.085	3	-.041	1
475		3	max	585.514	1	856.119	6	578.108	3	.041	2	.057	4	.084	6
476			min	-498.226	2	-276.644	1	-576.116	4	-.102	1	-.057	3	-.027	1
477		4	max	585.514	1	856.119	6	578.108	3	.041	2	.028	4	.042	6
478			min	-498.226	2	-276.644	1	-576.116	4	-.102	1	-.028	3	-.014	1
479		5	max	585.514	1	856.119	6	578.108	3	.041	2	0	4	0	2
480			min	-498.226	2	-276.644	1	-576.116	4	-.102	1	0	2	0	8
481	M49	1	max	1458.9	1	679.888	7	1598.837	2	.112	6	.243	1	.099	7
482			min	-1447.962	2	155.704	4	-1668.571	1	-.035	1	-.233	2	.023	4
483		2	max	1458.9	1	679.888	7	1598.837	2	.112	6	.182	1	.074	7
484			min	-1447.962	2	155.704	4	-1668.571	1	-.035	1	-.175	2	.017	4
485		3	max	1458.9	1	679.888	7	1598.837	2	.112	6	.122	1	.05	7
486			min	-1447.962	2	155.704	4	-1668.571	1	-.035	1	-.117	2	.011	4
487		4	max	1458.9	1	679.888	7	1598.837	2	.112	6	.061	1	.025	7
488			min	-1447.962	2	155.704	4	-1668.571	1	-.035	1	-.058	2	.006	4
489		5	max	1458.9	1	679.888	7	1598.837	2	.112	6	0	3	0	8
490			min	-1447.962	2	155.704	4	-1668.571	1	-.035	1	0	5	0	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
491	M50	1	max	216.963	2	560.664	3	712.123	4	.145	6	.14	3	.11	3
492			min	-167.251	1	-227.118	4	-713.987	3	-.01	1	-.14	4	-.045	4
493		2	max	216.963	2	560.664	3	712.123	4	.145	6	.105	3	.083	3
494			min	-167.251	1	-227.118	4	-713.987	3	-.01	1	-.105	4	-.033	4
495		3	max	216.963	2	560.664	3	712.123	4	.145	6	.07	3	.055	3
496			min	-167.251	1	-227.118	4	-713.987	3	-.01	1	-.07	4	-.022	4
497		4	max	216.963	2	560.664	3	712.123	4	.145	6	.035	3	.028	3
498			min	-167.251	1	-227.118	4	-713.987	3	-.01	1	-.035	4	-.011	4
499		5	max	216.963	2	560.664	3	712.123	4	.145	6	0	1	0	3
500			min	-167.251	1	-227.118	4	-713.987	3	-.01	1	0	3	0	5
501	5	1	max	673.398	4	631.969	7	1485.127	4	.045	4	.213	3	.092	7
502			min	-647.319	3	183.782	4	-1462.864	3	-.041	3	-.217	4	.027	4
503		2	max	673.398	4	631.969	7	1485.127	4	.045	4	.16	3	.069	7
504			min	-647.319	3	183.782	4	-1462.864	3	-.041	3	-.162	4	.02	4
505		3	max	673.398	4	631.969	7	1485.127	4	.045	4	.107	3	.046	7
506			min	-647.319	3	183.782	4	-1462.864	3	-.041	3	-.108	4	.013	4
507		4	max	673.398	4	631.969	7	1485.127	4	.045	4	.053	3	.023	7
508			min	-647.319	3	183.782	4	-1462.864	3	-.041	3	-.054	4	.007	4
509		5	max	673.398	4	631.969	7	1485.127	4	.045	4	0	4	0	5
510			min	-647.319	3	183.782	4	-1462.864	3	-.041	3	0	3	0	7
511	M52	1	max	0	11	0	11	0	11	0	11	0	11	0	11
512			min	0	1	0	1	0	1	0	1	0	1	0	1
513		2	max	376.037	2	269.144	4	199.647	4	.303	1	.498	4	.098	3
514			min	-355.83	1	-220.045	3	-186.83	3	-.357	2	-.482	3	-.101	4
515		3	max	1593.484	2	272.189	4	269.148	3	.256	2	.198	2	.103	4
516			min	-1618.452	1	-197.014	3	-266.407	4	-.294	1	-.21	1	-.096	3
517		4	max	68.775	4	84.61	4	267.706	4	.185	2	.484	3	.062	3
518			min	-69.53	3	-200.48	7	-279.025	3	-.144	1	-.491	4	-.184	8
519		5	max	0	11	0	11	0	11	0	11	0	11	0	11
520			min	0	1	0	1	0	1	0	1	0	1	0	1
521	M53	1	max	0	11	0	11	0	11	0	11	0	11	0	11
522			min	0	1	0	1	0	1	0	1	0	1	0	1
523		2	max	322.455	3	178.878	4	90.485	1	.257	1	.139	1	.146	3
524			min	-398.585	4	-188.982	3	-121.493	2	-.276	2	-.149	2	-.147	4
525		3	max	160.761	2	227.003	4	107.48	1	.154	1	.176	1	.022	2
526			min	-206.963	1	-204.476	3	-115.566	2	-.162	2	-.194	2	-.028	4
527		4	max	202.968	4	240.211	4	267.121	2	.402	2	.383	1	.222	4
528			min	-222.509	3	-233.364	3	-242.463	1	-.401	1	-.403	2	-.232	3
529		5	max	0	11	0	11	0	11	0	11	0	11	0	11
530			min	0	1	0	1	0	1	0	1	0	1	0	1
531	M54	1	max	564.379	1	722.455	2	646.088	3	.418	3	.441	1	.144	1
532			min	-489.54	2	-347.104	1	-646.189	4	-.438	4	-.445	2	-.185	2
533		2	max	564.379	1	722.455	2	646.088	3	.418	3	.445	1	.172	1
534			min	-489.54	2	-347.104	1	-646.189	4	-.438	4	-.449	2	-.245	2
535		3	max	564.379	1	722.455	2	646.088	3	.418	3	.45	1	.201	1
536			min	-489.54	2	-347.104	1	-646.189	4	-.438	4	-.454	2	-.304	2
537		4	max	564.379	1	722.455	2	646.088	3	.418	3	.454	1	.229	1
538			min	-489.54	2	-347.104	1	-646.189	4	-.438	4	-.458	2	-.363	2
539		5	max	564.379	1	722.455	2	646.088	3	.418	3	.458	1	.258	1
540			min	-489.54	2	-347.104	1	-646.189	4	-.438	4	-.462	2	-.422	2
541	M55	1	max	230.743	1	552.423	1	122.094	4	.458	3	.451	2	.105	4
542			min	-305.603	2	-517.646	2	-121.844	3	-.436	4	-.446	1	-.167	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
543		2	max	230.743	1	552.423	1	122.094	4	.458	3	.454	2	.1	4
544			min	-305.603	2	-517.646	2	-121.844	3	-.436	4	-.449	1	-.165	3
545		3	max	230.743	1	552.423	1	122.094	4	.458	3	.457	2	.096	4
546			min	-305.603	2	-517.646	2	-121.844	3	-.436	4	-.452	1	-.162	3
547		4	max	230.743	1	552.423	1	122.094	4	.458	3	.46	2	.091	4
548			min	-305.603	2	-517.646	2	-121.844	3	-.436	4	-.455	1	-.16	3
549		5	max	230.743	1	552.423	1	122.094	4	.458	3	.462	2	.087	4
550			min	-305.603	2	-517.646	2	-121.844	3	-.436	4	-.458	1	-.158	3
551	M56	1	max	302.185	1	49.209	1	171.04	4	.928	3	.245	2	.564	2
552			min	-330.627	2	-72.925	2	-144.638	3	-.965	4	-.237	1	-.555	1
553		2	max	302.185	1	49.209	1	171.04	4	.928	3	.246	2	.568	2
554			min	-330.627	2	-72.925	2	-144.638	3	-.965	4	-.237	1	-.558	1
555		3	max	302.185	1	49.209	1	171.04	4	.928	3	.247	2	.572	2
556			min	-330.627	2	-72.925	2	-144.638	3	-.965	4	-.237	1	-.56	1
557		4	max	302.185	1	49.209	1	171.04	4	.928	3	.248	2	.576	2
558			min	-330.627	2	-72.925	2	-144.638	3	-.965	4	-.236	1	-.563	1
559		5	max	302.185	1	49.209	1	171.04	4	.928	3	.249	2	.58	2
560			min	-330.627	2	-72.925	2	-144.638	3	-.965	4	-.236	1	-.566	1
561	M57	1	max	1315.509	1	907.84	6	994.242	3	.353	3	.397	4	.15	1
562			min	-1287.027	2	223.472	1	-1020.646	4	-.409	4	-.401	3	-.071	2
563		2	max	1315.509	1	907.84	6	994.242	3	.353	3	.314	4	.132	1
564			min	-1287.027	2	223.472	1	-1020.646	4	-.409	4	-.32	3	-.099	2
565		3	max	1315.509	1	907.84	6	994.242	3	.353	3	.237	1	.114	1
566			min	-1287.027	2	223.472	1	-1020.646	4	-.409	4	-.246	2	-.127	2
567		4	max	1315.509	1	907.84	6	994.242	3	.353	3	.236	1	.095	1
568			min	-1287.027	2	223.472	1	-1020.646	4	-.409	4	-.248	2	-.155	2
569		5	max	1315.509	1	907.84	6	994.242	3	.353	3	.236	1	.077	1
570			min	-1287.027	2	223.472	1	-1020.646	4	-.409	4	-.249	2	-.184	2
571	M58	1	max	660.76	1	507.053	8	749.039	3	.932	3	.352	2	.613	2
572			min	-639.448	2	150.268	3	-779.208	4	-.99	4	-.31	1	-.597	1
573		2	max	660.76	1	507.053	8	749.039	3	.932	3	.351	2	.599	2
574			min	-639.448	2	150.268	3	-779.208	4	-.99	4	-.312	1	-.612	1
575		3	max	660.76	1	507.053	8	749.039	3	.932	3	.351	2	.585	2
576			min	-639.448	2	150.268	3	-779.208	4	-.99	4	-.314	1	-.626	1
577		4	max	660.76	1	507.053	8	749.039	3	.932	3	.351	2	.571	2
578			min	-639.448	2	150.268	3	-779.208	4	-.99	4	-.317	1	-.641	1
579		5	max	660.76	1	507.053	8	749.039	3	.932	3	.351	2	.557	2
580			min	-639.448	2	150.268	3	-779.208	4	-.99	4	-.319	1	-.655	1
581	M59	1	max	44.708	2	2.276	3	430.545	4	.741	3	.313	1	.114	2
582			min	-66.01	1	-98.902	8	-400.336	3	-.79	4	-.351	2	-.104	1
583		2	max	44.708	2	2.276	3	430.545	4	.741	3	.314	1	.116	2
584			min	-66.01	1	-98.902	8	-400.336	3	-.79	4	-.351	2	-.102	1
585		3	max	44.708	2	2.276	3	430.545	4	.741	3	.316	1	.117	2
586			min	-66.01	1	-98.902	8	-400.336	3	-.79	4	-.351	2	-.1	1
587		4	max	44.708	2	2.276	3	430.545	4	.741	3	.317	1	.119	2
588			min	-66.01	1	-98.902	8	-400.336	3	-.79	4	-.351	2	-.098	1
589		5	max	44.708	2	2.276	3	430.545	4	.741	3	.319	1	.12	2
590			min	-66.01	1	-98.902	8	-400.336	3	-.79	4	-.351	2	-.097	1
591	M60	1	max	128.052	1	369.005	1	216.245	4	.372	3	.321	1	.154	3
592			min	-164.093	2	-455.065	2	-221.545	3	-.384	4	-.321	2	-.153	4
593		2	max	128.052	1	369.005	1	216.245	4	.372	3	.323	1	.164	3
594			min	-164.093	2	-455.065	2	-221.545	3	-.384	4	-.324	2	-.158	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
595		3	max	128.052	1	369.005	1	216.245	4	.372	3	.325	1	.174	3
596			min	-164.093	2	-455.065	2	-221.545	3	-.384	4	-.326	2	-.163	4
597		4	max	128.052	1	369.005	1	216.245	4	.372	3	.328	1	.183	3
598			min	-164.093	2	-455.065	2	-221.545	3	-.384	4	-.329	2	-.168	4
599		5	max	128.052	1	369.005	1	216.245	4	.372	3	.33	1	.193	3
600			min	-164.093	2	-455.065	2	-221.545	3	-.384	4	-.331	2	-.173	4
601	M61	1	max	70.835	1	527.238	2	406.609	3	.528	3	.317	2	.303	1
602			min	-38.429	3	-297.049	1	-401.622	4	-.496	4	-.318	1	-.357	2
603		2	max	70.835	1	527.238	2	406.609	3	.528	3	.32	2	.327	1
604			min	-38.429	3	-297.049	1	-401.622	4	-.496	4	-.321	1	-.4	2
605		3	max	70.835	1	527.238	2	406.609	3	.528	3	.324	2	.352	1
606			min	-38.429	3	-297.049	1	-401.622	4	-.496	4	-.324	1	-.444	2
607		4	max	70.835	1	527.238	2	406.609	3	.528	3	.328	2	.376	1
608			min	-38.429	3	-297.049	1	-401.622	4	-.496	4	-.327	1	-.487	2
609		5	max	70.835	1	527.238	2	406.609	3	.528	3	.331	2	.401	1
610			min	-38.429	3	-297.049	1	-401.622	4	-.496	4	-.33	1	-.53	2
611	MP1A	1	max	0	11	.012	4	.023	1	0	11	0	11	0	11
612			min	0	1	-.011	3	-.024	2	0	1	0	1	0	1
613		2	max	545.342	2	288.622	4	108.971	7	.458	1	.083	2	.147	4
614			min	-524.146	1	-289.318	3	-34.011	4	-.462	2	-.091	10	-.169	3
615		3	max	683.29	2	440.898	4	217.469	1	.458	1	.201	7	.505	3
616			min	-386.197	1	-441.594	3	-150.768	2	-.462	2	-.018	2	-.526	4
617		4	max	-27.497	10	148.325	3	266.896	2	0	11	.04	1	.039	3
618			min	-124.283	5	-148.323	4	-266.877	1	0	1	-.04	2	-.039	4
619		5	max	0	11	.022	3	.217	6	0	11	0	11	0	11
620			min	0	1	-.021	4	-.108	1	0	1	0	1	0	1
621	MP2A	1	max	291.554	8	294.426	4	683.351	1	0	11	0	11	0	11
622			min	73.68	1	-294.425	3	-683.379	2	0	1	0	1	0	1
623		2	max	343.934	6	504.565	4	419.551	1	.236	1	.537	1	.166	4
624			min	31.149	1	-477.974	3	-393.258	2	-.249	2	-.496	2	-.156	3
625		3	max	550.423	6	649.792	4	557.795	1	.236	1	1.464	1	.892	3
626			min	134.297	1	-623.2	3	-531.502	2	-.249	2	-1.371	2	-.935	4
627		4	max	-86.828	10	332.676	3	720.448	2	0	11	.72	1	.333	3
628			min	-324.86	5	-332.669	4	-720.386	1	0	1	-.721	2	-.333	4
629		5	max	0	11	.164	4	.472	6	0	11	0	11	0	11
630			min	0	1	-.157	3	-.037	1	0	1	0	1	0	1
631	MP3A	1	max	0	11	.009	4	.048	1	0	11	0	11	0	11
632			min	0	1	-.009	3	-.048	2	0	1	0	1	0	1
633		2	max	132.22	8	469.696	4	105.791	1	.351	2	.071	6	.32	4
634			min	10.906	3	-439.233	3	-84.455	2	-.319	1	.004	4	-.302	3
635		3	max	302.965	8	605.317	4	364.43	1	.351	2	.589	1	.761	3
636			min	74.034	3	-574.854	3	-343.094	2	-.319	1	-.502	2	-.803	4
637		4	max	-13.148	10	38.737	3	38.861	2	0	11	.039	1	.039	3
638			min	-33.306	5	-38.736	4	-38.851	1	0	1	-.039	2	-.039	4
639		5	max	0	11	.008	3	.133	2	0	11	0	11	0	11
640			min	0	1	-.007	4	-.123	1	0	1	0	1	0	1
641	MP4A	1	max	0	11	.012	4	.017	5	0	11	0	11	0	11
642			min	0	1	-.012	3	-.015	2	0	1	0	1	0	1
643		2	max	467.466	2	255.144	4	122.293	2	.331	2	.232	2	.129	4
644			min	-356.531	1	-260.861	3	-91.557	1	-.33	1	-.179	1	-.111	3
645		3	max	501.255	2	324.133	4	70.527	4	.331	2	.394	2	.479	3
646			min	-322.742	1	-329.849	3	-38.715	3	-.33	1	-.28	1	-.45	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
647		4	max	-13.148	10	38.746	3	38.826	2	0	11	.039	1	.039	3
648			min	-33.306	5	-38.749	4	-38.821	1	0	1	-.039	2	-.039	4
649		5	max	0	11	.018	3	.098	2	0	11	0	11	0	11
650			min	0	1	-.021	4	-.093	1	0	1	0	1	0	1
651	M66	1	max	0	11	.003	3	.002	3	0	11	0	11	0	11
652			min	0	1	0	10	-.001	1	0	1	0	1	0	1
653		2	max	490.342	3	266.25	2	181.361	3	.313	4	.278	2	.142	1
654			min	-482.955	4	-217.139	1	-171.668	4	-.367	3	-.26	1	-.145	2
655		3	max	1434.732	3	233.367	2	85.527	1	.219	1	.17	3	.132	3
656			min	-1459.885	4	-158.837	1	-85.783	2	-.256	2	-.18	4	-.124	4
657		4	max	58.954	1	47.641	2	224.723	2	.221	1	.239	1	.119	1
658			min	-64.61	2	-194.58	5	-234.057	1	-.181	2	-.248	2	-.219	2
659		5	max	0	11	0	11	0	2	0	11	0	11	0	11
660			min	0	1	-.004	1	-.001	4	0	1	0	1	0	1
661	M67	1	max	0	11	.004	1	.005	3	0	11	0	11	0	11
662			min	0	1	0	10	-.006	1	0	1	0	1	0	1
663		2	max	383.828	1	175.794	2	106.823	4	.195	4	.121	2	.146	1
664			min	-460.772	2	-186.038	1	-137.59	3	-.214	3	-.131	1	-.147	2
665		3	max	277.089	3	224.641	2	100.145	4	.143	4	.12	4	.035	1
666			min	-323.469	4	-202.208	1	-108.625	3	-.153	3	-.139	3	-.042	2
667		4	max	251.125	3	223.175	2	167.422	3	.306	3	.306	4	.204	2
668			min	-270.777	4	-216.239	1	-142.895	4	-.305	4	-.327	3	-.214	1
669		5	max	0	11	0	11	.006	3	0	11	0	11	0	11
670			min	0	1	-.004	2	-.003	1	0	1	0	1	0	1
671	M68	1	max	534.332	4	628.14	3	579.726	1	.329	1	.334	2	.181	2
672			min	-459.899	3	-251.659	4	-581.391	2	-.349	2	-.338	1	-.221	1
673		2	max	534.332	4	628.14	3	579.726	1	.329	1	.287	2	.187	2
674			min	-459.899	3	-251.659	4	-581.391	2	-.349	2	-.29	1	-.258	1
675		3	max	534.332	4	628.14	3	579.726	1	.329	1	.312	4	.193	2
676			min	-459.899	3	-251.659	4	-581.391	2	-.349	2	-.319	3	-.296	1
677		4	max	534.332	4	628.14	3	579.726	1	.329	1	.351	4	.198	2
678			min	-459.899	3	-251.659	4	-581.391	2	-.349	2	-.357	3	-.333	1
679		5	max	534.332	4	628.14	3	579.726	1	.329	1	.39	4	.204	2
680			min	-459.899	3	-251.659	4	-581.391	2	-.349	2	-.396	3	-.37	1
681	M69	1	max	134.338	2	457.876	4	89.042	3	.403	1	.375	3	.099	3
682			min	-203.013	1	-422.342	3	-92.566	4	-.381	2	-.368	4	-.161	4
683		2	max	134.338	2	457.876	4	89.042	3	.403	1	.38	3	.123	3
684			min	-203.013	1	-422.342	3	-92.566	4	-.381	2	-.374	4	-.187	4
685		3	max	134.338	2	457.876	4	89.042	3	.403	1	.385	3	.148	3
686			min	-203.013	1	-422.342	3	-92.566	4	-.381	2	-.379	4	-.213	4
687		4	max	134.338	2	457.876	4	89.042	3	.403	1	.391	3	.172	3
688			min	-203.013	1	-422.342	3	-92.566	4	-.381	2	-.384	4	-.24	4
689		5	max	134.338	2	457.876	4	89.042	3	.403	1	.396	3	.196	3
690			min	-203.013	1	-422.342	3	-92.566	4	-.381	2	-.39	4	-.266	4
691	M70	1	max	208.092	4	58.762	4	102.565	2	.902	1	.19	1	.459	3
692			min	-236.075	3	-76.556	3	-76.583	1	-.939	2	-.183	2	-.449	4
693		2	max	208.092	4	58.762	4	102.565	2	.902	1	.185	1	.464	3
694			min	-236.075	3	-76.556	3	-76.583	1	-.939	2	-.178	2	-.452	4
695		3	max	208.092	4	58.762	4	102.565	2	.902	1	.181	1	.468	3
696			min	-236.075	3	-76.556	3	-76.583	1	-.939	2	-.172	2	-.456	4
697		4	max	208.092	4	58.762	4	102.565	2	.902	1	.177	1	.472	3
698			min	-236.075	3	-76.556	3	-76.583	1	-.939	2	-.166	2	-.459	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
699		5	max	208.092	4	58.762	4	102.565	2	.902	1	.172	1	.477	3
700			min	-236.075	3	-76.556	3	-76.583	1	-.939	2	-.16	2	-.462	4
701	M71	1	max	1048.127	4	909.551	7	960.959	1	.186	1	.484	2	.141	7
702			min	-1020.126	3	219.803	4	-987.662	2	-.242	2	-.487	1	.002	1
703		2	max	1048.127	4	909.551	7	960.959	1	.186	1	.403	2	.067	7
704			min	-1020.126	3	219.803	4	-987.662	2	-.242	2	-.409	1	-.022	1
705		3	max	1048.127	4	909.551	7	960.959	1	.186	1	.322	2	.033	4
706			min	-1020.126	3	219.803	4	-987.662	2	-.242	2	-.33	1	-.045	1
707		4	max	1048.127	4	909.551	7	960.959	1	.186	1	.241	2	.015	4
708			min	-1020.126	3	219.803	4	-987.662	2	-.242	2	-.251	1	-.11	8
709		5	max	1048.127	4	909.551	7	960.959	1	.186	1	.16	2	-.003	4
710			min	-1020.126	3	219.803	4	-987.662	2	-.242	2	-.172	1	-.183	8
711	M72	1	max	492.979	4	508.013	7	732.098	1	.889	1	.472	3	.42	3
712			min	-469.626	3	143.132	4	-762.584	2	-.946	2	-.431	4	-.405	4
713		2	max	492.979	4	508.013	7	732.098	1	.889	1	.432	3	.402	3
714			min	-469.626	3	143.132	4	-762.584	2	-.946	2	-.392	4	-.417	4
715		3	max	492.979	4	508.013	7	732.098	1	.889	1	.391	3	.385	3
716			min	-469.626	3	143.132	4	-762.584	2	-.946	2	-.354	4	-.428	4
717		4	max	492.979	4	508.013	7	732.098	1	.889	1	.35	3	.368	3
718			min	-469.626	3	143.132	4	-762.584	2	-.946	2	-.316	4	-.44	4
719		5	max	492.979	4	508.013	7	732.098	1	.889	1	.31	3	.35	3
720			min	-469.626	3	143.132	4	-762.584	2	-.946	2	-.278	4	-.452	4
721	M73	1	max	56.455	1	5.647	4	407.055	2	.72	1	.323	4	.14	1
722			min	-77.675	2	-100.194	7	-377.108	1	-.768	2	-.362	3	-.129	2
723		2	max	56.455	1	5.647	4	407.055	2	.72	1	.312	4	.14	1
724			min	-77.675	2	-100.194	7	-377.108	1	-.768	2	-.349	3	-.126	2
725		3	max	56.455	1	5.647	4	407.055	2	.72	1	.3	4	.14	1
726			min	-77.675	2	-100.194	7	-377.108	1	-.768	2	-.336	3	-.122	2
727		4	max	56.455	1	5.647	4	407.055	2	.72	1	.289	4	.139	1
728			min	-77.675	2	-100.194	7	-377.108	1	-.768	2	-.323	3	-.119	2
729		5	max	56.455	1	5.647	4	407.055	2	.72	1	.278	4	.139	1
730			min	-77.675	2	-100.194	7	-377.108	1	-.768	2	-.31	3	-.115	2
731	M74	1	max	151.814	4	350.991	2	231.647	2	.382	1	.247	2	.226	1
732			min	-184.864	3	-437	1	-234.904	1	-.393	2	-.248	1	-.225	2
733		2	max	151.814	4	350.991	2	231.647	2	.382	1	.26	2	.251	1
734			min	-184.864	3	-437	1	-234.904	1	-.393	2	-.261	1	-.245	2
735		3	max	151.814	4	350.991	2	231.647	2	.382	1	.273	2	.276	1
736			min	-184.864	3	-437	1	-234.904	1	-.393	2	-.275	1	-.265	2
737		4	max	151.814	4	350.991	2	231.647	2	.382	1	.286	2	.301	1
738			min	-184.864	3	-437	1	-234.904	1	-.393	2	-.288	1	-.285	2
739		5	max	151.814	4	350.991	2	231.647	2	.382	1	.3	2	.326	1
740			min	-184.864	3	-437	1	-234.904	1	-.393	2	-.302	1	-.305	2
741	M75	1	max	137.363	2	509.543	1	393.334	1	.55	1	.288	3	.313	4
742			min	-101.701	1	-278.492	2	-390.193	2	-.517	2	-.29	4	-.367	3
743		2	max	137.363	2	509.543	1	393.334	1	.55	1	.272	3	.325	4
744			min	-101.701	1	-278.492	2	-390.193	2	-.517	2	-.273	4	-.398	3
745		3	max	137.363	2	509.543	1	393.334	1	.55	1	.257	3	.337	4
746			min	-101.701	1	-278.492	2	-390.193	2	-.517	2	-.257	4	-.429	3
747		4	max	137.363	2	509.543	1	393.334	1	.55	1	.269	1	.349	4
748			min	-101.701	1	-278.492	2	-390.193	2	-.517	2	-.268	2	-.46	3
749		5	max	137.363	2	509.543	1	393.334	1	.55	1	.302	1	.361	4
750			min	-101.701	1	-278.492	2	-390.193	2	-.517	2	-.3	2	-.491	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
751	MP1C	1	max	0	11	.021	4	.014	1	0	11	0	11	0	11
752			min	0	1	-.022	3	-.014	2	0	1	0	1	0	1
753		2	max	450.908	3	218.526	1	175.373	1	.39	4	.111	2	.21	4
754			min	-428.779	4	-159.974	2	-208.657	2	-.396	3	-.128	1	-.198	3
755		3	max	588.856	3	385.627	4	304.997	1	.39	4	.307	1	.271	2
756			min	-290.831	4	-327.034	3	-338.282	2	-.396	3	-.391	2	-.376	1
757		4	max	-27.497	10	237.27	3	177.959	2	0	11	.04	1	.04	3
758			min	-124.283	5	-237.255	4	-177.97	1	0	1	-.04	2	-.04	4
759		5	max	0	11	.191	7	.062	4	0	11	0	11	0	11
760			min	0	1	-.102	4	-.119	7	0	1	0	1	0	1
761	MP2C	1	max	291.554	8	586.044	4	391.618	1	0	11	0	11	0	11
762			min	73.68	1	-586.071	3	-391.605	2	0	1	0	1	0	1
763		2	max	345.443	7	428.726	4	440.332	1	.16	2	.228	3	.259	3
764			min	24.471	4	-419.758	3	-478.393	2	-.172	1	-.239	4	-.299	4
765		3	max	551.932	7	593.594	4	563.845	1	.16	2	.926	1	1.2	3
766			min	127.619	4	-584.626	3	-601.906	2	-.172	1	-1.013	2	-1.258	4
767		4	max	-86.828	10	623.509	3	429.595	2	0	11	.43	1	.624	3
768			min	-324.86	5	-623.459	4	-429.632	1	0	1	-.429	2	-.623	4
769		5	max	0	11	.415	5	.199	4	0	11	0	11	0	11
770			min	0	1	-.174	2	-.366	7	0	1	0	1	0	1
771	MP3C	1	max	0	11	.034	4	.02	1	0	11	0	11	0	11
772			min	0	1	-.034	3	-.02	2	0	1	0	1	0	1
773		2	max	133.443	7	165.887	4	393.839	1	.31	3	.292	2	.1	1
774			min	7.84	4	-161.424	3	-430.844	2	-.278	4	-.299	1	-.149	2
775		3	max	304.188	7	393.771	4	560.214	1	.31	3	.719	1	.529	3
776			min	70.969	4	-389.309	3	-597.22	2	-.278	4	-.8	2	-.586	4
777		4	max	-13.148	10	38.82	3	38.771	2	0	11	.039	1	.039	3
778			min	-33.306	5	-38.811	4	-38.777	1	0	1	-.039	2	-.039	4
779		5	max	0	11	.091	3	.043	2	0	11	0	11	0	11
780			min	0	1	-.083	4	-.049	1	0	1	0	1	0	1
781	MP4C	1	max	0	11	.015	8	.014	1	0	11	0	11	0	11
782			min	0	1	-.012	3	-.015	2	0	1	0	1	0	1
783		2	max	450.182	1	107.23	1	249.944	1	.302	1	.233	2	.145	2
784			min	-337.662	2	-77.163	2	-260.548	2	-.3	2	-.244	1	-.199	1
785		3	max	483.97	1	107.23	1	316.681	1	.302	1	.323	1	.299	2
786			min	-303.874	2	-77.163	2	-327.285	2	-.3	2	-.355	2	-.413	1
787		4	max	-13.148	10	38.795	3	38.779	2	0	11	.039	1	.039	3
788			min	-33.306	5	-38.789	4	-38.779	1	0	1	-.039	2	-.039	4
789		5	max	0	11	.066	3	.051	2	0	11	0	11	0	11
790			min	0	1	-.06	4	-.051	1	0	1	0	1	0	1
791	M80	1	max	0	11	.004	1	.001	3	0	11	0	11	0	11
792			min	0	1	0	8	-.003	2	0	1	0	1	0	1
793		2	max	328.711	1	238.335	1	219.809	1	.151	2	.368	1	.143	4
794			min	-317.643	2	-189.697	2	-208.137	2	-.206	1	-.353	2	-.146	3
795		3	max	1155.752	4	242.472	1	157.643	2	.335	4	.165	4	.134	1
796			min	-1174.791	3	-166.493	2	-152.702	1	-.371	3	-.178	3	-.127	2
797		4	max	77.688	1	36.898	1	181.919	1	.278	4	.39	2	.124	4
798			min	-75.196	2	-193.605	6	-194.391	2	-.238	3	-.394	1	-.224	3
799		5	max	0	11	0	9	.002	1	0	11	0	11	0	11
800			min	0	1	-.003	4	-.003	4	0	1	0	1	0	1
801	M81	1	max	0	11	.004	2	0	11	0	11	0	11	0	11
802			min	0	1	0	9	-.005	4	0	1	0	1	0	1

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mome...	LC
803		2	max	279.553	4	148.343	1	79.107	2	.229	3	.128	3	.115	2
804			min	-356.399	3	-158.516	2	-109.136	1	-.248	4	-.138	4	-.116	1
805		3	max	210.505	1	206.182	1	73.988	2	.074	3	.143	3	.041	4
806			min	-256.702	2	-183.49	2	-82.311	1	-.082	4	-.162	4	-.048	3
807		4	max	283.259	1	244.193	1	237.5	4	.333	4	.302	3	.24	1
808			min	-302.756	2	-237.147	2	-213.467	3	-.334	3	-.321	4	-.249	2
809		5	max	0	11	0	11	.006	1	0	11	0	11	0	11
810			min	0	1	-.003	1	-.009	4	0	1	0	1	0	1
811	M82	1	max	403.684	3	629.421	4	619.347	2	.388	2	.5	3	.238	3
812			min	-332.599	4	-249.939	3	-618.12	1	-.409	1	-.501	4	-.278	4
813		2	max	403.684	3	629.421	4	619.347	2	.388	2	.468	3	.259	3
814			min	-332.599	4	-249.939	3	-618.12	1	-.409	1	-.47	4	-.33	4
815		3	max	403.684	3	629.421	4	619.347	2	.388	2	.436	3	.279	3
816			min	-332.599	4	-249.939	3	-618.12	1	-.409	1	-.438	4	-.381	4
817		4	max	403.684	3	629.421	4	619.347	2	.388	2	.405	3	.3	3
818			min	-332.599	4	-249.939	3	-618.12	1	-.409	1	-.407	4	-.433	4
819		5	max	403.684	3	629.421	4	619.347	2	.388	2	.373	3	.32	3
820			min	-332.599	4	-249.939	3	-618.12	1	-.409	1	-.375	4	-.484	4
821	M83	1	max	249.633	3	457.528	3	123.464	1	.477	2	.378	4	.143	1
822			min	-320.724	4	-422.184	4	-125.416	2	-.455	1	-.375	3	-.206	2
823		2	max	249.633	3	457.528	3	123.464	1	.477	2	.377	4	.153	1
824			min	-320.724	4	-422.184	4	-125.416	2	-.455	1	-.374	3	-.218	2
825		3	max	249.633	3	457.528	3	123.464	1	.477	2	.377	4	.163	1
826			min	-320.724	4	-422.184	4	-125.416	2	-.455	1	-.374	3	-.23	2
827		4	max	249.633	3	457.528	3	123.464	1	.477	2	.376	4	.173	1
828			min	-320.724	4	-422.184	4	-125.416	2	-.455	1	-.373	3	-.242	2
829		5	max	249.633	3	457.528	3	123.464	1	.477	2	.375	4	.183	1
830			min	-320.724	4	-422.184	4	-125.416	2	-.455	1	-.373	3	-.254	2
831	M84	1	max	237.457	3	40.195	2	94.461	1	.898	2	.262	4	.415	4
832			min	-267.039	4	-51.852	1	-67.666	2	-.936	1	-.255	3	-.408	3
833		2	max	237.457	3	40.195	2	94.461	1	.898	2	.264	4	.417	4
834			min	-267.039	4	-51.852	1	-67.666	2	-.936	1	-.256	3	-.409	3
835		3	max	237.457	3	40.195	2	94.461	1	.898	2	.266	4	.419	4
836			min	-267.039	4	-51.852	1	-67.666	2	-.936	1	-.256	3	-.41	3
837		4	max	237.457	3	40.195	2	94.461	1	.898	2	.268	4	.421	4
838			min	-267.039	4	-51.852	1	-67.666	2	-.936	1	-.257	3	-.411	3
839		5	max	237.457	3	40.195	2	94.461	1	.898	2	.27	4	.423	4
840			min	-267.039	4	-51.852	1	-67.666	2	-.936	1	-.257	3	-.412	3
841	M85	1	max	1018.721	3	906.826	5	952.845	2	.158	2	.493	3	.135	5
842			min	-989.178	4	247.653	2	-978.873	1	-.216	1	-.496	4	-.057	4
843		2	max	1018.721	3	906.826	5	952.845	2	.158	2	.434	3	.112	3
844			min	-989.178	4	247.653	2	-978.873	1	-.216	1	-.44	4	-.082	4
845		3	max	1018.721	3	906.826	5	952.845	2	.158	2	.375	3	.09	3
846			min	-989.178	4	247.653	2	-978.873	1	-.216	1	-.383	4	-.108	4
847		4	max	1018.721	3	906.826	5	952.845	2	.158	2	.316	3	.069	3
848			min	-989.178	4	247.653	2	-978.873	1	-.216	1	-.326	4	-.134	4
849		5	max	1018.721	3	906.826	5	952.845	2	.158	2	.257	3	.047	3
850			min	-989.178	4	247.653	2	-978.873	1	-.216	1	-.27	4	-.177	6
851	M86	1	max	555.711	3	508.736	5	695.928	2	.841	2	.392	1	.536	4
852			min	-535.486	4	139.926	2	-726.228	1	-.899	1	-.35	2	-.519	3
853		2	max	555.711	3	508.736	5	695.928	2	.841	2	.332	1	.524	4
854			min	-535.486	4	139.926	2	-726.228	1	-.899	1	-.293	2	-.536	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
855		3	max	555.711	3	508.736	5	695.928	2	.841	2	.272	1	.512	4
856			min	-535.486	4	139.926	2	-726.228	1	-.899	1	-.236	2	-.553	3
857		4	max	555.711	3	508.736	5	695.928	2	.841	2	.213	1	.501	4
858			min	-535.486	4	139.926	2	-726.228	1	-.899	1	-.179	2	-.57	3
859		5	max	555.711	3	508.736	5	695.928	2	.841	2	.232	4	.489	4
860			min	-535.486	4	139.926	2	-726.228	1	-.899	1	-.201	3	-.587	3
861	M87	1	max	73.686	4	11.919	2	371.012	1	.641	2	.2	2	.166	4
862			min	-93.883	3	-100.699	5	-340.723	2	-.69	1	-.238	1	-.155	3
863		2	max	73.686	4	11.919	2	371.012	1	.641	2	.181	2	.166	4
864			min	-93.883	3	-100.699	5	-340.723	2	-.69	1	-.217	1	-.152	3
865		3	max	73.686	4	11.919	2	371.012	1	.641	2	.171	3	.166	4
866			min	-93.883	3	-100.699	5	-340.723	2	-.69	1	-.205	4	-.148	3
867		4	max	73.686	4	11.919	2	371.012	1	.641	2	.186	3	.166	4
868			min	-93.883	3	-100.699	5	-340.723	2	-.69	1	-.218	4	-.145	3
869		5	max	73.686	4	11.919	2	371.012	1	.641	2	.201	3	.166	4
870			min	-93.883	3	-100.699	5	-340.723	2	-.69	1	-.232	4	-.141	3
871	M88	1	max	81.99	2	461.158	3	173.191	1	.3	2	.316	3	.164	4
872			min	-113.504	1	-547.186	4	-180.274	2	-.312	1	-.317	4	-.162	3
873		2	max	81.99	2	461.158	3	173.191	1	.3	2	.326	3	.195	4
874			min	-113.504	1	-547.186	4	-180.274	2	-.312	1	-.327	4	-.188	3
875		3	max	81.99	2	461.158	3	173.191	1	.3	2	.335	3	.226	4
876			min	-113.504	1	-547.186	4	-180.274	2	-.312	1	-.337	4	-.215	3
877		4	max	81.99	2	461.158	3	173.191	1	.3	2	.345	3	.258	4
878			min	-113.504	1	-547.186	4	-180.274	2	-.312	1	-.346	4	-.241	3
879		5	max	81.99	2	461.158	3	173.191	1	.3	2	.355	3	.289	4
880			min	-113.504	1	-547.186	4	-180.274	2	-.312	1	-.356	4	-.267	3
881	M89	1	max	141.822	3	618.994	4	338.594	2	.433	2	.266	4	.151	2
882			min	-103.217	4	-389.503	3	-331.712	1	-.401	1	-.265	3	-.206	1
883		2	max	141.822	3	618.994	4	338.594	2	.433	2	.288	4	.179	3
884			min	-103.217	4	-389.503	3	-331.712	1	-.401	1	-.288	3	-.252	4
885		3	max	141.822	3	618.994	4	338.594	2	.433	2	.311	4	.211	3
886			min	-103.217	4	-389.503	3	-331.712	1	-.401	1	-.31	3	-.303	4
887		4	max	141.822	3	618.994	4	338.594	2	.433	2	.334	4	.243	3
888			min	-103.217	4	-389.503	3	-331.712	1	-.401	1	-.332	3	-.354	4
889		5	max	141.822	3	618.994	4	338.594	2	.433	2	.356	4	.275	3
890			min	-103.217	4	-389.503	3	-331.712	1	-.401	1	-.355	3	-.404	4
891	MP1B	1	max	0	11	.018	4	.014	1	0	11	0	11	0	11
892			min	0	1	-.018	3	-.013	2	0	1	0	1	0	1
893		2	max	450.468	4	48.782	2	282.981	1	.373	3	.222	2	.073	4
894			min	-428.833	3	-107.578	1	-317.414	2	-.375	4	-.202	1	-.064	3
895		3	max	588.416	4	174.663	4	412.606	1	.373	3	.448	1	.254	1
896			min	-290.885	3	-232.237	3	-447.039	2	-.375	4	-.497	2	-.128	2
897		4	max	-27.497	10	237.23	3	177.963	2	0	11	.04	1	.04	3
898			min	-124.283	5	-237.247	4	-177.971	1	0	1	-.04	2	-.04	4
899		5	max	0	11	.077	3	.044	2	0	11	0	11	0	11
900			min	0	1	-.173	8	-.093	5	0	1	0	1	0	1
901	MP2B	1	max	291.554	8	586.082	4	391.564	1	0	11	0	11	0	11
902			min	73.68	1	-586.06	3	-391.55	2	0	1	0	1	0	1
903		2	max	342.289	5	377.086	4	465.701	1	.257	3	.21	4	.324	3
904			min	46.137	2	-415.403	3	-456.549	2	-.27	4	-.239	3	-.294	4
905		3	max	548.778	5	541.955	4	589.213	1	.257	3	.952	1	1.256	3
906			min	149.285	2	-580.271	3	-580.061	2	-.27	4	-.962	2	-1.15	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
907		4	max	-86.828	10	623.458	3	429.578	2	0	11	.429	1	.623	3
908			min	-324.86	5	-623.514	4	-429.603	1	0	1	-.429	2	-.624	4
909		5	max	0	11	.154	2	.178	3	0	11	0	11	0	11
910			min	0	1	-.45	5	-.282	8	0	1	0	1	0	1
911	MP3B	1	max	0	11	.041	4	.02	4	0	11	0	11	0	11
912			min	0	1	-.041	3	-.02	3	0	1	0	1	0	1
913		2	max	133.974	5	220.079	4	353.091	1	.232	4	.221	2	.164	4
914			min	1.268	2	-253.272	3	-337.992	2	-.201	3	-.26	1	-.134	3
915		3	max	304.719	5	447.963	4	519.467	1	.232	4	.676	1	.695	3
916			min	64.396	2	-481.156	3	-504.368	2	-.201	3	-.685	2	-.598	4
917		4	max	-13.148	10	38.835	3	38.755	2	0	11	.039	1	.039	3
918			min	-33.306	5	-38.844	4	-38.759	1	0	1	-.039	2	-.039	4
919		5	max	0	11	.106	3	.057	3	0	11	0	11	0	11
920			min	0	1	-.116	4	-.061	4	0	1	0	1	0	1
921	MP4B	1	max	0	11	.018	4	.012	1	0	11	0	11	0	11
922			min	0	1	-.02	3	-.013	2	0	1	0	1	0	1
923		2	max	559.945	4	161.086	2	165.589	3	.356	4	.067	2	.322	4
924			min	-448.225	3	-185.062	1	-186.419	4	-.355	3	-.108	1	-.285	3
925		3	max	593.733	4	161.086	2	199.574	1	.356	4	.386	3	.35	1
926			min	-414.437	3	-185.062	1	-220.361	2	-.355	3	-.468	4	-.265	2
927		4	max	-13.148	10	38.824	3	38.757	2	0	11	.039	1	.039	3
928			min	-33.306	5	-38.827	4	-38.762	1	0	1	-.039	2	-.039	4
929		5	max	0	11	.095	3	.047	3	0	11	0	11	0	11
930			min	0	1	-.098	4	-.052	4	0	1	0	1	0	1
931	M94	1	max	270.05	1	466.865	2	614.177	4	.13	2	.433	3	.281	2
932			min	-334.442	2	-394.992	1	-544.484	3	-.122	1	-.49	4	-.26	1
933		2	max	270.05	1	466.865	2	614.177	4	.13	2	.42	3	.27	2
934			min	-334.442	2	-394.992	1	-544.484	3	-.122	1	-.475	4	-.25	1
935		3	max	270.05	1	466.865	2	614.177	4	.13	2	.406	3	.258	2
936			min	-334.442	2	-394.992	1	-544.484	3	-.122	1	-.46	4	-.241	1
937		4	max	270.05	1	466.865	2	614.177	4	.13	2	.393	3	.247	2
938			min	-334.442	2	-394.992	1	-544.484	3	-.122	1	-.445	4	-.231	1
939		5	max	270.05	1	466.865	2	614.177	4	.13	2	.379	3	.235	2
940			min	-334.442	2	-394.992	1	-544.484	3	-.122	1	-.429	4	-.221	1
941	M95	1	max	524.78	1	550.322	2	325.243	4	.206	1	.272	3	.37	2
942			min	-621.155	2	-600.222	1	-344.089	3	-.174	2	-.256	4	-.43	1
943		2	max	524.78	1	550.322	2	325.243	4	.206	1	.263	3	.356	2
944			min	-621.155	2	-600.222	1	-344.089	3	-.174	2	-.247	4	-.415	1
945		3	max	524.78	1	550.322	2	325.243	4	.206	1	.255	3	.342	2
946			min	-621.155	2	-600.222	1	-344.089	3	-.174	2	-.239	4	-.4	1
947		4	max	524.78	1	550.322	2	325.243	4	.206	1	.246	3	.329	2
948			min	-621.155	2	-600.222	1	-344.089	3	-.174	2	-.231	4	-.385	1
949		5	max	524.78	1	550.322	2	325.243	4	.206	1	.238	3	.315	2
950			min	-621.155	2	-600.222	1	-344.089	3	-.174	2	-.223	4	-.371	1
951	M96	1	max	297.043	4	610.012	1	670.338	2	.176	1	.499	1	.378	1
952			min	-359.441	3	-539.895	2	-597.379	1	-.167	2	-.556	2	-.358	2
953		2	max	297.043	4	610.012	1	670.338	2	.176	1	.485	1	.362	1
954			min	-359.441	3	-539.895	2	-597.379	1	-.167	2	-.54	2	-.344	2
955		3	max	297.043	4	610.012	1	670.338	2	.176	1	.47	1	.347	1
956			min	-359.441	3	-539.895	2	-597.379	1	-.167	2	-.523	2	-.331	2
957		4	max	297.043	4	610.012	1	670.338	2	.176	1	.455	1	.332	1
958			min	-359.441	3	-539.895	2	-597.379	1	-.167	2	-.507	2	-.318	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
959		5	max	297.043	4	610.012	1	670.338	2	.176	1	.44	1	.317	1
960			min	-359.441	3	-539.895	2	-597.379	1	-.167	2	-.49	2	-.304	2
961	M97	1	max	300.604	4	601.423	3	316.995	3	.223	4	.304	4	.406	3
962			min	-397.011	3	-653.944	4	-342.931	4	-.191	3	-.287	3	-.466	4
963		2	max	300.604	4	601.423	3	316.995	3	.223	4	.295	4	.391	3
964			min	-397.011	3	-653.944	4	-342.931	4	-.191	3	-.279	3	-.45	4
965		3	max	300.604	4	601.423	3	316.995	3	.223	4	.287	4	.376	3
966			min	-397.011	3	-653.944	4	-342.931	4	-.191	3	-.272	3	-.434	4
967		4	max	300.604	4	601.423	3	316.995	3	.223	4	.278	4	.361	3
968			min	-397.011	3	-653.944	4	-342.931	4	-.191	3	-.264	3	-.418	4
969		5	max	300.604	4	601.423	3	316.995	3	.223	4	.27	4	.346	3
970			min	-397.011	3	-653.944	4	-342.931	4	-.191	3	-.256	3	-.402	4
971	M98	1	max	173.538	2	662.811	4	504.05	3	.192	4	.352	4	.412	4
972			min	-235.404	1	-592.074	3	-430.017	4	-.183	3	-.41	3	-.391	3
973		2	max	173.538	2	662.811	4	504.05	3	.192	4	.342	4	.395	4
974			min	-235.404	1	-592.074	3	-430.017	4	-.183	3	-.397	3	-.376	3
975		3	max	173.538	2	662.811	4	504.05	3	.192	4	.331	4	.379	4
976			min	-235.404	1	-592.074	3	-430.017	4	-.183	3	-.385	3	-.362	3
977		4	max	173.538	2	662.811	4	504.05	3	.192	4	.32	4	.363	4
978			min	-235.404	1	-592.074	3	-430.017	4	-.183	3	-.372	3	-.347	3
979		5	max	173.538	2	662.811	4	504.05	3	.192	4	.31	4	.346	4
980			min	-235.404	1	-592.074	3	-430.017	4	-.183	3	-.36	3	-.333	3
981	M99	1	max	501.842	3	403.017	1	384.854	1	.162	2	.357	2	.273	1
982			min	-594.457	4	-459.033	2	-406.62	2	-.128	1	-.34	1	-.335	2
983		2	max	501.842	3	403.017	1	384.854	1	.162	2	.347	2	.263	1
984			min	-594.457	4	-459.033	2	-406.62	2	-.128	1	-.331	1	-.324	2
985		3	max	501.842	3	403.017	1	384.854	1	.162	2	.337	2	.253	1
986			min	-594.457	4	-459.033	2	-406.62	2	-.128	1	-.321	1	-.313	2
987		4	max	501.842	3	403.017	1	384.854	1	.162	2	.326	2	.243	1
988			min	-594.457	4	-459.033	2	-406.62	2	-.128	1	-.311	1	-.301	2
989		5	max	501.842	3	403.017	1	384.854	1	.162	2	.316	2	.233	1
990			min	-594.457	4	-459.033	2	-406.62	2	-.128	1	-.302	1	-.29	2
991	M100	1	max	372.794	3	396.029	1	415.502	3	.005	1	.18	4	.428	4
992			min	-461.788	4	-465.902	2	-440.189	4	-.005	2	-.133	3	-.403	3
993		2	max	368.849	3	397.606	1	408.669	3	.005	1	.143	4	.264	4
994			min	-457.843	4	-464.325	2	-433.357	4	-.005	2	-.118	3	-.229	3
995		3	max	364.905	3	399.184	1	401.836	3	.005	1	.109	4	.101	4
996			min	-453.898	4	-462.747	2	-426.524	4	-.005	2	-.104	3	-.057	3
997		4	max	360.96	3	400.761	1	395.004	3	.005	1	.076	4	.273	2
998			min	-449.953	4	-461.17	2	-419.691	4	-.005	2	-.09	3	-.223	1
999		5	max	357.015	3	402.338	1	388.171	3	.005	1	.057	9	.459	2
1000			min	-446.008	4	-459.593	2	-412.859	4	-.005	2	-.079	3	-.402	1
1001	M101	1	max	260.725	2	593.38	3	446.195	4	.008	3	.122	1	.523	3
1002			min	-349.101	1	-661.76	4	-474.112	3	-.007	4	-.074	2	-.499	4
1003		2	max	260.725	2	594.957	3	446.195	4	.008	3	.095	1	.278	3
1004			min	-349.101	1	-660.182	4	-474.112	3	-.007	4	-.069	2	-.245	4
1005		3	max	260.725	2	596.535	3	446.195	4	.008	3	.07	1	.066	5
1006			min	-349.101	1	-658.605	4	-474.112	3	-.007	4	-.065	2	-.019	2
1007		4	max	260.725	2	598.112	3	446.195	4	.008	3	.07	3	.263	4
1008			min	-349.101	1	-657.027	4	-474.112	3	-.007	4	-.086	4	-.214	3
1009		5	max	260.725	2	599.689	3	446.195	4	.008	3	.098	3	.516	4
1010			min	-349.101	1	-655.45	4	-474.112	3	-.007	4	-.134	4	-.46	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
1011	M102	1	max	343.461	1	541.331	2	493.688	1	.007	2	.101	2	.592	2
1012			min	-436.233	2	-608.946	1	-519.581	2	-.007	1	-.055	1	-.568	1
1013		2	max	339.516	1	542.908	2	491.41	1	.007	2	.106	2	.349	2
1014			min	-432.288	2	-607.368	1	-517.304	2	-.007	1	-.082	1	-.315	1
1015		3	max	335.571	1	544.486	2	489.133	1	.007	2	.113	2	.105	2
1016			min	-428.343	2	-605.791	1	-515.026	2	-.007	1	-.108	1	-.063	1
1017		4	max	331.627	1	546.063	2	486.855	1	.007	2	.12	2	.188	1
1018			min	-424.398	2	-604.214	1	-512.748	2	-.007	1	-.135	1	-.138	2
1019		5	max	327.682	1	547.64	2	484.577	1	.007	2	.128	2	.438	1
1020			min	-420.453	2	-602.636	1	-510.471	2	-.007	1	-.162	1	-.381	2
1021	M103	1	max	5220.619	5	48.345	5	63.668	4	0	2	0	11	0	11
1022			min	-210.107	2	-5.413	2	-63.668	3	0	5	0	1	0	1
1023		2	max	5210.175	5	24.172	5	31.834	4	0	2	.054	4	.005	2
1024			min	-229.338	2	-2.707	2	-31.834	3	0	5	-.054	3	-.041	5
1025		3	max	5199.731	5	0	11	0	11	0	2	.072	4	.006	2
1026			min	-248.57	2	0	1	0	1	0	5	-.072	3	-.055	5
1027		4	max	5189.287	5	2.707	2	31.834	3	0	2	.054	4	.005	2
1028			min	-267.801	2	-24.172	5	-31.834	4	0	5	-.054	3	-.041	5
1029		5	max	5178.843	5	5.413	2	63.668	3	0	2	0	11	0	11
1030			min	-287.032	2	-48.345	5	-63.668	4	0	5	0	1	0	1
1031	M104	1	max	5156.677	8	48.783	8	50.109	2	0	3	0	11	0	11
1032			min	50.124	3	-7.082	3	-50.109	1	0	4	0	1	0	1
1033		2	max	5146.565	8	24.391	8	25.054	2	0	3	.043	2	.006	3
1034			min	29.629	3	-3.541	3	-25.054	1	0	4	-.043	1	-.042	8
1035		3	max	5136.452	8	0	11	0	11	0	3	.057	2	.008	3
1036			min	9.134	3	0	1	0	1	0	4	-.057	1	-.055	8
1037		4	max	5126.34	8	3.541	3	25.054	1	0	3	.043	2	.006	3
1038			min	-11.361	3	-24.391	8	-25.054	2	0	4	-.043	1	-.042	8
1039		5	max	5116.228	8	7.082	3	50.109	1	0	3	0	11	0	11
1040			min	-31.855	3	-48.783	8	-50.109	2	0	4	0	1	0	1
1041	M105	1	max	5151.325	7	48.783	7	50.109	1	0	1	0	11	0	11
1042			min	70.401	4	-7.082	4	-50.109	2	0	2	0	1	0	1
1043		2	max	5141.212	7	24.391	7	25.054	1	0	1	.043	1	.006	4
1044			min	49.906	4	-3.541	4	-25.054	2	0	2	-.043	2	-.042	7
1045		3	max	5131.1	7	0	11	0	11	0	1	.057	1	.008	4
1046			min	29.412	4	0	1	0	1	0	2	-.057	2	-.055	7
1047		4	max	5120.988	7	3.541	4	25.054	2	0	1	.043	1	.006	4
1048			min	8.917	4	-24.391	7	-25.054	1	0	2	-.043	2	-.042	7
1049		5	max	5110.875	7	7.082	4	50.109	2	0	1	0	11	0	11
1050			min	-11.578	4	-48.783	7	-50.109	1	0	2	0	1	0	1

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

	Member	Shape	Code Check	Loc[...	LC	Shear...	Loc[...	Dir	LC	phi*Pn...	phi*Pnt...	phi*Mn...	phi*Mn...	Cb	Eqn
1	MP2A	PIPE_2.5	.511	4.5	2	.128	4.5		2	30038....	50715	3.596	3.596	2...	H1-1b
2	M23	PL3/8x6	.499	.167	3	.250	0	y	8	71583....	72900	.57	9.113	1...	H1-1b
3	MP2C	PIPE_2.5	.444	4.5	3	.093	4.5		1	30038....	50715	3.596	3.596	1...	H1-1b
4	MP2B	PIPE_2.5	.443	4.5	4	.128	4.5		4	30038....	50715	3.596	3.596	1...	H1-1b
5	M40	PL3/8x6	.443	.167	1	.250	0	y	7	71583....	72900	.57	9.113	1...	H1-1b
6	M53	PIPE_2.0	.439	8.464	2	.273	11.8...		2	6295.4...	32130	1.872	1.872	3...	H3-6
7	M6	PL3/8x6	.397	.167	2	.251	0	y	5	71583....	72900	.57	9.113	1...	H1-1b

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

	Member	Shape	Code Check	Loc[...	LC	Shear...	Loc[...	Dir	LC	phi*Pn...	phi*Pnt...	phi*Mn...	phi*Mn...	Cb	Eqn
8	M38	PL3/8x6	.395	.167	4	.232	0	y	7	71583....	72900	.57	9.113	1...	H1-1b
9	M5	PL3/8x6	.389	0	3	.128	0	y	3	70647....	72900	.57	9.113	1...	H1-1b
10	M29	L2x2x3	.369	0	4	.009	4.29	z	6	9305.2...	23392.8	.558	1.193	1...	H2-1
11	M46	L2x2x3	.363	0	2	.011	0	y	2	9305.2...	23392.8	.558	1.239	2...	H2-1
12	M67	PIPE_2.0	.344	8.464	3	.212	11.8...		3	6295.4...	32130	1.872	1.872	2...	H1-1b
13	M100	L2.5x2.5x4	.342	0	4	.062	0	y	2	36492....	38556	1.114	2.537	2...	H2-1
14	M41	PL1/2x6	.341	0	3	.175	0	y	6	93348....	97200	1.012	12.15	1...	H1-1b
15	M4	PL3/8x6	.337	.167	2	.232	0	y	5	71583....	72900	.57	9.113	1...	H1-1b
16	M102	L2.5x2.5x4	.335	0	2	.082	0	y	1	36492....	38556	1.114	2.537	2...	H2-1
17	M21	PL3/8x6	.329	.167	1	.233	0	y	6	71583....	72900	.57	9.113	1...	H1-1b
18	M26	PL1/2x6	.327	0	4	.134	0	y	9	93348....	97200	1.012	12.15	1...	H1-1b
19	M101	L2.5x2.5x4	.326	1.298	4	.090	0	y	4	36492....	38556	1.114	2.537	2...	H2-1
20	M9	PL1/2x6	.322	0	1	.125	0	y	8	93348....	97200	1.012	12.15	1...	H1-1b
21	M81	PIPE_2.0	.321	8.464	4	.231	11.8...		4	6295.4...	32130	1.872	1.872	2...	H1-1b
22	MP3C	PIPE_2.5	.313	4.5	2	.127	4.5		3	30038....	50715	3.596	3.596	2...	H1-1b
23	MP3A	PIPE_2.5	.312	4.5	4	.134	4.5		2	30038....	50715	3.596	3.596	1...	H1-1b
24	M7	PL1/2x6	.304	0	1	.176	0	y	7	93348....	97200	1.012	12.15	1...	H1-1b
25	M45	L2x2x3	.302	0	3	.012	4.29	y	6	9305.2...	23392.8	.558	1.176	1...	H2-1
26	M12	L2x2x3	.291	4.29	1	.010	4.29	z	8	9305.2...	23392.8	.558	1.212	2...	H2-1
27	M28	L2x2x3	.286	0	2	.012	4.29	y	5	9305.2...	23392.8	.558	1.208	2...	H2-1
28	MP3B	PIPE_2.5	.284	4.5	1	.105	4.5		4	30038....	50715	3.596	3.596	1...	H1-1b
29	M11	L2x2x3	.283	4.29	1	.012	4.29	y	7	9305.2...	23392.8	.558	1.211	2...	H2-1
30	M3	PL3/8x6	.274	0	4	.110	0	y	6	70647....	72900	.57	9.113	1...	H1-1b
31	M37	PL3/8x6	.268	0	3	.110	0	y	8	70647....	72900	.57	9.113	1...	H1-1b
32	M1	HSS4X4X4	.245	0	4	.103	0	z	3	12411...	139518	16.181	16.181	2...	H1-1b
33	M39	PL3/8x6	.230	0	2	.099	0	y	2	70647....	72900	.57	9.113	1...	H1-1b
34	MP1A	PIPE_2.5	.214	4.5	3	.168	4.5		2	30038....	50715	3.596	3.596	2...	H1-1b
35	MP1B	PIPE_2.5	.207	4.5	1	.138	4.5		4	30038....	50715	3.596	3.596	2...	H1-1b
36	M22	PL3/8x6	.207	0	1	.092	0	y	1	70647....	72900	.57	9.113	1...	H1-1b
37	M43	PL1/2x6	.204	0	4	.128	0	y	5	93348....	97200	1.012	12.15	1...	H1-1b
38	M24	PL1/2x6	.199	0	4	.173	0	y	5	93348....	97200	1.012	12.15	1...	H1-1b
39	MP4C	PIPE_2.5	.195	4.5	1	.118	4.5		1	30038....	50715	3.596	3.596	1...	H1-1b
40	MP1C	PIPE_2.5	.193	4.5	1	.151	4.5		4	30038....	50715	3.596	3.596	2...	H1-1b
41	MP4A	PIPE_2.5	.184	4.5	3	.114	1		2	30038....	50715	3.596	3.596	2...	H1-1b
42	M35	HSS4X4X4	.184	0	1	.096	0	z	2	12411...	139518	16.181	16.181	2...	H1-1b
43	MP4B	PIPE_2.5	.170	4.5	4	.129	4.5		4	30038....	50715	3.596	3.596	1...	H1-1b
44	M42	PL1/2x6	.148	.112	4	.158	0	y	3	96757....	97200	1.012	12.15	1...	H1-1b
45	M8	PL1/2x6	.141	.112	2	.146	0	y	5	96757....	97200	1.012	12.15	1...	H1-1b
46	M10	PL1/2x6	.140	.112	2	.233	0	y	7	96757....	97200	1.012	12.15	1...	H1-1b
47	M52	PIPE_3.0	.137	4.427	4	.130	8.073		1	28250....	65205	5.749	5.749	2...	H1-1b
48	M18	HSS4X4X4	.136	3.745	4	.059	0	z	1	12411...	139518	16.181	16.181	1...	H1-1b
49	M19	HSS4X4X4	.135	2.573	8	.070	4.931	z	4	12488...	139518	16.181	16.181	1...	H1-1b
50	M36	HSS4X4X4	.135	2.573	7	.070	4.931	z	2	12488...	139518	16.181	16.181	1...	H1-1b
51	M27	PL1/2x6	.135	0	3	.239	0	y	8	96757....	97200	1.012	12.15	1...	H1-1b
52	M80	PIPE_3.0	.130	4.557	1	.134	8.073		3	28250....	65205	5.749	5.749	2...	H1-1b
53	M2	HSS4X4X4	.129	2.573	5	.055	4.931	z	1	12488...	139518	16.181	16.181	1...	H1-1b
54	M44	PL1/2x6	.118	.112	4	.241	0	y	6	96757....	97200	1.012	12.15	1...	H1-1b
55	M103	LL2.5x2.5...	.118	0	5	.004	0	z	3	44372....	58320	3.954	2.55	1	H1-1b*
56	M104	LL2.5x2.5...	.116	0	8	.005	4.537	y	4	44372....	58320	3.954	2.55	1...	H1-1b*
57	M105	LL2.5x2.5...	.116	0	7	.005	0	z	2	44372....	58320	3.954	2.55	1...	H1-1b*
58	M20	PL3/8x6	.111	0	4	.107	0	y	7	70647....	72900	.57	9.113	1...	H1-1b
59	M25	PL1/2x6	.110	.112	4	.197	0	y	9	96757....	97200	1.012	12.15	1...	H1-1b

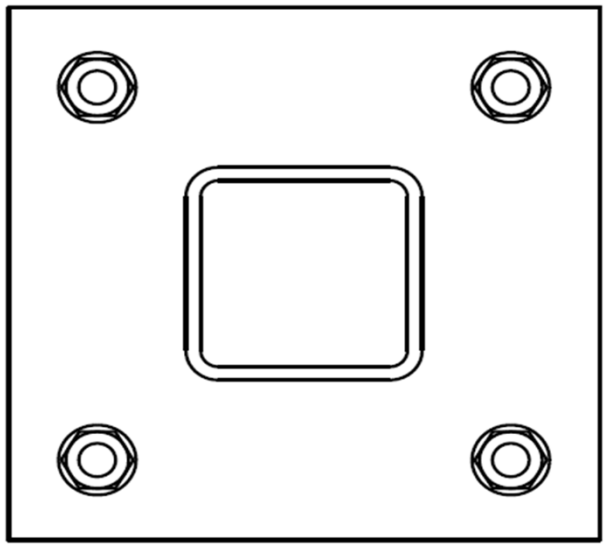
Envelope AISC 15th(360-16): LRFD Steel Code Checks (Continued)

	Member	Shape	Code Check	Loc[...	LC	Shear...	Loc[...	Dir	LC	phi*Pn...	phi*Pnt...	phi*Mn...	phi*Mn...	Cb	Eqn
60	M66	PIPE_3.0	.104	4.557	3	.091	.651		3	28250....	65205	5.749	5.749	2..	H1-1b

Tower Engineering Solutions	Standoff Arm Flange Connection Check		Date	6/27/2022
	Customer:	SBA Communications Corp	TIA Standard:	ANSI/TIA-222-G
	Carrier:	T-Mobile	Mount Elev. [ft]:	177
	Site Name:	Colchester2	Engineer Name:	Venkata Annamreddy
	Site Number:	CT02218-S-SBA	Project #:	130966

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 =	M1	
I or J End?	I	
Load Combination # =	3	
Plate Width, Wp =	8	[In]
Plate Height, Hp =	8	[In]
Plate Thickness, tp =	1	[In]
Plate Fy =	36	[KSI]
Bolt Diameter, db =	0.75	[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 =	0.921	[Kips]
Bolt Shear Capacity =	19.88	[Kips]
Max Bolt Shear Usage =	4.6%	PASS
Max Bolt Tension =	4.21	[Kips]
Bolt Tension Capacity =	30.10	[Kips]
Max Bolt Tension Usage =	14.0%	PASS
Max Bolt Interaction =	14.7%	PASS
Max Plate Bending Moment =	8.09	[Kip-In]
Length of Yield Line =	5.85	[In]
Plate Moment Capacity =	47.38	[Kip-In]
Max Plate Usage =	14.6%	PASS
Max Weld Usage =	28.7%	PASS

Exhibit F

Power Density/RF Emissions Report

Radio Frequency Exposure Analysis Report

July 21, 2022

Centerline on behalf of T-Mobile
Centerline Communications Project Number: N/A

T-Mobile Site Name: RT 2/Colchester West/SBA
Site Number: CT11338A

Site Address: 48 Westchester Road, Colchester, CT 06415

Site Compliance Summary

T-Mobile Compliance Status:	Compliant
Cumulative Calculated Power Density (Ground Level):	24.77044 µW/cm^2
Cumulative General Population % MPE (Ground Level):	0.49541000000000002%

750 West Center Street | Suite 301 | West Bridgewater | MA | 02379

July 21, 2022

Centerline
Attn: Jessica Meyer, Project Coordinator
750 W Center St, Suite 301
West Bridgewater, MA 02379

RF Exposure Analysis for Site: **RT 2/Colchester West/SBA**

Centerline Communications, LLC ("Centerline") was contracted to analyze the proposed T-Mobile facility at **48 Westchester Road, Colchester, CT 06415** for the purpose of determining whether the predictive exposure from the proposed facility is within specified federal limits.

All information used in this report was analyzed as a percentage of the Maximum Permissible Exposure (% MPE) limits as detailed in 47 CFR § 1.1310 as well as Federal Communications Commission (FCC) OET Bulletin 65 Edition 97-01. The FCC MPE limits are typically expressed in units of milliwatts per square centimeter (mW/cm^2) or microwatts per square centimeter ($\mu W/cm^2$). The exposure limits vary depending upon the frequencies being utilized. The General Population/Uncontrolled MPE limit (in mW/cm^2) for frequencies between 300 and 1500 is defined as frequency (in MHz) divided by 1500 ($f_{MHz}/1500$). Frequencies between 1500 and 100,000 MHz have a General Population/Uncontrolled MPE limit of 1 mW/cm^2 (1000 $\mu W/cm^2$). The calculated power density at each sample point divided by the limit at each calculated frequency provides a result in % MPE. Summing the calculated % MPE from all contributors provides a cumulative % MPE at a particular sample point. Wireless carriers use different frequency bands with varying MPE limits; therefore, it is useful to report results in terms of % MPE as opposed to power density.

All results were compared to the FCC radio frequency exposure rules as detailed in 47 CFR § 1.1307(b) to determine compliance with the 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.

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/ controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits, as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means. Additional details can be found in FCC OET 65.

Calculation Methodology

Centerline Communications, LLC has performed theoretical modeling of the site using a software tool, RoofMaster®, which incorporates calculation methodologies detailed in FCC OET 65. RoofMaster® uses a cylindrical model for conservative power density predictions within the near field of the antenna where the antenna pattern has not truly formed yet. Within this area power density values tend to decrease based upon an inverse distance function. At the point where it is appropriate for modeling to change from near-field calculations to far-field calculations, the power decreases inversely with the square of the distance. The modeling is based on worst-case assumptions in terms of transmitter power and duty cycle. No losses were included in the power calculations unless they were specifically provided for the project.

In OET 65, a far field model is presented to calculate the spatial peak power density. The RoofMaster® implementation of this model incorporates antenna manufacturer's horizontal and vertical pattern data to determine the power density in all directions. This model yields the power density at a single point in space. In order to determine the spatial power density for comparison to the FCC limits, the average of several points calculated within the human profile (0-6') must be conducted. RoofMaster® calculates seven power density values between 0-6' above the specified study plane and performs a linear spatial average.

Data & Results

The following table details the antennas and operating parameters for the T-Mobile antenna system as well as any other antenna systems at the site. This is based on antenna information provided by the client and data compiled from other sources where necessary. The data below was input into Roofmaster® to perform the theoretical exposure calculations at the ground level (0').

The theoretical calculations performed in Roofmaster® determine the cumulative exposure at all sample points at ground level (0-6' spatial average). The results from highest cumulative sample point at ground level surrounding the site are displayed in the table below. The contribution from directional antennas to the maximum cumulative totals varies greatly depending on location; therefore, the contribution from one antenna sector at the highest calculated exposure point may be greater or less than other sectors since sectorized directional antennas are pointed in different directions and there is not much overlapping exposure.

The contribution to the cumulative power density and % MPE for each antenna/frequency band is listed in the table. The cumulative power density and cumulative % MPE are displayed at the bottom of the table.

Maximum Calculated Cumulative Power Density (Location: approximately 505' southeast of site)

Antenna ID	Make / Model	Frequency Band (MHz)	Antenna Gain (dBd)	Antenna Centerline (ft)	Channel Count	TX Power/ Channel (watts)	ERP (watts)	Calculated Power Density (μW/cm²)	General Population MPE Limit (μW/cm²)	General Population % MPE
T-Mobile A 1	COMMSCOPE VV-65B-R1	1900	16.16	177.00	2.00	140.00	11565.33	0.00001	5000.00	0.00000
T-Mobile A 1	COMMSCOPE VV-65B-R1	2100	16.68	177.00	2.00	140.00	13036.41	0.00001	5000.00	0.00000
T-Mobile A 1	COMMSCOPE VV-65B-R1	1900	16.16	177.00	1.00	15.00	619.57	0.00000	5000.00	0.00000
T-Mobile A 2	RFS APXVAALL24 43-U-NA20	700	13.65	177.00	4.00	40.00	3707.83	0.00001	2333.33	0.00000
T-Mobile A 2	RFS APXVAALL24 43-U-NA20	600	12.95	177.00	2.00	40.00	1577.94	0.00000	2000.00	0.00000
T-Mobile A 2	RFS APXVAALL24 43-U-NA20	600	12.95	177.00	2.00	30.00	1183.45	0.00000	2000.00	0.00000
T-Mobile A 3	ERICSSON AIR6419	2500	22.05	177.00	2.00	80.00	25651.93	5.04868	5000.00	0.10097
T-Mobile A 3	ERICSSON AIR6419	2500	22.05	177.00	2.00	80.00	25651.93	5.04868	5000.00	0.10097
T-Mobile B 4	COMMSCOPE VV-65B-R1	1900	16.16	177.00	2.00	140.00	11565.33	0.00002	5000.00	0.00000
T-Mobile B 4	COMMSCOPE VV-65B-R1	2100	16.68	177.00	2.00	140.00	13036.41	0.00003	5000.00	0.00000
T-Mobile B 4	COMMSCOPE VV-65B-R1	1900	16.16	177.00	1.00	15.00	619.57	0.00000	5000.00	0.00000
T-Mobile B 5	RFS APXVAALL24 43-U-NA20	700	13.65	177.00	4.00	40.00	3707.83	0.00001	2333.33	0.00000
T-Mobile B 5	RFS APXVAALL24 43-U-NA20	600	12.95	177.00	2.00	40.00	1577.94	0.00001	2000.00	0.00000
T-Mobile B 5	RFS APXVAALL24 43-U-NA20	600	12.95	177.00	2.00	30.00	1183.45	0.00001	2000.00	0.00000
T-Mobile B 6	ERICSSON AIR6419	2500	22.05	177.00	2.00	80.00	25651.93	7.33537	5000.00	0.14671
T-Mobile B 6	ERICSSON AIR6419	2500	22.05	177.00	2.00	80.00	25651.93	7.33537	5000.00	0.14671
T-Mobile C 7	COMMSCOPE VV-65B-R1	1900	16.16	177.00	2.00	140.00	11565.33	0.00000	5000.00	0.00000
T-Mobile C 7	COMMSCOPE VV-65B-R1	2100	16.68	177.00	2.00	140.00	13036.41	0.00000	5000.00	0.00000
T-Mobile C 7	COMMSCOPE VV-65B-R1	1900	16.16	177.00	1.00	15.00	619.57	0.00000	5000.00	0.00000
T-Mobile C 8	RFS APXVAALL24 43-U-NA20	700	13.65	177.00	4.00	40.00	3707.83	0.00000	2333.33	0.00000
T-Mobile C 8	RFS APXVAALL24 43-U-NA20	600	12.95	177.00	2.00	40.00	1577.94	0.00000	2000.00	0.00000
T-Mobile C 8	RFS APXVAALL24 43-U-NA20	600	12.95	177.00	2.00	30.00	1183.45	0.00000	2000.00	0.00000
T-Mobile C 9	ERICSSON AIR6419	2500	22.05	177.00	2.00	80.00	25651.93	0.00070	5000.00	0.00001
T-Mobile C 9	ERICSSON AIR6419	2500	22.05	177.00	2.00	80.00	25651.93	0.00070	5000.00	0.00001
Verizon A 10	AMPHENOL LPA-80080-4CF	850	12.50	167.00	4.00	20.00	1422.62	0.00000	2833.33	0.00000
Verizon A 11	COMMSCOPE SBNHH-1D65B	700	12.38	167.00	2.00	40.00	1383.85	0.00000	2333.33	0.00000
Verizon A 11	COMMSCOPE SBNHH-1D65B	850	12.67	167.00	2.00	40.00	1479.41	0.00000	2833.33	0.00000
Verizon A 11	COMMSCOPE SBNHH-1D65B	1900	15.89	167.00	4.00	40.00	6210.41	0.00000	5000.00	0.00000
Verizon A 12	COMMSCOPE SBNHH-1D65B	700	12.38	167.00	2.00	40.00	1383.85	0.00000	2333.33	0.00000
Verizon A 12	COMMSCOPE SBNHH-1D65B	850	12.67	167.00	2.00	40.00	1479.41	0.00000	2833.33	0.00000
Verizon A 12	COMMSCOPE SBNHH-1D65B	2100	16.44	167.00	4.00	40.00	7048.88	0.00000	5000.00	0.00000
Verizon A 13	SAMSUNG MT6407	3700	23.35	167.00	4.00	50.00	43254.37	0.00019	5000.00	0.00000
Verizon A 14	AMPHENOL LPA-80080-4CF	850	12.50	167.00	3.00	20.00	1066.97	0.00000	2833.33	0.00000
Verizon B 15	AMPHENOL LPA-80080-4CF	850	12.50	167.00	4.00	20.00	1422.62	0.00001	2833.33	0.00000
Verizon B 16	COMMSCOPE SBNHH-1D65B	700	12.38	167.00	2.00	40.00	1383.85	0.00001	2333.33	0.00000

Antenna ID	Make / Model	Frequency Band (MHz)	Antenna Gain (dBd)	Antenna Centerline (ft)	Channel Count	TX Power/ Channel (watts)	ERP (watts)	Calculated Power Density (μW/cm²)	General Population MPE Limit (μW/cm²)	General Population % MPE
Verizon B 16	COMMSCOPE SBNHH-1D65B	850	12.67	167.00	2.00	40.00	1479.41	0.00000	2833.33	0.00000
Verizon B 16	COMMSCOPE SBNHH-1D65B	1900	15.89	167.00	4.00	40.00	6210.41	0.00001	5000.00	0.00000
Verizon B 17	COMMSCOPE SBNHH-1D65B	700	12.38	167.00	2.00	40.00	1383.85	0.00001	2333.33	0.00000
Verizon B 17	COMMSCOPE SBNHH-1D65B	850	12.67	167.00	2.00	40.00	1479.41	0.00000	2833.33	0.00000
Verizon B 17	COMMSCOPE SBNHH-1D65B	2100	16.44	167.00	4.00	40.00	7048.88	0.00001	5000.00	0.00000
Verizon B 18	SAMSUNG MT6407	3700	23.35	167.00	4.00	50.00	43254.37	0.00034	5000.00	0.00001
Verizon B 19	AMPHENOL LPA-80080-4CF	850	12.50	167.00	3.00	20.00	1066.97	0.00001	2833.33	0.00000
Verizon C 20	AMPHENOL LPA-80080-4CF	850	12.50	167.00	4.00	20.00	1422.62	0.00000	2833.33	0.00000
Verizon C 21	COMMSCOPE SBNHH-1D65B	700	12.38	167.00	2.00	40.00	1383.85	0.00000	2333.33	0.00000
Verizon C 21	COMMSCOPE SBNHH-1D65B	850	12.67	167.00	2.00	40.00	1479.41	0.00000	2833.33	0.00000
Verizon C 21	COMMSCOPE SBNHH-1D65B	1900	15.89	167.00	4.00	40.00	6210.41	0.00000	5000.00	0.00000
Verizon C 22	COMMSCOPE SBNHH-1D65B	700	12.38	167.00	2.00	40.00	1383.85	0.00000	2333.33	0.00000
Verizon C 22	COMMSCOPE SBNHH-1D65B	850	12.67	167.00	2.00	40.00	1479.41	0.00000	2833.33	0.00000
Verizon C 22	COMMSCOPE SBNHH-1D65B	2100	16.44	167.00	4.00	40.00	7048.88	0.00000	5000.00	0.00000
Verizon C 23	SAMSUNG MT6407	3700	23.35	167.00	4.00	50.00	43254.37	0.00000	5000.00	0.00000
Verizon C 24	AMPHENOL LPA-80080-4CF	850	12.50	167.00	3.00	20.00	1066.97	0.00000	2833.33	0.00000
AT&T A 25	POWERWAVE 7770	850	11.35	157.00	4.00	40.00	2183.33	0.00001	2833.33	0.00000
AT&T A 26	CCI DMP65R-BU4D	700	9.95	157.00	4.00	40.00	1581.68	0.00001	2333.33	0.00000
AT&T A 26	CCI DMP65R-BU4D	1900	13.45	157.00	4.00	40.00	3540.95	0.00001	5000.00	0.00000
AT&T A 26	CCI DMP65R-BU4D	2100	14.05	157.00	4.00	40.00	4065.56	0.00000	5000.00	0.00000
AT&T A 27	CCI HPA65R-BU4A	850	10.85	157.00	4.00	40.00	1945.90	0.00001	2833.33	0.00000
AT&T A 27	CCI HPA65R-BU4A	2300	14.75	157.00	4.00	25.00	2985.38	0.00000	5000.00	0.00000
AT&T B 28	POWERWAVE 7770	850	11.35	157.00	4.00	40.00	2183.33	0.00002	2833.33	0.00000
AT&T B 29	CCI DMP65R-BU8D	700	12.25	157.00	4.00	40.00	2686.09	0.00003	2333.33	0.00000
AT&T B 29	CCI DMP65R-BU8D	1900	14.55	157.00	4.00	40.00	4561.63	0.00002	5000.00	0.00000
AT&T B 29	CCI DMP65R-BU8D	2100	15.35	157.00	4.00	40.00	5484.28	0.00002	5000.00	0.00000
AT&T B 30	CCI HPA65R-BU8A	850	15.10	157.00	4.00	40.00	5177.50	0.00001	2833.33	0.00000
AT&T B 30	CCI HPA65R-BU8A	2300	16.40	157.00	4.00	25.00	4365.16	0.00001	5000.00	0.00000
AT&T C 31	POWERWAVE 7770	850	11.35	157.00	4.00	40.00	2183.33	0.00000	2833.33	0.00000
AT&T C 32	CCI DMP65R-BU4D	700	9.95	157.00	4.00	40.00	1581.68	0.00000	2333.33	0.00000
AT&T C 32	CCI DMP65R-BU4D	1900	13.45	157.00	4.00	40.00	3540.95	0.00000	5000.00	0.00000
AT&T C 32	CCI DMP65R-BU4D	2100	14.05	157.00	4.00	40.00	4065.56	0.00000	5000.00	0.00000
AT&T C 33	CCI HPA65R-BU4A	850	10.85	157.00	4.00	40.00	1945.90	0.00000	2833.33	0.00000
AT&T C 33	CCI HPA65R-BU4A	2300	14.75	157.00	4.00	25.00	2985.38	0.00000	5000.00	0.00000
Dish A 34	JMA MX08FRO665-21	700	12.05	147.00	4.00	40.00	2565.19	0.00001	2333.33	0.00000
Dish A 34	JMA MX08FRO665-21	2000	15.75	147.00	4.00	40.00	6013.40	0.00001	5000.00	0.00000

Antenna ID	Make / Model	Frequency Band (MHz)	Antenna Gain (dBd)	Antenna Centerline (ft)	Channel Count	TX Power/ Channel (watts)	ERP (watts)	Calculated Power Density ($\mu W/cm^2$)	General Population MPE Limit ($\mu W/cm^2$)	General Population % MPE
Dish A 34	JMA MX08FRO665-21	2100	16.75	147.00	4.00	40.00	7570.42	0.00000	5000.00	0.00000
Dish B 35	JMA MX08FRO665-21	700	12.05	147.00	4.00	40.00	2565.19	0.00002	2333.33	0.00000
Dish B 35	JMA MX08FRO665-21	2000	15.75	147.00	4.00	40.00	6013.40	0.00002	5000.00	0.00000
Dish B 35	JMA MX08FRO665-21	2100	16.75	147.00	4.00	40.00	7570.42	0.00002	5000.00	0.00000
Dish C 36	JMA MX08FRO665-21	700	12.05	147.00	4.00	40.00	2565.19	0.00000	2333.33	0.00000
Dish C 36	JMA MX08FRO665-21	2000	15.75	147.00	4.00	40.00	6013.40	0.00000	5000.00	0.00000
Dish C 36	JMA MX08FRO665-21	2100	16.75	147.00	4.00	40.00	7570.42	0.00000	5000.00	0.00000
							Cumulative Power Density:	**24.77044 $\mu W/cm^2$**	**Cumulative % MPE:**	**0.49541%**

Summary

The theoretical calculations performed for this analysis yielded cumulative power density totals in all areas at ground level (0') that are within the allowable federal limits for public exposure to RF energy. Therefore, the site is **Compliant** with FCC rules and regulations.

Katrina Styx
RF EME Technical Writer
Centerline Communications, LLC

Exhibit G

Recipient Mailings

UNITED STATES POSTAL SERVICE®

Click-N-Ship®

9405 5036 9930 0308 5818 28 0089 5000 0020 6415

usps.com
$8.95
US POSTAGE
Flat Rate Env

U.S. POSTAGE PAID
Click-N-Ship®

07/28/2022 Mailed from 01566

PRIORITY MAIL®

Expected Delivery Date: 07/30/22

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

Ref#: SBCT-338C

0000

C001

ANDREAS BISBIKOS
FIRST SELECTMAN
127 NORWICH AVE
COLCHESTER CT 06415-1230

USPS TRACKING #

9405 5036 9930 0308 5818 28

Electronic Rate Approved #038555749

Cut on dotted line.

Instructions

1. **Each Click-N-Ship® label is unique. Labels are to be used as printed and used only once. DO NOT PHOTO COPY OR ALTER LABEL.**
2. **Place your label so it does not wrap around the edge of the package.**
3. **Adhere your label to the package. A self-adhesive label is recommended. If tape or glue is used, DO NOT TAPE OVER BARCODE. Be sure all edges are secure.**
4. **To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.**
5. **Mail your package on the "Ship Date" you selected when creating this label.**

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0308 5818 28

Trans. #:	568589080
Print Date:	07/28/2022
Ship Date:	07/28/2022
Expected Delivery Date:	07/30/2022

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

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

Ref#: SBCT-338C

To: ANDREAS BISBIKOS
FIRST SELECTMAN
127 NORWICH AVE
COLCHESTER CT 06415-1230

* 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.

UNITED STATES POSTAL SERVICE®

Thank you for shipping with the United States Postal Service!
Check the status of your shipment on the USPS Tracking® page at usps.com

UNITED STATES POSTAL SERVICE®

Click-N-Ship®

9405 5036 9930 0308 5818 66 0089 5000 0020 6415

usps.com
$8.95
US POSTAGE
Flat Rate Env

U.S. POSTAGE PAID
Click-N-Ship®

07/28/2022 Mailed from 01566

PRIORITY MAIL®

Expected Delivery Date: 07/30/22

Ref#: SBCT-338C

0000

C001

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

ARIEL LAGO
ZONING ENFORCEMENT OFFICER
127 NORWICH AVE
COLCHESTER CT 06415-1230

USPS TRACKING #

9405 5036 9930 0308 5818 66

Electronic Rate Approved #038555749

Cut on dotted line.

Instructions

1. **Each Click-N-Ship® label is unique. Labels are to be used as printed and used only once. DO NOT PHOTO COPY OR ALTER LABEL.**
2. **Place your label so it does not wrap around the edge of the package.**
3. **Adhere your label to the package. A self-adhesive label is recommended. If tape or glue is used, DO NOT TAPE OVER BARCODE. Be sure all edges are secure.**
4. **To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.**
5. **Mail your package on the "Ship Date" you selected when creating this label.**

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0308 5818 66

Trans. #:	568589080
Print Date:	07/28/2022
Ship Date:	07/28/2022
Expected Delivery Date:	07/30/2022

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

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

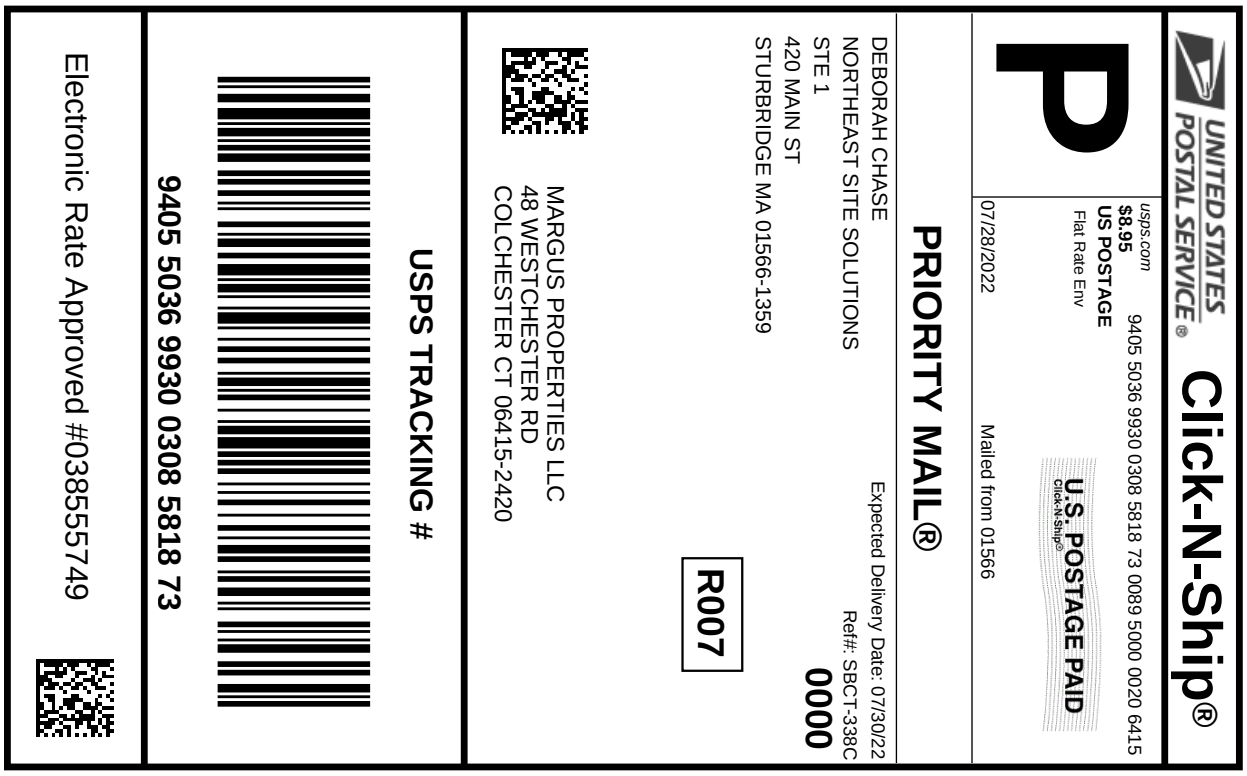
Ref#: SBCT-338C

To: ARIEL LAGO
ZONING ENFORCEMENT OFFICER
127 NORWICH AVE
COLCHESTER CT 06415-1230

* 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.

UNITED STATES POSTAL SERVICE®

Thank you for shipping with the United States Postal Service!
Check the status of your shipment on the USPS Tracking® page at usps.com



Cut on dotted line.

Instructions

1. **Each Click-N-Ship® label is unique. Labels are to be used as printed and used only once. DO NOT PHOTO COPY OR ALTER LABEL.**
2. **Place your label so it does not wrap around the edge of the package.**
3. **Adhere your label to the package. A self-adhesive label is recommended. If tape or glue is used, DO NOT TAPE OVER BARCODE. Be sure all edges are secure.**
4. **To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.**
5. **Mail your package on the "Ship Date" you selected when creating this label.**

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0308 5818 73

Trans. #:	568589080
Print Date:	07/28/2022
Ship Date:	07/28/2022
Expected Delivery Date:	07/30/2022

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

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

Ref#: SBCT-338C

To: MARGUS PROPERTIES LLC
48 WESTCHESTER RD
COLCHESTER CT 06415-2420

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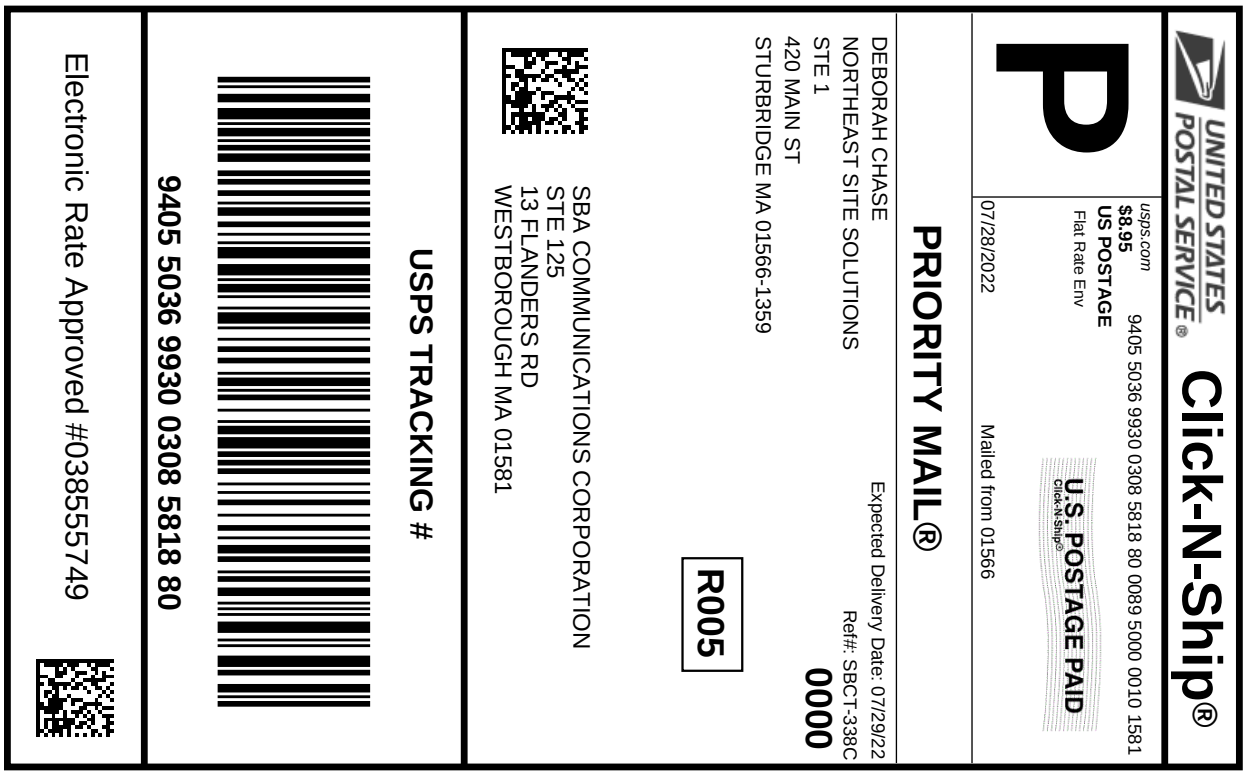

Cut on dotted line.

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Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0308 5818 80

Trans. #:	568589080
Print Date:	07/28/2022
Ship Date:	07/28/2022
Expected Delivery Date:	07/29/2022

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

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

Ref#: SBCT-338C

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

* 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.

Thank you for shipping with the United States Postal Service!
Check the status of your shipment on the USPS Tracking® page at usps.com

0113587+ TMO

UNITED STATES POSTAL SERVICE.

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

07/28/2022 03:43 PM

Product	Qty	Unit Price	Price
Prepaid Mail Westborough, MA 01581 Weight: 0 lb 2.00 oz Acceptance Date: Thu 07/28/2022 Tracking #: 9405 5036 9930 0308 5818 80	1		$0.00
Prepaid Mail Colchester, CT 06415 Weight: 0 lb 6.70 oz Acceptance Date: Thu 07/28/2022 Tracking #: 9405 5036 9930 0308 5818 73	1		$0.00
Prepaid Mail Colchester, CT 06415 Weight: 0 lb 6.70 oz Acceptance Date: Thu 07/28/2022 Tracking #: 9405 5036 9930 0308 5818 66	1		$0.00
Prepaid Mail Colchester, CT 06415 Weight: 0 lb 6.70 oz Acceptance Date: Thu 07/28/2022 Tracking #: 9405 5036 9930 0308 5818 28	1		$0.00
Grand Total:			$0.00

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