Filed by:
G. Scott Shepherd, Sr. Property Specialist - SBA Communications
134 Flanders Rd., Suite 125, Westborough, MA 01581
508.251.0720 x 3807 - GShepherd@sbasite.com

June 3, 2021

Melanie A. Bachman
Executive Director
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

RE: Notice of Exempt Modification
48 Westchester Road, Colchester, CT 06415
Latitude: 41.590161
Longitude: -72.401467
T-Mobile Site #: CT11338A_L600

Dear Ms. Bachman:

T-Mobile currently maintains six (6) antennas at the 177-foot level of the existing 180-foot Monopole Tower at 48 Westchester Rd, Colchester, CT. The 180-foot tower is owned by SBA Towers, LLC. The property is owned by Margus Properties, LLC. T-Mobile now intends to remove three (3) L600/L700MHz antennas and replace with three (3) new 600/700/2100 MHz antennas.

- **The new antennas would support 5G services and would be installed at the 177-foot level of the tower.**

Please note: Per the Connecticut Siting Council Website: CSC COVID 19 Guidelines. *In order to prevent the spread of Coronavirus and protect the health and safety of our members and staff, as of March 18, 2020, the Connecticut Siting Council shall convert to full remote operations until March 30, 2020. Please be advised that during this time period, all hard copy filing requirements will be waived in lieu of an electronic filing. Please also be advised that the March 26, 2020 regular meeting shall be held via teleconference. The Council's website is not equipped with an on-line filing fee receipt service. Therefore, filing fees and/or direct cost charges associated with matters received electronically during the above-mentioned time period will be directly invoiced at a later date.*

Planned Modifications:

TOWER

Remove:

- N/A

Remove and Replace:

- (3) LNX-6515DS-VTM Antenna (Remove) – (3) APXVAARR24_43U-NA20 Antenna 600/700/2100 MHz (Replace)

Install New:

- (3) Ericsson Radio 4449 B71+B85 RRUs
- (3) Ericsson 4415 B66A RRUs
- (3) 1.9" Fiber
- HR and kicker kit SitePro PRK-1245 & HRK12-U

Existing Equipment to Remain:

- (3) RFS APXV18-206516S-C-A20 1900 MHz antenna
- (1) Low profile platform
- (3) Kathrein 782 11056 Bias Ts
- (3) Ericsson KRY 112 489/2 TMAs
- (6) 1-5/8" Coax

Entitlements:

- (3) Ericsson KRY 112 144/1 TMAs
- (6) 1-5/8" fiber
- (1) 5/16" fiber
- (2) 5/16" Cat 6
- (1) Fastback Networks – IBR 1300 Dish

GROUND

Install New:

- Equipment inside existing 6201 cabinet
- Ericsson radio 4415 B66A in existing equipment area

Remain:

- 10' x 10' Concrete Pad
- (1) ½" coax for GPS antenna
- Existing Battery Cabinet
- Existing Ice Bridge

This facility was approved by the Town of Colchester's Zoning and Planning Commission under Site Development Plan 99-235 on November 3, 1999. The Town asked that a bond be posted in the amount of 25% of the total cost of site improvement. No post construction stipulations were set. Please see attached.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. §16.50j-72(b)(2). In accordance with R.C.S.A. § 16.50j-73, a copy of this letter is being sent to the Town of Colchester's First Selectman, Mary Bylone and Daphne Schaub, Zoning Enforcement Officer, as well as to the property owner. (Separate notice is not being sent to tower owner, as it belongs to SBA.)

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 modification 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 modification 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 telecommunication facility constitute an exempt modifications under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,

G. Scott Shepherd
Sr. Property Specialist
SBA COMMUNICATIONS CORPORATION
134 Flanders Rd., Suite 125
Westborough, MA 01581
508.251.0720 x3807 + T
508.366.2610 + F
508.868.6000 + C
GShepherd@sbasite.com

Attachments

cc: Mary Bylone, First Selectman / with attachments
127 Norwich Avenue, Colchester, CT 06415
Daphne Schaub, Zoning Enforcement Officer / with attachments
127 Norwich Avenue, Colchester, CT 06415
Margus Properties, LLC / with attachments
48 Westchester Road, Colchester CT 06415-2420 *(SBA address on file)*

Exhibit List

Exhibit 1	Check Copy	To be invoiced at a later date per Covid guidelines
Exhibit 2	Notification Receipts	x
Exhibit 3	Property Card	x
Exhibit 4	Property Map	x
Exhibit 5	Original Zoning Approval	Town of Colchester Z&P Commission 11/3/99
Exhibit 6	Construction Drawings	Chappell dated 4/20/21
Exhibit 7	Structural Analysis	TES dated 5/20/21
Exhibit 8	Post Mod Mount Analysis	TES dated 4/26/21
Exhibit 9	Mount Mod Drawings	TES dated 7/26/19
Exhibit 10	EME Report	EBI Consulting 6/2/21

EXHIBIT 1

Normally, Exhibit 1 would contain a copy of the check for the filing fee.

EXHIBIT 2

After printing this label:
1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.
Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com.FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery,misdelivery,or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim.Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental,consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss.Maximum for items of extraordinary value is $1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

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ORIGIN ID:BBFA (508) 614-0389
RICK WOODS
SBA COMMUNICATIONS CORPORATION
134 FLANDERS RD
SUITE 125
WESTBOROUGH, MA 01581
UNITED STATES US

SHIP DATE: 03JUN21
ACTWGT: 1.00 LB
CAD: 105843304/INET4340

BILL SENDER

TO DAPHNE SCHAUB, ZONE ENF. OFFICER
TOWN OF COLCHESTER
127 NORWICH AVE.

COLCHESTER CT 06415
(508) 251-0720 X 3807

REF: 10-56-92009-6099
INV:
PO:
DEPT:

FedEx Express

J211321033101uv

56DJ3/B387/FE4A

FRI - 04 JUN 10:30A
PRIORITY OVERNIGHT

TRK# 0201 7739 0277 3761

EB SKKA

06415
BDL
CT-US

After printing this label:
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EXHIBIT 3

Town of Colchester, CT

Property Report

Map Block Lot 06-12/040-000 | PID 1459 | Building # 1 | Section # 1 | Account C0064100

Property Information

Property Location	50 WESTCHESTER RD
Owner	MARGUS PROPERTIES LLC
Co-Owner	na
Mailing Address	48 WESTCHESTER RD COLCHESTER CT 06415
Land Use	1010 Single Fam
Land Class	R
Zoning Code	I
Census Tract	

Neighborhood	
Acreage	6.85
Utilities	UNKNOWN
Lot Setting/Desc	UNKNOWN UNKNOWN
Additional Info	

Photo

Sketch

Primary Construction Details

Year Built	1950
Stories	1.5
Building Style	Cape Cod
Building Use	Residential
Building Condition	
Interior Floors 1	Hardwood
Interior Floors 2	NA
Total Rooms	6
Basement Garages	
Occupancy	1.00
Building Grade	

Bedrooms	4 Bedrooms
Full Bathrooms	2
Half Bathrooms	0
Extra Fixtures	0
Bath Style	
Kitchen Style	
Roof Style	Gable
Roof Cover	Asphalt
AC Type	None
Fireplaces	0

Exterior Walls	Vinyl Siding
Exterior Walls 2	NA
Interior Walls	Drywall
Interior Walls 2	NA
Heating Type	Hot Water
Heating Fuel	Oil
Sq. Ft. Basement	
Fin BSMT Quality	
Extra Kitchens	

Report Created On 6/3/2021

Town of Colchester, CT

Property Report | Map Block Lot 06-12/040-000 | PID 1459 | Building # 1 | Section # 1 | Account C0064100

Valuation Summary

(Assessed value = 70% of Appraised Value)

Item	Appraised	Assessed
Buildings	110200	77100
Extras	1900	1300
Improvements		
Outbuildings	6900	4800
Land	167400	117300
Total	286400	200500

Outbuilding and Extra Features

Type	Description
Fpl 1.5ST Chim	1 UNITS
Garage	440 S.F.
Shed Frame	128 S.F.

Sub Areas

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
First Floor	1000	1000
Enclosed Porch	65	0
Half Story, Finished	1000	700
Basement, Unfinished	1000	0
Wood Deck	28	0
Total Area		1700

Sales History

Owner of Record	Book/ Page	Sale Date	Sale Price
MARGUS PROPERTIES LLC	1201/0219	6/17/2013	0
MARGUS PROPERTIES LLC	1197/0248	5/9/2013	90000
MARGUS PROPERTIES LLC	0847/0099	6/2/2005	365000
EVERETT MONICA A + LISA D	0213/0073	7/28/1988	0
CONORS ROBERT J + CAROLYN P	0121/0346	1/1/1987	0

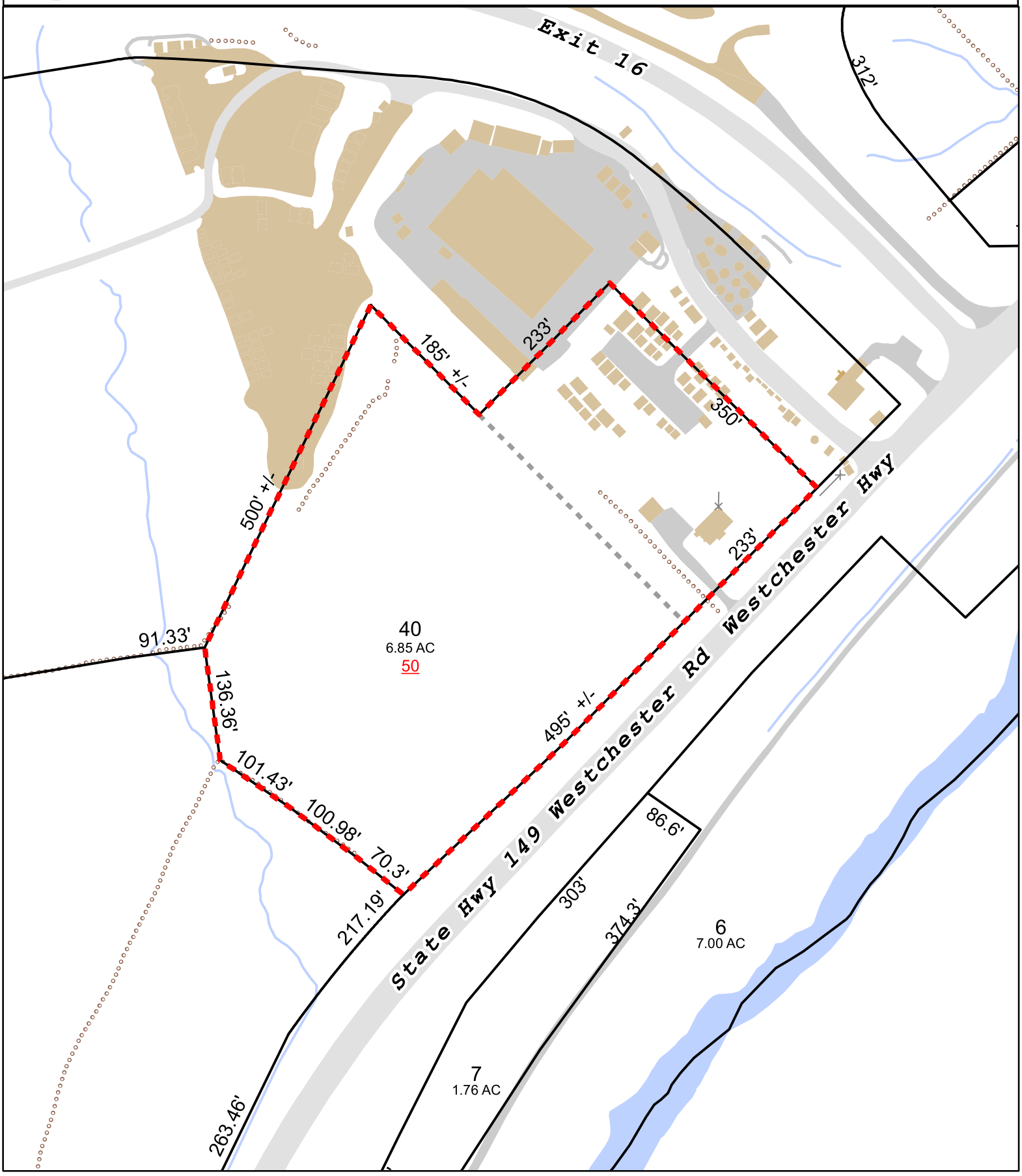
Report Created On 6/3/2021

EXHIBIT 4

Town of Colchester, Connecticut - Assessment Parcel Map

Parcel: 06-12-040-000

Address: 50 WESTCHESTER RD



Approximate Scale: 1 inch = 150 feet

0 75 150 225 300 Feet

Map Produced: April 2021 / Grand List: 2020

EXHIBIT 5

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

127 NORWICH AVENUE ❖ COLCHESTER, CT 06415 ❖ (860) 537-7280 ❖ FAX (860) 537-7287

EXHIBIT 6

SPECIAL CONSTRUCTION NOTE (SBA-PROVIDED ANTENNA MOUNT STRUCTURAL MOD SPECIAL EQUIPMENT INSTALLATION REQUIREMENTS):
GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL ANTENNA MOUNT STRUCTURAL AUGMENTS (STRUCTURAL MODIFICATIONS) AT THE T-MOBILE RAD/VERTICAL EQUIPMENT SPACE PER RECOMMENDATIONS FROM SBA-PROVIDED ANTENNA MOUNT STRUCTURAL ANALYSIS AND ANY SUPPLEMENTAL CONSTRUCTION DRAWINGS (PROVIDED BY OTHERS).

APPROVED
By Stephen Roth at 4:58:57 AM, 4/22/2021

ROUTE 2/COLCHESTER WEST/SBA

APPROVALS

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

T-MOBILE TECHNICIAN SITE SAFETY NOTES

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

48 WESTCHESTER ROAD
COLCHESTER, CT 06415
NEW LONDON COUNTY

SITE NO.: CT11338A

SITE TYPE: 180'± MONOPOLE

RF DESIGN GUIDELINE: 67D95F

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.

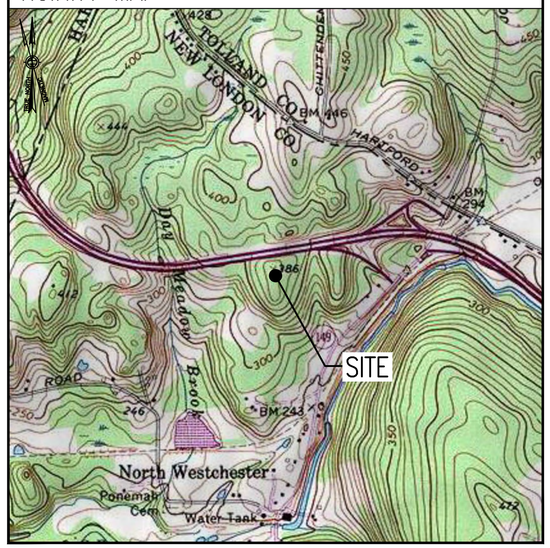
GENERAL NOTES

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"



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.

SHEET INDEX

SHEET NO.	DESCRIPTION	REV. NO.
T-1	TITLE SHEET	2
GN-1	GENERAL NOTES	2
A-1	COMPOUND & EQUIPMENT PLAN	2
A-2	TOWER ELEVATIONS & ANTENNA PLAN	2
A-3	SITE DETAILS	2
A-4	ANTENNA & FEEDLINE SCHEDULES	2
E-1	ELECTRIC & GROUNDING DETAILS	2

SPECIAL ZONING NOTE:
BASED ON INFORMATION PROVIDED BY SPRINT 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).

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
SBA RSM:	STEPHEN ROTH PHONE: 860-539-4920 EMAIL: SRoth@sbasite.com
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"

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

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

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

STATE OF CONNECTICUT
JAMES M. FITZGERALD
No. 25997
LICENSED PROFESSIONAL CIVIL ENGINEER
4/20/2021

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
2	04/20/21	CONSTRUCTION REVISED	CMC
1	08/06/19	ISSUED FOR CONSTRUCTION	CMC
0	05/07/19	ISSUED FOR REVIEW	CAW

SITE NUMBER:
CT11338A

SITE ADDRESS:
48 WESTCHESTER ROAD
COLCHESTER, CT 06415

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

1815.074

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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4/20/2021

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
2	04/20/21	CONSTRUCTION REVISED	CMC
1	08/06/19	ISSUED FOR CONSTRUCTION	CMC
0	05/07/19	ISSUED FOR REVIEW	CAW

SITE NUMBER:
CT11338A

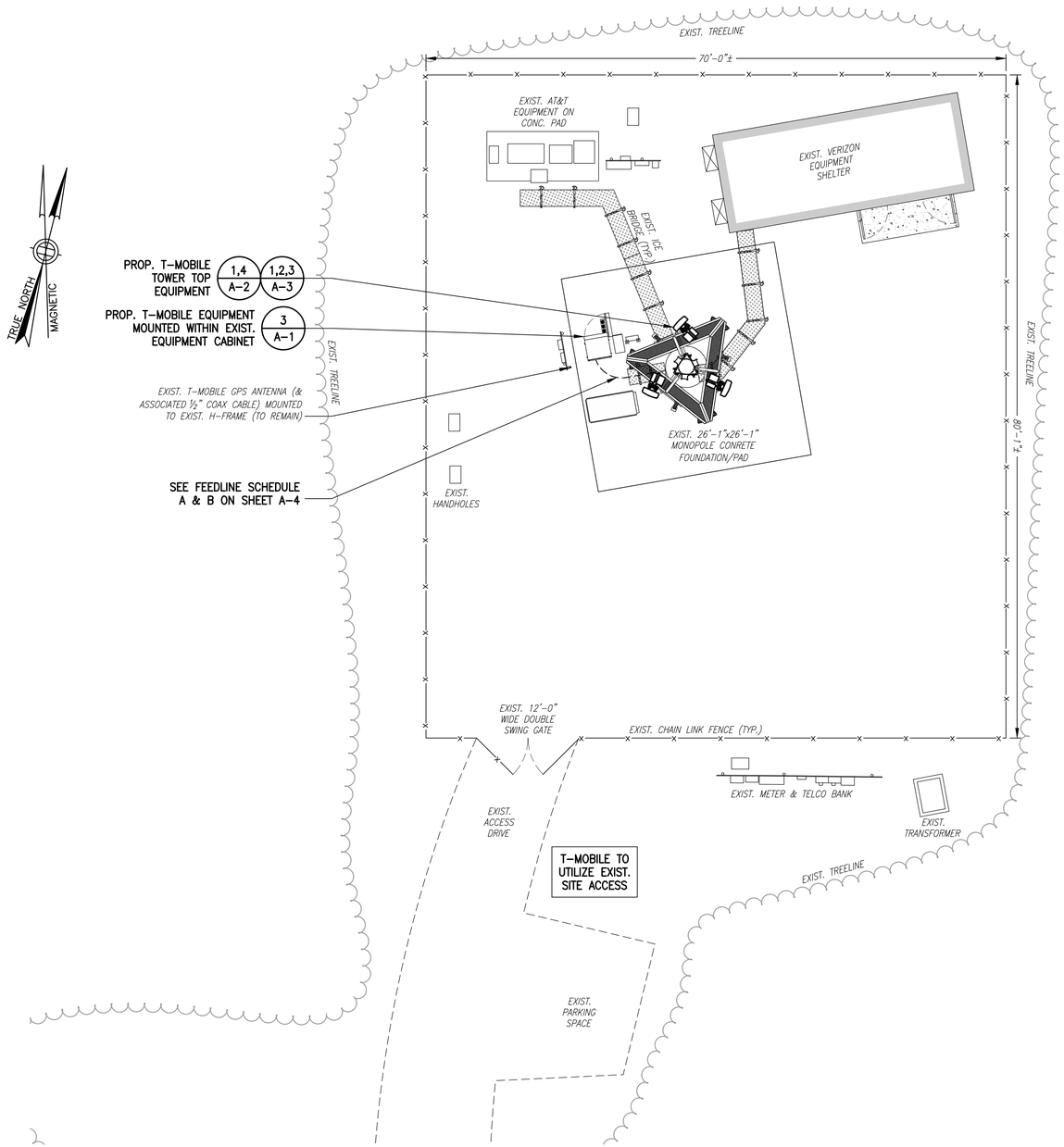
SITE ADDRESS:
48 WESTCHESTER ROAD
COLCHESTER, CT 06415

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-1

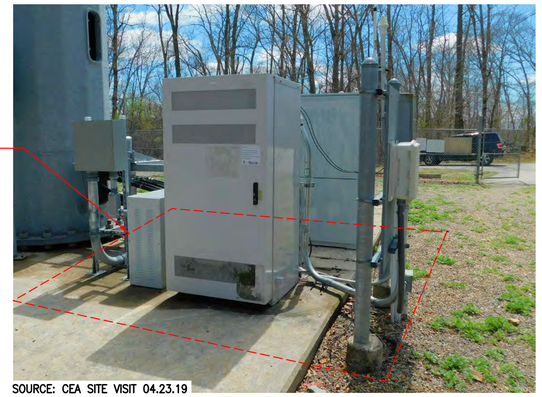
1815.074

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.



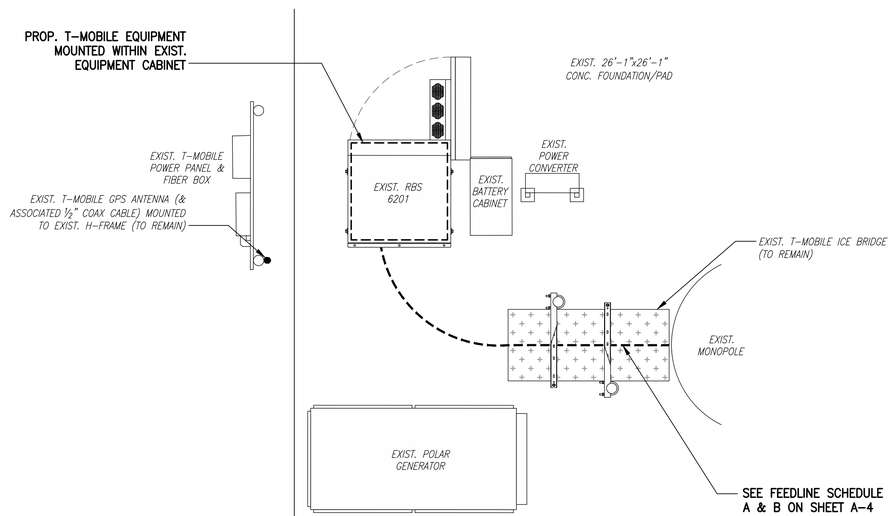
COMPOUND PLAN 1 A-1
SCALE: 1/8" = 1'-0"
0 2'-8" 5'-4" 8'-0"

EXIST. EQUIPMENT AREA 3 A-1



SOURCE: CEA SITE VISIT 04.23.19

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



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

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SUBMITTALS

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2	04/20/21	CONSTRUCTION REVISED	CMC
1	08/06/19	ISSUED FOR CONSTRUCTION	CMC
0	05/07/19	ISSUED FOR REVIEW	CAW

SITE NUMBER:
CT11338A

SITE ADDRESS:
48 WESTCHESTER ROAD
COLCHESTER, CT 06415

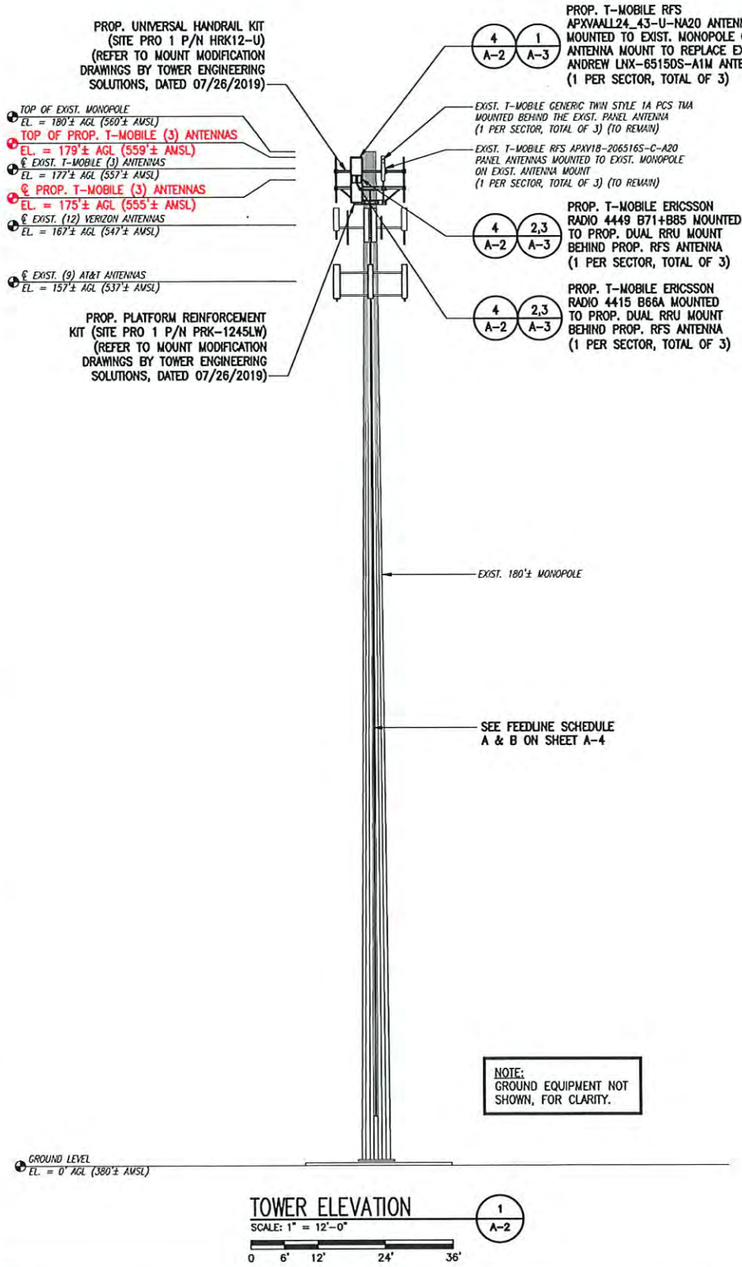
SHEET TITLE
COMPOUND & EQUIPMENT PLAN

SHEET NUMBER
A-1

1815.074

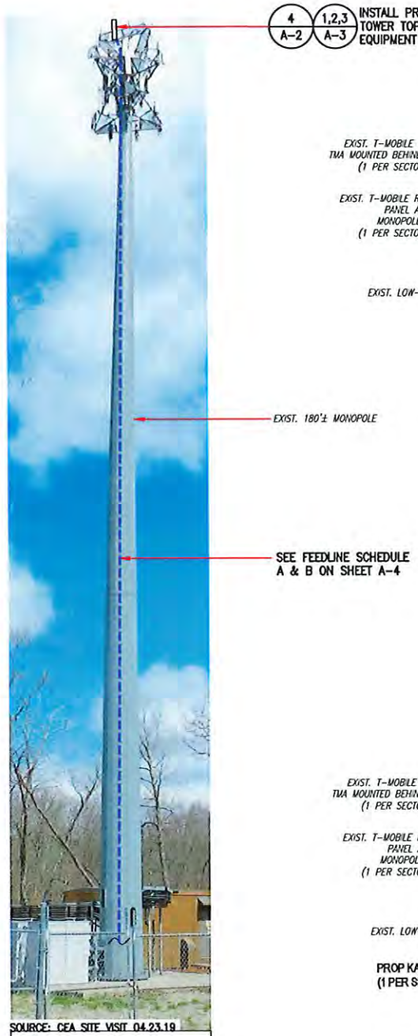
SPECIAL CONSTRUCTION NOTE (SBA-PROVIDED ANTENNA MOUNT STRUCTURAL MOD SPECIAL EQUIPMENT INSTALLATION REQUIREMENTS):
GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL ANTENNA MOUNT STRUCTURAL AUGMENTS (STRUCTURAL MODIFICATIONS) AT THE T-MOBILE RAD/VERTICAL EQUIPMENT SPACE PER RECOMMENDATIONS FROM SBA-PROVIDED 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.



NOTE:
GROUND EQUIPMENT NOT SHOWN, FOR CLARITY.

TOWER ELEVATION
SCALE: 1" = 12'-0" — 1 A-2



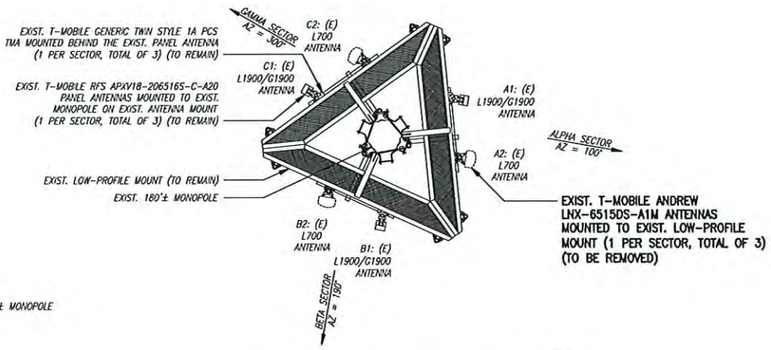
SOURCE: CEA SITE VISIT 04.23.19

NOTE:
PROPOSED T-MOBILE RRH'S NOT SHOWN, FOR CLARITY.

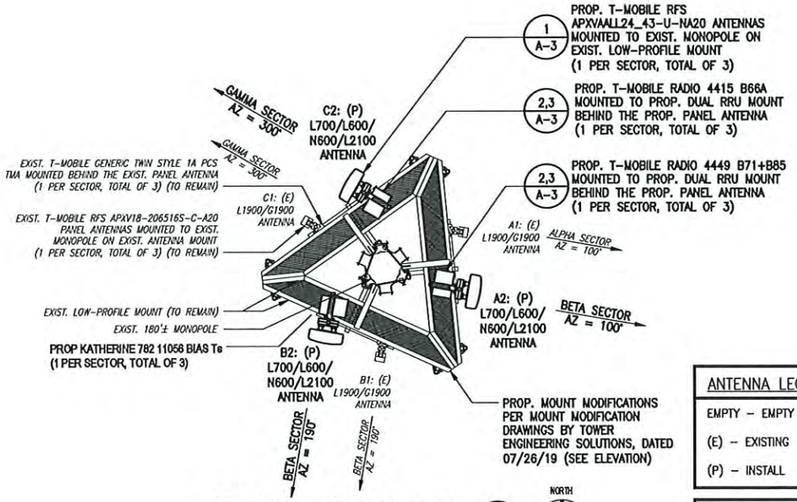
NOTE: ONE SECTOR SHOWN FOR CLARITY

TOWER PHOTO
SCALE: N.T.S. — 2 A-2

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.



EXISTING ANTENNA PLAN
SCALE: N.T.S. — 3 A-2 — NORTH



PROPOSED ANTENNA PLAN
SCALE: N.T.S. — 4 A-2 — NORTH

ANTENNA LEGEND:
- EMPTY – EMPTY PIPE
- (E) – EXISTING
- (P) – INSTALL

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

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SBA COMMUNICATIONS CORP.
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Civil Structural Land Surveying
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201 BOSTON POST ROAD WEST, SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

STATE OF CONNECTICUT ★ JAMES M. FITZGERALD ★ No. 25997 LICENSED PROFESSIONAL CIVIL ENGINEER
4/20/2021

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
2	04/20/21	CONSTRUCTION REVISED	CMC
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0	05/07/19	ISSUED FOR REVIEW	CAW

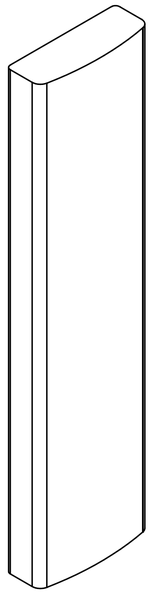
SITE NUMBER:
CT11338A

SITE ADDRESS:
48 WESTCHESTER ROAD
COLCHESTER, CT 06415

SHEET TITLE
TOWER ELEVATIONS & ANTENNA PLAN

SHEET NUMBER
A-2

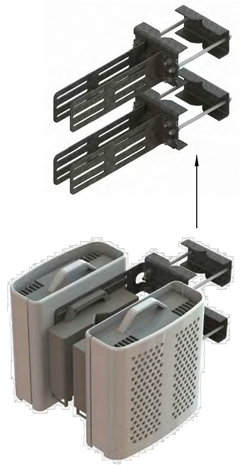
1815.074



RFS APXVAALL24_43-U-NA20 ANTENNA

DIMENSIONS: 95.9"H x 24.0"W x 8.5"D
WEIGHT: 122.8 lbs
QUANTITY: 1 PER SECTOR, TOTAL OF 3

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



COMMSCOPE RR-FA2 FAST ACCESS DUAL RRU MOUNT KIT

DIMENSIONS: 16.4"H x 8.6"W x 18"L
WEIGHT: 36.0 lbs
QUANTITY: 1 PER SECTOR, TOTAL OF 3

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

ERICSSON RADIO 4449 B71+B85

DIMENSIONS: 17.9"H x 13.1"W x 10.6"D
WEIGHT: 75.0 lbs
QUANTITY: 1 PER SECTOR, TOTAL OF 3

ERICSSON RADIO 4415 B66A

DIMENSIONS: 16.5"H x 13.4"W x 5.9"D
WEIGHT: 46.0 lbs
QUANTITY: 1 PER SECTOR, TOTAL OF 3

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

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STATE OF CONNECTICUT
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0	05/07/19	ISSUED FOR REVIEW	CAW

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CT11338A

SITE ADDRESS:
48 WESTCHESTER ROAD
COLCHESTER, CT 06415

SHEET TITLE
SITE DETAILS

SHEET NUMBER
A-3

1815.074

FINAL ANTENNA CONFIGURATION

SECTOR	ANTENNA	RAD CENTER	AZIMUTH (TRUE NORTH)	MECHANICAL DOWNTILT	ELECTRICAL DOWNTILT	BAND	TMA/RADIOS	CABLES
ALPHA	A1 *RFS APXV18-206516S-C-A20*	*177'± AGL*	*100°*	*0°*	*2°*	*L1900/G1900*	*GENERIC TWIN STYLE 1A PCS TMA*	*(6) 1-5/8" COAX CABLES*
	A2 **RFS APXVAALL24_43-U-NA20**	**175'± AGL**	**100°**	**0°**	**2°**	**L700/L600/N600**	**ERICSSON RADIO 4449 B71+B85**	**PROP. (3) 2" (6x24) HCS FIBER CABLES**
					2°	**L2100**	**ERICSSON RADIO 4415 B66A**	
BETA	B1 *RFS APXV18-206516S-C-A20*	*177'± AGL*	*190°*	*0°*	*2°*	*L1900/G1900*	*GENERIC TWIN STYLE 1A PCS TMA*	
	B2 **RFS APXVAALL24_43-U-NA20**	**175'± AGL**	**190°**	**0°**	**2°**	**L700/L600/N600**	**ERICSSON RADIO 4449 B71+B85**	
					2°	**L2100**	**ERICSSON RADIO 4415 B66A**	
GAMMA	G1 *RFS APXV18-206516S-C-A20*	*177'± AGL*	*300°*	*0°*	*2°*	*L1900/G1900*	*GENERIC TWIN STYLE 1A PCS TMA*	
	G2 **RFS APXVAALL24_43-U-NA20**	**175'± AGL**	**300°**	**0°**	**2°**	**L700/L600/N600**	**ERICSSON RADIO 4449 B71+B85**	
					2°	**L2100**	**ERICSSON RADIO 4415 B66A**	

CABLE NOTE: EXISTING (6) 1-5/8" COAX CABLES TO BE REMOVED. SEE FEEDLINE SCHEDULE A & B BELOW.

NOTE: RFDS REV3 – 02/09/21

FEEDLINE SCHEDULE

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

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

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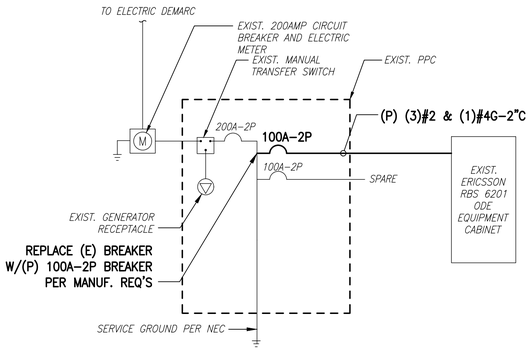
COLCHESTER, CT 06415

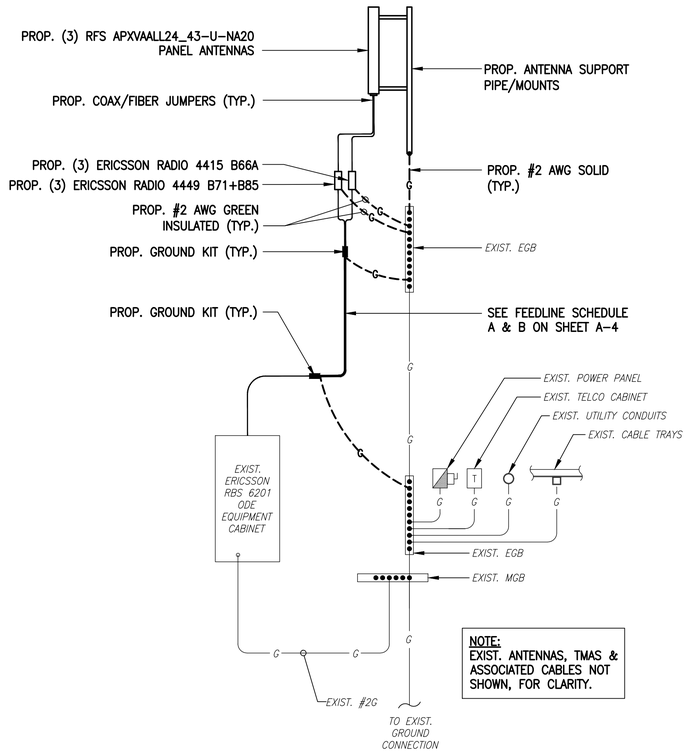
SHEET TITLE
ANTENNA & FEEDLINE CHARTS

SHEET NUMBER
A-4

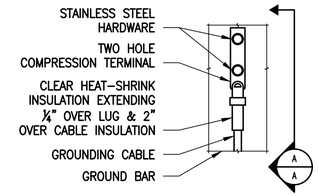
1815.074



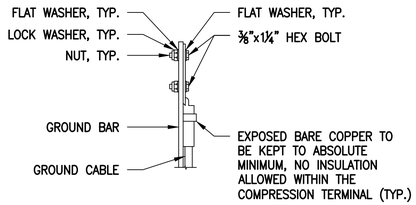
ONE LINE DIAGRAM (1 / E-1)
SCALE: NOT TO SCALE



GROUNDING RISER DIAGRAM (2 / E-1)
SCALE: NOT TO SCALE



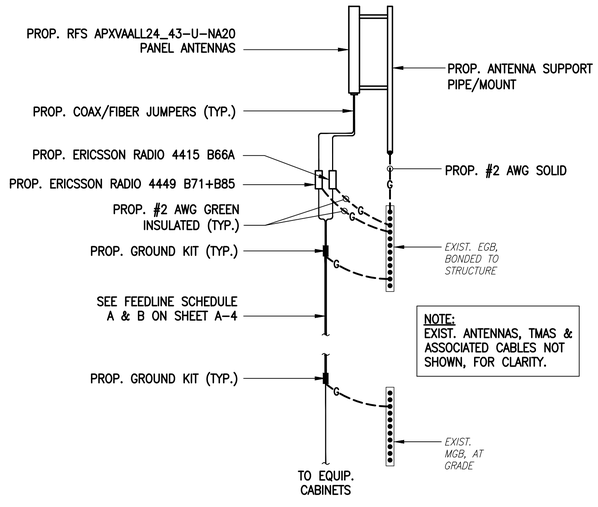
ELEVATION



SECTION A-A

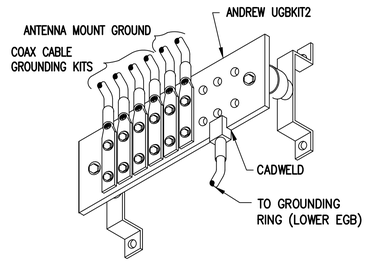
NOTES:
1. "DOUBLING UP" OR "STACKING" OF CONNECTION IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.
3. CADWELL DOWNLEADS FROM UPPER EGB, LOWER EGB AND MGB.

TYPICAL GROUND BAR CONNECTIONS DETAIL (3 / E-1)
SCALE: NOT TO SCALE



L700/L600/N600/L2100

COAX CABLE CONNECTION AND GROUNDING DETAIL (4 / E-1)
SCALE: NOT TO SCALE



GROUND BAR (EGB) (5 / 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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SITE NUMBER:
CT11338A

SITE ADDRESS:
48 WESTCHESTER ROAD
COLCHESTER, CT 06415

SHEET TITLE
ELECTRICAL & GROUNDING DETAILS

SHEET NUMBER
E-1

1815.074

EXHIBIT 7

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: Colchester

Carrier Name: T-Mobile (App#: 116665, V2)

Carrier Site ID / Name: CT11338A / Colchester

Site Location: 48 Westchester Road

Colchester, Connecticut

New London County

Latitude: 41.590161

Longitude: -72.401467

Exp.10/31/2021

05/20/2021

Analysis Result:

Max Structural Usage: 85.1% [Pass]

Max Foundation Usage: 75.0% [Pass]

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

Report Prepared By: Younus Alkarawi

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 # 106780, dated 04/26/2021

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	(12) 1 5/8" (1) 5/16" Fiber (2) 5/16" Cat 6	T-Mobile
-		3	Commscope - LNX-6515DS-VTM - Panel			
-		3	Ericsson - KRY 112 144/1 - TMA			
-		3	Kathrein - 782 11056 - Bias T's			
-		1	Fastback Networks - IBR 1300 - Dish			
7	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
8		2	Raycap RC2DC-3315-PF-48			
9		6	Antel LPA-80080-4CF-EDIN-0 - Panel			
10		3	Samsung VZS01 - Panel			
11		3	Samsung B5/B13 RRH-BR04C			
12		3	Samsung B2/B66A RRH-BR049			
13	157.0	3	Powerwave - 7770 - Panel	(1) Low Profile Platform	(12) 1 5/8" (2) ¾ DC (1) ½ Fiber	AT&T
14		2	CCI - DMP65R-BU4DA - Panel			
15		1	CCI - DMP65R-BU8DA - Panel			
16		2	CCI - HPA65R-BU4A - Panel			
17		1	CCI - HPA65R-BU8A - Panel			
18		3	4449 B5/B12			
19		3	8843 B2/B66A			
20		1	Raycap DC6-48-60-18-8F			

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 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
2		3	RFS APXVAALL24_43-U-NA20 - Panel			
3		3	Ericsson KRY 112 489/2 TMA			
4		3	Ericsson 4449 B71 + B85 RRU			
5		3	Ericsson 4415 B66A RRU			
6		3	Kathrein 782 11056-Bias Ts			

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

Analysis Results

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

	Pole shafts	Anchor Bolts	Base Plate
Max. Usage:	**85.1%**	**79.0%**	**61.6%**
Pass/Fail	**Pass**	**Pass**	**Pass**

Foundations

	Moment (Kip-Ft)	Shear (Kips)
Original Design Reactions	5045.0	39.5
Analysis Reactions	5624.8	45.1
Factored Reactions*	6810.8	53.3
% of Design Reactions	82.6%	84.6%

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

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 1.5965 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.

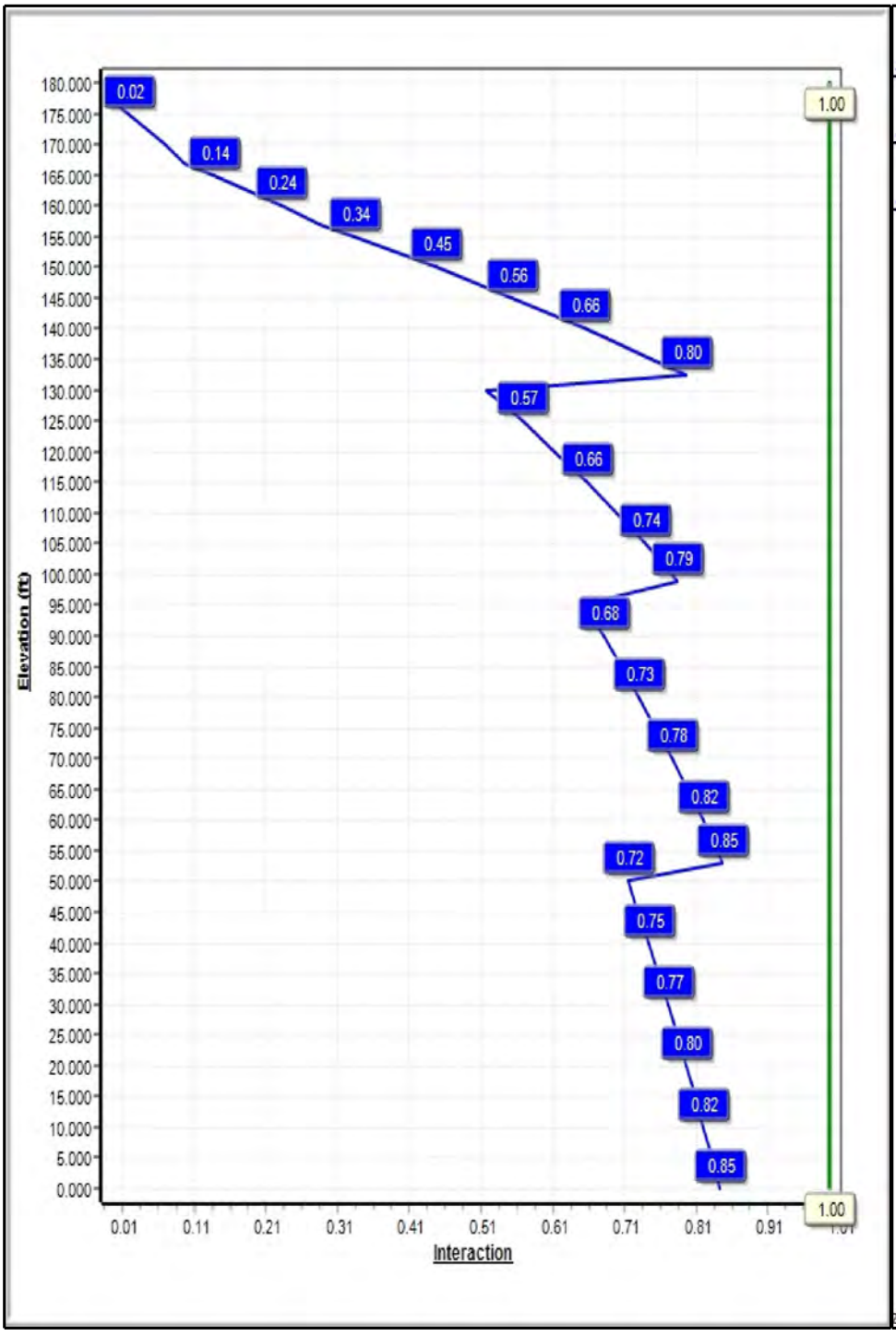
Usage Diagram - Max Ratio 85.14% at 53.0ft

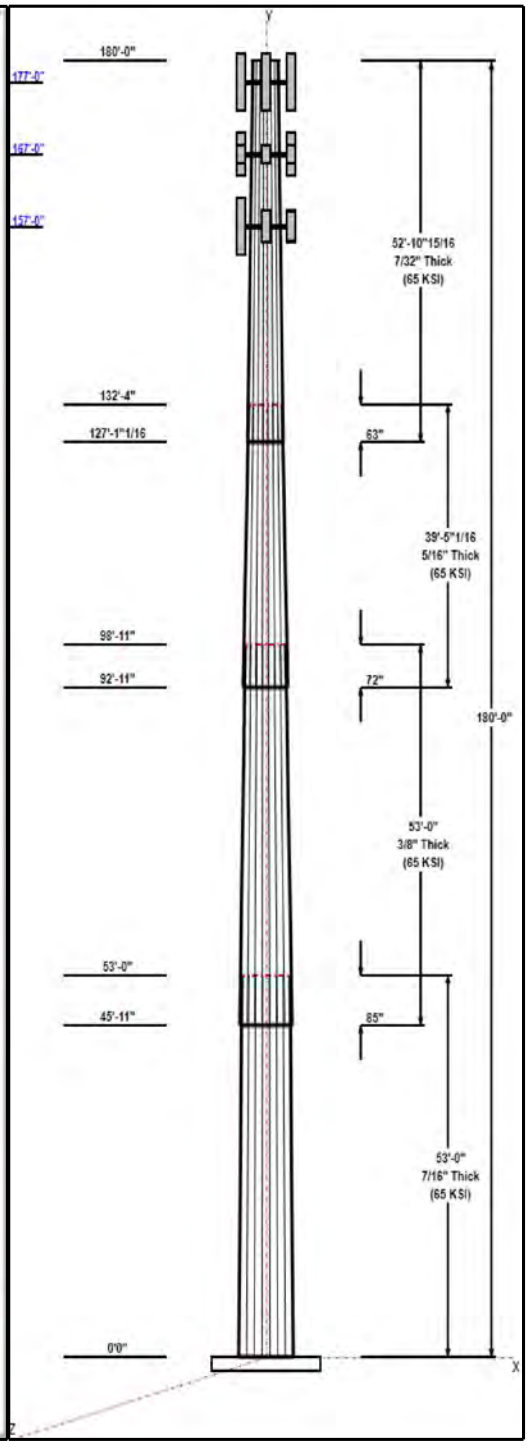
Structure:	CT02218-S-SBA	**Code:**	EIA/TIA-222-G	5/20/2021
Site Name:	Colchester	**Exposure:**	C	
Height:	180.00 (ft)	**Gh:**	1.1	
Base Elev:	0.000 (ft)			Page: 1

Tower Engineering Solutions

Dead Load Factor:	1.20	**Iterations:**	26
Wind Load Factor:	1.60		

Load Case : 1.2D + 1.6W 105 mph Wind





Structure: CT02218-S-SBA

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

Base Shape: 16 Sided
Taper: 0.20502

5/20/2021

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
180.00	180.00	1	6' Lightning rod	T-Mobile
177.00	177.00	3	782 11056	T-Mobile
177.00	177.00	1	Platform w/ Hand Rail	T-Mobile
177.00	177.00	3	Ericsson 4415 B66A RRU	T-Mobile
177.00	177.00	3	APXV18-206516S-C-A20	T-Mobile
177.00	177.00	1	MS-KI22-5 (Kickers w/o	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
167.00	167.00	3	Samsung VZS01	Verizon
167.00	167.00	3	Samsung B5/B13	Verizon
167.00	167.00	3	Samsung B2/B66A	Verizon
167.00	167.00	6	Commscope	Verizon
167.00	167.00	2	Raycap	Verizon
167.00	167.00	6	Antel	Verizon
167.00	167.00	1	Platform w/ Hand Rails	Verizon
157.00	157.00	1	Low Profile Platform-flat	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

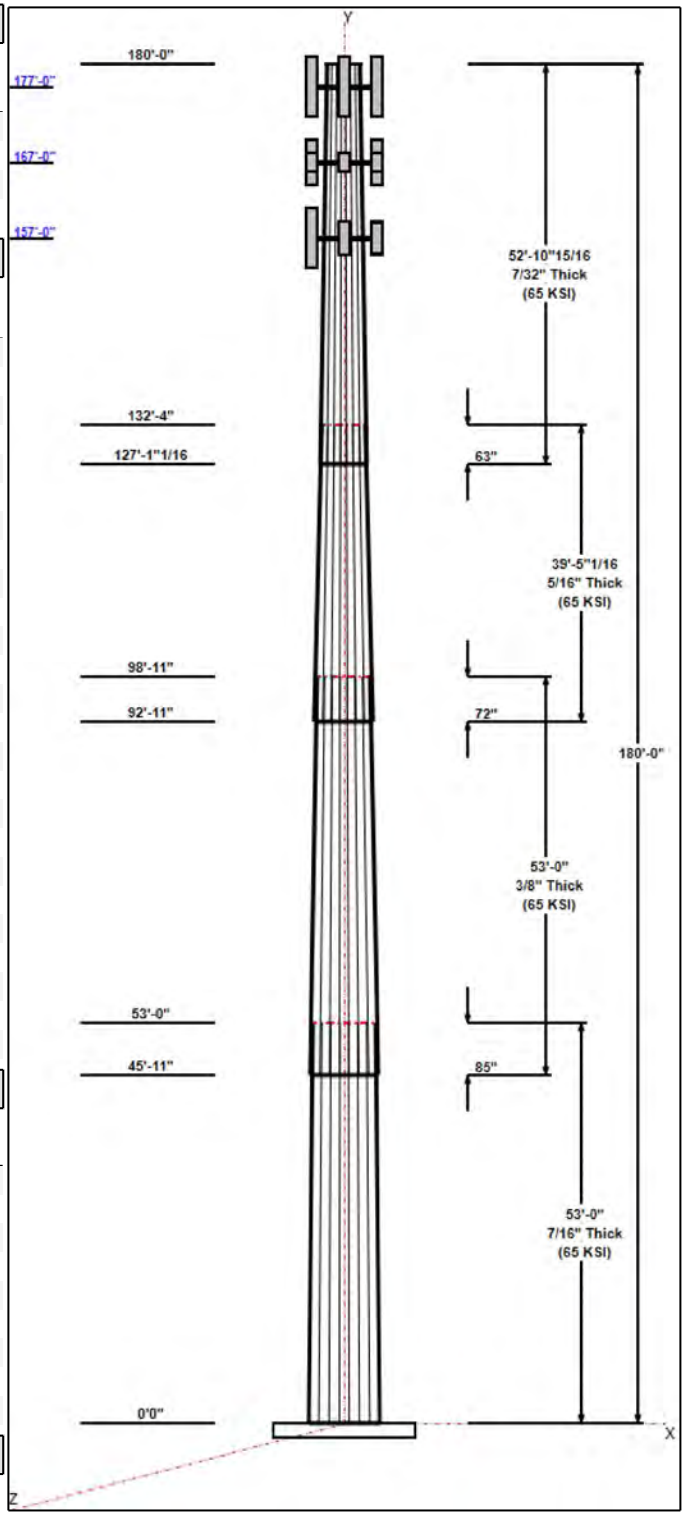
Linear Appurtenances

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

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

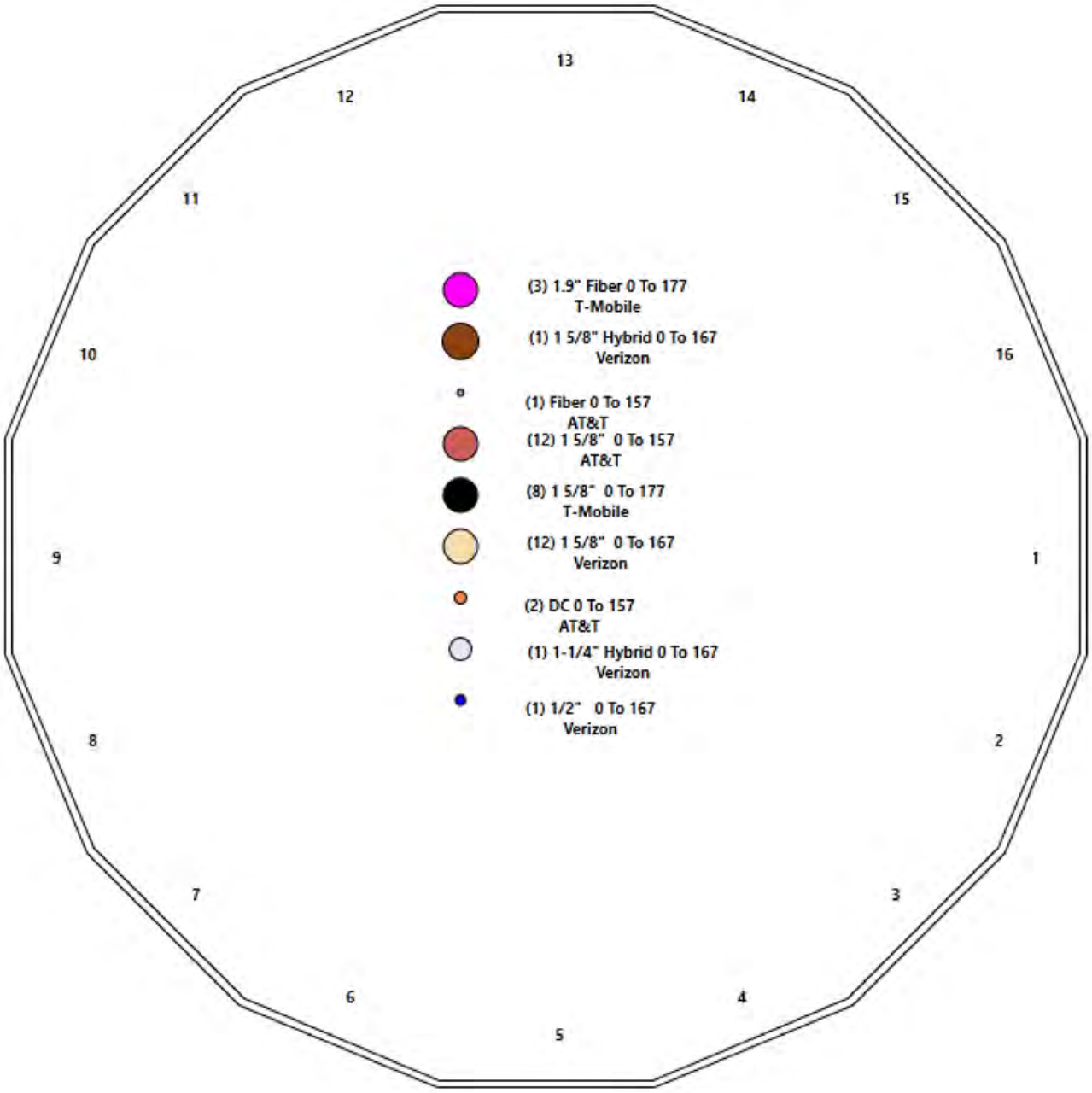
Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 105 mph Wind	5624.8	45.1	56.0
0.9D + 1.6W 105 mph Wind	5560.4	45.1	42.0
1.2D + 1.0Di + 1.0Wi 50 mph Wind	1287.0	10.2	81.6
1.2D + 1.0E	173.7	1.3	56.1
0.9D + 1.0E	171.6	1.3	42.0
1.0D + 1.0W 60 mph Wind	1141.8	9.2	46.7

Structure: CT02218-S-SBA - Coax Line Placement

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

5/20/2021

Tower Engineering Solutions



Shaft Properties

Structure:	CT02218-S-SBA		**Code:**	EIA/TIA-222-G	5/20/2021
Site Name:	Colchester		**Exposure:**	C	
Height:	180.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	B - Competent Rock	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 5

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:**	EIA/TIA-222-G	5/20/2021	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 6	

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	180.00	6' Lightning rod	1	6.50	0.38	1.00	43.47	1.488	1.00	0.00	0.00
2	177.00	782 11056	3	1.80	0.28	0.67	6.40	0.688	0.67	0.00	0.00
3	177.00	Platform w/ Hand Rail	1	1600.00	32.00	1.00	3734.89	60.389	1.00	0.00	0.00
4	177.00	Ericsson 4415 B66A RRU	3	49.60	1.86	0.67	113.22	2.435	0.67	0.00	0.00
5	177.00	APXV18-206516S-C-A20	3	18.70	3.61	0.73	89.94	5.498	0.73	0.00	0.00
6	177.00	MS-KI22-5 (Kickers w/o Collar)	1	146.00	5.33	1.00	353.24	11.004	1.00	0.00	0.00
7	177.00	RFS APXVAALL24_43-U-NA20	3	128.00	20.24	0.70	553.81	22.173	0.70	0.00	0.00
8	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
9	177.00	Ericsson 4449 B71 + B85 RRU	3	73.20	1.97	0.67	131.91	2.549	0.67	0.00	0.00
10	167.00	Samsung VZS01	3	87.10	4.30	0.69	199.59	5.194	0.69	0.00	0.00
11	167.00	Samsung B5/B13 RRH-BR04C	3	84.40	1.88	0.67	136.21	2.437	0.67	0.00	0.00
12	167.00	Samsung B2/B66A RRH-BR049	3	70.30	1.88	0.67	119.46	2.437	0.67	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	0.84	147.95	4.755	0.84	0.00	0.00
15	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
16	167.00	Platform w/ Hand Rails (flat)	1	2000.00	40.00	1.00	4116.86	61.169	1.00	0.00	0.00
17	157.00	Low Profile Platform-flat	1	1200.00	25.00	1.00	2251.92	46.038	1.00	0.00	0.00
18	157.00	7770	3	35.00	5.50	0.73	170.93	6.570	0.73	0.00	0.00
19	157.00	DMP65R-BU4DA	2	67.90	8.00	0.82	320.94	8.926	0.82	0.00	0.00
20	157.00	DMP65R-BU8DA	1	52.50	17.87	1.00	248.15	19.938	1.00	0.00	0.00
21	157.00	HPA65R-BU4A	2	28.70	4.96	1.00	135.65	5.534	1.00	0.00	0.00
22	157.00	HPA65R-BU8A	1	76.50	11.23	1.00	361.58	12.529	1.00	0.00	0.00
23	157.00	4449 B5/B12	3	71.00	1.97	0.67	124.62	2.520	0.67	0.00	0.00
24	157.00	8843 B2/B66A	3	72.00	1.64	0.67	119.06	2.139	0.67	0.00	0.00
25	157.00	Raycap DC6-48-60-18-8F	1	31.80	0.92	1.00	93.91	1.360	1.00	0.00	0.00
		Totals:	**62**	**7,802.00**			**20,178.33**				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	177.00	(8) 1 5/8" Coax	0.00	Inside
0.00	177.00	(3) 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

Shaft Section Properties

Structure:	CT02218-S-SBA	**Code:**	EIA/TIA-222-G	5/20/2021	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 7	

Increment Length: **5 (ft)**

Elev (ft)	Description	Thick (in)	Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fpy (ksi)	S (in^3)	Weight (lb)
0.00		0.4380	60.000	83.221	37298.1	25.66	136.99	73.5	1219.	0.0
5.00		0.4380	58.975	81.789	35405.3	25.19	134.65	74.1	1177.	1403.7
10.00		0.4380	57.950	80.357	33577.6	24.73	132.31	74.6	1136.	1379.4
15.00		0.4380	56.925	78.924	31813.9	24.26	129.96	75.1	1096.	1355.0
20.00		0.4380	55.900	77.492	30113.1	23.79	127.62	75.6	1056.	1330.6
25.00		0.4380	54.874	76.060	28474.0	23.33	125.28	76.2	1017.	1306.3
30.00		0.4380	53.849	74.627	26895.5	22.86	122.94	76.7	979.7	1281.9
35.00		0.4380	52.824	73.195	25376.4	22.40	120.60	77.2	942.3	1257.5
40.00		0.4380	51.799	71.763	23915.7	21.93	118.26	77.8	905.7	1233.1
45.00		0.4380	50.774	70.330	22512.1	21.47	115.92	78.3	869.7	1208.8
45.92	Bot - Section 2	0.4380	50.586	70.068	22260.8	21.38	115.49	78.4	863.2	219.0
50.00		0.4380	49.749	68.898	21164.5	21.00	113.58	78.8	834.5	1805.5
53.00	Top - Section 1	0.3750	49.884	59.225	18339.4	24.87	133.02	0.0	0.0	1307.3
55.00		0.3750	49.474	58.734	17887.4	24.65	131.93	74.7	709.2	401.4
60.00		0.3750	48.449	57.508	16790.3	24.11	129.20	75.3	679.8	988.9
65.00		0.3750	47.424	56.282	15738.9	23.56	126.46	75.9	651.0	968.0
70.00		0.3750	46.398	55.056	14732.4	23.02	123.73	76.5	622.8	947.1
75.00		0.3750	45.373	53.829	13769.7	22.48	121.00	77.1	595.3	926.3
80.00		0.3750	44.348	52.603	12849.9	21.93	118.26	77.8	568.4	905.4
85.00		0.3750	43.323	51.377	11972.0	21.39	115.53	78.4	542.1	884.5
90.00		0.3750	42.298	50.150	11135.1	20.84	112.79	79.0	516.4	863.7
92.92	Bot - Section 3	0.3750	41.700	49.435	10665.4	20.53	111.20	79.3	501.7	494.2
95.00		0.3750	41.273	48.924	10338.1	20.30	110.06	79.6	491.3	644.5
98.92	Top - Section 2	0.3130	41.096	40.720	8556.2	24.53	131.30	0.0	0.0	1193.7
100.00		0.3130	40.874	40.499	8417.2	24.38	130.59	75.0	403.9	149.7
105.00		0.3130	39.849	39.475	7795.0	23.73	127.31	75.7	383.7	680.3
110.00		0.3130	38.824	38.452	7204.2	23.08	124.04	76.5	364.0	662.9
115.00		0.3130	37.798	37.428	6644.1	22.43	120.76	77.2	344.8	645.5
120.00		0.3130	36.773	36.405	6113.8	21.78	117.49	77.9	326.1	628.1
125.00		0.3130	35.748	35.381	5612.5	21.13	114.21	78.7	308.0	610.7
127.09	Bot - Section 4	0.3130	35.320	34.954	5411.6	20.85	112.84	79.0	300.5	249.7
130.00		0.3130	34.723	34.357	5139.3	20.48	110.94	79.4	290.3	587.6
132.34	Top - Section 3	0.2190	34.682	24.076	3612.5	29.91	158.37	0.0	0.0	464.0
135.00		0.2190	34.136	23.695	3443.5	29.41	155.87	69.3	197.9	216.5
140.00		0.2190	33.111	22.979	3140.6	28.48	151.19	70.3	186.1	397.0
145.00		0.2190	32.086	22.262	2856.0	27.55	146.51	71.4	174.6	384.9
150.00		0.2190	31.061	21.546	2589.2	26.62	141.83	72.5	163.5	372.7
155.00		0.2190	30.036	20.830	2339.5	25.69	137.15	73.5	152.8	360.5
157.00		0.2190	29.626	20.544	2244.3	25.32	135.28	73.9	148.6	140.8
160.00		0.2190	29.010	20.114	2106.4	24.76	132.47	74.6	142.4	207.5
165.00		0.2190	27.985	19.398	1889.3	23.83	127.79	75.6	132.4	336.1
167.00		0.2190	27.575	19.111	1806.8	23.45	125.91	76.0	128.5	131.0
170.00		0.2190	26.960	18.682	1687.7	22.90	123.11	76.7	122.8	192.9
175.00		0.2190	25.935	17.966	1500.9	21.96	118.43	77.7	113.5	311.8
177.00		0.2190	25.525	17.679	1430.3	21.59	116.55	78.1	109.9	121.3
180.00		0.2190	24.910	17.249	1328.5	21.03	113.74	78.8	104.6	178.3
										32335.6

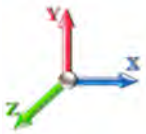
Wind Loading - Shaft

Structure:	CT02218-S-SBA	**Code:**	EIA/TIA-222-G	5/20/2021	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 8	

Load Case: 1.2D + 1.6W 105 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 26

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
5.00		1.00	0.85	22.791	25.07	485.08	0.750	0.000	5.00	25.272	18.95	760.3	0.0	1684.5
10.00		1.00	0.85	22.791	25.07	476.65	0.750	0.000	5.00	24.837	18.63	747.2	0.0	1655.2
15.00		1.00	0.85	22.791	25.07	468.21	0.750	0.000	5.00	24.401	18.30	734.1	0.0	1626.0
20.00		1.00	0.90	24.182	26.60	473.61	0.750	0.000	5.00	23.966	17.97	765.0	0.0	1596.7
25.00		1.00	0.95	25.345	27.88	475.97	0.750	0.000	5.00	23.530	17.65	787.2	0.0	1567.5
30.00		1.00	0.98	26.337	28.97	476.13	0.750	0.000	5.00	23.095	17.32	802.9	0.0	1538.3
35.00		1.00	1.01	27.206	29.93	474.71	0.750	0.000	5.00	22.659	16.99	813.7	0.0	1509.0
40.00		1.00	1.04	27.981	30.78	472.08	0.750	0.000	5.00	22.224	16.67	820.8	0.0	1479.8
45.00		1.00	1.07	28.684	31.55	468.51	0.750	0.000	5.00	21.788	16.34	825.0	0.0	1450.5
45.92	Bot - Section 2	1.00	1.07	28.806	31.69	467.77	0.750	0.000	0.92	3.947	2.96	150.1	0.0	262.8
50.00		1.00	1.09	29.327	32.26	464.17	0.750	0.000	4.08	17.666	13.25	683.9	0.0	2166.6
53.00	Top - Section 1	1.00	1.11	29.689	32.66	461.26	0.750	0.000	3.00	12.794	9.60	501.4	0.0	1568.8
55.00		1.00	1.12	29.922	32.91	466.26	0.750	0.000	2.00	8.442	6.33	333.4	0.0	481.7
60.00		1.00	1.14	30.475	33.52	460.80	0.750	0.000	5.00	20.800	15.60	836.7	0.0	1186.6
65.00		1.00	1.16	30.993	34.09	454.87	0.750	0.000	5.00	20.365	15.27	833.1	0.0	1161.6
70.00		1.00	1.17	31.480	34.63	448.52	0.750	0.000	5.00	19.929	14.95	828.1	0.0	1136.6
75.00		1.00	1.19	31.941	35.13	441.81	0.750	0.000	5.00	19.494	14.62	821.9	0.0	1111.5
80.00		1.00	1.21	32.377	35.62	434.77	0.750	0.000	5.00	19.058	14.29	814.5	0.0	1086.5
85.00		1.00	1.22	32.793	36.07	427.44	0.750	0.000	5.00	18.623	13.97	806.1	0.0	1061.5
90.00		1.00	1.24	33.190	36.51	419.84	0.750	0.000	5.00	18.187	13.64	796.8	0.0	1036.4
92.92	Bot - Section 3	1.00	1.25	33.414	36.76	415.30	0.750	0.000	2.92	10.408	7.81	459.1	0.0	593.0
95.00		1.00	1.25	33.570	36.93	412.01	0.750	0.000	2.08	7.454	5.59	330.3	0.0	773.4
98.92	Top - Section 2	1.00	1.26	33.857	37.24	405.71	0.750	0.000	3.92	13.810	10.36	617.2	0.0	1432.4
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
105.00		1.00	1.28	34.285	37.71	402.00	0.750	0.000	5.00	17.147	12.86	776.0	0.0	816.4
110.00		1.00	1.29	34.623	38.08	393.58	0.750	0.000	5.00	16.711	12.53	763.7	0.0	795.5
115.00		1.00	1.30	34.948	38.44	384.99	0.750	0.000	5.00	16.276	12.21	750.8	0.0	774.6
120.00		1.00	1.32	35.263	38.79	376.23	0.750	0.000	5.00	15.840	11.88	737.3	0.0	753.7
125.00		1.00	1.33	35.567	39.12	367.32	0.750	0.000	5.00	15.405	11.55	723.2	0.0	732.8
127.09	Bot - Section 4	1.00	1.33	35.691	39.26	363.55	0.750	0.000	2.09	6.300	4.73	296.8	0.0	299.6
130.00		1.00	1.34	35.862	39.45	358.26	0.750	0.000	2.91	8.777	6.58	415.5	0.0	705.1
132.34	Top - Section 3	1.00	1.34	35.997	39.60	353.98	0.750	0.000	2.34	6.933	5.20	329.4	0.0	556.9
135.00		1.00	1.35	36.148	39.76	353.60	0.750	0.000	2.66	7.787	5.84	371.5	0.0	259.8
140.00		1.00	1.36	36.426	40.07	344.30	0.750	0.000	5.00	14.284	10.71	686.8	0.0	476.5
145.00		1.00	1.37	36.696	40.37	334.88	0.750	0.000	5.00	13.849	10.39	670.8	0.0	461.8
150.00		1.00	1.38	36.959	40.65	325.34	0.750	0.000	5.00	13.413	10.06	654.4	0.0	447.2
155.00		1.00	1.39	37.215	40.94	315.69	0.750	0.000	5.00	12.978	9.73	637.5	0.0	432.6
157.00	Appurtenance(s)	1.00	1.39	37.315	41.05	311.80	0.750	0.000	2.00	5.069	3.80	249.7	0.0	168.9
160.00		1.00	1.40	37.464	41.21	305.93	0.750	0.000	3.00	7.473	5.60	369.6	0.0	249.0
165.00		1.00	1.41	37.708	41.48	296.08	0.750	0.000	5.00	12.107	9.08	602.6	0.0	403.3
167.00	Appurtenance(s)	1.00	1.41	37.804	41.58	292.11	0.750	0.000	2.00	4.721	3.54	235.6	0.0	157.2
170.00		1.00	1.42	37.946	41.74	286.13	0.750	0.000	3.00	6.950	5.21	348.1	0.0	231.5
175.00		1.00	1.42	38.178	42.00	276.09	0.750	0.000	5.00	11.236	8.43	566.2	0.0	374.1
177.00	Appurtenance(s)	1.00	1.43	38.269	42.10	272.05	0.750	0.000	2.00	4.372	3.28	220.9	0.0	145.5
180.00	Appurtenance(s)	1.00	1.43	38.405	42.25	265.97	0.750	0.000	3.00	6.428	4.82	325.9	0.0	213.9

Wind Loading - Shaft

Structure:	CT02218-S-SBA	**Code:**	EIA/TIA-222-G	5/20/2021	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 9	

Totals:	**180.00**	**26,770.1**	**38,802.8**

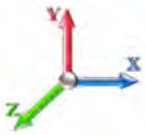
Discrete Appurtenance Forces

Structure:	CT02218-S-SBA	**Code:**	EIA/TIA-222-G	5/20/2021	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 10	

Load Case: 1.2D + 1.6W 105 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 26

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	180.00	6' Lightning rod	1	38.405	42.245	1.00	1.00	0.38	7.80	0.000	0.000	25.69	0.00	0.00
2	177.00	782 11056	3	38.269	42.096	0.50	0.75	0.42	6.48	0.000	0.000	28.43	0.00	0.00
3	177.00	Platform w/ Hand Rail	1	38.269	42.096	1.00	1.00	32.00	1920.00	0.000	0.000	2155.32	0.00	0.00
4	177.00	MS-KI22-5 (Kickers w/o	1	38.269	42.096	1.00	1.00	5.33	175.20	0.000	0.000	359.00	0.00	0.00
5	177.00	APXV18-206516S-C-A20	3	38.269	42.096	0.55	0.75	5.93	67.32	0.000	0.000	399.37	0.00	0.00
6	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
7	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
8	177.00	Ericsson 4449 B71 + B85	3	38.269	42.096	0.50	0.75	2.97	263.52	0.000	0.000	200.03	0.00	0.00
9	177.00	Ericsson 4415 B66A RRU	3	38.269	42.096	0.50	0.75	2.80	178.56	0.000	0.000	188.86	0.00	0.00
10	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
11	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
12	167.00	Samsung B2/B66A	3	37.804	41.584	0.50	0.75	2.83	253.08	0.000	0.000	188.56	0.00	0.00
13	167.00	Samsung B5/B13	3	37.804	41.584	0.50	0.75	2.83	303.84	0.000	0.000	188.56	0.00	0.00
14	167.00	Raycap	2	37.804	41.584	0.76	0.90	5.73	76.80	0.000	0.000	381.27	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	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
17	157.00	DMP65R-BU8DA	1	37.315	41.047	0.80	0.80	14.30	63.00	0.000	0.000	938.89	0.00	0.00
18	157.00	Low Profile Platform-flat	1	37.315	41.047	1.00	1.00	25.00	1440.00	0.000	0.000	1641.87	0.00	0.00
19	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
20	157.00	DMP65R-BU4DA	2	37.315	41.047	0.66	0.80	10.50	162.96	0.000	0.000	689.32	0.00	0.00
21	157.00	4449 B5/B12	3	37.315	41.047	0.54	0.80	3.17	255.60	0.000	0.000	208.04	0.00	0.00
22	157.00	HPA65R-BU4A	2	37.315	41.047	0.80	0.80	7.94	68.88	0.000	0.000	521.20	0.00	0.00
23	157.00	HPA65R-BU8A	1	37.315	41.047	0.80	0.80	8.98	91.80	0.000	0.000	590.02	0.00	0.00
24	157.00	8843 B2/B66A	3	37.315	41.047	0.54	0.80	2.64	259.20	0.000	0.000	173.19	0.00	0.00
25	157.00	Raycap DC6-48-60-18-8F	1	37.315	41.047	0.80	0.80	0.74	38.16	0.000	0.000	48.34	0.00	0.00
							Totals:		**9,362.40**			**18,216.97**		

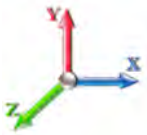
Total Applied Force Summary

Structure:	CT02218-S-SBA		**Code:**	EIA/TIA-222-G	5/20/2021
Site Name:	Colchester		**Exposure:**	C	
Height:	180.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	B - Competent Rock	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 11

Load Case: 1.2D + 1.6W 105 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 26

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		760.28	1921.32	0.00	0.00
10.00		747.18	1892.08	0.00	0.00
15.00		734.08	1862.84	0.00	0.00
20.00		764.99	1833.59	0.00	0.00
25.00		787.21	1804.35	0.00	0.00
30.00		802.88	1775.11	0.00	0.00
35.00		813.72	1745.86	0.00	0.00
40.00		820.83	1716.62	0.00	0.00
45.00		824.95	1687.38	0.00	0.00
45.92		150.09	306.18	0.00	0.00
50.00		683.87	2360.07	0.00	0.00
53.00		501.38	1710.86	0.00	0.00
55.00		333.43	576.40	0.00	0.00
60.00		836.72	1423.49	0.00	0.00
65.00		833.12	1398.45	0.00	0.00
70.00		828.13	1373.41	0.00	0.00
75.00		821.88	1348.38	0.00	0.00
80.00		814.51	1323.34	0.00	0.00
85.00		806.12	1298.30	0.00	0.00
90.00		796.80	1273.27	0.00	0.00
92.92		459.06	731.18	0.00	0.00
95.00		330.33	872.09	0.00	0.00
98.92		617.17	1617.95	0.00	0.00
100.00		168.99	230.96	0.00	0.00
105.00		776.00	1053.24	0.00	0.00
110.00		763.73	1032.35	0.00	0.00
115.00		750.82	1011.45	0.00	0.00
120.00		737.31	990.55	0.00	0.00
125.00		723.22	969.65	0.00	0.00
127.09		296.81	398.49	0.00	0.00
130.00		415.51	843.15	0.00	0.00
132.34		329.44	667.54	0.00	0.00
135.00		371.54	385.92	0.00	0.00
140.00		686.82	713.30	0.00	0.00
145.00		670.81	698.68	0.00	0.00
150.00		654.37	684.06	0.00	0.00
155.00		637.51	669.44	0.00	0.00
157.00	(17) attachments	5693.41	2769.28	0.00	0.00
160.00		369.57	343.11	0.00	0.00
165.00		602.60	560.15	0.00	0.00
167.00	(24) attachments	7455.77	3941.65	0.00	0.00
170.00		348.14	272.67	0.00	0.00
175.00		566.22	442.75	0.00	0.00
177.00	(20) attachments	5748.23	3300.32	0.00	0.00
180.00	(1) attachments	351.54	221.74	0.00	0.00

Total Applied Force Summary

Structure:	CT02218-S-SBA		**Code:**	EIA/TIA-222-G	5/20/2021
Site Name:	Colchester		**Exposure:**	C	
Height:	180.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	B - Competent Rock	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 12

Totals:	**44,987.10**	**56,052.96**	**0.00**	**0.00**

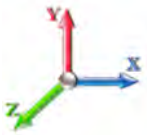
Calculated Forces

Structure:	CT02218-S-SBA	**Code:**	EIA/TIA-222-G	5/20/2021	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 13	

Load Case: 1.2D + 1.6W 105 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 26

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	-55.97	-45.09	0.00	-5624.8	0.00	5624.85	5508.12	2754.06	13547.4	6725.55	0.00	0.000	0.000	0.847
5.00	-53.88	-44.53	0.00	-5399.3	0.00	5399.39	5452.09	2726.05	13177.2	6541.73	0.11	-0.210	0.000	0.836
10.00	-51.83	-43.96	0.00	-5176.7	0.00	5176.76	5394.71	2697.35	12808.5	6358.68	0.45	-0.423	0.000	0.824
15.00	-49.81	-43.40	0.00	-4956.9	0.00	4956.95	5335.97	2667.98	12441.5	6176.49	1.01	-0.637	0.000	0.812
20.00	-47.83	-42.79	0.00	-4739.9	0.00	4739.96	5275.87	2637.93	12076.4	5995.24	1.79	-0.854	0.000	0.800
25.00	-45.88	-42.15	0.00	-4526.0	0.00	4526.00	5214.41	2607.20	11713.3	5815.02	2.80	-1.073	0.000	0.787
30.00	-43.96	-41.48	0.00	-4315.2	0.00	4315.25	5151.59	2575.80	11352.6	5635.92	4.04	-1.294	0.000	0.774
35.00	-42.07	-40.79	0.00	-4107.8	0.00	4107.84	5087.42	2543.71	10994.2	5458.02	5.52	-1.517	0.000	0.761
40.00	-40.22	-40.08	0.00	-3903.8	0.00	3903.89	5021.88	2510.94	10638.5	5281.41	7.23	-1.741	0.000	0.747
45.00	-38.47	-39.29	0.00	-3703.4	0.00	3703.49	4954.99	2477.50	10285.5	5106.18	9.17	-1.967	0.000	0.733
45.92	-38.09	-39.21	0.00	-3667.4	0.00	3667.48	4942.58	2471.29	10221.1	5074.21	9.55	-2.010	0.000	0.731
50.00	-35.65	-38.54	0.00	-3507.3	0.00	3507.38	4886.75	2443.37	9935.52	4932.41	11.36	-2.197	0.000	0.719
53.00	-33.88	-38.04	0.00	-3391.7	0.00	3391.77	3967.43	1983.71	8109.29	4025.79	12.78	-2.336	0.000	0.851
55.00	-33.20	-37.78	0.00	-3315.7	0.00	3315.70	3947.58	1973.79	8001.39	3972.23	13.78	-2.430	0.000	0.843
60.00	-31.65	-37.03	0.00	-3126.7	0.00	3126.78	3897.00	1948.50	7732.70	3838.84	16.46	-2.686	0.000	0.823
65.00	-30.14	-36.26	0.00	-2941.6	0.00	2941.65	3845.06	1922.53	7465.70	3706.29	19.41	-2.943	0.000	0.802
70.00	-28.65	-35.49	0.00	-2760.3	0.00	2760.35	3791.77	1895.89	7200.54	3574.65	22.63	-3.201	0.000	0.780
75.00	-27.20	-34.71	0.00	-2582.9	0.00	2582.91	3737.12	1868.56	6937.41	3444.02	26.12	-3.459	0.000	0.758
80.00	-25.77	-33.93	0.00	-2409.3	0.00	2409.34	3681.11	1840.56	6676.48	3314.49	29.88	-3.717	0.000	0.734
85.00	-24.38	-33.15	0.00	-2239.6	0.00	2239.67	3623.74	1811.87	6417.92	3186.13	33.91	-3.974	0.000	0.710
90.00	-23.06	-32.35	0.00	-2073.9	0.00	2073.92	3565.02	1782.51	6161.91	3059.03	38.20	-4.230	0.000	0.685
92.92	-22.29	-31.89	0.00	-1979.5	0.00	1979.57	3530.13	1765.07	6013.81	2985.51	40.83	-4.381	0.000	0.670
95.00	-21.36	-31.55	0.00	-1913.1	0.00	1913.14	3504.93	1752.47	5908.61	2933.28	42.77	-4.490	0.000	0.659
98.92	-19.73	-30.85	0.00	-1789.5	0.00	1789.58	2742.07	1371.04	4616.42	2291.78	46.53	-4.689	0.000	0.789
100.00	-19.42	-30.72	0.00	-1756.1	0.00	1756.17	2732.96	1366.48	4575.83	2271.63	47.60	-4.745	0.000	0.781
105.00	-18.29	-29.94	0.00	-1602.5	0.00	1602.59	2690.08	1345.04	4389.32	2179.04	52.72	-5.029	0.000	0.743
110.00	-17.19	-29.17	0.00	-1452.8	0.00	1452.87	2645.83	1322.92	4204.31	2087.20	58.13	-5.308	0.000	0.703
115.00	-16.12	-28.41	0.00	-1307.0	0.00	1307.00	2600.23	1300.12	4020.98	1996.19	63.83	-5.580	0.000	0.661
120.00	-15.09	-27.64	0.00	-1164.9	0.00	1164.97	2553.28	1276.64	3839.50	1906.09	69.81	-5.845	0.000	0.618
125.00	-14.11	-26.87	0.00	-1026.7	0.00	1026.76	2504.96	1252.48	3660.03	1816.99	76.05	-6.100	0.000	0.571
127.09	-13.69	-26.56	0.00	-970.70	0.00	970.70	2484.39	1242.20	3585.78	1780.13	78.74	-6.206	0.000	0.551
130.00	-12.84	-26.08	0.00	-893.33	0.00	893.33	2455.29	1227.64	3482.76	1728.99	82.56	-6.348	0.000	0.522
132.34	-12.16	-25.70	0.00	-832.39	0.00	832.39	1489.26	744.63	2121.49	1053.20	85.69	-6.460	0.000	0.800
135.00	-11.73	-25.33	0.00	-763.93	0.00	763.93	1477.63	738.82	2071.36	1028.31	89.33	-6.583	0.000	0.752
140.00	-10.98	-24.62	0.00	-637.26	0.00	637.26	1454.76	727.38	1977.27	981.60	96.36	-6.872	0.000	0.658
145.00	-10.27	-23.92	0.00	-514.15	0.00	514.15	1430.53	715.26	1883.34	934.97	103.69	-7.133	0.000	0.558
150.00	-9.59	-23.21	0.00	-394.57	0.00	394.57	1404.94	702.47	1789.74	888.50	111.26	-7.359	0.000	0.452
155.00	-8.96	-22.51	0.00	-278.51	0.00	278.51	1377.99	688.99	1696.65	842.29	119.06	-7.544	0.000	0.338
157.00	-6.95	-16.51	0.00	-233.48	0.00	233.48	1366.83	683.41	1659.60	823.90	122.22	-7.606	0.000	0.289
160.00	-6.63	-16.11	0.00	-183.94	0.00	183.94	1349.68	674.84	1604.25	796.42	127.01	-7.686	0.000	0.236
165.00	-6.14	-15.45	0.00	-103.38	0.00	103.38	1320.02	660.01	1512.71	750.97	135.10	-7.783	0.000	0.143
167.00	-3.24	-7.53	0.00	-72.49	0.00	72.49	1307.77	653.89	1476.37	732.93	138.35	-7.809	0.000	0.102
170.00	-3.02	-7.15	0.00	-49.91	0.00	49.91	1289.00	644.50	1422.20	706.04	143.26	-7.838	0.000	0.073
175.00	-2.65	-6.52	0.00	-14.18	0.00	14.18	1256.62	628.31	1332.89	661.70	151.46	-7.865	0.000	0.024
177.00	-0.17	-0.38	0.00	-1.14	0.00	1.14	1243.29	621.64	1297.54	644.16	154.74	-7.868	0.000	0.002
180.00	0.00	-0.35	0.00	0.00	0.00	0.00	1222.88	611.44	1244.96	618.05	159.67	-7.868	0.000	0.000

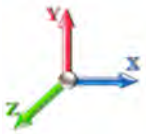
Wind Loading - Shaft

Structure:	CT02218-S-SBA	**Code:**	EIA/TIA-222-G	5/20/2021	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 14	

Load Case: 0.9D + 1.6W 105 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 26

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
5.00		1.00	0.85	22.791	25.07	485.08	0.750	0.000	5.00	25.272	18.95	760.3	0.0	1263.4
10.00		1.00	0.85	22.791	25.07	476.65	0.750	0.000	5.00	24.837	18.63	747.2	0.0	1241.4
15.00		1.00	0.85	22.791	25.07	468.21	0.750	0.000	5.00	24.401	18.30	734.1	0.0	1219.5
20.00		1.00	0.90	24.182	26.60	473.61	0.750	0.000	5.00	23.966	17.97	765.0	0.0	1197.6
25.00		1.00	0.95	25.345	27.88	475.97	0.750	0.000	5.00	23.530	17.65	787.2	0.0	1175.6
30.00		1.00	0.98	26.337	28.97	476.13	0.750	0.000	5.00	23.095	17.32	802.9	0.0	1153.7
35.00		1.00	1.01	27.206	29.93	474.71	0.750	0.000	5.00	22.659	16.99	813.7	0.0	1131.8
40.00		1.00	1.04	27.981	30.78	472.08	0.750	0.000	5.00	22.224	16.67	820.8	0.0	1109.8
45.00		1.00	1.07	28.684	31.55	468.51	0.750	0.000	5.00	21.788	16.34	825.0	0.0	1087.9
45.92	Bot - Section 2	1.00	1.07	28.806	31.69	467.77	0.750	0.000	0.92	3.947	2.96	150.1	0.0	197.1
50.00		1.00	1.09	29.327	32.26	464.17	0.750	0.000	4.08	17.666	13.25	683.9	0.0	1625.0
53.00	Top - Section 1	1.00	1.11	29.689	32.66	461.26	0.750	0.000	3.00	12.794	9.60	501.4	0.0	1176.6
55.00		1.00	1.12	29.922	32.91	466.26	0.750	0.000	2.00	8.442	6.33	333.4	0.0	361.3
60.00		1.00	1.14	30.475	33.52	460.80	0.750	0.000	5.00	20.800	15.60	836.7	0.0	890.0
65.00		1.00	1.16	30.993	34.09	454.87	0.750	0.000	5.00	20.365	15.27	833.1	0.0	871.2
70.00		1.00	1.17	31.480	34.63	448.52	0.750	0.000	5.00	19.929	14.95	828.1	0.0	852.4
75.00		1.00	1.19	31.941	35.13	441.81	0.750	0.000	5.00	19.494	14.62	821.9	0.0	833.6
80.00		1.00	1.21	32.377	35.62	434.77	0.750	0.000	5.00	19.058	14.29	814.5	0.0	814.9
85.00		1.00	1.22	32.793	36.07	427.44	0.750	0.000	5.00	18.623	13.97	806.1	0.0	796.1
90.00		1.00	1.24	33.190	36.51	419.84	0.750	0.000	5.00	18.187	13.64	796.8	0.0	777.3
92.92	Bot - Section 3	1.00	1.25	33.414	36.76	415.30	0.750	0.000	2.92	10.408	7.81	459.1	0.0	444.8
95.00		1.00	1.25	33.570	36.93	412.01	0.750	0.000	2.08	7.454	5.59	330.3	0.0	580.1
98.92	Top - Section 2	1.00	1.26	33.857	37.24	405.71	0.750	0.000	3.92	13.810	10.36	617.2	0.0	1074.3
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
105.00		1.00	1.28	34.285	37.71	402.00	0.750	0.000	5.00	17.147	12.86	776.0	0.0	612.3
110.00		1.00	1.29	34.623	38.08	393.58	0.750	0.000	5.00	16.711	12.53	763.7	0.0	596.6
115.00		1.00	1.30	34.948	38.44	384.99	0.750	0.000	5.00	16.276	12.21	750.8	0.0	581.0
120.00		1.00	1.32	35.263	38.79	376.23	0.750	0.000	5.00	15.840	11.88	737.3	0.0	565.3
125.00		1.00	1.33	35.567	39.12	367.32	0.750	0.000	5.00	15.405	11.55	723.2	0.0	549.6
127.09	Bot - Section 4	1.00	1.33	35.691	39.26	363.55	0.750	0.000	2.09	6.300	4.73	296.8	0.0	224.7
130.00		1.00	1.34	35.862	39.45	358.26	0.750	0.000	2.91	8.777	6.58	415.5	0.0	528.9
132.34	Top - Section 3	1.00	1.34	35.997	39.60	353.98	0.750	0.000	2.34	6.933	5.20	329.4	0.0	417.6
135.00		1.00	1.35	36.148	39.76	353.60	0.750	0.000	2.66	7.787	5.84	371.5	0.0	194.8
140.00		1.00	1.36	36.426	40.07	344.30	0.750	0.000	5.00	14.284	10.71	686.8	0.0	357.3
145.00		1.00	1.37	36.696	40.37	334.88	0.750	0.000	5.00	13.849	10.39	670.8	0.0	346.4
150.00		1.00	1.38	36.959	40.65	325.34	0.750	0.000	5.00	13.413	10.06	654.4	0.0	335.4
155.00		1.00	1.39	37.215	40.94	315.69	0.750	0.000	5.00	12.978	9.73	637.5	0.0	324.4
157.00	Appurtenance(s)	1.00	1.39	37.315	41.05	311.80	0.750	0.000	2.00	5.069	3.80	249.7	0.0	126.7
160.00		1.00	1.40	37.464	41.21	305.93	0.750	0.000	3.00	7.473	5.60	369.6	0.0	186.8
165.00		1.00	1.41	37.708	41.48	296.08	0.750	0.000	5.00	12.107	9.08	602.6	0.0	302.5
167.00	Appurtenance(s)	1.00	1.41	37.804	41.58	292.11	0.750	0.000	2.00	4.721	3.54	235.6	0.0	117.9
170.00		1.00	1.42	37.946	41.74	286.13	0.750	0.000	3.00	6.950	5.21	348.1	0.0	173.6
175.00		1.00	1.42	38.178	42.00	276.09	0.750	0.000	5.00	11.236	8.43	566.2	0.0	280.6
177.00	Appurtenance(s)	1.00	1.43	38.269	42.10	272.05	0.750	0.000	2.00	4.372	3.28	220.9	0.0	109.2
180.00	Appurtenance(s)	1.00	1.43	38.405	42.25	265.97	0.750	0.000	3.00	6.428	4.82	325.9	0.0	160.5

Wind Loading - Shaft

Structure:	CT02218-S-SBA	**Code:**	EIA/TIA-222-G	5/20/2021	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 15	

Totals:	**180.00**	**26,770.1**	**29,102.1**

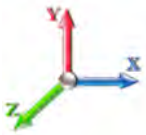
Discrete Appurtenance Forces

Structure:	CT02218-S-SBA	**Code:**	EIA/TIA-222-G	5/20/2021	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 16	

Load Case: 0.9D + 1.6W 105 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 26

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	180.00	6' Lightning rod	1	38.405	42.245	1.00	1.00	0.38	5.85	0.000	0.000	25.69	0.00	0.00
2	177.00	782 11056	3	38.269	42.096	0.50	0.75	0.42	4.86	0.000	0.000	28.43	0.00	0.00
3	177.00	Platform w/ Hand Rail	1	38.269	42.096	1.00	1.00	32.00	1440.00	0.000	0.000	2155.32	0.00	0.00
4	177.00	MS-KI22-5 (Kickers w/o	1	38.269	42.096	1.00	1.00	5.33	131.40	0.000	0.000	359.00	0.00	0.00
5	177.00	APXV18-206516S-C-A20	3	38.269	42.096	0.55	0.75	5.93	50.49	0.000	0.000	399.37	0.00	0.00
6	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
7	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
8	177.00	Ericsson 4449 B71 + B85	3	38.269	42.096	0.50	0.75	2.97	197.64	0.000	0.000	200.03	0.00	0.00
9	177.00	Ericsson 4415 B66A RRU	3	38.269	42.096	0.50	0.75	2.80	133.92	0.000	0.000	188.86	0.00	0.00
10	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
11	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
12	167.00	Samsung B2/B66A	3	37.804	41.584	0.50	0.75	2.83	189.81	0.000	0.000	188.56	0.00	0.00
13	167.00	Samsung B5/B13	3	37.804	41.584	0.50	0.75	2.83	227.88	0.000	0.000	188.56	0.00	0.00
14	167.00	Raycap	2	37.804	41.584	0.76	0.90	5.73	57.60	0.000	0.000	381.27	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	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
17	157.00	DMP65R-BU8DA	1	37.315	41.047	0.80	0.80	14.30	47.25	0.000	0.000	938.89	0.00	0.00
18	157.00	Low Profile Platform-flat	1	37.315	41.047	1.00	1.00	25.00	1080.00	0.000	0.000	1641.87	0.00	0.00
19	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
20	157.00	DMP65R-BU4DA	2	37.315	41.047	0.66	0.80	10.50	122.22	0.000	0.000	689.32	0.00	0.00
21	157.00	4449 B5/B12	3	37.315	41.047	0.54	0.80	3.17	191.70	0.000	0.000	208.04	0.00	0.00
22	157.00	HPA65R-BU4A	2	37.315	41.047	0.80	0.80	7.94	51.66	0.000	0.000	521.20	0.00	0.00
23	157.00	HPA65R-BU8A	1	37.315	41.047	0.80	0.80	8.98	68.85	0.000	0.000	590.02	0.00	0.00
24	157.00	8843 B2/B66A	3	37.315	41.047	0.54	0.80	2.64	194.40	0.000	0.000	173.19	0.00	0.00
25	157.00	Raycap DC6-48-60-18-8F	1	37.315	41.047	0.80	0.80	0.74	28.62	0.000	0.000	48.34	0.00	0.00
							Totals:		**7,021.80**			**18,216.97**		

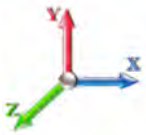
Total Applied Force Summary

Structure:	CT02218-S-SBA		**Code:**	EIA/TIA-222-G	5/20/2021
Site Name:	Colchester		**Exposure:**	C	
Height:	180.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	B - Competent Rock	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 17

Load Case: 0.9D + 1.6W 105 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 26

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		760.28	1440.99	0.00	0.00
10.00		747.18	1419.06	0.00	0.00
15.00		734.08	1397.13	0.00	0.00
20.00		764.99	1375.20	0.00	0.00
25.00		787.21	1353.26	0.00	0.00
30.00		802.88	1331.33	0.00	0.00
35.00		813.72	1309.40	0.00	0.00
40.00		820.83	1287.47	0.00	0.00
45.00		824.95	1265.53	0.00	0.00
45.92		150.09	229.64	0.00	0.00
50.00		683.87	1770.05	0.00	0.00
53.00		501.38	1283.14	0.00	0.00
55.00		333.43	432.30	0.00	0.00
60.00		836.72	1067.61	0.00	0.00
65.00		833.12	1048.84	0.00	0.00
70.00		828.13	1030.06	0.00	0.00
75.00		821.88	1011.28	0.00	0.00
80.00		814.51	992.50	0.00	0.00
85.00		806.12	973.73	0.00	0.00
90.00		796.80	954.95	0.00	0.00
92.92		459.06	548.38	0.00	0.00
95.00		330.33	654.07	0.00	0.00
98.92		617.17	1213.46	0.00	0.00
100.00		168.99	173.22	0.00	0.00
105.00		776.00	789.93	0.00	0.00
110.00		763.73	774.26	0.00	0.00
115.00		750.82	758.59	0.00	0.00
120.00		737.31	742.91	0.00	0.00
125.00		723.22	727.24	0.00	0.00
127.09		296.81	298.87	0.00	0.00
130.00		415.51	632.36	0.00	0.00
132.34		329.44	500.65	0.00	0.00
135.00		371.54	289.44	0.00	0.00
140.00		686.82	534.98	0.00	0.00
145.00		670.81	524.01	0.00	0.00
150.00		654.37	513.04	0.00	0.00
155.00		637.51	502.08	0.00	0.00
157.00	(17) attachments	5693.41	2076.96	0.00	0.00
160.00		369.57	257.33	0.00	0.00
165.00		602.60	420.12	0.00	0.00
167.00	(24) attachments	7455.77	2956.24	0.00	0.00
170.00		348.14	204.50	0.00	0.00
175.00		566.22	332.06	0.00	0.00
177.00	(20) attachments	5748.23	2475.24	0.00	0.00
180.00	(1) attachments	351.54	166.30	0.00	0.00

Total Applied Force Summary

Structure:	CT02218-S-SBA		**Code:**	EIA/TIA-222-G	5/20/2021
Site Name:	Colchester		**Exposure:**	C	
Height:	180.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	B - Competent Rock	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 18

Totals:	**44,987.10**	**42,039.72**	**0.00**	**0.00**

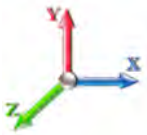
Calculated Forces

Structure:	CT02218-S-SBA	**Code:**	EIA/TIA-222-G	5/20/2021	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 19	

Load Case: 0.9D + 1.6W 105 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 26

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	-41.96	-45.06	0.00	-5560.3	0.00	5560.35	5508.12	2754.06	13547.4	6725.55	0.00	0.000	0.000	0.835
5.00	-40.35	-44.45	0.00	-5335.0	0.00	5335.03	5452.09	2726.05	13177.2	6541.73	0.11	-0.208	0.000	0.823
10.00	-38.78	-43.84	0.00	-5112.7	0.00	5112.79	5394.71	2697.35	12808.5	6358.68	0.44	-0.418	0.000	0.812
15.00	-37.23	-43.23	0.00	-4893.6	0.00	4893.61	5335.97	2667.98	12441.5	6176.49	0.99	-0.630	0.000	0.800
20.00	-35.70	-42.58	0.00	-4677.4	0.00	4677.46	5275.87	2637.93	12076.4	5995.24	1.77	-0.844	0.000	0.787
25.00	-34.20	-41.90	0.00	-4464.5	0.00	4464.56	5214.41	2607.20	11713.3	5815.02	2.77	-1.060	0.000	0.775
30.00	-32.73	-41.20	0.00	-4255.0	0.00	4255.06	5151.59	2575.80	11352.6	5635.92	3.99	-1.277	0.000	0.762
35.00	-31.29	-40.47	0.00	-4049.0	0.00	4049.09	5087.42	2543.71	10994.2	5458.02	5.45	-1.497	0.000	0.748
40.00	-29.87	-39.73	0.00	-3846.7	0.00	3846.73	5021.88	2510.94	10638.5	5281.41	7.14	-1.718	0.000	0.735
45.00	-28.54	-38.93	0.00	-3648.0	0.00	3648.08	4954.99	2477.50	10285.5	5106.18	9.06	-1.941	0.000	0.720
45.92	-28.24	-38.83	0.00	-3612.3	0.00	3612.39	4942.58	2471.29	10221.1	5074.21	9.43	-1.983	0.000	0.718
50.00	-26.39	-38.16	0.00	-3453.8	0.00	3453.84	4886.75	2443.37	9935.52	4932.41	11.21	-2.168	0.000	0.706
53.00	-25.05	-37.66	0.00	-3339.3	0.00	3339.37	3967.43	1983.71	8109.29	4025.79	12.62	-2.305	0.000	0.836
55.00	-24.52	-37.38	0.00	-3264.0	0.00	3264.06	3947.58	1973.79	8001.39	3972.23	13.60	-2.397	0.000	0.828
60.00	-23.33	-36.60	0.00	-3077.1	0.00	3077.17	3897.00	1948.50	7732.70	3838.84	16.25	-2.649	0.000	0.808
65.00	-22.17	-35.81	0.00	-2894.1	0.00	2894.18	3845.06	1922.53	7465.70	3706.29	19.16	-2.902	0.000	0.787
70.00	-21.03	-35.03	0.00	-2715.1	0.00	2715.11	3791.77	1895.89	7200.54	3574.65	22.33	-3.155	0.000	0.765
75.00	-19.91	-34.24	0.00	-2539.9	0.00	2539.98	3737.12	1868.56	6937.41	3444.02	25.77	-3.409	0.000	0.743
80.00	-18.82	-33.45	0.00	-2368.8	0.00	2368.80	3681.11	1840.56	6676.48	3314.49	29.47	-3.663	0.000	0.720
85.00	-17.76	-32.66	0.00	-2201.5	0.00	2201.57	3623.74	1811.87	6417.92	3186.13	33.44	-3.916	0.000	0.696
90.00	-16.75	-31.85	0.00	-2038.2	0.00	2038.29	3565.02	1782.51	6161.91	3059.03	37.68	-4.167	0.000	0.671
92.92	-16.17	-31.39	0.00	-1945.3	0.00	1945.39	3530.13	1765.07	6013.81	2985.51	40.27	-4.316	0.000	0.657
95.00	-15.46	-31.05	0.00	-1880.0	0.00	1880.00	3504.93	1752.47	5908.61	2933.28	42.17	-4.422	0.000	0.646
98.92	-14.24	-30.37	0.00	-1758.3	0.00	1758.38	2742.07	1371.04	4616.42	2291.78	45.88	-4.618	0.000	0.773
100.00	-13.99	-30.23	0.00	-1725.4	0.00	1725.48	2732.96	1366.48	4575.83	2271.63	46.93	-4.673	0.000	0.765
105.00	-13.12	-29.45	0.00	-1574.3	0.00	1574.33	2690.08	1345.04	4389.32	2179.04	51.97	-4.952	0.000	0.728
110.00	-12.28	-28.68	0.00	-1427.0	0.00	1427.06	2645.83	1322.92	4204.31	2087.20	57.30	-5.226	0.000	0.689
115.00	-11.47	-27.92	0.00	-1283.6	0.00	1283.64	2600.23	1300.12	4020.98	1996.19	62.91	-5.494	0.000	0.648
120.00	-10.68	-27.16	0.00	-1144.0	0.00	1144.05	2553.28	1276.64	3839.50	1906.09	68.79	-5.754	0.000	0.605
125.00	-9.95	-26.40	0.00	-1008.2	0.00	1008.26	2504.96	1252.48	3660.03	1816.99	74.95	-6.004	0.000	0.559
127.09	-9.63	-26.09	0.00	-953.18	0.00	953.18	2484.39	1242.20	3585.78	1780.13	77.59	-6.108	0.000	0.540
130.00	-8.99	-25.63	0.00	-877.17	0.00	877.17	2455.29	1227.64	3482.76	1728.99	81.35	-6.248	0.000	0.511
132.34	-8.48	-25.26	0.00	-817.29	0.00	817.29	1489.26	744.63	2121.49	1053.20	84.43	-6.357	0.000	0.783
135.00	-8.14	-24.89	0.00	-750.00	0.00	750.00	1477.63	738.82	2071.36	1028.31	88.01	-6.478	0.000	0.736
140.00	-7.58	-24.18	0.00	-625.55	0.00	625.55	1454.76	727.38	1977.27	981.60	94.93	-6.762	0.000	0.644
145.00	-7.04	-23.48	0.00	-504.63	0.00	504.63	1430.53	715.26	1883.34	934.97	102.14	-7.018	0.000	0.546
150.00	-6.53	-22.79	0.00	-387.22	0.00	387.22	1404.94	702.47	1789.74	888.50	109.60	-7.240	0.000	0.442
155.00	-6.07	-22.11	0.00	-273.25	0.00	273.25	1377.99	688.99	1696.65	842.29	117.26	-7.422	0.000	0.330
157.00	-4.73	-16.20	0.00	-229.03	0.00	229.03	1366.83	683.41	1659.60	823.90	120.38	-7.483	0.000	0.282
160.00	-4.50	-15.81	0.00	-180.42	0.00	180.42	1349.68	674.84	1604.25	796.42	125.09	-7.561	0.000	0.230
165.00	-4.15	-15.16	0.00	-101.39	0.00	101.39	1320.02	660.01	1512.71	750.97	133.04	-7.656	0.000	0.139
167.00	-2.21	-7.38	0.00	-71.07	0.00	71.07	1307.77	653.89	1476.37	732.93	136.25	-7.682	0.000	0.099
170.00	-2.05	-7.01	0.00	-48.94	0.00	48.94	1289.00	644.50	1422.20	706.04	141.07	-7.710	0.000	0.071
175.00	-1.80	-6.40	0.00	-13.91	0.00	13.91	1256.62	628.31	1332.89	661.70	149.14	-7.736	0.000	0.023
177.00	-0.12	-0.37	0.00	-1.11	0.00	1.11	1243.29	621.64	1297.54	644.16	152.37	-7.739	0.000	0.002
180.00	0.00	-0.35	0.00	0.00	0.00	0.00	1222.88	611.44	1244.96	618.05	157.22	-7.740	0.000	0.000

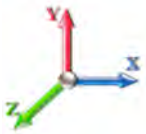
Wind Loading - Shaft

Structure:	CT02218-S-SBA	**Code:**	EIA/TIA-222-G	5/20/2021	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 20	

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 25

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
5.00		1.00	0.85	5.168	5.68	0.00	1.200	1.242	5.00	26.307	31.57	179.5	472.8	2157.3
10.00		1.00	0.85	5.168	5.68	0.00	1.200	1.331	5.00	25.946	31.14	177.0	498.9	2154.1
15.00		1.00	0.85	5.168	5.68	0.00	1.200	1.386	5.00	25.556	30.67	174.3	511.0	2137.0
20.00		1.00	0.90	5.483	6.03	0.00	1.200	1.427	5.00	25.154	30.19	182.1	517.0	2113.8
25.00		1.00	0.95	5.747	6.32	0.00	1.200	1.459	5.00	24.746	29.69	187.7	519.5	2087.0
30.00		1.00	0.98	5.972	6.57	0.00	1.200	1.486	5.00	24.333	29.20	191.8	519.7	2057.9
35.00		1.00	1.01	6.169	6.79	0.00	1.200	1.509	5.00	23.916	28.70	194.8	518.2	2027.2
40.00		1.00	1.04	6.345	6.98	0.00	1.200	1.529	5.00	23.498	28.20	196.8	515.4	1995.2
45.00		1.00	1.07	6.504	7.15	0.00	1.200	1.547	5.00	23.077	27.69	198.1	511.7	1962.2
45.92	Bot - Section 2	1.00	1.07	6.532	7.19	0.00	1.200	1.550	0.92	4.184	5.02	36.1	93.7	356.4
50.00		1.00	1.09	6.650	7.32	0.00	1.200	1.564	4.08	18.730	22.48	164.4	420.2	2586.9
53.00	Top - Section 1	1.00	1.11	6.732	7.41	0.00	1.200	1.573	3.00	13.580	16.30	120.7	306.9	1875.7
55.00		1.00	1.12	6.785	7.46	0.00	1.200	1.579	2.00	8.968	10.76	80.3	203.8	685.4
60.00		1.00	1.14	6.910	7.60	0.00	1.200	1.592	5.00	22.127	26.55	201.8	503.6	1690.3
65.00		1.00	1.16	7.028	7.73	0.00	1.200	1.605	5.00	21.702	26.04	201.3	497.4	1659.0
70.00		1.00	1.17	7.138	7.85	0.00	1.200	1.617	5.00	21.277	25.53	200.5	490.8	1627.3
75.00		1.00	1.19	7.243	7.97	0.00	1.200	1.628	5.00	20.851	25.02	199.3	483.7	1595.2
80.00		1.00	1.21	7.342	8.08	0.00	1.200	1.639	5.00	20.424	24.51	197.9	476.3	1562.8
85.00		1.00	1.22	7.436	8.18	0.00	1.200	1.649	5.00	19.997	24.00	196.3	468.6	1530.1
90.00		1.00	1.24	7.526	8.28	0.00	1.200	1.658	5.00	19.569	23.48	194.4	460.7	1497.1
92.92	Bot - Section 3	1.00	1.25	7.577	8.33	0.00	1.200	1.664	2.92	11.217	13.46	112.2	265.9	859.0
95.00		1.00	1.25	7.612	8.37	0.00	1.200	1.667	2.08	8.033	9.64	80.7	191.3	964.7
98.92	Top - Section 2	1.00	1.26	7.677	8.45	0.00	1.200	1.674	3.92	14.902	17.88	151.0	354.4	1786.9
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
105.00		1.00	1.28	7.774	8.55	0.00	1.200	1.684	5.00	18.550	22.26	190.4	442.0	1258.4
110.00		1.00	1.29	7.851	8.64	0.00	1.200	1.692	5.00	18.121	21.75	187.8	433.2	1228.7
115.00		1.00	1.30	7.925	8.72	0.00	1.200	1.699	5.00	17.692	21.23	185.1	424.2	1198.8
120.00		1.00	1.32	7.996	8.80	0.00	1.200	1.707	5.00	17.262	20.71	182.2	415.0	1168.7
125.00		1.00	1.33	8.065	8.87	0.00	1.200	1.714	5.00	16.833	20.20	179.2	405.6	1138.5
127.09	Bot - Section 4	1.00	1.33	8.093	8.90	0.00	1.200	1.717	2.09	6.897	8.28	73.7	167.6	467.3
130.00		1.00	1.34	8.132	8.95	0.00	1.200	1.720	2.91	9.613	11.54	103.2	233.6	938.8
132.34	Top - Section 3	1.00	1.34	8.163	8.98	0.00	1.200	1.723	2.34	7.604	9.13	81.9	185.3	742.1
135.00		1.00	1.35	8.197	9.02	0.00	1.200	1.727	2.66	8.553	10.26	92.5	208.4	468.2
140.00		1.00	1.36	8.260	9.09	0.00	1.200	1.733	5.00	15.729	18.87	171.5	381.6	858.0
145.00		1.00	1.37	8.321	9.15	0.00	1.200	1.739	5.00	15.298	18.36	168.0	371.7	833.5
150.00		1.00	1.38	8.381	9.22	0.00	1.200	1.745	5.00	14.868	17.84	164.5	361.7	808.9
155.00		1.00	1.39	8.439	9.28	0.00	1.200	1.751	5.00	14.437	17.32	160.8	351.6	784.2
157.00	Appurtenance(s)	1.00	1.39	8.462	9.31	0.00	1.200	1.753	2.00	5.654	6.78	63.1	139.0	308.0
160.00		1.00	1.40	8.495	9.34	0.00	1.200	1.757	3.00	8.351	10.02	93.7	204.8	453.9
165.00		1.00	1.41	8.551	9.41	0.00	1.200	1.762	5.00	13.575	16.29	153.2	331.1	734.4
167.00	Appurtenance(s)	1.00	1.41	8.572	9.43	0.00	1.200	1.764	2.00	5.309	6.37	60.1	130.8	288.0
170.00		1.00	1.42	8.604	9.46	0.00	1.200	1.767	3.00	7.834	9.40	89.0	192.4	423.9
175.00		1.00	1.42	8.657	9.52	0.00	1.200	1.772	5.00	12.713	15.26	145.3	310.2	684.3
177.00	Appurtenance(s)	1.00	1.43	8.678	9.55	0.00	1.200	1.774	2.00	4.964	5.96	56.9	122.4	267.9
180.00	Appurtenance(s)	1.00	1.43	8.709	9.58	0.00	1.200	1.777	3.00	7.317	8.78	84.1	179.8	393.7

Wind Loading - Shaft

Structure:	CT02218-S-SBA	**Code:**	EIA/TIA-222-G	5/20/2021	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 21	

Totals:	**180.00**	**6,546.6**	**54,694.0**

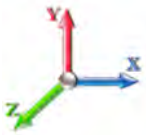
Discrete Appurtenance Forces

Structure:	CT02218-S-SBA	**Code:**	EIA/TIA-222-G	5/20/2021	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 22	

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 25

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	180.00	6' Lightning rod	1	8.709	9.579	1.00	1.00	1.49	39.47	0.000	0.000	14.25	0.00	0.00
2	177.00	782 11056	3	8.678	9.546	0.50	0.75	1.04	12.17	0.000	0.000	9.90	0.00	0.00
3	177.00	Platform w/ Hand Rail	1	8.678	9.546	1.00	1.00	60.39	3454.89	0.000	0.000	576.45	0.00	0.00
4	177.00	MS-KI22-5 (Kickers w/o	1	8.678	9.546	1.00	1.00	11.00	318.44	0.000	0.000	105.04	0.00	0.00
5	177.00	APXV18-206516S-C-A20	3	8.678	9.546	0.55	0.75	9.03	221.05	0.000	0.000	86.21	0.00	0.00
6	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
7	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
8	177.00	Ericsson 4449 B71 + B85	3	8.678	9.546	0.50	0.75	3.84	264.44	0.000	0.000	36.68	0.00	0.00
9	177.00	Ericsson 4415 B66A RRU	3	8.678	9.546	0.50	0.75	3.67	369.41	0.000	0.000	35.04	0.00	0.00
10	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
11	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
12	167.00	Samsung B2/B66A	3	8.572	9.429	0.50	0.75	3.67	365.76	0.000	0.000	34.64	0.00	0.00
13	167.00	Samsung B5/B13	3	8.572	9.429	0.50	0.75	3.67	353.68	0.000	0.000	34.64	0.00	0.00
14	167.00	Raycap	2	8.572	9.429	0.76	0.90	7.19	258.70	0.000	0.000	67.80	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	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
17	157.00	DMP65R-BU8DA	1	8.462	9.308	0.80	0.80	15.95	164.45	0.000	0.000	148.46	0.00	0.00
18	157.00	Low Profile Platform-flat	1	8.462	9.308	1.00	1.00	46.04	2191.92	0.000	0.000	428.51	0.00	0.00
19	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
20	157.00	DMP65R-BU4DA	2	8.462	9.308	0.66	0.80	11.71	511.43	0.000	0.000	109.00	0.00	0.00
21	157.00	4449 B5/B12	3	8.462	9.308	0.54	0.80	4.05	375.67	0.000	0.000	37.71	0.00	0.00
22	157.00	HPA65R-BU4A	2	8.462	9.308	0.80	0.80	8.85	46.79	0.000	0.000	82.41	0.00	0.00
23	157.00	HPA65R-BU8A	1	8.462	9.308	0.80	0.80	10.02	306.68	0.000	0.000	93.30	0.00	0.00
24	157.00	8843 B2/B66A	3	8.462	9.308	0.54	0.80	3.44	364.38	0.000	0.000	32.02	0.00	0.00
25	157.00	Raycap DC6-48-60-18-8F	1	8.462	9.308	0.80	0.80	1.09	82.57	0.000	0.000	10.13	0.00	0.00
							Totals:		**19,068.23**			**3,633.41**		

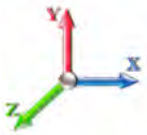
Total Applied Force Summary

Structure:	CT02218-S-SBA		**Code:**	EIA/TIA-222-G	5/20/2021
Site Name:	Colchester		**Exposure:**	C	
Height:	180.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	B - Competent Rock	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 23

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 25

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		179.46	2394.14	0.00	0.00
10.00		177.00	2390.94	0.00	0.00
15.00		174.34	2373.83	0.00	0.00
20.00		182.07	2350.61	0.00	0.00
25.00		187.73	2323.86	0.00	0.00
30.00		191.82	2294.79	0.00	0.00
35.00		194.76	2264.06	0.00	0.00
40.00		196.80	2232.06	0.00	0.00
45.00		198.13	2199.07	0.00	0.00
45.92		36.08	399.85	0.00	0.00
50.00		164.41	2780.28	0.00	0.00
53.00		120.68	2017.77	0.00	0.00
55.00		80.32	780.16	0.00	0.00
60.00		201.84	1927.14	0.00	0.00
65.00		201.33	1895.87	0.00	0.00
70.00		200.48	1864.17	0.00	0.00
75.00		199.34	1832.08	0.00	0.00
80.00		197.93	1799.66	0.00	0.00
85.00		196.28	1766.93	0.00	0.00
90.00		194.41	1733.93	0.00	0.00
92.92		112.18	997.12	0.00	0.00
95.00		80.72	1063.36	0.00	0.00
98.92		151.02	1972.38	0.00	0.00
100.00		41.39	328.59	0.00	0.00
105.00		190.36	1495.25	0.00	0.00
110.00		187.79	1465.52	0.00	0.00
115.00		185.07	1435.62	0.00	0.00
120.00		182.20	1405.54	0.00	0.00
125.00		179.20	1375.30	0.00	0.00
127.09		73.68	566.13	0.00	0.00
130.00		103.19	1076.75	0.00	0.00
132.34		81.93	852.81	0.00	0.00
135.00		92.54	594.36	0.00	0.00
140.00		171.49	1094.88	0.00	0.00
145.00		168.03	1070.38	0.00	0.00
150.00		164.47	1045.78	0.00	0.00
155.00		160.81	1021.05	0.00	0.00
157.00	(17) attachments	1111.82	4980.38	0.00	0.00
160.00		93.65	547.95	0.00	0.00
165.00		153.22	891.25	0.00	0.00
167.00	(24) attachments	1434.21	8329.01	0.00	0.00
170.00		88.98	465.08	0.00	0.00
175.00		145.27	752.93	0.00	0.00
177.00	(20) attachments	1253.20	6768.20	0.00	0.00
180.00	(1) attachments	98.36	433.16	0.00	0.00

Total Applied Force Summary

Structure:	CT02218-S-SBA		**Code:**	EIA/TIA-222-G	5/20/2021
Site Name:	Colchester		**Exposure:**	C	
Height:	180.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	B - Competent Rock	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 24

Totals:	**10,180.02**	**81,649.99**	**0.00**	**0.00**

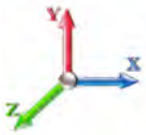
Calculated Forces

Structure:	CT02218-S-SBA	**Code:**	EIA/TIA-222-G	5/20/2021	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 25	

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 25

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-81.65	-10.21	0.00	-1286.9	0.00	1286.96	5508.12	2754.06	13547.4	6725.55	0.00	0.000	0.000	0.206
5.00	-79.24	-10.10	0.00	-1235.8	0.00	1235.89	5452.09	2726.05	13177.2	6541.73	0.03	-0.048	0.000	0.203
10.00	-76.84	-9.99	0.00	-1185.3	0.00	1185.38	5394.71	2697.35	12808.5	6358.68	0.10	-0.097	0.000	0.201
15.00	-74.46	-9.87	0.00	-1135.4	0.00	1135.45	5335.97	2667.98	12441.5	6176.49	0.23	-0.146	0.000	0.198
20.00	-72.10	-9.75	0.00	-1086.1	0.00	1086.10	5275.87	2637.93	12076.4	5995.24	0.41	-0.196	0.000	0.195
25.00	-69.77	-9.61	0.00	-1037.3	0.00	1037.37	5214.41	2607.20	11713.3	5815.02	0.64	-0.246	0.000	0.192
30.00	-67.47	-9.47	0.00	-989.33	0.00	989.33	5151.59	2575.80	11352.6	5635.92	0.93	-0.296	0.000	0.189
35.00	-65.20	-9.32	0.00	-941.99	0.00	941.99	5087.42	2543.71	10994.2	5458.02	1.26	-0.347	0.000	0.185
40.00	-62.96	-9.16	0.00	-895.41	0.00	895.41	5021.88	2510.94	10638.5	5281.41	1.66	-0.399	0.000	0.182
45.00	-60.76	-8.98	0.00	-849.59	0.00	849.59	4954.99	2477.50	10285.5	5106.18	2.10	-0.451	0.000	0.179
45.92	-60.35	-8.97	0.00	-841.36	0.00	841.36	4942.58	2471.29	10221.1	5074.21	2.19	-0.461	0.000	0.178
50.00	-57.57	-8.82	0.00	-804.73	0.00	804.73	4886.75	2443.37	9935.52	4932.41	2.60	-0.504	0.000	0.175
53.00	-55.55	-8.71	0.00	-778.27	0.00	778.27	3967.43	1983.71	8109.29	4025.79	2.93	-0.535	0.000	0.207
55.00	-54.76	-8.66	0.00	-760.86	0.00	760.86	3947.58	1973.79	8001.39	3972.23	3.16	-0.557	0.000	0.205
60.00	-52.83	-8.49	0.00	-717.58	0.00	717.58	3897.00	1948.50	7732.70	3838.84	3.77	-0.616	0.000	0.201
65.00	-50.93	-8.32	0.00	-675.13	0.00	675.13	3845.06	1922.53	7465.70	3706.29	4.45	-0.675	0.000	0.195
70.00	-49.06	-8.15	0.00	-633.53	0.00	633.53	3791.77	1895.89	7200.54	3574.65	5.19	-0.734	0.000	0.190
75.00	-47.22	-7.97	0.00	-592.79	0.00	592.79	3737.12	1868.56	6937.41	3444.02	5.99	-0.793	0.000	0.185
80.00	-45.41	-7.80	0.00	-552.93	0.00	552.93	3681.11	1840.56	6676.48	3314.49	6.85	-0.852	0.000	0.179
85.00	-43.64	-7.62	0.00	-513.96	0.00	513.96	3623.74	1811.87	6417.92	3186.13	7.77	-0.911	0.000	0.173
90.00	-41.91	-7.43	0.00	-475.87	0.00	475.87	3565.02	1782.51	6161.91	3059.03	8.76	-0.970	0.000	0.167
92.92	-40.91	-7.32	0.00	-454.21	0.00	454.21	3530.13	1765.07	6013.81	2985.51	9.36	-1.005	0.000	0.164
95.00	-39.84	-7.25	0.00	-438.96	0.00	438.96	3504.93	1752.47	5908.61	2933.28	9.81	-1.030	0.000	0.161
98.92	-37.87	-7.08	0.00	-410.58	0.00	410.58	2742.07	1371.04	4616.42	2291.78	10.67	-1.075	0.000	0.193
100.00	-37.54	-7.06	0.00	-402.92	0.00	402.92	2732.96	1366.48	4575.83	2271.63	10.92	-1.088	0.000	0.191
105.00	-36.04	-6.88	0.00	-367.64	0.00	367.64	2690.08	1345.04	4389.32	2179.04	12.09	-1.153	0.000	0.182
110.00	-34.57	-6.70	0.00	-333.26	0.00	333.26	2645.83	1322.92	4204.31	2087.20	13.34	-1.217	0.000	0.173
115.00	-33.13	-6.52	0.00	-299.78	0.00	299.78	2600.23	1300.12	4020.98	1996.19	14.64	-1.280	0.000	0.163
120.00	-31.72	-6.33	0.00	-267.20	0.00	267.20	2553.28	1276.64	3839.50	1906.09	16.02	-1.341	0.000	0.153
125.00	-30.35	-6.14	0.00	-235.53	0.00	235.53	2504.96	1252.48	3660.03	1816.99	17.45	-1.399	0.000	0.142
127.09	-29.78	-6.07	0.00	-222.71	0.00	222.71	2484.39	1242.20	3585.78	1780.13	18.07	-1.423	0.000	0.137
130.00	-28.70	-5.96	0.00	-205.02	0.00	205.02	2455.29	1227.64	3482.76	1728.99	18.95	-1.456	0.000	0.130
132.34	-27.85	-5.87	0.00	-191.11	0.00	191.11	1489.26	744.63	2121.49	1053.20	19.67	-1.482	0.000	0.200
135.00	-27.25	-5.78	0.00	-175.49	0.00	175.49	1477.63	738.82	2071.36	1028.31	20.50	-1.510	0.000	0.189
140.00	-26.16	-5.61	0.00	-146.59	0.00	146.59	1454.76	727.38	1977.27	981.60	22.12	-1.576	0.000	0.167
145.00	-25.09	-5.43	0.00	-118.55	0.00	118.55	1430.53	715.26	1883.34	934.97	23.80	-1.636	0.000	0.144
150.00	-24.04	-5.26	0.00	-91.38	0.00	91.38	1404.94	702.47	1789.74	888.50	25.55	-1.689	0.000	0.120
155.00	-23.02	-5.08	0.00	-65.08	0.00	65.08	1377.99	688.99	1696.65	842.29	27.34	-1.732	0.000	0.094
157.00	-18.08	-3.82	0.00	-54.92	0.00	54.92	1366.83	683.41	1659.60	823.90	28.07	-1.746	0.000	0.080
160.00	-17.53	-3.72	0.00	-43.45	0.00	43.45	1349.68	674.84	1604.25	796.42	29.17	-1.765	0.000	0.068
165.00	-16.65	-3.54	0.00	-24.86	0.00	24.86	1320.02	660.01	1512.71	750.97	31.03	-1.788	0.000	0.046
167.00	-8.37	-1.85	0.00	-17.77	0.00	17.77	1307.77	653.89	1476.37	732.93	31.78	-1.794	0.000	0.031
170.00	-7.90	-1.75	0.00	-12.23	0.00	12.23	1289.00	644.50	1422.20	706.04	32.91	-1.802	0.000	0.023
175.00	-7.16	-1.58	0.00	-3.49	0.00	3.49	1256.62	628.31	1332.89	661.70	34.81	-1.808	0.000	0.011
177.00	-0.43	-0.11	0.00	-0.34	0.00	0.34	1243.29	621.64	1297.54	644.16	35.56	-1.809	0.000	0.001
180.00	0.00	-0.10	0.00	0.00	0.00	0.00	1222.88	611.44	1244.96	618.05	36.70	-1.809	0.000	0.000

Seismic Segment Forces (Factored)

Structure:	CT02218-S-SBA	**Code:**	EIA/TIA-222-G	5/20/2021	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 26	

Load Case:	1.2D + 1.0E							**Iterations**	23
Gust Response Factor	1.10				**Sds**	0.12		**Ss**	0.18
Dead Load Factor	1.20	**Seismic Load Factor**	1.00		**Sd1**	0.04		**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.32		**SA**	0.01	**Seismic Importance Factor**		1.00

Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1403.7	0.00	0.03	0.02	18.34	
10.00		1379.3	0.01	0.05	0.03	25.44	
15.00		1354.9	0.01	0.06	0.03	28.69	
20.00		1330.6	0.02	0.07	0.04	30.14	
25.00		1306.2	0.04	0.07	0.04	30.69	
30.00		1281.8	0.05	0.07	0.04	30.85	
35.00		1257.5	0.07	0.07	0.04	30.88	
40.00		1233.1	0.09	0.07	0.04	30.92	
45.00		1208.7	0.12	0.07	0.03	31.00	
45.92	Bot - Section 2	218.97	0.12	0.07	0.03	5.64	
50.00		1805.5	0.15	0.07	0.03	47.35	
53.00	Top - Section 1	1307.2	0.16	0.07	0.03	34.69	
55.00		401.39	0.18	0.07	0.03	10.72	
60.00		988.87	0.21	0.06	0.02	26.58	
65.00		968.00	0.25	0.06	0.02	25.61	
70.00		947.14	0.29	0.05	0.01	23.70	
75.00		926.28	0.33	0.04	0.01	20.42	
80.00		905.41	0.37	0.03	0.01	15.35	
85.00		884.55	0.42	0.01	0.01	8.36	
90.00		863.69	0.47	-0.01	0.01	-0.04	
92.92	Bot - Section 3	494.18	0.50	-0.02	0.01	-2.96	
95.00		644.51	0.53	-0.03	0.01	-6.54	
98.92	Top - Section 2	1193.6	0.57	-0.04	0.01	-20.70	
100.00		149.70	0.58	-0.05	0.01	-2.86	
105.00		680.33	0.64	-0.07	0.02	-17.50	
110.00		662.92	0.71	-0.09	0.03	-19.63	
115.00		645.50	0.77	-0.11	0.05	-19.94	
120.00		628.09	0.84	-0.12	0.07	-18.71	
125.00		610.68	0.91	-0.12	0.09	-16.18	
127.09	Bot - Section 4	249.71	0.94	-0.12	0.10	-6.12	
130.00		587.62	0.99	-0.11	0.12	-12.43	
132.34	Top - Section 3	464.04	1.02	-0.10	0.14	-8.34	
135.00		216.47	1.06	-0.09	0.17	-2.99	
140.00		397.05	1.14	-0.04	0.21	-1.78	
145.00		384.86	1.23	0.03	0.27	2.64	
150.00		372.68	1.31	0.14	0.35	7.54	
155.00		360.49	1.40	0.29	0.43	12.87	
157.00	Appurtenance(s)	2228.7	1.44	0.36	0.47	94.67	
160.00		207.52	1.49	0.48	0.53	11.06	
165.00		336.12	1.59	0.74	0.65	24.56	
167.00	Appurtenance(s)	3232.4	1.63	0.86	0.71	263.76	
170.00		192.90	1.69	1.07	0.79	18.34	
175.00		311.76	1.79	1.48	0.95	37.22	
177.00	Appurtenance(s)	2727.3	1.83	1.67	1.03	353.90	
180.00	Appurtenance(s)	184.78	1.89	1.98	1.14	26.98	

Seismic Segment Forces (Factored)

Structure:	CT02218-S-SBA		**Code:**	EIA/TIA-222-G	5/20/2021
Site Name:	Colchester		**Exposure:**	C	
Height:	180.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	B - Competent Rock	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 27

Totals:	**40,137.6**	**1,172.2**	**Total Wind:**	**44,987.1**

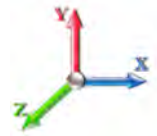
Seismic Base Shear is Less Than 50% of Wind Force - An Analysis is NOT Required

Calculated Forces

Structure:	CT02218-S-SBA	**Code:**	EIA/TIA-222-G	5/20/2021	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 28	

Tower Engineering Solutions

Load Case: 1.2D + 1.0E



Gust Response Factor	1.10			**Sds**	0.12			**Iterations**	23
Dead Load Factor	1.20	**Seismic Load Factor**	1.00	**Sd1**	0.04			**Ss**	0.18
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.32	**SA**	0.01			**S1**	0.06
								Seismic Importance Factor	1.00

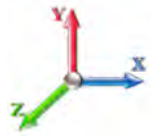
Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-56.05	-1.33	0.00	-173.71	0.00	173.71	5508.12	2754.06	13547.4	6725.55		0.00	0.00	0.036
5.00	-54.13	-1.32	0.00	-167.05	0.00	167.05	5452.09	2726.05	13177.2	6541.73		0.00	-0.01	0.035
10.00	-52.24	-1.30	0.00	-160.46	0.00	160.46	5394.71	2697.35	12808.5	6358.68		0.01	-0.01	0.035
15.00	-50.38	-1.28	0.00	-153.96	0.00	153.96	5335.97	2667.98	12441.5	6176.49		0.03	-0.02	0.034
20.00	-48.54	-1.25	0.00	-147.58	0.00	147.58	5275.87	2637.93	12076.4	5995.24		0.06	-0.03	0.034
25.00	-46.74	-1.22	0.00	-141.32	0.00	141.32	5214.41	2607.20	11713.3	5815.02		0.09	-0.03	0.033
30.00	-44.96	-1.20	0.00	-135.20	0.00	135.20	5151.59	2575.80	11352.6	5635.92		0.13	-0.04	0.033
35.00	-43.22	-1.17	0.00	-129.21	0.00	129.21	5087.42	2543.71	10994.2	5458.02		0.17	-0.05	0.032
40.00	-41.50	-1.14	0.00	-123.35	0.00	123.35	5021.88	2510.94	10638.5	5281.41		0.22	-0.05	0.032
45.00	-39.81	-1.11	0.00	-117.63	0.00	117.63	4954.99	2477.50	10285.5	5106.18		0.29	-0.06	0.031
45.92	-39.51	-1.11	0.00	-116.61	0.00	116.61	4942.58	2471.29	10221.1	5074.21		0.30	-0.06	0.031
50.00	-37.15	-1.06	0.00	-112.07	0.00	112.07	4886.75	2443.37	9935.52	4932.41		0.35	-0.07	0.030
53.00	-35.44	-1.03	0.00	-108.88	0.00	108.88	3967.43	1983.71	8109.29	4025.79		0.40	-0.07	0.036
55.00	-34.86	-1.02	0.00	-106.82	0.00	106.82	3947.58	1973.79	8001.39	3972.23		0.43	-0.08	0.036
60.00	-33.44	-1.00	0.00	-101.71	0.00	101.71	3897.00	1948.50	7732.70	3838.84		0.51	-0.08	0.035
65.00	-32.04	-0.98	0.00	-96.72	0.00	96.72	3845.06	1922.53	7465.70	3706.29		0.61	-0.09	0.034
70.00	-30.66	-0.95	0.00	-91.84	0.00	91.84	3791.77	1895.89	7200.54	3574.65		0.71	-0.10	0.034
75.00	-29.31	-0.94	0.00	-87.07	0.00	87.07	3737.12	1868.56	6937.41	3444.02		0.82	-0.11	0.033
80.00	-27.99	-0.92	0.00	-82.40	0.00	82.40	3681.11	1840.56	6676.48	3314.49		0.94	-0.12	0.032
85.00	-26.69	-0.91	0.00	-77.79	0.00	77.79	3623.74	1811.87	6417.92	3186.13		1.07	-0.13	0.032
90.00	-25.42	-0.91	0.00	-73.22	0.00	73.22	3565.02	1782.51	6161.91	3059.03		1.21	-0.14	0.031
92.92	-24.69	-0.92	0.00	-70.55	0.00	70.55	3530.13	1765.07	6013.81	2985.51		1.29	-0.14	0.031
95.00	-23.82	-0.92	0.00	-68.64	0.00	68.64	3504.93	1752.47	5908.61	2933.28		1.36	-0.15	0.030
98.92	-22.20	-0.91	0.00	-65.06	0.00	65.06	2742.07	1371.04	4616.42	2291.78		1.48	-0.15	0.036
100.00	-21.97	-0.91	0.00	-64.07	0.00	64.07	2732.96	1366.48	4575.83	2271.63		1.51	-0.16	0.036
105.00	-20.91	-0.92	0.00	-59.50	0.00	59.50	2690.08	1345.04	4389.32	2179.04		1.68	-0.17	0.035
110.00	-19.88	-0.92	0.00	-54.92	0.00	54.92	2645.83	1322.92	4204.31	2087.20		1.86	-0.18	0.034
115.00	-18.87	-0.92	0.00	-50.34	0.00	50.34	2600.23	1300.12	4020.98	1996.19		2.05	-0.19	0.032
120.00	-17.88	-0.92	0.00	-45.76	0.00	45.76	2553.28	1276.64	3839.50	1906.09		2.25	-0.20	0.031
125.00	-16.91	-0.91	0.00	-41.18	0.00	41.18	2504.96	1252.48	3660.03	1816.99		2.46	-0.21	0.029
127.09	-16.51	-0.91	0.00	-39.27	0.00	39.27	2484.39	1242.20	3585.78	1780.13		2.55	-0.21	0.029
130.00	-15.67	-0.91	0.00	-36.61	0.00	36.61	2455.29	1227.64	3482.76	1728.99		2.68	-0.22	0.028
132.34	-15.00	-0.91	0.00	-34.47	0.00	34.47	1489.26	744.63	2121.49	1053.20		2.79	-0.22	0.043
135.00	-14.61	-0.91	0.00	-32.05	0.00	32.05	1477.63	738.82	2071.36	1028.31		2.92	-0.23	0.041
140.00	-13.90	-0.91	0.00	-27.48	0.00	27.48	1454.76	727.38	1977.27	981.60		3.16	-0.24	0.038
145.00	-13.20	-0.91	0.00	-22.92	0.00	22.92	1430.53	715.26	1883.34	934.97		3.42	-0.25	0.034
150.00	-12.52	-0.90	0.00	-18.37	0.00	18.37	1404.94	702.47	1789.74	888.50		3.69	-0.26	0.030
155.00	-11.85	-0.89	0.00	-13.87	0.00	13.87	1377.99	688.99	1696.65	842.29		3.96	-0.27	0.025
157.00	-9.08	-0.78	0.00	-12.10	0.00	12.10	1366.83	683.41	1659.60	823.90		4.08	-0.27	0.021
160.00	-8.74	-0.77	0.00	-9.76	0.00	9.76	1349.68	674.84	1604.25	796.42		4.25	-0.28	0.019
165.00	-8.18	-0.74	0.00	-5.92	0.00	5.92	1320.02	660.01	1512.71	750.97		4.54	-0.28	0.014
167.00	-4.24	-0.46	0.00	-4.44	0.00	4.44	1307.77	653.89	1476.37	732.93		4.66	-0.28	0.009
170.00	-3.96	-0.44	0.00	-3.07	0.00	3.07	1289.00	644.50	1422.20	706.04		4.84	-0.29	0.007
175.00	-3.52	-0.40	0.00	-0.88	0.00	0.88	1256.62	628.31	1332.89	661.70		5.14	-0.29	0.004
177.00	-0.22	-0.03	0.00	-0.08	0.00	0.08	1243.29	621.64	1297.54	644.16		5.26	-0.29	0.000
180.00	0.00	-0.03	0.00	0.00	0.00	0.00	1222.88	611.44	1244.96	618.05		5.44	-0.29	0.000

Calculated Forces

Structure:	CT02218-S-SBA		**Code:**	EIA/TIA-222-G	5/20/2021
Site Name:	Colchester		**Exposure:**	C	
Height:	180.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	B - Competent Rock	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 29

Seismic Segment Forces (Factored)

Structure:	CT02218-S-SBA	**Code:**	EIA/TIA-222-G	5/20/2021	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 30	



Load Case:	0.9D + 1.0E						**Iterations**	23	
Gust Response Factor	1.10				**Sds**	0.12	**Ss**	0.18	
Dead Load Factor	0.90	**Seismic Load Factor**	1.00		**Sd1**	0.04	**S1**	0.06	
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.32		**SA**	0.01	**Seismic Importance Factor**	1.00	

Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1403.7	0.00	0.03	0.02	18.34	
10.00		1379.3	0.01	0.05	0.03	25.44	
15.00		1354.9	0.01	0.06	0.03	28.69	
20.00		1330.6	0.02	0.07	0.04	30.14	
25.00		1306.2	0.04	0.07	0.04	30.69	
30.00		1281.8	0.05	0.07	0.04	30.85	
35.00		1257.5	0.07	0.07	0.04	30.88	
40.00		1233.1	0.09	0.07	0.04	30.92	
45.00		1208.7	0.12	0.07	0.03	31.00	
45.92	Bot - Section 2	218.97	0.12	0.07	0.03	5.64	
50.00		1805.5	0.15	0.07	0.03	47.35	
53.00	Top - Section 1	1307.2	0.16	0.07	0.03	34.69	
55.00		401.39	0.18	0.07	0.03	10.72	
60.00		988.87	0.21	0.06	0.02	26.58	
65.00		968.00	0.25	0.06	0.02	25.61	
70.00		947.14	0.29	0.05	0.01	23.70	
75.00		926.28	0.33	0.04	0.01	20.42	
80.00		905.41	0.37	0.03	0.01	15.35	
85.00		884.55	0.42	0.01	0.01	8.36	
90.00		863.69	0.47	-0.01	0.01	-0.04	
92.92	Bot - Section 3	494.18	0.50	-0.02	0.01	-2.96	
95.00		644.51	0.53	-0.03	0.01	-6.54	
98.92	Top - Section 2	1193.6	0.57	-0.04	0.01	-20.70	
100.00		149.70	0.58	-0.05	0.01	-2.86	
105.00		680.33	0.64	-0.07	0.02	-17.50	
110.00		662.92	0.71	-0.09	0.03	-19.63	
115.00		645.50	0.77	-0.11	0.05	-19.94	
120.00		628.09	0.84	-0.12	0.07	-18.71	
125.00		610.68	0.91	-0.12	0.09	-16.18	
127.09	Bot - Section 4	249.71	0.94	-0.12	0.10	-6.12	
130.00		587.62	0.99	-0.11	0.12	-12.43	
132.34	Top - Section 3	464.04	1.02	-0.10	0.14	-8.34	
135.00		216.47	1.06	-0.09	0.17	-2.99	
140.00		397.05	1.14	-0.04	0.21	-1.78	
145.00		384.86	1.23	0.03	0.27	2.64	
150.00		372.68	1.31	0.14	0.35	7.54	
155.00		360.49	1.40	0.29	0.43	12.87	
157.00	Appurtenance(s)	2228.7	1.44	0.36	0.47	94.67	
160.00		207.52	1.49	0.48	0.53	11.06	
165.00		336.12	1.59	0.74	0.65	24.56	
167.00	Appurtenance(s)	3232.4	1.63	0.86	0.71	263.76	
170.00		192.90	1.69	1.07	0.79	18.34	
175.00		311.76	1.79	1.48	0.95	37.22	
177.00	Appurtenance(s)	2727.3	1.83	1.67	1.03	353.90	
180.00	Appurtenance(s)	184.78	1.89	1.98	1.14	26.98	

Seismic Segment Forces (Factored)

Structure:	CT02218-S-SBA		**Code:**	EIA/TIA-222-G	5/20/2021
Site Name:	Colchester		**Exposure:**	C	
Height:	180.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	B - Competent Rock	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 31

Totals:	**40,137.6**	**1,172.2**	**Total Wind:**	**44,987.1**

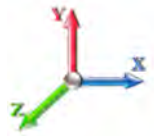
Seismic Base Shear is Less Than 50% of Wind Force - An Analysis is NOT Required

Calculated Forces

Structure:	CT02218-S-SBA	**Code:**	EIA/TIA-222-G	5/20/2021	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 32	

Tower Engineering Solutions

Load Case: 0.9D + 1.0E



Gust Response Factor	1.10			**Sds**	0.12			**Iterations**	23
Dead Load Factor	0.90	**Seismic Load Factor**	1.00	**Sd1**	0.04			**Ss**	0.18
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.32	**SA**	0.01			**S1**	0.06
								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	-42.04	-1.33	0.00	-171.57	0.00	171.57	5508.12	2754.06	13547.4	6725.55		0.00	0.00	0.033
5.00	-40.60	-1.32	0.00	-164.92	0.00	164.92	5452.09	2726.05	13177.2	6541.73		0.00	-0.01	0.033
10.00	-39.18	-1.30	0.00	-158.33	0.00	158.33	5394.71	2697.35	12808.5	6358.68		0.01	-0.01	0.032
15.00	-37.78	-1.27	0.00	-151.86	0.00	151.86	5335.97	2667.98	12441.5	6176.49		0.03	-0.02	0.032
20.00	-36.41	-1.24	0.00	-145.50	0.00	145.50	5275.87	2637.93	12076.4	5995.24		0.05	-0.03	0.031
25.00	-35.05	-1.22	0.00	-139.28	0.00	139.28	5214.41	2607.20	11713.3	5815.02		0.09	-0.03	0.031
30.00	-33.72	-1.19	0.00	-133.19	0.00	133.19	5151.59	2575.80	11352.6	5635.92		0.12	-0.04	0.030
35.00	-32.41	-1.16	0.00	-127.25	0.00	127.25	5087.42	2543.71	10994.2	5458.02		0.17	-0.05	0.030
40.00	-31.12	-1.13	0.00	-121.44	0.00	121.44	5021.88	2510.94	10638.5	5281.41		0.22	-0.05	0.029
45.00	-29.86	-1.10	0.00	-115.77	0.00	115.77	4954.99	2477.50	10285.5	5106.18		0.28	-0.06	0.029
45.92	-29.63	-1.10	0.00	-114.76	0.00	114.76	4942.58	2471.29	10221.1	5074.21		0.29	-0.06	0.029
50.00	-27.86	-1.05	0.00	-110.27	0.00	110.27	4886.75	2443.37	9935.52	4932.41		0.35	-0.07	0.028
53.00	-26.58	-1.02	0.00	-107.11	0.00	107.11	3967.43	1983.71	8109.29	4025.79		0.39	-0.07	0.033
55.00	-26.14	-1.01	0.00	-105.08	0.00	105.08	3947.58	1973.79	8001.39	3972.23		0.42	-0.08	0.033
60.00	-25.08	-0.98	0.00	-100.03	0.00	100.03	3897.00	1948.50	7732.70	3838.84		0.51	-0.08	0.032
65.00	-24.03	-0.96	0.00	-95.11	0.00	95.11	3845.06	1922.53	7465.70	3706.29		0.60	-0.09	0.032
70.00	-23.00	-0.94	0.00	-90.30	0.00	90.30	3791.77	1895.89	7200.54	3574.65		0.70	-0.10	0.031
75.00	-21.99	-0.92	0.00	-85.61	0.00	85.61	3737.12	1868.56	6937.41	3444.02		0.81	-0.11	0.031
80.00	-20.99	-0.91	0.00	-81.01	0.00	81.01	3681.11	1840.56	6676.48	3314.49		0.93	-0.12	0.030
85.00	-20.02	-0.90	0.00	-76.48	0.00	76.48	3623.74	1811.87	6417.92	3186.13		1.05	-0.13	0.030
90.00	-19.06	-0.90	0.00	-71.99	0.00	71.99	3565.02	1782.51	6161.91	3059.03		1.19	-0.13	0.029
92.92	-18.52	-0.90	0.00	-69.37	0.00	69.37	3530.13	1765.07	6013.81	2985.51		1.27	-0.14	0.028
95.00	-17.86	-0.90	0.00	-67.50	0.00	67.50	3504.93	1752.47	5908.61	2933.28		1.34	-0.14	0.028
98.92	-16.65	-0.90	0.00	-63.98	0.00	63.98	2742.07	1371.04	4616.42	2291.78		1.46	-0.15	0.034
100.00	-16.47	-0.90	0.00	-63.00	0.00	63.00	2732.96	1366.48	4575.83	2271.63		1.49	-0.15	0.034
105.00	-15.68	-0.90	0.00	-58.51	0.00	58.51	2690.08	1345.04	4389.32	2179.04		1.66	-0.16	0.033
110.00	-14.91	-0.90	0.00	-54.02	0.00	54.02	2645.83	1322.92	4204.31	2087.20		1.83	-0.17	0.032
115.00	-14.15	-0.90	0.00	-49.52	0.00	49.52	2600.23	1300.12	4020.98	1996.19		2.02	-0.18	0.030
120.00	-13.41	-0.90	0.00	-45.02	0.00	45.02	2553.28	1276.64	3839.50	1906.09		2.22	-0.19	0.029
125.00	-12.68	-0.90	0.00	-40.52	0.00	40.52	2504.96	1252.48	3660.03	1816.99		2.42	-0.20	0.027
127.09	-12.38	-0.90	0.00	-38.65	0.00	38.65	2484.39	1242.20	3585.78	1780.13		2.51	-0.21	0.027
130.00	-11.75	-0.90	0.00	-36.03	0.00	36.03	2455.29	1227.64	3482.76	1728.99		2.64	-0.21	0.026
132.34	-11.25	-0.90	0.00	-33.93	0.00	33.93	1489.26	744.63	2121.49	1053.20		2.75	-0.22	0.040
135.00	-10.96	-0.90	0.00	-31.55	0.00	31.55	1477.63	738.82	2071.36	1028.31		2.87	-0.22	0.038
140.00	-10.42	-0.90	0.00	-27.06	0.00	27.06	1454.76	727.38	1977.27	981.60		3.11	-0.24	0.035
145.00	-9.90	-0.89	0.00	-22.58	0.00	22.58	1430.53	715.26	1883.34	934.97		3.36	-0.25	0.031
150.00	-9.39	-0.89	0.00	-18.10	0.00	18.10	1404.94	702.47	1789.74	888.50		3.63	-0.26	0.027
155.00	-8.88	-0.87	0.00	-13.68	0.00	13.68	1377.99	688.99	1696.65	842.29		3.90	-0.27	0.023
157.00	-6.81	-0.77	0.00	-11.93	0.00	11.93	1366.83	683.41	1659.60	823.90		4.01	-0.27	0.019
160.00	-6.55	-0.76	0.00	-9.63	0.00	9.63	1349.68	674.84	1604.25	796.42		4.18	-0.27	0.017
165.00	-6.13	-0.73	0.00	-5.85	0.00	5.85	1320.02	660.01	1512.71	750.97		4.47	-0.28	0.012
167.00	-3.18	-0.45	0.00	-4.39	0.00	4.39	1307.77	653.89	1476.37	732.93		4.59	-0.28	0.008
170.00	-2.97	-0.43	0.00	-3.03	0.00	3.03	1289.00	644.50	1422.20	706.04		4.77	-0.28	0.007
175.00	-2.64	-0.39	0.00	-0.87	0.00	0.87	1256.62	628.31	1332.89	661.70		5.06	-0.28	0.003
177.00	-0.17	-0.03	0.00	-0.08	0.00	0.08	1243.29	621.64	1297.54	644.16		5.18	-0.28	0.000
180.00	0.00	-0.03	0.00	0.00	0.00	0.00	1222.88	611.44	1244.96	618.05		5.36	-0.28	0.000

Calculated Forces

Structure:	CT02218-S-SBA			**Code:**	EIA/TIA-222-G	5/20/2021
Site Name:	Colchester			**Exposure:**	C	
Height:	180.00 (ft)			**Crest Height:**	0.00	
Base Elev:	0.000 (ft)			**Site Class:**	B - Competent Rock	
Gh:	1.1	**Topography:**	1	**Struct Class:**	II	Page: 33

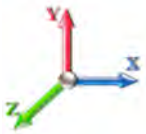
Wind Loading - Shaft

Structure:	CT02218-S-SBA	**Code:**	EIA/TIA-222-G	5/20/2021	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 34	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 24

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
5.00		1.00	0.85	7.442	8.19	277.19	0.750	0.000	5.00	25.272	18.95	155.2	0.0	1403.7
10.00		1.00	0.85	7.442	8.19	272.37	0.750	0.000	5.00	24.837	18.63	152.5	0.0	1379.4
15.00		1.00	0.85	7.442	8.19	267.55	0.750	0.000	5.00	24.401	18.30	149.8	0.0	1355.0
20.00		1.00	0.90	7.896	8.69	270.63	0.750	0.000	5.00	23.966	17.97	156.1	0.0	1330.6
25.00		1.00	0.95	8.276	9.10	271.98	0.750	0.000	5.00	23.530	17.65	160.7	0.0	1306.3
30.00		1.00	0.98	8.600	9.46	272.07	0.750	0.000	5.00	23.095	17.32	163.9	0.0	1281.9
35.00		1.00	1.01	8.883	9.77	271.26	0.750	0.000	5.00	22.659	16.99	166.1	0.0	1257.5
40.00		1.00	1.04	9.137	10.05	269.76	0.750	0.000	5.00	22.224	16.67	167.5	0.0	1233.1
45.00		1.00	1.07	9.366	10.30	267.72	0.750	0.000	5.00	21.788	16.34	168.4	0.0	1208.8
45.92	Bot - Section 2	1.00	1.07	9.406	10.35	267.30	0.750	0.000	0.92	3.947	2.96	30.6	0.0	219.0
50.00		1.00	1.09	9.576	10.53	265.24	0.750	0.000	4.08	17.666	13.25	139.6	0.0	1805.5
53.00	Top - Section 1	1.00	1.11	9.694	10.66	263.58	0.750	0.000	3.00	12.794	9.60	102.3	0.0	1307.3
55.00		1.00	1.12	9.770	10.75	266.44	0.750	0.000	2.00	8.442	6.33	68.0	0.0	401.4
60.00		1.00	1.14	9.951	10.95	263.32	0.750	0.000	5.00	20.800	15.60	170.8	0.0	988.9
65.00		1.00	1.16	10.120	11.13	259.93	0.750	0.000	5.00	20.365	15.27	170.0	0.0	968.0
70.00		1.00	1.17	10.279	11.31	256.30	0.750	0.000	5.00	19.929	14.95	169.0	0.0	947.1
75.00		1.00	1.19	10.430	11.47	252.46	0.750	0.000	5.00	19.494	14.62	167.7	0.0	926.3
80.00		1.00	1.21	10.572	11.63	248.44	0.750	0.000	5.00	19.058	14.29	166.2	0.0	905.4
85.00		1.00	1.22	10.708	11.78	244.25	0.750	0.000	5.00	18.623	13.97	164.5	0.0	884.5
90.00		1.00	1.24	10.838	11.92	239.91	0.750	0.000	5.00	18.187	13.64	162.6	0.0	863.7
92.92	Bot - Section 3	1.00	1.25	10.911	12.00	237.32	0.750	0.000	2.92	10.408	7.81	93.7	0.0	494.2
95.00		1.00	1.25	10.962	12.06	235.43	0.750	0.000	2.08	7.454	5.59	67.4	0.0	644.5
98.92	Top - Section 2	1.00	1.26	11.055	12.16	231.84	0.750	0.000	3.92	13.810	10.36	126.0	0.0	1193.7
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
105.00		1.00	1.28	11.195	12.31	229.72	0.750	0.000	5.00	17.147	12.86	158.4	0.0	680.3
110.00		1.00	1.29	11.305	12.44	224.91	0.750	0.000	5.00	16.711	12.53	155.9	0.0	662.9
115.00		1.00	1.30	11.412	12.55	219.99	0.750	0.000	5.00	16.276	12.21	153.2	0.0	645.5
120.00		1.00	1.32	11.514	12.67	214.99	0.750	0.000	5.00	15.840	11.88	150.5	0.0	628.1
125.00		1.00	1.33	11.614	12.78	209.90	0.750	0.000	5.00	15.405	11.55	147.6	0.0	610.7
127.09	Bot - Section 4	1.00	1.33	11.654	12.82	207.75	0.750	0.000	2.09	6.300	4.73	60.6	0.0	249.7
130.00		1.00	1.34	11.710	12.88	204.72	0.750	0.000	2.91	8.777	6.58	84.8	0.0	587.6
132.34	Top - Section 3	1.00	1.34	11.754	12.93	202.27	0.750	0.000	2.34	6.933	5.20	67.2	0.0	464.0
135.00		1.00	1.35	11.803	12.98	202.06	0.750	0.000	2.66	7.787	5.84	75.8	0.0	216.5
140.00		1.00	1.36	11.894	13.08	196.74	0.750	0.000	5.00	14.284	10.71	140.2	0.0	397.0
145.00		1.00	1.37	11.982	13.18	191.36	0.750	0.000	5.00	13.849	10.39	136.9	0.0	384.9
150.00		1.00	1.38	12.068	13.27	185.91	0.750	0.000	5.00	13.413	10.06	133.5	0.0	372.7
155.00		1.00	1.39	12.152	13.37	180.39	0.750	0.000	5.00	12.978	9.73	130.1	0.0	360.5
157.00	Appurtenance(s)	1.00	1.39	12.185	13.40	178.17	0.750	0.000	2.00	5.069	3.80	51.0	0.0	140.8
160.00		1.00	1.40	12.233	13.46	174.82	0.750	0.000	3.00	7.473	5.60	75.4	0.0	207.5
165.00		1.00	1.41	12.313	13.54	169.19	0.750	0.000	5.00	12.107	9.08	123.0	0.0	336.1
167.00	Appurtenance(s)	1.00	1.41	12.344	13.58	166.92	0.750	0.000	2.00	4.721	3.54	48.1	0.0	131.0
170.00		1.00	1.42	12.390	13.63	163.50	0.750	0.000	3.00	6.950	5.21	71.0	0.0	192.9
175.00		1.00	1.42	12.466	13.71	157.77	0.750	0.000	5.00	11.236	8.43	115.6	0.0	311.8
177.00	Appurtenance(s)	1.00	1.43	12.496	13.75	155.46	0.750	0.000	2.00	4.372	3.28	45.1	0.0	121.3
180.00	Appurtenance(s)	1.00	1.43	12.540	13.79	151.98	0.750	0.000	3.00	6.428	4.82	66.5	0.0	178.3

Wind Loading - Shaft

Structure:	CT02218-S-SBA	**Code:**	EIA/TIA-222-G	5/20/2021	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 35	

Totals:	**180.00**	**5,463.3**	**32,335.6**

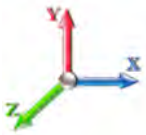
Discrete Appurtenance Forces

Structure:	CT02218-S-SBA	**Code:**	EIA/TIA-222-G	5/20/2021	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 36	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 24

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	180.00	6' Lightning rod	1	12.540	13.794	1.00	1.00	0.38	6.50	0.000	0.000	5.24	0.00	0.00
2	177.00	782 11056	3	12.496	13.746	0.50	0.75	0.42	5.40	0.000	0.000	5.80	0.00	0.00
3	177.00	Platform w/ Hand Rail	1	12.496	13.746	1.00	1.00	32.00	1600.00	0.000	0.000	439.86	0.00	0.00
4	177.00	MS-KI22-5 (Kickers w/o	1	12.496	13.746	1.00	1.00	5.33	146.00	0.000	0.000	73.26	0.00	0.00
5	177.00	APXV18-206516S-C-A20	3	12.496	13.746	0.55	0.75	5.93	56.10	0.000	0.000	81.50	0.00	0.00
6	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
7	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
8	177.00	Ericsson 4449 B71 + B85	3	12.496	13.746	0.50	0.75	2.97	219.60	0.000	0.000	40.82	0.00	0.00
9	177.00	Ericsson 4415 B66A RRU	3	12.496	13.746	0.50	0.75	2.80	148.80	0.000	0.000	38.54	0.00	0.00
10	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
11	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
12	167.00	Samsung B2/B66A	3	12.344	13.578	0.50	0.75	2.83	210.90	0.000	0.000	38.48	0.00	0.00
13	167.00	Samsung B5/B13	3	12.344	13.578	0.50	0.75	2.83	253.20	0.000	0.000	38.48	0.00	0.00
14	167.00	Raycap	2	12.344	13.578	0.76	0.90	5.73	64.00	0.000	0.000	77.81	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	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
17	157.00	DMP65R-BU8DA	1	12.185	13.403	0.80	0.80	14.30	52.50	0.000	0.000	191.61	0.00	0.00
18	157.00	Low Profile Platform-flat	1	12.185	13.403	1.00	1.00	25.00	1200.00	0.000	0.000	335.08	0.00	0.00
19	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
20	157.00	DMP65R-BU4DA	2	12.185	13.403	0.66	0.80	10.50	135.80	0.000	0.000	140.68	0.00	0.00
21	157.00	4449 B5/B12	3	12.185	13.403	0.54	0.80	3.17	213.00	0.000	0.000	42.46	0.00	0.00
22	157.00	HPA65R-BU4A	2	12.185	13.403	0.80	0.80	7.94	57.40	0.000	0.000	106.37	0.00	0.00
23	157.00	HPA65R-BU8A	1	12.185	13.403	0.80	0.80	8.98	76.50	0.000	0.000	120.41	0.00	0.00
24	157.00	8843 B2/B66A	3	12.185	13.403	0.54	0.80	2.64	216.00	0.000	0.000	35.35	0.00	0.00
25	157.00	Raycap DC6-48-60-18-8F	1	12.185	13.403	0.80	0.80	0.74	31.80	0.000	0.000	9.86	0.00	0.00
							Totals:		**7,802.00**			**3,717.75**		

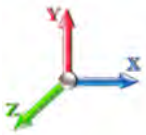
Total Applied Force Summary

Structure:	CT02218-S-SBA		**Code:**	EIA/TIA-222-G	5/20/2021
Site Name:	Colchester		**Exposure:**	C	
Height:	180.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	B - Competent Rock	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 37

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 24

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		155.16	1601.10	0.00	0.00
10.00		152.49	1576.73	0.00	0.00
15.00		149.81	1552.36	0.00	0.00
20.00		156.12	1527.99	0.00	0.00
25.00		160.66	1503.63	0.00	0.00
30.00		163.85	1479.26	0.00	0.00
35.00		166.07	1454.89	0.00	0.00
40.00		167.52	1430.52	0.00	0.00
45.00		168.36	1406.15	0.00	0.00
45.92		30.63	255.15	0.00	0.00
50.00		139.56	1966.72	0.00	0.00
53.00		102.32	1425.71	0.00	0.00
55.00		68.05	480.34	0.00	0.00
60.00		170.76	1186.24	0.00	0.00
65.00		170.03	1165.37	0.00	0.00
70.00		169.01	1144.51	0.00	0.00
75.00		167.73	1123.65	0.00	0.00
80.00		166.23	1102.78	0.00	0.00
85.00		164.52	1081.92	0.00	0.00
90.00		162.61	1061.06	0.00	0.00
92.92		93.69	609.31	0.00	0.00
95.00		67.41	726.75	0.00	0.00
98.92		125.95	1348.29	0.00	0.00
100.00		34.49	192.46	0.00	0.00
105.00		158.37	877.70	0.00	0.00
110.00		155.86	860.29	0.00	0.00
115.00		153.23	842.87	0.00	0.00
120.00		150.47	825.46	0.00	0.00
125.00		147.60	808.05	0.00	0.00
127.09		60.57	332.07	0.00	0.00
130.00		84.80	702.62	0.00	0.00
132.34		67.23	556.28	0.00	0.00
135.00		75.82	321.60	0.00	0.00
140.00		140.17	594.42	0.00	0.00
145.00		136.90	582.23	0.00	0.00
150.00		133.55	570.05	0.00	0.00
155.00		130.10	557.86	0.00	0.00
157.00	(17) attachments	1161.92	2307.73	0.00	0.00
160.00		75.42	285.93	0.00	0.00
165.00		122.98	466.79	0.00	0.00
167.00	(24) attachments	1521.59	3284.71	0.00	0.00
170.00		71.05	227.22	0.00	0.00
175.00		115.56	368.96	0.00	0.00
177.00	(20) attachments	1173.11	2750.27	0.00	0.00
180.00	(1) attachments	71.74	184.78	0.00	0.00

Total Applied Force Summary

Structure:	CT02218-S-SBA		**Code:**	EIA/TIA-222-G	5/20/2021
Site Name:	Colchester		**Exposure:**	C	
Height:	180.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	B - Competent Rock	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 38

Totals:	**9,181.04**	**46,710.80**	**0.00**	**0.00**

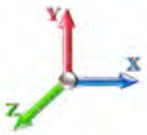
Calculated Forces

Structure:	CT02218-S-SBA	**Code:**	EIA/TIA-222-G	5/20/2021	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 39	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 24

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	-46.71	-9.20	0.00	-1141.8	0.00	1141.84	5508.12	2754.06	13547.4	6725.55	0.00	0.000	0.000	0.178
5.00	-45.10	-9.08	0.00	-1095.8	0.00	1095.85	5452.09	2726.05	13177.2	6541.73	0.02	-0.043	0.000	0.176
10.00	-43.52	-8.95	0.00	-1050.4	0.00	1050.48	5394.71	2697.35	12808.5	6358.68	0.09	-0.086	0.000	0.173
15.00	-41.96	-8.83	0.00	-1005.7	0.00	1005.71	5335.97	2667.98	12441.5	6176.49	0.20	-0.129	0.000	0.171
20.00	-40.42	-8.70	0.00	-961.54	0.00	961.54	5275.87	2637.93	12076.4	5995.24	0.36	-0.173	0.000	0.168
25.00	-38.91	-8.57	0.00	-918.02	0.00	918.02	5214.41	2607.20	11713.3	5815.02	0.57	-0.218	0.000	0.165
30.00	-37.43	-8.43	0.00	-875.17	0.00	875.17	5151.59	2575.80	11352.6	5635.92	0.82	-0.263	0.000	0.163
35.00	-35.97	-8.28	0.00	-833.03	0.00	833.03	5087.42	2543.71	10994.2	5458.02	1.12	-0.308	0.000	0.160
40.00	-34.53	-8.14	0.00	-791.61	0.00	791.61	5021.88	2510.94	10638.5	5281.41	1.47	-0.353	0.000	0.157
45.00	-33.12	-7.97	0.00	-750.94	0.00	750.94	4954.99	2477.50	10285.5	5106.18	1.86	-0.399	0.000	0.154
45.92	-32.86	-7.95	0.00	-743.63	0.00	743.63	4942.58	2471.29	10221.1	5074.21	1.94	-0.408	0.000	0.153
50.00	-30.89	-7.82	0.00	-711.15	0.00	711.15	4886.75	2443.37	9935.52	4932.41	2.30	-0.446	0.000	0.151
53.00	-29.47	-7.72	0.00	-687.70	0.00	687.70	3967.43	1983.71	8109.29	4025.79	2.59	-0.474	0.000	0.178
55.00	-28.98	-7.66	0.00	-672.26	0.00	672.26	3947.58	1973.79	8001.39	3972.23	2.80	-0.493	0.000	0.177
60.00	-27.79	-7.51	0.00	-633.95	0.00	633.95	3897.00	1948.50	7732.70	3838.84	3.34	-0.545	0.000	0.172
65.00	-26.62	-7.35	0.00	-596.42	0.00	596.42	3845.06	1922.53	7465.70	3706.29	3.94	-0.597	0.000	0.168
70.00	-25.47	-7.19	0.00	-559.68	0.00	559.68	3791.77	1895.89	7200.54	3574.65	4.59	-0.649	0.000	0.163
75.00	-24.34	-7.03	0.00	-523.73	0.00	523.73	3737.12	1868.56	6937.41	3444.02	5.30	-0.702	0.000	0.159
80.00	-23.24	-6.87	0.00	-488.57	0.00	488.57	3681.11	1840.56	6676.48	3314.49	6.06	-0.754	0.000	0.154
85.00	-22.15	-6.71	0.00	-454.21	0.00	454.21	3623.74	1811.87	6417.92	3186.13	6.88	-0.806	0.000	0.149
90.00	-21.09	-6.55	0.00	-420.64	0.00	420.64	3565.02	1782.51	6161.91	3059.03	7.75	-0.858	0.000	0.143
92.92	-20.48	-6.46	0.00	-401.53	0.00	401.53	3530.13	1765.07	6013.81	2985.51	8.29	-0.889	0.000	0.140
95.00	-19.75	-6.39	0.00	-388.08	0.00	388.08	3504.93	1752.47	5908.61	2933.28	8.68	-0.911	0.000	0.138
98.92	-18.40	-6.25	0.00	-363.06	0.00	363.06	2742.07	1371.04	4616.42	2291.78	9.44	-0.951	0.000	0.165
100.00	-18.20	-6.22	0.00	-356.29	0.00	356.29	2732.96	1366.48	4575.83	2271.63	9.66	-0.962	0.000	0.164
105.00	-17.32	-6.07	0.00	-325.17	0.00	325.17	2690.08	1345.04	4389.32	2179.04	10.70	-1.020	0.000	0.156
110.00	-16.46	-5.91	0.00	-294.84	0.00	294.84	2645.83	1322.92	4204.31	2087.20	11.80	-1.077	0.000	0.148
115.00	-15.61	-5.76	0.00	-265.28	0.00	265.28	2600.23	1300.12	4020.98	1996.19	12.96	-1.132	0.000	0.139
120.00	-14.79	-5.60	0.00	-236.50	0.00	236.50	2553.28	1276.64	3839.50	1906.09	14.17	-1.186	0.000	0.130
125.00	-13.98	-5.45	0.00	-208.48	0.00	208.48	2504.96	1252.48	3660.03	1816.99	15.44	-1.237	0.000	0.120
127.09	-13.65	-5.39	0.00	-197.12	0.00	197.12	2484.39	1242.20	3585.78	1780.13	15.99	-1.259	0.000	0.116
130.00	-12.94	-5.29	0.00	-181.43	0.00	181.43	2455.29	1227.64	3482.76	1728.99	16.76	-1.288	0.000	0.110
132.34	-12.39	-5.22	0.00	-169.06	0.00	169.06	1489.26	744.63	2121.49	1053.20	17.40	-1.310	0.000	0.169
135.00	-12.06	-5.14	0.00	-155.17	0.00	155.17	1477.63	738.82	2071.36	1028.31	18.14	-1.335	0.000	0.159
140.00	-11.47	-5.00	0.00	-129.46	0.00	129.46	1454.76	727.38	1977.27	981.60	19.57	-1.394	0.000	0.140
145.00	-10.88	-4.86	0.00	-104.46	0.00	104.46	1430.53	715.26	1883.34	934.97	21.06	-1.447	0.000	0.119
150.00	-10.31	-4.72	0.00	-80.18	0.00	80.18	1404.94	702.47	1789.74	888.50	22.60	-1.493	0.000	0.098
155.00	-9.76	-4.58	0.00	-56.59	0.00	56.59	1377.99	688.99	1696.65	842.29	24.18	-1.531	0.000	0.074
157.00	-7.48	-3.35	0.00	-47.44	0.00	47.44	1366.83	683.41	1659.60	823.90	24.83	-1.543	0.000	0.063
160.00	-7.20	-3.27	0.00	-37.37	0.00	37.37	1349.68	674.84	1604.25	796.42	25.80	-1.559	0.000	0.052
165.00	-6.73	-3.14	0.00	-21.00	0.00	21.00	1320.02	660.01	1512.71	750.97	27.45	-1.579	0.000	0.033
167.00	-3.49	-1.53	0.00	-14.73	0.00	14.73	1307.77	653.89	1476.37	732.93	28.11	-1.585	0.000	0.023
170.00	-3.26	-1.45	0.00	-10.14	0.00	10.14	1289.00	644.50	1422.20	706.04	29.11	-1.590	0.000	0.017
175.00	-2.90	-1.33	0.00	-2.88	0.00	2.88	1256.62	628.31	1332.89	661.70	30.78	-1.596	0.000	0.007
177.00	-0.18	-0.08	0.00	-0.23	0.00	0.23	1243.29	621.64	1297.54	644.16	31.45	-1.597	0.000	0.001
180.00	0.00	-0.07	0.00	0.00	0.00	0.00	1222.88	611.44	1244.96	618.05	32.45	-1.597	0.000	0.000

Final Analysis Summary

Structure:	CT02218-S-SBA	**Code:**	EIA/TIA-222-G	5/20/2021	
Site Name:	Colchester	**Exposure:**	C		
Height:	180.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	B - Competent Rock		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 40	

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	45.1	0.00	55.97	0.00	0.00	5624.85
0.9D + 1.6W 105 mph Wind	45.1	0.00	41.96	0.00	0.00	5560.35
1.2D + 1.0Di + 1.0Wi 50 mph Wind	10.2	0.00	81.65	0.00	0.00	1286.96
1.2D + 1.0E	1.3	0.00	56.05	0.00	0.00	173.71
0.9D + 1.0E	1.3	0.00	42.04	0.00	0.00	171.57
1.0D + 1.0W 60 mph Wind	9.2	0.00	46.71	0.00	0.00	1141.84

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	-33.88	-38.04	0.00	-3391.7	0.00	-3391.7	3967.43	1983.7	8109.29	4025.79	53.00	0.851
0.9D + 1.6W 105 mph Wind	-25.05	-37.66	0.00	-3339.3	0.00	-3339.3	3967.43	1983.7	8109.29	4025.79	53.00	0.836
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-55.55	-8.71	0.00	-778.27	0.00	-778.27	3967.43	1983.7	8109.29	4025.79	53.00	0.207
1.2D + 1.0E	-15.00	-0.91	0.00	-34.47	0.00	-34.47	1489.26	744.63	2121.49	1053.20	132.34	0.043
0.9D + 1.0E	-11.25	-0.90	0.00	-33.93	0.00	-33.93	1489.26	744.63	2121.49	1053.20	132.34	0.040
1.0D + 1.0W 60 mph Wind	-46.71	-9.20	0.00	-1141.8	0.00	-1141.8	5508.12	2754.0	13547.4	6725.55	0.00	0.178

Base Plate Summary

Structure:	CT02218-S-SB		**Code:**	EIA/TIA-222-G	5/20/2021
Site Name:	Colchester		**Exposure:**	C	
Height:	180.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	B - Competent Rock	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 41

Tower Engineering Solutions

Reactions	
Original Design	
Moment (kip-ft):	5045.00
Axial (kip):	56.10
Shear (kip):	39.50
Analysis (1.2D + 1.6W)	
Moment (kip-ft):	5624.85
Axial (kip):	55.97
Shear (kip):	45.09

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):	865.50
Allow Stress (ksi):	81.00
Applied Stress (ksi):	50.22
Stress Ratio:	0.62

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):	200.81
Allowable (kip):	260.00
Ratio:	0.79
Tension	
Force (kip):	192.65
Allowable (kip):	260.00
Ratio:	0.76

Monopole Mat Foundation Design

				Date
				5/20/2021
	Customer Name:	T-Mobile	**EIA/TIA Standard:**	EIA-222-G
	Site Name:		**Structure Height (Ft.):**	180
	Site Number:	CT02218-S-SBA	**Engineer Name:**	T. Alajaj
	Engr. Number:	107636	**Engineer Login ID:**	

Foundation Info Obtained from: Mapping Operation

Structure Type: Monopole

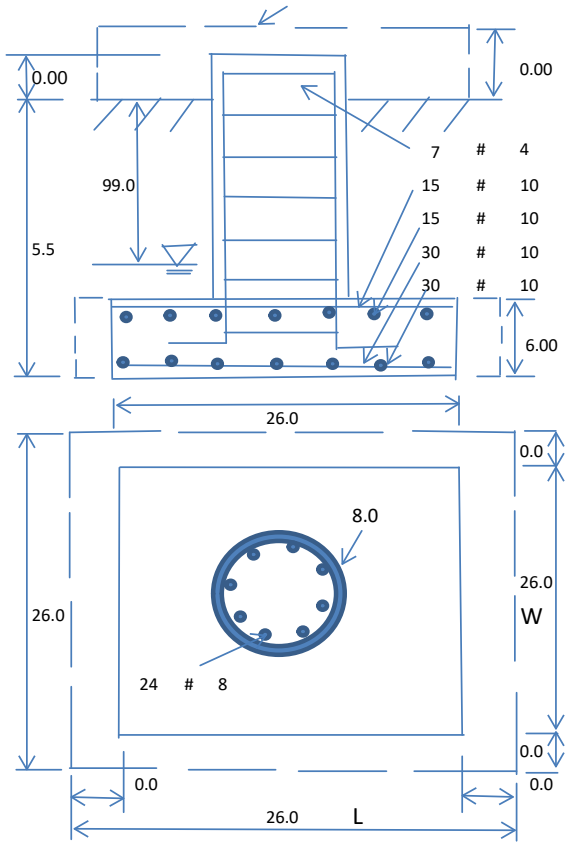
Analysis or Design? Analysis

Base Reactions (Factored):

Axial Load (Kips):	56.0	Shear Force (Kips):	45.1
Uplift Force (Kips):	0.0	Moment (Kips-ft):	5624.8
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):	664.59

Check Soil Capacities:

					Load/ Capacity Ratio	
Calculated Maxium Net Soil Pressure under the base (psf):	3972	<	Allowable Factored Soil Bearing (psf):	9000	0.44	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	7848.5	>	Design Factored Momont (kips-ft):	5896	0.75	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	1.33	OK!				

(2).Concrete Pad:

One-Way Design Shear Capacity (L-Direction, Kips):	1752.7	>	One-Way Factored Shear (L-D. Kips):	212.5	0.12	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	1752.7	>	One-Way Factored Shear (W-D., Kips)	212.5	0.12	OK!
One-Way Design Shear Capacity (Corner-Corner. Kips):	1171.2	>	One-Way Factored Shear (C-C, Kips):	217.2	0.19	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):	1870.7	0.16	OK!
Lower Steel Pad Moment Capacity (W-Direction. Kips-ft):	11476.6	>	Moment at Bottom (W-Dir. K-Ft):	1870.7	0.16	OK!
Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):	16133.5	>	Moment at Bottom (C-C Dir. K-Ft):	2645.6	0.16	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):	854.5	0.15	OK!
Upper Steel Pad Moment Capacity (W-Direc. Kips-ft):	5799.9	>	Moment at the top (W-Dir K-Ft):	854.5	0.15	OK!
Upper Steel Pad Moment Capacity (Corner-Corner. K-ft):	8178.0	>	Moment at the top (C-C Dir. K-Ft):	805.1	0.10	OK!

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

Moment transferred by punching shear:	2249.9	k-ft.	Max. factored shear stress v_{u_CD}:	2.8	Psi
Max. factored shear stress v_{u_AB}:	5.0	Psi	Factored shear Strength ϕv_n:	164.3	Psi
Max. factored shear stress v_u:	5.0	Psi	Check Usage of Punching Shear Capacity:	0.03	OK!

EXHIBIT 8

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

Antenna Mount Analysis Report

Existing 180-Ft Valmont Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT02218-S-SBA

Customer Site Name: Colchester

Carrier Name: T-Mobile (App#: 116665, V#2)

Carrier Site ID / Name: CT11338A / Colchester

Site Location: 48 Westchester Road

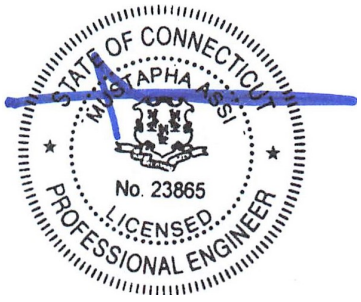
Colchester, Connecticut

New London County

Latitude: 41.590161

Longitude: -72.401467

Exp.10/31/2021



04/26/2021

Analysis Result:

Max Structural Usage: 94.4% [Pass]

Report Prepared By: Saroj Dangol

NOTE: The proposed support rail kit [HRK12-U] and Kicker kit [PRK-1245] are not currently installed on the mount. The proposed mount reinforcement kit was assumed to be installed per the manufacturer's instructions, and it was assumed that the kit can be installed properly on the existing mount. TES cannot verify that the proposed mount reinforcement kit will fit properly and is not liable for any fit-up issues during installation. Also, proposed equipment's should be installed directly to the existing mount pipes. If pipe-pipe connections are required please get approval from TES Engineer prior to the installment.

Introduction

The purpose of this report is to summarize the analysis results on the (1) Low profile platform w/ Proposed HR and Kicker kit at 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 Mapping by Full Metal Services, dated 04/26/2019.
Antenna Loading	SBA, Application #: 116665, v2 dated 04/16/2021
Modification Drawings	N/A.

Analysis Criteria

Basic Wind Speed Used in the Analysis: V_{ULT} = 135.0 mph (3-Sec. Gust) / Equivalent to
V_{ASD} = 105.0 mph (3-Sec. Gust)
Basic Wind Speed with Ice: 50 mph (3-Sec. Gust) with 0.75" radial ice concurrent
Operational Wind Speed: 60 mph +0" Radial ice
Standard/Codes: ANSI/TIA/EIA 222-G / 2015 IBC / 2018 Connecticut State Building
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) Low profile platform w/ Proposed HR and Kicker kit at 177.00' elevation

Final Antenna Configuration

3 RFS APXV18-206516S-C-A20
3 RFS APXVAALL24_43-U-NA20
3 Ericsson KRY 112 489/2
3 Ericsson 4449 B71 + B85
3 Ericsson 4415 B66A
3 Kathrein Scala 782 11056

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

Analysis Results

Our calculations have determined that under design wind load the existing mounts will be structurally adequate to support the proposed antenna configuration. The maximum structural usage is 94.4%, 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 support rail kit [HRK12-U] and Kicker kit [PRK-1245] are not currently installed on the mount. The proposed mount reinforcement kit was assumed to be installed per the manufacturer's instructions, and it was assumed that the kit can be installed properly on the existing mount. TES cannot verify that the proposed mount reinforcement kit will fit properly and is not liable for any fit-up issues during installation. Also, proposed equipment's should be installed directly to the existing mount pipes. If pipe-pipe connections are required please get approval from TES Engineer prior to the installment.

Attachments

1. Mount Photos Before Modification
2. Antenna Placement Diagram
3. Mount Mapping Information
4. 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.


04.26.2019 14:42

Structure: CT02218-S-SBA - Colchester

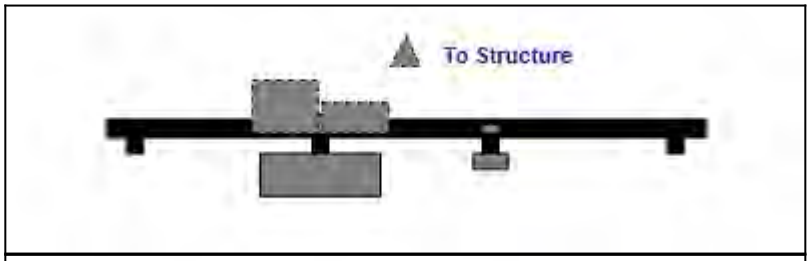
Sector: A

Structure Type: Monopole

Mount Elev: 177.00

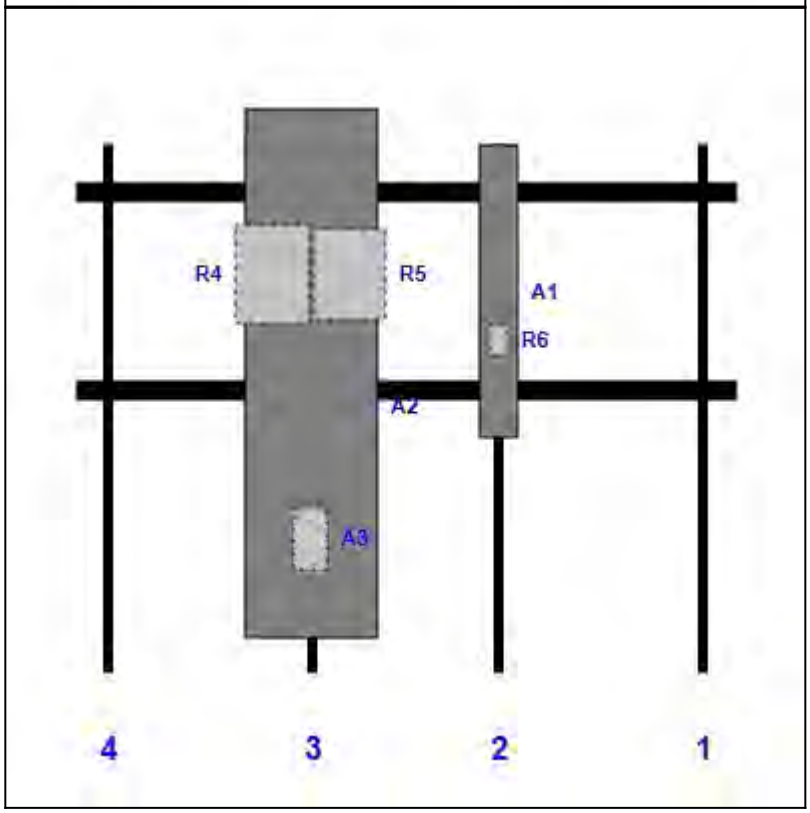
4/26/2021

Plan View



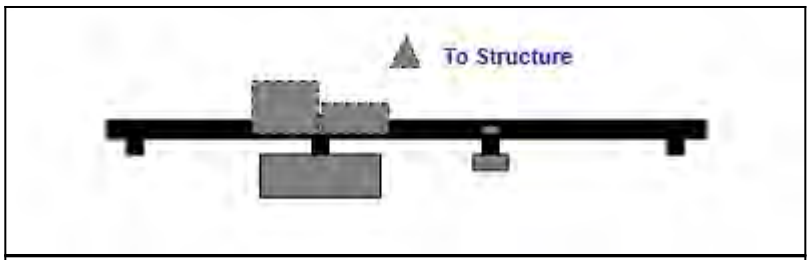
Front View

Looking Toward Structure



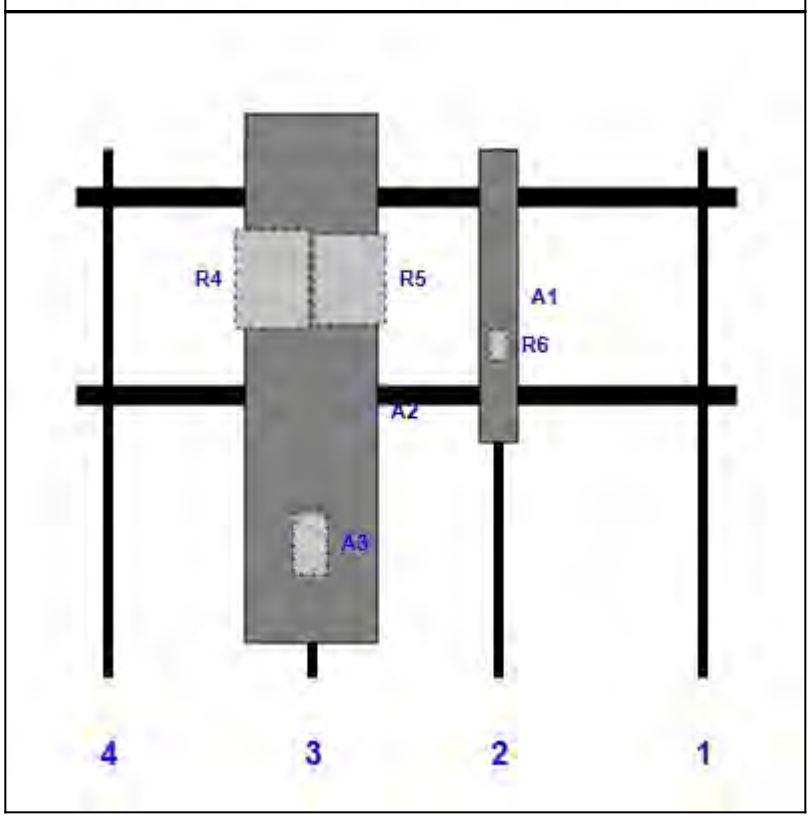
Ref #	Model	Height (in)	Width (in)	H Dist Left	Pipe #	Pipe Pos V	Pos	From Top	H Offset	Status	Validation
A1	APXV18-206516S-C-A20	53.10	6.90	77.00	2	a	Front	27.00			
R6	782 11056	5.50	3.20	77.00	2	a	Behind	36.00			
A2	APXVAALL24_43-U-NA20	95.90	24.00	43.00	3	a	Front	42.00			
A3	KRY 112 489/2	11.00	6.10	43.00	3	a	Behind	72.00			
R4	4449 B71 + B85	17.90	13.10	43.00	3	a	Behind	24.00	-7.00		
R5	4415 B66A	16.50	13.40	43.00	3	a	Behind	24.00	7.00		

Plan View



Front View

Looking Toward Structure



Ref #	Model	Height (in)	Width (in)	H Dist Left	Pipe #	Pipe Pos V	Pos	From Top	H Offset	Status	Validation
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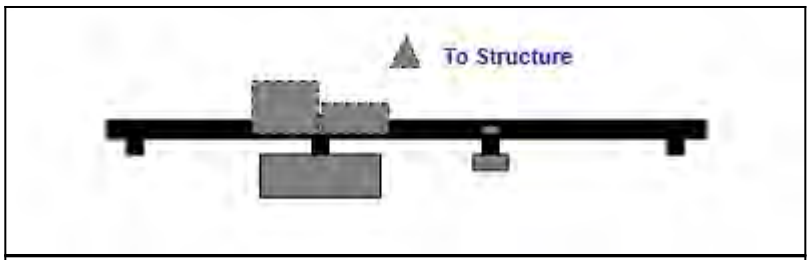
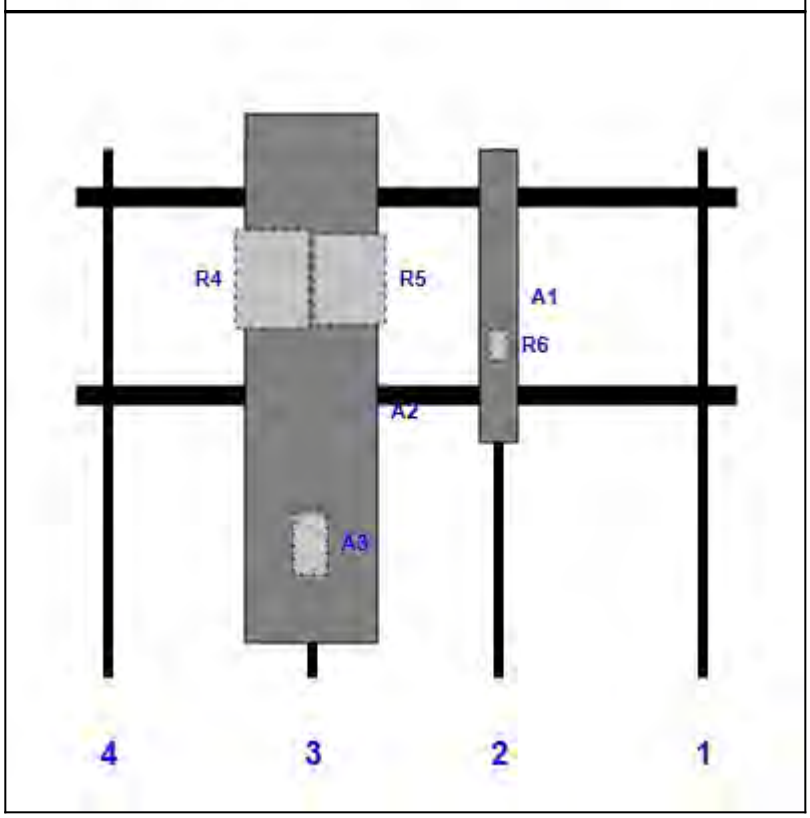
A3	KRY 112 489/2	11.00	6.10	43.00	3	a	Behind	72.00			
R4	4449 B71 + B85	17.90	13.10	43.00	3	a	Behind	24.00	-7.00		
R5	4415 B66A	16.50	13.40	43.00	3	a	Behind	24.00	7.00		

Plan View



Front View

Looking Toward Structure



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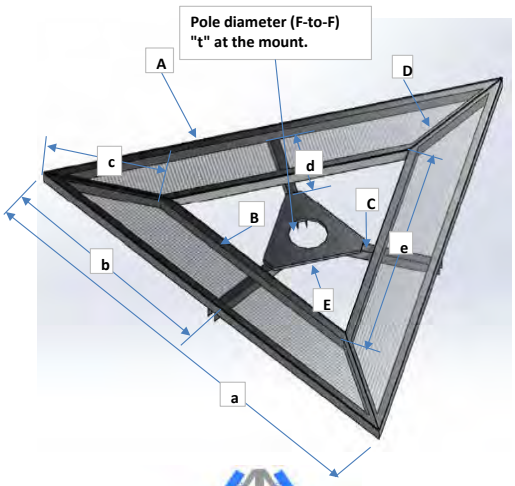
R4	4449 B71 + B85	17.90	13.10	43.00	3	a	Behind	24.00	-7.00		
R5	4415 B66A	16.50	13.40	43.00	3	a	Behind	24.00	7.00		

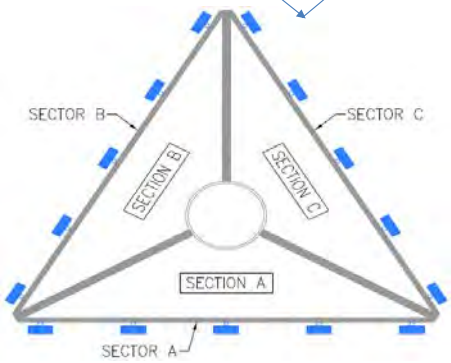
Antenna Mount Type "MT-U" Mapping Form (PATENT PENDING)

TES Tower Engineering Solutions

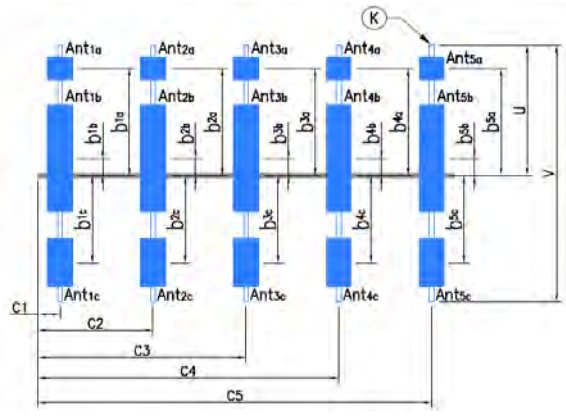
FCC # 1227127

Tower Owner:	SBA Communications	**Mapping Date:**	4/26/19
Site Name:	Colchester	**Structure Type:**	Monopole
Site Number or ID:	CT02218-S-SBA	**Structure Height (Ft.):**	180
Mapping Contractor:	Full Metal Tower Services	**Mount Height (Ft.):**	179





Climbing ladder is Located at Section A, at 0° Degree Azimuth



Antenna Layout

Geometries (Unit: inches)									
a	120	**e**	88	**j**	N/A	**o**	N/A	**s**	N/A
b	60	**f**	N/A	**k**	N/A	**p**	N/A	**t**	26
c	46	**g**	N/A	**m**	N/A	**q**	N/A	**u ***	45
d	36	**h**	N/A	**n**	N/A	**r**	N/A	**v ***	84

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

Items	Member	Lx (O.D.)	Ly (I.D.)	T	Items	Member	Lx (O.D.)	Ly (I.D.)	T
A	L3x3x1/4	3	3	0.25	**F**				
B	L3x3x1/4	3	3	0.25	**G**				
C	Tubing 4x4x1/4	4	4	0.25	**H**				
D	L3x3x1/4	3	3	0.25	**J**				
E	1/2" Thick. Plate	0	0	0.5	**K* (pipe)**	2.375 OD x 0.154 Pipe	2.375	2.067	0.154

Distance from top of main platform member to lowest tip of ant./eqpt. of Carrier above. (N/A if > 10 ft.)	N/A
Distance from top of main platform member to highest tip of ant./eqpt. of Carrier below. (N/A if > 10 ft.)	

Please enter the infomation below if members can't be found from the drop down lists

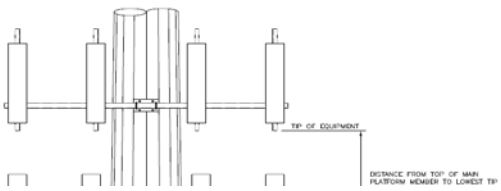
Collar All-Thread: 3/4"x16"

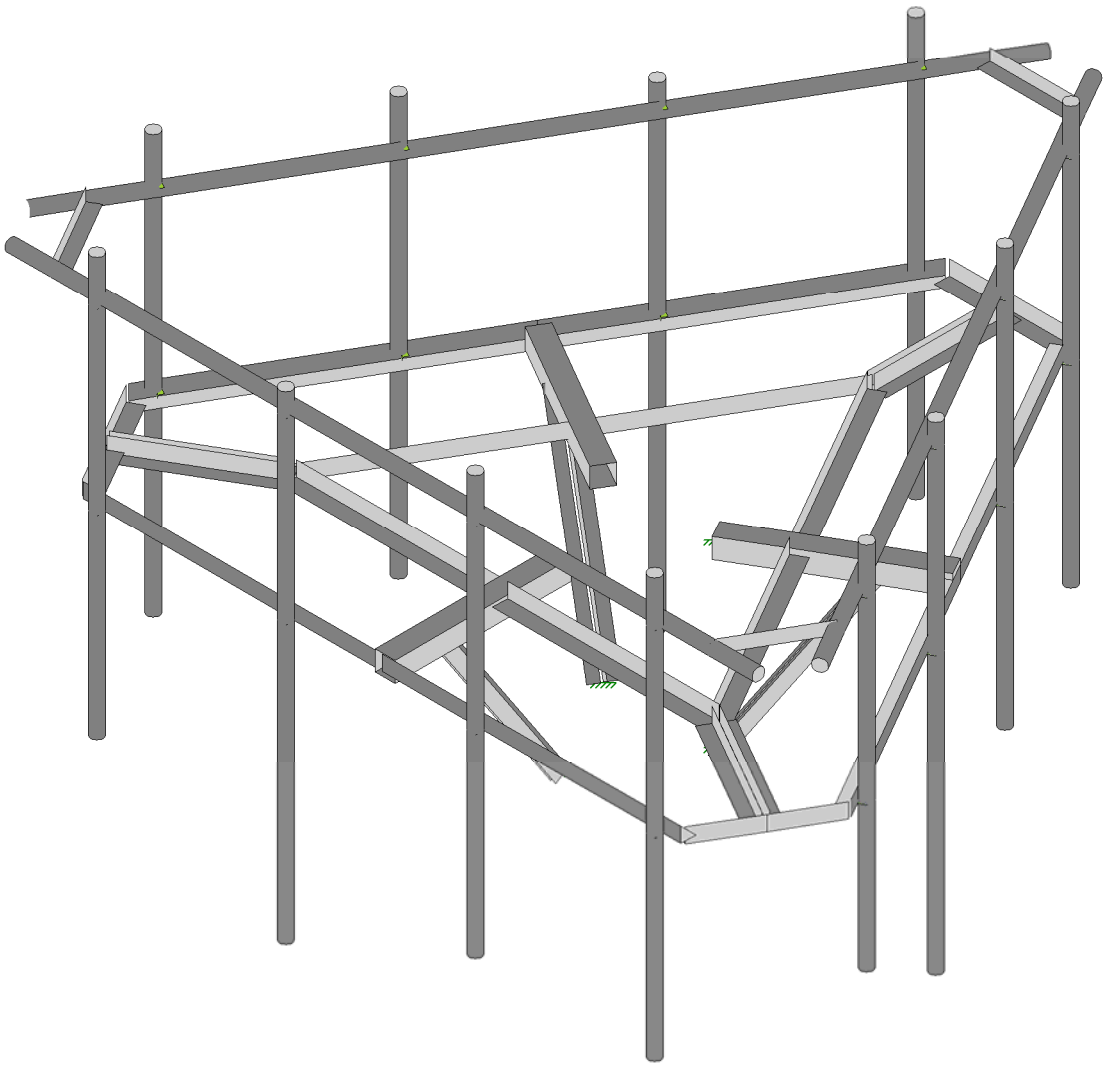
Ants. Items	Enter antenna model. If not labled, enter "Unknown". If no antenna at specified location, enter "N/A". If antennas and the locations are the same on all three sectors, only enter one sector.	Width (in.)	Depth (in.)	Height (in.)	Coax Size and Qty	Mounting Locations (Unit: inches) Vertical Distances"b_{1a}, b_{2a}, b_{3a}, b_{1b}...." (In.)	Horiz. offset (Use "-" if Ant. is inside)	Horiz. offset "C_1, C_2, C_3, C_4, C_5" (in.)	Photos of antennas Photo Numbers
Sector A									
Ant_{1a}									
Ant_{1b}	Empty Mast	N/A	N/A	N/A	N/A	N/A	N/A	6	
Ant_{1c}									
Ant_{2a}									
Ant_{2b}	Antenna A	7	3.5	53	1/2" (2)	+16"	6	43	
Ant_{2c}	TMA A	6.5	4	12	1/2" (2)	+17"	N/A	43	
Ant_{3a}									
Ant_{3b}	Antenna B	12	7.5	96.5	1/2" (2)	+4"	7	77	
Ant_{3c}									
Ant_{4a}									
Ant_{4b}	Empty Mast	N/A	N/A	N/A	N/A	N/A	N/A	114	
Ant_{4c}									
Ant_{5a}									
Ant_{5b}									
Ant_{5c}									
Are Ant same as sector A?	Yes	**Antennas on Sector B are the same as Sector A**							

Azimuth (Degree) of Each Sector and Climbing Information

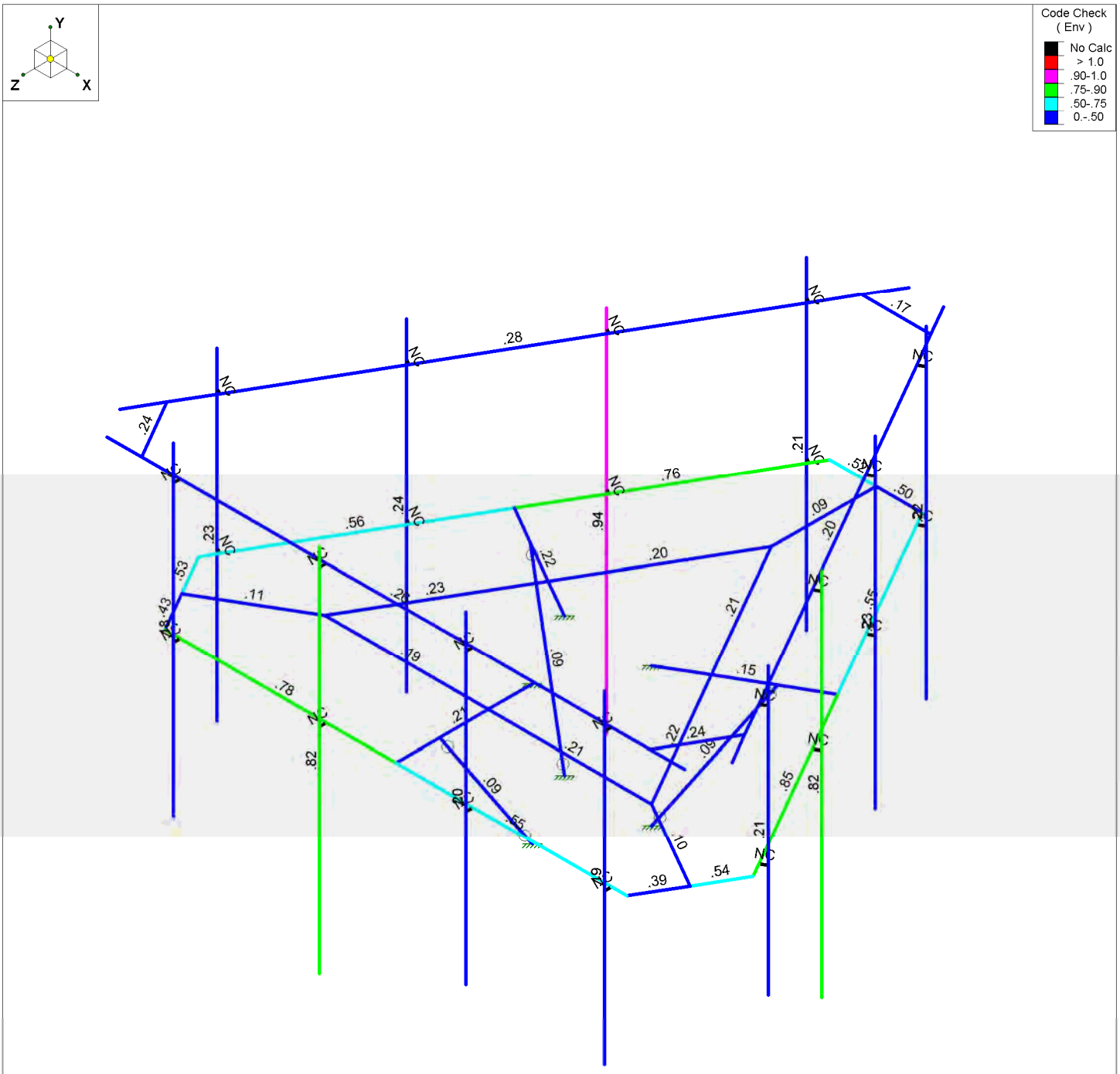
Sector A:	320°	Deg	
Sector B:	100°	Deg	
Sector C:	180°	Deg	
Climbing	0°	Deg	Located at Section A
Climbing Facility	Corrosion Type:		No corrosion observed
	Access:		Climbing path was unobstructed.
	Condition:		N/A

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





Tower Engineering Solutio...	CT02218-S-SBA_MT_LO_Loads Only_G	SK - 1
		Apr 26, 2021 at 12:30 PM
TES Project No. 106780		CT02218-S-SBA_106780_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
		Apr 26, 2021 at 12:30 PM
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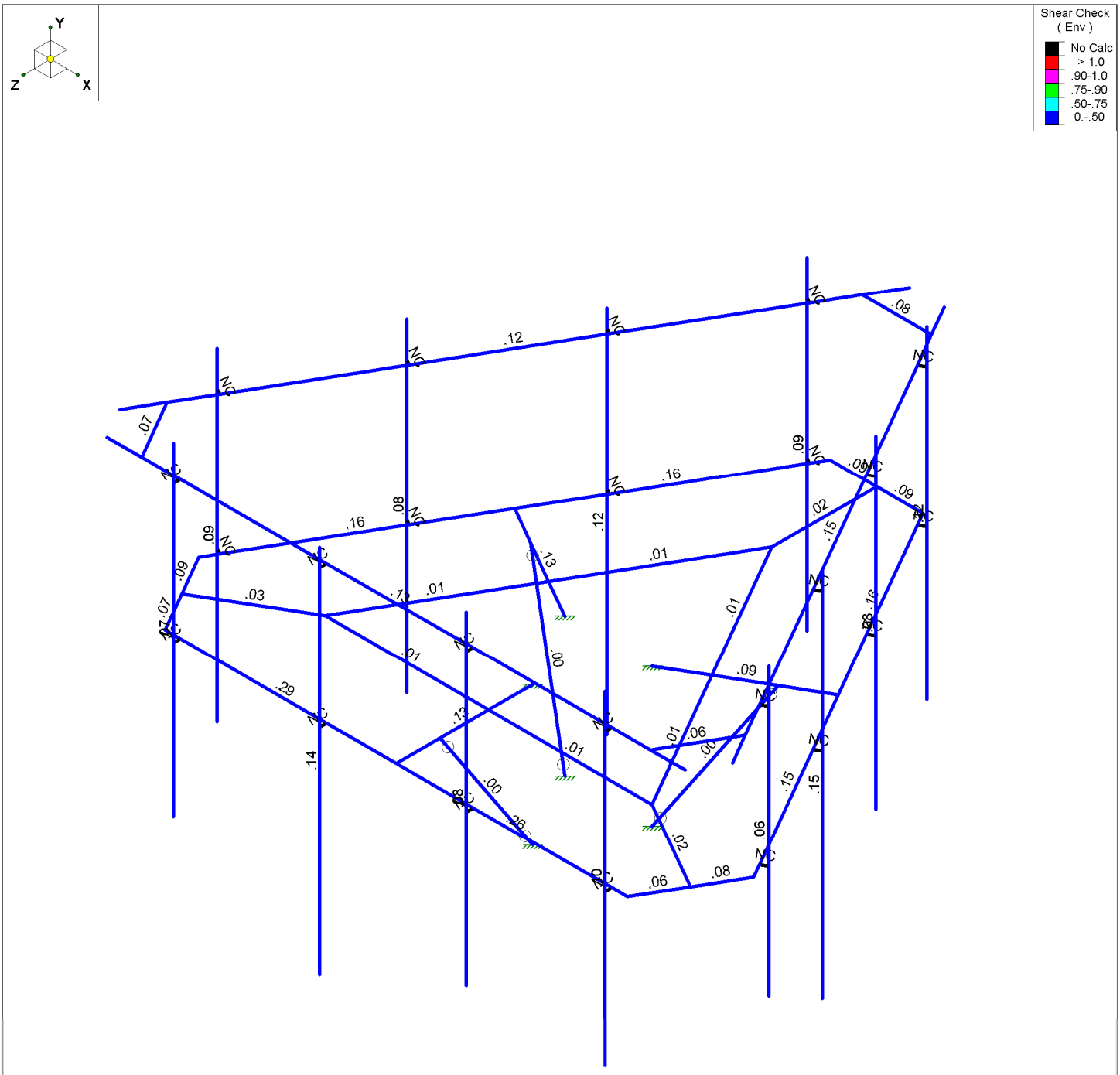


Member Shear Checks Displayed (Enveloped)
Results for LC 1, 1.2D+1.6W (Front)

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(P...
1	Antenna D	None					24			
2	Antenna Di	None					24			
3	Antenna W Front	None					24			
4	Antenna Wi Front	None					24			
5	Antenna W Side	None					24			
6	Antenna Wi Side	None					24			
7	Service Lm1	None					1			
8	Service Lm2	None					1			
9	Structure D	None		-1					3	
10	Structure Di	None						45	3	
11	Structure W Front	None						45		
12	Structure Wi Front	None						45		
13	Structure W Side	None						45		
14	Structure Wi Side	None						45		
15	BLC 9 Transient Area...	None								
16	BLC 10 Transient Are...	None						24		

Load Combinations

	Description	S...	P...	SRSS	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
1	1.2D+1.6W (Front)	Yes	Y		1	1.2	9	1.2	3	1.6	11	1.6												
2	1.2D+1.6W (Back)	Yes	Y		1	1.2	9	1.2	3	-1.6	11	-1.6												
3	1.2D+1.6W (Left)	Yes	Y		1	1.2	9	1.2	5	1.6	13	1.6												
4	1.2D+1.6W (Right)	Yes	Y		1	1.2	9	1.2	5	-1.6	13	-1.6												
5	1.2D+1.0Di+1.0Wi (F...	Yes	Y		1	1.2	9	1.2	2	1	10	1	4	1	12	1								
6	1.2D+1.0Di+1.0Wi (B...	Yes	Y		1	1.2	9	1.2	2	1	10	1	4	-1	12	-1								
7	1.2D+1.0Di+1.0Wi (L...	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	-0.945155	0	-0.545685	0	
2	N4	-1.	0	-6.350853	0	
3	N5	-6.	0	2.309401	0	
4	N7	-3.5	0	-2.020726	0	
5	N10	-7e-14	0	-4.083304	0	
6	N11	-3.536245	0	2.041652	0	
7	N9	-1.768122	0	-1.020826	0	
8	N8	-1e-14	0	1.091371	0	
9	N9A	-5	0	4.041452	0	
10	N10A	5	0	4.041452	0	
11	N11A	7e-14	0	4.041452	0	
12	N13	3.536245	0	2.041652	0	
13	N14	4.5e-13	0	2.041652	0	
14	N15	0.945155	0	-0.545685	0	
15	N16	6.	0	2.309401	0	
16	N17	1.	0	-6.350853	0	
17	N18	3.5	0	-2.020726	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
18	N21	1.768122	0	-1.020826	0	
19	N19	-3e-14	0	-6.350853	0	
20	N20	-5.5	0	3.175427	0	
21	N21A	5.5	0	3.175427	0	
22	N22	-5.83335	0	2.020755	0	
23	N23	-4.333334	0	-0.57735	0	
24	N24	-2.75	0	-3.319764	0	
25	N25	-1.166667	0	-6.062178	0	
26	N26	-5.963254	3.75	1.945755	0	
27	N27	-5.963254	-3.25	1.945755	0	
28	N28	-4.463237	3.75	-0.65235	0	
29	N29	-2.879904	3.375	-3.394764	0	
30	N30	-1.29657	3.75	-6.137178	0	
31	N31	-4.463237	-3.25	-0.65235	0	
32	N32	-2.879904	-4.625	-3.394764	0	
33	N33	-1.29657	-3.25	-6.137178	0	
34	N34	4.6667	3.75	4.191452	0	
35	N35	4.6667	-3.25	4.191452	0	
36	N36	1.666667	3.75	4.191452	0	
37	N38	-4.666667	3.75	4.191452	0	
38	N39	1.666667	-3.25	4.191452	0	
39	N41	-4.666667	-3.25	4.191452	0	
40	N42	1.296554	3.75	-6.137207	0	
41	N43	1.296554	-3.25	-6.137207	0	
42	N44	2.796571	3.75	-3.539102	0	
43	N46	5.963237	3.75	1.945726	0	
44	N47	2.796571	-3.25	-3.539102	0	
45	N49	5.963237	-2.416667	1.945726	0	
46	N50	-4.666667	0	4.041452	0	
47	N51	-1.5	0	4.041452	0	
48	N52	1.666667	0	4.041452	0	
49	N53	4.6667	0	4.041452	0	
50	N54	5.833334	0	2.020726	0	
51	N55	4.25	0	-0.721688	0	
52	N56	2.666667	0	-3.464102	0	
53	N57	1.16665	0	-6.062207	0	
54	N84A	-1.5	3.375	4.191452	0	
55	N85A	-1.5	-4.625	4.191452	0	
56	N86A	4.379904	3.375	-0.796688	0	
57	N87A	4.379904	-4.625	-0.796688	0	
58	N58	-0.375	3	-7.433385	0	
59	N59	-6.625	3	3.391933	0	
60	N60	-6.25	3	4.041452	0	
61	N61	6.25	3	4.041452	0	
62	N62	6.625	3	3.391933	0	
63	N63	0.375	3	-7.433385	0	
64	N64	-1.166667	3	-6.062178	0	
65	N65	-2.75	3	-3.319764	0	
66	N66	-4.333334	3	-0.57735	0	
67	N67	-5.83335	3	2.020755	0	
68	N68	-4.666667	3	4.041452	0	
69	N69	1.666667	3	4.041452	0	
70	N70	4.6667	3	4.041452	0	
71	N71	5.833334	3	2.020726	0	
72	N72	2.666667	3	-3.464102	0	
73	N73	1.16665	3	-6.062207	0	
74	N74	-1.5	3	4.041452	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
75	N75	4.25	3	-0.721688	0	
76	N76	-0.75	3	-6.783866	0	
77	N77	-6.25	3	2.742414	0	
78	N78	-5.5	3	4.041452	0	
79	N79	5.5	3	4.041452	0	
80	N80	6.25	3	2.742414	0	
81	N81	0.75	3	-6.783866	0	
82	N82	-1e-14	-3	1.091371	0	
83	N83	-1e-14	0	3.091371	0	
84	N84	0.945155	-3	-0.545685	0	
85	N85	2.677206	0	-1.545685	0	
86	N86	-0.945155	-3	-0.545685	0	
87	N87	-2.677206	0	-1.545685	0	
88	N88	-4.666667	0	4.191452	0	
89	N89	-1.5	0	4.191452	0	
90	N90	1.666667	0	4.191452	0	
91	N91	4.6667	0	4.191452	0	
92	N92	-4.666667	3	4.191452	0	
93	N93	1.666667	3	4.191452	0	
94	N94	4.6667	3	4.191452	0	
95	N95	-1.5	3	4.191452	0	
96	N104	5.963237	0	1.945726	0	
97	N105	4.379904	0	-0.796688	0	
98	N106	2.796571	0	-3.539102	0	
99	N107	1.296554	0	-6.137207	0	
100	N108	5.963238	3	1.945726	0	
101	N109	2.796571	3	-3.539102	0	
102	N110	1.296554	3	-6.137207	0	
103	N111	4.379904	3	-0.796688	0	
104	N120	-1.296571	0	-6.137178	0	
105	N121	-2.879904	0	-3.394764	0	
106	N122	-4.463238	0	-0.65235	0	
107	N123	-5.963254	0	1.945755	0	
108	N124	-1.296571	3	-6.137178	0	
109	N125	-4.463238	3	-0.65235	0	
110	N126	-5.963254	3	1.945755	0	
111	N127	-2.879904	3	-3.394764	0	

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design R...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	FF Bottom out	L3X3X4	Beam	Single Angle	A36 Gr.36	Typical	1.44	1.23	1.23	.031
2	FF Bottom inner	L3X3X4	Beam	Single Angle	A36 Gr.36	Typical	1.44	1.23	1.23	.031
3	End FF bottom	L3X3X4	Beam	Single Angle	A36 Gr.36	Typical	1.44	1.23	1.23	.031
4	Double Angle	LL3x3x4x0	Beam	Double Angle (N...	A36 Gr.36	Typical	2.88	4.5	2.46	.063
5	SA	HSS4X4X4	Beam	Tube	A500 Gr.B Rect	Typical	3.37	7.8	7.8	12.8
6	MP	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
7	MP2	PIPE_2.0X	Beam	Pipe	A53 Gr.B	Typical	1.4	.827	.827	1.65
8	HR	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
9	End conn	L2.5x2.5x3	Beam	Single Angle	A36 Gr.36	Typical	.901	.535	.535	.011
10	Kicker	LL2.5x2.5x3x0	Beam	Double Angle (N...	A36 Gr.36	Typical	1.8	1.91	1.07	.023

Hot Rolled Steel Properties

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

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N4	N7		270	FF Bottom out	Beam	Single Angle	A36 Gr.36	Typical
2	M4	N1	N7			SA	Beam	Tube	A500 Gr.B...	Typical
3	M10	N10	N9			FF Bottom inner	Beam	Single Angle	A36 Gr.36	Typical
4	M4A	N9A	N11A		270	FF Bottom out	Beam	Single Angle	A36 Gr.36	Typical
5	M5	N8	N11A			SA	Beam	Tube	A500 Gr.B...	Typical
6	M6	N11	N14			FF Bottom inner	Beam	Single Angle	A36 Gr.36	Typical
7	M7	N16	N18		270	FF Bottom out	Beam	Single Angle	A36 Gr.36	Typical
8	M8	N15	N18			SA	Beam	Tube	A500 Gr.B...	Typical
9	M9	N13	N21			FF Bottom inner	Beam	Single Angle	A36 Gr.36	Typical
10	M10A	N4	N19			End FF bottom	Beam	Single Angle	A36 Gr.36	Typical
11	M11	N9A	N20			End FF bottom	Beam	Single Angle	A36 Gr.36	Typical
12	M12	N16	N21A			End FF bottom	Beam	Single Angle	A36 Gr.36	Typical
13	M13	N19	N17			End FF bottom	Beam	Single Angle	A36 Gr.36	Typical
14	M14	N20	N5			End FF bottom	Beam	Single Angle	A36 Gr.36	Typical
15	M15	N21A	N10A			End FF bottom	Beam	Single Angle	A36 Gr.36	Typical
16	M16	N19	N10		180	Double Angle	Beam	Double Angle (...	A36 Gr.36	Typical
17	M17	N20	N11		180	Double Angle	Beam	Double Angle (...	A36 Gr.36	Typical
18	M18	N21A	N13		180	Double Angle	Beam	Double Angle (...	A36 Gr.36	Typical
19	MP4A	N30	N33			MP	Beam	Pipe	A53 Gr.B	Typical
20	MP3A	N29	N32			MP2	Beam	Pipe	A53 Gr.B	Typical
21	MP2A	N28	N31			MP2	Beam	Pipe	A53 Gr.B	Typical
22	MP1A	N26	N27			MP	Beam	Pipe	A53 Gr.B	Typical
23	MP4C	N38	N41			MP	Beam	Pipe	A53 Gr.B	Typical
24	MP2C	N36	N39			MP2	Beam	Pipe	A53 Gr.B	Typical
25	MP1C	N34	N35			MP	Beam	Pipe	A53 Gr.B	Typical
26	MP4B	N46	N49			MP	Beam	Pipe	A53 Gr.B	Typical
27	MP2B	N44	N47			MP2	Beam	Pipe	A53 Gr.B	Typical
28	MP1B	N42	N43			MP	Beam	Pipe	A53 Gr.B	Typical
29	M31	N7	N5		270	FF Bottom out	Beam	Single Angle	A36 Gr.36	Typical
30	M32	N9	N11			FF Bottom inner	Beam	Single Angle	A36 Gr.36	Typical
31	M33	N11A	N10A		270	FF Bottom out	Beam	Single Angle	A36 Gr.36	Typical
32	M34	N14	N13			FF Bottom inner	Beam	Single Angle	A36 Gr.36	Typical
33	M35	N18	N17		270	FF Bottom out	Beam	Single Angle	A36 Gr.36	Typical
34	M36	N21	N10			FF Bottom inner	Beam	Single Angle	A36 Gr.36	Typical
35	MP3C	N84A	N85A			MP2	Beam	Pipe	A53 Gr.B	Typical
36	MP3B	N86A	N87A			MP2	Beam	Pipe	A53 Gr.B	Typical
37	M37	N58	N59			HR	Beam	Pipe	A53 Gr.B	Typical
38	M38	N60	N61			HR	Beam	Pipe	A53 Gr.B	Typical
39	M39	N62	N63			HR	Beam	Pipe	A53 Gr.B	Typical
40	M40	N76	N81			End conn	Beam	Single Angle	A36 Gr.36	Typical
41	M41	N78	N77			End conn	Beam	Single Angle	A36 Gr.36	Typical
42	M42	N80	N79			End conn	Beam	Single Angle	A36 Gr.36	Typical
43	M43	N83	N82			Kicker	Beam	Double Angle (...	A36 Gr.36	Typical
44	M44	N85	N84			Kicker	Beam	Double Angle (...	A36 Gr.36	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
45	M45	N87	N86			Kicker	Beam	Double Angle (...	A36 Gr.36	Typical
46	M46	N68	N92			RIGID	Beam	None	RIGID	DR1
47	M47	N50	N88			RIGID	Beam	None	RIGID	DR1
48	M48	N74	N95			RIGID	Beam	None	RIGID	DR1
49	M49	N51	N89			RIGID	Beam	None	RIGID	DR1
50	M50	N69	N93			RIGID	Beam	None	RIGID	DR1
51	M51	N52	N90			RIGID	Beam	None	RIGID	DR1
52	M52	N70	N94			RIGID	Beam	None	RIGID	DR1
53	M53	N53	N91			RIGID	Beam	None	RIGID	DR1
54	M54	N71	N108			RIGID	Beam	None	RIGID	DR1
55	M55	N54	N104			RIGID	Beam	None	RIGID	DR1
56	M56	N75	N111			RIGID	Beam	None	RIGID	DR1
57	M57	N55	N105			RIGID	Beam	None	RIGID	DR1
58	M58	N72	N109			RIGID	Beam	None	RIGID	DR1
59	M59	N56	N106			RIGID	Beam	None	RIGID	DR1
60	M60	N73	N110			RIGID	Beam	None	RIGID	DR1
61	M61	N57	N107			RIGID	Beam	None	RIGID	DR1
62	M62	N64	N124			RIGID	Beam	None	RIGID	DR1
63	M63	N25	N120			RIGID	Beam	None	RIGID	DR1
64	M64	N65	N127			RIGID	Beam	None	RIGID	DR1
65	M65	N24	N121			RIGID	Beam	None	RIGID	DR1
66	M66	N66	N125			RIGID	Beam	None	RIGID	DR1
67	M67	N23	N122			RIGID	Beam	None	RIGID	DR1
68	M68	N67	N126			RIGID	Beam	None	RIGID	DR1
69	M69	N22	N123			RIGID	Beam	None	RIGID	DR1

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	M4						Yes				None
3	M10						Yes				None
4	M4A						Yes				None
5	M5						Yes				None
6	M6						Yes				None
7	M7						Yes				None
8	M8						Yes				None
9	M9						Yes				None
10	M10A						Yes				None
11	M11						Yes				None
12	M12						Yes				None
13	M13						Yes				None
14	M14						Yes				None
15	M15						Yes				None
16	M16						Yes				None
17	M17						Yes				None
18	M18						Yes				None
19	MP4A						Yes				None
20	MP3A						Yes				None
21	MP2A						Yes				None
22	MP1A						Yes				None
23	MP4C						Yes				None
24	MP2C						Yes				None
25	MP1C						Yes				None
26	MP4B						Yes				None
27	MP2B						Yes				None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
28	MP1B						Yes				None
29	M31						Yes				None
30	M32						Yes				None
31	M33						Yes				None
32	M34						Yes				None
33	M35						Yes				None
34	M36						Yes				None
35	MP3C						Yes				None
36	MP3B						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	BenPIN	BenPIN				Yes				None
44	M44	BenPIN	BenPIN				Yes				None
45	M45	BenPIN	BenPIN				Yes				None
46	M46						Yes				None
47	M47						Yes				None
48	M48						Yes				None
49	M49						Yes				None
50	M50						Yes				None
51	M51						Yes				None
52	M52						Yes				None
53	M53						Yes				None
54	M54						Yes				None
55	M55						Yes				None
56	M56						Yes				None
57	M57						Yes				None
58	M58						Yes				None
59	M59						Yes				None
60	M60						Yes				None
61	M61						Yes				None
62	M62						Yes				None
63	M63						Yes				None
64	M64						Yes				None
65	M65						Yes				None
66	M66						Yes				None
67	M67						Yes				None
68	M68						Yes				None
69	M69						Yes				None

Hot Rolled Steel Design Parameters

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[ft]	Lcomp bot[ft]	L-torq...	Kyy	Kzz	Cb	Function
1	M1	FF Bottom ...	5			Lbyy						Lateral
2	M4	SA	2.95			Lbyy						Gravity
3	M10	FF Bottom i...	3.536			Lbyy						Gravity
4	M4A	FF Bottom ...	5			Lbyy						Lateral
5	M5	SA	2.95			Lbyy						Gravity
6	M6	FF Bottom i...	3.536			Lbyy						Gravity
7	M7	FF Bottom ...	5			Lbyy						Lateral
8	M8	SA	2.95			Lbyy						Gravity
9	M9	FF Bottom i...	3.536			Lbyy						Gravity
10	M10A	End FF bott...	1			Lbyy						Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[ft]	Lcomp bot[ft]	L-torq...	Kyy	Kzz	Cb	Function
11	M11	End FF bott...	1			Lbyy						Lateral
12	M12	End FF bott...	1			Lbyy						Lateral
13	M13	End FF bott...	1			Lbyy						Lateral
14	M14	End FF bott...	1			Lbyy						Lateral
15	M15	End FF bott...	1			Lbyy						Lateral
16	M16	Double Angle	2.268			Lbyy						Lateral
17	M17	Double Angle	2.268			Lbyy						Lateral
18	M18	Double Angle	2.268			Lbyy						Lateral
19	MP4A	MP	7			Lbyy						Lateral
20	MP3A	MP2	8			Lbyy						Lateral
21	MP2A	MP2	7			Lbyy						Lateral
22	MP1A	MP	7			Lbyy						Lateral
23	MP4C	MP	7			Lbyy						Lateral
24	MP2C	MP2	7			Lbyy						Lateral
25	MP1C	MP	7			Lbyy						Lateral
26	MP4B	MP	6.167			Lbyy						Lateral
27	MP2B	MP2	7			Lbyy						Lateral
28	MP1B	MP	7			Lbyy						Lateral
29	M31	FF Bottom ...	5			Lbyy						Lateral
30	M32	FF Bottom i...	3.536			Lbyy						Gravity
31	M33	FF Bottom ...	5			Lbyy						Lateral
32	M34	FF Bottom i...	3.536			Lbyy						Gravity
33	M35	FF Bottom ...	5			Lbyy						Lateral
34	M36	FF Bottom i...	3.536			Lbyy						Gravity
35	MP3C	MP2	8			Lbyy						Lateral
36	MP3B	MP2	8			Lbyy						Lateral
37	M37	HR	12.5			Lbyy						Lateral
38	M38	HR	12.5			Lbyy						Lateral
39	M39	HR	12.5			Lbyy						Lateral
40	M40	End conn	1.5			Lbyy						Lateral
41	M41	End conn	1.5			Lbyy						Lateral
42	M42	End conn	1.5			Lbyy						Lateral
43	M43	Kicker	3.606			Lbyy						Lateral
44	M44	Kicker	3.606			Lbyy						Lateral
45	M45	Kicker	3.606			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	N1	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	N8	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	N15	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
4	N82	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
5	N83						
6	N84	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
7	N85						
8	N86	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
9	N87						

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	N1	max	2612.312	4	-135.008	3	3949.594	1	.452	1	3.34	1	.352	1
2		min	-1505.962	3	-871.647	8	-3317.469	2	-.521	9	-3.338	2	-.201	9
3	N8	max	3424.908	4	-98.694	1	1339.475	1	.174	6	3.242	4	.839	10
4		min	-3427.663	3	-877.505	6	-2608.558	2	.035	1	-3.237	3	-.961	9

Envelope Joint Reactions (Continued)

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
5	N15	max	2221.967	4	-98.941	4	3002.411	1	.261	4	2.227	2	.288	10
6		min	-3315.881	3	-871.45	7	-2367.282	2	-.666	10	-2.221	1	-.191	4
7	N82	max	49.858	4	3386.219	6	2219.664	6	0	11	0	10	0	10
8		min	-49.978	3	430.365	1	320.172	1	0	1	0	3	0	3
9	N84	max	1906.385	7	3362.028	7	-150.524	4	0	2	0	2	0	10
10		min	304.779	4	464.421	4	-1107.032	7	0	10	0	10	0	2
11	N86	max	-345.76	10	3370.364	8	-177.625	3	0	2	0	1	0	2
12		min	-1911.169	8	545.819	3	-1109.858	8	0	1	0	2	0	1
13	Totals:	max	7804.782	4	7215.178	5	7844.361	1						
14		min	-7804.788	3	2235.999	2	-7844.354	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 Mom...	LC
1	M1	1	max	1175.732	1	300.356	4	33.055	1	.035	3	.172	1	.226	2
2			min	-1321.123	2	-283.592	3	-36.55	2	-.025	4	-.232	2	-.161	1
3		2	max	989.411	1	180.434	4	130.993	2	.003	1	.135	4	.413	2
4			min	-1088.626	2	-144.864	3	-125.411	1	-.004	2	-.108	3	-.329	1
5		3	max	971.183	1	148.862	4	123.643	2	.003	1	.188	4	.467	2
6			min	-1070.398	2	-113.291	3	-132.761	1	-.004	2	-.132	3	-.414	1
7		4	max	850.471	4	974.937	2	-116.437	2	.008	4	.561	1	.291	3
8			min	-762.323	3	-902.134	1	-1257.944	5	-.007	3	-.37	2	-.172	4
9		5	max	868.699	4	985.461	2	-123.787	2	.008	4	.41	3	.415	1
10			min	-780.551	3	-912.658	1	-1285.752	5	-.007	3	-.861	4	-1.137	6
11	M4	1	max	912.617	3	-135.015	3	3413.963	2	.552	9	3.34	1	-.034	2
12			min	-2420.31	8	-871.603	8	-3405.947	1	-.568	1	-3.338	2	-.174	5
13		2	max	898.277	3	-145.93	3	3389.126	2	.552	9	.837	1	.478	8
14			min	-2417.196	8	-894.273	8	-3381.11	1	-.568	1	-.83	2	.063	3
15		3	max	851.758	3	-181.242	3	853.775	2	.214	9	.339	1	1.293	8
16			min	-2295.584	8	-1208.671	8	-850.391	1	-.33	5	-.361	2	.189	3
17		4	max	1154.038	3	2042.071	8	786.827	2	.214	9	.25	2	1.5	8
18			min	-1032.324	4	327.359	3	-783.723	1	-.33	5	-.27	1	.216	3
19		5	max	1139.698	3	2003.003	8	761.99	2	.214	9	.821	2	.023	4
20			min	-1017.984	4	316.444	3	-758.886	1	-.33	5	-.839	1	-.021	3
21	M10	1	max	1287.489	2	21.77	2	114.188	1	.001	5	.108	2	.167	4
22			min	-1153.451	1	-43.059	1	-90.184	2	0	3	-.12	3	-.133	3
23		2	max	1300.381	2	16.572	2	121.631	1	.001	5	.061	2	.136	4
24			min	-1166.343	1	-63.956	5	-97.627	2	0	3	-.074	1	-.073	3
25		3	max	1313.272	2	11.373	2	129.074	1	.001	5	.007	2	.241	1
26			min	-1179.235	1	-90.552	5	-105.07	2	0	3	-.038	5	-.143	2
27		4	max	1326.164	2	6.175	2	136.517	1	.001	5	.024	3	.359	1
28			min	-1192.126	1	-117.148	5	-112.513	2	0	3	-.074	8	-.216	2
29		5	max	1339.056	2	.977	2	143.96	1	.001	5	.07	1	.485	1
30			min	-1205.018	1	-131.9	5	-119.956	2	0	3	-.126	2	-.291	2
31	M4A	1	max	1064.336	4	297.679	2	118.326	9	.061	9	.254	4	.301	3
32			min	-1206.754	3	-279.939	1	-44.575	10	-.018	10	-.313	3	-.236	4
33		2	max	814.402	4	190.946	3	118.617	1	.003	2	.148	2	.337	3
34			min	-913.85	3	-156.834	4	-174.902	9	-.005	1	-.122	1	-.253	4
35		3	max	814.402	4	190.946	3	111.267	1	.003	2	.264	3	.39	1
36			min	-913.85	3	-156.834	4	-182.252	9	-.005	1	-.208	4	-.337	2
37		4	max	788.589	2	1082.094	1	-177.091	1	.005	9	.359	4	.354	4
38			min	-706.151	1	-1014.722	2	-1256.334	6	-.002	1	-.168	3	-.233	3
39		5	max	788.589	2	1124.19	1	-184.441	1	.005	9	.654	1	.175	2
40			min	-706.151	1	-1056.819	2	-1284.143	6	-.002	1	-1.103	2	-1.108	5
41	M5	1	max	1339.475	1	-98.703	1	3427.239	3	.839	10	3.242	4	-.035	1
42			min	-2608.558	2	-877.46	6	-3424.263	4	-.961	9	-3.237	3	-.174	6

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 Mom...	LC
43		2	max	1339.475	1	-109.618	1	3394.122	3	.839	10	.729	4	.481	6
44			min	-2608.558	2	-900.129	6	-3391.146	4	-.961	9	-.721	3	.041	1
45		3	max	1288.707	1	-142.318	1	542.695	3	.483	10	.379	4	1.301	6
46			min	-2502.171	2	-1213.916	6	-541.046	4	-.673	9	-.402	3	.139	1
47		4	max	1524.686	1	2052.613	6	459.094	3	.483	10	.356	1	1.508	6
48			min	-1404.026	2	250.82	1	-457.446	4	-.673	9	-.378	2	.162	1
49		5	max	1524.686	1	2013.545	6	425.977	3	.483	10	.545	1	.02	2
50			min	-1404.026	2	239.905	1	-424.329	4	-.673	9	-.567	2	-.019	1
51	M6	1	max	1548.361	3	16.995	1	140.919	4	.002	9	.15	3	.218	2
52			min	-1417.057	4	-61.978	9	-117.363	3	-.001	1	-.162	4	-.187	1
53		2	max	1548.361	3	11.797	1	140.919	4	.002	9	.081	3	.224	9
54			min	-1417.057	4	-67.176	9	-117.363	3	-.001	1	-.094	4	-.143	1
55		3	max	1548.361	3	6.598	1	140.919	4	.002	9	.008	3	.296	9
56			min	-1417.057	4	-88.072	6	-117.363	3	-.001	1	-.077	9	-.115	1
57		4	max	1548.361	3	1.4	1	140.919	4	.002	9	.033	4	.37	9
58			min	-1417.057	4	-114.668	6	-117.363	3	-.001	1	-.096	9	-.142	3
59		5	max	1548.361	3	-3.798	1	140.919	4	.002	9	.092	4	.446	9
60			min	-1417.057	4	-129.42	6	-117.363	3	-.001	1	-.148	3	-.21	3
61	M7	1	max	833.169	3	264.094	1	38.565	2	.033	2	.214	2	.254	1
62			min	-979.249	4	-247.447	2	-41.054	1	-.03	10	-.274	1	-.189	2
63		2	max	808.869	3	205.083	1	127.655	4	.005	3	.108	3	.342	4
64			min	-911.195	4	-171.029	2	-120.548	10	-.006	4	-.082	4	-.258	3
65		3	max	790.641	3	194.559	1	120.305	4	.005	3	.234	1	.521	4
66			min	-892.967	4	-160.505	2	-127.898	10	-.006	4	-.177	2	-.466	3
67		4	max	705.445	1	1348.825	4	-122.471	4	.004	4	.531	3	.318	2
68			min	-621.864	2	-1278.185	3	-1253.221	7	-.003	3	-.34	4	-.196	1
69		5	max	723.674	1	1380.397	4	-129.821	4	.004	4	.755	4	.47	3
70			min	-640.092	2	-1309.757	3	-1281.03	7	-.003	3	-1.195	3	-1.143	8
71	M8	1	max	1507.772	4	-98.951	4	2591.885	1	.321	4	2.227	2	-.035	4
72			min	-2774.843	3	-871.405	7	-2589.974	2	-.72	10	-2.221	1	-.173	7
73		2	max	1493.432	4	-109.866	4	2567.048	1	.321	4	.363	3	.478	7
74			min	-2760.504	3	-894.075	7	-2565.137	2	-.72	10	-.354	4	.042	4
75		3	max	1463.608	4	-162.211	4	642.647	4	.028	4	.147	2	1.291	7
76			min	-2674.834	3	-1203.712	7	-639.805	3	-.429	10	-.175	1	.15	4
77		4	max	1711.62	4	2038.601	7	611.842	4	.028	4	.453	4	1.496	7
78			min	-1593.687	3	265.027	4	-609.765	3	-.429	10	-.475	3	.18	4
79		5	max	1697.28	4	1999.533	7	603.563	4	.028	4	.901	4	.012	3
80			min	-1579.347	3	254.111	4	-601.486	3	-.429	10	-.922	3	-.011	4
81	M9	1	max	1267.511	1	26.367	9	116.514	2	.002	10	.126	1	.205	10
82			min	-1136.253	2	-68.195	10	-93.652	1	0	4	-.139	2	-.131	4
83		2	max	1280.403	1	21.169	9	109.071	2	.002	10	.063	1	.27	10
84			min	-1149.145	2	-73.393	10	-86.209	1	0	4	-.076	2	-.14	4
85		3	max	1293.295	1	15.971	9	101.628	2	.002	10	.014	9	.339	10
86			min	-1162.036	2	-89.503	7	-78.766	1	0	4	-.083	10	-.16	4
87		4	max	1306.186	1	10.772	9	94.185	2	.002	10	.026	2	.411	10
88			min	-1174.928	2	-116.099	7	-71.323	1	0	4	-.112	10	-.19	4
89		5	max	1319.078	1	5.574	9	95.415	3	.002	10	.064	2	.487	10
90			min	-1187.82	2	-130.851	7	-71.708	4	0	4	-.144	10	-.231	4
91	M10A	1	max	603.814	1	34.632	9	1124.871	2	.004	9	.177	1	.156	1
92			min	-691.251	2	-37.168	1	-1010.354	1	-.003	10	-.232	2	-.226	2
93		2	max	603.814	1	33.162	9	1133.29	2	.004	9	.172	3	.125	3
94			min	-691.251	2	-38.638	1	-1018.773	1	-.003	10	-.208	4	-.177	4
95		3	max	603.814	1	31.692	9	1141.71	2	.004	9	.19	3	.163	2
96			min	-691.251	2	-40.108	1	-1027.192	1	-.003	10	-.207	4	-.191	1
97		4	max	603.814	1	30.222	9	1150.129	2	.004	9	.388	2	.361	2
98			min	-691.251	2	-41.578	1	-1035.611	1	-.003	10	-.387	1	-.366	1
99		5	max	603.814	1	28.752	9	1158.548	2	.004	9	.597	2	.56	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 Mom...	LC
100			min	-691.251	2	-43.048	1	-1044.031	1	-.003	10	-.578	1	-.542	1
101	M11	1	max	702.617	4	44.223	10	936.517	3	.004	10	.263	4	.226	4
102			min	-789.373	3	-116.423	9	-824.389	4	-.008	9	-.318	3	-.296	3
103		2	max	706.263	4	42.753	10	942.832	3	.004	10	.184	1	.141	1
104			min	-793.019	3	-117.893	9	-830.703	4	-.008	9	-.22	2	-.192	2
105		3	max	709.909	4	41.283	10	949.146	3	.004	10	.291	1	.25	1
106			min	-796.664	3	-119.363	9	-837.018	4	-.008	9	-.308	2	-.279	2
107		4	max	713.554	4	39.813	10	955.461	3	.004	10	.399	1	.359	1
108			min	-800.31	3	-120.833	9	-843.332	4	-.008	9	-.396	2	-.367	2
109		5	max	717.2	4	38.343	10	961.775	3	.004	10	.506	1	.469	1
110			min	-803.955	3	-122.303	9	-849.647	4	-.008	9	-.484	2	-.454	2
111	M12	1	max	513.579	2	41.162	1	926.566	4	.012	10	.228	2	.175	2
112			min	-599.508	1	-39.149	2	-808.698	3	-.002	9	-.284	1	-.245	1
113		2	max	517.225	2	39.692	1	932.881	4	.012	10	.151	2	.112	2
114			min	-603.154	1	-40.619	2	-815.012	3	-.002	9	-.187	1	-.162	1
115		3	max	520.87	2	38.222	1	939.195	4	.012	10	.295	4	.261	4
116			min	-606.799	1	-42.089	2	-821.326	3	-.002	9	-.311	3	-.289	3
117		4	max	524.516	2	36.752	1	945.509	4	.012	10	.464	4	.425	4
118			min	-610.445	1	-43.559	2	-827.641	3	-.002	9	-.461	3	-.43	3
119		5	max	528.161	2	35.282	1	951.824	4	.012	10	.634	4	.59	4
120			min	-614.091	1	-45.029	2	-833.955	3	-.002	9	-.613	3	-.572	3
121	M13	1	max	588.847	1	40.565	4	985.086	1	.001	9	.574	2	.533	2
122			min	-682.951	2	-50.037	3	-1066.726	2	-.006	8	-.561	1	-.524	1
123		2	max	588.847	1	39.095	4	976.667	1	.001	9	.379	2	.351	2
124			min	-682.951	2	-51.507	3	-1058.307	2	-.006	8	-.382	1	-.356	1
125		3	max	588.847	1	37.625	4	968.248	1	.001	9	.187	2	.172	2
126			min	-682.951	2	-52.977	3	-1049.887	2	-.006	8	-.205	1	-.189	1
127		4	max	588.847	1	36.155	4	959.828	1	.001	9	.097	4	.06	4
128			min	-682.951	2	-54.447	3	-1041.468	2	-.006	8	-.131	3	-.092	3
129		5	max	588.847	1	34.685	4	951.409	1	.001	9	.144	1	.141	1
130			min	-682.951	2	-55.917	3	-1033.049	2	-.006	8	-.196	2	-.183	2
131	M14	1	max	469.318	4	56.789	2	967.625	4	.001	10	.609	3	.575	3
132			min	-564.381	3	-64.778	1	-1050.168	3	-.013	9	-.595	4	-.568	4
133		2	max	472.963	4	55.319	2	961.311	4	.001	10	.421	3	.392	3
134			min	-568.027	3	-66.248	1	-1043.854	3	-.013	9	-.424	4	-.399	4
135		3	max	476.609	4	53.849	2	954.997	4	.001	10	.235	3	.211	3
136			min	-571.672	3	-67.718	1	-1037.539	3	-.013	9	-.254	4	-.23	4
137		4	max	480.255	4	52.379	2	948.682	4	.001	10	.08	2	.052	2
138			min	-575.318	3	-69.188	1	-1031.225	3	-.013	9	-.115	1	-.082	1
139		5	max	483.9	4	50.909	2	942.368	4	.001	10	.136	2	.105	4
140			min	-578.964	3	-70.658	1	-1024.91	3	-.013	9	-.188	1	-.148	3
141	M15	1	max	519.072	3	112.982	10	685.886	3	.006	10	.459	1	.439	1
142			min	-610.368	4	-57.126	4	-765.228	4	-.006	7	-.442	2	-.434	2
143		2	max	515.427	3	111.512	10	679.572	3	.006	10	.332	1	.308	1
144			min	-606.722	4	-58.596	4	-758.914	4	-.006	7	-.333	2	-.316	2
145		3	max	511.781	3	110.042	10	673.257	3	.006	10	.206	1	.177	1
146			min	-603.076	4	-60.066	4	-752.6	4	-.006	7	-.223	2	-.197	2
147		4	max	508.135	3	108.572	10	666.943	3	.006	10	.08	1	.047	1
148			min	-599.431	4	-61.536	4	-746.285	4	-.006	7	-.115	2	-.08	10
149		5	max	504.49	3	107.102	10	660.629	3	.006	10	.162	3	.133	3
150			min	-595.785	4	-63.006	4	-739.971	4	-.006	7	-.213	4	-.174	4
151	M16	1	max	2227.884	2	66.39	1	370.456	3	.003	4	.554	4	.008	8
152			min	-2026.817	1	-67.512	2	-365.331	4	-.002	9	-.564	3	0	1
153		2	max	2227.884	2	73.056	1	389.547	3	.003	4	.342	4	.041	2
154			min	-2026.817	1	-60.845	2	-384.422	4	-.002	9	-.348	3	-.039	1
155		3	max	2227.884	2	79.723	1	408.638	3	.003	4	.118	4	.074	2
156			min	-2026.817	1	-54.178	2	-403.513	4	-.002	9	-.122	3	-.083	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 Mom...	LC
157		4	max	2227.884	2	86.39	1	427.729	3	.003	4	.115	3	.103	2
158			min	-2026.817	1	-47.512	2	-422.604	4	-.002	9	-.116	4	-.13	1
159		5	max	2227.884	2	98.495	5	446.82	3	.003	4	.363	3	.128	2
160			min	-2026.817	1	-40.845	2	-441.695	4	-.002	9	-.361	4	-.181	1
161	M17	1	max	2014.021	3	109.156	9	408.704	1	.011	9	.554	2	.008	6
162			min	-1815.444	4	-58.682	1	-401.111	2	-.002	4	-.568	1	0	4
163		2	max	2022.287	3	115.823	9	423.022	1	.011	9	.323	2	.033	1
164			min	-1823.71	4	-52.016	1	-415.429	2	-.002	4	-.332	1	-.058	9
165		3	max	2030.554	3	122.489	9	437.341	1	.011	9	.083	2	.06	1
166			min	-1831.977	4	-45.349	1	-429.747	2	-.002	4	-.088	1	-.126	9
167		4	max	2038.821	3	129.156	9	451.659	1	.011	9	.164	1	.084	1
168			min	-1840.244	4	-38.682	1	-444.066	2	-.002	4	-.164	2	-.197	9
169		5	max	2047.087	3	135.822	9	465.977	1	.011	9	.424	1	.104	1
170			min	-1848.51	4	-32.016	1	-458.384	2	-.002	4	-.42	2	-.272	9
171	M18	1	max	1718.61	4	111.781	10	321.826	2	.003	1	.496	1	.008	5
172			min	-1518.56	3	-75.129	4	-316.985	1	-.009	10	-.505	2	.001	2
173		2	max	1726.877	4	118.448	10	336.145	2	.003	1	.312	1	.044	4
174			min	-1526.827	3	-68.463	4	-331.303	1	-.009	10	-.318	2	-.06	10
175		3	max	1735.143	4	125.115	10	350.463	2	.003	1	.12	1	.081	4
176			min	-1535.094	3	-61.796	4	-345.622	1	-.009	10	-.124	2	-.129	10
177		4	max	1743.41	4	131.781	10	364.781	2	.003	1	.091	4	.114	4
178			min	-1543.36	3	-55.13	4	-359.94	1	-.009	10	-.092	3	-.202	10
179		5	max	1751.677	4	138.448	10	379.099	2	.003	1	.29	2	.143	4
180			min	-1551.627	3	-48.463	4	-374.258	1	-.009	10	-.288	1	-.278	10
181	MP4A	1	max	0	11	.011	8	.013	8	0	11	0	11	0	11
182			min	0	1	-.01	3	-.008	3	0	1	0	1	0	1
183		2	max	130.409	1	125.172	4	136.106	3	.102	4	.174	4	.08	2
184			min	-194.848	2	-117.263	3	-184.007	4	-.084	3	-.14	3	-.091	1
185		3	max	137.698	1	153.166	4	136.106	3	.102	4	.136	1	.152	3
186			min	-187.56	2	-145.256	3	-184.007	4	-.084	3	-.186	2	-.177	4
187		4	max	-7.289	10	28.037	3	28.009	2	0	11	.025	1	.025	3
188			min	-23.03	5	-28.037	4	-28.013	1	0	1	-.025	2	-.025	4
189		5	max	0	11	.043	3	.021	3	0	11	0	11	0	11
190			min	0	1	-.043	4	-.034	8	0	1	0	1	0	1
191	MP3A	1	max	291.554	8	295.02	4	682.204	1	0	11	0	11	0	11
192			min	73.68	1	-294.998	3	-682.17	2	0	1	0	1	0	1
193		2	max	743.587	5	613.653	4	661.602	1	.145	4	.408	1	.396	3
194			min	107.898	2	-551.428	3	-839.808	2	-.119	3	-.526	2	-.393	4
195		3	max	-115.027	10	382.225	3	791.214	2	0	11	1.921	1	.911	3
196			min	-394.38	5	-382.257	4	-791.367	1	0	1	-1.92	2	-.911	4
197		4	max	-94.603	10	338.27	3	736.284	2	0	11	.371	1	.178	3
198			min	-343.561	5	-338.301	4	-736.437	1	0	1	-.37	2	-.178	4
199		5	max	0	11	.423	4	1.388	1	0	11	0	11	0	11
200			min	0	1	-.454	3	-1.56	6	0	1	0	1	0	1
201	MP2A	1	max	56.766	8	67.759	4	121.653	1	0	11	0	11	0	11
202			min	11.22	1	-67.756	3	-121.651	2	0	1	0	1	0	1
203		2	max	387.815	6	105.737	2	333.853	1	.126	3	.111	2	.137	2
204			min	-80.51	1	-160.704	1	-249.673	2	-.159	4	-.12	1	-.103	1
205		3	max	425.278	6	105.737	2	367.572	1	.126	3	.492	1	.251	5
206			min	-68.346	1	-160.704	1	-283.392	2	-.159	4	-.353	2	-.048	2
207		4	max	-10.004	10	28.123	3	28.058	2	0	11	.025	1	.025	3
208			min	-25.745	5	-28.148	4	-28.05	1	0	1	-.025	2	-.025	4
209		5	max	0	11	.129	3	.097	6	0	11	0	11	0	11
210			min	0	1	-.258	8	-.056	1	0	1	0	1	0	1
211	MP1A	1	max	0	11	.014	8	.006	1	0	11	0	11	0	11
212			min	0	1	-.012	3	-.011	6	0	1	0	1	0	1
213		2	max	117.765	9	57.132	2	255.971	1	.09	3	.101	2	.057	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 Mom...	LC
214			min	-102.713	2	-108.198	1	-170.341	2	-.099	4	-.17	9	-.09	4
215		3	max	125.054	9	57.132	2	283.965	1	.09	3	.32	1	.13	1
216			min	-95.424	2	-108.198	1	-198.335	2	-.099	4	-.221	2	-.073	2
217		4	max	-7.289	10	28.026	3	28.022	2	0	11	.025	1	.025	3
218			min	-23.03	5	-28.028	4	-28.018	1	0	1	-.025	2	-.025	4
219		5	max	0	11	.032	3	.036	6	0	11	0	11	0	11
220			min	0	1	-.034	4	-.025	1	0	1	0	1	0	1
221	MP4C	1	max	0	11	.008	6	.013	1	0	11	0	11	0	11
222			min	0	1	-.004	1	-.017	6	0	1	0	1	0	1
223		2	max	80.527	2	166.272	4	55.981	9	.094	2	.038	1	.133	1
224			min	-486.877	9	-208.364	3	-22.967	3	-.075	1	-.114	9	-.155	2
225		3	max	87.816	2	194.266	4	58.78	9	.094	2	.087	1	.285	9
226			min	-479.589	9	-236.358	3	-23.928	2	-.075	1	-.083	2	-.194	4
227		4	max	-7.289	10	28.009	3	28.039	2	0	11	.025	1	.025	3
228			min	-23.03	5	-28.012	4	-28.037	1	0	1	-.025	2	-.025	4
229		5	max	0	11	.015	3	.045	2	0	11	0	11	0	11
230			min	0	1	-.037	9	-.043	1	0	1	0	1	0	1
231	MP2C	1	max	56.766	8	108.123	4	81.283	1	0	11	0	11	0	11
232			min	11.22	1	-108.121	3	-81.287	2	0	1	0	1	0	1
233		2	max	391.952	7	305.346	4	52.836	1	.114	1	.054	8	.145	4
234			min	-100.849	4	-205.917	3	-48.366	2	-.148	2	-.006	2	-.155	3
235		3	max	429.416	7	343.345	4	84.388	1	.114	1	.16	1	.235	3
236			min	-88.685	4	-243.917	3	-79.918	2	-.148	2	-.117	2	-.419	4
237		4	max	-10.004	10	28.035	3	28.17	2	0	11	.025	1	.025	3
238			min	-25.745	5	-28.018	4	-28.152	1	0	1	-.025	2	-.025	4
239		5	max	0	11	.129	7	.241	6	0	11	0	11	0	11
240			min	0	1	-.024	4	-.158	1	0	1	0	1	0	1
241	MP1C	1	max	0	11	.004	4	.013	1	0	11	0	11	0	11
242			min	0	1	-.01	7	-.014	2	0	1	0	1	0	1
243		2	max	73.981	2	221.705	4	48.413	10	.127	1	.047	4	.148	2
244			min	-465.741	10	-124.191	3	-30.362	4	-.137	2	-.104	10	-.088	1
245		3	max	81.27	2	249.699	4	51.213	10	.127	1	.083	1	.193	3
246			min	-458.452	10	-152.185	3	-39.746	2	-.137	2	-.083	2	-.305	4
247		4	max	-7.289	10	28.008	3	28.038	2	0	11	.025	1	.025	3
248			min	-23.03	5	-28.005	4	-28.038	1	0	1	-.025	2	-.025	4
249		5	max	0	11	.037	10	.044	2	0	11	0	11	0	11
250			min	0	1	-.013	9	-.044	1	0	1	0	1	0	1
251	MP4B	1	max	0	11	.012	4	.005	1	0	11	0	11	0	11
252			min	0	1	-.016	7	-.005	2	0	1	0	1	0	1
253		2	max	111.705	3	101.405	1	199.313	1	.089	3	.18	2	.128	3
254			min	-175.745	4	-65.942	2	-170.99	2	-.072	4	-.192	1	-.087	4
255		3	max	118.126	3	101.405	1	223.974	1	.089	3	.134	1	.058	3
256			min	-169.324	4	-65.942	2	-195.652	2	-.072	4	-.102	2	-.074	10
257		4	max	-6.421	10	24.689	3	24.685	2	0	11	.019	1	.019	3
258			min	-20.288	5	-24.688	4	-24.684	1	0	1	-.019	2	-.019	4
259		5	max	0	11	.029	7	.025	6	0	11	0	11	0	11
260			min	0	1	-.026	4	-.022	1	0	1	0	1	0	1
261	MP2B	1	max	56.766	8	108.243	4	81.177	1	0	11	0	11	0	11
262			min	11.22	1	-108.246	3	-81.176	2	0	1	0	1	0	1
263		2	max	388.881	5	155.333	4	170.963	4	.088	2	.101	3	.052	1
264			min	-50.068	2	-200.628	3	-259.56	3	-.12	1	-.126	4	-.077	2
265		3	max	426.345	5	193.332	4	170.963	4	.088	2	.173	4	.355	3
266			min	-37.904	2	-238.628	3	-259.56	3	-.12	1	-.375	7	-.301	4
267		4	max	-10.004	10	28.132	3	28.051	2	0	11	.025	1	.025	3
268			min	-25.745	5	-28.128	4	-28.075	1	0	1	-.025	2	-.025	4
269		5	max	0	11	.139	7	.06	4	0	11	0	11	0	11
270			min	0	1	-.134	4	-.208	7	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 Mom...	LC
271	MP1B	1	max	0	11	.012	8	.012	5	0	11	0	11	0	11
272			min	0	1	-.011	3	-.007	2	0	1	0	1	0	1
273		2	max	96.997	3	99.546	4	124.324	4	.143	4	.162	3	.062	9
274			min	-113.274	4	-146.824	3	-210.318	3	-.151	3	-.109	4	-.085	10
275		3	max	104.286	3	127.54	4	124.324	4	.143	4	.109	4	.207	3
276			min	-105.985	4	-174.818	3	-210.318	3	-.151	3	-.206	3	-.151	4
277		4	max	-7.289	10	28.035	3	28.01	2	0	11	.025	1	.025	3
278			min	-23.03	5	-28.038	4	-28.013	1	0	1	-.025	2	-.025	4
279		5	max	0	11	.041	3	.016	2	0	11	0	11	0	11
280			min	0	1	-.044	4	-.03	7	0	1	0	1	0	1
281	M31	1	max	1003.232	4	317.743	4	730.9	8	.015	3	.277	3	-.034	10
282			min	-918.185	3	-364.636	3	63.183	10	-.015	4	-.568	8	-.864	6
283		2	max	1021.46	4	286.171	4	703.091	8	.015	3	.114	1	.055	1
284			min	-936.413	3	-333.064	3	55.833	10	-.015	4	-.072	2	-.2	9
285		3	max	1051.697	4	81.775	4	195.788	1	.004	4	.036	2	.112	3
286			min	-1070.183	3	-123.072	3	-117.282	2	-.003	3	-.027	1	-.147	4
287		4	max	1069.925	4	50.683	2	188.438	1	.004	4	.154	4	.206	3
288			min	-1088.411	3	-92.703	1	-124.632	2	-.003	3	-.119	3	-.14	4
289		5	max	1057.395	4	139.277	2	71.485	1	.038	9	.122	2	.145	1
290			min	-1177.859	3	-179.087	1	-50.367	2	-.031	2	-.174	1	-.103	2
291	M32	1	max	1300.153	1	153.644	8	126.538	1	0	3	.072	2	.524	6
292			min	-1171.757	2	-.27	10	-158.818	2	-.002	9	-.156	5	-.248	1
293		2	max	1287.262	1	138.892	8	133.982	1	0	3	.014	2	.422	9
294			min	-1158.865	2	-5.469	10	-166.261	2	-.002	9	-.12	9	-.169	1
295		3	max	1274.37	1	112.297	8	141.425	1	0	3	.022	1	.347	9
296			min	-1145.973	2	-10.667	10	-173.704	2	-.002	9	-.086	9	-.083	3
297		4	max	1261.478	1	85.702	8	148.868	1	0	3	.109	1	.277	9
298			min	-1133.081	2	-15.865	10	-181.147	2	-.002	9	-.127	2	-.082	3
299		5	max	1248.586	1	73.398	9	156.311	1	0	3	.197	1	.21	9
300			min	-1120.19	2	-21.063	10	-188.59	2	-.002	9	-.21	2	-.091	3
301	M33	1	max	1044.243	2	351.981	2	731.91	6	.017	1	.265	1	-.068	2
302			min	-963.562	1	-397.045	1	56.782	1	-.017	2	-.562	6	-.96	10
303		2	max	1044.243	2	309.885	2	704.101	6	.017	1	.099	4	.06	4
304			min	-963.562	1	-354.949	1	49.432	1	-.017	2	-.057	3	-.249	10
305		3	max	837.003	2	74.503	3	212.782	10	.004	2	.039	3	.148	1
306			min	-857.356	1	-115.189	4	-71.661	3	-.003	1	-.046	10	-.182	2
307		4	max	837.003	2	74.503	3	205.432	10	.004	2	.167	2	.173	4
308			min	-857.356	1	-115.189	4	-79.011	3	-.003	1	-.132	1	-.109	3
309		5	max	823.682	3	105.988	3	65.43	4	.028	2	.153	3	.183	4
310			min	-939.508	4	-146.375	4	-109.097	10	-.053	10	-.203	4	-.142	3
311	M34	1	max	1399.688	4	152.672	7	132.229	4	0	9	.059	3	.563	3
312			min	-1269.838	3	-2.106	4	-164.363	3	-.002	10	-.148	8	-.308	4
313		2	max	1399.688	4	137.919	7	132.229	4	0	9	.005	3	.412	3
314			min	-1269.838	3	-7.304	4	-164.363	3	-.002	10	-.105	10	-.223	4
315		3	max	1399.688	4	111.325	7	132.229	4	0	9	.023	4	.319	10
316			min	-1269.838	3	-12.502	4	-164.363	3	-.002	10	-.081	10	-.134	4
317		4	max	1399.688	4	84.73	7	132.229	4	0	9	.097	4	.24	10
318			min	-1269.838	3	-17.701	4	-164.363	3	-.002	10	-.114	3	-.048	1
319		5	max	1399.688	4	69.734	10	132.229	4	0	9	.167	4	.162	10
320			min	-1269.838	3	-22.899	4	-164.363	3	-.002	10	-.178	3	-.093	1
321	M35	1	max	850.457	3	271.7	3	720.379	7	.015	4	.209	2	-.014	3
322			min	-769.854	4	-315.596	4	82.363	2	-.016	3	-.543	5	-.866	8
323		2	max	832.229	3	240.128	3	692.57	7	.015	4	.104	3	.042	2
324			min	-751.626	4	-284.024	4	75.013	2	-.016	3	-.061	4	-.176	5
325		3	max	975.949	1	82.523	1	189.363	3	.004	3	.037	1	.141	4
326			min	-996.684	2	-123.241	2	-111.829	4	-.003	4	-.029	2	-.175	3
327		4	max	994.178	1	71.999	1	182.013	3	.004	3	.134	3	.206	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 Mom...	LC
328			min	-1014.912	2	-112.717	2	-119.179	4	-.003	4	-.1	4	-.141	1
329		5	max	1117.543	1	129.365	4	55.623	3	.036	3	.143	1	.184	2
330			min	-1237.051	2	-168.119	3	-35.089	4	-.032	4	-.194	2	-.142	1
331	M36	1	max	1255.038	2	154.013	5	81.208	2	0	2	.02	4	.532	5
332			min	-1123.694	1	4.161	2	-114.131	1	-.001	1	-.147	7	-.217	2
333		2	max	1242.147	2	139.261	5	73.765	2	0	2	.008	9	.388	5
334			min	-1110.802	1	-1.037	2	-106.688	1	-.001	1	-.089	7	-.169	2
335		3	max	1229.255	2	112.666	5	68.716	3	0	2	.006	2	.259	5
336			min	-1097.91	1	-6.235	2	-100.857	4	-.001	1	-.051	5	-.123	2
337		4	max	1216.363	2	86.072	5	91.045	3	0	2	.063	3	.158	1
338			min	-1085.018	1	-11.433	2	-123.187	4	-.001	1	-.082	4	-.079	2
339		5	max	1203.471	2	60.506	5	113.375	3	0	2	.137	3	.122	3
340			min	-1072.126	1	-16.632	2	-145.516	4	-.001	1	-.151	4	-.085	4
341	MP3C	1	max	291.554	8	585.052	4	392.132	1	0	11	0	11	0	11
342			min	73.68	1	-585.028	3	-392.172	2	0	1	0	1	0	1
343		2	max	734.648	6	643.929	4	624.467	1	.196	2	.635	1	.317	3
344			min	154.332	1	-826.408	3	-588.836	2	-.171	1	-.573	2	-.218	4
345		3	max	-115.027	10	688.91	3	484.588	2	0	11	1.163	1	1.668	3
346			min	-394.38	5	-689.031	4	-484.48	1	0	1	-1.163	2	-1.668	4
347		4	max	-94.603	10	636.724	3	437.889	2	0	11	.226	1	.322	3
348			min	-343.561	5	-636.844	4	-437.782	1	0	1	-.227	2	-.322	4
349		5	max	0	11	1.206	4	.737	5	0	11	0	11	0	11
350			min	0	1	-1.345	7	-.611	2	0	1	0	1	0	1
351	MP3B	1	max	291.554	8	585.808	4	391.476	1	0	11	0	11	0	11
352			min	73.68	1	-585.846	3	-391.48	2	0	1	0	1	0	1
353		2	max	739.409	7	818.399	4	712.139	1	.201	3	.385	3	.622	3
354			min	110.376	4	-695.668	3	-572.634	2	-.178	4	-.33	4	-.726	4
355		3	max	-115.027	10	689.129	3	484.379	2	0	11	1.162	1	1.668	3
356			min	-394.38	5	-688.982	4	-484.326	1	0	1	-1.163	2	-1.668	4
357		4	max	-94.603	10	636.943	3	437.681	2	0	11	.226	1	.323	3
358			min	-343.561	5	-636.796	4	-437.627	1	0	1	-.226	2	-.322	4
359		5	max	0	11	1.254	4	.873	1	0	11	0	11	0	11
360			min	0	1	-1.108	3	-.819	2	0	1	0	1	0	1
361	M37	1	max	0	11	.01	1	.006	1	0	11	0	11	0	11
362			min	0	1	-.007	4	-.017	4	0	1	0	1	0	1
363		2	max	136.545	10	100.349	1	30.068	2	.166	2	.139	3	.065	4
364			min	-199.788	9	-174.713	2	-51.393	1	-.156	1	-.158	4	-.066	3
365		3	max	101.507	10	258.281	1	60.538	2	.064	4	.057	3	.068	1
366			min	-432.1	9	-310.318	2	-43.249	1	-.06	3	-.093	4	-.07	2
367		4	max	80.814	10	187.501	5	86.837	4	.124	4	.111	2	.073	9
368			min	-284.508	9	-44.417	2	-65.521	3	-.115	3	-.106	1	-.03	3
369		5	max	0	11	.001	9	.011	1	0	11	0	11	0	11
370			min	0	1	-.009	4	-.012	4	0	1	0	1	0	1
371	M38	1	max	0	11	0	11	0	11	0	11	0	11	0	11
372			min	0	1	0	1	0	1	0	1	0	1	0	1
373		2	max	30.376	1	141.21	4	33.551	1	.201	1	.123	1	.068	2
374			min	-215.505	10	-284.65	9	-55.468	2	-.192	2	-.145	2	-.07	1
375		3	max	88.528	1	248.863	4	43.346	1	.071	2	.077	1	.056	4
376			min	-426.705	6	-300.728	3	-27.542	2	-.066	1	-.113	2	-.059	3
377		4	max	-17.678	1	304.735	10	84.855	2	.151	2	.149	1	.072	2
378			min	-252.923	9	-23.267	1	-63.667	1	-.142	1	-.148	2	-.038	1
379		5	max	0	11	0	11	0	11	0	11	0	11	0	11
380			min	0	1	0	1	0	1	0	1	0	1	0	1
381	M39	1	max	0	11	.013	3	.015	3	0	11	0	11	0	11
382			min	0	1	-.001	10	-.012	1	0	1	0	1	0	1
383		2	max	130.456	9	121.293	2	50.174	4	.237	4	.111	2	.055	1
384			min	-240.616	10	-192.508	1	-72.152	3	-.228	3	-.129	1	-.056	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 Mom...	LC
385		3	max	118.981	9	156.446	2	57.772	4	.072	3	.09	4	.045	3
386			min	-424.995	7	-209.047	1	-40.522	3	-.066	4	-.125	3	-.048	4
387		4	max	89.475	9	185.929	7	71.095	1	.151	3	.158	4	.063	7
388			min	-240.032	10	-49.927	4	-50.754	4	-.144	4	-.154	3	-.026	4
389		5	max	0	11	.004	3	.018	3	0	11	0	11	0	11
390			min	0	1	-.009	1	-.004	1	0	1	0	1	0	1
391	M40	1	max	112.404	2	188.977	4	147.94	3	.006	3	.109	2	.174	4
392			min	-147.827	1	-219.762	3	-164.532	4	-.006	4	-.102	1	-.234	3
393		2	max	112.404	2	187.597	4	147.94	3	.006	3	.092	2	.081	4
394			min	-147.827	1	-221.142	3	-164.532	4	-.006	4	-.097	1	-.136	3
395		3	max	112.404	2	186.218	4	147.94	3	.006	3	.077	2	.037	2
396			min	-147.827	1	-222.521	3	-164.532	4	-.006	4	-.096	1	-.095	5
397		4	max	112.404	2	184.838	4	147.94	3	.006	3	.065	2	.06	3
398			min	-147.827	1	-223.901	3	-164.532	4	-.006	4	-.098	1	-.105	4
399		5	max	112.404	2	183.458	4	147.94	3	.006	3	.061	9	.159	3
400			min	-147.827	1	-225.281	3	-164.532	4	-.006	4	-.115	10	-.198	4
401	M41	1	max	118.959	3	173.234	2	115.426	1	.005	1	.155	9	.127	3
402			min	-154.958	4	-221.816	9	-134.354	2	-.005	2	-.099	10	-.188	4
403		2	max	114.402	3	171.854	2	118.057	1	.005	1	.083	3	.083	3
404			min	-150.401	4	-223.196	9	-136.985	2	-.005	2	-.089	4	-.139	4
405		3	max	109.845	3	170.475	2	120.688	1	.005	1	.071	3	.042	3
406			min	-145.844	4	-224.576	9	-139.616	2	-.005	2	-.09	4	-.097	8
407		4	max	105.288	3	169.095	2	123.319	1	.005	1	.06	3	.105	1
408			min	-141.287	4	-225.955	9	-142.247	2	-.005	2	-.094	4	-.149	2
409		5	max	100.731	3	167.715	2	125.95	1	.005	1	.051	3	.194	1
410			min	-136.73	4	-227.335	9	-144.878	2	-.005	2	-.154	9	-.232	2
411	M42	1	max	118.64	4	185.904	10	141.652	2	.005	2	.11	4	.18	1
412			min	-154.806	3	-171.805	2	-155.897	1	-.005	1	-.122	10	-.24	2
413		2	max	123.197	4	184.524	10	139.021	2	.005	2	.095	4	.102	1
414			min	-159.363	3	-173.185	2	-153.266	1	-.005	1	-.101	3	-.157	2
415		3	max	127.754	4	183.144	10	136.39	2	.005	2	.082	4	.052	4
416			min	-163.92	3	-174.565	2	-150.635	1	-.005	1	-.101	3	-.101	3
417		4	max	132.311	4	181.765	10	133.759	2	.005	2	.071	4	.115	4
418			min	-168.477	3	-175.944	2	-148.004	1	-.005	1	-.104	3	-.158	3
419		5	max	136.869	4	180.385	10	131.128	2	.005	2	.124	10	.179	4
420			min	-173.034	3	-177.324	2	-145.373	1	-.005	1	-.129	9	-.217	3
421	M43	1	max	3993.216	6	42.376	2	50.593	4	0	10	0	11	0	11
422			min	466.933	1	-27.676	1	-50.593	3	0	3	0	1	0	1
423		2	max	4007.1	6	21.188	2	25.297	4	0	10	.034	4	.019	1
424			min	484.121	1	-13.838	1	-25.297	3	0	3	-.034	3	-.029	2
425		3	max	4020.984	6	0	11	0	11	0	10	.046	4	.025	1
426			min	501.308	1	0	1	0	1	0	3	-.046	3	-.038	2
427		4	max	4034.869	6	13.838	1	25.297	3	0	10	.034	4	.019	1
428			min	518.496	1	-21.188	2	-25.297	4	0	3	-.034	3	-.029	2
429		5	max	4048.753	6	27.676	1	50.593	3	0	10	0	11	0	11
430			min	535.684	1	-42.376	2	-50.593	4	0	3	0	1	0	1
431	M44	1	max	3963.604	7	39.324	3	42.096	2	0	2	0	11	0	11
432			min	509.898	4	-24.624	4	-42.096	1	0	10	0	1	0	1
433		2	max	3977.756	7	19.662	3	21.048	2	0	2	.028	2	.017	4
434			min	526.069	4	-12.312	4	-21.048	1	0	10	-.028	1	-.027	3
435		3	max	3991.907	7	0	11	0	11	0	2	.038	2	.022	4
436			min	542.24	4	0	1	0	1	0	10	-.038	1	-.035	3
437		4	max	4006.058	7	12.312	4	21.048	1	0	2	.028	2	.017	4
438			min	558.41	4	-19.662	3	-21.048	2	0	10	-.028	1	-.027	3
439		5	max	4020.209	7	24.624	4	42.096	1	0	2	0	11	0	11
440			min	574.581	4	-39.324	3	-42.096	2	0	10	0	1	0	1
441	M45	1	max	3973.623	8	39.324	4	42.096	1	0	1	0	11	0	11

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mom...	LC
442			min	607.728	3	-24.624	3	-42.096	2	0	2	0	1	0	1
443		2	max	3987.774	8	19.662	4	21.048	1	0	1	.028	1	.017	3
444			min	623.899	3	-12.312	3	-21.048	2	0	2	-.028	2	-.027	4
445		3	max	4001.925	8	0	11	0	11	0	1	.038	1	.022	3
446			min	640.069	3	0	1	0	1	0	2	-.038	2	-.035	4
447		4	max	4016.077	8	12.312	3	21.048	2	0	1	.028	1	.017	3
448			min	656.24	3	-19.662	4	-21.048	1	0	2	-.028	2	-.027	4
449		5	max	4030.228	8	24.624	3	42.096	2	0	1	0	11	0	11
450			min	672.41	3	-39.324	4	-42.096	1	0	2	0	1	0	1
451	M46	1	max	23.369	3	493.974	9	137.964	4	.348	3	.059	1	.06	3
452			min	-52.246	9	-73.557	2	-180.941	3	-.284	4	-.071	2	-.095	9
453		2	max	23.369	3	493.974	9	137.964	4	.348	3	.063	1	.054	3
454			min	-52.246	9	-73.557	2	-180.941	3	-.284	4	-.077	2	-.114	9
455		3	max	23.369	3	493.974	9	137.964	4	.348	3	.067	1	.049	3
456			min	-52.246	9	-73.557	2	-180.941	3	-.284	4	-.083	2	-.132	9
457		4	max	23.369	3	493.974	9	137.964	4	.348	3	.071	1	.044	3
458			min	-52.246	9	-73.557	2	-180.941	3	-.284	4	-.088	2	-.151	9
459		5	max	23.369	3	493.974	9	137.964	4	.348	3	.075	1	.038	3
460			min	-52.246	9	-73.557	2	-180.941	3	-.284	4	-.094	2	-.169	9
461	M47	1	max	98.644	1	101.816	2	292.908	3	.328	9	.071	2	.02	2
462			min	-79.231	2	-464.939	9	-249.941	4	-.158	4	-.059	1	-.063	9
463		2	max	98.644	1	101.816	2	292.908	3	.328	9	.077	2	.018	3
464			min	-79.231	2	-464.939	9	-249.941	4	-.158	4	-.063	1	-.045	9
465		3	max	98.644	1	101.816	2	292.908	3	.328	9	.083	2	.022	3
466			min	-79.231	2	-464.939	9	-249.941	4	-.158	4	-.067	1	-.032	4
467		4	max	98.644	1	101.816	2	292.908	3	.328	9	.088	2	.026	3
468			min	-79.231	2	-464.939	9	-249.941	4	-.158	4	-.071	1	-.035	4
469		5	max	98.644	1	101.816	2	292.908	3	.328	9	.094	2	.031	3
470			min	-79.231	2	-464.939	9	-249.941	4	-.158	4	-.075	1	-.039	4
471	M48	1	max	21.729	2	77.129	1	58.093	1	.895	3	.163	1	.264	2
472			min	-67.722	5	-307.785	9	-325.859	6	-.698	4	-.16	2	-.267	1
473		2	max	21.729	2	77.129	1	58.093	1	.895	3	.165	1	.268	2
474			min	-67.722	5	-307.785	9	-325.859	6	-.698	4	-.169	2	-.27	1
475		3	max	21.729	2	77.129	1	58.093	1	.895	3	.167	1	.273	2
476			min	-67.722	5	-307.785	9	-325.859	6	-.698	4	-.178	2	-.273	1
477		4	max	21.729	2	77.129	1	58.093	1	.895	3	.169	1	.277	2
478			min	-67.722	5	-307.785	9	-325.859	6	-.698	4	-.187	2	-.276	1
479		5	max	21.729	2	77.129	1	58.093	1	.895	3	.171	1	.282	2
480			min	-67.722	5	-307.785	9	-325.859	6	-.698	4	-.196	2	-.278	1
481	M49	1	max	1140.751	1	1157.796	6	1548.324	3	.983	4	.22	4	.007	9
482			min	-1102.592	2	279.524	1	-1365.014	4	-.633	3	-.223	3	0	2
483		2	max	1140.751	1	1157.796	6	1548.324	3	.983	4	.169	2	-.008	1
484			min	-1102.592	2	279.524	1	-1365.014	4	-.633	3	-.165	3	-.04	8
485		3	max	1140.751	1	1157.796	6	1548.324	3	.983	4	.178	2	-.018	1
486			min	-1102.592	2	279.524	1	-1365.014	4	-.633	3	-.167	1	-.083	8
487		4	max	1140.751	1	1157.796	6	1548.324	3	.983	4	.187	2	-.029	1
488			min	-1102.592	2	279.524	1	-1365.014	4	-.633	3	-.169	1	-.127	8
489		5	max	1140.751	1	1157.796	6	1548.324	3	.983	4	.196	2	-.039	1
490			min	-1102.592	2	279.524	1	-1365.014	4	-.633	3	-.171	1	-.17	8
491	M50	1	max	57.068	1	122.078	4	262.892	10	.438	3	.117	2	.079	2
492			min	-62.866	2	-370.455	10	-106.282	1	-.528	4	-.098	1	-.076	1
493		2	max	57.068	1	122.078	4	262.892	10	.438	3	.125	2	.084	2
494			min	-62.866	2	-370.455	10	-106.282	1	-.528	4	-.102	1	-.074	1
495		3	max	57.068	1	122.078	4	262.892	10	.438	3	.133	2	.09	2
496			min	-62.866	2	-370.455	10	-106.282	1	-.528	4	-.106	1	-.072	1
497		4	max	57.068	1	122.078	4	262.892	10	.438	3	.141	2	.095	2
498			min	-62.866	2	-370.455	10	-106.282	1	-.528	4	-.11	1	-.071	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 Mom...	LC
499		5	max	57.068	1	122.078	4	262.892	10	.438	3	.148	2	.1	2
500			min	-62.866	2	-370.455	10	-106.282	1	-.528	4	-.114	1	-.069	1
501	M51	1	max	220.655	1	537.695	7	406.601	3	.182	1	.13	4	.021	2
502			min	-214.849	2	-57.465	4	-507.842	4	-.458	10	-.147	3	-.02	1
503		2	max	220.655	1	537.695	7	406.601	3	.182	1	.111	4	.014	2
504			min	-214.849	2	-57.465	4	-507.842	4	-.458	10	-.132	3	-.024	1
505		3	max	220.655	1	537.695	7	406.601	3	.182	1	.106	1	.006	2
506			min	-214.849	2	-57.465	4	-507.842	4	-.458	10	-.133	2	-.04	5
507		4	max	220.655	1	537.695	7	406.601	3	.182	1	.11	1	.006	4
508			min	-214.849	2	-57.465	4	-507.842	4	-.458	10	-.141	2	-.059	7
509		5	max	220.655	1	537.695	7	406.601	3	.182	1	.114	1	.008	4
510			min	-214.849	2	-57.465	4	-507.842	4	-.458	10	-.148	2	-.079	7
511	M52	1	max	30.312	4	472.87	10	193.527	4	.17	3	.111	2	.072	4
512			min	-44.815	10	-66.838	2	-96.453	3	-.326	4	-.116	1	-.081	10
513		2	max	30.312	4	472.87	10	193.527	4	.17	3	.118	2	.073	4
514			min	-44.815	10	-66.838	2	-96.453	3	-.326	4	-.119	1	-.098	10
515		3	max	30.312	4	472.87	10	193.527	4	.17	3	.124	2	.075	4
516			min	-44.815	10	-66.838	2	-96.453	3	-.326	4	-.122	1	-.116	10
517		4	max	30.312	4	472.87	10	193.527	4	.17	3	.131	2	.076	4
518			min	-44.815	10	-66.838	2	-96.453	3	-.326	4	-.125	1	-.134	10
519		5	max	30.312	4	472.87	10	193.527	4	.17	3	.137	2	.078	4
520			min	-44.815	10	-66.838	2	-96.453	3	-.326	4	-.127	1	-.152	10
521	M53	1	max	98.827	1	95.161	2	208.458	3	.147	3	.116	1	.024	9
522			min	-95.123	2	-443.821	10	-305.459	4	-.35	10	-.111	2	-.055	10
523		2	max	98.827	1	95.161	2	208.458	3	.147	3	.119	1	.022	9
524			min	-95.123	2	-443.821	10	-305.459	4	-.35	10	-.118	2	-.038	10
525		3	max	98.827	1	95.161	2	208.458	3	.147	3	.122	1	.019	9
526			min	-95.123	2	-443.821	10	-305.459	4	-.35	10	-.124	2	-.021	10
527		4	max	98.827	1	95.161	2	208.458	3	.147	3	.125	1	.017	9
528			min	-95.123	2	-443.821	10	-305.459	4	-.35	10	-.131	2	-.016	3
529		5	max	98.827	1	95.161	2	208.458	3	.147	3	.127	1	.015	9
530			min	-95.123	2	-443.821	10	-305.459	4	-.35	10	-.137	2	-.014	3
531	M54	1	max	52.871	4	181.801	4	159.746	2	.402	1	.072	4	.129	4
532			min	-70.856	3	-105.835	3	-202.026	1	-.337	2	-.083	3	-.159	3
533		2	max	52.871	4	181.801	4	159.746	2	.402	1	.072	4	.122	4
534			min	-70.856	3	-105.835	3	-202.026	1	-.337	2	-.085	3	-.155	3
535		3	max	52.871	4	181.801	4	159.746	2	.402	1	.072	4	.115	4
536			min	-70.856	3	-105.835	3	-202.026	1	-.337	2	-.086	3	-.151	3
537		4	max	52.871	4	181.801	4	159.746	2	.402	1	.072	4	.108	4
538			min	-70.856	3	-105.835	3	-202.026	1	-.337	2	-.088	3	-.147	3
539		5	max	52.871	4	181.801	4	159.746	2	.402	1	.072	4	.101	4
540			min	-70.856	3	-105.835	3	-202.026	1	-.337	2	-.089	3	-.143	3
541	M55	1	max	65.546	2	130.894	3	287.541	1	.265	10	.09	3	.03	10
542			min	-49.006	1	-156.654	4	-245.144	2	-.199	2	-.079	4	-.037	2
543		2	max	65.546	2	130.894	3	287.541	1	.265	10	.09	3	.027	1
544			min	-49.006	1	-156.654	4	-245.144	2	-.199	2	-.077	4	-.036	2
545		3	max	65.546	2	130.894	3	287.541	1	.265	10	.09	3	.027	1
546			min	-49.006	1	-156.654	4	-245.144	2	-.199	2	-.075	4	-.036	2
547		4	max	65.546	2	130.894	3	287.541	1	.265	10	.09	3	.028	1
548			min	-49.006	1	-156.654	4	-245.144	2	-.199	2	-.073	4	-.036	2
549		5	max	65.546	2	130.894	3	287.541	1	.265	10	.089	3	.028	1
550			min	-49.006	1	-156.654	4	-245.144	2	-.199	2	-.072	4	-.035	2
551	M56	1	max	5.799	3	120.839	4	81.348	4	.71	1	.166	4	.3	3
552			min	-62.69	8	-165.516	3	-322.792	5	-.513	2	-.161	3	-.303	4
553		2	max	5.799	3	120.839	4	81.348	4	.71	1	.169	4	.306	3
554			min	-62.69	8	-165.516	3	-322.792	5	-.513	2	-.171	3	-.307	4
555		3	max	5.799	3	120.839	4	81.348	4	.71	1	.172	4	.312	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 Mom...	LC
556			min	-62.69	8	-165.516	3	-322.792	5	-.513	2	-.181	3	-.312	4
557		4	max	5.799	3	120.839	4	81.348	4	.71	1	.175	4	.318	3
558			min	-62.69	8	-165.516	3	-322.792	5	-.513	2	-.191	3	-.317	4
559		5	max	5.799	3	120.839	4	81.348	4	.71	1	.178	4	.324	3
560			min	-62.69	8	-165.516	3	-322.792	5	-.513	2	-.201	3	-.321	4
561	M57	1	max	1380.434	4	1162.609	7	1102.113	1	.866	3	.277	3	.011	4
562			min	-1341.24	3	240.838	4	-922.681	2	-.515	4	-.281	4	-.008	3
563		2	max	1380.434	4	1162.609	7	1102.113	1	.866	3	.258	3	.002	4
564			min	-1341.24	3	240.838	4	-922.681	2	-.515	4	-.255	4	-.04	6
565		3	max	1380.434	4	1162.609	7	1102.113	1	.866	3	.239	3	-.007	4
566			min	-1341.24	3	240.838	4	-922.681	2	-.515	4	-.229	4	-.084	7
567		4	max	1380.434	4	1162.609	7	1102.113	1	.866	3	.22	3	-.017	4
568			min	-1341.24	3	240.838	4	-922.681	2	-.515	4	-.204	4	-.127	7
569		5	max	1380.434	4	1162.609	7	1102.113	1	.866	3	.201	3	-.026	4
570			min	-1341.24	3	240.838	4	-922.681	2	-.515	4	-.178	4	-.171	7
571	M58	1	max	70.884	4	71.045	2	256.857	3	.374	4	.118	1	.08	3
572			min	-74.357	3	-306.408	5	-157.259	4	-.464	3	-.101	2	-.078	4
573		2	max	70.884	4	71.045	2	256.857	3	.374	4	.118	1	.08	3
574			min	-74.357	3	-306.408	5	-157.259	4	-.464	3	-.098	2	-.072	4
575		3	max	70.884	4	71.045	2	256.857	3	.374	4	.119	1	.081	3
576			min	-74.357	3	-306.408	5	-157.259	4	-.464	3	-.094	2	-.066	4
577		4	max	70.884	4	71.045	2	256.857	3	.374	4	.12	1	.082	3
578			min	-74.357	3	-306.408	5	-157.259	4	-.464	3	-.091	2	-.06	4
579		5	max	70.884	4	71.045	2	256.857	3	.374	4	.12	1	.083	3
580			min	-74.357	3	-306.408	5	-157.259	4	-.464	3	-.088	2	-.054	4
581	M59	1	max	221.895	4	534.55	5	326.451	4	.279	4	.137	2	.019	3
582			min	-218.39	3	-7.203	2	-425.8	3	-.488	3	-.154	1	-.018	4
583		2	max	221.895	4	534.55	5	326.451	4	.279	4	.125	2	.016	3
584			min	-218.39	3	-7.203	2	-425.8	3	-.488	3	-.145	1	-.026	4
585		3	max	221.895	4	534.55	5	326.451	4	.279	4	.112	2	.013	3
586			min	-218.39	3	-7.203	2	-425.8	3	-.488	3	-.137	1	-.041	8
587		4	max	221.895	4	534.55	5	326.451	4	.279	4	.1	2	.01	3
588			min	-218.39	3	-7.203	2	-425.8	3	-.488	3	-.129	1	-.06	8
589		5	max	221.895	4	534.55	5	326.451	4	.279	4	.088	2	.007	3
590			min	-218.39	3	-7.203	2	-425.8	3	-.488	3	-.12	1	-.08	8
591	M60	1	max	27.672	2	120.569	4	241.26	3	.274	4	.115	3	.065	2
592			min	-30.751	9	-89.733	3	-143.735	4	-.431	3	-.121	4	-.065	1
593		2	max	27.672	2	120.569	4	241.26	3	.274	4	.124	3	.065	2
594			min	-30.751	9	-89.733	3	-143.735	4	-.431	3	-.127	4	-.068	9
595		3	max	27.672	2	120.569	4	241.26	3	.274	4	.133	3	.064	2
596			min	-30.751	9	-89.733	3	-143.735	4	-.431	3	-.132	4	-.071	9
597		4	max	27.672	2	120.569	4	241.26	3	.274	4	.142	3	.064	2
598			min	-30.751	9	-89.733	3	-143.735	4	-.431	3	-.138	4	-.073	9
599		5	max	27.672	2	120.569	4	241.26	3	.274	4	.151	3	.065	10
600			min	-30.751	9	-89.733	3	-143.735	4	-.431	3	-.143	4	-.076	9
601	M61	1	max	97.646	4	118.198	3	199.638	4	.171	4	.113	4	.033	3
602			min	-93.954	3	-92.104	4	-297.399	3	-.308	3	-.106	3	-.03	4
603		2	max	97.646	4	118.198	3	199.638	4	.171	4	.12	4	.028	3
604			min	-93.954	3	-92.104	4	-297.399	3	-.308	3	-.117	3	-.026	4
605		3	max	97.646	4	118.198	3	199.638	4	.171	4	.128	4	.024	3
606			min	-93.954	3	-92.104	4	-297.399	3	-.308	3	-.129	3	-.023	4
607		4	max	97.646	4	118.198	3	199.638	4	.171	4	.135	4	.019	3
608			min	-93.954	3	-92.104	4	-297.399	3	-.308	3	-.14	3	-.019	4
609		5	max	97.646	4	118.198	3	199.638	4	.171	4	.143	4	.015	3
610			min	-93.954	3	-92.104	4	-297.399	3	-.308	3	-.151	3	-.016	4
611	M62	1	max	40.485	2	202.053	2	162.616	3	.404	4	.06	3	.114	2
612			min	-57.555	1	-123.278	1	-207.869	4	-.335	3	-.071	4	-.144	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 Mom...	LC
613		2	max	40.485	2	202.053	2	162.616	3	.404	4	.066	3	.106	2
614			min	-57.555	1	-123.278	1	-207.869	4	-.335	3	-.079	4	-.14	1
615		3	max	40.485	2	202.053	2	162.616	3	.404	4	.072	3	.099	2
616			min	-57.555	1	-123.278	1	-207.869	4	-.335	3	-.087	4	-.135	1
617		4	max	40.485	2	202.053	2	162.616	3	.404	4	.078	3	.091	2
618			min	-57.555	1	-123.278	1	-207.869	4	-.335	3	-.094	4	-.13	1
619		5	max	40.485	2	202.053	2	162.616	3	.404	4	.084	3	.084	2
620			min	-57.555	1	-123.278	1	-207.869	4	-.335	3	-.102	4	-.126	1
621	M63	1	max	107.131	3	152.272	1	264.073	4	.233	4	.063	4	.027	4
622			min	-88.713	4	-172.992	2	-218.43	3	-.166	3	-.051	3	-.037	3
623		2	max	107.131	3	152.272	1	264.073	4	.233	4	.073	4	.024	4
624			min	-88.713	4	-172.992	2	-218.43	3	-.166	3	-.06	3	-.034	3
625		3	max	107.131	3	152.272	1	264.073	4	.233	4	.082	4	.022	4
626			min	-88.713	4	-172.992	2	-218.43	3	-.166	3	-.068	3	-.031	3
627		4	max	107.131	3	152.272	1	264.073	4	.233	4	.092	4	.019	4
628			min	-88.713	4	-172.992	2	-218.43	3	-.166	3	-.076	3	-.027	3
629		5	max	107.131	3	152.272	1	264.073	4	.233	4	.102	4	.024	2
630			min	-88.713	4	-172.992	2	-218.43	3	-.166	3	-.084	3	-.032	1
631	M64	1	max	4.798	1	122.977	2	64.216	2	.824	2	.112	3	.201	4
632			min	-63.487	7	-170.669	1	-335.647	8	-.623	1	-.109	4	-.204	3
633		2	max	4.798	1	122.977	2	64.216	2	.824	2	.114	3	.203	4
634			min	-63.487	7	-170.669	1	-335.647	8	-.623	1	-.118	4	-.205	3
635		3	max	4.798	1	122.977	2	64.216	2	.824	2	.116	3	.206	4
636			min	-63.487	7	-170.669	1	-335.647	8	-.623	1	-.127	4	-.206	3
637		4	max	4.798	1	122.977	2	64.216	2	.824	2	.118	3	.208	4
638			min	-63.487	7	-170.669	1	-335.647	8	-.623	1	-.136	4	-.207	3
639		5	max	4.798	1	122.977	2	64.216	2	.824	2	.119	3	.211	4
640			min	-63.487	7	-170.669	1	-335.647	8	-.623	1	-.145	4	-.208	3
641	M65	1	max	892.117	2	1167.145	5	1407.064	2	1.202	1	.294	1	.011	2
642			min	-854.12	1	238.573	2	-1220.743	1	-.848	2	-.3	2	-.009	1
643		2	max	892.117	2	1167.145	5	1407.064	2	1.202	1	.248	1	.002	2
644			min	-854.12	1	238.573	2	-1220.743	1	-.848	2	-.247	2	-.041	5
645		3	max	892.117	2	1167.145	5	1407.064	2	1.202	1	.202	1	-.007	2
646			min	-854.12	1	238.573	2	-1220.743	1	-.848	2	-.194	2	-.085	5
647		4	max	892.117	2	1167.145	5	1407.064	2	1.202	1	.157	1	-.015	2
648			min	-854.12	1	238.573	2	-1220.743	1	-.848	2	-.141	2	-.129	5
649		5	max	892.117	2	1167.145	5	1407.064	2	1.202	1	.145	4	-.024	2
650			min	-854.12	1	238.573	2	-1220.743	1	-.848	2	-.119	3	-.172	5
651	M66	1	max	43.416	2	101.403	1	240.276	1	.51	2	.142	4	.06	4
652			min	-47.152	4	-305.3	6	-138.197	2	-.6	1	-.124	3	-.056	2
653		2	max	43.416	2	101.403	1	240.276	1	.51	2	.146	4	.067	4
654			min	-47.152	4	-305.3	6	-138.197	2	-.6	1	-.124	3	-.056	3
655		3	max	43.416	2	101.403	1	240.276	1	.51	2	.151	4	.074	4
656			min	-47.152	4	-305.3	6	-138.197	2	-.6	1	-.125	3	-.057	3
657		4	max	43.416	2	101.403	1	240.276	1	.51	2	.155	4	.082	4
658			min	-47.152	4	-305.3	6	-138.197	2	-.6	1	-.125	3	-.057	3
659		5	max	43.416	2	101.403	1	240.276	1	.51	2	.159	4	.089	4
660			min	-47.152	4	-305.3	6	-138.197	2	-.6	1	-.126	3	-.058	3
661	M67	1	max	178.747	3	533.548	6	450.816	2	.253	2	.143	3	.019	4
662			min	-171.84	4	-37.926	1	-552.724	1	-.463	1	-.161	4	-.018	3
663		2	max	178.747	3	533.548	6	450.816	2	.253	2	.139	3	.01	1
664			min	-171.84	4	-37.926	1	-552.724	1	-.463	1	-.161	4	-.021	7
665		3	max	178.747	3	533.548	6	450.816	2	.253	2	.134	3	.012	1
666			min	-171.84	4	-37.926	1	-552.724	1	-.463	1	-.16	4	-.04	6
667		4	max	178.747	3	533.548	6	450.816	2	.253	2	.13	3	.013	1
668			min	-171.84	4	-37.926	1	-552.724	1	-.463	1	-.16	4	-.061	6
669		5	max	178.747	3	533.548	6	450.816	2	.253	2	.126	3	.015	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 Mom...	LC
670			min	-171.84	4	-37.926	1	-552.724	1	-.463	1	-.159	4	-.081	6
671	M68	1	max	44.557	9	110.103	2	251.223	1	.274	2	.086	4	.102	9
672			min	-33.512	10	-110.476	9	-152.2	2	-.434	1	-.092	3	-.074	10
673		2	max	44.557	9	110.103	2	251.223	1	.274	2	.089	4	.106	9
674			min	-33.512	10	-110.476	9	-152.2	2	-.434	1	-.092	3	-.077	10
675		3	max	44.557	9	110.103	2	251.223	1	.274	2	.093	4	.11	9
676			min	-33.512	10	-110.476	9	-152.2	2	-.434	1	-.091	3	-.079	10
677		4	max	44.557	9	110.103	2	251.223	1	.274	2	.096	4	.114	9
678			min	-33.512	10	-110.476	9	-152.2	2	-.434	1	-.091	3	-.082	10
679		5	max	44.557	9	110.103	2	251.223	1	.274	2	.099	4	.119	9
680			min	-33.512	10	-110.476	9	-152.2	2	-.434	1	-.09	3	-.085	10
681	M69	1	max	78.186	2	139.566	9	249.253	2	.205	2	.101	3	.038	9
682			min	-75.83	1	-81.212	2	-348.138	1	-.344	1	-.095	4	-.03	2
683		2	max	78.186	2	139.566	9	249.253	2	.205	2	.098	3	.033	9
684			min	-75.83	1	-81.212	2	-348.138	1	-.344	1	-.096	4	-.027	2
685		3	max	78.186	2	139.566	9	249.253	2	.205	2	.095	3	.027	9
686			min	-75.83	1	-81.212	2	-348.138	1	-.344	1	-.097	4	-.024	2
687		4	max	78.186	2	139.566	9	249.253	2	.205	2	.093	3	.022	9
688			min	-75.83	1	-81.212	2	-348.138	1	-.344	1	-.098	4	-.021	2
689		5	max	78.186	2	139.566	9	249.253	2	.205	2	.09	3	.017	1
690			min	-75.83	1	-81.212	2	-348.138	1	-.344	1	-.099	4	-.018	2

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

	Member	Shape	Code Check	Loc...	LC	Shea...	Loc.....		LC	phi*Pn...	phi*Pn...	phi*M...	phi*M...	...	Eqn
1	MP3A	PIPE_2.0X	.944	3.417	1	.116	3.333		4	19844...	44100	2.531	2.531	...	H1-1b
2	M7	L3X3X4	.846	5	3	.153	0	y	2	26816...	46656	1.688	3.656	...	H2-1
3	MP3B	PIPE_2.0X	.821	3.417	3	.148	3.333		3	19844...	44100	2.531	2.531	...	H1-1b
4	MP3C	PIPE_2.0X	.820	3.417	4	.139	3.333		2	19844...	44100	2.531	2.531	...	H1-1b
5	M4A	L3X3X4	.777	5	6	.292	.313	z	9	26816...	46656	1.688	3.756	...	H2-1
6	M1	L3X3X4	.761	5	8	.162	0	y	3	26816...	46656	1.688	3.756	...	H2-1
7	M31	L3X3X4	.562	0	8	.163	5	y	9	26816...	46656	1.688	3.756	...	H2-1
8	M33	L3X3X4	.554	0	6	.264	4.687	z	10	26816...	46656	1.688	3.756	...	H2-1
9	M35	L3X3X4	.550	0	5	.160	5	y	3	26816...	46656	1.688	3.756	...	H2-1
10	M12	L3X3X4	.540	1	4	.076	1	z	4	45633...	46656	1.688	3.756	...	H2-1
11	M14	L3X3X4	.526	0	3	.088	0	z	3	45633...	46656	1.688	3.756	...	H2-1
12	M10A	L3X3X4	.517	1	2	.088	1	z	2	45633...	46656	1.688	3.756	...	H2-1
13	M13	L3X3X4	.496	0	2	.085	0	z	2	45633...	46656	1.688	3.756	...	H2-1
14	M11	L3X3X4	.425	1	1	.071	1	z	3	45633...	46656	1.688	3.756	...	H2-1
15	M15	L3X3X4	.395	0	1	.065	0	z	1	45633...	46656	1.688	3.756	...	H2-1
16	M37	PIPE_2.0	.279	4.818	2	.119	4.688		2	6295....	32130	1.872	1.872	...	H1-1b
17	M38	PIPE_2.0	.261	4.818	3	.129	1.693		2	6295....	32130	1.872	1.872	...	H1-1b
18	MP2A	PIPE_2.0X	.242	3.719	1	.079	3.719		4	23929...	44100	2.531	2.531	...	H1-1b
19	M42	L2.5x2.5x3	.242	1.5	3	.064	1.5	y	2	26721...	29192.4	.873	1.972	...	H2-1
20	M41	L2.5x2.5x3	.239	0	9	.066	1.5	y	1	26721...	29192.4	.873	1.972	...	H2-1
21	M32	L3X3X4	.235	0	9	.015	0	y	8	35367...	46656	1.688	3.699	...	H2-1
22	MP2B	PIPE_2.0X	.230	3.719	3	.076	3.719		3	23929...	44100	2.531	2.531	...	H1-1b
23	MP1A	PIPE_2.0	.227	.802	1	.087	3.719		1	17855...	32130	1.872	1.872	...	H1-1b
24	MP1B	PIPE_2.0	.225	.802	3	.119	3.719		3	17855...	32130	1.872	1.872	...	H1-1b
25	M9	L3X3X4	.224	3.536	10	.014	3.536	y	7	35367...	46656	1.688	3.699	...	H2-1
26	M4	HSS4X4X4	.218	0	1	.131	0	z	1	13452...	139518	16.181	16.181	...	H1-1b
27	M36	L3X3X4	.213	0	5	.015	0	y	5	35367...	46656	1.688	3.756	...	H2-1
28	M34	L3X3X4	.212	0	3	.014	0	y	10	35367...	46656	1.688	3.756	...	H2-1
29	MP4B	PIPE_2.0	.211	.771	1	.065	3.726		1	20365...	32130	1.872	1.872	...	H1-1b
30	MP4A	PIPE_2.0	.210	.802	4	.087	3.719		4	17855...	32130	1.872	1.872	...	H1-1b
31	M5	HSS4X4X4	.208	0	4	.128	0	z	4	13452...	139518	16.181	16.181	...	H1-1b

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

	Member	Shape	Code Check	Loc...	LC	Shea...	Loc.....		LC	phi*Pn...	phi*Pn...	phi*M...	phi*M...	...	Eqn
32	M39	PIPE_2.0	.203	4.688	1	.151	1.693		4	6295....	32130	1.872	1.872	...	H1-1b
33	MP2C	PIPE_2.0X	.196	3.719	4	.085	3.719		2	23929...	44100	2.531	2.531	...	H1-1b
34	M10	L3X3X4	.196	3.536	1	.014	3.536	z	1	35367...	46656	1.688	3.756	...	H2-1
35	M6	L3X3X4	.194	3.536	9	.014	3.536	y	6	35367...	46656	1.688	3.718	...	H2-1
36	MP1C	PIPE_2.0	.194	3.719	4	.101	3.719		2	17855...	32130	1.872	1.872	...	H1-1b
37	MP4C	PIPE_2.0	.181	.802	3	.072	3.719		2	17855...	32130	1.872	1.872	...	H1-1b
38	M40	L2.5x2.5x3	.173	1.5	1	.077	1.5	y	3	26721...	29192.4	.873	1.972	...	H2-1
39	M8	HSS4X4X4	.146	0	1	.094	0	z	2	13452...	139518	16.181	16.181	...	H1-1b
40	M17	LL3x3x4x0	.106	2.268	1	.028	2.268	y	9	82208...	93312	6.48	3.069	...	H1-1b
41	M18	LL3x3x4x0	.097	2.268	4	.023	2.268	y	10	82208...	93312	6.48	3.069	...	H1-1b
42	M16	LL3x3x4x0	.088	0	4	.021	2.268	z	4	82208...	93312	6.48	3.069	...	H1-1b
43	M43	LL2.5x2.5x3x0	.086	3.606	6	.005	3.606	z	3	47262...	58320	3.3	2.55	1	H1-1b*
44	M45	LL2.5x2.5x3x0	.085	3.606	8	.004	3.606	z	2	47262...	58320	3.3	2.55	...	H1-1b*
45	M44	LL2.5x2.5x3x0	.085	3.606	7	.003	0	z	1	47262...	58320	3.3	2.55	...	H1-1b*

EXHIBIT 9

MODIFICATION AND DESIGN DRAWINGS FOR EXISTING ANTENNA MOUNTS 180' MONOPOLE TOWER

PROPOSED CARRIER: T-MOBILE

TOWER OWNER: SBA / TOWER OWNER SITE #: CT02218-S

CARRIER SITE #/NAME: CT11338A / COLCHESTER

COORDINATES (LATITUDE: 41.590161°, LONGITUDE: -72.401467°)

NOTE:

1. THE MODIFICATION DRAWINGS ARE BASED ON THE **TES** PROJECT NO. **77626**, DATED **06/28/2019**.

SHEET	SHEET TITLE	REV
T-1	TITLE SHEET	0
BOM	BILL OF MATERIALS	0
GN-1	GENERAL NOTES	0
A-1	ANTENNA MOUNT MODIFICATION DETAILS	0
A-2	ANTENNA MOUNT PHOTOS	0
D-1	STANDARD DETAILS	0
HRK12-U	SITE PRO UNIVERSAL HANDRAIL KIT	
PRK-1245LW	SITE PRO PLATFORM REINFORCEMENT KIT	

TES

Tower Engineering Solutions

1320 GREENWAY DRIVE, SUITE 600
IRVING, TX 75038
PH: (972) 483-0607

SBA

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

TES JOB NO:
81788

CUSTOMER SITE NO:
CT02218-S-SBA

CUSTOMER SITE NAME:
COLCHESTER

48 WESTCHESTER ROAD
COLCHESTER, CT 06415

STATE OF CONNECTICUT
HANMING YOU
28931
LICENSED PROFESSIONAL ENGINEER

7/26/19

DRAWN BY: BS | CHECKED BY: ID/HMA

REV	DESCRIPTION	BY	DATE
0	FIRST ISSUE	BS	07/26/19

SHEET TITLE:

TITLE SHEET

SHEET NUMBER: T-1

REV #: 0

BILL OF MATERIALS

QUANTITY COUNTED	QUANTITY PROVIDED	PART NUMBER	DESCRIPTIONS	SHEET LIST	PIECE WEIGHT (LBS)	WEIGHT (LB)	NOTES
			MATERIAL & HARDWARE				
			FOLLOWING ITEMS ARE "CUSTOM" PARTS				
1	1	HRK12-U	SITE PRO UNIVERSAL HANDRAIL KIT	A-1	302.21	302.2	GALVANIZED
1	1	PRK-1245LW	SITE PRO PLATFORM REINFORCEMENT KIT	A-1	564.12	564.1	GALVANIZED
			ALL METROSITE PARTS ARE AVAILABLE FROM METROSITE, LLC. **180 IND PARK BLVD COMMERCE, GA 30529** **OFFICE: (706) 335-7045** **FAX: (706) 335-7056**				
			NOTE: ALL MATERIALS, WHICH WEREN'T LISTED IN THIS SHEET, ARE ASSUMED TO BE PROVIDED BY THE CONTRACTOR.				
				TOTAL WEIGHT (LBS) =		**866.3**	

TES
Tower Engineering Solutions
1320 GREENWAY DRIVE, SUITE 600
IRVING, TX 75038
PH: (972) 483-0607

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

TES JOB NO:
81788

CUSTOMER SITE NO:
CT02218-S-SBA
CUSTOMER SITE NAME:
COLCHESTER
48 WESTCHESTER ROAD
COLCHESTER, CT 06415

DRAWN BY: BS | CHECKED BY: ID/HMA

REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	BS	07/26/19

SHEET TITLE:
BILL OF MATERIALS

SHEET NUMBER: BOM
REV #: 0

GENERAL NOTES

1. ALL WORK SHALL COMPLY WITH THE ANSI/TIA-222-G, ANSI/ASSP A10.48, 2018 CONNECTICUT STATE BUILDING CODE AND ANY OTHER GOVERNING BUILDING CODES AND OSHA SAFETY REGULATIONS.
2. ALL WORK INDICATED ON THE DRAWINGS SHALL BE PERFORMED BY QUALIFIED CONTRACTORS EXPERIENCED IN TELECOMMUNICATIONS TOWER, POLE AND FOUNDATION CONSTRUCTION.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND FABRICATION OF ALL MISCELLANEOUS PARTS (SUCH AS SHIMS), TEMPORARY SUPPORTS, AND GUYINGS, ETC., PER ANSI/ASSP A10.48, TO COMPLETE THE ASSEMBLY AS SHOWN IN THE DRAWINGS.
4. CONTRACTOR SHALL PROCEED WITH THE INSTALLATION WORK CAREFULLY SO THE WORK WILL NOT DAMAGE ANY EXISTING CABLE, EQUIPMENT OR THE STRUCTURE.
5. THE USE OF GAS TORCH OR WELDER, ARE NOT ALLOWED ON ANY TOWER STRUCTURE WITHOUT THE CONSENT OF THE TOWER OWNER.
6. GENERALLY THE CONTRACTOR IS RESPONSIBLE TO CONDUCT AN ONSITE VISIT SURVEY OF THE JOB SITE AFTER AWARD, AND REPORT ANY ISSUES WITH THE SITE TO **TES** BEFORE PROCEEDING CONSTRUCTION.
7. IT IS THE RESPONSIBILITY OF THE GC TO VERIFY THAT THERE IS NO INTERFERENCES (WITH SAFETY CLIMB BRACKETS, TRANSMISSION LINES, ETC.) PRIOR TO MOBILIZATION AND INSTALLATION OF THESE MODIFICATIONS.
8. PLEASE NOTIFY TES IMMEDIATELY IF ANY INSTALLATION ISSUES OCCUR RELATED TO THIS DRAWING @ 972-483-0607 OR EMAIL-TESCONSTRUCTION@TESTOWER.US

FABRICATION

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

WELDING

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

BOLTED ASSEMBLIES AND TIGHTENING OF CONNECTIONS

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

VERIFICATION AND INSPECTION

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

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

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

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

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

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

[d] BEVELED WASHER NOT USED.

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

INSTALLATION TORQUE REQUIRED FOR HOLLO BOLTS AND AJAX BOLTS:

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

FIELD HOT WORK PLAN NOTES:

FOLLOWING GUIDELINES SHALL BE COMPLIED WITH:

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

TES
Tower Engineering Solutions
1320 GREENWAY DRIVE, SUITE 600
IRVING, TX 75038
PH: (972) 483-0607

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

TES JOB NO:
81788

CUSTOMER SITE NO:
CT02218-S-SBA

CUSTOMER SITE NAME:
COLCHESTER

48 WESTCHESTER ROAD
COLCHESTER, CT 06415

DRAWN BY: BS | CHECKED BY: ID/HMA

REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	BS	07/26/19

SHEET TITLE:
GENERAL NOTES

SHEET NUMBER: GN-1

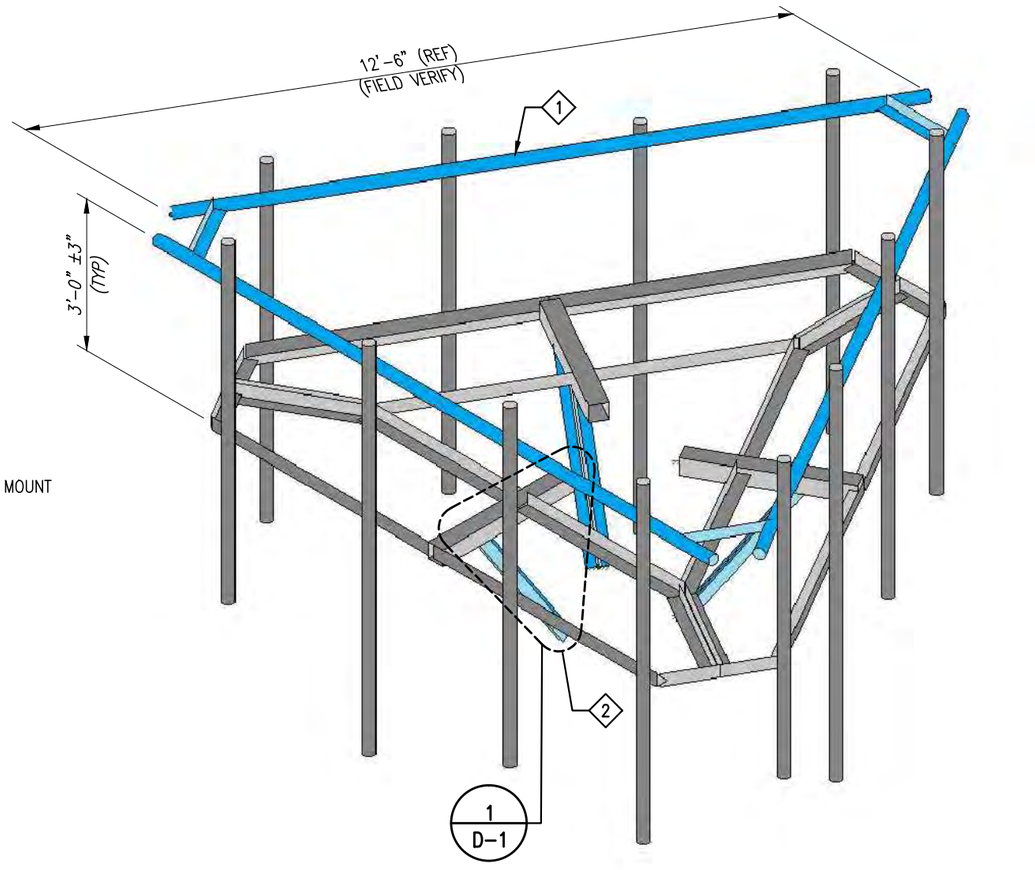
REV #: 0

SCOPE OF WORK

1. INSTALL NEW SITE PRO UNIVERSAL HANDRAIL KIT WITH END CONNECTION KIT. SEE SHEET HRK12-U FOR DETAILS.
2. INSTALL SITE PRO PLATFORM REINFORCEMENT KIT. SEE SHEETS D-1 & PRK-1245LW FOR DETAILS.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CLEAN-UP, REMOVAL AND DISPOSAL OF EXCESS MATERIALS USED AND REMOVED FROM THE STRUCTURE AT THE COMPLETION OF THE PROJECT.

EXISTING ANTENNA MOUNT
@ 177' ELEV

PHOTO 1



ISOMETRIC VIEW
EXISTING ANTENNA MOUNT @ 177' ELEV.

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

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

ITEM NO.	QTY.	PART NO.	DESCRIPTIONS
1	1	HRK12-U	SITE PRO UNIVERSAL HANDRAIL KIT
2	1	PRK-1245LW	SITE PRO PLATFORM REINFORCEMENT KIT

TES
Tower Engineering Solutions
1320 GREENWAY DRIVE, SUITE 600
IRVING, TX 75038
PH: (972) 483-0607

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

TES JOB NO:
81788

CUSTOMER SITE NO:
CT02218-S-SBA

CUSTOMER SITE NAME:
COLCHESTER

48 WESTCHESTER ROAD
COLCHESTER, CT 06415

DRAWN BY: BS | CHECKED BY: ID/HMA

REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	BS	07/26/19

SHEET TITLE:
ANTENNA MOUNT MODIFICATION DETAILS

SHEET NUMBER: A-1

REV #: 0

REMOVE EXISTING HORIZONTAL PIPE

PHOTO 1

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

PHOTO 2

PHOTO 3

TES
Tower Engineering Solutions
1320 GREENWAY DRIVE, SUITE 600
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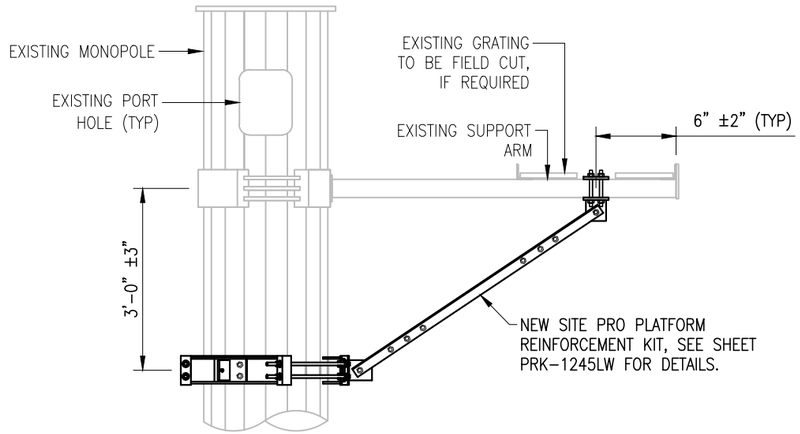
REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	BS	07/26/19

SHEET TITLE:

ANTENNA MOUNT PHOTOS

SHEET NUMBER: A-2

REV #: 0



1 / D-1 DETAIL

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

TES
Tower Engineering Solutions
1320 GREENWAY DRIVE, SUITE 600
IRVING, TX 75038
PH: (972) 483-0607

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

TES JOB NO:
81788

CUSTOMER SITE NO:
CT02218-S-SBA

CUSTOMER SITE NAME:
COLCHESTER

48 WESTCHESTER ROAD
COLCHESTER, CT 06415

DRAWN BY: BS | CHECKED BY: ID/HMA

REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	BS	07/26/19

SHEET TITLE:

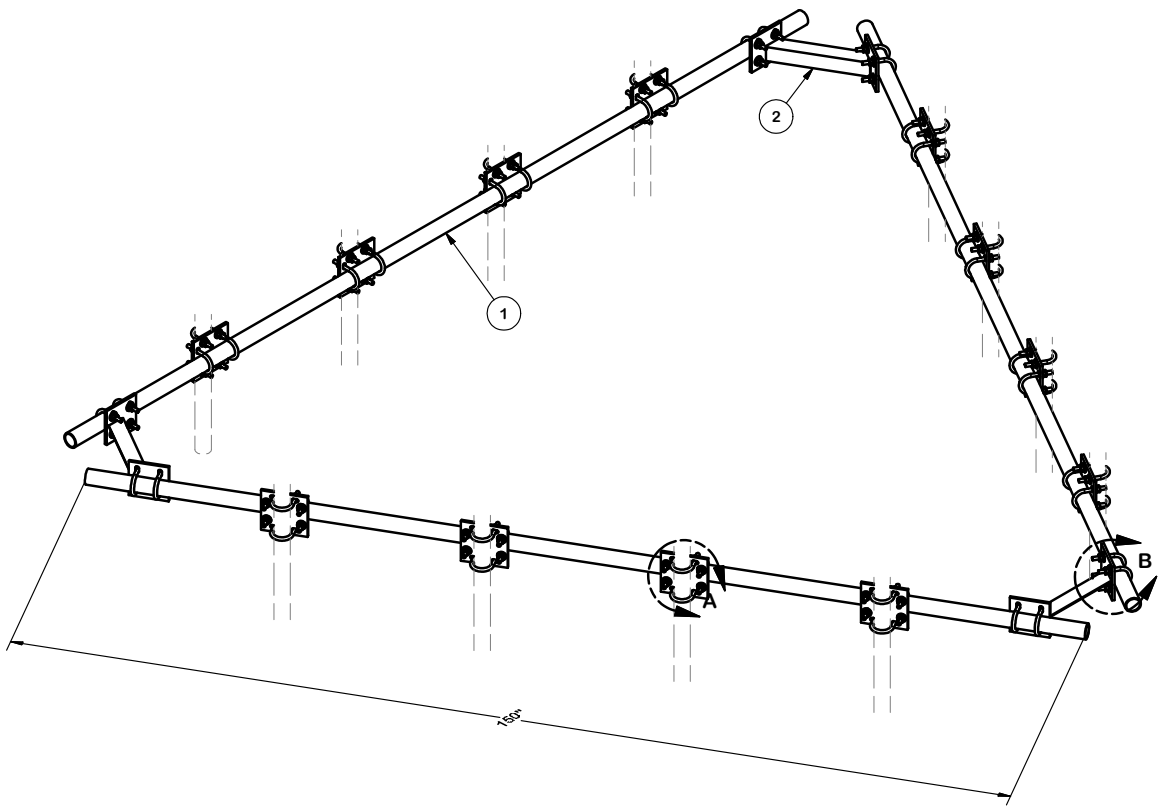
STANDARD DETAILS

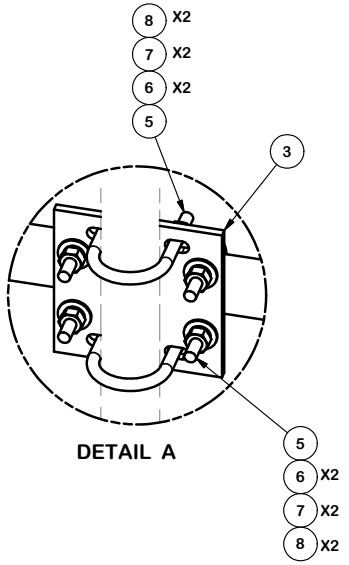
SHEET NUMBER: D-1

REV #: 0

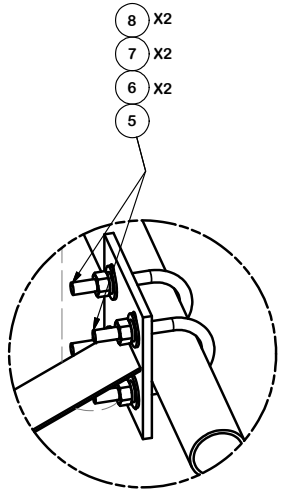
THE FOLLOWING DRAWINGS ARE INCLUDED FOR REFERENCE ONLY
PLEASE REFER TO THE INSTALLATION DRAWINGS FOR ACTUAL INSTALLATION DETAILS

PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	3	P2150	2-3/8" OD X 150" SCH 40 GALVANIZED PIPE	150 in	45.77	137.31
2	3	X-AHCP	ANGLE HANDRAIL CORNER PLATE		12.92	38.76
3	12	SCX2	CROSSOVER PLATE	7 in	4.80	57.56
4	24	X-UB1300	1/2" X 3" X 5" X 2" U-BOLT (HDG.)		0.73	17.56
5	60	X-UB1212	1/2" X 2-1/2" X 4-1/2" X 2" U-BOLT (HDG.)		0.73	43.90
6	120	G12FW	1/2" HDG USS FLATWASHER		0.03	4.09
7	120	G12LW	1/2" HDG LOCKWASHER		0.01	1.67
8	120	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	8.60
					TOTAL WT. #	302.21





DETAIL A



DETAIL B

TOLERANCE NOTES

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

DESCRIPTION
UNIVERSAL HANDRAIL KIT
FOR 12' PLATFORM
2-3/8" & 2-7/8" ANTENNA PIPES

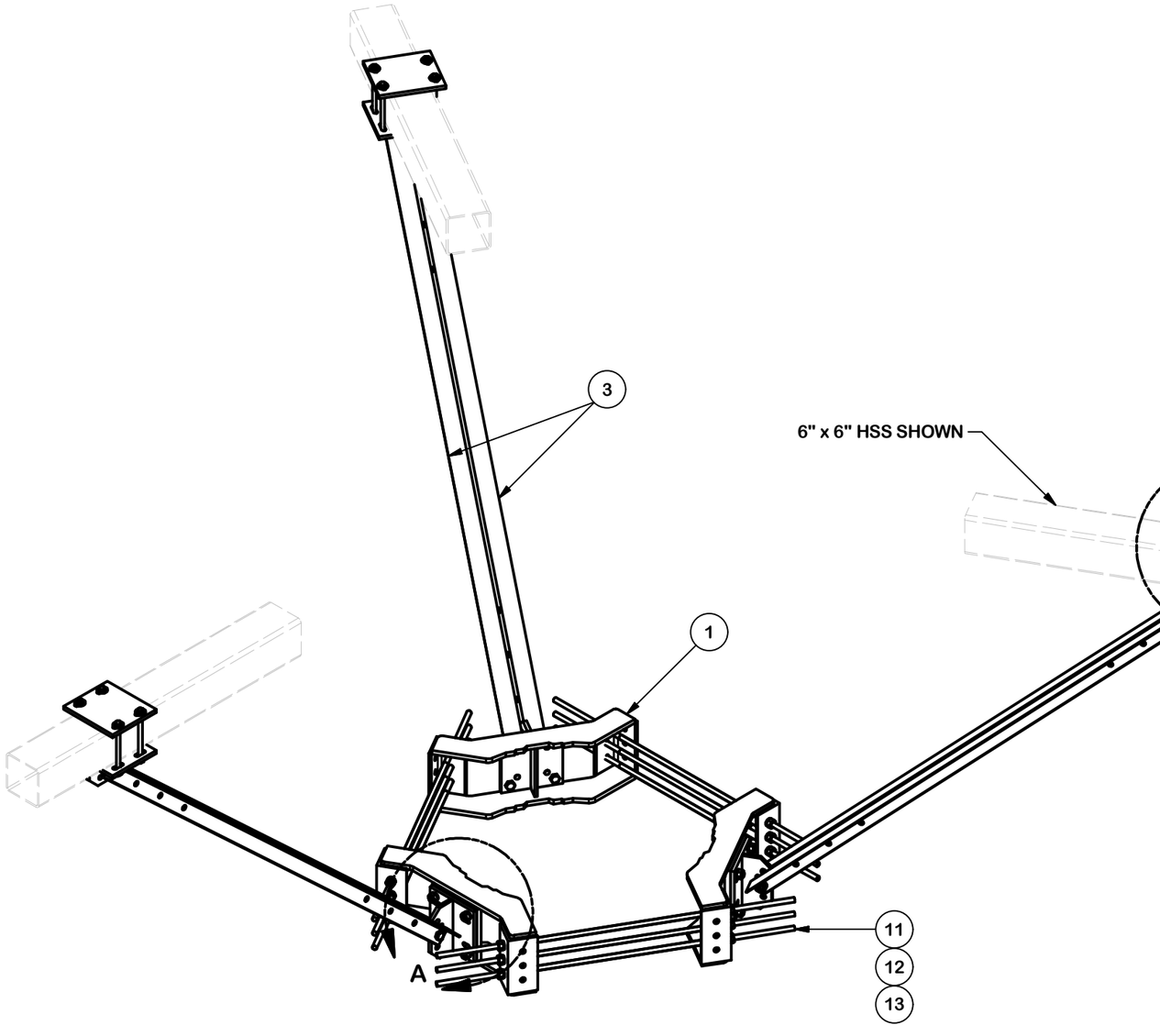
SITE PRO 1 — A valmont COMPANY

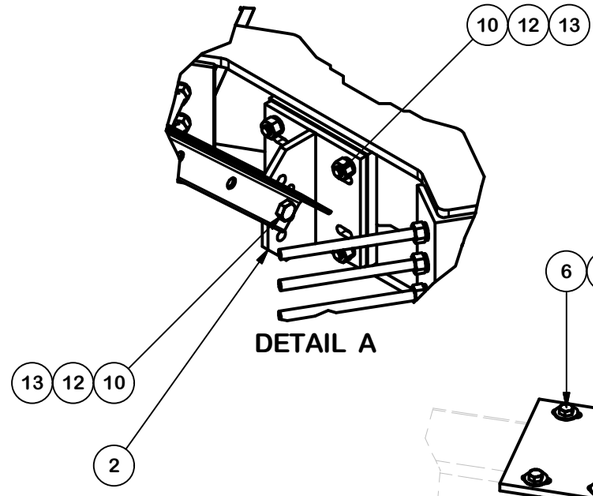
Engineering Support Team: 1-888-753-7446

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

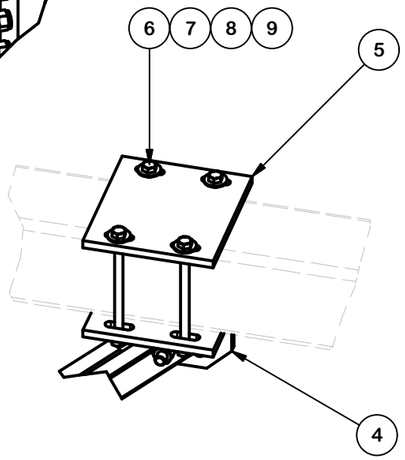
CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.	PAGE
	CEK 3/9/2015		HRK12-U	1 OF 1
CLASS / SUB	DRAWING USAGE	CHECKED BY	DWG. NO.	
81 / 01	CUSTOMER	BMC 3/10/2015	HRK12-U	

PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	3	X-LWRM	RING MOUNT WELDMENT		68.81	206.42
2	3	X-TBW	T-BRACKET WELDMENT		13.60	40.80
3	6	X-254923	PLATFORM REINFORCEMENT KIT ANGLE	84 in	22.83	137.00
4	3	X-TBWW	T-BRACKET WELDMENT (WIDE)		14.86	44.57
5	3	265374	WIDE CROSSOVER PLATE	8 in	9.70	29.11
6	12	G1208	1/2" x 8" HDG HEX BOLT GR5 FULL THREAD	8 in	0.49	5.92
7	24	G12FW	1/2" HDG USS FLATWASHER	3/32 in	0.03	0.82
8	12	G12LW	1/2" HDG LOCKWASHER	1/8 in	0.01	0.17
9	12	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	0.86
10	18	A582114	5/8" x 2-1/4" HDG A325 HEX BOLT	2 1/4 in	0.31	5.62
11	9	G58R-24	5/8" x 24" THREADED ROD (HDG.)	24 in	0.40	3.59
11	9	G58R-48	5/8" x 48" THREADED ROD (HDG.)	48 in	0.40	3.59
12	36	G58LW	5/8" HDG LOCKWASHER		0.03	0.94
13	36	G58NUT	5/8" HDG HEAVY 2H HEX NUT		0.13	4.68
					TOTAL WT. #	564.12





DETAIL A



DETAIL B

TOLERANCE NOTES

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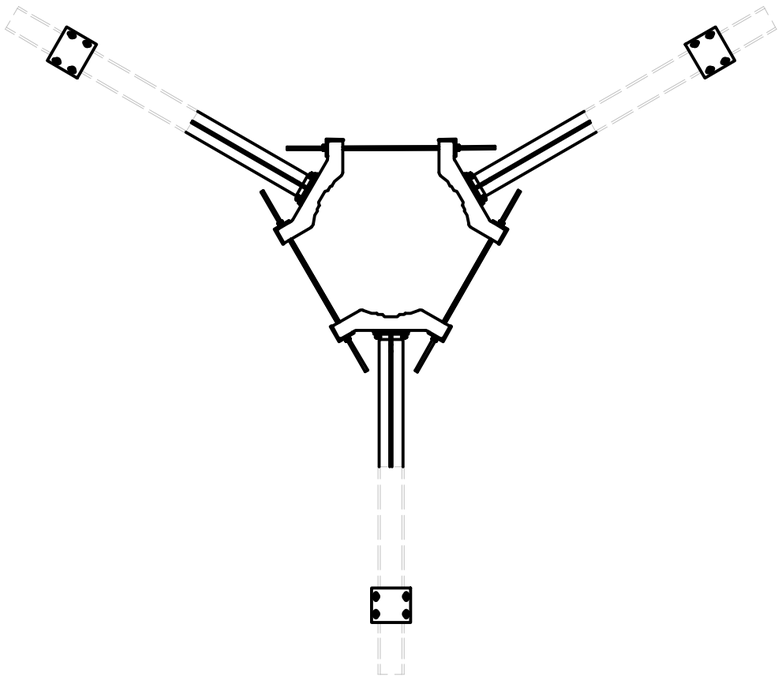
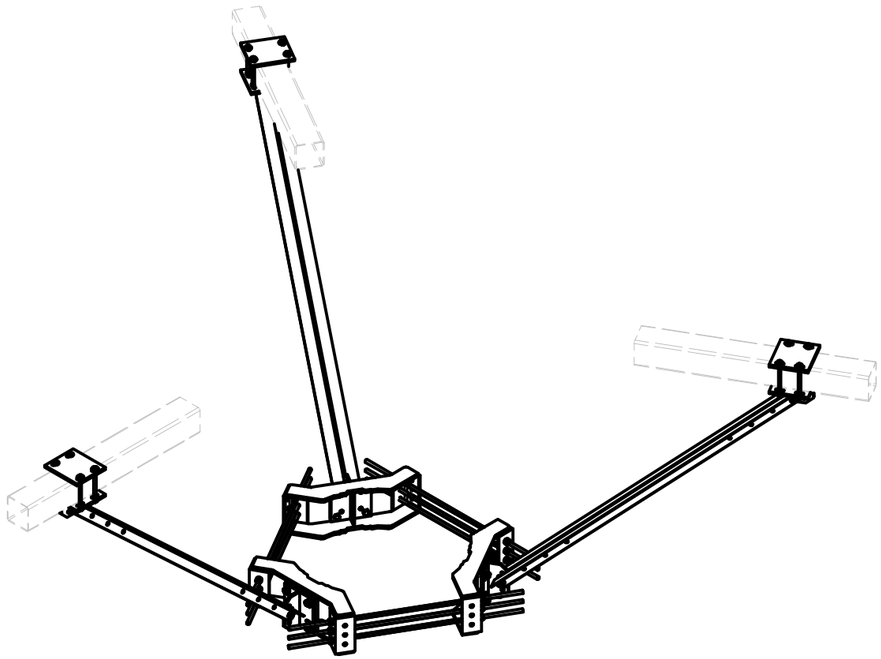
DRILLED AND GAS CUT HOLES (± 0.030") - NO CONING OF HOLES
LASER CUT EDGES AND HOLES (± 0.010") - NO CONING OF HOLES
BENDS ARE ± 1/2 DEGREE
ALL OTHER MACHINING (± 0.030")
ALL OTHER ASSEMBLY (± 0.060")

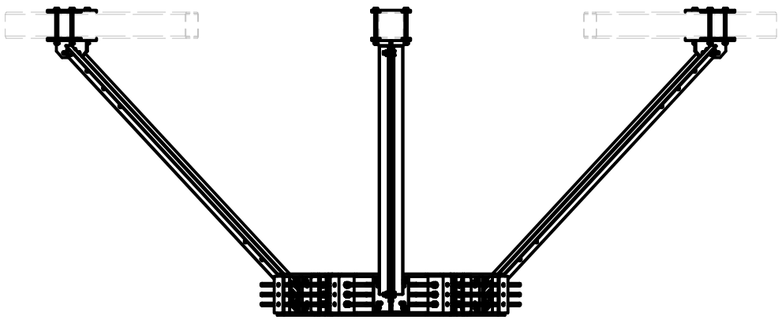
DESCRIPTION
PLATFORM REINFORCEMENT KIT
FOR 14' PLATFORMS ON A 12" T0 45" POLE
(WIDE STANDOFF)

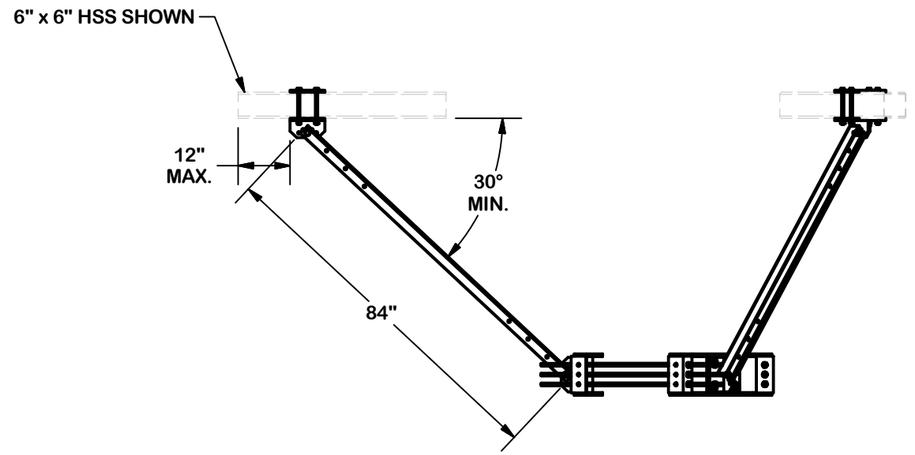
SITE PRO 1
A valmont COMPANY
Engineering Support Team: 1-888-753-7446
Locations:
New York, NY
Atlanta, GA
Los Angeles, CA
Plymouth, IN
Salem, OR
Dallas, TX

CPD NO.		DRAWN BY	ENG. APPROVAL	PART NO.	
		CSL 7/25/2017	3RD PARTY	PRK-1245LW	
CLASS	SUB	DRAWING USAGE	CHECKED BY	DWG. NO.	
81	02	CUSTOMER	BMC 7/25/2017	PRK-1245LW	









TOLERANCE NOTES

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

DESCRIPTION
PLATFORM REINFORCEMENT KIT
FOR 14' PLATFORMS ON A 12" T0 45" POLE
(WIDE STANDOFF)

SITE PRO 1
A valmont COMPANY
Engineering Support Team: 1-888-753-7446
Locations:
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CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.
	CSL 7/25/2017	3RD PARTY	PRK-1245LW

CLASS	SUB	DRAWING USAGE	CHECKED BY	DWG. NO.
81	02	CUSTOMER	BMC 7/25/2017	PRK-1245LW

EXHIBIT 10

EBI Consulting

environmental | engineering | due diligence

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

T-Mobile Existing Facility

Site ID: CT11338A

Route 2 / Colchester West / SBA
48 Westchester Road
Colchester, Connecticut 06415

June 2, 2021

EBI Project Number: 6221002767

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**6.59%**

June 2, 2021

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

Emissions Analysis for Site: CT11338A - Route 2 / Colchester West / SBA

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **48 Westchester Road** in **Colchester, Connecticut** for the purpose of determining whether the emissions from the Proposed T-Mobile Antenna Installation located on this property are within specified federal limits.

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

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

General population/uncontrolled exposure limits apply to situations in which the general population may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general population would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limits for the 600 MHz and 700 MHz frequency bands are approximately 400 $\mu W/cm^2$ and 467 $\mu W/cm^2$, respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 11 GHz frequency bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at 48 Westchester Road in Colchester, Connecticut using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report, the sample point is the top of a 6-foot person standing at the base of the tower.

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

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

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

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

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

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

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

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

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

9) The antennas used in this modeling are the RFS APXV18-206516S-C-A20 for the 1900 MHz / 1900 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 2100 MHz channel(s) in Sector A, the RFS APXV18-206516S-C-A20 for the 1900 MHz / 1900 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 2100 MHz channel(s) in Sector B, the RFS APXV18-206516S-C-A20 for the 1900 MHz / 1900 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 2100 MHz channel(s) in Sector C. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

10) The antenna mounting height centerline of the proposed antennas is 177 feet above ground level (AGL).

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

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

T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	RFS APXV18-206516S-C-A20	Make / Model:	RFS APXV18-206516S-C-A20	Make / Model:	RFS APXV18-206516S-C-A20
Frequency Bands:	1900 MHz / 1900 MHz	Frequency Bands:	1900 MHz / 1900 MHz	Frequency Bands:	1900 MHz / 1900 MHz
Gain:	16.3 dBd / 16.3 dBd	Gain:	16.3 dBd / 16.3 dBd	Gain:	16.3 dBd / 16.3 dBd
Height (AGL):	177 feet	Height (AGL):	177 feet	Height (AGL):	177 feet
Channel Count:	6	Channel Count:	6	Channel Count:	6
Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts
ERP (W):	10,237.91	ERP (W):	10,237.91	ERP (W):	10,237.91
Antenna A1 MPE %:	**1.26%**	Antenna B1 MPE %:	**1.26%**	Antenna C1 MPE %:	**1.26%**
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	RFS APXVAALL24_43-U-NA20	Make / Model:	RFS APXVAALL24_43-U-NA20	Make / Model:	RFS APXVAALL24_43-U-NA20
Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 2100 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 2100 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 2100 MHz
Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 16.45 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 16.45 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 16.45 dBd
Height (AGL):	177 feet	Height (AGL):	177 feet	Height (AGL):	177 feet
Channel Count:	7	Channel Count:	7	Channel Count:	7
Total TX Power (W):	320 Watts	Total TX Power (W):	320 Watts	Total TX Power (W):	320 Watts
ERP (W):	9,450.67	ERP (W):	9,450.67	ERP (W):	9,450.67
Antenna A2 MPE %:	**1.87%**	Antenna B2 MPE %:	**1.87%**	Antenna C2 MPE %:	**1.87%**

Site Composite MPE %	
Carrier	**MPE %**
T-Mobile (Max at Sector A):	3.13%
Verizon	1.95%
AT&T	1.51%
Site Total MPE % :	6.59%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	3.13%
T-Mobile Sector B Total:	3.13%
T-Mobile Sector C Total:	3.13%
Site Total MPE % :	6.59%

T-Mobile Maximum MPE Power Values (Sector A)

T-Mobile Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density (μW/cm²)	Frequency (MHz)	Allowable MPE (μW/cm²)	Calculated % MPE
T-Mobile 1900 MHz GSM	4	1279.74	177.0	6.29	1900 MHz GSM	1000	0.63%
T-Mobile 1900 MHz LTE	2	2559.48	177.0	6.29	1900 MHz LTE	1000	0.63%
T-Mobile 600 MHz LTE	2	591.73	177.0	1.46	600 MHz LTE	400	0.36%
T-Mobile 600 MHz NR	1	1577.94	177.0	1.94	600 MHz NR	400	0.49%
T-Mobile 700 MHz LTE	2	695.22	177.0	1.71	700 MHz LTE	467	0.37%
T-Mobile 2100 MHz LTE	2	2649.42	177.0	6.51	2100 MHz LTE	1000	0.65%
						Total:	**3.13%**

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

Summary

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

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

T-Mobile Sector	Power Density Value (%)
Sector A:	3.13%
Sector B:	3.13%
Sector C:	3.13%
T-Mobile Maximum MPE % (Sector A):	3.13%
Site Total:	6.59%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **6.59%** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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