Filed by:
G. Scott Shepherd, Site Development Specialist II - 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

Notice of Exempt Modification
2895 State St., Hamden, CT 06517
Latitude: 41.360008
Longitude: -72.885694
T-Mobile #: CT11611B_Anchor

Dear Ms. Bachman:

T-Mobile currently maintains six (6) antennas at the 128-foot level of the existing 136-foot Monopole Tower at 2895 State Street, Hamden, CT. The tower is owned by SBA 2012 TC Assets, LLC. The property is owned by Joseph J. Farricelli. T-Mobile plans to remove six (6) antennas and replace with six (6) new 2100/2500MHz. The total amount of antennas will remain at six (6).

- **The new antennas would support 5G services and would be installed at the 128-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) Ericsson AIR21 B2A/B4P (remove) – (3) Ericsson AIR6449 B41 2500 MHz Antenna (replace)
- (3) AIR32 KRD901146-1_B66A_B2A (remove) – (3) RFS APX16DWV-16WVS-E-A20 2100MHzz antenna (replace)
- (1) 1-5/8" Fiber (remove) – (1) 1.9" fiber (replace)

Install New:

- (3) Ericsson 4424 B25 RRU
- (3) Ericsson 4415 B66A RRU

Existing Equipment to Remain:

- (3) RFS APXVAARR24_43-U-NA20 600/700/1900 MHz antennas
- (1) SitePro Low Profile Platform w/handrail kit (RMQP-496-HK)
- (3) Ericsson 4449 B71+B12 RRU
- (2) 1/1/4" Hybrid (HCS)

Entitlements:

- (12) 1-5/8" Coax
- (3) Ericsson KRY 112 144/2 TMA

GROUND

Remove:

- (1) Nortel Cabinet

Install New:

- (4) 2" RGS Conduits
- (1) Ericsson 6160 cabinet
- (1) Ericsson B160 Battery cabinet

Existing Equipment to Remain:

- (1) 15' x 15" Concrete pad
- (1)" Coax for GPS antenna
- T-Mobile 6131 Cabinet
- Existing Ice Bridge
- T-Mobile 200 AMP PPC

This facility was approved by the Town of Hamden's Planning & Zoning Commission under Special Permit and Site Plan #99-887. Although the original Zoning Approval could not be located, the attached Bond Release approval provided by the Town of Hamden and issued by the Town of Hamden's Zoning Enforcement Officer dated September 10, 2009 provided reference to the aforementioned Special Permit & Site Plan Approval. Also enclosed is approval from the Connecticut Siting Council (CSC) EM-T-MOBILE-062-090316 for a notice of intent to modify an existing telecommunications facility for this site located at 2895 State Street, Hamden CT., issued by the CSC on April 28, 2009. There were no post construction stipulations made. 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 Hamden's Mayor Curt Leng, Acting Town Planner Erik Johnson, as well as to the property owner, Joseph J. Farricelli (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
Site Development Specialist II
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: Curt Leng, Mayor / with attachments
Town of Hamden, 2750 Dixwell Ave., Hamden, CT 06518
Erik Johnson, Acting Town Planner / with attachments
Town of Hamden, 2750 Dixwell Ave., Hamden, CT 06518
Joseph J. Farricelli / with attachments
104 Cherry Hill Rd., Branford, CT 06405

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 Hamden P&Z (10/27/99), CSC (4/28/09)
Exhibit 6	Construction Drawings	Chappell Engineering 5/5/21
Exhibit 7	Structural Analysis	TES 5/20/21
Exhibit 8	Mount Analysis	TES 4/26/21
Exhibit 10	EME Report	EBI Consulting 5/28/21

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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EXHIBIT 3

TOWN OF HAMDEN, CONNECTICUT
GEOGRAPHIC & PROPERTY INFORMATION NETWORK

2750 DIXWELL AVENUE
HAMDEN, CT 06518
203-287-2500
E-MAIL: GENERAL INFORMATION

MAIN MENU
- GIS HOME
- GIS PROPERTY MAP SEARCH
- TOWN WIDE MAP GALLERY
- TOWN GRID MAPS
- INTERACTIVE MAPPING
- HELP

PROPERTY INFO DATA UPDATED
Nightly
CURRENT PARCEL COUNT
16,754 +/-

SUMMARY PARCEL INFORMATION & MAP DOCUMENTS

Detailed Parcel Information

Parcel No
2432-021-00-0000

Unique ID
100130

Account
100130

Owner
FARRICIELLI JOSEPH J

Location
2895 STATE ST

MAILING ADDRESS
104 CHERRY HILL RD
BRANFORD CT 06405

Scroll Down For Complete Property Detail

Click on the BING logo to go to a Big Map!

Parcel Documents

Create Parcel Map | Property Summary Card

Full Size Assessor Maps

Full Assessor Map

Interactive GIS Maps of Property

GO TO VIRTUAL EARTH BIRDS EYE!

GO TO INTERACTIVE MAP!

Once in Interactive Map, Select Parcel and enter Abutters distance.

PARCEL VALUATIONS

	Appraised Value	Assessed Value
Buildings	185500	129850
Outbuildings	32300	22610
Improvements	219000	153300
Extra Features	1200	840
Land	775600	542920
TOTAL:	994600	696220

PROPERTY INFORMATION

Land Acres	24.67
Land Use	SAND&GRAVL M94
Land Class	I
Zoning	T4
Neighborhood	W3
Lot Description	Level
Lot Setting	Urban
Lot Utilities	Public Water,Septic
Street Description	Paved,Semi-Improved

SALE INFORMATION

Sale Date	8/28/2013
Sale Price	0
Book / Page	4077/ 44

BUILDING AREA

Gross Building Area	
Total Living Area	0

CONSTRUCTION DETAILS

Building Style	Service Shop

Building Use	Ind/Comm
Number of Rooms	
Number of Bedrooms	
Number of Bathrooms	0
Number of Half Bathrooms	
Kitchen Style	
Stories	1
Roof Style	Irregular
Roof Cover	Asphalt
Primary Exterior Wall Type	Brick Masonry
Secondary Exterior Wall Type	
Primary Interior Wall Type	Minim/Masonry
Secondary Interior Wall Type	
Primary Floor Type	Concr-Finished
Secondary Floor Type	
Heating Type	Forced Air-Duc
Heating Fuel	Oil
Air Conditioning Type	None
Building Style	Pre-Eng Warehs
Building Use	Ind/Comm
Number of Rooms	
Number of Bedrooms	
Number of Bathrooms	0
Number of Half Bathrooms	
Kitchen Style	
Stories	1
Roof Style	Steel Frm/Trus
Roof Cover	Metal/Tin
Primary Exterior Wall Type	Precast Panel
Secondary Exterior Wall Type	
Primary Interior Wall Type	Minim/Masonry
Secondary Interior Wall Type	
Primary Floor Type	Concr-Finished
Secondary Floor Type	
Heating Type	None
Heating Fuel	None
Air Conditioning Type	None
Building Style	Office Bldg
Building Use	Comm/Ind
Number of Rooms	
Number of Bedrooms	
Number of Bathrooms	0
Number of Half Bathrooms	
Kitchen Style	
Stories	1
Roof Style	Gable/Hip
Roof Cover	Metal/Tin
Primary Exterior Wall Type	Pre-Fab Wood
Secondary Exterior Wall Type	Pre-finsh Metl
Primary Interior Wall Type	Plywood Panel
Secondary Interior Wall Type	Drywall
Primary Floor Type	Vinyl/Asphalt
Secondary Floor Type	
Heating Type	Electr Basebrd
Heating Fuel	Electric

Air Conditioning Type	None
Building Style	Office Bldg
Building Use	Comm/Ind
Number of Rooms	
Number of Bedrooms	
Number of Bathrooms	0
Number of Half Bathrooms	
Kitchen Style	
Stories	1
Roof Style	Gable/Hip
Roof Cover	Asphalt
Primary Exterior Wall Type	Brick Veneer
Secondary Exterior Wall Type	
Primary Interior Wall Type	Drywall
Secondary Interior Wall Type	
Primary Floor Type	Carpet
Secondary Floor Type	
Heating Type	Forced Air-Duc
Heating Fuel	Gas
Air Conditioning Type	None

Back | New Search | Town of Hamden

EXHIBIT 4

Town of Hamden, Connecticut - Assessment Parcel Map

Parcel: 2432-021-00-0000 Address: 2895 STATE ST

N

Approximate Scale: 1 inch = 350 feet

0 175 350 525 700 Feet

Map Produced: October 2020

Disclaimer: This map is for informational purposes only. All information is subject to verification by any user. The Town of Hamden and its mapping contractors assume no legal responsibility for the information contained herein.

EXHIBIT 5

Town of Hamden

Planning and Zoning Department

Hamden Government Center
2750 Dixwell Avenue
Hamden, Connecticut 06518

Tel: (203) 287-7070
Fax:(203) 287-7075

October 27, 2009

Marsh USA Inc.
1255 23rd Street, N.W. Suite 400
Washington, D.C. 20037

RE: Surety Bond Number
Nextel Site # CT-1984
2895 State Street
Hamden, CT. 06517

Please be advised that the Town of Hamden, Planning and Zoning Office has approved the release of the above referenced Bond in the amount of $36,200.00, at its Planning and Zoning meeting held on October 13, 2009.

Thank you in advance for your attention to this matter.

Sincerely,

Leslie Creane, AICP
Town Planner

cc: T-Mobile, USA
100 Filey Street
Bloomfield, CT. 06002
Zoning Permit File #03-1112
Special Permit File #99-887
Chron. File

Enc:

United States of America
State of Ohio
Office of the Secretary of State

I, Jennifer Brunner, do hereby certify that I am the duly elected, qualified and present acting Secretary of State for the State of Ohio, and as such have custody of the records of Ohio and Foreign business entities; that said records show G. & B. LAND CO., INC., an Ohio corporation, Charter No. 747199, having its principal location in Wellington, County of Lorain, was incorporated on April 13, 1989 and is currently in GOOD STANDING upon the records of this office.

Witness my hand and the seal of the Secretary of State at Columbus, Ohio this 30th day of October, A.D. 2009

Jennifer Brunner

Ohio Secretary of State

Validation Number: V20093030F1ACE

Interoffice Memorandum

Date: 9/10/09

To: Stacy Shellard, Administrative Assistant to Boards & Commissions

CC: Leslie Creane, Town Planner

Dan Kops, Assistant Town Planner

From: Holly Masi, Zoning Enforcement Officer

RE: Bond Release – 2895 State Street – Special Permit & Site Plan 99-887/Nextel Communications

---

Please place the above referenced Bond Release on the Agenda for the Planning and Zoning Meeting on October 13, 2009. It is my recommendation that the currently held bond of $36,200.00 now be released. All work has been completed and a bond in the amount of $25,000 (for the cost of removal of the cell tower and all associated equipment has been posted in its place).

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

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

April 28, 2009

Mark R. Richard
UMTS Project Manager
T-Mobile USA, Inc.
35 Griffin Road South
Bloomfield, CT 06002

RE: **EM-T-MOBILE-062-090316** - Omnipoint Communications, as subsidiary of T-Mobile USA, Inc., notice of intent to modify an existing telecommunications facility located at 2895 State Street, Hamden, Connecticut.

Dear Mr. Richard:

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

The proposed modifications are to be implemented as specified here and in your notice dated March 17, 2009, including the placement of all necessary equipment and shelters within the tower compound. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site, increase noise levels at the tower site boundary by six decibels, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to General Statutes § 22a-162. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on this tower.

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

Thank you for your attention and cooperation.

Very truly yours,

S. Derek Phelps
Executive Director

SDP/MP/laf

c: The Honorable Craig B. Henrici, Mayor, Town of Hamden
Leslie Creane, Town Planner, Town of Hamden
Carrie L. Larson, Esq., Pullman & Comley, LLC
FNS Associates LLC

CSC
CONNECTICUT SITING COUNCIL

G:\EM\T-MOBILE\HAMDEN\dc041509letterSI.DOC

EXHIBIT 6

NEXTEL MONOPOLE HAMDEN

APPROVALS

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

T-MOBILE TECHNICIAN SITE SAFETY NOTES

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

GENERAL NOTES

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

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

2895 STATE STREET
HAMDEN, CT 06517

SITE NO.: CT11611B

RF DESIGN GUIDELINE: 67D5A998C OUTDOOR

VICINITY MAP: 1"=1000'

DIRECTIONS

FROM COMMERCE WAY TRAVELING NE TOWARDS N BOUNDARY RD/S WASHINGTON ST, CONTINUE ONTO S. WASHINGTON ST TO TAKE A RIGHT ONTO MA-123 E, TURN LEFT TO MERGE ONTO I-495 N TOWARD MANSFIELD, MARLBORO, FOLLOW I-495 N, TAKE EXIT 22 FOR I-90 W TOWARD ALBANY, KEEP LEFT AT THE FORK, FOLLOW SIGNS FOR I-90 W/SPRINGFIELD/ALBANY, USE THE RIGHT 2 LANES TO TAKE EXIT 78 FOR I-84 TOWARD HARTFORD CT/NEW YORK CITY, KEEP LEFT ON I-84, USE THE LEFT 2 LANES TO TAKE EXIT 57 FOR CT-15 S TOWARD I-91 S/CHARTER OAK BRIDGE/N.Y. CITY, TAKE EXIT 86 FOR I-91 S TOWARD NEW HAVEN/NEW YORK CITY, KEEP RIGHT TO STAY ON I-91 S, TAKE EXIT 17 FOR CT-15 S, KEEP LEFT AT FORK, FOLLOW SIGNS FOR CT-15 S/WILBUR CROSS PKWY, KEEP RIGHT TO CONTINUE ON CT-15 S, FOLLOW SIGNS FOR W CROSS PKWY, TAKE EXIT 63 TOWARD CT--22/NORTH HAVEN, TURN LEFT ONTO HARTFORD TURNPIKE, TURN LEFT ONTO SCHOOL LN, TURN RIGHT ONTO US-5 S/STATE ST, TURN LEFT, TURN LEFT

SHEET INDEX

SHT. NO.	DESCRIPTION	VER.
T-1	TITLE SHEET	1
GN-1	GENERAL NOTES	1
A-1	COMPOUND & EQUIPMENT PLANS	1
A-2	ELEVATION & ANTENNA PLANS	1
A-3	SITE DETAILS	1
A-4	ANTENNA & FEEDLINE CHARTS	1
S-1	ANTENNA MOUNTING DETAILS	1
E-1	ELECTRIC & GROUNDING DETAILS	1

DO NOT SCALE DRAWINGS

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

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.

PROJECT SUMMARY

SITE NUMBER:	CT11611B
SITE NAME:	NEXTEL MONOPOLE HAMDEN
SBA SITE NUMBER:	CT46137-A-01
SBA SITE NAME:	HAMDEN-STATE ST
SITE ADDRESS:	2895 STATE STREET HAMDEN, CT 06517
ASSESSOR'S ACCT NO.:	100130
ZONING DISTRICT:	T4 GENERAL URBAN
CONSTRUCTION TYPE:	ANCHOR UPGRADE
LAND OWNER:	JOSEPH J FARRICIELLI 104 CHERRY HILL ROAD BRANFORD, CT 06405
TOWER OWNER:	SBA TOWERS, LLC 8501 CONGRESS AVENUE BOCA RATON, FL 33487 PHONE: 561-226-9523
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: 41.36003000° N41°21'36.11" LONGITUDE: -72.88573000° W72°53'08.63"

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

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STATE OF CONNECTICUT
JAMES M. FITZGERALD
No. 25997
LICENSED
PROFESSIONAL CIVIL ENGINEER
5/5/2021

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	05/05/21	ISSUED FOR CONSTRUCTION	BDJ
0	03/05/21	ISSUED FOR REVIEW	BDJ

SITE NUMBER:
CT11611B
SITE ADDRESS:
2895 STATE STREET
HAMDEN, CT 06517

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

1815.190

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 FAMILARIZE 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 (400PSI) MAY BE USED. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 381 CODE REQUIREMENTS

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

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

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

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

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

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

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

STRUCTURAL STEEL NOTES:

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

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

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

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

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

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

SOIL COMPACTION NOTES FOR SLAB ON GRADE:

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

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

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

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

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

COMPACTION EQUIPMENT:

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

CONSTRUCTION NOTES:

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

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

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

ELECTRICAL INSTALLATION NOTES:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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STATE OF CONNECTICUT
JAMES M. FITZGERALD
No. 25997
LICENSED PROFESSIONAL CIVIL ENGINEER
5/5/2021

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

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1	05/05/21	ISSUED FOR CONSTRUCTION	BDJ
0	03/05/21	ISSUED FOR REVIEW	BDJ

SITE NUMBER:
CT11611B
SITE ADDRESS:
2895 STATE STREET
HAMDEN, CT 06517

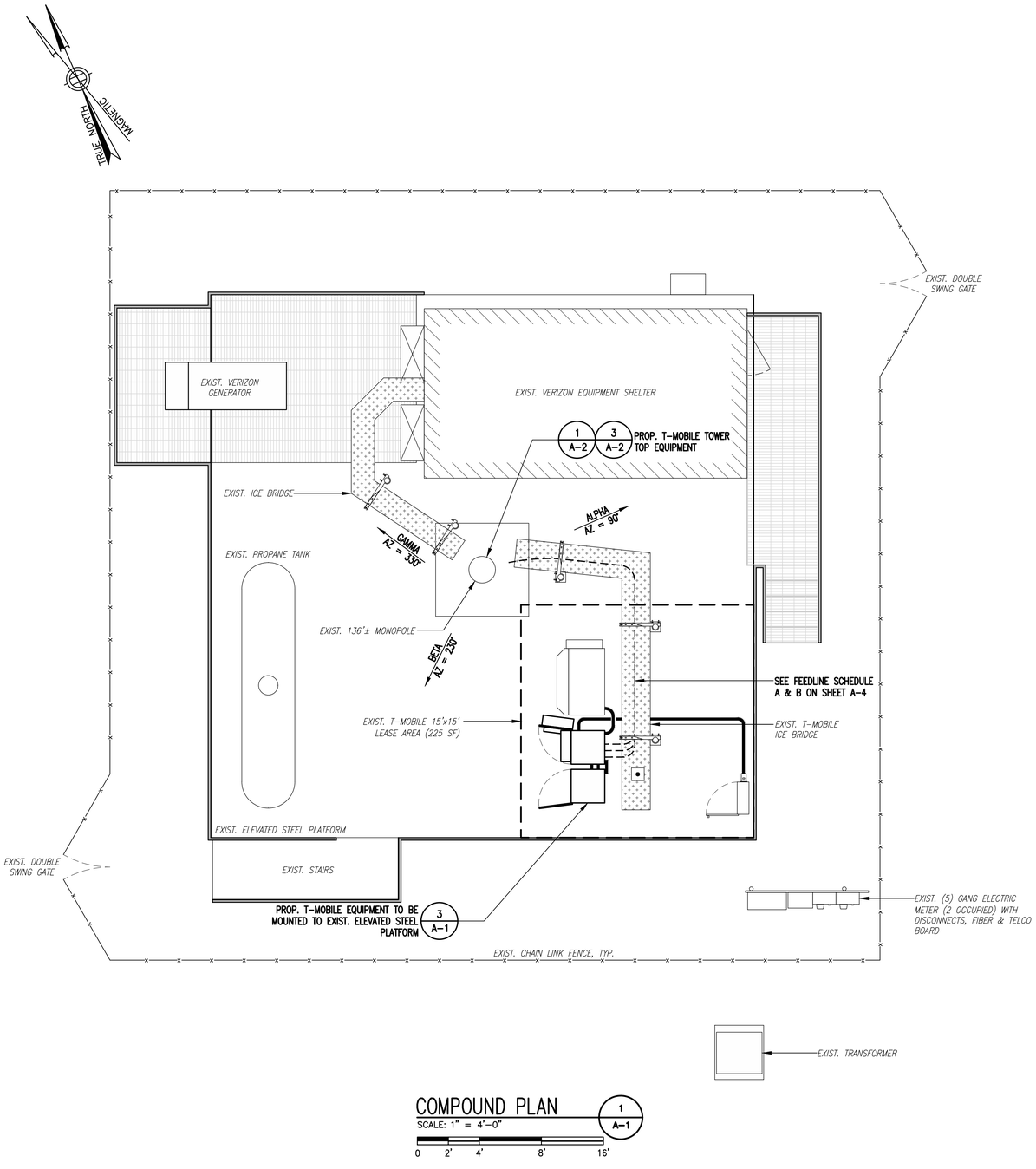
SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-1

1815.190

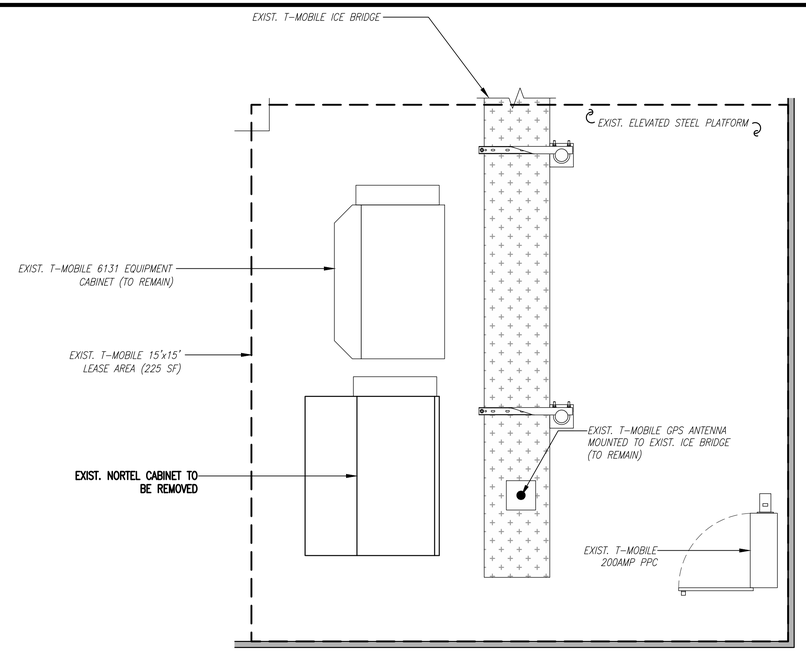
SPECIAL PRE-CONSTRUCTION WORK NOTE (SBA-PROVIDED TOWER STRUCTURAL ANALYSIS SPECIAL EQUIPMENT INSTALLATION REQUIREMENTS):
GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL SPECIAL OR SUPPLEMENTAL ADDITIONAL TOWER-MOUNTED EQUIPMENT PER RECOMMENDATIONS FROM SBA-PROVIDED TOWER STRUCTURAL ANALYSIS FOR ANY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

SPECIAL CONSTRUCTION NOTE (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).



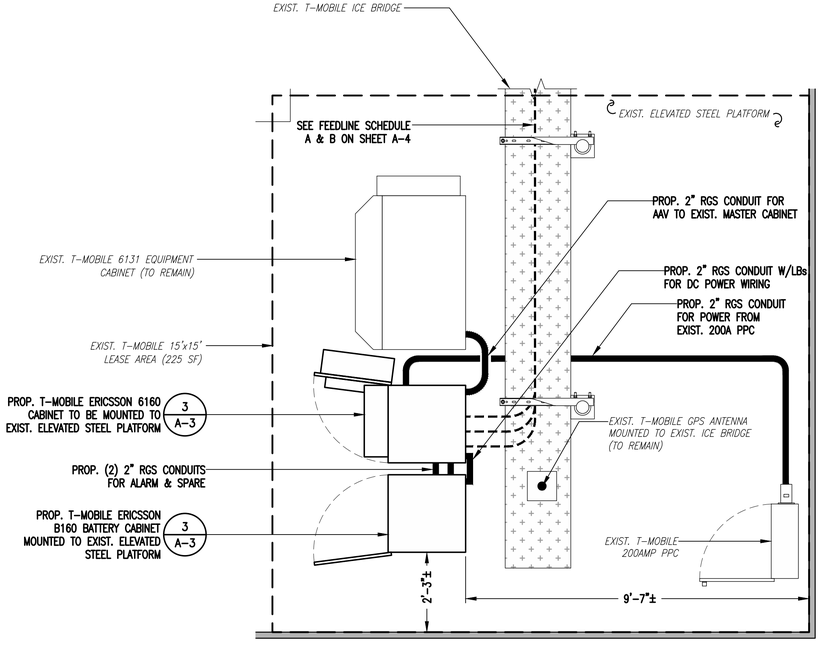
COMPOUND PLAN
SCALE: 1" = 4'-0" (1 A-1)

0 2' 4' 8' 16'



EXISTING EQUIPENT PLAN
SCALE: 1" = 2'-0" (2 A-1)

NORTH



PROPOSED EQUIPENT PLAN
SCALE: 1" = 2'-0" (3 A-1)

NORTH

T-MOBILE NORTHEAST LLC
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NORTON, MA 02766
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STATE OF CONNECTICUT
JAMES M. FITZGERALD
No. 25997
LICENSED PROFESSIONAL CIVIL ENGINEER
5/5/2021

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

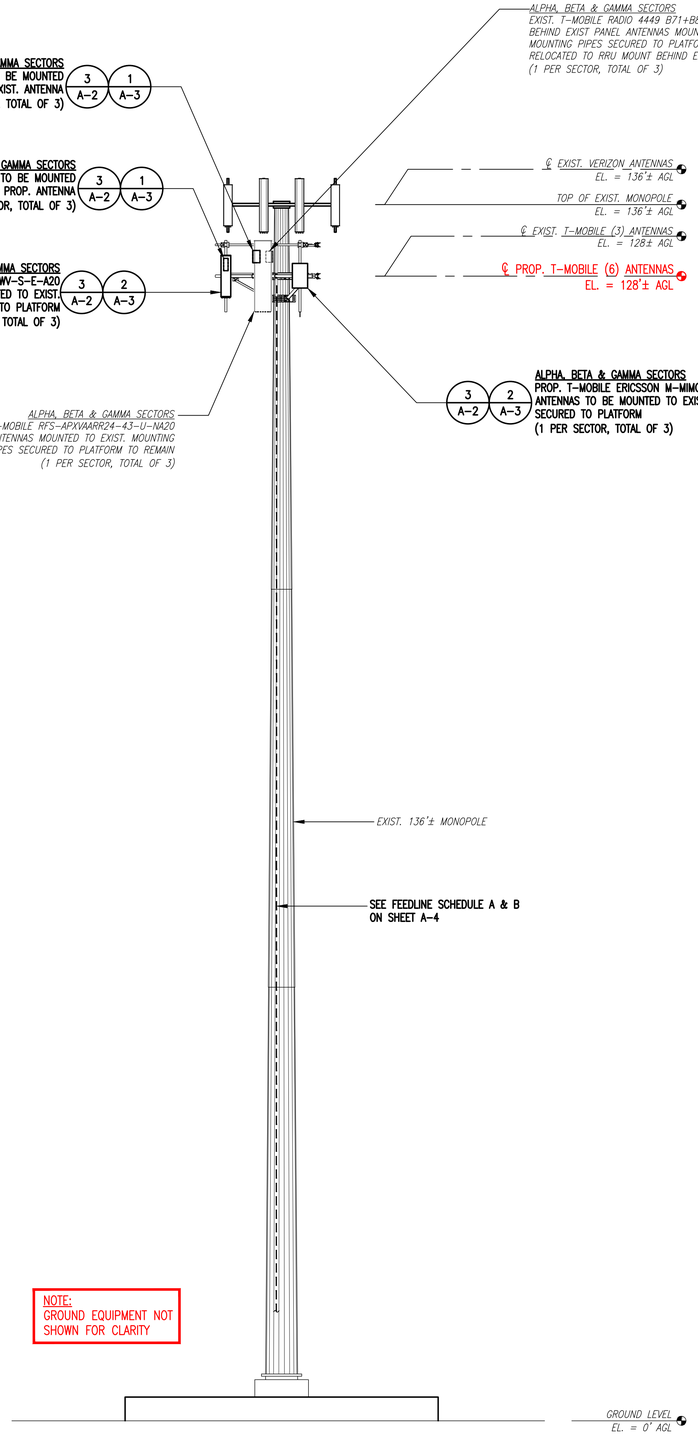
REV.	DATE	DESCRIPTION	BY
1	05/05/21	ISSUED FOR CONSTRUCTION	BDJ
0	03/05/21	ISSUED FOR REVIEW	BDJ

SITE NUMBER:
CT11611B
SITE ADDRESS:
2895 STATE STREET
HAMDEN, CT 06517

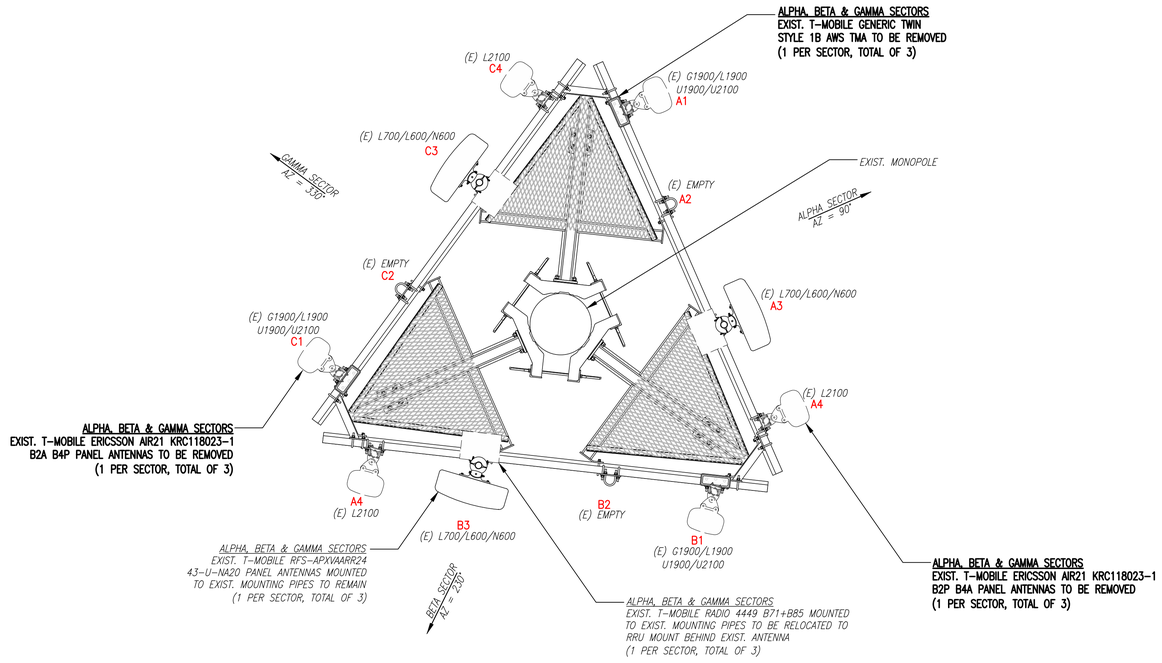
SHEET TITLE
COMPOUND & EQUIPMENT PLANS

SHEET NUMBER
A-1

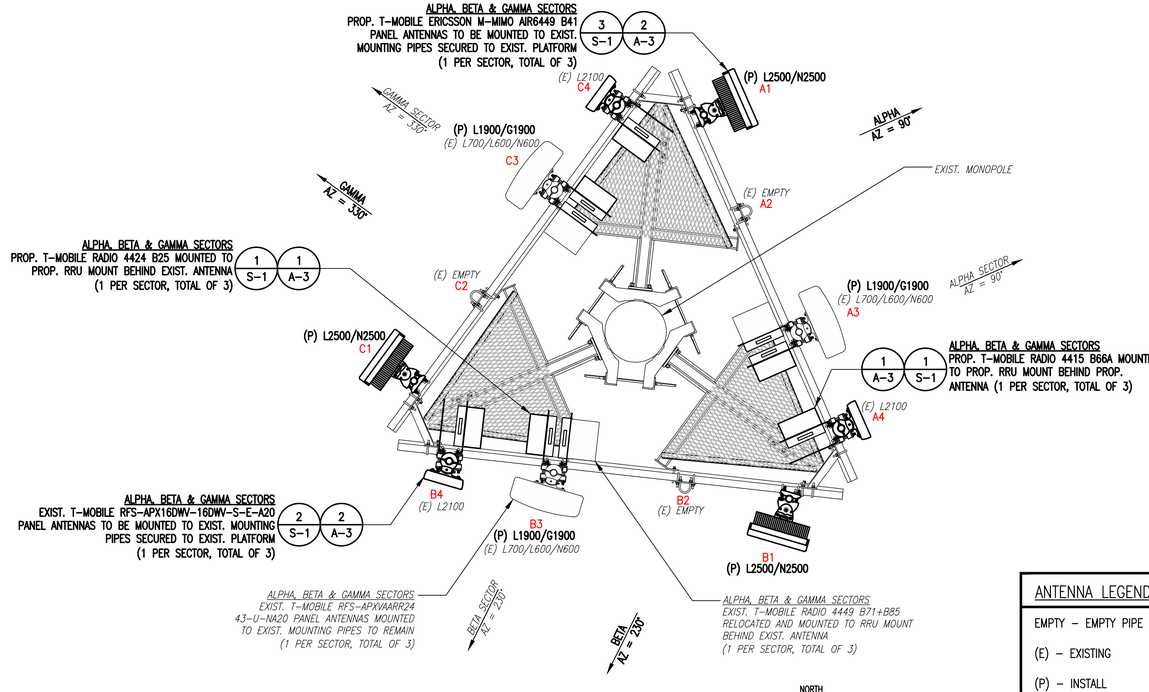
1815.190



ELEVATION
SCALE: 1" = 8'-0"
1 A-2
0 4' 8' 16' 24'



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



PROPOSED ANTENNA PLAN
SCALE: N.T.S.
2 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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SHEET TITLE
ELEVATION & ANTENNA PLANS

SHEET NUMBER
A-2

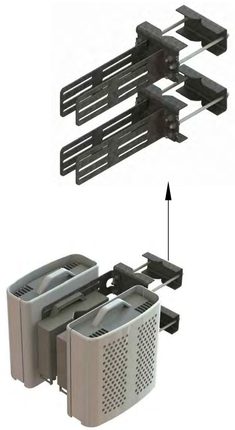
1815.190

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

ERICSSON RADIO 4424 B25

DIMENSIONS: 16.5"H x 13.5"W x 9.6"D
WEIGHT: 88.0 lbs
QUANTITY: 1 PER SECTOR, TOTAL OF 3



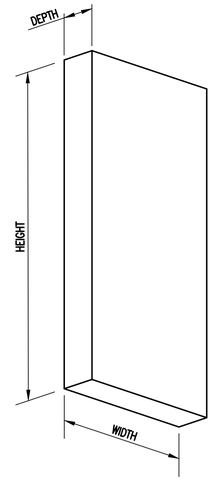
COMMSCOPE RADIO MOUNT RR-FA2

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

RADIO & MOUNT DETAILS 1/A-3
SCALE: N.T.S.

ERICSSON M-MIMO AIR6449 B41 ANTENNA

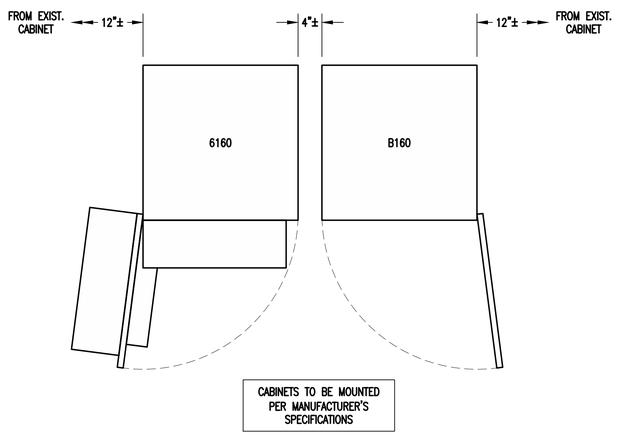
DIMENSIONS: 33.1"H x 20.5"W x 8.3"D
WEIGHT: 103.0 lbs
QUANTITY: 1 PER SECTOR, TOTAL OF 3



RFS APX16DWV-16VDWV-S-E-A20

DIMENSIONS: 55.9"H x 13.0"W x 3.15"D
WEIGHT: 53.9 lbs
QUANTITY: 1 PER SECTOR, TOTAL OF 3

ANTENNA DETAILS 2/A-3
SCALE: N.T.S.



ERICSSON 6161 SITE SUPPORT CABINET

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

ERICSSON B160 BATTERY CABINET

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

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

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SHEET TITLE

SITE DETAILS

SHEET NUMBER

A-3

1815.190

FINAL ANTENNA CONFIGURATION

SECTOR	ANTENNA	RAD CENTER	AZIMUTH (TRUE NORTH)	MECHANICAL DOWNTILT	ELECTRICAL DOWNTILT	BAND	TMA/RADIOS	SIGNAL CABLES
ALPHA	A1 ERICSSON M-MIMO AIR6449 B41	128'-0"± AGL	90°	0°	0°	L2500/N2500	-	(E) (2) 1-5/8" (6x12) HCS FIBER CABLES (P) (1) 1-3/4" (6x24) HCS FIBER CABLE
	A2 EMPTY	-	-	-	-	-	-	
	A3 RFS APXVAARR24_43-U-NA20	128'-0"± AGL	90°	0°	0°	L700/L600/N600 L1900/G1900	ERICSSON RADIO 4449 B71+B85 ERICSSON RADIO 4424 B25	
	A4 RFS-APX16DWV-16DWV-S-E-A20	128'-0"± AGL	90°	0°	0°	L2100	ERICSSON RADIO 4415 B66A	
BETA	B1 ERICSSON M-MIMO AIR6449 B41	128'-0"± AGL	230°	0°	0°	L2500/N2500	-	
	B2 EMPTY	-	-	-	-	-	-	
	B3 RFS APXVAARR24_43-U-NA20	128'-0"± AGL	230°	0°	0°	L700/L600/N600 L1900/G1900	ERICSSON RADIO 4449 B71+B85 ERICSSON RADIO 4424 B25	
	B4 RFS-APX16DWV-16DWV-S-E-A20	128'-0"± AGL	230°	0°	0°	L2100	ERICSSON RADIO 4415 B66A	
GAMMA	C1 ERICSSON M-MIMO AIR6449 B41	128'-0"± AGL	330°	0°	0°	L2500/N2500	-	
	C2 EMPTY	-	-	-	-	-	-	
	C3 RFS APXVAARR24_43-U-NA20	128'-0"± AGL	330°	0°	0°	L700/L600/N600 L1900/G1900	ERICSSON RADIO 4449 B71+B85 ERICSSON RADIO 4424 B25	
	C4 RFS-APX16DWV-16DWV-S-E-A20	128'-0"± AGL	330°	0°	0°	L2100	ERICSSON RADIO 4415 B66A	

CABLE NOTE: EXISTING (12) 1-5/8" COAX CABLES (CAPPED & WRAPPED) AND (1) 9x18 HCS FIBER CABLE TO BE REMOVED. SEE FEEDLINE SCHEDULE A & B BELOW.

NOTE: RFDS REV8 – 01/19/21

FEEDLINE SCHEDULE

SCHEDULE	FEEDLINES	LOCATION
A	EXISTING TO REMAIN: (2) 1-5/8" (6x12) HCS FIBER CABLES (1) 1/2" COAX CABLE FOR GPS ANTENNA EXISTING TO BE REMOVED: (12) 1-5/8" COAX CABLES (1) 1-5/8" HCS FIBER CABLE	ROUTED PER STRUCTURAL ANALYSIS
B	PROPOSED: (1) 1-3/4" (6x24) HCS FIBER CABLE	

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

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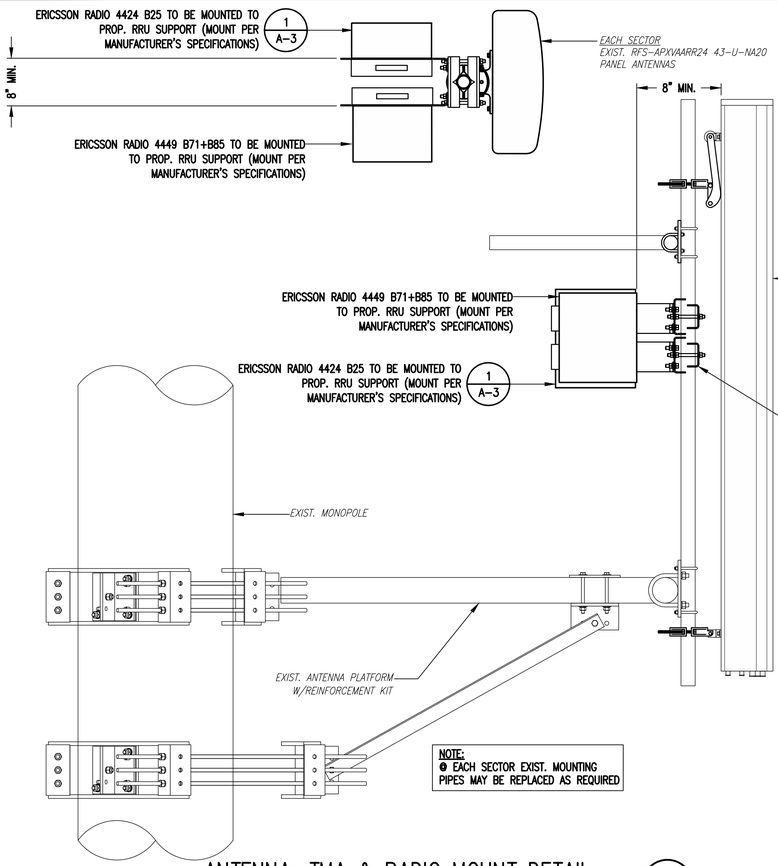
SHEET TITLE
ANTENNA & FEEDLINE CHARTS

SHEET NUMBER
A-4

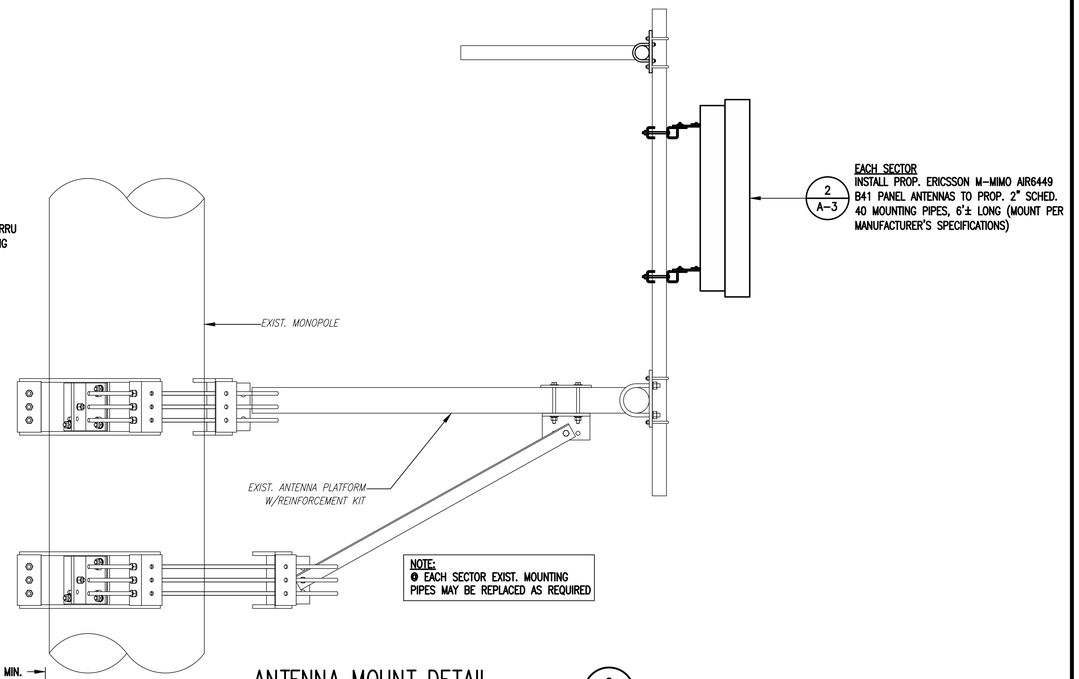
1815.190



ANTENNA, TMA & RADIO MOUNT DETAIL

SCALE: N.T.S.

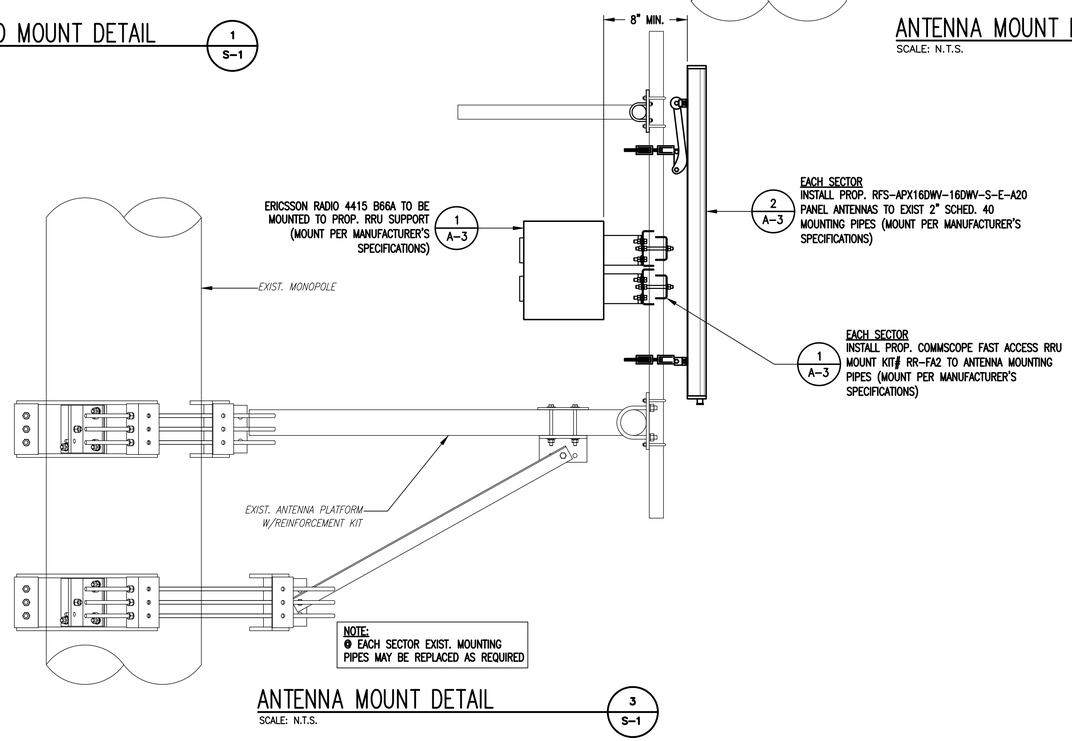
1 S-1



ANTENNA MOUNT DETAIL

SCALE: N.T.S.

2 S-1



ANTENNA MOUNT DETAIL

SCALE: N.T.S.

3 S-1

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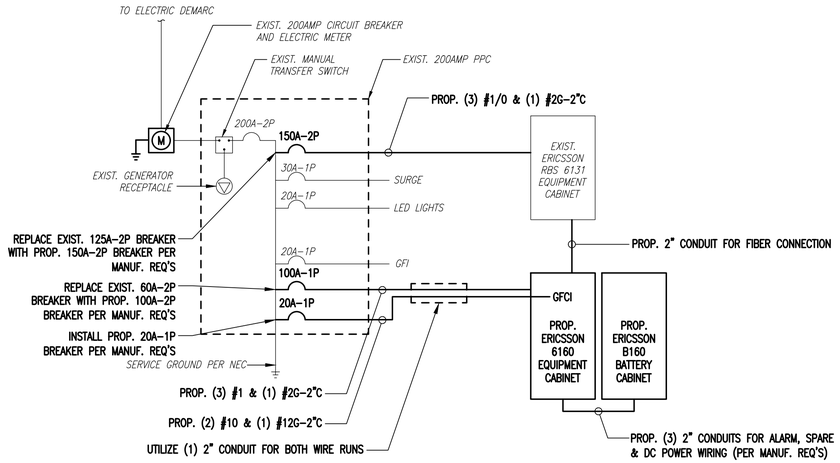
SHEET TITLE

ANTENNA MOUNTING DETAILS

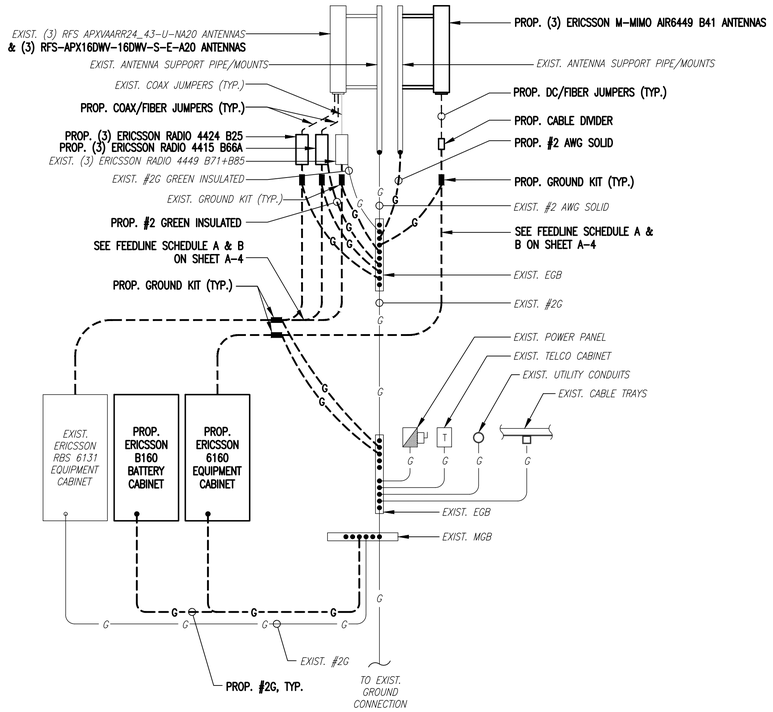
SHEET NUMBER

S-1

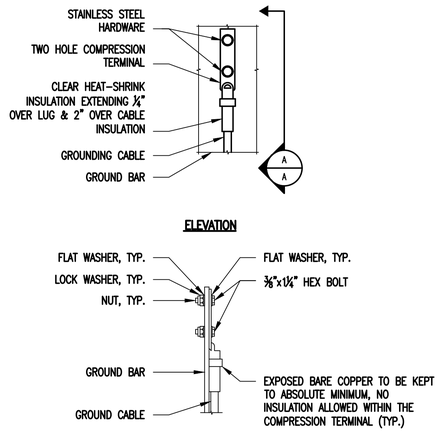
1815.190



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

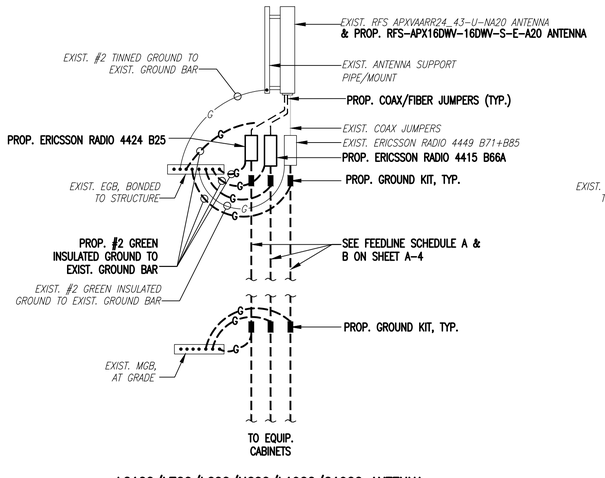


GROUNDING RISER DIAGRAM (2 / E-1)
SCALE: NOT TO SCALE

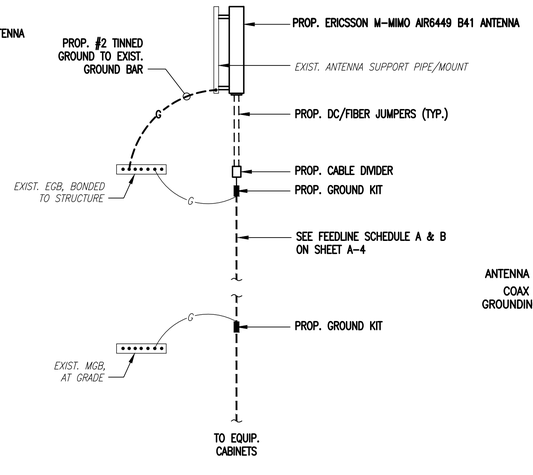


NOTES:
1. "DOUBLING UP" OR "STACKING" OF CONNECTION IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.
3. CADWELL DOWNLEADS FROM UPPER EGB, LOWER EGB AND MGB.

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

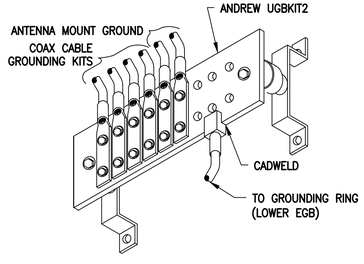


L2100/L700/L600/N600/L1900/G1900 ANTENNA



L2500/N2500 ANTENNA

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

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SHEET TITLE

ELECTRICAL & GROUNDING DETAILS

SHEET NUMBER

E-1

1815.190

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 136 ft EEI Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT46137-A

Customer Site Name: Hamden-State St

Carrier Name: T-Mobile (App#: 147478-1)

Carrier Site ID / Name: CT11611B / Nextel Monopole Hamden

Site Location: 2895 State Street

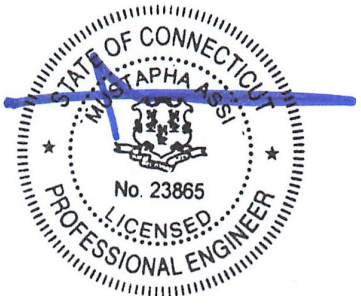
Hamden, Connecticut

New Haven County

Latitude: 41.360008

Longitude: -72.885694

Exp.10/31/2021



05/20/2021

Analysis Result:

Max Structural Usage: 73.6% [Pass]

Max Foundation Usage: 72.8% [Pass]

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

Report Prepared By : Tawfeeq Alajaj

Introduction

The purpose of this report is to summarize the analysis results on the 136 ft EEI Monopole to support the proposed antennas and transmission lines in addition to those currently installed. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Tower Drawings	Engineered Endeavors Incorporated (Job No. 5315-P01) Structure & Foundation Design Calculations dated August 16. 1999
Foundation Drawing	N/A
Geotechnical Report	Dr. Clarence Welti, P.E., P.C., Project Name: Nextel Tower Site, dated 5/27/1999
Modification Drawings	N/A
Mount Analysis	T-Mobile MA by TES# 106782. Dated 04/26/2021.

Analysis Criteria

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

Wind Speed Used in the Analysis:	Ultimate Design Wind Speed V_{ult} = 125.0 mph (3-Sec. Gust)/ Nominal Design Wind Speed V_{asd} = 97.0 mph (3-Sec. Gust)
Wind Speed with Ice:	50 mph (3-Sec. Gust) with 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 = 0.186, 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
1	136.0	6	Andrew LNX-6514DS-VTM Panel	Low Profile Platform w/ Handrail Kit	(2) 1 5/8" Hybrid	Verizon
2		6	Andrew HBX-6517DS-VTM Panel			
3		3	Samsung B2/B66A RRHBR049			
4		3	Samsung B5/B13 RRHBR04C			
5		2	Raycap RVZDC-6627-PF-48 COVP			
6	128.0	3	RFS APXVAARR24_43-U-NA20 (Octa)	Platform w/ Hand Rail (SitePro RMQP-496-HK)	(10) 1 5/8" (1) 1 5/8" Fiber (2) 1-1/4" Hybrid	T-Mobile
7		3	Ericsson Air 32 KRD901146-1_B66A_B2A			
8		3	Ericsson KRY 112 144/2 TMA			
9		3	Ericsson Radio 4449 B71 + B12 RRU			
10		3	Ericsson AIR 21 B2A/B4P			

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
6	128.0	3	Ericsson Air 6449 B41 - Panel	SitePro RMQP-496-HK	(8) 1 5/8" (2) 1-1/4" Hybrid (1) 1.9" Fiber	T-Mobile
7		3	RFS APXVAARR24_43-U-NA20 (Octa) - Panel			
8		3	RFS APX16DWV-16DWVS-E-A20 - Panel			
9		3	Ericsson KRY 112 144/2 TMA			
10		3	Ericsson 4449 B71 + B85			
11		3	Ericsson 4424 B25			
12		3	Ericsson 4415 B66A			

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:	**63.8%**	**52.9%**	**73.6%**
Pass/Fail	**Pass**	**Pass**	**Pass**

Foundations

	Moment (Kip-Ft)	Shear (Kips)
Original Design Reactions	2324.8	21.8
Analysis Reactions	2241.0	21.4
Factored Reactions*	3138.5	29.4
% of Design Reactions	71.4%	72.8%

* 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 1.5930 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 63.79% at 92.0ft

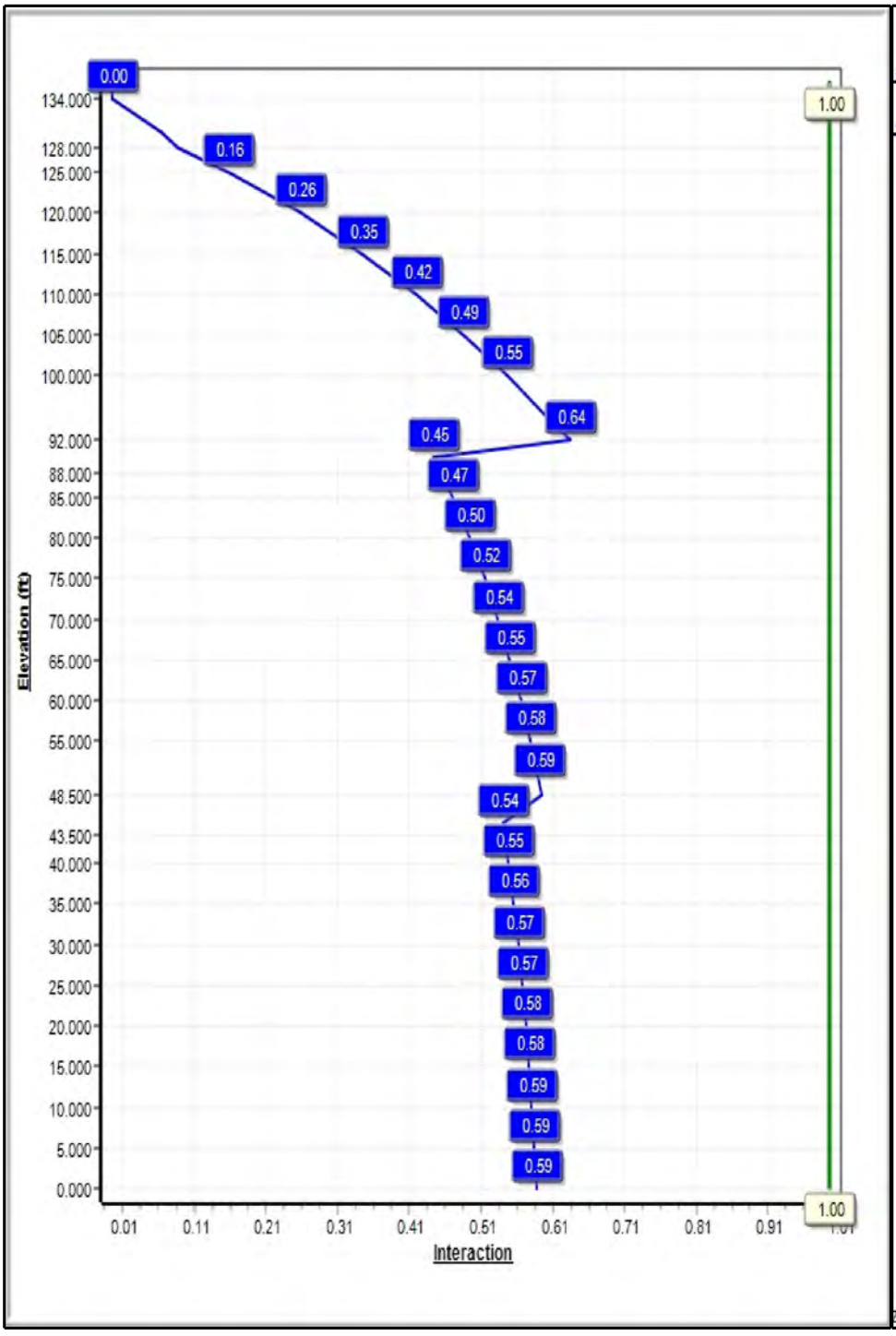
Structure:	CT46137-A-SBA	**Code:**	EIA/TIA-222-G	5/20/2021
Site Name:	Hamden-State St	**Exposure:**	C	
Height:	136.00 (ft)	**Gh:**	1.1	
Base Elev:	0.000 (ft)			Page: 1

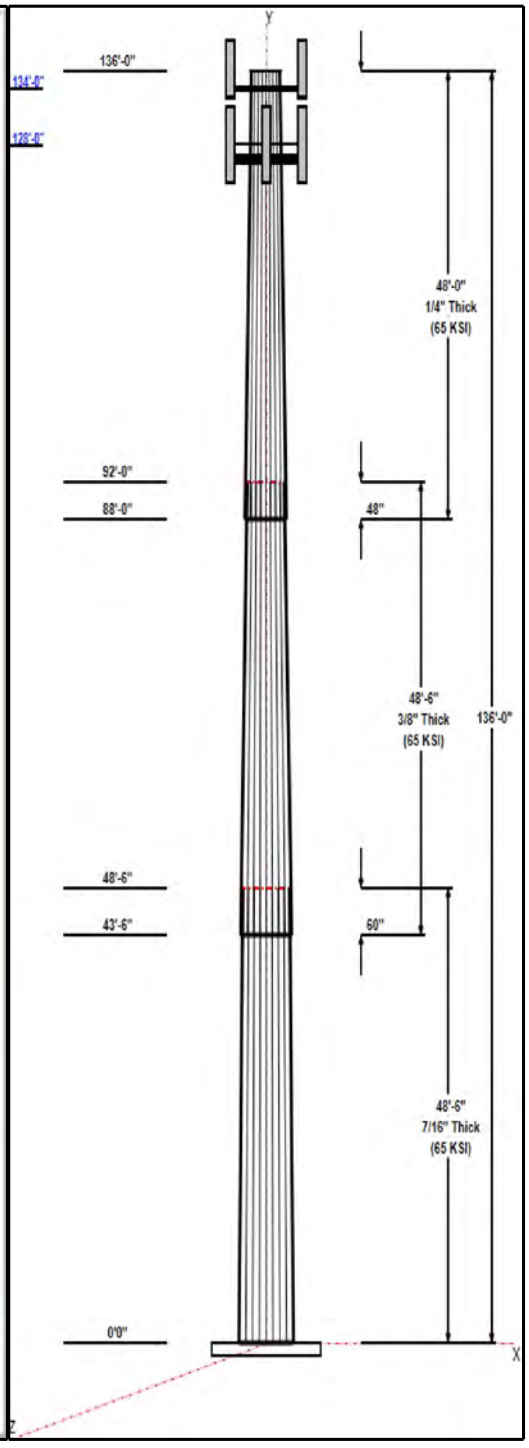
Tower Engineering Solutions

Dead Load Factor:	1.20
Wind Load Factor:	1.60

Load Case : 1.2D + 1.6W 97 mph Wind

Iterations: 25





Structure: CT46137-A-SBA

Type: Tapered
Site Name: Hamden-State St
Height: 136.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.18566

5/20/2021

Tower Engineering Solutions

Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	48.50	34.00	43.00	0.438		0.18566	65
2	48.50	26.67	35.67	0.375	Slip	0.18566	65
3	48.00	19.00	27.91	0.250	Slip	0.18566	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
134.00	134.00	1	HRR12-U Handrail	Verizon
134.00	136.00	3	Samsung B2/B66A	Verizon
134.00	136.00	3	Samsung B5/B13	Verizon
134.00	136.00	2	Raycap	Verizon
134.00	136.00	6	LNX-6514DS-VTM	Verizon
134.00	136.00	6	HBX-6517DS-VTM	Verizon
134.00	134.00	1	Low Profile Platform	Verizon
128.00	128.00	1	SitePro RMQP-496-HK	T-Mobile
128.00	128.00	3	Air 6449 B41	T-Mobile
128.00	128.00	3	APXVAARR24_43-U-NA20	T-Mobile
128.00	128.00	3	APX16DWV-16DWVS-E-A	T-Mobile
128.00	128.00	3	Ericsson KRY 112 144/2	T-Mobile
128.00	128.00	3	Ericsson 4449 B71 + B85	T-Mobile
128.00	128.00	3	Ericsson 4424 B25	T-Mobile
128.00	128.00	3	Ericsson 4415 B66A	T-Mobile

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	136.00	Inside	1 5/8" Fiber	Verizon
0.00	128.00	Inside	1 5/8" Coax	T-Mobile
0.00	128.00	Inside	1-1/4" Hybrid	T-Mobile
0.00	128.00	Inside	1.9" Fiber	T-Mobile

Anchor Bolts

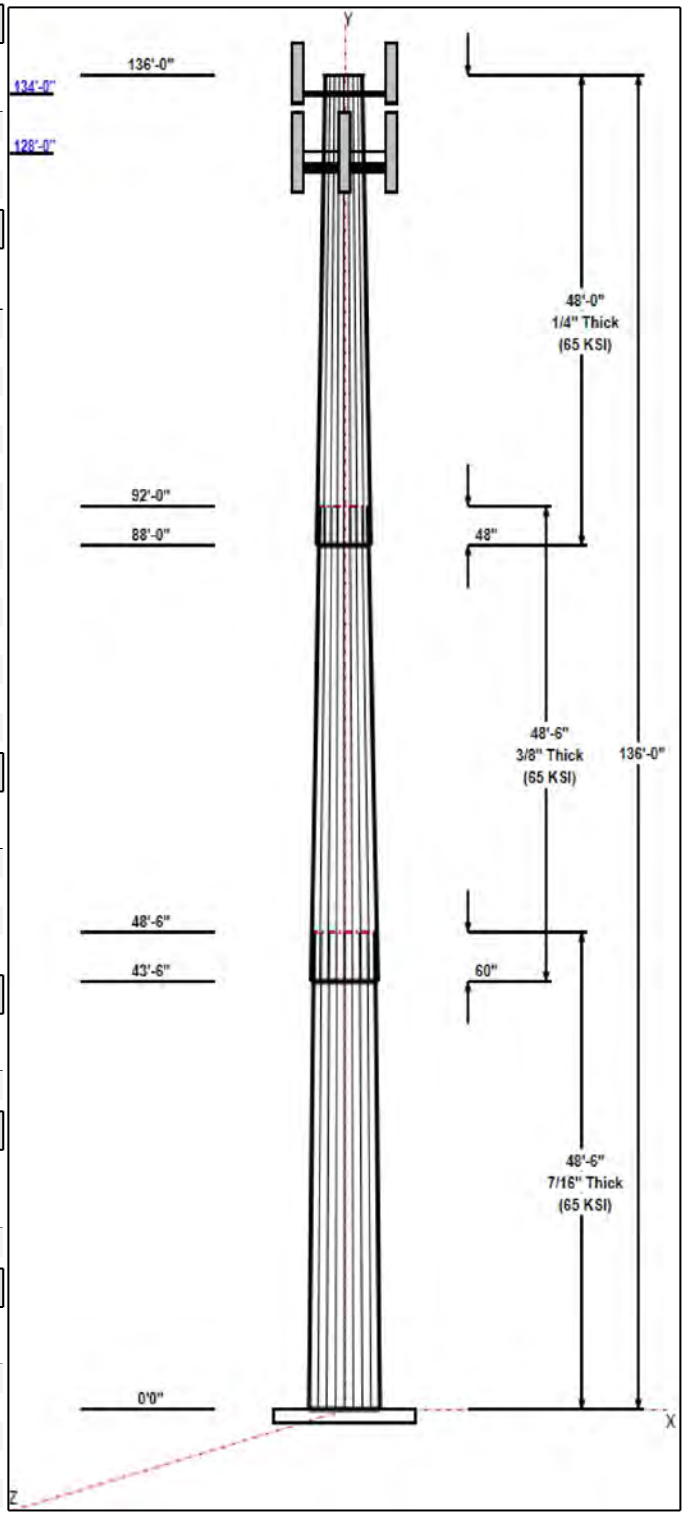
Qty	Specifications	Grade (ksi)	Arrangement
16	2.25" 18J	75.0	Radial

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
2.0000	57.0	60.0	Round

Reactions

Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 97 mph Wind	2241.0	21.4	31.4
0.9D + 1.6W 97 mph Wind	2212.9	21.4	23.5
1.2D + 1.0Di + 1.0Wi 50 mph Wind	637.5	6.2	47.3
1.2D + 1.0E	211.7	1.8	31.4
0.9D + 1.0E	208.9	1.8	23.6
1.0D + 1.0W 60 mph Wind	532.4	5.1	26.2



Structure: CT46137-A-SBA - Coax Line Placement

Type: Monopole
Site Name: Hamden-State St
Height: 136.00 (ft)

5/20/2021

Tower Engineering Solutions

Shaft Properties

Structure:	CT46137-A-SBA		**Code:**	EIA/TIA-222-G	5/20/2021
Site Name:	Hamden-State St		**Exposure:**	C	
Height:	136.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 4

Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	18	48.500	0.4375	65		0.00	8,722
2	18	48.500	0.3750	65	Slip	60.00	6,049
3	18	48.000	0.2500	65	Slip	48.00	3,007
					Total Shaft Weight:		**17,779**

	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	43.00	0.00	59.10	13527.07	15.92	98.29	34.00	48.50	46.60	6629.90	12.29	77.70	0.185662
2	35.67	43.50	42.01	6613.82	15.36	95.13	26.67	92.00	31.30	2733.70	11.13	71.12	0.185662
3	27.91	88.00	21.95	2121.90	18.28	111.65	19.00	136.00	14.88	660.83	11.99	76.00	0.185662

Load Summary

Structure:	CT46137-A-SBA	**Code:**	EIA/TIA-222-G	5/20/2021	
Site Name:	Hamden-State St	**Exposure:**	C		
Height:	136.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 5	

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	134.00	HRR12-U Handrail	1	400.00	6.75	0.75	869.37	13.273	0.00	0.00	0.00
2	134.00	Samsung B2/B66A RRHBR049	3	84.00	1.88	0.67	134.39	2.425	0.75	0.00	2.00
3	134.00	Samsung B5/B13 RRHBR04C	3	70.30	1.88	0.67	121.83	2.425	0.67	0.00	2.00
4	134.00	Raycap RVZDC-6627-PF-48 COVP	2	32.00	3.79	0.90	175.22	4.886	0.90	0.00	2.00
5	134.00	LNX-6514DS-VTM	6	38.80	8.09	0.80	241.30	10.854	0.80	0.00	2.00
6	134.00	HBX-6517DS-VTM	6	13.20	5.29	0.75	131.72	6.498	0.75	0.00	2.00
7	134.00	Low Profile Platform	1	1500.00	22.00	1.00	2794.23	39.464	1.00	0.00	0.00
8	128.00	SitePro RMQP-496-HK	1	2449.00	48.00	1.00	4973.07	80.981	1.00	0.00	0.00
9	128.00	Air 6449 B41	3	103.00	5.65	0.71	237.96	6.586	0.71	0.00	0.00
10	128.00	APXVAARR24_43-U-NA20 (Octa)	3	128.00	20.24	0.70	538.53	22.109	0.70	0.00	0.00
11	128.00	APX16DWV-16DWVS-E-A20	3	40.70	6.61	0.62	155.92	8.754	0.62	0.00	0.00
12	128.00	Ericsson KRY 112 144/2 TMA	3	11.00	0.41	0.70	21.61	0.878	0.70	0.00	0.00
13	128.00	Ericsson 4449 B71 + B85	3	70.00	1.65	0.67	136.90	2.178	0.67	0.00	0.00
14	128.00	Ericsson 4424 B25	3	88.00	2.05	0.67	172.73	2.635	0.67	0.00	0.00
15	128.00	Ericsson 4415 B66A	3	49.60	1.64	0.67	105.58	2.178	0.67	0.00	0.00
		Totals:	**44**	**6,658.80**			**16,101.62**				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	136.00	(2) 1 5/8" Fiber	0.00	Inside
0.00	128.00	(8) 1 5/8" Coax	0.00	Inside
0.00	128.00	(2) 1-1/4" Hybrid	0.00	Inside
0.00	128.00	(1) 1.9" Fiber	0.00	Inside

Shaft Section Properties

Structure:	CT46137-A-SBA	**Code:**	EIA/TIA-222-G	5/20/2021	
Site Name:	Hamden-State St	**Exposure:**	C		
Height:	136.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 6	

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		0.4375	43.000	59.101	13527.1	15.92	98.29	82.5	619.6	0.0
5.00		0.4375	42.072	57.812	12661.1	15.55	96.16	82.5	592.7	994.6
10.00		0.4375	41.143	56.523	11833.0	15.17	94.04	82.5	566.5	972.6
15.00		0.4375	40.215	55.234	11041.7	14.80	91.92	82.5	540.8	950.7
20.00		0.4375	39.287	53.945	10286.6	14.42	89.80	82.5	515.7	928.8
25.00		0.4375	38.358	52.656	9566.7	14.05	87.68	82.5	491.2	906.9
30.00		0.4375	37.430	51.367	8881.1	13.67	85.55	82.5	467.3	884.9
35.00		0.4375	36.502	50.078	8229.2	13.30	83.43	82.5	444.0	863.0
40.00		0.4375	35.574	48.789	7609.9	12.93	81.31	82.5	421.3	841.1
43.50	Bot - Section 2	0.4375	34.924	47.887	7195.5	12.66	79.83	82.5	405.8	575.7
45.00		0.4375	34.645	47.500	7022.6	12.55	79.19	82.5	399.2	457.0
48.50	Top - Section 1	0.3750	34.745	40.908	6105.6	14.93	92.65	0.0	0.0	1052.1
50.00		0.3750	34.467	40.576	5958.4	14.80	91.91	82.5	340.5	208.0
55.00		0.3750	33.539	39.472	5484.8	14.36	89.44	82.5	322.1	681.0
60.00		0.3750	32.610	38.367	5037.0	13.92	86.96	82.5	304.2	662.2
65.00		0.3750	31.682	37.262	4614.2	13.49	84.49	82.5	286.9	643.4
70.00		0.3750	30.754	36.157	4215.8	13.05	82.01	82.5	270.0	624.6
75.00		0.3750	29.825	35.052	3841.0	12.61	79.53	82.5	253.7	605.8
80.00		0.3750	28.897	33.947	3489.1	12.18	77.06	82.5	237.8	587.0
85.00		0.3750	27.969	32.842	3159.4	11.74	74.58	82.5	222.5	568.2
88.00	Bot - Section 3	0.3750	27.412	32.179	2971.9	11.48	73.10	82.5	213.5	331.9
90.00		0.3750	27.040	31.737	2851.2	11.30	72.11	82.5	207.7	365.9
92.00	Top - Section 2	0.2500	27.169	21.360	1955.5	17.75	108.68	0.0	0.0	360.9
95.00		0.2500	26.612	20.918	1836.6	17.36	106.45	81.0	135.9	215.8
100.00		0.2500	25.684	20.181	1649.4	16.70	102.74	81.8	126.5	349.6
105.00		0.2500	24.756	19.444	1475.3	16.05	99.02	82.5	117.4	337.1
110.00		0.2500	23.827	18.708	1313.9	15.39	95.31	82.5	108.6	324.6
115.00		0.2500	22.899	17.971	1164.7	14.74	91.60	82.5	100.2	312.0
120.00		0.2500	21.971	17.235	1027.3	14.09	87.88	82.5	92.1	299.5
125.00		0.2500	21.042	16.498	901.1	13.43	84.17	82.5	84.3	287.0
128.00		0.2500	20.485	16.056	830.6	13.04	81.94	82.5	79.9	166.2
130.00		0.2500	20.114	15.761	785.7	12.78	80.46	82.5	76.9	108.3
134.00		0.2500	19.371	15.172	700.9	12.25	77.49	82.5	71.3	210.5
135.00		0.2500	19.186	15.025	680.7	12.12	76.74	82.5	69.9	51.4
136.00		0.2500	19.000	14.878	660.8	11.99	76.00	82.5	68.5	50.9
										17778.7

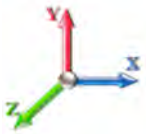
Wind Loading - Shaft

Structure:	CT46137-A-SBA	**Code:**	EIA/TIA-222-G	5/20/2021	
Site Name:	Hamden-State St	**Exposure:**	C		
Height:	136.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 7	

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



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	19.450	21.40	325.40	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	19.450	21.40	318.37	0.650	0.000	5.00	17.997	11.70	400.4	0.0	1193.5
10.00		1.00	0.85	19.450	21.40	311.35	0.650	0.000	5.00	17.604	11.44	391.7	0.0	1167.2
15.00		1.00	0.85	19.450	21.40	304.32	0.650	0.000	5.00	17.211	11.19	383.0	0.0	1140.9
20.00		1.00	0.90	20.638	22.70	306.24	0.650	0.000	5.00	16.818	10.93	397.1	0.0	1114.5
25.00		1.00	0.95	21.630	23.79	306.11	0.650	0.000	5.00	16.426	10.68	406.5	0.0	1088.2
30.00		1.00	0.98	22.477	24.72	304.49	0.650	0.000	5.00	16.033	10.42	412.3	0.0	1061.9
35.00		1.00	1.01	23.218	25.54	301.80	0.650	0.000	5.00	15.640	10.17	415.4	0.0	1035.6
40.00		1.00	1.04	23.880	26.27	298.28	0.650	0.000	5.00	15.247	9.91	416.5	0.0	1009.3
43.50	Bot - Section 2	1.00	1.06	24.305	26.74	295.43	0.650	0.000	3.50	10.439	6.79	290.3	0.0	690.8
45.00		1.00	1.07	24.479	26.93	294.12	0.650	0.000	1.50	4.510	2.93	126.3	0.0	548.4
48.50	Top - Section 1	1.00	1.09	24.869	27.36	290.89	0.650	0.000	3.50	10.387	6.75	295.5	0.0	1262.6
50.00		1.00	1.09	25.029	27.53	295.87	0.650	0.000	1.50	4.393	2.86	125.8	0.0	249.5
55.00		1.00	1.12	25.536	28.09	290.81	0.650	0.000	5.00	14.386	9.35	420.3	0.0	817.2
60.00		1.00	1.14	26.008	28.61	285.36	0.650	0.000	5.00	13.994	9.10	416.4	0.0	794.6
65.00		1.00	1.16	26.450	29.09	279.58	0.650	0.000	5.00	13.601	8.84	411.5	0.0	772.0
70.00		1.00	1.17	26.866	29.55	273.52	0.650	0.000	5.00	13.208	8.59	405.9	0.0	749.5
75.00		1.00	1.19	27.259	29.98	267.19	0.650	0.000	5.00	12.815	8.33	399.6	0.0	726.9
80.00		1.00	1.21	27.632	30.39	260.64	0.650	0.000	5.00	12.423	8.07	392.7	0.0	704.4
85.00		1.00	1.22	27.987	30.79	253.88	0.650	0.000	5.00	12.030	7.82	385.2	0.0	681.8
88.00	Bot - Section 3	1.00	1.23	28.192	31.01	249.74	0.650	0.000	3.00	7.029	4.57	226.7	0.0	398.3
90.00		1.00	1.24	28.325	31.16	246.94	0.650	0.000	2.00	4.692	3.05	152.1	0.0	439.0
92.00	Top - Section 2	1.00	1.24	28.457	31.30	244.11	0.650	0.000	2.00	4.629	3.01	150.7	0.0	433.0
95.00		1.00	1.25	28.650	31.51	244.41	0.650	0.000	3.00	6.826	4.44	223.7	0.0	258.9
100.00		1.00	1.27	28.961	31.86	237.16	0.650	0.000	5.00	11.063	7.19	366.5	0.0	419.5
105.00		1.00	1.28	29.260	32.19	229.77	0.650	0.000	5.00	10.670	6.94	357.2	0.0	404.5
110.00		1.00	1.29	29.548	32.50	222.24	0.650	0.000	5.00	10.278	6.68	347.4	0.0	389.5
115.00		1.00	1.30	29.826	32.81	214.58	0.650	0.000	5.00	9.885	6.43	337.3	0.0	374.4
120.00		1.00	1.32	30.094	33.10	206.81	0.650	0.000	5.00	9.492	6.17	326.8	0.0	359.4
125.00		1.00	1.33	30.354	33.39	198.92	0.650	0.000	5.00	9.099	5.91	316.0	0.0	344.4
128.00	Appurtenance(s)	1.00	1.33	30.506	33.56	194.14	0.650	0.000	3.00	5.271	3.43	184.0	0.0	199.4
130.00		1.00	1.34	30.605	33.67	190.93	0.650	0.000	2.00	3.435	2.23	120.3	0.0	129.9
134.00	Appurtenance(s)	1.00	1.35	30.801	33.88	184.47	0.650	0.000	4.00	6.682	4.34	235.5	0.0	252.6
135.00		1.00	1.35	30.850	33.93	182.85	0.650	0.000	1.00	1.631	1.06	57.6	0.0	61.7
136.00		1.00	1.35	30.898	33.99	181.22	0.650	0.000	1.00	1.616	1.05	57.1	0.0	61.1
								Totals:	**136.00**			**10,351.0**		**21,334.4**

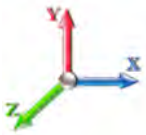
Discrete Appurtenance Forces

Structure:	CT46137-A-SBA	**Code:**	EIA/TIA-222-G	5/20/2021	
Site Name:	Hamden-State St	**Exposure:**	C		
Height:	136.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 8	

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



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	134.00	Samsung B2/B66A	3	30.898	33.987	0.60	0.90	3.40	302.40	0.000	2.000	184.94	0.00	369.88
2	134.00	HBX-6517DS-VTM	6	30.898	33.987	0.68	0.90	21.42	95.04	0.000	2.000	1165.06	0.00	2330.11
3	134.00	LNX-6514DS-VTM	6	30.898	33.987	0.72	0.90	34.95	279.36	0.000	2.000	1900.50	0.00	3801.00
4	134.00	HRR12-U Handrail	1	30.801	33.881	0.75	1.00	5.06	480.00	0.000	0.000	274.44	0.00	0.00
5	134.00	Raycap	2	30.898	33.987	0.81	0.90	6.14	76.80	0.000	2.000	333.88	0.00	667.76
6	134.00	Samsung B5/B13	3	30.898	33.987	0.60	0.90	3.40	253.08	0.000	2.000	184.94	0.00	369.88
7	134.00	Low Profile Platform	1	30.801	33.881	1.00	1.00	22.00	1800.00	0.000	0.000	1192.63	0.00	0.00
8	128.00	SitePro RMQP-496-HK	1	30.506	33.556	1.00	1.00	48.00	2938.80	0.000	0.000	2577.12	0.00	0.00
9	128.00	Ericsson 4415 B66A	3	30.506	33.556	0.50	0.75	2.47	178.56	0.000	0.000	132.74	0.00	0.00
10	128.00	Ericsson 4424 B25	3	30.506	33.556	0.50	0.75	3.09	316.80	0.000	0.000	165.92	0.00	0.00
11	128.00	Ericsson 4449 B71 + B85	3	30.506	33.556	0.50	0.75	2.49	252.00	0.000	0.000	133.55	0.00	0.00
12	128.00	Ericsson KRY 112 144/2	3	30.506	33.556	0.52	0.75	0.65	39.60	0.000	0.000	34.67	0.00	0.00
13	128.00	APX16DWV-16DWVS-E-A	3	30.506	33.556	0.46	0.75	9.22	146.52	0.000	0.000	495.07	0.00	0.00
14	128.00	APXVAARR24_43-U-NA2	3	30.506	33.556	0.52	0.75	31.88	460.80	0.000	0.000	1711.53	0.00	0.00
15	128.00	Air 6449 B41	3	30.506	33.556	0.53	0.75	9.03	370.80	0.000	0.000	484.60	0.00	0.00
							Totals:		**7,990.56**			**10,971.58**		

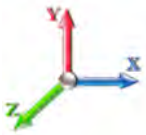
Total Applied Force Summary

Structure:	CT46137-A-SBA		**Code:**	EIA/TIA-222-G	5/20/2021
Site Name:	Hamden-State St		**Exposure:**	C	
Height:	136.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 9

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



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		400.45	1274.66	0.00	0.00
10.00		391.71	1248.34	0.00	0.00
15.00		382.97	1222.02	0.00	0.00
20.00		397.07	1195.71	0.00	0.00
25.00		406.45	1169.39	0.00	0.00
30.00		412.26	1143.07	0.00	0.00
35.00		415.42	1116.75	0.00	0.00
40.00		416.54	1090.44	0.00	0.00
43.50		290.27	747.65	0.00	0.00
45.00		126.31	572.79	0.00	0.00
48.50		295.50	1319.39	0.00	0.00
50.00		125.77	273.90	0.00	0.00
55.00		420.27	898.32	0.00	0.00
60.00		416.35	875.77	0.00	0.00
65.00		411.54	853.21	0.00	0.00
70.00		405.94	830.65	0.00	0.00
75.00		399.63	808.09	0.00	0.00
80.00		392.69	785.53	0.00	0.00
85.00		385.15	762.98	0.00	0.00
88.00		226.71	446.96	0.00	0.00
90.00		152.05	471.51	0.00	0.00
92.00		150.71	465.49	0.00	0.00
95.00		223.74	307.65	0.00	0.00
100.00		366.53	500.72	0.00	0.00
105.00		357.17	485.68	0.00	0.00
110.00		347.41	470.64	0.00	0.00
115.00		337.27	455.60	0.00	0.00
120.00		326.79	440.56	0.00	0.00
125.00		315.97	425.52	0.00	0.00
128.00	(22) attachments	5919.15	4951.98	0.00	0.00
130.00		120.28	135.20	0.00	0.00
134.00	(22) attachments	5471.85	3549.87	0.00	7538.64
135.00		57.57	64.29	0.00	0.00
136.00		57.11	63.69	0.00	0.00
	Totals:	**21,322.59**	**31,424.00**	**0.00**	**7,538.64**

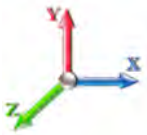
Calculated Forces

Structure:	CT46137-A-SBA	**Code:**	EIA/TIA-222-G	5/20/2021	
Site Name:	Hamden-State St	**Exposure:**	C		
Height:	136.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 10	

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



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	-31.38	-21.39	0.00	-2240.9	0.00	2240.97	4390.93	2195.46	7660.90	3836.15	0.00	0.000	0.000	0.591
5.00	-30.02	-21.10	0.00	-2134.0	0.00	2134.04	4295.16	2147.58	7328.71	3669.80	0.12	-0.230	0.000	0.589
10.00	-28.69	-20.82	0.00	-2028.5	0.00	2028.52	4199.39	2099.69	7003.88	3507.15	0.49	-0.464	0.000	0.585
15.00	-27.39	-20.54	0.00	-1924.4	0.00	1924.40	4103.62	2051.81	6686.41	3348.18	1.10	-0.701	0.000	0.582
20.00	-26.11	-20.24	0.00	-1821.6	0.00	1821.69	4007.85	2003.93	6376.31	3192.89	1.97	-0.943	0.000	0.577
25.00	-24.86	-19.92	0.00	-1720.4	0.00	1720.49	3912.08	1956.04	6073.57	3041.30	3.08	-1.188	0.000	0.572
30.00	-23.64	-19.58	0.00	-1620.9	0.00	1620.90	3816.32	1908.16	5778.19	2893.39	4.46	-1.436	0.000	0.567
35.00	-22.45	-19.24	0.00	-1522.9	0.00	1522.98	3720.55	1860.27	5490.18	2749.17	6.10	-1.688	0.000	0.560
40.00	-21.31	-18.87	0.00	-1426.7	0.00	1426.79	3624.78	1812.39	5209.53	2608.64	8.00	-1.943	0.000	0.553
43.50	-20.53	-18.60	0.00	-1360.7	0.00	1360.76	3557.74	1778.87	5017.45	2512.46	9.49	-2.125	0.000	0.547
45.00	-19.92	-18.50	0.00	-1332.8	0.00	1332.86	3529.01	1764.51	4936.24	2471.79	10.18	-2.205	0.000	0.545
48.50	-18.57	-18.19	0.00	-1268.1	0.00	1268.12	3039.25	1519.63	4279.34	2142.85	11.86	-2.390	0.000	0.598
50.00	-18.24	-18.11	0.00	-1240.8	0.00	1240.84	3014.63	1507.31	4209.90	2108.08	12.62	-2.470	0.000	0.595
55.00	-17.28	-17.74	0.00	-1150.2	0.00	1150.27	2932.54	1466.27	3982.54	1994.23	15.36	-2.756	0.000	0.583
60.00	-16.34	-17.36	0.00	-1061.5	0.00	1061.58	2850.45	1425.23	3761.50	1883.54	18.40	-3.043	0.000	0.569
65.00	-15.42	-16.98	0.00	-974.78	0.00	974.78	2768.37	1384.18	3546.76	1776.02	21.74	-3.330	0.000	0.555
70.00	-14.53	-16.60	0.00	-889.88	0.00	889.88	2686.28	1343.14	3338.33	1671.65	25.38	-3.618	0.000	0.538
75.00	-13.67	-16.21	0.00	-806.90	0.00	806.90	2604.19	1302.10	3136.22	1570.44	29.32	-3.904	0.000	0.519
80.00	-12.84	-15.83	0.00	-725.83	0.00	725.83	2522.10	1261.05	2940.42	1472.40	33.56	-4.188	0.000	0.498
85.00	-12.05	-15.44	0.00	-646.68	0.00	646.68	2440.02	1220.01	2750.93	1377.51	38.09	-4.467	0.000	0.475
88.00	-11.58	-15.20	0.00	-600.38	0.00	600.38	2390.76	1195.38	2640.27	1322.09	40.95	-4.636	0.000	0.459
90.00	-11.10	-15.03	0.00	-569.98	0.00	569.98	2357.93	1178.96	2567.75	1285.78	42.91	-4.748	0.000	0.448
92.00	-10.61	-14.87	0.00	-539.91	0.00	539.91	1547.90	773.95	1709.73	856.14	44.92	-4.859	0.000	0.638
95.00	-10.26	-14.67	0.00	-495.30	0.00	495.30	1524.57	762.29	1648.80	825.63	48.02	-5.020	0.000	0.607
100.00	-9.70	-14.32	0.00	-421.96	0.00	421.96	1484.88	742.44	1548.79	775.55	53.47	-5.375	0.000	0.551
105.00	-9.18	-13.96	0.00	-350.39	0.00	350.39	1444.16	722.08	1450.80	726.48	59.27	-5.709	0.000	0.489
110.00	-8.68	-13.61	0.00	-280.57	0.00	280.57	1389.90	694.95	1342.87	672.43	65.41	-6.013	0.000	0.424
115.00	-8.20	-13.27	0.00	-212.49	0.00	212.49	1335.17	667.59	1238.67	620.26	71.84	-6.280	0.000	0.349
120.00	-7.76	-12.92	0.00	-146.17	0.00	146.17	1280.45	640.22	1138.68	570.19	78.53	-6.499	0.000	0.263
125.00	-7.35	-12.57	0.00	-81.58	0.00	81.58	1225.72	612.86	1042.90	522.23	85.41	-6.656	0.000	0.163
128.00	-3.12	-6.11	0.00	-43.88	0.00	43.88	1192.89	596.44	987.45	494.46	89.60	-6.716	0.000	0.091
130.00	-2.99	-5.98	0.00	-31.65	0.00	31.65	1171.00	585.50	951.33	476.37	92.42	-6.742	0.000	0.069
134.00	-0.11	-0.13	0.00	-0.19	0.00	0.19	1127.22	563.61	881.10	441.20	98.07	-6.770	0.000	0.001
135.00	-0.06	-0.06	0.00	-0.06	0.00	0.06	1116.28	558.14	863.96	432.62	99.48	-6.770	0.000	0.000
136.00	0.00	-0.06	0.00	0.00	0.00	0.00	1105.33	552.67	846.99	424.13	100.90	-6.770	0.000	0.000

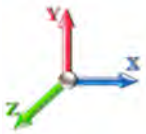
Wind Loading - Shaft

Structure:	CT46137-A-SBA	**Code:**	EIA/TIA-222-G	5/20/2021	
Site Name:	Hamden-State St	**Exposure:**	C		
Height:	136.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 11	

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



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	19.450	21.40	325.40	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	19.450	21.40	318.37	0.650	0.000	5.00	17.997	11.70	400.4	0.0	895.1
10.00		1.00	0.85	19.450	21.40	311.35	0.650	0.000	5.00	17.604	11.44	391.7	0.0	875.4
15.00		1.00	0.85	19.450	21.40	304.32	0.650	0.000	5.00	17.211	11.19	383.0	0.0	855.6
20.00		1.00	0.90	20.638	22.70	306.24	0.650	0.000	5.00	16.818	10.93	397.1	0.0	835.9
25.00		1.00	0.95	21.630	23.79	306.11	0.650	0.000	5.00	16.426	10.68	406.5	0.0	816.2
30.00		1.00	0.98	22.477	24.72	304.49	0.650	0.000	5.00	16.033	10.42	412.3	0.0	796.4
35.00		1.00	1.01	23.218	25.54	301.80	0.650	0.000	5.00	15.640	10.17	415.4	0.0	776.7
40.00		1.00	1.04	23.880	26.27	298.28	0.650	0.000	5.00	15.247	9.91	416.5	0.0	757.0
43.50	Bot - Section 2	1.00	1.06	24.305	26.74	295.43	0.650	0.000	3.50	10.439	6.79	290.3	0.0	518.1
45.00		1.00	1.07	24.479	26.93	294.12	0.650	0.000	1.50	4.510	2.93	126.3	0.0	411.3
48.50	Top - Section 1	1.00	1.09	24.869	27.36	290.89	0.650	0.000	3.50	10.387	6.75	295.5	0.0	946.9
50.00		1.00	1.09	25.029	27.53	295.87	0.650	0.000	1.50	4.393	2.86	125.8	0.0	187.2
55.00		1.00	1.12	25.536	28.09	290.81	0.650	0.000	5.00	14.386	9.35	420.3	0.0	612.9
60.00		1.00	1.14	26.008	28.61	285.36	0.650	0.000	5.00	13.994	9.10	416.4	0.0	595.9
65.00		1.00	1.16	26.450	29.09	279.58	0.650	0.000	5.00	13.601	8.84	411.5	0.0	579.0
70.00		1.00	1.17	26.866	29.55	273.52	0.650	0.000	5.00	13.208	8.59	405.9	0.0	562.1
75.00		1.00	1.19	27.259	29.98	267.19	0.650	0.000	5.00	12.815	8.33	399.6	0.0	545.2
80.00		1.00	1.21	27.632	30.39	260.64	0.650	0.000	5.00	12.423	8.07	392.7	0.0	528.3
85.00		1.00	1.22	27.987	30.79	253.88	0.650	0.000	5.00	12.030	7.82	385.2	0.0	511.4
88.00	Bot - Section 3	1.00	1.23	28.192	31.01	249.74	0.650	0.000	3.00	7.029	4.57	226.7	0.0	298.7
90.00		1.00	1.24	28.325	31.16	246.94	0.650	0.000	2.00	4.692	3.05	152.1	0.0	329.3
92.00	Top - Section 2	1.00	1.24	28.457	31.30	244.11	0.650	0.000	2.00	4.629	3.01	150.7	0.0	324.8
95.00		1.00	1.25	28.650	31.51	244.41	0.650	0.000	3.00	6.826	4.44	223.7	0.0	194.2
100.00		1.00	1.27	28.961	31.86	237.16	0.650	0.000	5.00	11.063	7.19	366.5	0.0	314.7
105.00		1.00	1.28	29.260	32.19	229.77	0.650	0.000	5.00	10.670	6.94	357.2	0.0	303.4
110.00		1.00	1.29	29.548	32.50	222.24	0.650	0.000	5.00	10.278	6.68	347.4	0.0	292.1
115.00		1.00	1.30	29.826	32.81	214.58	0.650	0.000	5.00	9.885	6.43	337.3	0.0	280.8
120.00		1.00	1.32	30.094	33.10	206.81	0.650	0.000	5.00	9.492	6.17	326.8	0.0	269.5
125.00		1.00	1.33	30.354	33.39	198.92	0.650	0.000	5.00	9.099	5.91	316.0	0.0	258.3
128.00	Appurtenance(s)	1.00	1.33	30.506	33.56	194.14	0.650	0.000	3.00	5.271	3.43	184.0	0.0	149.5
130.00		1.00	1.34	30.605	33.67	190.93	0.650	0.000	2.00	3.435	2.23	120.3	0.0	97.4
134.00	Appurtenance(s)	1.00	1.35	30.801	33.88	184.47	0.650	0.000	4.00	6.682	4.34	235.5	0.0	189.5
135.00		1.00	1.35	30.850	33.93	182.85	0.650	0.000	1.00	1.631	1.06	57.6	0.0	46.2
136.00		1.00	1.35	30.898	33.99	181.22	0.650	0.000	1.00	1.616	1.05	57.1	0.0	45.8
								Totals:	**136.00**			**10,351.0**		**16,000.8**

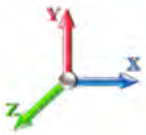
Discrete Appurtenance Forces

Structure:	CT46137-A-SBA	**Code:**	EIA/TIA-222-G	5/20/2021	
Site Name:	Hamden-State St	**Exposure:**	C		
Height:	136.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 12	

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



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	134.00	Samsung B2/B66A	3	30.898	33.987	0.60	0.90	3.40	226.80	0.000	2.000	184.94	0.00	369.88
2	134.00	HBX-6517DS-VTM	6	30.898	33.987	0.68	0.90	21.42	71.28	0.000	2.000	1165.06	0.00	2330.11
3	134.00	LNX-6514DS-VTM	6	30.898	33.987	0.72	0.90	34.95	209.52	0.000	2.000	1900.50	0.00	3801.00
4	134.00	HRR12-U Handrail	1	30.801	33.881	0.75	1.00	5.06	360.00	0.000	0.000	274.44	0.00	0.00
5	134.00	Raycap	2	30.898	33.987	0.81	0.90	6.14	57.60	0.000	2.000	333.88	0.00	667.76
6	134.00	Samsung B5/B13	3	30.898	33.987	0.60	0.90	3.40	189.81	0.000	2.000	184.94	0.00	369.88
7	134.00	Low Profile Platform	1	30.801	33.881	1.00	1.00	22.00	1350.00	0.000	0.000	1192.63	0.00	0.00
8	128.00	SitePro RMQP-496-HK	1	30.506	33.556	1.00	1.00	48.00	2204.10	0.000	0.000	2577.12	0.00	0.00
9	128.00	Ericsson 4415 B66A	3	30.506	33.556	0.50	0.75	2.47	133.92	0.000	0.000	132.74	0.00	0.00
10	128.00	Ericsson 4424 B25	3	30.506	33.556	0.50	0.75	3.09	237.60	0.000	0.000	165.92	0.00	0.00
11	128.00	Ericsson 4449 B71 + B85	3	30.506	33.556	0.50	0.75	2.49	189.00	0.000	0.000	133.55	0.00	0.00
12	128.00	Ericsson KRY 112 144/2	3	30.506	33.556	0.52	0.75	0.65	29.70	0.000	0.000	34.67	0.00	0.00
13	128.00	APX16DWV-16DWVS-E-A	3	30.506	33.556	0.46	0.75	9.22	109.89	0.000	0.000	495.07	0.00	0.00
14	128.00	APXVAARR24_43-U-NA2	3	30.506	33.556	0.52	0.75	31.88	345.60	0.000	0.000	1711.53	0.00	0.00
15	128.00	Air 6449 B41	3	30.506	33.556	0.53	0.75	9.03	278.10	0.000	0.000	484.60	0.00	0.00
							Totals:		**5,992.92**			**10,971.58**		

Total Applied Force Summary

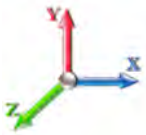
Structure:	CT46137-A-SBA		**Code:**	EIA/TIA-222-G	5/20/2021
Site Name:	Hamden-State St		**Exposure:**	C	
Height:	136.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 13

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 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		400.45	955.99	0.00	0.00
10.00		391.71	936.26	0.00	0.00
15.00		382.97	916.52	0.00	0.00
20.00		397.07	896.78	0.00	0.00
25.00		406.45	877.04	0.00	0.00
30.00		412.26	857.30	0.00	0.00
35.00		415.42	837.57	0.00	0.00
40.00		416.54	817.83	0.00	0.00
43.50		290.27	560.73	0.00	0.00
45.00		126.31	429.59	0.00	0.00
48.50		295.50	989.54	0.00	0.00
50.00		125.77	205.42	0.00	0.00
55.00		420.27	673.74	0.00	0.00
60.00		416.35	656.82	0.00	0.00
65.00		411.54	639.91	0.00	0.00
70.00		405.94	622.99	0.00	0.00
75.00		399.63	606.07	0.00	0.00
80.00		392.69	589.15	0.00	0.00
85.00		385.15	572.23	0.00	0.00
88.00		226.71	335.22	0.00	0.00
90.00		152.05	353.63	0.00	0.00
92.00		150.71	349.12	0.00	0.00
95.00		223.74	230.74	0.00	0.00
100.00		366.53	375.54	0.00	0.00
105.00		357.17	364.26	0.00	0.00
110.00		347.41	352.98	0.00	0.00
115.00		337.27	341.70	0.00	0.00
120.00		326.79	330.42	0.00	0.00
125.00		315.97	319.14	0.00	0.00
128.00	(22) attachments	5919.15	3713.98	0.00	0.00
130.00		120.28	101.40	0.00	0.00
134.00	(22) attachments	5471.85	2662.40	0.00	7538.64
135.00		57.57	48.22	0.00	0.00
136.00		57.11	47.77	0.00	0.00
	Totals:	**21,322.59**	**23,568.00**	**0.00**	**7,538.64**

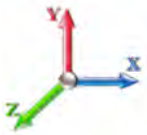
Calculated Forces

Structure:	CT46137-A-SBA	**Code:**	EIA/TIA-222-G	5/20/2021	
Site Name:	Hamden-State St	**Exposure:**	C		
Height:	136.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 14	

Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



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	-23.52	-21.37	0.00	-2212.9	0.00	2212.94	4390.93	2195.46	7660.90	3836.15	0.00	0.000	0.000	0.582
5.00	-22.49	-21.06	0.00	-2106.0	0.00	2106.09	4295.16	2147.58	7328.71	3669.80	0.12	-0.227	0.000	0.579
10.00	-21.47	-20.75	0.00	-2000.8	0.00	2000.81	4199.39	2099.69	7003.88	3507.15	0.48	-0.458	0.000	0.576
15.00	-20.47	-20.44	0.00	-1897.0	0.00	1897.07	4103.62	2051.81	6686.41	3348.18	1.09	-0.692	0.000	0.572
20.00	-19.50	-20.11	0.00	-1794.8	0.00	1794.88	4007.85	2003.93	6376.31	3192.89	1.94	-0.930	0.000	0.567
25.00	-18.54	-19.77	0.00	-1694.3	0.00	1694.32	3912.08	1956.04	6073.57	3041.30	3.04	-1.171	0.000	0.562
30.00	-17.61	-19.41	0.00	-1595.4	0.00	1595.48	3816.32	1908.16	5778.19	2893.39	4.40	-1.416	0.000	0.556
35.00	-16.70	-19.05	0.00	-1498.4	0.00	1498.43	3720.55	1860.27	5490.18	2749.17	6.01	-1.664	0.000	0.550
40.00	-15.83	-18.66	0.00	-1403.1	0.00	1403.19	3624.78	1812.39	5209.53	2608.64	7.89	-1.914	0.000	0.542
43.50	-15.24	-18.39	0.00	-1337.8	0.00	1337.86	3557.74	1778.87	5017.45	2512.46	9.36	-2.094	0.000	0.537
45.00	-14.77	-18.28	0.00	-1310.2	0.00	1310.28	3529.01	1764.51	4936.24	2471.79	10.03	-2.172	0.000	0.534
48.50	-13.75	-17.98	0.00	-1246.3	0.00	1246.30	3039.25	1519.63	4279.34	2142.85	11.69	-2.353	0.000	0.586
50.00	-13.50	-17.89	0.00	-1219.3	0.00	1219.33	3014.63	1507.31	4209.90	2108.08	12.44	-2.433	0.000	0.583
55.00	-12.76	-17.50	0.00	-1129.9	0.00	1129.91	2932.54	1466.27	3982.54	1994.23	15.14	-2.713	0.000	0.571
60.00	-12.04	-17.11	0.00	-1042.4	0.00	1042.41	2850.45	1425.23	3761.50	1883.54	18.13	-2.995	0.000	0.558
65.00	-11.34	-16.72	0.00	-956.86	0.00	956.86	2768.37	1384.18	3546.76	1776.02	21.42	-3.277	0.000	0.543
70.00	-10.66	-16.33	0.00	-873.27	0.00	873.27	2686.28	1343.14	3338.33	1671.65	25.00	-3.559	0.000	0.527
75.00	-10.00	-15.94	0.00	-791.62	0.00	791.62	2604.19	1302.10	3136.22	1570.44	28.88	-3.840	0.000	0.508
80.00	-9.37	-15.55	0.00	-711.91	0.00	711.91	2522.10	1261.05	2940.42	1472.40	33.04	-4.119	0.000	0.487
85.00	-8.77	-15.16	0.00	-634.14	0.00	634.14	2440.02	1220.01	2750.93	1377.51	37.50	-4.393	0.000	0.464
88.00	-8.42	-14.93	0.00	-588.66	0.00	588.66	2390.76	1195.38	2640.27	1322.09	40.31	-4.558	0.000	0.449
90.00	-8.05	-14.76	0.00	-558.80	0.00	558.80	2357.93	1178.96	2567.75	1285.78	42.24	-4.668	0.000	0.438
92.00	-7.68	-14.60	0.00	-529.28	0.00	529.28	1547.90	773.95	1709.73	856.14	44.22	-4.777	0.000	0.624
95.00	-7.40	-14.39	0.00	-485.47	0.00	485.47	1524.57	762.29	1648.80	825.63	47.27	-4.935	0.000	0.593
100.00	-6.98	-14.04	0.00	-413.50	0.00	413.50	1484.88	742.44	1548.79	775.55	52.62	-5.283	0.000	0.538
105.00	-6.58	-13.68	0.00	-343.31	0.00	343.31	1444.16	722.08	1450.80	726.48	58.32	-5.610	0.000	0.477
110.00	-6.20	-13.33	0.00	-274.90	0.00	274.90	1389.90	694.95	1342.87	672.43	64.35	-5.908	0.000	0.414
115.00	-5.84	-12.99	0.00	-208.24	0.00	208.24	1335.17	667.59	1238.67	620.26	70.67	-6.169	0.000	0.340
120.00	-5.50	-12.64	0.00	-143.31	0.00	143.31	1280.45	640.22	1138.68	570.19	77.24	-6.384	0.000	0.256
125.00	-5.20	-12.30	0.00	-80.10	0.00	80.10	1225.72	612.86	1042.90	522.23	84.00	-6.538	0.000	0.158
128.00	-2.18	-6.00	0.00	-43.19	0.00	43.19	1192.89	596.44	987.45	494.46	88.13	-6.597	0.000	0.089
130.00	-2.09	-5.87	0.00	-31.20	0.00	31.20	1171.00	585.50	951.33	476.37	90.89	-6.622	0.000	0.067
134.00	-0.08	-0.12	0.00	-0.19	0.00	0.19	1127.22	563.61	881.10	441.20	96.44	-6.651	0.000	0.000
135.00	-0.04	-0.06	0.00	-0.06	0.00	0.06	1116.28	558.14	863.96	432.62	97.83	-6.651	0.000	0.000
136.00	0.00	-0.06	0.00	0.00	0.00	0.00	1105.33	552.67	846.99	424.13	99.22	-6.651	0.000	0.000

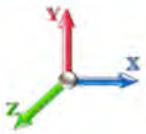
Wind Loading - Shaft

Structure:	CT46137-A-SBA	**Code:**	EIA/TIA-222-G	5/20/2021	
Site Name:	Hamden-State St	**Exposure:**	C		
Height:	136.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 15	

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

Dead Load Factor 1.20

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	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	19.032	22.84	129.8	337.0	1530.5
10.00		1.00	0.85	5.168	5.68	0.00	1.200	1.331	5.00	18.713	22.46	127.7	354.2	1521.3
15.00		1.00	0.85	5.168	5.68	0.00	1.200	1.386	5.00	18.366	22.04	125.3	361.2	1502.1
20.00		1.00	0.90	5.483	6.03	0.00	1.200	1.427	5.00	18.007	21.61	130.3	363.8	1478.4
25.00		1.00	0.95	5.747	6.32	0.00	1.200	1.459	5.00	17.641	21.17	133.8	363.8	1452.1
30.00		1.00	0.98	5.972	6.57	0.00	1.200	1.486	5.00	17.271	20.73	136.2	362.1	1424.0
35.00		1.00	1.01	6.169	6.79	0.00	1.200	1.509	5.00	16.897	20.28	137.6	359.2	1394.8
40.00		1.00	1.04	6.345	6.98	0.00	1.200	1.529	5.00	16.522	19.83	138.4	355.3	1364.6
43.50	Bot - Section 2	1.00	1.06	6.458	7.10	0.00	1.200	1.542	3.50	11.339	13.61	96.7	246.5	937.3
45.00		1.00	1.07	6.504	7.15	0.00	1.200	1.547	1.50	4.897	5.88	42.0	107.4	655.8
48.50	Top - Section 1	1.00	1.09	6.608	7.27	0.00	1.200	1.559	3.50	11.296	13.56	98.5	248.1	1510.7
50.00		1.00	1.09	6.650	7.32	0.00	1.200	1.564	1.50	4.783	5.74	42.0	105.8	355.4
55.00		1.00	1.12	6.785	7.46	0.00	1.200	1.579	5.00	15.702	18.84	140.6	347.2	1164.3
60.00		1.00	1.14	6.910	7.60	0.00	1.200	1.592	5.00	15.321	18.38	139.8	341.1	1135.7
65.00		1.00	1.16	7.028	7.73	0.00	1.200	1.605	5.00	14.939	17.93	138.6	334.6	1106.6
70.00		1.00	1.17	7.138	7.85	0.00	1.200	1.617	5.00	14.556	17.47	137.2	327.8	1077.3
75.00		1.00	1.19	7.243	7.97	0.00	1.200	1.628	5.00	14.172	17.01	135.5	320.7	1047.6
80.00		1.00	1.21	7.342	8.08	0.00	1.200	1.639	5.00	13.788	16.55	133.6	313.4	1017.7
85.00		1.00	1.22	7.436	8.18	0.00	1.200	1.649	5.00	13.404	16.08	131.6	305.8	987.6
88.00	Bot - Section 3	1.00	1.23	7.491	8.24	0.00	1.200	1.655	3.00	7.857	9.43	77.7	180.7	578.9
90.00		1.00	1.24	7.526	8.28	0.00	1.200	1.658	2.00	5.245	6.29	52.1	121.3	560.3
92.00	Top - Section 2	1.00	1.24	7.561	8.32	0.00	1.200	1.662	2.00	5.183	6.22	51.7	120.0	553.0
95.00		1.00	1.25	7.612	8.37	0.00	1.200	1.667	3.00	7.660	9.19	77.0	177.1	436.1
100.00		1.00	1.27	7.695	8.46	0.00	1.200	1.676	5.00	12.460	14.95	126.6	287.1	706.6
105.00		1.00	1.28	7.774	8.55	0.00	1.200	1.684	5.00	12.074	14.49	123.9	278.8	683.3
110.00		1.00	1.29	7.851	8.64	0.00	1.200	1.692	5.00	11.687	14.02	121.1	270.3	659.8
115.00		1.00	1.30	7.925	8.72	0.00	1.200	1.699	5.00	11.301	13.56	118.2	261.7	636.1
120.00		1.00	1.32	7.996	8.80	0.00	1.200	1.707	5.00	10.914	13.10	115.2	253.0	612.4
125.00		1.00	1.33	8.065	8.87	0.00	1.200	1.714	5.00	10.527	12.63	112.1	244.1	588.5
128.00	Appurtenance(s)	1.00	1.33	8.105	8.92	0.00	1.200	1.718	3.00	6.130	7.36	65.6	143.2	342.6
130.00		1.00	1.34	8.132	8.95	0.00	1.200	1.720	2.00	4.009	4.81	43.0	94.0	224.0
134.00	Appurtenance(s)	1.00	1.35	8.184	9.00	0.00	1.200	1.726	4.00	7.833	9.40	84.6	182.3	434.9
135.00		1.00	1.35	8.197	9.02	0.00	1.200	1.727	1.00	1.919	2.30	20.8	45.2	106.9
136.00		1.00	1.35	8.210	9.03	0.00	1.200	1.728	1.00	1.904	2.28	20.6	44.8	105.9
								Totals:	**136.00**			**3,505.3**		**29,892.9**

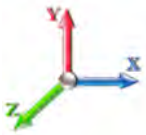
Discrete Appurtenance Forces

Structure:	CT46137-A-SBA	**Code:**	EIA/TIA-222-G	5/20/2021	
Site Name:	Hamden-State St	**Exposure:**	C		
Height:	136.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 16	

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

Dead Load Factor 1.20

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	134.00	Samsung B2/B66A	3	8.210	9.031	0.68	0.90	4.91	414.56	0.000	2.000	44.35	0.00	88.69
2	134.00	HBX-6517DS-VTM	6	8.210	9.031	0.68	0.90	26.32	806.19	0.000	2.000	237.66	0.00	475.32
3	134.00	LNX-6514DS-VTM	6	8.210	9.031	0.72	0.90	46.89	1228.55	0.000	2.000	423.44	0.00	846.88
4	134.00	HRR12-U Handrail	1	8.184	9.002	0.00	1.00	13.27	480.00	0.000	0.000	119.49	0.00	0.00
5	134.00	Raycap	2	8.210	9.031	0.81	0.90	7.92	363.24	0.000	2.000	71.48	0.00	142.96
6	134.00	Samsung B5/B13	3	8.210	9.031	0.60	0.90	4.39	368.08	0.000	2.000	39.62	0.00	79.23
7	134.00	Low Profile Platform	1	8.184	9.002	1.00	1.00	39.46	2794.23	0.000	0.000	355.27	0.00	0.00
8	128.00	SitePro RMQP-496-HK	1	8.105	8.916	1.00	1.00	80.98	4672.87	0.000	0.000	722.02	0.00	0.00
9	128.00	Ericsson 4415 B66A	3	8.105	8.916	0.50	0.75	3.28	346.51	0.000	0.000	29.28	0.00	0.00
10	128.00	Ericsson 4424 B25	3	8.105	8.916	0.50	0.75	3.97	570.99	0.000	0.000	35.42	0.00	0.00
11	128.00	Ericsson 4449 B71 + B85	3	8.105	8.916	0.50	0.75	3.28	452.70	0.000	0.000	29.28	0.00	0.00
12	128.00	Ericsson KRY 112 144/2	3	8.105	8.916	0.52	0.75	1.38	62.13	0.000	0.000	12.32	0.00	0.00
13	128.00	APX16DWV-16DWVS-E-A	3	8.105	8.916	0.46	0.75	12.21	391.67	0.000	0.000	108.88	0.00	0.00
14	128.00	APXVAARR24_43-U-NA2	3	8.105	8.916	0.52	0.75	34.82	1692.40	0.000	0.000	310.47	0.00	0.00
15	128.00	Air 6449 B41	3	8.105	8.916	0.53	0.75	10.52	680.58	0.000	0.000	93.80	0.00	0.00
							Totals:		**15,324.70**			**2,632.77**		

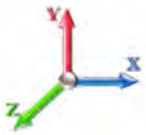
Total Applied Force Summary

Structure:	CT46137-A-SBA		**Code:**	EIA/TIA-222-G	5/20/2021
Site Name:	Hamden-State St		**Exposure:**	C	
Height:	136.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 17

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

Dead Load Factor 1.20

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		129.83	1611.64	0.00	0.00
10.00		127.66	1602.50	0.00	0.00
15.00		125.29	1583.24	0.00	0.00
20.00		130.34	1559.53	0.00	0.00
25.00		133.83	1533.22	0.00	0.00
30.00		136.15	1505.20	0.00	0.00
35.00		137.60	1475.94	0.00	0.00
40.00		138.37	1445.75	0.00	0.00
43.50		96.66	994.15	0.00	0.00
45.00		42.05	680.18	0.00	0.00
48.50		98.52	1567.49	0.00	0.00
50.00		41.99	379.74	0.00	0.00
55.00		140.63	1245.49	0.00	0.00
60.00		139.75	1216.84	0.00	0.00
65.00		138.58	1187.81	0.00	0.00
70.00		137.15	1158.45	0.00	0.00
75.00		135.49	1128.80	0.00	0.00
80.00		133.63	1098.89	0.00	0.00
85.00		131.57	1068.75	0.00	0.00
88.00		77.68	627.63	0.00	0.00
90.00		52.11	592.77	0.00	0.00
92.00		51.73	585.49	0.00	0.00
95.00		76.97	484.77	0.00	0.00
100.00		126.56	787.78	0.00	0.00
105.00		123.90	764.44	0.00	0.00
110.00		121.12	740.94	0.00	0.00
115.00		118.22	717.30	0.00	0.00
120.00		115.20	693.52	0.00	0.00
125.00		112.07	669.62	0.00	0.00
128.00	(22) attachments	1407.06	9261.18	0.00	0.00
130.00		43.03	229.25	0.00	0.00
134.00	(22) attachments	1375.91	6900.32	0.00	1633.08
135.00		20.76	109.50	0.00	0.00
136.00		20.63	108.53	0.00	0.00
	Totals:	**6,138.05**	**47,316.67**	**0.00**	**1,633.08**

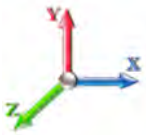
Calculated Forces

Structure:	CT46137-A-SBA	**Code:**	EIA/TIA-222-G	5/20/2021	
Site Name:	Hamden-State St	**Exposure:**	C		
Height:	136.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 18	

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

Dead Load Factor 1.20

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	-47.31	-6.16	0.00	-637.54	0.00	637.54	4390.93	2195.46	7660.90	3836.15	0.00	0.000	0.000	0.177
5.00	-45.69	-6.09	0.00	-606.72	0.00	606.72	4295.16	2147.58	7328.71	3669.80	0.03	-0.065	0.000	0.176
10.00	-44.09	-6.01	0.00	-576.29	0.00	576.29	4199.39	2099.69	7003.88	3507.15	0.14	-0.132	0.000	0.175
15.00	-42.50	-5.93	0.00	-546.25	0.00	546.25	4103.62	2051.81	6686.41	3348.18	0.31	-0.199	0.000	0.174
20.00	-40.93	-5.84	0.00	-516.61	0.00	516.61	4007.85	2003.93	6376.31	3192.89	0.56	-0.268	0.000	0.172
25.00	-39.39	-5.75	0.00	-487.40	0.00	487.40	3912.08	1956.04	6073.57	3041.30	0.88	-0.337	0.000	0.170
30.00	-37.88	-5.65	0.00	-458.67	0.00	458.67	3816.32	1908.16	5778.19	2893.39	1.27	-0.408	0.000	0.168
35.00	-36.40	-5.54	0.00	-430.43	0.00	430.43	3720.55	1860.27	5490.18	2749.17	1.73	-0.479	0.000	0.166
40.00	-34.95	-5.43	0.00	-402.71	0.00	402.71	3624.78	1812.39	5209.53	2608.64	2.27	-0.551	0.000	0.164
43.50	-33.95	-5.35	0.00	-383.71	0.00	383.71	3557.74	1778.87	5017.45	2512.46	2.69	-0.602	0.000	0.162
45.00	-33.27	-5.32	0.00	-375.69	0.00	375.69	3529.01	1764.51	4936.24	2471.79	2.89	-0.625	0.000	0.161
48.50	-31.70	-5.22	0.00	-357.08	0.00	357.08	3039.25	1519.63	4279.34	2142.85	3.37	-0.677	0.000	0.177
50.00	-31.31	-5.20	0.00	-349.24	0.00	349.24	3014.63	1507.31	4209.90	2108.08	3.58	-0.699	0.000	0.176
55.00	-30.06	-5.09	0.00	-323.22	0.00	323.22	2932.54	1466.27	3982.54	1994.23	4.36	-0.780	0.000	0.172
60.00	-28.84	-4.97	0.00	-297.78	0.00	297.78	2850.45	1425.23	3761.50	1883.54	5.22	-0.860	0.000	0.168
65.00	-27.65	-4.85	0.00	-272.91	0.00	272.91	2768.37	1384.18	3546.76	1776.02	6.16	-0.941	0.000	0.164
70.00	-26.49	-4.73	0.00	-248.64	0.00	248.64	2686.28	1343.14	3338.33	1671.65	7.19	-1.021	0.000	0.159
75.00	-25.35	-4.61	0.00	-224.97	0.00	224.97	2604.19	1302.10	3136.22	1570.44	8.30	-1.101	0.000	0.153
80.00	-24.25	-4.49	0.00	-201.90	0.00	201.90	2522.10	1261.05	2940.42	1472.40	9.50	-1.180	0.000	0.147
85.00	-23.18	-4.36	0.00	-179.44	0.00	179.44	2440.02	1220.01	2750.93	1377.51	10.78	-1.258	0.000	0.140
88.00	-22.55	-4.29	0.00	-166.36	0.00	166.36	2390.76	1195.38	2640.27	1322.09	11.58	-1.305	0.000	0.135
90.00	-21.96	-4.23	0.00	-157.79	0.00	157.79	2357.93	1178.96	2567.75	1285.78	12.13	-1.336	0.000	0.132
92.00	-21.37	-4.18	0.00	-149.32	0.00	149.32	1547.90	773.95	1709.73	856.14	12.70	-1.366	0.000	0.188
95.00	-20.88	-4.12	0.00	-136.78	0.00	136.78	1524.57	762.29	1648.80	825.63	13.57	-1.411	0.000	0.179
100.00	-20.09	-4.00	0.00	-116.19	0.00	116.19	1484.88	742.44	1548.79	775.55	15.10	-1.509	0.000	0.163
105.00	-19.33	-3.89	0.00	-96.17	0.00	96.17	1444.16	722.08	1450.80	726.48	16.73	-1.601	0.000	0.146
110.00	-18.58	-3.77	0.00	-76.72	0.00	76.72	1389.90	694.95	1342.87	672.43	18.46	-1.684	0.000	0.127
115.00	-17.87	-3.65	0.00	-57.86	0.00	57.86	1335.17	667.59	1238.67	620.26	20.26	-1.757	0.000	0.107
120.00	-17.17	-3.53	0.00	-39.59	0.00	39.59	1280.45	640.22	1138.68	570.19	22.13	-1.816	0.000	0.083
125.00	-16.51	-3.41	0.00	-21.93	0.00	21.93	1225.72	612.86	1042.90	522.23	24.06	-1.859	0.000	0.055
128.00	-7.30	-1.70	0.00	-11.71	0.00	11.71	1192.89	596.44	987.45	494.46	25.23	-1.875	0.000	0.030
130.00	-7.07	-1.65	0.00	-8.31	0.00	8.31	1171.00	585.50	951.33	476.37	26.02	-1.882	0.000	0.023
134.00	-0.22	-0.05	0.00	-0.07	0.00	0.07	1127.22	563.61	881.10	441.20	27.60	-1.889	0.000	0.000
135.00	-0.11	-0.02	0.00	-0.02	0.00	0.02	1116.28	558.14	863.96	432.62	28.00	-1.889	0.000	0.000
136.00	0.00	-0.02	0.00	0.00	0.00	0.00	1105.33	552.67	846.99	424.13	28.39	-1.889	0.000	0.000

Seismic Segment Forces (Factored)

Structure:	CT46137-A-SBA		**Code:**	EIA/TIA-222-G	5/20/2021
Site Name:	Hamden-State St		**Exposure:**	C	
Height:	136.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 19

Tower Engineering Solutions

Load Case:	1.2D + 1.0E							**Iterations**	23
Gust Response Factor	1.10				**Sds**	0.20		**Ss**	0.19
Dead Load Factor	1.20	**Seismic Load Factor**		1.00	**Sd1**	0.10		**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**		0.36	**SA**	0.04	**Seismic Importance Factor**		1.00

Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		994.58	0.00	0.04	0.02	20.45	
10.00		972.64	0.01	0.06	0.03	28.28	
15.00		950.71	0.02	0.07	0.04	31.37	
20.00		928.78	0.04	0.07	0.04	32.44	
25.00		906.85	0.06	0.07	0.04	32.73	
30.00		884.92	0.09	0.07	0.04	32.82	
35.00		862.99	0.13	0.07	0.03	32.85	
40.00		841.06	0.16	0.07	0.03	32.67	
43.50	Bot - Section 2	575.69	0.19	0.06	0.02	22.46	
45.00		457.03	0.21	0.06	0.02	17.80	
48.50	Top - Section 1	1052.1	0.24	0.06	0.02	40.19	
50.00		207.95	0.26	0.05	0.02	7.81	
55.00		680.96	0.31	0.04	0.01	22.95	
60.00		662.17	0.37	0.03	0.01	17.39	
65.00		643.37	0.43	0.01	0.01	9.43	
70.00		624.57	0.50	-0.02	0.01	-0.19	
75.00		605.77	0.57	-0.04	0.01	-9.74	
80.00		586.97	0.65	-0.07	0.02	-17.17	
85.00		568.17	0.74	-0.10	0.04	-21.16	
88.00	Bot - Section 3	331.88	0.79	-0.11	0.05	-12.95	
90.00		365.87	0.83	-0.12	0.06	-14.23	
92.00	Top - Section 2	360.85	0.86	-0.12	0.07	-13.61	
95.00		215.79	0.92	-0.12	0.10	-7.33	
100.00		349.62	1.02	-0.10	0.14	-7.90	
105.00		337.09	1.13	-0.05	0.20	-1.64	
110.00		324.56	1.24	0.04	0.28	6.21	
115.00		312.03	1.35	0.20	0.38	15.44	
120.00		299.49	1.47	0.43	0.51	25.85	
125.00		286.96	1.60	0.77	0.67	37.22	
128.00	Appurtenance(s)	4086.0	1.67	1.03	0.78	649.64	
130.00		108.27	1.73	1.23	0.86	19.48	
134.00	Appurtenance(s)	2949.4	1.83	1.70	1.04	663.66	
135.00		51.38	1.86	1.84	1.09	12.18	
136.00		50.88	1.89	1.98	1.14	12.68	
	Totals:	**24,437.5**				**1,718.1**	**Total Wind:** **21,322.6**

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

Calculated Forces

Structure:	CT46137-A-SBA		**Code:**	EIA/TIA-222-G	5/20/2021
Site Name:	Hamden-State St		**Exposure:**	C	
Height:	136.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 20

Load Case:	1.2D + 1.0E							**Iterations**	23
Gust Response Factor	1.10			**Sds**	0.20			**Ss**	0.19
Dead Load Factor	1.20	**Seismic Load Factor**	1.00	**Sd1**	0.10			**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.36	**SA**	0.04	**Seismic Importance Factor**			1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-31.42	-1.83	0.00	-211.68	0.00	211.68	4390.93	2195.46	7660.90	3836.15		0.00	0.00	0.062
5.00	-30.15	-1.82	0.00	-202.53	0.00	202.53	4295.16	2147.58	7328.71	3669.80		0.01	-0.02	0.062
10.00	-28.90	-1.80	0.00	-193.43	0.00	193.43	4199.39	2099.69	7003.88	3507.15		0.05	-0.04	0.062
15.00	-27.68	-1.78	0.00	-184.42	0.00	184.42	4103.62	2051.81	6686.41	3348.18		0.10	-0.07	0.062
20.00	-26.48	-1.76	0.00	-175.51	0.00	175.51	4007.85	2003.93	6376.31	3192.89		0.19	-0.09	0.062
25.00	-25.31	-1.73	0.00	-166.72	0.00	166.72	3912.08	1956.04	6073.57	3041.30		0.29	-0.11	0.061
30.00	-24.17	-1.71	0.00	-158.05	0.00	158.05	3816.32	1908.16	5778.19	2893.39		0.43	-0.14	0.061
35.00	-23.05	-1.68	0.00	-149.51	0.00	149.51	3720.55	1860.27	5490.18	2749.17		0.58	-0.16	0.061
40.00	-21.96	-1.66	0.00	-141.10	0.00	141.10	3624.78	1812.39	5209.53	2608.64		0.77	-0.19	0.060
43.50	-21.21	-1.63	0.00	-135.31	0.00	135.31	3557.74	1778.87	5017.45	2512.46		0.91	-0.21	0.060
45.00	-20.64	-1.62	0.00	-132.85	0.00	132.85	3529.01	1764.51	4936.24	2471.79		0.98	-0.21	0.060
48.50	-19.32	-1.58	0.00	-127.18	0.00	127.18	3039.25	1519.63	4279.34	2142.85		1.14	-0.23	0.066
50.00	-19.04	-1.58	0.00	-124.82	0.00	124.82	3014.63	1507.31	4209.90	2108.08		1.21	-0.24	0.066
55.00	-18.14	-1.56	0.00	-116.94	0.00	116.94	2932.54	1466.27	3982.54	1994.23		1.48	-0.27	0.065
60.00	-17.27	-1.55	0.00	-109.14	0.00	109.14	2850.45	1425.23	3761.50	1883.54		1.78	-0.30	0.064
65.00	-16.41	-1.54	0.00	-101.42	0.00	101.42	2768.37	1384.18	3546.76	1776.02		2.11	-0.33	0.063
70.00	-15.58	-1.54	0.00	-93.72	0.00	93.72	2686.28	1343.14	3338.33	1671.65		2.47	-0.36	0.062
75.00	-14.77	-1.55	0.00	-86.00	0.00	86.00	2604.19	1302.10	3136.22	1570.44		2.86	-0.39	0.060
80.00	-13.99	-1.55	0.00	-78.27	0.00	78.27	2522.10	1261.05	2940.42	1472.40		3.28	-0.42	0.059
85.00	-13.22	-1.55	0.00	-70.53	0.00	70.53	2440.02	1220.01	2750.93	1377.51		3.73	-0.45	0.057
88.00	-12.78	-1.55	0.00	-65.89	0.00	65.89	2390.76	1195.38	2640.27	1322.09		4.02	-0.47	0.055
90.00	-12.30	-1.55	0.00	-62.79	0.00	62.79	2357.93	1178.96	2567.75	1285.78		4.22	-0.48	0.054
92.00	-11.84	-1.55	0.00	-59.70	0.00	59.70	1547.90	773.95	1709.73	856.14		4.43	-0.49	0.077
95.00	-11.53	-1.55	0.00	-55.06	0.00	55.06	1524.57	762.29	1648.80	825.63		4.74	-0.51	0.074
100.00	-11.03	-1.55	0.00	-47.32	0.00	47.32	1484.88	742.44	1548.79	775.55		5.30	-0.55	0.068
105.00	-10.54	-1.55	0.00	-39.56	0.00	39.56	1444.16	722.08	1450.80	726.48		5.89	-0.59	0.062
110.00	-10.07	-1.55	0.00	-31.80	0.00	31.80	1389.90	694.95	1342.87	672.43		6.53	-0.62	0.055
115.00	-9.61	-1.53	0.00	-24.06	0.00	24.06	1335.17	667.59	1238.67	620.26		7.19	-0.65	0.046
120.00	-9.17	-1.50	0.00	-16.40	0.00	16.40	1280.45	640.22	1138.68	570.19		7.89	-0.68	0.036
125.00	-8.75	-1.46	0.00	-8.87	0.00	8.87	1225.72	612.86	1042.90	522.23		8.61	-0.69	0.024
128.00	-3.80	-0.75	0.00	-4.48	0.00	4.48	1192.89	596.44	987.45	494.46		9.05	-0.70	0.012
130.00	-3.67	-0.73	0.00	-2.97	0.00	2.97	1171.00	585.50	951.33	476.37		9.34	-0.70	0.009
134.00	-0.13	-0.03	0.00	-0.04	0.00	0.04	1127.22	563.61	881.10	441.20		9.93	-0.71	0.000
135.00	-0.06	-0.01	0.00	-0.01	0.00	0.01	1116.28	558.14	863.96	432.62		10.08	-0.71	0.000
136.00	0.00	-0.01	0.00	0.00	0.00	0.00	1105.33	552.67	846.99	424.13		10.23	-0.71	0.000

Seismic Segment Forces (Factored)

Structure:	CT46137-A-SBA	**Code:**	EIA/TIA-222-G	5/20/2021	
Site Name:	Hamden-State St	**Exposure:**	C		
Height:	136.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 21	

Tower Engineering Solutions

Load Case:	0.9D + 1.0E					**Iterations**	23
Gust Response Factor	1.10			**Sds**	0.20	**Ss**	0.19
Dead Load Factor	0.90	**Seismic Load Factor**	1.00	**Sd1**	0.10	**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.36	**SA**	0.04	**Seismic Importance Factor**	1.00

Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		994.58	0.00	0.04	0.02	20.45	
10.00		972.64	0.01	0.06	0.03	28.28	
15.00		950.71	0.02	0.07	0.04	31.37	
20.00		928.78	0.04	0.07	0.04	32.44	
25.00		906.85	0.06	0.07	0.04	32.73	
30.00		884.92	0.09	0.07	0.04	32.82	
35.00		862.99	0.13	0.07	0.03	32.85	
40.00		841.06	0.16	0.07	0.03	32.67	
43.50	Bot - Section 2	575.69	0.19	0.06	0.02	22.46	
45.00		457.03	0.21	0.06	0.02	17.80	
48.50	Top - Section 1	1052.1	0.24	0.06	0.02	40.19	
50.00		207.95	0.26	0.05	0.02	7.81	
55.00		680.96	0.31	0.04	0.01	22.95	
60.00		662.17	0.37	0.03	0.01	17.39	
65.00		643.37	0.43	0.01	0.01	9.43	
70.00		624.57	0.50	-0.02	0.01	-0.19	
75.00		605.77	0.57	-0.04	0.01	-9.74	
80.00		586.97	0.65	-0.07	0.02	-17.17	
85.00		568.17	0.74	-0.10	0.04	-21.16	
88.00	Bot - Section 3	331.88	0.79	-0.11	0.05	-12.95	
90.00		365.87	0.83	-0.12	0.06	-14.23	
92.00	Top - Section 2	360.85	0.86	-0.12	0.07	-13.61	
95.00		215.79	0.92	-0.12	0.10	-7.33	
100.00		349.62	1.02	-0.10	0.14	-7.90	
105.00		337.09	1.13	-0.05	0.20	-1.64	
110.00		324.56	1.24	0.04	0.28	6.21	
115.00		312.03	1.35	0.20	0.38	15.44	
120.00		299.49	1.47	0.43	0.51	25.85	
125.00		286.96	1.60	0.77	0.67	37.22	
128.00	Appurtenance(s)	4086.0	1.67	1.03	0.78	649.64	
130.00		108.27	1.73	1.23	0.86	19.48	
134.00	Appurtenance(s)	2949.4	1.83	1.70	1.04	663.66	
135.00		51.38	1.86	1.84	1.09	12.18	
136.00		50.88	1.89	1.98	1.14	12.68	
	Totals:	**24,437.5**				**1,718.1**	**Total Wind:** **21,322.6**

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

Calculated Forces

Structure:	CT46137-A-SBA		**Code:**	EIA/TIA-222-G	5/20/2021
Site Name:	Hamden-State St		**Exposure:**	C	
Height:	136.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 22

Load Case:	0.9D + 1.0E							**Iterations**	23
Gust Response Factor	1.10				**Sds**	0.20		**Ss**	0.19
Dead Load Factor	0.90	**Seismic Load Factor**	1.00		**Sd1**	0.10		**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.36		**SA**	0.04	**Seismic Importance Factor**		1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-23.57	-1.83	0.00	-208.86	0.00	208.86	4390.93	2195.46	7660.90	3836.15		0.00	0.00	0.060
5.00	-22.61	-1.82	0.00	-199.72	0.00	199.72	4295.16	2147.58	7328.71	3669.80		0.01	-0.02	0.060
10.00	-21.67	-1.80	0.00	-190.64	0.00	190.64	4199.39	2099.69	7003.88	3507.15		0.05	-0.04	0.060
15.00	-20.76	-1.77	0.00	-181.67	0.00	181.67	4103.62	2051.81	6686.41	3348.18		0.10	-0.07	0.059
20.00	-19.86	-1.75	0.00	-172.81	0.00	172.81	4007.85	2003.93	6376.31	3192.89		0.18	-0.09	0.059
25.00	-18.98	-1.72	0.00	-164.08	0.00	164.08	3912.08	1956.04	6073.57	3041.30		0.29	-0.11	0.059
30.00	-18.12	-1.69	0.00	-155.49	0.00	155.49	3816.32	1908.16	5778.19	2893.39		0.42	-0.14	0.058
35.00	-17.29	-1.66	0.00	-147.03	0.00	147.03	3720.55	1860.27	5490.18	2749.17		0.57	-0.16	0.058
40.00	-16.47	-1.64	0.00	-138.70	0.00	138.70	3624.78	1812.39	5209.53	2608.64		0.75	-0.18	0.058
43.50	-15.91	-1.61	0.00	-132.98	0.00	132.98	3557.74	1778.87	5017.45	2512.46		0.90	-0.20	0.057
45.00	-15.48	-1.60	0.00	-130.56	0.00	130.56	3529.01	1764.51	4936.24	2471.79		0.96	-0.21	0.057
48.50	-14.49	-1.56	0.00	-124.96	0.00	124.96	3039.25	1519.63	4279.34	2142.85		1.12	-0.23	0.063
50.00	-14.28	-1.55	0.00	-122.63	0.00	122.63	3014.63	1507.31	4209.90	2108.08		1.20	-0.24	0.063
55.00	-13.61	-1.53	0.00	-114.86	0.00	114.86	2932.54	1466.27	3982.54	1994.23		1.46	-0.26	0.062
60.00	-12.95	-1.52	0.00	-107.18	0.00	107.18	2850.45	1425.23	3761.50	1883.54		1.75	-0.29	0.061
65.00	-12.31	-1.51	0.00	-99.58	0.00	99.58	2768.37	1384.18	3546.76	1776.02		2.07	-0.32	0.061
70.00	-11.68	-1.52	0.00	-92.01	0.00	92.01	2686.28	1343.14	3338.33	1671.65		2.43	-0.35	0.059
75.00	-11.08	-1.52	0.00	-84.42	0.00	84.42	2604.19	1302.10	3136.22	1570.44		2.81	-0.38	0.058
80.00	-10.49	-1.52	0.00	-76.83	0.00	76.83	2522.10	1261.05	2940.42	1472.40		3.23	-0.41	0.056
85.00	-9.91	-1.52	0.00	-69.23	0.00	69.23	2440.02	1220.01	2750.93	1377.51		3.68	-0.44	0.054
88.00	-9.58	-1.52	0.00	-64.67	0.00	64.67	2390.76	1195.38	2640.27	1322.09		3.96	-0.46	0.053
90.00	-9.23	-1.52	0.00	-61.63	0.00	61.63	2357.93	1178.96	2567.75	1285.78		4.15	-0.47	0.052
92.00	-8.88	-1.52	0.00	-58.59	0.00	58.59	1547.90	773.95	1709.73	856.14		4.35	-0.48	0.074
95.00	-8.64	-1.52	0.00	-54.04	0.00	54.04	1524.57	762.29	1648.80	825.63		4.66	-0.50	0.071
100.00	-8.27	-1.52	0.00	-46.43	0.00	46.43	1484.88	742.44	1548.79	775.55		5.21	-0.54	0.065
105.00	-7.90	-1.52	0.00	-38.82	0.00	38.82	1444.16	722.08	1450.80	726.48		5.80	-0.58	0.059
110.00	-7.55	-1.52	0.00	-31.20	0.00	31.20	1389.90	694.95	1342.87	672.43		6.42	-0.61	0.052
115.00	-7.21	-1.50	0.00	-23.61	0.00	23.61	1335.17	667.59	1238.67	620.26		7.07	-0.64	0.043
120.00	-6.88	-1.48	0.00	-16.10	0.00	16.10	1280.45	640.22	1138.68	570.19		7.76	-0.66	0.034
125.00	-6.56	-1.44	0.00	-8.72	0.00	8.72	1225.72	612.86	1042.90	522.23		8.47	-0.68	0.022
128.00	-2.85	-0.74	0.00	-4.41	0.00	4.41	1192.89	596.44	987.45	494.46		8.90	-0.69	0.011
130.00	-2.75	-0.72	0.00	-2.93	0.00	2.93	1171.00	585.50	951.33	476.37		9.18	-0.69	0.008
134.00	-0.10	-0.03	0.00	-0.04	0.00	0.04	1127.22	563.61	881.10	441.20		9.76	-0.69	0.000
135.00	-0.05	-0.01	0.00	-0.01	0.00	0.01	1116.28	558.14	863.96	432.62		9.91	-0.69	0.000
136.00	0.00	-0.01	0.00	0.00	0.00	0.00	1105.33	552.67	846.99	424.13		10.05	-0.69	0.000

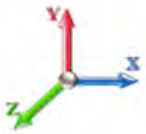
Wind Loading - Shaft

Structure:	CT46137-A-SBA	**Code:**	EIA/TIA-222-G	5/20/2021	
Site Name:	Hamden-State St	**Exposure:**	C		
Height:	136.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 23	

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	201.28	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	7.442	8.19	196.93	0.650	0.000	5.00	17.997	11.70	95.8	0.0	994.6
10.00		1.00	0.85	7.442	8.19	192.59	0.650	0.000	5.00	17.604	11.44	93.7	0.0	972.6
15.00		1.00	0.85	7.442	8.19	188.24	0.650	0.000	5.00	17.211	11.19	91.6	0.0	950.7
20.00		1.00	0.90	7.896	8.69	189.43	0.650	0.000	5.00	16.818	10.93	95.0	0.0	928.8
25.00		1.00	0.95	8.276	9.10	189.35	0.650	0.000	5.00	16.426	10.68	97.2	0.0	906.9
30.00		1.00	0.98	8.600	9.46	188.34	0.650	0.000	5.00	16.033	10.42	98.6	0.0	884.9
35.00		1.00	1.01	8.883	9.77	186.68	0.650	0.000	5.00	15.640	10.17	99.3	0.0	863.0
40.00		1.00	1.04	9.137	10.05	184.51	0.650	0.000	5.00	15.247	9.91	99.6	0.0	841.1
43.50	Bot - Section 2	1.00	1.06	9.300	10.23	182.74	0.650	0.000	3.50	10.439	6.79	69.4	0.0	575.7
45.00		1.00	1.07	9.366	10.30	181.93	0.650	0.000	1.50	4.510	2.93	30.2	0.0	457.0
48.50	Top - Section 1	1.00	1.09	9.515	10.47	179.93	0.650	0.000	3.50	10.387	6.75	70.7	0.0	1052.1
50.00		1.00	1.09	9.576	10.53	183.01	0.650	0.000	1.50	4.393	2.86	30.1	0.0	208.0
55.00		1.00	1.12	9.770	10.75	179.88	0.650	0.000	5.00	14.386	9.35	100.5	0.0	681.0
60.00		1.00	1.14	9.951	10.95	176.51	0.650	0.000	5.00	13.994	9.10	99.6	0.0	662.2
65.00		1.00	1.16	10.120	11.13	172.94	0.650	0.000	5.00	13.601	8.84	98.4	0.0	643.4
70.00		1.00	1.17	10.279	11.31	169.18	0.650	0.000	5.00	13.208	8.59	97.1	0.0	624.6
75.00		1.00	1.19	10.430	11.47	165.27	0.650	0.000	5.00	12.815	8.33	95.6	0.0	605.8
80.00		1.00	1.21	10.572	11.63	161.22	0.650	0.000	5.00	12.423	8.07	93.9	0.0	587.0
85.00		1.00	1.22	10.708	11.78	157.04	0.650	0.000	5.00	12.030	7.82	92.1	0.0	568.2
88.00	Bot - Section 3	1.00	1.23	10.787	11.87	154.48	0.650	0.000	3.00	7.029	4.57	54.2	0.0	331.9
90.00		1.00	1.24	10.838	11.92	152.75	0.650	0.000	2.00	4.692	3.05	36.4	0.0	365.9
92.00	Top - Section 2	1.00	1.24	10.888	11.98	151.00	0.650	0.000	2.00	4.629	3.01	36.0	0.0	360.9
95.00		1.00	1.25	10.962	12.06	151.18	0.650	0.000	3.00	6.826	4.44	53.5	0.0	215.8
100.00		1.00	1.27	11.081	12.19	146.70	0.650	0.000	5.00	11.063	7.19	87.6	0.0	349.6
105.00		1.00	1.28	11.195	12.31	142.13	0.650	0.000	5.00	10.670	6.94	85.4	0.0	337.1
110.00		1.00	1.29	11.305	12.44	137.47	0.650	0.000	5.00	10.278	6.68	83.1	0.0	324.6
115.00		1.00	1.30	11.412	12.55	132.73	0.650	0.000	5.00	9.885	6.43	80.7	0.0	312.0
120.00		1.00	1.32	11.514	12.67	127.92	0.650	0.000	5.00	9.492	6.17	78.1	0.0	299.5
125.00		1.00	1.33	11.614	12.78	123.04	0.650	0.000	5.00	9.099	5.91	75.6	0.0	287.0
128.00	Appurtenance(s)	1.00	1.33	11.672	12.84	120.09	0.650	0.000	3.00	5.271	3.43	44.0	0.0	166.2
130.00		1.00	1.34	11.710	12.88	118.10	0.650	0.000	2.00	3.435	2.23	28.8	0.0	108.3
134.00	Appurtenance(s)	1.00	1.35	11.785	12.96	114.11	0.650	0.000	4.00	6.682	4.34	56.3	0.0	210.5
135.00		1.00	1.35	11.803	12.98	113.10	0.650	0.000	1.00	1.631	1.06	13.8	0.0	51.4
136.00		1.00	1.35	11.822	13.00	112.09	0.650	0.000	1.00	1.616	1.05	13.7	0.0	50.9
								Totals:	**136.00**			**2,475.3**		**17,778.7**

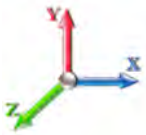
Discrete Appurtenance Forces

Structure:	CT46137-A-SBA	**Code:**	EIA/TIA-222-G	5/20/2021	
Site Name:	Hamden-State St	**Exposure:**	C		
Height:	136.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 24	

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	134.00	Samsung B2/B66A	3	11.822	13.004	0.60	0.90	3.40	252.00	0.000	2.000	44.23	0.00	88.45
2	134.00	HBX-6517DS-VTM	6	11.822	13.004	0.68	0.90	21.42	79.20	0.000	2.000	278.60	0.00	557.21
3	134.00	LNX-6514DS-VTM	6	11.822	13.004	0.72	0.90	34.95	232.80	0.000	2.000	454.47	0.00	908.94
4	134.00	HRR12-U Handrail	1	11.785	12.963	0.75	1.00	5.06	400.00	0.000	0.000	65.63	0.00	0.00
5	134.00	Raycap	2	11.822	13.004	0.81	0.90	6.14	64.00	0.000	2.000	79.84	0.00	159.68
6	134.00	Samsung B5/B13	3	11.822	13.004	0.60	0.90	3.40	210.90	0.000	2.000	44.23	0.00	88.45
7	134.00	Low Profile Platform	1	11.785	12.963	1.00	1.00	22.00	1500.00	0.000	0.000	285.20	0.00	0.00
8	128.00	SitePro RMQP-496-HK	1	11.672	12.839	1.00	1.00	48.00	2449.00	0.000	0.000	616.27	0.00	0.00
9	128.00	Ericsson 4415 B66A	3	11.672	12.839	0.50	0.75	2.47	148.80	0.000	0.000	31.74	0.00	0.00
10	128.00	Ericsson 4424 B25	3	11.672	12.839	0.50	0.75	3.09	264.00	0.000	0.000	39.68	0.00	0.00
11	128.00	Ericsson 4449 B71 + B85	3	11.672	12.839	0.50	0.75	2.49	210.00	0.000	0.000	31.94	0.00	0.00
12	128.00	Ericsson KRY 112 144/2	3	11.672	12.839	0.52	0.75	0.65	33.00	0.000	0.000	8.29	0.00	0.00
13	128.00	APX16DWV-16DWVS-E-A	3	11.672	12.839	0.46	0.75	9.22	122.10	0.000	0.000	118.39	0.00	0.00
14	128.00	APXVAARR24_43-U-NA2	3	11.672	12.839	0.52	0.75	31.88	384.00	0.000	0.000	409.28	0.00	0.00
15	128.00	Air 6449 B41	3	11.672	12.839	0.53	0.75	9.03	309.00	0.000	0.000	115.88	0.00	0.00
							Totals:		**6,658.80**			**2,623.66**		

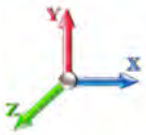
Total Applied Force Summary

Structure:	CT46137-A-SBA		**Code:**	EIA/TIA-222-G	5/20/2021
Site Name:	Hamden-State St		**Exposure:**	C	
Height:	136.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 25

Load Case: 1.0D + 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		95.76	1062.22	0.00	0.00
10.00		93.67	1040.28	0.00	0.00
15.00		91.58	1018.35	0.00	0.00
20.00		94.95	996.42	0.00	0.00
25.00		97.20	974.49	0.00	0.00
30.00		98.58	952.56	0.00	0.00
35.00		99.34	930.63	0.00	0.00
40.00		99.61	908.70	0.00	0.00
43.50		69.41	623.04	0.00	0.00
45.00		30.20	477.32	0.00	0.00
48.50		70.66	1099.49	0.00	0.00
50.00		30.08	228.25	0.00	0.00
55.00		100.50	748.60	0.00	0.00
60.00		99.56	729.81	0.00	0.00
65.00		98.41	711.01	0.00	0.00
70.00		97.07	692.21	0.00	0.00
75.00		95.57	673.41	0.00	0.00
80.00		93.90	654.61	0.00	0.00
85.00		92.10	635.81	0.00	0.00
88.00		54.21	372.47	0.00	0.00
90.00		36.36	392.92	0.00	0.00
92.00		36.04	387.91	0.00	0.00
95.00		53.50	256.37	0.00	0.00
100.00		87.65	417.26	0.00	0.00
105.00		85.41	404.73	0.00	0.00
110.00		83.08	392.20	0.00	0.00
115.00		80.65	379.67	0.00	0.00
120.00		78.15	367.13	0.00	0.00
125.00		75.56	354.60	0.00	0.00
128.00	(22) attachments	1415.46	4126.65	0.00	0.00
130.00		28.76	112.67	0.00	0.00
134.00	(22) attachments	1308.50	2958.22	0.00	1802.74
135.00		13.77	53.58	0.00	0.00
136.00		13.66	53.08	0.00	0.00
	Totals:	**5,098.93**	**26,186.67**	**0.00**	**1,802.74**

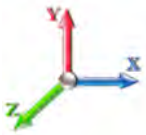
Calculated Forces

Structure:	CT46137-A-SBA	**Code:**	EIA/TIA-222-G	5/20/2021	
Site Name:	Hamden-State St	**Exposure:**	C		
Height:	136.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 26	

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	-26.18	-5.11	0.00	-532.40	0.00	532.40	4390.93	2195.46	7660.90	3836.15	0.00	0.000	0.000	0.145
5.00	-25.12	-5.04	0.00	-506.84	0.00	506.84	4295.16	2147.58	7328.71	3669.80	0.03	-0.055	0.000	0.144
10.00	-24.07	-4.97	0.00	-481.65	0.00	481.65	4199.39	2099.69	7003.88	3507.15	0.12	-0.110	0.000	0.143
15.00	-23.05	-4.90	0.00	-456.81	0.00	456.81	4103.62	2051.81	6686.41	3348.18	0.26	-0.167	0.000	0.142
20.00	-22.05	-4.82	0.00	-432.33	0.00	432.33	4007.85	2003.93	6376.31	3192.89	0.47	-0.224	0.000	0.141
25.00	-21.07	-4.74	0.00	-408.23	0.00	408.23	3912.08	1956.04	6073.57	3041.30	0.73	-0.282	0.000	0.140
30.00	-20.11	-4.66	0.00	-384.53	0.00	384.53	3816.32	1908.16	5778.19	2893.39	1.06	-0.341	0.000	0.138
35.00	-19.18	-4.57	0.00	-361.25	0.00	361.25	3720.55	1860.27	5490.18	2749.17	1.45	-0.401	0.000	0.137
40.00	-18.27	-4.48	0.00	-338.39	0.00	338.39	3624.78	1812.39	5209.53	2608.64	1.90	-0.461	0.000	0.135
43.50	-17.64	-4.42	0.00	-322.70	0.00	322.70	3557.74	1778.87	5017.45	2512.46	2.25	-0.504	0.000	0.133
45.00	-17.16	-4.39	0.00	-316.08	0.00	316.08	3529.01	1764.51	4936.24	2471.79	2.42	-0.523	0.000	0.133
48.50	-16.06	-4.32	0.00	-300.70	0.00	300.70	3039.25	1519.63	4279.34	2142.85	2.82	-0.567	0.000	0.146
50.00	-15.83	-4.30	0.00	-294.23	0.00	294.23	3014.63	1507.31	4209.90	2108.08	3.00	-0.586	0.000	0.145
55.00	-15.08	-4.21	0.00	-272.73	0.00	272.73	2932.54	1466.27	3982.54	1994.23	3.65	-0.654	0.000	0.142
60.00	-14.34	-4.12	0.00	-251.69	0.00	251.69	2850.45	1425.23	3761.50	1883.54	4.37	-0.722	0.000	0.139
65.00	-13.63	-4.03	0.00	-231.10	0.00	231.10	2768.37	1384.18	3546.76	1776.02	5.16	-0.790	0.000	0.135
70.00	-12.93	-3.93	0.00	-210.98	0.00	210.98	2686.28	1343.14	3338.33	1671.65	6.02	-0.858	0.000	0.131
75.00	-12.26	-3.84	0.00	-191.31	0.00	191.31	2604.19	1302.10	3136.22	1570.44	6.96	-0.926	0.000	0.127
80.00	-11.60	-3.75	0.00	-172.09	0.00	172.09	2522.10	1261.05	2940.42	1472.40	7.97	-0.993	0.000	0.121
85.00	-10.96	-3.66	0.00	-153.34	0.00	153.34	2440.02	1220.01	2750.93	1377.51	9.04	-1.060	0.000	0.116
88.00	-10.59	-3.60	0.00	-142.37	0.00	142.37	2390.76	1195.38	2640.27	1322.09	9.72	-1.100	0.000	0.112
90.00	-10.20	-3.56	0.00	-135.16	0.00	135.16	2357.93	1178.96	2567.75	1285.78	10.19	-1.126	0.000	0.109
92.00	-9.81	-3.53	0.00	-128.03	0.00	128.03	1547.90	773.95	1709.73	856.14	10.66	-1.152	0.000	0.156
95.00	-9.55	-3.48	0.00	-117.46	0.00	117.46	1524.57	762.29	1648.80	825.63	11.40	-1.191	0.000	0.149
100.00	-9.13	-3.39	0.00	-100.08	0.00	100.08	1484.88	742.44	1548.79	775.55	12.69	-1.275	0.000	0.135
105.00	-8.72	-3.31	0.00	-83.11	0.00	83.11	1444.16	722.08	1450.80	726.48	14.07	-1.354	0.000	0.120
110.00	-8.33	-3.23	0.00	-66.56	0.00	66.56	1389.90	694.95	1342.87	672.43	15.53	-1.426	0.000	0.105
115.00	-7.95	-3.15	0.00	-50.42	0.00	50.42	1335.17	667.59	1238.67	620.26	17.06	-1.490	0.000	0.087
120.00	-7.58	-3.06	0.00	-34.70	0.00	34.70	1280.45	640.22	1138.68	570.19	18.65	-1.541	0.000	0.067
125.00	-7.22	-2.98	0.00	-19.38	0.00	19.38	1225.72	612.86	1042.90	522.23	20.28	-1.579	0.000	0.043
128.00	-3.14	-1.45	0.00	-10.44	0.00	10.44	1192.89	596.44	987.45	494.46	21.28	-1.593	0.000	0.024
130.00	-3.03	-1.42	0.00	-7.53	0.00	7.53	1171.00	585.50	951.33	476.37	21.95	-1.599	0.000	0.018
134.00	-0.11	-0.03	0.00	-0.05	0.00	0.05	1127.22	563.61	881.10	441.20	23.29	-1.606	0.000	0.000
135.00	-0.05	-0.02	0.00	-0.02	0.00	0.02	1116.28	558.14	863.96	432.62	23.63	-1.606	0.000	0.000
136.00	0.00	-0.01	0.00	0.00	0.00	0.00	1105.33	552.67	846.99	424.13	23.97	-1.606	0.000	0.000

Final Analysis Summary

Structure:	CT46137-A-SBA	**Code:**	EIA/TIA-222-G	5/20/2021	
Site Name:	Hamden-State St	**Exposure:**	C		
Height:	136.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 27	

Reactions

Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)
1.2D + 1.6W 97 mph Wind	21.4	0.00	31.38	0.00	0.00	2240.97
0.9D + 1.6W 97 mph Wind	21.4	0.00	23.52	0.00	0.00	2212.94
1.2D + 1.0Di + 1.0Wi 50 mph Wind	6.2	0.00	47.31	0.00	0.00	637.54
1.2D + 1.0E	1.8	0.00	31.42	0.00	0.00	211.68
0.9D + 1.0E	1.8	0.00	23.57	0.00	0.00	208.86
1.0D + 1.0W 60 mph Wind	5.1	0.00	26.18	0.00	0.00	532.40

Max Stresses

Load Case	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Elev (ft)	Stress Ratio
1.2D + 1.6W 97 mph Wind	-10.61	-14.87	0.00	-539.91	0.00	-539.91	1547.90	773.95	1709.73	856.14	92.00	0.638
0.9D + 1.6W 97 mph Wind	-7.68	-14.60	0.00	-529.28	0.00	-529.28	1547.90	773.95	1709.73	856.14	92.00	0.624
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-21.37	-4.18	0.00	-149.32	0.00	-149.32	1547.90	773.95	1709.73	856.14	92.00	0.188
1.2D + 1.0E	-11.84	-1.55	0.00	-59.70	0.00	-59.70	1547.90	773.95	1709.73	856.14	92.00	0.077
0.9D + 1.0E	-8.88	-1.52	0.00	-58.59	0.00	-58.59	1547.90	773.95	1709.73	856.14	92.00	0.074
1.0D + 1.0W 60 mph Wind	-9.81	-3.53	0.00	-128.03	0.00	-128.03	1547.90	773.95	1709.73	856.14	92.00	0.156

Base Plate Summary

Structure:	CT46137-A-SB		**Code:**	EIA/TIA-222-G	5/20/2021
Site Name:	Hamden-State St		**Exposure:**	C	
Height:	136.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 28

Reactions	
Original Design	
Moment (kip-ft):	2324.83
Axial (kip):	26.85
Shear (kip):	21.75
Analysis (1.2D + 1.6W)	
Moment (kip-ft):	2240.97
Axial (kip):	31.38
Shear (kip):	21.39

Base Plate	
Yield (ksi):	60.00
Width (in):	57.00
Style:	Round
Polygon Sides:	0.00
Clip Length (in):	0.00
Effective Len (in):	12.20
Moment (kip-in):	485.20
Allow Stress (ksi):	81.00
Applied Stress (ksi):	59.94
Stress Ratio:	0.74

Anchor Bolts	
Bolt Circle:	51.00
Number Bolts:	16.00
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):	134.78
Allowable (kip):	260.00
Ratio:	0.53
Tension	
Force (kip):	128.86
Allowable (kip):	260.00
Ratio:	0.51

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 136 ft. EEI Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT46137-A-SBA

Customer Site Name: Hamden-State St

Carrier Name: T-Mobile (App#: 147478, V#1)

Carrier Site ID / Name: CT11611B / Nextel Monopole Hamden

Site Location: 2895 State Street

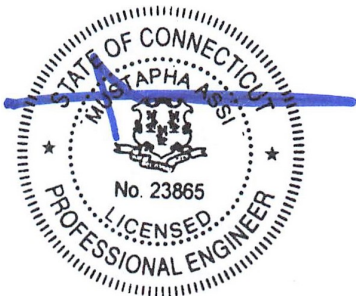
Hamden, Connecticut

New Haven County

Latitude: 41.360008

Longitude: -72.885694

Exp.10/31/2021



04/26/2021

Analysis Result:

Max Structural Usage: 76.9% [Pass]

Report Prepared By: Saroj Dangol

NOTE: The proposed Site Pro1 RMQP-496-HK mount is not currently installed on the tower. The proposed mount was assumed to be installed per the manufacturer's instructions, and it is assumed that they can be installed properly on the tower. TES cannot verify that the proposed mounts will fit properly and is not liable for any fit-up issues during installation.

Introduction

The purpose of this report is to summarize the analysis results on the (1) Proposed Platform w/ Handrails & Kicker [SitePro RMQP-496-HK] at 128.00' elevation to support the proposed antenna configuration. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Mount Drawings	Mount info from SBA Application #: 147478, v1 [SitePro RMQP-496-HK]
Antenna Loading	SBA Application #: 147478, v1 dated 04/16/2021
Modification Drawings	N/A

Analysis Criteria

Basic Wind Speed Used in the Analysis: V_{ULT} = 125 mph (3-Sec. Gust) / Equivalent to
V_{ASD} = 97 mph (3-Sec. Gust)
Basic Wind Speed with Ice: 50 mph (3-Sec. Gust) with 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) Proposed Platform w/ Handrails & Kicker [SitePro RMQP-496-HK] at 128.00'

Final Antenna Configuration

3 Ericsson Air 6449 B41
3 RFS APXVAARR24_43-U-NA20 (Octa)
3 RFS APX16DWV-16DWVS-E-A20
3 Ericsson KRY 112 144/2
3 Ericsson 4449 B71 + B85
3 Ericsson 4424 B25
3 Ericsson 4415 B66A

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 76.9%, 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 Site Pro1 RMQP-496-HK mount is not currently installed on the tower. The proposed mount was assumed to be installed per the manufacturer's instructions, and it is assumed that they can be installed properly on the tower. TES cannot verify that the proposed mounts will fit properly and is not liable for any fit-up issues during installation.

Attachments

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

Standard Conditions

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

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

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

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

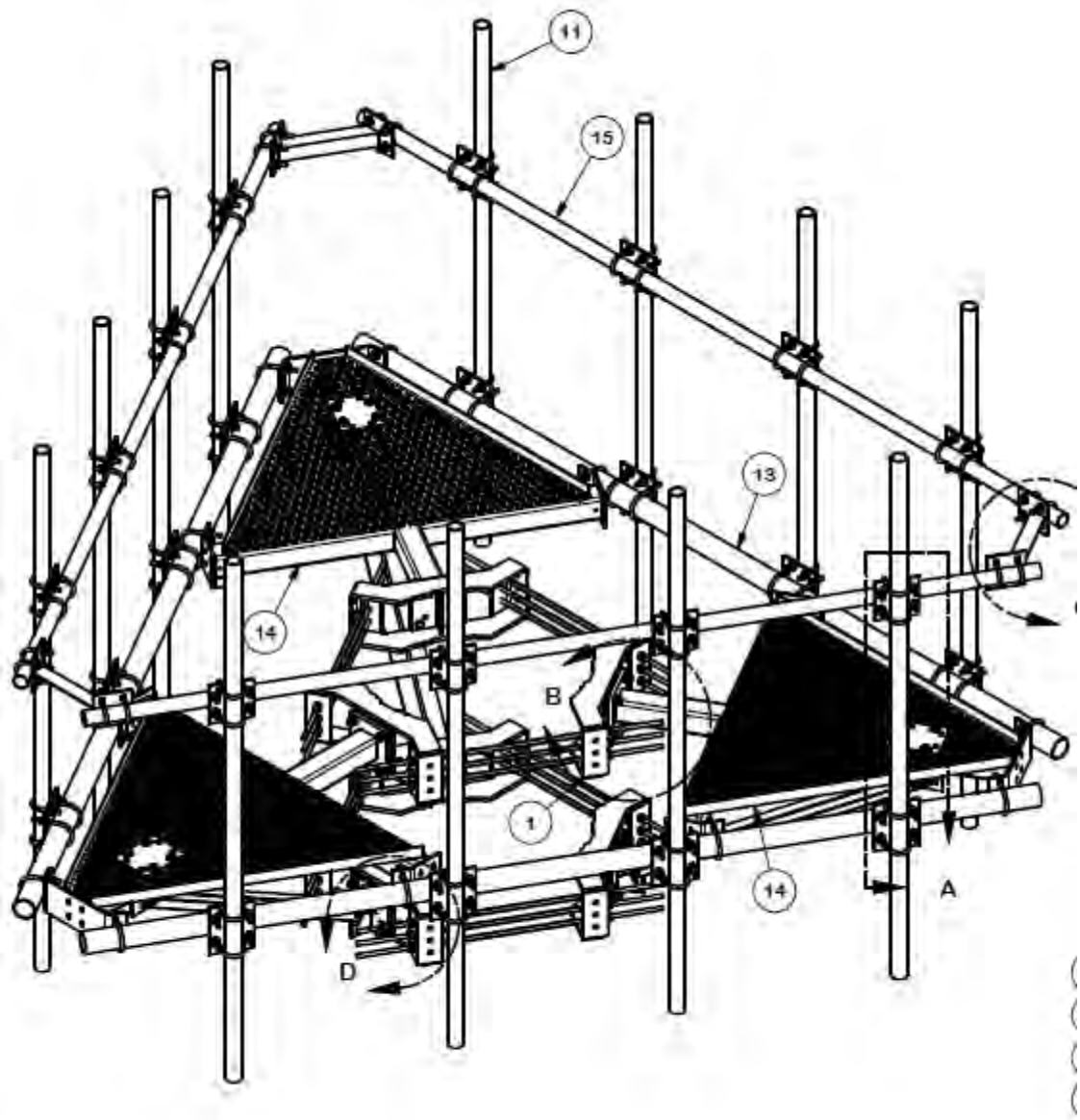
5. If the mount is modified, installation must adhere to the configuration communicated in the modification drawings.

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

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

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

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



Site Pro 1 RMQP-496-HK

Structure: CT46137-A-SBA - Hamden-State St

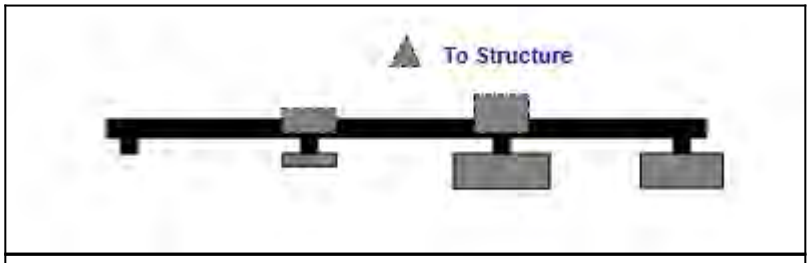
Sector: A

Structure Type: Monopole

Mount Elev: 128.00

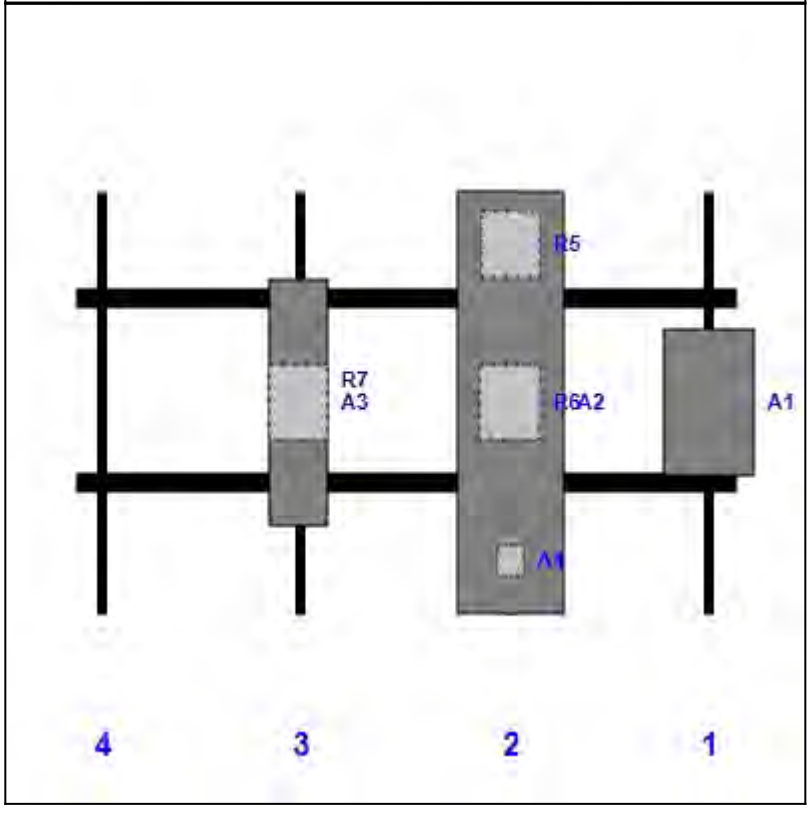
4/26/2021

Plan View



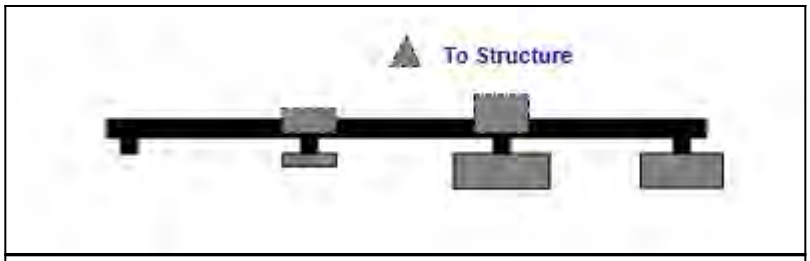
Front View

Looking Toward Structure



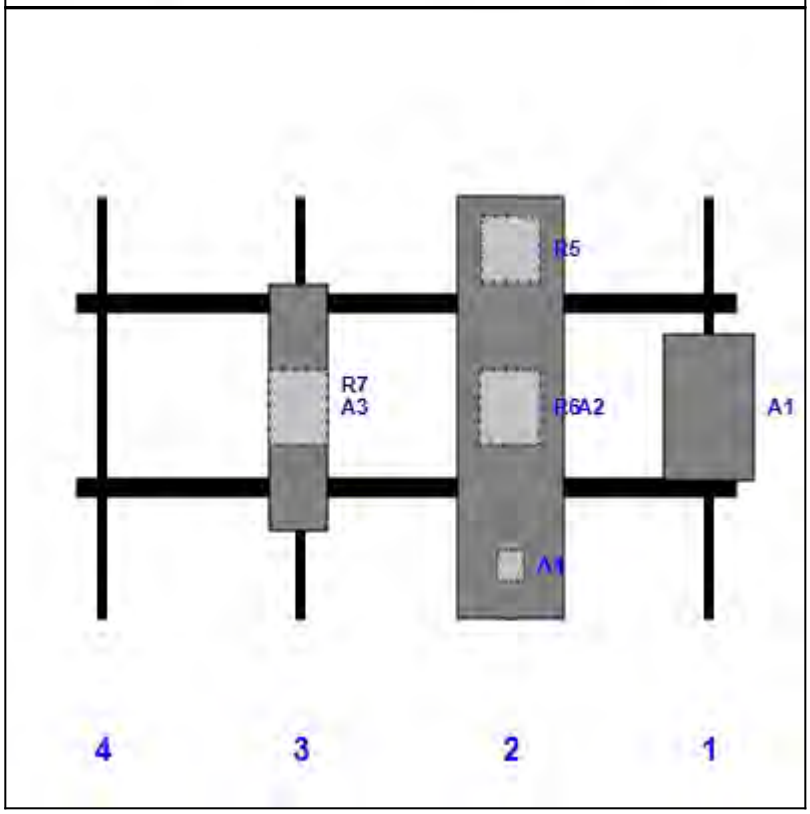
Ref #	Model	Height (in)	Width (in)	H Dist Left	Pipe #	Pipe Pos V	Pos	From Top	H Offset	Status	Validation
A1	Air 6449 B41	33.10	20.50	144.00	1	a	Front	48.00			
A2	APXVAARR24_43-U-NA20 (Octa)	95.90	24.00	99.00	2	a	Front	48.00			
A4	KRY 112 144/2	6.93	6.10	99.00	2	a	Behind	84.00			
R5	4449 B71 + B85	14.90	13.10	99.00	2	a	Behind	12.00			
R6	4424 B25	16.50	13.50	99.00	2	a	Behind	48.00			
A3	APX16DWV-16DWVS-E-A20	55.90	13.30	51.00	3	a	Front	48.00			
R7	4415 B66A	16.50	13.40	51.00	3	a	Behind	48.00			

Plan View



Front View

Looking Toward Structure



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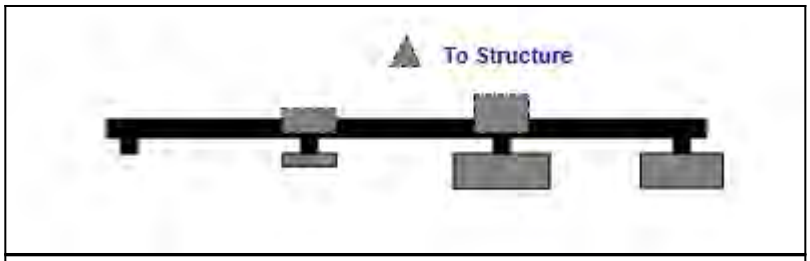
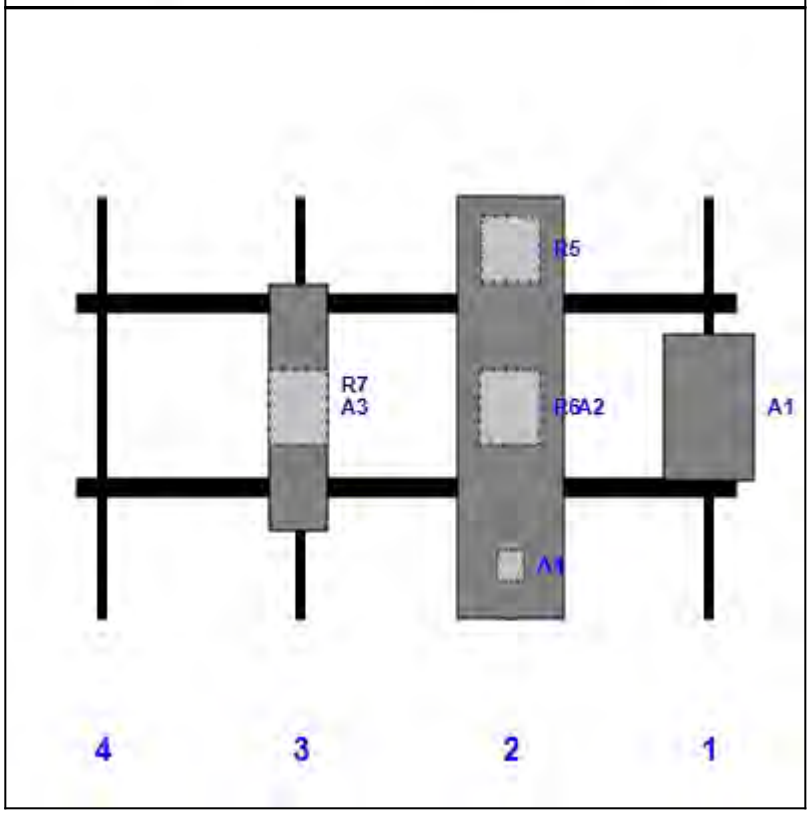
Plan View



Front View

Looking Toward Structure



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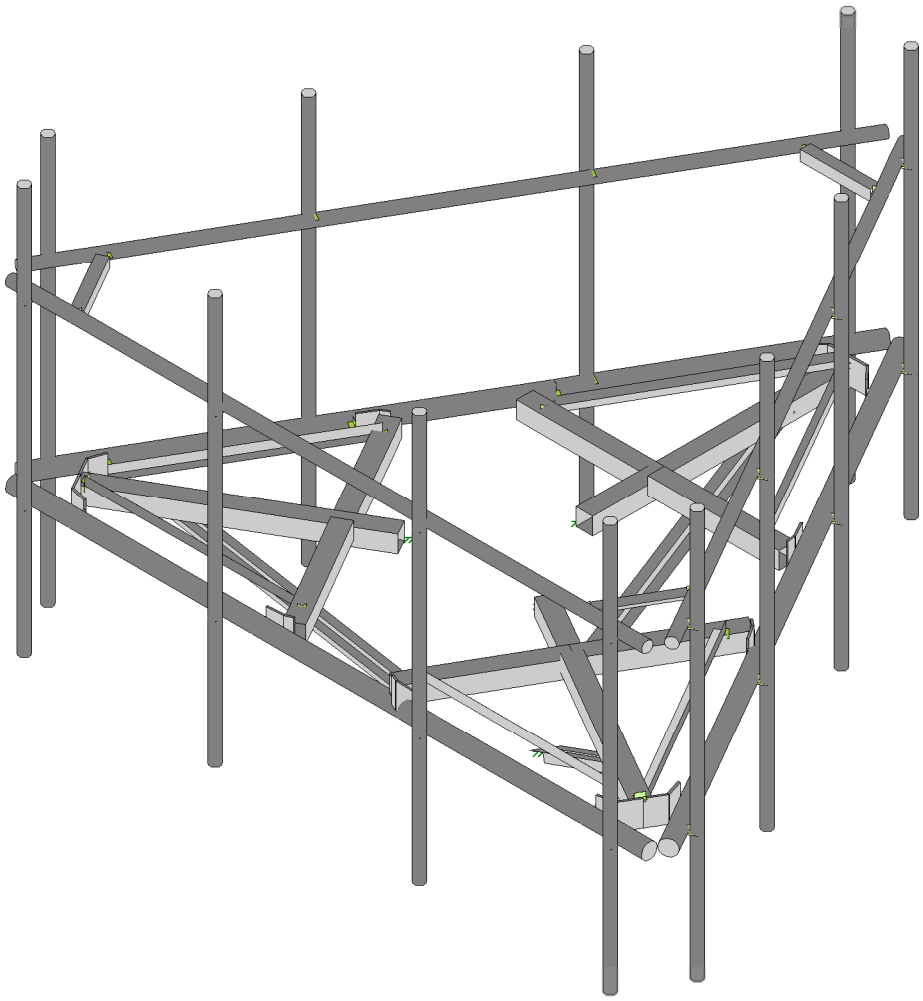
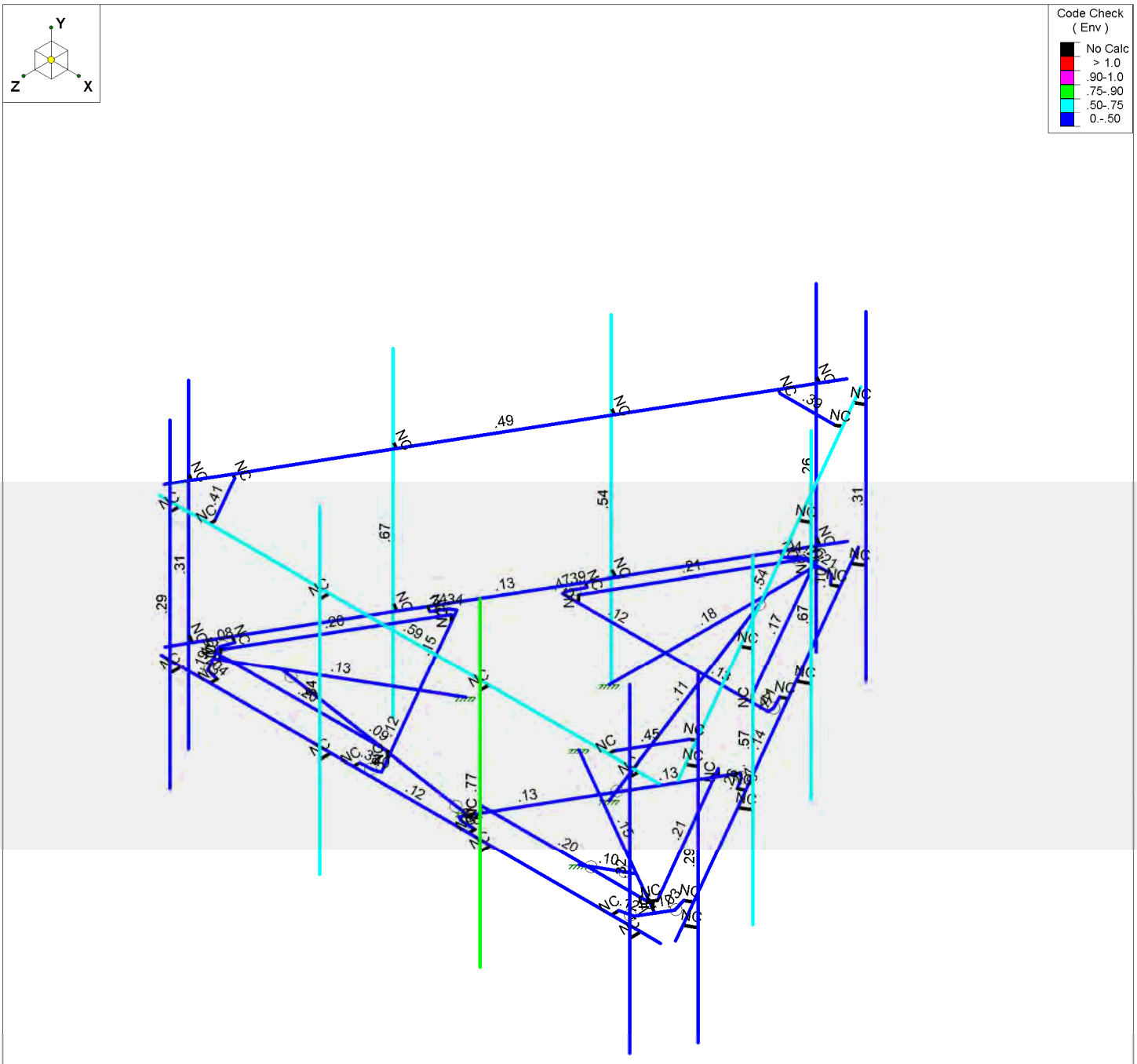


Tower Engineering Solutio...	CT46137-A-SBA_MT_LO_Loads Only_G	SK - 1
		Apr 26, 2021 at 9:14 AM
TES Project No. 106782		CT46137-A-SBA_106782_G_RISA_...



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

Tower Engineering Solutio...	CT46137-A-SBA_MT_LO_Loads Only_G	SK - 2
		Apr 26, 2021 at 9:16 AM
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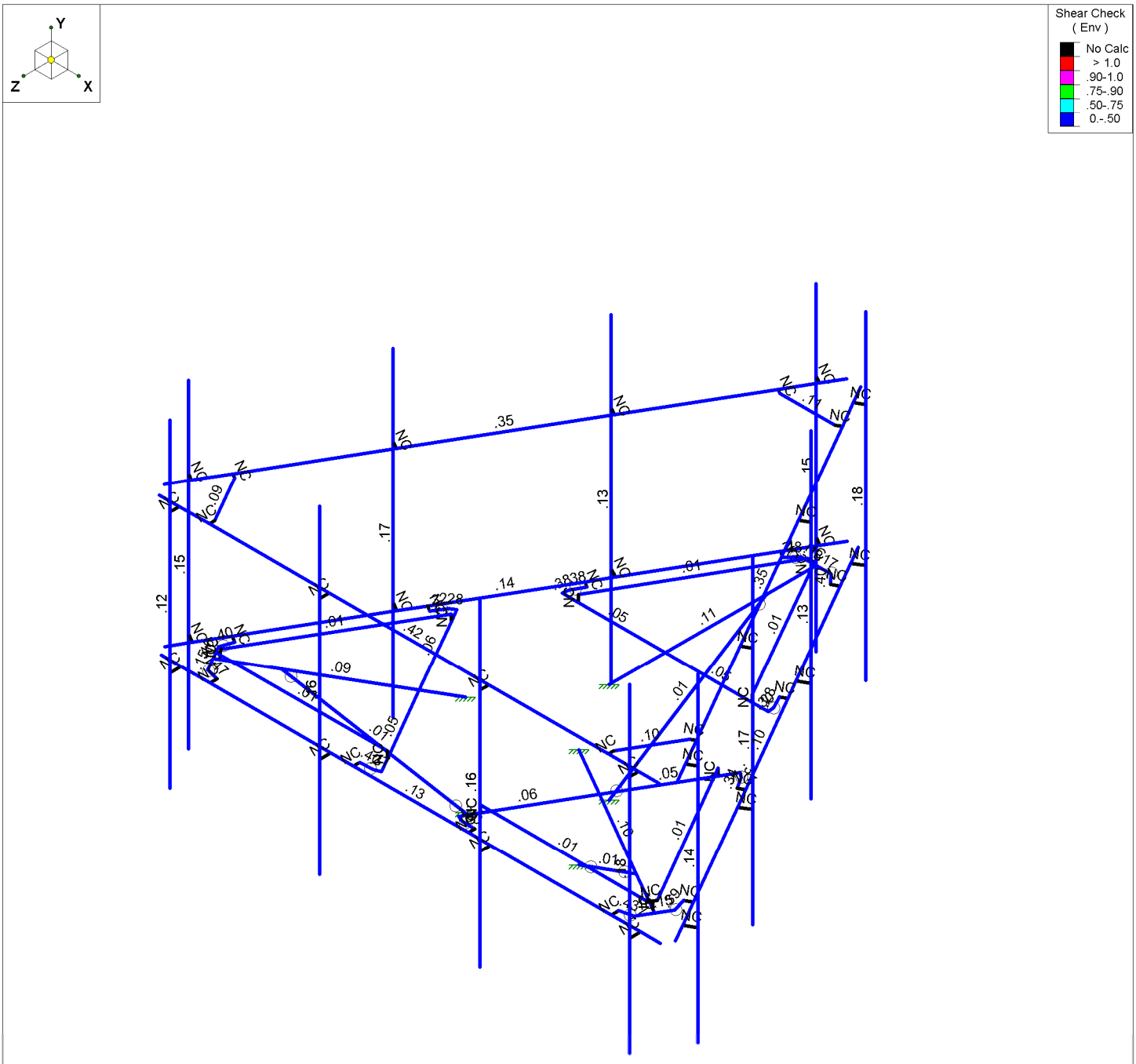

Member Shear Checks Displayed (Enveloped)
Results for LC 1, 1.2D+1.6W (Front)

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(P...
1	Antenna D	None					30			
2	Antenna Di	None					30			
3	Antenna W Front	None					30			
4	Antenna Wi Front	None					30			
5	Antenna W Side	None					30			
6	Antenna Wi Side	None					30			
7	Service Lm1	None					1			
8	Service Lm2	None					1			
9	Structure D	None		-1					5	
10	Structure Di	None						63	3	
11	Structure W Front	None						63		
12	Structure Wi Front	None						63		
13	Structure W Side	None						63		
14	Structure Wi Side	None						63		
15	BLC 9 Transient Area...	None								
16	BLC 10 Transient Are...	None						33		

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	6.386886	0	3.5279	0	
2	N2	0.136886	0	-7.297418	0	
3	N3	0	0	0	0	
4	N4	1.032012	0	0.59583	0	
5	N5	-1.5254	0	0.879181	0	
6	N6	-0.001283	0	-1.190667	0	
7	N7	0.750343	0	-6.234879	0	
8	N8	2.542009	0	-3.131621	0	
9	N9	3.982114	0	-0.637287	0	
10	N10	5.773781	0	2.465971	0	
11	N11	5.022485	0	3.767253	0	
12	N12	1.439152	0	3.767253	0	
13	N13	-1.441057	0	3.767253	0	
14	N14	-5.02439	0	3.767253	0	
15	N15	-5.774264	0	2.466802	0	
16	N16	-3.982597	0	-0.636455	0	
17	N17	-2.542493	0	-3.130789	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
18	N18	-0.750826	0	-6.234048	0	
19	N19	-2.25511	0	1.300755	0	
20	N20	-3.344832	0	-0.586699	0	
21	N21	-1.165274	0	3.188406	0	
22	N22	-5.523913	0	3.189233	0	
23	N23	-5.711414	0	2.864473	0	
24	N24	-5.336414	0	3.513993	0	
25	N25	-3.544576	0	-0.932666	0	
26	N26	-0.964576	0	3.536026	0	
27	N27	-0.001283	0	-2.60336	0	
28	N28	-0.001283	0	-6.378469	0	
29	N29	2.253148	0	1.300853	0	
30	N30	5.522485	0	3.188406	0	
31	N31	1.032012	-2.5	0.59583	0	
32	N32	-1.5254	-2.5	0.879181	0	
33	N33	-0.001283	-2.5	-1.190667	0	
34	N34	4.439953	0	2.563406	0	
35	N35	-4.442089	0	2.564233	0	
36	N36	-0.001283	0	-5.128469	0	
37	N37	6.426722	3.5	3.5049	0	
38	N38	0.176722	3.5	-7.320417	0	
39	N39	0.803458	3.5	-6.234879	0	
40	N40	5.800338	3.5	2.419971	0	
41	N59	5.751307	5.5	4.043255	0	
42	N60	5.751307	-2.5	4.043255	0	
43	N63	2	5.5	4.043256	0	
44	N64	2	-2.5	4.043256	0	
45	N70	5.751305	0	3.767253	0	
46	N72	2	0	3.767253	0	
47	N77	-0.138192	0	-7.29516	0	
48	N78	-6.388192	0	3.530157	0	
49	N79	-6.248698	0	3.767253	0	
50	N80	6.251302	0	3.767253	0	
51	N81	-0.178029	3.5	-7.31816	0	
52	N82	-6.428029	3.5	3.507158	0	
53	N83	-6.248698	3.5	3.813252	0	
54	N84	6.251302	3.5	3.813252	0	
55	N103	5.751307	0	4.043255	0	
56	N105	2	0	4.043256	0	
57	N106	5.751307	3.5	4.043255	0	
58	N108	2	3.5	4.043256	0	
59	N118	5.751307	3.5	3.813252	0	
60	N120	2	3.5	3.813252	0	
61	N121	0.690875	3.5	-6.169879	0	
62	N122	5.687755	3.5	2.484971	0	
63	N123	-5.801295	3.5	2.421623	0	
64	N124	-0.804415	3.5	-6.233227	0	
65	N125	-5.688709	3.5	2.486625	0	
66	N126	-0.691829	3.5	-6.168226	0	
67	N127	4.997835	3.5	3.813252	0	
68	N128	-4.995926	3.5	3.813252	0	
69	N129	4.997835	3.5	3.683254	0	
70	N130	-4.995926	3.5	3.683254	0	
71	N131	0.594458	0	-6.144879	0	
72	N132	5.617896	0	2.555971	0	
73	N133	-5.618851	0	2.557624	0	
74	N134	-0.595413	0	-6.143226	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
75	N135	5.024392	0	3.587255	0	
76	N136	-5.022483	0	3.587255	0	
77	N137	2.403445	0	-3.051621	0	
78	N138	3.84355	0	-0.557287	0	
79	N139	-3.844504	0	-0.555634	0	
80	N140	-2.4044	0	-3.049968	0	
81	N141	1.441059	0	3.607255	0	
82	N142	-1.43915	0	3.607255	0	
83	N143	-3.669177	0	-0.839309	0	
84	N144	-1.107726	0	3.597255	0	
85	N145	-3.344832	0.1745	-0.5867	0	
86	N146	-1.165274	0.1745	3.188406	0	
87	N147	-5.415731	0	3.126733	0	
88	N148	-5.41566	0.1745	3.126733	0	
89	N149	-5.45741	0.1745	3.05442	0	
90	N150	-5.37391	0.1745	3.199046	0	
91	N151	1.164172	0	3.189804	0	
92	N152	3.34373	0	-0.585303	0	
93	N153	5.336414	0	3.513993	0	
94	N154	5.711414	0	2.864473	0	
95	N155	0.964576	0	3.536026	0	
96	N156	3.544576	0	-0.932666	0	
97	N157	1.107726	0	3.597255	0	
98	N158	3.669177	0	-0.839309	0	
99	N159	1.164319	0.1745	3.190059	0	
100	N160	3.343878	0.1745	-0.585047	0	
101	N161	5.415658	0	3.12673	0	
102	N162	5.415658	0.1745	3.12673	0	
103	N163	5.37391	0.1745	3.199046	0	
104	N164	5.45741	0.1745	3.05442	0	
105	N165	2.180512	0	-2.60336	0	
106	N166	-2.178604	0	-2.60336	0	
107	N167	0.375	0	-6.378466	0	
108	N168	-0.375	0	-6.378466	0	
109	N169	2.58	0	-2.60336	0	
110	N170	-2.58	0	-2.60336	0	
111	N171	2.561452	0	-2.757946	0	
112	N172	-2.561452	0	-2.757946	0	
113	N173	2.180513	0.1745	-2.60336	0	
114	N174	-2.178604	0.1745	-2.60336	0	
115	N175	-0.001283	0	-6.255687	0	
116	N176	-2e-14	0.1745	-6.253466	0	
117	N177	0.0835	0.1745	-6.253466	0	
118	N178	-0.0835	0.1745	-6.253466	0	
119	N119	-5.751307	5.5	4.043255	0	
120	N120A	-5.751307	-2.5	4.043255	0	
121	N121A	-2	5.5	4.043256	0	
122	N122A	-2	-2.5	4.043256	0	
123	N123A	-5.751305	0	3.767253	0	
124	N124A	-2	0	3.767253	0	
125	N125A	-5.751307	0	4.043255	0	
126	N126A	-2	0	4.043256	0	
127	N127A	-5.751307	3.5	4.043255	0	
128	N128A	-2	3.5	4.043256	0	
129	N129A	-5.751307	3.5	3.813252	0	
130	N130A	-2	3.5	3.813252	0	
131	N131A	0.625909	5.5	-7.002405	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
132	N132A	0.625909	-2.5	-7.002405	0	
133	N133A	2.501562	5.5	-3.753679	0	
134	N134A	2.501562	-2.5	-3.753679	0	
135	N135A	0.386884	0	-6.864402	0	
136	N136A	2.262537	0	-3.615677	0	
137	N137A	0.625909	0	-7.002405	0	
138	N138A	2.501562	0	-3.753679	0	
139	N139A	0.625909	3.5	-7.002405	0	
140	N140A	2.501562	3.5	-3.753679	0	
141	N141A	0.42672	3.5	-6.887403	0	
142	N142A	2.302373	3.5	-3.638677	0	
143	N143A	6.377215	5.5	2.95915	0	
144	N144A	6.377215	-2.5	2.95915	0	
145	N145A	4.501562	5.5	-0.289577	0	
146	N146A	4.501562	-2.5	-0.289577	0	
147	N147A	6.138189	0	3.097149	0	
148	N148A	4.262537	0	-0.151576	0	
149	N149A	6.377215	0	2.95915	0	
150	N150A	4.501562	0	-0.289577	0	
151	N151A	6.377215	3.5	2.95915	0	
152	N152A	4.501562	3.5	-0.289577	0	
153	N153A	6.178026	3.5	3.074152	0	
154	N154A	4.302373	3.5	-0.174575	0	
155	N155A	-6.377215	5.5	2.95915	0	
156	N156A	-6.377215	-2.5	2.95915	0	
157	N157A	-4.501562	5.5	-0.289577	0	
158	N158A	-4.501562	-2.5	-0.289577	0	
159	N159A	-6.138189	0	3.097149	0	
160	N160A	-4.262537	0	-0.151576	0	
161	N161A	-6.377215	0	2.95915	0	
162	N162A	-4.501562	0	-0.289577	0	
163	N163A	-6.377215	3.5	2.95915	0	
164	N164A	-4.501562	3.5	-0.289577	0	
165	N165A	-6.178026	3.5	3.074152	0	
166	N166A	-4.302373	3.5	-0.174575	0	
167	N167A	-0.625909	5.5	-7.002405	0	
168	N168A	-0.625909	-2.5	-7.002405	0	
169	N169A	-2.501562	5.5	-3.753679	0	
170	N170A	-2.501562	-2.5	-3.753679	0	
171	N171A	-0.386884	0	-6.864402	0	
172	N172A	-2.262537	0	-3.615677	0	
173	N173A	-0.625909	0	-7.002405	0	
174	N174A	-2.501562	0	-3.753679	0	
175	N175A	-0.625909	3.5	-7.002405	0	
176	N176A	-2.501562	3.5	-3.753679	0	
177	N177A	-0.42672	3.5	-6.887403	0	
178	N178A	-2.302373	3.5	-3.638677	0	

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design R...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Footrails	PIPE 3.0	Beam	Pipe	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
2	Grating Angles	L2x2x3	Beam	Single Angle	A36 Gr.36	Typical	.722	.271	.271	.009
3	Handrails	PIPE 2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
4	Standoff Arm	HSS4X4X4	Beam	SquareTube	A500 Gr.46	Typical	3.37	7.8	7.8	12.8
5	Plan Bracing	HSS4X4X4	Beam	SquareTube	A500 Gr.46	Typical	3.37	7.8	7.8	12.8

Hot Rolled Steel Section Sets (Continued)

	Label	Shape	Type	Design List	Material	Design R...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
6	Kickers	LL2.5x2.5x3x3	Beam	Double Angle (3...	A36 Gr.36	Typical	1.8	2.46	1.07	.023
7	Mount Pipes	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
8	Footrail Connecti...	PL1/2x6	Beam	RECT	A36 Gr.36	Typical	3	.063	9	.237
9	Plan Bracing Co...	PL3/8x6	Beam	RECT	A36 Gr.36	Typical	2.25	.026	6.75	.101
10	Handrail Corner ...	L2.5x2.5x4	Beam	Single Angle	A36 Gr.36	Typical	1.19	.692	.692	.026

Hot Rolled Steel Properties

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

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N30	N4			Standoff Arm	Beam	SquareTube	A500 Gr.46	Typical
2	M2	N28	N6			Standoff Arm	Beam	SquareTube	A500 Gr.46	Typical
3	M3	N22	N24			Footrail Conne...	Beam	RECT	A36 Gr.36	Typical
4	M4	N22	N23			Footrail Conne...	Beam	RECT	A36 Gr.36	Typical
5	M5	N26	N144			Plan Bracing ...	Beam	RECT	A36 Gr.36	Typical
6	M6	N144	N142			Plan Bracing ...	Beam	RECT	A36 Gr.36	Typical
7	M7	N25	N143			Plan Bracing ...	Beam	RECT	A36 Gr.36	Typical
8	M8	N143	N139			Plan Bracing ...	Beam	RECT	A36 Gr.36	Typical
9	M9	N149	N145			Grating Angles	Beam	Single Angle	A36 Gr.36	Typical
10	M10	N150	N146		270	Grating Angles	Beam	Single Angle	A36 Gr.36	Typical
11	M11	N24	N136			Footrail Conne...	Beam	RECT	A36 Gr.36	Typical
12	M12	N23	N133			Footrail Conne...	Beam	RECT	A36 Gr.36	Typical
13	M13	N22	N5			Standoff Arm	Beam	SquareTube	A500 Gr.46	Typical
14	M14	N26	N19			Plan Bracing	Beam	SquareTube	A500 Gr.46	Typical
15	M15	N19	N25			Plan Bracing	Beam	SquareTube	A500 Gr.46	Typical
16	MP5B	N77	N78			Footrails	Beam	Pipe	A53 Gr.B	Typical
17	MP5A	N79	N80			Footrails	Beam	Pipe	A53 Gr.B	Typical
18	MP5C	N1	N2			Footrails	Beam	Pipe	A53 Gr.B	Typical
19	M19	N31	N34			Kickers	Beam	Double Angle (...	A36 Gr.36	Typical
20	M20	N32	N35			Kickers	Beam	Double Angle (...	A36 Gr.36	Typical
21	M21	N33	N36			Kickers	Beam	Double Angle (...	A36 Gr.36	Typical
22	M22	N37	N38			Handrails	Beam	Pipe	A53 Gr.B	Typical
23	M23	N81	N82			Handrails	Beam	Pipe	A53 Gr.B	Typical
24	M24	N83	N84			Handrails	Beam	Pipe	A53 Gr.B	Typical
25	M25	N130	N125		180	Handrail Corn...	Beam	Single Angle	A36 Gr.36	Typical
26	MP1A	N59	N60			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
27	MP2A	N63	N64			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
28	M46	N70	N103			RIGID	None	None	RIGID	Typical
29	M47	N72	N105			RIGID	None	None	RIGID	Typical
30	M58	N118	N106			RIGID	None	None	RIGID	Typical
31	M59	N120	N108			RIGID	None	None	RIGID	Typical
32	M62	N39	N121			RIGID	None	None	RIGID	Typical
33	M63	N40	N122			RIGID	None	None	RIGID	Typical
34	M64	N123	N125			RIGID	None	None	RIGID	Typical
35	M65	N124	N126			RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
36	M66	N127	N129			RIGID	None	None	RIGID	Typical
37	M67	N128	N130			RIGID	None	None	RIGID	Typical
38	M68	N122	N129		180	Handrail Corn...	Beam	Single Angle	A36 Gr.36	Typical
39	M69	N126	N121		180	Handrail Corn...	Beam	Single Angle	A36 Gr.36	Typical
40	M70	N10	N132			RIGID	None	None	RIGID	Typical
41	M71	N7	N131			RIGID	None	None	RIGID	Typical
42	M72	N18	N134			RIGID	None	None	RIGID	Typical
43	M73	N15	N133			RIGID	None	None	RIGID	Typical
44	M74	N14	N136			RIGID	None	None	RIGID	Typical
45	M75	N11	N135			RIGID	None	None	RIGID	Typical
46	M76	N8	N137			RIGID	None	None	RIGID	Typical
47	M77	N9	N138			RIGID	None	None	RIGID	Typical
48	M78	N16	N139			RIGID	None	None	RIGID	Typical
49	M79	N17	N140			RIGID	None	None	RIGID	Typical
50	M80	N12	N141			RIGID	None	None	RIGID	Typical
51	M81	N13	N142			RIGID	None	None	RIGID	Typical
52	M82	N21	N146			RIGID	None	None	RIGID	Typical
53	M83	N20	N145			RIGID	None	None	RIGID	Typical
54	M84	N147	N148			RIGID	None	None	RIGID	Typical
55	M85	N149	N150			RIGID	None	None	RIGID	Typical
56	M86	N30	N154			Footrail Conne...	Beam	RECT	A36 Gr.36	Typical
57	M87	N30	N153			Footrail Conne...	Beam	RECT	A36 Gr.36	Typical
58	M88	N156	N158			Plan Bracing ...	Beam	RECT	A36 Gr.36	Typical
59	M89	N158	N138			Plan Bracing ...	Beam	RECT	A36 Gr.36	Typical
60	M90	N155	N157			Plan Bracing ...	Beam	RECT	A36 Gr.36	Typical
61	M91	N157	N141			Plan Bracing ...	Beam	RECT	A36 Gr.36	Typical
62	M92	N163	N159			Grating Angles	Beam	Single Angle	A36 Gr.36	Typical
63	M93	N164	N160		270	Grating Angles	Beam	Single Angle	A36 Gr.36	Typical
64	M94	N154	N132			Footrail Conne...	Beam	RECT	A36 Gr.36	Typical
65	M95	N153	N135			Footrail Conne...	Beam	RECT	A36 Gr.36	Typical
66	M96	N156	N29			Plan Bracing	Beam	SquareTube	A500 Gr.46	Typical
67	M97	N29	N155			Plan Bracing	Beam	SquareTube	A500 Gr.46	Typical
68	M98	N152	N160			RIGID	None	None	RIGID	Typical
69	M99	N151	N159			RIGID	None	None	RIGID	Typical
70	M100	N161	N162			RIGID	None	None	RIGID	Typical
71	M101	N163	N164			RIGID	None	None	RIGID	Typical
72	M102	N28	N168			Footrail Conne...	Beam	RECT	A36 Gr.36	Typical
73	M103	N28	N167			Footrail Conne...	Beam	RECT	A36 Gr.36	Typical
74	M104	N170	N172			Plan Bracing ...	Beam	RECT	A36 Gr.36	Typical
75	M105	N172	N140			Plan Bracing ...	Beam	RECT	A36 Gr.36	Typical
76	M106	N169	N171			Plan Bracing ...	Beam	RECT	A36 Gr.36	Typical
77	M107	N171	N137			Plan Bracing ...	Beam	RECT	A36 Gr.36	Typical
78	M108	N177	N173			Grating Angles	Beam	Single Angle	A36 Gr.36	Typical
79	M109	N178	N174		270	Grating Angles	Beam	Single Angle	A36 Gr.36	Typical
80	M110	N168	N134			Footrail Conne...	Beam	RECT	A36 Gr.36	Typical
81	M111	N167	N131			Footrail Conne...	Beam	RECT	A36 Gr.36	Typical
82	M112	N170	N27			Plan Bracing	Beam	SquareTube	A500 Gr.46	Typical
83	M113	N27	N169			Plan Bracing	Beam	SquareTube	A500 Gr.46	Typical
84	M114	N166	N174			RIGID	None	None	RIGID	Typical
85	M115	N165	N173			RIGID	None	None	RIGID	Typical
86	M116	N175	N176			RIGID	None	None	RIGID	Typical
87	M117	N177	N178			RIGID	None	None	RIGID	Typical
88	MP4A	N119	N120A			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
89	MP3A	N121A	N122A			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
90	M90A	N123A	N125A			RIGID	None	None	RIGID	Typical
91	M91A	N124A	N126A			RIGID	None	None	RIGID	Typical
92	M92A	N129A	N127A			RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
93	M93A	N130A	N128A			RIGID	None	None	RIGID	Typical
94	MP1C	N131A	N132A			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
95	MP2C	N133A	N134A			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
96	M96A	N135A	N137A			RIGID	None	None	RIGID	Typical
97	M97A	N136A	N138A			RIGID	None	None	RIGID	Typical
98	M98A	N141A	N139A			RIGID	None	None	RIGID	Typical
99	M99A	N142A	N140A			RIGID	None	None	RIGID	Typical
100	MP4C	N143A	N144A			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
101	MP3C	N145A	N146A			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
102	M102A	N147A	N149A			RIGID	None	None	RIGID	Typical
103	M103A	N148A	N150A			RIGID	None	None	RIGID	Typical
104	M104A	N153A	N151A			RIGID	None	None	RIGID	Typical
105	M105A	N154A	N152A			RIGID	None	None	RIGID	Typical
106	MP1B	N155A	N156A			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
107	MP2B	N157A	N158A			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
108	M108A	N159A	N161A			RIGID	None	None	RIGID	Typical
109	M109A	N160A	N162A			RIGID	None	None	RIGID	Typical
110	M110A	N165A	N163A			RIGID	None	None	RIGID	Typical
111	M111A	N166A	N164A			RIGID	None	None	RIGID	Typical
112	MP4B	N167A	N168A			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
113	MP3B	N169A	N170A			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
114	M114A	N171A	N173A			RIGID	None	None	RIGID	Typical
115	M115A	N172A	N174A			RIGID	None	None	RIGID	Typical
116	M116A	N177A	N175A			RIGID	None	None	RIGID	Typical
117	M117A	N178A	N176A			RIGID	None	None	RIGID	Typical

Member Advanced Data

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
1	M1						Yes				None
2	M2						Yes				None
3	M3						Yes				None
4	M4						Yes				None
5	M5						Yes				None
6	M6		BenPIN				Yes				None
7	M7						Yes				None
8	M8		BenPIN				Yes				None
9	M9						Yes				None
10	M10						Yes				None
11	M11		BenPIN				Yes				None
12	M12		BenPIN				Yes				None
13	M13						Yes				None
14	M14						Yes				None
15	M15						Yes				None
16	MP5B						Yes				None
17	MP5A						Yes				None
18	MP5C						Yes				None
19	M19	BenPIN	BenPIN				Yes				None
20	M20	BenPIN	BenPIN				Yes				None
21	M21	BenPIN	BenPIN				Yes				None
22	M22						Yes				None
23	M23						Yes				None
24	M24						Yes				None
25	M25						Yes				None
26	MP1A						Yes				None
27	MP2A						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	M46						Yes	** NA **			None
29	M47						Yes	** NA **			None
30	M58						Yes	** NA **			None
31	M59						Yes	** NA **			None
32	M62						Yes	** NA **			None
33	M63						Yes	** NA **			None
34	M64						Yes	** NA **			None
35	M65						Yes	** NA **			None
36	M66						Yes	** NA **			None
37	M67						Yes	** NA **			None
38	M68						Yes				None
39	M69						Yes				None
40	M70						Yes	** NA **			None
41	M71						Yes	** NA **			None
42	M72						Yes	** NA **			None
43	M73						Yes	** NA **			None
44	M74						Yes	** NA **			None
45	M75						Yes	** NA **			None
46	M76						Yes	** NA **			None
47	M77						Yes	** NA **			None
48	M78						Yes	** NA **			None
49	M79						Yes	** NA **			None
50	M80						Yes	** NA **			None
51	M81						Yes	** NA **			None
52	M82						Yes	** NA **			None
53	M83						Yes	** NA **			None
54	M84						Yes	** NA **			None
55	M85						Yes	** NA **			None
56	M86						Yes				None
57	M87						Yes				None
58	M88						Yes				None
59	M89		BenPIN				Yes				None
60	M90						Yes				None
61	M91		BenPIN				Yes				None
62	M92						Yes				None
63	M93						Yes				None
64	M94		BenPIN				Yes				None
65	M95		BenPIN				Yes				None
66	M96						Yes				None
67	M97						Yes				None
68	M98						Yes	** NA **			None
69	M99						Yes	** NA **			None
70	M100						Yes	** NA **			None
71	M101						Yes	** NA **			None
72	M102						Yes				None
73	M103						Yes				None
74	M104						Yes				None
75	M105		BenPIN				Yes				None
76	M106						Yes				None
77	M107		BenPIN				Yes				None
78	M108						Yes				None
79	M109						Yes				None
80	M110		BenPIN				Yes				None
81	M111		BenPIN				Yes				None
82	M112						Yes				None
83	M113						Yes				None
84	M114						Yes	** NA **			None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
85	M115						Yes	** NA **			None
86	M116						Yes	** NA **			None
87	M117						Yes	** NA **			None
88	MP4A						Yes				None
89	MP3A						Yes				None
90	M90A						Yes	** NA **			None
91	M91A						Yes	** NA **			None
92	M92A						Yes	** NA **			None
93	M93A						Yes	** NA **			None
94	MP1C						Yes				None
95	MP2C						Yes				None
96	M96A						Yes	** NA **			None
97	M97A						Yes	** NA **			None
98	M98A						Yes	** NA **			None
99	M99A						Yes	** NA **			None
100	MP4C						Yes				None
101	MP3C						Yes				None
102	M102A						Yes	** NA **			None
103	M103A						Yes	** NA **			None
104	M104A						Yes	** NA **			None
105	M105A						Yes	** NA **			None
106	MP1B						Yes				None
107	MP2B						Yes				None
108	M108A						Yes	** NA **			None
109	M109A						Yes	** NA **			None
110	M110A						Yes	** NA **			None
111	M111A						Yes	** NA **			None
112	MP4B						Yes				None
113	MP3B						Yes				None
114	M114A						Yes	** NA **			None
115	M115A						Yes	** NA **			None
116	M116A						Yes	** NA **			None
117	M117A						Yes	** NA **			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	Standoff Arm	5.185			Lbyy			2.1	2.1		Lateral
2	M2	Standoff Arm	5.188			Lbyy			2.1	2.1		Lateral
3	M3	Footrail Con...	.375			Lbyy			.65	.65		Lateral
4	M4	Footrail Con...	.375			Lbyy			.65	.65		Lateral
5	M5	Plan Bracin...	.156			Lbyy			.65	.65		Lateral
6	M6	Plan Bracin...	.332			Lbyy			.8	.8		Lateral
7	M7	Plan Bracin...	.156			Lbyy			.65	.65		Lateral
8	M8	Plan Bracin...	.333			Lbyy			.8	.8		Lateral
9	M9	Grating Ang...	4.21			Lbyy			.65	.65		Lateral
10	M10	Grating Ang...	4.209			Lbyy			.65	.65		Lateral
11	M11	Footrail Con...	.322			Lbyy			.8	.8		Lateral
12	M12	Footrail Con...	.321			Lbyy			.8	.8		Lateral
13	M13	Standoff Arm	4.618			Lbyy			2.1	2.1		Lateral
14	M14	Plan Bracing	2.581			Lbyy			1	1		Lateral
15	M15	Plan Bracing	2.579			Lbyy			1	1		Lateral
16	MP5B	Footrails	12.5			Lbyy			1	1		Lateral
17	MP5A	Footrails	12.5			Lbyy			1	1		Lateral
18	MP5C	Footrails	12.5			Lbyy			1	1		Lateral
19	M19	Kickers	4.662			Lbyy			1	1		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
20	M20	Kickers	4.195			Lbyy			1	1		Lateral
21	M21	Kickers	4.664			Lbyy			1	1		Lateral
22	M22	Handrails	12.5			Lbyy			1	1		Lateral
23	M23	Handrails	12.5			Lbyy			1	1		Lateral
24	M24	Handrails	12.5			Lbyy			1	1		Lateral
25	M25	Handrail Co...	1.383			Lbyy			.65	.65		Lateral
26	MP1A	Mount Pipes	8			Lbyy			1	1		Lateral
27	MP2A	Mount Pipes	8			Lbyy			1	1		Lateral
28	M68	Handrail Co...	1.383			Lbyy			.65	.65		Lateral
29	M69	Handrail Co...	1.383			Lbyy			.65	.65		Lateral
30	M86	Footrail Con...	.375			Lbyy			.65	.65		Lateral
31	M87	Footrail Con...	.375			Lbyy			.65	.65		Lateral
32	M88	Plan Bracin...	.156			Lbyy			.65	.65		Lateral
33	M89	Plan Bracin...	.332			Lbyy			.8	.8		Lateral
34	M90	Plan Bracin...	.156			Lbyy			.65	.65		Lateral
35	M91	Plan Bracin...	.333			Lbyy			.8	.8		Lateral
36	M92	Grating Ang...	4.21			Lbyy			.65	.65		Lateral
37	M93	Grating Ang...	4.209			Lbyy			.65	.65		Lateral
38	M94	Footrail Con...	.322			Lbyy			.8	.8		Lateral
39	M95	Footrail Con...	.321			Lbyy			.8	.8		Lateral
40	M96	Plan Bracing	2.58			Lbyy			1	1		Lateral
41	M97	Plan Bracing	2.58			Lbyy			1	1		Lateral
42	M102	Footrail Con...	.374			Lbyy			.65	.65		Lateral
43	M103	Footrail Con...	.376			Lbyy			.65	.65		Lateral
44	M104	Plan Bracin...	.156			Lbyy			.65	.65		Lateral
45	M105	Plan Bracin...	.332			Lbyy			.8	.8		Lateral
46	M106	Plan Bracin...	.156			Lbyy			.65	.65		Lateral
47	M107	Plan Bracin...	.333			Lbyy			.8	.8		Lateral
48	M108	Grating Ang...	4.21			Lbyy			.65	.65		Lateral
49	M109	Grating Ang...	4.209			Lbyy			.65	.65		Lateral
50	M110	Footrail Con...	.322			Lbyy			.8	.8		Lateral
51	M111	Footrail Con...	.321			Lbyy			.8	.8		Lateral
52	M112	Plan Bracing	2.579			Lbyy			1	1		Lateral
53	M113	Plan Bracing	2.581			Lbyy			1	1		Lateral
54	MP4A	Mount Pipes	8			Lbyy			1	1		Lateral
55	MP3A	Mount Pipes	8			Lbyy			1	1		Lateral
56	MP1C	Mount Pipes	8			Lbyy			1	1		Lateral
57	MP2C	Mount Pipes	8			Lbyy			1	1		Lateral
58	MP4C	Mount Pipes	8			Lbyy			1	1		Lateral
59	MP3C	Mount Pipes	8			Lbyy			1	1		Lateral
60	MP1B	Mount Pipes	8			Lbyy			1	1		Lateral
61	MP2B	Mount Pipes	8			Lbyy			1	1		Lateral
62	MP4B	Mount Pipes	8			Lbyy			1	1		Lateral
63	MP3B	Mount Pipes	8			Lbyy			1	1		Lateral

Joint Boundary Conditions

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
1	N3						
2	N5	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	N29						
4	N6	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
5	N4	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
6	N31	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
7	N32	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
8	N33	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N5	max	5046.633	4	969.695	7	1911.844	1	.723	4	.887	3	.158	2
2		min	-3711.874	3	52.929	4	-2689.741	2	-.768	3	-.862	4	-1.07	5
3	N6	max	1813.773	4	836.615	6	6387.655	1	1.033	6	2.471	3	.92	3
4		min	-1808.957	3	27.872	1	-4369.537	2	.026	1	-2.456	4	-.645	4
5	N4	max	3329.423	4	1051.583	10	2300.325	1	.27	1	1.678	2	.819	5
6		min	-5084.22	3	57.937	3	-3315.065	2	-.859	6	-1.664	1	-.286	2
7	N31	max	3334.188	7	2504.464	7	1931.952	7	0	1	0	1	0	1
8		min	-341.422	4	-259.373	4	-217.308	4	0	2	0	2	0	2
9	N32	max	451.083	3	2409.79	8	1593.932	8	0	4	0	3	0	3
10		min	-2747.647	8	-400.014	3	-279.571	3	0	3	0	4	0	4
11	N33	max	50.708	4	2545.437	5	684.646	2	0	11	0	4	0	3
12		min	-50.493	3	-435.391	2	-3921.528	5	0	1	0	3	0	4
13	Totals:	max	7670.275	4	8966.357	5	7698.344	1						
14		min	-7670.247	3	3326.164	2	-7698.371	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	771.694	4	265.474	4	1137.162	1	.708	1	.109	1	.022	1
2			min	-802.755	3	-1290.367	7	-1087.462	2	-.892	2	-.13	2	-.113	6
3		2	max	3356.771	4	936.913	7	53.778	4	.457	1	.096	4	1.547	3
4			min	-5194.899	3	-62.277	4	-45.252	3	-.635	2	-.095	3	-.717	4
5		3	max	3376.862	4	899.271	7	42.179	4	.457	1	.158	4	.663	3
6			min	-5214.99	3	-80.115	4	-33.653	3	-.635	2	-.146	3	-.624	4
7		4	max	3638.287	4	-39.932	3	1476.236	1	.625	1	.858	4	.081	9
8			min	-5661.789	3	-806.385	8	-1474.561	2	-.862	2	-.878	3	-.04	2
9		5	max	3658.378	4	-57.77	3	1511.035	1	.625	1	1.664	1	1.039	8
10			min	-5681.88	3	-1051.475	10	-1509.36	2	-.862	2	-1.678	2	.073	3
11	M2	1	max	891.471	2	378.964	2	1162.122	4	.807	4	.138	4	.017	4
12			min	-917.869	1	-1322.582	5	-1134.052	3	-.994	3	-.16	3	-.115	7
13		2	max	4106.321	2	945.649	5	27.057	1	.543	4	.052	3	1.726	1
14			min	-5938.669	1	-123.017	2	-18.263	2	-.72	3	-.05	4	-.9	2
15		3	max	4106.321	2	907.986	5	66.06	4	.543	4	.053	1	.772	1
16			min	-5938.669	1	-140.864	2	-57.456	3	-.72	3	-.041	2	-.729	2
17		4	max	4369.537	2	-9.964	1	1766.468	4	.645	4	.3	1	.008	4
18			min	-6387.655	1	-798.418	6	-1761.383	3	-.92	3	-.322	2	-.032	3
19		5	max	4369.537	2	-27.811	1	1812.89	4	.645	4	2.456	4	1.033	6
20			min	-6387.655	1	-836.08	6	-1807.805	3	-.92	3	-2.471	3	.026	1
21	M3	1	max	531.451	4	614.934	2	478.713	3	.106	1	.176	4	.619	2
22			min	-473.503	3	-346.073	1	-512.612	4	-.096	2	-.169	3	-.409	1
23		2	max	529.272	4	613.786	2	474.938	3	.106	1	.128	4	.561	2
24			min	-471.324	3	-347.221	1	-508.837	4	-.096	2	-.124	3	-.377	1
25		3	max	527.092	4	612.637	2	471.163	3	.106	1	.081	4	.504	2
26			min	-469.144	3	-348.37	1	-505.062	4	-.096	2	-.08	3	-.344	1
27		4	max	524.913	4	611.489	2	467.388	3	.106	1	.034	4	.447	2
28			min	-466.965	3	-349.518	1	-501.287	4	-.096	2	-.036	3	-.312	1
29		5	max	522.733	4	610.34	2	463.613	3	.106	1	.023	2	.389	2
30			min	-464.785	3	-350.667	1	-497.511	4	-.096	2	-.031	1	-.279	1
31	M4	1	max	721.686	2	868.899	4	480.64	2	.035	1	.133	1	.727	4
32			min	-636.538	1	-298.411	3	-473.452	1	-.11	6	-.117	2	-.33	3
33		2	max	719.507	2	867.75	4	479.381	2	.035	1	.106	3	.646	4
34			min	-634.359	1	-299.56	3	-472.193	1	-.11	6	-.09	4	-.302	3
35		3	max	717.327	2	866.602	4	478.123	2	.035	1	.094	3	.564	4
36			min	-632.179	1	-300.708	3	-470.935	1	-.11	6	-.076	4	-.273	3
37		4	max	715.147	2	865.453	4	476.865	2	.035	1	.082	3	.483	4

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mom...	LC
38			min	-630	1	-301.857	3	-469.677	1	-.11	6	-.063	4	-.245	3
39		5	max	712.968	2	864.305	4	475.606	2	.035	1	.07	3	.402	4
40			min	-627.82	1	-303.005	3	-468.418	1	-.11	6	-.05	4	-.217	3
41	M5	1	max	1547.598	1	648.578	8	154.287	2	.129	2	.215	1	.319	6
42			min	-1255.556	2	156.255	3	-63.155	1	-.159	1	-.215	2	.053	1
43		2	max	1546.842	1	647.71	8	152.52	2	.129	2	.213	1	.295	6
44			min	-1254.801	2	155.898	3	-61.388	1	-.159	1	-.209	2	.044	1
45		3	max	1546.087	1	646.842	8	150.754	2	.129	2	.21	1	.27	6
46			min	-1254.045	2	155.54	3	-59.621	1	-.159	1	-.203	2	.035	1
47		4	max	1545.331	1	645.974	8	148.987	2	.129	2	.208	1	.246	6
48			min	-1253.289	2	155.183	3	-57.855	1	-.159	1	-.197	2	.026	1
49		5	max	1544.576	1	645.107	8	147.22	2	.129	2	.206	1	.222	6
50			min	-1252.534	2	154.825	3	-56.088	1	-.159	1	-.191	2	.018	1
51	M6	1	max	1419.063	1	645.08	8	585.14	2	.171	2	.206	1	.213	8
52			min	-1110.752	2	154.623	3	-629.676	1	-.141	1	-.191	2	.051	3
53		2	max	1418.929	1	643.232	8	580.694	2	.171	2	.154	1	.159	8
54			min	-1110.618	2	153.861	3	-625.229	1	-.141	1	-.143	2	.038	3
55		3	max	1418.795	1	641.384	8	576.247	2	.171	2	.102	1	.106	8
56			min	-1110.484	2	153.099	3	-620.783	1	-.141	1	-.095	2	.025	3
57		4	max	1418.661	1	639.535	8	571.801	2	.171	2	.051	1	.053	8
58			min	-1110.349	2	152.338	3	-616.336	1	-.141	1	-.047	2	.013	3
59		5	max	1418.527	1	637.687	8	567.354	2	.171	2	0	11	0	11
60			min	-1110.215	2	151.576	3	-611.89	1	-.141	1	0	1	0	1
61	M7	1	max	2111.93	3	721.798	6	136.714	4	.119	3	.146	4	.359	8
62			min	-1787.068	4	166.362	3	-249.198	3	-.081	4	-.143	3	.038	3
63		2	max	2110.927	3	720.93	6	137.465	4	.119	3	.151	4	.331	8
64			min	-1786.065	4	166.004	3	-249.949	3	-.081	4	-.153	3	.032	3
65		3	max	2109.924	3	720.062	6	138.216	4	.119	3	.157	4	.303	8
66			min	-1785.062	4	165.647	3	-250.7	3	-.081	4	-.162	3	.025	3
67		4	max	2108.921	3	719.194	6	138.968	4	.119	3	.162	4	.275	8
68			min	-1784.059	4	165.289	3	-251.452	3	-.081	4	-.172	3	.019	3
69		5	max	2107.919	3	718.327	6	139.719	4	.119	3	.168	4	.247	8
70			min	-1783.056	4	164.932	3	-252.203	3	-.081	4	-.182	3	.012	3
71	M8	1	max	2054.679	3	718.207	6	552.158	3	.107	3	.168	4	.238	6
72			min	-1710.33	4	166.805	3	-508.966	4	-.134	4	-.182	3	.055	3
73		2	max	2052.677	3	716.348	6	548.919	3	.107	3	.125	4	.178	6
74			min	-1708.328	4	166.039	3	-505.727	4	-.134	4	-.136	3	.041	3
75		3	max	2050.676	3	714.489	6	545.68	3	.107	3	.083	4	.119	6
76			min	-1706.326	4	165.273	3	-502.488	4	-.134	4	-.09	3	.027	3
77		4	max	2048.674	3	712.63	6	542.441	3	.107	3	.041	4	.059	6
78			min	-1704.324	4	164.507	3	-499.249	4	-.134	4	-.045	3	.014	3
79		5	max	2046.672	3	710.772	6	539.202	3	.107	3	0	11	0	11
80			min	-1702.322	4	163.741	3	-496.01	4	-.134	4	0	1	0	1
81	M9	1	max	1793.256	4	64.109	6	16.339	1	0	3	.006	1	.08	6
82			min	-2243.496	3	-5.999	1	-21.582	2	0	4	-.04	8	-.046	1
83		2	max	1785.08	4	46.845	6	11.596	1	0	3	.01	1	.045	2
84			min	-2235.32	3	-9.102	1	-16.839	2	0	4	-.014	2	-.03	1
85		3	max	1776.905	4	22.819	2	9.336	3	0	3	.015	5	.017	4
86			min	-2227.145	3	-12.205	1	-14.615	4	0	4	-.007	2	-.017	3
87		4	max	1768.729	4	19.716	2	23.427	3	0	3	.017	3	-.001	1
88			min	-2218.969	3	-17.239	5	-28.706	4	0	4	-.013	4	-.016	7
89		5	max	1760.553	4	16.614	2	37.518	3	0	3	.04	3	.016	3
90			min	-2210.794	3	-38.974	5	-42.797	4	0	4	-.038	4	-.03	4
91	M10	1	max	1313.157	2	30.779	2	74.488	8	0	2	.004	3	.027	3
92			min	-1746.987	1	-40.769	1	2.011	3	0	1	-.051	8	-.111	8
93		2	max	1313.109	2	11.949	2	57.136	8	0	2	.008	3	.024	3
94			min	-1746.94	1	-21.939	1	-1.091	3	0	1	-.017	4	-.056	4

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mom...	LC
95		3	max	1313.061	2	4.533	3	31.478	8	0	2	.014	7	.019	3
96			min	-1746.892	1	-15.708	8	-4.193	3	0	1	-.009	4	-.026	4
97		4	max	1313.014	2	15.721	1	20.195	4	0	2	.012	5	.022	5
98			min	-1746.845	1	-25.711	2	-8.573	7	0	1	-.006	2	-.001	2
99		5	max	1312.966	2	34.551	1	17.093	4	0	2	.04	1	.025	4
100			min	-1746.797	1	-44.542	2	-31.539	7	0	1	-.035	2	.001	3
101	M11	1	max	720.097	4	610.567	2	104.255	1	.276	1	.023	2	.196	2
102			min	-656.407	3	-350.178	1	-78.273	2	-.35	2	-.031	1	-.114	1
103		2	max	719.14	4	609.58	2	100.151	1	.276	1	.016	2	.147	2
104			min	-655.449	3	-351.165	1	-74.17	2	-.35	2	-.023	1	-.085	1
105		3	max	718.182	4	608.593	2	96.048	1	.276	1	.011	2	.098	2
106			min	-654.492	3	-352.153	1	-70.066	2	-.35	2	-.015	1	-.057	1
107		4	max	717.224	4	607.605	2	91.944	1	.276	1	.005	2	.049	2
108			min	-653.534	3	-353.14	1	-65.963	2	-.35	2	-.007	1	-.028	1
109		5	max	716.267	4	606.618	2	87.841	1	.276	1	0	11	0	11
110			min	-652.576	3	-354.127	1	-61.859	2	-.35	2	0	1	0	1
111	M12	1	max	834.36	2	864.55	4	164.562	4	.292	4	.07	3	.276	4
112			min	-771.806	1	-302.678	3	-226.197	3	-.206	3	-.05	4	-.098	3
113		2	max	833.17	2	863.568	4	160.619	4	.292	4	.052	3	.207	4
114			min	-770.617	1	-303.66	3	-222.253	3	-.206	3	-.037	4	-.073	3
115		3	max	831.981	2	862.587	4	156.676	4	.292	4	.034	3	.138	4
116			min	-769.427	1	-304.642	3	-218.31	3	-.206	3	-.024	4	-.049	3
117		4	max	830.791	2	861.605	4	152.732	4	.292	4	.017	3	.069	4
118			min	-768.238	1	-305.623	3	-214.367	3	-.206	3	-.012	4	-.025	3
119		5	max	829.602	2	860.624	4	148.789	4	.292	4	0	11	0	11
120			min	-767.048	1	-306.605	3	-210.424	3	-.206	3	0	1	0	1
121	M13	1	max	615.741	3	302.436	3	816.053	2	.585	2	.085	2	-.01	2
122			min	-663.057	4	-1282.402	8	-808.027	1	-.774	1	-.109	1	-.11	5
123		2	max	3140.488	3	275.503	3	99.312	4	.397	2	.098	4	1.512	4
124			min	-2443.087	4	-1451.351	8	-91.515	3	-.573	1	-.097	3	-.762	3
125		3	max	3747.226	3	832.792	8	72.122	4	.397	2	.188	4	.87	4
126			min	-5104.391	4	-174.18	3	-63.833	3	-.572	1	-.178	3	-.612	3
127		4	max	3765.125	3	799.267	8	61.782	4	.397	2	.265	4	.063	4
128			min	-5122.29	4	-190.067	3	-53.492	3	-.572	1	-.246	3	-.529	7
129		5	max	3994.568	3	-53.046	4	1145.38	2	.541	2	.862	4	.958	7
130			min	-5540.472	4	-969.447	7	-1137.391	1	-.858	1	-.887	3	-.057	4
131	M14	1	max	38.044	4	-155.837	3	1543.415	1	-.033	1	.215	2	.108	2
132			min	-189.684	5	-648.162	8	-1265.443	2	-.317	6	-.215	1	-.164	1
133		2	max	782.931	1	-174.805	3	51.774	1	-.003	2	.392	1	.386	2
134			min	-709.847	2	-691.892	8	-155.316	6	-.413	5	-.291	2	-.161	1
135		3	max	792.932	1	-183.684	3	57.548	1	-.003	2	.428	1	.818	6
136			min	-719.848	2	-710.63	8	-160.225	2	-.413	5	-.393	2	-.015	1
137		4	max	802.933	1	-192.564	3	63.322	1	-.003	2	.467	1	1.275	6
138			min	-729.849	2	-729.368	8	-165.999	2	-.413	5	-.498	2	.136	1
139		5	max	812.934	1	-201.443	3	69.096	1	-.003	2	.509	1	1.743	6
140			min	-739.85	2	-748.106	8	-171.773	2	-.413	5	-.607	2	.293	1
141	M15	1	max	671.548	3	830.305	8	322.233	4	.468	7	1.1	3	1.958	8
142			min	-608.238	4	200.325	3	-237.879	3	-.033	4	-1.149	4	.158	3
143		2	max	661.555	3	811.583	8	304.925	4	.468	7	.952	3	1.429	8
144			min	-598.246	4	191.453	3	-220.571	3	-.033	4	-.947	4	.032	3
145		3	max	651.563	3	792.861	8	287.618	4	.468	7	.815	3	.912	8
146			min	-588.253	4	182.581	3	-203.263	3	-.033	4	-.756	4	-.089	3
147		4	max	641.57	3	774.138	8	270.31	4	.468	7	.69	3	.446	4
148			min	-578.26	4	173.709	3	-185.956	3	-.033	4	-.576	4	-.204	3
149		5	max	347.509	4	721.176	8	1758.978	4	.354	8	.146	4	.055	4
150			min	-500.207	3	164.27	3	-2065.862	3	.024	3	-.143	3	-.123	3
151	MP5B	1	max	0	11	.005	1	0	5	0	11	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
152			min	0	1	0	11	-.001	4	0	1	0	1	0	1
153		2	max	317.457	1	252.269	1	141.758	1	.061	2	.081	1	.087	4
154			min	-281.719	2	-199.739	2	-130.834	2	-.15	1	-.088	2	-.092	3
155		3	max	900.229	4	279.343	1	150.003	3	.343	4	.187	3	.149	1
156			min	-1176.426	3	-177.118	2	-143.119	4	-.413	3	-.165	4	-.125	2
157		4	max	353.088	2	39.676	3	163.672	1	.101	8	.151	3	.219	4
158			min	-322.88	1	-305.559	8	-176.267	2	-.046	1	-.174	4	-.399	3
159		5	max	0	11	0	11	.002	1	0	11	0	11	0	11
160			min	0	1	-.006	3	-.006	4	0	1	0	1	0	1
161	MP5A	1	max	0	11	0	11	0	11	0	11	0	11	0	11
162			min	0	1	0	1	0	1	0	1	0	1	0	1
163		2	max	378.739	4	251.414	4	147.149	4	.129	1	.153	4	.111	2
164			min	-341.112	3	-198.408	3	-136.047	3	-.218	2	-.163	3	-.113	1
165		3	max	1062.126	2	335.745	4	38.855	1	.281	2	.215	1	.109	4
166			min	-1349.271	1	-222.187	3	-29.766	2	-.348	1	-.187	2	-.093	3
167		4	max	521.188	1	32.691	4	167.101	4	.134	1	.159	1	.18	3
168			min	-467.029	2	-318.415	7	-179.521	3	-.08	2	-.181	2	-.37	4
169		5	max	0	11	0	11	0	11	0	11	0	11	0	11
170			min	0	1	0	1	0	1	0	1	0	1	0	1
171	MP5C	1	max	0	11	.004	3	.005	3	0	11	0	11	0	11
172			min	0	1	0	9	-.001	1	0	1	0	1	0	1
173		2	max	305.256	2	210.212	3	92.039	3	.158	4	.093	2	.085	3
174			min	-271.247	1	-158.204	4	-79.825	4	-.248	3	-.103	1	-.085	4
175		3	max	949.078	3	305.991	2	88.287	2	.243	1	.16	4	.139	2
176			min	-1229.98	4	-190.564	1	-82.729	1	-.309	2	-.14	3	-.123	1
177		4	max	498.983	4	55.035	2	141.079	3	.146	4	.127	4	.24	1
178			min	-459.626	3	-324.857	5	-158.746	4	-.093	3	-.152	3	-.43	2
179		5	max	0	11	0	8	0	3	0	11	0	11	0	11
180			min	0	1	-.007	2	-.003	1	0	1	0	1	0	1
181	M19	1	max	4595.573	7	48.708	7	40.942	1	0	1	0	11	0	11
182			min	-480.371	4	-2.064	4	-40.942	2	0	2	0	1	0	1
183		2	max	4585.632	7	24.354	7	20.471	1	0	1	.036	1	.002	4
184			min	-497.971	4	-1.032	4	-20.471	2	0	2	-.036	2	-.043	7
185		3	max	4575.691	7	0	11	0	11	0	1	.048	1	.002	4
186			min	-515.571	4	0	1	0	1	0	2	-.048	2	-.057	7
187		4	max	4565.75	7	1.032	4	20.471	2	0	1	.036	1	.002	4
188			min	-533.17	4	-24.354	7	-20.471	1	0	2	-.036	2	-.043	7
189		5	max	4555.809	7	2.064	4	40.942	2	0	1	0	11	0	11
190			min	-550.77	4	-48.708	7	-40.942	1	0	2	0	1	0	1
191	M20	1	max	3986.913	8	42.68	8	37.206	2	0	3	0	11	0	11
192			min	-664.343	3	-5.023	3	-37.206	1	0	4	0	1	0	1
193		2	max	3976.584	8	21.34	8	18.603	2	0	3	.029	2	.004	3
194			min	-680.661	3	-2.512	3	-18.603	1	0	4	-.029	1	-.034	8
195		3	max	3966.254	8	0	11	0	11	0	3	.039	2	.005	3
196			min	-696.978	3	0	1	0	1	0	4	-.039	1	-.045	8
197		4	max	3955.925	8	2.512	3	18.603	1	0	3	.029	2	.004	3
198			min	-713.296	3	-21.34	8	-18.603	2	0	4	-.029	1	-.034	8
199		5	max	3945.595	8	5.023	3	37.206	1	0	3	0	11	0	11
200			min	-729.613	3	-42.68	8	-37.206	2	0	4	0	1	0	1
201	M21	1	max	4674.977	5	48.272	5	52.173	4	0	4	0	11	0	11
202			min	-811.359	2	-.516	2	-52.173	3	0	3	0	1	0	1
203		2	max	4664.672	5	24.136	5	26.086	4	0	4	.046	4	0	2
204			min	-827.757	2	-.258	2	-26.086	3	0	3	-.046	3	-.042	5
205		3	max	4654.367	5	0	11	0	11	0	4	.061	4	0	2
206			min	-844.155	2	0	1	0	1	0	3	-.061	3	-.056	5
207		4	max	4644.061	5	.258	2	26.086	3	0	4	.046	4	0	2
208			min	-860.552	2	-24.136	5	-26.086	4	0	3	-.046	3	-.042	5

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mom...	LC
209		5	max	4633.756	5	.516	2	52.173	3	0	4	0	11	0	11
210			min	-876.95	2	-48.272	5	-52.173	4	0	3	0	1	0	1
211	M22	1	max	0	11	.007	1	.009	4	0	11	0	11	0	11
212			min	0	1	0	11	-.01	2	0	1	0	1	0	1
213		2	max	345.579	1	250.134	2	160.133	4	.293	4	.223	2	.077	1
214			min	-403.13	2	-259.405	1	-198.592	3	-.313	3	-.216	1	-.081	2
215		3	max	222.854	3	293.216	2	125.585	4	.221	4	.264	4	.086	1
216			min	-236.947	4	-255.468	1	-136.83	3	-.237	3	-.29	3	-.098	2
217		4	max	144.664	3	257.918	3	232.053	3	.5	3	.363	4	.194	3
218			min	-143.047	4	-276.837	4	-194.773	4	-.514	4	-.374	3	-.227	4
219		5	max	0	11	0	11	.012	3	0	11	0	11	0	11
220			min	0	1	-.005	2	-.005	1	0	1	0	1	0	1
221	M23	1	max	0	11	.006	2	0	11	0	11	0	11	0	11
222			min	0	1	0	11	-.012	3	0	1	0	1	0	1
223		2	max	231.188	4	189.872	3	126.423	2	.368	3	.193	3	.064	2
224			min	-287.689	3	-200.141	4	-163.434	1	-.388	4	-.184	4	-.067	1
225		3	max	170.726	1	260.394	1	86.582	2	.123	2	.303	3	.1	4
226			min	-192.838	2	-225.65	2	-97.371	1	-.138	1	-.329	4	-.112	3
227		4	max	156.607	1	305.318	1	339.939	4	.51	4	.262	3	.225	1
228			min	-162.795	2	-320.591	2	-303.231	3	-.524	3	-.272	4	-.255	2
229		5	max	0	11	0	11	.008	1	0	11	0	11	0	11
230			min	0	1	-.005	1	-.014	4	0	1	0	1	0	1
231	M24	1	max	0	11	0	11	0	11	0	11	0	11	0	11
232			min	0	1	0	1	0	1	0	1	0	1	0	1
233		2	max	285.43	3	238.214	4	136.331	3	.396	1	.199	4	.086	3
234			min	-341.236	4	-247.039	3	-174.336	4	-.415	2	-.191	3	-.09	4
235		3	max	107.662	2	285.485	4	130.313	1	.231	1	.358	1	.058	3
236			min	-119.584	1	-248.536	3	-140.676	2	-.245	2	-.384	2	-.071	4
237		4	max	128.398	2	275.687	4	365.575	2	.625	2	.374	1	.197	4
238			min	-124.925	1	-294.511	3	-327.933	1	-.638	1	-.384	2	-.23	3
239		5	max	0	11	0	11	0	11	0	11	0	11	0	11
240			min	0	1	0	1	0	1	0	1	0	1	0	1
241	M25	1	max	384.804	3	458.973	1	326.861	3	.009	1	.278	2	.429	4
242			min	-475.285	4	-523.108	2	-353.909	4	-.009	2	-.233	1	-.406	3
243		2	max	381.451	3	460.653	1	321.069	3	.009	1	.247	4	.27	4
244			min	-471.932	4	-521.428	2	-348.117	4	-.009	2	-.224	3	-.239	3
245		3	max	378.098	3	462.332	1	315.277	3	.009	1	.235	4	.113	4
246			min	-468.579	4	-519.748	2	-342.325	4	-.009	2	-.233	3	-.074	3
247		4	max	374.745	3	464.012	1	309.485	3	.009	1	.226	4	.275	2
248			min	-465.225	4	-518.069	2	-336.533	4	-.009	2	-.244	3	-.231	1
249		5	max	371.391	3	465.692	1	303.693	3	.009	1	.218	4	.456	2
250			min	-461.872	4	-516.389	2	-330.742	4	-.009	2	-.255	3	-.406	1
251	MP1A	1	max	0	11	.021	8	.039	1	0	11	0	11	0	11
252			min	0	1	-.017	3	-.039	2	0	1	0	1	0	1
253		2	max	488.766	2	173.697	4	147.275	2	.257	1	.07	4	.355	4
254			min	-483.088	1	-192.37	3	-90.271	1	-.252	2	-.119	3	-.392	3
255		3	max	558.056	2	265.39	4	86.914	3	.257	1	.097	6	.085	3
256			min	-413.798	1	-284.063	3	-29.902	2	-.252	2	.011	4	-.084	4
257		4	max	-8.33	10	25.516	3	25.553	2	0	11	.026	1	.026	3
258			min	-25.508	5	-25.517	4	-25.543	1	0	1	-.026	2	-.026	4
259		5	max	0	11	.013	3	.075	6	0	11	0	11	0	11
260			min	0	1	-.015	8	-.041	1	0	1	0	1	0	1
261	MP2A	1	max	288.246	8	239.622	4	548.053	1	0	11	0	11	0	11
262			min	76.8	1	-239.621	3	-548.057	2	0	1	0	1	0	1
263		2	max	468.509	8	378.849	4	626.441	1	.143	1	1.174	1	.577	4
264			min	173.93	1	-363.158	3	-626.444	2	-.152	2	-1.175	2	-.139	7
265		3	max	644.391	6	465.098	4	274.601	1	.143	1	.704	1	.196	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
266			min	127.02	1	-449.407	3	-236.029	2	-.152	2	-.627	2	-.206	4
267		4	max	-98.354	10	272.332	3	579.618	2	0	11	1.122	1	.51	3
268			min	-343.116	5	-272.312	4	-579.409	1	0	1	-1.123	2	-.51	4
269		5	max	-76.8	10	238.147	3	543.108	2	0	11	0	11	0	11
270			min	-288.246	5	-238.128	4	-542.9	1	0	1	0	1	0	1
271	M46	1	max	293.427	1	633.457	2	400.445	3	.518	3	.253	1	.227	2
272			min	-227.188	2	-338.543	1	-382.482	4	-.489	4	-.253	2	-.297	1
273		2	max	293.427	1	633.457	2	400.445	3	.518	3	.254	1	.183	2
274			min	-227.188	2	-338.543	1	-382.482	4	-.489	4	-.252	2	-.273	1
275		3	max	293.427	1	633.457	2	400.445	3	.518	3	.255	1	.139	2
276			min	-227.188	2	-338.543	1	-382.482	4	-.489	4	-.252	2	-.25	1
277		4	max	293.427	1	633.457	2	400.445	3	.518	3	.256	1	.096	2
278			min	-227.188	2	-338.543	1	-382.482	4	-.489	4	-.252	2	-.227	1
279		5	max	293.427	1	633.457	2	400.445	3	.518	3	.257	1	.052	2
280			min	-227.188	2	-338.543	1	-382.482	4	-.489	4	-.252	2	-.224	7
281	M47	1	max	885.956	1	1037.899	6	756.491	3	.251	3	.288	4	.339	1
282			min	-841.705	2	242.899	1	-771.981	4	-.285	4	-.291	3	-.269	2
283		2	max	885.956	1	1037.899	6	756.491	3	.251	3	.235	4	.322	1
284			min	-841.705	2	242.899	1	-771.981	4	-.285	4	-.239	3	-.303	2
285		3	max	885.956	1	1037.899	6	756.491	3	.251	3	.181	4	.305	1
286			min	-841.705	2	242.899	1	-771.981	4	-.285	4	-.187	3	-.338	2
287		4	max	885.956	1	1037.899	6	756.491	3	.251	3	.143	1	.289	1
288			min	-841.705	2	242.899	1	-771.981	4	-.285	4	-.151	2	-.372	2
289		5	max	885.956	1	1037.899	6	756.491	3	.251	3	.143	1	.272	1
290			min	-841.705	2	242.899	1	-771.981	4	-.285	4	-.152	2	-.407	2
291	M58	1	max	111.816	1	490.398	1	148.085	4	.417	3	.253	2	.113	1
292			min	-177.734	2	-482.09	2	-165.895	3	-.381	4	-.253	1	-.16	2
293		2	max	111.816	1	490.398	1	148.085	4	.417	3	.253	2	.085	1
294			min	-177.734	2	-482.09	2	-165.895	3	-.381	4	-.254	1	-.132	2
295		3	max	111.816	1	490.398	1	148.085	4	.417	3	.252	2	.077	4
296			min	-177.734	2	-482.09	2	-165.895	3	-.381	4	-.255	1	-.125	3
297		4	max	111.816	1	490.398	1	148.085	4	.417	3	.252	2	.073	4
298			min	-177.734	2	-482.09	2	-165.895	3	-.381	4	-.256	1	-.122	3
299		5	max	111.816	1	490.398	1	148.085	4	.417	3	.252	2	.07	4
300			min	-177.734	2	-482.09	2	-165.895	3	-.381	4	-.257	1	-.119	3
301	M59	1	max	421.875	1	133.163	1	51.709	4	1.123	3	.148	2	.87	2
302			min	-465.82	2	-128.769	2	-36.551	3	-1.144	4	-.142	1	-.87	1
303		2	max	421.875	1	133.163	1	51.709	4	1.123	3	.149	2	.878	2
304			min	-465.82	2	-128.769	2	-36.551	3	-1.144	4	-.142	1	-.877	1
305		3	max	421.875	1	133.163	1	51.709	4	1.123	3	.15	2	.885	2
306			min	-465.82	2	-128.769	2	-36.551	3	-1.144	4	-.143	1	-.885	1
307		4	max	421.875	1	133.163	1	51.709	4	1.123	3	.151	2	.892	2
308			min	-465.82	2	-128.769	2	-36.551	3	-1.144	4	-.143	1	-.893	1
309		5	max	421.875	1	133.163	1	51.709	4	1.123	3	.153	2	.9	2
310			min	-465.82	2	-128.769	2	-36.551	3	-1.144	4	-.143	1	-.9	1
311	M62	1	max	261.215	2	634.211	3	193.907	3	.242	4	.226	4	.472	3
312			min	-353.778	1	-684	4	-219.287	4	-.21	3	-.217	3	-.533	4
313		2	max	261.215	2	634.211	3	193.907	3	.242	4	.219	4	.451	3
314			min	-353.778	1	-684	4	-219.287	4	-.21	3	-.211	3	-.511	4
315		3	max	261.215	2	634.211	3	193.907	3	.242	4	.212	4	.431	3
316			min	-353.778	1	-684	4	-219.287	4	-.21	3	-.204	3	-.488	4
317		4	max	261.215	2	634.211	3	193.907	3	.242	4	.205	4	.41	3
318			min	-353.778	1	-684	4	-219.287	4	-.21	3	-.198	3	-.466	4
319		5	max	261.215	2	634.211	3	193.907	3	.242	4	.197	4	.39	3
320			min	-353.778	1	-684	4	-219.287	4	-.21	3	-.192	3	-.444	4
321	M63	1	max	253.848	4	618.887	1	577.649	2	.162	1	.508	1	.38	1
322			min	-316.888	3	-549.87	2	-500.586	1	-.152	2	-.565	2	-.355	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
323		2	max	253.848	4	618.887	1	577.649	2	.162	1	.492	1	.36	1
324			min	-316.888	3	-549.87	2	-500.586	1	-.152	2	-.546	2	-.337	2
325		3	max	253.848	4	618.887	1	577.649	2	.162	1	.475	1	.34	1
326			min	-316.888	3	-549.87	2	-500.586	1	-.152	2	-.527	2	-.319	2
327		4	max	253.848	4	618.887	1	577.649	2	.162	1	.459	1	.32	1
328			min	-316.888	3	-549.87	2	-500.586	1	-.152	2	-.509	2	-.301	2
329		5	max	253.848	4	618.887	1	577.649	2	.162	1	.443	1	.3	1
330			min	-316.888	3	-549.87	2	-500.586	1	-.152	2	-.49	2	-.283	2
331	M64	1	max	471.326	3	466.281	1	266.445	1	.174	3	.35	2	.299	1
332			min	-568.682	4	-515.928	2	-289.903	2	-.142	4	-.339	1	-.359	2
333		2	max	471.326	3	466.281	1	266.445	1	.174	3	.34	2	.289	4
334			min	-568.682	4	-515.928	2	-289.903	2	-.142	4	-.33	1	-.347	3
335		3	max	471.326	3	466.281	1	266.445	1	.174	3	.331	2	.279	4
336			min	-568.682	4	-515.928	2	-289.903	2	-.142	4	-.321	1	-.336	3
337		4	max	471.326	3	466.281	1	266.445	1	.174	3	.322	2	.269	4
338			min	-568.682	4	-515.928	2	-289.903	2	-.142	4	-.313	1	-.324	3
339		5	max	471.326	3	466.281	1	266.445	1	.174	3	.312	2	.259	4
340			min	-568.682	4	-515.928	2	-289.903	2	-.142	4	-.304	1	-.313	3
341	M65	1	max	175.166	2	693.331	4	404.003	3	.214	4	.281	4	.483	4
342			min	-235.272	1	-624.283	3	-326.034	4	-.203	3	-.338	3	-.457	3
343		2	max	175.166	2	693.331	4	404.003	3	.214	4	.27	4	.461	4
344			min	-235.272	1	-624.283	3	-326.034	4	-.203	3	-.325	3	-.437	3
345		3	max	175.166	2	693.331	4	404.003	3	.214	4	.26	4	.438	4
346			min	-235.272	1	-624.283	3	-326.034	4	-.203	3	-.312	3	-.416	3
347		4	max	175.166	2	693.331	4	404.003	3	.214	4	.249	4	.415	4
348			min	-235.272	1	-624.283	3	-326.034	4	-.203	3	-.299	3	-.396	3
349		5	max	175.166	2	693.331	4	404.003	3	.214	4	.238	4	.393	4
350			min	-235.272	1	-624.283	3	-326.034	4	-.203	3	-.285	3	-.376	3
351	M66	1	max	481.445	1	561.867	2	249.291	4	.245	1	.325	3	.465	2
352			min	-583.496	2	-607.765	1	-268.07	3	-.213	2	-.315	4	-.525	1
353		2	max	481.445	1	561.867	2	249.291	4	.245	1	.317	3	.447	2
354			min	-583.496	2	-607.765	1	-268.07	3	-.213	2	-.307	4	-.505	1
355		3	max	481.445	1	561.867	2	249.291	4	.245	1	.308	3	.429	2
356			min	-583.496	2	-607.765	1	-268.07	3	-.213	2	-.299	4	-.486	1
357		4	max	481.445	1	561.867	2	249.291	4	.245	1	.299	3	.41	2
358			min	-583.496	2	-607.765	1	-268.07	3	-.213	2	-.291	4	-.466	1
359		5	max	481.445	1	561.867	2	249.291	4	.245	1	.291	3	.392	2
360			min	-583.496	2	-607.765	1	-268.07	3	-.213	2	-.283	4	-.446	1
361	M67	1	max	195.313	1	524.265	2	546.53	4	.186	2	.501	3	.407	2
362			min	-262.207	2	-457.825	1	-473.404	3	-.177	1	-.558	4	-.384	1
363		2	max	195.313	1	524.265	2	546.53	4	.186	2	.485	3	.39	2
364			min	-262.207	2	-457.825	1	-473.404	3	-.177	1	-.54	4	-.369	1
365		3	max	195.313	1	524.265	2	546.53	4	.186	2	.47	3	.373	2
366			min	-262.207	2	-457.825	1	-473.404	3	-.177	1	-.523	4	-.354	1
367		4	max	195.313	1	524.265	2	546.53	4	.186	2	.455	3	.356	2
368			min	-262.207	2	-457.825	1	-473.404	3	-.177	1	-.505	4	-.339	1
369		5	max	195.313	1	524.265	2	546.53	4	.186	2	.439	3	.339	2
370			min	-262.207	2	-457.825	1	-473.404	3	-.177	1	-.487	4	-.324	1
371	M68	1	max	361.39	1	551.624	2	371.721	1	.011	2	.267	3	.574	2
372			min	-455.843	2	-617.63	1	-401.158	2	-.01	1	-.217	4	-.554	1
373		2	max	358.046	1	553.303	2	369.796	1	.011	2	.228	3	.341	2
374			min	-452.5	2	-615.951	1	-399.233	2	-.01	1	-.202	4	-.312	1
375		3	max	354.702	1	554.983	2	367.871	1	.011	2	.195	2	.108	2
376			min	-449.156	2	-614.271	1	-397.308	2	-.01	1	-.192	1	-.072	1
377		4	max	351.358	1	556.663	2	365.945	1	.011	2	.234	2	.198	3
378			min	-445.812	2	-612.591	1	-395.382	2	-.01	1	-.253	1	-.153	4
379		5	max	348.015	1	558.343	2	364.02	1	.011	2	.273	2	.407	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
380			min	-442.468	2	-610.911	1	-393.457	2	-.01	1	-.313	1	-.358	2
381	M69	1	max	261.022	2	625.565	3	315.457	4	.012	3	.26	1	.504	3
382			min	-349.349	1	-692.343	4	-345.638	3	-.011	4	-.211	2	-.485	4
383		2	max	261.013	2	627.245	3	315.457	4	.012	3	.225	1	.267	3
384			min	-349.34	1	-690.663	4	-345.638	3	-.011	4	-.2	2	-.239	4
385		3	max	261.004	2	628.924	3	315.457	4	.012	3	.193	1	.078	1
386			min	-349.33	1	-688.984	4	-345.638	3	-.011	4	-.19	2	-.039	2
387		4	max	260.995	2	630.604	3	315.457	4	.012	3	.163	1	.252	4
388			min	-349.321	1	-687.304	4	-345.638	3	-.011	4	-.182	2	-.21	3
389		5	max	260.985	2	632.284	3	315.457	4	.012	3	.177	3	.497	4
390			min	-349.312	1	-685.624	4	-345.638	3	-.011	4	-.218	4	-.449	3
391	M70	1	max	223.608	2	374.739	4	556.764	1	.047	4	.11	2	.194	1
392			min	-186.187	1	-630.829	3	-613.402	2	-.065	3	-.1	1	-.164	2
393		2	max	223.608	2	374.739	4	556.764	1	.047	4	.083	2	.207	1
394			min	-186.187	1	-630.829	3	-613.402	2	-.065	3	-.075	1	-.165	2
395		3	max	223.608	2	374.739	4	556.764	1	.047	4	.055	2	.223	3
396			min	-186.187	1	-630.829	3	-613.402	2	-.065	3	-.05	1	-.17	4
397		4	max	223.608	2	374.739	4	556.764	1	.047	4	.028	2	.251	3
398			min	-186.187	1	-630.829	3	-613.402	2	-.065	3	-.025	1	-.187	4
399		5	max	223.608	2	374.739	4	556.764	1	.047	4	0	8	.28	3
400			min	-186.187	1	-630.829	3	-613.402	2	-.065	3	0	4	-.204	4
401	M71	1	max	488.565	4	154.808	4	796.217	4	.067	3	.133	3	.157	3
402			min	-406.417	3	-828.81	5	-736.586	3	-.048	4	-.143	4	-.174	4
403		2	max	488.565	4	154.808	4	796.217	4	.067	3	.099	3	.189	3
404			min	-406.417	3	-828.81	5	-736.586	3	-.048	4	-.107	4	-.181	4
405		3	max	488.565	4	154.808	4	796.217	4	.067	3	.066	3	.221	3
406			min	-406.417	3	-828.81	5	-736.586	3	-.048	4	-.072	4	-.188	4
407		4	max	488.565	4	154.808	4	796.217	4	.067	3	.033	3	.253	3
408			min	-406.417	3	-828.81	5	-736.586	3	-.048	4	-.036	4	-.195	4
409		5	max	488.565	4	154.808	4	796.217	4	.067	3	0	5	.285	3
410			min	-406.417	3	-828.81	5	-736.586	3	-.048	4	0	3	-.202	4
411	M72	1	max	195.872	3	255.524	3	562.54	2	.062	3	.111	1	.258	4
412			min	-152.552	4	-509.964	4	-613.934	1	-.08	4	-.101	2	-.227	3
413		2	max	195.872	3	255.524	3	562.54	2	.062	3	.083	1	.28	4
414			min	-152.552	4	-509.964	4	-613.934	1	-.08	4	-.076	2	-.239	3
415		3	max	195.872	3	255.524	3	562.54	2	.062	3	.055	1	.303	4
416			min	-152.552	4	-509.964	4	-613.934	1	-.08	4	-.051	2	-.25	3
417		4	max	195.872	3	255.524	3	562.54	2	.062	3	.028	1	.326	4
418			min	-152.552	4	-509.964	4	-613.934	1	-.08	4	-.025	2	-.262	3
419		5	max	195.872	3	255.524	3	562.54	2	.062	3	0	3	.349	4
420			min	-152.552	4	-509.964	4	-613.934	1	-.08	4	0	1	-.273	3
421	M73	1	max	381.493	2	308.01	3	761.321	2	.068	4	.129	1	.129	4
422			min	-310.417	1	-859.524	4	-714.52	1	-.048	3	-.137	2	-.145	3
423		2	max	381.493	2	308.01	3	761.321	2	.068	4	.096	1	.168	4
424			min	-310.417	1	-859.524	4	-714.52	1	-.048	3	-.103	2	-.159	3
425		3	max	381.493	2	308.01	3	761.321	2	.068	4	.064	1	.206	4
426			min	-310.417	1	-859.524	4	-714.52	1	-.048	3	-.069	2	-.172	3
427		4	max	381.493	2	308.01	3	761.321	2	.068	4	.032	1	.245	4
428			min	-310.417	1	-859.524	4	-714.52	1	-.048	3	-.034	2	-.186	3
429		5	max	381.493	2	308.01	3	761.321	2	.068	4	0	4	.284	4
430			min	-310.417	1	-859.524	4	-714.52	1	-.048	3	0	2	-.2	3
431	M74	1	max	196.849	4	355.113	1	632.324	3	.06	1	.124	4	.232	2
432			min	-163.787	3	-605.975	2	-689.695	4	-.076	2	-.114	3	-.205	1
433		2	max	196.849	4	355.113	1	632.324	3	.06	1	.093	4	.259	2
434			min	-163.787	3	-605.975	2	-689.695	4	-.076	2	-.085	3	-.221	1
435		3	max	196.849	4	355.113	1	632.324	3	.06	1	.062	4	.286	2
436			min	-163.787	3	-605.975	2	-689.695	4	-.076	2	-.057	3	-.237	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
437		4	max	196.849	4	355.113	1	632.324	3	.06	1	.031	4	.314	2
438			min	-163.787	3	-605.975	2	-689.695	4	-.076	2	-.028	3	-.253	1
439		5	max	196.849	4	355.113	1	632.324	3	.06	1	0	3	.341	2
440			min	-163.787	3	-605.975	2	-689.695	4	-.076	2	0	4	-.269	1
441	M75	1	max	460.486	1	314.617	1	699.726	3	.074	2	.119	4	.146	2
442			min	-373.83	2	-869.555	2	-662.528	4	-.054	1	-.126	3	-.162	1
443		2	max	460.486	1	314.617	1	699.726	3	.074	2	.089	4	.185	2
444			min	-373.83	2	-869.555	2	-662.528	4	-.054	1	-.094	3	-.177	1
445		3	max	460.486	1	314.617	1	699.726	3	.074	2	.06	4	.224	2
446			min	-373.83	2	-869.555	2	-662.528	4	-.054	1	-.063	3	-.191	1
447		4	max	460.486	1	314.617	1	699.726	3	.074	2	.03	4	.264	2
448			min	-373.83	2	-869.555	2	-662.528	4	-.054	1	-.031	3	-.205	1
449		5	max	460.486	1	314.617	1	699.726	3	.074	2	0	1	.303	2
450			min	-373.83	2	-869.555	2	-662.528	4	-.054	1	0	2	-.219	1
451	M76	1	max	681.272	4	-122.066	2	1073.92	1	.003	4	.222	2	.094	3
452			min	-663.035	3	-678.987	5	-1389.357	2	-.004	3	-.172	1	-.144	4
453		2	max	681.272	4	-122.066	2	1073.92	1	.003	4	.167	2	.1	3
454			min	-663.035	3	-678.987	5	-1389.357	2	-.004	3	-.129	1	-.131	4
455		3	max	681.272	4	-122.066	2	1073.92	1	.003	4	.111	2	.107	3
456			min	-663.035	3	-678.987	5	-1389.357	2	-.004	3	-.086	1	-.119	4
457		4	max	681.272	4	-122.066	2	1073.92	1	.003	4	.056	2	.113	3
458			min	-663.035	3	-678.987	5	-1389.357	2	-.004	3	-.043	1	-.106	4
459		5	max	681.272	4	-122.066	2	1073.92	1	.003	4	0	2	.12	3
460			min	-663.035	3	-678.987	5	-1389.357	2	-.004	3	0	3	-.094	4
461	M77	1	max	446.93	4	-129.244	1	1527.038	4	.004	3	.199	3	.105	3
462			min	-423.098	3	-645.848	6	-1240.674	3	-.003	4	-.244	4	-.148	4
463		2	max	446.93	4	-129.244	1	1527.038	4	.004	3	.149	3	.115	3
464			min	-423.098	3	-645.848	6	-1240.674	3	-.003	4	-.183	4	-.14	4
465		3	max	446.93	4	-129.244	1	1527.038	4	.004	3	.099	3	.125	3
466			min	-423.098	3	-645.848	6	-1240.674	3	-.003	4	-.122	4	-.132	4
467		4	max	446.93	4	-129.244	1	1527.038	4	.004	3	.05	3	.136	3
468			min	-423.098	3	-645.848	6	-1240.674	3	-.003	4	-.061	4	-.124	4
469		5	max	446.93	4	-129.244	1	1527.038	4	.004	3	0	3	.146	3
470			min	-423.098	3	-645.848	6	-1240.674	3	-.003	4	0	2	-.116	4
471	M78	1	max	570.771	3	-155.695	3	1689.026	4	.003	3	.325	3	.078	4
472			min	-550.513	4	-710.556	6	-2034.113	3	-.003	4	-.27	4	-.131	3
473		2	max	570.771	3	-155.695	3	1689.026	4	.003	3	.244	3	.092	4
474			min	-550.513	4	-710.556	6	-2034.113	3	-.003	4	-.203	4	-.125	3
475		3	max	570.771	3	-155.695	3	1689.026	4	.003	3	.163	3	.106	4
476			min	-550.513	4	-710.556	6	-2034.113	3	-.003	4	-.135	4	-.119	3
477		4	max	570.771	3	-155.695	3	1689.026	4	.003	3	.081	3	.12	4
478			min	-550.513	4	-710.556	6	-2034.113	3	-.003	4	-.068	4	-.113	3
479		5	max	570.771	3	-155.695	3	1689.026	4	.003	3	0	3	.134	4
480			min	-550.513	4	-710.556	6	-2034.113	3	-.003	4	0	4	-.107	3
481	M79	1	max	654.772	3	-138.68	4	1106.362	2	.006	4	.134	1	.144	4
482			min	-634.363	4	-618.05	7	-834.812	1	-.005	3	-.177	2	-.183	3
483		2	max	654.772	3	-138.68	4	1106.362	2	.006	4	.1	1	.149	4
484			min	-634.363	4	-618.05	7	-834.812	1	-.005	3	-.133	2	-.172	3
485		3	max	654.772	3	-138.68	4	1106.362	2	.006	4	.067	1	.155	4
486			min	-634.363	4	-618.05	7	-834.812	1	-.005	3	-.089	2	-.16	3
487		4	max	654.772	3	-138.68	4	1106.362	2	.006	4	.033	1	.16	4
488			min	-634.363	4	-618.05	7	-834.812	1	-.005	3	-.044	2	-.148	3
489		5	max	654.772	3	-138.68	4	1106.362	2	.006	4	0	3	.166	4
490			min	-634.363	4	-618.05	7	-834.812	1	-.005	3	0	7	-.136	3
491	M80	1	max	780.217	1	-120.947	4	1517.626	2	.002	1	.3	1	.092	2
492			min	-770.125	2	-684.546	7	-1874.702	1	-.002	2	-.243	2	-.142	1
493		2	max	780.217	1	-120.947	4	1517.626	2	.002	1	.225	1	.101	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
494			min	-770.125	2	-684.546	7	-1874.702	1	-.002	2	-.182	2	-.132	1
495		3	max	780.217	1	-120.947	4	1517.626	2	.002	1	.15	1	.111	2
496			min	-770.125	2	-684.546	7	-1874.702	1	-.002	2	-.121	2	-.123	1
497		4	max	780.217	1	-120.947	4	1517.626	2	.002	1	.075	1	.12	2
498			min	-770.125	2	-684.546	7	-1874.702	1	-.002	2	-.061	2	-.113	1
499		5	max	780.217	1	-120.947	4	1517.626	2	.002	1	0	3	.129	2
500			min	-770.125	2	-684.546	7	-1874.702	1	-.002	2	0	4	-.103	1
501	M81	1	max	653.525	1	-151.77	3	1392.999	1	.007	2	.173	2	.133	2
502			min	-626.688	2	-637.473	8	-1084.182	2	-.006	1	-.223	1	-.175	1
503		2	max	653.525	1	-151.77	3	1392.999	1	.007	2	.13	2	.142	2
504			min	-626.688	2	-637.473	8	-1084.182	2	-.006	1	-.167	1	-.167	1
505		3	max	653.525	1	-151.77	3	1392.999	1	.007	2	.087	2	.152	2
506			min	-626.688	2	-637.473	8	-1084.182	2	-.006	1	-.111	1	-.158	1
507		4	max	653.525	1	-151.77	3	1392.999	1	.007	2	.043	2	.161	2
508			min	-626.688	2	-637.473	8	-1084.182	2	-.006	1	-.056	1	-.15	1
509		5	max	653.525	1	-151.77	3	1392.999	1	.007	2	0	1	.17	2
510			min	-626.688	2	-637.473	8	-1084.182	2	-.006	1	0	4	-.141	1
511	M82	1	max	31.418	7	1313.086	2	29.961	1	.025	1	.007	2	.22	2
512			min	-17.277	4	-1746.851	1	-41.439	2	-.04	2	-.006	1	-.273	1
513		2	max	31.418	7	1313.086	2	29.961	1	.025	1	.006	2	.163	2
514			min	-17.277	4	-1746.851	1	-41.439	2	-.04	2	-.004	1	-.197	1
515		3	max	31.418	7	1313.086	2	29.961	1	.025	1	.004	2	.105	2
516			min	-17.277	4	-1746.851	1	-41.439	2	-.04	2	-.003	1	-.121	1
517		4	max	31.418	7	1313.086	2	29.961	1	.025	1	.002	2	.048	2
518			min	-17.277	4	-1746.851	1	-41.439	2	-.04	2	-.002	1	-.045	1
519		5	max	31.418	7	1313.086	2	29.961	1	.025	1	0	2	.032	1
520			min	-17.277	4	-1746.851	1	-41.439	2	-.04	2	0	1	-.009	2
521	M83	1	max	38.666	5	844.862	4	1545.248	4	.048	4	.322	3	.144	4
522			min	-16.352	2	-1079.076	3	-1929.873	3	-.04	3	-.265	4	-.18	3
523		2	max	38.666	5	844.862	4	1545.248	4	.048	4	.238	3	.107	4
524			min	-16.352	2	-1079.076	3	-1929.873	3	-.04	3	-.197	4	-.133	3
525		3	max	38.666	5	844.862	4	1545.248	4	.048	4	.154	3	.071	4
526			min	-16.352	2	-1079.076	3	-1929.873	3	-.04	3	-.13	4	-.085	3
527		4	max	38.666	5	844.862	4	1545.248	4	.048	4	.07	3	.034	4
528			min	-16.352	2	-1079.076	3	-1929.873	3	-.04	3	-.062	4	-.038	3
529		5	max	38.666	5	844.862	4	1545.248	4	.048	4	.013	1	.013	2
530			min	-16.352	2	-1079.076	3	-1929.873	3	-.04	3	-.022	2	-.008	1
531	M84	1	max	134.612	8	1782.319	3	1926.214	3	.193	2	.241	4	.34	5
532			min	13.113	3	-1150.425	4	-1531.417	4	-.207	1	-.339	3	-.127	2
533		2	max	134.612	8	1782.319	3	1926.214	3	.193	2	.174	4	.288	5
534			min	13.113	3	-1150.425	4	-1531.417	4	-.207	1	-.255	3	-.083	2
535		3	max	134.612	8	1782.319	3	1926.214	3	.193	2	.107	4	.237	5
536			min	13.113	3	-1150.425	4	-1531.417	4	-.207	1	-.171	3	-.04	2
537		4	max	134.612	8	1782.319	3	1926.214	3	.193	2	.04	4	.186	5
538			min	13.113	3	-1150.425	4	-1531.417	4	-.207	1	-.098	7	.004	2
539		5	max	134.612	8	1782.319	3	1926.214	3	.193	2	.034	1	.153	8
540			min	13.113	3	-1150.425	4	-1531.417	4	-.207	1	-.073	6	-.022	3
541	M85	1	max	883.082	4	5.924	1	1561.665	4	.031	1	.028	1	.042	6
542			min	-1099.119	3	-64.124	6	-1954.637	3	-.073	6	-.042	2	-.018	1
543		2	max	883.082	4	5.924	1	1561.665	4	.031	1	.052	4	.045	6
544			min	-1099.119	3	-64.177	6	-1954.637	3	-.073	6	-.082	3	-.018	1
545		3	max	883.082	4	74.819	8	1561.665	4	.099	8	.117	4	.063	8
546			min	-1099.119	3	-64.229	6	-1954.637	3	-.061	2	-.166	1	-.011	3
547		4	max	627.21	2	74.766	8	1535.333	1	.099	8	.06	2	.06	8
548			min	-834.154	1	2.117	3	-1154.244	2	-.019	3	-.102	1	-.011	3
549		5	max	627.21	2	74.713	8	1535.333	1	.099	8	.016	3	.057	8
550			min	-834.154	1	2.117	3	-1154.244	2	-.019	3	-.043	5	-.011	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
551	M86	1	max	511.588	2	639.199	3	397.665	1	.112	2	.135	2	.588	3
552			min	-450.966	1	-365.995	4	-430.373	2	-.103	1	-.13	1	-.373	4
553		2	max	509.397	2	638.05	3	396.387	1	.112	2	.098	3	.528	3
554			min	-448.776	1	-367.143	4	-429.096	2	-.103	1	-.095	4	-.339	4
555		3	max	507.207	2	636.902	3	395.11	1	.112	2	.069	3	.468	3
556			min	-446.585	1	-368.292	4	-427.818	2	-.103	1	-.07	4	-.304	4
557		4	max	505.016	2	635.753	3	393.832	1	.112	2	.041	3	.408	3
558			min	-444.395	1	-369.44	4	-426.541	2	-.103	1	-.045	4	-.27	4
559		5	max	502.826	2	634.605	3	392.555	1	.112	2	.018	1	.349	3
560			min	-442.204	1	-370.589	4	-425.263	2	-.103	1	-.025	2	-.235	4
561	M87	1	max	683.349	1	879.436	2	497.07	3	.007	2	.171	4	.748	2
562			min	-573.23	2	-304.44	1	-497.392	4	-.109	5	-.152	3	-.348	1
563		2	max	681.18	1	878.288	2	493.275	3	.007	2	.124	4	.665	2
564			min	-571.061	2	-305.588	1	-493.598	4	-.109	5	-.106	3	-.319	1
565		3	max	679.012	1	877.139	2	489.481	3	.007	2	.078	4	.583	2
566			min	-568.893	2	-306.737	1	-489.804	4	-.109	5	-.06	3	-.29	1
567		4	max	676.844	1	875.991	2	485.687	3	.007	2	.084	1	.501	2
568			min	-566.725	2	-307.885	1	-486.009	4	-.109	5	-.064	2	-.262	1
569		5	max	674.675	1	874.842	2	481.893	3	.007	2	.106	1	.419	2
570			min	-564.556	2	-309.033	1	-482.215	4	-.109	5	-.083	2	-.233	1
571	M88	1	max	1595.392	4	657.169	6	248.974	1	.104	3	.123	2	.322	7
572			min	-1323.687	3	135.897	1	-164.628	2	-.133	4	-.131	1	.053	4
573		2	max	1594.389	4	656.301	6	247.635	1	.104	3	.117	4	.297	7
574			min	-1322.684	3	135.54	1	-163.289	2	-.133	4	-.121	1	.045	4
575		3	max	1593.386	4	655.433	6	246.297	1	.104	3	.124	4	.272	7
576			min	-1321.681	3	135.182	1	-161.951	2	-.133	4	-.121	3	.037	4
577		4	max	1592.383	4	654.565	6	244.958	1	.104	3	.131	4	.247	7
578			min	-1320.678	3	134.824	1	-160.612	2	-.133	4	-.124	3	.029	4
579		5	max	1591.381	4	653.698	6	243.62	1	.104	3	.138	4	.222	7
580			min	-1319.676	3	134.467	1	-159.274	2	-.133	4	-.128	3	.021	4
581	M89	1	max	1547.247	4	653.705	6	390.974	3	.146	3	.138	4	.216	6
582			min	-1261.33	3	134.568	1	-423.258	4	-.116	4	-.128	3	.044	1
583		2	max	1545.257	4	651.857	6	387.754	3	.146	3	.103	4	.161	6
584			min	-1259.339	3	133.806	1	-420.038	4	-.116	4	-.095	3	.033	1
585		3	max	1543.266	4	650.009	6	384.534	3	.146	3	.069	4	.107	6
586			min	-1257.348	3	133.044	1	-416.818	4	-.116	4	-.063	3	.022	1
587		4	max	1541.275	4	648.161	6	381.314	3	.146	3	.034	4	.054	6
588			min	-1255.357	3	132.283	1	-413.598	4	-.116	4	-.031	3	.011	1
589		5	max	1539.284	4	646.313	6	378.095	3	.146	3	0	11	0	11
590			min	-1253.367	3	131.521	1	-410.379	4	-.116	4	0	1	0	1
591	M90	1	max	2040.5	1	695.822	7	37.264	1	.127	1	.265	2	.335	7
592			min	-1706.887	2	125.705	4	-147.093	2	-.091	2	-.267	1	.057	4
593		2	max	2039.745	1	694.954	7	35.498	1	.127	1	.259	2	.308	7
594			min	-1706.132	2	125.347	4	-145.326	2	-.091	2	-.266	1	.052	4
595		3	max	2038.989	1	694.086	7	33.731	1	.127	1	.254	2	.281	7
596			min	-1705.376	2	124.989	4	-143.559	2	-.091	2	-.265	1	.047	4
597		4	max	2038.233	1	693.218	7	31.964	1	.127	1	.248	2	.254	7
598			min	-1704.621	2	124.632	4	-141.793	2	-.091	2	-.263	1	.042	4
599		5	max	2037.478	1	692.35	7	30.198	1	.127	1	.243	2	.228	6
600			min	-1703.865	2	124.274	4	-140.026	2	-.091	2	-.262	1	.037	4
601	M91	1	max	1888.892	1	692.241	7	795.206	1	.103	1	.243	2	.23	7
602			min	-1531.923	2	124.141	4	-736.403	2	-.129	2	-.262	1	.041	4
603		2	max	1888.758	1	690.382	7	790.734	1	.103	1	.181	2	.172	7
604			min	-1531.789	2	123.375	4	-731.931	2	-.129	2	-.196	1	.031	4
605		3	max	1888.624	1	688.523	7	786.262	1	.103	1	.121	2	.114	7
606			min	-1531.655	2	122.609	4	-727.459	2	-.129	2	-.13	1	.02	4
607		4	max	1888.49	1	686.664	7	781.789	1	.103	1	.06	2	.057	7

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mom...	LC
608			min	-1531.521	2	121.843	4	-722.987	2	-.129	2	-.065	1	.01	4
609		5	max	1888.355	1	684.806	7	777.317	1	.103	1	0	11	0	11
610			min	-1531.387	2	121.077	4	-718.515	2	-.129	2	0	1	0	1
611	M92	1	max	1878.165	2	63.737	7	33.928	2	0	1	.006	4	.079	7
612			min	-2337.829	1	-1.058	2	-39.672	1	0	2	-.04	7	-.037	4
613		2	max	1878.125	2	46.474	7	15.094	2	0	1	.01	4	.045	3
614			min	-2337.788	1	-4.161	2	-20.837	1	0	2	-.013	3	-.03	4
615		3	max	1878.085	2	21.148	7	6.434	4	0	1	.016	8	.021	3
616			min	-2337.748	1	-7.263	2	-12.084	3	0	2	-.008	3	-.022	4
617		4	max	1878.045	2	15.54	1	16.832	1	0	1	.015	1	.006	2
618			min	-2337.708	1	-15.219	8	-22.575	2	0	2	-.01	2	-.021	5
619		5	max	1878.005	2	12.438	1	35.666	1	0	1	.045	1	.003	4
620			min	-2337.668	1	-36.955	8	-41.409	2	0	2	-.043	2	-.019	3
621	M93	1	max	1282.648	3	15.578	1	77.073	6	0	3	.002	1	.04	1
622			min	-1690.85	4	-26.101	2	-2.753	1	0	8	-.051	7	-.115	6
623		2	max	1274.471	3	10.829	1	59.721	6	0	3	.009	1	.027	1
624			min	-1682.672	4	-21.352	2	-5.855	1	0	8	-.018	2	-.058	2
625		3	max	1266.293	3	6.08	1	34.063	6	0	3	.014	5	.015	4
626			min	-1674.495	4	-16.811	7	-8.957	1	0	8	-.009	2	-.022	3
627		4	max	1258.116	3	18.862	4	26.017	2	0	3	.016	4	.024	8
628			min	-1666.318	4	-29.474	3	-12.058	1	0	8	-.01	3	.002	3
629		5	max	1249.938	3	32.943	4	22.915	2	0	3	.038	4	.035	2
630			min	-1658.14	4	-43.555	3	-31.239	5	0	8	-.032	3	-.005	1
631	M94	1	max	653.007	2	633.812	3	78.241	2	.209	4	.018	1	.204	3
632			min	-589.244	1	-371.021	4	-57.676	1	-.287	3	-.025	2	-.12	4
633		2	max	651.806	2	632.825	3	77.877	2	.209	4	.014	1	.153	3
634			min	-588.042	1	-372.008	4	-57.312	1	-.287	3	-.019	2	-.09	4
635		3	max	650.604	2	631.838	3	77.513	2	.209	4	.009	1	.102	3
636			min	-586.841	1	-372.995	4	-56.947	1	-.287	3	-.012	2	-.06	4
637		4	max	649.403	2	630.85	3	77.149	2	.209	4	.005	1	.051	3
638			min	-585.64	1	-373.982	4	-56.583	1	-.287	3	-.006	2	-.03	4
639		5	max	648.202	2	629.863	3	76.784	2	.209	4	0	11	0	11
640			min	-584.439	1	-374.97	4	-56.219	1	-.287	3	0	1	0	1
641	M95	1	max	748.833	3	876.256	2	268.565	2	.311	2	.106	1	.28	2
642			min	-695.652	4	-307.258	1	-338.549	1	-.226	1	-.083	2	-.099	1
643		2	max	747.876	3	875.274	2	264.488	2	.311	2	.079	1	.21	2
644			min	-694.695	4	-308.24	1	-334.472	1	-.226	1	-.062	2	-.074	1
645		3	max	746.919	3	874.293	2	260.411	2	.311	2	.052	1	.14	2
646			min	-693.737	4	-309.222	1	-330.394	1	-.226	1	-.041	2	-.05	1
647		4	max	745.961	3	873.311	2	256.333	2	.311	2	.026	1	.07	2
648			min	-692.78	4	-310.203	1	-326.317	1	-.226	1	-.02	2	-.025	1
649		5	max	745.004	3	872.33	2	252.256	2	.311	2	0	11	0	11
650			min	-691.823	4	-311.185	1	-322.24	1	-.226	1	0	1	0	1
651	M96	1	max	243.25	3	-135.603	1	1562.392	4	-.037	4	.131	1	.082	3
652			min	-365.122	4	-656.52	6	-1304.537	3	-.318	7	-.123	2	-.138	4
653		2	max	496.56	4	-159.722	1	158.115	4	-.002	3	.527	4	.375	7
654			min	-427.227	3	-697.781	6	-258.577	3	-.408	8	-.427	3	-.141	4
655		3	max	506.564	4	-168.597	1	175.417	4	-.002	3	.634	4	.822	7
656			min	-437.231	3	-716.511	6	-275.879	3	-.408	8	-.599	3	-.002	4
657		4	max	516.568	4	-177.473	1	192.719	4	-.002	3	.753	4	1.282	7
658			min	-447.236	3	-735.241	6	-293.182	3	-.408	8	-.783	3	.143	4
659		5	max	526.573	4	-186.349	1	210.022	4	-.002	3	.883	4	1.754	7
660			min	-457.24	3	-753.972	6	-310.484	3	-.408	8	-.978	3	.293	4
661	M97	1	max	1021.23	1	801.108	7	132.439	6	.457	5	.59	1	1.833	7
662			min	-960.921	2	173.353	4	-43.026	1	-.09	2	-.64	2	.311	4
663		2	max	1011.24	1	782.378	7	130.99	6	.457	5	.564	1	1.33	6
664			min	-950.932	2	164.477	4	-37.267	1	-.09	2	-.56	2	.175	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
665		3	max	1001.251	1	763.648	7	129.541	6	.457	5	.542	1	.85	6
666			min	-940.942	2	155.601	4	-31.509	1	-.09	2	-.483	2	.004	1
667		4	max	991.262	1	744.917	7	128.092	6	.457	5	.524	1	.39	2
668			min	-930.953	2	146.725	4	-25.75	1	-.09	2	-.41	2	-.161	1
669		5	max	48.443	2	695.204	7	1713.232	2	.327	7	.265	2	.071	2
670			min	-216.559	5	125.248	4	-2029.334	1	.054	4	-.267	1	-.136	1
671	M98	1	max	30.436	5	1658.191	4	41.716	3	.03	4	.005	4	.265	4
672			min	-23.382	2	-1250.053	3	-27.113	4	-.047	3	-.007	3	-.22	3
673		2	max	30.436	5	1658.191	4	41.716	3	.03	4	.004	4	.193	4
674			min	-23.382	2	-1250.053	3	-27.113	4	-.047	3	-.006	3	-.165	3
675		3	max	30.436	5	1658.191	4	41.716	3	.03	4	.003	4	.121	4
676			min	-23.382	2	-1250.053	3	-27.113	4	-.047	3	-.004	3	-.11	3
677		4	max	30.436	5	1658.191	4	41.716	3	.03	4	.002	4	.048	4
678			min	-23.382	2	-1250.053	3	-27.113	4	-.047	3	-.002	3	-.056	3
679		5	max	30.436	5	1658.191	4	41.716	3	.03	4	0	4	.008	1
680			min	-23.382	2	-1250.053	3	-27.113	4	-.047	3	0	3	-.033	2
681	M99	1	max	36.495	6	1141.019	1	2040.589	1	.036	2	.266	2	.18	1
682			min	-14.223	1	-907.6	2	-1644.626	2	-.026	1	-.324	1	-.146	2
683		2	max	36.495	6	1141.019	1	2040.589	1	.036	2	.194	2	.13	1
684			min	-14.223	1	-907.6	2	-1644.626	2	-.026	1	-.235	1	-.106	2
685		3	max	36.495	6	1141.019	1	2040.589	1	.036	2	.123	2	.08	1
686			min	-14.223	1	-907.6	2	-1644.626	2	-.026	1	-.146	1	-.067	2
687		4	max	36.495	6	1141.019	1	2040.589	1	.036	2	.051	2	.03	1
688			min	-14.223	1	-907.6	2	-1644.626	2	-.026	1	-.057	1	-.027	2
689		5	max	36.495	6	1141.019	1	2040.589	1	.036	2	.032	1	.013	2
690			min	-14.223	1	-907.6	2	-1644.626	2	-.026	1	-.021	2	-.019	1
691	M100	1	max	136.688	7	1560.78	2	1444.016	4	.247	1	.152	3	.236	2
692			min	16.113	4	-2222.893	1	-1092.236	3	-.255	2	-.266	4	-.415	1
693		2	max	136.688	7	1560.78	2	1444.016	4	.247	1	.104	3	.167	2
694			min	16.113	4	-2222.893	1	-1092.236	3	-.255	2	-.203	4	-.318	1
695		3	max	136.688	7	1560.78	2	1444.016	4	.247	1	.056	3	.099	2
696			min	16.113	4	-2222.893	1	-1092.236	3	-.255	2	-.156	8	-.232	5
697		4	max	136.688	7	1560.78	2	1444.016	4	.247	1	.034	1	.031	2
698			min	16.113	4	-2222.893	1	-1092.236	3	-.255	2	-.125	6	-.176	5
699		5	max	136.688	7	1560.78	2	1444.016	4	.247	1	.028	1	.024	4
700			min	16.113	4	-2222.893	1	-1092.236	3	-.255	2	-.103	6	-.137	7
701	M101	1	max	905.154	2	.648	4	1645.536	2	.026	4	.021	4	.042	7
702			min	-1131.523	1	-63.617	7	-2046.759	1	-.073	7	-.035	3	-.015	4
703		2	max	905.154	2	.648	4	1645.536	2	.026	4	.089	2	.045	7
704			min	-1131.523	1	-63.67	7	-2046.759	1	-.073	7	-.12	1	-.015	4
705		3	max	905.154	2	77.555	6	1645.536	2	.101	6	.158	2	.065	6
706			min	-1131.523	1	-63.723	7	-2046.759	1	-.056	3	-.205	1	-.015	4
707		4	max	628.647	3	77.502	6	1478.057	4	.101	6	.034	1	.062	6
708			min	-820.048	4	-2.716	1	-1118.826	3	-.026	1	-.076	2	-.015	1
709		5	max	628.647	3	77.449	6	1478.057	4	.101	6	.027	1	.059	6
710			min	-820.048	4	-2.716	1	-1118.826	3	-.026	1	-.054	2	-.015	1
711	M102	1	max	425.658	1	519.086	4	465.797	2	.132	3	.185	1	.567	4
712			min	-371.259	2	-246.722	3	-495.042	1	-.124	4	-.18	2	-.353	3
713		2	max	425.658	1	517.941	4	460.78	2	.132	3	.139	1	.519	4
714			min	-371.259	2	-247.867	3	-490.026	1	-.124	4	-.136	2	-.33	3
715		3	max	425.658	1	516.797	4	455.764	2	.132	3	.093	1	.471	4
716			min	-371.259	2	-249.011	3	-485.01	1	-.124	4	-.093	2	-.307	3
717		4	max	425.658	1	515.652	4	450.748	2	.132	3	.048	1	.422	4
718			min	-371.259	2	-250.156	3	-479.994	1	-.124	4	-.051	2	-.284	3
719		5	max	425.658	1	514.508	4	445.732	2	.132	3	.024	4	.374	4
720			min	-371.259	2	-251.3	3	-474.978	1	-.124	4	-.032	3	-.26	3
721	M103	1	max	833.826	4	846.47	5	446.696	4	.034	3	.179	2	.641	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
722			min	-732.796	3	-145.212	4	-433.081	3	-.115	8	-.16	1	-.24	4
723		2	max	833.826	4	844.069	5	446.696	4	.034	3	.139	2	.573	3
724			min	-732.796	3	-146.364	4	-433.081	3	-.115	8	-.121	1	-.226	4
725		3	max	833.826	4	841.668	5	446.696	4	.034	3	.1	2	.506	3
726			min	-732.796	3	-147.517	4	-433.081	3	-.115	8	-.081	1	-.212	4
727		4	max	833.826	4	839.267	5	446.696	4	.034	3	.061	2	.438	3
728			min	-732.796	3	-148.669	4	-433.081	3	-.115	8	-.043	1	-.198	4
729		5	max	833.826	4	836.866	5	446.696	4	.034	3	.096	4	.371	3
730			min	-732.796	3	-149.821	4	-433.081	3	-.115	8	-.075	3	-.184	4
731	M104	1	max	1135.811	2	629.74	7	353.839	4	.137	4	.254	3	.31	5
732			min	-878.092	1	150.24	4	-267.9	3	-.164	3	-.256	4	.053	2
733		2	max	1135.563	2	628.872	7	351.779	4	.137	4	.244	3	.286	5
734			min	-877.845	1	149.882	4	-265.84	3	-.164	3	-.243	4	.047	2
735		3	max	1135.316	2	628.005	7	349.719	4	.137	4	.234	3	.261	5
736			min	-877.598	1	149.525	4	-263.78	3	-.164	3	-.229	4	.041	2
737		4	max	1135.069	2	627.137	7	347.659	4	.137	4	.223	3	.237	5
738			min	-877.351	1	149.167	4	-261.72	3	-.164	3	-.215	4	.034	2
739		5	max	1134.822	2	626.269	7	345.598	4	.137	4	.213	3	.213	5
740			min	-877.104	1	148.81	4	-259.66	3	-.164	3	-.202	4	.028	2
741	M105	1	max	1123.178	2	626.338	7	615.854	4	.166	4	.213	3	.206	7
742			min	-851.015	1	149.87	4	-649.695	3	-.136	3	-.202	4	.049	4
743		2	max	1121.322	2	624.49	7	612.402	4	.166	4	.159	3	.155	7
744			min	-849.159	1	149.109	4	-646.243	3	-.136	3	-.151	4	.037	4
745		3	max	1119.465	2	622.642	7	608.95	4	.166	4	.106	3	.103	7
746			min	-847.302	1	148.347	4	-642.791	3	-.136	3	-.1	4	.024	4
747		4	max	1117.609	2	620.794	7	605.498	4	.166	4	.053	3	.051	7
748			min	-845.446	1	147.586	4	-639.339	3	-.136	3	-.05	4	.012	4
749		5	max	1115.752	2	618.946	7	602.046	4	.166	4	0	11	0	11
750			min	-843.589	1	146.824	4	-635.886	3	-.136	3	0	1	0	1
751	M106	1	max	1411.965	2	690.198	5	192.896	4	.127	4	.256	3	.339	5
752			min	-1112.396	1	129.056	2	-295.006	3	-.091	3	-.253	4	.035	2
753		2	max	1411.718	2	689.33	5	190.835	4	.127	4	.244	3	.312	5
754			min	-1112.149	1	128.699	2	-292.946	3	-.091	3	-.246	4	.03	2
755		3	max	1411.471	2	688.462	5	188.775	4	.127	4	.233	3	.286	5
756			min	-1111.902	1	128.341	2	-290.885	3	-.091	3	-.238	4	.025	2
757		4	max	1411.224	2	687.594	5	186.715	4	.127	4	.222	3	.259	5
758			min	-1111.655	1	127.983	2	-288.825	3	-.091	3	-.231	4	.02	2
759		5	max	1410.977	2	686.726	5	184.655	4	.127	4	.21	3	.232	5
760			min	-1111.408	1	127.626	2	-286.765	3	-.091	3	-.224	4	.015	2
761	M107	1	max	1405.621	2	686.698	5	678.336	4	.094	4	.21	3	.228	5
762			min	-1089.834	1	128.314	2	-638.02	3	-.12	3	-.224	4	.042	2
763		2	max	1403.754	2	684.84	5	674.865	4	.094	4	.157	3	.171	5
764			min	-1087.966	1	127.548	2	-634.549	3	-.12	3	-.167	4	.032	2
765		3	max	1401.886	2	682.981	5	671.394	4	.094	4	.105	3	.114	5
766			min	-1086.099	1	126.782	2	-631.078	3	-.12	3	-.111	4	.021	2
767		4	max	1400.018	2	681.122	5	667.922	4	.094	4	.052	3	.057	5
768			min	-1084.231	1	126.016	2	-627.606	3	-.12	3	-.056	4	.01	2
769		5	max	1398.15	2	679.263	5	664.451	4	.094	4	0	11	0	11
770			min	-1082.363	1	125.25	2	-624.135	3	-.12	3	0	1	0	1
771	M108	1	max	1216.908	3	64.961	8	33.297	3	0	4	0	2	.083	4
772			min	-1655.889	4	-8.153	3	-38.894	4	0	3	-.039	5	-.049	3
773		2	max	1225.043	3	47.697	8	19.136	3	0	4	.01	3	.041	1
774			min	-1664.025	4	-11.255	3	-24.733	4	0	3	-.014	4	-.027	2
775		3	max	1233.179	3	25.481	4	9.747	2	0	4	.016	7	.02	1
776			min	-1672.16	4	-14.358	3	-15.301	1	0	3	-.007	4	-.021	2
777		4	max	1241.314	3	22.378	4	14.42	2	0	4	.015	2	.007	3
778			min	-1680.295	4	-17.461	3	-19.975	1	0	3	-.011	1	-.021	8

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mom...	LC
779		5	max	1249.449	3	19.276	4	19.094	2	0	4	.032	4	.009	2
780			min	-1688.431	4	-38.619	7	-24.649	1	0	3	-.03	3	-.025	1
781	M109	1	max	958.088	4	31.448	4	76.484	7	0	4	-.001	2	.036	4
782			min	-1366.565	3	-41.856	3	-2.763	4	0	3	-.05	5	-.114	7
783		2	max	966.217	4	17.284	4	59.132	7	0	4	.008	4	.018	2
784			min	-1374.694	3	-27.693	3	-5.865	4	0	3	-.016	3	-.049	1
785		3	max	974.347	4	5.328	2	33.474	7	0	4	.014	8	.018	2
786			min	-1382.824	3	-16.73	5	-8.967	4	0	3	-.009	3	-.025	1
787		4	max	982.477	4	9.995	2	25.741	3	0	4	.014	2	.025	7
788			min	-1390.954	3	-20.439	1	-12.069	4	0	3	-.009	1	-.003	4
789		5	max	990.607	4	14.799	3	22.639	3	0	4	.03	3	.029	3
790			min	-1399.084	3	-25.208	4	-31.569	8	0	3	-.025	4	0	4
791	M110	1	max	637.068	1	515.494	4	103.095	3	.28	3	.024	4	.166	4
792			min	-579.598	2	-250.233	3	-77.771	4	-.358	4	-.032	3	-.081	3
793		2	max	634.909	1	514.506	4	100.79	3	.28	3	.017	4	.124	4
794			min	-577.439	2	-251.22	3	-75.467	4	-.358	4	-.024	3	-.061	3
795		3	max	632.75	1	513.519	4	98.486	3	.28	3	.011	4	.083	4
796			min	-575.28	2	-252.208	3	-73.162	4	-.358	4	-.016	3	-.041	3
797		4	max	630.592	1	512.532	4	96.182	3	.28	3	.006	4	.041	4
798			min	-573.121	2	-253.195	3	-70.858	4	-.358	4	-.008	3	-.02	3
799		5	max	628.433	1	511.545	4	93.878	3	.28	3	0	11	0	11
800			min	-570.962	2	-254.182	3	-68.554	4	-.358	4	0	1	0	1
801	M111	1	max	895.477	4	836.843	5	237.189	3	.293	3	.096	4	.267	5
802			min	-818.461	3	-147.956	4	-302.868	4	-.208	4	-.075	3	-.048	4
803		2	max	893.33	4	834.797	5	234.904	3	.293	3	.071	4	.2	5
804			min	-816.315	3	-148.938	4	-300.583	4	-.208	4	-.056	3	-.036	4
805		3	max	891.183	4	832.752	5	232.619	3	.293	3	.047	4	.133	5
806			min	-814.168	3	-149.919	4	-298.298	4	-.208	4	-.037	3	-.024	4
807		4	max	889.037	4	830.707	5	230.334	3	.293	3	.024	4	.066	5
808			min	-812.021	3	-150.901	4	-296.013	4	-.208	4	-.018	3	-.012	4
809		5	max	886.89	4	828.662	5	228.049	3	.293	3	0	11	0	11
810			min	-809.874	3	-151.882	4	-293.728	4	-.208	4	0	1	0	1
811	M112	1	max	198.38	1	-149.853	4	1115.319	3	-.044	2	.256	4	.12	4
812			min	-316.754	2	-628.827	7	-860.676	1	-.305	5	-.254	3	-.174	3
813		2	max	840.787	3	-169.659	2	24.658	2	-.012	4	.385	2	.345	8
814			min	-772.232	4	-671.494	5	-153.457	5	-.395	7	-.287	1	-.083	3
815		3	max	840.787	3	-178.53	2	47.733	2	-.012	4	.408	2	.784	5
816			min	-772.232	4	-690.214	5	-159.264	5	-.395	7	-.376	1	.037	2
817		4	max	840.787	3	-187.402	2	70.808	2	-.012	4	.446	2	1.235	5
818			min	-772.232	4	-708.935	5	-172.094	1	-.395	7	-.479	1	.155	2
819		5	max	840.787	3	-196.273	2	93.884	2	-.012	4	.499	2	1.698	5
820			min	-772.232	4	-727.656	5	-195.17	1	-.395	7	-.598	1	.278	2
821	M113	1	max	881.563	4	796.919	5	253.544	1	.441	8	.758	2	1.856	5
822			min	-816.415	3	171.01	2	-169.665	2	-.03	3	-.81	1	.182	2
823		2	max	881.563	4	778.18	5	230.446	1	.441	8	.656	2	1.347	5
824			min	-816.415	3	162.13	2	-146.567	2	-.03	3	-.654	1	.074	2
825		3	max	881.563	4	759.441	5	207.348	1	.441	8	.569	2	.851	5
826			min	-816.415	3	153.25	2	-123.469	2	-.03	3	-.513	1	-.028	2
827		4	max	881.563	4	740.701	5	184.25	1	.441	8	.497	2	.367	5
828			min	-816.415	3	144.37	2	-100.37	2	-.03	3	-.386	1	-.124	2
829		5	max	282.705	1	689.967	5	1086.856	1	.333	5	.256	3	.075	3
830			min	-418.755	2	127.834	2	-1371.204	2	.025	2	-.253	4	-.139	4
831	M114	1	max	31.57	8	711.043	3	1205.017	3	.013	2	.139	1	.105	2
832			min	-21.729	3	-513.849	4	-847.233	4	-.03	1	-.178	2	-.085	1
833		2	max	31.57	8	711.043	3	1205.017	3	.013	2	.106	1	.077	2
834			min	-21.729	3	-513.849	4	-847.233	4	-.03	1	-.13	2	-.064	1
835		3	max	31.57	8	711.043	3	1205.017	3	.013	2	.073	1	.049	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
836			min	-21.729	3	-513.849	4	-847.233	4	-.03	1	-.081	2	-.044	1
837		4	max	31.57	8	711.043	3	1205.017	3	.013	2	.04	1	.02	2
838			min	-21.729	3	-513.849	4	-847.233	4	-.03	1	-.033	2	-.024	1
839		5	max	31.57	8	711.043	3	1205.017	3	.013	2	.037	3	.008	4
840			min	-21.729	3	-513.849	4	-847.233	4	-.03	1	-.015	4	-.021	3
841	M115	1	max	38.483	7	641.199	3	1454.049	4	.032	1	.164	1	.099	1
842			min	-18.608	4	-858.52	4	-1072.646	3	-.022	2	-.219	4	-.13	4
843		2	max	38.483	7	641.199	3	1454.049	4	.032	1	.123	1	.075	1
844			min	-18.608	4	-858.52	4	-1072.646	3	-.022	2	-.161	2	-.096	2
845		3	max	38.483	7	641.199	3	1454.049	4	.032	1	.083	1	.05	1
846			min	-18.608	4	-858.52	4	-1072.646	3	-.022	2	-.105	2	-.062	2
847		4	max	38.483	7	641.199	3	1454.049	4	.032	1	.043	1	.026	1
848			min	-18.608	4	-858.52	4	-1072.646	3	-.022	2	-.048	2	-.029	2
849		5	max	38.483	7	641.199	3	1454.049	4	.032	1	.035	4	.02	4
850			min	-18.608	4	-858.52	4	-1072.646	3	-.022	2	-.024	3	-.013	3
851	M116	1	max	132.161	5	2199.568	2	795.038	1	.273	4	.264	3	.36	2
852			min	-18.046	2	-1570.061	1	-1138.678	2	-.285	3	-.151	4	-.187	1
853		2	max	132.161	5	2199.568	2	795.038	1	.273	4	.215	3	.28	6
854			min	-18.046	2	-1570.061	1	-1138.678	2	-.285	3	-.118	4	-.119	1
855		3	max	132.161	5	2199.568	2	795.038	1	.273	4	.166	3	.222	6
856			min	-18.046	2	-1570.061	1	-1138.678	2	-.285	3	-.084	4	-.05	1
857		4	max	132.161	5	2199.568	2	795.038	1	.273	4	.129	7	.172	8
858			min	-18.046	2	-1570.061	1	-1138.678	2	-.285	3	-.05	4	-.017	3
859		5	max	132.161	5	2199.568	2	795.038	1	.273	4	.099	7	.136	5
860			min	-18.046	2	-1570.061	1	-1138.678	2	-.285	3	-.017	4	-.024	2
861	M117	1	max	575.928	3	6.681	3	1071.855	3	.029	3	.036	3	.041	8
862			min	-793.335	4	-65.008	8	-1455.06	4	-.072	8	-.05	4	-.017	3
863		2	max	575.928	3	6.681	3	1071.855	3	.029	3	.081	3	.044	8
864			min	-793.335	4	-65.061	8	-1455.06	4	-.072	8	-.111	4	-.017	3
865		3	max	560.455	1	77.167	7	1205.9	3	.098	7	.048	1	.063	7
866			min	-793.335	4	-65.114	8	-1455.06	4	-.058	4	-.171	4	-.009	2
867		4	max	463.501	1	77.114	7	1205.9	3	.098	7	.066	4	.06	7
868			min	-651.428	2	-1.971	4	-846.663	4	-.018	4	-.108	3	-.01	4
869		5	max	463.501	1	77.061	7	1205.9	3	.098	7	.031	4	.057	7
870			min	-651.428	2	-1.971	4	-846.663	4	-.018	4	-.058	3	-.01	4
871	MP4A	1	max	0	11	.021	4	.043	5	0	11	0	11	0	11
872			min	0	1	-.022	7	-.029	2	0	1	0	1	0	1
873		2	max	480.228	2	232.433	4	57.353	4	.182	2	.115	3	.356	4
874			min	-382.872	1	-213.549	3	-34.204	3	-.185	1	-.093	4	-.315	3
875		3	max	488.558	2	257.936	4	57.353	4	.182	2	.11	6	.138	3
876			min	-374.542	1	-239.051	3	-34.204	3	-.185	1	-.032	1	-.135	4
877		4	max	-8.33	10	25.513	3	25.554	2	0	11	.026	1	.026	3
878			min	-25.508	5	-25.513	4	-25.549	1	0	1	-.026	2	-.026	4
879		5	max	0	11	.01	3	.061	6	0	11	0	11	0	11
880			min	0	1	-.01	4	-.046	1	0	1	0	1	0	1
881	MP3A	1	max	0	11	.008	4	.085	1	0	11	0	11	0	11
882			min	0	1	-.012	7	-.083	2	0	1	0	1	0	1
883		2	max	222.813	6	474.116	4	227.858	1	.217	2	.159	2	.838	4
884			min	41.19	1	-435.117	3	-202.047	2	-.195	1	-.137	1	-.771	3
885		3	max	347.594	6	539.086	4	296.16	1	.217	2	.344	1	.125	3
886			min	97.04	1	-500.086	3	-270.348	2	-.195	1	-.271	2	-.136	4
887		4	max	-27.866	10	71.687	3	156.271	2	0	11	.027	1	.026	3
888			min	-99.457	5	-71.681	4	-156.24	1	0	1	-.027	2	-.026	4
889		5	max	0	11	.03	7	.316	6	0	11	0	11	0	11
890			min	0	1	-.006	4	-.164	1	0	1	0	1	0	1
891	M90A	1	max	77.118	1	504.753	2	289.254	3	.471	3	.184	2	.049	3
892			min	-46.661	2	-358.589	1	-309.043	4	-.496	4	-.182	1	-.111	4

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mom...	LC
893		2	max	77.118	1	504.753	2	289.254	3	.471	3	.184	2	.038	3
894			min	-46.661	2	-358.589	1	-309.043	4	-.496	4	-.183	1	-.117	8
895		3	max	77.118	1	504.753	2	289.254	3	.471	3	.183	2	.027	3
896			min	-46.661	2	-358.589	1	-309.043	4	-.496	4	-.183	1	-.13	8
897		4	max	77.118	1	504.753	2	289.254	3	.471	3	.182	2	.016	3
898			min	-46.661	2	-358.589	1	-309.043	4	-.496	4	-.184	1	-.144	8
899		5	max	77.118	1	504.753	2	289.254	3	.471	3	.182	2	.024	1
900			min	-46.661	2	-358.589	1	-309.043	4	-.496	4	-.185	1	-.163	6
901	M91A	1	max	516.144	1	507.145	6	614.929	3	.83	3	.242	4	.633	2
902			min	-489.349	2	140.965	1	-653.472	4	-.9	4	-.211	3	-.652	1
903		2	max	516.144	1	507.145	6	614.929	3	.83	3	.217	2	.62	2
904			min	-489.349	2	140.965	1	-653.472	4	-.9	4	-.187	1	-.662	1
905		3	max	516.144	1	507.145	6	614.929	3	.83	3	.217	2	.606	2
906			min	-489.349	2	140.965	1	-653.472	4	-.9	4	-.189	1	-.672	1
907		4	max	516.144	1	507.145	6	614.929	3	.83	3	.217	2	.593	2
908			min	-489.349	2	140.965	1	-653.472	4	-.9	4	-.192	1	-.681	1
909		5	max	516.144	1	507.145	6	614.929	3	.83	3	.217	2	.579	2
910			min	-489.349	2	140.965	1	-653.472	4	-.9	4	-.195	1	-.691	1
911	M92A	1	max	33.92	3	391.037	1	206.894	4	.34	3	.182	1	.086	3
912			min	-57.419	4	-472.313	2	-187.414	3	-.381	4	-.184	2	-.083	4
913		2	max	33.92	3	391.037	1	206.894	4	.34	3	.183	1	.093	3
914			min	-57.419	4	-472.313	2	-187.414	3	-.381	4	-.183	2	-.085	4
915		3	max	33.92	3	391.037	1	206.894	4	.34	3	.183	1	.101	3
916			min	-57.419	4	-472.313	2	-187.414	3	-.381	4	-.183	2	-.088	4
917		4	max	33.92	3	391.037	1	206.894	4	.34	3	.184	1	.108	3
918			min	-57.419	4	-472.313	2	-187.414	3	-.381	4	-.182	2	-.09	4
919		5	max	33.92	3	391.037	1	206.894	4	.34	3	.185	1	.115	3
920			min	-57.419	4	-472.313	2	-187.414	3	-.381	4	-.182	2	-.093	4
921	M93A	1	max	77.026	3	-7.698	1	390.118	4	.797	3	.186	1	.17	2
922			min	-104.858	4	-105.028	6	-351.242	3	-.864	4	-.217	2	-.165	1
923		2	max	77.026	3	-7.698	1	390.118	4	.797	3	.188	1	.174	2
924			min	-104.858	4	-105.028	6	-351.242	3	-.864	4	-.217	2	-.165	1
925		3	max	77.026	3	-7.698	1	390.118	4	.797	3	.19	1	.178	2
926			min	-104.858	4	-105.028	6	-351.242	3	-.864	4	-.217	2	-.164	1
927		4	max	77.026	3	-7.698	1	390.118	4	.797	3	.192	1	.181	2
928			min	-104.858	4	-105.028	6	-351.242	3	-.864	4	-.217	2	-.164	1
929		5	max	77.026	3	-7.698	1	390.118	4	.797	3	.195	1	.185	2
930			min	-104.858	4	-105.028	6	-351.242	3	-.864	4	-.217	2	-.163	1
931	MP1C	1	max	0	11	.036	4	.02	1	0	11	0	11	0	11
932			min	0	1	-.037	3	-.022	6	0	1	0	1	0	1
933		2	max	394.582	3	199.813	1	93.201	4	.237	4	.278	2	.295	1
934			min	-387.844	4	-140.666	2	-106.106	3	-.232	3	-.284	1	-.235	2
935		3	max	463.872	3	199.813	1	205.391	1	.237	4	.034	4	.047	2
936			min	-318.554	4	-140.793	3	-218.48	2	-.232	3	-.066	3	-.104	1
937		4	max	-8.33	10	25.549	3	25.525	2	0	11	.026	1	.026	3
938			min	-25.508	5	-25.54	4	-25.529	1	0	1	-.026	2	-.026	4
939		5	max	0	11	.069	7	.022	2	0	11	0	11	0	11
940			min	0	1	-.037	4	-.033	5	0	1	0	1	0	1
941	MP2C	1	max	288.246	8	470.826	4	316.615	1	0	11	0	11	0	11
942			min	76.8	1	-470.835	3	-316.616	2	0	1	0	1	0	1
943		2	max	468.509	8	567.324	4	396.448	1	.125	2	.713	1	1.038	3
944			min	173.93	2	-567.332	3	-396.45	2	-.133	1	-.713	2	-1.038	4
945		3	max	641.776	7	362.834	4	376.643	1	.125	2	.259	1	.477	3
946			min	143.931	4	-336.741	3	-412.415	2	-.133	1	-.308	2	-.538	4
947		4	max	-98.354	10	506.431	3	348.833	2	0	11	.663	1	.973	3
948			min	-343.116	5	-506.257	4	-348.954	1	0	1	-.663	2	-.973	4
949		5	max	-76.8	10	466.918	3	314.319	2	0	11	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
950			min	-288.246	5	-466.745	4	-314.44	1	0	1	0	1	0	1
951	M96A	1	max	286.025	4	539.318	3	395.738	1	.496	1	.171	2	.251	3
952			min	-221.313	3	-243.198	4	-380.787	2	-.468	2	-.171	1	-.32	4
953		2	max	286.025	4	539.318	3	395.738	1	.496	1	.181	4	.213	3
954			min	-221.313	3	-243.198	4	-380.787	2	-.468	2	-.18	3	-.303	4
955		3	max	286.025	4	539.318	3	395.738	1	.496	1	.2	4	.176	3
956			min	-221.313	3	-243.198	4	-380.787	2	-.468	2	-.197	3	-.287	4
957		4	max	286.025	4	539.318	3	395.738	1	.496	1	.218	4	.139	3
958			min	-221.313	3	-243.198	4	-380.787	2	-.468	2	-.214	3	-.27	4
959		5	max	286.025	4	539.318	3	395.738	1	.496	1	.237	4	.102	3
960			min	-221.313	3	-243.198	4	-380.787	2	-.468	2	-.232	3	-.253	4
961	M97A	1	max	742.619	4	1035.311	7	738.518	1	.124	1	.334	2	.146	4
962			min	-698.478	3	260.927	4	-755.959	2	-.16	2	-.337	1	-.078	1
963		2	max	742.619	4	1035.311	7	738.518	1	.124	1	.282	2	.128	4
964			min	-698.478	3	260.927	4	-755.959	2	-.16	2	-.286	1	-.11	3
965		3	max	742.619	4	1035.311	7	738.518	1	.124	1	.23	2	.11	4
966			min	-698.478	3	260.927	4	-755.959	2	-.16	2	-.235	1	-.144	3
967		4	max	742.619	4	1035.311	7	738.518	1	.124	1	.177	2	.092	4
968			min	-698.478	3	260.927	4	-755.959	2	-.16	2	-.184	1	-.178	3
969		5	max	742.619	4	1035.311	7	738.518	1	.124	1	.125	2	.074	4
970			min	-698.478	3	260.927	4	-755.959	2	-.16	2	-.133	1	-.212	5
971	M98A	1	max	81.334	2	395.939	4	140.511	2	.416	1	.216	3	.113	2
972			min	-140.754	1	-387.024	3	-156.314	1	-.38	2	-.216	4	-.161	1
973		2	max	81.334	2	395.939	4	140.511	2	.416	1	.22	3	.098	2
974			min	-140.754	1	-387.024	3	-156.314	1	-.38	2	-.221	4	-.146	1
975		3	max	81.334	2	395.939	4	140.511	2	.416	1	.224	3	.082	2
976			min	-140.754	1	-387.024	3	-156.314	1	-.38	2	-.227	4	-.131	1
977		4	max	81.334	2	395.939	4	140.511	2	.416	1	.228	3	.067	2
978			min	-140.754	1	-387.024	3	-156.314	1	-.38	2	-.232	4	-.116	1
979		5	max	81.334	2	395.939	4	140.511	2	.416	1	.232	3	.061	3
980			min	-140.754	1	-387.024	3	-156.314	1	-.38	2	-.237	4	-.109	4
981	M99A	1	max	293.535	4	121.62	4	76.004	4	1.107	1	.133	1	.737	3
982			min	-338.131	3	-106.125	3	-62.071	3	-1.129	2	-.129	2	-.736	4
983		2	max	293.535	4	121.62	4	76.004	4	1.107	1	.133	1	.743	3
984			min	-338.131	3	-106.125	3	-62.071	3	-1.129	2	-.128	2	-.743	4
985		3	max	293.535	4	121.62	4	76.004	4	1.107	1	.133	1	.749	3
986			min	-338.131	3	-106.125	3	-62.071	3	-1.129	2	-.127	2	-.75	4
987		4	max	293.535	4	121.62	4	76.004	4	1.107	1	.133	1	.755	3
988			min	-338.131	3	-106.125	3	-62.071	3	-1.129	2	-.126	2	-.757	4
989		5	max	293.535	4	121.62	4	76.004	4	1.107	1	.133	1	.761	3
990			min	-338.131	3	-106.125	3	-62.071	3	-1.129	2	-.125	2	-.763	4
991	MP4C	1	max	0	11	.038	8	.028	1	0	11	0	11	0	11
992			min	0	1	-.023	3	-.03	2	0	1	0	1	0	1
993		2	max	381.417	1	49.403	1	197.703	1	.185	1	.356	2	.08	4
994			min	-277.295	2	-40.351	2	-224.949	2	-.189	2	-.333	1	-.122	3
995		3	max	389.747	1	50.762	4	223.206	1	.185	1	.088	1	.088	2
996			min	-268.965	2	-40.957	3	-250.452	2	-.189	2	-.119	2	-.149	1
997		4	max	-8.33	10	25.542	3	25.527	2	0	11	.026	1	.026	3
998			min	-25.508	5	-25.537	4	-25.529	1	0	1	-.026	2	-.026	4
999		5	max	0	11	.049	7	.024	2	0	11	0	11	0	11
1000			min	0	1	-.034	4	-.03	5	0	1	0	1	0	1
1001	MP3C	1	max	0	11	.061	4	.028	1	0	11	0	11	0	11
1002			min	0	1	-.058	3	-.029	2	0	1	0	1	0	1
1003		2	max	228.913	7	234.589	4	446.775	1	.208	3	.823	2	.243	4
1004			min	8.33	4	-231.811	3	-494.738	2	-.186	4	-.775	1	-.296	3
1005		3	max	353.694	7	315.64	4	510.527	1	.208	3	.144	1	.194	3
1006			min	55.633	4	-312.862	3	-558.49	2	-.186	4	-.192	2	-.252	4

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mom...	LC
1007		4	max	-27.866	10	135.116	3	92.837	2	0	11	.026	1	.026	3
1008			min	-99.457	5	-135.091	4	-92.857	1	0	1	-.026	2	-.026	4
1009		5	max	0	11	.237	7	.062	2	0	11	0	11	0	11
1010			min	0	1	-.115	4	-.16	7	0	1	0	1	0	1
1011	M102A	1	max	117.72	2	405.691	1	260.073	1	.455	1	.16	3	.117	1
1012			min	-91.617	1	-253.12	2	-282.703	2	-.481	2	-.157	4	-.176	2
1013		2	max	117.72	2	405.691	1	260.073	1	.455	1	.147	3	.089	1
1014			min	-91.617	1	-253.12	2	-282.703	2	-.481	2	-.146	4	-.159	2
1015		3	max	117.72	2	405.691	1	260.073	1	.455	1	.149	1	.061	1
1016			min	-91.617	1	-253.12	2	-282.703	2	-.481	2	-.15	2	-.141	2
1017		4	max	117.72	2	405.691	1	260.073	1	.455	1	.167	1	.072	4
1018			min	-91.617	1	-253.12	2	-282.703	2	-.481	2	-.169	2	-.164	3
1019		5	max	117.72	2	405.691	1	260.073	1	.455	1	.185	1	.089	4
1020			min	-91.617	1	-253.12	2	-282.703	2	-.481	2	-.189	2	-.191	3
1021	M103A	1	max	376.586	4	513.446	7	600.488	1	.771	1	.322	3	.43	3
1022			min	-348.52	3	101.698	4	-640.043	2	-.842	2	-.289	4	-.45	4
1023		2	max	376.586	4	513.446	7	600.488	1	.771	1	.293	3	.414	3
1024			min	-348.52	3	101.698	4	-640.043	2	-.842	2	-.264	4	-.457	4
1025		3	max	376.586	4	513.446	7	600.488	1	.771	1	.265	3	.397	3
1026			min	-348.52	3	101.698	4	-640.043	2	-.842	2	-.238	4	-.464	4
1027		4	max	376.586	4	513.446	7	600.488	1	.771	1	.237	3	.38	3
1028			min	-348.52	3	101.698	4	-640.043	2	-.842	2	-.212	4	-.471	2
1029		5	max	376.586	4	513.446	7	600.488	1	.771	1	.208	3	.369	1
1030			min	-348.52	3	101.698	4	-640.043	2	-.842	2	-.186	4	-.484	2
1031	M104A	1	max	63.391	4	286	2	193.822	2	.285	1	.144	2	.137	1
1032			min	-89.478	3	-372.908	1	-171.75	1	-.327	2	-.146	1	-.131	2
1033		2	max	63.391	4	286	2	193.822	2	.285	1	.155	2	.159	1
1034			min	-89.478	3	-372.908	1	-171.75	1	-.327	2	-.156	1	-.148	2
1035		3	max	63.391	4	286	2	193.822	2	.285	1	.166	2	.18	1
1036			min	-89.478	3	-372.908	1	-171.75	1	-.327	2	-.166	1	-.164	2
1037		4	max	63.391	4	286	2	193.822	2	.285	1	.177	2	.202	1
1038			min	-89.478	3	-372.908	1	-171.75	1	-.327	2	-.176	1	-.181	2
1039		5	max	63.391	4	286	2	193.822	2	.285	1	.189	2	.223	1
1040			min	-89.478	3	-372.908	1	-171.75	1	-.327	2	-.185	1	-.197	2
1041	M105A	1	max	104.413	1	32.898	4	367.633	2	.788	1	.221	4	.233	1
1042			min	-131.173	2	-111.093	7	-328.529	1	-.856	2	-.252	3	-.228	2
1043		2	max	104.413	1	32.898	4	367.633	2	.788	1	.213	4	.234	1
1044			min	-131.173	2	-111.093	7	-328.529	1	-.856	2	-.241	3	-.225	2
1045		3	max	104.413	1	32.898	4	367.633	2	.788	1	.204	4	.235	1
1046			min	-131.173	2	-111.093	7	-328.529	1	-.856	2	-.23	3	-.222	2
1047		4	max	104.413	1	32.898	4	367.633	2	.788	1	.195	4	.236	1
1048			min	-131.173	2	-111.093	7	-328.529	1	-.856	2	-.219	3	-.219	2
1049		5	max	104.413	1	32.898	4	367.633	2	.788	1	.186	4	.237	1
1050			min	-131.173	2	-111.093	7	-328.529	1	-.856	2	-.208	3	-.216	2
1051	MP1B	1	max	0	11	.03	4	.025	5	0	11	0	11	0	11
1052			min	0	1	-.03	3	-.022	2	0	1	0	1	0	1
1053		2	max	446.378	4	54.923	3	139.275	3	.2	3	.375	2	.047	2
1054			min	-440.069	3	-96.433	4	-180.759	4	-.195	4	-.324	1	-.072	1
1055		3	max	515.668	4	59.373	4	245.727	1	.2	3	.055	1	.091	5
1056			min	-370.779	3	-100.883	3	-287.475	2	-.195	4	-.087	2	-.015	2
1057		4	max	-8.33	10	25.538	3	25.522	2	0	11	.026	1	.026	3
1058			min	-25.508	5	-25.546	4	-25.528	1	0	1	-.026	2	-.026	4
1059		5	max	0	11	.035	3	.019	2	0	11	0	11	0	11
1060			min	0	1	-.061	8	-.041	5	0	1	0	1	0	1
1061	MP2B	1	max	288.246	8	470.88	4	316.516	1	0	11	0	11	0	11
1062			min	76.8	1	-470.886	3	-316.515	2	0	1	0	1	0	1
1063		2	max	468.509	8	567.378	4	396.35	1	.174	3	.713	1	1.038	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
1064			min	173.93	2	-567.383	3	-396.349	2	-.182	4	-.713	2	-1.038	4
1065		3	max	644.538	8	277.528	4	423.85	1	.174	3	.26	1	.546	3
1066			min	161.533	3	-320.47	3	-430.542	2	-.182	4	-.291	2	-.472	4
1067		4	max	-98.354	10	506.245	3	348.828	2	0	11	.663	1	.973	3
1068			min	-343.116	5	-506.433	4	-348.916	1	0	1	-.663	2	-.973	4
1069		5	max	-76.8	10	466.732	3	314.315	2	0	11	0	11	0	11
1070			min	-288.246	5	-466.92	4	-314.402	1	0	1	0	1	0	1
1071	M108A	1	max	186.767	2	592.358	4	384.923	2	.495	2	.273	3	.154	1
1072			min	-128.027	1	-294.312	3	-367.698	1	-.473	1	-.271	4	-.223	2
1073		2	max	186.767	2	592.358	4	384.923	2	.495	2	.255	3	.132	1
1074			min	-128.027	1	-294.312	3	-367.698	1	-.473	1	-.252	4	-.221	2
1075		3	max	186.767	2	592.358	4	384.923	2	.495	2	.237	3	.109	1
1076			min	-128.027	1	-294.312	3	-367.698	1	-.473	1	-.233	4	-.219	2
1077		4	max	186.767	2	592.358	4	384.923	2	.495	2	.218	3	.087	1
1078			min	-128.027	1	-294.312	3	-367.698	1	-.473	1	-.214	4	-.217	2
1079		5	max	186.767	2	592.358	4	384.923	2	.495	2	.2	3	.064	1
1080			min	-128.027	1	-294.312	3	-367.698	1	-.473	1	-.195	4	-.227	6
1081	M109A	1	max	683.349	3	1038.269	8	728.177	2	.08	2	.323	3	.264	3
1082			min	-639.904	4	278.957	3	-744.289	1	-.116	1	-.326	4	-.194	4
1083		2	max	683.349	3	1038.269	8	728.177	2	.08	2	.285	3	.244	3
1084			min	-639.904	4	278.957	3	-744.289	1	-.116	1	-.29	4	-.227	4
1085		3	max	683.349	3	1038.269	8	728.177	2	.08	2	.248	3	.225	3
1086			min	-639.904	4	278.957	3	-744.289	1	-.116	1	-.254	4	-.259	4
1087		4	max	683.349	3	1038.269	8	728.177	2	.08	2	.211	3	.206	3
1088			min	-639.904	4	278.957	3	-744.289	1	-.116	1	-.218	4	-.292	4
1089		5	max	683.349	3	1038.269	8	728.177	2	.08	2	.174	3	.187	3
1090			min	-639.904	4	278.957	3	-744.289	1	-.116	1	-.182	4	-.325	4
1091	M110A	1	max	136.975	3	447.5	3	127.929	1	.37	2	.217	4	.165	3
1092			min	-199.548	4	-439.301	4	-144.803	2	-.339	1	-.219	3	-.211	4
1093		2	max	136.975	3	447.5	3	127.929	1	.37	2	.212	4	.14	3
1094			min	-199.548	4	-439.301	4	-144.803	2	-.339	1	-.214	3	-.186	4
1095		3	max	136.975	3	447.5	3	127.929	1	.37	2	.206	4	.114	3
1096			min	-199.548	4	-439.301	4	-144.803	2	-.339	1	-.209	3	-.16	4
1097		4	max	136.975	3	447.5	3	127.929	1	.37	2	.201	4	.102	1
1098			min	-199.548	4	-439.301	4	-144.803	2	-.339	1	-.205	3	-.149	2
1099		5	max	136.975	3	447.5	3	127.929	1	.37	2	.195	4	.112	1
1100			min	-199.548	4	-439.301	4	-144.803	2	-.339	1	-.2	3	-.159	2
1101	M111A	1	max	353.33	3	102.707	3	73.914	4	1.111	2	.165	4	.646	4
1102			min	-397.173	4	-95.917	4	-62.278	3	-1.134	1	-.16	3	-.646	3
1103		2	max	353.33	3	102.707	3	73.914	4	1.111	2	.169	4	.651	4
1104			min	-397.173	4	-95.917	4	-62.278	3	-1.134	1	-.163	3	-.652	3
1105		3	max	353.33	3	102.707	3	73.914	4	1.111	2	.174	4	.657	4
1106			min	-397.173	4	-95.917	4	-62.278	3	-1.134	1	-.167	3	-.657	3
1107		4	max	353.33	3	102.707	3	73.914	4	1.111	2	.178	4	.662	4
1108			min	-397.173	4	-95.917	4	-62.278	3	-1.134	1	-.17	3	-.663	3
1109		5	max	353.33	3	102.707	3	73.914	4	1.111	2	.182	4	.668	4
1110			min	-397.173	4	-95.917	4	-62.278	3	-1.134	1	-.174	3	-.669	3
1111	MP4B	1	max	0	11	.034	4	.019	1	0	11	0	11	0	11
1112			min	0	1	-.042	7	-.03	6	0	1	0	1	0	1
1113		2	max	514.331	4	116.958	2	153.666	1	.213	4	.239	2	.237	4
1114			min	-412.66	3	-144.464	1	-149.599	2	-.217	3	-.285	1	-.234	3
1115		3	max	522.661	4	118.269	4	179.169	1	.213	4	.118	3	.113	1
1116			min	-404.33	3	-145.318	3	-175.102	2	-.217	3	-.155	4	-.055	2
1117		4	max	-8.33	10	25.548	3	25.52	2	0	11	.026	1	.026	3
1118			min	-25.508	5	-25.552	4	-25.523	1	0	1	-.026	2	-.026	4
1119		5	max	0	11	.045	3	.024	3	0	11	0	11	0	11
1120			min	0	1	-.055	8	-.031	8	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
1121	MP3B	1	max	0	11	.067	4	.039	4	0	11	0	11	0	11
1122			min	0	1	-.069	3	-.04	3	0	1	0	1	0	1
1123		2	max	224.95	5	333.832	4	354.575	1	.135	4	.551	2	.474	4
1124			min	8.33	2	-374.277	3	-337.464	2	-.113	3	-.614	1	-.486	3
1125		3	max	349.731	5	414.883	4	418.327	1	.135	4	.121	1	.288	3
1126			min	55.855	2	-455.329	3	-401.216	2	-.113	3	-.15	2	-.22	4
1127		4	max	-27.866	10	135.126	3	92.811	2	0	11	.026	1	.026	3
1128			min	-99.457	5	-135.154	4	-92.823	1	0	1	-.026	2	-.026	4
1129		5	max	0	11	.15	3	.082	3	0	11	0	11	0	11
1130			min	0	1	-.281	8	-.137	8	0	1	0	1	0	1
1131	M114A	1	max	125.137	3	538.284	4	254.86	2	.395	2	.168	4	.109	4
1132			min	-94.756	4	-388.908	3	-270.362	1	-.417	1	-.166	3	-.168	3
1133		2	max	125.137	3	538.284	4	254.86	2	.395	2	.179	4	.072	4
1134			min	-94.756	4	-388.908	3	-270.362	1	-.417	1	-.179	3	-.141	3
1135		3	max	125.137	3	538.284	4	254.86	2	.395	2	.19	4	.035	4
1136			min	-94.756	4	-388.908	3	-270.362	1	-.417	1	-.191	3	-.129	5
1137		4	max	125.137	3	538.284	4	254.86	2	.395	2	.202	4	.033	2
1138			min	-94.756	4	-388.908	3	-270.362	1	-.417	1	-.204	3	-.147	5
1139		5	max	125.137	3	538.284	4	254.86	2	.395	2	.213	4	.038	2
1140			min	-94.756	4	-388.908	3	-270.362	1	-.417	1	-.217	3	-.164	5
1141	M115A	1	max	484.581	3	509.76	5	552.142	2	.715	2	.283	1	.635	4
1142			min	-459.12	4	104.45	2	-586.863	1	-.778	1	-.252	2	-.655	3
1143		2	max	484.581	3	509.76	5	552.142	2	.715	2	.242	1	.624	4
1144			min	-459.12	4	104.45	2	-586.863	1	-.778	1	-.214	2	-.668	3
1145		3	max	484.581	3	509.76	5	552.142	2	.715	2	.202	1	.614	4
1146			min	-459.12	4	104.45	2	-586.863	1	-.778	1	-.176	2	-.681	3
1147		4	max	484.581	3	509.76	5	552.142	2	.715	2	.161	1	.604	4
1148			min	-459.12	4	104.45	2	-586.863	1	-.778	1	-.138	2	-.694	3
1149		5	max	484.581	3	509.76	5	552.142	2	.715	2	.135	4	.594	4
1150			min	-459.12	4	104.45	2	-586.863	1	-.778	1	-.113	3	-.707	3
1151	M116A	1	max	39.017	2	421.265	3	181.88	1	.319	2	.186	3	.096	4
1152			min	-61.552	1	-505.928	4	-166.445	2	-.357	1	-.187	4	-.089	3
1153		2	max	39.017	2	421.265	3	181.88	1	.319	2	.194	3	.125	4
1154			min	-61.552	1	-505.928	4	-166.445	2	-.357	1	-.193	4	-.114	3
1155		3	max	39.017	2	421.265	3	181.88	1	.319	2	.201	3	.154	4
1156			min	-61.552	1	-505.928	4	-166.445	2	-.357	1	-.2	4	-.138	3
1157		4	max	39.017	2	421.265	3	181.88	1	.319	2	.209	3	.183	4
1158			min	-61.552	1	-505.928	4	-166.445	2	-.357	1	-.206	4	-.162	3
1159		5	max	39.017	2	421.265	3	181.88	1	.319	2	.217	3	.212	4
1160			min	-61.552	1	-505.928	4	-166.445	2	-.357	1	-.213	4	-.186	3
1161	M117A	1	max	78.793	4	32.562	2	314.366	1	.673	2	.164	2	.252	4
1162			min	-102.393	3	-107.065	5	-279.302	2	-.734	1	-.193	1	-.246	3
1163		2	max	78.793	4	32.562	2	314.366	1	.673	2	.148	2	.253	4
1164			min	-102.393	3	-107.065	5	-279.302	2	-.734	1	-.175	1	-.243	3
1165		3	max	78.793	4	32.562	2	314.366	1	.673	2	.132	2	.254	4
1166			min	-102.393	3	-107.065	5	-279.302	2	-.734	1	-.157	1	-.24	3
1167		4	max	78.793	4	32.562	2	314.366	1	.673	2	.116	2	.254	4
1168			min	-102.393	3	-107.065	5	-279.302	2	-.734	1	-.139	1	-.237	3
1169		5	max	78.793	4	32.562	2	314.366	1	.673	2	.113	3	.255	4
1170			min	-102.393	3	-107.065	5	-279.302	2	-.734	1	-.135	4	-.234	3

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	MP2A	PIPE_2.0	.769	5.5	2	.157	2		2	14916...	32130	1.872	1.872	...	H1-1b
2	MP2B	PIPE_2.0	.672	5.5	4	.168	2		4	14916...	32130	1.872	1.872	...	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
3	MP2C	PIPE_2.0	.670	5.5	3	.125	5.5		1	14916...	32130	1.872	1.872	...	H1-1b
4	M24	PIPE_2.0	.586	8.333	2	.422	11....		1	6295....	32130	1.872	1.872	...	H3-6
5	MP3C	PIPE_2.0	.568	5.5	2	.165	5.5		3	14916...	32130	1.872	1.872	...	H1-1b
6	MP3B	PIPE_2.0	.544	5.5	3	.129	5.5		4	14916...	32130	1.872	1.872	...	H1-1b
7	MP3A	PIPE_2.0	.539	5.5	4	.161	5.5		2	14916...	32130	1.872	1.872	...	H1-1b
8	M22	PIPE_2.0	.536	8.333	3	.346	11....		4	6295....	32130	1.872	1.872	...	H3-6
9	M90	PL3/8x6	.494	0	2	.299	0	y	1	72411...	72900	.57	9.113	...	H1-1b
10	M23	PIPE_2.0	.487	8.333	4	.350	11....		3	6295....	32130	1.872	1.872	...	H3-6
11	M91	PL3/8x6	.483	0	1	.303	0	y	2	69574...	72900	.57	9.113	...	H1-1b
12	M104	PL3/8x6	.470	0	4	.385	0	y	3	72411...	72900	.57	9.113	...	H1-1b
13	M106	PL3/8x6	.470	0	3	.300	0	y	4	72411...	72900	.57	9.113	...	H1-1b
14	M68	L2.5x2.5x4	.451	1.383	1	.100	0	y	1	37553...	38556	1.114	2.537	...	H2-1
15	M25	L2.5x2.5x4	.415	0	4	.085	0	y	2	37553...	38556	1.114	2.537	...	H2-1
16	M107	PL3/8x6	.413	0	4	.280	0	y	3	69574...	72900	.57	9.113	...	H1-1b
17	M5	PL3/8x6	.404	0	2	.370	0	y	1	72411...	72900	.57	9.113	...	H1-1b
18	M69	L2.5x2.5x4	.395	1.383	4	.113	0	y	4	37553...	38556	1.114	2.537	...	H2-1
19	M105	PL3/8x6	.392	0	3	.385	0	y	4	69611.4	72900	.57	9.113	...	H1-1b
20	M6	PL3/8x6	.380	0	1	.398	0	y	2	69611.4	72900	.57	9.113	...	H1-1b
21	M8	PL3/8x6	.340	0	3	.319	0	y	4	69574...	72900	.57	9.113	...	H1-1b
22	M7	PL3/8x6	.335	.156	3	.278	0	y	3	72411...	72900	.57	9.113	...	H1-1b
23	MP1A	PIPE_2.0	.321	5.5	3	.181	5.5		1	14916...	32130	1.872	1.872	...	H1-1b
24	MP1B	PIPE_2.0	.310	5.5	2	.150	5.5		3	14916...	32130	1.872	1.872	...	H1-1b
25	MP1C	PIPE_2.0	.310	5.5	1	.180	5.5		4	14916...	32130	1.872	1.872	...	H1-1b
26	MP4A	PIPE_2.0	.292	5.5	4	.115	5.5		1	14916...	32130	1.872	1.872	...	H1-1b
27	MP4C	PIPE_2.0	.287	5.5	2	.142	5.5		2	14916...	32130	1.872	1.872	...	H1-1b
28	M89	PL3/8x6	.261	0	4	.343	0	y	3	69611.4	72900	.57	9.113	...	H1-1b
29	MP4B	PIPE_2.0	.257	5.5	1	.150	5.5		3	14916...	32130	1.872	1.872	...	H1-1b
30	M88	PL3/8x6	.256	.156	4	.311	0	y	4	72411...	72900	.57	9.113	...	H1-1b
31	M102	PL1/2x6	.220	0	1	.179	.374	y	3	95151...	97200	1.012	12.15	...	H1-1b
32	M109	L2x2x3	.211	0	7	.015	0	z	7	16079...	23392.8	.558	1.239	...	H2-1
33	M93	L2x2x3	.210	0	6	.015	0	z	6	16079...	23392.8	.558	1.239	...	H2-1
34	M103	PL1/2x6	.207	0	1	.166	0	y	8	95123...	97200	1.012	12.15	...	H1-1b
35	M9	L2x2x3	.204	4.21	4	.011	0	y	6	16076...	23392.8	.558	1.159	...	H2-1
36	M10	L2x2x3	.203	0	5	.014	0	z	5	16079...	23392.8	.558	1.239	...	H2-1
37	M92	L2x2x3	.201	4.21	2	.011	0	y	5	16076...	23392.8	.558	1.214	...	H2-1
38	M3	PL1/2x6	.190	0	4	.147	.375	y	1	95137...	97200	1.012	12.15	...	H1-1b
39	M87	PL1/2x6	.181	0	3	.157	0	y	5	95137...	97200	1.012	12.15	...	H1-1b
40	M2	HSS4X4X4	.178	5.188	4	.114	5.188	z	3	84900...	139518	16.181	16.181	...	H1-1b
41	M86	PL1/2x6	.175	0	3	.146	.375	y	2	95137...	97200	1.012	12.15	...	H1-1b
42	M108	L2x2x3	.169	0	8	.011	0	y	8	16076...	23392.8	.558	1.239	...	H2-1
43	M4	PL1/2x6	.165	0	1	.162	0	y	6	95137...	97200	1.012	12.15	...	H1-1b
44	M1	HSS4X4X4	.148	5.185	1	.102	5.185	z	2	84943...	139518	16.181	16.181	...	H1-1b
45	M15	HSS4X4X4	.146	0	4	.063	2.203	z	4	13568...	139518	16.181	16.181	...	H1-1b
46	MP5C	PIPE_3.0	.142	11....	1	.097	4.687		2	28250...	65205	5.749	5.749	...	H1-1b
47	MP5B	PIPE_3.0	.132	11....	4	.141	4.687		3	28250...	65205	5.749	5.749	...	H1-1b
48	M113	HSS4X4X4	.131	0	5	.053	0	y	8	13568...	139518	16.181	16.181	...	H1-1b
49	M96	HSS4X4X4	.131	2.58	7	.049	2.58	y	8	13568...	139518	16.181	16.181	...	H1-1b
50	M97	HSS4X4X4	.127	0	6	.058	2.204	z	1	13568...	139518	16.181	16.181	...	H1-1b
51	M13	HSS4X4X4	.125	1.251	4	.092	4.618	z	1	94124...	139518	16.181	16.181	...	H1-1b
52	M14	HSS4X4X4	.125	2.581	6	.049	2.581	y	5	13568...	139518	16.181	16.181	...	H1-1b
53	MP5A	PIPE_3.0	.123	11....	3	.133	4.687		1	28250...	65205	5.749	5.749	...	H1-1b
54	M112	HSS4X4X4	.122	2.579	5	.048	2.579	y	7	13568...	139518	16.181	16.181	...	H1-1b
55	M95	PL1/2x6	.116	0	1	.429	0	y	2	94920...	97200	1.012	12.15	...	H1-1b
56	M21	LL2.5x2.5x3x3	.106	0	5	.006	0	z	3	44189...	58320	3.954	2.55	1	H1-1b*
57	M19	LL2.5x2.5x3x3	.104	0	7	.006	0	z	2	44201...	58320	3.954	2.55	...	H1-1b*
58	M111	PL1/2x6	.103	0	4	.401	0	y	3	94920...	97200	1.012	12.15	...	H1-1b
59	M20	LL2.5x2.5x3x3	.089	0	8	.005	0	z	1	44613...	58320	3.954	2.55	...	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
60	M12	PL1/2x6	.077	0	3	.403	0	y	4	94920...	97200	1.012	12.15	...	H1-1b
61	M11	PL1/2x6	.041	0	1	.472	0	y	2	94894...	97200	1.012	12.15	...	H1-1b
62	M110	PL1/2x6	.041	0	3	.480	0	y	4	94894...	97200	1.012	12.15	...	H1-1b
63	M94	PL1/2x6	.032	0	3	.390	0	y	3	94894...	97200	1.012	12.15	...	H1-1b

EXHIBIT 9

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: CT11611B

Nextel Monopole Hamden
2895 State Road
Hamden, Connecticut 06517

May 28, 2021

EBI Project Number: 6221002766

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**36.57%**

21 B Street, Burlington, MA 01803 · Tel: (781) 273.2500 · Fax: (781) 273.3311

May 28, 2021

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

Emissions Analysis for Site: CT11611B - Nextel Monopole Hamden

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **2895 State Road** in **Hamden, 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 2895 State Road in Hamden, 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 power density calculations, the broadcast footprint of the AIR6449 antenna has been considered. Due to the beamforming nature of this antenna, the actual beam locations vary depending on demand and are narrow in nature. Using the broadcast footprint accounts for the potential location of beams at any given time.

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

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

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

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

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

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

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

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

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

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

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

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

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

13) The antennas used in this modeling are the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz channel(s), the RFS APX16DWV-16DWV-S-E-A20 for the 2100 MHz channel(s) in Sector A, the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz channel(s), the RFS APX16DWV-16DWV-S-E-A20 for the 2100 MHz channel(s) in Sector B, the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s), the RFS APXVAARR24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz channel(s), the RFS APX16DWV-16DWV-S-E-A20 for the 2100 MHz channel(s) in Sector C. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values

and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

14) The antenna mounting height centerline of the proposed antennas is 128 feet above ground level (AGL).

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

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

T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449
Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz
Gain:	22.65 dBd / 17.3 dBd / 22.65 dBd / 17.3 dBd	Gain:	22.65 dBd / 17.3 dBd / 22.65 dBd / 17.3 dBd	Gain:	22.65 dBd / 17.3 dBd / 22.65 dBd / 17.3 dBd
Height (AGL):	128 feet	Height (AGL):	128 feet	Height (AGL):	128 feet
Channel Count:	4	Channel Count:	4	Channel Count:	4
Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts
ERP (W):	36,356.09	ERP (W):	36,356.09	ERP (W):	36,356.09
Antenna A1 MPE %:	**8.78%**	Antenna B1 MPE %:	**8.78%**	Antenna C1 MPE %:	**8.78%**
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20
Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz
Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd / 15.65 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd / 15.65 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.35 dBd / 15.65 dBd / 15.65 dBd
Height (AGL):	128 feet	Height (AGL):	128 feet	Height (AGL):	128 feet
Channel Count:	11	Channel Count:	11	Channel Count:	11
Total TX Power (W):	440 Watts	Total TX Power (W):	440 Watts	Total TX Power (W):	440 Watts
ERP (W):	12,873.80	ERP (W):	12,873.80	ERP (W):	12,873.80
Antenna A2 MPE %:	**4.47%**	Antenna B2 MPE %:	**4.47%**	Antenna C2 MPE %:	**4.47%**
Antenna #:	**3**	Antenna #:	**3**	Antenna #:	**3**
Make / Model:	RFS APX16DWV-16DWV-S-E-A20	Make / Model:	RFS APX16DWV-16DWV-S-E-A20	Make / Model:	RFS APX16DWV-16DWV-S-E-A20
Frequency Bands:	2100 MHz	Frequency Bands:	2100 MHz	Frequency Bands:	2100 MHz
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	128 feet	Height (AGL):	128 feet	Height (AGL):	128 feet
Channel Count:	2	Channel Count:	2	Channel Count:	2
Total TX Power (W):	120 Watts	Total TX Power (W):	120 Watts	Total TX Power (W):	120 Watts
ERP (W):	4,668.54	ERP (W):	4,668.54	ERP (W):	4,668.54
Antenna A3 MPE %:	**1.13%**	Antenna B3 MPE %:	**1.13%**	Antenna C3 MPE %:	**1.13%**

Site Composite MPE %	
Carrier	**MPE %**
T-Mobile (Max at Sector A):	14.38%
Verizon	22.19%
Site Total MPE % :	36.57%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	14.38%
T-Mobile Sector B Total:	14.38%
T-Mobile Sector C Total:	14.38%
Site Total MPE % :	36.57%

T-Mobile Maximum MPE Power Values (Sector A)

T-Mobile Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density (μW/cm²)	Frequency (MHz)	Allowable MPE (μW/cm²)	Calculated % MPE
T-Mobile 2500 MHz LTE 1C & 2C Traffic	1	11044.63	128.0	26.68	2500 MHz LTE 1C & 2C Traffic	1000	2.67%
T-Mobile 2500 MHz LTE 1C & 2C Broadcast	1	1074.06	128.0	2.59	2500 MHz LTE 1C & 2C Broadcast	1000	0.26%
T-Mobile 2500 MHz NR Traffic	1	22089.26	128.0	53.36	2500 MHz NR Traffic	1000	5.34%
T-Mobile 2500 MHz NR Broadcast	1	2148.13	128.0	5.19	2500 MHz NR Broadcast	1000	0.52%
T-Mobile 600 MHz LTE	2	591.73	128.0	2.86	600 MHz LTE	400	0.71%
T-Mobile 600 MHz NR	1	1577.94	128.0	3.81	600 MHz NR	400	0.95%
T-Mobile 700 MHz LTE	2	648.82	128.0	3.13	700 MHz LTE	467	0.67%
T-Mobile 1900 MHz GSM	4	1101.85	128.0	10.65	1900 MHz GSM	1000	1.06%
T-Mobile 1900 MHz LTE	2	2203.69	128.0	10.65	1900 MHz LTE	1000	1.06%
T-Mobile 2100 MHz LTE	2	2334.27	128.0	11.28	2100 MHz LTE	1000	1.13%
						Total:	**14.38%**

• 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:	14.38%
Sector B:	14.38%
Sector C:	14.38%
T-Mobile Maximum MPE % (Sector A):	14.38%
Site Total:	36.57%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **36.57%** 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.