



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

May 9, 2022

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

RE: Exempt Modification Application
56 Floydville Road, East Granby, CT 06026
Latitude: 41.928666
Longitude: -72.776044
Site#: CT03081-S_CT11386G_SBA/T-Mobile

Dear Ms. Bachman:

T-Mobile is requesting to file an exempt modification for an existing tower located at 56 Floydville Road, East Granby, CT 06026. T-Mobile currently maintains three (3) antennas at the 110-foot level of the existing 120-foot tower. The property is owned by D I Paine & Sons LLC, and the tower is owned by SBA. T-Mobile now intends to install (3) new antennas. The new antennas would be installed at the 110-foot level of the tower. This modification includes B2, B5 hardware that is both 4G (LTE), and 5G capable. Antenna mount modifications will be completed as per the attached TES mount analysis dated April 13, 2022.

T-Mobile Planned Modifications:

Remove:

(3) Coax 1-5/8"

Remove and Replace: None

Install New:

(3) ERICSSON AIR6419 B41 Antennas
(3) ERICSSON 4460 B25+B66 RRU
(2) HCS Fiber Cable

Existing to Remain:

(3) RFS APXVAALL24-43-U-NA20 Antennas
(3) ERICSSON 4449 B71+B85 RRU
(1) HCS Fiber Cable
(3) Ericsson KRY 12 144/1 TMAs *
(6) Ericsson KRY 12 489/2 TMAs *
(9) Coax 1-5/8" *

* Equipment listed for entitlement purposed only



This facility was approved by the Town of East Granby Planning & Zoning Commission on June 5, 2001. 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 Eden Wimpfheimer, First Selectwoman and Mark Goderre, Zoning Enforcement Officer for the Town of East Granby, as well as the property owner and the tower owner.

The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S.A. § 16-50j-72(b)(2).

1. The proposed modifications will not result in an increase in the height of the existing structure.
2. The proposed modifications will not require the extension of the site boundary.
3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The existing structure and its foundation can support the proposed loading.

For the foregoing reasons, T-Mobile respectfully submits that the proposed modifications to the above referenced telecommunications facility constitute an exempt modification under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,

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



NSS **NORTHEAST**
SITE SOLUTIONS
Turnkey Wireless Development

Attachments

Cc: Eden Wimpfheimer, First Selectwoman
Town of East Granby
9 Center St, P.O. Box 1858
East Granby, CT 06026

Mark Goderre, Zoning Enforcement Officer
Town of East Granby
9 Center St, P.O. Box 1858
East Granby, CT 06026

D I Paine & Sons LLC, Property Owner
54 Floydville Road
East Granby, CT 06026

SBA – Tower Owner

Exhibit A

Original Facility Approval



TOWN:
PLANNING

9
EAST

1724
8633
0000
0040
6607
7099

CERTIFIED MAIL RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

Article Sent To: SBA Inc

Postage	\$	Postmark Here
Certified Fee		
Return Receipt Fee (Endorsement Required)		
Restricted Delivery Fee (Endorsement Required)		
Total Postage & Fees	\$	

Name (Please Print Clearly) (to be completed by mailer)

Street, Apt. No., or PO Box No.

City, State, ZIP+4

PS Form 3800, July 1999 See Reverse for Instructions

June 6, 2001

SBA Properties, Inc.
C/o Thomas F. Flynn III
80 Eastern Boulevard
Glastonbury, CT 06033

CERTIFIED MAIL

Dear Sir,

At its meeting on June 5, 2001, the East Granby Planning & Zoning Commission voted to approve your Application #01-03 for a communication tower on the Paine property (ref. Sheets T-1, S-1, Z-1, Z-2, and Z-5 all dated revised 1/26/01 and Sheets 2, 3 and Z-4 all dated 11/01/00) subject to the following conditions:

1. The tower height shall be 120 feet maximum. (Data provided did not show the 130 feet tower was necessary.)
2. The two Paine properties shall be legally combined and evidence of such shall be provided to the Commission. The necessary revisions shall be made to the plans (Resolve yard requirements and confusion as noted in the Town Engineer's letter dated 3/06/01 item 2.3.)
3. A letter of approval be provided from the FAA that the proposed tower meets their requirements (ref. section IX, G3d of the Zoning Regulations).
4. A \$70,000 bond shall be posted prior to construction to be used to remove the tower if abandoned per section IX, G7 of the Zoning Regulations.
5. A written statement from the applicant/First Selectman indicating what agreement for Town use was reached (ref. section IX, G3e).

6. The entrance driveway shall remain as shown for approximately 160 feet where it reaches the 190-foot elevation. It shall turn towards the right and follow the 190-foot contour line to the site. A 10-foot side yard dimension shall also be added.
7. Add a note that all utilities must be underground and remove all references to new overhead utilities (ref. 4/04/01 minutes of the Inland/Wetlands Commission and the PZC public hearing).
8. Add a note that this approval is for one carrier, Verizon at the 120-foot height level. All additional levels and carriers need further approval.
9. A written statement by a competent professional describing the impact on public health and safety associated with the proposed activity with particular emphasis on radio emissions (signal frequency, intensity and power density) and structural integrity shall be provided to the Commission. (Note: Information provided at the public hearing was not signed by anyone.)
10. Landscaping shall be added to the west and south side of the facility per the PZC's approval.
11. As noted above, the conditions require numerous revisions to the detailed plans on almost every page. This includes the property size which is a total of 17.3 acres for the two lots that will become one.

Please submit a mylar and four copies of the revised plans for the Commission's signature.

Sincerely,



Frederick O'Brien
Chairman

Cc: Town Clerk
Building Official
Town Engineer
Assessor

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY
<ul style="list-style-type: none"> ■ Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired. ■ Print your name and address on the reverse so that we can return the card to you. ■ Attach this card to the back of the mailpiece, or on the front if space permits. 	<p>A. Received by (Please Print Clearly) B. Date of Delivery 6-7-06</p>
<p>1. Article Addressed to:</p> <p>SBA c/o T. Flynn 50 Eastern Boulevard Glastonbury, CT 06033</p>	<p>C. Signature <input checked="" type="checkbox"/> <i>T. Flynn</i> <input type="checkbox"/> Agent <input type="checkbox"/> Address</p> <p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No</p>
<p>2. Article Number (Copy from service label)</p>	<p>3. Service Type <input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail <input type="checkbox"/> Registered <input type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.</p> <p>4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes</p>
<p>7099 3400 00886331724</p>	



STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square
New Britain, Connecticut 06051
Phone: (860) 827-2935
Fax: (860) 827-2950

August 8, 2002

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

RE: **EM-VER-040-020717** - Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 56 Floydville Road, East Granby, Connecticut.

Dear Attorney Baldwin:


At a public meeting held on August 1, 2002, the Connecticut Siting Council (Council) acknowledged your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies.

The proposed modifications are to be implemented as specified here and in your notice dated July 17, 2002. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site, increase noise levels at the tower site boundary by six decibels, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to General Statutes § 22a-162. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on this tower.

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

Thank you for your attention and cooperation.

Very truly yours,


Mortimer A. Gelston
Chairman

MAG/DM/laf

c: Honorable David K. Kilbon, First Selectman, Town of East Granby
Richard A. Nelson, Zoning Enforcement Officer, Town of East Granby
Sheila R. Becker, SBA, Inc.
Stephen J. Humes, Esq., LeBoeuf, Lamb, Greene & MacRae
Christopher B. Fisher, Esq., Cuddy & Feder & Worby LLP

Exhibit B

Property Card

54 FLOYDVILLE ROAD

Location 54 FLOYDVILLE ROAD

Mblu 15/ 10/ / /

Acct# 100469

Owner D I PAINE & SONS LLC

Assessment \$1,222,600

Appraisal \$1,746,400

PID 649

Building Count 2

Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2018	\$1,230,400	\$516,000	\$1,746,400

Assessment			
Valuation Year	Improvements	Land	Total
2018	\$861,400	\$361,200	\$1,222,600

Owner of Record

Owner D I PAINE & SONS LLC

Sale Price \$0

Co-Owner

Certificate

Address 54 FLOYDVILLE ROAD
EAST GRANBY, CT 06026

Book & Page 0160/0707

Sale Date 01/03/2006

Instrument CN

Ownership History

Ownership History					
Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
D I PAINE & SONS LLC	\$0		0160/0707	CN	01/03/2006
D I PAINE & SONS	\$0		0129/0622		08/01/2001
TYLER RUSSELL	\$0		0129/0616		08/01/2001
D I PAINE & SONS	\$0		0108/0546		12/05/1995

Building Information

Building 1 : Section 1

Year Built: 1986
Living Area: 24,900
Replacement Cost: \$1,292,584
Building Percent 73
Good:

Replacement Cost
Less Depreciation: \$943,600

Building Attributes	
Field	Description
STYLE	Light Indust
MODEL	Industrial
Grade	Average +10
Stories:	1
Occupancy	2
Exterior Wall A	Concr/Cinder
Exterior Wall B	Pre-finish Metl
Roof Structure	Gable/Hip
Roof Cover	Metal/Tin
Interior Wall A	Unfin/Minimum
Interior Wall B	Drywall
Interior Floor A	Concr-Finished
Interior Floor B	Vinyl/Asphalt
Heating Fuel	Gas
Heating Type	Forced Air-Duc
AC Type	Partial
Bldg Use	Industrial C
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	3-1
Heat/AC	HEAT/AC SPLIT
Frame Type	STEEL
Baths/Plumbing	AVERAGE
Ceiling/Wall	-DESCRIPTION-
Rooms/Prtns	AVERAGE
Wall Height	16
% Comn Wall	0

Building 2 : Section 1

Year Built: 2017
Living Area: 10,200
Replacement Cost: \$210,146
Building Percent 74
Good:
Replacement Cost
Less Depreciation: \$155,500

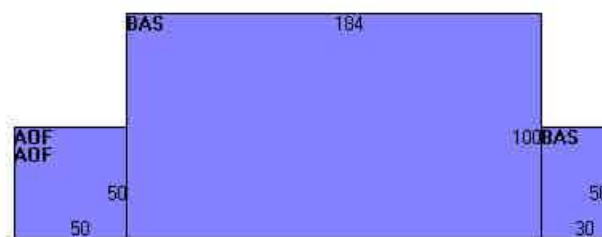
Building Attributes : Bldg 2 of 2	
Field	Description

Building Photo



(<http://images.vgsi.com/photos/EastGranbyCTPhotos//\00\01\17>)

Building Layout



(<http://images.vgsi.com/photos/EastGranbyCTPhotos//Sketches/>)

Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	19,900	19,900
AOF	Office, (Average)	5,000	5,000
		24,900	24,900

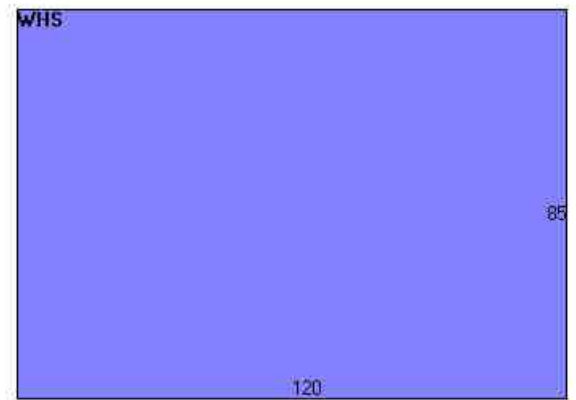
STYLE	Warehouse
MODEL	Industrial
Grade	Minimum
Stories:	1
Occupancy	1
Exterior Wall A	VinylPolyester
Exterior Wall B	
Roof Structure	Irregular
Roof Cover	Rubber Mem
Interior Wall A	Unfin/Minimum
Interior Wall B	
Interior Floor A	Concr Abv Grad
Interior Floor B	
Heating Fuel	None
Heating Type	None
AC Type	None
Bldg Use	Industrial C
Total Rooms	
Total Bedrms	
Total Baths	0
1st Floor Use:	
Heat/AC	NONE
Frame Type	NONE
Baths/Plumbing	NONE
Ceiling/Wall	NONE
Rooms/Prtns	LIGHT
Wall Height	
% Comn Wall	

Building Photo



(<http://images.vgsi.com/photos/EastGranbyCTPhotos//00\01\17>)

Building Layout



(<http://images.vgsi.com/photos/EastGranbyCTPhotos//Sketches/>)

Building Sub-Areas (sq ft)			<u>Legend</u>
Code	Description	Gross Area	Living Area
WHS	Warehouse	10,200	10,200
		10,200	10,200

Extra Features

Extra Features				<u>Legend</u>
Code	Description	Size	Value	Bldg #
MEZ	Mezzanine	2000 S.F.	\$21,900	1
A/C	Air Condition	5000 S.F.	\$9,100	1

Land

Land Use

Use Code	3-1
Description	Industrial C

Land Line Valuation

Size (Acres)	17.3
Frontage	0

Zone CP
Neighborhood
Alt Land Appr No
Category

Depth 0
Assessed Value \$361,200
Appraised Value \$516,000

Outbuildings

Outbuildings						Legend
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
SHED	Shed	A	Average	280 S.F.	\$3,500	2
FNC	Chain Link Fence	08	8 Ft. Height	420 L.F.	\$4,100	2
SHED	Shed	A	Average	96 S.F.	\$900	1
PAV	Paving	A	Asphalt	73445 S.F.	\$91,800	1

Valuation History

Appraisal			
Valuation Year	Improvements	Land	Total
2017	\$939,700	\$685,800	\$1,625,500
2012	\$750,900	\$502,100	\$1,253,000
2007	\$547,900	\$506,100	\$1,054,000

Assessment			
Valuation Year	Improvements	Land	Total
2017	\$657,800	\$480,000	\$1,137,800
2012	\$525,700	\$351,500	\$877,200
2007	\$383,500	\$354,400	\$737,900

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54 Floydville Rd

Granby, CT 06035



Directions



Save



Nearby



Send to your phone



Share



Confirm or fix this location
The location shown is not precise



Suggest an edit on 54 Floydville Rd



Add a missing place



Add your business



Add a label

Photos

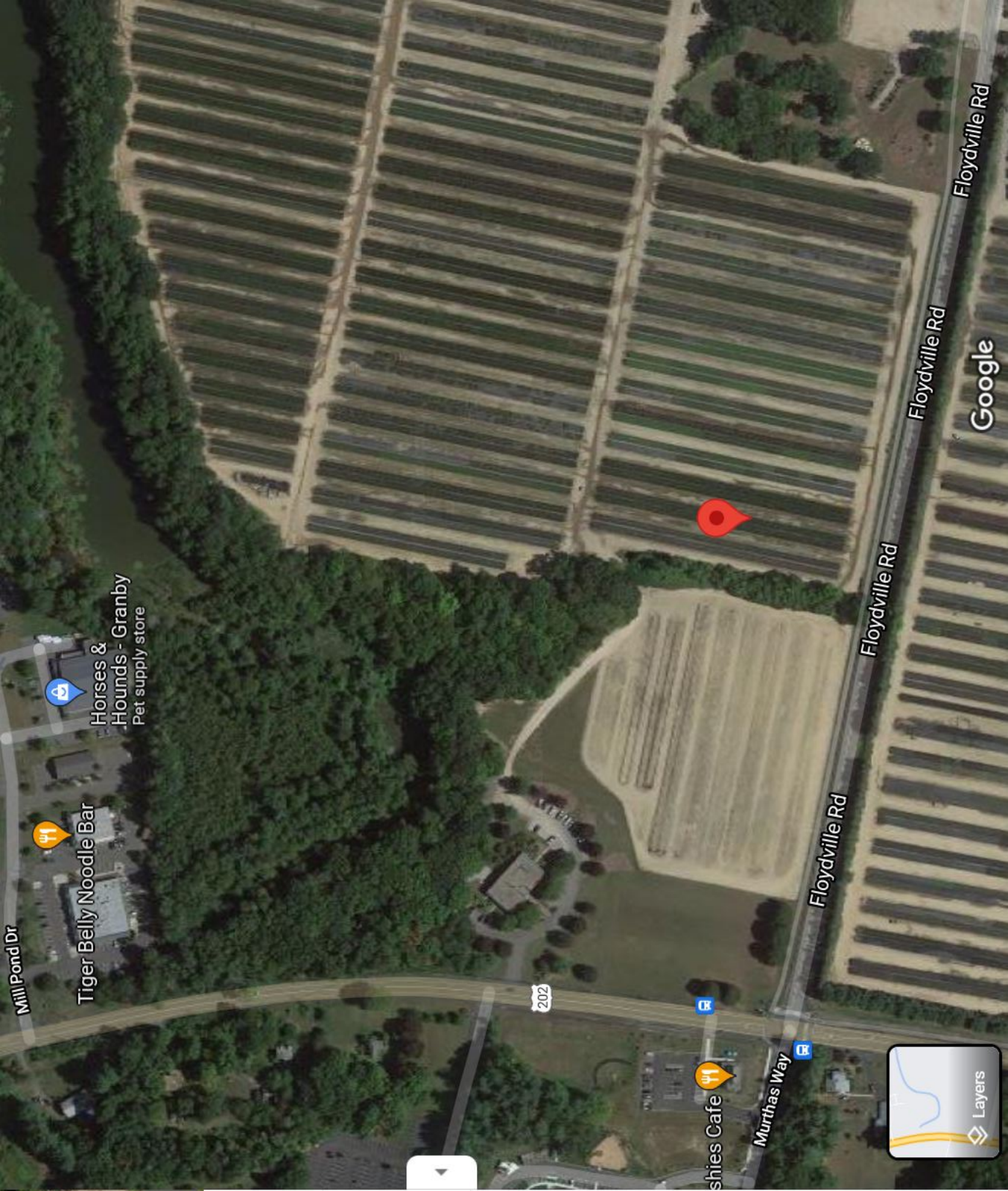


Exhibit C

Construction Drawings

SIMSBURY NORTH/RT 10

56 FLOYDVILLE ROAD
EAST GRANBY, CT 06026
HARTFORD COUNTY

SITE NO.: CT11386G

SITE TYPE: 120'± MONOPOLE

RF DESIGN GUIDELINE: 67D5D998E ODE+6160

APPROVALS

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

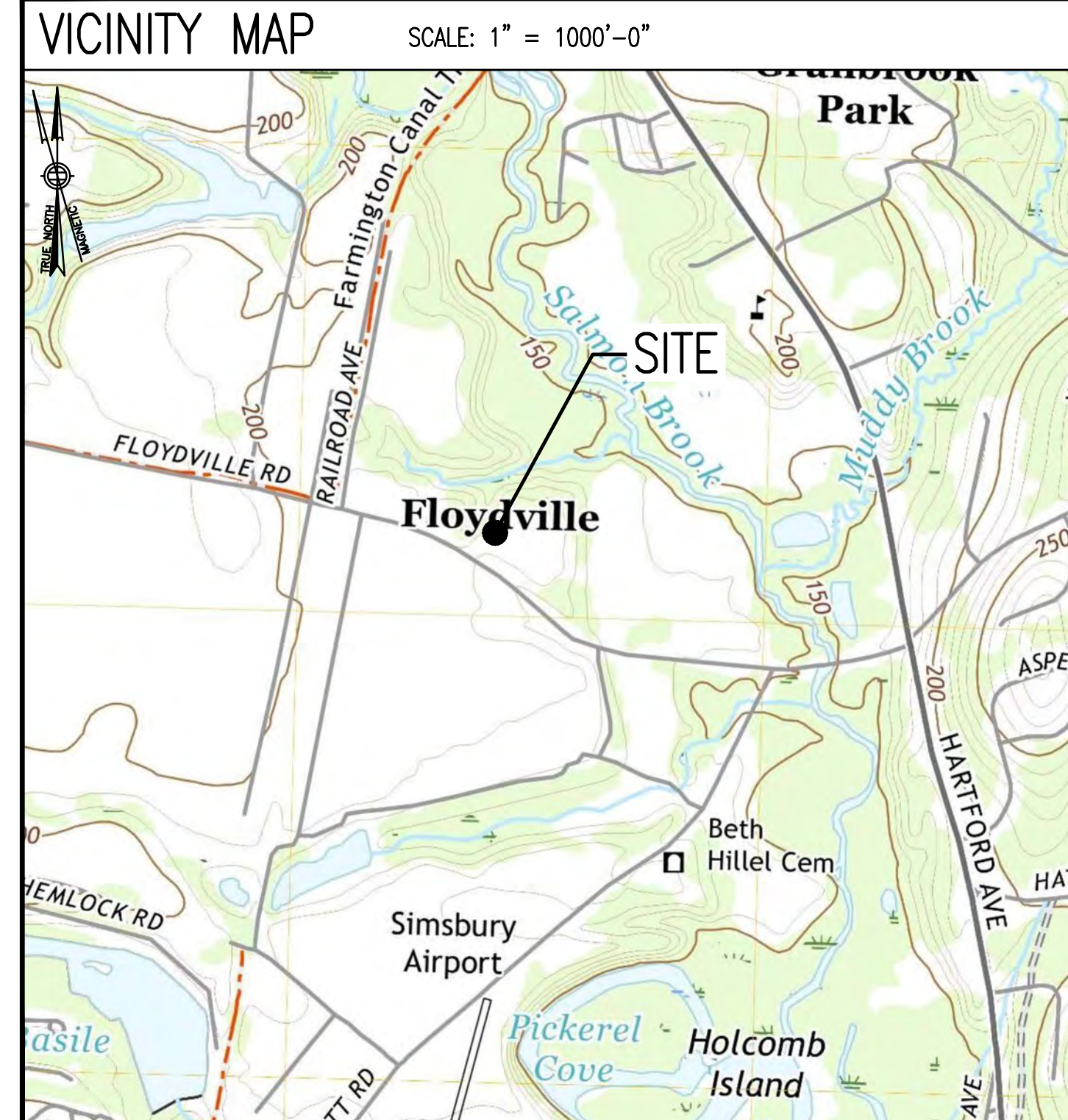
T-MOBILE TECHNICIAN SITE SAFETY NOTES

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

GENERAL NOTES

- 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.
- 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.
- THE CONTRACTOR OR BIDDER SHALL BEAR THE RESPONSIBILITY OF NOTIFYING (IN WRITING) THE OMBUDSMAN 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- THE CONTRACTOR SHALL COMPLY WITH ALL OSHA REQUIREMENTS AS THEY APPLY TO THIS PROJECT.
- 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.
- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, PROPERTY LINES, ETC. ON THE JOB.
- 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



DIRECTIONS

TURN LEFT ONTO S WASHINGTON ST. TURN RIGHT ONTO MA-123 E. TURN LEFT TO MERGE ONTO I-495 NORTH TOWARD MANSFIELD/MARLBORO. MERGE ONTO I-495 NORTH. TAKE EXIT 58 TO MERGE ONTO I-90 WEST. TAKE EXIT 78 FOR I-84 TOWARD HARTFORD CT/NEW YORK CITY. TAKE EXIT 61 TO MERGE ONTO I-291 WEST TOWARD WINDSOR. TAKE EXIT 2B MERGE ONTO I-91 NORTH TOWARD SPRINGFIELD. TAKE EXIT 37 FOR CT-305 WEST. TURN RIGHT ONTO CT-187 NORTH. TAKE THE CT-189 NORTH RAMP. TURN LEFT ONTO FLOYDVILLE ROAD. SITE WILL BE ON THE RIGHT.

SHEET INDEX

SHEET NO.	DESCRIPTION	REV. NO.
T-1	TITLE SHEET	0
GN-1	GENERAL NOTES	0
A-1	COMPOUND & EQUIPMENT PLANS	0
A-2	TOWER ELEVATIONS & ANTENNA PLANS	0
A-3	SITE DETAILS	0
A-4	ANTENNA & FEEDLINE CHARTS	0
S-1	ANTENNA & RADIO MOUNTING DETAIL	0
E-1	ELECTRIC & GROUNDING DETAILS	0

DO NOT SCALE DRAWINGS

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

SCOPE OF WORK

REMOVE:	INSTALL:
• 3 ANTENNAS	• 3 ANTENNAS
• 3 RRU's	• 3 RADIOS
• 6 TMAs	• 2 HYBRID FIBER CABLES
• ALL DIPLEXERS	• 1 6160 EQUIPMENT CABINET
• 1 100A-2P BREAKER	• 1 6160 BATTERY CABINET
• ALL COAX CABLES	• 1 SLACKBOX
	• 1 125A-2P BREAKER
	• 1 150A-2P BREAKER
	• 1 25A-1P BREAKER

SITE NOTES

- 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.
- 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.
- 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:	CT11386G
SITE NAME:	SIMSBURY NORTH/RT 10
SBA SITE NUMBER:	CT03801-S
SBA SITE NAME:	EAST GRANBY
SITE ADDRESS:	56 FLOYDVILLE ROAD EAST GRANBY, CT 06026
PROPERTY OWNER:	D I PAINE & SONS LLC. 54 FLOYDVILLE ROAD EAST GRANBY, CT 06026
TOWER OWNER:	SBA PROPERTIES, LLC. 8501 CONGRESS AVENUE BOCA RATON, FL 33487 PHONE: 561-226-9523
COUNTY:	HARTFORD
ZONING DISTRICT:	COMMERCIAL PARK B
STRUCTURE TYPE:	MONOPOLE
STRUCTURE HEIGHT:	120'±
APPLICANT:	T-MOBILE NORTHEAST LLC 15 COMMERCE WAY, SUITE B NORTON, MA 02766
ARCHITECT:	CHAPPELL ENGINEERING ASSOCIATES, LLC 201 BOSTON POST ROAD WEST, SUITE 101 MARLBOROUGH, MA 01752
STRUCTURAL ENGINEER:	CHAPPELL ENGINEERING ASSOCIATES, LLC 201 BOSTON POST ROAD WEST, SUITE 101 MARLBOROUGH, MA 01752
SITE CONTROL POINT:	LATITUDE: N.41.9287' (41°-55'-43.2") LONGITUDE: W.-72.7761' (72°-46'-34.1")

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

T-Mobile

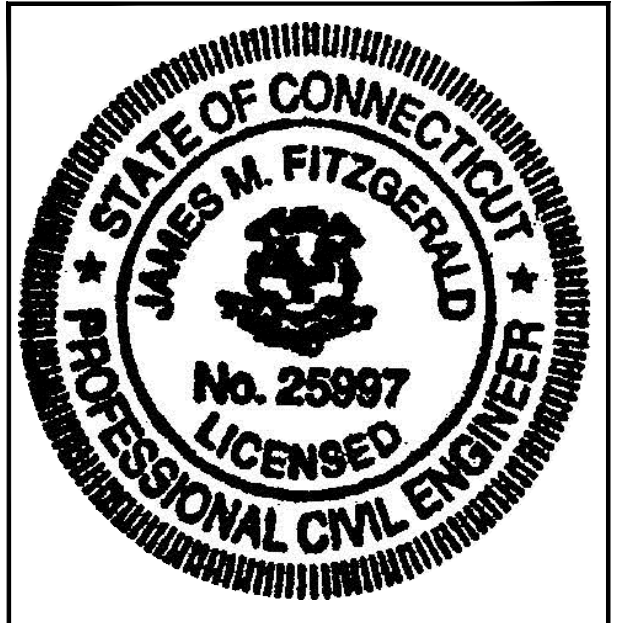
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APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
0	03/31/22	ISSUED FOR REVIEW	BDJ

SITE NUMBER:
CT11386G

SITE ADDRESS:
56 FLOYDVILLE ROAD
EAST GRANBY, CT 06026

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

GENERAL NOTES:

- 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
- PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.
- 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.
- 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.
- DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.
- UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
- THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
- IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CONTRACTOR.
- 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.
- 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.
- SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY.
- SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION AND RETURN DISTURBED AREAS TO ORIGINAL CONDITIONS.
- 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.
- 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.
- CONSTRUCTION SHALL COMPLY WITH ALL T-MOBILE STANDARDS AND SPECIFICATIONS.
- 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.
- 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.
- 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:

- THE SUBCONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
- 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.
- ALL SITE WORK SHALL BE AS INDICATED ON THE DRAWINGS AND PROJECT SPECIFICATIONS.
- IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
- THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE BTS EQUIPMENT AND TOWER AREAS.
- 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.
- THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
- 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.
- 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.
- 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.
- THE SUBCONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE T-MOBILE SPECIFICATION FOR SITE SIGNAGE.

CONCRETE AND REINFORCING STEEL NOTES:

- 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.
- 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
- 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.
- 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 LARGER2 IN.
#5 AND SMALLER & WWF1½ IN.
CONCRETE NOT EXPOSED TO EARTH OR WEATHER
OR NOT CAST AGAINST THE GROUND:
SLAB AND WALL¾ IN.
BEAMS AND COLUMNS1½ IN.
- A CHAMFER ¾" SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNO, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.
- 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.
- 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.
- 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.
- 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:

- 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".
- 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.
- BOLTED CONNECTIONS SHALL USE BEARING TYPE ASTM A325 BOLTS (¾") AND SHALL HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE. ALL BOLTS SHALL BE GALVANIZED OR STAINLESS STEEL.
- NON-STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE ¾" DIA. ASTM A 307 BOLTS (GALV) UNLESS NOTED OTHERWISE.
- CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ENGINEER REVIEW & APPROVAL ON PROJECTS REQUIRING STRUCTURAL STEEL
- ALL STRUCTURAL STEEL WORK SHALL BE DONE IN ACCORDANCE WITH AISC SPECIFICATIONS.

SOIL COMPACTION NOTES FOR SLAB ON GRADE:

- EXCAVATE AS REQUIRED TO REMOVE VEGETATION AND TOPSOIL TO EXPOSE NATURAL SUBGRADE AND PLACE CRUSHED STONE AS REQUIRED.
- COMPACTION CERTIFICATION: AN INSPECTION AND WRITTEN CERTIFICATION BY A QUALIFIED GEOTECHNICAL TECHNICIAN OR ENGINEER IS ACCEPTABLE.
- 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.
- 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.
- 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:

- HAND OPERATED DOUBLE DRUM, VIBRATORY ROLLER, VIBRATORY PLATE COMPACTOR OR JUMPING JACK COMPACTOR.

CONSTRUCTION NOTES:

- FIELD VERIFICATION:
SUBCONTRACTOR SHALL FIELD VERIFY SCOPE OF WORK, T-MOBILE ANTENNA PLATFORM LOCATION AND UTILITY TRENCHWORK.
- COORDINATION OF WORK:
SUBCONTRACTOR SHALL COORDINATE RF WORK AND PROCEDURES WITH CONTRACTOR.
- 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:

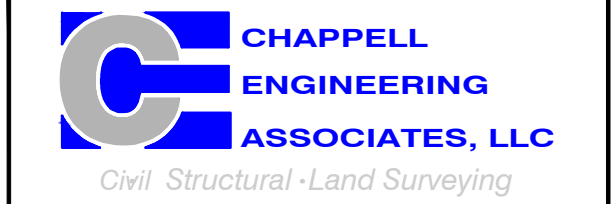
- WIRING, RACEWAY, AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC AND TELCORDIA.
- SUBCONTRACTOR SHALL MODIFY OR INSTALL CABLE TRAY SYSTEM AS REQUIRED TO SUPPORT RF AND TRANSPORT CABLING TO THE NEW BTS EQUIPMENT. SUBCONTRACTOR SHALL SUBMIT MODIFICATIONS TO CONTRACTOR FOR APPROVAL.
- ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC AND TELCORDIA.
- CABLES SHALL NOT BE ROUTED THROUGH LADDER-STYLE CABLE TRAY RUNGS.
- 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.
- 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.
- ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS. ALL EQUIPMENT SHALL BE LABELED WITH THEIR VOLTAGE RATINGS, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING, AND BRANCH CIRCUIT ID NUMBERS (I.E., PANELBOARD AND CIRCUIT ID'S).
- PANELBOARDS (ID NUMBERS) AND INTERNAL CIRCUIT BREAKERS (CIRCUIT ID NUMBERS) SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS.
- ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.
- 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.
- 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.
- PANELBOARDS (ID NUMBERS) AND INTERNAL CIRCUIT BREAKERS (CIRCUIT ID NUMBERS) SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS.
- 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.
- 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).
- RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.
- NEW RACEWAY OR CABLE TRAY WILL MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.
- 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.
- ELECTRICAL METALLIC TUBING (EMT), ELECTRICAL NONMETALLIC TUBING (ENT), OR RIGID NONMETALLIC CONDUIT (RIGID PVC, SCHEDULE 40) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
- GALVANIZED STEEL INTERMEDIATE METALLIC CONDUIT (IMC) SHALL BE USED FOR OUTDOOR LOCATIONS ABOVE GRADE.
- 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.
- LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
- CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SETSCREW FITTINGS ARE NOT ACCEPTABLE.
- CABINETS, BOXES AND WIREWAYS SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.
- CABINETS, BOXES AND WIREWAYS TO MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.
- 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.
- 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.
- 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.
- 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.
- THE SUBCONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CONTRACTOR BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
- 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.
- ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE LOCAL CODES.
- CONDUIT ROUTINGS ARE SCHEMATIC. SUBCONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED.



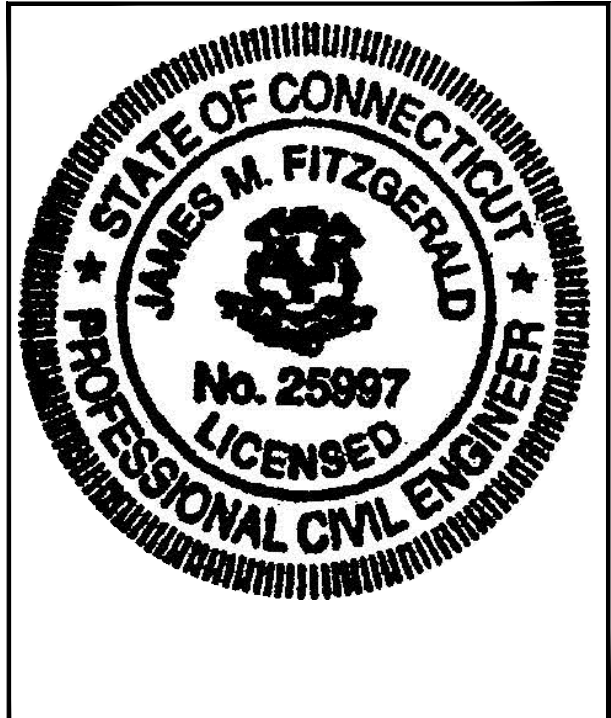
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SUBMITTALS			
REV.	DATE	DESCRIPTION	BY
0	03/31/22	ISSUED FOR REVIEW	BDJ

SITE NUMBER:
CT11386G
SITE ADDRESS:
56 FLOYDVILL ROAD
EAST GRANBY, CT 06026

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

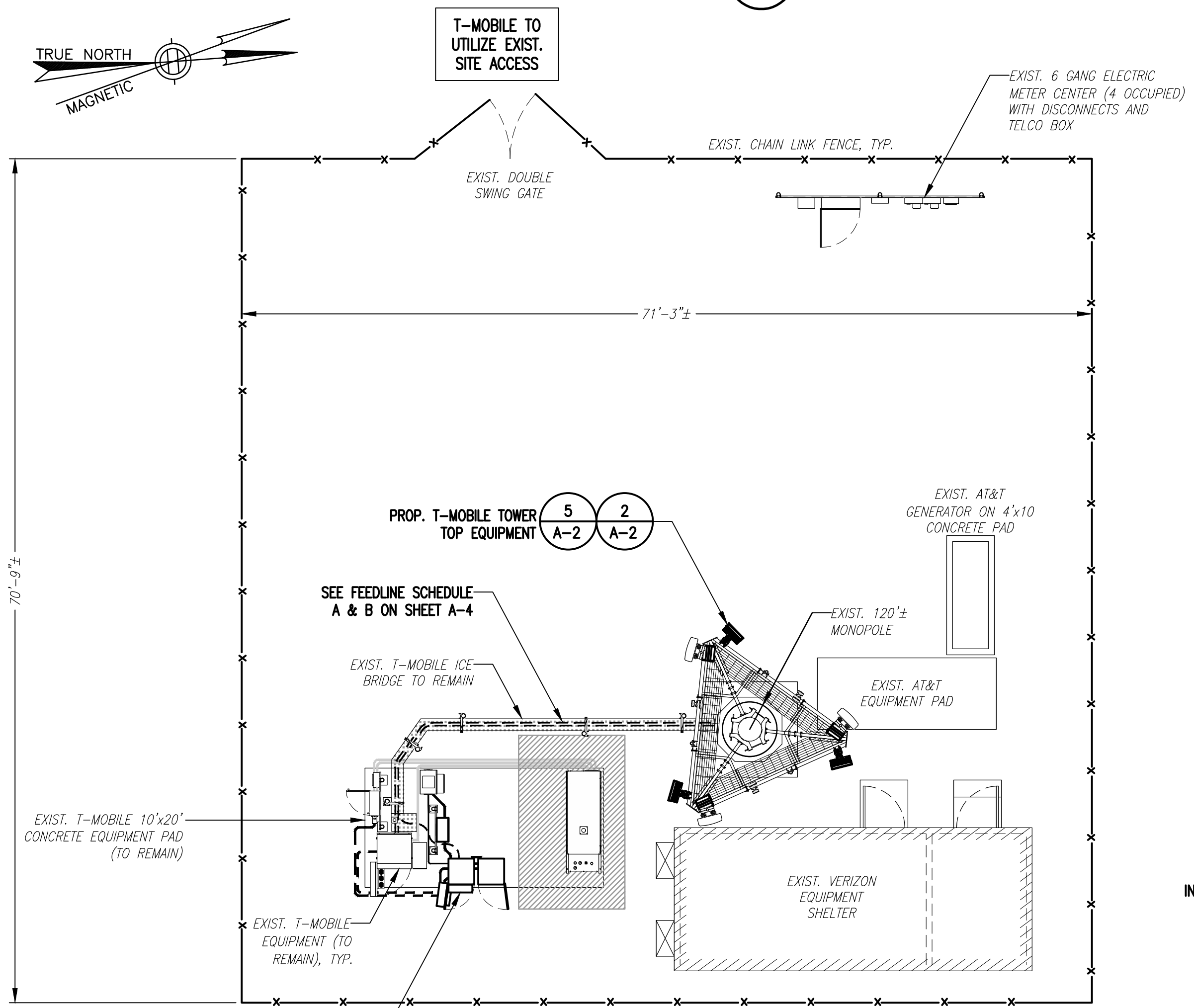
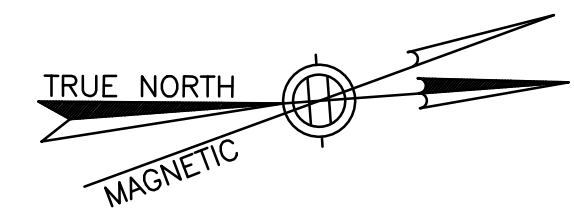
GN-1

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.

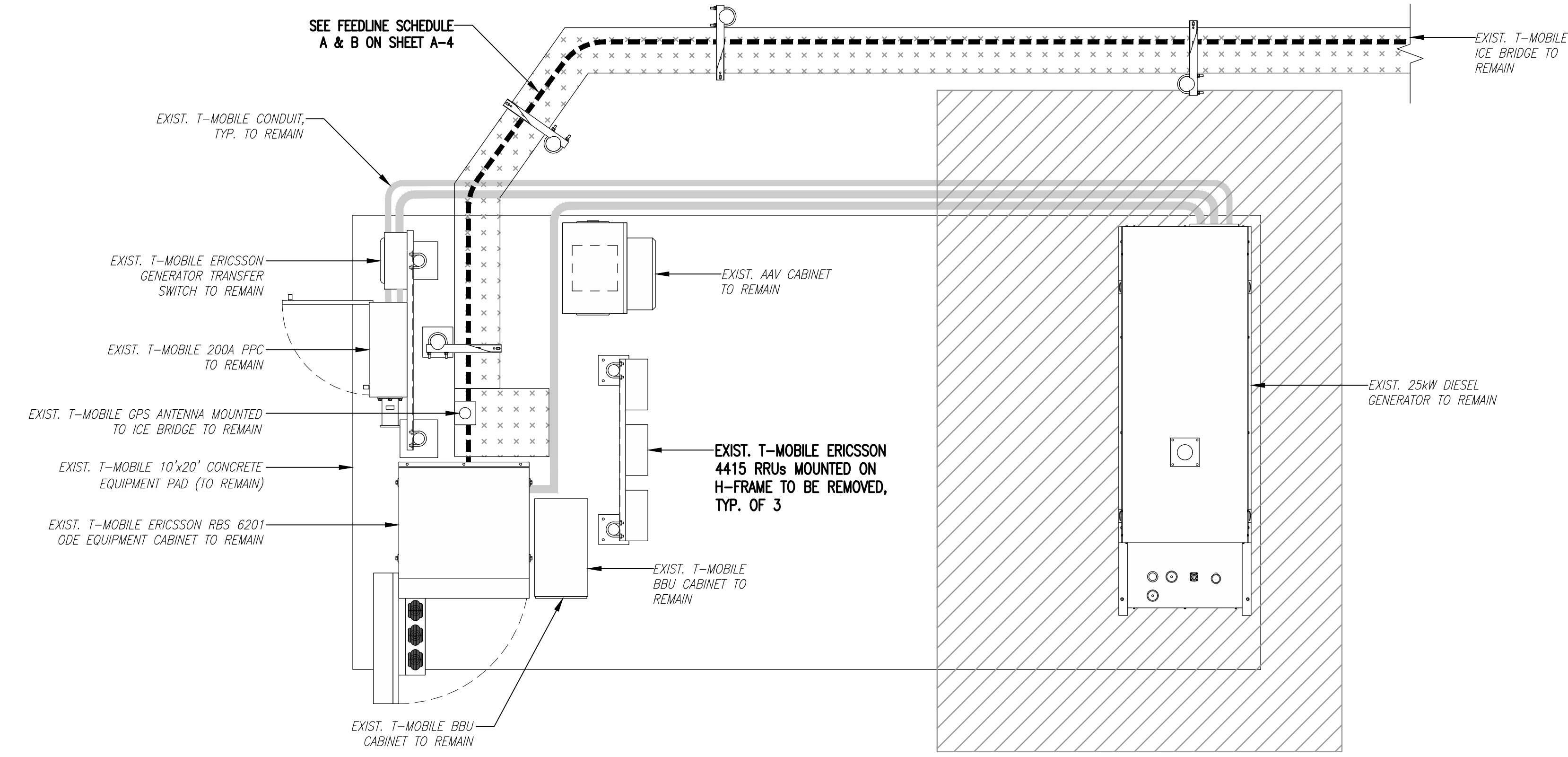
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 GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL SPECIAL OR SUPPLEMENTAL ADDITIONAL TOWER-MOUNTED EQUIPMENT PER RECOMMENDATIONS FROM SBA-PROVIDED TOWER STRUCTURAL ANALYSIS FOR ANY SPECIAL SHIELDING OF TOWER TOP EQUIPMENT AND FOR ANY SPECIAL FEEDLINE BUNDLING OR RELOCATION.



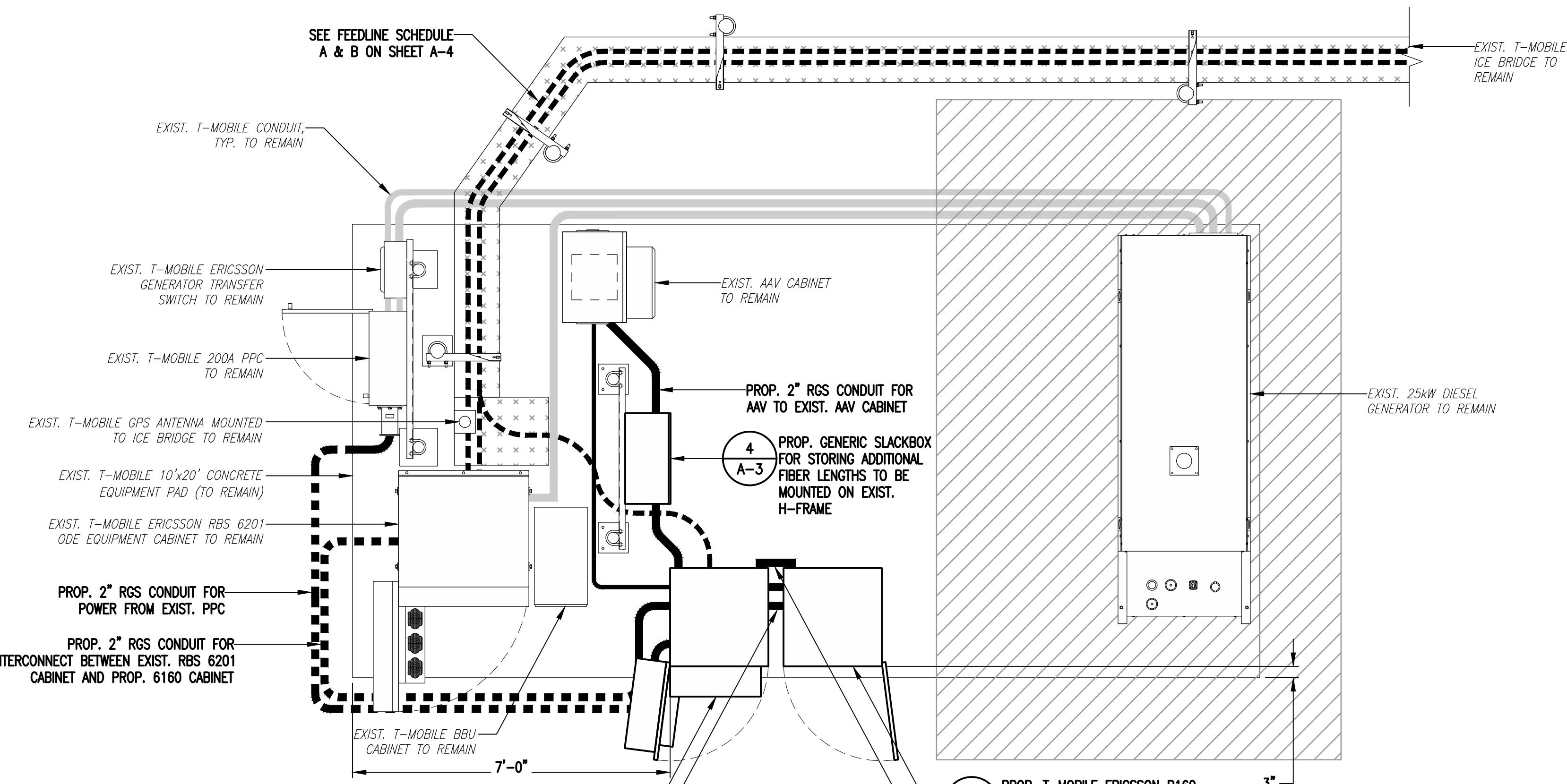
EXISTING EQUIPMENT PHOTO DETAIL (2) A-1
 SCALE: NTS



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



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



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

NOTE:
 ALL PROPOSED CONDUITS TO BE BURIED TO AVOID TRIP HAZARD.

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 www.chappellengineering.com

STATE OF CONNECTICUT
 JAMES M. FITZGERALD
 No. 25897
 PROFESSIONAL CIVIL ENGINEER

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
0	03/31/22	ISSUED FOR REVIEW	BDJ

SITE NUMBER:
CT11386G

SITE ADDRESS:
 56 FLOYDVILL ROAD
 EAST GRANBY, CT 06026

SHEET TITLE:
COMPOUND & EQUIPMENT PLAN

SHEET NUMBER:
A-1



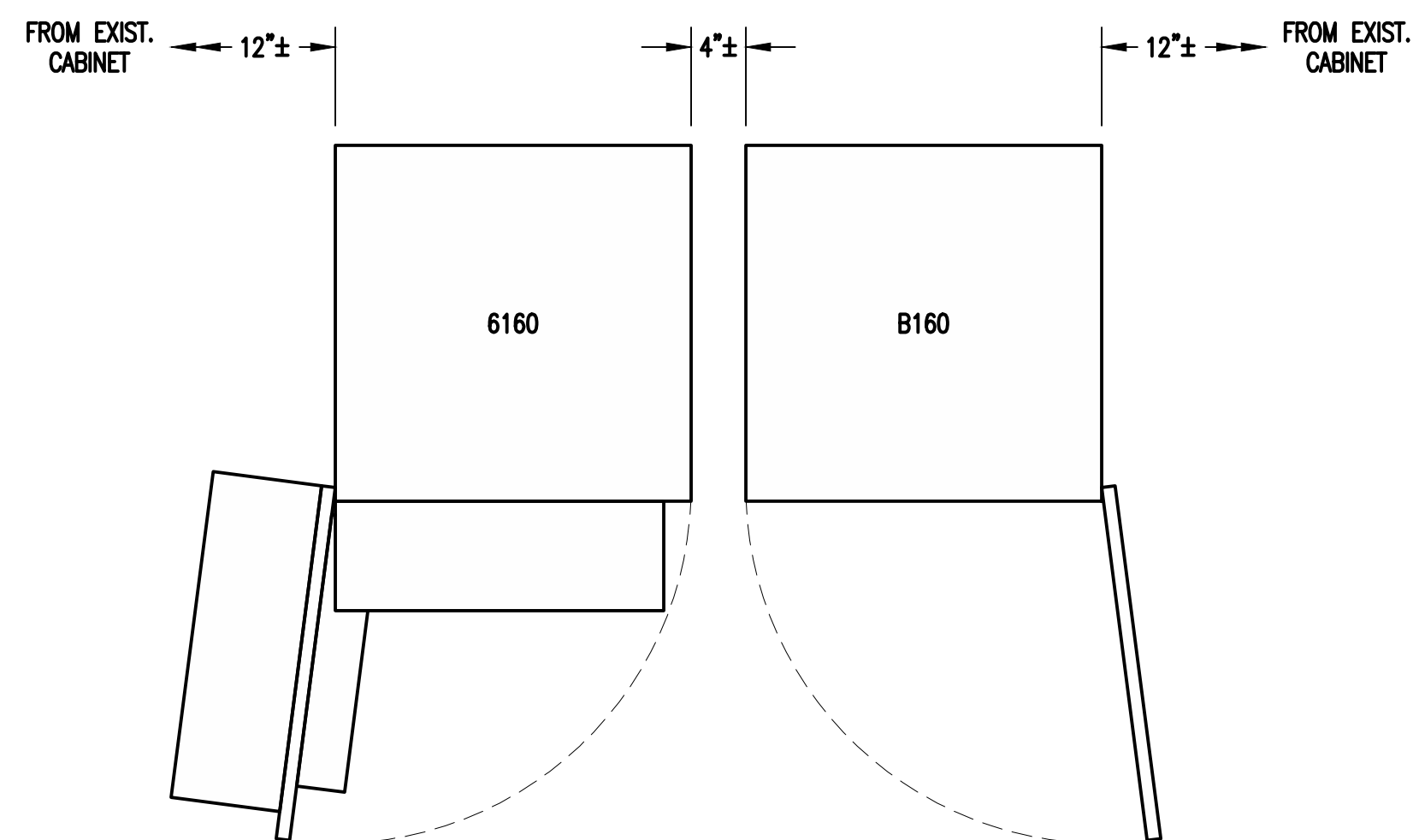
ERICSSON RADIO 4460 B25+B66
 DIMENSIONS: 17.0"H x 15.1"W x 11.9"D
 WEIGHT: 104.0 lbs
 QUANTITY: 1 PER SECTOR, TOTAL OF 3

RADIO DETAIL 1
 SCALE: N.T.S. A-3



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

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



CABINETS TO BE MOUNTED
 PER MANUFACTURER'S
 SPECIFICATIONS

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

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

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



SLACKBOX - HOFFMAN 32FH91 NEMA 3R ENCLOSURE
 DIMENSIONS: 24.0"H x 24.0"W x 12.0"D
 QUANTITY: TOTAL OF 1

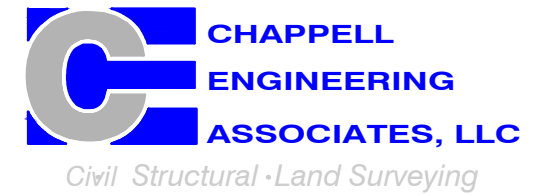
SSC DETAILS 4
 SCALE: N.T.S. A-3

T-Mobile

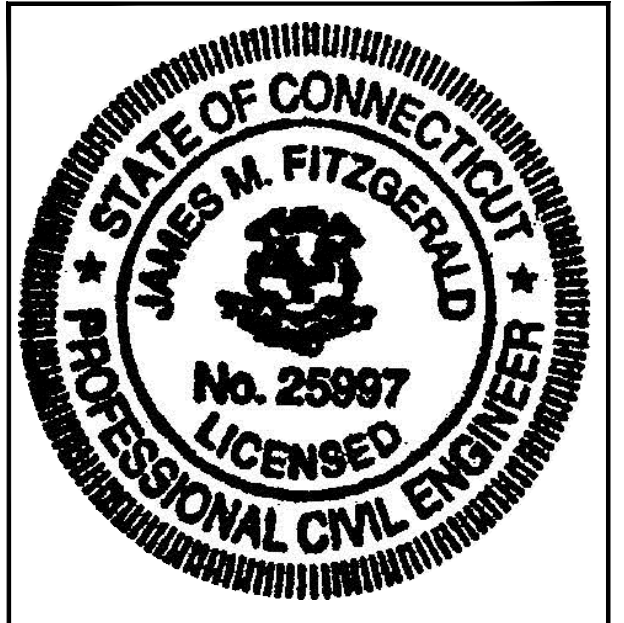
T-MOBILE NORTHEAST LLC
 15 COMMERCE WAY, SUITE B
 NORTON, MA 02766
 OFFICE: (508) 286-2700



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



R.K. EXECUTIVE CENTRE
 201 BOSTON POST ROAD WEST, SUITE 101
 MARLBOROUGH, MA 01752
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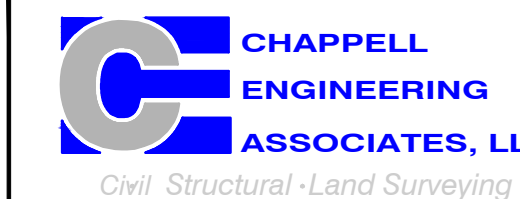
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CT11386G
 SITE ADDRESS:
 56 FLOYDVILL ROAD
 EAST GRANBY, CT 06026

SHEET TITLE
 SITE DETAILS

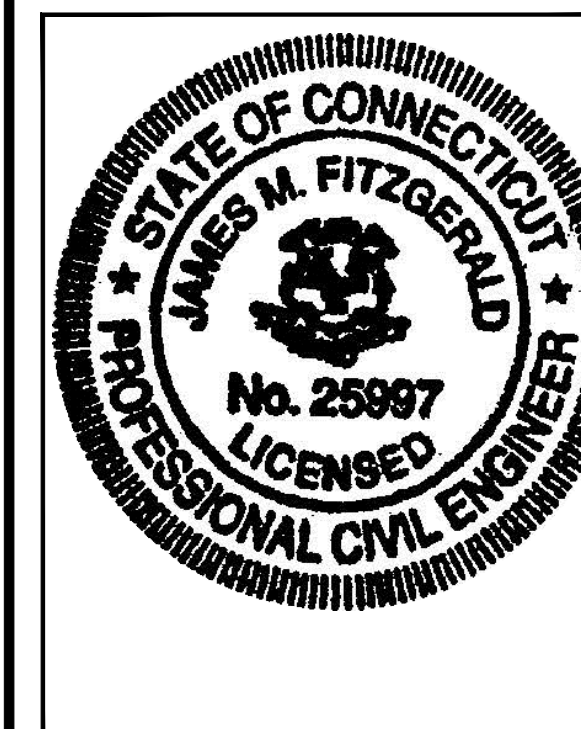
SHEET NUMBER
A-3



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SITE NUMBER:
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EAST GRANBY, CT 06026

SHEET TITLE
ANTENNA & FEEDLINE CHARTS

SHEET NUMBER
A-4

FINAL ANTENNA CONFIGURATION							
SECTOR	ANTENNA	RAD CENTER	AZIMUTH (TRUE NORTH)	MECHANICAL DOWNTILT	ELECTRICAL DOWNTILT	BAND	TMA/RADIOS
ALPHA	A1 ERICSSON M-MIMO AIR6419 B41	110'± AGL	80°	0°	2°	L2500/N2500	-
	A2 EMPTY						
	A3 EMPTY						
	A4 RFS APXVAALL24 43-U-NA20	110'± AGL	80°	0°	2°	L600/N600/L700 G1900/L1900 L2100	ERICSSON RADIO 4460 B25+B66 ERICSSON RADIO 4449 B71+B85
BETA	B1 ERICSSON M-MIMO AIR6419 B41	110'± AGL	200°	0°	2°	L2500/N2500	-
	B2 EMPTY						
	B3 EMPTY						
	B4 RFS APXVAALL24 43-U-NA20	110'± AGL	200°	0°	2°	L600/N600/L700 G1900/L1900 L2100	ERICSSON RADIO 4460 B25+B66 ERICSSON RADIO 4449 B71+B85
GAMMA	C1 ERICSSON M-MIMO AIR6419 B41	110'± AGL	320°	0°	2°	L2500/N2500	-
	C2 EMPTY						
	C3 EMPTY						
	C4 RFS APXVAALL24 43-U-NA20	110'± AGL	320°	0°	2°	L600/N600/L700 G1900/L1900 L2100	ERICSSON RADIO 4460 B25+B66 ERICSSON RADIO 4449 B71+B85

CABLE NOTE: EXISTING T-MOBILE ALL COAX CABLES, TO BE CAPPED, WRAPPED & REMOVED. (1) 1-3/4" (6x12) HCS FIBER CABLE & (1) 1/2" COAX CABLE USED FOR GPS ANTENNA TO REMAIN. SEE FEEDLINE SCHEDULE A & B BELOW.

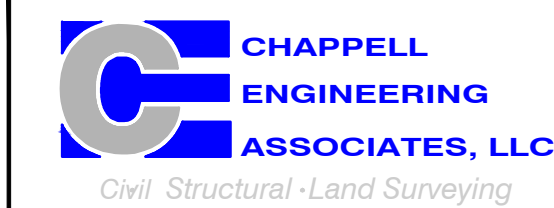
NOTE: RFDS REV6 - 03/07/22

FEEDLINE SCHEDULE		
SCHEDULE	FEEDLINES	LOCATION
A	EXISTING TO REMAIN: (1) 1/2" COAX CABLE FOR GPS ANTENNA, (1) 1-3/4" (6x12) HCS FIBER CABLE EXISTING TO BE REMOVED: ALL COAX CABLES, TO BE CAPPED, WRAPPED AND REMOVED.	ROUTED PER STRUCTURAL ANALYSIS
B	PROPOSED: (2) 1-3/4" (6x24) HCS FIBER CABLES	

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



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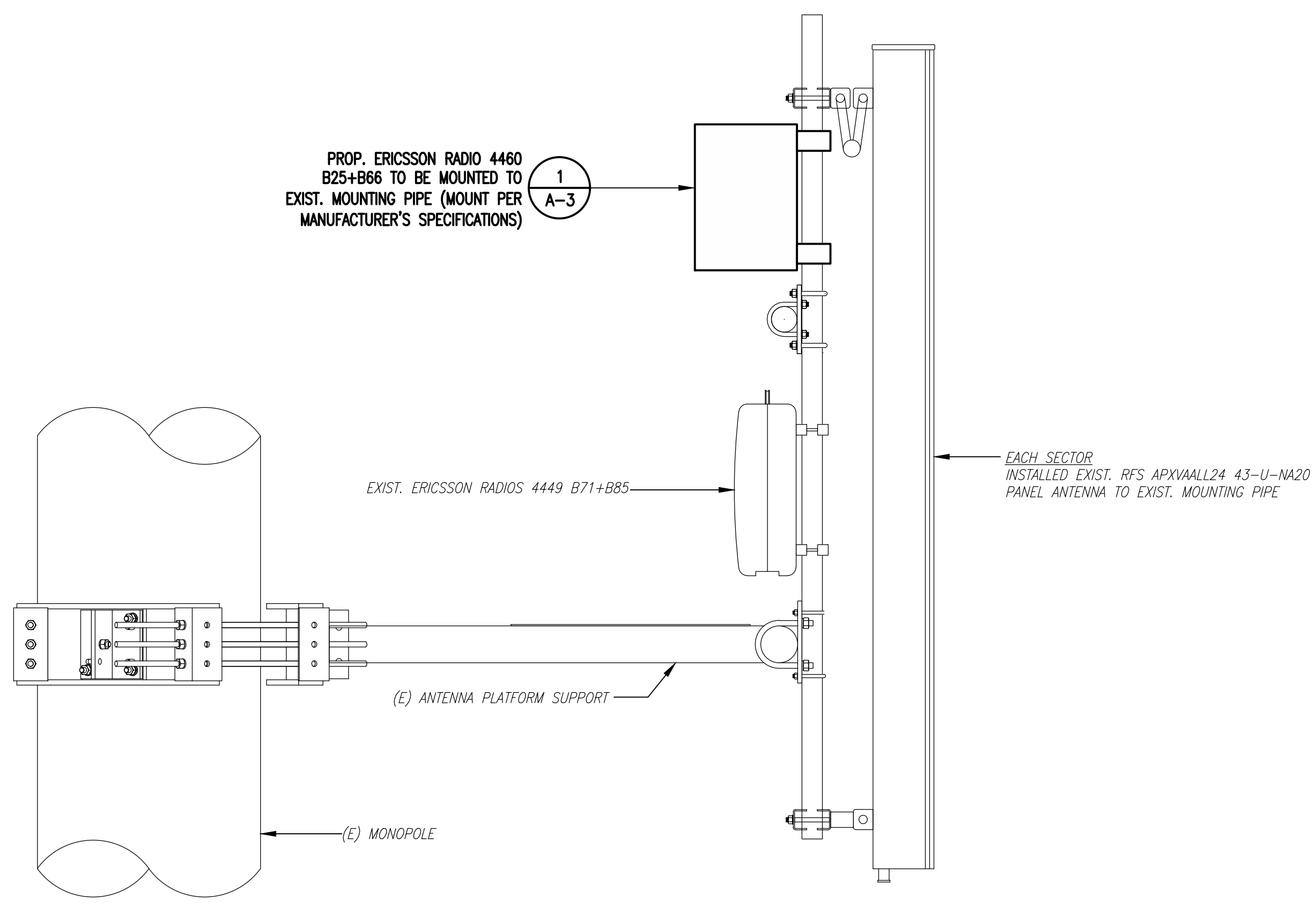
APPROVED BY: JMT

SUBMITTALS			
REV.	DATE	DESCRIPTION	BY
0	03/31/22	ISSUED FOR REVIEW	BDJ

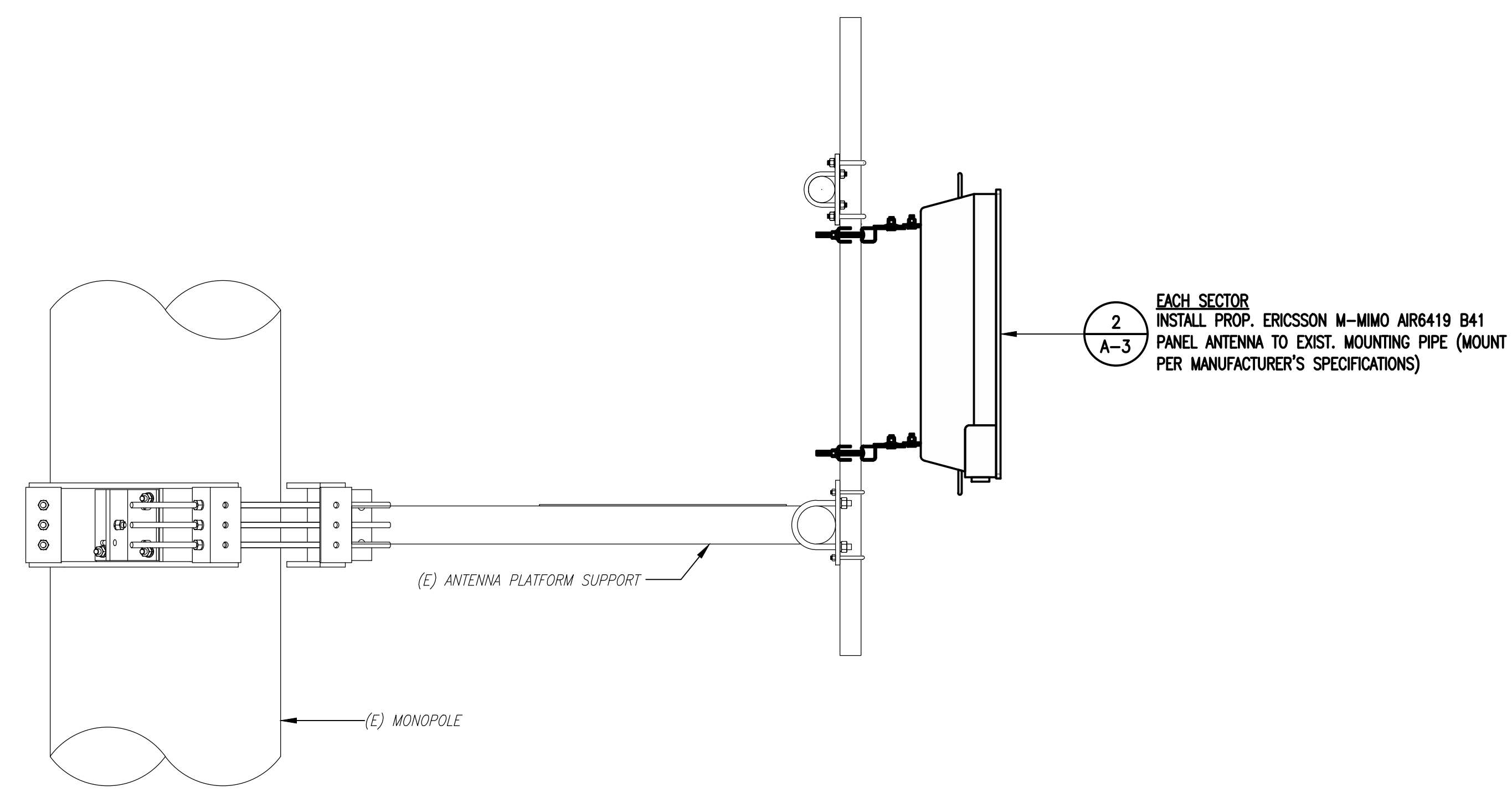
SITE NUMBER:
CT11386G
SITE ADDRESS:
56 FLOYDVILL ROAD
EAST GRANBY, CT 06026

SHEET TITLE
ANTENNA & RADIO MOUNTING DETAIL

SHEET NUMBER
S-1



ANTENNA & RADIO MOUNT DETAIL 1
SCALE: N.T.S. S-1

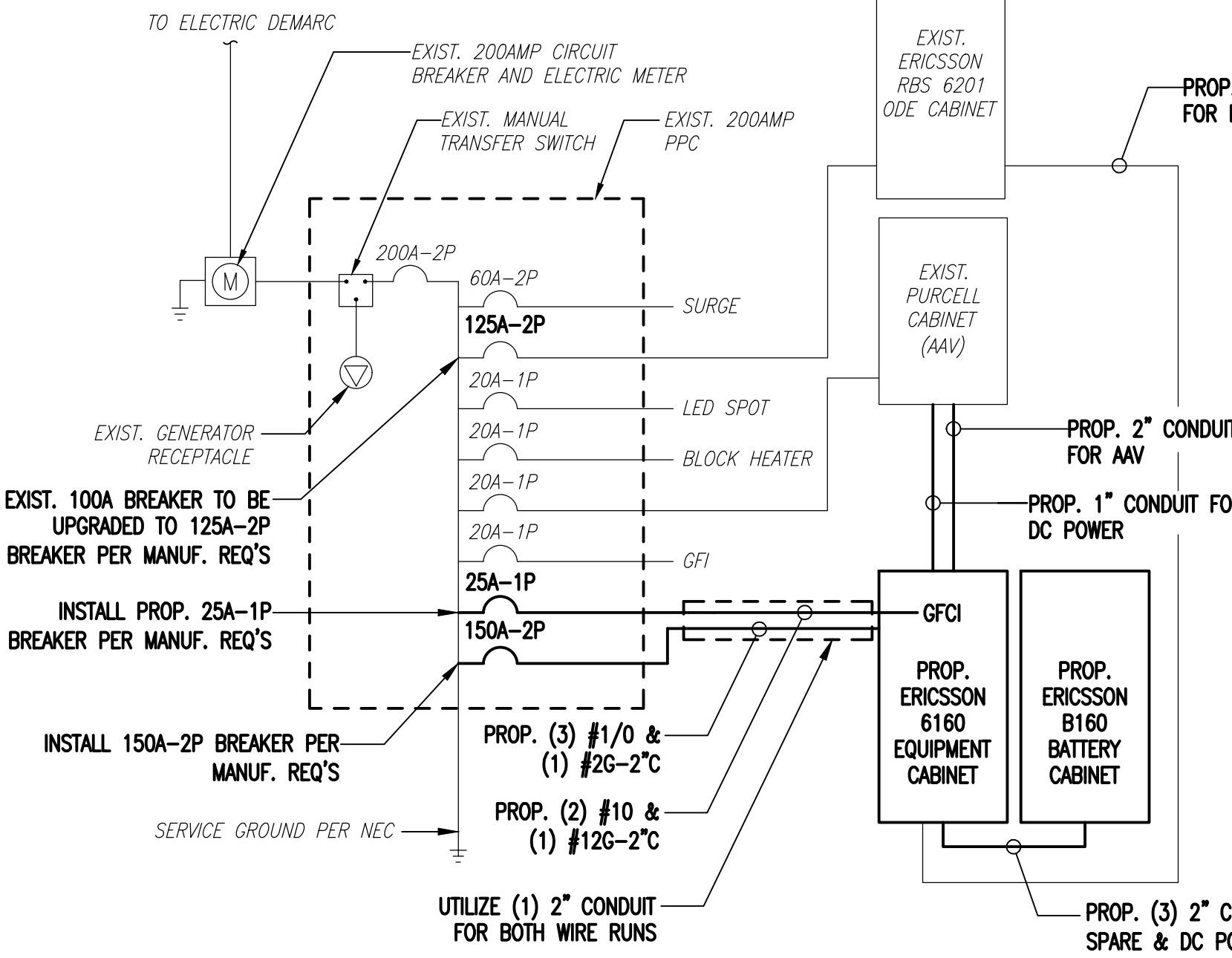


ANTENNA MOUNT DETAIL 2
SCALE: N.T.S. S-1



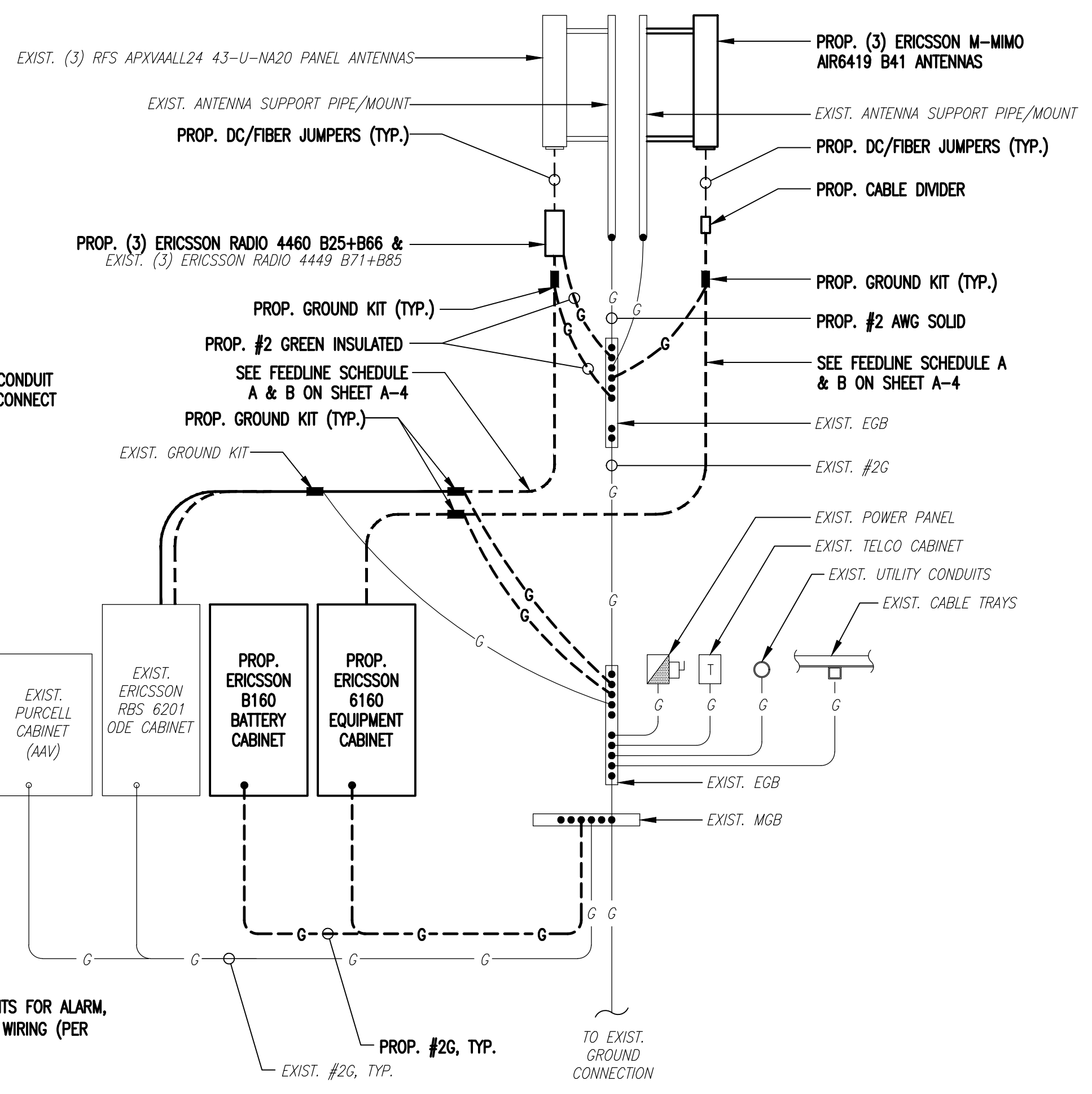
PPC PHOTO DETAIL
SCALE: NOT TO SCALE

1
E-1



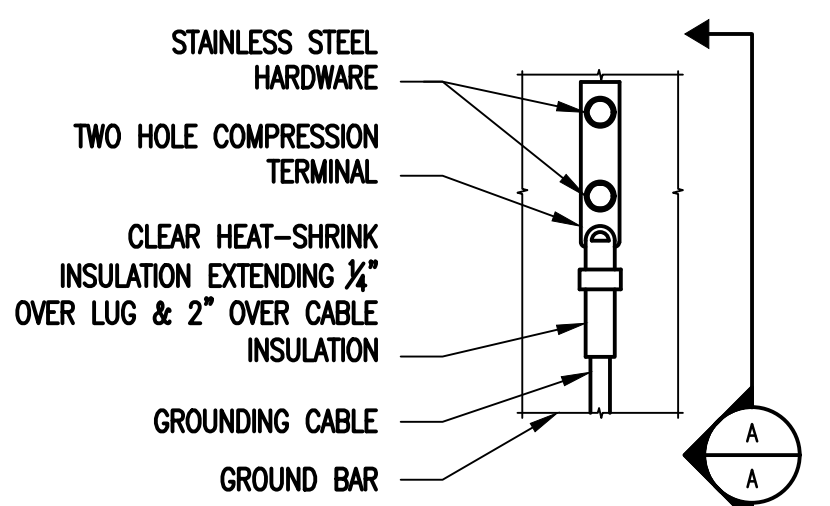
ONE LINE DIAGRAM
SCALE: NOT TO SCALE

2
E-1

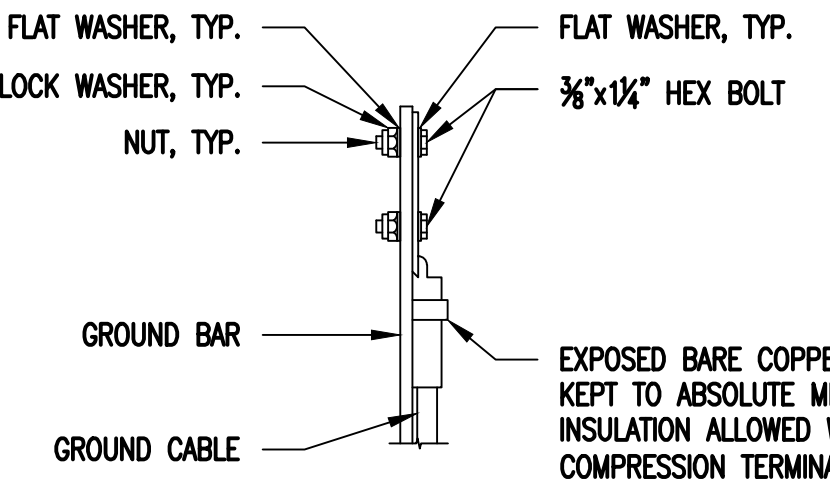


GROUNDING RISER DIAGRAM
SCALE: NOT TO SCALE

3
E-1



ELEVATION

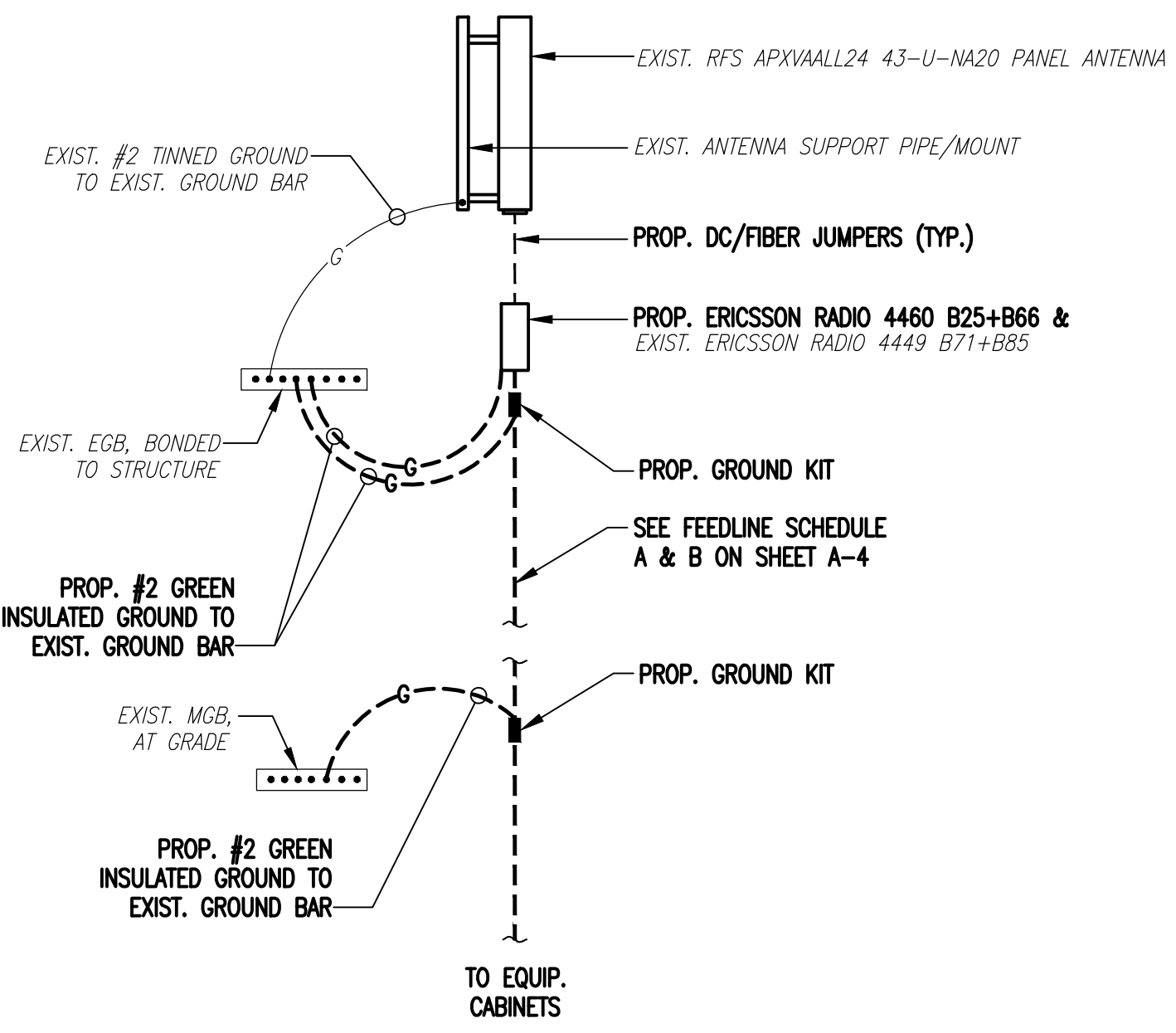


SECTION A-A

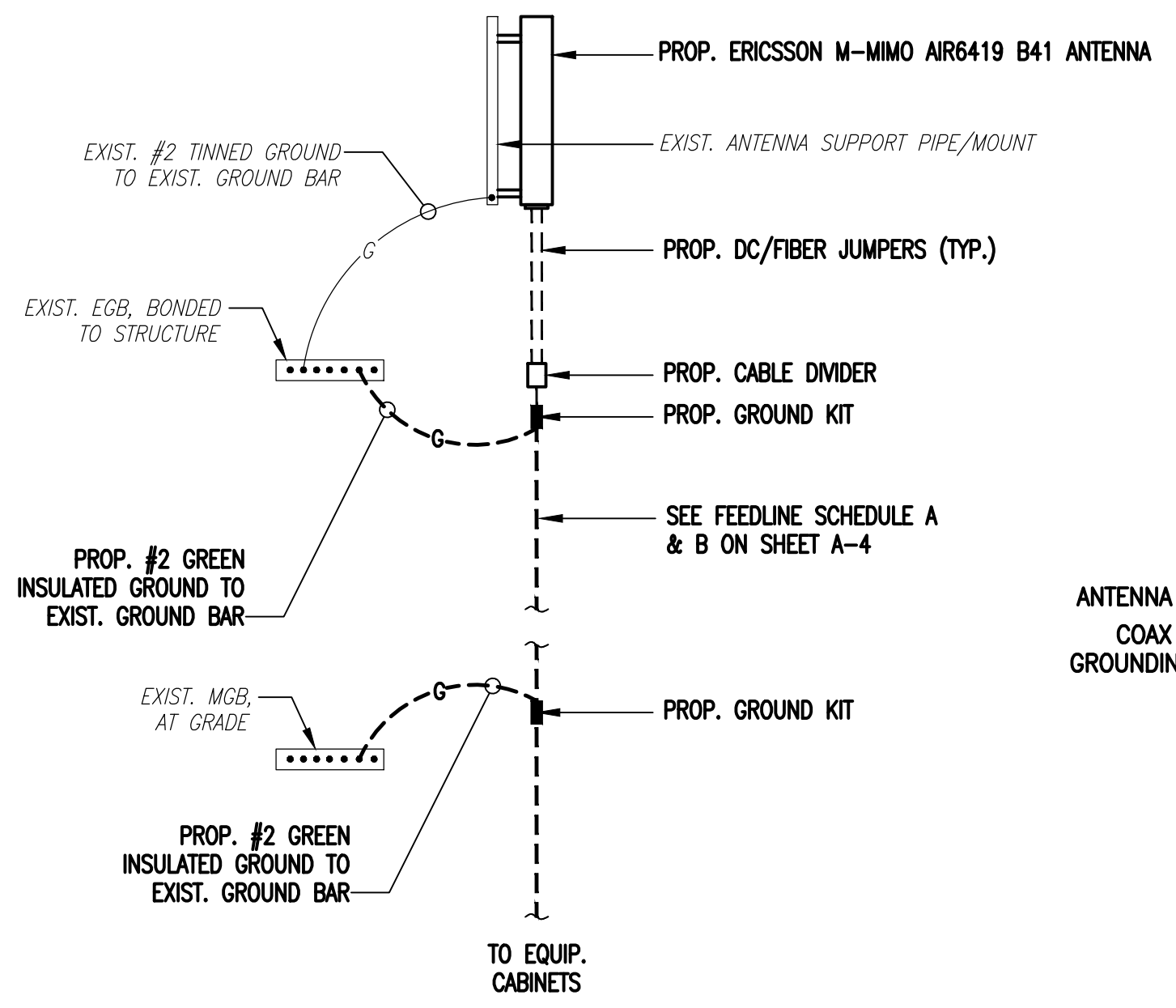
TYPICAL GROUND BAR CONNECTIONS DETAIL
SCALE: NOT TO SCALE

4
E-1

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



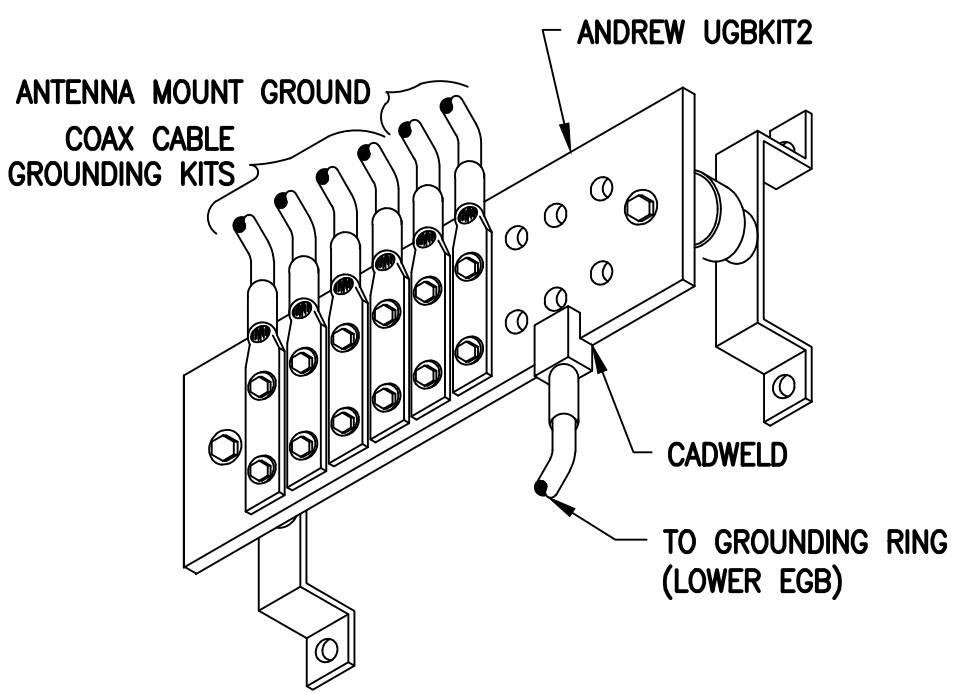
L600/N600/L700/G1900/L1900/L2100 ANTENNA



L2500/N2500 ANTENNA

COAX CABLE CONNECTION AND GROUNDING DETAIL
SCALE: NOT TO SCALE

5
E-1



GROUND BAR (EGB)
SCALE: NOT TO SCALE

6
E-1

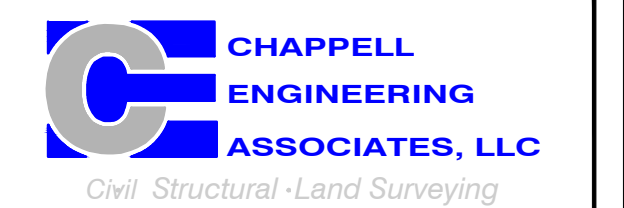
ELECTRICAL AND GROUNDING NOTES

- ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES.
- ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED PER SPECIFICATION REQUIREMENTS.
- THE ELECTRICAL WORK INCLUDES ALL LABOR AND MATERIAL DESCRIBED BY DRAWINGS AND SPECIFICATION INCLUDING INCIDENTAL WORK TO PROVIDE COMPLETE OPERATING AND APPROVED ELECTRICAL SYSTEM.
- GENERAL CONTRACTOR SHALL PAY FEES FOR PERMITS, AND IS RESPONSIBLE FOR OBTAINING SAID PERMITS AND COORDINATION OF INSPECTIONS.
- 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.
- BURIED CONDUIT SHALL BE SCHEDULE 40 PVC.
- ELECTRICAL WIRING SHALL BE COPPER WITH TYPE XHHW, THWN, OR THHN INSULATION.
- 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.
- 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.
- 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.
- ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.
- PPC SUPPLIED BY PROJECT OWNER.
- 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".
- GROUND COAXIAL CABLE SHIELDS MINIMUM AT BOTH ENDS USING MANUFACTURERS COAX CABLE GROUNDING KITS SUPPLIED BY PROJECT OWNER.
- 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.
- ALL GROUND CONNECTIONS TO BE BURNED HYDROGEN COMPRESSION TYPE CONNECTORS OR CADWELD EXOTHERMIC WELD. DO NOT ALLOW BARE COPPER WIRE TO BE IN CONTACT WITH GALVANIZED STEEL.
- 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.
- CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO HOLE COMPRESSION TYPE COPPER LUGS. APPLY OXIDE INHIBITING COMPOUND TO ALL LOCATIONS.
- APPLY OXIDE INHIBITING COMPOUND TO ALL COMPRESSION TYPE GROUND CONNECTIONS.
- 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.
- CONTRACTOR SHALL TEST COMPLETED GROUND SYSTEM AND RECORD RESULTS FOR PROJECT CLOSE-OUT DOCUMENTATION. 5 OHMS MINIMUM RESISTANCE REQUIRED.
- CONTRACTOR SHALL CONDUCT ANTENNA, COAX, AND LNA RETURN-LOSS AND DISTANCE- TO-FAULT MEASUREMENTS (SWEEP TESTS) AND RECORD RESULTS FOR PROJECT CLOSE OUT.

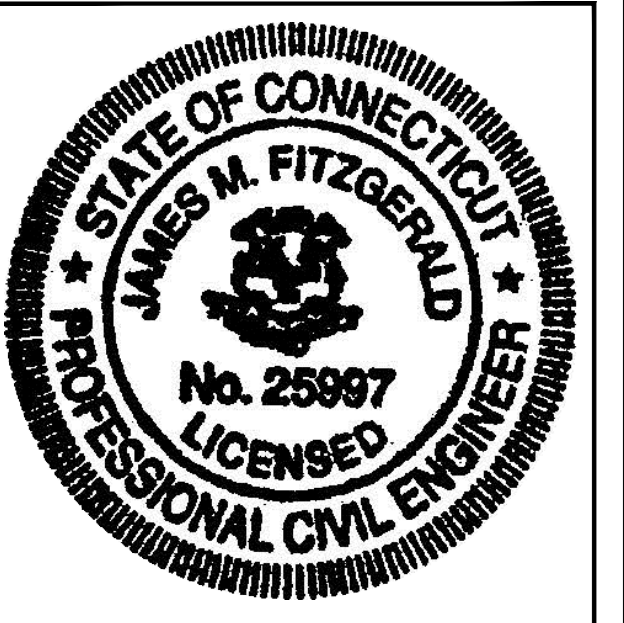
T-Mobile
T-MOBILE NORTHEAST LLC
15 COMMERCE WAY, SUITE B
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OFFICE: (508) 286-2700



SBA COMMUNICATIONS CORP.
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SUBMITTALS			
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SITE NUMBER:
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SITE ADDRESS:
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EAST GRANBY, CT 06026

SHEET TITLE
ELECTRICAL & GROUNDING DETAILS

SHEET NUMBER
E-1

Exhibit D

Structural Analysis Report



Tower Engineering Solutions

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

Structural Analysis Report

Existing 120 ft PIROD Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT03801-S

Customer Site Name: East Granby

Carrier Name: T-Mobile (App#: 192394, V1)

Carrier Site ID / Name: CT11386G / Simsbury North

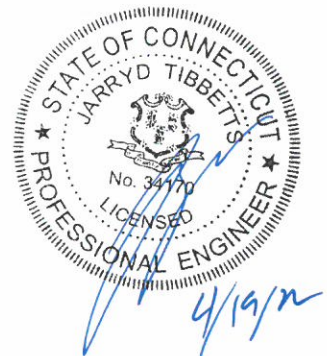
Site Location: 56 Floydville Road

East Granby, Connecticut

Hartford County

Latitude: 41.928649

Longitude: -72.776099



Analysis Result:

Max Structural Usage: 68.1% [Pass]

Max Foundation Usage: 48.0% [Pass]

Additional Usage Caused by Mount Modification: +1.0%

Report Prepared By: Praveen Shrestha



Tower Engineering Solutions

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

Structural Analysis Report

Existing 120 ft PIROD Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT03801-S

Customer Site Name: East Granby

Carrier Name: T-Mobile (App#: 192394, V1)

Carrier Site ID / Name: CT11386G / Simsbury North

Site Location: 56 Floydville Road

East Granby, Connecticut

Hartford County

Latitude: 41.928649

Longitude: -72.776099

Analysis Result:

Max Structural Usage: 68.1% [Pass]

Max Foundation Usage: 48.0% [Pass]

Additional Usage Caused by Mount Modification: +1.0%

Report Prepared By: Praveen Shrestha

Introduction

The purpose of this report is to summarize the analysis results on the 120 ft PIROD 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	PiRod Engineering, File A-118, 413-1, on June 14, 2001.
Foundation Drawing	PiRod Engineering, File A-118, 413-1, on June 14, 2001.
Geotechnical Report	Jaworski Geotech, Inc., Project #00729G, on May 11, 2001.
Modification Drawings	N/A
Mount Analysis	TES Project Number: 127671, dated 04/13/22.

Analysis Criteria

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

Wind Speed Used in the Analysis:	Ultimate Design Wind Speed $V_{ult} = 120$ mph (3-Sec. Gust)/ Nominal Design Wind Speed $V_{asd} = 93.0$ mph (3-Sec. Gust)
Wind Speed with Ice:	50 mph (3-Sec. Gust) with 1" radial ice concurrent
Operational Wind Speed:	60 mph + 0" Radial ice
Standard/Codes:	TIA-222-G-2 / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	C
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft
Seismic Parameters:	$S_S = 0.177$, $S_1 = 0.065$

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

Existing Antennas, Mounts and Transmission Lines

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

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	118.0	6	Commscope NHH-65B-R2B- Panel	Low Profile Platform, (3) Support Rail SP1: VZW SMART-PLK3, (1) KICKER KIT SP1: VZW SMART-PLK5, (1) MP COLLAR SP1: VZW SMART-PLK7, (3) Commscope BSAMNT-SBS-1-2	(2) 1 5/8" Hybrid (1) 1/2" (12) 1 5/8"	Verizon
2		3	Samsung MT6407-77A - Panel			
3		3	Samsung RF4439d-25A RRU			
4		3	Samsung RF4440d-13A RRU			
5		1	Raycap 12 OVP			
6	117.0	3	Andrew HBXX-6517DS-A2M Panel			
7		1	Lucent KS24019-L112A GPS			
-	107.0	3	Ericsson KRY 112 144/1 RRU	Low Profile Platform w/ (1) Metrosite Support Rail w/ End connection: MSHRCEP- 35 (1) Metrosite Light collar mount: MS-1436 (1) Metrosite Kicker Support: MS-K122-5	(12) 1 5/8" (1) 1 5/8" Fiber	T-Mobile
-		6	Ericsson KRY 112 489/2 RRU			
-		3	Ericsson Radio 4449 B71+B12 RRU			
-		3	RFS APXVAARR24_43-U-NA20 Panel			
14	97.0	3	Fujitsu TA08025-B605 RRU	(1) Commscope MC-PK8- DSH (Platform w/ Handrails)	(1) 1.6" Hybrid	Dish Wireless
15		3	Fujitsu TA08025-B604 RRU			
16		1	Raycap RDIDC-9181-PF-48			
17		3	JMA Wireless MX08FRO665-21 Panel			
18	87.0	3	Powerwave 7770 - Panel	Low Profile Platform (1) SitePro1 PRK-1245L (reinforcement Kit) (1) SitePro1 HRK-12 (Handrail Kit)	(12) 1 5/8" (2) 1/2" Fiber (1) 2" Conduit (1) 3" Conduit (4) 3/4" DC	AT&T*
19		3	CCI HPA-65R-BU8AA - Panel			
20		3	Kathrein 800 10966 - Panel			
21		6	Powerwave TT19-08BP111-001 TMA			
22		6	Powerwave 21903 Diplexer			
23		3	Ericsson RRUS 8843 B2 B66A -RRU			
24		3	Ericsson RRUS 4449 B5 -RRU			
25		1	Raycap DC6-48-60-18-8F			
26		1	Raycap DC6-48-60-18-8C			

**(1) 3" Conduit housing (2) 3/4" DC & (1) 1/2" Fiber; (1) 2" Conduit housing (2) 3/4" DC & (1) 1/2" Fiber*

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

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

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
8	110.0	3	RFS APXVAALL24_43-U-NA20 Panel	Low Profile Platform w/ (1) Metrosite Support Rail w/ End connection: MSHRCEP- 35 (1) Metrosite Light collar mount: MS-1436 (1) Metrosite Kicker Support: MS-K122-5 (1) Site Pro Support Rail Bracing Kit	(9) 1-5/8" Coax (1) 1-5/8" Fiber (2) 1.9" Fiber	T-Mobile
9		3	Ericsson AIR6419 B41 Panel			
10		3	Ericsson KRY 112 144/1 TMA			
11		6	Ericsson KRY 112 489/2 TMA			
12		3	Ericsson 4449 B71 + B85 RRU			
13		3	Ericsson 4460 B25 + B66 RRU			

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:	57.1%	50.2%	68.1%
Pass/Fail	Pass	Pass	Pass

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Analysis Reactions	2717.3	30.8	80.7

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 0.6645 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 57.11% at 0.0ft

Structure: CT03801-S-SBA
Site Name: East Granby
Height: 120.00 (ft)
Base Elev: 0.000 (ft)

Code: EIA/TIA-222-G
Exposure: C
Gh: 1.1

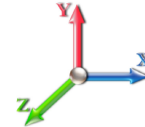
4/19/2022



Page: 1

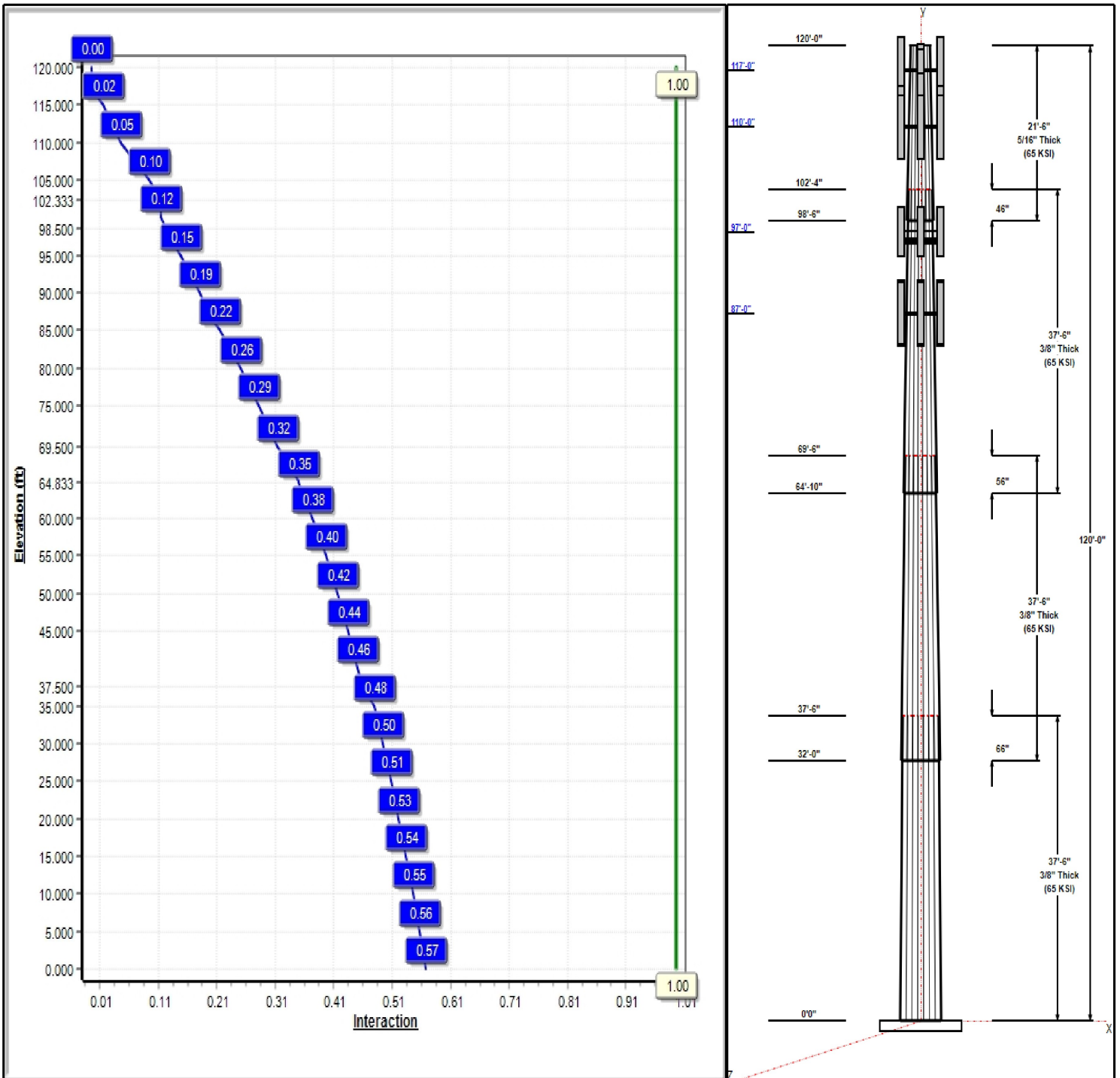
Dead Load Factor: 1.20
Wind Load Factor: 1.60

Load Case : 1.2D + 1.6W 93 mph Wind



Iterations: 20

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Structure: CT03801-S-SBA

Type: Tapered
Site Name: East Granby
Height: 120.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 16 Sided
Taper: 0.28333

4/19/2022

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Shaft Properties

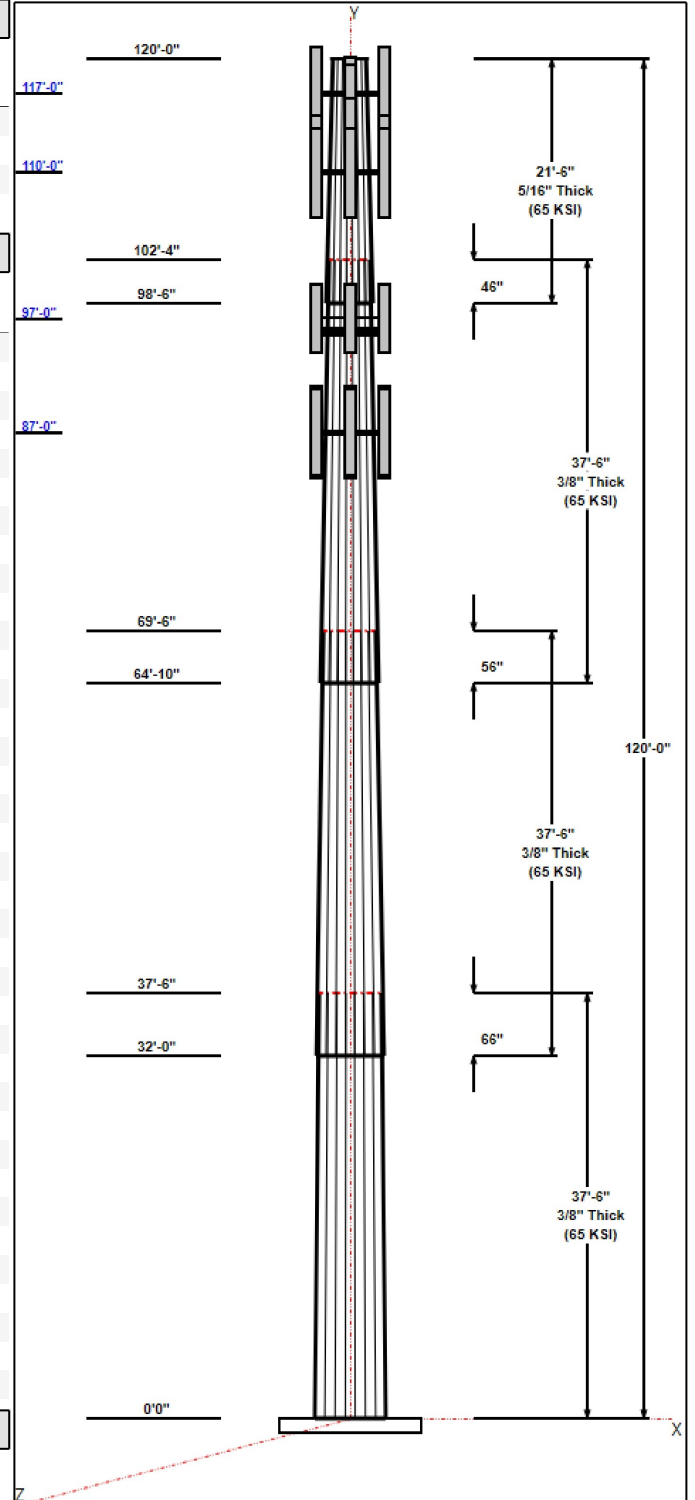
Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	37.50	45.50	56.13	0.375		0.28333	65
2	37.50	37.18	47.81	0.375	Slip	0.28333	65
3	37.50	28.63	39.26	0.375	Slip	0.28333	65
4	21.50	24.25	30.34	0.313	Slip	0.28333	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
117.00	117.00	3	HBXX-6517DS-VTM	Verizon
117.00	117.00	1	GPS	Verizon
117.00	117.00	1	Low Profile	Verizon
117.00	118.00	6	NHH-65B-R2B	Verizon
117.00	118.00	3	MT6407-77A	Verizon
117.00	118.00	3	RF4439d-25A	Verizon
117.00	118.00	3	RF4440d-13A	Verizon
117.00	118.00	1	12	Verizon
117.00	117.00	3	BSAMNT-SBS-1-2	Verizon
117.00	117.00	1	Support Rail Kit	T-Mobile
117.00	117.00	1	Kickers w/o Collar	T-Mobile
117.00	117.00	1	Collar Mount	T-Mobile
110.00	110.00	3	APXVAALL24_43-U-NA20	T-Mobile
110.00	110.00	3	AIR6419 B41	T-Mobile
110.00	110.00	3	4449 B71 + B85	T-Mobile
110.00	110.00	3	4460 B25 + B66	T-Mobile
110.00	110.00	3	KRY 112 144/1	T-Mobile
110.00	110.00	6	KRY 112 489/2	T-Mobile
110.00	110.00	1	Support Rail Bracing Kit	T-Mobile
110.00	110.00	1	Platform w/ Hand Rail	T-Mobile
97.00	97.00	3	MX08FRO665-21	Dish Wireless
97.00	97.00	1	MC-PK8-DSH	Dish Wireless
97.00	97.00	3	TA08025-B605	Dish Wireless
97.00	97.00	3	TA08025-B604	Dish Wireless
97.00	97.00	1	RDIDC-9181-PF-48	Dish Wireless
87.00	87.00	3	7770.00	AT&T
87.00	87.00	3	HPA-65R-BUU-H8	AT&T
87.00	87.00	3	800 10966	AT&T
87.00	87.00	1	Low Profile	AT&T
87.00	87.00	1	PRK-1245 (kicker kit)	AT&T
87.00	87.00	1	HRK12 (Handrail Kit)	AT&T
87.00	87.00	6	TT19-08BP111-001	AT&T
87.00	87.00	6	LGP21903	AT&T
87.00	87.00	3	B2 B66A 8843	AT&T
87.00	87.00	3	4449 B5/B12	AT&T
87.00	87.00	1	DC6-48-60-18-8F(23.5")	AT&T
87.00	87.00	1	DC6-48-60-18-8C	AT&T

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	117.00	Inside	1 5/8" Coax	Verizon
0.00	117.00	Inside	1 5/8" Fiber	Verizon
0.00	117.00	Inside	1/2" Coax	Verizon
0.00	110.00	Inside	1 5/8" Coax	T-Mobile
0.00	110.00	Inside	1 5/8" Fiber	T-Mobile



Structure: CT03801-S-SBA

Type: Tapered
Site Name: East Granby
Height: 120.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 16 Sided
Taper: 0.28333

4/19/2022

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0.00	110.00	Inside	1.9" Fiber	T-Mobile
0.00	97.00	Outside	1.6" Hybrid	Dish Wireless
0.00	87.00	Inside	1 5/8" Coax	AT&T
0.00	87.00	Inside	1/2" Fiber	AT&T
0.00	87.00	Inside	2" Conduit	AT&T
0.00	87.00	Inside	3" Conduit	AT&T
0.00	87.00	Inside	3/4" DC	AT&T

Anchor Bolts

Qty	Specifications	Grade (ksi)	Arrangement
39	1.25" A687	105.0	Radial

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
1.5000	65.0	50.0	Round

Reactions

Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 93 mph Wind	2717.3	30.8	46.1
0.9D + 1.6W 93 mph Wind	2698.7	30.8	34.6
1.2D + 1.0Di + 1.0Wi 50 mph Wind	863.2	9.6	80.7
1.2D + 1.0E	181.9	1.8	46.1
0.9D + 1.0E	180.5	1.8	34.6
1.0D + 1.0W 60 mph Wind	703.9	8.0	38.5

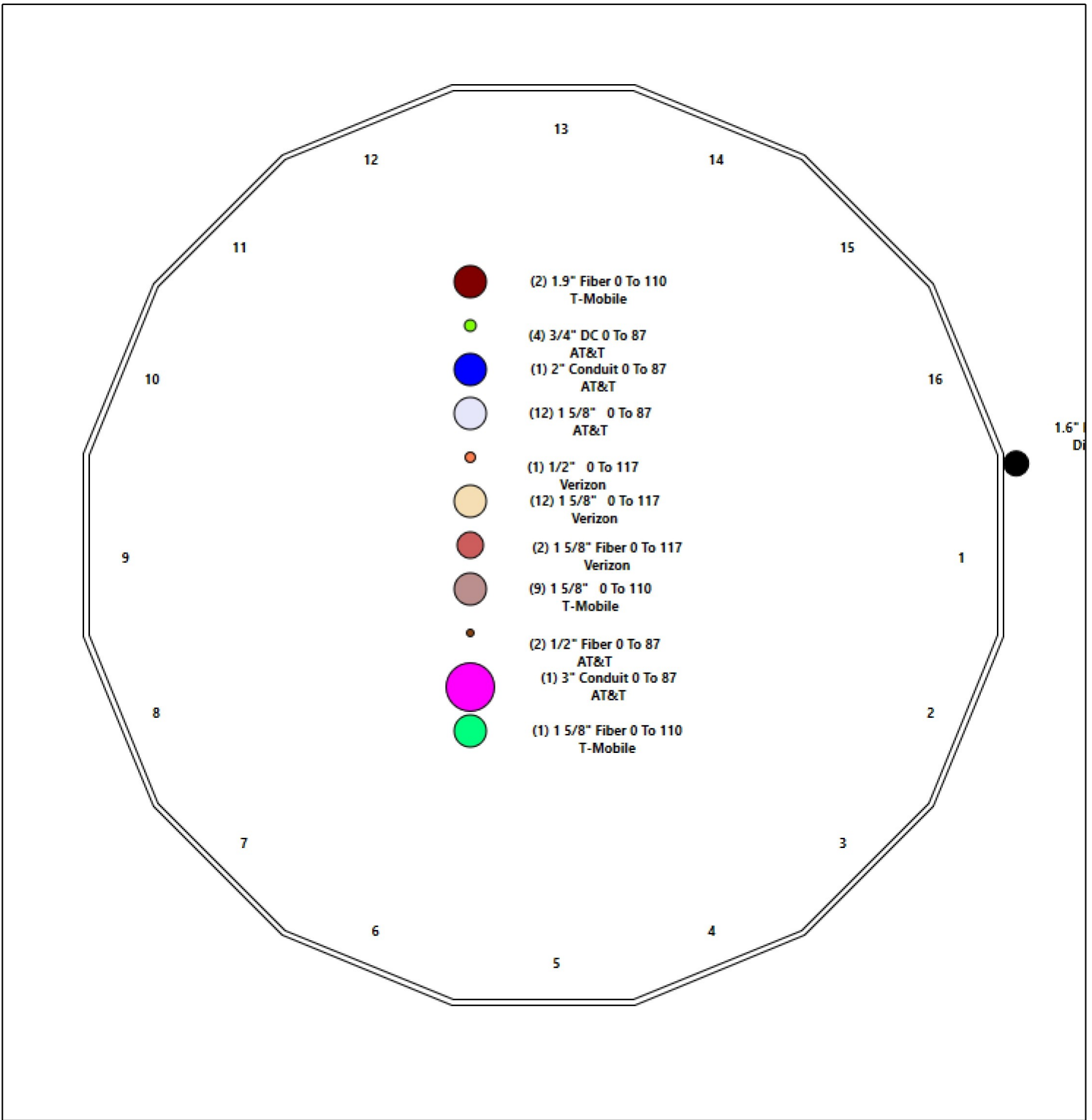
Structure: CT03801-S-SBA - Coax Line Placement

Type: Monopole
Site Name: East Granby
Height: 120.00 (ft)

4/19/2022



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Shaft Properties

Structure: CT03801-S-SBA	Code: TIA-222-G	4/19/2022
Site Name: East Granby	Exposure: C	
Height: 120.00 (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

Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	16	37.500	0.3750	65		0.00	7,699
2	16	37.500	0.3750	65	Slip	66.00	6,430
3	16	37.500	0.3750	65	Slip	56.00	5,124
4	16	21.500	0.3125	65	Slip	46.00	1,968
Total Shaft Weight:							21,221

Bottom

Top

Sec. No.	Dia (in)	Elev (ft)	Area (sqin)	Ix (in^4)	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (sqin)	Ix (in^4)	W/t Ratio	D/t Ratio	Taper
1	56.13	0.00	66.69	26186.11	28.18	149.67	45.50	37.50	53.98	13886.3	22.54	121.3	0.283333
2	47.81	32.00	56.74	16128.25	23.77	127.49	37.18	69.50	44.03	7536.59	18.13	99.16	0.283333
3	39.26	64.83	46.51	8882.47	19.23	104.68	28.63	102.33	33.80	3409.16	13.60	76.35	0.283333
4	30.34	98.50	29.94	3410.24	17.72	97.09	24.25	120.00	23.86	1727.39	13.84	77.60	0.283333

Load Summary

Structure: CT03801-S-SBA	Code: TIA-222-G	4/19/2022
Site Name: East Granby	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Discrete Appurtenances

No.	Elev (ft)	Description	Qty	No Ice			Ice			Hor. Ecc. (ft)	Vert Ecc (ft)
				Weight (lb)	CaAa (sf)	CaAa Factor	Weight (lb)	CaAa (sf)	CaAa Factor		
1	117.00	HBXX-6517DS-VTM	3	40.70	8.55	0.77	269.92	12.346	0.79	0.00	0.00
2	117.00	GPS	1	10.00	1.00	0.50	48.13	1.926	0.52	0.00	0.00
3	117.00	Low Profile Platform-Round	1	1500.00	32.00	1.00	3202.39	65.412	1.00	0.00	0.00
4	117.00	NHH-65B-R2B	6	43.70	8.08	0.83	321.20	9.795	0.83	0.00	1.00
5	117.00	MT6407-77A	3	79.40	4.69	0.70	244.87	5.939	0.70	0.00	1.00
6	117.00	RF4439d-25A	3	62.80	1.46	0.67	117.59	2.100	0.67	0.00	1.00
7	117.00	RF4440d-13A	3	62.80	1.46	0.67	117.59	2.100	0.67	0.00	1.00
8	117.00	12	1	38.00	1.46	1.00	118.42	2.364	1.00	0.00	1.00
9	117.00	BSAMNT-SBS-1-2	3	25.35	0.00	1.00	48.37	0.000	1.00	0.00	0.00
10	117.00	Support Rail Kit	1	430.00	8.75	1.00	1093.70	19.872	1.00	0.00	0.00
11	117.00	Kickers w/o Collar	1	146.00	5.33	1.00	411.12	12.589	1.00	0.00	0.00
12	117.00	Collar Mount	1	136.70	2.25	1.00	384.93	5.314	1.00	0.00	0.00
13	110.00	APXVAALL24_43-U-NA20	3	122.80	20.24	0.73	696.02	22.723	0.73	0.00	0.00
14	110.00	AIR6419 B41	3	103.00	5.65	0.71	280.24	6.879	0.71	0.00	0.00
15	110.00	4449 B71 + B85	3	73.20	1.97	0.67	147.84	2.706	0.67	0.00	0.00
16	110.00	4460 B25 + B66	3	72.00	1.64	0.67	132.55	2.282	0.67	0.00	0.00
17	110.00	KRY 112 144/1	3	11.00	0.41	0.67	24.94	1.024	0.67	0.00	0.00
18	110.00	KRY 112 489/2	6	0.10	0.01	0.67	0.10	0.010	0.67	0.00	0.00
19	110.00	Support Rail Bracing Kit	1	496.00	8.25	1.00	1256.87	18.672	1.00	0.00	0.00
20	110.00	Platform w/ Hand Rail (round)	1	1600.00	32.00	1.00	4314.29	68.094	1.00	0.00	0.00
21	97.00	MX08FRO665-21	3	64.50	12.49	0.74	435.79	14.360	0.74	0.00	0.00
22	97.00	MC-PK8-DSH	1	1727.00	37.59	1.00	3881.45	97.882	1.00	0.00	0.00
23	97.00	TA08025-B605	3	75.00	1.96	0.67	141.76	2.676	0.67	0.00	0.00
24	97.00	TA08025-B604	3	63.90	1.96	0.67	128.53	2.676	0.67	0.00	0.00
25	97.00	RDIDC-9181-PF-48	1	21.90	2.01	1.00	89.87	2.735	1.00	0.00	0.00
26	87.00	7770.00	3	35.00	5.50	0.73	216.01	6.868	0.75	0.00	0.00
27	87.00	HPA-65R-BUU-H8	3	68.00	12.98	0.79	451.53	15.052	0.81	0.00	0.00
28	87.00	800 10966	3	125.70	17.36	0.72	594.38	19.668	0.74	0.00	0.00
29	87.00	Low Profile Platform-Round	1	1500.00	22.00	1.00	3152.69	44.300	1.00	0.00	0.00
30	87.00	PRK-1245 (kicker kit)	1	464.91	9.50	1.00	874.70	22.061	1.00	0.00	0.00
31	87.00	HRK12 (Handrail Kit)	1	261.72	6.75	1.00	653.89	15.080	1.00	0.00	0.00
32	87.00	TT19-08BP111-001	6	16.00	0.64	0.90	41.55	1.389	0.92	0.00	0.00
33	87.00	LGP21903	6	5.50	0.27	0.84	16.14	0.772	0.86	0.00	0.00
34	87.00	B2 B66A 8843	3	70.00	1.64	0.85	128.06	2.292	0.87	0.00	0.00
35	87.00	4449 B5/B12	3	71.00	1.97	0.86	138.40	2.661	0.88	0.00	0.00
36	87.00	DC6-48-60-18-8F(23.5" Height)	1	20.00	1.26	1.00	86.62	2.093	1.00	0.00	0.00
37	87.00	DC6-48-60-18-8C	1	20.00	1.26	1.00	86.62	2.093	1.00	0.00	0.00
Totals:			93	12,442.48			34,872.81				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	117.00	(12) 1 5/8" Coax	0.00	Inside
0.00	117.00	(2) 1 5/8" Fiber	0.00	Inside
0.00	117.00	(1) 1/2" Coax	0.00	Inside
0.00	110.00	(9) 1 5/8" Coax	0.00	Inside

Discrete Appurtenances

No.	Elev (ft)	Description	Qty	No Ice			Ice			Hor. Ecc. (ft)	Vert Ecc (ft)
				Weight (lb)	CaAa (sf)	CaAa Factor	Weight (lb)	CaAa (sf)	CaAa Factor		
0.00	110.00	(1) 1 5/8" Fiber		0.00							
0.00	110.00	(2) 1.9" Fiber		0.00							
0.00	97.00	(1) 1.6" Hybrid		1.60							
0.00	87.00	(12) 1 5/8" Coax		0.00							
0.00	87.00	(2) 1/2" Fiber		0.00							
0.00	87.00	(1) 2" Conduit		0.00							
0.00	87.00	(1) 3" Conduit		0.00							
0.00	87.00	(4) 3/4" DC		0.00							

Shaft Section Properties

Structure: CT03801-S-SBA	Code: TIA-222-G	4/19/2022
Site Name: East Granby	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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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		0.3750	56.125	66.691	26186.1	28.18	149.67	70.7	915.2	0.0
5.00		0.3750	54.708	64.996	24240.2	27.43	145.89	71.5	869.1	1120.3
10.00		0.3750	53.292	63.302	22393.1	26.68	142.11	72.4	824.2	1091.4
15.00		0.3750	51.875	61.607	20642.3	25.92	138.33	73.2	780.6	1062.6
20.00		0.3750	50.458	59.912	18985.2	25.17	134.56	74.1	738.1	1033.8
25.00		0.3750	49.042	58.218	17419.3	24.42	130.78	74.9	696.7	1004.9
30.00		0.3750	47.625	56.523	15942.0	23.67	127.00	75.8	656.6	976.1
32.00	Bot - Section 2	0.3750	47.058	55.845	15375.2	23.37	125.49	76.1	640.9	382.4
35.00		0.3750	46.208	54.828	14550.6	22.92	123.22	76.6	617.7	1138.9
37.50	Top - Section 1	0.3750	46.250	54.878	14590.3	22.94	123.33	0.0	0.0	933.3
40.00		0.3750	45.542	54.031	13924.8	22.57	121.44	77.0	599.8	463.2
45.00		0.3750	44.125	52.336	12655.2	21.81	117.67	77.9	562.6	904.9
50.00		0.3750	42.708	50.641	11465.3	21.06	113.89	78.7	526.6	876.0
55.00		0.3750	41.292	48.947	10352.3	20.31	110.11	79.6	491.8	847.2
60.00		0.3750	39.875	47.252	9313.8	19.56	106.33	80.4	458.2	818.4
64.83	Bot - Section 3	0.3750	38.506	45.614	8378.3	18.83	102.68	81.3	426.8	763.7
65.00		0.3750	38.458	45.557	8347.2	18.81	102.56	81.3	425.7	52.2
69.50	Top - Section 2	0.3750	37.933	44.929	8006.7	18.53	101.16	0.0	0.0	1385.6
70.00		0.3750	37.792	44.760	7916.5	18.45	100.78	81.7	410.9	76.3
75.00		0.3750	36.375	43.065	7050.9	17.70	97.00	82.5	380.2	747.1
80.00		0.3750	34.958	41.370	6250.8	16.95	93.22	82.5	350.7	718.3
85.00		0.3750	33.542	39.676	5513.7	16.20	89.44	82.5	322.4	689.5
87.00		0.3750	32.975	38.998	5235.9	15.90	87.93	82.5	311.5	267.7
90.00		0.3750	32.125	37.981	4836.9	15.45	85.67	82.5	295.3	392.9
95.00		0.3750	30.708	36.286	4217.9	14.70	81.89	82.5	269.4	631.8
97.00		0.3750	30.142	35.608	3985.9	14.40	80.38	82.5	259.4	244.6
98.50	Bot - Section 4	0.3750	29.717	35.100	3817.6	14.17	79.24	82.5	252.0	180.5
100.00		0.3750	29.292	34.592	3654.1	13.95	78.11	82.5	244.7	329.6
102.33	Top - Section 3	0.3125	29.256	28.853	3053.4	17.03	93.62	0.0	0.0	503.2
105.00		0.3125	28.500	28.099	2820.5	16.55	91.20	82.5	194.1	258.4
110.00		0.3125	27.083	26.687	2416.2	15.65	86.67	82.5	175.0	466.1
115.00		0.3125	25.667	25.275	2052.6	14.75	82.13	82.5	156.9	442.0
117.00		0.3125	25.100	24.710	1918.0	14.39	80.32	82.5	149.9	170.1
120.00		0.3125	24.250	23.863	1727.4	13.84	77.60	82.5	139.7	247.9
										21220.7

Wind Loading - Shaft

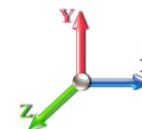
Structure: CT03801-S-SBA	Code: TIA-222-G	4/19/2022
Site Name: East Granby	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Page: 9
	Struct Class: II	



Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 20

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	17.879	19.67	408.88	0.750	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	17.879	19.67	398.56	0.750	0.000	5.00	23.543	17.66	555.6	0.0	1344.3
10.00		1.00	0.85	17.879	19.67	388.24	0.750	0.000	5.00	22.941	17.21	541.4	0.0	1309.7
15.00		1.00	0.85	17.879	19.67	377.92	0.750	0.000	5.00	22.339	16.75	527.2	0.0	1275.1
20.00		1.00	0.90	18.971	20.87	378.65	0.750	0.000	5.00	21.737	16.30	544.3	0.0	1240.5
25.00		1.00	0.95	19.883	21.87	376.76	0.750	0.000	5.00	21.135	15.85	554.7	0.0	1205.9
30.00		1.00	0.98	20.661	22.73	372.97	0.750	0.000	5.00	20.533	15.40	560.0	0.0	1171.3
32.00	Bot - Section 2	1.00	1.00	20.944	23.04	371.04	0.750	0.000	2.00	8.045	6.03	222.4	0.0	458.8
35.00		1.00	1.01	21.343	23.48	367.80	0.750	0.000	3.00	12.078	9.06	340.3	0.0	1366.7
37.50	Top - Section 1	1.00	1.03	21.655	23.82	364.80	0.750	0.000	2.50	9.899	7.42	283.0	0.0	1119.9
40.00		1.00	1.04	21.951	24.15	367.62	0.750	0.000	2.50	9.749	7.31	282.5	0.0	555.9
45.00		1.00	1.07	22.502	24.75	360.63	0.750	0.000	5.00	19.047	14.28	565.7	0.0	1085.8
50.00		1.00	1.09	23.007	25.31	352.94	0.750	0.000	5.00	18.445	13.83	560.1	0.0	1051.2
55.00		1.00	1.12	23.473	25.82	344.68	0.750	0.000	5.00	17.843	13.38	552.9	0.0	1016.6
60.00		1.00	1.14	23.907	26.30	335.91	0.750	0.000	5.00	17.241	12.93	544.1	0.0	982.0
64.83	Bot - Section 3	1.00	1.16	24.300	26.73	327.03	0.750	0.000	4.83	16.094	12.07	516.2	0.0	916.4
65.00		1.00	1.16	24.313	26.74	326.72	0.750	0.000	0.17	0.556	0.42	17.8	0.0	62.7
69.50	Top - Section 2	1.00	1.17	24.658	27.12	318.12	0.750	0.000	4.50	14.747	11.06	480.0	0.0	1662.7
70.00		1.00	1.17	24.696	27.17	323.57	0.750	0.000	0.50	1.609	1.21	52.4	0.0	91.6
75.00		1.00	1.19	25.057	27.56	313.71	0.750	0.000	5.00	15.754	11.82	521.1	0.0	896.5
80.00		1.00	1.21	25.400	27.94	303.55	0.750	0.000	5.00	15.152	11.36	508.0	0.0	861.9
85.00		1.00	1.22	25.726	28.30	293.11	0.750	0.000	5.00	14.550	10.91	494.1	0.0	827.3
87.00	Appurtenance(s)	1.00	1.23	25.852	28.44	288.87	0.750	0.000	2.00	5.652	4.24	192.9	0.0	321.2
90.00		1.00	1.24	26.037	28.64	282.43	0.750	0.000	3.00	8.297	6.22	285.2	0.0	471.5
95.00		1.00	1.25	26.336	28.97	271.51	0.750	0.000	5.00	13.347	10.01	464.0	0.0	758.1
97.00	Appurtenance(s)	1.00	1.26	26.451	29.10	267.09	0.750	0.000	2.00	5.170	3.88	180.5	0.0	293.6
98.50	Bot - Section 4	1.00	1.26	26.537	29.19	263.75	0.750	0.000	1.50	3.814	2.86	133.6	0.0	216.5
100.00		1.00	1.27	26.621	29.28	260.39	0.750	0.000	1.50	3.840	2.88	134.9	0.0	395.5
102.33	Top - Section 3	1.00	1.27	26.751	29.43	255.13	0.750	0.000	2.33	5.866	4.40	207.1	0.0	603.9
105.00		1.00	1.28	26.896	29.59	254.66	0.750	0.000	2.67	6.543	4.91	232.3	0.0	310.1
110.00	Appurtenance(s)	1.00	1.29	27.161	29.88	243.19	0.750	0.000	5.00	11.807	8.86	423.3	0.0	559.3
115.00		1.00	1.30	27.416	30.16	231.55	0.750	0.000	5.00	11.205	8.40	405.5	0.0	530.4
117.00	Appurtenance(s)	1.00	1.31	27.516	30.27	226.85	0.750	0.000	2.00	4.313	3.24	156.7	0.0	204.1
120.00		1.00	1.32	27.663	30.43	219.75	0.750	0.000	3.00	6.290	4.72	229.7	0.0	297.5
Totals:									120.00			12,269.6		25,464.8

Discrete Appurtenance Forces

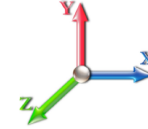
Structure: CT03801-S-SBA	Code: TIA-222-G	4/19/2022
Site Name: East Granby	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 20

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	117.00	RF4439d-25A	3	27.565	30.322	0.67	1.00	2.93	226.08	0.000	1.000	142.37	0.00	142.37
2	117.00	HBXX-6517DS-VTM	3	27.516	30.268	0.77	1.00	19.75	146.52	0.000	0.000	956.48	0.00	0.00
3	117.00	GPS	1	27.516	30.268	0.50	1.00	0.50	12.00	0.000	0.000	24.21	0.00	0.00
4	117.00	Low Profile	1	27.516	30.268	1.00	1.00	32.00	1800.00	0.000	0.000	1549.71	0.00	0.00
5	117.00	NHH-65B-R2B	6	27.565	30.322	0.83	1.00	40.24	314.64	0.000	1.000	1952.18	0.00	1952.18
6	117.00	MT6407-77A	3	27.565	30.322	0.70	1.00	9.85	285.84	0.000	1.000	477.83	0.00	477.83
7	117.00	Collar Mount	1	27.516	30.268	1.00	1.00	2.25	164.04	0.000	0.000	108.96	0.00	0.00
8	117.00	12	1	27.565	30.322	1.00	1.00	1.46	45.60	0.000	1.000	70.83	0.00	70.83
9	117.00	BSAMNT-SBS-1-2	3	27.516	30.268	1.00	1.00	0.00	91.26	0.000	0.000	0.00	0.00	0.00
10	117.00	Support Rail Kit	1	27.516	30.268	1.00	1.00	8.75	516.00	0.000	0.000	423.75	0.00	0.00
11	117.00	Kickers w/o Collar	1	27.516	30.268	1.00	1.00	5.33	175.20	0.000	0.000	258.12	0.00	0.00
12	117.00	RF4440d-13A	3	27.565	30.322	0.67	1.00	2.93	226.08	0.000	1.000	142.37	0.00	142.37
13	110.00	KRY 112 144/1	3	27.161	29.877	0.50	0.75	0.62	39.60	0.000	0.000	29.55	0.00	0.00
14	110.00	4449 B71 + B85	3	27.161	29.877	0.50	0.75	2.97	263.52	0.000	0.000	141.97	0.00	0.00
15	110.00	4460 B25 + B66	3	27.161	29.877	0.50	0.75	2.47	259.20	0.000	0.000	118.18	0.00	0.00
16	110.00	Platform w/ Hand Rail	1	27.161	29.877	1.00	1.00	32.00	1920.00	0.000	0.000	1529.71	0.00	0.00
17	110.00	KRY 112 489/2	6	27.161	29.877	0.50	0.75	0.03	0.72	0.000	0.000	1.44	0.00	0.00
18	110.00	Support Rail Bracing Kit	1	27.161	29.877	1.00	1.00	8.25	595.20	0.000	0.000	394.38	0.00	0.00
19	110.00	AIR6419 B41	3	27.161	29.877	0.53	0.75	9.03	370.80	0.000	0.000	431.47	0.00	0.00
20	110.00	APXVAALL24_43-U-NA20	3	27.161	29.877	0.55	0.75	33.24	442.08	0.000	0.000	1589.19	0.00	0.00
21	97.00	RDIDC-9181-PF-48	1	26.451	29.096	0.75	0.75	1.51	26.28	0.000	0.000	70.18	0.00	0.00
22	97.00	TA08025-B604	3	26.451	29.096	0.50	0.75	2.95	230.04	0.000	0.000	137.55	0.00	0.00
23	97.00	TA08025-B605	3	26.451	29.096	0.50	0.75	2.95	270.00	0.000	0.000	137.55	0.00	0.00
24	97.00	MC-PK8-DSH	1	26.451	29.096	1.00	1.00	37.59	2072.40	0.000	0.000	1749.98	0.00	0.00
25	97.00	MX08FRO665-21	3	26.451	29.096	0.55	0.75	20.80	232.20	0.000	0.000	968.14	0.00	0.00
26	87.00	800 10966	3	25.852	28.438	0.54	0.75	28.12	452.52	0.000	0.000	1279.61	0.00	0.00
27	87.00	PRK-1245 (kicker kit)	1	25.852	28.438	1.00	1.00	9.50	557.89	0.000	0.000	432.25	0.00	0.00
28	87.00	Low Profile	1	25.852	28.438	1.00	1.00	22.00	1800.00	0.000	0.000	1001.00	0.00	0.00
29	87.00	HRK12 (Handrail Kit)	1	25.852	28.438	1.00	1.00	6.75	314.06	0.000	0.000	307.13	0.00	0.00
30	87.00	HPA-65R-BUU-H8	3	25.852	28.438	0.59	0.75	23.07	244.80	0.000	0.000	1049.78	0.00	0.00
31	87.00	7770.00	3	25.852	28.438	0.55	0.75	9.03	126.00	0.000	0.000	411.04	0.00	0.00
32	87.00	4449 B5/B12	3	25.852	28.438	0.65	0.75	3.81	255.60	0.000	0.000	173.44	0.00	0.00
33	87.00	TT19-08BP111-001	6	25.852	28.438	0.68	0.75	2.59	115.20	0.000	0.000	117.94	0.00	0.00
34	87.00	LGP21903	6	25.852	28.438	0.63	0.75	1.02	39.60	0.000	0.000	46.44	0.00	0.00
35	87.00	B2 B66A 8843	3	25.852	28.438	0.64	0.75	3.14	252.00	0.000	0.000	142.71	0.00	0.00
36	87.00	DC6-48-60-18-8F(23.5")	1	25.852	28.438	1.00	1.00	1.26	24.00	0.000	0.000	57.33	0.00	0.00
37	87.00	DC6-48-60-18-8C	1	25.852	28.438	1.00	1.00	1.26	24.00	0.000	0.000	57.33	0.00	0.00

Totals: 14,930.98

18,482.10

Total Applied Force Summary

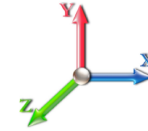
Structure: CT03801-S-SBA	Code: TIA-222-G	4/19/2022
Site Name: East Granby	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 20

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		555.62	1624.09	0.00	0.00
10.00		541.42	1589.49	0.00	0.00
15.00		527.21	1554.89	0.00	0.00
20.00		544.32	1520.29	0.00	0.00
25.00		554.71	1485.69	0.00	0.00
30.00		560.00	1451.09	0.00	0.00
32.00		222.41	570.75	0.00	0.00
35.00		340.26	1534.60	0.00	0.00
37.50		282.97	1259.81	0.00	0.00
40.00		282.48	695.78	0.00	0.00
45.00		565.74	1365.61	0.00	0.00
50.00		560.15	1331.01	0.00	0.00
55.00		552.85	1296.41	0.00	0.00
60.00		544.08	1261.81	0.00	0.00
64.83		516.24	1186.86	0.00	0.00
65.00		17.83	71.98	0.00	0.00
69.50		480.02	1914.49	0.00	0.00
70.00		52.43	119.54	0.00	0.00
75.00		521.07	1176.32	0.00	0.00
80.00		508.02	1141.72	0.00	0.00
85.00		494.11	1107.12	0.00	0.00
87.00	(32) attachments	5268.85	4638.84	0.00	0.00
90.00		285.16	573.45	0.00	0.00
95.00		463.97	928.06	0.00	0.00
97.00	(11) attachments	3243.92	3192.46	0.00	0.00
98.50		133.61	265.72	0.00	0.00
100.00		134.94	444.66	0.00	0.00
102.33		207.12	680.35	0.00	0.00
105.00		232.30	397.50	0.00	0.00
110.00	(23) attachments	4659.18	4614.32	0.00	0.00
115.00		405.50	612.29	0.00	0.00
117.00	(27) attachments	6263.49	4240.10	0.00	2785.58
120.00		229.67	297.51	0.00	0.00
	Totals:	30,751.66	46,144.56	0.00	2,785.58

Linear Appurtenance Segment Forces (Factored)

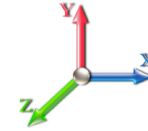
Structure: CT03801-S-SBA	Code: TIA-222-G	4/19/2022
Site Name: East Granby	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 20

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.028	0.000	17.879	0.00	6.00
10.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.029	0.000	17.879	0.00	6.00
15.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.030	0.000	17.879	0.00	6.00
20.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.031	0.000	18.971	0.00	6.00
25.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.032	0.000	19.883	0.00	6.00
30.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.032	0.000	20.661	0.00	6.00
32.00	1.6" Hybrid	Yes	2.00	0.000	1.60	0.27	0.00	0.033	0.000	20.944	0.00	2.40
35.00	1.6" Hybrid	Yes	3.00	0.000	1.60	0.40	0.00	0.034	0.000	21.343	0.00	3.60
37.50	1.6" Hybrid	Yes	2.50	0.000	1.60	0.33	0.00	0.034	0.000	21.655	0.00	3.00
40.00	1.6" Hybrid	Yes	2.50	0.000	1.60	0.33	0.00	0.034	0.000	21.951	0.00	3.00
45.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.035	0.000	22.502	0.00	6.00
50.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.036	0.000	23.007	0.00	6.00
55.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.037	0.000	23.473	0.00	6.00
60.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.039	0.000	23.907	0.00	6.00
64.83	1.6" Hybrid	Yes	4.83	0.000	1.60	0.64	0.00	0.040	0.000	24.300	0.00	5.80
65.00	1.6" Hybrid	Yes	0.17	0.000	1.60	0.02	0.00	0.041	0.000	24.313	0.00	0.20
69.50	1.6" Hybrid	Yes	4.50	0.000	1.60	0.60	0.00	0.041	0.000	24.658	0.00	5.40
70.00	1.6" Hybrid	Yes	0.50	0.000	1.60	0.07	0.00	0.041	0.000	24.696	0.00	0.60
75.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.042	0.000	25.057	0.00	6.00
80.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.044	0.000	25.400	0.00	6.00
85.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.046	0.000	25.726	0.00	6.00
87.00	1.6" Hybrid	Yes	2.00	0.000	1.60	0.27	0.00	0.047	0.000	25.852	0.00	2.40
90.00	1.6" Hybrid	Yes	3.00	0.000	1.60	0.40	0.00	0.048	0.000	26.037	0.00	3.60
95.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.050	0.000	26.336	0.00	6.00
97.00	1.6" Hybrid	Yes	2.00	0.000	1.60	0.27	0.00	0.052	0.000	26.451	0.00	2.40
Totals:											0.0	116.4

Calculated Forces

Structure: CT03801-S-SBA	Code: TIA-222-G	4/19/2022
Site Name: East Granby	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.6W 93 mph Wind	Iterations	20
Dead Load Factor 1.20		
Wind Load Factor 1.60		

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-46.10	-30.81	0.00	-2717.3	0.00	2717.34	4242.75	2121.37	9773.47	4851.96	0.00	0.000	0.000	0.571
5.00	-44.40	-30.37	0.00	-2563.2	0.00	2563.29	4184.67	2092.33	9393.09	4663.13	0.08	-0.143	0.000	0.561
10.00	-42.74	-29.93	0.00	-2411.4	0.00	2411.46	4124.00	2062.00	9013.89	4474.88	0.31	-0.289	0.000	0.549
15.00	-41.11	-29.50	0.00	-2261.8	0.00	2261.82	4060.73	2030.37	8636.33	4287.44	0.69	-0.438	0.000	0.538
20.00	-39.52	-29.05	0.00	-2114.3	0.00	2114.33	3994.87	1997.44	8260.86	4101.04	1.23	-0.589	0.000	0.526
25.00	-37.96	-28.58	0.00	-1969.1	0.00	1969.11	3926.42	1963.21	7887.94	3915.90	1.93	-0.742	0.000	0.513
30.00	-36.47	-28.06	0.00	-1826.2	0.00	1826.24	3855.38	1927.69	7518.03	3732.27	2.79	-0.897	0.000	0.499
32.00	-35.86	-27.88	0.00	-1770.1	0.00	1770.11	3826.23	1913.12	7371.01	3659.28	3.18	-0.961	0.000	0.493
35.00	-34.29	-27.57	0.00	-1686.4	0.00	1686.46	3781.74	1890.87	7151.59	3550.35	3.82	-1.057	0.000	0.484
37.50	-33.00	-27.31	0.00	-1617.5	0.00	1617.54	3783.94	1891.97	7162.31	3555.67	4.39	-1.137	0.000	0.464
40.00	-32.25	-27.08	0.00	-1549.2	0.00	1549.27	3746.19	1873.09	6980.48	3465.40	5.01	-1.219	0.000	0.456
45.00	-30.83	-26.56	0.00	-1413.8	0.00	1413.89	3668.73	1834.37	6619.97	3286.43	6.37	-1.370	0.000	0.439
50.00	-29.45	-26.05	0.00	-1281.0	0.00	1281.08	3588.69	1794.34	6264.07	3109.75	7.89	-1.521	0.000	0.420
55.00	-28.10	-25.53	0.00	-1150.8	0.00	1150.85	3506.05	1753.02	5913.22	2935.57	9.56	-1.672	0.000	0.400
60.00	-26.79	-25.02	0.00	-1023.2	0.00	1023.20	3420.81	1710.41	5567.90	2764.14	11.39	-1.822	0.000	0.378
64.83	-25.59	-24.49	0.00	-902.28	0.00	902.28	3335.96	1667.98	5239.76	2601.24	13.31	-1.964	0.000	0.355
65.00	-25.49	-24.50	0.00	-898.20	0.00	898.20	3332.99	1666.49	5228.55	2595.67	13.38	-1.969	0.000	0.354
69.50	-23.56	-23.99	0.00	-787.93	0.00	787.93	3299.78	1649.89	5104.40	2534.04	15.30	-2.098	0.000	0.318
70.00	-23.42	-23.96	0.00	-775.94	0.00	775.94	3290.76	1645.38	5071.06	2517.49	15.52	-2.113	0.000	0.316
75.00	-22.21	-23.44	0.00	-656.15	0.00	656.15	3199.12	1599.56	4741.34	2353.80	17.80	-2.242	0.000	0.286
80.00	-21.04	-22.93	0.00	-538.94	0.00	538.94	3073.61	1536.80	4374.21	2171.54	20.22	-2.362	0.000	0.255
85.00	-19.93	-22.42	0.00	-424.28	0.00	424.28	2947.70	1473.85	4021.34	1996.36	22.75	-2.472	0.000	0.220
87.00	-15.51	-16.96	0.00	-379.45	0.00	379.45	2897.34	1448.67	3884.35	1928.35	23.80	-2.513	0.000	0.202
90.00	-14.93	-16.67	0.00	-328.56	0.00	328.56	2821.79	1410.90	3683.31	1828.55	25.40	-2.571	0.000	0.185
95.00	-14.01	-16.18	0.00	-245.20	0.00	245.20	2695.89	1347.94	3360.11	1668.10	28.14	-2.655	0.000	0.152
97.00	-10.96	-12.80	0.00	-212.84	0.00	212.84	2645.52	1322.76	3234.99	1605.99	29.26	-2.686	0.000	0.137
98.50	-10.70	-12.65	0.00	-193.65	0.00	193.65	2607.75	1303.88	3142.71	1560.17	30.10	-2.708	0.000	0.128
100.00	-10.26	-12.50	0.00	-174.67	0.00	174.67	2569.98	1284.99	3051.76	1515.02	30.96	-2.729	0.000	0.119
102.33	-9.58	-12.27	0.00	-145.49	0.00	145.49	2143.60	1071.80	2553.25	1267.54	32.30	-2.758	0.000	0.119
105.00	-9.19	-12.02	0.00	-112.78	0.00	112.78	2087.65	1043.82	2420.99	1201.88	33.85	-2.786	0.000	0.098
110.00	-4.80	-7.15	0.00	-52.67	0.00	52.67	1982.72	991.36	2182.49	1083.48	36.79	-2.828	0.000	0.051
115.00	-4.21	-6.71	0.00	-16.94	0.00	16.94	1877.80	938.90	1956.35	971.22	39.76	-2.849	0.000	0.020
117.00	-0.29	-0.24	0.00	-0.73	0.00	0.73	1835.83	917.92	1869.36	928.03	40.96	-2.851	0.000	0.001
120.00	0.00	-0.23	0.00	0.00	0.00	0.00	1772.88	886.44	1742.58	865.09	42.75	-2.852	0.000	0.000

Wind Loading - Shaft

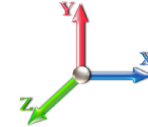
Structure: CT03801-S-SBA	Code: TIA-222-G	4/19/2022
Site Name: East Granby	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 20

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	17.879	19.67	408.88	0.750	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	17.879	19.67	398.56	0.750	0.000	5.00	23.543	17.66	555.6	0.0	1008.2
10.00		1.00	0.85	17.879	19.67	388.24	0.750	0.000	5.00	22.941	17.21	541.4	0.0	982.3
15.00		1.00	0.85	17.879	19.67	377.92	0.750	0.000	5.00	22.339	16.75	527.2	0.0	956.3
20.00		1.00	0.90	18.971	20.87	378.65	0.750	0.000	5.00	21.737	16.30	544.3	0.0	930.4
25.00		1.00	0.95	19.883	21.87	376.76	0.750	0.000	5.00	21.135	15.85	554.7	0.0	904.4
30.00		1.00	0.98	20.661	22.73	372.97	0.750	0.000	5.00	20.533	15.40	560.0	0.0	878.5
32.00	Bot - Section 2	1.00	1.00	20.944	23.04	371.04	0.750	0.000	2.00	8.045	6.03	222.4	0.0	344.1
35.00		1.00	1.01	21.343	23.48	367.80	0.750	0.000	3.00	12.078	9.06	340.3	0.0	1025.1
37.50	Top - Section 1	1.00	1.03	21.655	23.82	364.80	0.750	0.000	2.50	9.899	7.42	283.0	0.0	839.9
40.00		1.00	1.04	21.951	24.15	367.62	0.750	0.000	2.50	9.749	7.31	282.5	0.0	416.9
45.00		1.00	1.07	22.502	24.75	360.63	0.750	0.000	5.00	19.047	14.28	565.7	0.0	814.4
50.00		1.00	1.09	23.007	25.31	352.94	0.750	0.000	5.00	18.445	13.83	560.1	0.0	788.4
55.00		1.00	1.12	23.473	25.82	344.68	0.750	0.000	5.00	17.843	13.38	552.9	0.0	762.5
60.00		1.00	1.14	23.907	26.30	335.91	0.750	0.000	5.00	17.241	12.93	544.1	0.0	736.5
64.83	Bot - Section 3	1.00	1.16	24.300	26.73	327.03	0.750	0.000	4.83	16.094	12.07	516.2	0.0	687.3
65.00		1.00	1.16	24.313	26.74	326.72	0.750	0.000	0.17	0.556	0.42	17.8	0.0	47.0
69.50	Top - Section 2	1.00	1.17	24.658	27.12	318.12	0.750	0.000	4.50	14.747	11.06	480.0	0.0	1247.0
70.00		1.00	1.17	24.696	27.17	323.57	0.750	0.000	0.50	1.609	1.21	52.4	0.0	68.7
75.00		1.00	1.19	25.057	27.56	313.71	0.750	0.000	5.00	15.754	11.82	521.1	0.0	672.4
80.00		1.00	1.21	25.400	27.94	303.55	0.750	0.000	5.00	15.152	11.36	508.0	0.0	646.5
85.00		1.00	1.22	25.726	28.30	293.11	0.750	0.000	5.00	14.550	10.91	494.1	0.0	620.5
87.00	Appurtenance(s)	1.00	1.23	25.852	28.44	288.87	0.750	0.000	2.00	5.652	4.24	192.9	0.0	240.9
90.00		1.00	1.24	26.037	28.64	282.43	0.750	0.000	3.00	8.297	6.22	285.2	0.0	353.6
95.00		1.00	1.25	26.336	28.97	271.51	0.750	0.000	5.00	13.347	10.01	464.0	0.0	568.6
97.00	Appurtenance(s)	1.00	1.26	26.451	29.10	267.09	0.750	0.000	2.00	5.170	3.88	180.5	0.0	220.2
98.50	Bot - Section 4	1.00	1.26	26.537	29.19	263.75	0.750	0.000	1.50	3.814	2.86	133.6	0.0	162.4
100.00		1.00	1.27	26.621	29.28	260.39	0.750	0.000	1.50	3.840	2.88	134.9	0.0	296.6
102.33	Top - Section 3	1.00	1.27	26.751	29.43	255.13	0.750	0.000	2.33	5.866	4.40	207.1	0.0	452.9
105.00		1.00	1.28	26.896	29.59	254.66	0.750	0.000	2.67	6.543	4.91	232.3	0.0	232.6
110.00	Appurtenance(s)	1.00	1.29	27.161	29.88	243.19	0.750	0.000	5.00	11.807	8.86	423.3	0.0	419.5
115.00		1.00	1.30	27.416	30.16	231.55	0.750	0.000	5.00	11.205	8.40	405.5	0.0	397.8
117.00	Appurtenance(s)	1.00	1.31	27.516	30.27	226.85	0.750	0.000	2.00	4.313	3.24	156.7	0.0	153.1
120.00		1.00	1.32	27.663	30.43	219.75	0.750	0.000	3.00	6.290	4.72	229.7	0.0	223.1
Totals:									120.00			12,269.6		19,098.6

Discrete Appurtenance Forces

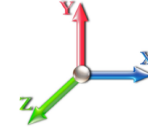
Structure: CT03801-S-SBA	Code: TIA-222-G	4/19/2022
Site Name: East Granby	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 20

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	117.00	RF4439d-25A	3	27.565	30.322	0.67	1.00	2.93	169.56	0.000	1.000	142.37	0.00	142.37
2	117.00	HBXX-6517DS-VTM	3	27.516	30.268	0.77	1.00	19.75	109.89	0.000	0.000	956.48	0.00	0.00
3	117.00	GPS	1	27.516	30.268	0.50	1.00	0.50	9.00	0.000	0.000	24.21	0.00	0.00
4	117.00	Low Profile	1	27.516	30.268	1.00	1.00	32.00	1350.00	0.000	0.000	1549.71	0.00	0.00
5	117.00	NHH-65B-R2B	6	27.565	30.322	0.83	1.00	40.24	235.98	0.000	1.000	1952.18	0.00	1952.18
6	117.00	MT6407-77A	3	27.565	30.322	0.70	1.00	9.85	214.38	0.000	1.000	477.83	0.00	477.83
7	117.00	Collar Mount	1	27.516	30.268	1.00	1.00	2.25	123.03	0.000	0.000	108.96	0.00	0.00
8	117.00	12	1	27.565	30.322	1.00	1.00	1.46	34.20	0.000	1.000	70.83	0.00	70.83
9	117.00	BSAMNT-SBS-1-2	3	27.516	30.268	1.00	1.00	0.00	68.45	0.000	0.000	0.00	0.00	0.00
10	117.00	Support Rail Kit	1	27.516	30.268	1.00	1.00	8.75	387.00	0.000	0.000	423.75	0.00	0.00
11	117.00	Kickers w/o Collar	1	27.516	30.268	1.00	1.00	5.33	131.40	0.000	0.000	258.12	0.00	0.00
12	117.00	RF4440d-13A	3	27.565	30.322	0.67	1.00	2.93	169.56	0.000	1.000	142.37	0.00	142.37
13	110.00	KRY 112 144/1	3	27.161	29.877	0.50	0.75	0.62	29.70	0.000	0.000	29.55	0.00	0.00
14	110.00	4449 B71 + B85	3	27.161	29.877	0.50	0.75	2.97	197.64	0.000	0.000	141.97	0.00	0.00
15	110.00	4460 B25 + B66	3	27.161	29.877	0.50	0.75	2.47	194.40	0.000	0.000	118.18	0.00	0.00
16	110.00	Platform w/ Hand Rail	1	27.161	29.877	1.00	1.00	32.00	1440.00	0.000	0.000	1529.71	0.00	0.00
17	110.00	KRY 112 489/2	6	27.161	29.877	0.50	0.75	0.03	0.54	0.000	0.000	1.44	0.00	0.00
18	110.00	Support Rail Bracing Kit	1	27.161	29.877	1.00	1.00	8.25	446.40	0.000	0.000	394.38	0.00	0.00
19	110.00	AIR6419 B41	3	27.161	29.877	0.53	0.75	9.03	278.10	0.000	0.000	431.47	0.00	0.00
20	110.00	APXVAALL24_43-U-NA20	3	27.161	29.877	0.55	0.75	33.24	331.56	0.000	0.000	1589.19	0.00	0.00
21	97.00	RDIDC-9181-PF-48	1	26.451	29.096	0.75	0.75	1.51	19.71	0.000	0.000	70.18	0.00	0.00
22	97.00	TA08025-B604	3	26.451	29.096	0.50	0.75	2.95	172.53	0.000	0.000	137.55	0.00	0.00
23	97.00	TA08025-B605	3	26.451	29.096	0.50	0.75	2.95	202.50	0.000	0.000	137.55	0.00	0.00
24	97.00	MC-PK8-DSH	1	26.451	29.096	1.00	1.00	37.59	1554.30	0.000	0.000	1749.98	0.00	0.00
25	97.00	MX08FRO665-21	3	26.451	29.096	0.55	0.75	20.80	174.15	0.000	0.000	968.14	0.00	0.00
26	87.00	800 10966	3	25.852	28.438	0.54	0.75	28.12	339.39	0.000	0.000	1279.61	0.00	0.00
27	87.00	PRK-1245 (kicker kit)	1	25.852	28.438	1.00	1.00	9.50	418.42	0.000	0.000	432.25	0.00	0.00
28	87.00	Low Profile	1	25.852	28.438	1.00	1.00	22.00	1350.00	0.000	0.000	1001.00	0.00	0.00
29	87.00	HRK12 (Handrail Kit)	1	25.852	28.438	1.00	1.00	6.75	235.55	0.000	0.000	307.13	0.00	0.00
30	87.00	HPA-65R-BUU-H8	3	25.852	28.438	0.59	0.75	23.07	183.60	0.000	0.000	1049.78	0.00	0.00
31	87.00	7770.00	3	25.852	28.438	0.55	0.75	9.03	94.50	0.000	0.000	411.04	0.00	0.00
32	87.00	4449 B5/B12	3	25.852	28.438	0.65	0.75	3.81	191.70	0.000	0.000	173.44	0.00	0.00
33	87.00	TT19-08BP111-001	6	25.852	28.438	0.68	0.75	2.59	86.40	0.000	0.000	117.94	0.00	0.00
34	87.00	LGP21903	6	25.852	28.438	0.63	0.75	1.02	29.70	0.000	0.000	46.44	0.00	0.00
35	87.00	B2 B66A 8843	3	25.852	28.438	0.64	0.75	3.14	189.00	0.000	0.000	142.71	0.00	0.00
36	87.00	DC6-48-60-18-8F(23.5")	1	25.852	28.438	1.00	1.00	1.26	18.00	0.000	0.000	57.33	0.00	0.00
37	87.00	DC6-48-60-18-8C	1	25.852	28.438	1.00	1.00	1.26	18.00	0.000	0.000	57.33	0.00	0.00

Totals: 11,198.23

18,482.10

Total Applied Force Summary

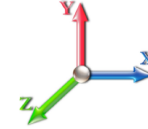
Structure: CT03801-S-SBA	Code: TIA-222-G	4/19/2022
Site Name: East Granby	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 20

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		555.62	1218.07	0.00	0.00
10.00		541.42	1192.12	0.00	0.00
15.00		527.21	1166.17	0.00	0.00
20.00		544.32	1140.22	0.00	0.00
25.00		554.71	1114.27	0.00	0.00
30.00		560.00	1088.32	0.00	0.00
32.00		222.41	428.06	0.00	0.00
35.00		340.26	1150.95	0.00	0.00
37.50		282.97	944.85	0.00	0.00
40.00		282.48	521.83	0.00	0.00
45.00		565.74	1024.20	0.00	0.00
50.00		560.15	998.25	0.00	0.00
55.00		552.85	972.30	0.00	0.00
60.00		544.08	946.35	0.00	0.00
64.83		516.24	890.14	0.00	0.00
65.00		17.83	53.99	0.00	0.00
69.50		480.02	1435.87	0.00	0.00
70.00		52.43	89.65	0.00	0.00
75.00		521.07	882.24	0.00	0.00
80.00		508.02	856.29	0.00	0.00
85.00		494.11	830.34	0.00	0.00
87.00	(32) attachments	5268.85	3479.13	0.00	0.00
90.00		285.16	430.08	0.00	0.00
95.00		463.97	696.05	0.00	0.00
97.00	(11) attachments	3243.92	2394.34	0.00	0.00
98.50		133.61	199.29	0.00	0.00
100.00		134.94	333.50	0.00	0.00
102.33		207.12	510.26	0.00	0.00
105.00		232.30	298.12	0.00	0.00
110.00	(23) attachments	4659.18	3460.74	0.00	0.00
115.00		405.50	459.21	0.00	0.00
117.00	(27) attachments	6263.49	3180.08	0.00	2785.58
120.00		229.67	223.13	0.00	0.00
	Totals:	30,751.66	34,608.42	0.00	2,785.58

Linear Appurtenance Segment Forces (Factored)

Structure: CT03801-S-SBA	Code: TIA-222-G	4/19/2022
Site Name: East Granby	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 20

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.028	0.000	17.879	0.00	4.50
10.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.029	0.000	17.879	0.00	4.50
15.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.030	0.000	17.879	0.00	4.50
20.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.031	0.000	18.971	0.00	4.50
25.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.032	0.000	19.883	0.00	4.50
30.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.032	0.000	20.661	0.00	4.50
32.00	1.6" Hybrid	Yes	2.00	0.000	1.60	0.27	0.00	0.033	0.000	20.944	0.00	1.80
35.00	1.6" Hybrid	Yes	3.00	0.000	1.60	0.40	0.00	0.034	0.000	21.343	0.00	2.70
37.50	1.6" Hybrid	Yes	2.50	0.000	1.60	0.33	0.00	0.034	0.000	21.655	0.00	2.25
40.00	1.6" Hybrid	Yes	2.50	0.000	1.60	0.33	0.00	0.034	0.000	21.951	0.00	2.25
45.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.035	0.000	22.502	0.00	4.50
50.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.036	0.000	23.007	0.00	4.50
55.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.037	0.000	23.473	0.00	4.50
60.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.039	0.000	23.907	0.00	4.50
64.83	1.6" Hybrid	Yes	4.83	0.000	1.60	0.64	0.00	0.040	0.000	24.300	0.00	4.35
65.00	1.6" Hybrid	Yes	0.17	0.000	1.60	0.02	0.00	0.041	0.000	24.313	0.00	0.15
69.50	1.6" Hybrid	Yes	4.50	0.000	1.60	0.60	0.00	0.041	0.000	24.658	0.00	4.05
70.00	1.6" Hybrid	Yes	0.50	0.000	1.60	0.07	0.00	0.041	0.000	24.696	0.00	0.45
75.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.042	0.000	25.057	0.00	4.50
80.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.044	0.000	25.400	0.00	4.50
85.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.046	0.000	25.726	0.00	4.50
87.00	1.6" Hybrid	Yes	2.00	0.000	1.60	0.27	0.00	0.047	0.000	25.852	0.00	1.80
90.00	1.6" Hybrid	Yes	3.00	0.000	1.60	0.40	0.00	0.048	0.000	26.037	0.00	2.70
95.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.050	0.000	26.336	0.00	4.50
97.00	1.6" Hybrid	Yes	2.00	0.000	1.60	0.27	0.00	0.052	0.000	26.451	0.00	1.80
Totals:											0.0	87.3

Calculated Forces

Structure: CT03801-S-SBA	Code: TIA-222-G	4/19/2022
Site Name: East Granby	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.6W 93 mph Wind

Iterations 20

Dead Load Factor 0.90

Wind Load Factor 1.60



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	-34.57	-30.80	0.00	-2698.7	0.00	2698.72	4242.75	2121.37	9773.47	4851.96	0.00	0.000	0.000	0.565
5.00	-33.28	-30.32	0.00	-2544.7	0.00	2544.75	4184.67	2092.33	9393.09	4663.13	0.08	-0.142	0.000	0.554
10.00	-32.01	-29.86	0.00	-2393.1	0.00	2393.14	4124.00	2062.00	9013.89	4474.88	0.30	-0.287	0.000	0.543
15.00	-30.77	-29.40	0.00	-2243.8	0.00	2243.85	4060.73	2030.37	8636.33	4287.44	0.69	-0.435	0.000	0.531
20.00	-29.56	-28.93	0.00	-2096.8	0.00	2096.84	3994.87	1997.44	8260.86	4101.04	1.22	-0.584	0.000	0.519
25.00	-28.38	-28.43	0.00	-1952.2	0.00	1952.21	3926.42	1963.21	7887.94	3915.90	1.92	-0.736	0.000	0.506
30.00	-27.24	-27.91	0.00	-1810.0	0.00	1810.04	3855.38	1927.69	7518.03	3732.27	2.77	-0.889	0.000	0.492
32.00	-26.78	-27.72	0.00	-1754.2	0.00	1754.22	3826.23	1913.12	7371.01	3659.28	3.16	-0.953	0.000	0.487
35.00	-25.59	-27.40	0.00	-1671.0	0.00	1671.06	3781.74	1890.87	7151.59	3550.35	3.79	-1.048	0.000	0.478
37.50	-24.62	-27.13	0.00	-1602.5	0.00	1602.57	3783.94	1891.97	7162.31	3555.67	4.36	-1.128	0.000	0.457
40.00	-24.05	-26.89	0.00	-1534.7	0.00	1534.74	3746.19	1873.09	6980.48	3465.40	4.97	-1.209	0.000	0.450
45.00	-22.97	-26.36	0.00	-1400.3	0.00	1400.31	3668.73	1834.37	6619.97	3286.43	6.32	-1.358	0.000	0.433
50.00	-21.91	-25.83	0.00	-1268.5	0.00	1268.52	3588.69	1794.34	6264.07	3109.75	7.82	-1.508	0.000	0.414
55.00	-20.89	-25.31	0.00	-1139.3	0.00	1139.37	3506.05	1753.02	5913.22	2935.57	9.48	-1.658	0.000	0.394
60.00	-19.90	-24.78	0.00	-1012.8	0.00	1012.84	3420.81	1710.41	5567.90	2764.14	11.30	-1.806	0.000	0.372
64.83	-19.00	-24.26	0.00	-893.06	0.00	893.06	3335.96	1667.98	5239.76	2601.24	13.20	-1.946	0.000	0.349
65.00	-18.92	-24.26	0.00	-889.02	0.00	889.02	3332.99	1666.49	5228.55	2595.67	13.27	-1.951	0.000	0.348
69.50	-17.47	-23.76	0.00	-779.83	0.00	779.83	3299.78	1649.89	5104.40	2534.04	15.17	-2.079	0.000	0.313
70.00	-17.35	-23.72	0.00	-767.95	0.00	767.95	3290.76	1645.38	5071.06	2517.49	15.39	-2.094	0.000	0.311
75.00	-16.44	-23.20	0.00	-649.34	0.00	649.34	3199.12	1599.56	4741.34	2353.80	17.65	-2.221	0.000	0.281
80.00	-15.56	-22.69	0.00	-533.33	0.00	533.33	3073.61	1536.80	4374.21	2171.54	20.05	-2.341	0.000	0.251
85.00	-14.72	-22.18	0.00	-419.86	0.00	419.86	2947.70	1473.85	4021.34	1996.36	22.56	-2.449	0.000	0.216
87.00	-11.46	-16.78	0.00	-375.50	0.00	375.50	2897.34	1448.67	3884.35	1928.35	23.59	-2.490	0.000	0.199
90.00	-11.02	-16.49	0.00	-325.16	0.00	325.16	2821.79	1410.90	3683.31	1828.55	25.18	-2.547	0.000	0.182
95.00	-10.33	-16.00	0.00	-242.72	0.00	242.72	2695.89	1347.94	3360.11	1668.10	27.89	-2.631	0.000	0.149
97.00	-8.08	-12.66	0.00	-210.71	0.00	210.71	2645.52	1322.76	3234.99	1605.99	29.00	-2.661	0.000	0.134
98.50	-7.89	-12.52	0.00	-191.73	0.00	191.73	2607.75	1303.88	3142.71	1560.17	29.84	-2.683	0.000	0.126
100.00	-7.55	-12.37	0.00	-172.95	0.00	172.95	2569.98	1284.99	3051.76	1515.02	30.69	-2.703	0.000	0.117
102.33	-7.05	-12.14	0.00	-144.09	0.00	144.09	2143.60	1071.80	2553.25	1267.54	32.01	-2.732	0.000	0.117
105.00	-6.75	-11.90	0.00	-111.71	0.00	111.71	2087.65	1043.82	2420.99	1201.88	33.55	-2.761	0.000	0.096
110.00	-3.52	-7.08	0.00	-52.21	0.00	52.21	1982.72	991.36	2182.49	1083.48	36.46	-2.802	0.000	0.050
115.00	-3.08	-6.65	0.00	-16.81	0.00	16.81	1877.80	938.90	1956.35	971.22	39.41	-2.822	0.000	0.019
117.00	-0.21	-0.24	0.00	-0.72	0.00	0.72	1835.83	917.92	1869.36	928.03	40.59	-2.825	0.000	0.001
120.00	0.00	-0.23	0.00	0.00	0.00	0.00	1772.88	886.44	1742.58	865.09	42.37	-2.825	0.000	0.000

Wind Loading - Shaft

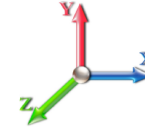
Structure: CT03801-S-SBA	Code: TIA-222-G	4/19/2022
Site Name: East Granby	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 19

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	1.656	5.00	24.923	29.91	170.0	590.0	1934.3
10.00		1.00	0.85	5.168	5.68	0.00	1.200	1.775	5.00	24.420	29.30	166.6	617.7	1927.5
15.00		1.00	0.85	5.168	5.68	0.00	1.200	1.848	5.00	23.879	28.66	162.9	627.6	1902.7
20.00		1.00	0.90	5.483	6.03	0.00	1.200	1.902	5.00	23.322	27.99	168.8	629.5	1870.0
25.00		1.00	0.95	5.747	6.32	0.00	1.200	1.945	5.00	22.756	27.31	172.6	626.8	1832.7
30.00		1.00	0.98	5.972	6.57	0.00	1.200	1.981	5.00	22.184	26.62	174.9	621.0	1792.3
32.00	Bot - Section 2	1.00	1.00	6.054	6.66	0.00	1.200	1.994	2.00	8.709	10.45	69.6	247.2	706.1
35.00		1.00	1.01	6.169	6.79	0.00	1.200	2.012	3.00	13.084	15.70	106.5	373.5	1740.3
37.50	Top - Section 1	1.00	1.03	6.259	6.89	0.00	1.200	2.026	2.50	10.743	12.89	88.8	309.0	1428.9
40.00		1.00	1.04	6.345	6.98	0.00	1.200	2.039	2.50	10.598	12.72	88.8	306.5	862.4
45.00		1.00	1.07	6.504	7.15	0.00	1.200	2.063	5.00	20.766	24.92	178.3	602.1	1687.9
50.00		1.00	1.09	6.650	7.32	0.00	1.200	2.085	5.00	20.182	24.22	177.2	590.1	1641.3
55.00		1.00	1.12	6.785	7.46	0.00	1.200	2.105	5.00	19.597	23.52	175.5	577.1	1593.8
60.00		1.00	1.14	6.910	7.60	0.00	1.200	2.123	5.00	19.010	22.81	173.4	563.4	1545.4
64.83	Bot - Section 3	1.00	1.16	7.024	7.73	0.00	1.200	2.140	4.83	17.818	21.38	165.2	531.2	1447.6
65.00		1.00	1.16	7.028	7.73	0.00	1.200	2.140	0.17	0.615	0.74	5.7	18.6	81.3
69.50	Top - Section 2	1.00	1.17	7.128	7.84	0.00	1.200	2.155	4.50	16.363	19.64	154.0	491.1	2153.8
70.00		1.00	1.17	7.138	7.85	0.00	1.200	2.156	0.50	1.788	2.15	16.8	54.4	146.0
75.00		1.00	1.19	7.243	7.97	0.00	1.200	2.171	5.00	17.563	21.08	167.9	528.7	1425.2
80.00		1.00	1.21	7.342	8.08	0.00	1.200	2.185	5.00	16.973	20.37	164.5	512.7	1374.7
85.00		1.00	1.22	7.436	8.18	0.00	1.200	2.198	5.00	16.382	19.66	160.8	496.3	1323.7
87.00	Appurtenance(s)	1.00	1.23	7.473	8.22	0.00	1.200	2.204	2.00	6.386	7.66	63.0	195.9	517.1
90.00		1.00	1.24	7.526	8.28	0.00	1.200	2.211	3.00	9.402	11.28	93.4	287.7	759.2
95.00		1.00	1.25	7.612	8.37	0.00	1.200	2.223	5.00	15.199	18.24	152.7	462.4	1220.5
97.00	Appurtenance(s)	1.00	1.26	7.646	8.41	0.00	1.200	2.228	2.00	5.913	7.10	59.7	182.2	475.7
98.50	Bot - Section 4	1.00	1.26	7.671	8.44	0.00	1.200	2.231	1.50	4.372	5.25	44.3	135.1	351.6
100.00		1.00	1.27	7.695	8.46	0.00	1.200	2.234	1.50	4.399	5.28	44.7	136.1	531.6
102.33	Top - Section 3	1.00	1.27	7.732	8.51	0.00	1.200	2.240	2.33	6.737	8.08	68.8	207.9	811.8
105.00		1.00	1.28	7.774	8.55	0.00	1.200	2.245	2.67	7.541	9.05	77.4	232.5	542.6
110.00	Appurtenance(s)	1.00	1.29	7.851	8.64	0.00	1.200	2.256	5.00	13.687	16.42	141.8	418.0	977.2
115.00		1.00	1.30	7.925	8.72	0.00	1.200	2.266	5.00	13.093	15.71	137.0	399.7	930.1
117.00	Appurtenance(s)	1.00	1.31	7.954	8.75	0.00	1.200	2.270	2.00	5.070	6.08	53.2	156.9	361.0
120.00		1.00	1.32	7.996	8.80	0.00	1.200	2.276	3.00	7.427	8.91	78.4	228.7	526.2
Totals:									120.00			3,923.1		38,422.5

Discrete Appurtenance Forces

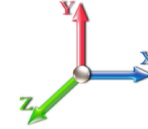
Structure: CT03801-S-SBA	Code: TIA-222-G	4/19/2022
Site Name: East Granby	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 19

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	117.00	RF4439d-25A	3	7.968	8.765	0.67	1.00	4.22	364.96	0.000	1.000	37.00	0.00	37.00	
2	117.00	HBXX-6517DS-VTM	3	7.954	8.749	0.79	1.00	29.26	680.58	0.000	0.000	255.99	0.00	0.00	
3	117.00	GPS	1	7.954	8.749	0.52	1.00	1.00	42.13	0.000	0.000	8.76	0.00	0.00	
4	117.00	Low Profile	1	7.954	8.749	1.00	1.00	65.41	3202.39	0.000	0.000	572.29	0.00	0.00	
5	117.00	NHH-65B-R2B	6	7.968	8.765	0.83	1.00	48.78	1979.64	0.000	1.000	427.54	0.00	427.54	
6	117.00	MT6407-77A	3	7.968	8.765	0.70	1.00	12.47	782.25	0.000	1.000	109.32	0.00	109.32	
7	117.00	Collar Mount	1	7.954	8.749	1.00	1.00	5.31	352.17	0.000	0.000	46.49	0.00	0.00	
8	117.00	12	1	7.968	8.765	1.00	1.00	2.36	108.32	0.000	1.000	20.72	0.00	20.72	
9	117.00	BSAMNT-SBS-1-2	3	7.954	8.749	1.00	1.00	0.00	156.86	0.000	0.000	0.00	0.00	0.00	
10	117.00	Support Rail Kit	1	7.954	8.749	1.00	1.00	19.87	1609.70	0.000	0.000	173.86	0.00	0.00	
11	117.00	Kickers w/o Collar	1	7.954	8.749	1.00	1.00	12.59	376.32	0.000	0.000	110.14	0.00	0.00	
12	117.00	RF4440d-13A	3	7.968	8.765	0.67	1.00	4.22	364.96	0.000	1.000	37.00	0.00	37.00	
13	110.00	KRY 112 144/1	3	7.851	8.636	0.50	0.75	1.54	72.11	0.000	0.000	13.33	0.00	0.00	
14	110.00	4449 B71 + B85	3	7.851	8.636	0.50	0.75	4.08	312.24	0.000	0.000	35.23	0.00	0.00	
15	110.00	4460 B25 + B66	3	7.851	8.636	0.50	0.75	3.44	404.86	0.000	0.000	29.71	0.00	0.00	
16	110.00	Platform w/ Hand Rail	1	7.851	8.636	1.00	1.00	68.09	4034.29	0.000	0.000	588.06	0.00	0.00	
17	110.00	KRY 112 489/2	6	7.851	8.636	0.50	0.75	0.03	1.32	0.000	0.000	0.26	0.00	0.00	
18	110.00	Support Rail Bracing Kit	1	7.851	8.636	1.00	1.00	18.67	1852.07	0.000	0.000	161.25	0.00	0.00	
19	110.00	AIR6419 B41	3	7.851	8.636	0.53	0.75	10.99	807.42	0.000	0.000	94.90	0.00	0.00	
20	110.00	APXVAALL24_43-U-NA20	3	7.851	8.636	0.55	0.75	37.32	2161.75	0.000	0.000	322.32	0.00	0.00	
21	97.00	RDIDC-9181-PF-48	1	7.646	8.410	0.75	0.75	2.05	81.55	0.000	0.000	17.25	0.00	0.00	
22	97.00	TA08025-B604	3	7.646	8.410	0.50	0.75	4.03	387.62	0.000	0.000	33.93	0.00	0.00	
23	97.00	TA08025-B605	3	7.646	8.410	0.50	0.75	4.03	432.49	0.000	0.000	33.93	0.00	0.00	
24	97.00	MC-PK8-DSH	1	7.646	8.410	1.00	1.00	97.88	3853.85	0.000	0.000	823.22	0.00	0.00	
25	97.00	MX08FRO665-21	3	7.646	8.410	0.55	0.75	23.91	1144.46	0.000	0.000	201.08	0.00	0.00	
26	87.00	800 10966	3	7.473	8.220	0.55	0.75	32.75	1858.55	0.000	0.000	269.18	0.00	0.00	
27	87.00	PRK-1245 (kicker kit)	1	7.473	8.220	1.00	1.00	22.06	872.59	0.000	0.000	181.33	0.00	0.00	
28	87.00	Low Profile	1	7.473	8.220	1.00	1.00	44.30	3152.69	0.000	0.000	364.14	0.00	0.00	
29	87.00	HRK12 (Handrail Kit)	1	7.473	8.220	1.00	1.00	15.08	967.96	0.000	0.000	123.95	0.00	0.00	
30	87.00	HPA-65R-BUU-H8	3	7.473	8.220	0.61	0.75	27.43	1395.38	0.000	0.000	225.49	0.00	0.00	
31	87.00	7770.00	3	7.473	8.220	0.56	0.75	11.59	669.02	0.000	0.000	95.27	0.00	0.00	
32	87.00	4449 B5/B12	3	7.473	8.220	0.66	0.75	5.27	417.00	0.000	0.000	43.31	0.00	0.00	
33	87.00	TT19-08BP111-001	6	7.473	8.220	0.69	0.75	5.75	233.73	0.000	0.000	47.25	0.00	0.00	
34	87.00	LGP21903	6	7.473	8.220	0.65	0.75	2.99	89.05	0.000	0.000	24.56	0.00	0.00	
35	87.00	B2 B66A 8843	3	7.473	8.220	0.65	0.75	4.49	392.28	0.000	0.000	36.88	0.00	0.00	
36	87.00	DC6-48-60-18-8F(23.5"	1	7.473	8.220	1.00	1.00	2.09	75.52	0.000	0.000	17.20	0.00	0.00	
37	87.00	DC6-48-60-18-8C	1	7.473	8.220	1.00	1.00	2.09	75.52	0.000	0.000	17.20	0.00	0.00	
Totals:									35,765.59						5,599.39

Total Applied Force Summary

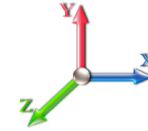
Structure: CT03801-S-SBA	Code: TIA-222-G	4/19/2022
Site Name: East Granby	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 19

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		170.02	2242.21	0.00	0.00
10.00		166.59	2238.59	0.00	0.00
15.00		162.90	2215.92	0.00	0.00
20.00		168.81	2184.80	0.00	0.00
25.00		172.64	2148.77	0.00	0.00
30.00		174.88	2109.47	0.00	0.00
32.00		69.60	833.07	0.00	0.00
35.00		106.54	1931.13	0.00	0.00
37.50		88.77	1588.17	0.00	0.00
40.00		88.77	1021.86	0.00	0.00
45.00		178.29	2007.61	0.00	0.00
50.00		177.16	1961.68	0.00	0.00
55.00		175.51	1914.77	0.00	0.00
60.00		173.41	1867.02	0.00	0.00
64.83		165.20	1758.95	0.00	0.00
65.00		5.71	92.03	0.00	0.00
69.50		153.95	2444.17	0.00	0.00
70.00		16.85	178.24	0.00	0.00
75.00		167.91	1748.39	0.00	0.00
80.00		164.49	1698.29	0.00	0.00
85.00		160.81	1647.73	0.00	0.00
87.00	(32) attachments	1508.78	10846.08	0.00	0.00
90.00		93.41	887.99	0.00	0.00
95.00		152.73	1435.55	0.00	0.00
97.00	(11) attachments	1169.09	6461.78	0.00	0.00
98.50		44.27	400.78	0.00	0.00
100.00		44.68	580.78	0.00	0.00
102.33		68.76	888.25	0.00	0.00
105.00		77.39	630.03	0.00	0.00
110.00	(23) attachments	1386.90	10787.21	0.00	0.00
115.00		136.96	1011.95	0.00	0.00
117.00	(27) attachments	1852.35	10414.04	0.00	631.58
120.00		78.39	526.18	0.00	0.00
	Totals:	9,522.50	80,703.47	0.00	631.58

Linear Appurtenance Segment Forces (Factored)

Structure: CT03801-S-SBA	Code: TIA-222-G	4/19/2022
Site Name: East Granby	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

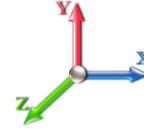


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Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Iterations 19

Dead Load Factor 1.20
Wind Load Factor 1.00



Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1.6" Hybrid	Yes	5.00	0.000	1.60	2.05	0.00	0.028	0.000	5.168	0.00	34.13
10.00	1.6" Hybrid	Yes	5.00	0.000	1.60	2.15	0.00	0.029	0.000	5.168	0.00	37.36
15.00	1.6" Hybrid	Yes	5.00	0.000	1.60	2.21	0.00	0.030	0.000	5.168	0.00	39.44
20.00	1.6" Hybrid	Yes	5.00	0.000	1.60	2.25	0.00	0.031	0.000	5.483	0.00	41.01
25.00	1.6" Hybrid	Yes	5.00	0.000	1.60	2.29	0.00	0.032	0.000	5.747	0.00	42.29
30.00	1.6" Hybrid	Yes	5.00	0.000	1.60	2.32	0.00	0.032	0.000	5.972	0.00	43.37
32.00	1.6" Hybrid	Yes	2.00	0.000	1.60	0.93	0.00	0.033	0.000	6.054	0.00	17.50
35.00	1.6" Hybrid	Yes	3.00	0.000	1.60	1.41	0.00	0.034	0.000	6.169	0.00	26.59
37.50	1.6" Hybrid	Yes	2.50	0.000	1.60	1.18	0.00	0.034	0.000	6.259	0.00	22.37
40.00	1.6" Hybrid	Yes	2.50	0.000	1.60	1.18	0.00	0.034	0.000	6.345	0.00	22.57
45.00	1.6" Hybrid	Yes	5.00	0.000	1.60	2.39	0.00	0.035	0.000	6.504	0.00	45.90
50.00	1.6" Hybrid	Yes	5.00	0.000	1.60	2.40	0.00	0.036	0.000	6.650	0.00	46.59
55.00	1.6" Hybrid	Yes	5.00	0.000	1.60	2.42	0.00	0.037	0.000	6.785	0.00	47.23
60.00	1.6" Hybrid	Yes	5.00	0.000	1.60	2.44	0.00	0.039	0.000	6.910	0.00	47.82
64.83	1.6" Hybrid	Yes	4.83	0.000	1.60	2.37	0.00	0.040	0.000	7.024	0.00	46.74
65.00	1.6" Hybrid	Yes	0.17	0.000	1.60	0.08	0.00	0.041	0.000	7.028	0.00	1.61
69.50	1.6" Hybrid	Yes	4.50	0.000	1.60	2.22	0.00	0.041	0.000	7.128	0.00	43.95
70.00	1.6" Hybrid	Yes	0.50	0.000	1.60	0.25	0.00	0.041	0.000	7.138	0.00	4.89
75.00	1.6" Hybrid	Yes	5.00	0.000	1.60	2.48	0.00	0.042	0.000	7.243	0.00	49.37
80.00	1.6" Hybrid	Yes	5.00	0.000	1.60	2.49	0.00	0.044	0.000	7.342	0.00	49.83
85.00	1.6" Hybrid	Yes	5.00	0.000	1.60	2.50	0.00	0.046	0.000	7.436	0.00	50.27
87.00	1.6" Hybrid	Yes	2.00	0.000	1.60	1.00	0.00	0.047	0.000	7.473	0.00	20.18
90.00	1.6" Hybrid	Yes	3.00	0.000	1.60	1.51	0.00	0.048	0.000	7.526	0.00	30.41
95.00	1.6" Hybrid	Yes	5.00	0.000	1.60	2.52	0.00	0.050	0.000	7.612	0.00	51.09
97.00	1.6" Hybrid	Yes	2.00	0.000	1.60	1.01	0.00	0.052	0.000	7.646	0.00	20.50
Totals:											0.0	883.0

Calculated Forces

Structure: CT03801-S-SBA	Code: TIA-222-G	4/19/2022
Site Name: East Granby	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

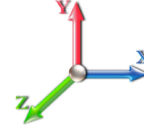


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Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Iterations 19

Dead Load Factor 1.20
Wind Load 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	-80.70	-9.56	0.00	-863.22	0.00	863.22	4242.75	2121.37	9773.47	4851.96	0.00	0.000	0.000	0.197
5.00	-78.45	-9.45	0.00	-815.45	0.00	815.45	4184.67	2092.33	9393.09	4663.13	0.02	-0.046	0.000	0.194
10.00	-76.20	-9.34	0.00	-768.22	0.00	768.22	4124.00	2062.00	9013.89	4474.88	0.10	-0.092	0.000	0.190
15.00	-73.98	-9.23	0.00	-721.52	0.00	721.52	4060.73	2030.37	8636.33	4287.44	0.22	-0.139	0.000	0.187
20.00	-71.79	-9.12	0.00	-675.35	0.00	675.35	3994.87	1997.44	8260.86	4101.04	0.39	-0.188	0.000	0.183
25.00	-69.63	-9.00	0.00	-629.75	0.00	629.75	3926.42	1963.21	7887.94	3915.90	0.61	-0.236	0.000	0.179
30.00	-67.52	-8.86	0.00	-584.75	0.00	584.75	3855.38	1927.69	7518.03	3732.27	0.89	-0.286	0.000	0.174
32.00	-66.68	-8.81	0.00	-567.04	0.00	567.04	3826.23	1913.12	7371.01	3659.28	1.01	-0.307	0.000	0.172
35.00	-64.75	-8.73	0.00	-540.60	0.00	540.60	3781.74	1890.87	7151.59	3550.35	1.22	-0.337	0.000	0.169
37.50	-63.16	-8.66	0.00	-518.79	0.00	518.79	3783.94	1891.97	7162.31	3555.67	1.40	-0.363	0.000	0.163
40.00	-62.13	-8.60	0.00	-497.15	0.00	497.15	3746.19	1873.09	6980.48	3465.40	1.60	-0.389	0.000	0.160
45.00	-60.12	-8.46	0.00	-454.14	0.00	454.14	3668.73	1834.37	6619.97	3286.43	2.03	-0.438	0.000	0.155
50.00	-58.15	-8.32	0.00	-411.84	0.00	411.84	3588.69	1794.34	6264.07	3109.75	2.52	-0.486	0.000	0.149
55.00	-56.23	-8.17	0.00	-370.25	0.00	370.25	3506.05	1753.02	5913.22	2935.57	3.05	-0.535	0.000	0.142
60.00	-54.36	-8.02	0.00	-329.40	0.00	329.40	3420.81	1710.41	5567.90	2764.14	3.64	-0.583	0.000	0.135
64.83	-52.60	-7.86	0.00	-290.61	0.00	290.61	3335.96	1667.98	5239.76	2601.24	4.25	-0.629	0.000	0.128
65.00	-52.50	-7.88	0.00	-289.30	0.00	289.30	3332.99	1666.49	5228.55	2595.67	4.28	-0.630	0.000	0.127
69.50	-50.06	-7.71	0.00	-253.87	0.00	253.87	3299.78	1649.89	5104.40	2534.04	4.89	-0.672	0.000	0.115
70.00	-49.87	-7.72	0.00	-250.01	0.00	250.01	3290.76	1645.38	5071.06	2517.49	4.96	-0.677	0.000	0.114
75.00	-48.12	-7.56	0.00	-211.43	0.00	211.43	3199.12	1599.56	4741.34	2353.80	5.69	-0.718	0.000	0.105
80.00	-46.42	-7.40	0.00	-173.64	0.00	173.64	3073.61	1536.80	4374.21	2171.54	6.47	-0.757	0.000	0.095
85.00	-44.77	-7.24	0.00	-136.62	0.00	136.62	2947.70	1473.85	4021.34	1996.36	7.28	-0.792	0.000	0.084
87.00	-33.95	-5.59	0.00	-122.14	0.00	122.14	2897.34	1448.67	3884.35	1928.35	7.61	-0.806	0.000	0.075
90.00	-33.06	-5.50	0.00	-105.38	0.00	105.38	2821.79	1410.90	3683.31	1828.55	8.13	-0.824	0.000	0.069
95.00	-31.62	-5.33	0.00	-77.90	0.00	77.90	2695.89	1347.94	3360.11	1668.10	9.01	-0.851	0.000	0.058
97.00	-25.18	-4.07	0.00	-67.23	0.00	67.23	2645.52	1322.76	3234.99	1605.99	9.36	-0.861	0.000	0.051
98.50	-24.78	-4.02	0.00	-61.13	0.00	61.13	2607.75	1303.88	3142.71	1560.17	9.64	-0.868	0.000	0.049
100.00	-24.20	-3.97	0.00	-55.10	0.00	55.10	2569.98	1284.99	3051.76	1515.02	9.91	-0.874	0.000	0.046
102.33	-23.31	-3.89	0.00	-45.83	0.00	45.83	2143.60	1071.80	2553.25	1267.54	10.34	-0.884	0.000	0.047
105.00	-22.68	-3.81	0.00	-35.44	0.00	35.44	2087.65	1043.82	2420.99	1201.88	10.84	-0.893	0.000	0.040
110.00	-11.92	-2.26	0.00	-16.39	0.00	16.39	1982.72	991.36	2182.49	1083.48	11.78	-0.906	0.000	0.021
115.00	-10.91	-2.10	0.00	-5.10	0.00	5.10	1877.80	938.90	1956.35	971.22	12.73	-0.912	0.000	0.011
117.00	-0.52	-0.09	0.00	-0.26	0.00	0.26	1835.83	917.92	1869.36	928.03	13.11	-0.913	0.000	0.001
120.00	0.00	-0.08	0.00	0.00	0.00	0.00	1772.88	886.44	1742.58	865.09	13.69	-0.913	0.000	0.000

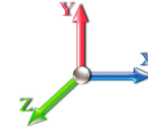
Seismic Segment Forces (Factored)

Structure: CT03801-S-SBA	Code: TIA-222-G	4/19/2022
Site Name: East Granby	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0E						Iterations 18
Gust Response Factor	1.10			Sds	0.19	Ss 0.18
Dead Load Factor	1.20	Seismic Load Factor	1.00	Sd1	0.10	S1 0.07
Wind Load Factor	0.00	Structure Frequency (f1)	0.48	SA	0.05	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		1120.2	0.00	0.04	0.02	18.18	
10.00		1091.4	0.01	0.06	0.03	25.51	
15.00		1062.5	0.03	0.07	0.04	28.34	
20.00		1033.7	0.05	0.07	0.04	29.32	
25.00		1004.9	0.08	0.07	0.04	29.69	
30.00		976.09	0.12	0.07	0.03	29.87	
32.00	Bot - Section 2	382.36	0.13	0.07	0.03	11.85	
35.00		1138.9	0.16	0.07	0.03	35.85	
37.50	Top - Section 1	933.26	0.18	0.06	0.03	29.61	
40.00		463.24	0.21	0.06	0.02	14.70	
45.00		904.85	0.27	0.05	0.02	27.74	
50.00		876.02	0.33	0.04	0.01	24.00	
55.00		847.19	0.40	0.02	0.01	17.99	
60.00		818.35	0.47	-0.01	0.01	9.87	
64.83	Bot - Section 3	763.67	0.55	-0.04	0.01	0.95	
65.00		52.21	0.55	-0.04	0.01	0.04	
69.50	Top - Section 2	1385.5	0.63	-0.07	0.02	-12.66	
70.00		76.30	0.64	-0.07	0.02	-0.77	
75.00		747.12	0.74	-0.10	0.04	-13.55	
80.00		718.29	0.84	-0.12	0.07	-14.84	
85.00		689.45	0.95	-0.12	0.11	-11.15	
87.00	Appurtenance(s)	3772.4	0.99	-0.11	0.13	-46.18	
90.00		392.91	1.06	-0.09	0.17	-1.56	
95.00		631.79	1.18	-0.01	0.24	10.26	
97.00	Appurtenance(s)	2603.7	1.23	0.04	0.28	69.26	
98.50	Bot - Section 4	180.45	1.27	0.09	0.31	6.36	
100.00		329.57	1.31	0.14	0.35	14.69	
102.33	Top - Section 3	503.21	1.37	0.24	0.41	30.50	
105.00		258.39	1.45	0.38	0.48	20.97	
110.00	Appurtenance(s)	3708.6	1.59	0.74	0.65	467.47	
115.00		442.04	1.74	1.26	0.87	79.33	
117.00	Appurtenance(s)	3506.1	1.80	1.52	0.97	712.60	
120.00		247.92	1.89	1.98	1.14	59.89	
Totals:		33,663.2				1,704.1	Total Wind: 30,751.7

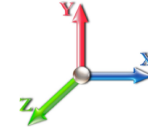
Calculated Forces

Structure: CT03801-S-SBA	Code: TIA-222-G	4/19/2022
Site Name: East Granby	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0E							Iterations 18
Gust Response Factor	1.10				Sds	0.19	Ss 0.18
Dead Load Factor	1.20	Seismic Load Factor	1.00	Sd1	0.10		S1 0.07
Wind Load Factor	0.00	Structure Frequency (f1)	0.48	SA	0.05	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	-46.14	-1.81	0.00	-181.87	0.00	181.87	4242.75	2121.37	9773.47	4851.96	0.00	0.00	0.00	0.048
5.00	-44.52	-1.80	0.00	-172.83	0.00	172.83	4184.67	2092.33	9393.09	4663.13	0.01	-0.01	0.048	
10.00	-42.93	-1.78	0.00	-163.84	0.00	163.84	4124.00	2062.00	9013.89	4474.88	0.02	-0.02	0.047	
15.00	-41.38	-1.76	0.00	-154.94	0.00	154.94	4060.73	2030.37	8636.33	4287.44	0.05	-0.03	0.046	
20.00	-39.85	-1.73	0.00	-146.16	0.00	146.16	3994.87	1997.44	8260.86	4101.04	0.08	-0.04	0.046	
25.00	-38.37	-1.71	0.00	-137.48	0.00	137.48	3926.42	1963.21	7887.94	3915.90	0.13	-0.05	0.045	
30.00	-36.92	-1.68	0.00	-128.93	0.00	128.93	3855.38	1927.69	7518.03	3732.27	0.19	-0.06	0.044	
32.00	-36.35	-1.68	0.00	-125.56	0.00	125.56	3826.23	1913.12	7371.01	3659.28	0.22	-0.07	0.044	
35.00	-34.81	-1.64	0.00	-120.53	0.00	120.53	3781.74	1890.87	7151.59	3550.35	0.26	-0.07	0.043	
37.50	-33.55	-1.61	0.00	-116.43	0.00	116.43	3783.94	1891.97	7162.31	3555.67	0.30	-0.08	0.042	
40.00	-32.86	-1.60	0.00	-112.39	0.00	112.39	3746.19	1873.09	6980.48	3465.40	0.34	-0.08	0.041	
45.00	-31.49	-1.58	0.00	-104.38	0.00	104.38	3668.73	1834.37	6619.97	3286.43	0.44	-0.10	0.040	
50.00	-30.16	-1.56	0.00	-96.48	0.00	96.48	3588.69	1794.34	6264.07	3109.75	0.54	-0.11	0.039	
55.00	-28.86	-1.54	0.00	-88.68	0.00	88.68	3506.05	1753.02	5913.22	2935.57	0.66	-0.12	0.038	
60.00	-27.60	-1.54	0.00	-80.96	0.00	80.96	3420.81	1710.41	5567.90	2764.14	0.79	-0.13	0.037	
64.83	-26.41	-1.54	0.00	-73.53	0.00	73.53	3335.96	1667.98	5239.76	2601.24	0.93	-0.14	0.036	
65.00	-26.34	-1.54	0.00	-73.28	0.00	73.28	3332.99	1666.49	5228.55	2595.67	0.93	-0.14	0.036	
69.50	-24.43	-1.54	0.00	-66.35	0.00	66.35	3299.78	1649.89	5104.40	2534.04	1.07	-0.15	0.034	
70.00	-24.31	-1.54	0.00	-65.58	0.00	65.58	3290.76	1645.38	5071.06	2517.49	1.09	-0.15	0.033	
75.00	-23.13	-1.54	0.00	-57.89	0.00	57.89	3199.12	1599.56	4741.34	2353.80	1.26	-0.16	0.032	
80.00	-21.99	-1.54	0.00	-50.19	0.00	50.19	3073.61	1536.80	4374.21	2171.54	1.44	-0.18	0.030	
85.00	-20.88	-1.54	0.00	-42.49	0.00	42.49	2947.70	1473.85	4021.34	1996.36	1.63	-0.19	0.028	
87.00	-16.24	-1.53	0.00	-39.41	0.00	39.41	2897.34	1448.67	3884.35	1928.35	1.70	-0.19	0.026	
90.00	-15.67	-1.53	0.00	-34.83	0.00	34.83	2821.79	1410.90	3683.31	1828.55	1.83	-0.20	0.025	
95.00	-14.74	-1.51	0.00	-27.20	0.00	27.20	2695.89	1347.94	3360.11	1668.10	2.04	-0.21	0.022	
97.00	-11.55	-1.43	0.00	-24.17	0.00	24.17	2645.52	1322.76	3234.99	1605.99	2.12	-0.21	0.019	
98.50	-11.28	-1.43	0.00	-22.02	0.00	22.02	2607.75	1303.88	3142.71	1560.17	2.19	-0.21	0.018	
100.00	-10.84	-1.41	0.00	-19.88	0.00	19.88	2569.98	1284.99	3051.76	1515.02	2.26	-0.21	0.017	
102.33	-10.16	-1.38	0.00	-16.59	0.00	16.59	2143.60	1071.80	2553.25	1267.54	2.36	-0.22	0.018	
105.00	-9.76	-1.36	0.00	-12.91	0.00	12.91	2087.65	1043.82	2420.99	1201.88	2.49	-0.22	0.015	
110.00	-5.15	-0.87	0.00	-6.12	0.00	6.12	1982.72	991.36	2182.49	1083.48	2.72	-0.23	0.008	
115.00	-4.53	-0.79	0.00	-1.76	0.00	1.76	1877.80	938.90	1956.35	971.22	2.96	-0.23	0.004	
117.00	-0.30	-0.06	0.00	-0.18	0.00	0.18	1835.83	917.92	1869.36	928.03	3.05	-0.23	0.000	
120.00	0.00	-0.06	0.00	0.00	0.00	0.00	1772.88	886.44	1742.58	865.09	3.20	-0.23	0.000	

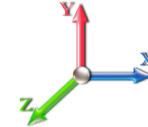
Seismic Segment Forces (Factored)

Structure: CT03801-S-SBA	Code: TIA-222-G	4/19/2022
Site Name: East Granby	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.0E				Iterations 18
Gust Response Factor	1.10	Sds	0.19	Ss 0.18
Dead Load Factor	0.90	Seismic Load Factor	1.00	S1 0.07
Wind Load Factor	0.00	Structure Frequency (f1)	0.48	SA 0.05
				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		1120.2	0.00	0.04	0.02	18.18	
10.00		1091.4	0.01	0.06	0.03	25.51	
15.00		1062.5	0.03	0.07	0.04	28.34	
20.00		1033.7	0.05	0.07	0.04	29.32	
25.00		1004.9	0.08	0.07	0.04	29.69	
30.00		976.09	0.12	0.07	0.03	29.87	
32.00	Bot - Section 2	382.36	0.13	0.07	0.03	11.85	
35.00		1138.9	0.16	0.07	0.03	35.85	
37.50	Top - Section 1	933.26	0.18	0.06	0.03	29.61	
40.00		463.24	0.21	0.06	0.02	14.70	
45.00		904.85	0.27	0.05	0.02	27.74	
50.00		876.02	0.33	0.04	0.01	24.00	
55.00		847.19	0.40	0.02	0.01	17.99	
60.00		818.35	0.47	-0.01	0.01	9.87	
64.83	Bot - Section 3	763.67	0.55	-0.04	0.01	0.95	
65.00		52.21	0.55	-0.04	0.01	0.04	
69.50	Top - Section 2	1385.5	0.63	-0.07	0.02	-12.66	
70.00		76.30	0.64	-0.07	0.02	-0.77	
75.00		747.12	0.74	-0.10	0.04	-13.55	
80.00		718.29	0.84	-0.12	0.07	-14.84	
85.00		689.45	0.95	-0.12	0.11	-11.15	
87.00	Appurtenance(s)	3772.4	0.99	-0.11	0.13	-46.18	
90.00		392.91	1.06	-0.09	0.17	-1.56	
95.00		631.79	1.18	-0.01	0.24	10.26	
97.00	Appurtenance(s)	2603.7	1.23	0.04	0.28	69.26	
98.50	Bot - Section 4	180.45	1.27	0.09	0.31	6.36	
100.00		329.57	1.31	0.14	0.35	14.69	
102.33	Top - Section 3	503.21	1.37	0.24	0.41	30.50	
105.00		258.39	1.45	0.38	0.48	20.97	
110.00	Appurtenance(s)	3708.6	1.59	0.74	0.65	467.47	
115.00		442.04	1.74	1.26	0.87	79.33	
117.00	Appurtenance(s)	3506.1	1.80	1.52	0.97	712.60	
120.00		247.92	1.89	1.98	1.14	59.89	
Totals:		33,663.2				1,704.1	Total Wind: 30,751.7

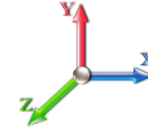
Calculated Forces

Structure: CT03801-S-SBA	Code: TIA-222-G	4/19/2022
Site Name: East Granby	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.0E						Iterations 18
Gust Response Factor	1.10			Sds	0.19	Ss 0.18
Dead Load Factor	0.90	Seismic Load Factor	1.00	Sd1	0.10	S1 0.07
Wind Load Factor	0.00	Structure Frequency (f1)	0.48	SA	0.05	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	-34.61	-1.81	0.00	-180.52	0.00	180.52	4242.75	2121.37	9773.47	4851.96	0.00	0.00	0.00	0.045
5.00	-33.39	-1.79	0.00	-171.48	0.00	171.48	4184.67	2092.33	9393.09	4663.13	0.01	-0.01	0.045	
10.00	-32.20	-1.77	0.00	-162.51	0.00	162.51	4124.00	2062.00	9013.89	4474.88	0.02	-0.02	0.044	
15.00	-31.03	-1.75	0.00	-153.64	0.00	153.64	4060.73	2030.37	8636.33	4287.44	0.05	-0.03	0.043	
20.00	-29.89	-1.73	0.00	-144.88	0.00	144.88	3994.87	1997.44	8260.86	4101.04	0.08	-0.04	0.043	
25.00	-28.78	-1.70	0.00	-136.25	0.00	136.25	3926.42	1963.21	7887.94	3915.90	0.13	-0.05	0.042	
30.00	-27.69	-1.67	0.00	-127.74	0.00	127.74	3855.38	1927.69	7518.03	3732.27	0.19	-0.06	0.041	
32.00	-27.26	-1.66	0.00	-124.39	0.00	124.39	3826.23	1913.12	7371.01	3659.28	0.21	-0.07	0.041	
35.00	-26.11	-1.63	0.00	-119.40	0.00	119.40	3781.74	1890.87	7151.59	3550.35	0.26	-0.07	0.041	
37.50	-25.16	-1.60	0.00	-115.32	0.00	115.32	3783.94	1891.97	7162.31	3555.67	0.30	-0.08	0.039	
40.00	-24.64	-1.59	0.00	-111.32	0.00	111.32	3746.19	1873.09	6980.48	3465.40	0.34	-0.08	0.039	
45.00	-23.62	-1.57	0.00	-103.37	0.00	103.37	3668.73	1834.37	6619.97	3286.43	0.43	-0.09	0.038	
50.00	-22.62	-1.54	0.00	-95.54	0.00	95.54	3588.69	1794.34	6264.07	3109.75	0.54	-0.11	0.037	
55.00	-21.65	-1.53	0.00	-87.83	0.00	87.83	3506.05	1753.02	5913.22	2935.57	0.66	-0.12	0.036	
60.00	-20.70	-1.52	0.00	-80.18	0.00	80.18	3420.81	1710.41	5567.90	2764.14	0.79	-0.13	0.035	
64.83	-19.81	-1.52	0.00	-72.83	0.00	72.83	3335.96	1667.98	5239.76	2601.24	0.92	-0.14	0.034	
65.00	-19.75	-1.52	0.00	-72.58	0.00	72.58	3332.99	1666.49	5228.55	2595.67	0.93	-0.14	0.034	
69.50	-18.32	-1.52	0.00	-65.74	0.00	65.74	3299.78	1649.89	5104.40	2534.04	1.06	-0.15	0.031	
70.00	-18.23	-1.52	0.00	-64.98	0.00	64.98	3290.76	1645.38	5071.06	2517.49	1.08	-0.15	0.031	
75.00	-17.35	-1.52	0.00	-57.37	0.00	57.37	3199.12	1599.56	4741.34	2353.80	1.25	-0.16	0.030	
80.00	-16.49	-1.52	0.00	-49.76	0.00	49.76	3073.61	1536.80	4374.21	2171.54	1.42	-0.17	0.028	
85.00	-15.66	-1.52	0.00	-42.14	0.00	42.14	2947.70	1473.85	4021.34	1996.36	1.61	-0.18	0.026	
87.00	-12.18	-1.51	0.00	-39.10	0.00	39.10	2897.34	1448.67	3884.35	1928.35	1.69	-0.19	0.024	
90.00	-11.75	-1.51	0.00	-34.57	0.00	34.57	2821.79	1410.90	3683.31	1828.55	1.81	-0.19	0.023	
95.00	-11.05	-1.50	0.00	-27.01	0.00	27.01	2695.89	1347.94	3360.11	1668.10	2.02	-0.20	0.020	
97.00	-8.66	-1.42	0.00	-24.00	0.00	24.00	2645.52	1322.76	3234.99	1605.99	2.11	-0.21	0.018	
98.50	-8.46	-1.42	0.00	-21.87	0.00	21.87	2607.75	1303.88	3142.71	1560.17	2.17	-0.21	0.017	
100.00	-8.13	-1.40	0.00	-19.74	0.00	19.74	2569.98	1284.99	3051.76	1515.02	2.24	-0.21	0.016	
102.33	-7.62	-1.37	0.00	-16.48	0.00	16.48	2143.60	1071.80	2553.25	1267.54	2.34	-0.22	0.017	
105.00	-7.32	-1.35	0.00	-12.83	0.00	12.83	2087.65	1043.82	2420.99	1201.88	2.46	-0.22	0.014	
110.00	-3.86	-0.87	0.00	-6.09	0.00	6.09	1982.72	991.36	2182.49	1083.48	2.70	-0.22	0.008	
115.00	-3.40	-0.79	0.00	-1.75	0.00	1.75	1877.80	938.90	1956.35	971.22	2.93	-0.23	0.004	
117.00	-0.22	-0.06	0.00	-0.18	0.00	0.18	1835.83	917.92	1869.36	928.03	3.03	-0.23	0.000	
120.00	0.00	-0.06	0.00	0.00	0.00	0.00	1772.88	886.44	1742.58	865.09	3.17	-0.23	0.000	

Wind Loading - Shaft

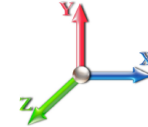
Structure: CT03801-S-SBA	Code: TIA-222-G	4/19/2022
Site Name: East Granby	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 19

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	263.79	0.750	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	7.442	8.19	257.13	0.750	0.000	5.00	23.543	17.66	144.5	0.0	1120.3
10.00		1.00	0.85	7.442	8.19	250.48	0.750	0.000	5.00	22.941	17.21	140.8	0.0	1091.4
15.00		1.00	0.85	7.442	8.19	243.82	0.750	0.000	5.00	22.339	16.75	137.2	0.0	1062.6
20.00		1.00	0.90	7.896	8.69	244.29	0.750	0.000	5.00	21.737	16.30	141.6	0.0	1033.8
25.00		1.00	0.95	8.276	9.10	243.07	0.750	0.000	5.00	21.135	15.85	144.3	0.0	1004.9
30.00		1.00	0.98	8.600	9.46	240.63	0.750	0.000	5.00	20.533	15.40	145.7	0.0	976.1
32.00	Bot - Section 2	1.00	1.00	8.717	9.59	239.38	0.750	0.000	2.00	8.045	6.03	57.9	0.0	382.4
35.00		1.00	1.01	8.883	9.77	237.29	0.750	0.000	3.00	12.078	9.06	88.5	0.0	1138.9
37.50	Top - Section 1	1.00	1.03	9.013	9.91	235.35	0.750	0.000	2.50	9.899	7.42	73.6	0.0	933.3
40.00		1.00	1.04	9.137	10.05	237.17	0.750	0.000	2.50	9.749	7.31	73.5	0.0	463.2
45.00		1.00	1.07	9.366	10.30	232.66	0.750	0.000	5.00	19.047	14.28	147.2	0.0	904.9
50.00		1.00	1.09	9.576	10.53	227.71	0.750	0.000	5.00	18.445	13.83	145.7	0.0	876.0
55.00		1.00	1.12	9.770	10.75	222.37	0.750	0.000	5.00	17.843	13.38	143.8	0.0	847.2
60.00		1.00	1.14	9.951	10.95	216.72	0.750	0.000	5.00	17.241	12.93	141.5	0.0	818.4
64.83	Bot - Section 3	1.00	1.16	10.115	11.13	210.99	0.750	0.000	4.83	16.094	12.07	134.3	0.0	763.7
65.00		1.00	1.16	10.120	11.13	210.79	0.750	0.000	0.17	0.556	0.42	4.6	0.0	52.2
69.50	Top - Section 2	1.00	1.17	10.264	11.29	205.24	0.750	0.000	4.50	14.747	11.06	124.9	0.0	1385.6
70.00		1.00	1.17	10.279	11.31	208.76	0.750	0.000	0.50	1.609	1.21	13.6	0.0	76.3
75.00		1.00	1.19	10.430	11.47	202.39	0.750	0.000	5.00	15.754	11.82	135.6	0.0	747.1
80.00		1.00	1.21	10.572	11.63	195.84	0.750	0.000	5.00	15.152	11.36	132.2	0.0	718.3
85.00		1.00	1.22	10.708	11.78	189.10	0.750	0.000	5.00	14.550	10.91	128.5	0.0	689.5
87.00	Appurtenance(s)	1.00	1.23	10.761	11.84	186.37	0.750	0.000	2.00	5.652	4.24	50.2	0.0	267.7
90.00		1.00	1.24	10.838	11.92	182.21	0.750	0.000	3.00	8.297	6.22	74.2	0.0	392.9
95.00		1.00	1.25	10.962	12.06	175.17	0.750	0.000	5.00	13.347	10.01	120.7	0.0	631.8
97.00	Appurtenance(s)	1.00	1.26	11.010	12.11	172.31	0.750	0.000	2.00	5.170	3.88	47.0	0.0	244.6
98.50	Bot - Section 4	1.00	1.26	11.046	12.15	170.16	0.750	0.000	1.50	3.814	2.86	34.8	0.0	180.5
100.00		1.00	1.27	11.081	12.19	167.99	0.750	0.000	1.50	3.840	2.88	35.1	0.0	329.6
102.33	Top - Section 3	1.00	1.27	11.135	12.25	164.60	0.750	0.000	2.33	5.866	4.40	53.9	0.0	503.2
105.00		1.00	1.28	11.195	12.31	164.29	0.750	0.000	2.67	6.543	4.91	60.4	0.0	258.4
110.00	Appurtenance(s)	1.00	1.29	11.305	12.44	156.89	0.750	0.000	5.00	11.807	8.86	110.1	0.0	466.1
115.00		1.00	1.30	11.412	12.55	149.38	0.750	0.000	5.00	11.205	8.40	105.5	0.0	442.0
117.00	Appurtenance(s)	1.00	1.31	11.453	12.60	146.35	0.750	0.000	2.00	4.313	3.24	40.8	0.0	170.1
120.00		1.00	1.32	11.514	12.67	141.77	0.750	0.000	3.00	6.290	4.72	59.7	0.0	247.9
Totals:									120.00			3,191.9		21,220.7

Discrete Appurtenance Forces

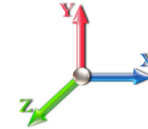
Structure: CT03801-S-SBA	Code: TIA-222-G	4/19/2022
Site Name: East Granby	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 19

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	117.00	RF4439d-25A	3	11.474	12.621	0.67	1.00	2.93	188.40	0.000	1.000	37.04	0.00	37.04
2	117.00	HBXX-6517DS-VTM	3	11.453	12.598	0.77	1.00	19.75	122.10	0.000	0.000	248.83	0.00	0.00
3	117.00	GPS	1	11.453	12.598	0.50	1.00	0.50	10.00	0.000	0.000	6.30	0.00	0.00
4	117.00	Low Profile	1	11.453	12.598	1.00	1.00	32.00	1500.00	0.000	0.000	403.15	0.00	0.00
5	117.00	NHH-65B-R2B	6	11.474	12.621	0.83	1.00	40.24	262.20	0.000	1.000	507.85	0.00	507.85
6	117.00	MT6407-77A	3	11.474	12.621	0.70	1.00	9.85	238.20	0.000	1.000	124.30	0.00	124.30
7	117.00	Collar Mount	1	11.453	12.598	1.00	1.00	2.25	136.70	0.000	0.000	28.35	0.00	0.00
8	117.00	12	1	11.474	12.621	1.00	1.00	1.46	38.00	0.000	1.000	18.43	0.00	18.43
9	117.00	BSAMNT-SBS-1-2	3	11.453	12.598	1.00	1.00	0.00	76.05	0.000	0.000	0.00	0.00	0.00
10	117.00	Support Rail Kit	1	11.453	12.598	1.00	1.00	8.75	430.00	0.000	0.000	110.24	0.00	0.00
11	117.00	Kickers w/o Collar	1	11.453	12.598	1.00	1.00	5.33	146.00	0.000	0.000	67.15	0.00	0.00
12	117.00	RF4440d-13A	3	11.474	12.621	0.67	1.00	2.93	188.40	0.000	1.000	37.04	0.00	37.04
13	110.00	KRY 112 144/1	3	11.305	12.436	0.50	0.75	0.62	33.00	0.000	0.000	7.69	0.00	0.00
14	110.00	4449 B71 + B85	3	11.305	12.436	0.50	0.75	2.97	219.60	0.000	0.000	36.93	0.00	0.00
15	110.00	4460 B25 + B66	3	11.305	12.436	0.50	0.75	2.47	216.00	0.000	0.000	30.75	0.00	0.00
16	110.00	Platform w/ Hand Rail	1	11.305	12.436	1.00	1.00	32.00	1600.00	0.000	0.000	397.95	0.00	0.00
17	110.00	KRY 112 489/2	6	11.305	12.436	0.50	0.75	0.03	0.60	0.000	0.000	0.37	0.00	0.00
18	110.00	Support Rail Bracing Kit	1	11.305	12.436	1.00	1.00	8.25	496.00	0.000	0.000	102.60	0.00	0.00
19	110.00	AIR6419 B41	3	11.305	12.436	0.53	0.75	9.03	309.00	0.000	0.000	112.24	0.00	0.00
20	110.00	APXVAALL24_43-U-NA20	3	11.305	12.436	0.55	0.75	33.24	368.40	0.000	0.000	413.42	0.00	0.00
21	97.00	RDIDC-9181-PF-48	1	11.010	12.111	0.75	0.75	1.51	21.90	0.000	0.000	18.26	0.00	0.00
22	97.00	TA08025-B604	3	11.010	12.111	0.50	0.75	2.95	191.70	0.000	0.000	35.78	0.00	0.00
23	97.00	TA08025-B605	3	11.010	12.111	0.50	0.75	2.95	225.00	0.000	0.000	35.78	0.00	0.00
24	97.00	MC-PK8-DSH	1	11.010	12.111	1.00	1.00	37.59	1727.00	0.000	0.000	455.25	0.00	0.00
25	97.00	MX08FRO665-21	3	11.010	12.111	0.55	0.75	20.80	193.50	0.000	0.000	251.86	0.00	0.00
26	87.00	800 10966	3	10.761	11.837	0.54	0.75	28.12	377.10	0.000	0.000	332.88	0.00	0.00
27	87.00	PRK-1245 (kicker kit)	1	10.761	11.837	1.00	1.00	9.50	464.91	0.000	0.000	112.45	0.00	0.00
28	87.00	Low Profile	1	10.761	11.837	1.00	1.00	22.00	1500.00	0.000	0.000	260.41	0.00	0.00
29	87.00	HRK12 (Handrail Kit)	1	10.761	11.837	1.00	1.00	6.75	261.72	0.000	0.000	79.90	0.00	0.00
30	87.00	HPA-65R-BUU-H8	3	10.761	11.837	0.59	0.75	23.07	204.00	0.000	0.000	273.09	0.00	0.00
31	87.00	7770.00	3	10.761	11.837	0.55	0.75	9.03	105.00	0.000	0.000	106.93	0.00	0.00
32	87.00	4449 B5/B12	3	10.761	11.837	0.65	0.75	3.81	213.00	0.000	0.000	45.12	0.00	0.00
33	87.00	TT19-08BP111-001	6	10.761	11.837	0.68	0.75	2.59	96.00	0.000	0.000	30.68	0.00	0.00
34	87.00	LGP21903	6	10.761	11.837	0.63	0.75	1.02	33.00	0.000	0.000	12.08	0.00	0.00
35	87.00	B2 B66A 8843	3	10.761	11.837	0.64	0.75	3.14	210.00	0.000	0.000	37.13	0.00	0.00
36	87.00	DC6-48-60-18-8F(23.5"	1	10.761	11.837	1.00	1.00	1.26	20.00	0.000	0.000	14.91	0.00	0.00
37	87.00	DC6-48-60-18-8C	1	10.761	11.837	1.00	1.00	1.26	20.00	0.000	0.000	14.91	0.00	0.00

Totals: 12,442.48

4,808.04

Total Applied Force Summary

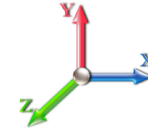
Structure: CT03801-S-SBA	Code: TIA-222-G	4/19/2022
Site Name: East Granby	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 19

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		144.54	1353.41	0.00	0.00
10.00		140.85	1324.57	0.00	0.00
15.00		137.15	1295.74	0.00	0.00
20.00		141.60	1266.91	0.00	0.00
25.00		144.30	1238.07	0.00	0.00
30.00		145.68	1209.24	0.00	0.00
32.00		57.86	475.62	0.00	0.00
35.00		88.52	1278.84	0.00	0.00
37.50		73.61	1049.84	0.00	0.00
40.00		73.49	579.81	0.00	0.00
45.00		147.17	1138.00	0.00	0.00
50.00		145.72	1109.17	0.00	0.00
55.00		143.82	1080.34	0.00	0.00
60.00		141.54	1051.50	0.00	0.00
64.83		134.30	989.05	0.00	0.00
65.00		4.64	59.99	0.00	0.00
69.50		124.87	1595.41	0.00	0.00
70.00		13.64	99.61	0.00	0.00
75.00		135.55	980.27	0.00	0.00
80.00		132.16	951.44	0.00	0.00
85.00		128.54	922.60	0.00	0.00
87.00	(32) attachments	1370.67	3865.70	0.00	0.00
90.00		74.18	477.87	0.00	0.00
95.00		120.70	773.39	0.00	0.00
97.00	(11) attachments	843.89	2660.38	0.00	0.00
98.50		34.76	221.43	0.00	0.00
100.00		35.10	370.55	0.00	0.00
102.33		53.88	566.96	0.00	0.00
105.00		60.43	331.25	0.00	0.00
110.00	(23) attachments	1212.07	3845.27	0.00	0.00
115.00		105.49	510.24	0.00	0.00
117.00	(27) attachments	1629.42	3533.42	0.00	724.66
120.00		59.75	247.92	0.00	0.00
	Totals:	7,999.91	38,453.80	0.00	724.66

Linear Appurtenance Segment Forces (Factored)

Structure: CT03801-S-SBA	Code: TIA-222-G	4/19/2022
Site Name: East Granby	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 19

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.028	0.000	7.442	0.00	5.00
10.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.029	0.000	7.442	0.00	5.00
15.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.030	0.000	7.442	0.00	5.00
20.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.031	0.000	7.896	0.00	5.00
25.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.032	0.000	8.276	0.00	5.00
30.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.032	0.000	8.600	0.00	5.00
32.00	1.6" Hybrid	Yes	2.00	0.000	1.60	0.27	0.00	0.033	0.000	8.717	0.00	2.00
35.00	1.6" Hybrid	Yes	3.00	0.000	1.60	0.40	0.00	0.034	0.000	8.883	0.00	3.00
37.50	1.6" Hybrid	Yes	2.50	0.000	1.60	0.33	0.00	0.034	0.000	9.013	0.00	2.50
40.00	1.6" Hybrid	Yes	2.50	0.000	1.60	0.33	0.00	0.034	0.000	9.137	0.00	2.50
45.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.035	0.000	9.366	0.00	5.00
50.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.036	0.000	9.576	0.00	5.00
55.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.037	0.000	9.770	0.00	5.00
60.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.039	0.000	9.951	0.00	5.00
64.83	1.6" Hybrid	Yes	4.83	0.000	1.60	0.64	0.00	0.040	0.000	10.115	0.00	4.83
65.00	1.6" Hybrid	Yes	0.17	0.000	1.60	0.02	0.00	0.041	0.000	10.120	0.00	0.17
69.50	1.6" Hybrid	Yes	4.50	0.000	1.60	0.60	0.00	0.041	0.000	10.264	0.00	4.50
70.00	1.6" Hybrid	Yes	0.50	0.000	1.60	0.07	0.00	0.041	0.000	10.279	0.00	0.50
75.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.042	0.000	10.430	0.00	5.00
80.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.044	0.000	10.572	0.00	5.00
85.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.046	0.000	10.708	0.00	5.00
87.00	1.6" Hybrid	Yes	2.00	0.000	1.60	0.27	0.00	0.047	0.000	10.761	0.00	2.00
90.00	1.6" Hybrid	Yes	3.00	0.000	1.60	0.40	0.00	0.048	0.000	10.838	0.00	3.00
95.00	1.6" Hybrid	Yes	5.00	0.000	1.60	0.67	0.00	0.050	0.000	10.962	0.00	5.00
97.00	1.6" Hybrid	Yes	2.00	0.000	1.60	0.27	0.00	0.052	0.000	11.010	0.00	2.00
Totals:											0.0	97.0

Calculated Forces

Structure: CT03801-S-SBA	Code: TIA-222-G	4/19/2022
Site Name: East Granby	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind	Iterations	19
Dead Load Factor 1.00		
Wind Load 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	-38.45	-8.01	0.00	-703.92	0.00	703.92	4242.75	2121.37	9773.47	4851.96	0.00	0.000	0.000	0.154
5.00	-37.09	-7.89	0.00	-663.86	0.00	663.86	4184.67	2092.33	9393.09	4663.13	0.02	-0.037	0.000	0.151
10.00	-35.76	-7.77	0.00	-624.40	0.00	624.40	4124.00	2062.00	9013.89	4474.88	0.08	-0.075	0.000	0.148
15.00	-34.46	-7.66	0.00	-585.53	0.00	585.53	4060.73	2030.37	8636.33	4287.44	0.18	-0.113	0.000	0.145
20.00	-33.19	-7.54	0.00	-547.25	0.00	547.25	3994.87	1997.44	8260.86	4101.04	0.32	-0.152	0.000	0.142
25.00	-31.95	-7.41	0.00	-509.57	0.00	509.57	3926.42	1963.21	7887.94	3915.90	0.50	-0.192	0.000	0.138
30.00	-30.74	-7.27	0.00	-472.52	0.00	472.52	3855.38	1927.69	7518.03	3732.27	0.72	-0.232	0.000	0.135
32.00	-30.26	-7.23	0.00	-457.97	0.00	457.97	3826.23	1913.12	7371.01	3659.28	0.82	-0.249	0.000	0.133
35.00	-28.98	-7.14	0.00	-436.29	0.00	436.29	3781.74	1890.87	7151.59	3550.35	0.99	-0.274	0.000	0.131
37.50	-27.92	-7.07	0.00	-418.44	0.00	418.44	3783.94	1891.97	7162.31	3555.67	1.14	-0.294	0.000	0.125
40.00	-27.34	-7.01	0.00	-400.75	0.00	400.75	3746.19	1873.09	6980.48	3465.40	1.30	-0.315	0.000	0.123
45.00	-26.20	-6.88	0.00	-365.69	0.00	365.69	3668.73	1834.37	6619.97	3286.43	1.65	-0.355	0.000	0.118
50.00	-25.09	-6.74	0.00	-331.31	0.00	331.31	3588.69	1794.34	6264.07	3109.75	2.04	-0.394	0.000	0.114
55.00	-24.00	-6.61	0.00	-297.61	0.00	297.61	3506.05	1753.02	5913.22	2935.57	2.47	-0.433	0.000	0.108
60.00	-22.95	-6.47	0.00	-264.58	0.00	264.58	3420.81	1710.41	5567.90	2764.14	2.95	-0.471	0.000	0.102
64.83	-21.96	-6.33	0.00	-233.31	0.00	233.31	3335.96	1667.98	5239.76	2601.24	3.45	-0.508	0.000	0.096
65.00	-21.90	-6.34	0.00	-232.25	0.00	232.25	3332.99	1666.49	5228.55	2595.67	3.46	-0.509	0.000	0.096
69.50	-20.30	-6.20	0.00	-203.74	0.00	203.74	3299.78	1649.89	5104.40	2534.04	3.96	-0.543	0.000	0.087
70.00	-20.20	-6.20	0.00	-200.64	0.00	200.64	3290.76	1645.38	5071.06	2517.49	4.02	-0.547	0.000	0.086
75.00	-19.22	-6.06	0.00	-169.66	0.00	169.66	3199.12	1599.56	4741.34	2353.80	4.61	-0.580	0.000	0.078
80.00	-18.26	-5.93	0.00	-139.36	0.00	139.36	3073.61	1536.80	4374.21	2171.54	5.23	-0.611	0.000	0.070
85.00	-17.34	-5.80	0.00	-109.71	0.00	109.71	2947.70	1473.85	4021.34	1996.36	5.89	-0.639	0.000	0.061
87.00	-13.49	-4.38	0.00	-98.12	0.00	98.12	2897.34	1448.67	3884.35	1928.35	6.16	-0.650	0.000	0.056
90.00	-13.01	-4.31	0.00	-84.97	0.00	84.97	2821.79	1410.90	3683.31	1828.55	6.57	-0.665	0.000	0.051
95.00	-12.24	-4.18	0.00	-63.42	0.00	63.42	2695.89	1347.94	3360.11	1668.10	7.28	-0.687	0.000	0.043
97.00	-9.59	-3.31	0.00	-55.06	0.00	55.06	2645.52	1322.76	3234.99	1605.99	7.57	-0.695	0.000	0.038
98.50	-9.37	-3.27	0.00	-50.09	0.00	50.09	2607.75	1303.88	3142.71	1560.17	7.79	-0.701	0.000	0.036
100.00	-9.00	-3.23	0.00	-45.19	0.00	45.19	2569.98	1284.99	3051.76	1515.02	8.01	-0.706	0.000	0.033
102.33	-8.43	-3.17	0.00	-37.65	0.00	37.65	2143.60	1071.80	2553.25	1267.54	8.36	-0.713	0.000	0.034
105.00	-8.10	-3.11	0.00	-29.18	0.00	29.18	2087.65	1043.82	2420.99	1201.88	8.76	-0.721	0.000	0.028
110.00	-4.27	-1.85	0.00	-13.64	0.00	13.64	1982.72	991.36	2182.49	1083.48	9.52	-0.732	0.000	0.015
115.00	-3.76	-1.74	0.00	-4.39	0.00	4.39	1877.80	938.90	1956.35	971.22	10.29	-0.737	0.000	0.007
117.00	-0.25	-0.06	0.00	-0.19	0.00	0.19	1835.83	917.92	1869.36	928.03	10.60	-0.738	0.000	0.000
120.00	0.00	-0.06	0.00	0.00	0.00	0.00	1772.88	886.44	1742.58	865.09	11.06	-0.738	0.000	0.000

Final Analysis Summary

Structure: CT03801-S-SBA	Code: TIA-222-G	4/19/2022
Site Name: East Granby	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 33

Reactions

Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)
1.2D + 1.6W 93 mph Wind	30.8	0.00	46.10	0.00	0.00	2717.34
0.9D + 1.6W 93 mph Wind	30.8	0.00	34.57	0.00	0.00	2698.72
1.2D + 1.0Di + 1.0Wi 50 mph Wind	9.6	0.00	80.70	0.00	0.00	863.22
1.2D + 1.0E	1.8	0.00	46.14	0.00	0.00	181.87
0.9D + 1.0E	1.8	0.00	34.61	0.00	0.00	180.52
1.0D + 1.0W 60 mph Wind	8.0	0.00	38.45	0.00	0.00	703.92

Max Stresses

Load Case	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Elev (ft)	Stress Ratio
1.2D + 1.6W 93 mph Wind	-46.10	-30.81	0.00	-2717.3	0.00	-2717.3	4242.75	2121.3	9773.47	4851.96	0.00	0.571
0.9D + 1.6W 93 mph Wind	-34.57	-30.80	0.00	-2698.7	0.00	-2698.7	4242.75	2121.3	9773.47	4851.96	0.00	0.565
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-80.70	-9.56	0.00	-863.22	0.00	-863.22	4242.75	2121.3	9773.47	4851.96	0.00	0.197
1.2D + 1.0E	-46.14	-1.81	0.00	-181.87	0.00	-181.87	4242.75	2121.3	9773.47	4851.96	0.00	0.048
0.9D + 1.0E	-34.61	-1.81	0.00	-180.52	0.00	-180.52	4242.75	2121.3	9773.47	4851.96	0.00	0.045
1.0D + 1.0W 60 mph Wind	-38.45	-8.01	0.00	-703.92	0.00	-703.92	4242.75	2121.3	9773.47	4851.96	0.00	0.154

Base Plate Summary

Structure: CT03801-S-SB	Code: TIA-222-G	4/19/2022
Site Name: East Granby	Exposure: C	
Height: 120.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 34



Reactions	Base Plate	Anchor Bolts
Original Design	Yield (ksi): 50.00	Bolt Circle: 61.00
Moment (kip-ft): 3719.37	Width (in): 65.00	Number Bolts: 39.00
Axial (kip): 37.44	Style: Round	Bolt Type: 1.25" A687
Shear (kip): 37.03	Polygon Sides: 0.00	Bolt Diameter (in): 1.25
Analysis (1.2D + 1.6W)	Clip Length (in): 0.00	Yield (ksi): 105.00
Moment (kip-ft): 2717.34	Effective Len (in): 8.05	Ultimate (ksi): 150.00
Axial (kip): 46.10	Moment (kip-in): 138.68	Arrangement: Radial
Shear (kip): 30.81	Allow Stress (ksi): 67.50	Cluster Dist (in): 0.00
	Applied Stress (ksi): 45.90	Start Angle (deg): 0.00
	Stress Ratio: 0.68	Compression
		Force (kip): 56.90
		Allowable (kip): 116.40
		Ratio: 0.50
		Tension
		Force (kip): 52.76
		Allowable (kip): 116.40
		Ratio: 0.47



Monopole Mat Foundation Design

Date
4/14/2022

Customer Name:	T-Mobile	TIA Standard:	TIA-222-G
Site Name:		Structure Height (Ft.):	120
Site Number:	CT03801-S-SBA	Engineer Name:	S. Hesselbeir
Engr. Number:	127668	Engineer Login ID:	

Foundation Info Obtained from:

Drawings/Calculations
Monopole
Analysis

Structure Type:

Analysis or Design?

Base Reactions (Factored):

Axial Load (Kips):	80.7	Shear Force (Kips):	30.8
Uplift Force (Kips):	0.0	Moment (Kips-ft):	2717.3

Allowable overstress %: 5.0%

Foundation Geometries:

		Mods required -Yes/No ?:	No
Diameter of Pier (ft.):	6.5	Depth of Base BG (ft.):	9.0
Pier Height A. G. (ft.):	0.50	Thickness of Pad (ft.):	2.50
Length of Pad (ft.):	27	Width of Pad (ft.):	27

Final Length of pad (ft)	27.0	Final width of pad (ft):	27.0
--------------------------	------	--------------------------	------

Material Properties and Rebar Info:

Concrete Strength (psi):	4000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield (ksi):	60	
Vertical Rebar Size #:	11	Tie / Stirrup Size #:	4	
Qty. of Vertical Rebars:	27	Tie Spacing (in):	12.0	
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	9	
Concrete Cover (in.):	3	Unit Weight of Concrete:	150.0	pcf

Rebar at the bottom of the concrete pad:			
Qty. of Rebar in Pad (L):	35	Qty. of Rebar in Pad (W):	35
Rebar at the top of the concrete pad:			
Qty. of Rebar in Pad (L):	35	Qty. of Rebar in Pad (W):	35

Apply 1.35 factor for e/w Per G: 1.35

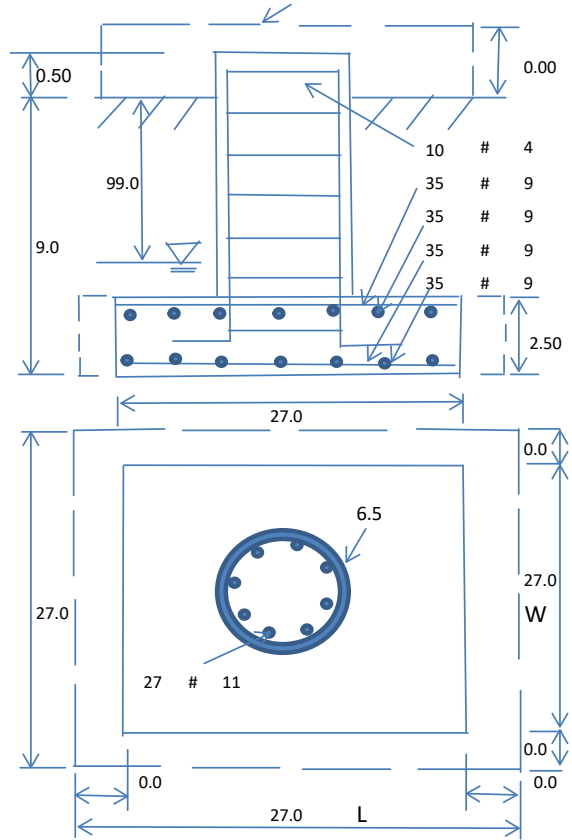
Soil Design Parameters:

Soil Unit Weight (pcf):	110.0	Soil Buoyant Weight:	50.0	Pcf	
Water Table B.G.S. (ft):	99.0	Unit Weight of Water:	62.4	pcf	Angle from Top of Pad: 30
Ultimate Bearing Pressure (psf):	5000	Ultimate Skin Friction:	0	Psf	Angle from Bottm of Pad: 25
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	No		Angle from Bottm of Pad: 25
Consider soil hor. resist. for OTM.:	Yes	Reduction factor on the maximum soil bearing pressure:	1.00		

Foundation Analysis and Design:	Uplift Strength Reduction Factor:	0.75	Compression Strength Reduction Factor:	0.75
Total Dry Soil Volume (cu. Ft.):		4522.81	Total Dry Soil Weight (Kips):	497.51
Total Buoyant Soil Volume (cu. Ft.):		0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):		497.51	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):		2054.78	Total Dry Concrete Weight (Kips):	308.22
Total Buoyant Concrete Volume (cu. Ft.):		0.00	Total Buoyant Concrete Weight (Kips):	0.00
Total Effective Concrete Weight (Kips):		308.22	Total Vertical Load on Base (Kips):	886.43

Check Soil Capacities:

Calculated Maxium Net Soil Pressure under the base (psf):	1735	< Allowable Factored Soil Bearing (psf):	3750	0.46	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	10879.0	> Design Factored Momont (kips-ft):	2701	0.25	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	4.03				OK!



Check the capacities of Reinforcing Concrete:

Strength reduction factor (Flexure and axial tension):	0.90	Strength reduction factor (Shear):	0.75		
Strength reduction factor (Axial compression):	0.65	Wind Load Factor on Concrete Design:	1.00		
				Load/ Capacity Ratio	
(1) Concrete Pier:					
Vertical Steel Rebar Area (sq. in./each):	1.56	Tie / Stirrup Area (sq. in./each):	0.20		
Calculated Moment Capacity (Mn,Kips-Ft):	6141.1	> Design Factored Moment (Mu, Kips-F	2932.9	0.48	OK!
Calculated Shear Capacity (Kips):	578.1	> Design Factored Shear (Kips):	30.8	0.05	OK!
Calculated Tension Capacity (Tn, Kips):	2274.5	> Design Factored Tension (Tu Kips):	0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	8373.7	> Design Factored Axial Load (Pu Kips):	80.7	0.01	OK!
Moment & Axial Strength Combination:	0.48	OK! Check Tie Spacing (Design/Required):	1		OK!
Pier Reinforcement Ratio:	0.009	Reinforcement Ratio is satisfied per ACI			
(2).Concrete Pad:					
One-Way Design Shear Capacity (L-Direction, Kips):	812.6	> One-Way Factored Shear (L-D. Kips):	234.1	0.29	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	812.6	> One-Way Factored Shear (W-D., Kips)	234.1	0.29	OK!
One-Way Design Shear Capacity (Corner-Corner, Kips):	821.0	> One-Way Factored Shear (C-C, Kips):	202.0	0.25	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0041	OK! Lower Steel Pad Reinf. Ratio (W-Direc	0.0041		
Lower Steel Pad Moment Capacity (L-Direction, Kips-ft):	4013.8	> Moment at Bottom (L-Dir. K-Ft):	1387.6	0.35	OK!
Lower Steel Pad Moment Capacity (W-Direction, Kips-ft):	4013.8	> Moment at Bottom (W-Dir. K-Ft):	1387.6	0.35	OK!
Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):	5632.8	> Moment at Bottom (C-C Dir. K-Ft):	1962.3	0.35	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0041	OK! Upper Steel Reinf. Ratio (W-Dir.):	0.0041		
Upper Steel Pad Moment Capacity (L-Direc. Kips-ft):	4013.8	> Moment at the top (L-Dir K-Ft):	460.6	0.11	OK!
Upper Steel Pad Moment Capacity (W-Direc. Kips-ft):	4013.8	> Moment at the top (W-Dir K-Ft):	460.6	0.11	OK!
Upper Steel Pad Moment Capacity (Corner-Corner, K-ft):	5632.8	> Moment at the top (C-C Dir. K-Ft):	430.4	0.08	OK!
(3).Check Punching Shear Capacity due to Moment in the Pier:					
Moment transferred by punching shear:	1086.9	k-ft. Max. factored shear stress $v_{u,CD}$:	0.1	Psi	
Max. factored shear stress $v_{u,AB}$:	14.7	Psi Factored shear Strength ϕv_n :	189.7	Psi	
Max. factored shear stress v_u :	14.7	Psi Check Usage of Punching Shear Capacity:	0.08		OK!



Exhibit E

Mount Analysis



Tower Engineering Solutions

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

Post-Mod Antenna Mount Analysis Report

Existing 121-Ft Monopole Tower

Customer Name: SBA Communications Corp

Customer Site Number: CT03801-S-SBA / East Granby

Customer Site Name: East Granby

Carrier Name: T-Mobile (App#: 192394-1)

Carrier Site ID / Name: CT11386G / Simsbury North

Site Location: 56 Floydville Road

East Granby, Connecticut

Hartford County

Latitude: 41.928649

Longitude: -72.776099

Analysis Result:

Max Structural Usage: 90.2% [Pass]

Report Prepared By: Jian Ma





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Analysis Result:

Max Structural Usage: 90.2% [Pass]

Report Prepared By: Jian Ma

Introduction

The purpose of this report is to summarize the analysis results on the (1) Platform with Handrails at 110.00' elevation including the proposed modifications to support the proposed antenna configuration. Any existing modification listed under Sources of Information was assumed completed and was included in this analysis.

The proposed modification by **TES** listed under Sources of Information was considered completed and was included in this analysis.

Sources of Information

Mount Drawings	Mount Mapping done by Full Metal Tower Services, drawing no. 1234202, dated 4/28/19.
Antenna Loading	Provided by SBA; Application #: 192394, v;1 dated 4/7/2022
Existing Modification	Tower Engineering Solutions; Project #80043; dated 07/03/19
Proposed Modification	TES Project No. 127671

Analysis Criteria

Basic Wind Speed Used in the Analysis: $V_{ULT} = 120$ mph (3-Sec. Gust) / Equivalent to
 $V_{ASD} = 93$ mph (3-Sec. Gust)

Basic Wind Speed with Ice: 50 mph (3-Sec. Gust) with 1" radial ice concurrent

Operational Wind Speed: 30 mph +0" Radial ice

Standard/Codes: ANSI/TIA/EIA 222-G/2015 IBC/ 2018 Connecticut State Building Code

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) Platform with Handrails at 110.00' elevation

Final Antenna Configuration

3 RFS APXVAALL24_43-U-NA20
3 Ericsson KRY 112 489/2
6 Ericsson KRY 112 144/1
3 Ericsson 4449 B71 + B85
3 Ericsson 4460 B25 + B66

Analysis Results

Our calculations have determined that under design wind load the existing mounts will be structurally adequate to support the proposed antenna configuration after the proposed modification is successfully completed. The maximum structural usage is 90.2%, which occurs in the connection. The proposed equipment must be installed as stipulated in the Final Antenna Configuration section of this report. The analysis results are void if the proposed equipment is not installed in accordance with this report.

Attachments

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

Standard Conditions

1. The loading configuration as analyzed in this report is as provided from the customer. Any deviation from this design shall be communicated to TES to verify deviation will not adversely impact the analysis.
2. The analysis is based on the presumption that the antenna mount members and components along with any existing reinforcement items have been correctly and properly designed, manufactured, installed and maintained.
3. All the existing structural members were assumed to be in good condition with no physical damage or deterioration associated with corrosion. The mount analysis is not a condition assessment of the mount.
4. The mount analysis was performed in accordance with the loading provided, and if applicable the modification required to support the additional loading.
5. If the mount is modified, installation must adhere to the configuration communicated in the modification drawings.
6. The modification drawings are not intended to convey means or methods. These are the responsibility of the installing contractor.
7. Rigging plan review is available if the contractor requires for a construction class IV or other if required. Review fee would apply.
8. The mount modification package was created based upon information provided for the mount loading. The underlying tower is assumed to provide support and sufficient rigidity to support the mount loads as a tower analysis was not part of the mount analysis.
9. TES is not responsible for modifications to climbing facilities unless communicated to TES in writing.



Structure: CT03801-S-SBA - East Granby

Sector: A

4/13/2022

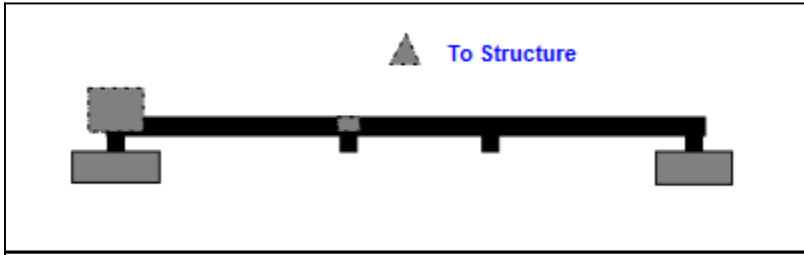
Structure Type: Monopole

Mount Elev: 110.00

Page: 1

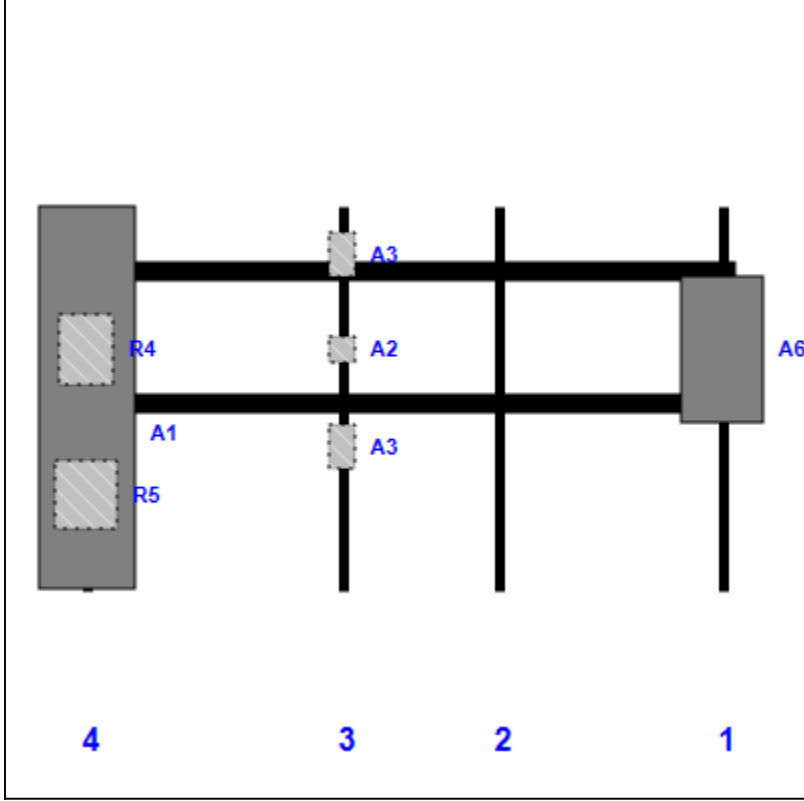


Plan View



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
A6	AIR6419 B41	36.30	20.90	162.00	1	a	Front	35.94			
A2	KRY 112 489/2	6.90	6.10	67.00	3	a	Behind	36.00			
A3	KRY 112 144/1	11.00	6.10	67.00	3	a	Behind	60.00			
A3	KRY 112 144/1	11.00	6.10	67.00	3	b	Behind	12.00			
A1	APXVAALL24_43-U-NA20	95.90	24.00	3.00	4	a	Front	48.00			
R4	4449 B71 + B85	17.90	13.10	3.00	4	a	Behind	36.00			
R5	4460 B25 + B66	17.00	15.10	3.00	4	a	Behind	72.00			

Structure: CT03801-S-SBA - East Granby

Sector: **B**

4/13/2022

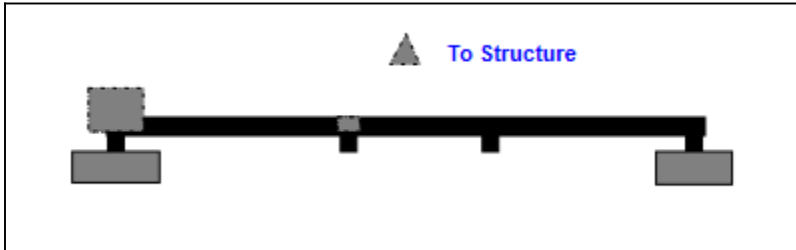
Structure Type: Monopole



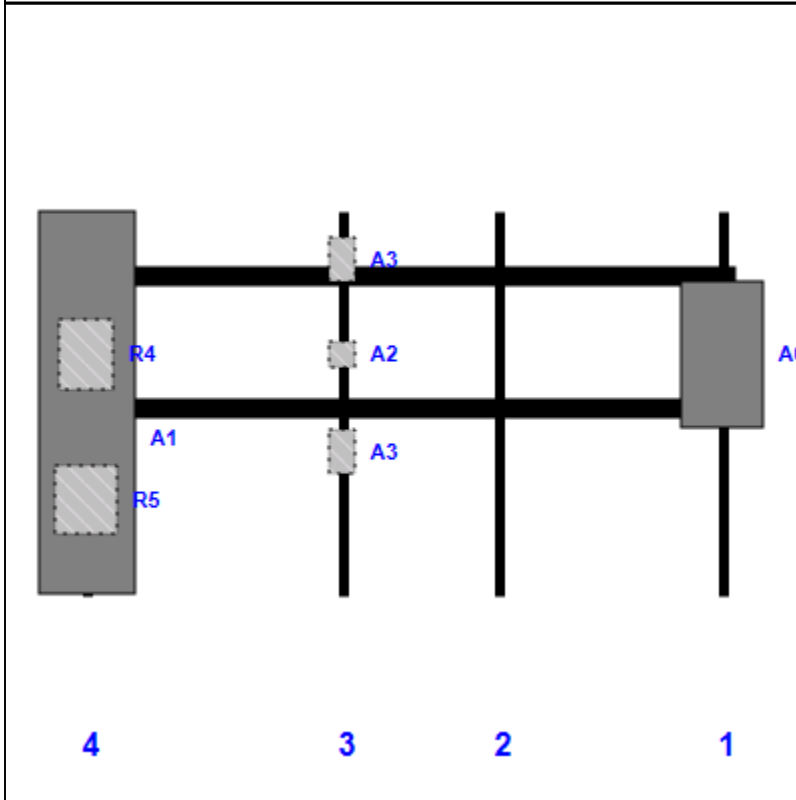
Mount Elev: 110.00

Page: 2

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
A6	AIR6419 B41	36.30	20.90	162.00	1	a	Front	35.94			
A2	KRY 112 489/2	6.90	6.10	67.00	3	a	Behind	36.00			
A3	KRY 112 144/1	11.00	6.10	67.00	3	a	Behind	60.00			
A3	KRY 112 144/1	11.00	6.10	67.00	3	b	Behind	12.00			
A1	APXVAALL24_43-U-NA20	95.90	24.00	3.00	4	a	Front	48.00			
R4	4449 B71 + B85	17.90	13.10	3.00	4	a	Behind	36.00			
R5	4460 B25 + B66	17.00	15.10	3.00	4	a	Behind	72.00			

Structure: CT03801-S-SBA - East Granby

Sector: **C**

4/13/2022

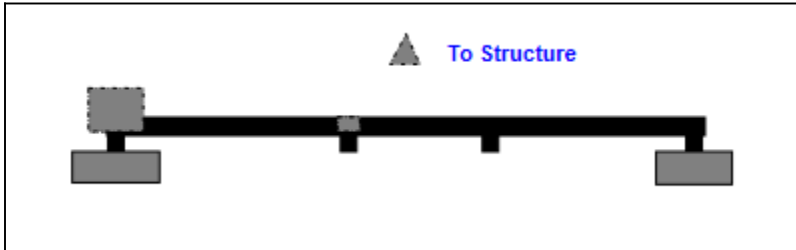
Structure Type: Monopole



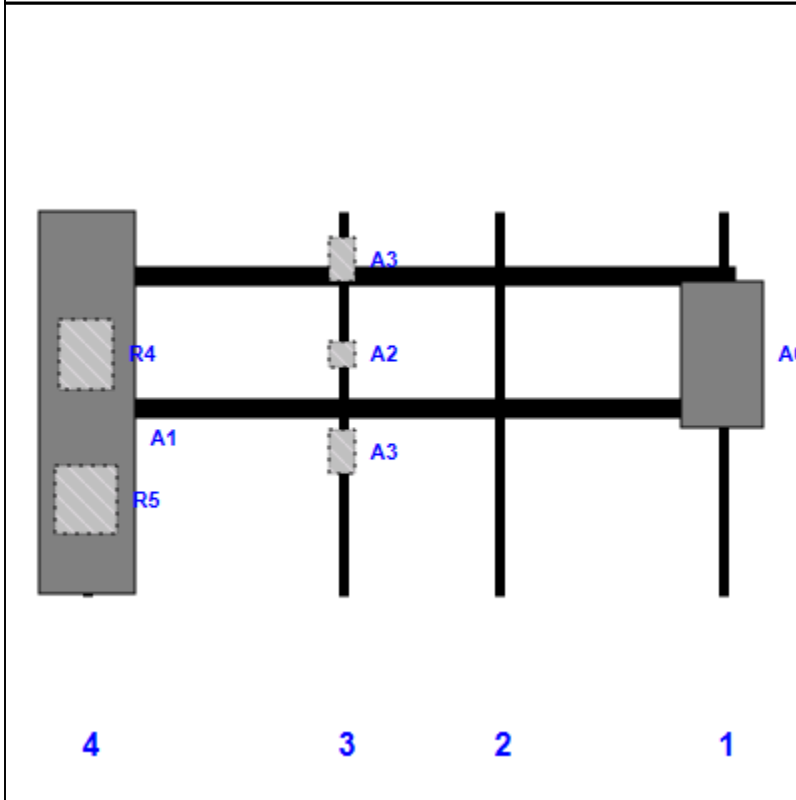
Mount Elev: 110.00

Page: 3


Plan View



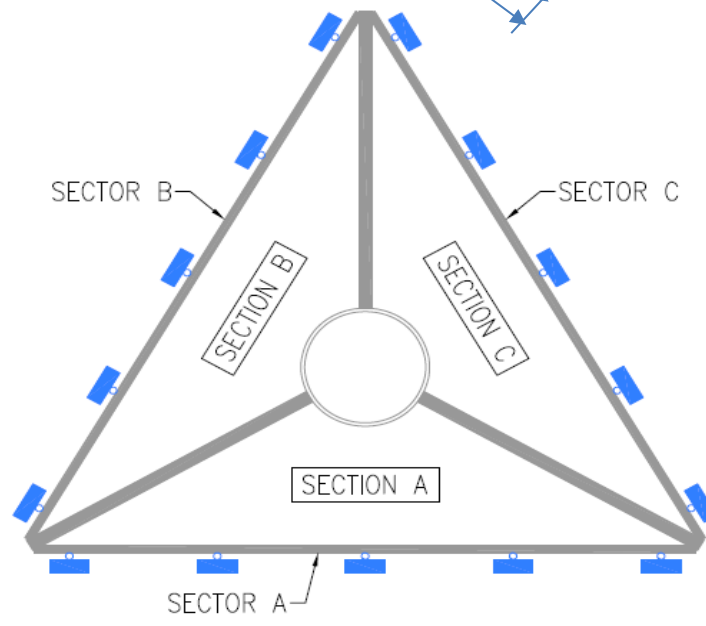
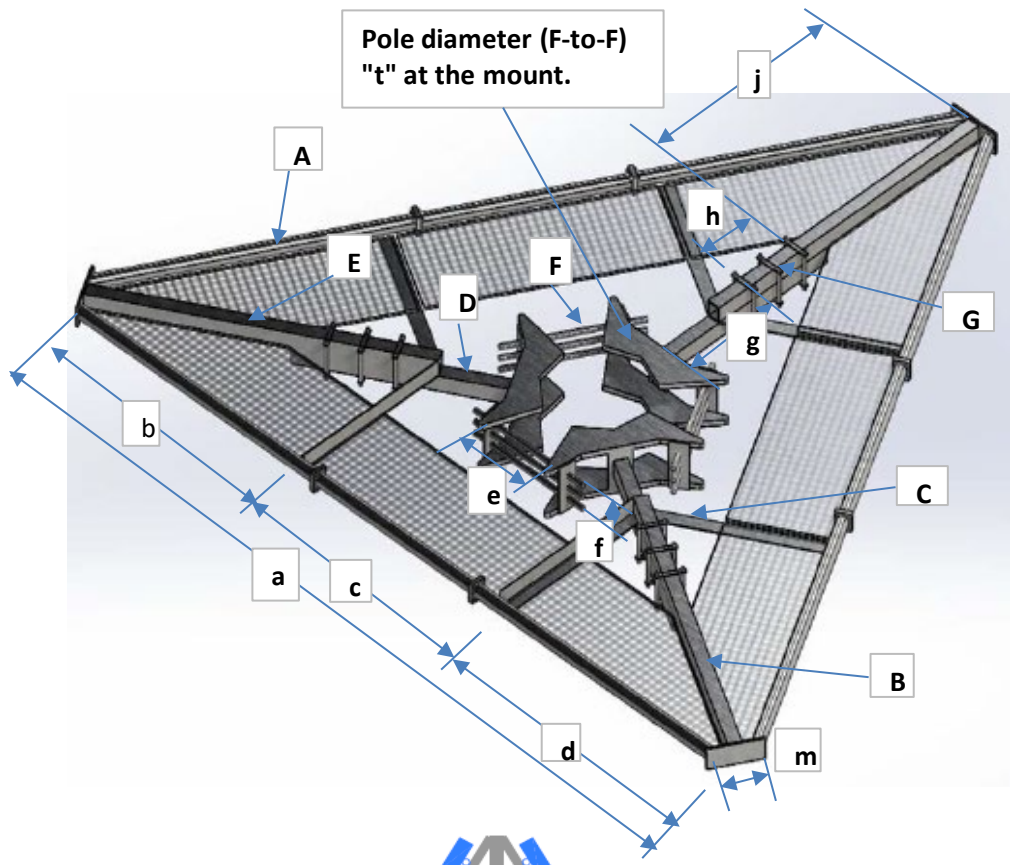
Front View
Looking Toward Structure



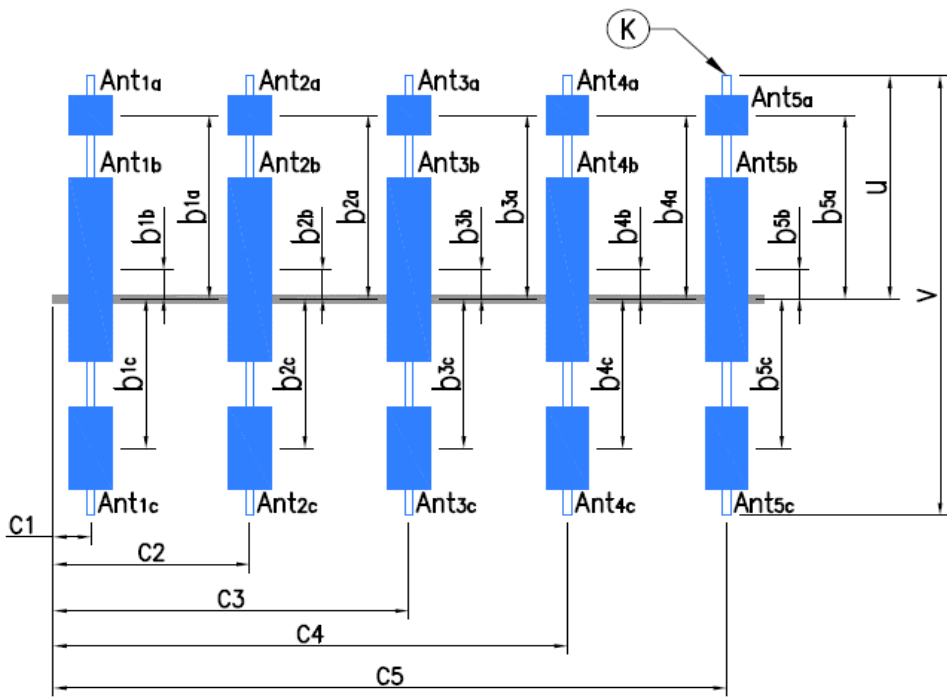
Ref #	Model	Height (in)	Width (in)	H Dist Left	Pipe #	Pipe Pos V	Pos	From Top	H Offset	Status	Validation
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R4	4449 B71 + B85	17.90	13.10	3.00	4	a	Behind	36.00			
R5	4460 B25 + B66	17.00	15.10	3.00	4	a	Behind	72.00			

	Antenna Mount Type "MT-G" Mapping Form (PATENT PENDING)		FCC # 1234202	
	Tower Owner:	SBA Communications	Mapping Date:	4/28/19
	Site Name:	East Granby	Structure Type:	Monopole
	Site Number or ID:	CT03801-S-SBA	Structure Height (Ft.):	121
	Mapping Contractor:	Full Metal Tower Services	Mount Height (Ft.):	110.2

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Climbing ladder is Located at Section A, at 90° Degree Azimuth



Antenna Layout

Azimuth (Degree) of Each Sector and Climbing Information

Sector A:	75°	Deg
Sector B:	205°	Deg
Sector C:	320°	Deg
Climbing	90°	Deg Located at Section A
Climbing Facility	Corrosion Type:	No corrosion observed
	Access:	Climbing path was unobstructed.
	Condition:	N/A

Geometries (Unit: inches)									
a	165	e	36	j	46	o	N/A	s	N/A
b	53	f	9	k	N/A	p	N/A	t	26
c	59	g	24	m	16	q	N/A	u*	40
d	53	h	12	n	N/A	r	N/A	v*	84

(b+c+d+e+f) does not equal to the a value Members/Bolts (Unit: inches See Antenna Layout for "u", "v" and member "K" (pi)

Items	Member	Lx (O.D.)	Ly (I.D.)	T	Items	Member	Lx (O.D.)	Ly (I.D.)	T
A	3.5 OD x 0.216 Pipe	3.5	3.068	0.216	F	3/4" Bolt			36
B	Tubing 4x4x5/16	4	4	0.3125	G	1/2" U-Bolt			Not U-Bolts
C	L2x2x1/4	2	2	0.25	H				
D	Tubing 4x4x5/16	4	4	0.3125	J				
E	Tubing 4x4x5/16	4	4	0.3125	K* (pipe)	2.375 OD x 0.154 Pipe	2.375	2.067	0.154

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

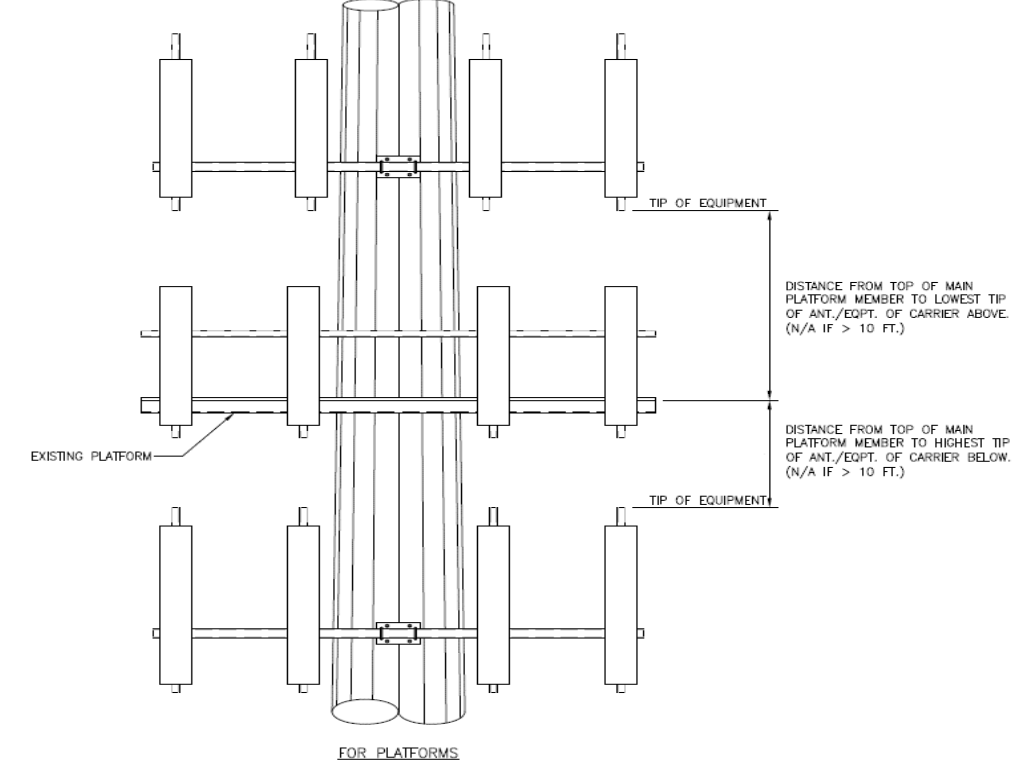
Distance from top of main platform member to highest tip of ant./eqpt. of Carrier below. (N/A if > 10 ft.) N/A


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

Ants. Items	Enter antenna model. If not labeled, enter "Unknown". If no antenna at specified location, enter "N/A". If antennas and the locations are the same on all three sectors, only enter one sector.					Mounting Locations (Unit: inches)			Photos of antennas
	Antenna Models if Known	Width (in.)	Depth (in.)	Height (in.)	Coax Size and Qty	Vertical Distances "b _{1a} , b _{2a} , b _{3a} , b _{1b} ..." (in.)	Horiz. offset (Use "-" if Ant. is inside)	Horiz. offset "C ₁ , C ₂ , C ₃ , C ₄ , C ₅ " (in.)	
Sector A									
Ant _{1a}	APXVAARR24_43-U-N24	24	8.7	95.6	N/A	N/A	N/A	162	
Ant _{1b}									
Ant _{1c}									
Ant _{2a}	Empty Mast	N/A	N/A	N/A	N/A	N/A	N/A	106	
Ant _{2b}									
Ant _{2c}									
Ant _{3a}	Empty Mast	N/A	N/A	N/A	N/A	N/A	N/A	67	
Ant _{3b}									
Ant _{3c}									
Ant _{4a}	Empty Mast	N/A	N/A	N/A	N/A	N/A	N/A	3	
Ant _{4b}									
Ant _{4c}									
Ant _{5a}									
Ant _{5b}									
Ant _{5c}									

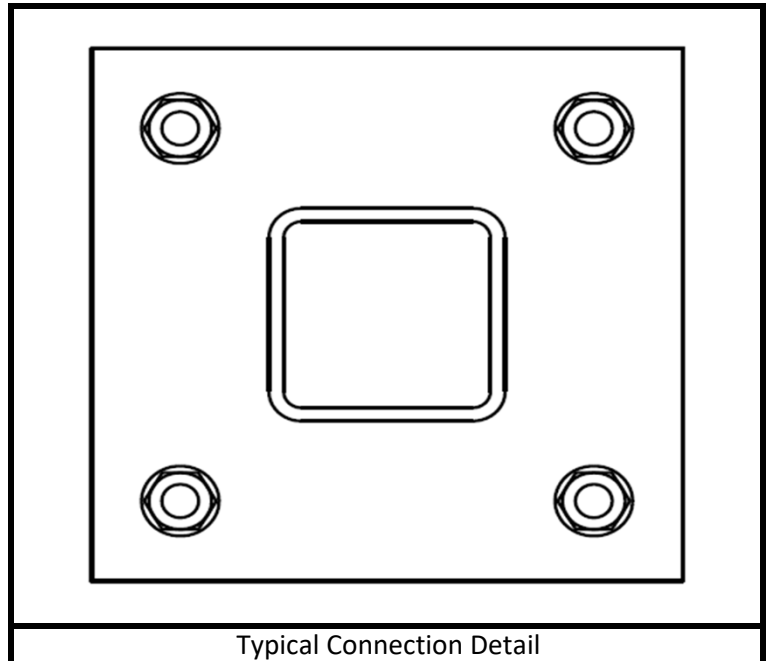
Are Ant same as sector A? Yes **Antennas on Sector B are the same as Sector A**

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



	Standoff Arm Flange Connection Check		Date	
			4/13/2022	
	Customer:		TIA Standard:	ANSI/TIA-222-H
	Carrier:		Mount Elev. [ft]:	
	Site Name:		Engineer Name:	Jian Ma
Site Number:		Project #:		
<p><i>NOTE: The calculations shown below are for a single representative load combination for example purposes. The results for all load combinations are presented in the Results Summary Table.</i></p>				

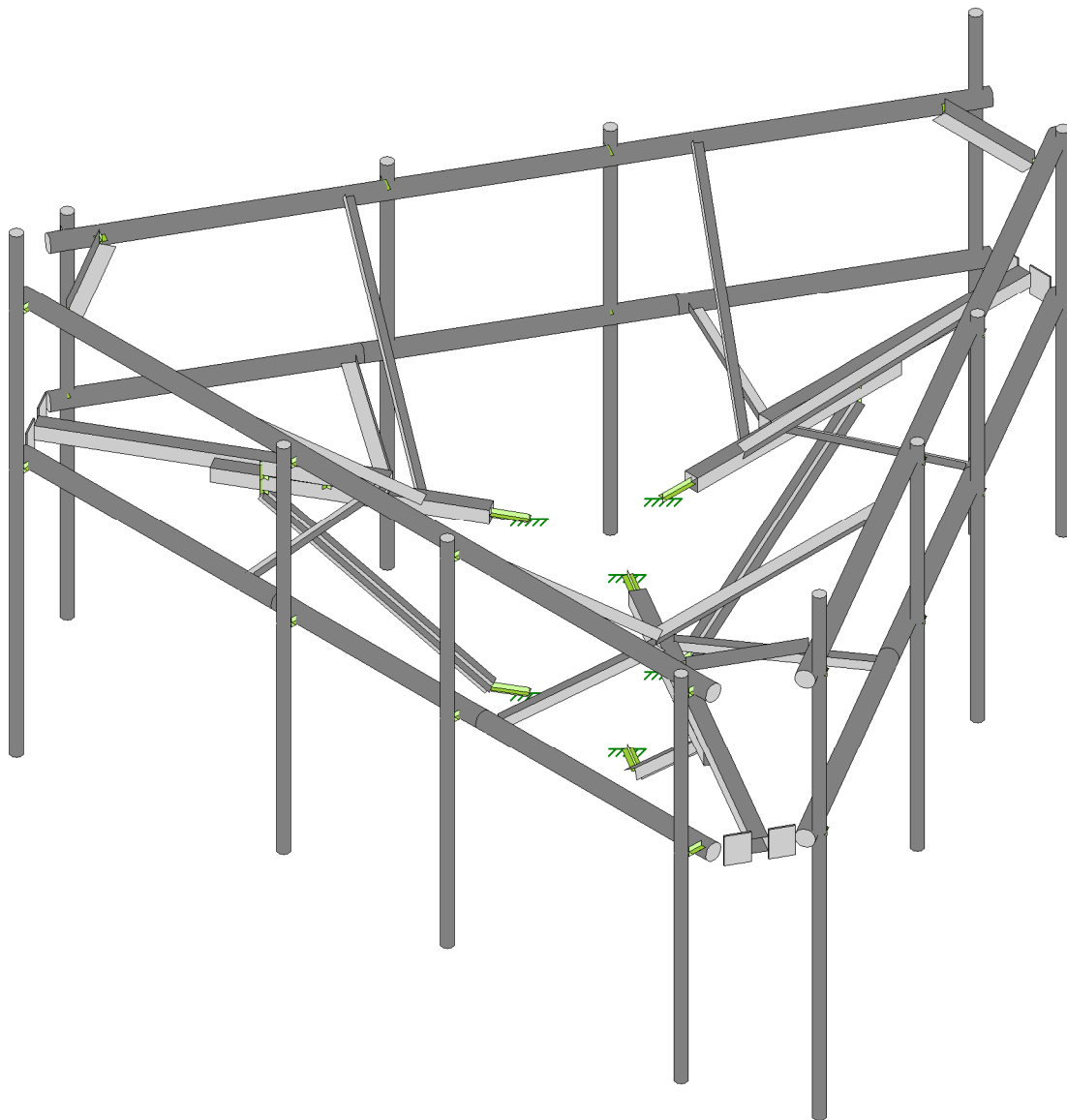
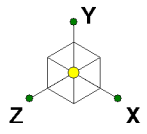
RISA Member Label =	M63	
I or J End?	J	
Load Combination # =	3	
Plate Width, Wp =	6	[In]
Plate Height, Hp =	6	[In]
Plate Thickness, tp =	1	[In]
Plate Fy =	36	[KSI]
Bolt Diameter, db =	0.625	[In]
Bolt Fu =	120	[KSI]
Bolt Horizontal Spacing, Sbh =	4	[In]
Bolt Vertical Spacing, Sbv =	4	[In]
Standoff Member Shape =	Rect Tube	
Member Width, Wm =	3	[In]
Member Depth, Dm =	4	[In]
Member Thickness, tm =	0.25	[In]
Standoff Weld Size =	0.1875	[In]
# Standoff Welds =	1	
Length of Stiffener, Ls =		[In]
Width of Stiffener, Ws =		[In]
Width of Notch, Wn =		[In]
Stiffener Dim 1, ds1 =		[In]
Stiffener Dim 2, ds2 =		[In]
Stiffener Fy =		[KSI]
Stiffener Weld Size =		[In]
# Stiffener Welds =		



NOTES
Standoff and Stiffener welds are assumed 0.1875 in.

Capacity Checks:

Max Bolt Shear =	#N/A	[Kips]
Bolt Shear Capacity =	13.81	[Kips]
Max Bolt Shear Usage =	#N/A	#N/A
Max Bolt Tension =	#N/A	[Kips]
Bolt Tension Capacity =	20.34	[Kips]
Max Bolt Tension Usage =	#N/A	#N/A
Max Bolt Interaction =	#N/A	#N/A
Max Plate Bending Moment =	#N/A	[Kip-In]
Length of Yield Line =	#N/A	[In]
Plate Moment Capacity =	#N/A	[Kip-In]
Max Plate Usage =	#N/A	#N/A
Max Weld Usage =	#N/A	#N/A



Envelope Only Solution

Tower Engineering Solutio...

Progesh Roka

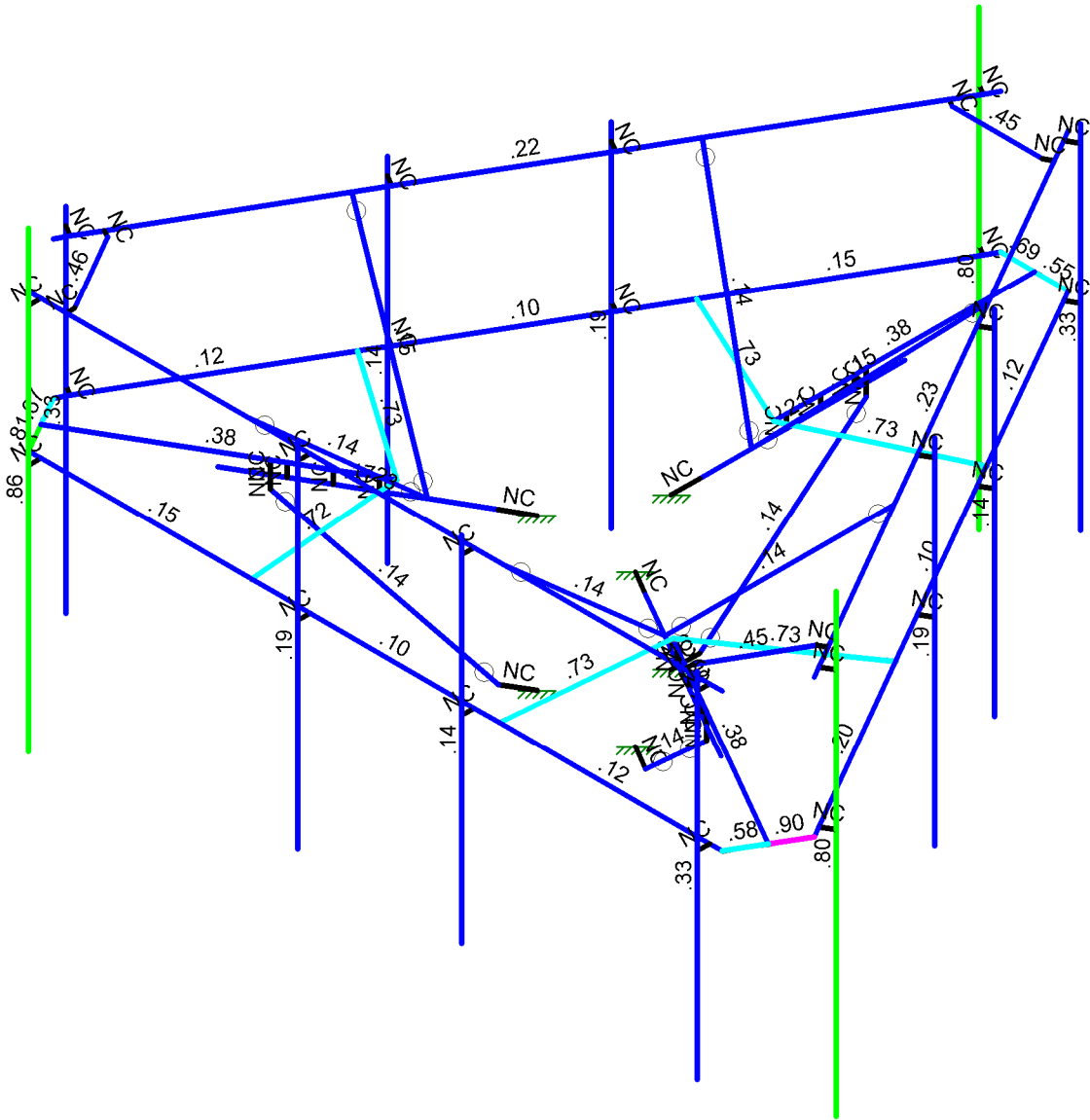
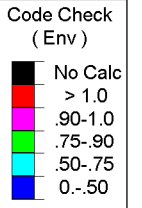
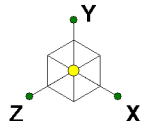
TES Project No. 127671

CT03801-S-SBA_MT_LO_Loads Only_G

SK - 1

Apr 13, 2022 at 3:58 PM

CT03801-S-SBA_127671_G_RISA_...



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

Tower Engineering Solutio...

Progesh Roka

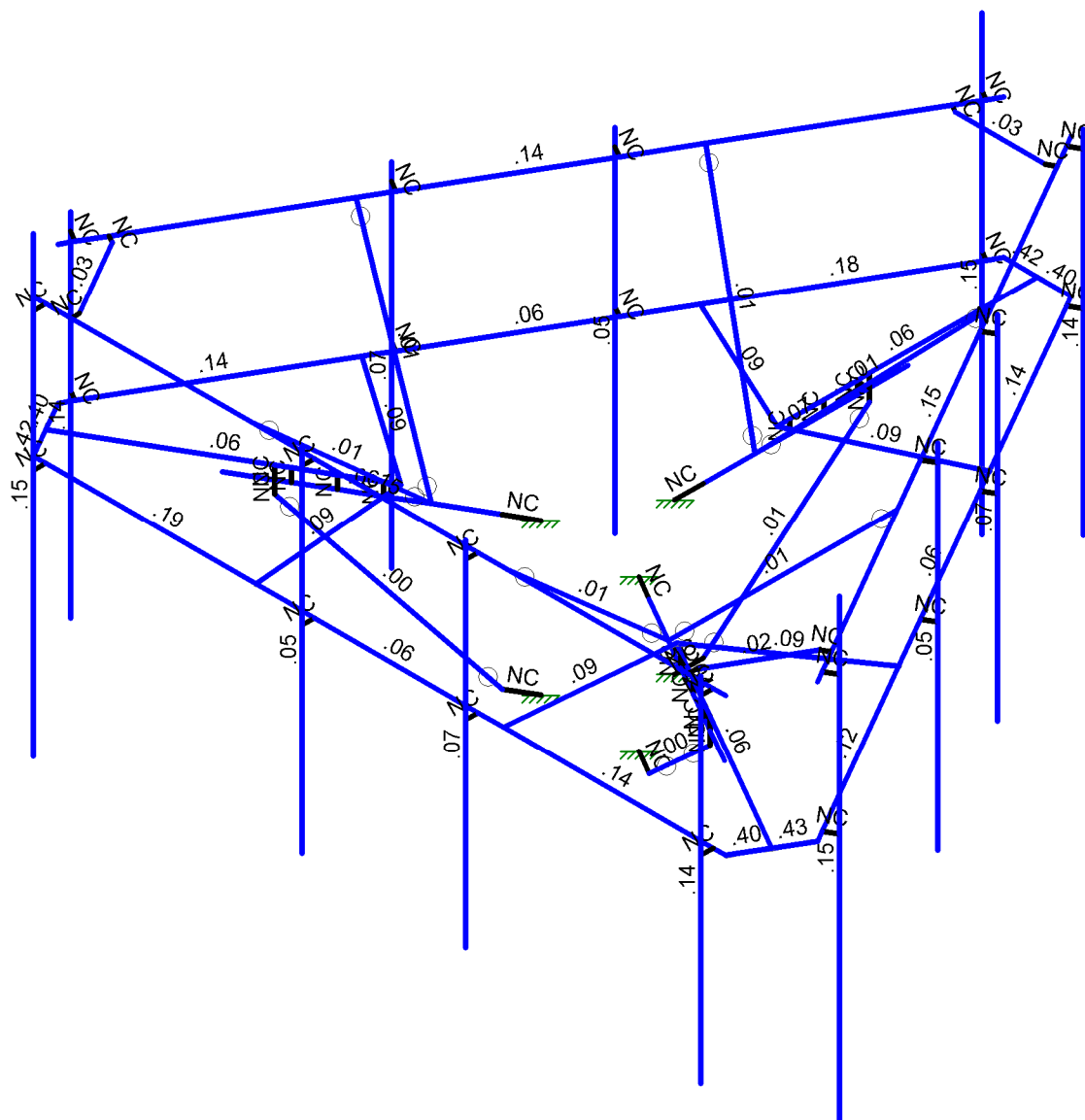
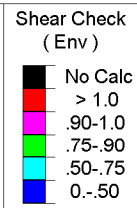
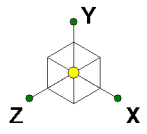
TES Project No. 127671

CT03801-S-SBA_MT_LO_Loads Only_G

SK - 2

Apr 13, 2022 at 3:58 PM

CT03801-S-SBA_127671_G_RISA_...



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

Tower Engineering Solutio...	CT03801-S-SBA_MT_LO_Loads Only_G	SK - 3
Progesh Roka		Apr 13, 2022 at 3:58 PM
TES Project No. 127671		CT03801-S-SBA_127671_G_RISA_...



Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(M... Surface...
1	Antenna D	None					27		
2	Antenna Di	None					27		
3	Antenna W Front	None					27		
4	Antenna Wi Front	None					27		
5	Antenna W Side	None					27		
6	Antenna Wi Side	None					27		
7	Service Lm1	None					1		
8	Service Lm2	None					1		
9	Structure D	None		-1					6
10	Structure Di	None						54	6
11	Structure W Front	None						54	
12	Structure Wi Front	None						54	
13	Structure W Side	None						54	
14	Structure Wi Side	None						54	
15	BLC 9 Transient Area Loads	None						120	
16	BLC 10 Transient Area Loads	None						120	

Load Combinations

	Description	S... P...	S... BLC	Fa... B...	Fa... B...	Fa... B...	Fa... B...	Fa... B...	Fa... B...	Fa... B...	Fa... B...	Fa... B...	Fa... B...	Fa... B...	Fa... B...	Fa... B...	Fa... B...	Fa... B...	Fa... B...	Fa... B...
1	1.2D+1.6W (Front)	Yes Y	1	1.2 9	1.2 3	1.6 11	1.6													
2	1.2D+1.6W (Back)	Yes Y	1	1.2 9	1.2 3	-1.6 11	-1.6													
3	1.2D+1.6W (Left)	Yes Y	1	1.2 9	1.2 5	1.6 13	1.6													
4	1.2D+1.6W (Right)	Yes Y	1	1.2 9	1.2 5	-1.6 13	-1.6													
5	1.2D+1.0Di+1.0Wi (Front)	Yes Y	1	1.2 9	1.2 2	1 10	1 4	1 12	1											
6	1.2D+1.0Di+1.0Wi (Back)	Yes Y	1	1.2 9	1.2 2	1 10	1 4	-1 12	-1											
7	1.2D+1.0Di+1.0Wi (Left)	Yes Y	1	1.2 9	1.2 2	1 10	1 6	1 14	1											
8	1.2D+1.0Di+1.0Wi (Right)	Yes Y	1	1.2 9	1.2 2	1 10	1 6	-1 14	-1											
9	1.2D+1.5L1+.16W (Maintai...	Yes Y	1	1.2 9	1.2 7	1.5 3	.16 11	.16												
10	1.2D+1.5L2+.16W (Maintai...	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	N2	-0.666667	0	-8.323466	0	
2	N3	-7.541667	0	3.584383	0	
3	N4	-6.875	0	4.739083	0	
4	N5	6.875	0	4.739083	0	
5	N6	7.541667	0	3.584383	0	
6	N7	0.666667	0	-8.323467	0	
7	N8	-0.	-0.25	-5.750133	0	
8	N9	-7.633173	3.083333	3.242877	0	
9	N10	-7.633173	-3.916667	3.242877	0	
10	N11	-5.29984	3.083333	-0.798575	0	
11	N12	-5.29984	-3.916667	-0.798575	0	
12	N13	-3.67484	3.083333	-3.613158	0	
13	N14	-3.67484	-3.916667	-3.613158	0	
14	N15	-1.008173	4.083333	-8.23196	0	
15	N16	-1.008173	-4.916667	-8.23196	0	
16	N17	1.008173	3.083333	-8.23196	0	
17	N18	1.008173	-3.916667	-8.23196	0	
18	N19	3.341506	3.083333	-4.190508	0	
19	N20	3.341506	-3.916667	-4.190508	0	
20	N21	4.966506	3.083333	-1.375926	0	



Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
21	N22	4.966506	-3.916667	-1.375926	0	
22	N23	7.633173	4.083333	3.242877	0	
23	N24	7.633173	-4.916667	3.242877	0	
24	N25	6.625	3.083333	4.989083	0	
25	N26	6.625	-3.916667	4.989083	0	
26	N27	1.958333	3.083333	4.989083	0	
27	N28	1.958333	-3.916667	4.989083	0	
28	N29	-1.291667	3.083333	4.989083	0	
29	N30	-1.291667	-3.916667	4.989083	0	
30	N31	-6.625	4.083333	4.989083	0	
31	N32	-6.625	-4.916667	4.989083	0	
32	N33	-0.	- .25	-1.687467	0	
33	N34	2.736755	0	1.580067	0	
34	N35	-7.633173	0	3.242877	0	
35	N36	-5.29984	0	-0.798575	0	
36	N37	-3.67484	0	-3.613158	0	
37	N38	-1.008173	0	-8.23196	0	
38	N39	6.625	0	4.739083	0	
39	N40	1.958333	0	4.739083	0	
40	N41	-1.291667	0	4.739083	0	
41	N42	-6.625	0	4.739083	0	
42	N43	0.791667	0	-8.10696	0	
43	N44	3.125	0	-4.065508	0	
44	N45	4.75	0	-1.250926	0	
45	N46	7.416667	0	3.367877	0	
46	N47	5.333167	0	-0.240851	0	
47	N48	2.458	0	4.739083	0	
48	N49	-0.	0	-8.323466	0	
49	N50	-0.000001	0	-3.160133	0	
50	N51	-7.208333	0	4.161733	0	
51	N52	-2.736755	0	1.580067	0	
52	N53	7.208333	0	4.161733	0	
53	N54	2.953261	- .25	1.705066	0	
54	N55	3.533498	- .25	2.040066	0	
55	N56	4.113735	- .25	2.375066	0	
56	N57	2.953261	0	1.705066	0	
57	N58	3.533498	0	2.040066	0	
58	N59	4.113735	0	2.375066	0	
59	N60	-0.	- .25	-3.410132	0	
60	N61	-0.	- .25	-4.080132	0	
61	N62	-0.	- .25	-4.750132	0	
62	N63	-0.000001	0	-3.410132	0	
63	N64	-0.000001	0	-4.080132	0	
64	N65	-0.000001	0	-4.750132	0	
65	N66	-2.953262	- .25	1.705068	0	
66	N67	-3.533499	- .25	2.040067	0	
67	N68	-4.113736	- .25	2.375067	0	
68	N69	-2.953262	0	1.705068	0	
69	N70	-3.533499	0	2.040067	0	
70	N71	-4.113736	0	2.375067	0	
71	N72	7.541667	2.75	3.584383	0	
72	N73	0.666667	2.75	-8.323467	0	
73	N74	0.791667	2.75	-8.10696	0	
74	N75	3.125	2.75	-4.065508	0	
75	N76	4.75	2.75	-1.250926	0	
76	N77	7.416667	2.75	3.367877	0	
77	N78	-0.666667	2.75	-8.323466	0	



Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
78	N79	-7.541667	2.75	3.584383	0	
79	N80	-7.633173	2.75	3.242877	0	
80	N81	-5.29984	2.75	-0.798575	0	
81	N82	-3.67484	2.75	-3.613158	0	
82	N83	-1.008173	2.75	-8.23196	0	
83	N84	-6.875	2.75	4.739083	0	
84	N85	6.875	2.75	4.739084	0	
85	N86	6.625	2.75	4.739083	0	
86	N87	1.958333	2.75	4.739083	0	
87	N88	-1.291667	2.75	4.739083	0	
88	N89	-6.625	2.75	4.739083	0	
89	N90	-7.166667	2.75	2.934864	0	
90	N91	-6.125	2.75	4.572417	0	
91	N92	6.125	2.75	4.572417	0	
92	N93	6.625	0	4.989083	0	
93	N94	1.958333	0	4.989083	0	
94	N95	-1.291667	0	4.989083	0	
95	N96	-6.625	0	4.989083	0	
96	N97	6.625	2.75	4.989083	0	
97	N98	1.958333	2.75	4.989083	0	
98	N99	-1.291667	2.75	4.989083	0	
99	N100	-6.625	2.75	4.989083	0	
100	N101	1.008173	0	-8.23196	0	
101	N102	3.341506	0	-4.190508	0	
102	N103	4.966506	0	-1.375926	0	
103	N104	7.633173	0	3.242877	0	
104	N105	1.008173	2.75	-8.23196	0	
105	N106	3.341506	2.75	-4.190508	0	
106	N107	4.966506	2.75	-1.375926	0	
107	N108	7.633173	2.75	3.242877	0	
108	N109	-7.416667	0	3.367877	0	
109	N110	-5.083333	0	-0.673575	0	
110	N111	-3.458333	0	-3.488158	0	
111	N112	-0.791667	0	-8.10696	0	
112	N113	-7.416667	2.75	3.367876	0	
113	N114	-5.083333	2.75	-0.673575	0	
114	N115	-3.458333	2.75	-3.488158	0	
115	N116	-0.791667	2.75	-8.10696	0	
116	N117	0	-25	-1.125	0	
117	N118	-1.461389	-25	0.843734	0	
118	N119	-0.974279	-25	0.5625	0	
119	N120	1.461389	-25	0.843733	0	
120	N121	0.974279	-25	0.5625	0	
121	N122	-2.875167	0	-4.498232	0	
122	N123	-2.458	0	4.739083	0	
123	N124	-5.333167	0	-0.240851	0	
124	N125	2.875167	0	-4.498232	0	
125	N126	-1.461389	-3.25	0.843734	0	
126	N127	-0.974279	-3.25	0.5625	0	
127	N128	1.461389	-3.25	0.843733	0	
128	N129	0.974279	-3.25	0.5625	0	
129	N130	-0.	-5	-4.990133	0	
130	N131	-0.	-25	-4.990133	0	
131	N132	-0.	-3.25	-1.687467	0	
132	N133	0	-3.25	-1.125	0	
133	N134	-2.958333	0	-4.354183	0	
134	N135	-5.25	0	-0.3849	0	



Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
135	N136	-1.791667	0	4.739083	0	
136	N137	2.291667	0	4.739083	0	
137	N138	5.25	0	-0.3849	0	
138	N139	2.958333	0	-4.354183	0	
139	N140	-6.125	2.75	4.739083	0	
140	N141	6.125	2.75	4.739083	0	
141	N142	-7.022329	2.75	3.018197	0	
142	N143	7.022329	2.75	3.018197	0	
143	N144	-0.897329	2.75	-7.590614	0	
144	N145	0.897329	2.75	-7.590614	0	
145	N146	7.166667	2.75	2.934864	0	
146	N147	1.041667	2.75	-7.673947	0	
147	N148	-1.041667	2.75	-7.673947	0	
148	N149	-4.979761	-25	2.875067	0	
149	N150	4.979761	-25	2.875067	0	
150	N151	-4.321582	-5	2.495067	0	
151	N152	-4.321582	-25	2.495067	0	
152	N153	4.321582	-5	2.495067	0	
153	N154	4.321582	-25	2.495067	0	
154	N156	-0.000001	0	-4.990132	0	
155	N157	-4.321581	0	2.495067	0	
156	N159	4.321582	0	2.495066	0	
157	N160	-2.541667	2.75	4.739083	0	
158	N162	5.375	2.75	-0.168394	0	
159	N163	0	-25	-2.718358	0	
160	N164	-2.833333	2.75	-4.57069	0	
161	N166	2.833333	2.75	-4.57069	0	
162	N166A	-2.354167	-25	1.359179	0	
163	N168	-5.375	2.75	-0.168394	0	
164	N169	2.354167	-25	1.359179	0	
165	N171	2.541667	2.75	4.739083	0	

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design L...	Material	Design R...	A [in ²]	I _{yy} [in ⁴]	I _{zz} [in ⁴]	J [in ⁴]
1	Mount Pipe	PIPE 2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
2	Front face	PIPE 3.0	Beam	Pipe	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
3	Standoff	HSS3X3X5	Beam	None	A572 Gr...	Typical	2.94	3.45	3.45	5.94
4	Bracing	L1.5x2.5x4	Beam	Single A...	A36 Gr.36	Typical	1.19	.692	.692	.026
5	Support Rail Connector	L3X3X4	Beam	Single A...	A36 Gr.36	Typical	1.44	1.23	1.23	.031
6	V Brace	L2x2x4	Beam	Single A...	A36 Gr.36	Typical	.944	.346	.346	.021
7	Kickers	LL2x2x4x3	Beam	Double A...	A36 Gr.36	Typical	1.89	1.82	.692	.042
8	End Connection	PL5/8x6	Beam	RECT	A36 Gr.36	Typical	1.875	.015	5.625	.059
9	Support Rail	PIPE_3.0	Beam	Pipe	A53 Gr.B	Typical	2.07	2.85	2.85	5.69

Cold Formed Steel Section Sets

	Label	Shape	Type	Design List	Material	Design R...	A [in ²]	I _{yy} [in ⁴]	I _{zz} [in ⁴]	J [in ⁴]
1	CF	4CU5.25X0375	Beam	CU	A570 Gr.33	Typical	4.854	13.238	12.817	.228

Aluminum Section Sets

	Label	Shape	Type	Design List	Material	Design Rules	A [in ²]	I _{yy} [in ⁴]	I _{zz} [in ⁴]	J [in ⁴]
1	AL1A	AACS14X13.9	Beam	AA Channel	3003-H14	Typical	11.8	44.7	401	1.19



Hot Rolled Steel Properties

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

Cold Formed Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (/1E5 F)	Density[k/ft^3]	Yield[ksi]	Fu[ksi]
1	A570 Gr.33	29500	11346	.3	.65	.49	33	52
2	A607 C1 Gr.55	29500	11346	.3	.65	.49	55	70

Aluminum Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (...)	Density[...	Table B.4	kt	Ftu[ksi]	Fty[ksi]	Fcy[ksi]	Fsu[ksi]	Ct
1	3003-H14	10100	3787.5	.33	1.3	.173	Table B...	1	19	16	13	12	141
2	6061-T6	10100	3787.5	.33	1.3	.173	Table B...	1	38	35	35	24	141
3	6063-T5	10100	3787.5	.33	1.3	.173	Table B...	1	22	16	16	13	141
4	6063-T6	10100	3787.5	.33	1.3	.173	Table B...	1	30	25	25	19	141
5	5052-H34	10200	3787.5	.33	1.3	.173	Table B...	1	34	26	24	20	141
6	6061-T6 W	10100	3787.5	.33	1.3	.173	Table B...	1	24	15	15	15	141

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(...)	Section/Shape	Type	Design List	Material	Design R...
1	M1	N2	N134			Front face	Beam	Pipe	A53 Gr.B	Typical
2	M2	N4	N136			Front face	Beam	Pipe	A53 Gr.B	Typical
3	M3	N6	N138			Front face	Beam	Pipe	A53 Gr.B	Typical
4	MP1B	N9	N10			Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
5	MP2B	N11	N12			Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
6	MP3B	N13	N14			Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
7	MP4B	N15	N16			Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
8	MP1C	N17	N18		300	Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
9	MP2C	N19	N20		300	Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
10	MP3C	N21	N22		300	Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
11	MP4C	N23	N24		300	Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
12	MP1A	N25	N26		60	Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
13	MP2A	N27	N28		60	Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
14	MP3A	N29	N30		60	Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
15	MP4A	N31	N32		60	Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
16	M16	N7	N49			End Connection	Beam	RECT	A36 Gr.36	Typical
17	M17	N6	N53			End Connection	Beam	RECT	A36 Gr.36	Typical
18	M18	N3	N51			End Connection	Beam	RECT	A36 Gr.36	Typical
19	M19	N33	N8			Standoff	Beam	None	A572 Gr.50	Typical
20	M20	N47	N34		270	Bracing	Beam	Single Angle	A36 Gr.36	Typical
21	M21	N34	N48		270	Bracing	Beam	Single Angle	A36 Gr.36	Typical
22	M22	N50	N49			Standoff	Beam	None	A572 Gr.50	Typical
23	M23	N52	N51			Standoff	Beam	None	A572 Gr.50	Typical
24	M24	N34	N53			Standoff	Beam	None	A572 Gr.50	Typical
25	M25	N57	N54			RIGID	Beam	None	RIGID	DR1
26	M26	N58	N55			RIGID	Beam	None	RIGID	DR1
27	M27	N59	N56			RIGID	Beam	None	RIGID	DR1



Company : Tower Engineering Solutions, LLC
 Designer : Progesh Roka
 Job Number : TES Project No. 127671
 Model Name : CT03801-S-SBA_MT_LO_Loads Only_G

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Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(...)	Section/Shape	Type	Design List	Material	Design R...
28	M28	N63	N60			RIGID	Beam	None	RIGID	DR1
29	M29	N64	N61			RIGID	Beam	None	RIGID	DR1
30	M30	N65	N62			RIGID	Beam	None	RIGID	DR1
31	M31	N69	N66			RIGID	Beam	None	RIGID	DR1
32	M32	N70	N67			RIGID	Beam	None	RIGID	DR1
33	M33	N71	N68			RIGID	Beam	None	RIGID	DR1
34	M34	N72	N73			Support Rail	Beam	Pipe	A53 Gr.B	Typical
35	M35	N78	N79			Support Rail	Beam	Pipe	A53 Gr.B	Typical
36	M36	N84	N85			Support Rail	Beam	Pipe	A53 Gr.B	Typical
37	M37	N142	N91		270	Support Rail Connector	Beam	Single Angle	A36 Gr.36	Typical
38	M38	N96	N42			RIGID	Beam	None	RIGID	DR1
39	M39	N95	N41			RIGID	Beam	None	RIGID	DR1
40	M40	N94	N40			RIGID	Beam	None	RIGID	DR1
41	M41	N93	N39			RIGID	Beam	None	RIGID	DR1
42	M42	N100	N89			RIGID	Beam	None	RIGID	DR1
43	M43	N99	N88			RIGID	Beam	None	RIGID	DR1
44	M44	N98	N87			RIGID	Beam	None	RIGID	DR1
45	M45	N97	N86			RIGID	Beam	None	RIGID	DR1
46	M46	N104	N46			RIGID	Beam	None	RIGID	DR1
47	M47	N103	N45			RIGID	Beam	None	RIGID	DR1
48	M48	N102	N44			RIGID	Beam	None	RIGID	DR1
49	M49	N101	N43			RIGID	Beam	None	RIGID	DR1
50	M50	N108	N77			RIGID	Beam	None	RIGID	DR1
51	M51	N107	N76			RIGID	Beam	None	RIGID	DR1
52	M52	N106	N75			RIGID	Beam	None	RIGID	DR1
53	M53	N105	N74			RIGID	Beam	None	RIGID	DR1
54	M54	N38	N112			RIGID	Beam	None	RIGID	DR1
55	M55	N37	N111			RIGID	Beam	None	RIGID	DR1
56	M56	N36	N110			RIGID	Beam	None	RIGID	DR1
57	M57	N35	N109			RIGID	Beam	None	RIGID	DR1
58	M58	N83	N116			RIGID	Beam	None	RIGID	DR1
59	M59	N82	N115			RIGID	Beam	None	RIGID	DR1
60	M60	N81	N114			RIGID	Beam	None	RIGID	DR1
61	M61	N80	N113			RIGID	Beam	None	RIGID	DR1
62	M62	N117	N33			RIGID	Beam	None	RIGID	DR1
63	M63	N119	N118			RIGID	Beam	None	RIGID	DR1
64	M64	N121	N120			RIGID	Beam	None	RIGID	DR1
65	M67	N122	N50		270	Bracing	Beam	Single Angle	A36 Gr.36	Typical
66	M68	N50	N125		270	Bracing	Beam	Single Angle	A36 Gr.36	Typical
67	M69	N123	N52		270	Bracing	Beam	Single Angle	A36 Gr.36	Typical
68	M70	N52	N124		270	Bracing	Beam	Single Angle	A36 Gr.36	Typical
69	M71	N49	N2			End Connection	Beam	RECT	A36 Gr.36	Typical
70	M72	N53	N5			End Connection	Beam	RECT	A36 Gr.36	Typical
71	M73	N51	N4			End Connection	Beam	RECT	A36 Gr.36	Typical
72	M74	N127	N126			RIGID	Beam	None	RIGID	DR1
73	M75	N129	N128			RIGID	Beam	None	RIGID	DR1
74	M76	N130	N132			Kickers	Beam	Double An...	A36 Gr.36	Typical
75	M77	N131	N130			RIGID	Beam	None	RIGID	DR1
76	M78	N133	N132			RIGID	Beam	None	RIGID	DR1
77	M79	N134	N135			Front face	Beam	Pipe	A53 Gr.B	Typical
78	M80	N135	N3			Front face	Beam	Pipe	A53 Gr.B	Typical
79	M81	N136	N137			Front face	Beam	Pipe	A53 Gr.B	Typical
80	M82	N137	N5			Front face	Beam	Pipe	A53 Gr.B	Typical
81	M83	N138	N139			Front face	Beam	Pipe	A53 Gr.B	Typical
82	M84	N139	N7			Front face	Beam	Pipe	A53 Gr.B	Typical
83	M85	N140	N91			RIGID	Beam	None	RIGID	DR1
84	M86	N141	N92			RIGID	Beam	None	RIGID	DR1



Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(...)	Section/Shape	Type	Design List	Material	Design R...
85	M87	N90	N142			RIGID	Beam	None	RIGID	DR1
86	M88	N92	N143		270	Support Rail Connector	Beam	Single Angle	A36 Gr.36	Typical
87	M89	N145	N144		270	Support Rail Connector	Beam	Single Angle	A36 Gr.36	Typical
88	M90	N146	N143			RIGID	Beam	None	RIGID	DR1
89	M91	N147	N145			RIGID	Beam	None	RIGID	DR1
90	M92	N148	N144			RIGID	Beam	None	RIGID	DR1
91	M94	N118	N149			Standoff	Beam	None	A572 Gr.50	Typical
92	M95	N120	N150			Standoff	Beam	None	A572 Gr.50	Typical
93	M96	N151	N126			Kickers	Beam	Double An...	A36 Gr.36	Typical
94	M97	N152	N151			RIGID	Beam	None	RIGID	DR1
95	M98	N153	N128			Kickers	Beam	Double An...	A36 Gr.36	Typical
96	M99	N154	N153			RIGID	Beam	None	RIGID	DR1
97	M97A	N156	N131			RIGID	Beam	None	RIGID	DR1
98	M98A	N157	N152			RIGID	Beam	None	RIGID	DR1
99	M99A	N159	N154			RIGID	Beam	None	RIGID	DR1
100	M100	N163	N164			V Brace	Beam	Single Angle	A36 Gr.36	Typical
101	M101	N163	N166			V Brace	Beam	Single Angle	A36 Gr.36	Typical
102	M102	N166A	N160			V Brace	Beam	Single Angle	A36 Gr.36	Typical
103	M103	N166A	N168			V Brace	Beam	Single Angle	A36 Gr.36	Typical
104	M104	N169	N162			V Brace	Beam	Single Angle	A36 Gr.36	Typical
105	M105	N169	N171			V Brace	Beam	Single Angle	A36 Gr.36	Typical

Member Advanced Data

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
1	M1						Yes				None
2	M2						Yes				None
3	M3						Yes				None
4	MP1B						Yes		-z		None
5	MP2B						Yes		-z		None
6	MP3B						Yes		-z		None
7	MP4B						Yes		-z		None
8	MP1C						Yes		+z		None
9	MP2C						Yes		+z		None
10	MP3C						Yes		+z		None
11	MP4C						Yes		+z		None
12	MP1A						Yes		+z		None
13	MP2A						Yes		+z		None
14	MP3A						Yes		+z		None
15	MP4A						Yes		+z		None
16	M16			1.75	1.5		Yes				None
17	M17			1.75	1.5		Yes				None
18	M18			1.75	1.5		Yes				None
19	M19						Yes				None
20	M20			1.75	1.5		Yes				None
21	M21			1.5	1.75		Yes				None
22	M22						Yes				None
23	M23						Yes				None
24	M24						Yes				None
25	M25						Yes				None
26	M26						Yes				None
27	M27						Yes				None
28	M28						Yes				None
29	M29						Yes				None
30	M30						Yes				None
31	M31						Yes				None



Company : Tower Engineering Solutions, LLC
 Designer : Progesh Roka
 Job Number : TES Project No. 127671
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Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
32	M32						Yes				None
33	M33						Yes				None
34	M34						Yes				None
35	M35						Yes				None
36	M36						Yes				None
37	M37						Yes				None
38	M38						Yes				None
39	M39						Yes				None
40	M40						Yes				None
41	M41						Yes				None
42	M42						Yes				None
43	M43						Yes				None
44	M44						Yes				None
45	M45						Yes				None
46	M46						Yes				None
47	M47						Yes				None
48	M48						Yes				None
49	M49						Yes				None
50	M50						Yes				None
51	M51						Yes				None
52	M52						Yes				None
53	M53						Yes				None
54	M54						Yes				None
55	M55						Yes				None
56	M56						Yes				None
57	M57						Yes				None
58	M58						Yes				None
59	M59						Yes				None
60	M60						Yes				None
61	M61						Yes				None
62	M62						Yes				None
63	M63						Yes				None
64	M64						Yes				None
65	M67			1.75	1.5		Yes				None
66	M68			1.5	1.75		Yes				None
67	M69			1.75	1.5		Yes				None
68	M70			1.5	1.75		Yes				None
69	M71			1.5	1.75		Yes				None
70	M72			1.5	1.75		Yes				None
71	M73			1.5	1.75		Yes				None
72	M74						Yes				None
73	M75						Yes				None
74	M76	BenPIN	BenPIN				Yes				None
75	M77						Yes				None
76	M78						Yes				None
77	M79						Yes				None
78	M80						Yes				None
79	M81						Yes				None
80	M82						Yes				None
81	M83						Yes				None
82	M84						Yes				None
83	M85						Yes				None
84	M86						Yes				None
85	M87						Yes				None
86	M88						Yes				None
87	M89						Yes				None
88	M90						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...
89	M91						Yes				None
90	M92						Yes				None
91	M94						Yes				None
92	M95						Yes				None
93	M96	BenPIN	BenPIN				Yes				None
94	M97						Yes				None
95	M98	BenPIN	BenPIN				Yes				None
96	M99						Yes				None
97	M97A						Yes				None
98	M98A						Yes				None
99	M99A						Yes				None
100	M100	BenPIN	BenPIN				Yes				None
101	M101	BenPIN	BenPIN				Yes				None
102	M102	BenPIN	BenPIN				Yes				None
103	M103	BenPIN	BenPIN				Yes				None
104	M104	BenPIN	BenPIN				Yes				None
105	M105	BenPIN	BenPIN				Yes				None

Hot Rolled Steel Design Parameters

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[ft]	Lcomp bot[ft]	L-torq...	Kyy	Kzz	Cb	Function
1	M1	Front face	4.583			Lbyy						Gravity
2	M2	Front face	5.083			Lbyy						Gravity
3	M3	Front face	4.583			Lbyy						Gravity
4	MP1B	Mount Pipe	7			Lbyy						Lateral
5	MP2B	Mount Pipe	7			Lbyy						Lateral
6	MP3B	Mount Pipe	7			Lbyy						Lateral
7	MP4B	Mount Pipe	9			Lbyy						Lateral
8	MP1C	Mount Pipe	7			Lbyy						Lateral
9	MP2C	Mount Pipe	7			Lbyy						Lateral
10	MP3C	Mount Pipe	7			Lbyy						Lateral
11	MP4C	Mount Pipe	9			Lbyy						Lateral
12	MP1A	Mount Pipe	7			Lbyy						Lateral
13	MP2A	Mount Pipe	7			Lbyy						Lateral
14	MP3A	Mount Pipe	7			Lbyy						Lateral
15	MP4A	Mount Pipe	9			Lbyy						Lateral
16	M16	End Conne...	.667			Lbyy						Lateral
17	M17	End Conne...	.667			Lbyy						Lateral
18	M18	End Conne...	.667			Lbyy						Lateral
19	M19	Standoff	4.063			Lbyy						Lateral
20	M20	Bracing	3.171			Lbyy		.65	.65			Lateral
21	M21	Bracing	3.171			Lbyy		.65	.65			Lateral
22	M22	Standoff	5.163			Lbyy						Lateral
23	M23	Standoff	5.163			Lbyy						Lateral
24	M24	Standoff	5.163			Lbyy						Lateral
25	M34	Support Rail	13.75			Lbyy						Gravity
26	M35	Support Rail	13.75			Lbyy						Gravity
27	M36	Support Rail	13.75			Lbyy						Gravity
28	M37	Support Rai...	1.795			Lbyy						Lateral
29	M67	Bracing	3.171			Lbyy		.65	.65			Lateral
30	M68	Bracing	3.171			Lbyy		.65	.65			Lateral
31	M69	Bracing	3.171			Lbyy		.65	.65			Lateral
32	M70	Bracing	3.171			Lbyy		.65	.65			Lateral
33	M71	End Conne...	.667			Lbyy						Lateral
34	M72	End Conne...	.667			Lbyy						Lateral
35	M73	End Conne...	.667			Lbyy						Lateral



Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[ft]	Lcomp bot[ft]	L-torq...	Kyy	Kzz	Cb	Function
36	M76	Kickers	4.298			Lbyy						Lateral
37	M79	Front face	4.583			Lbyy						Gravity
38	M80	Front face	4.583			Lbyy						Gravity
39	M81	Front face	4.083			Lbyy						Gravity
40	M82	Front face	4.583			Lbyy						Gravity
41	M83	Front face	4.583			Lbyy						Gravity
42	M84	Front face	4.583			Lbyy						Gravity
43	M88	Support Rai...	1.795			Lbyy						Lateral
44	M89	Support Rai...	1.795			Lbyy						Lateral
45	M94	Standoff	4.063			Lbyy						Lateral
46	M95	Standoff	4.063			Lbyy						Lateral
47	M96	Kickers	4.298			Lbyy						Lateral
48	M98	Kickers	4.298			Lbyy						Lateral
49	M100	V Brace	4.523			Lbyy						Lateral
50	M101	V Brace	4.523			Lbyy						Lateral
51	M102	V Brace	4.523			Lbyy						Lateral
52	M103	V Brace	4.523			Lbyy						Lateral
53	M104	V Brace	4.523			Lbyy						Lateral
54	M105	V Brace	4.523			Lbyy						Lateral

Cold Formed Steel Design Parameters

Label	Shape	Length...	Lbyy[ft]	Lbzz[ft]	Lcomp t...	Lcomp ...	L-torque...	Kyy	Kzz	Cm-...Cm-...	Cb	R	a[ft]	y sw...z sw...
No Data to Print ...														

Aluminum Design Parameters

Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[ft]	Lcomp bot[ft]	L-torq...	Kyy	Kzz	Cb	Function
No Data to Print ...											

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	N33						
2	N34						
3	N50						
4	N52						
5	N54						
6	N55						
7	N56						
8	N57						
9	N58						
10	N59						
11	N60						
12	N61						
13	N62						
14	N63						
15	N64						
16	N65						
17	N66						
18	N67						
19	N68						
20	N69						
21	N70						
22	N71						



Joint Boundary Conditions (Continued)

	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]
23	N117	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
24	N118						
25	N119	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
26	N120						
27	N121	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
28	N126						
29	N127	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
30	N128						
31	N129	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
32	N130						
33	N131						
34	N132						
35	N133	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
36	N151						
37	N152						
38	N153						
39	N154						
40	N156						
41	N157						
42	N159						

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	N117	max	1576.909	4	675.179	6	5084.982	5	.83	6	2.985	3	.123	3
2		min	-1574.799	3	-211.052	1	-2493.904	2	-.226	1	-2.985	4	-.179	4
3	N119	max	4282.198	8	654.915	7	1500.515	1	.05	4	2.214	1	.149	4
4		min	-1713.158	3	-149.775	4	-2699.731	2	-.491	7	-2.209	2	-.65	5
5	N121	max	1970.973	4	657.408	8	903.936	4	.17	3	1.13	2	.729	8
6		min	-4338.106	7	-156.773	3	-2496.536	6	-.354	8	-1.13	1	-.082	3
7	N127	max	-741.375	3	3827.062	8	2264.686	8	-.198	3	.015	1	-.343	3
8		min	-3911.397	8	704.658	3	412.873	3	-1.076	8	-.014	2	-1.864	8
9	N129	max	3911.993	7	3827.75	7	2265.319	7	-.198	4	.015	2	1.865	7
10		min	740.434	4	703.859	4	412.572	4	-1.076	7	-.015	1	.343	4
11	N133	max	31.175	4	3864	5	-712.82	2	2.173	5	.018	3	0	4
12		min	-31.304	3	591.888	2	-4564.201	5	.333	2	-.018	4	0	3
13	Totals:	max	6522.26	4	12701.833	6	6394.123	1						
14		min	-6522.269	3	3912.74	1	-6394.123	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	1365.043	1	950.137	8	673.712	3	.689	4	.438	2	.442	3
2			min	-1321.445	2	4.928	3	-403.477	4	-.727	3	-.407	1	-.343	4
3		2	max	1028.379	4	73.862	2	222.588	1	.055	3	.428	2	.263	2
4			min	-840.435	3	-209.281	5	-214.187	2	-.499	8	-.355	1	-.455	1
5		3	max	1036.681	4	58.282	2	235.83	4	.055	3	.18	2	.186	2
6			min	-848.736	3	-257.395	5	-227.435	3	-.499	8	-.097	1	-.242	1
7		4	max	1044.982	4	42.274	2	250.208	4	.055	3	.4	4	.218	6
8			min	-857.037	3	-306.976	5	-241.814	3	-.499	8	-.308	3	-.009	1
9		5	max	1146.535	4	99.435	4	229.663	3	.096	1	.438	4	.46	7
10			min	-837.505	3	-73.738	3	-314.054	4	-.136	2	-.458	3	.113	2
11	M2	1	max	1164.967	2	952.577	6	768.454	1	.709	2	.469	1	.431	1
12			min	-1121.405	1	1.832	1	-498.585	2	-.748	1	-.437	2	-.333	2
13		2	max	1127.533	2	31.593	3	314.033	2	.169	1	.41	1	.201	3
14			min	-942.188	1	-206.951	8	-306.167	1	-.526	6	-.336	2	-.38	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	
15	3	max	1127.533	2	13.483	3	335.295	2	.169	1	.154	8	.171	3	
16		min	-942.188	1	-263.162	8	-327.43	1	-.526	6	-.014	3	-.191	4	
17	4	max	1127.533	2	-2.651	3	356.558	2	.169	1	.516	2	.325	7	
18		min	-942.188	1	-312.585	8	-348.692	1	-.526	6	-.422	1	.02	4	
19	5	max	1340.009	2	90.573	2	172.614	1	.071	9	.187	2	.45	5	
20		min	-1032.846	1	-76.088	1	-257.368	2	-.1	3	-.249	1	.098	4	
21	M3	1	max	1524.527	3	924.464	7	669.131	4	.422	3	.555	4	.259	4
22		min	-1481.378	4	129.647	4	-402.029	3	-.461	4	-.523	3	-.16	1	
23	2	max	1039.543	3	119.94	4	292.443	3	.175	4	.598	4	.373	4	
24		min	-853.989	4	-225.226	3	-284.194	4	-.529	7	-.525	3	-.566	3	
25	3	max	1031.242	3	104.359	4	306.821	3	.175	4	.264	4	.244	4	
26		min	-845.688	4	-265.471	7	-298.572	4	-.529	7	-.182	3	-.3	3	
27	4	max	1022.94	3	88.351	4	321.2	3	.175	4	.196	7	.223	5	
28		min	-837.386	4	-315.052	7	-312.951	4	-.529	7	-.086	4	-.032	2	
29	5	max	1336.159	3	70.338	7	-11.395	2	.053	3	.036	4	.464	7	
30		min	-1027.689	4	-43.281	4	-166.383	7	-.101	8	-.054	3	.084	4	
31	MP1B	1	max	0	.006	6	0	10	0	1	0	11	0	11	
32		min	0	6	0	1	-.003	6	0	6	0	1	0	1	
33	2	max	232.36	1	72.582	4	197.016	1	-.012	4	.039	5	.022	4	
34		min	-160.105	2	-463.278	7	-171.92	2	-.148	7	.001	2	-.022	3	
35	3	max	-64.558	1	170.142	3	129.028	2	0	7	.159	1	.201	3	
36		min	-225.653	6	-170.17	4	-128.988	1	0	4	-.16	2	-.201	4	
37	4	max	-7.289	1	19.788	3	19.819	2	0	7	.017	1	.017	3	
38		min	-29.625	6	-19.815	4	-19.779	1	0	4	-.017	2	-.017	4	
39	5	max	0	1	.053	4	.302	5	0	7	0	11	0	11	
40		min	0	6	-.244	7	-.049	2	0	4	0	1	0	1	
41	MP2B	1	max	0	.014	6	.006	5	0	1	0	11	0	11	
42		min	0	8	0	1	0	9	0	6	0	1	0	1	
43	2	max	53.125	1	121.661	8	176.954	1	-.015	4	.01	3	.044	8	
44		min	-153.912	7	-30.071	10	-120.014	2	-.096	7	-.025	8	.001	3	
45	3	max	-14.578	3	39.717	3	39.726	2	0	7	.07	1	.069	3	
46		min	-59.249	8	-39.746	4	-39.74	1	0	4	-.07	2	-.07	4	
47	4	max	-7.289	3	19.849	3	19.858	2	0	7	.017	1	.017	3	
48		min	-29.624	8	-19.878	4	-19.871	1	0	4	-.017	2	-.017	4	
49	5	max	0	3	-.01	4	-.003	1	0	7	0	11	0	11	
50		min	0	8	-.209	7	-.1	6	0	4	0	1	0	1	
51	MP3B	1	max	0	.013	6	.01	5	0	4	0	11	0	11	
52		min	0	5	0	4	0	2	0	5	0	1	0	1	
53	2	max	83.296	4	235.78	8	143.422	1	.047	6	0	4	.031	5	
54		min	-275.236	7	-29.394	3	-168.684	2	0	1	-.037	7	.003	2	
55	3	max	-33.058	2	67.308	3	60.441	2	0	7	.101	1	.111	3	
56		min	-114.121	5	-67.369	4	-60.487	1	0	4	-.101	2	-.111	4	
57	4	max	-7.289	2	19.812	3	19.835	2	0	7	.017	1	.017	3	
58		min	-29.624	5	-19.874	4	-19.881	1	0	4	-.017	2	-.017	4	
59	5	max	0	2	-.005	4	-.013	1	0	7	0	11	0	11	
60		min	0	5	-.386	7	-.289	6	0	4	0	1	0	1	
61	MP4B	1	max	0	.325	8	.636	5	0	10	0	8	0	11	
62		min	0	2	-.004	10	-.013	2	0	8	0	1	0	1	
63	2	max	228.054	4	78.217	4	133.451	1	.147	6	.224	6	-.022	2	
64		min	-241.5	3	-291.98	7	-495.085	6	.013	1	.012	1	-.117	5	
65	3	max	-217.223	2	560.806	3	370.084	2	0	3	.867	1	1.288	3	
66		min	-686.658	5	-560.917	4	-370.258	1	0	4	-.866	2	-1.289	4	
67	4	max	-83.051	2	438.389	3	301.531	2	0	3	.095	1	.128	3	
68		min	-398.381	5	-438.501	4	-301.705	1	0	4	-.095	2	-.128	4	
69	5	max	0	11	2.057	4	1.336	1	0	3	0	11	0	11	
70		min	0	5	-2.168	3	-2.022	6	0	4	0	1	0	1	
71	MP1C	1	max	0	0	3	.003	8	0	3	0	11	0	11	



Envelope Member Section Forces (Continued)

Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mom...	LC	
72		min	0	1	-.006	8	0	2	0	5	0	1	0	1	
73	2	max	249.819	3	457.993	6	143.492	4	-.009	1	.005	10	.012	2	
74		min	-177.488	4	-42.547	1	-168.561	3	-.149	6	-.038	7	-.013	1	
75	3	max	-64.558	2	111.777	1	147.323	3	0	8	.174	4	.138	1	
76		min	-225.653	5	-111.749	2	-147.363	4	0	3	-.174	3	-.138	2	
77	4	max	-7.289	2	17.199	1	17.112	3	0	8	.015	4	.015	1	
78		min	-29.625	5	-17.172	2	-17.152	4	0	3	-.015	3	-.015	2	
79	5	max	0	2	.245	8	.055	4	0	8	0	11	0	11	
80		min	0	5	-.069	3	-.302	7	0	3	0	1	0	1	
81	MP2C	1	max	0	7	0	3	0	1	0	9	0	11	0	11
82		min	0	1	-.014	5	-.006	6	0	5	0	1	0	1	
83	2	max	125.762	3	38.961	2	89.543	1	-.009	1	.025	5	-.004	2	
84		min	-198.783	4	-126.61	5	-146.716	2	-.097	6	-.008	2	-.043	5	
85	3	max	-14.578	9	34.427	1	34.416	3	0	8	.06	4	.06	1	
86		min	-59.249	7	-34.397	2	-34.402	4	0	3	-.06	3	-.06	2	
87	4	max	-7.289	9	17.22	1	17.209	3	0	8	.015	4	.015	1	
88		min	-29.624	7	-17.191	2	-17.196	4	0	3	-.015	3	-.015	2	
89	5	max	0	9	.208	8	.099	8	0	8	0	11	0	11	
90		min	0	7	.008	3	.003	3	0	3	0	1	0	1	
91	MP3C	1	max	0	7	0	9	0	1	0	9	0	11	0	11
92		min	0	1	-.013	5	-.01	6	0	5	0	1	0	1	
93	2	max	11.291	1	16.753	2	130.982	4	.045	8	.036	6	-.006	2	
94		min	-250.597	6	-234.396	5	-105.537	3	.004	2	.005	1	-.03	7	
95	3	max	-33.058	4	52.387	1	58.345	3	0	6	.096	4	.087	1	
96		min	-114.121	7	-52.325	2	-58.299	4	0	1	-.096	3	-.087	2	
97	4	max	-7.289	4	17.221	1	17.213	3	0	6	.015	4	.015	1	
98		min	-29.624	7	-17.159	2	-17.166	4	0	1	-.015	3	-.015	2	
99	5	max	0	4	.378	6	.293	8	0	6	0	11	0	11	
100		min	0	7	.015	1	.006	3	0	1	0	1	0	1	
101	MP4C	1	max	0	6	.008	9	.01	1	0	9	0	11	0	11
102		min	0	1	-.315	5	-.634	6	0	5	0	1	0	1	
103	2	max	308.648	3	286.169	6	497.373	8	.148	8	-.03	3	.121	6	
104		min	-321.979	4	-37.548	1	-165.378	3	.005	3	-.219	8	.01	1	
105	3	max	-217.223	1	320.64	1	485.701	3	0	6	1.115	4	.751	1	
106		min	-686.658	6	-320.529	2	-485.527	4	0	1	-1.116	3	-.75	2	
107	4	max	-83.051	1	261.271	1	379.685	3	0	6	.11	4	.082	1	
108		min	-398.381	6	-261.161	2	-379.511	4	0	1	-.111	3	-.082	2	
109	5	max	0	11	1.524	6	2.314	8	0	6	0	11	0	11	
110		min	0	6	-1.169	1	-1.849	3	0	1	0	1	0	1	
111	MP1A	1	max	0	7	0	.003	5	0	4	0	11	0	11	
112		min	0	1	-.006	7	0	9	0	7	0	5	0	5	
113	2	max	178.569	2	457.075	5	142.562	3	-.01	3	-.004	3	.017	1	
114		min	-106.134	1	-60.842	2	-167.578	4	-.148	8	-.038	8	-.018	2	
115	3	max	-64.558	4	165.164	2	95.331	2	0	5	.12	3	.192	2	
116		min	-225.653	7	-165.136	1	-95.371	1	0	2	-.12	4	-.192	1	
117	4	max	-7.289	4	17.137	2	17.129	4	0	5	.015	3	.015	2	
118		min	-29.625	7	-17.109	1	-17.169	3	0	2	-.015	4	-.015	1	
119	5	max	0	4	.254	5	.038	3	0	5	0	11	0	11	
120		min	0	7	-.07	2	-.293	8	0	2	0	1	0	1	
121	MP2A	1	max	0	6	0	4	0	3	0	4	0	11	0	11
122		min	0	1	-.014	7	-.006	8	0	7	0	5	0	5	
123	2	max	81.594	2	20.649	4	91.99	3	-.01	3	.024	6	-.005	1	
124		min	-166.657	5	-119.883	7	-149.105	4	-.097	8	-.005	1	-.042	6	
125	3	max	-14.578	10	34.422	2	34.416	4	0	5	.06	3	.06	2	
126		min	-59.249	6	-34.392	1	-34.403	3	0	2	-.06	4	-.06	1	
127	4	max	-7.289	10	17.216	2	17.21	4	0	5	.015	3	.015	2	
128		min	-29.624	6	-17.186	1	-17.196	3	0	2	-.015	4	-.015	1	



Envelope Member Section Forces (Continued)

Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mom...	LC	
129	5	max	0	10	.209	5	.099	7	0	5	0	11	0	11	
130		min	0	6	.009	2	.003	4	0	2	0	1	0	1	
131	MP3A	1	max	0	6	0	10	0	3	0	10	0	11	0	11
132			min	0	1	-.013	6	-.01	8	0	6	0	5	0	5
133		2	max	24.767	2	-9.362	4	138.096	3	.047	7	.036	5	-.005	10
134			min	-266.998	5	-225.338	7	-112.933	4	-.004	4	.006	2	-.03	8
135		3	max	-33.058	1	61.33	2	49.408	4	0	5	.083	3	.101	2
136			min	-114.121	6	-61.268	1	-49.361	3	0	2	-.083	4	-.1	1
137		4	max	-7.289	1	17.214	2	17.226	4	0	5	.015	3	.015	2
138			min	-29.624	6	-17.153	1	-17.179	3	0	2	-.015	4	-.015	1
139		5	max	0	1	.379	5	.284	5	0	5	0	11	0	11
140			min	0	6	.008	2	.009	2	0	2	0	1	0	1
141	MP4A	1	max	0	3	.007	10	.01	3	0	10	0	11	0	11
142			min	0	8	-.331	6	-.635	8	0	6	0	1	0	5
143		2	max	347.423	2	290.527	5	478.457	7	.146	5	-.014	4	.121	8
144			min	-360.785	1	-75.597	2	-86.904	2	.011	2	-.221	7	.012	3
145		3	max	-217.223	3	505.537	2	293.882	4	0	1	.694	1	1.205	2
146			min	-686.658	8	-505.426	1	-293.707	3	0	2	-.695	2	-1.204	1
147		4	max	-83.051	3	439.118	2	253.453	2	0	1	.072	1	.125	2
148			min	-398.381	8	-439.007	1	-253.279	1	0	2	-.072	2	-.125	1
149		5	max	0	11	2.074	1	1.815	5	0	1	0	11	0	11
150			min	0	8	-1.963	2	-1.205	2	0	2	0	6	0	1
151	M16	1	max	690.597	1	164.626	4	987.541	1	-.024	4	.199	2	.492	7
152			min	-440.622	2	-601.07	10	-1017.928	2	-.117	7	-.194	1	-.132	4
153		2	max	690.597	1	163.589	4	992.271	1	-.024	4	.098	2	.528	7
154			min	-440.622	2	-602.106	10	-1022.659	2	-.117	7	-.096	1	-.148	4
155		3	max	690.597	1	162.553	4	997.002	1	-.024	4	.009	4	.565	7
156			min	-440.622	2	-603.142	10	-1027.389	2	-.117	7	-.01	3	-.164	4
157		4	max	690.597	1	161.517	4	1001.732	1	-.024	4	.101	1	.602	7
158			min	-440.622	2	-604.178	10	-1032.12	2	-.117	7	-.106	2	-.18	4
159		5	max	690.597	1	160.481	4	1006.463	1	-.024	4	.201	1	.639	7
160			min	-440.622	2	-605.214	10	-1036.85	2	-.117	7	-.208	2	-.196	4
161	M17	1	max	536.86	7	-126.248	4	1617.879	4	.119	7	.301	3	.547	4
162			min	-179.35	1	-925.679	7	-1522.699	3	-.006	4	-.319	4	-.386	3
163		2	max	536.323	7	-127.284	4	1621.427	4	.119	7	.15	3	.56	4
164			min	-181.398	1	-929.327	7	-1526.247	3	-.006	4	-.159	4	-.345	3
165		3	max	535.786	7	-128.32	4	1624.975	4	.119	7	.008	1	.573	4
166			min	-183.447	1	-932.974	7	-1529.795	3	-.006	4	-.006	2	-.304	3
167		4	max	535.249	7	-129.357	4	1628.523	4	.119	7	.163	4	.622	6
168			min	-185.495	1	-936.622	7	-1533.343	3	-.006	4	-.152	3	-.263	3
169		5	max	534.712	7	-130.393	4	1632.071	4	.119	7	.324	4	.708	6
170			min	-187.543	1	-940.27	7	-1536.891	3	-.006	4	-.304	3	-.221	3
171	M18	1	max	621.295	4	126.592	2	1234.439	4	-.026	2	.25	3	.492	5
172			min	-368.893	3	-347.852	5	-1263.575	3	-.117	8	-.245	4	-.153	2
173		2	max	619.246	4	125.556	2	1237.987	4	-.026	2	.124	3	.526	5
174			min	-366.845	3	-351.499	5	-1267.123	3	-.117	8	-.123	4	-.165	2
175		3	max	617.198	4	124.52	2	1241.535	4	-.026	2	.009	2	.561	5
176			min	-364.797	3	-355.147	5	-1270.671	3	-.117	8	-.01	1	-.177	2
177		4	max	615.15	4	123.484	2	1245.083	4	-.026	2	.123	4	.597	5
178			min	-362.748	3	-358.795	5	-1274.219	3	-.117	8	-.127	3	-.19	2
179		5	max	613.101	4	122.447	2	1248.631	4	-.026	2	.246	4	.632	5
180			min	-360.7	3	-362.443	5	-1277.767	3	-.117	8	-.253	3	-.202	2
181	M19	1	max	2493.904	2	674.517	6	1574.812	4	.179	4	2.099	3	.45	6
182			min	-5084.982	5	-210.836	1	-1573.203	3	-.123	3	-2.098	4	-.107	1
183		2	max	2493.904	2	643.591	6	1550.536	4	.179	4	.514	3	.113	1
184			min	-5084.982	5	-223.029	1	-1548.926	3	-.123	3	-.51	4	-.219	6
185		3	max	1248.559	2	-90.83	2	278.247	4	.108	3	.057	3	.024	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
186		min	-3073.919	5	-1085.091	5	-346.195	3	-.077	4	-.052	4	-.064	5
187	4	max	1594.137	6	-106.571	2	254.6	4	.108	3	.109	4	.577	5
188		min	-897.629	1	-1128.601	5	-322.519	3	-.077	4	-.13	3	.082	2
189	5	max	0	11	0	11	0	11	0	11	0	11	0	11
190		min	0	1	0	1	0	1	0	1	0	1	0	1
191	M20	1	max	284.174	4	354.498	3	118.59	4	0	.155	8	.671	3
192		min	-367.323	3	-225.009	4	-420.217	7	-.001	6	-.024	3	-.466	4
193		2	max	288.248	4	357.355	3	106.523	4	0	.065	8	.313	3
194		min	-371.397	3	-227.866	4	-461.048	7	-.001	6	-.016	3	-.291	4
195		3	max	292.321	4	360.212	3	96.108	4	0	-.001	1	-.052	3
196		min	-375.471	3	-230.723	4	-496.202	7	-.001	6	-.053	6	-.291	8
197		4	max	296.395	4	363.069	3	82.828	4	0	-.015	3	.043	4
198		min	-379.545	3	-233.58	4	-541.198	7	-.001	6	-.18	8	-.697	7
199		5	max	300.469	4	365.927	3	58.339	4	0	-.025	3	.2	4
200		min	-383.619	3	-236.437	4	-624.694	7	-.001	6	-.345	8	-1.148	7
201	M21	1	max	261.723	1	99.393	1	618.476	6	0	-.036	2	-.009	1
202		min	-376.465	2	-290.011	6	57.488	1	0	9	-.336	5	-1.138	6
203		2	max	260.964	1	99.326	1	534.98	6	0	-.018	2	-.037	1
204		min	-375.706	2	-289.977	6	33	1	0	9	-.177	5	-.696	6
205		3	max	260.206	1	99.259	1	489.985	6	0	-.005	4	-.048	4
206		min	-374.947	2	-289.943	6	19.72	1	0	9	-.05	7	-.29	7
207		4	max	259.447	1	99.192	1	454.827	6	0	.059	5	.157	2
208		min	-374.189	2	-289.909	6	9.304	1	0	9	-.006	2	-.118	1
209		5	max	258.688	1	99.125	1	413.967	6	0	.146	5	.476	6
210		min	-373.43	2	-289.876	6	-2.772	1	0	9	-.009	2	-.168	1
211	M22	1	max	731.518	5	-70.298	2	899.051	3	.137	.267	3	-.068	2
212		min	-372.704	2	-1228.177	5	-874.882	4	-.122	4	-.246	4	-.924	5
213		2	max	84.739	2	-103.57	2	127.677	3	.108	.024	4	.257	5
214		min	-5892.287	5	-1121.353	5	-66.14	4	-.077	4	-.021	3	.052	2
215		3	max	2343.689	2	1385.683	5	99.524	4	.273	.247	4	3.163	5
216		min	-2211.506	1	313.173	2	-105.694	3	-.194	4	-.252	3	.709	2
217		4	max	2343.689	2	1314.54	5	68.671	4	.273	.355	4	1.421	5
218		min	-2211.506	1	288.407	2	-74.841	3	-.194	4	-.369	3	.321	2
219		5	max	2343.689	2	1248.149	5	37.818	4	.273	.424	4	-.037	2
220		min	-2211.506	1	265.025	2	-43.987	3	-.194	4	-.445	3	-.233	5
221	M23	1	max	705.042	8	-120.04	3	671.713	1	.207	.347	1	-.103	3
222		min	-293.182	3	-1213.629	8	-644.333	2	-.193	2	-.326	2	-.913	8
223		2	max	-226.888	3	-144.474	3	137.871	1	.11	.022	3	.255	8
224		min	-5788.768	8	-1108.35	8	-76.818	2	-.079	2	-.017	4	.06	10
225		3	max	2022.681	3	1375.668	8	107.899	2	.281	.222	2	3.14	8
226		min	-1888.624	4	343.92	3	-113.379	1	-.202	2	-.229	1	.773	10
227		4	max	2009.321	3	1304.526	8	84.759	2	.281	.346	2	1.411	8
228		min	-1875.264	4	319.155	3	-90.239	1	-.202	2	-.36	1	.341	10
229		5	max	1995.961	3	1240.012	8	61.619	2	.281	.441	2	-.043	1
230		min	-1861.905	4	296.319	3	-67.1	1	-.202	2	-.462	1	-.231	8
231	M24	1	max	715.346	7	-83.969	4	283.669	2	.233	.398	4	-.086	4
232		min	-349.406	4	-1219.357	7	-260.39	1	-.219	3	-.377	3	-.916	7
233		2	max	-274.683	4	-140.122	4	119.197	8	.085	.031	1	.254	7
234		min	-5784.935	7	-1109.116	7	-57.17	3	-.055	3	-.027	2	.066	4
235		3	max	2105.317	4	1374.67	7	90.363	3	.223	.202	1	3.134	7
236		min	-1971.589	3	352.201	4	-95.43	4	-.145	3	-.206	2	.813	4
237		4	max	2091.957	4	1303.527	7	82.65	3	.223	.278	1	1.407	7
238		min	-1958.23	3	327.435	4	-87.717	4	-.145	3	-.29	2	.374	4
239		5	max	2078.597	4	1237.136	7	74.937	3	.223	.359	3	-.033	4
240		min	-1944.87	3	304.053	4	-80.004	4	-.145	3	-.378	4	-.233	7
241	M25	1	max	168.493	7	459.153	4	321.182	4	.367	.104	3	.223	7
242		min	-35.437	4	-2345.247	7	-1309.28	6	-.411	4	-.154	4	-.028	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	
243	2	max	168.493	7	459.153	4	321.182	4	.367	3	.056	1	.369	7	
244		min	-35.437	4	-2345.247	7	-1309.28	6	-.411	4	-.193	6	-.057	4	
245	3	max	168.493	7	459.153	4	321.182	4	.367	3	.071	1	.516	7	
246		min	-35.437	4	-2345.247	7	-1309.28	6	-.411	4	-.275	6	-.085	4	
247	4	max	168.493	7	459.153	4	321.182	4	.367	3	.086	1	.663	7	
248		min	-35.437	4	-2345.247	7	-1309.28	6	-.411	4	-.356	6	-.114	4	
249	5	max	168.493	7	459.153	4	321.182	4	.367	3	.101	1	.809	7	
250		min	-35.437	4	-2345.247	7	-1309.28	6	-.411	4	-.438	6	-.143	4	
251	M26	1	max	13.577	7	-407.214	4	-234.985	4	.078	3	.24	7	-.051	4
252		min	3.589	4	-3325.377	7	-1920.185	7	-.121	4	.029	4	-.416	7	
253	2	max	13.577	7	-407.214	4	-234.985	4	.078	3	.12	7	-.025	4	
254		min	3.589	4	-3325.377	7	-1920.185	7	-.121	4	.015	4	-.208	7	
255	3	max	13.577	7	-407.214	4	-234.985	4	.078	3	0	10	0	6	
256		min	3.589	4	-3325.377	7	-1920.185	7	-.121	4	0	6	0	10	
257	4	max	13.577	7	-407.214	4	-234.985	4	.078	3	-.015	4	.208	7	
258		min	3.589	4	-3325.377	7	-1920.185	7	-.121	4	-.12	7	.025	4	
259	5	max	13.577	7	-407.214	4	-234.985	4	.078	3	-.029	4	.416	7	
260		min	3.589	4	-3325.377	7	-1920.185	7	-.121	4	-.24	7	.051	4	
261	M27	1	max	10.618	7	-346.487	4	-82.042	4	.061	3	.163	7	-.043	4
262		min	2.403	4	-2331.201	7	-1302.301	7	-.094	4	.01	4	-.292	7	
263	2	max	10.618	7	-346.487	4	-82.042	4	.061	3	.082	7	-.022	4	
264		min	2.403	4	-2331.201	7	-1302.301	7	-.094	4	.005	4	-.146	7	
265	3	max	10.618	7	-346.487	4	-82.042	4	.061	3	0	8	0	3	
266		min	2.403	4	-2331.201	7	-1302.301	7	-.094	4	0	3	0	5	
267	4	max	10.618	7	-346.487	4	-82.042	4	.061	3	-.005	4	.145	7	
268		min	2.403	4	-2331.201	7	-1302.301	7	-.094	4	-.081	7	.022	4	
269	5	max	10.618	7	-346.487	4	-82.042	4	.061	3	-.01	4	.291	7	
270		min	2.403	4	-2331.201	7	-1302.301	7	-.094	4	-.162	7	.043	4	
271	M28	1	max	165.133	5	842.206	4	2740.836	5	.436	4	.219	5	.063	2
272		min	-45.124	10	-804.206	3	-798.831	2	-.48	3	.047	2	-.08	1	
273	2	max	165.133	5	842.206	4	2740.836	5	.436	4	.39	5	.079	3	
274		min	-45.124	10	-804.206	3	-798.831	2	-.48	3	-.003	2	-.098	4	
275	3	max	165.133	5	842.206	4	2740.836	5	.436	4	.562	5	.13	3	
276		min	-45.124	10	-804.206	3	-798.831	2	-.48	3	-.053	2	-.151	4	
277	4	max	165.133	5	842.206	4	2740.836	5	.436	4	.733	5	.18	3	
278		min	-45.124	10	-804.206	3	-798.831	2	-.48	3	-.103	2	-.203	4	
279	5	max	165.133	5	842.206	4	2740.836	5	.436	4	.904	5	.23	3	
280		min	-45.124	10	-804.206	3	-798.831	2	-.48	3	-.153	2	-.256	4	
281	M29	1	max	13.629	5	2.312	4	3883.042	5	.11	4	-.043	2	0	4
282		min	3.577	2	-2.178	3	341.39	2	-.153	3	-.485	5	0	3	
283	2	max	13.629	5	2.312	4	3883.042	5	.11	4	-.021	2	0	4	
284		min	3.577	2	-2.178	3	341.39	2	-.153	3	-.243	5	0	3	
285	3	max	13.629	5	2.312	4	3883.042	5	.11	4	0	8	0	11	
286		min	3.577	2	-2.178	3	341.39	2	-.153	3	0	1	0	4	
287	4	max	13.629	5	2.312	4	3883.042	5	.11	4	.243	5	0	3	
288		min	3.577	2	-2.178	3	341.39	2	-.153	3	.021	2	0	4	
289	5	max	13.629	5	2.312	4	3883.042	5	.11	4	.485	5	0	3	
290		min	3.577	2	-2.178	3	341.39	2	-.153	3	.043	2	0	4	
291	M30	1	max	10.703	5	127.964	3	2699.322	5	.086	4	-.032	2	.016	3
292		min	2.366	2	-91.268	4	253.645	2	-.12	3	-.338	5	-.011	4	
293	2	max	10.703	5	127.964	3	2699.322	5	.086	4	-.016	2	.008	3	
294		min	2.366	2	-91.268	4	253.645	2	-.12	3	-.169	5	-.006	4	
295	3	max	10.703	5	127.964	3	2699.322	5	.086	4	0	10	0	4	
296		min	2.366	2	-91.268	4	253.645	2	-.12	3	0	6	0	3	
297	4	max	10.703	5	127.964	3	2699.322	5	.086	4	.168	5	.006	4	
298		min	2.366	2	-91.268	4	253.645	2	-.12	3	.016	2	-.008	3	
299	5	max	10.703	5	127.964	3	2699.322	5	.086	4	.337	5	.011	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	
300		min	2.366	2	-91.268	4	253.645	2	-.12	3	.032	2	-.016	3	
301	M31	1	max	163.526	8	2273.802	8	541.309	1	.459	2	.056	1	-.005	2
302		min	-56.453	9	-437.83	3	-1476.222	6	-.504	1	-.163	6	-.188	5	
303		2	max	163.526	8	2273.802	8	541.309	1	.459	2	.09	1	.008	3
304		min	-56.453	9	-437.83	3	-1476.222	6	-.504	1	-.255	6	-.327	8	
305		3	max	163.526	8	2273.802	8	541.309	1	.459	2	.123	1	.035	3
306		min	-56.453	9	-437.83	3	-1476.222	6	-.504	1	-.347	6	-.469	8	
307		4	max	163.526	8	2273.802	8	541.309	1	.459	2	.157	1	.062	3
308		min	-56.453	9	-437.83	3	-1476.222	6	-.504	1	-.439	6	-.611	8	
309		5	max	163.526	8	2273.802	8	541.309	1	.459	2	.191	1	.09	3
310		min	-56.453	9	-437.83	3	-1476.222	6	-.504	1	-.532	6	-.753	8	
311	M32	1	max	13.577	8	3322.976	8	-242.55	3	.112	2	.24	8	.415	8
312		min	3.579	3	420.537	3	-1918.94	8	-.155	1	.03	3	.053	3	
313		2	max	13.577	8	3322.976	8	-242.55	3	.112	2	.12	8	.208	8
314		min	3.579	3	420.537	3	-1918.94	8	-.155	1	.015	3	.026	3	
315		3	max	13.577	8	3322.976	8	-242.55	3	.112	2	0	2	0	1
316		min	3.579	3	420.537	3	-1918.94	8	-.155	1	0	8	0	5	
317		4	max	13.577	8	3322.976	8	-242.55	3	.112	2	-.015	3	-.026	3
318		min	3.579	3	420.537	3	-1918.94	8	-.155	1	-.12	8	-.208	8	
319		5	max	13.577	8	3322.976	8	-242.55	3	.112	2	-.03	3	-.053	3
320		min	3.579	3	420.537	3	-1918.94	8	-.155	1	-.24	8	-.415	8	
321	M33	1	max	10.633	8	2277.879	8	-174.577	3	.087	2	.174	8	.285	8
322		min	2.391	3	305.088	3	-1390.981	8	-.121	1	.022	3	.038	3	
323		2	max	10.633	8	2277.879	8	-174.577	3	.087	2	.087	8	.143	8
324		min	2.391	3	305.088	3	-1390.981	8	-.121	1	.011	3	.019	3	
325		3	max	10.633	8	2277.879	8	-174.577	3	.087	2	0	7	0	7
326		min	2.391	3	305.088	3	-1390.981	8	-.121	1	0	9	0	9	
327		4	max	10.633	8	2277.879	8	-174.577	3	.087	2	-.011	3	-.019	3
328		min	2.391	3	305.088	3	-1390.981	8	-.121	1	-.087	8	-.142	8	
329		5	max	10.633	8	2277.879	8	-174.577	3	.087	2	-.022	3	-.038	3
330		min	2.391	3	305.088	3	-1390.981	8	-.121	1	-.174	8	-.284	8	
331	M34	1	max	0	11	.001	2	.002	3	0	11	0	11	0	11
332		min	0	1	0	8	-.001	5	0	1	0	1	0	1	
333		2	max	-89.213	1	39.269	3	-73.058	3	-.038	2	-.061	10	.331	8
334		min	-783.017	6	-326.881	8	-588.378	8	-.234	5	-.526	7	.059	3	
335		3	max	-145.346	3	-17.383	2	48.97	3	.114	6	-.112	3	.185	8
336		min	-966.338	8	-116.734	5	-74.522	10	-.025	10	-.869	8	.008	3	
337		4	max	-104.444	3	318.276	6	636.257	8	.389	7	.062	3	.395	8
338		min	-889.523	8	6.975	1	76.234	3	.037	4	-.561	8	.04	1	
339		5	max	0	11	0	6	.002	2	0	11	0	11	0	11
340		min	0	1	-.001	4	-.003	4	0	1	0	1	0	1	
341	M35	1	max	0	11	.001	1	.003	3	0	11	0	11	0	11
342		min	0	1	0	6	-.001	6	0	1	0	1	0	1	
343		2	max	-65.654	4	43.987	1	-70.142	4	-.039	3	.086	4	.352	7
344		min	-790.913	7	-329.374	6	-589.327	7	-.234	8	-.576	7	-.015	4	
345		3	max	-135.509	4	42.967	10	64.397	10	.115	5	-.11	4	.18	6
346		min	-968.515	7	-120.25	6	-77.488	9	-.02	2	-.87	7	.028	1	
347		4	max	-90.685	1	308.43	7	629.055	7	.393	5	-.036	10	.388	7
348		min	-889.468	6	28.377	2	109.524	4	.017	2	-.522	6	.082	4	
349		5	max	0	11	0	7	.001	7	0	11	0	11	0	11
350		min	0	1	-.001	2	-.002	2	0	1	0	1	0	1	
351	M36	1	max	0	11	0	11	0	11	0	11	0	11	0	11
352		min	0	1	0	1	0	1	0	1	0	1	0	1	
353		2	max	-96.265	2	38.129	4	-40.704	2	-.03	4	.006	2	.351	5
354		min	-786.41	5	-325.373	7	-596.693	5	-.236	7	-.551	5	-.012	2	
355		3	max	-129.16	2	-2.326	9	72.634	3	.12	8	-.094	2	.18	5
356		min	-971.202	5	-112.042	7	-84.814	4	-.036	3	-.873	5	.035	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	
357	4	max	-130.139	2	319.319	8	634.596	5	.392	8	.011	3	.394	8	
358		min	-886.24	5	-7.86	3	93.05	2	.022	3	-.546	8	.033	3	
359	5	max	0	11	0	11	0	11	0	11	0	11	0	11	
360		min	0	1	0	1	0	1	0	1	0	1	0	1	
361	M37	1	max	-160.746	1	144.849	2	297.838	1	.002	2	-.04	2	.668	7
362			min	-1155.946	6	-108.271	1	-217.354	2	-.003	1	-.438	5	.028	4
363		2	max	-165.39	1	142.168	2	295.2	1	.002	2	-.064	2	.681	7
364			min	-1154.35	6	-105.59	1	-219.993	2	-.003	1	-.372	5	.067	4
365		3	max	-170.033	1	139.487	2	292.562	1	.002	2	-.072	4	.701	5
366			min	-1152.755	6	-102.909	1	-222.631	2	-.003	1	-.314	7	.033	2
367		4	max	-174.677	1	136.806	2	289.924	1	.002	2	-.039	1	.746	5
368			min	-1151.159	6	-100.228	1	-225.269	2	-.003	1	-.265	6	-.082	2
369		5	max	-179.32	1	134.125	2	287.286	1	.002	2	.022	1	.787	5
370			min	-1149.563	6	-97.547	1	-227.907	2	-.003	1	-.224	6	-.197	2
371	M38	1	max	1054.489	1	39.945	1	715.152	3	.602	4	.01	4	.926	1
372			min	-790.298	2	-1109.897	6	-573.217	4	-.361	3	-.126	7	-1.32	2
373		2	max	1054.489	1	39.945	1	715.152	3	.602	4	.02	1	.924	1
374			min	-790.298	2	-1109.897	6	-573.217	4	-.361	3	-.11	6	-1.279	2
375		3	max	1054.489	1	39.945	1	715.152	3	.602	4	.031	1	.921	1
376			min	-790.298	2	-1109.897	6	-573.217	4	-.361	3	-.097	6	-1.237	2
377		4	max	1054.489	1	39.945	1	715.152	3	.602	4	.055	3	.919	1
378			min	-790.298	2	-1109.897	6	-573.217	4	-.361	3	-.097	4	-1.195	2
379		5	max	1054.489	1	39.945	1	715.152	3	.602	4	.1	3	.917	1
380			min	-790.298	2	-1109.897	6	-573.217	4	-.361	3	-.133	4	-1.154	2
381	M39	1	max	118.13	1	110.092	1	262.58	3	.202	7	.007	4	.204	5
382			min	-224.971	6	-77.912	2	-177.576	4	-.01	4	-.072	7	-.008	2
383		2	max	118.13	1	108.37	1	262.58	3	.202	7	-.004	9	.198	5
384			min	-224.971	6	-79.634	2	-177.576	4	-.01	4	-.058	7	-.003	2
385		3	max	118.13	1	106.648	1	262.58	3	.202	7	0	9	.193	5
386			min	-224.971	6	-81.357	2	-177.576	4	-.01	4	-.048	6	.002	2
387		4	max	118.13	1	104.925	1	262.58	3	.202	7	.004	3	.189	5
388			min	-224.971	6	-83.079	2	-177.576	4	-.01	4	-.044	8	.007	2
389		5	max	118.13	1	103.203	1	262.58	3	.202	7	.02	3	.185	5
390			min	-224.971	6	-84.801	2	-177.576	4	-.01	4	-.041	8	.013	2
391	M40	1	max	49.863	1	132.272	1	180.783	3	.089	3	.09	8	.163	5
392			min	-179.331	6	-103.173	2	-199.166	4	-.117	4	0	3	-.011	2
393		2	max	49.863	1	132.272	1	180.783	3	.089	3	.086	5	.158	5
394			min	-179.331	6	-103.173	2	-199.166	4	-.117	4	.007	2	-.004	2
395		3	max	49.863	1	132.272	1	180.783	3	.089	3	.084	5	.154	5
396			min	-179.331	6	-103.173	2	-199.166	4	-.117	4	.008	2	.002	2
397		4	max	49.863	1	132.272	1	180.783	3	.089	3	.081	5	.149	5
398			min	-179.331	6	-103.173	2	-199.166	4	-.117	4	.008	2	.008	2
399		5	max	49.863	1	132.272	1	180.783	3	.089	3	.084	7	.144	5
400			min	-179.331	6	-103.173	2	-199.166	4	-.117	4	0	4	.015	2
401	M41	1	max	514.196	1	33.898	1	231.349	3	-.043	3	.195	5	-.089	1
402			min	-313.902	2	-414.521	6	-375.564	4	-.337	5	0	2	-.465	6
403		2	max	514.196	1	33.898	1	231.349	3	-.043	3	.179	5	-.091	1
404			min	-313.902	2	-414.521	6	-375.564	4	-.337	5	-.003	2	-.439	6
405		3	max	514.196	1	33.898	1	231.349	3	-.043	3	.163	5	-.094	1
406			min	-313.902	2	-414.521	6	-375.564	4	-.337	5	-.007	2	-.413	6
407		4	max	514.196	1	33.898	1	231.349	3	-.043	3	.148	5	-.082	4
408			min	-313.902	2	-414.521	6	-375.564	4	-.337	5	-.01	2	-.387	6
409		5	max	514.196	1	33.898	1	231.349	3	-.043	3	.132	5	-.069	4
410			min	-313.902	2	-414.521	6	-375.564	4	-.337	5	-.014	2	-.361	6
411	M42	1	max	136.292	1	264.772	2	37.261	2	.453	7	.127	5	.227	2
412			min	-488.689	6	-443.935	1	-264.851	5	-.212	4	-.025	2	-.708	5
413		2	max	136.292	1	264.772	2	37.261	2	.453	7	.11	5	.21	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	
414		min	-488.689	6	-443.935	1	-264.851	5	-.212	4	-.023	2	-.684	5	
415	3	max	136.292	1	264.772	2	37.261	2	.453	7	.094	5	.193	2	
416		min	-488.689	6	-443.935	1	-264.851	5	-.212	4	-.02	2	-.659	5	
417	4	max	136.292	1	264.772	2	37.261	2	.453	7	.077	5	.177	2	
418		min	-488.689	6	-443.935	1	-264.851	5	-.212	4	-.018	2	-.635	5	
419	5	max	136.292	1	264.772	2	37.261	2	.453	7	.061	5	.16	2	
420		min	-488.689	6	-443.935	1	-264.851	5	-.212	4	-.016	2	-.611	5	
421	M43	1	max	164.764	8	-1.098	2	56.088	4	.263	7	.069	7	.267	6
422		min	32.486	3	-352.439	5	-167.121	7	-.108	4	-.001	4	.027	1	
423	2	max	164.764	8	-1.098	2	56.088	4	.263	7	.058	7	.284	6	
424		min	32.486	3	-352.439	5	-167.121	7	-.108	4	.002	4	.039	1	
425	3	max	164.764	8	-1.098	2	56.088	4	.263	7	.048	5	.301	6	
426		min	32.486	3	-352.439	5	-167.121	7	-.108	4	.002	9	.051	1	
427	4	max	164.764	8	-1.098	2	56.088	4	.263	7	.039	5	.319	6	
428		min	32.486	3	-352.439	5	-167.121	7	-.108	4	0	9	.063	1	
429	5	max	164.764	8	-1.098	2	56.088	4	.263	7	.03	5	.337	8	
430		min	32.486	3	-352.439	5	-167.121	7	-.108	4	-.003	9	.072	3	
431	M44	1	max	138.184	8	74.226	2	119.767	4	.159	3	-.003	3	.247	6
432		min	23.594	9	-196.964	5	-101.303	3	-.176	4	-.088	8	.018	1	
433	2	max	138.184	8	74.226	2	119.767	4	.159	3	-.01	3	.254	6	
434		min	23.594	9	-196.964	5	-101.303	3	-.176	4	-.084	8	.028	1	
435	3	max	138.184	8	74.226	2	119.767	4	.159	3	-.015	2	.261	6	
436		min	23.594	9	-196.964	5	-101.303	3	-.176	4	-.08	5	.038	1	
437	4	max	138.184	8	74.226	2	119.767	4	.159	3	-.015	2	.268	6	
438		min	23.594	9	-196.964	5	-101.303	3	-.176	4	-.078	5	.048	1	
439	5	max	138.184	8	74.226	2	119.767	4	.159	3	-.016	2	.275	6	
440		min	23.594	9	-196.964	5	-101.303	3	-.176	4	-.075	7	.049	9	
441	M45	1	max	-67.694	2	121.302	2	263.056	8	.073	3	-.018	3	-.021	2
442		min	-340.027	5	-163.325	1	-14.37	3	-.349	8	-.19	8	-.525	5	
443	2	max	-67.694	2	121.302	2	263.056	8	.073	3	-.019	3	-.029	2	
444		min	-340.027	5	-163.325	1	-14.37	3	-.349	8	-.173	8	-.518	5	
445	3	max	-67.694	2	121.302	2	263.056	8	.073	3	-.02	3	-.037	2	
446		min	-340.027	5	-163.325	1	-14.37	3	-.349	8	-.157	8	-.51	5	
447	4	max	-67.694	2	121.302	2	263.056	8	.073	3	-.021	3	-.044	2	
448		min	-340.027	5	-163.325	1	-14.37	3	-.349	8	-.141	8	-.503	5	
449	5	max	-67.694	2	121.302	2	263.056	8	.073	3	-.019	2	-.052	2	
450		min	-340.027	5	-163.325	1	-14.37	3	-.349	8	-.124	8	-.495	5	
451	M46	1	max	941.803	4	1.825	4	635.494	1	.656	2	.017	2	.637	4
452		min	-677.645	3	-1103.225	7	-493.853	2	-.415	1	-.128	5	-1.031	3	
453	2	max	941.803	4	1.825	4	635.494	1	.656	2	.01	4	.637	4	
454		min	-677.645	3	-1103.225	7	-493.853	2	-.415	1	-.108	7	-.991	3	
455	3	max	941.803	4	1.825	4	635.494	1	.656	2	.048	4	.637	4	
456		min	-677.645	3	-1103.225	7	-493.853	2	-.415	1	-.102	7	-.952	3	
457	4	max	941.803	4	1.825	4	635.494	1	.656	2	.087	4	.637	4	
458		min	-677.645	3	-1103.225	7	-493.853	2	-.415	1	-.129	3	-.913	3	
459	5	max	941.803	4	1.825	4	635.494	1	.656	2	.126	4	.637	4	
460		min	-677.645	3	-1103.225	7	-493.853	2	-.415	1	-.159	3	-.874	3	
461	M47	1	max	76.431	4	96.241	2	261.38	1	.216	8	.006	2	.202	8
462		min	-212.36	7	-64.662	1	-176.789	2	-.028	3	-.071	5	-.012	3	
463	2	max	76.431	4	94.519	2	261.38	1	.216	8	-.005	2	.199	8	
464		min	-212.36	7	-66.384	1	-176.789	2	-.028	3	-.057	5	-.014	3	
465	3	max	76.431	4	92.797	2	261.38	1	.216	8	.003	4	.196	8	
466		min	-212.36	7	-68.106	1	-176.789	2	-.028	3	-.052	7	-.016	3	
467	4	max	76.431	4	91.074	2	261.38	1	.216	8	.016	4	.193	8	
468		min	-212.36	7	-69.829	1	-176.789	2	-.028	3	-.047	7	-.018	3	
469	5	max	76.431	4	89.352	2	261.38	1	.216	8	.03	4	.19	8	
470		min	-212.36	7	-71.551	1	-176.789	2	-.028	3	-.046	3	-.019	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	
471	M48	1	max	73.847	4	176.755	4	179.752	1	.117	1	.093	6	.157	6
472			min	-181.829	7	-147.351	3	-198.303	2	-.145	2	-.006	1	-.012	1
473		2	max	73.847	4	176.755	4	179.752	1	.117	1	.086	6	.153	6
474			min	-181.829	7	-147.351	3	-198.303	2	-.145	2	.005	1	-.009	1
475		3	max	73.847	4	176.755	4	179.752	1	.117	1	.086	8	.149	6
476			min	-181.829	7	-147.351	3	-198.303	2	-.145	2	.003	3	-.005	1
477		4	max	73.847	4	176.755	4	179.752	1	.117	1	.086	8	.145	6
478			min	-181.829	7	-147.351	3	-198.303	2	-.145	2	-.004	3	-.001	1
479		5	max	73.847	4	176.755	4	179.752	1	.117	1	.086	8	.141	6
480			min	-181.829	7	-147.351	3	-198.303	2	-.145	2	-.011	3	-.01	4
481	M49	1	max	448.475	4	104.929	4	223.483	1	-.05	3	.199	6	-.12	1
482			min	-248.612	3	-425.091	7	-367.891	2	-.343	8	-.008	1	-.456	7
483		2	max	448.475	4	104.929	4	223.483	1	-.05	3	.178	6	-.106	3
484			min	-248.612	3	-425.091	7	-367.891	2	-.343	8	.006	1	-.429	7
485		3	max	448.475	4	104.929	4	223.483	1	-.05	3	.16	8	-.086	3
486			min	-248.612	3	-425.091	7	-367.891	2	-.343	8	.008	3	-.403	7
487		4	max	448.475	4	104.929	4	223.483	1	-.05	3	.148	8	-.065	3
488			min	-248.612	3	-425.091	7	-367.891	2	-.343	8	-.007	3	-.377	6
489		5	max	448.475	4	104.929	4	223.483	1	-.05	3	.136	8	-.045	3
490			min	-248.612	3	-425.091	7	-367.891	2	-.343	8	-.022	3	-.355	6
491	M50	1	max	26.314	4	225.894	3	22.983	1	.451	8	.126	8	.167	3
492			min	-464.602	7	-405.049	4	-253.59	6	-.214	3	-.016	3	-.698	8
493		2	max	26.314	4	225.894	3	22.983	1	.451	8	.111	8	.153	3
494			min	-464.602	7	-405.049	4	-253.59	6	-.214	3	-.021	3	-.674	8
495		3	max	26.314	4	225.894	3	22.983	1	.451	8	.095	8	.139	3
496			min	-464.602	7	-405.049	4	-253.59	6	-.214	3	-.026	3	-.65	8
497		4	max	26.314	4	225.894	3	22.983	1	.451	8	.08	8	.125	3
498			min	-464.602	7	-405.049	4	-253.59	6	-.214	3	-.031	3	-.626	8
499		5	max	26.314	4	225.894	3	22.983	1	.451	8	.069	4	.11	3
500			min	-464.602	7	-405.049	4	-253.59	6	-.214	3	-.036	3	-.602	8
501	M51	1	max	164.21	6	-14.54	1	62.945	2	.266	5	.067	8	.26	7
502			min	39.398	1	-336.061	6	-170.39	5	-.113	2	.006	2	.052	4
503		2	max	164.21	6	-14.54	1	62.945	2	.266	5	.057	8	.279	7
504			min	39.398	1	-336.061	6	-170.39	5	-.113	2	.01	2	.057	4
505		3	max	164.21	6	-14.54	1	62.945	2	.266	5	.046	8	.298	7
506			min	39.398	1	-336.061	6	-170.39	5	-.113	2	.014	2	.062	4
507		4	max	164.21	6	-14.54	1	62.945	2	.266	5	.039	6	.317	7
508			min	39.398	1	-336.061	6	-170.39	5	-.113	2	.005	1	.067	4
509		5	max	164.21	6	-14.54	1	62.945	2	.266	5	.033	6	.336	7
510			min	39.398	1	-336.061	6	-170.39	5	-.113	2	-.005	1	.072	4
511	M52	1	max	145.777	7	118.361	3	129.554	2	.162	1	0	1	.254	7
512			min	-5.02	4	-206.063	4	-110.92	1	-.179	2	-.089	6	-.022	4
513		2	max	145.777	7	118.361	3	129.554	2	.162	1	-.008	1	.261	7
514			min	-5.02	4	-206.063	4	-110.92	1	-.179	2	-.085	6	-.009	4
515		3	max	145.777	7	118.361	3	129.554	2	.162	1	-.012	3	.268	7
516			min	-5.02	4	-206.063	4	-110.92	1	-.179	2	-.081	8	.004	4
517		4	max	145.777	7	118.361	3	129.554	2	.162	1	-.007	3	.274	7
518			min	-5.02	4	-206.063	4	-110.92	1	-.179	2	-.08	8	.017	4
519		5	max	145.777	7	118.361	3	129.554	2	.162	1	-.002	3	.281	7
520			min	-5.02	4	-206.063	4	-110.92	1	-.179	2	-.079	8	.029	4
521	M53	1	max	-46.216	3	192.524	3	263.549	6	.054	1	-.014	1	-.016	3
522			min	-344.582	6	-234.568	4	.1	1	-.349	6	-.192	6	-.521	8
523		2	max	-46.216	3	192.524	3	263.549	6	.054	1	-.014	1	-.028	3
524			min	-344.582	6	-234.568	4	.1	1	-.349	6	-.175	6	-.513	6
525		3	max	-46.216	3	192.524	3	263.549	6	.054	1	-.014	1	-.041	3
526			min	-344.582	6	-234.568	4	.1	1	-.349	6	-.159	6	-.507	6
527		4	max	-46.216	3	192.524	3	263.549	6	.054	1	-.014	1	-.053	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	
528		min	-344.582	6	-234.568	4	.1	1	-.349	6	-.142	6	-.501	6	
529	5	max	-46.216	3	192.524	3	263.549	6	.054	1	-.014	1	-.064	1	
530		min	-344.582	6	-234.568	4	.1	1	-.349	6	-.126	6	-.496	6	
531	M54	1	max	873.384	3	-77.984	3	691.709	2	.718	3	.033	3	.762	3
532		min	-609.417	4	-1082.026	8	-548.662	1	-.477	4	-.13	8	-1.156	4	
533	2	max	873.384	3	-77.984	3	691.709	2	.718	3	.013	3	.767	3	
534		min	-609.417	4	-1082.026	8	-548.662	1	-.477	4	-.11	8	-1.122	4	
535	3	max	873.384	3	-77.984	3	691.709	2	.718	3	.023	2	.772	3	
536		min	-609.417	4	-1082.026	8	-548.662	1	-.477	4	-.097	5	-1.088	4	
537	4	max	873.384	3	-77.984	3	691.709	2	.718	3	.066	2	.777	3	
538		min	-609.417	4	-1082.026	8	-548.662	1	-.477	4	-.108	1	-1.054	4	
539	5	max	873.384	3	-77.984	3	691.709	2	.718	3	.11	2	.782	3	
540		min	-609.417	4	-1082.026	8	-548.662	1	-.477	4	-.143	1	-1.02	4	
541	M55	1	max	95.676	3	168.231	3	290.619	2	.222	6	.001	1	.196	7
542		min	-217.164	8	-136.521	4	-205.49	1	-.066	1	-.069	6	.01	4	
543	2	max	95.676	3	166.508	3	290.619	2	.222	6	-.009	10	.19	7	
544		min	-217.164	8	-138.243	4	-205.49	1	-.066	1	-.056	8	.011	1	
545	3	max	95.676	3	164.786	3	290.619	2	.222	6	-.003	2	.184	7	
546		min	-217.164	8	-139.965	4	-205.49	1	-.066	1	-.05	5	.009	1	
547	4	max	95.676	3	163.064	3	290.619	2	.222	6	.015	2	.181	6	
548		min	-217.164	8	-141.688	4	-205.49	1	-.066	1	-.047	5	.007	1	
549	5	max	95.676	3	161.341	3	290.619	2	.222	6	.034	2	.178	6	
550		min	-217.164	8	-143.41	4	-205.49	1	-.066	1	-.05	1	.005	1	
551	M56	1	max	36.25	2	103.941	2	186.567	2	.105	2	.091	7	.168	7
552		min	-168.354	8	-74.79	1	-204.272	1	-.158	10	0	4	-.037	4	
553	2	max	36.25	2	103.941	2	186.567	2	.105	2	.086	7	.164	7	
554		min	-168.354	8	-74.79	1	-204.272	1	-.158	10	.007	4	-.033	4	
555	3	max	36.25	2	103.941	2	186.567	2	.105	2	.083	6	.16	7	
556		min	-168.354	8	-74.79	1	-204.272	1	-.158	10	.011	1	-.03	4	
557	4	max	36.25	2	103.941	2	186.567	2	.105	2	.086	6	.156	7	
558		min	-168.354	8	-74.79	1	-204.272	1	-.158	10	-.002	1	-.027	4	
559	5	max	36.25	2	103.941	2	186.567	2	.105	2	.088	6	.152	7	
560		min	-168.354	8	-74.79	1	-204.272	1	-.158	10	-.015	1	-.024	4	
561	M57	1	max	432.335	3	87.785	2	208.836	2	-.083	2	.199	7	-.093	1
562		min	-231.993	4	-414.797	5	-352.255	1	-.327	6	-.014	4	-.457	8	
563	2	max	432.335	3	87.785	2	208.836	2	-.083	2	.18	7	-.074	1	
564		min	-231.993	4	-414.797	5	-352.255	1	-.327	6	-.006	4	-.432	8	
565	3	max	432.335	3	87.785	2	208.836	2	-.083	2	.161	7	-.055	1	
566		min	-231.993	4	-414.797	5	-352.255	1	-.327	6	.001	4	-.407	8	
567	4	max	432.335	3	87.785	2	208.836	2	-.083	2	.145	6	-.036	1	
568		min	-231.993	4	-414.797	5	-352.255	1	-.327	6	.009	4	-.382	8	
569	5	max	432.335	3	87.785	2	208.836	2	-.083	2	.136	6	-.017	1	
570		min	-231.993	4	-414.797	5	-352.255	1	-.327	6	-.012	1	-.357	6	
571	M58	1	max	94.727	3	145.196	4	103.026	4	.464	6	.123	7	.104	4
572		min	-483.027	8	-360.447	7	-275.442	7	-.246	1	-.009	4	-.679	7	
573	2	max	94.727	3	145.196	4	103.026	4	.464	6	.107	6	.095	4	
574		min	-483.027	8	-360.447	7	-275.442	7	-.246	1	-.003	4	-.656	7	
575	3	max	94.727	3	145.196	4	103.026	4	.464	6	.092	6	.086	4	
576		min	-483.027	8	-360.447	7	-275.442	7	-.246	1	-.008	1	-.633	7	
577	4	max	94.727	3	145.196	4	103.026	4	.464	6	.077	6	.077	4	
578		min	-483.027	8	-360.447	7	-275.442	7	-.246	1	-.015	1	-.611	7	
579	5	max	94.727	3	145.196	4	103.026	4	.464	6	.063	6	.068	4	
580		min	-483.027	8	-360.447	7	-275.442	7	-.246	1	-.022	1	-.588	7	
581	M59	1	max	161.771	6	57.434	4	91.69	1	.282	2	.069	6	.267	8
582		min	35.339	3	-360.669	7	-178.304	6	-.154	1	-.001	1	.02	3	
583	2	max	161.771	6	57.434	4	91.69	1	.282	2	.058	6	.284	8	
584		min	35.339	3	-360.669	7	-178.304	6	-.154	1	.005	1	.036	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	
585	3	max	161.771	6	57.434	4	91.69	1	.282	2	.048	7	.301	8	
586		min	35.339	3	-360.669	7	-178.304	6	-.154	1	.005	4	.051	3	
587	4	max	161.771	6	57.434	4	91.69	1	.282	2	.041	7	.318	8	
588		min	35.339	3	-360.669	7	-178.304	6	-.154	1	-.002	4	.067	3	
589	5	max	161.771	6	57.434	4	91.69	1	.282	2	.034	7	.335	5	
590		min	35.339	3	-360.669	7	-178.304	6	-.154	1	-.009	4	.074	2	
591	M60	1	max	142.786	5	45.739	1	135.546	1	.192	2	-.008	4	.244	5
592		min	3.496	2	-184.253	7	-117.712	2	-.209	1	-.087	7	.003	2	
593	2	max	142.786	5	45.739	1	135.546	1	.192	2	-.013	4	.252	5	
594		min	3.496	2	-184.253	7	-117.712	2	-.209	1	-.083	7	.012	2	
595	3	max	142.786	5	45.739	1	135.546	1	.192	2	-.017	4	.261	5	
596		min	3.496	2	-184.253	7	-117.712	2	-.209	1	-.079	7	.02	2	
597	4	max	142.786	5	45.739	1	135.546	1	.192	2	-.011	1	.269	5	
598		min	3.496	2	-184.253	7	-117.712	2	-.209	1	-.079	6	.028	2	
599	5	max	142.786	5	45.739	1	135.546	1	.192	2	-.002	1	.278	5	
600		min	3.496	2	-184.253	7	-117.712	2	-.209	1	-.079	6	.037	2	
601	M61	1	max	-47.689	1	175.05	1	254.599	5	.037	2	-.02	4	-.028	4
602		min	-342.468	7	-217.155	2	14.81	2	-.338	5	-.189	7	-.526	7	
603	2	max	-47.689	1	175.05	1	254.599	5	.037	2	-.017	4	-.033	4	
604		min	-342.468	7	-217.155	2	14.81	2	-.338	5	-.174	7	-.519	7	
605	3	max	-47.689	1	175.05	1	254.599	5	.037	2	-.014	4	-.037	4	
606		min	-342.468	7	-217.155	2	14.81	2	-.338	5	-.158	7	-.512	7	
607	4	max	-47.689	1	175.05	1	254.599	5	.037	2	-.011	4	-.041	4	
608		min	-342.468	7	-217.155	2	14.81	2	-.338	5	-.142	7	-.505	7	
609	5	max	-47.689	1	175.05	1	254.599	5	.037	2	-.008	4	-.046	4	
610		min	-342.468	7	-217.155	2	14.81	2	-.338	5	-.126	7	-.499	7	
611	M62	1	max	2493.904	2	675.179	6	1576.909	4	.179	4	2.985	3	.83	6
612		min	-5084.982	5	-211.052	1	-1574.799	3	-.123	3	-2.985	4	-.226	1	
613	2	max	2493.904	2	675.179	6	1576.909	4	.179	4	2.764	3	.735	6	
614		min	-5084.982	5	-211.052	1	-1574.799	3	-.123	3	-2.763	4	-.196	1	
615	3	max	2493.904	2	675.179	6	1576.909	4	.179	4	2.542	3	.64	6	
616		min	-5084.982	5	-211.052	1	-1574.799	3	-.123	3	-2.541	4	-.166	1	
617	4	max	2493.904	2	675.179	6	1576.909	4	.179	4	2.321	3	.545	6	
618		min	-5084.982	5	-211.052	1	-1574.799	3	-.123	3	-2.319	4	-.137	1	
619	5	max	2493.904	2	675.179	6	1576.909	4	.179	4	2.099	3	.45	6	
620		min	-5084.982	5	-211.052	1	-1574.799	3	-.123	3	-2.098	4	-.107	1	
621	M63	1	max	1997.786	3	654.915	7	1216.34	2	.184	2	2.214	1	.806	7
622		min	-4920.888	8	-149.774	4	-1213.317	1	-.128	1	-2.209	2	-.154	4	
623	2	max	1997.786	3	654.915	7	1216.34	2	.184	2	2.044	1	.714	7	
624		min	-4920.888	8	-149.774	4	-1213.317	1	-.128	1	-2.038	2	-.133	4	
625	3	max	1997.786	3	654.915	7	1216.34	2	.184	2	1.873	1	.622	7	
626		min	-4920.888	8	-149.774	4	-1213.317	1	-.128	1	-1.867	2	-.112	4	
627	4	max	1997.786	3	654.915	7	1216.34	2	.184	2	1.703	1	.53	7	
628		min	-4920.888	8	-149.774	4	-1213.317	1	-.128	1	-1.696	2	-.091	4	
629	5	max	1997.786	3	654.915	7	1216.34	2	.184	2	1.532	1	.437	7	
630		min	-4920.888	8	-149.774	4	-1213.317	1	-.128	1	-1.525	2	-.07	4	
631	M64	1	max	2158.881	4	657.408	8	667.386	1	.136	5	1.13	2	.808	8
632		min	-4955.215	7	-156.773	3	-666.975	2	-.059	2	-1.13	1	-.156	3	
633	2	max	2158.881	4	657.408	8	667.386	1	.136	5	1.037	2	.715	8	
634		min	-4955.215	7	-156.773	3	-666.975	2	-.059	2	-1.036	1	-.134	3	
635	3	max	2158.881	4	657.408	8	667.386	1	.136	5	.943	2	.623	8	
636		min	-4955.215	7	-156.773	3	-666.975	2	-.059	2	-.942	1	-.112	3	
637	4	max	2158.881	4	657.408	8	667.386	1	.136	5	.849	2	.531	8	
638		min	-4955.215	7	-156.773	3	-666.975	2	-.059	2	-.848	1	-.09	3	
639	5	max	2158.881	4	657.408	8	667.386	1	.136	5	.755	2	.438	8	
640		min	-4955.215	7	-156.773	3	-666.975	2	-.059	2	-.755	1	-.068	3	
641	M67	1	max	487.192	3	267.303	5	66.87	2	0	2	.145	6	.497	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	
642		min	-567.048	4	-132.977	2	-407.197	5	-.001	5	.004	1	-.291	2	
643	2	max	490.507	3	270.912	5	54.802	2	0	2	.062	6	.212	1	
644		min	-570.363	4	-140.1	2	-448.028	5	-.001	5	-.008	1	-.19	2	
645	3	max	493.822	3	277.174	1	44.387	2	0	2	.011	4	-.083	1	
646		min	-573.678	4	-147.223	2	-483.182	5	-.001	5	-.056	7	-.287	5	
647	4	max	497.137	3	284.297	1	31.107	2	0	2	-.016	4	.006	2	
648		min	-576.993	4	-154.346	2	-528.178	5	-.001	5	-.181	7	-.687	5	
649	5	max	500.452	3	291.42	1	6.619	2	0	2	-.053	4	.098	2	
650		min	-580.308	4	-161.469	2	-611.674	5	-.001	5	-.337	7	-1.12	5	
651	M68	1	max	443.04	4	66.003	2	613.586	5	.001	10	-.064	3	-.052	2
652		min	-556.187	3	-286.156	5	77.435	2	0	3	-.329	8	-1.128	5	
653	2	max	439.725	4	58.88	2	530.09	5	.001	10	-.023	3	-.051	2	
654		min	-552.872	3	-282.547	5	52.946	2	0	3	-.176	8	-.691	5	
655	3	max	436.41	4	51.757	2	485.094	5	.001	10	.008	3	-.056	2	
656		min	-549.557	3	-278.938	5	39.666	2	0	3	-.054	8	-.288	5	
657	4	max	433.095	4	44.634	2	449.94	5	.001	10	.06	6	.101	1	
658		min	-546.242	3	-275.328	5	29.252	2	0	3	-.002	1	-.063	2	
659	5	max	429.78	4	37.511	2	409.113	5	.001	10	.141	6	.453	5	
660		min	-542.927	3	-271.719	5	17.185	2	0	3	.014	1	-.072	2	
661	M69	1	max	533.199	1	273.8	6	58.187	1	0	3	.145	8	.495	2
662		min	-612.872	2	-137.992	1	-405.054	6	-.001	8	.017	3	-.289	1	
663	2	max	533.958	1	273.834	6	46.182	1	0	3	.057	8	.213	2	
664		min	-613.631	2	-138.059	1	-445.669	6	-.001	8	.009	3	-.191	1	
665	3	max	534.717	1	273.868	6	35.805	1	0	3	.003	2	-.066	3	
666		min	-614.389	2	-138.126	1	-480.692	6	-.001	8	-.053	5	-.292	8	
667	4	max	535.476	1	273.902	6	22.525	1	0	3	-.016	2	-.014	1	
668		min	-615.148	2	-138.193	1	-525.688	6	-.001	8	-.181	5	-.683	6	
669	5	max	536.234	1	273.936	6	-1.963	1	0	3	-.044	2	.063	1	
670		min	-615.907	2	-138.26	1	-609.184	6	-.001	8	-.34	5	-1.113	6	
671	M70	1	max	184.844	2	145.579	3	624.88	8	0	9	-.023	4	.046	3
672		min	-300.443	1	-305.311	8	37.979	3	0	1	-.34	7	-1.155	8	
673	2	max	180.771	2	142.722	3	541.384	8	0	9	-.018	4	-.015	3	
674		min	-296.37	1	-303.863	8	13.49	3	0	1	-.176	7	-.702	8	
675	3	max	176.697	2	139.865	3	496.388	8	0	9	.006	1	-.08	1	
676		min	-292.296	1	-302.416	8	.21	3	0	1	-.053	6	-.282	8	
677	4	max	172.623	2	137.008	3	461.234	8	0	9	.066	7	.197	4	
678		min	-288.222	1	-300.968	8	-10.204	3	0	1	-.028	4	-.158	3	
679	5	max	168.549	2	134.151	3	420.407	8	0	9	.154	7	.497	8	
680		min	-284.148	1	-299.521	8	-22.271	3	0	1	-.04	4	-.236	3	
681	M71	1	max	672.219	1	965.517	8	1303.381	2	.116	5	.242	1	.854	3
682		min	-414.456	2	9.527	3	-1210.169	1	.006	2	-.262	2	-.478	4	
683	2	max	672.219	1	961.87	8	1298.65	2	.116	5	.122	1	.854	3	
684		min	-414.456	2	8.491	3	-1205.438	1	.006	2	-.133	2	-.531	4	
685	3	max	672.219	1	958.222	8	1293.92	2	.116	5	.007	3	.853	3	
686		min	-414.456	2	7.454	3	-1200.708	1	.006	2	-.008	4	-.585	4	
687	4	max	672.219	1	954.574	8	1289.189	2	.116	5	.123	2	.852	3	
688		min	-414.456	2	6.418	3	-1195.977	1	.006	2	-.115	1	-.638	4	
689	5	max	672.219	1	950.926	8	1284.459	2	.116	5	.251	2	.851	3	
690		min	-414.456	2	5.382	3	-1191.247	1	.006	2	-.233	1	-.691	4	
691	M72	1	max	540.358	7	361.732	6	1048.744	2	-.025	1	.21	1	.613	6
692		min	-232.237	4	-60.449	1	-1080.011	1	-.117	6	-.203	2	-.026	3	
693	2	max	539.821	7	358.084	6	1047.562	2	-.025	1	.103	1	.577	6	
694		min	-230.189	4	-61.485	1	-1078.828	1	-.117	6	-.099	2	-.028	3	
695	3	max	539.284	7	354.436	6	1046.379	2	-.025	1	.007	4	.542	6	
696		min	-228.141	4	-62.521	1	-1077.646	1	-.117	6	-.006	3	-.029	3	
697	4	max	538.747	7	350.788	6	1045.196	2	-.025	1	.108	2	.507	6	
698		min	-226.092	4	-63.557	1	-1076.463	1	-.117	6	-.11	1	-.031	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	
699	5	max	538.21	7	347.14	6	1044.014	2	-.025	1	.212	2	.473	6	
700		min	-224.044	4	-64.593	1	-1075.28	1	-.117	6	-.217	1	-.032	3	
701	M73	1	max	637.93	4	969.822	6	1360.416	1	.117	6	.246	2	.864	1
702		min	-382.159	3	4.943	1	-1263.819	2	0	1	-.266	1	-.487	2	
703		2	max	635.881	4	965.472	6	1359.233	1	.117	6	.121	2	.864	1
704		min	-380.111	3	3.703	1	-1262.636	2	0	1	-.131	1	-.541	2	
705		3	max	633.833	4	961.322	6	1358.051	1	.117	6	.005	4	.863	1
706		min	-378.063	3	2.521	1	-1261.453	2	0	1	-.006	3	-.595	2	
707		4	max	631.785	4	957.374	6	1356.868	1	.117	6	.137	1	.863	1
708		min	-376.014	3	1.397	1	-1260.271	2	0	1	-.129	2	-.648	2	
709		5	max	629.736	4	953.625	6	1355.685	1	.117	6	.272	1	.863	1
710		min	-373.966	3	.331	1	-1259.088	2	0	1	-.254	2	-.702	2	
711	M74	1	max	4519.712	8	3827.062	8	24.831	2	0	1	.015	1	2.153	8
712		min	848.486	3	704.658	3	-25.846	1	0	2	-.014	2	.396	3	
713		2	max	4519.712	8	3827.062	8	24.831	2	0	1	.011	1	1.614	8
714		min	848.486	3	704.658	3	-25.846	1	0	2	-.011	2	.297	3	
715		3	max	4519.712	8	3827.062	8	24.831	2	0	1	.008	1	1.076	8
716		min	848.486	3	704.658	3	-25.846	1	0	2	-.007	2	.198	3	
717		4	max	4519.712	8	3827.062	8	24.831	2	0	1	.004	1	.538	8
718		min	848.486	3	704.658	3	-25.846	1	0	2	-.004	2	.099	3	
719		5	max	4519.712	8	3827.062	8	24.831	2	0	1	0	1	0	11
720		min	848.486	3	704.658	3	-25.846	1	0	2	0	2	0	1	
721	M75	1	max	4520.545	7	3827.75	7	26.724	1	0	7	.015	2	2.153	7
722		min	847.52	4	703.859	4	-26.285	2	0	9	-.015	1	.396	4	
723		2	max	4520.545	7	3827.75	7	26.724	1	0	7	.011	2	1.615	7
724		min	847.52	4	703.859	4	-26.285	2	0	9	-.011	1	.297	4	
725		3	max	4520.545	7	3827.75	7	26.724	1	0	7	.008	2	1.076	7
726		min	847.52	4	703.859	4	-26.285	2	0	9	-.008	1	.198	4	
727		4	max	4520.545	7	3827.75	7	26.724	1	0	7	.004	2	.538	7
728		min	847.52	4	703.859	4	-26.285	2	0	9	-.004	1	.099	4	
729		5	max	4520.545	7	3827.75	7	26.724	1	0	7	0	7	0	11
730		min	847.52	4	703.859	4	-26.285	2	0	9	0	9	0	1	
731	M76	1	max	5921.439	5	49.705	5	34.241	3	.001	3	0	11	0	11
732		min	871.624	2	-1.276	2	-34.241	4	0	4	0	1	0	1	
733		2	max	5936.072	5	24.853	5	17.12	3	.001	3	.028	3	.001	2
734		min	885.348	2	-.638	2	-17.12	4	0	4	-.028	4	-.04	5	
735		3	max	5950.705	5	0	11	0	11	.001	3	.037	3	.001	2
736		min	899.073	2	0	1	0	1	0	4	-.037	4	-.053	5	
737		4	max	5965.337	5	.638	2	17.12	4	.001	3	.028	3	.001	2
738		min	912.797	2	-24.853	5	-17.12	3	0	4	-.028	4	-.04	5	
739		5	max	5979.97	5	1.276	2	34.241	4	.001	3	0	11	0	11
740		min	926.522	2	-49.705	5	-34.241	3	0	4	0	1	0	1	
741	M77	1	max	3750.153	5	37.072	3	-669.004	2	0	3	1.145	5	.008	3
742		min	558.72	2	-36.84	4	-4579.837	5	0	4	.167	2	-.008	4	
743		2	max	3750.153	5	37.072	3	-669.004	2	0	3	.859	5	.006	3
744		min	558.72	2	-36.84	4	-4579.837	5	0	4	.125	2	-.006	4	
745		3	max	3750.153	5	37.072	3	-669.004	2	0	3	.572	5	.004	3
746		min	558.72	2	-36.84	4	-4579.837	5	0	4	.084	2	-.004	4	
747		4	max	3750.153	5	37.072	3	-669.004	2	0	3	.286	5	.001	3
748		min	558.72	2	-36.84	4	-4579.837	5	0	4	.042	2	-.002	4	
749		5	max	3750.153	5	37.072	3	-669.004	2	0	3	0	11	0	4
750		min	558.72	2	-36.84	4	-4579.837	5	0	4	0	2	0	3	
751	M78	1	max	4564.201	5	3864	5	31.175	4	0	3	.018	3	2.173	5
752		min	712.82	2	591.888	2	-31.304	3	0	4	-.018	4	.333	2	
753		2	max	4564.201	5	3864	5	31.175	4	0	3	.014	3	1.63	5
754		min	712.82	2	591.888	2	-31.304	3	0	4	-.014	4	.25	2	
755		3	max	4564.201	5	3864	5	31.175	4	0	3	.01	3	1.087	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	
756		min	712.82	2	591.888	2	-31.304	3	0	4	-.009	4	.166	2	
757	4	max	4564.201	5	3864	5	31.175	4	0	3	.005	3	.543	5	
758		min	712.82	2	591.888	2	-31.304	3	0	4	-.005	4	.083	2	
759	5	max	4564.201	5	3864	5	31.175	4	0	3	0	3	0	11	
760		min	712.82	2	591.888	2	-31.304	3	0	4	0	4	0	1	
761	M79	1	max	1146.535	4	99.551	4	229.331	3	.096	1	.438	4	.46	7
762		min	-837.505	3	-73.876	3	-314.46	4	-.136	2	-.458	3	.113	2	
763	2	max	1339.328	4	103.504	10	118.741	3	.118	3	.127	4	.271	7	
764		min	-945.725	3	-69.862	9	-107.393	4	-.06	4	-.247	3	-.079	4	
765	3	max	1347.629	4	82.594	10	104.363	3	.118	3	.012	4	.252	7	
766		min	-954.027	3	-90.772	9	-93.014	4	-.06	4	-.185	7	-.002	4	
767	4	max	1355.931	4	59.489	10	89.985	3	.118	3	.075	1	.337	6	
768		min	-962.328	3	-129.487	8	-78.636	4	-.06	4	-.178	6	.018	1	
769	5	max	1478.214	4	92.984	3	202.197	5	.269	7	.191	1	.525	6	
770		min	-1103.109	3	-177.38	8	-106.363	2	-.084	4	-.199	2	.145	1	
771	M80	1	max	1478.214	4	92.906	3	202.193	5	.269	7	.191	1	.525	6
772		min	-1103.109	3	-177.16	8	-106.379	2	-.084	4	-.199	2	.145	1	
773	2	max	1228.518	4	214.506	6	162.567	3	.666	5	.214	1	.364	8	
774		min	-987.387	3	45.593	1	-197.074	4	.066	2	-.11	2	.072	3	
775	3	max	1236.819	4	164.939	6	148.189	3	.666	5	.179	3	.15	8	
776		min	-995.688	3	29.589	1	-182.695	4	.066	2	-.114	4	.012	10	
777	4	max	1245.121	4	116.811	6	133.811	3	.666	5	.34	3	.049	1	
778		min	-1003.99	3	14.004	1	-168.317	4	.066	2	-.315	4	-.062	10	
779	5	max	1376.808	4	126.757	2	79.402	4	.324	5	.434	3	.321	5	
780		min	-1280.488	3	-348.088	5	-441.38	7	-.129	2	-.425	4	-.044	2	
781	M81	1	max	1340.009	2	90.715	2	172.342	1	.071	9	.187	2	.45	5
782		min	-1032.846	1	-76.253	1	-257.641	2	-.1	3	-.249	1	.098	4	
783	2	max	1374.022	2	66.462	9	97.293	3	.124	4	.029	2	.244	5	
784		min	-981.752	1	-13.432	3	-85.946	4	-.066	3	-.212	7	.004	2	
785	3	max	1374.022	2	45.802	9	97.293	3	.124	4	.012	2	.262	5	
786		min	-981.752	1	-57.984	6	-85.946	4	-.066	3	-.18	5	.022	2	
787	4	max	1374.022	2	25.467	9	97.293	3	.124	4	.066	3	.347	5	
788		min	-981.752	1	-123.019	6	-85.946	4	-.066	3	-.186	8	.062	2	
789	5	max	1380.508	2	89.288	1	217.193	6	.25	5	.219	3	.531	5	
790		min	-1006.338	1	-176.522	6	-64.766	1	-.047	3	-.228	4	.086	3	
791	M82	1	max	1380.508	2	89.206	1	217.187	6	.25	5	.219	3	.531	5
792		min	-1006.338	1	-176.314	6	-64.804	1	-.047	3	-.228	4	.086	3	
793	2	max	1170.963	2	213.643	5	182.244	1	.668	6	.232	6	.363	8	
794		min	-930.489	1	51.393	3	-216.41	2	.092	1	-.113	1	.058	3	
795	3	max	1170.963	2	164.076	5	163.073	1	.668	6	.118	5	.149	6	
796		min	-930.489	1	35.389	3	-197.238	2	.092	1	-.021	2	.007	3	
797	4	max	1170.963	2	115.948	5	143.902	1	.668	6	.261	1	.041	2	
798		min	-930.489	1	19.804	3	-178.067	2	.092	1	-.236	2	-.046	1	
799	5	max	1113.82	2	63.754	1	155.72	2	.31	8	.373	1	.313	6	
800		min	-1017.831	1	-346.696	6	-460.813	5	-.044	3	-.364	2	.009	3	
801	M83	1	max	1336.159	3	70.736	7	-11.398	2	.053	3	.036	4	.464	7
802		min	-1027.689	4	-43.382	4	-166.31	7	-.101	8	-.054	3	.084	4	
803	2	max	1202.373	3	81.269	3	126.613	3	.128	2	.018	4	.253	6	
804		min	-808.504	4	-64.733	4	-115.42	4	-.07	1	-.232	7	-.027	1	
805	3	max	1194.072	3	60.512	3	140.991	3	.128	2	.015	3	.241	6	
806		min	-800.202	4	-85.489	4	-129.799	4	-.07	1	-.185	8	.022	1	
807	4	max	1185.77	3	37.253	3	155.369	3	.128	2	.185	3	.344	8	
808		min	-791.901	4	-128.034	8	-144.177	4	-.07	1	-.28	4	.002	3	
809	5	max	1096.611	1	75.705	2	325.773	3	.263	6	.412	3	.543	8	
810		min	-722.838	2	-169.706	5	-232.908	4	-.068	1	-.421	4	.085	3	
811	M84	1	max	1096.611	1	75.637	2	325.593	3	.263	6	.412	3	.543	8
812		min	-722.838	2	-169.511	5	-233.027	4	-.068	1	-.421	4	.085	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	
813	2	max	964.158	3	220.352	8	179.422	4	.671	7	.389	3	.363	8	
814		min	-720.493	4	25.657	3	-213.909	3	.061	4	-.286	4	.095	3	
815	3	max	958.738	1	170.785	8	165.043	4	.671	7	.152	3	.146	7	
816		min	-718.493	2	9.653	3	-199.53	3	.061	4	-.088	4	.012	4	
817	4	max	967.04	1	136.979	10	150.665	4	.671	7	.225	2	.072	3	
818		min	-726.794	2	-5.933	3	-185.152	3	.061	4	-.2	1	-.141	10	
819	5	max	1198.812	1	163.976	4	78.354	3	.322	7	.347	2	.321	7	
820		min	-1103.013	2	-600.654	10	-443.438	8	-.105	4	-.338	1	-.033	4	
821	M85	1	max	-106.621	1	228.519	2	524.431	8	.123	2	.014	2	.247	2
822		min	-1038.395	6	-287.339	1	119.826	10	-.228	1	-.779	5	-.437	1	
823	2	max	-106.621	1	228.519	2	524.431	8	.123	2	.019	2	.237	2	
824		min	-1038.395	6	-287.339	1	119.826	10	-.228	1	-.757	5	-.425	1	
825	3	max	-106.621	1	228.519	2	524.431	8	.123	2	.025	2	.228	2	
826		min	-1038.395	6	-287.339	1	119.826	10	-.228	1	-.736	5	-.414	1	
827	4	max	-106.621	1	228.519	2	524.431	8	.123	2	.031	2	.218	2	
828		min	-1038.395	6	-287.339	1	119.826	10	-.228	1	-.714	5	-.402	1	
829	5	max	-106.621	1	228.519	2	524.431	8	.123	2	.036	2	.209	2	
830		min	-1038.395	6	-287.339	1	119.826	10	-.228	1	-.692	5	-.39	1	
831	M86	1	max	-218.384	2	227.087	4	-3.595	4	.086	5	.866	5	.093	2
832		min	-957.424	8	-146.379	3	-657.331	7	-.04	2	.157	2	-.152	1	
833	2	max	-218.384	2	227.087	4	-3.595	4	.086	5	.839	5	.086	2	
834		min	-957.424	8	-146.379	3	-657.331	7	-.04	2	.154	2	-.149	1	
835	3	max	-218.384	2	227.087	4	-3.595	4	.086	5	.813	5	.079	2	
836		min	-957.424	8	-146.379	3	-657.331	7	-.04	2	.151	2	-.145	1	
837	4	max	-218.384	2	227.087	4	-3.595	4	.086	5	.786	5	.072	2	
838		min	-957.424	8	-146.379	3	-657.331	7	-.04	2	.148	2	-.146	5	
839	5	max	-218.384	2	227.087	4	-3.595	4	.086	5	.759	5	.065	2	
840		min	-957.424	8	-146.379	3	-657.331	7	-.04	2	.145	2	-.15	5	
841	M87	1	max	-193.243	1	297.88	1	13.128	1	.084	7	.882	7	.112	1
842		min	-958.288	7	-216.928	2	-659.299	6	-.039	1	.11	4	-.171	2	
843	2	max	-193.243	1	297.88	1	13.128	1	.084	7	.855	7	.1	1	
844		min	-958.288	7	-216.928	2	-659.299	6	-.039	1	.106	4	-.162	2	
845	3	max	-193.243	1	297.88	1	13.128	1	.084	7	.829	7	.087	1	
846		min	-958.288	7	-216.928	2	-659.299	6	-.039	1	.102	4	-.153	2	
847	4	max	-193.243	1	297.88	1	13.128	1	.084	7	.802	7	.075	1	
848		min	-958.288	7	-216.928	2	-659.299	6	-.039	1	.098	4	-.144	2	
849	5	max	-193.243	1	297.88	1	13.128	1	.084	7	.776	7	.062	1	
850		min	-958.288	7	-216.928	2	-659.299	6	-.039	1	.094	4	-.147	7	
851	M88	1	max	-225.624	2	196.998	3	227.005	4	.001	1	-.102	1	.659	5
852		min	-1145.861	5	-160.941	4	-146.637	3	-.002	2	-.428	6	.048	2	
853	2	max	-230.267	2	188.955	3	224.367	4	.001	1	-.089	3	.666	5	
854		min	-1144.265	5	-152.898	4	-149.275	3	-.002	2	-.367	8	.116	2	
855	3	max	-234.911	2	180.912	3	221.729	4	.001	1	-.078	3	.709	8	
856		min	-1142.67	5	-144.855	4	-151.913	3	-.002	2	-.313	8	.017	3	
857	4	max	-239.554	2	172.869	3	219.091	4	.001	1	-.05	2	.752	8	
858		min	-1141.074	5	-136.812	4	-154.551	3	-.002	2	-.263	5	-.088	3	
859	5	max	-244.198	2	164.826	3	216.453	4	.001	1	-.018	2	.792	8	
860		min	-1139.478	5	-128.769	4	-157.19	3	-.002	2	-.217	5	-.191	3	
861	M89	1	max	-172.611	3	104.101	1	262.357	3	.002	4	-.023	4	.646	6
862		min	-1154.009	8	-68.117	2	-181.794	4	-.003	3	-.444	7	.101	3	
863	2	max	-172.611	3	93.377	1	259.719	3	.002	4	-.059	4	.678	6	
864		min	-1154.009	8	-57.394	2	-184.432	4	-.003	3	-.375	7	.082	1	
865	3	max	-172.611	3	82.653	1	257.08	3	.002	4	-.071	1	.706	6	
866		min	-1154.009	8	-46.67	2	-187.07	4	-.003	3	-.315	6	.051	1	
867	4	max	-172.611	3	71.93	1	254.442	3	.002	4	-.022	3	.729	6	
868		min	-1154.009	8	-45.803	10	-189.708	4	-.003	3	-.269	8	.021	1	
869	5	max	-172.611	3	69.45	8	251.804	3	.002	4	.048	3	.75	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	
870		min	-1154.009	8	-46.875	10	-192.346	4	-.003	3	-.232	8	-.048	4	
871	M90	1	max	-183.132	2	157.698	3	545.582	8	.092	3	.081	3	.183	3
872		min	-1025.343	5	-216.522	4	44.729	3	-.207	8	-.799	8	-.377	8	
873		2	max	-183.132	2	157.698	3	545.582	8	.092	3	.082	3	.177	3
874		min	-1025.343	5	-216.522	4	44.729	3	-.207	8	-.777	8	-.372	8	
875		3	max	-183.132	2	157.698	3	545.582	8	.092	3	.084	3	.17	3
876		min	-1025.343	5	-216.522	4	44.729	3	-.207	8	-.754	8	-.366	8	
877		4	max	-183.132	2	157.698	3	545.582	8	.092	3	.086	3	.164	3
878		min	-1025.343	5	-216.522	4	44.729	3	-.207	8	-.731	8	-.361	8	
879		5	max	-183.132	2	157.698	3	545.582	8	.092	3	.088	3	.157	3
880		min	-1025.343	5	-216.522	4	44.729	3	-.207	8	-.709	8	-.355	8	
881	M91	1	max	-165.586	3	262.46	3	-58.305	3	.092	4	.856	6	.125	3
882		min	-972.655	6	-181.41	4	-640.995	8	-.051	3	.207	1	-.185	4	
883		2	max	-165.586	3	262.46	3	-58.305	3	.092	4	.831	6	.114	3
884		min	-972.655	6	-181.41	4	-640.995	8	-.051	3	.197	1	-.177	4	
885		3	max	-165.586	3	262.46	3	-58.305	3	.092	4	.806	6	.104	3
886		min	-972.655	6	-181.41	4	-640.995	8	-.051	3	.188	1	-.17	4	
887		4	max	-165.586	3	262.46	3	-58.305	3	.092	4	.781	6	.093	3
888		min	-972.655	6	-181.41	4	-640.995	8	-.051	3	.179	1	-.162	4	
889		5	max	-165.586	3	262.46	3	-58.305	3	.092	4	.755	6	.082	3
890		min	-972.655	6	-181.41	4	-640.995	8	-.051	3	.17	1	-.154	4	
891	M92	1	max	-133.393	3	192.783	4	532.894	6	.08	4	-.034	1	.166	4
892		min	-1033.849	8	-251.779	3	78.405	1	-.202	7	-.77	6	-.369	7	
893		2	max	-133.393	3	192.783	4	532.894	6	.08	4	-.031	1	.158	4
894		min	-1033.849	8	-251.779	3	78.405	1	-.202	7	-.748	6	-.363	7	
895		3	max	-133.393	3	192.783	4	532.894	6	.08	4	-.028	1	.15	4
896		min	-1033.849	8	-251.779	3	78.405	1	-.202	7	-.726	6	-.357	7	
897		4	max	-133.393	3	192.783	4	532.894	6	.08	4	-.025	1	.142	4
898		min	-1033.849	8	-251.779	3	78.405	1	-.202	7	-.703	6	-.351	7	
899		5	max	-133.393	3	192.783	4	532.894	6	.08	4	-.021	1	.134	4
900		min	-1033.849	8	-251.779	3	78.405	1	-.202	7	-.681	6	-.345	7	
901	M94	1	max	1997.786	3	654.23	7	1212.718	2	.184	2	1.532	1	.437	7
902		min	-4920.888	8	-149.663	4	-1214.309	1	-.128	1	-1.525	2	-.07	4	
903		2	max	1987.274	3	623.304	7	1194.511	2	.184	2	.308	1	.088	4
904		min	-4917.276	8	-161.856	4	-1196.102	1	-.128	1	-.303	2	-.211	7	
905		3	max	994.261	3	-131.726	3	269.783	2	.11	1	.061	1	.02	3
906		min	-2992.408	8	-1072.097	8	-338.937	1	-.079	2	-.056	2	-.063	8	
907		4	max	1556.775	7	-147.475	3	252.138	2	.11	1	.098	2	.57	8
908		min	-772.356	4	-1115.599	8	-320.993	1	-.079	2	-.119	1	.102	3	
909		5	max	0	11	0	5	0	11	0	11	0	11	0	11
910		min	0	1	-.002	4	-.007	1	0	1	0	1	0	1	1
911	M95	1	max	2158.881	4	656.732	8	667.722	1	.136	5	.755	2	.438	8
912		min	-4955.215	7	-156.672	3	-665.366	2	-.059	2	-.755	1	-.068	3	
913		2	max	2148.369	4	625.806	8	649.515	1	.136	5	.148	3	.097	3
914		min	-4951.602	7	-168.865	3	-647.159	2	-.059	2	-.145	4	-.213	8	
915		3	max	1140.979	4	-127.381	4	179.459	3	.085	4	.047	4	.027	4
916		min	-3018.492	7	-1072.865	7	-247.34	4	-.055	3	-.042	3	-.064	7	
917		4	max	1600.617	4	-143.122	4	173.263	3	.085	4	.076	1	.57	7
918		min	-904.41	3	-1116.364	7	-241.271	4	-.055	3	-.095	2	.106	4	
919		5	max	0	11	0	5	.002	2	0	11	0	11	0	11
920		min	0	1	-.002	3	0	9	0	1	0	1	0	1	1
921	M96	1	max	5863.761	8	49.766	8	27.377	1	0	1	0	11	0	11
922		min	1047.697	3	-1.418	3	-27.377	2	0	2	0	1	0	1	1
923		2	max	5878.357	8	24.883	8	13.688	1	0	1	.022	1	.001	3
924		min	1061.507	3	-.709	3	-13.688	2	0	2	-.022	2	-.04	8	
925		3	max	5892.953	8	0	11	0	11	0	1	.029	1	.002	3
926		min	1075.317	3	0	1	0	1	0	2	-.029	2	-.053	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	
927	4	max	5907.55	8	.709	3	13.688	2	0	1	.022	1	.001	3	
928		min	1089.127	3	-24.883	8	-13.688	1	0	2	-.022	2	-.04	8	
929	5	max	5922.146	8	1.418	3	27.377	2	0	1	0	11	0	11	
930		min	1102.937	3	-49.766	8	-27.377	1	0	2	0	1	0	1	
931	M97	1	max	3713.216	8	-690.27	3	2261.715	8	0	1	-.103	3	-.172	3
932		min	671.49	3	-3931.483	8	412.806	3	0	2	-.566	8	-.983	8	
933	2	max	3713.216	8	-690.27	3	2261.715	8	0	1	-.078	3	-.129	3	
934		min	671.49	3	-3931.483	8	412.806	3	0	2	-.424	8	-.737	8	
935	3	max	3713.216	8	-690.27	3	2261.715	8	0	1	-.052	3	-.086	3	
936		min	671.49	3	-3931.483	8	412.806	3	0	2	-.283	8	-.491	8	
937	4	max	3713.216	8	-690.27	3	2261.715	8	0	1	-.026	3	-.043	3	
938		min	671.49	3	-3931.483	8	412.806	3	0	2	-.141	8	-.246	8	
939	5	max	3713.216	8	-690.27	3	2261.715	8	0	1	0	2	0	1	
940		min	671.49	3	-3931.483	8	412.806	3	0	2	0	1	0	2	
941	M98	1	max	5864.841	7	49.766	7	27.377	2	0	7	0	11	0	11
942		min	1046.443	4	-1.418	4	-27.377	1	0	9	0	1	0	1	
943	2	max	5879.437	7	24.883	7	13.688	2	0	7	.022	2	.001	4	
944		min	1060.253	4	-.709	4	-13.688	1	0	9	-.022	1	-.04	7	
945	3	max	5894.033	7	0	11	0	11	0	7	.029	2	.002	4	
946		min	1074.063	4	0	1	0	1	0	9	-.029	1	-.053	7	
947	4	max	5908.629	7	.709	4	13.688	1	0	7	.022	2	.001	4	
948		min	1087.873	4	-24.883	7	-13.688	2	0	9	-.022	1	-.04	7	
949	5	max	5923.226	7	1.418	4	27.377	1	0	7	0	11	0	11	
950		min	1101.683	4	-49.766	7	-27.377	2	0	9	0	1	0	1	
951	M99	1	max	3713.904	7	3930.174	7	2265.651	7	0	7	-.103	4	.983	7
952		min	670.691	4	689.261	4	412.613	4	0	9	-.566	7	.172	4	
953	2	max	3713.904	7	3930.174	7	2265.651	7	0	7	-.077	4	.737	7	
954		min	670.691	4	689.261	4	412.613	4	0	9	-.425	7	.129	4	
955	3	max	3713.904	7	3930.174	7	2265.651	7	0	7	-.052	4	.491	7	
956		min	670.691	4	689.261	4	412.613	4	0	9	-.283	7	.086	4	
957	4	max	3713.904	7	3930.174	7	2265.651	7	0	7	-.026	4	.246	7	
958		min	670.691	4	689.261	4	412.613	4	0	9	-.141	7	.043	4	
959	5	max	3713.904	7	3930.174	7	2265.651	7	0	7	0	7	0	7	
960		min	670.691	4	689.261	4	412.613	4	0	9	0	9	0	9	
961	M97A	1	max	2579.636	5	283.703	4	-2058.585	9	.117	4	3.69	5	.128	4
962		min	437.713	2	-388.199	3	-8107.298	8	-.129	3	.871	2	-.181	3	
963	2	max	2579.636	5	283.703	4	-2058.585	9	.117	4	3.184	5	.111	4	
964		min	437.713	2	-388.199	3	-8107.298	8	-.129	3	.714	2	-.156	3	
965	3	max	2579.636	5	283.703	4	-2058.585	9	.117	4	2.679	5	.093	4	
966		min	437.713	2	-388.199	3	-8107.298	8	-.129	3	.557	2	-.132	3	
967	4	max	2579.636	5	283.703	4	-2058.585	9	.117	4	2.173	5	.075	4	
968		min	437.713	2	-388.199	3	-8107.298	8	-.129	3	.4	2	-.108	3	
969	5	max	2579.636	5	283.703	4	-2058.585	9	.117	4	1.668	5	.058	4	
970		min	437.713	2	-388.199	3	-8107.298	8	-.129	3	.243	2	-.084	3	
971	M98A	1	max	2555.768	8	-1767.096	10	4262.189	5	.102	2	-.473	3	-.764	1
972		min	509.502	3	-6969.303	7	936.273	2	-.115	1	-1.912	8	-3.143	6	
973	2	max	2555.768	8	-1767.096	10	4262.189	5	.102	2	-.392	3	-.64	1	
974		min	509.502	3	-6969.303	7	936.273	2	-.115	1	-1.65	8	-2.707	6	
975	3	max	2555.768	8	-1767.096	10	4262.189	5	.102	2	-.311	3	-.515	1	
976		min	509.502	3	-6969.303	7	936.273	2	-.115	1	-1.388	8	-2.272	6	
977	4	max	2555.768	8	-1767.096	10	4262.189	5	.102	2	-.23	3	-.391	1	
978		min	509.502	3	-6969.303	7	936.273	2	-.115	1	-1.126	8	-1.838	8	
979	5	max	2555.768	8	-1767.096	10	4262.189	5	.102	2	-.149	3	-.253	3	
980		min	509.502	3	-6969.303	7	936.273	2	-.115	1	-.864	8	-1.407	8	
981	M99A	1	max	2555.713	7	7171.97	8	3949.46	5	.088	1	-.361	4	3.212	6
982		min	513.044	4	1783.414	3	988.974	2	-.099	2	-1.784	7	.846	1	
983	2	max	2555.713	7	7171.97	8	3949.46	5	.088	1	-.293	4	2.767	6	



Envelope Member Section Forces (Continued)

Member	Sec		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-...	LC	y-y Mome...	LC	z-z Mom...	LC	
984		min	513.044	4	1783.414	3	988.974	2	-.099	2	-1.538	7	.713	1	
985	3	max	2555.713	7	7171.97	8	3949.46	5	.088	1	-.225	4	2.323	6	
986		min	513.044	4	1783.414	3	988.974	2	-.099	2	-1.292	7	.579	1	
987	4	max	2555.713	7	7171.97	8	3949.46	5	.088	1	-.157	4	1.881	7	
988		min	513.044	4	1783.414	3	988.974	2	-.099	2	-1.047	7	.445	1	
989	5	max	2555.713	7	7171.97	8	3949.46	5	.088	1	-.089	4	1.443	7	
990		min	513.044	4	1783.414	3	988.974	2	-.099	2	-.801	7	.293	4	
991	M100	1	max	1060.839	7	31.733	8	27.518	2	0	8	0	11	0	11
992		min	-12.821	4	-9.07	3	-27.518	1	0	3	0	1	0	1	
993	2	max	1045.975	7	15.866	8	13.759	2	0	8	.023	8	.02	2	
994		min	-6.914	4	-4.535	3	-13.759	1	0	3	-.015	3	-.028	1	
995	3	max	1031.111	7	0	11	0	11	0	8	.031	8	.026	2	
996		min	-1.006	4	0	1	0	1	0	3	-.02	3	-.037	1	
997	4	max	1016.246	7	4.535	3	13.759	1	0	8	.023	8	.02	2	
998		min	4.901	4	-15.866	8	-13.759	2	0	3	-.015	3	-.028	1	
999	5	max	1001.382	7	9.07	3	27.518	1	0	8	0	11	0	11	
1000		min	10.808	4	-31.733	8	-27.518	2	0	3	0	1	0	1	
1001	M101	1	max	1136.018	8	31.733	7	27.518	1	0	4	0	11	0	11
1002		min	51.622	3	-9.07	4	-27.518	2	0	7	0	1	0	1	
1003	2	max	1121.154	8	15.866	7	13.759	1	0	4	.028	1	.015	4	
1004		min	57.529	3	-4.535	4	-13.759	2	0	7	-.02	2	-.023	7	
1005	3	max	1106.29	8	0	11	0	11	0	4	.037	1	.02	4	
1006		min	63.437	3	0	1	0	1	0	7	-.026	2	-.031	7	
1007	4	max	1091.426	8	4.535	4	13.759	2	0	4	.028	1	.015	4	
1008		min	69.344	3	-15.866	7	-13.759	1	0	7	-.02	2	-.023	7	
1009	5	max	1076.562	8	9.07	4	27.518	2	0	4	0	11	0	11	
1010		min	75.251	3	-31.733	7	-27.518	1	0	7	0	1	0	1	
1011	M102	1	max	1068.161	5	31.846	6	35.951	3	0	7	0	11	0	11
1012		min	-39.221	2	-9.335	1	-35.951	4	0	9	0	1	0	1	
1013	2	max	1053.233	5	15.923	6	17.975	3	0	7	.025	3	.018	3	
1014		min	-33.164	2	-4.668	1	-17.975	4	0	9	-.017	4	-.026	4	
1015	3	max	1038.305	5	0	11	0	11	0	7	.033	3	.025	3	
1016		min	-27.108	2	0	1	0	1	0	9	-.022	4	-.035	4	
1017	4	max	1023.378	5	4.668	1	17.975	4	0	7	.025	3	.018	3	
1018		min	-21.051	2	-15.923	6	-17.975	3	0	9	-.017	4	-.026	4	
1019	5	max	1008.45	5	9.335	1	35.951	4	0	7	0	11	0	11	
1020		min	-14.994	2	-31.846	6	-35.951	3	0	9	0	1	0	1	
1021	M103	1	max	1104.087	7	31.852	8	30.27	2	0	2	0	11	0	11
1022		min	170.833	10	-9.351	3	-30.27	1	0	5	0	1	0	1	
1023	2	max	1089.155	7	15.926	8	15.135	2	0	2	.022	8	.02	2	
1024		min	168.514	10	-4.676	3	-15.135	1	0	5	-.013	3	-.028	1	
1025	3	max	1074.224	7	0	11	0	11	0	2	.03	8	.027	2	
1026		min	166.196	10	0	1	0	1	0	5	-.017	3	-.038	1	
1027	4	max	1059.292	7	4.676	3	15.135	1	0	2	.022	8	.02	2	
1028		min	163.878	10	-15.926	8	-15.135	2	0	5	-.013	3	-.028	1	
1029	5	max	1044.361	7	9.351	3	30.27	1	0	2	0	11	0	11	
1030		min	161.56	10	-31.852	8	-30.27	2	0	5	0	1	0	1	
1031	M104	1	max	1025.714	8	31.852	7	30.27	1	0	5	0	11	0	11
1032		min	119.666	3	-9.351	4	-30.27	2	0	2	0	1	0	1	
1033	2	max	1010.782	8	15.926	7	15.135	1	0	5	.028	1	.013	4	
1034		min	125.731	3	-4.676	4	-15.135	2	0	2	-.02	2	-.022	7	
1035	3	max	995.851	8	0	11	0	11	0	5	.038	1	.017	4	
1036		min	131.797	3	0	1	0	1	0	2	-.027	2	-.03	7	
1037	4	max	980.919	8	4.676	4	15.135	2	0	5	.028	1	.013	4	
1038		min	137.863	3	-15.926	7	-15.135	1	0	2	-.02	2	-.022	7	
1039	5	max	965.988	8	9.351	4	30.27	2	0	5	0	11	0	11	
1040		min	143.928	3	-31.852	7	-30.27	1	0	2	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	
1041	M105	1	max	1126.184	5	31.846	6	35.951	3	0	3	0	11	0	11
1042			min	119.482	2	-9.335	1	-35.951	4	0	8	0	1	0	1
1043		2	max	1111.257	5	15.923	6	17.975	3	0	3	.026	3	.017	3
1044			min	119.845	3	-4.668	1	-17.975	4	0	8	-.018	4	-.025	4
1045		3	max	1096.329	5	0	11	0	11	0	3	.035	3	.022	3
1046			min	117.7	3	0	1	0	1	0	8	-.025	4	-.033	4
1047		4	max	1081.401	5	4.668	1	17.975	4	0	3	.026	3	.017	3
1048			min	115.555	3	-15.923	6	-17.975	3	0	8	-.018	4	-.025	4
1049		5	max	1066.473	5	9.335	1	35.951	4	0	3	0	11	0	11
1050			min	113.41	3	-31.846	6	-35.951	3	0	8	0	1	0	1

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

Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[...Dir	LC	phi*Pnc...	phi*Pnt...	phi*Mn...	phi*Mn...Cb	Eqn		
1	M17	PL5/8x6	.902	.396	4	.427	.396	y 7	48609.7...	.60750	.396	7.447	1...	H1-1b
2	M73	PL5/8x6	.808	.396	1	.424	0	y 6	48609.7...	.60750	.396	7.197	1...	H1-1b
3	M71	PL5/8x6	.690	0	2	.418	0	y 5	48609.7...	.60750	.396	7.594	1...	H1-1b
4	M72	PL5/8x6	.575	.396	2	.399	0	y 6	48609.7...	.60750	.396	7.594	1...	H1-1b
5	M16	PL5/8x6	.546	.396	2	.399	.396	y 7	48609.7...	.60750	.396	7.589	1...	H1-1b
6	M18	PL5/8x6	.667	.396	4	.396	.396	y 8	48609.7...	.60750	.396	7.594	1...	H1-1b
7	M2	PIPE 3.0	.146	.265	2	.185	0	1	56781.4...	.65205	5.749	5.749	2...	H1-1b
8	M1	PIPE 3.0	.149	.286	1	.176	0	3	58269.7...	.65205	5.749	5.749	1...	H1-1b
9	MP4C	PIPE 2.0	.804	4.125	3	.151	4.031	8	12143.9...	.32130	1.872	1.872	1...	H1-1b
10	MP4B	PIPE 2.0	.805	4.125	4	.149	4.031	6	12143.9...	.32130	1.872	1.872	2...	H1-1b
11	MP4A	PIPE 2.0	.864	4.125	2	.148	4.031	5	12143.9...	.32130	1.872	1.872	1...	H1-1b
12	M36	PIPE 3.0	.228	9.453	8	.148	.716	5	23649.2...	.65205	5.749	5.749	1...	H1-1b
13	M34	PIPE 3.0	.231	9.453	8	.146	.716	8	23649.2...	.65205	5.749	5.749	1...	H1-1b
14	M84	PIPE 3.0	.122	.191	7	.144	.191	7	58269.7...	.65205	5.749	5.749	2...	H1-1b
15	M82	PIPE 3.0	.122	.191	6	.144	.191	6	58269.7...	.65205	5.749	5.749	2...	H1-1b
16	M80	PIPE 3.0	.121	.191	8	.143	.191	5	58269.7...	.65205	5.749	5.749	2...	H1-1b
17	M35	PIPE 3.0	.223	4.297	7	.142	.716	7	23649.2...	.65205	5.749	5.749	1...	H1-1b
18	MP1C	PIPE 2.0	.334	3.063	6	.138	3.063	6	17855.0...	.32130	1.872	1.872	4...	H1-1b
19	MP1B	PIPE 2.0	.334	3.063	7	.138	3.063	7	17855.0...	.32130	1.872	1.872	4...	H1-1b
20	MP1A	PIPE 2.0	.327	3.063	5	.136	3.063	8	17855.0...	.32130	1.872	1.872	4...	H1-1b
21	M3	PIPE 3.0	.197	.286	3	.125	0	4	58269.7...	.65205	5.749	5.749	1...	H1-1b
22	M20	L1.5x2.5x4	.731	2.9	7	.092	2.9	z 7	34333.8...	.38556	1.114	2.537	2...	H2-1
23	M67	L1.5x2.5x4	.729	2.9	5	.091	2.9	z 5	34333.8...	.38556	1.114	2.537	2...	H2-1
24	M69	L1.5x2.5x4	.723	2.9	6	.090	2.9	z 6	34333.8...	.38556	1.114	2.537	2...	H2-1
25	M70	L1.5x2.5x4	.731	0	8	.089	0	z 8	34333.8...	.38556	1.114	2.537	2...	H2-1
26	M21	L1.5x2.5x4	.729	0	6	.088	0	z 6	34333.8...	.38556	1.114	2.537	2...	H2-1
27	M68	L1.5x2.5x4	.731	0	5	.087	0	z 5	34333.8...	.38556	1.114	2.537	2...	H2-1
28	MP2A	PIPE 2.0	.138	.365	8	.075	3.063	8	17855.0...	.32130	1.872	1.872	3...	H1-1b
29	MP2C	PIPE 2.0	.143	.365	7	.075	3.063	6	17855.0...	.32130	1.872	1.872	3...	H1-1b
30	MP2B	PIPE 2.0	.144	.365	5	.074	3.063	5	17855.0...	.32130	1.872	1.872	3...	H1-1b
31	M19	HSS3X3X5	.210	0	3	.066	0	z 4	114089...	.132300	10.875	10.875	1...	H1-1b
32	M22	HSS3X3X5	.383	1.882	5	.061	1.882	y 7	104153...	.132300	10.875	10.875	1...	H1-1b
33	M79	PIPE 3.0	.098	4.583	8	.061	4.583	7	58269.7...	.65205	5.749	5.749	1...	H1-1b
34	M23	HSS3X3X5	.383	1.882	8	.060	1.882	y 5	104153...	.132300	10.875	10.875	1...	H1-1b
35	M83	PIPE 3.0	.100	4.583	8	.059	4.583	6	58269.7...	.65205	5.749	5.749	1...	H1-1b
36	M24	HSS3X3X5	.382	1.882	6	.059	1.882	y 6	104153...	.132300	10.875	10.875	1...	H1-1b
37	M81	PIPE 3.0	.098	4.083	8	.058	4.083	8	59637.2...	.65205	5.749	5.749	1...	H1-1b
38	M94	HSS3X3X5	.167	0	1	.055	0	z 2	114089...	.132300	10.875	10.875	2...	H1-1b
39	MP3A	PIPE 2.0	.188	.365	7	.054	3.063	7	17855.0...	.32130	1.872	1.872	4...	H1-1b
40	MP3B	PIPE 2.0	.193	.365	6	.054	3.063	6	17855.0...	.32130	1.872	1.872	4...	H1-1b
41	MP3C	PIPE 2.0	.193	.365	5	.054	3.063	5	17855.0...	.32130	1.872	1.872	3...	H1-1b
42	M95	HSS3X3X5	.092	0	1	.039	3.047	y 6	114089...	.132300	10.875	10.875	2...	H1-1b



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

Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[...Dir	LC	phi*	Pnc...	phi*	Pnt...	phi*	Mn...	phi*	Mn...	Cb	Eqn
43	M37	L3X3X4	.456	0	7	.032	0	z	1	43443.2...	.46656	1.688	3.756	1...	H2-1		
44	M89	L3X3X4	.447	0	6	.031	0	z	3	43443.2...	.46656	1.688	3.756	1...	H2-1		
45	M88	L3X3X4	.446	0	5	.022	0	z	4	43443.2...	.46656	1.688	3.756	1...	H2-1		
46	M101	L2x2x4	.146	2.214	5	.009	0	y	7	10841.4...	.30585.6	.691	1.467	1...	H2-1		
47	M103	L2x2x4	.146	2.214	8	.009	0	v	5	10841.4...	.30585.6	.691	1.467	1...	H2-1		
48	M105	L2x2x4	.142	2.214	7	.009	0	y	6	10841.4...	.30585.6	.691	1.467	1...	H2-1		
49	M100	L2x2x4	.136	2.214	8	.007	0	y	8	10841.4...	.30585.6	.691	1.467	1...	H2-1		
50	M102	L2x2x4	.142	2.214	7	.007	0	y	6	10841.4...	.30585.6	.691	1.467	1...	H2-1		
51	M104	L2x2x4	.143	2.214	5	.007	4.523	y	5	10841.4...	.30585.6	.691	1.467	1...	H2-1		
52	M76	LL2x2x4x3	.143	4.298	5	.005	0	z	3	41775.7...	.61236	3.594	2.114	1...	H1-1b*		
53	M96	LL2x2x4x3	.142	4.298	8	.004	4.298	z	1	41775.7...	.61236	3.594	2.114	1...	H1-1b*		
54	M98	LL2x2x4x3	.142	4.298	7	.004	4.298	y	7	41775.7...	.61236	3.594	2.114	1...	H1-1b*		

Envelope AISI S100-10: LRFD Cold Formed Steel Code Checks

Member	Shape	Code ...	Loc[ft]	LC	Shear ...	Loc[ft]	Dir	LC	phi*	Pn[lb]	phi*	Tn[lb]	phi*	Mny...	phi*	Mnz...	Cb	Cmyy	Cmzz	Eqn
No Data to Print ...																				

Envelope AA ADM1-10: ASD - Building Aluminum Code Checks

Member	Shape	Code C...	Loc[ft]	LC	Shear ...	Loc[ft]	Dir	LC	Pnc/O...	Pnt/Om...	Mny/O...	Mnz/O...	Vny/O...	Vnz/O...	Cb	Eqn
No Data to Print ...																

Wood Wall Panel Parameters

Label	Top Plate	Sill Plate	Studs	Min Stud Sp...	Max Stud Sp...	Green Lumb...	Header Size	Header Matl
1	Typical	2-2X6	2X6	2X6	16	16	6x8	Same as Wall

Additional Wood Wall Panel Parameters

Label	Schedule	Min. Pan...	Max. Pa...	Double S...	Max. Nai...	Min. Nail...	HD Chor...	HD Chor...	Hold Down	Chord...	Eccen...
1	Typical	IBC2012 Pan...	.375	.75	Optimum	6-in.	2-in.	2-2X6	Same as...	CAN SIMPS...	SIMP... Yes

Exhibit F

Power Density/RF Emissions Report

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

T-Mobile Existing Facility

Site ID: CT11386G

Simsbury North/RT 10
56 Floydville Road
East Granby, Connecticut 06035

May 5, 2022

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	46.98%

May 5, 2022

T-Mobile

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

Emissions Analysis for Site: CT11386G - Simsbury North/RT 10

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **56 Floydville Road in East Granby, 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 97-01 and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The number of $\mu\text{W}/\text{cm}^2$ 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 ($\mu\text{W}/\text{cm}^2$). The general population exposure limits for the 600 MHz and 700 MHz frequency bands are approximately $400 \mu\text{W}/\text{cm}^2$ and $467 \mu\text{W}/\text{cm}^2$, respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 11 GHz frequency bands is $1000 \mu\text{W}/\text{cm}^2$. 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 56 Floydville Road in East Granby, Connecticut using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report, the sample point is the top of a 6-foot person standing at the base of the tower.

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

- 1) 2 LTE channels (600 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 2) 1 NR channel (600 MHz Band) was considered for each sector of the proposed installation. This Channel has a transmit power of 80 Watts.
- 3) 2 LTE channels (700 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 4) 4 GSM channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 5) 2 LTE channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.
- 6) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

- 7) 1 LTE Traffic channel (LTE 1C and 2C BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 60 Watts.
- 8) 1 LTE Broadcast channel (LTE 1C and 2C BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 20 Watts.
- 9) 1 NR Traffic channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 120 Watts.
- 10) 1 NR Broadcast channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 40 Watts.
- 11) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.
- 12) For the following calculations, the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 13) The antennas used in this modeling are the Ericsson AIR 6419 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz channel(s) in Sector A, the Ericsson AIR 6419 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz channel(s) in Sector B, the Ericsson AIR 6419 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz channel(s) in Sector C. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used for all calculations. This value is a very conservative

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

- 14) The antenna mounting height centerline of the proposed antennas is 110 feet above ground level (AGL).
- 15) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.
- 16) All calculations were done with respect to uncontrolled / general population threshold limits.

T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	Ericsson AIR 6419	Make / Model:	Ericsson AIR 6419	Make / Model:	Ericsson AIR 6419
Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz
Gain:	22.05 dBd / 15.55 dBd / 22.05 dBd / 15.55 dBd	Gain:	22.05 dBd / 15.55 dBd / 22.05 dBd / 15.55 dBd	Gain:	22.05 dBd / 15.55 dBd / 22.05 dBd / 15.55 dBd
Height (AGL):	110 feet	Height (AGL):	110 feet	Height (AGL):	110 feet
Channel Count:	4	Channel Count:	4	Channel Count:	4
Total TX Power (W):	240.00 Watts	Total TX Power (W):	240.00 Watts	Total TX Power (W):	240.00 Watts
ERP (W):	31,011.95	ERP (W):	31,011.95	ERP (W):	31,011.95
Antenna A1 MPE %:	10.31%	Antenna B1 MPE %:	10.31%	Antenna C1 MPE %:	10.31%
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	RFS APXVAALL24_43-U-NA20	Make / Model:	RFS APXVAALL24_43-U-NA20	Make / Model:	RFS APXVAALL24_43-U-NA20
Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz
Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd / 15.45 dBd / 16.45 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd / 15.45 dBd / 16.45 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd / 15.45 dBd / 16.45 dBd
Height (AGL):	110 feet	Height (AGL):	110 feet	Height (AGL):	110 feet
Channel Count:	13	Channel Count:	13	Channel Count:	13
Total TX Power (W):	560.00 Watts	Total TX Power (W):	560.00 Watts	Total TX Power (W):	560.00 Watts
ERP (W):	17,868.72	ERP (W):	17,868.72	ERP (W):	17,868.72
Antenna A2 MPE %:	7.84%	Antenna B2 MPE %:	7.84%	Antenna C2 MPE %:	7.84%

Site Composite MPE %	
Carrier	MPE %
T-Mobile (Max at Sector A):	18.15%
Dish	2.86%
Verizon	14.53%
Metro PCS	0.82%
AT&T	10.62%
Site Total MPE % :	46.98%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	18.15%
T-Mobile Sector B Total:	18.15%
T-Mobile Sector C Total:	18.15%
Site Total MPE % :	46.98%

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 ($\mu\text{W}/\text{cm}^2$)	Frequency (MHz)	Allowable MPE ($\mu\text{W}/\text{cm}^2$)	Calculated % MPE
T-Mobile 2500 MHz LTE IC & 2C Traffic	1	9619.47	110.0	31.97	2500 MHz LTE IC & 2C Traffic	1000	3.20%
T-Mobile 2500 MHz LTE IC & 2C Broadcast	1	717.84	110.0	2.39	2500 MHz LTE IC & 2C Broadcast	1000	0.24%
T-Mobile 2500 MHz NR Traffic	1	19238.94	110.0	63.95	2500 MHz NR Traffic	1000	6.39%
T-Mobile 2500 MHz NR Broadcast	1	1435.69	110.0	4.77	2500 MHz NR Broadcast	1000	0.48%
T-Mobile 600 MHz LTE	2	591.73	110.0	3.93	600 MHz LTE	400	0.98%
T-Mobile 600 MHz NR	1	1577.94	110.0	5.24	600 MHz NR	400	1.31%
T-Mobile 700 MHz LTE	2	695.22	110.0	4.62	700 MHz LTE	467	0.99%
T-Mobile 1900 MHz GSM	4	1052.26	110.0	13.99	1900 MHz GSM	1000	1.40%
T-Mobile 1900 MHz LTE	2	2104.51	110.0	13.99	1900 MHz LTE	1000	1.40%
T-Mobile 2100 MHz LTE	2	2649.42	110.0	17.61	2100 MHz LTE	1000	1.76%
						Total:	18.15%

• 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:

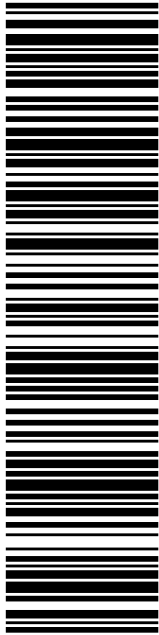
T-Mobile Sector	Power Density Value (%)
Sector A:	18.15%
Sector B:	18.15%
Sector C:	18.15%
T-Mobile Maximum MPE % (Sector A):	18.15%
Site Total:	46.98%
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **46.98%** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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

Exhibit G

Recipient Mailings



USPS TRACKING #

9405 5036 9930 0244 9015 68

Electronic Rate Approved #038555749

SHIP TO: EDEN WIMPFHEIMER
FIRST SELECTWOMAN- EAST GRANBY
PO BOX 1858
EAST GRANBY CT 06026-1858

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

Expected Delivery Date: 05/12/22
Ref#: SBCT-386G
0006

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05/09/2022

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Click-N-Ship® Label Record

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9405 5036 9930 0244 9015 68

Trans. #: 563160211	Priority Mail® Postage: \$8.95
Print Date: 05/09/2022	Total: \$8.95
Ship Date: 05/09/2022	
Expected Delivery Date: 05/12/2022	

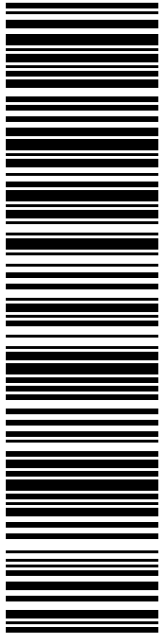
From: DEBORAH CHASE Ref#: SBCT-386G
NORTHEAST SITE SOLUTIONS
420 MAIN ST
STE 1
STURBRIDGE MA 01566-1359

To: EDEN WIMPFHEIMER
FIRST SELECTWOMAN- EAST GRANBY
PO BOX 1858
EAST GRANBY CT 06026-1858

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TO: MARK GODERRE
ZONING ENFORCEMENT OFFICEER
PO BOX 1858
EAST GRANBY CT 06026-1858

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 STURBRIDGE MA 01566-1359

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 Ref#: SBCT-386G
0006

B005



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USPS TRACKING # :
9405 5036 9930 0244 9015 75

Trans. #: 563160211	Priority Mail® Postage: \$8.95
Print Date: 05/09/2022	Total: \$8.95
Ship Date: 05/09/2022	
Expected Delivery Date: 05/12/2022	

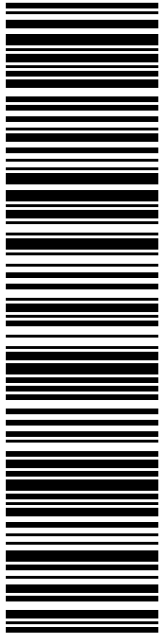
From: DEBORAH CHASE Ref#: SBCT-386G
 NORTHEAST SITE SOLUTIONS
 420 MAIN ST
 STE 1
 STURBRIDGE MA 01566-1359

To: MARK GODERRE
 ZONING ENFORCEMENT OFFICEER
 PO BOX 1858
 EAST GRANBY CT 06026-1858

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05/09/2022

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US POSTAGE

Flat Rate Env

\$8.95

Expected Delivery Date: 05/11/22

Ref#: SBCT-386G

0006

PRIORITY MAIL 1-DAY™

DEBORAH CHASE

NORTHEAST SITE SOLUTIONS

420 MAIN ST

STE 1

STURBRIDGE MA 01566-1359

R005

SHIP TO: SBA COMMUNICATIONS CORPORATION

13 FLANDERS RD

STE 125

WESTBOROUGH MA 01581



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5. Mail your package on the "Ship Date" you selected when creating this label.

Click-N-Ship® Label Record

USPS TRACKING # :

9405 5036 9930 0244 9015 82

Trans. #: 563160211	Priority Mail® Postage: \$8.95
Print Date: 05/09/2022	Total: \$8.95
Ship Date: 05/09/2022	
Expected Delivery Date: 05/11/2022	

From: DEBORAH CHASE Ref#: SBCT-386G
 NORTHEAST SITE SOLUTIONS
 420 MAIN ST
 STE 1
 STURBRIDGE MA 01566-1359


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

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



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**UNITED STATES
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usps.com 9405 5036 9930 0244 9015 99 0089 5000 0010 6026
US POSTAGE
 Flat Rate Env
 05/09/2022

U.S. POSTAGE PAID
Click-N-Ship®

Mailed from 01566

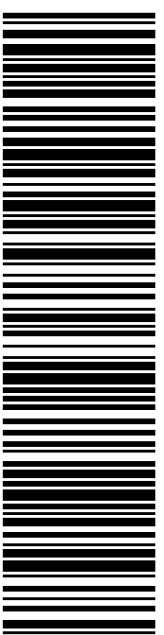
PRIORITY MAIL 2-DAY™

Expected Delivery Date: 05/12/22
 Ref#: SBCT-386G
0006

R023

SHIP TO:
 D I PAINE & SONS LLC
 54 FLOYDVILLE RD
 EAST GRANBY CT 06026-9512

USPS TRACKING #



9405 5036 9930 0244 9015 99

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3. Adhere your label to the package. A self-adhesive label is recommended. If tape or glue is used, DO NOT TAPE OVER BARCODE. Be sure all edges are secure.
4. To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.
5. Mail your package on the "Ship Date" you selected when creating this label.

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0244 9015 99

Trans. #: 563160211	Priority Mail® Postage: \$8.95
Print Date: 05/09/2022	Total: \$8.95
Ship Date: 05/09/2022	
Expected Delivery Date: 05/12/2022	

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

Ref#: SBCT-386G

To: D I PAINE & SONS LLC
 54 FLOYDVILLE RD
 EAST GRANBY CT 06026-9512

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



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

CT11386G SOA TMO



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

05/10/2022 12:21 PM

Product	Qty	Unit Price	Price
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Prepaid Mail	1		\$0.00
Westborough, MA 01581			
Weight: 0 lb 2.00 oz			
Acceptance Date:			
Tue 05/10/2022			
Tracking #:			
9405 5036 9930 0244 9015 82			

Prepaid Mail	1		\$0.00
East Granby, CT 06026			
Weight: 0 lb 8.90 oz			
Acceptance Date:			
Tue 05/10/2022			
Tracking #:			
9405 5036 9930 0244 9015 68			

Prepaid Mail	1		\$0.00
East Granby, CT 06026			
Weight: 0 lb 8.90 oz			
Acceptance Date:			
Tue 05/10/2022			
Tracking #:			
9405 5036 9930 0244 9015 75			

Prepaid Mail	1		\$0.00
East Granby, CT 06026			
Weight: 1 lb 1.70 oz			
Acceptance Date:			
Tue 05/10/2022			
Tracking #:			
9405 5036 9930 0244 9015 99			

Grand Total: \$0.00

Every household in the U.S. is now eligible to receive a second set of 4 free test kits.
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