Filed by:
G. Scott Shepherd, Site Development Specialist II - SBA Communications
134 Flanders Rd., Suite 125, Westborough, MA 01581
508.251.0720 x 3807 - gshepherd@sbasite.com

July 1, 2021

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

RE: Notice of Exempt Modification
39 Nichols Rd., East Haddam, CT
Latitude: 41.521000
Longitude: -72.423200
T-Mobile Site #: CTNL082B_L600

Dear Ms. Bachman:

T-Mobile currently maintains twelve (12) antennas at the 150-foot level of the existing 175-foot Monopole Tower at 39 Nichols Rd., East Haddam, CT. The 175-foot tower is owned by SBA Towers IX, LLC. The property is owned by The Town of East Haddam. T-Mobile now intends to install remove four (4) L700 MHz antennas and replace with four (4) new 600/700 MHz antennas.

- **The new antennas support 5G services and would be installed at the 150-foot level of the tower**.

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

Planned Modifications:

TOWER

Remove:
- N/A

Remove and Replace:

- (4) RFS APXVAA24-43_U_A20 antennas (remove) – (4) RFS APXVAALL24-43-U-NA20 600/700 MHz antennas (replace)
- (4) Ericsson S11B12 RRUs (remove) – (4) Ericsson 4449 B71 + B85 RRUs (replace)

Install New:

- N/A

Existing Equipment to Remain:

- (4) AIR32 KRD901146-1_B66A_B2A 1900/2100 MHz antennas
- (4) RFS APX16DWV-16DWVS-E-A20 2100 MHz antennas
- (1) SirePro F4P-10W W/KRK 10 Platform
- (2) MW Radio Waves SP2-5.2
- (8) Ericsson S11B12 Diplexers
- (4) Ericsson S11B4 RRUs
- (4) Ericsson 4478 RRUs
- (4) 1-5/8" Fiber

Entitlements:

- (3) ½" coax
- (12) 1-1/4" coax
- (2) 3/8" CD power

GROUND

Remove:

- N/A

Remove and Replace:

- N/A

Install New:

- N/A

Existing Equipment to Remain:

- RBS6102 MUAC Equipment cabinet
- Emerson Compact 2416 cabinet
- 200A PPC Cabinet & H-Frame
- Floodlight
- 20' x 10' concrete pad
- T-Mobile diesel generator
- Ice Bridge
- (1) ½" GPS

Entitlements:

- N/A

This facility was approved by the Connecticut Siting Council (CSC) under Docket No. 255, September 23, 2003. Approval was given for the construction of a telecommunications monopole tower, no taller than necessary to provide the proposed telecommunications services sufficient to accommodate the antennas of AT&T and other entities, both public and private, but such tower shall not exceed 175-feet above ground level. 2. The Certificate Holder shall prepare a Development Management Plan (D&M) in compliance with Sections 16-50j-75 through 16-50j-77 of the regulations of Connecticut Stater Agencies. The D&M Plan shall be submitted to and approved by the Council prior to the commencement of facility construction and shall include: a detailed site development plan that depicts the location of the access road, compound, tower, and utility line; specifications of the tower, tower foundation, antennas, and equipment building, and security fence; construction plans for site clearing, water drainage, and erosion and sedimentation control. 3. Prior to the commencement of operation, the Certificate Holder shall provide Council worst-case scenario modeling of electromagnetic radio frequency power of all proposed entities. 4. The facility shall be brought into compliance with any new state or federal radio frequency standard. 5. Certificate Holder shall permit public or private entities to share space on the proposed tower. 6. If the facility does not provide wireless services within 1-year of completion, this Decision and Order shall be void. 7. Any antenna that becomes obsolete and ceases to function shall be removed within 60-days. There were no further post construction stipulations set. Please see attached.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. §16.50j-72(b) (2). In accordance with R.C.S.A. § 16.50j-73, a copy of this letter is being sent to the Town of East Haddam's First Selectman, Robert R. Smith, and Zoning Enforcement Officer, James F. Ventures, the Property is Owned by the Town of East Haddam. (Separate notice is not being sent to tower owner, as it belongs to SBA.)

The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S.A. §16.50j-72(b)(2).

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

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

Sincerely,

G. Scott Shepherd
Site Development Specialist II
SBA COMMUNICATIONS CORPORATION

134 Flanders Rd., Suite 125
Westborough, MA 01581
508.251.0720 x3807 + T
508.366.2610 + F
508.868.6000 + C
gshepherd@sbasite.com

Attachments
cc: Robert R. Smith, First Selectman / with attachments
Town of Haddam, 1 Plains Rd., Moodus, CT 06469
James F. Ventures, Zoning Enforcement Officer / with attachments
Town of Haddam, 1 Plains Rd., Moodus, CT 06469

EXHIBIT LIST

Exhibit 1	Check Copy	To be invoiced at a later date per Covid guidelines
Exhibit 2	Notification Receipts	x
Exhibit 3	Property Card	x
Exhibit 4	Property Map	x
Exhibit 5	Original Zoning Approval	CSC Docket No. 255 (9/23/03)
Exhibit 6	Construction Drawings	Chappell Engineering 6/28/21
Exhibit 7	Structural Analysis	TES 6/30/21
Exhibit 8	Mount Analysis	TES 5/25/21
Exhibit 9	EME Report	EBI Consulting 6/23/21

EXHIBIT 1

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

EXHIBIT 2

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

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

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EXHIBIT 3

39 NICHOLS RD

Location	39 NICHOLS RD	**Mblu**	M75/ / L021/ /
Acct#	00416200	**Owner**	EAST HADDAM TOWN OF
Assessment	$598,310	**Appraisal**	$854,720
PID	4621	**Building Count**	3

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$191,700	$663,020	$854,720
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$134,190	$464,120	$598,310

Owner of Record

Owner	EAST HADDAM TOWN OF	**Sale Price**	$0
Co-Owner	TRANSFER STATION-KENNEL	**Certificate**	
Address	PO BOX 385 MOODUS, CT 06469	**Book & Page**	91/ 80
		Sale Date	05/09/1969

Ownership History

Ownership History				
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Sale Date**
EAST HADDAM TOWN OF	$0		91/ 80	05/09/1969

Building Information

Building 1 : Section 1

Year Built:	1982
Living Area:	798
Replacement Cost:	$44,903
Building Percent Good:	76
Replacement Cost Less Depreciation:	$34,100

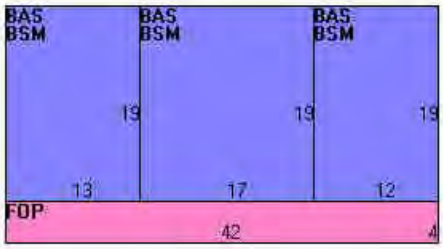
Building Attributes

Field	Description
STYLE	Light Industrial
MODEL	Ind/Comm
Grade	C
Stories:	2
Occupancy	1
Exterior Wall 1	Vinyl Siding
Exterior Wall 2	
Roof Structure	Gable
Roof Cover	Asphalt
Interior Wall 1	Drywall
Interior Wall 2	
Interior Floor 1	Concrete
Interior Floor 2	
Heating Fuel	None
Heating Type	None
AC Percent	0
Foundation	N/A
Bldg Use	Exempt Ind
Total Rooms	0
Total Bedrms	0
Total Fixtures	6
% Sprinklers	0
Bsmt Area	0
1st Floor Use:	
Heat/AC	Typical
Frame Type	Wood Frame
Baths/Plumbing	Average
Ceiling/Wall	None
Rooms/Prtns	None / N/A
Wall Height	8
% Comn Wall	0

Building Photo

(http://images.vgsi.com/photos/EastHaddamCTPhotos//\00\00\69/03.jpg)

Building Layout



(http://images.vgsi.com/photos/EastHaddamCTPhotos//Sketches/4621_46

Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	798	798
BSM	Basement	798	0
FOP	Open Porch	168	0
		1,764	798

Building 2 : Section 1

Year Built: 2010
Living Area: 1,920
Replacement Cost: $69,696
Building Percent Good: 93
Replacement Cost Less Depreciation: $64,800

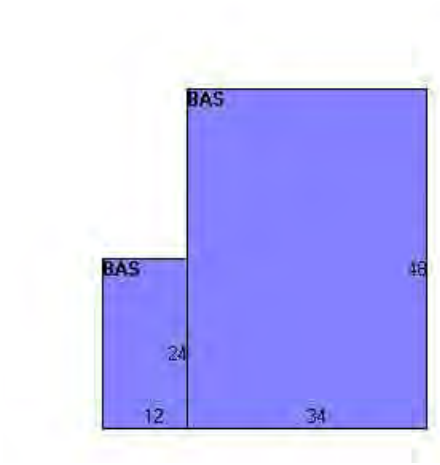
Building Attributes : Bldg 2 of 3	
Field	Description

STYLE	Pre-Eng Warehs
MODEL	Ind/Comm
Grade	C
Stories:	1
Occupancy	1
Exterior Wall 1	Pre-Finsh Metl
Exterior Wall 2	
Roof Structure	Shed
Roof Cover	Metal
Interior Wall 1	Minimum
Interior Wall 2	
Interior Floor 1	Concrete
Interior Floor 2	
Heating Fuel	None
Heating Type	None
AC Percent	0
Foundation	Slab
Bldg Use	Industrial
Total Rooms	
Total Bedrms	
Total Fixtures	
% Sprinklers	0
Bsmt Area	
1st Floor Use:	
Heat/AC	None
Frame Type	Steel
Baths/Plumbing	Average
Ceiling/Wall	None
Rooms/Prtns	Average
Wall Height	14
% Comn Wall	

Building Photo

(http://images.vgsi.com/photos/EastHaddamCTPhotos//\00\00\69/04.jpg)

Building Layout



(http://images.vgsi.com/photos/EastHaddamCTPhotos//Sketches/4621_10

Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	1,920	1,920
		1,920	1,920

Building 3 : Section 1

Year Built: 2012
Living Area: 336
Replacement Cost: $24,157
Building Percent Good: 95
Replacement Cost Less Depreciation: $22,900

Building Attributes : Bldg 3 of 3	
Field	**Description**
STYLE	Kennel

MODEL	Ind/Comm
Grade	C
Stories:	1
Occupancy	1
Exterior Wall 1	Concr/Cinder
Exterior Wall 2	Vinyl Siding
Roof Structure	Gable
Roof Cover	Asphalt
Interior Wall 1	Minimum
Interior Wall 2	
Interior Floor 1	Concrete
Interior Floor 2	
Heating Fuel	Propane
Heating Type	Space Heat
AC Percent	1
Foundation	
Bldg Use	Industrial
Total Rooms	
Total Bedrms	
Total Fixtures	
% Sprinklers	
Bsmt Area	
1st Floor Use:	
Heat/AC	None
Frame Type	Masonry
Baths/Plumbing	None
Ceiling/Wall	None
Rooms/Prtns	None / N/A
Wall Height	7
% Comn Wall	

Building Photo

(http://images.vgsi.com/photos/EastHaddamCTPhotos//default.jpg)

Building Layout

(http://images.vgsi.com/photos/EastHaddamCTPhotos//Sketches/4621_10

Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	336	336
FOP	Open Porch	567	0
SLB	Slab	336	0
		1,239	336

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Land Line Valuation

Use Code	301E	**Size (Acres)**	120.86
Description	Exempt Ind	**Frontage**	
Zone	R2	**Depth**	
Neighborhood		**Assessed Value**	$464,120
Alt Land Appr	No	**Appraised Value**	$663,020
Category			

Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
PAV1	Paving			31080 S.F.	$46,600	2
SHD1	Shed			200 S.F.	$1,800	1
SHD1	Shed			80 S.F.	$700	3
CNP	Canopy			200 S.F.	$2,000	3
LNT	Lean To			210 S.F.	$500	1
PAV1	Paving			8500 S.F.	$7,700	2
SHD1	Shed			160 S.F.	$1,500	1
SHD1	Shed			120 S.F.	$800	1
SHP1	WorkShop Heated			200 S.F.	$3,000	1
GAZ	Gazebo			250 S.F.	$5,300	1

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$191,700	$663,020	$854,720
2018	$191,700	$663,020	$854,720
2017	$191,700	$663,020	$854,720

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$134,190	$464,120	$598,310
2018	$134,190	$464,120	$598,310
2017	$134,190	$464,120	$598,310

EXHIBIT 4

Google Maps 39 Nichols Rd

Imagery ©2021 Maxar Technologies, U.S. Geological Survey, USDA Farm Service Agency, Map data ©2021 100 ft

39 Nichols Rd

Directions Save Nearby Send to your phone Share

39 Nichols Rd, Moodus, CT 06469

GHCG+84 Moodus, East Haddam, CT

EXHIBIT 5

Connecticut Siting Council

Decisions

DOCKET NO. 255 – Message Center Management application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a telecommunications facility in East Haddam, Connecticut.	}	Connecticut Siting Council

September 23, 2003

Decision and Order

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, operation, and maintenance of a telecommunications facility including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate either alone or cumulatively with other effects when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes **§** 16-50k, be issued to Message Center Management (MCM) for the construction, maintenance and operation of a wireless telecommunications facility at the proposed site located on Nichols Road, East Haddam, Connecticut.

The facility shall be constructed, operated, and maintained substantially as specified in the Council's record in this matter, and subject to the following conditions:

1. The tower shall be constructed as a monopole, no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of AT&T and other entities, both public and private, but such tower shall not exceed a height of 175 feet above ground level.

2. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be submitted to and approved by the Council prior to the commencement of facility construction and shall include:

    a. a detailed site development plan that depicts the location of the access road, compound, tower, and utility line;

b. specifications for the tower, tower foundation, antennas, equipment building, and security fence;

c. construction plans for site clearing, water drainage, and erosion and sedimentation control consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended.

3 The Certificate Holder shall, prior to the commencement of operation, provide the Council worst-case modeling of electromagnetic radio frequency power densities of all proposed entities' antennas at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin No. 65, August 1997. The Certificate Holder shall provide a recalculated report of electromagnetic radio frequency power density if and when circumstances in operation cause a change in power density above the levels calculated and provided pursuant to this Decision and Order.

4. Upon the establishment of any new state or federal radio frequency standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards.

5. The Certificate Holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing. Upon request, the Certificate Holder shall provide space on its tower for Town of East Haddam antennas at no cost to the Town.

6. If the facility does not initially provide wireless services within one year of completion of construction or ceases to provide wireless services for a period of one year, this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made.

7. Any antenna that becomes obsolete and ceases to function shall be removed within 60 days after such antennas become obsolete and cease to function.

8. Unless otherwise approved by the Council, this Decision and Order shall be void if the facility authorized herein is not operational within one year of the effective date of this Decision and Order or within one year after all appeals to this Decision and Order have been resolved.

Pursuant to General Statutes **§** 16-50p, we hereby direct that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed below, and notice of issuance shall be published in The Hartford Courant.

By this Decision and Order, the Council disposes of the legal rights, duties, and privileges of each party named or admitted to the proceeding in accordance with

Section 16-50j-17 of the Regulations of Connecticut State Agencies.

Content Last Modified on 9/25/2003 1:39:11 PM

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@po.state.ct.us
Web Site: www.state.ct.us/csc/index.htm

November 10, 2003

Peter J. Tyrrell
Levy & Droney, P.C.
Pond View Corporate Center
74 Batterson Park Road
Farmington, CT 06032

Re: **DOCKET NO. 255** - Message Center Management application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a telecommunications facility in East Haddam, Connecticut.

Dear Attorney Tyrrell:

At a public meeting held on October 29, 2003, the Connecticut Siting Council (Council) considered and approved the Development and Management Plan (D&M Plan) for the East Haddam facility.

This approval applies only to the D&M Plan as submitted October 22, 2003. Any other changes to this D&M Plan require advance Council notification and approval. Failure to obtain Council approval before implementing any changes to this D&M plan 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.

Please notify the Council two weeks prior to the commencement of construction.

Enclosed is a copy of the staff report on the D&M Plan, dated October 29, 2003.

Very truly yours,

Pamela B. Katz /

Pamela B. Katz, P.E.
Chairman

SDP/laf

c: Parties and Intervenors

Enclosure (1)

Docket 255: Message Center Management
169 Trowbridge Road
East Haddam, Connecticut
Development & Management Plan
Staff Report
October 29, 2003

On September 23, 2003, the Council issued a Certificate of Environmental Compatibility and Public Need to Message Center Management (MCM) for the construction, maintenance, and operation of a cellular telecommunications facility at 169 Trowbridge Road, East Haddam, Connecticut. As required in the Council's Decision and Order, MCM submitted a Development and Management (D&M) Plan for this facility on October 23, 2003.

The site to be developed is on a 127-acre parcel owned by the Town of East Haddam. The property is used for various town purposes including a recycling center, a bulky waste transfer station, and a dog pound. A portion of the property was formerly used as a bulky waste landfill.

The facility compound would consist of a 60-foot by 100-foot area with a gravel surface enclosed by an 8-foot high chain link fence. Electric and telephone services would be brought to the compound via underground conduits that would originate at existing CL&P pole #4771. The facility would share a portion of the dog pound's graveled driveway. A small parking area off this driveway would be created within which the transformer and meter board would be located.

The tower would be built to a height of 175 feet and would be expandable to 195 feet. Because of the possibility of contamination, soil excavated at the site would be stockpiled within a silt fence barrier and tested for proper disposal.

All of the elements of the Council's D&M Plan requirements appear to be in compliance. Staff recommends approval of this Plan.

EXHIBIT 6

SPECIAL CONSTRUCTION NOTE:
GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL ANTENNA MOUNT STRUCTURAL AUGMENTS (STRUCTURAL MODIFICATIONS) AT T-MOBILE'S RAD/VERTICAL EQUIPMENT SPACE PER RECOMMENDATIONS FROM SBA-PROVIDED ANTENNA MOUNT STRUCTURAL ANALYSIS AND ANY SUPPLEMENTAL CONSTRUCTION DRAWINGS (PROVIDED BY OTHERS).

CTHA603B

39 NICHOLS ROAD
EAST HADDAM, CT 06469
MIDDLESEX COUNTY

SITE NO.: CTHA603B

RF DESIGN GUIDELINE: 4SEC-67D97DB2

SCOPE OF WORK

REMOVE:
- 4 ANTENNAS
- 8 RRUs
- 8 DIPLEXERS

INSTALL:
- 4 ANTENNAS
- 4 RRUs

SITE NOTES

1. THIS IS AN UNMANNED AND RESTRICTED ACCESS TELECOMMUNICATION FACILITY, AND IS NOT FOR HUMAN HABITATION. IT WILL BE USED FOR THE TRANSMISSION OF RADIO SIGNAL FOR THE PURPOSE OF PROVIDING PUBLIC CELLULAR SERVICE.
   - ADA COMPLIANCE NOT REQUIRED.
   - POTABLE WATER OR SANITARY SERVICE IS NOT REQUIRED.
   - NO OUTDOOR STORAGE OR ANY SOLID WASTE RECEPTACLES REQUIRED.
2. CONTRACTOR SHALL VERIFY ALL PLANS, EXISTING DIMENSIONS, AND CONDITIONS ON JOB SITE. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT/ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK. FAILURE TO NOTIFY THE ARCHITECT/ENGINEER PLACE THE RESPONSIBILITY ON THE CONTRACTOR TO CORRECT THE DISCREPANCIES AT THE CONTRACTOR'S EXPENSE.
3. NEW CONSTRUCTION WILL CONFORM TO ALL APPLICABLE CODES AND ORDINANCES.
   - BUILDING CODE: 2018 CONNECTICUT STATE BUILDING CODE
   - ELECTRICAL CODE: 2017 NATIONAL ELECTRICAL CODE
   - STRUCTURAL CODE: TIA/EIA-222-G STRUCTURAL STANDARDS FOR ANTENNA SUPPORTING STRUCTURES AND ANTENNAS.

APPROVALS

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

T-MOBILE TECHNICIAN SITE SAFETY NOTES

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

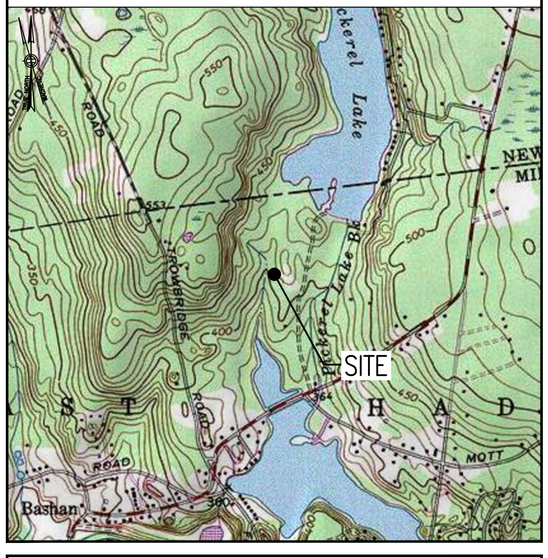
GENERAL NOTES

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

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

VICINITY MAP

SCALE: 1" = 1000'-0"



DIRECTIONS

TURN LEFT ONTO S WASHINGTON ST. TURN RIGHT ONTO MA-123 E. TURN LEFT TO MERGE ONTO I-495 NORTH TOWARD MANSFIELD/MARLBORO. MERGE ONTO I-495 NORTH. TAKE EXIT 13B TO MERGE ONTO I-95 SOUTH TOWARD PROVIDENCE RI. TAKE EXIT 6 FOR I-295 SOUTH. TAKE EXIT 9C-A FOR US-6 WEST TOWARD HARTFORD CT. KEEP RIGHT AT THE FORK, FOLLOW SIGNS FOR JOHNSTON/SCITUATE/FOSTER. MERGE ONTO US-6 WEST. CONTINUE STRAIGHT ON US-6 WEST. SLIGHT LEFT ONTO CT TURN PIKE. TAKE EXIT ON LEFT FOR I-395 SOUTH. TAKE EXIT 14 TOWARD CT-2 WEST. TURN RIGHT ONTO WEST TOWN STREET. CONTINUE ONTO FITCHVILLE ROAD. TURN LEFT TO MERGE ONTO CT-2 WEST. TAKE EXIT 18 FOR CT-16 TOWARD COLCHESTER. TURN LEFT ONTO CT-16 WEST. TURN LEFT ONTO CT-149 SOUTH. TURN RIGHT ONTO NICHOLS ROAD. SITE WILL BE ON THE LEFT.

SHEET INDEX

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DO NOT SCALE DRAWINGS

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

PROJECT SUMMARY

SITE NUMBER:	CTHA603B
SBA SITE NUMBER:	CT22076-A
SBA SITE NAME:	EAST HADDAM (TROWBRIDGE)
SITE ADDRESS:	39 NICHOLS ROAD EAST HADDAM, CT 06469
PROPERTY OWNER:	TOWN OF EAST HADDAM TRANSFER STATION-KENNEL PO BOX 385 MOODUS, CT 06469
TOWER OWNER:	SBA TOWERS IX, LLC 8501 CONGRESS AVENUE BOCA RATON, FL 33487 PHONE: 561-226-9523
COUNTY:	MIDDLESEX COUNTY
ZONING DISTRICT:	INDUSTRIAL/COMMERCIAL
STRUCTURE TYPE:	MONOPOLE
STRUCTURE HEIGHT:	177'±
APPLICANT:	T-MOBILE NORTHEAST LLC 15 COMMERCE WAY, SUITE B NORTON, MA 02766
SBA RSM:	STEPHEN ROTH PHONE: 860-539-4920 EMAIL: SRoth@sbasite.com
ARCHITECT:	CHAPPELL ENGINEERING ASSOCIATES, LLC. 201 BOSTON POST ROAD WEST, SUITE 101 MARLBOROUGH, MA 01752
STRUCTURAL ENGINEER:	CHAPPELL ENGINEERING ASSOCIATES, LLC. 201 BOSTON POST ROAD WEST, SUITE 101 MARLBOROUGH, MA 01752
SITE CONTROL POINT:	LATITUDE: N.41.521000° N41°31'15.60" LONGITUDE W.72.423200° W72°25'23.52"

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

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

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

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

STATE OF CONNECTICUT
JAMES M. FITZGERALD
No. 25997
LICENSED
PROFESSIONAL CIVIL ENGINEER
6/8/2021

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
2	06/28/21	CONSTRUCTION REVISED	CMC
1	06/07/21	ISSUED FOR CONSTRUCTION	CMC
0	06/01/21	ISSUED FOR REVIEW	JRV

SITE NUMBER:
CTHA603B

SITE ADDRESS:
39 NICHOLS ROAD
EAST HADDAM, CT 06469

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

1815.238

GENERAL NOTES:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

SITE WORK GENERAL NOTES:

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

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

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

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

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

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

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

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

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

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

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

CONCRETE AND REINFORCING STEEL NOTES:

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

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

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

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

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

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

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

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

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

STRUCTURAL STEEL NOTES:

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

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

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

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

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

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

SOIL COMPACTION NOTES FOR SLAB ON GRADE:

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

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

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

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

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

COMPACTION EQUIPMENT:

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

CONSTRUCTION NOTES:

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

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

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

ELECTRICAL INSTALLATION NOTES:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

T-MOBILE
NORTHEAST LLC

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STATE OF CONNECTICUT
JAMES M. FITZGERALD
No. 25937
LICENSED
PROFESSIONAL CIVIL ENGINEER

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
2	06/28/21	CONSTRUCTION REVISED	CMC
1	06/07/21	ISSUED FOR CONSTRUCTION	CMC
0	06/01/21	ISSUED FOR REVIEW	JRV

SITE NUMBER:
CTHA603B

SITE ADDRESS:
39 NICHOLS ROAD
EAST HADDAM, CT 06469

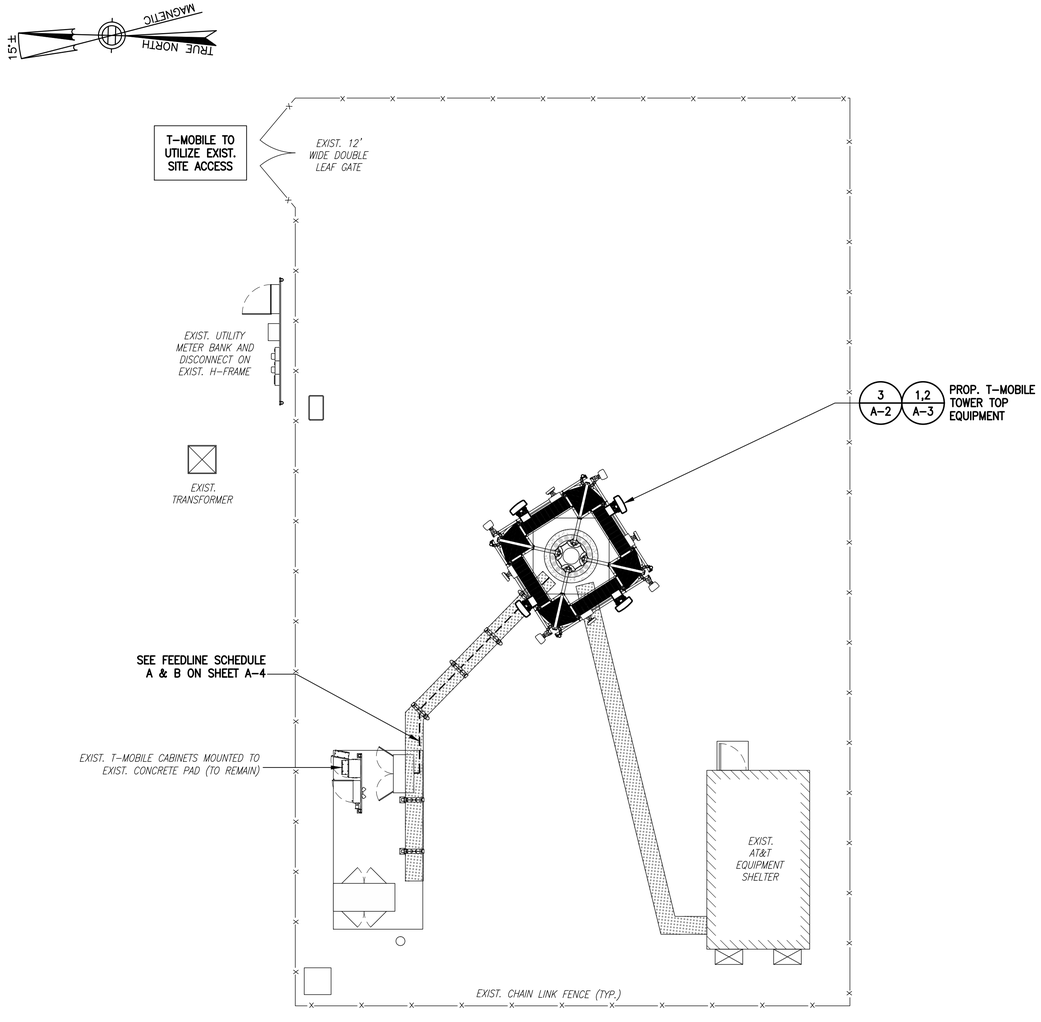
SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-1

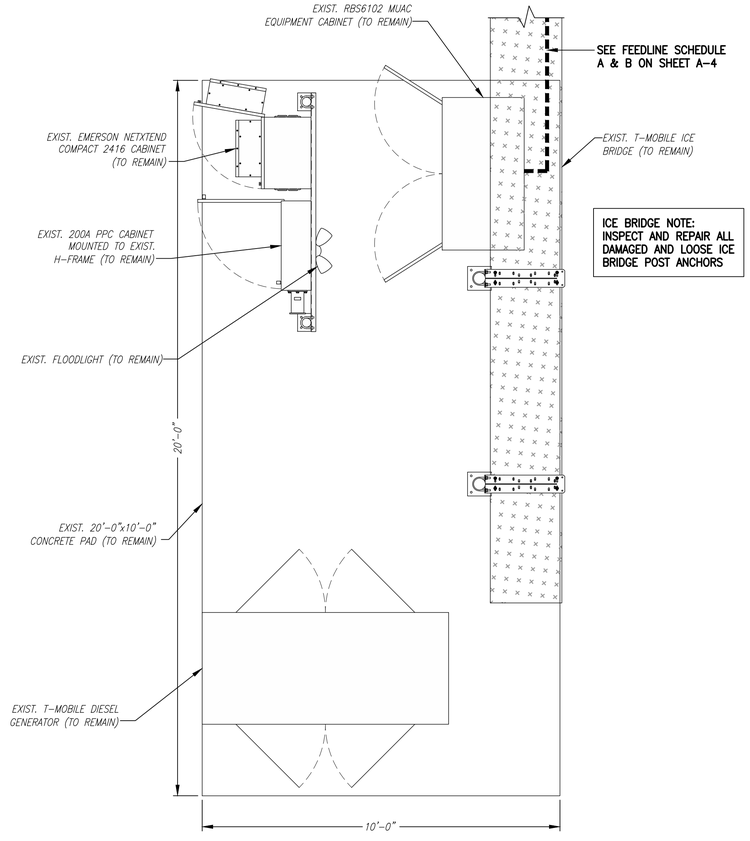
1815.238

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

SPECIAL CONSTRUCTION NOTE:
GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL ANTENNA MOUNT STRUCTURAL AUGMENTS (STRUCTURAL MODIFICATIONS) AT T-MOBILE'S RAD/VERTICAL EQUIPMENT SPACE PER RECOMMENDATIONS FROM SBA-PROVIDED ANTENNA MOUNT STRUCTURAL ANALYSIS AND ANY SUPPLEMENTAL CONSTRUCTION DRAWINGS (PROVIDED BY OTHERS).



COMPOUND PLAN 1/A-1
SCALE: 1/8" = 1'-0"
0 8'-0" 16'-0 24'-0"



EXISTING EQUIPMENT PLAN 2/A-1
SCALE: 1/2" = 1'-0"
0 2'-0" 4'-0" 8'-0"

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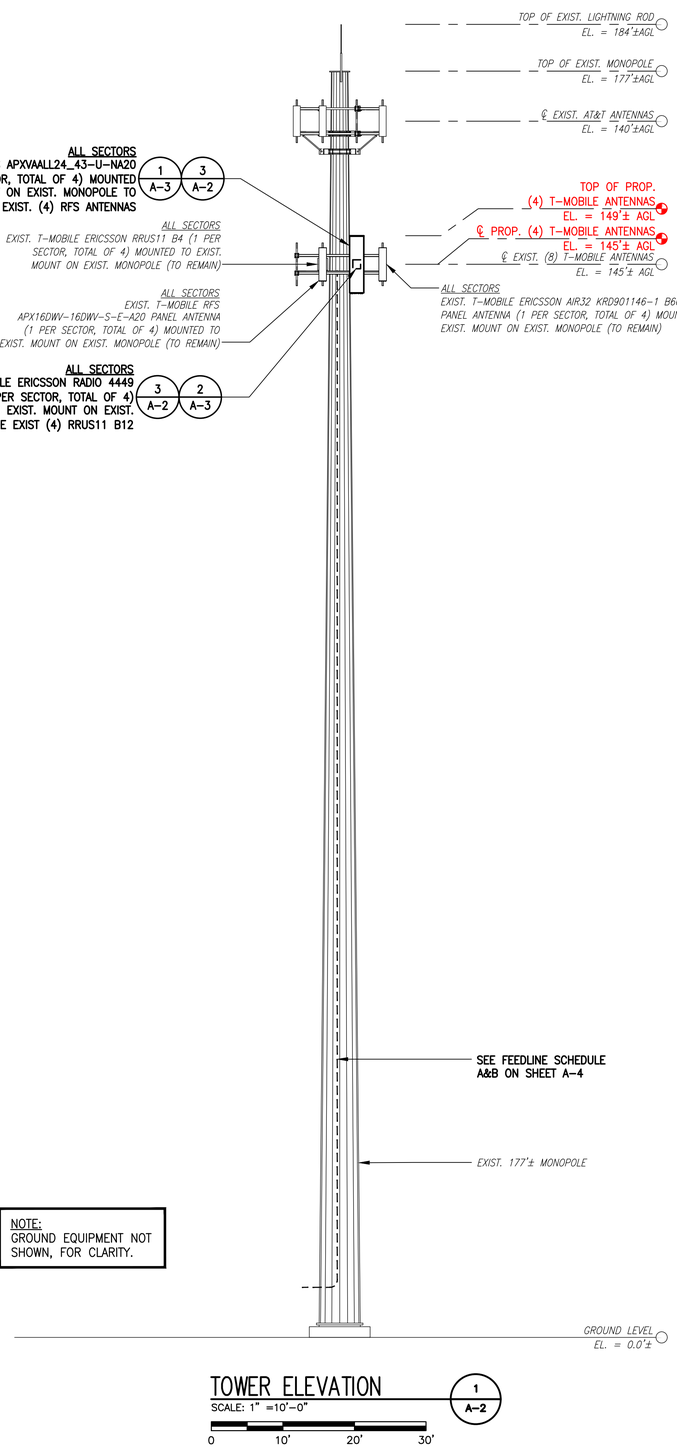
EAST HADDAM, CT 06469

SHEET TITLE
COMPOUND & EQUIPMENT PLAN

SHEET NUMBER
A-1

1815.238



NOTE:
GROUND EQUIPMENT NOT SHOWN, FOR CLARITY.

TOWER ELEVATION (1 / A-2)

SCALE: 1" =10'-0"

0 10' 20' 30'

SPECIAL PRE-CONSTRUCTION WORK NOTE (SBA-PROVIDED TOWER STRUCTURAL ANALYSIS SPECIAL EQUIPMENT INSTALLATION REQUIREMENTS):
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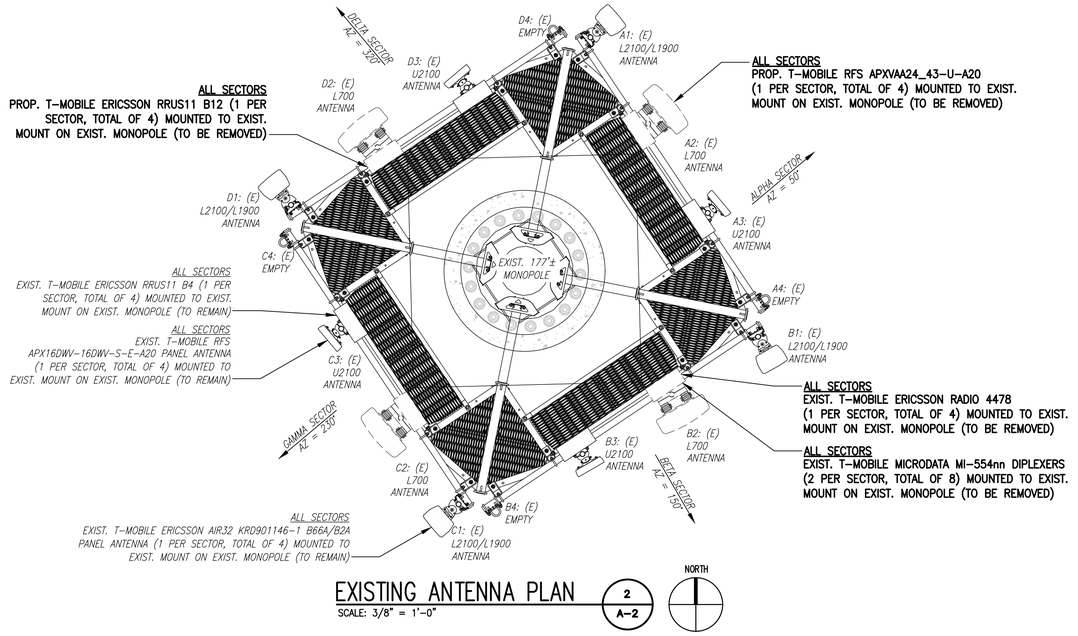
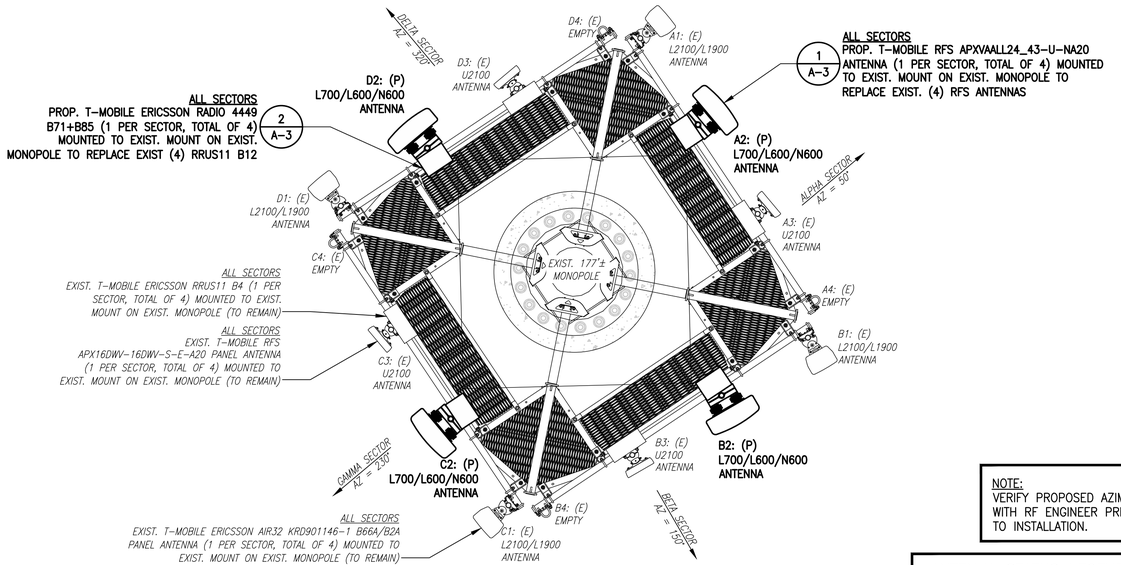
RAD CENTER NOTE:
T-MOBILE RAD CENTER SHOWN IN RED TEXT BASED ON SBA-PROVIDED CO-LOCATION APPLICATION, EQUIPMENT DATABASE, AND STRUCTURAL ANALYSIS. THE SBA-PROVIDED ANTENNA RAD CENTER SHALL SUPERSEDE ANY CONFLICTING INFORMATION DERIVED FROM THE T-MOBILE RFDS.

SPECIAL CONSTRUCTION NOTE:
GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL ANTENNA MOUNT STRUCTURAL AUGMENTS (STRUCTURAL MODIFICATIONS) AT T-MOBILE'S RAD/VERTICAL EQUIPMENT SPACE PER RECOMMENDATIONS FROM SBA-PROVIDED ANTENNA MOUNT STRUCTURAL ANALYSIS AND ANY SUPPLEMENTAL CONSTRUCTION DRAWINGS (PROVIDED BY OTHERS).



EXISTING ANTENNA PLAN (2 / A-2)

SCALE: 3/8" = 1'-0"



PROPOSED ANTENNA PLAN (3 / A-2)

SCALE: 3/8" = 1'-0"

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

ANTENNA STATUS LEGEND:

EMPTY – EMPTY PIPE

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

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6/28/2021

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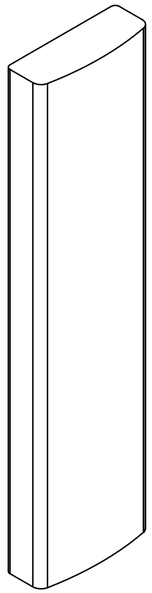
SHEET TITLE
TOWER ELEVATIONS & ANTENNA PLANS

SHEET NUMBER
A-2

1815.238



RFS APXVAALL24_43-U-NA20 ANTENNA

DIMENSIONS: 95.9"H x 24.0"W x 8.7"D
WEIGHT: 128.0 lbs
QUANTITY: 1 PER SECTOR, TOTAL OF 4

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

ERICSSON RADIO 4449 B71+B85

DIMENSIONS: 14.9"H x 13.2"W x 9.3"D
WEIGHT: 74.0 lbs
QUANTITY: 1 PER SECTOR, TOTAL OF 4

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

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SHEET TITLE
SITE DETAILS

SHEET NUMBER
A-3

1815.238

FINAL ANTENNA CONFIGURATION

SECTOR		ANTENNA	RAD CENTER	AZIMUTH (TRUE NORTH)	MECHANICAL DOWNTILT	ELECTRICAL DOWNTILT	BAND	TMA/RADIOS	SIGNAL CABLES
ALPHA	A1	*ERICSSON AIR32 KRD901146-1 B66A/B2A*	*145'± AGL*	*50°*	*0°*	*2°*	*L2100/L1900*	–	*(4) 1-5/8" (6x12) HCS FIBER CABLES*
	A2	**RFS APXVAALL24_43-U-NA20**	**145'± AGL**	**50°**	**0°**	**2°**	**L700/L600/N600**	**RADIO 4449 B71+B85**	
	A3	*RFS APX16DWV-16DWV-S-E-A20*	*145'± AGL*	*50°*	*0°*	*2°*	*U2100*	*RRUS11 B4*	
	A4	*EMPTY PIPE*	–	–	–	–	–	–	
BETA	B1	*ERICSSON AIR32 KRD901146-1 B66A/B2A*	*145'± AGL*	*150°*	*0°*	*2°*	*L2100/L1900*	–	
	B2	**RFS APXVAALL24_43-U-NA20**	**145'± AGL**	**150°**	**0°**	**2°**	**L700/L600/N600**	**RADIO 4449 B71+B85**	
	B3	*RFS APX16DWV-16DWV-S-E-A20*	*145'± AGL*	*150°*	*0°*	*2°*	*U2100*	*RRUS11 B4*	
	B4	*EMPTY PIPE*	–	–	–	–	–	–	
GAMMA	C1	*ERICSSON AIR32 KRD901146-1 B66A/B2A*	*145'± AGL*	*230°*	*0°*	*2°*	*L2100/L1900*	–	
	C2	**RFS APXVAALL24_43-U-NA20**	**145'± AGL**	**230°**	**0°**	**2°**	**L700/L600/N600**	**RADIO 4449 B71+B85**	
	C3	*RFS APX16DWV-16DWV-S-E-A20*	*145'± AGL*	*230°*	*0°*	*2°*	*U2100*	*RRUS11 B4*	
	C4	*EMPTY PIPE*	–	–	–	–	–	–	
DELTA	D1	*ERICSSON AIR32 KRD901146-1 B66A/B2A*	*145'± AGL*	*320°*	*0°*	*2°*	*L2100/L1900*	–	
	D2	**RFS APXVAALL24_43-U-NA20**	**145'± AGL**	**320°**	**0°**	**2°**	**L700/L600/N600**	**RADIO 4449 B71+B85**	
	D3	*RFS APX16DWV-16DWV-S-E-A20*	*145'± AGL*	*320°*	*0°*	*2°*	*U2100*	*RRUS11 B4*	
	D4	*EMPTY PIPE*	–	–	–	–	–	–	

CABLE NOTE: SEE FEEDLINE SCHEDULE A & B BELOW.
ANCILLARY NOTE: EXISTING (4) MICRODATA MI-554nn DIPLEXERS & EXISTING (4) ERICSSON RADIO 4478 TO BE REMOVED

NOTE: RFDS REV2 – 01/21/21

FEEDLINE SCHEDULE

SCHEDULE	FEEDLINES	LOCATION
A	*EXISTING TO REMAIN:* *(1) 1/2" COAX CABLE FOR GPS ANTENNA* *(4) 1-5/8" (6x12) HCS FIBER CABLES* *EXISTING TO BE REMOVED:* *NONE*	ROUTED PER STRUCTURAL ANALYSIS
B	**PROPOSED:** **NONE**	

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

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STATE OF CONNECTICUT
JAMES M. FITZGERALD
No. 25997
LICENSED PROFESSIONAL CIVIL ENGINEER
6/28/2021

CHECKED BY: JMT

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SUBMITTALS

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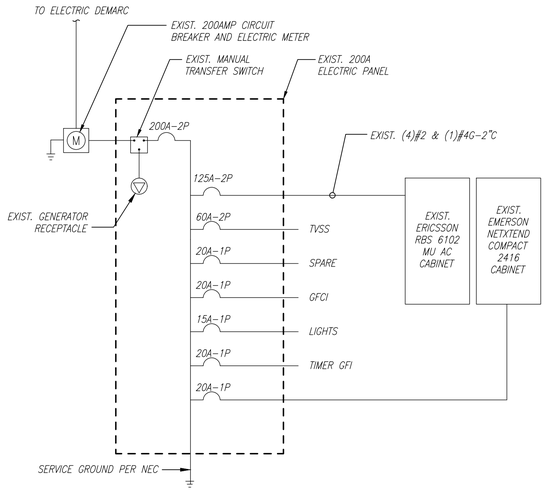
CTHA603B

SITE ADDRESS:
39 NICHOLS ROAD
EAST HADDAM, CT 06469

SHEET TITLE
ANTENNA & FEEDLINE CHARTS

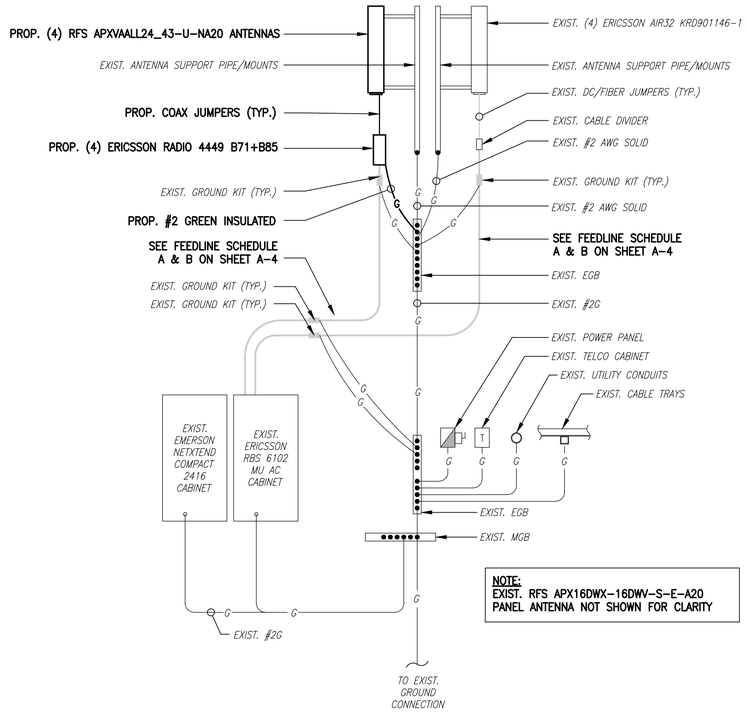
SHEET NUMBER
A-4

1815.238



ONE LINE DIAGRAM

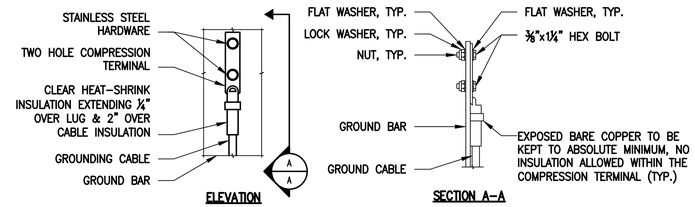
SCALE: NOT TO SCALE — 1 / E-1



NOTE:
EXIST. RFS APX16DWX-16DWV-S-E-A20 PANEL ANTENNA NOT SHOWN FOR CLARITY

GROUNDING RISER DIAGRAM

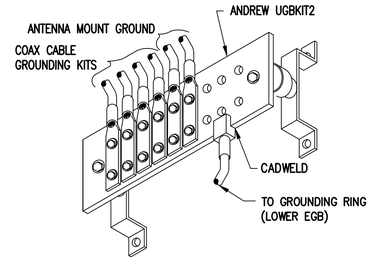
SCALE: NOT TO SCALE — 2 / E-1



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

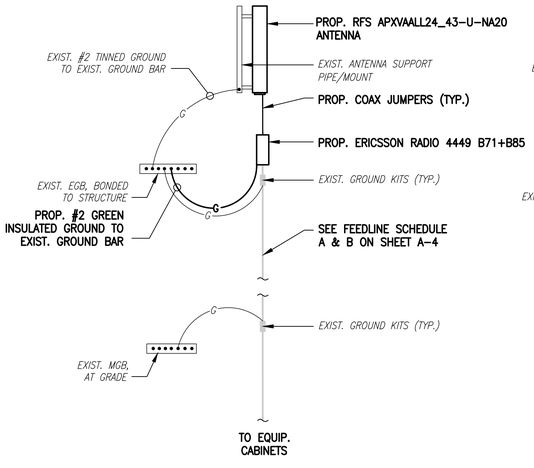
TYPICAL GROUND BAR CONNECTIONS DETAIL

SCALE: NOT TO SCALE — 3 / E-1

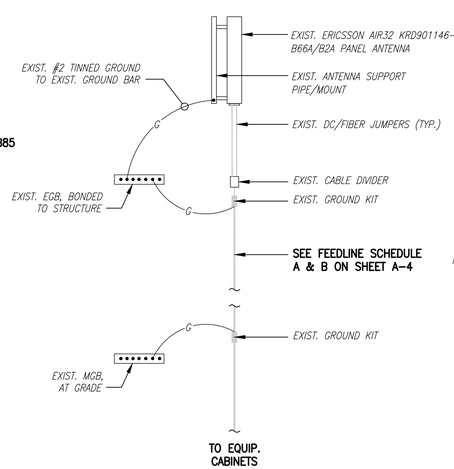


GROUND BAR (EGB)

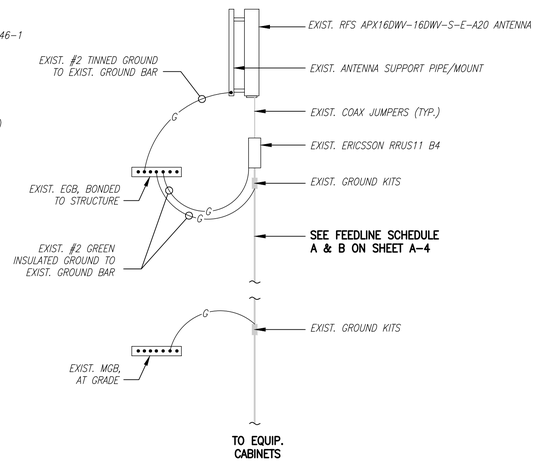
SCALE: NOT TO SCALE — 5 / E-1



L700/L600/N600 ANTENNA



L2100/L1900 ANTENNA



U2100 ANTENNA

COAX CABLE CONNECTION AND GROUNDING DETAIL

SCALE: NOT TO SCALE — 4 / E-1

ELECTRICAL AND GROUNDING NOTES

1. ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES.
2. ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED PER SPECIFICATION REQUIREMENTS.
3. THE ELECTRICAL WORK INCLUDES ALL LABOR AND MATERIAL DESCRIBED BY DRAWINGS AND SPECIFICATION INCLUDING INCIDENTAL WORK TO PROVIDE COMPLETE OPERATING AND APPROVED ELECTRICAL SYSTEM.
4. GENERAL CONTRACTOR SHALL PAY FEES FOR PERMITS, AND IS RESPONSIBLE FOR OBTAINING SAID PERMITS AND COORDINATION OF INSPECTIONS.
5. ELECTRICAL AND TELCO WIRING OUTSIDE A BUILDING AND EXPOSED TO WEATHER SHALL BE IN WATER TIGHT GALVANIZED RIGID STEEL CONDUITS OR SCHEDULE 80 PVC (AS PERMITTED BY CODE) AND WHERE REQUIRED IN LIQUID TIGHT FLEXIBLE METAL OR NONMETALLIC CONDUITS.
6. BURIED CONDUIT SHALL BE SCHEDULE 40 PVC.
7. ELECTRICAL WIRING SHALL BE COPPER WITH TYPE XHHW, THWN, OR THININSULATION.
8. RUN ELECTRICAL CONDUIT OR CABLE BETWEEN ELECTRICAL UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE PPC AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE. COORDINATE INSTALLATION WITH UTILITY COMPANY.
9. RUN TELCO CONDUIT OR CABLE BETWEEN TELEPHONE UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE TELCO CABINET AND BTS CABINET AS INDICATED ON THIS DRAWING PROVIDE FULL LENGTH PULL ROPE IN INSTALLED TELCO CONDUIT. PROVIDE GREENLEE CONDUIT MEASURING TAPE AT EACH END.
10. WHERE CONDUIT BETWEEN BTS AND PROJECT OWNER CELL SITE PPC AND BETWEEN BTS AND PROJECT OWNER CELL SITE TELCO SERVICE CABINET ARE UNDERGROUND USE PVC, SCHEDULE 40 CONDUIT. ABOVE THE GROUND PORTION OF THESE CONDUITS SHALL BE PVC CONDUIT.
11. ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.
12. PPC SUPPLIED BY PROJECT OWNER.
13. GROUNDING SHALL COMPLY WITH NEC ART. 250. ADDITIONALLY, GROUNDING, BONDING AND LIGHTNING PROTECTION SHALL BE DONE IN ACCORDANCE WITH "T-MOBILE BTS SITE GROUNDING STANDARDS".
14. GROUND COAXIAL CABLE SHIELDS MINIMUM AT BOTH ENDS USING MANUFACTURERS COAX CABLE GROUNDING KITS SUPPLIED BY PROJECT OWNER.
15. USE #6 COPPER STRANDED WIRE WITH GREEN COLOR INSULATION FOR ABOVE GRADE GROUNDING (UNLESS OTHERWISE SPECIFIED) AND #2 SOLID TINNED BARE COPPER WIRE FOR BELOW GRADE GROUNDING AS INDICATED ON THE DRAWING.
16. ALL GROUND CONNECTIONS TO BE BURNDY HYGROUND COMPRESSION TYPE CONNECTORS OR CADWELD EXOTHERMIC WELD. DO NOT ALLOW BARE COPPER WIRE TO BE IN CONTACT WITH GALVANIZED STEEL.
17. ROUTE GROUNDING CONDUCTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE, EXCEPT AS OTHERWISE INDICATED. GROUNDING LEADS SHOULD NEVER BE BENT AT RIGHT ANGLE. ALWAYS MAKE AT LEAST 12" RADIUS BENDS. #6 WIRE CAN BE BENT AT 6" RADIUS WHEN NECESSARY. BOND ANY METAL OBJECTS WITHIN 6 FEET OF PROJECT OWNER EQUIPMENT OR CABINET TO MASTER GROUND BAR OR GROUNDING RING.
18. CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO HOLE COMPRESSION TYPE COPPER LUGS. APPLY OXIDE INHIBITING COMPOUND TO ALL LOCATIONS.
19. APPLY OXIDE INHIBITING COMPOUND TO ALL COMPRESSION TYPE GROUND CONNECTIONS.
20. CONTRACTOR SHALL PROVIDE AND INSTALL OMNI DIRECTIONAL ELECTRONIC MARKER SYSTEM (EMS) BALLS OVER EACH GROUND ROD AND BONDING POINT BETWEEN EXIST. TOWER/ MONOPOLE GROUNDING RING AND EQUIPMENT GROUNDING RING.
21. CONTRACTOR SHALL TEST COMPLETED GROUND SYSTEM AND RECORD RESULTS FOR PROJECT CLOSE-OUT DOCUMENTATION. 5 OHMNS MINIMUM RESISTANCE REQUIRED.
22. CONTRACTOR SHALL CONDUCT ANTENNA, COAX, AND LNA RETURN-LOSS AND DISTANCE- TO-FAULT MEASUREMENTS (SWEEP TESTS) AND RECORD RESULTS FOR PROJECT CLOSE OUT.

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

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

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil ·Structural ·Land Surveying
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST, SUITE 101
MARLBOROUGH, MA 01752
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STATE OF CONNECTICUT
JAMES M. FITZGERALD
No. 25997
LICENSED PROFESSIONAL CIVIL ENGINEER

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
2	06/28/21	CONSTRUCTION REVISED	CMC
1	06/07/21	ISSUED FOR CONSTRUCTION	CMC
0	06/01/21	ISSUED FOR REVIEW	JRV

SITE NUMBER:
CTHA603B

SITE ADDRESS:
39 NICHOLS ROAD
EAST HADDAM, CT 06469

SHEET TITLE
ELECTRIC & GROUNDING DETAILS

SHEET NUMBER
E-1

1815.238

EXHIBIT 7

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

Structural Analysis Report

Existing 175 ft PIROD Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT22076-A

Customer Site Name: East Haddam (Trowbridge)

Carrier Name: T-Mobile (App#: 154414, V1)

Carrier Site ID / Name: CTHA603B / East Haddam

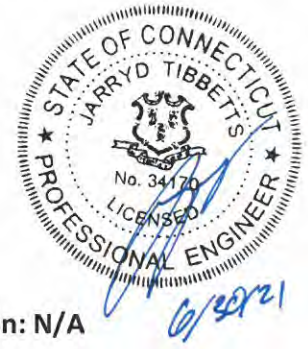
Site Location: 39 Nichols Rd

East Haddam, Connecticut

MIDDLESEX County

Latitude: 41.521000

Longitude: -72.423200



Analysis Result:

Max Structural Usage: 79.9% [Pass]

Max Foundation Usage: 48.0% [Pass]

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

Report Prepared By: Younus Alkarawi

Introduction

The purpose of this report is to summarize the analysis results on the 175 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 Inc. Drawing no. 1776649 dated 06/21/2005
Foundation Drawing	Pirod Inc. Drawing no. 177649 dated 06/21/2005
Geotechnical Report	BL Companies Project# C-3109 dated 02/13/2003
Modification Drawings	N/A
Mount Analysis	T-Mobile MA by TES # 106842, 05/25/2021

Analysis Criteria

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

Wind Speed Used in the Analysis:	Ultimate Design Wind Speed V_{ult} = 130.0 mph (3-Sec. Gust)/ Nominal Design Wind Speed V_{asd} = 101.0 mph (3-Sec. Gust)
Wind Speed with Ice:	50 mph (3-Sec. Gust) with 3/4" radial ice concurrent
Operational Wind Speed:	60 mph + 0" Radial ice
Standard/Codes:	TIA-222-G-2 / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	C
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft
Seismic Parameters:	S_S = 0.174, S_1 = 0.061

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	175.0	6	LGP21901 Diplexer	Low Profile Platform SitePro 1 PN HRK14	(12) 1 1/4" (2) 3/8" DC Power (1) 3/8"Fiber	AT&T
2	167.0	3	Powerwave 7770			
3		2	KMW AM-X-CD-17-65-00T-RET			
4		1	Commscope SBNH-1D4545A			
5		1	Quintel QS46512-2			
6		2	Cci TPA-65R-LCUUUU-H8			
7		6	Powerwave LGP21401 TMA			
8		3	Ericsson RRUS-11			
9		3	Ericsson RRUS 4415 B25			
10		3	Kaelus DBC0061F1V51-2			
11		1	Raycap DC6-48-60-18-8F			
-	150.0	4	Ericsson Air 32 KRD901146-1_B66A_B2A Panel	Four-sided platform w/HRK Sitepro F4P-10W w/HRK10	(4) 1 5/8" Fiber (3) 1/2" Coax	T-Mobile
-		4	RFS APXVAA24_43-U-A20 Panel			
-		4	RFS APX16DWV-16DWVS-E-A20 Panel			
-		2	Radio Waves SP2-5.2 Dish			
-		8	Microdata Telecom MI-554nn Diplexer			
-		4	Ericsson RRU 4478 RRU			
-		4	Ericsson S11B12 RRU			
-		4	Ericsson S11B4 RRU			
-		1	Panasonic VIC100 GPS Reciever			

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
12	150.0	4	Ericsson AIR32 KRD901146-1_B66A_B2A (Octo)- Panel	Four-sided platform w/HRK Sitepro F4P-10W w/HRK10	(3) 1/2" (4) 1 5/8" Fiber	T-Mobile
13		4	RFS APXVAALL24-43-U-NA20- Panel			
14		4	RFS APX16DWV-16DWVS-E-A20- Panel			
15		8	Microdata MI-554nn-Diplexers]			
16		4	Ericsson S11B4 RRU			
17		4	Ericsson 4449 B71 + B85 RRU			
18		4	Ericsson RRU 4478			
19		2	Radio Waves SP2-5.2- Dish:			

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:	**79.6%**	**71.9%**	**79.9%**
Pass/Fail	**Pass**	**Pass**	**Pass**

Foundations

	Moment (Kip-Ft)	Shear (Kips)
Original Design Reactions	7478.9	54.1
Analysis Reactions	5608.9	49.3
Factored Reactions*	10096.5	73.0
% of Design Reactions	55.6%	67.5%

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

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

Operational Condition (Rigidity):

The maximum twist and sway of the microwave dishes under the operational wind speed as specified in the Analysis Criteria are listed in the table below:

Elevation (ft)	Antenna / Dish	Carrier	Twist (deg)	Sway (deg)
150.0	Radio Waves SP2-5.2- Dish	T-Mobile	0.000	1.087

It is recommended that the carriers review the twist and sway values of the microwave dishes.

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.

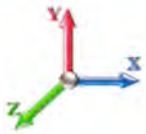
Usage Diagram - Max Ratio 79.61% at 0.0ft

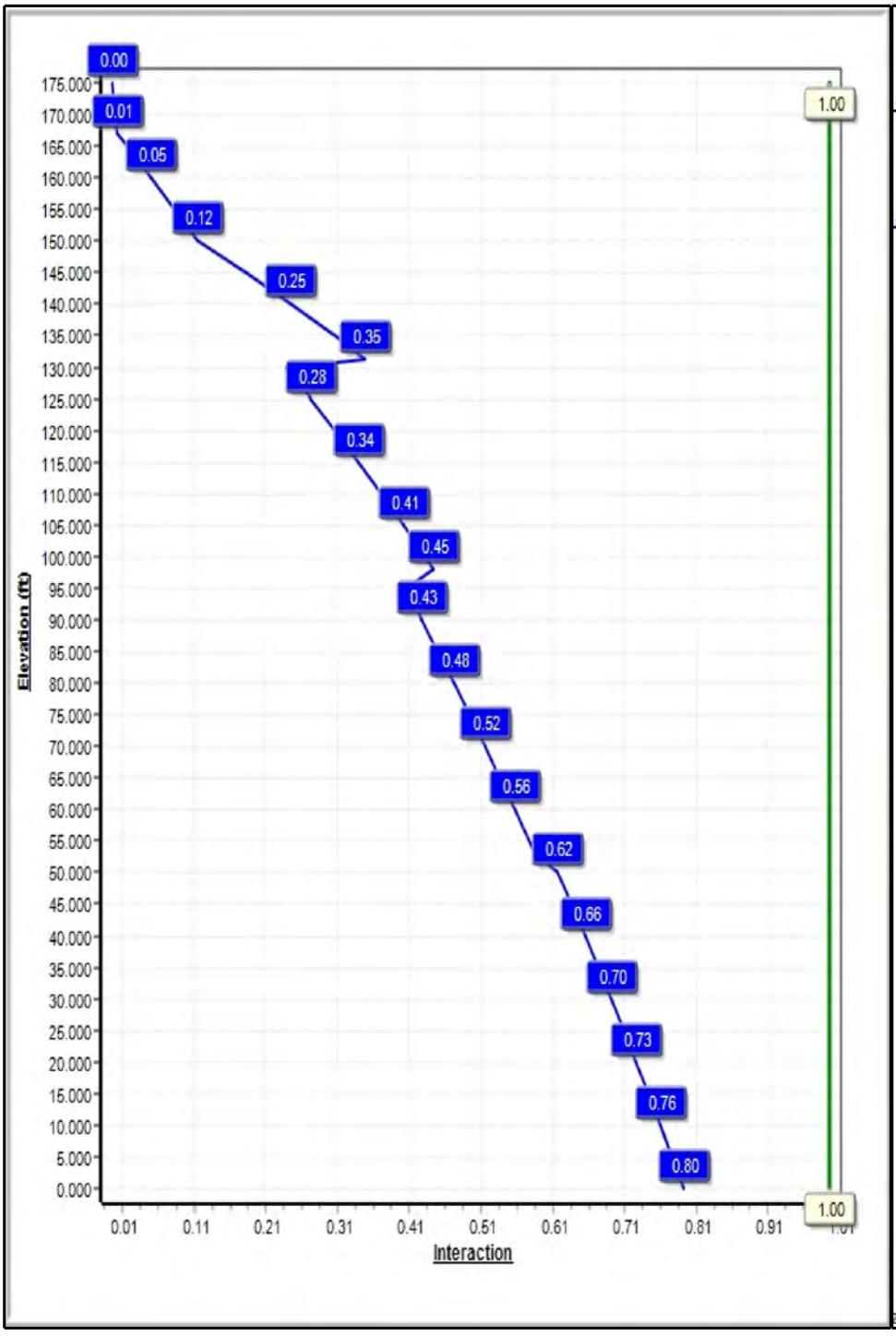
Structure:	CT22076-A-SBA	**Code:**	EIA/TIA-222-G	6/1/2021
Site Name:	East Haddam (Trowbridge)	**Exposure:**	C	
Height:	175.00 (ft)	**Gh:**	1.1	
Base Elev:	0.000 (ft)			Page: 1

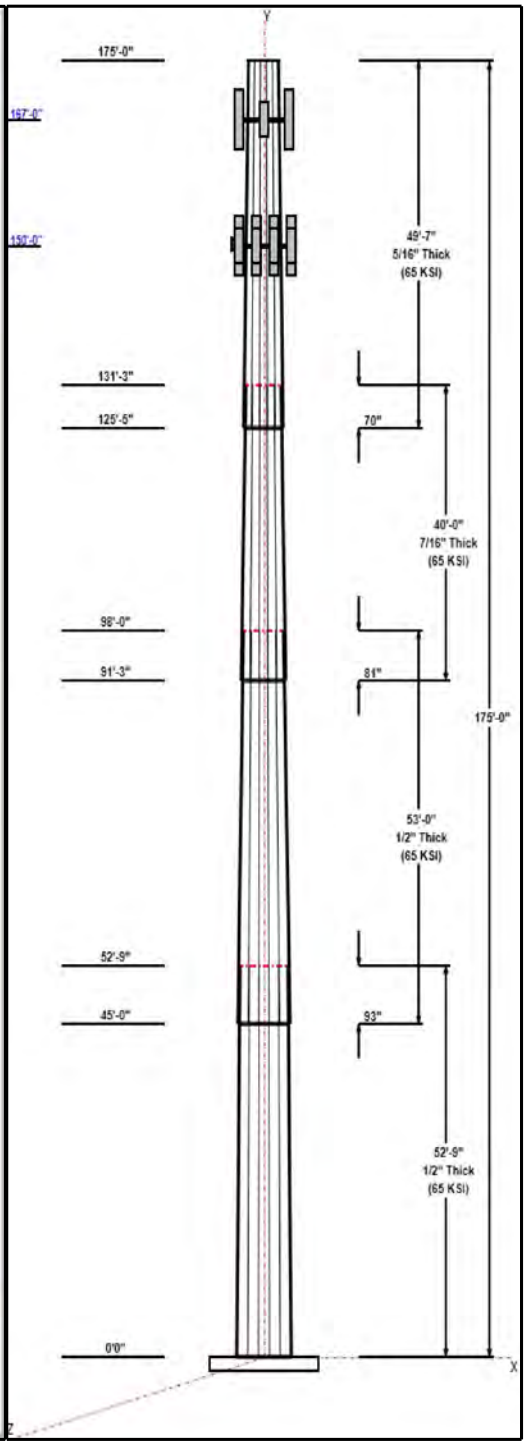
Tower Engineering Solutions

Dead Load Factor:	1.20	**Iterations:**	24
Wind Load Factor:	1.60		

Load Case : 1.2D + 1.6W 101 mph Wind







Structure: CT22076-A-SBA

Type: Tapered
Site Name: East Haddam (Trowbridge)
Height: 175.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 12 Sided
Taper: 0.18286

6/1/2021

Tower Engineering Solutions

Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	52.75	48.35	58.00	0.500		0.18286	65
2	53.00	41.08	50.77	0.500	Slip	0.18286	65
3	40.00	35.88	43.19	0.438	Slip	0.18286	65
4	49.58	28.50	37.57	0.313	Slip	0.18286	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
175.00	175.00	1	Lightning rod	
167.00	167.00	3	7770.00A	AT&T
167.00	167.00	1	SBNH-1D4545A	AT&T
167.00	167.00	1	QS46512-2	AT&T
167.00	167.00	2	TPA-65R-LCUUUU-H8	AT&T
167.00	175.00	6	LGP21901 Diplexer	AT&T
167.00	167.00	3	RRUS 4415 B25	AT&T
167.00	167.00	3	DBC0061F1V51-2	AT&T
167.00	167.00	1	HRK14	AT&T
167.00	167.00	1	PRK-1245 (kicker kit)	AT&T
167.00	167.00	2	AM-X-CD-17-65-00T-RET	AT&T
167.00	167.00	6	LGP21401	AT&T
167.00	167.00	1	DC6-48-60-18-8F	AT&T
167.00	167.00	3	RRUS-11	AT&T
167.00	167.00	1	Platform	AT&T
150.00	150.00	4	Ericsson 4449 B71 + B85	T-Mobile
150.00	150.00	4	KRD 9011461-B66A-B2A	T-Mobile
150.00	150.00	4	APXVAA24_43-U-A20	T-Mobile
150.00	150.00	4	APX16DWV-16DWVS-C	T-Mobile
150.00	150.00	2	SP2-5.2	T-Mobile
150.00	150.00	8	MI-554nn	T-Mobile
150.00	150.00	4	RRUS 4478	T-Mobile
150.00	150.00	4	S11B4	T-Mobile
150.00	150.00	1	F4P-10W	T-Mobile
150.00	150.00	1	F4P-HRK10	T-Mobile

Linear Appurtenances

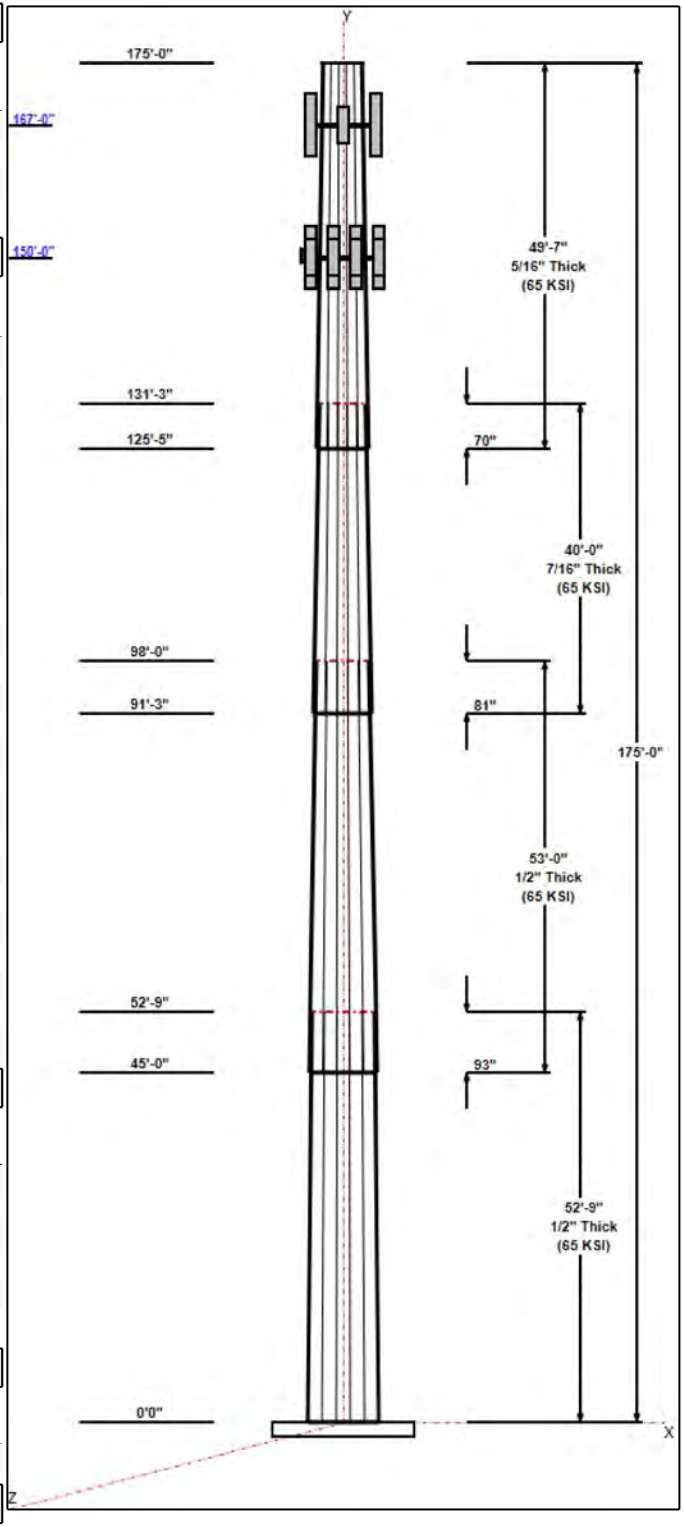
Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	170.00	Inside	1 1/4" Coax	AT&T
0.00	170.00	Inside	3/8" Fiber	AT&T
0.00	170.00	Inside	3/8" Fiber	AT&T
0.00	150.00	Inside	1 5/8" Fiber	T-Mobile
0.00	150.00	Inside	1/2" Coax	T-Mobile
0.00	150.00	Inside	1/2" Coax	T-Mobile

Anchor Bolts

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

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
3.2500	81.8	50.0	Polygon



Reactions

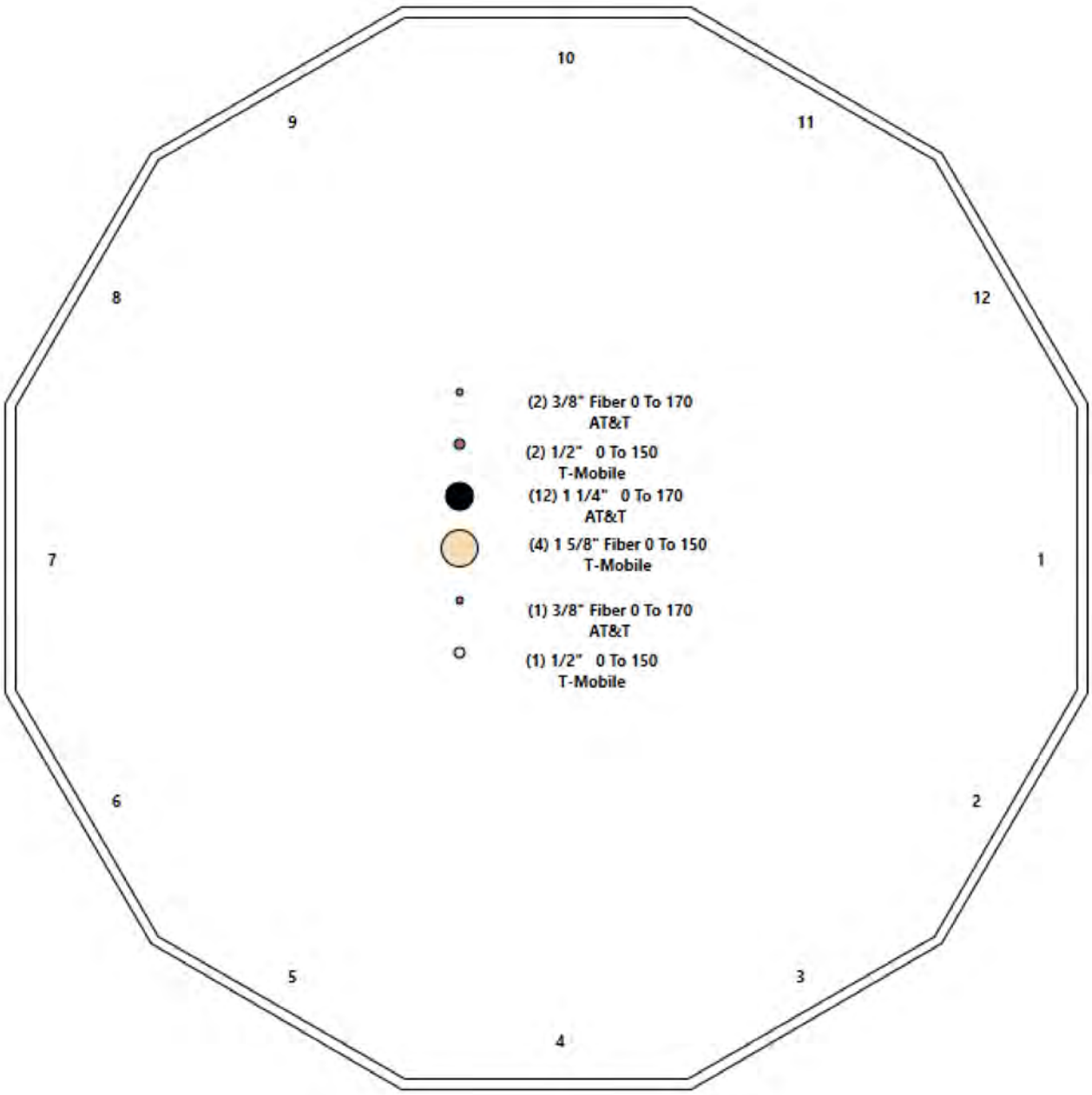
Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 101 mph Wind	5608.9	49.3	62.1
0.9D + 1.6W 101 mph Wind	5554.4	49.3	46.5
1.2D + 1.0Di + 1.0Wi 50 mph Wind	1276.9	10.5	88.6
1.2D + 1.0E	250.8	2.1	62.2
0.9D + 1.0E	248.2	2.1	46.6
1.0D + 1.0W 60 mph Wind	1230.5	10.9	51.8

Structure: CT22076-A-SBA - Coax Line Placement

Type: Monopole
Site Name: East Haddam (Trowbridge)
Height: 175.00 (ft)

6/1/2021

Tower Engineering Solutions



Shaft Properties

Structure:	CT22076-A-SBA	**Code:**	EIA/TIA-222-G	6/1/2021	
Site Name:	East Haddam (Trowbridge)	**Exposure:**	C		
Height:	175.00 (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	12	52.750	0.5000	65		0.00	15,223
2	12	53.000	0.5000	65	Slip	93.00	13,190
3	12	40.000	0.4375	65	Slip	81.00	7,496
4	12	49.583	0.3125	65	Slip	70.00	5,555
					Total Shaft Weight:		**41,464**

	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	58.00	0.00	92.58	39067.48	28.94	116.00	48.35	52.75	77.05	22520.3	23.77	96.71	0.182857
2	50.77	45.00	80.94	26108.11	25.06	101.54	41.08	98.00	65.33	13732.4	19.87	82.16	0.182857
3	43.19	91.25	60.23	14050.20	24.31	98.72	35.88	131.25	49.92	8002.19	19.83	82.00	0.182857
4	37.57	125.4	37.49	6640.74	30.07	120.21	28.50	175.00	28.36	2876.48	22.29	91.20	0.182857

Load Summary

Structure:	CT22076-A-SBA	**Code:**	EIA/TIA-222-G	6/1/2021	
Site Name:	East Haddam (Trowbridge)	**Exposure:**	C		
Height:	175.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 6	

Discrete Appurtenances

				No Ice			Ice				
No.	Elev (ft)	Description	Qty	Weight (lb)	CaAa (sf)	CaAa Factor	Weight (lb)	CaAa (sf)	CaAa Factor	Hor. Ecc. (ft)	Vert Ecc (ft)
1	175.00	Lightning rod	1	12.00	1.25	1.00	37.52	5.681	1.00	0.00	0.00
2	167.00	7770.00A	3	27.00	5.54	0.72	142.53	7.698	0.72	0.00	0.00
3	167.00	SBNH-1D4545A	1	36.40	9.10	1.00	220.48	11.277	1.00	0.00	0.00
4	167.00	QS46512-2	1	75.00	5.55	1.00	237.20	6.580	1.00	0.00	0.00
5	167.00	TPA-65R-LCUUUU-H8	2	75.00	13.30	0.83	391.04	14.965	0.83	0.00	0.00
6	167.00	LGP21901 Diplexer	6	5.50	0.23	0.50	13.27	0.602	0.50	0.00	8.00
7	167.00	RRUS 4415 B25	3	46.00	1.64	0.67	87.55	2.161	0.67	0.00	0.00
8	167.00	DBC0061F1V51-2	3	25.40	0.43	0.50	40.10	0.718	0.50	0.00	0.00
9	167.00	HRK14	1	302.36	8.13	1.00	665.06	16.161	1.00	0.00	0.00
10	167.00	PRK-1245 (kicker kit)	1	464.91	9.50	1.00	792.96	19.555	1.00	0.00	0.00
11	167.00	AM-X-CD-17-65-00T-RET (48")	2	30.80	5.00	0.79	144.01	6.895	0.81	0.00	0.00
12	167.00	LGP21401	6	14.10	1.29	0.66	39.37	2.135	0.72	0.00	0.00
13	167.00	DC6-48-60-18-8F	1	31.80	0.92	1.00	94.29	1.363	1.00	0.00	0.00
14	167.00	RRUS-11	3	50.00	2.57	0.67	115.62	3.223	0.67	0.00	0.00
15	167.00	Platform	1	1600.00	22.00	1.00	3722.51	41.405	1.00	0.00	0.00
16	150.00	Ericsson 4449 B71 + B85 RRU	4	73.20	1.97	0.67	130.94	2.539	0.67	0.00	0.00
17	150.00	KRD 9011461-B66A-B2A	4	132.20	6.51	0.86	315.44	7.632	0.88	0.00	0.00
18	150.00	APXVAA24_43-U-A20	4	122.80	20.24	0.72	550.50	22.140	0.73	0.00	0.00
19	150.00	APX16DWV-16DWVS-C	4	40.70	6.46	0.62	155.71	8.629	0.62	0.00	0.00
20	150.00	SP2-5.2	2	22.00	3.96	1.00	105.29	5.135	1.00	0.00	0.00
21	150.00	MI-554nn	8	12.10	0.63	0.50	43.13	0.993	0.67	0.00	0.00
22	150.00	RRUS 4478	4	60.00	1.65	0.67	101.89	2.168	0.67	0.00	0.00
23	150.00	S11B4	4	51.00	2.83	0.67	120.60	3.502	0.67	0.00	0.00
24	150.00	F4P-10W	1	2396.00	58.98	1.00	4737.66	28.974	1.00	0.00	0.00
25	150.00	F4P-HRK10	1	478.27	9.00	1.00	945.69	19.681	1.00	0.00	0.00
		Totals:	**71**	**8,231.54**			**20,052.68**				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	170.00	(12) 1 1/4" Coax	0.00	Inside
0.00	170.00	(1) 3/8" Fiber	0.00	Inside
0.00	170.00	(2) 3/8" Fiber	0.00	Inside
0.00	150.00	(4) 1 5/8" Fiber	0.00	Inside
0.00	150.00	(2) 1/2" Coax	0.00	Inside
0.00	150.00	(1) 1/2" Coax	0.00	Inside

Shaft Section Properties

Structure:	CT22076-A-SBA	**Code:**	EIA/TIA-222-G	6/1/2021	
Site Name:	East Haddam (Trowbridge)	**Exposure:**	C		
Height:	175.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 7	

Increment Length: **5 (ft)**

Elev (ft)	Description	Thick (in)	Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fpy (ksi)	S (in^3)	Weight (lb)
0.00		0.5000	58.000	92.575	39067.5	28.94	116.00	73.2	1301.	0.0
5.00		0.5000	57.086	91.103	37233.4	28.45	114.17	73.7	1260.	1562.5
10.00		0.5000	56.171	89.631	35457.6	27.96	112.34	74.2	1219.	1537.5
15.00		0.5000	55.257	88.159	33739.2	27.47	110.51	74.8	1179.	1512.4
20.00		0.5000	54.343	86.687	32077.2	26.98	108.69	75.3	1140.	1487.4
25.00		0.5000	53.429	85.215	30470.7	26.49	106.86	75.8	1101.	1462.4
30.00		0.5000	52.514	83.743	28918.8	26.00	105.03	76.4	1063.	1437.3
35.00		0.5000	51.600	82.271	27420.4	25.51	103.20	76.9	1026.	1412.3
40.00		0.5000	50.686	80.799	25974.8	25.02	101.37	77.4	990.0	1387.2
45.00	Bot - Section 2	0.5000	49.771	79.327	24580.9	24.53	99.54	78.0	954.1	1362.2
50.00		0.5000	48.857	77.855	23237.7	24.04	97.71	78.5	918.8	2701.7
52.75	Top - Section 1	0.5000	49.354	78.655	23961.8	24.31	98.71	0.0	0.0	1464.6
55.00		0.5000	48.943	77.993	23361.5	24.08	97.89	78.4	922.1	599.7
60.00		0.5000	48.029	76.521	22063.6	23.59	96.06	79.0	887.5	1314.4
65.00		0.5000	47.114	75.049	20814.6	23.10	94.23	79.5	853.5	1289.4
70.00		0.5000	46.200	73.577	19613.7	22.61	92.40	80.0	820.1	1264.4
75.00		0.5000	45.286	72.105	18459.9	22.12	90.57	80.6	787.5	1239.3
80.00		0.5000	44.371	70.633	17352.3	21.63	88.74	81.1	755.5	1214.3
85.00		0.5000	43.457	69.161	16289.9	21.15	86.91	81.7	724.2	1189.2
90.00		0.5000	42.543	67.689	15271.7	20.66	85.09	81.9	693.5	1164.2
91.25	Bot - Section 3	0.5000	42.314	67.321	15024.0	20.53	84.63	81.9	685.9	287.1
95.00		0.5000	41.629	66.217	14296.9	20.17	83.26	81.9	663.5	1614.4
98.00	Top - Section 2	0.4375	41.955	58.488	12868.1	23.55	95.90	0.0	0.0	1272.5
100.00		0.4375	41.589	57.973	12531.0	23.33	95.06	79.3	582.1	396.3
105.00		0.4375	40.675	56.685	11714.2	22.77	92.97	79.9	556.4	975.4
110.00		0.4375	39.761	55.397	10933.7	22.21	90.88	80.5	531.2	953.5
115.00		0.4375	38.846	54.109	10188.6	21.65	88.79	81.1	506.7	931.6
120.00		0.4375	37.932	52.821	9478.2	21.09	86.70	81.7	482.7	909.6
125.00		0.4375	37.018	51.533	8801.6	20.53	84.61	81.9	459.3	887.7
125.42	Bot - Section 4	0.4375	36.942	51.425	8746.8	20.48	84.44	81.9	457.4	73.0
130.00		0.4375	36.104	50.245	8158.0	19.97	82.52	81.9	436.5	1370.9
131.25	Top - Section 3	0.3125	36.500	36.414	6086.5	29.15	116.80	0.0	0.0	368.4
135.00		0.3125	35.814	35.724	5747.0	28.56	114.61	73.6	310.0	460.3
140.00		0.3125	34.900	34.804	5314.3	27.78	111.68	74.4	294.2	600.0
145.00		0.3125	33.986	33.884	4903.9	27.00	108.75	75.3	278.8	584.3
150.00		0.3125	33.071	32.964	4515.2	26.21	105.83	76.1	263.8	568.7
155.00		0.3125	32.157	32.044	4147.6	25.43	102.90	77.0	249.2	553.0
160.00		0.3125	31.243	31.124	3800.6	24.65	99.98	77.8	235.0	537.4
165.00		0.3125	30.329	30.204	3473.4	23.86	97.05	78.7	221.2	521.7
167.00		0.3125	29.963	29.836	3348.0	23.55	95.88	79.0	215.9	204.3
170.00		0.3125	29.414	29.284	3165.6	23.08	94.13	79.5	207.9	301.8
175.00		0.3125	28.500	28.364	2876.5	22.29	91.20	80.4	195.0	490.4
										41464.4

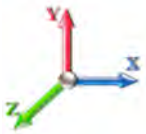
Wind Loading - Shaft

Structure:	CT22076-A-SBA	**Code:**	EIA/TIA-222-G	6/1/2021	
Site Name:	East Haddam (Trowbridge)	**Exposure:**	C		
Height:	175.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 8	

Load Case: 1.2D + 1.6W 101 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 24

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	21.088	23.20	465.94	1.000	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	21.088	23.20	458.60	1.000	0.000	5.00	24.822	24.82	921.2	0.0	1875.0
10.00		1.00	0.85	21.088	23.20	451.25	1.000	0.000	5.00	24.428	24.43	906.6	0.0	1845.0
15.00		1.00	0.85	21.088	23.20	443.91	1.000	0.000	5.00	24.033	24.03	892.0	0.0	1814.9
20.00		1.00	0.90	22.375	24.61	449.69	1.000	0.000	5.00	23.639	23.64	930.9	0.0	1784.9
25.00		1.00	0.95	23.451	25.80	452.63	1.000	0.000	5.00	23.244	23.24	959.4	0.0	1754.8
30.00		1.00	0.98	24.369	26.81	453.51	1.000	0.000	5.00	22.850	22.85	980.0	0.0	1724.8
35.00		1.00	1.01	25.172	27.69	452.90	1.000	0.000	5.00	22.456	22.46	994.9	0.0	1694.7
40.00		1.00	1.04	25.890	28.48	451.17	1.000	0.000	5.00	22.061	22.06	1005.3	0.0	1664.7
45.00	Bot - Section 2	1.00	1.07	26.540	29.19	448.56	1.000	0.000	5.00	21.667	21.67	1012.1	0.0	1634.6
50.00		1.00	1.09	27.135	29.85	445.23	1.000	0.000	5.00	21.704	21.70	1036.5	0.0	3242.0
52.75	Top - Section 1	1.00	1.11	27.443	30.19	443.14	1.000	0.000	2.75	11.769	11.77	568.4	0.0	1757.5
55.00		1.00	1.12	27.685	30.45	450.51	1.000	0.000	2.25	9.540	9.54	464.9	0.0	719.6
60.00		1.00	1.14	28.197	31.02	446.16	1.000	0.000	5.00	20.915	20.92	1037.9	0.0	1577.3
65.00		1.00	1.16	28.676	31.54	441.37	1.000	0.000	5.00	20.521	20.52	1035.7	0.0	1547.3
70.00		1.00	1.17	29.127	32.04	436.20	1.000	0.000	5.00	20.126	20.13	1031.7	0.0	1517.2
75.00		1.00	1.19	29.553	32.51	430.68	1.000	0.000	5.00	19.732	19.73	1026.3	0.0	1487.2
80.00		1.00	1.21	29.958	32.95	424.86	1.000	0.000	5.00	19.337	19.34	1019.6	0.0	1457.1
85.00		1.00	1.22	30.342	33.38	418.77	1.000	0.000	5.00	18.943	18.94	1011.6	0.0	1427.1
90.00		1.00	1.24	30.710	33.78	412.44	1.000	0.000	5.00	18.549	18.55	1002.5	0.0	1397.0
91.25	Bot - Section 3	1.00	1.24	30.799	33.88	410.82	1.000	0.000	1.25	4.576	4.58	248.0	0.0	344.6
95.00		1.00	1.25	31.061	34.17	405.88	1.000	0.000	3.75	13.862	13.86	757.8	0.0	1937.2
98.00	Top - Section 2	1.00	1.26	31.265	34.39	401.84	1.000	0.000	3.00	10.930	10.93	601.4	0.0	1527.0
100.00		1.00	1.27	31.399	34.54	407.69	1.000	0.000	2.00	7.208	7.21	398.3	0.0	475.5
105.00		1.00	1.28	31.723	34.89	400.78	1.000	0.000	5.00	17.743	17.74	990.6	0.0	1170.5
110.00		1.00	1.29	32.035	35.24	393.69	1.000	0.000	5.00	17.349	17.35	978.1	0.0	1144.2
115.00		1.00	1.30	32.336	35.57	386.45	1.000	0.000	5.00	16.954	16.95	964.9	0.0	1117.9
120.00		1.00	1.32	32.627	35.89	379.04	1.000	0.000	5.00	16.560	16.56	950.9	0.0	1091.6
125.00		1.00	1.33	32.909	36.20	371.50	1.000	0.000	5.00	16.165	16.17	936.3	0.0	1065.3
125.42	Bot - Section 4	1.00	1.33	32.932	36.22	370.87	1.000	0.000	0.42	1.329	1.33	77.0	0.0	87.6
130.00		1.00	1.34	33.182	36.50	363.82	1.000	0.000	4.58	14.689	14.69	857.8	0.0	1645.1
131.25	Top - Section 3	1.00	1.34	33.249	36.57	361.89	1.000	0.000	1.25	3.949	3.95	231.1	0.0	442.1
135.00		1.00	1.35	33.446	36.79	362.35	1.000	0.000	3.75	11.698	11.70	688.6	0.0	552.3
140.00		1.00	1.36	33.703	37.07	354.45	1.000	0.000	5.00	15.252	15.25	904.7	0.0	720.0
145.00		1.00	1.37	33.953	37.35	346.44	1.000	0.000	5.00	14.857	14.86	887.8	0.0	701.2
150.00	Appurtenance(s)	1.00	1.38	34.196	37.62	338.33	1.000	0.000	5.00	14.463	14.46	870.5	0.0	682.4
155.00		1.00	1.39	34.433	37.88	330.11	1.000	0.000	5.00	14.069	14.07	852.6	0.0	663.6
160.00		1.00	1.40	34.664	38.13	321.80	1.000	0.000	5.00	13.674	13.67	834.3	0.0	644.8
165.00		1.00	1.41	34.890	38.38	313.40	1.000	0.000	5.00	13.280	13.28	815.5	0.0	626.0
167.00	Appurtenance(s)	1.00	1.41	34.978	38.48	310.01	1.000	0.000	2.00	5.202	5.20	320.2	0.0	245.2
170.00		1.00	1.42	35.110	38.62	304.90	1.000	0.000	3.00	7.684	7.68	474.8	0.0	362.1
175.00	Appurtenance(s)	1.00	1.42	35.324	38.86	296.33	1.000	0.000	5.00	12.491	12.49	776.6	0.0	588.5
								Totals:	**175.00**			**33,255.4**		**49,757.2**

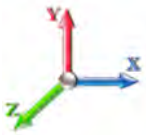
Discrete Appurtenance Forces

Structure:	CT22076-A-SBA	**Code:**	EIA/TIA-222-G	6/1/2021	
Site Name:	East Haddam (Trowbridge)	**Exposure:**	C		
Height:	175.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 9	

Load Case: 1.2D + 1.6W 101 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 24

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	175.00	Lightning rod	1	35.324	38.857	1.00	1.00	1.25	14.40	0.000	0.000	77.71	0.00	0.00
2	167.00	QS46512-2	1	34.978	38.476	1.00	1.00	5.55	90.00	0.000	0.000	341.67	0.00	0.00
3	167.00	LGP21401	6	34.978	38.476	0.49	0.75	3.83	101.52	0.000	0.000	235.86	0.00	0.00
4	167.00	DC6-48-60-18-8F	1	34.978	38.476	1.00	1.00	0.92	38.16	0.000	0.000	56.64	0.00	0.00
5	167.00	RRUS-11	3	34.978	38.476	0.50	0.75	3.87	180.00	0.000	0.000	238.51	0.00	0.00
6	167.00	Platform	1	34.978	38.476	1.00	1.00	22.00	1920.00	0.000	0.000	1354.35	0.00	0.00
7	167.00	LGP21901 Diplexer	6	35.324	38.857	0.38	0.75	0.52	39.60	0.000	8.000	32.17	0.00	257.39
8	167.00	TPA-65R-LCUUUU-H8	2	34.978	38.476	0.62	0.75	16.56	180.00	0.000	0.000	1019.37	0.00	0.00
9	167.00	RRUS 4415 B25	3	34.978	38.476	0.50	0.75	2.47	165.60	0.000	0.000	152.20	0.00	0.00
10	167.00	DBC0061F1V51-2	3	34.978	38.476	0.38	0.75	0.48	91.44	0.000	0.000	29.78	0.00	0.00
11	167.00	HRK14	1	34.978	38.476	1.00	1.00	8.13	362.83	0.000	0.000	500.50	0.00	0.00
12	167.00	PRK-1245 (kicker kit)	1	34.978	38.476	1.00	1.00	9.50	557.89	0.000	0.000	584.83	0.00	0.00
13	167.00	AM-X-CD-17-65-00T-RET	2	34.978	38.476	0.59	0.75	5.93	73.92	0.000	0.000	364.75	0.00	0.00
14	167.00	7770.00A	3	34.978	38.476	0.54	0.75	8.97	97.20	0.000	0.000	552.50	0.00	0.00
15	167.00	SBNH-1D4545A	1	34.978	38.476	1.00	1.00	9.10	43.68	0.000	0.000	560.21	0.00	0.00
16	150.00	SP2-5.2	2	34.196	37.616	1.00	1.00	7.92	52.80	0.000	0.000	476.67	0.00	0.00
17	150.00	Ericsson 4449 B71 + B85	4	34.196	37.616	0.50	0.75	3.96	351.36	0.000	0.000	238.32	0.00	0.00
18	150.00	KRD 9011461-B66A-B2A	4	34.196	37.616	0.65	0.75	16.80	634.56	0.000	0.000	1010.87	0.00	0.00
19	150.00	APXVAA24_43-U-A20	4	34.196	37.616	0.54	0.75	43.72	589.44	0.000	0.000	2631.23	0.00	0.00
20	150.00	APX16DWV-16DWVS-C	4	34.196	37.616	0.46	0.75	12.02	195.36	0.000	0.000	723.17	0.00	0.00
21	150.00	RRUS 4478	4	34.196	37.616	0.50	0.75	3.32	288.00	0.000	0.000	199.61	0.00	0.00
22	150.00	MI-554nn	8	34.196	37.616	0.38	0.75	1.89	116.16	0.000	0.000	113.75	0.00	0.00
23	150.00	S11B4	4	34.196	37.616	0.50	0.75	5.69	244.80	0.000	0.000	342.35	0.00	0.00
24	150.00	F4P-10W	1	34.196	37.616	1.00	1.00	58.98	2875.20	0.000	0.000	3549.76	0.00	0.00
25	150.00	F4P-HRK10	1	34.196	37.616	1.00	1.00	9.00	573.92	0.000	0.000	541.67	0.00	0.00
							Totals:		**9,877.85**			**15,928.44**		

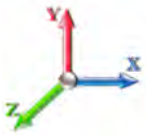
Total Applied Force Summary

Structure:	CT22076-A-SBA		**Code:**	EIA/TIA-222-G	6/1/2021
Site Name:	East Haddam (Trowbridge)		**Exposure:**	C	
Height:	175.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 10

Load Case: 1.2D + 1.6W 101 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 24

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		921.24	1952.93	0.00	0.00
10.00		906.61	1922.87	0.00	0.00
15.00		891.97	1892.82	0.00	0.00
20.00		930.88	1862.77	0.00	0.00
25.00		959.38	1832.71	0.00	0.00
30.00		980.01	1802.66	0.00	0.00
35.00		994.86	1772.61	0.00	0.00
40.00		1005.25	1742.55	0.00	0.00
45.00		1012.07	1712.50	0.00	0.00
50.00		1036.53	3319.88	0.00	0.00
52.75		568.44	1800.32	0.00	0.00
55.00		464.87	754.65	0.00	0.00
60.00		1037.95	1655.21	0.00	0.00
65.00		1035.68	1625.16	0.00	0.00
70.00		1031.75	1595.10	0.00	0.00
75.00		1026.33	1565.05	0.00	0.00
80.00		1019.58	1535.00	0.00	0.00
85.00		1011.61	1504.94	0.00	0.00
90.00		1002.54	1474.89	0.00	0.00
91.25		248.02	364.03	0.00	0.00
95.00		757.80	1995.63	0.00	0.00
98.00		601.43	1573.69	0.00	0.00
100.00		398.30	506.70	0.00	0.00
105.00		990.62	1248.34	0.00	0.00
110.00		978.14	1222.04	0.00	0.00
115.00		964.89	1195.75	0.00	0.00
120.00		950.93	1169.45	0.00	0.00
125.00		936.29	1143.15	0.00	0.00
125.42		77.05	94.08	0.00	0.00
130.00		857.82	1716.47	0.00	0.00
131.25		231.06	461.55	0.00	0.00
135.00		688.59	610.71	0.00	0.00
140.00		904.71	797.85	0.00	0.00
145.00		887.85	779.06	0.00	0.00
150.00	(36) attachments	10697.86	6681.88	0.00	0.00
155.00		852.60	712.22	0.00	0.00
160.00		834.25	693.43	0.00	0.00
165.00		815.46	674.65	0.00	0.00
167.00	(34) attachments	6343.55	4206.44	0.00	257.39
170.00		474.81	391.27	0.00	0.00
175.00	(1) attachments	854.30	602.88	0.00	0.00
	Totals:	**49,183.87**	**62,165.88**	**0.00**	**257.39**

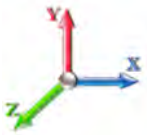
Calculated Forces

Structure:	CT22076-A-SBA	**Code:**	EIA/TIA-222-G	6/1/2021	
Site Name:	East Haddam (Trowbridge)	**Exposure:**	C		
Height:	175.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 11	

Load Case: 1.2D + 1.6W 101 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 24

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-62.08	-49.29	0.00	-5608.9	0.00	5608.95	6094.92	3047.46	14456.0	7139.28	0.00	0.000	0.000	0.796
5.00	-59.96	-48.58	0.00	-5362.4	0.00	5362.48	6041.82	3020.91	14100.2	6963.58	0.11	-0.200	0.000	0.780
10.00	-57.87	-47.87	0.00	-5119.5	0.00	5119.59	5987.31	2993.65	13745.2	6788.27	0.42	-0.400	0.000	0.764
15.00	-55.82	-47.15	0.00	-4880.2	0.00	4880.26	5931.38	2965.69	13391.2	6613.44	0.95	-0.601	0.000	0.748
20.00	-53.81	-46.39	0.00	-4644.5	0.00	4644.50	5874.03	2937.02	13038.3	6439.15	1.69	-0.801	0.000	0.731
25.00	-51.83	-45.58	0.00	-4412.5	0.00	4412.57	5815.27	2907.64	12686.7	6265.50	2.64	-1.002	0.000	0.713
30.00	-49.89	-44.74	0.00	-4184.6	0.00	4184.66	5755.10	2877.55	12336.5	6092.55	3.79	-1.203	0.000	0.696
35.00	-47.99	-43.88	0.00	-3960.9	0.00	3960.95	5693.50	2846.75	11987.9	5920.39	5.16	-1.403	0.000	0.678
40.00	-46.12	-42.99	0.00	-3741.5	0.00	3741.58	5630.49	2815.25	11641.0	5749.10	6.74	-1.603	0.000	0.659
45.00	-44.30	-42.08	0.00	-3526.6	0.00	3526.66	5566.07	2783.04	11296.1	5578.76	8.52	-1.802	0.000	0.640
50.00	-40.90	-41.04	0.00	-3316.2	0.00	3316.28	5500.23	2750.11	10953.3	5409.44	10.52	-2.000	0.000	0.621
52.75	-39.06	-40.47	0.00	-3203.4	0.00	3203.43	5536.21	2768.10	11139.4	5501.37	11.70	-2.110	0.000	0.590
55.00	-38.22	-40.07	0.00	-3112.3	0.00	3112.36	5506.46	2753.23	10985.3	5425.27	12.72	-2.200	0.000	0.581
60.00	-36.49	-39.09	0.00	-2912.0	0.00	2912.00	5439.34	2719.67	10644.5	5256.96	15.12	-2.383	0.000	0.561
65.00	-34.79	-38.09	0.00	-2716.5	0.00	2716.57	5370.80	2685.40	10306.1	5089.82	17.71	-2.564	0.000	0.540
70.00	-33.13	-37.09	0.00	-2526.1	0.00	2526.11	5300.84	2650.42	9970.29	4923.95	20.49	-2.744	0.000	0.519
75.00	-31.50	-36.08	0.00	-2340.6	0.00	2340.67	5229.47	2614.74	9637.14	4759.42	23.46	-2.920	0.000	0.498
80.00	-29.92	-35.07	0.00	-2160.2	0.00	2160.25	5156.68	2578.34	9306.86	4596.31	26.61	-3.093	0.000	0.476
85.00	-28.37	-34.06	0.00	-1984.8	0.00	1984.88	5082.48	2541.24	8979.62	4434.70	29.94	-3.263	0.000	0.453
90.00	-26.90	-33.03	0.00	-1814.5	0.00	1814.56	4989.36	2494.68	8625.31	4259.72	33.45	-3.429	0.000	0.432
91.25	-26.51	-32.79	0.00	-1773.2	0.00	1773.28	4962.23	2481.12	8531.23	4213.26	34.35	-3.471	0.000	0.426
95.00	-24.50	-31.96	0.00	-1650.3	0.00	1650.30	4880.86	2440.43	8252.09	4075.40	37.13	-3.593	0.000	0.410
98.00	-22.92	-31.29	0.00	-1554.4	0.00	1554.42	4159.95	2079.97	7111.13	3511.92	39.41	-3.688	0.000	0.448
100.00	-22.38	-30.91	0.00	-1491.8	0.00	1491.83	4136.05	2068.02	7007.35	3460.67	40.97	-3.751	0.000	0.437
105.00	-21.12	-29.89	0.00	-1337.3	0.00	1337.30	4075.31	2037.66	6749.44	3333.30	44.98	-3.912	0.000	0.407
110.00	-19.90	-28.88	0.00	-1187.8	0.00	1187.84	4013.16	2006.58	6493.86	3207.07	49.16	-4.065	0.000	0.376
115.00	-18.71	-27.88	0.00	-1043.4	0.00	1043.42	3949.59	1974.80	6240.77	3082.08	53.49	-4.210	0.000	0.343
120.00	-17.55	-26.89	0.00	-904.01	0.00	904.01	3884.61	1942.31	5990.33	2958.40	57.97	-4.346	0.000	0.310
125.00	-16.45	-25.88	0.00	-769.58	0.00	769.58	3798.47	1899.23	5713.02	2821.44	62.59	-4.472	0.000	0.277
125.42	-16.34	-25.82	0.00	-758.80	0.00	758.80	3790.55	1895.28	5689.10	2809.63	62.98	-4.482	0.000	0.275
130.00	-14.67	-24.84	0.00	-640.48	0.00	640.48	3703.53	1851.76	5429.36	2681.36	67.33	-4.587	0.000	0.243
131.25	-14.20	-24.59	0.00	-609.42	0.00	609.42	2389.73	1194.86	3567.35	1761.78	68.54	-4.614	0.000	0.352
135.00	-13.61	-23.87	0.00	-517.22	0.00	517.22	2365.06	1182.53	3463.05	1710.27	72.19	-4.689	0.000	0.309
140.00	-12.85	-22.93	0.00	-397.85	0.00	397.85	2330.94	1165.47	3324.42	1641.81	77.16	-4.802	0.000	0.248
145.00	-12.12	-22.00	0.00	-283.21	0.00	283.21	2295.39	1147.70	3186.42	1573.65	82.23	-4.893	0.000	0.186
150.00	-6.37	-10.77	0.00	-173.23	0.00	173.23	2258.44	1129.22	3049.21	1505.89	87.39	-4.959	0.000	0.118
155.00	-5.73	-9.86	0.00	-119.38	0.00	119.38	2220.06	1110.03	2912.95	1438.60	92.60	-5.006	0.000	0.086
160.00	-5.11	-8.97	0.00	-70.08	0.00	70.08	2180.27	1090.14	2777.81	1371.86	97.86	-5.038	0.000	0.053
165.00	-4.50	-8.10	0.00	-25.22	0.00	25.22	2139.07	1069.53	2643.95	1305.75	103.14	-5.056	0.000	0.021
167.00	-0.87	-1.41	0.00	-8.76	0.00	8.76	2122.19	1061.09	2590.80	1279.50	105.26	-5.059	0.000	0.007
170.00	-0.53	-0.90	0.00	-4.52	0.00	4.52	2096.45	1048.22	2511.52	1240.35	108.43	-5.060	0.000	0.004
175.00	0.00	-0.85	0.00	0.00	0.00	0.00	2052.41	1026.20	2380.70	1175.74	113.72	-5.061	0.000	0.000

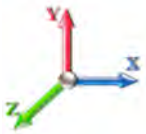
Wind Loading - Shaft

Structure:	CT22076-A-SBA	**Code:**	EIA/TIA-222-G	6/1/2021	
Site Name:	East Haddam (Trowbridge)	**Exposure:**	C		
Height:	175.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 12	

Load Case: 0.9D + 1.6W 101 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 23

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	21.088	23.20	465.94	1.000	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	21.088	23.20	458.60	1.000	0.000	5.00	24.822	24.82	921.2	0.0	1406.3
10.00		1.00	0.85	21.088	23.20	451.25	1.000	0.000	5.00	24.428	24.43	906.6	0.0	1383.7
15.00		1.00	0.85	21.088	23.20	443.91	1.000	0.000	5.00	24.033	24.03	892.0	0.0	1361.2
20.00		1.00	0.90	22.375	24.61	449.69	1.000	0.000	5.00	23.639	23.64	930.9	0.0	1338.7
25.00		1.00	0.95	23.451	25.80	452.63	1.000	0.000	5.00	23.244	23.24	959.4	0.0	1316.1
30.00		1.00	0.98	24.369	26.81	453.51	1.000	0.000	5.00	22.850	22.85	980.0	0.0	1293.6
35.00		1.00	1.01	25.172	27.69	452.90	1.000	0.000	5.00	22.456	22.46	994.9	0.0	1271.0
40.00		1.00	1.04	25.890	28.48	451.17	1.000	0.000	5.00	22.061	22.06	1005.3	0.0	1248.5
45.00	Bot - Section 2	1.00	1.07	26.540	29.19	448.56	1.000	0.000	5.00	21.667	21.67	1012.1	0.0	1226.0
50.00		1.00	1.09	27.135	29.85	445.23	1.000	0.000	5.00	21.704	21.70	1036.5	0.0	2431.5
52.75	Top - Section 1	1.00	1.11	27.443	30.19	443.14	1.000	0.000	2.75	11.769	11.77	568.4	0.0	1318.1
55.00		1.00	1.12	27.685	30.45	450.51	1.000	0.000	2.25	9.540	9.54	464.9	0.0	539.7
60.00		1.00	1.14	28.197	31.02	446.16	1.000	0.000	5.00	20.915	20.92	1037.9	0.0	1183.0
65.00		1.00	1.16	28.676	31.54	441.37	1.000	0.000	5.00	20.521	20.52	1035.7	0.0	1160.5
70.00		1.00	1.17	29.127	32.04	436.20	1.000	0.000	5.00	20.126	20.13	1031.7	0.0	1137.9
75.00		1.00	1.19	29.553	32.51	430.68	1.000	0.000	5.00	19.732	19.73	1026.3	0.0	1115.4
80.00		1.00	1.21	29.958	32.95	424.86	1.000	0.000	5.00	19.337	19.34	1019.6	0.0	1092.8
85.00		1.00	1.22	30.342	33.38	418.77	1.000	0.000	5.00	18.943	18.94	1011.6	0.0	1070.3
90.00		1.00	1.24	30.710	33.78	412.44	1.000	0.000	5.00	18.549	18.55	1002.5	0.0	1047.8
91.25	Bot - Section 3	1.00	1.24	30.799	33.88	410.82	1.000	0.000	1.25	4.576	4.58	248.0	0.0	258.4
95.00		1.00	1.25	31.061	34.17	405.88	1.000	0.000	3.75	13.862	13.86	757.8	0.0	1452.9
98.00	Top - Section 2	1.00	1.26	31.265	34.39	401.84	1.000	0.000	3.00	10.930	10.93	601.4	0.0	1145.2
100.00		1.00	1.27	31.399	34.54	407.69	1.000	0.000	2.00	7.208	7.21	398.3	0.0	356.7
105.00		1.00	1.28	31.723	34.89	400.78	1.000	0.000	5.00	17.743	17.74	990.6	0.0	877.8
110.00		1.00	1.29	32.035	35.24	393.69	1.000	0.000	5.00	17.349	17.35	978.1	0.0	858.1
115.00		1.00	1.30	32.336	35.57	386.45	1.000	0.000	5.00	16.954	16.95	964.9	0.0	838.4
120.00		1.00	1.32	32.627	35.89	379.04	1.000	0.000	5.00	16.560	16.56	950.9	0.0	818.7
125.00		1.00	1.33	32.909	36.20	371.50	1.000	0.000	5.00	16.165	16.17	936.3	0.0	799.0
125.42	Bot - Section 4	1.00	1.33	32.932	36.22	370.87	1.000	0.000	0.42	1.329	1.33	77.0	0.0	65.7
130.00		1.00	1.34	33.182	36.50	363.82	1.000	0.000	4.58	14.689	14.69	857.8	0.0	1233.8
131.25	Top - Section 3	1.00	1.34	33.249	36.57	361.89	1.000	0.000	1.25	3.949	3.95	231.1	0.0	331.6
135.00		1.00	1.35	33.446	36.79	362.35	1.000	0.000	3.75	11.698	11.70	688.6	0.0	414.2
140.00		1.00	1.36	33.703	37.07	354.45	1.000	0.000	5.00	15.252	15.25	904.7	0.0	540.0
145.00		1.00	1.37	33.953	37.35	346.44	1.000	0.000	5.00	14.857	14.86	887.8	0.0	525.9
150.00	Appurtenance(s)	1.00	1.38	34.196	37.62	338.33	1.000	0.000	5.00	14.463	14.46	870.5	0.0	511.8
155.00		1.00	1.39	34.433	37.88	330.11	1.000	0.000	5.00	14.069	14.07	852.6	0.0	497.7
160.00		1.00	1.40	34.664	38.13	321.80	1.000	0.000	5.00	13.674	13.67	834.3	0.0	483.6
165.00		1.00	1.41	34.890	38.38	313.40	1.000	0.000	5.00	13.280	13.28	815.5	0.0	469.5
167.00	Appurtenance(s)	1.00	1.41	34.978	38.48	310.01	1.000	0.000	2.00	5.202	5.20	320.2	0.0	183.9
170.00		1.00	1.42	35.110	38.62	304.90	1.000	0.000	3.00	7.684	7.68	474.8	0.0	271.6
175.00	Appurtenance(s)	1.00	1.42	35.324	38.86	296.33	1.000	0.000	5.00	12.491	12.49	776.6	0.0	441.4
								Totals:	**175.00**			**33,255.4**		**37,317.9**

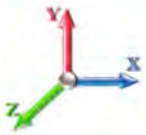
Discrete Appurtenance Forces

Structure:	CT22076-A-SBA	**Code:**	EIA/TIA-222-G	6/1/2021	
Site Name:	East Haddam (Trowbridge)	**Exposure:**	C		
Height:	175.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 13	

Load Case: 0.9D + 1.6W 101 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 23

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	175.00	Lightning rod	1	35.324	38.857	1.00	1.00	1.25	10.80	0.000	0.000	77.71	0.00	0.00
2	167.00	QS46512-2	1	34.978	38.476	1.00	1.00	5.55	67.50	0.000	0.000	341.67	0.00	0.00
3	167.00	LGP21401	6	34.978	38.476	0.49	0.75	3.83	76.14	0.000	0.000	235.86	0.00	0.00
4	167.00	DC6-48-60-18-8F	1	34.978	38.476	1.00	1.00	0.92	28.62	0.000	0.000	56.64	0.00	0.00
5	167.00	RRUS-11	3	34.978	38.476	0.50	0.75	3.87	135.00	0.000	0.000	238.51	0.00	0.00
6	167.00	Platform	1	34.978	38.476	1.00	1.00	22.00	1440.00	0.000	0.000	1354.35	0.00	0.00
7	167.00	LGP21901 Diplexer	6	35.324	38.857	0.38	0.75	0.52	29.70	0.000	8.000	32.17	0.00	257.39
8	167.00	TPA-65R-LCUUUU-H8	2	34.978	38.476	0.62	0.75	16.56	135.00	0.000	0.000	1019.37	0.00	0.00
9	167.00	RRUS 4415 B25	3	34.978	38.476	0.50	0.75	2.47	124.20	0.000	0.000	152.20	0.00	0.00
10	167.00	DBC0061F1V51-2	3	34.978	38.476	0.38	0.75	0.48	68.58	0.000	0.000	29.78	0.00	0.00
11	167.00	HRK14	1	34.978	38.476	1.00	1.00	8.13	272.12	0.000	0.000	500.50	0.00	0.00
12	167.00	PRK-1245 (kicker kit)	1	34.978	38.476	1.00	1.00	9.50	418.42	0.000	0.000	584.83	0.00	0.00
13	167.00	AM-X-CD-17-65-00T-RET	2	34.978	38.476	0.59	0.75	5.93	55.44	0.000	0.000	364.75	0.00	0.00
14	167.00	7770.00A	3	34.978	38.476	0.54	0.75	8.97	72.90	0.000	0.000	552.50	0.00	0.00
15	167.00	SBNH-1D4545A	1	34.978	38.476	1.00	1.00	9.10	32.76	0.000	0.000	560.21	0.00	0.00
16	150.00	SP2-5.2	2	34.196	37.616	1.00	1.00	7.92	39.60	0.000	0.000	476.67	0.00	0.00
17	150.00	Ericsson 4449 B71 + B85	4	34.196	37.616	0.50	0.75	3.96	263.52	0.000	0.000	238.32	0.00	0.00
18	150.00	KRD 9011461-B66A-B2A	4	34.196	37.616	0.65	0.75	16.80	475.92	0.000	0.000	1010.87	0.00	0.00
19	150.00	APXVAA24_43-U-A20	4	34.196	37.616	0.54	0.75	43.72	442.08	0.000	0.000	2631.23	0.00	0.00
20	150.00	APX16DWV-16DWVS-C	4	34.196	37.616	0.46	0.75	12.02	146.52	0.000	0.000	723.17	0.00	0.00
21	150.00	RRUS 4478	4	34.196	37.616	0.50	0.75	3.32	216.00	0.000	0.000	199.61	0.00	0.00
22	150.00	MI-554nn	8	34.196	37.616	0.38	0.75	1.89	87.12	0.000	0.000	113.75	0.00	0.00
23	150.00	S11B4	4	34.196	37.616	0.50	0.75	5.69	183.60	0.000	0.000	342.35	0.00	0.00
24	150.00	F4P-10W	1	34.196	37.616	1.00	1.00	58.98	2156.40	0.000	0.000	3549.76	0.00	0.00
25	150.00	F4P-HRK10	1	34.196	37.616	1.00	1.00	9.00	430.44	0.000	0.000	541.67	0.00	0.00
							Totals:		**7,408.39**			**15,928.44**		

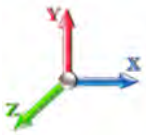
Total Applied Force Summary

Structure:	CT22076-A-SBA		**Code:**	EIA/TIA-222-G	6/1/2021
Site Name:	East Haddam (Trowbridge)		**Exposure:**	C	
Height:	175.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 14

Load Case: 0.9D + 1.6W 101 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 23

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		921.24	1464.69	0.00	0.00
10.00		906.61	1442.15	0.00	0.00
15.00		891.97	1419.61	0.00	0.00
20.00		930.88	1397.07	0.00	0.00
25.00		959.38	1374.53	0.00	0.00
30.00		980.01	1351.99	0.00	0.00
35.00		994.86	1329.45	0.00	0.00
40.00		1005.25	1306.91	0.00	0.00
45.00		1012.07	1284.37	0.00	0.00
50.00		1036.53	2489.91	0.00	0.00
52.75		568.44	1350.24	0.00	0.00
55.00		464.87	565.99	0.00	0.00
60.00		1037.95	1241.41	0.00	0.00
65.00		1035.68	1218.87	0.00	0.00
70.00		1031.75	1196.33	0.00	0.00
75.00		1026.33	1173.79	0.00	0.00
80.00		1019.58	1151.25	0.00	0.00
85.00		1011.61	1128.71	0.00	0.00
90.00		1002.54	1106.17	0.00	0.00
91.25		248.02	273.02	0.00	0.00
95.00		757.80	1496.73	0.00	0.00
98.00		601.43	1180.26	0.00	0.00
100.00		398.30	380.02	0.00	0.00
105.00		990.62	936.25	0.00	0.00
110.00		978.14	916.53	0.00	0.00
115.00		964.89	896.81	0.00	0.00
120.00		950.93	877.09	0.00	0.00
125.00		936.29	857.36	0.00	0.00
125.42		77.05	70.56	0.00	0.00
130.00		857.82	1287.35	0.00	0.00
131.25		231.06	346.17	0.00	0.00
135.00		688.59	458.03	0.00	0.00
140.00		904.71	598.38	0.00	0.00
145.00		887.85	584.30	0.00	0.00
150.00	(36) attachments	10697.86	5011.41	0.00	0.00
155.00		852.60	534.16	0.00	0.00
160.00		834.25	520.07	0.00	0.00
165.00		815.46	505.99	0.00	0.00
167.00	(34) attachments	6343.55	3154.83	0.00	257.39
170.00		474.81	293.45	0.00	0.00
175.00	(1) attachments	854.30	452.16	0.00	0.00
	Totals:	**49,183.87**	**46,624.41**	**0.00**	**257.39**

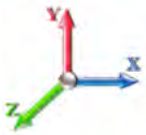
Calculated Forces

Structure:	CT22076-A-SBA	**Code:**	EIA/TIA-222-G	6/1/2021	
Site Name:	East Haddam (Trowbridge)	**Exposure:**	C		
Height:	175.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 15	

Load Case: 0.9D + 1.6W 101 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 23

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	-46.54	-49.27	0.00	-5554.3	0.00	5554.38	6094.92	3047.46	14456.0	7139.28	0.00	0.000	0.000	0.786
5.00	-44.91	-48.50	0.00	-5308.0	0.00	5308.06	6041.82	3020.91	14100.2	6963.58	0.11	-0.198	0.000	0.770
10.00	-43.30	-47.73	0.00	-5065.5	0.00	5065.58	5987.31	2993.65	13745.2	6788.27	0.42	-0.396	0.000	0.754
15.00	-41.73	-46.97	0.00	-4826.9	0.00	4826.92	5931.38	2965.69	13391.2	6613.44	0.94	-0.594	0.000	0.737
20.00	-40.18	-46.17	0.00	-4592.0	0.00	4592.05	5874.03	2937.02	13038.3	6439.15	1.67	-0.793	0.000	0.720
25.00	-38.67	-45.32	0.00	-4361.2	0.00	4361.23	5815.27	2907.64	12686.7	6265.50	2.61	-0.991	0.000	0.703
30.00	-37.18	-44.44	0.00	-4134.6	0.00	4134.64	5755.10	2877.55	12336.5	6092.55	3.75	-1.190	0.000	0.685
35.00	-35.73	-43.54	0.00	-3912.4	0.00	3912.44	5693.50	2846.75	11987.9	5920.39	5.11	-1.388	0.000	0.667
40.00	-34.30	-42.62	0.00	-3694.7	0.00	3694.74	5630.49	2815.25	11641.0	5749.10	6.67	-1.585	0.000	0.649
45.00	-32.90	-41.68	0.00	-3481.6	0.00	3481.64	5566.07	2783.04	11296.1	5578.76	8.43	-1.782	0.000	0.630
50.00	-30.34	-40.65	0.00	-3273.2	0.00	3273.22	5500.23	2750.11	10953.3	5409.44	10.40	-1.977	0.000	0.611
52.75	-28.94	-40.08	0.00	-3161.4	0.00	3161.45	5536.21	2768.10	11139.4	5501.37	11.57	-2.085	0.000	0.580
55.00	-28.30	-39.66	0.00	-3071.2	0.00	3071.27	5506.46	2753.23	10985.3	5425.27	12.58	-2.174	0.000	0.571
60.00	-26.98	-38.66	0.00	-2872.9	0.00	2872.97	5439.34	2719.67	10644.5	5256.96	14.95	-2.355	0.000	0.552
65.00	-25.69	-37.65	0.00	-2679.6	0.00	2679.67	5370.80	2685.40	10306.1	5089.82	17.51	-2.534	0.000	0.531
70.00	-24.43	-36.64	0.00	-2491.4	0.00	2491.41	5300.84	2650.42	9970.29	4923.95	20.26	-2.711	0.000	0.511
75.00	-23.20	-35.63	0.00	-2308.2	0.00	2308.20	5229.47	2614.74	9637.14	4759.42	23.19	-2.885	0.000	0.490
80.00	-22.00	-34.62	0.00	-2130.0	0.00	2130.05	5156.68	2578.34	9306.86	4596.31	26.31	-3.056	0.000	0.468
85.00	-20.83	-33.61	0.00	-1956.9	0.00	1956.97	5082.48	2541.24	8979.62	4434.70	29.59	-3.223	0.000	0.446
90.00	-19.73	-32.58	0.00	-1788.9	0.00	1788.94	4989.36	2494.68	8625.31	4259.72	33.06	-3.387	0.000	0.424
91.25	-19.43	-32.34	0.00	-1748.2	0.00	1748.22	4962.23	2481.12	8531.23	4213.26	33.95	-3.428	0.000	0.419
95.00	-17.92	-31.53	0.00	-1626.9	0.00	1626.95	4880.86	2440.43	8252.09	4075.40	36.69	-3.548	0.000	0.403
98.00	-16.74	-30.87	0.00	-1532.3	0.00	1532.37	4159.95	2079.97	7111.13	3511.92	38.95	-3.642	0.000	0.441
100.00	-16.32	-30.48	0.00	-1470.6	0.00	1470.63	4136.05	2068.02	7007.35	3460.67	40.49	-3.704	0.000	0.429
105.00	-15.37	-29.48	0.00	-1318.2	0.00	1318.21	4075.31	2037.66	6749.44	3333.30	44.45	-3.863	0.000	0.399
110.00	-14.45	-28.47	0.00	-1170.8	0.00	1170.83	4013.16	2006.58	6493.86	3207.07	48.57	-4.014	0.000	0.369
115.00	-13.56	-27.48	0.00	-1028.4	0.00	1028.46	3949.59	1974.80	6240.77	3082.08	52.85	-4.157	0.000	0.337
120.00	-12.70	-26.50	0.00	-891.06	0.00	891.06	3884.61	1942.31	5990.33	2958.40	57.27	-4.291	0.000	0.305
125.00	-11.89	-25.51	0.00	-758.58	0.00	758.58	3798.47	1899.23	5713.02	2821.44	61.83	-4.415	0.000	0.272
125.42	-11.80	-25.44	0.00	-747.95	0.00	747.95	3790.55	1895.28	5689.10	2809.63	62.22	-4.425	0.000	0.270
130.00	-10.55	-24.50	0.00	-631.34	0.00	631.34	3703.53	1851.76	5429.36	2681.36	66.51	-4.527	0.000	0.238
131.25	-10.20	-24.25	0.00	-600.72	0.00	600.72	2389.73	1194.86	3567.35	1761.78	67.70	-4.554	0.000	0.346
135.00	-9.76	-23.54	0.00	-509.79	0.00	509.79	2365.06	1182.53	3463.05	1710.27	71.30	-4.628	0.000	0.303
140.00	-9.20	-22.61	0.00	-392.09	0.00	392.09	2330.94	1165.47	3324.42	1641.81	76.21	-4.740	0.000	0.243
145.00	-8.66	-21.69	0.00	-279.05	0.00	279.05	2295.39	1147.70	3186.42	1573.65	81.22	-4.830	0.000	0.181
150.00	-4.57	-10.61	0.00	-170.62	0.00	170.62	2258.44	1129.22	3049.21	1505.89	86.31	-4.895	0.000	0.115
155.00	-4.10	-9.71	0.00	-117.60	0.00	117.60	2220.06	1110.03	2912.95	1438.60	91.46	-4.940	0.000	0.084
160.00	-3.65	-8.84	0.00	-69.03	0.00	69.03	2180.27	1090.14	2777.81	1371.86	96.64	-4.972	0.000	0.052
165.00	-3.22	-7.98	0.00	-24.84	0.00	24.84	2139.07	1069.53	2643.95	1305.75	101.86	-4.990	0.000	0.021
167.00	-0.63	-1.39	0.00	-8.62	0.00	8.62	2122.19	1061.09	2590.80	1279.50	103.94	-4.993	0.000	0.007
170.00	-0.38	-0.89	0.00	-4.45	0.00	4.45	2096.45	1048.22	2511.52	1240.35	107.08	-4.994	0.000	0.004
175.00	0.00	-0.85	0.00	0.00	0.00	0.00	2052.41	1026.20	2380.70	1175.74	112.30	-4.995	0.000	0.000

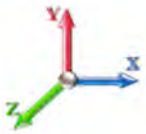
Wind Loading - Shaft

Structure:	CT22076-A-SBA	**Code:**	EIA/TIA-222-G	6/1/2021	
Site Name:	East Haddam (Trowbridge)	**Exposure:**	C		
Height:	175.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 16	

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 23

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	5.168	5.68	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	5.168	5.68	0.00	1.200	1.242	5.00	25.857	31.03	176.4	469.3	2344.3
10.00		1.00	0.85	5.168	5.68	0.00	1.200	1.331	5.00	25.537	30.64	174.2	495.8	2340.8
15.00		1.00	0.85	5.168	5.68	0.00	1.200	1.386	5.00	25.188	30.23	171.8	508.6	2323.5
20.00		1.00	0.90	5.483	6.03	0.00	1.200	1.427	5.00	24.828	29.79	179.7	515.3	2300.2
25.00		1.00	0.95	5.747	6.32	0.00	1.200	1.459	5.00	24.460	29.35	185.6	518.6	2273.4
30.00		1.00	0.98	5.972	6.57	0.00	1.200	1.486	5.00	24.088	28.91	189.9	519.6	2244.4
35.00		1.00	1.01	6.169	6.79	0.00	1.200	1.509	5.00	23.713	28.46	193.1	518.9	2213.6
40.00		1.00	1.04	6.345	6.98	0.00	1.200	1.529	5.00	23.336	28.00	195.4	517.0	2181.7
45.00	Bot - Section 2	1.00	1.07	6.504	7.15	0.00	1.200	1.547	5.00	22.956	27.55	197.1	514.2	2148.8
50.00		1.00	1.09	6.650	7.32	0.00	1.200	1.564	5.00	23.007	27.61	202.0	520.6	3762.6
52.75	Top - Section 1	1.00	1.11	6.726	7.40	0.00	1.200	1.572	2.75	12.490	14.99	110.9	285.1	2042.6
55.00		1.00	1.12	6.785	7.46	0.00	1.200	1.579	2.25	10.132	12.16	90.7	232.4	952.0
60.00		1.00	1.14	6.910	7.60	0.00	1.200	1.592	5.00	22.242	26.69	202.9	511.6	2089.0
65.00		1.00	1.16	7.028	7.73	0.00	1.200	1.605	5.00	21.858	26.23	202.8	506.4	2053.6
70.00		1.00	1.17	7.138	7.85	0.00	1.200	1.617	5.00	21.474	25.77	202.3	500.7	2017.9
75.00		1.00	1.19	7.243	7.97	0.00	1.200	1.628	5.00	21.089	25.31	201.6	494.6	1981.8
80.00		1.00	1.21	7.342	8.08	0.00	1.200	1.639	5.00	20.703	24.84	200.6	488.2	1945.3
85.00		1.00	1.22	7.436	8.18	0.00	1.200	1.649	5.00	20.317	24.38	199.4	481.5	1908.5
90.00		1.00	1.24	7.526	8.28	0.00	1.200	1.658	5.00	19.931	23.92	198.0	474.5	1871.5
91.25	Bot - Section 3	1.00	1.24	7.548	8.30	0.00	1.200	1.661	1.25	4.922	5.91	49.0	118.2	462.7
95.00		1.00	1.25	7.612	8.37	0.00	1.200	1.667	3.75	14.904	17.88	149.8	357.6	2294.8
98.00	Top - Section 2	1.00	1.26	7.662	8.43	0.00	1.200	1.672	3.00	11.766	14.12	119.0	283.4	1810.4
100.00		1.00	1.27	7.695	8.46	0.00	1.200	1.676	2.00	7.766	9.32	78.9	187.7	663.3
105.00		1.00	1.28	7.774	8.55	0.00	1.200	1.684	5.00	19.146	22.98	196.5	461.8	1632.2
110.00		1.00	1.29	7.851	8.64	0.00	1.200	1.692	5.00	18.759	22.51	194.4	454.0	1598.1
115.00		1.00	1.30	7.925	8.72	0.00	1.200	1.699	5.00	18.370	22.04	192.2	446.0	1563.9
120.00		1.00	1.32	7.996	8.80	0.00	1.200	1.707	5.00	17.982	21.58	189.8	437.9	1529.4
125.00		1.00	1.33	8.065	8.87	0.00	1.200	1.714	5.00	17.593	21.11	187.3	429.6	1494.9
125.42	Bot - Section 4	1.00	1.33	8.071	8.88	0.00	1.200	1.714	0.42	1.448	1.74	15.4	35.7	123.3
130.00		1.00	1.34	8.132	8.95	0.00	1.200	1.720	4.58	16.003	19.20	171.8	392.4	2037.5
131.25	Top - Section 3	1.00	1.34	8.148	8.96	0.00	1.200	1.722	1.25	4.307	5.17	46.3	106.5	548.6
135.00		1.00	1.35	8.197	9.02	0.00	1.200	1.727	3.75	12.777	15.33	138.2	314.7	867.0
140.00		1.00	1.36	8.260	9.09	0.00	1.200	1.733	5.00	16.696	20.04	182.0	410.9	1130.9
145.00		1.00	1.37	8.321	9.15	0.00	1.200	1.739	5.00	16.307	19.57	179.1	402.1	1103.3
150.00	Appurtenance(s)	1.00	1.38	8.381	9.22	0.00	1.200	1.745	5.00	15.917	19.10	176.1	393.2	1075.6
155.00		1.00	1.39	8.439	9.28	0.00	1.200	1.751	5.00	15.528	18.63	173.0	384.2	1047.8
160.00		1.00	1.40	8.495	9.34	0.00	1.200	1.757	5.00	15.138	18.17	169.8	375.0	1019.9
165.00		1.00	1.41	8.551	9.41	0.00	1.200	1.762	5.00	14.748	17.70	166.5	365.8	991.9
167.00	Appurtenance(s)	1.00	1.41	8.572	9.43	0.00	1.200	1.764	2.00	5.790	6.95	65.5	144.8	390.0
170.00		1.00	1.42	8.604	9.46	0.00	1.200	1.767	3.00	8.568	10.28	97.3	213.9	576.0
175.00	Appurtenance(s)	1.00	1.42	8.657	9.52	0.00	1.200	1.772	5.00	13.968	16.76	159.6	347.1	935.6
								Totals:	**175.00**			**6,572.0**		**65,892.5**

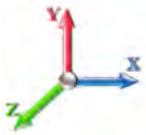
Discrete Appurtenance Forces

Structure:	CT22076-A-SBA	**Code:**	EIA/TIA-222-G	6/1/2021	
Site Name:	East Haddam (Trowbridge)	**Exposure:**	C		
Height:	175.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 17	

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 23

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	175.00	Lightning rod	1	8.657	9.523	1.00	1.00	5.68	25.92	0.000	0.000	54.10	0.00	0.00
2	167.00	QS46512-2	1	8.572	9.429	1.00	1.00	6.58	212.40	0.000	0.000	62.05	0.00	0.00
3	167.00	LGP21401	6	8.572	9.429	0.54	0.75	6.92	210.55	0.000	0.000	65.22	0.00	0.00
4	167.00	DC6-48-60-18-8F	1	8.572	9.429	1.00	1.00	1.36	82.95	0.000	0.000	12.85	0.00	0.00
5	167.00	RRUS-11	3	8.572	9.429	0.50	0.75	4.86	333.37	0.000	0.000	45.81	0.00	0.00
6	167.00	Platform	1	8.572	9.429	1.00	1.00	41.40	3442.51	0.000	0.000	390.42	0.00	0.00
7	167.00	LGP21901 Diplexer	6	8.657	9.523	0.38	0.75	1.35	73.04	0.000	8.000	12.90	0.00	103.18
8	167.00	TPA-65R-LCUUUU-H8	2	8.572	9.429	0.62	0.75	18.63	812.08	0.000	0.000	175.69	0.00	0.00
9	167.00	RRUS 4415 B25	3	8.572	9.429	0.50	0.75	3.26	262.04	0.000	0.000	30.71	0.00	0.00
10	167.00	DBC0061F1V51-2	3	8.572	9.429	0.38	0.75	0.81	125.03	0.000	0.000	7.62	0.00	0.00
11	167.00	HRK14	1	8.572	9.429	1.00	1.00	16.16	1027.89	0.000	0.000	152.39	0.00	0.00
12	167.00	PRK-1245 (kicker kit)	1	8.572	9.429	1.00	1.00	19.56	790.85	0.000	0.000	184.39	0.00	0.00
13	167.00	AM-X-CD-17-65-00T-RET	2	8.572	9.429	0.61	0.75	8.38	235.94	0.000	0.000	78.99	0.00	0.00
14	167.00	7770.00A	3	8.572	9.429	0.54	0.75	12.47	345.69	0.000	0.000	117.59	0.00	0.00
15	167.00	SBNH-1D4545A	1	8.572	9.429	1.00	1.00	11.28	175.56	0.000	0.000	106.33	0.00	0.00
16	150.00	SP2-5.2	2	8.381	9.219	1.00	1.00	10.27	171.77	0.000	0.000	94.67	0.00	0.00
17	150.00	Ericsson 4449 B71 + B85	4	8.381	9.219	0.50	0.75	5.10	348.73	0.000	0.000	47.05	0.00	0.00
18	150.00	KRD 9011461-B66A-B2A	4	8.381	9.219	0.66	0.75	20.15	1367.52	0.000	0.000	185.73	0.00	0.00
19	150.00	APXVAA24_43-U-A20	4	8.381	9.219	0.55	0.75	48.49	2300.25	0.000	0.000	446.99	0.00	0.00
20	150.00	APX16DWV-16DWVS-C	4	8.381	9.219	0.46	0.75	16.05	523.81	0.000	0.000	147.96	0.00	0.00
21	150.00	RRUS 4478	4	8.381	9.219	0.50	0.75	4.36	420.34	0.000	0.000	40.18	0.00	0.00
22	150.00	MI-554nn	8	8.381	9.219	0.50	0.75	3.99	364.39	0.000	0.000	36.79	0.00	0.00
23	150.00	S11B4	4	8.381	9.219	0.50	0.75	7.04	458.81	0.000	0.000	64.89	0.00	0.00
24	150.00	F4P-10W	1	8.381	9.219	1.00	1.00	128.97	4525.86	0.000	0.000	1188.98	0.00	0.00
25	150.00	F4P-HRK10	1	8.381	9.219	1.00	1.00	19.68	1519.62	0.000	0.000	181.43	0.00	0.00
							Totals:		**20,156.93**			**3,931.74**		

Total Applied Force Summary

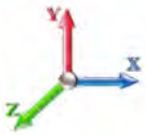
Structure:	CT22076-A-SBA		**Code:**	EIA/TIA-222-G	6/1/2021
Site Name:	East Haddam (Trowbridge)		**Exposure:**	C	
Height:	175.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 18

Tower Engineering Solutions

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 23

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		176.39	2422.18	0.00	0.00
10.00		174.21	2418.66	0.00	0.00
15.00		171.83	2401.38	0.00	0.00
20.00		179.71	2378.08	0.00	0.00
25.00		185.56	2351.30	0.00	0.00
30.00		189.89	2322.23	0.00	0.00
35.00		193.10	2291.53	0.00	0.00
40.00		195.44	2259.58	0.00	0.00
45.00		197.09	2226.66	0.00	0.00
50.00		201.96	3840.52	0.00	0.00
52.75		110.88	2085.43	0.00	0.00
55.00		90.75	987.04	0.00	0.00
60.00		202.89	2166.84	0.00	0.00
65.00		202.77	2131.51	0.00	0.00
70.00		202.34	2095.76	0.00	0.00
75.00		201.62	2059.64	0.00	0.00
80.00		200.64	2023.18	0.00	0.00
85.00		199.43	1986.43	0.00	0.00
90.00		198.00	1949.41	0.00	0.00
91.25		49.04	482.21	0.00	0.00
95.00		149.76	2353.20	0.00	0.00
98.00		119.00	1857.09	0.00	0.00
100.00		78.88	694.45	0.00	0.00
105.00		196.48	1710.11	0.00	0.00
110.00		194.40	1676.02	0.00	0.00
115.00		192.17	1641.75	0.00	0.00
120.00		189.80	1607.32	0.00	0.00
125.00		187.30	1572.74	0.00	0.00
125.42		15.43	129.82	0.00	0.00
130.00		171.78	2108.91	0.00	0.00
131.25		46.33	568.05	0.00	0.00
135.00		138.24	925.39	0.00	0.00
140.00		182.04	1208.75	0.00	0.00
145.00		179.11	1181.16	0.00	0.00
150.00	(36) attachments	2610.76	13154.57	0.00	0.00
155.00		172.97	1096.38	0.00	0.00
160.00		169.75	1068.47	0.00	0.00
165.00		166.46	1040.46	0.00	0.00
167.00	(34) attachments	1508.48	8539.34	0.00	103.18
170.00		97.31	605.16	0.00	0.00
175.00	(1) attachments	213.72	961.49	0.00	0.00
	Totals:	**10,503.69**	**88,580.18**	**0.00**	**103.18**

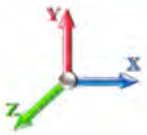
Calculated Forces

Structure:	CT22076-A-SBA	**Code:**	EIA/TIA-222-G	6/1/2021	
Site Name:	East Haddam (Trowbridge)	**Exposure:**	C		
Height:	175.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 19	

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 23

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	-88.58	-10.54	0.00	-1276.9	0.00	1276.91	6094.92	3047.46	14456.0	7139.28	0.00	0.000	0.000	0.193
5.00	-86.15	-10.43	0.00	-1224.2	0.00	1224.22	6041.82	3020.91	14100.2	6963.58	0.02	-0.046	0.000	0.190
10.00	-83.72	-10.32	0.00	-1172.0	0.00	1172.06	5987.31	2993.65	13745.2	6788.27	0.10	-0.091	0.000	0.187
15.00	-81.31	-10.21	0.00	-1120.4	0.00	1120.46	5931.38	2965.69	13391.2	6613.44	0.22	-0.137	0.000	0.183
20.00	-78.92	-10.09	0.00	-1069.4	0.00	1069.42	5874.03	2937.02	13038.3	6439.15	0.39	-0.183	0.000	0.180
25.00	-76.57	-9.95	0.00	-1018.9	0.00	1018.98	5815.27	2907.64	12686.7	6265.50	0.60	-0.230	0.000	0.176
30.00	-74.24	-9.81	0.00	-969.21	0.00	969.21	5755.10	2877.55	12336.5	6092.55	0.87	-0.276	0.000	0.172
35.00	-71.94	-9.67	0.00	-920.14	0.00	920.14	5693.50	2846.75	11987.9	5920.39	1.18	-0.323	0.000	0.168
40.00	-69.67	-9.52	0.00	-871.80	0.00	871.80	5630.49	2815.25	11641.0	5749.10	1.55	-0.369	0.000	0.164
45.00	-67.44	-9.36	0.00	-824.23	0.00	824.23	5566.07	2783.04	11296.1	5578.76	1.96	-0.416	0.000	0.160
50.00	-63.59	-9.17	0.00	-777.44	0.00	777.44	5500.23	2750.11	10953.3	5409.44	2.42	-0.462	0.000	0.155
52.75	-61.51	-9.06	0.00	-752.24	0.00	752.24	5536.21	2768.10	11139.4	5501.37	2.69	-0.488	0.000	0.148
55.00	-60.51	-9.00	0.00	-731.84	0.00	731.84	5506.46	2753.23	10985.3	5425.27	2.93	-0.509	0.000	0.146
60.00	-58.34	-8.82	0.00	-686.86	0.00	686.86	5439.34	2719.67	10644.5	5256.96	3.48	-0.552	0.000	0.141
65.00	-56.21	-8.64	0.00	-642.76	0.00	642.76	5370.80	2685.40	10306.1	5089.82	4.08	-0.595	0.000	0.137
70.00	-54.11	-8.45	0.00	-599.58	0.00	599.58	5300.84	2650.42	9970.29	4923.95	4.73	-0.637	0.000	0.132
75.00	-52.04	-8.26	0.00	-557.33	0.00	557.33	5229.47	2614.74	9637.14	4759.42	5.42	-0.679	0.000	0.127
80.00	-50.02	-8.07	0.00	-516.01	0.00	516.01	5156.68	2578.34	9306.86	4596.31	6.15	-0.721	0.000	0.122
85.00	-48.03	-7.88	0.00	-475.64	0.00	475.64	5082.48	2541.24	8979.62	4434.70	6.93	-0.761	0.000	0.117
90.00	-46.08	-7.68	0.00	-436.23	0.00	436.23	4989.36	2494.68	8625.31	4259.72	7.75	-0.801	0.000	0.112
91.25	-45.60	-7.64	0.00	-426.63	0.00	426.63	4962.23	2481.12	8531.23	4213.26	7.96	-0.811	0.000	0.110
95.00	-43.24	-7.47	0.00	-397.99	0.00	397.99	4880.86	2440.43	8252.09	4075.40	8.61	-0.840	0.000	0.107
98.00	-41.38	-7.34	0.00	-375.56	0.00	375.56	4159.95	2079.97	7111.13	3511.92	9.14	-0.863	0.000	0.117
100.00	-40.69	-7.27	0.00	-360.88	0.00	360.88	4136.05	2068.02	7007.35	3460.67	9.51	-0.879	0.000	0.114
105.00	-38.98	-7.07	0.00	-324.52	0.00	324.52	4075.31	2037.66	6749.44	3333.30	10.45	-0.918	0.000	0.107
110.00	-37.30	-6.88	0.00	-289.15	0.00	289.15	4013.16	2006.58	6493.86	3207.07	11.43	-0.955	0.000	0.099
115.00	-35.66	-6.68	0.00	-254.78	0.00	254.78	3949.59	1974.80	6240.77	3082.08	12.45	-0.990	0.000	0.092
120.00	-34.05	-6.48	0.00	-221.39	0.00	221.39	3884.61	1942.31	5990.33	2958.40	13.51	-1.023	0.000	0.084
125.00	-32.48	-6.27	0.00	-189.00	0.00	189.00	3798.47	1899.23	5713.02	2821.44	14.59	-1.054	0.000	0.076
125.42	-32.35	-6.26	0.00	-186.39	0.00	186.39	3790.55	1895.28	5689.10	2809.63	14.69	-1.057	0.000	0.075
130.00	-30.24	-6.06	0.00	-157.68	0.00	157.68	3703.53	1851.76	5429.36	2681.36	15.71	-1.082	0.000	0.067
131.25	-29.67	-6.01	0.00	-150.11	0.00	150.11	2389.73	1194.86	3567.35	1761.78	16.00	-1.089	0.000	0.098
135.00	-28.75	-5.86	0.00	-127.58	0.00	127.58	2365.06	1182.53	3463.05	1710.27	16.86	-1.108	0.000	0.087
140.00	-27.54	-5.67	0.00	-98.25	0.00	98.25	2330.94	1165.47	3324.42	1641.81	18.04	-1.136	0.000	0.072
145.00	-26.36	-5.48	0.00	-69.90	0.00	69.90	2295.39	1147.70	3186.42	1573.65	19.24	-1.158	0.000	0.056
150.00	-13.26	-2.60	0.00	-42.51	0.00	42.51	2258.44	1129.22	3049.21	1505.89	20.46	-1.174	0.000	0.034
155.00	-12.17	-2.41	0.00	-29.50	0.00	29.50	2220.06	1110.03	2912.95	1438.60	21.70	-1.186	0.000	0.026
160.00	-11.10	-2.22	0.00	-17.46	0.00	17.46	2180.27	1090.14	2777.81	1371.86	22.95	-1.194	0.000	0.018
165.00	-10.07	-2.03	0.00	-6.36	0.00	6.36	2139.07	1069.53	2643.95	1305.75	24.20	-1.198	0.000	0.010
167.00	-1.56	-0.34	0.00	-2.20	0.00	2.20	2122.19	1061.09	2590.80	1279.50	24.70	-1.199	0.000	0.002
170.00	-0.96	-0.23	0.00	-1.17	0.00	1.17	2096.45	1048.22	2511.52	1240.35	25.45	-1.199	0.000	0.001
175.00	0.00	-0.21	0.00	0.00	0.00	0.00	2052.41	1026.20	2380.70	1175.74	26.71	-1.200	0.000	0.000

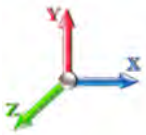
Seismic Segment Forces (Factored)

Structure:	CT22076-A-SBA	**Code:**	EIA/TIA-222-G	6/1/2021	
Site Name:	East Haddam (Trowbridge)	**Exposure:**	C		
Height:	175.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 20	

Tower Engineering Solutions

Load Case: 1.2D + 1.0E

Gust Response Factor	1.10			**Sds**	0.19	**Iterations**	21
Dead Load Factor	1.20	**Seismic Load Factor**	1.00	**Sd1**	0.10	**Ss**	0.17
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.33	**SA**	0.03	**S1**	0.06
						Seismic Importance Factor	1.00



Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1562.5	0.00	0.03	0.02	26.24	
10.00		1537.4	0.01	0.05	0.03	38.31	
15.00		1512.4	0.01	0.06	0.03	44.24	
20.00		1487.4	0.02	0.07	0.04	47.05	
25.00		1462.3	0.04	0.07	0.04	48.28	
30.00		1437.3	0.06	0.07	0.04	48.77	
35.00		1412.2	0.08	0.07	0.04	48.98	
40.00		1387.2	0.10	0.07	0.04	49.11	
45.00	Bot - Section 2	1362.1	0.12	0.07	0.03	49.21	
50.00		2701.6	0.15	0.07	0.03	99.27	
52.75	Top - Section 1	1464.5	0.17	0.07	0.03	54.15	
55.00		599.67	0.19	0.06	0.02	22.23	
60.00		1314.4	0.22	0.06	0.02	48.33	
65.00		1289.4	0.26	0.05	0.02	45.71	
70.00		1264.3	0.30	0.04	0.01	41.22	
75.00		1239.3	0.35	0.03	0.01	34.33	
80.00		1214.2	0.39	0.02	0.01	24.74	
85.00		1189.2	0.45	0.00	0.01	12.63	
90.00		1164.1	0.50	-0.02	0.01	-1.05	
91.25	Bot - Section 3	287.13	0.51	-0.02	0.01	-1.12	
95.00		1614.3	0.56	-0.04	0.01	-20.76	
98.00	Top - Section 2	1272.4	0.59	-0.05	0.01	-24.90	
100.00		396.29	0.62	-0.06	0.02	-9.37	
105.00		975.38	0.68	-0.08	0.03	-31.08	
110.00		953.47	0.75	-0.10	0.04	-35.00	
115.00		931.55	0.82	-0.11	0.06	-35.25	
120.00		909.64	0.89	-0.12	0.08	-32.04	
125.00		887.73	0.96	-0.12	0.11	-25.68	
125.42	Bot - Section 4	72.99	0.97	-0.12	0.12	-2.06	
130.00		1370.9	1.04	-0.10	0.15	-26.11	
131.25	Top - Section 3	368.40	1.06	-0.09	0.17	-5.90	
135.00		460.25	1.12	-0.05	0.20	-2.58	
140.00		599.97	1.21	0.01	0.26	6.81	
145.00		584.32	1.30	0.12	0.33	18.63	
150.00	Appurtenance(s)	5503.3	1.39	0.26	0.42	308.17	
155.00		553.01	1.48	0.46	0.52	46.33	
160.00		537.36	1.58	0.72	0.64	61.95	
165.00		521.71	1.68	1.05	0.78	78.56	
167.00	Appurtenance(s)	3489.1	1.72	1.20	0.85	578.46	
170.00		301.75	1.78	1.46	0.95	57.26	
175.00	Appurtenance(s)	502.40	1.89	1.98	1.14	117.02	
	Totals:	**49,695.9**				**1,803.1**	**Total Wind:** **49,183.9**

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

Calculated Forces

Structure:	CT22076-A-SBA	**Code:**	EIA/TIA-222-G	6/1/2021	
Site Name:	East Haddam (Trowbridge)	**Exposure:**	C		
Height:	175.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 21	

Load Case:	1.2D + 1.0E							**Iterations**	21
Gust Response Factor	1.10			**Sds**	0.19			**Ss**	0.17
Dead Load Factor	1.20	**Seismic Load Factor**	1.00	**Sd1**	0.10			**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.33	**SA**	0.03	**Seismic Importance Factor**			1.00

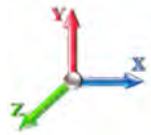
Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-62.17	-2.06	0.00	-250.79	0.00	250.79	6094.92	3047.46	14456.0	7139.28		0.00	0.00	0.045
5.00	-60.21	-2.04	0.00	-240.49	0.00	240.49	6041.82	3020.91	14100.2	6963.58		0.00	-0.01	0.045
10.00	-58.29	-2.01	0.00	-230.27	0.00	230.27	5987.31	2993.65	13745.2	6788.27		0.02	-0.02	0.044
15.00	-56.40	-1.98	0.00	-220.20	0.00	220.20	5931.38	2965.69	13391.2	6613.44		0.04	-0.03	0.043
20.00	-54.53	-1.94	0.00	-210.32	0.00	210.32	5874.03	2937.02	13038.3	6439.15		0.08	-0.04	0.042
25.00	-52.70	-1.90	0.00	-200.63	0.00	200.63	5815.27	2907.64	12686.7	6265.50		0.12	-0.05	0.041
30.00	-50.90	-1.85	0.00	-191.14	0.00	191.14	5755.10	2877.55	12336.5	6092.55		0.17	-0.05	0.040
35.00	-49.12	-1.81	0.00	-181.87	0.00	181.87	5693.50	2846.75	11987.9	5920.39		0.23	-0.06	0.039
40.00	-47.38	-1.77	0.00	-172.81	0.00	172.81	5630.49	2815.25	11641.0	5749.10		0.30	-0.07	0.038
45.00	-45.67	-1.72	0.00	-163.97	0.00	163.97	5566.07	2783.04	11296.1	5578.76		0.38	-0.08	0.038
50.00	-42.35	-1.63	0.00	-155.35	0.00	155.35	5500.23	2750.11	10953.3	5409.44		0.48	-0.09	0.036
52.75	-40.55	-1.57	0.00	-150.88	0.00	150.88	5536.21	2768.10	11139.4	5501.37		0.53	-0.10	0.035
55.00	-39.79	-1.55	0.00	-147.35	0.00	147.35	5506.46	2753.23	10985.3	5425.27		0.58	-0.10	0.034
60.00	-38.14	-1.51	0.00	-139.59	0.00	139.59	5439.34	2719.67	10644.5	5256.96		0.69	-0.11	0.034
65.00	-36.51	-1.46	0.00	-132.05	0.00	132.05	5370.80	2685.40	10306.1	5089.82		0.81	-0.12	0.033
70.00	-34.92	-1.42	0.00	-124.74	0.00	124.74	5300.84	2650.42	9970.29	4923.95		0.93	-0.13	0.032
75.00	-33.35	-1.39	0.00	-117.62	0.00	117.62	5229.47	2614.74	9637.14	4759.42		1.07	-0.14	0.031
80.00	-31.82	-1.37	0.00	-110.66	0.00	110.66	5156.68	2578.34	9306.86	4596.31		1.22	-0.14	0.030
85.00	-30.31	-1.36	0.00	-103.82	0.00	103.82	5082.48	2541.24	8979.62	4434.70		1.37	-0.15	0.029
90.00	-28.84	-1.35	0.00	-97.04	0.00	97.04	4989.36	2494.68	8625.31	4259.72		1.54	-0.16	0.029
91.25	-28.47	-1.36	0.00	-95.35	0.00	95.35	4962.23	2481.12	8531.23	4213.26		1.58	-0.16	0.028
95.00	-26.48	-1.35	0.00	-90.26	0.00	90.26	4880.86	2440.43	8252.09	4075.40		1.71	-0.17	0.028
98.00	-24.90	-1.35	0.00	-86.21	0.00	86.21	4159.95	2079.97	7111.13	3511.92		1.82	-0.18	0.031
100.00	-24.40	-1.35	0.00	-83.51	0.00	83.51	4136.05	2068.02	7007.35	3460.67		1.90	-0.18	0.030
105.00	-23.15	-1.35	0.00	-76.75	0.00	76.75	4075.31	2037.66	6749.44	3333.30		2.09	-0.19	0.029
110.00	-21.93	-1.35	0.00	-70.00	0.00	70.00	4013.16	2006.58	6493.86	3207.07		2.29	-0.20	0.027
115.00	-20.73	-1.35	0.00	-63.25	0.00	63.25	3949.59	1974.80	6240.77	3082.08		2.50	-0.21	0.026
120.00	-19.56	-1.35	0.00	-56.51	0.00	56.51	3884.61	1942.31	5990.33	2958.40		2.72	-0.21	0.024
125.00	-18.42	-1.34	0.00	-49.77	0.00	49.77	3798.47	1899.23	5713.02	2821.44		2.95	-0.22	0.022
125.42	-18.32	-1.35	0.00	-49.21	0.00	49.21	3790.55	1895.28	5689.10	2809.63		2.97	-0.22	0.022
130.00	-16.61	-1.34	0.00	-43.04	0.00	43.04	3703.53	1851.76	5429.36	2681.36		3.19	-0.23	0.021
131.25	-16.15	-1.34	0.00	-41.37	0.00	41.37	2389.73	1194.86	3567.35	1761.78		3.25	-0.23	0.030
135.00	-15.53	-1.34	0.00	-36.35	0.00	36.35	2365.06	1182.53	3463.05	1710.27		3.44	-0.24	0.028
140.00	-14.74	-1.33	0.00	-29.66	0.00	29.66	2330.94	1165.47	3324.42	1641.81		3.69	-0.25	0.024
145.00	-13.96	-1.31	0.00	-23.01	0.00	23.01	2295.39	1147.70	3186.42	1573.65		3.95	-0.25	0.021
150.00	-7.28	-0.97	0.00	-16.46	0.00	16.46	2258.44	1129.22	3049.21	1505.89		4.22	-0.26	0.014
155.00	-6.56	-0.92	0.00	-11.60	0.00	11.60	2220.06	1110.03	2912.95	1438.60		4.49	-0.26	0.011
160.00	-5.87	-0.86	0.00	-6.98	0.00	6.98	2180.27	1090.14	2777.81	1371.86		4.77	-0.27	0.008
165.00	-5.20	-0.78	0.00	-2.69	0.00	2.69	2139.07	1069.53	2643.95	1305.75		5.05	-0.27	0.004
167.00	-0.99	-0.18	0.00	-1.14	0.00	1.14	2122.19	1061.09	2590.80	1279.50		5.16	-0.27	0.001
170.00	-0.60	-0.12	0.00	-0.60	0.00	0.60	2096.45	1048.22	2511.52	1240.35		5.33	-0.27	0.001
175.00	0.00	-0.12	0.00	0.00	0.00	0.00	2052.41	1026.20	2380.70	1175.74		5.61	-0.27	0.000

Seismic Segment Forces (Factored)

Structure:	CT22076-A-SBA	**Code:**	EIA/TIA-222-G	6/1/2021	
Site Name:	East Haddam (Trowbridge)	**Exposure:**	C		
Height:	175.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 22	

Tower Engineering Solutions

Load Case: 0.9D + 1.0E



Gust Response Factor	1.10			**Sds**	0.19	**Iterations**	21
Dead Load Factor	0.90	**Seismic Load Factor**	1.00	**Sd1**	0.10	**Ss**	0.17
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.33	**SA**	0.03	**S1**	0.06
						Seismic Importance Factor	1.00

Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1562.5	0.00	0.03	0.02	26.24	
10.00		1537.4	0.01	0.05	0.03	38.31	
15.00		1512.4	0.01	0.06	0.03	44.24	
20.00		1487.4	0.02	0.07	0.04	47.05	
25.00		1462.3	0.04	0.07	0.04	48.28	
30.00		1437.3	0.06	0.07	0.04	48.77	
35.00		1412.2	0.08	0.07	0.04	48.98	
40.00		1387.2	0.10	0.07	0.04	49.11	
45.00	Bot - Section 2	1362.1	0.12	0.07	0.03	49.21	
50.00		2701.6	0.15	0.07	0.03	99.27	
52.75	Top - Section 1	1464.5	0.17	0.07	0.03	54.15	
55.00		599.67	0.19	0.06	0.02	22.23	
60.00		1314.4	0.22	0.06	0.02	48.33	
65.00		1289.4	0.26	0.05	0.02	45.71	
70.00		1264.3	0.30	0.04	0.01	41.22	
75.00		1239.3	0.35	0.03	0.01	34.33	
80.00		1214.2	0.39	0.02	0.01	24.74	
85.00		1189.2	0.45	0.00	0.01	12.63	
90.00		1164.1	0.50	-0.02	0.01	-1.05	
91.25	Bot - Section 3	287.13	0.51	-0.02	0.01	-1.12	
95.00		1614.3	0.56	-0.04	0.01	-20.76	
98.00	Top - Section 2	1272.4	0.59	-0.05	0.01	-24.90	
100.00		396.29	0.62	-0.06	0.02	-9.37	
105.00		975.38	0.68	-0.08	0.03	-31.08	
110.00		953.47	0.75	-0.10	0.04	-35.00	
115.00		931.55	0.82	-0.11	0.06	-35.25	
120.00		909.64	0.89	-0.12	0.08	-32.04	
125.00		887.73	0.96	-0.12	0.11	-25.68	
125.42	Bot - Section 4	72.99	0.97	-0.12	0.12	-2.06	
130.00		1370.9	1.04	-0.10	0.15	-26.11	
131.25	Top - Section 3	368.40	1.06	-0.09	0.17	-5.90	
135.00		460.25	1.12	-0.05	0.20	-2.58	
140.00		599.97	1.21	0.01	0.26	6.81	
145.00		584.32	1.30	0.12	0.33	18.63	
150.00	Appurtenance(s)	5503.3	1.39	0.26	0.42	308.17	
155.00		553.01	1.48	0.46	0.52	46.33	
160.00		537.36	1.58	0.72	0.64	61.95	
165.00		521.71	1.68	1.05	0.78	78.56	
167.00	Appurtenance(s)	3489.1	1.72	1.20	0.85	578.46	
170.00		301.75	1.78	1.46	0.95	57.26	
175.00	Appurtenance(s)	502.40	1.89	1.98	1.14	117.02	
	Totals:	**49,695.9**				**1,803.1**	**Total Wind:** **49,183.9**

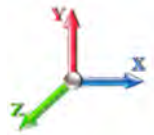
Seismic Base Shear is Less Than 50% of Wind Force - An Analysis is NOT Required

Calculated Forces

Structure:	CT22076-A-SBA	**Code:**	EIA/TIA-222-G	6/1/2021	
Site Name:	East Haddam (Trowbridge)	**Exposure:**	C		
Height:	175.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 23	

Tower Engineering Solutions

Load Case: 0.9D + 1.0E



Gust Response Factor	1.10			**Sds**	0.19			**Iterations**	21
Dead Load Factor	0.90	**Seismic Load Factor**	1.00	**Sd1**	0.10			**Ss**	0.17
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.33	**SA**	0.03			**S1**	0.06
								Seismic Importance Factor	1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-46.62	-2.06	0.00	-248.19	0.00	248.19	6094.92	3047.46	14456.0	7139.28		0.00	0.00	0.042
5.00	-45.16	-2.04	0.00	-237.90	0.00	237.90	6041.82	3020.91	14100.2	6963.58		0.00	-0.01	0.042
10.00	-43.72	-2.01	0.00	-227.70	0.00	227.70	5987.31	2993.65	13745.2	6788.27		0.02	-0.02	0.041
15.00	-42.30	-1.97	0.00	-217.66	0.00	217.66	5931.38	2965.69	13391.2	6613.44		0.04	-0.03	0.040
20.00	-40.90	-1.93	0.00	-207.81	0.00	207.81	5874.03	2937.02	13038.3	6439.15		0.07	-0.04	0.039
25.00	-39.52	-1.89	0.00	-198.17	0.00	198.17	5815.27	2907.64	12686.7	6265.50		0.12	-0.04	0.038
30.00	-38.17	-1.84	0.00	-188.75	0.00	188.75	5755.10	2877.55	12336.5	6092.55		0.17	-0.05	0.038
35.00	-36.84	-1.80	0.00	-179.54	0.00	179.54	5693.50	2846.75	11987.9	5920.39		0.23	-0.06	0.037
40.00	-35.54	-1.75	0.00	-170.56	0.00	170.56	5630.49	2815.25	11641.0	5749.10		0.30	-0.07	0.036
45.00	-34.25	-1.71	0.00	-161.80	0.00	161.80	5566.07	2783.04	11296.1	5578.76		0.38	-0.08	0.035
50.00	-31.76	-1.61	0.00	-153.27	0.00	153.27	5500.23	2750.11	10953.3	5409.44		0.47	-0.09	0.034
52.75	-30.41	-1.55	0.00	-148.85	0.00	148.85	5536.21	2768.10	11139.4	5501.37		0.52	-0.10	0.033
55.00	-29.84	-1.53	0.00	-145.36	0.00	145.36	5506.46	2753.23	10985.3	5425.27		0.57	-0.10	0.032
60.00	-28.60	-1.49	0.00	-137.69	0.00	137.69	5439.34	2719.67	10644.5	5256.96		0.68	-0.11	0.031
65.00	-27.38	-1.44	0.00	-130.25	0.00	130.25	5370.80	2685.40	10306.1	5089.82		0.80	-0.12	0.031
70.00	-26.19	-1.40	0.00	-123.04	0.00	123.04	5300.84	2650.42	9970.29	4923.95		0.92	-0.13	0.030
75.00	-25.01	-1.37	0.00	-116.02	0.00	116.02	5229.47	2614.74	9637.14	4759.42		1.06	-0.13	0.029
80.00	-23.86	-1.35	0.00	-109.17	0.00	109.17	5156.68	2578.34	9306.86	4596.31		1.20	-0.14	0.028
85.00	-22.73	-1.33	0.00	-102.44	0.00	102.44	5082.48	2541.24	8979.62	4434.70		1.36	-0.15	0.028
90.00	-21.63	-1.33	0.00	-95.77	0.00	95.77	4989.36	2494.68	8625.31	4259.72		1.52	-0.16	0.027
91.25	-21.35	-1.33	0.00	-94.10	0.00	94.10	4962.23	2481.12	8531.23	4213.26		1.56	-0.16	0.027
95.00	-19.86	-1.33	0.00	-89.10	0.00	89.10	4880.86	2440.43	8252.09	4075.40		1.69	-0.17	0.026
98.00	-18.68	-1.33	0.00	-85.10	0.00	85.10	4159.95	2079.97	7111.13	3511.92		1.80	-0.17	0.029
100.00	-18.30	-1.33	0.00	-82.44	0.00	82.44	4136.05	2068.02	7007.35	3460.67		1.87	-0.18	0.028
105.00	-17.36	-1.33	0.00	-75.79	0.00	75.79	4075.31	2037.66	6749.44	3333.30		2.06	-0.19	0.027
110.00	-16.44	-1.33	0.00	-69.14	0.00	69.14	4013.16	2006.58	6493.86	3207.07		2.26	-0.20	0.026
115.00	-15.55	-1.33	0.00	-62.49	0.00	62.49	3949.59	1974.80	6240.77	3082.08		2.47	-0.20	0.024
120.00	-14.67	-1.33	0.00	-55.84	0.00	55.84	3884.61	1942.31	5990.33	2958.40		2.69	-0.21	0.023
125.00	-13.81	-1.33	0.00	-49.20	0.00	49.20	3798.47	1899.23	5713.02	2821.44		2.92	-0.22	0.021
125.42	-13.74	-1.33	0.00	-48.65	0.00	48.65	3790.55	1895.28	5689.10	2809.63		2.94	-0.22	0.021
130.00	-12.45	-1.32	0.00	-42.57	0.00	42.57	3703.53	1851.76	5429.36	2681.36		3.15	-0.23	0.019
131.25	-12.11	-1.32	0.00	-40.92	0.00	40.92	2389.73	1194.86	3567.35	1761.78		3.21	-0.23	0.028
135.00	-11.65	-1.32	0.00	-35.96	0.00	35.96	2365.06	1182.53	3463.05	1710.27		3.39	-0.23	0.026
140.00	-11.05	-1.31	0.00	-29.36	0.00	29.36	2330.94	1165.47	3324.42	1641.81		3.64	-0.24	0.023
145.00	-10.47	-1.29	0.00	-22.79	0.00	22.79	2295.39	1147.70	3186.42	1573.65		3.90	-0.25	0.019
150.00	-5.46	-0.96	0.00	-16.32	0.00	16.32	2258.44	1129.22	3049.21	1505.89		4.16	-0.25	0.013
155.00	-4.92	-0.92	0.00	-11.50	0.00	11.50	2220.06	1110.03	2912.95	1438.60		4.43	-0.26	0.010
160.00	-4.40	-0.85	0.00	-6.93	0.00	6.93	2180.27	1090.14	2777.81	1371.86		4.71	-0.26	0.007
165.00	-3.90	-0.77	0.00	-2.67	0.00	2.67	2139.07	1069.53	2643.95	1305.75		4.98	-0.26	0.004
167.00	-0.74	-0.18	0.00	-1.13	0.00	1.13	2122.19	1061.09	2590.80	1279.50		5.09	-0.26	0.001
170.00	-0.45	-0.12	0.00	-0.60	0.00	0.60	2096.45	1048.22	2511.52	1240.35		5.26	-0.26	0.001
175.00	0.00	-0.12	0.00	0.00	0.00	0.00	2052.41	1026.20	2380.70	1175.74		5.54	-0.26	0.000

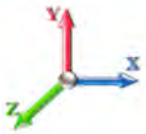
Wind Loading - Shaft

Structure:	CT22076-A-SBA	**Code:**	EIA/TIA-222-G	6/1/2021	
Site Name:	East Haddam (Trowbridge)	**Exposure:**	C		
Height:	175.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 24	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 22

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	7.442	8.19	276.80	1.000	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	7.442	8.19	272.44	1.000	0.000	5.00	24.822	24.82	203.2	0.0	1562.5
10.00		1.00	0.85	7.442	8.19	268.07	1.000	0.000	5.00	24.428	24.43	200.0	0.0	1537.5
15.00		1.00	0.85	7.442	8.19	263.71	1.000	0.000	5.00	24.033	24.03	196.7	0.0	1512.4
20.00		1.00	0.90	7.896	8.69	267.14	1.000	0.000	5.00	23.639	23.64	205.3	0.0	1487.4
25.00		1.00	0.95	8.276	9.10	268.89	1.000	0.000	5.00	23.244	23.24	211.6	0.0	1462.4
30.00		1.00	0.98	8.600	9.46	269.41	1.000	0.000	5.00	22.850	22.85	216.2	0.0	1437.3
35.00		1.00	1.01	8.883	9.77	269.05	1.000	0.000	5.00	22.456	22.46	219.4	0.0	1412.3
40.00		1.00	1.04	9.137	10.05	268.02	1.000	0.000	5.00	22.061	22.06	221.7	0.0	1387.2
45.00	Bot - Section 2	1.00	1.07	9.366	10.30	266.47	1.000	0.000	5.00	21.667	21.67	223.2	0.0	1362.2
50.00		1.00	1.09	9.576	10.53	264.50	1.000	0.000	5.00	21.704	21.70	228.6	0.0	2701.7
52.75	Top - Section 1	1.00	1.11	9.685	10.65	263.25	1.000	0.000	2.75	11.769	11.77	125.4	0.0	1464.6
55.00		1.00	1.12	9.770	10.75	267.63	1.000	0.000	2.25	9.540	9.54	102.5	0.0	599.7
60.00		1.00	1.14	9.951	10.95	265.05	1.000	0.000	5.00	20.915	20.92	228.9	0.0	1314.4
65.00		1.00	1.16	10.120	11.13	262.20	1.000	0.000	5.00	20.521	20.52	228.4	0.0	1289.4
70.00		1.00	1.17	10.279	11.31	259.13	1.000	0.000	5.00	20.126	20.13	227.6	0.0	1264.4
75.00		1.00	1.19	10.430	11.47	255.85	1.000	0.000	5.00	19.732	19.73	226.4	0.0	1239.3
80.00		1.00	1.21	10.572	11.63	252.39	1.000	0.000	5.00	19.337	19.34	224.9	0.0	1214.3
85.00		1.00	1.22	10.708	11.78	248.78	1.000	0.000	5.00	18.943	18.94	223.1	0.0	1189.2
90.00		1.00	1.24	10.838	11.92	245.01	1.000	0.000	5.00	18.549	18.55	221.1	0.0	1164.2
91.25	Bot - Section 3	1.00	1.24	10.869	11.96	244.05	1.000	0.000	1.25	4.576	4.58	54.7	0.0	287.1
95.00		1.00	1.25	10.962	12.06	241.12	1.000	0.000	3.75	13.862	13.86	167.1	0.0	1614.4
98.00	Top - Section 2	1.00	1.26	11.034	12.14	238.72	1.000	0.000	3.00	10.930	10.93	132.7	0.0	1272.5
100.00		1.00	1.27	11.081	12.19	242.19	1.000	0.000	2.00	7.208	7.21	87.9	0.0	396.3
105.00		1.00	1.28	11.195	12.31	238.09	1.000	0.000	5.00	17.743	17.74	218.5	0.0	975.4
110.00		1.00	1.29	11.305	12.44	233.88	1.000	0.000	5.00	17.349	17.35	215.7	0.0	953.5
115.00		1.00	1.30	11.412	12.55	229.57	1.000	0.000	5.00	16.954	16.95	212.8	0.0	931.6
120.00		1.00	1.32	11.514	12.67	225.17	1.000	0.000	5.00	16.560	16.56	209.7	0.0	909.6
125.00		1.00	1.33	11.614	12.78	220.69	1.000	0.000	5.00	16.165	16.17	206.5	0.0	887.7
125.42	Bot - Section 4	1.00	1.33	11.622	12.78	220.32	1.000	0.000	0.42	1.329	1.33	17.0	0.0	73.0
130.00		1.00	1.34	11.710	12.88	216.13	1.000	0.000	4.58	14.689	14.69	189.2	0.0	1370.9
131.25	Top - Section 3	1.00	1.34	11.734	12.91	214.98	1.000	0.000	1.25	3.949	3.95	51.0	0.0	368.4
135.00		1.00	1.35	11.803	12.98	215.26	1.000	0.000	3.75	11.698	11.70	151.9	0.0	460.3
140.00		1.00	1.36	11.894	13.08	210.56	1.000	0.000	5.00	15.252	15.25	199.5	0.0	600.0
145.00		1.00	1.37	11.982	13.18	205.81	1.000	0.000	5.00	14.857	14.86	195.8	0.0	584.3
150.00	Appurtenance(s)	1.00	1.38	12.068	13.27	200.99	1.000	0.000	5.00	14.463	14.46	192.0	0.0	568.7
155.00		1.00	1.39	12.152	13.37	196.11	1.000	0.000	5.00	14.069	14.07	188.1	0.0	553.0
160.00		1.00	1.40	12.233	13.46	191.17	1.000	0.000	5.00	13.674	13.67	184.0	0.0	537.4
165.00		1.00	1.41	12.313	13.54	186.18	1.000	0.000	5.00	13.280	13.28	179.9	0.0	521.7
167.00	Appurtenance(s)	1.00	1.41	12.344	13.58	184.16	1.000	0.000	2.00	5.202	5.20	70.6	0.0	204.3
170.00		1.00	1.42	12.390	13.63	181.13	1.000	0.000	3.00	7.684	7.68	104.7	0.0	301.8
175.00	Appurtenance(s)	1.00	1.42	12.466	13.71	176.04	1.000	0.000	5.00	12.491	12.49	171.3	0.0	490.4
								Totals:	**175.00**			**7,335.0**		**41,464.4**

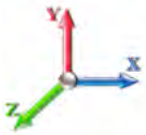
Discrete Appurtenance Forces

Structure:	CT22076-A-SBA	**Code:**	EIA/TIA-222-G	6/1/2021	
Site Name:	East Haddam (Trowbridge)	**Exposure:**	C		
Height:	175.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 25	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 22

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	175.00	Lightning rod	1	12.466	13.713	1.00	1.00	1.25	12.00	0.000	0.000	17.14	0.00	0.00
2	167.00	QS46512-2	1	12.344	13.578	1.00	1.00	5.55	75.00	0.000	0.000	75.36	0.00	0.00
3	167.00	LGP21401	6	12.344	13.578	0.49	0.75	3.83	84.60	0.000	0.000	52.02	0.00	0.00
4	167.00	DC6-48-60-18-8F	1	12.344	13.578	1.00	1.00	0.92	31.80	0.000	0.000	12.49	0.00	0.00
5	167.00	RRUS-11	3	12.344	13.578	0.50	0.75	3.87	150.00	0.000	0.000	52.61	0.00	0.00
6	167.00	Platform	1	12.344	13.578	1.00	1.00	22.00	1600.00	0.000	0.000	298.73	0.00	0.00
7	167.00	LGP21901 Diplexer	6	12.466	13.713	0.38	0.75	0.52	33.00	0.000	8.000	7.10	0.00	56.77
8	167.00	TPA-65R-LCUUUU-H8	2	12.344	13.578	0.62	0.75	16.56	150.00	0.000	0.000	224.84	0.00	0.00
9	167.00	RRUS 4415 B25	3	12.344	13.578	0.50	0.75	2.47	138.00	0.000	0.000	33.57	0.00	0.00
10	167.00	DBC0061F1V51-2	3	12.344	13.578	0.38	0.75	0.48	76.20	0.000	0.000	6.57	0.00	0.00
11	167.00	HRK14	1	12.344	13.578	1.00	1.00	8.13	302.36	0.000	0.000	110.39	0.00	0.00
12	167.00	PRK-1245 (kicker kit)	1	12.344	13.578	1.00	1.00	9.50	464.91	0.000	0.000	129.00	0.00	0.00
13	167.00	AM-X-CD-17-65-00T-RET	2	12.344	13.578	0.59	0.75	5.93	61.60	0.000	0.000	80.45	0.00	0.00
14	167.00	7770.00A	3	12.344	13.578	0.54	0.75	8.97	81.00	0.000	0.000	121.86	0.00	0.00
15	167.00	SBNH-1D4545A	1	12.344	13.578	1.00	1.00	9.10	36.40	0.000	0.000	123.56	0.00	0.00
16	150.00	SP2-5.2	2	12.068	13.275	1.00	1.00	7.92	44.00	0.000	0.000	105.14	0.00	0.00
17	150.00	Ericsson 4449 B71 + B85	4	12.068	13.275	0.50	0.75	3.96	292.80	0.000	0.000	52.56	0.00	0.00
18	150.00	KRD 9011461-B66A-B2A	4	12.068	13.275	0.65	0.75	16.80	528.80	0.000	0.000	222.96	0.00	0.00
19	150.00	APXVAA24_43-U-A20	4	12.068	13.275	0.54	0.75	43.72	491.20	0.000	0.000	580.36	0.00	0.00
20	150.00	APX16DWV-16DWVS-C	4	12.068	13.275	0.46	0.75	12.02	162.80	0.000	0.000	159.51	0.00	0.00
21	150.00	RRUS 4478	4	12.068	13.275	0.50	0.75	3.32	240.00	0.000	0.000	44.03	0.00	0.00
22	150.00	MI-554nn	8	12.068	13.275	0.38	0.75	1.89	96.80	0.000	0.000	25.09	0.00	0.00
23	150.00	S11B4	4	12.068	13.275	0.50	0.75	5.69	204.00	0.000	0.000	75.51	0.00	0.00
24	150.00	F4P-10W	1	12.068	13.275	1.00	1.00	58.98	2396.00	0.000	0.000	782.96	0.00	0.00
25	150.00	F4P-HRK10	1	12.068	13.275	1.00	1.00	9.00	478.27	0.000	0.000	119.47	0.00	0.00
							Totals:		**8,231.54**			**3,513.28**		

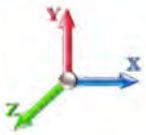
Total Applied Force Summary

Structure:	CT22076-A-SBA		**Code:**	EIA/TIA-222-G	6/1/2021
Site Name:	East Haddam (Trowbridge)		**Exposure:**	C	
Height:	175.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 26

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 22

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		203.20	1627.44	0.00	0.00
10.00		199.97	1602.39	0.00	0.00
15.00		196.74	1577.35	0.00	0.00
20.00		205.32	1552.31	0.00	0.00
25.00		211.61	1527.26	0.00	0.00
30.00		216.16	1502.22	0.00	0.00
35.00		219.43	1477.17	0.00	0.00
40.00		221.73	1452.13	0.00	0.00
45.00		223.23	1427.08	0.00	0.00
50.00		228.62	2766.57	0.00	0.00
52.75		125.38	1500.26	0.00	0.00
55.00		102.53	628.87	0.00	0.00
60.00		228.94	1379.34	0.00	0.00
65.00		228.44	1354.30	0.00	0.00
70.00		227.57	1329.25	0.00	0.00
75.00		226.37	1304.21	0.00	0.00
80.00		224.88	1279.16	0.00	0.00
85.00		223.13	1254.12	0.00	0.00
90.00		221.13	1229.08	0.00	0.00
91.25		54.71	303.36	0.00	0.00
95.00		167.14	1663.03	0.00	0.00
98.00		132.66	1311.40	0.00	0.00
100.00		87.85	422.25	0.00	0.00
105.00		218.50	1040.28	0.00	0.00
110.00		215.74	1018.37	0.00	0.00
115.00		212.82	996.45	0.00	0.00
120.00		209.74	974.54	0.00	0.00
125.00		206.51	952.63	0.00	0.00
125.42		16.99	78.40	0.00	0.00
130.00		189.21	1430.39	0.00	0.00
131.25		50.96	384.63	0.00	0.00
135.00		151.88	508.93	0.00	0.00
140.00		199.55	664.87	0.00	0.00
145.00		195.83	649.22	0.00	0.00
150.00	(36) attachments	2359.59	5568.24	0.00	0.00
155.00		188.05	593.51	0.00	0.00
160.00		184.01	577.86	0.00	0.00
165.00		179.86	562.21	0.00	0.00
167.00	(34) attachments	1399.18	3505.37	0.00	56.77
170.00		104.73	326.05	0.00	0.00
175.00	(1) attachments	188.43	502.40	0.00	0.00
	Totals:	**10,848.32**	**51,804.90**	**0.00**	**56.77**

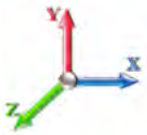
Calculated Forces

Structure:	CT22076-A-SBA	**Code:**	EIA/TIA-222-G	6/1/2021	
Site Name:	East Haddam (Trowbridge)	**Exposure:**	C		
Height:	175.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 27	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 22

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-51.80	-10.87	0.00	-1230.5	0.00	1230.51	6094.92	3047.46	14456.0	7139.28	0.00	0.000	0.000	0.181
5.00	-50.17	-10.70	0.00	-1176.1	0.00	1176.17	6041.82	3020.91	14100.2	6963.58	0.02	-0.044	0.000	0.177
10.00	-48.55	-10.54	0.00	-1122.6	0.00	1122.66	5987.31	2993.65	13745.2	6788.27	0.09	-0.088	0.000	0.174
15.00	-46.97	-10.37	0.00	-1069.9	0.00	1069.97	5931.38	2965.69	13391.2	6613.44	0.21	-0.132	0.000	0.170
20.00	-45.41	-10.20	0.00	-1018.1	0.00	1018.10	5874.03	2937.02	13038.3	6439.15	0.37	-0.176	0.000	0.166
25.00	-43.88	-10.02	0.00	-967.11	0.00	967.11	5815.27	2907.64	12686.7	6265.50	0.58	-0.220	0.000	0.162
30.00	-42.37	-9.83	0.00	-917.03	0.00	917.03	5755.10	2877.55	12336.5	6092.55	0.83	-0.264	0.000	0.158
35.00	-40.88	-9.63	0.00	-867.90	0.00	867.90	5693.50	2846.75	11987.9	5920.39	1.13	-0.308	0.000	0.154
40.00	-39.43	-9.43	0.00	-819.75	0.00	819.75	5630.49	2815.25	11641.0	5749.10	1.48	-0.351	0.000	0.150
45.00	-37.99	-9.23	0.00	-772.60	0.00	772.60	5566.07	2783.04	11296.1	5578.76	1.87	-0.395	0.000	0.145
50.00	-35.22	-9.00	0.00	-726.46	0.00	726.46	5500.23	2750.11	10953.3	5409.44	2.31	-0.438	0.000	0.141
52.75	-33.72	-8.87	0.00	-701.72	0.00	701.72	5536.21	2768.10	11139.4	5501.37	2.57	-0.462	0.000	0.134
55.00	-33.09	-8.78	0.00	-681.75	0.00	681.75	5506.46	2753.23	10985.3	5425.27	2.79	-0.482	0.000	0.132
60.00	-31.70	-8.57	0.00	-637.83	0.00	637.83	5439.34	2719.67	10644.5	5256.96	3.32	-0.522	0.000	0.127
65.00	-30.35	-8.34	0.00	-595.01	0.00	595.01	5370.80	2685.40	10306.1	5089.82	3.88	-0.562	0.000	0.123
70.00	-29.01	-8.12	0.00	-553.28	0.00	553.28	5300.84	2650.42	9970.29	4923.95	4.49	-0.601	0.000	0.118
75.00	-27.71	-7.90	0.00	-512.67	0.00	512.67	5229.47	2614.74	9637.14	4759.42	5.14	-0.640	0.000	0.113
80.00	-26.43	-7.68	0.00	-473.16	0.00	473.16	5156.68	2578.34	9306.86	4596.31	5.83	-0.678	0.000	0.108
85.00	-25.17	-7.46	0.00	-434.76	0.00	434.76	5082.48	2541.24	8979.62	4434.70	6.56	-0.715	0.000	0.103
90.00	-23.94	-7.23	0.00	-397.48	0.00	397.48	4989.36	2494.68	8625.31	4259.72	7.33	-0.751	0.000	0.098
91.25	-23.64	-7.18	0.00	-388.44	0.00	388.44	4962.23	2481.12	8531.23	4213.26	7.53	-0.761	0.000	0.097
95.00	-21.97	-7.00	0.00	-361.52	0.00	361.52	4880.86	2440.43	8252.09	4075.40	8.14	-0.787	0.000	0.093
98.00	-20.66	-6.85	0.00	-340.53	0.00	340.53	4159.95	2079.97	7111.13	3511.92	8.64	-0.808	0.000	0.102
100.00	-20.24	-6.77	0.00	-326.82	0.00	326.82	4136.05	2068.02	7007.35	3460.67	8.98	-0.822	0.000	0.099
105.00	-19.20	-6.55	0.00	-292.98	0.00	292.98	4075.31	2037.66	6749.44	3333.30	9.86	-0.857	0.000	0.093
110.00	-18.18	-6.33	0.00	-260.25	0.00	260.25	4013.16	2006.58	6493.86	3207.07	10.78	-0.891	0.000	0.086
115.00	-17.18	-6.11	0.00	-228.63	0.00	228.63	3949.59	1974.80	6240.77	3082.08	11.73	-0.923	0.000	0.079
120.00	-16.21	-5.89	0.00	-198.10	0.00	198.10	3884.61	1942.31	5990.33	2958.40	12.71	-0.952	0.000	0.071
125.00	-15.26	-5.67	0.00	-168.66	0.00	168.66	3798.47	1899.23	5713.02	2821.44	13.72	-0.980	0.000	0.064
125.42	-15.18	-5.65	0.00	-166.29	0.00	166.29	3790.55	1895.28	5689.10	2809.63	13.81	-0.982	0.000	0.063
130.00	-13.75	-5.44	0.00	-140.38	0.00	140.38	3703.53	1851.76	5429.36	2681.36	14.76	-1.005	0.000	0.056
131.25	-13.36	-5.39	0.00	-133.57	0.00	133.57	2389.73	1194.86	3567.35	1761.78	15.03	-1.011	0.000	0.081
135.00	-12.86	-5.23	0.00	-113.36	0.00	113.36	2365.06	1182.53	3463.05	1710.27	15.83	-1.027	0.000	0.072
140.00	-12.19	-5.03	0.00	-87.20	0.00	87.20	2330.94	1165.47	3324.42	1641.81	16.92	-1.052	0.000	0.058
145.00	-11.55	-4.82	0.00	-62.06	0.00	62.06	2295.39	1147.70	3186.42	1573.65	18.03	-1.072	0.000	0.044
150.00	-6.02	-2.36	0.00	-37.95	0.00	37.95	2258.44	1129.22	3049.21	1505.89	19.16	-1.087	0.000	0.028
155.00	-5.43	-2.16	0.00	-26.16	0.00	26.16	2220.06	1110.03	2912.95	1438.60	20.31	-1.097	0.000	0.021
160.00	-4.86	-1.97	0.00	-15.36	0.00	15.36	2180.27	1090.14	2777.81	1371.86	21.46	-1.104	0.000	0.013
165.00	-4.30	-1.78	0.00	-5.53	0.00	5.53	2139.07	1069.53	2643.95	1305.75	22.62	-1.108	0.000	0.006
167.00	-0.82	-0.31	0.00	-1.92	0.00	1.92	2122.19	1061.09	2590.80	1279.50	23.08	-1.108	0.000	0.002
170.00	-0.50	-0.20	0.00	-0.99	0.00	0.99	2096.45	1048.22	2511.52	1240.35	23.78	-1.109	0.000	0.001
175.00	0.00	-0.19	0.00	0.00	0.00	0.00	2052.41	1026.20	2380.70	1175.74	24.94	-1.109	0.000	0.000

Final Analysis Summary

Structure:	CT22076-A-SBA		**Code:**	EIA/TIA-222-G	6/1/2021
Site Name:	East Haddam (Trowbridge)		**Exposure:**	C	
Height:	175.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 28

Reactions

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 101 mph Wind	49.3	0.00	62.08	0.00	0.00	5608.95
0.9D + 1.6W 101 mph Wind	49.3	0.00	46.54	0.00	0.00	5554.38
1.2D + 1.0Di + 1.0Wi 50 mph Wind	10.5	0.00	88.58	0.00	0.00	1276.91
1.2D + 1.0E	2.1	0.00	62.17	0.00	0.00	250.79
0.9D + 1.0E	2.1	0.00	46.62	0.00	0.00	248.19
1.0D + 1.0W 60 mph Wind	10.9	0.00	51.80	0.00	0.00	1230.51

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 101 mph Wind	-62.08	-49.29	0.00	-5608.9	0.00	-5608.9	6094.92	3047.4	14456.0	7139.28	0.00	0.796
0.9D + 1.6W 101 mph Wind	-46.54	-49.27	0.00	-5554.3	0.00	-5554.3	6094.92	3047.4	14456.0	7139.28	0.00	0.786
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-88.58	-10.54	0.00	-1276.9	0.00	-1276.9	6094.92	3047.4	14456.0	7139.28	0.00	0.193
1.2D + 1.0E	-62.17	-2.06	0.00	-250.79	0.00	-250.79	6094.92	3047.4	14456.0	7139.28	0.00	0.045
0.9D + 1.0E	-46.62	-2.06	0.00	-248.19	0.00	-248.19	6094.92	3047.4	14456.0	7139.28	0.00	0.042
1.0D + 1.0W 60 mph Wind	-51.80	-10.87	0.00	-1230.5	0.00	-1230.5	6094.92	3047.4	14456.0	7139.28	0.00	0.181

Base Plate Summary

Structure:	CT22076-A-SB		**Code:**	EIA/TIA-222-G	6/1/2021
Site Name:	East Haddam (Trowbridge)		**Exposure:**	C	
Height:	175.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 29

Tower Engineering Solutions

Reactions	
Original Design	
Moment (kip-ft):	7478.92
Axial (kip):	77.65
Shear (kip):	54.08
Analysis (1.2D + 1.6W)	
Moment (kip-ft):	5608.95
Axial (kip):	62.08
Shear (kip):	49.29

Base Plate	
Yield (ksi):	50.00
Width (in):	81.83
Style:	Polygon
Polygon Sides:	12.00
Clip Length (in):	0.00
Effective Len (in):	17.08
Moment (kip-in):	1622.09
Allow Stress (ksi):	67.50
Applied Stress (ksi):	54.00
Stress Ratio:	0.80

Anchor Bolts	
Bolt Circle:	75.83
Number Bolts:	20.00
Bolt Type:	2.25" 18J
Bolt Diameter (in):	2.25
Yield (ksi):	75.00
Ultimate (ksi):	100.00
Arrangement:	Radial
Cluster Dist (in):	0.00
Start Angle (deg):	0.00
Compression	
Force (kip):	181.95
Allowable (kip):	260.00
Ratio:	0.72
Tension	
Force (kip):	173.09
Allowable (kip):	260.00
Ratio:	0.68

Monopole Mat Foundation Design

			Date: 6/1/2021
Customer Name:	T-Mobile	**EIA/TIA Standard:**	EIA-222-G
Site Name:		**Structure Height (Ft.):**	175
Site Number:	CT22076-A-SBA	**Engineer Name:**	T. Alajaj
Engr. Number:	109426	**Engineer Login ID:**	

Foundation Info Obtained from: Mapping Operation

Structure Type: Monopole

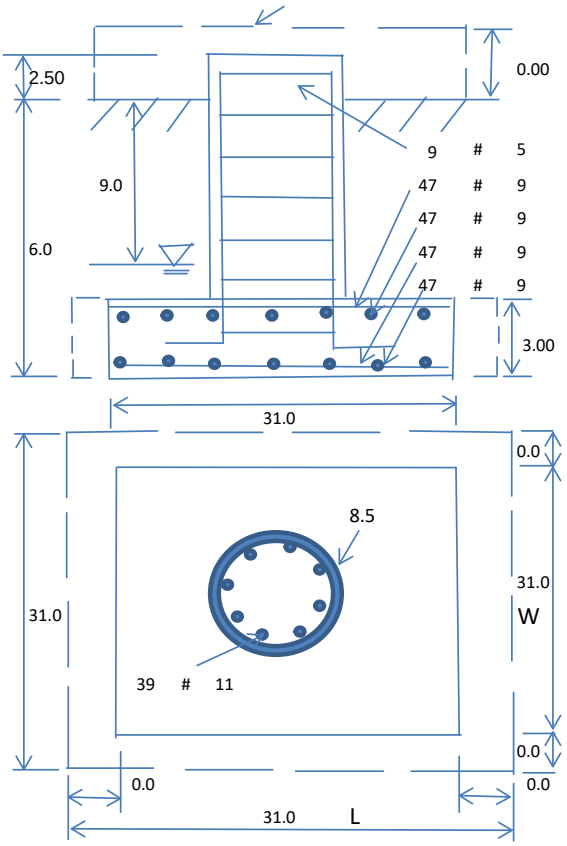
Analysis or Design? Analysis

Base Reactions (Factored):

Axial Load (Kips):	62.1	Shear Force (Kips):	49.3
Uplift Force (Kips):	0.0	Moment (Kips-ft):	5608.9
Allowable overstress %:	5.0%		

Foundation Geometries:

		Mods required -Yes/No ?:	No
Diameter of Pier (ft.):	8.5	Depth of Base BG (ft.):	6.0
Pier Height A. G. (ft.):	2.50	Thickness of Pad (ft):	3.00
Length of Pad (ft.):	31	Width of Pad (ft.):	31
Final Length of pad (ft)	31.0	Final width of pad (ft):	31.0



Material Properties and Reabr 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 #:	5	
Qty. of Vertical Rebars:	39	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):	47	Qty. of Rebar in Pad (W):	47

Rebar at the top of the concrete pad:

Qty. of Rebar in Pad (L):	47	Qty. of Rebar in Pad (W):	47
Apply 1.35 factor for e/w Per G:	1.35		

Soil Design Parameters:

Soil Unit Weight (pcf):	140.0	Soil Buoyant Weight:	50.0	Pcf		
Water Table B.G.S. (ft):	9.0	Unit Weight of Water:	62.4	pcf	Angle from Top of Pad:	30
Ultimate Bearing Pressure (psf):	14000	Ultimate Skin Friction:	0	Psf	Angle from Bottm of Pad:	25
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	No		Angle from Bottm of Pad:	25
Consider soil hor. resist. for OTM.:	No	Reduction factor on the maximum soil bearing pressure:	1.00			

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

Total Dry Soil Volume (cu. Ft.):	2712.76	Total Dry Soil Weight (Kips):	379.79
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	379.79	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	3195.10	Total Dry Concrete Weight (Kips):	479.26
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00
Total Effective Concrete Weight (Kips):	479.26	Total Vertical Load on Base (Kips):	921.15

Check Soil Capacities:

					Load/ Capacity Ratio	
Calculated Maxium Net Soil Pressure under the base (psf):	2188	<	Allowable Factored Soil Bearing (psf):	10500	0.21	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	12946.3	>	Design Factored Momont (kips-ft):	6028	0.47	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	2.15	OK!				

Check the capacities of Reinforceing Concrete:

Strength reduction factor (Flexure and axial tension):	0.90		Strength reduction factor (Shear):	0.75		
Strength reduction factor (Axial compresion):	0.65		Wind Load Factor on Concrete Design:	1.00		
					Load/ Capacity Ratio	
(1) Concrete Pier:						
Vertical Steel Rebar Area (sq. in./each):	1.56		Tie / Stirrup Area (sq. in./each):	0.31		
Calculated Moment Capacity (Mn,Kips-Ft):	12178.8	>	Design Factored Moment (Mu, Kips-F	5880.1	0.48	OK!
Calculated Shear Capacity (Kips):	1028.2	>	Design Factored Shear (Kips):	49.3	0.05	OK!
Calculated Tension Capacity (Tn, Kips):	3285.4	>	Design Factored Tension (Tu Kips):	0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	14339.3	>	Design Factored Axial Load (Pu Kips):	62.1	0.00	OK!
Moment & Axial Strength Combination:	0.48	OK!	Check Tie Spacing (Design/Required):		1	OK!
Pier Reinforcement Ratio:	0.007		Reinforcement Ratio is satisfied per ACI			
(2).Concrete Pad:						
One-Way Design Shear Capacity (L-Direction, Kips):	1144.8	>	One-Way Factored Shear (L-D. Kips):	320.3	0.28	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	1144.8	>	One-Way Factored Shear (W-D., Kips)	320.3	0.28	OK!
One-Way Design Shear Capacity (Corner-Corner. Kips):	1105.4	>	One-Way Factored Shear (C-C, Kips):	312.7	0.28	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0039	OK!	Lower Steel Pad Reinf. Ratio (W-Direc	0.0039		
Lower Steel Pad Moment Capacity (L-Direction. Kips-ft):	6624.8	>	Moment at Bottom (L-Dir. K-Ft):	2093.3	0.32	OK!
Lower Steel Pad Moment Capacity (W-Direction. Kips-ft):	6624.8	>	Moment at Bottom (W-Dir. K-Ft):	2093.3	0.32	OK!
Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):	9288.6	>	Moment at Bottom (C-C Dir. K-Ft):	2960.4	0.32	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0039	OK!	Upper Steel Reinf. Ratio (W-Dir.):	0.0039		
Upper Steel Pad Moment Capacity (L-Direc. Kips-ft):	6624.8	>	Moment at the top (L-Dir K-Ft):	953.6	0.14	OK!
Upper Steel Pad Moment Capacity (W-Direc. Kips-ft):	6624.8	>	Moment at the top (W-Dir K-Ft):	953.6	0.14	OK!
Upper Steel Pad Moment Capacity (Corner-Corner. K-ft):	9288.6	>	Moment at the top (C-C Dir. K-Ft):	894.0	0.10	OK!
(3).Check Punching Shear Capacity due to Moment in the Pier:						
Moment transferred by punching shear:	2243.6	k-ft.	Max. factored shear stress v_{u_CD}:		3.4	Psi
Max. factored shear stress v_{u_AB}:	10.7	Psi	Factored shear Strength ϕv_n:		189.7	Psi
Max. factored shear stress v_u:	10.7	Psi	Check Usage of Punching Shear Capacity:		0.06	OK!

EXHIBIT 8

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

Antenna Mount Analysis Report

Existing 175-Ft Monopole Tower

Customer Name: SBA Communications Corp

Customer Site Number: CT22076-A-SBA / East Haddam (Trowbridge)

Customer Site Name: East Haddam (Trowbridge)

Carrier Name: T-Mobile (App#: 154414-1)

Carrier Site ID / Name: CTHA603B / East Haddam

Site Location: 39 Nichols Rd

East Haddam, Connecticut

MIDDLESEX County

Latitude: 41.521000

Longitude: -72.423200

Exp.10/31/2021

05/25/2021

Analysis Result:

Max Structural Usage: 87.4% [Pass]

Report Prepared By : Noah Kessler

Introduction

The purpose of this report is to summarize the analysis results on the (1) Sitepro F4P-10W w/ HRK10 at 150.00' elevation to support the proposed antenna configuration. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Mount Drawings	(1) Sitepro F4P-10W w/ HRK10
Antenna Loading	Provided by SBA#: 154414, v1
Modification Drawings	N/A

Analysis Criteria

Basic Wind Speed Used in the Analysis: V_{ULT} = 130 mph (3-Sec. Gust) / Equivalent to
V_{ASD} = 101 mph (3-Sec. Gust)
Basic Wind Speed with Ice: 50 mph (3-Sec. Gust) with 0.75" radial ice concurrent
Operational Wind Speed: 30 mph +0" Radial ice
Standard/Codes: ANSI/TIA/EIA 222-G
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) Sitepro F4P-10W w/ HRK10 at 150.00' elevation

Final Antenna Configuration

4	Ericsson AIR32 KRD901146-1_B66A_B2A (Octo)
4	RFS APXVAALL24-43-U_NA20
4	RFS APX16DWV-16DWVS-E-A20
4	Ericsson 4449 B71 + B85
4	Ericsson S11B4

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

Analysis Results

Our calculations have determined that under design wind load the existing mounts will be structurally adequate to support the proposed antenna configuration. The maximum structural usage is 87.4%, which occurs in the mount pipes. 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
2. Antenna Placement Diagram
3. Analysis Calculations

Standard Conditions

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

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

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

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

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

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

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

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

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

Structure: CT22076-A-SBA - East Haddam (Trowbridge)

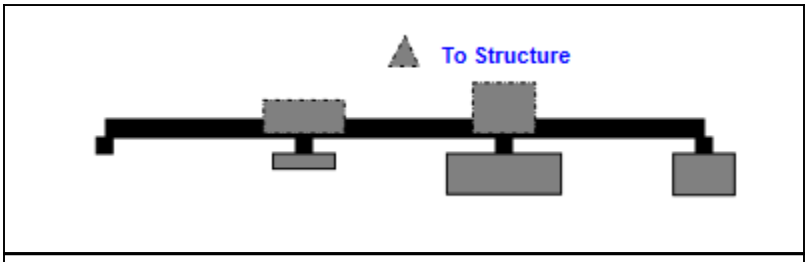
Sector: **A**

Structure Type: Monopole

Mount Elev: 150.00

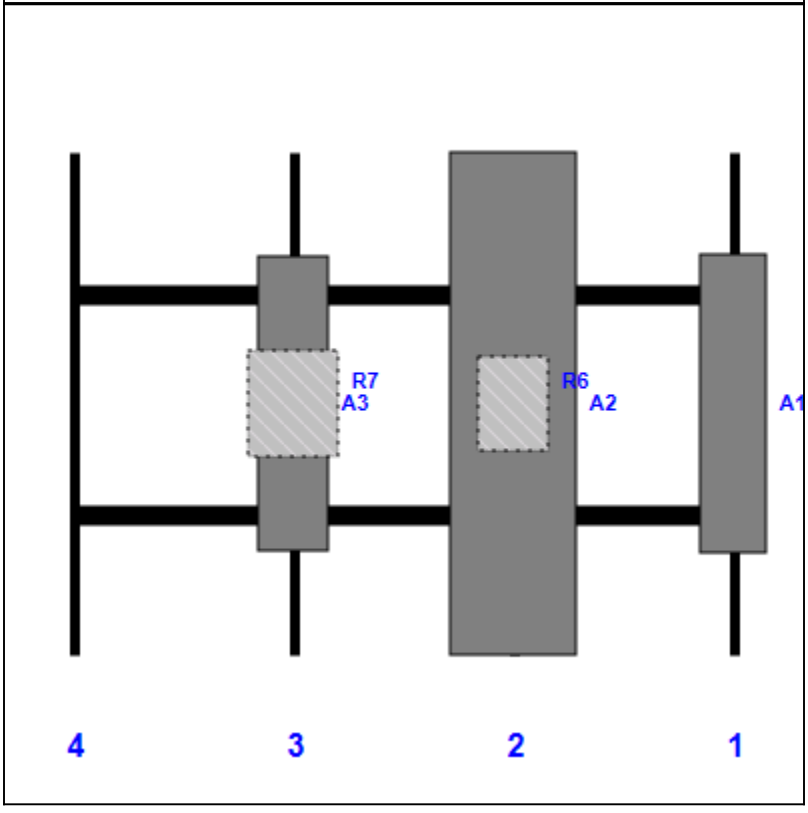
5/25/2021

Plan View



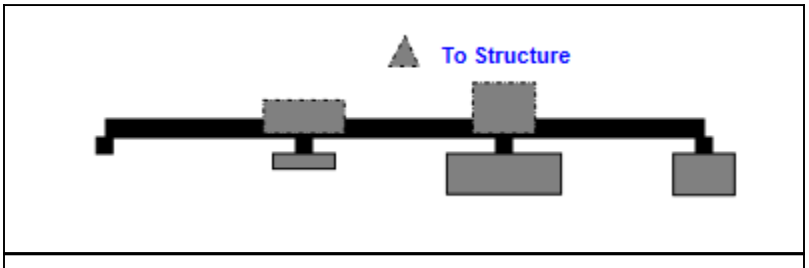
Front View

Looking Toward Structure



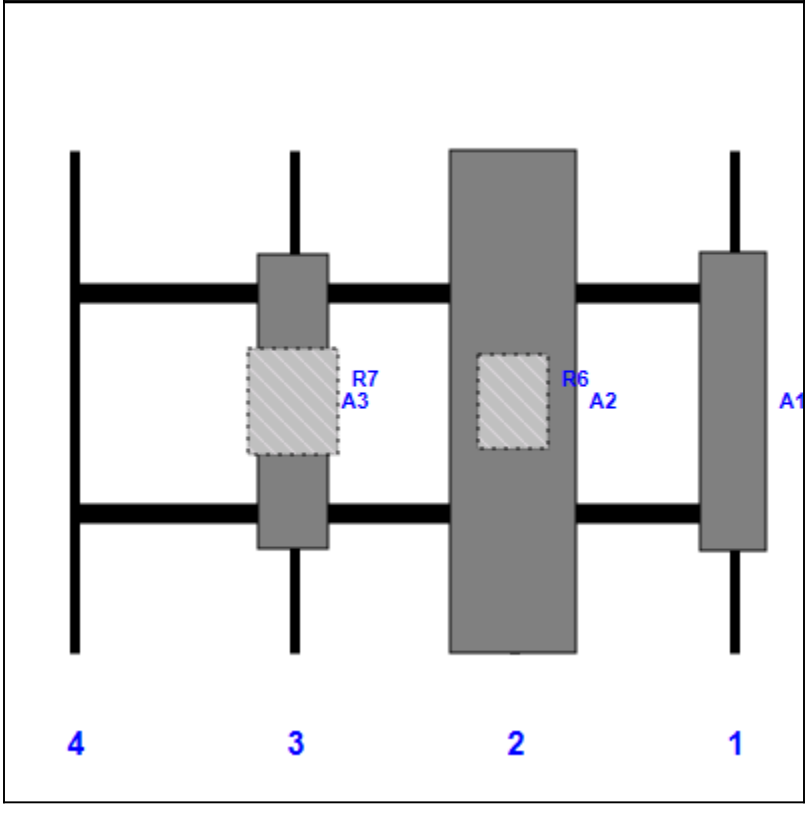
Ref #	Model	Height (in)	Width (in)	H Dist Left	Pipe #	Pipe Pos V	Pos	From Top	H Offset	Status	Validation
A1	AIR32 KRD901146-1_B66A_B2A (Octo)	56.60	12.90	126.00	1	a	Front	48.00			
A2	APXVAALL24-43-U_NA20	95.90	24.00	84.00	2	a	Front	48.00			
R6	4449 B71 + B85	17.90	13.10	84.00	2	a	Behind	48.00			
A3	APX16DWV-16DWVS-E-A20	55.90	13.00	42.00	3	a	Front	48.00			
R7	S11B4	20.00	17.00	42.00	3	a	Behind	48.00			
MP1	AIR32 KRD901146-1_B66A_B2A	56.60	12.90		Member						
MP2	APXVAALL24-43-U_NA20	95.90	24.00		Member						
MP3	APX16DWV-16DWVS-E-A20	55.90	13.00		Member						
MP3	MI-554nn	11.80	6.30		Member						
MP3	MI-554nn	11.80	6.30		Member						
MP2	4449 B71 + B85	17.90	13.10		Member						
MP3	S11B4	20.00	17.00		Member						
MP3	4478	15.00	13.20		Member						

Plan View



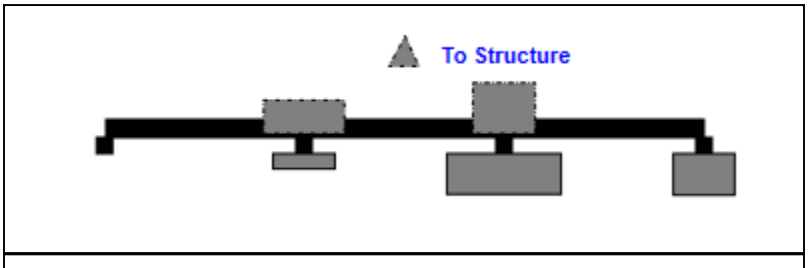
Front View

Looking Toward Structure



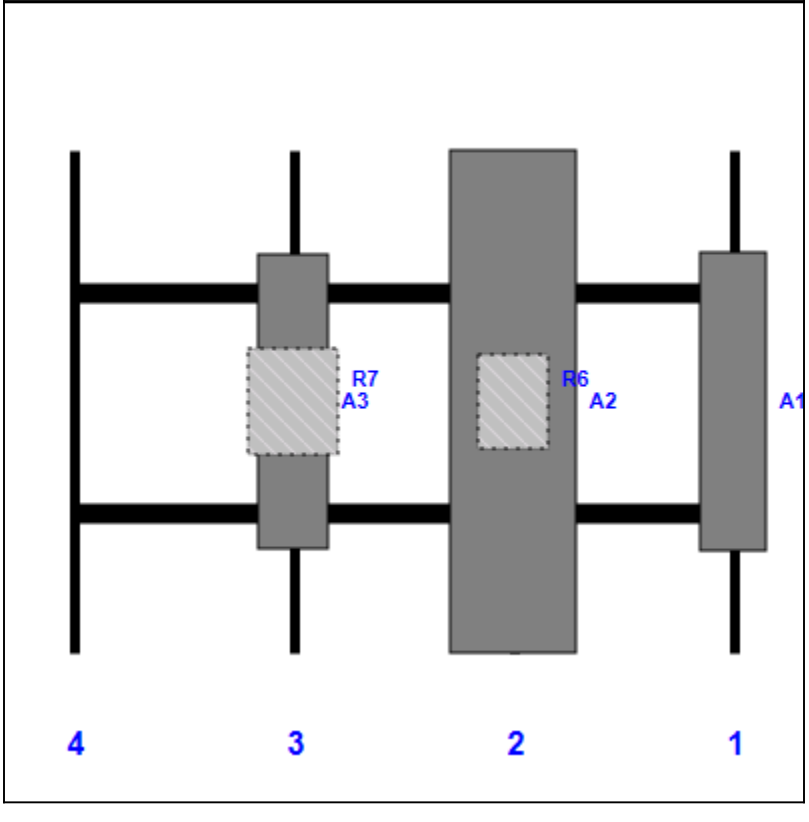
Ref #	Model	Height (in)	Width (in)	H Dist Left	Pipe #	Pipe Pos V	Pos	From Top	H Offset	Status	Validation
A1	AIR32 KRD901146-1_B66A_B2A (Octo)	56.60	12.90	126.00	1	a	Front	48.00			
A2	APXVAALL24-43-U_NA20	95.90	24.00	84.00	2	a	Front	48.00			
R6	4449 B71 + B85	17.90	13.10	84.00	2	a	Behind	48.00			
A3	APX16DWV-16DWVS-E-A20	55.90	13.00	42.00	3	a	Front	48.00			
R7	S11B4	20.00	17.00	42.00	3	a	Behind	48.00			

Plan View

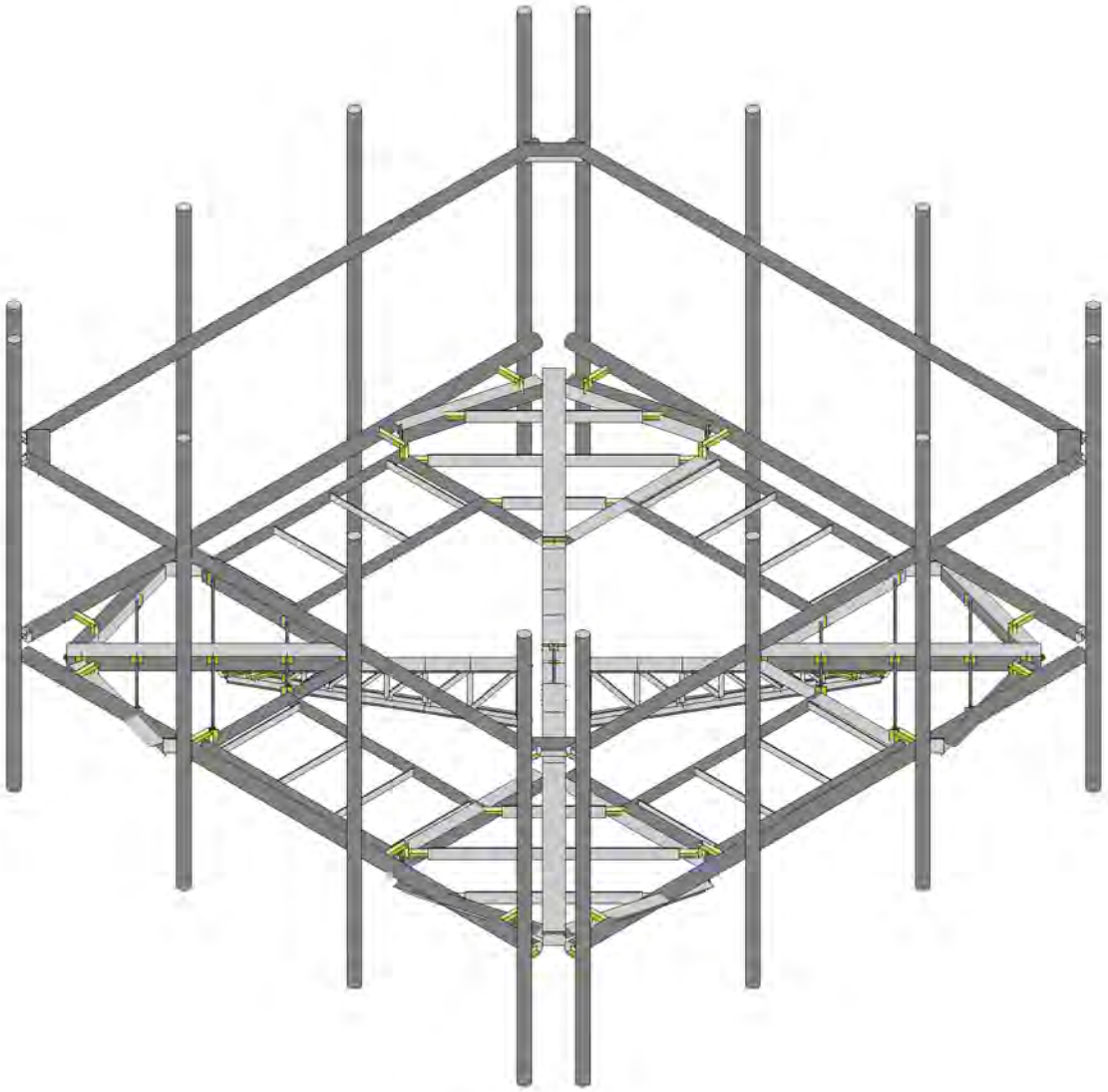


Front View

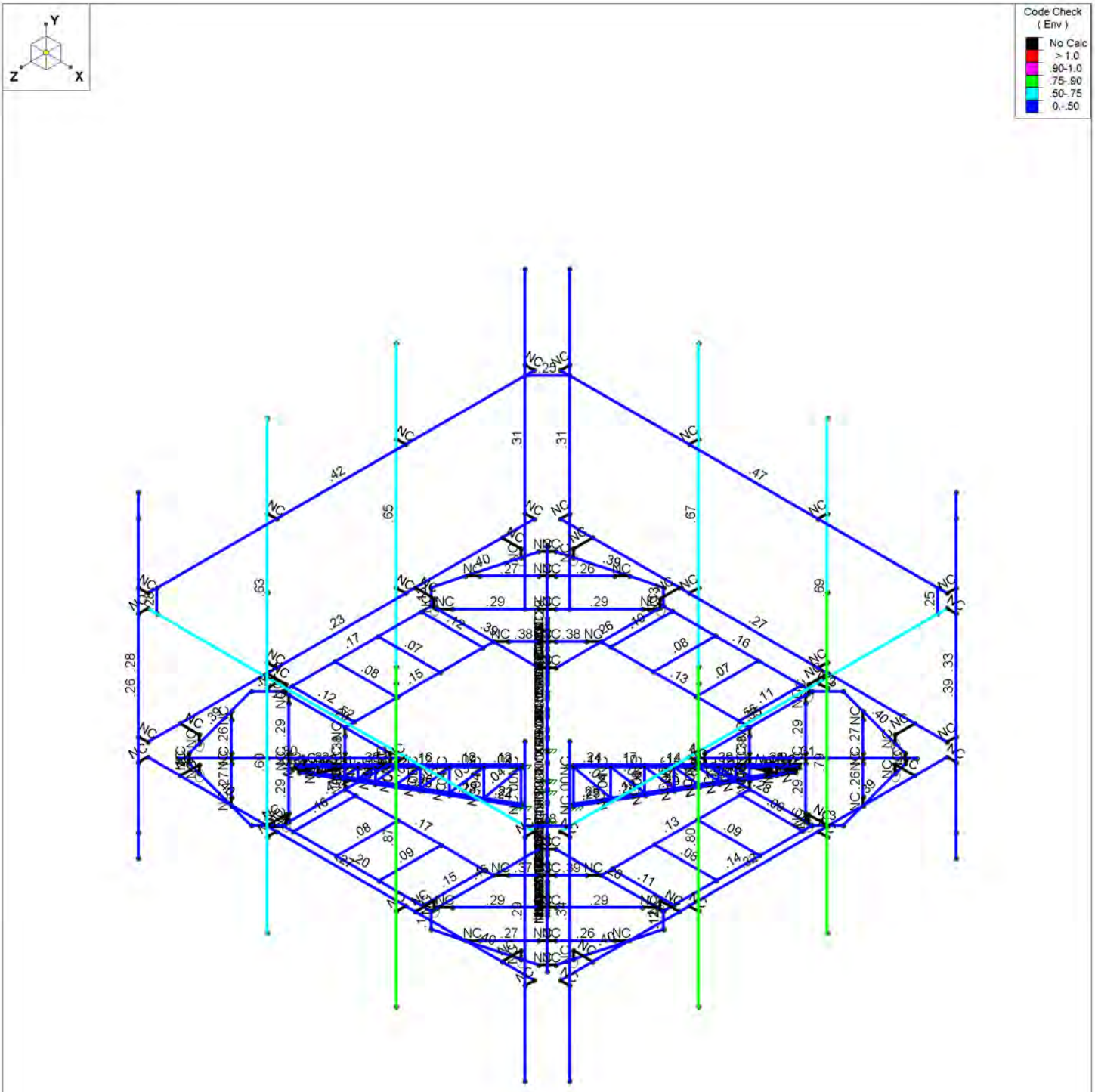
Looking Toward Structure



Ref #	Model	Height (in)	Width (in)	H Dist Left	Pipe #	Pipe Pos V	Pos	From Top	H Offset	Status	Validation
A1	AIR32 KRD901146-1_B66A_B2A (Octo)	56.60	12.90	126.00	1	a	Front	48.00			
A2	APXVAALL24-43-U_NA20	95.90	24.00	84.00	2	a	Front	48.00			
R6	4449 B71 + B85	17.90	13.10	84.00	2	a	Behind	48.00			
A3	APX16DWV-16DWVS-E-A20	55.90	13.00	42.00	3	a	Front	48.00			
R7	S11B4	20.00	17.00	42.00	3	a	Behind	48.00			

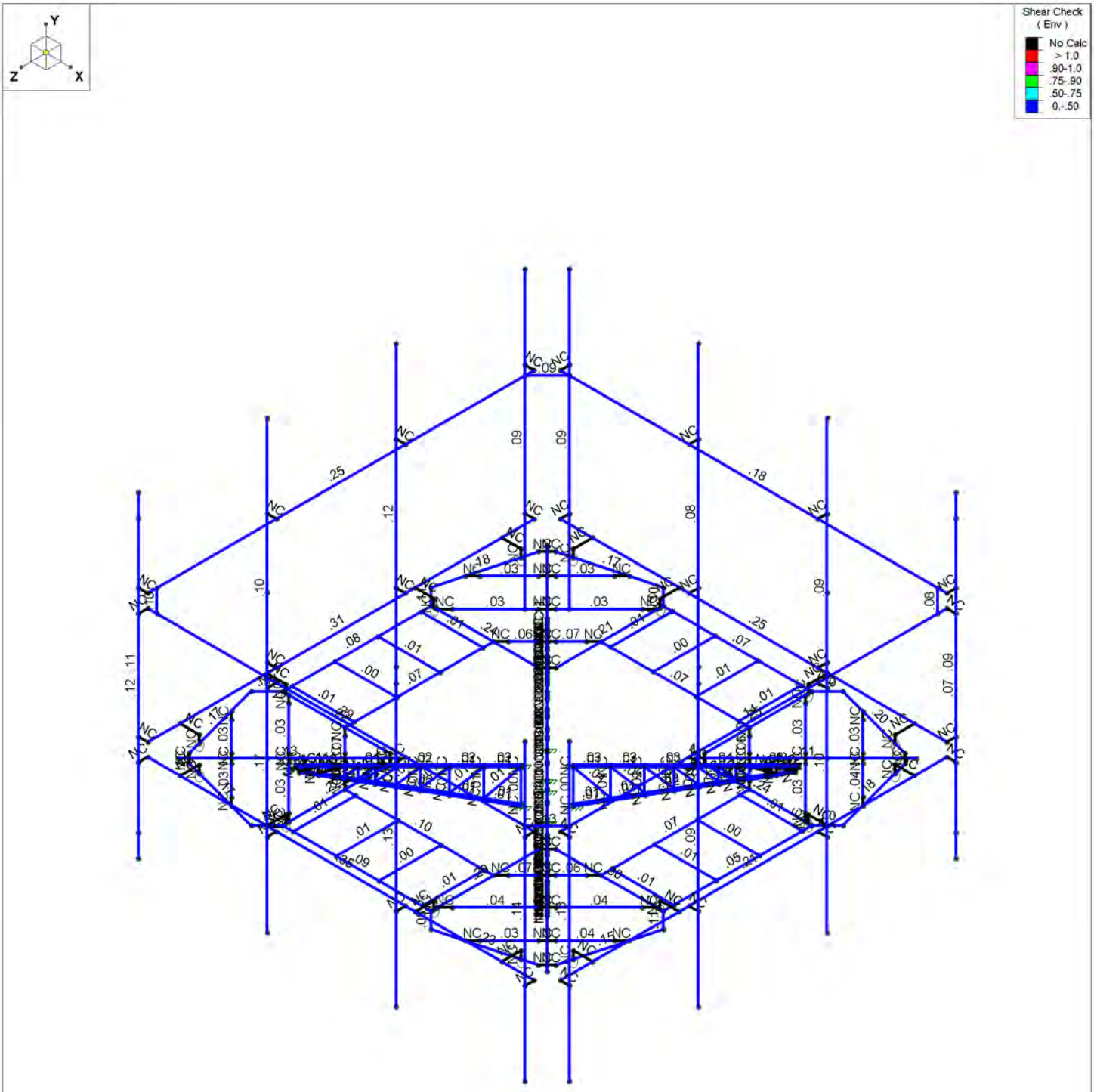


Tower Engineering Solutio...	CT22076-A-SBA_MT_LO_Loads Only_G	SK - 1
JET		May 25, 2021 at 10:28 AM
TES Project No. 106842		CT22076-A-SBA_106842_G_RISA_...



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

Tower Engineering Solutio...	CT22076-A-SBA_MT_LO_Loads Only_G	SK - 2
JET		May 25, 2021 at 10:29 AM
TES Project No. 106842		CT22076-A-SBA_106842_G_RISA_...



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

Tower Engineering Solutio...	CT22076-A-SBA_MT_LO_Loads Only_G	SK - 3
JET		May 25, 2021 at 10:29 AM
TES Project No. 106842		CT22076-A-SBA_106842_G_RISA_...

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(P...
1	Antenna D	None					32			
2	Antenna Di	None					32			
3	Antenna W Front	None					32			
4	Antenna Wi Front	None					32			
5	Antenna W Side	None					32			
6	Antenna Wi Side	None					32			
7	Service Lm1	None					1			
8	Service Lm2	None					1			
9	Structure D	None		-1						
10	Structure Di	None						240		
11	Structure W Front	None						240		
12	Structure Wi Front	None						240		
13	Structure W Side	None						240		
14	Structure Wi Side	None						240		

Load Combinations

	Description	Sol..	PD..	SR..	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...
1	1.2D+1.6...	Yes	Y		1	1.2	9	1.2	3	1.6	11	1.6														
2	1.2D+1.6...	Yes	Y		1	1.2	9	1.2	3	-1.6	11	-1.6														
3	1.2D+1.6...	Yes	Y		1	1.2	9	1.2	5	1.6	13	1.6														
4	1.2D+1.6...	Yes	Y		1	1.2	9	1.2	5	-1.6	13	-1.6														
5	1.2D+1.0...	Yes	Y		1	1.2	9	1.2	2	1	10	1	4	1	12	1										
6	1.2D+1.0...	Yes	Y		1	1.2	9	1.2	2	1	10	1	4	-1	12	-1										
7	1.2D+1.0...	Yes	Y		1	1.2	9	1.2	2	1	10	1	6	1	14	1										
8	1.2D+1.0...	Yes	Y		1	1.2	9	1.2	2	1	10	1	6	-1	14	-1										
9	1.2D+1.5L...	Yes	Y		1	1.2	9	1.2	7	1.5	3	.16	11	.16												
10	1.2D+1.5L...	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 Diaphragm
1	N74A	-2.015313	.125	2.015313	0	
2	N75A	-5.01651	.125	5.01651	0	
3	N77	-2.7482	.125	2.7482	0	
4	N79	-2.21787	.125	3.27853	0	
5	N27	-3.50834	.125	3.50834	0	
6	N28	-4.288043	.125	4.288043	0	
7	N29	-2.217457	.125	4.799222	0	
8	N31	-3.375522	.125	5.200564	0	
9	N35	-2.630349	.125	2.866051	0	
10	N38	-3.390489	.125	3.626191	0	
11	N39	-4.170192	.125	4.405894	0	
12	N41	-2.016686	.125	3.479714	0	
13	N41A	-2.016521	.125	5.000158	0	
14	N42	-3.174337	.125	5.401748	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diaphragm
15	N47	-2.134537	.125	2.134537	0	
16	N49	-4.862991	.125	4.862991	0	
17	N50	-2.016686	.125	2.252388	0	
18	N52	-2.016526	.125	5.166819	0	
19	N52A	-4.74514	.125	4.980842	0	
20	N64	-3.27853	.125	2.21787	0	
21	N67	-4.799222	.125	2.217457	0	
22	N68	-5.200564	.125	3.375521	0	
23	N69	-2.866051	.125	2.630349	0	
24	N70	-3.626191	.125	3.390489	0	
25	N71	-4.405894	.125	4.170192	0	
26	N72	-3.479714	.125	2.016686	0	
27	N73	-5.000158	.125	2.016521	0	
28	N74	-5.401748	.125	3.174337	0	
29	N78	-2.252388	.125	2.016686	0	
30	N79A	-5.166819	.125	2.016526	0	
31	N80	-4.980842	.125	4.74514	0	
32	N54	-2.016531	.125	5.083471	0	
33	N55	-2.016531	0.33325	5.083471	0	
34	N56	-2.016531	0.33325	5.604305	0	
35	N59	-4.37334	0.33325	5.604305	0	
36	N60	-5.598343	.125	2.440636	0	
37	N62	-2.440636	.125	5.598343	0	
38	N58	-4.371005	.125	5.081093	0	
39	N59A	-4.371005	0.33325	5.081093	0	
40	N60A	-5.083471	.125	2.016531	0	
41	N61	-5.083471	0.33325	2.016531	0	
42	N62A	-5.604305	0.33325	2.016531	0	
43	N63	-5.604305	0.33325	4.37334	0	
44	N64A	-5.081093	.125	4.371005	0	
45	N65	-5.081093	0.33325	4.371005	0	
46	N85	2.015313	.125	2.015313	0	
47	N86	5.01651	.125	5.01651	0	
48	N88	2.7482	.125	2.7482	0	
49	N89	3.27853	.125	2.21787	0	
50	N90	3.50834	.125	3.50834	0	
51	N91	4.288043	.125	4.288043	0	
52	N92	4.799222	.125	2.217457	0	
53	N93	5.200564	.125	3.375521	0	
54	N94	2.866051	.125	2.630349	0	
55	N95	3.626191	.125	3.390489	0	
56	N96	4.405894	.125	4.170192	0	
57	N97	3.479714	.125	2.016686	0	
58	N98	5.000158	.125	2.016521	0	
59	N99	5.401748	.125	3.174337	0	
60	N100	2.134537	.125	2.134537	0	
61	N101	4.862991	.125	4.862991	0	
62	N102	2.252388	.125	2.016686	0	
63	N103	5.166819	.125	2.016526	0	
64	N104	4.980842	.125	4.74514	0	
65	N105	2.21787	.125	3.27853	0	
66	N106	2.217457	.125	4.799222	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diaphragm
67	N107	3.375522	.125	5.200564	0	
68	N108	2.630349	.125	2.866051	0	
69	N109	3.390489	.125	3.626191	0	
70	N110	4.170192	.125	4.405894	0	
71	N111	2.016686	.125	3.479714	0	
72	N112	2.016521	.125	5.000158	0	
73	N113	3.174337	.125	5.401748	0	
74	N114	2.016686	.125	2.252388	0	
75	N115	2.016526	.125	5.166819	0	
76	N116	4.74514	.125	4.980842	0	
77	N117	5.083471	.125	2.016531	0	
78	N118	5.083471	0.33325	2.016531	0	
79	N119	5.604305	0.33325	2.016531	0	
80	N120	5.604305	0.33325	4.37334	0	
81	N121	2.440636	.125	5.598343	0	
82	N122	5.598343	.125	2.440636	0	
83	N123	5.081093	.125	4.371005	0	
84	N124	5.081093	0.33325	4.371005	0	
85	N125	2.016531	.125	5.083471	0	
86	N126	2.016531	0.33325	5.083471	0	
87	N127	2.016531	0.33325	5.604305	0	
88	N128	4.37334	0.33325	5.604305	0	
89	N129	4.371005	.125	5.081093	0	
90	N130	4.371005	0.33325	5.081093	0	
91	N150	2.015313	.125	-2.015313	0	
92	N151	5.01651	.125	-5.01651	0	
93	N153	2.7482	.125	-2.7482	0	
94	N154	2.21787	.125	-3.27853	0	
95	N155	3.50834	.125	-3.50834	0	
96	N156	4.288043	.125	-4.288043	0	
97	N157	2.217457	.125	-4.799222	0	
98	N158	3.375522	.125	-5.200564	0	
99	N159	2.630349	.125	-2.866051	0	
100	N160	3.390489	.125	-3.626191	0	
101	N161	4.170192	.125	-4.405894	0	
102	N162	2.016686	.125	-3.479714	0	
103	N163	2.016521	.125	-5.000158	0	
104	N164	3.174337	.125	-5.401748	0	
105	N165	2.134537	.125	-2.134537	0	
106	N166	4.862991	.125	-4.862991	0	
107	N167	2.016686	.125	-2.252388	0	
108	N168	2.016526	.125	-5.166819	0	
109	N169	4.74514	.125	-4.980843	0	
110	N170	3.27853	.125	-2.21787	0	
111	N171	4.799222	.125	-2.217457	0	
112	N172	5.200564	.125	-3.375522	0	
113	N173	2.866051	.125	-2.630349	0	
114	N174	3.626191	.125	-3.390489	0	
115	N175	4.405894	.125	-4.170192	0	
116	N176	3.479714	.125	-2.016686	0	
117	N177	5.000158	.125	-2.016521	0	
118	N178	5.401748	.125	-3.174337	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diaphragm
119	N179	2.252388	.125	-2.016686	0	
120	N180	5.166819	.125	-2.016527	0	
121	N181	4.980842	.125	-4.74514	0	
122	N182	2.016531	.125	-5.083471	0	
123	N183	2.016531	0.33325	-5.083471	0	
124	N184	2.016531	0.33325	-5.604305	0	
125	N185	4.37334	0.33325	-5.604305	0	
126	N186	5.598343	.125	-2.440636	0	
127	N187	2.440636	.125	-5.598343	0	
128	N188	4.371005	.125	-5.081093	0	
129	N189	4.371005	0.33325	-5.081093	0	
130	N190	5.083471	.125	-2.016531	0	
131	N191	5.083471	0.33325	-2.016531	0	
132	N192	5.604305	0.33325	-2.016531	0	
133	N193	5.604305	0.33325	-4.37334	0	
134	N194	5.081093	.125	-4.371005	0	
135	N195	5.081093	0.33325	-4.371005	0	
136	N215	-2.015313	.125	-2.015313	0	
137	N216	-5.01651	.125	-5.01651	0	
138	N217	-3.299832	.125	-3.299832	0	
139	N218	-2.7482	.125	-2.7482	0	
140	N219	-3.27853	.125	-2.21787	0	
141	N220	-3.50834	.125	-3.50834	0	
142	N221	-4.288043	.125	-4.288043	0	
143	N222	-4.799222	.125	-2.217457	0	
144	N223	-5.200564	.125	-3.375522	0	
145	N224	-2.866051	.125	-2.630349	0	
146	N225	-3.626191	.125	-3.390489	0	
147	N226	-4.405894	.125	-4.170192	0	
148	N227	-3.479714	.125	-2.016686	0	
149	N228	-5.000158	.125	-2.016521	0	
150	N229	-5.401748	.125	-3.174337	0	
151	N230	-2.134537	.125	-2.134537	0	
152	N231	-4.862991	.125	-4.862991	0	
153	N232	-2.252388	.125	-2.016686	0	
154	N233	-5.166819	.125	-2.016527	0	
155	N234	-4.980842	.125	-4.74514	0	
156	N235	-2.21787	.125	-3.27853	0	
157	N236	-2.217457	.125	-4.799222	0	
158	N237	-3.375522	.125	-5.200564	0	
159	N238	-2.630349	.125	-2.866051	0	
160	N239	-3.390489	.125	-3.626191	0	
161	N240	-4.170192	.125	-4.405894	0	
162	N241	-2.016686	.125	-3.479714	0	
163	N242	-2.016521	.125	-5.000158	0	
164	N243	-3.174337	.125	-5.401748	0	
165	N244	-2.016686	.125	-2.252388	0	
166	N245	-2.016526	.125	-5.166819	0	
167	N246	-4.74514	.125	-4.980843	0	
168	N247	-5.083471	.125	-2.016531	0	
169	N248	-5.083471	0.33325	-2.016531	0	
170	N249	-5.604305	0.33325	-2.016531	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diaphragm
171	N250	-5.604305	0.33325	-4.37334	0	
172	N251	-2.440636	.125	-5.598343	0	
173	N252	-5.598343	.125	-2.440636	0	
174	N253	-5.081093	.125	-4.371005	0	
175	N254	-5.081093	0.33325	-4.371005	0	
176	N255	-2.016531	.125	-5.083471	0	
177	N256	-2.016531	0.33325	-5.083471	0	
178	N257	-2.016531	0.33325	-5.604305	0	
179	N258	-4.37334	0.33325	-5.604305	0	
180	N259	-4.371005	.125	-5.081093	0	
181	N260	-4.371005	0.33325	-5.081093	0	
182	N263	-1.75	0.33325	5.604305	0	
183	N264	1.75	0.33325	5.604305	0	
184	N267	5.604305	0.33325	1.75	0	
185	N268	5.604305	0.33325	-1.75	0	
186	N271	1.75	0.33325	-5.604305	0	
187	N272	-1.75	0.33325	-5.604305	0	
188	N275	-5.604305	0.33325	-1.75	0	
189	N276	-5.604305	0.33325	1.75	0	
190	N250B	-0.353553	-0.020833	0.353553	0	
191	N251B	-2.048459	-0.020833	2.048459	0	
192	N252B	-2.330733	-0.020833	2.330733	0	
193	N253B	-3.113802	-0.020833	3.113802	0	
194	N254B	-3.417683	-0.020833	3.417683	0	
195	N255B	-0.353553	-1	0.353553	0	
196	N256B	-3.366127	-0.208363	3.366127	0	
197	N257B	-0.353553	-0.083333	0.353553	0	
198	N258B	-0.861448	-0.020833	0.861448	0	
199	N259B	-1.324837	-0.020833	1.324837	0	
200	N260B	-1.720083	-0.020833	1.720083	0	
201	N262A	-2.566315	-0.020833	2.566315	0	
202	N263A	-2.750567	-0.020833	2.750567	0	
203	N264A	-0.861448	-0.083333	0.861448	0	
204	N265A	-1.324837	-0.083333	1.324837	0	
205	N266A	-1.720083	-0.083333	1.720083	0	
206	N267A	-2.051493	-0.083333	2.051493	0	
207	N268A	-2.330733	-0.083333	2.330733	0	
208	N269A	-2.566315	-0.083333	2.566315	0	
209	N270A	-2.750567	-0.083333	2.750567	0	
210	N271A	-0.353553	-0.938546	0.353553	0	
211	N272A	-1.324837	-0.681239	1.324837	0	
212	N273A	-0.869523	-0.864411	0.869523	0	
213	N274A	-1.728149	-0.638772	1.728149	0	
214	N275A	-1.332906	-0.742648	1.332906	0	
215	N276A	-2.059565	-0.551691	2.059565	0	
216	N277	-2.338806	-0.478314	2.338806	0	
217	N278	-2.574389	-0.41641	2.574389	0	
218	N279	-2.758642	-0.367995	2.758642	0	
219	N280	-0.861448	-0.802956	0.861448	0	
220	N281	-1.720083	-0.577391	1.720083	0	
221	N282	-2.051493	-0.490257	2.051493	0	
222	N283	-2.330733	-0.416873	2.330733	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diaphragm
223	N284	-2.566315	-0.354962	2.566315	0	
224	N285	-2.750567	-0.306541	2.750567	0	
225	N286	-3.417683	-0.083333	3.417683	0	
226	N287	-3.358053	-0.1545	3.358053	0	
227	N288	-3.113802	-0.083333	3.113802	0	
228	N289	-3.113802	-0.215625	3.113802	0	
229	N290	-3.113802	-0.274792	3.113802	0	
230	N260C	5.604305	0.33325	-5.25	0	
231	N261B	-5.604305	0.33325	-5.25	0	
232	N262B	5.604305	0.33325	5.25	0	
233	N263B	-5.604305	0.33325	5.25	0	
234	N264B	5.25	0.33325	5.604305	0	
235	N265B	5.25	0.33325	-5.604305	0	
236	N266B	-5.25	0.33325	5.604305	0	
237	N267C	-5.25	0.33325	-5.604305	0	
238	N271B	0.353553	-0.020833	0.353553	0	
239	N272B	2.048459	-0.020833	2.048459	0	
240	N273B	2.330733	-0.020833	2.330733	0	
241	N274B	3.113802	-0.020833	3.113802	0	
242	N275B	3.417683	-0.020833	3.417683	0	
243	N276B	0.353553	-1	0.353553	0	
244	N277A	3.366127	-0.208363	3.366127	0	
245	N278A	0.353553	-0.083333	0.353553	0	
246	N279A	0.861448	-0.020833	0.861448	0	
247	N280A	1.324837	-0.020833	1.324837	0	
248	N281A	1.720083	-0.020833	1.720083	0	
249	N283A	2.566315	-0.020833	2.566315	0	
250	N284A	2.750567	-0.020833	2.750567	0	
251	N285A	0.861448	-0.083333	0.861448	0	
252	N286A	1.324837	-0.083333	1.324837	0	
253	N287A	1.720083	-0.083333	1.720083	0	
254	N288A	2.051493	-0.083333	2.051493	0	
255	N289A	2.330733	-0.083333	2.330733	0	
256	N290A	2.566315	-0.083333	2.566315	0	
257	N291	2.750567	-0.083333	2.750567	0	
258	N292	0.353553	-0.938546	0.353553	0	
259	N293	1.324837	-0.681239	1.324837	0	
260	N294	0.869523	-0.864411	0.869523	0	
261	N295	1.728149	-0.638772	1.728149	0	
262	N296	1.332906	-0.742648	1.332906	0	
263	N297	2.059565	-0.551691	2.059565	0	
264	N298	2.338806	-0.478314	2.338806	0	
265	N299	2.574389	-0.41641	2.574389	0	
266	N300	2.758642	-0.367995	2.758642	0	
267	N301	0.861448	-0.802956	0.861448	0	
268	N302	1.720083	-0.577391	1.720083	0	
269	N303	2.051493	-0.490257	2.051493	0	
270	N304	2.330733	-0.416873	2.330733	0	
271	N305	2.566315	-0.354962	2.566315	0	
272	N306	2.750567	-0.306541	2.750567	0	
273	N307	3.417683	-0.083333	3.417683	0	
274	N308	3.358053	-0.1545	3.358053	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diaphragm
275	N309	3.113802	-0.083333	3.113802	0	
276	N310	3.113802	-0.215625	3.113802	0	
277	N311	3.113802	-0.274792	3.113802	0	
278	N314	0.353553	-0.020833	-0.353553	0	
279	N315	2.048459	-0.020833	-2.048459	0	
280	N316	2.330733	-0.020833	-2.330733	0	
281	N317	3.113802	-0.020833	-3.113802	0	
282	N318	3.417683	-0.020833	-3.417683	0	
283	N319	0.353553	-1	-0.353553	0	
284	N320	3.366127	-0.208363	-3.366127	0	
285	N321	0.353553	-0.083333	-0.353553	0	
286	N322	0.861448	-0.020833	-0.861448	0	
287	N323	1.324837	-0.020833	-1.324837	0	
288	N324	1.720083	-0.020833	-1.720083	0	
289	N326	2.566315	-0.020833	-2.566315	0	
290	N327	2.750567	-0.020833	-2.750567	0	
291	N328	0.861448	-0.083333	-0.861448	0	
292	N329	1.324837	-0.083333	-1.324837	0	
293	N330	1.720083	-0.083333	-1.720083	0	
294	N331	2.051493	-0.083333	-2.051493	0	
295	N332	2.330733	-0.083333	-2.330733	0	
296	N333	2.566315	-0.083333	-2.566315	0	
297	N334	2.750567	-0.083333	-2.750567	0	
298	N335	0.353553	-0.938546	-0.353553	0	
299	N336	1.324837	-0.681239	-1.324837	0	
300	N337	0.869523	-0.864411	-0.869523	0	
301	N338	1.728149	-0.638772	-1.728149	0	
302	N339	1.332906	-0.742648	-1.332907	0	
303	N340	2.059565	-0.551691	-2.059565	0	
304	N341	2.338806	-0.478314	-2.338807	0	
305	N342	2.574389	-0.41641	-2.574389	0	
306	N343	2.758642	-0.367995	-2.758642	0	
307	N344	0.861448	-0.802956	-0.861448	0	
308	N345	1.720083	-0.577391	-1.720083	0	
309	N346	2.051493	-0.490257	-2.051493	0	
310	N347	2.330733	-0.416873	-2.330733	0	
311	N348	2.566315	-0.354962	-2.566315	0	
312	N349	2.750567	-0.306541	-2.750567	0	
313	N350	3.417683	-0.083333	-3.417683	0	
314	N351	3.358053	-0.1545	-3.358053	0	
315	N352	3.113802	-0.083333	-3.113802	0	
316	N353	3.113802	-0.215625	-3.113802	0	
317	N354	3.113802	-0.274792	-3.113802	0	
318	N357	-0.353553	-0.020833	-0.353553	0	
319	N358	-2.134537	-0.020833	-2.134537	0	
320	N359	-2.330733	-0.020833	-2.330733	0	
321	N360	-3.113802	-0.020833	-3.113802	0	
322	N361	-3.417683	-0.020833	-3.417683	0	
323	N362	-0.353553	-1	-0.353553	0	
324	N363	-3.366127	-0.208363	-3.366127	0	
325	N364	-0.353553	-0.083333	-0.353553	0	
326	N365	-0.861448	-0.020833	-0.861448	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diaphragm
327	N366	-1.324837	-0.020833	-1.324837	0	
328	N367	-1.720083	-0.020833	-1.720083	0	
329	N368	-2.051493	-0.020833	-2.051493	0	
330	N369	-2.566315	-0.020833	-2.566315	0	
331	N370	-2.750567	-0.020833	-2.750567	0	
332	N371	-0.861448	-0.083333	-0.861448	0	
333	N372	-1.324837	-0.083333	-1.324837	0	
334	N373	-1.720083	-0.083333	-1.720083	0	
335	N374	-2.051493	-0.083333	-2.051493	0	
336	N375	-2.330733	-0.083333	-2.330733	0	
337	N376	-2.566315	-0.083333	-2.566315	0	
338	N377	-2.750567	-0.083333	-2.750567	0	
339	N378	-0.353553	-0.938546	-0.353553	0	
340	N379	-1.324837	-0.681239	-1.324837	0	
341	N380	-0.869523	-0.864411	-0.869523	0	
342	N381	-1.728149	-0.638772	-1.728149	0	
343	N382	-1.332906	-0.742648	-1.332906	0	
344	N383	-2.059565	-0.551691	-2.059565	0	
345	N384	-2.338806	-0.478314	-2.338806	0	
346	N385	-2.574389	-0.41641	-2.574389	0	
347	N386	-2.758642	-0.367995	-2.758642	0	
348	N387	-0.861448	-0.802956	-0.861448	0	
349	N388	-1.720083	-0.577391	-1.720083	0	
350	N389	-2.051493	-0.490257	-2.051493	0	
351	N390	-2.330733	-0.416873	-2.330733	0	
352	N391	-2.566315	-0.354962	-2.566315	0	
353	N392	-2.750567	-0.306541	-2.750567	0	
354	N393	-3.417683	-0.083333	-3.417683	0	
355	N394	-3.358053	-0.1545	-3.358053	0	
356	N395	-3.113802	-0.083333	-3.113802	0	
357	N396	-3.113802	-0.215625	-3.113802	0	
358	N397	-3.113802	-0.274792	-3.113802	0	
359	N397A	0	0	0	0	
360	N389A	-3.299832	-0.020833	-3.299832	0	
361	N383A	-3.299832	.125	3.299832	0	
362	N385A	-2.134537	-0.020833	2.134537	0	
363	N386A	-3.299832	-0.020833	3.299832	0	
364	N387A	3.299832	.125	3.299832	0	
365	N388A	2.134537	-0.020833	2.134537	0	
366	N389B	3.299832	-0.020833	3.299832	0	
367	N390A	3.299832	.125	-3.299832	0	
368	N391A	2.134537	-0.020833	-2.134537	0	
369	N392A	3.299832	-0.020833	-3.299832	0	
370	N386B	3.479714	.125	-1.766686	0	
371	N387B	5.166819	.125	-1.766527	0	
372	N388B	3.479714	.125	-0.60002	0	
373	N389C	5.166819	.125	-0.59986	0	
374	N390B	3.479714	.125	0.566647	0	
375	N391B	5.166819	.125	0.566807	0	
376	N392B	3.479714	.125	1.733314	0	
377	N393A	5.166819	.125	1.733473	0	
378	N394A	-1.766686	.125	-3.479714	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diaphragm
379	N395A	-1.766527	.125	-5.166819	0	
380	N396A	-0.60002	.125	-3.479714	0	
381	N397B	-0.59986	.125	-5.166819	0	
382	N398	0.566647	.125	-3.479714	0	
383	N399	0.566807	.125	-5.166819	0	
384	N400	1.733314	.125	-3.479714	0	
385	N401	1.733473	.125	-5.166819	0	
386	N402	-3.479714	.125	1.766686	0	
387	N403	-5.166819	.125	1.766527	0	
388	N404	-3.479714	.125	0.60002	0	
389	N405	-5.166819	.125	0.59986	0	
390	N406	-3.479714	.125	-0.566647	0	
391	N407	-5.166819	.125	-0.566807	0	
392	N408	-3.479714	.125	-1.733314	0	
393	N409	-5.166819	.125	-1.733473	0	
394	N410	1.766686	.125	3.479714	0	
395	N411	1.766527	.125	5.166819	0	
396	N412	0.60002	.125	3.479714	0	
397	N413	0.59986	.125	5.166819	0	
398	N414	-0.566647	.125	3.479714	0	
399	N415	-0.566807	.125	5.166819	0	
400	N416	-1.733314	.125	3.479714	0	
401	N417	-1.733473	.125	5.166819	0	
402	N402A	-1.75	0.33325	5.854305	0	
403	N403A	1.75	0.33325	5.854305	0	
404	N404A	5.25	0.33325	5.854305	0	
405	N405A	-5.25	0.33325	5.854305	0	
406	N418A	-1.75	3.83325	5.604305	0	
407	N419A	1.75	3.83325	5.604305	0	
408	N420A	5.25	3.83325	5.604305	0	
409	N421A	-5.25	3.83325	5.604305	0	
410	N422	-1.75	3.83325	5.854305	0	
411	N423	1.75	3.83325	5.854305	0	
412	N424	5.25	3.83325	5.854305	0	
413	N425	-5.25	3.83325	5.854305	0	
414	N426A	-1.75	6.08325	5.854305	0	
415	N427A	1.75	6.08325	5.854305	0	
416	N428A	5.25	6.08325	5.854305	0	
417	N429A	-5.25	6.08325	5.854305	0	
418	N430	-1.75	-1.91675	5.854305	0	
419	N431	1.75	-1.91675	5.854305	0	
420	N432	5.25	-1.91675	5.854305	0	
421	N433	-5.25	-1.91675	5.854305	0	
422	N434	5.604305	3.83325	1.75	0	
423	N435	5.604305	3.83325	-1.75	0	
424	N436	5.604305	3.83325	-5.25	0	
425	N437	5.604305	3.83325	5.25	0	
426	N450	1.75	3.83325	-5.604305	0	
427	N451	-1.75	3.83325	-5.604305	0	
428	N452	-5.25	3.83325	-5.604305	0	
429	N453	5.25	3.83325	-5.604305	0	
430	N466	-5.604305	3.83325	-1.75	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diaphragm
431	N467	-5.604305	3.83325	1.75	0	
432	N468	-5.604305	3.83325	5.25	0	
433	N469	-5.604305	3.83325	-5.25	0	
434	N482	-5	3.83325	5.604305	0	
435	N483	5	3.83325	5.604305	0	
436	N484	5.604305	3.83325	5	0	
437	N485	5.604305	3.83325	-5	0	
438	N486	5	3.83325	-5.604305	0	
439	N487	-5	3.83325	-5.604305	0	
440	N488	-5.604305	3.83325	-5	0	
441	N489	-5.604305	3.83325	5	0	
442	N446	5.854305	0.33325	1.75	0	
443	N447	5.854305	0.33325	-1.75	0	
444	N448	5.854305	0.33325	-5.25	0	
445	N449	5.854305	0.33325	5.25	0	
446	N454	5.854305	3.83325	1.75	0	
447	N455	5.854305	3.83325	-1.75	0	
448	N456	5.854305	3.83325	-5.25	0	
449	N457	5.854305	3.83325	5.25	0	
450	N458	5.854305	6.08325	1.75	0	
451	N459	5.854305	6.08325	-1.75	0	
452	N460	5.854305	6.08325	-5.25	0	
453	N461	5.854305	6.08325	5.25	0	
454	N462	5.854305	-1.91675	1.75	0	
455	N463	5.854305	-1.91675	-1.75	0	
456	N464	5.854305	-1.91675	-5.25	0	
457	N465	5.854305	-1.91675	5.25	0	
458	N470	1.75	0.33325	-5.854305	0	
459	N471	-1.75	0.33325	-5.854305	0	
460	N472	-5.25	0.33325	-5.854305	0	
461	N473	5.25	0.33325	-5.854305	0	
462	N478	1.75	3.83325	-5.854305	0	
463	N479	-1.75	3.83325	-5.854305	0	
464	N480	-5.25	3.83325	-5.854305	0	
465	N481	5.25	3.83325	-5.854305	0	
466	N482A	1.75	6.08325	-5.854305	0	
467	N483A	-1.75	6.08325	-5.854305	0	
468	N484A	-5.25	6.08325	-5.854305	0	
469	N485A	5.25	6.08325	-5.854305	0	
470	N486A	1.75	-1.91675	-5.854305	0	
471	N487A	-1.75	-1.91675	-5.854305	0	
472	N488A	-5.25	-1.91675	-5.854305	0	
473	N489A	5.25	-1.91675	-5.854305	0	
474	N494	-5.854305	0.33325	-1.75	0	
475	N495	-5.854305	0.33325	1.75	0	
476	N496	-5.854305	0.33325	5.25	0	
477	N497	-5.854305	0.33325	-5.25	0	
478	N502	-5.854305	3.83325	-1.75	0	
479	N503	-5.854305	3.83325	1.75	0	
480	N504	-5.854305	3.83325	5.25	0	
481	N505	-5.854305	3.83325	-5.25	0	
482	N506	-5.854305	6.08325	-1.75	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diaphragm
483	N507	-5.854305	6.08325	1.75	0	
484	N508	-5.854305	6.08325	5.25	0	
485	N509	-5.854305	6.08325	-5.25	0	
486	N510	-5.854305	-1.91675	-1.75	0	
487	N511	-5.854305	-1.91675	1.75	0	
488	N512	-5.854305	-1.91675	5.25	0	
489	N513	-5.854305	-1.91675	-5.25	0	

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	HR1A	W4x13	Beam	Wide Flange	A992	Typical	3.83	3.86	11.3	.151
2	Mount Pipes	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
3	Support Rail	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
4	SR End Connection	WT4x2.25x0.375...	Beam	Wide Flange	A53 Gr.B	Typical	2.344	2.01	1.304	.111
5	Corner Platform Pla...	3/8 x 2 3/8 "	Beam	RECT	Q235	Typical	.891	.01	.419	.038
6	Corner Corner Plate	PL3/8x3	Beam	RECT	Q235	Typical	1.125	.013	.844	.049
7	Walkway Plate	3/16 X 1 1/2	Beam	RECT	A992	Typical	.282	.000831	.053	.003
8	Corner Edge Plate	L3x3x6	Beam	Single Angle	Q235	Typical	2.11	1.75	1.75	.101
9	Walkway Pipe	PIPE_1.5	Beam	Pipe	A53 Gr.B	Typical	.749	.293	.293	.586
10	Face Horizontal	PIPE_2.5	Beam	Pipe	A53 Gr.B	Typical	1.61	1.45	1.45	2.89
11	Corner Vertical	HSS4x3x4	Beam	Tube	A53 Gr.B	Typical	2.91	3.91	6.15	7.96
12	SO Top Plate	.5" x 4"	Beam	RECT	A992	Typical	2	.042	2.667	.154
13	SO Middle Plate	3/8 x 1"	Beam	RECT	A992	Typical	.375	.004	.031	.013
14	SO Bottom Plate	3/8 x 4	Beam	RECT	A992	Typical	1.5	.018	2	.066
15	SO vert/diag 2	.875 x .375	Beam	RECT	A992	Typical	.328	.004	.021	.011
16	SO vert/diag 3	3/4 x 3/8	Beam	RECT	A992	Typical	.281	.003	.013	.009
17	SO vert/diag 4	3/4 x 3/8	Beam	RECT	A992	Typical	.281	.003	.013	.009

Cold Formed Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rul...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	CF1A	162T125-18	Beam	CU	A653 SS G...	Typical	.078	.013	.042	9e-6

Aluminum Section Sets

	Label	Shape	Type	Design List	Material	Design Rules	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
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
8	Q235	29000	11154	.3	.65	.49	35	1.5	58	1.2

Cold Formed Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (\1E5 F)	Density[k/ft^3]	Yield[ksi]	Fu[ksi]
1	A653 SS Gr33	29500	11346	.3	.65	.49	33	45
2	A653 SS Gr50/1	29500	11346	.3	.65	.49	50	65

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	R3	N77	N35			RIGID	None	None	RIGID	Typical
2	R4	N27	N38			RIGID	None	None	RIGID	Typical
3	R5	N28	N39			RIGID	None	None	RIGID	Typical
4	R6	N79	N41			RIGID	None	None	RIGID	Typical
5	R7	N29	N41A			RIGID	None	None	RIGID	Typical
6	R8	N31	N42			RIGID	None	None	RIGID	Typical
7	R9	N47	N50			RIGID	None	None	RIGID	Typical
8	R10	N49	N52A			RIGID	None	None	RIGID	Typical
9	M57	N77	N69			RIGID	None	None	RIGID	Typical
10	M58	N27	N70			RIGID	None	None	RIGID	Typical
11	M59	N28	N71			RIGID	None	None	RIGID	Typical
12	M63	N64	N72			RIGID	None	None	RIGID	Typical
13	M64	N67	N73			RIGID	None	None	RIGID	Typical
14	M65	N68	N74			RIGID	None	None	RIGID	Typical
15	M67	N47	N78			RIGID	None	None	RIGID	Typical
16	M70	N49	N80			RIGID	None	None	RIGID	Typical
17	M71	N54	N55			RIGID	None	None	RIGID	Typical
18	M72	N55	N56			RIGID	None	None	RIGID	Typical
19	M74A	N58	N59A			RIGID	None	None	RIGID	Typical
20	M75C	N59A	N59			RIGID	None	None	RIGID	Typical
21	M75A	N60A	N61			RIGID	None	None	RIGID	Typical
22	M76	N61	N62A			RIGID	None	None	RIGID	Typical
23	M77	N64A	N65			RIGID	None	None	RIGID	Typical
24	M78	N65	N63			RIGID	None	None	RIGID	Typical
25	M100	N88	N94			RIGID	None	None	RIGID	Typical
26	M101	N90	N95			RIGID	None	None	RIGID	Typical
27	M102	N91	N96			RIGID	None	None	RIGID	Typical
28	M106	N89	N97			RIGID	None	None	RIGID	Typical
29	M107	N92	N98			RIGID	None	None	RIGID	Typical
30	M108	N93	N99			RIGID	None	None	RIGID	Typical
31	M109	N100	N102			RIGID	None	None	RIGID	Typical
32	M111	N101	N104			RIGID	None	None	RIGID	Typical
33	M133	N88	N108			RIGID	None	None	RIGID	Typical
34	M134	N90	N109			RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(...	Section/Shape	Type	Design List	Material	Design R...
35	M135	N91	N110			RIGID	None	None	RIGID	Typical
36	M139	N105	N111			RIGID	None	None	RIGID	Typical
37	M140	N106	N112			RIGID	None	None	RIGID	Typical
38	M141	N107	N113			RIGID	None	None	RIGID	Typical
39	M143	N100	N114			RIGID	None	None	RIGID	Typical
40	M145	N101	N116			RIGID	None	None	RIGID	Typical
41	M146	N117	N118			RIGID	None	None	RIGID	Typical
42	M147	N118	N119			RIGID	None	None	RIGID	Typical
43	M151	N123	N124			RIGID	None	None	RIGID	Typical
44	M152	N124	N120			RIGID	None	None	RIGID	Typical
45	M153	N125	N126			RIGID	None	None	RIGID	Typical
46	M154	N126	N127			RIGID	None	None	RIGID	Typical
47	M155	N129	N130			RIGID	None	None	RIGID	Typical
48	M156	N130	N128			RIGID	None	None	RIGID	Typical
49	M178	N153	N159			RIGID	None	None	RIGID	Typical
50	M179	N155	N160			RIGID	None	None	RIGID	Typical
51	M180	N156	N161			RIGID	None	None	RIGID	Typical
52	M184	N154	N162			RIGID	None	None	RIGID	Typical
53	M185	N157	N163			RIGID	None	None	RIGID	Typical
54	M186	N158	N164			RIGID	None	None	RIGID	Typical
55	M187	N165	N167			RIGID	None	None	RIGID	Typical
56	M189	N166	N169			RIGID	None	None	RIGID	Typical
57	M211	N153	N173			RIGID	None	None	RIGID	Typical
58	M212	N155	N174			RIGID	None	None	RIGID	Typical
59	M213	N156	N175			RIGID	None	None	RIGID	Typical
60	M217	N170	N176			RIGID	None	None	RIGID	Typical
61	M218	N171	N177			RIGID	None	None	RIGID	Typical
62	M219	N172	N178			RIGID	None	None	RIGID	Typical
63	M221	N165	N179			RIGID	None	None	RIGID	Typical
64	M223	N166	N181			RIGID	None	None	RIGID	Typical
65	M224	N182	N183			RIGID	None	None	RIGID	Typical
66	M225	N183	N184			RIGID	None	None	RIGID	Typical
67	M229	N188	N189			RIGID	None	None	RIGID	Typical
68	M230	N189	N185			RIGID	None	None	RIGID	Typical
69	M231	N190	N191			RIGID	None	None	RIGID	Typical
70	M232	N191	N192			RIGID	None	None	RIGID	Typical
71	M233	N194	N195			RIGID	None	None	RIGID	Typical
72	M234	N195	N193			RIGID	None	None	RIGID	Typical
73	M256	N218	N224			RIGID	None	None	RIGID	Typical
74	M257	N220	N225			RIGID	None	None	RIGID	Typical
75	M258	N221	N226			RIGID	None	None	RIGID	Typical
76	M262	N219	N227			RIGID	None	None	RIGID	Typical
77	M263	N222	N228			RIGID	None	None	RIGID	Typical
78	M264	N223	N229			RIGID	None	None	RIGID	Typical
79	M265	N230	N232			RIGID	None	None	RIGID	Typical
80	M267	N231	N234			RIGID	None	None	RIGID	Typical
81	M289	N218	N238			RIGID	None	None	RIGID	Typical
82	M290	N220	N239			RIGID	None	None	RIGID	Typical
83	M291	N221	N240			RIGID	None	None	RIGID	Typical
84	M295	N235	N241			RIGID	None	None	RIGID	Typical
85	M296	N236	N242			RIGID	None	None	RIGID	Typical
86	M297	N237	N243			RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(...	Section/Shape	Type	Design List	Material	Design R...
87	M299	N230	N244			RIGID	None	None	RIGID	Typical
88	M301	N231	N246			RIGID	None	None	RIGID	Typical
89	M302	N247	N248			RIGID	None	None	RIGID	Typical
90	M303	N248	N249			RIGID	None	None	RIGID	Typical
91	M307	N253	N254			RIGID	None	None	RIGID	Typical
92	M308	N254	N250			RIGID	None	None	RIGID	Typical
93	M309	N255	N256			RIGID	None	None	RIGID	Typical
94	M310	N256	N257			RIGID	None	None	RIGID	Typical
95	M311	N259	N260			RIGID	None	None	RIGID	Typical
96	M312	N260	N258			RIGID	None	None	RIGID	Typical
97	M313	N266B	N264B			Face Horizontal	Beam	Pipe	A53 Gr.B	Typical
98	M314	N262B	N260C			Face Horizontal	Beam	Pipe	A53 Gr.B	Typical
99	M315	N265B	N267C			Face Horizontal	Beam	Pipe	A53 Gr.B	Typical
100	M316	N261B	N263B			Face Horizontal	Beam	Pipe	A53 Gr.B	Typical
101	M45A	N50	N52		180	Corner Edge Plate	Beam	Single Angle	Q235	Typical
102	M68	N78	N79A		90	Corner Edge Plate	Beam	Single Angle	Q235	Typical
103	M74B	N80	N60		180	Corner Edge Plate	Beam	Single Angle	Q235	Typical
104	M75B	N52A	N62		90	Corner Edge Plate	Beam	Single Angle	Q235	Typical
105	M110	N102	N103		180	Corner Edge Plate	Beam	Single Angle	Q235	Typical
106	M144	N114	N115		90	Corner Edge Plate	Beam	Single Angle	Q235	Typical
107	M148	N116	N121		180	Corner Edge Plate	Beam	Single Angle	Q235	Typical
108	M150	N104	N122		90	Corner Edge Plate	Beam	Single Angle	Q235	Typical
109	M188	N167	N168		180	Corner Edge Plate	Beam	Single Angle	Q235	Typical
110	M222	N179	N180		90	Corner Edge Plate	Beam	Single Angle	Q235	Typical
111	M226	N181	N186		180	Corner Edge Plate	Beam	Single Angle	Q235	Typical
112	M228	N169	N187		90	Corner Edge Plate	Beam	Single Angle	Q235	Typical
113	M266	N232	N233		180	Corner Edge Plate	Beam	Single Angle	Q235	Typical
114	M300	N244	N245		90	Corner Edge Plate	Beam	Single Angle	Q235	Typical
115	M304	N246	N251		180	Corner Edge Plate	Beam	Single Angle	Q235	Typical
116	M306	N234	N252		90	Corner Edge Plate	Beam	Single Angle	Q235	Typical
117	M54	N74A	N75A		90	Corner Vertical	Beam	Tube	A53 Gr.B	Typical
118	M130	N85	N86		90	Corner Vertical	Beam	Tube	A53 Gr.B	Typical
119	M208	N150	N151		90	Corner Vertical	Beam	Tube	A53 Gr.B	Typical
120	M286	N215	N216		90	Corner Vertical	Beam	Tube	A53 Gr.B	Typical
121	M66	N79A	N60			Corner Corner Plate	Beam	RECT	Q235	Typical
122	M74C	N52	N62			Corner Corner Plate	Beam	RECT	Q235	Typical
123	M142	N115	N121			Corner Corner Plate	Beam	RECT	Q235	Typical
124	M149	N103	N122			Corner Corner Plate	Beam	RECT	Q235	Typical
125	M220	N180	N186			Corner Corner Plate	Beam	RECT	Q235	Typical
126	M227	N168	N187			Corner Corner Plate	Beam	RECT	Q235	Typical
127	M298	N245	N251			Corner Corner Plate	Beam	RECT	Q235	Typical
128	M305	N233	N252			Corner Corner Plate	Beam	RECT	Q235	Typical
129	M31	N38	N29			Corner Platform Plate	Beam	RECT	Q235	Typical
130	M33	N39	N31			Corner Platform Plate	Beam	RECT	Q235	Typical
131	M34A	N35	N79			Corner Platform Plate	Beam	RECT	Q235	Typical
132	M60	N70	N67			Corner Platform Plate	Beam	RECT	Q235	Typical
133	M61	N71	N68			Corner Platform Plate	Beam	RECT	Q235	Typical
134	M62	N69	N64			Corner Platform Plate	Beam	RECT	Q235	Typical
135	M103	N95	N92			Corner Platform Plate	Beam	RECT	Q235	Typical
136	M104	N96	N93			Corner Platform Plate	Beam	RECT	Q235	Typical
137	M105	N94	N89			Corner Platform Plate	Beam	RECT	Q235	Typical
138	M136	N109	N106			Corner Platform Plate	Beam	RECT	Q235	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(...	Section/Shape	Type	Design List	Material	Design R...
139	M137	N110	N107			Corner Platform Plate	Beam	RECT	Q235	Typical
140	M138	N108	N105			Corner Platform Plate	Beam	RECT	Q235	Typical
141	M181	N160	N157			Corner Platform Plate	Beam	RECT	Q235	Typical
142	M182	N161	N158			Corner Platform Plate	Beam	RECT	Q235	Typical
143	M183	N159	N154			Corner Platform Plate	Beam	RECT	Q235	Typical
144	M214	N174	N171			Corner Platform Plate	Beam	RECT	Q235	Typical
145	M215	N175	N172			Corner Platform Plate	Beam	RECT	Q235	Typical
146	M216	N173	N170			Corner Platform Plate	Beam	RECT	Q235	Typical
147	M259	N225	N222			Corner Platform Plate	Beam	RECT	Q235	Typical
148	M260	N226	N223			Corner Platform Plate	Beam	RECT	Q235	Typical
149	M261	N224	N219			Corner Platform Plate	Beam	RECT	Q235	Typical
150	M292	N239	N236			Corner Platform Plate	Beam	RECT	Q235	Typical
151	M293	N240	N237			Corner Platform Plate	Beam	RECT	Q235	Typical
152	M294	N238	N235			Corner Platform Plate	Beam	RECT	Q235	Typical
153	M190	N254B	N286			RIGID	None	None	RIGID	Typical
154	M191	N287	N256B			RIGID	None	None	RIGID	Typical
155	M192	N288	N253B			RIGID	None	None	RIGID	Typical
156	M193A	N289	N290			RIGID	None	None	RIGID	Typical
157	M194A	N270A	N263A			RIGID	None	None	RIGID	Typical
158	M195A	N285	N279			RIGID	None	None	RIGID	Typical
159	M196A	N269A	N262A			RIGID	None	None	RIGID	Typical
160	M197A	N284	N278			RIGID	None	None	RIGID	Typical
161	M198A	N268A	N252B			RIGID	None	None	RIGID	Typical
162	M199A	N267A	N251B			RIGID	None	None	RIGID	Typical
163	M200A	N266A	N260B			RIGID	None	None	RIGID	Typical
164	M201A	N265A	N259B			RIGID	None	None	RIGID	Typical
165	M202A	N264A	N258B			RIGID	None	None	RIGID	Typical
166	M203A	N257B	N250B			RIGID	None	None	RIGID	Typical
167	M204A	N271A	N255B			RIGID	None	None	RIGID	Typical
168	M205A	N280	N273A			RIGID	None	None	RIGID	Typical
169	M206A	N272A	N275A			RIGID	None	None	RIGID	Typical
170	M207A	N281	N274A			RIGID	None	None	RIGID	Typical
171	M208B	N282	N276A			RIGID	None	None	RIGID	Typical
172	M209	N283	N277			RIGID	None	None	RIGID	Typical
173	M210	N257B	N264A			SO Middle Plate	Beam	RECT	A992	Typical
174	M211A	N264A	N265A			SO Middle Plate	Beam	RECT	A992	Typical
175	M215A	N270A	N286			SO Middle Plate	Beam	RECT	A992	Typical
176	M222A	N271A	N257B		45	SO Middle Plate	Beam	RECT	A992	Typical
177	M223A	N257B	N280			SO Middle Plate	Beam	RECT	A992	Typical
178	M224A	N280	N264A		45	SO Middle Plate	Beam	RECT	A992	Typical
179	M225A	N272A	N264A			SO Middle Plate	Beam	RECT	A992	Typical
180	M226A	N272A	N265A		45	SO vert/diag 2	Beam	RECT	A992	Typical
181	M227A	N281	N265A			SO vert/diag 2	Beam	RECT	A992	Typical
182	M228A	N281	N266A		45	SO vert/diag 2	Beam	RECT	A992	Typical
183	M229A	N282	N266A			SO vert/diag 3	Beam	RECT	A992	Typical
184	M230A	N282	N267A		45	SO vert/diag 3	Beam	RECT	A992	Typical
185	M231A	N283	N267A			SO vert/diag 3	Beam	RECT	A992	Typical
186	M232A	N283	N268A		45	SO vert/diag 4	Beam	RECT	A992	Typical
187	M233A	N284	N268A			SO vert/diag 4	Beam	RECT	A992	Typical
188	M234A	N284	N269A		45	SO vert/diag 4	Beam	RECT	A992	Typical
189	M235	N285	N269A			SO vert/diag 4	Beam	RECT	A992	Typical
190	M236	N285	N270A			RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(...	Section/Shape	Type	Design List	Material	Design R...
191	M237	N256B	N286			RIGID	None	None	RIGID	Typical
192	M238	N289	N288			RIGID	None	None	RIGID	Typical
193	M215B	N254B	N263A		90	SO Top Plate	Beam	RECT	A992	Typical
194	M216A	N263A	N251B		90	SO Top Plate	Beam	RECT	A992	Typical
195	M217A	N251B	N259B		90	SO Top Plate	Beam	RECT	A992	Typical
196	M218A	N259B	N258B		90	SO Top Plate	Beam	RECT	A992	Typical
197	M219A	N258B	N250B		90	SO Top Plate	Beam	RECT	A992	Typical
198	M220A	N256B	N279		90	SO Bottom Plate	Beam	RECT	A992	Typical
199	M221A	N279	N276A		90	SO Bottom Plate	Beam	RECT	A992	Typical
200	M222B	N276A	N275A		90	SO Bottom Plate	Beam	RECT	A992	Typical
201	M223B	N275A	N273A		90	SO Bottom Plate	Beam	RECT	A992	Typical
202	M224B	N273A	N255B		90	SO Bottom Plate	Beam	RECT	A992	Typical
203	M225B	N287	N285			SO Middle Plate	Beam	RECT	A992	Typical
204	M226B	N285	N282			SO Middle Plate	Beam	RECT	A992	Typical
205	M227B	N282	N272A			SO Middle Plate	Beam	RECT	A992	Typical
206	M228B	N272A	N280			SO Middle Plate	Beam	RECT	A992	Typical
207	M229B	N280	N271A			SO Middle Plate	Beam	RECT	A992	Typical
208	M227C	N270A	N267A			SO Middle Plate	Beam	RECT	A992	Typical
209	M228C	N267A	N265A			SO Middle Plate	Beam	RECT	A992	Typical
210	M229C	N275B	N307			RIGID	None	None	RIGID	Typical
211	M230B	N308	N277A			RIGID	None	None	RIGID	Typical
212	M231B	N309	N274B			RIGID	None	None	RIGID	Typical
213	M232B	N310	N311			RIGID	None	None	RIGID	Typical
214	M233B	N291	N284A			RIGID	None	None	RIGID	Typical
215	M234B	N306	N300			RIGID	None	None	RIGID	Typical
216	M235A	N290A	N283A			RIGID	None	None	RIGID	Typical
217	M236A	N305	N299			RIGID	None	None	RIGID	Typical
218	M237A	N289A	N273B			RIGID	None	None	RIGID	Typical
219	M238A	N288A	N272B			RIGID	None	None	RIGID	Typical
220	M239A	N287A	N281A			RIGID	None	None	RIGID	Typical
221	M240A	N286A	N280A			RIGID	None	None	RIGID	Typical
222	M241A	N285A	N279A			RIGID	None	None	RIGID	Typical
223	M242	N278A	N271B			RIGID	None	None	RIGID	Typical
224	M243	N292	N276B			RIGID	None	None	RIGID	Typical
225	M244	N301	N294			RIGID	None	None	RIGID	Typical
226	M245	N293	N296			RIGID	None	None	RIGID	Typical
227	M246	N302	N295			RIGID	None	None	RIGID	Typical
228	M247	N303	N297			RIGID	None	None	RIGID	Typical
229	M248	N304	N298			RIGID	None	None	RIGID	Typical
230	M249	N278A	N285A			SO Middle Plate	Beam	RECT	A992	Typical
231	M250	N285A	N286A			SO Middle Plate	Beam	RECT	A992	Typical
232	M251	N291	N307			SO Middle Plate	Beam	RECT	A992	Typical
233	M252	N292	N278A		135	SO Middle Plate	Beam	RECT	A992	Typical
234	M253	N278A	N301			SO Middle Plate	Beam	RECT	A992	Typical
235	M254	N301	N285A		135	SO Middle Plate	Beam	RECT	A992	Typical
236	M255	N293	N285A			SO Middle Plate	Beam	RECT	A992	Typical
237	M256A	N293	N286A		135	SO vert/diag 2	Beam	RECT	A992	Typical
238	M257A	N302	N286A			SO vert/diag 2	Beam	RECT	A992	Typical
239	M258A	N302	N287A		135	SO vert/diag 2	Beam	RECT	A992	Typical
240	M259A	N303	N287A			SO vert/diag 3	Beam	RECT	A992	Typical
241	M260A	N303	N288A		135	SO vert/diag 3	Beam	RECT	A992	Typical
242	M261A	N304	N288A			SO vert/diag 3	Beam	RECT	A992	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(...	Section/Shape	Type	Design List	Material	Design R...
243	M262A	N304	N289A		135	SO vert/diag 4	Beam	RECT	A992	Typical
244	M263A	N305	N289A			SO vert/diag 4	Beam	RECT	A992	Typical
245	M264A	N305	N290A		135	SO vert/diag 4	Beam	RECT	A992	Typical
246	M265A	N306	N290A			SO vert/diag 4	Beam	RECT	A992	Typical
247	M266A	N306	N291			RIGID	None	None	RIGID	Typical
248	M267A	N277A	N307			RIGID	None	None	RIGID	Typical
249	M268	N310	N309			RIGID	None	None	RIGID	Typical
250	M272	N275B	N284A		90	SO Top Plate	Beam	RECT	A992	Typical
251	M273	N284A	N272B		90	SO Top Plate	Beam	RECT	A992	Typical
252	M274	N272B	N280A		90	SO Top Plate	Beam	RECT	A992	Typical
253	M275	N280A	N279A		90	SO Top Plate	Beam	RECT	A992	Typical
254	M276	N279A	N271B		90	SO Top Plate	Beam	RECT	A992	Typical
255	M277	N277A	N300		90	SO Bottom Plate	Beam	RECT	A992	Typical
256	M278	N300	N297		90	SO Bottom Plate	Beam	RECT	A992	Typical
257	M279	N297	N296		90	SO Bottom Plate	Beam	RECT	A992	Typical
258	M280	N296	N294		90	SO Bottom Plate	Beam	RECT	A992	Typical
259	M281	N294	N276B		90	SO Bottom Plate	Beam	RECT	A992	Typical
260	M282	N308	N306			SO Middle Plate	Beam	RECT	A992	Typical
261	M283	N306	N303			SO Middle Plate	Beam	RECT	A992	Typical
262	M284	N303	N293			SO Middle Plate	Beam	RECT	A992	Typical
263	M285	N293	N301			SO Middle Plate	Beam	RECT	A992	Typical
264	M286A	N301	N292			SO Middle Plate	Beam	RECT	A992	Typical
265	M287	N291	N288A			SO Middle Plate	Beam	RECT	A992	Typical
266	M288	N288A	N286A			SO Middle Plate	Beam	RECT	A992	Typical
267	M289A	N318	N350			RIGID	None	None	RIGID	Typical
268	M290A	N351	N320			RIGID	None	None	RIGID	Typical
269	M291A	N352	N317			RIGID	None	None	RIGID	Typical
270	M292A	N353	N354			RIGID	None	None	RIGID	Typical
271	M293A	N334	N327			RIGID	None	None	RIGID	Typical
272	M294A	N349	N343			RIGID	None	None	RIGID	Typical
273	M295A	N333	N326			RIGID	None	None	RIGID	Typical
274	M296A	N348	N342			RIGID	None	None	RIGID	Typical
275	M297A	N332	N316			RIGID	None	None	RIGID	Typical
276	M298A	N331	N315			RIGID	None	None	RIGID	Typical
277	M299A	N330	N324			RIGID	None	None	RIGID	Typical
278	M300A	N329	N323			RIGID	None	None	RIGID	Typical
279	M301A	N328	N322			RIGID	None	None	RIGID	Typical
280	M302A	N321	N314			RIGID	None	None	RIGID	Typical
281	M303A	N335	N319			RIGID	None	None	RIGID	Typical
282	M304A	N344	N337			RIGID	None	None	RIGID	Typical
283	M305A	N336	N339			RIGID	None	None	RIGID	Typical
284	M306A	N345	N338			RIGID	None	None	RIGID	Typical
285	M307A	N346	N340			RIGID	None	None	RIGID	Typical
286	M308A	N347	N341			RIGID	None	None	RIGID	Typical
287	M309A	N321	N328			SO Middle Plate	Beam	RECT	A992	Typical
288	M310A	N328	N329			SO Middle Plate	Beam	RECT	A992	Typical
289	M311A	N334	N350			SO Middle Plate	Beam	RECT	A992	Typical
290	M312A	N335	N321		45	SO Middle Plate	Beam	RECT	A992	Typical
291	M313A	N321	N344			SO Middle Plate	Beam	RECT	A992	Typical
292	M314A	N344	N328		45	SO Middle Plate	Beam	RECT	A992	Typical
293	M315A	N336	N328			SO Middle Plate	Beam	RECT	A992	Typical
294	M316A	N336	N329		45	SO vert/diag 2	Beam	RECT	A992	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(...	Section/Shape	Type	Design List	Material	Design R...
295	M317	N345	N329			SO vert/diag 2	Beam	RECT	A992	Typical
296	M318	N345	N330		45	SO vert/diag 2	Beam	RECT	A992	Typical
297	M319	N346	N330			SO vert/diag 3	Beam	RECT	A992	Typical
298	M320	N346	N331		45	SO vert/diag 3	Beam	RECT	A992	Typical
299	M321	N347	N331			SO vert/diag 3	Beam	RECT	A992	Typical
300	M322	N347	N332		45	SO vert/diag 4	Beam	RECT	A992	Typical
301	M323	N348	N332			SO vert/diag 4	Beam	RECT	A992	Typical
302	M324	N348	N333		45	SO vert/diag 4	Beam	RECT	A992	Typical
303	M325	N349	N333			SO vert/diag 4	Beam	RECT	A992	Typical
304	M326	N349	N334			RIGID	None	None	RIGID	Typical
305	M327	N320	N350			RIGID	None	None	RIGID	Typical
306	M328	N353	N352			RIGID	None	None	RIGID	Typical
307	M332	N318	N327		90	SO Top Plate	Beam	RECT	A992	Typical
308	M333	N327	N315		90	SO Top Plate	Beam	RECT	A992	Typical
309	M334	N315	N323		90	SO Top Plate	Beam	RECT	A992	Typical
310	M335	N323	N322		90	SO Top Plate	Beam	RECT	A992	Typical
311	M336	N322	N314		90	SO Top Plate	Beam	RECT	A992	Typical
312	M337	N320	N343		90	SO Bottom Plate	Beam	RECT	A992	Typical
313	M338	N343	N340		90	SO Bottom Plate	Beam	RECT	A992	Typical
314	M339	N340	N339		90	SO Bottom Plate	Beam	RECT	A992	Typical
315	M340	N339	N337		90	SO Bottom Plate	Beam	RECT	A992	Typical
316	M341	N337	N319		90	SO Bottom Plate	Beam	RECT	A992	Typical
317	M342	N351	N349			SO Middle Plate	Beam	RECT	A992	Typical
318	M343	N349	N346			SO Middle Plate	Beam	RECT	A992	Typical
319	M344	N346	N336			SO Middle Plate	Beam	RECT	A992	Typical
320	M345	N336	N344			SO Middle Plate	Beam	RECT	A992	Typical
321	M346	N344	N335			SO Middle Plate	Beam	RECT	A992	Typical
322	M347	N334	N331			SO Middle Plate	Beam	RECT	A992	Typical
323	M348	N331	N329			SO Middle Plate	Beam	RECT	A992	Typical
324	M349	N361	N393			RIGID	None	None	RIGID	Typical
325	M350	N394	N363			RIGID	None	None	RIGID	Typical
326	M351	N395	N360			RIGID	None	None	RIGID	Typical
327	M352	N396	N397			RIGID	None	None	RIGID	Typical
328	M353	N377	N370			RIGID	None	None	RIGID	Typical
329	M354	N392	N386			RIGID	None	None	RIGID	Typical
330	M355	N376	N369			RIGID	None	None	RIGID	Typical
331	M356	N391	N385			RIGID	None	None	RIGID	Typical
332	M357	N375	N359			RIGID	None	None	RIGID	Typical
333	M358	N374	N368			RIGID	None	None	RIGID	Typical
334	M359	N373	N367			RIGID	None	None	RIGID	Typical
335	M360	N372	N366			RIGID	None	None	RIGID	Typical
336	M361	N371	N365			RIGID	None	None	RIGID	Typical
337	M362	N364	N357			RIGID	None	None	RIGID	Typical
338	M363	N378	N362			RIGID	None	None	RIGID	Typical
339	M364	N387	N380			RIGID	None	None	RIGID	Typical
340	M365	N379	N382			RIGID	None	None	RIGID	Typical
341	M366	N388	N381			RIGID	None	None	RIGID	Typical
342	M367	N389	N383			RIGID	None	None	RIGID	Typical
343	M368	N390	N384			RIGID	None	None	RIGID	Typical
344	M369	N364	N371			SO Middle Plate	Beam	RECT	A992	Typical
345	M370	N371	N372			SO Middle Plate	Beam	RECT	A992	Typical
346	M371	N377	N393			SO Middle Plate	Beam	RECT	A992	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(...	Section/Shape	Type	Design List	Material	Design R...
347	M372	N378	N364		135	SO Middle Plate	Beam	RECT	A992	Typical
348	M373	N364	N387			SO Middle Plate	Beam	RECT	A992	Typical
349	M374	N387	N371		135	SO Middle Plate	Beam	RECT	A992	Typical
350	M375	N379	N371			SO Middle Plate	Beam	RECT	A992	Typical
351	M376	N379	N372		135	SO vert/diag 2	Beam	RECT	A992	Typical
352	M377	N388	N372			SO vert/diag 2	Beam	RECT	A992	Typical
353	M378	N388	N373		135	SO vert/diag 2	Beam	RECT	A992	Typical
354	M379	N389	N373			SO vert/diag 3	Beam	RECT	A992	Typical
355	M380	N389	N374		135	SO vert/diag 3	Beam	RECT	A992	Typical
356	M381	N390	N374			SO vert/diag 3	Beam	RECT	A992	Typical
357	M382	N390	N375		135	SO vert/diag 4	Beam	RECT	A992	Typical
358	M383	N391	N375			SO vert/diag 4	Beam	RECT	A992	Typical
359	M384	N391	N376		135	SO vert/diag 4	Beam	RECT	A992	Typical
360	M385	N392	N376			SO vert/diag 4	Beam	RECT	A992	Typical
361	M386	N392	N377			RIGID	None	None	RIGID	Typical
362	M387	N363	N393			RIGID	None	None	RIGID	Typical
363	M388	N396	N395			RIGID	None	None	RIGID	Typical
364	M389	N389A	N217			RIGID	None	None	RIGID	Typical
365	M390	N358	N230			RIGID	None	None	RIGID	Typical
366	M392	N361	N370		90	SO Top Plate	Beam	RECT	A992	Typical
367	M393	N370	N368		90	SO Top Plate	Beam	RECT	A992	Typical
368	M394	N368	N366		90	SO Top Plate	Beam	RECT	A992	Typical
369	M395	N366	N365		90	SO Top Plate	Beam	RECT	A992	Typical
370	M396	N365	N357		90	SO Top Plate	Beam	RECT	A992	Typical
371	M397	N363	N386		90	SO Bottom Plate	Beam	RECT	A992	Typical
372	M398	N386	N383		90	SO Bottom Plate	Beam	RECT	A992	Typical
373	M399	N383	N382		90	SO Bottom Plate	Beam	RECT	A992	Typical
374	M400	N382	N380		90	SO Bottom Plate	Beam	RECT	A992	Typical
375	M401	N380	N362		90	SO Bottom Plate	Beam	RECT	A992	Typical
376	M402	N394	N392			SO Middle Plate	Beam	RECT	A992	Typical
377	M403	N392	N389			SO Middle Plate	Beam	RECT	A992	Typical
378	M404	N389	N379			SO Middle Plate	Beam	RECT	A992	Typical
379	M405	N379	N387			SO Middle Plate	Beam	RECT	A992	Typical
380	M406	N387	N378			SO Middle Plate	Beam	RECT	A992	Typical
381	M407	N377	N374			SO Middle Plate	Beam	RECT	A992	Typical
382	M408	N374	N372			SO Middle Plate	Beam	RECT	A992	Typical
383	M408A	N386A	N383A			RIGID	None	None	RIGID	Typical
384	M409	N385A	N47			RIGID	None	None	RIGID	Typical
385	M410	N389B	N387A			RIGID	None	None	RIGID	Typical
386	M411	N388A	N100			RIGID	None	None	RIGID	Typical
387	M412	N392A	N390A			RIGID	None	None	RIGID	Typical
388	M413	N391A	N165			RIGID	None	None	RIGID	Typical
389	M405A	N291	N310			RIGID	None	None	RIGID	Typical
390	M406A	N309	N308			RIGID	None	None	RIGID	Typical
391	M407A	N334	N353			RIGID	None	None	RIGID	Typical
392	M408B	N352	N351			RIGID	None	None	RIGID	Typical
393	M409A	N377	N396			RIGID	None	None	RIGID	Typical
394	M410A	N395	N394			RIGID	None	None	RIGID	Typical
395	M411A	N270A	N289			RIGID	None	None	RIGID	Typical
396	M412A	N288	N287			RIGID	None	None	RIGID	Typical
397	M413A	N168	N245			Walkway Pipe	Beam	Pipe	A53 Gr.B	Typical
398	M414	N162	N241			Walkway Pipe	Beam	Pipe	A53 Gr.B	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(...	Section/Shape	Type	Design List	Material	Design R...
399	M415	N103	N180			Walkway Pipe	Beam	Pipe	A53 Gr.B	Typical
400	M416	N97	N176			Walkway Pipe	Beam	Pipe	A53 Gr.B	Typical
401	M417	N227	N72			Walkway Pipe	Beam	Pipe	A53 Gr.B	Typical
402	M418	N233	N79A			Walkway Pipe	Beam	Pipe	A53 Gr.B	Typical
403	M419	N52	N115			Walkway Pipe	Beam	Pipe	A53 Gr.B	Typical
404	M420	N41	N111			Walkway Pipe	Beam	Pipe	A53 Gr.B	Typical
405	M421	N386B	N387B			Walkway Plate	Beam	RECT	A992	Typical
406	M422	N388B	N389C			Walkway Plate	Beam	RECT	A992	Typical
407	M423	N390B	N391B			Walkway Plate	Beam	RECT	A992	Typical
408	M424	N392B	N393A			Walkway Plate	Beam	RECT	A992	Typical
409	M425	N394A	N395A			Walkway Plate	Beam	RECT	A992	Typical
410	M426	N396A	N397B			Walkway Plate	Beam	RECT	A992	Typical
411	M427	N398	N399			Walkway Plate	Beam	RECT	A992	Typical
412	M428	N400	N401			Walkway Plate	Beam	RECT	A992	Typical
413	M429	N402	N403			Walkway Plate	Beam	RECT	A992	Typical
414	M430	N404	N405			Walkway Plate	Beam	RECT	A992	Typical
415	M431	N406	N407			Walkway Plate	Beam	RECT	A992	Typical
416	M432	N408	N409			Walkway Plate	Beam	RECT	A992	Typical
417	M433	N410	N411			Walkway Plate	Beam	RECT	A992	Typical
418	M434	N412	N413			Walkway Plate	Beam	RECT	A992	Typical
419	M435	N414	N415			Walkway Plate	Beam	RECT	A992	Typical
420	M436	N416	N417			Walkway Plate	Beam	RECT	A992	Typical
421	M421A	N264B	N404A			RIGID	None	None	RIGID	Typical
422	M422A	N264	N403A			RIGID	None	None	RIGID	Typical
423	M423A	N263	N402A			RIGID	None	None	RIGID	Typical
424	M424A	N266B	N405A			RIGID	None	None	RIGID	Typical
425	M437	N421A	N420A			Support Rail	Beam	Pipe	A53 Gr.B	Typical
426	M438	N420A	N424			RIGID	None	None	RIGID	Typical
427	M439	N419A	N423			RIGID	None	None	RIGID	Typical
428	M440	N418A	N422			RIGID	None	None	RIGID	Typical
429	M441	N421A	N425			RIGID	None	None	RIGID	Typical
430	M446	N437	N436			Support Rail	Beam	Pipe	A53 Gr.B	Typical
431	M455	N453	N452			Support Rail	Beam	Pipe	A53 Gr.B	Typical
432	M464	N469	N468			Support Rail	Beam	Pipe	A53 Gr.B	Typical
433	M473	N489	N482			SR End Connection	Beam	Wide Flange	A53 Gr.B	Typical
434	M474	N483	N484			SR End Connection	Beam	Wide Flange	A53 Gr.B	Typical
435	M475	N485	N486			SR End Connection	Beam	Wide Flange	A53 Gr.B	Typical
436	M476	N487	N488			SR End Connection	Beam	Wide Flange	A53 Gr.B	Typical
437	MP1A	N428A	N432			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
438	MP2A	N427A	N431			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
439	MP3A	N426A	N430			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
440	MP4A	N429A	N433			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
441	M441A	N260C	N448			RIGID	None	None	RIGID	Typical
442	M442	N268	N447			RIGID	None	None	RIGID	Typical
443	M443	N267	N446			RIGID	None	None	RIGID	Typical
444	M444	N262B	N449			RIGID	None	None	RIGID	Typical
445	M445	N436	N456			RIGID	None	None	RIGID	Typical
446	M446A	N435	N455			RIGID	None	None	RIGID	Typical
447	M447	N434	N454			RIGID	None	None	RIGID	Typical
448	M448	N437	N457			RIGID	None	None	RIGID	Typical
449	MP1D	N460	N464			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
450	MP2D	N459	N463			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(...	Section/Shape	Type	Design List	Material	Design R...
451	MP3D	N458	N462			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
452	MP4D	N461	N465			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
453	M453	N267C	N472			RIGID	None	None	RIGID	Typical
454	M454	N272	N471			RIGID	None	None	RIGID	Typical
455	M455A	N271	N470			RIGID	None	None	RIGID	Typical
456	M456	N265B	N473			RIGID	None	None	RIGID	Typical
457	M457	N452	N480			RIGID	None	None	RIGID	Typical
458	M458	N451	N479			RIGID	None	None	RIGID	Typical
459	M459	N450	N478			RIGID	None	None	RIGID	Typical
460	M460	N453	N481			RIGID	None	None	RIGID	Typical
461	MP1C	N484A	N488A			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
462	MP2C	N483A	N487A			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
463	MP3C	N482A	N486A			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
464	MP4C	N485A	N489A			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
465	M465	N263B	N496			RIGID	None	None	RIGID	Typical
466	M466	N276	N495			RIGID	None	None	RIGID	Typical
467	M467	N275	N494			RIGID	None	None	RIGID	Typical
468	M468	N261B	N497			RIGID	None	None	RIGID	Typical
469	M469	N468	N504			RIGID	None	None	RIGID	Typical
470	M470	N467	N503			RIGID	None	None	RIGID	Typical
471	M471	N466	N502			RIGID	None	None	RIGID	Typical
472	M472	N469	N505			RIGID	None	None	RIGID	Typical
473	MP1B	N508	N512			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
474	MP2B	N507	N511			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
475	MP3B	N506	N510			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
476	MP4B	N509	N513			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical

Member Advanced Data

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Analysis ...	Inactive	Seismic Design ...
1	R3						Yes			None
2	R4						Yes			None
3	R5						Yes			None
4	R6						Yes			None
5	R7						Yes			None
6	R8						Yes			None
7	R9						Yes			None
8	R10						Yes			None
9	M57						Yes			None
10	M58						Yes			None
11	M59						Yes			None
12	M63						Yes			None
13	M64						Yes			None
14	M65						Yes			None
15	M67						Yes			None
16	M70						Yes			None
17	M71		OOOXOO				Yes			None
18	M72						Yes			None
19	M74A		OOOXOO				Yes			None
20	M75C						Yes			None
21	M75A		OOOXOO				Yes			None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Analysis ...	Inactive	Seismic Design ...
22	M76						Yes			None
23	M77		OOOXOO				Yes			None
24	M78						Yes			None
25	M100						Yes			None
26	M101						Yes			None
27	M102						Yes			None
28	M106						Yes			None
29	M107						Yes			None
30	M108						Yes			None
31	M109						Yes			None
32	M111						Yes			None
33	M133						Yes			None
34	M134						Yes			None
35	M135						Yes			None
36	M139						Yes			None
37	M140						Yes			None
38	M141						Yes			None
39	M143						Yes			None
40	M145						Yes			None
41	M146		OOOXOO				Yes			None
42	M147						Yes			None
43	M151		OOOXOO				Yes			None
44	M152						Yes			None
45	M153		OOOXOO				Yes			None
46	M154						Yes			None
47	M155		OOOXOO				Yes			None
48	M156						Yes			None
49	M178						Yes			None
50	M179						Yes			None
51	M180						Yes			None
52	M184						Yes			None
53	M185						Yes			None
54	M186						Yes			None
55	M187						Yes			None
56	M189						Yes			None
57	M211						Yes			None
58	M212						Yes			None
59	M213						Yes			None
60	M217						Yes			None
61	M218						Yes			None
62	M219						Yes			None
63	M221						Yes			None
64	M223						Yes			None
65	M224		OOOXOO				Yes			None
66	M225						Yes			None
67	M229		OOOXOO				Yes			None
68	M230						Yes			None
69	M231		OOOXOO				Yes			None
70	M232						Yes			None
71	M233		OOOXOO				Yes			None
72	M234						Yes			None
73	M256						Yes			None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Analysis ...	Inactive	Seismic Design ...
74	M257						Yes			None
75	M258						Yes			None
76	M262						Yes			None
77	M263						Yes			None
78	M264						Yes			None
79	M265						Yes			None
80	M267						Yes			None
81	M289						Yes			None
82	M290						Yes			None
83	M291						Yes			None
84	M295						Yes			None
85	M296						Yes			None
86	M297						Yes			None
87	M299						Yes			None
88	M301						Yes			None
89	M302		OOOXOO				Yes			None
90	M303						Yes			None
91	M307		OOOXOO				Yes			None
92	M308						Yes			None
93	M309		OOOXOO				Yes			None
94	M310						Yes			None
95	M311		OOOXOO				Yes			None
96	M312						Yes			None
97	M313						Yes			None
98	M314						Yes			None
99	M315						Yes			None
100	M316						Yes			None
101	M45A						Yes			None
102	M68						Yes			None
103	M74B						Yes			None
104	M75B						Yes			None
105	M110						Yes			None
106	M144						Yes			None
107	M148						Yes			None
108	M150						Yes			None
109	M188						Yes			None
110	M222						Yes			None
111	M226						Yes			None
112	M228						Yes			None
113	M266						Yes			None
114	M300						Yes			None
115	M304						Yes			None
116	M306						Yes			None
117	M54						Yes			None
118	M130						Yes			None
119	M208						Yes			None
120	M286						Yes			None
121	M66						Yes			None
122	M74C						Yes			None
123	M142						Yes			None
124	M149						Yes			None
125	M220						Yes			None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Analysis ...	Inactive	Seismic Design ...
126	M227						Yes			None
127	M298						Yes			None
128	M305						Yes			None
129	M31						Yes			None
130	M33						Yes			None
131	M34A						Yes			None
132	M60						Yes			None
133	M61						Yes			None
134	M62						Yes			None
135	M103						Yes			None
136	M104						Yes			None
137	M105						Yes			None
138	M136						Yes			None
139	M137						Yes			None
140	M138						Yes			None
141	M181						Yes			None
142	M182						Yes			None
143	M183						Yes			None
144	M214						Yes			None
145	M215						Yes			None
146	M216						Yes			None
147	M259						Yes			None
148	M260						Yes			None
149	M261						Yes			None
150	M292						Yes			None
151	M293						Yes			None
152	M294						Yes			None
153	M190						Yes			None
154	M191						Yes			None
155	M192						Yes			None
156	M193A						Yes			None
157	M194A						Yes			None
158	M195A						Yes			None
159	M196A						Yes			None
160	M197A						Yes			None
161	M198A						Yes			None
162	M199A						Yes			None
163	M200A						Yes			None
164	M201A						Yes			None
165	M202A						Yes			None
166	M203A						Yes			None
167	M204A						Yes			None
168	M205A						Yes			None
169	M206A						Yes			None
170	M207A						Yes			None
171	M208B						Yes			None
172	M209						Yes			None
173	M210						Yes			None
174	M211A						Yes			None
175	M215A						Yes			None
176	M222A						Yes			None
177	M223A						Yes			None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Analysis ...	Inactive	Seismic Design ...
178	M224A						Yes			None
179	M225A						Yes			None
180	M226A						Yes			None
181	M227A						Yes			None
182	M228A						Yes			None
183	M229A						Yes			None
184	M230A						Yes			None
185	M231A						Yes			None
186	M232A						Yes			None
187	M233A						Yes			None
188	M234A						Yes			None
189	M235						Yes			None
190	M236						Yes			None
191	M237						Yes			None
192	M238						Yes			None
193	M215B						Yes			None
194	M216A						Yes			None
195	M217A						Yes			None
196	M218A						Yes			None
197	M219A						Yes			None
198	M220A						Yes			None
199	M221A						Yes			None
200	M222B						Yes			None
201	M223B						Yes			None
202	M224B						Yes			None
203	M225B						Yes			None
204	M226B						Yes			None
205	M227B						Yes			None
206	M228B						Yes			None
207	M229B						Yes			None
208	M227C						Yes			None
209	M228C						Yes			None
210	M229C						Yes			None
211	M230B						Yes			None
212	M231B						Yes			None
213	M232B						Yes			None
214	M233B						Yes			None
215	M234B						Yes			None
216	M235A						Yes			None
217	M236A						Yes			None
218	M237A						Yes			None
219	M238A						Yes			None
220	M239A						Yes			None
221	M240A						Yes			None
222	M241A						Yes			None
223	M242						Yes			None
224	M243						Yes			None
225	M244						Yes			None
226	M245						Yes			None
227	M246						Yes			None
228	M247						Yes			None
229	M248						Yes			None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Analysis ...	Inactive	Seismic Design ...
230	M249						Yes			None
231	M250						Yes			None
232	M251						Yes			None
233	M252						Yes			None
234	M253						Yes			None
235	M254						Yes			None
236	M255						Yes			None
237	M256A						Yes			None
238	M257A						Yes			None
239	M258A						Yes			None
240	M259A						Yes			None
241	M260A						Yes			None
242	M261A						Yes			None
243	M262A						Yes			None
244	M263A						Yes			None
245	M264A						Yes			None
246	M265A						Yes			None
247	M266A						Yes			None
248	M267A						Yes			None
249	M268						Yes			None
250	M272						Yes			None
251	M273						Yes			None
252	M274						Yes			None
253	M275						Yes			None
254	M276						Yes			None
255	M277						Yes			None
256	M278						Yes			None
257	M279						Yes			None
258	M280						Yes			None
259	M281						Yes			None
260	M282						Yes			None
261	M283						Yes			None
262	M284						Yes			None
263	M285						Yes			None
264	M286A						Yes			None
265	M287						Yes			None
266	M288						Yes			None
267	M289A						Yes			None
268	M290A						Yes			None
269	M291A						Yes			None
270	M292A						Yes			None
271	M293A						Yes			None
272	M294A						Yes			None
273	M295A						Yes			None
274	M296A						Yes			None
275	M297A						Yes			None
276	M298A						Yes			None
277	M299A						Yes			None
278	M300A						Yes			None
279	M301A						Yes			None
280	M302A						Yes			None
281	M303A						Yes			None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Analysis ...	Inactive	Seismic Design ...
282	M304A						Yes			None
283	M305A						Yes			None
284	M306A						Yes			None
285	M307A						Yes			None
286	M308A						Yes			None
287	M309A						Yes			None
288	M310A						Yes			None
289	M311A						Yes			None
290	M312A						Yes			None
291	M313A						Yes			None
292	M314A						Yes			None
293	M315A						Yes			None
294	M316A						Yes			None
295	M317						Yes			None
296	M318						Yes			None
297	M319						Yes			None
298	M320						Yes			None
299	M321						Yes			None
300	M322						Yes			None
301	M323						Yes			None
302	M324						Yes			None
303	M325						Yes			None
304	M326						Yes			None
305	M327						Yes			None
306	M328						Yes			None
307	M332						Yes			None
308	M333						Yes			None
309	M334						Yes			None
310	M335						Yes			None
311	M336						Yes			None
312	M337						Yes			None
313	M338						Yes			None
314	M339						Yes			None
315	M340						Yes			None
316	M341						Yes			None
317	M342						Yes			None
318	M343						Yes			None
319	M344						Yes			None
320	M345						Yes			None
321	M346						Yes			None
322	M347						Yes			None
323	M348						Yes			None
324	M349						Yes			None
325	M350						Yes			None
326	M351						Yes			None
327	M352						Yes			None
328	M353						Yes			None
329	M354						Yes			None
330	M355						Yes			None
331	M356						Yes			None
332	M357						Yes			None
333	M358						Yes			None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Analysis ...	Inactive	Seismic Design ...
334	M359						Yes			None
335	M360						Yes			None
336	M361						Yes			None
337	M362						Yes			None
338	M363						Yes			None
339	M364						Yes			None
340	M365						Yes			None
341	M366						Yes			None
342	M367						Yes			None
343	M368						Yes			None
344	M369						Yes			None
345	M370						Yes			None
346	M371						Yes			None
347	M372						Yes			None
348	M373						Yes			None
349	M374						Yes			None
350	M375						Yes			None
351	M376						Yes			None
352	M377						Yes			None
353	M378						Yes			None
354	M379						Yes			None
355	M380						Yes			None
356	M381						Yes			None
357	M382						Yes			None
358	M383						Yes			None
359	M384						Yes			None
360	M385						Yes			None
361	M386						Yes			None
362	M387						Yes			None
363	M388						Yes			None
364	M389						Yes			None
365	M390						Yes			None
366	M392						Yes			None
367	M393						Yes			None
368	M394						Yes			None
369	M395						Yes			None
370	M396						Yes			None
371	M397						Yes			None
372	M398						Yes			None
373	M399						Yes			None
374	M400						Yes			None
375	M401						Yes			None
376	M402						Yes			None
377	M403						Yes			None
378	M404						Yes			None
379	M405						Yes			None
380	M406						Yes			None
381	M407						Yes			None
382	M408						Yes			None
383	M408A						Yes			None
384	M409						Yes			None
385	M410						Yes			None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Analysis ...	Inactive	Seismic Design ...
386	M411						Yes			None
387	M412						Yes			None
388	M413						Yes			None
389	M405A						Yes			None
390	M406A						Yes			None
391	M407A						Yes			None
392	M408B						Yes			None
393	M409A						Yes			None
394	M410A						Yes			None
395	M411A						Yes			None
396	M412A						Yes			None
397	M413A						Yes			None
398	M414						Yes			None
399	M415						Yes			None
400	M416						Yes			None
401	M417						Yes			None
402	M418						Yes			None
403	M419						Yes			None
404	M420						Yes			None
405	M421						Yes			None
406	M422						Yes			None
407	M423						Yes			None
408	M424						Yes			None
409	M425						Yes			None
410	M426						Yes			None
411	M427						Yes			None
412	M428						Yes			None
413	M429						Yes			None
414	M430						Yes			None
415	M431						Yes			None
416	M432						Yes			None
417	M433						Yes			None
418	M434						Yes			None
419	M435						Yes			None
420	M436						Yes			None
421	M421A						Yes			None
422	M422A						Yes			None
423	M423A						Yes			None
424	M424A						Yes			None
425	M437						Yes			None
426	M438						Yes			None
427	M439						Yes			None
428	M440						Yes			None
429	M441						Yes			None
430	M446						Yes			None
431	M455						Yes			None
432	M464						Yes			None
433	M473						Yes			None
434	M474						Yes			None
435	M475						Yes			None
436	M476						Yes			None
437	MP1A						Yes			None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Analysis ...	Inactive	Seismic Design ...
438	MP2A						Yes			None
439	MP3A						Yes			None
440	MP4A						Yes			None
441	M441A						Yes			None
442	M442						Yes			None
443	M443						Yes			None
444	M444						Yes			None
445	M445						Yes			None
446	M446A						Yes			None
447	M447						Yes			None
448	M448						Yes			None
449	MP1D						Yes			None
450	MP2D						Yes			None
451	MP3D						Yes			None
452	MP4D						Yes			None
453	M453						Yes			None
454	M454						Yes			None
455	M455A						Yes			None
456	M456						Yes			None
457	M457						Yes			None
458	M458						Yes			None
459	M459						Yes			None
460	M460						Yes			None
461	MP1C						Yes			None
462	MP2C						Yes			None
463	MP3C						Yes			None
464	MP4C						Yes			None
465	M465						Yes			None
466	M466						Yes			None
467	M467						Yes			None
468	M468						Yes			None
469	M469						Yes			None
470	M470						Yes			None
471	M471						Yes			None
472	M472						Yes			None
473	MP1B						Yes			None
474	MP2B						Yes			None
475	MP3B						Yes			None
476	MP4B						Yes			None

Hot Rolled Steel Design Parameters

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[ft]	Lcomp bot[ft]	L-torqu...	Kyy	Kzz	Cb	Function
1	M313	Face Horizo...	10.5			Lbyy			.65	.65		Lateral
2	M314	Face Horizo...	10.5			Lbyy			.65	.65		Lateral
3	M315	Face Horizo...	10.5			Lbyy			.65	.65		Lateral
4	M316	Face Horizo...	10.5			Lbyy			.65	.65		Lateral
5	M45A	Corner Edg...	2.914	Segment	Segment	Lbyy			.65	.65		Lateral
6	M68	Corner Edg...	2.914	Segment	Segment	Lbyy			.65	.65		Lateral
7	M74B	Corner Edg...	2.386	Segment	Segment	Lbyy			.65	.65		Lateral
8	M75B	Corner Edg...	2.386	Segment	Segment	Lbyy			.65	.65		Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[ft]	Lcomp bot[ft]	L-torqu...	Kyy	Kzz	Cb	Function
9	M110	Corner Edg...	2.914	Segment	Segment	Lbyy			.65	.65		Lateral
10	M144	Corner Edg...	2.914	Segment	Segment	Lbyy			.65	.65		Lateral
11	M148	Corner Edg...	2.386	Segment	Segment	Lbyy			.65	.65		Lateral
12	M150	Corner Edg...	2.386	Segment	Segment	Lbyy			.65	.65		Lateral
13	M188	Corner Edg...	2.914	Segment	Segment	Lbyy			.65	.65		Lateral
14	M222	Corner Edg...	2.914	Segment	Segment	Lbyy			.65	.65		Lateral
15	M226	Corner Edg...	2.386	Segment	Segment	Lbyy			.65	.65		Lateral
16	M228	Corner Edg...	2.386	Segment	Segment	Lbyy			.65	.65		Lateral
17	M266	Corner Edg...	2.914	Segment	Segment	Lbyy			.65	.65		Lateral
18	M300	Corner Edg...	2.914	Segment	Segment	Lbyy			.65	.65		Lateral
19	M304	Corner Edg...	2.386	Segment	Segment	Lbyy			.65	.65		Lateral
20	M306	Corner Edg...	2.386	Segment	Segment	Lbyy			.65	.65		Lateral
21	M54	Corner Verti...	4.244			Lbyy			1	1		Lateral
22	M130	Corner Verti...	4.244			Lbyy			1	1		Lateral
23	M208	Corner Verti...	4.244			Lbyy			1	1		Lateral
24	M286	Corner Verti...	4.244			Lbyy			1	1		Lateral
25	M66	Corner Corn...	.605			Lbyy			.65	.65		Lateral
26	M74C	Corner Corn...	.605			Lbyy			.65	.65		Lateral
27	M142	Corner Corn...	.605			Lbyy			.65	.65		Lateral
28	M149	Corner Corn...	.605			Lbyy			.65	.65		Lateral
29	M220	Corner Corn...	.605			Lbyy			.65	.65		Lateral
30	M227	Corner Corn...	.605			Lbyy			.65	.65		Lateral
31	M298	Corner Corn...	.605			Lbyy			.65	.65		Lateral
32	M305	Corner Corn...	.605			Lbyy			.65	.65		Lateral
33	M31	Corner Platf...	1.659	.5	.5	Lbyy			.65	.65		Lateral
34	M33	Corner Platf...	1.124	.5	.5	Lbyy			.65	.65		Lateral
35	M34A	Corner Platf...	.583	.5	.5	Lbyy			.65	.65		Lateral
36	M60	Corner Platf...	1.659	.5	.5	Lbyy			.65	.65		Lateral
37	M61	Corner Platf...	1.124	.5	.5	Lbyy			.65	.65		Lateral
38	M62	Corner Platf...	.583	.5	.5	Lbyy			.65	.65		Lateral
39	M103	Corner Platf...	1.659	.5	.5	Lbyy			.65	.65		Lateral
40	M104	Corner Platf...	1.124	.5	.5	Lbyy			.65	.65		Lateral
41	M105	Corner Platf...	.583	.5	.5	Lbyy			.65	.65		Lateral
42	M136	Corner Platf...	1.659	.5	.5	Lbyy			.65	.65		Lateral
43	M137	Corner Platf...	1.124	.5	.5	Lbyy			.65	.65		Lateral
44	M138	Corner Platf...	.583	.5	.5	Lbyy			.65	.65		Lateral
45	M181	Corner Platf...	1.659	.5	.5	Lbyy			.65	.65		Lateral
46	M182	Corner Platf...	1.124	.5	.5	Lbyy			.65	.65		Lateral
47	M183	Corner Platf...	.583	.5	.5	Lbyy			.65	.65		Lateral
48	M214	Corner Platf...	1.659	.5	.5	Lbyy			.65	.65		Lateral
49	M215	Corner Platf...	1.124	.5	.5	Lbyy			.65	.65		Lateral
50	M216	Corner Platf...	.583	.5	.5	Lbyy			.65	.65		Lateral
51	M259	Corner Platf...	1.659	.5	.5	Lbyy			.65	.65		Lateral
52	M260	Corner Platf...	1.124	.5	.5	Lbyy			.65	.65		Lateral
53	M261	Corner Platf...	.583	.5	.5	Lbyy			.65	.65		Lateral
54	M292	Corner Platf...	1.659	.5	.5	Lbyy			.65	.65		Lateral
55	M293	Corner Platf...	1.124	.5	.5	Lbyy			.65	.65		Lateral
56	M294	Corner Platf...	.583	.5	.5	Lbyy			.65	.65		Lateral
57	M210	SO Middle ...	.718			Lbyy			.65	.65		Lateral
58	M211A	SO Middle ...	.655			Lbyy			.65	.65		Lateral
59	M215A	SO Middle ...	.943			Lbyy			.65	.65		Lateral
60	M222A	SO Middle ...	.855			Lbyy			.65	.65		Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[ft]	Lcomp bot[ft]	L-torqu...	Kyy	Kzz	Cb	Function
61	M223A	SO Middle ...	1.017			Lbyy			.65	.65		Lateral
62	M224A	SO Middle ...	.72			Lbyy			.65	.65		Lateral
63	M225A	SO Middle ...	.887			Lbyy			.65	.65		Lateral
64	M226A	SO vert/dia...	.598			Lbyy			.65	.65		Lateral
65	M227A	SO vert/dia...	.746			Lbyy			.65	.65		Lateral
66	M228A	SO vert/dia...	.494			Lbyy			.65	.65		Lateral
67	M229A	SO vert/dia...	.621			Lbyy			.65	.65		Lateral
68	M230A	SO vert/dia...	.407			Lbyy			.65	.65		Lateral
69	M231A	SO vert/dia...	.517			Lbyy			.65	.65		Lateral
70	M232A	SO vert/dia...	.334			Lbyy			.65	.65		Lateral
71	M233A	SO vert/dia...	.43			Lbyy			.65	.65		Lateral
72	M234A	SO vert/dia...	.272			Lbyy			.65	.65		Lateral
73	M235	SO vert/dia...	.343			Lbyy			.65	.65		Lateral
74	M215B	SO Top Plate	.943			Lbyy			.65	.65		Lateral
75	M216A	SO Top Plate	.993			Lbyy			.65	.65		Lateral
76	M217A	SO Top Plate	1.023			Lbyy			.65	.65		Lateral
77	M218A	SO Top Plate	.655			Lbyy			.65	.65		Lateral
78	M219A	SO Top Plate	.718			Lbyy			.65	.65		Lateral
79	M220A	SO Bottom ...	.874			Lbyy			.65	.65		Lateral
80	M221A	SO Bottom ...	1.006			Lbyy			.65	.65		Lateral
81	M222B	SO Bottom ...	1.045			Lbyy			.65	.65		Lateral
82	M223B	SO Bottom ...	.667			Lbyy			.65	.65		Lateral
83	M224B	SO Bottom ...	.742			Lbyy			.65	.65		Lateral
84	M225B	SO Middle ...	.872			Lbyy			.65	.65		Lateral
85	M226B	SO Middle ...	1.006			Lbyy			.65	.65		Lateral
86	M227B	SO Middle ...	1.045			Lbyy			.65	.65		Lateral
87	M228B	SO Middle ...	.667			Lbyy			.65	.65		Lateral
88	M229B	SO Middle ...	.731			Lbyy			.65	.65		Lateral
89	M227C	SO Middle ...	.989			Lbyy			.65	.65		Lateral
90	M228C	SO Middle ...	1.028			Lbyy			.65	.65		Lateral
91	M249	SO Middle ...	.718			Lbyy			.65	.65		Lateral
92	M250	SO Middle ...	.655			Lbyy			.65	.65		Lateral
93	M251	SO Middle ...	.943			Lbyy			.65	.65		Lateral
94	M252	SO Middle ...	.855			Lbyy			.65	.65		Lateral
95	M253	SO Middle ...	1.017			Lbyy			.65	.65		Lateral
96	M254	SO Middle ...	.72			Lbyy			.65	.65		Lateral
97	M255	SO Middle ...	.887			Lbyy			.65	.65		Lateral
98	M256A	SO vert/dia...	.598			Lbyy			.65	.65		Lateral
99	M257A	SO vert/dia...	.746			Lbyy			.65	.65		Lateral
100	M258A	SO vert/dia...	.494			Lbyy			.65	.65		Lateral
101	M259A	SO vert/dia...	.621			Lbyy			.65	.65		Lateral
102	M260A	SO vert/dia...	.407			Lbyy			.65	.65		Lateral
103	M261A	SO vert/dia...	.517			Lbyy			.65	.65		Lateral
104	M262A	SO vert/dia...	.334			Lbyy			.65	.65		Lateral
105	M263A	SO vert/dia...	.43			Lbyy			.65	.65		Lateral
106	M264A	SO vert/dia...	.272			Lbyy			.65	.65		Lateral
107	M265A	SO vert/dia...	.343			Lbyy			.65	.65		Lateral
108	M272	SO Top Plate	.943			Lbyy			.65	.65		Lateral
109	M273	SO Top Plate	.993			Lbyy			.65	.65		Lateral
110	M274	SO Top Plate	1.023			Lbyy			.65	.65		Lateral
111	M275	SO Top Plate	.655			Lbyy			.65	.65		Lateral
112	M276	SO Top Plate	.718			Lbyy			.65	.65		Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[ft]	Lcomp bot[ft]	L-torqu...	Kyy	Kzz	Cb	Function
113	M277	SO Bottom ...	.874			Lbyy			.65	.65		Lateral
114	M278	SO Bottom ...	1.006			Lbyy			.65	.65		Lateral
115	M279	SO Bottom ...	1.045			Lbyy			.65	.65		Lateral
116	M280	SO Bottom ...	.667			Lbyy			.65	.65		Lateral
117	M281	SO Bottom ...	.742			Lbyy			.65	.65		Lateral
118	M282	SO Middle ...	.872			Lbyy			.65	.65		Lateral
119	M283	SO Middle ...	1.006			Lbyy			.65	.65		Lateral
120	M284	SO Middle ...	1.045			Lbyy			.65	.65		Lateral
121	M285	SO Middle ...	.667			Lbyy			.65	.65		Lateral
122	M286A	SO Middle ...	.731			Lbyy			.65	.65		Lateral
123	M287	SO Middle ...	.989			Lbyy			.65	.65		Lateral
124	M288	SO Middle ...	1.028			Lbyy			.65	.65		Lateral
125	M309A	SO Middle ...	.718			Lbyy			.65	.65		Lateral
126	M310A	SO Middle ...	.655			Lbyy			.65	.65		Lateral
127	M311A	SO Middle ...	.943			Lbyy			.65	.65		Lateral
128	M312A	SO Middle ...	.855			Lbyy			.65	.65		Lateral
129	M313A	SO Middle ...	1.017			Lbyy			.65	.65		Lateral
130	M314A	SO Middle ...	.72			Lbyy			.65	.65		Lateral
131	M315A	SO Middle ...	.887			Lbyy			.65	.65		Lateral
132	M316A	SO vert/dia...	.598			Lbyy			.65	.65		Lateral
133	M317	SO vert/dia...	.746			Lbyy			.65	.65		Lateral
134	M318	SO vert/dia...	.494			Lbyy			.65	.65		Lateral
135	M319	SO vert/dia...	.621			Lbyy			.65	.65		Lateral
136	M320	SO vert/dia...	.407			Lbyy			.65	.65		Lateral
137	M321	SO vert/dia...	.517			Lbyy			.65	.65		Lateral
138	M322	SO vert/dia...	.334			Lbyy			.65	.65		Lateral
139	M323	SO vert/dia...	.43			Lbyy			.65	.65		Lateral
140	M324	SO vert/dia...	.272			Lbyy			.65	.65		Lateral
141	M325	SO vert/dia...	.343			Lbyy			.65	.65		Lateral
142	M332	SO Top Plate	.943			Lbyy			.65	.65		Lateral
143	M333	SO Top Plate	.993			Lbyy			.65	.65		Lateral
144	M334	SO Top Plate	1.023			Lbyy			.65	.65		Lateral
145	M335	SO Top Plate	.655			Lbyy			.65	.65		Lateral
146	M336	SO Top Plate	.718			Lbyy			.65	.65		Lateral
147	M337	SO Bottom ...	.874			Lbyy			.65	.65		Lateral
148	M338	SO Bottom ...	1.006			Lbyy			.65	.65		Lateral
149	M339	SO Bottom ...	1.045			Lbyy			.65	.65		Lateral
150	M340	SO Bottom ...	.667			Lbyy			.65	.65		Lateral
151	M341	SO Bottom ...	.742			Lbyy			.65	.65		Lateral
152	M342	SO Middle ...	.872			Lbyy			.65	.65		Lateral
153	M343	SO Middle ...	1.006			Lbyy			.65	.65		Lateral
154	M344	SO Middle ...	1.045			Lbyy			.65	.65		Lateral
155	M345	SO Middle ...	.667			Lbyy			.65	.65		Lateral
156	M346	SO Middle ...	.731			Lbyy			.65	.65		Lateral
157	M347	SO Middle ...	.989			Lbyy			.65	.65		Lateral
158	M348	SO Middle ...	1.028			Lbyy			.65	.65		Lateral
159	M369	SO Middle ...	.718			Lbyy			.65	.65		Lateral
160	M370	SO Middle ...	.655			Lbyy			.65	.65		Lateral
161	M371	SO Middle ...	.943			Lbyy			.65	.65		Lateral
162	M372	SO Middle ...	.855			Lbyy			.65	.65		Lateral
163	M373	SO Middle ...	1.017			Lbyy			.65	.65		Lateral
164	M374	SO Middle ...	.72			Lbyy			.65	.65		Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[ft]	Lcomp bot[ft]	L-torqu...	Kyy	Kzz	Cb	Function
165	M375	SO Middle ...	.887			Lbyy			.65	.65		Lateral
166	M376	SO vert/dia...	.598			Lbyy			.65	.65		Lateral
167	M377	SO vert/dia...	.746			Lbyy			.65	.65		Lateral
168	M378	SO vert/dia...	.494			Lbyy			.65	.65		Lateral
169	M379	SO vert/dia...	.621			Lbyy			.65	.65		Lateral
170	M380	SO vert/dia...	.407			Lbyy			.65	.65		Lateral
171	M381	SO vert/dia...	.517			Lbyy			.65	.65		Lateral
172	M382	SO vert/dia...	.334			Lbyy			.65	.65		Lateral
173	M383	SO vert/dia...	.43			Lbyy			.65	.65		Lateral
174	M384	SO vert/dia...	.272			Lbyy			.65	.65		Lateral
175	M385	SO vert/dia...	.343			Lbyy			.65	.65		Lateral
176	M392	SO Top Plate	.943			Lbyy			.65	.65		Lateral
177	M393	SO Top Plate	.989			Lbyy			.65	.65		Lateral
178	M394	SO Top Plate	1.028			Lbyy			.65	.65		Lateral
179	M395	SO Top Plate	.655			Lbyy			.65	.65		Lateral
180	M396	SO Top Plate	.718			Lbyy			.65	.65		Lateral
181	M397	SO Bottom ...	.874			Lbyy			.65	.65		Lateral
182	M398	SO Bottom ...	1.006			Lbyy			.65	.65		Lateral
183	M399	SO Bottom ...	1.045			Lbyy			.65	.65		Lateral
184	M400	SO Bottom ...	.667			Lbyy			.65	.65		Lateral
185	M401	SO Bottom ...	.742			Lbyy			.65	.65		Lateral
186	M402	SO Middle ...	.872			Lbyy			.65	.65		Lateral
187	M403	SO Middle ...	1.006			Lbyy			.65	.65		Lateral
188	M404	SO Middle ...	1.045			Lbyy			.65	.65		Lateral
189	M405	SO Middle ...	.667			Lbyy			.65	.65		Lateral
190	M406	SO Middle ...	.731			Lbyy			.65	.65		Lateral
191	M407	SO Middle ...	.989			Lbyy			.65	.65		Lateral
192	M408	SO Middle ...	1.028			Lbyy			.65	.65		Lateral
193	M413A	Walkway Pi...	4.033			Lbyy						Lateral
194	M414	Walkway Pi...	4.033			Lbyy						Lateral
195	M415	Walkway Pi...	4.033			Lbyy						Lateral
196	M416	Walkway Pi...	4.033			Lbyy						Lateral
197	M417	Walkway Pi...	4.033			Lbyy						Lateral
198	M418	Walkway Pi...	4.033			Lbyy						Lateral
199	M419	Walkway Pi...	4.033			Lbyy						Lateral
200	M420	Walkway Pi...	4.033			Lbyy						Lateral
201	M421	Walkway Pl...	1.687	.833	.833	Lbyy						Lateral
202	M422	Walkway Pl...	1.687	.833	.833	Lbyy						Lateral
203	M423	Walkway Pl...	1.687	.833	.833	Lbyy						Lateral
204	M424	Walkway Pl...	1.687	.833	.833	Lbyy						Lateral
205	M425	Walkway Pl...	1.687	.833	.833	Lbyy						Lateral
206	M426	Walkway Pl...	1.687	.833	.833	Lbyy						Lateral
207	M427	Walkway Pl...	1.687	.833	.833	Lbyy						Lateral
208	M428	Walkway Pl...	1.687	.833	.833	Lbyy						Lateral
209	M429	Walkway Pl...	1.687	.833	.833	Lbyy						Lateral
210	M430	Walkway Pl...	1.687	.833	.833	Lbyy						Lateral
211	M431	Walkway Pl...	1.687	.833	.833	Lbyy						Lateral
212	M432	Walkway Pl...	1.687	.833	.833	Lbyy						Lateral
213	M433	Walkway Pl...	1.687	.833	.833	Lbyy						Lateral
214	M434	Walkway Pl...	1.687	.833	.833	Lbyy						Lateral
215	M435	Walkway Pl...	1.687	.833	.833	Lbyy						Lateral
216	M436	Walkway Pl...	1.687	.833	.833	Lbyy						Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[ft]	Lcomp bot[ft]	L-torqu...	Kyy	Kzz	Cb	Function
217	M437	Support Rail	10.5			Lbyy			.65	.65		Lateral
218	M446	Support Rail	10.5			Lbyy			.65	.65		Lateral
219	M455	Support Rail	10.5			Lbyy			.65	.65		Lateral
220	M464	Support Rail	10.5			Lbyy			.65	.65		Lateral
221	M473	SR End Co...	.855			Lbyy						Lateral
222	M474	SR End Co...	.855			Lbyy						Lateral
223	M475	SR End Co...	.855			Lbyy						Lateral
224	M476	SR End Co...	.855			Lbyy						Lateral
225	MP1A	Mount Pipes	8			Lbyy						Lateral
226	MP2A	Mount Pipes	8			Lbyy						Lateral
227	MP3A	Mount Pipes	8			Lbyy						Lateral
228	MP4A	Mount Pipes	8			Lbyy						Lateral
229	MP1D	Mount Pipes	8			Lbyy						Lateral
230	MP2D	Mount Pipes	8			Lbyy						Lateral
231	MP3D	Mount Pipes	8			Lbyy						Lateral
232	MP4D	Mount Pipes	8			Lbyy						Lateral
233	MP1C	Mount Pipes	8			Lbyy						Lateral
234	MP2C	Mount Pipes	8			Lbyy						Lateral
235	MP3C	Mount Pipes	8			Lbyy						Lateral
236	MP4C	Mount Pipes	8			Lbyy						Lateral
237	MP1B	Mount Pipes	8			Lbyy						Lateral
238	MP2B	Mount Pipes	8			Lbyy						Lateral
239	MP3B	Mount Pipes	8			Lbyy						Lateral
240	MP4B	Mount Pipes	8			Lbyy						Lateral

Cold Formed Steel Design Parameters

Label	Shape	Lengt...	Lbyy[ft]	Lbzz[ft]	Lcomp to..	Lcomp b...	Kyy	Kzz	Cm-yy	Cm-zz	Cb	R	y sway	z sway
No Data to Print ...														

Aluminum Design Parameters

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

Joint Loads and Enforced Displacements

Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2...
No Data to Print ...			

Member Area Loads

Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[ksf]
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	N250B	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	N255B	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	N271B	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
4	N276B	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
5	N314	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
6	N319	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
7	N357	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
8	N362	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N250B	max	9010.841	2	535.217	5	5745.935	1	.07	4	.317	2	.074	2
2		min	-5546.939	1	-142.756	2	-9166.631	2	-.051	3	-.291	1	-.055	1
3	N255B	max	1375.059	1	2780.684	6	10456.801	6	.151	2	.487	2	.122	4
4		min	-10460.087	6	-362.917	1	-1613.349	1	-.083	1	-.501	1	-.052	3
5	N271B	max	6310.359	1	545.599	5	7736.807	1	.076	2	1.638	2	.069	1
6		min	-9736.008	2	-196.77	2	-11229.372	2	-.057	1	-1.626	1	-.088	2
7	N276B	max	10627.749	6	2820.174	6	10594.288	6	.108	7	.532	2	.107	1
8		min	-2568.783	1	-605.494	1	-2291.292	1	.026	4	-.554	1	-.174	2
9	N314	max	6314.668	2	542.617	6	10801.1	1	.057	2	1.273	2	.064	2
10		min	-9782.086	1	-187.475	1	-7285.542	2	-.077	1	-1.27	1	-.084	1
11	N319	max	10624.626	5	2814.637	5	2176.249	2	.071	4	.517	2	.1	2
12		min	-2416.915	2	-571.245	2	-10554.143	5	-.139	3	-.516	1	-.17	1
13	N357	max	9525.421	4	536.803	7	9182.198	1	.055	3	1.059	3	.074	1
14		min	-6045.926	3	-152.6	4	-5727.781	2	-.074	4	-1.046	4	-.054	2
15	N362	max	1372.528	3	2778.729	8	1537.977	3	.077	2	.467	2	.101	5
16		min	-10421.255	8	-352.206	3	-10481.247	8	-.148	1	-.473	1	.029	1
17	Totals:	max	11315.383	4	11814.709	8	12634.799	1						
18		min	-11315.382	3	4203.259	3	-12634.799	2						

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear ...	Loc[ft]	Dir	LC	phi*Pnc ...	phi*Pnt ...	phi*Mn ...	phi*Mn ...	Cb	Eqn
1	MP2A	PIPE 2.0	.874	5.684	1	.132	5.684		2	14916.0...	32130	1.872	1.872	3...	H1-1b
2	MP3D	PIPE 2.0	.797	5.684	2	.094	5.684		2	14916.0...	32130	1.872	1.872	2...	H1-1b
3	MP2D	PIPE 2.0	.786	5.684	1	.101	5.684		1	14916.0...	32130	1.872	1.872	2...	H1-1b
4	MP3C	PIPE 2.0	.692	5.684	3	.088	5.684		3	14916.0...	32130	1.872	1.872	4...	H1-1b
5	MP2C	PIPE 2.0	.675	5.684	4	.083	5.684		4	14916.0...	32130	1.872	1.872	2...	H1-1b
6	MP3B	PIPE 2.0	.651	5.684	1	.116	5.684		4	14916.0...	32130	1.872	1.872	2...	H1-1b
7	MP2B	PIPE 2.0	.629	5.684	2	.098	5.684		4	14916.0...	32130	1.872	1.872	2...	H1-1b
8	MP3A	PIPE 2.0	.602	5.684	4	.169	5.684		2	14916.0...	32130	1.872	1.872	4...	H1-1b
9	M446	PIPE 2.0	.553	6.908	2	.140	10.2...		4	18380.6...	32130	1.872	1.872	2...	H1-1b
10	M437	PIPE 2.0	.515	7.184	2	.292	10.2...		1	18380.6...	32130	1.872	1.872	2...	H3-6
11	M455	PIPE 2.0	.469	6.908	3	.182	10.2...		2	18380.6...	32130	1.872	1.872	2...	H1-1b
12	M144	L3x3x6	.465	2.761	1	.201	2.914	z	3	66460.7...	66465	2.243	5.174	1...	H2-1
13	M45A	L3x3x6	.427	2.761	1	.225	2.914	y	4	66460.7...	66465	2.243	5.174	1...	H2-1
14	M464	PIPE 2.0	.425	6.908	1	.253	10.2...		3	18380.6...	32130	1.872	1.872	3...	H1-1b
15	M75B	L3x3x6	.404	0	6	.174	0	z	2	66373.0...	66465	2.243	5.174	2...	H2-1
16	M148	L3x3x6	.401	0	6	.226	0	y	2	66373.0...	66465	2.243	5.174	2...	H2-1
17	M228	L3x3x6	.399	0	5	.197	0	z	1	66373.0...	66465	2.243	5.174	1...	H2-1

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear ...	Loc[ft]	Dir	LC	phi*Pnc ...	phi*Pnt ...	phi*Mn ...	phi*Mn ...	Cb	Eqn
18	M306	L3x3x6	.398	0	8	.177	0	z	4	66373.0...	66465	2.243	5.174	1...	H2-1
19	M150	L3x3x6	.396	0	7	.147	0	z	3	66373.0...	66465	2.243	5.174	1...	H2-1
20	MP1D	PIPE 2.0	.395	5.684	2	.075	5.684		2	14916.0...	32130	1.872	1.872	3...	H1-1b
21	M304	L3x3x6	.394	0	5	.170	0	y	1	66373.0...	66465	2.243	5.174	2...	H2-1
22	M74B	L3x3x6	.392	0	8	.167	0	y	4	66373.0...	66465	2.243	5.174	2...	H2-1
23	M226	L3x3x6	.392	0	7	.177	0	y	3	66373.0...	66465	2.243	5.174	1...	H2-1
24	M105	3/8 x 2 3/8 "	.389	0	6	.056	0	y	7	26251.56	28054.6...	.219	1.388	1...	H1-1b
25	M266	L3x3x6	.388	2.761	3	.242	2.914	y	1	66460.7...	66465	2.243	5.174	1...	H2-1
26	M34A	3/8 x 2 3/8 "	.381	0	8	.057	0	y	6	26251.56	28054.6...	.219	1.388	1...	H1-1b
27	M261	3/8 x 2 3/8 "	.380	0	5	.056	0	y	8	26251.56	28054.6...	.219	1.388	1...	H1-1b
28	M183	3/8 x 2 3/8 "	.380	0	7	.056	0	y	5	26251.56	28054.6...	.219	1.388	1...	H1-1b
29	M62	3/8 x 2 3/8 "	.377	0	6	.067	0	y	8	26251.56	28054.6...	.219	1.388	1...	H1-1b
30	M294	3/8 x 2 3/8 "	.375	0	8	.067	0	y	5	26251.56	28054.6...	.219	1.388	1...	H1-1b
31	M216	3/8 x 2 3/8 "	.375	0	5	.066	0	y	7	26251.56	28054.6...	.219	1.388	1...	H1-1b
32	M138	3/8 x 2 3/8 "	.371	0	7	.068	0	y	6	26251.56	28054.6...	.219	1.388	1.3	H1-1b
33	M273	.5" x 4"	.368	.888	2	.036	.888	z	3	73036.74	90000	.938	7.5	3...	H1-1b
34	M272	.5" x 4"	.358	.149	2	.091	0	z	3	74534.4...	90000	.938	7.5	2...	H1-1b
35	M188	L3x3x6	.354	2.761	2	.255	2.914	y	3	66460.7...	66465	2.243	5.174	1...	H2-1
36	MP4D	PIPE 2.0	.342	5.684	1	.151	5.684		1	14916.0...	32130	1.872	1.872	4...	H1-1b
37	M332	.5" x 4"	.336	.149	1	.077	0	z	1	74534.4...	90000	.938	7.5	2...	H1-1b
38	MP4C	PIPE 2.0	.330	5.684	4	.086	5.684		4	14916.0...	32130	1.872	1.872	3...	H1-1b
39	M215B	.5" x 4"	.323	.149	2	.112	0	z	2	74534.4...	90000	.938	7.5	2...	H1-1b
40	M130	HSS4x3x4	.320	1.899	2	.127	1.899	z	2	83040.4...	91665	8.19	10.001	1...	H1-1b
41	M314	PIPE 2.5	.318	3.592	2	.206	3.316		4	34640.7...	50715	3.596	3.596	3...	H1-1b
42	MP1C	PIPE 2.0	.313	5.684	3	.092	5.684		3	14916.0...	32130	1.872	1.872	3...	H1-1b
43	M208	HSS4x3x4	.312	1.899	1	.115	1.899	z	1	83040.4...	91665	8.19	10.001	1...	H1-1b
44	M392	.5" x 4"	.311	.149	4	.106	0	z	1	74534.4...	90000	.938	7.5	2...	H1-1b
45	MP4B	PIPE 2.0	.308	5.684	2	.090	5.684		2	14916.0...	32130	1.872	1.872	2...	H1-1b
46	M333	.5" x 4"	.304	.888	1	.035	.888	z	1	73036.74	90000	.938	7.5	3...	H1-1b
47	M279	3/8 x 4	.303	0	2	.023	1.045	y	2	44585.04	67500	.527	5.625	1...	H1-1a
48	M54	HSS4x3x4	.303	1.899	2	.126	1.899	z	2	83040.4...	91665	8.19	10.001	1...	H1-1b
49	M339	3/8 x 4	.300	0	1	.016	1.045	y	2	44585.04	67500	.527	5.625	1...	H1-1a
50	M278	3/8 x 4	.299	1.006	2	.010	1.006	y	2	45983.6...	67500	.527	5.625	1...	H1-1a
51	M338	3/8 x 4	.296	1.006	1	.016	1.006	z	10	45983.6...	67500	.527	5.625	1...	H1-1a
52	M216A	.5" x 4"	.296	.888	2	.042	.888	z	2	73036.74	90000	.938	7.5	3...	H1-1b
53	M214	3/8 x 2 3/8 "	.294	0	5	.028	0	y	1	26251.56	28054.6...	.219	1.388	1...	H1-1b
54	M136	3/8 x 2 3/8 "	.294	0	6	.038	0	y	2	26251.56	28054.6...	.219	1.388	1...	H1-1b
55	M103	3/8 x 2 3/8 "	.293	0	6	.038	0	y	2	26251.56	28054.6...	.219	1.388	1...	H1-1b
56	M60	3/8 x 2 3/8 "	.293	0	6	.030	0	y	2	26251.56	28054.6...	.219	1.388	1...	H1-1b
57	M292	3/8 x 2 3/8 "	.293	0	5	.030	0	y	4	26251.56	28054.6...	.219	1.388	1...	H1-1b
58	MP1A	PIPE 2.0	.292	5.684	4	.139	2.316		2	14916.0...	32130	1.872	1.872	3...	H1-1b
59	M31	3/8 x 2 3/8 "	.291	0	6	.034	0	y	2	26251.56	28054.6...	.219	1.388	1...	H1-1b
60	M393	.5" x 4"	.291	.885	4	.041	.885	z	1	73168.4...	90000	.938	7.5	3...	H1-1b
61	M276	.5" x 4"	.290	.718	2	.043	.718	y	2	80682.6...	90000	.938	7.5	1...	H1-1b
62	M181	3/8 x 2 3/8 "	.288	0	7	.031	0	y	1	26251.56	28054.6...	.219	1.388	1...	H1-1b
63	M259	3/8 x 2 3/8 "	.288	0	5	.031	0	y	4	26251.56	28054.6...	.219	1.388	1...	H1-1b
64	M68	L3x3x6	.286	2.761	3	.218	2.914	z	2	66460.7...	66465	2.243	5.174	1...	H2-1
65	M286	HSS4x3x4	.286	1.899	4	.115	1.899	z	5	83040.4...	91665	8.19	10.001	1...	H1-1b
66	M473	WT4x2.25x...	.284	.855	2	.101	0	y	4	72205.4...	73836	4.145	1.742	1...	H1-1b
67	M474	WT4x2.25x...	.283	0	2	.125	0	y	2	72205.4...	73836	4.145	1.742	1...	H1-1b
68	M222B	3/8 x 4	.282	1.045	6	.015	.495	y	1	44585.04	67500	.527	5.625	1...	H1-1a
69	M399	3/8 x 4	.280	1.045	5	.014	1.045	y	3	44585.04	67500	.527	5.625	1...	H1-1a

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear ...	Loc[ft]	Dir	LC	phi*Pnc ...	phi*Pnt ...	phi*Mn ...	phi*Mn ...	Cb	Eqn
70	M222	L3x3x6	.279	2.684	3	.244	2.914	y	1	65062.6...	66465	2.243	5.174	1...	H2-1
71	MP1B	PIPE_2.0	.277	5.684	1	.112	2.316		4	14916.0...	32130	1.872	1.872	3...	H1-1b
72	M110	L3x3x6	.276	2.761	4	.297	2.914	y	2	66460.7...	66465	2.243	5.174	1...	H2-1
73	M283	3/8 x 1"	.272	1.006	6	.043	.265	y	2	11496.4...	16875	.132	.352	1...	H1-1a
74	M315	PIPE_2.5	.270	3.592	3	.249	3.316		2	34640.7...	50715	3.596	3.596	3...	H1-1b
75	M343	3/8 x 1"	.270	1.006	5	.041	.265	y	1	11496.4...	16875	.132	.352	1...	H1-1a
76	M33	3/8 x 2 3/8 "	.269	0	6	.034	0	y	8	26251.56	28054.6...	.219	1.388	1...	H1-1b
77	M221A	3/8 x 4	.269	1.006	6	.011	.609	y	1	45983.6...	67500	.527	5.625	1...	H1-1a
78	M137	3/8 x 2 3/8 "	.269	0	6	.031	0	y	7	26251.56	28054.6...	.219	1.388	1...	H1-1b
79	M182	3/8 x 2 3/8 "	.267	0	5	.034	0	y	7	26251.56	28054.6...	.219	1.388	1...	H1-1b
80	M226B	3/8 x 1"	.266	1.006	6	.039	.265	y	6	11496.4...	16875	.132	.352	1...	H1-1a
81	M260	3/8 x 2 3/8 "	.266	0	8	.034	0	y	5	26251.56	28054.6...	.219	1.388	1...	H1-1b
82	M403	3/8 x 1"	.265	1.006	8	.039	.265	y	8	11496.4...	16875	.132	.352	1...	H1-1a
83	M313	PIPE_2.5	.265	7.184	1	.353	7.184		1	34640.7...	50715	3.596	3.596	3...	H3-6
84	MP4A	PIPE_2.0	.265	5.684	3	.116	5.684		3	14916.0...	32130	1.872	1.872	3...	H1-1b
85	M398	3/8 x 4	.265	1.006	8	.011	.609	y	1	45983.6...	67500	.527	5.625	1...	H1-1a
86	M104	3/8 x 2 3/8 "	.263	0	7	.035	0	y	2	26251.56	28054.6...	.219	1.388	1...	H1-1b
87	M293	3/8 x 2 3/8 "	.263	0	5	.033	0	y	4	26251.56	28054.6...	.219	1.388	1...	H1-1b
88	M300	L3x3x6	.263	2.684	1	.214	2.914	z	4	65062.6...	66465	2.243	5.174	1...	H2-1
89	M61	3/8 x 2 3/8 "	.262	0	8	.035	0	y	2	26251.56	28054.6...	.219	1.388	1...	H1-1b
90	M215	3/8 x 2 3/8 "	.262	0	7	.036	0	y	1	26251.56	28054.6...	.219	1.388	1...	H1-1b
91	M284	3/8 x 1"	.261	1.045	6	.025	.468	y	1	11146.7...	16875	.132	.352	2...	H1-1a
92	M344	3/8 x 1"	.260	1.045	5	.021	.468	y	2	11146.7...	16875	.132	.352	2...	H1-1a
93	M404	3/8 x 1"	.256	1.045	8	.020	.468	y	3	11146.7...	16875	.132	.352	2...	H1-1a
94	M227B	3/8 x 1"	.255	1.045	6	.016	.468	y	1	11146.7...	16875	.132	.352	2...	H1-1a
95	M475	WT4x2.25x...	.254	.855	1	.081	0	y	2	72205.4...	73836	4.145	1.742	1...	H1-1b
96	M341	3/8 x 4	.251	.742	5	.011	.742	y	2	54763.7...	67500	.527	5.625	1...	H1-1a
97	M476	WT4x2.25x...	.251	.855	4	.087	0	y	3	72205.4...	73836	4.145	1.742	1...	H1-1b
98	M281	3/8 x 4	.247	.742	6	.015	.742	y	1	54763.7...	67500	.527	5.625	1...	H1-1a
99	M401	3/8 x 4	.244	.742	8	.012	0	y	1	54763.7...	67500	.527	5.625	1...	H1-1a
100	M224B	3/8 x 4	.240	.742	6	.014	0	y	1	54763.7...	67500	.527	5.292	1...	H1-1a
101	M336	.5" x 4"	.240	.718	1	.028	.718	y	2	80682.6...	90000	.938	7.5	1...	H1-1b
102	M340	3/8 x 4	.235	.667	5	.014	.667	y	2	57024.39	67500	.527	5.625	1...	H1-1a
103	M280	3/8 x 4	.234	.667	6	.020	.667	y	1	57024.39	67500	.527	5.625	1...	H1-1a
104	M400	3/8 x 4	.230	.667	5	.013	0	y	1	57024.39	67500	.527	5.625	1...	H1-1a
105	M223B	3/8 x 4	.229	.667	6	.015	0	y	1	57024.39	67500	.527	5.527	1...	H1-1a
106	M286A	3/8 x 1"	.226	.731	6	.010	.731	y	1	13777.4...	16875	.132	.352	1...	H1-1a
107	M346	3/8 x 1"	.226	.731	5	.008	.731	y	2	13777.4...	16875	.132	.352	1...	H1-1a
108	M316	PIPE_2.5	.226	3.592	1	.306	3.316		3	34640.7...	50715	3.596	3.596	3...	H1-1b
109	M406	3/8 x 1"	.223	.731	8	.009	.731	y	2	13777.4...	16875	.132	.352	1...	H1-1a
110	M229B	3/8 x 1"	.221	.731	6	.010	.731	y	1	13777.4...	16875	.132	.352	1...	H1-1a
111	M274	.5" x 4"	.203	0	1	.046	1.023	y	2	72093.8...	90000	.938	7.5	2...	H1-1b
112	M396	.5" x 4"	.202	.718	4	.027	.718	y	3	80682.6...	90000	.938	7.5	1...	H1-1b
113	M419	PIPE_1.5	.196	4.033	2	.092	4.033		2	17366.0...	23593.5	1.105	1.105	1...	H1-1b
114	M275	.5" x 4"	.193	.655	2	.047	.655	y	2	82173.8...	90000	.938	7.5	1...	H1-1b
115	M285	3/8 x 1"	.190	0	6	.017	.667	y	1	14256.3...	16875	.132	.352	2...	H1-1b*
116	M345	3/8 x 1"	.190	0	5	.012	.667	y	2	14256.3...	16875	.132	.352	2...	H1-1b*
117	M228B	3/8 x 1"	.188	0	6	.012	.667	y	1	14256.3...	16875	.132	.352	2...	H1-1b*
118	M405	3/8 x 1"	.187	0	8	.012	.667	y	3	14256.3...	16875	.132	.352	2...	H1-1b*
119	M335	.5" x 4"	.174	.655	1	.032	.655	y	2	82173.8...	90000	.938	7.5	1...	H1-1b
120	M418	PIPE_1.5	.167	0	4	.079	0		3	17366.0...	23593.5	1.105	1.105	1...	H1-1b
121	M420	PIPE_1.5	.166	0	1	.100	.212		2	17365.2...	23593.5	1.105	1.105	3...	H1-1b

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear ...	Loc[ft]	Dir	LC	phi*Pnc ...	phi*Pnt ...	phi*Mn ...	phi*Mn ...	Cb	Eqn
122	M413A	PIPE_1.5	.164	0	1	.070	0		2	17366.0...	23593.5	1.105	1.105	1...	H1-1b
123	M217A	.5" x 4"	.157	0	4	.021	.458	y	4	72093.8...	90000	.938	7.5	1...	H1-1b
124	M436	3/16 X 1 1/2	.156	0	2	.009	0	y	6	1877.333	12690	.05	.302	1...	H1-1b
125	M287	3/8 x 1"	.155	.989	2	.033	.989	y	2	11644.6...	16875	.132	.352	2...	H1-1b
126	M417	PIPE_1.5	.152	4.033	1	.068	3.821		4	17365.2...	23593.5	1.105	1.105	2...	H1-1b
127	M394	.5" x 4"	.149	0	2	.031	1.028	y	3	71959.54	90000	.938	7.494	1...	H1-1b
128	M433	3/16 X 1 1/2	.148	1.687	2	.007	0	y	6	1877.333	12690	.05	.305	1...	H1-1b
129	M347	3/8 x 1"	.147	.989	1	.032	.989	y	1	11644.6...	16875	.132	.352	2...	H1-1b
130	M334	.5" x 4"	.144	.458	2	.033	1.023	y	2	72093.8...	90000	.938	7.5	2...	H1-1b*
131	M415	PIPE_1.5	.143	0	1	.054	.212		1	17366.0...	23593.5	1.105	1.105	2...	H1-1b
132	M288	3/8 x 1"	.143	1.028	1	.018	1.028	y	1	11302.1...	16875	.132	.352	2...	H1-1b*
133	M395	.5" x 4"	.142	.655	4	.030	.655	y	3	82173.8...	90000	.938	7.5	1...	H1-1b
134	M142	PL3/8x3	.141	0	6	.083	.605	y	3	32108.5...	35437.5	.276	2.216	1...	H1-1b
135	M348	3/8 x 1"	.138	1.028	2	.017	.46	y	2	11302.1...	16875	.132	.352	2...	H1-1b*
136	M66	PL3/8x3	.134	0	6	.102	.605	y	2	32108.5...	35437.5	.276	2.216	1...	H1-1b
137	M220	PL3/8x3	.134	0	7	.102	.605	y	1	32108.5...	35437.5	.276	2.216	1...	H1-1b
138	M262A	3/4 x 3/8	.134	.334	2	.015	.334	y	6	12132.9...	12656.25	.099	.198	2...	H1-1b
139	M218A	.5" x 4"	.133	0	2	.020	.655	y	4	82173.8...	90000	.938	7.5	1...	H1-1b
140	M414	PIPE_1.5	.133	4.033	2	.066	3.821		1	17365.2...	23593.5	1.105	1.105	2...	H1-1b
141	M227C	3/8 x 1"	.132	.989	2	.025	.26	y	2	11644.6...	16875	.132	.352	2...	H1-1b
142	M407	3/8 x 1"	.132	.989	4	.028	.989	y	4	11644.6...	16875	.132	.352	2...	H1-1b
143	M416	PIPE_1.5	.129	0	2	.066	0		7	17365.2...	23593.5	1.105	1.105	2...	H1-1b
144	M298	PL3/8x3	.129	0	8	.096	.605	y	4	32108.5...	35437.5	.276	2.216	1...	H1-1b
145	M305	PL3/8x3	.128	0	8	.105	.605	y	5	32108.5...	35437.5	.276	2.216	1...	H1-1b
146	M261A	3/4 x 3/8	.128	.517	2	.012	0	y	1	11435.53	12656.25	.099	.198	2...	H1-1b
147	M227	PL3/8x3	.127	0	5	.104	.605	y	7	32108.5...	35437.5	.276	2.216	1...	H1-1b
148	M432	3/16 X 1 1/2	.125	0	4	.009	0	y	8	1877.333	12690	.05	.306	1...	H1-1b
149	M322	3/4 x 3/8	.125	.334	1	.016	.334	y	1	12132.9...	12656.25	.099	.198	2...	H1-1b
150	M74C	PL3/8x3	.124	0	6	.105	.605	y	8	32108.5...	35437.5	.276	2.216	1...	H1-1b
151	M219A	.5" x 4"	.122	0	2	.017	.718	y	4	80682.6...	90000	.938	7.5	1...	H1-1b
152	M149	PL3/8x3	.121	0	7	.107	.605	y	6	32108.5...	35437.5	.276	2.216	1...	H1-1b
153	M264A	3/4 x 3/8	.119	.272	2	.020	.272	y	2	12306.7...	12656.25	.099	.198	2...	H1-1b
154	M429	3/16 X 1 1/2	.119	1.687	1	.007	0	y	8	1877.333	12690	.05	.397	1...	H1-1b
155	M228C	3/8 x 1"	.117	1.028	1	.019	.46	y	1	11302.1...	16875	.132	.352	2...	H1-1b*
156	M321	3/4 x 3/8	.117	.517	1	.010	0	y	1	11435.53	12656.25	.099	.198	2...	H1-1b
157	M408	3/8 x 1"	.117	1.028	3	.016	.46	y	3	11302.1...	16875	.132	.352	2...	H1-1b*
158	M324	3/4 x 3/8	.116	.272	1	.020	.272	y	5	12306.7...	12656.25	.099	.198	2...	H1-1b
159	M424	3/16 X 1 1/2	.114	0	1	.009	0	y	7	1877.333	12690	.05	.36	1...	H1-1b
160	M232A	3/4 x 3/8	.113	.334	2	.015	.334	y	6	12132.9...	12656.25	.099	.198	2...	H1-1b
161	M382	3/4 x 3/8	.112	.334	1	.014	.334	y	8	12132.9...	12656.25	.099	.198	2...	H1-1b
162	M249	3/8 x 1"	.111	0	1	.014	0	y	1	13873.9...	16875	.132	.352	2...	H1-1b*
163	M234A	3/4 x 3/8	.109	.272	6	.020	.272	y	6	12306.7...	12656.25	.099	.198	2...	H1-1b
164	M384	3/4 x 3/8	.109	.272	5	.020	.272	y	8	12306.7...	12656.25	.099	.198	2...	H1-1b
165	M250	3/8 x 1"	.108	0	1	.017	0	y	1	14336.7...	16875	.132	.352	2...	H1-1b*
166	M309A	3/8 x 1"	.107	0	2	.010	0	y	2	13873.9...	16875	.132	.352	2...	H1-1b*
167	M428	3/16 X 1 1/2	.106	0	1	.009	0	y	8	1877.333	12690	.05	.312	1...	H1-1b
168	M310A	3/8 x 1"	.104	0	2	.013	0	y	2	14336.7...	16875	.132	.352	2...	H1-1b*
169	M381	3/4 x 3/8	.104	.517	4	.014	0	y	1	11435.53	12656.25	.099	.198	2...	H1-1b
170	M425	3/16 X 1 1/2	.100	0	1	.007	0	y	5	1877.333	12690	.05	.323	1...	H1-1b
171	M231A	3/4 x 3/8	.097	.517	2	.014	0	y	1	11435.53	12656.25	.099	.198	2...	H1-1b
172	M260A	3/4 x 3/8	.096	.407	1	.012	0	y	1	11885.2...	12656.25	.099	.198	2...	H1-1b
173	M422	3/16 X 1 1/2	.093	0	1	.005	0	y	6	1877.333	12690	.05	.397	2...	H1-1b

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear ...	Loc[ft]	Dir	LC	phi*Pnc ...	phi*Pnt ...	phi*Mn ...	phi*Mn ...	Cb	Eqn
174	M421	3/16 X 1 1/2	.091	0	6	.007	0	y	7	1877.333	12690	.05	.397	2...	H1-1b
175	M210	3/8 x 1"	.090	0	1	.009	0	y	1	13873.9...	16875	.132	.352	2...	H1-1b*
176	M369	3/8 x 1"	.090	0	2	.010	0	y	3	13873.9...	16875	.132	.352	2...	H1-1b*
177	M211A	3/8 x 1"	.088	0	1	.012	0	y	1	14336.7...	16875	.132	.352	2...	H1-1b*
178	M370	3/8 x 1"	.087	0	3	.013	0	y	3	14336.7...	16875	.132	.352	2...	H1-1b*
179	M434	3/16 X 1 1/2	.087	0	2	.005	0	y	8	1877.333	12690	.05	.38	1...	H1-1b
180	M426	3/16 X 1 1/2	.084	0	4	.005	0	y	5	1877.333	12690	.05	.397	2...	H1-1b
181	M435	3/16 X 1 1/2	.082	0	2	.007	0	y	7	1877.333	12690	.05	.395	1...	H1-1b
182	M423	3/16 X 1 1/2	.081	0	1	.007	0	y	5	1877.333	12690	.05	.397	2...	H1-1b
183	M430	3/16 X 1 1/2	.081	1.687	2	.005	0	y	8	1877.333	12690	.05	.349	1	H1-1b
184	M263A	3/4 x 3/8	.077	0	2	.010	.43	y	1	11798.9...	12656.25	.099	.198	1...	H1-1b
185	M427	3/16 X 1 1/2	.074	0	3	.007	0	y	8	1877.333	12690	.05	.397	2...	H1-1b
186	M320	3/4 x 3/8	.073	.407	2	.013	0	y	2	11885.2...	12656.25	.099	.198	2...	H1-1b
187	M265A	3/4 x 3/8	.073	0	2	.007	0	y	2	12103.1...	12656.25	.099	.198	2...	H1-1b
188	M323	3/4 x 3/8	.072	0	1	.006	.43	y	1	11798.9...	12656.25	.099	.198	1...	H1-1b
189	M325	3/4 x 3/8	.071	0	1	.006	0	y	1	12103.1...	12656.25	.099	.198	2...	H1-1b
190	M431	3/16 X 1 1/2	.071	1.687	2	.007	0	y	6	1877.333	12690	.05	.349	1	H1-1b
191	M258A	.875 x .375	.069	.494	1	.026	0	y	1	13458.8...	14765.6...	.115	.269	2...	H1-1b
192	M230A	3/4 x 3/8	.068	.407	1	.009	0	y	5	11885.2...	12656.25	.099	.198	2...	H1-1b
193	M380	3/4 x 3/8	.067	.407	3	.011	0	y	3	11885.2...	12656.25	.099	.198	2...	H1-1b
194	M385	3/4 x 3/8	.066	0	8	.005	0	y	4	12103.1...	12656.25	.099	.198	2...	H1-1b
195	M235	3/4 x 3/8	.066	0	6	.003	0	y	2	12103.1...	12656.25	.099	.198	2...	H1-1b
196	M383	3/4 x 3/8	.065	0	8	.007	.43	y	1	11798.9...	12656.25	.099	.198	1...	H1-1b
197	M233A	3/4 x 3/8	.065	.43	2	.007	.43	y	1	11798.9...	12656.25	.099	.198	1...	H1-1b
198	M259A	3/4 x 3/8	.059	.539	1	.008	.621	y	4	10934.4	12656.25	.099	.198	1...	H1-1b
199	M318	.875 x .375	.056	.494	2	.021	0	y	2	13458.8...	14765.6...	.115	.269	2...	H1-1b
200	M228A	.875 x .375	.054	.494	5	.013	0	y	3	13458.8...	14765.6...	.115	.269	2...	H1-1b
201	M378	.875 x .375	.052	.494	3	.020	0	y	3	13458.8...	14765.6...	.115	.269	2...	H1-1b
202	M319	3/4 x 3/8	.051	.278	2	.004	.621	y	1	10934.4	12656.25	.099	.198	1...	H1-1b
203	M257A	.875 x .375	.049	.216	1	.006	.746	y	4	11953.5...	14765.6...	.115	.269	1...	H1-1b
204	M379	3/4 x 3/8	.047	.343	3	.010	.621	y	1	10934.4	12656.25	.099	.198	1...	H1-1b
205	M256A	.875 x .375	.047	0	1	.025	0	y	1	12891.78	14765.6...	.115	.269	2...	H1-1b*
206	M229A	3/4 x 3/8	.046	0	1	.011	.621	y	1	10934.4	12656.25	.099	.198	1...	H1-1b
207	M316A	.875 x .375	.046	0	2	.018	0	y	2	12891.78	14765.6...	.115	.269	2...	H1-1b*
208	M376	.875 x .375	.045	0	7	.018	0	y	3	12891.78	14765.6...	.115	.269	2...	H1-1b*
209	M255	3/8 x 1"	.045	0	1	.006	.887	y	4	12517.6...	16875	.132	.352	1...	H1-1b
210	M226A	.875 x .375	.045	0	5	.014	0	y	3	12891.78	14765.6...	.115	.269	2...	H1-1b*
211	M317	.875 x .375	.045	.137	2	.003	.746	y	1	11953.5...	14765.6...	.115	.269	1...	H1-1b
212	M253	3/8 x 1"	.043	0	1	.014	0	y	1	11398.1...	16875	.132	.352	1...	H1-1b
213	M377	.875 x .375	.041	.196	3	.009	.746	y	1	11953.5...	14765.6...	.115	.269	1...	H1-1b
214	M254	3/8 x 1"	.041	.72	1	.017	0	y	1	13863.7...	16875	.132	.352	2...	H1-1b
215	M313A	3/8 x 1"	.040	0	6	.012	0	y	2	11398.1...	16875	.132	.352	2...	H1-1b
216	M373	3/8 x 1"	.040	0	7	.009	0	y	3	11398.1...	16875	.132	.352	2...	H1-1b
217	M315A	3/8 x 1"	.039	0	2	.006	.887	y	2	12517.6...	16875	.132	.352	1...	H1-1b
218	M227A	.875 x .375	.039	.294	1	.010	.746	y	1	11953.5...	14765.6...	.115	.269	1...	H1-1b
219	M314A	3/8 x 1"	.038	0	6	.012	0	y	2	13863.7...	16875	.132	.352	2...	H1-1b*
220	M223A	3/8 x 1"	.038	0	5	.007	0	y	1	11398.1...	16875	.132	.352	2...	H1-1b
221	M374	3/8 x 1"	.038	0	7	.012	0	y	3	13863.7...	16875	.132	.352	2...	H1-1b*
222	M224A	3/8 x 1"	.038	0	5	.010	0	y	3	13863.7...	16875	.132	.352	2...	H1-1b*
223	M375	3/8 x 1"	.036	.023	3	.008	.887	y	2	12517.6...	16875	.132	.352	1...	H1-1b
224	M225A	3/8 x 1"	.035	.187	1	.008	.887	y	1	12517.6...	16875	.132	.352	1...	H1-1b
225	M252	3/8 x 1"	.005	0	2	.000	0	y	2	12784.4...	16875	.132	.352	2...	H1-1b

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear ...	Loc[ft]	Dir	LC	phi*Pnc ...	phi*Pnt ...	phi*Mn ...	phi*Mn ...	Cb	Eqn
226	M312A	3/8 x 1"	.005	0	1	.000	0	y	1	12784.4...	16875	.132	.352	2...	H1-1b
227	M372	3/8 x 1"	.005	0	1	.000	0	y	1	12784.4...	16875	.132	.352	2...	H1-1b
228	M222A	3/8 x 1"	.005	0	2	.000	0	y	2	12784.4...	16875	.132	.352	2...	H1-1b
229	M282	3/8 x 1"	.001	.872	2	.000	.872	y	6	12640.6...	16875	.132	.352	2...	H1-1b
230	M342	3/8 x 1"	.001	.872	1	.000	.872	y	5	12640.6...	16875	.132	.352	2...	H1-1b
231	M402	3/8 x 1"	.001	.872	4	.000	.872	y	8	12640.6...	16875	.132	.352	2...	H1-1b
232	M225B	3/8 x 1"	.001	.872	2	.000	.872	y	6	12640.6...	16875	.132	.352	2...	H1-1b
233	M215A	3/8 x 1"	.001	0	3	.000	0	y	6	12037.0...	16875	.132	.352	1...	H1-1b
234	M371	3/8 x 1"	.001	0	2	.000	0	y	8	12037.0...	16875	.132	.352	1...	H1-1b
235	M251	3/8 x 1"	.001	0	4	.000	0	y	6	12037.0...	16875	.132	.352	1...	H1-1b
236	M311A	3/8 x 1"	.001	0	4	.000	0	y	5	12037.0...	16875	.132	.352	1...	H1-1b
237	M277	3/8 x 4	.001	.874	6	.000	.345	y	2	50515.4...	67500	.527	5.625	2...	H1-1b
238	M337	3/8 x 4	.001	.874	7	.000	.345	y	2	50515.4...	67500	.527	5.625	2...	H1-1b
239	M220A	3/8 x 4	.001	.874	8	.000	.345	y	4	50515.4...	67500	.527	5.625	2...	H1-1b
240	M397	3/8 x 4	.001	.874	5	.000	.345	y	3	50515.4...	67500	.527	5.625	2...	H1-1b

Envelope AISI NAS-01: ASD Cold Formed Steel Code Checks

Member	Shape	Code ...	Loc[ft]	LC	Shear ...	Loc[ft]	Dir	LC	Pn/Om[lb]	Tn/Om[lb]	Mnyy/O...	Mnzz/O...	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 ...																

EXHIBIT 9

EBI Consulting

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

T-Mobile Existing Facility

Site ID: CTHA603B

39 Nichols Road
Moodus, Connecticut 06469

June 23, 2021

EBI Project Number: 6221003263

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**5.63%**

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

June 23, 2021

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

Emissions Analysis for Site: CTHA603B

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **39 Nichols Road** in **Moodus, Connecticut** for the purpose of determining whether the emissions from the Proposed T-Mobile Antenna Installation located on this property are within specified federal limits.

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

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

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

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

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at 39 Nichols Road in Moodus, 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) 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.

5) 2 UMTS channels (AWS Band - 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

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

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

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

9) The antennas used in this modeling are the Ericsson AIR 32 for the 1900 MHz / 2100 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz channel(s), the RFS APX16DWV-16DWV-S-E-A20 for the 2100 MHz channel(s) in Sector A, the Ericsson AIR 32 for the 1900 MHz / 2100 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz channel(s), the RFS APX16DWV-16DWV-S-E-A20 for the 2100 MHz channel(s) in Sector B, the Ericsson AIR 32 for the 1900 MHz / 2100 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz channel(s), the RFS APX16DWV-16DWV-S-E-A20 for the 2100 MHz channel(s) in Sector C, the Ericsson AIR 32 for the 1900 MHz / 2100 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz channel(s), the RFS APX16DWV-16DWV-S-E-A20 for the 2100 MHz channel(s) in Sector D. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

10) The antenna mounting height centerline of the proposed antennas is 150 feet above ground level (AGL).

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

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

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T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C	Sector:	D
Antenna #:	1	Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	Ericsson AIR 32	Make / Model:	Ericsson AIR 32	Make / Model:	Ericsson AIR 32	Make / Model:	Ericsson AIR 32
Frequency Bands:	1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 2100 MHz
Gain:	15.35 dBd / 15.85 dBd	Gain:	15.35 dBd / 15.85 dBd	Gain:	15.35 dBd / 15.85 dBd	Gain:	15.35 dBd / 15.85 dBd
Height (AGL):	150 feet	Height (AGL):	150 feet	Height (AGL):	150 feet	Height (AGL):	150 feet
Channel Count:	4	Channel Count:	4	Channel Count:	4	Channel Count:	4
Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts
ERP (W):	8,728.31	ERP (W):	8,728.31	ERP (W):	8,728.31	ERP (W):	8,728.31
Antenna A1 MPE %:	**1.51%**	Antenna B1 MPE %:	**1.51%**	Antenna C1 MPE %:	**1.51%**	Antenna D1 MPE %:	**1.51%**
Antenna #:	2	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	Make / Model:	RFS APXVAALL24_43-U-NA20
Frequency Bands:	600 MHz / 600 MHz / 700 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz
Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd
Height (AGL):	150 feet	Height (AGL):	150 feet	Height (AGL):	150 feet	Height (AGL):	150 feet
Channel Count:	5	Channel Count:	5	Channel Count:	5	Channel Count:	5
Total TX Power (W):	200 Watts	Total TX Power (W):	200 Watts	Total TX Power (W):	200 Watts	Total TX Power (W):	200 Watts
ERP (W):	4,151.83	ERP (W):	4,151.83	ERP (W):	4,151.83	ERP (W):	4,151.83
Antenna A2 MPE %:	**1.71%**	Antenna B2 MPE %:	**1.71%**	Antenna C2 MPE %:	**1.71%**	Antenna D2 MPE %:	**1.71%**
Antenna #:	3	Antenna #:	3	Antenna #:	3	Antenna #:	3
Make / Model:	RFS APX16DWV-16DWV-S-E-A20	Make / Model:	RFS APX16DWV-16DWV-S-E-A20	Make / Model:	RFS APX16DWV-16DWV-S-E-A20	Make / Model:	RFS APX16DWV-16DWV-S-E-A20
Frequency Bands:	2100 MHz	Frequency Bands:	2100 MHz	Frequency Bands:	2100 MHz	Frequency Bands:	2100 MHz
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	150 feet	Height (AGL):	150 feet	Height (AGL):	150 feet	Height (AGL):	150 feet
Channel Count:	2	Channel Count:	2	Channel Count:	2	Channel Count:	2
Total TX Power (W):	60 Watts	Total TX Power (W):	60 Watts	Total TX Power (W):	60 Watts	Total TX Power (W):	60 Watts
ERP (W):	2,334.27	ERP (W):	2,334.27	ERP (W):	2,334.27	ERP (W):	2,334.27
Antenna A3 MPE %:	**0.40%**	Antenna B3 MPE %:	**0.40%**	Antenna C3 MPE %:	**0.40%**	Antenna D3 MPE %:	**0.40%**

Site Composite MPE %	
Carrier	**MPE %**
T-Mobile (Max at Sector A):	3.63%
AT&T	2%
Site Total MPE % :	5.63%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	3.63%
T-Mobile Sector B Total:	3.63%
T-Mobile Sector C Total:	3.63%
T-Mobile Sector D Total:	3.63%
Site Total MPE % :	5.63%

T-Mobile Maximum MPE Power Values (Sector A)

T-Mobile Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density (μW/cm²)	Frequency (MHz)	Allowable MPE (μW/cm²)	Calculated % MPE
T-Mobile 1900 MHz LTE	2	2056.61	150.0	7.13	1900 MHz LTE	1000	0.71%
T-Mobile 2100 MHz LTE	2	2307.55	150.0	8.00	2100 MHz LTE	1000	0.80%
T-Mobile 600 MHz LTE	2	591.73	150.0	2.05	600 MHz LTE	400	0.51%
T-Mobile 600 MHz NR	1	1577.94	150.0	2.74	600 MHz NR	400	0.68%
T-Mobile 700 MHz LTE	2	695.22	150.0	2.41	700 MHz LTE	467	0.52%
T-Mobile 2100 MHz UMTS	2	1167.14	150.0	4.05	2100 MHz UMTS	1000	0.40%
						Total:	**3.63%**

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

Summary

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

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

T-Mobile Sector	Power Density Value (%)
Sector A:	3.63%
Sector B:	3.63%
Sector C:	3.63%
Sector D:	3.63%
T-Mobile Maximum MPE % (Sector A):	3.63%
Site Total:	5.63%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **5.63%** 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.