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

June 18, 2021

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

RE: Notice of Exempt Modification
45 Fargo Road, Waterford, CT 06385
Latitude: 41.389339
Longitude: -72.171408
T-Mobile Site #: CT11473A_L600

Dear Ms. Bachman:

T-Mobile currently maintains nine (9) antennas at the 153-foot level of the existing 183-foot Monopole Tower at 45 Fargo Rd., Waterford, CT. The 183-foot tower is owned by SBA Properties, LLC. The property is owned by Angioletta, LLC. T-Mobile now intends to remove three (3) antennas and replace with three (3) new L600MHz. The new antennas would be installed at the 153-foot level of the tower.

- **The new antennas support 5G services and would be installed at the 153-foot level of the tower**.

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

Planned Modifications:

TOWER

Remove:
- N/A

Remove and Replace:

- (3) LNX-6515DS antennas (remove) – (3) RFS APXVAALL24_43-U-NA20 600 MHz antennas (replace)
- (3) Ericsson S11B12 RRUs (remove) – (3) Ericsson 4449 B71 + B85 RRUs (replace)
- (3) 1-5/8" Coax (remove) – (3) 1.9" Fiber (replace)

Install New:

- (1) SitePro Platform Kit (PRK-1245L)
- (1) SitePro V-Brace Kit (PRK-SFS-L) w/(6) new Pipe 2.0 OSTD
- (3) SitePro tie back kit (SPTB)

Existing Equipment to Remain:

- (3) Ericsson AIR 21 B2A/B4P 2100 MHz antennas
- (3) Ericsson AIR 21 B4P/B2P 1900 MHz antennas
- (3) T-Arms (a.k.a. Low Profile platform)
- (3 Ericsson KRY 112 144/1 TMAs

Entitlements:

- (9) 1-5/8" Coax
- (1) 1-1/4" fiber

GROUND

Remove:

- N/A

Remove and replace:

- N/A

Install New:

- (1) T-Mobile RBS6131 Radio Equipment within existing 6131 cabinet

Existing to Remain:

- (1) 10' x 20' concrete pad
- T-Mobile Ice bridge
- GPS/GSM antenna and associated ½" coax
- Ciena Fiber box
- T-Mobile 200A panel
- T-Mobile RBS6131 Equipment cabinet
- Nortel S8000 Equipment cabinet

This facility was approved by the Town of Waterford's Planning and Zoning Commission on April 26, 1999. Special Use Permit #99-101/301 approved a 185' monopole and associated base equipment for use as a digital, cellular, two-way radio and paging communications facility. The tower was to allow co-location by other communication companies requesting same using industry standard lease agreements. The police and fire departments were to be provided emergency entry means. The town emergency communications equipment would

be permitted on the tower with no compensation owed to applicant. And the Property Owner and SBA were to be equally responsible for ensuring that the property was property restored within a six-month timeframe should the tower no longer be utilized. 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 Waterford's First Selectman, Robert J. Brule, and Zoning Official, Jill Pisechko, as well as to the property owner. (Separate notice is not being sent to tower owner, as it belongs to SBA.)

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

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

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

Sincerely,

G. Scott Shepherd
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 J. Brule, First Selectman / with attachments
Town of Waterford, 15 Rope Ferry Road, Waterford, CT 06385
Jill Pisechko, Zoning Official / with attachments
Town of Waterford, 15 Rope Ferry Road, Waterford, CT 06385
Angioletta LLC, Rudolph T Chieka, Trustee / with attachments
45 Fargo Road, Waterford, CT 06385
199 Niantic River Rd., Waterford, CT 06385-1843 (SBA address on file)

EXHIBIT LIST

Exhibit 1	Check Copy	To be invoiced at a later date per Covid guidelines
Exhibit 2	Notification Receipts	x
Exhibit 3	Property Card	x
Exhibit 4	Property Map	x
Exhibit 5	Original Zoning Approval	Town of Waterford Planning & Zoning Commission 4/26/99
Exhibit 6	Construction Drawings	Chappell Engineering 6/18/21
Exhibit 7	Structural Analysis	TES 5/5/21
Exhibit 8	Mount Analysis	GeoStructural 4/8/21
Exhibit 9	EME Report	EBI Consulting 5/27/21

EXHIBIT 1

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

EXHIBIT 2

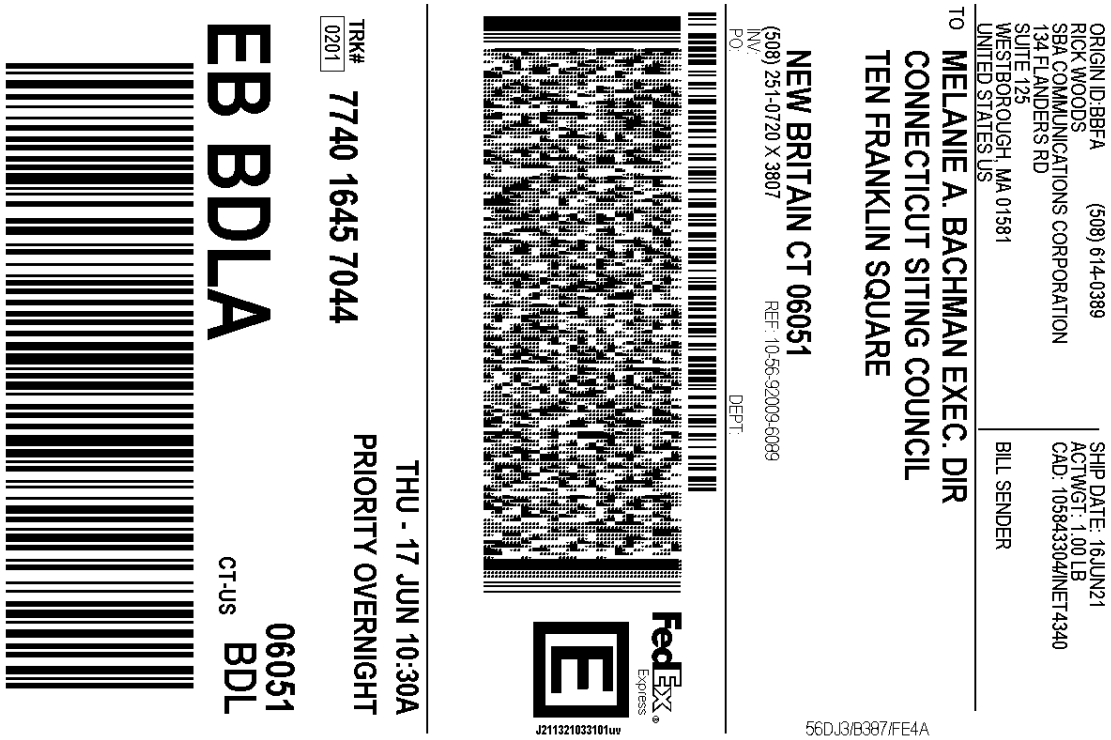

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EXHIBIT 3

45 FARGO ROAD

Location	45 FARGO ROAD	**Mblu**	71/ / 2307/ /
Acct#	00201800	**Owner**	ANGIOLETTO LLC
Assessment	$62,740	**Appraisal**	$640,830
PID	2307	**Building Count**	1

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$3,600	$637,230	$640,830

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$2,520	$60,220	$62,740

Parcel Addreses

Additional Addresses
No Additional Addresses available for this parcel

Owner of Record

Owner	ANGIOLETTO LLC	**Sale Price**	$0
Co-Owner		**Certificate**	
		Book & Page	1323/0097
		Sale Date	08/09/2013

Ownership History

Ownership History				
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Sale Date**
ANGIOLETTO LLC	$0		1323/0097	08/09/2013
ANGIOLETTA LLC	$0		1323/0095	08/09/2013
CHIEKA RUDOLPH ETALS	$0		0413/0333	12/29/1992

Building Information

Building 1 : Section 1

Year Built:
Living Area: 0
Replacement Cost: $0
Building Percent Good:

Building Attributes	
Field	**Description**
Style	Conventional
Model	
Grade:	
Stories	
Occupancy	
Exterior Wall 1	
Exterior Wall 2	
Roof Structure	
Roof Cover	
Interior Wall 1	
Interior Wall 2	
Interior Flr 1	
Interior Flr 2	
Heat Fuel	
Heat Type:	
AC Percent	
Total Bedrooms:	
Full Bthrms:	
Half Baths:	
Extra Fixtures	
Total Rooms:	
Bath Style:	
Kitchen Style:	
Num Kitchens	
Fireplace(s)	
Extra Opening(s)	
Gas Fireplace(s)	
% Attic Fin	
LF Dormer	
Foundation	
Bsmt Gar(s)	
Bsmt %	
SF FBM	
SF Rec Rm	

Building Photo


(http://images.vgsi.com/photos/WaterfordCTPhotos//\00\01\69\12.jpg)

Building Layout

Building Layout
(http://images.vgsi.com/photos/WaterfordCTPhotos//Sketches/2307_2307.j

Building Sub-Areas (sq ft)	Legend
No Data for Building Sub-Areas	

Fin Bsmt Qual	
Bsmt Access	
Usrfld 300	
Usrfld 301	

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code	109
Description	Vacant W/ OB
Zone	RU120
Neighborhood	300
Alt Land Appr	No
Category	

Land Line Valuation

Size (Acres)	74.03
Frontage	1112
Depth	0
Assessed Value	$60,220
Appraised Value	$637,230

Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
SHD1	Shed	MS	Masonry	400.00 S.F.	$3,600	1

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$3,600	$637,230	$640,830
4000	$3,600	$637,230	$640,830

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$2,520	$60,220	$62,740
4000	$2,520	$60,220	$62,740

EXHIBIT 4

Google Maps 45 Fargo Rd

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

45 Fargo Rd

Directions Save Nearby Send to your phone Share

45 Fargo Rd, Waterford, CT 06385

9RQH+GC Waterford, Connecticut

EXHIBIT 5

FIFTEEN ROPE FERRY ROAD

Town of Waterford

WATERFORD, CT 06385-2886

April 27, 1999

SBA Inc./Nextel Communications, Inc.
125 Shaw Street
Suite 116
New London, CT 06320

RE: #99-101/301 SBA COMMUNICATIONS TOWER
45 FARGO ROAD

Dear Sir or Madam:

At its meeting on Monday, April 26, 1999, the Town of Waterford Planning and Zoning Commission took the following action in regards to the above referenced application:

APPROVED WITH CONDITIONS: #99-101/301. Request of Rudolph Chieka, ET ALS, owners; SBA, Inc./Nextel Communications, Inc. applicants; Scott Thomae, agent; for special permit and site plan approval to locate a telecommunications tower at 45 Fargo Road, RU-120 Zone, in accordance with Section 3.6 of the Zoning Regulations and as shown on plans entitled "SBA, Inc., In Conjunction With Nextel Communications Of The Mid-Atlantic, Inc., SBA Site #4284 Waterford, 45 Fargo Road" , dated January 14, 1999. This property is also known as parcel #5 on Assessor's Map #109.

Please refer to the attached minutes and special permit for the conditions of the approval.

In order to comply with the records retention schedule required by the State of Connecticut you are required to file a signed site plan with the Waterford Town Clerk.

Please submit one mylar and ten (10) copies of the plans to this office for the Chairman's signature. You will be notified when the plans have been signed and you will then be required to record the mylar with the Town Clerk. After

recording, signed plans will be distributed to various agencies and 2 copies will be returned to you.

Sincerely,

Pam Hagerman

Pamela Hagerman
Planning and Zoning Commission

Enclosure: Minutes
Notice of Action

Certified #: P 378 011 124

cc: Scott Thomae, agent w/enclosures
Rudolph Chieka, ET ALS, owner

Mr. Visco reviewed the site plan. He explained that there will be one building (130 units) with a circular access drive, walking trails and a majority of the site will be open space. The rear portion of the building will be for residents with early dimensia. He also stated that the buildings will constructed to fit in with the residential area.

Mr. Visco also explained that the facility will be staffed by approximately 60 full time employees, with the largest shift being 30-35 people. Most of the traffic generated by the facility would be on weekends and early evening when visitors stop by. A majority of the residents will utilize the transportation provide; approximately 5% of the residents own a vehicle.

D. Martin stated that the applicants should consider another name for the facility because the Fire Marshal commented that there is already a street named " Clark Place" in town.

This application was tabled until the May 10, 1999 meeting.

#99-101/301. Request of Rudolph Chieka, ET ALS, owners; SBA, Inc./Nextel Communications, Inc. applicants; Scott Thomae, agent; for special permit and site plan approval to locate a telecommunications tower at 45 Fargo Road, RU-120 Zone, in accordance with Section 3.6 of the Zoning Regulations and as shown on plans entitled "SBA, Inc., In Conjunction With Nextel Communications Of The Mid-Atlantic, Inc., SBA Site #4284 Waterford, 45 Fargo Road" , dated January 14, 1999. This property is also known as parcel #5 on Assessor's Map #109.

D. Martin reviewed the draft Special Permit findings review including the conditions/stipulations.

MOTION: Motion made by G. Lombardi, second by G. Blinderman to approve the communications tower with conditions/stipulations listed in Special Permit #99-101/301 (Attachment A) with the following addition:

1. Property owner(s) and SBA, Inc. are equally responsible for ensuring that the property is properly restored should the tower no longer be utilized.

VOTE: 5-0

Attachment A
Minutes of April 26, 1999
Special Permit and Site Plan

Application: #99-101/301
Owner: Rudolph Chieka, ET ALS
Applicant: SBA, Inc./Nextel Communications, Inc.
Location: 45 Fargo Road
Public Hearing Date: March 8, 1999
Public Hearing Advertisement Dates: February 24 and March 3, 1999.
Zoning Districts: RU-120
Use: Telecommunication antennae tower together with support equipment.

Description of Project: SBA, Inc./Nextel Communications, Inc. have made application to construct a 185 foot monopole type antennae structure and associated base equipment for use as a digital, cellular, two-way radio and paging communications facility on the property located at 45 Fargo Road. The subject site is undeveloped, wooded and 3.15 acres in area.

23.5 FINDINGS:

A Special Permit shall not be granted until the Planning & Zoning Commission has determined that all of the following conditions have been satisfied:

23.5.1 COMPLIANCE WITH THE ADOPTED LAND USE PLAN AND THE ZONING REGULATIONS:

Land Use Plan Designation: Lowest Density Residential

Consistency: The adopted Plan of Preservation, Conservation and Development describes the lowest density residential as areas not intended to be served by public sewer or water and where residential development is expected to occur at densities less than one unit per three acres, due to environmental and/or access constraints and desired development patterns. The Commission finds the construction of the proposed communications tower to be consistent with the adopted land use plan in that it is compatible with nearby development and the tower will not create any sewer or water demands.

Pertinent Regulations Specially Permitting the Use: Sections 3.6 and 6.2.1

23.5.2 ORDERLY DEVELOPMENT

TYPE OF STRUCTURE AND IMPROVEMENTS: The communications tower proposed is of the monopole type construction and 185' in height together with support equipment. Construction of this communications tower itself will involve little clearing of land. The plan includes access improvements, installation of underground utilities, equipment buildings, protective fencing, and landscaping.

PRESENT LAND USE OF PARCEL: The subject parcel is currently wooded and undeveloped.

ABUTTING USES: The adjacent property to the north, west and south is wooded and undeveloped. The lot adjacent to the east has been developed as a municipal water tower site. The water tower structure will be approximately 231 feet away from the communication tower itself.

ADJACENT PROPERTY EFFECT: The Commission finds after a public hearing and upon the hearing record that this proposed tower will not have any significant negative effect on adjacent properties. The Commission has also determined that the establishment of a telecommunications tower will not discourage the appropriate development and use of adjacent property.

23.5.3 PROPERTY VALUES AND CHARACTER:

The proposed use will not depreciate adjacent property values and the size and height of all proposed buildings and the extent of all proposed site improvements shall both be such as to harmonize with the existing character of the neighborhood in which such use is to be established.

STRUCTURE PLACEMENT: The proposed tower has been located on the site to limit the amount of land disturbance and clearing of existing vegetation.

NEIGHBORHOOD CHARACTERISTICS/EFFECT: The Commission finds that the construction of this communications tower will not depreciate adjacent property values in this residential area of Town. Evidence by a qualified individual was not placed into the hearing record that would demonstrate any negative

23.5.5 TRAFFIC CONSIDERATIONS:

ADEQUANCY OF PUBLIC ROADS SERVING DEVELOPMENT: The Commission finds the public road serving access to this site is more than adequate to carry all anticipated traffic

PROVISIONS FOR ACCESS TO AND FROM THE SITE; HAZARD OR CONGESTION RESULTING: The Commission finds no evidence has been placed in the record indicating any hazards or congestion will result. The amount of additional traffic anticipated (occasional service vehicles) does not warrant any further improvements to the public road system.

CONTINUATION OF STREET SYSTEM: The Commission finds the scope of this proposal and the topography of the lot does not warrant any provisions for the continuation of any street or for the provision for interlot access.

SECTION 20 COMPLIANCE: The Commission finds this proposal complies with the provisions of Section 20 of the Zoning Regulations. Sufficient parking is provided on site for both cars and trucks. The general public does not visit this property. Only occasional authorized service vehicles of the communication companies with antennas on the tower are required to access this site.

23.5.6 LANDSCAPING AND BUFFERS:

The Commission finds adequate buffers exist, and will continue to exist, after the proposed development occurs. The general area is wooded and clearing is limited to the area shown on the plan of record. The base of the tower including the equipment buildings, will be screened by a 6' high chain link fence with 1' of barbed wire on top. Additional landscape plantings are proposed along the perimeter of the security fence

23.5.7 RELATIONSHIP TO UTILITY SYSTEMS, DRAINAGE SYSTEMS, AND IMPACT ON COMMUNITY FACILITIES:

Adequate provision for stormwater drainage can be provided without adversely affecting neighboring properties or adjacent public drainage systems, and the proposed use will not adversely impact existing community facilities.

WATER: Not required by this project.

SEWER: Not required by this project.

DRAINAGE: Site improvements planned do not include a significant amount of impervious surfaces. The access drive and tower base area are not paved decreasing surface runoff. The plan limits the amount of clearing and site disturbance.

23.5.8 COMPLIANCE WITH ZONING REGULATIONS:

In addition to meeting the other conditions described herein, the proposed use and the arrangement of all proposed buildings, structures, facilities, and other site improvements shall comply with all applicable provisions of these Zoning Regulations.

SECTION 22 COMPLIANCE:

The site plan prepared and submitted with this application for special permit, as modified by the Commission, complies with the provisions of Section 22 of the Zoning Regulations.

SEAMLESS WEB/COVERAGE ANALYSIS:

Upon request of the Commission, SBA/Nextel submitted for the record a coverage analysis for the proposed communications tower. The Commission conducted a review of all co-location possibilities examining all towers existing, approved and under construction within Waterford and surrounding municipalities which could serve Waterford. The Commission has determined the subject site is most suitable for the tower because it provides a large service coverage area. This will become important when other communications companies wish to locate in Waterford. They may co-locate on the subject tower reducing the need to construct additional towers.

Along with this application, the Commission reviewed the Town's overall telecommunications cellular coverage both existing and future. This cell site will cover a substantial portion of northwest Waterford and major highways, which will supplement the communications tower recently approved on Industrial Drive. The Commission finds this particular site provides good coverage, is remote, and with co-location possibilities is a good choice to provide a significant portion of the seamless communications web that has been developed during recent years within the Town of Waterford.

STIPULATIONS AND CONDITIONS:

1. SBA/Nextel shall allow co-location on the subject tower by other communication companies requesting same using industry standard lease agreements.
2. Zoning Compliance Chart on Sheet 1 incomplete. All bulk requirements for zone district and this project shall be referenced and provided column completed with actual figures. Include frontage, maximum building height, buildable area, lot size etc. Example: front yard setback >50' not acceptable. Insert actual setback. Maximum building height. Insert height of tower.
3. The tower removal & obsolescence notes on Sheet C-4 must be modified to include the following provision:
   a. This site will be restored at the time when the tower is no longer being used for either transmission or reception of wireless communications signal by any carrier. At the termination of this project the described removal work will be completed within six months.
4. Plan indicates access drive entrance and equipment compound are planned to be gated. The Police and Fire Departments must be provided keys for emergency entry. Contact those Departments to work out method.
5. Plans must be revised to include the location, type and fuel storage provisions for any emergency generator planned and approved by the Fire Marshal.
6. An excavation permit for any type of work within the public right-of-way is required from the Department of Public Works. Any damage to the paved access drive serving the municipal water tank must be repaired.
7. Submission of tower construction details for this particular tower to Commission staff upon final design for review for consistency with application and support materials shall be provided.
8. Limits of clearing shall be flagged in the field and verified by the Zoning Official before any clearing (tree cutting) and grading begins. (48 Hours Notice Required) If more clearing is done than is shown on the approved plan, the site will have to be restored.
9. All erosion and sedimentation controls shall be in place and inspected by Zoning Official prior to any land disturbance. (48 Hours Notice Required)
10. Submission of all building plans to Building Official and Fire Marshal for approval prior to the issuance of a Zoning Compliance Permit to begin work.

11. All disturbed areas shall be restored using 4" of topsoil, seeded and mulched. Note 10 on sheet C-4 shall be modified to this effect. If soil stabilization has not been completed due to the time of year, a performance bond will be required.
12. General note 4 on Sheet C-4 shall be modified to state that no changes to approved plans shall occur without Town of Waterford authorization.
13. This project will not be phased. All site improvements shown shall be completed at same time.
14. The Commission also acknowledges the applicant's offer in the interest of public safety to permit a Town of Waterford emergency communications antennae, with no compensation to applicant on this tower.
15. The access drive construction detail on sheet C-4 indicates an incorrect driveway width. The final plan must be modified to indicate a width of 12'.
16. The final plans shall be modified to include a temporary earth material stockpile area, including E/S controls.
17. Property owner(s) and SBA, Inc., are equally responsible for ensuring that the property is properly restored should the tower no longer be utilized.

COMMISSION ACTION:

The Commission approves application #99-101/301 for special permit and site plan review subject to the findings, stipulations and conditions contained herein. All potential adverse impacts have been addressed as modified herein.

MODIFICATION, REVISIONS, EXTENSIONS:

All revisions, extensions, and modifications to any items, conditions or stipulations in this permit shall be governed by the provisions of Section 23.9 of the Waterford Zoning Regulations.

VIOLATIONS:

Any violations of the findings, stipulations or conditions of this permit shall be subject to Section 23.8 of the Waterford Zoning Regulations.

LIST OF EXHIBITS:

EXHIBIT A - Notice of Public Hearing advertised in The Day on February 24, 1999 and March 3, 1999.

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).

WATERFORD/RT 85/DOUGLAS

45 FARGO ROAD
WATERFORD, CT 06385
NEW LONDON COUNTY

SITE NO.: CT11473A

SITE TYPE: 183'± MONOPOLE

RF DESIGN GUIDELINE: 67D02C OUTDOOR

SCOPE OF WORK

REMOVE:
- 3 ANTENNAS
- 3 RRUs
- 3 TMAs
- 12 COAX CABLES
- 1 HYBRID CABLE

INSTALL:
- 3 ANTENNAS
- 3 RRUs
- 3 HYBRID CABLES
- 1 PLATFORM REINFORCEMENT KIT
- 1 V–BRACE/HANDRAIL KIT
- 3 TIEBACK KITS

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

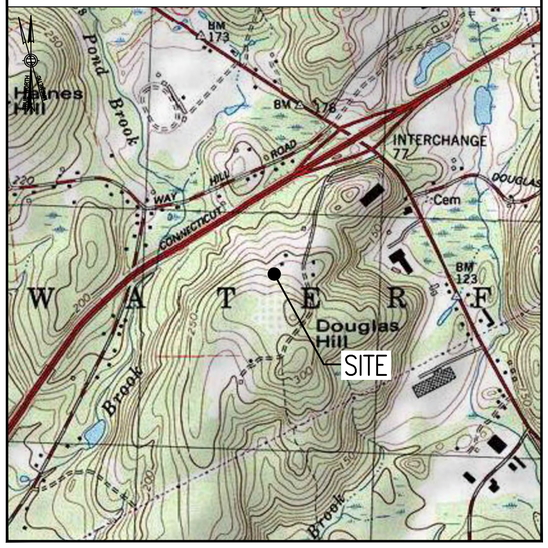
GENERAL NOTES

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. KEEP LEFT TO STAY ON I–95 SOUTH. TAKE EXIT 82 FOR CT–85 FOR CT–85/BROAD STREET TOWARD WATERFORD. TURN RIGHT ONTO C T–85 NORTH. TURN LEFT ONTO FARGO ROAD. TURN LEFT TO STAY ON FARGO ROAD. TURN RIGHT TO STAY ON FARGO ROAD. TURN LEFT TO STAY ON FARGO ROAD. SITE WILL BE AT THE END OF THE ROAD.

SHEET INDEX

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

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

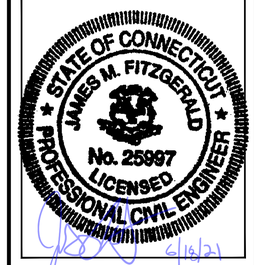
SITE NUMBER:	CT11473A
SBA SITE NUMBER:	CT01002–S
SBA SITE NAME:	WATERFORD
SITE ADDRESS:	45 FARGO ROAD WATERFORD, CT 06385
PROPERTY OWNER:	RUDOLPH T. CHIEKA, TRUSTEE 199 NIANTIC RIVER WATERFORD, CT 06385
TOWER OWNER:	SBA PROPERTIES, LLC 8501 CONGRESS AVENUE BOCA RATON, FL 33487 PHONE: 561–226–9523
COUNTY:	NEW LONDON COUNTY
ZONING DISTRICT:	RURAL RESIDENTIAL
STRUCTURE TYPE:	MONOPOLE
STRUCTURE HEIGHT:	183'
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.41.389321° LONGITUDE W.72.171384°

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 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



CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
2	06/17/21	REVISED CONSTRUCTION	JRV
1	03/31/21	ISSUED FOR CONSTRUCTION	JRV
0	05/20/19	ISSUED FOR REVIEW	CMC

SITE NUMBER:
CT11473A

SITE ADDRESS:
45 FARGO ROAD
WATERFORD, CT 06385

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

1815.088

GENERAL NOTES:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

SITE WORK GENERAL NOTES:

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

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

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

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

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

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

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

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

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

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

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

CONCRETE AND REINFORCING STEEL NOTES:

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

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

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

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

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

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

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

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

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

STRUCTURAL STEEL NOTES:

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

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

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

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

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

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

SOIL COMPACTION NOTES FOR SLAB ON GRADE:

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

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

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

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

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

COMPACTION EQUIPMENT:

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

CONSTRUCTION NOTES:

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

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

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

ELECTRICAL INSTALLATION NOTES:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

6/18/21

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
2	06/17/21	REVISED CONSTRUCTION	JRV
1	03/31/21	ISSUED FOR CONSTRUCTION	JRV
0	05/20/19	ISSUED FOR REVIEW	CMC

SITE NUMBER:
CT11473A

SITE ADDRESS:
45 FARGO ROAD
WATERFORD, CT 06385

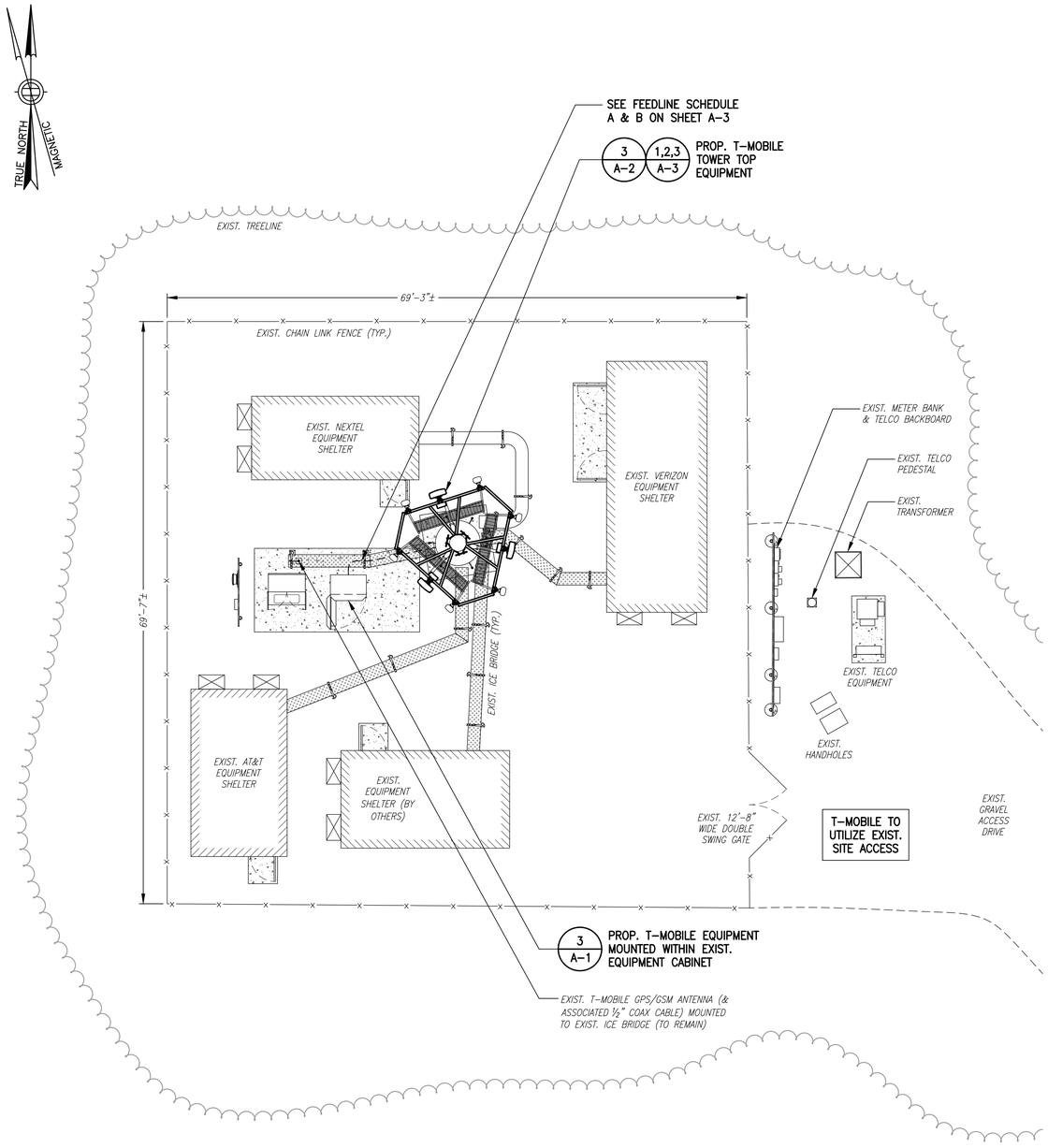
SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-1

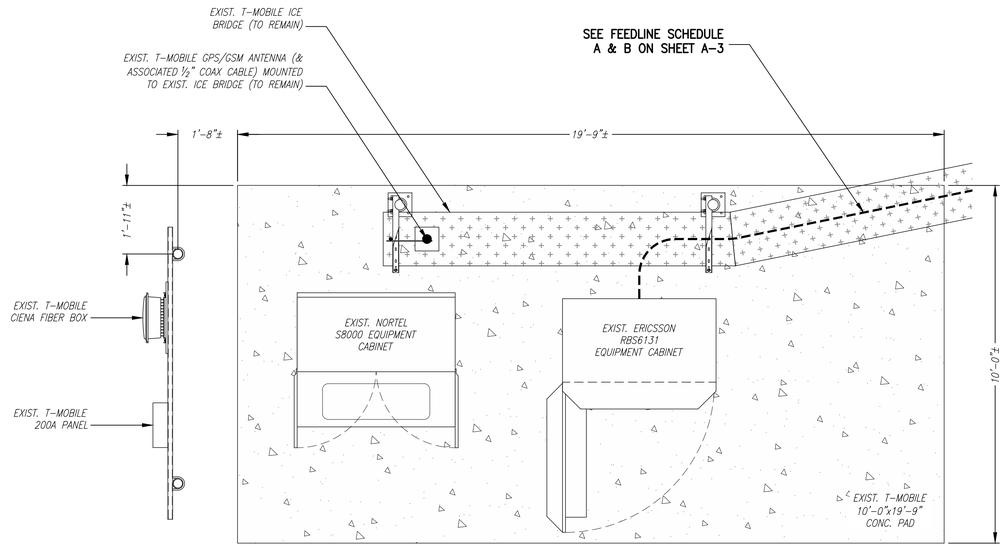
1815.088

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.

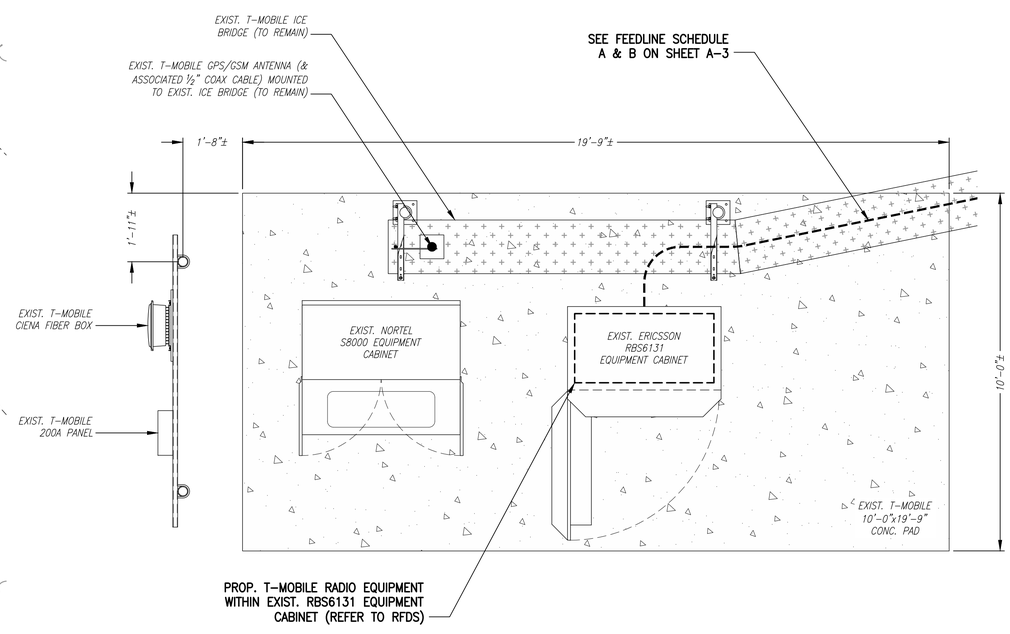
SPECIAL CONSTRUCTION NOTE:
GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL ANTENNA MOUNT STRUCTURAL AUGMENTS (STRUCTURAL MODIFICATIONS) AT T-MOBILE'S RAD/VERTICAL EQUIPMENT SPACE PER RECOMMENDATIONS FROM SBA-PROVIDED ANTENNA MOUNT STRUCTURAL ANALYSIS AND ANY SUPPLEMENTAL CONSTRUCTION DRAWINGS (PROVIDED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



COMPOUND PLAN 1 A-1
SCALE: 1/8" = 1'-0"
0 4' 8' 16' 24'



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



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

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STATE OF CONNECTICUT ★ JAMES M. FITZGERALD ★ No. 25997 LICENSED PROFESSIONAL CIVIL ENGINEER
6/24/21

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

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0	05/20/19	ISSUED FOR REVIEW	CMC

SITE NUMBER:
CT11473A

SITE ADDRESS:
45 FARGO ROAD
WATERFORD, CT 06385

SHEET TITLE
COMPOUND & EQUIPMENT PLAN

SHEET NUMBER
A-1

1815.088

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:
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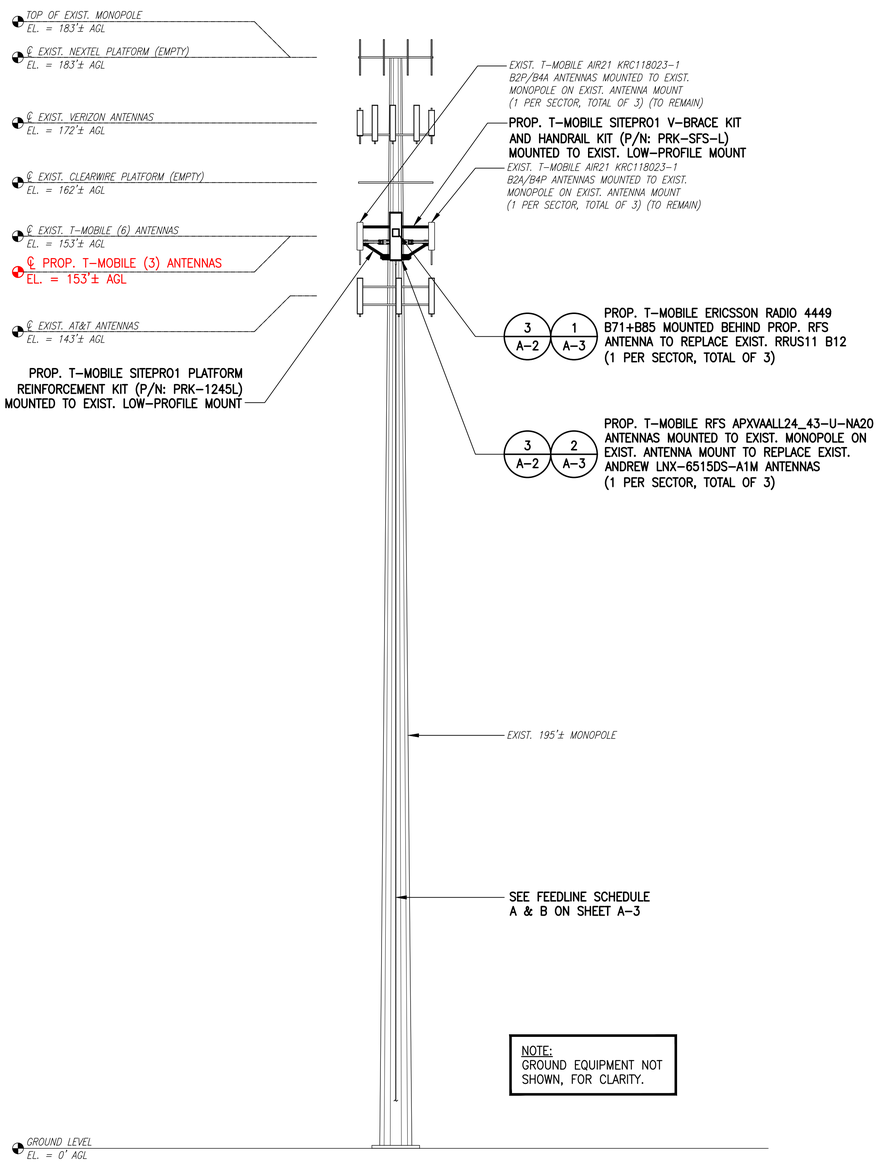
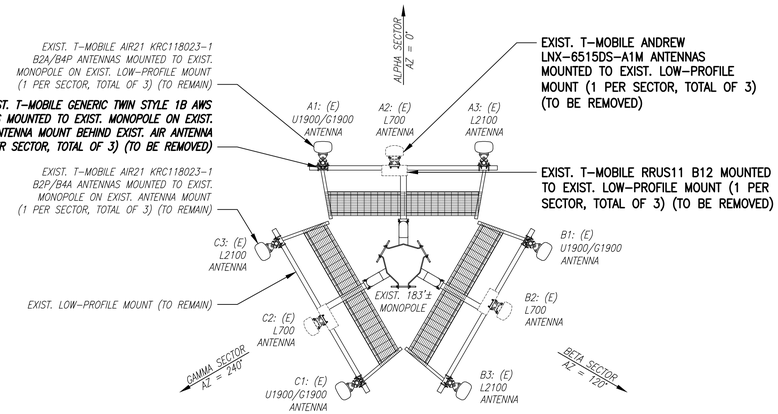
RAD CENTER NOTE:
T-MOBILE RAD CENTER SHOWN IN RED TEXT BASED ON SBA-PROVIDED CO-LOCATION APPLICATION, EQUIPMENT DATABASE, AND STRUCTURAL ANALYSIS. THE SBA-PROVIDED ANTENNA RAD CENTER SHALL SUPERSEDE ANY CONFLICTING INFORMATION DERIVED FROM THE T-MOBILE RFDS.

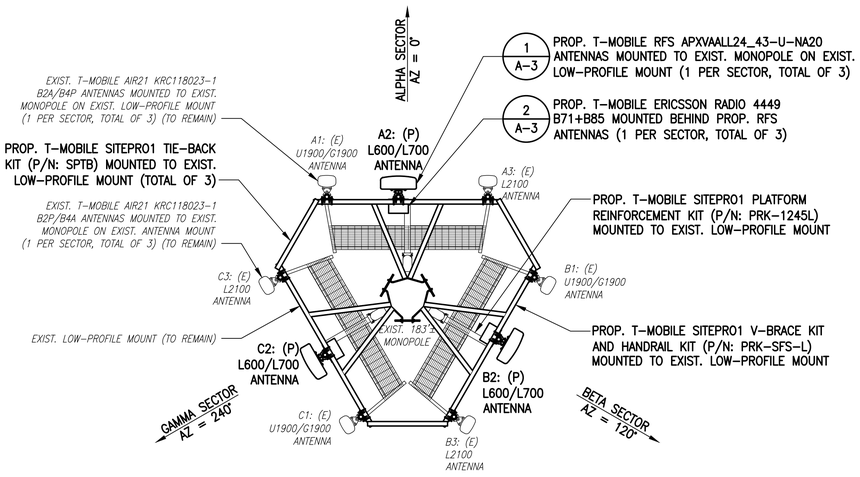


NOTE:
GROUND EQUIPMENT NOT SHOWN, FOR CLARITY.

TOWER ELEVATION
1 A-2
SCALE: 1" = 12'-0"
0 6' 12' 24' 36'



EXISTING ANTENNA PLAN
2 A-2
SCALE: 1/4" = 1'-0"
NORTH



PROPOSED ANTENNA PLAN
3 A-2
SCALE: 1/4" = 1'-0"
NORTH

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

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

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STATE OF CONNECTICUT
JAMES M. FITZGERALD
No. 25997
LICENSED
PROFESSIONAL CIVIL ENGINEER
4/19/21

CHECKED BY: JMT
APPROVED BY: JMT

SUBMITTALS

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0	05/20/19	ISSUED FOR REVIEW	CMC

SITE NUMBER:
CT11473A

SITE ADDRESS:
45 FARGO ROAD
WATERFORD, CT 06385

SHEET TITLE
TOWER ELEVATIONS & ANTENNA PLAN

SHEET NUMBER
A-2

1815.088

FINAL ANTENNA CONFIGURATION

SECTOR	ANTENNA	RAD CENTER	AZIMUTH (TRUE NORTH)	MECHANICAL DOWNTILT	ELECTRICAL DOWNTILT	BAND	TMA/RADIOS	SIGNAL CABLES
ALPHA	A1 *ERICSSON AIR21 KRC118023-1 B2A/B4P*	*153'± AGL*	*0°*	*0°*	*2°*	*U1900/G1900*	–	(3) 2" (6x24) HCS FIBER CABLES
	A2 **RFS APXVAALL24_43-U-NA20**	**153'± AGL**	**0°**	**0°**	**2°**	**L700/L600/N600**	**RADIO 4449 B71+B85**	
	A3 *ERICSSON AIR21 KRC118023-1 B2P/B4A*	*153'± AGL*	*0°*	*0°*	*2°*	*L2100*	–	
BETA	B1 *ERICSSON AIR21 KRC118023-1 B2A/B4P*	*153'± AGL*	*120°*	*0°*	*2°*	*U1900/G1900*	–	
	B2 **RFS APXVAALL24_43-U-NA20**	**153'± AGL**	**120°**	**0°**	**2°**	**L700/L600/N600**	**RADIO 4449 B71+B85**	
	B3 *ERICSSON AIR21 KRC118023-1 B2P/B4A*	*153'± AGL*	*120°*	*0°*	*2°*	*L2100*	–	
GAMMA	G1 *ERICSSON AIR21 KRC118023-1 B2A/B4P*	*153'± AGL*	*240°*	*0°*	*2°*	*U1900/G1900*	–	
	G2 **RFS APXVAALL24_43-U-NA20**	**153'± AGL**	**240°**	**0°**	**2°**	**L700/L600/N600**	**RADIO 4449 B71+B85**	
	G3 *ERICSSON AIR21 KRC118023-1 B2P/B4A*	*153'± AGL*	*240°*	*0°*	*2°*	*L2100*	–	

CABLE NOTE: EXISTING (12) 1-5/8" COAX CABLES & EXISTING (1) 1-¼" (9x18) HCS FIBER CABLE TO BE REMOVED. SEE FEEDLINE SCHEDULE A & B CHART THIS SHEET.
ANCILLARY NOTE: EXISTING (3) GENERIC TWIN STYLE 1B AWS TMAS & EXISTING (3) RRUS11 B12 TO BE REMOVED.

NOTE: RFDS REV3 – 02/09/21

SPECIAL CONSTRUCTION NOTE:
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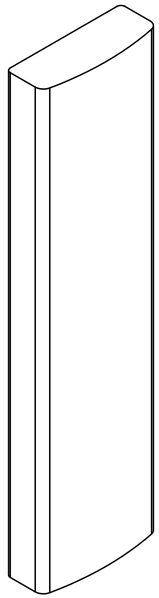
FEEDLINE SCHEDULE

SCHEDULE	FEEDLINES		LOCATION
A	*EXISTING TO REMAIN:*	*(1) ½" COAX CABLE FOR GPS ANTENNA*	ROUTED PER STRUCTURAL ANALYSIS
	EXISTING TO BE REMOVED:	*(12) 1-5/8" COAX CABLES* *(1) 1-¼" (9x18) HCS FIBER CABLE*	
B	PROPOSED:	(3) 2" (6x24) HCS FIBER CABLES	

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



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 3

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 3

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

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6/18/21

CHECKED BY: JMT

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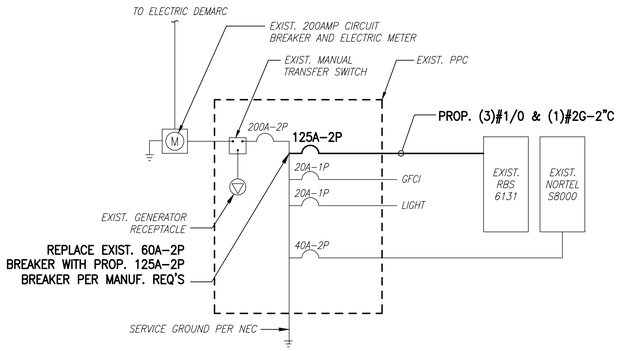
SITE NUMBER:
CT11473A

SITE ADDRESS:
45 FARGO ROAD
WATERFORD, CT 06385

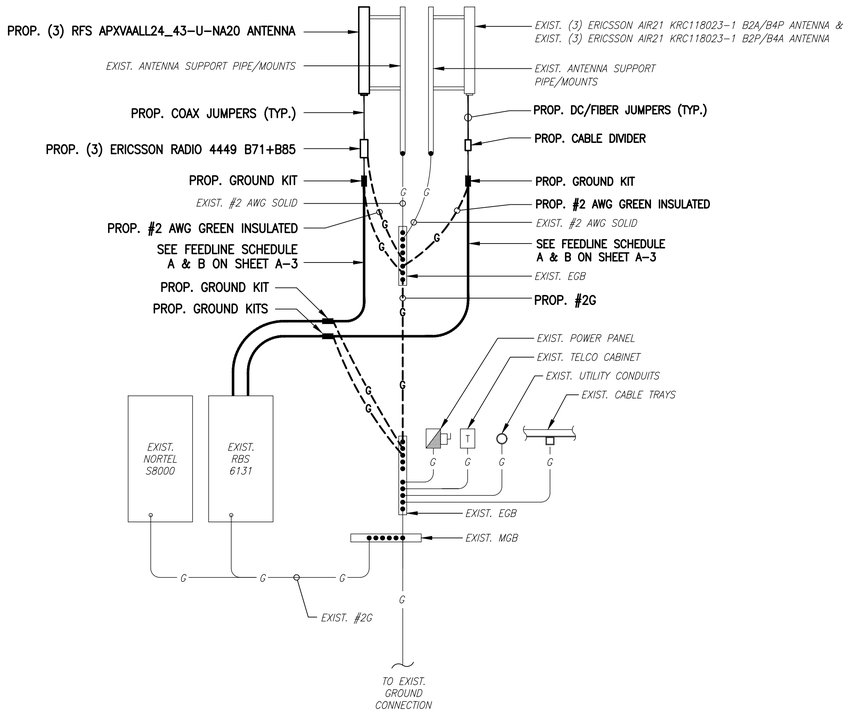
SHEET TITLE
SITE DETAILS

SHEET NUMBER
A-3

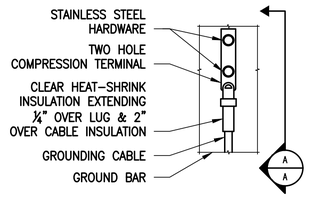
1815.088



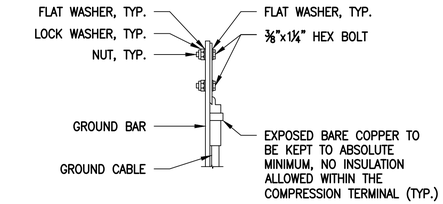
ONE LINE DIAGRAM (1 / E-1)
SCALE: NOT TO SCALE



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



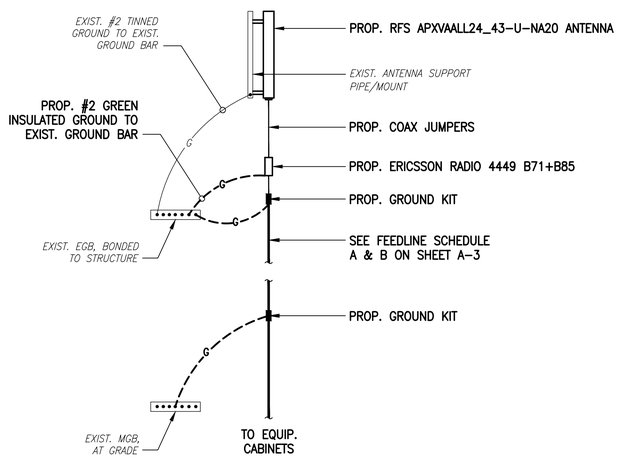
ELEVATION



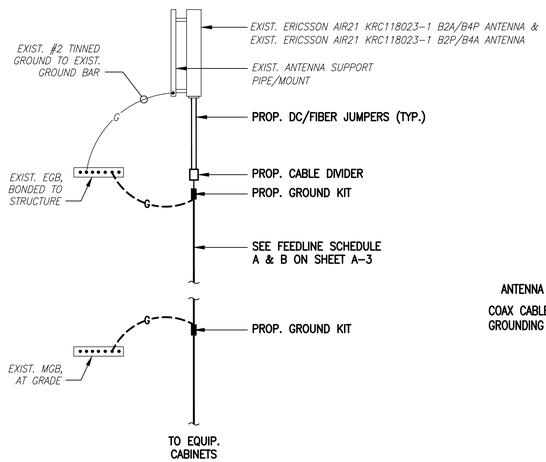
SECTION A-A

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

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

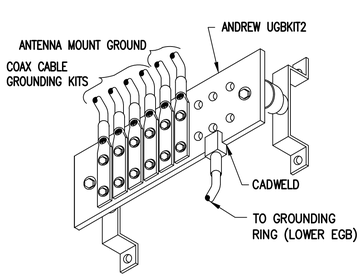


L700/L600/N600 ANTENNA



U1900/G1900 ANTENNA & L2100 ANTENNA

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



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

ELECTRICAL AND GROUNDING NOTES

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

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
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CHAPPELL ENGINEERING ASSOCIATES, LLC
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STATE OF CONNECTICUT · JAMES M. FITZGERALD · No. 25997 · LICENSED PROFESSIONAL CIVIL ENGINEER
6/18/21

CHECKED BY: JMT

APPROVED BY: JMT

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
2	06/17/21	REVISED CONSTRUCTION	JRV
1	03/31/21	ISSUED FOR CONSTRUCTION	JRV
0	05/20/19	ISSUED FOR REVIEW	CMC

SITE NUMBER:
CT11473A

SITE ADDRESS:
45 FARGO ROAD
WATERFORD, CT 06385

SHEET TITLE
ELECTRICAL & GROUNDING DETAILS

SHEET NUMBER
E-1

1815.088

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 183 ft Nudd Corporation Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT01002-S

Customer Site Name: Waterford

Carrier Name: T-Mobile (App#: 116757, V3)

Carrier Site ID / Name: CT11473A / Waterford

Site Location: 45 Fargo Road

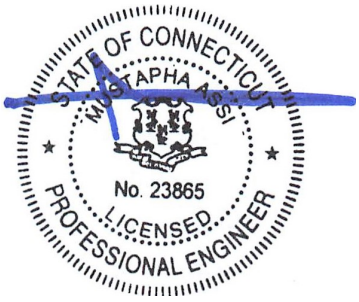
Waterford, Connecticut

New London County

Latitude: 41.389339

Longitude: -72.171408

Exp.10/31/2021



05/05/2021

Analysis Result:

Max Structural Usage: 97.0% [Pass]

Max Foundation Usage: 38.0% [Pass]

Additional Usage Caused by Mount Modification: +2.1%

Report Prepared By: Younus Alkarawi

Introduction

The purpose of this report is to summarize the analysis results on the 183 ft Nudd Corporation 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	A.Nudd Corp. Project #6637, dated May 7, 1999
Foundation Drawing	A.Nudd Corp. Project #6637, dated May 7, 1999
Geotechnical Report	Jaworski Geotech Inc Project #C98392G, dated September 18, 1998
Modification Drawings	Semaan Engineering Solutions, Inc.analysis and Modifications Package, dated May 7, 2002 FDH Engineering Inc. Project #10-08045E S2, dated November 4, 2010
Mount Analysis	Geo Structural #L600 Project, dated 06/21/2019

Analysis Criteria

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

Wind Speed Used in the Analysis:	Ultimate Design Wind Speed V_{ult} = 135.0 mph (3-Sec. Gust)/ Nominal Design Wind Speed V_{asd} = 105.0 mph (3-Sec. Gust)
Wind Speed with Ice:	50 mph (3-Sec. Gust) with 3/4" radial ice concurrent
Operational Wind Speed:	60 mph + 0" Radial ice
Standard/Codes:	TIA-222-G-2 / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	B
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft
Seismic Parameters:	S_S = 0.164, S_1 = 0.059

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
-	181.0	-	-	Empty Low profile platform	-	-
1	173.0	4	Antel - LPA-80080-4CF-EDIN-0 - Panel	Low Profile Platform	(3) 1 5/8" Outside *(9) 1 5/8" (2) 1 5/8" Hybriflex	Verizon
2		2	RFS - APL866513-42T0 - Panel			
3		6	Commscope - HBXX-6517DS-VTM - Panel			
4		3	Commscope - LNX-6514DS-VTM - Panel			
5		3	Alcatel RRH2X60-AWS-RRH			
6		3	Alcatel RRH2x60-PCS-RRH			
7		3	Alcatel RRH2x60-700U-RRH			
8		2	RFS DB-T1-6Z-8AB-OZ ODU			
9	163.0	3	Samsung DAP Radio Head	Low Profile Platform	(3) 9/16" (3) 5/16" (1) 3" Conduit	Clearwire
10		3	Argus - LLPX310R - Panel			
-	158.0	-	-	Empty Low profile platform	--	-
-	153.0	3	Ericsson - AIR 21 B2A B4P - Panel	(3) T-Arms	(12) 1 5/8" (1) 1 5/8" Fiber	T-Mobile
-		3	Ericsson - AIR 21 B4A B2P - Panel			
-		3	Commscope - LNX-6515DS - Panel			
-		3	Ericsson KRY 112 144/1			
-		3	Ericsson S11B12			
16	143.0	1	Quintel QS46512-2 - Panel	Low Profile Platform w/ SitePro 1 Handrail Kit (P/N HRK 14-U) and (6) 2-1/2" std. mast pipes.	(12) 1 5/8" Coax (2) 3/4" DC (1) 5/16" Fiber	AT&T
17		1	Cci OPA-65R-LCUU-H4 - Panel			
18		2	Cci TPA-65R-LCUUUU-H8 - Panel			
19		2	Cci OPA-65R-LCUU-H8 - Panel			
20		3	Cci DTMABP7819VG12A TMA			
21		3	Kaelus DBC0061F1V51-2 - Diplexer			
22		3	Ericsson RRUS 32 B2			
23		3	Powerwave 7770 - Panel			
24		3	ADC ClearGain 850-1900 Dual Band - TMA			
25		3	Ericsson RRUS 11			
26		3	Css DBC-750			
27		1	Raycap DC6-48-60-18-8F			

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

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

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
11	153.0	3	Ericsson Air 21 B2A/B4P - Panel	(3) Modified T-Arms W/ (1) Sitepro PRK-1245L (Platform reinforcement kit), (1) Sitepro PRK-SFS-L (V-brace kit) & (3) Sitepro SPTB (Tie back kit)	(3) 1.9" Fiber (9) 1 5/8"	T-Mobile
12		3	Ericsson Air 21 B4A/B2P - Panel			
13		3	RFS APXVAALL24-43-U-NA20 - Panel			
14		3	Ericsson KRY 112 144/1-TMA			
15		3	Ericsson 4449 B71 + B85 RRU			

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

Analysis Results

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

	Pole shafts	Anchor Bolts	Base Plate
Max. Usage:	**75.7%**	**61.7%**	**97.0%**
Pass/Fail	**Pass**	**Pass**	**Pass**

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Analysis Reactions	5108.5	39.1	62.1

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

Operational Condition (Rigidity):

Operational characteristics of the tower are found to be within the limits prescribed by TIA-222 for the installed antennas. The maximum twist/sway at the elevation of the proposed equipment is 1.2136 degrees under the operational wind speed as specified in the Analysis Criteria.

Conclusions

Based on the analysis results, the existing structure and its foundation were found to be adequate to safely support the existing and proposed equipment and meet the minimum requirements per the TIA-222 Standard under the design basic wind speed as specified in the Analysis Criteria.

Standard Conditions

1. This analysis was performed based on the information supplied to **(TES) Tower Engineering Solutions, LLC.** Verification of the information provided was not included in the Scope of Work for **TES**. The accuracy of the analysis is dependent on the accuracy of the information provided.

2. The structural analysis was performance based upon the evidence available at the time of this report. All information provided by the client is considered to be accurate.

3. The analyses will be performed based on the codes as specified by the client or based on the best knowledge of the engineering staff of **TES**. In the absence of information to the contrary, all work will be performed in accordance with the latest relevant revision of ANSI/TIA-222. If wind speed and/or ice loads are different from the minimum values recommended by the ANSI/TIA-222 standard or other codes, **TES** should be notified in writing and the applicable minimum values provided by the client.

4. The configuration of the existing mounts, antennas, coax and other appurtenances were supplied by the customer for the current structural analysis. **TES** has not visited the tower site to verify the adequacy of the information provided. If there is any discrepancy found in the report regarding the existing conditions, **TES** should be notified immediately to evaluate the effect of the discrepancy on the analysis results.

5. The client will assume responsibility for rework associated with the differences in initially provided information, including tower and foundation information, existing and/or proposed equipment and transmission lines.

6. If a feasibility analysis was performed, final acceptance of changed conditions shall be based upon a rigorous structural analysis.

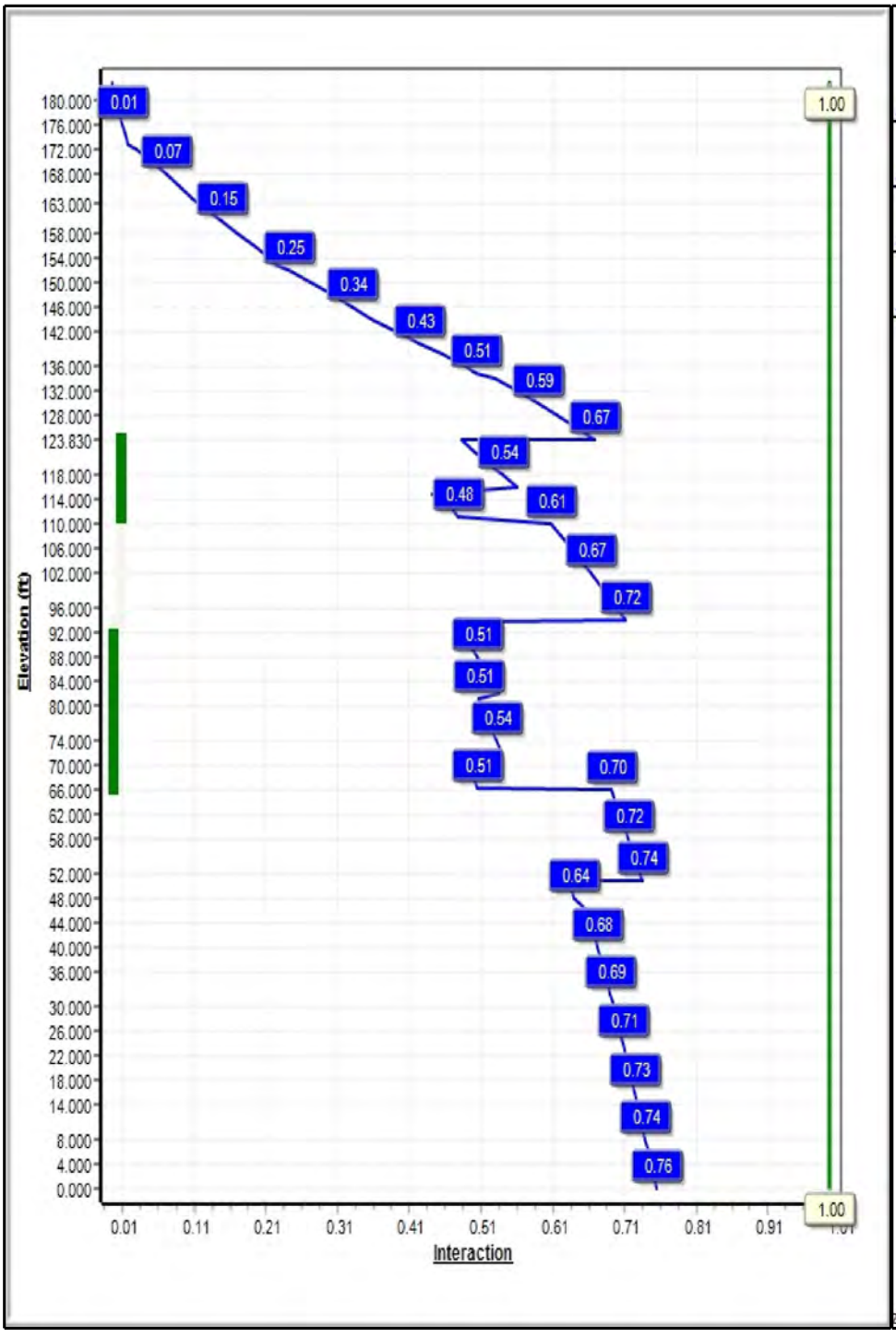
Usage Diagram - Max Ratio 75.88% at 0.0ft

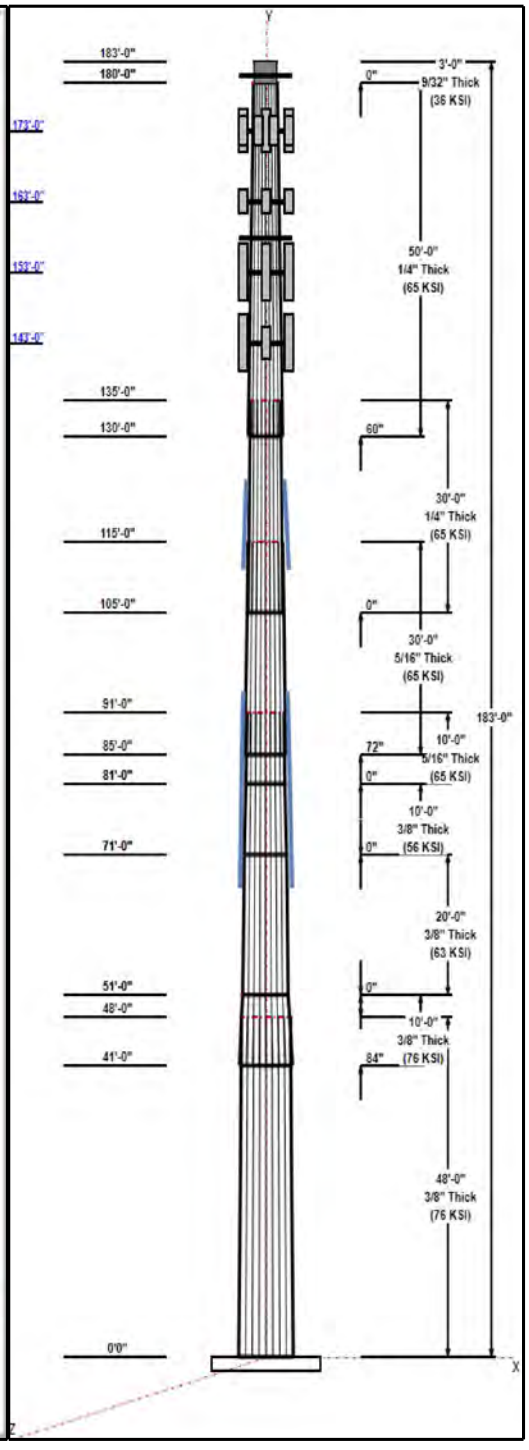
Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021
Site Name:	Waterford	**Exposure:**	B	
Height:	183.00 (ft)	**Gh:**	1.1	
Base Elev:	0.000 (ft)			Page: 1

Tower Engineering Solutions

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

Load Case : 1.2D + 1.6W 105 mph Wind





Structure: CT01002-S-SBA

Type: Custom
Site Name: Waterford
Height: 183.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.23542

5/5/2021

Tower Engineering Solutions

Shaft Properties

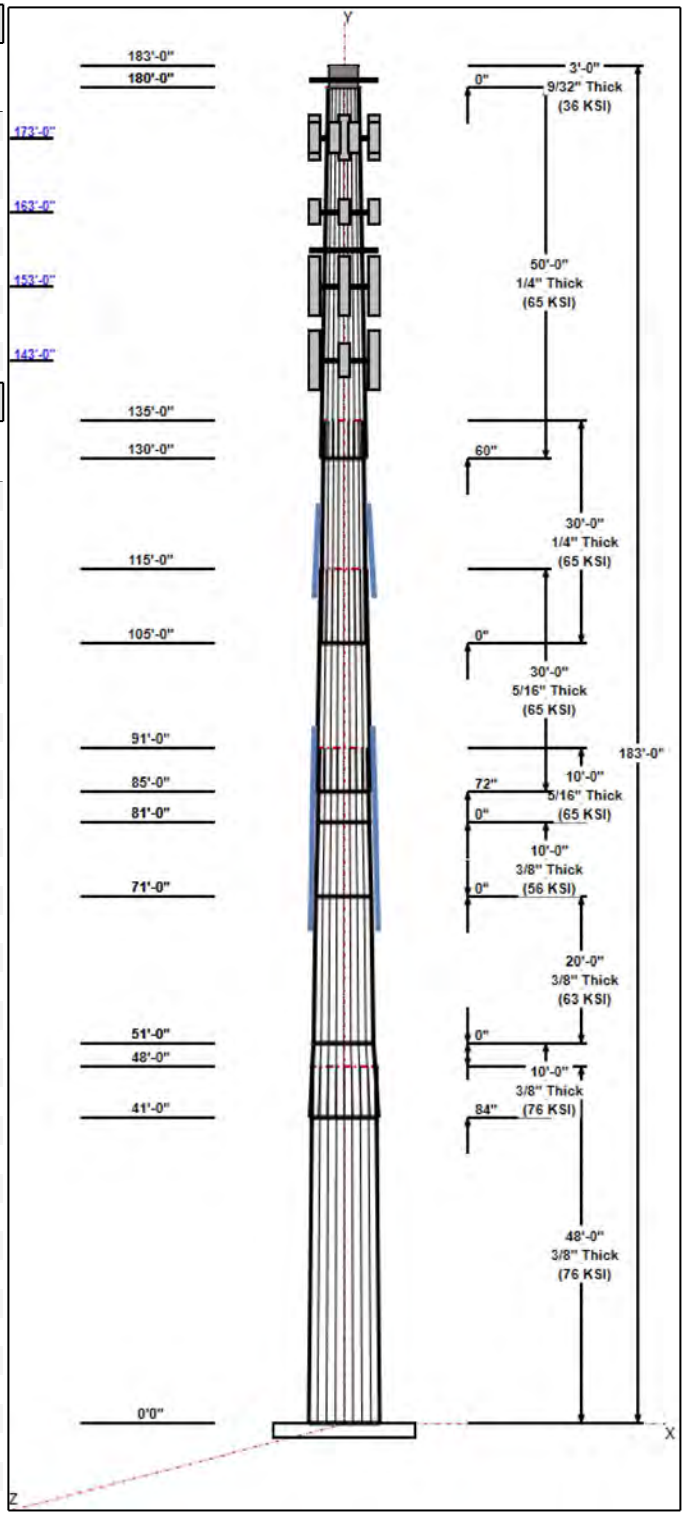
Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	48.00	53.20	64.50	0.375		0.23542	76
2	10.00	53.24	55.60	0.375	Slip	0.23542	76
3	20.00	48.53	53.24	0.375	Butt	0.23542	63
4	10.00	46.18	48.53	0.375	Butt	0.23542	56
5	10.00	43.83	46.18	0.313	Butt	0.23542	65
6	30.00	38.80	45.87	0.313	Slip	0.23542	65
7	30.00	34.09	38.80	0.250	Butt	0.23542	65
8	50.00	24.00	35.77	0.250	Slip	0.23542	65
9	3.00	24.00	24.00	0.281	Butt	0.00000	36

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
181.00	181.00	1	Low Profile	-
173.00	173.00	1	Low Profile	Verizon
173.00	173.00	4	LPA-80080-4CF-EDIN-0	Verizon
173.00	173.00	2	APL866513-42T0	Verizon
173.00	173.00	6	HBXX-6517DS-VTM	Verizon
173.00	173.00	3	LNX-6514DS-VTM	Verizon
173.00	173.00	3	RRH2X60-AWS	Verizon
173.00	173.00	3	RRH2x60-700U	Verizon
173.00	173.00	3	RRH2x60-1900	Verizon
173.00	173.00	2	DB-T1-6Z-8AB-OZ	Verizon
163.00	163.00	3	LLPX310R	Clearwire
163.00	163.00	1	Low Profile	Clearwire
163.00	163.00	3	DAP Head	Clearwire
158.00	158.00	1	Low Profile	-
153.00	153.00	3	Ericsson 4449 B71 + B85	T-Mobile
153.00	153.00	1	(3) T-Arms	T-Mobile
153.00	153.00	3	Ericsson Air 21 B2A/B4P	T-Mobile
153.00	153.00	3	Ericsson Air 21 B4A/B2P	T-Mobile
153.00	153.00	3	KRY 112 144/1	T-Mobile
153.00	153.00	3	RFS	T-Mobile
153.00	153.00	1	PRK-1245 (kicker kit)	T-Mobile
153.00	153.00	1	SPTB(Tie back Kit)	T-Mobile
153.00	153.00	1	V-brace kit	T-Mobile
143.00	143.00	1	QS46512-2	AT&T
143.00	143.00	1	OPA-65R-LCUU-H4	AT&T
143.00	143.00	2	TPA-65R-LCUUUU-H8	AT&T
143.00	143.00	2	OPA-65R-LCUU-H8	AT&T
143.00	143.00	3	DTMABP7819VG12A	AT&T
143.00	143.00	3	DBC0061F1V51-2	AT&T
143.00	143.00	3	RRUS 32 B2	AT&T
143.00	143.00	1	HRK14	AT&T
143.00	143.00	3	Powerwave 7770.00	AT&T
143.00	143.00	1	Low Profile	AT&T
143.00	143.00	3	850-1900 Dual Band	AT&T
143.00	143.00	3	RRUS 11	AT&T
143.00	143.00	3	DBC-750	AT&T
143.00	143.00	1	DC6-48-60-18-8F	AT&T

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier



0.00	183.00	Outside	Safety Cable	
0.00	183.00	Outside	Step bolts (ladder)	
0.00	173.00	Inside	1 5/8" Coax	Verizon
0.00	173.00	Outside	1 5/8" Coax	Verizon
0.00	173.00	Inside	1 5/8" Hybrid	Verizon
0.00	163.00	Inside	3" Conduit	Clearwire
0.00	163.00	Inside	5/16" Coax	Clearwire
0.00	163.00	Inside	9/16" Coax	Clearwire
0.00	153.00	Inside	1 5/8" Coax	T-Mobile
0.00	153.00	Inside	1.9" Fiber	T-Mobile
0.00	143.00	Inside	1 5/8" Coax	AT&T
0.00	143.00	Inside	3/4" DC	AT&T
0.00	143.00	Inside	5/16" Fiber	AT&T
110.00	125.00	Outside	C6X10.5 Reinforcing	
65.00	95.00	Outside	C6X10.5 Reinforcing	

Anchor Bolts

Qty	Specifications	Grade (ksi)	Arrangement
24	2.00" A687	105.0	Radial

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
1.5000	64.5	60.0	Round

Reactions

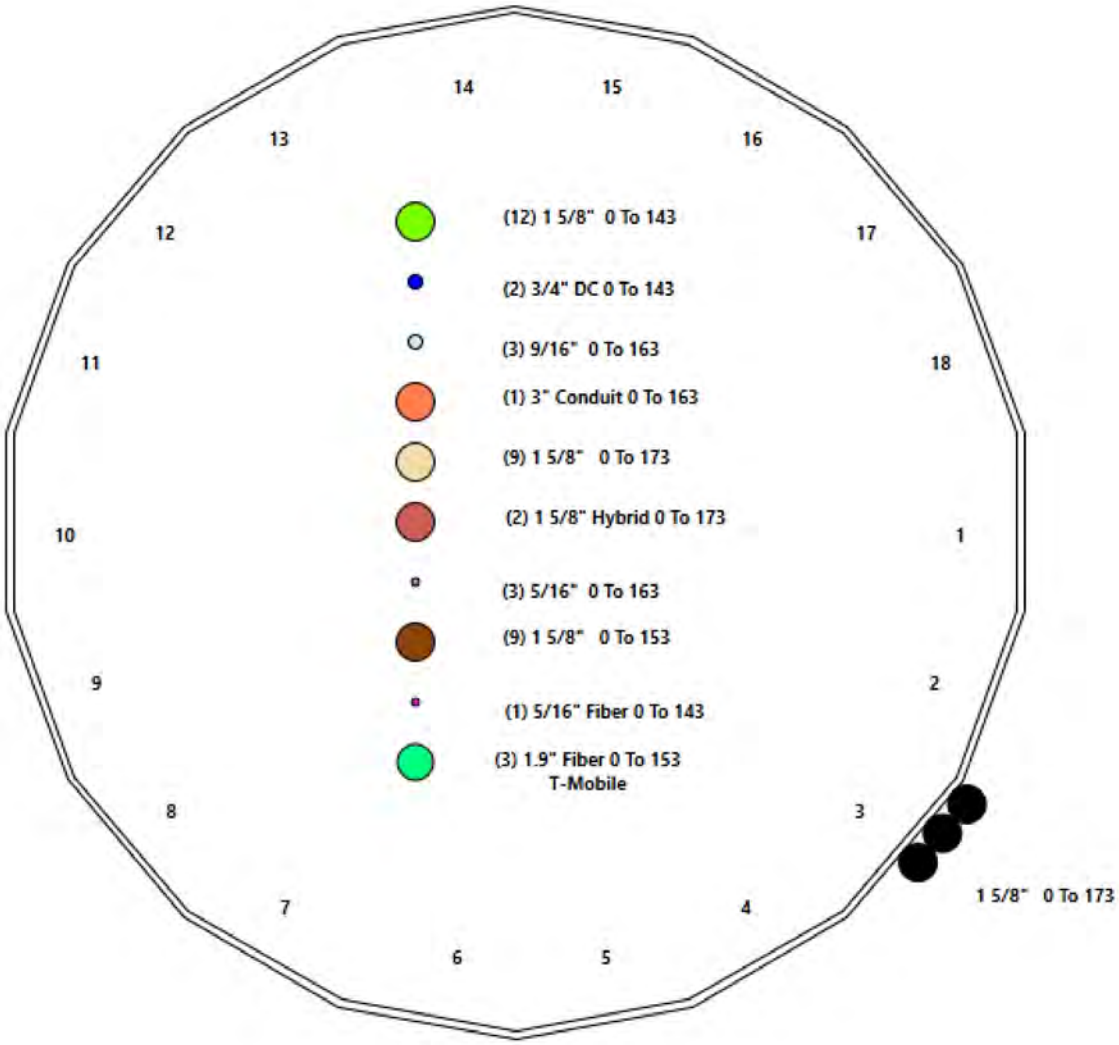
Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 105 mph Wind	5123.1	39.2	62.1
0.9D + 1.6W 105 mph Wind	5056.1	39.1	46.6
1.2D + 1.0Di + 1.0Wi 50 mph Wind	1279.3	9.7	97.3
1.2D + 1.0E	256.9	1.9	62.1
0.9D + 1.0E	253.3	1.9	46.6
1.0D + 1.0W 60 mph Wind	1037.9	8.0	51.8

Structure: CT01002-S-SBA - Coax Line Placement

Type: Monopole
Site Name: Waterford
Height: 183.00 (ft)

5/5/2021

Tower Engineering Solutions



Shaft Properties

Structure:	CT01002-S-SBA		**Code:**	EIA/TIA-222-G	5/5/2021
Site Name:	Waterford		**Exposure:**	B	
Height:	183.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 5

Tower Engineering Solutions

Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	18	48.000	0.3750	76		0.00	11,368
2	18	10.000	0.3750	76	Slip	84.00	2,189
3	18	20.000	0.3750	63	Flange	0.00	4,092
4	18	10.000	0.3750	56	Flange	0.00	1,903
5	18	10.000	0.3125	65	Flange	0.00	1,508
6	18	30.000	0.3125	65	Slip	72.00	4,255
7	18	30.000	0.2500	65	Flange	0.00	2,837
8	18	50.000	0.2500	65	Slip	60.00	4,001
9	R	3.000	0.2810	36	Flange	0.00	214
					Total Shaft Weight:		**32,365**

	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	64.50	0.00	76.32	39651.33	28.92	172.00	53.20	48.00	62.87	22166.3	23.60	141.8	0.235417
2	55.60	41.00	65.73	25324.19	24.73	148.26	53.24	51.00	62.92	22221.5	23.62	141.9	0.235417
3	53.24	51.00	62.93	22221.78	23.62	141.98	48.53	71.00	57.32	16797.8	21.41	129.4	0.235417
4	48.53	71.00	57.32	16797.13	21.41	129.43	46.18	81.00	54.52	14452.3	20.30	123.1	0.235417
5	46.18	81.00	45.49	12093.11	24.65	147.78	43.83	91.00	43.16	10325.0	23.32	140.2	0.235417
6	45.87	85.00	45.18	11844.89	24.47	146.77	38.80	115.00	38.18	7145.58	20.48	124.1	0.235417
7	38.80	105.0	30.59	5744.14	25.96	155.21	34.09	135.00	24.99	3130.27	20.98	136.3	0.235417
8	35.77	130.0	28.18	4493.04	23.82	143.08	24.00	180.00	18.85	1343.02	15.52	96.00	0.235417
9	24.00	180.0	20.94	1473.63	0.00	85.41	24.00	183.00	20.94	1473.63	0.00	85.41	0.000000

Additional Steel

							Intermediate Connectors		Termination Connectors			
Elev From (ft)	Elev To (ft)	Qty	Description	Fy (ksi)	Fu (ksi)	Offset (in)	Description	Spacing (in)	Description	Spacing (in)	Lower Qty	Upper Qty
66.17	93.83	6	PLT C6x10.5(1.5" Hole)	65	80	0.85	5/8" Hollo Bolt	0.00	5/8" Hollo Bolt	24.00		
111.1	123.8	3	PLT C6x10.5(1.5" Hole)	65	80	0.85	5/8" Hollo Bolt	0.00	5/8" Hollo Bolt	24.00		

Load Summary

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (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	181.00	Low Profile Platform-Round	1	1500.00	22.00	1.00	2833.73	39.996	1.00	0.00	0.00
2	173.00	Low Profile Platform-Round	1	1500.00	22.00	1.00	2827.72	39.915	1.00	0.00	0.00
3	173.00	LPA-80080-4CF-EDIN-0	4	12.00	2.61	1.70	129.28	3.521	1.70	0.00	0.00
4	173.00	APL866513-42T0	2	15.70	4.05	0.93	126.47	5.940	0.93	0.00	0.00
5	173.00	HBXX-6517DS-VTM	6	40.70	8.55	0.77	219.47	11.511	0.77	0.00	0.00
6	173.00	LNX-6514DS-VTM	3	33.10	8.09	0.80	210.32	10.926	0.80	0.00	0.00
7	173.00	RRH2X60-AWS	3	60.00	3.50	0.67	148.54	4.301	0.67	0.00	0.00
8	173.00	RRH2x60-700U	3	50.00	2.48	0.67	124.64	3.655	0.67	0.00	0.00
9	173.00	RRH2x60-1900	3	19.50	1.51	0.67	80.48	2.069	0.67	0.00	0.00
10	173.00	DB-T1-6Z-8AB-OZ	2	44.00	4.80	1.00	190.17	5.687	1.00	0.00	0.00
11	163.00	LLPX310R	3	28.60	4.30	0.69	119.66	5.974	0.69	0.00	0.00
12	163.00	Low Profile Platform-Round	1	1500.00	22.00	1.00	2819.84	39.809	1.00	0.00	0.00
13	163.00	DAP Head	3	42.00	1.88	0.67	89.27	3.037	0.67	0.00	0.00
14	158.00	Low Profile Platform-Round	1	1500.00	22.00	1.00	2815.73	39.754	1.00	0.00	0.00
15	153.00	Ericsson 4449 B71 + B85 RRU	3	73.20	1.97	0.67	131.06	2.541	0.67	0.00	0.00
16	153.00	T-Arms	1	1200.00	25.00	1.00	2249.20	45.984	1.00	0.00	0.00
17	153.00	Ericsson Air 21 B2A/B4P	3	91.50	6.09	0.86	260.79	7.190	0.86	0.00	0.00
18	153.00	Ericsson Air 21 B4A/B2P	3	90.40	6.09	0.86	259.69	7.190	0.86	0.00	0.00
19	153.00	KRY 112 144/1	3	11.00	0.41	0.70	21.80	0.886	0.70	0.00	0.00
20	153.00	RFS APXVAALL24-43-U-NA20	3	122.80	20.24	0.70	541.67	22.144	0.70	0.00	0.00
21	153.00	PRK-1245 (kicker kit)	1	464.91	9.50	1.00	790.10	19.467	1.00	0.00	0.00
22	153.00	SPTB(Tie back Kit)	1	140.00	3.70	1.00	316.27	7.582	1.00	0.00	0.00
23	153.00	V-brace kit	1	230.00	2.70	1.00	551.76	5.533	1.00	0.00	0.00
24	143.00	QS46512-2	1	27.30	5.55	1.00	195.54	14.338	1.00	0.00	0.00
25	143.00	OPA-65R-LCUU-H4	1	57.00	5.94	1.00	214.71	6.967	1.00	0.00	0.00
26	143.00	TPA-65R-LCUUUU-H8	2	75.00	13.30	0.83	385.41	14.938	0.83	0.00	0.00
27	143.00	OPA-65R-LCUU-H8	2	95.00	12.75	0.79	375.65	14.349	0.79	0.00	0.00
28	143.00	DTMABP7819VG12A	3	19.20	1.14	0.67	44.60	1.906	0.67	0.00	0.00
29	143.00	DBC0061F1V51-2	3	25.40	0.43	0.67	39.87	0.714	0.67	0.00	0.00
30	143.00	RRUS 32 B2	3	53.00	2.74	0.67	140.49	3.465	0.67	0.00	0.00
31	143.00	HRK14	1	352.36	10.13	1.00	768.53	19.983	1.00	0.00	0.00
32	143.00	Powerwave 7770.00	3	35.00	5.50	0.73	169.38	6.560	0.73	0.00	0.00
33	143.00	Low Profile Platform-Round	1	1500.00	22.00	1.00	2802.67	39.577	1.00	0.00	0.00
34	143.00	850-1900 Dual Band	3	5.50	0.52	0.66	17.09	1.048	0.66	0.00	0.00
35	143.00	RRUS 11	3	50.70	2.52	0.67	139.37	3.168	0.67	0.00	0.00
36	143.00	DBC-750	3	4.80	0.51	0.50	14.42	1.037	0.50	0.00	0.00
37	143.00	DC6-48-60-18-8F	1	31.80	1.47	1.00	93.33	2.167	1.00	0.00	0.00
		Totals:	**85**	**13,202.07**			**30,927.87**				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	183.00	(1) Safety Cable	0.00	Outside
0.00	183.00	(1) Step bolts (ladder)	0.00	Outside
0.00	173.00	(9) 1 5/8" Coax	0.00	Inside
0.00	173.00	(3) 1 5/8" Coax	1.98	Outside

Discrete Appurtenances

No.	Elev (ft)	Description	Qty	No Ice Weight (lb)	No Ice CaAa (sf)	No Ice CaAa Factor	Ice Weight (lb)	Ice CaAa (sf)	Ice CaAa Factor	Hor. Ecc. (ft)	Vert Ecc (ft)
0.00	173.00	(2) 1 5/8" Hybrid			0.00	Inside					
0.00	163.00	(1) 3" Conduit			0.00	Inside					
0.00	163.00	(3) 5/16" Coax			0.00	Inside					
0.00	163.00	(3) 9/16" Coax			0.00	Inside					
0.00	153.00	(9) 1 5/8" Coax			0.00	Inside					
0.00	153.00	(3) 1.9" Fiber			0.00	Inside					
0.00	143.00	(12) 1 5/8" Coax			0.00	Inside					
0.00	143.00	(2) 3/4" DC			0.00	Inside					
0.00	143.00	(1) 5/16" Fiber			0.00	Inside					
110.0	125.00	(3) C6X10.5 Reinforcing plate			0.00	Outside					
65.00	95.00	(6) C6X10.5 Reinforcing plate			0.00	Outside					

Shaft Section Properties

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (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

Increment Length: **2 (ft)**

											Additional Reinforcing			
Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fy (ksi)	Fb (ksi)	Weight (lb)	Area (in^2)	Ixp (in^4)	Iyp (in^4)	Weight (lb)
0.00		0.3750	64.500	76.322	39651.3	28.92	172.00	76	76	0.0				
2.00		0.3750	64.029	75.762	38784.3	28.70	170.74	76	76	517.5				
4.00		0.3750	63.558	75.201	37930.0	28.47	169.49	76	76	513.7				
6.00		0.3750	63.087	74.641	37088.4	28.25	168.23	76	77	509.9				
8.00		0.3750	62.617	74.080	36259.3	28.03	166.98	76	77	506.1				
10.00		0.3750	62.146	73.520	35442.6	27.81	165.72	76	77	502.3				
12.00		0.3750	61.675	72.960	34638.3	27.59	164.47	76	78	498.4				
14.00		0.3750	61.204	72.399	33846.3	27.37	163.21	76	78	494.6				
16.00		0.3750	60.733	71.839	33066.4	27.15	161.96	76	78	490.8				
18.00		0.3750	60.262	71.279	32298.6	26.93	160.70	76	79	487.0				
20.00		0.3750	59.792	70.718	31542.8	26.70	159.44	76	79	483.2				
22.00		0.3750	59.321	70.158	30798.9	26.48	158.19	76	79	479.4				
24.00		0.3750	58.850	69.597	30066.7	26.26	156.93	76	80	475.6				
26.00		0.3750	58.379	69.037	29346.3	26.04	155.68	76	80	471.7				
28.00		0.3750	57.908	68.477	28637.4	25.82	154.42	76	80	467.9				
30.00		0.3750	57.437	67.916	27940.1	25.60	153.17	76	80	464.1				
32.00		0.3750	56.967	67.356	27254.2	25.38	151.91	76	81	460.3				
34.00		0.3750	56.496	66.795	26579.6	25.15	150.66	76	81	456.5				
36.00		0.3750	56.025	66.235	25916.2	24.93	149.40	76	81	452.7				
38.00		0.3750	55.554	65.675	25263.9	24.71	148.14	76	82	448.9				
40.00		0.3750	55.083	65.114	24622.7	24.49	146.89	76	82	445.0				
41.00	Bot - Section 2	0.3750	54.848	64.834	24306.2	24.38	146.26	76	82	221.1				
42.00		0.3750	54.612	64.554	23992.4	24.27	145.63	76	82	443.3				
44.00		0.3750	54.142	63.993	23373.0	24.05	144.38	76	83	880.9				
46.00		0.3750	53.671	63.433	22764.3	23.83	143.12	76	83	873.3				
48.00	Top - Section 1	0.3750	53.950	63.765	23124.1	23.96	143.87	76	83	865.7				
50.00		0.3750	53.479	63.205	22519.7	23.74	142.61	76	83	432.1				
51.00	Top - Section 2	0.3750	53.244	62.925	22221.6	23.62	141.98	76	83	214.6				
51.00	Bot - Section 3	0.3750	53.244	62.925	22221.8	23.62	141.98	63	72					
52.00		0.3750	53.009	62.645	21926.3	23.51	141.36	63	72	213.6				
54.00		0.3750	52.538	62.084	21343.1	23.29	140.10	63	72	424.4				
56.00		0.3750	52.067	61.524	20770.3	23.07	138.85	63	72	420.6				
58.00		0.3750	51.596	60.964	20207.9	22.85	137.59	63	73	416.8				
60.00		0.3750	51.125	60.403	19655.8	22.63	136.33	63	73	413.0				
62.00		0.3750	50.654	59.843	19113.8	22.41	135.08	63	73	409.2				
64.00		0.3750	50.184	59.283	18581.8	22.19	133.82	63	73	405.4				
66.00		0.3750	49.713	58.722	18059.8	21.96	132.57	63	74	401.5				
66.17	RB1	0.3750	49.673	58.675	18015.9	21.95	132.46	63	74	34.0	18.48	6572.7	6572.7	10.7
68.00		0.3750	49.242	58.162	17547.7	21.74	131.31	63	74	363.8	18.48	6467.0	6467.0	115.3
70.00		0.3750	48.771	57.601	17045.4	21.52	130.06	63	74	393.9	18.48	6352.5	6352.5	126.0
71.00	Top - Section 3	0.3750	48.536	57.321	16797.8	21.41	129.43	63	74	195.5	18.48	6295.6	6295.6	63.0
71.00	Bot - Section 4	0.3750	48.535	57.320	16797.1	21.41	129.43	56	67					
72.00		0.3750	48.300	57.040	16552.0	21.30	128.80	56	67	194.6	18.48	6238.8	6238.8	63.0
74.00		0.3750	47.829	56.480	16068.9	21.08	127.54	56	68	386.3	18.48	6126.3	6126.3	126.0
76.00		0.3750	47.358	55.919	15595.4	20.86	126.29	56	68	382.5	18.48	6014.8	6014.8	126.0
78.00		0.3750	46.887	55.359	15131.2	20.64	125.03	56	68	378.7	18.48	5904.4	5904.4	126.0
80.00		0.3750	46.416	54.799	14676.3	20.41	123.78	56	68	374.8	18.48	5795.0	5795.0	126.0
81.00	Top - Section 4	0.3750	46.181	54.518	14452.3	20.30	123.15	56	68	186.0	18.48	5740.7	5740.7	63.0
81.00	Bot - Section 5	0.3125	46.181	45.494	12093.1	24.36	147.78	65	72					
82.00		0.3125	45.946	45.261	11907.9	24.51	147.03	65	73	154.4	18.48	5686.6	5686.6	63.0

Increment Length: 2 (ft)

Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fy (ksi)	Fb (ksi)	Weight (lb)	Additional Reinforcing Area (in^2)	Additional Reinforcing Ixp (in^4)	Additional Reinforcing Iyp (in^4)	Additional Reinforcing Weight (lb)
84.00		0.3125	45.475	44.794	11543.1	24.25	145.52	65	73	306.4	18.48	5579.3	5579.3	126.0
85.00	Bot - Section 6	0.3125	45.239	44.560	11363.5	24.12	144.77	65	73	152.0	18.48	5526.0	5526.0	63.0
86.00		0.3125	45.004	44.327	11185.8	23.98	144.01	65	73	304.6	18.48	5614.5	5614.5	63.0
88.00		0.3125	44.533	43.860	10836.0	23.72	142.51	65	74	604.4	18.48	5507.8	5507.8	126.0
90.00		0.3125	44.062	43.393	10493.5	23.45	141.00	65	74	598.0	18.48	5402.1	5402.1	126.0
91.00	Top - Section 5	0.3125	44.452	43.780	10776.8	23.67	142.25	65	74	296.6	18.48	5349.7	5349.7	63.0
92.00		0.3125	44.217	43.546	10605.3	23.54	141.49	65	74	148.6	18.48	5297.5	5297.5	63.0
93.83	RT1	0.3125	43.786	43.119	10296.2	23.30	140.12	65	74	269.8	18.48	5202.6	5202.6	115.3
94.00		0.3125	43.746	43.079	10267.8	23.27	139.99	65	74	24.9				
96.00		0.3125	43.275	42.612	9937.5	23.01	138.48	65	74	291.6				
98.00		0.3125	42.805	42.145	9614.3	22.74	136.97	65	75	288.4				
100.00		0.3125	42.334	41.678	9298.2	22.48	135.47	65	75	285.2				
102.00		0.3125	41.863	41.211	8989.2	22.21	133.96	65	75	282.1				
104.00		0.3125	41.392	40.744	8687.0	21.94	132.45	65	76	278.9				
106.00		0.3125	40.921	40.277	8391.8	21.68	130.95	65	76	483.9				
108.00		0.3125	40.450	39.810	8103.2	21.41	129.44	65	76	478.2				
110.00		0.3125	39.980	39.343	7821.4	21.15	127.93	65	77	472.4				
111.17	RB2	0.3125	39.704	39.070	7659.6	20.99	127.05	65	77	273.7	9.24	1943.8	1943.8	36.9
112.00		0.3125	39.509	38.876	7546.2	20.88	126.43	65	77	193.0	9.24	1925.4	1925.4	26.1
114.00		0.3125	39.038	38.409	7277.5	20.62	124.92	65	77	461.0	9.24	1881.3	1881.3	63.0
115.00	Top - Section 6	0.3125	38.802	38.176	7145.6	20.48	124.17	65	77	130.3	9.24	2083.9	2083.9	31.5
115.00	Bot - Section 7	0.2500	38.802	30.590	5744.1	25.60	155.21	65	71					
116.00		0.2500	38.567	30.403	5639.6	25.79	154.27	65	71	103.8	9.24	2060.8	2060.8	31.5
118.00		0.2500	38.096	30.030	5434.2	25.46	152.38	65	71	205.6	9.24	2015.2	2015.2	63.0
120.00		0.2500	37.625	29.656	5233.9	25.13	150.50	65	72	203.1	9.24	1970.0	1970.0	63.0
122.00		0.2500	37.154	29.282	5038.6	24.79	148.62	65	72	200.6	9.24	1925.4	1925.4	63.0
123.83	RT2	0.2500	36.723	28.940	4864.2	24.49	146.89	65	73	181.3	9.24	1885.0	1885.0	57.6
124.00		0.2500	36.683	28.909	4848.2	24.46	146.73	65	73	16.7				
126.00		0.2500	36.212	28.535	4662.6	24.13	144.85	65	73	195.5				
128.00		0.2500	35.742	28.162	4481.9	23.80	142.97	65	73	192.9				
130.00	Bot - Section 8	0.2500	35.271	27.788	4305.9	23.47	141.08	65	74	190.4				
132.00		0.2500	34.800	27.414	4134.5	23.13	139.20	65	74	378.4				
134.00		0.2500	34.329	27.041	3967.8	22.80	137.32	65	75	373.3				
135.00	Top - Section 7	0.2500	34.594	27.251	4061.0	22.99	138.38	65	74	184.7				
136.00		0.2500	34.358	27.064	3978.1	22.82	137.43	65	75	92.4				
138.00		0.2500	33.888	26.691	3815.6	22.49	135.55	65	75	182.9				
140.00		0.2500	33.417	26.317	3657.6	22.16	133.67	65	75	180.4				
142.00		0.2500	32.946	25.943	3504.0	21.83	131.78	65	76	177.8				
143.00		0.2500	32.711	25.757	3428.9	21.66	130.84	65	76	88.0				
144.00		0.2500	32.475	25.570	3354.8	21.49	129.90	65	76	87.3				
146.00		0.2500	32.004	25.196	3209.9	21.16	128.02	65	77	172.7				
148.00		0.2500	31.533	24.823	3069.2	20.83	126.13	65	77	170.2				
150.00		0.2500	31.063	24.449	2932.7	20.50	124.25	65	77	167.7				
152.00		0.2500	30.592	24.075	2800.3	20.17	122.37	65	78	165.1				
153.00		0.2500	30.356	23.889	2735.7	20.00	121.43	65	78	81.6				
154.00		0.2500	30.121	23.702	2672.0	19.83	120.48	65	78	81.0				
156.00		0.2500	29.650	23.328	2547.6	19.50	118.60	65	78	160.0				
158.00		0.2500	29.179	22.955	2427.2	19.17	116.72	65	79	157.5				
160.00		0.2500	28.708	22.581	2310.6	18.84	114.83	65	79	154.9				
162.00		0.2500	28.238	22.207	2197.8	18.51	112.95	65	80	152.4				
163.00		0.2500	28.002	22.021	2142.8	18.34	112.01	65	80	75.2				
164.00		0.2500	27.767	21.834	2088.7	18.17	111.07	65	80	74.6				
166.00		0.2500	27.296	21.460	1983.3	17.84	109.18	65	80	147.3				
168.00		0.2500	26.825	21.087	1881.5	17.51	107.30	65	81	144.8				
170.00		0.2500	26.354	20.713	1783.3	17.18	105.42	65	81	142.2				
172.00		0.2500	25.883	20.339	1688.5	16.85	103.53	65	82	139.7				
173.00		0.2500	25.648	20.153	1642.4	16.68	102.59	65	82	68.9				
174.00		0.2500	25.413	19.966	1597.2	16.51	101.65	65	82	68.3				
176.00		0.2500	24.942	19.592	1509.2	16.18	99.77	65	82	134.6				
178.00		0.2500	24.471	19.219	1424.5	15.85	97.88	65	83	132.1				

Increment Length: **2 (ft)**

Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fy (ksi)	Fb (ksi)	Weight (lb)	Additional Reinforcing Area (in^2)	Ixp (in^4)	Iyp (in^4)	Weight (lb)
180.00	Top - Section 8	0.2500	24.000	18.845	1343.0	15.52	96.00	65	83	129.5				
180.00	Bot - Section 9	0.2810	24.000	20.939	1473.6	13.81	85.41	36	36					
181.00		0.2810	24.000	20.939	1473.6	0.00	85.41	36	36	71.3				
182.00		0.2810	24.000	20.939	1473.6	0.00	85.41	36	36	71.3				
183.00		0.2810	24.000	20.939	1473.6	0.00	85.41	36	36	71.3				
							Total Weight			**32498.7**				**2188.9**

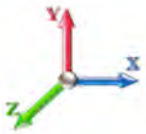
Wind Loading - Shaft

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (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 105 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 30

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	18.769	20.65	479.47	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
2.00		1.00	0.70	18.769	20.65	475.97	0.650	0.000	2.00	10.876	7.07	233.5	0.0	621.0
4.00		1.00	0.70	18.769	20.65	472.47	0.650	0.000	2.00	10.796	7.02	231.8	0.0	616.4
6.00		1.00	0.70	18.769	20.65	468.97	0.650	0.000	2.00	10.717	6.97	230.1	0.0	611.9
8.00		1.00	0.70	18.769	20.65	465.47	0.650	0.000	2.00	10.637	6.91	228.4	0.0	607.3
10.00		1.00	0.70	18.769	20.65	461.97	0.650	0.000	2.00	10.557	6.86	226.7	0.0	602.7
12.00		1.00	0.70	18.769	20.65	458.47	0.650	0.000	2.00	10.478	6.81	225.0	0.0	598.1
14.00		1.00	0.70	18.769	20.65	454.97	0.650	0.000	2.00	10.398	6.76	223.3	0.0	593.5
16.00		1.00	0.70	18.769	20.65	451.47	0.650	0.000	2.00	10.318	6.71	221.5	0.0	589.0
18.00		1.00	0.70	18.769	20.65	447.97	0.650	0.000	2.00	10.239	6.66	219.8	0.0	584.4
20.00		1.00	0.70	18.769	20.65	444.47	0.650	0.000	2.00	10.159	6.60	218.1	0.0	579.8
22.00		1.00	0.70	18.769	20.65	440.97	0.650	0.000	2.00	10.079	6.55	216.4	0.0	575.2
24.00		1.00	0.70	18.769	20.65	437.47	0.650	0.000	2.00	9.999	6.50	214.7	0.0	570.7
26.00		1.00	0.70	18.769	20.65	433.97	0.650	0.000	2.00	9.920	6.45	213.0	0.0	566.1
28.00		1.00	0.70	18.769	20.65	430.47	0.650	0.000	2.00	9.840	6.40	211.3	0.0	561.5
30.00		1.00	0.70	18.785	20.66	427.15	0.650	0.000	2.00	9.760	6.34	209.7	0.0	556.9
32.00		1.00	0.71	19.134	21.05	427.58	0.650	0.000	2.00	9.681	6.29	211.9	0.0	552.4
34.00		1.00	0.73	19.469	21.42	427.73	0.650	0.000	2.00	9.601	6.24	213.8	0.0	547.8
36.00		1.00	0.74	19.789	21.77	427.64	0.650	0.000	2.00	9.521	6.19	215.6	0.0	543.2
38.00		1.00	0.75	20.097	22.11	427.34	0.650	0.000	2.00	9.442	6.14	217.1	0.0	538.6
40.00		1.00	0.76	20.394	22.43	426.83	0.650	0.000	2.00	9.362	6.09	218.4	0.0	534.1
41.00	Bot - Section 2	1.00	0.77	20.538	22.59	426.51	0.650	0.000	1.00	4.651	3.02	109.3	0.0	265.3
42.00		1.00	0.77	20.680	22.75	426.14	0.650	0.000	1.00	4.695	3.05	111.1	0.0	532.0
44.00		1.00	0.78	20.957	23.05	425.29	0.650	0.000	2.00	9.330	6.06	223.7	0.0	1057.1
46.00		1.00	0.79	21.225	23.35	424.27	0.650	0.000	2.00	9.250	6.01	224.6	0.0	1047.9
48.00	Top - Section 1	1.00	0.80	21.485	23.63	423.12	0.650	0.000	2.00	9.170	5.96	225.4	0.0	1038.8
50.00		1.00	0.81	21.737	23.91	427.83	0.650	0.000	2.00	9.091	5.91	226.1	0.0	518.5
51.00	Top - Section 2	1.00	0.82	21.860	24.05	427.15	0.650	0.000	1.00	4.515	2.94	112.9	0.0	257.5
52.00		1.00	0.82	21.982	24.18	426.44	0.650	0.000	1.00	4.495	2.92	113.0	0.0	256.4
54.00		1.00	0.83	22.220	24.44	424.94	0.650	0.000	2.00	8.931	5.81	227.0	0.0	509.3
56.00		1.00	0.84	22.452	24.70	423.33	0.650	0.000	2.00	8.852	5.75	227.4	0.0	504.7
58.00		1.00	0.85	22.678	24.95	421.61	0.650	0.000	2.00	8.772	5.70	227.6	0.0	500.2
60.00		1.00	0.85	22.899	25.19	419.79	0.650	0.000	2.00	8.692	5.65	227.7	0.0	495.6
62.00		1.00	0.86	23.114	25.43	417.87	0.650	0.000	2.00	8.612	5.60	227.7	0.0	491.0
64.00		1.00	0.87	23.325	25.66	415.87	0.650	0.000	2.00	8.533	5.55	227.7	0.0	486.4
66.00		1.00	0.88	23.531	25.88	413.78	0.650	0.000	2.00	8.453	5.49	227.6	0.0	481.9
66.17	RB1	1.00	0.88	23.548	25.90	413.60	0.650	0.000	0.17	0.715	0.46	19.3	0.0	40.7
68.00		1.00	0.89	23.733	26.11	411.62	0.650	0.000	1.83	7.659	4.98	207.9	0.0	436.5
70.00		1.00	0.89	23.930	26.32	409.37	0.650	0.000	2.00	8.294	5.39	227.0	0.0	472.7
71.00	Top - Section 3	1.00	0.90	24.027	26.43	408.22	0.650	0.000	1.00	4.117	2.68	113.2	0.0	234.6
72.00		1.00	0.90	24.123	26.54	407.05	0.650	0.000	1.00	4.097	2.66	113.1	0.0	233.5
74.00		1.00	0.91	24.313	26.74	404.66	0.650	0.000	2.00	8.134	5.29	226.2	0.0	463.5
76.00		1.00	0.91	24.499	26.95	402.21	0.650	0.000	2.00	8.055	5.24	225.7	0.0	459.0
78.00		1.00	0.92	24.681	27.15	399.69	0.650	0.000	2.00	7.975	5.18	225.2	0.0	454.4
80.00		1.00	0.93	24.861	27.35	397.11	0.650	0.000	2.00	7.895	5.13	224.5	0.0	449.8
81.00	Top - Section 4	1.00	0.93	24.949	27.44	395.80	0.650	0.000	1.00	3.918	2.55	111.8	0.0	223.2
82.00		1.00	0.93	25.037	27.54	394.47	0.650	0.000	1.00	3.898	2.53	111.6	0.0	185.3

Wind Loading - Shaft

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (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

84.00	1.00	0.94	25.210	27.73	391.78	0.650	0.000	2.00	7.736	5.03	223.1	0.0	367.7
85.00 Bot - Section 6	1.00	0.94	25.295	27.82	390.41	0.650	0.000	1.00	3.838	2.49	111.1	0.0	182.4
86.00	1.00	0.95	25.380	27.92	389.03	0.650	0.000	1.00	3.871	2.52	112.4	0.0	365.5
88.00	1.00	0.95	25.547	28.10	386.22	0.650	0.000	2.00	7.682	4.99	224.5	0.0	725.3
90.00	1.00	0.96	25.711	28.28	383.37	0.650	0.000	2.00	7.603	4.94	223.6	0.0	717.6
91.00 Top - Section 5	1.00	0.96	25.793	28.37	381.92	0.650	0.000	1.00	3.771	2.45	111.3	0.0	356.0
92.00	1.00	0.96	25.873	28.46	385.92	0.650	0.000	1.00	3.752	2.44	111.0	0.0	178.3
93.83 RT1	1.00	0.97	26.019	28.62	383.24	0.650	0.000	1.83	6.814	4.43	202.8	0.0	323.8
94.00	1.00	0.97	26.033	28.64	382.99	0.650	0.000	0.17	0.630	0.41	18.8	0.0	29.9
96.00	1.00	0.98	26.190	28.81	380.01	0.650	0.000	2.00	7.364	4.79	220.6	0.0	349.9
98.00	1.00	0.98	26.345	28.98	376.98	0.650	0.000	2.00	7.284	4.73	219.5	0.0	346.1
100.00	1.00	0.99	26.497	29.15	373.91	0.650	0.000	2.00	7.204	4.68	218.4	0.0	342.3
102.00	1.00	0.99	26.648	29.31	370.80	0.650	0.000	2.00	7.125	4.63	217.2	0.0	338.5
104.00	1.00	1.00	26.796	29.48	367.65	0.650	0.000	2.00	7.045	4.58	216.0	0.0	334.7
106.00	1.00	1.00	26.942	29.64	364.46	0.650	0.000	2.00	6.567	4.27	202.4	0.0	330.8
108.00	1.00	1.01	27.086	29.79	361.23	0.650	0.000	2.00	6.487	4.22	201.0	0.0	327.0
110.00	1.00	1.02	27.229	29.95	357.96	0.650	0.000	2.00	6.407	4.16	199.6	0.0	323.2
111.17 RB2	1.00	1.02	27.311	30.04	356.03	0.650	0.000	1.17	3.711	2.41	116.0	0.0	187.3
112.00	1.00	1.02	27.369	30.11	354.66	0.650	0.000	0.83	2.616	1.70	81.9	0.0	132.1
114.00	1.00	1.03	27.508	30.26	351.32	0.650	0.000	2.00	6.248	4.06	196.6	0.0	315.6
115.00 Top - Section 6	1.00	1.03	27.577	30.33	349.64	0.650	0.000	1.00	3.293	2.14	103.9	0.0	156.4
116.00	1.00	1.03	27.645	30.41	347.94	0.650	0.000	1.00	3.273	2.13	103.5	0.0	124.5
118.00	1.00	1.04	27.780	30.56	344.53	0.650	0.000	2.00	6.487	4.22	206.2	0.0	246.8
120.00	1.00	1.04	27.914	30.71	341.09	0.650	0.000	2.00	6.407	4.16	204.6	0.0	243.7
122.00	1.00	1.05	28.046	30.85	337.62	0.650	0.000	2.00	6.328	4.11	203.0	0.0	240.7
123.83 RT2	1.00	1.05	28.166	30.98	334.42	0.650	0.000	1.83	5.720	3.72	184.3	0.0	217.5
124.00	1.00	1.05	28.177	30.99	334.12	0.650	0.000	0.17	0.528	0.34	17.0	0.0	20.1
126.00	1.00	1.06	28.306	31.14	330.58	0.650	0.000	2.00	6.168	4.01	199.7	0.0	234.6
128.00	1.00	1.06	28.434	31.28	327.02	0.650	0.000	2.00	6.089	3.96	198.1	0.0	231.5
130.00 Bot - Section 8	1.00	1.07	28.560	31.42	323.43	0.650	0.000	2.00	6.009	3.91	196.3	0.0	228.5
132.00	1.00	1.07	28.685	31.55	319.81	0.650	0.000	2.00	6.014	3.91	197.4	0.0	454.1
134.00	1.00	1.07	28.808	31.69	316.16	0.650	0.000	2.00	5.934	3.86	195.6	0.0	448.0
135.00 Top - Section 7	1.00	1.08	28.869	31.76	314.32	0.650	0.000	1.00	2.937	1.91	97.0	0.0	221.7
136.00	1.00	1.08	28.930	31.82	317.10	0.650	0.000	1.00	2.917	1.90	96.6	0.0	110.9
138.00	1.00	1.08	29.051	31.96	313.41	0.650	0.000	2.00	5.775	3.75	191.9	0.0	219.5
140.00	1.00	1.09	29.171	32.09	309.69	0.650	0.000	2.00	5.695	3.70	190.1	0.0	216.4
142.00	1.00	1.09	29.289	32.22	305.95	0.650	0.000	2.00	5.616	3.65	188.2	0.0	213.4
143.00 Appurtenance(s)	1.00	1.09	29.348	32.28	304.06	0.650	0.000	1.00	2.778	1.81	93.3	0.0	105.6
144.00	1.00	1.10	29.407	32.35	302.18	0.650	0.000	1.00	2.758	1.79	92.8	0.0	104.8
146.00	1.00	1.10	29.523	32.48	298.38	0.650	0.000	2.00	5.456	3.55	184.3	0.0	207.3
148.00	1.00	1.11	29.638	32.60	294.56	0.650	0.000	2.00	5.376	3.49	182.3	0.0	204.2
150.00	1.00	1.11	29.752	32.73	290.72	0.650	0.000	2.00	5.297	3.44	180.3	0.0	201.2
152.00	1.00	1.11	29.865	32.85	286.86	0.650	0.000	2.00	5.217	3.39	178.2	0.0	198.1
153.00 Appurtenance(s)	1.00	1.12	29.921	32.91	284.92	0.650	0.000	1.00	2.579	1.68	88.3	0.0	97.9
154.00	1.00	1.12	29.976	32.97	282.97	0.650	0.000	1.00	2.559	1.66	87.7	0.0	97.2
156.00	1.00	1.12	30.087	33.10	279.06	0.650	0.000	2.00	5.058	3.29	174.1	0.0	192.0
158.00 Appurtenance(s)	1.00	1.13	30.197	33.22	275.13	0.650	0.000	2.00	4.978	3.24	172.0	0.0	189.0
160.00	1.00	1.13	30.305	33.34	271.18	0.650	0.000	2.00	4.898	3.18	169.8	0.0	185.9
162.00	1.00	1.13	30.413	33.45	267.21	0.650	0.000	2.00	4.819	3.13	167.7	0.0	182.9
163.00 Appurtenance(s)	1.00	1.14	30.467	33.51	265.21	0.650	0.000	1.00	2.379	1.55	82.9	0.0	90.3
164.00	1.00	1.14	30.520	33.57	263.21	0.650	0.000	1.00	2.360	1.53	82.4	0.0	89.5
166.00	1.00	1.14	30.626	33.69	259.20	0.650	0.000	2.00	4.659	3.03	163.2	0.0	176.8
168.00	1.00	1.15	30.731	33.80	255.16	0.650	0.000	2.00	4.580	2.98	161.0	0.0	173.7
170.00	1.00	1.15	30.835	33.92	251.11	0.650	0.000	2.00	4.500	2.92	158.7	0.0	170.7
172.00	1.00	1.15	30.938	34.03	247.03	0.650	0.000	2.00	4.420	2.87	156.4	0.0	167.6
173.00 Appurtenance(s)	1.00	1.16	30.989	34.09	244.99	0.650	0.000	1.00	2.180	1.42	77.3	0.0	82.7
174.00	1.00	1.16	31.041	34.14	242.94	0.650	0.000	1.00	2.160	1.40	76.7	0.0	81.9

Wind Loading - Shaft

Structure:	CT01002-S-SBA		**Code:**	EIA/TIA-222-G	5/5/2021
Site Name:	Waterford		**Exposure:**	B	
Height:	183.00 (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

176.00		1.00	1.16	31.142	34.26	238.83	0.650	0.000	2.00	4.261	2.77	151.8	0.0	161.5
178.00		1.00	1.17	31.243	34.37	234.70	0.650	0.000	2.00	4.181	2.72	149.4	0.0	158.5
180.00	Top - Section 8	1.00	1.17	31.343	34.48	230.55	0.650	0.000	2.00	4.102	2.67	147.1	0.0	155.4
181.00	Appurtenance(s)	1.00	1.17	31.392	34.53	227.23	0.600	0.000	1.00	2.000	1.20	66.3	0.0	85.5
182.00		1.00	1.17	31.442	34.59	227.41	0.600	0.000	1.00	2.000	1.20	66.4	0.0	85.5
183.00		1.00	1.17	31.491	34.64	227.58	0.600	0.000	1.00	2.000	1.20	66.5	0.0	85.5
								Totals:	**183.00**			**18,722.6**		**37,779.9**

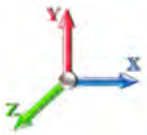
Discrete Appurtenance Forces

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (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: 1.2D + 1.6W 105 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 30

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	181.00	Low Profile	1	31.392	34.532	1.00	1.00	22.00	1800.00	0.000	0.000	1215.51	0.00	0.00
2	173.00	LNX-6514DS-VTM	3	30.989	34.088	0.64	0.80	15.53	119.16	0.000	0.000	847.18	0.00	0.00
3	173.00	Low Profile	1	30.989	34.088	1.00	1.00	22.00	1800.00	0.000	0.000	1199.91	0.00	0.00
4	173.00	APL866513-42T0	2	30.989	34.088	0.74	0.80	6.03	37.68	0.000	0.000	328.69	0.00	0.00
5	173.00	HBXX-6517DS-VTM	6	30.989	34.088	0.62	0.80	31.60	293.04	0.000	0.000	1723.55	0.00	0.00
6	173.00	LPA-80080-4CF-EDIN-0	4	30.989	34.088	1.36	0.80	14.20	57.60	0.000	0.000	774.40	0.00	0.00
7	173.00	RRH2X60-AWS	3	30.989	34.088	0.54	0.80	5.63	216.00	0.000	0.000	306.96	0.00	0.00
8	173.00	RRH2x60-700U	3	30.989	34.088	0.54	0.80	3.99	180.00	0.000	0.000	217.50	0.00	0.00
9	173.00	RRH2x60-1900	3	30.989	34.088	0.54	0.80	2.43	70.20	0.000	0.000	132.43	0.00	0.00
10	173.00	DB-T1-6Z-8AB-OZ	2	30.989	34.088	0.80	0.80	7.68	105.60	0.000	0.000	418.88	0.00	0.00
11	163.00	LLPX310R	3	30.467	33.513	0.55	0.80	7.12	102.96	0.000	0.000	381.83	0.00	0.00
12	163.00	Low Profile	1	30.467	33.513	1.00	1.00	22.00	1800.00	0.000	0.000	1179.67	0.00	0.00
13	163.00	DAP Head	3	30.467	33.513	0.54	0.80	3.02	151.20	0.000	0.000	162.10	0.00	0.00
14	158.00	Low Profile	1	30.197	33.216	1.00	1.00	22.00	1800.00	0.000	0.000	1169.22	0.00	0.00
15	153.00	V-brace kit	1	29.921	32.913	1.00	1.00	2.70	276.00	0.000	0.000	142.18	0.00	0.00
16	153.00	SPTB(Tie back Kit)	1	29.921	32.913	1.00	1.00	3.70	168.00	0.000	0.000	194.84	0.00	0.00
17	153.00	PRK-1245 (kicker kit)	1	29.921	32.913	1.00	1.00	9.50	557.89	0.000	0.000	500.27	0.00	0.00
18	153.00	RFS	3	29.921	32.913	0.56	0.80	34.00	442.08	0.000	0.000	1790.61	0.00	0.00
19	153.00	KRY 112 144/1	3	29.921	32.913	0.56	0.80	0.69	39.60	0.000	0.000	36.27	0.00	0.00
20	153.00	Ericsson Air 21 B2A/B4P	3	29.921	32.913	0.69	0.80	12.57	329.40	0.000	0.000	661.93	0.00	0.00
21	153.00	T-Arms	1	29.921	32.913	1.00	1.00	25.00	1440.00	0.000	0.000	1316.50	0.00	0.00
22	153.00	Ericsson 4449 B71 + B85	3	29.921	32.913	0.54	0.80	3.17	263.52	0.000	0.000	166.81	0.00	0.00
23	153.00	Ericsson Air 21 B4A/B2P	3	29.921	32.913	0.69	0.80	12.57	325.44	0.000	0.000	661.93	0.00	0.00
24	143.00	OPA-65R-LCUU-H8	2	29.348	32.283	0.59	0.75	15.11	228.00	0.000	0.000	780.41	0.00	0.00
25	143.00	DBC0061F1V51-2	3	29.348	32.283	0.50	0.75	0.65	91.44	0.000	0.000	33.48	0.00	0.00
26	143.00	DTMABP7819VG12A	3	29.348	32.283	0.50	0.75	1.72	69.12	0.000	0.000	88.77	0.00	0.00
27	143.00	RRUS 32 B2	3	29.348	32.283	0.50	0.75	4.13	190.80	0.000	0.000	213.36	0.00	0.00
28	143.00	TPA-65R-LCUUUU-H8	2	29.348	32.283	0.62	0.75	16.56	180.00	0.000	0.000	855.30	0.00	0.00
29	143.00	OPA-65R-LCUU-H4	1	29.348	32.283	0.75	0.75	4.46	68.40	0.000	0.000	230.11	0.00	0.00
30	143.00	QS46512-2	1	29.348	32.283	0.75	0.75	4.16	32.76	0.000	0.000	215.01	0.00	0.00
31	143.00	Low Profile	1	29.348	32.283	1.00	1.00	22.00	1800.00	0.000	0.000	1136.36	0.00	0.00
32	143.00	HRK14	1	29.348	32.283	1.00	1.00	10.13	422.83	0.000	0.000	523.24	0.00	0.00
33	143.00	Powerwave 7770.00	3	29.348	32.283	0.55	0.75	9.03	126.00	0.000	0.000	466.62	0.00	0.00
34	143.00	850-1900 Dual Band	3	29.348	32.283	0.49	0.75	0.77	19.80	0.000	0.000	39.89	0.00	0.00
35	143.00	RRUS 11	3	29.348	32.283	0.50	0.75	3.80	182.52	0.000	0.000	196.22	0.00	0.00
36	143.00	DBC-750	3	29.348	32.283	0.38	0.75	0.57	17.28	0.000	0.000	29.64	0.00	0.00
37	143.00	DC6-48-60-18-8F	1	29.348	32.283	0.75	0.75	1.10	38.16	0.000	0.000	56.95	0.00	0.00
							Totals:		**15,842.48**			**20,394.54**		

Total Applied Force Summary

Structure:	CT01002-S-SBA		**Code:**	EIA/TIA-222-G	5/5/2021
Site Name:	Waterford		**Exposure:**	B	
Height:	183.00 (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

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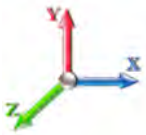
Load Case: 1.2D + 1.6W 105 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 30

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
2.00		233.53	728.44	0.00	0.00
4.00		231.82	723.86	0.00	0.00
6.00		230.10	719.29	0.00	0.00
8.00		228.39	714.71	0.00	0.00
10.00		226.68	710.13	0.00	0.00
12.00		224.97	705.56	0.00	0.00
14.00		223.26	700.98	0.00	0.00
16.00		221.55	696.40	0.00	0.00
18.00		219.84	691.83	0.00	0.00
20.00		218.13	687.25	0.00	0.00
22.00		216.42	682.67	0.00	0.00
24.00		214.71	678.10	0.00	0.00
26.00		212.99	673.52	0.00	0.00
28.00		211.28	668.94	0.00	0.00
30.00		209.75	664.37	0.00	0.00
32.00		211.91	659.79	0.00	0.00
34.00		213.84	655.22	0.00	0.00
36.00		215.55	650.64	0.00	0.00
38.00		217.08	646.06	0.00	0.00
40.00		218.42	641.49	0.00	0.00
41.00		109.28	319.03	0.00	0.00
42.00		111.07	585.69	0.00	0.00
44.00		223.68	1164.53	0.00	0.00
46.00		224.60	1155.37	0.00	0.00
48.00		225.39	1146.22	0.00	0.00
50.00		226.05	625.89	0.00	0.00
51.00		112.92	311.23	0.00	0.00
52.00		113.05	310.09	0.00	0.00
54.00		227.03	616.74	0.00	0.00
56.00		227.35	612.17	0.00	0.00
58.00		227.58	607.59	0.00	0.00
60.00		227.70	603.01	0.00	0.00
62.00		227.74	598.44	0.00	0.00
64.00		227.69	593.86	0.00	0.00
66.00		227.55	589.28	0.00	0.00
66.17		19.26	49.88	0.00	0.00
68.00		207.93	534.83	0.00	0.00
70.00		227.05	580.13	0.00	0.00
71.00		113.16	288.35	0.00	0.00
72.00		113.07	287.20	0.00	0.00
74.00		226.25	570.97	0.00	0.00
76.00		225.74	566.39	0.00	0.00
78.00		225.18	561.82	0.00	0.00
80.00		224.54	557.24	0.00	0.00
81.00		111.82	276.90	0.00	0.00
82.00		111.64	239.01	0.00	0.00

Total Applied Force Summary

Structure:	CT01002-S-SBA		**Code:**	EIA/TIA-222-G	5/5/2021
Site Name:	Waterford		**Exposure:**	B	
Height:	183.00 (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

84.00		223.10	475.15	0.00	0.00
85.00		111.06	236.15	0.00	0.00
86.00		112.39	419.20	0.00	0.00
88.00		224.52	832.69	0.00	0.00
90.00		223.63	825.06	0.00	0.00
91.00		111.28	409.67	0.00	0.00
92.00		111.04	232.01	0.00	0.00
93.83		202.82	422.10	0.00	0.00
94.00		18.75	39.05	0.00	0.00
96.00		220.63	457.34	0.00	0.00
98.00		219.53	453.52	0.00	0.00
100.00		218.38	449.71	0.00	0.00
102.00		217.19	445.90	0.00	0.00
104.00		215.96	442.08	0.00	0.00
106.00		202.40	438.27	0.00	0.00
108.00		201.01	434.46	0.00	0.00
110.00		199.59	430.64	0.00	0.00
111.17		115.96	250.16	0.00	0.00
112.00		81.92	176.67	0.00	0.00
114.00		196.62	423.01	0.00	0.00
115.00		103.90	210.08	0.00	0.00
116.00		103.53	178.24	0.00	0.00
118.00		206.16	354.20	0.00	0.00
120.00		204.61	351.15	0.00	0.00
122.00		203.02	348.10	0.00	0.00
123.83		184.31	315.83	0.00	0.00
124.00		17.02	29.21	0.00	0.00
126.00		199.74	341.99	0.00	0.00
128.00		198.05	338.94	0.00	0.00
130.00		196.33	335.89	0.00	0.00
132.00		197.35	561.49	0.00	0.00
134.00		195.57	555.39	0.00	0.00
135.00		97.01	275.41	0.00	0.00
136.00		96.55	164.61	0.00	0.00
138.00		191.93	326.93	0.00	0.00
140.00		190.06	323.88	0.00	0.00
142.00		188.16	320.83	0.00	0.00
143.00	(30) attachments	4958.62	3626.38	0.00	0.00
144.00		92.78	142.47	0.00	0.00
146.00		184.28	282.66	0.00	0.00
148.00		182.29	279.61	0.00	0.00
150.00		180.28	276.56	0.00	0.00
152.00		178.24	273.51	0.00	0.00
153.00	(19) attachments	5559.62	3977.54	0.00	0.00
154.00		87.75	120.02	0.00	0.00
156.00		174.09	237.74	0.00	0.00
158.00	(1) attachments	1341.19	2034.69	0.00	0.00
160.00		169.82	231.64	0.00	0.00
162.00		167.66	228.59	0.00	0.00
163.00	(7) attachments	1806.53	2167.31	0.00	0.00
164.00		82.38	108.73	0.00	0.00
166.00		163.25	215.17	0.00	0.00
168.00		161.00	212.12	0.00	0.00
170.00		158.74	209.07	0.00	0.00
172.00		156.45	206.01	0.00	0.00
173.00	(27) attachments	6026.80	2981.14	0.00	0.00
174.00		76.71	83.48	0.00	0.00

Total Applied Force Summary

Structure:	CT01002-S-SBA		**Code:**	EIA/TIA-222-G	5/5/2021
Site Name:	Waterford		**Exposure:**	B	
Height:	183.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 17

Tower Engineering Solutions

176.00		151.80	164.68	0.00	0.00
178.00		149.45	161.63	0.00	0.00
180.00		147.07	158.58	0.00	0.00
181.00	(1) attachments	1281.81	1887.08	0.00	0.00
182.00		66.40	87.08	0.00	0.00
183.00		66.51	87.08	0.00	0.00
	Totals:	**39,117.17**	**62,116.69**	**0.00**	**0.00**

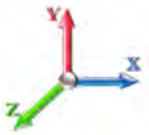
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 18	

Load Case: 1.2D + 1.6W 105 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 30

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
2.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.030	0.000	18.769	0.00	0.66
2.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.030	0.000	18.769	0.00	2.50
2.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.030	0.000	18.769	0.00	7.49
4.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	18.769	0.00	0.66
4.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	18.769	0.00	2.50
4.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.031	0.000	18.769	0.00	7.49
6.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	18.769	0.00	0.66
6.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	18.769	0.00	2.50
6.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.031	0.000	18.769	0.00	7.49
8.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	18.769	0.00	0.66
8.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	18.769	0.00	2.50
8.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.031	0.000	18.769	0.00	7.49
10.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	18.769	0.00	0.66
10.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	18.769	0.00	2.50
10.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.031	0.000	18.769	0.00	7.49
12.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	18.769	0.00	0.66
12.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	18.769	0.00	2.50
12.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.031	0.000	18.769	0.00	7.49
14.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	18.769	0.00	0.66
14.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	18.769	0.00	2.50
14.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.032	0.000	18.769	0.00	7.49
16.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	18.769	0.00	0.66
16.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	18.769	0.00	2.50
16.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.032	0.000	18.769	0.00	7.49
18.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	18.769	0.00	0.66
18.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	18.769	0.00	2.50
18.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.032	0.000	18.769	0.00	7.49
20.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	18.769	0.00	0.66
20.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	18.769	0.00	2.50
20.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.032	0.000	18.769	0.00	7.49
22.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.033	0.000	18.769	0.00	0.66
22.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.033	0.000	18.769	0.00	2.50
22.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.033	0.000	18.769	0.00	7.49
24.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.033	0.000	18.769	0.00	0.66
24.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.033	0.000	18.769	0.00	2.50
24.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.033	0.000	18.769	0.00	7.49
26.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.033	0.000	18.769	0.00	0.66
26.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.033	0.000	18.769	0.00	2.50
26.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.033	0.000	18.769	0.00	7.49
28.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	18.769	0.00	0.66
28.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	18.769	0.00	2.50
28.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.034	0.000	18.769	0.00	7.49
30.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	18.785	0.00	0.66
30.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	18.785	0.00	2.50
30.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.034	0.000	18.785	0.00	7.49
32.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	19.134	0.00	0.66
32.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	19.134	0.00	2.50

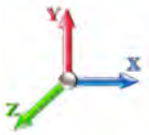
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (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 + 1.6W 105 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 30

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
32.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.034	0.000	19.134	0.00	7.49
34.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	19.469	0.00	0.66
34.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	19.469	0.00	2.50
34.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.034	0.000	19.469	0.00	7.49
36.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.035	0.000	19.789	0.00	0.66
36.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.035	0.000	19.789	0.00	2.50
36.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.035	0.000	19.789	0.00	7.49
38.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.035	0.000	20.097	0.00	0.66
38.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.035	0.000	20.097	0.00	2.50
38.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.035	0.000	20.097	0.00	7.49
40.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.035	0.000	20.394	0.00	0.66
40.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.035	0.000	20.394	0.00	2.50
40.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.035	0.000	20.394	0.00	7.49
41.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.035	0.000	20.538	0.00	0.33
41.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.035	0.000	20.538	0.00	1.25
41.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.035	0.000	20.538	0.00	3.74
42.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.036	0.000	20.680	0.00	0.33
42.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.036	0.000	20.680	0.00	1.25
42.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.036	0.000	20.680	0.00	3.74
44.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	20.957	0.00	0.66
44.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	20.957	0.00	2.50
44.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.036	0.000	20.957	0.00	7.49
46.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	21.225	0.00	0.66
46.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	21.225	0.00	2.50
46.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.036	0.000	21.225	0.00	7.49
48.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	21.485	0.00	0.66
48.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	21.485	0.00	2.50
48.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.036	0.000	21.485	0.00	7.49
50.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	21.737	0.00	0.66
50.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	21.737	0.00	2.50
50.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.036	0.000	21.737	0.00	7.49
51.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.037	0.000	21.860	0.00	0.33
51.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.037	0.000	21.860	0.00	1.25
51.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.037	0.000	21.860	0.00	3.74
52.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.037	0.000	21.982	0.00	0.33
52.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.037	0.000	21.982	0.00	1.25
52.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.037	0.000	21.982	0.00	3.74
54.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.037	0.000	22.220	0.00	0.66
54.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.037	0.000	22.220	0.00	2.50
54.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.037	0.000	22.220	0.00	7.49
56.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.037	0.000	22.452	0.00	0.66
56.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.037	0.000	22.452	0.00	2.50
56.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.037	0.000	22.452	0.00	7.49
58.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.038	0.000	22.678	0.00	0.66
58.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.038	0.000	22.678	0.00	2.50
58.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.038	0.000	22.678	0.00	7.49
60.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.038	0.000	22.899	0.00	0.66

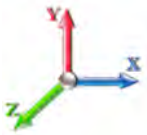
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 20	

Load Case: 1.2D + 1.6W 105 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 30

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
60.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.038	0.000	22.899	0.00	2.50
60.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.038	0.000	22.899	0.00	7.49
62.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.038	0.000	23.114	0.00	0.66
62.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.038	0.000	23.114	0.00	2.50
62.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.038	0.000	23.114	0.00	7.49
64.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.039	0.000	23.325	0.00	0.66
64.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.039	0.000	23.325	0.00	2.50
64.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.039	0.000	23.325	0.00	7.49
66.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.039	0.000	23.531	0.00	0.66
66.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.039	0.000	23.531	0.00	2.50
66.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.039	0.000	23.531	0.00	7.49
66.00	C6X10.5 Reinforcing	Yes	1.00	0.000	0.00	0.00	0.00	0.039	0.000	23.531	0.00	0.00
66.17	Safety Cable	Yes	0.17	0.000	0.00	0.00	0.00	0.039	0.000	23.548	0.00	0.06
66.17	Step bolts (ladder)	Yes	0.17	0.000	0.00	0.00	0.00	0.039	0.000	23.548	0.00	0.21
66.17	1 5/8" Coax	Yes	0.17	0.000	1.98	0.03	0.00	0.039	0.000	23.548	0.00	0.64
66.17	C6X10.5 Reinforcing	Yes	0.17	0.000	0.00	0.00	0.00	0.039	0.000	23.548	0.00	0.00
68.00	Safety Cable	Yes	1.83	0.000	0.00	0.00	0.00	0.039	0.000	23.733	0.00	0.60
68.00	Step bolts (ladder)	Yes	1.83	0.000	0.00	0.00	0.00	0.039	0.000	23.733	0.00	2.28
68.00	1 5/8" Coax	Yes	1.83	0.000	1.98	0.30	0.00	0.039	0.000	23.733	0.00	6.85
68.00	C6X10.5 Reinforcing	Yes	1.83	0.000	0.00	0.00	0.00	0.039	0.000	23.733	0.00	0.00
70.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.040	0.000	23.930	0.00	0.66
70.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.040	0.000	23.930	0.00	2.50
70.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.040	0.000	23.930	0.00	7.49
70.00	C6X10.5 Reinforcing	Yes	2.00	0.000	0.00	0.00	0.00	0.040	0.000	23.930	0.00	0.00
71.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.040	0.000	24.027	0.00	0.33
71.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.040	0.000	24.027	0.00	1.25
71.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.040	0.000	24.027	0.00	3.74
71.00	C6X10.5 Reinforcing	Yes	1.00	0.000	0.00	0.00	0.00	0.040	0.000	24.027	0.00	0.00
72.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.040	0.000	24.123	0.00	0.33
72.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.040	0.000	24.123	0.00	1.25
72.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.040	0.000	24.123	0.00	3.74
72.00	C6X10.5 Reinforcing	Yes	1.00	0.000	0.00	0.00	0.00	0.040	0.000	24.123	0.00	0.00
74.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.041	0.000	24.313	0.00	0.66
74.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.041	0.000	24.313	0.00	2.50
74.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.041	0.000	24.313	0.00	7.49
74.00	C6X10.5 Reinforcing	Yes	2.00	0.000	0.00	0.00	0.00	0.041	0.000	24.313	0.00	0.00
76.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.041	0.000	24.499	0.00	0.66
76.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.041	0.000	24.499	0.00	2.50
76.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.041	0.000	24.499	0.00	7.49
76.00	C6X10.5 Reinforcing	Yes	2.00	0.000	0.00	0.00	0.00	0.041	0.000	24.499	0.00	0.00
78.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.041	0.000	24.681	0.00	0.66
78.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.041	0.000	24.681	0.00	2.50
78.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.041	0.000	24.681	0.00	7.49
78.00	C6X10.5 Reinforcing	Yes	2.00	0.000	0.00	0.00	0.00	0.041	0.000	24.681	0.00	0.00
80.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.042	0.000	24.861	0.00	0.66
80.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.042	0.000	24.861	0.00	2.50
80.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.042	0.000	24.861	0.00	7.49

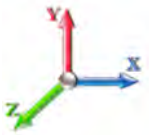
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (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 + 1.6W 105 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 30

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
80.00	C6X10.5 Reinforcing	Yes	2.00	0.000	0.00	0.00	0.00	0.042	0.000	24.861	0.00	0.00
81.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.042	0.000	24.949	0.00	0.33
81.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.042	0.000	24.949	0.00	1.25
81.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.042	0.000	24.949	0.00	3.74
81.00	C6X10.5 Reinforcing	Yes	1.00	0.000	0.00	0.00	0.00	0.042	0.000	24.949	0.00	0.00
82.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.042	0.000	25.037	0.00	0.33
82.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.042	0.000	25.037	0.00	1.25
82.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.042	0.000	25.037	0.00	3.74
82.00	C6X10.5 Reinforcing	Yes	1.00	0.000	0.00	0.00	0.00	0.042	0.000	25.037	0.00	0.00
84.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.043	0.000	25.210	0.00	0.66
84.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.043	0.000	25.210	0.00	2.50
84.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.043	0.000	25.210	0.00	7.49
84.00	C6X10.5 Reinforcing	Yes	2.00	0.000	0.00	0.00	0.00	0.043	0.000	25.210	0.00	0.00
85.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.043	0.000	25.295	0.00	0.33
85.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.043	0.000	25.295	0.00	1.25
85.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.043	0.000	25.295	0.00	3.74
85.00	C6X10.5 Reinforcing	Yes	1.00	0.000	0.00	0.00	0.00	0.043	0.000	25.295	0.00	0.00
86.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.043	0.000	25.380	0.00	0.33
86.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.043	0.000	25.380	0.00	1.25
86.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.043	0.000	25.380	0.00	3.74
86.00	C6X10.5 Reinforcing	Yes	1.00	0.000	0.00	0.00	0.00	0.043	0.000	25.380	0.00	0.00
88.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.044	0.000	25.547	0.00	0.66
88.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.044	0.000	25.547	0.00	2.50
88.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.044	0.000	25.547	0.00	7.49
88.00	C6X10.5 Reinforcing	Yes	2.00	0.000	0.00	0.00	0.00	0.044	0.000	25.547	0.00	0.00
90.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.044	0.000	25.711	0.00	0.66
90.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.044	0.000	25.711	0.00	2.50
90.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.044	0.000	25.711	0.00	7.49
90.00	C6X10.5 Reinforcing	Yes	2.00	0.000	0.00	0.00	0.00	0.044	0.000	25.711	0.00	0.00
91.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.044	0.000	25.793	0.00	0.33
91.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.044	0.000	25.793	0.00	1.25
91.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.044	0.000	25.793	0.00	3.74
91.00	C6X10.5 Reinforcing	Yes	1.00	0.000	0.00	0.00	0.00	0.044	0.000	25.793	0.00	0.00
92.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.044	0.000	25.873	0.00	0.33
92.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.044	0.000	25.873	0.00	1.25
92.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.044	0.000	25.873	0.00	3.74
92.00	C6X10.5 Reinforcing	Yes	1.00	0.000	0.00	0.00	0.00	0.044	0.000	25.873	0.00	0.00
93.83	Safety Cable	Yes	1.83	0.000	0.00	0.00	0.00	0.044	0.000	26.019	0.00	0.60
93.83	Step bolts (ladder)	Yes	1.83	0.000	0.00	0.00	0.00	0.044	0.000	26.019	0.00	2.28
93.83	1 5/8" Coax	Yes	1.83	0.000	1.98	0.30	0.00	0.044	0.000	26.019	0.00	6.85
93.83	C6X10.5 Reinforcing	Yes	1.83	0.000	0.00	0.00	0.00	0.044	0.000	26.019	0.00	0.00
94.00	Safety Cable	Yes	0.17	0.000	0.00	0.00	0.00	0.045	0.000	26.033	0.00	0.06
94.00	Step bolts (ladder)	Yes	0.17	0.000	0.00	0.00	0.00	0.045	0.000	26.033	0.00	0.21
94.00	1 5/8" Coax	Yes	0.17	0.000	1.98	0.03	0.00	0.045	0.000	26.033	0.00	0.64
94.00	C6X10.5 Reinforcing	Yes	0.17	0.000	0.00	0.00	0.00	0.045	0.000	26.033	0.00	0.00
96.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.045	0.000	26.190	0.00	0.66
96.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.045	0.000	26.190	0.00	2.50

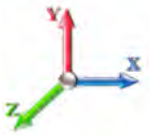
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 22	

Load Case: 1.2D + 1.6W 105 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 30

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
96.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.045	0.000	26.190	0.00	7.49
96.00	C6X10.5 Reinforcing	Yes	1.00	0.000	0.00	0.00	0.00	0.045	0.000	26.190	0.00	0.00
98.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.045	0.000	26.345	0.00	0.66
98.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.045	0.000	26.345	0.00	2.50
98.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.045	0.000	26.345	0.00	7.49
100.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.046	0.000	26.497	0.00	0.66
100.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.046	0.000	26.497	0.00	2.50
100.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.046	0.000	26.497	0.00	7.49
102.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.046	0.000	26.648	0.00	0.66
102.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.046	0.000	26.648	0.00	2.50
102.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.046	0.000	26.648	0.00	7.49
104.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.047	0.000	26.796	0.00	0.66
104.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.047	0.000	26.796	0.00	2.50
104.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.047	0.000	26.796	0.00	7.49
106.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.047	0.000	26.942	0.00	0.66
106.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.047	0.000	26.942	0.00	2.50
106.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.047	0.000	26.942	0.00	7.49
108.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.048	0.000	27.086	0.00	0.66
108.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.048	0.000	27.086	0.00	2.50
108.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.048	0.000	27.086	0.00	7.49
110.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.048	0.000	27.229	0.00	0.66
110.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.048	0.000	27.229	0.00	2.50
110.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.048	0.000	27.229	0.00	7.49
111.17	Safety Cable	Yes	1.17	0.000	0.00	0.00	0.00	0.049	0.000	27.311	0.00	0.38
111.17	Step bolts (ladder)	Yes	1.17	0.000	0.00	0.00	0.00	0.049	0.000	27.311	0.00	1.46
111.17	1 5/8" Coax	Yes	1.17	0.000	1.98	0.19	0.00	0.049	0.000	27.311	0.00	4.38
111.17	C6X10.5 Reinforcing	Yes	1.17	0.000	0.00	0.00	0.00	0.049	0.000	27.311	0.00	0.00
112.00	Safety Cable	Yes	0.83	0.000	0.00	0.00	0.00	0.049	0.000	27.369	0.00	0.27
112.00	Step bolts (ladder)	Yes	0.83	0.000	0.00	0.00	0.00	0.049	0.000	27.369	0.00	1.04
112.00	1 5/8" Coax	Yes	0.83	0.000	1.98	0.14	0.00	0.049	0.000	27.369	0.00	3.11
112.00	C6X10.5 Reinforcing	Yes	0.83	0.000	0.00	0.00	0.00	0.049	0.000	27.369	0.00	0.00
114.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.050	0.000	27.508	0.00	0.66
114.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.050	0.000	27.508	0.00	2.50
114.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.050	0.000	27.508	0.00	7.49
114.00	C6X10.5 Reinforcing	Yes	2.00	0.000	0.00	0.00	0.00	0.050	0.000	27.508	0.00	0.00
115.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.050	0.000	27.577	0.00	0.33
115.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.050	0.000	27.577	0.00	1.25
115.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.050	0.000	27.577	0.00	3.74
115.00	C6X10.5 Reinforcing	Yes	1.00	0.000	0.00	0.00	0.00	0.050	0.000	27.577	0.00	0.00
116.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.050	0.000	27.645	0.00	0.33
116.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.050	0.000	27.645	0.00	1.25
116.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.050	0.000	27.645	0.00	3.74
116.00	C6X10.5 Reinforcing	Yes	1.00	0.000	0.00	0.00	0.00	0.050	0.000	27.645	0.00	0.00
118.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.051	0.000	27.780	0.00	0.66
118.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.051	0.000	27.780	0.00	2.50
118.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.051	0.000	27.780	0.00	7.49
118.00	C6X10.5 Reinforcing	Yes	2.00	0.000	0.00	0.00	0.00	0.051	0.000	27.780	0.00	0.00

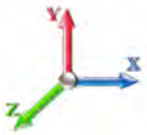
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 23	

Load Case: 1.2D + 1.6W 105 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 30

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
120.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.052	0.000	27.914	0.00	0.66
120.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.052	0.000	27.914	0.00	2.50
120.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.052	0.000	27.914	0.00	7.49
120.00	C6X10.5 Reinforcing	Yes	2.00	0.000	0.00	0.00	0.00	0.052	0.000	27.914	0.00	0.00
122.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.052	0.000	28.046	0.00	0.66
122.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.052	0.000	28.046	0.00	2.50
122.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.052	0.000	28.046	0.00	7.49
122.00	C6X10.5 Reinforcing	Yes	2.00	0.000	0.00	0.00	0.00	0.052	0.000	28.046	0.00	0.00
123.83	Safety Cable	Yes	1.83	0.000	0.00	0.00	0.00	0.053	0.000	28.166	0.00	0.60
123.83	Step bolts (ladder)	Yes	1.83	0.000	0.00	0.00	0.00	0.053	0.000	28.166	0.00	2.28
123.83	1 5/8" Coax	Yes	1.83	0.000	1.98	0.30	0.00	0.053	0.000	28.166	0.00	6.85
123.83	C6X10.5 Reinforcing	Yes	1.83	0.000	0.00	0.00	0.00	0.053	0.000	28.166	0.00	0.00
124.00	Safety Cable	Yes	0.17	0.000	0.00	0.00	0.00	0.053	0.000	28.177	0.00	0.06
124.00	Step bolts (ladder)	Yes	0.17	0.000	0.00	0.00	0.00	0.053	0.000	28.177	0.00	0.21
124.00	1 5/8" Coax	Yes	0.17	0.000	1.98	0.03	0.00	0.053	0.000	28.177	0.00	0.64
124.00	C6X10.5 Reinforcing	Yes	0.17	0.000	0.00	0.00	0.00	0.053	0.000	28.177	0.00	0.00
126.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.053	0.000	28.306	0.00	0.66
126.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.053	0.000	28.306	0.00	2.50
126.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.053	0.000	28.306	0.00	7.49
126.00	C6X10.5 Reinforcing	Yes	1.00	0.000	0.00	0.00	0.00	0.053	0.000	28.306	0.00	0.00
128.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.054	0.000	28.434	0.00	0.66
128.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.054	0.000	28.434	0.00	2.50
128.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.054	0.000	28.434	0.00	7.49
130.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.055	0.000	28.560	0.00	0.66
130.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.055	0.000	28.560	0.00	2.50
130.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.055	0.000	28.560	0.00	7.49
132.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.056	0.000	28.685	0.00	0.66
132.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.056	0.000	28.685	0.00	2.50
132.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.056	0.000	28.685	0.00	7.49
134.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.056	0.000	28.808	0.00	0.66
134.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.056	0.000	28.808	0.00	2.50
134.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.056	0.000	28.808	0.00	7.49
135.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.057	0.000	28.869	0.00	0.33
135.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.057	0.000	28.869	0.00	1.25
135.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.057	0.000	28.869	0.00	3.74
136.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.057	0.000	28.930	0.00	0.33
136.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.057	0.000	28.930	0.00	1.25
136.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.057	0.000	28.930	0.00	3.74
138.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.057	0.000	29.051	0.00	0.66
138.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.057	0.000	29.051	0.00	2.50
138.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.057	0.000	29.051	0.00	7.49
140.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.058	0.000	29.171	0.00	0.66
140.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.058	0.000	29.171	0.00	2.50
140.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.058	0.000	29.171	0.00	7.49
142.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.059	0.000	29.289	0.00	0.66
142.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.059	0.000	29.289	0.00	2.50
142.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.059	0.000	29.289	0.00	7.49

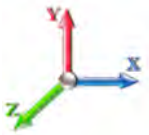
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (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: 1.2D + 1.6W 105 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 30

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
143.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.059	0.000	29.348	0.00	0.33
143.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.059	0.000	29.348	0.00	1.25
143.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.059	0.000	29.348	0.00	3.74
144.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.060	0.000	29.407	0.00	0.33
144.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.060	0.000	29.407	0.00	1.25
144.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.060	0.000	29.407	0.00	3.74
146.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.060	0.000	29.523	0.00	0.66
146.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.060	0.000	29.523	0.00	2.50
146.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.060	0.000	29.523	0.00	7.49
148.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.061	0.000	29.638	0.00	0.66
148.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.061	0.000	29.638	0.00	2.50
148.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.061	0.000	29.638	0.00	7.49
150.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.062	0.000	29.752	0.00	0.66
150.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.062	0.000	29.752	0.00	2.50
150.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.062	0.000	29.752	0.00	7.49
152.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.063	0.000	29.865	0.00	0.66
152.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.063	0.000	29.865	0.00	2.50
152.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.063	0.000	29.865	0.00	7.49
153.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.064	0.000	29.921	0.00	0.33
153.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.064	0.000	29.921	0.00	1.25
153.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.064	0.000	29.921	0.00	3.74
154.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.064	0.000	29.976	0.00	0.33
154.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.064	0.000	29.976	0.00	1.25
154.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.064	0.000	29.976	0.00	3.74
156.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.065	0.000	30.087	0.00	0.66
156.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.065	0.000	30.087	0.00	2.50
156.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.065	0.000	30.087	0.00	7.49
158.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.066	0.000	30.197	0.00	0.66
158.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.066	0.000	30.197	0.00	2.50
158.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.066	0.000	30.197	0.00	7.49
160.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.067	0.000	30.305	0.00	0.66
160.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.067	0.000	30.305	0.00	2.50
160.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.067	0.000	30.305	0.00	7.49
162.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.068	0.000	30.413	0.00	0.66
162.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.068	0.000	30.413	0.00	2.50
162.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.068	0.000	30.413	0.00	7.49
163.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.069	0.000	30.467	0.00	0.33
163.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.069	0.000	30.467	0.00	1.25
163.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.069	0.000	30.467	0.00	3.74
164.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.070	0.000	30.520	0.00	0.33
164.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.070	0.000	30.520	0.00	1.25
164.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.070	0.000	30.520	0.00	3.74
166.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.071	0.000	30.626	0.00	0.66
166.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.071	0.000	30.626	0.00	2.50
166.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.071	0.000	30.626	0.00	7.49
168.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.072	0.000	30.731	0.00	0.66
168.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.072	0.000	30.731	0.00	2.50

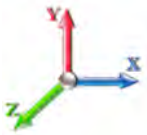
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 25	

Load Case: 1.2D + 1.6W 105 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 30

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
168.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.072	0.000	30.731	0.00	7.49
170.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.073	0.000	30.835	0.00	0.66
170.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.073	0.000	30.835	0.00	2.50
170.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.073	0.000	30.835	0.00	7.49
172.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.075	0.000	30.938	0.00	0.66
172.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.075	0.000	30.938	0.00	2.50
172.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.075	0.000	30.938	0.00	7.49
173.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.076	0.000	30.989	0.00	0.33
173.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.076	0.000	30.989	0.00	1.25
173.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.076	0.000	30.989	0.00	3.74
174.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	31.041	0.00	0.33
174.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	31.041	0.00	1.25
176.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	31.142	0.00	0.66
176.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	31.142	0.00	2.50
178.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	31.243	0.00	0.66
178.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	31.243	0.00	2.50
180.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	31.343	0.00	0.66
180.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	31.343	0.00	2.50
181.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	31.392	0.00	0.33
181.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	31.392	0.00	1.25
182.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	31.442	0.00	0.33
182.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	31.442	0.00	1.25
183.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	31.491	0.00	0.33
183.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	31.491	0.00	1.25
									Totals:		**0.0**	**936.0**

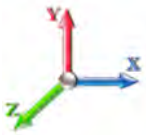
Calculated Forces

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (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: 1.2D + 1.6W 105 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 30

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-62.09	-39.16	0.00	-5123.1	0.00	5123.11	5190.16	2595.08	13702.9	6861.66	0.00	0.000	0.000	0.759
2.00	-61.31	-39.00	0.00	-5044.8	0.00	5044.80	5174.50	2587.25	13560.7	6790.43	0.02	-0.073	0.000	0.755
4.00	-60.54	-38.85	0.00	-4966.8	0.00	4966.80	5158.51	2579.25	13418.2	6719.08	0.06	-0.146	0.000	0.751
6.00	-59.77	-38.69	0.00	-4889.1	0.00	4889.11	5142.18	2571.09	13275.4	6647.61	0.14	-0.220	0.000	0.747
8.00	-59.01	-38.54	0.00	-4811.7	0.00	4811.73	5125.52	2562.76	13132.5	6576.03	0.25	-0.295	0.000	0.743
10.00	-58.25	-38.38	0.00	-4734.6	0.00	4734.66	5108.53	2554.27	12989.4	6504.36	0.39	-0.370	0.000	0.740
12.00	-57.49	-38.23	0.00	-4657.8	0.00	4657.89	5091.21	2545.61	12846.0	6432.60	0.56	-0.445	0.000	0.736
14.00	-56.74	-38.07	0.00	-4581.4	0.00	4581.44	5073.56	2536.78	12702.6	6360.75	0.76	-0.521	0.000	0.732
16.00	-56.00	-37.92	0.00	-4505.2	0.00	4505.29	5055.57	2527.79	12559.0	6288.85	1.00	-0.597	0.000	0.728
18.00	-55.26	-37.77	0.00	-4429.4	0.00	4429.45	5037.25	2518.63	12415.3	6216.88	1.27	-0.674	0.000	0.724
20.00	-54.52	-37.62	0.00	-4353.9	0.00	4353.92	5018.60	2509.30	12271.4	6144.86	1.57	-0.752	0.000	0.720
22.00	-53.79	-37.46	0.00	-4278.6	0.00	4278.69	4999.62	2499.81	12127.5	6072.81	1.90	-0.829	0.000	0.716
24.00	-53.07	-37.31	0.00	-4203.7	0.00	4203.77	4980.31	2490.15	11983.6	6000.72	2.26	-0.908	0.000	0.711
26.00	-52.35	-37.16	0.00	-4129.1	0.00	4129.15	4960.66	2480.33	11839.6	5928.62	2.66	-0.987	0.000	0.707
28.00	-51.63	-37.01	0.00	-4054.8	0.00	4054.83	4940.68	2470.34	11695.6	5856.50	3.09	-1.066	0.000	0.703
30.00	-50.92	-36.86	0.00	-3980.8	0.00	3980.82	4920.37	2460.19	11551.6	5784.39	3.56	-1.146	0.000	0.699
32.00	-50.21	-36.70	0.00	-3907.1	0.00	3907.11	4899.73	2449.87	11407.6	5712.28	4.05	-1.226	0.000	0.694
34.00	-49.51	-36.54	0.00	-3833.7	0.00	3833.71	4878.76	2439.38	11263.6	5640.19	4.58	-1.307	0.000	0.690
36.00	-48.81	-36.38	0.00	-3760.6	0.00	3760.62	4857.45	2428.72	11119.7	5568.14	5.15	-1.388	0.000	0.686
38.00	-48.12	-36.22	0.00	-3687.8	0.00	3687.86	4835.81	2417.91	10975.9	5496.12	5.75	-1.470	0.000	0.681
40.00	-47.44	-36.03	0.00	-3615.4	0.00	3615.43	4813.84	2406.92	10832.2	5424.15	6.38	-1.552	0.000	0.677
41.00	-47.10	-35.95	0.00	-3579.4	0.00	3579.40	4802.73	2401.36	10760.3	5388.18	6.71	-1.594	0.000	0.674
42.00	-46.48	-35.87	0.00	-3543.4	0.00	3543.45	4791.54	2395.77	10688.5	5352.24	7.05	-1.635	0.000	0.672
44.00	-45.27	-35.68	0.00	-3471.7	0.00	3471.70	4768.90	2384.45	10545.1	5280.39	7.76	-1.719	0.000	0.667
46.00	-44.07	-35.49	0.00	-3400.3	0.00	3400.34	4745.94	2372.97	10401.7	5208.63	8.49	-1.802	0.000	0.662
48.00	-42.88	-35.29	0.00	-3329.3	0.00	3329.37	4759.60	2379.80	10486.7	5251.18	9.27	-1.886	0.000	0.643
50.00	-42.23	-35.09	0.00	-3258.8	0.00	3258.80	4736.50	2368.25	10343.5	5179.45	10.08	-1.971	0.000	0.638
51.00	-41.89	-34.99	0.00	-3223.7	0.00	3223.72	4724.82	2362.41	10271.9	5143.62	10.49	-2.012	0.000	0.636
51.00	-41.89	-34.99	0.00	-3223.7	0.00	3223.72	4064.30	2032.15	8835.99	4424.56	10.49	-2.012	0.000	0.739
52.00	-41.55	-34.91	0.00	-3188.7	0.00	3188.73	4053.20	2026.60	8772.35	4392.70	10.92	-2.053	0.000	0.736
54.00	-40.89	-34.72	0.00	-3118.9	0.00	3118.90	4030.83	2015.41	8645.34	4329.09	11.80	-2.135	0.000	0.731
56.00	-40.24	-34.53	0.00	-3049.4	0.00	3049.46	4008.20	2004.10	8518.66	4265.66	12.71	-2.217	0.000	0.725
58.00	-39.59	-34.34	0.00	-2980.4	0.00	2980.40	3985.33	1992.66	8392.33	4202.40	13.66	-2.300	0.000	0.719
60.00	-38.95	-34.14	0.00	-2911.7	0.00	2911.74	3962.20	1981.10	8266.38	4139.33	14.64	-2.383	0.000	0.714
62.00	-38.31	-33.94	0.00	-2843.4	0.00	2843.46	3938.82	1969.41	8140.81	4076.46	15.65	-2.466	0.000	0.708
64.00	-37.68	-33.74	0.00	-2775.5	0.00	2775.57	3915.19	1957.60	8015.64	4013.78	16.70	-2.550	0.000	0.701
66.00	-37.07	-33.52	0.00	-2708.0	0.00	2708.09	3891.31	1945.66	7890.88	3951.30	17.79	-2.633	0.000	0.695
66.17	-37.01	-33.52	0.00	-2702.3	0.00	2702.39	3889.27	1944.64	7880.29	3946.00	17.88	-2.641	0.000	0.509
68.00	-36.45	-33.32	0.00	-2641.0	0.00	2641.05	3867.19	1933.59	7766.55	3889.05	18.91	-2.697	0.000	0.504
70.00	-35.85	-33.10	0.00	-2574.4	0.00	2574.41	3842.81	1921.40	7642.66	3827.01	20.05	-2.759	0.000	0.497
71.00	-35.55	-32.99	0.00	-2541.3	0.00	2541.31	3830.52	1915.26	7580.89	3796.08	20.63	-2.790	0.000	0.494
71.00	-35.55	-32.99	0.00	-2541.3	0.00	2541.31	3467.89	1733.95	6863.13	3436.66	20.63	-2.790	0.000	0.546
72.00	-35.24	-32.89	0.00	-2508.3	0.00	2508.32	3456.29	1728.14	6806.46	3408.29	21.22	-2.821	0.000	0.543
74.00	-34.65	-32.68	0.00	-2442.5	0.00	2442.54	3432.92	1716.46	6693.50	3351.73	22.41	-2.883	0.000	0.536
76.00	-34.06	-32.46	0.00	-2377.1	0.00	2377.19	3409.33	1704.67	6581.05	3295.42	23.64	-2.945	0.000	0.528
78.00	-33.48	-32.24	0.00	-2312.2	0.00	2312.27	3385.54	1692.77	6469.11	3239.36	24.88	-3.007	0.000	0.521
80.00	-32.91	-32.01	0.00	-2247.7	0.00	2247.79	3361.54	1680.77	6357.71	3183.58	26.15	-3.068	0.000	0.514
81.00	-32.62	-31.90	0.00	-2215.7	0.00	2215.78	3349.46	1674.73	6302.21	3155.79	26.80	-3.099	0.000	0.510

Calculated Forces

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (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

81.00	-32.62	-31.90	0.00	-2215.7	0.00	2215.78	2964.88	1482.44	5593.85	2801.08	26.80	-3.099	0.000	0.481
82.00	-32.36	-31.81	0.00	-2183.8	0.00	2183.88	2956.03	1478.01	5548.33	2778.29	27.45	-3.130	0.000	0.540
84.00	-31.87	-31.59	0.00	-2120.2	0.00	2120.27	2938.12	1469.06	5457.44	2732.78	28.78	-3.200	0.000	0.531
85.00	-31.62	-31.48	0.00	-2088.6	0.00	2088.68	2929.07	1464.54	5412.08	2710.06	29.45	-3.235	0.000	0.527
86.00	-31.18	-31.38	0.00	-2057.2	0.00	2057.20	2919.96	1459.98	5366.77	2687.37	30.13	-3.270	0.000	0.518
88.00	-30.32	-31.14	0.00	-1994.4	0.00	1994.45	2901.53	1450.76	5276.32	2642.08	31.52	-3.338	0.000	0.508
90.00	-29.48	-30.89	0.00	-1932.1	0.00	1932.17	2882.84	1441.42	5186.12	2596.92	32.93	-3.407	0.000	0.499
91.00	-29.06	-30.78	0.00	-1901.2	0.00	1901.28	2898.35	1449.17	5260.87	2634.34	33.65	-3.441	0.000	0.504
92.00	-28.81	-30.67	0.00	-1870.5	0.00	1870.50	2889.01	1444.51	5215.76	2611.76	34.37	-3.475	0.000	0.485
93.83	-28.39	-30.46	0.00	-1814.3	0.00	1814.37	2871.76	1435.88	5133.38	2570.50	35.72	-3.536	0.000	0.476
93.83	-28.39	-30.46	0.00	-1814.3	0.00	1814.37	2871.76	1435.88	5133.38	2570.50	35.72	-3.536	0.000	0.476
94.00	-28.32	-30.47	0.00	-1809.1	0.00	1809.19	2870.15	1435.07	5125.73	2566.68	35.84	-3.541	0.000	0.715
96.00	-27.83	-30.27	0.00	-1748.2	0.00	1748.26	2851.02	1425.51	5035.98	2521.73	37.35	-3.640	0.000	0.703
98.00	-27.34	-30.07	0.00	-1687.7	0.00	1687.72	2831.62	1415.81	4946.52	2476.93	38.89	-3.738	0.000	0.691
100.00	-26.85	-29.86	0.00	-1627.5	0.00	1627.59	2811.97	1405.98	4857.35	2432.29	40.48	-3.836	0.000	0.679
102.00	-26.37	-29.66	0.00	-1567.8	0.00	1567.87	2792.05	1396.03	4768.51	2387.80	42.11	-3.934	0.000	0.667
104.00	-25.89	-29.46	0.00	-1508.5	0.00	1508.55	2771.87	1385.94	4680.00	2343.48	43.77	-4.031	0.000	0.654
106.00	-25.42	-29.27	0.00	-1449.6	0.00	1449.63	2751.43	1375.71	4591.84	2299.33	45.48	-4.128	0.000	0.640
108.00	-24.95	-29.08	0.00	-1391.0	0.00	1391.09	2730.72	1365.36	4504.04	2255.37	47.23	-4.225	0.000	0.626
110.00	-24.50	-28.88	0.00	-1332.9	0.00	1332.93	2709.75	1354.88	4416.62	2211.59	49.02	-4.320	0.000	0.612
111.17	-24.24	-28.76	0.00	-1299.1	0.00	1299.14	2697.36	1348.68	4365.66	2186.08	50.09	-4.376	0.000	0.482
112.00	-24.04	-28.69	0.00	-1275.2	0.00	1275.27	2688.52	1344.26	4329.60	2168.02	50.85	-4.408	0.000	0.476
114.00	-23.61	-28.49	0.00	-1217.8	0.00	1217.89	2667.03	1333.51	4242.98	2124.64	52.71	-4.483	0.000	0.463
115.00	-23.39	-28.38	0.00	-1189.4	0.00	1189.40	2656.18	1328.09	4199.83	2103.04	53.65	-4.520	0.000	0.445
115.00	-23.39	-28.38	0.00	-1189.4	0.00	1189.40	1951.15	975.57	3095.05	1549.82	53.65	-4.520	0.000	0.486
116.00	-23.19	-28.29	0.00	-1161.0	0.00	1161.02	1944.57	972.29	3065.67	1535.11	54.60	-4.556	0.000	0.564
118.00	-22.81	-28.09	0.00	-1104.4	0.00	1104.45	1931.24	965.62	3006.98	1505.73	56.53	-4.640	0.000	0.545
120.00	-22.44	-27.89	0.00	-1048.2	0.00	1048.28	1917.63	958.82	2948.42	1476.40	58.49	-4.722	0.000	0.526
122.00	-22.07	-27.68	0.00	-992.50	0.00	992.50	1903.77	951.88	2889.98	1447.14	60.48	-4.803	0.000	0.506
123.83	-21.75	-27.49	0.00	-941.84	0.00	941.84	1890.85	945.43	2836.64	1420.43	62.34	-4.875	0.000	0.487
123.83	-21.75	-27.49	0.00	-941.84	0.00	941.84	1890.85	945.43	2836.64	1420.43	62.34	-4.875	0.000	0.487
124.00	-21.70	-27.49	0.00	-937.17	0.00	937.17	1889.64	944.82	2831.69	1417.95	62.51	-4.882	0.000	0.673
126.00	-21.33	-27.30	0.00	-882.19	0.00	882.19	1875.25	937.63	2773.56	1388.84	64.58	-4.989	0.000	0.647
128.00	-20.96	-27.11	0.00	-827.58	0.00	827.58	1860.60	930.30	2715.62	1359.83	66.69	-5.093	0.000	0.621
130.00	-20.59	-26.92	0.00	-773.36	0.00	773.36	1845.69	922.84	2657.86	1330.91	68.84	-5.195	0.000	0.593
132.00	-20.01	-26.71	0.00	-719.51	0.00	719.51	1830.51	915.25	2600.31	1302.09	71.04	-5.293	0.000	0.564
134.00	-19.44	-26.49	0.00	-666.09	0.00	666.09	1815.07	907.53	2542.99	1273.39	73.27	-5.389	0.000	0.535
135.00	-19.15	-26.38	0.00	-639.61	0.00	639.61	1823.79	911.89	2575.21	1289.52	74.40	-5.436	0.000	0.507
136.00	-18.97	-26.29	0.00	-613.23	0.00	613.23	1816.04	908.02	2546.57	1275.18	75.55	-5.481	0.000	0.492
138.00	-18.62	-26.09	0.00	-560.65	0.00	560.65	1800.35	900.18	2489.47	1246.58	77.86	-5.565	0.000	0.461
140.00	-18.29	-25.90	0.00	-508.46	0.00	508.46	1784.41	892.20	2432.62	1218.12	80.20	-5.645	0.000	0.429
142.00	-17.96	-25.70	0.00	-456.66	0.00	456.66	1768.19	884.10	2376.04	1189.79	82.58	-5.720	0.000	0.395
143.00	-14.84	-20.41	0.00	-430.97	0.00	430.97	1759.99	879.99	2347.86	1175.68	83.78	-5.756	0.000	0.376
144.00	-14.68	-20.32	0.00	-410.56	0.00	410.56	1751.72	875.86	2319.75	1161.60	84.99	-5.791	0.000	0.362
146.00	-14.40	-20.12	0.00	-369.93	0.00	369.93	1734.98	867.49	2263.76	1133.56	87.43	-5.857	0.000	0.335
148.00	-14.12	-19.92	0.00	-329.69	0.00	329.69	1717.98	858.99	2208.08	1105.68	89.89	-5.919	0.000	0.307
150.00	-13.84	-19.73	0.00	-289.84	0.00	289.84	1700.72	850.36	2152.74	1077.97	92.38	-5.977	0.000	0.278
152.00	-13.58	-19.53	0.00	-250.39	0.00	250.39	1683.20	841.60	2097.74	1050.43	94.89	-6.029	0.000	0.247
153.00	-10.20	-13.59	0.00	-230.85	0.00	230.85	1674.33	837.17	2070.37	1036.72	96.15	-6.054	0.000	0.229
154.00	-10.08	-13.50	0.00	-217.26	0.00	217.26	1665.41	832.70	2043.10	1023.07	97.42	-6.077	0.000	0.219
156.00	-9.86	-13.30	0.00	-190.27	0.00	190.27	1647.36	823.68	1988.83	995.90	99.97	-6.120	0.000	0.197
158.00	-7.97	-11.76	0.00	-163.67	0.00	163.67	1629.04	814.52	1934.96	968.92	102.54	-6.160	0.000	0.174
160.00	-7.75	-11.57	0.00	-140.15	0.00	140.15	1610.47	805.23	1881.50	942.15	105.13	-6.195	0.000	0.154
162.00	-7.54	-11.38	0.00	-117.01	0.00	117.01	1591.63	795.82	1828.46	915.59	107.72	-6.227	0.000	0.133
163.00	-5.58	-9.35	0.00	-105.63	0.00	105.63	1582.11	791.06	1802.10	902.39	109.03	-6.241	0.000	0.121
164.00	-5.47	-9.26	0.00	-96.28	0.00	96.28	1572.53	786.27	1775.86	889.25	110.33	-6.255	0.000	0.112
166.00	-5.28	-9.08	0.00	-77.76	0.00	77.76	1553.17	776.58	1723.71	863.13	112.95	-6.279	0.000	0.094

Calculated Forces

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (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

168.00	-5.08	-8.89	0.00	-59.61	0.00	59.61	1533.54	766.77	1672.03	837.26	115.58	-6.298	0.000	0.075
170.00	-4.89	-8.71	0.00	-41.83	0.00	41.83	1513.65	756.83	1620.83	811.62	118.22	-6.314	0.000	0.055
172.00	-4.70	-8.54	0.00	-24.40	0.00	24.40	1493.50	746.75	1570.13	786.23	120.86	-6.324	0.000	0.034
173.00	-2.40	-2.22	0.00	-15.86	0.00	15.86	1483.33	741.66	1544.98	773.64	122.19	-6.328	0.000	0.022
174.00	-2.33	-2.13	0.00	-13.65	0.00	13.65	1473.09	736.54	1519.95	761.10	123.51	-6.330	0.000	0.020
176.00	-2.18	-1.96	0.00	-9.38	0.00	9.38	1452.41	726.20	1470.30	736.24	126.16	-6.334	0.000	0.014
178.00	-2.03	-1.80	0.00	-5.45	0.00	5.45	1427.85	713.93	1417.60	709.85	128.80	-6.337	0.000	0.009
180.00	-1.89	-1.63	0.00	-1.86	0.00	1.86	1400.09	700.05	1362.74	682.38	131.45	-6.338	0.000	0.004
180.00	-1.89	-1.63	0.00	-1.86	0.00	1.86	678.42	339.21	662.23	396.30	131.45	-6.338	0.000	0.008
181.00	-0.16	-0.15	0.00	-0.23	0.00	0.23	678.42	339.21	662.23	396.30	132.78	-6.339	0.000	0.001
182.00	-0.08	-0.08	0.00	-0.08	0.00	0.08	678.42	339.21	662.23	396.30	134.10	-6.339	0.000	0.000
183.00	0.00	-0.07	0.00	0.00	0.00	0.00	678.42	339.21	662.23	396.30	135.43	-6.339	0.000	0.000

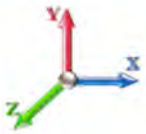
Wind Loading - Shaft

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (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	

Load Case: 0.9D + 1.6W 105 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 30

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	18.769	20.65	479.47	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
2.00		1.00	0.70	18.769	20.65	475.97	0.650	0.000	2.00	10.876	7.07	233.5	0.0	465.8
4.00		1.00	0.70	18.769	20.65	472.47	0.650	0.000	2.00	10.796	7.02	231.8	0.0	462.3
6.00		1.00	0.70	18.769	20.65	468.97	0.650	0.000	2.00	10.717	6.97	230.1	0.0	458.9
8.00		1.00	0.70	18.769	20.65	465.47	0.650	0.000	2.00	10.637	6.91	228.4	0.0	455.5
10.00		1.00	0.70	18.769	20.65	461.97	0.650	0.000	2.00	10.557	6.86	226.7	0.0	452.0
12.00		1.00	0.70	18.769	20.65	458.47	0.650	0.000	2.00	10.478	6.81	225.0	0.0	448.6
14.00		1.00	0.70	18.769	20.65	454.97	0.650	0.000	2.00	10.398	6.76	223.3	0.0	445.2
16.00		1.00	0.70	18.769	20.65	451.47	0.650	0.000	2.00	10.318	6.71	221.5	0.0	441.7
18.00		1.00	0.70	18.769	20.65	447.97	0.650	0.000	2.00	10.239	6.66	219.8	0.0	438.3
20.00		1.00	0.70	18.769	20.65	444.47	0.650	0.000	2.00	10.159	6.60	218.1	0.0	434.9
22.00		1.00	0.70	18.769	20.65	440.97	0.650	0.000	2.00	10.079	6.55	216.4	0.0	431.4
24.00		1.00	0.70	18.769	20.65	437.47	0.650	0.000	2.00	9.999	6.50	214.7	0.0	428.0
26.00		1.00	0.70	18.769	20.65	433.97	0.650	0.000	2.00	9.920	6.45	213.0	0.0	424.6
28.00		1.00	0.70	18.769	20.65	430.47	0.650	0.000	2.00	9.840	6.40	211.3	0.0	421.1
30.00		1.00	0.70	18.785	20.66	427.15	0.650	0.000	2.00	9.760	6.34	209.7	0.0	417.7
32.00		1.00	0.71	19.134	21.05	427.58	0.650	0.000	2.00	9.681	6.29	211.9	0.0	414.3
34.00		1.00	0.73	19.469	21.42	427.73	0.650	0.000	2.00	9.601	6.24	213.8	0.0	410.8
36.00		1.00	0.74	19.789	21.77	427.64	0.650	0.000	2.00	9.521	6.19	215.6	0.0	407.4
38.00		1.00	0.75	20.097	22.11	427.34	0.650	0.000	2.00	9.442	6.14	217.1	0.0	404.0
40.00		1.00	0.76	20.394	22.43	426.83	0.650	0.000	2.00	9.362	6.09	218.4	0.0	400.5
41.00	Bot - Section 2	1.00	0.77	20.538	22.59	426.51	0.650	0.000	1.00	4.651	3.02	109.3	0.0	199.0
42.00		1.00	0.77	20.680	22.75	426.14	0.650	0.000	1.00	4.695	3.05	111.1	0.0	399.0
44.00		1.00	0.78	20.957	23.05	425.29	0.650	0.000	2.00	9.330	6.06	223.7	0.0	792.8
46.00		1.00	0.79	21.225	23.35	424.27	0.650	0.000	2.00	9.250	6.01	224.6	0.0	786.0
48.00	Top - Section 1	1.00	0.80	21.485	23.63	423.12	0.650	0.000	2.00	9.170	5.96	225.4	0.0	779.1
50.00		1.00	0.81	21.737	23.91	427.83	0.650	0.000	2.00	9.091	5.91	226.1	0.0	388.8
51.00	Top - Section 2	1.00	0.82	21.860	24.05	427.15	0.650	0.000	1.00	4.515	2.94	112.9	0.0	193.1
52.00		1.00	0.82	21.982	24.18	426.44	0.650	0.000	1.00	4.495	2.92	113.0	0.0	192.3
54.00		1.00	0.83	22.220	24.44	424.94	0.650	0.000	2.00	8.931	5.81	227.0	0.0	382.0
56.00		1.00	0.84	22.452	24.70	423.33	0.650	0.000	2.00	8.852	5.75	227.4	0.0	378.6
58.00		1.00	0.85	22.678	24.95	421.61	0.650	0.000	2.00	8.772	5.70	227.6	0.0	375.1
60.00		1.00	0.85	22.899	25.19	419.79	0.650	0.000	2.00	8.692	5.65	227.7	0.0	371.7
62.00		1.00	0.86	23.114	25.43	417.87	0.650	0.000	2.00	8.612	5.60	227.7	0.0	368.3
64.00		1.00	0.87	23.325	25.66	415.87	0.650	0.000	2.00	8.533	5.55	227.7	0.0	364.8
66.00		1.00	0.88	23.531	25.88	413.78	0.650	0.000	2.00	8.453	5.49	227.6	0.0	361.4
66.17	RB1	1.00	0.88	23.548	25.90	413.60	0.650	0.000	0.17	0.715	0.46	19.3	0.0	30.6
68.00		1.00	0.89	23.733	26.11	411.62	0.650	0.000	1.83	7.659	4.98	207.9	0.0	327.4
70.00		1.00	0.89	23.930	26.32	409.37	0.650	0.000	2.00	8.294	5.39	227.0	0.0	354.5
71.00	Top - Section 3	1.00	0.90	24.027	26.43	408.22	0.650	0.000	1.00	4.117	2.68	113.2	0.0	176.0
72.00		1.00	0.90	24.123	26.54	407.05	0.650	0.000	1.00	4.097	2.66	113.1	0.0	175.1
74.00		1.00	0.91	24.313	26.74	404.66	0.650	0.000	2.00	8.134	5.29	226.2	0.0	347.7
76.00		1.00	0.91	24.499	26.95	402.21	0.650	0.000	2.00	8.055	5.24	225.7	0.0	344.2
78.00		1.00	0.92	24.681	27.15	399.69	0.650	0.000	2.00	7.975	5.18	225.2	0.0	340.8
80.00		1.00	0.93	24.861	27.35	397.11	0.650	0.000	2.00	7.895	5.13	224.5	0.0	337.4
81.00	Top - Section 4	1.00	0.93	24.949	27.44	395.80	0.650	0.000	1.00	3.918	2.55	111.8	0.0	167.4
82.00		1.00	0.93	25.037	27.54	394.47	0.650	0.000	1.00	3.898	2.53	111.6	0.0	139.0

Wind Loading - Shaft

Structure: CT01002-S-SBA | **Code:** EIA/TIA-222-G | 5/5/2021
Site Name: Waterford | **Exposure:** B
Height: 183.00 (ft) | **Crest Height:** 0.00
Base Elev: 0.000 (ft) | **Site Class:** D - Stiff Soil
Gh: 1.1 | **Topography:** 1 | **Struct Class:** II | Page: 30

84.00	1.00	0.94	25.210	27.73	391.78	0.650	0.000	2.00	7.736	5.03	223.1	0.0	275.8
85.00 Bot - Section 6	1.00	0.94	25.295	27.82	390.41	0.650	0.000	1.00	3.838	2.49	111.1	0.0	136.8
86.00	1.00	0.95	25.380	27.92	389.03	0.650	0.000	1.00	3.871	2.52	112.4	0.0	274.1
88.00	1.00	0.95	25.547	28.10	386.22	0.650	0.000	2.00	7.682	4.99	224.5	0.0	543.9
90.00	1.00	0.96	25.711	28.28	383.37	0.650	0.000	2.00	7.603	4.94	223.6	0.0	538.2
91.00 Top - Section 5	1.00	0.96	25.793	28.37	381.92	0.650	0.000	1.00	3.771	2.45	111.3	0.0	267.0
92.00	1.00	0.96	25.873	28.46	385.92	0.650	0.000	1.00	3.752	2.44	111.0	0.0	133.7
93.83 RT1	1.00	0.97	26.019	28.62	383.24	0.650	0.000	1.83	6.814	4.43	202.8	0.0	242.9
94.00	1.00	0.97	26.033	28.64	382.99	0.650	0.000	0.17	0.630	0.41	18.8	0.0	22.4
96.00	1.00	0.98	26.190	28.81	380.01	0.650	0.000	2.00	7.364	4.79	220.6	0.0	262.4
98.00	1.00	0.98	26.345	28.98	376.98	0.650	0.000	2.00	7.284	4.73	219.5	0.0	259.6
100.00	1.00	0.99	26.497	29.15	373.91	0.650	0.000	2.00	7.204	4.68	218.4	0.0	256.7
102.00	1.00	0.99	26.648	29.31	370.80	0.650	0.000	2.00	7.125	4.63	217.2	0.0	253.8
104.00	1.00	1.00	26.796	29.48	367.65	0.650	0.000	2.00	7.045	4.58	216.0	0.0	251.0
106.00	1.00	1.00	26.942	29.64	364.46	0.650	0.000	2.00	6.567	4.27	202.4	0.0	248.1
108.00	1.00	1.01	27.086	29.79	361.23	0.650	0.000	2.00	6.487	4.22	201.0	0.0	245.3
110.00	1.00	1.02	27.229	29.95	357.96	0.650	0.000	2.00	6.407	4.16	199.6	0.0	242.4
111.17 RB2	1.00	1.02	27.311	30.04	356.03	0.650	0.000	1.17	3.711	2.41	116.0	0.0	140.5
112.00	1.00	1.02	27.369	30.11	354.66	0.650	0.000	0.83	2.616	1.70	81.9	0.0	99.1
114.00	1.00	1.03	27.508	30.26	351.32	0.650	0.000	2.00	6.248	4.06	196.6	0.0	236.7
115.00 Top - Section 6	1.00	1.03	27.577	30.33	349.64	0.650	0.000	1.00	3.293	2.14	103.9	0.0	117.3
116.00	1.00	1.03	27.645	30.41	347.94	0.650	0.000	1.00	3.273	2.13	103.5	0.0	93.4
118.00	1.00	1.04	27.780	30.56	344.53	0.650	0.000	2.00	6.487	4.22	206.2	0.0	185.1
120.00	1.00	1.04	27.914	30.71	341.09	0.650	0.000	2.00	6.407	4.16	204.6	0.0	182.8
122.00	1.00	1.05	28.046	30.85	337.62	0.650	0.000	2.00	6.328	4.11	203.0	0.0	180.5
123.83 RT2	1.00	1.05	28.166	30.98	334.42	0.650	0.000	1.83	5.720	3.72	184.3	0.0	163.2
124.00	1.00	1.05	28.177	30.99	334.12	0.650	0.000	0.17	0.528	0.34	17.0	0.0	15.1
126.00	1.00	1.06	28.306	31.14	330.58	0.650	0.000	2.00	6.168	4.01	199.7	0.0	175.9
128.00	1.00	1.06	28.434	31.28	327.02	0.650	0.000	2.00	6.089	3.96	198.1	0.0	173.6
130.00 Bot - Section 8	1.00	1.07	28.560	31.42	323.43	0.650	0.000	2.00	6.009	3.91	196.3	0.0	171.3
132.00	1.00	1.07	28.685	31.55	319.81	0.650	0.000	2.00	6.014	3.91	197.4	0.0	340.5
134.00	1.00	1.07	28.808	31.69	316.16	0.650	0.000	2.00	5.934	3.86	195.6	0.0	336.0
135.00 Top - Section 7	1.00	1.08	28.869	31.76	314.32	0.650	0.000	1.00	2.937	1.91	97.0	0.0	166.3
136.00	1.00	1.08	28.930	31.82	317.10	0.650	0.000	1.00	2.917	1.90	96.6	0.0	83.2
138.00	1.00	1.08	29.051	31.96	313.41	0.650	0.000	2.00	5.775	3.75	191.9	0.0	164.6
140.00	1.00	1.09	29.171	32.09	309.69	0.650	0.000	2.00	5.695	3.70	190.1	0.0	162.3
142.00	1.00	1.09	29.289	32.22	305.95	0.650	0.000	2.00	5.616	3.65	188.2	0.0	160.0
143.00 Appurtenance(s)	1.00	1.09	29.348	32.28	304.06	0.650	0.000	1.00	2.778	1.81	93.3	0.0	79.2
144.00	1.00	1.10	29.407	32.35	302.18	0.650	0.000	1.00	2.758	1.79	92.8	0.0	78.6
146.00	1.00	1.10	29.523	32.48	298.38	0.650	0.000	2.00	5.456	3.55	184.3	0.0	155.5
148.00	1.00	1.11	29.638	32.60	294.56	0.650	0.000	2.00	5.376	3.49	182.3	0.0	153.2
150.00	1.00	1.11	29.752	32.73	290.72	0.650	0.000	2.00	5.297	3.44	180.3	0.0	150.9
152.00	1.00	1.11	29.865	32.85	286.86	0.650	0.000	2.00	5.217	3.39	178.2	0.0	148.6
153.00 Appurtenance(s)	1.00	1.12	29.921	32.91	284.92	0.650	0.000	1.00	2.579	1.68	88.3	0.0	73.4
154.00	1.00	1.12	29.976	32.97	282.97	0.650	0.000	1.00	2.559	1.66	87.7	0.0	72.9
156.00	1.00	1.12	30.087	33.10	279.06	0.650	0.000	2.00	5.058	3.29	174.1	0.0	144.0
158.00 Appurtenance(s)	1.00	1.13	30.197	33.22	275.13	0.650	0.000	2.00	4.978	3.24	172.0	0.0	141.7
160.00	1.00	1.13	30.305	33.34	271.18	0.650	0.000	2.00	4.898	3.18	169.8	0.0	139.5
162.00	1.00	1.13	30.413	33.45	267.21	0.650	0.000	2.00	4.819	3.13	167.7	0.0	137.2
163.00 Appurtenance(s)	1.00	1.14	30.467	33.51	265.21	0.650	0.000	1.00	2.379	1.55	82.9	0.0	67.7
164.00	1.00	1.14	30.520	33.57	263.21	0.650	0.000	1.00	2.360	1.53	82.4	0.0	67.2
166.00	1.00	1.14	30.626	33.69	259.20	0.650	0.000	2.00	4.659	3.03	163.2	0.0	132.6
168.00	1.00	1.15	30.731	33.80	255.16	0.650	0.000	2.00	4.580	2.98	161.0	0.0	130.3
170.00	1.00	1.15	30.835	33.92	251.11	0.650	0.000	2.00	4.500	2.92	158.7	0.0	128.0
172.00	1.00	1.15	30.938	34.03	247.03	0.650	0.000	2.00	4.420	2.87	156.4	0.0	125.7
173.00 Appurtenance(s)	1.00	1.16	30.989	34.09	244.99	0.650	0.000	1.00	2.180	1.42	77.3	0.0	62.0
174.00	1.00	1.16	31.041	34.14	242.94	0.650	0.000	1.00	2.160	1.40	76.7	0.0	61.4

Wind Loading - Shaft

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 31	

176.00		1.00	1.16	31.142	34.26	238.83	0.650	0.000	2.00	4.261	2.77	151.8	0.0	121.1
178.00		1.00	1.17	31.243	34.37	234.70	0.650	0.000	2.00	4.181	2.72	149.4	0.0	118.9
180.00	Top - Section 8	1.00	1.17	31.343	34.48	230.55	0.650	0.000	2.00	4.102	2.67	147.1	0.0	116.6
181.00	Appurtenance(s)	1.00	1.17	31.392	34.53	227.23	0.600	0.000	1.00	2.000	1.20	66.3	0.0	64.1
182.00		1.00	1.17	31.442	34.59	227.41	0.600	0.000	1.00	2.000	1.20	66.4	0.0	64.1
183.00		1.00	1.17	31.491	34.64	227.58	0.600	0.000	1.00	2.000	1.20	66.5	0.0	64.1
								Totals:	**183.00**			**18,722.6**		**28,334.9**

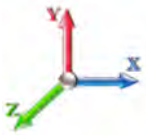
Discrete Appurtenance Forces

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 32	

Load Case: 0.9D + 1.6W 105 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 30

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	181.00	Low Profile	1	31.392	34.532	1.00	1.00	22.00	1350.00	0.000	0.000	1215.51	0.00	0.00
2	173.00	LNX-6514DS-VTM	3	30.989	34.088	0.64	0.80	15.53	89.37	0.000	0.000	847.18	0.00	0.00
3	173.00	Low Profile	1	30.989	34.088	1.00	1.00	22.00	1350.00	0.000	0.000	1199.91	0.00	0.00
4	173.00	APL866513-42T0	2	30.989	34.088	0.74	0.80	6.03	28.26	0.000	0.000	328.69	0.00	0.00
5	173.00	HBXX-6517DS-VTM	6	30.989	34.088	0.62	0.80	31.60	219.78	0.000	0.000	1723.55	0.00	0.00
6	173.00	LPA-80080-4CF-EDIN-0	4	30.989	34.088	1.36	0.80	14.20	43.20	0.000	0.000	774.40	0.00	0.00
7	173.00	RRH2X60-AWS	3	30.989	34.088	0.54	0.80	5.63	162.00	0.000	0.000	306.96	0.00	0.00
8	173.00	RRH2x60-700U	3	30.989	34.088	0.54	0.80	3.99	135.00	0.000	0.000	217.50	0.00	0.00
9	173.00	RRH2x60-1900	3	30.989	34.088	0.54	0.80	2.43	52.65	0.000	0.000	132.43	0.00	0.00
10	173.00	DB-T1-6Z-8AB-OZ	2	30.989	34.088	0.80	0.80	7.68	79.20	0.000	0.000	418.88	0.00	0.00
11	163.00	LLPX310R	3	30.467	33.513	0.55	0.80	7.12	77.22	0.000	0.000	381.83	0.00	0.00
12	163.00	Low Profile	1	30.467	33.513	1.00	1.00	22.00	1350.00	0.000	0.000	1179.67	0.00	0.00
13	163.00	DAP Head	3	30.467	33.513	0.54	0.80	3.02	113.40	0.000	0.000	162.10	0.00	0.00
14	158.00	Low Profile	1	30.197	33.216	1.00	1.00	22.00	1350.00	0.000	0.000	1169.22	0.00	0.00
15	153.00	V-brace kit	1	29.921	32.913	1.00	1.00	2.70	207.00	0.000	0.000	142.18	0.00	0.00
16	153.00	SPTB(Tie back Kit)	1	29.921	32.913	1.00	1.00	3.70	126.00	0.000	0.000	194.84	0.00	0.00
17	153.00	PRK-1245 (kicker kit)	1	29.921	32.913	1.00	1.00	9.50	418.42	0.000	0.000	500.27	0.00	0.00
18	153.00	RFS	3	29.921	32.913	0.56	0.80	34.00	331.56	0.000	0.000	1790.61	0.00	0.00
19	153.00	KRY 112 144/1	3	29.921	32.913	0.56	0.80	0.69	29.70	0.000	0.000	36.27	0.00	0.00
20	153.00	Ericsson Air 21 B2A/B4P	3	29.921	32.913	0.69	0.80	12.57	247.05	0.000	0.000	661.93	0.00	0.00
21	153.00	T-Arms	1	29.921	32.913	1.00	1.00	25.00	1080.00	0.000	0.000	1316.50	0.00	0.00
22	153.00	Ericsson 4449 B71 + B85	3	29.921	32.913	0.54	0.80	3.17	197.64	0.000	0.000	166.81	0.00	0.00
23	153.00	Ericsson Air 21 B4A/B2P	3	29.921	32.913	0.69	0.80	12.57	244.08	0.000	0.000	661.93	0.00	0.00
24	143.00	OPA-65R-LCUU-H8	2	29.348	32.283	0.59	0.75	15.11	171.00	0.000	0.000	780.41	0.00	0.00
25	143.00	DBC0061F1V51-2	3	29.348	32.283	0.50	0.75	0.65	68.58	0.000	0.000	33.48	0.00	0.00
26	143.00	DTMABP7819VG12A	3	29.348	32.283	0.50	0.75	1.72	51.84	0.000	0.000	88.77	0.00	0.00
27	143.00	RRUS 32 B2	3	29.348	32.283	0.50	0.75	4.13	143.10	0.000	0.000	213.36	0.00	0.00
28	143.00	TPA-65R-LCUUUU-H8	2	29.348	32.283	0.62	0.75	16.56	135.00	0.000	0.000	855.30	0.00	0.00
29	143.00	OPA-65R-LCUU-H4	1	29.348	32.283	0.75	0.75	4.46	51.30	0.000	0.000	230.11	0.00	0.00
30	143.00	QS46512-2	1	29.348	32.283	0.75	0.75	4.16	24.57	0.000	0.000	215.01	0.00	0.00
31	143.00	Low Profile	1	29.348	32.283	1.00	1.00	22.00	1350.00	0.000	0.000	1136.36	0.00	0.00
32	143.00	HRK14	1	29.348	32.283	1.00	1.00	10.13	317.12	0.000	0.000	523.24	0.00	0.00
33	143.00	Powerwave 7770.00	3	29.348	32.283	0.55	0.75	9.03	94.50	0.000	0.000	466.62	0.00	0.00
34	143.00	850-1900 Dual Band	3	29.348	32.283	0.49	0.75	0.77	14.85	0.000	0.000	39.89	0.00	0.00
35	143.00	RRUS 11	3	29.348	32.283	0.50	0.75	3.80	136.89	0.000	0.000	196.22	0.00	0.00
36	143.00	DBC-750	3	29.348	32.283	0.38	0.75	0.57	12.96	0.000	0.000	29.64	0.00	0.00
37	143.00	DC6-48-60-18-8F	1	29.348	32.283	0.75	0.75	1.10	28.62	0.000	0.000	56.95	0.00	0.00
							Totals:		**11,881.86**			**20,394.54**		

Total Applied Force Summary

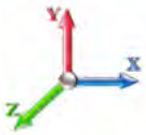
Structure:	CT01002-S-SBA		**Code:**	EIA/TIA-222-G	5/5/2021
Site Name:	Waterford		**Exposure:**	B	
Height:	183.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 33

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 105 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 30

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
2.00		233.53	546.33	0.00	0.00
4.00		231.82	542.90	0.00	0.00
6.00		230.10	539.46	0.00	0.00
8.00		228.39	536.03	0.00	0.00
10.00		226.68	532.60	0.00	0.00
12.00		224.97	529.17	0.00	0.00
14.00		223.26	525.74	0.00	0.00
16.00		221.55	522.30	0.00	0.00
18.00		219.84	518.87	0.00	0.00
20.00		218.13	515.44	0.00	0.00
22.00		216.42	512.01	0.00	0.00
24.00		214.71	508.57	0.00	0.00
26.00		212.99	505.14	0.00	0.00
28.00		211.28	501.71	0.00	0.00
30.00		209.75	498.28	0.00	0.00
32.00		211.91	494.84	0.00	0.00
34.00		213.84	491.41	0.00	0.00
36.00		215.55	487.98	0.00	0.00
38.00		217.08	484.55	0.00	0.00
40.00		218.42	481.11	0.00	0.00
41.00		109.28	239.27	0.00	0.00
42.00		111.07	439.27	0.00	0.00
44.00		223.68	873.39	0.00	0.00
46.00		224.60	866.53	0.00	0.00
48.00		225.39	859.66	0.00	0.00
50.00		226.05	469.42	0.00	0.00
51.00		112.92	233.42	0.00	0.00
52.00		113.05	232.57	0.00	0.00
54.00		227.03	462.56	0.00	0.00
56.00		227.35	459.12	0.00	0.00
58.00		227.58	455.69	0.00	0.00
60.00		227.70	452.26	0.00	0.00
62.00		227.74	448.83	0.00	0.00
64.00		227.69	445.40	0.00	0.00
66.00		227.55	441.96	0.00	0.00
66.17		19.26	37.41	0.00	0.00
68.00		207.93	401.12	0.00	0.00
70.00		227.05	435.10	0.00	0.00
71.00		113.16	216.26	0.00	0.00
72.00		113.07	215.40	0.00	0.00
74.00		226.25	428.23	0.00	0.00
76.00		225.74	424.80	0.00	0.00
78.00		225.18	421.36	0.00	0.00
80.00		224.54	417.93	0.00	0.00
81.00		111.82	207.68	0.00	0.00
82.00		111.64	179.26	0.00	0.00

Total Applied Force Summary

Structure:	CT01002-S-SBA		**Code:**	EIA/TIA-222-G	5/5/2021
Site Name:	Waterford		**Exposure:**	B	
Height:	183.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 34

84.00		223.10	356.36	0.00	0.00
85.00		111.06	177.11	0.00	0.00
86.00		112.39	314.40	0.00	0.00
88.00		224.52	624.52	0.00	0.00
90.00		223.63	618.80	0.00	0.00
91.00		111.28	307.25	0.00	0.00
92.00		111.04	174.00	0.00	0.00
93.83		202.82	316.58	0.00	0.00
94.00		18.75	29.29	0.00	0.00
96.00		220.63	343.00	0.00	0.00
98.00		219.53	340.14	0.00	0.00
100.00		218.38	337.28	0.00	0.00
102.00		217.19	334.42	0.00	0.00
104.00		215.96	331.56	0.00	0.00
106.00		202.40	328.70	0.00	0.00
108.00		201.01	325.84	0.00	0.00
110.00		199.59	322.98	0.00	0.00
111.17		115.96	187.62	0.00	0.00
112.00		81.92	132.50	0.00	0.00
114.00		196.62	317.26	0.00	0.00
115.00		103.90	157.56	0.00	0.00
116.00		103.53	133.68	0.00	0.00
118.00		206.16	265.65	0.00	0.00
120.00		204.61	263.36	0.00	0.00
122.00		203.02	261.07	0.00	0.00
123.83		184.31	236.88	0.00	0.00
124.00		17.02	21.91	0.00	0.00
126.00		199.74	256.50	0.00	0.00
128.00		198.05	254.21	0.00	0.00
130.00		196.33	251.92	0.00	0.00
132.00		197.35	421.12	0.00	0.00
134.00		195.57	416.54	0.00	0.00
135.00		97.01	206.55	0.00	0.00
136.00		96.55	123.46	0.00	0.00
138.00		191.93	245.20	0.00	0.00
140.00		190.06	242.91	0.00	0.00
142.00		188.16	240.62	0.00	0.00
143.00	(30) attachments	4958.62	2719.79	0.00	0.00
144.00		92.78	106.86	0.00	0.00
146.00		184.28	212.00	0.00	0.00
148.00		182.29	209.71	0.00	0.00
150.00		180.28	207.42	0.00	0.00
152.00		178.24	205.13	0.00	0.00
153.00	(19) attachments	5559.62	2983.16	0.00	0.00
154.00		87.75	90.01	0.00	0.00
156.00		174.09	178.31	0.00	0.00
158.00	(1) attachments	1341.19	1526.02	0.00	0.00
160.00		169.82	173.73	0.00	0.00
162.00		167.66	171.44	0.00	0.00
163.00	(7) attachments	1806.53	1625.48	0.00	0.00
164.00		82.38	81.55	0.00	0.00
166.00		163.25	161.38	0.00	0.00
168.00		161.00	159.09	0.00	0.00
170.00		158.74	156.80	0.00	0.00
172.00		156.45	154.51	0.00	0.00
173.00	(27) attachments	6026.80	2235.86	0.00	0.00
174.00		76.71	62.61	0.00	0.00

Total Applied Force Summary

Structure:	CT01002-S-SBA		**Code:**	EIA/TIA-222-G	5/5/2021
Site Name:	Waterford		**Exposure:**	B	
Height:	183.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 35

176.00		151.80	123.51	0.00	0.00
178.00		149.45	121.22	0.00	0.00
180.00		147.07	118.93	0.00	0.00
181.00	(1) attachments	1281.81	1415.31	0.00	0.00
182.00		66.40	65.31	0.00	0.00
183.00		66.51	65.31	0.00	0.00
	Totals:	**39,117.17**	**46,587.52**	**0.00**	**0.00**

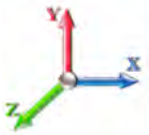
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 36

Load Case: 0.9D + 1.6W 105 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 30

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
2.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.030	0.000	18.769	0.00	0.49
2.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.030	0.000	18.769	0.00	1.87
2.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.030	0.000	18.769	0.00	5.62
4.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	18.769	0.00	0.49
4.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	18.769	0.00	1.87
4.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.031	0.000	18.769	0.00	5.62
6.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	18.769	0.00	0.49
6.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	18.769	0.00	1.87
6.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.031	0.000	18.769	0.00	5.62
8.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	18.769	0.00	0.49
8.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	18.769	0.00	1.87
8.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.031	0.000	18.769	0.00	5.62
10.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	18.769	0.00	0.49
10.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	18.769	0.00	1.87
10.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.031	0.000	18.769	0.00	5.62
12.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	18.769	0.00	0.49
12.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	18.769	0.00	1.87
12.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.031	0.000	18.769	0.00	5.62
14.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	18.769	0.00	0.49
14.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	18.769	0.00	1.87
14.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.032	0.000	18.769	0.00	5.62
16.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	18.769	0.00	0.49
16.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	18.769	0.00	1.87
16.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.032	0.000	18.769	0.00	5.62
18.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	18.769	0.00	0.49
18.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	18.769	0.00	1.87
18.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.032	0.000	18.769	0.00	5.62
20.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	18.769	0.00	0.49
20.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	18.769	0.00	1.87
20.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.032	0.000	18.769	0.00	5.62
22.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.033	0.000	18.769	0.00	0.49
22.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.033	0.000	18.769	0.00	1.87
22.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.033	0.000	18.769	0.00	5.62
24.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.033	0.000	18.769	0.00	0.49
24.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.033	0.000	18.769	0.00	1.87
24.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.033	0.000	18.769	0.00	5.62
26.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.033	0.000	18.769	0.00	0.49
26.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.033	0.000	18.769	0.00	1.87
26.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.033	0.000	18.769	0.00	5.62
28.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	18.769	0.00	0.49
28.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	18.769	0.00	1.87
28.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.034	0.000	18.769	0.00	5.62
30.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	18.785	0.00	0.49
30.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	18.785	0.00	1.87
30.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.034	0.000	18.785	0.00	5.62
32.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	19.134	0.00	0.49
32.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	19.134	0.00	1.87

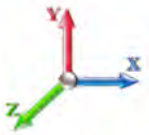
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 37	

Load Case: 0.9D + 1.6W 105 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 30

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
32.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.034	0.000	19.134	0.00	5.62
34.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	19.469	0.00	0.49
34.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	19.469	0.00	1.87
34.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.034	0.000	19.469	0.00	5.62
36.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.035	0.000	19.789	0.00	0.49
36.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.035	0.000	19.789	0.00	1.87
36.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.035	0.000	19.789	0.00	5.62
38.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.035	0.000	20.097	0.00	0.49
38.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.035	0.000	20.097	0.00	1.87
38.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.035	0.000	20.097	0.00	5.62
40.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.035	0.000	20.394	0.00	0.49
40.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.035	0.000	20.394	0.00	1.87
40.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.035	0.000	20.394	0.00	5.62
41.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.035	0.000	20.538	0.00	0.25
41.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.035	0.000	20.538	0.00	0.94
41.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.035	0.000	20.538	0.00	2.81
42.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.036	0.000	20.680	0.00	0.25
42.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.036	0.000	20.680	0.00	0.94
42.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.036	0.000	20.680	0.00	2.81
44.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	20.957	0.00	0.49
44.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	20.957	0.00	1.87
44.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.036	0.000	20.957	0.00	5.62
46.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	21.225	0.00	0.49
46.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	21.225	0.00	1.87
46.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.036	0.000	21.225	0.00	5.62
48.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	21.485	0.00	0.49
48.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	21.485	0.00	1.87
48.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.036	0.000	21.485	0.00	5.62
50.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	21.737	0.00	0.49
50.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	21.737	0.00	1.87
50.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.036	0.000	21.737	0.00	5.62
51.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.037	0.000	21.860	0.00	0.25
51.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.037	0.000	21.860	0.00	0.94
51.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.037	0.000	21.860	0.00	2.81
52.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.037	0.000	21.982	0.00	0.25
52.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.037	0.000	21.982	0.00	0.94
52.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.037	0.000	21.982	0.00	2.81
54.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.037	0.000	22.220	0.00	0.49
54.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.037	0.000	22.220	0.00	1.87
54.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.037	0.000	22.220	0.00	5.62
56.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.037	0.000	22.452	0.00	0.49
56.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.037	0.000	22.452	0.00	1.87
56.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.037	0.000	22.452	0.00	5.62
58.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.038	0.000	22.678	0.00	0.49
58.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.038	0.000	22.678	0.00	1.87
58.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.038	0.000	22.678	0.00	5.62
60.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.038	0.000	22.899	0.00	0.49

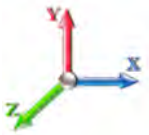
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 38	

Load Case: 0.9D + 1.6W 105 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 30

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
60.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.038	0.000	22.899	0.00	1.87
60.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.038	0.000	22.899	0.00	5.62
62.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.038	0.000	23.114	0.00	0.49
62.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.038	0.000	23.114	0.00	1.87
62.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.038	0.000	23.114	0.00	5.62
64.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.039	0.000	23.325	0.00	0.49
64.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.039	0.000	23.325	0.00	1.87
64.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.039	0.000	23.325	0.00	5.62
66.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.039	0.000	23.531	0.00	0.49
66.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.039	0.000	23.531	0.00	1.87
66.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.039	0.000	23.531	0.00	5.62
66.00	C6X10.5 Reinforcing	Yes	1.00	0.000	0.00	0.00	0.00	0.039	0.000	23.531	0.00	0.00
66.17	Safety Cable	Yes	0.17	0.000	0.00	0.00	0.00	0.039	0.000	23.548	0.00	0.04
66.17	Step bolts (ladder)	Yes	0.17	0.000	0.00	0.00	0.00	0.039	0.000	23.548	0.00	0.16
66.17	1 5/8" Coax	Yes	0.17	0.000	1.98	0.03	0.00	0.039	0.000	23.548	0.00	0.48
66.17	C6X10.5 Reinforcing	Yes	0.17	0.000	0.00	0.00	0.00	0.039	0.000	23.548	0.00	0.00
68.00	Safety Cable	Yes	1.83	0.000	0.00	0.00	0.00	0.039	0.000	23.733	0.00	0.45
68.00	Step bolts (ladder)	Yes	1.83	0.000	0.00	0.00	0.00	0.039	0.000	23.733	0.00	1.71
68.00	1 5/8" Coax	Yes	1.83	0.000	1.98	0.30	0.00	0.039	0.000	23.733	0.00	5.14
68.00	C6X10.5 Reinforcing	Yes	1.83	0.000	0.00	0.00	0.00	0.039	0.000	23.733	0.00	0.00
70.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.040	0.000	23.930	0.00	0.49
70.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.040	0.000	23.930	0.00	1.87
70.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.040	0.000	23.930	0.00	5.62
70.00	C6X10.5 Reinforcing	Yes	2.00	0.000	0.00	0.00	0.00	0.040	0.000	23.930	0.00	0.00
71.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.040	0.000	24.027	0.00	0.25
71.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.040	0.000	24.027	0.00	0.94
71.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.040	0.000	24.027	0.00	2.81
71.00	C6X10.5 Reinforcing	Yes	1.00	0.000	0.00	0.00	0.00	0.040	0.000	24.027	0.00	0.00
72.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.040	0.000	24.123	0.00	0.25
72.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.040	0.000	24.123	0.00	0.94
72.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.040	0.000	24.123	0.00	2.81
72.00	C6X10.5 Reinforcing	Yes	1.00	0.000	0.00	0.00	0.00	0.040	0.000	24.123	0.00	0.00
74.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.041	0.000	24.313	0.00	0.49
74.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.041	0.000	24.313	0.00	1.87
74.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.041	0.000	24.313	0.00	5.62
74.00	C6X10.5 Reinforcing	Yes	2.00	0.000	0.00	0.00	0.00	0.041	0.000	24.313	0.00	0.00
76.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.041	0.000	24.499	0.00	0.49
76.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.041	0.000	24.499	0.00	1.87
76.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.041	0.000	24.499	0.00	5.62
76.00	C6X10.5 Reinforcing	Yes	2.00	0.000	0.00	0.00	0.00	0.041	0.000	24.499	0.00	0.00
78.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.041	0.000	24.681	0.00	0.49
78.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.041	0.000	24.681	0.00	1.87
78.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.041	0.000	24.681	0.00	5.62
78.00	C6X10.5 Reinforcing	Yes	2.00	0.000	0.00	0.00	0.00	0.041	0.000	24.681	0.00	0.00
80.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.042	0.000	24.861	0.00	0.49
80.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.042	0.000	24.861	0.00	1.87
80.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.042	0.000	24.861	0.00	5.62

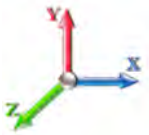
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 39	

Load Case: 0.9D + 1.6W 105 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 30

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
80.00	C6X10.5 Reinforcing	Yes	2.00	0.000	0.00	0.00	0.00	0.042	0.000	24.861	0.00	0.00
81.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.042	0.000	24.949	0.00	0.25
81.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.042	0.000	24.949	0.00	0.94
81.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.042	0.000	24.949	0.00	2.81
81.00	C6X10.5 Reinforcing	Yes	1.00	0.000	0.00	0.00	0.00	0.042	0.000	24.949	0.00	0.00
82.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.042	0.000	25.037	0.00	0.25
82.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.042	0.000	25.037	0.00	0.94
82.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.042	0.000	25.037	0.00	2.81
82.00	C6X10.5 Reinforcing	Yes	1.00	0.000	0.00	0.00	0.00	0.042	0.000	25.037	0.00	0.00
84.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.043	0.000	25.210	0.00	0.49
84.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.043	0.000	25.210	0.00	1.87
84.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.043	0.000	25.210	0.00	5.62
84.00	C6X10.5 Reinforcing	Yes	2.00	0.000	0.00	0.00	0.00	0.043	0.000	25.210	0.00	0.00
85.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.043	0.000	25.295	0.00	0.25
85.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.043	0.000	25.295	0.00	0.94
85.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.043	0.000	25.295	0.00	2.81
85.00	C6X10.5 Reinforcing	Yes	1.00	0.000	0.00	0.00	0.00	0.043	0.000	25.295	0.00	0.00
86.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.043	0.000	25.380	0.00	0.25
86.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.043	0.000	25.380	0.00	0.94
86.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.043	0.000	25.380	0.00	2.81
86.00	C6X10.5 Reinforcing	Yes	1.00	0.000	0.00	0.00	0.00	0.043	0.000	25.380	0.00	0.00
88.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.044	0.000	25.547	0.00	0.49
88.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.044	0.000	25.547	0.00	1.87
88.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.044	0.000	25.547	0.00	5.62
88.00	C6X10.5 Reinforcing	Yes	2.00	0.000	0.00	0.00	0.00	0.044	0.000	25.547	0.00	0.00
90.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.044	0.000	25.711	0.00	0.49
90.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.044	0.000	25.711	0.00	1.87
90.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.044	0.000	25.711	0.00	5.62
90.00	C6X10.5 Reinforcing	Yes	2.00	0.000	0.00	0.00	0.00	0.044	0.000	25.711	0.00	0.00
91.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.044	0.000	25.793	0.00	0.25
91.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.044	0.000	25.793	0.00	0.94
91.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.044	0.000	25.793	0.00	2.81
91.00	C6X10.5 Reinforcing	Yes	1.00	0.000	0.00	0.00	0.00	0.044	0.000	25.793	0.00	0.00
92.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.044	0.000	25.873	0.00	0.25
92.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.044	0.000	25.873	0.00	0.94
92.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.044	0.000	25.873	0.00	2.81
92.00	C6X10.5 Reinforcing	Yes	1.00	0.000	0.00	0.00	0.00	0.044	0.000	25.873	0.00	0.00
93.83	Safety Cable	Yes	1.83	0.000	0.00	0.00	0.00	0.044	0.000	26.019	0.00	0.45
93.83	Step bolts (ladder)	Yes	1.83	0.000	0.00	0.00	0.00	0.044	0.000	26.019	0.00	1.71
93.83	1 5/8" Coax	Yes	1.83	0.000	1.98	0.30	0.00	0.044	0.000	26.019	0.00	5.14
93.83	C6X10.5 Reinforcing	Yes	1.83	0.000	0.00	0.00	0.00	0.044	0.000	26.019	0.00	0.00
94.00	Safety Cable	Yes	0.17	0.000	0.00	0.00	0.00	0.045	0.000	26.033	0.00	0.04
94.00	Step bolts (ladder)	Yes	0.17	0.000	0.00	0.00	0.00	0.045	0.000	26.033	0.00	0.16
94.00	1 5/8" Coax	Yes	0.17	0.000	1.98	0.03	0.00	0.045	0.000	26.033	0.00	0.48
94.00	C6X10.5 Reinforcing	Yes	0.17	0.000	0.00	0.00	0.00	0.045	0.000	26.033	0.00	0.00
96.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.045	0.000	26.190	0.00	0.49
96.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.045	0.000	26.190	0.00	1.87

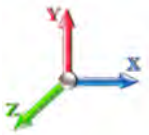
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 40	

Load Case: 0.9D + 1.6W 105 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 30

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
96.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.045	0.000	26.190	0.00	5.62
96.00	C6X10.5 Reinforcing	Yes	1.00	0.000	0.00	0.00	0.00	0.045	0.000	26.190	0.00	0.00
98.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.045	0.000	26.345	0.00	0.49
98.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.045	0.000	26.345	0.00	1.87
98.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.045	0.000	26.345	0.00	5.62
100.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.046	0.000	26.497	0.00	0.49
100.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.046	0.000	26.497	0.00	1.87
100.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.046	0.000	26.497	0.00	5.62
102.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.046	0.000	26.648	0.00	0.49
102.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.046	0.000	26.648	0.00	1.87
102.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.046	0.000	26.648	0.00	5.62
104.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.047	0.000	26.796	0.00	0.49
104.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.047	0.000	26.796	0.00	1.87
104.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.047	0.000	26.796	0.00	5.62
106.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.047	0.000	26.942	0.00	0.49
106.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.047	0.000	26.942	0.00	1.87
106.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.047	0.000	26.942	0.00	5.62
108.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.048	0.000	27.086	0.00	0.49
108.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.048	0.000	27.086	0.00	1.87
108.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.048	0.000	27.086	0.00	5.62
110.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.048	0.000	27.229	0.00	0.49
110.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.048	0.000	27.229	0.00	1.87
110.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.048	0.000	27.229	0.00	5.62
111.17	Safety Cable	Yes	1.17	0.000	0.00	0.00	0.00	0.049	0.000	27.311	0.00	0.29
111.17	Step bolts (ladder)	Yes	1.17	0.000	0.00	0.00	0.00	0.049	0.000	27.311	0.00	1.10
111.17	1 5/8" Coax	Yes	1.17	0.000	1.98	0.19	0.00	0.049	0.000	27.311	0.00	3.29
111.17	C6X10.5 Reinforcing	Yes	1.17	0.000	0.00	0.00	0.00	0.049	0.000	27.311	0.00	0.00
112.00	Safety Cable	Yes	0.83	0.000	0.00	0.00	0.00	0.049	0.000	27.369	0.00	0.20
112.00	Step bolts (ladder)	Yes	0.83	0.000	0.00	0.00	0.00	0.049	0.000	27.369	0.00	0.78
112.00	1 5/8" Coax	Yes	0.83	0.000	1.98	0.14	0.00	0.049	0.000	27.369	0.00	2.33
112.00	C6X10.5 Reinforcing	Yes	0.83	0.000	0.00	0.00	0.00	0.049	0.000	27.369	0.00	0.00
114.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.050	0.000	27.508	0.00	0.49
114.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.050	0.000	27.508	0.00	1.87
114.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.050	0.000	27.508	0.00	5.62
114.00	C6X10.5 Reinforcing	Yes	2.00	0.000	0.00	0.00	0.00	0.050	0.000	27.508	0.00	0.00
115.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.050	0.000	27.577	0.00	0.25
115.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.050	0.000	27.577	0.00	0.94
115.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.050	0.000	27.577	0.00	2.81
115.00	C6X10.5 Reinforcing	Yes	1.00	0.000	0.00	0.00	0.00	0.050	0.000	27.577	0.00	0.00
116.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.050	0.000	27.645	0.00	0.25
116.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.050	0.000	27.645	0.00	0.94
116.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.050	0.000	27.645	0.00	2.81
116.00	C6X10.5 Reinforcing	Yes	1.00	0.000	0.00	0.00	0.00	0.050	0.000	27.645	0.00	0.00
118.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.051	0.000	27.780	0.00	0.49
118.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.051	0.000	27.780	0.00	1.87
118.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.051	0.000	27.780	0.00	5.62
118.00	C6X10.5 Reinforcing	Yes	2.00	0.000	0.00	0.00	0.00	0.051	0.000	27.780	0.00	0.00

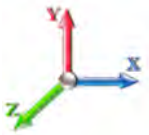
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 41	

Load Case: 0.9D + 1.6W 105 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 30

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
120.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.052	0.000	27.914	0.00	0.49
120.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.052	0.000	27.914	0.00	1.87
120.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.052	0.000	27.914	0.00	5.62
120.00	C6X10.5 Reinforcing	Yes	2.00	0.000	0.00	0.00	0.00	0.052	0.000	27.914	0.00	0.00
122.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.052	0.000	28.046	0.00	0.49
122.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.052	0.000	28.046	0.00	1.87
122.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.052	0.000	28.046	0.00	5.62
122.00	C6X10.5 Reinforcing	Yes	2.00	0.000	0.00	0.00	0.00	0.052	0.000	28.046	0.00	0.00
123.83	Safety Cable	Yes	1.83	0.000	0.00	0.00	0.00	0.053	0.000	28.166	0.00	0.45
123.83	Step bolts (ladder)	Yes	1.83	0.000	0.00	0.00	0.00	0.053	0.000	28.166	0.00	1.71
123.83	1 5/8" Coax	Yes	1.83	0.000	1.98	0.30	0.00	0.053	0.000	28.166	0.00	5.14
123.83	C6X10.5 Reinforcing	Yes	1.83	0.000	0.00	0.00	0.00	0.053	0.000	28.166	0.00	0.00
124.00	Safety Cable	Yes	0.17	0.000	0.00	0.00	0.00	0.053	0.000	28.177	0.00	0.04
124.00	Step bolts (ladder)	Yes	0.17	0.000	0.00	0.00	0.00	0.053	0.000	28.177	0.00	0.16
124.00	1 5/8" Coax	Yes	0.17	0.000	1.98	0.03	0.00	0.053	0.000	28.177	0.00	0.48
124.00	C6X10.5 Reinforcing	Yes	0.17	0.000	0.00	0.00	0.00	0.053	0.000	28.177	0.00	0.00
126.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.053	0.000	28.306	0.00	0.49
126.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.053	0.000	28.306	0.00	1.87
126.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.053	0.000	28.306	0.00	5.62
126.00	C6X10.5 Reinforcing	Yes	1.00	0.000	0.00	0.00	0.00	0.053	0.000	28.306	0.00	0.00
128.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.054	0.000	28.434	0.00	0.49
128.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.054	0.000	28.434	0.00	1.87
128.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.054	0.000	28.434	0.00	5.62
130.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.055	0.000	28.560	0.00	0.49
130.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.055	0.000	28.560	0.00	1.87
130.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.055	0.000	28.560	0.00	5.62
132.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.056	0.000	28.685	0.00	0.49
132.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.056	0.000	28.685	0.00	1.87
132.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.056	0.000	28.685	0.00	5.62
134.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.056	0.000	28.808	0.00	0.49
134.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.056	0.000	28.808	0.00	1.87
134.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.056	0.000	28.808	0.00	5.62
135.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.057	0.000	28.869	0.00	0.25
135.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.057	0.000	28.869	0.00	0.94
135.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.057	0.000	28.869	0.00	2.81
136.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.057	0.000	28.930	0.00	0.25
136.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.057	0.000	28.930	0.00	0.94
136.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.057	0.000	28.930	0.00	2.81
138.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.057	0.000	29.051	0.00	0.49
138.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.057	0.000	29.051	0.00	1.87
138.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.057	0.000	29.051	0.00	5.62
140.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.058	0.000	29.171	0.00	0.49
140.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.058	0.000	29.171	0.00	1.87
140.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.058	0.000	29.171	0.00	5.62
142.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.059	0.000	29.289	0.00	0.49
142.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.059	0.000	29.289	0.00	1.87
142.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.059	0.000	29.289	0.00	5.62

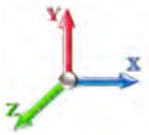
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 42	

Load Case: 0.9D + 1.6W 105 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 30

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
143.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.059	0.000	29.348	0.00	0.25
143.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.059	0.000	29.348	0.00	0.94
143.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.059	0.000	29.348	0.00	2.81
144.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.060	0.000	29.407	0.00	0.25
144.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.060	0.000	29.407	0.00	0.94
144.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.060	0.000	29.407	0.00	2.81
146.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.060	0.000	29.523	0.00	0.49
146.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.060	0.000	29.523	0.00	1.87
146.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.060	0.000	29.523	0.00	5.62
148.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.061	0.000	29.638	0.00	0.49
148.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.061	0.000	29.638	0.00	1.87
148.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.061	0.000	29.638	0.00	5.62
150.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.062	0.000	29.752	0.00	0.49
150.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.062	0.000	29.752	0.00	1.87
150.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.062	0.000	29.752	0.00	5.62
152.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.063	0.000	29.865	0.00	0.49
152.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.063	0.000	29.865	0.00	1.87
152.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.063	0.000	29.865	0.00	5.62
153.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.064	0.000	29.921	0.00	0.25
153.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.064	0.000	29.921	0.00	0.94
153.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.064	0.000	29.921	0.00	2.81
154.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.064	0.000	29.976	0.00	0.25
154.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.064	0.000	29.976	0.00	0.94
154.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.064	0.000	29.976	0.00	2.81
156.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.065	0.000	30.087	0.00	0.49
156.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.065	0.000	30.087	0.00	1.87
156.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.065	0.000	30.087	0.00	5.62
158.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.066	0.000	30.197	0.00	0.49
158.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.066	0.000	30.197	0.00	1.87
158.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.066	0.000	30.197	0.00	5.62
160.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.067	0.000	30.305	0.00	0.49
160.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.067	0.000	30.305	0.00	1.87
160.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.067	0.000	30.305	0.00	5.62
162.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.068	0.000	30.413	0.00	0.49
162.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.068	0.000	30.413	0.00	1.87
162.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.068	0.000	30.413	0.00	5.62
163.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.069	0.000	30.467	0.00	0.25
163.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.069	0.000	30.467	0.00	0.94
163.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.069	0.000	30.467	0.00	2.81
164.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.070	0.000	30.520	0.00	0.25
164.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.070	0.000	30.520	0.00	0.94
164.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.070	0.000	30.520	0.00	2.81
166.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.071	0.000	30.626	0.00	0.49
166.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.071	0.000	30.626	0.00	1.87
166.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.071	0.000	30.626	0.00	5.62
168.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.072	0.000	30.731	0.00	0.49
168.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.072	0.000	30.731	0.00	1.87

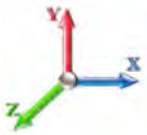
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 43	

Load Case: 0.9D + 1.6W 105 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 30

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
168.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.072	0.000	30.731	0.00	5.62
170.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.073	0.000	30.835	0.00	0.49
170.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.073	0.000	30.835	0.00	1.87
170.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.073	0.000	30.835	0.00	5.62
172.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.075	0.000	30.938	0.00	0.49
172.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.075	0.000	30.938	0.00	1.87
172.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.075	0.000	30.938	0.00	5.62
173.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.076	0.000	30.989	0.00	0.25
173.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.076	0.000	30.989	0.00	0.94
173.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.076	0.000	30.989	0.00	2.81
174.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	31.041	0.00	0.25
174.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	31.041	0.00	0.94
176.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	31.142	0.00	0.49
176.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	31.142	0.00	1.87
178.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	31.243	0.00	0.49
178.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	31.243	0.00	1.87
180.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	31.343	0.00	0.49
180.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	31.343	0.00	1.87
181.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	31.392	0.00	0.25
181.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	31.392	0.00	0.94
182.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	31.442	0.00	0.25
182.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	31.442	0.00	0.94
183.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	31.491	0.00	0.25
183.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	31.491	0.00	0.94
										Totals:	**0.0**	**702.0**

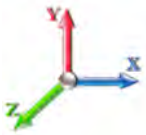
Calculated Forces

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 44	

Load Case: 0.9D + 1.6W 105 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 30

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-46.56	-39.15	0.00	-5056.0	0.00	5056.09	5190.16	2595.08	13702.9	6861.66	0.00	0.000	0.000	0.746
2.00	-45.97	-38.97	0.00	-4977.8	0.00	4977.80	5174.50	2587.25	13560.7	6790.43	0.02	-0.072	0.000	0.742
4.00	-45.37	-38.80	0.00	-4899.8	0.00	4899.86	5158.51	2579.25	13418.2	6719.08	0.06	-0.144	0.000	0.738
6.00	-44.79	-38.62	0.00	-4822.2	0.00	4822.27	5142.18	2571.09	13275.4	6647.61	0.14	-0.217	0.000	0.734
8.00	-44.20	-38.45	0.00	-4745.0	0.00	4745.03	5125.52	2562.76	13132.5	6576.03	0.25	-0.291	0.000	0.730
10.00	-43.62	-38.27	0.00	-4668.1	0.00	4668.14	5108.53	2554.27	12989.4	6504.36	0.38	-0.365	0.000	0.726
12.00	-43.04	-38.10	0.00	-4591.5	0.00	4591.59	5091.21	2545.61	12846.0	6432.60	0.55	-0.439	0.000	0.722
14.00	-42.47	-37.93	0.00	-4515.3	0.00	4515.39	5073.56	2536.78	12702.6	6360.75	0.75	-0.514	0.000	0.718
16.00	-41.90	-37.76	0.00	-4439.5	0.00	4439.53	5055.57	2527.79	12559.0	6288.85	0.99	-0.589	0.000	0.714
18.00	-41.33	-37.59	0.00	-4364.0	0.00	4364.02	5037.25	2518.63	12415.3	6216.88	1.25	-0.665	0.000	0.710
20.00	-40.77	-37.42	0.00	-4288.8	0.00	4288.85	5018.60	2509.30	12271.4	6144.86	1.54	-0.741	0.000	0.706
22.00	-40.21	-37.25	0.00	-4214.0	0.00	4214.01	4999.62	2499.81	12127.5	6072.81	1.87	-0.818	0.000	0.702
24.00	-39.66	-37.08	0.00	-4139.5	0.00	4139.52	4980.31	2490.15	11983.6	6000.72	2.23	-0.895	0.000	0.698
26.00	-39.11	-36.91	0.00	-4065.3	0.00	4065.36	4960.66	2480.33	11839.6	5928.62	2.62	-0.972	0.000	0.694
28.00	-38.56	-36.74	0.00	-3991.5	0.00	3991.54	4940.68	2470.34	11695.6	5856.50	3.05	-1.051	0.000	0.690
30.00	-38.01	-36.58	0.00	-3918.0	0.00	3918.06	4920.37	2460.19	11551.6	5784.39	3.51	-1.129	0.000	0.685
32.00	-37.47	-36.41	0.00	-3844.9	0.00	3844.90	4899.73	2449.87	11407.6	5712.28	4.00	-1.208	0.000	0.681
34.00	-36.94	-36.23	0.00	-3772.0	0.00	3772.09	4878.76	2439.38	11263.6	5640.19	4.52	-1.288	0.000	0.677
36.00	-36.40	-36.06	0.00	-3699.6	0.00	3699.63	4857.45	2428.72	11119.7	5568.14	5.08	-1.368	0.000	0.672
38.00	-35.87	-35.88	0.00	-3627.5	0.00	3627.51	4835.81	2417.91	10975.9	5496.12	5.67	-1.448	0.000	0.668
40.00	-35.36	-35.69	0.00	-3555.7	0.00	3555.75	4813.84	2406.92	10832.2	5424.15	6.29	-1.529	0.000	0.663
41.00	-35.10	-35.60	0.00	-3520.0	0.00	3520.07	4802.73	2401.36	10760.3	5388.18	6.62	-1.570	0.000	0.661
42.00	-34.62	-35.51	0.00	-3484.4	0.00	3484.47	4791.54	2395.77	10688.5	5352.24	6.95	-1.611	0.000	0.658
44.00	-33.71	-35.31	0.00	-3413.4	0.00	3413.45	4768.90	2384.45	10545.1	5280.39	7.64	-1.693	0.000	0.654
46.00	-32.80	-35.11	0.00	-3342.8	0.00	3342.84	4745.94	2372.97	10401.7	5208.63	8.37	-1.775	0.000	0.649
48.00	-31.89	-34.90	0.00	-3272.6	0.00	3272.63	4759.60	2379.80	10486.7	5251.18	9.13	-1.858	0.000	0.630
50.00	-31.40	-34.69	0.00	-3202.8	0.00	3202.83	4736.50	2368.25	10343.5	5179.45	9.93	-1.941	0.000	0.625
51.00	-31.14	-34.59	0.00	-3168.1	0.00	3168.14	4724.82	2362.41	10271.9	5143.62	10.34	-1.981	0.000	0.623
51.00	-31.14	-34.59	0.00	-3168.1	0.00	3168.14	4064.30	2032.15	8835.99	4424.56	10.34	-1.981	0.000	0.724
52.00	-30.88	-34.50	0.00	-3133.5	0.00	3133.55	4053.20	2026.60	8772.35	4392.70	10.76	-2.021	0.000	0.721
54.00	-30.37	-34.30	0.00	-3064.5	0.00	3064.54	4030.83	2015.41	8645.34	4329.09	11.62	-2.102	0.000	0.716
56.00	-29.88	-34.10	0.00	-2995.9	0.00	2995.94	4008.20	2004.10	8518.66	4265.66	12.52	-2.183	0.000	0.710
58.00	-29.38	-33.90	0.00	-2927.7	0.00	2927.74	3985.33	1992.66	8392.33	4202.40	13.45	-2.264	0.000	0.704
60.00	-28.89	-33.69	0.00	-2859.9	0.00	2859.94	3962.20	1981.10	8266.38	4139.33	14.42	-2.345	0.000	0.698
62.00	-28.40	-33.49	0.00	-2792.5	0.00	2792.56	3938.82	1969.41	8140.81	4076.46	15.42	-2.427	0.000	0.693
64.00	-27.92	-33.28	0.00	-2725.5	0.00	2725.58	3915.19	1957.60	8015.64	4013.78	16.45	-2.509	0.000	0.686
66.00	-27.46	-33.06	0.00	-2659.0	0.00	2659.02	3891.31	1945.66	7890.88	3951.30	17.52	-2.592	0.000	0.680
66.17	-27.41	-33.05	0.00	-2653.4	0.00	2653.40	3889.27	1944.64	7880.29	3946.00	17.61	-2.599	0.000	0.498
68.00	-26.99	-32.85	0.00	-2592.9	0.00	2592.92	3867.19	1933.59	7766.55	3889.05	18.62	-2.654	0.000	0.493
70.00	-26.54	-32.62	0.00	-2527.2	0.00	2527.22	3842.81	1921.40	7642.66	3827.01	19.75	-2.715	0.000	0.487
71.00	-26.31	-32.52	0.00	-2494.6	0.00	2494.60	3830.52	1915.26	7580.89	3796.08	20.32	-2.745	0.000	0.483
71.00	-26.31	-32.52	0.00	-2494.6	0.00	2494.60	3467.89	1733.95	6863.13	3436.66	20.32	-2.745	0.000	0.534
72.00	-26.07	-32.41	0.00	-2462.0	0.00	2462.08	3456.29	1728.14	6806.46	3408.29	20.90	-2.776	0.000	0.531
74.00	-25.62	-32.19	0.00	-2397.2	0.00	2397.26	3432.92	1716.46	6693.50	3351.73	22.07	-2.837	0.000	0.524
76.00	-25.17	-31.97	0.00	-2332.8	0.00	2332.87	3409.33	1704.67	6581.05	3295.42	23.27	-2.897	0.000	0.517
78.00	-24.73	-31.75	0.00	-2268.9	0.00	2268.93	3385.54	1692.77	6469.11	3239.36	24.50	-2.958	0.000	0.510
80.00	-24.30	-31.53	0.00	-2205.4	0.00	2205.42	3361.54	1680.77	6357.71	3183.58	25.75	-3.018	0.000	0.502
81.00	-24.08	-31.42	0.00	-2173.9	0.00	2173.90	3349.46	1674.73	6302.21	3155.79	26.39	-3.049	0.000	0.499

Calculated Forces

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 45

81.00	-24.08	-31.42	0.00	-2173.9	0.00	2173.90	2964.88	1482.44	5593.85	2801.08	26.39	-3.049	0.000	0.470
82.00	-23.88	-31.32	0.00	-2142.4	0.00	2142.48	2956.03	1478.01	5548.33	2778.29	27.03	-3.079	0.000	0.528
84.00	-23.51	-31.09	0.00	-2079.8	0.00	2079.85	2938.12	1469.06	5457.44	2732.78	28.33	-3.147	0.000	0.519
85.00	-23.32	-30.99	0.00	-2048.7	0.00	2048.76	2929.07	1464.54	5412.08	2710.06	29.00	-3.182	0.000	0.515
86.00	-22.99	-30.88	0.00	-2017.7	0.00	2017.77	2919.96	1459.98	5366.77	2687.37	29.67	-3.216	0.000	0.506
88.00	-22.34	-30.65	0.00	-1956.0	0.00	1956.01	2901.53	1450.76	5276.32	2642.08	31.03	-3.283	0.000	0.497
90.00	-21.71	-30.41	0.00	-1894.7	0.00	1894.72	2882.84	1441.42	5186.12	2596.92	32.42	-3.350	0.000	0.487
91.00	-21.39	-30.29	0.00	-1864.3	0.00	1864.32	2898.35	1449.17	5260.87	2634.34	33.12	-3.384	0.000	0.492
92.00	-21.20	-30.18	0.00	-1834.0	0.00	1834.03	2889.01	1444.51	5215.76	2611.76	33.83	-3.418	0.000	0.474
93.83	-20.88	-29.97	0.00	-1778.7	0.00	1778.79	2871.76	1435.88	5133.38	2570.50	35.16	-3.477	0.000	0.465
93.83	-20.88	-29.97	0.00	-1778.7	0.00	1778.79	2871.76	1435.88	5133.38	2570.50	35.16	-3.477	0.000	0.465
94.00	-20.82	-29.97	0.00	-1773.7	0.00	1773.70	2870.15	1435.07	5125.73	2566.68	35.28	-3.482	0.000	0.699
96.00	-20.44	-29.77	0.00	-1713.7	0.00	1713.75	2851.02	1425.51	5035.98	2521.73	36.76	-3.579	0.000	0.687
98.00	-20.07	-29.56	0.00	-1654.2	0.00	1654.22	2831.62	1415.81	4946.52	2476.93	38.28	-3.675	0.000	0.675
100.00	-19.70	-29.35	0.00	-1595.1	0.00	1595.10	2811.97	1405.98	4857.35	2432.29	39.84	-3.771	0.000	0.663
102.00	-19.33	-29.15	0.00	-1536.4	0.00	1536.40	2792.05	1396.03	4768.51	2387.80	41.44	-3.867	0.000	0.651
104.00	-18.97	-28.94	0.00	-1478.1	0.00	1478.11	2771.87	1385.94	4680.00	2343.48	43.08	-3.963	0.000	0.638
106.00	-18.60	-28.75	0.00	-1420.2	0.00	1420.23	2751.43	1375.71	4591.84	2299.33	44.76	-4.058	0.000	0.625
108.00	-18.25	-28.55	0.00	-1362.7	0.00	1362.74	2730.72	1365.36	4504.04	2255.37	46.48	-4.152	0.000	0.611
110.00	-17.90	-28.35	0.00	-1305.6	0.00	1305.64	2709.75	1354.88	4416.62	2211.59	48.24	-4.246	0.000	0.597
111.17	-17.70	-28.24	0.00	-1272.4	0.00	1272.46	2697.36	1348.68	4365.66	2186.08	49.28	-4.300	0.000	0.470
112.00	-17.55	-28.16	0.00	-1249.0	0.00	1249.03	2688.52	1344.26	4329.60	2168.02	50.03	-4.331	0.000	0.465
114.00	-17.22	-27.96	0.00	-1192.7	0.00	1192.71	2667.03	1333.51	4242.98	2124.64	51.86	-4.405	0.000	0.452
115.00	-17.06	-27.85	0.00	-1164.7	0.00	1164.75	2656.18	1328.09	4199.83	2103.04	52.79	-4.441	0.000	0.434
115.00	-17.06	-27.85	0.00	-1164.7	0.00	1164.75	1951.15	975.57	3095.05	1549.82	52.79	-4.441	0.000	0.474
116.00	-16.90	-27.76	0.00	-1136.9	0.00	1136.90	1944.57	972.29	3065.67	1535.11	53.72	-4.477	0.000	0.550
118.00	-16.62	-27.55	0.00	-1081.3	0.00	1081.39	1931.24	965.62	3006.98	1505.73	55.61	-4.559	0.000	0.531
120.00	-16.33	-27.35	0.00	-1026.2	0.00	1026.29	1917.63	958.82	2948.42	1476.40	57.54	-4.639	0.000	0.512
122.00	-16.05	-27.15	0.00	-971.59	0.00	971.59	1903.77	951.88	2889.98	1447.14	59.50	-4.718	0.000	0.493
123.83	-15.81	-26.95	0.00	-921.91	0.00	921.91	1890.85	945.43	2836.64	1420.43	61.32	-4.789	0.000	0.475
123.83	-15.81	-26.95	0.00	-921.91	0.00	921.91	1890.85	945.43	2836.64	1420.43	61.32	-4.789	0.000	0.475
124.00	-15.77	-26.95	0.00	-917.33	0.00	917.33	1889.64	944.82	2831.69	1417.95	61.49	-4.796	0.000	0.656
126.00	-15.48	-26.76	0.00	-863.43	0.00	863.43	1875.25	937.63	2773.56	1388.84	63.52	-4.900	0.000	0.631
128.00	-15.20	-26.57	0.00	-809.91	0.00	809.91	1860.60	930.30	2715.62	1359.83	65.59	-5.002	0.000	0.605
130.00	-14.92	-26.37	0.00	-756.78	0.00	756.78	1845.69	922.84	2657.86	1330.91	67.71	-5.102	0.000	0.578
132.00	-14.47	-26.16	0.00	-704.03	0.00	704.03	1830.51	915.25	2600.31	1302.09	69.86	-5.198	0.000	0.549
134.00	-14.04	-25.95	0.00	-651.71	0.00	651.71	1815.07	907.53	2542.99	1273.39	72.06	-5.291	0.000	0.520
135.00	-13.83	-25.84	0.00	-625.76	0.00	625.76	1823.79	911.89	2575.21	1289.52	73.17	-5.337	0.000	0.494
136.00	-13.68	-25.75	0.00	-599.92	0.00	599.92	1816.04	908.02	2546.57	1275.18	74.29	-5.382	0.000	0.479
138.00	-13.42	-25.56	0.00	-548.42	0.00	548.42	1800.35	900.18	2489.47	1246.58	76.56	-5.464	0.000	0.448
140.00	-13.17	-25.36	0.00	-497.31	0.00	497.31	1784.41	892.20	2432.62	1218.12	78.87	-5.542	0.000	0.416
142.00	-12.92	-25.16	0.00	-446.59	0.00	446.59	1768.19	884.10	2376.04	1189.79	81.20	-5.616	0.000	0.383
143.00	-10.69	-19.97	0.00	-421.42	0.00	421.42	1759.99	879.99	2347.86	1175.68	82.38	-5.651	0.000	0.365
144.00	-10.58	-19.87	0.00	-401.46	0.00	401.46	1751.72	875.86	2319.75	1161.60	83.57	-5.685	0.000	0.352
146.00	-10.36	-19.68	0.00	-361.71	0.00	361.71	1734.98	867.49	2263.76	1133.56	85.96	-5.750	0.000	0.326
148.00	-10.15	-19.49	0.00	-322.36	0.00	322.36	1717.98	858.99	2208.08	1105.68	88.38	-5.810	0.000	0.298
150.00	-9.95	-19.30	0.00	-283.38	0.00	283.38	1700.72	850.36	2152.74	1077.97	90.82	-5.867	0.000	0.269
152.00	-9.75	-19.10	0.00	-244.79	0.00	244.79	1683.20	841.60	2097.74	1050.43	93.28	-5.918	0.000	0.239
153.00	-7.35	-13.27	0.00	-225.68	0.00	225.68	1674.33	837.17	2070.37	1036.72	94.53	-5.942	0.000	0.222
154.00	-7.26	-13.18	0.00	-212.42	0.00	212.42	1665.41	832.70	2043.10	1023.07	95.77	-5.964	0.000	0.212
156.00	-7.09	-12.99	0.00	-186.06	0.00	186.06	1647.36	823.68	1988.83	995.90	98.27	-6.007	0.000	0.191
158.00	-5.71	-11.50	0.00	-160.08	0.00	160.08	1629.04	814.52	1934.96	968.92	100.79	-6.046	0.000	0.169
160.00	-5.55	-11.32	0.00	-137.08	0.00	137.08	1610.47	805.23	1881.50	942.15	103.33	-6.080	0.000	0.149
162.00	-5.39	-11.13	0.00	-114.45	0.00	114.45	1591.63	795.82	1828.46	915.59	105.88	-6.111	0.000	0.129
163.00	-3.96	-9.16	0.00	-103.32	0.00	103.32	1582.11	791.06	1802.10	902.39	107.16	-6.125	0.000	0.117
164.00	-3.89	-9.07	0.00	-94.16	0.00	94.16	1572.53	786.27	1775.86	889.25	108.44	-6.139	0.000	0.108
166.00	-3.74	-8.90	0.00	-76.01	0.00	76.01	1553.17	776.58	1723.71	863.13	111.01	-6.162	0.000	0.091

Calculated Forces

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 46

168.00	-3.60	-8.72	0.00	-58.21	0.00	58.21	1533.54	766.77	1672.03	837.26	113.59	-6.181	0.000	0.072
170.00	-3.46	-8.55	0.00	-40.77	0.00	40.77	1513.65	756.83	1620.83	811.62	116.18	-6.196	0.000	0.053
172.00	-3.32	-8.37	0.00	-23.68	0.00	23.68	1493.50	746.75	1570.13	786.23	118.78	-6.206	0.000	0.032
173.00	-1.75	-2.14	0.00	-15.31	0.00	15.31	1483.33	741.66	1544.98	773.64	120.07	-6.210	0.000	0.021
174.00	-1.70	-2.06	0.00	-13.16	0.00	13.16	1473.09	736.54	1519.95	761.10	121.37	-6.212	0.000	0.018
176.00	-1.59	-1.89	0.00	-9.05	0.00	9.05	1452.41	726.20	1470.30	736.24	123.97	-6.216	0.000	0.013
178.00	-1.49	-1.73	0.00	-5.26	0.00	5.26	1427.85	713.93	1417.60	709.85	126.57	-6.219	0.000	0.008
180.00	-1.38	-1.57	0.00	-1.79	0.00	1.79	1400.09	700.05	1362.74	682.38	129.17	-6.220	0.000	0.004
180.00	-1.38	-1.57	0.00	-1.79	0.00	1.79	678.42	339.21	662.23	396.30	129.17	-6.220	0.000	0.007
181.00	-0.12	-0.15	0.00	-0.22	0.00	0.22	678.42	339.21	662.23	396.30	130.47	-6.220	0.000	0.001
182.00	-0.06	-0.07	0.00	-0.07	0.00	0.07	678.42	339.21	662.23	396.30	131.77	-6.220	0.000	0.000
183.00	0.00	-0.07	0.00	0.00	0.00	0.00	678.42	339.21	662.23	396.30	133.07	-6.220	0.000	0.000

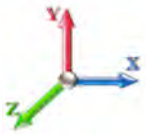
Wind Loading - Shaft

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 47	

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 29

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	4.256	4.68	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
2.00		1.00	0.70	4.256	4.68	0.00	1.200	1.133	2.00	11.254	13.50	63.2	183.2	804.2
4.00		1.00	0.70	4.256	4.68	0.00	1.200	1.215	2.00	11.201	13.44	62.9	195.2	811.6
6.00		1.00	0.70	4.256	4.68	0.00	1.200	1.265	2.00	11.138	13.37	62.6	201.9	813.8
8.00		1.00	0.70	4.256	4.68	0.00	1.200	1.302	2.00	11.071	13.29	62.2	206.4	813.7
10.00		1.00	0.70	4.256	4.68	0.00	1.200	1.331	2.00	11.001	13.20	61.8	209.6	812.3
12.00		1.00	0.70	4.256	4.68	0.00	1.200	1.356	2.00	10.929	13.12	61.4	211.9	810.1
14.00		1.00	0.70	4.256	4.68	0.00	1.200	1.377	2.00	10.857	13.03	61.0	213.7	807.2
16.00		1.00	0.70	4.256	4.68	0.00	1.200	1.395	2.00	10.783	12.94	60.6	215.0	804.0
18.00		1.00	0.70	4.256	4.68	0.00	1.200	1.412	2.00	10.709	12.85	60.2	216.0	800.4
20.00		1.00	0.70	4.256	4.68	0.00	1.200	1.427	2.00	10.634	12.76	59.7	216.6	796.5
22.00		1.00	0.70	4.256	4.68	0.00	1.200	1.440	2.00	10.559	12.67	59.3	217.1	792.3
24.00		1.00	0.70	4.256	4.68	0.00	1.200	1.453	2.00	10.484	12.58	58.9	217.3	788.0
26.00		1.00	0.70	4.256	4.68	0.00	1.200	1.465	2.00	10.408	12.49	58.5	217.4	783.5
28.00		1.00	0.70	4.256	4.68	0.00	1.200	1.476	2.00	10.332	12.40	58.0	217.3	778.8
30.00		1.00	0.70	4.260	4.69	0.00	1.200	1.486	2.00	10.256	12.31	57.7	217.1	774.1
32.00		1.00	0.71	4.339	4.77	0.00	1.200	1.495	2.00	10.179	12.22	58.3	216.8	769.2
34.00		1.00	0.73	4.415	4.86	0.00	1.200	1.504	2.00	10.103	12.12	58.9	216.4	764.2
36.00		1.00	0.74	4.487	4.94	0.00	1.200	1.513	2.00	10.026	12.03	59.4	215.9	759.1
38.00		1.00	0.75	4.557	5.01	0.00	1.200	1.521	2.00	9.949	11.94	59.8	215.4	754.0
40.00		1.00	0.76	4.625	5.09	0.00	1.200	1.529	2.00	9.872	11.85	60.3	214.7	748.8
41.00	Bot - Section 2	1.00	0.77	4.657	5.12	0.00	1.200	1.533	1.00	4.907	5.89	30.2	107.2	372.5
42.00		1.00	0.77	4.689	5.16	0.00	1.200	1.537	1.00	4.951	5.94	30.6	108.4	640.4
44.00		1.00	0.78	4.752	5.23	0.00	1.200	1.544	2.00	9.844	11.81	61.8	216.1	1273.2
46.00		1.00	0.79	4.813	5.29	0.00	1.200	1.551	2.00	9.767	11.72	62.0	215.3	1263.2
48.00	Top - Section 1	1.00	0.80	4.872	5.36	0.00	1.200	1.557	2.00	9.689	11.63	62.3	214.4	1253.2
50.00		1.00	0.81	4.929	5.42	0.00	1.200	1.564	2.00	9.612	11.53	62.5	213.5	731.9
51.00	Top - Section 2	1.00	0.82	4.957	5.45	0.00	1.200	1.567	1.00	4.777	5.73	31.3	106.5	364.0
52.00		1.00	0.82	4.984	5.48	0.00	1.200	1.570	1.00	4.757	5.71	31.3	106.2	362.6
54.00		1.00	0.83	5.039	5.54	0.00	1.200	1.576	2.00	9.456	11.35	62.9	211.5	720.8
56.00		1.00	0.84	5.091	5.60	0.00	1.200	1.581	2.00	9.379	11.25	63.0	210.4	715.1
58.00		1.00	0.85	5.142	5.66	0.00	1.200	1.587	2.00	9.301	11.16	63.1	209.3	709.5
60.00		1.00	0.85	5.193	5.71	0.00	1.200	1.592	2.00	9.223	11.07	63.2	208.2	703.8
62.00		1.00	0.86	5.241	5.77	0.00	1.200	1.598	2.00	9.145	10.97	63.3	207.0	698.0
64.00		1.00	0.87	5.289	5.82	0.00	1.200	1.603	2.00	9.067	10.88	63.3	205.8	692.3
66.00		1.00	0.88	5.336	5.87	0.00	1.200	1.608	2.00	8.989	10.79	63.3	204.6	686.5
66.17	RB1	1.00	0.88	5.340	5.87	0.00	1.200	1.608	0.17	0.760	0.91	5.4	17.4	58.1
68.00		1.00	0.89	5.382	5.92	0.00	1.200	1.612	1.83	8.150	9.78	57.9	186.1	622.6
70.00		1.00	0.89	5.426	5.97	0.00	1.200	1.617	2.00	8.833	10.60	63.3	202.1	674.8
71.00	Top - Section 3	1.00	0.90	5.448	5.99	0.00	1.200	1.619	1.00	4.387	5.26	31.5	100.7	335.3
72.00		1.00	0.90	5.470	6.02	0.00	1.200	1.622	1.00	4.367	5.24	31.5	100.4	333.9
74.00		1.00	0.91	5.513	6.06	0.00	1.200	1.626	2.00	8.676	10.41	63.1	199.4	663.0
76.00		1.00	0.91	5.555	6.11	0.00	1.200	1.631	2.00	8.598	10.32	63.0	198.1	657.0
78.00		1.00	0.92	5.597	6.16	0.00	1.200	1.635	2.00	8.520	10.22	62.9	196.7	651.1
80.00		1.00	0.93	5.637	6.20	0.00	1.200	1.639	2.00	8.442	10.13	62.8	195.3	645.1
81.00	Top - Section 4	1.00	0.93	5.657	6.22	0.00	1.200	1.641	1.00	4.191	5.03	31.3	97.3	320.5
82.00		1.00	0.93	5.677	6.24	0.00	1.200	1.643	1.00	4.172	5.01	31.3	96.9	282.2

Wind Loading - Shaft

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 48

84.00	1.00	0.94	5.716	6.29	0.00	1.200	1.647	2.00	8.285	9.94	62.5	192.4	560.2
85.00 Bot - Section 6	1.00	0.94	5.736	6.31	0.00	1.200	1.649	1.00	4.113	4.94	31.1	95.9	278.3
86.00	1.00	0.95	5.755	6.33	0.00	1.200	1.651	1.00	4.146	4.98	31.5	96.8	462.3
88.00	1.00	0.95	5.793	6.37	0.00	1.200	1.655	2.00	8.234	9.88	63.0	192.1	917.3
90.00	1.00	0.96	5.830	6.41	0.00	1.200	1.658	2.00	8.155	9.79	62.8	190.6	908.2
91.00 Top - Section 5	1.00	0.96	5.849	6.43	0.00	1.200	1.660	1.00	4.048	4.86	31.3	94.9	450.9
92.00	1.00	0.96	5.867	6.45	0.00	1.200	1.662	1.00	4.029	4.83	31.2	94.5	272.8
93.83 RT1	1.00	0.97	5.900	6.49	0.00	1.200	1.665	1.83	7.322	8.79	57.0	171.7	495.5
94.00	1.00	0.97	5.903	6.49	0.00	1.200	1.666	0.17	0.677	0.81	5.3	15.9	45.9
96.00	1.00	0.98	5.939	6.53	0.00	1.200	1.669	2.00	7.920	9.50	62.1	186.0	535.9
98.00	1.00	0.98	5.974	6.57	0.00	1.200	1.672	2.00	7.841	9.41	61.8	184.5	530.6
100.00	1.00	0.99	6.008	6.61	0.00	1.200	1.676	2.00	7.763	9.32	61.6	182.9	525.2
102.00	1.00	0.99	6.043	6.65	0.00	1.200	1.679	2.00	7.684	9.22	61.3	181.3	519.8
104.00	1.00	1.00	6.076	6.68	0.00	1.200	1.682	2.00	7.606	9.13	61.0	179.7	514.4
106.00	1.00	1.00	6.109	6.72	0.00	1.200	1.686	2.00	7.129	8.55	57.5	168.2	499.1
108.00	1.00	1.01	6.142	6.76	0.00	1.200	1.689	2.00	7.050	8.46	57.2	166.6	493.6
110.00	1.00	1.02	6.174	6.79	0.00	1.200	1.692	2.00	6.971	8.37	56.8	164.9	488.2
111.17 RB2	1.00	1.02	6.193	6.81	0.00	1.200	1.694	1.17	4.042	4.85	33.0	95.9	283.2
112.00	1.00	1.02	6.206	6.83	0.00	1.200	1.695	0.83	2.851	3.42	23.4	67.8	199.8
114.00	1.00	1.03	6.238	6.86	0.00	1.200	1.698	2.00	6.814	8.18	56.1	161.6	477.2
115.00 Top - Section 6	1.00	1.03	6.253	6.88	0.00	1.200	1.699	1.00	3.577	4.29	29.5	85.3	241.7
116.00	1.00	1.03	6.269	6.90	0.00	1.200	1.701	1.00	3.557	4.27	29.4	84.9	209.4
118.00	1.00	1.04	6.299	6.93	0.00	1.200	1.704	2.00	7.055	8.47	58.7	168.1	414.9
120.00	1.00	1.04	6.330	6.96	0.00	1.200	1.707	2.00	6.976	8.37	58.3	166.4	410.2
122.00	1.00	1.05	6.360	7.00	0.00	1.200	1.710	2.00	6.898	8.28	57.9	164.7	405.4
123.83 RT2	1.00	1.05	6.387	7.03	0.00	1.200	1.712	1.83	6.242	7.49	52.6	149.3	366.8
124.00	1.00	1.05	6.389	7.03	0.00	1.200	1.712	0.17	0.576	0.69	4.9	13.9	33.9
126.00	1.00	1.06	6.419	7.06	0.00	1.200	1.715	2.00	6.740	8.09	57.1	161.3	395.8
128.00	1.00	1.06	6.448	7.09	0.00	1.200	1.718	2.00	6.661	7.99	56.7	159.5	391.1
130.00 Bot - Section 8	1.00	1.07	6.476	7.12	0.00	1.200	1.720	2.00	6.582	7.90	56.3	157.8	386.3
132.00	1.00	1.07	6.504	7.15	0.00	1.200	1.723	2.00	6.588	7.91	56.6	158.2	612.2
134.00	1.00	1.07	6.532	7.19	0.00	1.200	1.726	2.00	6.509	7.81	56.1	156.4	604.4
135.00 Top - Section 7	1.00	1.08	6.546	7.20	0.00	1.200	1.727	1.00	3.225	3.87	27.9	77.8	299.4
136.00	1.00	1.08	6.560	7.22	0.00	1.200	1.728	1.00	3.205	3.85	27.8	77.3	188.2
138.00	1.00	1.08	6.588	7.25	0.00	1.200	1.731	2.00	6.352	7.62	55.2	152.8	372.3
140.00	1.00	1.09	6.615	7.28	0.00	1.200	1.733	2.00	6.273	7.53	54.8	151.0	367.5
142.00	1.00	1.09	6.642	7.31	0.00	1.200	1.736	2.00	6.194	7.43	54.3	149.2	362.6
143.00 Appurtenance(s)	1.00	1.09	6.655	7.32	0.00	1.200	1.737	1.00	3.067	3.68	26.9	74.2	179.7
144.00	1.00	1.10	6.668	7.34	0.00	1.200	1.738	1.00	3.048	3.66	26.8	73.7	178.5
146.00	1.00	1.10	6.695	7.36	0.00	1.200	1.741	2.00	6.036	7.24	53.3	145.6	352.9
148.00	1.00	1.11	6.721	7.39	0.00	1.200	1.743	2.00	5.957	7.15	52.8	143.8	348.0
150.00	1.00	1.11	6.746	7.42	0.00	1.200	1.745	2.00	5.879	7.05	52.4	141.9	343.1
152.00	1.00	1.11	6.772	7.45	0.00	1.200	1.748	2.00	5.800	6.96	51.8	140.1	338.2
153.00 Appurtenance(s)	1.00	1.12	6.785	7.46	0.00	1.200	1.749	1.00	2.870	3.44	25.7	69.6	167.5
154.00	1.00	1.12	6.797	7.48	0.00	1.200	1.750	1.00	2.850	3.42	25.6	69.1	166.3
156.00	1.00	1.12	6.822	7.50	0.00	1.200	1.752	2.00	5.642	6.77	50.8	136.4	328.4
158.00 Appurtenance(s)	1.00	1.13	6.847	7.53	0.00	1.200	1.754	2.00	5.563	6.68	50.3	134.5	323.5
160.00	1.00	1.13	6.872	7.56	0.00	1.200	1.757	2.00	5.484	6.58	49.7	132.7	318.6
162.00	1.00	1.13	6.896	7.59	0.00	1.200	1.759	2.00	5.405	6.49	49.2	130.8	313.7
163.00 Appurtenance(s)	1.00	1.14	6.909	7.60	0.00	1.200	1.760	1.00	2.673	3.21	24.4	64.9	155.2
164.00	1.00	1.14	6.921	7.61	0.00	1.200	1.761	1.00	2.653	3.18	24.2	64.4	154.0
166.00	1.00	1.14	6.945	7.64	0.00	1.200	1.763	2.00	5.247	6.30	48.1	127.0	303.8
168.00	1.00	1.15	6.968	7.67	0.00	1.200	1.765	2.00	5.168	6.20	47.5	125.1	298.8
170.00	1.00	1.15	6.992	7.69	0.00	1.200	1.767	2.00	5.089	6.11	47.0	123.2	293.9
172.00	1.00	1.15	7.015	7.72	0.00	1.200	1.769	2.00	5.010	6.01	46.4	121.3	288.9
173.00 Appurtenance(s)	1.00	1.16	7.027	7.73	0.00	1.200	1.770	1.00	2.475	2.97	23.0	60.2	142.8
174.00	1.00	1.16	7.039	7.74	0.00	1.200	1.771	1.00	2.456	2.95	22.8	59.7	141.6

Wind Loading - Shaft

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 49	

176.00		1.00	1.16	7.062	7.77	0.00	1.200	1.773	2.00	4.852	5.82	45.2	117.4	279.0
178.00		1.00	1.17	7.085	7.79	0.00	1.200	1.775	2.00	4.773	5.73	44.6	115.5	274.0
180.00	Top - Section 8	1.00	1.17	7.107	7.82	0.00	1.200	1.777	2.00	4.694	5.63	44.0	113.6	269.0
181.00	Appurtenance(s)	1.00	1.17	7.118	7.83	0.00	1.200	1.778	1.00	2.296	2.76	21.6	56.0	141.5
182.00		1.00	1.17	7.130	7.84	0.00	1.200	1.779	1.00	2.297	2.76	21.6	56.0	141.5
183.00		1.00	1.17	7.141	7.85	0.00	1.200	1.780	1.00	2.297	2.76	21.6	56.1	141.6
								Totals:	**183.00**			**5,281.9**		**54,120.7**

Discrete Appurtenance Forces

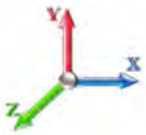
Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 50	

Tower Engineering Solutions

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 29

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	181.00	Low Profile	1	7.118	7.830	1.00	1.00	40.00	2833.73	0.000	0.000	313.18	0.00	0.00
2	173.00	LNX-6514DS-VTM	3	7.027	7.730	0.64	0.80	20.98	500.82	0.000	0.000	162.15	0.00	0.00
3	173.00	Low Profile	1	7.027	7.730	1.00	1.00	39.92	2827.72	0.000	0.000	308.54	0.00	0.00
4	173.00	APL866513-42T0	2	7.027	7.730	0.74	0.80	8.84	196.63	0.000	0.000	68.32	0.00	0.00
5	173.00	HBXX-6517DS-VTM	6	7.027	7.730	0.62	0.80	42.54	1058.47	0.000	0.000	328.85	0.00	0.00
6	173.00	LPA-80080-4CF-EDIN-0	4	7.027	7.730	1.36	0.80	19.16	394.32	0.000	0.000	148.06	0.00	0.00
7	173.00	RRH2X60-AWS	3	7.027	7.730	0.54	0.80	6.92	421.33	0.000	0.000	53.45	0.00	0.00
8	173.00	RRH2x60-700U	3	7.027	7.730	0.54	0.80	5.88	340.61	0.000	0.000	45.43	0.00	0.00
9	173.00	RRH2x60-1900	3	7.027	7.730	0.54	0.80	3.33	253.15	0.000	0.000	25.72	0.00	0.00
10	173.00	DB-T1-6Z-8AB-OZ	2	7.027	7.730	0.80	0.80	9.10	397.93	0.000	0.000	70.34	0.00	0.00
11	163.00	LLPX310R	3	6.909	7.599	0.55	0.80	9.89	298.43	0.000	0.000	75.18	0.00	0.00
12	163.00	Low Profile	1	6.909	7.599	1.00	1.00	39.81	2819.84	0.000	0.000	302.52	0.00	0.00
13	163.00	DAP Head	3	6.909	7.599	0.54	0.80	4.88	252.82	0.000	0.000	37.11	0.00	0.00
14	158.00	Low Profile	1	6.847	7.532	1.00	1.00	39.75	2815.73	0.000	0.000	299.43	0.00	0.00
15	153.00	V-brace kit	1	6.785	7.463	1.00	1.00	5.53	496.76	0.000	0.000	41.29	0.00	0.00
16	153.00	SPTB(Tie back Kit)	1	6.785	7.463	1.00	1.00	7.58	284.27	0.000	0.000	56.59	0.00	0.00
17	153.00	PRK-1245 (kicker kit)	1	6.785	7.463	1.00	1.00	19.47	787.99	0.000	0.000	145.29	0.00	0.00
18	153.00	RFS	3	6.785	7.463	0.56	0.80	37.20	1698.68	0.000	0.000	277.65	0.00	0.00
19	153.00	KRY 112 144/1	3	6.785	7.463	0.56	0.80	1.49	62.71	0.000	0.000	11.11	0.00	0.00
20	153.00	Ericsson Air 21 B2A/B4P	3	6.785	7.463	0.69	0.80	14.84	837.26	0.000	0.000	110.75	0.00	0.00
21	153.00	T-Arms	1	6.785	7.463	1.00	1.00	45.98	2189.20	0.000	0.000	343.19	0.00	0.00
22	153.00	Ericsson 4449 B71 + B85	3	6.785	7.463	0.54	0.80	4.09	261.89	0.000	0.000	30.49	0.00	0.00
23	153.00	Ericsson Air 21 B4A/B2P	3	6.785	7.463	0.69	0.80	14.84	833.30	0.000	0.000	110.75	0.00	0.00
24	143.00	OPA-65R-LCUU-H8	2	6.655	7.320	0.59	0.75	17.00	789.31	0.000	0.000	124.47	0.00	0.00
25	143.00	DBC0061F1V51-2	3	6.655	7.320	0.50	0.75	1.08	124.35	0.000	0.000	7.88	0.00	0.00
26	143.00	DTMABP7819VG12A	3	6.655	7.320	0.50	0.75	2.87	123.41	0.000	0.000	21.03	0.00	0.00
27	143.00	RRUS 32 B2	3	6.655	7.320	0.50	0.75	5.22	453.26	0.000	0.000	38.24	0.00	0.00
28	143.00	TPA-65R-LCUUUU-H8	2	6.655	7.320	0.62	0.75	18.60	800.81	0.000	0.000	136.14	0.00	0.00
29	143.00	OPA-65R-LCUU-H4	1	6.655	7.320	0.75	0.75	5.23	226.11	0.000	0.000	38.25	0.00	0.00
30	143.00	QS46512-2	1	6.655	7.320	0.75	0.75	10.75	152.60	0.000	0.000	78.72	0.00	0.00
31	143.00	Low Profile	1	6.655	7.320	1.00	1.00	39.58	2802.67	0.000	0.000	289.72	0.00	0.00
32	143.00	HRK14	1	6.655	7.320	1.00	1.00	19.98	1191.36	0.000	0.000	146.28	0.00	0.00
33	143.00	Powerwave 7770.00	3	6.655	7.320	0.55	0.75	10.77	529.15	0.000	0.000	78.87	0.00	0.00
34	143.00	850-1900 Dual Band	3	6.655	7.320	0.49	0.75	1.56	44.66	0.000	0.000	11.39	0.00	0.00
35	143.00	RRUS 11	3	6.655	7.320	0.50	0.75	4.78	448.54	0.000	0.000	34.96	0.00	0.00
36	143.00	DBC-750	3	6.655	7.320	0.38	0.75	1.17	37.44	0.000	0.000	8.54	0.00	0.00
37	143.00	DC6-48-60-18-8F	1	6.655	7.320	0.75	0.75	1.62	81.99	0.000	0.000	11.89	0.00	0.00
							Totals:		**30,669.25**			**4,391.77**		

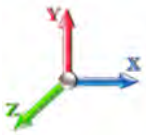
Total Applied Force Summary

Structure:	CT01002-S-SBA		**Code:**	EIA/TIA-222-G	5/5/2021
Site Name:	Waterford		**Exposure:**	B	
Height:	183.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 51

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 29

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
2.00		63.22	935.32	0.00	0.00
4.00		62.93	944.99	0.00	0.00
6.00		62.57	948.63	0.00	0.00
8.00		62.20	949.63	0.00	0.00
10.00		61.80	949.14	0.00	0.00
12.00		61.40	947.66	0.00	0.00
14.00		60.99	945.49	0.00	0.00
16.00		60.58	942.79	0.00	0.00
18.00		60.16	939.69	0.00	0.00
20.00		59.74	936.26	0.00	0.00
22.00		59.32	932.56	0.00	0.00
24.00		58.90	928.63	0.00	0.00
26.00		58.47	924.50	0.00	0.00
28.00		58.04	920.21	0.00	0.00
30.00		57.66	915.77	0.00	0.00
32.00		58.30	911.21	0.00	0.00
34.00		58.87	906.52	0.00	0.00
36.00		59.39	901.73	0.00	0.00
38.00		59.85	896.85	0.00	0.00
40.00		60.26	891.89	0.00	0.00
41.00		30.16	444.11	0.00	0.00
42.00		30.65	712.09	0.00	0.00
44.00		61.75	1416.79	0.00	0.00
46.00		62.05	1407.05	0.00	0.00
48.00		62.31	1397.24	0.00	0.00
50.00		62.54	876.20	0.00	0.00
51.00		31.25	436.20	0.00	0.00
52.00		31.30	434.86	0.00	0.00
54.00		62.89	865.47	0.00	0.00
56.00		63.03	860.04	0.00	0.00
58.00		63.13	854.56	0.00	0.00
60.00		63.22	849.04	0.00	0.00
62.00		63.27	843.48	0.00	0.00
64.00		63.30	837.88	0.00	0.00
66.00		63.31	845.57	0.00	0.00
66.17		5.36	72.79	0.00	0.00
68.00		57.90	780.61	0.00	0.00
70.00		63.27	847.71	0.00	0.00
71.00		31.55	421.88	0.00	0.00
72.00		31.53	420.46	0.00	0.00
74.00		63.14	836.40	0.00	0.00
76.00		63.05	830.70	0.00	0.00
78.00		62.94	824.98	0.00	0.00
80.00		62.82	819.23	0.00	0.00
81.00		31.30	407.60	0.00	0.00
82.00		31.26	369.40	0.00	0.00

Total Applied Force Summary

Structure:	CT01002-S-SBA		**Code:**	EIA/TIA-222-G	5/5/2021
Site Name:	Waterford		**Exposure:**	B	
Height:	183.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 52

84.00		62.52	734.72	0.00	0.00
85.00		31.14	365.62	0.00	0.00
86.00		31.50	549.65	0.00	0.00
88.00		62.96	1092.31	0.00	0.00
90.00		62.76	1083.39	0.00	0.00
91.00		31.25	538.51	0.00	0.00
92.00		31.20	360.52	0.00	0.00
93.83		57.02	656.17	0.00	0.00
94.00		5.27	60.78	0.00	0.00
96.00		62.09	697.77	0.00	0.00
98.00		61.83	678.60	0.00	0.00
100.00		61.57	673.33	0.00	0.00
102.00		61.29	668.05	0.00	0.00
104.00		61.00	662.75	0.00	0.00
106.00		57.49	647.59	0.00	0.00
108.00		57.16	642.24	0.00	0.00
110.00		56.82	636.88	0.00	0.00
111.17		33.04	380.61	0.00	0.00
112.00		23.35	268.95	0.00	0.00
114.00		56.10	643.85	0.00	0.00
115.00		29.52	325.07	0.00	0.00
116.00		29.43	292.86	0.00	0.00
118.00		58.66	581.88	0.00	0.00
120.00		58.29	577.27	0.00	0.00
122.00		57.90	572.66	0.00	0.00
123.83		52.63	519.98	0.00	0.00
124.00		4.86	48.16	0.00	0.00
126.00		57.11	554.39	0.00	0.00
128.00		56.69	540.71	0.00	0.00
130.00		56.27	536.00	0.00	0.00
132.00		56.57	762.08	0.00	0.00
134.00		56.13	754.30	0.00	0.00
135.00		27.87	374.44	0.00	0.00
136.00		27.76	263.22	0.00	0.00
138.00		55.23	522.46	0.00	0.00
140.00		54.77	517.71	0.00	0.00
142.00		54.30	512.94	0.00	0.00
143.00	(30) attachments	1053.34	8060.56	0.00	0.00
144.00		26.83	237.67	0.00	0.00
146.00		53.34	471.32	0.00	0.00
148.00		52.85	466.53	0.00	0.00
150.00		52.35	461.73	0.00	0.00
152.00		51.84	456.92	0.00	0.00
153.00	(19) attachments	1152.80	7678.93	0.00	0.00
154.00		25.58	210.84	0.00	0.00
156.00		50.81	417.61	0.00	0.00
158.00	(1) attachments	349.71	3228.50	0.00	0.00
160.00		49.74	407.93	0.00	0.00
162.00		49.20	403.08	0.00	0.00
163.00	(7) attachments	439.18	3571.03	0.00	0.00
164.00		24.24	195.07	0.00	0.00
166.00		48.10	386.03	0.00	0.00
168.00		47.54	381.16	0.00	0.00
170.00		46.97	376.27	0.00	0.00
172.00		46.40	371.38	0.00	0.00
173.00	(27) attachments	1233.82	6575.07	0.00	0.00
174.00		22.81	152.25	0.00	0.00

Total Applied Force Summary

Structure:	CT01002-S-SBA		**Code:**	EIA/TIA-222-G	5/5/2021
Site Name:	Waterford		**Exposure:**	B	
Height:	183.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 53

Tower Engineering Solutions

176.00		45.23	300.32	0.00	0.00
178.00		44.64	295.38	0.00	0.00
180.00		44.04	290.42	0.00	0.00
181.00	(1) attachments	334.76	2985.97	0.00	0.00
182.00		21.61	152.28	0.00	0.00
183.00		21.65	152.32	0.00	0.00
	Totals:	**9,673.68**	**97,266.81**	**0.00**	**0.00**

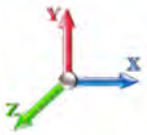
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 54	

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 29

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
2.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.030	0.000	4.256	0.00	4.48
2.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.030	0.000	4.256	0.00	6.80
2.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.71	0.00	0.030	0.000	4.256	0.00	23.06
4.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	4.256	0.00	4.99
4.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	4.256	0.00	7.35
4.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.73	0.00	0.031	0.000	4.256	0.00	24.28
6.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	4.256	0.00	5.33
6.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	4.256	0.00	7.70
6.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.75	0.00	0.031	0.000	4.256	0.00	25.05
8.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	4.256	0.00	5.58
8.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	4.256	0.00	7.97
8.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.76	0.00	0.031	0.000	4.256	0.00	25.62
10.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	4.256	0.00	5.79
10.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	4.256	0.00	8.19
10.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.77	0.00	0.031	0.000	4.256	0.00	26.08
12.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	4.256	0.00	5.96
12.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	4.256	0.00	8.37
12.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.78	0.00	0.031	0.000	4.256	0.00	26.47
14.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	4.256	0.00	6.11
14.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	4.256	0.00	8.53
14.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.79	0.00	0.032	0.000	4.256	0.00	26.80
16.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	4.256	0.00	6.25
16.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	4.256	0.00	8.67
16.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.80	0.00	0.032	0.000	4.256	0.00	27.10
18.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	4.256	0.00	6.37
18.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	4.256	0.00	8.80
18.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.80	0.00	0.032	0.000	4.256	0.00	27.37
20.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	4.256	0.00	6.48
20.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	4.256	0.00	8.92
20.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.81	0.00	0.032	0.000	4.256	0.00	27.61
22.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.033	0.000	4.256	0.00	6.59
22.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.033	0.000	4.256	0.00	9.03
22.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.81	0.00	0.033	0.000	4.256	0.00	27.83
24.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.033	0.000	4.256	0.00	6.68
24.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.033	0.000	4.256	0.00	9.13
24.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.81	0.00	0.033	0.000	4.256	0.00	28.04
26.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.033	0.000	4.256	0.00	6.77
26.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.033	0.000	4.256	0.00	9.23
26.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.82	0.00	0.033	0.000	4.256	0.00	28.23
28.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	4.256	0.00	6.86
28.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	4.256	0.00	9.32
28.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.82	0.00	0.034	0.000	4.256	0.00	28.41
30.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	4.260	0.00	6.94
30.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	4.260	0.00	9.40
30.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.83	0.00	0.034	0.000	4.260	0.00	28.57
32.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	4.339	0.00	7.02
32.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	4.339	0.00	9.48

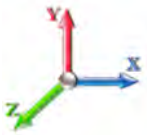
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 55	

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 29

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
32.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.83	0.00	0.034	0.000	4.339	0.00	28.73
34.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	4.415	0.00	7.09
34.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	4.415	0.00	9.55
34.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.83	0.00	0.034	0.000	4.415	0.00	28.88
36.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.035	0.000	4.487	0.00	7.16
36.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.035	0.000	4.487	0.00	9.63
36.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.83	0.00	0.035	0.000	4.487	0.00	29.03
38.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.035	0.000	4.557	0.00	7.22
38.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.035	0.000	4.557	0.00	9.70
38.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.84	0.00	0.035	0.000	4.557	0.00	29.16
40.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.035	0.000	4.625	0.00	7.28
40.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.035	0.000	4.625	0.00	9.76
40.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.84	0.00	0.035	0.000	4.625	0.00	29.29
41.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.035	0.000	4.657	0.00	3.66
41.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.035	0.000	4.657	0.00	4.90
41.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.42	0.00	0.035	0.000	4.657	0.00	14.68
42.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.036	0.000	4.689	0.00	3.67
42.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.036	0.000	4.689	0.00	4.91
42.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.42	0.00	0.036	0.000	4.689	0.00	14.71
44.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	4.752	0.00	7.40
44.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	4.752	0.00	9.89
44.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.84	0.00	0.036	0.000	4.752	0.00	29.54
46.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	4.813	0.00	7.46
46.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	4.813	0.00	9.94
46.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.85	0.00	0.036	0.000	4.813	0.00	29.65
48.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	4.872	0.00	7.51
48.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	4.872	0.00	10.00
48.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.85	0.00	0.036	0.000	4.872	0.00	29.77
50.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	4.929	0.00	7.56
50.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	4.929	0.00	10.06
50.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.85	0.00	0.036	0.000	4.929	0.00	29.87
51.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.037	0.000	4.957	0.00	3.80
51.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.037	0.000	4.957	0.00	5.04
51.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.43	0.00	0.037	0.000	4.957	0.00	14.96
52.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.037	0.000	4.984	0.00	3.81
52.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.037	0.000	4.984	0.00	5.05
52.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.43	0.00	0.037	0.000	4.984	0.00	14.99
54.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.037	0.000	5.039	0.00	7.66
54.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.037	0.000	5.039	0.00	10.16
54.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.86	0.00	0.037	0.000	5.039	0.00	30.08
56.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.037	0.000	5.091	0.00	7.71
56.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.037	0.000	5.091	0.00	10.21
56.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.86	0.00	0.037	0.000	5.091	0.00	30.17
58.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.038	0.000	5.142	0.00	7.76
58.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.038	0.000	5.142	0.00	10.26
58.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.86	0.00	0.038	0.000	5.142	0.00	30.27
60.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.038	0.000	5.193	0.00	7.80

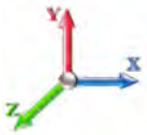
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 56	

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 29

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
60.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.038	0.000	5.193	0.00	10.31
60.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.86	0.00	0.038	0.000	5.193	0.00	30.36
62.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.038	0.000	5.241	0.00	7.85
62.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.038	0.000	5.241	0.00	10.35
62.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.86	0.00	0.038	0.000	5.241	0.00	30.45
64.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.039	0.000	5.289	0.00	7.89
64.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.039	0.000	5.289	0.00	10.40
64.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.86	0.00	0.039	0.000	5.289	0.00	30.54
66.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.039	0.000	5.336	0.00	7.93
66.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.039	0.000	5.336	0.00	10.44
66.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.87	0.00	0.039	0.000	5.336	0.00	30.62
66.00	C6X10.5 Reinforcing	Yes	1.00	0.000	0.00	0.00	0.00	0.039	0.000	5.336	0.00	13.32
66.17	Safety Cable	Yes	0.17	0.000	0.00	0.00	0.00	0.039	0.000	5.340	0.00	0.67
66.17	Step bolts (ladder)	Yes	0.17	0.000	0.00	0.00	0.00	0.039	0.000	5.340	0.00	0.89
66.17	1 5/8" Coax	Yes	0.17	0.000	1.98	0.07	0.00	0.039	0.000	5.340	0.00	2.60
66.17	C6X10.5 Reinforcing	Yes	0.17	0.000	0.00	0.00	0.00	0.039	0.000	5.340	0.00	2.26
68.00	Safety Cable	Yes	1.83	0.000	0.00	0.00	0.00	0.039	0.000	5.382	0.00	7.29
68.00	Step bolts (ladder)	Yes	1.83	0.000	0.00	0.00	0.00	0.039	0.000	5.382	0.00	9.59
68.00	1 5/8" Coax	Yes	1.83	0.000	1.98	0.79	0.00	0.039	0.000	5.382	0.00	28.09
68.00	C6X10.5 Reinforcing	Yes	1.83	0.000	0.00	0.00	0.00	0.039	0.000	5.382	0.00	24.46
70.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.040	0.000	5.426	0.00	8.01
70.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.040	0.000	5.426	0.00	10.52
70.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.87	0.00	0.040	0.000	5.426	0.00	30.78
70.00	C6X10.5 Reinforcing	Yes	2.00	0.000	0.00	0.00	0.00	0.040	0.000	5.426	0.00	26.82
71.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.040	0.000	5.448	0.00	4.02
71.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.040	0.000	5.448	0.00	5.27
71.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.43	0.00	0.040	0.000	5.448	0.00	15.41
71.00	C6X10.5 Reinforcing	Yes	1.00	0.000	0.00	0.00	0.00	0.040	0.000	5.448	0.00	13.43
72.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.040	0.000	5.470	0.00	4.03
72.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.040	0.000	5.470	0.00	5.28
72.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.44	0.00	0.040	0.000	5.470	0.00	15.43
72.00	C6X10.5 Reinforcing	Yes	1.00	0.000	0.00	0.00	0.00	0.040	0.000	5.470	0.00	13.46
74.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.041	0.000	5.513	0.00	8.09
74.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.041	0.000	5.513	0.00	10.60
74.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.87	0.00	0.041	0.000	5.513	0.00	30.94
74.00	C6X10.5 Reinforcing	Yes	2.00	0.000	0.00	0.00	0.00	0.041	0.000	5.513	0.00	27.00
76.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.041	0.000	5.555	0.00	8.13
76.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.041	0.000	5.555	0.00	10.64
76.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.87	0.00	0.041	0.000	5.555	0.00	31.01
76.00	C6X10.5 Reinforcing	Yes	2.00	0.000	0.00	0.00	0.00	0.041	0.000	5.555	0.00	27.08
78.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.041	0.000	5.597	0.00	8.16
78.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.041	0.000	5.597	0.00	10.68
78.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.87	0.00	0.041	0.000	5.597	0.00	31.09
78.00	C6X10.5 Reinforcing	Yes	2.00	0.000	0.00	0.00	0.00	0.041	0.000	5.597	0.00	27.17
80.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.042	0.000	5.637	0.00	8.20
80.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.042	0.000	5.637	0.00	10.72
80.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.88	0.00	0.042	0.000	5.637	0.00	31.16

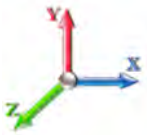
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 57	

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 29

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
80.00	C6X10.5 Reinforcing	Yes	2.00	0.000	0.00	0.00	0.00	0.042	0.000	5.637	0.00	27.25
81.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.042	0.000	5.657	0.00	4.11
81.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.042	0.000	5.657	0.00	5.37
81.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.44	0.00	0.042	0.000	5.657	0.00	15.60
81.00	C6X10.5 Reinforcing	Yes	1.00	0.000	0.00	0.00	0.00	0.042	0.000	5.657	0.00	13.64
82.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.042	0.000	5.677	0.00	4.12
82.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.042	0.000	5.677	0.00	5.38
82.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.44	0.00	0.042	0.000	5.677	0.00	15.61
82.00	C6X10.5 Reinforcing	Yes	1.00	0.000	0.00	0.00	0.00	0.042	0.000	5.677	0.00	13.66
84.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.043	0.000	5.716	0.00	8.27
84.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.043	0.000	5.716	0.00	10.79
84.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.88	0.00	0.043	0.000	5.716	0.00	31.30
84.00	C6X10.5 Reinforcing	Yes	2.00	0.000	0.00	0.00	0.00	0.043	0.000	5.716	0.00	27.41
85.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.043	0.000	5.736	0.00	4.14
85.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.043	0.000	5.736	0.00	5.40
85.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.44	0.00	0.043	0.000	5.736	0.00	15.66
85.00	C6X10.5 Reinforcing	Yes	1.00	0.000	0.00	0.00	0.00	0.043	0.000	5.736	0.00	13.72
86.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.043	0.000	5.755	0.00	4.15
86.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.043	0.000	5.755	0.00	5.41
86.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.44	0.00	0.043	0.000	5.755	0.00	15.68
86.00	C6X10.5 Reinforcing	Yes	1.00	0.000	0.00	0.00	0.00	0.043	0.000	5.755	0.00	13.74
88.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.044	0.000	5.793	0.00	8.33
88.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.044	0.000	5.793	0.00	10.86
88.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.88	0.00	0.044	0.000	5.793	0.00	31.43
88.00	C6X10.5 Reinforcing	Yes	2.00	0.000	0.00	0.00	0.00	0.044	0.000	5.793	0.00	27.56
90.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.044	0.000	5.830	0.00	8.37
90.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.044	0.000	5.830	0.00	10.89
90.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.88	0.00	0.044	0.000	5.830	0.00	31.49
90.00	C6X10.5 Reinforcing	Yes	2.00	0.000	0.00	0.00	0.00	0.044	0.000	5.830	0.00	27.63
91.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.044	0.000	5.849	0.00	4.19
91.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.044	0.000	5.849	0.00	5.45
91.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.44	0.00	0.044	0.000	5.849	0.00	15.76
91.00	C6X10.5 Reinforcing	Yes	1.00	0.000	0.00	0.00	0.00	0.044	0.000	5.849	0.00	13.83
92.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.044	0.000	5.867	0.00	4.20
92.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.044	0.000	5.867	0.00	5.46
92.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.44	0.00	0.044	0.000	5.867	0.00	15.78
92.00	C6X10.5 Reinforcing	Yes	1.00	0.000	0.00	0.00	0.00	0.044	0.000	5.867	0.00	13.85
93.83	Safety Cable	Yes	1.83	0.000	0.00	0.00	0.00	0.044	0.000	5.900	0.00	7.71
93.83	Step bolts (ladder)	Yes	1.83	0.000	0.00	0.00	0.00	0.044	0.000	5.900	0.00	10.02
93.83	1 5/8" Coax	Yes	1.83	0.000	1.98	0.81	0.00	0.044	0.000	5.900	0.00	28.93
93.83	C6X10.5 Reinforcing	Yes	1.83	0.000	0.00	0.00	0.00	0.044	0.000	5.900	0.00	25.41
94.00	Safety Cable	Yes	0.17	0.000	0.00	0.00	0.00	0.045	0.000	5.903	0.00	0.72
94.00	Step bolts (ladder)	Yes	0.17	0.000	0.00	0.00	0.00	0.045	0.000	5.903	0.00	0.93
94.00	1 5/8" Coax	Yes	0.17	0.000	1.98	0.08	0.00	0.045	0.000	5.903	0.00	2.69
94.00	C6X10.5 Reinforcing	Yes	0.17	0.000	0.00	0.00	0.00	0.045	0.000	5.903	0.00	2.36
96.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.045	0.000	5.939	0.00	8.46
96.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.045	0.000	5.939	0.00	10.99

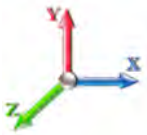
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 58	

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 29

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
96.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.89	0.00	0.045	0.000	5.939	0.00	31.68
96.00	C6X10.5 Reinforcing	Yes	1.00	0.000	0.00	0.00	0.00	0.045	0.000	5.939	0.00	13.92
98.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.045	0.000	5.974	0.00	8.49
98.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.045	0.000	5.974	0.00	11.02
98.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.89	0.00	0.045	0.000	5.974	0.00	31.74
100.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.046	0.000	6.008	0.00	8.52
100.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.046	0.000	6.008	0.00	11.05
100.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.89	0.00	0.046	0.000	6.008	0.00	31.80
102.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.046	0.000	6.043	0.00	8.55
102.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.046	0.000	6.043	0.00	11.08
102.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.89	0.00	0.046	0.000	6.043	0.00	31.86
104.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.047	0.000	6.076	0.00	8.58
104.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.047	0.000	6.076	0.00	11.11
104.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.89	0.00	0.047	0.000	6.076	0.00	31.91
106.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.047	0.000	6.109	0.00	8.60
106.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.047	0.000	6.109	0.00	11.14
106.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.89	0.00	0.047	0.000	6.109	0.00	31.97
108.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.048	0.000	6.142	0.00	8.63
108.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.048	0.000	6.142	0.00	11.17
108.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.89	0.00	0.048	0.000	6.142	0.00	32.02
110.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.048	0.000	6.174	0.00	8.66
110.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.048	0.000	6.174	0.00	11.20
110.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.89	0.00	0.048	0.000	6.174	0.00	32.08
111.17	Safety Cable	Yes	1.17	0.000	0.00	0.00	0.00	0.049	0.000	6.193	0.00	5.08
111.17	Step bolts (ladder)	Yes	1.17	0.000	0.00	0.00	0.00	0.049	0.000	6.193	0.00	6.56
111.17	1 5/8" Coax	Yes	1.17	0.000	1.98	0.52	0.00	0.049	0.000	6.193	0.00	18.78
111.17	C6X10.5 Reinforcing	Yes	1.17	0.000	0.00	0.00	0.00	0.049	0.000	6.193	0.00	10.34
112.00	Safety Cable	Yes	0.83	0.000	0.00	0.00	0.00	0.049	0.000	6.206	0.00	3.61
112.00	Step bolts (ladder)	Yes	0.83	0.000	0.00	0.00	0.00	0.049	0.000	6.206	0.00	4.66
112.00	1 5/8" Coax	Yes	0.83	0.000	1.98	0.37	0.00	0.049	0.000	6.206	0.00	13.33
112.00	C6X10.5 Reinforcing	Yes	0.83	0.000	0.00	0.00	0.00	0.049	0.000	6.206	0.00	7.34
114.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.050	0.000	6.238	0.00	8.71
114.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.050	0.000	6.238	0.00	11.26
114.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.90	0.00	0.050	0.000	6.238	0.00	32.19
114.00	C6X10.5 Reinforcing	Yes	2.00	0.000	0.00	0.00	0.00	0.050	0.000	6.238	0.00	17.73
115.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.050	0.000	6.253	0.00	4.36
115.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.050	0.000	6.253	0.00	5.64
115.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.45	0.00	0.050	0.000	6.253	0.00	16.11
115.00	C6X10.5 Reinforcing	Yes	1.00	0.000	0.00	0.00	0.00	0.050	0.000	6.253	0.00	8.88
116.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.050	0.000	6.269	0.00	4.37
116.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.050	0.000	6.269	0.00	5.64
116.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.45	0.00	0.050	0.000	6.269	0.00	16.12
116.00	C6X10.5 Reinforcing	Yes	1.00	0.000	0.00	0.00	0.00	0.050	0.000	6.269	0.00	8.89
118.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.051	0.000	6.299	0.00	8.77
118.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.051	0.000	6.299	0.00	11.31
118.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.90	0.00	0.051	0.000	6.299	0.00	32.29
118.00	C6X10.5 Reinforcing	Yes	2.00	0.000	0.00	0.00	0.00	0.051	0.000	6.299	0.00	17.81

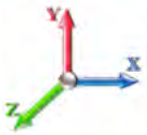
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 59	

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 29

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
120.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.052	0.000	6.330	0.00	8.79
120.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.052	0.000	6.330	0.00	11.34
120.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.90	0.00	0.052	0.000	6.330	0.00	32.34
120.00	C6X10.5 Reinforcing	Yes	2.00	0.000	0.00	0.00	0.00	0.052	0.000	6.330	0.00	17.86
122.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.052	0.000	6.360	0.00	8.82
122.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.052	0.000	6.360	0.00	11.36
122.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.90	0.00	0.052	0.000	6.360	0.00	32.39
122.00	C6X10.5 Reinforcing	Yes	2.00	0.000	0.00	0.00	0.00	0.052	0.000	6.360	0.00	17.90
123.83	Safety Cable	Yes	1.83	0.000	0.00	0.00	0.00	0.053	0.000	6.387	0.00	8.09
123.83	Step bolts (ladder)	Yes	1.83	0.000	0.00	0.00	0.00	0.053	0.000	6.387	0.00	10.42
123.83	1 5/8" Coax	Yes	1.83	0.000	1.98	0.82	0.00	0.053	0.000	6.387	0.00	29.68
123.83	C6X10.5 Reinforcing	Yes	1.83	0.000	0.00	0.00	0.00	0.053	0.000	6.387	0.00	16.41
124.00	Safety Cable	Yes	0.17	0.000	0.00	0.00	0.00	0.053	0.000	6.389	0.00	0.75
124.00	Step bolts (ladder)	Yes	0.17	0.000	0.00	0.00	0.00	0.053	0.000	6.389	0.00	0.97
124.00	1 5/8" Coax	Yes	0.17	0.000	1.98	0.08	0.00	0.053	0.000	6.389	0.00	2.76
124.00	C6X10.5 Reinforcing	Yes	0.17	0.000	0.00	0.00	0.00	0.053	0.000	6.389	0.00	1.52
126.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.053	0.000	6.419	0.00	8.87
126.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.053	0.000	6.419	0.00	11.42
126.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.90	0.00	0.053	0.000	6.419	0.00	32.49
126.00	C6X10.5 Reinforcing	Yes	1.00	0.000	0.00	0.00	0.00	0.053	0.000	6.419	0.00	8.99
128.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.054	0.000	6.448	0.00	8.89
128.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.054	0.000	6.448	0.00	11.44
128.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.90	0.00	0.054	0.000	6.448	0.00	32.53
130.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.055	0.000	6.476	0.00	8.91
130.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.055	0.000	6.476	0.00	11.47
130.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.90	0.00	0.055	0.000	6.476	0.00	32.58
132.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.056	0.000	6.504	0.00	8.94
132.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.056	0.000	6.504	0.00	11.49
132.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.90	0.00	0.056	0.000	6.504	0.00	32.63
134.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.056	0.000	6.532	0.00	8.96
134.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.056	0.000	6.532	0.00	11.52
134.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.91	0.00	0.056	0.000	6.532	0.00	32.67
135.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.057	0.000	6.546	0.00	4.49
135.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.057	0.000	6.546	0.00	5.76
135.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.45	0.00	0.057	0.000	6.546	0.00	16.35
136.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.057	0.000	6.560	0.00	4.49
136.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.057	0.000	6.560	0.00	5.77
136.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.45	0.00	0.057	0.000	6.560	0.00	16.36
138.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.057	0.000	6.588	0.00	9.01
138.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.057	0.000	6.588	0.00	11.56
138.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.91	0.00	0.057	0.000	6.588	0.00	32.76
140.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.058	0.000	6.615	0.00	9.03
140.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.058	0.000	6.615	0.00	11.59
140.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.91	0.00	0.058	0.000	6.615	0.00	32.81
142.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.059	0.000	6.642	0.00	9.05
142.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.059	0.000	6.642	0.00	11.61
142.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.91	0.00	0.059	0.000	6.642	0.00	32.85

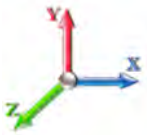
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 60	

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 29

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
143.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.059	0.000	6.655	0.00	4.53
143.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.059	0.000	6.655	0.00	5.81
143.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.45	0.00	0.059	0.000	6.655	0.00	16.44
144.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.060	0.000	6.668	0.00	4.54
144.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.060	0.000	6.668	0.00	5.82
144.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.45	0.00	0.060	0.000	6.668	0.00	16.45
146.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.060	0.000	6.695	0.00	9.10
146.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.060	0.000	6.695	0.00	11.66
146.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.91	0.00	0.060	0.000	6.695	0.00	32.94
148.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.061	0.000	6.721	0.00	9.12
148.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.061	0.000	6.721	0.00	11.68
148.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.91	0.00	0.061	0.000	6.721	0.00	32.98
150.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.062	0.000	6.746	0.00	9.14
150.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.062	0.000	6.746	0.00	11.70
150.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.91	0.00	0.062	0.000	6.746	0.00	33.02
152.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.063	0.000	6.772	0.00	9.16
152.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.063	0.000	6.772	0.00	11.72
152.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.91	0.00	0.063	0.000	6.772	0.00	33.06
153.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.064	0.000	6.785	0.00	4.59
153.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.064	0.000	6.785	0.00	5.87
153.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.46	0.00	0.064	0.000	6.785	0.00	16.54
154.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.064	0.000	6.797	0.00	4.59
154.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.064	0.000	6.797	0.00	5.87
154.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.46	0.00	0.064	0.000	6.797	0.00	16.55
156.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.065	0.000	6.822	0.00	9.20
156.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.065	0.000	6.822	0.00	11.77
156.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.91	0.00	0.065	0.000	6.822	0.00	33.14
158.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.066	0.000	6.847	0.00	9.22
158.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.066	0.000	6.847	0.00	11.79
158.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.91	0.00	0.066	0.000	6.847	0.00	33.18
160.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.067	0.000	6.872	0.00	9.24
160.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.067	0.000	6.872	0.00	11.81
160.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.92	0.00	0.067	0.000	6.872	0.00	33.22
162.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.068	0.000	6.896	0.00	9.26
162.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.068	0.000	6.896	0.00	11.83
162.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.92	0.00	0.068	0.000	6.896	0.00	33.26
163.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.069	0.000	6.909	0.00	4.64
163.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.069	0.000	6.909	0.00	5.92
163.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.46	0.00	0.069	0.000	6.909	0.00	16.64
164.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.070	0.000	6.921	0.00	4.64
164.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.070	0.000	6.921	0.00	5.92
164.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.46	0.00	0.070	0.000	6.921	0.00	16.65
166.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.071	0.000	6.945	0.00	9.30
166.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.071	0.000	6.945	0.00	11.87
166.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.92	0.00	0.071	0.000	6.945	0.00	33.34
168.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.072	0.000	6.968	0.00	9.32
168.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.072	0.000	6.968	0.00	11.89

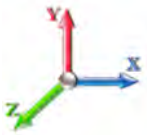
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 61	

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 29

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
168.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.92	0.00	0.072	0.000	6.968	0.00	33.37
170.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.073	0.000	6.992	0.00	9.34
170.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.073	0.000	6.992	0.00	11.91
170.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.92	0.00	0.073	0.000	6.992	0.00	33.41
172.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.075	0.000	7.015	0.00	9.36
172.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.075	0.000	7.015	0.00	11.93
172.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.92	0.00	0.075	0.000	7.015	0.00	33.45
173.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.076	0.000	7.027	0.00	4.68
173.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.076	0.000	7.027	0.00	5.97
173.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.46	0.00	0.076	0.000	7.027	0.00	16.73
174.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	7.039	0.00	4.69
174.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	7.039	0.00	5.97
176.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	7.062	0.00	9.40
176.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	7.062	0.00	11.97
178.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	7.085	0.00	9.42
178.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	7.085	0.00	11.99
180.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	7.107	0.00	9.43
180.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	7.107	0.00	12.01
181.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	7.118	0.00	4.72
181.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	7.118	0.00	6.01
182.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	7.130	0.00	4.73
182.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	7.130	0.00	6.01
183.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	7.141	0.00	4.73
183.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	7.141	0.00	6.02
										Totals:	**0.0**	**4,918.5**

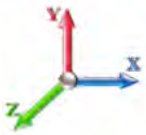
Calculated Forces

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 62	

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 29

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-97.27	-9.69	0.00	-1279.2	0.00	1279.29	5190.16	2595.08	13702.9	6861.66	0.00	0.000	0.000	0.205
2.00	-96.33	-9.66	0.00	-1259.9	0.00	1259.92	5174.50	2587.25	13560.7	6790.43	0.00	-0.018	0.000	0.204
4.00	-95.38	-9.62	0.00	-1240.6	0.00	1240.61	5158.51	2579.25	13418.2	6719.08	0.02	-0.037	0.000	0.203
6.00	-94.43	-9.59	0.00	-1221.3	0.00	1221.36	5142.18	2571.09	13275.4	6647.61	0.04	-0.055	0.000	0.202
8.00	-93.47	-9.56	0.00	-1202.1	0.00	1202.18	5125.52	2562.76	13132.5	6576.03	0.06	-0.074	0.000	0.201
10.00	-92.52	-9.52	0.00	-1183.0	0.00	1183.07	5108.53	2554.27	12989.4	6504.36	0.10	-0.092	0.000	0.200
12.00	-91.57	-9.49	0.00	-1164.0	0.00	1164.02	5091.21	2545.61	12846.0	6432.60	0.14	-0.111	0.000	0.199
14.00	-90.62	-9.46	0.00	-1145.0	0.00	1145.03	5073.56	2536.78	12702.6	6360.75	0.19	-0.130	0.000	0.198
16.00	-89.68	-9.43	0.00	-1126.1	0.00	1126.12	5055.57	2527.79	12559.0	6288.85	0.25	-0.149	0.000	0.197
18.00	-88.73	-9.39	0.00	-1107.2	0.00	1107.27	5037.25	2518.63	12415.3	6216.88	0.32	-0.168	0.000	0.196
20.00	-87.80	-9.36	0.00	-1088.4	0.00	1088.48	5018.60	2509.30	12271.4	6144.86	0.39	-0.188	0.000	0.195
22.00	-86.86	-9.33	0.00	-1069.7	0.00	1069.76	4999.62	2499.81	12127.5	6072.81	0.47	-0.207	0.000	0.194
24.00	-85.93	-9.29	0.00	-1051.1	0.00	1051.11	4980.31	2490.15	11983.6	6000.72	0.57	-0.227	0.000	0.192
26.00	-85.00	-9.26	0.00	-1032.5	0.00	1032.52	4960.66	2480.33	11839.6	5928.62	0.66	-0.247	0.000	0.191
28.00	-84.08	-9.23	0.00	-1014.0	0.00	1014.00	4940.68	2470.34	11695.6	5856.50	0.77	-0.266	0.000	0.190
30.00	-83.16	-9.20	0.00	-995.54	0.00	995.54	4920.37	2460.19	11551.6	5784.39	0.89	-0.286	0.000	0.189
32.00	-82.24	-9.16	0.00	-977.15	0.00	977.15	4899.73	2449.87	11407.6	5712.28	1.01	-0.306	0.000	0.188
34.00	-81.34	-9.13	0.00	-958.83	0.00	958.83	4878.76	2439.38	11263.6	5640.19	1.15	-0.327	0.000	0.187
36.00	-80.43	-9.09	0.00	-940.58	0.00	940.58	4857.45	2428.72	11119.7	5568.14	1.29	-0.347	0.000	0.185
38.00	-79.53	-9.05	0.00	-922.40	0.00	922.40	4835.81	2417.91	10975.9	5496.12	1.44	-0.367	0.000	0.184
40.00	-78.64	-9.01	0.00	-904.29	0.00	904.29	4813.84	2406.92	10832.2	5424.15	1.60	-0.388	0.000	0.183
41.00	-78.19	-8.99	0.00	-895.28	0.00	895.28	4802.73	2401.36	10760.3	5388.18	1.68	-0.398	0.000	0.182
42.00	-77.48	-8.97	0.00	-886.30	0.00	886.30	4791.54	2395.77	10688.5	5352.24	1.76	-0.409	0.000	0.182
44.00	-76.06	-8.93	0.00	-868.35	0.00	868.35	4768.90	2384.45	10545.1	5280.39	1.94	-0.430	0.000	0.180
46.00	-74.65	-8.88	0.00	-850.49	0.00	850.49	4745.94	2372.97	10401.7	5208.63	2.12	-0.451	0.000	0.179
48.00	-73.25	-8.84	0.00	-832.72	0.00	832.72	4759.60	2379.80	10486.7	5251.18	2.32	-0.472	0.000	0.174
50.00	-72.37	-8.79	0.00	-815.04	0.00	815.04	4736.50	2368.25	10343.5	5179.45	2.52	-0.493	0.000	0.173
51.00	-71.93	-8.77	0.00	-806.26	0.00	806.26	4724.82	2362.41	10271.9	5143.62	2.62	-0.503	0.000	0.172
51.00	-71.93	-8.77	0.00	-806.26	0.00	806.26	4064.30	2032.15	8835.99	4424.56	2.62	-0.503	0.000	0.200
52.00	-71.50	-8.75	0.00	-797.49	0.00	797.49	4053.20	2026.60	8772.35	4392.70	2.73	-0.513	0.000	0.199
54.00	-70.63	-8.70	0.00	-779.99	0.00	779.99	4030.83	2015.41	8645.34	4329.09	2.95	-0.534	0.000	0.198
56.00	-69.77	-8.66	0.00	-762.58	0.00	762.58	4008.20	2004.10	8518.66	4265.66	3.18	-0.554	0.000	0.196
58.00	-68.91	-8.61	0.00	-745.27	0.00	745.27	3985.33	1992.66	8392.33	4202.40	3.41	-0.575	0.000	0.195
60.00	-68.06	-8.56	0.00	-728.04	0.00	728.04	3962.20	1981.10	8266.38	4139.33	3.66	-0.596	0.000	0.193
62.00	-67.21	-8.52	0.00	-710.92	0.00	710.92	3938.82	1969.41	8140.81	4076.46	3.91	-0.617	0.000	0.191
64.00	-66.37	-8.47	0.00	-693.88	0.00	693.88	3915.19	1957.60	8015.64	4013.78	4.18	-0.637	0.000	0.190
66.00	-65.52	-8.41	0.00	-676.95	0.00	676.95	3891.31	1945.66	7890.88	3951.30	4.45	-0.658	0.000	0.188
66.17	-65.45	-8.41	0.00	-675.52	0.00	675.52	3889.27	1944.64	7880.29	3946.00	4.47	-0.660	0.000	0.138
68.00	-64.67	-8.36	0.00	-660.12	0.00	660.12	3867.19	1933.59	7766.55	3889.05	4.73	-0.674	0.000	0.137
70.00	-63.82	-8.30	0.00	-643.40	0.00	643.40	3842.81	1921.40	7642.66	3827.01	5.01	-0.690	0.000	0.135
71.00	-63.40	-8.27	0.00	-635.10	0.00	635.10	3830.52	1915.26	7580.89	3796.08	5.16	-0.698	0.000	0.134
71.00	-63.40	-8.27	0.00	-635.10	0.00	635.10	3467.89	1733.95	6863.13	3436.66	5.16	-0.698	0.000	0.148
72.00	-62.98	-8.25	0.00	-626.83	0.00	626.83	3456.29	1728.14	6806.46	3408.29	5.31	-0.705	0.000	0.147
74.00	-62.14	-8.19	0.00	-610.33	0.00	610.33	3432.92	1716.46	6693.50	3351.73	5.60	-0.721	0.000	0.145
76.00	-61.31	-8.14	0.00	-593.95	0.00	593.95	3409.33	1704.67	6581.05	3295.42	5.91	-0.736	0.000	0.144
78.00	-60.48	-8.08	0.00	-577.68	0.00	577.68	3385.54	1692.77	6469.11	3239.36	6.22	-0.752	0.000	0.142
80.00	-59.66	-8.02	0.00	-561.52	0.00	561.52	3361.54	1680.77	6357.71	3183.58	6.54	-0.767	0.000	0.140
81.00	-59.25	-7.99	0.00	-553.51	0.00	553.51	3349.46	1674.73	6302.21	3155.79	6.70	-0.775	0.000	0.139

Calculated Forces

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 63

81.00	-59.25	-7.99	0.00	-553.51	0.00	553.51	2964.88	1482.44	5593.85	2801.08	6.70	-0.775	0.000	0.131
82.00	-58.88	-7.96	0.00	-545.52	0.00	545.52	2956.03	1478.01	5548.33	2778.29	6.86	-0.783	0.000	0.147
84.00	-58.14	-7.90	0.00	-529.59	0.00	529.59	2938.12	1469.06	5457.44	2732.78	7.20	-0.800	0.000	0.145
85.00	-57.78	-7.88	0.00	-521.69	0.00	521.69	2929.07	1464.54	5412.08	2710.06	7.36	-0.809	0.000	0.143
86.00	-57.23	-7.85	0.00	-513.81	0.00	513.81	2919.96	1459.98	5366.77	2687.37	7.53	-0.817	0.000	0.141
88.00	-56.13	-7.79	0.00	-498.11	0.00	498.11	2901.53	1450.76	5276.32	2642.08	7.88	-0.835	0.000	0.139
90.00	-55.05	-7.72	0.00	-482.54	0.00	482.54	2882.84	1441.42	5186.12	2596.92	8.23	-0.852	0.000	0.136
91.00	-54.51	-7.69	0.00	-474.81	0.00	474.81	2898.35	1449.17	5260.87	2634.34	8.41	-0.860	0.000	0.137
92.00	-54.15	-7.67	0.00	-467.12	0.00	467.12	2889.01	1444.51	5215.76	2611.76	8.59	-0.869	0.000	0.132
93.83	-53.49	-7.61	0.00	-453.10	0.00	453.10	2871.76	1435.88	5133.38	2570.50	8.93	-0.884	0.000	0.130
93.83	-53.49	-7.61	0.00	-453.10	0.00	453.10	2871.76	1435.88	5133.38	2570.50	8.93	-0.884	0.000	0.130
94.00	-53.43	-7.61	0.00	-451.80	0.00	451.80	2870.15	1435.07	5125.73	2566.68	8.96	-0.885	0.000	0.195
96.00	-52.73	-7.56	0.00	-436.58	0.00	436.58	2851.02	1425.51	5035.98	2521.73	9.34	-0.910	0.000	0.192
98.00	-52.05	-7.51	0.00	-421.45	0.00	421.45	2831.62	1415.81	4946.52	2476.93	9.73	-0.934	0.000	0.189
100.00	-51.37	-7.46	0.00	-406.43	0.00	406.43	2811.97	1405.98	4857.35	2432.29	10.12	-0.959	0.000	0.185
102.00	-50.70	-7.41	0.00	-391.51	0.00	391.51	2792.05	1396.03	4768.51	2387.80	10.53	-0.983	0.000	0.182
104.00	-50.04	-7.36	0.00	-376.69	0.00	376.69	2771.87	1385.94	4680.00	2343.48	10.95	-1.008	0.000	0.179
106.00	-49.39	-7.31	0.00	-361.98	0.00	361.98	2751.43	1375.71	4591.84	2299.33	11.37	-1.032	0.000	0.175
108.00	-48.75	-7.26	0.00	-347.36	0.00	347.36	2730.72	1365.36	4504.04	2255.37	11.81	-1.056	0.000	0.172
110.00	-48.11	-7.21	0.00	-332.83	0.00	332.83	2709.75	1354.88	4416.62	2211.59	12.26	-1.080	0.000	0.168
111.17	-47.73	-7.18	0.00	-324.40	0.00	324.40	2697.36	1348.68	4365.66	2186.08	12.53	-1.094	0.000	0.133
112.00	-47.46	-7.16	0.00	-318.44	0.00	318.44	2688.52	1344.26	4329.60	2168.02	12.72	-1.102	0.000	0.131
114.00	-46.81	-7.10	0.00	-304.12	0.00	304.12	2667.03	1333.51	4242.98	2124.64	13.18	-1.120	0.000	0.128
115.00	-46.49	-7.07	0.00	-297.02	0.00	297.02	2656.18	1328.09	4199.83	2103.04	13.42	-1.130	0.000	0.123
115.00	-46.49	-7.07	0.00	-297.02	0.00	297.02	1951.15	975.57	3095.05	1549.82	13.42	-1.130	0.000	0.135
116.00	-46.19	-7.05	0.00	-289.94	0.00	289.94	1944.57	972.29	3065.67	1535.11	13.66	-1.139	0.000	0.157
118.00	-45.61	-7.00	0.00	-275.84	0.00	275.84	1931.24	965.62	3006.98	1505.73	14.14	-1.160	0.000	0.152
120.00	-45.03	-6.94	0.00	-261.84	0.00	261.84	1917.63	958.82	2948.42	1476.40	14.63	-1.180	0.000	0.147
122.00	-44.46	-6.89	0.00	-247.96	0.00	247.96	1903.77	951.88	2889.98	1447.14	15.13	-1.200	0.000	0.142
123.83	-43.94	-6.83	0.00	-235.35	0.00	235.35	1890.85	945.43	2836.64	1420.43	15.59	-1.218	0.000	0.137
123.83	-43.94	-6.83	0.00	-235.35	0.00	235.35	1890.85	945.43	2836.64	1420.43	15.59	-1.218	0.000	0.137
124.00	-43.89	-6.84	0.00	-234.19	0.00	234.19	1889.64	944.82	2831.69	1417.95	15.63	-1.220	0.000	0.188
126.00	-43.33	-6.79	0.00	-220.51	0.00	220.51	1875.25	937.63	2773.56	1388.84	16.15	-1.247	0.000	0.182
128.00	-42.79	-6.74	0.00	-206.94	0.00	206.94	1860.60	930.30	2715.62	1359.83	16.68	-1.273	0.000	0.175
130.00	-42.25	-6.69	0.00	-193.46	0.00	193.46	1845.69	922.84	2657.86	1330.91	17.22	-1.298	0.000	0.168
132.00	-41.49	-6.63	0.00	-180.08	0.00	180.08	1830.51	915.25	2600.31	1302.09	17.77	-1.323	0.000	0.161
134.00	-40.73	-6.57	0.00	-166.81	0.00	166.81	1815.07	907.53	2542.99	1273.39	18.33	-1.347	0.000	0.153
135.00	-40.36	-6.54	0.00	-160.24	0.00	160.24	1823.79	911.89	2575.21	1289.52	18.61	-1.358	0.000	0.146
136.00	-40.09	-6.52	0.00	-153.69	0.00	153.69	1816.04	908.02	2546.57	1275.18	18.90	-1.370	0.000	0.143
138.00	-39.57	-6.47	0.00	-140.65	0.00	140.65	1800.35	900.18	2489.47	1246.58	19.47	-1.391	0.000	0.135
140.00	-39.05	-6.41	0.00	-127.72	0.00	127.72	1784.41	892.20	2432.62	1218.12	20.06	-1.411	0.000	0.127
142.00	-38.54	-6.36	0.00	-114.89	0.00	114.89	1768.19	884.10	2376.04	1189.79	20.66	-1.430	0.000	0.118
143.00	-30.51	-5.11	0.00	-108.54	0.00	108.54	1759.99	879.99	2347.86	1175.68	20.96	-1.439	0.000	0.110
144.00	-30.27	-5.08	0.00	-103.43	0.00	103.43	1751.72	875.86	2319.75	1161.60	21.26	-1.448	0.000	0.106
146.00	-29.80	-5.02	0.00	-93.27	0.00	93.27	1734.98	867.49	2263.76	1133.56	21.87	-1.464	0.000	0.099
148.00	-29.33	-4.97	0.00	-83.23	0.00	83.23	1717.98	858.99	2208.08	1105.68	22.49	-1.480	0.000	0.092
150.00	-28.87	-4.91	0.00	-73.29	0.00	73.29	1700.72	850.36	2152.74	1077.97	23.11	-1.495	0.000	0.085
152.00	-28.41	-4.85	0.00	-63.48	0.00	63.48	1683.20	841.60	2097.74	1050.43	23.74	-1.508	0.000	0.077
153.00	-20.77	-3.50	0.00	-58.63	0.00	58.63	1674.33	837.17	2070.37	1036.72	24.06	-1.514	0.000	0.069
154.00	-20.56	-3.47	0.00	-55.13	0.00	55.13	1665.41	832.70	2043.10	1023.07	24.37	-1.520	0.000	0.066
156.00	-20.14	-3.41	0.00	-48.19	0.00	48.19	1647.36	823.68	1988.83	995.90	25.01	-1.531	0.000	0.061
158.00	-16.92	-2.98	0.00	-41.37	0.00	41.37	1629.04	814.52	1934.96	968.92	25.66	-1.541	0.000	0.053
160.00	-16.51	-2.92	0.00	-35.42	0.00	35.42	1610.47	805.23	1881.50	942.15	26.30	-1.550	0.000	0.048
162.00	-16.11	-2.86	0.00	-29.58	0.00	29.58	1591.63	795.82	1828.46	915.59	26.96	-1.558	0.000	0.042
163.00	-12.56	-2.32	0.00	-26.72	0.00	26.72	1582.11	791.06	1802.10	902.39	27.28	-1.562	0.000	0.038
164.00	-12.36	-2.30	0.00	-24.40	0.00	24.40	1572.53	786.27	1775.86	889.25	27.61	-1.565	0.000	0.035
166.00	-11.98	-2.24	0.00	-19.80	0.00	19.80	1553.17	776.58	1723.71	863.13	28.27	-1.571	0.000	0.031

Calculated Forces

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 64

168.00	-11.60	-2.18	0.00	-15.33	0.00	15.33	1533.54	766.77	1672.03	837.26	28.93	-1.576	0.000	0.026
170.00	-11.22	-2.13	0.00	-10.96	0.00	10.96	1513.65	756.83	1620.83	811.62	29.59	-1.580	0.000	0.021
172.00	-10.85	-2.07	0.00	-6.71	0.00	6.71	1493.50	746.75	1570.13	786.23	30.25	-1.583	0.000	0.016
173.00	-4.31	-0.65	0.00	-4.64	0.00	4.64	1483.33	741.66	1544.98	773.64	30.58	-1.584	0.000	0.009
174.00	-4.16	-0.63	0.00	-3.99	0.00	3.99	1473.09	736.54	1519.95	761.10	30.91	-1.585	0.000	0.008
176.00	-3.86	-0.57	0.00	-2.74	0.00	2.74	1452.41	726.20	1470.30	736.24	31.58	-1.586	0.000	0.006
178.00	-3.57	-0.52	0.00	-1.59	0.00	1.59	1427.85	713.93	1417.60	709.85	32.24	-1.587	0.000	0.005
180.00	-3.28	-0.47	0.00	-0.55	0.00	0.55	1400.09	700.05	1362.74	682.38	32.91	-1.587	0.000	0.003
180.00	-3.28	-0.47	0.00	-0.55	0.00	0.55	678.42	339.21	662.23	396.30	32.91	-1.587	0.000	0.006
181.00	-0.30	-0.05	0.00	-0.08	0.00	0.08	678.42	339.21	662.23	396.30	33.24	-1.587	0.000	0.001
182.00	-0.15	-0.03	0.00	-0.03	0.00	0.03	678.42	339.21	662.23	396.30	33.57	-1.587	0.000	0.000
183.00	0.00	-0.02	0.00	0.00	0.00	0.00	678.42	339.21	662.23	396.30	33.90	-1.587	0.000	0.000

Seismic Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 65	

Tower Engineering Solutions

Load Case:	1.2D + 1.0E							**Iterations**	26
Gust Response Factor	1.10				**Sds**	0.17		**Ss**	0.16
Dead Load Factor	1.20	**Seismic Load Factor**	1.00		**Sd1**	0.09		**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.28		**SA**	0.03	**Seismic Importance Factor**		1.00

Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
2.00		517.51	0.00	0.01	0.01	4.35	
4.00		513.69	0.00	0.02	0.01	7.34	
6.00		509.88	0.00	0.03	0.02	9.50	
8.00		506.07	0.00	0.04	0.02	11.09	
10.00		502.25	0.01	0.05	0.03	12.28	
12.00		498.44	0.01	0.05	0.03	13.17	
14.00		494.62	0.01	0.06	0.03	13.84	
16.00		490.81	0.01	0.06	0.04	14.33	
18.00		487.00	0.02	0.06	0.04	14.70	
20.00		483.18	0.02	0.07	0.04	14.96	
22.00		479.37	0.03	0.07	0.04	15.14	
24.00		475.56	0.03	0.07	0.04	15.26	
26.00		471.74	0.04	0.07	0.04	15.34	
28.00		467.93	0.04	0.07	0.04	15.38	
30.00		464.11	0.05	0.07	0.04	15.40	
32.00		460.30	0.06	0.07	0.04	15.41	
34.00		456.49	0.07	0.07	0.04	15.41	
36.00		452.67	0.07	0.07	0.04	15.40	
38.00		448.86	0.08	0.07	0.04	15.39	
40.00		445.05	0.09	0.07	0.04	15.38	
41.00	Bot - Section 2	221.09	0.09	0.07	0.04	7.67	
42.00		443.32	0.10	0.07	0.04	15.44	
44.00		880.91	0.11	0.07	0.04	30.94	
46.00		873.28	0.12	0.07	0.03	30.91	
48.00	Top - Section 1	865.66	0.13	0.07	0.03	30.88	
50.00		432.05	0.14	0.07	0.03	15.53	
51.00	Top - Section 2	214.60	0.15	0.07	0.03	7.74	
52.00		213.64	0.15	0.07	0.03	7.73	
54.00		424.43	0.16	0.07	0.03	15.44	
56.00		420.61	0.18	0.07	0.03	15.36	
58.00		416.80	0.19	0.06	0.02	15.25	
60.00		412.98	0.20	0.06	0.02	15.10	
62.00		409.17	0.22	0.06	0.02	14.91	
64.00		405.36	0.23	0.06	0.02	14.66	
66.00		401.54	0.25	0.06	0.02	14.34	
66.17	RB1	33.96	0.25	0.06	0.02	1.21	
68.00		363.77	0.26	0.05	0.02	12.76	
70.00		393.92	0.28	0.05	0.01	13.47	
71.00	Top - Section 3	195.53	0.28	0.05	0.01	6.58	
72.00		194.57	0.29	0.05	0.01	6.43	
74.00		386.28	0.31	0.04	0.01	12.21	
76.00		382.47	0.33	0.04	0.01	11.41	
78.00		378.66	0.34	0.03	0.01	10.49	
80.00		374.84	0.36	0.03	0.01	9.43	
81.00	Top - Section 4	185.99	0.37	0.03	0.01	4.41	

Seismic Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 66	

82.00		154.41	0.38	0.02	0.01	3.43
84.00		306.44	0.40	0.02	0.01	5.78
85.00	Bot - Section 6	152.03	0.41	0.02	0.01	2.59
86.00		304.57	0.42	0.01	0.01	4.60
88.00		604.38	0.44	0.01	0.01	6.66
90.00		598.02	0.46	0.00	0.01	3.95
91.00	Top - Section 5	296.63	0.47	0.00	0.01	1.27
92.00		148.58	0.48	-0.01	0.01	0.29
93.83	RT1	269.84	0.50	-0.01	0.01	-0.66
94.00		24.93	0.50	-0.02	0.01	-0.07
96.00		291.59	0.52	-0.02	0.01	-2.24
98.00		288.41	0.54	-0.03	0.01	-3.59
100.00		285.23	0.56	-0.04	0.01	-4.86
102.00		282.06	0.59	-0.05	0.01	-6.03
104.00		278.88	0.61	-0.06	0.02	-7.06
106.00		483.88	0.63	-0.07	0.02	-13.97
108.00		478.16	0.66	-0.07	0.02	-15.28
110.00		472.44	0.68	-0.08	0.03	-16.30
111.17	RB2	273.72	0.70	-0.09	0.03	-9.79
112.00		192.99	0.71	-0.09	0.03	-7.05
114.00		461.00	0.73	-0.10	0.04	-17.53
115.00	Top - Section 6	130.30	0.75	-0.10	0.04	-5.03
116.00		103.77	0.76	-0.10	0.04	-4.05
118.00		205.64	0.79	-0.11	0.05	-8.10
120.00		203.10	0.81	-0.11	0.06	-7.98
122.00		200.55	0.84	-0.12	0.07	-7.75
123.83	RT2	181.28	0.87	-0.12	0.07	-6.81
124.00		16.73	0.87	-0.12	0.08	-0.63
126.00		195.47	0.90	-0.12	0.09	-7.00
128.00		192.93	0.92	-0.12	0.10	-6.49
130.00	Bot - Section 8	190.38	0.95	-0.12	0.11	-5.89
132.00		378.38	0.98	-0.11	0.12	-10.52
134.00		373.30	1.01	-0.11	0.14	-9.02
135.00	Top - Section 7	184.74	1.03	-0.10	0.15	-4.09
136.00		92.41	1.04	-0.10	0.15	-1.85
138.00		182.92	1.07	-0.08	0.17	-2.82
140.00		180.37	1.11	-0.07	0.19	-1.87
142.00		177.83	1.14	-0.05	0.21	-0.85
143.00	Appurtenance(s)	2977.2	1.15	-0.03	0.22	-5.49
144.00		87.33	1.17	-0.02	0.23	0.11
146.00		172.75	1.20	0.01	0.26	1.34
148.00		170.20	1.24	0.04	0.28	2.51
150.00		167.66	1.27	0.08	0.31	3.73
152.00		165.12	1.30	0.13	0.34	4.98
153.00	Appurtenance(s)	3283.2	1.32	0.15	0.36	112.80
154.00		80.97	1.34	0.18	0.37	3.13
156.00		160.03	1.37	0.24	0.40	7.62
158.00	Appurtenance(s)	1657.4	1.41	0.30	0.44	94.55
160.00		154.95	1.44	0.37	0.48	10.38
162.00		152.40	1.48	0.46	0.52	11.80
163.00	Appurtenance(s)	1787.0	1.50	0.50	0.54	148.09
164.00		74.61	1.52	0.55	0.56	6.60
166.00		147.32	1.56	0.65	0.61	14.72
168.00		144.78	1.59	0.76	0.66	16.20
170.00		142.23	1.63	0.88	0.71	17.69
172.00		139.69	1.67	1.01	0.77	19.20
173.00	Appurtenance(s)	2468.2	1.69	1.08	0.80	355.86

Seismic Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 67	

174.00			68.26	1.71	1.16	0.83	10.31		
176.00			134.61	1.75	1.31	0.89	22.23		
178.00			132.06	1.79	1.49	0.96	23.74		
180.00	Top - Section 8		129.52	1.83	1.67	1.03	25.26		
181.00	Appurtenance(s)		1571.2	1.85	1.77	1.06	318.64		
182.00			71.25	1.87	1.87	1.10	15.01		
183.00			71.25	1.89	1.98	1.14	15.59		
		Totals:	**45,700.8**				**1,699.4**	**Total Wind:**	**39,117.2**

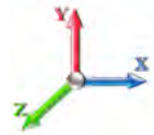
Seismic Base Shear is Less Than 50% of Wind Force - An Analysis is NOT Required

Calculated Forces

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 68	

Tower Engineering Solutions

Load Case: 1.2D + 1.0E



Gust Response Factor	1.10			**Sds**	0.17			**Iterations**	26
Dead Load Factor	1.20	**Seismic Load Factor**	1.00	**Sd1**	0.09			**Ss**	0.16
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.28	**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	-62.12	-1.90	0.00	-256.88	0.00	256.88	5190.16	2595.08	13702.9	6861.66		0.00	0.00	0.049
2.00	-61.39	-1.90	0.00	-253.08	0.00	253.08	5174.50	2587.25	13560.7	6790.43		0.00	0.00	0.049
4.00	-60.66	-1.89	0.00	-249.28	0.00	249.28	5158.51	2579.25	13418.2	6719.08		0.00	-0.01	0.049
6.00	-59.94	-1.89	0.00	-245.49	0.00	245.49	5142.18	2571.09	13275.4	6647.61		0.01	-0.01	0.049
8.00	-59.23	-1.88	0.00	-241.72	0.00	241.72	5125.52	2562.76	13132.5	6576.03		0.01	-0.01	0.048
10.00	-58.52	-1.87	0.00	-237.95	0.00	237.95	5108.53	2554.27	12989.4	6504.36		0.02	-0.02	0.048
12.00	-57.81	-1.86	0.00	-234.21	0.00	234.21	5091.21	2545.61	12846.0	6432.60		0.03	-0.02	0.048
14.00	-57.11	-1.85	0.00	-230.48	0.00	230.48	5073.56	2536.78	12702.6	6360.75		0.04	-0.03	0.047
16.00	-56.42	-1.84	0.00	-226.77	0.00	226.77	5055.57	2527.79	12559.0	6288.85		0.05	-0.03	0.047
18.00	-55.72	-1.83	0.00	-223.09	0.00	223.09	5037.25	2518.63	12415.3	6216.88		0.06	-0.03	0.047
20.00	-55.04	-1.82	0.00	-219.43	0.00	219.43	5018.60	2509.30	12271.4	6144.86		0.08	-0.04	0.047
22.00	-54.35	-1.81	0.00	-215.79	0.00	215.79	4999.62	2499.81	12127.5	6072.81		0.10	-0.04	0.046
24.00	-53.68	-1.80	0.00	-212.18	0.00	212.18	4980.31	2490.15	11983.6	6000.72		0.11	-0.05	0.046
26.00	-53.00	-1.78	0.00	-208.59	0.00	208.59	4960.66	2480.33	11839.6	5928.62		0.13	-0.05	0.046
28.00	-52.33	-1.77	0.00	-205.02	0.00	205.02	4940.68	2470.34	11695.6	5856.50		0.16	-0.05	0.046
30.00	-51.67	-1.76	0.00	-201.48	0.00	201.48	4920.37	2460.19	11551.6	5784.39		0.18	-0.06	0.045
32.00	-51.01	-1.75	0.00	-197.96	0.00	197.96	4899.73	2449.87	11407.6	5712.28		0.20	-0.06	0.045
34.00	-50.35	-1.73	0.00	-194.47	0.00	194.47	4878.76	2439.38	11263.6	5640.19		0.23	-0.07	0.045
36.00	-49.70	-1.72	0.00	-191.00	0.00	191.00	4857.45	2428.72	11119.7	5568.14		0.26	-0.07	0.045
38.00	-49.06	-1.71	0.00	-187.56	0.00	187.56	4835.81	2417.91	10975.9	5496.12		0.29	-0.07	0.044
40.00	-48.42	-1.69	0.00	-184.15	0.00	184.15	4813.84	2406.92	10832.2	5424.15		0.32	-0.08	0.044
41.00	-48.10	-1.69	0.00	-182.45	0.00	182.45	4802.73	2401.36	10760.3	5388.18		0.34	-0.08	0.044
42.00	-47.51	-1.67	0.00	-180.76	0.00	180.76	4791.54	2395.77	10688.5	5352.24		0.35	-0.08	0.044
44.00	-46.35	-1.65	0.00	-177.41	0.00	177.41	4768.90	2384.45	10545.1	5280.39		0.39	-0.09	0.043
46.00	-45.19	-1.62	0.00	-174.12	0.00	174.12	4745.94	2372.97	10401.7	5208.63		0.43	-0.09	0.043
48.00	-44.04	-1.59	0.00	-170.89	0.00	170.89	4759.60	2379.80	10486.7	5251.18		0.47	-0.10	0.042
50.00	-43.42	-1.57	0.00	-167.72	0.00	167.72	4736.50	2368.25	10343.5	5179.45		0.51	-0.10	0.042
51.00	-43.11	-1.57	0.00	-166.14	0.00	166.14	4724.82	2362.41	10271.9	5143.62		0.53	-0.10	0.041
51.00	-43.11	-1.57	0.00	-166.14	0.00	166.14	4064.30	2032.15	8835.99	4424.56		0.53	-0.10	0.048
52.00	-42.80	-1.56	0.00	-164.58	0.00	164.58	4053.20	2026.60	8772.35	4392.70		0.55	-0.10	0.048
54.00	-42.18	-1.55	0.00	-161.46	0.00	161.46	4030.83	2015.41	8645.34	4329.09		0.59	-0.11	0.048
56.00	-41.57	-1.53	0.00	-158.37	0.00	158.37	4008.20	2004.10	8518.66	4265.66		0.64	-0.11	0.047
58.00	-40.96	-1.52	0.00	-155.30	0.00	155.30	3985.33	1992.66	8392.33	4202.40		0.69	-0.12	0.047
60.00	-40.36	-1.51	0.00	-152.26	0.00	152.26	3962.20	1981.10	8266.38	4139.33		0.74	-0.12	0.047
62.00	-39.76	-1.49	0.00	-149.25	0.00	149.25	3938.82	1969.41	8140.81	4076.46		0.79	-0.13	0.047
64.00	-39.16	-1.48	0.00	-146.26	0.00	146.26	3915.19	1957.60	8015.64	4013.78		0.84	-0.13	0.046
66.00	-38.57	-1.47	0.00	-143.30	0.00	143.30	3891.31	1945.66	7890.88	3951.30		0.90	-0.13	0.046
66.17	-38.52	-1.47	0.00	-143.05	0.00	143.05	3889.27	1944.64	7880.29	3946.00		0.90	-0.13	0.034
68.00	-37.99	-1.45	0.00	-140.37	0.00	140.37	3867.19	1933.59	7766.55	3889.05		0.96	-0.14	0.034
70.00	-37.41	-1.44	0.00	-137.46	0.00	137.46	3842.81	1921.40	7642.66	3827.01		1.02	-0.14	0.034
71.00	-37.12	-1.43	0.00	-136.02	0.00	136.02	3830.52	1915.26	7580.89	3796.08		1.04	-0.14	0.033
71.00	-37.12	-1.43	0.00	-136.02	0.00	136.02	3467.89	1733.95	6863.13	3436.66		1.04	-0.14	0.037
72.00	-36.83	-1.43	0.00	-134.58	0.00	134.58	3456.29	1728.14	6806.46	3408.29		1.07	-0.14	0.037
74.00	-36.26	-1.42	0.00	-131.73	0.00	131.73	3432.92	1716.46	6693.50	3351.73		1.14	-0.15	0.036
76.00	-35.70	-1.41	0.00	-128.89	0.00	128.89	3409.33	1704.67	6581.05	3295.42		1.20	-0.15	0.036
78.00	-35.13	-1.40	0.00	-126.08	0.00	126.08	3385.54	1692.77	6469.11	3239.36		1.26	-0.15	0.036
80.00	-34.58	-1.39	0.00	-123.28	0.00	123.28	3361.54	1680.77	6357.71	3183.58		1.33	-0.16	0.035

Calculated Forces

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 69

81.00	-34.30	-1.38	0.00	-121.90	0.00	121.90	3349.46	1674.73	6302.21	3155.79	1.36	-0.16	0.035
81.00	-34.30	-1.38	0.00	-121.90	0.00	121.90	2964.88	1482.44	5593.85	2801.08	1.36	-0.16	0.033
82.00	-34.06	-1.38	0.00	-120.51	0.00	120.51	2956.03	1478.01	5548.33	2778.29	1.39	-0.16	0.038
84.00	-33.59	-1.38	0.00	-117.75	0.00	117.75	2938.12	1469.06	5457.44	2732.78	1.46	-0.16	0.037
85.00	-33.35	-1.37	0.00	-116.37	0.00	116.37	2929.07	1464.54	5412.08	2710.06	1.50	-0.17	0.037
86.00	-32.93	-1.37	0.00	-115.00	0.00	115.00	2919.96	1459.98	5366.77	2687.37	1.53	-0.17	0.036
88.00	-32.10	-1.36	0.00	-112.26	0.00	112.26	2901.53	1450.76	5276.32	2642.08	1.60	-0.17	0.036
90.00	-31.27	-1.36	0.00	-109.54	0.00	109.54	2882.84	1441.42	5186.12	2596.92	1.68	-0.18	0.035
91.00	-30.86	-1.36	0.00	-108.18	0.00	108.18	2898.35	1449.17	5260.87	2634.34	1.71	-0.18	0.036
92.00	-30.63	-1.36	0.00	-106.82	0.00	106.82	2889.01	1444.51	5215.76	2611.76	1.75	-0.18	0.035
93.83	-30.21	-1.36	0.00	-104.34	0.00	104.34	2871.76	1435.88	5133.38	2570.50	1.82	-0.18	0.034
93.83	-30.21	-1.36	0.00	-104.34	0.00	104.34	2871.76	1435.88	5133.38	2570.50	1.82	-0.18	0.034
94.00	-30.17	-1.36	0.00	-104.11	0.00	104.11	2870.15	1435.07	5125.73	2566.68	1.83	-0.18	0.051
96.00	-29.71	-1.36	0.00	-101.40	0.00	101.40	2851.02	1425.51	5035.98	2521.73	1.91	-0.19	0.051
98.00	-29.26	-1.36	0.00	-98.68	0.00	98.68	2831.62	1415.81	4946.52	2476.93	1.99	-0.20	0.050
100.00	-28.81	-1.36	0.00	-95.96	0.00	95.96	2811.97	1405.98	4857.35	2432.29	2.07	-0.20	0.050
102.00	-28.36	-1.36	0.00	-93.23	0.00	93.23	2792.05	1396.03	4768.51	2387.80	2.16	-0.21	0.049
104.00	-27.92	-1.36	0.00	-90.51	0.00	90.51	2771.87	1385.94	4680.00	2343.48	2.25	-0.21	0.049
106.00	-27.48	-1.37	0.00	-87.78	0.00	87.78	2751.43	1375.71	4591.84	2299.33	2.34	-0.22	0.048
108.00	-27.05	-1.37	0.00	-85.05	0.00	85.05	2730.72	1365.36	4504.04	2255.37	2.43	-0.22	0.048
110.00	-26.62	-1.37	0.00	-82.31	0.00	82.31	2709.75	1354.88	4416.62	2211.59	2.52	-0.23	0.047
111.17	-26.37	-1.37	0.00	-80.71	0.00	80.71	2697.36	1348.68	4365.66	2186.08	2.58	-0.23	0.037
112.00	-26.19	-1.37	0.00	-79.58	0.00	79.58	2688.52	1344.26	4329.60	2168.02	2.62	-0.24	0.037
114.00	-25.77	-1.37	0.00	-76.84	0.00	76.84	2667.03	1333.51	4242.98	2124.64	2.72	-0.24	0.037
115.00	-25.56	-1.37	0.00	-75.47	0.00	75.47	2656.18	1328.09	4199.83	2103.04	2.77	-0.24	0.036
115.00	-25.56	-1.37	0.00	-75.47	0.00	75.47	1951.15	975.57	3095.05	1549.82	2.77	-0.24	0.039
116.00	-25.38	-1.37	0.00	-74.10	0.00	74.10	1944.57	972.29	3065.67	1535.11	2.82	-0.25	0.045
118.00	-25.02	-1.37	0.00	-71.37	0.00	71.37	1931.24	965.62	3006.98	1505.73	2.93	-0.25	0.044
120.00	-24.67	-1.37	0.00	-68.63	0.00	68.63	1917.63	958.82	2948.42	1476.40	3.03	-0.26	0.044
122.00	-24.32	-1.37	0.00	-65.88	0.00	65.88	1903.77	951.88	2889.98	1447.14	3.14	-0.26	0.043
123.83	-24.01	-1.37	0.00	-63.37	0.00	63.37	1890.85	945.43	2836.64	1420.43	3.24	-0.27	0.042
123.83	-24.01	-1.37	0.00	-63.37	0.00	63.37	1890.85	945.43	2836.64	1420.43	3.24	-0.27	0.042
124.00	-23.98	-1.37	0.00	-63.14	0.00	63.14	1889.64	944.82	2831.69	1417.95	3.25	-0.27	0.057
126.00	-23.64	-1.37	0.00	-60.39	0.00	60.39	1875.25	937.63	2773.56	1388.84	3.37	-0.27	0.056
128.00	-23.30	-1.38	0.00	-57.65	0.00	57.65	1860.60	930.30	2715.62	1359.83	3.48	-0.28	0.055
130.00	-22.96	-1.38	0.00	-54.89	0.00	54.89	1845.69	922.84	2657.86	1330.91	3.60	-0.29	0.054
132.00	-22.40	-1.38	0.00	-52.14	0.00	52.14	1830.51	915.25	2600.31	1302.09	3.72	-0.30	0.052
134.00	-21.85	-1.38	0.00	-49.39	0.00	49.39	1815.07	907.53	2542.99	1273.39	3.85	-0.30	0.051
135.00	-21.57	-1.38	0.00	-48.01	0.00	48.01	1823.79	911.89	2575.21	1289.52	3.91	-0.31	0.049
136.00	-21.40	-1.38	0.00	-46.64	0.00	46.64	1816.04	908.02	2546.57	1275.18	3.98	-0.31	0.048
138.00	-21.08	-1.38	0.00	-43.88	0.00	43.88	1800.35	900.18	2489.47	1246.58	4.11	-0.32	0.047
140.00	-20.75	-1.38	0.00	-41.13	0.00	41.13	1784.41	892.20	2432.62	1218.12	4.24	-0.32	0.045
142.00	-20.43	-1.38	0.00	-38.37	0.00	38.37	1768.19	884.10	2376.04	1189.79	4.38	-0.33	0.044
143.00	-16.81	-1.36	0.00	-36.99	0.00	36.99	1759.99	879.99	2347.86	1175.68	4.45	-0.33	0.041
144.00	-16.66	-1.36	0.00	-35.63	0.00	35.63	1751.72	875.86	2319.75	1161.60	4.52	-0.33	0.040
146.00	-16.38	-1.36	0.00	-32.92	0.00	32.92	1734.98	867.49	2263.76	1133.56	4.66	-0.34	0.038
148.00	-16.10	-1.35	0.00	-30.20	0.00	30.20	1717.98	858.99	2208.08	1105.68	4.80	-0.35	0.037
150.00	-15.82	-1.35	0.00	-27.50	0.00	27.50	1700.72	850.36	2152.74	1077.97	4.95	-0.35	0.035
152.00	-15.55	-1.35	0.00	-24.79	0.00	24.79	1683.20	841.60	2097.74	1050.43	5.10	-0.36	0.033
153.00	-11.57	-1.21	0.00	-23.45	0.00	23.45	1674.33	837.17	2070.37	1036.72	5.17	-0.36	0.030
154.00	-11.45	-1.20	0.00	-22.24	0.00	22.24	1665.41	832.70	2043.10	1023.07	5.25	-0.36	0.029
156.00	-11.22	-1.20	0.00	-19.83	0.00	19.83	1647.36	823.68	1988.83	995.90	5.40	-0.37	0.027
158.00	-9.18	-1.09	0.00	-17.44	0.00	17.44	1629.04	814.52	1934.96	968.92	5.55	-0.37	0.024
160.00	-8.95	-1.08	0.00	-15.26	0.00	15.26	1610.47	805.23	1881.50	942.15	5.71	-0.37	0.022
162.00	-8.72	-1.07	0.00	-13.10	0.00	13.10	1591.63	795.82	1828.46	915.59	5.87	-0.38	0.020
163.00	-6.56	-0.90	0.00	-12.04	0.00	12.04	1582.11	791.06	1802.10	902.39	5.95	-0.38	0.017
164.00	-6.45	-0.90	0.00	-11.13	0.00	11.13	1572.53	786.27	1775.86	889.25	6.03	-0.38	0.017

Calculated Forces

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 70

166.00	-6.23	-0.88	0.00	-9.34	0.00	9.34	1553.17	776.58	1723.71	863.13	6.19	-0.38	0.015
168.00	-6.02	-0.86	0.00	-7.58	0.00	7.58	1533.54	766.77	1672.03	837.26	6.35	-0.39	0.013
170.00	-5.81	-0.84	0.00	-5.85	0.00	5.85	1513.65	756.83	1620.83	811.62	6.51	-0.39	0.011
172.00	-5.61	-0.82	0.00	-4.16	0.00	4.16	1493.50	746.75	1570.13	786.23	6.67	-0.39	0.009
173.00	-2.63	-0.45	0.00	-3.34	0.00	3.34	1483.33	741.66	1544.98	773.64	6.75	-0.39	0.006
174.00	-2.54	-0.44	0.00	-2.89	0.00	2.89	1473.09	736.54	1519.95	761.10	6.83	-0.39	0.006
176.00	-2.38	-0.41	0.00	-2.02	0.00	2.02	1452.41	726.20	1470.30	736.24	7.00	-0.39	0.004
178.00	-2.22	-0.39	0.00	-1.19	0.00	1.19	1427.85	713.93	1417.60	709.85	7.16	-0.39	0.003
180.00	-2.06	-0.36	0.00	-0.41	0.00	0.41	1400.09	700.05	1362.74	682.38	7.33	-0.39	0.002
180.00	-2.06	-0.36	0.00	-0.41	0.00	0.41	678.42	339.21	662.23	396.30	7.33	-0.39	0.004
181.00	-0.17	-0.03	0.00	-0.05	0.00	0.05	678.42	339.21	662.23	396.30	7.41	-0.39	0.000
182.00	-0.09	-0.02	0.00	-0.02	0.00	0.02	678.42	339.21	662.23	396.30	7.49	-0.39	0.000
183.00	0.00	-0.02	0.00	0.00	0.00	0.00	678.42	339.21	662.23	396.30	7.57	-0.39	0.000

Seismic Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 71	

Tower Engineering Solutions

Load Case:	0.9D + 1.0E					**Iterations**	26
Gust Response Factor	1.10			**Sds**	0.17	**Ss**	0.16
Dead Load Factor	0.90	**Seismic Load Factor**	1.00	**Sd1**	0.09	**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.28	**SA**	0.03	**Seismic Importance Factor**	1.00

Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
2.00		517.51	0.00	0.01	0.01	4.35	
4.00		513.69	0.00	0.02	0.01	7.34	
6.00		509.88	0.00	0.03	0.02	9.50	
8.00		506.07	0.00	0.04	0.02	11.09	
10.00		502.25	0.01	0.05	0.03	12.28	
12.00		498.44	0.01	0.05	0.03	13.17	
14.00		494.62	0.01	0.06	0.03	13.84	
16.00		490.81	0.01	0.06	0.04	14.33	
18.00		487.00	0.02	0.06	0.04	14.70	
20.00		483.18	0.02	0.07	0.04	14.96	
22.00		479.37	0.03	0.07	0.04	15.14	
24.00		475.56	0.03	0.07	0.04	15.26	
26.00		471.74	0.04	0.07	0.04	15.34	
28.00		467.93	0.04	0.07	0.04	15.38	
30.00		464.11	0.05	0.07	0.04	15.40	
32.00		460.30	0.06	0.07	0.04	15.41	
34.00		456.49	0.07	0.07	0.04	15.41	
36.00		452.67	0.07	0.07	0.04	15.40	
38.00		448.86	0.08	0.07	0.04	15.39	
40.00		445.05	0.09	0.07	0.04	15.38	
41.00	Bot - Section 2	221.09	0.09	0.07	0.04	7.67	
42.00		443.32	0.10	0.07	0.04	15.44	
44.00		880.91	0.11	0.07	0.04	30.94	
46.00		873.28	0.12	0.07	0.03	30.91	
48.00	Top - Section 1	865.66	0.13	0.07	0.03	30.88	
50.00		432.05	0.14	0.07	0.03	15.53	
51.00	Top - Section 2	214.60	0.15	0.07	0.03	7.74	
52.00		213.64	0.15	0.07	0.03	7.73	
54.00		424.43	0.16	0.07	0.03	15.44	
56.00		420.61	0.18	0.07	0.03	15.36	
58.00		416.80	0.19	0.06	0.02	15.25	
60.00		412.98	0.20	0.06	0.02	15.10	
62.00		409.17	0.22	0.06	0.02	14.91	
64.00		405.36	0.23	0.06	0.02	14.66	
66.00		401.54	0.25	0.06	0.02	14.34	
66.17	RB1	33.96	0.25	0.06	0.02	1.21	
68.00		363.77	0.26	0.05	0.02	12.76	
70.00		393.92	0.28	0.05	0.01	13.47	
71.00	Top - Section 3	195.53	0.28	0.05	0.01	6.58	
72.00		194.57	0.29	0.05	0.01	6.43	
74.00		386.28	0.31	0.04	0.01	12.21	
76.00		382.47	0.33	0.04	0.01	11.41	
78.00		378.66	0.34	0.03	0.01	10.49	
80.00		374.84	0.36	0.03	0.01	9.43	
81.00	Top - Section 4	185.99	0.37	0.03	0.01	4.41	

Seismic Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 72	

82.00		154.41	0.38	0.02	0.01	3.43
84.00		306.44	0.40	0.02	0.01	5.78
85.00	Bot - Section 6	152.03	0.41	0.02	0.01	2.59
86.00		304.57	0.42	0.01	0.01	4.60
88.00		604.38	0.44	0.01	0.01	6.66
90.00		598.02	0.46	0.00	0.01	3.95
91.00	Top - Section 5	296.63	0.47	0.00	0.01	1.27
92.00		148.58	0.48	-0.01	0.01	0.29
93.83	RT1	269.84	0.50	-0.01	0.01	-0.66
94.00		24.93	0.50	-0.02	0.01	-0.07
96.00		291.59	0.52	-0.02	0.01	-2.24
98.00		288.41	0.54	-0.03	0.01	-3.59
100.00		285.23	0.56	-0.04	0.01	-4.86
102.00		282.06	0.59	-0.05	0.01	-6.03
104.00		278.88	0.61	-0.06	0.02	-7.06
106.00		483.88	0.63	-0.07	0.02	-13.97
108.00		478.16	0.66	-0.07	0.02	-15.28
110.00		472.44	0.68	-0.08	0.03	-16.30
111.17	RB2	273.72	0.70	-0.09	0.03	-9.79
112.00		192.99	0.71	-0.09	0.03	-7.05
114.00		461.00	0.73	-0.10	0.04	-17.53
115.00	Top - Section 6	130.30	0.75	-0.10	0.04	-5.03
116.00		103.77	0.76	-0.10	0.04	-4.05
118.00		205.64	0.79	-0.11	0.05	-8.10
120.00		203.10	0.81	-0.11	0.06	-7.98
122.00		200.55	0.84	-0.12	0.07	-7.75
123.83	RT2	181.28	0.87	-0.12	0.07	-6.81
124.00		16.73	0.87	-0.12	0.08	-0.63
126.00		195.47	0.90	-0.12	0.09	-7.00
128.00		192.93	0.92	-0.12	0.10	-6.49
130.00	Bot - Section 8	190.38	0.95	-0.12	0.11	-5.89
132.00		378.38	0.98	-0.11	0.12	-10.52
134.00		373.30	1.01	-0.11	0.14	-9.02
135.00	Top - Section 7	184.74	1.03	-0.10	0.15	-4.09
136.00		92.41	1.04	-0.10	0.15	-1.85
138.00		182.92	1.07	-0.08	0.17	-2.82
140.00		180.37	1.11	-0.07	0.19	-1.87
142.00		177.83	1.14	-0.05	0.21	-0.85
143.00	Appurtenance(s)	2977.2	1.15	-0.03	0.22	-5.49
144.00		87.33	1.17	-0.02	0.23	0.11
146.00		172.75	1.20	0.01	0.26	1.34
148.00		170.20	1.24	0.04	0.28	2.51
150.00		167.66	1.27	0.08	0.31	3.73
152.00		165.12	1.30	0.13	0.34	4.98
153.00	Appurtenance(s)	3283.2	1.32	0.15	0.36	112.80
154.00		80.97	1.34	0.18	0.37	3.13
156.00		160.03	1.37	0.24	0.40	7.62
158.00	Appurtenance(s)	1657.4	1.41	0.30	0.44	94.55
160.00		154.95	1.44	0.37	0.48	10.38
162.00		152.40	1.48	0.46	0.52	11.80
163.00	Appurtenance(s)	1787.0	1.50	0.50	0.54	148.09
164.00		74.61	1.52	0.55	0.56	6.60
166.00		147.32	1.56	0.65	0.61	14.72
168.00		144.78	1.59	0.76	0.66	16.20
170.00		142.23	1.63	0.88	0.71	17.69
172.00		139.69	1.67	1.01	0.77	19.20
173.00	Appurtenance(s)	2468.2	1.69	1.08	0.80	355.86

Seismic Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 73	

174.00		68.26	1.71	1.16	0.83	10.31		
176.00		134.61	1.75	1.31	0.89	22.23		
178.00		132.06	1.79	1.49	0.96	23.74		
180.00	Top - Section 8	129.52	1.83	1.67	1.03	25.26		
181.00	Appurtenance(s)	1571.2	1.85	1.77	1.06	318.64		
182.00		71.25	1.87	1.87	1.10	15.01		
183.00		71.25	1.89	1.98	1.14	15.59		
	Totals:	**45,700.8**				**1,699.4**	**Total Wind:**	**39,117.2**

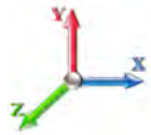
Seismic Base Shear is Less Than 50% of Wind Force - An Analysis is NOT Required

Calculated Forces

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 74	

Tower Engineering Solutions

Load Case: 0.9D + 1.0E



Gust Response Factor	1.10			**Sds**	0.17			**Iterations**	26
Dead Load Factor	0.90	**Seismic Load Factor**	1.00	**Sd1**	0.09			**Ss**	0.16
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.28	**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	-46.59	-1.90	0.00	-253.31	0.00	253.31	5190.16	2595.08	13702.9	6861.66		0.00	0.00	0.046
2.00	-46.04	-1.90	0.00	-249.51	0.00	249.51	5174.50	2587.25	13560.7	6790.43		0.00	0.00	0.046
4.00	-45.50	-1.89	0.00	-245.72	0.00	245.72	5158.51	2579.25	13418.2	6719.08		0.00	-0.01	0.045
6.00	-44.96	-1.89	0.00	-241.93	0.00	241.93	5142.18	2571.09	13275.4	6647.61		0.01	-0.01	0.045
8.00	-44.42	-1.88	0.00	-238.16	0.00	238.16	5125.52	2562.76	13132.5	6576.03		0.01	-0.01	0.045
10.00	-43.89	-1.87	0.00	-234.41	0.00	234.41	5108.53	2554.27	12989.4	6504.36		0.02	-0.02	0.045
12.00	-43.36	-1.86	0.00	-230.67	0.00	230.67	5091.21	2545.61	12846.0	6432.60		0.03	-0.02	0.044
14.00	-42.83	-1.85	0.00	-226.96	0.00	226.96	5073.56	2536.78	12702.6	6360.75		0.04	-0.03	0.044
16.00	-42.31	-1.83	0.00	-223.26	0.00	223.26	5055.57	2527.79	12559.0	6288.85		0.05	-0.03	0.044
18.00	-41.79	-1.82	0.00	-219.60	0.00	219.60	5037.25	2518.63	12415.3	6216.88		0.06	-0.03	0.044
20.00	-41.28	-1.81	0.00	-215.95	0.00	215.95	5018.60	2509.30	12271.4	6144.86		0.08	-0.04	0.043
22.00	-40.77	-1.80	0.00	-212.33	0.00	212.33	4999.62	2499.81	12127.5	6072.81		0.09	-0.04	0.043
24.00	-40.26	-1.78	0.00	-208.74	0.00	208.74	4980.31	2490.15	11983.6	6000.72		0.11	-0.04	0.043
26.00	-39.75	-1.77	0.00	-205.17	0.00	205.17	4960.66	2480.33	11839.6	5928.62		0.13	-0.05	0.043
28.00	-39.25	-1.76	0.00	-201.63	0.00	201.63	4940.68	2470.34	11695.6	5856.50		0.15	-0.05	0.042
30.00	-38.75	-1.74	0.00	-198.12	0.00	198.12	4920.37	2460.19	11551.6	5784.39		0.18	-0.06	0.042
32.00	-38.26	-1.73	0.00	-194.63	0.00	194.63	4899.73	2449.87	11407.6	5712.28		0.20	-0.06	0.042
34.00	-37.76	-1.72	0.00	-191.16	0.00	191.16	4878.76	2439.38	11263.6	5640.19		0.23	-0.06	0.042
36.00	-37.28	-1.70	0.00	-187.73	0.00	187.73	4857.45	2428.72	11119.7	5568.14		0.26	-0.07	0.041
38.00	-36.79	-1.69	0.00	-184.32	0.00	184.32	4835.81	2417.91	10975.9	5496.12		0.28	-0.07	0.041
40.00	-36.31	-1.68	0.00	-180.94	0.00	180.94	4813.84	2406.92	10832.2	5424.15		0.32	-0.08	0.041
41.00	-36.07	-1.67	0.00	-179.26	0.00	179.26	4802.73	2401.36	10760.3	5388.18		0.33	-0.08	0.041
42.00	-35.63	-1.66	0.00	-177.59	0.00	177.59	4791.54	2395.77	10688.5	5352.24		0.35	-0.08	0.041
44.00	-34.76	-1.63	0.00	-174.27	0.00	174.27	4768.90	2384.45	10545.1	5280.39		0.38	-0.09	0.040
46.00	-33.89	-1.60	0.00	-171.02	0.00	171.02	4745.94	2372.97	10401.7	5208.63		0.42	-0.09	0.040
48.00	-33.03	-1.57	0.00	-167.83	0.00	167.83	4759.60	2379.80	10486.7	5251.18		0.46	-0.09	0.039
50.00	-32.56	-1.55	0.00	-164.69	0.00	164.69	4736.50	2368.25	10343.5	5179.45		0.50	-0.10	0.039
51.00	-32.33	-1.55	0.00	-163.14	0.00	163.14	4724.82	2362.41	10271.9	5143.62		0.52	-0.10	0.039
51.00	-32.33	-1.55	0.00	-163.14	0.00	163.14	4064.30	2032.15	8835.99	4424.56		0.52	-0.10	0.045
52.00	-32.10	-1.54	0.00	-161.59	0.00	161.59	4053.20	2026.60	8772.35	4392.70		0.54	-0.10	0.045
54.00	-31.63	-1.53	0.00	-158.51	0.00	158.51	4030.83	2015.41	8645.34	4329.09		0.59	-0.11	0.044
56.00	-31.17	-1.51	0.00	-155.46	0.00	155.46	4008.20	2004.10	8518.66	4265.66		0.63	-0.11	0.044
58.00	-30.72	-1.50	0.00	-152.44	0.00	152.44	3985.33	1992.66	8392.33	4202.40		0.68	-0.11	0.044
60.00	-30.27	-1.48	0.00	-149.45	0.00	149.45	3962.20	1981.10	8266.38	4139.33		0.73	-0.12	0.044
62.00	-29.82	-1.47	0.00	-146.48	0.00	146.48	3938.82	1969.41	8140.81	4076.46		0.78	-0.12	0.044
64.00	-29.37	-1.46	0.00	-143.54	0.00	143.54	3915.19	1957.60	8015.64	4013.78		0.83	-0.13	0.043
66.00	-28.93	-1.44	0.00	-140.62	0.00	140.62	3891.31	1945.66	7890.88	3951.30		0.89	-0.13	0.043
66.17	-28.89	-1.44	0.00	-140.38	0.00	140.38	3889.27	1944.64	7880.29	3946.00		0.89	-0.13	0.032
68.00	-28.49	-1.43	0.00	-137.74	0.00	137.74	3867.19	1933.59	7766.55	3889.05		0.94	-0.14	0.031
70.00	-28.06	-1.42	0.00	-134.88	0.00	134.88	3842.81	1921.40	7642.66	3827.01		1.00	-0.14	0.031
71.00	-27.84	-1.41	0.00	-133.46	0.00	133.46	3830.52	1915.26	7580.89	3796.08		1.03	-0.14	0.031
71.00	-27.84	-1.41	0.00	-133.46	0.00	133.46	3467.89	1733.95	6863.13	3436.66		1.03	-0.14	0.034
72.00	-27.62	-1.40	0.00	-132.05	0.00	132.05	3456.29	1728.14	6806.46	3408.29		1.06	-0.14	0.034
74.00	-27.20	-1.39	0.00	-129.24	0.00	129.24	3432.92	1716.46	6693.50	3351.73		1.12	-0.15	0.034
76.00	-26.77	-1.38	0.00	-126.46	0.00	126.46	3409.33	1704.67	6581.05	3295.42		1.18	-0.15	0.034
78.00	-26.35	-1.37	0.00	-123.69	0.00	123.69	3385.54	1692.77	6469.11	3239.36		1.24	-0.15	0.033
80.00	-25.93	-1.36	0.00	-120.95	0.00	120.95	3361.54	1680.77	6357.71	3183.58		1.31	-0.15	0.033

Calculated Forces

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 75

81.00	-25.72	-1.36	0.00	-119.58	0.00	119.58	3349.46	1674.73	6302.21	3155.79	1.34	-0.16	0.033
81.00	-25.72	-1.36	0.00	-119.58	0.00	119.58	2964.88	1482.44	5593.85	2801.08	1.34	-0.16	0.031
82.00	-25.55	-1.36	0.00	-118.23	0.00	118.23	2956.03	1478.01	5548.33	2778.29	1.37	-0.16	0.035
84.00	-25.19	-1.35	0.00	-115.51	0.00	115.51	2938.12	1469.06	5457.44	2732.78	1.44	-0.16	0.035
85.00	-25.01	-1.35	0.00	-114.16	0.00	114.16	2929.07	1464.54	5412.08	2710.06	1.47	-0.16	0.034
86.00	-24.70	-1.34	0.00	-112.82	0.00	112.82	2919.96	1459.98	5366.77	2687.37	1.51	-0.17	0.034
88.00	-24.07	-1.34	0.00	-110.13	0.00	110.13	2901.53	1450.76	5276.32	2642.08	1.58	-0.17	0.033
90.00	-23.45	-1.33	0.00	-107.46	0.00	107.46	2882.84	1441.42	5186.12	2596.92	1.65	-0.17	0.033
91.00	-23.15	-1.33	0.00	-106.12	0.00	106.12	2898.35	1449.17	5260.87	2634.34	1.69	-0.18	0.033
92.00	-22.97	-1.33	0.00	-104.79	0.00	104.79	2889.01	1444.51	5215.76	2611.76	1.72	-0.18	0.032
93.83	-22.66	-1.33	0.00	-102.36	0.00	102.36	2871.76	1435.88	5133.38	2570.50	1.79	-0.18	0.032
93.83	-22.66	-1.33	0.00	-102.36	0.00	102.36	2871.76	1435.88	5133.38	2570.50	1.79	-0.18	0.032
94.00	-22.63	-1.33	0.00	-102.13	0.00	102.13	2870.15	1435.07	5125.73	2566.68	1.80	-0.18	0.048
96.00	-22.28	-1.33	0.00	-99.47	0.00	99.47	2851.02	1425.51	5035.98	2521.73	1.88	-0.19	0.047
98.00	-21.94	-1.33	0.00	-96.80	0.00	96.80	2831.62	1415.81	4946.52	2476.93	1.96	-0.19	0.047
100.00	-21.61	-1.34	0.00	-94.13	0.00	94.13	2811.97	1405.98	4857.35	2432.29	2.04	-0.20	0.046
102.00	-21.27	-1.34	0.00	-91.46	0.00	91.46	2792.05	1396.03	4768.51	2387.80	2.12	-0.20	0.046
104.00	-20.94	-1.34	0.00	-88.79	0.00	88.79	2771.87	1385.94	4680.00	2343.48	2.21	-0.21	0.045
106.00	-20.61	-1.34	0.00	-86.12	0.00	86.12	2751.43	1375.71	4591.84	2299.33	2.30	-0.22	0.045
108.00	-20.28	-1.34	0.00	-83.44	0.00	83.44	2730.72	1365.36	4504.04	2255.37	2.39	-0.22	0.044
110.00	-19.96	-1.34	0.00	-80.76	0.00	80.76	2709.75	1354.88	4416.62	2211.59	2.48	-0.23	0.044
111.17	-19.77	-1.34	0.00	-79.20	0.00	79.20	2697.36	1348.68	4365.66	2186.08	2.54	-0.23	0.035
112.00	-19.64	-1.34	0.00	-78.08	0.00	78.08	2688.52	1344.26	4329.60	2168.02	2.58	-0.23	0.035
114.00	-19.32	-1.34	0.00	-75.40	0.00	75.40	2667.03	1333.51	4242.98	2124.64	2.68	-0.24	0.034
115.00	-19.17	-1.34	0.00	-74.06	0.00	74.06	2656.18	1328.09	4199.83	2103.04	2.73	-0.24	0.033
115.00	-19.17	-1.34	0.00	-74.06	0.00	74.06	1951.15	975.57	3095.05	1549.82	2.73	-0.24	0.036
116.00	-19.03	-1.34	0.00	-72.72	0.00	72.72	1944.57	972.29	3065.67	1535.11	2.78	-0.24	0.042
118.00	-18.77	-1.34	0.00	-70.04	0.00	70.04	1931.24	965.62	3006.98	1505.73	2.88	-0.25	0.041
120.00	-18.50	-1.34	0.00	-67.36	0.00	67.36	1917.63	958.82	2948.42	1476.40	2.98	-0.25	0.041
122.00	-18.24	-1.34	0.00	-64.68	0.00	64.68	1903.77	951.88	2889.98	1447.14	3.09	-0.26	0.040
123.83	-18.01	-1.34	0.00	-62.22	0.00	62.22	1890.85	945.43	2836.64	1420.43	3.19	-0.26	0.039
123.83	-18.01	-1.34	0.00	-62.22	0.00	62.22	1890.85	945.43	2836.64	1420.43	3.19	-0.26	0.039
124.00	-17.98	-1.34	0.00	-61.99	0.00	61.99	1889.64	944.82	2831.69	1417.95	3.20	-0.26	0.053
126.00	-17.73	-1.34	0.00	-59.31	0.00	59.31	1875.25	937.63	2773.56	1388.84	3.31	-0.27	0.052
128.00	-17.47	-1.35	0.00	-56.62	0.00	56.62	1860.60	930.30	2715.62	1359.83	3.42	-0.28	0.051
130.00	-17.22	-1.35	0.00	-53.93	0.00	53.93	1845.69	922.84	2657.86	1330.91	3.54	-0.28	0.050
132.00	-16.80	-1.35	0.00	-51.23	0.00	51.23	1830.51	915.25	2600.31	1302.09	3.66	-0.29	0.049
134.00	-16.38	-1.35	0.00	-48.54	0.00	48.54	1815.07	907.53	2542.99	1273.39	3.78	-0.30	0.047
135.00	-16.18	-1.35	0.00	-47.20	0.00	47.20	1823.79	911.89	2575.21	1289.52	3.85	-0.30	0.045
136.00	-16.05	-1.35	0.00	-45.85	0.00	45.85	1816.04	908.02	2546.57	1275.18	3.91	-0.30	0.045
138.00	-15.81	-1.35	0.00	-43.16	0.00	43.16	1800.35	900.18	2489.47	1246.58	4.04	-0.31	0.043
140.00	-15.56	-1.35	0.00	-40.46	0.00	40.46	1784.41	892.20	2432.62	1218.12	4.17	-0.32	0.042
142.00	-15.32	-1.35	0.00	-37.77	0.00	37.77	1768.19	884.10	2376.04	1189.79	4.30	-0.32	0.040
143.00	-12.60	-1.33	0.00	-36.42	0.00	36.42	1759.99	879.99	2347.86	1175.68	4.37	-0.33	0.038
144.00	-12.50	-1.33	0.00	-35.09	0.00	35.09	1751.72	875.86	2319.75	1161.60	4.44	-0.33	0.037
146.00	-12.28	-1.33	0.00	-32.43	0.00	32.43	1734.98	867.49	2263.76	1133.56	4.58	-0.33	0.036
148.00	-12.07	-1.33	0.00	-29.76	0.00	29.76	1717.98	858.99	2208.08	1105.68	4.72	-0.34	0.034
150.00	-11.87	-1.33	0.00	-27.11	0.00	27.11	1700.72	850.36	2152.74	1077.97	4.86	-0.35	0.032
152.00	-11.66	-1.32	0.00	-24.46	0.00	24.46	1683.20	841.60	2097.74	1050.43	5.01	-0.35	0.030
153.00	-8.68	-1.19	0.00	-23.14	0.00	23.14	1674.33	837.17	2070.37	1036.72	5.08	-0.35	0.028
154.00	-8.59	-1.19	0.00	-21.95	0.00	21.95	1665.41	832.70	2043.10	1023.07	5.16	-0.35	0.027
156.00	-8.41	-1.18	0.00	-19.58	0.00	19.58	1647.36	823.68	1988.83	995.90	5.31	-0.36	0.025
158.00	-6.89	-1.07	0.00	-17.22	0.00	17.22	1629.04	814.52	1934.96	968.92	5.46	-0.36	0.022
160.00	-6.71	-1.06	0.00	-15.07	0.00	15.07	1610.47	805.23	1881.50	942.15	5.61	-0.37	0.020
162.00	-6.54	-1.05	0.00	-12.95	0.00	12.95	1591.63	795.82	1828.46	915.59	5.77	-0.37	0.018
163.00	-4.92	-0.89	0.00	-11.90	0.00	11.90	1582.11	791.06	1802.10	902.39	5.84	-0.37	0.016
164.00	-4.83	-0.89	0.00	-11.00	0.00	11.00	1572.53	786.27	1775.86	889.25	5.92	-0.37	0.015

Calculated Forces

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 76

166.00	-4.67	-0.87	0.00	-9.23	0.00	9.23	1553.17	776.58	1723.71	863.13	6.08	-0.38	0.014
168.00	-4.51	-0.85	0.00	-7.49	0.00	7.49	1533.54	766.77	1672.03	837.26	6.24	-0.38	0.012
170.00	-4.36	-0.83	0.00	-5.79	0.00	5.79	1513.65	756.83	1620.83	811.62	6.40	-0.38	0.010
172.00	-4.20	-0.81	0.00	-4.12	0.00	4.12	1493.50	746.75	1570.13	786.23	6.56	-0.38	0.008
173.00	-1.97	-0.44	0.00	-3.31	0.00	3.31	1483.33	741.66	1544.98	773.64	6.64	-0.38	0.006
174.00	-1.91	-0.43	0.00	-2.86	0.00	2.86	1473.09	736.54	1519.95	761.10	6.72	-0.38	0.005
176.00	-1.78	-0.41	0.00	-2.00	0.00	2.00	1452.41	726.20	1470.30	736.24	6.88	-0.38	0.004
178.00	-1.66	-0.39	0.00	-1.18	0.00	1.18	1427.85	713.93	1417.60	709.85	7.04	-0.39	0.003
180.00	-1.54	-0.36	0.00	-0.41	0.00	0.41	1400.09	700.05	1362.74	682.38	7.20	-0.39	0.002
180.00	-1.54	-0.36	0.00	-0.41	0.00	0.41	678.42	339.21	662.23	396.30	7.20	-0.39	0.003
181.00	-0.13	-0.03	0.00	-0.05	0.00	0.05	678.42	339.21	662.23	396.30	7.28	-0.39	0.000
182.00	-0.07	-0.02	0.00	-0.02	0.00	0.02	678.42	339.21	662.23	396.30	7.36	-0.39	0.000
183.00	0.00	-0.02	0.00	0.00	0.00	0.00	678.42	339.21	662.23	396.30	7.44	-0.39	0.000

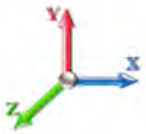
Wind Loading - Shaft

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 77	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 28

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	6.129	6.74	273.99	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
2.00		1.00	0.70	6.129	6.74	271.99	0.650	0.000	2.00	10.876	7.07	47.7	0.0	517.5
4.00		1.00	0.70	6.129	6.74	269.99	0.650	0.000	2.00	10.796	7.02	47.3	0.0	513.7
6.00		1.00	0.70	6.129	6.74	267.99	0.650	0.000	2.00	10.717	6.97	47.0	0.0	509.9
8.00		1.00	0.70	6.129	6.74	265.99	0.650	0.000	2.00	10.637	6.91	46.6	0.0	506.1
10.00		1.00	0.70	6.129	6.74	263.99	0.650	0.000	2.00	10.557	6.86	46.3	0.0	502.3
12.00		1.00	0.70	6.129	6.74	261.99	0.650	0.000	2.00	10.478	6.81	45.9	0.0	498.4
14.00		1.00	0.70	6.129	6.74	259.99	0.650	0.000	2.00	10.398	6.76	45.6	0.0	494.6
16.00		1.00	0.70	6.129	6.74	257.99	0.650	0.000	2.00	10.318	6.71	45.2	0.0	490.8
18.00		1.00	0.70	6.129	6.74	255.99	0.650	0.000	2.00	10.239	6.66	44.9	0.0	487.0
20.00		1.00	0.70	6.129	6.74	253.99	0.650	0.000	2.00	10.159	6.60	44.5	0.0	483.2
22.00		1.00	0.70	6.129	6.74	251.99	0.650	0.000	2.00	10.079	6.55	44.2	0.0	479.4
24.00		1.00	0.70	6.129	6.74	249.99	0.650	0.000	2.00	9.999	6.50	43.8	0.0	475.6
26.00		1.00	0.70	6.129	6.74	247.98	0.650	0.000	2.00	9.920	6.45	43.5	0.0	471.7
28.00		1.00	0.70	6.129	6.74	245.98	0.650	0.000	2.00	9.840	6.40	43.1	0.0	467.9
30.00		1.00	0.70	6.134	6.75	244.09	0.650	0.000	2.00	9.760	6.34	42.8	0.0	464.1
32.00		1.00	0.71	6.248	6.87	244.33	0.650	0.000	2.00	9.681	6.29	43.2	0.0	460.3
34.00		1.00	0.73	6.357	6.99	244.42	0.650	0.000	2.00	9.601	6.24	43.6	0.0	456.5
36.00		1.00	0.74	6.462	7.11	244.37	0.650	0.000	2.00	9.521	6.19	44.0	0.0	452.7
38.00		1.00	0.75	6.562	7.22	244.19	0.650	0.000	2.00	9.442	6.14	44.3	0.0	448.9
40.00		1.00	0.76	6.659	7.33	243.90	0.650	0.000	2.00	9.362	6.09	44.6	0.0	445.0
41.00	Bot - Section 2	1.00	0.77	6.706	7.38	243.72	0.650	0.000	1.00	4.651	3.02	22.3	0.0	221.1
42.00		1.00	0.77	6.753	7.43	243.51	0.650	0.000	1.00	4.695	3.05	22.7	0.0	443.3
44.00		1.00	0.78	6.843	7.53	243.02	0.650	0.000	2.00	9.330	6.06	45.6	0.0	880.9
46.00		1.00	0.79	6.931	7.62	242.44	0.650	0.000	2.00	9.250	6.01	45.8	0.0	873.3
48.00	Top - Section 1	1.00	0.80	7.015	7.72	241.78	0.650	0.000	2.00	9.170	5.96	46.0	0.0	865.7
50.00		1.00	0.81	7.098	7.81	244.47	0.650	0.000	2.00	9.091	5.91	46.1	0.0	432.1
51.00	Top - Section 2	1.00	0.82	7.138	7.85	244.09	0.650	0.000	1.00	4.515	2.94	23.0	0.0	214.6
52.00		1.00	0.82	7.178	7.90	243.68	0.650	0.000	1.00	4.495	2.92	23.1	0.0	213.6
54.00		1.00	0.83	7.255	7.98	242.82	0.650	0.000	2.00	8.931	5.81	46.3	0.0	424.4
56.00		1.00	0.84	7.331	8.06	241.90	0.650	0.000	2.00	8.852	5.75	46.4	0.0	420.6
58.00		1.00	0.85	7.405	8.15	240.92	0.650	0.000	2.00	8.772	5.70	46.4	0.0	416.8
60.00		1.00	0.85	7.477	8.22	239.88	0.650	0.000	2.00	8.692	5.65	46.5	0.0	413.0
62.00		1.00	0.86	7.548	8.30	238.78	0.650	0.000	2.00	8.612	5.60	46.5	0.0	409.2
64.00		1.00	0.87	7.616	8.38	237.64	0.650	0.000	2.00	8.533	5.55	46.5	0.0	405.4
66.00		1.00	0.88	7.684	8.45	236.45	0.650	0.000	2.00	8.453	5.49	46.4	0.0	401.5
66.17	RB1	1.00	0.88	7.689	8.46	236.34	0.650	0.000	0.17	0.715	0.46	3.9	0.0	34.0
68.00		1.00	0.89	7.749	8.52	235.21	0.650	0.000	1.83	7.659	4.98	42.4	0.0	363.8
70.00		1.00	0.89	7.814	8.60	233.93	0.650	0.000	2.00	8.294	5.39	46.3	0.0	393.9
71.00	Top - Section 3	1.00	0.90	7.846	8.63	233.27	0.650	0.000	1.00	4.117	2.68	23.1	0.0	195.5
72.00		1.00	0.90	7.877	8.66	232.60	0.650	0.000	1.00	4.097	2.66	23.1	0.0	194.6
74.00		1.00	0.91	7.939	8.73	231.24	0.650	0.000	2.00	8.134	5.29	46.2	0.0	386.3
76.00		1.00	0.91	8.000	8.80	229.83	0.650	0.000	2.00	8.055	5.24	46.1	0.0	382.5
78.00		1.00	0.92	8.059	8.87	228.39	0.650	0.000	2.00	7.975	5.18	46.0	0.0	378.7
80.00		1.00	0.93	8.118	8.93	226.92	0.650	0.000	2.00	7.895	5.13	45.8	0.0	374.8
81.00	Top - Section 4	1.00	0.93	8.147	8.96	226.17	0.650	0.000	1.00	3.918	2.55	22.8	0.0	186.0
82.00		1.00	0.93	8.175	8.99	225.41	0.650	0.000	1.00	3.898	2.53	22.8	0.0	154.4

Wind Loading - Shaft

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 78

84.00	1.00	0.94	8.232	9.05	223.87	0.650	0.000	2.00	7.736	5.03	45.5	0.0	306.4
85.00 Bot - Section 6	1.00	0.94	8.260	9.09	223.09	0.650	0.000	1.00	3.838	2.49	22.7	0.0	152.0
86.00	1.00	0.95	8.287	9.12	222.30	0.650	0.000	1.00	3.871	2.52	22.9	0.0	304.6
88.00	1.00	0.95	8.342	9.18	220.70	0.650	0.000	2.00	7.682	4.99	45.8	0.0	604.4
90.00	1.00	0.96	8.396	9.24	219.07	0.650	0.000	2.00	7.603	4.94	45.6	0.0	598.0
91.00 Top - Section 5	1.00	0.96	8.422	9.26	218.24	0.650	0.000	1.00	3.771	2.45	22.7	0.0	296.6
92.00	1.00	0.96	8.448	9.29	220.53	0.650	0.000	1.00	3.752	2.44	22.7	0.0	148.6
93.83 RT1	1.00	0.97	8.496	9.35	219.00	0.650	0.000	1.83	6.814	4.43	41.4	0.0	269.8
94.00	1.00	0.97	8.501	9.35	218.85	0.650	0.000	0.17	0.630	0.41	3.8	0.0	24.9
96.00	1.00	0.98	8.552	9.41	217.15	0.650	0.000	2.00	7.364	4.79	45.0	0.0	291.6
98.00	1.00	0.98	8.602	9.46	215.42	0.650	0.000	2.00	7.284	4.73	44.8	0.0	288.4
100.00	1.00	0.99	8.652	9.52	213.67	0.650	0.000	2.00	7.204	4.68	44.6	0.0	285.2
102.00	1.00	0.99	8.701	9.57	211.89	0.650	0.000	2.00	7.125	4.63	44.3	0.0	282.1
104.00	1.00	1.00	8.750	9.62	210.09	0.650	0.000	2.00	7.045	4.58	44.1	0.0	278.9
106.00	1.00	1.00	8.797	9.68	208.26	0.650	0.000	2.00	6.567	4.27	41.3	0.0	275.7
108.00	1.00	1.01	8.845	9.73	206.42	0.650	0.000	2.00	6.487	4.22	41.0	0.0	272.5
110.00	1.00	1.02	8.891	9.78	204.55	0.650	0.000	2.00	6.407	4.16	40.7	0.0	269.3
111.17 RB2	1.00	1.02	8.918	9.81	203.45	0.650	0.000	1.17	3.711	2.41	23.7	0.0	156.1
112.00	1.00	1.02	8.937	9.83	202.66	0.650	0.000	0.83	2.616	1.70	16.7	0.0	110.1
114.00	1.00	1.03	8.982	9.88	200.75	0.650	0.000	2.00	6.248	4.06	40.1	0.0	263.0
115.00 Top - Section 6	1.00	1.03	9.005	9.91	199.79	0.650	0.000	1.00	3.293	2.14	21.2	0.0	130.3
116.00	1.00	1.03	9.027	9.93	198.82	0.650	0.000	1.00	3.273	2.13	21.1	0.0	103.8
118.00	1.00	1.04	9.071	9.98	196.88	0.650	0.000	2.00	6.487	4.22	42.1	0.0	205.6
120.00	1.00	1.04	9.115	10.03	194.91	0.650	0.000	2.00	6.407	4.16	41.8	0.0	203.1
122.00	1.00	1.05	9.158	10.07	192.93	0.650	0.000	2.00	6.328	4.11	41.4	0.0	200.6
123.83 RT2	1.00	1.05	9.197	10.12	191.10	0.650	0.000	1.83	5.720	3.72	37.6	0.0	181.3
124.00	1.00	1.05	9.201	10.12	190.92	0.650	0.000	0.17	0.528	0.34	3.5	0.0	16.7
126.00	1.00	1.06	9.243	10.17	188.91	0.650	0.000	2.00	6.168	4.01	40.8	0.0	195.5
128.00	1.00	1.06	9.284	10.21	186.87	0.650	0.000	2.00	6.089	3.96	40.4	0.0	192.9
130.00 Bot - Section 8	1.00	1.07	9.326	10.26	184.82	0.650	0.000	2.00	6.009	3.91	40.1	0.0	190.4
132.00	1.00	1.07	9.366	10.30	182.75	0.650	0.000	2.00	6.014	3.91	40.3	0.0	378.4
134.00	1.00	1.07	9.407	10.35	180.66	0.650	0.000	2.00	5.934	3.86	39.9	0.0	373.3
135.00 Top - Section 7	1.00	1.08	9.427	10.37	179.61	0.650	0.000	1.00	2.937	1.91	19.8	0.0	184.7
136.00	1.00	1.08	9.447	10.39	181.20	0.650	0.000	1.00	2.917	1.90	19.7	0.0	92.4
138.00	1.00	1.08	9.486	10.43	179.09	0.650	0.000	2.00	5.775	3.75	39.2	0.0	182.9
140.00	1.00	1.09	9.525	10.48	176.97	0.650	0.000	2.00	5.695	3.70	38.8	0.0	180.4
142.00	1.00	1.09	9.564	10.52	174.83	0.650	0.000	2.00	5.616	3.65	38.4	0.0	177.8
143.00 Appurtenance(s)	1.00	1.09	9.583	10.54	173.75	0.650	0.000	1.00	2.778	1.81	19.0	0.0	88.0
144.00	1.00	1.10	9.602	10.56	172.67	0.650	0.000	1.00	2.758	1.79	18.9	0.0	87.3
146.00	1.00	1.10	9.640	10.60	170.50	0.650	0.000	2.00	5.456	3.55	37.6	0.0	172.7
148.00	1.00	1.11	9.678	10.65	168.32	0.650	0.000	2.00	5.376	3.49	37.2	0.0	170.2
150.00	1.00	1.11	9.715	10.69	166.13	0.650	0.000	2.00	5.297	3.44	36.8	0.0	167.7
152.00	1.00	1.11	9.752	10.73	163.92	0.650	0.000	2.00	5.217	3.39	36.4	0.0	165.1
153.00 Appurtenance(s)	1.00	1.12	9.770	10.75	162.81	0.650	0.000	1.00	2.579	1.68	18.0	0.0	81.6
154.00	1.00	1.12	9.788	10.77	161.70	0.650	0.000	1.00	2.559	1.66	17.9	0.0	81.0
156.00	1.00	1.12	9.824	10.81	159.46	0.650	0.000	2.00	5.058	3.29	35.5	0.0	160.0
158.00 Appurtenance(s)	1.00	1.13	9.860	10.85	157.22	0.650	0.000	2.00	4.978	3.24	35.1	0.0	157.5
160.00	1.00	1.13	9.896	10.89	154.96	0.650	0.000	2.00	4.898	3.18	34.7	0.0	154.9
162.00	1.00	1.13	9.931	10.92	152.69	0.650	0.000	2.00	4.819	3.13	34.2	0.0	152.4
163.00 Appurtenance(s)	1.00	1.14	9.948	10.94	151.55	0.650	0.000	1.00	2.379	1.55	16.9	0.0	75.2
164.00	1.00	1.14	9.966	10.96	150.41	0.650	0.000	1.00	2.360	1.53	16.8	0.0	74.6
166.00	1.00	1.14	10.000	11.00	148.11	0.650	0.000	2.00	4.659	3.03	33.3	0.0	147.3
168.00	1.00	1.15	10.035	11.04	145.81	0.650	0.000	2.00	4.580	2.98	32.9	0.0	144.8
170.00	1.00	1.15	10.069	11.08	143.49	0.650	0.000	2.00	4.500	2.92	32.4	0.0	142.2
172.00	1.00	1.15	10.102	11.11	141.16	0.650	0.000	2.00	4.420	2.87	31.9	0.0	139.7
173.00 Appurtenance(s)	1.00	1.16	10.119	11.13	139.99	0.650	0.000	1.00	2.180	1.42	15.8	0.0	68.9
174.00	1.00	1.16	10.136	11.15	138.82	0.650	0.000	1.00	2.160	1.40	15.7	0.0	68.3

Wind Loading - Shaft

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 79	

176.00		1.00	1.16	10.169	11.19	136.47	0.650	0.000	2.00	4.261	2.77	31.0	0.0	134.6
178.00		1.00	1.17	10.202	11.22	134.11	0.650	0.000	2.00	4.181	2.72	30.5	0.0	132.1
180.00	Top - Section 8	1.00	1.17	10.234	11.26	131.74	0.650	0.000	2.00	4.102	2.67	30.0	0.0	129.5
181.00	Appurtenance(s)	1.00	1.17	10.251	11.28	129.84	0.600	0.000	1.00	2.000	1.20	13.5	0.0	71.3
182.00		1.00	1.17	10.267	11.29	129.95	0.600	0.000	1.00	2.000	1.20	13.6	0.0	71.3
183.00		1.00	1.17	10.283	11.31	130.05	0.600	0.000	1.00	2.000	1.20	13.6	0.0	71.3
								Totals:	**183.00**			**3,820.9**		**31,483.2**

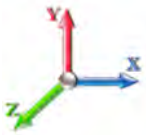
Discrete Appurtenance Forces

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 80	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 28

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	181.00	Low Profile	1	10.251	11.276	1.00	1.00	22.00	1500.00	0.000	0.000	248.06	0.00	0.00
2	173.00	LNX-6514DS-VTM	3	10.119	11.131	0.64	0.80	15.53	99.30	0.000	0.000	172.89	0.00	0.00
3	173.00	Low Profile	1	10.119	11.131	1.00	1.00	22.00	1500.00	0.000	0.000	244.88	0.00	0.00
4	173.00	APL866513-42T0	2	10.119	11.131	0.74	0.80	6.03	31.40	0.000	0.000	67.08	0.00	0.00
5	173.00	HBXX-6517DS-VTM	6	10.119	11.131	0.62	0.80	31.60	244.20	0.000	0.000	351.75	0.00	0.00
6	173.00	LPA-80080-4CF-EDIN-0	4	10.119	11.131	1.36	0.80	14.20	48.00	0.000	0.000	158.04	0.00	0.00
7	173.00	RRH2X60-AWS	3	10.119	11.131	0.54	0.80	5.63	180.00	0.000	0.000	62.64	0.00	0.00
8	173.00	RRH2x60-700U	3	10.119	11.131	0.54	0.80	3.99	150.00	0.000	0.000	44.39	0.00	0.00
9	173.00	RRH2x60-1900	3	10.119	11.131	0.54	0.80	2.43	58.50	0.000	0.000	27.03	0.00	0.00
10	173.00	DB-T1-6Z-8AB-OZ	2	10.119	11.131	0.80	0.80	7.68	88.00	0.000	0.000	85.49	0.00	0.00
11	163.00	LLPX310R	3	9.948	10.943	0.55	0.80	7.12	85.80	0.000	0.000	77.92	0.00	0.00
12	163.00	Low Profile	1	9.948	10.943	1.00	1.00	22.00	1500.00	0.000	0.000	240.75	0.00	0.00
13	163.00	DAP Head	3	9.948	10.943	0.54	0.80	3.02	126.00	0.000	0.000	33.08	0.00	0.00
14	158.00	Low Profile	1	9.860	10.846	1.00	1.00	22.00	1500.00	0.000	0.000	238.62	0.00	0.00
15	153.00	V-brace kit	1	9.770	10.747	1.00	1.00	2.70	230.00	0.000	0.000	29.02	0.00	0.00
16	153.00	SPTB(Tie back Kit)	1	9.770	10.747	1.00	1.00	3.70	140.00	0.000	0.000	39.76	0.00	0.00
17	153.00	PRK-1245 (kicker kit)	1	9.770	10.747	1.00	1.00	9.50	464.91	0.000	0.000	102.10	0.00	0.00
18	153.00	RFS	3	9.770	10.747	0.56	0.80	34.00	368.40	0.000	0.000	365.43	0.00	0.00
19	153.00	KRY 112 144/1	3	9.770	10.747	0.56	0.80	0.69	33.00	0.000	0.000	7.40	0.00	0.00
20	153.00	Ericsson Air 21 B2A/B4P	3	9.770	10.747	0.69	0.80	12.57	274.50	0.000	0.000	135.09	0.00	0.00
21	153.00	T-Arms	1	9.770	10.747	1.00	1.00	25.00	1200.00	0.000	0.000	268.67	0.00	0.00
22	153.00	Ericsson 4449 B71 + B85	3	9.770	10.747	0.54	0.80	3.17	219.60	0.000	0.000	34.04	0.00	0.00
23	153.00	Ericsson Air 21 B4A/B2P	3	9.770	10.747	0.69	0.80	12.57	271.20	0.000	0.000	135.09	0.00	0.00
24	143.00	OPA-65R-LCUU-H8	2	9.583	10.541	0.59	0.75	15.11	190.00	0.000	0.000	159.27	0.00	0.00
25	143.00	DBC0061F1V51-2	3	9.583	10.541	0.50	0.75	0.65	76.20	0.000	0.000	6.83	0.00	0.00
26	143.00	DTMABP7819VG12A	3	9.583	10.541	0.50	0.75	1.72	57.60	0.000	0.000	18.12	0.00	0.00
27	143.00	RRUS 32 B2	3	9.583	10.541	0.50	0.75	4.13	159.00	0.000	0.000	43.54	0.00	0.00
28	143.00	TPA-65R-LCUUUU-H8	2	9.583	10.541	0.62	0.75	16.56	150.00	0.000	0.000	174.55	0.00	0.00
29	143.00	OPA-65R-LCUU-H4	1	9.583	10.541	0.75	0.75	4.46	57.00	0.000	0.000	46.96	0.00	0.00
30	143.00	QS46512-2	1	9.583	10.541	0.75	0.75	4.16	27.30	0.000	0.000	43.88	0.00	0.00
31	143.00	Low Profile	1	9.583	10.541	1.00	1.00	22.00	1500.00	0.000	0.000	231.91	0.00	0.00
32	143.00	HRK14	1	9.583	10.541	1.00	1.00	10.13	352.36	0.000	0.000	106.78	0.00	0.00
33	143.00	Powerwave 7770.00	3	9.583	10.541	0.55	0.75	9.03	105.00	0.000	0.000	95.23	0.00	0.00
34	143.00	850-1900 Dual Band	3	9.583	10.541	0.49	0.75	0.77	16.50	0.000	0.000	8.14	0.00	0.00
35	143.00	RRUS 11	3	9.583	10.541	0.50	0.75	3.80	152.10	0.000	0.000	40.05	0.00	0.00
36	143.00	DBC-750	3	9.583	10.541	0.38	0.75	0.57	14.40	0.000	0.000	6.05	0.00	0.00
37	143.00	DC6-48-60-18-8F	1	9.583	10.541	0.75	0.75	1.10	31.80	0.000	0.000	11.62	0.00	0.00
							Totals:		**13,202.07**			**4,162.15**		

Total Applied Force Summary

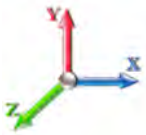
Structure:	CT01002-S-SBA		**Code:**	EIA/TIA-222-G	5/5/2021
Site Name:	Waterford		**Exposure:**	B	
Height:	183.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 81

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 28

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
2.00		47.66	607.03	0.00	0.00
4.00		47.31	603.22	0.00	0.00
6.00		46.96	599.41	0.00	0.00
8.00		46.61	595.59	0.00	0.00
10.00		46.26	591.78	0.00	0.00
12.00		45.91	587.96	0.00	0.00
14.00		45.56	584.15	0.00	0.00
16.00		45.21	580.34	0.00	0.00
18.00		44.87	576.52	0.00	0.00
20.00		44.52	572.71	0.00	0.00
22.00		44.17	568.90	0.00	0.00
24.00		43.82	565.08	0.00	0.00
26.00		43.47	561.27	0.00	0.00
28.00		43.12	557.45	0.00	0.00
30.00		42.81	553.64	0.00	0.00
32.00		43.25	549.83	0.00	0.00
34.00		43.64	546.01	0.00	0.00
36.00		43.99	542.20	0.00	0.00
38.00		44.30	538.39	0.00	0.00
40.00		44.58	534.57	0.00	0.00
41.00		22.30	265.86	0.00	0.00
42.00		22.67	488.08	0.00	0.00
44.00		45.65	970.44	0.00	0.00
46.00		45.84	962.81	0.00	0.00
48.00		46.00	955.18	0.00	0.00
50.00		46.13	521.58	0.00	0.00
51.00		23.04	259.36	0.00	0.00
52.00		23.07	258.41	0.00	0.00
54.00		46.33	513.95	0.00	0.00
56.00		46.40	510.14	0.00	0.00
58.00		46.44	506.32	0.00	0.00
60.00		46.47	502.51	0.00	0.00
62.00		46.48	498.70	0.00	0.00
64.00		46.47	494.88	0.00	0.00
66.00		46.44	491.07	0.00	0.00
66.17		3.93	41.57	0.00	0.00
68.00		42.44	445.69	0.00	0.00
70.00		46.34	483.44	0.00	0.00
71.00		23.09	240.29	0.00	0.00
72.00		23.07	239.33	0.00	0.00
74.00		46.17	475.81	0.00	0.00
76.00		46.07	472.00	0.00	0.00
78.00		45.95	468.18	0.00	0.00
80.00		45.83	464.37	0.00	0.00
81.00		22.82	230.75	0.00	0.00
82.00		22.78	199.17	0.00	0.00

Total Applied Force Summary

Structure:	CT01002-S-SBA		**Code:**	EIA/TIA-222-G	5/5/2021
Site Name:	Waterford		**Exposure:**	B	
Height:	183.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 82

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84.00		45.53	395.96	0.00	0.00
85.00		22.67	196.79	0.00	0.00
86.00		22.94	349.34	0.00	0.00
88.00		45.82	693.91	0.00	0.00
90.00		45.64	687.55	0.00	0.00
91.00		22.71	341.39	0.00	0.00
92.00		22.66	193.34	0.00	0.00
93.83		41.39	351.75	0.00	0.00
94.00		3.83	32.54	0.00	0.00
96.00		45.03	381.12	0.00	0.00
98.00		44.80	377.94	0.00	0.00
100.00		44.57	374.76	0.00	0.00
102.00		44.33	371.58	0.00	0.00
104.00		44.07	368.40	0.00	0.00
106.00		41.31	365.22	0.00	0.00
108.00		41.02	362.05	0.00	0.00
110.00		40.73	358.87	0.00	0.00
111.17		23.66	208.46	0.00	0.00
112.00		16.72	147.23	0.00	0.00
114.00		40.13	352.51	0.00	0.00
115.00		21.20	175.06	0.00	0.00
116.00		21.13	148.54	0.00	0.00
118.00		42.07	295.16	0.00	0.00
120.00		41.76	292.62	0.00	0.00
122.00		41.43	290.08	0.00	0.00
123.83		37.61	263.20	0.00	0.00
124.00		3.47	24.34	0.00	0.00
126.00		40.76	284.99	0.00	0.00
128.00		40.42	282.45	0.00	0.00
130.00		40.07	279.91	0.00	0.00
132.00		40.28	467.91	0.00	0.00
134.00		39.91	462.82	0.00	0.00
135.00		19.80	229.51	0.00	0.00
136.00		19.70	137.17	0.00	0.00
138.00		39.17	272.44	0.00	0.00
140.00		38.79	269.90	0.00	0.00
142.00		38.40	267.36	0.00	0.00
143.00	(30) attachments	1011.96	3021.98	0.00	0.00
144.00		18.94	118.73	0.00	0.00
146.00		37.61	235.55	0.00	0.00
148.00		37.20	233.01	0.00	0.00
150.00		36.79	230.47	0.00	0.00
152.00		36.38	227.92	0.00	0.00
153.00	(19) attachments	1134.62	3314.62	0.00	0.00
154.00		17.91	100.01	0.00	0.00
156.00		35.53	198.12	0.00	0.00
158.00	(1) attachments	273.71	1695.58	0.00	0.00
160.00		34.66	193.03	0.00	0.00
162.00		34.22	190.49	0.00	0.00
163.00	(7) attachments	368.68	1806.09	0.00	0.00
164.00		16.81	90.61	0.00	0.00
166.00		33.32	179.31	0.00	0.00
168.00		32.86	176.76	0.00	0.00
170.00		32.40	174.22	0.00	0.00
172.00		31.93	171.68	0.00	0.00
173.00	(27) attachments	1229.96	2484.29	0.00	0.00
174.00		15.66	69.57	0.00	0.00

Total Applied Force Summary

Structure:	CT01002-S-SBA		**Code:**	EIA/TIA-222-G	5/5/2021
Site Name:	Waterford		**Exposure:**	B	
Height:	183.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 83

Tower Engineering Solutions

176.00		30.98	137.23	0.00	0.00
178.00		30.50	134.69	0.00	0.00
180.00		30.01	132.15	0.00	0.00
181.00	(1) attachments	261.59	1572.56	0.00	0.00
182.00		13.55	72.56	0.00	0.00
183.00		13.57	72.56	0.00	0.00
	Totals:	**7,983.10**	**51,763.91**	**0.00**	**0.00**

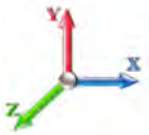
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 84	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 28

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
2.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.030	0.000	6.129	0.00	0.55
2.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.030	0.000	6.129	0.00	2.08
2.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.030	0.000	6.129	0.00	6.24
4.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	6.129	0.00	0.55
4.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	6.129	0.00	2.08
4.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.031	0.000	6.129	0.00	6.24
6.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	6.129	0.00	0.55
6.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	6.129	0.00	2.08
6.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.031	0.000	6.129	0.00	6.24
8.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	6.129	0.00	0.55
8.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	6.129	0.00	2.08
8.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.031	0.000	6.129	0.00	6.24
10.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	6.129	0.00	0.55
10.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	6.129	0.00	2.08
10.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.031	0.000	6.129	0.00	6.24
12.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	6.129	0.00	0.55
12.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	6.129	0.00	2.08
12.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.031	0.000	6.129	0.00	6.24
14.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	6.129	0.00	0.55
14.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	6.129	0.00	2.08
14.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.032	0.000	6.129	0.00	6.24
16.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	6.129	0.00	0.55
16.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	6.129	0.00	2.08
16.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.032	0.000	6.129	0.00	6.24
18.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	6.129	0.00	0.55
18.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	6.129	0.00	2.08
18.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.032	0.000	6.129	0.00	6.24
20.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	6.129	0.00	0.55
20.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	6.129	0.00	2.08
20.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.032	0.000	6.129	0.00	6.24
22.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.033	0.000	6.129	0.00	0.55
22.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.033	0.000	6.129	0.00	2.08
22.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.033	0.000	6.129	0.00	6.24
24.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.033	0.000	6.129	0.00	0.55
24.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.033	0.000	6.129	0.00	2.08
24.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.033	0.000	6.129	0.00	6.24
26.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.033	0.000	6.129	0.00	0.55
26.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.033	0.000	6.129	0.00	2.08
26.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.033	0.000	6.129	0.00	6.24
28.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	6.129	0.00	0.55
28.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	6.129	0.00	2.08
28.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.034	0.000	6.129	0.00	6.24
30.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	6.134	0.00	0.55
30.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	6.134	0.00	2.08
30.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.034	0.000	6.134	0.00	6.24
32.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	6.248	0.00	0.55
32.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	6.248	0.00	2.08

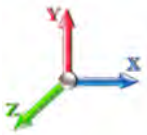
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 85	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 28

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
32.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.034	0.000	6.248	0.00	6.24
34.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	6.357	0.00	0.55
34.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	6.357	0.00	2.08
34.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.034	0.000	6.357	0.00	6.24
36.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.035	0.000	6.462	0.00	0.55
36.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.035	0.000	6.462	0.00	2.08
36.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.035	0.000	6.462	0.00	6.24
38.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.035	0.000	6.562	0.00	0.55
38.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.035	0.000	6.562	0.00	2.08
38.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.035	0.000	6.562	0.00	6.24
40.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.035	0.000	6.659	0.00	0.55
40.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.035	0.000	6.659	0.00	2.08
40.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.035	0.000	6.659	0.00	6.24
41.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.035	0.000	6.706	0.00	0.27
41.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.035	0.000	6.706	0.00	1.04
41.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.035	0.000	6.706	0.00	3.12
42.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.036	0.000	6.753	0.00	0.27
42.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.036	0.000	6.753	0.00	1.04
42.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.036	0.000	6.753	0.00	3.12
44.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	6.843	0.00	0.55
44.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	6.843	0.00	2.08
44.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.036	0.000	6.843	0.00	6.24
46.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	6.931	0.00	0.55
46.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	6.931	0.00	2.08
46.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.036	0.000	6.931	0.00	6.24
48.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	7.015	0.00	0.55
48.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	7.015	0.00	2.08
48.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.036	0.000	7.015	0.00	6.24
50.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	7.098	0.00	0.55
50.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	7.098	0.00	2.08
50.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.036	0.000	7.098	0.00	6.24
51.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.037	0.000	7.138	0.00	0.27
51.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.037	0.000	7.138	0.00	1.04
51.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.037	0.000	7.138	0.00	3.12
52.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.037	0.000	7.178	0.00	0.27
52.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.037	0.000	7.178	0.00	1.04
52.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.037	0.000	7.178	0.00	3.12
54.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.037	0.000	7.255	0.00	0.55
54.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.037	0.000	7.255	0.00	2.08
54.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.037	0.000	7.255	0.00	6.24
56.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.037	0.000	7.331	0.00	0.55
56.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.037	0.000	7.331	0.00	2.08
56.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.037	0.000	7.331	0.00	6.24
58.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.038	0.000	7.405	0.00	0.55
58.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.038	0.000	7.405	0.00	2.08
58.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.038	0.000	7.405	0.00	6.24
60.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.038	0.000	7.477	0.00	0.55

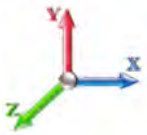
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 86	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 28

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
60.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.038	0.000	7.477	0.00	2.08
60.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.038	0.000	7.477	0.00	6.24
62.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.038	0.000	7.548	0.00	0.55
62.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.038	0.000	7.548	0.00	2.08
62.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.038	0.000	7.548	0.00	6.24
64.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.039	0.000	7.616	0.00	0.55
64.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.039	0.000	7.616	0.00	2.08
64.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.039	0.000	7.616	0.00	6.24
66.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.039	0.000	7.684	0.00	0.55
66.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.039	0.000	7.684	0.00	2.08
66.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.039	0.000	7.684	0.00	6.24
66.00	C6X10.5 Reinforcing	Yes	1.00	0.000	0.00	0.00	0.00	0.039	0.000	7.684	0.00	0.00
66.17	Safety Cable	Yes	0.17	0.000	0.00	0.00	0.00	0.039	0.000	7.689	0.00	0.05
66.17	Step bolts (ladder)	Yes	0.17	0.000	0.00	0.00	0.00	0.039	0.000	7.689	0.00	0.18
66.17	1 5/8" Coax	Yes	0.17	0.000	1.98	0.03	0.00	0.039	0.000	7.689	0.00	0.53
66.17	C6X10.5 Reinforcing	Yes	0.17	0.000	0.00	0.00	0.00	0.039	0.000	7.689	0.00	0.00
68.00	Safety Cable	Yes	1.83	0.000	0.00	0.00	0.00	0.039	0.000	7.749	0.00	0.50
68.00	Step bolts (ladder)	Yes	1.83	0.000	0.00	0.00	0.00	0.039	0.000	7.749	0.00	1.90
68.00	1 5/8" Coax	Yes	1.83	0.000	1.98	0.30	0.00	0.039	0.000	7.749	0.00	5.71
68.00	C6X10.5 Reinforcing	Yes	1.83	0.000	0.00	0.00	0.00	0.039	0.000	7.749	0.00	0.00
70.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.040	0.000	7.814	0.00	0.55
70.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.040	0.000	7.814	0.00	2.08
70.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.040	0.000	7.814	0.00	6.24
70.00	C6X10.5 Reinforcing	Yes	2.00	0.000	0.00	0.00	0.00	0.040	0.000	7.814	0.00	0.00
71.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.040	0.000	7.846	0.00	0.27
71.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.040	0.000	7.846	0.00	1.04
71.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.040	0.000	7.846	0.00	3.12
71.00	C6X10.5 Reinforcing	Yes	1.00	0.000	0.00	0.00	0.00	0.040	0.000	7.846	0.00	0.00
72.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.040	0.000	7.877	0.00	0.27
72.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.040	0.000	7.877	0.00	1.04
72.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.040	0.000	7.877	0.00	3.12
72.00	C6X10.5 Reinforcing	Yes	1.00	0.000	0.00	0.00	0.00	0.040	0.000	7.877	0.00	0.00
74.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.041	0.000	7.939	0.00	0.55
74.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.041	0.000	7.939	0.00	2.08
74.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.041	0.000	7.939	0.00	6.24
74.00	C6X10.5 Reinforcing	Yes	2.00	0.000	0.00	0.00	0.00	0.041	0.000	7.939	0.00	0.00
76.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.041	0.000	8.000	0.00	0.55
76.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.041	0.000	8.000	0.00	2.08
76.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.041	0.000	8.000	0.00	6.24
76.00	C6X10.5 Reinforcing	Yes	2.00	0.000	0.00	0.00	0.00	0.041	0.000	8.000	0.00	0.00
78.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.041	0.000	8.059	0.00	0.55
78.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.041	0.000	8.059	0.00	2.08
78.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.041	0.000	8.059	0.00	6.24
78.00	C6X10.5 Reinforcing	Yes	2.00	0.000	0.00	0.00	0.00	0.041	0.000	8.059	0.00	0.00
80.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.042	0.000	8.118	0.00	0.55
80.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.042	0.000	8.118	0.00	2.08
80.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.042	0.000	8.118	0.00	6.24

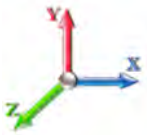
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 87	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 28

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
80.00	C6X10.5 Reinforcing	Yes	2.00	0.000	0.00	0.00	0.00	0.042	0.000	8.118	0.00	0.00
81.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.042	0.000	8.147	0.00	0.27
81.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.042	0.000	8.147	0.00	1.04
81.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.042	0.000	8.147	0.00	3.12
81.00	C6X10.5 Reinforcing	Yes	1.00	0.000	0.00	0.00	0.00	0.042	0.000	8.147	0.00	0.00
82.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.042	0.000	8.175	0.00	0.27
82.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.042	0.000	8.175	0.00	1.04
82.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.042	0.000	8.175	0.00	3.12
82.00	C6X10.5 Reinforcing	Yes	1.00	0.000	0.00	0.00	0.00	0.042	0.000	8.175	0.00	0.00
84.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.043	0.000	8.232	0.00	0.55
84.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.043	0.000	8.232	0.00	2.08
84.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.043	0.000	8.232	0.00	6.24
84.00	C6X10.5 Reinforcing	Yes	2.00	0.000	0.00	0.00	0.00	0.043	0.000	8.232	0.00	0.00
85.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.043	0.000	8.260	0.00	0.27
85.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.043	0.000	8.260	0.00	1.04
85.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.043	0.000	8.260	0.00	3.12
85.00	C6X10.5 Reinforcing	Yes	1.00	0.000	0.00	0.00	0.00	0.043	0.000	8.260	0.00	0.00
86.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.043	0.000	8.287	0.00	0.27
86.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.043	0.000	8.287	0.00	1.04
86.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.043	0.000	8.287	0.00	3.12
86.00	C6X10.5 Reinforcing	Yes	1.00	0.000	0.00	0.00	0.00	0.043	0.000	8.287	0.00	0.00
88.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.044	0.000	8.342	0.00	0.55
88.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.044	0.000	8.342	0.00	2.08
88.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.044	0.000	8.342	0.00	6.24
88.00	C6X10.5 Reinforcing	Yes	2.00	0.000	0.00	0.00	0.00	0.044	0.000	8.342	0.00	0.00
90.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.044	0.000	8.396	0.00	0.55
90.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.044	0.000	8.396	0.00	2.08
90.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.044	0.000	8.396	0.00	6.24
90.00	C6X10.5 Reinforcing	Yes	2.00	0.000	0.00	0.00	0.00	0.044	0.000	8.396	0.00	0.00
91.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.044	0.000	8.422	0.00	0.27
91.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.044	0.000	8.422	0.00	1.04
91.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.044	0.000	8.422	0.00	3.12
91.00	C6X10.5 Reinforcing	Yes	1.00	0.000	0.00	0.00	0.00	0.044	0.000	8.422	0.00	0.00
92.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.044	0.000	8.448	0.00	0.27
92.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.044	0.000	8.448	0.00	1.04
92.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.044	0.000	8.448	0.00	3.12
92.00	C6X10.5 Reinforcing	Yes	1.00	0.000	0.00	0.00	0.00	0.044	0.000	8.448	0.00	0.00
93.83	Safety Cable	Yes	1.83	0.000	0.00	0.00	0.00	0.044	0.000	8.496	0.00	0.50
93.83	Step bolts (ladder)	Yes	1.83	0.000	0.00	0.00	0.00	0.044	0.000	8.496	0.00	1.90
93.83	1 5/8" Coax	Yes	1.83	0.000	1.98	0.30	0.00	0.044	0.000	8.496	0.00	5.71
93.83	C6X10.5 Reinforcing	Yes	1.83	0.000	0.00	0.00	0.00	0.044	0.000	8.496	0.00	0.00
94.00	Safety Cable	Yes	0.17	0.000	0.00	0.00	0.00	0.045	0.000	8.501	0.00	0.05
94.00	Step bolts (ladder)	Yes	0.17	0.000	0.00	0.00	0.00	0.045	0.000	8.501	0.00	0.18
94.00	1 5/8" Coax	Yes	0.17	0.000	1.98	0.03	0.00	0.045	0.000	8.501	0.00	0.53
94.00	C6X10.5 Reinforcing	Yes	0.17	0.000	0.00	0.00	0.00	0.045	0.000	8.501	0.00	0.00
96.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.045	0.000	8.552	0.00	0.55
96.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.045	0.000	8.552	0.00	2.08

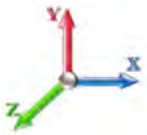
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 88	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 28

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
96.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.045	0.000	8.552	0.00	6.24
96.00	C6X10.5 Reinforcing	Yes	1.00	0.000	0.00	0.00	0.00	0.045	0.000	8.552	0.00	0.00
98.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.045	0.000	8.602	0.00	0.55
98.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.045	0.000	8.602	0.00	2.08
98.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.045	0.000	8.602	0.00	6.24
100.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.046	0.000	8.652	0.00	0.55
100.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.046	0.000	8.652	0.00	2.08
100.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.046	0.000	8.652	0.00	6.24
102.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.046	0.000	8.701	0.00	0.55
102.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.046	0.000	8.701	0.00	2.08
102.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.046	0.000	8.701	0.00	6.24
104.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.047	0.000	8.750	0.00	0.55
104.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.047	0.000	8.750	0.00	2.08
104.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.047	0.000	8.750	0.00	6.24
106.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.047	0.000	8.797	0.00	0.55
106.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.047	0.000	8.797	0.00	2.08
106.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.047	0.000	8.797	0.00	6.24
108.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.048	0.000	8.845	0.00	0.55
108.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.048	0.000	8.845	0.00	2.08
108.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.048	0.000	8.845	0.00	6.24
110.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.048	0.000	8.891	0.00	0.55
110.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.048	0.000	8.891	0.00	2.08
110.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.048	0.000	8.891	0.00	6.24
111.17	Safety Cable	Yes	1.17	0.000	0.00	0.00	0.00	0.049	0.000	8.918	0.00	0.32
111.17	Step bolts (ladder)	Yes	1.17	0.000	0.00	0.00	0.00	0.049	0.000	8.918	0.00	1.22
111.17	1 5/8" Coax	Yes	1.17	0.000	1.98	0.19	0.00	0.049	0.000	8.918	0.00	3.65
111.17	C6X10.5 Reinforcing	Yes	1.17	0.000	0.00	0.00	0.00	0.049	0.000	8.918	0.00	0.00
112.00	Safety Cable	Yes	0.83	0.000	0.00	0.00	0.00	0.049	0.000	8.937	0.00	0.23
112.00	Step bolts (ladder)	Yes	0.83	0.000	0.00	0.00	0.00	0.049	0.000	8.937	0.00	0.86
112.00	1 5/8" Coax	Yes	0.83	0.000	1.98	0.14	0.00	0.049	0.000	8.937	0.00	2.59
112.00	C6X10.5 Reinforcing	Yes	0.83	0.000	0.00	0.00	0.00	0.049	0.000	8.937	0.00	0.00
114.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.050	0.000	8.982	0.00	0.55
114.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.050	0.000	8.982	0.00	2.08
114.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.050	0.000	8.982	0.00	6.24
114.00	C6X10.5 Reinforcing	Yes	2.00	0.000	0.00	0.00	0.00	0.050	0.000	8.982	0.00	0.00
115.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.050	0.000	9.005	0.00	0.27
115.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.050	0.000	9.005	0.00	1.04
115.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.050	0.000	9.005	0.00	3.12
115.00	C6X10.5 Reinforcing	Yes	1.00	0.000	0.00	0.00	0.00	0.050	0.000	9.005	0.00	0.00
116.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.050	0.000	9.027	0.00	0.27
116.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.050	0.000	9.027	0.00	1.04
116.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.050	0.000	9.027	0.00	3.12
116.00	C6X10.5 Reinforcing	Yes	1.00	0.000	0.00	0.00	0.00	0.050	0.000	9.027	0.00	0.00
118.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.051	0.000	9.071	0.00	0.55
118.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.051	0.000	9.071	0.00	2.08
118.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.051	0.000	9.071	0.00	6.24
118.00	C6X10.5 Reinforcing	Yes	2.00	0.000	0.00	0.00	0.00	0.051	0.000	9.071	0.00	0.00

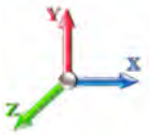
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 89	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 28

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
120.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.052	0.000	9.115	0.00	0.55
120.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.052	0.000	9.115	0.00	2.08
120.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.052	0.000	9.115	0.00	6.24
120.00	C6X10.5 Reinforcing	Yes	2.00	0.000	0.00	0.00	0.00	0.052	0.000	9.115	0.00	0.00
122.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.052	0.000	9.158	0.00	0.55
122.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.052	0.000	9.158	0.00	2.08
122.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.052	0.000	9.158	0.00	6.24
122.00	C6X10.5 Reinforcing	Yes	2.00	0.000	0.00	0.00	0.00	0.052	0.000	9.158	0.00	0.00
123.83	Safety Cable	Yes	1.83	0.000	0.00	0.00	0.00	0.053	0.000	9.197	0.00	0.50
123.83	Step bolts (ladder)	Yes	1.83	0.000	0.00	0.00	0.00	0.053	0.000	9.197	0.00	1.90
123.83	1 5/8" Coax	Yes	1.83	0.000	1.98	0.30	0.00	0.053	0.000	9.197	0.00	5.71
123.83	C6X10.5 Reinforcing	Yes	1.83	0.000	0.00	0.00	0.00	0.053	0.000	9.197	0.00	0.00
124.00	Safety Cable	Yes	0.17	0.000	0.00	0.00	0.00	0.053	0.000	9.201	0.00	0.05
124.00	Step bolts (ladder)	Yes	0.17	0.000	0.00	0.00	0.00	0.053	0.000	9.201	0.00	0.18
124.00	1 5/8" Coax	Yes	0.17	0.000	1.98	0.03	0.00	0.053	0.000	9.201	0.00	0.53
124.00	C6X10.5 Reinforcing	Yes	0.17	0.000	0.00	0.00	0.00	0.053	0.000	9.201	0.00	0.00
126.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.053	0.000	9.243	0.00	0.55
126.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.053	0.000	9.243	0.00	2.08
126.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.053	0.000	9.243	0.00	6.24
126.00	C6X10.5 Reinforcing	Yes	1.00	0.000	0.00	0.00	0.00	0.053	0.000	9.243	0.00	0.00
128.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.054	0.000	9.284	0.00	0.55
128.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.054	0.000	9.284	0.00	2.08
128.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.054	0.000	9.284	0.00	6.24
130.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.055	0.000	9.326	0.00	0.55
130.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.055	0.000	9.326	0.00	2.08
130.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.055	0.000	9.326	0.00	6.24
132.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.056	0.000	9.366	0.00	0.55
132.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.056	0.000	9.366	0.00	2.08
132.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.056	0.000	9.366	0.00	6.24
134.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.056	0.000	9.407	0.00	0.55
134.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.056	0.000	9.407	0.00	2.08
134.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.056	0.000	9.407	0.00	6.24
135.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.057	0.000	9.427	0.00	0.27
135.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.057	0.000	9.427	0.00	1.04
135.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.057	0.000	9.427	0.00	3.12
136.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.057	0.000	9.447	0.00	0.27
136.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.057	0.000	9.447	0.00	1.04
136.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.057	0.000	9.447	0.00	3.12
138.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.057	0.000	9.486	0.00	0.55
138.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.057	0.000	9.486	0.00	2.08
138.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.057	0.000	9.486	0.00	6.24
140.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.058	0.000	9.525	0.00	0.55
140.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.058	0.000	9.525	0.00	2.08
140.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.058	0.000	9.525	0.00	6.24
142.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.059	0.000	9.564	0.00	0.55
142.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.059	0.000	9.564	0.00	2.08
142.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.059	0.000	9.564	0.00	6.24

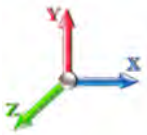
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 90	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 28

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
143.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.059	0.000	9.583	0.00	0.27
143.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.059	0.000	9.583	0.00	1.04
143.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.059	0.000	9.583	0.00	3.12
144.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.060	0.000	9.602	0.00	0.27
144.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.060	0.000	9.602	0.00	1.04
144.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.060	0.000	9.602	0.00	3.12
146.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.060	0.000	9.640	0.00	0.55
146.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.060	0.000	9.640	0.00	2.08
146.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.060	0.000	9.640	0.00	6.24
148.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.061	0.000	9.678	0.00	0.55
148.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.061	0.000	9.678	0.00	2.08
148.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.061	0.000	9.678	0.00	6.24
150.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.062	0.000	9.715	0.00	0.55
150.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.062	0.000	9.715	0.00	2.08
150.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.062	0.000	9.715	0.00	6.24
152.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.063	0.000	9.752	0.00	0.55
152.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.063	0.000	9.752	0.00	2.08
152.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.063	0.000	9.752	0.00	6.24
153.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.064	0.000	9.770	0.00	0.27
153.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.064	0.000	9.770	0.00	1.04
153.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.064	0.000	9.770	0.00	3.12
154.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.064	0.000	9.788	0.00	0.27
154.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.064	0.000	9.788	0.00	1.04
154.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.064	0.000	9.788	0.00	3.12
156.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.065	0.000	9.824	0.00	0.55
156.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.065	0.000	9.824	0.00	2.08
156.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.065	0.000	9.824	0.00	6.24
158.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.066	0.000	9.860	0.00	0.55
158.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.066	0.000	9.860	0.00	2.08
158.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.066	0.000	9.860	0.00	6.24
160.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.067	0.000	9.896	0.00	0.55
160.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.067	0.000	9.896	0.00	2.08
160.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.067	0.000	9.896	0.00	6.24
162.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.068	0.000	9.931	0.00	0.55
162.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.068	0.000	9.931	0.00	2.08
162.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.068	0.000	9.931	0.00	6.24
163.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.069	0.000	9.948	0.00	0.27
163.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.069	0.000	9.948	0.00	1.04
163.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.069	0.000	9.948	0.00	3.12
164.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.070	0.000	9.966	0.00	0.27
164.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.070	0.000	9.966	0.00	1.04
164.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.070	0.000	9.966	0.00	3.12
166.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.071	0.000	10.000	0.00	0.55
166.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.071	0.000	10.000	0.00	2.08
166.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.071	0.000	10.000	0.00	6.24
168.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.072	0.000	10.035	0.00	0.55
168.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.072	0.000	10.035	0.00	2.08

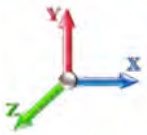
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 91	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 28

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
168.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.072	0.000	10.035	0.00	6.24
170.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.073	0.000	10.069	0.00	0.55
170.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.073	0.000	10.069	0.00	2.08
170.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.073	0.000	10.069	0.00	6.24
172.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.075	0.000	10.102	0.00	0.55
172.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.075	0.000	10.102	0.00	2.08
172.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.075	0.000	10.102	0.00	6.24
173.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.076	0.000	10.119	0.00	0.27
173.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.076	0.000	10.119	0.00	1.04
173.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.076	0.000	10.119	0.00	3.12
174.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	10.136	0.00	0.27
174.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	10.136	0.00	1.04
176.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	10.169	0.00	0.55
176.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	10.169	0.00	2.08
178.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	10.202	0.00	0.55
178.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	10.202	0.00	2.08
180.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	10.234	0.00	0.55
180.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	10.234	0.00	2.08
181.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	10.251	0.00	0.27
181.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	10.251	0.00	1.04
182.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	10.267	0.00	0.27
182.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	10.267	0.00	1.04
183.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	10.283	0.00	0.27
183.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	10.283	0.00	1.04
										Totals:	**0.0**	**780.0**

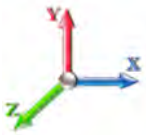
Calculated Forces

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 92	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 28

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-51.76	-7.99	0.00	-1037.8	0.00	1037.88	5190.16	2595.08	13702.9	6861.66	0.00	0.000	0.000	0.161
2.00	-51.15	-7.95	0.00	-1021.9	0.00	1021.90	5174.50	2587.25	13560.7	6790.43	0.00	-0.015	0.000	0.160
4.00	-50.55	-7.92	0.00	-1005.9	0.00	1005.99	5158.51	2579.25	13418.2	6719.08	0.01	-0.030	0.000	0.160
6.00	-49.95	-7.88	0.00	-990.15	0.00	990.15	5142.18	2571.09	13275.4	6647.61	0.03	-0.045	0.000	0.159
8.00	-49.35	-7.85	0.00	-974.38	0.00	974.38	5125.52	2562.76	13132.5	6576.03	0.05	-0.060	0.000	0.158
10.00	-48.76	-7.82	0.00	-958.68	0.00	958.68	5108.53	2554.27	12989.4	6504.36	0.08	-0.075	0.000	0.157
12.00	-48.17	-7.78	0.00	-943.05	0.00	943.05	5091.21	2545.61	12846.0	6432.60	0.11	-0.090	0.000	0.156
14.00	-47.58	-7.75	0.00	-927.48	0.00	927.48	5073.56	2536.78	12702.6	6360.75	0.15	-0.105	0.000	0.155
16.00	-47.00	-7.72	0.00	-911.99	0.00	911.99	5055.57	2527.79	12559.0	6288.85	0.20	-0.121	0.000	0.154
18.00	-46.42	-7.68	0.00	-896.56	0.00	896.56	5037.25	2518.63	12415.3	6216.88	0.26	-0.137	0.000	0.153
20.00	-45.84	-7.65	0.00	-881.19	0.00	881.19	5018.60	2509.30	12271.4	6144.86	0.32	-0.152	0.000	0.153
22.00	-45.27	-7.62	0.00	-865.90	0.00	865.90	4999.62	2499.81	12127.5	6072.81	0.38	-0.168	0.000	0.152
24.00	-44.71	-7.58	0.00	-850.67	0.00	850.67	4980.31	2490.15	11983.6	6000.72	0.46	-0.184	0.000	0.151
26.00	-44.14	-7.55	0.00	-835.50	0.00	835.50	4960.66	2480.33	11839.6	5928.62	0.54	-0.200	0.000	0.150
28.00	-43.58	-7.52	0.00	-820.40	0.00	820.40	4940.68	2470.34	11695.6	5856.50	0.63	-0.216	0.000	0.149
30.00	-43.03	-7.48	0.00	-805.37	0.00	805.37	4920.37	2460.19	11551.6	5784.39	0.72	-0.232	0.000	0.148
32.00	-42.48	-7.45	0.00	-790.40	0.00	790.40	4899.73	2449.87	11407.6	5712.28	0.82	-0.248	0.000	0.147
34.00	-41.93	-7.42	0.00	-775.50	0.00	775.50	4878.76	2439.38	11263.6	5640.19	0.93	-0.265	0.000	0.146
36.00	-41.38	-7.38	0.00	-760.67	0.00	760.67	4857.45	2428.72	11119.7	5568.14	1.04	-0.281	0.000	0.145
38.00	-40.84	-7.35	0.00	-745.91	0.00	745.91	4835.81	2417.91	10975.9	5496.12	1.16	-0.298	0.000	0.144
40.00	-40.31	-7.31	0.00	-731.22	0.00	731.22	4813.84	2406.92	10832.2	5424.15	1.29	-0.314	0.000	0.143
41.00	-40.04	-7.29	0.00	-723.91	0.00	723.91	4802.73	2401.36	10760.3	5388.18	1.36	-0.323	0.000	0.143
42.00	-39.55	-7.27	0.00	-716.62	0.00	716.62	4791.54	2395.77	10688.5	5352.24	1.43	-0.331	0.000	0.142
44.00	-38.58	-7.23	0.00	-702.08	0.00	702.08	4768.90	2384.45	10545.1	5280.39	1.57	-0.348	0.000	0.141
46.00	-37.61	-7.19	0.00	-687.61	0.00	687.61	4745.94	2372.97	10401.7	5208.63	1.72	-0.365	0.000	0.140
48.00	-36.66	-7.15	0.00	-673.23	0.00	673.23	4759.60	2379.80	10486.7	5251.18	1.88	-0.382	0.000	0.136
50.00	-36.13	-7.11	0.00	-658.93	0.00	658.93	4736.50	2368.25	10343.5	5179.45	2.04	-0.399	0.000	0.135
51.00	-35.87	-7.09	0.00	-651.82	0.00	651.82	4724.82	2362.41	10271.9	5143.62	2.12	-0.407	0.000	0.134
51.00	-35.87	-7.09	0.00	-651.82	0.00	651.82	4064.30	2032.15	8835.99	4424.56	2.12	-0.407	0.000	0.156
52.00	-35.61	-7.07	0.00	-644.73	0.00	644.73	4053.20	2026.60	8772.35	4392.70	2.21	-0.415	0.000	0.156
54.00	-35.10	-7.03	0.00	-630.58	0.00	630.58	4030.83	2015.41	8645.34	4329.09	2.39	-0.432	0.000	0.154
56.00	-34.59	-6.99	0.00	-616.52	0.00	616.52	4008.20	2004.10	8518.66	4265.66	2.57	-0.449	0.000	0.153
58.00	-34.08	-6.95	0.00	-602.54	0.00	602.54	3985.33	1992.66	8392.33	4202.40	2.76	-0.465	0.000	0.152
60.00	-33.58	-6.91	0.00	-588.63	0.00	588.63	3962.20	1981.10	8266.38	4139.33	2.96	-0.482	0.000	0.151
62.00	-33.07	-6.87	0.00	-574.81	0.00	574.81	3938.82	1969.41	8140.81	4076.46	3.17	-0.499	0.000	0.149
64.00	-32.58	-6.83	0.00	-561.07	0.00	561.07	3915.19	1957.60	8015.64	4013.78	3.38	-0.516	0.000	0.148
66.00	-32.09	-6.78	0.00	-547.42	0.00	547.42	3891.31	1945.66	7890.88	3951.30	3.60	-0.533	0.000	0.147
66.17	-32.04	-6.78	0.00	-546.26	0.00	546.26	3889.27	1944.64	7880.29	3946.00	3.62	-0.534	0.000	0.108
68.00	-31.60	-6.74	0.00	-533.85	0.00	533.85	3867.19	1933.59	7766.55	3889.05	3.83	-0.546	0.000	0.107
70.00	-31.11	-6.70	0.00	-520.37	0.00	520.37	3842.81	1921.40	7642.66	3827.01	4.06	-0.558	0.000	0.105
71.00	-30.87	-6.67	0.00	-513.67	0.00	513.67	3830.52	1915.26	7580.89	3796.08	4.18	-0.564	0.000	0.105
71.00	-30.87	-6.67	0.00	-513.67	0.00	513.67	3467.89	1733.95	6863.13	3436.66	4.18	-0.564	0.000	0.115
72.00	-30.63	-6.65	0.00	-507.00	0.00	507.00	3456.29	1728.14	6806.46	3408.29	4.30	-0.571	0.000	0.115
74.00	-30.16	-6.61	0.00	-493.69	0.00	493.69	3432.92	1716.46	6693.50	3351.73	4.54	-0.583	0.000	0.113
76.00	-29.68	-6.56	0.00	-480.48	0.00	480.48	3409.33	1704.67	6581.05	3295.42	4.78	-0.596	0.000	0.112
78.00	-29.21	-6.52	0.00	-467.35	0.00	467.35	3385.54	1692.77	6469.11	3239.36	5.04	-0.608	0.000	0.110
80.00	-28.75	-6.47	0.00	-454.31	0.00	454.31	3361.54	1680.77	6357.71	3183.58	5.29	-0.621	0.000	0.109
81.00	-28.52	-6.45	0.00	-447.83	0.00	447.83	3349.46	1674.73	6302.21	3155.79	5.42	-0.627	0.000	0.108

Calculated Forces

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 93

81.00	-28.52	-6.45	0.00	-447.83	0.00	447.83	2964.88	1482.44	5593.85	2801.08	5.42	-0.627	0.000	0.102
82.00	-28.32	-6.43	0.00	-441.38	0.00	441.38	2956.03	1478.01	5548.33	2778.29	5.56	-0.633	0.000	0.114
84.00	-27.92	-6.39	0.00	-428.52	0.00	428.52	2938.12	1469.06	5457.44	2732.78	5.83	-0.647	0.000	0.112
85.00	-27.72	-6.37	0.00	-422.13	0.00	422.13	2929.07	1464.54	5412.08	2710.06	5.96	-0.654	0.000	0.112
86.00	-27.37	-6.34	0.00	-415.76	0.00	415.76	2919.96	1459.98	5366.77	2687.37	6.10	-0.661	0.000	0.110
88.00	-26.68	-6.30	0.00	-403.08	0.00	403.08	2901.53	1450.76	5276.32	2642.08	6.38	-0.675	0.000	0.108
90.00	-25.99	-6.25	0.00	-390.48	0.00	390.48	2882.84	1441.42	5186.12	2596.92	6.67	-0.689	0.000	0.106
91.00	-25.65	-6.22	0.00	-384.24	0.00	384.24	2898.35	1449.17	5260.87	2634.34	6.81	-0.696	0.000	0.107
92.00	-25.45	-6.20	0.00	-378.01	0.00	378.01	2889.01	1444.51	5215.76	2611.76	6.96	-0.703	0.000	0.103
93.83	-25.10	-6.16	0.00	-366.66	0.00	366.66	2871.76	1435.88	5133.38	2570.50	7.23	-0.715	0.000	0.101
93.83	-25.10	-6.16	0.00	-366.66	0.00	366.66	2871.76	1435.88	5133.38	2570.50	7.23	-0.715	0.000	0.101
94.00	-25.07	-6.16	0.00	-365.62	0.00	365.62	2870.15	1435.07	5125.73	2566.68	7.25	-0.716	0.000	0.151
96.00	-24.69	-6.12	0.00	-353.29	0.00	353.29	2851.02	1425.51	5035.98	2521.73	7.56	-0.736	0.000	0.149
98.00	-24.31	-6.08	0.00	-341.06	0.00	341.06	2831.62	1415.81	4946.52	2476.93	7.87	-0.756	0.000	0.146
100.00	-23.93	-6.04	0.00	-328.90	0.00	328.90	2811.97	1405.98	4857.35	2432.29	8.19	-0.776	0.000	0.144
102.00	-23.56	-6.00	0.00	-316.83	0.00	316.83	2792.05	1396.03	4768.51	2387.80	8.52	-0.796	0.000	0.141
104.00	-23.19	-5.95	0.00	-304.84	0.00	304.84	2771.87	1385.94	4680.00	2343.48	8.86	-0.815	0.000	0.138
106.00	-22.82	-5.92	0.00	-292.93	0.00	292.93	2751.43	1375.71	4591.84	2299.33	9.21	-0.835	0.000	0.136
108.00	-22.46	-5.88	0.00	-281.10	0.00	281.10	2730.72	1365.36	4504.04	2255.37	9.56	-0.854	0.000	0.133
110.00	-22.10	-5.84	0.00	-269.35	0.00	269.35	2709.75	1354.88	4416.62	2211.59	9.92	-0.874	0.000	0.130
111.17	-21.89	-5.81	0.00	-262.52	0.00	262.52	2697.36	1348.68	4365.66	2186.08	10.14	-0.885	0.000	0.102
112.00	-21.74	-5.80	0.00	-257.69	0.00	257.69	2688.52	1344.26	4329.60	2168.02	10.29	-0.891	0.000	0.101
114.00	-21.39	-5.76	0.00	-246.10	0.00	246.10	2667.03	1333.51	4242.98	2124.64	10.67	-0.907	0.000	0.099
115.00	-21.21	-5.74	0.00	-240.34	0.00	240.34	2656.18	1328.09	4199.83	2103.04	10.86	-0.914	0.000	0.095
115.00	-21.21	-5.74	0.00	-240.34	0.00	240.34	1951.15	975.57	3095.05	1549.82	10.86	-0.914	0.000	0.104
116.00	-21.06	-5.72	0.00	-234.61	0.00	234.61	1944.57	972.29	3065.67	1535.11	11.05	-0.921	0.000	0.120
118.00	-20.77	-5.68	0.00	-223.18	0.00	223.18	1931.24	965.62	3006.98	1505.73	11.44	-0.938	0.000	0.116
120.00	-20.47	-5.63	0.00	-211.82	0.00	211.82	1917.63	958.82	2948.42	1476.40	11.84	-0.955	0.000	0.112
122.00	-20.18	-5.59	0.00	-200.56	0.00	200.56	1903.77	951.88	2889.98	1447.14	12.24	-0.971	0.000	0.108
123.83	-19.92	-5.55	0.00	-190.32	0.00	190.32	1890.85	945.43	2836.64	1420.43	12.62	-0.986	0.000	0.105
123.83	-19.92	-5.55	0.00	-190.32	0.00	190.32	1890.85	945.43	2836.64	1420.43	12.62	-0.986	0.000	0.105
124.00	-19.89	-5.55	0.00	-189.37	0.00	189.37	1889.64	944.82	2831.69	1417.95	12.65	-0.987	0.000	0.144
126.00	-19.61	-5.52	0.00	-178.26	0.00	178.26	1875.25	937.63	2773.56	1388.84	13.07	-1.009	0.000	0.139
128.00	-19.32	-5.48	0.00	-167.23	0.00	167.23	1860.60	930.30	2715.62	1359.83	13.50	-1.030	0.000	0.133
130.00	-19.04	-5.44	0.00	-156.28	0.00	156.28	1845.69	922.84	2657.86	1330.91	13.93	-1.050	0.000	0.128
132.00	-18.57	-5.40	0.00	-145.40	0.00	145.40	1830.51	915.25	2600.31	1302.09	14.38	-1.070	0.000	0.122
134.00	-18.11	-5.35	0.00	-134.60	0.00	134.60	1815.07	907.53	2542.99	1273.39	14.83	-1.090	0.000	0.116
135.00	-17.88	-5.33	0.00	-129.25	0.00	129.25	1823.79	911.89	2575.21	1289.52	15.06	-1.099	0.000	0.110
136.00	-17.74	-5.31	0.00	-123.92	0.00	123.92	1816.04	908.02	2546.57	1275.18	15.29	-1.108	0.000	0.107
138.00	-17.47	-5.27	0.00	-113.29	0.00	113.29	1800.35	900.18	2489.47	1246.58	15.76	-1.125	0.000	0.101
140.00	-17.20	-5.23	0.00	-102.74	0.00	102.74	1784.41	892.20	2432.62	1218.12	16.23	-1.141	0.000	0.094
142.00	-16.93	-5.19	0.00	-92.27	0.00	92.27	1768.19	884.10	2376.04	1189.79	16.72	-1.157	0.000	0.087
143.00	-13.93	-4.12	0.00	-87.08	0.00	87.08	1759.99	879.99	2347.86	1175.68	16.96	-1.164	0.000	0.082
144.00	-13.81	-4.10	0.00	-82.96	0.00	82.96	1751.72	875.86	2319.75	1161.60	17.20	-1.171	0.000	0.079
146.00	-13.58	-4.06	0.00	-74.75	0.00	74.75	1734.98	867.49	2263.76	1133.56	17.70	-1.184	0.000	0.074
148.00	-13.34	-4.03	0.00	-66.62	0.00	66.62	1717.98	858.99	2208.08	1105.68	18.20	-1.197	0.000	0.068
150.00	-13.11	-3.99	0.00	-58.57	0.00	58.57	1700.72	850.36	2152.74	1077.97	18.70	-1.208	0.000	0.062
152.00	-12.88	-3.95	0.00	-50.59	0.00	50.59	1683.20	841.60	2097.74	1050.43	19.21	-1.219	0.000	0.056
153.00	-9.59	-2.74	0.00	-46.65	0.00	46.65	1674.33	837.17	2070.37	1036.72	19.47	-1.224	0.000	0.051
154.00	-9.50	-2.72	0.00	-43.90	0.00	43.90	1665.41	832.70	2043.10	1023.07	19.72	-1.229	0.000	0.049
156.00	-9.30	-2.69	0.00	-38.46	0.00	38.46	1647.36	823.68	1988.83	995.90	20.24	-1.237	0.000	0.044
158.00	-7.61	-2.38	0.00	-33.08	0.00	33.08	1629.04	814.52	1934.96	968.92	20.76	-1.245	0.000	0.039
160.00	-7.42	-2.34	0.00	-28.33	0.00	28.33	1610.47	805.23	1881.50	942.15	21.28	-1.253	0.000	0.035
162.00	-7.23	-2.30	0.00	-23.65	0.00	23.65	1591.63	795.82	1828.46	915.59	21.81	-1.259	0.000	0.030
163.00	-5.43	-1.89	0.00	-21.35	0.00	21.35	1582.11	791.06	1802.10	902.39	22.07	-1.262	0.000	0.027
164.00	-5.34	-1.87	0.00	-19.46	0.00	19.46	1572.53	786.27	1775.86	889.25	22.34	-1.265	0.000	0.025
166.00	-5.16	-1.84	0.00	-15.71	0.00	15.71	1553.17	776.58	1723.71	863.13	22.87	-1.269	0.000	0.022

Calculated Forces

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 94	

168.00	-4.98	-1.80	0.00	-12.04	0.00	12.04	1533.54	766.77	1672.03	837.26	23.40	-1.273	0.000	0.018
170.00	-4.81	-1.77	0.00	-8.44	0.00	8.44	1513.65	756.83	1620.83	811.62	23.94	-1.276	0.000	0.014
172.00	-4.64	-1.73	0.00	-4.91	0.00	4.91	1493.50	746.75	1570.13	786.23	24.47	-1.279	0.000	0.009
173.00	-2.18	-0.44	0.00	-3.18	0.00	3.18	1483.33	741.66	1544.98	773.64	24.74	-1.279	0.000	0.006
174.00	-2.11	-0.43	0.00	-2.73	0.00	2.73	1473.09	736.54	1519.95	761.10	25.01	-1.280	0.000	0.005
176.00	-1.98	-0.39	0.00	-1.88	0.00	1.88	1452.41	726.20	1470.30	736.24	25.54	-1.281	0.000	0.004
178.00	-1.84	-0.36	0.00	-1.09	0.00	1.09	1427.85	713.93	1417.60	709.85	26.08	-1.281	0.000	0.003
180.00	-1.71	-0.33	0.00	-0.37	0.00	0.37	1400.09	700.05	1362.74	682.38	26.62	-1.281	0.000	0.002
180.00	-1.71	-0.33	0.00	-0.37	0.00	0.37	678.42	339.21	662.23	396.30	26.62	-1.281	0.000	0.003
181.00	-0.14	-0.03	0.00	-0.05	0.00	0.05	678.42	339.21	662.23	396.30	26.88	-1.282	0.000	0.000
182.00	-0.07	-0.02	0.00	-0.02	0.00	0.02	678.42	339.21	662.23	396.30	27.15	-1.282	0.000	0.000
183.00	0.00	-0.01	0.00	0.00	0.00	0.00	678.42	339.21	662.23	396.30	27.42	-1.282	0.000	0.000

Final Analysis Summary

Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-G	5/5/2021	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 95	

Reactions

Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)
1.2D + 1.6W 105 mph Wind	39.2	0.00	62.09	0.00	0.00	5123.11
0.9D + 1.6W 105 mph Wind	39.1	0.00	46.56	0.00	0.00	5056.09
1.2D + 1.0Di + 1.0Wi 50 mph Wind	9.7	0.00	97.27	0.00	0.00	1279.29
1.2D + 1.0E	1.9	0.00	62.12	0.00	0.00	256.88
0.9D + 1.0E	1.9	0.00	46.59	0.00	0.00	253.31
1.0D + 1.0W 60 mph Wind	8.0	0.00	51.76	0.00	0.00	1037.88

Max Stresses

Load Case	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Elev (ft)	Stress Ratio
1.2D + 1.6W 105 mph Wind	-62.09	-39.16	0.00	-5123.1	0.00	-5123.1	5190.16	2595.0	13702.9	6861.66	0.00	0.759
0.9D + 1.6W 105 mph Wind	-46.56	-39.15	0.00	-5056.0	0.00	-5056.0	5190.16	2595.0	13702.9	6861.66	0.00	0.746
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-97.27	-9.69	0.00	-1279.2	0.00	-1279.2	5190.16	2595.0	13702.9	6861.66	0.00	0.205
1.2D + 1.0E	-23.98	-1.37	0.00	-63.14	0.00	-63.14	1889.64	944.82	2831.69	1417.95	124.00	0.057
0.9D + 1.0E	-17.98	-1.34	0.00	-61.99	0.00	-61.99	1889.64	944.82	2831.69	1417.95	124.00	0.053
1.0D + 1.0W 60 mph Wind	-51.76	-7.99	0.00	-1037.8	0.00	-1037.8	5190.16	2595.0	13702.9	6861.66	0.00	0.161

Additional Steel Summary

			Intermediate Connectors			Lower Termination				Upper Termination				Max Member			
Elev From (ft)	Elev To (ft)	Member	VQ/I (lb/in)	Vu (kips)	phi Vn (kips)	MQ/I (kips)	phi Vn (kips)	Num Reqd	Num Actual	MQ/I (kips)	phi Vn (kips)	Num Reqd	Num Actual	Pu (kips)	phi Pn (kips)	phi Tn (kips)	Ratio
66.2	93.8	(6) PLT-C6x10.5(1.5" Hole)	145.4	0.00	25.3	108.3	25.3	5	0	102.6	25.3	5	0	113.76	180.2	155.36	0.732
111.2	123.8	(3) PLT-C6x10.5(1.5" Hole)	253.2	0.00	25.3	102.5	25.3	5	0	104.1	25.3	5	0	117.63	180.2	155.36	0.757

Monopole Mat Foundation Design

Customer Name:	T-Mobile	**EIA/TIA Standard:**	EIA-222-G
Site Name:		**Structure Height (Ft.):**	183
Site Number:	CT01002-S-SBA	**Engineer Name:**	T. Alajaj
Engr. Number:	106725	**Engineer Login ID:**	

Date 5/5/2021

Foundation Info Obtained from: Mapping Operation

Structure Type: Monopole

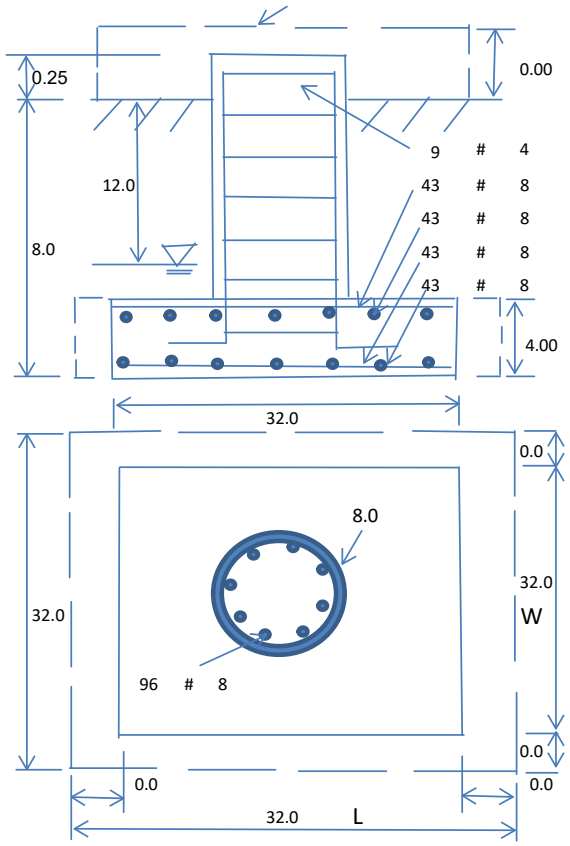
Analysis or Design? Analysis

Base Reactions (Factored):

Axial Load (Kips):	62.1	Shear Force (Kips):	39.1
Uplift Force (Kips):	0.0	Moment (Kips-ft):	5108.5
Allowable overstress %:	5.0%		

Foundation Geometries:

		Mods required -Yes/No ?:	No
Diameter of Pier (ft.):	8.0	Depth of Base BG (ft.):	8.0
Pier Height A. G. (ft.):	0.25	Thickness of Pad (ft):	4.00
Length of Pad (ft.):	32	Width of Pad (ft.):	32
Final Length of pad (ft)	32.0	Final width of pad (ft):	32.0



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 #:	8	Tie / Stirrup Size #:	4	
Qty. of Vertical Rebars:	96	Tie Spacing (in):	12.0	
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	8	
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):	43	Qty. of Rebar in Pad (W):	43

Rebar at the top of the concrete pad:

Qty. of Rebar in Pad (L):	43	Qty. of Rebar in Pad (W):	43
Apply 1.35 factor for e/w Per G:	1.35		

Soil Design Parameters:

Soil Unit Weight (pcf):	100.0	Soil Buoyant Weight:	50.0	Pcf		
Water Table B.G.S. (ft):	12.0	Unit Weight of Water:	62.4	pcf	Angle from Top of Pad:	30
Ultimate Bearing Pressure (psf):	10000	Ultimate Skin Friction:	0	Psf	Angle from Bottm of Pad:	25
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	No		Angle from Bottm of Pad:	25
Consider soil hor. resist. for OTM.:	Yes	Reduction factor on the maximum soil bearing pressure:	1.00			

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

Total Dry Soil Volume (cu. Ft.):	3894.94	Total Dry Soil Weight (Kips):	389.49
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	389.49	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	4309.63	Total Dry Concrete Weight (Kips):	646.44
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00
Total Effective Concrete Weight (Kips):	646.44	Total Vertical Load on Base (Kips):	1098.04

Check Soil Capacities:

				Load/ Capacity Ratio	
Calculated Maxium Net Soil Pressure under the base (psf):	1950	<	Allowable Factored Soil Bearing (psf): 7500	0.26	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	15911.1	>	Design Factored Momont (kips-ft): 5061	0.32	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	3.14	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):	0.79		Tie / Stirrup Area (sq. in./each):	0.20		
Calculated Moment Capacity (Mn,Kips-Ft):	14006.5	>	Design Factored Moment (Mu, Kips-F	5274.7	0.38	OK!
Calculated Shear Capacity (Kips):	840.3	>	Design Factored Shear (Kips):	39.1	0.05	OK!
Calculated Tension Capacity (Tn, Kips):	4095.4	>	Design Factored Tension (Tu Kips):	0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	12663.1	>	Design Factored Axial Load (Pu Kips):	62.1	0.00	OK!
Moment & Axial Strength Combination:	0.38	OK!	Check Tie Spacing (Design/Required):		1	OK!
Pier Reinforcement Ratio:	0.010		Reinforcement Ratio is satisfied per ACI			
(2).Concrete Pad:						
One-Way Design Shear Capacity (L-Direction, Kips):	1621.1	>	One-Way Factored Shear (L-D. Kips):	324.6	0.20	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	1621.1	>	One-Way Factored Shear (W-D., Kips)	324.6	0.20	OK!
One-Way Design Shear Capacity (Corner-Corner. Kips):	1511.6	>	One-Way Factored Shear (C-C, Kips):	299.6	0.20	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0020	OK!	Lower Steel Pad Reinf. Ratio (W-Direc	0.0020		
Lower Steel Pad Moment Capacity (L-Direction. Kips-ft):	6683.2	>	Moment at Bottom (L-Dir. K-Ft):	2471.8	0.37	OK!
Lower Steel Pad Moment Capacity (W-Direction. Kips-ft):	6683.2	>	Moment at Bottom (W-Dir. K-Ft):	2471.8	0.37	OK!
Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):	9415.2	>	Moment at Bottom (C-C Dir. K-Ft):	3495.6	0.37	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0020	OK!	Upper Steel Reinf. Ratio (W-Dir.):	0.0020		
Upper Steel Pad Moment Capacity (L-Direc. Kips-ft):	6683.2	>	Moment at the top (L-Dir K-Ft):	879.4	0.13	OK!
Upper Steel Pad Moment Capacity (W-Direc. Kips-ft):	6683.2	>	Moment at the top (W-Dir K-Ft):	879.4	0.13	OK!
Upper Steel Pad Moment Capacity (Corner-Corner. K-ft):	9415.2	>	Moment at the top (C-C Dir. K-Ft):	822.3	0.09	OK!
(3).Check Punching Shear Capacity due to Moment in the Pier:						
Moment transferred by punching shear:	2043.4	k-ft.	Max. factored shear stress v_{u_CD}:		3.2	Psi
Max. factored shear stress v_{u_AB}:	8.0	Psi	Factored shear Strength ϕv_n:		189.7	Psi
Max. factored shear stress v_u:	8.0	Psi	Check Usage of Punching Shear Capacity:		0.04	OK!

EXHIBIT 8

Antenna Mount Structural Analysis

Source: SBA Date: 04.29.2019

SBA Site:	CT01002-S Waterford
T-Mobile Site Number:	CT11473A
Project:	L600 Project
Prepared For:	T-Mobile
Mount Description:	(3) Nudd T-Arms w/ Handrail and Kicker Augments
Site Location:	45 Fargo Rd, Waterford, CT New London County 41.389321°, -72.171384°
Design Codes:	ANSI/TIA-222-G IBC 2015 w/ 2018 CT Building Code
Analysis Load Case:	T-Mobile Final Configuration
Analysis Result:	**Adequate @ 77% - Once Augmented** **See Conclusion**

STATE OF CONNECTICUT
GREGORY DURGIN
No.32155
LICENSED
PROFESSIONAL ENGINEER

Revision 1
April 8, 2021

GeoStructural ▪ P.O. Box 2621, Boise, ID 83701 ▪ Office: (530) 539-4787
Professional Engineers | Tower Technicians | Climbers | sUAS Mapping

1.0 Introduction

An antenna mount structural analysis has been performed on T-Mobile's existing mount assembly with augments located at the CT01002-S Waterford communications site in New London County, CT considering the final equipment loading configuration listed in Section 3.0.

2.0 Analysis Criteria

An elastic three-dimensional model of the mount structure has been analyzed pursuant to the following criteria considering wind forces in 30° increments:

- 2018 Connecticut State Building Code.
- IBC 2015 – International Building Code.
- ANSI/TIA-222-G – Structural Standard for Antenna Supporting Structures and Antennas.
- AISC – Steel Construction Manual.
- ANSI/AWS D1.1 – Structural Welding Code.

Wind w/o ice = 135 mph (3-sec gust Ultimate Wind Speed) Wind w/o ice = 105 mph (3-sec gust Basic Wind Speed) Wind w/ ice = 50 mph (3-sec gust Basic) with 3/4" Design Ice, Escalated with Height
Topographic Category 1; Exposure Category B; Structure Class (Risk Category) II Gust Effect Factor = 1.0; Directionality Factor = 0.95 Site Class D "Stiff Soil"; F_a = 1.6; F_v = 2.4; S_{DS} = 0.175
Maintenance Loads**: Lm = 500 lb @ Worst Case Mount Pipe (Concurrent with 30 mph Wind Speed) Lv = 250 lb @ Worst Case Member Location (Center Span or Cantilever) ** *The mount face horizontal boom rails of T-Arm mount assemblies are not rated for rigging, hoisting or maintenance loading.*

The following documents were provided:

- Mount and Tower Record Documents
  SBA
- Construction Drawings
  Chappell, L600 Project, Rev-0, 5/20/19.
- Colo Application
  SBA 600 MHz, App # 116757 v3.
- RFDS
  T-Mobile L600 Project, V3, CT11473A, 2/22/21.

The results of the analysis are illustrated in Section 4.0. If any of the existing or proposed conditions reported in this analysis are not properly represented, please contact our office immediately to request an amended report.

3.0 Appurtenance Information

Table 3.1 – T-Mobile Final Configuration[1,2,3]

COR	(Quantity) Appurtenance Make/Model	Mount Description
153.0'±	(3) ERICSSON AIR21 B2A/B4P	(3) Nudd T-Arms w/ Handrail and Kicker Augments
	(3) ERICSSON AIR21 B2P/B4A	
	(3) RFS APXVAALL24_43-U-NA20	
	(3) ERICSSON 4449 B71+B85 RRH	
	(3) Twin Style 1B AWS TMA	

1. *Refer to antenna installation Construction Drawings (by others, when applicable) for additional information regarding final antenna and equipment orientations.*
2. *Panel antennas to be installed as follows:*
   - 2.1. *AIR21 panels to remain installed on mount pipes in Positions 1 and 3 similar to existing.*
   - 2.2. *AALL panels to be installed on mount pipes in Positions 2 similar to existing (middle position).*
3. *RRH/TMA units to be installed as follows:*
   - 3.1. *TMAs to be installed on mount pipes behind panels in Position 1.*
   - 3.2. *4449 RRHs to be installed on mount pipe behind panels in Position 2.*

4.0 Analysis Results

Table 4.1 – Augmented Mount Capacity

Load Case	Governing Mount Component[1]	% Capacity[2]	Result
Final T-Mobile Configuration	New V-Brace Angle	42%	Adequate Once Augmented[3]
	Standoff	77%	
	Bottom Rail	44%	
	Mount Pipe	69%	
	PRK Double Angles	61%	
	New Top Handrail	42%	

1. *Refer to the Calculations & Software Output portion of this report for mount component and structural information.*
2. *Listed results are expressed as a percentage of available mount member capacity based upon the assumed material strengths listed in Table 4.2. 105% is an acceptable allowable stress percentage for mount components.*
3. *Refer to Section 5.0 for information regarding required mount augments.*

Table 4.2 – Structural Component Material Strengths

Structural Component	Nominal Strength/Material[1]
Pipe	F_y = 35 ksi (A53, Gr. B)
Tube	F_y = 46 ksi (A500, Gr. B)
Structural Shapes (L, C, W, etc.), Plate / Bar	F_y = 36 ksi (A36)
Uni-Strut	F_y = 33 ksi (A570, Gr. 33)
Connection Bolts	A325
Stainless Steel Bolts	18-8 Stainless, Grade 316/304 F_y = 74 ksi (Yield) & F_u = 29 ksi (Tension)
U-Bolts / Threaded Rod	SAE J429 Grade 2 (Substitution: ASTM A449) F_y = 57 ksi (Yield) & F_u = 74 ksi (Tension)
Welds	E70XX Electrodes

1. *Strengths listed were assumed for this analysis and are based upon ASTM, AISC, RCSC, AWS and ACI preferred specification values. Values and materials are consistent with industry standards. Material strengths were taken from original design documents when available.*

5.0 Conclusion & Recommendations

Based on T-Mobile's final equipment loading configuration, the mount assemblies do not have sufficient capacity to support the loading considered in this analysis pursuant to the listed standards. Structural modifications (augments) will be required and are briefly summarized below:

- Install Platform Reinforcement Kit;
  - Sitepro1 PRK-1245L, (1) total.
- Install V-Brace Kit and Handrail Kit;
  - Sitepro1 PRK-SFS-L, (1) total.
- Install Tie-Back Kit;
  - Sitepro1 SPTB, (3) total.

Once the recommended augments are successfully implemented, the augmented mount assembly has sufficient capacity to support the loading considered in this analysis pursuant to the listed standards.

Augmentation Requirements:

- Antennas and equipment shall be installed centered vertically on the mount front face rails (limit vertical installation eccentricity) same as existing. This analysis accounts for vertical eccentricities necessary to install all panel antennas at the same relative top tip elevation.
- Panel antennas to be installed as follows:
  - AIR21 panels to remain installed on mount pipes in Positions 1 and 3 similar to existing.
  - AALL panels to be installed on mount pipes in Positions 2 similar to existing (middle position).
- RRH/TMA units to be installed as follows:
  - TMAs to be installed on mount pipes behind panels in Position 1.
  - 4449 RRHs to be installed on mount pipe behind panels in Position 2.
- In order to obtain a mount structure capable of supporting the currently proposed final loading configuration, upgrade augments must be installed in accordance with GeoStructural's *mount augment CDs and recommendations*.

All data required to complete our structural analysis was furnished by our client and provided record data. GeoStructural has not conducted a site visit or independent study, nor have they been provided a mount mapping to verify existing conditions and the results of this analysis are based solely on the information provided.

This analysis only encompasses the antenna mount assembly. The tower, overall mount support structure, foundation, etc. are beyond the scope of this analysis. If any of the existing or proposed conditions (appurtenance loading, member sizes, etc.) reported in this analysis are not properly represented, please contact our office immediately to request an amended report.

Prepared by:

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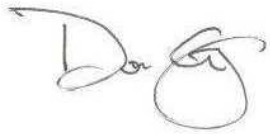
Reviewed and Approved by:



Don George, PE, SE, MLSE
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6.0 Standard Conditions

- All data required to complete our structural analysis was furnished by our client and provided record data. GeoStructural has not conducted a site visit or independent study to verify existing conditions and the results of this analysis are based solely on the information provided. It has been assumed that the tower, antenna support structure and foundation have been constructed according to the provided existing drawings, previous structural analysis reports, mapping documents, etc.

- The default Structure Classification is Class II in accordance with ANSI/TIA-222-G §A.2.2 & §A.15.3 and has been assumed for this analysis. The owner shall verify this classification conforms with original or desired reliability criteria.

- This analysis assumes that the structure has been properly installed and maintained in accordance with ANSI/TIA-222-G §15.5 and that no physical deterioration has occurred in any of the components of the structure. Damaged, missing, or rusted members were not considered.

- This analysis verifies the adequacy of the main components of the structure. Not all connections, welds, bolts, plates, etc. were individually detailed and analyzed. Where not specifically analyzed, the existing connection plates, welds, bolts, etc. were assumed adequate to develop the full capacity of the main structural members.

- No consideration has been made for unusual or extreme wind events, rime/in-cloud ice loadings, harmonic or nodal vibration, vortex shedding or other similar conditions.

- It is the owner's responsibility to determine the appropriate design wind speed and amount of ice accumulation beyond code minimum values that should be considered in the analysis.

- This analysis report does not constitute a maintenance and condition assessment. No certifications regarding maintenance and condition are expressed or implied. If desired, GeoStructural can provide these services under a subsequent contract.

- This analysis only encompasses the antenna mount assembly. The tower, overall mount support structure, foundation, etc. are beyond the scope of this analysis. If desired, GeoStructural can provide these services under a subsequent contract.

7.0 Calculations & Software Output

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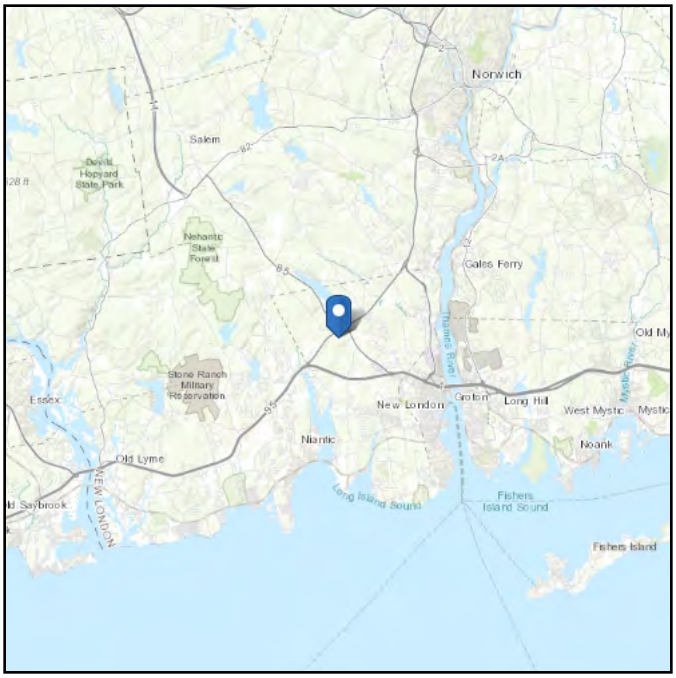
ASCE 7 Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-10
Risk Category: II
Soil Class: D - Stiff Soil

Elevation: 293.46 ft (NAVD 88)
Latitude: 41.389321
Longitude: -72.171384



Wind

Results:

Wind Speed:	133 Vmph
10-year MRI	79 Vmph
25-year MRI	89 Vmph
50-year MRI	98 Vmph
100-year MRI	108 Vmph

Data Source: ASCE/SEI 7-10, Fig. 26.5-1A and Figs. CC-1–CC-4, and Section 26.5.2, incorporating errata of March 12, 2014

Date Accessed: Thu Apr 08 2021

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-10 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

Site is in a hurricane-prone region as defined in ASCE/SEI 7-10 Section 26.2. Glazed openings need not be protected against wind-borne debris.

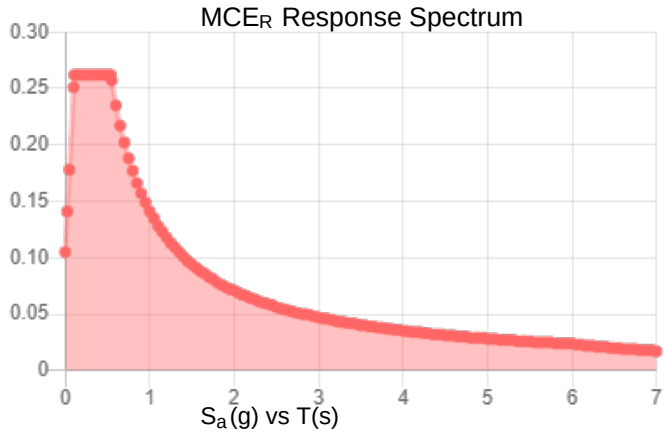
Seismic

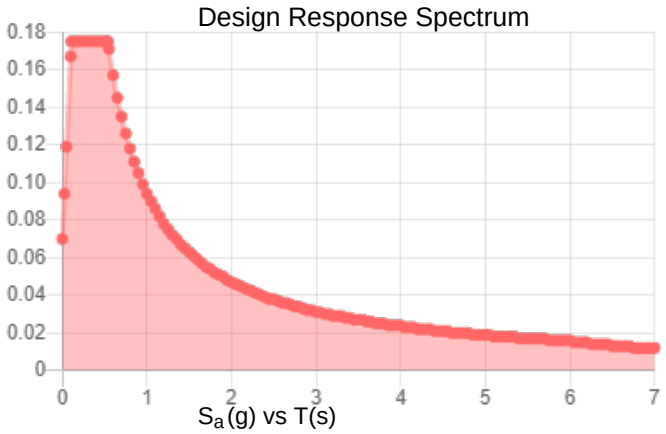
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.164	S_{DS} :	0.175
S_1 :	0.059	S_{D1} :	0.094
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.082
S_{MS} :	0.262	PGA_M :	0.131
S_{M1} :	0.141	F_{PGA} :	1.6
		I_e :	1

Seismic Design Category B





Data Accessed: Thu Apr 08 2021

Date Source: USGS Seismic Design Maps based on ASCE/SEI 7-10, incorporating Supplement 1 and errata of March 31, 2013, and ASCE/SEI 7-10 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-10 Ch. 21 are available from USGS.

Ice

Results:

Ice Thickness:	0.75 in.
Concurrent Temperature:	15 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Thu Apr 08 2021

Ice thicknesses on structures in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 50-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Basic Load Cases

	BLC Description	Category	Y Gravity	Nodal	Distributed
1	D	DL	-1	24	3
2	Di	SL		24	45
3	Lm [500]	LL		1	
4	Lv [250]	LL		2	
5	Woz	WL		24	41
6	Wox	WL		24	43
7	Wiz	WL		24	41
8	Wix	WL		24	43
9	Ez	EL		24	
10	Ex	EL		24	

Load Combination Design

	Description	Service	Hot Rolled	Cold Formed	Wood	Concrete	Masonry	Aluminum	Stainless	Connection
1	1) 1.4D		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2	2) 1.2D+1.0Wo [0deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3	2) 1.2D+1.0Wo [30deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4	2) 1.2D+1.0Wo [60deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5	2) 1.2D+1.0Wo [90deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
6	2) 1.2D+1.0Wo [120deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
7	2) 1.2D+1.0Wo [150deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
8	2) 1.2D+1.0Wo [180deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
9	2) 1.2D+1.0Wo [210deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
10	2) 1.2D+1.0Wo [240deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
11	2) 1.2D+1.0Wo [270deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
12	2) 1.2D+1.0Wo [300deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
13	2) 1.2D+1.0Wo [330deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
14	3) 0.9D+1.0Wo [0deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
15	3) 0.9D+1.0Wo [30deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
16	3) 0.9D+1.0Wo [60deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
17	3) 0.9D+1.0Wo [90deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
18	3) 0.9D+1.0Wo [120deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
19	3) 0.9D+1.0Wo [150deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
20	3) 0.9D+1.0Wo [180deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
21	3) 0.9D+1.0Wo [210deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
22	3) 0.9D+1.0Wo [240deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
23	3) 0.9D+1.0Wo [270deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
24	3) 0.9D+1.0Wo [300deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
25	3) 0.9D+1.0Wo [330deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
26	4) 1.2D+1.0Di+1.0Wi [0deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
27	4) 1.2D+1.0Di+1.0Wi [30deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
28	4) 1.2D+1.0Di+1.0Wi [60deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
29	4) 1.2D+1.0Di+1.0Wi [90deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
30	4) 1.2D+1.0Di+1.0Wi [120deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
31	4) 1.2D+1.0Di+1.0Wi [150deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
32	4) 1.2D+1.0Di+1.0Wi [180deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
33	4) 1.2D+1.0Di+1.0Wi [210deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
34	4) 1.2D+1.0Di+1.0Wi [240deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
35	4) 1.2D+1.0Di+1.0Wi [270deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
36	4) 1.2D+1.0Di+1.0Wi [300deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
37	4) 1.2D+1.0Di+1.0Wi [330deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
38	5) 1.2D+1.5Lm+1.0WL [0deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
39	5) 1.2D+1.5Lm+1.0WL [30deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
40	5) 1.2D+1.5Lm+1.0WL [60deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
41	5) 1.2D+1.5Lm+1.0WL [90deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
42	5) 1.2D+1.5Lm+1.0WL [120deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
43	5) 1.2D+1.5Lm+1.0WL [150deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
44	5) 1.2D+1.5Lm+1.0WL [180deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
45	5) 1.2D+1.5Lm+1.0WL [210deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Load Combination Design (Continued)

	Description	Service	Hot Rolled	Cold Formed	Wood	Concrete	Masonry	Aluminum	Stainless	Connection
46	5) 1.2D+1.5Lm+1.0WL [240deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
47	5) 1.2D+1.5Lm+1.0WL [270deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
48	5) 1.2D+1.5Lm+1.0WL [300deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
49	5) 1.2D+1.5Lm+1.0WL [330deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
50	6) 1.2D+1.5Lv		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
51	7) (1.2+0.2Sds)D+E [0deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
52	7) (1.2+0.2Sds)D+E [30deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
53	7) (1.2+0.2Sds)D+E [60deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
54	7) (1.2+0.2Sds)D+E [90deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
55	7) (1.2+0.2Sds)D+E [120deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
56	7) (1.2+0.2Sds)D+E [150deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
57	7) (1.2+0.2Sds)D+E [180deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
58	7) (1.2+0.2Sds)D+E [210deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
59	7) (1.2+0.2Sds)D+E [240deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
60	7) (1.2+0.2Sds)D+E [270deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
61	7) (1.2+0.2Sds)D+E [300deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
62	7) (1.2+0.2Sds)D+E [330deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
63	8) (0.9-0.2Sds)D+E [0deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
64	8) (0.9-0.2Sds)D+E [30deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
65	8) (0.9-0.2Sds)D+E [60deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
66	8) (0.9-0.2Sds)D+E [90deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
67	8) (0.9-0.2Sds)D+E [120deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
68	8) (0.9-0.2Sds)D+E [150deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
69	8) (0.9-0.2Sds)D+E [180deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
70	8) (0.9-0.2Sds)D+E [210deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
71	8) (0.9-0.2Sds)D+E [240deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
72	8) (0.9-0.2Sds)D+E [270deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
73	8) (0.9-0.2Sds)D+E [300deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
74	8) (0.9-0.2Sds)D+E [330deg]		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e^{5}°F^{-1}]	Density [k/ft^{3}]	Yield [ksi]	Ry	Fu [ksi]	Rt
1	A36 Gr.36	29000	11154	0.3	0.65	0.49	36	1.5	58	1.2
2	A572 Gr.50	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
3	A992	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	0.3	0.65	0.49	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	0.3	0.65	0.49	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	0.3	0.65	0.49	35	1.6	60	1.2
7	A500 Gr.B RND_1	29000	11154	0.3	0.65	0.527	42	1.4	58	1.3
8	A500 Gr.B Rect_1	29000	11154	0.3	0.65	0.527	46	1.4	58	1.3
9	A1085	29000	11154	0.3	0.65	0.49	50	1.4	65	1.3

Cold Formed Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e^{5}°F^{-1}]	Density [k/ft^{3}]	Yield [ksi]	Fu [ksi]
1	A653 Gr.33	29500	11346	0.3	0.65	0.49	33	45
2	A570 Gr.33	29500	11346	0.3	0.65	0.49	33	52
3	A607 C1 Gr.55	29500	11346	0.3	0.65	0.49	55	70

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in^{2}]	Iyy [in^{4}]	Izz [in^{4}]	J [in^{4}]
1	PIPE_1.5	PIPE_1.5	Beam	None	A53 Gr.B	Typical	0.749	0.293	0.293	0.586
2	PIPE_2.0	PIPE_2.0	Beam	None	A53 Gr.B	Typical	1.02	0.627	0.627	1.25
3	PIPE_2.5	PIPE_2.5	Beam	None	A53 Gr.B	Typical	1.61	1.45	1.45	2.89
4	PIPE_3.0	PIPE_3.0	Beam	None	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
5	PIPE_3.5	PIPE_3.5	Beam	None	A53 Gr.B	Typical	2.5	4.52	4.52	9.04
6	PIPE_4.0	PIPE_4.0	Beam	None	A53 Gr.B	Typical	2.96	6.82	6.82	13.6
7	PIPE_5.0	PIPE_5.0	Beam	None	A53 Gr.B	Typical	4.01	14.3	14.3	28.6

Hot Rolled Steel Section Sets (Continued)

	Label	Shape	Type	Design List	Material	Design Rule	Area [in²]	Iyy [in⁴]	Izz [in⁴]	J [in⁴]
8	HSS2x2x3	HSS2X2X3	Beam	None	A500 Gr.B Rect	Typical	1.19	0.641	0.641	1.09
9	HSS3x3x3	HSS3X3X3	Beam	None	A500 Gr.B Rect	Typical	1.89	2.46	2.46	4.03
10	HSS4x4x3	HSS4X4X3	Beam	None	A500 Gr.B Rect	Typical	2.58	6.21	6.21	10
11	HSS4x4x4	HSS4X4X4	Beam	None	A500 Gr.B Rect	Typical	3.37	7.8	7.8	12.8
12	HSS5x5x4	HSS5X5X4	Beam	None	A500 Gr.B Rect	Typical	4.3	16	16	25.8
13	C3x3.5	C3X3.5	Beam	None	A36 Gr.36	Typical	1.09	0.169	1.57	0.023
14	C4x4.5	C4X4.5_HRA	Beam	None	A36 Gr.36	Typical	1.38	0.289	3.65	0.032
15	C5x6.7	C5X6.7	Beam	None	A36 Gr.36	Typical	1.97	0.47	7.48	0.055
16	L2.5x2.5x3	L2.5x2.5x3	Beam	None	A36 Gr.36	Typical	0.901	0.535	0.535	0.011
17	L2.5x2.5x4	L2.5x2.5x4	Beam	None	A36 Gr.36	Typical	1.19	0.692	0.692	0.026
18	L3x3x3	L3X3X3	Beam	None	A36 Gr.36	Typical	1.09	0.948	0.948	0.014
19	L3x3x4	L3X3X4	Beam	None	A36 Gr.36	Typical	1.44	1.23	1.23	0.031
20	L3x3x6	L3X3X6	Beam	None	A36 Gr.36	Typical	2.11	1.75	1.75	0.101
21	L3.5x3.5x4	L3.5X3.5X4	Beam	None	A36 Gr.36	Typical	1.7	2	2	0.039
22	L4x4x4	L4X4X4	Beam	None	A36 Gr.36	Typical	1.93	3	3	0.044
23	1/2"x6"	1/2"x6"	Beam	None	A36 Gr.36	Typical	3	0.063	9	0.237
24	2L2.5x2.5x3	LL2.5x2.5x3x3	Beam	None	A36 Gr.36	Typical	1.8	2.46	1.07	0.023

Cold Formed Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in²]	Iyy [in⁴]	Izz [in⁴]	J [in⁴]
1	P1000UNI	P1000UNI	Beam	None	A653 Gr.33	Typical	0.555	0.185	0.236	0.002
2	CF1	8CU1.25X057	Beam	None	A570 Gr.33	Typical	0.581	0.057	4.41	0.00063

Member Primary Data

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	M1	N1	N2		RIGID	None	None	RIGID	Typical
2	M2	N3	N4		PIPE_2.0	Beam	None	A53 Gr.B	Typical
3	M3	N5	N6		RIGID	None	None	RIGID	Typical
4	M4	N7	N8		RIGID	None	None	RIGID	Typical
5	M5	N9	N10		PIPE_2.0	Beam	None	A53 Gr.B	Typical
6	M6	N11	N12		RIGID	None	None	RIGID	Typical
7	M7	N13	N14		RIGID	None	None	RIGID	Typical
8	M8	N15	N16		PIPE_2.0	Beam	None	A53 Gr.B	Typical
9	M9	N17	N18		RIGID	None	None	RIGID	Typical
10	M10	N19	N20		RIGID	None	None	RIGID	Typical
11	M11	N21	N22		PIPE_2.0	Beam	None	A53 Gr.B	Typical
12	M12	N23	N24		RIGID	None	None	RIGID	Typical
13	M13	N25	N26		RIGID	None	None	RIGID	Typical
14	M14	N27	N28		PIPE_2.0	Beam	None	A53 Gr.B	Typical
15	M15	N29	N30		RIGID	None	None	RIGID	Typical
16	M16	N31	N32		HSS4x4x3	Beam	None	A500 Gr.B Rect	Typical
17	M17	N33	N34		HSS4x4x3	Beam	None	A500 Gr.B Rect	Typical
18	M18	N35	N36		RIGID	None	None	RIGID	Typical
19	M19	N37	N38		RIGID	None	None	RIGID	Typical
20	M20	N39	N40		RIGID	None	None	RIGID	Typical
21	M21	N32	N41		RIGID	None	None	RIGID	Typical
22	M22	N42	N43		RIGID	None	None	RIGID	Typical
23	M23	N44	N45		PIPE_4.0	Beam	None	A53 Gr.B	Typical
24	M24	N46	N47	90	1/2"x6"	Beam	None	A36 Gr.36	Typical
25	M25	N48	N49	90	1/2"x6"	Beam	None	A36 Gr.36	Typical
26	M26	N50	N112	180	L3x3x4	Beam	None	A36 Gr.36	Typical
27	M27	N51	N113	90	L3x3x4	Beam	None	A36 Gr.36	Typical
28	M28	N52	N53		PIPE_3.5	Beam	None	A53 Gr.B	Typical
29	M29	N54	N55		PIPE_4.0	Beam	None	A53 Gr.B	Typical
30	M30	N56	N57	90	1/2"x6"	Beam	None	A36 Gr.36	Typical
31	M31	N58	N59	90	1/2"x6"	Beam	None	A36 Gr.36	Typical
32	M32	N60	N114	180	L3x3x4	Beam	None	A36 Gr.36	Typical

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
33	M33	N61	N115	90	L3x3x4	Beam	None	A36 Gr.36	Typical
34	M34	N62	N63		PIPE_3.5	Beam	None	A53 Gr.B	Typical
35	M35	N64	N65		PIPE_4.0	Beam	None	A53 Gr.B	Typical
36	M36	N66	N67	90	1/2"x6"	Beam	None	A36 Gr.36	Typical
37	M37	N68	N69	90	1/2"x6"	Beam	None	A36 Gr.36	Typical
38	M38	N73	N74		2L2.5x2.5x3	Beam	None	A36 Gr.36	Typical
39	M39	N72	N75		2L2.5x2.5x3	Beam	None	A36 Gr.36	Typical
40	M40	N76	N77		RIGID	None	None	RIGID	Typical
41	M41	N78	N79		RIGID	None	None	RIGID	Typical
42	M42	N80	N81		RIGID	None	None	RIGID	Typical
43	M43	N82	N83		PIPE_2.0	Beam	None	A53 Gr.B	Typical
44	M44	N87	N85		RIGID	None	None	RIGID	Typical
45	M45	N88	N86		RIGID	None	None	RIGID	Typical
46	M46	N84	N87	180	L2.5x2.5x3	Beam	None	A36 Gr.36	Typical
47	M47	N84	N88	90	L2.5x2.5x3	Beam	None	A36 Gr.36	Typical
48	M48	N89	N90		RIGID	None	None	RIGID	Typical
49	M49	N91	N92		RIGID	None	None	RIGID	Typical
50	M50	N93	N94		PIPE_2.0	Beam	None	A53 Gr.B	Typical
51	M51	N98	N96		RIGID	None	None	RIGID	Typical
52	M52	N99	N97		RIGID	None	None	RIGID	Typical
53	M53	N95	N98	180	L2.5x2.5x3	Beam	None	A36 Gr.36	Typical
54	M54	N95	N99	90	L2.5x2.5x3	Beam	None	A36 Gr.36	Typical
55	M55	N100	N82		RIGID	None	None	RIGID	Typical
56	M56	N101	N93		RIGID	None	None	RIGID	Typical
57	M57	N102	N83		RIGID	None	None	RIGID	Typical
58	M58	N103	N94		RIGID	None	None	RIGID	Typical
59	M59	N119	N120		RIGID	None	None	RIGID	Typical
60	M60	N117	N115		RIGID	None	None	RIGID	Typical
61	M61	N121	N114		RIGID	None	None	RIGID	Typical
62	M62	N122	N113		RIGID	None	None	RIGID	Typical
63	M63	N123	N112		RIGID	None	None	RIGID	Typical
64	M64	N124	N125		RIGID	None	None	RIGID	Typical
65	M65	N126	N127		RIGID	None	None	RIGID	Typical
66	M66	N117	N127		PIPE_2.0	Beam	None	A53 Gr.B	Typical
67	M67	N122	N120		PIPE_2.0	Beam	None	A53 Gr.B	Typical
68	M68	N129	N130		RIGID	None	None	RIGID	Typical
69	M69	N131	N132		PIPE_2.0	Beam	None	A53 Gr.B	Typical
70	M70	N133	N134		RIGID	None	None	RIGID	Typical
71	M71	N135	N136		RIGID	None	None	RIGID	Typical
72	M72	N137	N138		PIPE_2.0	Beam	None	A53 Gr.B	Typical
73	M73	N139	N140		RIGID	None	None	RIGID	Typical
74	M74	N141	N142		HSS4x4x3	Beam	None	A500 Gr.B Rect	Typical
75	M75	N143	N144		RIGID	None	None	RIGID	Typical
76	M76	N145	N146		RIGID	None	None	RIGID	Typical
77	M77	N147	N170	180	L3x3x4	Beam	None	A36 Gr.36	Typical
78	M78	N148	N171	90	L3x3x4	Beam	None	A36 Gr.36	Typical
79	M79	N149	N150		PIPE_3.5	Beam	None	A53 Gr.B	Typical
80	M80	N151	N152		2L2.5x2.5x3	Beam	None	A36 Gr.36	Typical
81	M81	N153	N154		RIGID	None	None	RIGID	Typical
82	M82	N155	N156		RIGID	None	None	RIGID	Typical
83	M83	N157	N158		PIPE_2.0	Beam	None	A53 Gr.B	Typical
84	M84	N162	N160		RIGID	None	None	RIGID	Typical
85	M85	N163	N161		RIGID	None	None	RIGID	Typical
86	M86	N159	N162	180	L2.5x2.5x3	Beam	None	A36 Gr.36	Typical
87	M87	N159	N163	90	L2.5x2.5x3	Beam	None	A36 Gr.36	Typical
88	M88	N164	N157		RIGID	None	None	RIGID	Typical
89	M89	N165	N158		RIGID	None	None	RIGID	Typical
90	M90	N172	N171		RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
91	M91	N173	N170		RIGID	None	None	RIGID	Typical
92	M92	N172	N125		PIPE_2.0	Beam	None	A53 Gr.B	Typical
93	M93	N174	N175		RIGID	None	None	RIGID	Typical
94	M94	N176	N177		RIGID	None	None	RIGID	Typical
95	M95	N165	N100		PIPE_2.0	Beam	None	A53 Gr.B	Typical
96	M96	N102	N101		PIPE_2.0	Beam	None	A53 Gr.B	Typical
97	M97	N103	N164		PIPE_2.0	Beam	None	A53 Gr.B	Typical
98	M98	N178	N179		RIGID	None	None	RIGID	Typical
99	M99	N180	N181		RIGID	None	None	RIGID	Typical
100	M100	N182	N183		RIGID	None	None	RIGID	Typical
101	M101	N184	N185		RIGID	None	None	RIGID	Typical
102	M102	N186	N187		RIGID	None	None	RIGID	Typical
103	M103	N188	N189		RIGID	None	None	RIGID	Typical
104	M104	N190	N191		RIGID	None	None	RIGID	Typical
105	M105	N192	N193		RIGID	None	None	RIGID	Typical
106	M106	N194	N195		RIGID	None	None	RIGID	Typical
107	M107	N196	N197		PIPE_2.0	Beam	None	A53 Gr.B	Typical
108	M108	N198	N199		RIGID	None	None	RIGID	Typical
109	M109	N34	N200		RIGID	None	None	RIGID	Typical
110	M110	N203	N204		RIGID	None	None	RIGID	Typical
111	M111	N205	N206		RIGID	None	None	RIGID	Typical
112	M112	N207	N208		PIPE_2.0	Beam	None	A53 Gr.B	Typical
113	M113	N209	N210		RIGID	None	None	RIGID	Typical
114	M114	N142	N211		RIGID	None	None	RIGID	Typical
115	M115	N214	N215		RIGID	None	None	RIGID	Typical

Envelope Node Reactions

	Node Label		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N66	max	0.515	18	0.178	8	0.159	14	0	74	1.549	5	0	74
2		min	-0.585	48	-0.103	14	-1.651	32	0	1	-1.551	11	0	1
3	N46	max	1.509	29	0.163	4	1.249	13	0	74	2.577	13	0	74
4		min	-0.357	23	-0.088	22	-0.738	19	0	1	-2.544	19	0	1
5	N48	max	1.225	30	0.047	16	1.321	13	0	74	2.665	13	0	74
6		min	-0.332	24	-0.082	10	-0.779	19	0	1	-2.551	19	0	1
7	N68	max	1.006	41	0.061	20	0.083	14	0	74	1.724	5	0	74
8		min	-0.777	11	-0.097	2	-1.412	32	0	1	-1.696	23	0	1
9	N58	max	0.602	16	0.062	23	1.066	3	0	74	2.689	10	0	74
10		min	-1.446	10	-0.097	5	-0.581	21	0	1	-2.676	16	0	1
11	N56	max	0.68	17	0.189	11	1.059	3	0	74	2.654	10	0	74
12		min	-1.636	11	-0.115	17	-0.456	21	0	1	-2.67	16	0	1
13	N72	max	2.631	29	2.732	29	-0.306	24	0.001	10	0.001	10	0	16
14		min	0.495	23	0.603	23	-1.517	30	-0.001	16	-0.001	16	0	10
15	N73	max	0.051	17	2.732	26	3.034	26	0	74	0.002	42	0.002	42
16		min	-0.051	23	0.615	20	0.687	20	0	1	0	24	-0.001	24
17	N84	max	0.34	17	0.084	32	0.921	14	0	74	0	74	0	74
18		min	-0.54	47	0.013	25	-0.967	8	0	1	0	1	0	1
19	N95	max	0.744	17	0.084	36	0.576	13	0	74	0	74	0	74
20		min	-0.769	11	0.013	17	-0.542	19	0	1	0	1	0	1
21	N151	max	-0.546	16	2.727	34	-0.297	15	0	19	0.001	13	0	19
22		min	-2.625	34	0.644	16	-1.518	33	-0.001	13	-0.001	19	0	13
23	N159	max	0.906	5	0.084	29	0.465	15	0	74	0	74	0	74
24		min	-0.843	23	0.013	21	-0.485	9	0	1	0	1	0	1
25	Totals:	max	7.378	5	8.386	28	6.634	14						
26		min	-7.378	23	2.46	71	-6.634	8						

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn
1	M16	HSS4X4X3	0.209	3.281	39	0.269	3.281	y	42	101.674	106.812	12.662	12.662	1.319	H3-6
2	M29	PIPE_4.0	0.228	1.5	35	0.254	3		10	90.594	93.24	10.631	10.631	1.348	H1-1b
3	M23	PIPE_4.0	0.229	1.5	28	0.235	0		13	90.594	93.24	10.631	10.631	1.367	H1-1b
4	M69	PIPE_2.0	0.353	2.5	5	0.19	2.5		10	20.867	32.13	1.872	1.872	2.107	H1-1b
5	M5	PIPE_2.0	0.426	2.5	8	0.176	5.5		46	20.867	32.13	1.872	1.872	2.017	H1-1b
6	M83	PIPE_2.0	0.385	8.724	5	0.171	3.646		4	6.295	32.13	1.872	1.872	1.581	H1-1b
7	M11	PIPE_2.0	0.335	2.5	29	0.163	2.5		5	20.867	32.13	1.872	1.872	2.113	H1-1b
8	M2	PIPE_2.0	0.342	2.5	2	0.159	2.5		13	20.867	32.13	1.872	1.872	2.2	H1-1b
9	M35	PIPE_4.0	0.226	1.5	32	0.157	1.5		5	90.594	93.24	10.631	10.631	1.376	H1-1b
10	M43	PIPE_2.0	0.42	11.979	46	0.155	6.25		44	6.295	32.13	1.872	1.872	1.933	H1-1b
11	M72	PIPE_2.0	0.379	2.5	37	0.152	2.5		12	20.867	32.13	1.872	1.872	2.067	H1-1b
12	M50	PIPE_2.0	0.309	3.646	5	0.144	3.646		12	6.295	32.13	1.872	1.872	1.626	H1-1b
13	M14	PIPE_2.0	0.373	2.5	33	0.137	2.5		9	20.867	32.13	1.872	1.872	2.022	H1-1b
14	M8	PIPE_2.0	0.691	2.5	41	0.127	2.5		4	20.867	32.13	1.872	1.872	2.266	H1-1b
15	M112	PIPE_2.0	0.44	2.5	5	0.124	5.5		5	20.867	32.13	1.872	1.872	2.597	H1-1b
16	M74	HSS4X4X3	0.299	0	13	0.103	3.281	y	27	101.674	106.812	12.662	12.662	1.303	H1-1b
17	M17	HSS4X4X3	0.318	0	10	0.087	3.281	y	34	101.674	106.812	12.662	12.662	2.972	H1-1b
18	M107	PIPE_2.0	0.428	2.5	11	0.082	5.5		2	20.867	32.13	1.872	1.872	2.489	H1-1b
19	M28	PIPE_3.5	0.331	7.25	4	0.074	7.25		10	33.422	78.75	7.954	7.954	1.801	H1-1b
20	M34	PIPE_3.5	0.435	7.25	39	0.069	7.25		7	33.422	78.75	7.954	7.954	1.796	H1-1b
21	M96	PIPE_2.0	0.01	1.451	11	0.066	2.843		38	29.162	32.13	1.872	1.872	1.136	H1-1b
22	M95	PIPE_2.0	0.01	1.422	6	0.062	2.843		42	29.162	32.13	1.872	1.872	1.136	H1-1b
23	M79	PIPE_3.5	0.294	7.25	11	0.061	7.25		2	33.422	78.75	7.954	7.954	1.746	H1-1b
24	M33	L3X3X4	0.152	0	14	0.041	0	z	43	42.124	46.656	1.688	3.756	1.313	H2-1
25	M78	L3X3X4	0.177	0	11	0.039	2.148	y	11	42.124	46.656	1.688	3.756	1.273	H2-1
26	M25	1/2"x6"	0.223	0	13	0.03	0.75	y	13	67.552	97.2	1.012	12.15	1.213	H1-1b
27	M27	L3X3X4	0.111	2.148	2	0.029	2.148	y	7	42.124	46.656	1.688	3.756	1.29	H2-1
28	M92	PIPE_2.0	0.032	4.698	23	0.029	4.698		5	24.659	32.13	1.872	1.872	1.136	H1-1b*
29	M31	1/2"x6"	0.227	0	10	0.029	0.75	y	4	67.552	97.2	1.012	12.15	1.197	H1-1b
30	M24	1/2"x6"	0.216	0	13	0.028	0.75	y	7	67.552	97.2	1.012	12.15	1.191	H1-1b
31	M30	1/2"x6"	0.276	0.75	10	0.028	0.75	y	4	67.552	97.2	1.012	12.15	1.188	H1-1b
32	M97	PIPE_2.0	0.01	1.422	2	0.027	2.843		10	29.162	32.13	1.872	1.872	1.136	H1-1b
33	M37	1/2"x6"	0.145	0	5	0.026	0.75	y	41	67.552	97.2	1.012	12.15	1.219	H1-1b
34	M66	PIPE_2.0	0.024	2.349	4	0.024	4.698		9	24.659	32.13	1.872	1.872	1.136	H1-1b
35	M67	PIPE_2.0	0.03	2.349	8	0.023	4.698		2	24.659	32.13	1.872	1.872	1.136	H1-1b
36	M36	1/2"x6"	0.178	0.75	6	0.015	0.75	y	48	67.552	97.2	1.012	12.15	1.167	H1-1b
37	M39	LL2.5x2.5x3x3	0.111	2.658	5	0.014	5.315	z	10	40.231	58.32	3.954	1.593	1.136	H1-1b
38	M80	LL2.5x2.5x3x3	0.109	2.658	11	0.013	5.315	z	13	40.231	58.32	3.954	1.593	1.136	H1-1b
39	M38	LL2.5x2.5x3x3	0.101	0	26	0.013	5.315	y	42	40.231	58.32	3.954	2.55	1	H1-1b*
40	M87	L2.5x2.5x3	0.128	2.487	13	0.008	4.974	y	14	12.982	29.192	0.873	1.664	1.136	H2-1
41	M53	L2.5x2.5x3	0.125	2.487	3	0.008	4.974	z	8	12.982	29.192	0.873	1.664	1.136	H2-1
42	M86	L2.5x2.5x3	0.102	2.435	23	0.006	4.974	z	24	12.982	29.192	0.873	1.664	1.136	H2-1
43	M54	L2.5x2.5x3	0.106	2.435	17	0.006	4.974	y	4	12.982	29.192	0.873	1.664	1.136	H2-1
44	M46	L2.5x2.5x3	0.103	2.435	11	0.006	4.974	z	4	12.982	29.192	0.873	1.664	1.136	H2-1
45	M47	L2.5x2.5x3	0.105	2.435	5	0.006	4.974	y	24	12.982	29.192	0.873	1.664	1.136	H2-1
46	M77	L3X3X4	0.039	0	2	0.004	0	z	2	42.124	46.656	1.688	3.756	1.5	H2-1
47	M26	L3X3X4	0.036	0	11	0.004	0	z	5	42.124	46.656	1.688	3.756	1.5	H2-1
48	M32	L3X3X4	0.03	0	6	0.003	0	z	6	42.124	46.656	1.688	3.756	1.5	H2-1

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Envelope Plate Principal Stresses

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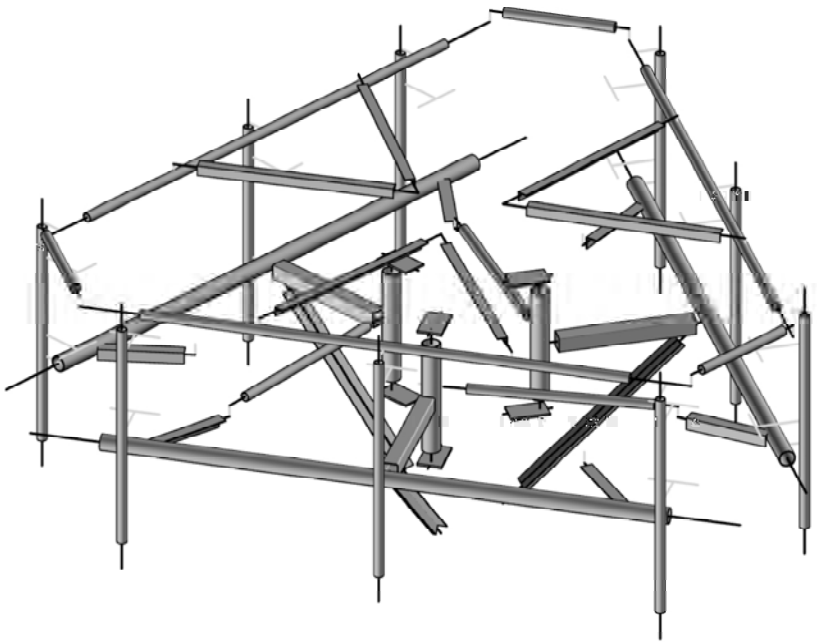

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Envelope Only Solution

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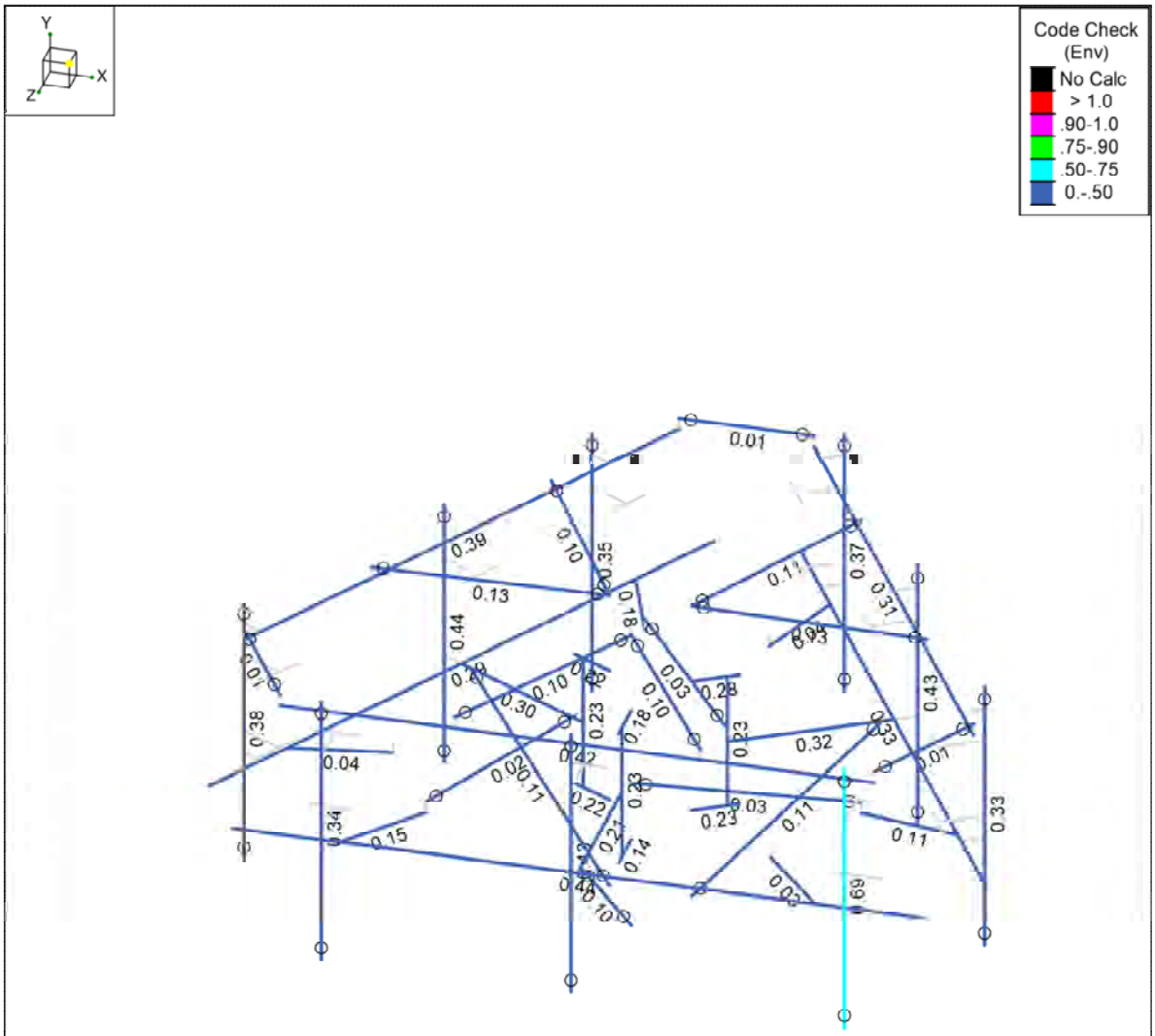

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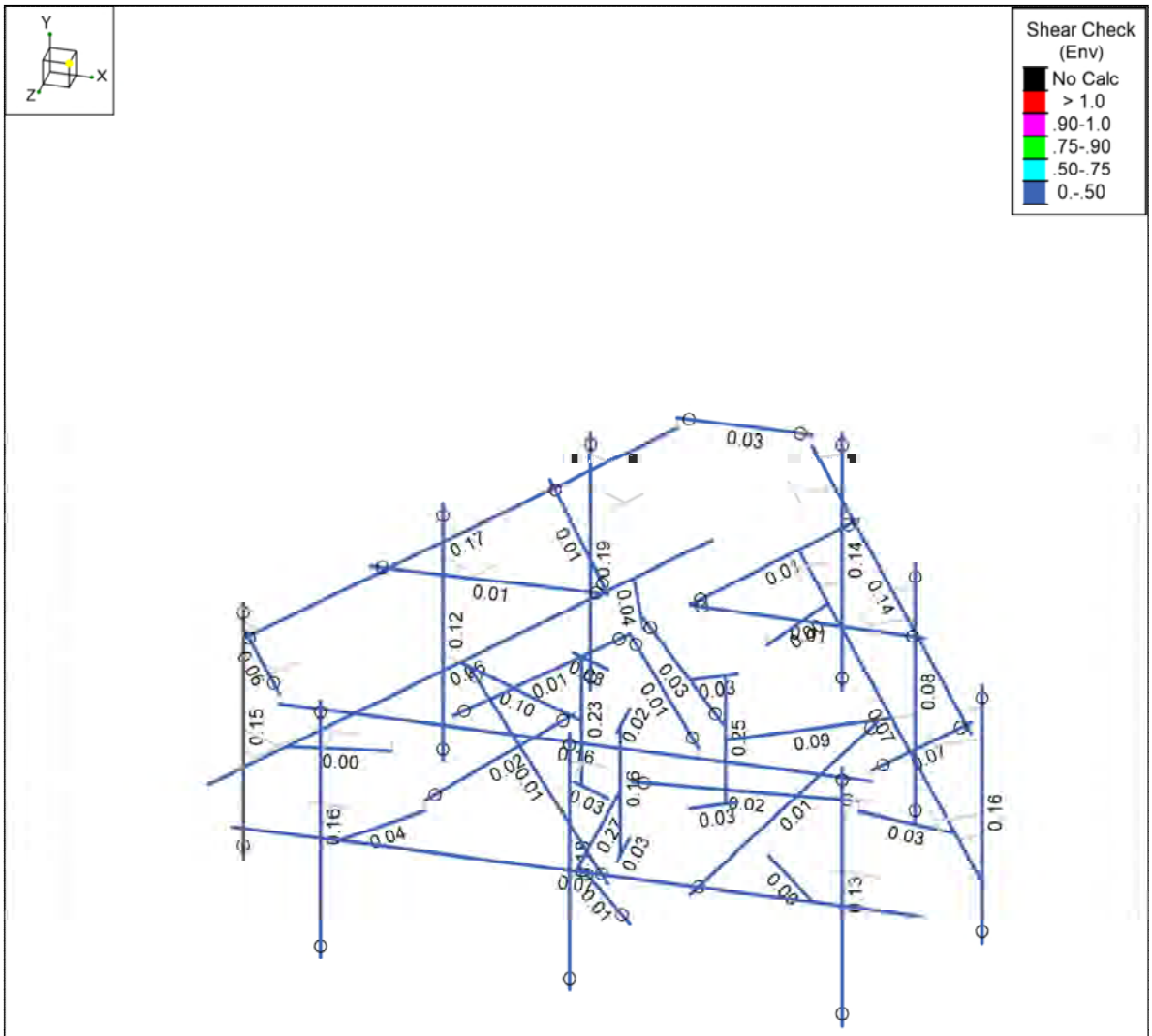

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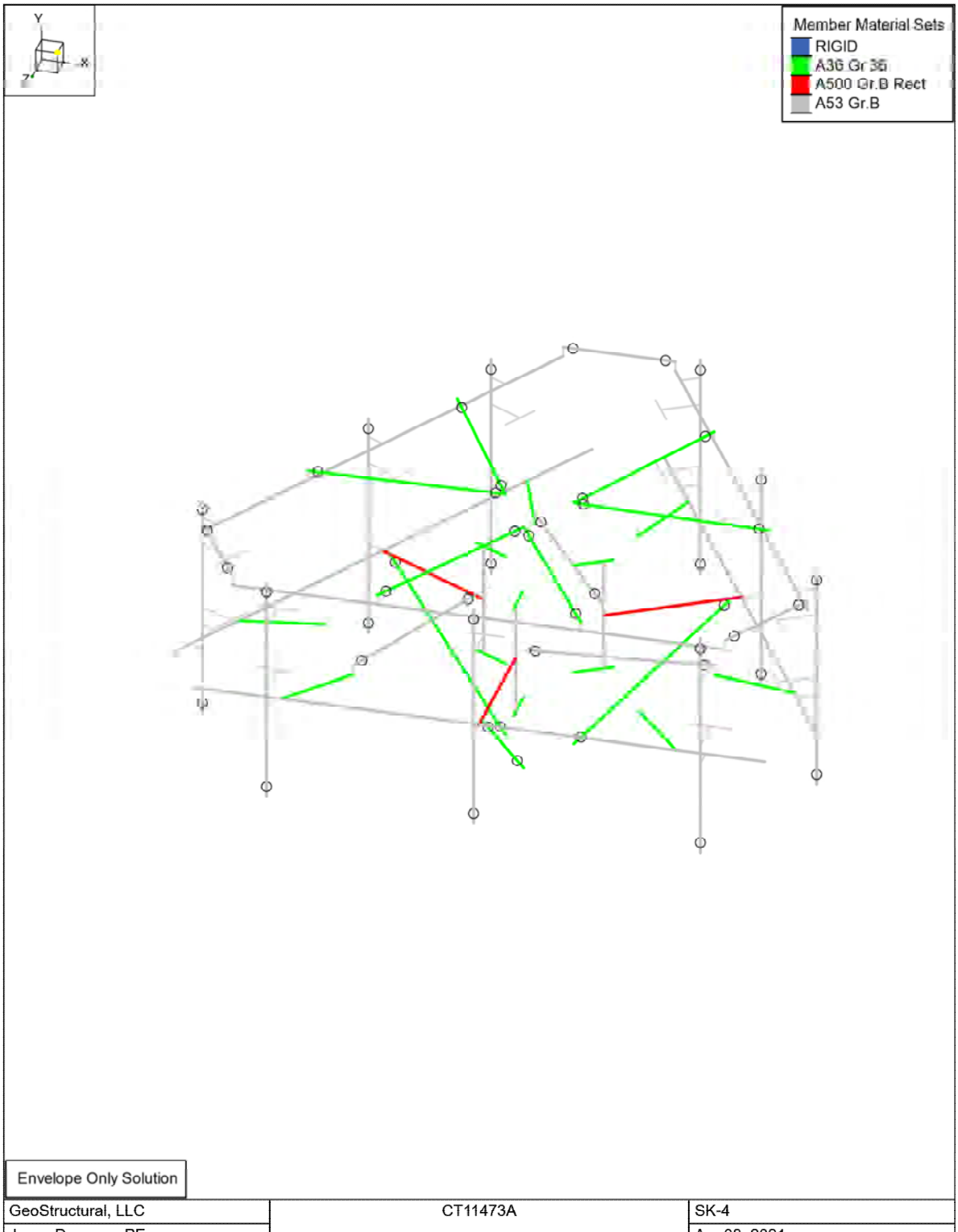

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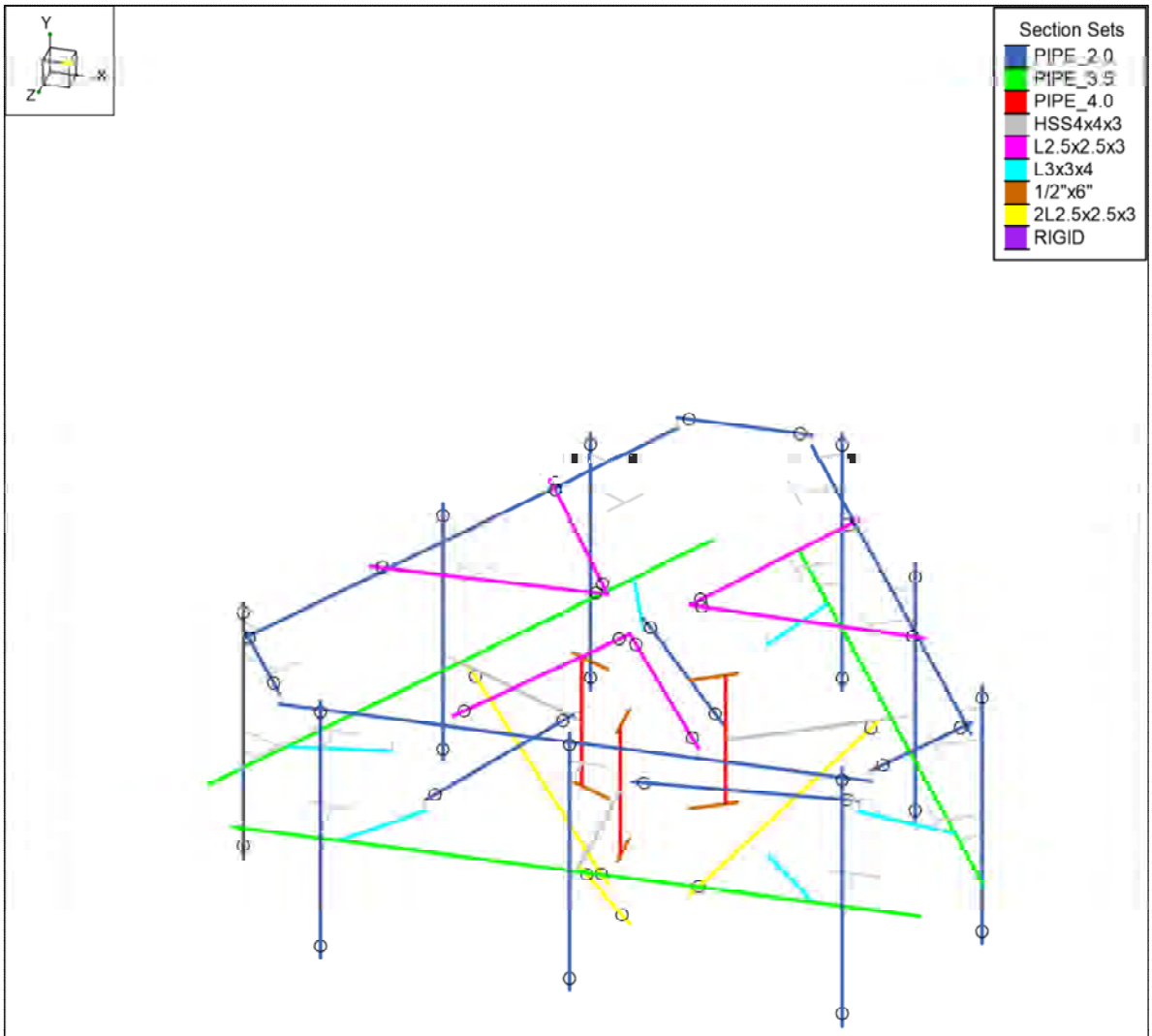

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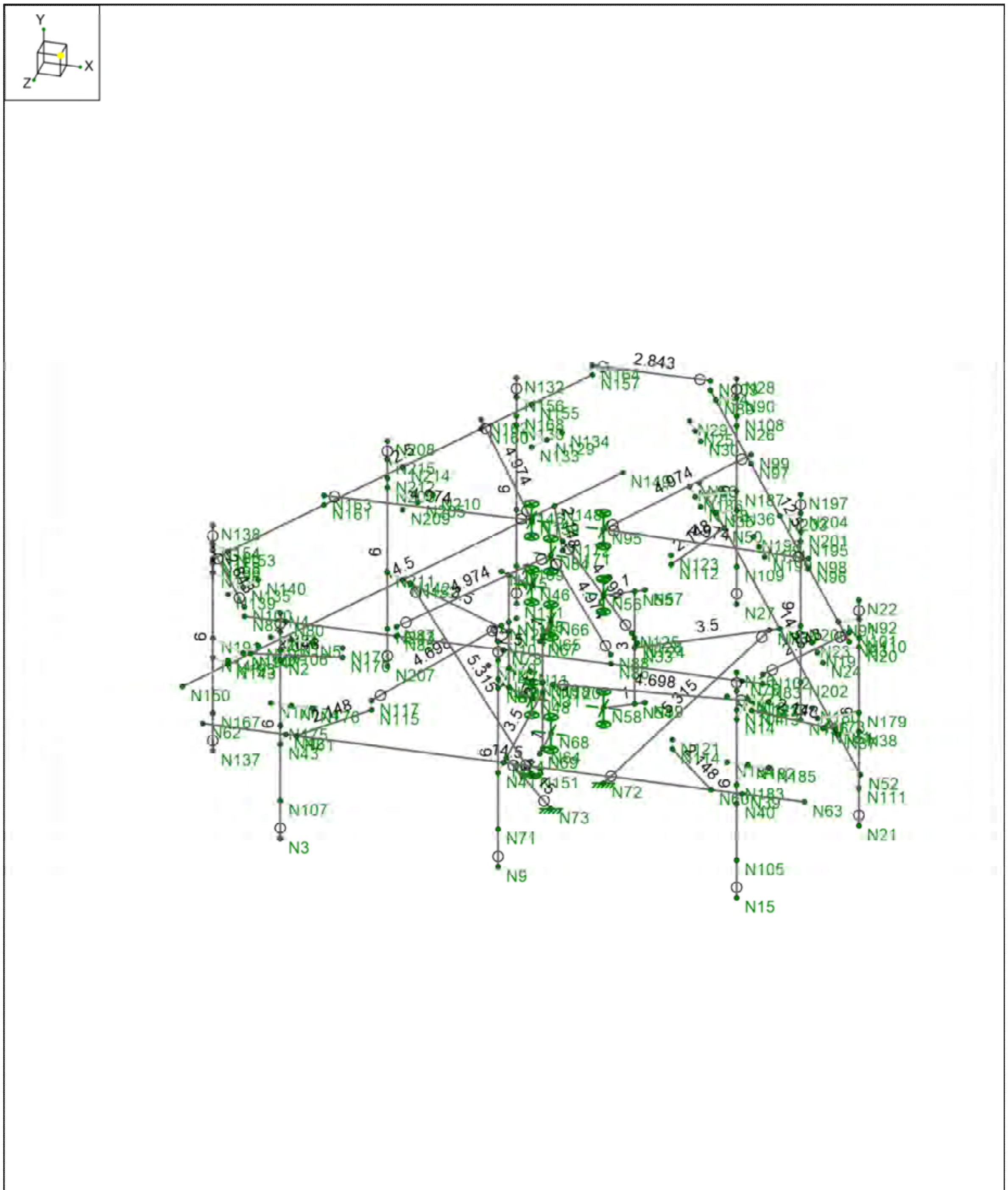

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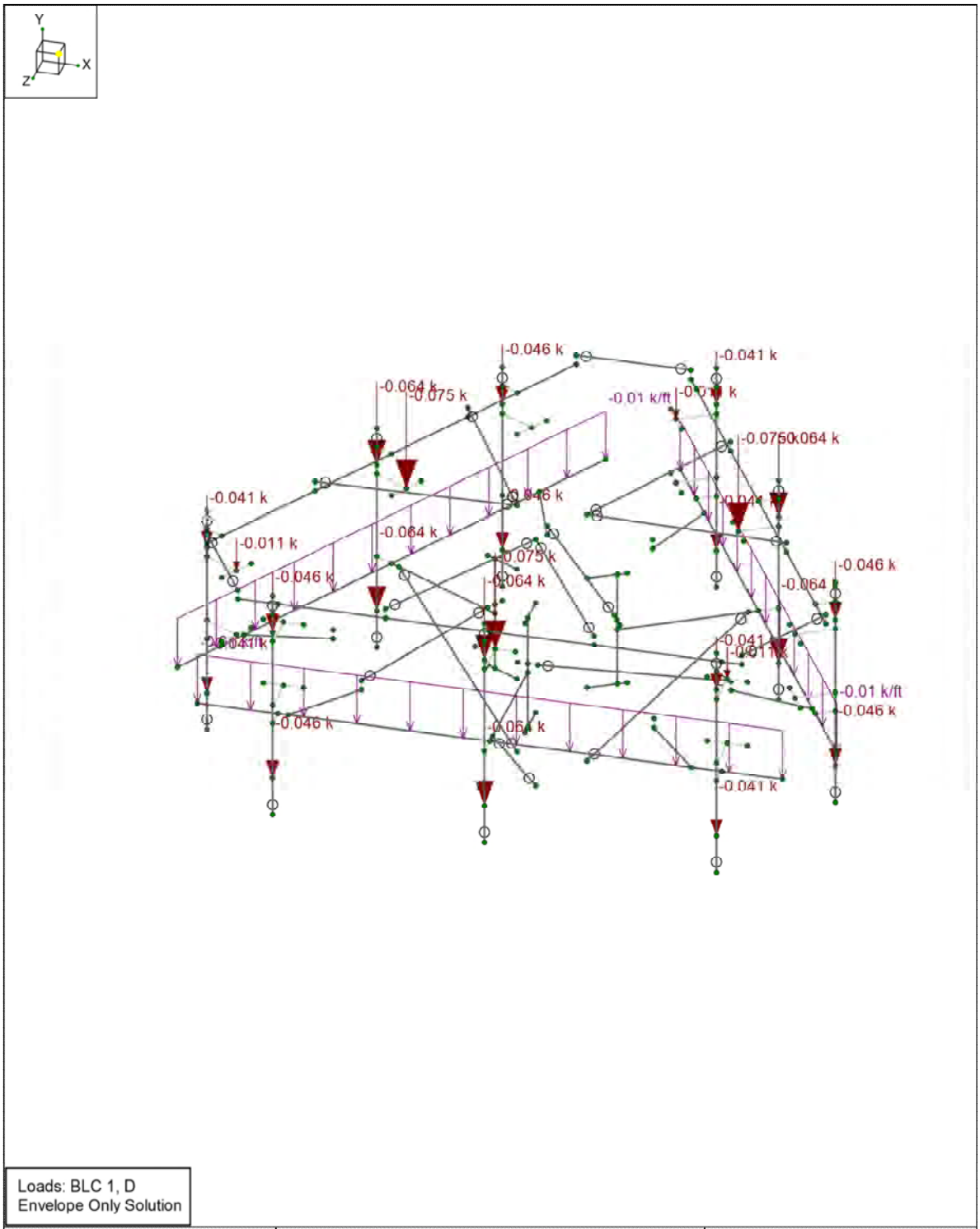

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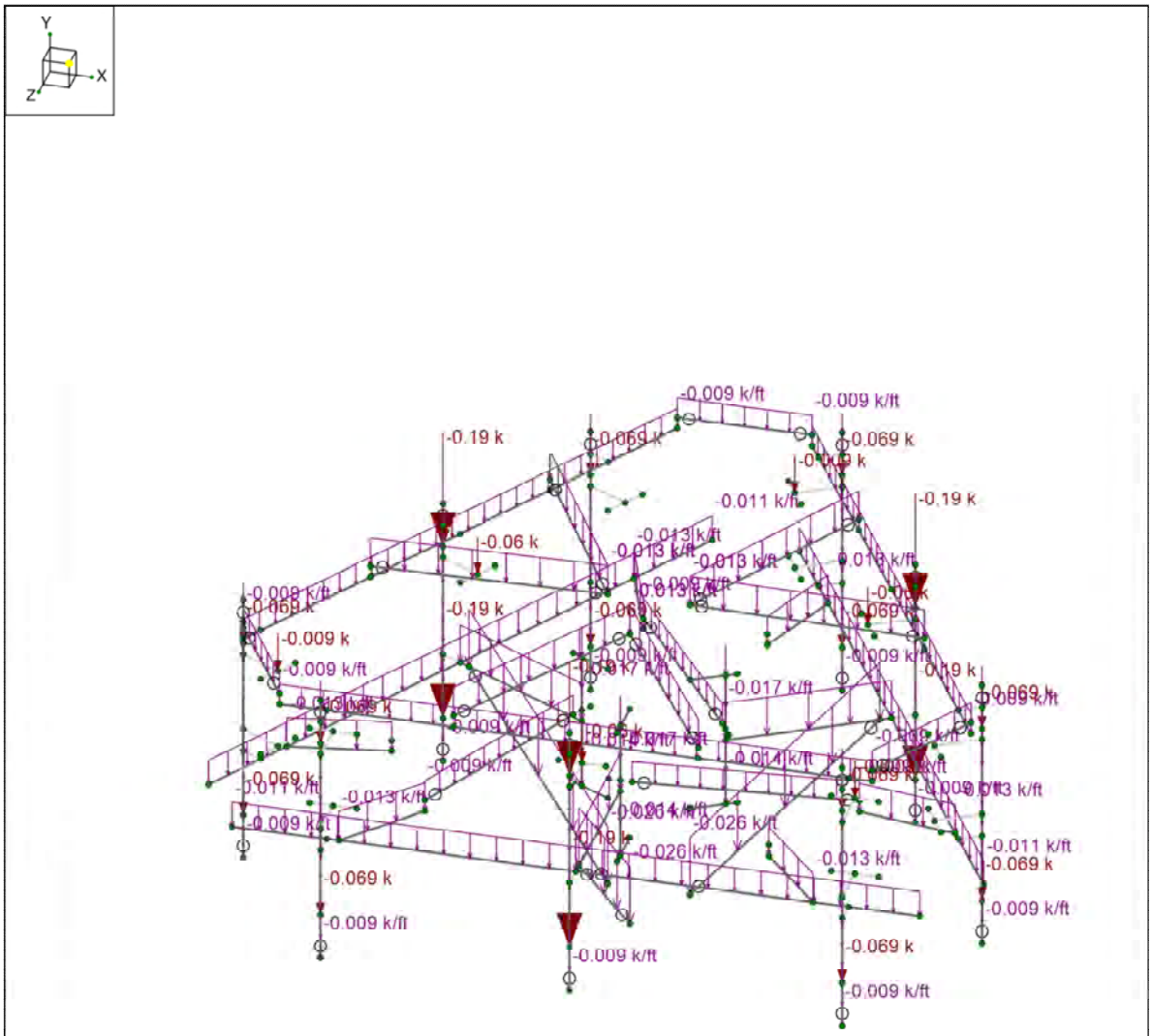

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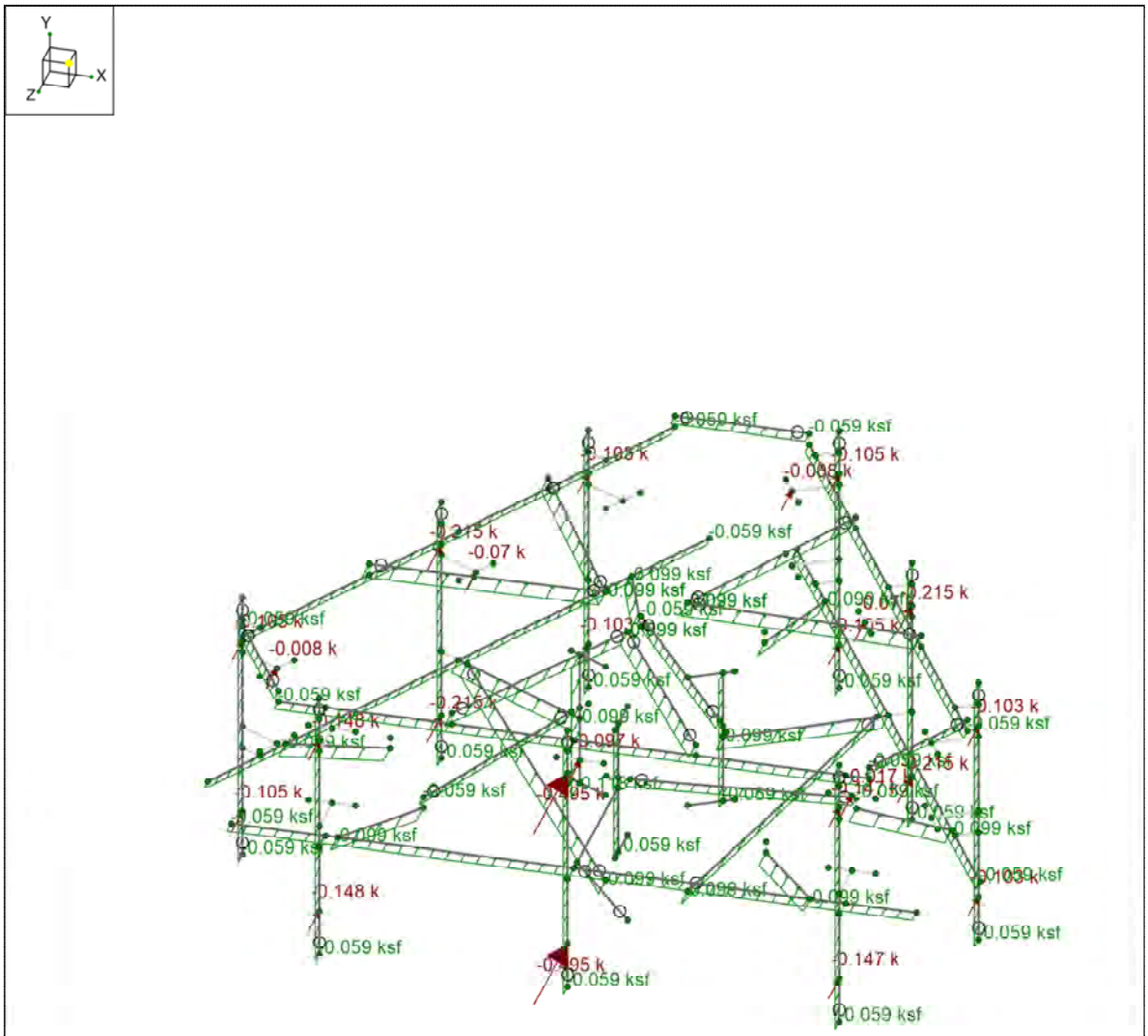

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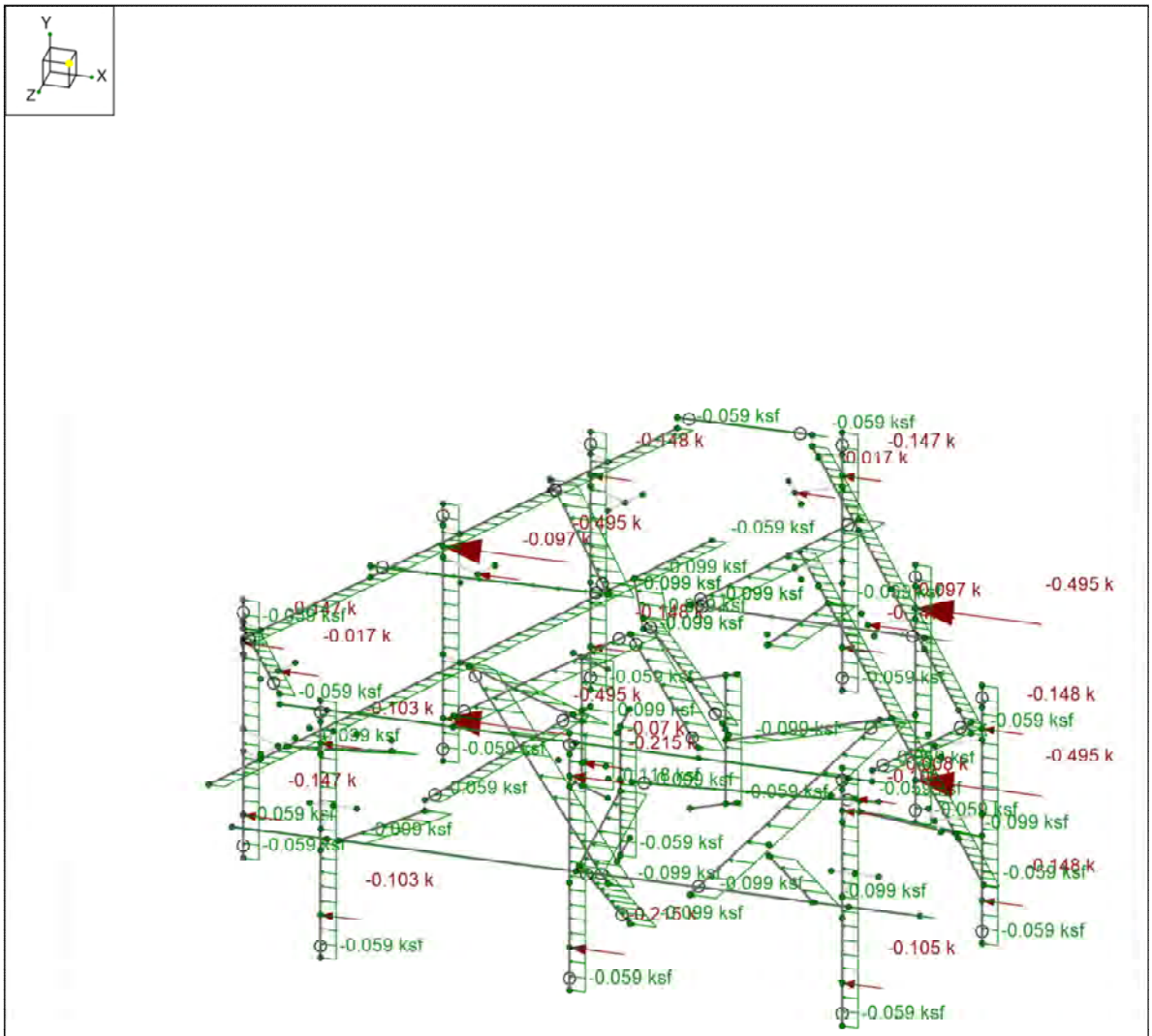

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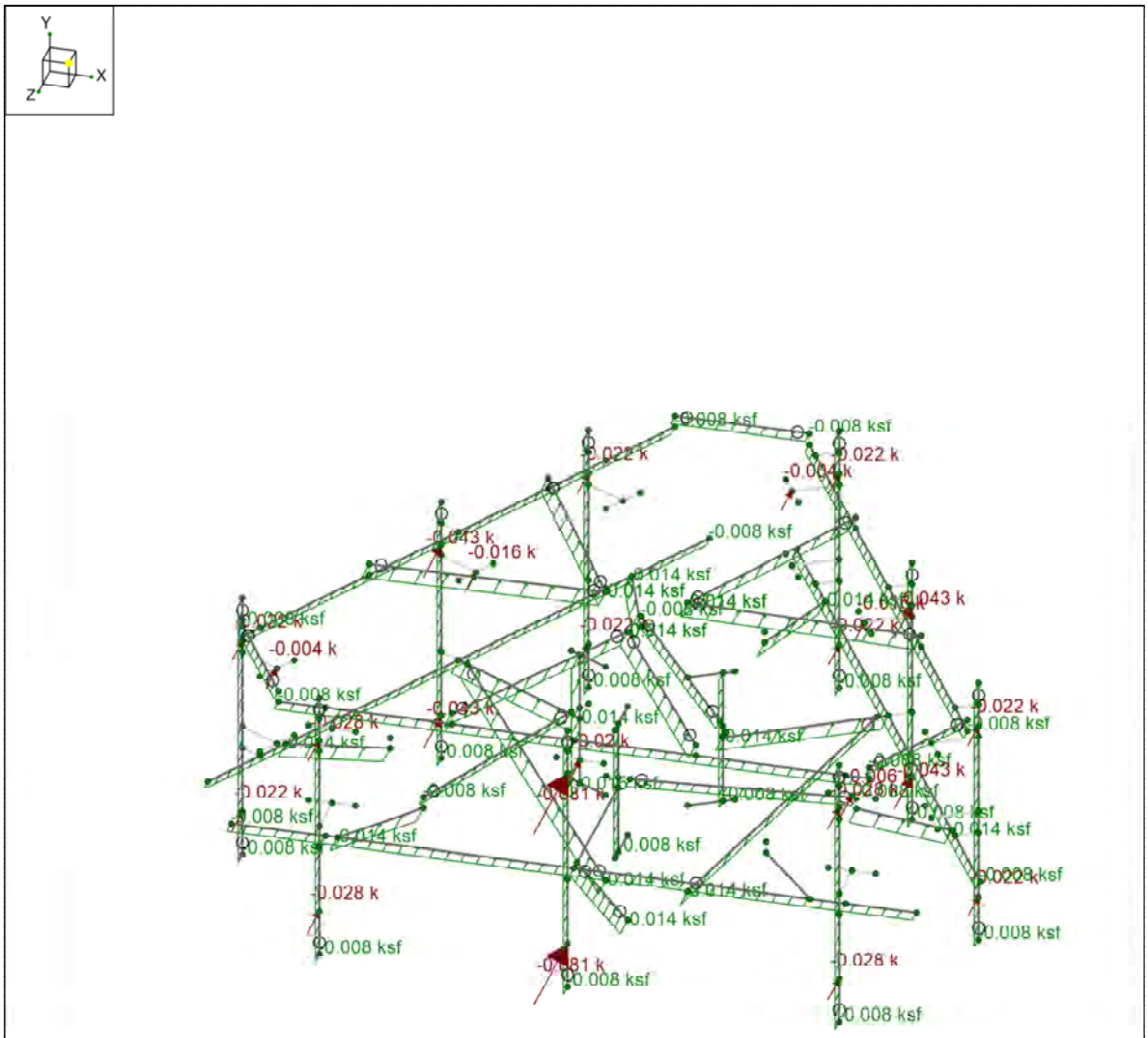

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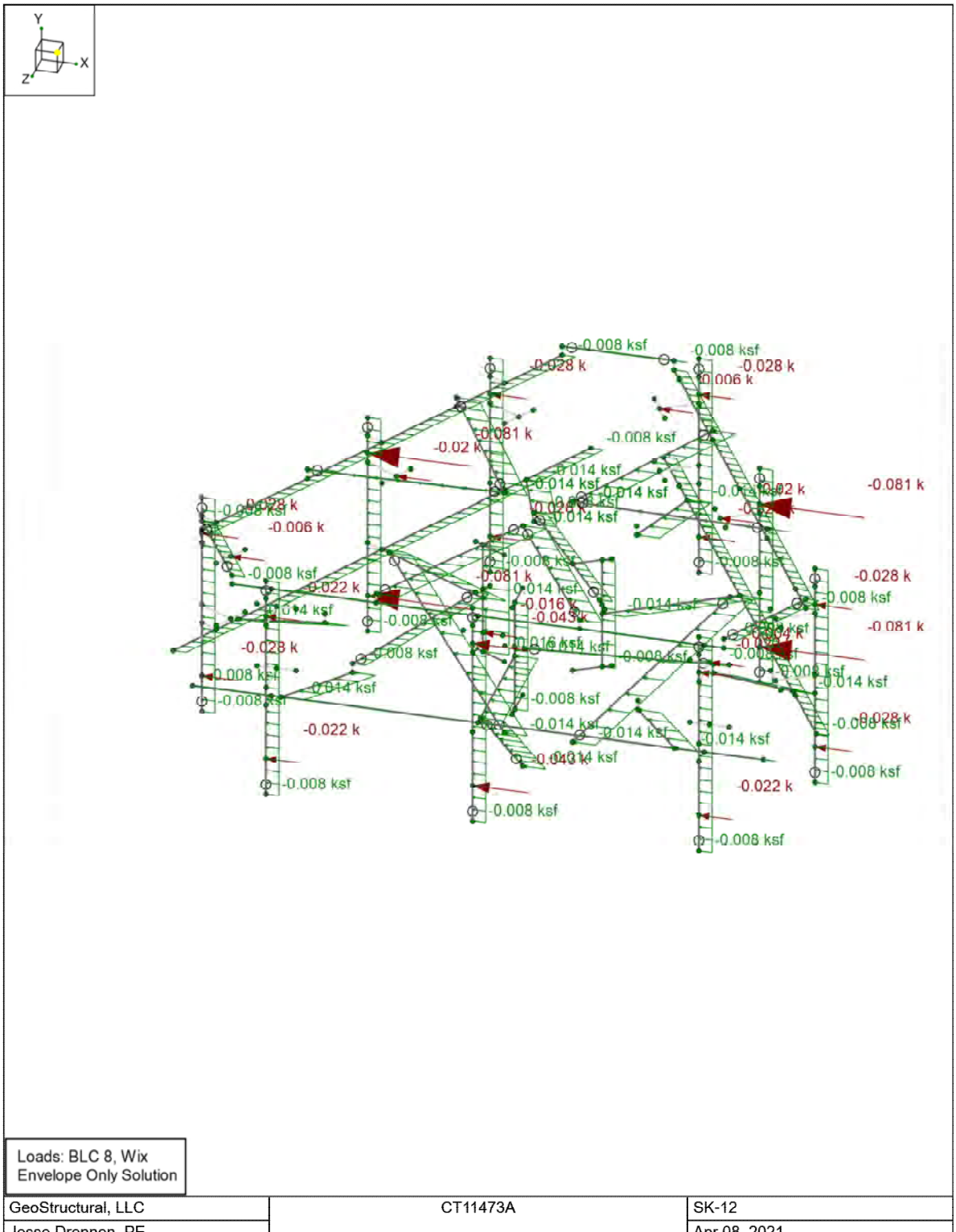

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EXHIBIT 9

EBI Consulting

environmental | engineering | due diligence

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

T-Mobile Existing Facility

Site ID: CT11473A

Waterford/Rt 85/Douglas
45 Fargo Road
Waterford, Connecticut 06385

May 27, 2021

EBI Project Number: 6221002706

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**8.32%**

May 27, 2021

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

Emissions Analysis for Site: CT11473A - Waterford/Rt 85/Douglas

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **45 Fargo Road** in **Waterford, 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 45 Fargo Road in Waterford, Connecticut using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report, the sample point is the top of a 6-foot person standing at the base of the tower.

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

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

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

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

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

5) 2 UMTS channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

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 21 for the 1900 MHz / 1900 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz channel(s), the Ericsson AIR 21 for the 2100 MHz channel(s) in Sector A, the Ericsson AIR 21 for the 1900 MHz / 1900 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz channel(s), the Ericsson AIR 21 for the 2100 MHz channel(s) in Sector B, the Ericsson AIR 21 for the 1900 MHz / 1900 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz channel(s), the Ericsson AIR 21 for the 2100 MHz channel(s) in Sector C. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

10) The antenna mounting height centerline of the proposed antennas is 153 feet above ground level (AGL).

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

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

T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	Ericsson AIR 21	Make / Model:	Ericsson AIR 21	Make / Model:	Ericsson AIR 21
Frequency Bands:	1900 MHz / 1900 MHz	Frequency Bands:	1900 MHz / 1900 MHz	Frequency Bands:	1900 MHz / 1900 MHz
Gain:	15.35 dBd / 15.35 dBd	Gain:	15.35 dBd / 15.35 dBd	Gain:	15.35 dBd / 15.35 dBd
Height (AGL):	153 feet	Height (AGL):	153 feet	Height (AGL):	153 feet
Channel Count:	6	Channel Count:	6	Channel Count:	6
Total TX Power (W):	180 Watts	Total TX Power (W):	180 Watts	Total TX Power (W):	180 Watts
ERP (W):	6,169.82	ERP (W):	6,169.82	ERP (W):	6,169.82
Antenna A1 MPE %:	**1.03%**	Antenna B1 MPE %:	**1.03%**	Antenna C1 MPE %:	**1.03%**
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	RFS APXVAALL24_43-U-NA20	Make / Model:	RFS APXVAALL24_43-U-NA20	Make / Model:	RFS APXVAALL24_43-U-NA20
Frequency Bands:	600 MHz / 600 MHz / 700 MHz	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
Height (AGL):	153 feet	Height (AGL):	153 feet	Height (AGL):	153 feet
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
ERP (W):	4,151.83	ERP (W):	4,151.83	ERP (W):	4,151.83
Antenna A2 MPE %:	**1.64%**	Antenna B2 MPE %:	**1.64%**	Antenna C2 MPE %:	**1.64%**
Antenna #:	**3**	Antenna #:	**3**	Antenna #:	**3**
Make / Model:	Ericsson AIR 21	Make / Model:	Ericsson AIR 21	Make / Model:	Ericsson AIR 21
Frequency Bands:	2100 MHz	Frequency Bands:	2100 MHz	Frequency Bands:	2100 MHz
Gain:	15.35 dBd	Gain:	15.35 dBd	Gain:	15.35 dBd
Height (AGL):	153 feet	Height (AGL):	153 feet	Height (AGL):	153 feet
Channel Count:	2	Channel Count:	2	Channel Count:	2
Total TX Power (W):	120 Watts	Total TX Power (W):	120 Watts	Total TX Power (W):	120 Watts
ERP (W):	4,113.21	ERP (W):	4,113.21	ERP (W):	4,113.21
Antenna A3 MPE %:	**0.68%**	Antenna B3 MPE %:	**0.68%**	Antenna C3 MPE %:	**0.68%**

Site Composite MPE %	
Carrier	**MPE %**
T-Mobile (Max at Sector A):	3.35%
Clearwire	0.08%
Verizon	1.8%
AT&T	3.09%
Site Total MPE % :	8.32%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	3.35%
T-Mobile Sector B Total:	3.35%
T-Mobile Sector C Total:	3.35%
Site Total MPE % :	8.32%

T-Mobile Maximum MPE Power Values (Sector A)

T-Mobile Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density (μW/cm²)	Frequency (MHz)	Allowable MPE (μW/cm²)	Calculated % MPE
T-Mobile 1900 MHz GSM	4	1028.30	153.0	6.84	1900 MHz GSM	1000	0.68%
T-Mobile 1900 MHz UMTS	2	1028.30	153.0	3.42	1900 MHz UMTS	1000	0.34%
T-Mobile 600 MHz LTE	2	591.73	153.0	1.97	600 MHz LTE	400	0.49%
T-Mobile 600 MHz NR	1	1577.94	153.0	2.63	600 MHz NR	400	0.66%
T-Mobile 700 MHz LTE	2	695.22	153.0	2.31	700 MHz LTE	467	0.50%
T-Mobile 2100 MHz LTE	2	2056.61	153.0	6.84	2100 MHz LTE	1000	0.68%
						Total:	**3.35%**

• 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:	3.35%
Sector B:	3.35%
Sector C:	3.35%
T-Mobile Maximum MPE % (Sector A):	3.35%
Site Total:	8.32%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **8.32%** 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.