February 15, 2024

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

RE: **Notice of Intent to Allow Shared Use of the Existing SBA Telecommunications Site**
Location: 45 Fargo Road, Waterford, CT
Dish Wireless Site No: BOBOS01205A
SBA Site No: CT01002-S

Dear Ms. Bachman:

Please let the following serve as Evidence of Intent to allow Dish's shared use of the existing SBA telecommunications site at **45 Fargo Road, Waterford, CT**

SBA Properties, LLC ("Owner") and Dish Wireless ("Tenant") are entering into a Site Lease Agreement. Tenant will be provided ground space within the existing site compound for its base station equipment and space at the height of 183' for antennas and associated equipment.

Thank you,

Catherine Ware

Catherine Ware
Site Development Specialist
SBA COMMUNICATIONS CORPORATION
134 Flanders Road, Suite 125
Westboro, MA 01581

(917)868-8365 + C
CWare@sbasite.com

February 15, 2024

Melanie Bachman
Connecticut Siting Council Ten Franklin Square
New Britain, CT 06051

RE: Tower Share Application

45 Fargo Road, Waterford, CT 06385
Latitude: Lat.: 41.389339
Longitude: 72.171408
Site#: CT01002-S_BOBOS01205A_SBA_DISH

Dear Ms. Bachman:

This letter and attachments are submitted on behalf of Dish Wireless LLC. Dish Wireless LLC plans to install antennas and related equipment to the tower site located at 45 Fargo Road, Waterford, CT.

Dish Wireless LLC proposes to install three (3)600/1900/2100 MHz antennas and six (6) RRUs, at the 183-foot level of the existing 187-foot monopole tower, one (1) Fiber cables will also be installed. Dish Wireless LLC equipment cabinets will be placed in a 5'x7' leased area.Included are plans by Kimley Horn dated 01/11/2024, Exhibit 6. Also included is a structural analysis prepared by TES Engineering dated 09/04/2023, confirming that the existing tower is structurally capable of supporting the proposed equipment, attached as Exhibit 7. Also included is a mount analysis prepared by Kimley Horn dated 10/04/2023 confirming that the mount is structurally capable of supporting the proposed equipment, attached as Exhibit 8. This facility original zoning approval by the Town of Waterford on 4-26-1999. Please see attached Exhibit 5.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies 16-50aa, of Dish Wireless LLC intent to share a telecommunications facility pursuant to R.C.S.A. 16-50j-88. In accordance with R.C.S.A., a copy of this letter is being sent to Rob Brule, First Selectman and Jonathan Mullen Planning Director, both from the Town of Waterford, CT. (Separate notice is being sent to the ground owner Angioletto LLC, of Waterford).

The planned modifications of the facility fall squarely within those activities explicitly provided for in R.C.S.A. 16-50j-89.

1. The proposed modification will not result in an increase in the height of the existing structure. The top of the existing tower is 187 feet and the Dish Wireless LLC antennas will be located at a center line height of 183-feet.

2. The proposed modifications will not result in the increase of the site boundary as depicted on the attached site plan.

3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed local and state criteria. The incremental effect of the proposed changes will be negligent.

4. The operation of the proposed antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard. As indicated in the attached power density calculations, the combined site operations will result in a total power density of 9.46% as evidenced by Exhibit 9.

Connecticut General Statutes 16-50aa indicates that the Council must approve the shared use of a telecommunications facility provided it finds the shared use is technically, legally, environmentally, and economically feasible and meets public safety concerns. As demonstrated in this letter, Dish Wireless LLC respectfully indicates that the shared use of this facility satisfies these criteria.

A. Technical Feasibility. The existing self-support tower has been deemed structurally capable of supporting Dish Wireless LLC proposed loading. The structural analysis is included as Exhibit 7.

B. Legal Feasibility. As referenced above, C.G.S. 16-50aa has been authorized to issue orders approving the shared use of an existing tower such as this monopole tower in Waterford. Under the authority granted to the Council, an order of the Council approving the requested shared use would permit Dish Wireless LLC to obtain a building permit for the proposed installation.

C. Environmental Feasibility. The proposed shared use of this facility would have a minimal environmental impact. The installation of Dish Wireless LLC equipment at the 183-foot level of the existing 187-foot tower would have an insignificant visual impact on the area around the tower. Dish Wireless LLC ground equipment would be installed within the existing facility compound. Dish Wireless LLC shared use would therefore not cause any significant alteration in the physical or environmental characteristics of the existing site. Additionally, as evidenced by Exhibit 9, the proposed antennas would not increase radio frequency emissions to a level at or above the Federal Communications Commission safety standard.

D. Economic Feasibility. Dish Wireless LLC will be entering into an agreement with the owner of this facility to mutually agreeable terms. As previously mentioned, the Letter of Authorization has been provided by the owner to assist Dish Wireless LLC with this tower sharing application.

E. Public Safety Concerns. As discussed above, the tower is structurally capable of supporting Dish Wireless LLC proposed loading.

Dish Wireless LLC is not aware of any public safety concerns relative to the proposed sharing of the existing monopole tower. Dish Wireless LLC intentions of providing new and improved wireless service through the shared use of this facility is expected to enhance the safety and welfare of local residents and individuals traveling through Waterford.

Sincerely,
Catherine Ware

Catherine Ware
Site Development Specialist
SBA Communications Corporation
134 Flanders Road, Suite 125
Westborough, MA 01581
(917)868-8365+ **T**
Cware@sbasite.com

Attachments:

cc:

Rob Brule, First Selectman, Town of Waterford
Waterford Town Hall
15 Rope Ferry Road
Waterford, CT 06385
860-444-5834

Jonathan Mullen, Planning Director, Town of Waterford
Waterford Town Hall
15 Rope Ferry Road
Waterford, CT 06385
860-444-5813

Rudolph T. Chieka . – Ground Owner
199 Niantic River Road
Waterford, CT 06385
860-442-0826

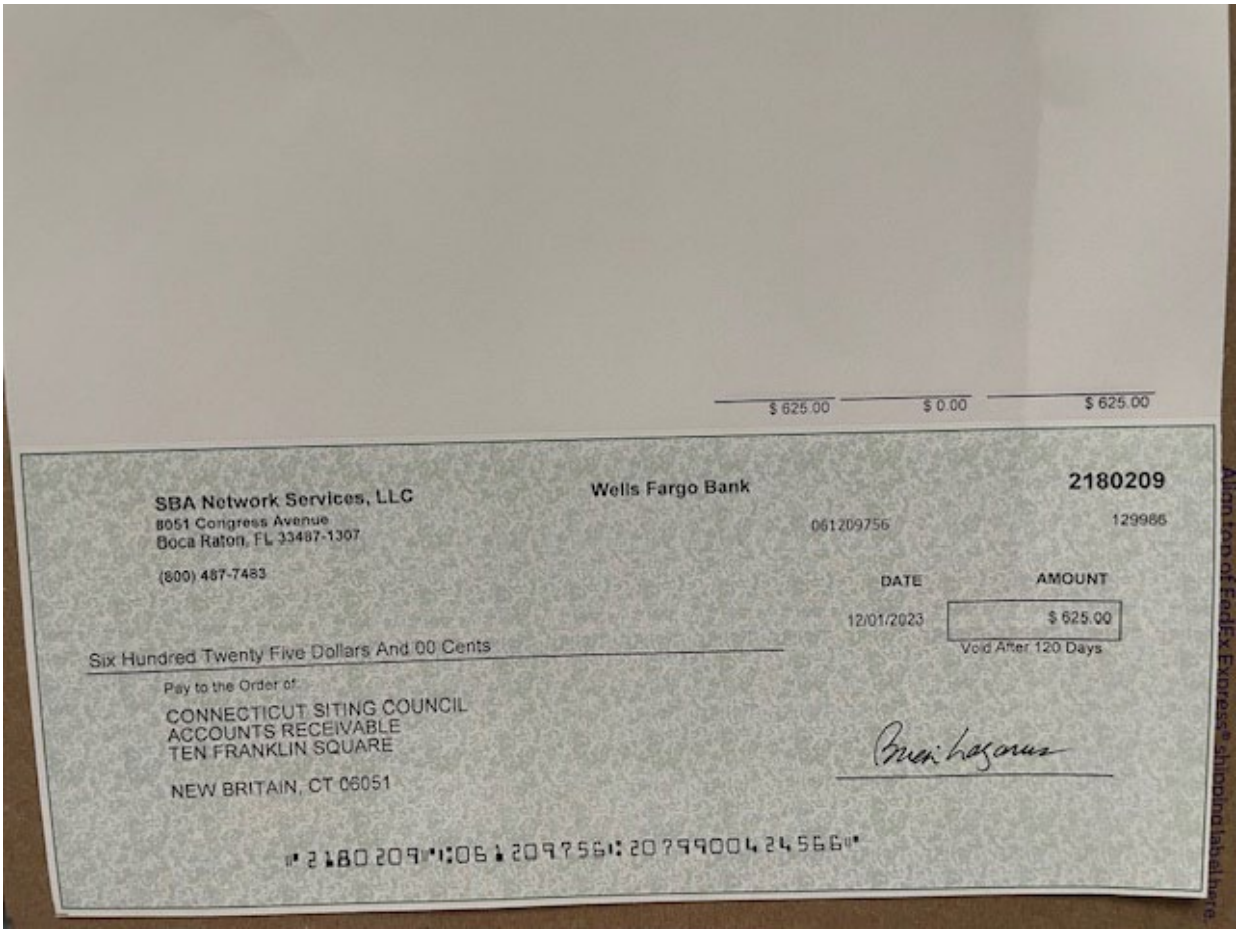
EXHIBIT LIST

Exhibit 1	Copy of Check	X
Exhibit 2	Notification Receipts	x
Exhibit 3	Property Card	x
Exhibit 4	Property Map	x
Exhibit 5	Original Zoning Approval	4/26/1999
Exhibit 6	Construction Drawings	Kimley Horn 1/11/2024
Exhibit 7	Structural Analysis	TES Engineering 9/04/2023
Exhibit 8	Mount Analysis	Kimley Horn 10/04/2023
Exhibit 9	EME	Fox Hill Telecom – 12/04/2023

EXHIBIT 1

Copy of Check for filing fee.

From: Catherine Ware
To: Catherine Ware
Subject: [External] CSC zoning filing fee
Date: Thursday, December 7, 2023 2:22:19 PM



$ 625.00 $ 0.00 $ 625.00

SBA Network Services, LLC
8051 Congress Avenue
Boca Raton, FL 33487-1307
(800) 487-7483

Wells Fargo Bank
061209756

2180209
129986

DATE 12/01/2023
AMOUNT $ 625.00
Void After 120 Days

Six Hundred Twenty Five Dollars And 00 Cents

Pay to the Order of
CONNECTICUT SITING COUNCIL
ACCOUNTS RECEIVABLE
TEN FRANKLIN SQUARE

NEW BRITAIN, CT 06051

⑈2180209⑈ ⑆061209756⑆ 20799004245660⑈

Sent from my iPhone

EXHIBIT 2

FedEx Labels

Address: 1 OAK ST
WESTBOROUGH
MA 01581
Location: AYEK
Device ID: -BTC01

FedEx Express Package(s) - Dropped Off
Tracking Number:
775198941953

FedEx Express Package(s) - Dropped Off
Tracking Number:
775198991671

FedEx Express Package(s) - Dropped Off
Tracking Number:
775199049901

Total Pieces: 3

Subject to terms and conditions, including terms that limit FedEx's liability. The estimated shipping charge may be different than the actual charges for your shipment. Differences may occur based on actual weight, dimensions and other factors. Shipment-related terms and conditions and details on how shipping charges are calculated are available upon request or at fedex.com/serviceguide.

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Or call 1.800.GoFedEx
1.800.463.3339

Feb 15, 2024 4:31:55 PM

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Tell us how we're doing
& receive a discount on your next order!
fedex.com/welisten
Redemption Code: _____

*** Thank you ***

ORIGIN ID:BBFA (917) 868-8365
CATHERINE WARE
SBA COMMUNICATIONS CORPORATION
134 FLANDERS ROAD
SUITE 125
WESTBOROUGH, MA 01581
UNITED STATES US

SHIP DATE: 15FEB24
ACTWGT: 2.00 LB
CAD: 255382542/INET4535

BILL SENDER

TO **MELANIE BACHMAN**
CONNECTICUT SITING COUNCIL
TEN FRANKLIN SQUARE

NEW BRITAIN CT 06051
(860) 827-2935 REF: 10-56-92009-6089
INV:
PO: DEPT:

583J6/194B/9AE3

FedEx Express

E

J241024011001uv

MON - 19 FEB 5:00P
**** 2DAY ****

TRK# 0201 **7751 9886 0268**

06051

4Z SWNDG

CT-US BDL

After printing this label:
CONSIGNEE COPY - PLEASE PLACE IN FRONT OF POUCH
1. Fold the printed page along the horizontal line.
2. Place label in shipping pouch and affix it to your shipment.

ORIGIN ID:BBFA (917) 868-8365
CATHERINE WARE
SBA COMMUNICATIONS CORPORATION
134 FLANDERS ROAD
SUITE 125
WESTBOROUGH, MA 01581
UNITED STATES US

SHIP DATE: 15FEB24
ACTWGT: 2.00 LB
CAD: 255382542/INET4535

BILL SENDER

TO **ROB BRULE - FIRST SELECTMAN**
TOWN OF WATERFORD
15 ROPE FERRY ROAD

WATERFORD CT 06385
(860) 444-5834
INV:
PO:
REF: 10-56-92009-6089
DEPT:

583b/194B/9AE3

FedEx Express

J2410240110010uv

MON - 19 FEB 5:00P
**** 2DAY ****

TRK# 0201 **7751 9894 1953**

4Z PROVG

06385
CT-US PVD

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

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CATHERINE WARE
SBA COMMUNICATIONS CORPORATION
134 FLANDERS ROAD
SUITE 125
WESTBOROUGH, MA 01581
UNITED STATES US

SHIP DATE: 15FEB24
ACTWGT: 2.00 LB
CAD: 255382542/INET4535

BILL SENDER

TO **JONATHAN MULLEN - PLANNING DIRECTOR**
TOWN OF WATERFORD
15 ROPE FERRY ROAD

WATERFORD CT 06385
(860) 444-5834
INV:
PO:
REF: 10-56-92009-6089
DEPT:

583b/194B/9AE3

FedEx Express

2410240110010uv

MON - 19 FEB 5:00P
**** 2DAY ****

TRK# 0201 **7751 9899 1671**

4Z PROVG

06385
CT-US PVD

After printing this label:
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ORIGIN ID:BBFA (917) 868-8365
CATHERINE WARE
SBA COMMUNICATIONS CORPORATION
134 FLANDERS ROAD
SUITE 125
WESTBOROUGH, MA 01581
UNITED STATES US

SHIP DATE: 15FEB24
ACTWGT: 2.00 LB
CAD: 255382542/INET4535

BILL SENDER

TO **RUDOLPH T. CHIEKA**
199 NIANTIC RIVER ROAD

WATERFORD CT 06385
(860) 442-0826 REF: 10-56-92009-6089
INV:
PO: DEPT:

583J6/194B/9AE3

FedEx Express

E

J241024011001uv

MON - 19 FEB 5:00P
**** 2DAY ****

TRK# 0201 **7751 9904 9901**

06385
CT-US PVD

4Z PROVG

After printing this label:
CONSIGNEE COPY - PLEASE PLACE IN FRONT OF POUCH
1. Fold the printed page along the horizontal line.
2. Place label in shipping pouch and affix it to your shipment.

EXHIBIT 3

Property Card

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

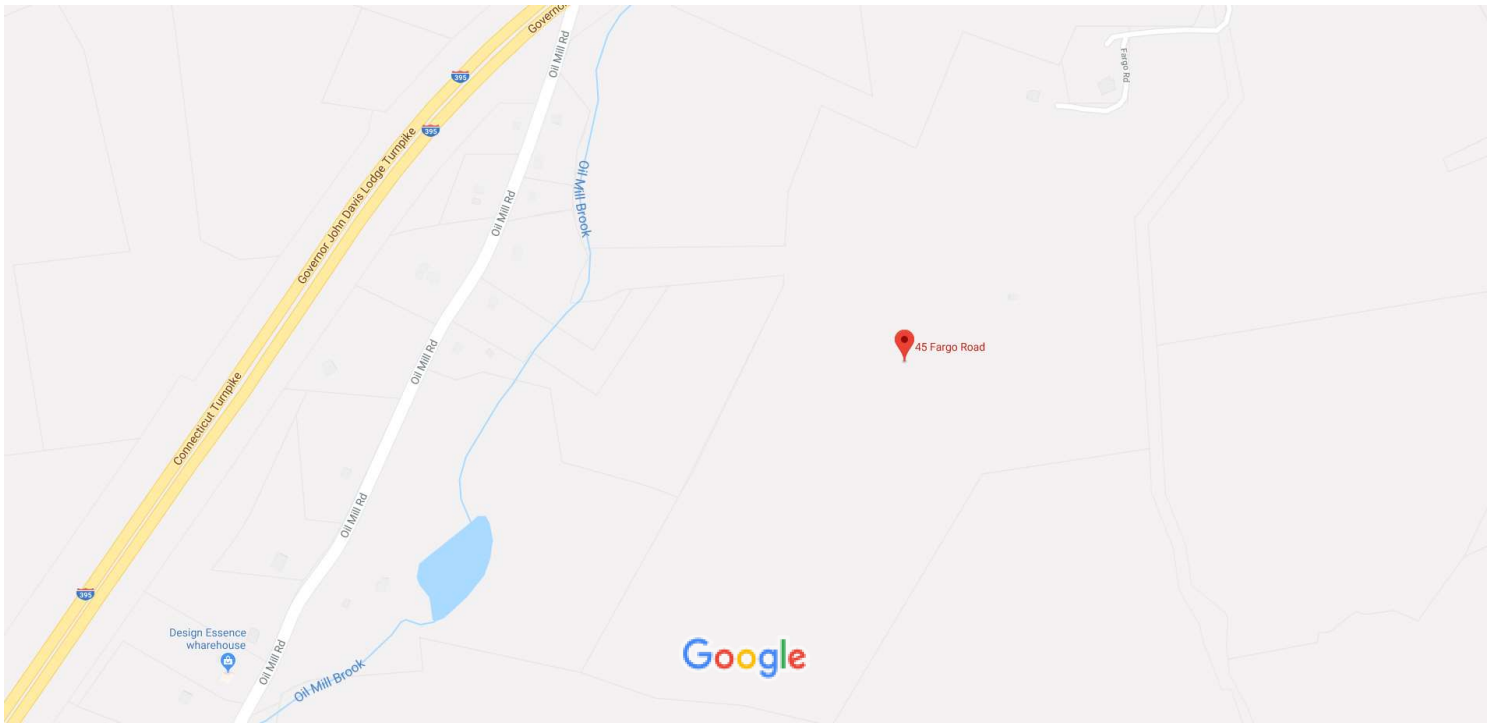
Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$3,600	$637,230	$640,830
4000	$3,600	$637,230	$640,830

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

EXHIBIT 4

Property Map

Google Maps 45 Fargo Rd



Map data ©2019 Google 200 ft

45 Fargo Rd

Waterford, CT 06385

Directions Save Nearby Send to your phone Share

9RPG+JP Waterford, CT

EXHIBIT 5

Zoning Documents

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

EXHIBIT 6

Construction Drawings

DISH Wireless L.L.C. SITE ID:

BOBOS01205A

DISH Wireless L.L.C. SITE ADDRESS:

45 FARGO ROAD
WATERFORD, CT 06385

SBA APPROVED

By Stephen Roth at 5:49:28 AM, 1/18/2024

SCOPE OF WORK

THIS IS NOT AN ALL INCLUSIVE LIST. CONTRACTOR SHALL UTILIZE SPECIFIED EQUIPMENT PART OR ENGINEER APPROVED EQUIVALENT. CONTRACTOR SHALL VERIFY ALL NEEDED EQUIPMENT TO PROVIDE A FUNCTIONAL SITE. THE PROJECT GENERALLY CONSISTS OF THE FOLLOWING:

TOWER SCOPE OF WORK:
- INSTALL (3) PROPOSED PANEL ANTENNAS (1 PER SECTOR)
- INSTALL (1) PROPOSED ANTENNA PLATFORM
- INSTALL PROPOSED JUMPERS
- INSTALL (6) PROPOSED RRUs (2 PER SECTOR)
- INSTALL (1) PROPOSED OVER VOLTAGE PROTECTION DEVICE (OVP)
- INSTALL (1) PROPOSED HYBRID CABLE

GROUND SCOPE OF WORK:
- REMOVE EXISTING ICE BRIDGE
- INSTALL (1) PROPOSED METAL PLATFORM
- INSTALL (1) PROPOSED ICE BRIDGE
- INSTALL (1) PROPOSED PPC CABINET
- INSTALL (1) PROPOSED EQUIPMENT CABINET
- INSTALL (1) PROPOSED POWER CONDUIT
- INSTALL (1) PROPOSED TELCO CONDUIT
- INSTALL (1) PROPOSED TELCO-FIBER BOX
- INSTALL (1) PROPOSED GPS UNIT
- INSTALL (1) PROPOSED FIBER NID (IF REQUIRED)

SITE INFORMATION

PROPERTY OWNER:	ANGIOLETTO LLC
ADDRESS:	45 FARGO ROAD WATERFORD, CT 06385
TOWER TYPE:	MONOPOLE
SBA SITE ID:	CT01002-S
SBA APP NUMBER:	234515
COUNTY:	NEW LONDON
LATITUDE (NAD 83):	41° 23' 21.62" N 41.389339° N
LONGITUDE (NAD 83):	72° 10' 17.07" W 72.171408° W
ZONING JURISDICTION:	CITY OF WATERFORD
ZONING DISTRICT:	RURAL RESIDENTIAL
PARCEL NUMBER:	152-0201800
OCCUPANCY GROUP:	U
CONSTRUCTION TYPE:	II-B
POWER COMPANY:	NATIONAL GRID
FIBER PROVIDER:	TBD

PROJECT DIRECTORY

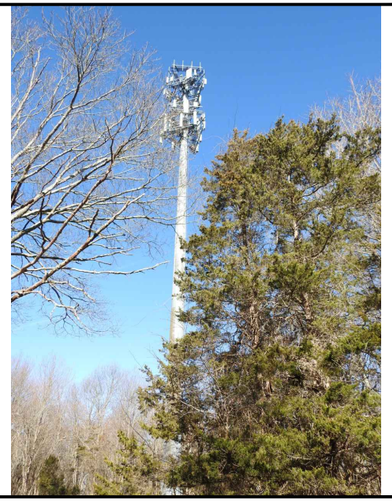
APPLICANT:	DISH Wireless L.L.C. 5701 SOUTH SANTA FE DRIVE LITTLETON, CO 80120 (303) 706-5008
TOWER OWNER:	SBA COMMUNICATIONS 470 DAVIDSON ROAD PITTSBURGH, PA 15239
SITE DESIGNER:	KIMLEY-HORN & ASSOCIATES COA: PEC.0000738 3875 EMBASSY PKWY, SUITE 280 AKRON, OH 44333 (216) 505-7771
SITE ACQUISITION:	JULIE CHAREST JULIE.CHAREST@DISH.COM
CONSTRUCTION MANAGER:	CHAD WILCOX CHAD.WILCOX@DISH.COM
RF ENGINEER:	IRENE RANGEL IRENE.RANGEL@DISH.COM

CONNECTICUT CODE OF COMPLIANCE

ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES

CODE TYPE	CODE
BUILDING	2022 CT STATE BUILDING CODE/2021 IBC W/ CT AMENDMENTS
MECHANICAL	2022 CT STATE BUILDING CODE/2021 IMC W/ CT AMENDMENTS
ELECTRICAL	2022 CT STATE BUILDING CODE/2020 NEC W/ CT AMENDMENTS

SITE PHOTO



DIRECTIONS

DIRECTIONS FROM BRADLEY INTERNATIONAL AIRPORT:
- CONTINUE ONTO BRADLEY INTERNATIONAL AIRPORT CON
- CONTINUE ONTO CT-20 E/BRADLEY INTERNATIONAL AIRPORT CON
- MERGE ONTO I-91 S TOWARD HARTFORD
- TAKE EXIT 30 TO MERGE ONTO I-84 E TOWARD CT-2/E. HARTFORD/NEW LONDON
- TAKE EXIT 55 FOR CT-2 E TOWARD NORWICH/NEW LONDON/I-84 E
- CONTINUE ONTO CT-2 E
- CONTINUE ON CT-11 S, FOLLOW SIGNS FOR NEW LONDON
- CONTINUE ONTO EXIT 4 (SIGNS FOR CT-82/SALEM/HADLYME)
- TURN LEFT ONTO CT-82 E
- AT THE TRAFFIC CIRCLE, TAKE THE 1ST EXIT ONTO CT-85 S
- TURN RIGHT ONTO FARGO RD
- TURN LEFT TO STAY ON FARGO RD
- TURN RIGHT TO STAY ON FARGO RD
- TURN LEFT TO STAY ON FARGO RD

SHEET INDEX

SHEET NO.	SHEET TITLE
T-1	TITLE SHEET
LS1	SITE SURVEY
A-1	OVERALL AND ENLARGED SITE PLAN
A-2	ELEVATION, ANTENNA LAYOUT AND SCHEDULE
A-3	EQUIPMENT PLATFORM AND H-FRAME DETAILS
A-4	EQUIPMENT DETAILS
A-5	EQUIPMENT DETAILS
A-6	EQUIPMENT DETAILS
E-1	ELECTRICAL/FIBER ROUTE PLAN AND NOTES
E-2	ELECTRICAL DETAILS
E-3	ELECTRICAL ONE-LINE, FAULT CALCS & PANEL SCHEDULE
E-4	PPC NEUTRAL-TO-GROUND SCHEMATIC
G-1	GROUNDING PLANS AND NOTES
G-2	GROUNDING DETAILS
G-3	GROUNDING DETAILS
G-4	GROUNDING DETAILS
RF-1	RF CABLE COLOR CODE
GN-1	LEGEND AND ABBREVIATIONS
GN-2	RF SIGNAGE
GN-3	GENERAL NOTES
GN-4	GENERAL NOTES
GN-5	GENERAL NOTES

UNDERGROUND SERVICE ALERT CBYD 811
UTILITY NOTIFICATION CENTER OF CONNECTICUT
(800) 922-4455
WWW.CBYD.COM
CALL 2 WORKING DAYS UTILITY NOTIFICATION PRIOR TO CONSTRUCTION

811

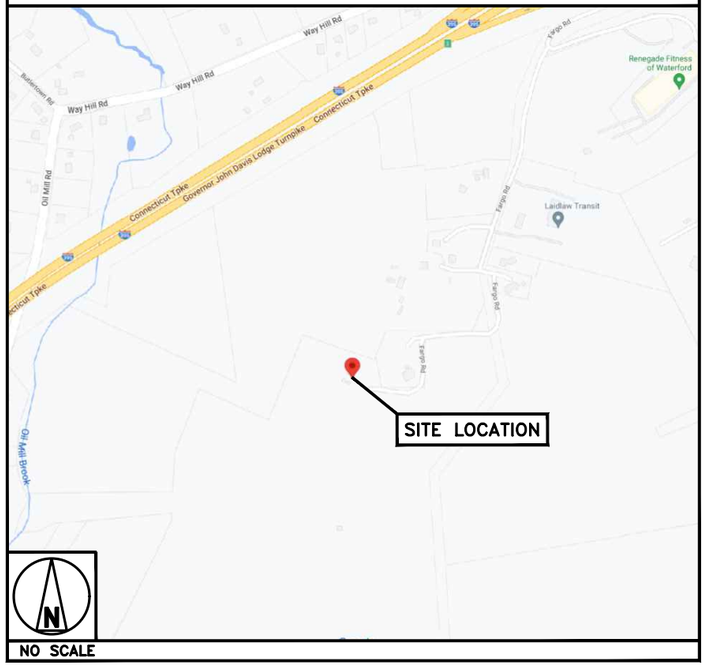
GENERAL NOTES

THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. A TECHNICIAN WILL VISIT THE SITE AS REQUIRED FOR ROUTINE MAINTENANCE. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT DISTURBANCE OR EFFECT ON DRAINAGE. NO SANITARY SEWER SERVICE, POTABLE WATER, OR TRASH DISPOSAL IS REQUIRED AND NO COMMERCIAL SIGNAGE IS PROPOSED.

11"x17" PLOT WILL BE HALF SCALE UNLESS OTHERWISE NOTED

CONTRACTOR SHALL VERIFY ALL PLANS, EXISTING DIMENSIONS, AND CONDITIONS ON THE JOB SITE, AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK.

VICINITY MAP



N

NO SCALE

dish wireless.

5701 SOUTH SANTA FE DRIVE
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RALEIGH, NC 27601

SBA

470 DAVIDSON ROAD
PITTSBURGH, PA 15239
TEL: (740) 260-9710

STATE OF CONNECTICUT
WILLIAM C. EDMONSON
36630
LICENSED PROFESSIONAL ENGINEER
1-10-24

DRAWN BY:	CHECKED BY:	APPROVED BY:
LMS	MCK	KJC

APPLICATION REV #: 2

CONSTRUCTION DOCUMENTS

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1	01/11/2024	REVISED PER COMMENTS

A&E PROJECT NUMBER

KHCLE- 48511

DISH Wireless L.L.C.
PROJECT INFORMATION

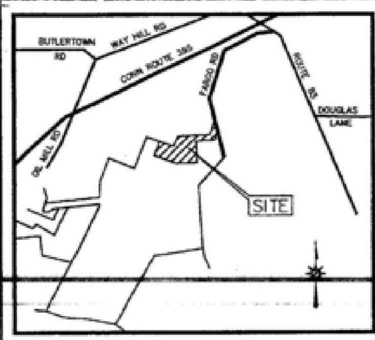
BOBOS01205A
45 FARGO ROAD
WATERFORD, CT 06385

SHEET TITLE

TITLE SHEET

SHEET NUMBER

T-1



LOCATION MAP
NOT TO SCALE

SITE DATA

LOCATION: 45 FARGO ROAD WATERFORD, CONNECTICUT	
TOWER TYPE: EXISTING MONOPOLE TOWER	
ITEM	EXISTING
NORTH (NAD 27)	703117.354
EAST (NAD 27)	1158764.223
LATITUDE (NAD 83)	42°-44'-40.0''
LONGITUDE (NAD 83)	070°-40'-10.96''
GROUND ELEVATION (NGVD 29)	296.5 FEET
TOWER HEIGHT ABOVE GROUND	184 FEET
ANTENNA RAD CENTER ABOVE GROUND	184 FEET

BULK AREA REQUIREMENTS

ZONE: RU-120	
ITEM	REQUIRED
MINIMUM LOT AREA	120,000 SQ. FT.
MINIMUM FRONT SETBACK	30'
MINIMUM SIDE SETBACK	30'
MINIMUM REAR SETBACK	75'
MIN. BUILDING SQUARE	50' X 50'
MIN. FRONTAGE	150'

GENERAL NOTES

1. A) THIS MAP HAS BEEN PREPARED IN ACCORDANCE WITH THE REGULATIONS OF CONNECTICUT STATE AGENCIES, SECTIONS 20-300b-1 THROUGH 20-300b-20 AND THE "STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. ON SEPTEMBER 26, 1996.

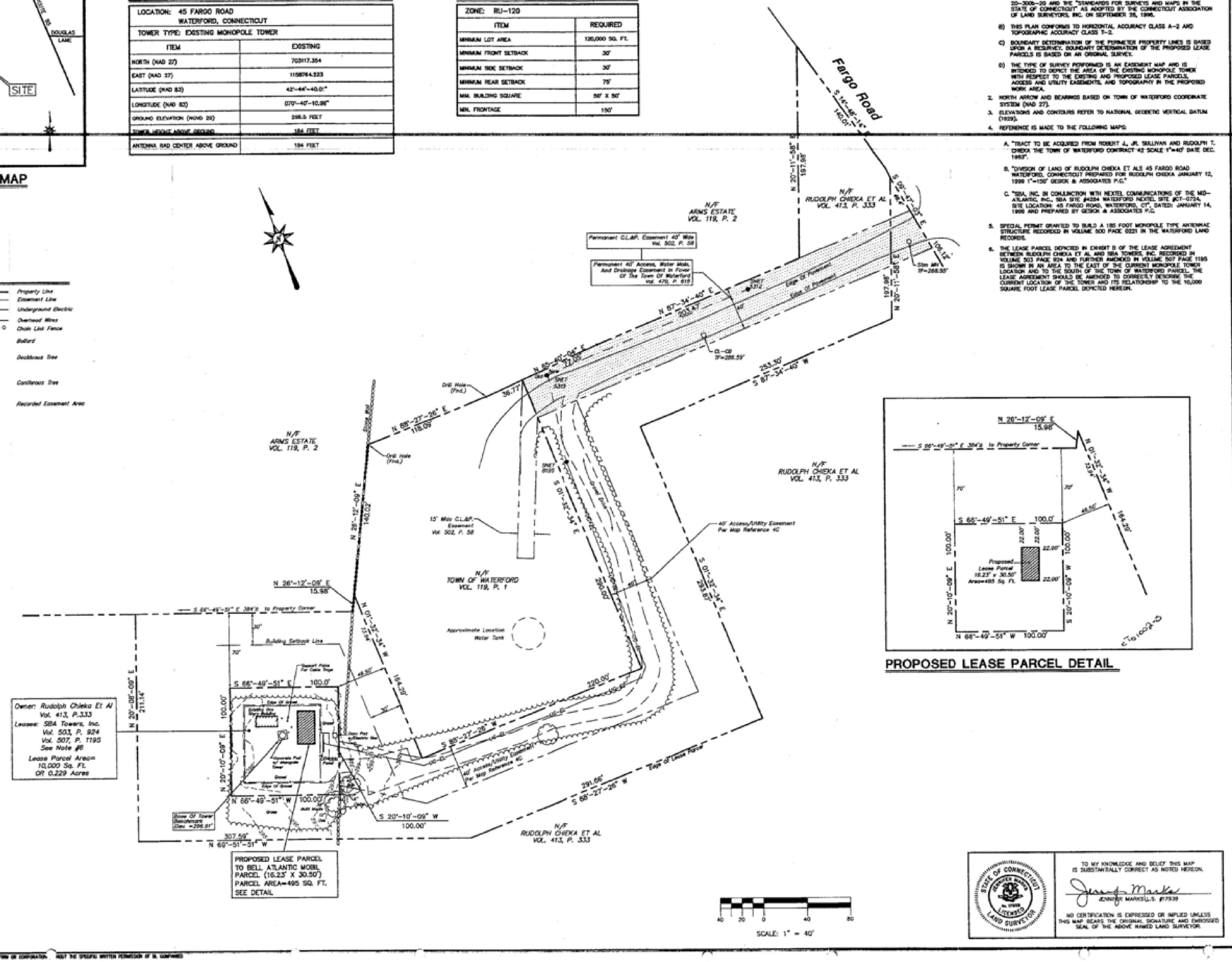
   B) THIS PLAN CONFORMS TO HORIZONTAL ACCURACY CLASS A-2 AND TOPOGRAPHIC ACCURACY CLASS T-2.

   C) BOUNDARY DETERMINATION OF THE PERIMETER PROPERTY LINES IS BASED UPON A RESURVEY. BOUNDARY DETERMINATION OF THE PROPOSED LEASE PARCELS IS BASED ON AN ORIGINAL SURVEY.

   D) THE TYPE OF SURVEY PERFORMED IS AN EASEMENT MAP AND IS INTENDED TO DEPICT THE AREA OF THE EXISTING MONOPOLE TOWER WITH RESPECT TO THE EXISTING AND PROPOSED LEASE PARCELS, ACCESS AND UTILITY EASEMENTS, AND TOPOGRAPHY IN THE PROPOSED WORK AREA.
2. NORTH ARROW AND BEARINGS BASED ON TOWN OF WATERFORD COORDINATE SYSTEM (NAD 27).
3. ELEVATIONS AND CONTOURS REFER TO NATIONAL GEODETIC VERTICAL DATUM (1929).
4. REFERENCE IS MADE TO THE FOLLOWING MAPS:
   A. "TRACT TO BE ACQUIRED FROM ROBERT J., JR. SULLIVAN AND RUDOLPH T. CHIEKA THE TOWN OF WATERFORD CONTRACT 42 SCALE 1"=40' DATE DEC. 1983".
   B. "DIVISION OF LAND OF RUDOLPH CHIEKA ET ALS 45 FARGO ROAD WATERFORD, CONNECTICUT PREPARED FOR RUDOLPH CHIEKA JANUARY 12, 1999 1"=150' GESICK & ASSOCIATES P.C."
   C. "SBA, INC. IN CONJUNCTION WITH NEXTEL COMMUNICATIONS OF THE MID-ATLANTIC, INC., SBA SITE #4284 WATERFORD NEXTEL SITE #CT-0724, SITE LOCATION: 45 FARGO ROAD, WATERFORD, CT", DATED: JANUARY 14, 1999 AND PREPARED BY GESICK & ASSOCIATES P.C.
5. SPECIAL PERMIT GRANTED TO BUILD A 185 FOOT MONOPOLE TYPE ANTENNAE STRUCTURE RECORDED IN VOLUME 500 PAGE 0221 IN THE WATERFORD LAND RECORDS.
6. THE LEASE PARCEL DEPICTED IN EXHIBIT B OF THE LEASE AGREEMENT BETWEEN RUDOLPH CHIEKA ET AL AND SBA TOWERS, INC. RECORDED IN VOLUME 503 PAGE 924 AND FURTHER AMENDED IN VOLUME 507 PAGE 1195 IS SHOWN IN AN AREA TO THE EAST OF THE CURRENT MONOPOLE TOWER LOCATION AND TO THE SOUTH OF THE TOWN OF WATERFORD PARCEL. THE LEASE AGREEMENT SHOULD BE AMENDED TO CORRECTLY DESCRIBE THE CURRENT LOCATION OF THE TOWER AND ITS RELATIONSHIP TO THE 10,000 SQUARE FOOT LEASE PARCEL DEPICTED HEREON.

LEGEND

Property Line
Easement Line
Underground Electric
Overhead Wires
Chain Link Fence
Bollard
Deciduous Tree
Coniferous Tree
Recorded Easement Area



EASEMENT MAP - LEASE PARCEL
PREPARED FOR BELL ATLANTIC MOBILE
45 FARGO ROAD
WATERFORD, CONNECTICUT

BL Companies

TO MY KNOWLEDGE AND BELIEF THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.
JENNIFER MARKS L.S. #17939
NO CERTIFICATION IS EXPRESSED OR IMPLIED UNLESS THIS MAP BEARS THE ORIGINAL SIGNATURE AND EMBOSSED SEAL OF THE ABOVE NAMED LAND SURVEYOR.

EX-1

SITE SURVEY

NO SCALE | 1

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FOR REFERENCE PURPOSES ONLY

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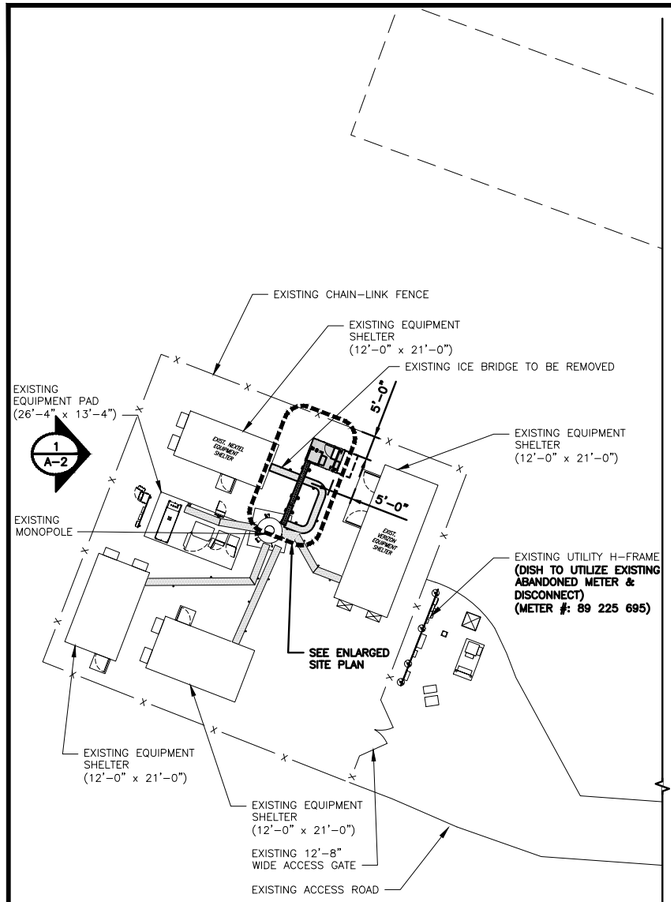
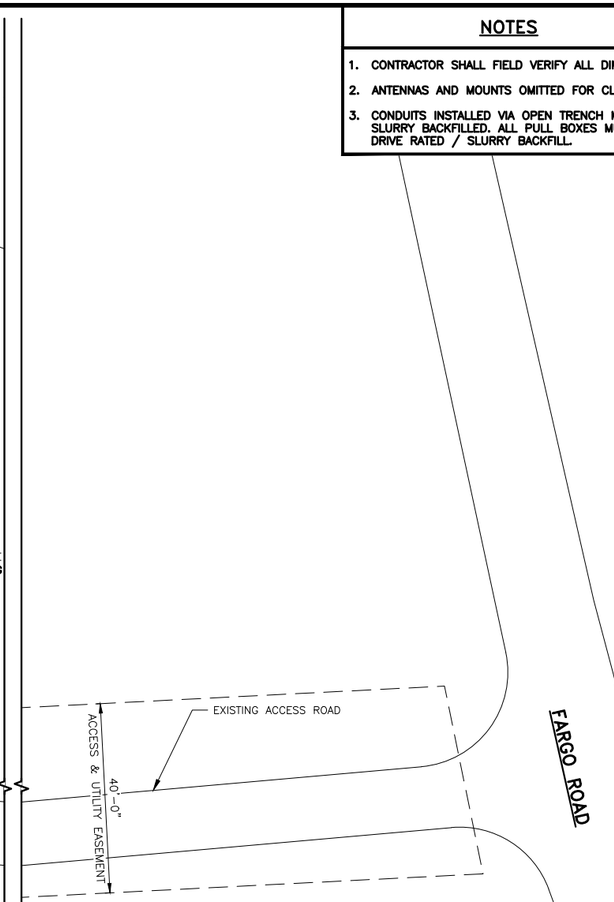
BOBOS01205A
45 FARGO ROAD
WATERFORD, CT 06385

SHEET TITLE
SITE SURVEY

SHEET NUMBER
LS-1





NOTES

1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.
3. CONDUITS INSTALLED VIA OPEN TRENCH MUST BE SLURRY BACKFILLED. ALL PULL BOXES MUST BE DRIVE RATED / SLURRY BACKFILL.

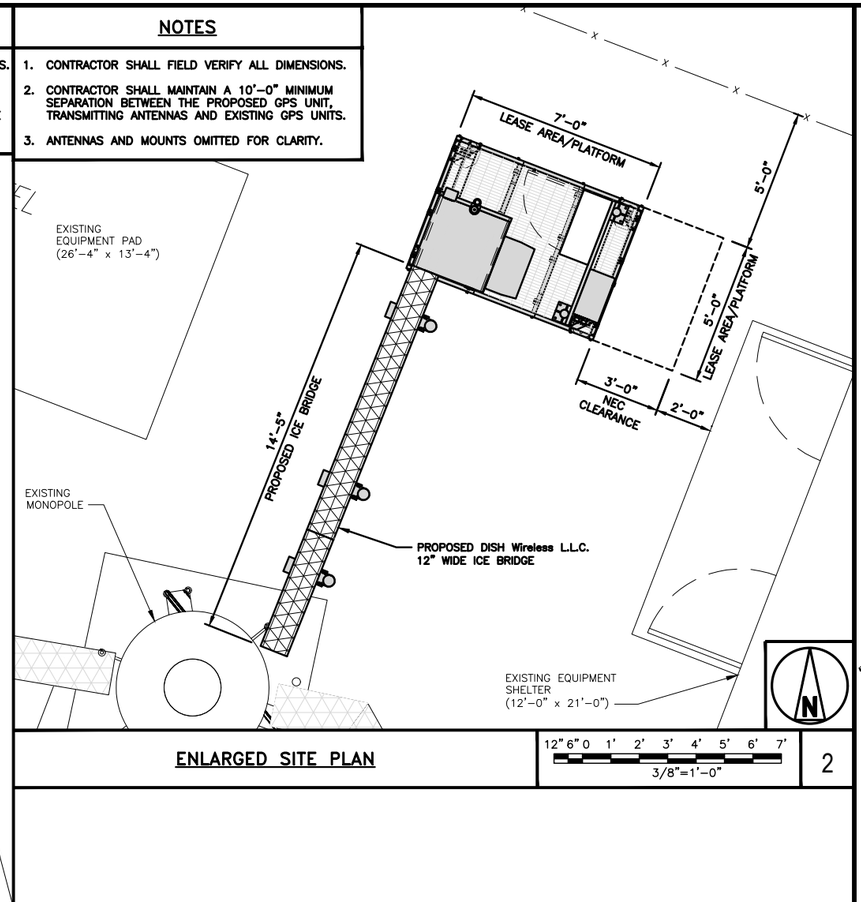
OVERALL SITE PLAN

16' 12' 8' 4' 0 16' 32'
1/16"=1'-0"

1

NOTES

1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. CONTRACTOR SHALL MAINTAIN A 10'-0" MINIMUM SEPARATION BETWEEN THE PROPOSED GPS UNIT, TRANSMITTING ANTENNAS AND EXISTING GPS UNITS.
3. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.



ENLARGED SITE PLAN

12" 6" 0 1' 2' 3' 4' 5' 6' 7"
3/8"=1'-0"

2

NOT USED

3

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BOBOS01205A
45 FARGO ROAD
WATERFORD, CT 06385

SHEET TITLE

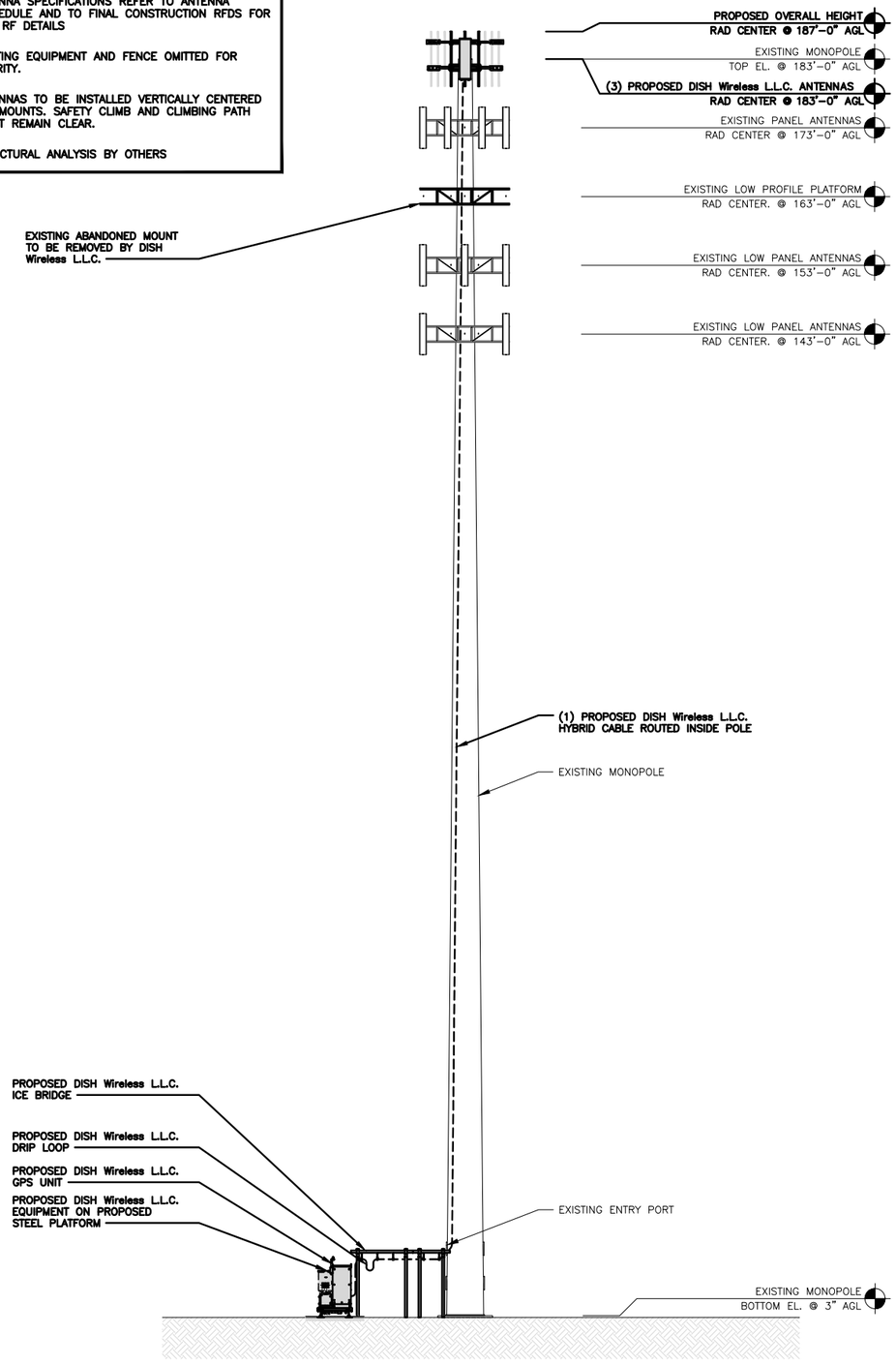
OVERALL AND ENLARGED SITE PLAN

SHEET NUMBER

A-1

NOTES

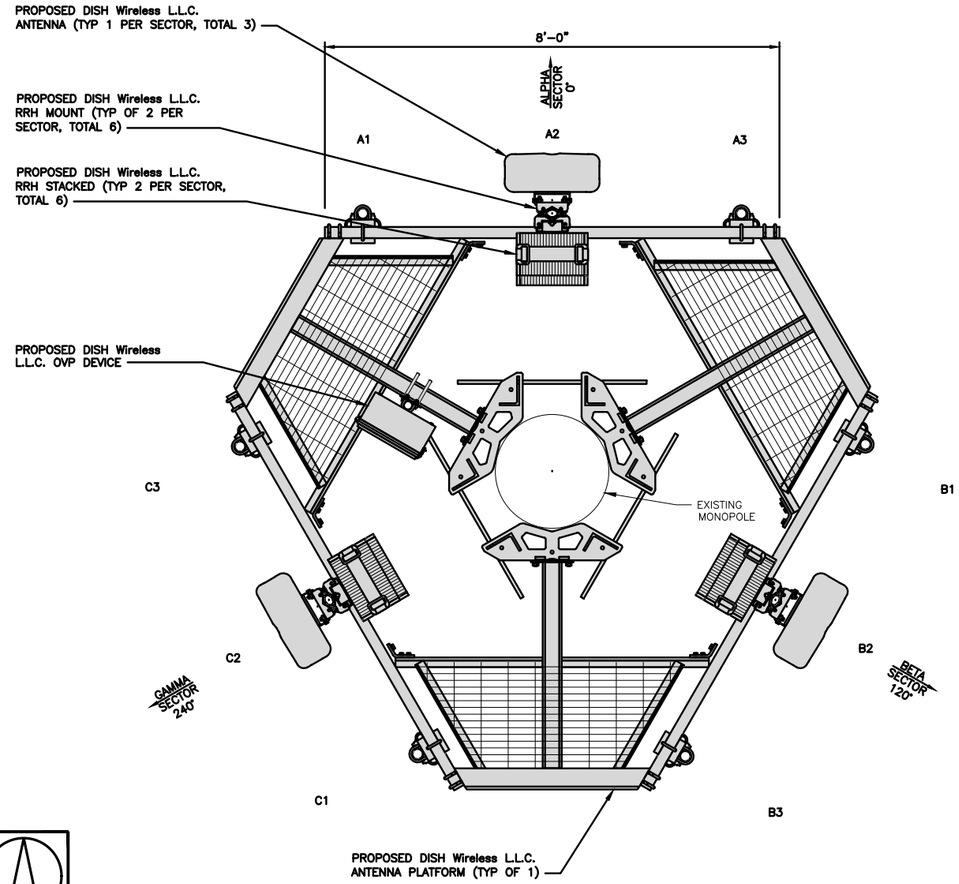
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNA SPECIFICATIONS REFER TO ANTENNA SCHEDULE AND TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS
3. EXISTING EQUIPMENT AND FENCE OMITTED FOR CLARITY.
4. ANTENNAS TO BE INSTALLED VERTICALLY CENTERED ON MOUNTS. SAFETY CLIMB AND CLIMBING PATH MUST REMAIN CLEAR.
5. STRUCTURAL ANALYSIS BY OTHERS



PROPOSED WEST ELEVATION

12' 8' 4' 0 10' 20'
3/32"=1'-0"

1



ANTENNA LAYOUT

12" 6" 0 1' 2' 3'
3/4"=1'-0"

2

SECTOR POS.	ANTENNA					TRANSMISSION CABLE	RRH			OVP
	EXISTING OR PROPOSED	MANUFACTURER – MODEL NUMBER	TECH	AZIMUTH	RAD CENTER	FEED LINE TYPE AND LENGTH	MANUFACTURER – MODEL NUMBER	TECH	POS	MANUFACTURER MODEL
A–1	– –	– –	– –	– –	– –	(1) HIGH–CAPACITY HYBRID CABLE (240' LONG)	SAMSUNG – RF4405D–70A	5G	A2	RAYCAP RDIDC – 9181–PF–48
A–2	PROPOSED	COMMSCOPE – FFVV–65B–R2	5G	0°	183'–0"		SAMSUNG – RF4405T–71A	5G	A2	
A–3	– –	– –	– –	– –	– –		– –	– –	– –	
B–1	– –	– –	– –	– –	– –	SHARED W/ALPHA	SAMSUNG – RF4405D–70A	5G	B2	SHARED W/ALPHA
B–2	PROPOSED	COMMSCOPE – FFVV–65B–R2	5G	120°	183'–0"		SAMSUNG – RF4405T–71A	5G	B2	
B–3	– –	– –	– –	– –	– –		– –	– –	– –	
C–1	– –	– –	– –	– –	– –	SHARED W/ALPHA	SAMSUNG – RF4405D–70A	5G	C2	SHARED W/ALPHA
C–2	PROPOSED	COMMSCOPE – FFVV–65B–R2	5G	240°	183'–0"		SAMSUNG – RF4405T–71A	5G	C2	
C–3	– –	– –	– –	– –	– –		– –	– –	– –	

NOTES
1. CONTRACTOR TO REFER TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS.
2. ANTENNA AND RRH MODELS MAY CHANGE DUE TO EQUIPMENT AVAILABILITY. ALL EQUIPMENT CHANGES MUST BE APPROVED AND REMAIN IN COMPLIANCE WITH THE PROPOSED DESIGN AND STRUCTURAL ANALYSES.

ANTENNA SCHEDULE

NO SCALE

3

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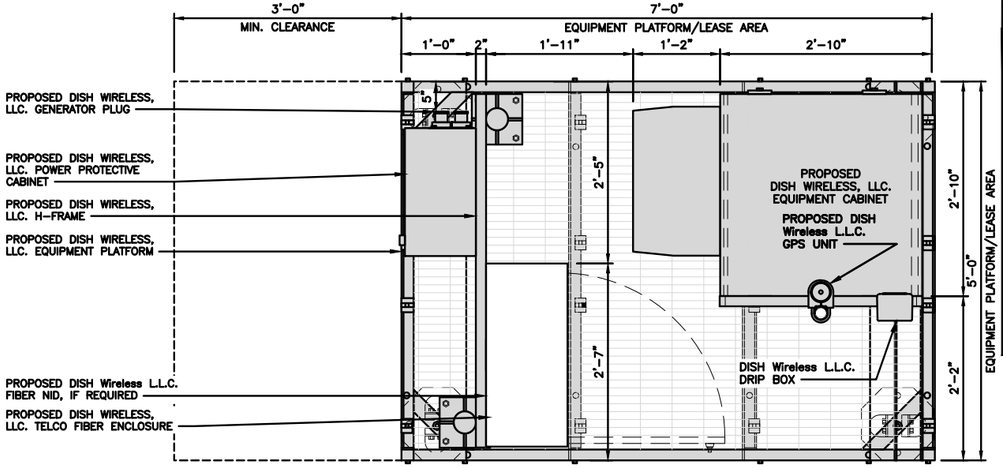
DISH Wireless L.L.C.
PROJECT INFORMATION
BOBOS01205A
45 FARGO ROAD
WATERFORD, CT 06385

SHEET TITLE
ELEVATION, ANTENNA LAYOUT AND SCHEDULE

SHEET NUMBER
A-2



PLATFORM EQUIPMENT PLAN

12" 9" 6" 3" 0 1' 2"
1"=1'-0"

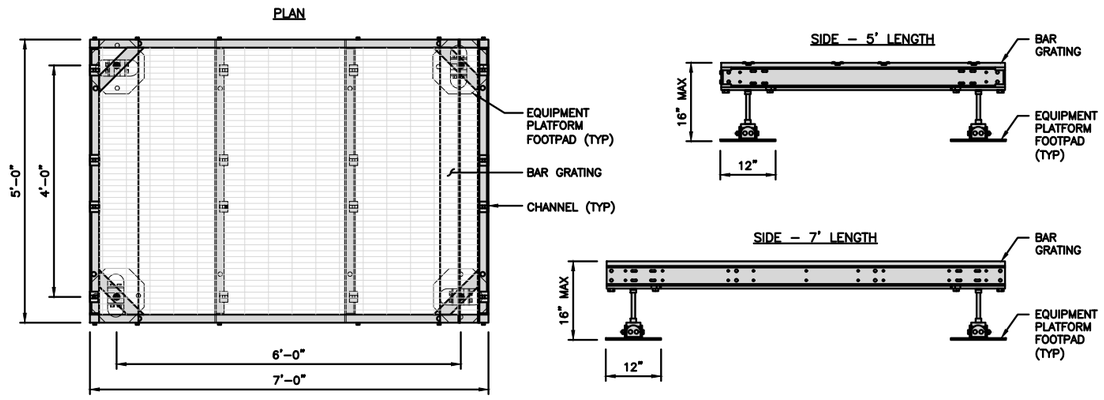
1

NOTES

1. INSTALL POSTS BASES TO GRATING JUST INSIDE PLATFORM FRAME. NO DRILLING REQUIRED.
2. GPS MAY BE MOVED TO ICE BRIDGE OR H-FRAME.
3. ALL CONDUIT TO BE ROUTED THROUGH PLATFORM GRATING USING LIQUIDTIGHT, EMT, RIGID OR PVC COUPLERS. CONDUIT QUANTITY AND SIZES ARE PER ONE-LINE DIAGRAM ON E-3 SHEET OF CDS. (DC PLANT DEPENDENT.)
4. CONTRACTOR MAY FIELD INSTALL CONDUIT HOLES IN BOTTOM OF PPC CABINET TO MATCH CONDUIT SIZES. (SEAL TO PPC MANUFACTURER SPECIFICATIONS).
5. H-FRAME POSTS ARE STAGGERED TO ALLOW FIBER NID BOXES TO BE INSTALLED CLOSE TO PERIMETER FRAME OF PLATFORM.
6. CONDUITS FROM PPC/FIBER DEMARK CABINETS TO EQUIPMENT CABINET (BBU) SHALL BE INSTALLED INSIDE PERIMETER OF PLATFORM AND UNDER GRATING.
7. KIMLEY-HORN DID NOT EVALUATE THE PLATFORM STRUCTURE TO SUPPORT THE PROPOSED EQUIPMENT CONFIGURATION. CONTRACTOR TO OBTAIN PASSING PLATFORM ANALYSIS REPORT PRIOR TO INSTALLING THE PROPOSED PLATFORM.

COMMSCOPE MTC4045LP 5X7 PLATFORM	
DIMENSIONS (HxWxD)	16"x84"x60"
TOTAL WEIGHT	423 LBS

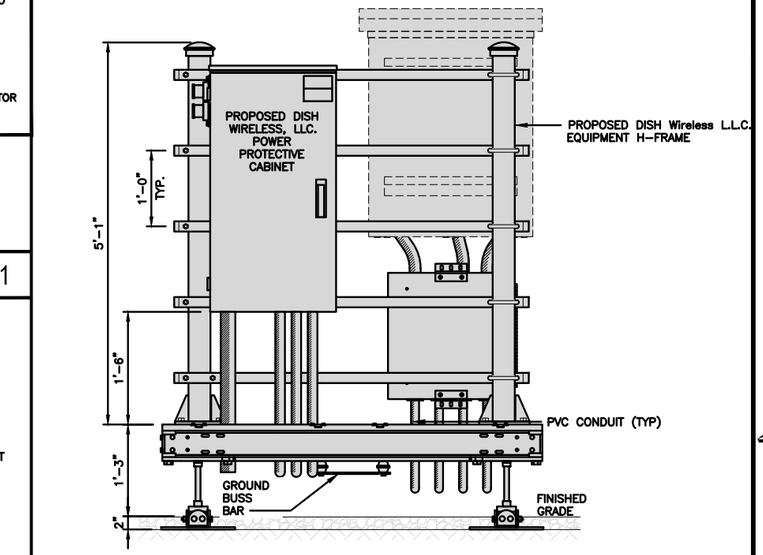
NOTE:
1. GC TO PROVIDE EXTENDED THREAD FOR PLATFORM IF REQUIRED HEIGHT EXCEEDS 16"
2. PLATFORM TO BE LEVEL WITHIN 1"



PLATFORM DETAIL

NO SCALE

2

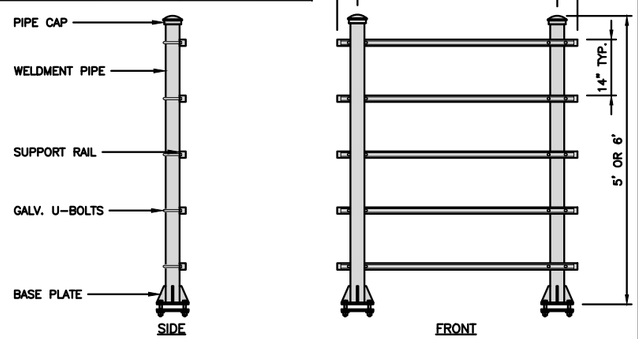


FRONT ELEVATION

NOTES

1. CONTRACTOR TO BURY PLATFORM FEET WITH A MINIMUM OF 2" OF FILL PER EXISTING SITE SURFACE
2. WEED BARRIER FABRIC TO BE ADDED AT DISCRETION OF DISH Wireless L.L.C. CONSTRUCTION MANAGER AT TIME OF CONSTRUCTION. ONE SHEET 8'x8' INSTALLED UNDER ALL FOUR FEET OF THE PLATFORM (4 MIL BLACK PLASTIC)
3. EQUIPMENT CABINET OMITTED FOR CLARITY
4. NOTE FOR FIELD CREW: CONSULT WITH DISH CM FOR H-FRAME POST AND UNITSTRUT PLACEMENTS

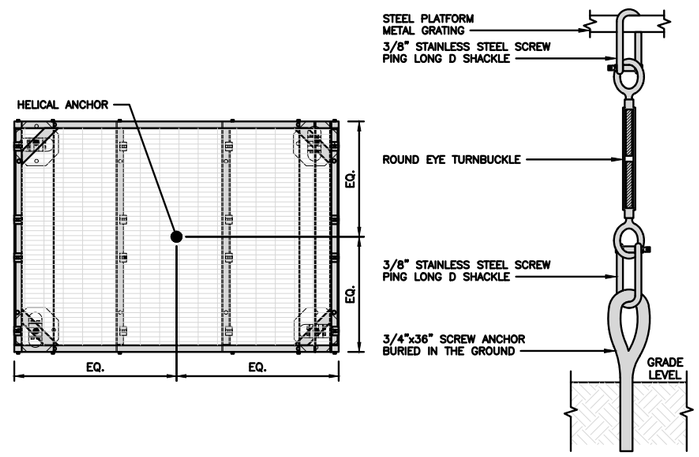
COMMSCOPE MTC4045HFLD H-FRAME	
UNISTRUT/SUPPORT RAILS QTY	5
WEIGHT	59.74 lbs



H-FRAME DETAIL

NO SCALE

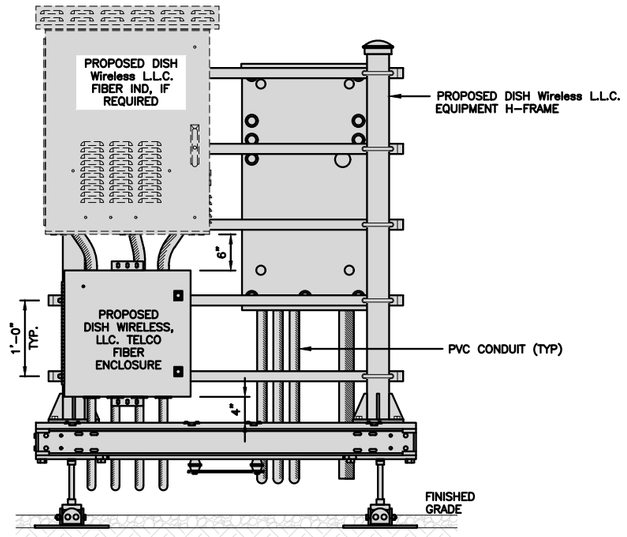
3



PLATFORM ANCHORAGE DETAIL

NO SCALE

4



BACK ELEVATION

H-FRAME EQUIPMENT ELEVATION

12" 9" 6" 3" 0 1' 2"
1"=1'-0"

5

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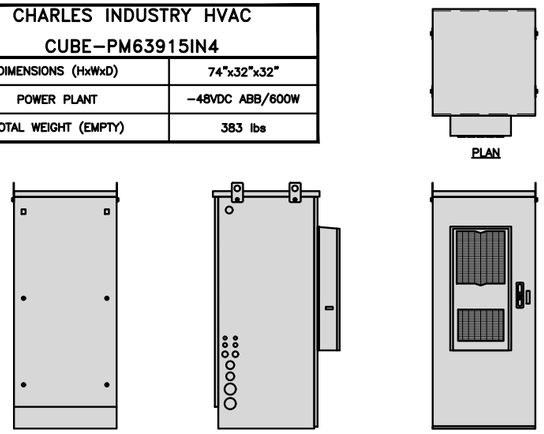
45 FARGO ROAD
WATERFORD, CT 06385

SHEET TITLE
EQUIPMENT PLATFORM AND H-FRAME DETAILS

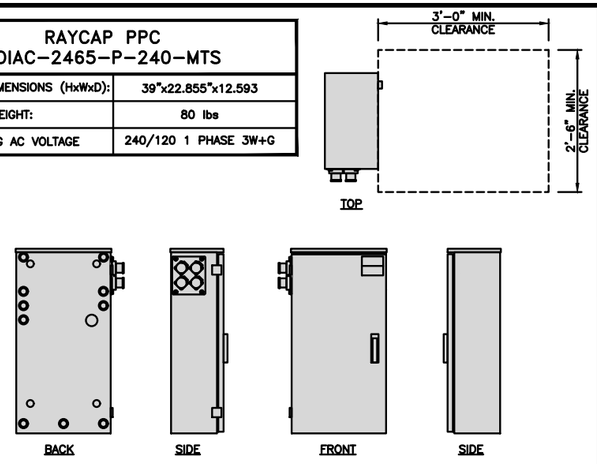
SHEET NUMBER
A-3

CHARLES INDUSTRY HVAC CUBE–PM63915IN4	
DIMENSIONS (HxWxD)	74"x32"x32"
POWER PLANT	–48VDC ABB/600W
TOTAL WEIGHT (EMPTY)	383 lbs



CABINET DETAIL | NO SCALE | 1

RAYCAP PPC RDIAC–2465–P–240–MTS	
ENCLOSURE DIMENSIONS (HxWxD):	39"x22.855"x12.593
WEIGHT:	80 lbs
OPERATING AC VOLTAGE	240/120 1 PHASE 3W+G



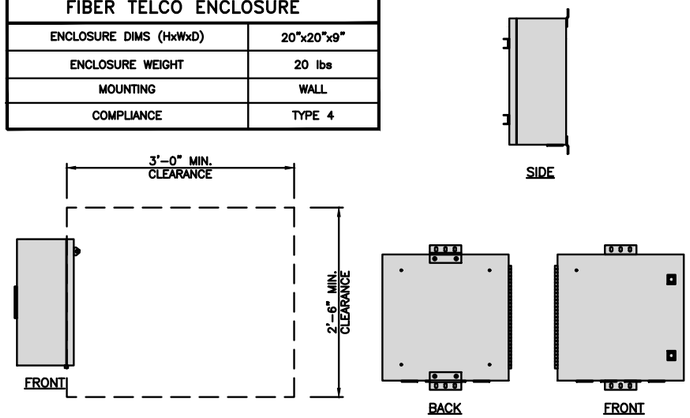
POWER PROTECTION CABINET (PPC) DETAIL | NO SCALE | 2

NOT USED | NO SCALE | 3

NOT USED | NO SCALE | 4

NOT USED | NO SCALE | 5

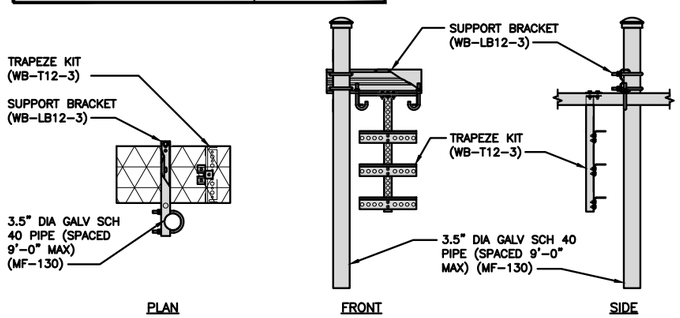
CHARLES CFIT–PF2020DSH1 FIBER TELCO ENCLOSURE	
ENCLOSURE DIMS (HxWxD)	20"x20"x9"
ENCLOSURE WEIGHT	20 lbs
MOUNTING	WALL
COMPLIANCE	TYPE 4



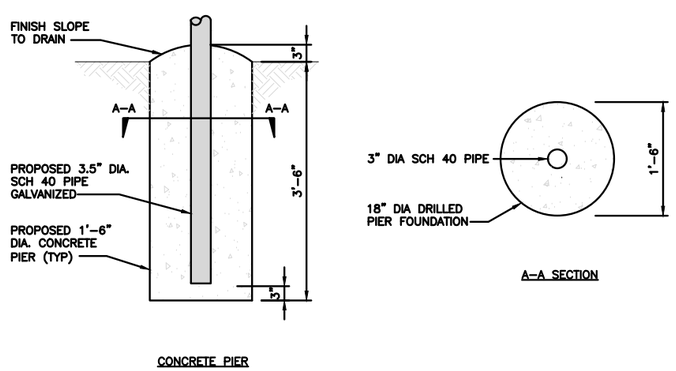
FIBER TELCO ENCLOSURE DETAIL | NO SCALE | 6

COMMSCOPE WB–K110–B WAVEGUIDE BRIDGE KIT	
DIMENSIONS (HxL)	160"x10'
WEIGHT/ VOLUME	325.0 LBS
CABLE RUN (QTY)	12

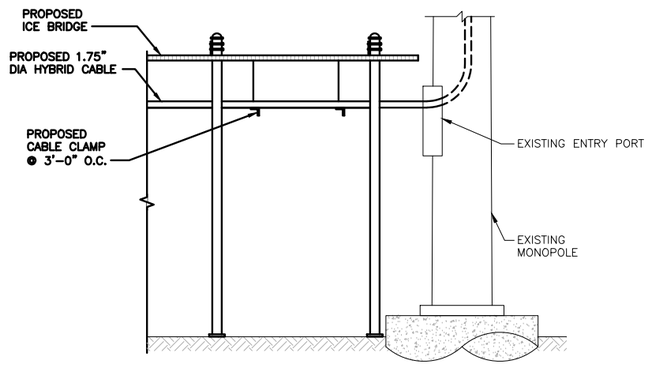
INCLUDED PRODUCTS:	WB–T12–3 TRAPEZE KIT, 3 RUNGS
	WB–LB12–3 SUPPORT BRACKET
	MF–130 DIRECT BURIAL PIPE COLUMN, 13'–4"



ICE BRIDGE DETAIL | NO SCALE | 7



TYPICAL ICE BRIDGE CONCRETE PIER DETAIL | NO SCALE | 8



HYBRID CABLE RUN | NO SCALE | 9

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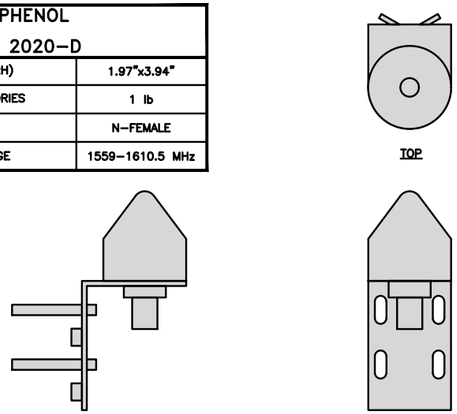
SHEET TITLE

EQUIPMENT DETAILS

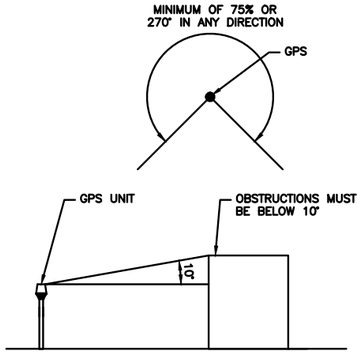
SHEET NUMBER

A-4

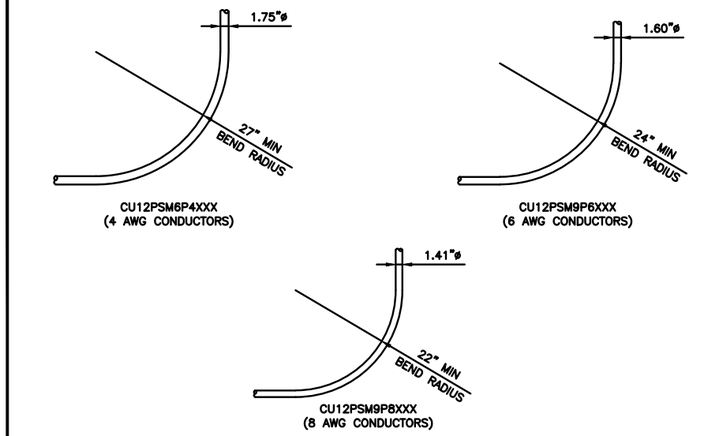
AMPHENOL GNS 2020-D	
DIMENSIONS (DIAxH)	1.97"x3.94"
WEIGHT W/ACCESSORIES	1 lb
CONNECTOR	N-FEMALE
FREQUENCY RANGE	1559-1610.5 MHz



GPS DETAIL — NO SCALE — 1



GPS MINIMUM SKY VIEW REQUIREMENTS — NO SCALE — 2

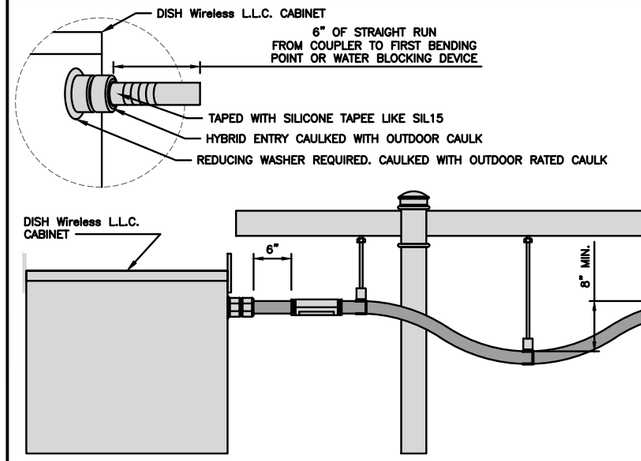


CABLES UNLIMITED HYBRID CABLE MINIMUM BEND RADIUSES — NO SCALE — 3

NOTE:

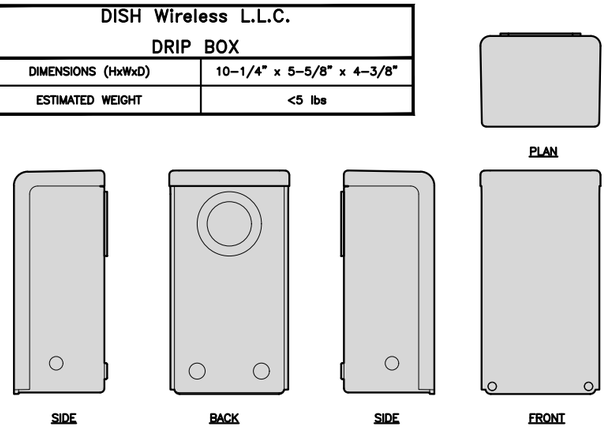
CONTRACTOR SHALL NOT LOOP EXCESS HYBRID OUTSIDE CABINET. EXCESS HYBRID LENGTH IS TO BE ADJUSTED BY STRIPPING JACKET AND SHIELDING AND TERMINATING DC CABLE TO LENGTH. FIBER EXCESS IS TO BE COILED IN FIBER SLACK TRAY INSIDE NETWORK CABINET.

HYBRID CABLE INSTALLATION NOTE — NO SCALE — 4

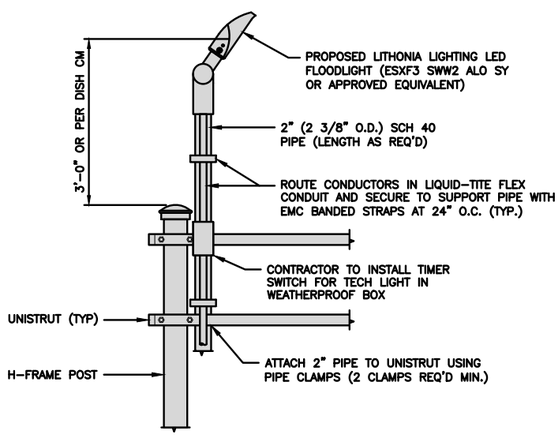


HYBRID CABLE INSTALLATION DETAIL — NO SCALE — 5

DISH Wireless L.L.C. DRIP BOX	
DIMENSIONS (HxWxD)	10-1/4" x 5-5/8" x 4-3/8"
ESTIMATED WEIGHT	<5 lbs



DISH Wireless L.L.C. DRIP BOX DETAIL — NO SCALE — 6



TECH LIGHT DETAIL — NO SCALE — 7

NOT USED — NO SCALE — 8

NOT USED — NO SCALE — 9

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STATE OF CONNECTICUT
WILLIAM C. EDMONSON
36630
LICENSED
PROFESSIONAL ENGINEER
10-24

DRAWN BY:	CHECKED BY:	APPROVED BY:
LMS	MCK	KJC

APPLICATION REV #: 2

CONSTRUCTION DOCUMENTS

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1	01/11/2024	REVISED PER COMMENTS

A&E PROJECT NUMBER

KHCLE- 48511

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS01205A
45 FARGO ROAD
WATERFORD, CT 06385

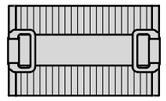
SHEET TITLE

EQUIPMENT DETAILS

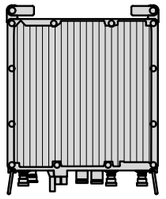
SHEET NUMBER

A-5

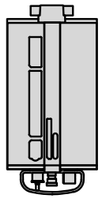
SAMSUNG – MID BAND RF4451D-70A / SFG-ARR3KM01DI	
DIMENSIONS (HxWxD)	15"x15"x8.9"
WEIGHT	61.3 lbs
CONNECTOR TYPE	4.3-10 RF CONNECTOR
INPUT VOLTAGE	-48VDC (-36 to 58 VDC)



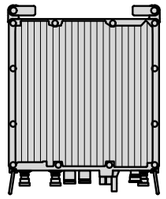
PLAN



BACK



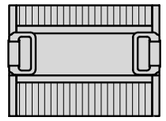
SIDE



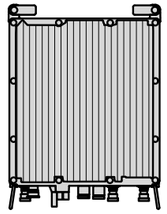
FRONT

RRH DETAIL | NO SCALE | 1

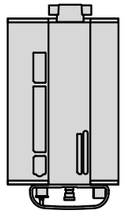
SAMSUNG – LOW BAND RF4450T-71A / SFG-ARR3J601DI	
DIMENSIONS (HxWxD)	15"x16.5"x11"
WEIGHT	94.6 lbs
CONNECTOR TYPE	4.3-10 RF CONNECTOR
INPUT VOLTAGE	-48VDC (-36 to 58 VDC)



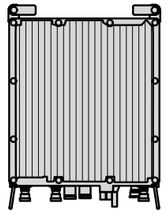
PLAN



BACK



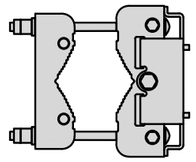
SIDE



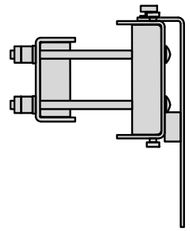
FRONT

RRH DETAIL | NO SCALE | 2

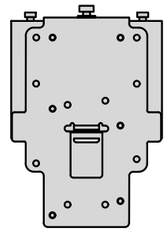
SAMSUNG FDD RRH POLE MOUNT	
DIMENSIONS (HxWxD)	9.8"x7"x10"
WEIGHT	TBD



PLAN



SIDE



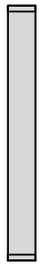
FRONT

RRH MOUNT DETAIL | NO SCALE | 3

NOT USED | NO SCALE | 4

COMMSCOPE FFVV-65B-R2	
DIMENSIONS (HxWxD)(MM/IN)	1828x498x197 72"x19.6"x7.8"
TOTAL WEIGHT	70.8 lbs
RF CONNECTOR INTERFACE	4.3-10 FEMALE

PLAN



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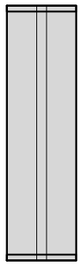
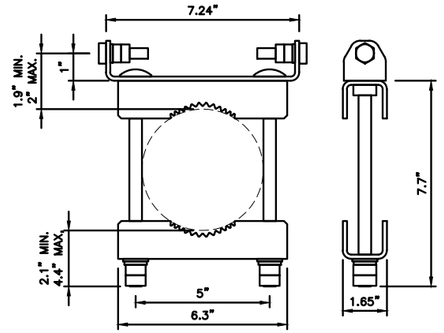


FRONT

ANTENNA DETAIL | NO SCALE | 5

COMMSCOPE ANTENNA BRACKET BSAMNT-F	
DIAMETER COMPATIBILITY	2.402" – 4.5"
NET WEIGHT	7.937 lbs

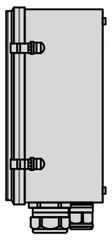
NOTE:
OR DISH Wireless L.L.C.
APPROVED EQUIVALENT



ANTENNA BRACKET DETAIL | NO SCALE | 6

RAYCAP RDIDC-9181-PF-48 DC SURGE PROTECTION	
DIMENSIONS (HxWxD)	18.98"x14.39"x8.15"
WEIGHT	21.82 LBS

PLAN



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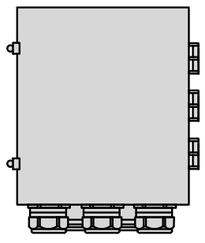
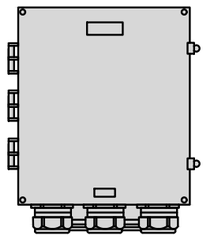


BACK

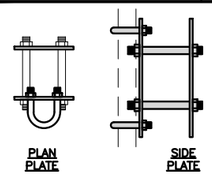


FRONT

SURGE SUPPRESSION DETAIL | NO SCALE | 7

COMMSCOPE XP-2040 CROSSOVER PLATE	
DIMENSIONS (HxW)	10"x12"
WEIGHT	11 lbs

NOTE:
OR DISH Wireless L.L.C.
APPROVED EQUIVALENT

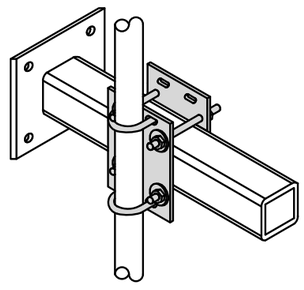


PLAN PLATE

SIDE PLATE

PLAN U-BOLT

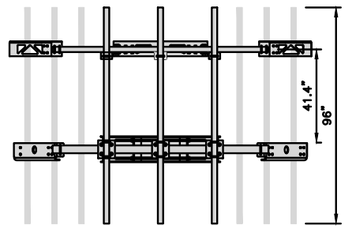
SIDE U-BOLT

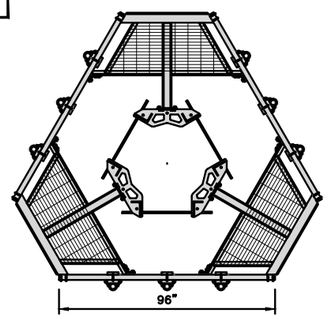


RRH/OVP MOUNT DETAIL | NO SCALE | 8

COMMSCOPE MC-PK8-DSH	
FACE WIDTH	96"
WEIGHT	1373.08 lbs
NOTE: 15" TO 38" O.D.	

NOTE:
OR DISH Wireless L.L.C.
APPROVED EQUIVALENT





ANTENNA PLATFORM DETAIL | NO SCALE | 9

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STATE OF CONNECTICUT
WILLIAM C. EDMONSON
36630
LICENSED
PROFESSIONAL ENGINEER
1-10-24

DRAWN BY:	CHECKED BY:	APPROVED BY:
LMS	MCK	KJC

APPLICATION REV #: 2

CONSTRUCTION DOCUMENTS

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REV	DATE	DESCRIPTION
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A&E PROJECT NUMBER
KHCLE- 48511

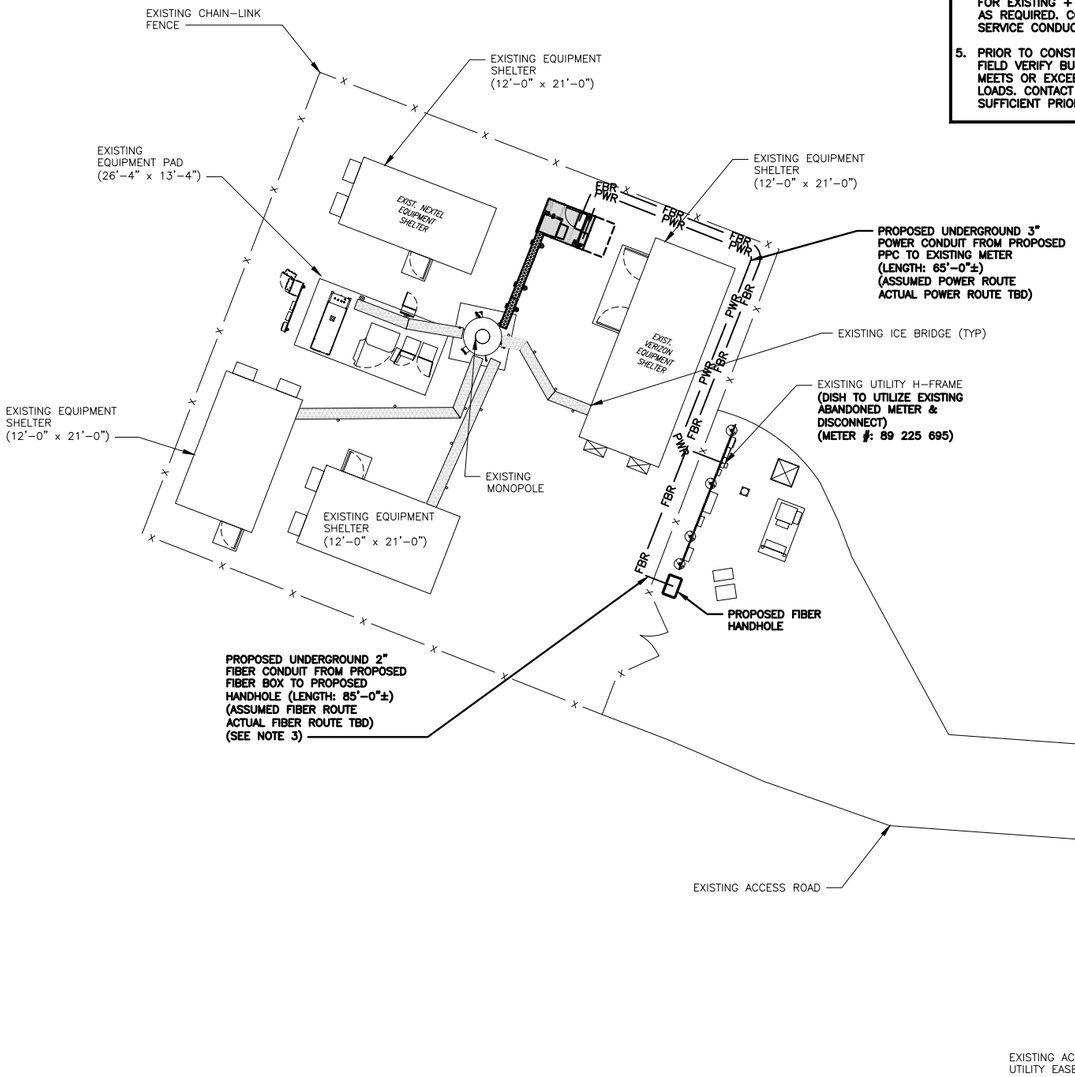
DISH Wireless L.L.C.
PROJECT INFORMATION
BOBOS01205A
45 FARGO ROAD
WATERFORD, CT 06385

SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-6

NOTES

1. CONTRACTOR SHALL FIELD VERIFY ALL PROPOSED UNDERGROUND UTILITY CONDUIT ROUTE.
2. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.
3. THE GROUND LEASE PROVIDES BROAD/BLANKET UTILITY RIGHTS. 'PWR' AND 'FBR' PATH DEPICTED ON A-1 AND E-1 ARE BASED ON BEST AVAILABLE INFORMATION INCLUDING BUT NOT LIMITED TO FIELD VERIFICATION, PRIOR PROJECT DOCUMENTATION AND OTHER REAL PROPERTY RIGHTS DOCUMENTS. WHEN INSTALLING THE UTILITIES PLEASE LOCATE AND FOLLOW EXISTING PATH. IF EXISTING PATH IS NOT AN OPTION, PLEASE NOTIFY SBA REAL ESTATE AS FURTHER COORDINATION MAY BE NEEDED.
4. PRIOR TO CONSTRUCTION, CONTRACTOR SHALL FIELD VERIFY SERVICE CONDUCTOR SIZE IS RATED FOR EXISTING + PROPOSED LOADS & UPGRADE AS REQUIRED. CONTACT EOR IN THE EVENT THE SERVICE CONDUCTORS ARE NOT SUFFICIENT
5. PRIOR TO CONSTRUCTION, CONTRACTOR SHALL FIELD VERIFY BUSS RATING AND VERIFY RATING MEETS OR EXCEEDS EXISTING + PROPOSED LOADS. CONTACT EOR IF RATING IS NOT SUFFICIENT PRIOR TO CONSTRUCTION.



UTILITY ROUTE PLAN

12' 8' 4' 0 10' 20'
3/32"=1'-0"

1

DC POWER WIRING SHALL BE COLOR CODED AT EACH END FOR IDENTIFYING +24V AND -48V CONDUCTORS. RED MARKINGS SHALL IDENTIFY +24V AND BLUE MARKINGS SHALL IDENTIFY -48V.

1. CONTRACTOR SHALL INSPECT THE EXISTING CONDITIONS PRIOR TO SUBMITTING A BID. ANY QUESTIONS ARISING DURING THE BID PERIOD IN REGARDS TO THE CONTRACTOR'S FUNCTIONS, THE SCOPE OF WORK, OR ANY OTHER ISSUE RELATED TO THIS PROJECT SHALL BE BROUGHT UP DURING THE BID PERIOD WITH THE PROJECT MANAGER FOR CLARIFICATION, NOT AFTER THE CONTRACT HAS BEEN AWARDED.
2. ALL ELECTRICAL WORK SHALL BE DONE IN ACCORDANCE WITH CURRENT NATIONAL ELECTRICAL CODES AND ALL STATE AND LOCAL CODES, LAWS, AND ORDINANCES. PROVIDE ALL COMPONENTS AND WIRING SIZES AS REQUIRED TO MEET NEC STANDARDS.
3. LOCATION OF EQUIPMENT, CONDUIT AND DEVICES SHOWN ON THE DRAWINGS ARE APPROXIMATE AND SHALL BE COORDINATED WITH FIELD CONDITIONS PRIOR TO CONSTRUCTION.
4. CONDUIT ROUGH-IN SHALL BE COORDINATED WITH THE MECHANICAL EQUIPMENT TO AVOID LOCATION CONFLICTS. VERIFY WITH THE MECHANICAL EQUIPMENT CONTRACTOR AND COMPLY AS REQUIRED.
5. CONTRACTOR SHALL PROVIDE ALL BREAKERS, CONDUITS AND CIRCUITS AS REQUIRED FOR A COMPLETE SYSTEM.
6. CONTRACTOR SHALL PROVIDE PULL BOXES AND JUNCTION BOXES AS REQUIRED BY THE NEC ARTICLE 314.
7. CONTRACTOR SHALL PROVIDE ALL STRAIN RELIEF AND CABLE SUPPORTS FOR ALL CABLE ASSEMBLIES. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
8. ALL DISCONNECTS AND CONTROLLING DEVICES SHALL BE PROVIDED WITH ENGRAVED PHENOLIC NAMEPLATES INDICATING EQUIPMENT CONTROLLED, BRANCH CIRCUITS INSTALLED ON, AND PANEL FIELD LOCATIONS FED FROM.
9. INSTALL AN EQUIPMENT GROUNDING CONDUCTOR IN ALL CONDUITS PER THE SPECIFICATIONS AND NEC 250. THE EQUIPMENT GROUNDING CONDUCTORS SHALL BE BONDED AT ALL JUNCTION BOXES, PULL BOXES, AND ALL DISCONNECT SWITCHES, AND EQUIPMENT CABINETS.
10. ALL NEW MATERIAL SHALL HAVE A U.L. LABEL.
11. PANEL SCHEDULE LOADING AND CIRCUIT ARRANGEMENTS REFLECT POST-CONSTRUCTION EQUIPMENT.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR AS-BUILT PANEL SCHEDULE AND SITE DRAWINGS.
13. ALL TRENCHES IN COMPOUND TO BE HAND DUG

ELECTRICAL NOTES

NO SCALE

2

UTILITY ROUTING PLAN

NO SCALE

3

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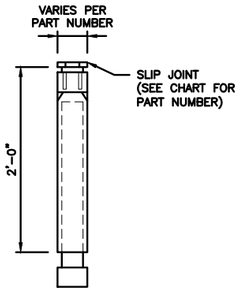
PROJECT INFORMATION
BOBOS01205A
45 FARGO ROAD
WATERFORD, CT 06385

SHEET TITLE
ELECTRICAL/FIBER ROUTE PLAN AND NOTES

SHEET NUMBER
E-1

CARLON EXPANSION FITTINGS

COUPLING END PART#	MALE TERMINAL ADAPTER END PART#	SIZE	STD CTN QTY.	TRAVEL LENGTH
E945D	E945DX	1/2"	20	4"
E945E	E945EX	3/4"	15	4"
E945F	E945FX	1"	10	4"
E945G	E945GX	1 1/4"	5	4"
E945H	E945HX	1 1/2"	5	4"
E945J	E945JX	2"	15	8"
E945K	E945KX	2 1/2"	10	8"
E945L	E945LX	3"	10	8"
E945M	E945MX	3 1/2"	5	8"
E945N	E945NX	4"	5	8"
E945P	E945PX	5"	1	8"
E945R	E945RX	6"	1	8"

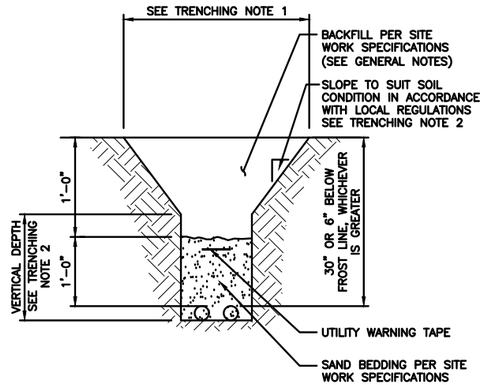


NOTE:
CONTRACTOR TO INSTALL EXPANSION FITTING SLIP JOINT AT METER CENTER CONDUIT TERMINATION, AS PER LOCAL UTILITY POLICY, ORDINANCE AND/OR SPECIFIED REQUIREMENT.

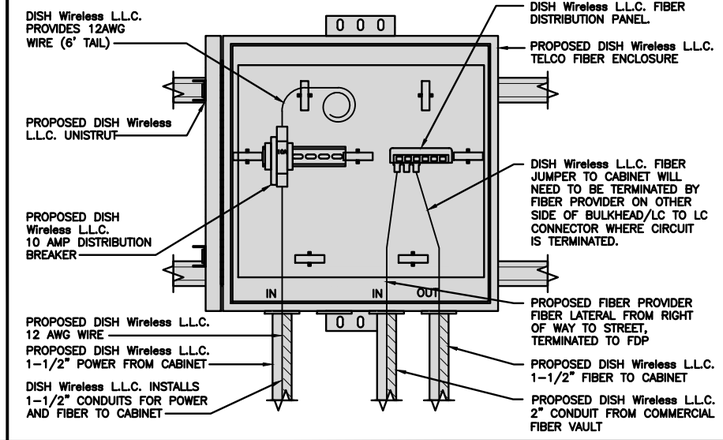
EXPANSION JOINT DETAIL | NO SCALE | 1

TRENCHING NOTES

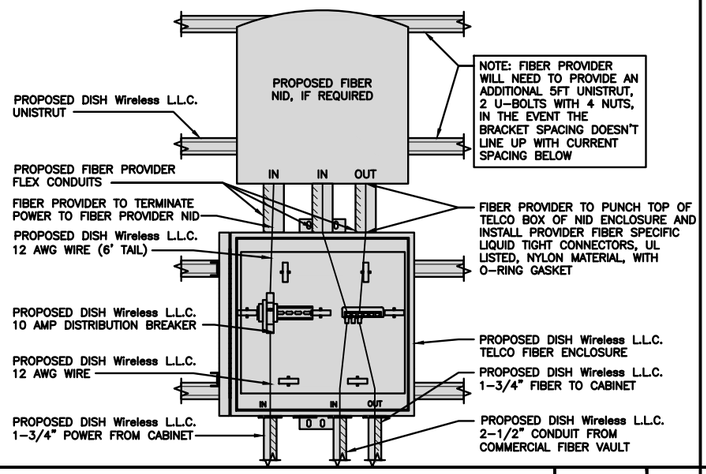
1. CONTRACTOR SHALL RESTORE THE TRENCH TO ITS ORIGINAL CONDITIONS BY EITHER SEEDING OR SODDING GRASS AREAS, OR REPLACING ASPHALT OR CONCRETE AREAS TO ITS ORIGINAL CROSS SECTION.
2. TRENCHING SAFETY; INCLUDING, BUT NOT LIMITED TO SOIL CLASSIFICATION, SLOPING, AND SHORING, SHALL BE GOVERNED BY THE CURRENT OSHA TRENCHING AND EXCAVATION SAFETY STANDARDS.
3. ALL CONDUITS SHALL BE INSTALLED IN COMPLIANCE WITH THE CURRENT NATIONAL ELECTRIC CODE (NEC) OR AS REQUIRED BY THE LOCAL JURISDICTION, WHICHEVER IS THE MOST STRINGENT.



TYPICAL UNDERGROUND TRENCH DETAIL | NO SCALE | 2



DARK TELCO BOX – INTERIOR WIRING LAYOUT | NO SCALE | 3



LIT TELCO BOX – INTERIOR WIRING LAYOUT (OPTIONAL) | NO SCALE | 4

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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DRAWN BY:	CHECKED BY:	APPROVED BY:
LMS	MCK	KJC

APPLICATION REV #: 2

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	10/27/2023	ISSUED FOR REVIEW
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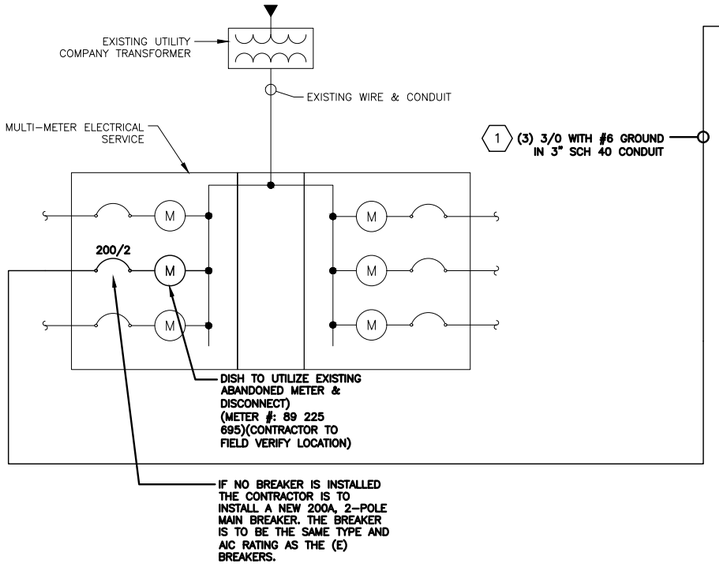
A&E PROJECT NUMBER
KHCLE– 48511

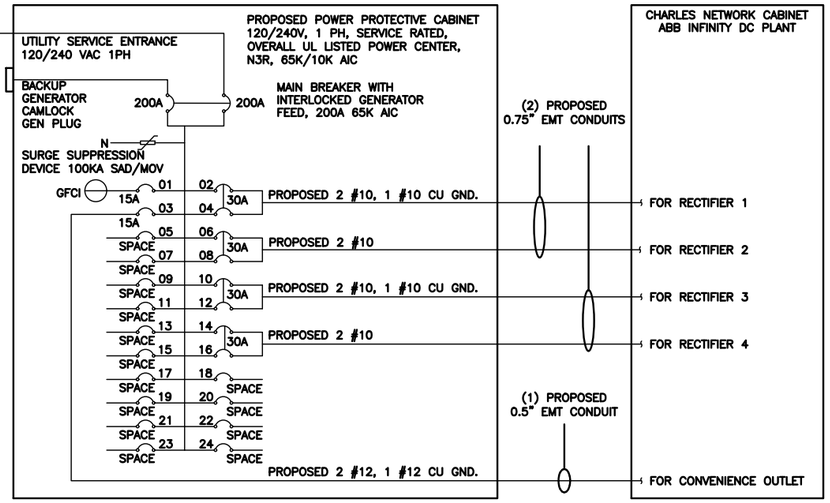
DISH Wireless L.L.C.
PROJECT INFORMATION
BOBOS01205A
45 FARGO ROAD
WATERFORD, CT 06385

SHEET TITLE
ELECTRICAL DETAILS

SHEET NUMBER
E-2



1 (3) 3/0 WITH #6 GROUND IN 3" SCH 40 CONDUIT



SERVICE/FEEDER CONDUCTOR LENGTH TABLE (BASED ON INDUSTRY STANDARD 3% VOLTAGE DROP AND 5% NEC ALLOWABLE LIMIT)						
	CONDUCTOR SIZES					
DESIGN LOADS	250 kcmil AL	300 kcmil AL	3/0 CU	4/0 CU	250 kcmil CU	300 kcmil CU
DISH Wireless L.L.C. MAXIMUM CONTINUOUS LOAD (160A) (NEC ARTICLE 220 & 230 3% VOLTAGE DROP)	130'	155'	145'	180'	215'	255'
DISH Wireless L.L.C. MAXIMUM CONTINUOUS LOAD (160A) (NEC ARTICLE 220 & 230 5% VOLTAGE DROP)	220'	260'	240'	300'	360'	425'

NOTES:
1. 250 MCM/KCMIL AL + #2 AL GRD MAY BE USED AS A REPLACEMENT FOR 3/0 CU + #6 CU GRD SERVICE CONDUCTOR FROM THE DISH Wireless L.L.C. FIRST MEANS OF DISCONNECT/UTILITY COMPANY MEET-ME POINT. REFER TO VALUES ABOVE TO LIMIT VOLTAGE DROP TO 3%.
2. ALUMINUM/COPPER CONDUCTORS MUST BE RATED 75°C.
3. ALUMINUM TO COPPER BUSS CONNECTIONS MUST MEET AND CONFORM TO ANSI AND BE UL LISTED. USE ANTI CORROSION CONDUCTIVE LUBRICANT ON CONNECTIONS
4. PPC MAIN DISCONNECT CIRCUIT BREAKERS ACCEPT #4 - 300KCMIL AL OR CU CONDUCTORS.
5. VOLTAGE DROP FOR SINGLE METER ENCLOSURE FED FROM TRANSFORMER WITH MULTIPLE CUSTOMERS IS CALCULATED FROM THE TRANSFORMER TO PPC. (SERVICE AND FEEDER CONDUCTOR LENGTH)
6. VOLTAGE DROP FOR MULTI-METER ENCLOSURE IS CALCULATED FROM THE METER TO PPC. (FEEDER CONDUCTOR LENGTH)
7. VOLTAGE DROP CALCULATIONS ARE BASED ON A POWER FACTOR OF 1, A LINE TO GROUND VOLTAGE PER CONDUCTOR OF 120V, NO CORRECTION FACTOR FOR AMBIENT TEMPERATURE OR ADJUSTMENT FACTOR FOR MORE THAN THREE CURRENT-CARRYING CONDUCTORS IN A SINGLE CONDUCT OR RACEWAY. A POWER FACTOR LESS THAN 1 OR VOLTAGE LESS THAN 120 WILL RESULT IN SHORTER DISTANCES THAN SHOWN IN TABLE.

NOTES

THE ENGINEER OF RECORD HAS PERFORMED ALL REQUIRED SHORT CIRCUIT CALCULATIONS AND THE AIC RATINGS FOR EACH DEVICE IS ADEQUATE TO PROTECT THE EQUIPMENT AND THE ELECTRICAL SYSTEM.

THE ENGINEER OF RECORD HAS PERFORMED ALL REQUIRED VOLTAGE DROP CALCULATIONS AND ALL BRANCH CIRCUIT AND FEEDERS COMPLY WITH THE NEC (LISTED ON T-1) ARTICLE 210.19(A)(1) FPN NO. 4.

THE (2) CONDUITS WITH (4) CURRENT CARRYING CONDUCTORS EACH, SHALL APPLY THE ADJUSTMENT FACTOR OF 80% PER 2014/17 NEC TABLE 310.15(B)(3)(a) OR 2020 NEC TABLE 310.15(C)(1) FOR UL1015 WIRE.

#12 FOR 15A-20A/1P BREAKER: 0.8 x 30A = 24.0A
#10 FOR 25A-30A/2P BREAKER: 0.8 x 40A = 32.0A
#8 FOR 35A-40A/2P BREAKER: 0.8 x 55A = 44.0A
#6 FOR 45A-60A/2P BREAKER: 0.8 x 75A = 60.0A

CONDUIT SIZING: AT 40% FILL PER NEC CHAPTER 9, TABLE 4, ARTICLE 358.
0.5" CONDUIT - 0.122 SQ. IN AREA
0.75" CONDUIT - 0.213 SQ. IN AREA
2.0" CONDUIT - 1.316 SQ. IN AREA
3.0" CONDUIT - 2.907 SQ. IN AREA

CABINET CONVENIENCE OUTLET CONDUCTORS (1 CONDUIT): USING THWN-2, CU.

#12 - 0.0050 SQ. IN X 2 = 0.0100 SQ. IN
#12 - 0.0050 SQ. IN X 1 = 0.0050 SQ. IN <GROUND
TOTAL = 0.0150 SQ. IN

0.5" EMT CONDUIT IS ADEQUATE TO HANDLE THE TOTAL OF (3) WIRES, INCLUDING GROUND WIRE, AS INDICATED ABOVE.

RECTIFIER CONDUCTORS (2 CONDUITS): USING UL1015, CU.

#10 - 0.0266 SQ. IN X 4 = 0.1064 SQ. IN
#10 - 0.0082 SQ. IN X 1 = 0.0082 SQ. IN <BARE GROUND
TOTAL = 0.1146 SQ. IN

0.75" EMT CONDUIT IS ADEQUATE TO HANDLE THE TOTAL OF (5) WIRES, INCLUDING GROUND WIRE, AS INDICATED ABOVE.

PPC FEED CONDUCTORS (1 CONDUIT): USING THWN, CU.

3/0 - 0.2679 SQ. IN X 3 = 0.8037 SQ. IN
#6 - 0.0507 SQ. IN X 1 = 0.0507 SQ. IN <GROUND
TOTAL = 0.8544 SQ. IN

3.0" SCH 40 PVC CONDUIT IS ADEQUATE TO HANDLE THE TOTAL OF (4) WIRES, INCLUDING GROUND WIRE, AS INDICATED ABOVE.

1 PPC FEED CONDUCTORS (1 CONDUIT): USING THWN, AL.

250kcmil AL - 0.3970 SQ. IN X 3 = 1.191 SQ. IN
#4 AL - 0.0824 SQ. IN X 1 = 0.0824 SQ.IN <GROUND
TOTAL = 1.2734 SQ. IN

3.0" SCH 40 PVC CONDUIT IS ADEQUATE TO HANDLE THE TOTAL OF (4) WIRES, INCLUDING GROUND WIRE, AS INDICATED ABOVE.

NOTE:
BRANCH CIRCUIT WIRING SUPPLYING RECTIFIERS ARE TO BE RATED UL1015, 105°C, 600V, AND PVC INSULATED, IN THE SIZES SHOWN IN THE ONE-LINE DIAGRAM. CONTRACTOR MAY SUBSTITUTE UL1015 WIRE FOR THWN-2 FOR CONVENIENCE OUTLET BRANCH CIRCUIT.

BREAKERS REQUIRED:
(4) 30A, 2P BREAKER - SQUARE D P/N:QO230
(2) 15A, 1P BREAKER - SQUARE D P/N:QO115

PPC ONE-LINE DIAGRAM — NO SCALE — 1

PROPOSED CHARLES PANEL SCHEDULE

LOAD SERVED	VOLT AMPS (WATTS) L1	VOLT AMPS (WATTS) L2	TRIP	CKT #	PHASE	CKT #	TRIP	VOLT AMPS (WATTS) L1	VOLT AMPS (WATTS) L2	LOAD SERVED
PPC GFCI OUTLET	180		15A	1	A	2	30A	2880		ABB/GE INFINITY RECTIFIER 1
CHARLES GFCI OUTLET		180	15A	3	B	4			2880	
-SPACE-				5	A	6	30A	2880		ABB/GE INFINITY RECTIFIER 2
-SPACE-				7	B	8			2880	
-SPACE-				9	A	10	30A	2880		ABB/GE INFINITY RECTIFIER 3
-SPACE-				11	B	12			2880	
-SPACE-				13	A	14	30A	2880		ABB/GE INFINITY RECTIFIER 4
-SPACE-				15	B	16			2880	
-SPACE-				17	A	18				-SPACE-
-SPACE-				19	B	20				-SPACE-
-SPACE-				21	A	22				-SPACE-
-SPACE-				23	B	24				-SPACE-
VOLTAGE AMPS	180	180						11520	11520	
200A MCB, 1Φ, 24 SPACE, 120/240V			L1		L2					
MB RATING: 65,000 AIC			11700		11700		VOLTAGE AMPS			
			98		98		AMPS			
			98				MAX AMPS			
			123				MAX 125%			

PANEL SCHEDULE — NO SCALE — 2

NOT USED — NO SCALE — 3

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STATE OF CONNECTICUT
WILLIAM C. EDMONSON
36630
LICENSED PROFESSIONAL ENGINEER
1-16-24

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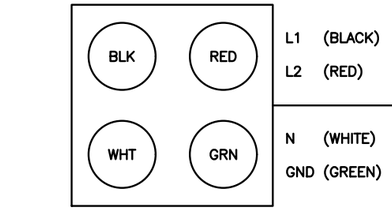
BOBOS01205A
45 FARGO ROAD
WATERFORD, CT 06385

SHEET TITLE
ELECTRICAL ONE-LINE, FAULT CALCS & PANEL SCHEDULE

SHEET NUMBER
E-3

NOTES:

1. HAZARD OF ELECTRICAL SHOCK OR BURN. TURN OFF POWER SUPPLYING THIS EQUIPMENT BEFORE WORKING INSIDE.
2. 100 OR 200 AMP, 240 VOLTS, SINGLE PHASE ALTERNATING CURRENT CIRCUIT ONLY
3. GENERATOR SHORT CIRCUIT RATING: 10,000 / 20,000 AMPS RMS SYMMETRICAL, AMPERES AT 240 VOLTS
4. UTILITY SHORT CIRCUIT RATING: 65,000 AMPS RMS SYMMETRICAL, AMPERES AT 240 VOLTS
5. SUITABLE FOR USE AS SERVICE EQUIPMENT
6. SUITABLE FOR USE IN ACCORDANCE WITH ARTICLE 702 OF THE NATIONAL ELECTRIC CODE ANSI/NFPA 70
7. BONDED NEUTRAL WHEN INSTALLED AS SHOWN IN WIRING DIAGRAM
8. RAIN PROOF TYPE 3R
9. USE CU–AL WIRE 60–75 °C
10. EQUIPPED WITH SLIDE BAR MECHANICAL INTERLOCK
11. INTERLOCK PROHIBITS BOTH POWER SOURCES FROM BEING IN THE ON POSITION SIMULTANEOUSLY
12. EQUIPPED WITH SQUARE D BREAKERS OR ALTERNATIVE MANUFACTURER EQUIVALENT
13. WHEN REPLACE LOAD CENTER BREAKERS, USE ONLY SQUARE D (QO TYPE) OF THE SAME RATING OR EQUIVALENT
14. WHEN RESETTING BREAKERS TURN TO OFF POSITION, THEN TO ON POSITION
15. WARNING: MAKE CONTINUITY CHECK WITH OHM METER TO VERIFY CORRECT PHASING AND GROUNDING CONNECTIONS BEFORE POWER UP
16. VERIFY PIN OUT CONFIGURATION OF GENERATOR PRIOR TO USE.
17. RISK OF ELECTRIC SHOCK, BOTH ENDS OF DISCONNECTING MEANS MAY BE ENERGIZED. TEST BEFORE SERVICING
18. THIS SWITCH BOARD MAY CONTAIN A TAP ON THE SERVICE SIDE OF THE MAIN POWER DISCONNECT FOR REMOTE MONITORING OF UTILITY/STANDBY POWER
19. THE NORMAL AC POWER MONITORING CIRCUIT MUST UTILIZE A DISCONNECTING MEANS WITH A SHORT CIRCUIT RATING GREATER THAN THE AVAILABLE INTERRUPTING CURRENT
20. A RED PUSH–TO–TRIP BUTTON PROVIDES A MEANS TO MECHANICALLY TRIP THE CIRCUIT BREAKER. THIS ACTION EXERCISES THE TRIPPING PORTION OF THE MECHANISM AND ALLOWS MAINTENANCE CHECK ON THE BREAKER



CAM–LOCK GENERATOR RECEPTACLE

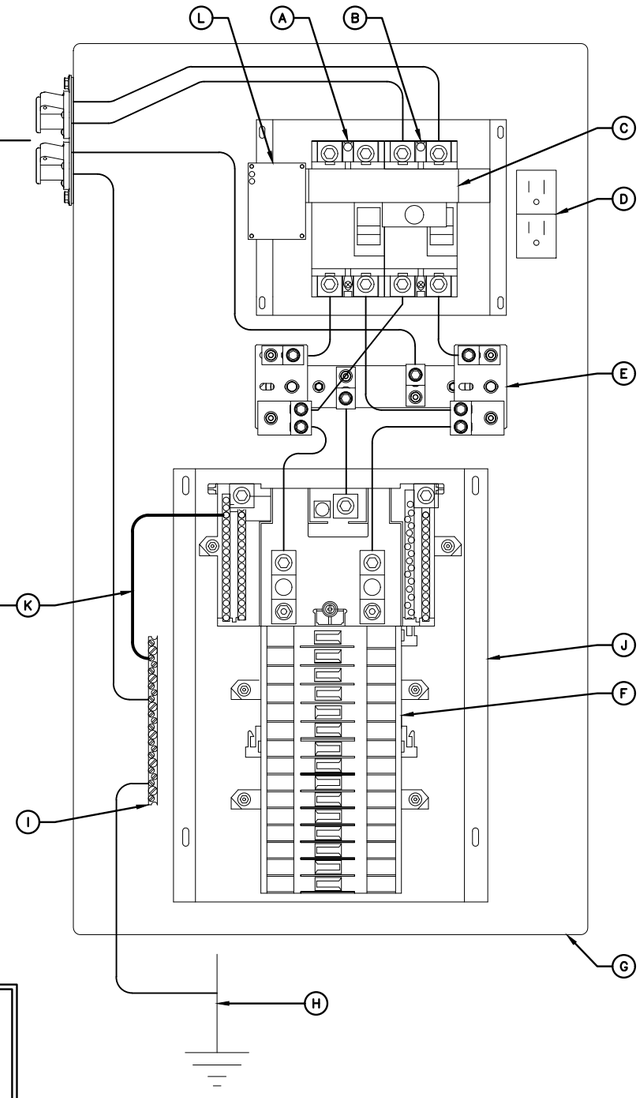
(AS VIEWED FROM OUTSIDE OF ENCLOSURE)
USE LINE UP PIN AS REFERENCE

REFER TO RECEPTACLE FOR MODEL NUMBER

DANGER:

HAZARD OF ELECTRICAL SHOCK OR BURN. TURN OFF POWER SUPPLYING THIS EQUIPMENT BEFORE WORKING INSIDE.

RAYCAP CUSTOMER SERVICE
(800) 890–2569



SUITABLE FOR USE AS SERVICE EQUIPMENT

ELECTRICAL RATING 120/240 VOLTS SINGLE PHASE 60 Hz	
NORMAL AC POWER 100A□ 200A□	GENERATOR POWER 100A□ 200A□

CAUTION:

- THE OPERATING HANDLE ASSUMES A CENTER POSITION WHEN THE CIRCUIT BREAKER IS TRIPPED
- THE BREAKER CAN BE RESET BY OPERATING THE HANDLE TO THE EXTREME OFF POSITION AND THEN TO ON
- SLIDE BAR MECHANICAL INTERLOCK TRANSFERS NORMAL AC POWER TO GENERATOR POWER. THE SLIDE BAR MECHANICAL INTERLOCK PROHIBITS BOTH POWER SOURCES FROM BEING IN THE ON POSITION SIMULTANEOUSLY
- TO TRANSFER FROM ON POWER SOURCE TO THE OTHER POWER SOURCE, SWITCH ON BREAKER TO THE OFF POSITION, MOVE THE SLIDE BAR TO THE OTHER SIDE AND THE SWITCH THE OTHER BREAKER TO THE ON POSITION

THIS SWITCHBOARD UTILITY MAN BREAKER IS SUITABLE FOR USE ON CIRCUIT CAPABLE OF DELIVERING NOT MORE THAN 65,000 RMS SYMMETRICAL AMPS, 240 VOLTS MAXIMUM.

200A UTILITY FEED

LOAD SIZE CIRCUIT BREAKERS				LINE SIDE MAIN CIRCUIT BREAKER					
MFR.	TYPE	POLES	AMP RATING	MFR.	TYPE	AMP RATING	SYMMET. AMP RMS	VOLTS AC	PHASES
SQ–D	QO	1 2	15–100A	SQ–D	QGL	200A	65,000A	240V	2

THIS SWITCHBOARD GENERATOR POWER CIRCUIT IS SUITABLE FOR USE ON A CIRCUIT CAPABLE OF DELIVERING NOT MORE THAN 10,000 RMS SYMMETRICAL AMPS, 240 VOLTS MAXIMUM.

200A GENERATOR FEED

LOAD SIZE CIRCUIT BREAKERS				LINE SIDE MAIN CIRCUIT BREAKER					
MFR.	TYPE	POLES	AMP RATING	MFR.	TYPE	AMP RATING	SYMMET. AMP RMS	VOLTS AC	PHASES
SQ–D	QO	1 2	15–100A	SQ–D	QGL	200A	65,000A	240V	2

MAXIMUM CONTINUOUS LOADS NOT TO EXCEED 80% OF THE OVER–CURRENT PROTECTIVE DEVICE (CIRCUIT BREAKER AND FUSES) RATINGS EMPLOYED IN OTHER THAN MOTOR CIRCUITS, EXCEPT FOR THOSE CIRCUITS EMPLOYING CIRCUIT BREAKERS MARKED AS SUITABLE FOR CONTINUOUS OPERATION AT 100% OF THEIR RATINGS. CONDUCTORS ARE NOT TO ENTER OR LEAVE THE ENCLOSURE DIRECTLY OPPOSITE THE WIRING TERMINAL

NEUTRAL–TO–GROUND NOTES:

- WHEN THE PPC IS USED AS THE SERVICE ENTRANCE DEVICE, THE NEUTRAL TO GROUND BOND NEEDS TO BE ESTABLISHED IN THE PPC.
- WHEN THE SERVICE ENTRY DEVICE IS A MULTI–METER CENTER OR A PRE–PPC DISCONNECT IS USED AND HAS "NEUTRAL TO GROUND" ACCOMMODATIONS, THE NEUTRAL TO GROUND WIRE IN THE PPC IS NOT REQUIRED.
- THE GREEN #6 WIRE IS PROVIDED WITH THE PPC CABINET AS A SEPARATE UNINSTALLED PART TO BE INSTALLED BY CONTRACTOR IF NEEDED.

NEUTRAL–TO–GROUND CONDING JUMPER

INSTALLTION INSTRUCTIONS:

- IF REQUIRED, THE N–G BONDING KIT SHOULD BE INSTALLED BY QUALIFIED PERSONNEL
- ENSURE THE MAIN BREAKERS ARE OFF
- USE THE GREEN #6 WIRE PROVIDED WITH THE PPC
- INSTALL THE JUMPER AS SHOWN IN THE WIRING DIAGRAM
- TIGHTEN TERMINALS TO TORQUE VALUE SHOWN IN TORQUE TABLE
- PLACE THE PROVIDED "SERVICE" LABEL IN THE SPACE BELOW THE WORDS "AC POWER" LOCATED ABODE THE MAIN CIRCUIT BREAKER IN THE UPPER PORTION OF THE DEAD FRONT

LEGEND:

A. UTILITY DISCONNECT (SERVICE RATED)
B. GENERATOR DISCONNECT
C. MAIN DISCONNECT CIRCUIT BREAKERS W/ MECHANICAL INTERLOCK
D. GFCI RECEPTACLE 15A
E. SPD STRIKESORB KELVIN CONNECTION (TYP OF 2)
F. BREAKER PANEL – 24 POSITION (CONTRACTOR TO ADD APPROPRIATE BREAKER PER ONE–LINE DIAGRAM PANEL SCHEDULE)
G. POWER PROTECTION CABINET (PPC) (FULLY ASSEMBLED FROM MANUFACTURER)
H. CONTRACTOR TO ATTACH TO UNDERGROUND GROUNDING HALO OR INSTALL GROUND ROD WHEN REQUIRED BY CODE
I. GROUND BAR
J. SQUARE D Q SERIES LOAD CENTER
K. NETURAL–TO–GROUND (N–G) BONDING JUMPER (CONTRACTOR INSTALLED IF REQUIRED)
L. OPTIONAL SPD STATUS INDICATORS

RAYCAP POWER PROTECTION CABINET – RDIAC–2465–P–240–MTS (NEUTRAL–TO–GROUND)

NO SCALE | 1

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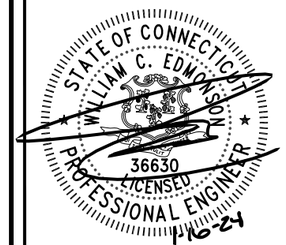

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PROJECT INFORMATION

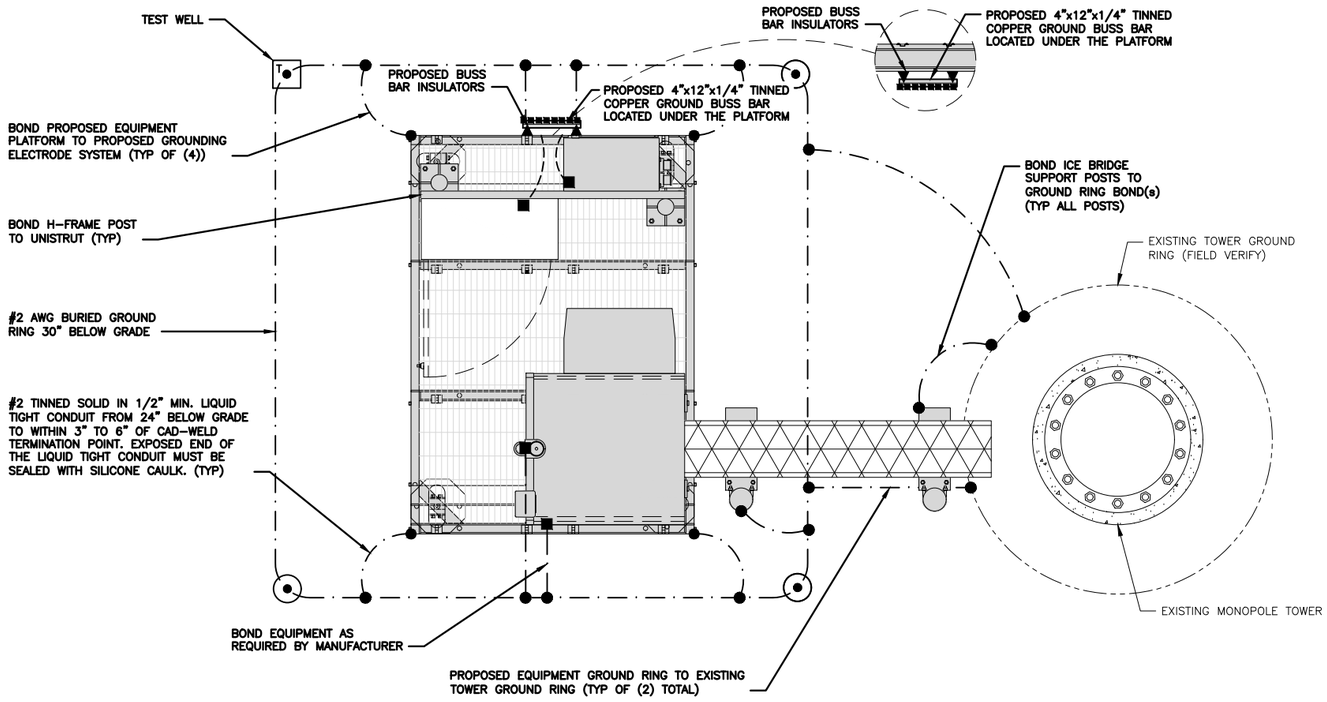
BOBOS01205A
45 FARGO ROAD
WATERFORD, CT 06385

SHEET TITLE

PPC NEUTRAL–TO–GROUND SCHEMATIC

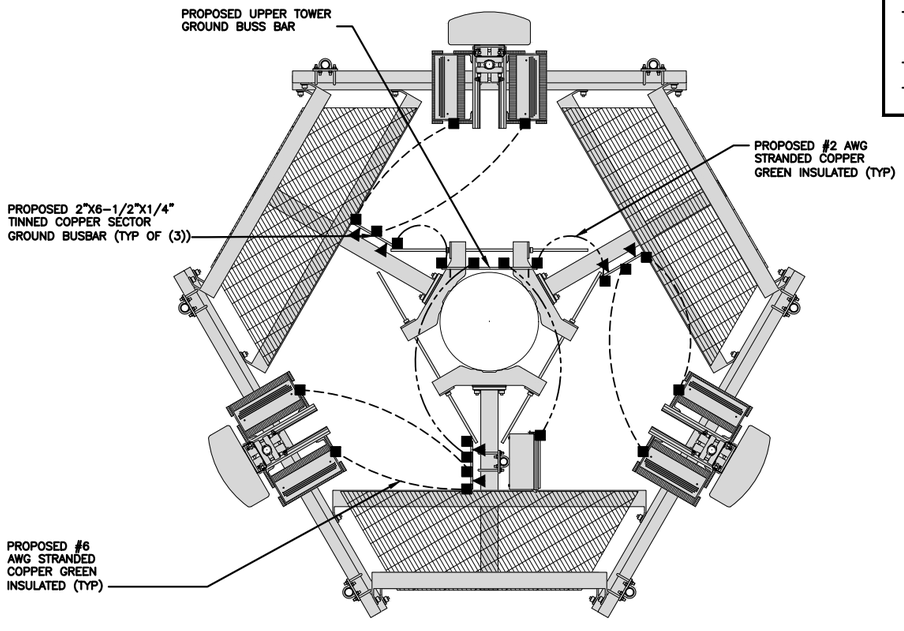
SHEET NUMBER

E-4



TYPICAL EQUIPMENT GROUNDING PLAN

NO SCALE | 1



TYPICAL ANTENNA GROUNDING PLAN

NO SCALE | 2

NOTES

- ANTENNAS AND OVP SHOWN ARE GENERIC AND NOT REFERENCING TO A SPECIFIC MANUFACTURER. THIS LAYOUT IS FOR REFERENCE PURPOSES ONLY
- SECTOR BUSSBARS SHALL BE INSTALLED WITH INSULATORS
- UPPER TOWER BUSSBAR SHALL BE INSTALLED WITH OUT INSULATORS

EXOTHERMIC CONNECTION
MECHANICAL CONNECTION
GROUND BUS BAR
GROUND ROD
TEST GROUND ROD WITH INSPECTION SLEEVE
#6 AWG STRANDED & INSULATED
#2 AWG SOLID COPPER TINNED
BUSS BAR INSULATOR

GROUNDING LEGEND

1. GROUNDING IS SHOWN DIAGRAMMATICALLY ONLY.
2. CONTRACTOR SHALL GROUND ALL EQUIPMENT AS A COMPLETE SYSTEM. GROUNDING SHALL BE IN COMPLIANCE WITH NEC SECTION 250 AND DISH Wireless L.L.C. GROUNDING AND BONDING REQUIREMENTS AND MANUFACTURER'S SPECIFICATIONS.
3. ALL GROUND CONDUCTORS SHALL BE COPPER; NO ALUMINUM CONDUCTORS SHALL BE USED.

GROUNDING KEY NOTES

(A) **EXTERIOR GROUND RING:** #2 AWG SOLID COPPER, BURIED AT A DEPTH OF AT LEAST 30 INCHES BELOW GRADE, OR 6 INCHES BELOW THE FROST LINE AND APPROXIMATELY 24 INCHES FROM THE EXTERIOR WALL OR FOOTING.

(B) **TOWER GROUND RING:** THE GROUND RING SYSTEM SHALL BE INSTALLED AROUND AN ANTENNA TOWER'S LEGS, AND/OR GUY ANCHORS. WHERE SEPARATE SYSTEMS HAVE BEEN PROVIDED FOR THE TOWER AND THE BUILDING, AT LEAST TWO BONDS SHALL BE MADE BETWEEN THE TOWER RING GROUND SYSTEM AND THE BUILDING RING GROUND SYSTEM USING MINIMUM #2 AWG SOLID COPPER CONDUCTORS.

(C) **INTERIOR GROUND RING:** #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTOR EXTENDED AROUND THE PERIMETER OF THE EQUIPMENT AREA. ALL NON-TELECOMMUNICATIONS RELATED METALLIC OBJECTS FOUND WITHIN A SITE SHALL BE GROUNDED TO THE INTERIOR GROUND RING WITH #6 AWG STRANDED GREEN INSULATED CONDUCTOR.

(D) **BOND TO INTERIOR GROUND RING:** #2 AWG SOLID TINNED COPPER WIRE PRIMARY BONDS SHALL BE PROVIDED AT LEAST AT FOUR POINTS ON THE INTERIOR GROUND RING, LOCATED AT THE CORNERS OF THE BUILDING.

(E) **GROUND ROD:** UL LISTED COPPER CLAD STEEL. MINIMUM 1/2" DIAMETER BY EIGHT FEET LONG. GROUND RODS SHALL BE INSTALLED WITH INSPECTION SLEEVES. GROUND RODS SHALL BE DRIVEN TO THE DEPTH OF GROUND RING CONDUCTOR.

(F) **CELL REFERENCE GROUND BAR:** POINT OF GROUND REFERENCE FOR ALL COMMUNICATIONS EQUIPMENT FRAMES. ALL BONDS ARE MADE WITH #2 AWG UNLESS NOTED OTHERWISE STRANDED GREEN INSULATED COPPER CONDUCTORS. BOND TO GROUND RING WITH (2) #2 SOLID TINNED COPPER CONDUCTORS.

(G) **HATCH PLATE GROUND BAR:** BOND TO THE INTERIOR GROUND RING WITH TWO #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS. WHEN A HATCH-PLATE AND A CELL REFERENCE GROUND BAR ARE BOTH PRESENT, THE CRGB MUST BE CONNECTED TO THE HATCH-PLATE AND TO THE INTERIOR GROUND RING USING (2) TWO #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS EACH.

(H) **EXTERIOR CABLE ENTRY PORT GROUND BARS:** LOCATED AT THE ENTRANCE TO THE CELL SITE BUILDING. BOND TO GROUND RING WITH A #2 AWG SOLID TINNED COPPER CONDUCTORS WITH AN EXOTHERMIC WELD AND INSPECTION SLEEVE.

(I) **TELCO GROUND BAR:** BOND TO BOTH CELL REFERENCE GROUND BAR OR EXTERIOR GROUND RING.

(J) **FRAME BONDING:** THE BONDING POINT FOR TELECOM EQUIPMENT FRAMES SHALL BE THE GROUND BUS THAT IS NOT ISOLATED FROM THE EQUIPMENTS METAL FRAMEWORK.

(K) **INTERIOR UNIT BONDS:** METAL FRAMES, CABINETS AND INDIVIDUAL METALLIC UNITS LOCATED WITH THE AREA OF THE INTERIOR GROUND RING REQUIRE A #6 AWG STRANDED GREEN INSULATED COPPER BOND TO THE INTERIOR GROUND RING.

(L) **FENCE AND GATE GROUNDING:** METAL FENCES WITHIN 7 FEET OF THE EXTERIOR GROUND RING OR OBJECTS BONDED TO THE EXTERIOR GROUND RING SHALL BE BONDED TO THE GROUND RING WITH A #2 AWG SOLID TINNED COPPER CONDUCTOR AT AN INTERVAL NOT EXCEEDING 25 FEET. BONDS SHALL BE MADE AT EACH GATE POST AND ACROSS GATE OPENINGS.

(M) **EXTERIOR UNIT BONDS:** METALLIC OBJECTS, EXTERNAL TO OR MOUNTED TO THE BUILDING, SHALL BE BONDED TO THE EXTERIOR GROUND RING. USING #2 TINNED SOLID COPPER WIRE

(N) **ICE BRIDGE SUPPORTS:** EACH ICE BRIDGE LEG SHALL BE BONDED TO THE GROUND RING WITH #2 AWG BARE TINNED COPPER CONDUCTOR. PROVIDE EXOTHERMIC WELDS AT BOTH THE ICE BRIDGE LEG AND BURIED GROUND RING.

(O) DURING ALL DC POWER SYSTEM CHANGES INCLUDING DC SYSTEM CHANGE OUTS, RECTIFIER REPLACEMENTS OR ADDITIONS, BREAKER DISTRIBUTION CHANGES, BATTERY ADDITIONS, BATTERY REPLACEMENTS AND INSTALLATIONS OR CHANGES TO DC CONVERTER SYSTEMS IT SHALL BE REQUIRED THAT SERVICE CONTRACTORS VERIFY ALL DC POWER SYSTEMS ARE EQUIPPED WITH A MASTER DC SYSTEM RETURN GROUND CONDUCTOR FROM THE DC POWER SYSTEM COMMON RETURN BUS DIRECTLY CONNECTED TO THE CELL SITE REFERENCE GROUND BAR

(P) TOWER TOP COLLECTOR BUSS BAR IS TO BE MECHANICALLY BONDED TO PROPOSED ANTENNA MOUNT COLLAR.

REFER TO DISH Wireless L.L.C. GROUNDING NOTES.

GROUNDING KEY NOTES

NO SCALE | 3

dish wireless.
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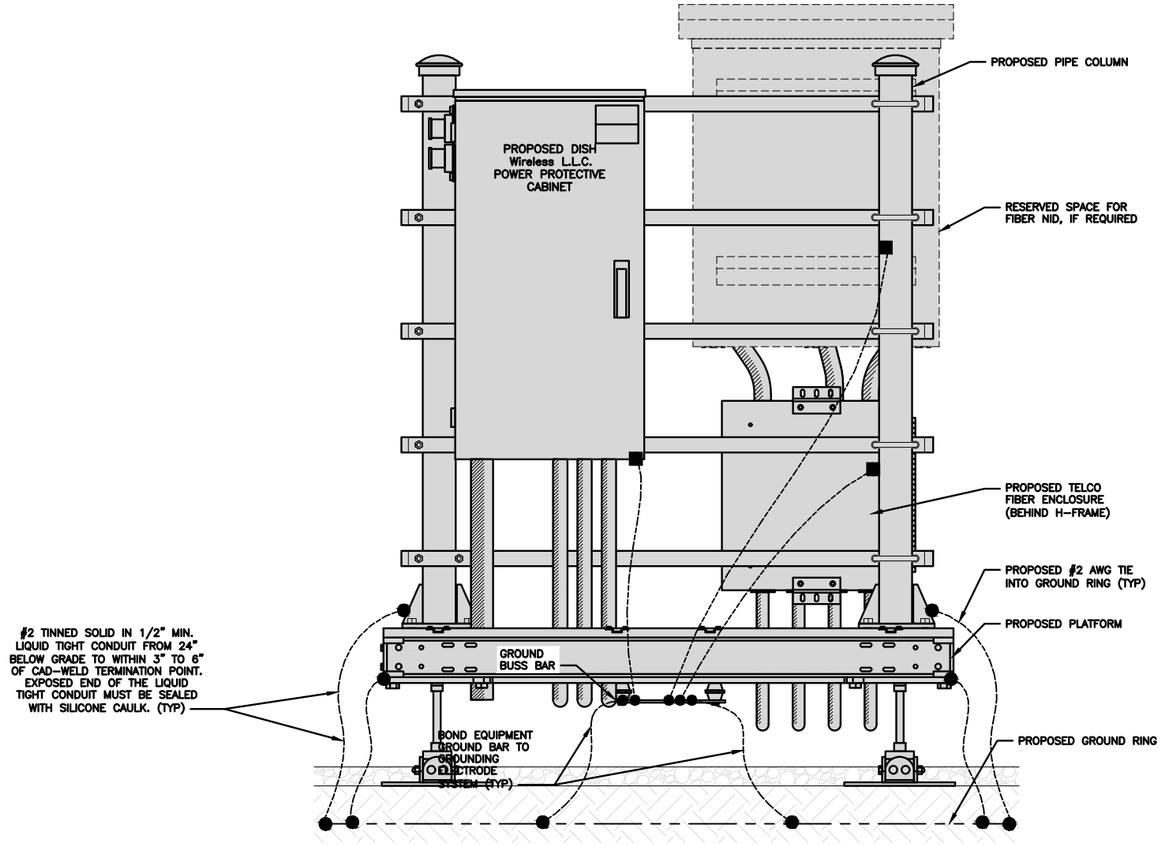
SHEET TITLE
GROUNDING PLANS AND NOTES

SHEET NUMBER
G-1

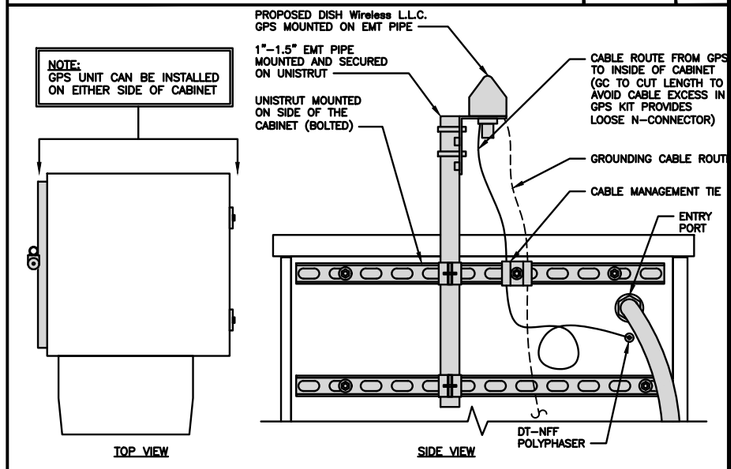
NOTES

EQUIPMENT CABINET OMITTED FOR CLARITY

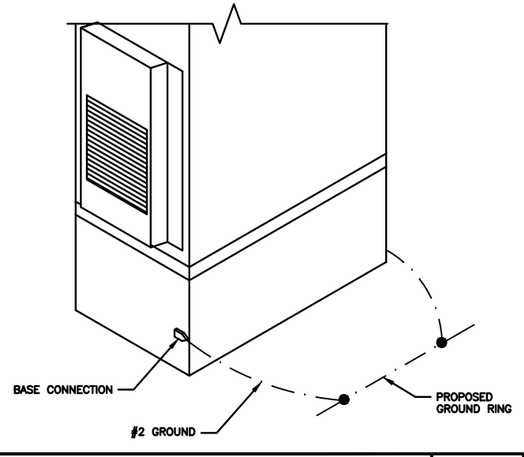


H-FRAME GROUNDING DETAIL | NO SCALE | 1

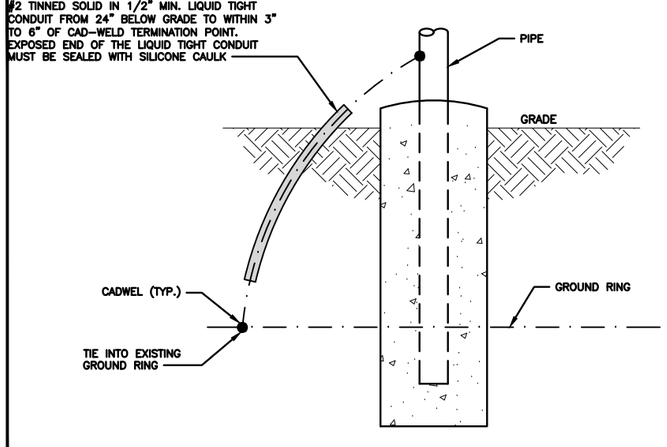
NOT USED | NO SCALE | 2



TYPICAL PCTEL GPS UNIT GROUNDING | NO SCALE | 3



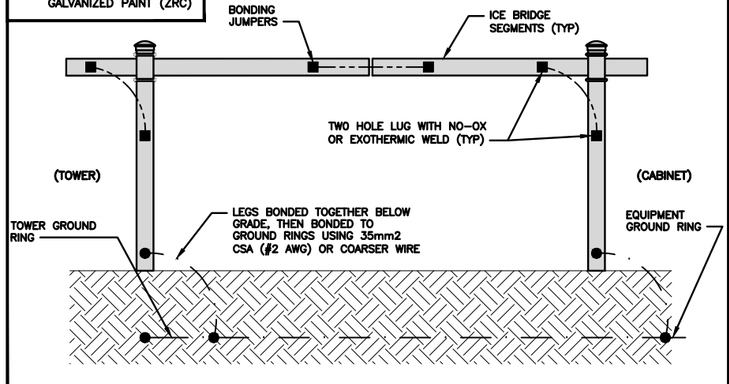
OUTDOOR CABINET GROUNDING | NO SCALE | 4



TRANSITIONING GROUND DETAIL | NO SCALE | 5

NOTES

- DRILLED HOLES TO BE SPRAYED WITH GALVANIZED PAINT (ZRC)



ICE BRIDGE GROUNDING DETAIL | NO SCALE | 6

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1-10-24

DRAWN BY:	CHECKED BY:	APPROVED BY:
LMS	MCK	KJC

APPLICATION REV #: 2

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A&E PROJECT NUMBER

KHCLE- 48511

DISH Wireless L.L.C.
PROJECT INFORMATION

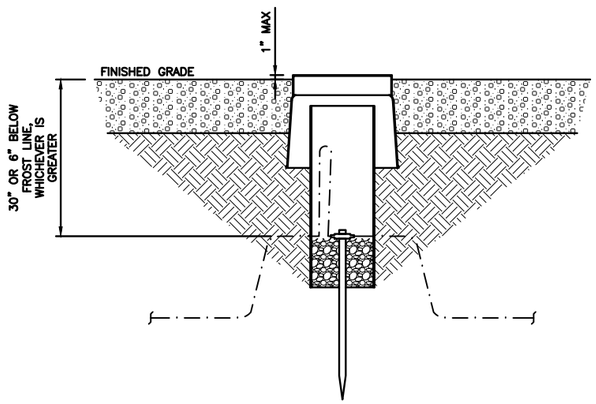
BOBOS01205A
45 FARGO ROAD
WATERFORD, CT 06385

SHEET TITLE

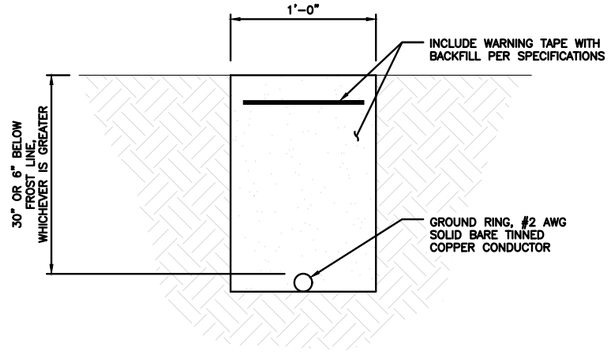
GROUNDING DETAILS

SHEET NUMBER

G-2



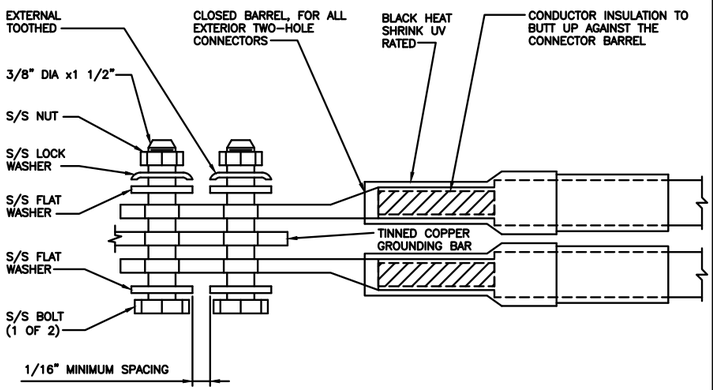
TYPICAL TEST GROUND ROD WITH INSPECTION SLEEVE | NO SCALE | 1



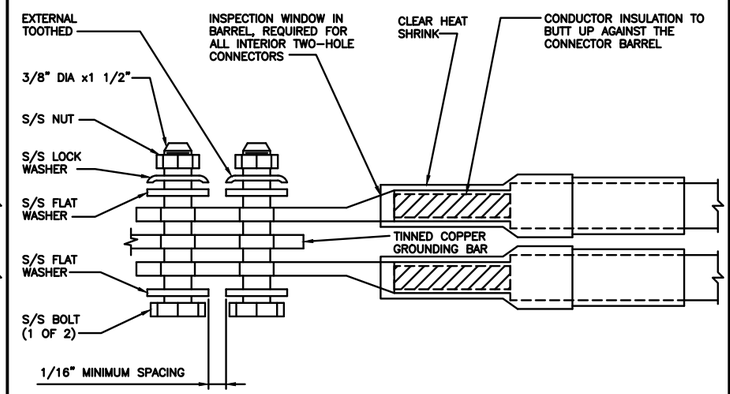
TYPICAL GROUND RING TRENCH | NO SCALE | 2

1. EXOTHERMIC WELD (2) TWO, #2 AWG BARE TINNED SOLID COPPER CONDUCTORS TO GROUND BAR. ROUTE CONDUCTORS TO BURIED GROUND RING AND PROVIDE PARALLEL EXOTHERMIC WELD.
2. ALL EXTERIOR GROUNDING HARDWARE SHALL BE STAINLESS STEEL 3/8" DIAMETER OR LARGER. ALL HARDWARE 18-8 STAINLESS STEEL INCLUDING LOCK WASHERS, COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING.
3. FOR GROUND BOND TO STEEL ONLY: COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING.
4. DO NOT INSTALL CABLE GROUNDING KIT AT A BEND AND ALWAYS DIRECT GROUND CONDUCTOR DOWN TO GROUNDING BUS.
5. NUT & WASHER SHALL BE PLACED ON THE FRONT SIDE OF THE GROUND BAR AND BOLTED ON THE BACK SIDE.
6. ALL GROUNDING PARTS AND EQUIPMENT TO BE SUPPLIED AND INSTALLED BY CONTRACTOR.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING ADDITIONAL GROUND BAR AS REQUIRED.
8. ENSURE THE WIRE INSULATION TERMINATION IS WITHIN 1/8" OF THE BARREL (NO SHINERS).

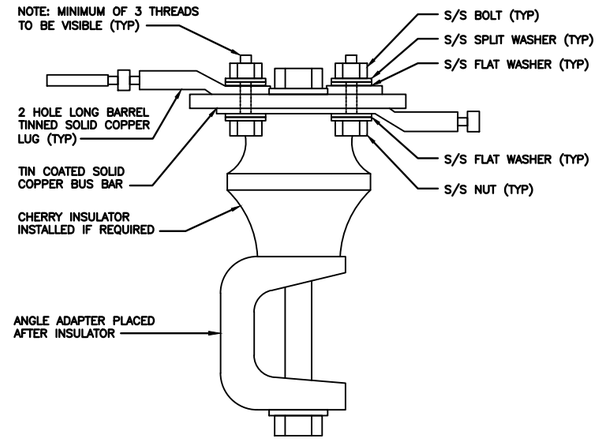
TYPICAL GROUNDING NOTES | NO SCALE | 3



TYPICAL EXTERIOR TWO HOLE LUG | NO SCALE | 4



TYPICAL INTERIOR TWO HOLE LUG | NO SCALE | 5



LUG DETAIL | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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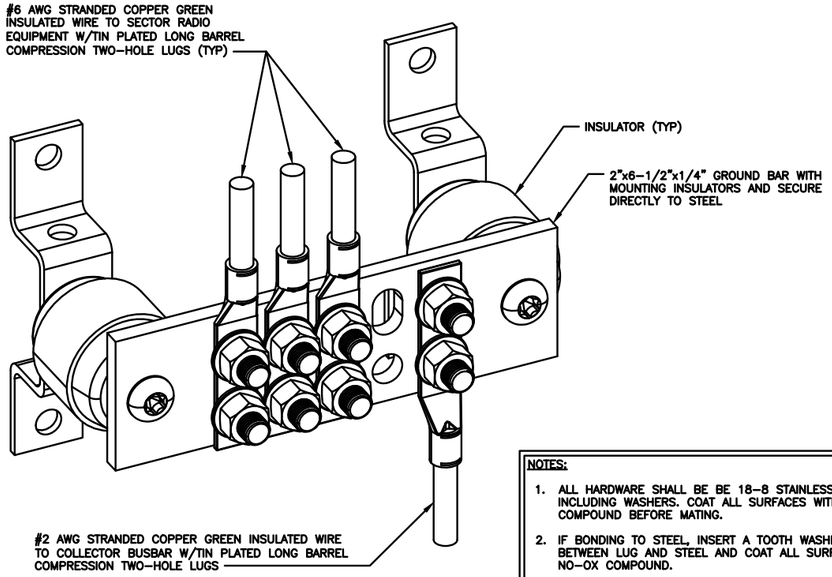
BOBOS01205A
45 FARGO ROAD
WATERFORD, CT 06385

SHEET TITLE

GROUNDING DETAILS

SHEET NUMBER

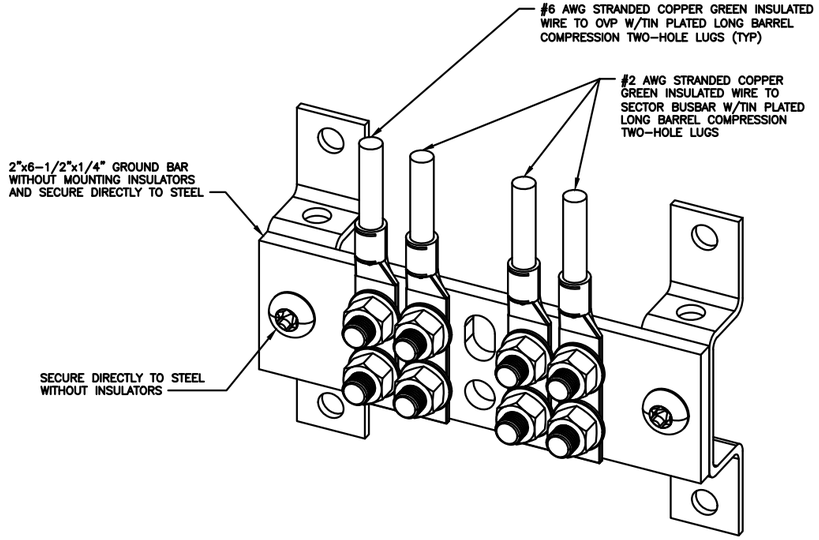
G-3



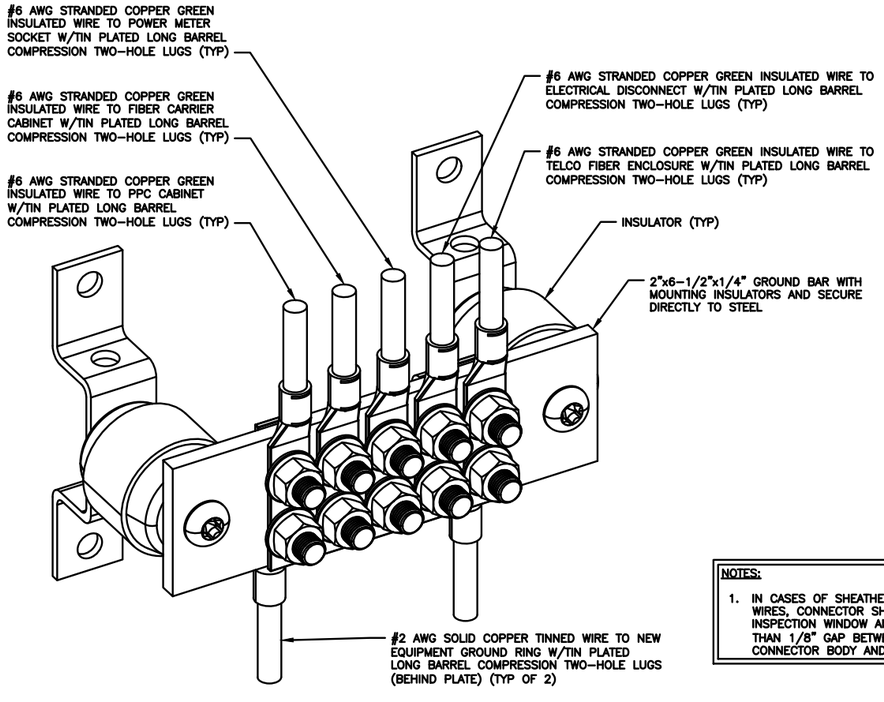
NOTES:

1. ALL HARDWARE SHALL BE BE 18-8 STAINLESS STEEL INCLUDING WASHERS. COAT ALL SURFACES WITH NO-OX COMPOUND BEFORE MATING.
2. IF BONDING TO STEEL, INSERT A TOOTH WASHER BETWEEN LUG AND STEEL AND COAT ALL SURFACE WITH NO-OX COMPOUND.
3. USE A THIN COAT OF NO-OX OR UL LISTED ANTIOXIDANT COMPOUND BETWEEN GROUNDING CONNECTIONS.

SECTOR GROUND BUSBAR DETAIL | NO SCALE | 1



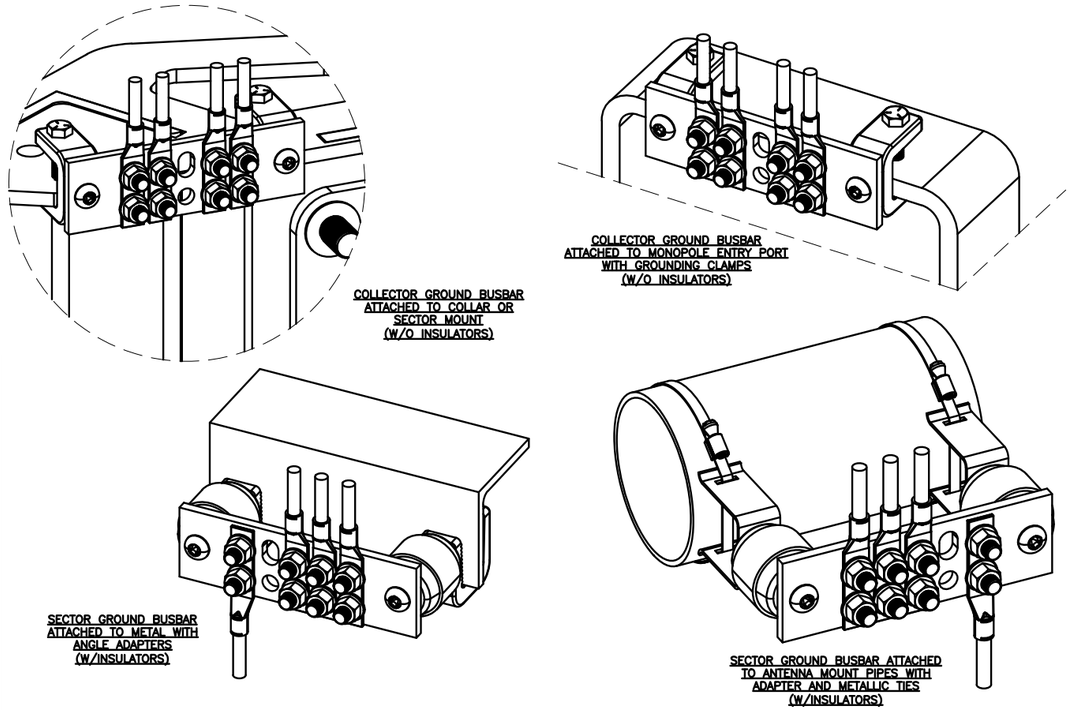
UPPER TOWER GROUND BUSBAR DETAIL | NO SCALE | 2



NOTES:

1. IN CASES OF SHEATHED STRANDED WIRES, CONNECTOR SHALL HAVE INSPECTION WINDOW AND NO MORE THAN 1/8" GAP BETWEEN CONNECTOR BODY AND SHEATH.

EQUIPMENT GROUND BUSBAR DETAIL | NO SCALE | 3



GROUND BUSBAR ATTACHMENT OPTIONS | NO SCALE | 4

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PROJECT INFORMATION

BOBOS01205A
45 FARGO ROAD
WATERFORD, CT 06385

SHEET TITLE

GROUNDING DETAILS

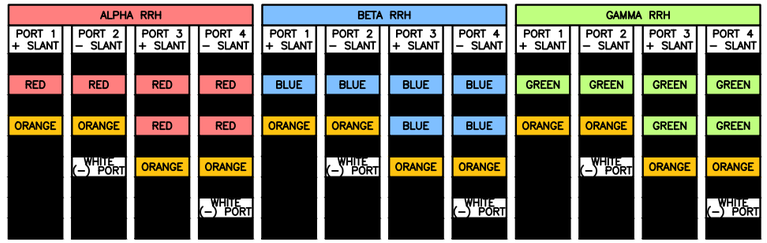
SHEET NUMBER

G-4

HYBRID/DISCREET CABLES — 3/4" TAPE WIDTHS WITH 3/4" SPACING

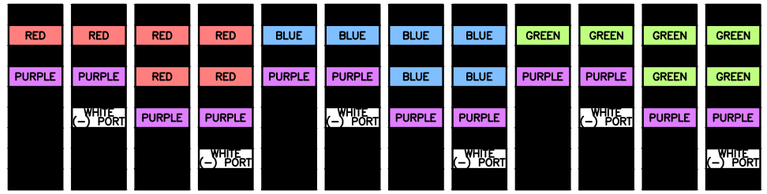
LOW–BAND RRH
(600 MHz N71 BASEBAND) +
(850 MHz N26 BAND) +
(700 MHz N29 BAND) – OPTIONAL PER MARKET

ADD FREQUENCY COLOR TO SECTOR BAND
(CBRS WILL USE YELLOW BAND)



MID–BAND RRH
(AWS BANDS N66+N70)

ADD FREQUENCY COLOR TO SECTOR BAND
(CBRS WILL USE YELLOW BANDS)



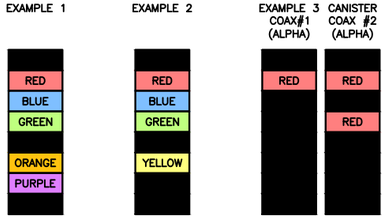
HYBRID/DISCREET CABLES

INCLUDE SECTOR BANDS BEING SUPPORTED ALONG WITH FREQUENCY BANDS.

EXAMPLE 1 – HYBRID, OR DISCREET, SUPPORTS ALL SECTORS, BOTH LOW–BANDS AND MID–BANDS.

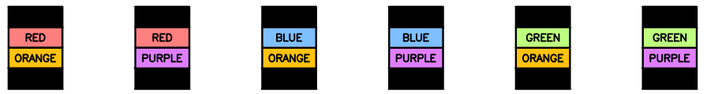
EXAMPLE 2 – HYBRID, OR DISCREET, SUPPORTS CBRS ONLY, ALL SECTORS.

EXAMPLE 3 – MAIN COAX WITH GROUND MOUNTED RRHs.



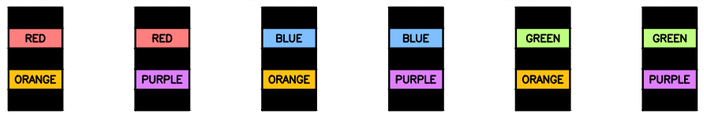
FIBER JUMPERS TO RRHs

LOW–BAND HHR FIBER CABLES HAVE SECTOR STRIPE ONLY.



POWER CABLES TO RRHs

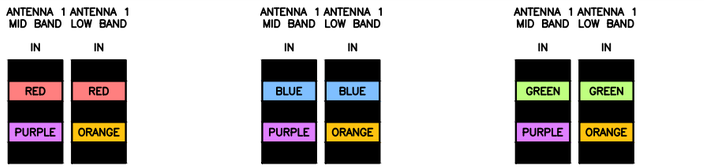
LOW–BAND RRH POWER CABLES HAVE SECTOR STRIPE ONLY



RET MOTORS AT ANTENNAS

RET CONTROL IS HANDLED BY THE MID–BAND RRH WHEN ONE SET OF RET PORTS EXIST ON ANTENNA.

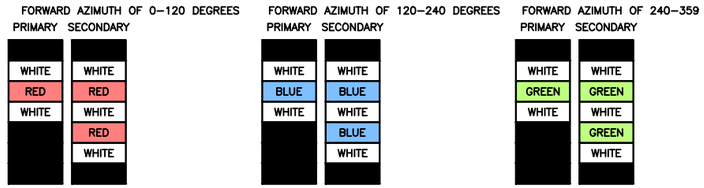
SEPARATE RET CABLES ARE USED WHEN ANTENNA PORTS PROVIDE INPUTS FOR BOTH LOW AND MID BANDS.



MICROWAVE RADIO LINKS

LINKS WILL HAVE A 1.5–2 INCH WHITE WRAP WITH THE AZIMUTH COLOR OVERLAPPING IN THE MIDDLE.
ADD ADDITIONAL SECTOR COLOR BANDS FOR EACH ADDITIONAL MW RADIO.

MICROWAVE CABLES WILL REQUIRE P–TOUCH LABELS INSIDE THE CABINET TO IDENTIFY THE LOCAL AND REMOTE SITE ID's.



RF CABLE COLOR CODES | | 1

LOW BANDS (N71+N26) OPTIONAL – (N29): ORANGE

AWS (N66+N70+H–BLOCK): PURPLE

CBRS TECH (3 GHz): YELLOW

NEGATIVE SLANT PORT ON ANT/RRH: WHITE

ALPHA SECTOR: RED

BETA SECTOR: BLUE

GAMMA SECTOR: GREEN

COLOR IDENTIFIER | | 2

NOT USED | | 3

NOT USED | | 4

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PROJECT INFORMATION
BOBOS01205A
45 FARGO ROAD
WATERFORD, CT 06385

SHEET TITLE
RF
CABLE COLOR CODES

SHEET NUMBER
RF-1

LEGEND

EXOTHERMIC CONNECTION

MECHANICAL CONNECTION

BUSS BAR INSULATOR

CHEMICAL ELECTROLYTIC GROUNDING SYSTEM

TEST CHEMICAL ELECTROLYTIC GROUNDING SYSTEM

EXOTHERMIC WITH INSPECTION SLEEVE

GROUNDING BAR

GROUND ROD

TEST GROUND ROD WITH INSPECTION SLEEVE

SINGLE POLE SWITCH

DUPLEX RECEPTACLE

DUPLEX GFCI RECEPTACLE

FLUORESCENT LIGHTING FIXTURE
(2) TWO LAMPS 48–T8

SMOKE DETECTION (DC)

EMERGENCY LIGHTING (DC)

SECURITY LIGHT W/PHOTOCELL LITHONIA ALXW
LED–1–25A400/51K–SR4–120–PE–DDBTXD

CHAIN LINK FENCE

WOOD/WROUGHT IRON FENCE

WALL STRUCTURE

LEASE AREA

PROPERTY LINE (PL)

SETBACKS

ICE BRIDGE

CABLE TRAY

WATER LINE

UNDERGROUND POWER

UNDERGROUND TELCO

OVERHEAD POWER

OVERHEAD TELCO

UNDERGROUND TELCO/POWER

ABOVE GROUND POWER

ABOVE GROUND TELCO

ABOVE GROUND TELCO/POWER

WORKPOINT

W.P.

SECTION REFERENCE

DETAIL REFERENCE

ABBREVIATIONS

AB	ANCHOR BOLT
ABV	ABOVE
AC	ALTERNATING CURRENT
ADDL	ADDITIONAL
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AGL	ABOVE GROUND LEVEL
AIC	AMPERAGE INTERRUPTION CAPACITY
ALUM	ALUMINUM
ALT	ALTERNATE
ANT	ANTENNA
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
BATT	BATTERY
BLDG	BUILDING
BLK	BLOCK
BLKG	BLOCKING
BM	BEAM
BTC	BARE TINNED COPPER CONDUCTOR
BOF	BOTTOM OF FOOTING
CAB	CABINET
CANT	CANTILEVERED
CHG	CHARGING
CLG	CEILING
CLR	CLEAR
COL	COLUMN
COMM	COMMON
CONC	CONCRETE
CONSTR	CONSTRUCTION
DBL	DOUBLE
DC	DIRECT CURRENT
DEPT	DEPARTMENT
DF	DOUGLAS FIR
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DWG	DRAWING
DWL	DOWEL
EA	EACH
EC	ELECTRICAL CONDUCTOR
EL.	ELEVATION
ELEC	ELECTRICAL
EMT	ELECTRICAL METALLIC TUBING
ENG	ENGINEER
EQ	EQUAL
EXP	EXPANSION
EXT	EXTERIOR
EW	EACH WAY
FAB	FABRICATION
FF	FINISH FLOOR
FG	FINISH GRADE
FIF	FACILITY INTERFACE FRAME
FIN	FINISH(ED)
FLR	FLOOR
FDN	FOUNDATION
FOC	FACE OF CONCRETE
FOM	FACE OF MASONRY
FOS	FACE OF STUD
FOW	FACE OF WALL
FS	FINISH SURFACE
FT	FOOT
FTG	FOOTING
GA	GAUGE
GEN	GENERATOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GLB	GLUE LAMINATED BEAM
GLV	GALVANIZED
GPS	GLOBAL POSITIONING SYSTEM
GND	GROUND
GSM	GLOBAL SYSTEM FOR MOBILE
HDG	HOT DIPPED GALVANIZED
HDR	HEADER
HGR	HANGER
HVAC	HEAT/VENTILATION/AIR CONDITIONING
HT	HEIGHT
IGR	INTERIOR GROUND RING
IN	INCH
INT	INTERIOR
LB(S)	POUND(S)
LF	LINEAR FEET
LTE	LONG TERM EVOLUTION
MAS	MASONRY
MAX	MAXIMUM
MB	MACHINE BOLT
MECH	MECHANICAL
MFR	MANUFACTURER
MGB	MASTER GROUND BAR
MIN	MINIMUM
MISC	MISCELLANEOUS
MTL	METAL
MTS	MANUAL TRANSFER SWITCH
MW	MICROWAVE
NEC	NATIONAL ELECTRIC CODE
NM	NEWTON METERS
NO.	NUMBER
#	NUMBER
NTS	NOT TO SCALE
OC	ON–CENTER
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
OPNG	OPENING
P/C	PRECAST CONCRETE
PCS	PERSONAL COMMUNICATION SERVICES
PCU	PRIMARY CONTROL UNIT
PRC	PRIMARY RADIO CABINET
PP	POLARIZING PRESERVING
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	PRESSURE TREATED
PWR	POWER CABINET
QTY	QUANTITY
RAD	RADIUS
RECT	RECTIFIER
REF	REFERENCE
REINF	REINFORCEMENT
REQ'D	REQUIRED
RET	REMOTE ELECTRIC TILT
RF	RADIO FREQUENCY
RMC	RIGID METALLIC CONDUIT
RRH	REMOTE RADIO HEAD
RRU	REMOTE RADIO UNIT
RWY	RACEWAY
SCH	SCHEDULE
SHT	SHEET
SIAD	SMART INTEGRATED ACCESS DEVICE
SIM	SIMILAR
SPEC	SPECIFICATION
SQ	SQUARE
SS	STAINLESS STEEL
STD	STANDARD
STL	STEEL
TEMP	TEMPORARY
THK	THICKNESS
TMA	TOWER MOUNTED AMPLIFIER
TN	TOE NAIL
TOA	TOP OF ANTENNA
TOC	TOP OF CURB
TOF	TOP OF FOUNDATION
TOP	TOP OF PLATE (PARAPET)
TOS	TOP OF STEEL
TOW	TOP OF WALL
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION
TYP	TYPICAL
UG	UNDERGROUND
UL	UNDERWRITERS LABORATORY
UNO	UNLESS NOTED OTHERWISE
UMTS	UNIVERSAL MOBILE TELECOMMUNICATIONS SYSTEM
UPS	UNITERRUPTIBLE POWER SYSTEM (DC POWER PLANT)
VIF	VERIFIED IN FIELD
W	WIDE
W/	WITH
WD	WOOD
WP	WEATHERPROOF
WT	WEIGHT

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SHEET TITLE

LEGEND AND ABBREVIATIONS

SHEET NUMBER

GN-1

SIGN TYPES		
TYPE	COLOR	COLOR CODE PURPOSE
INFORMATION	GREEN	**"INFORMATIONAL SIGN"** TO NOTIFY OTHERS OF SITE OWNERSHIP & CONTACT NUMBER AND POTENTIAL RF EXPOSURE.
NOTICE	BLUE	**"NOTICE BEYOND THIS POINT"** RF FIELDS BEYOND THIS POINT MAY EXCEED THE FCC GENERAL PUBLIC EXPOSURE LIMIT. OBEY ALL POSTED SIGNS AND SITE GUIDELINES FOR WORKING IN RF ENVIRONMENTS. IN ACCORDANCE WITH FEDERAL COMMUNICATIONS COMMISSION RULES ON RADIO FREQUENCY EMISSIONS 47 CFR–1.1307(b)
CAUTION	YELLOW	**"CAUTION BEYOND THIS POINT"** RF FIELDS BEYOND THIS POINT MAY EXCEED THE FCC GENERAL PUBLIC EXPOSURE LIMIT. OBEY ALL POSTED SIGNS AND SITE GUIDELINES FOR WORKING IN RF ENVIRONMENTS. IN ACCORDANCE WITH FEDERAL COMMUNICATIONS COMMISSION RULES ON RADIO FREQUENCY EMISSIONS 47 CFR–1.1307(b)
WARNING	ORANGE/RED	**"WARNING BEYOND THIS POINT"** RF FIELDS AT THIS SITE EXCEED FCC RULES FOR HUMAN EXPOSURE. FAILURE TO OBEY ALL POSTED SIGNS AND SITE GUIDELINES FOR WORKING IN RF ENVIRONMENTS COULD RESULT IN SERIOUS INJURY. IN ACCORDANCE WITH FEDERAL COMMUNICATIONS COMMISSION RULES ON RADIO FREQUENCY EMISSIONS 47 CFR–1.1307(b)

SIGN PLACEMENT:

- RF SIGNAGE PLACEMENT SHALL FOLLOW THE RECOMMENDATIONS OF AN EXISTING EME REPORT, CREATED BY A THIRD PARTY PREVIOUSLY AUTHORIZED BY DISH Wireless L.L.C.
- INFORMATION SIGN (GREEN) SHALL BE LOCATED ON EXISTING DISH Wireless L.L.C EQUIPMENT.
  A) IF THE INFORMATION SIGN IS A STICKER, IT SHALL BE PLACED ON EXISTING DISH Wireless L.L.C EQUIPMENT CABINET.
  B) IF THE INFORMATION SIGH IS A METAL SIGN IT SHALL BE PLACED ON EXISTING DISH Wireless L.L.C H–FRAME WITH A SECURE ATTACH METHOD.
- IF EME REPORT IS NOT AVAILABLE AT THE TIME OF CREATION OF CONSTRUCTION DOCUMENTS; PLEASE CONTACT DISH Wireless L.L.C. CONSTRUCTION MANAGER FOR FURTHER INSTRUCTION ON HOW TO PROCEED.

NOTES:

1. FOR DISH Wireless L.L.C. LOGO, SEE DISH Wireless L.L.C. DESIGN SPECIFICATIONS (PROVIDED BY DISH Wireless L.L.C.)
2. SITE ID SHALL BE APPLIED TO SIGNS USING "LASER ENGRAVING" OR ANY OTHER WEATHER RESISTANT METHOD (DISH Wireless L.L.C. APPROVAL REQUIRED)
3. TEXT FOR SIGNAGE SHALL INDICATE CORRECT SITE NAME AND NUMBER AS PER DISH Wireless L.L.C. CONSTRUCTION MANAGER RECOMMENDATIONS.
4. CABINET/SHELTER MOUNTING APPLICATION REQUIRES ANOTHER PLATE APPLIED TO THE FACE OF THE CABINET WITH WATER PROOF POLYURETHANE ADHESIVE
5. ALL SIGNS WILL BE SECURED WITH EITHER STAINLESS STEEL ZIP TIES OR STAINLESS STEEL TECH SCREWS
6. ALL SIGNS TO BE 8.5"x11" AND MADE WITH 0.04" OF ALUMINUM MATERIAL

INFORMATION

This is an access point to an area with transmitting antennas.

Obey all signs and barriers beyond this point.
Call the DISH Wireless L.L.C. NOC at 1-866-624-6874

Site ID: BOBOS01205A

THIS SIGN IS FOR REFERENCE PURPOSES ONLY

NOTICE

Transmitting Antenna(s)

Radio frequency fields beyond this point MAY *EXCEED* the FCC Occupational exposure limit.

Obey all posted signs and site guidelines for working in radio frequency environments.

Call the DISH Wireless L.L.C. NOC at 1-866-624-6874 prior to working beyond this point.

Site ID: BOBOS01205A

dish

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dish

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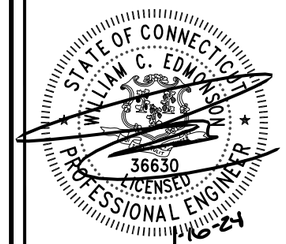
RF SIGNAGE

dish wireless.
5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

Kimley»Horn
421 FAYETTEVILLE ST, SUITE 600
RALEIGH, NC 27601

SBA
470 DAVIDSON ROAD
PITTSBURGH, PA 15239
TEL: (740) 260–9710



DRAWN BY:	CHECKED BY:	APPROVED BY:
LMS	MCK	KJC

APPLICATION REV #: 2

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	10/27/2023	ISSUED FOR REVIEW
0	11/15/2023	ISSUED FOR PERMIT
1	01/11/2024	REVISED PER COMMENTS

A&E PROJECT NUMBER
KHCLE– 48511

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBOS01205A
45 FARGO ROAD
WATERFORD, CT 06385

SHEET TITLE
RF SIGNAGE

SHEET NUMBER
GN-2

SITE ACTIVITY REQUIREMENTS:

1. NOTICE TO PROCEED – NO WORK SHALL COMMENCE PRIOR TO CONTRACTOR RECEIVING A WRITTEN NOTICE TO PROCEED (NTP) AND THE ISSUANCE OF A PURCHASE ORDER. PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE DISH Wireless L.L.C. AND TOWER OWNER NOC & THE DISH Wireless L.L.C. AND TOWER OWNER CONSTRUCTION MANAGER.

2. "LOOK UP" – DISH Wireless L.L.C. AND TOWER OWNER SAFETY CLIMB REQUIREMENT:

THE INTEGRITY OF THE SAFETY CLIMB AND ALL COMPONENTS OF THE CLIMBING FACILITY SHALL BE CONSIDERED DURING ALL STAGES OF DESIGN, INSTALLATION, AND INSPECTION. TOWER MODIFICATION, MOUNT REINFORCEMENTS, AND/OR EQUIPMENT INSTALLATIONS SHALL NOT COMPROMISE THE INTEGRITY OR FUNCTIONAL USE OF THE SAFETY CLIMB OR ANY COMPONENTS OF THE CLIMBING FACILITY ON THE STRUCTURE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO: PINCHING OF THE WIRE ROPE, BENDING OF THE WIRE ROPE FROM ITS SUPPORTS, DIRECT CONTACT OR CLOSE PROXIMITY TO THE WIRE ROPE WHICH MAY CAUSE FRICTIONAL WEAR, IMPACT TO THE ANCHORAGE POINTS IN ANY WAY, OR TO IMPEDE/BLOCK ITS INTENDED USE. ANY COMPROMISED SAFETY CLIMB, INCLUDING EXISTING CONDITIONS MUST BE TAGGED OUT AND REPORTED TO YOUR DISH Wireless L.L.C. AND DISH Wireless L.L.C. AND TOWER OWNER POC OR CALL THE NOC TO GENERATE A SAFETY CLIMB MAINTENANCE AND CONTRACTOR NOTICE TICKET.

3. PRIOR TO THE START OF CONSTRUCTION, ALL REQUIRED JURISDICTIONAL PERMITS SHALL BE OBTAINED. THIS INCLUDES, BUT IS NOT LIMITED TO, BUILDING, ELECTRICAL, MECHANICAL, FIRE, FLOOD ZONE, ENVIRONMENTAL, AND ZONING. AFTER ONSITE ACTIVITIES AND CONSTRUCTION ARE COMPLETED, ALL REQUIRED PERMITS SHALL BE SATISFIED AND CLOSED OUT ACCORDING TO LOCAL JURISDICTIONAL REQUIREMENTS.

4. ALL CONSTRUCTION MEANS AND METHODS; INCLUDING BUT NOT LIMITED TO, ERECTION PLANS, RIGGING PLANS, CLIMBING PLANS, AND RESCUE PLANS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR RESPONSIBLE FOR THE EXECUTION OF THE WORK CONTAINED HEREIN, AND SHALL MEET ANSI/ASSE A10.48 (LATEST EDITION); FEDERAL, STATE, AND LOCAL REGULATIONS; AND ANY APPLICABLE INDUSTRY CONSENSUS STANDARDS RELATED TO THE CONSTRUCTION ACTIVITIES BEING PERFORMED. ALL RIGGING PLANS SHALL ADHERE TO ANSI/ASSE A10.48 (LATEST EDITION) AND DISH Wireless L.L.C. AND TOWER OWNER STANDARDS, INCLUDING THE REQUIRED INVOLVEMENT OF A QUALIFIED ENGINEER FOR CLASS IV CONSTRUCTION, TO CERTIFY THE SUPPORTING STRUCTURE(S) IN ACCORDANCE WITH ANSI/TIA–322 (LATEST EDITION).

5. ALL SITE WORK TO COMPLY WITH DISH Wireless L.L.C. AND TOWER OWNER INSTALLATION STANDARDS FOR CONSTRUCTION ACTIVITIES ON DISH Wireless L.L.C. AND TOWER OWNER TOWER SITE AND LATEST VERSION OF ANSI/TIA–1019–A–2012 "STANDARD FOR INSTALLATION, ALTERATION, AND MAINTENANCE OF ANTENNA SUPPORTING STRUCTURES AND ANTENNAS."

6. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY DISH Wireless L.L.C. AND TOWER OWNER PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.

7. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.

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

9. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES INCLUDING PRIVATE LOCATES SERVICES PRIOR TO THE START OF CONSTRUCTION.

10. 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 CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR 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 E) CONSTRUCTION SAFETY PROCEDURES.

11. ALL SITE WORK SHALL BE AS INDICATED ON THE STAMPED CONSTRUCTION DRAWINGS AND DISH PROJECT SPECIFICATIONS, LATEST APPROVED REVISION.

12. CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH AT THE COMPLETION OF THE WORK. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.

13. 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 DISH Wireless L.L.C. AND TOWER OWNER, AND/OR LOCAL UTILITIES.

14. THE CONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE REQUIRED BY LOCAL JURISDICTION AND SIGNAGE REQUIRED ON INDIVIDUAL PIECES OF EQUIPMENT, ROOMS, AND SHELTERS.

15. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE CARRIER'S EQUIPMENT AND TOWER AREAS.

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

17. 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 ON THE CONSTRUCTION DRAWINGS AND/OR PROJECT SPECIFICATIONS.

18. CONTRACTOR 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.

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

20. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS AND RADIOS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.

21. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.

22. 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.

GENERAL NOTES:

1.FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:

CONTRACTOR:GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION

CARRIER:DISH Wireless L.L.C.

TOWER OWNER:TOWER OWNER

2. THESE DRAWINGS HAVE BEEN PREPARED USING STANDARDS OF PROFESSIONAL CARE AND COMPLETENESS NORMALLY EXERCISED UNDER SIMILAR CIRCUMSTANCES BY REPUTABLE ENGINEERS IN THIS OR SIMILAR LOCALITIES. IT IS ASSUMED THAT THE WORK DEPICTED WILL BE PERFORMED BY AN EXPERIENCED CONTRACTOR AND/OR WORKPEOPLE WHO HAVE A WORKING KNOWLEDGE OF THE APPLICABLE CODE STANDARDS AND REQUIREMENTS AND OF INDUSTRY ACCEPTED STANDARD GOOD PRACTICE. AS NOT EVERY CONDITION OR ELEMENT IS (OR CAN BE) EXPLICITLY SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL USE INDUSTRY ACCEPTED STANDARD GOOD PRACTICE FOR MISCELLANEOUS WORK NOT EXPLICITLY SHOWN.

3. THESE DRAWINGS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE MEANS OR METHODS OF CONSTRUCTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY FOR PROTECTION OF LIFE AND PROPERTY DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, FORMWORK, SHORING, ETC. SITE VISITS BY THE ENGINEER OR HIS REPRESENTATIVE WILL NOT INCLUDE INSPECTION OF THESE ITEMS AND IS FOR STRUCTURAL OBSERVATION OF THE FINISHED STRUCTURE ONLY.

4. NOTES AND DETAILS IN THE CONSTRUCTION DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT, AND/OR AS PROVIDED FOR IN THE CONTRACT DOCUMENTS. WHERE DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS, GENERAL NOTES, AND SPECIFICATIONS, THE GREATER, MORE STRICT REQUIREMENTS, SHALL GOVERN. IF FURTHER CLARIFICATION IS REQUIRED CONTACT THE ENGINEER OF RECORD.

5. SUBSTANTIAL EFFORT HAS BEEN MADE TO PROVIDE ACCURATE DIMENSIONS AND MEASUREMENTS ON THE DRAWINGS TO ASSIST IN THE FABRICATION AND/OR PLACEMENT OF CONSTRUCTION ELEMENTS BUT IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY THE DIMENSIONS, MEASUREMENTS, AND/OR CLEARANCES SHOWN IN THE CONSTRUCTION DRAWINGS PRIOR TO FABRICATION OR CUTTING OF ANY NEW OR EXISTING CONSTRUCTION ELEMENTS. IF IT IS DETERMINED THAT THERE ARE DISCREPANCIES AND/OR CONFLICTS WITH THE CONSTRUCTION DRAWINGS THE ENGINEER OF RECORD IS TO BE NOTIFIED AS SOON AS POSSIBLE.

6. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING CONTRACTOR 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 CARRIER POC AND TOWER OWNER.

7. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.

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

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

10. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CARRIER AND TOWER OWNER PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.

11. CONTRACTOR IS TO PERFORM A SITE INVESTIGATION, BEFORE SUBMITTING BIDS, TO DETERMINE THE BEST ROUTING OF ALL CONDUITS FOR POWER, AND TELCO AND FOR GROUNDING CABLES AS SHOWN IN THE POWER, TELCO, AND GROUNDING PLAN DRAWINGS.

12. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF DISH Wireless L.L.C. AND TOWER OWNER

13. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.

14. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.

dish wireless.
5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

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470 DAVIDSON ROAD
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TEL: (740) 260–9710

DRAWN BY:	CHECKED BY:	APPROVED BY:
LMS	MCK	KJC

APPLICATION REV #: 2

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	10/27/2023	ISSUED FOR REVIEW
0	11/15/2023	ISSUED FOR PERMIT
1	01/11/2024	REVISED PER COMMENTS

A&E PROJECT NUMBER

KHCLE– 48511

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS01205A
45 FARGO ROAD
WATERFORD, CT 06385

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-3

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

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. UNLESS NOTED OTHERWISE, SOIL BEARING PRESSURE USED FOR DESIGN OF SLABS AND FOUNDATIONS IS ASSUMED TO BE 1000 psf.

3. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 3000 psi AT 28 DAYS, UNLESS NOTED OTHERWISE. NO MORE THAN 90 MINUTES SHALL ELAPSE FROM BATCH TIME TO TIME OF PLACEMENT UNLESS APPROVED BY THE ENGINEER OF RECORD. TEMPERATURE OF CONCRETE SHALL NOT EXCEED 90°f AT TIME OF PLACEMENT.

4. CONCRETE EXPOSED TO FREEZE-THAW CYCLES SHALL CONTAIN AIR ENTRAINING ADMIXTURES. AMOUNT OF AIR ENTRAINMENT TO BE BASED ON SIZE OF AGGREGATE AND F3 CLASS EXPOSURE (VERY SEVERE). CEMENT USED TO BE TYPE II PORTLAND CEMENT WITH A MAXIMUM WATER-TO-CEMENT RATIO (W/C) OF 0.45.

5. ALL STEEL REINFORCING SHALL CONFORM TO ASTM A615. ALL WELDED WIRE FABRIC (WWF) SHALL CONFORM TO ASTM A185. ALL SPLICES SHALL BE CLASS "B" TENSION SPLICES, UNLESS NOTED OTHERWISE. ALL HOOKS SHALL BE STANDARD 90 DEGREE HOOKS, UNLESS NOTED OTHERWISE. YIELD STRENGTH (Fy) OF STANDARD DEFORMED BARS ARE AS FOLLOWS:

#4 BARS AND SMALLER 40 ksi

#5 BARS AND LARGER 60 ksi

6. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:

- CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH 3"
- CONCRETE EXPOSED TO EARTH OR WEATHER:
- #6 BARS AND LARGER 2"
- #5 BARS AND SMALLER 1-1/2"
- CONCRETE NOT EXPOSED TO EARTH OR WEATHER:
- SLAB AND WALLS 3/4"
- BEAMS AND COLUMNS 1-1/2"

7. A TOOLED EDGE OR A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNLESS NOTED OTHERWISE, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

ELECTRICAL INSTALLATION NOTES:

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES/ORDINANCES.

2. CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED AND TRIP HAZARDS ARE ELIMINATED.

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

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

4.1. ALL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OF APPROVAL, AND SHALL CONFORM TO REQUIREMENT OF THE NATIONAL ELECTRICAL CODE.

4.2. ALL OVERCURRENT DEVICES SHALL HAVE AN INTERRUPTING CURRENT RATING THAT SHALL BE GREATER THAN THE SHORT CIRCUIT CURRENT TO WHICH THEY ARE SUBJECTED, 22,000 AIC MINIMUM. VERIFY AVAILABLE SHORT CIRCUIT CURRENT DOES NOT EXCEED THE RATING OF ELECTRICAL EQUIPMENT IN ACCORDANCE WITH ARTICLE 110.24 NEC OR THE MOST CURRENT ADOPTED CODE PRE THE GOVERNING JURISDICTION.

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

6. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH LAMICOID TAGS SHOWING THEIR RATED VOLTAGE, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING AND BRANCH CIRCUIT ID NUMBERS (i.e. PANEL BOARD AND CIRCUIT ID'S).

7. PANEL BOARDS (ID NUMBERS) SHALL BE CLEARLY LABELED WITH PLASTIC LABELS.

8. TIE WRAPS ARE NOT ALLOWED.

9. ALL POWER AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE COPPER CONDUCTOR (#14 OR LARGER) WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.

10. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE COPPER CONDUCTOR (#6 OR LARGER) WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.

11. POWER AND CONTROL WIRING IN FLEXIBLE CORD SHALL BE MULTI-CONDUCTOR, TYPE SOOW CORD (#14 OR LARGER) UNLESS OTHERWISE SPECIFIED.

12. POWER AND CONTROL WIRING FOR USE IN CABLE TRAY SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (#14 OR LARGER), WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.

13. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE, COMPRESSION WIRE LUGS AND WIRE NUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRE NUTS SHALL BE RATED FOR OPERATION NOT LESS THAN 75° C (90° C IF AVAILABLE).

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

15. ELECTRICAL METALLIC TUBING (EMT), INTERMEDIATE METAL CONDUIT (IMC), OR RIGID METAL CONDUIT (RMC) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.

16. ELECTRICAL METALLIC TUBING (EMT) OR METAL-CLAD CABLE (MC) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.

17. SCHEDULE 40 PVC UNDERGROUND ON STRAIGHTS AND SCHEDULE 80 PVC FOR ALL ELBOWS/90s AND ALL APPROVED ABOVE GRADE PVC CONDUIT.

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

19. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.

20. CABINETS, BOXES AND WIRE WAYS SHALL BE LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND THE NEC.

21. WIREWAYS SHALL BE METAL WITH AN ENAMEL FINISH AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARDS (WIREMOLD SPECMATE WIREWAY).

22. SLOTTED WIRING DUCT SHALL BE PVC AND INCLUDE COVER (PANDUIT TYPE E OR EQUAL).

23. CONDUITS SHALL BE FASTENED SECURELY IN PLACE WITH APPROVED NON-PERFORATED STRAPS AND HANGERS. EXPLOSIVE DEVICES (i.e. POWDER-ACTUATED) FOR ATTACHING HANGERS TO STRUCTURE WILL NOT BE PERMITTED. CLOSELY FOLLOW THE LINES OF THE STRUCTURE, MAINTAIN CLOSE PROXIMITY TO THE STRUCTURE AND KEEP CONDUITS IN TIGHT ENVELOPES. CHANGES IN DIRECTION TO ROUTE AROUND OBSTACLES SHALL BE MADE WITH CONDUIT OUTLET BODIES. CONDUIT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER. PARALLEL AND PERPENDICULAR TO STRUCTURE WALL AND CEILING LINES. ALL CONDUIT SHALL BE FISHED TO CLEAR OBSTRUCTIONS. ENDS OF CONDUITS SHALL BE TEMPORARILY CAPPED FLUSH TO FINISH GRADE TO PREVENT CONCRETE, PLASTER OR DIRT FROM ENTERING. CONDUITS SHALL BE RIGIDLY CLAMPED TO BOXES BY GALVANIZED MALLEABLE IRON BUSHING ON INSIDE AND GALVANIZED MALLEABLE IRON LOCKNUT ON OUTSIDE AND INSIDE.

24. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL. SHALL MEET OR EXCEED UL 50 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND NEMA 3 (OR BETTER) FOR EXTERIOR LOCATIONS.

25. 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 BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.

26. NONMETALLIC RECEPTACLE, SWITCH AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2 (NEWEST REVISION) AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.

27. THE CONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CARRIER AND/OR DISH Wireless L.L.C. AND TOWER OWNER BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.

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

29. INSTALL LAMICOID LABEL ON THE METER CENTER TO SHOW "DISH Wireless L.L.C.".

30. ALL EMPTY/SPARE CONDUITS THAT ARE INSTALLED ARE TO HAVE A METERED MULE TAPE PULL CORD INSTALLED.

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

Kimley»Horn

421 FAYETTEVILLE ST, SUITE 600
RALEIGH, NC 27601

SBA

470 DAVIDSON ROAD
PITTSBURGH, PA 15239
TEL: (740) 260-9710

STATE OF CONNECTICUT
WILLIAM C. EDMONSON
36630
LICENSED
PROFESSIONAL ENGINEER
1-16-24

DRAWN BY:	CHECKED BY:	APPROVED BY:
LMS	MCK	KJC

APPLICATION REV #: 2

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	10/27/2023	ISSUED FOR REVIEW
0	11/15/2023	ISSUED FOR PERMIT
1	01/11/2024	REVISED PER COMMENTS

A&E PROJECT NUMBER

KHCLE- 48511

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS01205A
45 FARGO ROAD
WATERFORD, CT 06385

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-4

GROUNDING NOTES:

1. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION AND AC POWER GES'S) SHALL BE BONDED TOGETHER AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.

2. THE CONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS, THE CONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.

3. THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT AND PROVIDE TESTING RESULTS.

4. METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.

5. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.

6. EACH CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, #6 STRANDED COPPER OR LARGER FOR INDOOR BTS; #2 BARE SOLID TINNED COPPER FOR OUTDOOR BTS.

7. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED BACK TO BACK CONNECTIONS ON OPPOSITE SIDE OF THE GROUND BUS ARE PERMITTED.

8. ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING SHALL BE #2 SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.

9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.

10. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.

11. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.

12. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR AND EXTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS.

13. COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC WELD CONNECTIONS.

14. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.

15. APPROVED ANTIOXIDANT COATINGS (i.e. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.

16. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.

17. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.

18. BOND ALL METALLIC OBJECTS WITHIN 6 ft OF MAIN GROUND RING WITH (1) #2 BARE SOLID TINNED COPPER GROUND CONDUCTOR.

19. GROUND CONDUCTORS USED FOR THE FACILITY GROUNDING AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL SUCH AS PVC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (i.e., NONMETALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.

20. ALL GROUNDS THAT TRANSITION FROM BELOW GRADE TO ABOVE GRADE MUST BE #2 BARE SOLID TINNED COPPER IN 3/4" NON-METALLIC, FLEXIBLE CONDUIT FROM 24" BELOW GRADE TO WITHIN 3" TO 6" OF CAD-WELD TERMINATION POINT. THE EXPOSED END OF THE CONDUIT MUST BE SEALED WITH SILICONE CAULK. (ADD TRANSITIONING GROUND STANDARD DETAIL AS WELL).

21. BUILDINGS WHERE THE MAIN GROUNDING CONDUCTORS ARE REQUIRED TO BE ROUTED TO GRADE, THE CONTRACTOR SHALL ROUTE TWO GROUNDING CONDUCTORS FROM THE ROOFTOP, TOWERS, AND WATER TOWERS GROUNDING RING, TO THE EXISTING GROUNDING SYSTEM, THE GROUNDING CONDUCTORS SHALL NOT BE SMALLER THAN 2/0 COPPER. ROOFTOP GROUNDING RING SHALL BE BONDED TO THE EXISTING GROUNDING SYSTEM, THE BUILDING STEEL COLUMNS, LIGHTNING PROTECTION SYSTEM, AND BUILDING MAIN WATER LINE (FERROUS OR NONFERROUS METAL PIPING ONLY). DO NOT ATTACH GROUNDING TO FIRE SPRINKLER SYSTEM PIPES.

dish wireless.

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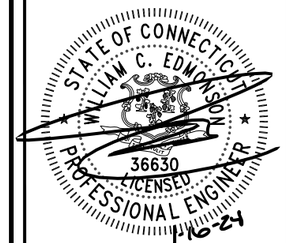

DRAWN BY:	CHECKED BY:	APPROVED BY:
LMS	MCK	KJC

APPLICATION REV #: 2

CONSTRUCTION DOCUMENTS

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1	01/11/2024	REVISED PER COMMENTS

A&E PROJECT NUMBER

KHCLE- 48511

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS01205A
45 FARGO ROAD
WATERFORD, CT 06385

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-5

EXHIBIT 7

Structural Analysis

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: Dish Wireless (App#: 234515, V#2)
Carrier Site ID / Name: BOBOS01205A / 0
Site Location: 45 Fargo Road
Waterford, Connecticut
New London County
Latitude: 41.389339
Longitude: -72.171408

9/21/23

Analysis Result:

Max Structural Usage: 70.8% [Pass]
Max Foundation Usage: 66.7% [Pass]
Additional Usage Caused by New Mount/Mount Modification : N/A

Report Prepared By: Jerin Tasnim

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: Dish Wireless (App#: 234515, V#2)

Carrier Site ID / Name: BOBOS01205A / 0

Site Location: 45 Fargo Road

Waterford, Connecticut

New London County

Latitude: 41.389339

Longitude: -72.171408

Analysis Result:

Max Structural Usage: 70.8% [Pass]

Max Foundation Usage: 66.7% [Pass]

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

Report Prepared By: Jerin Tasnim

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	N/A

Analysis Criteria

The comprehensive analysis was performed in accordance with the requirements and stipulations of the TIA-222-H**.** 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:	126.0 mph (3-Sec. Gust) (Ultimate wind speed)
Wind Speed with Ice:	50 mph (3-Sec. Gust) with 1" radial ice concurrent
Service Load Wind Speed:	60 mph + 0" Radial ice
Standard/Codes:	TIA-222-H / 2021 IBC / 2022 Connecticut State Building Code
Exposure Category:	B
Risk Category:	II
Topographic Category:	1
Crest Height:	0 ft
Seismic Parameters:	S_S = 0.197, S_1 = 0.053

This structural analysis is based upon the tower being classified as a Risk Category 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	-	-
5	173.0	4	Antel LPA-80080/4CF ___- Panel	(3) Modified 14.5' T-Arms W/ (3) Commscope BSAMNT-SBS-2-2	(12) 1 5/8" (2) 1 5/8" Hybrid	Verizon
6		2	Rfs Celwave APL866513-42T0- Panel			
7		6	Andrew JAHH-65B-R3B - Panel			
8		3	Samsung MT6407-77A - Panel			
9		3	Commscope CBC78T-DS-43/E14F05P19			
10		3	Samsung B2/B66 RRH BR049			
11		3	Samsung B5/B13 RRH BR04C			
12		2	RFS DB-T1-6Z-8AB-0Z-OVP Box			
-	163.0	-	-	Empty Low profile platform*	-	-
13	153.0	3	Ericsson- AIR6419 B41 - Panel	(3) T-Arms (1) Sitepro PRK-1245L- (Platform reinforcement kit) (1) Sitepro PRK-SFS-L- (V-brace kit) (3) Sitepro SPTB- (Tie back kit)	(9) 1-5/8" Coax (3) 1.9" Fiber	T-Mobile
14		3	Commscope- VV-65A-R1 - Panel			
15		3	RFS- APXVAALL24-43-U-NA20 - Panel			
16		3	Ericsson- KRY 112 144/1- TMA			
17		3	Ericsson- 4449 B71 + B85- RRU			
18		3	Ericsson- 4460 B25+ B66- RRU			
19	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
20		1	Cci OPA-65R-LCUU-H4 - Panel			
21		2	Cci TPA-65R-LCUUUU-H8 - Panel			
22		2	Cci OPA-65R-LCUU-H8 - Panel			
23		3	Cci DTMABP7819VG12A TMA			
24		3	Kaelus DBC0061F1V51-2 - Diplexer			
25		3	Ericsson RRUS 32 B2			
26		3	Powerwave 7770 - Panel			
27		3	ADC ClearGain 850-1900 Dual Band - TMA			
28		3	Ericsson RRUS 11			
29		3	Css DBC-750			
30		1	Raycap DC6-48-60-18-8F			

*Dish will remove abandoned mount at 163' elevation.

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

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

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	183.0	3	Commscope FFVV-65B-R2 - Panel	Platform w/HRK [(1) Commscope MC-PK8-DSH]	(1) 1.75" Hybrid	Dish Wireless
2		3	Samsung RF4450t-71A - RRU			
3		3	Samsung RF4451d-70A - RRU			
4		1	Raycap RDIDC-9181-PF-48 - OVP			

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:	**70.8%**	**56.2%**	**73.9%**
Pass/Fail	**Pass**	**Pass**	**Pass**

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Analysis Reactions	4777.8	37.1	59.9

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.

Service Load 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 1.2230 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.

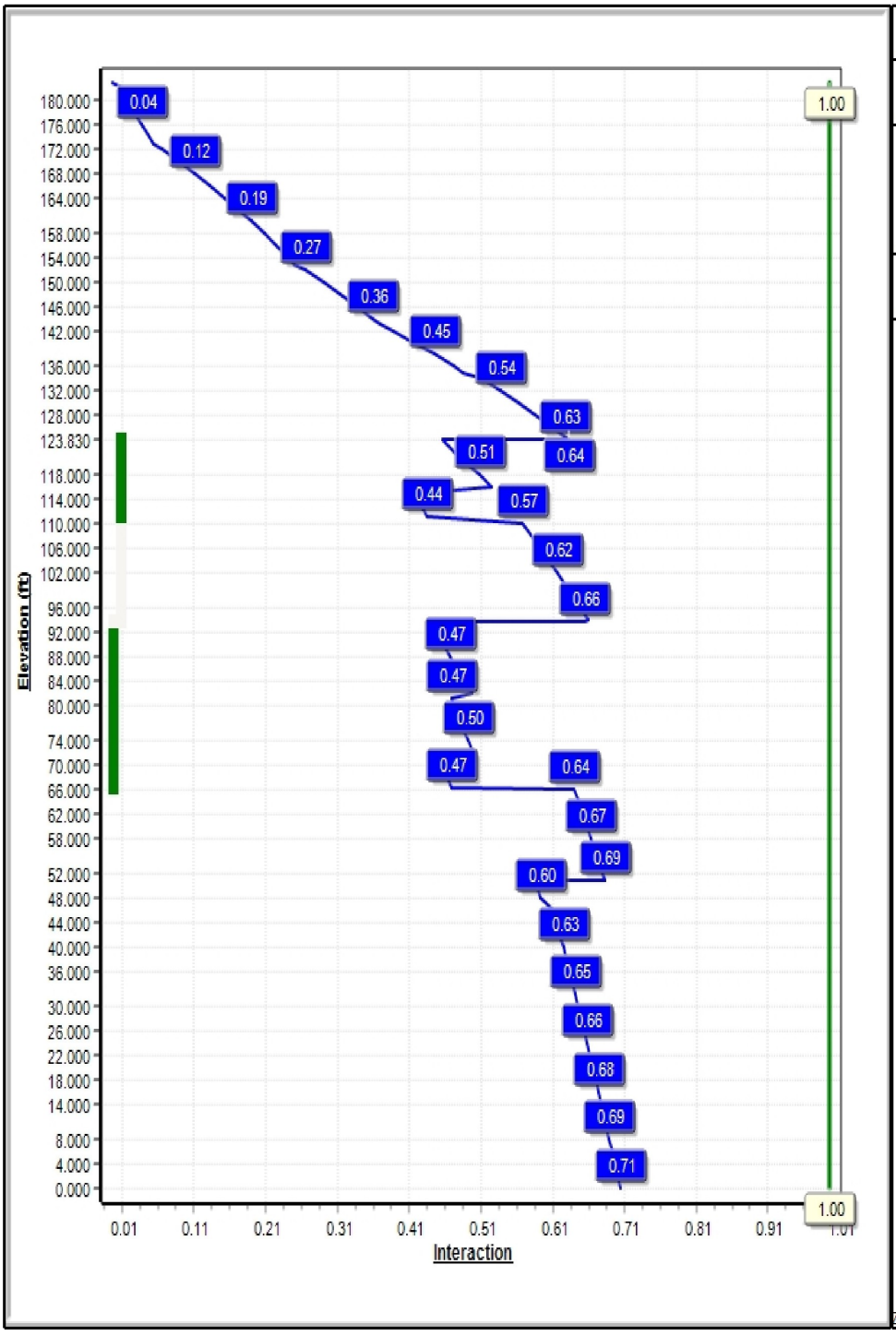
Usage Diagram - Max Ratio 70.84% at 0.0ft

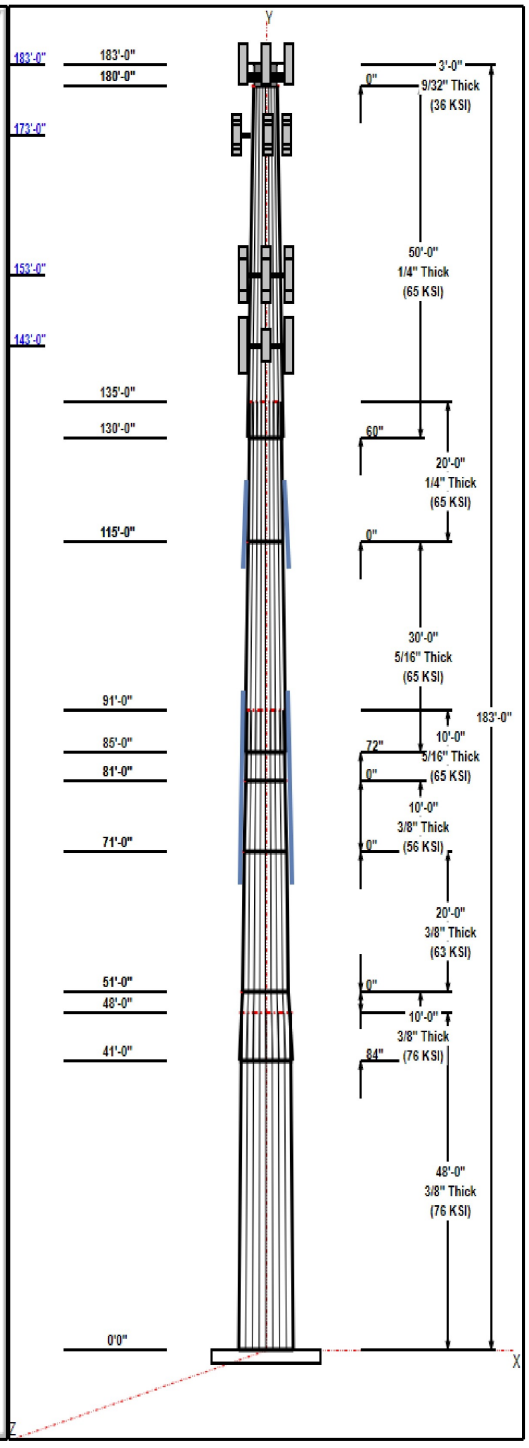
Structure:	CT01002-S-SBA	**Code:**	EIA/TIA-222-H	9/21/2023	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Gh:**	1.1	Page: 1	
Base Elev:	0.000 (ft)				

Tower Engineering Solutions

Dead Load Factor:	1.20	**Iterations:**	29
Wind Load Factor:	1.00		

Load Case : 1.2D + 1.0W 126 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

9/21/2023

Tower Engineering Solutions

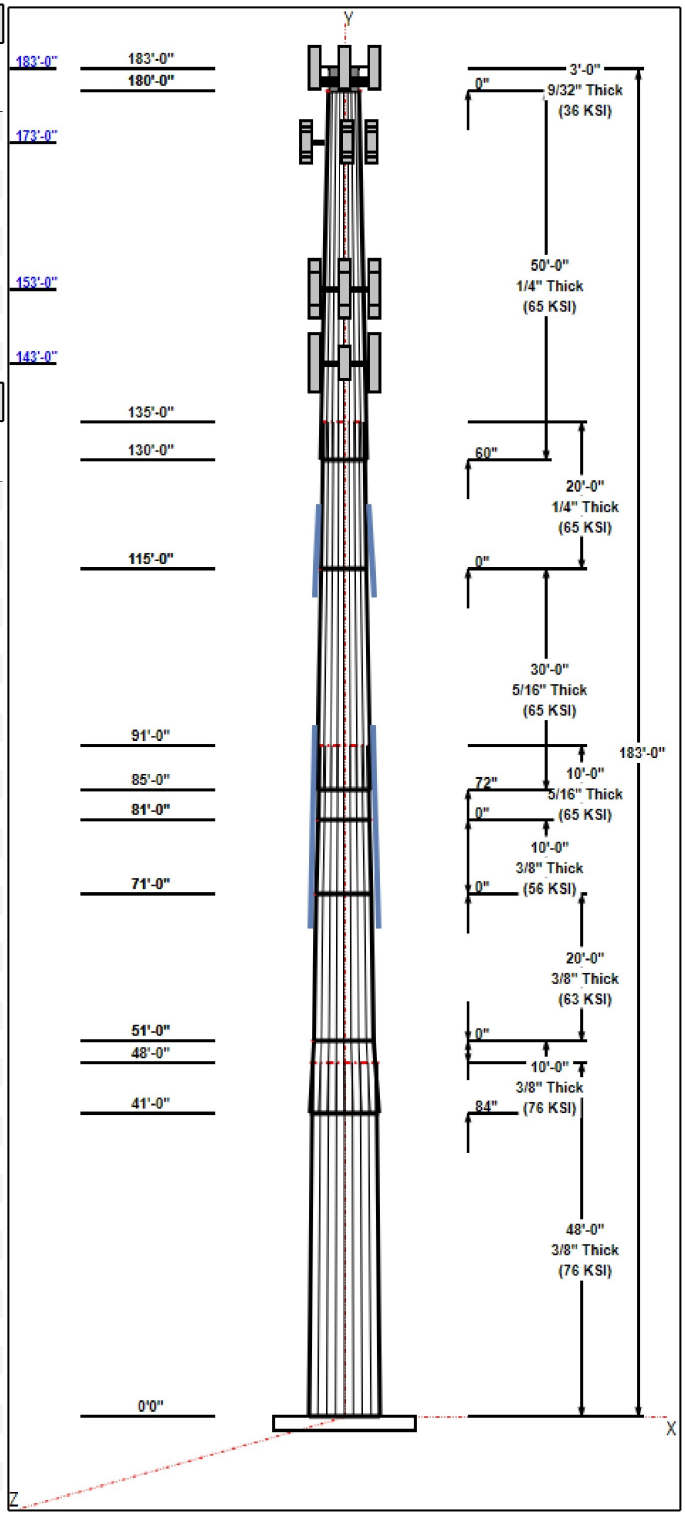
Shaft Properties

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	20.00	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
183.00	183.00	3	FFVV-65B-R2	Dish Wireless
183.00	183.00	3	RF4450t-71A	Dish Wireless
183.00	183.00	3	RF4451d-70A	Dish Wireless
183.00	183.00	1	RDIDC-9181-OF-48	Dish Wireless
183.00	183.00	1	MC-PK8-DSH	Dish Wireless
173.00	173.00	6	Andrew JAHH-65B-R3B	Verizon
173.00	173.00	3	Samsung MT6407-77A	Verizon
173.00	173.00	3	BSAMNT-SBS-1-2	Verizon
173.00	173.00	3	CBC78T-DS-43/E14F05P1	Verizon
173.00	173.00	3	Samsung B2/B66 RRH	Verizon
173.00	173.00	3	Samsung B5/B13 RRH	Verizon
173.00	173.00	1	(3) T-Arms	Verizon
173.00	173.00	4	LPA-80080-4CF-EDIN-0	Verizon
173.00	173.00	2	APL866513-42T0	Verizon
173.00	173.00	2	DB-T1-6Z-8AB-OZ	Verizon
153.00	153.00	3	Ericsson 4449 B71 + B85	T-Mobile
153.00	153.00	1	Low Profile Platform	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
153.00	153.00	3	AIR6419 B41	T-Mobile
153.00	153.00	3	VV-65A-R1	T-Mobile
153.00	153.00	3	4460 Radio	T-Mobile
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
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

Linear Appurtenances



Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	183.00	Inside	1.75" Hybrid	Dish Wireless
0.00	183.00	Outside	Safety Cable	
0.00	183.00	Outside	Step bolts (ladder)	
0.00	173.00	Outside	1 5/8" Coax	Verizon
0.00	173.00	Inside	1 5/8" Coax	Verizon
0.00	173.00	Inside	1 5/8" Hybrid	Verizon
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	50.0	Round

Reactions

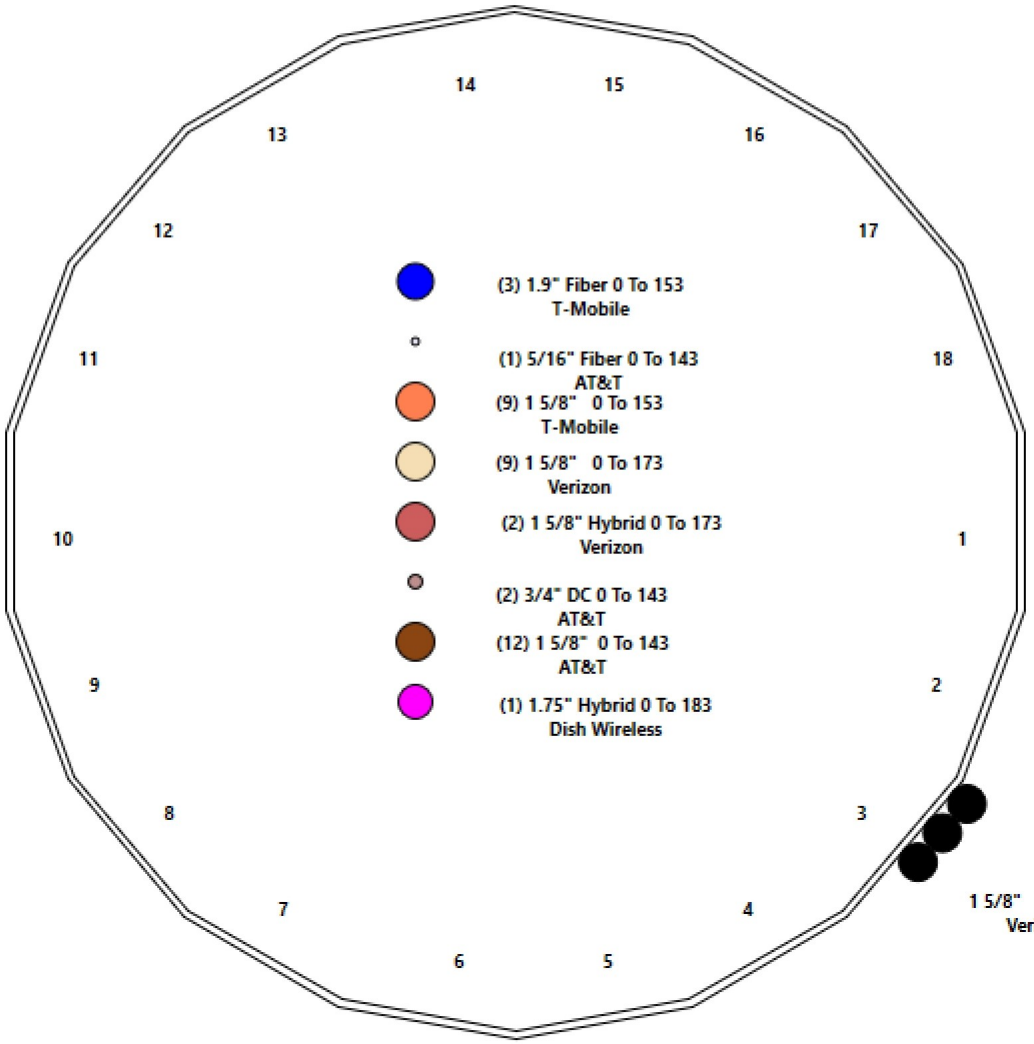
Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.0W 126 mph Wind	4777.8	37.1	59.9
0.9D + 1.0W 126 mph Wind	4719.1	37.1	44.9
1.2D + 1.0Di + 1.0Wi 50 mph Wind	1148.9	9.0	82.1
1.2D + 1.0Ev + 1.0Eh	119.4	0.7	62.1
0.9D + 1.0Ev + 1.0Eh	118.2	0.7	47.0
1.0D + 1.0W 60 mph Wind	962.4	7.5	49.9

Structure: CT01002-S-SBA - Coax Line Placement

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

9/21/2023

Tower Engineering Solutions



Shaft Properties

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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

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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	20.000	0.2500	65	Flange	0.00	1,955
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:		**31,483**

	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	115.0	30.59	5744.14	25.96	155.21	34.09	135.00	26.85	3886.12	22.64	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:**	TIA-222-H	9/21/2023	
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	

Tower Engineering Solutions

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	183.00	FFVV-65B-R2	3	70.80	12.27	0.74	264.74	13.260	0.75	0.00	0.00
2	183.00	RF4450t-71A	3	74.70	1.87	0.67	109.42	2.244	0.67	0.00	0.00
3	183.00	RF4451d-70A	3	74.70	1.87	0.67	109.42	2.244	0.67	0.00	0.00
4	183.00	RDIDC-9181-OF-48	1	21.90	2.01	1.00	58.11	2.397	1.00	0.00	0.00
5	183.00	MC-PK8-DSH	1	1727.00	37.59	1.00	2874.82	69.712	1.00	0.00	0.00
6	173.00	Andrew JAHH-65B-R3B	6	63.30	9.11	0.83	210.52	10.004	0.83	0.00	0.00
7	173.00	Samsung MT6407-77A	3	79.40	4.69	0.70	154.83	5.324	0.70	0.00	0.00
8	173.00	BSAMNT-SBS-1-2	3	25.35	0.00	1.00	37.32	0.000	1.00	0.00	0.00
9	173.00	CBC78T-DS-43/E14F05P19	3	10.40	0.37	0.67	22.36	0.548	0.67	0.00	0.00
10	173.00	Samsung B2/B66 RRH BR049	3	84.40	1.87	0.67	132.21	2.246	0.67	0.00	0.00
11	173.00	Samsung B5/B13 RRH BR04C	3	70.30	1.87	0.67	113.40	2.246	0.67	0.00	0.00
12	173.00	(3) T-Arms	1	1500.00	30.00	1.00	2385.15	46.287	1.00	0.00	0.00
13	173.00	LPA-80080-4CF-EDIN-0	4	12.00	2.61	1.70	90.19	3.217	1.70	0.00	0.00
14	173.00	APL866513-42T0	2	15.70	4.05	0.93	89.55	5.310	0.93	0.00	0.00
15	173.00	DB-T1-6Z-8AB-OZ	2	44.00	4.80	0.75	135.68	5.378	0.75	0.00	0.00
16	153.00	Ericsson 4449 B71 + B85 RRU	3	73.20	1.97	0.67	111.77	2.350	0.67	0.00	0.00
17	153.00	Low Profile Platform	1	1200.00	25.00	1.00	1899.47	38.989	1.00	0.00	0.00
18	153.00	KRY 112 144/1	3	11.00	0.41	0.70	18.20	0.727	0.70	0.00	0.00
19	153.00	RFS APXVAALL24-43-U-NA20	3	122.80	20.24	0.70	390.28	21.494	0.70	0.00	0.00
20	153.00	PRK-1245 (kicker kit)	1	464.91	9.50	1.00	681.70	16.145	1.00	0.00	0.00
21	153.00	SPTB(Tie back Kit)	1	140.00	3.70	1.00	257.51	6.288	1.00	0.00	0.00
22	153.00	V-brace kit	1	230.00	2.70	1.00	444.50	4.589	1.00	0.00	0.00
23	153.00	AIR6419 B41	3	66.10	3.80	0.76	130.37	4.332	0.76	0.00	0.00
24	153.00	VV-65A-R1	3	52.90	6.69	0.83	167.04	7.420	0.83	0.00	0.00
25	153.00	4460 Radio	3	109.00	2.85	0.67	157.03	3.300	0.67	0.00	0.00
26	143.00	HRK14	1	352.36	10.13	1.00	629.81	16.699	1.00	0.00	0.00
27	143.00	Powerwave 7770.00	3	35.00	5.50	0.73	117.92	6.192	0.73	0.00	0.00
28	143.00	Low Profile Platform-Round	1	1500.00	22.00	1.00	2368.45	33.718	1.00	0.00	0.00
29	143.00	850-1900 Dual Band	3	5.50	0.52	0.66	13.22	0.872	0.66	0.00	0.00
30	143.00	RRUS 11	3	50.70	2.52	0.67	105.49	2.939	0.67	0.00	0.00
31	143.00	DBC-750	3	4.80	0.51	0.50	11.21	0.861	0.50	0.00	0.00
32	143.00	DC6-48-60-18-8F	1	31.80	1.47	1.00	72.82	1.934	1.00	0.00	0.00
33	143.00	QS46512-2	1	27.30	5.55	1.00	139.46	11.408	1.00	0.00	0.00
34	143.00	OPA-65R-LCUU-H4	1	57.00	5.94	1.00	155.58	6.609	1.00	0.00	0.00
35	143.00	TPA-65R-LCUUUU-H8	2	75.00	13.30	0.90	271.09	14.368	0.90	0.00	0.00
36	143.00	OPA-65R-LCUU-H8	2	95.00	12.75	0.90	271.68	13.792	0.90	0.00	0.00
37	143.00	DTMABP7819VG12A	3	19.20	1.14	0.67	36.13	1.651	0.67	0.00	0.00
38	143.00	DBC0061F1V51-2	3	25.40	0.43	0.67	35.05	0.619	0.67	0.00	0.00
39	143.00	RRUS 32 B2	3	53.00	2.74	0.67	106.80	3.211	0.67	0.00	0.00
		Totals:	**93**	**11,495.42**			**22,159.86**				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	183.00	(1) 1.75" Hybrid	0.00	Inside
0.00	183.00	(1) Safety Cable	0.00	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	183.00	(1) Step bolts (ladder)			0.00	Outside					
0.00	173.00	(3) 1 5/8" Coax			1.98	Outside					
0.00	173.00	(9) 1 5/8" Coax			0.00	Inside					
0.00	173.00	(2) 1 5/8" Hybrid			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			2.03	Outside					
65.00	95.00	(6) C6X10.5 Reinforcing plate			4.06	Outside					

Shaft Section Properties

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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	275.7				
108.00		0.3125	40.450	39.810	8103.2	21.41	129.44	65	76	272.5				
110.00		0.3125	39.980	39.343	7821.4	21.15	127.93	65	77	269.3				
111.17	RB2	0.3125	39.704	39.070	7659.6	20.99	127.05	65	77	156.1	9.24	2173.3	2173.3	36.9
112.00		0.3125	39.509	38.876	7546.2	20.88	126.43	65	77	110.1	9.24	2153.7	2153.7	26.1
114.00		0.3125	39.038	38.409	7277.5	20.62	124.92	65	77	263.0	9.24	2107.0	2107.0	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				
164.00		0.2500	27.767	21.834	2088.7	18.17	111.07	65	80	149.9				
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				
180.00	Top - Section 8	0.2500	24.000	18.845	1343.0	15.52	96.00	65	83	129.5				

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)
180.00	Bot - Section 9	0.2810	24.000	20.939	1473.6	13.81	85.41	36	36					
182.00		0.2810	24.000	20.939	1473.6	0.00	85.41	36	36	142.5				
183.00		0.2810	24.000	20.939	1473.6	0.00	85.41	36	36	71.3				
							Total Weight			**31483.2**				**2188.9**

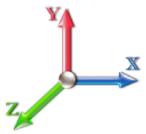
Wind Loading - Shaft

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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 + 1.0W 126 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	26.739	29.41	572.30	0.730	0.000	0.00	0.000	0.00	0.0	0.0	0.0
2.00		1.00	0.70	26.739	29.41	568.12	0.730	0.000	2.00	10.876	7.94	233.5	0.0	621.0
4.00		1.00	0.70	26.739	29.41	563.94	0.730	0.000	2.00	10.796	7.88	231.8	0.0	616.4
6.00		1.00	0.70	26.739	29.41	559.76	0.730	0.000	2.00	10.717	7.82	230.1	0.0	611.9
8.00		1.00	0.70	26.739	29.41	555.59	0.730	0.000	2.00	10.637	7.76	228.4	0.0	607.3
10.00		1.00	0.70	26.739	29.41	551.41	0.730	0.000	2.00	10.557	7.71	226.7	0.0	602.7
12.00		1.00	0.70	26.739	29.41	547.23	0.730	0.000	2.00	10.478	7.65	225.0	0.0	598.1
14.00		1.00	0.70	26.739	29.41	543.05	0.730	0.000	2.00	10.398	7.59	223.3	0.0	593.5
16.00		1.00	0.70	26.739	29.41	538.88	0.730	0.000	2.00	10.318	7.53	221.6	0.0	589.0
18.00		1.00	0.70	26.739	29.41	534.70	0.730	0.000	2.00	10.239	7.47	219.8	0.0	584.4
20.00		1.00	0.70	26.739	29.41	530.52	0.730	0.000	2.00	10.159	7.42	218.1	0.0	579.8
22.00		1.00	0.70	26.739	29.41	526.34	0.730	0.000	2.00	10.079	7.36	216.4	0.0	575.2
24.00		1.00	0.70	26.739	29.41	522.17	0.730	0.000	2.00	9.999	7.30	214.7	0.0	570.7
26.00		1.00	0.70	26.739	29.41	517.99	0.730	0.000	2.00	9.920	7.24	213.0	0.0	566.1
28.00		1.00	0.70	26.739	29.41	513.81	0.730	0.000	2.00	9.840	7.18	211.3	0.0	561.5
30.00		1.00	0.70	26.762	29.44	509.85	0.730	0.000	2.00	9.760	7.13	209.8	0.0	556.9
32.00		1.00	0.71	27.260	29.99	510.35	0.730	0.000	2.00	9.681	7.07	211.9	0.0	552.4
34.00		1.00	0.73	27.736	30.51	510.54	0.730	0.000	2.00	9.601	7.01	213.8	0.0	547.8
36.00		1.00	0.74	28.193	31.01	510.43	0.730	0.000	2.00	9.521	6.95	215.6	0.0	543.2
38.00		1.00	0.75	28.632	31.50	510.07	0.730	0.000	2.00	9.442	6.89	217.1	0.0	538.6
40.00		1.00	0.76	29.055	31.96	509.46	0.730	0.000	2.00	9.362	6.83	218.4	0.0	534.1
41.00	Bot - Section 2	1.00	0.77	29.260	32.19	509.08	0.730	0.000	1.00	4.651	3.40	109.3	0.0	265.3
42.00		1.00	0.77	29.463	32.41	508.64	0.730	0.000	1.00	4.695	3.43	111.1	0.0	532.0
44.00		1.00	0.78	29.857	32.84	507.62	0.730	0.000	2.00	9.330	6.81	223.7	0.0	1057.1
46.00		1.00	0.79	30.238	33.26	506.41	0.730	0.000	2.00	9.250	6.75	224.6	0.0	1047.9
48.00	Top - Section 1	1.00	0.80	30.608	33.67	505.03	0.730	0.000	2.00	9.170	6.69	225.4	0.0	1038.8
50.00		1.00	0.81	30.967	34.06	510.65	0.730	0.000	2.00	9.091	6.64	226.1	0.0	518.5
51.00	Top - Section 2	1.00	0.82	31.143	34.26	509.84	0.730	0.000	1.00	4.515	3.30	112.9	0.0	257.5
52.00		1.00	0.82	31.316	34.45	509.00	0.730	0.000	1.00	4.495	3.28	113.0	0.0	256.4
54.00		1.00	0.83	31.656	34.82	507.21	0.730	0.000	2.00	8.931	6.52	227.0	0.0	509.3
56.00		1.00	0.84	31.987	35.19	505.28	0.730	0.000	2.00	8.852	6.46	227.4	0.0	504.7
58.00		1.00	0.85	32.309	35.54	503.23	0.730	0.000	2.00	8.772	6.40	227.6	0.0	500.2
60.00		1.00	0.85	32.623	35.89	501.05	0.730	0.000	2.00	8.692	6.35	227.7	0.0	495.6
62.00		1.00	0.86	32.930	36.22	498.77	0.730	0.000	2.00	8.612	6.29	227.7	0.0	491.0
64.00		1.00	0.87	33.230	36.55	496.38	0.730	0.000	2.00	8.533	6.23	227.7	0.0	486.4
66.00		1.00	0.88	33.524	36.88	493.89	0.730	0.000	2.00	8.453	6.17	227.6	0.0	481.9
66.17	RB1	1.00	0.88	33.549	36.90	493.67	0.773 *	0.000	0.17	0.715	0.55	20.4	0.0	40.7
68.00		1.00	0.89	33.811	37.19	491.30	0.774 *	0.000	1.83	7.659	5.93	220.6	0.0	436.5
70.00		1.00	0.89	34.092	37.50	488.62	0.777 *	0.000	2.00	8.294	6.44	241.6	0.0	472.7
71.00	Top - Section 3	1.00	0.90	34.231	37.65	487.25	0.779 *	0.000	1.00	4.117	3.21	120.7	0.0	234.6
72.00		1.00	0.90	34.368	37.80	485.85	0.780 *	0.000	1.00	4.097	3.20	120.8	0.0	233.5
74.00		1.00	0.91	34.638	38.10	483.00	0.782 *	0.000	2.00	8.134	6.36	242.4	0.0	463.5
76.00		1.00	0.91	34.903	38.39	480.07	0.785 *	0.000	2.00	8.055	6.32	242.7	0.0	459.0
78.00		1.00	0.92	35.163	38.68	477.07	0.787 *	0.000	2.00	7.975	6.28	242.9	0.0	454.4
80.00		1.00	0.93	35.418	38.96	473.99	0.790 *	0.000	2.00	7.895	6.24	243.1	0.0	449.8
81.00	Top - Section 4	1.00	0.93	35.544	39.10	472.42	0.792 *	0.000	1.00	3.918	3.10	121.4	0.0	223.2
82.00		1.00	0.93	35.669	39.24	470.84	0.794 *	0.000	1.00	3.898	3.09	121.4	0.0	185.3

Wind Loading - Shaft

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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	35.915	39.51	467.62	0.796 *	0.000	2.00	7.736	6.16	243.3	0.0	367.7
85.00	Bot - Section 6	1.00	0.94	36.037	39.64	465.99	0.798 *	0.000	1.00	3.838	3.06	121.4	0.0	182.4
86.00		1.00	0.95	36.158	39.77	464.34	0.800 *	0.000	1.00	3.871	3.10	123.1	0.0	365.5
88.00		1.00	0.95	36.396	40.04	460.99	0.802 *	0.000	2.00	7.682	6.16	246.7	0.0	725.3
90.00		1.00	0.96	36.630	40.29	457.59	0.805 *	0.000	2.00	7.603	6.12	246.6	0.0	717.6
91.00	Top - Section 5	1.00	0.96	36.746	40.42	455.86	0.807 *	0.000	1.00	3.771	3.05	123.1	0.0	356.0
92.00		1.00	0.96	36.861	40.55	460.64	0.805 *	0.000	1.00	3.752	3.02	122.4	0.0	178.3
93.83	RT1	1.00	0.97	37.069	40.78	457.43	0.807 *	0.000	1.83	6.814	5.50	224.2	0.0	323.8
94.00		1.00	0.97	37.088	40.80	457.13	0.809 *	0.000	0.17	0.630	0.51	20.8	0.0	29.9
96.00		1.00	0.98	37.312	41.04	453.58	0.730	0.000	2.00	7.364	5.38	220.6	0.0	349.9
98.00		1.00	0.98	37.532	41.29	449.97	0.730	0.000	2.00	7.284	5.32	219.5	0.0	346.1
100.00		1.00	0.99	37.750	41.52	446.30	0.730	0.000	2.00	7.204	5.26	218.4	0.0	342.3
102.00		1.00	0.99	37.964	41.76	442.59	0.730	0.000	2.00	7.125	5.20	217.2	0.0	338.5
104.00		1.00	1.00	38.175	41.99	438.83	0.730	0.000	2.00	7.045	5.14	216.0	0.0	334.7
106.00		1.00	1.00	38.383	42.22	435.02	0.730	0.000	2.00	6.965	5.08	214.7	0.0	330.8
108.00		1.00	1.01	38.589	42.45	431.16	0.730	0.000	2.00	6.886	5.03	213.4	0.0	327.0
110.00		1.00	1.02	38.792	42.67	427.26	0.730	0.000	2.00	6.806	4.97	212.0	0.0	323.2
111.17	RB2	1.00	1.02	38.909	42.80	424.96	0.730	0.000	1.17	3.945	2.88	123.2	0.0	187.3
112.00		1.00	1.02	38.992	42.89	423.32	0.730	0.000	0.83	2.782	2.03	87.1	0.0	132.1
114.00		1.00	1.03	39.190	43.11	419.33	0.731 *	0.000	2.00	6.647	4.86	209.5	0.0	315.6
115.00	Top - Section 6	1.00	1.03	39.288	43.22	417.32	0.733 *	0.000	1.00	3.293	2.41	104.4	0.0	156.4
116.00		1.00	1.03	39.385	43.32	415.30	0.735 *	0.000	1.00	3.273	2.40	104.2	0.0	124.5
118.00		1.00	1.04	39.578	43.54	411.23	0.737 *	0.000	2.00	6.487	4.78	208.0	0.0	246.8
120.00		1.00	1.04	39.768	43.75	407.13	0.739 *	0.000	2.00	6.407	4.74	207.3	0.0	243.7
122.00		1.00	1.05	39.957	43.95	402.98	0.742 *	0.000	2.00	6.328	4.70	206.4	0.0	240.7
123.83	RT2	1.00	1.05	40.127	44.14	399.16	0.745 *	0.000	1.83	5.720	4.26	188.1	0.0	217.5
124.00		1.00	1.05	40.143	44.16	398.80	0.747 *	0.000	0.17	0.528	0.39	17.4	0.0	20.1
126.00		1.00	1.06	40.327	44.36	394.58	0.730	0.000	2.00	6.168	4.50	199.7	0.0	234.6
128.00		1.00	1.06	40.508	44.56	390.33	0.730	0.000	2.00	6.089	4.44	198.1	0.0	231.5
130.00	Bot - Section 8	1.00	1.07	40.688	44.76	386.04	0.730	0.000	2.00	6.009	4.39	196.3	0.0	228.5
132.00		1.00	1.07	40.866	44.95	381.72	0.730	0.000	2.00	6.014	4.39	197.4	0.0	454.1
134.00		1.00	1.07	41.042	45.15	377.37	0.730	0.000	2.00	5.934	4.33	195.6	0.0	448.0
135.00	Top - Section 7	1.00	1.08	41.129	45.24	375.18	0.730	0.000	1.00	2.937	2.14	97.0	0.0	221.7
136.00		1.00	1.08	41.216	45.34	378.49	0.730	0.000	1.00	2.917	2.13	96.6	0.0	110.9
138.00		1.00	1.08	41.388	45.53	374.08	0.730	0.000	2.00	5.775	4.22	191.9	0.0	219.5
140.00		1.00	1.09	41.559	45.71	369.64	0.730	0.000	2.00	5.695	4.16	190.1	0.0	216.4
142.00		1.00	1.09	41.728	45.90	365.17	0.730	0.000	2.00	5.616	4.10	188.2	0.0	213.4
143.00	Appurtenance(s)	1.00	1.09	41.811	45.99	362.93	0.730	0.000	1.00	2.778	2.03	93.3	0.0	105.6
144.00		1.00	1.10	41.895	46.08	360.68	0.730	0.000	1.00	2.758	2.01	92.8	0.0	104.8
146.00		1.00	1.10	42.060	46.27	356.15	0.730	0.000	2.00	5.456	3.98	184.3	0.0	207.3
148.00		1.00	1.11	42.224	46.45	351.59	0.730	0.000	2.00	5.376	3.92	182.3	0.0	204.2
150.00		1.00	1.11	42.386	46.62	347.01	0.730	0.000	2.00	5.297	3.87	180.3	0.0	201.2
152.00		1.00	1.11	42.547	46.80	342.39	0.730	0.000	2.00	5.217	3.81	178.2	0.0	198.1
153.00	Appurtenance(s)	1.00	1.12	42.627	46.89	340.08	0.730	0.000	1.00	2.579	1.88	88.3	0.0	97.9
154.00		1.00	1.12	42.706	46.98	337.75	0.730	0.000	1.00	2.559	1.87	87.7	0.0	97.2
156.00		1.00	1.12	42.864	47.15	333.09	0.730	0.000	2.00	5.058	3.69	174.1	0.0	192.0
158.00		1.00	1.13	43.020	47.32	328.40	0.730	0.000	2.00	4.978	3.63	172.0	0.0	189.0
160.00		1.00	1.13	43.175	47.49	323.68	0.730	0.000	2.00	4.898	3.58	169.8	0.0	185.9
162.00		1.00	1.13	43.329	47.66	318.93	0.730	0.000	2.00	4.819	3.52	167.7	0.0	182.9
164.00		1.00	1.14	43.481	47.83	314.17	0.730	0.000	2.00	4.739	3.46	165.5	0.0	179.8
166.00		1.00	1.14	43.632	47.99	309.37	0.730	0.000	2.00	4.659	3.40	163.2	0.0	176.8
168.00		1.00	1.15	43.781	48.16	304.56	0.730	0.000	2.00	4.580	3.34	161.0	0.0	173.7
170.00		1.00	1.15	43.929	48.32	299.72	0.730	0.000	2.00	4.500	3.28	158.7	0.0	170.7
172.00		1.00	1.15	44.077	48.48	294.86	0.730	0.000	2.00	4.420	3.23	156.4	0.0	167.6
173.00	Appurtenance(s)	1.00	1.16	44.150	48.56	292.42	0.730	0.000	1.00	2.180	1.59	77.3	0.0	82.7
174.00		1.00	1.16	44.222	48.64	289.97	0.730	0.000	1.00	2.160	1.58	76.7	0.0	81.9
176.00		1.00	1.16	44.367	48.80	285.06	0.730	0.000	2.00	4.261	3.11	151.8	0.0	161.5

Wind Loading - Shaft

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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

178.00	1.00	1.17	44.510	48.96	280.14	0.730	0.000	2.00	4.181	3.05	149.4	0.0	158.5
180.00 Top - Section 8	1.00	1.17	44.653	49.12	275.18	0.730	0.000	2.00	4.102	2.99	147.1	0.0	155.4
182.00	1.00	1.17	44.794	49.27	271.43	0.600	0.000	2.00	4.000	2.40	118.3	0.0	171.0
183.00 Appurtenance(s)	1.00	1.17	44.864	49.35	271.64	0.600	0.000	1.00	2.000	1.20	59.2	0.0	85.5
							Totals:	**183.00**			**19,042.0**		**37,779.9**

* Cf Adjusted by Linear Load Ra Effect

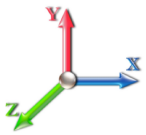
Discrete Appurtenance Forces

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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 + 1.0W 126 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	183.00	RDIDC-9181-OF-48	1	44.864	49.351	1.00	1.00	2.01	26.28	0.000	0.000	99.19	0.00	0.00
2	183.00	RF4451d-70A	3	44.864	49.351	0.60	0.90	3.38	268.92	0.000	0.000	166.94	0.00	0.00
3	183.00	RF4450t-71A	3	44.864	49.351	0.60	0.90	3.38	268.92	0.000	0.000	166.94	0.00	0.00
4	183.00	FFVV-65B-R2	3	44.864	49.351	0.67	0.90	24.52	254.88	0.000	0.000	1209.85	0.00	0.00
5	183.00	MC-PK8-DSH	1	44.864	49.351	1.00	1.00	37.59	2072.40	0.000	0.000	1855.09	0.00	0.00
6	173.00	Samsung B2/B66 RRH	3	44.150	48.565	0.54	0.80	3.01	303.84	0.000	0.000	146.03	0.00	0.00
7	173.00	Andrew JAHH-65B-R3B	6	44.150	48.565	0.66	0.80	36.29	455.76	0.000	0.000	1762.61	0.00	0.00
8	173.00	Samsung MT6407-77A	3	44.150	48.565	0.56	0.80	7.88	285.84	0.000	0.000	382.65	0.00	0.00
9	173.00	BSAMNT-SBS-1-2	3	44.150	48.565	0.75	0.75	0.00	91.26	0.000	0.000	0.00	0.00	0.00
10	173.00	CBC78T-DS-43/E14F05P	3	44.150	48.565	0.54	0.80	0.59	37.44	0.000	0.000	28.89	0.00	0.00
11	173.00	Samsung B5/B13 RRH	3	44.150	48.565	0.54	0.80	3.01	253.08	0.000	0.000	146.03	0.00	0.00
12	173.00	(3) T-Arms	1	44.150	48.565	0.75	0.75	22.50	1800.00	0.000	0.000	1092.70	0.00	0.00
13	173.00	LPA-80080-4CF-EDIN-0	4	44.150	48.565	1.36	0.80	14.20	57.60	0.000	0.000	689.54	0.00	0.00
14	173.00	APL866513-42T0	2	44.150	48.565	0.84	0.90	6.78	37.68	0.000	0.000	329.25	0.00	0.00
15	173.00	DB-T1-6Z-8AB-OZ	2	44.150	48.565	0.60	0.80	5.76	105.60	0.000	0.000	279.73	0.00	0.00
16	153.00	V-brace kit	1	42.627	46.889	1.00	1.00	2.70	276.00	0.000	0.000	126.60	0.00	0.00
17	153.00	SPTB(Tie back Kit)	1	42.627	46.889	1.00	1.00	3.70	168.00	0.000	0.000	173.49	0.00	0.00
18	153.00	PRK-1245 (kicker kit)	1	42.627	46.889	1.00	1.00	9.50	557.89	0.000	0.000	445.45	0.00	0.00
19	153.00	RFS	3	42.627	46.889	0.52	0.75	31.88	442.08	0.000	0.000	1494.74	0.00	0.00
20	153.00	KRY 112 144/1	3	42.627	46.889	0.52	0.75	0.65	39.60	0.000	0.000	30.28	0.00	0.00
21	153.00	4460 Radio	3	42.627	46.889	0.50	0.75	4.30	392.40	0.000	0.000	201.45	0.00	0.00
22	153.00	VV-65A-R1	3	42.627	46.889	0.62	0.75	12.49	190.44	0.000	0.000	585.82	0.00	0.00
23	153.00	AIR6419 B41	3	42.627	46.889	0.57	0.75	6.50	237.96	0.000	0.000	304.69	0.00	0.00
24	153.00	Ericsson 4449 B71 + B85	3	42.627	46.889	0.50	0.75	2.97	263.52	0.000	0.000	139.25	0.00	0.00
25	153.00	Low Profile Platform	1	42.627	46.889	1.00	1.00	25.00	1440.00	0.000	0.000	1172.24	0.00	0.00
26	143.00	RRUS 11	3	41.811	45.993	0.50	0.75	3.80	182.52	0.000	0.000	174.72	0.00	0.00
27	143.00	DC6-48-60-18-8F	1	41.811	45.993	1.00	1.00	1.47	38.16	0.000	0.000	67.61	0.00	0.00
28	143.00	DBC-750	3	41.811	45.993	0.38	0.75	0.57	17.28	0.000	0.000	26.39	0.00	0.00
29	143.00	QS46512-2	1	41.811	45.993	1.00	1.00	5.55	32.76	0.000	0.000	255.26	0.00	0.00
30	143.00	850-1900 Dual Band	3	41.811	45.993	0.49	0.75	0.77	19.80	0.000	0.000	35.52	0.00	0.00
31	143.00	Low Profile	1	41.811	45.993	1.00	1.00	22.00	1800.00	0.000	0.000	1011.84	0.00	0.00
32	143.00	Powerwave 7770.00	3	41.811	45.993	0.55	0.75	9.03	126.00	0.000	0.000	415.49	0.00	0.00
33	143.00	OPA-65R-LCUU-H8	2	41.811	45.993	0.81	0.90	20.66	228.00	0.000	0.000	949.98	0.00	0.00
34	143.00	OPA-65R-LCUU-H4	1	41.811	45.993	1.00	1.00	5.94	68.40	0.000	0.000	273.20	0.00	0.00
35	143.00	TPA-65R-LCUUUU-H8	2	41.811	45.993	0.81	0.90	21.55	180.00	0.000	0.000	990.96	0.00	0.00
36	143.00	DTMABP7819VG12A	3	41.811	45.993	0.50	0.75	1.72	69.12	0.000	0.000	79.04	0.00	0.00
37	143.00	DBC0061F1V51-2	3	41.811	45.993	0.50	0.75	0.65	91.44	0.000	0.000	29.81	0.00	0.00
38	143.00	RRUS 32 B2	3	41.811	45.993	0.50	0.75	4.13	190.80	0.000	0.000	189.97	0.00	0.00
39	143.00	HRK14	1	41.811	45.993	1.00	1.00	10.13	422.83	0.000	0.000	465.90	0.00	0.00
							Totals:		**13,794.50**			**17,995.15**		

Total Applied Force Summary

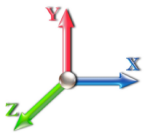
Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 15	

Tower Engineering Solutions

Load Case: 1.2D + 1.0W 126 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		233.53	725.90	0.00	0.00
4.00		231.82	721.32	0.00	0.00
6.00		230.11	716.74	0.00	0.00
8.00		228.39	712.17	0.00	0.00
10.00		226.68	707.59	0.00	0.00
12.00		224.97	703.02	0.00	0.00
14.00		223.26	698.44	0.00	0.00
16.00		221.55	693.86	0.00	0.00
18.00		219.84	689.29	0.00	0.00
20.00		218.13	684.71	0.00	0.00
22.00		216.42	680.13	0.00	0.00
24.00		214.71	675.56	0.00	0.00
26.00		213.00	670.98	0.00	0.00
28.00		211.28	666.40	0.00	0.00
30.00		209.75	661.83	0.00	0.00
32.00		211.91	657.25	0.00	0.00
34.00		213.84	652.67	0.00	0.00
36.00		215.56	648.10	0.00	0.00
38.00		217.08	643.52	0.00	0.00
40.00		218.42	638.94	0.00	0.00
41.00		109.28	317.76	0.00	0.00
42.00		111.07	584.42	0.00	0.00
44.00		223.68	1161.98	0.00	0.00
46.00		224.60	1152.83	0.00	0.00
48.00		225.39	1143.68	0.00	0.00
50.00		226.05	623.35	0.00	0.00
51.00		112.92	309.96	0.00	0.00
52.00		113.05	308.82	0.00	0.00
54.00		227.03	614.20	0.00	0.00
56.00		227.35	609.62	0.00	0.00
58.00		227.58	605.05	0.00	0.00
60.00		227.70	600.47	0.00	0.00
62.00		227.74	595.90	0.00	0.00
64.00		227.69	591.32	0.00	0.00
66.00		227.56	586.74	0.00	0.00
66.17		20.40	49.66	0.00	0.00
68.00		220.58	532.50	0.00	0.00
70.00		241.61	577.59	0.00	0.00
71.00		120.72	287.08	0.00	0.00
72.00		120.82	285.93	0.00	0.00
74.00		242.37	568.43	0.00	0.00
76.00		242.66	563.85	0.00	0.00
78.00		242.90	559.28	0.00	0.00
80.00		243.07	554.70	0.00	0.00
81.00		121.37	275.63	0.00	0.00
82.00		121.40	237.74	0.00	0.00

Total Applied Force Summary

Structure:	CT01002-S-SBA		**Code:**	TIA-222-H	9/21/2023
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

Tower Engineering Solutions

84.00		243.27	472.61	0.00	0.00
85.00		121.44	234.88	0.00	0.00
86.00		123.13	417.93	0.00	0.00
88.00		246.66	830.15	0.00	0.00
90.00		246.62	822.52	0.00	0.00
91.00		123.09	408.40	0.00	0.00
92.00		122.43	230.74	0.00	0.00
93.83		224.23	419.78	0.00	0.00
94.00		20.77	38.83	0.00	0.00
96.00		220.63	454.80	0.00	0.00
98.00		219.53	450.98	0.00	0.00
100.00		218.38	447.17	0.00	0.00
102.00		217.19	443.36	0.00	0.00
104.00		215.96	439.54	0.00	0.00
106.00		214.68	435.73	0.00	0.00
108.00		213.36	431.91	0.00	0.00
110.00		212.00	428.10	0.00	0.00
111.17		123.24	248.67	0.00	0.00
112.00		87.10	175.62	0.00	0.00
114.00		209.51	420.47	0.00	0.00
115.00		104.36	208.81	0.00	0.00
116.00		104.17	176.97	0.00	0.00
118.00		208.04	351.66	0.00	0.00
120.00		207.26	348.61	0.00	0.00
122.00		206.45	345.55	0.00	0.00
123.83		188.13	313.51	0.00	0.00
124.00		17.41	28.99	0.00	0.00
126.00		199.74	339.45	0.00	0.00
128.00		198.05	336.40	0.00	0.00
130.00		196.33	333.35	0.00	0.00
132.00		197.35	558.95	0.00	0.00
134.00		195.57	552.85	0.00	0.00
135.00		97.01	274.14	0.00	0.00
136.00		96.55	163.34	0.00	0.00
138.00		191.93	324.39	0.00	0.00
140.00		190.06	321.34	0.00	0.00
142.00		188.16	318.29	0.00	0.00
143.00	(30) attachments	5058.94	3625.11	0.00	0.00
144.00		92.78	141.20	0.00	0.00
146.00		184.28	280.12	0.00	0.00
148.00		182.29	277.07	0.00	0.00
150.00		180.28	274.02	0.00	0.00
152.00		178.24	270.97	0.00	0.00
153.00	(22) attachments	4762.27	4142.23	0.00	0.00
154.00		87.75	118.74	0.00	0.00
156.00		174.09	235.20	0.00	0.00
158.00		171.97	232.15	0.00	0.00
160.00		169.83	229.10	0.00	0.00
162.00		167.66	226.05	0.00	0.00
164.00		165.46	223.00	0.00	0.00
166.00		163.25	219.95	0.00	0.00
168.00		161.00	216.89	0.00	0.00
170.00		158.74	213.84	0.00	0.00
172.00		156.45	210.79	0.00	0.00
173.00	(30) attachments	4934.74	3532.35	0.00	0.00
174.00		76.72	85.87	0.00	0.00
176.00		151.80	169.46	0.00	0.00

Total Applied Force Summary

Structure:	CT01002-S-SBA		**Code:**	TIA-222-H	9/21/2023
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

178.00		149.45	166.41	0.00	0.00
180.00		147.07	163.36	0.00	0.00
182.00		118.26	178.93	0.00	0.00
183.00	(11) attachments	3557.24	2980.87	0.00	0.00
	Totals:	**37,037.19**	**59,909.35**	**0.00**	**0.00**

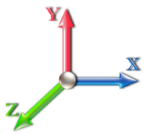
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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 + 1.0W 126 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	26.739	0.00	0.66
2.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.030	0.000	26.739	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	26.739	0.00	7.49
4.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	26.739	0.00	0.66
4.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	26.739	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	26.739	0.00	7.49
6.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	26.739	0.00	0.66
6.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	26.739	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	26.739	0.00	7.49
8.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	26.739	0.00	0.66
8.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	26.739	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	26.739	0.00	7.49
10.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	26.739	0.00	0.66
10.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	26.739	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	26.739	0.00	7.49
12.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	26.739	0.00	0.66
12.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	26.739	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	26.739	0.00	7.49
14.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	26.739	0.00	0.66
14.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	26.739	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	26.739	0.00	7.49
16.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	26.739	0.00	0.66
16.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	26.739	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	26.739	0.00	7.49
18.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	26.739	0.00	0.66
18.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	26.739	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	26.739	0.00	7.49
20.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	26.739	0.00	0.66
20.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	26.739	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	26.739	0.00	7.49
22.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.033	0.000	26.739	0.00	0.66
22.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.033	0.000	26.739	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	26.739	0.00	7.49
24.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.033	0.000	26.739	0.00	0.66
24.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.033	0.000	26.739	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	26.739	0.00	7.49
26.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.033	0.000	26.739	0.00	0.66
26.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.033	0.000	26.739	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	26.739	0.00	7.49
28.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	26.739	0.00	0.66
28.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	26.739	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	26.739	0.00	7.49
30.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	26.762	0.00	0.66
30.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	26.762	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	26.762	0.00	7.49
32.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	27.260	0.00	0.66
32.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	27.260	0.00	2.50

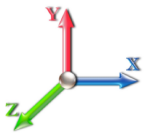
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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 + 1.0W 126 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	0.33	0.00	0.034	0.000	27.260	0.00	7.49
34.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	27.736	0.00	0.66
34.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	27.736	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	27.736	0.00	7.49
36.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.035	0.000	28.193	0.00	0.66
36.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.035	0.000	28.193	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	28.193	0.00	7.49
38.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.035	0.000	28.632	0.00	0.66
38.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.035	0.000	28.632	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	28.632	0.00	7.49
40.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.035	0.000	29.055	0.00	0.66
40.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.035	0.000	29.055	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	29.055	0.00	7.49
41.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.035	0.000	29.260	0.00	0.33
41.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.035	0.000	29.260	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	29.260	0.00	3.74
42.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.036	0.000	29.463	0.00	0.33
42.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.036	0.000	29.463	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	29.463	0.00	3.74
44.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	29.857	0.00	0.66
44.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	29.857	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	29.857	0.00	7.49
46.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	30.238	0.00	0.66
46.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	30.238	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	30.238	0.00	7.49
48.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	30.608	0.00	0.66
48.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	30.608	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	30.608	0.00	7.49
50.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	30.967	0.00	0.66
50.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	30.967	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	30.967	0.00	7.49
51.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.037	0.000	31.143	0.00	0.33
51.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.037	0.000	31.143	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	31.143	0.00	3.74
52.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.037	0.000	31.316	0.00	0.33
52.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.037	0.000	31.316	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	31.316	0.00	3.74
54.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.037	0.000	31.656	0.00	0.66
54.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.037	0.000	31.656	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	31.656	0.00	7.49
56.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.037	0.000	31.987	0.00	0.66
56.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.037	0.000	31.987	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	31.987	0.00	7.49
58.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.038	0.000	32.309	0.00	0.66
58.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.038	0.000	32.309	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	32.309	0.00	7.49
60.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.038	0.000	32.623	0.00	0.66

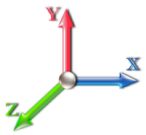
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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 + 1.0W 126 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	32.623	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	32.623	0.00	7.49
62.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.038	0.000	32.930	0.00	0.66
62.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.038	0.000	32.930	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	32.930	0.00	7.49
64.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.039	0.000	33.230	0.00	0.66
64.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.039	0.000	33.230	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	33.230	0.00	7.49
66.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.079	0.000	33.524	0.00	0.66
66.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.079	0.000	33.524	0.00	2.50
66.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.079	0.000	33.524	0.00	7.49
66.00	C6X10.5 Reinforcing	Yes	1.00	0.000	4.06	0.34	0.00	0.079	0.000	33.524	0.00	0.00
66.17	Safety Cable	Yes	0.17	0.000	0.00	0.00	0.00	0.120	1.059	33.549	0.00	0.06
66.17	Step bolts (ladder)	Yes	0.17	0.000	0.00	0.00	0.00	0.120	1.059	33.549	0.00	0.21
66.17	1 5/8" Coax	Yes	0.17	0.000	1.98	0.03	0.00	0.120	1.059	33.549	0.00	0.64
66.17	C6X10.5 Reinforcing	Yes	0.17	0.000	4.06	0.06	0.00	0.120	1.059	33.549	0.00	0.00
68.00	Safety Cable	Yes	1.83	0.000	0.00	0.00	0.00	0.120	1.061	33.811	0.00	0.60
68.00	Step bolts (ladder)	Yes	1.83	0.000	0.00	0.00	0.00	0.120	1.061	33.811	0.00	2.28
68.00	1 5/8" Coax	Yes	1.83	0.000	1.98	0.30	0.00	0.120	1.061	33.811	0.00	6.85
68.00	C6X10.5 Reinforcing	Yes	1.83	0.000	4.06	0.62	0.00	0.120	1.061	33.811	0.00	0.00
70.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.121	1.064	34.092	0.00	0.66
70.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.121	1.064	34.092	0.00	2.50
70.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.121	1.064	34.092	0.00	7.49
70.00	C6X10.5 Reinforcing	Yes	2.00	0.000	4.06	0.68	0.00	0.121	1.064	34.092	0.00	0.00
71.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.122	1.067	34.231	0.00	0.33
71.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.122	1.067	34.231	0.00	1.25
71.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.122	1.067	34.231	0.00	3.74
71.00	C6X10.5 Reinforcing	Yes	1.00	0.000	4.06	0.34	0.00	0.122	1.067	34.231	0.00	0.00
72.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.123	1.069	34.368	0.00	0.33
72.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.123	1.069	34.368	0.00	1.25
72.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.123	1.069	34.368	0.00	3.74
72.00	C6X10.5 Reinforcing	Yes	1.00	0.000	4.06	0.34	0.00	0.123	1.069	34.368	0.00	0.00
74.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.124	1.071	34.638	0.00	0.66
74.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.124	1.071	34.638	0.00	2.50
74.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.124	1.071	34.638	0.00	7.49
74.00	C6X10.5 Reinforcing	Yes	2.00	0.000	4.06	0.68	0.00	0.124	1.071	34.638	0.00	0.00
76.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.125	1.075	34.903	0.00	0.66
76.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.125	1.075	34.903	0.00	2.50
76.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.125	1.075	34.903	0.00	7.49
76.00	C6X10.5 Reinforcing	Yes	2.00	0.000	4.06	0.68	0.00	0.125	1.075	34.903	0.00	0.00
78.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.126	1.079	35.163	0.00	0.66
78.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.126	1.079	35.163	0.00	2.50
78.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.126	1.079	35.163	0.00	7.49
78.00	C6X10.5 Reinforcing	Yes	2.00	0.000	4.06	0.68	0.00	0.126	1.079	35.163	0.00	0.00
80.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.128	1.083	35.418	0.00	0.66
80.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.128	1.083	35.418	0.00	2.50
80.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.128	1.083	35.418	0.00	7.49

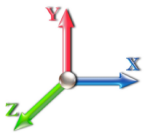
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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 + 1.0W 126 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	4.06	0.68	0.00	0.128	1.083	35.418	0.00	0.00
81.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.128	1.085	35.544	0.00	0.33
81.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.128	1.085	35.544	0.00	1.25
81.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.128	1.085	35.544	0.00	3.74
81.00	C6X10.5 Reinforcing	Yes	1.00	0.000	4.06	0.34	0.00	0.128	1.085	35.544	0.00	0.00
82.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.129	1.087	35.669	0.00	0.33
82.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.129	1.087	35.669	0.00	1.25
82.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.129	1.087	35.669	0.00	3.74
82.00	C6X10.5 Reinforcing	Yes	1.00	0.000	4.06	0.34	0.00	0.129	1.087	35.669	0.00	0.00
84.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.130	1.090	35.915	0.00	0.66
84.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.130	1.090	35.915	0.00	2.50
84.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.130	1.090	35.915	0.00	7.49
84.00	C6X10.5 Reinforcing	Yes	2.00	0.000	4.06	0.68	0.00	0.130	1.090	35.915	0.00	0.00
85.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.131	1.093	36.037	0.00	0.33
85.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.131	1.093	36.037	0.00	1.25
85.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.131	1.093	36.037	0.00	3.74
85.00	C6X10.5 Reinforcing	Yes	1.00	0.000	4.06	0.34	0.00	0.131	1.093	36.037	0.00	0.00
86.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.132	1.095	36.158	0.00	0.33
86.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.132	1.095	36.158	0.00	1.25
86.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.132	1.095	36.158	0.00	3.74
86.00	C6X10.5 Reinforcing	Yes	1.00	0.000	4.06	0.34	0.00	0.132	1.095	36.158	0.00	0.00
88.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.133	1.099	36.396	0.00	0.66
88.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.133	1.099	36.396	0.00	2.50
88.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.133	1.099	36.396	0.00	7.49
88.00	C6X10.5 Reinforcing	Yes	2.00	0.000	4.06	0.68	0.00	0.133	1.099	36.396	0.00	0.00
90.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.134	1.103	36.630	0.00	0.66
90.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.134	1.103	36.630	0.00	2.50
90.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.134	1.103	36.630	0.00	7.49
90.00	C6X10.5 Reinforcing	Yes	2.00	0.000	4.06	0.68	0.00	0.134	1.103	36.630	0.00	0.00
91.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.135	1.106	36.746	0.00	0.33
91.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.135	1.106	36.746	0.00	1.25
91.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.135	1.106	36.746	0.00	3.74
91.00	C6X10.5 Reinforcing	Yes	1.00	0.000	4.06	0.34	0.00	0.135	1.106	36.746	0.00	0.00
92.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.134	1.102	36.861	0.00	0.33
92.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.134	1.102	36.861	0.00	1.25
92.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.134	1.102	36.861	0.00	3.74
92.00	C6X10.5 Reinforcing	Yes	1.00	0.000	4.06	0.34	0.00	0.134	1.102	36.861	0.00	0.00
93.83	Safety Cable	Yes	1.83	0.000	0.00	0.00	0.00	0.135	1.106	37.069	0.00	0.60
93.83	Step bolts (ladder)	Yes	1.83	0.000	0.00	0.00	0.00	0.135	1.106	37.069	0.00	2.28
93.83	1 5/8" Coax	Yes	1.83	0.000	1.98	0.30	0.00	0.135	1.106	37.069	0.00	6.85
93.83	C6X10.5 Reinforcing	Yes	1.83	0.000	4.06	0.62	0.00	0.135	1.106	37.069	0.00	0.00
94.00	Safety Cable	Yes	0.17	0.000	0.00	0.00	0.00	0.136	1.108	37.088	0.00	0.06
94.00	Step bolts (ladder)	Yes	0.17	0.000	0.00	0.00	0.00	0.136	1.108	37.088	0.00	0.21
94.00	1 5/8" Coax	Yes	0.17	0.000	1.98	0.03	0.00	0.136	1.108	37.088	0.00	0.64
94.00	C6X10.5 Reinforcing	Yes	0.17	0.000	4.06	0.06	0.00	0.136	1.108	37.088	0.00	0.00
96.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.091	0.000	37.312	0.00	0.66
96.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.091	0.000	37.312	0.00	2.50

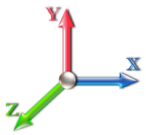
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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 + 1.0W 126 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	0.33	0.00	0.091	0.000	37.312	0.00	7.49
96.00	C6X10.5 Reinforcing	Yes	1.00	0.000	4.06	0.34	0.00	0.091	0.000	37.312	0.00	0.00
98.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.045	0.000	37.532	0.00	0.66
98.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.045	0.000	37.532	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	37.532	0.00	7.49
100.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.046	0.000	37.750	0.00	0.66
100.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.046	0.000	37.750	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	37.750	0.00	7.49
102.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.046	0.000	37.964	0.00	0.66
102.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.046	0.000	37.964	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	37.964	0.00	7.49
104.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.047	0.000	38.175	0.00	0.66
104.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.047	0.000	38.175	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	38.175	0.00	7.49
106.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.047	0.000	38.383	0.00	0.66
106.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.047	0.000	38.383	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	38.383	0.00	7.49
108.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.048	0.000	38.589	0.00	0.66
108.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.048	0.000	38.589	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	38.589	0.00	7.49
110.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.048	0.000	38.792	0.00	0.66
110.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.048	0.000	38.792	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	38.792	0.00	7.49
111.17	Safety Cable	Yes	1.17	0.000	0.00	0.00	0.00	0.099	0.000	38.909	0.00	0.38
111.17	Step bolts (ladder)	Yes	1.17	0.000	0.00	0.00	0.00	0.099	0.000	38.909	0.00	1.46
111.17	1 5/8" Coax	Yes	1.17	0.000	1.98	0.19	0.00	0.099	0.000	38.909	0.00	4.38
111.17	C6X10.5 Reinforcing	Yes	1.17	0.000	2.03	0.20	0.00	0.099	0.000	38.909	0.00	0.00
112.00	Safety Cable	Yes	0.83	0.000	0.00	0.00	0.00	0.100	0.000	38.992	0.00	0.27
112.00	Step bolts (ladder)	Yes	0.83	0.000	0.00	0.00	0.00	0.100	0.000	38.992	0.00	1.04
112.00	1 5/8" Coax	Yes	0.83	0.000	1.98	0.14	0.00	0.100	0.000	38.992	0.00	3.11
112.00	C6X10.5 Reinforcing	Yes	0.83	0.000	2.03	0.14	0.00	0.100	0.000	38.992	0.00	0.00
114.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.101	1.002	39.190	0.00	0.66
114.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.101	1.002	39.190	0.00	2.50
114.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.101	1.002	39.190	0.00	7.49
114.00	C6X10.5 Reinforcing	Yes	2.00	0.000	2.03	0.34	0.00	0.101	1.002	39.190	0.00	0.00
115.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.101	1.004	39.288	0.00	0.33
115.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.101	1.004	39.288	0.00	1.25
115.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.101	1.004	39.288	0.00	3.74
115.00	C6X10.5 Reinforcing	Yes	1.00	0.000	2.03	0.17	0.00	0.101	1.004	39.288	0.00	0.00
116.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.102	1.006	39.385	0.00	0.33
116.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.102	1.006	39.385	0.00	1.25
116.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.102	1.006	39.385	0.00	3.74
116.00	C6X10.5 Reinforcing	Yes	1.00	0.000	2.03	0.17	0.00	0.102	1.006	39.385	0.00	0.00
118.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.103	1.009	39.578	0.00	0.66
118.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.103	1.009	39.578	0.00	2.50
118.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.103	1.009	39.578	0.00	7.49
118.00	C6X10.5 Reinforcing	Yes	2.00	0.000	2.03	0.34	0.00	0.103	1.009	39.578	0.00	0.00

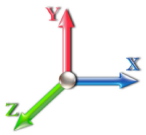
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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 + 1.0W 126 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	0.104	1.013	39.768	0.00	0.66
120.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.104	1.013	39.768	0.00	2.50
120.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.104	1.013	39.768	0.00	7.49
120.00	C6X10.5 Reinforcing	Yes	2.00	0.000	2.03	0.34	0.00	0.104	1.013	39.768	0.00	0.00
122.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.106	1.017	39.957	0.00	0.66
122.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.106	1.017	39.957	0.00	2.50
122.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.106	1.017	39.957	0.00	7.49
122.00	C6X10.5 Reinforcing	Yes	2.00	0.000	2.03	0.34	0.00	0.106	1.017	39.957	0.00	0.00
123.83	Safety Cable	Yes	1.83	0.000	0.00	0.00	0.00	0.107	1.021	40.127	0.00	0.60
123.83	Step bolts (ladder)	Yes	1.83	0.000	0.00	0.00	0.00	0.107	1.021	40.127	0.00	2.28
123.83	1 5/8" Coax	Yes	1.83	0.000	1.98	0.30	0.00	0.107	1.021	40.127	0.00	6.85
123.83	C6X10.5 Reinforcing	Yes	1.83	0.000	2.03	0.31	0.00	0.107	1.021	40.127	0.00	0.00
124.00	Safety Cable	Yes	0.17	0.000	0.00	0.00	0.00	0.108	1.023	40.143	0.00	0.06
124.00	Step bolts (ladder)	Yes	0.17	0.000	0.00	0.00	0.00	0.108	1.023	40.143	0.00	0.21
124.00	1 5/8" Coax	Yes	0.17	0.000	1.98	0.03	0.00	0.108	1.023	40.143	0.00	0.64
124.00	C6X10.5 Reinforcing	Yes	0.17	0.000	2.03	0.03	0.00	0.108	1.023	40.143	0.00	0.00
126.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.081	0.000	40.327	0.00	0.66
126.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.081	0.000	40.327	0.00	2.50
126.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.081	0.000	40.327	0.00	7.49
126.00	C6X10.5 Reinforcing	Yes	1.00	0.000	2.03	0.17	0.00	0.081	0.000	40.327	0.00	0.00
128.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.054	0.000	40.508	0.00	0.66
128.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.054	0.000	40.508	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	40.508	0.00	7.49
130.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.055	0.000	40.688	0.00	0.66
130.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.055	0.000	40.688	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	40.688	0.00	7.49
132.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.056	0.000	40.866	0.00	0.66
132.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.056	0.000	40.866	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	40.866	0.00	7.49
134.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.056	0.000	41.042	0.00	0.66
134.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.056	0.000	41.042	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	41.042	0.00	7.49
135.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.057	0.000	41.129	0.00	0.33
135.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.057	0.000	41.129	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	41.129	0.00	3.74
136.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.057	0.000	41.216	0.00	0.33
136.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.057	0.000	41.216	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	41.216	0.00	3.74
138.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.057	0.000	41.388	0.00	0.66
138.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.057	0.000	41.388	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	41.388	0.00	7.49
140.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.058	0.000	41.559	0.00	0.66
140.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.058	0.000	41.559	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	41.559	0.00	7.49
142.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.059	0.000	41.728	0.00	0.66
142.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.059	0.000	41.728	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	41.728	0.00	7.49

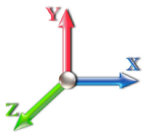
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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 + 1.0W 126 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	41.811	0.00	0.33
143.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.059	0.000	41.811	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	41.811	0.00	3.74
144.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.060	0.000	41.895	0.00	0.33
144.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.060	0.000	41.895	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	41.895	0.00	3.74
146.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.060	0.000	42.060	0.00	0.66
146.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.060	0.000	42.060	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	42.060	0.00	7.49
148.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.061	0.000	42.224	0.00	0.66
148.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.061	0.000	42.224	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	42.224	0.00	7.49
150.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.062	0.000	42.386	0.00	0.66
150.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.062	0.000	42.386	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	42.386	0.00	7.49
152.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.063	0.000	42.547	0.00	0.66
152.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.063	0.000	42.547	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	42.547	0.00	7.49
153.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.064	0.000	42.627	0.00	0.33
153.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.064	0.000	42.627	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	42.627	0.00	3.74
154.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.064	0.000	42.706	0.00	0.33
154.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.064	0.000	42.706	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	42.706	0.00	3.74
156.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.065	0.000	42.864	0.00	0.66
156.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.065	0.000	42.864	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	42.864	0.00	7.49
158.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.066	0.000	43.020	0.00	0.66
158.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.066	0.000	43.020	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	43.020	0.00	7.49
160.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.067	0.000	43.175	0.00	0.66
160.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.067	0.000	43.175	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	43.175	0.00	7.49
162.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.068	0.000	43.329	0.00	0.66
162.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.068	0.000	43.329	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	43.329	0.00	7.49
164.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.070	0.000	43.481	0.00	0.66
164.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.070	0.000	43.481	0.00	2.50
164.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.070	0.000	43.481	0.00	7.49
166.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.071	0.000	43.632	0.00	0.66
166.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.071	0.000	43.632	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	43.632	0.00	7.49
168.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.072	0.000	43.781	0.00	0.66
168.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.072	0.000	43.781	0.00	2.50
168.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.072	0.000	43.781	0.00	7.49
170.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.073	0.000	43.929	0.00	0.66
170.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.073	0.000	43.929	0.00	2.50

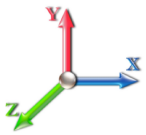
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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 + 1.0W 126 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)
170.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.073	0.000	43.929	0.00	7.49
172.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.075	0.000	44.077	0.00	0.66
172.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.075	0.000	44.077	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	44.077	0.00	7.49
173.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.076	0.000	44.150	0.00	0.33
173.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.076	0.000	44.150	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	44.150	0.00	3.74
174.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	44.222	0.00	0.33
174.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	44.222	0.00	1.25
176.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	44.367	0.00	0.66
176.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	44.367	0.00	2.50
178.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	44.510	0.00	0.66
178.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	44.510	0.00	2.50
180.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	44.653	0.00	0.66
180.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	44.653	0.00	2.50
182.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	44.794	0.00	0.66
182.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	44.794	0.00	2.50
183.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	44.864	0.00	0.33
183.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	44.864	0.00	1.25
										Totals:	**0.0**	**936.0**

Calculated Forces

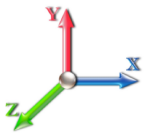
Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 26	

Tower Engineering Solutions

Load Case: 1.2D + 1.0W 126 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	-59.89	-37.07	0.00	-4777.8	0.00	4777.82	5190.16	1566.13	8332.38	6861.66	0.00	0.000	0.000	0.708
2.00	-59.12	-36.91	0.00	-4703.6	0.00	4703.67	5174.50	1554.63	8210.47	6790.43	0.02	-0.068	0.000	0.705
4.00	-58.35	-36.75	0.00	-4629.8	0.00	4629.86	5158.51	1543.13	8089.46	6719.08	0.06	-0.136	0.000	0.701
6.00	-57.59	-36.58	0.00	-4556.3	0.00	4556.37	5142.18	1531.63	7969.35	6647.61	0.13	-0.205	0.000	0.697
8.00	-56.84	-36.42	0.00	-4483.2	0.00	4483.20	5125.52	1520.13	7850.13	6576.03	0.23	-0.275	0.000	0.693
10.00	-56.09	-36.26	0.00	-4410.3	0.00	4410.37	5108.53	1508.63	7731.81	6504.36	0.36	-0.345	0.000	0.690
12.00	-55.34	-36.10	0.00	-4337.8	0.00	4337.85	5091.21	1497.13	7614.39	6432.60	0.52	-0.415	0.000	0.686
14.00	-54.60	-35.94	0.00	-4265.6	0.00	4265.66	5073.56	1485.63	7497.87	6360.75	0.71	-0.485	0.000	0.682
16.00	-53.86	-35.78	0.00	-4193.7	0.00	4193.79	5055.57	1474.13	7382.25	6288.85	0.93	-0.557	0.000	0.678
18.00	-53.13	-35.61	0.00	-4122.2	0.00	4122.24	5037.25	1462.64	7267.53	6216.88	1.18	-0.628	0.000	0.674
20.00	-52.40	-35.45	0.00	-4051.0	0.00	4051.01	5018.60	1451.14	7153.70	6144.86	1.46	-0.700	0.000	0.670
22.00	-51.68	-35.30	0.00	-3980.1	0.00	3980.10	4999.62	1439.64	7040.78	6072.81	1.77	-0.773	0.000	0.666
24.00	-50.96	-35.14	0.00	-3909.5	0.00	3909.52	4980.31	1428.14	6928.75	6000.72	2.11	-0.845	0.000	0.662
26.00	-50.25	-34.98	0.00	-3839.2	0.00	3839.25	4960.66	1416.64	6817.62	5928.62	2.48	-0.919	0.000	0.658
28.00	-49.54	-34.82	0.00	-3769.2	0.00	3769.29	4940.68	1405.14	6707.39	5856.50	2.88	-0.992	0.000	0.654
30.00	-48.84	-34.66	0.00	-3699.6	0.00	3699.66	4920.37	1393.64	6598.05	5784.39	3.31	-1.067	0.000	0.650
32.00	-48.14	-34.50	0.00	-3630.3	0.00	3630.34	4899.73	1382.14	6489.62	5712.28	3.78	-1.141	0.000	0.646
34.00	-47.45	-34.33	0.00	-3561.3	0.00	3561.34	4878.76	1370.64	6382.08	5640.19	4.27	-1.216	0.000	0.642
36.00	-46.76	-34.17	0.00	-3492.6	0.00	3492.67	4857.45	1359.14	6275.45	5568.14	4.80	-1.292	0.000	0.638
38.00	-46.08	-34.00	0.00	-3424.3	0.00	3424.34	4835.81	1347.64	6169.71	5496.12	5.35	-1.368	0.000	0.633
40.00	-45.41	-33.81	0.00	-3356.3	0.00	3356.35	4813.84	1336.14	6064.87	5424.15	5.94	-1.444	0.000	0.629
41.00	-45.07	-33.72	0.00	-3322.5	0.00	3322.55	4802.73	1330.39	6012.78	5388.18	6.25	-1.483	0.000	0.627
42.00	-44.46	-33.64	0.00	-3288.8	0.00	3288.83	4791.54	1324.64	5960.92	5352.24	6.57	-1.521	0.000	0.624
44.00	-43.26	-33.44	0.00	-3221.5	0.00	3221.55	4768.90	1313.15	5857.88	5280.39	7.22	-1.599	0.000	0.620
46.00	-42.07	-33.24	0.00	-3154.6	0.00	3154.67	4745.94	1301.65	5755.73	5208.63	7.91	-1.676	0.000	0.615
48.00	-40.89	-33.04	0.00	-3088.1	0.00	3088.19	4759.60	1308.47	5816.21	5251.18	8.63	-1.754	0.000	0.597
50.00	-40.24	-32.83	0.00	-3022.1	0.00	3022.11	4736.50	1296.97	5714.43	5179.45	9.38	-1.833	0.000	0.593
51.00	-39.91	-32.74	0.00	-2989.2	0.00	2989.28	4724.82	1291.22	5663.88	5143.62	9.77	-1.871	0.000	0.590
51.00	-39.91	-32.74	0.00	-2989.2	0.00	2989.28	4064.30	1070.36	4695.09	4424.56	9.77	-1.871	0.000	0.686
52.00	-39.57	-32.65	0.00	-2956.5	0.00	2956.55	4053.20	1065.59	4653.37	4392.70	10.16	-1.909	0.000	0.684
54.00	-38.92	-32.46	0.00	-2891.2	0.00	2891.24	4030.83	1056.06	4570.49	4329.09	10.98	-1.985	0.000	0.678
56.00	-38.28	-32.26	0.00	-2826.3	0.00	2826.33	4008.20	1046.52	4488.35	4265.66	11.83	-2.061	0.000	0.673
58.00	-37.64	-32.06	0.00	-2761.8	0.00	2761.81	3985.33	1036.99	4406.96	4202.40	12.71	-2.137	0.000	0.668
60.00	-37.00	-31.86	0.00	-2697.6	0.00	2697.69	3962.20	1027.46	4326.31	4139.33	13.62	-2.214	0.000	0.662
62.00	-36.37	-31.66	0.00	-2633.9	0.00	2633.97	3938.82	1017.93	4246.41	4076.46	14.56	-2.291	0.000	0.656
64.00	-35.75	-31.45	0.00	-2570.6	0.00	2570.66	3915.19	1008.40	4167.25	4013.78	15.54	-2.369	0.000	0.651
66.00	-35.15	-31.23	0.00	-2507.7	0.00	2507.75	3891.31	998.86	4088.84	3951.30	16.55	-2.447	0.000	0.645
66.17	-35.09	-31.22	0.00	-2502.4	0.00	2502.44	3889.27	998.05	4082.21	3946.00	16.64	-2.453	0.000	0.472
68.00	-34.53	-31.01	0.00	-2445.3	0.00	2445.30	3867.19	989.33	4011.17	3889.05	17.59	-2.506	0.000	0.467
70.00	-33.94	-30.77	0.00	-2383.2	0.00	2383.28	3842.81	979.80	3934.25	3827.01	18.65	-2.563	0.000	0.461
71.00	-33.65	-30.66	0.00	-2352.5	0.00	2352.51	3830.52	975.03	3896.07	3796.08	19.19	-2.592	0.000	0.458
71.00	-33.65	-30.66	0.00	-2352.5	0.00	2352.51	3467.89	866.68	3463.07	3436.66	19.19	-2.592	0.000	0.506
72.00	-33.35	-30.55	0.00	-2321.8	0.00	2321.85	3456.29	862.45	3429.30	3408.29	19.73	-2.621	0.000	0.503
74.00	-32.76	-30.31	0.00	-2260.7	0.00	2260.76	3432.92	853.97	3362.25	3351.73	20.84	-2.678	0.000	0.497
76.00	-32.18	-30.07	0.00	-2200.1	0.00	2200.14	3409.33	845.50	3295.86	3295.42	21.98	-2.735	0.000	0.490
78.00	-31.60	-29.84	0.00	-2139.9	0.00	2139.99	3385.54	837.03	3230.13	3239.36	23.14	-2.792	0.000	0.483
80.00	-31.04	-29.59	0.00	-2080.3	0.00	2080.32	3361.54	828.56	3165.07	3183.58	24.32	-2.849	0.000	0.477
81.00	-30.75	-29.47	0.00	-2050.7	0.00	2050.73	3349.46	824.32	3132.78	3155.79	24.92	-2.878	0.000	0.473

Calculated Forces

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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

Tower Engineering Solutions

81.00	-30.75	-29.47	0.00	-2050.7	0.00	2050.73	2964.88	798.42	3038.52	2801.08	24.92	-2.878	0.000	0.446
82.00	-30.50	-29.36	0.00	-2021.2	0.00	2021.26	2956.03	794.32	3007.41	2778.29	25.52	-2.907	0.000	0.501
84.00	-30.01	-29.12	0.00	-1962.5	0.00	1962.54	2938.12	786.13	2945.67	2732.78	26.76	-2.971	0.000	0.493
85.00	-29.77	-29.00	0.00	-1933.4	0.00	1933.42	2929.07	782.03	2915.04	2710.06	27.38	-3.003	0.000	0.489
86.00	-29.33	-28.88	0.00	-1904.4	0.00	1904.42	2919.96	777.93	2884.57	2687.37	28.01	-3.036	0.000	0.480
88.00	-28.49	-28.62	0.00	-1846.6	0.00	1846.66	2901.53	769.74	2824.11	2642.08	29.30	-3.099	0.000	0.472
90.00	-27.65	-28.35	0.00	-1789.4	0.00	1789.41	2882.84	761.54	2764.29	2596.92	30.61	-3.162	0.000	0.463
91.00	-27.24	-28.22	0.00	-1761.0	0.00	1761.06	2898.35	768.34	2813.83	2634.34	31.28	-3.194	0.000	0.468
92.00	-26.99	-28.11	0.00	-1732.8	0.00	1732.83	2889.01	764.24	2783.89	2611.76	31.95	-3.226	0.000	0.450
93.83	-26.57	-27.88	0.00	-1681.3	0.00	1681.39	2871.76	756.74	2729.53	2570.50	33.20	-3.282	0.000	0.442
93.83	-26.57	-27.88	0.00	-1681.3	0.00	1681.39	2871.76	756.74	2729.53	2570.50	33.20	-3.282	0.000	0.658
94.00	-26.51	-27.88	0.00	-1676.6	0.00	1676.65	2870.15	756.04	2724.50	2566.68	33.31	-3.287	0.000	0.664
96.00	-26.02	-27.67	0.00	-1620.9	0.00	1620.90	2851.02	747.85	2665.76	2521.73	34.71	-3.378	0.000	0.653
98.00	-25.54	-27.47	0.00	-1565.5	0.00	1565.56	2831.62	739.65	2607.65	2476.93	36.14	-3.470	0.000	0.642
100.00	-25.07	-27.26	0.00	-1510.6	0.00	1510.63	2811.97	731.45	2550.18	2432.29	37.62	-3.561	0.000	0.631
102.00	-24.60	-27.05	0.00	-1456.1	0.00	1456.11	2792.05	723.26	2493.35	2387.80	39.13	-3.651	0.000	0.620
104.00	-24.13	-26.85	0.00	-1402.0	0.00	1402.00	2771.87	715.06	2437.16	2343.48	40.67	-3.742	0.000	0.608
106.00	-23.67	-26.64	0.00	-1348.3	0.00	1348.31	2751.43	706.87	2381.62	2299.33	42.26	-3.832	0.000	0.596
108.00	-23.21	-26.44	0.00	-1295.0	0.00	1295.02	2730.72	698.67	2326.71	2255.37	43.89	-3.922	0.000	0.584
110.00	-22.76	-26.22	0.00	-1242.1	0.00	1242.15	2709.75	690.48	2272.44	2211.59	45.55	-4.011	0.000	0.571
111.17	-22.51	-26.10	0.00	-1211.4	0.00	1211.47	2697.36	685.68	2241.00	2186.08	46.54	-4.063	0.000	0.440
112.00	-22.32	-26.02	0.00	-1189.8	0.00	1189.81	2688.52	682.28	2218.82	2168.02	47.24	-4.092	0.000	0.435
114.00	-21.89	-25.80	0.00	-1137.7	0.00	1137.77	2667.03	674.08	2165.83	2124.64	48.97	-4.160	0.000	0.423
115.00	-21.67	-25.69	0.00	-1111.9	0.00	1111.97	2656.18	669.99	2139.58	2103.04	49.85	-4.194	0.000	0.417
115.00	-21.67	-25.69	0.00	-1111.9	0.00	1111.97	1951.15	536.85	1717.18	1549.82	49.85	-4.194	0.000	0.456
116.00	-21.48	-25.60	0.00	-1086.2	0.00	1086.28	1944.57	533.57	1696.28	1535.11	50.73	-4.228	0.000	0.529
118.00	-21.11	-25.39	0.00	-1035.0	0.00	1035.09	1931.24	527.02	1654.84	1505.73	52.51	-4.306	0.000	0.512
120.00	-20.74	-25.19	0.00	-984.30	0.00	984.30	1917.63	520.46	1613.93	1476.40	54.33	-4.383	0.000	0.495
122.00	-20.38	-24.98	0.00	-933.93	0.00	933.93	1903.77	513.90	1573.52	1447.14	56.19	-4.459	0.000	0.477
123.83	-20.07	-24.78	0.00	-888.22	0.00	888.22	1890.85	507.91	1536.99	1420.43	57.91	-4.527	0.000	0.461
123.83	-20.07	-24.78	0.00	-888.22	0.00	888.22	1890.85	507.91	1536.99	1420.43	57.91	-4.527	0.000	0.631
124.00	-20.02	-24.78	0.00	-884.00	0.00	884.00	1889.64	507.35	1533.62	1417.95	58.07	-4.534	0.000	0.636
126.00	-19.65	-24.59	0.00	-834.44	0.00	834.44	1875.25	500.79	1494.24	1388.84	59.99	-4.635	0.000	0.614
128.00	-19.29	-24.40	0.00	-785.27	0.00	785.27	1860.60	494.24	1455.37	1359.83	61.95	-4.733	0.000	0.590
130.00	-18.94	-24.20	0.00	-736.48	0.00	736.48	1845.69	487.68	1417.01	1330.91	63.95	-4.830	0.000	0.566
132.00	-18.36	-23.99	0.00	-688.07	0.00	688.07	1830.51	481.12	1379.17	1302.09	65.99	-4.924	0.000	0.541
134.00	-17.80	-23.77	0.00	-640.09	0.00	640.09	1815.07	474.57	1341.83	1273.39	68.07	-5.015	0.000	0.515
135.00	-17.51	-23.66	0.00	-616.32	0.00	616.32	1823.79	478.25	1362.77	1289.52	69.13	-5.061	0.000	0.490
136.00	-17.33	-23.57	0.00	-592.66	0.00	592.66	1816.04	474.98	1344.15	1275.18	70.19	-5.105	0.000	0.477
138.00	-16.99	-23.37	0.00	-545.52	0.00	545.52	1800.35	468.42	1307.30	1246.58	72.35	-5.186	0.000	0.450
140.00	-16.66	-23.18	0.00	-498.78	0.00	498.78	1784.41	461.86	1270.96	1218.12	74.53	-5.264	0.000	0.421
142.00	-16.34	-22.98	0.00	-452.42	0.00	452.42	1768.19	455.31	1235.13	1189.79	76.75	-5.338	0.000	0.392
143.00	-13.19	-17.61	0.00	-429.45	0.00	429.45	1759.99	452.03	1217.41	1175.68	77.87	-5.374	0.000	0.374
144.00	-13.04	-17.51	0.00	-411.84	0.00	411.84	1751.72	448.75	1199.81	1161.60	79.00	-5.409	0.000	0.364
146.00	-12.76	-17.32	0.00	-376.81	0.00	376.81	1734.98	442.19	1165.01	1133.56	81.28	-5.476	0.000	0.341
148.00	-12.49	-17.12	0.00	-342.17	0.00	342.17	1717.98	435.64	1130.72	1105.68	83.58	-5.539	0.000	0.318
150.00	-12.21	-16.93	0.00	-307.92	0.00	307.92	1700.72	429.08	1096.94	1077.97	85.91	-5.600	0.000	0.294
152.00	-11.95	-16.74	0.00	-274.06	0.00	274.06	1683.20	422.52	1063.67	1050.43	88.27	-5.656	0.000	0.270
153.00	-8.29	-11.59	0.00	-257.33	0.00	257.33	1674.33	419.24	1047.23	1036.72	89.46	-5.683	0.000	0.254
154.00	-8.18	-11.50	0.00	-245.74	0.00	245.74	1665.41	415.97	1030.91	1023.07	90.65	-5.709	0.000	0.246
156.00	-7.95	-11.31	0.00	-222.74	0.00	222.74	1647.36	409.41	998.67	995.90	93.05	-5.759	0.000	0.229
158.00	-7.73	-11.12	0.00	-200.13	0.00	200.13	1629.04	402.85	966.94	968.92	95.47	-5.806	0.000	0.212
160.00	-7.51	-10.93	0.00	-177.89	0.00	177.89	1610.47	396.30	935.72	942.15	97.90	-5.851	0.000	0.194
162.00	-7.29	-10.75	0.00	-156.02	0.00	156.02	1591.63	389.74	905.02	915.59	100.36	-5.892	0.000	0.176
164.00	-7.08	-10.56	0.00	-134.53	0.00	134.53	1572.53	383.18	874.82	889.25	102.83	-5.929	0.000	0.157
166.00	-6.87	-10.38	0.00	-113.40	0.00	113.40	1553.17	376.63	845.14	863.13	105.32	-5.963	0.000	0.137
168.00	-6.67	-10.20	0.00	-92.63	0.00	92.63	1533.54	370.07	815.97	837.26	107.82	-5.993	0.000	0.116

Calculated Forces

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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

170.00	-6.47	-10.03	0.00	-72.22	0.00	72.22	1513.65	363.51	787.31	811.62	110.33	-6.018	0.000	0.094
172.00	-6.28	-9.85	0.00	-52.17	0.00	52.17	1493.50	356.96	759.17	786.23	112.85	-6.037	0.000	0.071
173.00	-3.28	-4.57	0.00	-42.32	0.00	42.32	1483.33	353.68	745.29	773.64	114.12	-6.045	0.000	0.057
174.00	-3.20	-4.49	0.00	-37.75	0.00	37.75	1473.09	350.40	731.54	761.10	115.38	-6.052	0.000	0.052
176.00	-3.05	-4.32	0.00	-28.77	0.00	28.77	1452.41	343.84	704.42	736.24	117.91	-6.064	0.000	0.041
178.00	-2.90	-4.15	0.00	-20.14	0.00	20.14	1427.85	337.29	677.81	709.85	120.45	-6.073	0.000	0.031
180.00	-2.75	-3.99	0.00	-11.83	0.00	11.83	1400.09	330.73	651.71	682.38	122.99	-6.080	0.000	0.019
180.00	-2.75	-3.99	0.00	-11.83	0.00	11.83	678.42	203.53	26019.0	396.30	122.99	-6.080	0.000	0.034
182.00	-2.59	-3.85	0.00	-3.85	0.00	3.85	678.42	203.53	26019.0	396.30	125.54	-6.083	0.000	0.014
183.00	0.00	-3.56	0.00	0.00	0.00	0.00	678.42	203.53	26019.0	396.30	126.81	-6.084	0.000	0.000

Wind Loading - Shaft

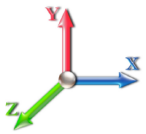
Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 29	

Tower Engineering Solutions

Load Case: 0.9D + 1.0W 126 mph Wind

Dead Load Factor 0.90

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	26.739	29.41	572.30	0.730	0.000	0.00	0.000	0.00	0.0	0.0	0.0
2.00		1.00	0.70	26.739	29.41	568.12	0.730	0.000	2.00	10.876	7.94	233.5	0.0	465.8
4.00		1.00	0.70	26.739	29.41	563.94	0.730	0.000	2.00	10.796	7.88	231.8	0.0	462.3
6.00		1.00	0.70	26.739	29.41	559.76	0.730	0.000	2.00	10.717	7.82	230.1	0.0	458.9
8.00		1.00	0.70	26.739	29.41	555.59	0.730	0.000	2.00	10.637	7.76	228.4	0.0	455.5
10.00		1.00	0.70	26.739	29.41	551.41	0.730	0.000	2.00	10.557	7.71	226.7	0.0	452.0
12.00		1.00	0.70	26.739	29.41	547.23	0.730	0.000	2.00	10.478	7.65	225.0	0.0	448.6
14.00		1.00	0.70	26.739	29.41	543.05	0.730	0.000	2.00	10.398	7.59	223.3	0.0	445.2
16.00		1.00	0.70	26.739	29.41	538.88	0.730	0.000	2.00	10.318	7.53	221.6	0.0	441.7
18.00		1.00	0.70	26.739	29.41	534.70	0.730	0.000	2.00	10.239	7.47	219.8	0.0	438.3
20.00		1.00	0.70	26.739	29.41	530.52	0.730	0.000	2.00	10.159	7.42	218.1	0.0	434.9
22.00		1.00	0.70	26.739	29.41	526.34	0.730	0.000	2.00	10.079	7.36	216.4	0.0	431.4
24.00		1.00	0.70	26.739	29.41	522.17	0.730	0.000	2.00	9.999	7.30	214.7	0.0	428.0
26.00		1.00	0.70	26.739	29.41	517.99	0.730	0.000	2.00	9.920	7.24	213.0	0.0	424.6
28.00		1.00	0.70	26.739	29.41	513.81	0.730	0.000	2.00	9.840	7.18	211.3	0.0	421.1
30.00		1.00	0.70	26.762	29.44	509.85	0.730	0.000	2.00	9.760	7.13	209.8	0.0	417.7
32.00		1.00	0.71	27.260	29.99	510.35	0.730	0.000	2.00	9.681	7.07	211.9	0.0	414.3
34.00		1.00	0.73	27.736	30.51	510.54	0.730	0.000	2.00	9.601	7.01	213.8	0.0	410.8
36.00		1.00	0.74	28.193	31.01	510.43	0.730	0.000	2.00	9.521	6.95	215.6	0.0	407.4
38.00		1.00	0.75	28.632	31.50	510.07	0.730	0.000	2.00	9.442	6.89	217.1	0.0	404.0
40.00		1.00	0.76	29.055	31.96	509.46	0.730	0.000	2.00	9.362	6.83	218.4	0.0	400.5
41.00	Bot - Section 2	1.00	0.77	29.260	32.19	509.08	0.730	0.000	1.00	4.651	3.40	109.3	0.0	199.0
42.00		1.00	0.77	29.463	32.41	508.64	0.730	0.000	1.00	4.695	3.43	111.1	0.0	399.0
44.00		1.00	0.78	29.857	32.84	507.62	0.730	0.000	2.00	9.330	6.81	223.7	0.0	792.8
46.00		1.00	0.79	30.238	33.26	506.41	0.730	0.000	2.00	9.250	6.75	224.6	0.0	786.0
48.00	Top - Section 1	1.00	0.80	30.608	33.67	505.03	0.730	0.000	2.00	9.170	6.69	225.4	0.0	779.1
50.00		1.00	0.81	30.967	34.06	510.65	0.730	0.000	2.00	9.091	6.64	226.1	0.0	388.8
51.00	Top - Section 2	1.00	0.82	31.143	34.26	509.84	0.730	0.000	1.00	4.515	3.30	112.9	0.0	193.1
52.00		1.00	0.82	31.316	34.45	509.00	0.730	0.000	1.00	4.495	3.28	113.0	0.0	192.3
54.00		1.00	0.83	31.656	34.82	507.21	0.730	0.000	2.00	8.931	6.52	227.0	0.0	382.0
56.00		1.00	0.84	31.987	35.19	505.28	0.730	0.000	2.00	8.852	6.46	227.4	0.0	378.6
58.00		1.00	0.85	32.309	35.54	503.23	0.730	0.000	2.00	8.772	6.40	227.6	0.0	375.1
60.00		1.00	0.85	32.623	35.89	501.05	0.730	0.000	2.00	8.692	6.35	227.7	0.0	371.7
62.00		1.00	0.86	32.930	36.22	498.77	0.730	0.000	2.00	8.612	6.29	227.7	0.0	368.3
64.00		1.00	0.87	33.230	36.55	496.38	0.730	0.000	2.00	8.533	6.23	227.7	0.0	364.8
66.00		1.00	0.88	33.524	36.88	493.89	0.730	0.000	2.00	8.453	6.17	227.6	0.0	361.4
66.17	RB1	1.00	0.88	33.549	36.90	493.67	0.773 *	0.000	0.17	0.715	0.55	20.4	0.0	30.6
68.00		1.00	0.89	33.811	37.19	491.30	0.774 *	0.000	1.83	7.659	5.93	220.6	0.0	327.4
70.00		1.00	0.89	34.092	37.50	488.62	0.777 *	0.000	2.00	8.294	6.44	241.6	0.0	354.5
71.00	Top - Section 3	1.00	0.90	34.231	37.65	487.25	0.779 *	0.000	1.00	4.117	3.21	120.7	0.0	176.0
72.00		1.00	0.90	34.368	37.80	485.85	0.780 *	0.000	1.00	4.097	3.20	120.8	0.0	175.1
74.00		1.00	0.91	34.638	38.10	483.00	0.782 *	0.000	2.00	8.134	6.36	242.4	0.0	347.7
76.00		1.00	0.91	34.903	38.39	480.07	0.785 *	0.000	2.00	8.055	6.32	242.7	0.0	344.2
78.00		1.00	0.92	35.163	38.68	477.07	0.787 *	0.000	2.00	7.975	6.28	242.9	0.0	340.8
80.00		1.00	0.93	35.418	38.96	473.99	0.790 *	0.000	2.00	7.895	6.24	243.1	0.0	337.4
81.00	Top - Section 4	1.00	0.93	35.544	39.10	472.42	0.792 *	0.000	1.00	3.918	3.10	121.4	0.0	167.4
82.00		1.00	0.93	35.669	39.24	470.84	0.794 *	0.000	1.00	3.898	3.09	121.4	0.0	139.0

Wind Loading - Shaft

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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	35.915	39.51	467.62	0.796 *	0.000	2.00	7.736	6.16	243.3	0.0	275.8
85.00	Bot - Section 6	1.00	0.94	36.037	39.64	465.99	0.798 *	0.000	1.00	3.838	3.06	121.4	0.0	136.8
86.00		1.00	0.95	36.158	39.77	464.34	0.800 *	0.000	1.00	3.871	3.10	123.1	0.0	274.1
88.00		1.00	0.95	36.396	40.04	460.99	0.802 *	0.000	2.00	7.682	6.16	246.7	0.0	543.9
90.00		1.00	0.96	36.630	40.29	457.59	0.805 *	0.000	2.00	7.603	6.12	246.6	0.0	538.2
91.00	Top - Section 5	1.00	0.96	36.746	40.42	455.86	0.807 *	0.000	1.00	3.771	3.05	123.1	0.0	267.0
92.00		1.00	0.96	36.861	40.55	460.64	0.805 *	0.000	1.00	3.752	3.02	122.4	0.0	133.7
93.83	RT1	1.00	0.97	37.069	40.78	457.43	0.807 *	0.000	1.83	6.814	5.50	224.2	0.0	242.9
94.00		1.00	0.97	37.088	40.80	457.13	0.809 *	0.000	0.17	0.630	0.51	20.8	0.0	22.4
96.00		1.00	0.98	37.312	41.04	453.58	0.730	0.000	2.00	7.364	5.38	220.6	0.0	262.4
98.00		1.00	0.98	37.532	41.29	449.97	0.730	0.000	2.00	7.284	5.32	219.5	0.0	259.6
100.00		1.00	0.99	37.750	41.52	446.30	0.730	0.000	2.00	7.204	5.26	218.4	0.0	256.7
102.00		1.00	0.99	37.964	41.76	442.59	0.730	0.000	2.00	7.125	5.20	217.2	0.0	253.8
104.00		1.00	1.00	38.175	41.99	438.83	0.730	0.000	2.00	7.045	5.14	216.0	0.0	251.0
106.00		1.00	1.00	38.383	42.22	435.02	0.730	0.000	2.00	6.965	5.08	214.7	0.0	248.1
108.00		1.00	1.01	38.589	42.45	431.16	0.730	0.000	2.00	6.886	5.03	213.4	0.0	245.3
110.00		1.00	1.02	38.792	42.67	427.26	0.730	0.000	2.00	6.806	4.97	212.0	0.0	242.4
111.17	RB2	1.00	1.02	38.909	42.80	424.96	0.730	0.000	1.17	3.945	2.88	123.2	0.0	140.5
112.00		1.00	1.02	38.992	42.89	423.32	0.730	0.000	0.83	2.782	2.03	87.1	0.0	99.1
114.00		1.00	1.03	39.190	43.11	419.33	0.731 *	0.000	2.00	6.647	4.86	209.5	0.0	236.7
115.00	Top - Section 6	1.00	1.03	39.288	43.22	417.32	0.733 *	0.000	1.00	3.293	2.41	104.4	0.0	117.3
116.00		1.00	1.03	39.385	43.32	415.30	0.735 *	0.000	1.00	3.273	2.40	104.2	0.0	93.4
118.00		1.00	1.04	39.578	43.54	411.23	0.737 *	0.000	2.00	6.487	4.78	208.0	0.0	185.1
120.00		1.00	1.04	39.768	43.75	407.13	0.739 *	0.000	2.00	6.407	4.74	207.3	0.0	182.8
122.00		1.00	1.05	39.957	43.95	402.98	0.742 *	0.000	2.00	6.328	4.70	206.4	0.0	180.5
123.83	RT2	1.00	1.05	40.127	44.14	399.16	0.745 *	0.000	1.83	5.720	4.26	188.1	0.0	163.2
124.00		1.00	1.05	40.143	44.16	398.80	0.747 *	0.000	0.17	0.528	0.39	17.4	0.0	15.1
126.00		1.00	1.06	40.327	44.36	394.58	0.730	0.000	2.00	6.168	4.50	199.7	0.0	175.9
128.00		1.00	1.06	40.508	44.56	390.33	0.730	0.000	2.00	6.089	4.44	198.1	0.0	173.6
130.00	Bot - Section 8	1.00	1.07	40.688	44.76	386.04	0.730	0.000	2.00	6.009	4.39	196.3	0.0	171.3
132.00		1.00	1.07	40.866	44.95	381.72	0.730	0.000	2.00	6.014	4.39	197.4	0.0	340.5
134.00		1.00	1.07	41.042	45.15	377.37	0.730	0.000	2.00	5.934	4.33	195.6	0.0	336.0
135.00	Top - Section 7	1.00	1.08	41.129	45.24	375.18	0.730	0.000	1.00	2.937	2.14	97.0	0.0	166.3
136.00		1.00	1.08	41.216	45.34	378.49	0.730	0.000	1.00	2.917	2.13	96.6	0.0	83.2
138.00		1.00	1.08	41.388	45.53	374.08	0.730	0.000	2.00	5.775	4.22	191.9	0.0	164.6
140.00		1.00	1.09	41.559	45.71	369.64	0.730	0.000	2.00	5.695	4.16	190.1	0.0	162.3
142.00		1.00	1.09	41.728	45.90	365.17	0.730	0.000	2.00	5.616	4.10	188.2	0.0	160.0
143.00	Appurtenance(s)	1.00	1.09	41.811	45.99	362.93	0.730	0.000	1.00	2.778	2.03	93.3	0.0	79.2
144.00		1.00	1.10	41.895	46.08	360.68	0.730	0.000	1.00	2.758	2.01	92.8	0.0	78.6
146.00		1.00	1.10	42.060	46.27	356.15	0.730	0.000	2.00	5.456	3.98	184.3	0.0	155.5
148.00		1.00	1.11	42.224	46.45	351.59	0.730	0.000	2.00	5.376	3.92	182.3	0.0	153.2
150.00		1.00	1.11	42.386	46.62	347.01	0.730	0.000	2.00	5.297	3.87	180.3	0.0	150.9
152.00		1.00	1.11	42.547	46.80	342.39	0.730	0.000	2.00	5.217	3.81	178.2	0.0	148.6
153.00	Appurtenance(s)	1.00	1.12	42.627	46.89	340.08	0.730	0.000	1.00	2.579	1.88	88.3	0.0	73.4
154.00		1.00	1.12	42.706	46.98	337.75	0.730	0.000	1.00	2.559	1.87	87.7	0.0	72.9
156.00		1.00	1.12	42.864	47.15	333.09	0.730	0.000	2.00	5.058	3.69	174.1	0.0	144.0
158.00		1.00	1.13	43.020	47.32	328.40	0.730	0.000	2.00	4.978	3.63	172.0	0.0	141.7
160.00		1.00	1.13	43.175	47.49	323.68	0.730	0.000	2.00	4.898	3.58	169.8	0.0	139.5
162.00		1.00	1.13	43.329	47.66	318.93	0.730	0.000	2.00	4.819	3.52	167.7	0.0	137.2
164.00		1.00	1.14	43.481	47.83	314.17	0.730	0.000	2.00	4.739	3.46	165.5	0.0	134.9
166.00		1.00	1.14	43.632	47.99	309.37	0.730	0.000	2.00	4.659	3.40	163.2	0.0	132.6
168.00		1.00	1.15	43.781	48.16	304.56	0.730	0.000	2.00	4.580	3.34	161.0	0.0	130.3
170.00		1.00	1.15	43.929	48.32	299.72	0.730	0.000	2.00	4.500	3.28	158.7	0.0	128.0
172.00		1.00	1.15	44.077	48.48	294.86	0.730	0.000	2.00	4.420	3.23	156.4	0.0	125.7
173.00	Appurtenance(s)	1.00	1.16	44.150	48.56	292.42	0.730	0.000	1.00	2.180	1.59	77.3	0.0	62.0
174.00		1.00	1.16	44.222	48.64	289.97	0.730	0.000	1.00	2.160	1.58	76.7	0.0	61.4
176.00		1.00	1.16	44.367	48.80	285.06	0.730	0.000	2.00	4.261	3.11	151.8	0.0	121.1

Wind Loading - Shaft

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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

178.00	1.00	1.17	44.510	48.96	280.14	0.730	0.000	2.00	4.181	3.05	149.4	0.0	118.9
180.00 Top - Section 8	1.00	1.17	44.653	49.12	275.18	0.730	0.000	2.00	4.102	2.99	147.1	0.0	116.6
182.00	1.00	1.17	44.794	49.27	271.43	0.600	0.000	2.00	4.000	2.40	118.3	0.0	128.3
183.00 Appurtenance(s)	1.00	1.17	44.864	49.35	271.64	0.600	0.000	1.00	2.000	1.20	59.2	0.0	64.1
							Totals:	**183.00**			**19,042.0**		**28,334.9**

* Cf Adjusted by Linear Load Ra Effect

Discrete Appurtenance Forces

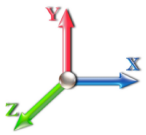
Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 32	

Tower Engineering Solutions

Load Case: 0.9D + 1.0W 126 mph Wind

Dead Load Factor 0.90

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	183.00	RDIDC-9181-OF-48	1	44.864	49.351	1.00	1.00	2.01	19.71	0.000	0.000	99.19	0.00	0.00
2	183.00	RF4451d-70A	3	44.864	49.351	0.60	0.90	3.38	201.69	0.000	0.000	166.94	0.00	0.00
3	183.00	RF4450t-71A	3	44.864	49.351	0.60	0.90	3.38	201.69	0.000	0.000	166.94	0.00	0.00
4	183.00	FFVV-65B-R2	3	44.864	49.351	0.67	0.90	24.52	191.16	0.000	0.000	1209.85	0.00	0.00
5	183.00	MC-PK8-DSH	1	44.864	49.351	1.00	1.00	37.59	1554.30	0.000	0.000	1855.09	0.00	0.00
6	173.00	Samsung B2/B66 RRH	3	44.150	48.565	0.54	0.80	3.01	227.88	0.000	0.000	146.03	0.00	0.00
7	173.00	Andrew JAHH-65B-R3B	6	44.150	48.565	0.66	0.80	36.29	341.82	0.000	0.000	1762.61	0.00	0.00
8	173.00	Samsung MT6407-77A	3	44.150	48.565	0.56	0.80	7.88	214.38	0.000	0.000	382.65	0.00	0.00
9	173.00	BSAMNT-SBS-1-2	3	44.150	48.565	0.75	0.75	0.00	68.45	0.000	0.000	0.00	0.00	0.00
10	173.00	CBC78T-DS-43/E14F05P	3	44.150	48.565	0.54	0.80	0.59	28.08	0.000	0.000	28.89	0.00	0.00
11	173.00	Samsung B5/B13 RRH	3	44.150	48.565	0.54	0.80	3.01	189.81	0.000	0.000	146.03	0.00	0.00
12	173.00	(3) T-Arms	1	44.150	48.565	0.75	0.75	22.50	1350.00	0.000	0.000	1092.70	0.00	0.00
13	173.00	LPA-80080-4CF-EDIN-0	4	44.150	48.565	1.36	0.80	14.20	43.20	0.000	0.000	689.54	0.00	0.00
14	173.00	APL866513-42T0	2	44.150	48.565	0.84	0.90	6.78	28.26	0.000	0.000	329.25	0.00	0.00
15	173.00	DB-T1-6Z-8AB-OZ	2	44.150	48.565	0.60	0.80	5.76	79.20	0.000	0.000	279.73	0.00	0.00
16	153.00	V-brace kit	1	42.627	46.889	1.00	1.00	2.70	207.00	0.000	0.000	126.60	0.00	0.00
17	153.00	SPTB(Tie back Kit)	1	42.627	46.889	1.00	1.00	3.70	126.00	0.000	0.000	173.49	0.00	0.00
18	153.00	PRK-1245 (kicker kit)	1	42.627	46.889	1.00	1.00	9.50	418.42	0.000	0.000	445.45	0.00	0.00
19	153.00	RFS	3	42.627	46.889	0.52	0.75	31.88	331.56	0.000	0.000	1494.74	0.00	0.00
20	153.00	KRY 112 144/1	3	42.627	46.889	0.52	0.75	0.65	29.70	0.000	0.000	30.28	0.00	0.00
21	153.00	4460 Radio	3	42.627	46.889	0.50	0.75	4.30	294.30	0.000	0.000	201.45	0.00	0.00
22	153.00	VV-65A-R1	3	42.627	46.889	0.62	0.75	12.49	142.83	0.000	0.000	585.82	0.00	0.00
23	153.00	AIR6419 B41	3	42.627	46.889	0.57	0.75	6.50	178.47	0.000	0.000	304.69	0.00	0.00
24	153.00	Ericsson 4449 B71 + B85	3	42.627	46.889	0.50	0.75	2.97	197.64	0.000	0.000	139.25	0.00	0.00
25	153.00	Low Profile Platform	1	42.627	46.889	1.00	1.00	25.00	1080.00	0.000	0.000	1172.24	0.00	0.00
26	143.00	RRUS 11	3	41.811	45.993	0.50	0.75	3.80	136.89	0.000	0.000	174.72	0.00	0.00
27	143.00	DC6-48-60-18-8F	1	41.811	45.993	1.00	1.00	1.47	28.62	0.000	0.000	67.61	0.00	0.00
28	143.00	DBC-750	3	41.811	45.993	0.38	0.75	0.57	12.96	0.000	0.000	26.39	0.00	0.00
29	143.00	QS46512-2	1	41.811	45.993	1.00	1.00	5.55	24.57	0.000	0.000	255.26	0.00	0.00
30	143.00	850-1900 Dual Band	3	41.811	45.993	0.49	0.75	0.77	14.85	0.000	0.000	35.52	0.00	0.00
31	143.00	Low Profile	1	41.811	45.993	1.00	1.00	22.00	1350.00	0.000	0.000	1011.84	0.00	0.00
32	143.00	Powerwave 7770.00	3	41.811	45.993	0.55	0.75	9.03	94.50	0.000	0.000	415.49	0.00	0.00
33	143.00	OPA-65R-LCUU-H8	2	41.811	45.993	0.81	0.90	20.66	171.00	0.000	0.000	949.98	0.00	0.00
34	143.00	OPA-65R-LCUU-H4	1	41.811	45.993	1.00	1.00	5.94	51.30	0.000	0.000	273.20	0.00	0.00
35	143.00	TPA-65R-LCUUUU-H8	2	41.811	45.993	0.81	0.90	21.55	135.00	0.000	0.000	990.96	0.00	0.00
36	143.00	DTMABP7819VG12A	3	41.811	45.993	0.50	0.75	1.72	51.84	0.000	0.000	79.04	0.00	0.00
37	143.00	DBC0061F1V51-2	3	41.811	45.993	0.50	0.75	0.65	68.58	0.000	0.000	29.81	0.00	0.00
38	143.00	RRUS 32 B2	3	41.811	45.993	0.50	0.75	4.13	143.10	0.000	0.000	189.97	0.00	0.00
39	143.00	HRK14	1	41.811	45.993	1.00	1.00	10.13	317.12	0.000	0.000	465.90	0.00	0.00
							Totals:		**10,345.88**			**17,995.15**		

Total Applied Force Summary

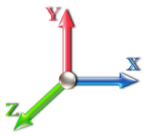
Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 33	

Tower Engineering Solutions

Load Case: 0.9D + 1.0W 126 mph Wind

Dead Load Factor 0.90

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		233.53	544.42	0.00	0.00
4.00		231.82	540.99	0.00	0.00
6.00		230.11	537.56	0.00	0.00
8.00		228.39	534.13	0.00	0.00
10.00		226.68	530.69	0.00	0.00
12.00		224.97	527.26	0.00	0.00
14.00		223.26	523.83	0.00	0.00
16.00		221.55	520.40	0.00	0.00
18.00		219.84	516.96	0.00	0.00
20.00		218.13	513.53	0.00	0.00
22.00		216.42	510.10	0.00	0.00
24.00		214.71	506.67	0.00	0.00
26.00		213.00	503.23	0.00	0.00
28.00		211.28	499.80	0.00	0.00
30.00		209.75	496.37	0.00	0.00
32.00		211.91	492.94	0.00	0.00
34.00		213.84	489.51	0.00	0.00
36.00		215.56	486.07	0.00	0.00
38.00		217.08	482.64	0.00	0.00
40.00		218.42	479.21	0.00	0.00
41.00		109.28	238.32	0.00	0.00
42.00		111.07	438.32	0.00	0.00
44.00		223.68	871.49	0.00	0.00
46.00		224.60	864.62	0.00	0.00
48.00		225.39	857.76	0.00	0.00
50.00		226.05	467.51	0.00	0.00
51.00		112.92	232.47	0.00	0.00
52.00		113.05	231.61	0.00	0.00
54.00		227.03	460.65	0.00	0.00
56.00		227.35	457.22	0.00	0.00
58.00		227.58	453.79	0.00	0.00
60.00		227.70	450.35	0.00	0.00
62.00		227.74	446.92	0.00	0.00
64.00		227.69	443.49	0.00	0.00
66.00		227.56	440.06	0.00	0.00
66.17		20.40	37.25	0.00	0.00
68.00		220.58	399.38	0.00	0.00
70.00		241.61	433.19	0.00	0.00
71.00		120.72	215.31	0.00	0.00
72.00		120.82	214.45	0.00	0.00
74.00		242.37	426.32	0.00	0.00
76.00		242.66	422.89	0.00	0.00
78.00		242.90	419.46	0.00	0.00
80.00		243.07	416.02	0.00	0.00
81.00		121.37	206.73	0.00	0.00
82.00		121.40	178.30	0.00	0.00

Total Applied Force Summary

Structure:	CT01002-S-SBA		**Code:**	TIA-222-H	9/21/2023
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

Tower Engineering Solutions

84.00		243.27	354.46	0.00	0.00
85.00		121.44	176.16	0.00	0.00
86.00		123.13	313.45	0.00	0.00
88.00		246.66	622.61	0.00	0.00
90.00		246.62	616.89	0.00	0.00
91.00		123.09	306.30	0.00	0.00
92.00		122.43	173.05	0.00	0.00
93.83		224.23	314.83	0.00	0.00
94.00		20.77	29.13	0.00	0.00
96.00		220.63	341.10	0.00	0.00
98.00		219.53	338.24	0.00	0.00
100.00		218.38	335.38	0.00	0.00
102.00		217.19	332.52	0.00	0.00
104.00		215.96	329.66	0.00	0.00
106.00		214.68	326.80	0.00	0.00
108.00		213.36	323.94	0.00	0.00
110.00		212.00	321.08	0.00	0.00
111.17		123.24	186.50	0.00	0.00
112.00		87.10	131.71	0.00	0.00
114.00		209.51	315.35	0.00	0.00
115.00		104.36	156.60	0.00	0.00
116.00		104.17	132.73	0.00	0.00
118.00		208.04	263.74	0.00	0.00
120.00		207.26	261.45	0.00	0.00
122.00		206.45	259.17	0.00	0.00
123.83		188.13	235.13	0.00	0.00
124.00		17.41	21.75	0.00	0.00
126.00		199.74	254.59	0.00	0.00
128.00		198.05	252.30	0.00	0.00
130.00		196.33	250.01	0.00	0.00
132.00		197.35	419.21	0.00	0.00
134.00		195.57	414.64	0.00	0.00
135.00		97.01	205.60	0.00	0.00
136.00		96.55	122.50	0.00	0.00
138.00		191.93	243.29	0.00	0.00
140.00		190.06	241.00	0.00	0.00
142.00		188.16	238.71	0.00	0.00
143.00	(30) attachments	5058.94	2718.83	0.00	0.00
144.00		92.78	105.90	0.00	0.00
146.00		184.28	210.09	0.00	0.00
148.00		182.29	207.80	0.00	0.00
150.00		180.28	205.51	0.00	0.00
152.00		178.24	203.22	0.00	0.00
153.00	(22) attachments	4762.27	3106.67	0.00	0.00
154.00		87.75	89.06	0.00	0.00
156.00		174.09	176.40	0.00	0.00
158.00		171.97	174.11	0.00	0.00
160.00		169.83	171.82	0.00	0.00
162.00		167.66	169.54	0.00	0.00
164.00		165.46	167.25	0.00	0.00
166.00		163.25	164.96	0.00	0.00
168.00		161.00	162.67	0.00	0.00
170.00		158.74	160.38	0.00	0.00
172.00		156.45	158.09	0.00	0.00
173.00	(30) attachments	4934.74	2649.26	0.00	0.00
174.00		76.72	64.41	0.00	0.00
176.00		151.80	127.09	0.00	0.00

Total Applied Force Summary

Structure:	CT01002-S-SBA		**Code:**	TIA-222-H	9/21/2023
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

Tower Engineering Solutions

178.00		149.45	124.81	0.00	0.00
180.00		147.07	122.52	0.00	0.00
182.00		118.26	134.20	0.00	0.00
183.00	(11) attachments	3557.24	2235.65	0.00	0.00
	Totals:	**37,037.19**	**44,932.02**	**0.00**	**0.00**

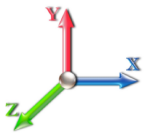
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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 + 1.0W 126 mph Wind

Dead Load Factor 0.90

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	26.739	0.00	0.49
2.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.030	0.000	26.739	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	26.739	0.00	5.62
4.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	26.739	0.00	0.49
4.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	26.739	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	26.739	0.00	5.62
6.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	26.739	0.00	0.49
6.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	26.739	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	26.739	0.00	5.62
8.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	26.739	0.00	0.49
8.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	26.739	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	26.739	0.00	5.62
10.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	26.739	0.00	0.49
10.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	26.739	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	26.739	0.00	5.62
12.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	26.739	0.00	0.49
12.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	26.739	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	26.739	0.00	5.62
14.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	26.739	0.00	0.49
14.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	26.739	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	26.739	0.00	5.62
16.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	26.739	0.00	0.49
16.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	26.739	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	26.739	0.00	5.62
18.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	26.739	0.00	0.49
18.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	26.739	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	26.739	0.00	5.62
20.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	26.739	0.00	0.49
20.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	26.739	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	26.739	0.00	5.62
22.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.033	0.000	26.739	0.00	0.49
22.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.033	0.000	26.739	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	26.739	0.00	5.62
24.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.033	0.000	26.739	0.00	0.49
24.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.033	0.000	26.739	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	26.739	0.00	5.62
26.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.033	0.000	26.739	0.00	0.49
26.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.033	0.000	26.739	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	26.739	0.00	5.62
28.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	26.739	0.00	0.49
28.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	26.739	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	26.739	0.00	5.62
30.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	26.762	0.00	0.49
30.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	26.762	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	26.762	0.00	5.62
32.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	27.260	0.00	0.49
32.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	27.260	0.00	1.87

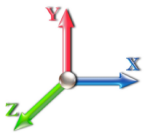
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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 + 1.0W 126 mph Wind

Dead Load Factor 0.90

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	0.33	0.00	0.034	0.000	27.260	0.00	5.62
34.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	27.736	0.00	0.49
34.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	27.736	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	27.736	0.00	5.62
36.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.035	0.000	28.193	0.00	0.49
36.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.035	0.000	28.193	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	28.193	0.00	5.62
38.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.035	0.000	28.632	0.00	0.49
38.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.035	0.000	28.632	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	28.632	0.00	5.62
40.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.035	0.000	29.055	0.00	0.49
40.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.035	0.000	29.055	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	29.055	0.00	5.62
41.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.035	0.000	29.260	0.00	0.25
41.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.035	0.000	29.260	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	29.260	0.00	2.81
42.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.036	0.000	29.463	0.00	0.25
42.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.036	0.000	29.463	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	29.463	0.00	2.81
44.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	29.857	0.00	0.49
44.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	29.857	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	29.857	0.00	5.62
46.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	30.238	0.00	0.49
46.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	30.238	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	30.238	0.00	5.62
48.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	30.608	0.00	0.49
48.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	30.608	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	30.608	0.00	5.62
50.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	30.967	0.00	0.49
50.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	30.967	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	30.967	0.00	5.62
51.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.037	0.000	31.143	0.00	0.25
51.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.037	0.000	31.143	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	31.143	0.00	2.81
52.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.037	0.000	31.316	0.00	0.25
52.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.037	0.000	31.316	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	31.316	0.00	2.81
54.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.037	0.000	31.656	0.00	0.49
54.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.037	0.000	31.656	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	31.656	0.00	5.62
56.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.037	0.000	31.987	0.00	0.49
56.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.037	0.000	31.987	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	31.987	0.00	5.62
58.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.038	0.000	32.309	0.00	0.49
58.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.038	0.000	32.309	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	32.309	0.00	5.62
60.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.038	0.000	32.623	0.00	0.49

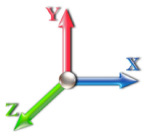
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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 + 1.0W 126 mph Wind

Dead Load Factor 0.90

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	32.623	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	32.623	0.00	5.62
62.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.038	0.000	32.930	0.00	0.49
62.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.038	0.000	32.930	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	32.930	0.00	5.62
64.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.039	0.000	33.230	0.00	0.49
64.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.039	0.000	33.230	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	33.230	0.00	5.62
66.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.079	0.000	33.524	0.00	0.49
66.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.079	0.000	33.524	0.00	1.87
66.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.079	0.000	33.524	0.00	5.62
66.00	C6X10.5 Reinforcing	Yes	1.00	0.000	4.06	0.34	0.00	0.079	0.000	33.524	0.00	0.00
66.17	Safety Cable	Yes	0.17	0.000	0.00	0.00	0.00	0.120	1.059	33.549	0.00	0.04
66.17	Step bolts (ladder)	Yes	0.17	0.000	0.00	0.00	0.00	0.120	1.059	33.549	0.00	0.16
66.17	1 5/8" Coax	Yes	0.17	0.000	1.98	0.03	0.00	0.120	1.059	33.549	0.00	0.48
66.17	C6X10.5 Reinforcing	Yes	0.17	0.000	4.06	0.06	0.00	0.120	1.059	33.549	0.00	0.00
68.00	Safety Cable	Yes	1.83	0.000	0.00	0.00	0.00	0.120	1.061	33.811	0.00	0.45
68.00	Step bolts (ladder)	Yes	1.83	0.000	0.00	0.00	0.00	0.120	1.061	33.811	0.00	1.71
68.00	1 5/8" Coax	Yes	1.83	0.000	1.98	0.30	0.00	0.120	1.061	33.811	0.00	5.14
68.00	C6X10.5 Reinforcing	Yes	1.83	0.000	4.06	0.62	0.00	0.120	1.061	33.811	0.00	0.00
70.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.121	1.064	34.092	0.00	0.49
70.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.121	1.064	34.092	0.00	1.87
70.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.121	1.064	34.092	0.00	5.62
70.00	C6X10.5 Reinforcing	Yes	2.00	0.000	4.06	0.68	0.00	0.121	1.064	34.092	0.00	0.00
71.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.122	1.067	34.231	0.00	0.25
71.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.122	1.067	34.231	0.00	0.94
71.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.122	1.067	34.231	0.00	2.81
71.00	C6X10.5 Reinforcing	Yes	1.00	0.000	4.06	0.34	0.00	0.122	1.067	34.231	0.00	0.00
72.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.123	1.069	34.368	0.00	0.25
72.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.123	1.069	34.368	0.00	0.94
72.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.123	1.069	34.368	0.00	2.81
72.00	C6X10.5 Reinforcing	Yes	1.00	0.000	4.06	0.34	0.00	0.123	1.069	34.368	0.00	0.00
74.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.124	1.071	34.638	0.00	0.49
74.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.124	1.071	34.638	0.00	1.87
74.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.124	1.071	34.638	0.00	5.62
74.00	C6X10.5 Reinforcing	Yes	2.00	0.000	4.06	0.68	0.00	0.124	1.071	34.638	0.00	0.00
76.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.125	1.075	34.903	0.00	0.49
76.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.125	1.075	34.903	0.00	1.87
76.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.125	1.075	34.903	0.00	5.62
76.00	C6X10.5 Reinforcing	Yes	2.00	0.000	4.06	0.68	0.00	0.125	1.075	34.903	0.00	0.00
78.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.126	1.079	35.163	0.00	0.49
78.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.126	1.079	35.163	0.00	1.87
78.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.126	1.079	35.163	0.00	5.62
78.00	C6X10.5 Reinforcing	Yes	2.00	0.000	4.06	0.68	0.00	0.126	1.079	35.163	0.00	0.00
80.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.128	1.083	35.418	0.00	0.49
80.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.128	1.083	35.418	0.00	1.87
80.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.128	1.083	35.418	0.00	5.62

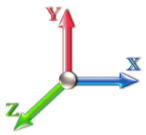
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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 + 1.0W 126 mph Wind

Dead Load Factor 0.90

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	4.06	0.68	0.00	0.128	1.083	35.418	0.00	0.00
81.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.128	1.085	35.544	0.00	0.25
81.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.128	1.085	35.544	0.00	0.94
81.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.128	1.085	35.544	0.00	2.81
81.00	C6X10.5 Reinforcing	Yes	1.00	0.000	4.06	0.34	0.00	0.128	1.085	35.544	0.00	0.00
82.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.129	1.087	35.669	0.00	0.25
82.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.129	1.087	35.669	0.00	0.94
82.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.129	1.087	35.669	0.00	2.81
82.00	C6X10.5 Reinforcing	Yes	1.00	0.000	4.06	0.34	0.00	0.129	1.087	35.669	0.00	0.00
84.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.130	1.090	35.915	0.00	0.49
84.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.130	1.090	35.915	0.00	1.87
84.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.130	1.090	35.915	0.00	5.62
84.00	C6X10.5 Reinforcing	Yes	2.00	0.000	4.06	0.68	0.00	0.130	1.090	35.915	0.00	0.00
85.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.131	1.093	36.037	0.00	0.25
85.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.131	1.093	36.037	0.00	0.94
85.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.131	1.093	36.037	0.00	2.81
85.00	C6X10.5 Reinforcing	Yes	1.00	0.000	4.06	0.34	0.00	0.131	1.093	36.037	0.00	0.00
86.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.132	1.095	36.158	0.00	0.25
86.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.132	1.095	36.158	0.00	0.94
86.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.132	1.095	36.158	0.00	2.81
86.00	C6X10.5 Reinforcing	Yes	1.00	0.000	4.06	0.34	0.00	0.132	1.095	36.158	0.00	0.00
88.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.133	1.099	36.396	0.00	0.49
88.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.133	1.099	36.396	0.00	1.87
88.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.133	1.099	36.396	0.00	5.62
88.00	C6X10.5 Reinforcing	Yes	2.00	0.000	4.06	0.68	0.00	0.133	1.099	36.396	0.00	0.00
90.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.134	1.103	36.630	0.00	0.49
90.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.134	1.103	36.630	0.00	1.87
90.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.134	1.103	36.630	0.00	5.62
90.00	C6X10.5 Reinforcing	Yes	2.00	0.000	4.06	0.68	0.00	0.134	1.103	36.630	0.00	0.00
91.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.135	1.106	36.746	0.00	0.25
91.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.135	1.106	36.746	0.00	0.94
91.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.135	1.106	36.746	0.00	2.81
91.00	C6X10.5 Reinforcing	Yes	1.00	0.000	4.06	0.34	0.00	0.135	1.106	36.746	0.00	0.00
92.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.134	1.102	36.861	0.00	0.25
92.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.134	1.102	36.861	0.00	0.94
92.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.134	1.102	36.861	0.00	2.81
92.00	C6X10.5 Reinforcing	Yes	1.00	0.000	4.06	0.34	0.00	0.134	1.102	36.861	0.00	0.00
93.83	Safety Cable	Yes	1.83	0.000	0.00	0.00	0.00	0.135	1.106	37.069	0.00	0.45
93.83	Step bolts (ladder)	Yes	1.83	0.000	0.00	0.00	0.00	0.135	1.106	37.069	0.00	1.71
93.83	1 5/8" Coax	Yes	1.83	0.000	1.98	0.30	0.00	0.135	1.106	37.069	0.00	5.14
93.83	C6X10.5 Reinforcing	Yes	1.83	0.000	4.06	0.62	0.00	0.135	1.106	37.069	0.00	0.00
94.00	Safety Cable	Yes	0.17	0.000	0.00	0.00	0.00	0.136	1.108	37.088	0.00	0.04
94.00	Step bolts (ladder)	Yes	0.17	0.000	0.00	0.00	0.00	0.136	1.108	37.088	0.00	0.16
94.00	1 5/8" Coax	Yes	0.17	0.000	1.98	0.03	0.00	0.136	1.108	37.088	0.00	0.48
94.00	C6X10.5 Reinforcing	Yes	0.17	0.000	4.06	0.06	0.00	0.136	1.108	37.088	0.00	0.00
96.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.091	0.000	37.312	0.00	0.49
96.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.091	0.000	37.312	0.00	1.87

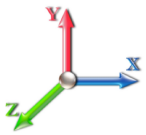
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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 + 1.0W 126 mph Wind

Dead Load Factor 0.90

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	0.33	0.00	0.091	0.000	37.312	0.00	5.62
96.00	C6X10.5 Reinforcing	Yes	1.00	0.000	4.06	0.34	0.00	0.091	0.000	37.312	0.00	0.00
98.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.045	0.000	37.532	0.00	0.49
98.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.045	0.000	37.532	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	37.532	0.00	5.62
100.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.046	0.000	37.750	0.00	0.49
100.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.046	0.000	37.750	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	37.750	0.00	5.62
102.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.046	0.000	37.964	0.00	0.49
102.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.046	0.000	37.964	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	37.964	0.00	5.62
104.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.047	0.000	38.175	0.00	0.49
104.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.047	0.000	38.175	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	38.175	0.00	5.62
106.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.047	0.000	38.383	0.00	0.49
106.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.047	0.000	38.383	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	38.383	0.00	5.62
108.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.048	0.000	38.589	0.00	0.49
108.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.048	0.000	38.589	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	38.589	0.00	5.62
110.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.048	0.000	38.792	0.00	0.49
110.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.048	0.000	38.792	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	38.792	0.00	5.62
111.17	Safety Cable	Yes	1.17	0.000	0.00	0.00	0.00	0.099	0.000	38.909	0.00	0.29
111.17	Step bolts (ladder)	Yes	1.17	0.000	0.00	0.00	0.00	0.099	0.000	38.909	0.00	1.10
111.17	1 5/8" Coax	Yes	1.17	0.000	1.98	0.19	0.00	0.099	0.000	38.909	0.00	3.29
111.17	C6X10.5 Reinforcing	Yes	1.17	0.000	2.03	0.20	0.00	0.099	0.000	38.909	0.00	0.00
112.00	Safety Cable	Yes	0.83	0.000	0.00	0.00	0.00	0.100	0.000	38.992	0.00	0.20
112.00	Step bolts (ladder)	Yes	0.83	0.000	0.00	0.00	0.00	0.100	0.000	38.992	0.00	0.78
112.00	1 5/8" Coax	Yes	0.83	0.000	1.98	0.14	0.00	0.100	0.000	38.992	0.00	2.33
112.00	C6X10.5 Reinforcing	Yes	0.83	0.000	2.03	0.14	0.00	0.100	0.000	38.992	0.00	0.00
114.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.101	1.002	39.190	0.00	0.49
114.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.101	1.002	39.190	0.00	1.87
114.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.101	1.002	39.190	0.00	5.62
114.00	C6X10.5 Reinforcing	Yes	2.00	0.000	2.03	0.34	0.00	0.101	1.002	39.190	0.00	0.00
115.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.101	1.004	39.288	0.00	0.25
115.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.101	1.004	39.288	0.00	0.94
115.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.101	1.004	39.288	0.00	2.81
115.00	C6X10.5 Reinforcing	Yes	1.00	0.000	2.03	0.17	0.00	0.101	1.004	39.288	0.00	0.00
116.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.102	1.006	39.385	0.00	0.25
116.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.102	1.006	39.385	0.00	0.94
116.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.102	1.006	39.385	0.00	2.81
116.00	C6X10.5 Reinforcing	Yes	1.00	0.000	2.03	0.17	0.00	0.102	1.006	39.385	0.00	0.00
118.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.103	1.009	39.578	0.00	0.49
118.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.103	1.009	39.578	0.00	1.87
118.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.103	1.009	39.578	0.00	5.62
118.00	C6X10.5 Reinforcing	Yes	2.00	0.000	2.03	0.34	0.00	0.103	1.009	39.578	0.00	0.00

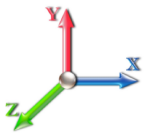
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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 + 1.0W 126 mph Wind

Dead Load Factor 0.90

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	0.104	1.013	39.768	0.00	0.49
120.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.104	1.013	39.768	0.00	1.87
120.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.104	1.013	39.768	0.00	5.62
120.00	C6X10.5 Reinforcing	Yes	2.00	0.000	2.03	0.34	0.00	0.104	1.013	39.768	0.00	0.00
122.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.106	1.017	39.957	0.00	0.49
122.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.106	1.017	39.957	0.00	1.87
122.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.106	1.017	39.957	0.00	5.62
122.00	C6X10.5 Reinforcing	Yes	2.00	0.000	2.03	0.34	0.00	0.106	1.017	39.957	0.00	0.00
123.83	Safety Cable	Yes	1.83	0.000	0.00	0.00	0.00	0.107	1.021	40.127	0.00	0.45
123.83	Step bolts (ladder)	Yes	1.83	0.000	0.00	0.00	0.00	0.107	1.021	40.127	0.00	1.71
123.83	1 5/8" Coax	Yes	1.83	0.000	1.98	0.30	0.00	0.107	1.021	40.127	0.00	5.14
123.83	C6X10.5 Reinforcing	Yes	1.83	0.000	2.03	0.31	0.00	0.107	1.021	40.127	0.00	0.00
124.00	Safety Cable	Yes	0.17	0.000	0.00	0.00	0.00	0.108	1.023	40.143	0.00	0.04
124.00	Step bolts (ladder)	Yes	0.17	0.000	0.00	0.00	0.00	0.108	1.023	40.143	0.00	0.16
124.00	1 5/8" Coax	Yes	0.17	0.000	1.98	0.03	0.00	0.108	1.023	40.143	0.00	0.48
124.00	C6X10.5 Reinforcing	Yes	0.17	0.000	2.03	0.03	0.00	0.108	1.023	40.143	0.00	0.00
126.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.081	0.000	40.327	0.00	0.49
126.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.081	0.000	40.327	0.00	1.87
126.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.081	0.000	40.327	0.00	5.62
126.00	C6X10.5 Reinforcing	Yes	1.00	0.000	2.03	0.17	0.00	0.081	0.000	40.327	0.00	0.00
128.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.054	0.000	40.508	0.00	0.49
128.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.054	0.000	40.508	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	40.508	0.00	5.62
130.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.055	0.000	40.688	0.00	0.49
130.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.055	0.000	40.688	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	40.688	0.00	5.62
132.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.056	0.000	40.866	0.00	0.49
132.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.056	0.000	40.866	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	40.866	0.00	5.62
134.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.056	0.000	41.042	0.00	0.49
134.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.056	0.000	41.042	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	41.042	0.00	5.62
135.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.057	0.000	41.129	0.00	0.25
135.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.057	0.000	41.129	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	41.129	0.00	2.81
136.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.057	0.000	41.216	0.00	0.25
136.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.057	0.000	41.216	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	41.216	0.00	2.81
138.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.057	0.000	41.388	0.00	0.49
138.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.057	0.000	41.388	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	41.388	0.00	5.62
140.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.058	0.000	41.559	0.00	0.49
140.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.058	0.000	41.559	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	41.559	0.00	5.62
142.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.059	0.000	41.728	0.00	0.49
142.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.059	0.000	41.728	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	41.728	0.00	5.62

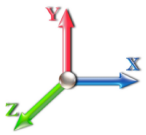
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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 + 1.0W 126 mph Wind

Dead Load Factor 0.90

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	41.811	0.00	0.25
143.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.059	0.000	41.811	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	41.811	0.00	2.81
144.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.060	0.000	41.895	0.00	0.25
144.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.060	0.000	41.895	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	41.895	0.00	2.81
146.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.060	0.000	42.060	0.00	0.49
146.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.060	0.000	42.060	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	42.060	0.00	5.62
148.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.061	0.000	42.224	0.00	0.49
148.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.061	0.000	42.224	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	42.224	0.00	5.62
150.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.062	0.000	42.386	0.00	0.49
150.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.062	0.000	42.386	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	42.386	0.00	5.62
152.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.063	0.000	42.547	0.00	0.49
152.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.063	0.000	42.547	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	42.547	0.00	5.62
153.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.064	0.000	42.627	0.00	0.25
153.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.064	0.000	42.627	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	42.627	0.00	2.81
154.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.064	0.000	42.706	0.00	0.25
154.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.064	0.000	42.706	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	42.706	0.00	2.81
156.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.065	0.000	42.864	0.00	0.49
156.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.065	0.000	42.864	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	42.864	0.00	5.62
158.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.066	0.000	43.020	0.00	0.49
158.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.066	0.000	43.020	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	43.020	0.00	5.62
160.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.067	0.000	43.175	0.00	0.49
160.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.067	0.000	43.175	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	43.175	0.00	5.62
162.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.068	0.000	43.329	0.00	0.49
162.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.068	0.000	43.329	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	43.329	0.00	5.62
164.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.070	0.000	43.481	0.00	0.49
164.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.070	0.000	43.481	0.00	1.87
164.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.070	0.000	43.481	0.00	5.62
166.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.071	0.000	43.632	0.00	0.49
166.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.071	0.000	43.632	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	43.632	0.00	5.62
168.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.072	0.000	43.781	0.00	0.49
168.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.072	0.000	43.781	0.00	1.87
168.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.072	0.000	43.781	0.00	5.62
170.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.073	0.000	43.929	0.00	0.49
170.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.073	0.000	43.929	0.00	1.87

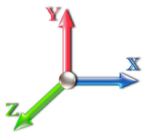
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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 + 1.0W 126 mph Wind

Dead Load Factor 0.90

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)
170.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.073	0.000	43.929	0.00	5.62
172.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.075	0.000	44.077	0.00	0.49
172.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.075	0.000	44.077	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	44.077	0.00	5.62
173.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.076	0.000	44.150	0.00	0.25
173.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.076	0.000	44.150	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	44.150	0.00	2.81
174.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	44.222	0.00	0.25
174.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	44.222	0.00	0.94
176.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	44.367	0.00	0.49
176.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	44.367	0.00	1.87
178.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	44.510	0.00	0.49
178.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	44.510	0.00	1.87
180.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	44.653	0.00	0.49
180.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	44.653	0.00	1.87
182.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	44.794	0.00	0.49
182.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	44.794	0.00	1.87
183.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	44.864	0.00	0.25
183.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	44.864	0.00	0.94
										Totals:	**0.0**	**702.0**

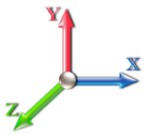
Calculated Forces

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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 + 1.0W 126 mph Wind

Dead Load Factor 0.90

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	-44.91	-37.06	0.00	-4719.0	0.00	4719.05	5190.16	1566.13	8332.38	6861.66	0.00	0.000	0.000	0.697
2.00	-44.32	-36.88	0.00	-4644.9	0.00	4644.93	5174.50	1554.63	8210.47	6790.43	0.01	-0.067	0.000	0.693
4.00	-43.74	-36.70	0.00	-4571.1	0.00	4571.17	5158.51	1543.13	8089.46	6719.08	0.06	-0.135	0.000	0.689
6.00	-43.16	-36.52	0.00	-4497.7	0.00	4497.77	5142.18	1531.63	7969.35	6647.61	0.13	-0.203	0.000	0.686
8.00	-42.58	-36.34	0.00	-4424.7	0.00	4424.73	5125.52	1520.13	7850.13	6576.03	0.23	-0.271	0.000	0.682
10.00	-42.01	-36.16	0.00	-4352.0	0.00	4352.05	5108.53	1508.63	7731.81	6504.36	0.36	-0.340	0.000	0.678
12.00	-41.44	-35.98	0.00	-4279.7	0.00	4279.73	5091.21	1497.13	7614.39	6432.60	0.52	-0.409	0.000	0.674
14.00	-40.87	-35.81	0.00	-4207.7	0.00	4207.77	5073.56	1485.63	7497.87	6360.75	0.70	-0.479	0.000	0.670
16.00	-40.31	-35.63	0.00	-4136.1	0.00	4136.15	5055.57	1474.13	7382.25	6288.85	0.92	-0.549	0.000	0.666
18.00	-39.75	-35.45	0.00	-4064.9	0.00	4064.90	5037.25	1462.64	7267.53	6216.88	1.17	-0.620	0.000	0.662
20.00	-39.20	-35.28	0.00	-3993.9	0.00	3993.99	5018.60	1451.14	7153.70	6144.86	1.44	-0.691	0.000	0.658
22.00	-38.65	-35.10	0.00	-3923.4	0.00	3923.44	4999.62	1439.64	7040.78	6072.81	1.75	-0.762	0.000	0.654
24.00	-38.10	-34.93	0.00	-3853.2	0.00	3853.23	4980.31	1428.14	6928.75	6000.72	2.08	-0.834	0.000	0.650
26.00	-37.55	-34.76	0.00	-3783.3	0.00	3783.37	4960.66	1416.64	6817.62	5928.62	2.45	-0.906	0.000	0.646
28.00	-37.01	-34.58	0.00	-3713.8	0.00	3713.86	4940.68	1405.14	6707.39	5856.50	2.84	-0.979	0.000	0.642
30.00	-36.48	-34.41	0.00	-3644.7	0.00	3644.70	4920.37	1393.64	6598.05	5784.39	3.27	-1.052	0.000	0.638
32.00	-35.94	-34.24	0.00	-3575.8	0.00	3575.87	4899.73	1382.14	6489.62	5712.28	3.73	-1.126	0.000	0.634
34.00	-35.42	-34.06	0.00	-3507.4	0.00	3507.40	4878.76	1370.64	6382.08	5640.19	4.21	-1.200	0.000	0.630
36.00	-34.89	-33.88	0.00	-3439.2	0.00	3439.28	4857.45	1359.14	6275.45	5568.14	4.73	-1.274	0.000	0.625
38.00	-34.37	-33.70	0.00	-3371.5	0.00	3371.52	4835.81	1347.64	6169.71	5496.12	5.28	-1.349	0.000	0.621
40.00	-33.86	-33.50	0.00	-3304.1	0.00	3304.13	4813.84	1336.14	6064.87	5424.15	5.86	-1.424	0.000	0.617
41.00	-33.60	-33.41	0.00	-3270.6	0.00	3270.63	4802.73	1330.39	6012.78	5388.18	6.17	-1.462	0.000	0.615
42.00	-33.14	-33.32	0.00	-3237.2	0.00	3237.23	4791.54	1324.64	5960.92	5352.24	6.48	-1.500	0.000	0.612
44.00	-32.23	-33.11	0.00	-3170.6	0.00	3170.60	4768.90	1313.15	5857.88	5280.39	7.12	-1.576	0.000	0.608
46.00	-31.32	-32.91	0.00	-3104.3	0.00	3104.37	4745.94	1301.65	5755.73	5208.63	7.80	-1.652	0.000	0.603
48.00	-30.43	-32.70	0.00	-3038.5	0.00	3038.56	4759.60	1308.47	5816.21	5251.18	8.51	-1.729	0.000	0.586
50.00	-29.94	-32.49	0.00	-2973.1	0.00	2973.17	4736.50	1296.97	5714.43	5179.45	9.25	-1.806	0.000	0.581
51.00	-29.69	-32.38	0.00	-2940.6	0.00	2940.68	4724.82	1291.22	5663.88	5143.62	9.63	-1.844	0.000	0.579
51.00	-29.69	-32.38	0.00	-2940.6	0.00	2940.68	4064.30	1070.36	4695.09	4424.56	9.63	-1.844	0.000	0.673
52.00	-29.43	-32.29	0.00	-2908.3	0.00	2908.30	4053.20	1065.59	4653.37	4392.70	10.02	-1.881	0.000	0.670
54.00	-28.93	-32.09	0.00	-2843.7	0.00	2843.71	4030.83	1056.06	4570.49	4329.09	10.83	-1.956	0.000	0.665
56.00	-28.44	-31.88	0.00	-2779.5	0.00	2779.54	4008.20	1046.52	4488.35	4265.66	11.66	-2.031	0.000	0.660
58.00	-27.96	-31.68	0.00	-2715.7	0.00	2715.77	3985.33	1036.99	4406.96	4202.40	12.53	-2.106	0.000	0.654
60.00	-27.47	-31.47	0.00	-2652.4	0.00	2652.42	3962.20	1027.46	4326.31	4139.33	13.43	-2.181	0.000	0.649
62.00	-26.99	-31.26	0.00	-2589.4	0.00	2589.49	3938.82	1017.93	4246.41	4076.46	14.36	-2.257	0.000	0.643
64.00	-26.52	-31.05	0.00	-2526.9	0.00	2526.97	3915.19	1008.40	4167.25	4013.78	15.32	-2.334	0.000	0.637
66.00	-26.07	-30.82	0.00	-2464.8	0.00	2464.88	3891.31	998.86	4088.84	3951.30	16.31	-2.410	0.000	0.631
66.17	-26.01	-30.81	0.00	-2459.6	0.00	2459.64	3889.27	998.05	4082.21	3946.00	16.40	-2.417	0.000	0.463
68.00	-25.60	-30.60	0.00	-2403.2	0.00	2403.25	3867.19	989.33	4011.17	3889.05	17.34	-2.468	0.000	0.458
70.00	-25.15	-30.36	0.00	-2342.0	0.00	2342.05	3842.81	979.80	3934.25	3827.01	18.38	-2.524	0.000	0.452
71.00	-24.93	-30.24	0.00	-2311.6	0.00	2311.69	3830.52	975.03	3896.07	3796.08	18.91	-2.553	0.000	0.449
71.00	-24.93	-30.24	0.00	-2311.6	0.00	2311.69	3467.89	866.68	3463.07	3436.66	18.91	-2.553	0.000	0.496
72.00	-24.69	-30.13	0.00	-2281.4	0.00	2281.45	3456.29	862.45	3429.30	3408.29	19.45	-2.581	0.000	0.493
74.00	-24.25	-29.89	0.00	-2221.2	0.00	2221.20	3432.92	853.97	3362.25	3351.73	20.55	-2.637	0.000	0.486
76.00	-23.81	-29.65	0.00	-2161.4	0.00	2161.42	3409.33	845.50	3295.86	3295.42	21.66	-2.693	0.000	0.480
78.00	-23.37	-29.41	0.00	-2102.1	0.00	2102.11	3385.54	837.03	3230.13	3239.36	22.80	-2.749	0.000	0.473
80.00	-22.95	-29.17	0.00	-2043.2	0.00	2043.29	3361.54	828.56	3165.07	3183.58	23.97	-2.805	0.000	0.466
81.00	-22.73	-29.05	0.00	-2014.1	0.00	2014.12	3349.46	824.32	3132.78	3155.79	24.56	-2.834	0.000	0.463

Calculated Forces

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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

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81.00	-22.73	-29.05	0.00	-2014.1	0.00	2014.12	2964.88	798.42	3038.52	2801.08	24.56	-2.834	0.000	0.437
82.00	-22.54	-28.93	0.00	-1985.0	0.00	1985.08	2956.03	794.32	3007.41	2778.29	25.15	-2.862	0.000	0.490
84.00	-22.17	-28.69	0.00	-1927.2	0.00	1927.21	2938.12	786.13	2945.67	2732.78	26.37	-2.925	0.000	0.482
85.00	-21.99	-28.57	0.00	-1898.5	0.00	1898.52	2929.07	782.03	2915.04	2710.06	26.98	-2.957	0.000	0.478
86.00	-21.66	-28.45	0.00	-1869.9	0.00	1869.95	2919.96	777.93	2884.57	2687.37	27.60	-2.989	0.000	0.470
88.00	-21.02	-28.20	0.00	-1813.0	0.00	1813.05	2901.53	769.74	2824.11	2642.08	28.87	-3.051	0.000	0.461
90.00	-20.39	-27.93	0.00	-1756.6	0.00	1756.65	2882.84	761.54	2764.29	2596.92	30.16	-3.113	0.000	0.453
91.00	-20.08	-27.80	0.00	-1728.7	0.00	1728.72	2898.35	768.34	2813.83	2634.34	30.82	-3.144	0.000	0.457
92.00	-19.89	-27.69	0.00	-1700.9	0.00	1700.92	2889.01	764.24	2783.89	2611.76	31.48	-3.175	0.000	0.440
93.83	-19.58	-27.46	0.00	-1650.2	0.00	1650.25	2871.76	756.74	2729.53	2570.50	32.70	-3.230	0.000	0.433
93.83	-19.58	-27.46	0.00	-1650.2	0.00	1650.25	2871.76	756.74	2729.53	2570.50	32.70	-3.230	0.000	0.644
94.00	-19.53	-27.45	0.00	-1645.5	0.00	1645.58	2870.15	756.04	2724.50	2566.68	32.82	-3.235	0.000	0.649
96.00	-19.15	-27.24	0.00	-1590.6	0.00	1590.68	2851.02	747.85	2665.76	2521.73	34.19	-3.325	0.000	0.639
98.00	-18.79	-27.03	0.00	-1536.2	0.00	1536.21	2831.62	739.65	2607.65	2476.93	35.61	-3.415	0.000	0.628
100.00	-18.42	-26.82	0.00	-1482.1	0.00	1482.14	2811.97	731.45	2550.18	2432.29	37.06	-3.504	0.000	0.617
102.00	-18.06	-26.61	0.00	-1428.5	0.00	1428.50	2792.05	723.26	2493.35	2387.80	38.54	-3.593	0.000	0.606
104.00	-17.71	-26.40	0.00	-1375.2	0.00	1375.28	2771.87	715.06	2437.16	2343.48	40.07	-3.682	0.000	0.595
106.00	-17.36	-26.19	0.00	-1322.4	0.00	1322.48	2751.43	706.87	2381.62	2299.33	41.63	-3.770	0.000	0.583
108.00	-17.01	-25.99	0.00	-1270.0	0.00	1270.09	2730.72	698.67	2326.71	2255.37	43.22	-3.858	0.000	0.571
110.00	-16.67	-25.77	0.00	-1218.1	0.00	1218.12	2709.75	690.48	2272.44	2211.59	44.86	-3.945	0.000	0.558
111.17	-16.48	-25.65	0.00	-1187.9	0.00	1187.96	2697.36	685.68	2241.00	2186.08	45.83	-3.997	0.000	0.430
112.00	-16.33	-25.57	0.00	-1166.6	0.00	1166.68	2688.52	682.28	2218.82	2168.02	46.53	-4.025	0.000	0.425
114.00	-16.01	-25.35	0.00	-1115.5	0.00	1115.55	2667.03	674.08	2165.83	2124.64	48.23	-4.092	0.000	0.413
115.00	-15.84	-25.24	0.00	-1090.2	0.00	1090.20	2656.18	669.99	2139.58	2103.04	49.09	-4.125	0.000	0.408
115.00	-15.84	-25.24	0.00	-1090.2	0.00	1090.20	1951.15	536.85	1717.18	1549.82	49.09	-4.125	0.000	0.445
116.00	-15.69	-25.14	0.00	-1064.9	0.00	1064.96	1944.57	533.57	1696.28	1535.11	49.96	-4.158	0.000	0.516
118.00	-15.41	-24.94	0.00	-1014.6	0.00	1014.67	1931.24	527.02	1654.84	1505.73	51.71	-4.235	0.000	0.500
120.00	-15.14	-24.73	0.00	-964.80	0.00	964.80	1917.63	520.46	1613.93	1476.40	53.50	-4.311	0.000	0.483
122.00	-14.86	-24.52	0.00	-915.33	0.00	915.33	1903.77	513.90	1573.52	1447.14	55.32	-4.385	0.000	0.466
123.83	-14.63	-24.33	0.00	-870.46	0.00	870.46	1890.85	507.91	1536.99	1420.43	57.02	-4.452	0.000	0.450
123.83	-14.63	-24.33	0.00	-870.46	0.00	870.46	1890.85	507.91	1536.99	1420.43	57.02	-4.452	0.000	0.616
124.00	-14.58	-24.32	0.00	-866.32	0.00	866.32	1889.64	507.35	1533.62	1417.95	57.17	-4.458	0.000	0.621
126.00	-14.31	-24.13	0.00	-817.68	0.00	817.68	1875.25	500.79	1494.24	1388.84	59.06	-4.557	0.000	0.599
128.00	-14.03	-23.93	0.00	-769.42	0.00	769.42	1860.60	494.24	1455.37	1359.83	60.99	-4.654	0.000	0.576
130.00	-13.76	-23.74	0.00	-721.56	0.00	721.56	1845.69	487.68	1417.01	1330.91	62.96	-4.748	0.000	0.552
132.00	-13.32	-23.53	0.00	-674.08	0.00	674.08	1830.51	481.12	1379.17	1302.09	64.97	-4.841	0.000	0.527
134.00	-12.90	-23.31	0.00	-627.02	0.00	627.02	1815.07	474.57	1341.83	1273.39	67.01	-4.930	0.000	0.502
135.00	-12.68	-23.21	0.00	-603.71	0.00	603.71	1823.79	478.25	1362.77	1289.52	68.05	-4.974	0.000	0.477
136.00	-12.54	-23.12	0.00	-580.50	0.00	580.50	1816.04	474.98	1344.15	1275.18	69.09	-5.018	0.000	0.465
138.00	-12.29	-22.92	0.00	-534.26	0.00	534.26	1800.35	468.42	1307.30	1246.58	71.21	-5.097	0.000	0.438
140.00	-12.03	-22.73	0.00	-488.42	0.00	488.42	1784.41	461.86	1270.96	1218.12	73.36	-5.174	0.000	0.410
142.00	-11.79	-22.53	0.00	-442.98	0.00	442.98	1768.19	455.31	1235.13	1189.79	75.54	-5.246	0.000	0.381
143.00	-9.54	-17.25	0.00	-420.45	0.00	420.45	1759.99	452.03	1217.41	1175.68	76.64	-5.281	0.000	0.364
144.00	-9.43	-17.15	0.00	-403.20	0.00	403.20	1751.72	448.75	1199.81	1161.60	77.75	-5.315	0.000	0.354
146.00	-9.22	-16.96	0.00	-368.90	0.00	368.90	1734.98	442.19	1165.01	1133.56	79.99	-5.381	0.000	0.332
148.00	-9.01	-16.77	0.00	-334.98	0.00	334.98	1717.98	435.64	1130.72	1105.68	82.26	-5.443	0.000	0.310
150.00	-8.80	-16.58	0.00	-301.45	0.00	301.45	1700.72	429.08	1096.94	1077.97	84.55	-5.502	0.000	0.286
152.00	-8.61	-16.39	0.00	-268.29	0.00	268.29	1683.20	422.52	1063.67	1050.43	86.86	-5.557	0.000	0.262
153.00	-5.97	-11.35	0.00	-251.91	0.00	251.91	1674.33	419.24	1047.23	1036.72	88.03	-5.584	0.000	0.247
154.00	-5.89	-11.26	0.00	-240.56	0.00	240.56	1665.41	415.97	1030.91	1023.07	89.20	-5.609	0.000	0.239
156.00	-5.72	-11.07	0.00	-218.05	0.00	218.05	1647.36	409.41	998.67	995.90	91.55	-5.658	0.000	0.223
158.00	-5.55	-10.89	0.00	-195.91	0.00	195.91	1629.04	402.85	966.94	968.92	93.93	-5.704	0.000	0.206
160.00	-5.39	-10.70	0.00	-174.14	0.00	174.14	1610.47	396.30	935.72	942.15	96.33	-5.748	0.000	0.189
162.00	-5.23	-10.52	0.00	-152.73	0.00	152.73	1591.63	389.74	905.02	915.59	98.74	-5.788	0.000	0.171
164.00	-5.08	-10.34	0.00	-131.69	0.00	131.69	1572.53	383.18	874.82	889.25	101.17	-5.825	0.000	0.152
166.00	-4.92	-10.17	0.00	-111.00	0.00	111.00	1553.17	376.63	845.14	863.13	103.61	-5.858	0.000	0.132
168.00	-4.77	-9.99	0.00	-90.66	0.00	90.66	1533.54	370.07	815.97	837.26	106.07	-5.887	0.000	0.112

Calculated Forces

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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

Tower Engineering Solutions

170.00	-4.63	-9.82	0.00	-70.67	0.00	70.67	1513.65	363.51	787.31	811.62	108.53	-5.911	0.000	0.091
172.00	-4.48	-9.65	0.00	-51.03	0.00	51.03	1493.50	356.96	759.17	786.23	111.01	-5.931	0.000	0.069
173.00	-2.36	-4.47	0.00	-41.38	0.00	41.38	1483.33	353.68	745.29	773.64	112.25	-5.938	0.000	0.055
174.00	-2.30	-4.39	0.00	-36.91	0.00	36.91	1473.09	350.40	731.54	761.10	113.49	-5.945	0.000	0.050
176.00	-2.19	-4.22	0.00	-28.14	0.00	28.14	1452.41	343.84	704.42	736.24	115.98	-5.957	0.000	0.040
178.00	-2.08	-4.06	0.00	-19.70	0.00	19.70	1427.85	337.29	677.81	709.85	118.48	-5.966	0.000	0.029
180.00	-1.97	-3.90	0.00	-11.57	0.00	11.57	1400.09	330.73	651.71	682.38	120.97	-5.972	0.000	0.019
180.00	-1.97	-3.90	0.00	-11.57	0.00	11.57	678.42	203.53	26019.0	396.30	120.97	-5.972	0.000	0.032
182.00	-1.85	-3.77	0.00	-3.77	0.00	3.77	678.42	203.53	26019.0	396.30	123.47	-5.975	0.000	0.013
183.00	0.00	-3.56	0.00	0.00	0.00	0.00	678.42	203.53	26019.0	396.30	124.72	-5.976	0.000	0.000

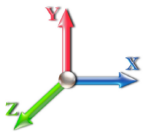
Wind Loading - Shaft

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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 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	4.211	4.63	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
2.00		1.00	0.70	4.211	4.63	0.00	1.200	0.756	2.00	11.128	13.35	61.8	121.4	742.4
4.00		1.00	0.70	4.211	4.63	0.00	1.200	0.810	2.00	11.066	13.28	61.5	129.3	745.7
6.00		1.00	0.70	4.211	4.63	0.00	1.200	0.843	2.00	10.998	13.20	61.1	133.7	745.6
8.00		1.00	0.70	4.211	4.63	0.00	1.200	0.868	2.00	10.926	13.11	60.7	136.7	744.0
10.00		1.00	0.70	4.211	4.63	0.00	1.200	0.887	2.00	10.853	13.02	60.3	138.8	741.5
12.00		1.00	0.70	4.211	4.63	0.00	1.200	0.904	2.00	10.779	12.93	59.9	140.3	738.4
14.00		1.00	0.70	4.211	4.63	0.00	1.200	0.918	2.00	10.704	12.84	59.5	141.4	735.0
16.00		1.00	0.70	4.211	4.63	0.00	1.200	0.930	2.00	10.628	12.75	59.1	142.3	731.3
18.00		1.00	0.70	4.211	4.63	0.00	1.200	0.941	2.00	10.552	12.66	58.7	142.9	727.3
20.00		1.00	0.70	4.211	4.63	0.00	1.200	0.951	2.00	10.476	12.57	58.2	143.3	723.1
22.00		1.00	0.70	4.211	4.63	0.00	1.200	0.960	2.00	10.399	12.48	57.8	143.6	718.8
24.00		1.00	0.70	4.211	4.63	0.00	1.200	0.969	2.00	10.322	12.39	57.4	143.7	714.4
26.00		1.00	0.70	4.211	4.63	0.00	1.200	0.976	2.00	10.245	12.29	56.9	143.8	709.9
28.00		1.00	0.70	4.211	4.63	0.00	1.200	0.984	2.00	10.168	12.20	56.5	143.7	705.2
30.00		1.00	0.70	4.214	4.64	0.00	1.200	0.991	2.00	10.091	12.11	56.1	143.6	700.5
32.00		1.00	0.71	4.293	4.72	0.00	1.200	0.997	2.00	10.013	12.02	56.7	143.3	695.7
34.00		1.00	0.73	4.368	4.80	0.00	1.200	1.003	2.00	9.935	11.92	57.3	143.1	690.8
36.00		1.00	0.74	4.440	4.88	0.00	1.200	1.009	2.00	9.858	11.83	57.8	142.7	685.9
38.00		1.00	0.75	4.509	4.96	0.00	1.200	1.014	2.00	9.780	11.74	58.2	142.3	680.9
40.00		1.00	0.76	4.575	5.03	0.00	1.200	1.019	2.00	9.702	11.64	58.6	141.9	675.9
41.00	Bot - Section 2	1.00	0.77	4.608	5.07	0.00	1.200	1.022	1.00	4.821	5.79	29.3	70.8	336.1
42.00		1.00	0.77	4.639	5.10	0.00	1.200	1.024	1.00	4.865	5.84	29.8	71.6	603.6
44.00		1.00	0.78	4.702	5.17	0.00	1.200	1.029	2.00	9.673	11.61	60.0	142.8	1199.9
46.00		1.00	0.79	4.762	5.24	0.00	1.200	1.034	2.00	9.595	11.51	60.3	142.2	1190.1
48.00	Top - Section 1	1.00	0.80	4.820	5.30	0.00	1.200	1.038	2.00	9.516	11.42	60.5	141.6	1180.4
50.00		1.00	0.81	4.876	5.36	0.00	1.200	1.042	2.00	9.438	11.33	60.8	141.0	659.4
51.00	Top - Section 2	1.00	0.82	4.904	5.39	0.00	1.200	1.044	1.00	4.689	5.63	30.4	70.3	327.8
52.00		1.00	0.82	4.931	5.42	0.00	1.200	1.047	1.00	4.670	5.60	30.4	70.2	326.5
54.00		1.00	0.83	4.985	5.48	0.00	1.200	1.050	2.00	9.281	11.14	61.1	139.6	648.9
56.00		1.00	0.84	5.037	5.54	0.00	1.200	1.054	2.00	9.203	11.04	61.2	138.9	643.7
58.00		1.00	0.85	5.088	5.60	0.00	1.200	1.058	2.00	9.125	10.95	61.3	138.2	638.3
60.00		1.00	0.85	5.137	5.65	0.00	1.200	1.062	2.00	9.046	10.86	61.3	137.4	633.0
62.00		1.00	0.86	5.186	5.70	0.00	1.200	1.065	2.00	8.968	10.76	61.4	136.6	627.6
64.00		1.00	0.87	5.233	5.76	0.00	1.200	1.068	2.00	8.889	10.67	61.4	135.8	622.3
66.00		1.00	0.88	5.279	5.81	0.00	1.200	1.072	2.00	8.810	10.57	61.4	135.0	616.9
66.17	RB1	1.00	0.88	5.283	5.81	0.00	1.271 *	1.072	0.17	0.745	0.95	5.5	11.5	52.2
68.00		1.00	0.89	5.324	5.86	0.00	1.273 *	1.075	1.83	7.986	10.17	59.5	122.8	559.3
70.00		1.00	0.89	5.369	5.91	0.00	1.277 *	1.078	2.00	8.653	11.05	65.3	133.3	606.0
71.00	Top - Section 3	1.00	0.90	5.390	5.93	0.00	1.280 *	1.080	1.00	4.297	5.50	32.6	66.4	301.1
72.00		1.00	0.90	5.412	5.95	0.00	1.282 *	1.081	1.00	4.277	5.48	32.7	66.2	299.7
74.00		1.00	0.91	5.454	6.00	0.00	1.286 *	1.084	2.00	8.496	10.92	65.5	131.5	595.1
76.00		1.00	0.91	5.496	6.05	0.00	1.290 *	1.087	2.00	8.417	10.86	65.6	130.6	589.6
78.00		1.00	0.92	5.537	6.09	0.00	1.294 *	1.090	2.00	8.338	10.79	65.7	129.7	584.1
80.00		1.00	0.93	5.577	6.14	0.00	1.299 *	1.093	2.00	8.259	10.73	65.8	128.7	578.6
81.00	Top - Section 4	1.00	0.93	5.597	6.16	0.00	1.303 *	1.094	1.00	4.100	5.34	32.9	64.1	287.3
82.00		1.00	0.93	5.617	6.18	0.00	1.305 *	1.095	1.00	4.080	5.32	32.9	63.9	249.2

Wind Loading - Shaft

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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

Tower Engineering Solutions

84.00	1.00	0.94	5.656	6.22	0.00	1.308 *	1.098	2.00	8.102	10.60	66.0	126.8	494.5
85.00 Bot - Section 6	1.00	0.94	5.675	6.24	0.00	1.312 *	1.099	1.00	4.021	5.28	32.9	63.2	245.6
86.00	1.00	0.95	5.694	6.26	0.00	1.315 *	1.101	1.00	4.055	5.33	33.4	63.8	429.3
88.00	1.00	0.95	5.731	6.30	0.00	1.318 *	1.103	2.00	8.050	10.61	66.9	126.6	851.8
90.00	1.00	0.96	5.768	6.34	0.00	1.323 *	1.106	2.00	7.971	10.55	66.9	125.6	843.2
91.00 Top - Section 5	1.00	0.96	5.786	6.37	0.00	1.327 *	1.107	1.00	3.956	5.25	33.4	62.5	418.5
92.00	1.00	0.96	5.805	6.38	0.00	1.323 *	1.108	1.00	3.936	5.21	33.3	62.3	240.6
93.83 RT1	1.00	0.97	5.837	6.42	0.00	1.327 *	1.110	1.83	7.152	9.49	60.9	113.1	436.9
94.00	1.00	0.97	5.840	6.42	0.00	1.329 *	1.110	0.17	0.661	0.88	5.6	10.5	40.4
96.00	1.00	0.98	5.876	6.46	0.00	1.200	1.113	2.00	7.735	9.28	60.0	122.5	472.4
98.00	1.00	0.98	5.910	6.50	0.00	1.200	1.115	2.00	7.656	9.19	59.7	121.5	467.5
100.00	1.00	0.99	5.944	6.54	0.00	1.200	1.117	2.00	7.577	9.09	59.5	120.4	462.7
102.00	1.00	0.99	5.978	6.58	0.00	1.200	1.119	2.00	7.498	9.00	59.2	119.3	457.8
104.00	1.00	1.00	6.011	6.61	0.00	1.200	1.122	2.00	7.419	8.90	58.9	118.3	452.9
106.00	1.00	1.00	6.044	6.65	0.00	1.200	1.124	2.00	7.340	8.81	58.6	117.2	448.0
108.00	1.00	1.01	6.077	6.68	0.00	1.200	1.126	2.00	7.261	8.71	58.2	116.1	443.1
110.00	1.00	1.02	6.109	6.72	0.00	1.200	1.128	2.00	7.182	8.62	57.9	115.0	438.2
111.17 RB2	1.00	1.02	6.127	6.74	0.00	1.200	1.129	1.17	4.165	5.00	33.7	66.9	254.2
112.00	1.00	1.02	6.140	6.75	0.00	1.200	1.130	0.83	2.938	3.53	23.8	47.3	179.4
114.00	1.00	1.03	6.171	6.79	0.00	1.202 *	1.132	2.00	7.024	8.44	57.3	112.8	428.4
115.00 Top - Section 6	1.00	1.03	6.187	6.81	0.00	1.205 *	1.133	1.00	3.482	4.20	28.6	56.1	212.5
116.00	1.00	1.03	6.202	6.82	0.00	1.208 *	1.134	1.00	3.462	4.18	28.5	55.8	180.4
118.00	1.00	1.04	6.232	6.86	0.00	1.211 *	1.136	2.00	6.866	8.31	57.0	110.5	357.3
120.00	1.00	1.04	6.262	6.89	0.00	1.216 *	1.138	2.00	6.787	8.25	56.8	109.4	353.1
122.00	1.00	1.05	6.292	6.92	0.00	1.220 *	1.140	2.00	6.708	8.18	56.6	108.2	348.9
123.83 RT2	1.00	1.05	6.319	6.95	0.00	1.225 *	1.141	1.83	6.068	7.43	51.7	98.1	315.6
124.00	1.00	1.05	6.321	6.95	0.00	1.227 *	1.142	0.17	0.560	0.69	4.8	9.1	29.2
126.00	1.00	1.06	6.350	6.99	0.00	1.200	1.143	2.00	6.549	7.86	54.9	105.9	340.5
128.00	1.00	1.06	6.379	7.02	0.00	1.200	1.145	2.00	6.470	7.76	54.5	104.8	336.3
130.00 Bot - Section 8	1.00	1.07	6.407	7.05	0.00	1.200	1.147	2.00	6.391	7.67	54.1	103.6	332.0
132.00	1.00	1.07	6.435	7.08	0.00	1.200	1.149	2.00	6.397	7.68	54.3	103.8	557.9
134.00	1.00	1.07	6.463	7.11	0.00	1.200	1.150	2.00	6.318	7.58	53.9	102.7	550.6
135.00 Top - Section 7	1.00	1.08	6.477	7.12	0.00	1.200	1.151	1.00	3.129	3.75	26.8	51.0	272.7
136.00	1.00	1.08	6.490	7.14	0.00	1.200	1.152	1.00	3.109	3.73	26.6	50.7	161.6
138.00	1.00	1.08	6.517	7.17	0.00	1.200	1.154	2.00	6.160	7.39	53.0	100.3	319.8
140.00	1.00	1.09	6.544	7.20	0.00	1.200	1.155	2.00	6.080	7.30	52.5	99.1	315.5
142.00	1.00	1.09	6.571	7.23	0.00	1.200	1.157	2.00	6.001	7.20	52.1	97.9	311.3
143.00 Appurtenance(s)	1.00	1.09	6.584	7.24	0.00	1.200	1.158	1.00	2.971	3.57	25.8	48.6	154.2
144.00	1.00	1.10	6.597	7.26	0.00	1.200	1.159	1.00	2.951	3.54	25.7	48.3	153.1
146.00	1.00	1.10	6.623	7.29	0.00	1.200	1.160	2.00	5.843	7.01	51.1	95.4	302.7
148.00	1.00	1.11	6.649	7.31	0.00	1.200	1.162	2.00	5.764	6.92	50.6	94.2	298.4
150.00	1.00	1.11	6.675	7.34	0.00	1.200	1.163	2.00	5.685	6.82	50.1	93.0	294.2
152.00	1.00	1.11	6.700	7.37	0.00	1.200	1.165	2.00	5.605	6.73	49.6	91.7	289.9
153.00 Appurtenance(s)	1.00	1.12	6.712	7.38	0.00	1.200	1.166	1.00	2.773	3.33	24.6	45.6	143.5
154.00	1.00	1.12	6.725	7.40	0.00	1.200	1.167	1.00	2.753	3.30	24.4	45.3	142.4
156.00	1.00	1.12	6.750	7.42	0.00	1.200	1.168	2.00	5.447	6.54	48.5	89.3	281.3
158.00	1.00	1.13	6.774	7.45	0.00	1.200	1.170	2.00	5.368	6.44	48.0	88.0	277.0
160.00	1.00	1.13	6.799	7.48	0.00	1.200	1.171	2.00	5.289	6.35	47.5	86.8	272.7
162.00	1.00	1.13	6.823	7.51	0.00	1.200	1.172	2.00	5.210	6.25	46.9	85.5	268.4
164.00	1.00	1.14	6.847	7.53	0.00	1.200	1.174	2.00	5.130	6.16	46.4	84.2	264.1
166.00	1.00	1.14	6.871	7.56	0.00	1.200	1.175	2.00	5.051	6.06	45.8	83.0	259.8
168.00	1.00	1.15	6.894	7.58	0.00	1.200	1.177	2.00	4.972	5.97	45.2	81.7	255.4
170.00	1.00	1.15	6.918	7.61	0.00	1.200	1.178	2.00	4.893	5.87	44.7	80.4	251.1
172.00	1.00	1.15	6.941	7.63	0.00	1.200	1.180	2.00	4.813	5.78	44.1	79.1	246.8
173.00 Appurtenance(s)	1.00	1.16	6.952	7.65	0.00	1.200	1.180	1.00	2.377	2.85	21.8	39.3	121.9
174.00	1.00	1.16	6.964	7.66	0.00	1.200	1.181	1.00	2.357	2.83	21.7	38.9	120.8
176.00	1.00	1.16	6.986	7.69	0.00	1.200	1.182	2.00	4.655	5.59	42.9	76.6	238.1

Wind Loading - Shaft

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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	

178.00	1.00	1.17	7.009	7.71	0.00	1.200	1.184	2.00	4.576	5.49	42.3	75.3	233.8
180.00 Top - Section 8	1.00	1.17	7.031	7.73	0.00	1.200	1.185	2.00	4.497	5.40	41.7	74.0	229.4
182.00	1.00	1.17	7.054	7.76	0.00	1.200	1.186	2.00	4.395	5.27	40.9	73.0	244.0
183.00 Appurtenance(s)	1.00	1.17	7.065	7.77	0.00	1.200	1.187	1.00	2.198	2.64	20.5	36.5	122.0
							Totals:	**183.00**			**5,192.4**		**48,574.6**

* Cf Adjusted by Linear Load Ra Effect

Discrete Appurtenance Forces

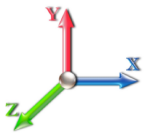
Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 50	

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 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	183.00	RDIDC-9181-OF-48	1	7.065	7.771	1.00	1.00	2.40	49.79	0.000	0.000	18.62	0.00	0.00
2	183.00	RF4451d-70A	3	7.065	7.771	0.60	0.90	4.06	597.17	0.000	0.000	31.54	0.00	0.00
3	183.00	RF4450t-71A	3	7.065	7.771	0.60	0.90	4.06	597.17	0.000	0.000	31.54	0.00	0.00
4	183.00	FFVV-65B-R2	3	7.065	7.771	0.68	0.90	26.85	639.29	0.000	0.000	208.67	0.00	0.00
5	183.00	MC-PK8-DSH	1	7.065	7.771	1.00	1.00	69.71	2847.22	0.000	0.000	541.75	0.00	0.00
6	173.00	Samsung B2/B66 RRH	3	6.952	7.647	0.54	0.80	3.61	447.26	0.000	0.000	27.62	0.00	0.00
7	173.00	Andrew JAHH-65B-R3B	6	6.952	7.647	0.66	0.80	39.85	1339.09	0.000	0.000	304.78	0.00	0.00
8	173.00	Samsung MT6407-77A	3	6.952	7.647	0.56	0.80	8.94	512.14	0.000	0.000	68.40	0.00	0.00
9	173.00	BSAMNT-SBS-1-2	3	6.952	7.647	0.75	0.75	0.00	123.71	0.000	0.000	0.00	0.00	0.00
10	173.00	CBC78T-DS-43/E14F05P	3	6.952	7.647	0.54	0.80	0.88	73.31	0.000	0.000	6.74	0.00	0.00
11	173.00	Samsung B5/B13 RRH	3	6.952	7.647	0.54	0.80	3.61	382.39	0.000	0.000	27.62	0.00	0.00
12	173.00	(3) T-Arms	1	6.952	7.647	0.75	0.75	34.72	2385.15	0.000	0.000	265.48	0.00	0.00
13	173.00	LPA-80080-4CF-EDIN-0	4	6.952	7.647	1.36	0.80	17.50	237.95	0.000	0.000	133.85	0.00	0.00
14	173.00	APL866513-42T0	2	6.952	7.647	0.84	0.90	8.89	122.78	0.000	0.000	67.98	0.00	0.00
15	173.00	DB-T1-6Z-8AB-OZ	2	6.952	7.647	0.60	0.80	6.45	288.95	0.000	0.000	49.35	0.00	0.00
16	153.00	V-brace kit	1	6.712	7.384	1.00	1.00	4.59	389.50	0.000	0.000	33.88	0.00	0.00
17	153.00	SPTB(Tie back Kit)	1	6.712	7.384	1.00	1.00	6.29	225.51	0.000	0.000	46.43	0.00	0.00
18	153.00	PRK-1245 (kicker kit)	1	6.712	7.384	1.00	1.00	16.14	679.60	0.000	0.000	119.21	0.00	0.00
19	153.00	RFS	3	6.712	7.384	0.52	0.75	33.85	1244.53	0.000	0.000	249.96	0.00	0.00
20	153.00	KRY 112 144/1	3	6.712	7.384	0.52	0.75	1.15	51.91	0.000	0.000	8.46	0.00	0.00
21	153.00	4460 Radio	3	6.712	7.384	0.50	0.75	4.98	485.50	0.000	0.000	36.74	0.00	0.00
22	153.00	VV-65A-R1	3	6.712	7.384	0.62	0.75	13.86	532.85	0.000	0.000	102.31	0.00	0.00
23	153.00	AIR6419 B41	3	6.712	7.384	0.57	0.75	7.41	362.66	0.000	0.000	54.69	0.00	0.00
24	153.00	Ericsson 4449 B71 + B85	3	6.712	7.384	0.50	0.75	3.54	204.03	0.000	0.000	26.16	0.00	0.00
25	153.00	Low Profile Platform	1	6.712	7.384	1.00	1.00	38.99	1839.47	0.000	0.000	287.89	0.00	0.00
26	143.00	RRUS 11	3	6.584	7.242	0.50	0.75	4.43	346.89	0.000	0.000	32.09	0.00	0.00
27	143.00	DC6-48-60-18-8F	1	6.584	7.242	1.00	1.00	1.93	61.48	0.000	0.000	14.01	0.00	0.00
28	143.00	DBC-750	3	6.584	7.242	0.38	0.75	0.97	27.82	0.000	0.000	7.02	0.00	0.00
29	143.00	QS46512-2	1	6.584	7.242	1.00	1.00	11.41	96.52	0.000	0.000	82.63	0.00	0.00
30	143.00	850-1900 Dual Band	3	6.584	7.242	0.49	0.75	1.29	33.07	0.000	0.000	9.37	0.00	0.00
31	143.00	Low Profile	1	6.584	7.242	1.00	1.00	33.72	2368.45	0.000	0.000	244.20	0.00	0.00
32	143.00	Powerwave 7770.00	3	6.584	7.242	0.55	0.75	10.17	374.75	0.000	0.000	73.66	0.00	0.00
33	143.00	OPA-65R-LCUU-H8	2	6.584	7.242	0.81	0.90	22.34	581.37	0.000	0.000	161.82	0.00	0.00
34	143.00	OPA-65R-LCUU-H4	1	6.584	7.242	1.00	1.00	6.61	166.98	0.000	0.000	47.87	0.00	0.00
35	143.00	TPA-65R-LCUUUU-H8	2	6.584	7.242	0.81	0.90	23.28	572.19	0.000	0.000	168.58	0.00	0.00
36	143.00	DTMABP7819VG12A	3	6.584	7.242	0.50	0.75	2.49	98.02	0.000	0.000	18.02	0.00	0.00
37	143.00	DBC0061F1V51-2	3	6.584	7.242	0.50	0.75	0.93	109.88	0.000	0.000	6.76	0.00	0.00
38	143.00	RRUS 32 B2	3	6.584	7.242	0.50	0.75	4.84	352.19	0.000	0.000	35.06	0.00	0.00
39	143.00	HRK14	1	6.584	7.242	1.00	1.00	16.70	1052.64	0.000	0.000	120.94	0.00	0.00
							Totals:		**22,901.17**			**3,771.70**		

Total Applied Force Summary

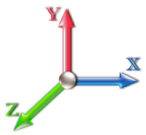
Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 51	

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 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		61.85	861.71	0.00	0.00
4.00		61.51	866.22	0.00	0.00
6.00		61.13	866.85	0.00	0.00
8.00		60.73	865.79	0.00	0.00
10.00		60.32	863.76	0.00	0.00
12.00		59.91	861.11	0.00	0.00
14.00		59.49	858.01	0.00	0.00
16.00		59.07	854.58	0.00	0.00
18.00		58.65	850.88	0.00	0.00
20.00		58.23	846.98	0.00	0.00
22.00		57.80	842.90	0.00	0.00
24.00		57.37	838.68	0.00	0.00
26.00		56.94	834.33	0.00	0.00
28.00		56.51	829.87	0.00	0.00
30.00		56.13	825.32	0.00	0.00
32.00		56.74	820.69	0.00	0.00
34.00		57.28	815.98	0.00	0.00
36.00		57.77	811.21	0.00	0.00
38.00		58.20	806.37	0.00	0.00
40.00		58.59	801.48	0.00	0.00
41.00		29.32	398.94	0.00	0.00
42.00		29.80	666.47	0.00	0.00
44.00		60.03	1325.67	0.00	0.00
46.00		60.31	1316.07	0.00	0.00
48.00		60.55	1306.44	0.00	0.00
50.00		60.75	785.60	0.00	0.00
51.00		30.36	390.95	0.00	0.00
52.00		30.40	389.66	0.00	0.00
54.00		61.07	775.31	0.00	0.00
56.00		61.19	770.12	0.00	0.00
58.00		61.28	764.91	0.00	0.00
60.00		61.34	759.66	0.00	0.00
62.00		61.38	754.40	0.00	0.00
64.00		61.40	749.10	0.00	0.00
66.00		61.39	752.23	0.00	0.00
66.17		5.50	64.44	0.00	0.00
68.00		59.54	691.00	0.00	0.00
70.00		65.25	750.08	0.00	0.00
71.00		32.62	373.14	0.00	0.00
72.00		32.65	371.80	0.00	0.00
74.00		65.53	739.41	0.00	0.00
76.00		65.64	734.05	0.00	0.00
78.00		65.74	728.67	0.00	0.00
80.00		65.82	723.27	0.00	0.00
81.00		32.88	359.71	0.00	0.00
82.00		32.90	321.60	0.00	0.00

Total Applied Force Summary

Structure:	CT01002-S-SBA		**Code:**	TIA-222-H	9/21/2023
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

Tower Engineering Solutions

84.00		65.95	639.50	0.00	0.00
85.00		32.94	318.10	0.00	0.00
86.00		33.38	501.80	0.00	0.00
88.00		66.91	997.00	0.00	0.00
90.00		66.93	988.48	0.00	0.00
91.00		33.42	491.15	0.00	0.00
92.00		33.25	313.26	0.00	0.00
93.83		60.93	570.04	0.00	0.00
94.00		5.65	52.79	0.00	0.00
96.00		59.99	609.22	0.00	0.00
98.00		59.73	595.64	0.00	0.00
100.00		59.45	590.83	0.00	0.00
102.00		59.17	586.02	0.00	0.00
104.00		58.87	581.19	0.00	0.00
106.00		58.56	576.35	0.00	0.00
108.00		58.24	571.51	0.00	0.00
110.00		57.91	566.65	0.00	0.00
111.17		33.68	335.50	0.00	0.00
112.00		23.81	237.03	0.00	0.00
114.00		57.31	567.43	0.00	0.00
115.00		28.56	282.02	0.00	0.00
116.00		28.52	249.93	0.00	0.00
118.00		56.99	496.51	0.00	0.00
120.00		56.83	492.39	0.00	0.00
122.00		56.65	488.27	0.00	0.00
123.83		51.66	443.19	0.00	0.00
124.00		4.78	41.03	0.00	0.00
126.00		54.90	474.68	0.00	0.00
128.00		54.48	465.19	0.00	0.00
130.00		54.05	461.01	0.00	0.00
132.00		54.34	686.91	0.00	0.00
134.00		53.90	679.67	0.00	0.00
135.00		26.75	337.26	0.00	0.00
136.00		26.64	226.18	0.00	0.00
138.00		52.99	448.92	0.00	0.00
140.00		52.53	444.72	0.00	0.00
142.00		52.05	440.50	0.00	0.00
143.00	(30) attachments	1047.84	6461.05	0.00	0.00
144.00		25.70	201.73	0.00	0.00
146.00		51.08	400.00	0.00	0.00
148.00		50.59	395.77	0.00	0.00
150.00		50.08	391.53	0.00	0.00
152.00		49.57	387.29	0.00	0.00
153.00	(22) attachments	990.29	6207.76	0.00	0.00
154.00		24.44	176.31	0.00	0.00
156.00		48.53	349.13	0.00	0.00
158.00		48.00	344.87	0.00	0.00
160.00		47.46	340.61	0.00	0.00
162.00		46.92	336.34	0.00	0.00
164.00		46.37	332.06	0.00	0.00
166.00		45.81	327.79	0.00	0.00
168.00		45.25	323.50	0.00	0.00
170.00		44.68	319.22	0.00	0.00
172.00		44.10	314.92	0.00	0.00
173.00	(30) attachments	973.64	6068.73	0.00	0.00
174.00		21.67	129.18	0.00	0.00
176.00		42.93	254.79	0.00	0.00

Total Applied Force Summary

Structure:	CT01002-S-SBA		**Code:**	TIA-222-H	9/21/2023
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

178.00		42.33	250.47	0.00	0.00
180.00		41.73	246.14	0.00	0.00
182.00		40.93	260.74	0.00	0.00
183.00	(11) attachments	852.63	4861.05	0.00	0.00
	Totals:	**8,964.14**	**82,114.25**	**0.00**	**0.00**

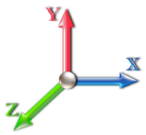
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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 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	4.211	0.00	2.51
2.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.030	0.000	4.211	0.00	4.69
2.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.58	0.00	0.030	0.000	4.211	0.00	17.83
4.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	4.211	0.00	2.75
4.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	4.211	0.00	4.95
4.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.60	0.00	0.031	0.000	4.211	0.00	18.54
6.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	4.211	0.00	2.91
6.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	4.211	0.00	5.12
6.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.61	0.00	0.031	0.000	4.211	0.00	18.98
8.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	4.211	0.00	3.03
8.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	4.211	0.00	5.25
8.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.62	0.00	0.031	0.000	4.211	0.00	19.31
10.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	4.211	0.00	3.12
10.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	4.211	0.00	5.35
10.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.63	0.00	0.031	0.000	4.211	0.00	19.58
12.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	4.211	0.00	3.20
12.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	4.211	0.00	5.44
12.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.63	0.00	0.031	0.000	4.211	0.00	19.80
14.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	4.211	0.00	3.27
14.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	4.211	0.00	5.51
14.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.64	0.00	0.032	0.000	4.211	0.00	19.99
16.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	4.211	0.00	3.34
16.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	4.211	0.00	5.58
16.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.64	0.00	0.032	0.000	4.211	0.00	20.16
18.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	4.211	0.00	3.39
18.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	4.211	0.00	5.64
18.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.64	0.00	0.032	0.000	4.211	0.00	20.31
20.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	4.211	0.00	3.44
20.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	4.211	0.00	5.70
20.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.65	0.00	0.032	0.000	4.211	0.00	20.45
22.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.033	0.000	4.211	0.00	3.49
22.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.033	0.000	4.211	0.00	5.75
22.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.65	0.00	0.033	0.000	4.211	0.00	20.58
24.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.033	0.000	4.211	0.00	3.54
24.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.033	0.000	4.211	0.00	5.80
24.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.65	0.00	0.033	0.000	4.211	0.00	20.69
26.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.033	0.000	4.211	0.00	3.58
26.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.033	0.000	4.211	0.00	5.84
26.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.66	0.00	0.033	0.000	4.211	0.00	20.80
28.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	4.211	0.00	3.62
28.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	4.211	0.00	5.88
28.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.66	0.00	0.034	0.000	4.211	0.00	20.90
30.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	4.214	0.00	3.65
30.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	4.214	0.00	5.92
30.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.66	0.00	0.034	0.000	4.214	0.00	21.00
32.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	4.293	0.00	3.69
32.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	4.293	0.00	5.96

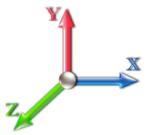
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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 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	0.66	0.00	0.034	0.000	4.293	0.00	21.09
34.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	4.368	0.00	3.72
34.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	4.368	0.00	5.99
34.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.66	0.00	0.034	0.000	4.368	0.00	21.18
36.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.035	0.000	4.440	0.00	3.75
36.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.035	0.000	4.440	0.00	6.03
36.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.67	0.00	0.035	0.000	4.440	0.00	21.26
38.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.035	0.000	4.509	0.00	3.78
38.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.035	0.000	4.509	0.00	6.06
38.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.67	0.00	0.035	0.000	4.509	0.00	21.34
40.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.035	0.000	4.575	0.00	3.81
40.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.035	0.000	4.575	0.00	6.09
40.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.67	0.00	0.035	0.000	4.575	0.00	21.41
41.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.035	0.000	4.608	0.00	1.91
41.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.035	0.000	4.608	0.00	3.05
41.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.34	0.00	0.035	0.000	4.608	0.00	10.72
42.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.036	0.000	4.639	0.00	1.92
42.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.036	0.000	4.639	0.00	3.06
42.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.34	0.00	0.036	0.000	4.639	0.00	10.74
44.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	4.702	0.00	3.87
44.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	4.702	0.00	6.15
44.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.67	0.00	0.036	0.000	4.702	0.00	21.55
46.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	4.762	0.00	3.89
46.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	4.762	0.00	6.18
46.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.67	0.00	0.036	0.000	4.762	0.00	21.61
48.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	4.820	0.00	3.92
48.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	4.820	0.00	6.20
48.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.68	0.00	0.036	0.000	4.820	0.00	21.68
50.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	4.876	0.00	3.94
50.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	4.876	0.00	6.23
50.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.68	0.00	0.036	0.000	4.876	0.00	21.74
51.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.037	0.000	4.904	0.00	1.98
51.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.037	0.000	4.904	0.00	3.12
51.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.34	0.00	0.037	0.000	4.904	0.00	10.88
52.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.037	0.000	4.931	0.00	1.98
52.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.037	0.000	4.931	0.00	3.13
52.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.34	0.00	0.037	0.000	4.931	0.00	10.90
54.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.037	0.000	4.985	0.00	3.99
54.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.037	0.000	4.985	0.00	6.28
54.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.68	0.00	0.037	0.000	4.985	0.00	21.85
56.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.037	0.000	5.037	0.00	4.01
56.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.037	0.000	5.037	0.00	6.30
56.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.68	0.00	0.037	0.000	5.037	0.00	21.91
58.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.038	0.000	5.088	0.00	4.03
58.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.038	0.000	5.088	0.00	6.33
58.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.68	0.00	0.038	0.000	5.088	0.00	21.96
60.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.038	0.000	5.137	0.00	4.05

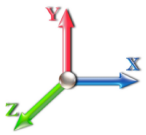
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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 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	5.137	0.00	6.35
60.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.68	0.00	0.038	0.000	5.137	0.00	22.01
62.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.038	0.000	5.186	0.00	4.07
62.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.038	0.000	5.186	0.00	6.37
62.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.69	0.00	0.038	0.000	5.186	0.00	22.06
64.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.039	0.000	5.233	0.00	4.09
64.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.039	0.000	5.233	0.00	6.39
64.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.69	0.00	0.039	0.000	5.233	0.00	22.11
66.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.079	0.000	5.279	0.00	4.11
66.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.079	0.000	5.279	0.00	6.41
66.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.69	0.00	0.079	0.000	5.279	0.00	22.16
66.00	C6X10.5 Reinforcing	Yes	1.00	0.000	4.06	0.52	0.00	0.079	0.000	5.279	0.00	8.44
66.17	Safety Cable	Yes	0.17	0.000	0.00	0.00	0.00	0.120	1.059	5.283	0.00	0.35
66.17	Step bolts (ladder)	Yes	0.17	0.000	0.00	0.00	0.00	0.120	1.059	5.283	0.00	0.54
66.17	1 5/8" Coax	Yes	0.17	0.000	1.98	0.06	0.00	0.120	1.059	5.283	0.00	1.88
66.17	C6X10.5 Reinforcing	Yes	0.17	0.000	4.06	0.09	0.00	0.120	1.059	5.283	0.00	1.43
68.00	Safety Cable	Yes	1.83	0.000	0.00	0.00	0.00	0.120	1.061	5.324	0.00	3.78
68.00	Step bolts (ladder)	Yes	1.83	0.000	0.00	0.00	0.00	0.120	1.061	5.324	0.00	5.88
68.00	1 5/8" Coax	Yes	1.83	0.000	1.98	0.63	0.00	0.120	1.061	5.324	0.00	20.32
68.00	C6X10.5 Reinforcing	Yes	1.83	0.000	4.06	0.95	0.00	0.120	1.061	5.324	0.00	15.49
70.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.121	1.064	5.369	0.00	4.15
70.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.121	1.064	5.369	0.00	6.45
70.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.69	0.00	0.121	1.064	5.369	0.00	22.25
70.00	C6X10.5 Reinforcing	Yes	2.00	0.000	4.06	1.04	0.00	0.121	1.064	5.369	0.00	16.98
71.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.122	1.067	5.390	0.00	2.08
71.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.122	1.067	5.390	0.00	3.23
71.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.34	0.00	0.122	1.067	5.390	0.00	11.14
71.00	C6X10.5 Reinforcing	Yes	1.00	0.000	4.06	0.52	0.00	0.122	1.067	5.390	0.00	8.50
72.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.123	1.069	5.412	0.00	2.08
72.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.123	1.069	5.412	0.00	3.23
72.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.35	0.00	0.123	1.069	5.412	0.00	11.15
72.00	C6X10.5 Reinforcing	Yes	1.00	0.000	4.06	0.52	0.00	0.123	1.069	5.412	0.00	8.52
74.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.124	1.071	5.454	0.00	4.18
74.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.124	1.071	5.454	0.00	6.49
74.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.69	0.00	0.124	1.071	5.454	0.00	22.34
74.00	C6X10.5 Reinforcing	Yes	2.00	0.000	4.06	1.04	0.00	0.124	1.071	5.454	0.00	17.08
76.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.125	1.075	5.496	0.00	4.20
76.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.125	1.075	5.496	0.00	6.51
76.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.69	0.00	0.125	1.075	5.496	0.00	22.38
76.00	C6X10.5 Reinforcing	Yes	2.00	0.000	4.06	1.04	0.00	0.125	1.075	5.496	0.00	17.13
78.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.126	1.079	5.537	0.00	4.22
78.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.126	1.079	5.537	0.00	6.52
78.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.69	0.00	0.126	1.079	5.537	0.00	22.42
78.00	C6X10.5 Reinforcing	Yes	2.00	0.000	4.06	1.04	0.00	0.126	1.079	5.537	0.00	17.18
80.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.128	1.083	5.577	0.00	4.23
80.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.128	1.083	5.577	0.00	6.54
80.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.69	0.00	0.128	1.083	5.577	0.00	22.46

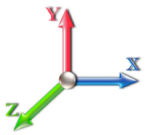
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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 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	4.06	1.04	0.00	0.128	1.083	5.577	0.00	17.23
81.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.128	1.085	5.597	0.00	2.12
81.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.128	1.085	5.597	0.00	3.27
81.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.35	0.00	0.128	1.085	5.597	0.00	11.24
81.00	C6X10.5 Reinforcing	Yes	1.00	0.000	4.06	0.52	0.00	0.128	1.085	5.597	0.00	8.63
82.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.129	1.087	5.617	0.00	2.12
82.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.129	1.087	5.617	0.00	3.28
82.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.35	0.00	0.129	1.087	5.617	0.00	11.25
82.00	C6X10.5 Reinforcing	Yes	1.00	0.000	4.06	0.52	0.00	0.129	1.087	5.617	0.00	8.64
84.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.130	1.090	5.656	0.00	4.26
84.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.130	1.090	5.656	0.00	6.57
84.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.70	0.00	0.130	1.090	5.656	0.00	22.54
84.00	C6X10.5 Reinforcing	Yes	2.00	0.000	4.06	1.04	0.00	0.130	1.090	5.656	0.00	17.32
85.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.131	1.093	5.675	0.00	2.14
85.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.131	1.093	5.675	0.00	3.29
85.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.35	0.00	0.131	1.093	5.675	0.00	11.28
85.00	C6X10.5 Reinforcing	Yes	1.00	0.000	4.06	0.52	0.00	0.131	1.093	5.675	0.00	8.67
86.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.132	1.095	5.694	0.00	2.14
86.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.132	1.095	5.694	0.00	3.30
86.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.35	0.00	0.132	1.095	5.694	0.00	11.29
86.00	C6X10.5 Reinforcing	Yes	1.00	0.000	4.06	0.52	0.00	0.132	1.095	5.694	0.00	8.68
88.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.133	1.099	5.731	0.00	4.30
88.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.133	1.099	5.731	0.00	6.61
88.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.70	0.00	0.133	1.099	5.731	0.00	22.62
88.00	C6X10.5 Reinforcing	Yes	2.00	0.000	4.06	1.04	0.00	0.133	1.099	5.731	0.00	17.41
90.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.134	1.103	5.768	0.00	4.31
90.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.134	1.103	5.768	0.00	6.62
90.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.70	0.00	0.134	1.103	5.768	0.00	22.65
90.00	C6X10.5 Reinforcing	Yes	2.00	0.000	4.06	1.05	0.00	0.134	1.103	5.768	0.00	17.45
91.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.135	1.106	5.786	0.00	2.16
91.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.135	1.106	5.786	0.00	3.32
91.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.35	0.00	0.135	1.106	5.786	0.00	11.34
91.00	C6X10.5 Reinforcing	Yes	1.00	0.000	4.06	0.52	0.00	0.135	1.106	5.786	0.00	8.74
92.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.134	1.102	5.805	0.00	2.16
92.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.134	1.102	5.805	0.00	3.32
92.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.35	0.00	0.134	1.102	5.805	0.00	11.34
92.00	C6X10.5 Reinforcing	Yes	1.00	0.000	4.06	0.52	0.00	0.134	1.102	5.805	0.00	8.75
93.83	Safety Cable	Yes	1.83	0.000	0.00	0.00	0.00	0.135	1.106	5.837	0.00	3.97
93.83	Step bolts (ladder)	Yes	1.83	0.000	0.00	0.00	0.00	0.135	1.106	5.837	0.00	6.09
93.83	1 5/8" Coax	Yes	1.83	0.000	1.98	0.64	0.00	0.135	1.106	5.837	0.00	20.79
93.83	C6X10.5 Reinforcing	Yes	1.83	0.000	4.06	0.96	0.00	0.135	1.106	5.837	0.00	16.04
94.00	Safety Cable	Yes	0.17	0.000	0.00	0.00	0.00	0.136	1.108	5.840	0.00	0.37
94.00	Step bolts (ladder)	Yes	0.17	0.000	0.00	0.00	0.00	0.136	1.108	5.840	0.00	0.57
94.00	1 5/8" Coax	Yes	0.17	0.000	1.98	0.06	0.00	0.136	1.108	5.840	0.00	1.93
94.00	C6X10.5 Reinforcing	Yes	0.17	0.000	4.06	0.09	0.00	0.136	1.108	5.840	0.00	1.49
96.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.091	0.000	5.876	0.00	4.35
96.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.091	0.000	5.876	0.00	6.67

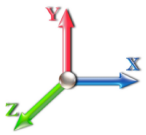
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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 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	0.70	0.00	0.091	0.000	5.876	0.00	22.76
96.00	C6X10.5 Reinforcing	Yes	1.00	0.000	4.06	0.52	0.00	0.091	0.000	5.876	0.00	8.79
98.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.045	0.000	5.910	0.00	4.37
98.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.045	0.000	5.910	0.00	6.68
98.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.70	0.00	0.045	0.000	5.910	0.00	22.79
100.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.046	0.000	5.944	0.00	4.38
100.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.046	0.000	5.944	0.00	6.70
100.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.70	0.00	0.046	0.000	5.944	0.00	22.82
102.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.046	0.000	5.978	0.00	4.39
102.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.046	0.000	5.978	0.00	6.71
102.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.70	0.00	0.046	0.000	5.978	0.00	22.86
104.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.047	0.000	6.011	0.00	4.41
104.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.047	0.000	6.011	0.00	6.73
104.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.70	0.00	0.047	0.000	6.011	0.00	22.89
106.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.047	0.000	6.044	0.00	4.42
106.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.047	0.000	6.044	0.00	6.74
106.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.70	0.00	0.047	0.000	6.044	0.00	22.92
108.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.048	0.000	6.077	0.00	4.43
108.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.048	0.000	6.077	0.00	6.75
108.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.71	0.00	0.048	0.000	6.077	0.00	22.95
110.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.048	0.000	6.109	0.00	4.45
110.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.048	0.000	6.109	0.00	6.77
110.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.71	0.00	0.048	0.000	6.109	0.00	22.98
111.17	Safety Cable	Yes	1.17	0.000	0.00	0.00	0.00	0.099	0.000	6.127	0.00	2.60
111.17	Step bolts (ladder)	Yes	1.17	0.000	0.00	0.00	0.00	0.099	0.000	6.127	0.00	3.96
111.17	1 5/8" Coax	Yes	1.17	0.000	1.98	0.41	0.00	0.099	0.000	6.127	0.00	13.45
111.17	C6X10.5 Reinforcing	Yes	1.17	0.000	2.03	0.42	0.00	0.099	0.000	6.127	0.00	6.13
112.00	Safety Cable	Yes	0.83	0.000	0.00	0.00	0.00	0.100	0.000	6.140	0.00	1.85
112.00	Step bolts (ladder)	Yes	0.83	0.000	0.00	0.00	0.00	0.100	0.000	6.140	0.00	2.81
112.00	1 5/8" Coax	Yes	0.83	0.000	1.98	0.29	0.00	0.100	0.000	6.140	0.00	9.55
112.00	C6X10.5 Reinforcing	Yes	0.83	0.000	2.03	0.30	0.00	0.100	0.000	6.140	0.00	4.35
114.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.101	1.002	6.171	0.00	4.47
114.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.101	1.002	6.171	0.00	6.79
114.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.71	0.00	0.101	1.002	6.171	0.00	23.04
114.00	C6X10.5 Reinforcing	Yes	2.00	0.000	2.03	0.72	0.00	0.101	1.002	6.171	0.00	10.52
115.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.101	1.004	6.187	0.00	2.24
115.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.101	1.004	6.187	0.00	3.40
115.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.35	0.00	0.101	1.004	6.187	0.00	11.53
115.00	C6X10.5 Reinforcing	Yes	1.00	0.000	2.03	0.36	0.00	0.101	1.004	6.187	0.00	5.26
116.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.102	1.006	6.202	0.00	2.24
116.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.102	1.006	6.202	0.00	3.40
116.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.35	0.00	0.102	1.006	6.202	0.00	11.54
116.00	C6X10.5 Reinforcing	Yes	1.00	0.000	2.03	0.36	0.00	0.102	1.006	6.202	0.00	5.27
118.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.103	1.009	6.232	0.00	4.49
118.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.103	1.009	6.232	0.00	6.82
118.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.71	0.00	0.103	1.009	6.232	0.00	23.10
118.00	C6X10.5 Reinforcing	Yes	2.00	0.000	2.03	0.72	0.00	0.103	1.009	6.232	0.00	10.56

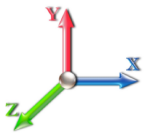
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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 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	0.104	1.013	6.262	0.00	4.51
120.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.104	1.013	6.262	0.00	6.83
120.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.71	0.00	0.104	1.013	6.262	0.00	23.13
120.00	C6X10.5 Reinforcing	Yes	2.00	0.000	2.03	0.72	0.00	0.104	1.013	6.262	0.00	10.58
122.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.106	1.017	6.292	0.00	4.52
122.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.106	1.017	6.292	0.00	6.84
122.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.71	0.00	0.106	1.017	6.292	0.00	23.16
122.00	C6X10.5 Reinforcing	Yes	2.00	0.000	2.03	0.72	0.00	0.106	1.017	6.292	0.00	10.60
123.83	Safety Cable	Yes	1.83	0.000	0.00	0.00	0.00	0.107	1.021	6.319	0.00	4.14
123.83	Step bolts (ladder)	Yes	1.83	0.000	0.00	0.00	0.00	0.107	1.021	6.319	0.00	6.27
123.83	1 5/8" Coax	Yes	1.83	0.000	1.98	0.65	0.00	0.107	1.021	6.319	0.00	21.21
123.83	C6X10.5 Reinforcing	Yes	1.83	0.000	2.03	0.66	0.00	0.107	1.021	6.319	0.00	9.72
124.00	Safety Cable	Yes	0.17	0.000	0.00	0.00	0.00	0.108	1.023	6.321	0.00	0.38
124.00	Step bolts (ladder)	Yes	0.17	0.000	0.00	0.00	0.00	0.108	1.023	6.321	0.00	0.58
124.00	1 5/8" Coax	Yes	0.17	0.000	1.98	0.06	0.00	0.108	1.023	6.321	0.00	1.97
124.00	C6X10.5 Reinforcing	Yes	0.17	0.000	2.03	0.06	0.00	0.108	1.023	6.321	0.00	0.90
126.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.081	0.000	6.350	0.00	4.54
126.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.081	0.000	6.350	0.00	6.87
126.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.71	0.00	0.081	0.000	6.350	0.00	23.21
126.00	C6X10.5 Reinforcing	Yes	1.00	0.000	2.03	0.36	0.00	0.081	0.000	6.350	0.00	5.32
128.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.054	0.000	6.379	0.00	4.55
128.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.054	0.000	6.379	0.00	6.88
128.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.71	0.00	0.054	0.000	6.379	0.00	23.24
130.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.055	0.000	6.407	0.00	4.56
130.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.055	0.000	6.407	0.00	6.89
130.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.71	0.00	0.055	0.000	6.407	0.00	23.26
132.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.056	0.000	6.435	0.00	4.57
132.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.056	0.000	6.435	0.00	6.90
132.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.71	0.00	0.056	0.000	6.435	0.00	23.29
134.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.056	0.000	6.463	0.00	4.58
134.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.056	0.000	6.463	0.00	6.91
134.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.71	0.00	0.056	0.000	6.463	0.00	23.31
135.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.057	0.000	6.477	0.00	2.29
135.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.057	0.000	6.477	0.00	3.46
135.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.36	0.00	0.057	0.000	6.477	0.00	11.66
136.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.057	0.000	6.490	0.00	2.30
136.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.057	0.000	6.490	0.00	3.46
136.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.36	0.00	0.057	0.000	6.490	0.00	11.67
138.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.057	0.000	6.517	0.00	4.60
138.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.057	0.000	6.517	0.00	6.94
138.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.71	0.00	0.057	0.000	6.517	0.00	23.37
140.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.058	0.000	6.544	0.00	4.62
140.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.058	0.000	6.544	0.00	6.95
140.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.72	0.00	0.058	0.000	6.544	0.00	23.39
142.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.059	0.000	6.571	0.00	4.63
142.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.059	0.000	6.571	0.00	6.96
142.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.72	0.00	0.059	0.000	6.571	0.00	23.41

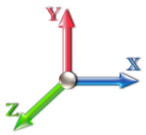
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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 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	6.584	0.00	2.32
143.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.059	0.000	6.584	0.00	3.48
143.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.36	0.00	0.059	0.000	6.584	0.00	11.71
144.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.060	0.000	6.597	0.00	2.32
144.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.060	0.000	6.597	0.00	3.48
144.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.36	0.00	0.060	0.000	6.597	0.00	11.72
146.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.060	0.000	6.623	0.00	4.65
146.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.060	0.000	6.623	0.00	6.98
146.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.72	0.00	0.060	0.000	6.623	0.00	23.46
148.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.061	0.000	6.649	0.00	4.66
148.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.061	0.000	6.649	0.00	6.99
148.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.72	0.00	0.061	0.000	6.649	0.00	23.49
150.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.062	0.000	6.675	0.00	4.67
150.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.062	0.000	6.675	0.00	7.00
150.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.72	0.00	0.062	0.000	6.675	0.00	23.51
152.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.063	0.000	6.700	0.00	4.67
152.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.063	0.000	6.700	0.00	7.01
152.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.72	0.00	0.063	0.000	6.700	0.00	23.53
153.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.064	0.000	6.712	0.00	2.34
153.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.064	0.000	6.712	0.00	3.51
153.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.36	0.00	0.064	0.000	6.712	0.00	11.77
154.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.064	0.000	6.725	0.00	2.34
154.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.064	0.000	6.725	0.00	3.51
154.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.36	0.00	0.064	0.000	6.725	0.00	11.78
156.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.065	0.000	6.750	0.00	4.69
156.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.065	0.000	6.750	0.00	7.03
156.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.72	0.00	0.065	0.000	6.750	0.00	23.58
158.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.066	0.000	6.774	0.00	4.70
158.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.066	0.000	6.774	0.00	7.04
158.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.72	0.00	0.066	0.000	6.774	0.00	23.60
160.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.067	0.000	6.799	0.00	4.71
160.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.067	0.000	6.799	0.00	7.05
160.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.72	0.00	0.067	0.000	6.799	0.00	23.62
162.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.068	0.000	6.823	0.00	4.72
162.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.068	0.000	6.823	0.00	7.06
162.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.72	0.00	0.068	0.000	6.823	0.00	23.64
164.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.070	0.000	6.847	0.00	4.73
164.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.070	0.000	6.847	0.00	7.07
164.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.72	0.00	0.070	0.000	6.847	0.00	23.67
166.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.071	0.000	6.871	0.00	4.74
166.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.071	0.000	6.871	0.00	7.08
166.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.72	0.00	0.071	0.000	6.871	0.00	23.69
168.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.072	0.000	6.894	0.00	4.75
168.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.072	0.000	6.894	0.00	7.09
168.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.72	0.00	0.072	0.000	6.894	0.00	23.71
170.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.073	0.000	6.918	0.00	4.76
170.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.073	0.000	6.918	0.00	7.10

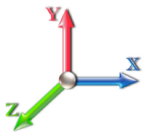
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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 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)
170.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.72	0.00	0.073	0.000	6.918	0.00	23.73
172.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.075	0.000	6.941	0.00	4.77
172.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.075	0.000	6.941	0.00	7.11
172.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.72	0.00	0.075	0.000	6.941	0.00	23.75
173.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.076	0.000	6.952	0.00	2.39
173.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.076	0.000	6.952	0.00	3.56
173.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.36	0.00	0.076	0.000	6.952	0.00	11.88
174.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	6.964	0.00	2.39
174.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	6.964	0.00	3.56
176.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	6.986	0.00	4.78
176.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	6.986	0.00	7.13
178.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	7.009	0.00	4.79
178.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	7.009	0.00	7.13
180.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	7.031	0.00	4.80
180.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	7.031	0.00	7.14
182.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	7.054	0.00	4.81
182.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	7.054	0.00	7.15
183.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	7.065	0.00	2.41
183.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	7.065	0.00	3.58
									Totals:		**0.0**	**3,239.5**

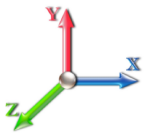
Calculated Forces

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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 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	-82.11	-8.97	0.00	-1148.8	0.00	1148.89	5190.16	1566.13	8332.38	6861.66	0.00	0.000	0.000	0.183
2.00	-81.25	-8.94	0.00	-1130.9	0.00	1130.94	5174.50	1554.63	8210.47	6790.43	0.00	-0.016	0.000	0.182
4.00	-80.38	-8.90	0.00	-1113.0	0.00	1113.07	5158.51	1543.13	8089.46	6719.08	0.01	-0.033	0.000	0.181
6.00	-79.51	-8.86	0.00	-1095.2	0.00	1095.27	5142.18	1531.63	7969.35	6647.61	0.03	-0.049	0.000	0.180
8.00	-78.64	-8.82	0.00	-1077.5	0.00	1077.56	5125.52	1520.13	7850.13	6576.03	0.06	-0.066	0.000	0.179
10.00	-77.78	-8.78	0.00	-1059.9	0.00	1059.92	5108.53	1508.63	7731.81	6504.36	0.09	-0.083	0.000	0.178
12.00	-76.91	-8.74	0.00	-1042.3	0.00	1042.36	5091.21	1497.13	7614.39	6432.60	0.13	-0.100	0.000	0.177
14.00	-76.05	-8.70	0.00	-1024.8	0.00	1024.87	5073.56	1485.63	7497.87	6360.75	0.17	-0.117	0.000	0.176
16.00	-75.19	-8.67	0.00	-1007.4	0.00	1007.46	5055.57	1474.13	7382.25	6288.85	0.22	-0.134	0.000	0.175
18.00	-74.34	-8.63	0.00	-990.13	0.00	990.13	5037.25	1462.64	7267.53	6216.88	0.28	-0.151	0.000	0.174
20.00	-73.49	-8.59	0.00	-972.88	0.00	972.88	5018.60	1451.14	7153.70	6144.86	0.35	-0.168	0.000	0.173
22.00	-72.65	-8.55	0.00	-955.70	0.00	955.70	4999.62	1439.64	7040.78	6072.81	0.43	-0.186	0.000	0.172
24.00	-71.81	-8.51	0.00	-938.60	0.00	938.60	4980.31	1428.14	6928.75	6000.72	0.51	-0.203	0.000	0.171
26.00	-70.97	-8.47	0.00	-921.58	0.00	921.58	4960.66	1416.64	6817.62	5928.62	0.60	-0.221	0.000	0.170
28.00	-70.14	-8.44	0.00	-904.63	0.00	904.63	4940.68	1405.14	6707.39	5856.50	0.69	-0.238	0.000	0.169
30.00	-69.31	-8.40	0.00	-887.76	0.00	887.76	4920.37	1393.64	6598.05	5784.39	0.80	-0.256	0.000	0.168
32.00	-68.49	-8.36	0.00	-870.96	0.00	870.96	4899.73	1382.14	6489.62	5712.28	0.91	-0.274	0.000	0.166
34.00	-67.67	-8.32	0.00	-854.24	0.00	854.24	4878.76	1370.64	6382.08	5640.19	1.03	-0.292	0.000	0.165
36.00	-66.85	-8.28	0.00	-837.61	0.00	837.61	4857.45	1359.14	6275.45	5568.14	1.15	-0.310	0.000	0.164
38.00	-66.05	-8.24	0.00	-821.05	0.00	821.05	4835.81	1347.64	6169.71	5496.12	1.29	-0.328	0.000	0.163
40.00	-65.24	-8.19	0.00	-804.58	0.00	804.58	4813.84	1336.14	6064.87	5424.15	1.43	-0.347	0.000	0.162
41.00	-64.84	-8.17	0.00	-796.39	0.00	796.39	4802.73	1330.39	6012.78	5388.18	1.50	-0.356	0.000	0.161
42.00	-64.17	-8.15	0.00	-788.22	0.00	788.22	4791.54	1324.64	5960.92	5352.24	1.58	-0.365	0.000	0.161
44.00	-62.85	-8.10	0.00	-771.93	0.00	771.93	4768.90	1313.15	5857.88	5280.39	1.73	-0.384	0.000	0.159
46.00	-61.53	-8.05	0.00	-755.72	0.00	755.72	4745.94	1301.65	5755.73	5208.63	1.90	-0.402	0.000	0.158
48.00	-60.22	-8.00	0.00	-739.62	0.00	739.62	4759.60	1308.47	5816.21	5251.18	2.07	-0.421	0.000	0.154
50.00	-59.43	-7.95	0.00	-723.62	0.00	723.62	4736.50	1296.97	5714.43	5179.45	2.25	-0.440	0.000	0.152
51.00	-59.04	-7.93	0.00	-715.67	0.00	715.67	4724.82	1291.22	5663.88	5143.62	2.35	-0.449	0.000	0.152
51.00	-59.04	-7.93	0.00	-715.67	0.00	715.67	4064.30	1070.36	4695.09	4424.56	2.35	-0.449	0.000	0.176
52.00	-58.65	-7.91	0.00	-707.75	0.00	707.75	4053.20	1065.59	4653.37	4392.70	2.44	-0.458	0.000	0.176
54.00	-57.87	-7.86	0.00	-691.94	0.00	691.94	4030.83	1056.06	4570.49	4329.09	2.64	-0.476	0.000	0.174
56.00	-57.10	-7.81	0.00	-676.22	0.00	676.22	4008.20	1046.52	4488.35	4265.66	2.84	-0.494	0.000	0.173
58.00	-56.33	-7.76	0.00	-660.61	0.00	660.61	3985.33	1036.99	4406.96	4202.40	3.05	-0.513	0.000	0.171
60.00	-55.57	-7.71	0.00	-645.10	0.00	645.10	3962.20	1027.46	4326.31	4139.33	3.27	-0.531	0.000	0.170
62.00	-54.82	-7.66	0.00	-629.68	0.00	629.68	3938.82	1017.93	4246.41	4076.46	3.50	-0.550	0.000	0.168
64.00	-54.06	-7.60	0.00	-614.37	0.00	614.37	3915.19	1008.40	4167.25	4013.78	3.73	-0.568	0.000	0.167
66.00	-53.31	-7.55	0.00	-599.16	0.00	599.16	3891.31	998.86	4088.84	3951.30	3.97	-0.587	0.000	0.165
66.17	-53.25	-7.55	0.00	-597.88	0.00	597.88	3889.27	998.05	4082.21	3946.00	3.99	-0.588	0.000	0.121
68.00	-52.55	-7.49	0.00	-584.07	0.00	584.07	3867.19	989.33	4011.17	3889.05	4.22	-0.601	0.000	0.120
70.00	-51.80	-7.43	0.00	-569.09	0.00	569.09	3842.81	979.80	3934.25	3827.01	4.48	-0.614	0.000	0.119
71.00	-51.43	-7.40	0.00	-561.67	0.00	561.67	3830.52	975.03	3896.07	3796.08	4.61	-0.621	0.000	0.118
71.00	-51.43	-7.40	0.00	-561.67	0.00	561.67	3467.89	866.68	3463.07	3436.66	4.61	-0.621	0.000	0.130
72.00	-51.06	-7.37	0.00	-554.27	0.00	554.27	3456.29	862.45	3429.30	3408.29	4.74	-0.628	0.000	0.129
74.00	-50.32	-7.31	0.00	-539.53	0.00	539.53	3432.92	853.97	3362.25	3351.73	5.00	-0.642	0.000	0.128
76.00	-49.58	-7.24	0.00	-524.92	0.00	524.92	3409.33	845.50	3295.86	3295.42	5.28	-0.656	0.000	0.126
78.00	-48.85	-7.18	0.00	-510.43	0.00	510.43	3385.54	837.03	3230.13	3239.36	5.55	-0.669	0.000	0.124
80.00	-48.13	-7.12	0.00	-496.07	0.00	496.07	3361.54	828.56	3165.07	3183.58	5.84	-0.683	0.000	0.122
81.00	-47.77	-7.09	0.00	-488.95	0.00	488.95	3349.46	824.32	3132.78	3155.79	5.98	-0.690	0.000	0.122

Calculated Forces

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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	-47.77	-7.09	0.00	-488.95	0.00	488.95	2964.88	798.42	3038.52	2801.08	5.98	-0.690	0.000	0.115
82.00	-47.45	-7.06	0.00	-481.86	0.00	481.86	2956.03	794.32	3007.41	2778.29	6.13	-0.696	0.000	0.129
84.00	-46.81	-6.99	0.00	-467.75	0.00	467.75	2938.12	786.13	2945.67	2732.78	6.42	-0.712	0.000	0.127
85.00	-46.49	-6.96	0.00	-460.76	0.00	460.76	2929.07	782.03	2915.04	2710.06	6.57	-0.720	0.000	0.126
86.00	-45.98	-6.93	0.00	-453.79	0.00	453.79	2919.96	777.93	2884.57	2687.37	6.72	-0.727	0.000	0.124
88.00	-44.99	-6.86	0.00	-439.93	0.00	439.93	2901.53	769.74	2824.11	2642.08	7.03	-0.742	0.000	0.121
90.00	-44.00	-6.79	0.00	-426.20	0.00	426.20	2882.84	761.54	2764.29	2596.92	7.34	-0.757	0.000	0.119
91.00	-43.51	-6.76	0.00	-419.41	0.00	419.41	2898.35	768.34	2813.83	2634.34	7.50	-0.765	0.000	0.120
92.00	-43.19	-6.73	0.00	-412.65	0.00	412.65	2889.01	764.24	2783.89	2611.76	7.67	-0.773	0.000	0.116
93.83	-42.62	-6.67	0.00	-400.34	0.00	400.34	2871.76	756.74	2729.53	2570.50	7.96	-0.786	0.000	0.114
93.83	-42.62	-6.67	0.00	-400.34	0.00	400.34	2871.76	756.74	2729.53	2570.50	7.96	-0.786	0.000	0.165
94.00	-42.57	-6.67	0.00	-399.20	0.00	399.20	2870.15	756.04	2724.50	2566.68	7.99	-0.787	0.000	0.170
96.00	-41.96	-6.62	0.00	-385.87	0.00	385.87	2851.02	747.85	2665.76	2521.73	8.33	-0.809	0.000	0.168
98.00	-41.36	-6.56	0.00	-372.64	0.00	372.64	2831.62	739.65	2607.65	2476.93	8.67	-0.831	0.000	0.165
100.00	-40.77	-6.51	0.00	-359.51	0.00	359.51	2811.97	731.45	2550.18	2432.29	9.02	-0.852	0.000	0.162
102.00	-40.18	-6.46	0.00	-346.49	0.00	346.49	2792.05	723.26	2493.35	2387.80	9.38	-0.874	0.000	0.160
104.00	-39.60	-6.40	0.00	-333.58	0.00	333.58	2771.87	715.06	2437.16	2343.48	9.76	-0.895	0.000	0.157
106.00	-39.02	-6.35	0.00	-320.77	0.00	320.77	2751.43	706.87	2381.62	2299.33	10.14	-0.917	0.000	0.154
108.00	-38.45	-6.30	0.00	-308.07	0.00	308.07	2730.72	698.67	2326.71	2255.37	10.52	-0.938	0.000	0.151
110.00	-37.88	-6.24	0.00	-295.47	0.00	295.47	2709.75	690.48	2272.44	2211.59	10.92	-0.959	0.000	0.148
111.17	-37.54	-6.21	0.00	-288.17	0.00	288.17	2697.36	685.68	2241.00	2186.08	11.16	-0.972	0.000	0.114
112.00	-37.31	-6.19	0.00	-283.01	0.00	283.01	2688.52	682.28	2218.82	2168.02	11.33	-0.979	0.000	0.113
114.00	-36.74	-6.13	0.00	-270.64	0.00	270.64	2667.03	674.08	2165.83	2124.64	11.74	-0.995	0.000	0.110
115.00	-36.46	-6.10	0.00	-264.51	0.00	264.51	2656.18	669.99	2139.58	2103.04	11.95	-1.003	0.000	0.109
115.00	-36.46	-6.10	0.00	-264.51	0.00	264.51	1951.15	536.85	1717.18	1549.82	11.95	-1.003	0.000	0.118
116.00	-36.20	-6.08	0.00	-258.41	0.00	258.41	1944.57	533.57	1696.28	1535.11	12.16	-1.011	0.000	0.138
118.00	-35.71	-6.02	0.00	-246.25	0.00	246.25	1931.24	527.02	1654.84	1505.73	12.59	-1.030	0.000	0.134
120.00	-35.21	-5.97	0.00	-234.21	0.00	234.21	1917.63	520.46	1613.93	1476.40	13.02	-1.048	0.000	0.129
122.00	-34.73	-5.91	0.00	-222.27	0.00	222.27	1903.77	513.90	1573.52	1447.14	13.47	-1.066	0.000	0.125
123.83	-34.28	-5.86	0.00	-211.45	0.00	211.45	1890.85	507.91	1536.99	1420.43	13.88	-1.082	0.000	0.121
123.83	-34.28	-5.86	0.00	-211.45	0.00	211.45	1890.85	507.91	1536.99	1420.43	13.88	-1.082	0.000	0.162
124.00	-34.24	-5.86	0.00	-210.46	0.00	210.46	1889.64	507.35	1533.62	1417.95	13.92	-1.084	0.000	0.167
126.00	-33.76	-5.81	0.00	-198.74	0.00	198.74	1875.25	500.79	1494.24	1388.84	14.38	-1.108	0.000	0.161
128.00	-33.30	-5.76	0.00	-187.12	0.00	187.12	1860.60	494.24	1455.37	1359.83	14.85	-1.131	0.000	0.156
130.00	-32.84	-5.71	0.00	-175.60	0.00	175.60	1845.69	487.68	1417.01	1330.91	15.33	-1.154	0.000	0.150
132.00	-32.15	-5.65	0.00	-164.18	0.00	164.18	1830.51	481.12	1379.17	1302.09	15.81	-1.177	0.000	0.144
134.00	-31.47	-5.60	0.00	-152.87	0.00	152.87	1815.07	474.57	1341.83	1273.39	16.31	-1.199	0.000	0.138
135.00	-31.13	-5.57	0.00	-147.27	0.00	147.27	1823.79	478.25	1362.77	1289.52	16.56	-1.209	0.000	0.131
136.00	-30.90	-5.54	0.00	-141.70	0.00	141.70	1816.04	474.98	1344.15	1275.18	16.82	-1.220	0.000	0.128
138.00	-30.45	-5.49	0.00	-130.62	0.00	130.62	1800.35	468.42	1307.30	1246.58	17.33	-1.239	0.000	0.122
140.00	-30.01	-5.44	0.00	-119.63	0.00	119.63	1784.41	461.86	1270.96	1218.12	17.86	-1.258	0.000	0.115
142.00	-29.57	-5.38	0.00	-108.76	0.00	108.76	1768.19	455.31	1235.13	1189.79	18.39	-1.276	0.000	0.108
143.00	-23.13	-4.20	0.00	-103.37	0.00	103.37	1759.99	452.03	1217.41	1175.68	18.66	-1.284	0.000	0.101
144.00	-22.93	-4.17	0.00	-99.18	0.00	99.18	1751.72	448.75	1199.81	1161.60	18.93	-1.293	0.000	0.099
146.00	-22.53	-4.12	0.00	-90.84	0.00	90.84	1734.98	442.19	1165.01	1133.56	19.47	-1.309	0.000	0.093
148.00	-22.13	-4.06	0.00	-82.61	0.00	82.61	1717.98	435.64	1130.72	1105.68	20.02	-1.324	0.000	0.088
150.00	-21.74	-4.01	0.00	-74.48	0.00	74.48	1700.72	429.08	1096.94	1077.97	20.58	-1.339	0.000	0.082
152.00	-21.36	-3.95	0.00	-66.47	0.00	66.47	1683.20	422.52	1063.67	1050.43	21.15	-1.353	0.000	0.076
153.00	-15.17	-2.82	0.00	-62.51	0.00	62.51	1674.33	419.24	1047.23	1036.72	21.43	-1.359	0.000	0.069
154.00	-15.00	-2.79	0.00	-59.69	0.00	59.69	1665.41	415.97	1030.91	1023.07	21.72	-1.365	0.000	0.067
156.00	-14.65	-2.74	0.00	-54.11	0.00	54.11	1647.36	409.41	998.67	995.90	22.29	-1.378	0.000	0.063
158.00	-14.30	-2.68	0.00	-48.63	0.00	48.63	1629.04	402.85	966.94	968.92	22.87	-1.389	0.000	0.059
160.00	-13.96	-2.63	0.00	-43.26	0.00	43.26	1610.47	396.30	935.72	942.15	23.45	-1.400	0.000	0.055
162.00	-13.63	-2.58	0.00	-38.00	0.00	38.00	1591.63	389.74	905.02	915.59	24.04	-1.410	0.000	0.050
164.00	-13.30	-2.53	0.00	-32.84	0.00	32.84	1572.53	383.18	874.82	889.25	24.64	-1.419	0.000	0.045
166.00	-12.97	-2.47	0.00	-27.79	0.00	27.79	1553.17	376.63	845.14	863.13	25.23	-1.427	0.000	0.041
168.00	-12.65	-2.42	0.00	-22.84	0.00	22.84	1533.54	370.07	815.97	837.26	25.83	-1.435	0.000	0.036

Calculated Forces

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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

170.00	-12.33	-2.37	0.00	-18.00	0.00	18.00	1513.65	363.51	787.31	811.62	26.43	-1.441	0.000	0.030
172.00	-12.02	-2.32	0.00	-13.26	0.00	13.26	1493.50	356.96	759.17	786.23	27.04	-1.446	0.000	0.025
173.00	-5.97	-1.19	0.00	-10.94	0.00	10.94	1483.33	353.68	745.29	773.64	27.34	-1.448	0.000	0.018
174.00	-5.85	-1.17	0.00	-9.74	0.00	9.74	1473.09	350.40	731.54	761.10	27.65	-1.450	0.000	0.017
176.00	-5.59	-1.12	0.00	-7.40	0.00	7.40	1452.41	343.84	704.42	736.24	28.25	-1.453	0.000	0.014
178.00	-5.34	-1.07	0.00	-5.17	0.00	5.17	1427.85	337.29	677.81	709.85	28.86	-1.455	0.000	0.011
180.00	-5.10	-1.02	0.00	-3.02	0.00	3.02	1400.09	330.73	651.71	682.38	29.47	-1.457	0.000	0.008
180.00	-5.10	-1.02	0.00	-3.02	0.00	3.02	678.42	203.53	26019.0	396.30	29.47	-1.457	0.000	0.015
182.00	-4.84	-0.98	0.00	-0.98	0.00	0.98	678.42	203.53	26019.0	396.30	30.08	-1.457	0.000	0.010
183.00	0.00	-0.85	0.00	0.00	0.00	0.00	678.42	203.53	26019.0	396.30	30.39	-1.458	0.000	0.000

Seismic Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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	

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Load Case: 1.2D + 1.0Ev + 1.0Eh

Gust Response Factor	1.10			**Sds**	0.21	**Iterations**	25
Dead Load Factor	1.20	**Seismic Load Factor**	1.00	**Sd1**	0.08	**Ss**	0.20
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.29	**SA**	0.02	**S1**	0.05
						Seismic Importance Factor	1.00

Top Elev (ft)	Description	Wz (lb)	Hz (lb)	Vertical Ev (lb)	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	
2.00		622.40	1.00	26.16	0.00	
4.00		618.58	3.00	26.00	0.00	
6.00		614.77	5.00	25.84	0.01	
8.00		610.96	7.00	25.68	0.01	
10.00		607.14	9.00	25.52	0.02	
12.00		603.33	11.00	25.36	0.03	
14.00		599.51	13.00	25.20	0.04	
16.00		595.70	15.00	25.04	0.06	
18.00		591.89	17.00	24.88	0.07	
20.00		588.07	19.00	24.71	0.09	
22.00		584.26	21.00	24.55	0.11	
24.00		580.45	23.00	24.39	0.12	
26.00		576.63	25.00	24.23	0.15	
28.00		572.82	27.00	24.07	0.17	
30.00		569.00	29.00	23.91	0.19	
32.00		565.19	31.00	23.75	0.22	
34.00		561.38	33.00	23.59	0.24	
36.00		557.56	35.00	23.43	0.27	
38.00		553.75	37.00	23.27	0.29	
40.00		549.94	39.00	23.11	0.32	
41.00	Bot - Section 2	273.54	40.50	11.50	0.09	
42.00		495.76	41.50	20.84	0.30	
44.00		985.80	43.00	41.43	1.26	
46.00		978.17	45.00	41.11	1.36	
48.00	Top - Section 1	970.55	47.00	40.79	1.46	
50.00		536.94	49.00	22.57	0.49	
51.00	Top - Section 2	267.04	50.50	11.22	0.13	
52.00		266.09	51.50	11.18	0.13	
54.00		529.32	53.00	22.25	0.55	
56.00		525.50	55.00	22.09	0.59	
58.00		521.69	57.00	21.92	0.62	
60.00		517.87	59.00	21.76	0.65	
62.00		514.06	61.00	21.60	0.69	
64.00		510.25	63.00	21.44	0.72	
66.00		506.43	65.00	21.28	0.76	
66.17	RB1	42.87	66.09	1.80	0.01	
68.00		459.75	67.09	19.32	0.67	
70.00		498.81	69.00	20.96	0.83	
71.00	Top - Section 3	247.97	70.50	10.42	0.21	
72.00		247.02	71.50	10.38	0.22	
74.00		491.17	73.00	20.64	0.90	
76.00		487.36	75.00	20.48	0.94	
78.00		483.55	77.00	20.32	0.97	
80.00		479.73	79.00	20.16	1.01	
81.00	Top - Section 4	238.44	80.50	10.02	0.26	

Seismic Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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	

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82.00		206.85	81.50	8.69	0.20
84.00		411.32	83.00	17.29	0.82
85.00	Bot - Section 6	204.47	84.50	8.59	0.21
86.00		357.02	85.50	15.00	0.65
88.00		709.27	87.00	29.81	2.67
90.00		702.91	89.00	29.54	2.74
91.00	Top - Section 5	349.07	90.50	14.67	0.70
92.00		201.02	91.50	8.45	0.24
93.83	RT1	365.81	92.91	15.37	0.81
94.00		33.85	93.91	1.42	0.01
96.00		396.48	95.00	16.66	0.99
98.00		393.30	97.00	16.53	1.02
100.00		390.12	99.00	16.40	1.05
102.00		386.94	101.00	16.26	1.07
104.00		383.77	103.00	16.13	1.10
106.00		380.59	105.00	15.99	1.12
108.00		377.41	107.00	15.86	1.14
110.00		374.23	109.00	15.73	1.17
111.17	RB2	217.45	110.59	9.14	0.41
112.00		153.60	111.59	6.46	0.21
114.00		367.88	113.00	15.46	1.21
115.00	Top - Section 6	182.75	114.50	7.68	0.31
116.00		156.22	115.50	6.57	0.23
118.00		310.53	117.00	13.05	0.93
120.00		307.99	119.00	12.94	0.94
122.00		305.44	121.00	12.84	0.96
123.83	RT2	277.25	122.91	11.65	0.81
124.00		25.65	123.91	1.08	0.01
126.00		300.36	125.00	12.62	0.99
128.00		297.82	127.00	12.52	1.00
130.00	Bot - Section 8	295.27	129.00	12.41	1.02
132.00		483.27	131.00	20.31	2.81
134.00		478.19	133.00	20.10	2.84
135.00	Top - Section 7	237.19	134.50	9.97	0.71
136.00		144.86	135.50	6.09	0.27
138.00		287.80	137.00	12.10	1.09
140.00		285.26	139.00	11.99	1.10
142.00		282.72	141.00	11.88	1.11
143.00	Appurtenance(s)	3029.6	142.50	127.33	130.65
144.00		123.74	143.50	5.20	0.22
146.00		245.57	145.00	10.32	0.89
148.00		243.03	147.00	10.21	0.89
150.00		240.49	149.00	10.11	0.90
152.00		237.94	151.00	10.00	0.90
153.00	Appurtenance(s)	3457.9	152.50	145.33	194.92
154.00		102.55	153.50	4.31	0.17
156.00		203.19	155.00	8.54	0.70
158.00		200.65	157.00	8.43	0.70
160.00		198.11	159.00	8.33	0.70
162.00		195.57	161.00	8.22	0.69
164.00		193.02	163.00	8.11	0.69
166.00		190.48	165.00	8.01	0.69
168.00		187.94	167.00	7.90	0.69
170.00		185.40	169.00	7.79	0.69
172.00		182.85	171.00	7.68	0.69
173.00	Appurtenance(s)	2947.2	172.50	123.86	181.18
174.00		72.22	173.50	3.04	0.11

Seismic Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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

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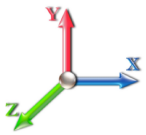
176.00			142.54	175.00	5.99	0.44		
178.00			139.99	177.00	5.88	0.43		
180.00	Top - Section 8		137.45	179.00	5.78	0.42		
182.00			150.43	181.00	6.32	0.52		
183.00	Appurtenance(s)		2484.7	182.50	104.42	144.14		
		Totals:	**51,313.6**		**2,156.5**	**717.9**	**Total Wind:**	**37,037.2**

Calculated Forces

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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 + 1.0Ev + 1.0Eh



Gust Response Factor	1.10			**Sds**	0.21			**Iterations**	25
Dead Load Factor	1.20	**Seismic Load Factor**	1.00	**Sd1**	0.08			**Ss**	0.20
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.29	**SA**	0.02			**S1**	0.05
								Seismic Importance Factor	1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-62.07	-0.72	0.00	-119.40	0.00	119.40	5190.16	1566.13	8332.38	6861.66		0.00	0.00	0.029
2.00	-61.31	-0.72	0.00	-117.96	0.00	117.96	5174.50	1554.63	8210.47	6790.43		0.00	0.00	0.029
4.00	-60.57	-0.72	0.00	-116.53	0.00	116.53	5158.51	1543.13	8089.46	6719.08		0.00	0.00	0.029
6.00	-59.82	-0.72	0.00	-115.09	0.00	115.09	5142.18	1531.63	7969.35	6647.61		0.00	-0.01	0.029
8.00	-59.09	-0.72	0.00	-113.65	0.00	113.65	5125.52	1520.13	7850.13	6576.03		0.01	-0.01	0.029
10.00	-58.35	-0.72	0.00	-112.20	0.00	112.20	5108.53	1508.63	7731.81	6504.36		0.01	-0.01	0.029
12.00	-57.62	-0.73	0.00	-110.75	0.00	110.75	5091.21	1497.13	7614.39	6432.60		0.01	-0.01	0.029
14.00	-56.90	-0.73	0.00	-109.30	0.00	109.30	5073.56	1485.63	7497.87	6360.75		0.02	-0.01	0.028
16.00	-56.18	-0.73	0.00	-107.84	0.00	107.84	5055.57	1474.13	7382.25	6288.85		0.02	-0.01	0.028
18.00	-55.47	-0.73	0.00	-106.38	0.00	106.38	5037.25	1462.64	7267.53	6216.88		0.03	-0.02	0.028
20.00	-54.76	-0.73	0.00	-104.92	0.00	104.92	5018.60	1451.14	7153.70	6144.86		0.04	-0.02	0.028
22.00	-54.05	-0.73	0.00	-103.45	0.00	103.45	4999.62	1439.64	7040.78	6072.81		0.04	-0.02	0.028
24.00	-53.35	-0.74	0.00	-101.98	0.00	101.98	4980.31	1428.14	6928.75	6000.72		0.05	-0.02	0.028
26.00	-52.66	-0.74	0.00	-100.51	0.00	100.51	4960.66	1416.64	6817.62	5928.62		0.06	-0.02	0.028
28.00	-51.97	-0.74	0.00	-99.04	0.00	99.04	4940.68	1405.14	6707.39	5856.50		0.07	-0.03	0.027
30.00	-51.28	-0.74	0.00	-97.56	0.00	97.56	4920.37	1393.64	6598.05	5784.39		0.08	-0.03	0.027
32.00	-50.60	-0.74	0.00	-96.08	0.00	96.08	4899.73	1382.14	6489.62	5712.28		0.10	-0.03	0.027
34.00	-49.92	-0.74	0.00	-94.60	0.00	94.60	4878.76	1370.64	6382.08	5640.19		0.11	-0.03	0.027
36.00	-49.25	-0.74	0.00	-93.12	0.00	93.12	4857.45	1359.14	6275.45	5568.14		0.12	-0.03	0.027
38.00	-48.59	-0.74	0.00	-91.63	0.00	91.63	4835.81	1347.64	6169.71	5496.12		0.14	-0.04	0.027
40.00	-47.92	-0.74	0.00	-90.14	0.00	90.14	4813.84	1336.14	6064.87	5424.15		0.15	-0.04	0.027
41.00	-47.60	-0.75	0.00	-89.40	0.00	89.40	4802.73	1330.39	6012.78	5388.18		0.16	-0.04	0.027
42.00	-46.99	-0.75	0.00	-88.65	0.00	88.65	4791.54	1324.64	5960.92	5352.24		0.17	-0.04	0.026
44.00	-45.79	-0.75	0.00	-87.16	0.00	87.16	4768.90	1313.15	5857.88	5280.39		0.19	-0.04	0.026
46.00	-44.59	-0.74	0.00	-85.67	0.00	85.67	4745.94	1301.65	5755.73	5208.63		0.20	-0.04	0.026
48.00	-43.41	-0.74	0.00	-84.18	0.00	84.18	4759.60	1308.47	5816.21	5251.18		0.22	-0.05	0.025
50.00	-42.76	-0.74	0.00	-82.70	0.00	82.70	4736.50	1296.97	5714.43	5179.45		0.24	-0.05	0.025
51.00	-42.44	-0.74	0.00	-81.95	0.00	81.95	4724.82	1291.22	5663.88	5143.62		0.25	-0.05	0.025
51.00	-42.44	-0.74	0.00	-81.95	0.00	81.95	4064.30	1070.36	4695.09	4424.56		0.25	-0.05	0.029
52.00	-42.12	-0.75	0.00	-81.21	0.00	81.21	4053.20	1065.59	4653.37	4392.70		0.26	-0.05	0.029
54.00	-41.48	-0.75	0.00	-79.72	0.00	79.72	4030.83	1056.06	4570.49	4329.09		0.28	-0.05	0.029
56.00	-40.85	-0.75	0.00	-78.23	0.00	78.23	4008.20	1046.52	4488.35	4265.66		0.31	-0.05	0.029
58.00	-40.23	-0.75	0.00	-76.73	0.00	76.73	3985.33	1036.99	4406.96	4202.40		0.33	-0.06	0.028
60.00	-39.60	-0.75	0.00	-75.24	0.00	75.24	3962.20	1027.46	4326.31	4139.33		0.35	-0.06	0.028
62.00	-38.99	-0.75	0.00	-73.75	0.00	73.75	3938.82	1017.93	4246.41	4076.46		0.38	-0.06	0.028
64.00	-38.37	-0.75	0.00	-72.26	0.00	72.26	3915.19	1008.40	4167.25	4013.78		0.40	-0.06	0.028
66.00	-37.76	-0.75	0.00	-70.76	0.00	70.76	3891.31	998.86	4088.84	3951.30		0.43	-0.07	0.028
66.17	-37.71	-0.75	0.00	-70.64	0.00	70.64	3889.27	998.05	4082.21	3946.00		0.43	-0.07	0.020
68.00	-37.16	-0.75	0.00	-69.27	0.00	69.27	3867.19	989.33	4011.17	3889.05		0.46	-0.07	0.020
70.00	-36.56	-0.75	0.00	-67.78	0.00	67.78	3842.81	979.80	3934.25	3827.01		0.49	-0.07	0.020
71.00	-36.27	-0.75	0.00	-67.03	0.00	67.03	3830.52	975.03	3896.07	3796.08		0.50	-0.07	0.020
71.00	-36.27	-0.75	0.00	-67.03	0.00	67.03	3467.89	866.68	3463.07	3436.66		0.50	-0.07	0.022
72.00	-35.97	-0.75	0.00	-66.29	0.00	66.29	3456.29	862.45	3429.30	3408.29		0.52	-0.07	0.022
74.00	-35.38	-0.75	0.00	-64.79	0.00	64.79	3432.92	853.97	3362.25	3351.73		0.55	-0.07	0.022
76.00	-34.80	-0.74	0.00	-63.30	0.00	63.30	3409.33	845.50	3295.86	3295.42		0.58	-0.07	0.022
78.00	-34.22	-0.74	0.00	-61.82	0.00	61.82	3385.54	837.03	3230.13	3239.36		0.61	-0.07	0.021
80.00	-33.64	-0.74	0.00	-60.33	0.00	60.33	3361.54	828.56	3165.07	3183.58		0.64	-0.08	0.021

Calculated Forces

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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

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81.00	-33.36	-0.74	0.00	-59.59	0.00	59.59	3349.46	824.32	3132.78	3155.79	0.65	-0.08	0.021
81.00	-33.36	-0.74	0.00	-59.59	0.00	59.59	2964.88	798.42	3038.52	2801.08	0.65	-0.08	0.020
82.00	-33.11	-0.74	0.00	-58.84	0.00	58.84	2956.03	794.32	3007.41	2778.29	0.67	-0.08	0.022
84.00	-32.62	-0.74	0.00	-57.36	0.00	57.36	2938.12	786.13	2945.67	2732.78	0.70	-0.08	0.022
85.00	-32.38	-0.74	0.00	-56.62	0.00	56.62	2929.07	782.03	2915.04	2710.06	0.72	-0.08	0.022
86.00	-31.94	-0.74	0.00	-55.87	0.00	55.87	2919.96	777.93	2884.57	2687.37	0.74	-0.08	0.022
88.00	-31.08	-0.74	0.00	-54.39	0.00	54.39	2901.53	769.74	2824.11	2642.08	0.77	-0.08	0.021
90.00	-30.23	-0.74	0.00	-52.91	0.00	52.91	2882.84	761.54	2764.29	2596.92	0.81	-0.09	0.021
91.00	-29.81	-0.73	0.00	-52.18	0.00	52.18	2898.35	768.34	2813.83	2634.34	0.83	-0.09	0.021
92.00	-29.57	-0.73	0.00	-51.44	0.00	51.44	2889.01	764.24	2783.89	2611.76	0.84	-0.09	0.020
93.83	-29.13	-0.73	0.00	-50.10	0.00	50.10	2871.76	756.74	2729.53	2570.50	0.88	-0.09	0.020
93.83	-29.13	-0.73	0.00	-50.10	0.00	50.10	2871.76	756.74	2729.53	2570.50	0.88	-0.09	0.026
94.00	-29.09	-0.73	0.00	-49.97	0.00	49.97	2870.15	756.04	2724.50	2566.68	0.88	-0.09	0.030
96.00	-28.62	-0.73	0.00	-48.51	0.00	48.51	2851.02	747.85	2665.76	2521.73	0.92	-0.09	0.029
98.00	-28.15	-0.73	0.00	-47.04	0.00	47.04	2831.62	739.65	2607.65	2476.93	0.96	-0.09	0.029
100.00	-27.69	-0.73	0.00	-45.57	0.00	45.57	2811.97	731.45	2550.18	2432.29	1.00	-0.10	0.029
102.00	-27.23	-0.73	0.00	-44.10	0.00	44.10	2792.05	723.26	2493.35	2387.80	1.04	-0.10	0.028
104.00	-26.77	-0.73	0.00	-42.64	0.00	42.64	2771.87	715.06	2437.16	2343.48	1.08	-0.10	0.028
106.00	-26.32	-0.73	0.00	-41.17	0.00	41.17	2751.43	706.87	2381.62	2299.33	1.13	-0.11	0.027
108.00	-25.88	-0.73	0.00	-39.71	0.00	39.71	2730.72	698.67	2326.71	2255.37	1.17	-0.11	0.027
110.00	-25.43	-0.73	0.00	-38.25	0.00	38.25	2709.75	690.48	2272.44	2211.59	1.22	-0.11	0.027
111.17	-25.17	-0.73	0.00	-37.40	0.00	37.40	2697.36	685.68	2241.00	2186.08	1.25	-0.11	0.021
112.00	-24.99	-0.73	0.00	-36.79	0.00	36.79	2688.52	682.28	2218.82	2168.02	1.27	-0.11	0.021
114.00	-24.56	-0.73	0.00	-35.33	0.00	35.33	2667.03	674.08	2165.83	2124.64	1.31	-0.12	0.020
115.00	-24.34	-0.73	0.00	-34.60	0.00	34.60	2656.18	669.99	2139.58	2103.04	1.34	-0.12	0.020
115.00	-24.34	-0.73	0.00	-34.60	0.00	34.60	1951.15	536.85	1717.18	1549.82	1.34	-0.12	0.022
116.00	-24.16	-0.73	0.00	-33.88	0.00	33.88	1944.57	533.57	1696.28	1535.11	1.36	-0.12	0.026
118.00	-23.79	-0.73	0.00	-32.42	0.00	32.42	1931.24	527.02	1654.84	1505.73	1.41	-0.12	0.025
120.00	-23.43	-0.73	0.00	-30.97	0.00	30.97	1917.63	520.46	1613.93	1476.40	1.46	-0.12	0.025
122.00	-23.07	-0.73	0.00	-29.51	0.00	29.51	1903.77	513.90	1573.52	1447.14	1.52	-0.13	0.024
123.83	-22.75	-0.72	0.00	-28.19	0.00	28.19	1890.85	507.91	1536.99	1420.43	1.56	-0.13	0.023
123.83	-22.75	-0.72	0.00	-28.19	0.00	28.19	1890.85	507.91	1536.99	1420.43	1.56	-0.13	0.029
124.00	-22.72	-0.73	0.00	-28.06	0.00	28.06	1889.64	507.35	1533.62	1417.95	1.57	-0.13	0.032
126.00	-22.36	-0.72	0.00	-26.61	0.00	26.61	1875.25	500.79	1494.24	1388.84	1.62	-0.13	0.031
128.00	-22.01	-0.72	0.00	-25.16	0.00	25.16	1860.60	494.24	1455.37	1359.83	1.68	-0.13	0.030
130.00	-21.67	-0.72	0.00	-23.71	0.00	23.71	1845.69	487.68	1417.01	1330.91	1.74	-0.14	0.030
132.00	-21.09	-0.72	0.00	-22.27	0.00	22.27	1830.51	481.12	1379.17	1302.09	1.79	-0.14	0.029
134.00	-20.52	-0.72	0.00	-20.82	0.00	20.82	1815.07	474.57	1341.83	1273.39	1.85	-0.14	0.028
135.00	-20.23	-0.72	0.00	-20.11	0.00	20.11	1823.79	478.25	1362.77	1289.52	1.88	-0.14	0.027
136.00	-20.06	-0.72	0.00	-19.39	0.00	19.39	1816.04	474.98	1344.15	1275.18	1.91	-0.15	0.026
138.00	-19.73	-0.72	0.00	-17.96	0.00	17.96	1800.35	468.42	1307.30	1246.58	1.98	-0.15	0.025
140.00	-19.39	-0.71	0.00	-16.53	0.00	16.53	1784.41	461.86	1270.96	1218.12	2.04	-0.15	0.024
142.00	-19.06	-0.71	0.00	-15.10	0.00	15.10	1768.19	455.31	1235.13	1189.79	2.10	-0.15	0.023
143.00	-15.31	-0.57	0.00	-14.39	0.00	14.39	1759.99	452.03	1217.41	1175.68	2.13	-0.15	0.021
144.00	-15.16	-0.57	0.00	-13.81	0.00	13.81	1751.72	448.75	1199.81	1161.60	2.17	-0.16	0.021
146.00	-14.87	-0.57	0.00	-12.67	0.00	12.67	1734.98	442.19	1165.01	1133.56	2.23	-0.16	0.020
148.00	-14.59	-0.57	0.00	-11.53	0.00	11.53	1717.98	435.64	1130.72	1105.68	2.30	-0.16	0.019
150.00	-14.30	-0.57	0.00	-10.38	0.00	10.38	1700.72	429.08	1096.94	1077.97	2.37	-0.16	0.018
152.00	-14.02	-0.57	0.00	-9.25	0.00	9.25	1683.20	422.52	1063.67	1050.43	2.44	-0.16	0.017
153.00	-9.73	-0.36	0.00	-8.68	0.00	8.68	1674.33	419.24	1047.23	1036.72	2.47	-0.17	0.014
154.00	-9.61	-0.36	0.00	-8.32	0.00	8.32	1665.41	415.97	1030.91	1023.07	2.51	-0.17	0.014
156.00	-9.37	-0.36	0.00	-7.60	0.00	7.60	1647.36	409.41	998.67	995.90	2.58	-0.17	0.013
158.00	-9.13	-0.36	0.00	-6.88	0.00	6.88	1629.04	402.85	966.94	968.92	2.65	-0.17	0.013
160.00	-8.89	-0.36	0.00	-6.16	0.00	6.16	1610.47	396.30	935.72	942.15	2.72	-0.17	0.012
162.00	-8.66	-0.36	0.00	-5.45	0.00	5.45	1591.63	389.74	905.02	915.59	2.79	-0.17	0.011
164.00	-8.42	-0.35	0.00	-4.74	0.00	4.74	1572.53	383.18	874.82	889.25	2.86	-0.17	0.011
166.00	-8.20	-0.35	0.00	-4.03	0.00	4.03	1553.17	376.63	845.14	863.13	2.94	-0.18	0.010

Calculated Forces

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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

168.00	-7.97	-0.35	0.00	-3.32	0.00	3.32	1533.54	370.07	815.97	837.26	3.01	-0.18	0.009
170.00	-7.75	-0.35	0.00	-2.61	0.00	2.61	1513.65	363.51	787.31	811.62	3.08	-0.18	0.008
172.00	-7.53	-0.35	0.00	-1.91	0.00	1.91	1493.50	356.96	759.17	786.23	3.16	-0.18	0.007
173.00	-3.88	-0.16	0.00	-1.56	0.00	1.56	1483.33	353.68	745.29	773.64	3.19	-0.18	0.005
174.00	-3.79	-0.16	0.00	-1.40	0.00	1.40	1473.09	350.40	731.54	761.10	3.23	-0.18	0.004
176.00	-3.61	-0.16	0.00	-1.09	0.00	1.09	1452.41	343.84	704.42	736.24	3.31	-0.18	0.004
178.00	-3.44	-0.16	0.00	-0.77	0.00	0.77	1427.85	337.29	677.81	709.85	3.38	-0.18	0.003
180.00	-3.27	-0.15	0.00	-0.46	0.00	0.46	1400.09	330.73	651.71	682.38	3.46	-0.18	0.003
180.00	-3.27	-0.15	0.00	-0.46	0.00	0.46	678.42	203.53	26019.0	396.30	3.46	-0.18	0.006
182.00	-3.08	-0.15	0.00	-0.15	0.00	0.15	678.42	203.53	26019.0	396.30	3.53	-0.18	0.005
183.00	0.00	-0.14	0.00	0.00	0.00	0.00	678.42	203.53	26019.0	396.30	3.57	-0.18	0.000

Seismic Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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	

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Load Case: 0.9D + 1.0Ev + 1.0Eh

Gust Response Factor	1.10			**Sds**	0.21	**Iterations**	25
Dead Load Factor	0.90	**Seismic Load Factor**	1.00	**Sd1**	0.08	**Ss**	0.20
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.29	**SA**	0.02	**S1**	0.05
						Seismic Importance Factor	1.00

Top Elev (ft)	Description	Wz (lb)	Hz (lb)	Vertical Ev (lb)	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	
2.00		596.17	1.00	25.06	0.00	
4.00		592.36	3.00	24.89	0.00	
6.00		588.55	5.00	24.73	0.01	
8.00		584.73	7.00	24.57	0.01	
10.00		580.92	9.00	24.41	0.02	
12.00		577.11	11.00	24.25	0.03	
14.00		573.29	13.00	24.09	0.04	
16.00		569.48	15.00	23.93	0.05	
18.00		565.66	17.00	23.77	0.07	
20.00		561.85	19.00	23.61	0.08	
22.00		558.04	21.00	23.45	0.10	
24.00		554.22	23.00	23.29	0.12	
26.00		550.41	25.00	23.13	0.13	
28.00		546.60	27.00	22.97	0.15	
30.00		542.78	29.00	22.81	0.18	
32.00		538.97	31.00	22.65	0.20	
34.00		535.15	33.00	22.49	0.22	
36.00		531.34	35.00	22.33	0.25	
38.00		527.53	37.00	22.17	0.27	
40.00		523.71	39.00	22.01	0.30	
41.00	Bot - Section 2	260.43	40.50	10.94	0.08	
42.00		482.65	41.50	20.28	0.29	
44.00		959.58	43.00	40.33	1.21	
46.00		951.95	45.00	40.01	1.31	
48.00	Top - Section 1	944.32	47.00	39.69	1.40	
50.00		510.72	49.00	21.46	0.45	
51.00	Top - Section 2	253.93	50.50	10.67	0.12	
52.00		252.98	51.50	10.63	0.12	
54.00		503.09	53.00	21.14	0.51	
56.00		499.28	55.00	20.98	0.54	
58.00		495.47	57.00	20.82	0.57	
60.00		491.65	59.00	20.66	0.60	
62.00		487.84	61.00	20.50	0.63	
64.00		484.02	63.00	20.34	0.66	
66.00		480.21	65.00	20.18	0.69	
66.17	RB1	40.64	66.09	1.71	0.01	
68.00		435.76	67.09	18.31	0.61	
70.00		472.58	69.00	19.86	0.76	
71.00	Top - Section 3	234.86	70.50	9.87	0.20	
72.00		233.91	71.50	9.83	0.20	
74.00		464.95	73.00	19.54	0.82	
76.00		461.14	75.00	19.38	0.85	
78.00		457.32	77.00	19.22	0.88	
80.00		453.51	79.00	19.06	0.91	
81.00	Top - Section 4	225.32	80.50	9.47	0.23	

Seismic Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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	

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82.00		193.74	81.50	8.14	0.18
84.00		385.10	83.00	16.18	0.73
85.00	Bot - Section 6	191.36	84.50	8.04	0.19
86.00		343.91	85.50	14.45	0.62
88.00		683.05	87.00	28.71	2.51
90.00		676.69	89.00	28.44	2.58
91.00	Top - Section 5	335.96	90.50	14.12	0.66
92.00		187.91	91.50	7.90	0.21
93.83	RT1	341.82	92.91	14.37	0.72
94.00		31.62	93.91	1.33	0.01
96.00		370.26	95.00	15.56	0.88
98.00		367.08	97.00	15.43	0.90
100.00		363.90	99.00	15.29	0.92
102.00		360.72	101.00	15.16	0.94
104.00		357.54	103.00	15.03	0.96
106.00		354.37	105.00	14.89	0.98
108.00		351.19	107.00	14.76	1.00
110.00		348.01	109.00	14.63	1.02
111.17	RB2	202.11	110.59	8.49	0.36
112.00		142.72	111.59	6.00	0.18
114.00		341.65	113.00	14.36	1.06
115.00	Top - Section 6	169.63	114.50	7.13	0.27
116.00		143.11	115.50	6.01	0.19
118.00		284.31	117.00	11.95	0.79
120.00		281.76	119.00	11.84	0.80
122.00		279.22	121.00	11.73	0.81
123.83	RT2	253.26	122.91	10.64	0.69
124.00		23.42	123.91	0.98	0.01
126.00		274.14	125.00	11.52	0.84
128.00		271.59	127.00	11.41	0.85
130.00	Bot - Section 8	269.05	129.00	11.31	0.86
132.00		457.05	131.00	19.21	2.55
134.00		451.97	133.00	18.99	2.57
135.00	Top - Section 7	224.08	134.50	9.42	0.65
136.00		131.74	135.50	5.54	0.23
138.00		261.58	137.00	10.99	0.91
140.00		259.04	139.00	10.89	0.92
142.00		256.50	141.00	10.78	0.93
143.00	Appurtenance(s)	3016.5	142.50	126.78	131.44
144.00		114.64	143.50	4.82	0.19
146.00		227.36	145.00	9.56	0.77
148.00		224.82	147.00	9.45	0.78
150.00		222.28	149.00	9.34	0.78
152.00		219.74	151.00	9.23	0.78
153.00	Appurtenance(s)	3448.8	152.50	144.94	196.78
154.00		97.16	153.50	4.08	0.16
156.00		192.40	155.00	8.09	0.63
158.00		189.86	157.00	7.98	0.63
160.00		187.32	159.00	7.87	0.63
162.00		184.78	161.00	7.77	0.63
164.00		182.23	163.00	7.66	0.63
166.00		179.69	165.00	7.55	0.63
168.00		177.15	167.00	7.44	0.62
170.00		174.61	169.00	7.34	0.62
172.00		172.06	171.00	7.23	0.62
173.00	Appurtenance(s)	2941.8	172.50	123.64	183.19
174.00		71.23	173.50	2.99	0.11

Seismic Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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

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176.00			140.55	175.00	5.91	0.43		
178.00			138.01	177.00	5.80	0.42		
180.00	Top - Section 8		135.47	179.00	5.69	0.42		
182.00			148.45	181.00	6.24	0.51		
183.00	Appurtenance(s)		2483.7	182.50	104.38	146.16		
		Totals:	**49,229.9**		**2,069.0**	**717.9**	**Total Wind:**	**37,037.2**

Calculated Forces

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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	

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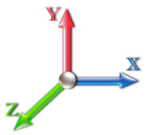
Load Case: 0.9D + 1.0Ev + 1.0Eh



Gust Response Factor	1.10			**Sds**	0.21			**Iterations**	25
Dead Load Factor	0.90	**Seismic Load Factor**	1.00	**Sd1**	0.08			**Ss**	0.20
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.29	**SA**	0.02			**S1**	0.05
								Seismic Importance Factor	1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-47.00	-0.72	0.00	-118.18	0.00	118.18	5190.16	1566.13	8332.38	6861.66		0.00	0.00	0.026
2.00	-46.43	-0.72	0.00	-116.75	0.00	116.75	5174.50	1554.63	8210.47	6790.43		0.00	0.00	0.026
4.00	-45.87	-0.72	0.00	-115.32	0.00	115.32	5158.51	1543.13	8089.46	6719.08		0.00	0.00	0.026
6.00	-45.30	-0.72	0.00	-113.88	0.00	113.88	5142.18	1531.63	7969.35	6647.61		0.00	-0.01	0.026
8.00	-44.74	-0.72	0.00	-112.44	0.00	112.44	5125.52	1520.13	7850.13	6576.03		0.01	-0.01	0.026
10.00	-44.19	-0.72	0.00	-111.00	0.00	111.00	5108.53	1508.63	7731.81	6504.36		0.01	-0.01	0.026
12.00	-43.64	-0.72	0.00	-109.55	0.00	109.55	5091.21	1497.13	7614.39	6432.60		0.01	-0.01	0.026
14.00	-43.09	-0.73	0.00	-108.10	0.00	108.10	5073.56	1485.63	7497.87	6360.75		0.02	-0.01	0.025
16.00	-42.55	-0.73	0.00	-106.65	0.00	106.65	5055.57	1474.13	7382.25	6288.85		0.02	-0.01	0.025
18.00	-42.00	-0.73	0.00	-105.20	0.00	105.20	5037.25	1462.64	7267.53	6216.88		0.03	-0.02	0.025
20.00	-41.47	-0.73	0.00	-103.74	0.00	103.74	5018.60	1451.14	7153.70	6144.86		0.04	-0.02	0.025
22.00	-40.93	-0.73	0.00	-102.29	0.00	102.29	4999.62	1439.64	7040.78	6072.81		0.04	-0.02	0.025
24.00	-40.40	-0.73	0.00	-100.83	0.00	100.83	4980.31	1428.14	6928.75	6000.72		0.05	-0.02	0.025
26.00	-39.88	-0.73	0.00	-99.37	0.00	99.37	4960.66	1416.64	6817.62	5928.62		0.06	-0.02	0.025
28.00	-39.35	-0.73	0.00	-97.90	0.00	97.90	4940.68	1405.14	6707.39	5856.50		0.07	-0.03	0.025
30.00	-38.84	-0.73	0.00	-96.44	0.00	96.44	4920.37	1393.64	6598.05	5784.39		0.08	-0.03	0.025
32.00	-38.32	-0.73	0.00	-94.97	0.00	94.97	4899.73	1382.14	6489.62	5712.28		0.10	-0.03	0.024
34.00	-37.81	-0.74	0.00	-93.50	0.00	93.50	4878.76	1370.64	6382.08	5640.19		0.11	-0.03	0.024
36.00	-37.30	-0.74	0.00	-92.03	0.00	92.03	4857.45	1359.14	6275.45	5568.14		0.12	-0.03	0.024
38.00	-36.79	-0.74	0.00	-90.56	0.00	90.56	4835.81	1347.64	6169.71	5496.12		0.14	-0.04	0.024
40.00	-36.29	-0.74	0.00	-89.09	0.00	89.09	4813.84	1336.14	6064.87	5424.15		0.15	-0.04	0.024
41.00	-36.04	-0.74	0.00	-88.35	0.00	88.35	4802.73	1330.39	6012.78	5388.18		0.16	-0.04	0.024
42.00	-35.59	-0.74	0.00	-87.62	0.00	87.62	4791.54	1324.64	5960.92	5352.24		0.17	-0.04	0.024
44.00	-34.67	-0.74	0.00	-86.14	0.00	86.14	4768.90	1313.15	5857.88	5280.39		0.18	-0.04	0.024
46.00	-33.77	-0.74	0.00	-84.67	0.00	84.67	4745.94	1301.65	5755.73	5208.63		0.20	-0.04	0.023
48.00	-32.87	-0.74	0.00	-83.19	0.00	83.19	4759.60	1308.47	5816.21	5251.18		0.22	-0.05	0.023
50.00	-32.38	-0.74	0.00	-81.72	0.00	81.72	4736.50	1296.97	5714.43	5179.45		0.24	-0.05	0.023
51.00	-32.14	-0.74	0.00	-80.99	0.00	80.99	4724.82	1291.22	5663.88	5143.62		0.25	-0.05	0.023
51.00	-32.14	-0.74	0.00	-80.99	0.00	80.99	4064.30	1070.36	4695.09	4424.56		0.25	-0.05	0.026
52.00	-31.90	-0.74	0.00	-80.25	0.00	80.25	4053.20	1065.59	4653.37	4392.70		0.26	-0.05	0.026
54.00	-31.42	-0.74	0.00	-78.78	0.00	78.78	4030.83	1056.06	4570.49	4329.09		0.28	-0.05	0.026
56.00	-30.94	-0.74	0.00	-77.30	0.00	77.30	4008.20	1046.52	4488.35	4265.66		0.30	-0.05	0.026
58.00	-30.46	-0.74	0.00	-75.83	0.00	75.83	3985.33	1036.99	4406.96	4202.40		0.33	-0.06	0.026
60.00	-29.99	-0.74	0.00	-74.36	0.00	74.36	3962.20	1027.46	4326.31	4139.33		0.35	-0.06	0.026
62.00	-29.52	-0.74	0.00	-72.88	0.00	72.88	3938.82	1017.93	4246.41	4076.46		0.37	-0.06	0.025
64.00	-29.06	-0.74	0.00	-71.41	0.00	71.41	3915.19	1008.40	4167.25	4013.78		0.40	-0.06	0.025
66.00	-28.60	-0.74	0.00	-69.94	0.00	69.94	3891.31	998.86	4088.84	3951.30		0.43	-0.06	0.025
66.17	-28.56	-0.74	0.00	-69.81	0.00	69.81	3889.27	998.05	4082.21	3946.00		0.43	-0.06	0.019
68.00	-28.14	-0.74	0.00	-68.46	0.00	68.46	3867.19	989.33	4011.17	3889.05		0.45	-0.07	0.018
70.00	-27.69	-0.74	0.00	-66.99	0.00	66.99	3842.81	979.80	3934.25	3827.01		0.48	-0.07	0.018
71.00	-27.47	-0.74	0.00	-66.26	0.00	66.26	3830.52	975.03	3896.07	3796.08		0.50	-0.07	0.018
71.00	-27.47	-0.74	0.00	-66.26	0.00	66.26	3467.89	866.68	3463.07	3436.66		0.50	-0.07	0.020
72.00	-27.24	-0.74	0.00	-65.52	0.00	65.52	3456.29	862.45	3429.30	3408.29		0.51	-0.07	0.020
74.00	-26.79	-0.74	0.00	-64.05	0.00	64.05	3432.92	853.97	3362.25	3351.73		0.54	-0.07	0.020
76.00	-26.35	-0.73	0.00	-62.58	0.00	62.58	3409.33	845.50	3295.86	3295.42		0.57	-0.07	0.020
78.00	-25.91	-0.73	0.00	-61.11	0.00	61.11	3385.54	837.03	3230.13	3239.36		0.60	-0.07	0.019
80.00	-25.48	-0.73	0.00	-59.64	0.00	59.64	3361.54	828.56	3165.07	3183.58		0.63	-0.08	0.019

Calculated Forces

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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

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81.00	-25.26	-0.73	0.00	-58.91	0.00	58.91	3349.46	824.32	3132.78	3155.79	0.65	-0.08	0.019
81.00	-25.26	-0.73	0.00	-58.91	0.00	58.91	2964.88	798.42	3038.52	2801.08	0.65	-0.08	0.018
82.00	-25.08	-0.73	0.00	-58.18	0.00	58.18	2956.03	794.32	3007.41	2778.29	0.66	-0.08	0.020
84.00	-24.71	-0.73	0.00	-56.71	0.00	56.71	2938.12	786.13	2945.67	2732.78	0.70	-0.08	0.020
85.00	-24.52	-0.73	0.00	-55.98	0.00	55.98	2929.07	782.03	2915.04	2710.06	0.71	-0.08	0.020
86.00	-24.19	-0.73	0.00	-55.25	0.00	55.25	2919.96	777.93	2884.57	2687.37	0.73	-0.08	0.020
88.00	-23.54	-0.73	0.00	-53.78	0.00	53.78	2901.53	769.74	2824.11	2642.08	0.76	-0.08	0.019
90.00	-22.90	-0.73	0.00	-52.33	0.00	52.33	2882.84	761.54	2764.29	2596.92	0.80	-0.08	0.019
91.00	-22.58	-0.73	0.00	-51.60	0.00	51.60	2898.35	768.34	2813.83	2634.34	0.82	-0.09	0.019
92.00	-22.40	-0.73	0.00	-50.88	0.00	50.88	2889.01	764.24	2783.89	2611.76	0.84	-0.09	0.018
93.83	-22.07	-0.72	0.00	-49.55	0.00	49.55	2871.76	756.74	2729.53	2570.50	0.87	-0.09	0.018
93.83	-22.07	-0.72	0.00	-49.55	0.00	49.55	2871.76	756.74	2729.53	2570.50	0.87	-0.09	0.025
94.00	-22.04	-0.73	0.00	-49.42	0.00	49.42	2870.15	756.04	2724.50	2566.68	0.87	-0.09	0.027
96.00	-21.68	-0.72	0.00	-47.97	0.00	47.97	2851.02	747.85	2665.76	2521.73	0.91	-0.09	0.027
98.00	-21.33	-0.72	0.00	-46.53	0.00	46.53	2831.62	739.65	2607.65	2476.93	0.95	-0.09	0.026
100.00	-20.97	-0.72	0.00	-45.08	0.00	45.08	2811.97	731.45	2550.18	2432.29	0.99	-0.10	0.026
102.00	-20.63	-0.72	0.00	-43.63	0.00	43.63	2792.05	723.26	2493.35	2387.80	1.03	-0.10	0.026
104.00	-20.28	-0.72	0.00	-42.18	0.00	42.18	2771.87	715.06	2437.16	2343.48	1.07	-0.10	0.025
106.00	-19.94	-0.72	0.00	-40.74	0.00	40.74	2751.43	706.87	2381.62	2299.33	1.11	-0.10	0.025
108.00	-19.60	-0.72	0.00	-39.29	0.00	39.29	2730.72	698.67	2326.71	2255.37	1.16	-0.11	0.025
110.00	-19.27	-0.72	0.00	-37.85	0.00	37.85	2709.75	690.48	2272.44	2211.59	1.20	-0.11	0.024
111.17	-19.07	-0.72	0.00	-37.01	0.00	37.01	2697.36	685.68	2241.00	2186.08	1.23	-0.11	0.019
112.00	-18.93	-0.72	0.00	-36.41	0.00	36.41	2688.52	682.28	2218.82	2168.02	1.25	-0.11	0.019
114.00	-18.60	-0.72	0.00	-34.97	0.00	34.97	2667.03	674.08	2165.83	2124.64	1.30	-0.11	0.018
115.00	-18.44	-0.72	0.00	-34.25	0.00	34.25	2656.18	669.99	2139.58	2103.04	1.32	-0.12	0.018
115.00	-18.44	-0.72	0.00	-34.25	0.00	34.25	1951.15	536.85	1717.18	1549.82	1.32	-0.12	0.020
116.00	-18.30	-0.72	0.00	-33.53	0.00	33.53	1944.57	533.57	1696.28	1535.11	1.35	-0.12	0.023
118.00	-18.03	-0.72	0.00	-32.10	0.00	32.10	1931.24	527.02	1654.84	1505.73	1.40	-0.12	0.023
120.00	-17.75	-0.72	0.00	-30.66	0.00	30.66	1917.63	520.46	1613.93	1476.40	1.45	-0.12	0.022
122.00	-17.48	-0.72	0.00	-29.22	0.00	29.22	1903.77	513.90	1573.52	1447.14	1.50	-0.12	0.022
123.83	-17.24	-0.72	0.00	-27.91	0.00	27.91	1890.85	507.91	1536.99	1420.43	1.55	-0.13	0.021
123.83	-17.24	-0.72	0.00	-27.91	0.00	27.91	1890.85	507.91	1536.99	1420.43	1.55	-0.13	0.026
124.00	-17.21	-0.72	0.00	-27.79	0.00	27.79	1889.64	507.35	1533.62	1417.95	1.55	-0.13	0.029
126.00	-16.95	-0.72	0.00	-26.36	0.00	26.36	1875.25	500.79	1494.24	1388.84	1.60	-0.13	0.028
128.00	-16.68	-0.72	0.00	-24.93	0.00	24.93	1860.60	494.24	1455.37	1359.83	1.66	-0.13	0.027
130.00	-16.42	-0.72	0.00	-23.49	0.00	23.49	1845.69	487.68	1417.01	1330.91	1.72	-0.14	0.027
132.00	-15.98	-0.71	0.00	-22.06	0.00	22.06	1830.51	481.12	1379.17	1302.09	1.77	-0.14	0.026
134.00	-15.55	-0.71	0.00	-20.64	0.00	20.64	1815.07	474.57	1341.83	1273.39	1.83	-0.14	0.025
135.00	-15.33	-0.71	0.00	-19.93	0.00	19.93	1823.79	478.25	1362.77	1289.52	1.86	-0.14	0.024
136.00	-15.21	-0.71	0.00	-19.22	0.00	19.22	1816.04	474.98	1344.15	1275.18	1.89	-0.14	0.023
138.00	-14.95	-0.71	0.00	-17.80	0.00	17.80	1800.35	468.42	1307.30	1246.58	1.95	-0.15	0.023
140.00	-14.70	-0.71	0.00	-16.39	0.00	16.39	1784.41	461.86	1270.96	1218.12	2.02	-0.15	0.022
142.00	-14.45	-0.71	0.00	-14.98	0.00	14.98	1768.19	455.31	1235.13	1189.79	2.08	-0.15	0.021
143.00	-11.60	-0.57	0.00	-14.27	0.00	14.27	1759.99	452.03	1217.41	1175.68	2.11	-0.15	0.019
144.00	-11.49	-0.57	0.00	-13.70	0.00	13.70	1751.72	448.75	1199.81	1161.60	2.14	-0.15	0.018
146.00	-11.27	-0.57	0.00	-12.57	0.00	12.57	1734.98	442.19	1165.01	1133.56	2.21	-0.16	0.018
148.00	-11.06	-0.57	0.00	-11.44	0.00	11.44	1717.98	435.64	1130.72	1105.68	2.27	-0.16	0.017
150.00	-10.84	-0.56	0.00	-10.31	0.00	10.31	1700.72	429.08	1096.94	1077.97	2.34	-0.16	0.016
152.00	-10.63	-0.56	0.00	-9.18	0.00	9.18	1683.20	422.52	1063.67	1050.43	2.41	-0.16	0.015
153.00	-7.38	-0.36	0.00	-8.62	0.00	8.62	1674.33	419.24	1047.23	1036.72	2.44	-0.16	0.013
154.00	-7.29	-0.36	0.00	-8.26	0.00	8.26	1665.41	415.97	1030.91	1023.07	2.48	-0.16	0.012
156.00	-7.10	-0.36	0.00	-7.54	0.00	7.54	1647.36	409.41	998.67	995.90	2.55	-0.17	0.012
158.00	-6.92	-0.36	0.00	-6.83	0.00	6.83	1629.04	402.85	966.94	968.92	2.62	-0.17	0.011
160.00	-6.74	-0.35	0.00	-6.12	0.00	6.12	1610.47	396.30	935.72	942.15	2.69	-0.17	0.011
162.00	-6.56	-0.35	0.00	-5.41	0.00	5.41	1591.63	389.74	905.02	915.59	2.76	-0.17	0.010
164.00	-6.39	-0.35	0.00	-4.71	0.00	4.71	1572.53	383.18	874.82	889.25	2.83	-0.17	0.009
166.00	-6.21	-0.35	0.00	-4.00	0.00	4.00	1553.17	376.63	845.14	863.13	2.90	-0.17	0.009

Calculated Forces

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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

168.00	-6.04	-0.35	0.00	-3.30	0.00	3.30	1533.54	370.07	815.97	837.26	2.98	-0.17	0.008
170.00	-5.88	-0.35	0.00	-2.60	0.00	2.60	1513.65	363.51	787.31	811.62	3.05	-0.18	0.007
172.00	-5.71	-0.35	0.00	-1.90	0.00	1.90	1493.50	356.96	759.17	786.23	3.12	-0.18	0.006
173.00	-2.94	-0.16	0.00	-1.55	0.00	1.55	1483.33	353.68	745.29	773.64	3.16	-0.18	0.004
174.00	-2.87	-0.16	0.00	-1.40	0.00	1.40	1473.09	350.40	731.54	761.10	3.20	-0.18	0.004
176.00	-2.74	-0.16	0.00	-1.08	0.00	1.08	1452.41	343.84	704.42	736.24	3.27	-0.18	0.003
178.00	-2.61	-0.15	0.00	-0.77	0.00	0.77	1427.85	337.29	677.81	709.85	3.34	-0.18	0.003
180.00	-2.48	-0.15	0.00	-0.46	0.00	0.46	1400.09	330.73	651.71	682.38	3.42	-0.18	0.002
180.00	-2.48	-0.15	0.00	-0.46	0.00	0.46	678.42	203.53	26019.0	396.30	3.42	-0.18	0.005
182.00	-2.34	-0.15	0.00	-0.15	0.00	0.15	678.42	203.53	26019.0	396.30	3.49	-0.18	0.004
183.00	0.00	-0.15	0.00	0.00	0.00	0.00	678.42	203.53	26019.0	396.30	3.53	-0.18	0.000

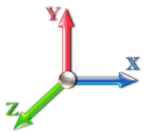
Wind Loading - Shaft

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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 27

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	5.425	5.97	272.52	0.730	0.000	0.00	0.000	0.00	0.0	0.0	0.0
2.00		1.00	0.70	5.425	5.97	270.53	0.730	0.000	2.00	10.876	7.94	47.4	0.0	517.5
4.00		1.00	0.70	5.425	5.97	268.54	0.730	0.000	2.00	10.796	7.88	47.0	0.0	513.7
6.00		1.00	0.70	5.425	5.97	266.55	0.730	0.000	2.00	10.717	7.82	46.7	0.0	509.9
8.00		1.00	0.70	5.425	5.97	264.57	0.730	0.000	2.00	10.637	7.76	46.3	0.0	506.1
10.00		1.00	0.70	5.425	5.97	262.58	0.730	0.000	2.00	10.557	7.71	46.0	0.0	502.3
12.00		1.00	0.70	5.425	5.97	260.59	0.730	0.000	2.00	10.478	7.65	45.6	0.0	498.4
14.00		1.00	0.70	5.425	5.97	258.60	0.730	0.000	2.00	10.398	7.59	45.3	0.0	494.6
16.00		1.00	0.70	5.425	5.97	256.61	0.730	0.000	2.00	10.318	7.53	44.9	0.0	490.8
18.00		1.00	0.70	5.425	5.97	254.62	0.730	0.000	2.00	10.239	7.47	44.6	0.0	487.0
20.00		1.00	0.70	5.425	5.97	252.63	0.730	0.000	2.00	10.159	7.42	44.3	0.0	483.2
22.00		1.00	0.70	5.425	5.97	250.64	0.730	0.000	2.00	10.079	7.36	43.9	0.0	479.4
24.00		1.00	0.70	5.425	5.97	248.65	0.730	0.000	2.00	9.999	7.30	43.6	0.0	475.6
26.00		1.00	0.70	5.425	5.97	246.66	0.730	0.000	2.00	9.920	7.24	43.2	0.0	471.7
28.00		1.00	0.70	5.425	5.97	244.67	0.730	0.000	2.00	9.840	7.18	42.9	0.0	467.9
30.00		1.00	0.70	5.430	5.97	242.78	0.730	0.000	2.00	9.760	7.13	42.6	0.0	464.1
32.00		1.00	0.71	5.531	6.08	243.02	0.730	0.000	2.00	9.681	7.07	43.0	0.0	460.3
34.00		1.00	0.73	5.627	6.19	243.11	0.730	0.000	2.00	9.601	7.01	43.4	0.0	456.5
36.00		1.00	0.74	5.720	6.29	243.06	0.730	0.000	2.00	9.521	6.95	43.7	0.0	452.7
38.00		1.00	0.75	5.809	6.39	242.89	0.730	0.000	2.00	9.442	6.89	44.0	0.0	448.9
40.00		1.00	0.76	5.895	6.48	242.60	0.730	0.000	2.00	9.362	6.83	44.3	0.0	445.0
41.00	Bot - Section 2	1.00	0.77	5.937	6.53	242.42	0.730	0.000	1.00	4.651	3.40	22.2	0.0	221.1
42.00		1.00	0.77	5.978	6.58	242.21	0.730	0.000	1.00	4.695	3.43	22.5	0.0	443.3
44.00		1.00	0.78	6.058	6.66	241.72	0.730	0.000	2.00	9.330	6.81	45.4	0.0	880.9
46.00		1.00	0.79	6.135	6.75	241.15	0.730	0.000	2.00	9.250	6.75	45.6	0.0	873.3
48.00	Top - Section 1	1.00	0.80	6.210	6.83	240.49	0.730	0.000	2.00	9.170	6.69	45.7	0.0	865.7
50.00		1.00	0.81	6.283	6.91	243.17	0.730	0.000	2.00	9.091	6.64	45.9	0.0	432.1
51.00	Top - Section 2	1.00	0.82	6.319	6.95	242.78	0.730	0.000	1.00	4.515	3.30	22.9	0.0	214.6
52.00		1.00	0.82	6.354	6.99	242.38	0.730	0.000	1.00	4.495	3.28	22.9	0.0	213.6
54.00		1.00	0.83	6.423	7.06	241.53	0.730	0.000	2.00	8.931	6.52	46.1	0.0	424.4
56.00		1.00	0.84	6.490	7.14	240.61	0.730	0.000	2.00	8.852	6.46	46.1	0.0	420.6
58.00		1.00	0.85	6.555	7.21	239.63	0.730	0.000	2.00	8.772	6.40	46.2	0.0	416.8
60.00		1.00	0.85	6.619	7.28	238.60	0.730	0.000	2.00	8.692	6.35	46.2	0.0	413.0
62.00		1.00	0.86	6.681	7.35	237.51	0.730	0.000	2.00	8.612	6.29	46.2	0.0	409.2
64.00		1.00	0.87	6.742	7.42	236.37	0.730	0.000	2.00	8.533	6.23	46.2	0.0	405.4
66.00		1.00	0.88	6.802	7.48	235.19	0.730	0.000	2.00	8.453	6.17	46.2	0.0	401.5
66.17	RB1	1.00	0.88	6.807	7.49	235.08	0.773 *	0.000	0.17	0.715	0.55	4.1	0.0	34.0
68.00		1.00	0.89	6.860	7.55	233.95	0.774 *	0.000	1.83	7.659	5.93	44.8	0.0	363.8
70.00		1.00	0.89	6.917	7.61	232.68	0.777 *	0.000	2.00	8.294	6.44	49.0	0.0	393.9
71.00	Top - Section 3	1.00	0.90	6.945	7.64	232.03	0.779 *	0.000	1.00	4.117	3.21	24.5	0.0	195.5
72.00		1.00	0.90	6.973	7.67	231.36	0.780 *	0.000	1.00	4.097	3.20	24.5	0.0	194.6
74.00		1.00	0.91	7.028	7.73	230.00	0.782 *	0.000	2.00	8.134	6.36	49.2	0.0	386.3
76.00		1.00	0.91	7.081	7.79	228.61	0.785 *	0.000	2.00	8.055	6.32	49.2	0.0	382.5
78.00		1.00	0.92	7.134	7.85	227.18	0.787 *	0.000	2.00	7.975	6.28	49.3	0.0	378.7
80.00		1.00	0.93	7.186	7.90	225.71	0.790 *	0.000	2.00	7.895	6.24	49.3	0.0	374.8
81.00	Top - Section 4	1.00	0.93	7.211	7.93	224.96	0.792 *	0.000	1.00	3.918	3.10	24.6	0.0	186.0
82.00		1.00	0.93	7.237	7.96	224.21	0.794 *	0.000	1.00	3.898	3.09	24.6	0.0	154.4

Wind Loading - Shaft

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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	7.287	8.02	222.68	0.796 *	0.000	2.00	7.736	6.16	49.4	0.0	306.4
85.00	Bot - Section 6	1.00	0.94	7.311	8.04	221.90	0.798 *	0.000	1.00	3.838	3.06	24.6	0.0	152.0
86.00		1.00	0.95	7.336	8.07	221.11	0.800 *	0.000	1.00	3.871	3.10	25.0	0.0	304.6
88.00		1.00	0.95	7.384	8.12	219.52	0.802 *	0.000	2.00	7.682	6.16	50.0	0.0	604.4
90.00		1.00	0.96	7.432	8.18	217.90	0.805 *	0.000	2.00	7.603	6.12	50.0	0.0	598.0
91.00	Top - Section 5	1.00	0.96	7.455	8.20	217.08	0.807 *	0.000	1.00	3.771	3.05	25.0	0.0	296.6
92.00		1.00	0.96	7.479	8.23	219.35	0.805 *	0.000	1.00	3.752	3.02	24.8	0.0	148.6
93.83	RT1	1.00	0.97	7.521	8.27	217.83	0.807 *	0.000	1.83	6.814	5.50	45.5	0.0	269.8
94.00		1.00	0.97	7.525	8.28	217.68	0.809 *	0.000	0.17	0.630	0.51	4.2	0.0	24.9
96.00		1.00	0.98	7.570	8.33	215.99	0.730	0.000	2.00	7.364	5.38	44.8	0.0	291.6
98.00		1.00	0.98	7.615	8.38	214.27	0.730	0.000	2.00	7.284	5.32	44.5	0.0	288.4
100.00		1.00	0.99	7.659	8.42	212.52	0.730	0.000	2.00	7.204	5.26	44.3	0.0	285.2
102.00		1.00	0.99	7.702	8.47	210.76	0.730	0.000	2.00	7.125	5.20	44.1	0.0	282.1
104.00		1.00	1.00	7.745	8.52	208.96	0.730	0.000	2.00	7.045	5.14	43.8	0.0	278.9
106.00		1.00	1.00	7.788	8.57	207.15	0.730	0.000	2.00	6.965	5.08	43.6	0.0	275.7
108.00		1.00	1.01	7.829	8.61	205.31	0.730	0.000	2.00	6.886	5.03	43.3	0.0	272.5
110.00		1.00	1.02	7.870	8.66	203.46	0.730	0.000	2.00	6.806	4.97	43.0	0.0	269.3
111.17	RB2	1.00	1.02	7.894	8.68	202.36	0.730	0.000	1.17	3.945	2.88	25.0	0.0	156.1
112.00		1.00	1.02	7.911	8.70	201.58	0.730	0.000	0.83	2.782	2.03	17.7	0.0	110.1
114.00		1.00	1.03	7.951	8.75	199.68	0.731 *	0.000	2.00	6.647	4.86	42.5	0.0	263.0
115.00	Top - Section 6	1.00	1.03	7.971	8.77	198.73	0.733 *	0.000	1.00	3.293	2.41	21.2	0.0	130.3
116.00		1.00	1.03	7.991	8.79	197.76	0.735 *	0.000	1.00	3.273	2.40	21.1	0.0	103.8
118.00		1.00	1.04	8.030	8.83	195.83	0.737 *	0.000	2.00	6.487	4.78	42.2	0.0	205.6
120.00		1.00	1.04	8.069	8.88	193.87	0.739 *	0.000	2.00	6.407	4.74	42.0	0.0	203.1
122.00		1.00	1.05	8.107	8.92	191.90	0.742 *	0.000	2.00	6.328	4.70	41.9	0.0	200.6
123.83	RT2	1.00	1.05	8.141	8.96	190.08	0.745 *	0.000	1.83	5.720	4.26	38.2	0.0	181.3
124.00		1.00	1.05	8.144	8.96	189.91	0.747 *	0.000	0.17	0.528	0.39	3.5	0.0	16.7
126.00		1.00	1.06	8.182	9.00	187.90	0.730	0.000	2.00	6.168	4.50	40.5	0.0	195.5
128.00		1.00	1.06	8.219	9.04	185.87	0.730	0.000	2.00	6.089	4.44	40.2	0.0	192.9
130.00	Bot - Section 8	1.00	1.07	8.255	9.08	183.83	0.730	0.000	2.00	6.009	4.39	39.8	0.0	190.4
132.00		1.00	1.07	8.291	9.12	181.77	0.730	0.000	2.00	6.014	4.39	40.0	0.0	378.4
134.00		1.00	1.07	8.327	9.16	179.70	0.730	0.000	2.00	5.934	4.33	39.7	0.0	373.3
135.00	Top - Section 7	1.00	1.08	8.345	9.18	178.66	0.730	0.000	1.00	2.937	2.14	19.7	0.0	184.7
136.00		1.00	1.08	8.362	9.20	180.23	0.730	0.000	1.00	2.917	2.13	19.6	0.0	92.4
138.00		1.00	1.08	8.397	9.24	178.13	0.730	0.000	2.00	5.775	4.22	38.9	0.0	182.9
140.00		1.00	1.09	8.432	9.27	176.02	0.730	0.000	2.00	5.695	4.16	38.6	0.0	180.4
142.00		1.00	1.09	8.466	9.31	173.89	0.730	0.000	2.00	5.616	4.10	38.2	0.0	177.8
143.00	Appurtenance(s)	1.00	1.09	8.483	9.33	172.82	0.730	0.000	1.00	2.778	2.03	18.9	0.0	88.0
144.00		1.00	1.10	8.500	9.35	171.75	0.730	0.000	1.00	2.758	2.01	18.8	0.0	87.3
146.00		1.00	1.10	8.534	9.39	169.59	0.730	0.000	2.00	5.456	3.98	37.4	0.0	172.7
148.00		1.00	1.11	8.567	9.42	167.42	0.730	0.000	2.00	5.376	3.92	37.0	0.0	170.2
150.00		1.00	1.11	8.600	9.46	165.24	0.730	0.000	2.00	5.297	3.87	36.6	0.0	167.7
152.00		1.00	1.11	8.632	9.50	163.04	0.730	0.000	2.00	5.217	3.81	36.2	0.0	165.1
153.00	Appurtenance(s)	1.00	1.12	8.648	9.51	161.94	0.730	0.000	1.00	2.579	1.88	17.9	0.0	81.6
154.00		1.00	1.12	8.665	9.53	160.84	0.730	0.000	1.00	2.559	1.87	17.8	0.0	81.0
156.00		1.00	1.12	8.697	9.57	158.61	0.730	0.000	2.00	5.058	3.69	35.3	0.0	160.0
158.00		1.00	1.13	8.728	9.60	156.38	0.730	0.000	2.00	4.978	3.63	34.9	0.0	157.5
160.00		1.00	1.13	8.760	9.64	154.13	0.730	0.000	2.00	4.898	3.58	34.5	0.0	154.9
162.00		1.00	1.13	8.791	9.67	151.87	0.730	0.000	2.00	4.819	3.52	34.0	0.0	152.4
164.00		1.00	1.14	8.822	9.70	149.60	0.730	0.000	2.00	4.739	3.46	33.6	0.0	149.9
166.00		1.00	1.14	8.852	9.74	147.32	0.730	0.000	2.00	4.659	3.40	33.1	0.0	147.3
168.00		1.00	1.15	8.883	9.77	145.03	0.730	0.000	2.00	4.580	3.34	32.7	0.0	144.8
170.00		1.00	1.15	8.913	9.80	142.72	0.730	0.000	2.00	4.500	3.28	32.2	0.0	142.2
172.00		1.00	1.15	8.943	9.84	140.41	0.730	0.000	2.00	4.420	3.23	31.7	0.0	139.7
173.00	Appurtenance(s)	1.00	1.16	8.957	9.85	139.25	0.730	0.000	1.00	2.180	1.59	15.7	0.0	68.9
174.00		1.00	1.16	8.972	9.87	138.08	0.730	0.000	1.00	2.160	1.58	15.6	0.0	68.3
176.00		1.00	1.16	9.002	9.90	135.75	0.730	0.000	2.00	4.261	3.11	30.8	0.0	134.6

Wind Loading - Shaft

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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

178.00	1.00	1.17	9.031	9.93	133.40	0.730	0.000	2.00	4.181	3.05	30.3	0.0	132.1
180.00 Top - Section 8	1.00	1.17	9.060	9.97	131.04	0.730	0.000	2.00	4.102	2.99	29.8	0.0	129.5
182.00	1.00	1.17	9.088	10.00	129.25	0.600	0.000	2.00	4.000	2.40	24.0	0.0	142.5
183.00 Appurtenance(s)	1.00	1.17	9.102	10.01	129.35	0.600	0.000	1.00	2.000	1.20	12.0	0.0	71.3
							Totals:	**183.00**			**3,863.4**		**31,483.2**

* Cf Adjusted by Linear Load Ra Effect

Discrete Appurtenance Forces

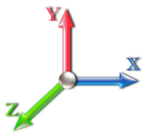
Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 80	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 27

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	183.00	RDIDC-9181-OF-48	1	9.102	10.013	1.00	1.00	2.01	21.90	0.000	0.000	20.13	0.00	0.00
2	183.00	RF4451d-70A	3	9.102	10.013	0.60	0.90	3.38	224.10	0.000	0.000	33.87	0.00	0.00
3	183.00	RF4450t-71A	3	9.102	10.013	0.60	0.90	3.38	224.10	0.000	0.000	33.87	0.00	0.00
4	183.00	FFVV-65B-R2	3	9.102	10.013	0.67	0.90	24.52	212.40	0.000	0.000	245.46	0.00	0.00
5	183.00	MC-PK8-DSH	1	9.102	10.013	1.00	1.00	37.59	1727.00	0.000	0.000	376.38	0.00	0.00
6	173.00	Samsung B2/B66 RRH	3	8.957	9.853	0.54	0.80	3.01	253.20	0.000	0.000	29.63	0.00	0.00
7	173.00	Andrew JAHH-65B-R3B	6	8.957	9.853	0.66	0.80	36.29	379.80	0.000	0.000	357.61	0.00	0.00
8	173.00	Samsung MT6407-77A	3	8.957	9.853	0.56	0.80	7.88	238.20	0.000	0.000	77.64	0.00	0.00
9	173.00	BSAMNT-SBS-1-2	3	8.957	9.853	0.75	0.75	0.00	76.05	0.000	0.000	0.00	0.00	0.00
10	173.00	CBC78T-DS-43/E14F05P	3	8.957	9.853	0.54	0.80	0.59	31.20	0.000	0.000	5.86	0.00	0.00
11	173.00	Samsung B5/B13 RRH	3	8.957	9.853	0.54	0.80	3.01	210.90	0.000	0.000	29.63	0.00	0.00
12	173.00	(3) T-Arms	1	8.957	9.853	0.75	0.75	22.50	1500.00	0.000	0.000	221.70	0.00	0.00
13	173.00	LPA-80080-4CF-EDIN-0	4	8.957	9.853	1.36	0.80	14.20	48.00	0.000	0.000	139.90	0.00	0.00
14	173.00	APL866513-42T0	2	8.957	9.853	0.84	0.90	6.78	31.40	0.000	0.000	66.80	0.00	0.00
15	173.00	DB-T1-6Z-8AB-OZ	2	8.957	9.853	0.60	0.80	5.76	88.00	0.000	0.000	56.75	0.00	0.00
16	153.00	V-brace kit	1	8.648	9.513	1.00	1.00	2.70	230.00	0.000	0.000	25.69	0.00	0.00
17	153.00	SPTB(Tie back Kit)	1	8.648	9.513	1.00	1.00	3.70	140.00	0.000	0.000	35.20	0.00	0.00
18	153.00	PRK-1245 (kicker kit)	1	8.648	9.513	1.00	1.00	9.50	464.91	0.000	0.000	90.38	0.00	0.00
19	153.00	RFS	3	8.648	9.513	0.52	0.75	31.88	368.40	0.000	0.000	303.27	0.00	0.00
20	153.00	KRY 112 144/1	3	8.648	9.513	0.52	0.75	0.65	33.00	0.000	0.000	6.14	0.00	0.00
21	153.00	4460 Radio	3	8.648	9.513	0.50	0.75	4.30	327.00	0.000	0.000	40.87	0.00	0.00
22	153.00	VV-65A-R1	3	8.648	9.513	0.62	0.75	12.49	158.70	0.000	0.000	118.86	0.00	0.00
23	153.00	AIR6419 B41	3	8.648	9.513	0.57	0.75	6.50	198.30	0.000	0.000	61.82	0.00	0.00
24	153.00	Ericsson 4449 B71 + B85	3	8.648	9.513	0.50	0.75	2.97	219.60	0.000	0.000	28.25	0.00	0.00
25	153.00	Low Profile Platform	1	8.648	9.513	1.00	1.00	25.00	1200.00	0.000	0.000	237.83	0.00	0.00
26	143.00	RRUS 11	3	8.483	9.331	0.50	0.75	3.80	152.10	0.000	0.000	35.45	0.00	0.00
27	143.00	DC6-48-60-18-8F	1	8.483	9.331	1.00	1.00	1.47	31.80	0.000	0.000	13.72	0.00	0.00
28	143.00	DBC-750	3	8.483	9.331	0.38	0.75	0.57	14.40	0.000	0.000	5.35	0.00	0.00
29	143.00	QS46512-2	1	8.483	9.331	1.00	1.00	5.55	27.30	0.000	0.000	51.79	0.00	0.00
30	143.00	850-1900 Dual Band	3	8.483	9.331	0.49	0.75	0.77	16.50	0.000	0.000	7.21	0.00	0.00
31	143.00	Low Profile	1	8.483	9.331	1.00	1.00	22.00	1500.00	0.000	0.000	205.29	0.00	0.00
32	143.00	Powerwave 7770.00	3	8.483	9.331	0.55	0.75	9.03	105.00	0.000	0.000	84.30	0.00	0.00
33	143.00	OPA-65R-LCUU-H8	2	8.483	9.331	0.81	0.90	20.66	190.00	0.000	0.000	192.74	0.00	0.00
34	143.00	OPA-65R-LCUU-H4	1	8.483	9.331	1.00	1.00	5.94	57.00	0.000	0.000	55.43	0.00	0.00
35	143.00	TPA-65R-LCUUUU-H8	2	8.483	9.331	0.81	0.90	21.55	150.00	0.000	0.000	201.05	0.00	0.00
36	143.00	DTMABP7819VG12A	3	8.483	9.331	0.50	0.75	1.72	57.60	0.000	0.000	16.04	0.00	0.00
37	143.00	DBC0061F1V51-2	3	8.483	9.331	0.50	0.75	0.65	76.20	0.000	0.000	6.05	0.00	0.00
38	143.00	RRUS 32 B2	3	8.483	9.331	0.50	0.75	4.13	159.00	0.000	0.000	38.54	0.00	0.00
39	143.00	HRK14	1	8.483	9.331	1.00	1.00	10.13	352.36	0.000	0.000	94.53	0.00	0.00
							Totals:		**11,495.42**			**3,651.00**		

Total Applied Force Summary

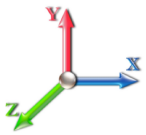
Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
Site Name:	Waterford	**Exposure:**	B		
Height:	183.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 81	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 27

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		47.38	604.91	0.00	0.00
4.00		47.03	601.10	0.00	0.00
6.00		46.69	597.29	0.00	0.00
8.00		46.34	593.47	0.00	0.00
10.00		45.99	589.66	0.00	0.00
12.00		45.64	585.85	0.00	0.00
14.00		45.30	582.03	0.00	0.00
16.00		44.95	578.22	0.00	0.00
18.00		44.60	574.40	0.00	0.00
20.00		44.26	570.59	0.00	0.00
22.00		43.91	566.78	0.00	0.00
24.00		43.56	562.96	0.00	0.00
26.00		43.21	559.15	0.00	0.00
28.00		42.87	555.34	0.00	0.00
30.00		42.56	551.52	0.00	0.00
32.00		42.99	547.71	0.00	0.00
34.00		43.39	543.89	0.00	0.00
36.00		43.73	540.08	0.00	0.00
38.00		44.04	536.27	0.00	0.00
40.00		44.32	532.45	0.00	0.00
41.00		22.17	264.80	0.00	0.00
42.00		22.53	487.02	0.00	0.00
44.00		45.38	968.32	0.00	0.00
46.00		45.57	960.69	0.00	0.00
48.00		45.73	953.06	0.00	0.00
50.00		45.86	519.46	0.00	0.00
51.00		22.91	258.30	0.00	0.00
52.00		22.94	257.35	0.00	0.00
54.00		46.06	511.83	0.00	0.00
56.00		46.13	508.02	0.00	0.00
58.00		46.17	504.21	0.00	0.00
60.00		46.20	500.39	0.00	0.00
62.00		46.21	496.58	0.00	0.00
64.00		46.20	492.77	0.00	0.00
66.00		46.17	488.95	0.00	0.00
66.17		4.14	41.39	0.00	0.00
68.00		44.75	443.75	0.00	0.00
70.00		49.02	481.32	0.00	0.00
71.00		24.49	239.23	0.00	0.00
72.00		24.51	238.28	0.00	0.00
74.00		49.17	473.69	0.00	0.00
76.00		49.23	469.88	0.00	0.00
78.00		49.28	466.06	0.00	0.00
80.00		49.32	462.25	0.00	0.00
81.00		24.62	229.69	0.00	0.00
82.00		24.63	198.11	0.00	0.00

Total Applied Force Summary

Structure:	CT01002-S-SBA		**Code:**	TIA-222-H	9/21/2023
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

Tower Engineering Solutions

84.00		49.36	393.84	0.00	0.00
85.00		24.64	195.73	0.00	0.00
86.00		24.98	348.28	0.00	0.00
88.00		50.04	691.79	0.00	0.00
90.00		50.04	685.43	0.00	0.00
91.00		24.97	340.33	0.00	0.00
92.00		24.84	192.28	0.00	0.00
93.83		45.49	349.81	0.00	0.00
94.00		4.21	32.36	0.00	0.00
96.00		44.76	379.00	0.00	0.00
98.00		44.54	375.82	0.00	0.00
100.00		44.31	372.64	0.00	0.00
102.00		44.07	369.46	0.00	0.00
104.00		43.82	366.28	0.00	0.00
106.00		43.56	363.11	0.00	0.00
108.00		43.29	359.93	0.00	0.00
110.00		43.01	356.75	0.00	0.00
111.17		25.00	207.23	0.00	0.00
112.00		17.67	146.35	0.00	0.00
114.00		42.51	350.39	0.00	0.00
115.00		21.17	174.01	0.00	0.00
116.00		21.14	147.48	0.00	0.00
118.00		42.21	293.05	0.00	0.00
120.00		42.05	290.50	0.00	0.00
122.00		41.89	287.96	0.00	0.00
123.83		38.17	261.26	0.00	0.00
124.00		3.53	24.16	0.00	0.00
126.00		40.53	282.88	0.00	0.00
128.00		40.18	280.33	0.00	0.00
130.00		39.83	277.79	0.00	0.00
132.00		40.04	465.79	0.00	0.00
134.00		39.68	460.71	0.00	0.00
135.00		19.68	228.45	0.00	0.00
136.00		19.59	136.11	0.00	0.00
138.00		38.94	270.32	0.00	0.00
140.00		38.56	267.78	0.00	0.00
142.00		38.18	265.24	0.00	0.00
143.00	(30) attachments	1026.40	3020.93	0.00	0.00
144.00		18.82	117.67	0.00	0.00
146.00		37.39	233.43	0.00	0.00
148.00		36.99	230.89	0.00	0.00
150.00		36.58	228.35	0.00	0.00
152.00		36.16	225.81	0.00	0.00
153.00	(22) attachments	966.21	3451.86	0.00	0.00
154.00		17.80	98.95	0.00	0.00
156.00		35.32	196.00	0.00	0.00
158.00		34.89	193.46	0.00	0.00
160.00		34.46	190.92	0.00	0.00
162.00		34.02	188.37	0.00	0.00
164.00		33.57	185.83	0.00	0.00
166.00		33.12	183.29	0.00	0.00
168.00		32.67	180.75	0.00	0.00
170.00		32.21	178.20	0.00	0.00
172.00		31.74	175.66	0.00	0.00
173.00	(30) attachments	1001.20	2943.63	0.00	0.00
174.00		15.56	71.56	0.00	0.00
176.00		30.80	141.22	0.00	0.00

Total Applied Force Summary

Structure:	CT01002-S-SBA		**Code:**	TIA-222-H	9/21/2023
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

178.00		30.32	138.67	0.00	0.00
180.00		29.84	136.13	0.00	0.00
182.00		23.99	149.11	0.00	0.00
183.00	(11) attachments	721.72	2484.05	0.00	0.00
	Totals:	**7,514.41**	**49,924.46**	**0.00**	**0.00**

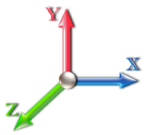
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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 27

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	5.425	0.00	0.55
2.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.030	0.000	5.425	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	5.425	0.00	6.24
4.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	5.425	0.00	0.55
4.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	5.425	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	5.425	0.00	6.24
6.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	5.425	0.00	0.55
6.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	5.425	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	5.425	0.00	6.24
8.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	5.425	0.00	0.55
8.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	5.425	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	5.425	0.00	6.24
10.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	5.425	0.00	0.55
10.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	5.425	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	5.425	0.00	6.24
12.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	5.425	0.00	0.55
12.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.031	0.000	5.425	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	5.425	0.00	6.24
14.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	5.425	0.00	0.55
14.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	5.425	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	5.425	0.00	6.24
16.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	5.425	0.00	0.55
16.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	5.425	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	5.425	0.00	6.24
18.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	5.425	0.00	0.55
18.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	5.425	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	5.425	0.00	6.24
20.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	5.425	0.00	0.55
20.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.032	0.000	5.425	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	5.425	0.00	6.24
22.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.033	0.000	5.425	0.00	0.55
22.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.033	0.000	5.425	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	5.425	0.00	6.24
24.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.033	0.000	5.425	0.00	0.55
24.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.033	0.000	5.425	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	5.425	0.00	6.24
26.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.033	0.000	5.425	0.00	0.55
26.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.033	0.000	5.425	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	5.425	0.00	6.24
28.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	5.425	0.00	0.55
28.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	5.425	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	5.425	0.00	6.24
30.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	5.430	0.00	0.55
30.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	5.430	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	5.430	0.00	6.24
32.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	5.531	0.00	0.55
32.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	5.531	0.00	2.08

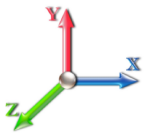
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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 27

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	5.531	0.00	6.24
34.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	5.627	0.00	0.55
34.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.034	0.000	5.627	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	5.627	0.00	6.24
36.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.035	0.000	5.720	0.00	0.55
36.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.035	0.000	5.720	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	5.720	0.00	6.24
38.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.035	0.000	5.809	0.00	0.55
38.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.035	0.000	5.809	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	5.809	0.00	6.24
40.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.035	0.000	5.895	0.00	0.55
40.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.035	0.000	5.895	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	5.895	0.00	6.24
41.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.035	0.000	5.937	0.00	0.27
41.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.035	0.000	5.937	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	5.937	0.00	3.12
42.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.036	0.000	5.978	0.00	0.27
42.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.036	0.000	5.978	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	5.978	0.00	3.12
44.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	6.058	0.00	0.55
44.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	6.058	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	6.058	0.00	6.24
46.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	6.135	0.00	0.55
46.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	6.135	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	6.135	0.00	6.24
48.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	6.210	0.00	0.55
48.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	6.210	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	6.210	0.00	6.24
50.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	6.283	0.00	0.55
50.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.036	0.000	6.283	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	6.283	0.00	6.24
51.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.037	0.000	6.319	0.00	0.27
51.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.037	0.000	6.319	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	6.319	0.00	3.12
52.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.037	0.000	6.354	0.00	0.27
52.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.037	0.000	6.354	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	6.354	0.00	3.12
54.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.037	0.000	6.423	0.00	0.55
54.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.037	0.000	6.423	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	6.423	0.00	6.24
56.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.037	0.000	6.490	0.00	0.55
56.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.037	0.000	6.490	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	6.490	0.00	6.24
58.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.038	0.000	6.555	0.00	0.55
58.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.038	0.000	6.555	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	6.555	0.00	6.24
60.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.038	0.000	6.619	0.00	0.55

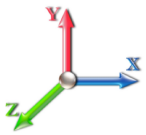
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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 27

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	6.619	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	6.619	0.00	6.24
62.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.038	0.000	6.681	0.00	0.55
62.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.038	0.000	6.681	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	6.681	0.00	6.24
64.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.039	0.000	6.742	0.00	0.55
64.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.039	0.000	6.742	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	6.742	0.00	6.24
66.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.079	0.000	6.802	0.00	0.55
66.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.079	0.000	6.802	0.00	2.08
66.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.079	0.000	6.802	0.00	6.24
66.00	C6X10.5 Reinforcing	Yes	1.00	0.000	4.06	0.34	0.00	0.079	0.000	6.802	0.00	0.00
66.17	Safety Cable	Yes	0.17	0.000	0.00	0.00	0.00	0.120	1.059	6.807	0.00	0.05
66.17	Step bolts (ladder)	Yes	0.17	0.000	0.00	0.00	0.00	0.120	1.059	6.807	0.00	0.18
66.17	1 5/8" Coax	Yes	0.17	0.000	1.98	0.03	0.00	0.120	1.059	6.807	0.00	0.53
66.17	C6X10.5 Reinforcing	Yes	0.17	0.000	4.06	0.06	0.00	0.120	1.059	6.807	0.00	0.00
68.00	Safety Cable	Yes	1.83	0.000	0.00	0.00	0.00	0.120	1.061	6.860	0.00	0.50
68.00	Step bolts (ladder)	Yes	1.83	0.000	0.00	0.00	0.00	0.120	1.061	6.860	0.00	1.90
68.00	1 5/8" Coax	Yes	1.83	0.000	1.98	0.30	0.00	0.120	1.061	6.860	0.00	5.71
68.00	C6X10.5 Reinforcing	Yes	1.83	0.000	4.06	0.62	0.00	0.120	1.061	6.860	0.00	0.00
70.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.121	1.064	6.917	0.00	0.55
70.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.121	1.064	6.917	0.00	2.08
70.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.121	1.064	6.917	0.00	6.24
70.00	C6X10.5 Reinforcing	Yes	2.00	0.000	4.06	0.68	0.00	0.121	1.064	6.917	0.00	0.00
71.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.122	1.067	6.945	0.00	0.27
71.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.122	1.067	6.945	0.00	1.04
71.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.122	1.067	6.945	0.00	3.12
71.00	C6X10.5 Reinforcing	Yes	1.00	0.000	4.06	0.34	0.00	0.122	1.067	6.945	0.00	0.00
72.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.123	1.069	6.973	0.00	0.27
72.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.123	1.069	6.973	0.00	1.04
72.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.123	1.069	6.973	0.00	3.12
72.00	C6X10.5 Reinforcing	Yes	1.00	0.000	4.06	0.34	0.00	0.123	1.069	6.973	0.00	0.00
74.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.124	1.071	7.028	0.00	0.55
74.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.124	1.071	7.028	0.00	2.08
74.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.124	1.071	7.028	0.00	6.24
74.00	C6X10.5 Reinforcing	Yes	2.00	0.000	4.06	0.68	0.00	0.124	1.071	7.028	0.00	0.00
76.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.125	1.075	7.081	0.00	0.55
76.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.125	1.075	7.081	0.00	2.08
76.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.125	1.075	7.081	0.00	6.24
76.00	C6X10.5 Reinforcing	Yes	2.00	0.000	4.06	0.68	0.00	0.125	1.075	7.081	0.00	0.00
78.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.126	1.079	7.134	0.00	0.55
78.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.126	1.079	7.134	0.00	2.08
78.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.126	1.079	7.134	0.00	6.24
78.00	C6X10.5 Reinforcing	Yes	2.00	0.000	4.06	0.68	0.00	0.126	1.079	7.134	0.00	0.00
80.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.128	1.083	7.186	0.00	0.55
80.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.128	1.083	7.186	0.00	2.08
80.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.128	1.083	7.186	0.00	6.24

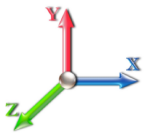
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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 27

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	4.06	0.68	0.00	0.128	1.083	7.186	0.00	0.00
81.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.128	1.085	7.211	0.00	0.27
81.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.128	1.085	7.211	0.00	1.04
81.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.128	1.085	7.211	0.00	3.12
81.00	C6X10.5 Reinforcing	Yes	1.00	0.000	4.06	0.34	0.00	0.128	1.085	7.211	0.00	0.00
82.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.129	1.087	7.237	0.00	0.27
82.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.129	1.087	7.237	0.00	1.04
82.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.129	1.087	7.237	0.00	3.12
82.00	C6X10.5 Reinforcing	Yes	1.00	0.000	4.06	0.34	0.00	0.129	1.087	7.237	0.00	0.00
84.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.130	1.090	7.287	0.00	0.55
84.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.130	1.090	7.287	0.00	2.08
84.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.130	1.090	7.287	0.00	6.24
84.00	C6X10.5 Reinforcing	Yes	2.00	0.000	4.06	0.68	0.00	0.130	1.090	7.287	0.00	0.00
85.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.131	1.093	7.311	0.00	0.27
85.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.131	1.093	7.311	0.00	1.04
85.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.131	1.093	7.311	0.00	3.12
85.00	C6X10.5 Reinforcing	Yes	1.00	0.000	4.06	0.34	0.00	0.131	1.093	7.311	0.00	0.00
86.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.132	1.095	7.336	0.00	0.27
86.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.132	1.095	7.336	0.00	1.04
86.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.132	1.095	7.336	0.00	3.12
86.00	C6X10.5 Reinforcing	Yes	1.00	0.000	4.06	0.34	0.00	0.132	1.095	7.336	0.00	0.00
88.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.133	1.099	7.384	0.00	0.55
88.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.133	1.099	7.384	0.00	2.08
88.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.133	1.099	7.384	0.00	6.24
88.00	C6X10.5 Reinforcing	Yes	2.00	0.000	4.06	0.68	0.00	0.133	1.099	7.384	0.00	0.00
90.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.134	1.103	7.432	0.00	0.55
90.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.134	1.103	7.432	0.00	2.08
90.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.134	1.103	7.432	0.00	6.24
90.00	C6X10.5 Reinforcing	Yes	2.00	0.000	4.06	0.68	0.00	0.134	1.103	7.432	0.00	0.00
91.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.135	1.106	7.455	0.00	0.27
91.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.135	1.106	7.455	0.00	1.04
91.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.135	1.106	7.455	0.00	3.12
91.00	C6X10.5 Reinforcing	Yes	1.00	0.000	4.06	0.34	0.00	0.135	1.106	7.455	0.00	0.00
92.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.134	1.102	7.479	0.00	0.27
92.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.134	1.102	7.479	0.00	1.04
92.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.134	1.102	7.479	0.00	3.12
92.00	C6X10.5 Reinforcing	Yes	1.00	0.000	4.06	0.34	0.00	0.134	1.102	7.479	0.00	0.00
93.83	Safety Cable	Yes	1.83	0.000	0.00	0.00	0.00	0.135	1.106	7.521	0.00	0.50
93.83	Step bolts (ladder)	Yes	1.83	0.000	0.00	0.00	0.00	0.135	1.106	7.521	0.00	1.90
93.83	1 5/8" Coax	Yes	1.83	0.000	1.98	0.30	0.00	0.135	1.106	7.521	0.00	5.71
93.83	C6X10.5 Reinforcing	Yes	1.83	0.000	4.06	0.62	0.00	0.135	1.106	7.521	0.00	0.00
94.00	Safety Cable	Yes	0.17	0.000	0.00	0.00	0.00	0.136	1.108	7.525	0.00	0.05
94.00	Step bolts (ladder)	Yes	0.17	0.000	0.00	0.00	0.00	0.136	1.108	7.525	0.00	0.18
94.00	1 5/8" Coax	Yes	0.17	0.000	1.98	0.03	0.00	0.136	1.108	7.525	0.00	0.53
94.00	C6X10.5 Reinforcing	Yes	0.17	0.000	4.06	0.06	0.00	0.136	1.108	7.525	0.00	0.00
96.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.091	0.000	7.570	0.00	0.55
96.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.091	0.000	7.570	0.00	2.08

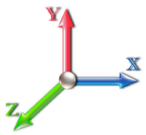
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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 27

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	0.091	0.000	7.570	0.00	6.24
96.00	C6X10.5 Reinforcing	Yes	1.00	0.000	4.06	0.34	0.00	0.091	0.000	7.570	0.00	0.00
98.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.045	0.000	7.615	0.00	0.55
98.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.045	0.000	7.615	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	7.615	0.00	6.24
100.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.046	0.000	7.659	0.00	0.55
100.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.046	0.000	7.659	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	7.659	0.00	6.24
102.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.046	0.000	7.702	0.00	0.55
102.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.046	0.000	7.702	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	7.702	0.00	6.24
104.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.047	0.000	7.745	0.00	0.55
104.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.047	0.000	7.745	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	7.745	0.00	6.24
106.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.047	0.000	7.788	0.00	0.55
106.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.047	0.000	7.788	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	7.788	0.00	6.24
108.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.048	0.000	7.829	0.00	0.55
108.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.048	0.000	7.829	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	7.829	0.00	6.24
110.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.048	0.000	7.870	0.00	0.55
110.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.048	0.000	7.870	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	7.870	0.00	6.24
111.17	Safety Cable	Yes	1.17	0.000	0.00	0.00	0.00	0.099	0.000	7.894	0.00	0.32
111.17	Step bolts (ladder)	Yes	1.17	0.000	0.00	0.00	0.00	0.099	0.000	7.894	0.00	1.22
111.17	1 5/8" Coax	Yes	1.17	0.000	1.98	0.19	0.00	0.099	0.000	7.894	0.00	3.65
111.17	C6X10.5 Reinforcing	Yes	1.17	0.000	2.03	0.20	0.00	0.099	0.000	7.894	0.00	0.00
112.00	Safety Cable	Yes	0.83	0.000	0.00	0.00	0.00	0.100	0.000	7.911	0.00	0.23
112.00	Step bolts (ladder)	Yes	0.83	0.000	0.00	0.00	0.00	0.100	0.000	7.911	0.00	0.86
112.00	1 5/8" Coax	Yes	0.83	0.000	1.98	0.14	0.00	0.100	0.000	7.911	0.00	2.59
112.00	C6X10.5 Reinforcing	Yes	0.83	0.000	2.03	0.14	0.00	0.100	0.000	7.911	0.00	0.00
114.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.101	1.002	7.951	0.00	0.55
114.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.101	1.002	7.951	0.00	2.08
114.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.101	1.002	7.951	0.00	6.24
114.00	C6X10.5 Reinforcing	Yes	2.00	0.000	2.03	0.34	0.00	0.101	1.002	7.951	0.00	0.00
115.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.101	1.004	7.971	0.00	0.27
115.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.101	1.004	7.971	0.00	1.04
115.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.101	1.004	7.971	0.00	3.12
115.00	C6X10.5 Reinforcing	Yes	1.00	0.000	2.03	0.17	0.00	0.101	1.004	7.971	0.00	0.00
116.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.102	1.006	7.991	0.00	0.27
116.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.102	1.006	7.991	0.00	1.04
116.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.102	1.006	7.991	0.00	3.12
116.00	C6X10.5 Reinforcing	Yes	1.00	0.000	2.03	0.17	0.00	0.102	1.006	7.991	0.00	0.00
118.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.103	1.009	8.030	0.00	0.55
118.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.103	1.009	8.030	0.00	2.08
118.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.103	1.009	8.030	0.00	6.24
118.00	C6X10.5 Reinforcing	Yes	2.00	0.000	2.03	0.34	0.00	0.103	1.009	8.030	0.00	0.00

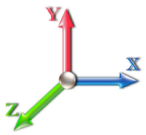
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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 27

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	0.104	1.013	8.069	0.00	0.55
120.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.104	1.013	8.069	0.00	2.08
120.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.104	1.013	8.069	0.00	6.24
120.00	C6X10.5 Reinforcing	Yes	2.00	0.000	2.03	0.34	0.00	0.104	1.013	8.069	0.00	0.00
122.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.106	1.017	8.107	0.00	0.55
122.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.106	1.017	8.107	0.00	2.08
122.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.106	1.017	8.107	0.00	6.24
122.00	C6X10.5 Reinforcing	Yes	2.00	0.000	2.03	0.34	0.00	0.106	1.017	8.107	0.00	0.00
123.83	Safety Cable	Yes	1.83	0.000	0.00	0.00	0.00	0.107	1.021	8.141	0.00	0.50
123.83	Step bolts (ladder)	Yes	1.83	0.000	0.00	0.00	0.00	0.107	1.021	8.141	0.00	1.90
123.83	1 5/8" Coax	Yes	1.83	0.000	1.98	0.30	0.00	0.107	1.021	8.141	0.00	5.71
123.83	C6X10.5 Reinforcing	Yes	1.83	0.000	2.03	0.31	0.00	0.107	1.021	8.141	0.00	0.00
124.00	Safety Cable	Yes	0.17	0.000	0.00	0.00	0.00	0.108	1.023	8.144	0.00	0.05
124.00	Step bolts (ladder)	Yes	0.17	0.000	0.00	0.00	0.00	0.108	1.023	8.144	0.00	0.18
124.00	1 5/8" Coax	Yes	0.17	0.000	1.98	0.03	0.00	0.108	1.023	8.144	0.00	0.53
124.00	C6X10.5 Reinforcing	Yes	0.17	0.000	2.03	0.03	0.00	0.108	1.023	8.144	0.00	0.00
126.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.081	0.000	8.182	0.00	0.55
126.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.081	0.000	8.182	0.00	2.08
126.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.081	0.000	8.182	0.00	6.24
126.00	C6X10.5 Reinforcing	Yes	1.00	0.000	2.03	0.17	0.00	0.081	0.000	8.182	0.00	0.00
128.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.054	0.000	8.219	0.00	0.55
128.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.054	0.000	8.219	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	8.219	0.00	6.24
130.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.055	0.000	8.255	0.00	0.55
130.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.055	0.000	8.255	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	8.255	0.00	6.24
132.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.056	0.000	8.291	0.00	0.55
132.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.056	0.000	8.291	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	8.291	0.00	6.24
134.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.056	0.000	8.327	0.00	0.55
134.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.056	0.000	8.327	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	8.327	0.00	6.24
135.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.057	0.000	8.345	0.00	0.27
135.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.057	0.000	8.345	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	8.345	0.00	3.12
136.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.057	0.000	8.362	0.00	0.27
136.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.057	0.000	8.362	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	8.362	0.00	3.12
138.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.057	0.000	8.397	0.00	0.55
138.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.057	0.000	8.397	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	8.397	0.00	6.24
140.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.058	0.000	8.432	0.00	0.55
140.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.058	0.000	8.432	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	8.432	0.00	6.24
142.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.059	0.000	8.466	0.00	0.55
142.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.059	0.000	8.466	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	8.466	0.00	6.24

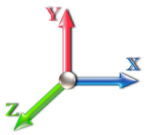
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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 27

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	8.483	0.00	0.27
143.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.059	0.000	8.483	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	8.483	0.00	3.12
144.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.060	0.000	8.500	0.00	0.27
144.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.060	0.000	8.500	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	8.500	0.00	3.12
146.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.060	0.000	8.534	0.00	0.55
146.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.060	0.000	8.534	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	8.534	0.00	6.24
148.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.061	0.000	8.567	0.00	0.55
148.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.061	0.000	8.567	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	8.567	0.00	6.24
150.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.062	0.000	8.600	0.00	0.55
150.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.062	0.000	8.600	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	8.600	0.00	6.24
152.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.063	0.000	8.632	0.00	0.55
152.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.063	0.000	8.632	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	8.632	0.00	6.24
153.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.064	0.000	8.648	0.00	0.27
153.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.064	0.000	8.648	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	8.648	0.00	3.12
154.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.064	0.000	8.665	0.00	0.27
154.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.064	0.000	8.665	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	8.665	0.00	3.12
156.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.065	0.000	8.697	0.00	0.55
156.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.065	0.000	8.697	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	8.697	0.00	6.24
158.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.066	0.000	8.728	0.00	0.55
158.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.066	0.000	8.728	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	8.728	0.00	6.24
160.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.067	0.000	8.760	0.00	0.55
160.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.067	0.000	8.760	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	8.760	0.00	6.24
162.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.068	0.000	8.791	0.00	0.55
162.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.068	0.000	8.791	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	8.791	0.00	6.24
164.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.070	0.000	8.822	0.00	0.55
164.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.070	0.000	8.822	0.00	2.08
164.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.070	0.000	8.822	0.00	6.24
166.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.071	0.000	8.852	0.00	0.55
166.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.071	0.000	8.852	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	8.852	0.00	6.24
168.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.072	0.000	8.883	0.00	0.55
168.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.072	0.000	8.883	0.00	2.08
168.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.072	0.000	8.883	0.00	6.24
170.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.073	0.000	8.913	0.00	0.55
170.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.073	0.000	8.913	0.00	2.08

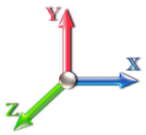
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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 27

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)
170.00	1 5/8" Coax	Yes	2.00	0.000	1.98	0.33	0.00	0.073	0.000	8.913	0.00	6.24
172.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.075	0.000	8.943	0.00	0.55
172.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.075	0.000	8.943	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	8.943	0.00	6.24
173.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.076	0.000	8.957	0.00	0.27
173.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.076	0.000	8.957	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	8.957	0.00	3.12
174.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	8.972	0.00	0.27
174.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	8.972	0.00	1.04
176.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	9.002	0.00	0.55
176.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	9.002	0.00	2.08
178.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	9.031	0.00	0.55
178.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	9.031	0.00	2.08
180.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	9.060	0.00	0.55
180.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	9.060	0.00	2.08
182.00	Safety Cable	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	9.088	0.00	0.55
182.00	Step bolts (ladder)	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	9.088	0.00	2.08
183.00	Safety Cable	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	9.102	0.00	0.27
183.00	Step bolts (ladder)	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	9.102	0.00	1.04
										Totals:	**0.0**	**780.0**

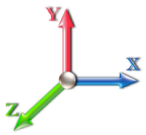
Calculated Forces

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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 27

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	-49.92	-7.52	0.00	-962.40	0.00	962.40	5190.16	1566.13	8332.38	6861.66	0.00	0.000	0.000	0.150
2.00	-49.32	-7.48	0.00	-947.37	0.00	947.37	5174.50	1554.63	8210.47	6790.43	0.00	-0.014	0.000	0.149
4.00	-48.71	-7.45	0.00	-932.40	0.00	932.40	5158.51	1543.13	8089.46	6719.08	0.01	-0.027	0.000	0.148
6.00	-48.11	-7.41	0.00	-917.51	0.00	917.51	5142.18	1531.63	7969.35	6647.61	0.03	-0.041	0.000	0.147
8.00	-47.52	-7.38	0.00	-902.69	0.00	902.69	5125.52	1520.13	7850.13	6576.03	0.05	-0.055	0.000	0.147
10.00	-46.93	-7.34	0.00	-887.94	0.00	887.94	5108.53	1508.63	7731.81	6504.36	0.07	-0.069	0.000	0.146
12.00	-46.34	-7.31	0.00	-873.26	0.00	873.26	5091.21	1497.13	7614.39	6432.60	0.11	-0.084	0.000	0.145
14.00	-45.76	-7.27	0.00	-858.65	0.00	858.65	5073.56	1485.63	7497.87	6360.75	0.14	-0.098	0.000	0.144
16.00	-45.18	-7.24	0.00	-844.11	0.00	844.11	5055.57	1474.13	7382.25	6288.85	0.19	-0.112	0.000	0.143
18.00	-44.60	-7.20	0.00	-829.63	0.00	829.63	5037.25	1462.64	7267.53	6216.88	0.24	-0.126	0.000	0.142
20.00	-44.03	-7.17	0.00	-815.23	0.00	815.23	5018.60	1451.14	7153.70	6144.86	0.29	-0.141	0.000	0.141
22.00	-43.46	-7.13	0.00	-800.90	0.00	800.90	4999.62	1439.64	7040.78	6072.81	0.36	-0.156	0.000	0.141
24.00	-42.90	-7.10	0.00	-786.63	0.00	786.63	4980.31	1428.14	6928.75	6000.72	0.42	-0.170	0.000	0.140
26.00	-42.33	-7.06	0.00	-772.43	0.00	772.43	4960.66	1416.64	6817.62	5928.62	0.50	-0.185	0.000	0.139
28.00	-41.78	-7.03	0.00	-758.30	0.00	758.30	4940.68	1405.14	6707.39	5856.50	0.58	-0.200	0.000	0.138
30.00	-41.22	-7.00	0.00	-744.24	0.00	744.24	4920.37	1393.64	6598.05	5784.39	0.67	-0.215	0.000	0.137
32.00	-40.67	-6.96	0.00	-730.25	0.00	730.25	4899.73	1382.14	6489.62	5712.28	0.76	-0.230	0.000	0.136
34.00	-40.13	-6.93	0.00	-716.32	0.00	716.32	4878.76	1370.64	6382.08	5640.19	0.86	-0.245	0.000	0.135
36.00	-39.59	-6.89	0.00	-702.47	0.00	702.47	4857.45	1359.14	6275.45	5568.14	0.97	-0.260	0.000	0.134
38.00	-39.05	-6.86	0.00	-688.69	0.00	688.69	4835.81	1347.64	6169.71	5496.12	1.08	-0.275	0.000	0.133
40.00	-38.52	-6.82	0.00	-674.97	0.00	674.97	4813.84	1336.14	6064.87	5424.15	1.20	-0.291	0.000	0.132
41.00	-38.25	-6.80	0.00	-668.16	0.00	668.16	4802.73	1330.39	6012.78	5388.18	1.26	-0.298	0.000	0.132
42.00	-37.76	-6.78	0.00	-661.36	0.00	661.36	4791.54	1324.64	5960.92	5352.24	1.32	-0.306	0.000	0.131
44.00	-36.79	-6.74	0.00	-647.80	0.00	647.80	4768.90	1313.15	5857.88	5280.39	1.45	-0.322	0.000	0.130
46.00	-35.83	-6.70	0.00	-634.32	0.00	634.32	4745.94	1301.65	5755.73	5208.63	1.59	-0.337	0.000	0.129
48.00	-34.88	-6.66	0.00	-620.92	0.00	620.92	4759.60	1308.47	5816.21	5251.18	1.74	-0.353	0.000	0.126
50.00	-34.36	-6.61	0.00	-607.61	0.00	607.61	4736.50	1296.97	5714.43	5179.45	1.89	-0.369	0.000	0.125
51.00	-34.10	-6.59	0.00	-600.99	0.00	600.99	4724.82	1291.22	5663.88	5143.62	1.97	-0.376	0.000	0.124
51.00	-34.10	-6.59	0.00	-600.99	0.00	600.99	4064.30	1070.36	4695.09	4424.56	1.97	-0.376	0.000	0.144
52.00	-33.84	-6.58	0.00	-594.40	0.00	594.40	4053.20	1065.59	4653.37	4392.70	2.05	-0.384	0.000	0.144
54.00	-33.32	-6.54	0.00	-581.24	0.00	581.24	4030.83	1056.06	4570.49	4329.09	2.21	-0.399	0.000	0.143
56.00	-32.81	-6.50	0.00	-568.17	0.00	568.17	4008.20	1046.52	4488.35	4265.66	2.38	-0.415	0.000	0.141
58.00	-32.31	-6.45	0.00	-555.18	0.00	555.18	3985.33	1036.99	4406.96	4202.40	2.56	-0.430	0.000	0.140
60.00	-31.81	-6.41	0.00	-542.27	0.00	542.27	3962.20	1027.46	4326.31	4139.33	2.74	-0.445	0.000	0.139
62.00	-31.31	-6.37	0.00	-529.45	0.00	529.45	3938.82	1017.93	4246.41	4076.46	2.93	-0.461	0.000	0.138
64.00	-30.82	-6.33	0.00	-516.70	0.00	516.70	3915.19	1008.40	4167.25	4013.78	3.13	-0.477	0.000	0.137
66.00	-30.33	-6.28	0.00	-504.05	0.00	504.05	3891.31	998.86	4088.84	3951.30	3.33	-0.492	0.000	0.135
66.17	-30.28	-6.28	0.00	-502.98	0.00	502.98	3889.27	998.05	4082.21	3946.00	3.35	-0.494	0.000	0.099
68.00	-29.84	-6.24	0.00	-491.48	0.00	491.48	3867.19	989.33	4011.17	3889.05	3.54	-0.504	0.000	0.098
70.00	-29.36	-6.19	0.00	-479.00	0.00	479.00	3842.81	979.80	3934.25	3827.01	3.75	-0.516	0.000	0.097
71.00	-29.12	-6.17	0.00	-472.81	0.00	472.81	3830.52	975.03	3896.07	3796.08	3.86	-0.521	0.000	0.096
71.00	-29.12	-6.17	0.00	-472.81	0.00	472.81	3467.89	866.68	3463.07	3436.66	3.86	-0.521	0.000	0.106
72.00	-28.88	-6.14	0.00	-466.65	0.00	466.65	3456.29	862.45	3429.30	3408.29	3.97	-0.527	0.000	0.106
74.00	-28.40	-6.10	0.00	-454.36	0.00	454.36	3432.92	853.97	3362.25	3351.73	4.20	-0.539	0.000	0.104
76.00	-27.93	-6.05	0.00	-442.17	0.00	442.17	3409.33	845.50	3295.86	3295.42	4.42	-0.550	0.000	0.103
78.00	-27.47	-6.00	0.00	-430.07	0.00	430.07	3385.54	837.03	3230.13	3239.36	4.66	-0.562	0.000	0.102
80.00	-27.00	-5.95	0.00	-418.07	0.00	418.07	3361.54	828.56	3165.07	3183.58	4.89	-0.573	0.000	0.100
81.00	-26.77	-5.93	0.00	-412.12	0.00	412.12	3349.46	824.32	3132.78	3155.79	5.01	-0.579	0.000	0.099

Calculated Forces

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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

Tower Engineering Solutions

81.00	-26.77	-5.93	0.00	-412.12	0.00	412.12	2964.88	798.42	3038.52	2801.08	5.01	-0.579	0.000	0.094
82.00	-26.58	-5.90	0.00	-406.19	0.00	406.19	2956.03	794.32	3007.41	2778.29	5.14	-0.585	0.000	0.105
84.00	-26.18	-5.86	0.00	-394.38	0.00	394.38	2938.12	786.13	2945.67	2732.78	5.38	-0.598	0.000	0.104
85.00	-25.99	-5.83	0.00	-388.53	0.00	388.53	2929.07	782.03	2915.04	2710.06	5.51	-0.604	0.000	0.103
86.00	-25.64	-5.81	0.00	-382.70	0.00	382.70	2919.96	777.93	2884.57	2687.37	5.64	-0.611	0.000	0.101
88.00	-24.94	-5.76	0.00	-371.08	0.00	371.08	2901.53	769.74	2824.11	2642.08	5.90	-0.623	0.000	0.099
90.00	-24.26	-5.70	0.00	-359.58	0.00	359.58	2882.84	761.54	2764.29	2596.92	6.16	-0.636	0.000	0.097
91.00	-23.92	-5.68	0.00	-353.87	0.00	353.87	2898.35	768.34	2813.83	2634.34	6.29	-0.642	0.000	0.098
92.00	-23.72	-5.65	0.00	-348.20	0.00	348.20	2889.01	764.24	2783.89	2611.76	6.43	-0.649	0.000	0.095
93.83	-23.37	-5.61	0.00	-337.86	0.00	337.86	2871.76	756.74	2729.53	2570.50	6.68	-0.660	0.000	0.093
93.83	-23.37	-5.61	0.00	-337.86	0.00	337.86	2871.76	756.74	2729.53	2570.50	6.68	-0.660	0.000	0.136
94.00	-23.34	-5.60	0.00	-336.90	0.00	336.90	2870.15	756.04	2724.50	2566.68	6.70	-0.661	0.000	0.139
96.00	-22.96	-5.56	0.00	-325.69	0.00	325.69	2851.02	747.85	2665.76	2521.73	6.98	-0.679	0.000	0.137
98.00	-22.58	-5.52	0.00	-314.57	0.00	314.57	2831.62	739.65	2607.65	2476.93	7.27	-0.698	0.000	0.135
100.00	-22.21	-5.48	0.00	-303.53	0.00	303.53	2811.97	731.45	2550.18	2432.29	7.57	-0.716	0.000	0.133
102.00	-21.84	-5.44	0.00	-292.57	0.00	292.57	2792.05	723.26	2493.35	2387.80	7.87	-0.734	0.000	0.130
104.00	-21.47	-5.40	0.00	-281.69	0.00	281.69	2771.87	715.06	2437.16	2343.48	8.19	-0.752	0.000	0.128
106.00	-21.11	-5.35	0.00	-270.90	0.00	270.90	2751.43	706.87	2381.62	2299.33	8.50	-0.771	0.000	0.126
108.00	-20.75	-5.31	0.00	-260.20	0.00	260.20	2730.72	698.67	2326.71	2255.37	8.83	-0.789	0.000	0.123
110.00	-20.39	-5.27	0.00	-249.57	0.00	249.57	2709.75	690.48	2272.44	2211.59	9.17	-0.806	0.000	0.120
111.17	-20.18	-5.24	0.00	-243.41	0.00	243.41	2697.36	685.68	2241.00	2186.08	9.36	-0.817	0.000	0.093
112.00	-20.04	-5.23	0.00	-239.05	0.00	239.05	2688.52	682.28	2218.82	2168.02	9.51	-0.823	0.000	0.092
114.00	-19.68	-5.18	0.00	-228.60	0.00	228.60	2667.03	674.08	2165.83	2124.64	9.85	-0.836	0.000	0.089
115.00	-19.51	-5.16	0.00	-223.42	0.00	223.42	2656.18	669.99	2139.58	2103.04	10.03	-0.843	0.000	0.088
115.00	-19.51	-5.16	0.00	-223.42	0.00	223.42	1951.15	536.85	1717.18	1549.82	10.03	-0.843	0.000	0.096
116.00	-19.36	-5.14	0.00	-218.25	0.00	218.25	1944.57	533.57	1696.28	1535.11	10.21	-0.850	0.000	0.112
118.00	-19.07	-5.10	0.00	-207.97	0.00	207.97	1931.24	527.02	1654.84	1505.73	10.57	-0.866	0.000	0.108
120.00	-18.78	-5.06	0.00	-197.76	0.00	197.76	1917.63	520.46	1613.93	1476.40	10.93	-0.881	0.000	0.105
122.00	-18.49	-5.02	0.00	-187.64	0.00	187.64	1903.77	513.90	1573.52	1447.14	11.31	-0.897	0.000	0.101
123.83	-18.23	-4.98	0.00	-178.46	0.00	178.46	1890.85	507.91	1536.99	1420.43	11.65	-0.910	0.000	0.098
123.83	-18.23	-4.98	0.00	-178.46	0.00	178.46	1890.85	507.91	1536.99	1420.43	11.65	-0.910	0.000	0.132
124.00	-18.20	-4.98	0.00	-177.61	0.00	177.61	1889.64	507.35	1533.62	1417.95	11.69	-0.912	0.000	0.135
126.00	-17.92	-4.94	0.00	-167.66	0.00	167.66	1875.25	500.79	1494.24	1388.84	12.07	-0.932	0.000	0.130
128.00	-17.64	-4.90	0.00	-157.78	0.00	157.78	1860.60	494.24	1455.37	1359.83	12.47	-0.952	0.000	0.126
130.00	-17.36	-4.86	0.00	-147.97	0.00	147.97	1845.69	487.68	1417.01	1330.91	12.87	-0.971	0.000	0.121
132.00	-16.89	-4.82	0.00	-138.25	0.00	138.25	1830.51	481.12	1379.17	1302.09	13.28	-0.990	0.000	0.116
134.00	-16.43	-4.78	0.00	-128.61	0.00	128.61	1815.07	474.57	1341.83	1273.39	13.70	-1.008	0.000	0.110
135.00	-16.20	-4.76	0.00	-123.83	0.00	123.83	1823.79	478.25	1362.77	1289.52	13.91	-1.017	0.000	0.105
136.00	-16.07	-4.74	0.00	-119.08	0.00	119.08	1816.04	474.98	1344.15	1275.18	14.13	-1.026	0.000	0.102
138.00	-15.79	-4.70	0.00	-109.61	0.00	109.61	1800.35	468.42	1307.30	1246.58	14.56	-1.043	0.000	0.097
140.00	-15.53	-4.66	0.00	-100.21	0.00	100.21	1784.41	461.86	1270.96	1218.12	15.00	-1.058	0.000	0.091
142.00	-15.26	-4.62	0.00	-90.90	0.00	90.90	1768.19	455.31	1235.13	1189.79	15.45	-1.073	0.000	0.085
143.00	-12.26	-3.54	0.00	-86.28	0.00	86.28	1759.99	452.03	1217.41	1175.68	15.67	-1.080	0.000	0.080
144.00	-12.14	-3.52	0.00	-82.74	0.00	82.74	1751.72	448.75	1199.81	1161.60	15.90	-1.087	0.000	0.078
146.00	-11.91	-3.48	0.00	-75.71	0.00	75.71	1734.98	442.19	1165.01	1133.56	16.36	-1.101	0.000	0.074
148.00	-11.68	-3.44	0.00	-68.75	0.00	68.75	1717.98	435.64	1130.72	1105.68	16.82	-1.114	0.000	0.069
150.00	-11.45	-3.40	0.00	-61.87	0.00	61.87	1700.72	429.08	1096.94	1077.97	17.29	-1.126	0.000	0.064
152.00	-11.22	-3.36	0.00	-55.07	0.00	55.07	1683.20	422.52	1063.67	1050.43	17.77	-1.137	0.000	0.059
153.00	-7.79	-2.33	0.00	-51.71	0.00	51.71	1674.33	419.24	1047.23	1036.72	18.00	-1.142	0.000	0.055
154.00	-7.69	-2.31	0.00	-49.38	0.00	49.38	1665.41	415.97	1030.91	1023.07	18.24	-1.148	0.000	0.053
156.00	-7.50	-2.27	0.00	-44.76	0.00	44.76	1647.36	409.41	998.67	995.90	18.73	-1.158	0.000	0.050
158.00	-7.30	-2.23	0.00	-40.22	0.00	40.22	1629.04	402.85	966.94	968.92	19.21	-1.167	0.000	0.046
160.00	-7.11	-2.20	0.00	-35.75	0.00	35.75	1610.47	396.30	935.72	942.15	19.71	-1.176	0.000	0.042
162.00	-6.92	-2.16	0.00	-31.36	0.00	31.36	1591.63	389.74	905.02	915.59	20.20	-1.184	0.000	0.039
164.00	-6.74	-2.12	0.00	-27.04	0.00	27.04	1572.53	383.18	874.82	889.25	20.70	-1.192	0.000	0.035
166.00	-6.56	-2.09	0.00	-22.79	0.00	22.79	1553.17	376.63	845.14	863.13	21.20	-1.199	0.000	0.031
168.00	-6.38	-2.05	0.00	-18.62	0.00	18.62	1533.54	370.07	815.97	837.26	21.70	-1.205	0.000	0.026

Calculated Forces

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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

170.00	-6.20	-2.02	0.00	-14.51	0.00	14.51	1513.65	363.51	787.31	811.62	22.21	-1.210	0.000	0.022
172.00	-6.02	-1.98	0.00	-10.48	0.00	10.48	1493.50	356.96	759.17	786.23	22.72	-1.214	0.000	0.017
173.00	-3.10	-0.92	0.00	-8.50	0.00	8.50	1483.33	353.68	745.29	773.64	22.97	-1.215	0.000	0.013
174.00	-3.03	-0.90	0.00	-7.58	0.00	7.58	1473.09	350.40	731.54	761.10	23.22	-1.217	0.000	0.012
176.00	-2.89	-0.87	0.00	-5.78	0.00	5.78	1452.41	343.84	704.42	736.24	23.73	-1.219	0.000	0.010
178.00	-2.75	-0.83	0.00	-4.05	0.00	4.05	1427.85	337.29	677.81	709.85	24.25	-1.221	0.000	0.008
180.00	-2.62	-0.80	0.00	-2.38	0.00	2.38	1400.09	330.73	651.71	682.38	24.76	-1.222	0.000	0.005
180.00	-2.62	-0.80	0.00	-2.38	0.00	2.38	678.42	203.53	26019.0	396.30	24.76	-1.222	0.000	0.010
182.00	-2.47	-0.77	0.00	-0.77	0.00	0.77	678.42	203.53	26019.0	396.30	25.27	-1.223	0.000	0.006
183.00	0.00	-0.72	0.00	0.00	0.00	0.00	678.42	203.53	26019.0	396.30	25.53	-1.223	0.000	0.000

Final Analysis Summary

Structure:	CT01002-S-SBA	**Code:**	TIA-222-H	9/21/2023	
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	

Tower Engineering Solutions

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 + 1.0W 126 mph Wind	37.1	0.00	59.89	0.00	0.00	4777.82
0.9D + 1.0W 126 mph Wind	37.1	0.00	44.91	0.00	0.00	4719.05
1.2D + 1.0Di + 1.0Wi 50 mph Wind	9.0	0.00	82.11	0.00	0.00	1148.89
1.2D + 1.0Ev + 1.0Eh	0.7	0.00	62.07	0.00	0.00	119.40
0.9D + 1.0Ev + 1.0Eh	0.7	0.00	47.00	0.00	0.00	118.18
1.0D + 1.0W 60 mph Wind	7.5	0.00	49.92	0.00	0.00	962.40

Max Stresses

Load Case	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Elev (ft)	Stress Ratio
1.2D + 1.0W 126 mph Wind	-59.89	-37.07	0.00	-4777.8	0.00	-4777.8	5190.16	1566.1	8332.38	6861.66	0.00	0.708
0.9D + 1.0W 126 mph Wind	-44.91	-37.06	0.00	-4719.0	0.00	-4719.0	5190.16	1566.1	8332.38	6861.66	0.00	0.697
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-82.11	-8.97	0.00	-1148.8	0.00	-1148.8	5190.16	1566.1	8332.38	6861.66	0.00	0.183
1.2D + 1.0Ev + 1.0Eh	-22.72	-0.73	0.00	-28.06	0.00	-28.06	1889.64	507.35	1533.62	1417.95	124.00	0.032
0.9D + 1.0Ev + 1.0Eh	-17.21	-0.72	0.00	-27.79	0.00	-27.79	1889.64	507.35	1533.62	1417.95	124.00	0.029
1.0D + 1.0W 60 mph Wind	-49.92	-7.52	0.00	-962.40	0.00	-962.40	5190.16	1566.1	8332.38	6861.66	0.00	0.150

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)	133.4	0.00	25.3	100.3	25.3	4	0	95.1	25.3	4	0	105.29	180.2	155.36	0.678
111.2	123.8	(3) PLT-C6x10.5(1.5" Hole)	228.3	0.00	25.3	98.7	25.3	4	0	98.2	25.3	4	0	110.06	180.2	155.36	0.708

Monopole Mat Foundation Design

				Date
				9/21/2023
	Customer Name:	Dish Wireless	**TIA Standard:**	TIA-222-H
	Site Name:		**Structure Height (Ft.):**	183
	Site Number:	CT01002-S-SBA	**Engineer Name:**	J. Tibbetts
	Engr. Number:	142529	**Engineer Login ID:**	

Foundation Info Obtained from: Drawings/Calculations

Structure Type: Monopole

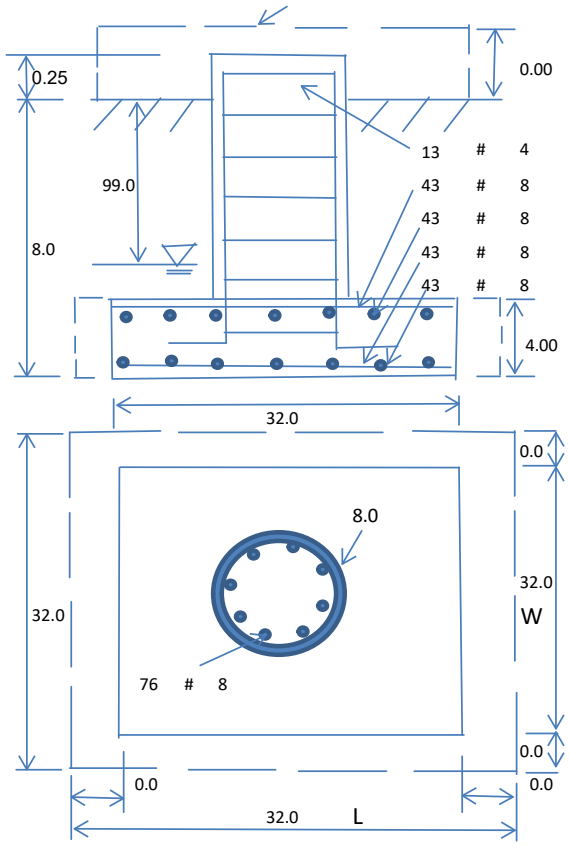
Analysis or Design? Analysis

Base Reactions (Factored):

Axial Load (Kips):	59.9	Shear Force (Kips):	37.1
Uplift Force (Kips):	0.0	Moment (Kips-ft):	4777.8
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:	76	Tie Spacing (in):	8.0	
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):	120.0	Soil Buoyant Weight:	50.0	Pcf		
Water Table B.G.S. (ft):	99.0	Unit Weight of Water:	62.4	pcf	Angle from Top of Pad:	30
Ultimate Bearing Pressure (psf):	20000	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):	467.39
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	467.39	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):	1173.74

Check Soil Capacities:

					Load/ Capacity Ratio	
Calculated Maxium Net Soil Pressure under the base (psf):	1702	<	Allowable Factored Soil Bearing (psf):	15000	0.11	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	16997.7	>	Design Factored Momont (kips-ft):	4640	0.27	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	3.66	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):	11466.4	>	Design Factored Moment (Mu, Kips-F	4935.5	0.43	OK!
Calculated Shear Capacity (Kips):	917.1	>	Design Factored Shear (Kips):	37.1	0.04	OK!
Calculated Tension Capacity (Tn, Kips):	3242.2	>	Design Factored Tension (Tu Kips):	0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	12691.0	>	Design Factored Axial Load (Pu Kips):	59.9	0.00	OK!
Moment & Axial Strength Combination:	0.43	OK!	Check Tie Spacing (Design/Required):		0.6667	OK!
Pier Reinforcement Ratio:	0.008		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):	292.4	0.18	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	1621.1	>	One-Way Factored Shear (W-D., Kips)	292.4	0.18	OK!
One-Way Design Shear Capacity (Corner-Corner. Kips):	1511.6	>	One-Way Factored Shear (C-C, Kips):	248.5	0.16	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):	2208.5	0.33	OK!
Lower Steel Pad Moment Capacity (W-Direction. Kips-ft):	6683.2	>	Moment at Bottom (W-Dir. K-Ft):	2208.5	0.33	OK!
Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):	9415.2	>	Moment at Bottom (C-C Dir. K-Ft):	3123.3	0.33	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):	815.0	0.12	OK!
Upper Steel Pad Moment Capacity (W-Direc. Kips-ft):	6683.2	>	Moment at the top (W-Dir K-Ft):	815.0	0.12	OK!
Upper Steel Pad Moment Capacity (Corner-Corner. K-ft):	9415.2	>	Moment at the top (C-C Dir. K-Ft):	762.1	0.08	OK!
(3).Check Punching Shear Capacity due to Moment in the Pier:						
Moment transferred by punching shear:	1911.1	k-ft.	Max. factored shear stress v_{u_CD}:		2.9	Psi
Max. factored shear stress v_{u_AB}:	7.5	Psi	Factored shear Strength ϕv_n:		189.7	Psi
Max. factored shear stress v_u:	7.5	Psi	Check Usage of Punching Shear Capacity:		0.04	OK!
(4).Check Bending Capacity of the Pad Within the Effective Slab Width:						
Overturning moment to be transferred by flexure:	1433.3	k-ft.	Effective Width for resisting OT moment:		20.0	ft.
Calculated number of Rebar in Effective width:	27		Actual number of Rebar in Effective width:		27	
Steel Pad Moment Capacity (L-Direc. Kips-ft):	4196.1	k-ft.	Check Usage of the Flexure Capacity:		0.34	OK!

EXHIBIT 8

Mount Anaysis

Kimley»Horn

Mount Analysis for

Proposed Platform with Support Rails
Commscope Part #: MC-PK8-DSH

October 4, 2023

Site Name:	**Waterford**
SBA Site Number:	**CT01002-S**
Dish Site Number:	**BOBOS01205A**
Site Address:	**45 Fargo Road**
	Waterford, CT
	New London County
Site Coordinates:	**41.389339°, -72.171408°**

Kimley-Horn Job Number: 180000025.1.202
Kimley-Horn JIRA Ticket: KHCLE-48514

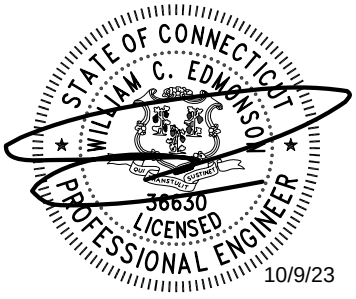
Analysis Results

Proposed Platform with Support Rails	**23.2%**	**Sufficient**
Mount Connections	**17.7%**	**Sufficient**

See additional details in the Conclusions and Recommendation section.

Prepared By:
Kevin Fraleigh, P.E.

Reviewed and Signed By:
Cole Edmonson, P.E.
Lic. #PEN.0036630, Exp. 01/31/2024
Kimley-Horn and Associates, Inc. COA #PEC.0000738



10/9/23

▪ SUPPORTING DOCUMENTATION

Information on existing and proposed antennas as well as mount geometry was provided to Kimley-Horn and Associates in the documents listed below. It is assumed that all information provided to Kimley-Horn & Associates, Inc. is accurate. In the absence of information to the contrary, we assume the structure has been properly erected and maintained per the original design drawings and the capacity has not significantly changed from the "as new" condition.

Tenant Loading	Dish Wireless Collo App, dated 9/29/2023
Mount Design	Commscope Part #: MC-PK8-DSH, dated 3/17/2021

▪ ANALYSIS CRITERIA

Code	ANSI/TIA-222-H / 2021 IBC / 2022 CSBC / ASCE 7
Basic Wind Speed	126 mph (3-Second Gust, Vult)
Basic Wind Speed w/ Ice	50 mph (3-sec Gust) with 1.0" radial ice (escalating)
Risk Category	II
Exposure Category	B
Topographic Factor	$K_{zt} = 1.0$

This analysis utilizes an ultimate 3-second gust wind speed of 126 mph as required by the 2022 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

▪ APPURTENANCE LISTING

The tables below will show the final equipment configuration considered in the analysis. If the final equipment observed in the field deviates from the information shown below, Kimley-Horn & Associates, Inc. should be contacted to perform an analysis revision immediately.

Final Equipment Configuration:

Antenna RAD (ft)	Description	Feedlines	Mount Type	Mount Elevation (ft)	Carrier
183	(3) Commscope FFVV-65B-R2 (3) Samsung RF4450t-71A (3) Samsung RF4451d-70A (1) Raycap RDIDC-9181-PF-48 OVP	(1) 1.75" Hybrid	Platform with Support Rails	183	Dish

▪ CONCLUSIONS AND RECOMMENDATIONS

Per our rigorous structural analysis, the proposed Platform with Support Rails have been found to be **SUFFICIENT**. The mount can support the referenced loading in accordance with the structural strength requirements of ANSI/TIA-222-H and 2021 IBC with local amendments.

▪ ASSUMPTIONS AND LIMITATIONS

This report is not a condition assessment of the mount; It is an engineering analysis based upon the theoretical capacity of the structure. Unless told otherwise, we assume the mount components and connections to be in "like new" condition. If these assumptions are not accurate, Kimley-Horn & Associates, Inc. should be notified immediately to perform a revised analysis.

All services are performed, results obtained, and recommendation made in accordance with generally accepted engineering principles and practices. Kimley-Horn & Associates, Inc. is not responsible for the conclusions, opinions and recommendations made by others based on the information in this report.

Kimley-Horn makes no warranties, expressed or implied in connection with this report and disclaims any liability arising from original design, material, fabrication, section deficiencies, corrosion, or insufficient maintenance of the structure.

APPENDIX

General Criteria	
TIA Standard	H
IBC Edition	2021
Structure Class	-
Risk Category	II

Site-Specific Criteria	
Exposure Category	B
Topographic Factor, K_{zt}	1.00
Structure Base Elev. (AMSL), z_s (ft)	295.00
Ground Effect Factor, K_e	0.99

Mount & Structure Criteria	
Mount Elevation (AGL) (ft)	183.00
Structure Height (ft)	183.00
Structure Type	Monopole

Constants	
Wind Direction Probability Factor, K_d	0.95
Gust Effect Factor, G_h	1
Shielding Factor, K_a **(antenna)**	0.9
Shielding Factor, K_a **(mount)**	0.9

Wind Summary	
Basic Wind Speed w/o Ice, **V** (mph)	126.00
Velocity Pressure Coeff., K_z	1.17
Velocity Pressure, q_z **(w/o Ice)** (psf)	44.87

Ice Load Summary	
Basic Wind Speed w/ Ice, V_i (mph)	50.00
Design Ice Thick. (ASCE 7-16) , t_i (in)	1
Velocity Pressure, q_z **(w/ Ice)** (psf)	7.06
Escalated Ice Thick. @ Mount, t_{iz} (in)	1.19

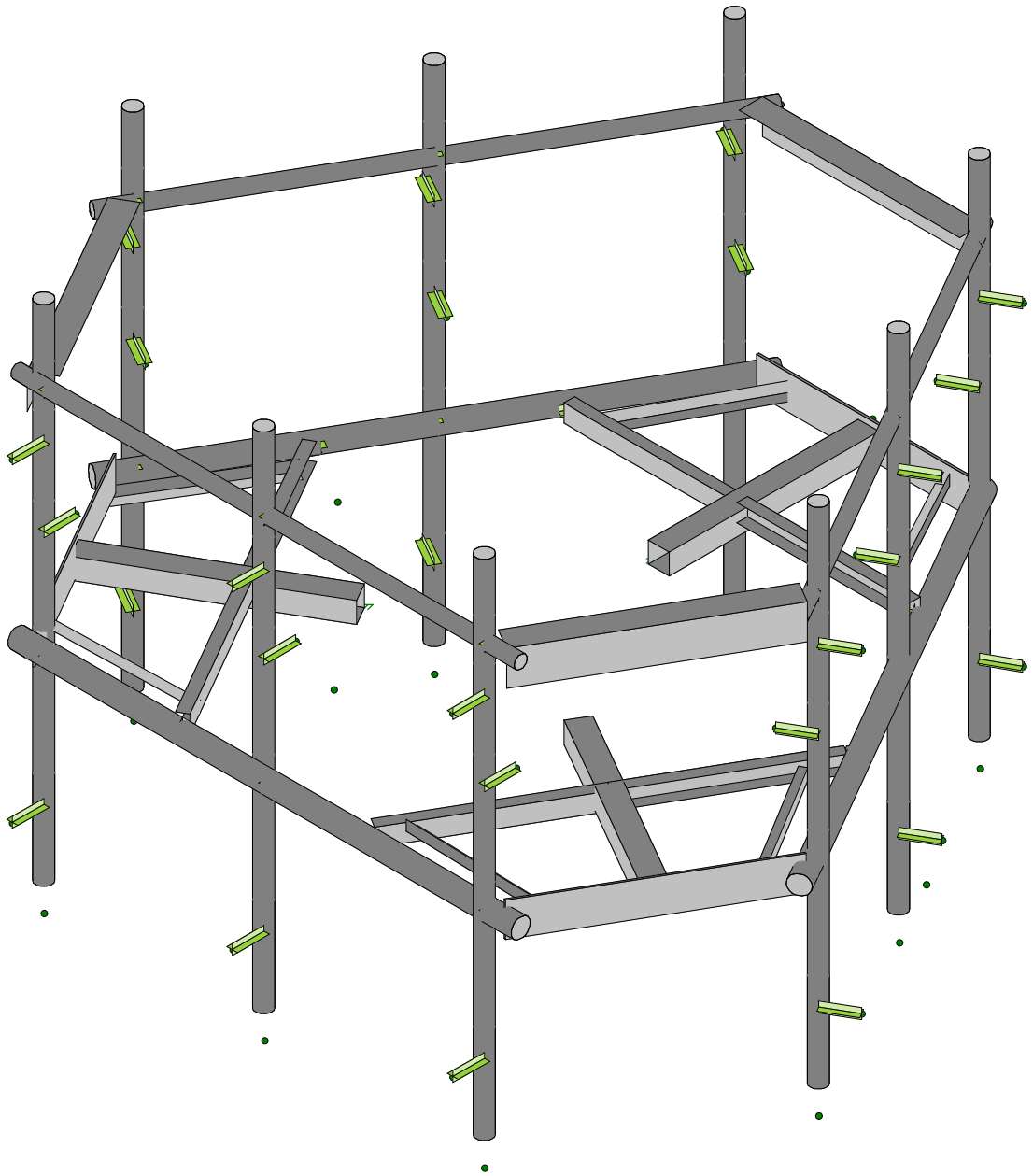
Seismic Load Summary	
Spectral Response (Short Periods), S_s	0.197
Spectral Response (1-Sec. Period), S_1	0.053
Site Class	D
Seismic Design Category	B
Seismic Risk Category	II

Snow Load Summary	
Ground Snow Load, p_g (psf)	-
Snow Load on Flat Roofs, p_f (psf)	-

Kimley»Horn

Date	October 04, 2023
Client	SBA
Site #	CT01002-S
Site Name	Waterford
Project #	KHCLE-48514

Antenna Name	Qty	Shape	Dimensions (in)			Weight (lb)	Joint Labels								EPA (ft²)		Wind Force, F_A (lb)			
																	No Ice		With Ice	
			H	W	D		Alpha		Beta		Gamma		Delta		Front	Side	Front	Side	Front	Side
FFVV-65B-R2	3	Flat	72	19.6	7.8	84.5	A2T	A2B	B2T	B2B	G2T	G2B			12.27	5.75	495.49	232.18	89.43	47.12
RF4450t-71A	3	Flat	16.5	15	11	94.6	A2R		B2R		G2R				0.76	1.03	30.54	41.64	6.69	8.69
RF4451d-70A	3	Flat	15	15	8.9	61.3	A2R		B2R		G2R				0.56	0.94	22.46	37.86	5.19	8
RDIDC-9181-PF-48	1	Flat	16.6	14.6	8.5	21.9	DCU								2.01	1.17	81.24	47.17	17.01	10.87



Envelope Only Solution

CommScope	MC-PK8-C	SK - 2
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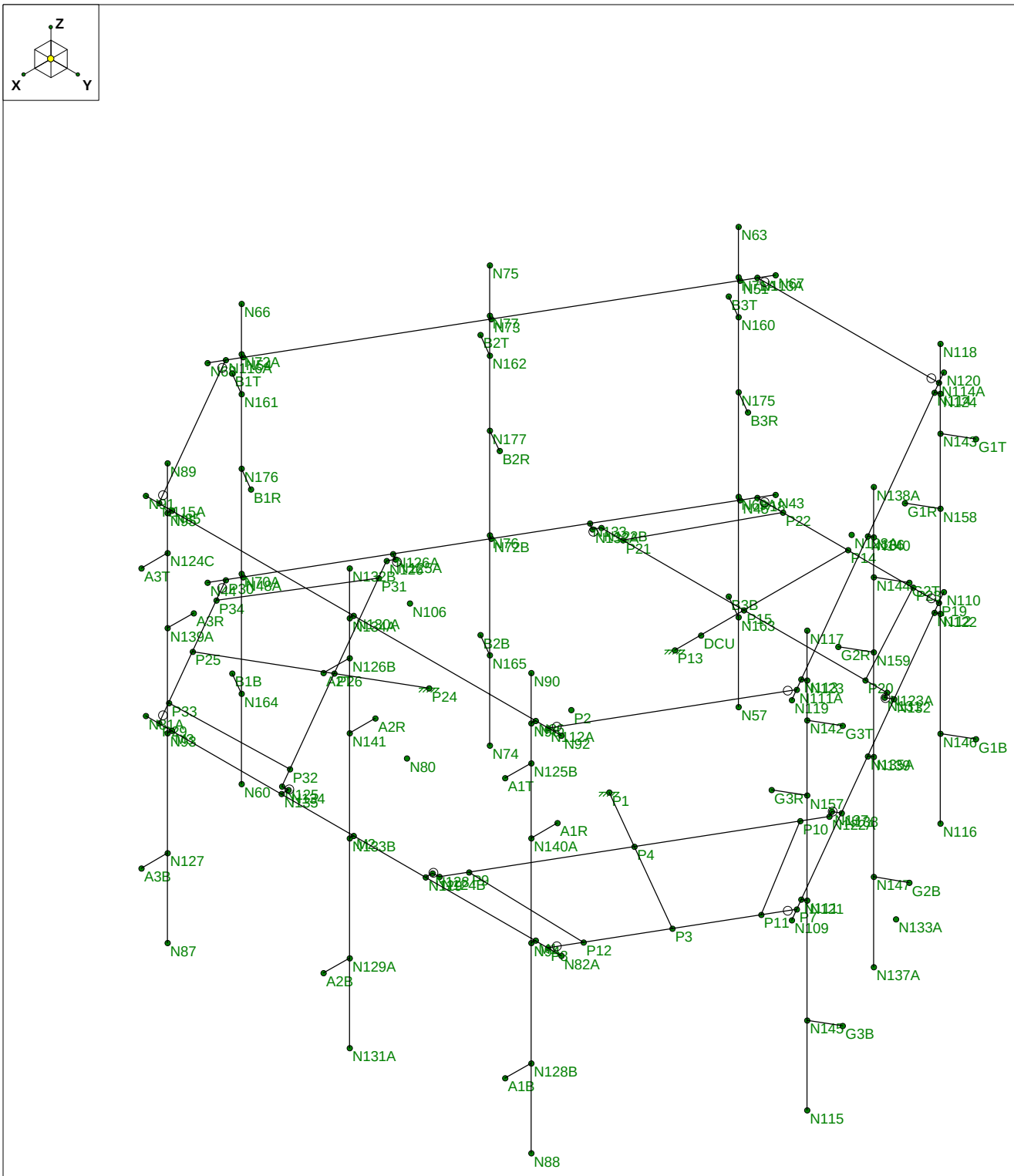

Envelope Only Solution

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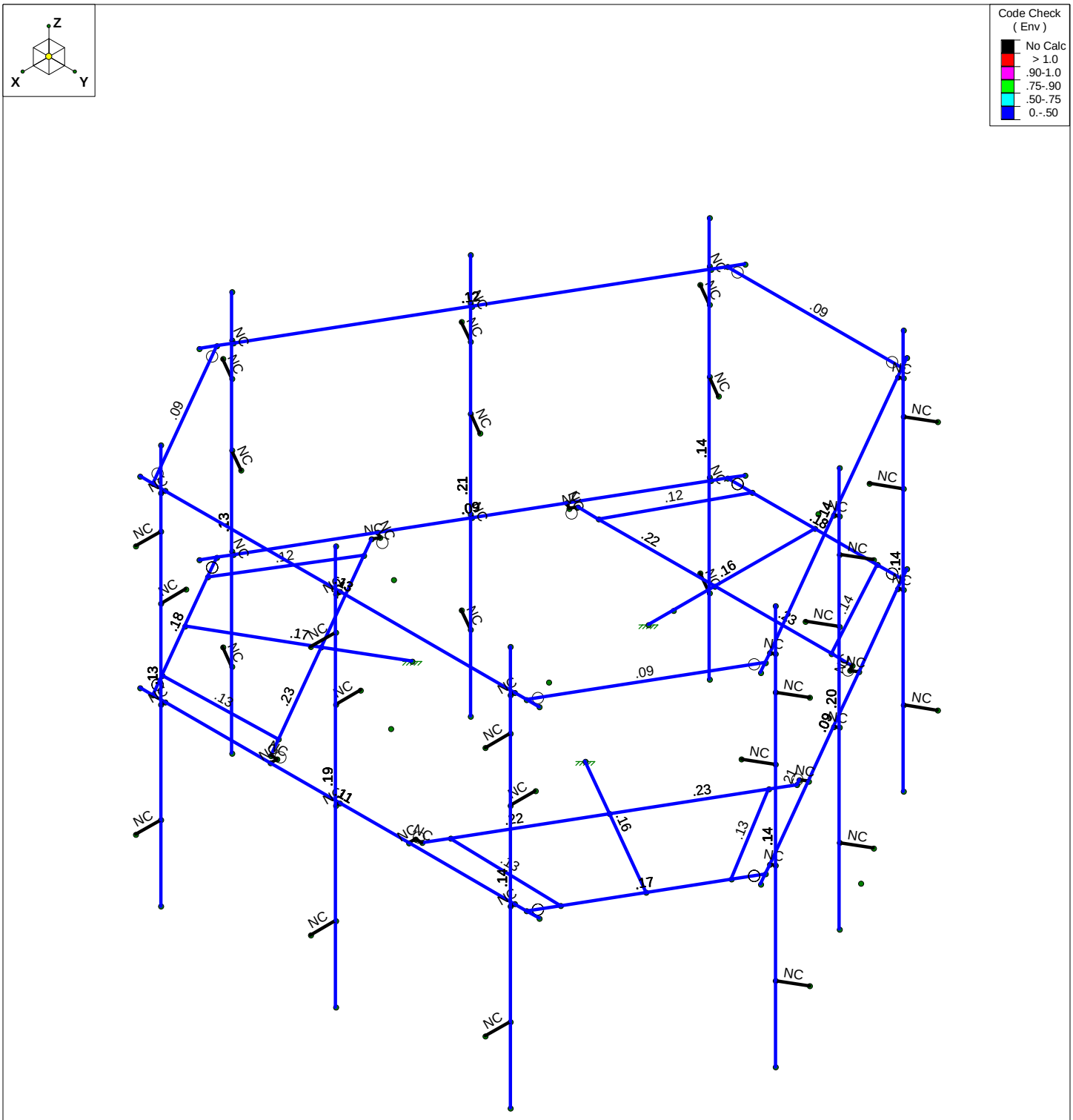
		MC-PK8DSH.r3d



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

CommScope	MC-PK8-C	SK - 3
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Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (\1E...	Density[k/ft...	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A992	29000	11154	.3	.65	.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	.3	.65	.527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	.3	.65	.527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	.3	.65	.49	35	1.6	60	1.2
7	A1085	29000	11154	.3	.65	.49	50	1.4	65	1.3
8	A913 Gr.65	29000	11154	.3	.65	.49	65	1.1	80	1.1
9	A500 GR.C	29000	11154	.3	.65	.49	46	1.6	60	1.2
10	A529 Gr. 50	29000	11154	.3	.65	.49	50	1.1	65	1.1
11	A1011-33Ksi	29000	11154	.3	.65	.49	33	1.5	58	1.2
12	A1011 36 Ksi	29000	11154	.3	.65	.49	36	1.5	58	1.2
13	A1018 50 Ksi	29000	11154	.3	.65	.49	50	1.5	65	1.2

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Ru...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	6.5"x0.37" Plate	PL6.5x0.375	Beam	None	A1011 36 Ksi	Typical	2.438	.029	8.582	.11
2	6"x0.37" Plate	Plate 6x.37	Beam	None	A1011 36 Ksi	Typical	2.22	.025	6.66	.097
3	L 2"x2"x1/4"	L2x2x4	Beam	None	A529 Gr. 50	Typical	.944	.346	.346	.021
4	Face Pipes(3.5x.16)	Pipe3.5x0.165	Beam	None	A500 GR.C	Typical	1.729	2.409	2.409	4.819
5	Antenna Pipes	Pipe 2.875x0.12	Beam	None	A500 GR.C	Typical	1.039	.987	.987	1.975
6	Channel(3.38x2.06)	C3.38x2.06x0....	Beam	None	A1011 36 Ksi	Typical	1.75	.715	3.026	.034
7	Square Tubing	HSS4X4X6	Beam	None	A500 GR.C	Typical	4.78	10.3	10.3	17.5
8	Handrail Connector	L6.6x4.46x0.25	Beam	None	A1011 36 Ksi	Typical	2.703	4.759	12.473	.055
9	Handrail	PIPE_2.0	Beam	None	A500 GR.C	Typical	1.02	.627	.627	1.25

Joint Coordinates and Temperatures

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
1	P1	12.	20.78461	-0.	0	
2	P2	0	0	0	0	
3	P3	32.	55.425626	-0.	0	
4	P4	20.	34.641016	0.	0	
5	P7	13.813467	65.925626	0.	0	
6	P8	50.186533	44.925626	-0.	0	
7	P9	44.248711	20.641016	-0.	0	
8	P10	-4.248711	48.641016	0.	0	
9	P11	19.009619	62.925626	0.	0	
10	P12	44.990381	47.925626	-0.	0	
11	P13	-24	0.	0.	0	
12	P14	-64	-0.	0.	0	
13	P15	-40	0.	0.	0	
14	P18	-64.	-21	0.	0	
15	P19	-64	21	0.	0	
16	P20	-40	28	0.	0	
17	P21	-40	-28	0.	0	
18	P22	-64	-15.	0.	0	
19	P23	-64.	15	0.	0	
20	P24	12	-20.78461	-0.	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
21	P25	32	-55.425626	-0.	0	
22	P26	20	-34.641016	-0.	0	
23	P29	50.186533	-44.925626	-0.	0	
24	P30	13.813467	-65.925626	-0.	0	
25	P31	-4.248711	-48.641016	-0.	0	
26	P32	44.248711	-20.641016	-0.	0	
27	P33	44.990381	-47.925626	-0.	0	
28	P34	19.009619	-62.925626	-0.	0	
29	N43	-66.662486	-19.462813	0.	0	
30	N44	16.475953	-67.462813	-0.	0	
31	N45	-61.466333	-22.462813	0.	0	
32	N48A	11.2798	-64.462813	-0.	0	
33	N51	-61.466333	-22.462813	44	0	
34	N54	11.2798	-64.462813	44	0	
35	N57	-61.966333	-23.328838	-42	0	
36	N60	10.7798	-65.328838	-42	0	
37	N63	-61.966333	-23.328838	54	0	
38	N66	10.7798	-65.328838	54	0	
39	N67	-66.662486	-19.462813	44	0	
40	N68	16.475953	-67.462813	44	0	
41	N111A	13.813467	65.925626	44	0	
42	N112A	50.186533	44.925626	44	0	
43	N113A	-64.	-21	44	0	
44	N114A	-64	21	44	0	
45	N115A	50.186533	-44.925626	44	0	
46	N116A	13.813467	-65.925626	44	0	
47	N69A	-61.966333	-23.328838	0.	0	
48	N70A	10.7798	-65.328838	-0.	0	
49	N71A	-61.966333	-23.328838	44	0	
50	N72A	10.7798	-65.328838	44	0	
51	N122A	-8.578838	51.141016	0.	0	
52	N124B	48.578838	18.141016	-0.	0	
53	N122B	-40.	-33.	0.	0	
54	N123A	-40.	33.	0.	0	
55	N125	48.578838	-18.141016	-0.	0	
56	N126	-8.578838	-51.141016	-0.	0	
57	N125A	-9.877877	-50.391016	-0.	0	
58	N126A	-10.681724	-51.783321	-0.	0	
59	N128	48.578838	16.641016	-0.	0	
60	N129	50.186533	16.641016	-0.	0	
61	N131	-38.700962	33.75	0.	0	
62	N132	-39.504809	35.142305	0.	0	
63	N132A	-38.700962	-33.75	0.	0	
64	N133	-39.504809	-35.142305	0.	0	
65	N134	48.578838	-16.641016	-0.	0	
66	N135	50.186533	-16.641016	-0.	0	
67	N137	-9.877877	50.391016	0.	0	
68	N138	-10.681724	51.783321	0.	0	
69	N72B	-25.093267	-43.462813	0.	0	
70	N73	-25.093267	-43.462813	44	0	
71	N74	-25.593267	-44.328838	-42	0	
72	N75	-25.593267	-44.328838	54	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
73	N76	-25.593267	-44.328838	0.	0	
74	N77	-25.593267	-44.328838	44	0	
75	N80	-13.468911	-51.328838	-42	0	
76	N81A	50.186533	-48.	-0.	0	
77	N82A	50.186533	48.	-0.	0	
78	M3	50.186533	-42.	-0.	0	
79	M1	50.186533	42.	-0.	0	
80	N85	50.186533	-42.	44	0	
81	N86	50.186533	42.	44	0	
82	N87	51.186533	-42.	-42	0	
83	N88	51.186533	42.	-42	0	
84	N89	51.186533	-42.	54	0	
85	N90	51.186533	42.	54	0	
86	N91	50.186533	-48.	44	0	
87	N92	50.186533	48.	44	0	
88	N93	51.186533	-42.	-0.	0	
89	N94	51.186533	42.	-0.	0	
90	N95	51.186533	-42.	44	0	
91	N96	51.186533	42.	44	0	
92	N106	51.186533	14.	54	0	
93	N109	16.475952	67.462813	0.	0	
94	N110	-66.662486	19.462813	0.	0	
95	N111	11.2798	64.462813	0.	0	
96	N112	-61.466334	22.462813	0.	0	
97	N113	11.2798	64.462813	44	0	
98	N114	-61.466334	22.462813	44	0	
99	N115	10.7798	65.328838	-42	0	
100	N116	-61.966334	23.328838	-42	0	
101	N117	10.7798	65.328838	54	0	
102	N118	-61.966334	23.328838	54	0	
103	N119	16.475952	67.462813	44	0	
104	N120	-66.662486	19.462813	44	0	
105	N121	10.7798	65.328838	0.	0	
106	N122	-61.966334	23.328838	0.	0	
107	N123	10.7798	65.328838	44	0	
108	N124	-61.966334	23.328838	44	0	
109	N128A	-13.468911	51.328838	54	0	
110	N133A	-37.717623	37.328838	-42	0	
111	M2	50.186533	0.	-0.	0	
112	N130A	50.186533	0.	44	0	
113	N131A	51.186533	0.	-42	0	
114	N132B	51.186533	0.	54	0	
115	N133B	51.186533	0.	-0.	0	
116	N134A	51.186533	0.	44	0	
117	N135A	-25.093267	43.462813	0.	0	
118	N136	-25.093267	43.462813	44	0	
119	N137A	-25.593267	44.328838	-42	0	
120	N138A	-25.593267	44.328838	54	0	
121	N139	-25.593267	44.328838	0.	0	
122	N140	-25.593267	44.328838	44	0	
123	N124C	51.186533	-42.	36	0	
124	N125B	51.186533	42.	36	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
125	N126B	51.186533	0.	36	0	
126	N127	51.186533	-42.	-24	0	
127	N128B	51.186533	42.	-24	0	
128	N129A	51.186533	0.	-24	0	
129	A3T	57.186533	-42.	36	0	
130	A1T	57.186533	42.	36	0	
131	A2T	57.186533	0.	36	0	
132	A3B	57.186533	-42.	-24	0	
133	A1B	57.186533	42.	-24	0	
134	A2B	57.186533	0.	-24	0	
135	A3R	45.186533	-42.	21	0	
136	A1R	45.186533	42.	21	0	
137	A2R	45.186533	0.	21	0	
138	N139A	51.186533	-42.	21	0	
139	N140A	51.186533	42.	21	0	
140	N141	51.186533	0.	21	0	
141	N142	10.7798	65.328838	36	0	
142	N143	-61.966334	23.328838	36	0	
143	N144	-25.593267	44.328838	36	0	
144	N145	10.7798	65.328838	-24	0	
145	N146	-61.966334	23.328838	-24	0	
146	N147	-25.593267	44.328838	-24	0	
147	G3T	7.7798	70.524991	36	0	
148	G1T	-64.966334	28.524991	36	0	
149	G2T	-28.593267	49.524991	36	0	
150	G3B	7.7798	70.524991	-24	0	
151	G1B	-64.966334	28.524991	-24	0	
152	G2B	-28.593267	49.524991	-24	0	
153	G3R	13.7798	60.132686	21	0	
154	G1R	-58.966334	18.132686	21	0	
155	G2R	-22.593267	39.132686	21	0	
156	N157	10.7798	65.328838	21	0	
157	N158	-61.966334	23.328838	21	0	
158	N159	-25.593267	44.328838	21	0	
159	N160	-61.966333	-23.328838	36	0	
160	N161	10.7798	-65.328838	36	0	
161	N162	-25.593267	-44.328838	36	0	
162	N163	-61.966333	-23.328838	-24	0	
163	N164	10.7798	-65.328838	-24	0	
164	N165	-25.593267	-44.328838	-24	0	
165	B3T	-64.966333	-28.524991	36	0	
166	B1T	7.7798	-70.524991	36	0	
167	B2T	-28.593267	-49.524991	36	0	
168	B3B	-64.966333	-28.524991	-24	0	
169	B1B	7.7798	-70.524991	-24	0	
170	B2B	-28.593267	-49.524991	-24	0	
171	B3R	-58.966333	-18.132686	21	0	
172	B1R	13.7798	-60.132686	21	0	
173	B2R	-22.593267	-39.132686	21	0	
174	N175	-61.966333	-23.328838	21	0	
175	N176	10.7798	-65.328838	21	0	
176	N177	-25.593267	-44.328838	21	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
177	DCU	-30	0	0	0	

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M2	P3	P1			Square Tubing	Beam	None	A500 GR.C	Typical
2	M3	P9	P12		270	L 2"x2"x1/4"	Beam	None	A529 Gr. 50	Typical
3	M4	P10	P11			L 2"x2"x1/4"	Beam	None	A529 Gr. 50	Typical
4	M5	P7	P8			6.5"x0.37" Pla...	Beam	None	A1011 36 Ksi	Typical
5	M7	P14	P13			Square Tubing	Beam	None	A500 GR.C	Typical
6	M8	P20	P23		270	L 2"x2"x1/4"	Beam	None	A529 Gr. 50	Typical
7	M9	P21	P22			L 2"x2"x1/4"	Beam	None	A529 Gr. 50	Typical
8	M10	P18	P19			6.5"x0.37" Pla...	Beam	None	A1011 36 Ksi	Typical
9	M12	P25	P24			Square Tubing	Beam	None	A500 GR.C	Typical
10	M13	P31	P34		270	L 2"x2"x1/4"	Beam	None	A529 Gr. 50	Typical
11	M14	P32	P33			L 2"x2"x1/4"	Beam	None	A529 Gr. 50	Typical
12	M15	P29	P30			6.5"x0.37" Pla...	Beam	None	A1011 36 Ksi	Typical
13	M18	N43	N44			Face Pipes(3....	Beam	None	A500 GR.C	Typical
14	MP9	N60	N66			Antenna Pipes	Beam	None	A500 GR.C	Typical
15	MP7	N57	N63			Antenna Pipes	Beam	None	A500 GR.C	Typical
16	M25	N67	N68			Handrail	Beam	None	A500 GR.C	Typical
17	M28	N114A	N113A		180	Handrail Conn...	Beam	None	A1011 36 Ksi	Typical
18	M29	N112A	N111A		180	Handrail Conn...	Beam	None	A1011 36 Ksi	Typical
19	M30	N116A	N115A		180	Handrail Conn...	Beam	None	A1011 36 Ksi	Typical
20	M32	N48A	N70A			RIGID	None	None	RIGID	Typical
21	M35	N45	N69A			RIGID	None	None	RIGID	Typical
22	M36	N51	N71A			RIGID	None	None	RIGID	Typical
23	M39A	N54	N72A			RIGID	None	None	RIGID	Typical
24	M61A	P4	N122A			Channel(3.38...	Beam	None	A1011 36 Ksi	Typical
25	M63A	P4	N124B			Channel(3.38...	Beam	None	A1011 36 Ksi	Typical
26	M60A	P15	N122B			Channel(3.38...	Beam	None	A1011 36 Ksi	Typical
27	M61B	P15	N123A			Channel(3.38...	Beam	None	A1011 36 Ksi	Typical
28	M62A	P26	N125			Channel(3.38...	Beam	None	A1011 36 Ksi	Typical
29	M63B	P26	N126			Channel(3.38...	Beam	None	A1011 36 Ksi	Typical
30	M64	N126A	N125A			RIGID	None	None	RIGID	Typical
31	M65	N126	N125A			RIGID	None	None	RIGID	Typical
32	M66	N129	N128			RIGID	None	None	RIGID	Typical
33	M67	N124B	N128			RIGID	None	None	RIGID	Typical
34	M68	N132	N131			RIGID	None	None	RIGID	Typical
35	M69	N123A	N131			RIGID	None	None	RIGID	Typical
36	M70	N133	N132A			RIGID	None	None	RIGID	Typical
37	M71	N122B	N132A			RIGID	None	None	RIGID	Typical
38	M72	N135	N134			RIGID	None	None	RIGID	Typical
39	M73	N125	N134			RIGID	None	None	RIGID	Typical
40	M74	N138	N137			RIGID	None	None	RIGID	Typical
41	M75	N122A	N137			PL 2.375x0.5	None	None	A36 Gr.36	Typical
42	MP8	N74	N75			Antenna Pipes	Beam	None	A500 GR.C	Typical
43	M43	N72B	N76			RIGID	None	None	RIGID	Typical
44	M44	N73	N77			RIGID	None	None	RIGID	Typical
45	M48	N81A	N82A			Face Pipes(3....	Beam	None	A500 GR.C	Typical
46	MP3	N88	N90			Antenna Pipes	Beam	None	A500 GR.C	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
47	MP1	N87	N89			Antenna Pipes	Beam	None	A500 GR.C	Typical
48	M51	N91	N92			Handrail	Beam	None	A500 GR.C	Typical
49	M52	M1	N94			RIGID	None	None	RIGID	Typical
50	M53	M3	N93			RIGID	None	None	RIGID	Typical
51	M54	N85	N95			RIGID	None	None	RIGID	Typical
52	M55	N86	N96			RIGID	None	None	RIGID	Typical
53	M62	N109	N110			Face Pipes(3...	Beam	None	A500 GR.C	Typical
54	MP6	N116	N118			Antenna Pipes	Beam	None	A500 GR.C	Typical
55	MP4	N115	N117			Antenna Pipes	Beam	None	A500 GR.C	Typical
56	M65A	N119	N120			Handrail	Beam	None	A500 GR.C	Typical
57	M66A	N112	N122			RIGID	None	None	RIGID	Typical
58	M67A	N111	N121			RIGID	None	None	RIGID	Typical
59	M68A	N113	N123			RIGID	None	None	RIGID	Typical
60	M69A	N114	N124			RIGID	None	None	RIGID	Typical
61	MP2	N131A	N132B			Antenna Pipes	Beam	None	A500 GR.C	Typical
62	M68B	M2	N133B			RIGID	None	None	RIGID	Typical
63	M69B	N130A	N134A			RIGID	None	None	RIGID	Typical
64	MP5	N137A	N138A			Antenna Pipes	Beam	None	A500 GR.C	Typical
65	M71B	N135A	N139			RIGID	None	None	RIGID	Typical
66	M72B	N136	N140			RIGID	None	None	RIGID	Typical
67	M67B	A1B	N128B			RIGID	None	None	RIGID	Typical
68	M68C	A2B	N129A			RIGID	None	None	RIGID	Typical
69	M69C	A3B	N127			RIGID	None	None	RIGID	Typical
70	M70A	A3T	N124C			RIGID	None	None	RIGID	Typical
71	M71A	A2T	N126B			RIGID	None	None	RIGID	Typical
72	M72A	A1T	N125B			RIGID	None	None	RIGID	Typical
73	M73A	N139A	A3R			RIGID	None	None	RIGID	Typical
74	M74A	N141	A2R			RIGID	None	None	RIGID	Typical
75	M75A	N140A	A1R			RIGID	None	None	RIGID	Typical
76	M76	G1B	N146			RIGID	None	None	RIGID	Typical
77	M77	G2B	N147			RIGID	None	None	RIGID	Typical
78	M78	G3B	N145			RIGID	None	None	RIGID	Typical
79	M79	G3T	N142			RIGID	None	None	RIGID	Typical
80	M80	G2T	N144			RIGID	None	None	RIGID	Typical
81	M81	G1T	N143			RIGID	None	None	RIGID	Typical
82	M82	N157	G3R			RIGID	None	None	RIGID	Typical
83	M83	N159	G2R			RIGID	None	None	RIGID	Typical
84	M84	N158	G1R			RIGID	None	None	RIGID	Typical
85	M85	B1B	N164			RIGID	None	None	RIGID	Typical
86	M86	B2B	N165			RIGID	None	None	RIGID	Typical
87	M87	B3B	N163			RIGID	None	None	RIGID	Typical
88	M88	B3T	N160			RIGID	None	None	RIGID	Typical
89	M89	B2T	N162			RIGID	None	None	RIGID	Typical
90	M90	B1T	N161			RIGID	None	None	RIGID	Typical
91	M91	N175	B3R			RIGID	None	None	RIGID	Typical
92	M92	N177	B2R			RIGID	None	None	RIGID	Typical
93	M93	N176	B1R			RIGID	None	None	RIGID	Typical

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(P...
1	Dead	DL			-1	13				
2	Dead of Ice	RL				13		37		
4	Structure Wind (0)	None						74		
5	Structure Wind (30)	None						74		
6	Structure Wind (45)	None						74		
7	Structure Wind (60)	None						74		
8	Structure Wind (90)	None						74		
9	Structure Wind (120)	None						74		
10	Structure Wind (135)	None						74		
11	Structure Wind (150)	None						74		
12	Structure Wind w/ Ice...	None						74		
13	Structure Wind w/ Ice...	None						74		
14	Structure Wind w/ Ice...	None						74		
15	Structure Wind w/ Ice...	None						74		
16	Structure Wind w/ Ice...	None						74		
17	Structure Wind w/ Ice...	None						74		
18	Structure Wind w/ Ice...	None						74		
19	Structure Wind w/ Ice...	None						74		
20	Antenna Wind (0)	None				26				
21	Antenna Wind (30)	None				26				
22	Antenna Wind (45)	None				26				
23	Antenna Wind (60)	None				26				
24	Antenna Wind (90)	None				26				
25	Antenna Wind (120)	None				26				
26	Antenna Wind (135)	None				26				
27	Antenna Wind (150)	None				26				
28	Antenna Wind w/ Ice ...	None				26				
29	Antenna Wind w/ Ice ...	None				26				
30	Antenna Wind w/ Ice ...	None				26				
31	Antenna Wind w/ Ice ...	None				26				
32	Antenna Wind w/ Ice ...	None				26				
33	Antenna Wind w/ Ice ...	None				26				
34	Antenna Wind w/ Ice ...	None				26				
35	Antenna Wind w/ Ice ...	None				26				
36	Seismic X	ELX				13		37		
37	Seismic Y	ELY				13		37		
38	Maintenance Live Lm ...	OL1				1				
39	Maintenance Live Lm ...	OL2				1				
40	Maintenance Live Lm ...	OL3				1				
43	Maintenance Live Lv (...	OL6					1			

Load Combinations

	Description	So...	P...	S...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...
1	Summary: 1.0D + ...	Yes	Y		DL	1	20	1																		
2	1.4D	Yes	Y		DL	1.4																				
3	1.2D + 1.0W(0)	Yes	Y		DL	1.2	4	1	20	1																
4	1.2D + 1.0W(30)	Yes	Y		DL	1.2	5	1	21	1																
5	1.2D + 1.0W(45)	Yes	Y		DL	1.2	6	1	22	1																
6	1.2D + 1.0W(60)	Yes	Y		DL	1.2	7	1	23	1																

Load Combinations (Continued)

	Description	So...	P...	S...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...
7	1.2D + 1.0W(90)	Yes	Y		DL	1.2	8	1	24	1														
8	1.2D + 1.0W(120)	Yes	Y		DL	1.2	9	1	25	1														
9	1.2D + 1.0W(135)	Yes	Y		DL	1.2	10	1	26	1														
10	1.2D + 1.0W(150)	Yes	Y		DL	1.2	11	1	27	1														
11	1.2D + 1.0W(180)	Yes	Y		DL	1.2	4	-1	20	-1														
12	1.2D + 1.0W(210)	Yes	Y		DL	1.2	5	-1	21	-1														
13	1.2D + 1.0W(225)	Yes	Y		DL	1.2	6	-1	22	-1														
14	1.2D + 1.0W(240)	Yes	Y		DL	1.2	7	-1	23	-1														
15	1.2D + 1.0W(270)	Yes	Y		DL	1.2	8	-1	24	-1														
16	1.2D + 1.0W(300)	Yes	Y		DL	1.2	9	-1	25	-1														
17	1.2D + 1.0W(315)	Yes	Y		DL	1.2	10	-1	26	-1														
18	1.2D + 1.0W(330)	Yes	Y		DL	1.2	11	-1	27	-1														
19	1.2D + 1.0Di + 1.0...	Yes	Y		DL	1.2	RL	1	12	1	28	1												
20	1.2D + 1.0Di + 1.0...	Yes	Y		DL	1.2	RL	1	13	1	29	1												
21	1.2D + 1.0Di + 1.0...	Yes	Y		DL	1.2	RL	1	14	1	30	1												
22	1.2D + 1.0Di + 1.0...	Yes	Y		DL	1.2	RL	1	15	1	31	1												
23	1.2D + 1.0Di + 1.0...	Yes	Y		DL	1.2	RL	1	16	1	32	1												
24	1.2D + 1.0Di + 1.0...	Yes	Y		DL	1.2	RL	1	17	1	33	1												
25	1.2D + 1.0Di + 1.0...	Yes	Y		DL	1.2	RL	1	18	1	34	1												
26	1.2D + 1.0Di + 1.0...	Yes	Y		DL	1.2	RL	1	19	1	35	1												
27	1.2D + 1.0Di + 1.0...	Yes	Y		DL	1.2	RL	1	12	-1	28	-1												
28	1.2D + 1.0Di + 1.0...	Yes	Y		DL	1.2	RL	1	13	-1	39	-1												
29	1.2D + 1.0Di + 1.0...	Yes	Y		DL	1.2	RL	1	14	-1	30	-1												
30	1.2D + 1.0Di + 1.0...	Yes	Y		DL	1.2	RL	1	15	-1	31	-1												
31	1.2D + 1.0Di + 1.0...	Yes	Y		DL	1.2	RL	1	16	-1	32	-1												
32	1.2D + 1.0Di + 1.0...	Yes	Y		DL	1.2	RL	1	17	-1	33	-1												
33	1.2D + 1.0Di + 1.0...	Yes	Y		DL	1.2	RL	1	18	-1	34	-1												
34	1.2D + 1.0Di + 1.0...	Yes	Y		DL	1.2	RL	1	19	-1	35	-1												
35	1.2D + 1.0E(0)	Yes	Y		DL	1.2	ELX	-1	ELY															
36	1.2D + 1.0E(30)	Yes	Y		DL	1.2	ELX	-.866	ELY	.5														
37	1.2D + 1.0E(45)	Yes	Y		DL	1.2	ELX	-.707	ELY	.707														
38	1.2D + 1.0E(60)	Yes	Y		DL	1.2	ELX	-.5	ELY	.866														
39	1.2D + 1.0E(90)	Yes	Y		DL	1.2	ELX	-2.2...	ELY	1														
40	1.2D + 1.0E(120)	Yes	Y		DL	1.2	ELX	.5	ELY	.866														
41	1.2D + 1.0E(135)	Yes	Y		DL	1.2	ELX	.707	ELY	.707														
42	1.2D + 1.0E(150)	Yes	Y		DL	1.2	ELX	.866	ELY	.5														
43	1.2D + 1.0E(180)	Yes	Y		DL	1.2	ELX	1	ELY	4.5...														
44	1.2D + 1.0E(210)	Yes	Y		DL	1.2	ELX	.866	ELY	-.5														
45	1.2D + 1.0E(225)	Yes	Y		DL	1.2	ELX	.707	ELY	-.707														
46	1.2D + 1.0E(240)	Yes	Y		DL	1.2	ELX	.5	ELY	-.866														
47	1.2D + 1.0E(270)	Yes	Y		DL	1.2	ELX	6.8...	ELY	-1														
48	1.2D + 1.0E(300)	Yes	Y		DL	1.2	ELX	-.5	ELY	-.866														
49	1.2D + 1.0E(315)	Yes	Y		DL	1.2	ELX	-.707	ELY	-.707														
50	1.2D + 1.0E(330)	Yes	Y		DL	1.2	ELX	-.866	ELY	-.5														
51	0.9D + 1.0E(0)	Yes	Y		DL	.9	ELX	-1	ELY															
52	0.9D + 1.0E(30)	Yes	Y		DL	.9	ELX	-.866	ELY	.5														
53	0.9D + 1.0E(45)	Yes	Y		DL	.9	ELX	-.707	ELY	.707														
54	0.9D + 1.0E(60)	Yes	Y		DL	.9	ELX	-.5	ELY	.866														
55	0.9D + 1.0E(90)	Yes	Y		DL	.9	ELX	-2.2...	ELY	1														
56	0.9D + 1.0E(120)	Yes	Y		DL	.9	ELX	.5	ELY	.866														
57	0.9D + 1.0E(135)	Yes	Y		DL	.9	ELX	.707	ELY	.707														
58	0.9D + 1.0E(150)	Yes	Y		DL	.9	ELX	.866	ELY	.5														

Load Combinations (Continued)

	Description	So...	P...	S...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...
59	0.9D + 1.0E(180)	Yes	Y		DL	.9	ELX	1	ELY	4.5...														
60	0.9D + 1.0E(210)	Yes	Y		DL	.9	ELX	.866	ELY	-.5														
61	0.9D + 1.0E(225)	Yes	Y		DL	.9	ELX	.707	ELY	-.707														
62	0.9D + 1.0E(240)	Yes	Y		DL	.9	ELX	.5	ELY	-.866														
63	0.9D + 1.0E(270)	Yes	Y		DL	.9	ELX	6.8...	ELY	-1														
64	0.9D + 1.0E(300)	Yes	Y		DL	.9	ELX	-.5	ELY	-.866														
65	0.9D + 1.0E(315)	Yes	Y		DL	.9	ELX	-.707	ELY	-.707														
66	0.9D + 1.0E(330)	Yes	Y		DL	.9	ELX	-.866	ELY	-.5														
67	1.2D + 1.5Lm(1) +...	Yes	Y		DL	1.2	4	.057	20	.057	OL1	1.5												
68	1.2D + 1.5Lm(1) +...	Yes	Y		DL	1.2	5	.057	21	.057	OL1	1.5												
69	1.2D + 1.5Lm(1) +...	Yes	Y		DL	1.2	6	.057	22	.057	OL1	1.5												
70	1.2D + 1.5Lm(1) +...	Yes	Y		DL	1.2	7	.057	23	.057	OL1	1.5												
71	1.2D + 1.5Lm(1) +...	Yes	Y		DL	1.2	8	.057	24	.057	OL1	1.5												
72	1.2D + 1.5Lm(1) +...	Yes	Y		DL	1.2	9	.057	25	.057	OL1	1.5												
73	1.2D + 1.5Lm(1) +...	Yes	Y		DL	1.2	10	.057	26	.057	OL1	1.5												
74	1.2D + 1.5Lm(1) +...	Yes	Y		DL	1.2	11	.057	27	.057	OL1	1.5												
75	1.2D + 1.5Lm(1) +...	Yes	Y		DL	1.2	4	-.057	20	-.057	OL1	1.5												
76	1.2D + 1.5Lm(1) +...	Yes	Y		DL	1.2	5	-.057	21	-.057	OL1	1.5												
77	1.2D + 1.5Lm(1) +...	Yes	Y		DL	1.2	6	-.057	22	-.057	OL1	1.5												
78	1.2D + 1.5Lm(1) +...	Yes	Y		DL	1.2	7	-.057	23	-.057	OL1	1.5												
79	1.2D + 1.5Lm(1) +...	Yes	Y		DL	1.2	8	-.057	24	-.057	OL1	1.5												
80	1.2D + 1.5Lm(1) +...	Yes	Y		DL	1.2	9	-.057	25	-.057	OL1	1.5												
81	1.2D + 1.5Lm(1) +...	Yes	Y		DL	1.2	10	-.057	26	-.057	OL1	1.5												
82	1.2D + 1.5Lm(1) +...	Yes	Y		DL	1.2	11	-.057	27	-.057	OL1	1.5												
83	1.2D + 1.5Lm(2) +...	Yes	Y		DL	1.2	4	.057	20	.057	OL2	1.5												
84	1.2D + 1.5Lm(2) +...	Yes	Y		DL	1.2	5	.057	21	.057	OL2	1.5												
85	1.2D + 1.5Lm(2) +...	Yes	Y		DL	1.2	6	.057	22	.057	OL2	1.5												
86	1.2D + 1.5Lm(2) +...	Yes	Y		DL	1.2	7	.057	23	.057	OL2	1.5												
87	1.2D + 1.5Lm(2) +...	Yes	Y		DL	1.2	8	.057	24	.057	OL2	1.5												
88	1.2D + 1.5Lm(2) +...	Yes	Y		DL	1.2	9	.057	25	.057	OL2	1.5												
89	1.2D + 1.5Lm(2) +...	Yes	Y		DL	1.2	10	.057	26	.057	OL2	1.5												
90	1.2D + 1.5Lm(2) +...	Yes	Y		DL	1.2	11	.057	27	.057	OL2	1.5												
91	1.2D + 1.5Lm(2) +...	Yes	Y		DL	1.2	4	-.057	20	-.057	OL2	1.5												
92	1.2D + 1.5Lm(2) +...	Yes	Y		DL	1.2	5	-.057	21	-.057	OL2	1.5												
93	1.2D + 1.5Lm(2) +...	Yes	Y		DL	1.2	6	-.057	22	-.057	OL2	1.5												
94	1.2D + 1.5Lm(2) +...	Yes	Y		DL	1.2	7	-.057	23	-.057	OL2	1.5												
95	1.2D + 1.5Lm(2) +...	Yes	Y		DL	1.2	8	-.057	24	-.057	OL2	1.5												
96	1.2D + 1.5Lm(2) +...	Yes	Y		DL	1.2	9	-.057	25	-.057	OL2	1.5												
97	1.2D + 1.5Lm(2) +...	Yes	Y		DL	1.2	10	-.057	26	-.057	OL2	1.5												
98	1.2D + 1.5Lm(2) +...	Yes	Y		DL	1.2	11	-.057	27	-.057	OL2	1.5												
99	1.2D + 1.5Lm(3) +...	Yes	Y		DL	1.2	4	.057	20	.057	OL3	1.5												
100	1.2D + 1.5Lm(3) +...	Yes	Y		DL	1.2	5	.057	21	.057	OL3	1.5												
101	1.2D + 1.5Lm(3) +...	Yes	Y		DL	1.2	6	.057	22	.057	OL3	1.5												
102	1.2D + 1.5Lm(3) +...	Yes	Y		DL	1.2	7	.057	23	.057	OL3	1.5												
103	1.2D + 1.5Lm(3) +...	Yes	Y		DL	1.2	8	.057	24	.057	OL3	1.5												
104	1.2D + 1.5Lm(3) +...	Yes	Y		DL	1.2	9	.057	25	.057	OL3	1.5												
105	1.2D + 1.5Lm(3) +...	Yes	Y		DL	1.2	10	.057	26	.057	OL3	1.5												
106	1.2D + 1.5Lm(3) +...	Yes	Y		DL	1.2	11	.057	27	.057	OL3	1.5												
107	1.2D + 1.5Lm(3) +...	Yes	Y		DL	1.2	4	-.057	20	-.057	OL3	1.5												
108	1.2D + 1.5Lm(3) +...	Yes	Y		DL	1.2	5	-.057	21	-.057	OL3	1.5												
109	1.2D + 1.5Lm(3) +...	Yes	Y		DL	1.2	6	-.057	22	-.057	OL3	1.5												
110	1.2D + 1.5Lm(3) +...	Yes	Y		DL	1.2	7	-.057	23	-.057	OL3	1.5												

Load Combinations (Continued)

	Description	So...	P...	S...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...
111	1.2D + 1.5Lm(3) +...	Yes	Y		DL	1.2	8	-.057	24	-.057	OL3	1.5														
112	1.2D + 1.5Lm(3) +...	Yes	Y		DL	1.2	9	-.057	25	-.057	OL3	1.5														
113	1.2D + 1.5Lm(3) +...	Yes	Y		DL	1.2	10	-.057	26	-.057	OL3	1.5														
114	1.2D + 1.5Lm(3) +...	Yes	Y		DL	1.2	11	-.057	27	-.057	OL3	1.5														
115	1.2D + 1.5Lv(1) + ...	Yes	Y		DL	1.2	4	.057	20	.057	OL6	1.5														
116	1.2D + 1.5Lv(1) + ...	Yes	Y		DL	1.2	5	.057	21	.057	OL6	1.5														
117	1.2D + 1.5Lv(1) + ...	Yes	Y		DL	1.2	6	.057	22	.057	OL6	1.5														
118	1.2D + 1.5Lv(1) + ...	Yes	Y		DL	1.2	7	.057	23	.057	OL6	1.5														
119	1.2D + 1.5Lv(1) + ...	Yes	Y		DL	1.2	8	.057	24	.057	OL6	1.5														
120	1.2D + 1.5Lv(1) + ...	Yes	Y		DL	1.2	9	.057	25	.057	OL6	1.5														
121	1.2D + 1.5Lv(1) + ...	Yes	Y		DL	1.2	10	.057	26	.057	OL6	1.5														
122	1.2D + 1.5Lv(1) + ...	Yes	Y		DL	1.2	11	.057	27	.057	OL6	1.5														
123	1.2D + 1.5Lv(1) + ...	Yes	Y		DL	1.2	4	-.057	20	-.057	OL6	1.5														
124	1.2D + 1.5Lv(1) + ...	Yes	Y		DL	1.2	5	-.057	21	-.057	OL6	1.5														
125	1.2D + 1.5Lv(1) + ...	Yes	Y		DL	1.2	6	-.057	22	-.057	OL6	1.5														
126	1.2D + 1.5Lv(1) + ...	Yes	Y		DL	1.2	7	-.057	23	-.057	OL6	1.5														
127	1.2D + 1.5Lv(1) + ...	Yes	Y		DL	1.2	8	-.057	24	-.057	OL6	1.5														
128	1.2D + 1.5Lv(1) + ...	Yes	Y		DL	1.2	9	-.057	25	-.057	OL6	1.5														
129	1.2D + 1.5Lv(1) + ...	Yes	Y		DL	1.2	10	-.057	26	-.057	OL6	1.5														
130	1.2D + 1.5Lv(1) + ...	Yes	Y		DL	1.2	11	-.057	27	-.057	OL6	1.5														

Joint Loads and Enforced Displacements (BLC 1 : Dead)

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2...
1	A2T	L	Z	-42.25
2	A2B	L	Z	-42.25
3	B2T	L	Z	-42.25
4	B2B	L	Z	-42.25
5	G2T	L	Z	-42.25
6	G2B	L	Z	-42.25
7	A2R	L	Z	-94.6
8	B2R	L	Z	-94.6
9	G2R	L	Z	-94.6
10	A2R	L	Z	-61.3
11	B2R	L	Z	-61.3
12	G2R	L	Z	-61.3
13	DCU	L	Z	-21.9

Joint Loads and Enforced Displacements (BLC 2 : Dead of Ice)

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2...
1	A2T	L	Z	-88.887
2	A2B	L	Z	-88.887
3	B2T	L	Z	-88.887
4	B2B	L	Z	-88.887
5	G2T	L	Z	-88.887
6	G2B	L	Z	-88.887
7	A2R	L	Z	-51.788
8	B2R	L	Z	-51.788
9	G2R	L	Z	-51.788
10	A2R	L	Z	-43.426
11	B2R	L	Z	-43.426

Joint Loads and Enforced Displacements (BLC 2 : Dead of Ice) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2...
12	G2R	L	Z	-43.426
13	DCU	L	Z	-44.516

Joint Loads and Enforced Displacements (BLC 20 : Antenna Wind (0))

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2...
1	A2T	L	X	-247.747
2	A2T	L	Y	0
3	A2B	L	X	-247.747
4	A2B	L	Y	0
5	B2T	L	X	-149.004
6	B2T	L	Y	0
7	B2B	L	X	-149.004
8	B2B	L	Y	0
9	G2T	L	X	-149.004
10	G2T	L	Y	0
11	G2B	L	X	-149.004
12	G2B	L	Y	0
13	A2R	L	X	-30.537
14	A2R	L	Y	0
15	B2R	L	X	-38.865
16	B2R	L	Y	0
17	G2R	L	X	-38.865
18	G2R	L	Y	0
19	A2R	L	X	-22.461
20	A2R	L	Y	0
21	B2R	L	X	-34.007
22	B2R	L	Y	0
23	G2R	L	X	-34.007
24	G2R	L	Y	0
25	DCU	L	X	-81.237
26	DCU	L	Y	0

Joint Loads and Enforced Displacements (BLC 21 : Antenna Wind (30))

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2...
1	A2T	L	X	-186.05
2	A2T	L	Y	107.416
3	A2B	L	X	-186.05
4	A2B	L	Y	107.416
5	B2T	L	X	-100.536
6	B2T	L	Y	58.045
7	B2B	L	X	-100.536
8	B2B	L	Y	58.045
9	G2T	L	X	-186.05
10	G2T	L	Y	107.416
11	G2B	L	X	-186.05
12	G2B	L	Y	107.416
13	A2R	L	X	-28.85
14	A2R	L	Y	16.656
15	B2R	L	X	-36.062
16	B2R	L	Y	20.82
17	G2R	L	X	-28.85

Joint Loads and Enforced Displacements (BLC 21 : Antenna Wind (30)) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2...
18	G2R	L	Y	16.656
19	A2R	L	X	-22.785
20	A2R	L	Y	13.155
21	B2R	L	X	-32.784
22	B2R	L	Y	18.928
23	G2R	L	X	-22.785
24	G2R	L	Y	13.155
25	DCU	L	X	-62.978
26	DCU	L	Y	36.36

Joint Loads and Enforced Displacements (BLC 22 : Antenna Wind (45))

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2...
1	A2T	L	X	-128.635
2	A2T	L	Y	128.635
3	A2B	L	X	-128.635
4	A2B	L	Y	128.635
5	B2T	L	X	-88.324
6	B2T	L	Y	88.324
7	B2B	L	X	-88.324
8	B2B	L	Y	88.324
9	G2T	L	X	-168.947
10	G2T	L	Y	168.947
11	G2B	L	X	-168.947
12	G2B	L	Y	168.947
13	A2R	L	X	-25.518
14	A2R	L	Y	25.518
15	B2R	L	X	-28.918
16	B2R	L	Y	28.918
17	G2R	L	X	-22.119
18	G2R	L	Y	22.119
19	A2R	L	X	-21.325
20	A2R	L	Y	21.325
21	B2R	L	X	-26.038
22	B2R	L	Y	26.038
23	G2R	L	X	-16.611
24	G2R	L	Y	16.611
25	DCU	L	X	-45.399
26	DCU	L	Y	45.399

Joint Loads and Enforced Displacements (BLC 23 : Antenna Wind (60))

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2...
1	A2T	L	X	-74.502
2	A2T	L	Y	129.041
3	A2B	L	X	-74.502
4	A2B	L	Y	129.041
5	B2T	L	X	-74.502
6	B2T	L	Y	129.041
7	B2B	L	X	-74.502
8	B2B	L	Y	129.041
9	G2T	L	X	-123.873
10	G2T	L	Y	214.555

Joint Loads and Enforced Displacements (BLC 23 : Antenna Wind (60)) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2...
11	G2B	L	X	-123.873
12	G2B	L	Y	214.555
13	A2R	L	X	-19.432
14	A2R	L	Y	33.658
15	B2R	L	X	-19.432
16	B2R	L	Y	33.658
17	G2R	L	X	-15.268
18	G2R	L	Y	26.445
19	A2R	L	X	-17.003
20	A2R	L	Y	29.451
21	B2R	L	X	-17.003
22	B2R	L	Y	29.451
23	G2R	L	X	-11.23
24	G2R	L	Y	19.452
25	DCU	L	X	-27.843
26	DCU	L	Y	48.226

Joint Loads and Enforced Displacements (BLC 24 : Antenna Wind (90))

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2...
1	A2T	L	X	-2.633e-5
2	A2T	L	Y	116.089
3	A2B	L	X	-2.633e-5
4	A2B	L	Y	116.089
5	B2T	L	X	-4.872e-5
6	B2T	L	Y	214.832
7	B2B	L	X	-4.872e-5
8	B2B	L	Y	214.832
9	G2T	L	X	-4.872e-5
10	G2T	L	Y	214.832
11	G2B	L	X	-4.872e-5
12	G2B	L	Y	214.832
13	A2R	L	X	-9.444e-6
14	A2R	L	Y	41.641
15	B2R	L	X	-7.555e-6
16	B2R	L	Y	33.313
17	G2R	L	X	-7.555e-6
18	G2R	L	Y	33.313
19	A2R	L	X	-8.585e-6
20	A2R	L	Y	37.855
21	B2R	L	X	-5.967e-6
22	B2R	L	Y	26.309
23	G2R	L	X	-5.967e-6
24	G2R	L	Y	26.309
25	DCU	L	X	-1.07e-5
26	DCU	L	Y	47.17

Joint Loads and Enforced Displacements (BLC 25 : Antenna Wind (120))

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2...
1	A2T	L	X	74.502
2	A2T	L	Y	129.041
3	A2B	L	X	74.502

Joint Loads and Enforced Displacements (BLC 25 : Antenna Wind (120)) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2...
4	A2B	L	Y	129.041
5	B2T	L	X	123.873
6	B2T	L	Y	214.555
7	B2B	L	X	123.873
8	B2B	L	Y	214.555
9	G2T	L	X	74.502
10	G2T	L	Y	129.041
11	G2B	L	X	74.502
12	G2B	L	Y	129.041
13	A2R	L	X	19.432
14	A2R	L	Y	33.658
15	B2R	L	X	15.268
16	B2R	L	Y	26.445
17	G2R	L	X	19.432
18	G2R	L	Y	33.658
19	A2R	L	X	17.003
20	A2R	L	Y	29.451
21	B2R	L	X	11.23
22	B2R	L	Y	19.452
23	G2R	L	X	17.003
24	G2R	L	Y	29.451
25	DCU	L	X	27.843
26	DCU	L	Y	48.226

Joint Loads and Enforced Displacements (BLC 26 : Antenna Wind (135))

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2...
1	A2T	L	X	128.635
2	A2T	L	Y	128.635
3	A2B	L	X	128.635
4	A2B	L	Y	128.635
5	B2T	L	X	168.947
6	B2T	L	Y	168.947
7	B2B	L	X	168.947
8	B2B	L	Y	168.947
9	G2T	L	X	88.324
10	G2T	L	Y	88.324
11	G2B	L	X	88.324
12	G2B	L	Y	88.324
13	A2R	L	X	25.518
14	A2R	L	Y	25.519
15	B2R	L	X	22.119
16	B2R	L	Y	22.119
17	G2R	L	X	28.918
18	G2R	L	Y	28.918
19	A2R	L	X	21.325
20	A2R	L	Y	21.325
21	B2R	L	X	16.611
22	B2R	L	Y	16.611
23	G2R	L	X	26.038
24	G2R	L	Y	26.038
25	DCU	L	X	45.399

Joint Loads and Enforced Displacements (BLC 26 : Antenna Wind (135)) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2...
26	DCU	L	Y	45.399

Joint Loads and Enforced Displacements (BLC 27 : Antenna Wind (150))

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2...
1	A2T	L	X	186.05
2	A2T	L	Y	107.416
3	A2B	L	X	186.05
4	A2B	L	Y	107.416
5	B2T	L	X	186.05
6	B2T	L	Y	107.416
7	B2B	L	X	186.05
8	B2B	L	Y	107.416
9	G2T	L	X	100.536
10	G2T	L	Y	58.045
11	G2B	L	X	100.536
12	G2B	L	Y	58.045
13	A2R	L	X	28.85
14	A2R	L	Y	16.656
15	B2R	L	X	28.85
16	B2R	L	Y	16.656
17	G2R	L	X	36.062
18	G2R	L	Y	20.82
19	A2R	L	X	22.785
20	A2R	L	Y	13.155
21	B2R	L	X	22.785
22	B2R	L	Y	13.155
23	G2R	L	X	32.784
24	G2R	L	Y	18.928
25	DCU	L	X	62.978
26	DCU	L	Y	36.36

Joint Loads and Enforced Displacements (BLC 28 : Antenna Wind w/ Ice (0))

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2...
1	A2T	L	X	-44.716
2	A2T	L	Y	0
3	A2B	L	X	-44.716
4	A2B	L	Y	0
5	B2T	L	X	-28.849
6	B2T	L	Y	0
7	B2B	L	X	-28.849
8	B2B	L	Y	0
9	G2T	L	X	-28.849
10	G2T	L	Y	0
11	G2B	L	X	-28.849
12	G2B	L	Y	0
13	A2R	L	X	-6.687
14	A2R	L	Y	0
15	B2R	L	X	-8.187
16	B2R	L	Y	0
17	G2R	L	X	-8.187
18	G2R	L	Y	0

Joint Loads and Enforced Displacements (BLC 28 : Antenna Wind w/ Ice (0)) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2...
19	A2R	L	X	-5.189
20	A2R	L	Y	0
21	B2R	L	X	-7.295
22	B2R	L	Y	0
23	G2R	L	X	-7.295
24	G2R	L	Y	0
25	DCU	L	X	-17.008
26	DCU	L	Y	0

Joint Loads and Enforced Displacements (BLC 29 : Antenna Wind w/ Ice (30))

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2...
1	A2T	L	X	-34.145
2	A2T	L	Y	19.714
3	A2B	L	X	-34.145
4	A2B	L	Y	19.714
5	B2T	L	X	-20.404
6	B2T	L	Y	11.78
7	B2B	L	X	-20.404
8	B2B	L	Y	11.78
9	G2T	L	X	-34.145
10	G2T	L	Y	19.714
11	G2B	L	X	-34.145
12	G2B	L	Y	19.714
13	A2R	L	X	-6.224
14	A2R	L	Y	3.594
15	B2R	L	X	-7.524
16	B2R	L	Y	4.344
17	G2R	L	X	-6.224
18	G2R	L	Y	3.594
19	A2R	L	X	-5.102
20	A2R	L	Y	2.946
21	B2R	L	X	-6.926
22	B2R	L	Y	3.998
23	G2R	L	X	-5.102
24	G2R	L	Y	2.946
25	DCU	L	X	-13.401
26	DCU	L	Y	7.737

Joint Loads and Enforced Displacements (BLC 30 : Antenna Wind w/ Ice (45))

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2...
1	A2T	L	X	-24.139
2	A2T	L	Y	24.139
3	A2B	L	X	-24.139
4	A2B	L	Y	24.139
5	B2T	L	X	-17.662
6	B2T	L	Y	17.662
7	B2B	L	X	-17.662
8	B2B	L	Y	17.662
9	G2T	L	X	-30.617
10	G2T	L	Y	30.617
11	G2B	L	X	-30.617

Joint Loads and Enforced Displacements (BLC 30 : Antenna Wind w/ Ice (45)) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2...
12	G2B	L	Y	30.617
13	A2R	L	X	-5.436
14	A2R	L	Y	5.436
15	B2R	L	X	-6.048
16	B2R	L	Y	6.048
17	G2R	L	X	-4.823
18	G2R	L	Y	4.823
19	A2R	L	X	-4.662
20	A2R	L	Y	4.662
21	B2R	L	X	-5.522
22	B2R	L	Y	5.522
23	G2R	L	X	-3.802
24	G2R	L	Y	3.802
25	DCU	L	X	-9.858
26	DCU	L	Y	9.858

Joint Loads and Enforced Displacements (BLC 31 : Antenna Wind w/ Ice (60))

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2...
1	A2T	L	X	-14.425
2	A2T	L	Y	24.984
3	A2B	L	X	-14.425
4	A2B	L	Y	24.984
5	B2T	L	X	-14.425
6	B2T	L	Y	24.984
7	B2B	L	X	-14.425
8	B2B	L	Y	24.984
9	G2T	L	X	-22.358
10	G2T	L	Y	38.725
11	G2B	L	X	-22.358
12	G2B	L	Y	38.725
13	A2R	L	X	-4.094
14	A2R	L	Y	7.09
15	B2R	L	X	-4.094
16	B2R	L	Y	7.09
17	G2R	L	X	-3.344
18	G2R	L	Y	5.791
19	A2R	L	X	-3.648
20	A2R	L	Y	6.318
21	B2R	L	X	-3.648
22	B2R	L	Y	6.318
23	G2R	L	X	-2.595
24	G2R	L	Y	4.494
25	DCU	L	X	-6.204
26	DCU	L	Y	10.746

Joint Loads and Enforced Displacements (BLC 32 : Antenna Wind w/ Ice (90))

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2...
1	A2T	L	X	-5.343e-6
2	A2T	L	Y	23.56
3	A2B	L	X	-5.343e-6
4	A2B	L	Y	23.56

Joint Loads and Enforced Displacements (BLC 32 : Antenna Wind w/ Ice (90)) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2...
5	B2T	L	X	-8.942e-6
6	B2T	L	Y	39.427
7	B2B	L	X	-8.942e-6
8	B2B	L	Y	39.427
9	G2T	L	X	-8.942e-6
10	G2T	L	Y	39.427
11	G2B	L	X	-8.942e-6
12	G2B	L	Y	39.427
13	A2R	L	X	-1.97e-6
14	A2R	L	Y	8.687
15	B2R	L	X	-1.63e-6
16	B2R	L	Y	7.187
17	G2R	L	X	-1.63e-6
18	G2R	L	Y	7.187
19	A2R	L	X	-1.814e-6
20	A2R	L	Y	7.997
21	B2R	L	X	-1.336e-6
22	B2R	L	Y	5.891
23	G2R	L	X	-1.336e-6
24	G2R	L	Y	5.891
25	DCU	L	X	-2.466e-6
26	DCU	L	Y	10.875

Joint Loads and Enforced Displacements (BLC 33 : Antenna Wind w/ Ice (120))

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2...
1	A2T	L	X	14.425
2	A2T	L	Y	24.984
3	A2B	L	X	14.425
4	A2B	L	Y	24.984
5	B2T	L	X	22.358
6	B2T	L	Y	38.725
7	B2B	L	X	22.358
8	B2B	L	Y	38.725
9	G2T	L	X	14.425
10	G2T	L	Y	24.984
11	G2B	L	X	14.425
12	G2B	L	Y	24.984
13	A2R	L	X	4.094
14	A2R	L	Y	7.09
15	B2R	L	X	3.344
16	B2R	L	Y	5.791
17	G2R	L	X	4.094
18	G2R	L	Y	7.09
19	A2R	L	X	3.648
20	A2R	L	Y	6.318
21	B2R	L	X	2.595
22	B2R	L	Y	4.494
23	G2R	L	X	3.648
24	G2R	L	Y	6.318
25	DCU	L	X	6.204
26	DCU	L	Y	10.746

Joint Loads and Enforced Displacements (BLC 34 : Antenna Wind w/ Ice (135))

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2...
1	A2T	L	X	24.139
2	A2T	L	Y	24.139
3	A2B	L	X	24.139
4	A2B	L	Y	24.139
5	B2T	L	X	30.617
6	B2T	L	Y	30.617
7	B2B	L	X	30.617
8	B2B	L	Y	30.617
9	G2T	L	X	17.662
10	G2T	L	Y	17.662
11	G2B	L	X	17.662
12	G2B	L	Y	17.662
13	A2R	L	X	5.436
14	A2R	L	Y	5.436
15	B2R	L	X	4.823
16	B2R	L	Y	4.823
17	G2R	L	X	6.048
18	G2R	L	Y	6.048
19	A2R	L	X	4.662
20	A2R	L	Y	4.662
21	B2R	L	X	3.802
22	B2R	L	Y	3.802
23	G2R	L	X	5.522
24	G2R	L	Y	5.522
25	DCU	L	X	9.858
26	DCU	L	Y	9.858

Joint Loads and Enforced Displacements (BLC 35 : Antenna Wind w/ Ice (150))

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2...
1	A2T	L	X	34.145
2	A2T	L	Y	19.714
3	A2B	L	X	34.145
4	A2B	L	Y	19.714
5	B2T	L	X	34.145
6	B2T	L	Y	19.714
7	B2B	L	X	34.145
8	B2B	L	Y	19.714
9	G2T	L	X	20.404
10	G2T	L	Y	11.78
11	G2B	L	X	20.404
12	G2B	L	Y	11.78
13	A2R	L	X	6.224
14	A2R	L	Y	3.594
15	B2R	L	X	6.224
16	B2R	L	Y	3.594
17	G2R	L	X	7.524
18	G2R	L	Y	4.344
19	A2R	L	X	5.102
20	A2R	L	Y	2.946
21	B2R	L	X	5.102
22	B2R	L	Y	2.946

Joint Loads and Enforced Displacements (BLC 35 : Antenna Wind w/ Ice (150)) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2...
23	G2R	L	X	6.926
24	G2R	L	Y	3.998
25	DCU	L	X	13.401
26	DCU	L	Y	7.737

Joint Loads and Enforced Displacements (BLC 36 : Seismic X)

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2...
1	A2T	L	X	4.439
2	A2B	L	X	4.439
3	B2T	L	X	4.439
4	B2B	L	X	4.439
5	G2T	L	X	4.439
6	G2B	L	X	4.439
7	A2R	L	X	9.939
8	B2R	L	X	9.939
9	G2R	L	X	9.939
10	A2R	L	X	6.441
11	B2R	L	X	6.441
12	G2R	L	X	6.441
13	DCU	L	X	2.301

Joint Loads and Enforced Displacements (BLC 37 : Seismic Y)

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2...
1	A2T	L	Y	4.439
2	A2B	L	Y	4.439
3	B2T	L	Y	4.439
4	B2B	L	Y	4.439
5	G2T	L	Y	4.439
6	G2B	L	Y	4.439
7	A2R	L	Y	9.939
8	B2R	L	Y	9.939
9	G2R	L	Y	9.939
10	A2R	L	Y	6.441
11	B2R	L	Y	6.441
12	G2R	L	Y	6.441
13	DCU	L	Y	2.301

Joint Loads and Enforced Displacements (BLC 38 : Maintenance Live Lm (1))

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2...
1	M1	L	Z	-500

Joint Loads and Enforced Displacements (BLC 39 : Maintenance Live Lm (2))

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2...
1	M2	L	Z	-500

Joint Loads and Enforced Displacements (BLC 40 : Maintenance Live Lm (3))

	Joint Label	L,D,M	Direction	Magnitude[(lb,k-ft), (in,rad), (lb*s^2...
1	M3	L	Z	-500

Member Point Loads (BLC 43 : Maintenance Live Lv (1))

	Member Label	Direction	Magnitude[lb,k-ft]	Location[in,%]
1	M48	Z	-250	%50

Member Distributed Loads (BLC 2 : Dead of Ice)

	Member Label	Direction	Start Magnitude[lb/ft,F,p..	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
1	M2	Z	-9.106	-9.106	0	0
2	M3	Z	-5.296	-5.296	0	0
3	M4	Z	-5.296	-5.296	0	0
4	M5	Z	-8.067	-8.067	0	0
5	M7	Z	-9.106	-9.106	0	0
6	M8	Z	-5.296	-5.296	0	0
7	M9	Z	-5.296	-5.296	0	0
8	M10	Z	-8.067	-8.067	0	0
9	M12	Z	-9.106	-9.106	0	0
10	M13	Z	-5.296	-5.296	0	0
11	M14	Z	-5.296	-5.296	0	0
12	M15	Z	-8.067	-8.067	0	0
13	M18	Z	-6.796	-6.796	0	0
14	MP9	Z	-5.89	-5.89	0	0
15	MP7	Z	-5.89	-5.89	0	0
16	M25	Z	-5.165	-5.165	0	0
17	M28	Z	-11.813	-11.813	0	0
18	M29	Z	-11.813	-11.813	0	0
19	M30	Z	-11.813	-11.813	0	0
20	M61A	Z	-8.178	-8.178	0	0
21	M63A	Z	-8.178	-8.178	0	0
22	M60A	Z	-8.178	-8.178	0	0
23	M61B	Z	-8.178	-8.178	0	0
24	M62A	Z	-8.178	-8.178	0	0
25	M63B	Z	-8.178	-8.178	0	0
26	M75	Z	-4.375	-4.375	0	0
27	MP8	Z	-5.89	-5.89	0	0
28	M48	Z	-6.796	-6.796	0	0
29	MP3	Z	-5.89	-5.89	0	0
30	MP1	Z	-5.89	-5.89	0	0
31	M51	Z	-5.165	-5.165	0	0
32	M62	Z	-6.796	-6.796	0	0
33	MP6	Z	-5.89	-5.89	0	0
34	MP4	Z	-5.89	-5.89	0	0
35	M65A	Z	-5.165	-5.165	0	0
36	MP2	Z	-5.89	-5.89	0	0
37	MP5	Z	-5.89	-5.89	0	0

Member Distributed Loads (BLC 4 : Structure Wind (0))

	Member Label	Direction	Start Magnitude[lb/ft,F,p..	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
1	M2	X	-20.189	-20.189	0	0
2	M2	Y	0	0	0	0
3	M3	X	-13.45	-13.45	0	0
4	M3	Y	0	0	0	0
5	M4	X	-3.686	-3.686	0	0

Member Distributed Loads (BLC 4 : Structure Wind (0)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,p..	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
6	M4	Y	0	0	0	0
7	M5	X	-10.936	-10.936	0	0
8	M5	Y	0	0	0	0
9	M7	X	-2.489e-25	-2.489e-25	0	0
10	M7	Y	0	0	0	0
11	M8	X	-3.053	-3.053	0	0
12	M8	Y	0	0	0	0
13	M9	X	-3.053	-3.053	0	0
14	M9	Y	0	0	0	0
15	M10	X	-43.744	-43.744	0	0
16	M10	Y	0	0	0	0
17	M12	X	-20.189	-20.189	0	0
18	M12	Y	0	0	0	0
19	M13	X	-3.686	-3.686	0	0
20	M13	Y	0	0	0	0
21	M14	X	-13.45	-13.45	0	0
22	M14	Y	0	0	0	0
23	M15	X	-10.936	-10.936	0	0
24	M15	Y	0	0	0	0
25	M18	X	-3.533	-3.533	0	0
26	M18	Y	0	0	0	0
27	MP9	X	-11.609	-11.609	0	0
28	MP9	Y	0	0	0	0
29	MP7	X	-11.609	-11.609	0	0
30	MP7	Y	0	0	0	0
31	M25	X	-2.397	-2.397	0	0
32	M25	Y	0	0	0	0
33	M28	X	-44.417	-44.417	0	0
34	M28	Y	0	0	0	0
35	M29	X	-11.104	-11.104	0	0
36	M29	Y	0	0	0	0
37	M30	X	-11.104	-11.104	0	0
38	M30	Y	0	0	0	0
39	M61A	X	-5.687	-5.687	0	0
40	M61A	Y	0	0	0	0
41	M63A	X	-5.687	-5.687	0	0
42	M63A	Y	0	0	0	0
43	M60A	X	-22.747	-22.747	0	0
44	M60A	Y	0	0	0	0
45	M61B	X	-22.747	-22.747	0	0
46	M61B	Y	0	0	0	0
47	M62A	X	-5.687	-5.687	0	0
48	M62A	Y	0	0	0	0
49	M63B	X	-5.687	-5.687	0	0
50	M63B	Y	0	0	0	0
51	M75	X	-3.996	-3.996	0	0
52	M75	Y	0	0	0	0
53	MP8	X	-11.609	-11.609	0	0
54	MP8	Y	0	0	0	0
55	M48	X	-14.133	-14.133	0	0
56	M48	Y	0	0	0	0
57	MP3	X	-11.609	-11.609	0	0

Member Distributed Loads (BLC 4 : Structure Wind (0)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,p..	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
58	MP3	Y	0	0	0	0
59	MP1	X	-11.609	-11.609	0	0
60	MP1	Y	0	0	0	0
61	M51	X	-9.59	-9.59	0	0
62	M51	Y	0	0	0	0
63	M62	X	-3.533	-3.533	0	0
64	M62	Y	0	0	0	0
65	MP6	X	-11.609	-11.609	0	0
66	MP6	Y	0	0	0	0
67	MP4	X	-11.609	-11.609	0	0
68	MP4	Y	0	0	0	0
69	M65A	X	-2.397	-2.397	0	0
70	M65A	Y	0	0	0	0
71	MP2	X	-11.609	-11.609	0	0
72	MP2	Y	0	0	0	0
73	MP5	X	-11.609	-11.609	0	0
74	MP5	Y	0	0	0	0

Member Distributed Loads (BLC 5 : Structure Wind (30))

	Member Label	Direction	Start Magnitude[lb/ft,F,p..	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
1	M2	X	-23.313	-23.313	0	0
2	M2	Y	13.46	13.46	0	0
3	M3	X	-9.012	-9.012	0	0
4	M3	Y	5.203	5.203	0	0
5	M4	X	-9.012	-9.012	0	0
6	M4	Y	5.203	5.203	0	0
7	M5	X	-2.868e-13	-2.868e-13	0	0
8	M5	Y	1.656e-13	1.656e-13	0	0
9	M7	X	-5.828	-5.828	0	0
10	M7	Y	3.365	3.365	0	0
11	M8	X	-8.464	-8.464	0	0
12	M8	Y	4.887	4.887	0	0
13	M9	X	-.009	-.009	0	0
14	M9	Y	.005	.005	0	0
15	M10	X	-28.412	-28.412	0	0
16	M10	Y	16.404	16.404	0	0
17	M12	X	-5.828	-5.828	0	0
18	M12	Y	3.365	3.365	0	0
19	M13	X	-.009	-.009	0	0
20	M13	Y	.005	.005	0	0
21	M14	X	-8.464	-8.464	0	0
22	M14	Y	4.887	4.887	0	0
23	M15	X	-28.412	-28.412	0	0
24	M15	Y	16.404	16.404	0	0
25	M18	X	-6.995e-14	-6.995e-14	0	0
26	M18	Y	4.038e-14	4.038e-14	0	0
27	MP9	X	-10.054	-10.054	0	0
28	MP9	Y	5.804	5.804	0	0
29	MP7	X	-10.054	-10.054	0	0
30	MP7	Y	5.804	5.804	0	0
31	M25	X	-4.746e-14	-4.746e-14	0	0

Member Distributed Loads (BLC 5 : Structure Wind (30)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,p..	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
32	M25	Y	2.74e-14	2.74e-14	0	0
33	M28	X	-28.85	-28.85	0	0
34	M28	Y	16.656	16.656	0	0
35	M29	X	-2.912e-13	-2.912e-13	0	0
36	M29	Y	1.682e-13	1.682e-13	0	0
37	M30	X	-28.85	-28.85	0	0
38	M30	Y	16.656	16.656	0	0
39	M61A	X	-1.095e-13	-1.095e-13	0	0
40	M61A	Y	6.322e-14	6.322e-14	0	0
41	M63A	X	-1.159e-13	-1.159e-13	0	0
42	M63A	Y	6.693e-14	6.693e-14	0	0
43	M60A	X	-14.774	-14.774	0	0
44	M60A	Y	8.53	8.53	0	0
45	M61B	X	-14.774	-14.774	0	0
46	M61B	Y	8.53	8.53	0	0
47	M62A	X	-14.774	-14.774	0	0
48	M62A	Y	8.53	8.53	0	0
49	M63B	X	-14.774	-14.774	0	0
50	M63B	Y	8.53	8.53	0	0
51	M75	X	-10.381	-10.381	0	0
52	M75	Y	5.994	5.994	0	0
53	MP8	X	-10.054	-10.054	0	0
54	MP8	Y	5.804	5.804	0	0
55	M48	X	-9.179	-9.179	0	0
56	M48	Y	5.3	5.3	0	0
57	MP3	X	-10.054	-10.054	0	0
58	MP3	Y	5.804	5.804	0	0
59	MP1	X	-10.054	-10.054	0	0
60	MP1	Y	5.804	5.804	0	0
61	M51	X	-6.229	-6.229	0	0
62	M51	Y	3.596	3.596	0	0
63	M62	X	-9.179	-9.179	0	0
64	M62	Y	5.3	5.3	0	0
65	MP6	X	-10.054	-10.054	0	0
66	MP6	Y	5.804	5.804	0	0
67	MP4	X	-10.054	-10.054	0	0
68	MP4	Y	5.804	5.804	0	0
69	M65A	X	-6.229	-6.229	0	0
70	M65A	Y	3.596	3.596	0	0
71	MP2	X	-10.054	-10.054	0	0
72	MP2	Y	5.804	5.804	0	0
73	MP5	X	-10.054	-10.054	0	0
74	MP5	Y	5.804	5.804	0	0

Member Distributed Loads (BLC 6 : Structure Wind (45))

	Member Label	Direction	Start Magnitude[lb/ft,F,p..	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
1	M2	X	-17.76	-17.76	0	0
2	M2	Y	17.76	17.76	0	0
3	M3	X	-5.017	-5.017	0	0
4	M3	Y	5.017	5.017	0	0
5	M4	X	-9.003	-9.003	0	0

Member Distributed Loads (BLC 6 : Structure Wind (45)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,p..	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
6	M4	Y	9.003	9.003	0	0
7	M5	X	-2.072	-2.072	0	0
8	M5	Y	2.072	2.072	0	0
9	M7	X	-9.517	-9.517	0	0
10	M7	Y	9.517	9.517	0	0
11	M8	X	-8.744	-8.744	0	0
12	M8	Y	8.744	8.744	0	0
13	M9	X	-.773	-.773	0	0
14	M9	Y	.773	.773	0	0
15	M10	X	-15.466	-15.466	0	0
16	M10	Y	15.466	15.466	0	0
17	M12	X	-1.275	-1.275	0	0
18	M12	Y	1.275	1.275	0	0
19	M13	X	-.514	-.514	0	0
20	M13	Y	.514	.514	0	0
21	M14	X	-4.5	-4.5	0	0
22	M14	Y	4.5	4.5	0	0
23	M15	X	-28.859	-28.859	0	0
24	M15	Y	28.859	28.859	0	0
25	M18	X	-.669	-.669	0	0
26	M18	Y	.669	.669	0	0
27	MP9	X	-8.209	-8.209	0	0
28	MP9	Y	8.209	8.209	0	0
29	MP7	X	-8.209	-8.209	0	0
30	MP7	Y	8.209	8.209	0	0
31	M25	X	-.454	-.454	0	0
32	M25	Y	.454	.454	0	0
33	M28	X	-15.704	-15.704	0	0
34	M28	Y	15.704	15.704	0	0
35	M29	X	-2.104	-2.104	0	0
36	M29	Y	2.104	2.104	0	0
37	M30	X	-29.303	-29.303	0	0
38	M30	Y	29.303	29.303	0	0
39	M61A	X	-1.077	-1.077	0	0
40	M61A	Y	1.077	1.077	0	0
41	M63A	X	-1.077	-1.077	0	0
42	M63A	Y	1.077	1.077	0	0
43	M60A	X	-8.042	-8.042	0	0
44	M60A	Y	8.042	8.042	0	0
45	M61B	X	-8.042	-8.042	0	0
46	M61B	Y	8.042	8.042	0	0
47	M62A	X	-15.007	-15.007	0	0
48	M62A	Y	15.007	15.007	0	0
49	M63B	X	-15.007	-15.007	0	0
50	M63B	Y	15.007	15.007	0	0
51	M75	X	-10.545	-10.545	0	0
52	M75	Y	10.545	10.545	0	0
53	MP8	X	-8.209	-8.209	0	0
54	MP8	Y	8.209	8.209	0	0
55	M48	X	-4.997	-4.997	0	0
56	M48	Y	4.997	4.997	0	0
57	MP3	X	-8.209	-8.209	0	0

Member Distributed Loads (BLC 6 : Structure Wind (45)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,p..	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
58	MP3	Y	8.209	8.209	0	0
59	MP1	X	-8.209	-8.209	0	0
60	MP1	Y	8.209	8.209	0	0
61	M51	X	-3.391	-3.391	0	0
62	M51	Y	3.391	3.391	0	0
63	M62	X	-9.324	-9.324	0	0
64	M62	Y	9.324	9.324	0	0
65	MP6	X	-8.209	-8.209	0	0
66	MP6	Y	8.209	8.209	0	0
67	MP4	X	-8.209	-8.209	0	0
68	MP4	Y	8.209	8.209	0	0
69	M65A	X	-6.327	-6.327	0	0
70	M65A	Y	6.327	6.327	0	0
71	MP2	X	-8.209	-8.209	0	0
72	MP2	Y	8.209	8.209	0	0
73	MP5	X	-8.209	-8.209	0	0
74	MP5	Y	8.209	8.209	0	0

Member Distributed Loads (BLC 7 : Structure Wind (60))

	Member Label	Direction	Start Magnitude[lb/ft,F,p..	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
1	M2	X	-10.095	-10.095	0	0
2	M2	Y	17.485	17.485	0	0
3	M3	X	-1.843	-1.843	0	0
4	M3	Y	3.193	3.193	0	0
5	M4	X	-6.725	-6.725	0	0
6	M4	Y	11.648	11.648	0	0
7	M5	X	-5.468	-5.468	0	0
8	M5	Y	9.471	9.471	0	0
9	M7	X	-10.095	-10.095	0	0
10	M7	Y	17.485	17.485	0	0
11	M8	X	-6.725	-6.725	0	0
12	M8	Y	11.648	11.648	0	0
13	M9	X	-1.843	-1.843	0	0
14	M9	Y	3.193	3.193	0	0
15	M10	X	-5.468	-5.468	0	0
16	M10	Y	9.471	9.471	0	0
17	M12	X	-3e-13	-3e-13	0	0
18	M12	Y	5.197e-13	5.197e-13	0	0
19	M13	X	-1.527	-1.527	0	0
20	M13	Y	2.644	2.644	0	0
21	M14	X	-1.527	-1.527	0	0
22	M14	Y	2.644	2.644	0	0
23	M15	X	-21.872	-21.872	0	0
24	M15	Y	37.883	37.883	0	0
25	M18	X	-1.767	-1.767	0	0
26	M18	Y	3.06	3.06	0	0
27	MP9	X	-5.804	-5.804	0	0
28	MP9	Y	10.054	10.054	0	0
29	MP7	X	-5.804	-5.804	0	0
30	MP7	Y	10.054	10.054	0	0
31	M25	X	-1.199	-1.199	0	0

Member Distributed Loads (BLC 7 : Structure Wind (60)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,p..	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
32	M25	Y	2.076	2.076	0	0
33	M28	X	-5.552	-5.552	0	0
34	M28	Y	9.617	9.617	0	0
35	M29	X	-5.552	-5.552	0	0
36	M29	Y	9.616	9.616	0	0
37	M30	X	-22.208	-22.208	0	0
38	M30	Y	38.466	38.466	0	0
39	M61A	X	-2.843	-2.843	0	0
40	M61A	Y	4.925	4.925	0	0
41	M63A	X	-2.843	-2.843	0	0
42	M63A	Y	4.925	4.925	0	0
43	M60A	X	-2.843	-2.843	0	0
44	M60A	Y	4.925	4.925	0	0
45	M61B	X	-2.843	-2.843	0	0
46	M61B	Y	4.925	4.925	0	0
47	M62A	X	-11.373	-11.373	0	0
48	M62A	Y	19.699	19.699	0	0
49	M63B	X	-11.373	-11.373	0	0
50	M63B	Y	19.699	19.699	0	0
51	M75	X	-7.992	-7.992	0	0
52	M75	Y	13.842	13.842	0	0
53	MP8	X	-5.804	-5.804	0	0
54	MP8	Y	10.054	10.054	0	0
55	M48	X	-1.767	-1.767	0	0
56	M48	Y	3.06	3.06	0	0
57	MP3	X	-5.804	-5.804	0	0
58	MP3	Y	10.054	10.054	0	0
59	MP1	X	-5.804	-5.804	0	0
60	MP1	Y	10.054	10.054	0	0
61	M51	X	-1.199	-1.199	0	0
62	M51	Y	2.076	2.076	0	0
63	M62	X	-7.066	-7.066	0	0
64	M62	Y	12.239	12.239	0	0
65	MP6	X	-5.804	-5.804	0	0
66	MP6	Y	10.054	10.054	0	0
67	MP4	X	-5.804	-5.804	0	0
68	MP4	Y	10.054	10.054	0	0
69	M65A	X	-4.795	-4.795	0	0
70	M65A	Y	8.305	8.305	0	0
71	MP2	X	-5.804	-5.804	0	0
72	MP2	Y	10.054	10.054	0	0
73	MP5	X	-5.804	-5.804	0	0
74	MP5	Y	10.054	10.054	0	0

Member Distributed Loads (BLC 8 : Structure Wind (90))

	Member Label	Direction	Start Magnitude[lb/ft,F,p..	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
1	M2	X	-1.526e-6	-1.526e-6	0	0
2	M2	Y	6.73	6.73	0	0
3	M3	X	-2.254e-9	-2.254e-9	0	0
4	M3	Y	.01	.01	0	0
5	M4	X	-2.216e-6	-2.216e-6	0	0

Member Distributed Loads (BLC 8 : Structure Wind (90)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,p..	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
6	M4	Y	9.773	9.773	0	0
7	M5	X	-7.441e-6	-7.441e-6	0	0
8	M5	Y	32.808	32.808	0	0
9	M7	X	-6.105e-6	-6.105e-6	0	0
10	M7	Y	26.919	26.919	0	0
11	M8	X	-2.36e-6	-2.36e-6	0	0
12	M8	Y	10.406	10.406	0	0
13	M9	X	-2.36e-6	-2.36e-6	0	0
14	M9	Y	10.406	10.406	0	0
15	M10	X	-5.103e-19	-5.103e-19	0	0
16	M10	Y	2.25e-12	2.25e-12	0	0
17	M12	X	-1.526e-6	-1.526e-6	0	0
18	M12	Y	6.73	6.73	0	0
19	M13	X	-2.216e-6	-2.216e-6	0	0
20	M13	Y	9.773	9.773	0	0
21	M14	X	-2.254e-9	-2.254e-9	0	0
22	M14	Y	.01	.01	0	0
23	M15	X	-7.441e-6	-7.441e-6	0	0
24	M15	Y	32.808	32.808	0	0
25	M18	X	-2.404e-6	-2.404e-6	0	0
26	M18	Y	10.599	10.599	0	0
27	MP9	X	-2.633e-6	-2.633e-6	0	0
28	MP9	Y	11.609	11.609	0	0
29	MP7	X	-2.633e-6	-2.633e-6	0	0
30	MP7	Y	11.609	11.609	0	0
31	M25	X	-1.631e-6	-1.631e-6	0	0
32	M25	Y	7.192	7.192	0	0
33	M28	X	-5.181e-19	-5.181e-19	0	0
34	M28	Y	2.285e-12	2.285e-12	0	0
35	M29	X	-7.555e-6	-7.555e-6	0	0
36	M29	Y	33.313	33.313	0	0
37	M30	X	-7.555e-6	-7.555e-6	0	0
38	M30	Y	33.313	33.313	0	0
39	M61A	X	-3.869e-6	-3.869e-6	0	0
40	M61A	Y	17.06	17.06	0	0
41	M63A	X	-3.869e-6	-3.869e-6	0	0
42	M63A	Y	17.06	17.06	0	0
43	M60A	X	-2.537e-19	-2.537e-19	0	0
44	M60A	Y	1.118e-12	1.118e-12	0	0
45	M61B	X	-2.773e-19	-2.773e-19	0	0
46	M61B	Y	1.223e-12	1.223e-12	0	0
47	M62A	X	-3.869e-6	-3.869e-6	0	0
48	M62A	Y	17.06	17.06	0	0
49	M63B	X	-3.869e-6	-3.869e-6	0	0
50	M63B	Y	17.06	17.06	0	0
51	M75	X	-2.719e-6	-2.719e-6	0	0
52	M75	Y	11.987	11.987	0	0
53	MP8	X	-2.633e-6	-2.633e-6	0	0
54	MP8	Y	11.609	11.609	0	0
55	M48	X	-1.649e-19	-1.649e-19	0	0
56	M48	Y	7.269e-13	7.269e-13	0	0
57	MP3	X	-2.633e-6	-2.633e-6	0	0

Member Distributed Loads (BLC 8 : Structure Wind (90)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,p..	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
58	MP3	Y	11.609	11.609	0	0
59	MP1	X	-2.633e-6	-2.633e-6	0	0
60	MP1	Y	11.609	11.609	0	0
61	M51	X	-1.119e-19	-1.119e-19	0	0
62	M51	Y	4.933e-13	4.933e-13	0	0
63	M62	X	-2.404e-6	-2.404e-6	0	0
64	M62	Y	10.599	10.599	0	0
65	MP6	X	-2.633e-6	-2.633e-6	0	0
66	MP6	Y	11.609	11.609	0	0
67	MP4	X	-2.633e-6	-2.633e-6	0	0
68	MP4	Y	11.609	11.609	0	0
69	M65A	X	-1.631e-6	-1.631e-6	0	0
70	M65A	Y	7.192	7.192	0	0
71	MP2	X	-2.633e-6	-2.633e-6	0	0
72	MP2	Y	11.609	11.609	0	0
73	MP5	X	-2.633e-6	-2.633e-6	0	0
74	MP5	Y	11.609	11.609	0	0

Member Distributed Loads (BLC 9 : Structure Wind (120))

	Member Label	Direction	Start Magnitude[lb/ft,F,p..	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
1	M2	X	1.231e-12	1.231e-12	0	0
2	M2	Y	2.132e-12	2.132e-12	0	0
3	M3	X	1.527	1.527	0	0
4	M3	Y	2.644	2.644	0	0
5	M4	X	1.527	1.527	0	0
6	M4	Y	2.644	2.644	0	0
7	M5	X	21.872	21.872	0	0
8	M5	Y	37.883	37.883	0	0
9	M7	X	10.095	10.095	0	0
10	M7	Y	17.485	17.485	0	0
11	M8	X	1.843	1.843	0	0
12	M8	Y	3.193	3.193	0	0
13	M9	X	6.725	6.725	0	0
14	M9	Y	11.648	11.648	0	0
15	M10	X	5.468	5.468	0	0
16	M10	Y	9.471	9.471	0	0
17	M12	X	10.095	10.095	0	0
18	M12	Y	17.485	17.485	0	0
19	M13	X	6.725	6.725	0	0
20	M13	Y	11.648	11.648	0	0
21	M14	X	1.843	1.843	0	0
22	M14	Y	3.193	3.193	0	0
23	M15	X	5.468	5.468	0	0
24	M15	Y	9.471	9.471	0	0
25	M18	X	7.066	7.066	0	0
26	M18	Y	12.239	12.239	0	0
27	MP9	X	5.804	5.804	0	0
28	MP9	Y	10.054	10.054	0	0
29	MP7	X	5.804	5.804	0	0
30	MP7	Y	10.054	10.054	0	0
31	M25	X	4.795	4.795	0	0

Member Distributed Loads (BLC 9 : Structure Wind (120)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,p..	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
32	M25	Y	8.305	8.305	0	0
33	M28	X	5.552	5.552	0	0
34	M28	Y	9.616	9.616	0	0
35	M29	X	22.208	22.208	0	0
36	M29	Y	38.466	38.466	0	0
37	M30	X	5.552	5.552	0	0
38	M30	Y	9.617	9.617	0	0
39	M61A	X	11.373	11.373	0	0
40	M61A	Y	19.699	19.699	0	0
41	M63A	X	11.373	11.373	0	0
42	M63A	Y	19.699	19.699	0	0
43	M60A	X	2.843	2.843	0	0
44	M60A	Y	4.925	4.925	0	0
45	M61B	X	2.843	2.843	0	0
46	M61B	Y	4.925	4.925	0	0
47	M62A	X	2.843	2.843	0	0
48	M62A	Y	4.925	4.925	0	0
49	M63B	X	2.843	2.843	0	0
50	M63B	Y	4.925	4.925	0	0
51	M75	X	1.998	1.998	0	0
52	M75	Y	3.46	3.46	0	0
53	MP8	X	5.804	5.804	0	0
54	MP8	Y	10.054	10.054	0	0
55	M48	X	1.767	1.767	0	0
56	M48	Y	3.06	3.06	0	0
57	MP3	X	5.804	5.804	0	0
58	MP3	Y	10.054	10.054	0	0
59	MP1	X	5.804	5.804	0	0
60	MP1	Y	10.054	10.054	0	0
61	M51	X	1.199	1.199	0	0
62	M51	Y	2.076	2.076	0	0
63	M62	X	1.767	1.767	0	0
64	M62	Y	3.06	3.06	0	0
65	MP6	X	5.804	5.804	0	0
66	MP6	Y	10.054	10.054	0	0
67	MP4	X	5.804	5.804	0	0
68	MP4	Y	10.054	10.054	0	0
69	M65A	X	1.199	1.199	0	0
70	M65A	Y	2.076	2.076	0	0
71	MP2	X	5.804	5.804	0	0
72	MP2	Y	10.054	10.054	0	0
73	MP5	X	5.804	5.804	0	0
74	MP5	Y	10.054	10.054	0	0

Member Distributed Loads (BLC 10 : Structure Wind (135))

	Member Label	Direction	Start Magnitude[lb/ft,F,p..	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
1	M2	X	1.275	1.275	0	0
2	M2	Y	1.275	1.275	0	0
3	M3	X	4.5	4.5	0	0
4	M3	Y	4.5	4.5	0	0
5	M4	X	.514	.514	0	0

Member Distributed Loads (BLC 10 : Structure Wind (135)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,p..	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
6	M4	Y	.514	.514	0	0
7	M5	X	28.859	28.859	0	0
8	M5	Y	28.86	28.86	0	0
9	M7	X	9.517	9.517	0	0
10	M7	Y	9.517	9.517	0	0
11	M8	X	.773	.773	0	0
12	M8	Y	.773	.773	0	0
13	M9	X	8.744	8.744	0	0
14	M9	Y	8.745	8.745	0	0
15	M10	X	15.466	15.466	0	0
16	M10	Y	15.466	15.466	0	0
17	M12	X	17.76	17.76	0	0
18	M12	Y	17.76	17.76	0	0
19	M13	X	9.003	9.003	0	0
20	M13	Y	9.003	9.003	0	0
21	M14	X	5.017	5.017	0	0
22	M14	Y	5.017	5.017	0	0
23	M15	X	2.072	2.072	0	0
24	M15	Y	2.072	2.072	0	0
25	M18	X	9.324	9.324	0	0
26	M18	Y	9.324	9.324	0	0
27	MP9	X	8.209	8.209	0	0
28	MP9	Y	8.209	8.209	0	0
29	MP7	X	8.209	8.209	0	0
30	MP7	Y	8.209	8.209	0	0
31	M25	X	6.327	6.327	0	0
32	M25	Y	6.327	6.327	0	0
33	M28	X	15.704	15.704	0	0
34	M28	Y	15.704	15.704	0	0
35	M29	X	29.303	29.303	0	0
36	M29	Y	29.303	29.303	0	0
37	M30	X	2.104	2.104	0	0
38	M30	Y	2.104	2.104	0	0
39	M61A	X	15.007	15.007	0	0
40	M61A	Y	15.007	15.007	0	0
41	M63A	X	15.007	15.007	0	0
42	M63A	Y	15.007	15.007	0	0
43	M60A	X	8.042	8.042	0	0
44	M60A	Y	8.042	8.042	0	0
45	M61B	X	8.042	8.042	0	0
46	M61B	Y	8.042	8.042	0	0
47	M62A	X	1.077	1.077	0	0
48	M62A	Y	1.077	1.077	0	0
49	M63B	X	1.077	1.077	0	0
50	M63B	Y	1.077	1.077	0	0
51	M75	X	.757	.757	0	0
52	M75	Y	.757	.757	0	0
53	MP8	X	8.209	8.209	0	0
54	MP8	Y	8.209	8.209	0	0
55	M48	X	4.997	4.997	0	0
56	M48	Y	4.997	4.997	0	0
57	MP3	X	8.209	8.209	0	0

Member Distributed Loads (BLC 10 : Structure Wind (135)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,p..	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
58	MP3	Y	8.209	8.209	0	0
59	MP1	X	8.209	8.209	0	0
60	MP1	Y	8.209	8.209	0	0
61	M51	X	3.391	3.391	0	0
62	M51	Y	3.391	3.391	0	0
63	M62	X	.669	.669	0	0
64	M62	Y	.669	.669	0	0
65	MP6	X	8.209	8.209	0	0
66	MP6	Y	8.209	8.209	0	0
67	MP4	X	8.209	8.209	0	0
68	MP4	Y	8.209	8.209	0	0
69	M65A	X	.454	.454	0	0
70	M65A	Y	.454	.454	0	0
71	MP2	X	8.209	8.209	0	0
72	MP2	Y	8.209	8.209	0	0
73	MP5	X	8.209	8.209	0	0
74	MP5	Y	8.209	8.209	0	0

Member Distributed Loads (BLC 11 : Structure Wind (150))

	Member Label	Direction	Start Magnitude[lb/ft,F,p..	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
1	M2	X	5.828	5.828	0	0
2	M2	Y	3.365	3.365	0	0
3	M3	X	8.464	8.464	0	0
4	M3	Y	4.887	4.887	0	0
5	M4	X	.009	.009	0	0
6	M4	Y	.005	.005	0	0
7	M5	X	28.412	28.412	0	0
8	M5	Y	16.404	16.404	0	0
9	M7	X	5.828	5.828	0	0
10	M7	Y	3.365	3.365	0	0
11	M8	X	.009	.009	0	0
12	M8	Y	.005	.005	0	0
13	M9	X	8.464	8.464	0	0
14	M9	Y	4.887	4.887	0	0
15	M10	X	28.412	28.412	0	0
16	M10	Y	16.404	16.404	0	0
17	M12	X	23.313	23.313	0	0
18	M12	Y	13.46	13.46	0	0
19	M13	X	9.012	9.012	0	0
20	M13	Y	5.203	5.203	0	0
21	M14	X	9.012	9.012	0	0
22	M14	Y	5.203	5.203	0	0
23	M15	X	5.091e-12	5.091e-12	0	0
24	M15	Y	2.939e-12	2.939e-12	0	0
25	M18	X	9.179	9.179	0	0
26	M18	Y	5.3	5.3	0	0
27	MP9	X	10.054	10.054	0	0
28	MP9	Y	5.804	5.804	0	0
29	MP7	X	10.054	10.054	0	0
30	MP7	Y	5.804	5.804	0	0
31	M25	X	6.229	6.229	0	0

Member Distributed Loads (BLC 11 : Structure Wind (150)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,p..	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
32	M25	Y	3.596	3.596	0	0
33	M28	X	28.849	28.849	0	0
34	M28	Y	16.656	16.656	0	0
35	M29	X	28.85	28.85	0	0
36	M29	Y	16.656	16.656	0	0
37	M30	X	5.169e-12	5.169e-12	0	0
38	M30	Y	2.984e-12	2.984e-12	0	0
39	M61A	X	14.774	14.774	0	0
40	M61A	Y	8.53	8.53	0	0
41	M63A	X	14.774	14.774	0	0
42	M63A	Y	8.53	8.53	0	0
43	M60A	X	14.774	14.774	0	0
44	M60A	Y	8.53	8.53	0	0
45	M61B	X	14.774	14.774	0	0
46	M61B	Y	8.53	8.53	0	0
47	M62A	X	2.799e-12	2.799e-12	0	0
48	M62A	Y	1.616e-12	1.616e-12	0	0
49	M63B	X	2.831e-12	2.831e-12	0	0
50	M63B	Y	1.634e-12	1.634e-12	0	0
51	M75	X	1.978e-12	1.978e-12	0	0
52	M75	Y	1.142e-12	1.142e-12	0	0
53	MP8	X	10.054	10.054	0	0
54	MP8	Y	5.804	5.804	0	0
55	M48	X	9.179	9.179	0	0
56	M48	Y	5.3	5.3	0	0
57	MP3	X	10.054	10.054	0	0
58	MP3	Y	5.804	5.804	0	0
59	MP1	X	10.054	10.054	0	0
60	MP1	Y	5.804	5.804	0	0
61	M51	X	6.229	6.229	0	0
62	M51	Y	3.596	3.596	0	0
63	M62	X	1.749e-12	1.749e-12	0	0
64	M62	Y	1.01e-12	1.01e-12	0	0
65	MP6	X	10.054	10.054	0	0
66	MP6	Y	5.804	5.804	0	0
67	MP4	X	10.054	10.054	0	0
68	MP4	Y	5.804	5.804	0	0
69	M65A	X	1.187e-12	1.187e-12	0	0
70	M65A	Y	6.851e-13	6.851e-13	0	0
71	MP2	X	10.054	10.054	0	0
72	MP2	Y	5.804	5.804	0	0
73	MP5	X	10.054	10.054	0	0
74	MP5	Y	5.804	5.804	0	0

Member Distributed Loads (BLC 12 : Structure Wind w/ Ice (0))

	Member Label	Direction	Start Magnitude[lb/ft,F,p..	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
1	M2	X	-1.397	-1.397	0	0
2	M2	Y	0	0	0	0
3	M3	X	-1.685	-1.685	0	0
4	M3	Y	0	0	0	0
5	M4	X	-.462	-.462	0	0

Member Distributed Loads (BLC 12 : Structure Wind w/ Ice (0)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,p..	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
6	M4	Y	0	0	0	0
7	M5	X	-1.412	-1.412	0	0
8	M5	Y	0	0	0	0
9	M7	X	-1.72e-26	-1.72e-26	0	0
10	M7	Y	0	0	0	0
11	M8	X	-.382	-.382	0	0
12	M8	Y	0	0	0	0
13	M9	X	-.382	-.382	0	0
14	M9	Y	0	0	0	0
15	M10	X	-5.649	-5.649	0	0
16	M10	Y	0	0	0	0
17	M12	X	-1.397	-1.397	0	0
18	M12	Y	0	0	0	0
19	M13	X	-.462	-.462	0	0
20	M13	Y	0	0	0	0
21	M14	X	-1.685	-1.685	0	0
22	M14	Y	0	0	0	0
23	M15	X	-1.412	-1.412	0	0
24	M15	Y	0	0	0	0
25	M18	X	-.934	-.934	0	0
26	M18	Y	0	0	0	0
27	MP9	X	-3.337	-3.337	0	0
28	MP9	Y	0	0	0	0
29	MP7	X	-3.337	-3.337	0	0
30	MP7	Y	0	0	0	0
31	M25	X	-.755	-.755	0	0
32	M25	Y	0	0	0	0
33	M28	X	-2.092	-2.092	0	0
34	M28	Y	0	0	0	0
35	M29	X	-.523	-.523	0	0
36	M29	Y	0	0	0	0
37	M30	X	-.523	-.523	0	0
38	M30	Y	0	0	0	0
39	M61A	X	-.452	-.452	0	0
40	M61A	Y	0	0	0	0
41	M63A	X	-.452	-.452	0	0
42	M63A	Y	0	0	0	0
43	M60A	X	-1.808	-1.808	0	0
44	M60A	Y	0	0	0	0
45	M61B	X	-1.808	-1.808	0	0
46	M61B	Y	0	0	0	0
47	M62A	X	-.452	-.452	0	0
48	M62A	Y	0	0	0	0
49	M63B	X	-.452	-.452	0	0
50	M63B	Y	0	0	0	0
51	M75	X	-.763	-.763	0	0
52	M75	Y	0	0	0	0
53	MP8	X	-3.337	-3.337	0	0
54	MP8	Y	0	0	0	0
55	M48	X	-3.735	-3.735	0	0
56	M48	Y	0	0	0	0
57	MP3	X	-3.337	-3.337	0	0

Member Distributed Loads (BLC 12 : Structure Wind w/ Ice (0)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,p..	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
58	MP3	Y	0	0	0	0
59	MP1	X	-3.337	-3.337	0	0
60	MP1	Y	0	0	0	0
61	M51	X	-3.019	-3.019	0	0
62	M51	Y	0	0	0	0
63	M62	X	-.934	-.934	0	0
64	M62	Y	0	0	0	0
65	MP6	X	-3.337	-3.337	0	0
66	MP6	Y	0	0	0	0
67	MP4	X	-3.337	-3.337	0	0
68	MP4	Y	0	0	0	0
69	M65A	X	-.755	-.755	0	0
70	M65A	Y	0	0	0	0
71	MP2	X	-3.337	-3.337	0	0
72	MP2	Y	0	0	0	0
73	MP5	X	-3.337	-3.337	0	0
74	MP5	Y	0	0	0	0

Member Distributed Loads (BLC 13 : Structure Wind w/ Ice (30))

	Member Label	Direction	Start Magnitude[lb/ft,F,p..	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
1	M2	X	-1.613	-1.613	0	0
2	M2	Y	.931	.931	0	0
3	M3	X	-1.129	-1.129	0	0
4	M3	Y	.652	.652	0	0
5	M4	X	-1.129	-1.129	0	0
6	M4	Y	.652	.652	0	0
7	M5	X	-3.704e-14	-3.704e-14	0	0
8	M5	Y	2.139e-14	2.139e-14	0	0
9	M7	X	-.403	-.403	0	0
10	M7	Y	.233	.233	0	0
11	M8	X	-1.06	-1.06	0	0
12	M8	Y	.612	.612	0	0
13	M9	X	-.001	-.001	0	0
14	M9	Y	.0006224	.0006224	0	0
15	M10	X	-3.669	-3.669	0	0
16	M10	Y	2.118	2.118	0	0
17	M12	X	-.403	-.403	0	0
18	M12	Y	.233	.233	0	0
19	M13	X	-.001	-.001	0	0
20	M13	Y	.0006224	.0006224	0	0
21	M14	X	-1.06	-1.06	0	0
22	M14	Y	.612	.612	0	0
23	M15	X	-3.669	-3.669	0	0
24	M15	Y	2.118	2.118	0	0
25	M18	X	-1.848e-14	-1.848e-14	0	0
26	M18	Y	1.067e-14	1.067e-14	0	0
27	MP9	X	-2.89	-2.89	0	0
28	MP9	Y	1.669	1.669	0	0
29	MP7	X	-2.89	-2.89	0	0
30	MP7	Y	1.669	1.669	0	0
31	M25	X	-1.494e-14	-1.494e-14	0	0

Member Distributed Loads (BLC 13 : Structure Wind w/ Ice (30)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,p..	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
32	M25	Y	8.628e-15	8.628e-15	0	0
33	M28	X	-1.359	-1.359	0	0
34	M28	Y	.785	.785	0	0
35	M29	X	-1.372e-14	-1.372e-14	0	0
36	M29	Y	7.92e-15	7.92e-15	0	0
37	M30	X	-1.359	-1.359	0	0
38	M30	Y	.785	.785	0	0
39	M61A	X	-8.703e-15	-8.703e-15	0	0
40	M61A	Y	5.024e-15	5.024e-15	0	0
41	M63A	X	-9.213e-15	-9.213e-15	0	0
42	M63A	Y	5.319e-15	5.319e-15	0	0
43	M60A	X	-1.174	-1.174	0	0
44	M60A	Y	.678	.678	0	0
45	M61B	X	-1.174	-1.174	0	0
46	M61B	Y	.678	.678	0	0
47	M62A	X	-1.174	-1.174	0	0
48	M62A	Y	.678	.678	0	0
49	M63B	X	-1.174	-1.174	0	0
50	M63B	Y	.678	.678	0	0
51	M75	X	-1.983	-1.983	0	0
52	M75	Y	1.145	1.145	0	0
53	MP8	X	-2.89	-2.89	0	0
54	MP8	Y	1.669	1.669	0	0
55	M48	X	-2.426	-2.426	0	0
56	M48	Y	1.401	1.401	0	0
57	MP3	X	-2.89	-2.89	0	0
58	MP3	Y	1.669	1.669	0	0
59	MP1	X	-2.89	-2.89	0	0
60	MP1	Y	1.669	1.669	0	0
61	M51	X	-1.961	-1.961	0	0
62	M51	Y	1.132	1.132	0	0
63	M62	X	-2.426	-2.426	0	0
64	M62	Y	1.401	1.401	0	0
65	MP6	X	-2.89	-2.89	0	0
66	MP6	Y	1.669	1.669	0	0
67	MP4	X	-2.89	-2.89	0	0
68	MP4	Y	1.669	1.669	0	0
69	M65A	X	-1.961	-1.961	0	0
70	M65A	Y	1.132	1.132	0	0
71	MP2	X	-2.89	-2.89	0	0
72	MP2	Y	1.669	1.669	0	0
73	MP5	X	-2.89	-2.89	0	0
74	MP5	Y	1.669	1.669	0	0

Member Distributed Loads (BLC 14 : Structure Wind w/ Ice (45))

	Member Label	Direction	Start Magnitude[lb/ft,F,p..	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
1	M2	X	-1.229	-1.229	0	0
2	M2	Y	1.229	1.229	0	0
3	M3	X	-.628	-.628	0	0
4	M3	Y	.628	.628	0	0
5	M4	X	-1.128	-1.128	0	0

Member Distributed Loads (BLC 14 : Structure Wind w/ Ice (45)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,p..	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
6	M4	Y	1.128	1.128	0	0
7	M5	X	-.268	-.268	0	0
8	M5	Y	.268	.268	0	0
9	M7	X	-.659	-.659	0	0
10	M7	Y	.659	.659	0	0
11	M8	X	-1.095	-1.095	0	0
12	M8	Y	1.095	1.095	0	0
13	M9	X	-.097	-.097	0	0
14	M9	Y	.097	.097	0	0
15	M10	X	-1.997	-1.997	0	0
16	M10	Y	1.997	1.997	0	0
17	M12	X	-.088	-.088	0	0
18	M12	Y	.088	.088	0	0
19	M13	X	-.064	-.064	0	0
20	M13	Y	.064	.064	0	0
21	M14	X	-.564	-.564	0	0
22	M14	Y	.564	.564	0	0
23	M15	X	-3.727	-3.727	0	0
24	M15	Y	3.727	3.727	0	0
25	M18	X	-.177	-.177	0	0
26	M18	Y	.177	.177	0	0
27	MP9	X	-2.36	-2.36	0	0
28	MP9	Y	2.36	2.36	0	0
29	MP7	X	-2.36	-2.36	0	0
30	MP7	Y	2.36	2.36	0	0
31	M25	X	-.143	-.143	0	0
32	M25	Y	.143	.143	0	0
33	M28	X	-.74	-.74	0	0
34	M28	Y	.74	.74	0	0
35	M29	X	-.099	-.099	0	0
36	M29	Y	.099	.099	0	0
37	M30	X	-1.38	-1.38	0	0
38	M30	Y	1.38	1.38	0	0
39	M61A	X	-.086	-.086	0	0
40	M61A	Y	.086	.086	0	0
41	M63A	X	-.086	-.086	0	0
42	M63A	Y	.086	.086	0	0
43	M60A	X	-.639	-.639	0	0
44	M60A	Y	.639	.639	0	0
45	M61B	X	-.639	-.639	0	0
46	M61B	Y	.639	.639	0	0
47	M62A	X	-1.193	-1.193	0	0
48	M62A	Y	1.193	1.193	0	0
49	M63B	X	-1.193	-1.193	0	0
50	M63B	Y	1.193	1.193	0	0
51	M75	X	-2.014	-2.014	0	0
52	M75	Y	2.014	2.014	0	0
53	MP8	X	-2.36	-2.36	0	0
54	MP8	Y	2.36	2.36	0	0
55	M48	X	-1.32	-1.32	0	0
56	M48	Y	1.32	1.32	0	0
57	MP3	X	-2.36	-2.36	0	0

Member Distributed Loads (BLC 14 : Structure Wind w/ Ice (45)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,p..	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
58	MP3	Y	2.36	2.36	0	0
59	MP1	X	-2.36	-2.36	0	0
60	MP1	Y	2.36	2.36	0	0
61	M51	X	-1.068	-1.068	0	0
62	M51	Y	1.068	1.068	0	0
63	M62	X	-2.464	-2.464	0	0
64	M62	Y	2.464	2.464	0	0
65	MP6	X	-2.36	-2.36	0	0
66	MP6	Y	2.36	2.36	0	0
67	MP4	X	-2.36	-2.36	0	0
68	MP4	Y	2.36	2.36	0	0
69	M65A	X	-1.992	-1.992	0	0
70	M65A	Y	1.992	1.992	0	0
71	MP2	X	-2.36	-2.36	0	0
72	MP2	Y	2.36	2.36	0	0
73	MP5	X	-2.36	-2.36	0	0
74	MP5	Y	2.36	2.36	0	0

Member Distributed Loads (BLC 15 : Structure Wind w/ Ice (60))

	Member Label	Direction	Start Magnitude[lb/ft,F,p..	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
1	M2	X	-.698	-.698	0	0
2	M2	Y	1.21	1.21	0	0
3	M3	X	-.231	-.231	0	0
4	M3	Y	.4	.4	0	0
5	M4	X	-.842	-.842	0	0
6	M4	Y	1.459	1.459	0	0
7	M5	X	-.706	-.706	0	0
8	M5	Y	1.223	1.223	0	0
9	M7	X	-.698	-.698	0	0
10	M7	Y	1.21	1.21	0	0
11	M8	X	-.842	-.842	0	0
12	M8	Y	1.459	1.459	0	0
13	M9	X	-.231	-.231	0	0
14	M9	Y	.4	.4	0	0
15	M10	X	-.706	-.706	0	0
16	M10	Y	1.223	1.223	0	0
17	M12	X	-2.076e-14	-2.076e-14	0	0
18	M12	Y	3.596e-14	3.596e-14	0	0
19	M13	X	-.191	-.191	0	0
20	M13	Y	.331	.331	0	0
21	M14	X	-.191	-.191	0	0
22	M14	Y	.331	.331	0	0
23	M15	X	-2.825	-2.825	0	0
24	M15	Y	4.892	4.892	0	0
25	M18	X	-.467	-.467	0	0
26	M18	Y	.809	.809	0	0
27	MP9	X	-1.669	-1.669	0	0
28	MP9	Y	2.89	2.89	0	0
29	MP7	X	-1.669	-1.669	0	0
30	MP7	Y	2.89	2.89	0	0
31	M25	X	-.377	-.377	0	0

Member Distributed Loads (BLC 15 : Structure Wind w/ Ice (60)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,p..	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
32	M25	Y	.654	.654	0	0
33	M28	X	-.262	-.262	0	0
34	M28	Y	.453	.453	0	0
35	M29	X	-.262	-.262	0	0
36	M29	Y	.453	.453	0	0
37	M30	X	-1.046	-1.046	0	0
38	M30	Y	1.812	1.812	0	0
39	M61A	X	-.226	-.226	0	0
40	M61A	Y	.391	.391	0	0
41	M63A	X	-.226	-.226	0	0
42	M63A	Y	.391	.391	0	0
43	M60A	X	-.226	-.226	0	0
44	M60A	Y	.391	.391	0	0
45	M61B	X	-.226	-.226	0	0
46	M61B	Y	.391	.391	0	0
47	M62A	X	-.904	-.904	0	0
48	M62A	Y	1.566	1.566	0	0
49	M63B	X	-.904	-.904	0	0
50	M63B	Y	1.566	1.566	0	0
51	M75	X	-1.526	-1.526	0	0
52	M75	Y	2.644	2.644	0	0
53	MP8	X	-1.669	-1.669	0	0
54	MP8	Y	2.89	2.89	0	0
55	M48	X	-.467	-.467	0	0
56	M48	Y	.809	.809	0	0
57	MP3	X	-1.669	-1.669	0	0
58	MP3	Y	2.89	2.89	0	0
59	MP1	X	-1.669	-1.669	0	0
60	MP1	Y	2.89	2.89	0	0
61	M51	X	-.377	-.377	0	0
62	M51	Y	.654	.654	0	0
63	M62	X	-1.867	-1.867	0	0
64	M62	Y	3.234	3.234	0	0
65	MP6	X	-1.669	-1.669	0	0
66	MP6	Y	2.89	2.89	0	0
67	MP4	X	-1.669	-1.669	0	0
68	MP4	Y	2.89	2.89	0	0
69	M65A	X	-1.51	-1.51	0	0
70	M65A	Y	2.615	2.615	0	0
71	MP2	X	-1.669	-1.669	0	0
72	MP2	Y	2.89	2.89	0	0
73	MP5	X	-1.669	-1.669	0	0
74	MP5	Y	2.89	2.89	0	0

Member Distributed Loads (BLC 16 : Structure Wind w/ Ice (90))

	Member Label	Direction	Start Magnitude[lb/ft,F,p..	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
1	M2	X	-1.056e-7	-1.056e-7	0	0
2	M2	Y	.466	.466	0	0
3	M3	X	-2.823e-10	-2.823e-10	0	0
4	M3	Y	.001	.001	0	0
5	M4	X	-2.776e-7	-2.776e-7	0	0

Member Distributed Loads (BLC 16 : Structure Wind w/ Ice (90)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,p..	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
6	M4	Y	1.224	1.224	0	0
7	M5	X	-9.609e-7	-9.609e-7	0	0
8	M5	Y	4.237	4.237	0	0
9	M7	X	-4.224e-7	-4.224e-7	0	0
10	M7	Y	1.863	1.863	0	0
11	M8	X	-2.956e-7	-2.956e-7	0	0
12	M8	Y	1.303	1.303	0	0
13	M9	X	-2.956e-7	-2.956e-7	0	0
14	M9	Y	1.303	1.303	0	0
15	M10	X	-6.59e-20	-6.59e-20	0	0
16	M10	Y	2.906e-13	2.906e-13	0	0
17	M12	X	-1.056e-7	-1.056e-7	0	0
18	M12	Y	.466	.466	0	0
19	M13	X	-2.776e-7	-2.776e-7	0	0
20	M13	Y	1.224	1.224	0	0
21	M14	X	-2.823e-10	-2.823e-10	0	0
22	M14	Y	.001	.001	0	0
23	M15	X	-9.609e-7	-9.609e-7	0	0
24	M15	Y	4.237	4.237	0	0
25	M18	X	-6.353e-7	-6.353e-7	0	0
26	M18	Y	2.801	2.801	0	0
27	MP9	X	-7.569e-7	-7.569e-7	0	0
28	MP9	Y	3.337	3.337	0	0
29	MP7	X	-7.569e-7	-7.569e-7	0	0
30	MP7	Y	3.337	3.337	0	0
31	M25	X	-5.136e-7	-5.136e-7	0	0
32	M25	Y	2.265	2.265	0	0
33	M28	X	-2.441e-20	-2.441e-20	0	0
34	M28	Y	1.076e-13	1.076e-13	0	0
35	M29	X	-3.559e-7	-3.559e-7	0	0
36	M29	Y	1.569	1.569	0	0
37	M30	X	-3.559e-7	-3.559e-7	0	0
38	M30	Y	1.569	1.569	0	0
39	M61A	X	-3.075e-7	-3.075e-7	0	0
40	M61A	Y	1.356	1.356	0	0
41	M63A	X	-3.075e-7	-3.075e-7	0	0
42	M63A	Y	1.356	1.356	0	0
43	M60A	X	-2.016e-20	-2.016e-20	0	0
44	M60A	Y	8.889e-14	8.889e-14	0	0
45	M61B	X	-2.204e-20	-2.204e-20	0	0
46	M61B	Y	9.717e-14	9.717e-14	0	0
47	M62A	X	-3.075e-7	-3.075e-7	0	0
48	M62A	Y	1.356	1.356	0	0
49	M63B	X	-3.075e-7	-3.075e-7	0	0
50	M63B	Y	1.356	1.356	0	0
51	M75	X	-5.192e-7	-5.192e-7	0	0
52	M75	Y	2.289	2.289	0	0
53	MP8	X	-7.569e-7	-7.569e-7	0	0
54	MP8	Y	3.337	3.337	0	0
55	M48	X	-4.357e-20	-4.357e-20	0	0
56	M48	Y	1.921e-13	1.921e-13	0	0
57	MP3	X	-7.569e-7	-7.569e-7	0	0

Member Distributed Loads (BLC 16 : Structure Wind w/ Ice (90)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,p..	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
58	MP3	Y	3.337	3.337	0	0
59	MP1	X	-7.569e-7	-7.569e-7	0	0
60	MP1	Y	3.337	3.337	0	0
61	M51	X	-3.522e-20	-3.522e-20	0	0
62	M51	Y	1.553e-13	1.553e-13	0	0
63	M62	X	-6.353e-7	-6.353e-7	0	0
64	M62	Y	2.801	2.801	0	0
65	MP6	X	-7.569e-7	-7.569e-7	0	0
66	MP6	Y	3.337	3.337	0	0
67	MP4	X	-7.569e-7	-7.569e-7	0	0
68	MP4	Y	3.337	3.337	0	0
69	M65A	X	-5.136e-7	-5.136e-7	0	0
70	M65A	Y	2.265	2.265	0	0
71	MP2	X	-7.569e-7	-7.569e-7	0	0
72	MP2	Y	3.337	3.337	0	0
73	MP5	X	-7.569e-7	-7.569e-7	0	0
74	MP5	Y	3.337	3.337	0	0

Member Distributed Loads (BLC 17 : Structure Wind w/ Ice (120))

	Member Label	Direction	Start Magnitude[lb/ft,F,p..	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
1	M2	X	8.516e-14	8.516e-14	0	0
2	M2	Y	1.475e-13	1.475e-13	0	0
3	M3	X	.191	.191	0	0
4	M3	Y	.331	.331	0	0
5	M4	X	.191	.191	0	0
6	M4	Y	.331	.331	0	0
7	M5	X	2.825	2.825	0	0
8	M5	Y	4.892	4.892	0	0
9	M7	X	.698	.698	0	0
10	M7	Y	1.21	1.21	0	0
11	M8	X	.231	.231	0	0
12	M8	Y	.4	.4	0	0
13	M9	X	.842	.842	0	0
14	M9	Y	1.459	1.459	0	0
15	M10	X	.706	.706	0	0
16	M10	Y	1.223	1.223	0	0
17	M12	X	.698	.698	0	0
18	M12	Y	1.21	1.21	0	0
19	M13	X	.842	.842	0	0
20	M13	Y	1.459	1.459	0	0
21	M14	X	.231	.231	0	0
22	M14	Y	.4	.4	0	0
23	M15	X	.706	.706	0	0
24	M15	Y	1.223	1.223	0	0
25	M18	X	1.867	1.867	0	0
26	M18	Y	3.234	3.234	0	0
27	MP9	X	1.669	1.669	0	0
28	MP9	Y	2.89	2.89	0	0
29	MP7	X	1.669	1.669	0	0
30	MP7	Y	2.89	2.89	0	0
31	M25	X	1.51	1.51	0	0

Member Distributed Loads (BLC 17 : Structure Wind w/ Ice (120)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,p..	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
32	M25	Y	2.615	2.615	0	0
33	M28	X	.262	.262	0	0
34	M28	Y	.453	.453	0	0
35	M29	X	1.046	1.046	0	0
36	M29	Y	1.812	1.812	0	0
37	M30	X	.262	.262	0	0
38	M30	Y	.453	.453	0	0
39	M61A	X	.904	.904	0	0
40	M61A	Y	1.566	1.566	0	0
41	M63A	X	.904	.904	0	0
42	M63A	Y	1.566	1.566	0	0
43	M60A	X	.226	.226	0	0
44	M60A	Y	.391	.391	0	0
45	M61B	X	.226	.226	0	0
46	M61B	Y	.391	.391	0	0
47	M62A	X	.226	.226	0	0
48	M62A	Y	.391	.391	0	0
49	M63B	X	.226	.226	0	0
50	M63B	Y	.391	.391	0	0
51	M75	X	.382	.382	0	0
52	M75	Y	.661	.661	0	0
53	MP8	X	1.669	1.669	0	0
54	MP8	Y	2.89	2.89	0	0
55	M48	X	.467	.467	0	0
56	M48	Y	.809	.809	0	0
57	MP3	X	1.669	1.669	0	0
58	MP3	Y	2.89	2.89	0	0
59	MP1	X	1.669	1.669	0	0
60	MP1	Y	2.89	2.89	0	0
61	M51	X	.377	.377	0	0
62	M51	Y	.654	.654	0	0
63	M62	X	.467	.467	0	0
64	M62	Y	.809	.809	0	0
65	MP6	X	1.669	1.669	0	0
66	MP6	Y	2.89	2.89	0	0
67	MP4	X	1.669	1.669	0	0
68	MP4	Y	2.89	2.89	0	0
69	M65A	X	.377	.377	0	0
70	M65A	Y	.654	.654	0	0
71	MP2	X	1.669	1.669	0	0
72	MP2	Y	2.89	2.89	0	0
73	MP5	X	1.669	1.669	0	0
74	MP5	Y	2.89	2.89	0	0

Member Distributed Loads (BLC 18 : Structure Wind w/ Ice (135))

	Member Label	Direction	Start Magnitude[lb/ft,F,p..	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
1	M2	X	.088	.088	0	0
2	M2	Y	.088	.088	0	0
3	M3	X	.564	.564	0	0
4	M3	Y	.564	.564	0	0
5	M4	X	.064	.064	0	0

Member Distributed Loads (BLC 18 : Structure Wind w/ Ice (135)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,p..	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
6	M4	Y	.064	.064	0	0
7	M5	X	3.727	3.727	0	0
8	M5	Y	3.727	3.727	0	0
9	M7	X	.659	.659	0	0
10	M7	Y	.659	.659	0	0
11	M8	X	.097	.097	0	0
12	M8	Y	.097	.097	0	0
13	M9	X	1.095	1.095	0	0
14	M9	Y	1.095	1.095	0	0
15	M10	X	1.997	1.997	0	0
16	M10	Y	1.997	1.997	0	0
17	M12	X	1.229	1.229	0	0
18	M12	Y	1.229	1.229	0	0
19	M13	X	1.128	1.128	0	0
20	M13	Y	1.128	1.128	0	0
21	M14	X	.628	.628	0	0
22	M14	Y	.628	.628	0	0
23	M15	X	.268	.268	0	0
24	M15	Y	.268	.268	0	0
25	M18	X	2.464	2.464	0	0
26	M18	Y	2.464	2.464	0	0
27	MP9	X	2.36	2.36	0	0
28	MP9	Y	2.36	2.36	0	0
29	MP7	X	2.36	2.36	0	0
30	MP7	Y	2.36	2.36	0	0
31	M25	X	1.992	1.992	0	0
32	M25	Y	1.992	1.992	0	0
33	M28	X	.74	.74	0	0
34	M28	Y	.74	.74	0	0
35	M29	X	1.38	1.38	0	0
36	M29	Y	1.38	1.38	0	0
37	M30	X	.099	.099	0	0
38	M30	Y	.099	.099	0	0
39	M61A	X	1.193	1.193	0	0
40	M61A	Y	1.193	1.193	0	0
41	M63A	X	1.193	1.193	0	0
42	M63A	Y	1.193	1.193	0	0
43	M60A	X	.639	.639	0	0
44	M60A	Y	.639	.639	0	0
45	M61B	X	.639	.639	0	0
46	M61B	Y	.639	.639	0	0
47	M62A	X	.086	.086	0	0
48	M62A	Y	.086	.086	0	0
49	M63B	X	.086	.086	0	0
50	M63B	Y	.086	.086	0	0
51	M75	X	.145	.145	0	0
52	M75	Y	.145	.145	0	0
53	MP8	X	2.36	2.36	0	0
54	MP8	Y	2.36	2.36	0	0
55	M48	X	1.32	1.32	0	0
56	M48	Y	1.32	1.32	0	0
57	MP3	X	2.36	2.36	0	0

Member Distributed Loads (BLC 18 : Structure Wind w/ Ice (135)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,p..	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
58	MP3	Y	2.36	2.36	0	0
59	MP1	X	2.36	2.36	0	0
60	MP1	Y	2.36	2.36	0	0
61	M51	X	1.068	1.068	0	0
62	M51	Y	1.068	1.068	0	0
63	M62	X	.177	.177	0	0
64	M62	Y	.177	.177	0	0
65	MP6	X	2.36	2.36	0	0
66	MP6	Y	2.36	2.36	0	0
67	MP4	X	2.36	2.36	0	0
68	MP4	Y	2.36	2.36	0	0
69	M65A	X	.143	.143	0	0
70	M65A	Y	.143	.143	0	0
71	MP2	X	2.36	2.36	0	0
72	MP2	Y	2.36	2.36	0	0
73	MP5	X	2.36	2.36	0	0
74	MP5	Y	2.36	2.36	0	0

Member Distributed Loads (BLC 19 : Structure Wind w/ Ice (150))

	Member Label	Direction	Start Magnitude[lb/ft,F,p..	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
1	M2	X	.403	.403	0	0
2	M2	Y	.233	.233	0	0
3	M3	X	1.06	1.06	0	0
4	M3	Y	.612	.612	0	0
5	M4	X	.001	.001	0	0
6	M4	Y	.0006224	.0006224	0	0
7	M5	X	3.669	3.669	0	0
8	M5	Y	2.118	2.118	0	0
9	M7	X	.403	.403	0	0
10	M7	Y	.233	.233	0	0
11	M8	X	.001	.001	0	0
12	M8	Y	.0006224	.0006224	0	0
13	M9	X	1.06	1.06	0	0
14	M9	Y	.612	.612	0	0
15	M10	X	3.669	3.669	0	0
16	M10	Y	2.118	2.118	0	0
17	M12	X	1.613	1.613	0	0
18	M12	Y	.931	.931	0	0
19	M13	X	1.129	1.129	0	0
20	M13	Y	.652	.652	0	0
21	M14	X	1.129	1.129	0	0
22	M14	Y	.652	.652	0	0
23	M15	X	6.574e-13	6.574e-13	0	0
24	M15	Y	3.796e-13	3.796e-13	0	0
25	M18	X	2.426	2.426	0	0
26	M18	Y	1.401	1.401	0	0
27	MP9	X	2.89	2.89	0	0
28	MP9	Y	1.669	1.669	0	0
29	MP7	X	2.89	2.89	0	0
30	MP7	Y	1.669	1.669	0	0
31	M25	X	1.961	1.961	0	0

Member Distributed Loads (BLC 19 : Structure Wind w/ Ice (150)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,p..	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
32	M25	Y	1.132	1.132	0	0
33	M28	X	1.359	1.359	0	0
34	M28	Y	.785	.785	0	0
35	M29	X	1.359	1.359	0	0
36	M29	Y	.785	.785	0	0
37	M30	X	2.435e-13	2.435e-13	0	0
38	M30	Y	1.406e-13	1.406e-13	0	0
39	M61A	X	1.174	1.174	0	0
40	M61A	Y	.678	.678	0	0
41	M63A	X	1.174	1.174	0	0
42	M63A	Y	.678	.678	0	0
43	M60A	X	1.174	1.174	0	0
44	M60A	Y	.678	.678	0	0
45	M61B	X	1.174	1.174	0	0
46	M61B	Y	.678	.678	0	0
47	M62A	X	2.224e-13	2.224e-13	0	0
48	M62A	Y	1.284e-13	1.284e-13	0	0
49	M63B	X	2.25e-13	2.25e-13	0	0
50	M63B	Y	1.299e-13	1.299e-13	0	0
51	M75	X	3.777e-13	3.777e-13	0	0
52	M75	Y	2.181e-13	2.181e-13	0	0
53	MP8	X	2.89	2.89	0	0
54	MP8	Y	1.669	1.669	0	0
55	M48	X	2.426	2.426	0	0
56	M48	Y	1.401	1.401	0	0
57	MP3	X	2.89	2.89	0	0
58	MP3	Y	1.669	1.669	0	0
59	MP1	X	2.89	2.89	0	0
60	MP1	Y	1.669	1.669	0	0
61	M51	X	1.961	1.961	0	0
62	M51	Y	1.132	1.132	0	0
63	M62	X	4.621e-13	4.621e-13	0	0
64	M62	Y	2.668e-13	2.668e-13	0	0
65	MP6	X	2.89	2.89	0	0
66	MP6	Y	1.669	1.669	0	0
67	MP4	X	2.89	2.89	0	0
68	MP4	Y	1.669	1.669	0	0
69	M65A	X	3.736e-13	3.736e-13	0	0
70	M65A	Y	2.157e-13	2.157e-13	0	0
71	MP2	X	2.89	2.89	0	0
72	MP2	Y	1.669	1.669	0	0
73	MP5	X	2.89	2.89	0	0
74	MP5	Y	1.669	1.669	0	0

Member Distributed Loads (BLC 36 : Seismic X)

	Member Label	Direction	Start Magnitude[lb/ft,F,p..	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
1	M2	X	1.709	1.709	0	0
2	M3	X	.337	.337	0	0
3	M4	X	.337	.337	0	0
4	M5	X	.871	.871	0	0
5	M7	X	1.709	1.709	0	0

Member Distributed Loads (BLC 36 : Seismic X) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,p..	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
6	M8	X	.337	.337	0	0
7	M9	X	.337	.337	0	0
8	M10	X	.871	.871	0	0
9	M12	X	1.709	1.709	0	0
10	M13	X	.337	.337	0	0
11	M14	X	.337	.337	0	0
12	M15	X	.871	.871	0	0
13	M18	X	.618	.618	0	0
14	MP9	X	.371	.371	0	0
15	MP7	X	.371	.371	0	0
16	M25	X	.365	.365	0	0
17	M28	X	.966	.966	0	0
18	M29	X	.966	.966	0	0
19	M30	X	.966	.966	0	0
20	M61A	X	.626	.626	0	0
21	M63A	X	.626	.626	0	0
22	M60A	X	.626	.626	0	0
23	M61B	X	.626	.626	0	0
24	M62A	X	.626	.626	0	0
25	M63B	X	.626	.626	0	0
26	M75	X	.425	.425	0	0
27	MP8	X	.371	.371	0	0
28	M48	X	.618	.618	0	0
29	MP3	X	.371	.371	0	0
30	MP1	X	.371	.371	0	0
31	M51	X	.365	.365	0	0
32	M62	X	.618	.618	0	0
33	MP6	X	.371	.371	0	0
34	MP4	X	.371	.371	0	0
35	M65A	X	.365	.365	0	0
36	MP2	X	.371	.371	0	0
37	MP5	X	.371	.371	0	0

Member Distributed Loads (BLC 37 : Seismic Y)

	Member Label	Direction	Start Magnitude[lb/ft,F,p..	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
1	M2	Y	1.709	1.709	0	0
2	M3	Y	.337	.337	0	0
3	M4	Y	.337	.337	0	0
4	M5	Y	.871	.871	0	0
5	M7	Y	1.709	1.709	0	0
6	M8	Y	.337	.337	0	0
7	M9	Y	.337	.337	0	0
8	M10	Y	.871	.871	0	0
9	M12	Y	1.709	1.709	0	0
10	M13	Y	.337	.337	0	0
11	M14	Y	.337	.337	0	0
12	M15	Y	.871	.871	0	0
13	M18	Y	.618	.618	0	0
14	MP9	Y	.371	.371	0	0
15	MP7	Y	.371	.371	0	0
16	M25	Y	.365	.365	0	0

Member Distributed Loads (BLC 37 : Seismic Y) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,F,p...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
17	M28	Y	.966	.966	0	0
18	M29	Y	.966	.966	0	0
19	M30	Y	.966	.966	0	0
20	M61A	Y	.626	.626	0	0
21	M63A	Y	.626	.626	0	0
22	M60A	Y	.626	.626	0	0
23	M61B	Y	.626	.626	0	0
24	M62A	Y	.626	.626	0	0
25	M63B	Y	.626	.626	0	0
26	M75	Y	.425	.425	0	0
27	MP8	Y	.371	.371	0	0
28	M48	Y	.618	.618	0	0
29	MP3	Y	.371	.371	0	0
30	MP1	Y	.371	.371	0	0
31	M51	Y	.365	.365	0	0
32	M62	Y	.618	.618	0	0
33	MP6	Y	.371	.371	0	0
34	MP4	Y	.371	.371	0	0
35	M65A	Y	.365	.365	0	0
36	MP2	Y	.371	.371	0	0
37	MP5	Y	.371	.371	0	0

Member Area Loads

Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[psf]
No Data to Print ...						

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	P24	max	1437.497	18	941.405	16	1478.146	110	-.226	6	-.137	7	1.857	18
2		min	-1439.559	10	-942.804	8	320.561	6	-2.742	30	-2.868	111	-1.87	10
3	P13	max	688.918	3	1687.679	15	1492.856	19	.178	15	3.105	19	1.862	7
4		min	-693.521	11	-1691.751	7	334.268	11	-.154	7	.257	11	-1.836	15
5	P1	max	1405.397	4	932.77	14	1444.11	72	2.569	24	-.096	15	1.779	12
6		min	-1400.443	12	-927.195	6	293.082	16	.196	16	-2.818	71	-1.792	4
7	Totals:	max	3369.254	3	3336.233	15	4135.308	29						
8		min	-3369.257	11	-3336.235	7	1539.864	52						

Envelope AISC 15th(360-16): LRFD Steel Code Checks

	Member	Shape	Code...	Loc[in]	LC	Shear Check	Loc[...	Dir	LC	phi*Pn...	phi*Pnt...	phi*Mn...	phi*Mn...	Cb	Eqn
1	M61B	C3.38x2.06x0....	.232	0	3	.034	28.1...	y	28	47760....	56700	2.203	5.752	1...	H1-1b
2	M62A	C3.38x2.06x0....	.229	0	14	.032	28.1...	y	85	47760....	56700	2.203	5.752	1...	H1-1b
3	M61A	C3.38x2.06x0....	.227	0	8	.031	28.1...	y	32	47760....	56700	2.203	5.752	1...	H1-1b
4	M63A	C3.38x2.06x0....	.223	0	8	.032	28.1...	y	33	47760....	56700	2.203	5.752	1...	H1-1b
5	M63B	C3.38x2.06x0....	.223	0	14	.033	28.1...	y	22	47760....	56700	2.203	5.752	1...	H1-1b
6	M60A	C3.38x2.06x0....	.220	0	3	.032	28.1...	y	28	47760....	56700	2.203	5.752	1...	H1-1b
7	MP8	Pipe 2.875x0.12	.205	42	8	.067	63		12	22398....	42998....	3.144	3.144	1...	H1-1b
8	M75	PL 2.375x0.5	.205	1.5	11	.170	0	y	22	38256....	38475	.401	1.904	2...	H1-1b

Envelope AISC 15th(360-16): LRFD Steel Code Checks (Continued)

	Member	Shape	Code...	Loc[in]	LC	Shear Check	Loc[...	Dir	LC	phi*Pn...	phi*Pnt...	phi*Mn...	phi*Mn...	Cb	Eqn
9	MP5	Pipe 2.875x0.12	.199	42	14	.074	63		18	22398....	42998....	3.144	3.144	1...	H1-1b
10	MP2	Pipe 2.875x0.12	.193	42	3	.072	63		15	22398....	42998....	3.144	3.144	1...	H1-1b
11	M10	PL6.5x0.375	.178	21	3	.074	36.3...	y	14	3658.14	78975	.617	7.44	1...	H1-1b
12	M15	PL6.5x0.375	.176	21	14	.087	5.687	y	99	3658.14	78975	.617	7.426	1...	H1-1b
13	M5	PL6.5x0.375	.170	21	8	.086	36.3...	y	67	3658.14	78975	.617	7.439	1...	H1-1b
14	M12	HSS4X4X6	.169	40	107	.092	40	y	112	18825...	197892	22.046	22.046	1...	H1-1b
15	M7	HSS4X4X6	.165	40	6	.042	40	z	15	18825...	197892	22.046	22.046	1...	H1-1b
16	M2	HSS4X4X6	.165	40	75	.090	40	y	70	18825...	197892	22.046	22.046	1...	H1-1b
17	MP4	Pipe 2.875x0.12	.142	42	10	.053	42		12	22398....	42998....	3.144	3.144	2	H1-1b
18	MP3	Pipe 2.875x0.12	.141	42	7	.056	42		4	22398....	42998....	3.144	3.144	2...	H1-1b
19	M8	L2x2x4	.140	0	3	.014	0	y	11	29527....	42480	.96	2.19	2...	H2-1
20	MP7	Pipe 2.875x0.12	.137	42	4	.059	42		7	22398....	42998....	3.144	3.144	2...	H1-1b
21	MP6	Pipe 2.875x0.12	.136	42	18	.053	42		15	22398....	42998....	3.144	3.144	1...	H1-1b
22	M65A	PIPE_2.0	.136	6	10	.049	90		17	15369....	42228	2.46	2.46	1...	H1-1b
23	M51	PIPE_2.0	.134	90	7	.045	6		16	15369....	42228	2.46	2.46	1...	H1-1b
24	M14	L2x2x4	.133	0	14	.013	0	z	5	29527....	42480	.96	2.19	2...	H2-1
25	M4	L2x2x4	.132	0	8	.013	0	z	16	29527....	42480	.96	2.19	2...	H2-1
26	MP9	Pipe 2.875x0.12	.130	42	12	.059	42		10	22398....	42998....	3.144	3.144	2...	H1-1b
27	MP1	Pipe 2.875x0.12	.130	42	15	.056	42		18	22398....	42998....	3.144	3.144	1...	H1-1b
28	M3	L2x2x4	.125	0	16	.013	0	y	16	29527....	42480	.96	2.19	2...	H2-1
29	M13	L2x2x4	.124	0	6	.013	27.2...	z	99	29527....	42480	.96	2.19	2...	H2-1
30	M25	PIPE_2.0	.122	6	4	.041	6		5	15369....	42228	2.46	2.46	1...	H1-1b
31	M9	L2x2x4	.122	0	11	.013	0	z	11	29527....	42480	.96	2.19	2...	H2-1
32	M48	Pipe3.5x0.165	.114	48	95	.039	48		15	45873....	71580.6	6.338	6.338	1...	H1-1b
33	M62	Pipe3.5x0.165	.094	65	8	.044	48		17	45873....	71580.6	6.338	6.338	1...	H1-1b
34	M29	L6.6x4.46x0.25	.093	41.562	18	.012	21	z	4	51170....	87561	2.465	7.125	1...	H2-1
35	M28	L6.6x4.46x0.25	.091	.438	10	.012	0	z	7	51170....	87561	2.465	7.125	1...	H2-1
36	M18	Pipe3.5x0.165	.091	31	14	.037	32		5	45873....	71580.6	6.338	6.338	1...	H1-1b
37	M30	L6.6x4.46x0.25	.086	41.562	7	.012	0	z	10	51170....	87561	2.465	7.125	1...	H2-1

Square/Rectangular Flange Connection

TIA-222-H

Site Number	CT-01002-S
Job number	
Code	TIA-222-H

Member/Node Under Consideration	
Controlling Load Combination	

Normalize usages per TIA-222-H, Sec. 15.5	☐

REACTIONS		
Moment, Mu (kip-ft)	3.105	*About X*
Axial, Pu (kips) - *Negative for tension*	1.687	
Shear, Vu (kips)	1.492	

BOLT CONFIGURATION	
Bolt Quantity, n_b	4
Bolt Diameter, d_b (in)	0.625
Bolt Grade	A325
Width between bolts, s (in)	7.00

BOLT USAGE	
Maximum Tension in Bolt, Tub (kip)	3.342
Nominal Tensile Strength, ϕRnt (kip)	20.340
Tensile Usage (Section 4.9.6.1)	**16.4%**

PLATE CONFIGURATION	
Plate Grade	A572-50
Thickness of plate, t (in)	0.750
Width of plate, w (in)	9.00

PLATE USAGE	
Ultimate flexural load in plate, Mu (kip-in)	5.032
Factored flexural capacity, ϕMn (kip-in)	28.430
Flexural Usage	**17.7%**

SUPPORT ARM CONFIGURATION	
Member Shape	Square
Member Grade	A500-50
Thickness of Member, t (in)	0.375
Width of member, w (in)	4.000

SUPPORT ARM USAGE	
Ultimate flexural load in member, Mu (kip-ft)	3.105
Factored flexural capacity, ϕMn (kip-ft)	27.817
Flexural Usage	**11.2%**

Stiffeners present?	☐

EXHIBIT 9

EME Report

FOX HILL TELECOM

Radio Frequency Emissions Analysis Report

Site ID: BOBOS01205A

45 Fargo Road
Waterford, CT 06385

December 4, 2023

Fox Hill Telecom Project Number: 231064

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**9.46 %**

FOX HILL TELECOM

December 4, 2023

Dish Wireless
5701 South Santa Fe Drive
Littleton, CO 80120

Emissions Analysis for Site: **BOBOS01205A**

Fox Hill Telecom, Inc ("Fox Hill") was directed to analyze the proposed radio installation for Dish Wireless, LLC (Dish) facility located at **45 Fargo Road, Waterford, CT**, for the purpose of determining whether the emissions from the Proposed Dish radio and 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 (μW/cm2). 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.

Population exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limit for the 600 MHz band is approximately 400 $\mu W/cm^2$. The general population exposure limit for the 1900 MHz (PCS) and 2100 MHz (AWS / AWS-4) 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 the percentage 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 performed for the proposed upgrades to the Dish Wireless antenna facility located at **45 Fargo Road, Waterford, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65 for far field modeling calculations.

In OET-65, plane wave power densities in the Far Field of an antenna are calculated by considering antenna gain and reflective waves that would contribute to exposure.

Since the radiation pattern of an antenna has developed in the **Far Field** region the power gain in specific directions needs to be considered in exposure predictions to yield an Effective Radiated Power (ERP) in each specific direction from the antenna. Also, since the vertical radiation pattern of the antenna is considered, the exposure calculations would most likely be reduced significantly at ground level, resulting in a more realistic estimate of the actual exposure levels. To determine a worst-case scenario at each point along the calculation radials, each point was calculated using the antenna gain value at each angle of incident and compared against the result using an isotropic radiator at the antenna height with the greater of the two used to yield the more pessimistic far field value for each point along the calculation radial.

Additionally, to model a truly "worst case" prediction of exposure levels at or near a surface, such as at ground-level or on a rooftop, reflection off the surface of antenna radiation power can be assumed, resulting in a potential 1.6 times increase in power density in calculating far field power density values.

With these factors Considered, the worst case **Far Field prediction model** utilized in this analysis is determined by the following equation:

Equation 9 per FCC OET65 for Far Field Modeling

$$S = \frac{33.4\ ERP}{R^2}$$

S = Power Density (in μw/cm^2)
ERP = Effective Radiated Power from antenna (watts)
R = Distance from the antenna (meters)

Predicted far field power density values for all carriers identified in this report were calculated 6 feet above the ground level and are displayed as a percentage of the applicable FCC standards. All emissions values for other carriers were calculated using the same Far Field model outlined above, using industry standard radio configurations and frequency band selection based upon available licenses in this geographic area for emissions contribution estimates.

For each Dish sector the following channel counts, frequency bands and power levels were utilized as shown in *Table 1*:

Technology	Frequency Band	Channel Count	Transmit Power per Channel (W)
5G	n71 (600 MHz)	4	61.5
5G	n70 (AWS-4 / 1995-2020)	4	40
5G	n66 (AWS-4 / 2180-2200)	4	40

Table 1: Channel Data Table

The following **Dish** antennas listed in *Table 2* were used in the modeling for transmission in the 600 MHz (n71) frequency band and the 2100 MHz (AWS 4) frequency bands at 1995-2020 MHz (n70) and 2180-2200 MHz (n66). This is based on feedback from Dish regarding anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below.

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	Commscope FFVV-65B-R2	183
B	1	Commscope FFVV-65B-R2	183
C	1	Commscope FFVV-65B-R2	183

Table 2: Antenna Data

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

RESULTS

Per the calculations completed for the proposed **Dish** configurations *Table 3* shows resulting emissions power levels and percentages of the FCC's allowable general population limit.

Antenna ID	Antenna Make / Model	Frequency Bands	Antenna Gain (dBd)	Channel Count	Total TX Power (W)	ERP (W)	MPE %
Antenna A1	Commscope FFVV-65B-R2	n71 (600 MHz) / n70 (AWS-4 / 1995-2020) / n66 (AWS-4 / 2180-2200)	12.15 / 15.95 / 16.25	12	566	17,079.80	1.08
						Sector A Composite MPE%	**1.08**
Antenna B1	Commscope FFVV-65B-R2	n71 (600 MHz) / n70 (AWS-4 / 1995-2020) / n66 (AWS-4 / 2180-2200)	12.15 / 15.95 / 16.25	12	566	17,079.80	1.08
						Sector B Composite MPE%	**1.08**
Antenna C1	Commscope FFVV-65B-R2	n71 (600 MHz) / n70 (AWS-4 / 1995-2020) / n66 (AWS-4 / 2180-2200)	12.15 / 15.95 / 16.25	12	566	17,079.80	1.08
						Sector C Composite MPE%	**1.08**

Table 3: Dish Emissions Levels

The Following table (*Table 4*) shows all additional carriers on site and their emissions contribution estimates, along with the newly calculated **Dish** far field emissions contributions per this report. FCC OET 65 specifies that for carriers utilizing directional antennas, the highest recorded sector value be used for composite site emissions values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. For this site, all three sectors have the same configuration yielding the same results for all three sectors. *Table 5* below shows a summary for each **Dish** Sector as well as the composite emissions value for the site.

Site Composite MPE%	
Carrier	**MPE%**
Dish – Max Per Sector Value	**1.08 %**
AT&T	2.98 %
T-Mobile	2.95 %
Verizon Wireless	2.45 %
Site Total MPE %:	**9.46 %**

Table 4: All Carrier MPE Contributions

Dish Sector A Total:	1.08 %
Dish Sector B Total:	1.08 %
Dish Sector C Total:	1.08 %
Site Total:	9.46 %

Table 5: Site MPE Summary

Table 6 below details a breakdown by frequency band and technology for the MPE power values for the maximum calculated **Dish** sector(s). For this site, all three sectors have the same configuration yielding the same results for all three sectors.

Dish _ Frequency Band / Technology Max Power Values (Per Sector)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
Dish n71 (600 MHz) 5G	4	1,008.96	183	2.88	n71 (600 MHz)	400	0.72%
Dish n70 (AWS-4 / 1995-2020) 5G	4	1,574.20	183	1.80	n70 (AWS-4 / 1995-2020)	1000	0.18%
Dish n66 (AWS-4 / 2180-2200) 5G	4	1,686.79	183	1.80	n66 (AWS-4 / 2180-2200)	1000	0.18%
						Total:	**1.08 %**

Table 6: Dish Maximum Sector MPE Power Values

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 Dish 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:

Dish Sector	Power Density Value (%)
Sector A:	1.08 %
Sector B:	1.08 %
Sector C:	1.08 %
Dish Maximum Total (per sector):	1.08 %
Site Total:	9.46 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite emissions value for this site, assuming all carriers present, is **9.46 %** of the allowable FCC established general population limit sampled at the ground level. This is based upon the far field calculations performed for all carriers identified in this report.

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.

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