



**QC Development**  
PO Box 916  
Storrs, CT 06268  
860-670-9068  
Mark.Roberts@QCDevelopment.net

April 17, 2020

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

**Notice of Exempt Modification – New Cingular Wireless PCS, LLC (AT&T) – CT2547**  
**67 Fairchild Road, Middletown, CT 06457**  
**N 41.54483333**  
**W 72.62078889**

Dear Ms. Bachman:

AT&T currently maintains nine (9) antennas at the 130-foot level of the existing 130-foot Monopole at 67 Fairchild Road, Middletown, CT. The tower is owned by SBA. The property is owned by the Stephen G. & Barbara L. Borrelli. AT&T now intends to remove (3) Powerwave antennas and install (6) CCI DMP65R-BU6DA antennas. AT&T will also remove (3) Ericsson RRUS-11 and (3) RRUS-32 Remote Radio Units (RRU) and install (3) 8843 B2/B66, (3) 4449 B5/B12, (3) RRUS 4478-B14 and (3) RRUS E2-B29 RRUs. The new antennas and RRUS will also be installed at the 130' level of the tower.

This facility was approved by the Connecticut Siting Council in Docket # 316 on November 14, 2006. This decision was later rescinded and re-issued as Docket # 316A on August 25, 2011. The re-issued approval included a tower height limitation of 130 feet and eliminated the prior condition that antennas be flush-mounted. Since no further modification to the overall facility height is proposed, this modification therefore complies with the aforementioned approval.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to the

Honorable Benjamin Florsheim, Mayor of the City of Middletown, and the Middletown Planning Office, as well as the property owner and the tower owner.

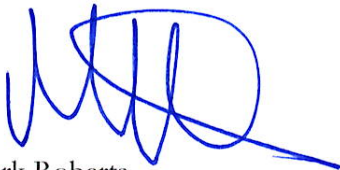
The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S.A. § 16-50j-72(b)(2).

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

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

Please feel free to call me at (860) 670-9068 with any questions regarding this matter. Thank you for your consideration.

Sincerely,



Mark Roberts  
QC Development  
Consultant for AT&T

#### Attachments

cc: Mayor Benjamin Florsheim - Elected Official  
Joseph Samolis – Planning Director  
Stephen G. & Barbara L. Borrelli - Property Owners  
SBA - Tower Owner (via e-mail)

## Power Density

### Existing Loading on Tower

Carrier	# of Channels	ERP/Ch (W)	Antenna Centerline Height (ft)	Power Density (mW/cm <sup>2</sup> )	Freq. Band (MHz <sup>**</sup> )	Limit S (mW/cm <sup>2</sup> )	%MPE
Other Carriers*							18.02%
AT&T UMTS	2	656	130	0.0307	850	0.5667	0.54%
AT&T UMTS	2	971	130	0.0454	1900	1.0000	0.45%
AT&T LTE	1	757	130	0.0354	700	0.4667	0.76%
AT&T LTE	2	3664	130	0.1714	1900	1.0000	1.71%
AT&T LTE	1	3837	130	0.1795	2100	1.0000	1.79%
AT&T LTE	1	1285	130	0.0601	2300	1.0000	0.60%
Site Total							23.88%

\*Per CSC Records (available upon request, includes calculation formulas)

\*\* If a range of frequencies are used, such as 880-894, enter the lowest value, i.e. 880

### Proposed Loading on Tower

Carrier	# of Channels	ERP/Ch (W)	Antenna Centerline Height (ft)	Power Density (mW/cm <sup>2</sup> )	Freq. Band (MHz <sup>**</sup> )	Limit S (mW/cm <sup>2</sup> )	%MPE
Other Carriers*							18.02%
AT&T UMTS	1	656	130	0.0153	850	0.5667	0.27%
AT&T LTE	1	1476	130	0.0345	700	0.4667	0.74%
AT&T LTE	1	2951	130	0.0690	700	0.4667	1.48%
AT&T LTE	1	1000	130	0.0234	850	0.5667	0.41%
AT&T 5G	1	1000	130	0.0234	850	0.5667	0.41%
AT&T LTE	2	4842	130	0.2265	1900	1.0000	2.26%
AT&T LTE	1	5070	130	0.1186	2100	1.0000	1.19%
AT&T LTE	1	1285	130	0.0301	2300	1.0000	0.30%
Site Total							25.09%

\*Per CSC Records (available upon request, includes calculation formulas)

\*\* If a range of frequencies are used, such as 880-894, enter the lowest value, i.e. 880



**PROJECT INFORMATION**

SCOPE OF WORK: ITEMS TO BE MOUNTED ON THE EXISTING MONOPOLE:

- NEW AT&T ANTENNAS (DMP65R-BU6DA) (TYP. OF 2 PER SECTOR, TOTAL OF 6).
- EXISTING AT&T ANTENNAS (OPA-65R-LCUU-H6) @ POS. 4 TO BE RELOCATED TO POS.1 (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T RRUS E2 B29 (700) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T RRUS 4478 B14 (700) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T RRUS 8843 B2/B66A (PCS/AWS) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T RRUS 4449 B5/B12 (850/700) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T SURGE ARRESTOR DC ONLY (DC6-48-60-0-8C-EV) (TOTAL OF 2) WITH (4) DC POWER WITHIN (1) 3"Ø CONDUIT.
- PROPOSED MOUNT MODS (SEE S-1 SHEET).

ITEMS TO BE MOUNTED AT EQUIPMENT LOCATION:

- ADD (1) 6630.
- ADD IDLe.

ITEMS TO BE REMOVED:

- EXISTING AT&T ANTENNAS: (P65-16-XLH-RR) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- EXISTING AT&T RRUS: RRUS 11 B12 (700) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- EXISTING AT&T RRUS: RRUS 32 B66A (AWS) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- EXISTING AT&T DIPLEXERS (PWAV CM1007-DBPXBC-003) (TYP. OF 2 PER SECTOR, TOTAL OF 6).
- EXISTING AT&T TMA'S (DTMABP7819VG12A) (TYP. OF 1 PER SECTOR, TOTAL OF 3).

ITEMS TO REMAIN:

- (6) ANTENNAS, (6) RRU'S, (2) SURGE ARRESTOR,
- (6) 1-5/8" COAX CABLES, (4) DC POWER & (2) FIBER.

SITE ADDRESS: 50 FAIRCHILD ROAD  
MIDDLETOWN, CT 06457

LATITUDE: 41.545011° N, 41° 32' 42.04" N

LONGITUDE: 72.620766° W, 72° 37' 14.76" W

TYPE OF SITE: MONOPOLE / INDOOR EQUIPMENT

STRUCTURE HEIGHT: 130'-0"±

RAD CENTER: 130'-0"±

CURRENT USE: TELECOMMUNICATIONS FACILITY

PROPOSED USE: TELECOMMUNICATIONS FACILITY



**SITE NUMBER: CT2547**

**SITE NAME: MIDDLETOWN FAIRCHILD ROAD**

**FA CODE: 10141343**

**PACE ID: MRCTB045485, MRCTB045500, MRCTB045477, MRCTB045495**

**PROJECT: LTE 5C\_6C\_5G\_BWE 2020 UPGRADE**

**VICINITY MAP**

**DIRECTIONS TO SITE:**

FROM HARTFORD, TAKE I-91 SOUTH. TAKE ROUTE 9 SOUTH. TAKE EXIT 12. TURN LEFT ON SILVER STREET. TURN RIGHT ON EASTERN DRIVE. TURN LEFT ON BOW LANE. TURN RIGHT ON FAIRCHILD STREET. SITE AT END OF FAIRCHILD STREET. CONTINUE DOWN PRIVATE HOME DRIVEWAY AT THE END OF STREET TO ACCESS ROAD. FOLLOW ACCESS ROAD TO SITE. GATE COMBO 4722.



**GENERAL NOTES**

1. THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF AT&T. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.
2. THE FACILITY IS AN UNMANNED PRIVATE AND SECURED EQUIPMENT INSTALLATION. IT IS ONLY ACCESSED BY TRAINED TECHNICIANS FOR PERIODIC ROUTINE MAINTENANCE AND THEREFORE DOES NOT REQUIRE ANY WATER OR SANITARY SEWER SERVICE. THE FACILITY IS NOT GOVERNED BY REGULATIONS REQUIRING PUBLIC ACCESS PER ADA REQUIREMENTS.
3. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE AT&T MOBILITY REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.
4. CONSTRUCTION DRAWINGS ARE VALID FOR SIX MONTHS AFTER ENGINEER OF RECORD'S STAMPED AND SIGNED SUBMITTAL DATE LISTED HEREIN.

**DRAWING INDEX**

SHEET NO.	DESCRIPTION	REV.
T-1	TITLE SHEET	A
GN-1	GENERAL NOTES	A
A-1	COMPOUND & EQUIPMENT PLANS	A
A-2	ANTENNA LAYOUTS & ELEVATION	A
A-3	DETAILS	A
SN-1	STRUCTURAL NOTES	A
S-1	MOUNT MODIFICATION DESIGN	A
G-1	GROUNDING DETAILS	A
RF-1	RF PLUMBING DIAGRAM	A

**SBA SITE #: CTL02547**

**72 HOURS**

**CALL BEFORE YOU DIG**

CALL TOLL FREE 1-800-922-4455  
OR CALL 811

**UNDERGROUND SERVICE ALERT**

 45 BEECHWOOD DRIVE NORTH ANDOVER, MA 01845 TEL: (978) 557-5553 FAX: (978) 336-5586	 12 INDUSTRIAL WAY SALEM, NH 03079	SITE NUMBER: CT2547 SITE NAME: MIDDLETOWN FAIRCHILD ROAD SBA SITE # ID: CTL02547 50 FAIRCHILD ROAD MIDDLETOWN, CT 06457 MIDDLESEX COUNTY	 500 ENTERPRISE DRIVE, SUITE 3A ROCKY HILL, CT 06067	<table border="1"> <tr> <td>NO.</td> <td>DATE</td> <td>ISSUED FOR REVIEW</td> <td>GA</td> <td>HC</td> <td>DPH</td> </tr> <tr> <td></td> <td></td> <td>REVISIONS</td> <td>BY</td> <td>CHK</td> <td>APP'D</td> </tr> </table>			NO.	DATE	ISSUED FOR REVIEW	GA	HC	DPH			REVISIONS	BY	CHK	APP'D	AT&T TITLE SHEET LTE 5C_6C_5G_BWE 2020 UPGRADE		
				NO.	DATE	ISSUED FOR REVIEW	GA	HC	DPH												
		REVISIONS	BY	CHK	APP'D																
SCALE: AS SHOWN    DESIGNED BY: HC    DRAWN BY: GA				SITE NUMBER <b>CT2547</b>	DRAWING NUMBER <b>T-1</b>	REV <b>A</b>															



**GROUNDING NOTES**

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.
2. 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.
3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81 STANDARDS) FOR NEW GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
4. 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.
5. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, #6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS AND #2 AWG STRANDED COPPER FOR OUTDOOR BTS.
6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
7. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO GROUND BAR.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
11. METAL CONDUIT SHALL BE MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
12. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE OF 1/2 IN. OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID BARE TINNED COPPER GROUND WIRE, PER NEC 250.50

**GENERAL NOTES**

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:  
 CONTRACTOR – SAI  
 SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)  
 OWNER – AT&T MOBILITY
2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.
3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
4. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.
5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
6. "KITTING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY CONTRACTOR. ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.
7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.
9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.
10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
11. SUBCONTRACTOR 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.
12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
13. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.

14. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.
15. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy = 36 ksi) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E (Fy = 36 ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCH UP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.
16. CONSTRUCTION SHALL COMPLY WITH SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF AT&T SITES."
17. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
18. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
19. SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.
20. **APPLICABLE BUILDING CODES:**  
 SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.

**BUILDING CODE: IBC 2015 WITH 2018 CT STATE BUILDING CODE AMENDMENTS  
 ELECTRICAL CODE: 2017 NATIONAL ELECTRICAL CODE (NFPA 70-2017)**

SUBCONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS:

**AMERICAN CONCRETE INSTITUTE (ACI) 318; BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE;**

**AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) MANUAL OF STEEL CONSTRUCTION, ASD, FOURTEENTH EDITION;**

**TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-H, STRUCTURAL STANDARDS FOR STEEL**

FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

ABBREVIATIONS					
AGL	ABOVE GRADE LEVEL	EQ	EQUAL	REQ	REQUIRED
AWG	AMERICAN WIRE GAUGE	GC	GENERAL CONTRACTOR	RF	RADIO FREQUENCY
BBU	BATTERY BACKUP UNIT	GRC	GALVANIZED RIGID CONDUIT	TBD	TO BE DETERMINED
BTCW	BARE TINNED SOLID COPPER WIRE	MGB	MASTER GROUND BAR	TBR	TO BE REMOVED
BGR	BURIED GROUND RING	MIN	MINIMUM	TBRR	TO BE REMOVED AND REPLACED
BTS	BASE TRANSCEIVER STATION	P	PROPOSED	TYP	TYPICAL
E	EXISTING	NTS	NOT TO SCALE	UG	UNDER GROUND
EGB	EQUIPMENT GROUND BAR	RAD	RADIATION CENTER LINE (ANTENNA)	VIF	VERIFY IN FIELD
EGR	EQUIPMENT GROUND RING	REF	REFERENCE		



45 BEECHWOOD DRIVE  
 NORTH ANDOVER, MA 01845  
 TEL: (978) 557-5553  
 FAX: (978) 336-5586



12 INDUSTRIAL WAY  
 SALEM, NH 03079

**SITE NUMBER: CT2547  
 SITE NAME: MIDDLETOWN FAIRCHILD ROAD  
 SBA SITE # ID: CTL02547**

50 FAIRCHILD ROAD  
 MIDDLETOWN, CT 06457  
 MIDDLESEX COUNTY



500 ENTERPRISE DRIVE, SUITE 3A  
 ROCKY HILL, CT 06067

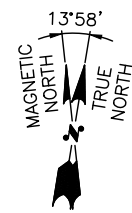
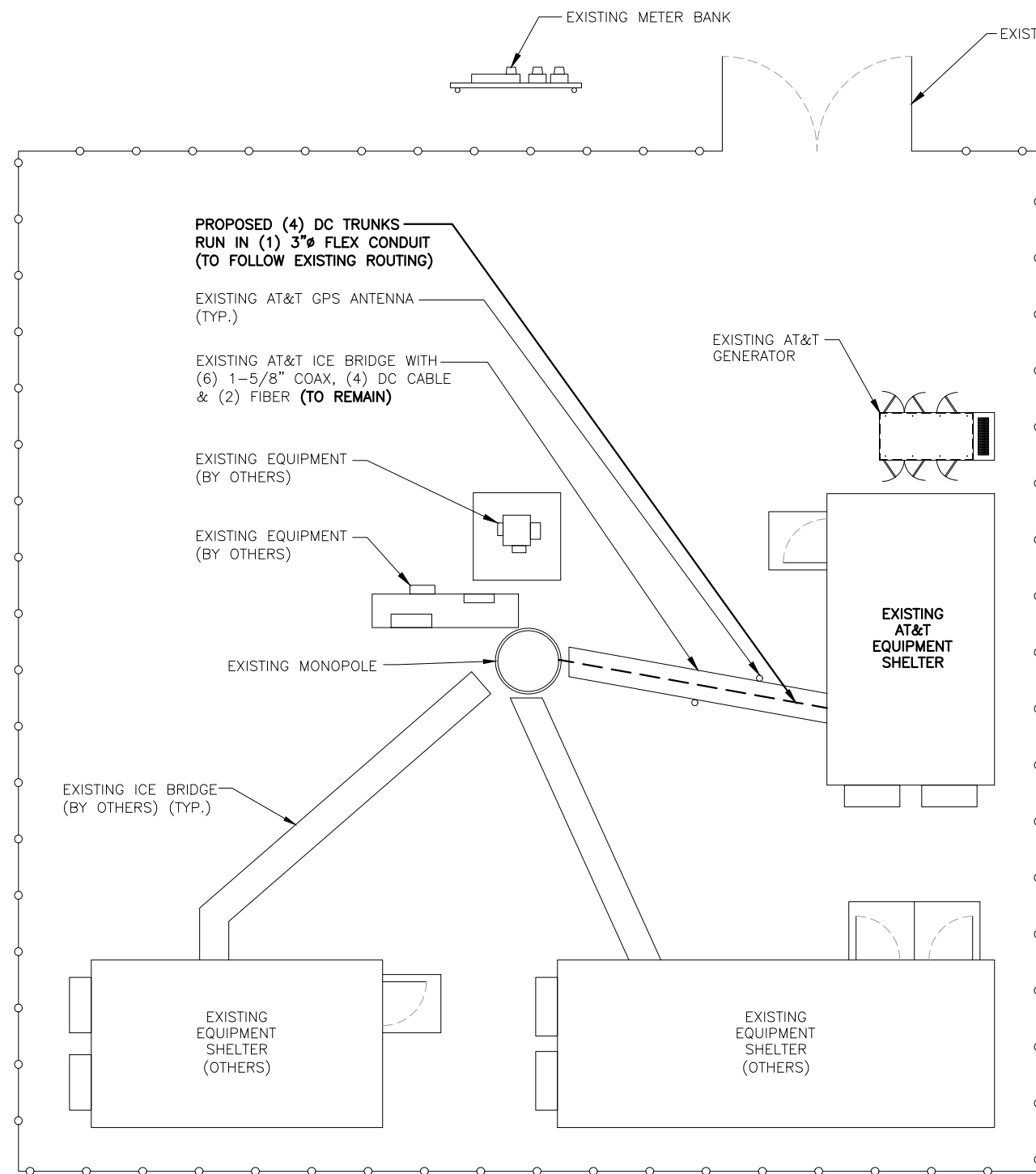
A	01/13/20	ISSUED FOR REVIEW	GA	HC	DPH
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: HC	DRAWN BY: GA		

AT&T		
GENERAL NOTES		
LTE 5C_6C_5G_BWE 2020 UPGRADE		
SITE NUMBER	DRAWING NUMBER	REV
CT2547	GN-1	A

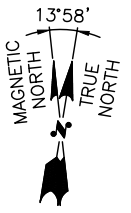
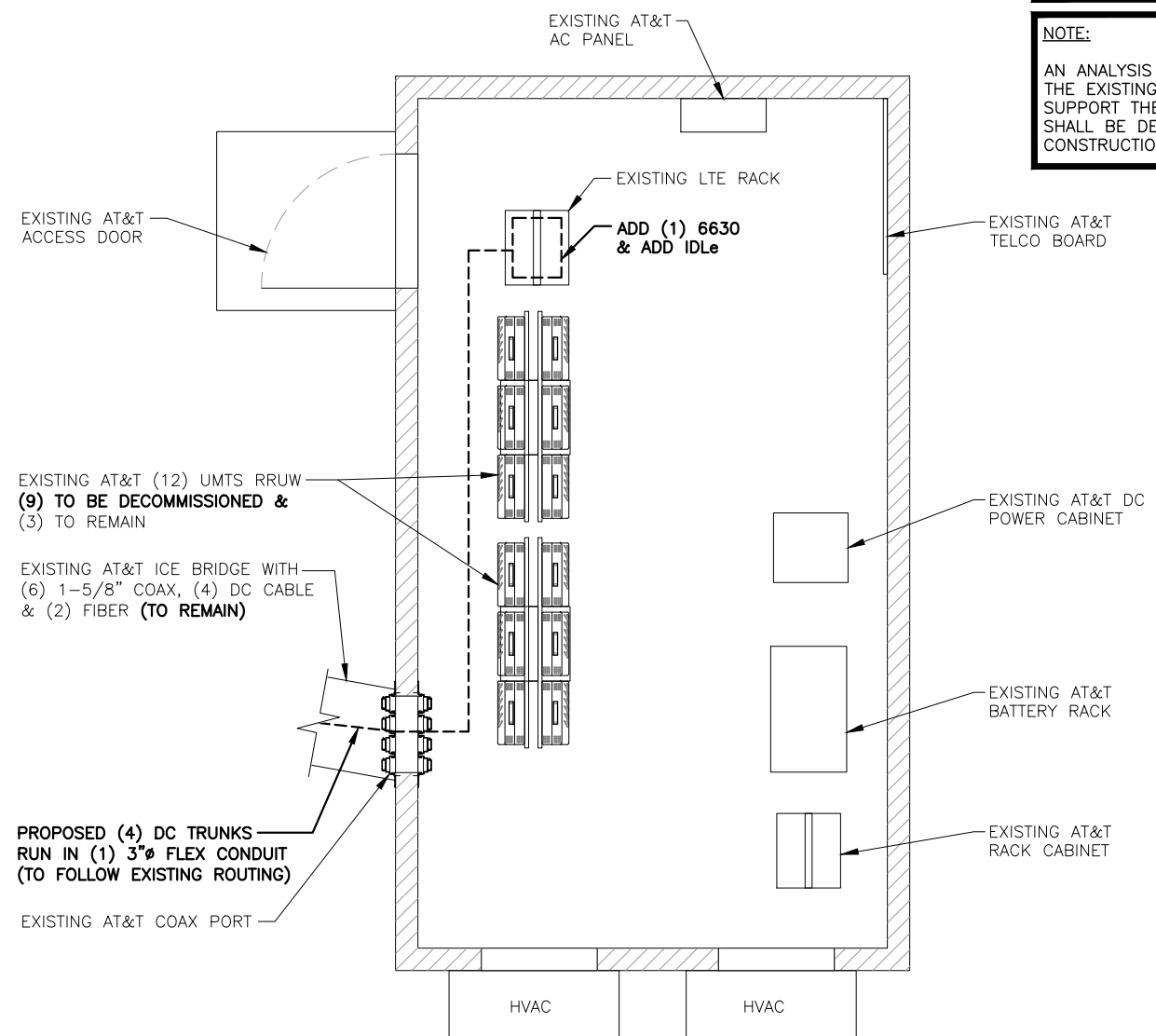
**NOTE:**  
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

**NOTE:**  
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING ANTENNA MOUNT TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY:  
HUDSON DESIGN GROUP, LLC.  
DATED: JANUARY 27, 2020

**NOTE:**  
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION.



**COMPOUND PLAN**  
22x34 SCALE: 3/16"=1'-0"  
11x17 SCALE: 3/32"=1'-0"



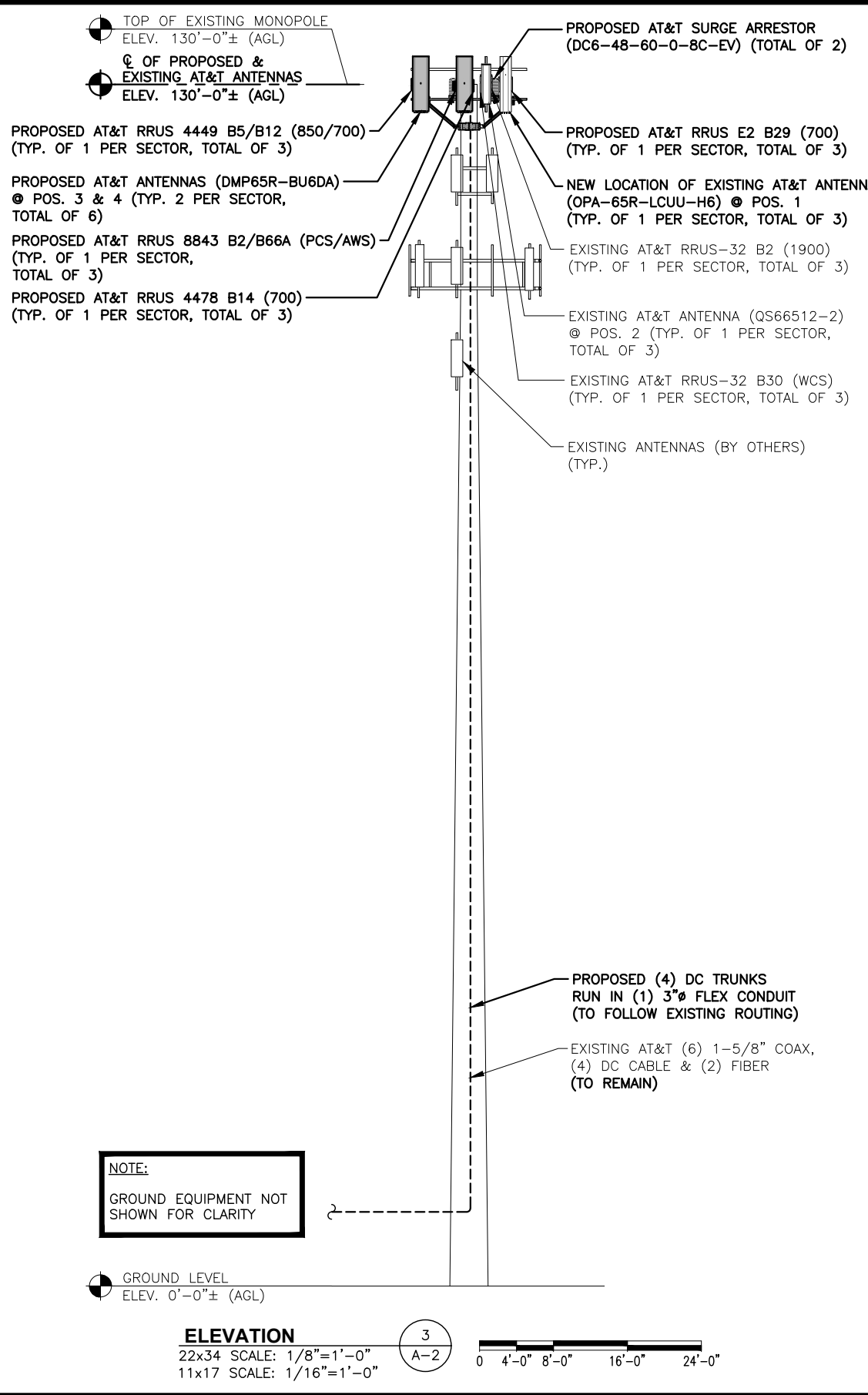
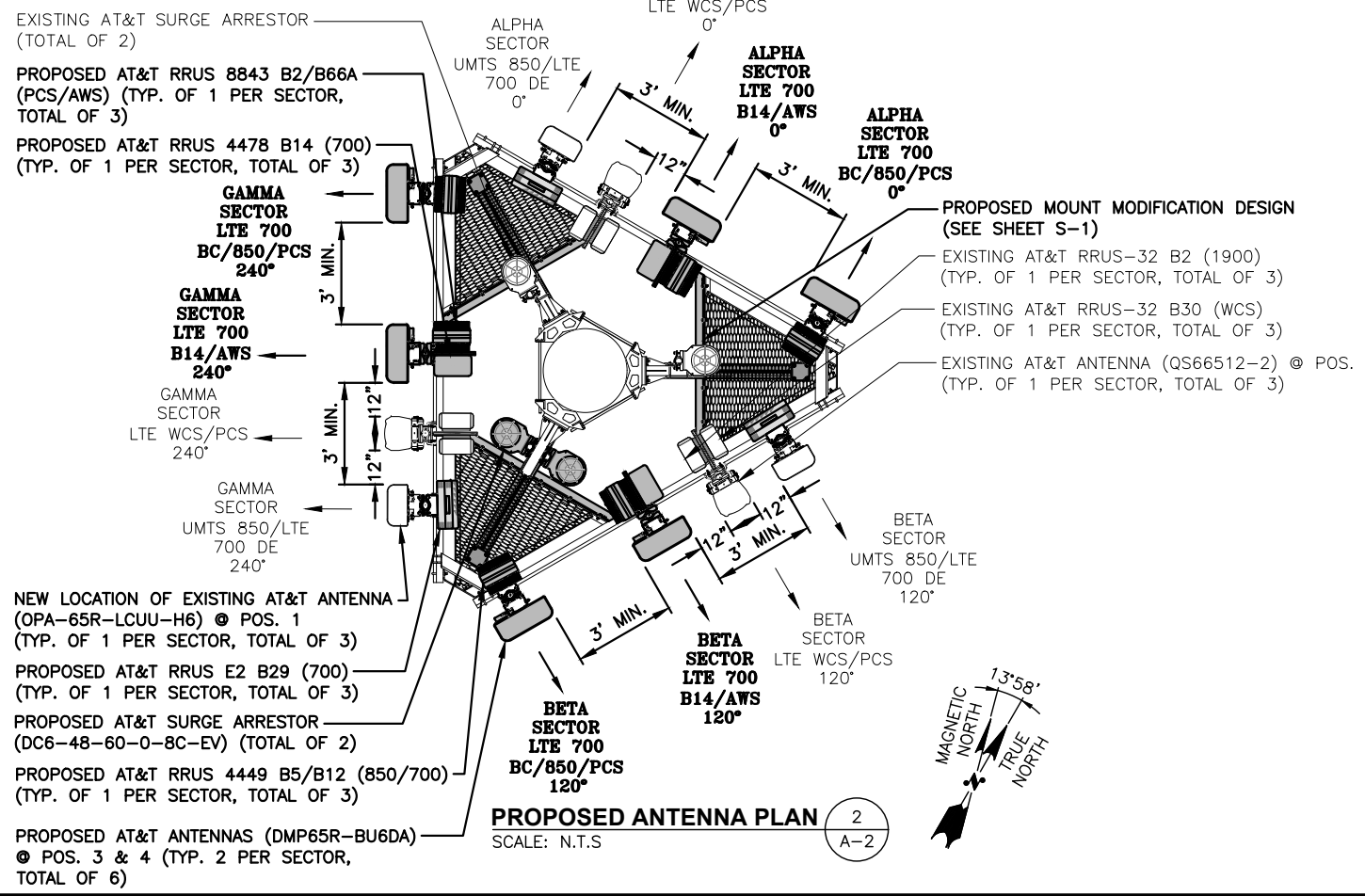
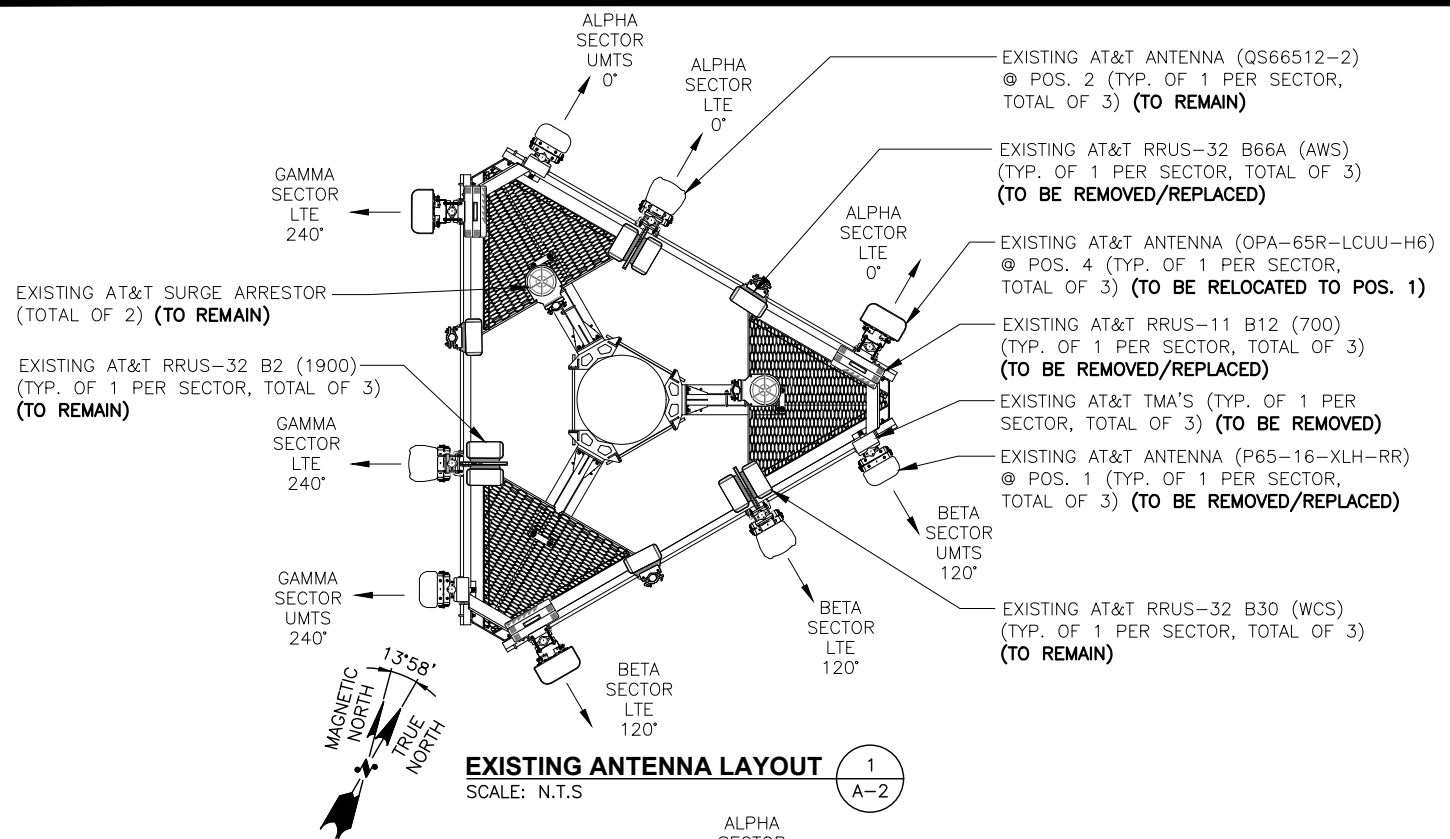
**EQUIPMENT PLAN**  
22x34 SCALE: 1/2"=1'-0"  
11x17 SCALE: 1/4"=1'-0"



NO.	DATE	ISSUED FOR REVIEW	GA	HC	DPH
A	01/13/20	ISSUED FOR REVIEW			
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: HC	DRAWN BY: GA		

<b>AT&amp;T</b>		
COMPOUND & EQUIPMENT PLANS LTE 5C_6C_5G_BWE 2020 UPGRADE		
SITE NUMBER	DRAWING NUMBER	REV
CT2547	A-1	A





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**NOTE:**  
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION.

NO.	DATE	REVISIONS	BY	CHK	APP'D
A	01/13/20	ISSUED FOR REVIEW	GA	HC	DPH
SCALE: AS SHOWN		DESIGNED BY: HC	DRAWN BY: GA		

AT&T		
ANTENNA LAYOUTS & ELEVATION		
LTE 5C_6C_5G_BWE 2020 UPGRADE		
SITE NUMBER	DRAWING NUMBER	REV
CT2547	A-2	A

**ANTENNA SCHEDULE**

SECTOR	EXISTING/PROPOSED	BAND	ANTENNA	SIZE (INCHES) (L x W x D)	ANTENNA Ø HEIGHT	AZIMUTH	TMA/ DIPLEXER	RRU	FREQUENCY	SIZE (INCHES) (L x W x D)	FEEDER	RAYCAP
A1	EXISTING	UMTS 850/LTE 700 DE	OPA-65R-LCUU-H6	72X14.8X7.4	130'-0"±	0°	-	(P)(1) RRUS E2 B29	(700)	20.4X18.5X7.5	(2)1-5/8 COAX	(E) (1) RAYCAP DC6-48-60-18-8F
A2	EXISTING	LTE WCS/PCS	QS66512-2	72x12x9.6	130'-0"±	0°	-	(E)(1) RRUS 32 B2 (E)(1) RRUS 32 B30	(PCS) (WCS)	- -	(E)(2) DC (1) FIBER	
A3	PROPOSED	LTE 700 B14/ AWS J	DMP65R-BU6DA	71.2X20.7X7.7	130'-0"±	0°	-	(P)(1) RRUS 4478 B14 (P)(1) RRUS 8843 B2/B66A	(700) (PCS/AWS)	18.1x13.4x8.3 14.9x13.2x10.9	-	
A4	PROPOSED	LTE 700 BC/ 850/PCS	DMP65R-BU6DA	71.2X20.7X7.7	130'-0"±	0°	-	(P)(1) RRUS 4449 B5/B12	(850/700)	17.9x13.9x9.44	-	
B1	EXISTING	UMTS 850/LTE 700 DE	OPA-65R-LCUU-H6	72X14.8X7.4	130'-0"±	120°	-	(P)(1) RRUS E2 B29	(700)	20.4X18.5X7.5	(2)1-5/8 COAX	(E) (1) RAYCAP DC6-48-60-18-8F
B2	EXISTING	LTE WCS/PCS	QS66512-2	72x12x9.6	130'-0"±	120°	-	(E)(1) RRUS 32 B2 (E)(1) RRUS 32 B30	(PCS) (WCS)	- -	(E)(2) DC (1) FIBER	
B3	PROPOSED	LTE 700 B14/ AWS J	DMP65R-BU6DA	71.2X20.7X7.7	130'-0"±	120°	-	(P)(1) RRUS 4478 B14 (P)(1) RRUS 8843 B2/B66A	(700) (PCS/AWS)	18.1x13.4x8.3 14.9x13.2x10.9	-	
B4	PROPOSED	LTE 700 BC/ 850/PCS	DMP65R-BU6DA	71.2X20.7X7.7	130'-0"±	120°	-	(P)(1) RRUS 4449 B5/B12	(850/700)	17.9x13.9x9.44	-	
C1	EXISTING	UMTS 850/LTE 700 DE	OPA-65R-LCUU-H6	72X14.8X7.4	130'-0"±	240°	-	(P)(1) RRUS E2 B29	(700)	20.4X18.5X7.5	(2)1-5/8 COAX	(P) (2) RAYCAP DC6-48-60-0-8C-EV
C2	EXISTING	LTE WCS/PCS	QS66512-2	72x12x9.6	130'-0"±	240°	-	(E)(1) RRUS 32 B2 (E)(1) RRUS 32 B30	(PCS) (WCS)	- -	(P)(4) DC	
C3	PROPOSED	LTE 700 B14/ AWS J	DMP65R-BU6DA	71.2X20.7X7.7	130'-0"±	240°	-	(P)(1) RRUS 4478 B14 (P)(1) RRUS 8843 B2/B66A	(700) (PCS/AWS)	18.1x13.4x8.3 14.9x13.2x10.9	-	
C4	PROPOSED	LTE 700 BC/ 850/PCS	DMP65R-BU6DA	71.2X20.7X7.7	130'-0"±	240°	-	(P)(1) RRUS 4449 B5/B12	(850/700)	17.9x13.9x9.44	-	

**NOTE:**

REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

**NOTE:**

AN ANALYSIS FOR THE CAPACITY OF THE EXISTING ANTENNA MOUNT TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY: HUDSON DESIGN GROUP, LLC. DATED: JANUARY 27, 2020

**NOTE:**

AN ANALYSIS FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION.

**FINAL ANTENNA SCHEDULE**

SCALE: N.T.S

1  
A-3

QUANTITY	MODEL	L	W	D
3(P)	8843 B2/B66A (PCS/AWS)	14.9"	13.2"	10.9"
3(P)	4449 B5/B12 (850/700)	14.9"	13.2"	10.4"
3(P)	RRUS B14 4478 (700)	18.1"	13.4"	8.3"
3(P)	RRUS E2 B29 (700)	20.4"	18.5"	7.5"
3(E)	RRUS-32 B2 (PCS)	27.2"	12.1"	7.0"
3(E)	RRUS-32 B30 (WCS)	27.2"	12.1"	7.0"

**NOTE:**  
MOUNT PER MANUFACTURER'S SPECIFICATIONS

**NOTE:**  
SEE RFDS FOR RRH FREQUENCY AND MODEL NUMBER

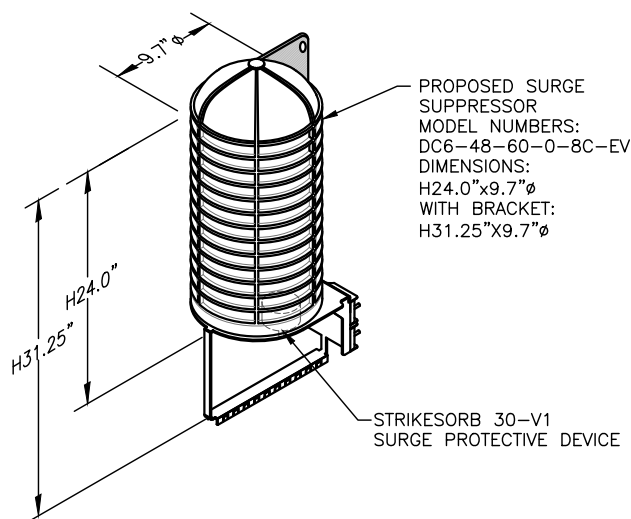
PROPOSED RRU REFER TO THE FINAL RFDS AND CHART FOR QUANTITY, MODEL AND DIMENSIONS

**NOTE:**  
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

**PROPOSED RRU DETAIL**

SCALE: N.T.S

2  
A-3

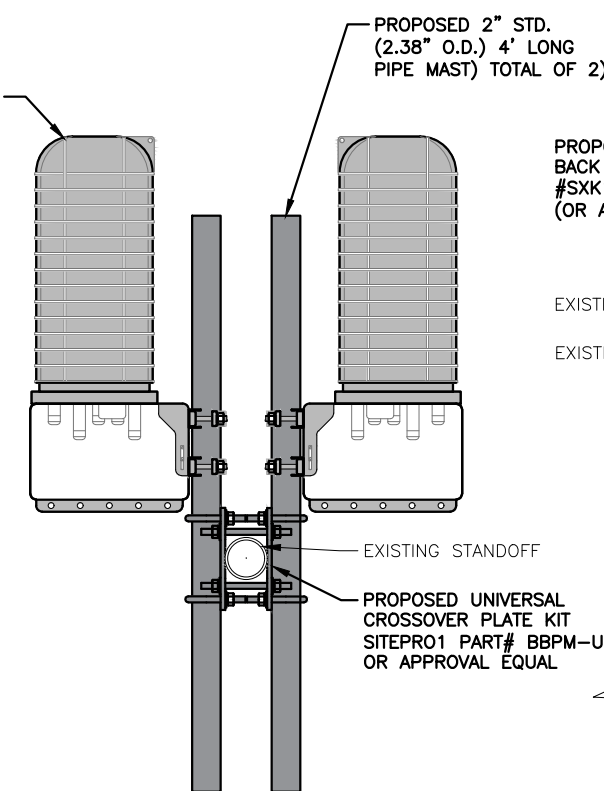


**NOTE:**  
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

**DC SURGE SUPPRESSOR DETAIL**

SCALE: N.T.S

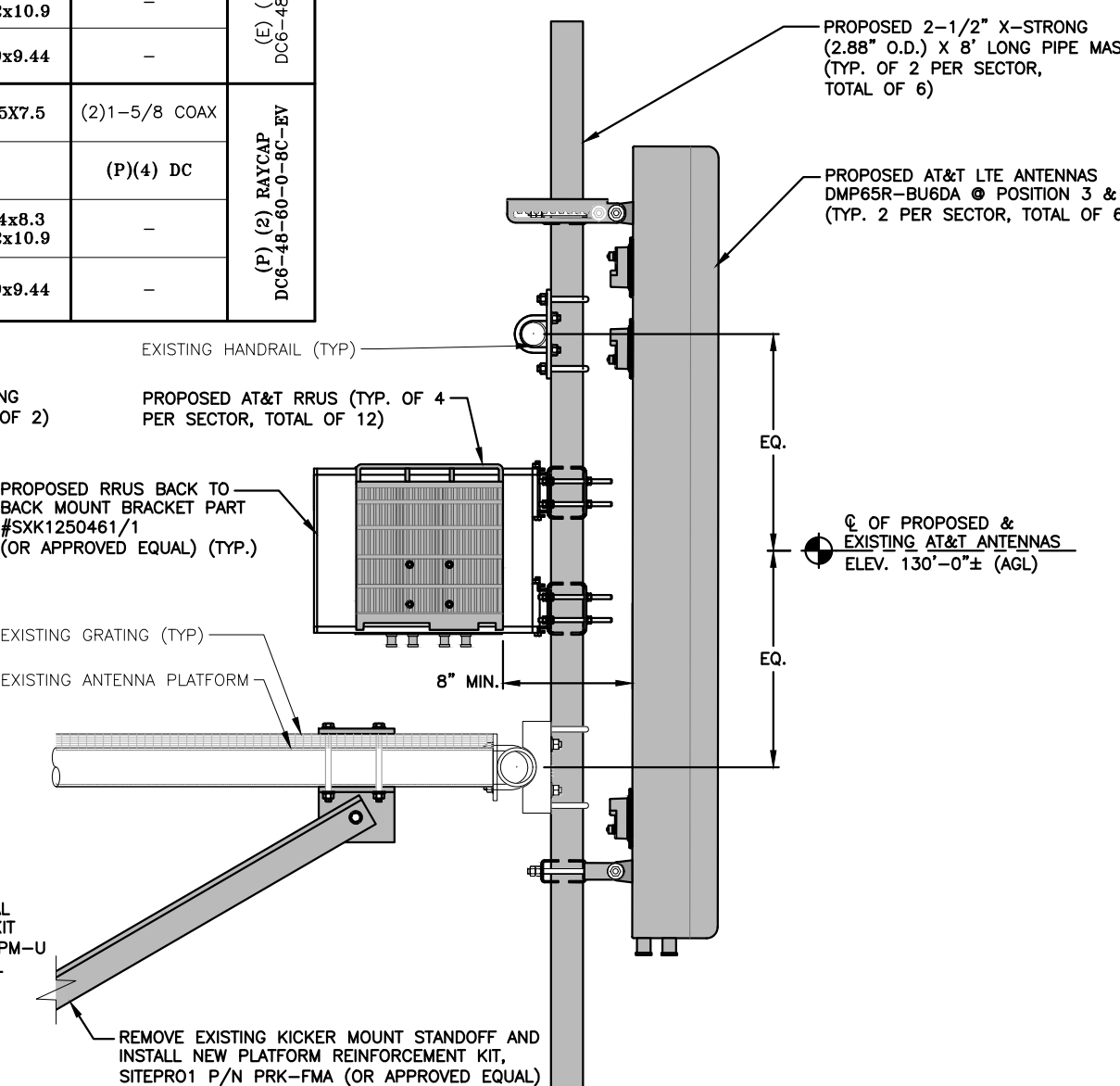
3  
A-3



**PROPOSED SURGE ARRESTOR MOUNTING DETAIL**

SCALE: N.T.S

4  
A-3



**PROPOSED LTE ANTENNA MOUNTING DETAIL**

22x34 SCALE: 1-1/2"=1'-0"  
11x17 SCALE: 3/4"=1'-0"

5  
A-3

0 0'-4" 0'-8" 1'-4" 2'-0"

NO.	DATE	REVISIONS	BY	CHK	APP'D
A	01/13/20	ISSUED FOR REVIEW	GA	HC	DPH
SCALE: AS SHOWN		DESIGNED BY: HC	DRAWN BY: GA		

SITE NUMBER	DRAWING NUMBER	REV
CT2547	A-3	A



**STRUCTURAL NOTES:**

- DESIGN REQUIREMENTS ARE PER STATE BUILDING CODE AND APPLICABLE SUPPLEMENTS, INTERNATIONAL BUILDING CODE, EIA/TIA-222-H STRUCTURAL STANDARDS FOR STEEL ANTENNA, TOWERS AND ANTENNA SUPPORTING STRUCTURES.
- CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE CONSTRUCTION MANAGER AND ENGINEER OF RECORD.
- DESIGN AND CONSTRUCTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".
- STRUCTURAL STEEL SHALL CONFORM TO ASTM A992 (Fy=50 ksi), MISCELLANEOUS STEEL SHALL CONFORM TO ASTM A36 UNLESS OTHERWISE INDICATED.
- STEEL PIPE SHALL CONFORM TO ASTM A500 "COLD-FORMED WELDED & SEAMLESS CARBON STEEL STRUCTURAL TUBING", GRADE B, OR ASTM A53 PIPE STEEL BLACK AND HOT-DIPPED ZINC-COATED WELDED AND SEAMLESS TYPE E OR S, GRADE B. PIPE SIZES INDICATED ARE NOMINAL. ACTUAL OUTSIDE DIAMETER IS LARGER.
- STRUCTURAL CONNECTION BOLTS SHALL BE HIGH STRENGTH BOLTS (BEARING TYPE) AND CONFORM TO ASTM A325 TYPE-X "HIGH STRENGTH BOLTS FOR STRUCTURAL JOINTS, INCLUDING SUITABLE NUTS AND PLAIN HARDENED WASHERS". ALL BOLTS SHALL BE 3/4" DIA UON.
- ALL STEEL MATERIALS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS", UNLESS OTHERWISE NOTED.
- ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC-COATING (HOT-DIP) ON IRON AND STEEL HARDWARE", UNLESS OTHERWISE NOTED.
- FIELD WELDS, DRILL HOLES, SAW CUTS AND ALL DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED WITH AN ORGANIC ZINC REPAIR PAINT COMPLYING WITH REQUIREMENTS OF ASTM A780. GALVANIZING REPAIR PAINT SHALL HAVE 65 PERCENT ZINC BY WEIGHT, ZIRP BY DUNCAN GALVANIZING, GALVA BRIGHT PREMIUM BY CROWN OR EQUAL. THICKNESS OF APPLIED GALVANIZING REPAIR PAINT SHALL BE NOT LESS THAN 4 COATS (ALLOW TIME TO DRY BETWEEN COATS) WITH A RESULTING COATING THICKNESS REQUIRED BY ASTM A123 OR A153 AS APPLICABLE.
- CONTRACTOR SHALL COMPLY WITH AWS CODE FOR PROCEDURES, APPEARANCE AND QUALITY OF WELDS, AND FOR METHODS USED IN CORRECTING WELDING. ALL WELDERS AND WELDING PROCESSES SHALL BE QUALIFIED IN ACCORDANCE WITH AWS "STANDARD QUALIFICATION PROCEDURES". ALL WELDING SHALL BE DONE USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND D1.1. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "STEEL CONSTRUCTION MANUAL". 14TH EDITION.
- INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NON-CONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE CONSTRUCTION MANAGER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE CONSTRUCTION MANAGER APPROVAL.
- UNISTRUT SHALL BE FORMED STEEL CHANNEL STRUT FRAMING AS MANUFACTURED BY UNISTRUT CORP., WAYNE, MI OR EQUAL. STRUT MEMBERS SHALL BE 1 5/8"x1 5/8"x12GA, UNLESS OTHERWISE NOTED, AND SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION.
- EPOXY ANCHOR ASSEMBLY SHALL CONSIST OF STAINLESS STEEL ANCHOR ROD WITH NUTS & WASHERS, AN INTERNALLY THREADED INSERT, A SCREEN TUBE AND A EPOXY ADHESIVE. THE ANCHORING SYSTEM SHALL BE THE HILTI-HIT HY-270 AND OR HY-200 SYSTEMS (AS SPECIFIED IN DWG.) OR ENGINEERS APPROVED EQUAL.
- EXPANSION BOLTS SHALL CONFORM TO FEDERAL SPECIFICATION FF-S-325, GROUP II, TYPE 4, CLASS I, HILTI KWIK BOLT III OR APPROVED EQUAL. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- LUMBER SHALL COMPLY WITH THE REQUIREMENTS OF THE AMERICAN INSTITUTE OF TIMBER CONSTRUCTION AND THE NATIONAL FOREST PRODUCTS ASSOCIATION'S NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION. ALL LUMBER SHALL BE PRESSURE TREATED AND SHALL BE STRUCTURAL GRADE NO. 2 OR BETTER.
- WHERE ROOF PENETRATIONS ARE REQUIRED, THE CONTRACTOR SHALL CONTACT AND COORDINATE RELATED WORK WITH THE BUILDING OWNER AND THE EXISTING ROOF INSTALLER. WORK SHALL BE PERFORMED IN SUCH A MANNER AS TO NOT VOID THE EXISTING ROOF WARRANTY. ROOF SHALL BE WATERTIGHT.
- ALL FIBERGLASS MEMBERS USED ARE AS MANUFACTURED BY STRONGWELL COMPANY OF BRISTOL, VA 24203. ALL DESIGN CRITERIA FOR THESE MEMBERS IS BASED ON INFORMATION PROVIDED IN THE DESIGN MANUAL. ALL REQUIREMENTS PUBLISHED IN SAID MANUAL MUST BE STRICTLY ADHERED TO.
- NO MATERIALS TO BE ORDERED AND NO WORK TO BE COMPLETED UNTIL SHOP DRAWINGS HAVE BEEN REVIEWED AND APPROVED IN WRITING.
- SUBCONTRACTOR SHALL FIREPROOF ALL STEEL TO PRE-EXISTING CONDITIONS.

**SPECIAL INSPECTIONS (REFERENCE IBC CHAPTER 17):**

**GENERAL:** WHERE APPLICATION IS MADE FOR CONSTRUCTION, THE OWNER OR THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE ACTING AS THE OWNER'S AGENT SHALL EMPLOY ONE OR MORE APPROVED AGENCIES TO PERFORM INSPECTIONS DURING CONSTRUCTION ON THE TYPES OF WORK LISTED IN THE INSPECTION CHECKLIST ABOVE.

THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE AND ENGINEERS OF RECORD INVOLVED IN THE DESIGN OF THE PROJECT ARE PERMITTED TO ACT AS THE APPROVED AGENCY AND THEIR PERSONNEL ARE PERMITTED TO ACT AS THE SPECIAL INSPECTOR FOR THE WORK DESIGNED BY THEM, PROVIDED THOSE PERSONNEL MEET THE QUALIFICATION REQUIREMENTS.

STATEMENT OF SPECIAL INSPECTIONS: THE APPLICANT SHALL SUBMIT A STATEMENT OF SPECIAL INSPECTIONS PREPARED BY THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE IN ACCORDANCE WITH SECTION 107.1 AS A CONDITION FOR ISSUANCE. THIS STATEMENT SHALL BE IN ACCORDANCE WITH SECTION 1705.

REPORT REQUIREMENT: SPECIAL INSPECTORS SHALL KEEP RECORDS OF INSPECTIONS. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. REPORTS SHALL INDICATE THAT WORK INSPECTED WAS OR WAS NOT COMPLETED IN CONFORMANCE TO APPROVED CONSTRUCTION DOCUMENTS. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF THEY ARE NOT CORRECTED, THE DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. A FINAL REPORT DOCUMENTING REQUIRED SPECIAL INSPECTIONS SHALL BE SUBMITTED.

**NOTES:**

- ALL CONNECTIONS TO BE SHOP WELDED & FIELD BOLTED USING 3/4"Ø A325-X BOLTS, UNLESS OTHERWISE NOTIFIED.
- SHOP DRAWING ENGINEER REVIEW & APPROVAL REQUIRED BEFORE ORDERING MATERIAL.
- SHOP DRAWING ENGINEER REVIEW & APPROVAL REQUIRED PRIOR TO STEEL FABRICATION.
- VERIFICATION OF EXISTING ROOF CONSTRUCTION IS REQUIRED PRIOR TO THE INSTALLATION OF THE ROOF PLATFORM. ENGINEER OF RECORD IS TO APPROVE EXISTING CONDITIONS IN ORDER TO MOVE FORWARD.
- CENTERLINE OF PROPOSED STEEL PLATFORM SUPPORT COLUMNS TO BE CENTRALLY LOCATED OVER THE EXISTING BUILDING COLUMNS.
- EXISTING BRICK MASONRY COLUMNS/BEARING TO BE REPAIRED/REPLACED AT ALL PROPOSED PLATFORM SUPPORT POINTS. ENGINEER OF RECORD TO REVIEW AND APPROVE.

**NOTES:**

- REQUIRED FOR ANY NEW SHOP FABRICATED FRP OR STEEL.
- PROVIDED BY MANUFACTURER, REQUIRED IF HIGH STRENGTH BOLTS OR STEEL.
- PROVIDED BY GENERAL CONTRACTOR; PROOF OF MATERIALS.
- HIGH WIND ZONE INSPECTION CATB 120MPH OR CAT C,D 110MPH INSPECT FRAMING OF WALLS, ANCHORING, FASTENING SCHEDULE.
- ADHESIVE FOR REBAR AND ANCHORS SHALL HAVE BEEN TESTED IN ACCORDANCE WITH ACI 355.4 AND ICC-ES AC308 FOR CRACKED CONCRETE AND SEISMIC APPLICATIONS. DESIGN ADHESIVE BOND STRENGTH HAS BEEN BASED ON ACI 355.4 TEMPERATURE CATEGORY B WITH INSTALLATIONS INTO DRY HOLES DRILLED USING A CARBIDE BIT INTO CRACKED CONCRETE THAT HAS CURED FOR AT LEAST 21 DAYS. ADHESIVE ANCHORS REQUIRING CERTIFIED INSTALLATIONS SHALL BE INSTALLED BY A CERTIFIED ADHESIVE ANCHOR INSTALLER PER ACI 318-11 D.9.2.2. INSTALLATIONS REQUIRING CERTIFIED INSTALLERS SHALL BE INSPECTED PER ACI 318-11 D.8.2.4. AS REQUIRED; FOR ANY FIELD CHANGES TO THE ITEMS IN THIS TABLE.
- AS REQUIRED; FOR ANY FIELD CHANGES TO THE ITEMS IN THIS TABLE.

**SPECIAL INSPECTION CHECKLIST**

**BEFORE CONSTRUCTION**

CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
<b>REQUIRED</b>	ENGINEER OF RECORD APPROVED SHOP DRAWINGS <sup>1</sup>
<b>REQUIRED</b>	MATERIAL SPECIFICATIONS REPORT <sup>2</sup>
N/A	FABRICATOR NDE INSPECTION
<b>REQUIRED</b>	PACKING SLIPS <sup>3</sup>

ADDITIONAL TESTING AND INSPECTIONS:

**DURING CONSTRUCTION**

CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
<b>REQUIRED</b>	STEEL INSPECTIONS
N/A	HIGH STRENGTH BOLT INSPECTIONS
N/A	HIGH WIND ZONE INSPECTIONS <sup>4</sup>
N/A	FOUNDATION INSPECTIONS
N/A	CONCRETE COMP. STRENGTH, SLUMP TESTS AND PLACEMENT
N/A	POST INSTALLED ANCHOR VERIFICATION <sup>5</sup>
N/A	GROUT VERIFICATION
N/A	CERTIFIED WELD INSPECTION
N/A	EARTHWORK: LIFT AND DENSITY
N/A	ON SITE COLD GALVANIZING VERIFICATION
N/A	GUY WIRE TENSION REPORT

ADDITIONAL TESTING AND INSPECTIONS:

**AFTER CONSTRUCTION**

CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
<b>REQUIRED</b>	MODIFICATION INSPECTOR REDLINE OR RECORD DRAWINGS <sup>6</sup>
N/A	POST INSTALLED ANCHOR PULL-OUT TESTING
<b>REQUIRED</b>	PHOTOGRAPHS

ADDITIONAL TESTING AND INSPECTIONS:



45 BEECHWOOD DRIVE  
NORTH ANDOVER, MA 01845  
TEL: (978) 557-5553  
FAX: (978) 336-5586



12 INDUSTRIAL WAY  
SALEM, NH 03079

**SITE NUMBER: CT2547**  
**SITE NAME: MIDDLETOWN FAIRCHILD ROAD**  
**SBA SITE # ID: CTL02547**

50 FAIRCHILD ROAD  
MIDDLETOWN, CT 06457  
MIDDLESEX COUNTY



500 ENTERPRISE DRIVE, SUITE 3A  
ROCKY HILL, CT 06067

NO.	DATE	ISSUED FOR REVIEW	GA	HC	DPH
		REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: HC	DRAWN BY: GA		

**AT&T**

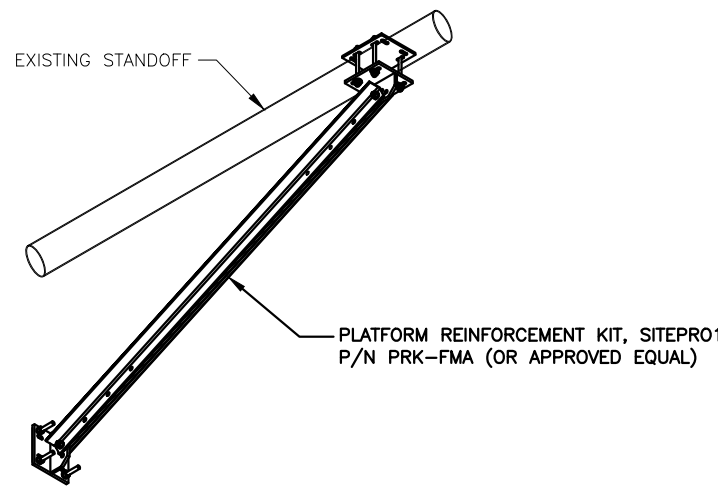
**DETAILS**  
**LTE 5C\_6C\_5G\_BWE 2020 UPGRADE**

SITE NUMBER	DRAWING NUMBER	REV
CT2547	SN-1	A

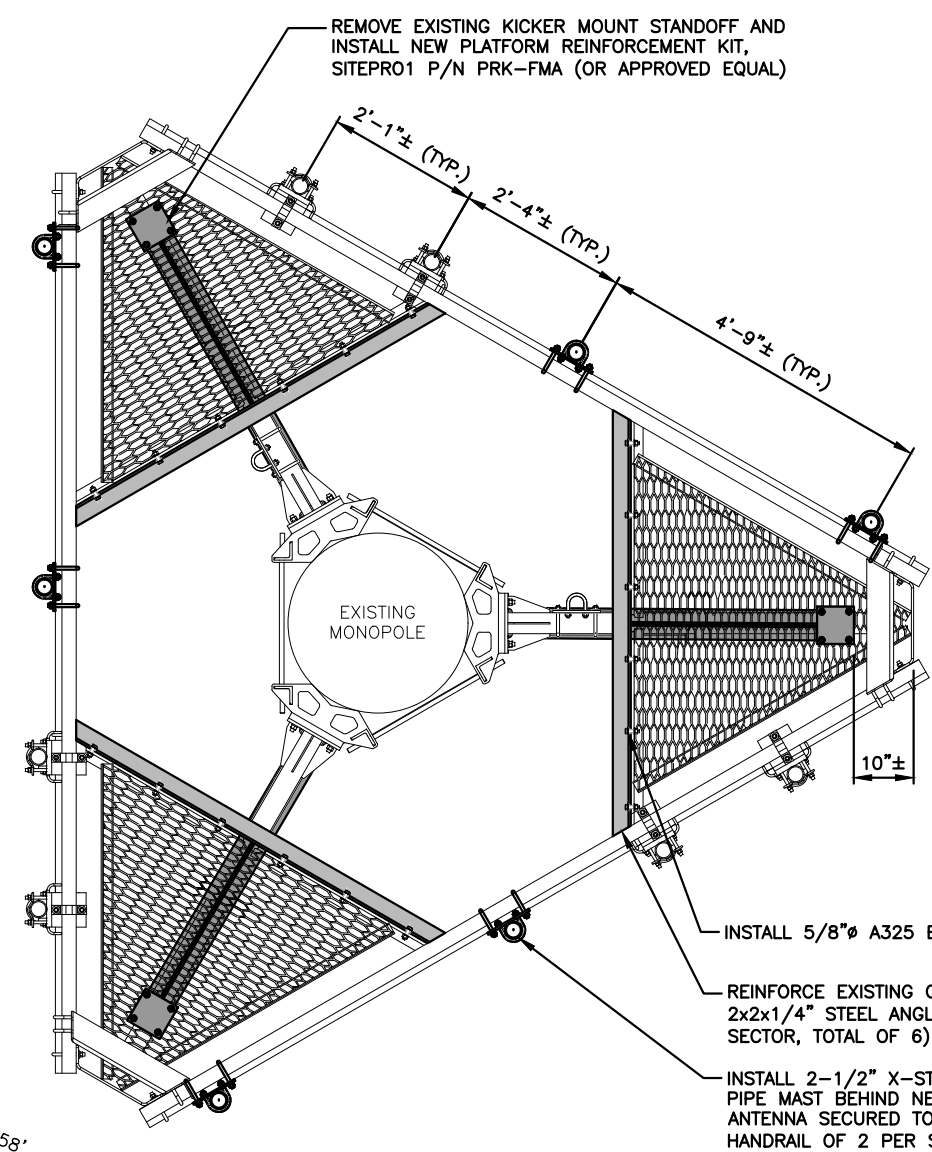
**NOTE:**  
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

**NOTE:**  
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING ANTENNA MOUNT TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY:  
HUDSON DESIGN GROUP, LLC.  
DATED: JANUARY 27, 2020

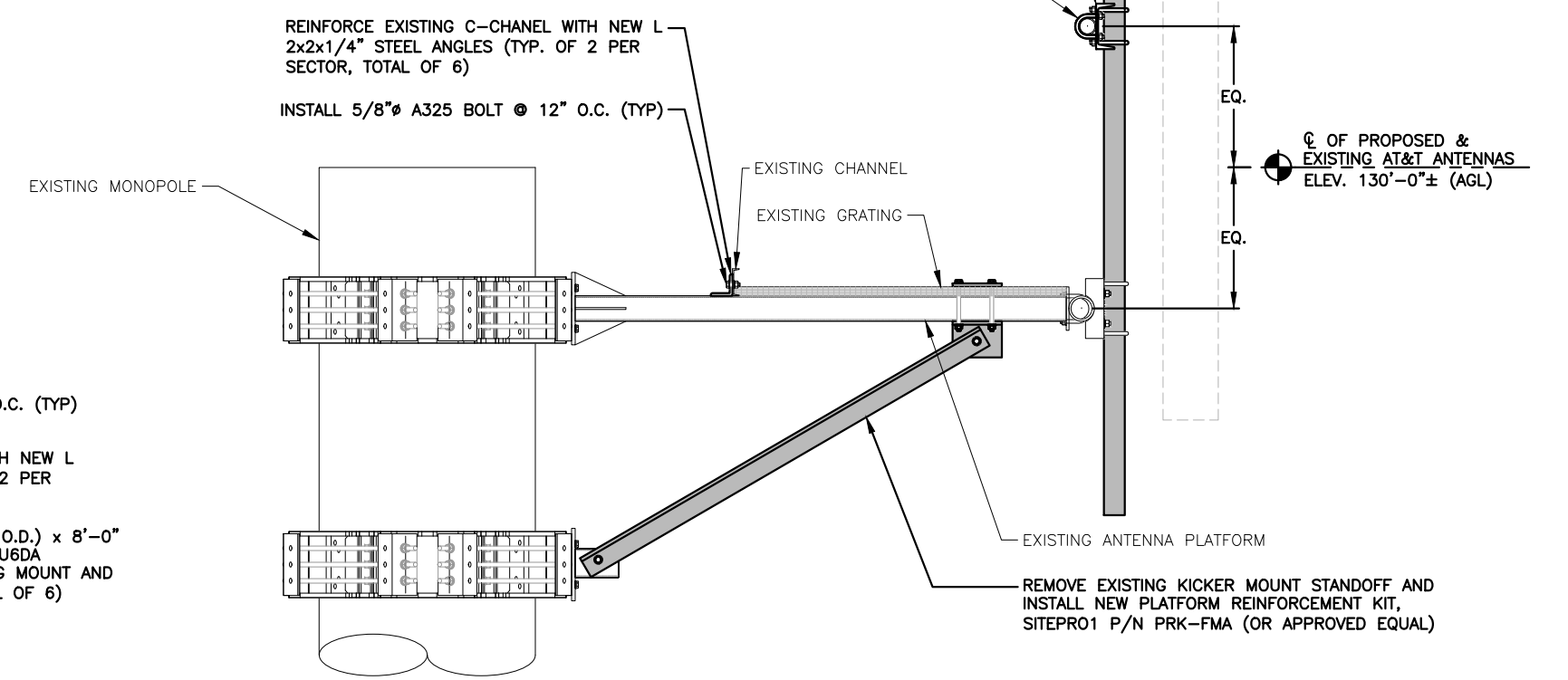
**NOTE:**  
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION.



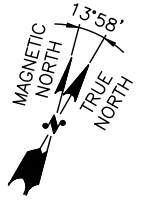
**STANDOFF DETAIL** 2  
SCALE: N.T.S. S-1



**PROPOSED MOUNT MODIFICATIONS PLAN** 1  
22x34 SCALE: 3/4"=1'-0"  
11x17 SCALE: 3/8"=1'-0" S-1



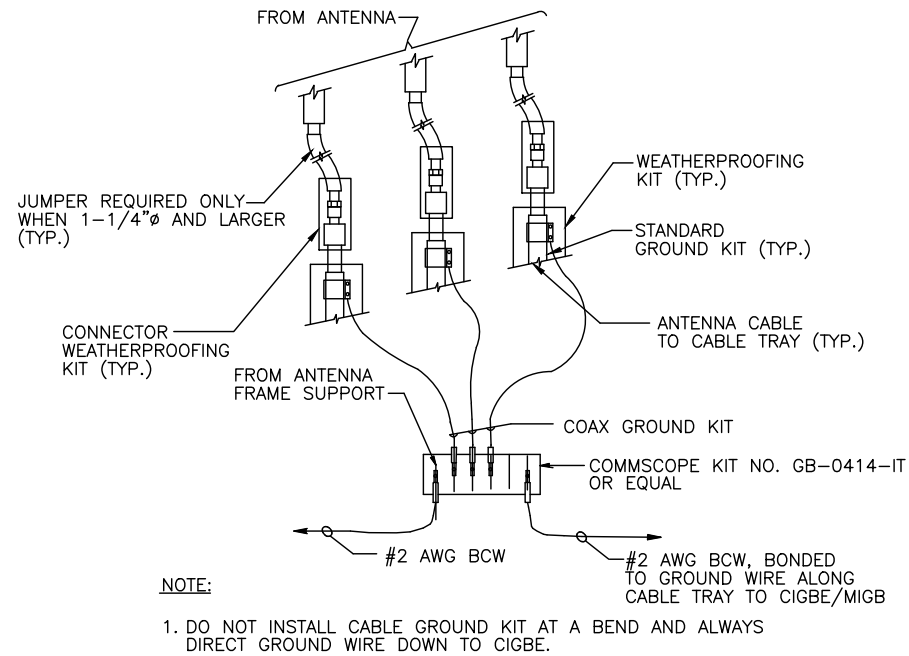
**PROPOSED MOUNT MODIFICATIONS DETAIL** 3  
22x34 SCALE: 1"=1'-0"  
11x17 SCALE: 1/2"=1'-0" S-1



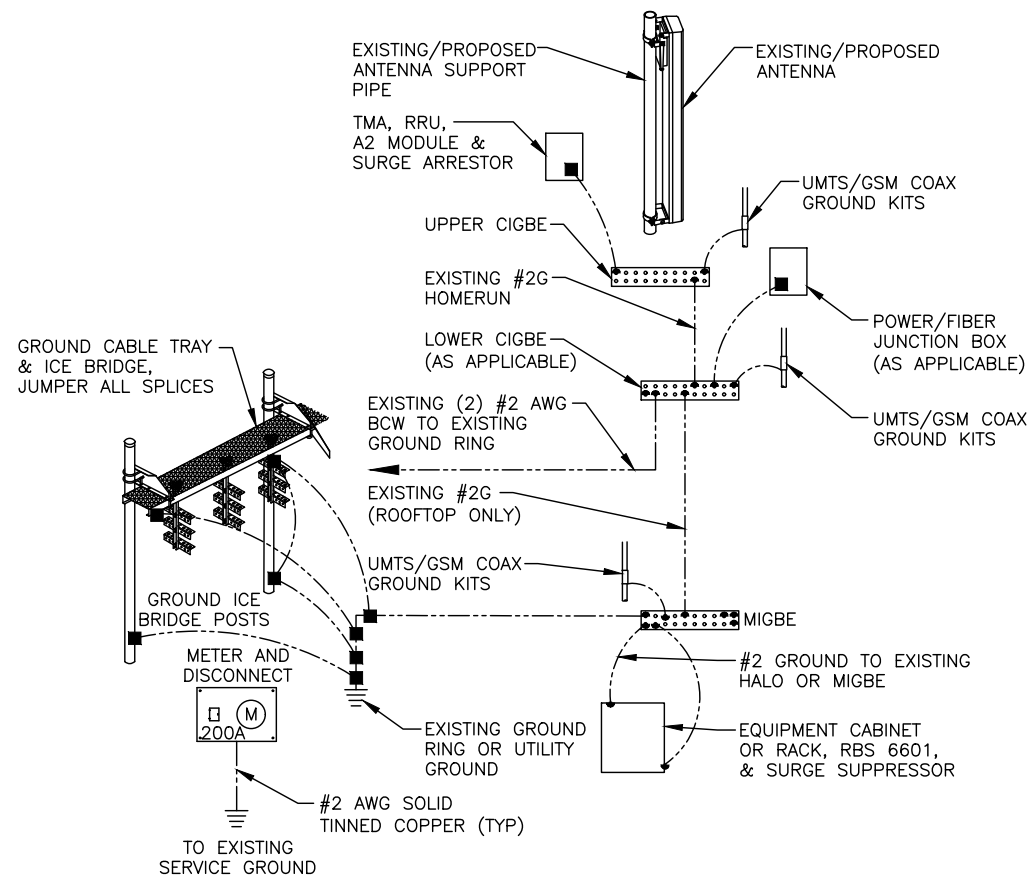
NO.	DATE	REVISIONS	BY	CHK	APP'D
A	01/13/20	ISSUED FOR REVIEW	GA	HC	DPH
SCALE: AS SHOWN		DESIGNED BY: HC	DRAWN BY: GA		

<b>AT&amp;T</b>		
MOUNT MODIFICATION DESIGN		
LTE 5C_6C_5G_BWE 2020 UPGRADE		
SITE NUMBER	DRAWING NUMBER	REV
CT2547	S-1	A

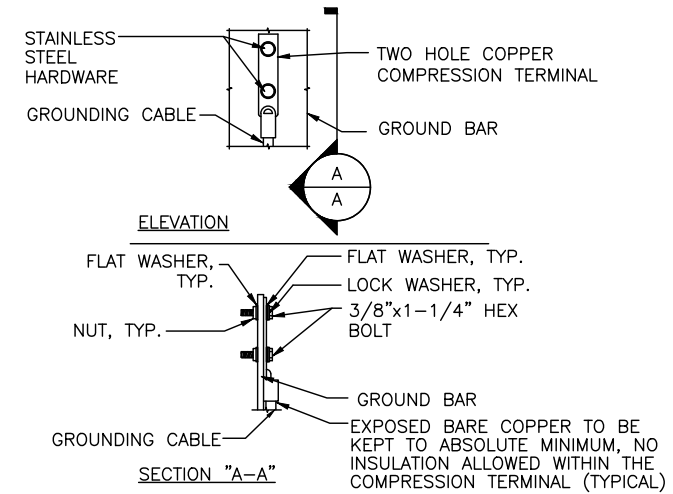




**GROUND WIRE TO GROUND BAR CONNECTION DETAIL** 1  
SCALE: N.T.S. G-1



**GROUNDING RISER DIAGRAM** 2  
SCALE: N.T.S. G-1



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

**TYPICAL GROUND BAR CONNECTION DETAIL** 3  
SCALE: N.T.S. G-1

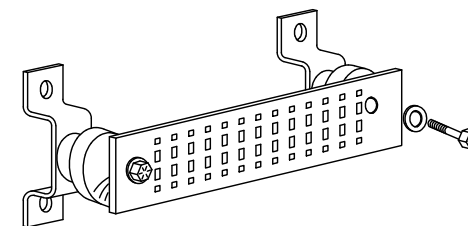
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

**SECTION "P" - SURGE PRODUCERS**

- CABLE ENTRY PORTS (HATCH PLATES) (#2 AWG)
- GENERATOR FRAMEWORK (IF AVAILABLE) (#2 AWG)
- TELCO GROUND BAR
- COMMERCIAL POWER COMMON NEUTRAL/GROUND BOND (#2 AWG)
- +24V POWER SUPPLY RETURN BAR (#2 AWG)
- 48V POWER SUPPLY RETURN BAR (#2 AWG)
- RECTIFIER FRAMES.

**SECTION "A" - SURGE ABSORBERS**

- INTERIOR GROUND RING (#2 AWG)
- EXTERNAL EARTH GROUND FIELD (BURIED GROUND RING) (#2 AWG)
- METALLIC COLD WATER PIPE (IF AVAILABLE) (#2 AWG)
- BUILDING STEEL (IF AVAILABLE) (#2 AWG)



**GROUND BAR - DETAIL (AS REQUIRED)** 4  
SCALE: N.T.S. G-1

NO.	DATE	ISSUED FOR REVIEW	GA	HC	DPH
A	01/13/20	ISSUED FOR REVIEW			
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: HC	DRAWN BY: GA		

AT&T		
GROUNDING DETAILS		
LTE 5C_6C_5G_BWE 2020 UPGRADE		
SITE NUMBER	DRAWING NUMBER	REV
CT2547	G-1	A





January 27, 2020



SAI Communications  
12 Industrial Way  
Salem NH, 03079

RE:      Site Number:            CT2547 (LTE 5C/6C)  
            FA Number:              10141343  
            PACE Number:            MRCTB045500  
            PT Number:                2051A0T1MP  
            Site Name:                 MIDDLETOWN FAIRCHILD ROAD  
            Site Address:             50 Fairchild Road  
   Middletown, CT 06457

To Whom It May Concern:

Hudson Design Group LLC (HDG) has been authorized by SAI Communications to perform a mount analysis on the existing AT&T antenna/RRH mount to determine their capability of supporting the following additional loading:

- (3) OPA-65R-LCUU-H6 Antennas (72.0"x14.8"x7.4" – Wt. = 73 lbs. /each)
- (3) QS66512-2 Antennas (72.0"x12.0"x9.6" – Wt. = 111 lbs. /each)
- (3) RRUS-32 B2 RRH's (27.2"x12.1"x7.0" – Wt. = 60 lbs. /each)
- (3) RRUS-32 B30 RRH's (27.2"x12.1"x7.0" – Wt. = 60 lbs. /each)
- (2) Squid Surge Arrestor (24.0"x9.7"  $\Phi$  – Wt. = 33 lbs. /each)
- **(6) DMP65R-BU6DA Antennas (71.2"x20.7"x7.7" – Wt. = 80 lbs. /each)**
- **(3) RRUS-E2 B29 RRH's (20.4"x18.5"x7.5" – Wt. = 53 lbs. /each)**
- **(3) B14 4478 RRH's (18.1"x13.4"x8.3" – Wt. = 60 lbs. /each)**
- **(3) B2/B66A 8843 RRH's (14.9"x13.2"x10.9" – Wt. = 72 lbs. /each)**
- **(3) B5/B12 4449 RRH's (17.9"x13.2"x9.4" – Wt. = 71 lbs. /each)**
- **(2) Squid Surge Arrestor (24.0"x9.7"  $\Phi$  – Wt. = 33 lbs. /each)**

\*Proposed equipment shown in bold

Fabrication drawings prepared by CommScope, P/N MTC3607, dated September 24, 2013 were available for the existing mount. HDG conducted a ground audit of the existing AT&T antenna mount on November 11, 2019.

Mount Analysis Methods:

- This analysis was conducted in accordance with EIA/TIA-222-H, Structural Standards for Steel Antenna Towers and Antenna Supporting Structures, the International Building Code 2015 with 2018 Connecticut State Building Code, and AT&T Mount Technical Directive – R13.
- HDG considers this mount to be asymmetrical and has applied wind loads in 30 degree increments all around the mount. Per TIA-222-H and Appendix N of the Connecticut State Building Code, the max basic wind speed for this site is equal to 130 mph with a max basic wind speed with ice of 50 mph and a max ice thickness of 1.0 in. An escalated ice thickness of 1.15 in was used for this analysis.
- HDG considers this site to be exposure category C; tower is located near large, flat, open, terrain/grasslands.
- HDG considers this site to be topographic category 1; tower is located on flat terrain or the bottom of a hill or ridge.
- The mount has been analyzed with load combinations consisting of 250 lbs live load using a service wind speed of 30 mph wind on the worst case antenna. Analysis performed on each antenna pipe to determine worst case location; worst case location was antenna position 2.
- The mount has been analyzed with load combinations consisting of a 250 lbs live load in a worst case location on the mount.
- The existing mount is secured to the existing monopole with ring mount and thru bolts. The connection is considered OK by visual inspection.

Based on our evaluation, we have determined that the existing mount **IS NOT CAPABLE** of supporting the proposed installation. HDG recommends the following modifications:

- **Remove existing Kicker Mount Standoff and Install new platform reinforcement kit, SitePro1 P/N PRK-FMA (or approved equal).**
- **Install new 2-1/2" x-strong (2.88" O.D.) pipe mast behind new DMP65R-BU6DA antennas secured to the existing mount and handrail (typ. of 2 per sector, total of 6).**
- **Reinforce existing C-channel with new L 2x2x1/4 steel angles (typ. of 2 per sector, total of 6).**

	Component	Controlling Load Case	Stress Ratio	Pass/Fail
Existing (LTE 5C/6C) Mount Rating	12	LC1	119%	<b>FAIL</b>
Modified (LTE 5C/6C) Mount Rating	12	LC4	92%	<b>PASS</b>

Reference Documents:

- Fabrication drawings prepared by CommScope, P/N MTC3607, dated September 24, 2013.

This determination was based on the following limitations and assumptions:

1. HDG is not responsible for any modifications completed prior to and hereafter which HDG was not directly involved.
2. All structural members and their connections are assumed to be in good condition and are free from defects with no deterioration to its member capacities.
3. All antennas, coax cables and waveguide cables are assumed to be properly installed and supported as per the manufacturer's requirements.
4. The existing mount has been adequately secured to the tower structure per the mount manufacturer's specifications.
5. All components pertaining to AT&T's mounts must be tightened and re-plumbed prior to the installation of new appurtenances.
6. HDG performed a localized analysis on the mount itself and not on the supporting tower structure.

Please feel free to contact our office should you have any questions.

Respectfully Submitted,  
Hudson Design Group LLC



Michael Cabral  
Vice President



Daniel P. Hamm, PE  
Principal



**FIELD PHOTOS:**





**HUDSON**  
Design Group LLC

## Wind & Ice Calculations

Date: 1/29/2020  
 Project Name: MIDDLETOWN FAIRCHILD ROAD  
 Project No.: CT2547  
 Designed By: RL Checked By: MSC



**2.6.5.2 Velocity Pressure Coeff:**

$K_z = 2.01 (z/z_g)^{2/\alpha}$

$K_z =$  **1.337**

$z =$  130 (ft)  
 $z_g =$  900 (ft)  
 $\alpha =$  9.5

$K_{zmin} \leq K_z \leq 2.01$

**Table 2-4**

Exposure	$Z_g$	$\alpha$	$K_{zmin}$	$K_c$
B	1200 ft	7.0	0.70	0.9
C	900 ft	9.5	0.85	1.0
D	700 ft	11.5	1.03	1.1

**2.6.6.2 Topographic Factor:**

**Table 2-5**

Topo. Category	$K_t$	f
2	0.43	1.25
3	0.53	2.0
4	0.72	1.5

$K_{zt} = [1 + (K_c K_t / K_h)]^2$

$K_h = e^{(f \cdot z / H)}$

$K_{zt} =$  **#DIV/0!**

$K_h =$  **#DIV/0!**

$K_c =$  1.0 (from Table 2-4)

$K_t =$  0 (from Table 2-5)

f = 0 (from Table 2-5)

z = 130

$z_s =$  190 (Mean elevation of base of structure above sea level)

H = 0 (Ht. of the crest above surrounding terrain)

$K_{zt} =$  1.00 (from 2.6.6.2.1)

$K_e =$  0.99 (from 2.6.8)

*(If Category 1 then  $K_{zt} = 1.0$ )*

Category = **1**

**2.6.10 Design Ice Thickness**

Max Ice Thickness =  
 Importance Factor =

$t_i =$  1.00 in

l = 1.0 (from Table 2-3)

$K_{iz} =$  1.15 (from Sec. 2.6.10)

$t_{iz} = t_i * I * K_{iz} * (K_{zt})^{0.35}$

$t_{iz} =$  1.15 in



Date: 1/29/2020  
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**2.6.9 Gust Effect Factor**

2.6.9.1 Self Supporting Lattice Structures

$G_h = 1.0$  Latticed Structures > 600 ft

$G_h = 0.85$  Latticed Structures 450 ft or less

$G_h = 0.85 + 0.15 [h/150 - 3.0]$

$h =$  ht. of structure

$h =$  130

$G_h =$  0.85

2.6.9.2 Guyed Masts

$G_h =$  0.85

2.6.9.3 Pole Structures

$G_h =$  1.1

2.6.9 Appurtenances

$G_h =$  1.0

2.6.9.4 Structures Supported on Other Structures

(Cantilevered tubular or latticed spines, pole, structures on buildings (ht. : width ratio > 5))

$G_h =$  1.35

$G_h =$  1.00

2.6.11.2 Design Wind Force on Appurtenances

$F = q_z * G_h * (EPA)_A$

$q_z = 0.00256 * K_z * K_{zt} * K_s * K_e * K_d * V_{max}^2$

$q_z =$	54.60
$q_{z(ice)} =$	8.08
$q_{z(30)} =$	2.91

$K_z =$	1.337 (from 2.6.5.2)
$K_{zt} =$	1.0 (from 2.6.6.2.1)
$K_s =$	1.0 (from 2.6.7)
$K_e =$	0.99 (from 2.6.8)
$K_d =$	0.95 (from Table 2-2)
$V_{max} =$	130 mph (Ultimate Wind Speed)
$V_{max(ice)} =$	50 mph
$V_{30} =$	30 mph

Table 2-2

Structure Type	Wind Direction Probability Factor, Kd
Latticed structures with triangular, square or rectangular cross sections	0.85
Tubular pole structures, latticed structures with other cross sections, appurtenances	0.95
Tubular pole structures supporting antennas enclosed within a cylindrical shroud	1.00

Determine Ca:

Table 2-9

Force Coefficients (Ca) for Appurtenances			
Member Type	Aspect Ratio ≤ 2.5	Aspect Ratio = 7	Aspect Ratio ≥ 25
	Ca	Ca	Ca
Flat	1.2	1.4	2.0
Square/Rectangular HSS	1.2 - 2.8( $r_s$ ) ≥ 0.85	1.4 - 4.0( $r_s$ ) ≥ 0.90	2.0 - 6.0( $r_s$ ) ≥ 1.25
Round	C < 39 (Subcritical)	0.7	0.8
	39 ≤ C ≤ 78 (Transitional)	4.14/(C <sup>0.485</sup> )	3.66/(C <sup>0.415</sup> )
	C > 78 (Supercritical)	0.5	0.6

Aspect Ratio is the overall length/width ratio in the plane normal to the wind direction  
 (Aspect ratio is independent of the spacing between support points of a linear appurtenance.)

Note: Linear interpolation may be used for aspect ratios other than those shown.

Ice Thickness = **1.15 in**      Angle = **0 (deg)**      Equivalent Angle = **180 (deg)**

Appurtenances	Height	Width	Depth	Flat Area	Aspect Ratio	Ca	Force (lbs)	Force (lbs) (w/ Ice)	Force (lbs) (30 mph)
OPA-65R-LCUU-H6 Antenna	72.0	14.8	7.4	7.40	4.86	1.31	527	93	28
QS66512-2 Antenna	72.0	12.0	9.6	6.00	6.00	1.36	444	81	24
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.44	1.24	694	118	37
RRUS-E2 B29 RRH	20.4	18.5	7.5	2.62	1.10	1.20	172	32	9
RRUS-E2 B29 RRH (Shielded)	20.4	3.7	7.5	0.52	5.51	1.33	38	10	2
RRUS-32 B2 RRH	27.2	7.0	12.1	1.32	3.89	1.26	91	19	5
RRUS-32 B2 RRH (Shielded)	27.2	3.5	12.1	0.66	7.77	1.43	51	14	3
RRUS-32 B30 RRH	27.2	7.0	12.1	1.32	3.89	1.26	91	19	5
RRUS-32 B30 RRH (Shielded)	27.2	3.5	12.1	0.66	7.77	1.43	51	14	3
B14 4478 RRH	18.1	8.3	13.4	1.04	2.18	1.20	68	15	4
B14 4478 RRH (Shielded)	18.1	4.2	13.4	0.52	4.36	1.28	37	9	2
B2/B66A 8843 RRH	14.9	10.9	13.2	1.13	1.37	1.20	74	15	4
B2/B66A 8843 RRH (Shielded)	14.9	5.5	13.2	0.56	2.73	1.21	37	9	2
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.36	1.20	107	21	6
B5/B12 4449 RRH (Shielded)	17.9	0.0	9.4	0.00	0.00	1.20	0	3	0
Surge Arrestor	24.0	9.7	9.7	1.62	2.47	0.70	62	12	3
3x3 Angle	3.0	12.0		0.25	0.25	2.00	27		
2x2 Angle	2.0	12.0		0.17	0.17	2.00	18		
C 3x2x1/4	3.0	2.0		0.04	1.50	1.25	3		
C 6x4x1/4	6.0	4.0		0.17	1.50	1.25	11		
PL 6x1/2	6.0	0.5		0.02	12.00	1.20	1		
3" Pipe	3.5	12.0		0.29	0.29	2.00	32		
2-1/2" Pipe	2.9	12.0		0.24	0.24	1.25	16		
2" Pipe	2.4	12.0		0.20	0.20	1.20	13		

Date: 1/29/2020  
 Project Name: MIDDLETOWN FAIRCHILD ROAD  
 Project No.: CT2547  
 Designed By: RL Checked By: MSC



**WIND LOADS**

Angle = 30 (deg)      Ice Thickness = 1.15 in.      Equivalent Angle = 210 (deg)

**WIND LOADS WITH NO ICE:**

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Aspect Ratio	Aspect Ratio	Ca (normal)	Ca (side)	Force (lbs)	Force (lbs)	Force (lbs)
OPA-65R-LCUU-H6 Antenna	72.0	14.8	7.4	7.40	3.70	4.86	9.73	1.31	1.49	527	301	471
QS66512-2 Antenna	72.0	12.0	9.6	6.00	4.80	6.00	7.50	1.36	1.42	444	371	426
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	694	307	597
RRUS-E2 B29 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	172	70	146
RRUS-E2 B29 RRH (Shielded)	20.4	9.3	7.5	1.31	1.06	2.21	2.72	1.20	1.21	86	70	82
RRUS-32 B2 RRH	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	91	150	106
RRUS-32 B2 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	51	150	76
RRUS-32 B30 RRH	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	91	150	106
RRUS-32 B30 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	51	150	76
B14 4478 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	68	110	79
B14 4478 RRH (Shielded)	18.1	4.2	13.4	0.52	1.68	4.36	1.35	1.28	1.20	37	110	55
B2/B66A 8843 RRH	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	74	89	78
B2/B66A 8843 RRH (Shielded)	14.9	5.5	13.2	0.56	1.37	2.73	1.13	1.21	1.20	37	89	50
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	107	77	100
B5/B12 4449 RRH (Shielded)	17.9	6.6	9.4	0.82	1.17	2.71	1.90	1.21	1.20	54	77	60

**WIND LOADS WITH ICE:**

OPA-65R-LCUU-H6 Antenna	74.3	17.1	9.7	8.82	5.00	4.35	7.66	1.28	1.42	91	57	83
QS66512-2 Antenna	74.3	14.3	11.9	7.37	6.14	5.20	6.25	1.32	1.37	79	68	76
DMP65R-BU6DA Antenna	73.5	23.0	10.0	11.74	5.10	3.20	7.35	1.23	1.41	117	58	102
RRUS-E2 B29 RRH	22.7	20.8	9.8	3.28	1.54	1.09	2.32	1.20	1.20	32	15	28
RRUS-E2 B29 RRH (Shielded)	22.7	10.4	9.8	1.64	1.54	2.18	2.32	1.20	1.20	16	15	16
RRUS-32 B2 RRH	29.5	9.3	14.4	1.90	2.95	3.17	2.05	1.23	1.20	19	29	21
RRUS-32 B2 RRH (Shielded)	29.5	4.6	14.4	0.95	2.95	6.35	2.05	1.37	1.20	11	29	15
RRUS-32 B30 RRH	29.5	9.3	14.4	1.90	2.95	3.17	2.05	1.23	1.20	19	29	21
RRUS-32 B30 RRH (Shielded)	29.5	4.6	14.4	0.95	2.95	6.35	2.05	1.37	1.20	11	29	15
B14 4478 RRH	20.4	10.6	15.7	1.50	2.22	1.93	1.30	1.20	1.20	15	22	16
B14 4478 RRH (Shielded)	20.4	5.3	15.7	0.75	2.22	3.85	1.30	1.26	1.20	8	22	11
B2/B66A 8843 RRH	17.2	13.2	15.5	1.58	1.85	1.30	1.11	1.20	1.20	15	18	16
B2/B66A 8843 RRH (Shielded)	17.2	6.6	15.5	0.79	1.85	2.61	1.11	1.20	1.20	8	18	10
B5/B12 4449 RRH	20.2	15.5	11.7	2.17	1.64	1.30	1.73	1.20	1.20	21	16	20
B5/B12 4449 RRH (Shielded)	20.2	7.7	11.7	1.09	1.64	2.61	1.73	1.20	1.20	11	16	12

**WIND LOADS AT 30 MPH:**

OPA-65R-LCUU-H6 Antenna	72.0	14.8	7.4	7.40	3.70	4.86	9.73	1.31	1.49	28	16	25
QS66512-2 Antenna	72.0	12.0	9.6	6.00	4.80	6.00	7.50	1.36	1.42	24	20	23
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	37	16	32
RRUS-E2 B29 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	9	4	8
RRUS-E2 B29 RRH (Shielded)	20.4	9.3	7.5	1.31	1.06	2.21	2.72	1.20	1.21	5	4	4
RRUS-32 B2 RRH	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	5	8	6
RRUS-32 B2 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	3	8	4
RRUS-32 B30 RRH	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	5	8	6
RRUS-32 B30 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	3	8	4
B14 4478 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	4	6	4
B14 4478 RRH (Shielded)	18.1	4.2	13.4	0.52	1.68	4.36	1.35	1.28	1.20	2	6	3
B2/B66A 8843 RRH	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	4	5	4
B2/B66A 8843 RRH (Shielded)	14.9	5.5	13.2	0.56	1.37	2.73	1.13	1.21	1.20	2	5	3
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	6	4	5
B5/B12 4449 RRH (Shielded)	17.9	6.6	9.4	0.82	1.17	2.71	1.90	1.21	1.20	3	4	3



Date: 1/29/2020  
 Project Name: MIDDLETOWN FAIRCHILD ROAD  
 Project No.: CT2547  
 Designed By: RL Checked By: MSC



**WIND LOADS**

Angle = 60 (deg)      Ice Thickness = 1.15 in.      Equivalent Angle = 240 (deg)

**WIND LOADS WITH NO ICE:**

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs)	Force (lbs)	Force (lbs)
OPA-65R-LCUU-H6 Antenna	72.0	14.8	7.4	7.40	3.70	4.86	9.73	1.31	1.49	527	301	358
QS66512-2 Antenna	72.0	12.0	9.6	6.00	4.80	6.00	7.50	1.36	1.42	444	371	389
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	694	307	403
RRUS-E2 B29 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	172	70	96
RRUS-E2 B29 RRH (Shielded)	20.4	13.9	7.5	1.97	1.06	1.47	2.72	1.20	1.21	129	70	85
RRUS-32 B2 RRH	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	91	150	135
RRUS-32 B2 RRH (Shielded)	27.2	5.3	12.1	0.99	2.29	5.18	2.25	1.32	1.20	71	150	130
RRUS-32 B30 RRH	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	91	150	135
RRUS-32 B30 RRH (Shielded)	27.2	5.3	12.1	0.99	2.29	5.18	2.25	1.32	1.20	71	150	130
B14 4478 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	68	110	100
B14 4478 RRH (Shielded)	18.1	6.2	13.4	0.78	1.68	2.91	1.35	1.22	1.20	52	110	96
B2/B66A 8843 RRH	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	74	89	86
B2/B66A 8843 RRH (Shielded)	14.9	8.2	13.2	0.85	1.37	1.82	1.13	1.20	1.20	55	89	81
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	107	77	84
B5/B12 4449 RRH (Shielded)	17.9	9.9	9.4	1.23	1.17	1.81	1.90	1.20	1.20	81	77	78

**WIND LOADS WITH ICE:**

OPA-65R-LCUU-H6 Antenna	74.3	17.1	9.7	8.82	5.00	4.35	7.66	1.28	1.42	91	57	66
QS66512-2 Antenna	74.3	14.3	11.9	7.37	6.14	5.20	6.25	1.32	1.37	79	68	70
DMP65R-BU6DA Antenna	73.5	23.0	10.0	11.74	5.10	3.20	7.35	1.23	1.41	117	58	73
RRUS-E2 B29 RRH	22.7	20.8	9.8	3.28	1.54	1.09	2.32	1.20	1.20	32	15	19
RRUS-E2 B29 RRH (Shielded)	22.7	15.6	9.8	2.46	1.54	1.46	2.32	1.20	1.20	24	15	17
RRUS-32 B2 RRH	29.5	9.3	14.4	1.90	2.95	3.17	2.05	1.23	1.20	19	29	26
RRUS-32 B2 RRH (Shielded)	29.5	7.0	14.4	1.43	2.95	4.23	2.05	1.28	1.20	15	29	25
RRUS-32 B30 RRH	29.5	9.3	14.4	1.90	2.95	3.17	2.05	1.23	1.20	19	29	26
RRUS-32 B30 RRH (Shielded)	29.5	7.0	14.4	1.43	2.95	4.23	2.05	1.28	1.20	15	29	25
B14 4478 RRH	20.4	10.6	15.7	1.50	2.22	1.93	1.30	1.20	1.20	15	22	20
B14 4478 RRH (Shielded)	20.4	7.9	15.7	1.13	2.22	2.57	1.30	1.20	1.20	11	22	19
B2/B66A 8843 RRH	17.2	13.2	15.5	1.58	1.85	1.30	1.11	1.20	1.20	15	18	17
B2/B66A 8843 RRH (Shielded)	17.2	9.9	15.5	1.18	1.85	1.74	1.11	1.20	1.20	11	18	16
B5/B12 4449 RRH	20.2	15.5	11.7	2.17	1.64	1.30	1.73	1.20	1.20	21	16	17
B5/B12 4449 RRH (Shielded)	20.2	11.6	11.7	1.63	1.64	1.74	1.73	1.20	1.20	16	16	16

**WIND LOADS AT 30 MPH:**

OPA-65R-LCUU-H6 Antenna	72.0	14.8	7.4	7.40	3.70	4.86	9.73	1.31	1.49	28	16	19
QS66512-2 Antenna	72.0	12.0	9.6	6.00	4.80	6.00	7.50	1.36	1.42	24	20	21
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	37	16	21
RRUS-E2 B29 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	9	4	5
RRUS-E2 B29 RRH (Shielded)	20.4	13.9	7.5	1.97	1.06	1.47	2.72	1.20	1.21	7	4	5
RRUS-32 B2 RRH	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	5	8	7
RRUS-32 B2 RRH (Shielded)	27.2	5.3	12.1	0.99	2.29	5.18	2.25	1.32	1.20	4	8	7
RRUS-32 B30 RRH	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	5	8	7
RRUS-32 B30 RRH (Shielded)	27.2	5.3	12.1	0.99	2.29	5.18	2.25	1.32	1.20	4	8	7
B14 4478 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	4	6	5
B14 4478 RRH (Shielded)	18.1	6.2	13.4	0.78	1.68	2.91	1.35	1.22	1.20	3	6	5
B2/B66A 8843 RRH	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	4	5	5
B2/B66A 8843 RRH (Shielded)	14.9	8.2	13.2	0.85	1.37	1.82	1.13	1.20	1.20	3	5	4
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	6	4	4
B5/B12 4449 RRH (Shielded)	17.9	9.9	9.4	1.23	1.17	1.81	1.90	1.20	1.20	4	4	4

Date: 1/29/2020  
 Project Name: MIDDLETOWN FAIRCHILD ROAD  
 Project No.: CT2547  
 Designed By: RL Checked By: MSC



**WIND LOADS**

Angle = 90 (deg)      Ice Thickness = 1.15 in.      Equivalent Angle = 270 (deg)

**WIND LOADS WITH NO ICE:**

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs)	Force (lbs)	Force (lbs)
OPA-65R-LCUU-H6 Antenna	72.0	14.8	7.4	7.40	3.70	4.86	9.73	1.31	1.49	527	301	301
QS66512-2 Antenna	72.0	12.0	9.6	6.00	4.80	6.00	7.50	1.36	1.42	444	371	371
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	694	307	307
RRUS-E2 B29 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	172	70	70
RRUS-E2 B29 RRH (Shielded)	20.4	3.7	7.5	0.52	1.06	5.51	2.72	1.33	1.21	38	70	70
RRUS-32 B2 RRH	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	91	150	150
RRUS-32 B2 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	51	150	150
RRUS-32 B30 RRH	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	91	150	150
RRUS-32 B30 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	51	150	150
B14 4478 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	68	110	110
B14 4478 RRH (Shielded)	18.1	4.2	13.4	0.52	1.68	4.36	1.35	1.28	1.20	37	110	110
B2/B66A 8843 RRH	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	74	89	89
B2/B66A 8843 RRH (Shielded)	14.9	5.5	13.2	0.56	1.37	2.73	1.13	1.21	1.20	37	89	89
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	107	77	77
B5/B12 4449 RRH (Shielded)	17.9	0.0	9.4	0.00	1.17	0.00	1.90	1.20	1.20	0	77	77

**WIND LOADS WITH ICE:**

OPA-65R-LCUU-H6 Antenna	74.3	17.1	9.7	8.82	5.00	4.35	7.66	1.28	1.42	91	57	57
QS66512-2 Antenna	74.3	14.3	11.9	7.37	6.14	5.20	6.25	1.32	1.37	79	68	68
DMP65R-BU6DA Antenna	73.5	29.0	10.0	11.74	5.10	3.20	7.35	1.23	1.41	117	58	58
RRUS-E2 B29 RRH	22.7	20.8	9.8	9.28	1.54	1.09	2.32	1.20	1.20	32	15	15
RRUS-E2 B29 RRH (Shielded)	22.7	6.0	9.8	0.94	1.54	3.79	2.32	1.26	1.20	10	15	15
RRUS-32 B2 RRH	29.5	9.3	14.4	1.90	2.95	3.17	2.05	1.23	1.20	19	29	29
RRUS-32 B2 RRH (Shielded)	29.5	5.8	14.4	1.19	2.95	5.09	2.05	1.32	1.20	13	29	29
RRUS-32 B30 RRH	29.5	9.3	14.4	1.90	2.95	3.17	2.05	1.23	1.20	19	29	29
RRUS-32 B30 RRH (Shielded)	29.5	5.8	14.4	1.19	2.95	5.09	2.05	1.32	1.20	13	29	29
B14 4478 RRH	20.4	10.6	15.7	1.50	2.22	1.93	1.30	1.20	1.20	15	22	22
B14 4478 RRH (Shielded)	20.4	6.4	15.7	0.91	2.22	3.16	1.30	1.23	1.20	9	22	22
B2/B66A 8843 RRH	17.2	13.2	15.5	1.58	1.85	1.30	1.11	1.20	1.20	15	18	18
B2/B66A 8843 RRH (Shielded)	17.2	7.7	15.5	0.92	1.85	2.22	1.11	1.20	1.20	9	18	18
B5/B12 4449 RRH	20.2	15.5	11.7	2.17	1.64	1.30	1.73	1.20	1.20	21	16	16
B5/B12 4449 RRH (Shielded)	20.2	2.3	11.7	0.32	1.64	8.80	1.73	1.46	1.20	4	16	16

**WIND LOADS AT 30 MPH:**

OPA-65R-LCUU-H6 Antenna	72.0	14.8	7.4	7.40	3.70	4.86	9.73	1.31	1.49	28	16	16
QS66512-2 Antenna	72.0	12.0	9.6	6.00	4.80	6.00	7.50	1.36	1.42	24	20	20
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	37	16	16
RRUS-E2 B29 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	9	4	4
RRUS-E2 B29 RRH (Shielded)	20.4	3.7	7.5	0.52	1.06	5.51	2.72	1.33	1.21	2	4	4
RRUS-32 B2 RRH	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	5	8	8
RRUS-32 B2 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	3	8	8
RRUS-32 B30 RRH	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	5	8	8
RRUS-32 B30 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	3	8	8
B14 4478 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	4	6	6
B14 4478 RRH (Shielded)	18.1	4.2	13.4	0.52	1.68	4.36	1.35	1.28	1.20	2	6	6
B2/B66A 8843 RRH	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	4	5	5
B2/B66A 8843 RRH (Shielded)	14.9	5.5	13.2	0.56	1.37	2.73	1.13	1.21	1.20	2	5	5
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	6	4	4
B5/B12 4449 RRH (Shielded)	17.9	0.0	9.4	0.00	1.17	0.00	1.90	1.20	1.20	0	4	4

Date: 1/29/2020  
 Project Name: MIDDLETOWN FAIRCHILD ROAD  
 Project No.: CT2547  
 Designed By: RL Checked By: MSC



WIND LOADS

Angle = 120 (deg) Ice Thickness = 1.15 in. Equivalent Angle = 300 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs)	Force (lbs)	Force (lbs)
OPA-65R-LCUU-H6 Antenna	72.0	14.8	7.4	7.40	3.70	4.86	9.73	1.31	1.49	527	301	358
QS66512-2 Antenna	72.0	12.0	9.6	6.00	4.80	6.00	7.50	1.36	1.42	444	371	389
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	694	307	403
RRUS-E2 B29 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	172	70	96
RRUS-E2 B29 RRH (Shielded)	20.4	13.9	7.5	1.97	1.06	1.47	2.72	1.20	1.21	129	70	85
RRUS-32 B2 RRH	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	91	150	135
RRUS-32 B2 RRH (Shielded)	27.2	5.3	12.1	0.99	2.29	5.18	2.25	1.32	1.20	71	150	130
RRUS-32 B30 RRH	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	91	150	135
RRUS-32 B30 RRH (Shielded)	27.2	5.3	12.1	0.99	2.29	5.18	2.25	1.32	1.20	71	150	130
B14 4478 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	68	110	100
B14 4478 RRH (Shielded)	18.1	6.2	13.4	0.78	1.68	2.91	1.35	1.22	1.20	52	110	96
B2/B66A 8843 RRH	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	74	89	86
B2/B66A 8843 RRH (Shielded)	14.9	8.2	13.2	0.85	1.37	1.82	1.13	1.20	1.20	55	89	81
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	107	77	84
B5/B12 4449 RRH (Shielded)	17.9	9.9	9.4	1.23	1.17	1.81	1.90	1.20	1.20	81	77	78

WIND LOADS WITH ICE:

OPA-65R-LCUU-H6 Antenna	74.3	17.1	9.7	8.82	5.00	4.35	7.66	1.28	1.42	91	57	66
QS66512-2 Antenna	74.3	14.3	11.9	7.37	6.14	5.20	6.25	1.32	1.37	79	68	70
DMP65R-BU6DA Antenna	73.5	23.0	10.0	11.74	5.10	3.20	7.35	1.23	1.41	117	58	73
RRUS-E2 B29 RRH	22.7	20.8	9.8	3.28	1.54	1.09	2.32	1.20	1.20	32	15	19
RRUS-E2 B29 RRH (Shielded)	22.7	15.6	9.8	2.46	1.54	1.46	2.32	1.20	1.20	24	15	17
RRUS-32 B2 RRH	29.5	9.3	14.4	1.90	2.95	3.17	2.05	1.23	1.20	19	29	26
RRUS-32 B2 RRH (Shielded)	29.5	7.0	14.4	1.43	2.95	4.23	2.05	1.28	1.20	15	29	25
RRUS-32 B30 RRH	29.5	9.3	14.4	1.90	2.95	3.17	2.05	1.23	1.20	19	29	26
RRUS-32 B30 RRH (Shielded)	29.5	7.0	14.4	1.43	2.95	4.23	2.05	1.28	1.20	15	29	25
B14 4478 RRH	20.4	10.6	15.7	1.50	2.22	1.93	1.30	1.20	1.20	15	22	20
B14 4478 RRH (Shielded)	20.4	7.9	15.7	1.13	2.22	2.57	1.30	1.20	1.20	11	22	19
B2/B66A 8843 RRH	17.2	13.2	15.5	1.58	1.85	1.30	1.11	1.20	1.20	15	18	17
B2/B66A 8843 RRH (Shielded)	17.2	9.9	15.5	1.18	1.85	1.74	1.11	1.20	1.20	11	18	16
B5/B12 4449 RRH	20.2	15.5	11.7	2.17	1.64	1.30	1.73	1.20	1.20	21	16	17
B5/B12 4449 RRH (Shielded)	20.2	11.6	11.7	1.63	1.64	1.74	1.73	1.20	1.20	16	16	16

WIND LOADS AT 30 MPH:

OPA-65R-LCUU-H6 Antenna	72.0	14.8	7.4	7.40	3.70	4.86	9.73	1.31	1.49	28	16	19
QS66512-2 Antenna	72.0	12.0	9.6	6.00	4.80	6.00	7.50	1.36	1.42	24	20	21
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	37	16	21
RRUS-E2 B29 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	9	4	5
RRUS-E2 B29 RRH (Shielded)	20.4	13.9	7.5	1.97	1.06	1.47	2.72	1.20	1.21	7	4	5
RRUS-32 B2 RRH	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	5	8	7
RRUS-32 B2 RRH (Shielded)	27.2	5.3	12.1	0.99	2.29	5.18	2.25	1.32	1.20	4	8	7
RRUS-32 B30 RRH	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	5	8	7
RRUS-32 B30 RRH (Shielded)	27.2	5.3	12.1	0.99	2.29	5.18	2.25	1.32	1.20	4	8	7
B14 4478 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	4	6	5
B14 4478 RRH (Shielded)	18.1	6.2	13.4	0.78	1.68	2.91	1.35	1.22	1.20	3	6	5
B2/B66A 8843 RRH	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	4	5	5
B2/B66A 8843 RRH (Shielded)	14.9	8.2	13.2	0.85	1.37	1.82	1.13	1.20	1.20	3	5	4
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	6	4	4
B5/B12 4449 RRH (Shielded)	17.9	9.9	9.4	1.23	1.17	1.81	1.90	1.20	1.20	4	4	4



**WIND LOADS**

Angle = 150 (deg) Ice Thickness = 1.15 in. Equivalent Angle = 330 (deg)

**WIND LOADS WITH NO ICE:**

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs)	Force (lbs)	Force (lbs)
OPA-65R-LCUU-H6 Antenna	72.0	14.8	7.4	7.40	3.70	4.86	9.73	1.31	1.49	527	301	471
QS66512-2 Antenna	72.0	12.0	9.6	6.00	4.80	6.00	7.50	1.36	1.42	444	371	426
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	694	307	597
RRUS-E2 B29 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	172	70	146
RRUS-E2 B29 RRH (Shielded)	20.4	9.3	7.5	1.31	1.06	2.21	2.72	1.20	1.21	86	70	82
RRUS-32 B2 RRH	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	91	150	106
RRUS-32 B2 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	51	150	76
RRUS-32 B30 RRH	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	91	150	106
RRUS-32 B30 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	51	150	76
B14 4478 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	68	110	79
B14 4478 RRH (Shielded)	18.1	4.2	13.4	0.52	1.68	4.36	1.35	1.28	1.20	37	110	55
B2/B66A 8843 RRH	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	74	89	78
B2/B66A 8843 RRH (Shielded)	14.9	5.5	13.2	0.56	1.37	2.73	1.13	1.21	1.20	37	89	50
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	107	77	100
B5/B12 4449 RRH (Shielded)	17.9	6.6	9.4	0.82	1.17	2.71	1.90	1.21	1.20	54	77	60

**WIND LOADS WITH ICE:**

OPA-65R-LCUU-H6 Antenna	74.3	17.1	9.7	8.82	5.00	4.35	7.66	1.28	1.42	91	57	83
QS66512-2 Antenna	74.3	14.3	11.9	7.37	6.14	5.20	6.25	1.32	1.37	79	68	76
DMP65R-BU6DA Antenna	73.5	23.0	10.0	11.74	5.10	3.20	7.35	1.23	1.41	117	58	102
RRUS-E2 B29 RRH	22.7	20.8	9.8	3.28	1.54	1.09	2.32	1.20	1.20	32	15	28
RRUS-E2 B29 RRH (Shielded)	22.7	10.4	9.8	1.64	1.54	2.18	2.32	1.20	1.20	16	15	16
RRUS-32 B2 RRH	29.5	9.3	14.4	1.90	2.95	3.17	2.05	1.23	1.20	19	29	21
RRUS-32 B2 RRH (Shielded)	29.5	4.6	14.4	0.95	2.95	6.35	2.05	1.37	1.20	11	29	15
RRUS-32 B30 RRH	29.5	9.3	14.4	1.90	2.95	3.17	2.05	1.23	1.20	19	29	21
RRUS-32 B30 RRH (Shielded)	29.5	4.6	14.4	0.95	2.95	6.35	2.05	1.37	1.20	11	29	15
B14 4478 RRH	20.4	10.6	15.7	1.50	2.22	1.93	1.30	1.20	1.20	15	22	16
B14 4478 RRH (Shielded)	20.4	5.3	15.7	0.75	2.22	3.85	1.30	1.26	1.20	8	22	11
B2/B66A 8843 RRH	17.2	13.2	15.5	1.58	1.85	1.30	1.11	1.20	1.20	15	18	16
B2/B66A 8843 RRH (Shielded)	17.2	6.6	15.5	0.79	1.85	2.61	1.11	1.20	1.20	8	18	10
B5/B12 4449 RRH	20.2	15.5	11.7	2.17	1.64	1.30	1.73	1.20	1.20	21	16	20
B5/B12 4449 RRH (Shielded)	20.2	7.7	11.7	1.09	1.64	2.61	1.73	1.20	1.20	11	16	12

**WIND LOADS AT 30 MPH:**

OPA-65R-LCUU-H6 Antenna	72.0	14.8	7.4	7.40	3.70	4.86	9.73	1.31	1.49	26	16	25
QS66512-2 Antenna	72.0	12.0	9.6	6.00	4.80	6.00	7.50	1.36	1.42	24	20	23
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	37	16	32
RRUS-E2 B29 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	9	4	8
RRUS-E2 B29 RRH (Shielded)	20.4	9.3	7.5	1.31	1.06	2.21	2.72	1.20	1.21	5	4	4
RRUS-32 B2 RRH	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	5	8	6
RRUS-32 B2 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	3	8	4
RRUS-32 B30 RRH	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	5	8	6
RRUS-32 B30 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	3	8	4
B14 4478 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	4	6	4
B14 4478 RRH (Shielded)	18.1	4.2	13.4	0.52	1.68	4.36	1.35	1.28	1.20	2	6	3
B2/B66A 8843 RRH	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	4	5	4
B2/B66A 8843 RRH (Shielded)	14.9	5.5	13.2	0.56	1.37	2.73	1.13	1.21	1.20	2	5	3
B5/B12 4449 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	6	4	5
B5/B12 4449 RRH (Shielded)	17.9	6.6	9.4	0.82	1.17	2.71	1.90	1.21	1.20	3	4	3

Date: 1/29/2020

Project Name: MIDDLETOWN FAIRCHILD ROAD

Project No.: CT2547

Designed By: RL Checked By: MSC



HUDSON Design Group LLC

ICE WEIGHT CALCULATIONS

Thickness of ice: 1.15 in.
Density of ice: 56 pcf

OPA-65R-LCUU-H6 Antenna

Weight of ice based on total radial SF area:
Height (in): 72.0
Width (in): 14.8
Depth (in): 7.4
Total weight of ice on object: 149 lbs
Weight of object: 73.0 lbs
Combined weight of ice and object: 222 lbs

QS66512-2 Antenna

Weight of ice based on total radial SF area:
Height (in): 72.0
Width (in): 12.0
Depth (in): 9.6
Total weight of ice on object: 139 lbs
Weight of object: 111.0 lbs
Combined weight of ice and object: 250 lbs

DMP65R-BU6DA Antenna

Weight of ice based on total radial SF area:
Height (in): 71.2
Width (in): 20.7
Depth (in): 7.7
Total weight of ice on object: 194 lbs
Weight of object: 80.0 lbs
Combined weight of ice and object: 274 lbs

RRUS-E2 B29 RRH

Weight of ice based on total radial SF area:
Height (in): 20.4
Width (in): 18.5
Depth (in): 7.5
Total weight of ice on object: 50 lbs
Weight of object: 53.0 lbs
Combined weight of ice and object: 103 lbs

RRUS-32 B2 RRH

Weight of ice based on total radial SF area:
Height (in): 27.2
Width (in): 12.1
Depth (in): 7.0
Total weight of ice on object: 48 lbs
Weight of object: 60.0 lbs
Combined weight of ice and object: 108 lbs

RRUS-32 B30 RRH

Weight of ice based on total radial SF area:
Height (in): 27.2
Width (in): 12.1
Depth (in): 7.0
Total weight of ice on object: 48 lbs
Weight of object: 60.0 lbs
Combined weight of ice and object: 108 lbs

B14 4478 RRH

Weight of ice based on total radial SF area:
Height (in): 18.1
Width (in): 13.4
Depth (in): 8.3
Total weight of ice on object: 36 lbs
Weight of object: 60.0 lbs
Combined weight of ice and object: 96 lbs

B2/B66A 8843 RRH

Weight of ice based on total radial SF area:
Height (in): 14.9
Width (in): 13.2
Depth (in): 10.9
Total weight of ice on object: 32 lbs
Weight of object: 72.0 lbs
Combined weight of ice and object: 104 lbs

B5/B12 4449 RRH

Weight of ice based on total radial SF area:
Height (in): 17.9
Width (in): 13.2
Depth (in): 9.4
Total weight of ice on object: 36 lbs
Weight of object: 71.0 lbs
Combined weight of ice and object: 107 lbs

Squid Surge Arrestor

Weight of ice based on total radial SF area:
Depth (in): 24.0
Diameter(in): 9.7
Total weight of ice on object: 30 lbs
Weight of object: 33 lbs
Combined weight of ice and object: 63 lbs

L 3x3 Angles

Weight of ice based on total radial SF area:
Height (in): 3
Width (in): 3
Per foot weight of ice on object: 8 plf

L 2x2 Angles

Weight of ice based on total radial SF area:
Height (in): 2
Width (in): 2
Per foot weight of ice on object: 6 plf

C 3x2

Weight of ice based on total radial SF area:
Height (in): 3
Width (in): 2
Per foot weight of ice on object: 7 plf

PL 6x1/2

Weight of ice based on total radial SF area:
Height (in): 6
Width (in): 0.5
Per foot weight of ice on object: 10 plf

3" Pipe

Per foot weight of ice:
diameter (in): 3.5
Per foot weight of ice on object: 7 plf

2-1/2" pipe

Per foot weight of ice:
diameter (in): 2.88
Per foot weight of ice on object: 6 plf

2" pipe

Per foot weight of ice:
diameter (in): 2.38
Per foot weight of ice on object: 5 plf



**HUDSON**  
Design Group LLC

**Mount Calculations  
(Existing Conditions)**

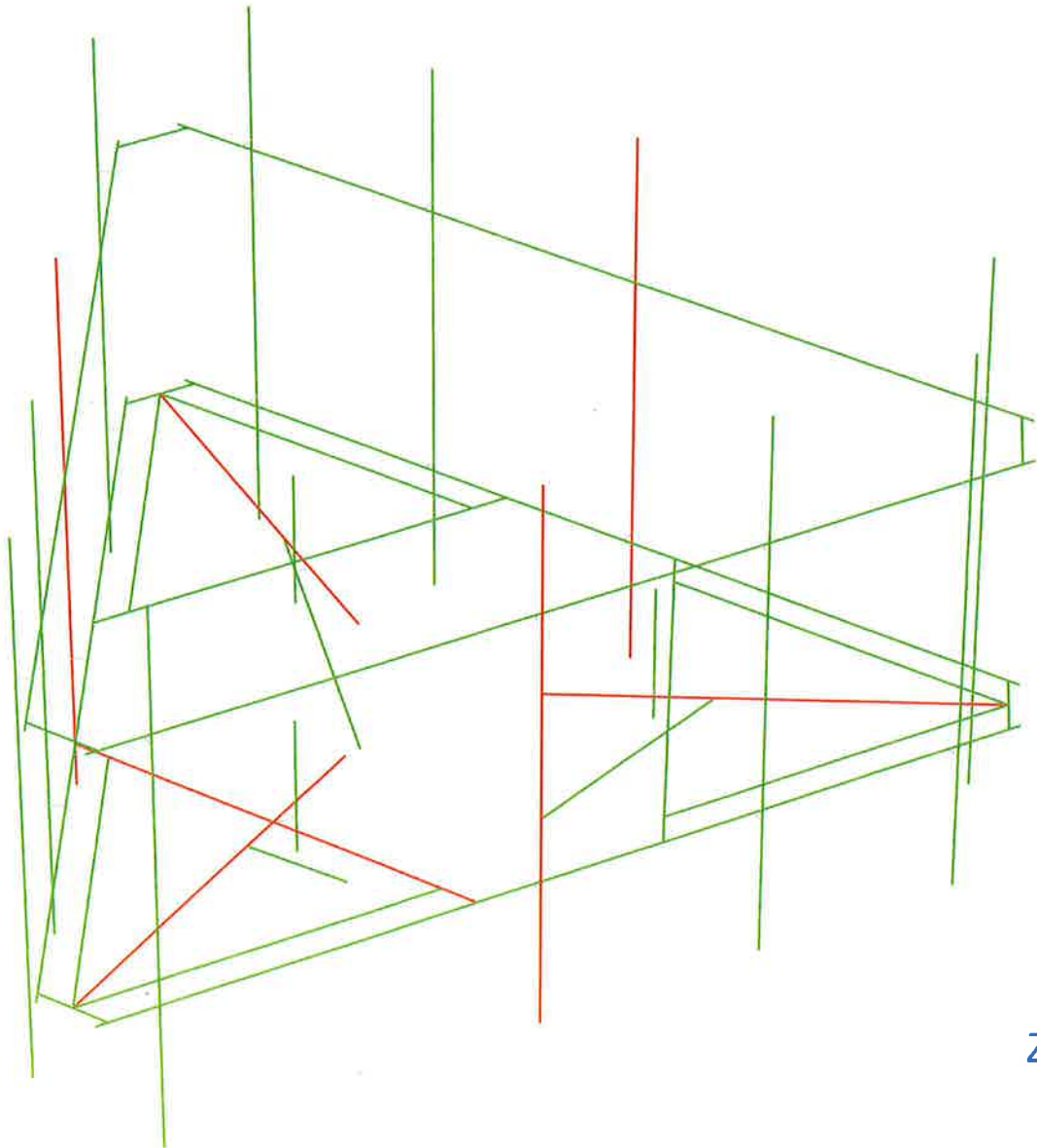


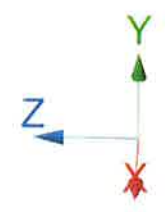
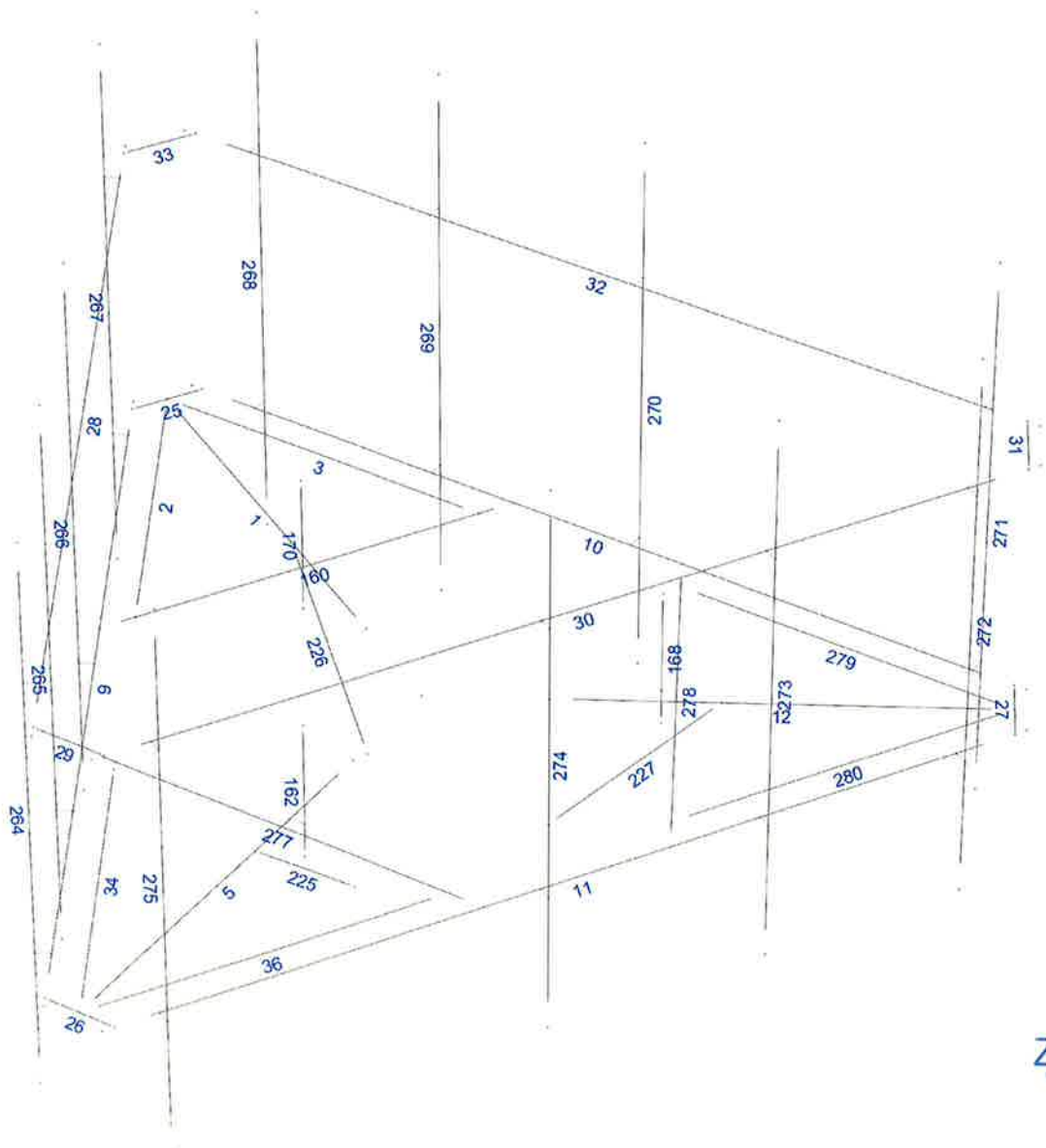




**Design status**

- Not designed
- Error on design
- Design O.K.
- With warnings







## Load data

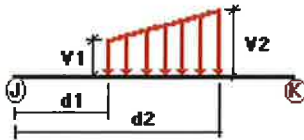
### GLOSSARY

Comb : Indicates if load condition is a load combination

### Load Conditions

Condition	Description	Comb.	Category
DL	Dead Load	No	DL
W0	Wind Load 0/60/120 deg	No	WIND
W30	Wind Load 30/90/150 deg	No	WIND
Di	Ice Load	No	LL
Wi0	Ice Wind Load 0/60/120 deg	No	WIND
Wi30	Ice Wind Load 30/90/150 deg	No	WIND
WL0	WL 30 mph 0/60/120 deg	No	WIND
WL30	WL 30 mph 30/90/150 deg	No	WIND
LL1	250 lb Live Load Center of Mount	No	LL
LL2	250 lb Live Load End of Mount	No	LL
LLa1	250 lb Live Load Antenna 1	No	LL
LLa2	250 lb Live Load Antenna 2	No	LL
LLa3	250 lb Live Load Antenna 3	No	LL
LLa4	250 lb Live Load Antenna 4	No	LL

### Distributed force on members

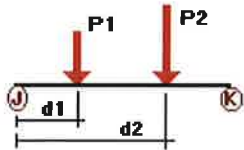


Condition	Member	Dir1	Val1 [Kip/ft]	Val2 [Kip/ft]	Dist1 [ft]	%	Dist2 [ft]	%
DL	2	Y	-0.01	-0.01	0.00	No	100.00	Yes
	3	Y	-0.01	-0.01	0.00	No	100.00	Yes
	34	Y	-0.01	-0.01	0.00	No	100.00	Yes
	36	Y	-0.01	-0.01	0.00	No	100.00	Yes
	160	Y	-0.01	-0.01	5.00	Yes	95.00	Yes
	277	Y	-0.01	-0.01	5.00	Yes	95.00	Yes
	278	Y	-0.01	-0.01	5.00	Yes	95.00	Yes
	279	Y	-0.01	-0.01	0.00	No	100.00	Yes
	280	Y	-0.01	-0.01	0.00	No	100.00	Yes
W0	1	z	-0.032	-0.032	0.00	No	100.00	Yes
	2	z	-0.018	-0.018	0.00	No	100.00	Yes
	3	z	-0.018	-0.018	0.00	No	100.00	Yes
	5	z	-0.032	-0.032	0.00	No	100.00	Yes
	9	z	-0.032	-0.032	0.00	No	100.00	Yes

	10	z	-0.032	-0.032	0.00	No	100.00	Yes
	11	z	-0.032	-0.032	0.00	No	100.00	Yes
	25	z	-0.001	-0.001	0.00	No	100.00	Yes
	26	z	-0.001	-0.001	0.00	No	100.00	Yes
	28	z	-0.013	-0.013	0.00	No	100.00	Yes
	29	z	-0.011	-0.011	0.00	No	100.00	Yes
	30	z	-0.013	-0.013	0.00	No	100.00	Yes
	32	z	-0.013	-0.013	0.00	No	100.00	Yes
	33	z	-0.011	-0.011	0.00	No	100.00	Yes
	34	z	-0.018	-0.018	0.00	No	100.00	Yes
	36	z	-0.018	-0.018	0.00	No	100.00	Yes
	160	z	-0.003	-0.003	0.00	No	100.00	Yes
	168	z	-0.013	-0.013	0.00	No	100.00	Yes
	170	z	-0.013	-0.013	0.00	No	100.00	Yes
	225	z	-0.027	-0.027	0.00	No	100.00	Yes
	226	z	-0.027	-0.027	0.00	No	100.00	Yes
	227	z	-0.027	-0.027	0.00	No	100.00	Yes
	268	z	-0.016	-0.016	0.00	No	100.00	Yes
	269	z	-0.016	-0.016	0.00	No	100.00	Yes
	270	z	-0.016	-0.016	0.00	No	100.00	Yes
	273	z	-0.016	-0.016	0.00	No	100.00	Yes
	274	z	-0.016	-0.016	0.00	No	100.00	Yes
	275	z	-0.016	-0.016	0.00	No	100.00	Yes
	277	z	-0.003	-0.003	0.00	No	100.00	Yes
	278	z	-0.003	-0.003	0.00	No	100.00	Yes
	27	z	-0.001	-0.001	0.00	No	100.00	Yes
	31	z	-0.011	-0.011	0.00	No	100.00	Yes
	272	z	-0.016	-0.016	0.00	No	100.00	Yes
	271	z	-0.016	-0.016	0.00	No	100.00	Yes
	162	z	-0.013	-0.013	0.00	No	100.00	Yes
W30	1	x	-0.032	-0.032	0.00	No	100.00	Yes
	3	x	-0.018	-0.018	0.00	No	100.00	Yes
	5	x	-0.032	-0.032	0.00	No	100.00	Yes
	10	x	-0.032	-0.032	0.00	No	100.00	Yes
	11	x	-0.032	-0.032	0.00	No	100.00	Yes
	12	x	-0.032	-0.032	0.00	No	100.00	Yes
	25	x	-0.001	-0.001	0.00	No	100.00	Yes
	26	x	-0.001	-0.001	0.00	No	100.00	Yes
	29	x	-0.011	-0.011	0.00	No	100.00	Yes
	30	x	-0.013	-0.013	0.00	No	100.00	Yes
	32	x	-0.013	-0.013	0.00	No	100.00	Yes
	33	x	-0.011	-0.011	0.00	No	100.00	Yes
	36	x	-0.018	-0.018	0.00	No	100.00	Yes
	168	x	-0.013	-0.013	0.00	No	100.00	Yes
	170	x	-0.013	-0.013	0.00	No	100.00	Yes
	225	x	-0.027	-0.027	0.00	No	100.00	Yes
	226	x	-0.027	-0.027	0.00	No	100.00	Yes
	227	x	-0.027	-0.027	0.00	No	100.00	Yes
	264	x	-0.016	-0.016	0.00	No	100.00	Yes
	265	x	-0.016	-0.016	0.00	No	100.00	Yes
	266	x	-0.016	-0.016	0.00	No	100.00	Yes
	267	x	-0.016	-0.016	0.00	No	100.00	Yes
	268	x	-0.016	-0.016	0.00	No	100.00	Yes
	269	x	-0.016	-0.016	0.00	No	100.00	Yes
	270	x	-0.016	-0.016	0.00	No	100.00	Yes
	271	x	-0.016	-0.016	0.00	No	100.00	Yes
Di	1	y	-0.007	-0.007	0.00	No	100.00	Yes
	2	y	-0.006	-0.006	0.00	No	100.00	Yes
	3	y	-0.006	-0.006	0.00	No	100.00	Yes
	5	y	-0.007	-0.007	0.00	No	100.00	Yes

9	y	-0.007	-0.007	0.00	No	100.00	Yes
10	y	-0.007	-0.007	0.00	No	100.00	Yes
11	y	-0.007	-0.007	0.00	No	100.00	Yes
12	y	-0.007	-0.007	0.00	No	100.00	Yes
25	y	-0.01	-0.01	0.00	No	100.00	Yes
26	y	-0.01	-0.01	0.00	No	100.00	Yes
28	y	-0.005	-0.005	0.00	No	100.00	Yes
29	y	-0.01	-0.01	0.00	No	100.00	Yes
30	y	-0.005	-0.005	0.00	No	100.00	Yes
32	y	-0.005	-0.005	0.00	No	100.00	Yes
33	y	-0.01	-0.01	0.00	No	100.00	Yes
34	y	-0.006	-0.006	0.00	No	100.00	Yes
36	y	-0.006	-0.006	0.00	No	100.00	Yes
160	y	-0.007	-0.007	0.00	No	100.00	Yes
168	y	-0.005	-0.005	0.00	No	100.00	Yes
170	y	-0.005	-0.005	0.00	No	100.00	Yes
225	y	-0.008	-0.008	0.00	No	100.00	Yes
226	y	-0.008	-0.008	0.00	No	100.00	Yes
227	y	-0.008	-0.008	0.00	No	100.00	Yes
264	y	-0.006	-0.006	0.00	No	100.00	Yes
265	y	-0.006	-0.006	0.00	No	100.00	Yes
266	y	-0.006	-0.006	0.00	No	100.00	Yes
267	y	-0.006	-0.006	0.00	No	100.00	Yes
268	y	-0.006	-0.006	0.00	No	100.00	Yes
269	y	-0.006	-0.006	0.00	No	100.00	Yes
270	y	-0.006	-0.006	0.00	No	100.00	Yes
273	y	-0.006	-0.006	0.00	No	100.00	Yes
274	y	-0.006	-0.006	0.00	No	100.00	Yes
275	y	-0.006	-0.006	0.00	No	100.00	Yes
277	y	-0.007	-0.007	0.00	No	100.00	Yes
278	y	-0.007	-0.007	0.00	No	100.00	Yes
27	y	-0.01	-0.01	0.00	No	100.00	Yes
31	y	-0.01	-0.01	0.00	No	100.00	Yes
272	y	-0.006	-0.006	0.00	No	100.00	Yes
271	y	-0.006	-0.006	0.00	No	100.00	Yes
162	y	-0.005	-0.005	0.00	No	100.00	Yes

### Concentrated forces on members



Condition	Member	Dir1	Value1 [Kip]	Dist1 [ft]	%
DL	168	y	-0.033	0.50	No
	170	y	-0.033	0.50	No
	264	y	-0.037	0.50	No
		y	-0.037	6.50	No
	265	y	-0.053	4.50	No
		y	-0.056	0.50	No
		y	-0.056	6.50	No
	266	y	-0.12	4.50	No
		y	-0.04	0.50	No

	y	-0.04	6.50	No	
	y	-0.132	4.50	No	
267	y	-0.04	0.50	No	
	y	-0.04	6.50	No	
	y	-0.071	4.50	No	
268	y	-0.037	0.50	No	
	y	-0.037	6.50	No	
	y	-0.053	4.50	No	
269	y	-0.056	0.50	No	
	y	-0.056	6.50	No	
	y	-0.12	4.50	No	
270	y	-0.04	0.50	No	
	y	-0.04	6.50	No	
	y	-0.132	4.50	No	
273	y	-0.056	0.50	No	
	y	-0.056	6.50	No	
	y	-0.12	4.50	No	
274	y	-0.04	0.50	No	
	y	-0.04	6.50	No	
	y	-0.132	4.50	No	
275	y	-0.04	0.50	No	
	y	-0.04	6.50	No	
	y	-0.071	4.50	No	
272	y	-0.037	0.50	No	
	y	-0.037	6.50	No	
	y	-0.053	4.50	No	
271	y	-0.04	0.50	No	
	y	-0.04	6.50	No	
	y	-0.071	4.50	No	
162	y	-0.033	0.50	No	
	y	-0.033	1.50	No	
W0	168	z	-0.062	0.50	No
	170	z	-0.062	0.50	No
	264	z	-0.264	0.50	No
		z	-0.264	6.50	No
		z	-0.038	4.50	No
265	z	-0.223	0.50	No	
	z	-0.223	6.50	No	
	z	-0.103	4.50	No	
266	z	-0.347	0.50	No	
	z	-0.347	6.50	No	
	z	-0.074	4.50	No	
267	z	-0.347	0.50	No	
	z	-0.347	6.50	No	
268	z	-0.179	0.50	No	
	z	-0.179	6.50	No	
	z	-0.085	4.50	No	
269	z	-0.195	0.50	No	
	z	-0.195	6.50	No	
	z	-0.13	4.50	No	
270	z	-0.202	0.50	No	
	z	-0.202	6.50	No	
	z	-0.096	4.50	No	
273	z	-0.195	0.50	No	
	z	-0.195	6.50	No	
	z	-0.13	4.50	No	
274	z	-0.202	0.50	No	
	z	-0.202	6.50	No	
	z	-0.096	4.50	No	
275	z	-0.202	0.50	No	



		z	-0.202	6.50	No
		z	-0.078	4.50	No
	272	z	-0.179	0.50	No
		z	-0.179	6.50	No
		z	-0.085	4.50	No
	271	z	-0.202	0.50	No
		z	-0.202	6.50	No
		z	-0.078	4.50	No
	162	z	-0.062	0.50	No
		z	-0.062	1.50	No
W30	168	x	-0.062	0.50	No
	170	x	-0.062	0.50	No
	264	x	-0.151	0.50	No
		x	-0.151	6.50	No
		x	-0.07	4.50	No
	265	x	-0.186	0.50	No
		x	-0.186	6.50	No
		x	-0.15	4.50	No
	266	x	-0.154	0.50	No
		x	-0.154	6.50	No
		x	-0.11	4.50	No
	267	x	-0.154	0.50	No
		x	-0.154	6.50	No
		x	-0.077	4.50	No
	268	x	-0.236	0.50	No
		x	-0.236	6.50	No
		x	-0.082	4.50	No
	269	x	-0.213	0.50	No
		x	-0.213	6.50	No
		x	-0.076	4.50	No
	270	x	-0.299	0.50	No
		x	-0.299	6.50	No
		x	-0.055	4.50	No
	273	x	-0.213	0.50	No
		x	-0.213	6.50	No
		x	-0.076	4.50	No
	274	x	-0.299	0.50	No
		x	-0.299	6.50	No
		x	-0.055	4.50	No
	275	x	-0.299	0.50	No
		x	-0.299	6.50	No
		x	-0.06	4.50	No
	272	x	-0.236	0.50	No
		x	-0.236	6.50	No
		x	-0.082	4.50	No
	271	x	-0.299	0.50	No
		x	-0.299	6.50	No
		x	-0.06	4.50	No
	162	x	-0.062	0.50	No
		x	-0.062	1.50	No
Di	168	y	-0.03	0.50	No
	170	y	-0.03	0.50	No
	264	y	-0.075	0.50	No
		y	-0.075	6.50	No
		y	-0.05	4.50	No
	265	y	-0.07	0.50	No
		y	-0.07	6.50	No
		y	-0.096	4.50	No
	266	y	-0.097	0.50	No
		y	-0.097	6.50	No

	y	-0.068	4.50	No
267	y	-0.097	0.50	No
	y	-0.097	6.50	No
	y	-0.036	4.50	No
268	y	-0.075	0.50	No
	y	-0.075	6.50	No
	y	-0.05	4.50	No
269	y	-0.07	0.50	No
	y	-0.07	6.50	No
	y	-0.096	4.50	No
270	y	-0.097	0.50	No
	y	-0.097	6.50	No
	y	-0.068	4.50	No
273	y	-0.07	0.50	No
	y	-0.07	6.50	No
	y	-0.096	4.50	No
274	y	-0.097	0.50	No
	y	-0.097	6.50	No
	y	-0.068	4.50	No
275	y	-0.097	0.50	No
	y	-0.097	6.50	No
	y	-0.036	4.50	No
272	y	-0.075	0.50	No
	y	-0.075	6.50	No
	y	-0.05	4.50	No
271	y	-0.097	0.50	No
	y	-0.097	6.50	No
	y	-0.036	4.50	No
162	y	-0.03	0.50	No
	y	-0.03	1.50	No
W/O 168	z	-0.012	0.50	No
170	z	-0.012	0.50	No
264	z	-0.047	0.50	No
	z	-0.047	6.50	No
	z	-0.01	4.50	No
265	z	-0.041	0.50	No
	z	-0.041	6.50	No
	z	-0.027	4.50	No
266	z	-0.059	0.50	No
	z	-0.059	6.50	No
	z	-0.018	4.50	No
267	z	-0.059	0.50	No
	z	-0.059	6.50	No
268	z	-0.033	0.50	No
	z	-0.033	6.50	No
	z	-0.017	4.50	No
269	z	-0.036	0.50	No
	z	-0.036	6.50	No
	z	-0.025	4.50	No
270	z	-0.037	0.50	No
	z	-0.037	6.50	No
	z	-0.019	4.50	No
273	z	-0.036	0.50	No
	z	-0.036	6.50	No
	z	-0.025	4.50	No
274	z	-0.037	0.50	No
	z	-0.037	6.50	No
	z	-0.019	4.50	No
275	z	-0.037	0.50	No
	z	-0.037	6.50	No

		z	-0.016	4.50	No
	272	z	-0.033	0.50	No
		z	-0.033	6.50	No
		z	-0.017	4.50	No
	271	z	-0.037	0.50	No
		z	-0.037	6.50	No
		z	-0.016	4.50	No
	162	z	-0.012	0.50	No
		z	-0.012	1.50	No
Wi30	168	x	-0.012	0.50	No
	170	x	-0.012	0.50	No
	264	x	-0.029	0.50	No
		x	-0.029	6.50	No
		x	-0.015	4.50	No
	265	x	-0.034	0.50	No
		x	-0.034	6.50	No
		x	-0.029	4.50	No
	266	x	-0.03	0.50	No
		x	-0.03	6.50	No
		x	-0.022	4.50	No
	267	x	-0.03	0.50	No
		x	-0.03	6.50	No
		x	-0.016	4.50	No
	268	x	-0.042	0.50	No
		x	-0.042	6.50	No
		x	-0.016	4.50	No
	269	x	-0.038	0.50	No
		x	-0.038	6.50	No
		x	-0.015	4.50	No
	270	x	-0.052	0.50	No
		x	-0.052	6.50	No
		x	-0.011	4.50	No
	273	x	-0.038	0.50	No
		x	-0.038	6.50	No
		x	-0.015	4.50	No
	274	x	-0.052	0.50	No
		x	-0.052	6.50	No
		x	-0.011	4.50	No
	275	x	-0.052	0.50	No
		x	-0.052	6.50	No
		x	-0.012	4.50	No
	272	x	-0.042	0.50	No
		x	-0.042	6.50	No
		x	-0.016	4.50	No
	271	x	-0.052	0.50	No
		x	-0.052	6.50	No
		x	-0.012	4.50	No
	162	x	-0.012	0.50	No
		x	-0.012	1.50	No
WLO	168	z	-0.003	0.50	No
	170	z	-0.003	0.50	No
	264	z	-0.015	0.50	No
		z	-0.015	6.50	No
		z	-0.002	4.50	No
	265	z	-0.012	0.50	No
		z	-0.012	6.50	No
		z	-0.005	4.50	No
	266	z	-0.019	0.50	No
		z	-0.019	6.50	No
		z	-0.004	4.50	No

267	z	-0.019	0.50	No
	z	-0.019	6.50	No
268	z	-0.01	0.50	No
	z	-0.01	6.50	No
	z	-0.005	4.50	No
269	z	-0.011	0.50	No
	z	-0.011	6.50	No
	z	-0.007	4.50	No
270	z	-0.011	0.50	No
	z	-0.011	6.50	No
	z	-0.005	4.50	No
273	z	-0.011	0.50	No
	z	-0.011	6.50	No
	z	-0.007	4.50	No
274	z	-0.011	0.50	No
	z	-0.011	6.50	No
	z	-0.005	4.50	No
275	z	-0.011	0.50	No
	z	-0.011	6.50	No
	z	-0.004	4.50	No
272	z	-0.01	0.50	No
	z	-0.01	6.50	No
	z	-0.005	4.50	No
271	z	-0.011	0.50	No
	z	-0.011	6.50	No
	z	-0.004	4.50	No
162	z	-0.003	0.50	No
	z	-0.003	1.50	No
WL30 168	x	-0.003	0.50	No
170	x	-0.003	0.50	No
264	x	-0.009	0.50	No
	x	-0.009	6.50	No
	x	-0.004	4.50	No
265	x	-0.01	0.50	No
	x	-0.01	6.50	No
	x	-0.008	4.50	No
266	x	-0.009	0.50	No
	x	-0.009	6.50	No
	x	-0.006	4.50	No
267	x	-0.009	0.50	No
	x	-0.009	6.50	No
	x	-0.004	4.50	No
268	x	-0.013	0.50	No
	x	-0.013	6.50	No
	x	-0.004	4.50	No
269	x	-0.012	0.50	No
	x	-0.012	6.50	No
	x	-0.004	4.50	No
270	x	-0.016	0.50	No
	x	-0.016	6.50	No
	x	-0.003	4.50	No
273	x	-0.012	0.50	No
	x	-0.012	6.50	No
	x	-0.004	4.50	No
274	x	-0.016	0.50	No
	x	-0.016	6.50	No
	x	-0.003	4.50	No
275	x	-0.016	0.50	No
	x	-0.016	6.50	No
	x	-0.003	4.50	No



	272	x	-0.013	0.50	No
		x	-0.013	6.50	No
		x	-0.004	4.50	No
	271	x	-0.016	0.50	No
		x	-0.016	6.50	No
		x	-0.003	4.50	No
	162	x	-0.003	0.50	No
		x	-0.003	1.50	No
LL1	9	y	-0.25	50.00	Yes
LL2	9	y	-0.25	0.00	Yes
LLa1	264	y	-0.25	50.00	Yes
LLa2	265	y	-0.25	50.00	Yes
LLa3	266	y	-0.25	50.00	Yes
LLa4	267	y	-0.25	50.00	Yes

### Self weight multipliers for load conditions

Condition	Description	Self weight multiplier			
		Comb.	MultX	MultY	MultZ
DL	Dead Load	No	0.00	-1.00	0.00
W0	Wind Load 0/60/120 deg	No	0.00	0.00	0.00
W30	Wind Load 30/90/150 deg	No	0.00	0.00	0.00
Di	Ice Load	No	0.00	0.00	0.00
Wi0	Ice Wind Load 0/60/120 deg	No	0.00	0.00	0.00
Wi30	Ice Wind Load 30/90/150 deg	No	0.00	0.00	0.00
WL0	WL 30 mph 0/60/120 deg	No	0.00	0.00	0.00
WL30	WL 30 mph 30/90/150 deg	No	0.00	0.00	0.00
LL1	250 lb Live Load Center of Mount	No	0.00	0.00	0.00
LL2	250 lb Live Load End of Mount	No	0.00	0.00	0.00
LLa1	250 lb Live Load Antenna 1	No	0.00	0.00	0.00
LLa2	250 lb Live Load Antenna 2	No	0.00	0.00	0.00
LLa3	250 lb Live Load Antenna 3	No	0.00	0.00	0.00
LLa4	250 lb Live Load Antenna 4	No	0.00	0.00	0.00

### Earthquake (Dynamic analysis only)

Condition	a/g	Ang. [Deg]	Damp. [%]
DL	0.00	0.00	0.00
W0	0.00	0.00	0.00
W30	0.00	0.00	0.00
Di	0.00	0.00	0.00
Wi0	0.00	0.00	0.00
Wi30	0.00	0.00	0.00
WL0	0.00	0.00	0.00
WL30	0.00	0.00	0.00
LL1	0.00	0.00	0.00
LL2	0.00	0.00	0.00
LLa1	0.00	0.00	0.00
LLa2	0.00	0.00	0.00
LLa3	0.00	0.00	0.00

LLa4            0.00        0.00        0.00

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## Steel Code Check

Report: Summary - Group by member

**Load conditions to be included in design :**

- LC1=1.2DL+W0
- LC2=1.2DL+W30
- LC3=1.2DL-W0
- LC4=1.2DL-W30
- LC5=0.9DL+W0
- LC6=0.9DL+W30
- LC7=0.9DL-W0
- LC8=0.9DL-W30
- LC9=1.2DL+Di+Wi0
- LC10=1.2DL+Di+Wi30
- LC11=1.2DL+Di-Wi0
- LC12=1.2DL+Di-Wi30
- LC13=1.2DL
- LC15=1.2DL+1.5LL1
- LC16=1.2DL+1.5LL2
- LC17=1.2DL+W0+1.5LLa1
- LC18=1.2DL+W30+1.5LLa1
- LC19=1.2DL-W0+1.5LLa1
- LC20=1.2DL-W30+1.5LLa1
- LC21=1.2DL+W0+1.5LLa2
- LC22=1.2DL+W30+1.5LLa2
- LC23=1.2DL-W0+1.5LLa2
- LC24=1.2DL-W30+1.5LLa2
- LC25=1.2DL+W0+1.5LLa3
- LC26=1.2DL+W30+1.5LLa3
- LC27=1.2DL-W0+1.5LLa3
- LC28=1.2DL-W30+1.5LLa3
- LC29=1.2DL+W0+1.5LLa4
- LC30=1.2DL+W30+1.5LLa4
- LC31=1.2DL-W0+1.5LLa4
- LC32=1.2DL-W30+1.5LLa4

Description	Section	Member	Ctrl Eq.	Ratio	Status	Reference
	<b>C 3x2x1/4</b>	<b>160</b>	LC2 at 50.00%	0.96	OK	Eq. H1-1b
		<b>277</b>	LC1 at 0.00%	<b>1.04</b>	<b>N.G.</b>	Eq. H1-1b
		<b>278</b>	LC1 at 50.00%	0.99	OK	Eq. H1-1b
	<b>C 6x4x1/4</b>	<b>29</b>	LC3 at 100.00%	0.14	OK	Eq. H1-1b
		<b>31</b>	LC1 at 100.00%	0.12	OK	Eq. H1-1b
		<b>33</b>	LC2 at 100.00%	<b>0.16</b>	<b>OK</b>	Eq. H1-1b
	<b>L 2X2X1_4</b>	<b>2</b>	LC2 at 0.00%	0.69	OK	Eq. H2-1
		<b>3</b>	LC2 at 0.00%	0.61	OK	Eq. H2-1
		<b>34</b>	LC4 at 0.00%	0.62	OK	Eq. H2-1
		<b>36</b>	LC4 at 0.00%	0.63	OK	Eq. H2-1
		<b>279</b>	LC1 at 100.00%	<b>0.73</b>	<b>OK</b>	Eq. H2-1
		<b>280</b>	LC1 at 0.00%	0.68	OK	Eq. H2-1
	<b>PIPE 2-1_2x0.203</b>	<b>264</b>	LC2 at 72.92%	0.48	OK	Eq. H1-1b
		<b>265</b>	LC2 at 72.92%	0.82	OK	Eq. H1-1b

<b>266</b>	LC2 at 72.92%	1.11	N.G.	Eq. H1-1b
<b>267</b>	LC4 at 72.92%	0.51	OK	Eq. H1-1b
<b>268</b>	LC1 at 72.92%	0.45	OK	Eq. H1-1b
<b>269</b>	LC1 at 72.92%	0.81	OK	Eq. H1-1b
<b>270</b>	LC4 at 72.92%	<b>1.16</b>	<b>N.G.</b>	Eq. H1-1b
<b>271</b>	LC3 at 72.92%	0.52	OK	Eq. H1-1b
<b>272</b>	LC3 at 72.92%	0.48	OK	Eq. H1-1b
<b>273</b>	LC3 at 72.92%	0.82	OK	Eq. H1-1b
<b>274</b>	LC3 at 72.92%	1.09	N.G.	Eq. H1-1b
<b>275</b>	LC1 at 72.92%	0.50	OK	Eq. H1-1b

**PIPE 2x0.154**

<b>28</b>	LC2 at 6.25%	<b>0.85</b>	<b>OK</b>	Eq. H1-1b
<b>30</b>	LC2 at 7.14%	0.75	OK	Eq. H1-1b
<b>32</b>	LC1 at 93.75%	0.76	OK	Eq. H1-1b
<b>162</b>	LC1 at 71.88%	0.08	OK	Eq. H1-1b
<b>168</b>	LC4 at 71.88%	0.08	OK	Eq. H1-1b
<b>170</b>	LC3 at 71.88%	0.08	OK	Eq. H1-1b

**PIPE 3x0.216**

<b>1</b>	LC2 at 62.50%	1.06	N.G.	Eq. H1-1b
<b>5</b>	LC4 at 62.50%	1.06	N.G.	Eq. H1-1b
<b>9</b>	LC4 at 60.42%	0.44	OK	Eq. H1-1b
<b>10</b>	LC3 at 39.58%	0.50	OK	Eq. H3-6
<b>11</b>	LC2 at 39.58%	0.50	OK	Eq. H3-6
<b>12</b>	LC1 at 37.50%	<b>1.19</b>	<b>N.G.</b>	Eq. H1-1b

**PL 6X1/2**

<b>25</b>	LC2 at 50.00%	0.39	OK	Eq. H1-1b
<b>26</b>	LC4 at 50.00%	0.39	OK	Eq. H1-1b
<b>27</b>	LC1 at 50.00%	<b>0.47</b>	<b>OK</b>	Eq. H1-1b

**T2L 3X3X1\_4**

<b>225</b>	LC4 at 100.00%	<b>0.98</b>	<b>OK</b>	Eq. H2-1
<b>226</b>	LC2 at 0.00%	0.89	OK	Eq. H2-1
<b>227</b>	LC1 at 0.00%	0.97	OK	Eq. H2-1



## Geometry data

### GLOSSARY

Cb22, Cb33	: Moment gradient coefficients
Cm22, Cm33	: Coefficients applied to bending term in interaction formula
d0	: Tapered member section depth at J end of member
DJX	: Rigid end offset distance measured from J node in axis X
DJY	: Rigid end offset distance measured from J node in axis Y
DJZ	: Rigid end offset distance measured from J node in axis Z
DKX	: Rigid end offset distance measured from K node in axis X
DKY	: Rigid end offset distance measured from K node in axis Y
DKZ	: Rigid end offset distance measured from K node in axis Z
dL	: Tapered member section depth at K end of member
Ig factor	: Inertia reduction factor (Effective Inertia/Gross Inertia) for reinforced concrete members
K22	: Effective length factor about axis 2
K33	: Effective length factor about axis 3
L22	: Member length for calculation of axial capacity
L33	: Member length for calculation of axial capacity
LB pos	: Lateral unbraced length of the compression flange in the positive side of local axis 2
LB neg	: Lateral unbraced length of the compression flange in the negative side of local axis 2
RX	: Rotation about X
RY	: Rotation about Y
RZ	: Rotation about Z
TO	: 1 = Tension only member    0 = Normal member
TX	: Translation in X
TY	: Translation in Y
TZ	: Translation in Z

### Nodes

Node	X [ft]	Y [ft]	Z [ft]	Rigid Floor
173	1.3574	-1.975	-3.3059	0
95	1.3574	0.00	-3.3059	0
108	-1.3574	0.00	-3.3059	0
175	-1.3574	-1.975	-3.3059	0
107	0.00	0.00	-5.6569	0
174	0.00	-1.975	-5.6569	0

### Restraints

Node	TX	TY	TZ	RX	RY	RZ
173	1	1	1	1	1	1
95	1	1	1	1	1	1
108	1	1	1	1	1	1
175	1	1	1	1	1	1
107	1	1	1	1	1	1
174	1	1	1	1	1	1

## Members

Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	Ig factor
1	5	108		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
2	5	672		L 2X2X1_4	A36	0.00	0.00	0.00
3	5	671		L 2X2X1_4	A36	0.00	0.00	0.00
5	20	95		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
9	4	19		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
10	10	14		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
11	29	25		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
12	107	32		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
25	6	3		PL 6X1/2	A36	0.00	0.00	0.00
26	18	21		PL 6X1/2	A36	0.00	0.00	0.00
27	28	13		PL 6X1/2	A36	0.00	0.00	0.00
28	72	73		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
29	74	75		C 6x4x1/4	A36	0.00	0.00	0.00
30	76	77		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
31	78	79		C 6x4x1/4	A36	0.00	0.00	0.00
32	80	81		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
33	82	83		C 6x4x1/4	A36	0.00	0.00	0.00
34	20	669		L 2X2X1_4	A36	0.00	0.00	0.00
36	20	670		L 2X2X1_4	A36	0.00	0.00	0.00
160	667	634		C 3x2x1/4	A36	0.00	0.00	0.00
225	173	631		T2L 3X3X1_4	A36	0.00	0.00	0.00
226	630	175		T2L 3X3X1_4	A36	0.00	0.00	0.00
227	629	174		T2L 3X3X1_4	A36	0.00	0.00	0.00
277	655	666		C 3x2x1/4	A36	0.00	0.00	0.00
278	665	668		C 3x2x1/4	A36	0.00	0.00	0.00
279	674	32		L 2X2X1_4	A36	0.00	0.00	0.00
280	32	673		L 2X2X1_4	A36	0.00	0.00	0.00
162	417	418		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
168	429	430		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
170	433	434		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
264	606	607		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
265	600	601		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
266	594	595		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
267	612	613		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
268	582	583		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
269	576	577		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
270	570	571		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
271	588	589		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
272	519	520		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
273	525	526		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
274	531	532		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
275	537	538		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00

## Orientation of local axes

Member	Rotation [Deg]	Axes23	NX	NY	NZ
2	270.00	0	0.00	0.00	0.00
29	180.00	0	0.00	0.00	0.00
31	180.00	0	0.00	0.00	0.00
33	180.00	0	0.00	0.00	0.00
36	270.00	0	0.00	0.00	0.00
162	315.00	0	0.00	0.00	0.00
168	315.00	0	0.00	0.00	0.00
170	315.00	0	0.00	0.00	0.00
264	315.00	0	0.00	0.00	0.00
265	315.00	0	0.00	0.00	0.00
266	315.00	0	0.00	0.00	0.00
267	315.00	0	0.00	0.00	0.00
268	315.00	0	0.00	0.00	0.00
269	315.00	0	0.00	0.00	0.00
270	315.00	0	0.00	0.00	0.00
271	315.00	0	0.00	0.00	0.00
272	315.00	0	0.00	0.00	0.00
273	315.00	0	0.00	0.00	0.00
274	315.00	0	0.00	0.00	0.00
275	315.00	0	0.00	0.00	0.00

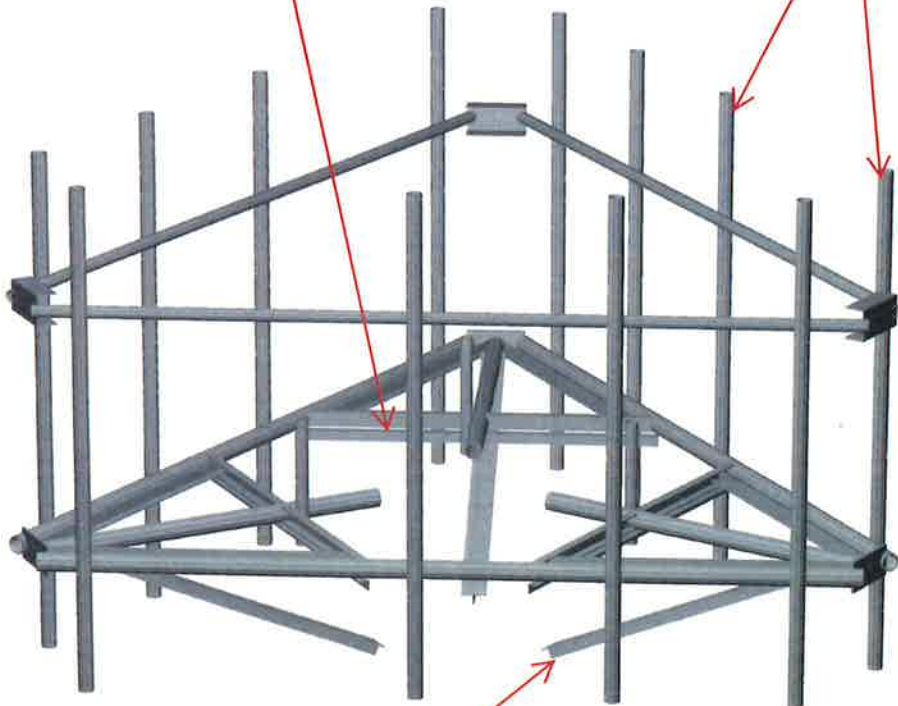


**HUDSON**  
Design Group LLC

**Mount Calculations  
(Modified Conditions)**

Reinforce existing C-channel with new L 2x2x1/4 steel angles (typ. of 2 per sector, total of 6).

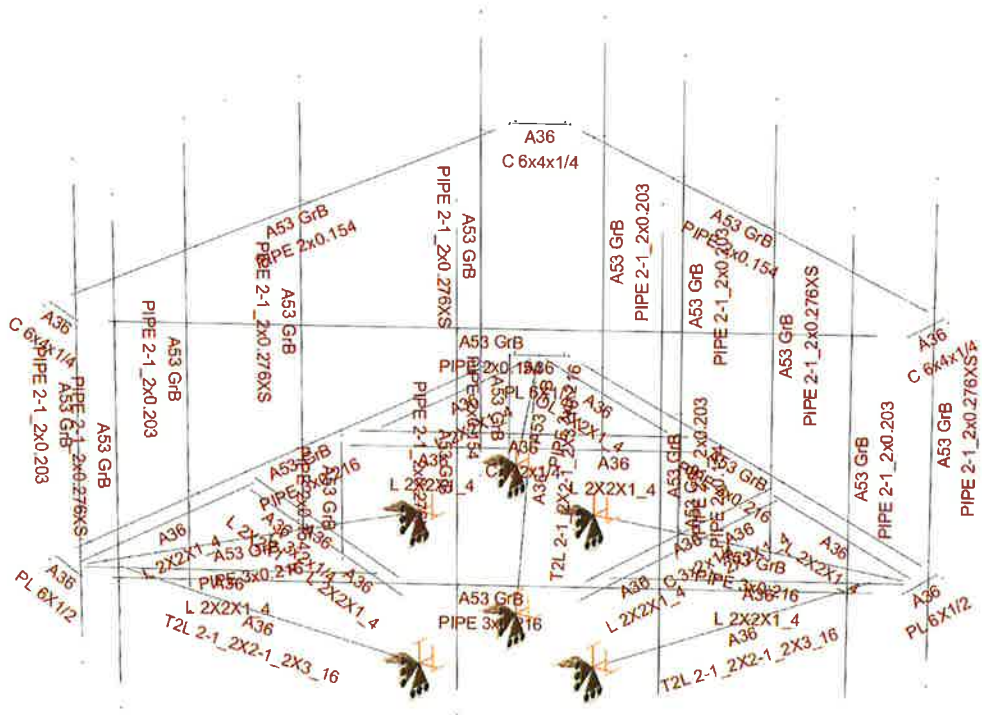
Install new 2-1/2" x-strong (2.88" O.D.) pipe mast behind new DMP65R-BU6DA antennas secured to the existing mount and handrail (typ. of 2 per sector, total of 6).





Remove existing Kicker Mount Standoff and Install new platform reinforcement kit, SitePro1 P/N PRK-FMA (or approved equal).

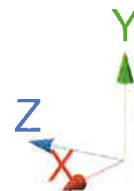
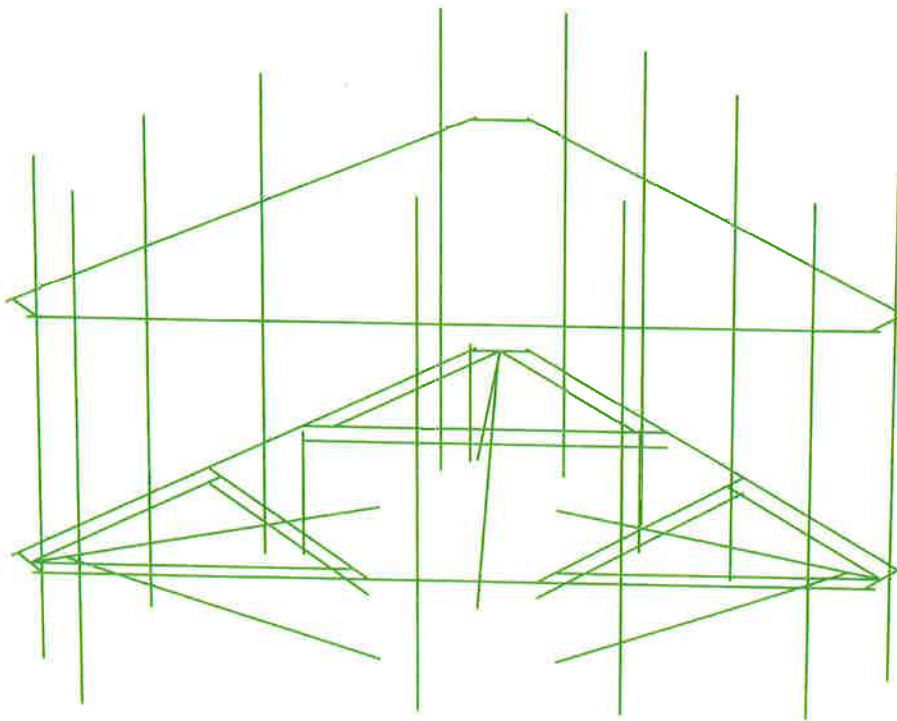


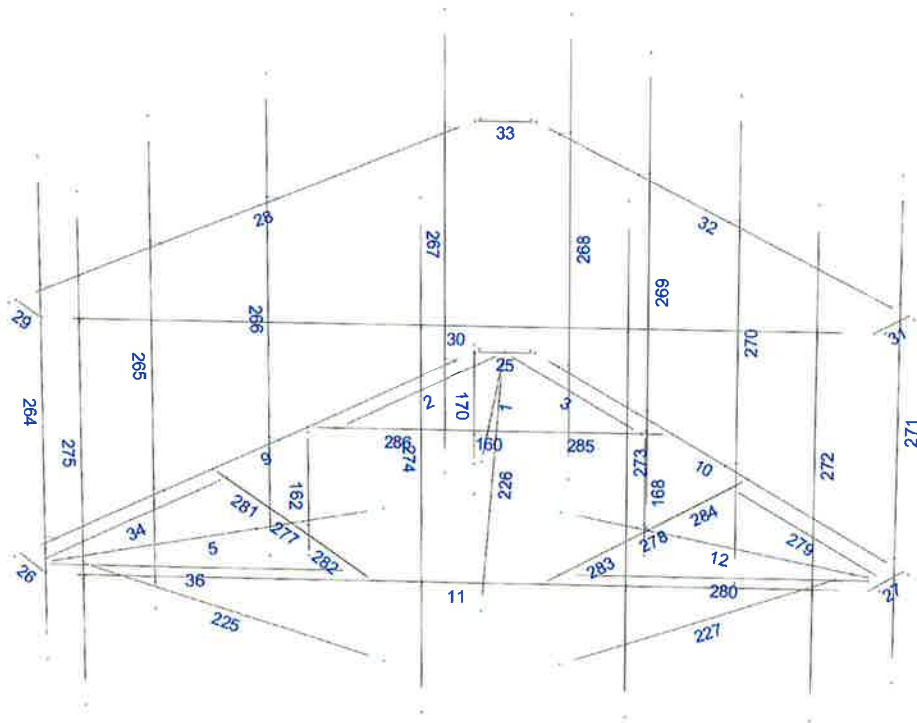




Design status

-  Not designed
-  Error on design
-  Design O.K.
-  With warnings







Current Date: 1/28/2020 5:00 PM

Units system: English

File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT2547\CT2547 (LTE 5C 6C)\CT2547 (5C 6C)(MOD).retx

## Steel Code Check

Report: Summary - Group by member

**Load conditions to be included in design :**

- LC1=1.2DL+W0
- LC2=1.2DL+W30
- LC3=1.2DL-W0
- LC4=1.2DL-W30
- LC5=0.9DL+W0
- LC6=0.9DL+W30
- LC7=0.9DL-W0
- LC8=0.9DL-W30
- LC9=1.2DL+Di+Wi0
- LC10=1.2DL+Di+Wi30
- LC11=1.2DL+Di-Wi0
- LC12=1.2DL+Di-Wi30
- LC13=1.2DL
- LC15=1.2DL+1.5LL1
- LC16=1.2DL+1.5LL2
- LC17=1.2DL+WL0+1.5LLa1
- LC18=1.2DL+WL30+1.5LLa1
- LC19=1.2DL-WL0+1.5LLa1
- LC20=1.2DL-WL30+1.5LLa1
- LC21=1.2DL+WL0+1.5LLa2
- LC22=1.2DL+WL30+1.5LLa2
- LC23=1.2DL-WL0+1.5LLa2
- LC24=1.2DL-WL30+1.5LLa2
- LC25=1.2DL+WL0+1.5LLa3
- LC26=1.2DL+WL30+1.5LLa3
- LC27=1.2DL-WL0+1.5LLa3
- LC28=1.2DL-WL30+1.5LLa3
- LC29=1.2DL+WL0+1.5LLa4
- LC30=1.2DL+WL30+1.5LLa4
- LC31=1.2DL-WL0+1.5LLa4
- LC32=1.2DL-WL30+1.5LLa4

Description	Section	Member	Ctrl Eq.	Ratio	Status	Reference
	<b>C 3x2x1/4</b>	<b>160</b>	LC4 at 0.00%	0.82	OK	Eq. H1-1a
		<b>277</b>	LC1 at 0.00%	<b>0.84</b>	<b>OK</b>	Eq. H1-1a
		<b>278</b>	LC2 at 0.00%	0.63	OK	Eq. H1-1a
	<b>C 6x4x1/4</b>	<b>29</b>	LC3 at 100.00%	0.11	OK	Eq. H1-1b
		<b>31</b>	LC4 at 100.00%	0.09	OK	Eq. H1-1b
		<b>33</b>	LC2 at 100.00%	<b>0.13</b>	<b>OK</b>	Eq. H1-1b
	<b>L 2X2X1_4</b>	<b>2</b>	LC7 at 100.00%	0.41	OK	Eq. H2-1
		<b>3</b>	LC6 at 100.00%	0.42	OK	Eq. H2-1
		<b>34</b>	LC7 at 100.00%	0.43	OK	Eq. H2-1
		<b>36</b>	LC4 at 0.00%	0.44	OK	Eq. H2-1
		<b>279</b>	LC1 at 100.00%	0.47	OK	Eq. H2-1
		<b>280</b>	LC1 at 0.00%	0.39	OK	Eq. H2-1
		<b>281</b>	LC7 at 15.63%	0.59	OK	Eq. H2-1
		<b>282</b>	LC4 at 0.00%	0.63	OK	Eq. H2-1
		<b>283</b>	LC1 at 100.00%	0.64	OK	Eq. H2-1

	<b>284</b>	LC1 at 0.00%	<b>0.71</b>	<b>OK</b>	Eq. H2-1
	<b>285</b>	LC2 at 100.00%	0.65	OK	Eq. H2-1
	<b>286</b>	LC2 at 0.00%	0.64	OK	Eq. H2-1
<hr/>					
<b>PIPE 2-1_2x0.203</b>	<b>264</b>	LC4 at 72.92%	0.63	OK	Eq. H1-1b
	<b>265</b>	LC4 at 72.92%	0.69	OK	Eq. H1-1b
	<b>268</b>	LC2 at 72.92%	0.43	OK	Eq. H1-1b
	<b>269</b>	LC4 at 72.92%	0.74	OK	Eq. H1-1b
	<b>272</b>	LC1 at 72.92%	0.57	OK	Eq. H1-1b
	<b>273</b>	LC3 at 72.92%	<b>0.76</b>	<b>OK</b>	Eq. H1-1b
<hr/>					
<b>PIPE 2-1_2x0.276XS</b>	<b>266</b>	LC1 at 72.92%	0.82	OK	Eq. H1-1b
	<b>267</b>	LC2 at 72.92%	0.49	OK	Eq. H1-1b
	<b>270</b>	LC4 at 72.92%	<b>0.89</b>	<b>OK</b>	Eq. H1-1b
	<b>271</b>	LC1 at 72.92%	0.47	OK	Eq. H1-1b
	<b>274</b>	LC3 at 72.92%	0.77	OK	Eq. H1-1b
	<b>275</b>	LC4 at 72.92%	0.36	OK	Eq. H1-1b
<hr/>					
<b>PIPE 2x0.154</b>	<b>28</b>	LC2 at 6.25%	<b>0.87</b>	<b>OK</b>	Eq. H1-1b
	<b>30</b>	LC1 at 8.04%	0.79	OK	Eq. H1-1b
	<b>32</b>	LC1 at 93.75%	0.80	OK	Eq. H1-1b
	<b>162</b>	LC3 at 71.88%	0.08	OK	Eq. H1-1b
	<b>168</b>	LC4 at 71.88%	0.08	OK	Eq. H1-1b
	<b>170</b>	LC2 at 71.88%	0.08	OK	Eq. H1-1b
<hr/>					
<b>PIPE 3x0.216</b>	<b>1</b>	LC3 at 100.00%	0.74	OK	Eq. H1-1b
	<b>5</b>	LC3 at 100.00%	0.81	OK	Eq. H1-1b
	<b>9</b>	LC1 at 60.42%	0.38	OK	Eq. H3-6
	<b>10</b>	LC4 at 54.17%	0.36	OK	Eq. H3-6
	<b>11</b>	LC2 at 39.58%	0.38	OK	Eq. H3-6
	<b>12</b>	LC4 at 0.00%	<b>0.92</b>	<b>OK</b>	Eq. H1-1b
<hr/>					
<b>PL 6X1/2</b>	<b>25</b>	LC2 at 50.00%	0.39	OK	Eq. H1-1b
	<b>26</b>	LC4 at 50.00%	0.35	OK	Eq. H1-1b
	<b>27</b>	LC1 at 50.00%	<b>0.45</b>	<b>OK</b>	Eq. H1-1b
<hr/>					
<b>T2L 2-1_2X2-1_2X3_16</b>	<b>225</b>	LC4 at 100.00%	<b>0.72</b>	<b>OK</b>	Eq. H2-1
	<b>226</b>	LC2 at 0.00%	0.71	OK	Eq. H2-1
	<b>227</b>	LC1 at 0.00%	0.68	OK	Eq. H2-1



## Geometry data

### GLOSSARY

Cb22, Cb33	: Moment gradient coefficients
Cm22, Cm33	: Coefficients applied to bending term in interaction formula
d0	: Tapered member section depth at J end of member
DJX	: Rigid end offset distance measured from J node in axis X
DJY	: Rigid end offset distance measured from J node in axis Y
DJZ	: Rigid end offset distance measured from J node in axis Z
DKX	: Rigid end offset distance measured from K node in axis X
DKY	: Rigid end offset distance measured from K node in axis Y
DKZ	: Rigid end offset distance measured from K node in axis Z
dL	: Tapered member section depth at K end of member
Ig factor	: Inertia reduction factor (Effective Inertia/Gross Inertia) for reinforced concrete members
K22	: Effective length factor about axis 2
K33	: Effective length factor about axis 3
L22	: Member length for calculation of axial capacity
L33	: Member length for calculation of axial capacity
LB pos	: Lateral unbraced length of the compression flange in the positive side of local axis 2
LB neg	: Lateral unbraced length of the compression flange in the negative side of local axis 2
RX	: Rotation about X
RY	: Rotation about Y
RZ	: Rotation about Z
TO	: 1 = Tension only member    0 = Normal member
TX	: Translation in X
TY	: Translation in Y
TZ	: Translation in Z

### Nodes

Node	X [ft]	Y [ft]	Z [ft]	Rigid Floor
95	1.3574	0.00	-3.3059	0
173	1.3574	-2.50	-3.3059	0
107	0.00	0.00	-5.6569	0
174	0.00	-2.50	-5.6569	0
108	-1.3574	0.00	-3.3059	0
175	-1.3574	-2.50	-3.3059	0

### Restraints

Node	TX	TY	TZ	RX	RY	RZ
95	1	1	1	1	1	1
173	1	1	1	1	1	1
107	1	1	1	1	1	1
174	1	1	1	1	1	1
108	1	1	1	1	1	1
175	1	1	1	1	1	1

## Members

Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	Ig factor
1	5	108		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
2	5	672		L 2X2X1_4	A36	0.00	0.00	0.00
3	5	671		L 2X2X1_4	A36	0.00	0.00	0.00
5	20	95		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
9	4	19		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
10	10	14		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
11	29	25		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
12	107	32		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
25	6	3		PL 6X1/2	A36	0.00	0.00	0.00
26	18	21		PL 6X1/2	A36	0.00	0.00	0.00
27	28	13		PL 6X1/2	A36	0.00	0.00	0.00
28	72	73		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
29	74	75		C 6x4x1/4	A36	0.00	0.00	0.00
30	76	77		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
31	78	79		C 6x4x1/4	A36	0.00	0.00	0.00
32	80	81		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
33	82	83		C 6x4x1/4	A36	0.00	0.00	0.00
34	20	669		L 2X2X1_4	A36	0.00	0.00	0.00
36	20	670		L 2X2X1_4	A36	0.00	0.00	0.00
160	667	634		C 3x2x1/4	A36	0.00	0.00	0.00
162	417	418		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
168	429	430		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
170	433	434		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
225	173	688		T2L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
226	687	175		T2L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
227	680	174		T2L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
264	606	607		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
265	600	601		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
266	594	595		PIPE 2-1_2x0.276XS	A53 GrB	0.00	0.00	0.00
267	612	613		PIPE 2-1_2x0.276XS	A53 GrB	0.00	0.00	0.00
268	582	583		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
269	576	577		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
270	570	571		PIPE 2-1_2x0.276XS	A53 GrB	0.00	0.00	0.00
271	588	589		PIPE 2-1_2x0.276XS	A53 GrB	0.00	0.00	0.00
272	519	520		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
273	525	526		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
274	531	532		PIPE 2-1_2x0.276XS	A53 GrB	0.00	0.00	0.00
275	537	538		PIPE 2-1_2x0.276XS	A53 GrB	0.00	0.00	0.00
277	655	666		C 3x2x1/4	A36	0.00	0.00	0.00
278	665	668		C 3x2x1/4	A36	0.00	0.00	0.00
279	674	32		L 2X2X1_4	A36	0.00	0.00	0.00
280	32	673		L 2X2X1_4	A36	0.00	0.00	0.00
281	655	690		L 2X2X1_4	A36	0.00	0.00	0.00
282	690	666		L 2X2X1_4	A36	0.00	0.00	0.00
283	665	689		L 2X2X1_4	A36	0.00	0.00	0.00
284	689	668		L 2X2X1_4	A36	0.00	0.00	0.00
285	667	691		L 2X2X1_4	A36	0.00	0.00	0.00
286	691	634		L 2X2X1_4	A36	0.00	0.00	0.00

## Orientation of local axes

---

Member	Rotation [Deg]	Axes23	NX	NY	NZ
2	270.00	0	0.00	0.00	0.00
29	180.00	0	0.00	0.00	0.00
31	180.00	0	0.00	0.00	0.00
33	180.00	0	0.00	0.00	0.00
36	270.00	0	0.00	0.00	0.00
162	315.00	0	0.00	0.00	0.00
168	315.00	0	0.00	0.00	0.00
170	315.00	0	0.00	0.00	0.00
264	315.00	0	0.00	0.00	0.00
265	315.00	0	0.00	0.00	0.00
266	315.00	0	0.00	0.00	0.00
267	315.00	0	0.00	0.00	0.00
268	315.00	0	0.00	0.00	0.00
269	315.00	0	0.00	0.00	0.00
270	315.00	0	0.00	0.00	0.00
271	315.00	0	0.00	0.00	0.00
272	315.00	0	0.00	0.00	0.00
273	315.00	0	0.00	0.00	0.00
274	315.00	0	0.00	0.00	0.00
275	315.00	0	0.00	0.00	0.00
281	90.00	0	0.00	0.00	0.00
282	90.00	0	0.00	0.00	0.00
283	90.00	0	0.00	0.00	0.00
284	90.00	0	0.00	0.00	0.00
285	90.00	0	0.00	0.00	0.00
286	90.00	0	0.00	0.00	0.00

---

## Rigid end offsets

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Member	DJX [in]	DJY [in]	DJZ [in]	DKX [in]	DKY [in]	DKZ [in]
281	0.00	-3.00	0.00	0.00	-3.00	0.00
282	0.00	-3.00	0.00	0.00	-3.00	0.00
283	0.00	-3.00	0.00	0.00	-3.00	0.00
284	0.00	-3.00	0.00	0.00	-3.00	0.00
285	0.00	-3.00	0.00	0.00	-3.00	0.00
286	0.00	-3.00	0.00	0.00	-3.00	0.00

---



**Tower Engineering Solutions**

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

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## Post-Mod Structural Analysis Report

**Existing 130 ft Rohn Monopole**

**Customer Name: SBA Communications Corp**

**Customer Site Number: CT13064-A**

**Customer Site Name: Middletown 2, CT**

**Carrier Name: AT&T (App#: 128492, v1)**

**Carrier Site ID / Name: CT2547 / Middletown**

**Site Location: 67 Fairchild Road**

**Middletown, Connecticut**

**Middlesex County**

**Latitude: 41.545011**

**Longitude: -72.620766**

### Analysis Result:

**Max Structural Usage: 96.7% [Pass]**

**Max Foundation Usage: 94.0% [Pass]**

**Report Prepared by: Matthew Baker**





**Tower Engineering Solutions**

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

---

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**Existing 130 ft Rohn Monopole**

**Customer Name: SBA Communications Corp**

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**Middlesex County**

**Latitude: 41.545011**

**Longitude: -72.620766**

### **Analysis Result:**

**Max Structural Usage: 96.7% [Pass]**

**Max Foundation Usage: 94.0% [Pass]**

**Report Prepared by: Matthew Baker**



## Introduction

The purpose of this report is to summarize the analysis results on the 130 ft Rohn Monopole to support the proposed antennas and transmission lines in addition to those currently installed. Any existing modification listed under Sources of Information was assumed completed and was included in this analysis.

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

## Sources of Information

<b>Tower Drawings</b>	Rohn Parent File # 57886EH, Eng. File # 060-3494, Dwg. # A060995, dated 12/15/2006
<b>Foundation Drawing</b>	Rohn Parent File # 57886EH, Eng. File # 060-3494, Dwg. # A060998, dated 12/15/2006
<b>Geotechnical Report</b>	Gemini Geotechnical Associates Project # 06161CT, dated 11/30/2006
<b>Existing Modification</b>	FDH Project # 11-01248E S1, dated 09/21/2001; FDH Project # 12-08192E S2, dated 11/14/2012; FDH Project # 15BVXK1400, dated 08/06/2015; TES Job # 13064, dated 11/05/2015; TES Job # 56931, dated 08/24/2018
<b>Proposed Modification</b>	TES Job # 92080

## Analysis Criteria

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

<b>Wind Speed Used in the Analysis:</b>	Ultimate Design Wind Speed $V_{ult} = 130.0$ mph (3-Sec. Gust)/ Nominal Design Wind Speed $V_{asd} = 101.0$ mph (3-Sec. Gust)
<b>Basic Wind Speed with Ice:</b>	50 mph (3-Sec. Gust) with 3/4" radial ice concurrent
<b>Operational Wind Speed:</b>	60 mph + 0" Radial ice
<b>Standard/Codes:</b>	TIA-222-G-2 / 2015 IBC / 2018 Connecticut State Building Code
<b>Exposure Category:</b>	C
<b>Structure Class:</b>	II
<b>Topographic Category:</b>	1
<b>Crest Height:</b>	0 ft
<b>Seismic Parameters:</b>	SS = 0.18, S1 = 0.063

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

## Existing Antennas, Mounts and Transmission Lines

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

Items	Elevation (ft.)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
-	130.0	3	Powerwave - P65-16-XLH-RR - Panel	Platform w/ Hand Rail (Commscope P/N MTC3607R)	(12) 1 5/8" (4) 3/4" DC And (2) 1/2" Fiber inside (3) 2" Conduit	AT&T
-		3	CCI - OPA-65R-LCUU-H6 - Panel			
-		3	Quintel - QS66512-2 - Panel			
-		3	CCI - DTMABP7819VG12A - TMA			
-		3	Ericsson - RRUS 11 - RRU			
-		3	Ericsson - RRUS-32 - RRU			
-		3	Ericsson - RRUS 32 B2 - RRU			
-		3	Ericsson - RRUS 32 b66 - RRU			
-		2	Raycap - DC6-48-60-18-8F - SP			
11	111.0	3	Andrew - CBC721-DF - Panel	(3) T-Arms	(12) 1 5/8" (2) 1 5/8" Hybrid	Verizon
12	110.0	6	Andrew - SBNHH-1D65B - Panel			
13		3	Alcatel - RRH2X60-1900A-4R			
14		3	Alcatel - B13 RRH4X30-4R			
15		3	Alcatel - B4 RRH2X60-4R			
16		2	RFS - DB-T1-6Z-8AB-0Z			
17	109.0	3	Andrew - CBC721-DF - Panel	(3) T-Arms (Site Pro P/N RMV12-3xx)	(6) 1 5/8" (1) 1 5/8" Hybrid	T-Mobile
18	100.0	3	Ericsson - AIR 21 B2A/B4P - Panel			
19		3	Ericsson - AIR 21 B4A/B2P - Panel			
20		3	Commscope - LNX-6515DS-A1M - Panel			
22	90.0	3	Kathrein - 782 11056 - TMA	Platform w/ Handrails (Site Pro F3P-10W w/HRK10)	(3) 1-1/4" Fiber (1) 1.689" Fiber (2) 1/2" Fiber	Sprint Nextel
23		3	Nokia - AAHC - MIMO - Panel			
24		3	Commscope - NNVV-65B-R4 - Panel			
25		3	ALU - 1900 Mhz - RRU			
26		6	ALU - 800 Mhz - RRU			
27		2	Andrew - VHLP2-11 - Dish			

## 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	129.0	3	Cci - OPA-65R-LCUU-H6 - Panel	Platform w/ Hand Rail (Commscope MTC3607R) + Platform Reinforcement Kit (SitePro1 PRK-FMA), (6) P2.5" X-STR Pipe Masts, and (6) Channel Reinforcement Angles L2x2x1/4	(2) 1/2" Fiber* (8) 3/4" DC* (1) 1/2"	AT&T
2		3	Quintel - QS66512-2 - Panel			
3		6	Cci - DMP65R-BU6DA - Panel			
4		6	Ericsson - RRUS 32 - RRU			
5		3	Ericsson - RRUS 4478 B14 - RRU			
6		3	Ericsson - RRUS 8843 B2 B66A - RRU			
7		3	Ericsson - 4449 B5/B12 - RRU			
8		3	Ericsson - RRUS E2 B29 - RRU			
9		2	Raycap - DC6-48-60-18-8F - OVP			
10		2	Raycap - DC6-48-60-0-8C-EV - OVP			

\*Inside (5) 2" Conduits

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	Flanges
Max. Usage:	<b>96.7%</b>	<b>87.0%</b>	<b>40.4%</b>	<b>66.3%</b>
Pass/Fail	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

## Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Analysis Reactions	3260.2	32.9	35.0

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

## **Operational Condition (Rigidity):**

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

Elevation (ft)	Antenna / Dish	Carrier	Twist (deg)	Sway (deg)
90.0	Andrew - VHLP2-11 - Dish	Sprint Nextel	0.000	1.112

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

## **Conclusions**

Based on the analysis results, the structure and its foundation will be adequate to safely support the existing and proposed equipment and meet the minimum requirements per the design ANSI/TIA/EIA 222-G standards under a basic wind speed of 101 mph no ice and 50 mph with 3/4" radial ice after the following proposed modification is successfully completed.

- Proposed modification design drawing by **TES** Job # 92080

### **Pre-Mod Installation Determination**

We have also checked this tower to determine if the proposed AT&T equipment loading can be installed prior to the completion of the required modifications. We ran a reduced wind loading case as required by TIA-322 considering a construction period of no more than 6 months.

The tower and foundations passed, so the Carrier can proceed and install their proposed loading prior to the mods completion. Please be aware that this approval is being provided and is based on the method outlined in TIA-322. This approval is not a blanket approval and there is still a risk that the tower will experience a wind event that cannot be predicted by TIA-322 or our Engineers. In the event of an unforeseen wind event, Tower Engineering Solutions will not be liable nor responsible for damage to the tower or the Carriers equipment. Additionally, the tower cannot go beyond the 6-month construction period without the modifications being completed. If the modifications cannot be completed within 6 months from the completed installation of the Carrier's proposed equipment, TES must be notified immediately for further review.

## 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 EIA/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 83.57% at 91.3ft

**Structure:** CT13064-A-SBA  
**Site Name:** Middletown 2, CT  
**Height:** 130.00 (ft)  
**Base Elev:** 0.000 (ft)

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

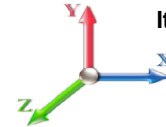
3/17/2020



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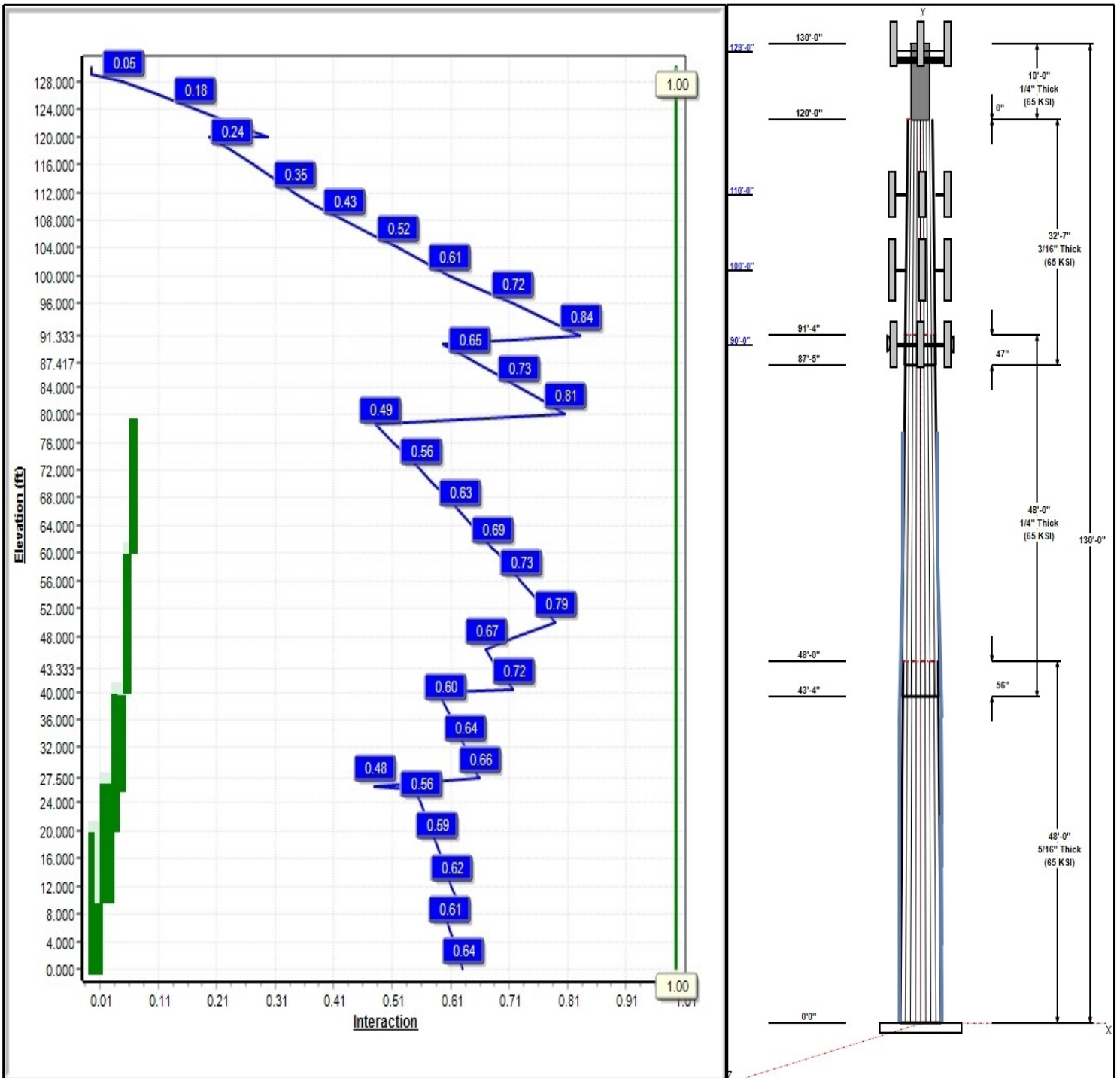
**Dead Load Factor:** 1.20  
**Wind Load Factor:** 1.60

**Load Case : 1.2D + 1.6W 101 mph Wind**



**Iterations:** 26

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## Structure: CT13064-A-SBA

**Type:** Custom  
**Site Name:** Middletown 2, CT  
**Height:** 130.00 (ft)  
**Base Elev:** 0.00 (ft)

**Base Shape:** 18 Sided  
**Taper:** 0.15529

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### Shaft Properties

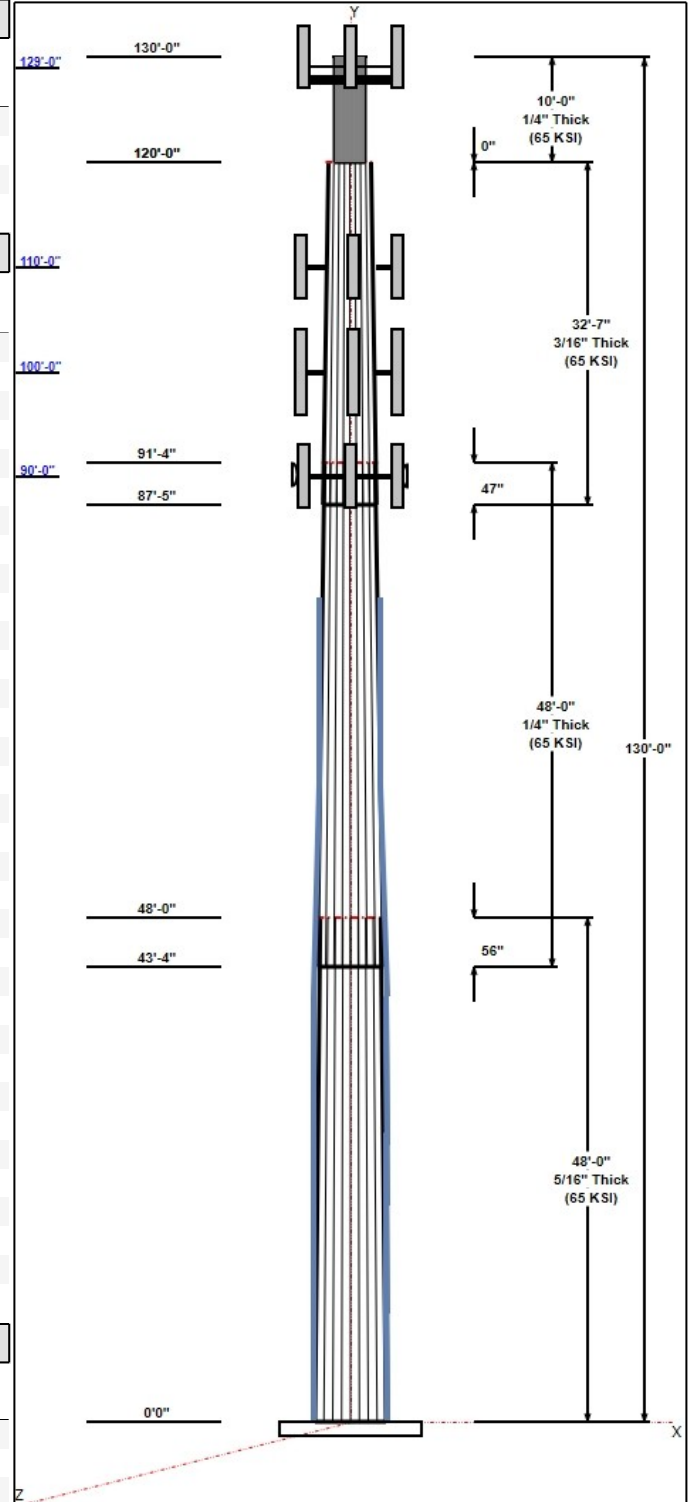
Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	48.00	35.05	42.50	0.313		0.15529	65
2	48.00	28.82	36.27	0.250	Slip	0.15529	65
3	32.58	24.74	29.80	0.188	Slip	0.15529	65
4	10.00	18.00	18.00	0.250	Butt	0.00000	65

### Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
130.00	130.00	1	6' Lightning rod	T-Mobile
129.00	129.00	1	MTC3607 Platform + HR	AT&T
129.00	129.00	1	PRK-1245 (kicker kit)	AT&T
129.00	129.00	1	Angle Reinforcement	AT&T
129.00	130.00	3	OPA-65R-LCUU-H6	AT&T
129.00	130.00	3	QS66512-2	AT&T
129.00	130.00	6	OPA65R-KE6D	AT&T
129.00	130.00	6	RRUS 32	AT&T
129.00	130.00	3	RRUS 4478 B14	AT&T
129.00	130.00	3	B2 B66A 8843	AT&T
129.00	130.00	3	4449 B5/B12	AT&T
129.00	130.00	3	RRUS E2 B29	AT&T
129.00	130.00	2	DC6-48-60-18-8F	AT&T
129.00	130.00	2	DC6-48-60-0-8C	AT&T
110.00	111.00	3	CBC721-DF	Verizon
110.00	109.00	3	CBC721-DF	Verizon
110.00	110.00	6	SBNHH-1D65B	Verizon
110.00	110.00	3	RRH2X60-1900A-4R	Verizon
110.00	110.00	3	B13 RRH4X30-4R	Verizon
110.00	110.00	3	B4 RRH2X60-4R	Verizon
110.00	110.00	2	DB-T1-6Z-8AB-OZ	Verizon
110.00	110.00	3	T-Arm (Round)	Verizon
100.00	100.00	3	AIR 21, 1.3M, B2A B4P	T-Mobile
100.00	100.00	3	AIR 21, 1.3M, B4A B2P	T-Mobile
100.00	100.00	3	LNx-6515DS-A1M	T-Mobile
100.00	100.00	3	782 11056	T-Mobile
100.00	100.00	3	T-Arm (Round)	T-Mobile
94.00	94.00	1	14"x6.5"x6" Surge	Clearwire
90.00	90.00	3	AAHC	Sprint Nextel
90.00	90.00	3	NNVV-65B-R4	Sprint Nextel
90.00	90.00	1	F3P-10W	Sprint Nextel
90.00	90.00	2	Andrew - VHLP2-11	Sprint Nextel
90.00	90.00	3	ALU - 1900MHz - RRU	Sprint Nextel
90.00	90.00	6	ALU - 800 MHz - RRU	Sprint Nextel

### Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	129.00	Inside	1/2" Coax	AT&T
0.00	129.00	Inside	1/2" Fiber	AT&T
0.00	129.00	Outside	2" Conduit	AT&T
0.00	129.00	Inside	2" Conduit	AT&T
0.00	129.00	Inside	3/4" DC	AT&T
0.00	110.00	Inside	1 5/8" Coax	Verizon
0.00	110.00	Inside	1 5/8" Hybrid	Verizon
0.00	100.00	Inside	1 5/8" Coax	T-Mobile



**Structure: CT13064-A-SBA**

**Type:** Custom  
**Site Name:** Middletown 2, CT  
**Height:** 130.00 (ft)  
**Base Elev:** 0.00 (ft)

**Base Shape:** 18 Sided  
**Taper:** 0.00000

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0.00	100.00	Inside	1 5/8" Hybrid	T-Mobile
0.00	90.00	Inside	1-1/4" Fiber	Sprint Nextel
0.00	90.00	Inside	1.689" Hybrid	Sprint Nextel
0.00	90.00	Inside	1/2" Fiber	Sprint Nextel
0.00	81.00	Outside	1" Reinforcing plate	

**Anchor Bolts**

Qty	Specifications	Grade (ksi)	Arrangement
14	1.5" F1554 105	105.0	Radial

**Base Plate**

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
1.5000	51.8	50.0	Round

**Reactions**

Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 101 mph Wind	3260.2	32.9	35.0
0.9D + 1.6W 101 mph Wind	3228.1	32.9	26.2
1.2D + 1.0Di + 1.0Wi 50 mph Wind	831.4	8.4	58.4
1.2D + 1.0E	191.5	1.6	35.0
0.9D + 1.0E	189.4	1.6	26.3
1.0D + 1.0W 60 mph Wind	715.5	7.3	29.2

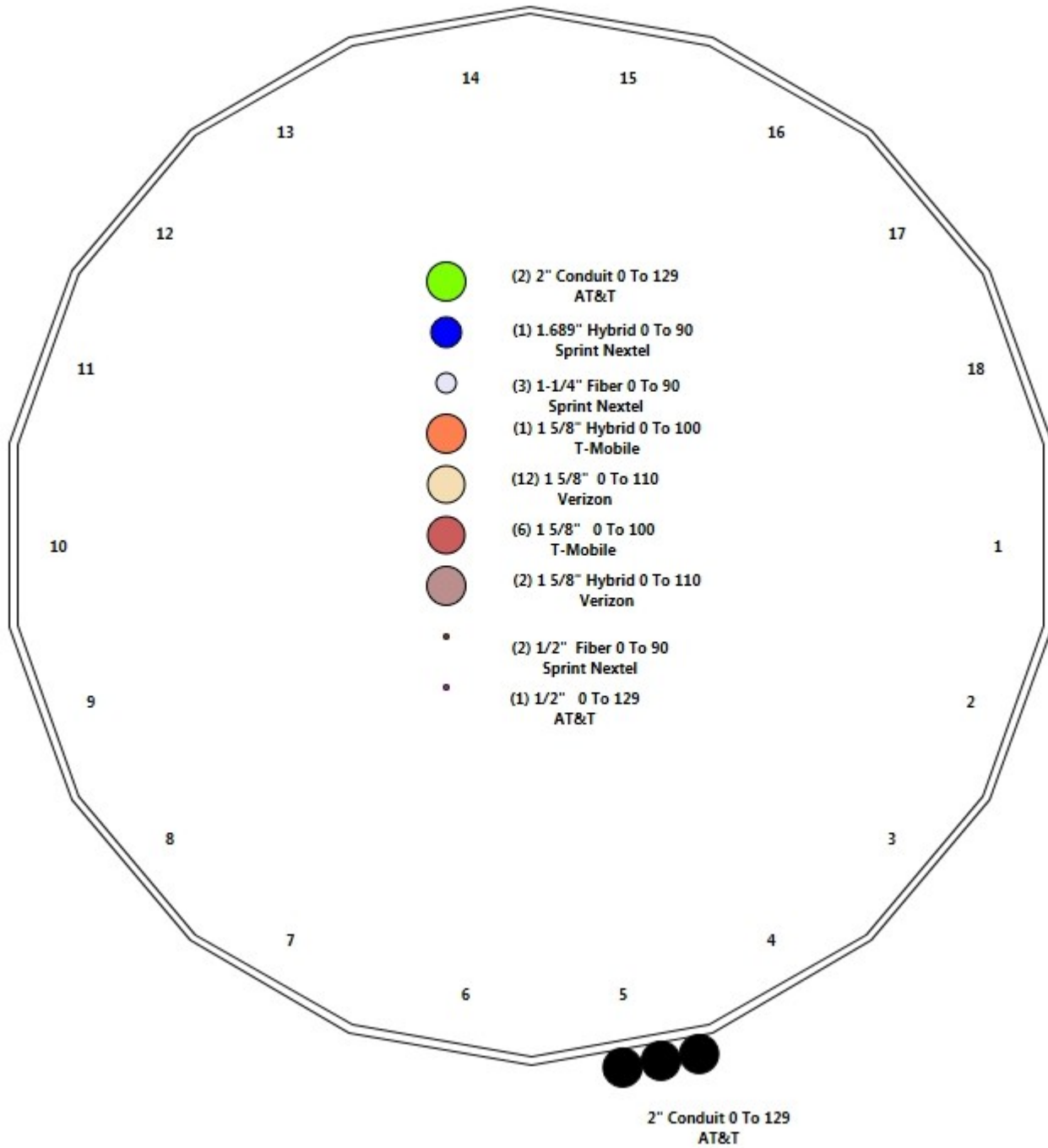
# Structure: CT13064-A-SBA - Coax Line Placement

**Type:** Monopole  
**Site Name:** Middletown 2, CT  
**Height:** 130.00 (ft)

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## Shaft Properties

<b>Structure:</b> CT13064-A-SBA	<b>Code:</b> EIA/TIA-222-G	3/17/2020
<b>Site Name:</b> Middletown 2, CT	<b>Exposure:</b> C	
<b>Height:</b> 130.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	18	48.000	0.3125	65		0.00	6,231
2	18	48.000	0.2500	65	Slip	56.00	4,185
3	18	32.583	0.1875	65	Slip	47.00	1,787
4	R	10.000	0.2500	65	Flange	0.00	474
<b>Total Shaft Weight:</b>							<b>12,677</b>

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	42.50	0.00	41.84	9409.05	22.57	136.00	35.05	48.00	34.45	5250.98	18.36	112.1	0.155292
2	36.27	43.33	28.58	4685.33	24.17	145.08	28.82	91.33	22.67	2337.03	18.91	115.2	0.155292
3	29.80	87.42	17.62	1952.39	26.61	158.93	24.74	120.00	14.61	1112.84	21.86	131.9	0.155292
4	18.00	120.0	13.94	549.45	0.00	72.00	18.00	130.00	13.94	549.45	0.00	72.00	0.000000

### Additional Steel

Elev From (ft)	Elev To (ft)	Qty	Description	Fy (ksi)	Fu (ksi)	Offset (in)	Intermediate Connectors		Termination Connectors			
							Description	Spacing (in)	Description	Spacing (in)	Lower Qty	Upper Qty
0.00	20.50	4	PLT 6"x1" (1.25" Hole)	65	80	0.00	AJM20&sleeve	16.00	AJM20&sleeve	3.00	8	8
0.00	10.25	4	PLT 5.5"x1 1/4" (1.25" hol	65	80	0.00	AJM20&sleeve	18.00	AJM20&sleeve	3.00	9	9
10.25	27.50	2	LNP LP6X100-G-20CT	65	80	0.00	5/8" Hollo Bolt	24.00	AJM20&sleeve	3.00		8
10.25	27.50	2	LNP LP6X100-G-20CT	65	80	0.00	5/8" Hollo Bolt	24.00	5/8" Hollo Bolt	3.00		8
20.50	40.50	4	PLT 6"x1" (1.25" Hole)	65	80	0.00	AJM20&sleeve	16.00	AJM20&sleeve	3.00	8	8
26.33	40.33	2	LNP LP6X100-G-20TT	65	80	0.00	5/8" Hollo Bolt	24.00	5/8" Hollo Bolt	3.00	10	10
40.50	60.75	4	PLT 6"x1" (1.25" Hole)	65	80	0.00	AJM20&sleeve	16.00	AJM20&sleeve	3.00	8	8
60.75	78.50	4	PLT 6"x1" (1.25" Hole)	65	80	0.00	AJM20&sleeve	16.00	AJM20&sleeve	3.00	8	8

## Load Summary

<b>Structure:</b> CT13064-A-SBA	<b>Code:</b> EIA/TIA-222-G	3/17/2020
<b>Site Name:</b> Middletown 2, CT	<b>Exposure:</b> C	
<b>Height:</b> 130.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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### Discrete Appurtenances

No.	Elev (ft)	Description	Qty	No Ice			Ice			Hor. Ecc. (ft)	Vert Ecc (ft)
				Weight (lb)	CaAa (sf)	CaAa Factor	Weight (lb)	CaAa (sf)	CaAa Factor		
1	130.00	6' Lightning rod	1	6.50	0.38	1.00	42.28	1.452	1.00	0.00	0.00
2	129.00	MTC3607 Platform + HR	1	2000.00	45.40	1.00	4062.91	78.492	1.00	0.00	0.00
3	129.00	PRK-1245 (kicker kit)	1	464.91	9.50	1.00	784.60	19.299	1.00	0.00	0.00
4	129.00	Angle Reinforcement	1	250.00	5.80	1.00	542.25	11.384	1.00	0.00	0.00
5	129.00	OPA-65R-LCUU-H6	3	80.00	9.66	0.79	310.22	11.008	0.81	0.00	1.00
6	129.00	QS66512-2	3	111.00	8.13	0.92	328.30	9.405	0.93	0.00	1.00
7	129.00	OPA65R-KE6D	6	63.30	12.71	0.72	359.98	14.178	0.74	0.00	1.00
8	129.00	RRUS 32	6	77.00	1.65	0.67	182.90	2.217	0.67	0.00	1.00
9	129.00	RRUS 4478 B14	3	59.40	1.65	0.67	100.25	2.161	0.67	0.00	1.00
10	129.00	B2 B66A 8843	3	70.00	1.64	0.67	115.29	2.149	0.67	0.00	1.00
11	129.00	4449 B5/B12	3	71.00	1.97	0.67	123.58	2.509	0.67	0.00	1.00
12	129.00	RRUS E2 B29	3	59.40	3.15	0.67	123.12	3.843	0.67	0.00	1.00
13	129.00	DC6-48-60-18-8F	2	31.80	0.92	1.00	92.70	1.351	1.00	0.00	1.00
14	129.00	DC6-48-60-0-8C	2	16.00	4.78	0.50	137.88	5.651	0.50	0.00	1.00
15	110.00	CBC721-DF	3	4.40	0.45	0.63	13.66	0.934	0.67	0.00	1.00
16	110.00	CBC721-DF	3	4.40	0.45	0.63	13.66	0.934	0.67	0.00	-1.00
17	110.00	SBNHH-1D65B	6	40.00	8.16	0.79	235.78	9.418	0.82	0.00	0.00
18	110.00	RRH2X60-1900A-4R	3	46.00	1.88	0.67	112.46	2.446	0.68	0.00	0.00
19	110.00	B13 RRH4X30-4R	3	57.20	2.16	0.67	117.59	2.752	0.68	0.00	0.00
20	110.00	B4 RRH2X60-4R	3	55.00	3.36	0.67	138.75	4.115	0.68	0.00	0.00
21	110.00	DB-T1-6Z-8AB-OZ	2	18.90	4.80	1.00	157.48	5.645	1.00	0.00	0.00
22	110.00	T-Arm (Round)	3	350.00	8.00	0.75	586.87	14.768	0.75	0.00	0.00
23	100.00	AIR 21, 1.3M, B2A B4P	3	91.50	6.09	0.80	252.43	7.141	0.83	0.00	0.00
24	100.00	AIR 21, 1.3M, B4A B2P	3	90.40	6.09	0.80	251.33	7.141	0.83	0.00	0.00
25	100.00	LNx-6515DS-A1M	3	50.30	11.47	0.80	272.94	14.607	0.84	0.00	0.00
26	100.00	782 11056	3	1.80	0.13	0.78	4.18	0.410	0.82	0.00	0.00
27	100.00	T-Arm (Round)	3	350.00	8.00	0.75	584.62	14.704	0.75	0.00	0.00
28	94.00	1'4"x6.5"x6" Surge Protector	1	53.00	2.14	1.00	146.00	3.112	1.00	0.00	0.00
29	90.00	AAHC	3	104.00	4.20	0.75	225.70	4.987	0.75	0.00	0.00
30	90.00	NNVV-65B-R4	3	77.40	12.27	0.74	348.74	13.654	0.74	0.00	0.00
31	90.00	F3P-10W	1	2122.00	51.77	1.00	4092.60	13.582	1.00	0.00	0.00
32	90.00	Andrew - VHLP2-11	2	27.00	4.68	1.00	119.99	5.891	1.00	0.00	0.00
33	90.00	ALU - 1900MHz - RRU	3	44.00	3.80	0.67	147.73	5.121	0.69	0.00	0.00
34	90.00	ALU - 800 MHz - RRU	6	53.00	2.49	0.67	123.28	3.577	0.69	0.00	0.00
<b>Totals:</b>			<b>98</b>	<b>11,815.21</b>			<b>28,612.60</b>				

### Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	129.00	(1) 1/2" Coax	0.00	Inside
0.00	129.00	(2) 1/2" Fiber	0.00	Inside
0.00	129.00	(3) 2" Conduit	2.00	Outside
0.00	129.00	(2) 2" Conduit	0.00	Inside
0.00	129.00	(8) 3/4" DC	0.00	Inside
0.00	110.00	(12) 1 5/8" Coax	0.00	Inside
0.00	110.00	(2) 1 5/8" Hybrid	0.00	Inside

## Discrete Appurtenances

No.	Elev (ft)	Description	Qty	No Ice			Ice			Hor. Ecc. (ft)	Vert Ecc (ft)
				Weight (lb)	CaAa (sf)	CaAa Factor	Weight (lb)	CaAa (sf)	CaAa Factor		
0.00	100.00	(6) 1 5/8" Coax		0.00							
0.00	100.00	(1) 1 5/8" Hybrid		0.00							
0.00	90.00	(3) 1-1/4" Fiber		0.00							
0.00	90.00	(1) 1.689" Hybrid		0.00							
0.00	90.00	(2) 1/2" Fiber		0.00							
0.00	81.00	(4) 1" Reinforcing plate		1.00							



## Shaft Section Properties

<b>Structure:</b> CT13064-A-SBA	<b>Code:</b> EIA/TIA-222-G	<b>3/17/2020</b>
<b>Site Name:</b> Middletown 2, CT	<b>Exposure:</b> C	
<b>Height:</b> 130.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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**Increment Length:** 2 (ft)

Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fy (ksi)	Fb (ksi)	Weight (lb)	Additional Reinforcing			
											Area (in^2)	Ixp (in^4)	Iyp (in^4)	Weight (lb)
0.00	RB1 RB2	0.3125	42.500	41.843	9409.0	22.57	136.00	65	75	0.0	51.50	14167.5	10491.3	
2.00		0.3125	42.189	41.535	9202.8	22.39	135.01	65	75	283.7	51.50	13967.4	10343.8	350.5
4.00		0.3125	41.879	41.227	8999.5	22.22	134.01	65	75	281.6	51.50	13768.6	10197.3	350.5
6.00		0.3125	41.568	40.919	8799.3	22.04	133.02	65	75	279.5	51.50	13571.3	10051.8	350.5
8.00		0.3125	41.258	40.611	8602.1	21.87	132.02	65	76	277.4	51.50	13375.5	9907.4	350.5
10.00		0.3125	40.947	40.303	8407.8	21.69	131.03	65	76	275.3	51.50	13181.0	9764.1	350.5
10.25	RT2 RB3 RB4	0.3125	40.908	40.264	8383.7	21.67	130.91	65	76	34.3	48.00	12321.2	8902.4	40.8
12.00		0.3125	40.636	39.995	8216.5	21.52	130.04	65	76	239.0	48.00	12162.8	8788.4	285.8
14.00		0.3125	40.326	39.687	8028.1	21.34	129.04	65	76	271.1	48.00	11983.0	8659.0	326.7
16.00		0.3125	40.015	39.379	7842.6	21.17	128.05	65	77	269.0	48.00	11804.5	8530.6	326.7
18.00		0.3125	39.705	39.071	7660.0	20.99	127.06	65	77	266.9	48.00	11627.4	8403.2	326.7
20.00		0.3125	39.394	38.763	7480.2	20.82	126.06	65	77	264.9	48.00	11451.6	8276.7	326.7
20.50	RT1 RB5	0.3125	39.317	38.686	7435.7	20.77	125.81	65	77	65.9	48.00	11407.8	8245.2	81.7
22.00		0.3125	39.084	38.455	7303.3	20.64	125.07	65	77	196.9	48.00	11277.1	8151.2	245.0
24.00		0.3125	38.773	38.147	7129.2	20.47	124.07	65	77	260.7	48.00	11104.0	8026.7	326.7
26.00		0.3125	38.462	37.839	6957.9	20.29	123.08	65	78	258.6	48.00	10932.3	7903.1	326.7
26.33	RB6	0.3125	38.411	37.788	6929.9	20.26	122.92	65	78	42.5	60.00	13111.8	9906.6	67.4
27.50	RT3 RT4	0.3125	38.229	37.608	6831.2	20.16	122.33	65	78	150.1	36.00	8355.0	5189.2	143.3
28.00		0.3125	38.152	37.531	6789.3	20.12	122.09	65	78	63.9	36.00	8321.9	5168.9	61.3
30.00		0.3125	37.841	37.222	6623.5	19.94	121.09	65	78	254.4	36.00	8190.1	5088.1	245.0
32.00		0.3125	37.531	36.914	6460.4	19.77	120.10	65	78	252.3	36.00	8059.4	5007.9	245.0
34.00		0.3125	37.220	36.606	6300.0	19.59	119.10	65	78	250.2	36.00	7929.8	4928.4	245.0
36.00		0.3125	36.909	36.298	6142.3	19.42	118.11	65	79	248.1	36.00	7801.2	4849.5	245.0
38.00		0.3125	36.599	35.990	5987.2	19.24	117.12	65	79	246.0	36.00	7673.7	4771.3	245.0
40.00		0.3125	36.288	35.682	5834.8	19.06	116.12	65	79	243.9	36.00	7547.2	4693.7	245.0
40.33	RT6	0.3125	36.237	35.631	5809.9	19.04	115.96	65	79	40.0	24.00	5556.0	2797.3	27.0
40.50	RT5 RB7	0.3125	36.211	35.605	5797.1	19.02	115.87	65	79	20.6	24.00	5548.1	2793.4	13.9
42.00		0.3125	35.978	35.374	5685.0	18.89	115.13	65	79	181.1	24.00	5479.2	2759.1	122.5
43.33	Bot - Section 2	0.3125	35.771	35.169	5586.6	18.77	114.47	65	79	160.0	24.00	5418.2	2728.7	108.9
44.00		0.3125	35.667	35.066	5537.8	18.71	114.13	65	79	144.4	24.00	5351.1	2786.8	54.4
46.00		0.3125	35.357	34.758	5393.1	18.54	113.14	65	80	430.7	24.00	5443.4	2741.1	163.3
48.00	Top - Section 1	0.2500	35.546	28.006	4408.2	23.66	142.18	65	74	426.9	24.00	5352.4	2695.8	163.3
50.00		0.2500	35.235	27.760	4292.8	23.44	140.94	65	74	189.8	24.00	5261.0	2648.8	163.3
52.00		0.2500	34.925	27.513	4179.5	23.22	139.70	65	74	188.1	24.00	5171.5	2604.3	163.3
54.00		0.2500	34.614	27.267	4068.2	23.00	138.46	65	74	186.4	24.00	5082.9	2560.2	163.3
56.00		0.2500	34.304	27.021	3958.9	22.78	137.21	65	75	184.7	24.00	4995.1	2516.5	163.3
58.00		0.2500	33.993	26.774	3851.6	22.56	135.97	65	75	183.1	24.00	4908.0	2473.2	163.3
60.00		0.2500	33.682	26.528	3746.2	22.35	134.73	65	75	181.4	24.00	4821.6	2430.2	163.3
60.75	RT7 RB8	0.2500	33.566	26.435	3707.2	22.26	134.26	65	75	67.6	24.00	4789.5	2414.2	61.3
62.00		0.2500	33.372	26.281	3642.8	22.13	133.49	65	75	112.1	24.00	4736.1	2387.7	102.1
64.00		0.2500	33.061	26.035	3541.2	21.91	132.25	65	76	178.0	24.00	4651.3	2345.5	163.3
66.00		0.2500	32.751	25.788	3441.6	21.69	131.00	65	76	176.3	24.00	4567.3	2303.7	163.3
68.00		0.2500	32.440	25.542	3343.9	21.47	129.76	65	76	174.7	24.00	4484.1	2262.3	163.3
70.00		0.2500	32.130	25.296	3248.0	21.25	128.52	65	76	173.0	24.00	4401.6	2221.3	163.3
72.00		0.2500	31.819	25.049	3154.0	21.03	127.28	65	77	171.3	24.00	4319.9	2180.6	163.3
74.00		0.2500	31.508	24.803	3061.9	20.81	126.03	65	77	169.6	24.00	4239.0	2140.4	163.3
76.00		0.2500	31.198	24.556	2971.5	20.59	124.79	65	77	168.0	24.00	4158.8	2100.5	163.3
78.00		0.2500	30.887	24.310	2882.9	20.37	123.55	65	77	166.3	24.00	4079.4	2061.0	163.3
78.50	RT8	0.2500	30.810	24.248	2861.1	20.32	123.24	65	78	41.3	24.00	4059.7	2051.2	40.8
80.00		0.2500	30.577	24.063	2796.1	20.16	122.31	65	78	123.3				

Increment Length: 2 (ft)

Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fy (ksi)	Fb (ksi)	Weight (lb)	Additional Reinforcing			
											Area (in^2)	Ixp (in^4)	Iyp (in^4)	Weight (lb)
82.00		0.2500	30.266	23.817	2711.1	19.94	121.06	65	78	162.9				
84.00		0.2500	29.955	23.570	2627.8	19.72	119.82	65	78	161.2				
86.00		0.2500	29.645	23.324	2546.3	19.50	118.58	65	78	159.6				
87.42	Bot - Section 3	0.2500	29.425	23.149	2489.5	19.34	117.70	65	79	112.0				
88.00		0.2500	29.334	23.078	2466.4	19.28	117.34	65	79	80.8				
90.00		0.2500	29.024	22.831	2388.2	19.06	116.09	65	79	275.2				
91.33	Top - Section 2	0.1875	29.192	17.260	1834.5	26.04	155.69	65	71	181.8				
92.00		0.1875	29.088	17.199	1815.0	25.94	155.14	65	71	39.1				
94.00		0.1875	28.778	17.014	1757.1	25.65	153.48	65	71	116.4				
96.00		0.1875	28.467	16.829	1700.4	25.36	151.82	65	72	115.2				
98.00		0.1875	28.156	16.644	1645.0	25.07	150.17	65	72	113.9				
100.00		0.1875	27.846	16.460	1590.8	24.78	148.51	65	72	112.6				
102.00		0.1875	27.535	16.275	1537.8	24.48	146.85	65	73	111.4				
104.00		0.1875	27.225	16.090	1486.0	24.19	145.20	65	73	110.1				
106.00		0.1875	26.914	15.905	1435.4	23.90	143.54	65	73	108.9				
108.00		0.1875	26.603	15.720	1385.9	23.61	141.89	65	74	107.6				
110.00		0.1875	26.293	15.535	1337.6	23.32	140.23	65	74	106.4				
112.00		0.1875	25.982	15.351	1290.5	23.02	138.57	65	74	105.1				
114.00		0.1875	25.672	15.166	1244.4	22.73	136.92	65	75	103.8				
116.00		0.1875	25.361	14.981	1199.5	22.44	135.26	65	75	102.6				
118.00		0.1875	25.051	14.796	1155.6	22.15	133.60	65	75	101.3				
120.00	Top - Section 3	0.1875	24.740	14.611	1112.8	21.86	131.95	65	76	100.1				
120.00	Bot - Section 4	0.2500	18.000	13.941	549.4	16.39	98.96	65	59					
122.00		0.2500	18.000	13.941	549.4	0.00	72.00	65	59	94.9				
124.00		0.2500	18.000	13.941	549.4	0.00	72.00	65	59	94.9				
126.00		0.2500	18.000	13.941	549.4	0.00	72.00	65	59	94.9				
128.00		0.2500	18.000	13.941	549.4	0.00	72.00	65	59	94.9				
129.00		0.2500	18.000	13.941	549.4	0.00	72.00	65	59	47.4				
130.00		0.2500	18.000	13.941	549.4	0.00	72.00	65	59	47.4				
<b>Total Weight</b>										<b>12677.2</b>	<b>9251.9</b>			

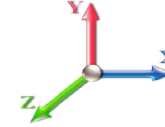
## Wind Loading - Shaft

<b>Structure:</b> CT13064-A-SBA	<b>Code:</b> EIA/TIA-222-G	3/17/2020
<b>Site Name:</b> Middletown 2, CT	<b>Exposure:</b> C	
<b>Height:</b> 130.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



**Load Case:** 1.2D + 1.6W 101 mph Wind

**Dead Load Factor** 1.20  
**Wind Load Factor** 1.60



**Iterations** 26

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	RB1 RB2	1.00	0.85	21.088	23.20	334.88	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
2.00		1.00	0.85	21.088	23.20	332.43	0.650	0.000	2.00	7.166	4.66	172.9	0.0	340.5
4.00		1.00	0.85	21.088	23.20	329.98	0.650	0.000	2.00	7.114	4.62	171.6	0.0	337.9
6.00		1.00	0.85	21.088	23.20	327.54	0.650	0.000	2.00	7.061	4.59	170.3	0.0	335.4
8.00		1.00	0.85	21.088	23.20	325.09	0.650	0.000	2.00	7.009	4.56	169.1	0.0	332.9
10.00		1.00	0.85	21.088	23.20	322.64	0.650	0.000	2.00	6.956	4.52	167.8	0.0	330.4
10.25	RT2 RB3 RB4	1.00	0.85	21.088	23.20	322.34	0.650	0.000	0.25	0.866	0.56	20.9	0.0	41.1
12.00		1.00	0.85	21.088	23.20	320.19	0.650	0.000	1.75	6.038	3.92	145.7	0.0	286.8
14.00		1.00	0.85	21.088	23.20	317.75	0.650	0.000	2.00	6.851	4.45	165.3	0.0	325.4
16.00		1.00	0.86	21.348	23.48	317.24	0.650	0.000	2.00	6.798	4.42	166.0	0.0	322.9
18.00		1.00	0.88	21.884	24.07	318.71	0.650	0.000	2.00	6.746	4.38	168.9	0.0	320.3
20.00		1.00	0.90	22.375	24.61	319.74	0.650	0.000	2.00	6.693	4.35	171.3	0.0	317.8
20.50	RT1 RB5	1.00	0.91	22.491	24.74	319.94	0.650	0.000	0.50	1.665	1.08	42.8	0.0	79.1
22.00		1.00	0.92	22.828	25.11	320.42	0.650	0.000	1.50	4.976	3.23	129.9	0.0	236.2
24.00		1.00	0.94	23.250	25.58	320.80	0.650	0.000	2.00	6.588	4.28	175.2	0.0	312.8
26.00		1.00	0.95	23.645	26.01	320.92	0.650	0.000	2.00	6.536	4.25	176.8	0.0	310.3
26.33	RB6	1.00	0.96	23.708	26.08	320.92	0.650	0.000	0.33	1.073	0.70	29.1	0.0	51.0
27.50	RT3 RT4	1.00	0.96	23.926	26.32	320.86	0.650	0.000	1.17	3.794	2.47	103.8	0.0	180.1
28.00		1.00	0.97	24.017	26.42	320.82	0.650	0.000	0.50	1.616	1.05	44.4	0.0	76.7
30.00		1.00	0.98	24.369	26.81	320.53	0.650	0.000	2.00	6.430	4.18	179.3	0.0	305.2
32.00		1.00	1.00	24.702	27.17	320.06	0.650	0.000	2.00	6.378	4.15	180.2	0.0	302.7
34.00		1.00	1.01	25.019	27.52	319.45	0.650	0.000	2.00	6.325	4.11	181.0	0.0	300.2
36.00		1.00	1.02	25.322	27.85	318.69	0.650	0.000	2.00	6.273	4.08	181.7	0.0	297.7
38.00		1.00	1.03	25.612	28.17	317.82	0.650	0.000	2.00	6.220	4.04	182.3	0.0	295.2
40.00		1.00	1.04	25.890	28.48	316.82	0.650	0.000	2.00	6.168	4.01	182.7	0.0	292.7
40.33	RT6	1.00	1.05	25.935	28.53	316.65	0.650	0.000	0.33	1.013	0.66	30.0	0.0	48.0
40.50	RT5 RB7	1.00	1.05	25.958	28.55	316.56	0.650	0.000	0.17	0.521	0.34	15.5	0.0	24.7
42.00		1.00	1.05	26.157	28.77	315.73	0.650	0.000	1.50	4.581	2.98	137.1	0.0	217.4
43.33	Bot - Section 2	1.00	1.06	26.330	28.96	314.95	0.650	0.000	1.33	4.048	2.63	121.9	0.0	192.0
44.00		1.00	1.06	26.415	29.06	314.54	0.650	0.000	0.67	2.043	1.33	61.7	0.0	173.3
46.00		1.00	1.07	26.663	29.33	313.26	0.650	0.000	2.00	6.095	3.96	185.9	0.0	516.9
48.00	Top - Section 1	1.00	1.08	26.903	29.59	311.91	0.650	0.000	2.00	6.042	3.93	186.0	0.0	512.3
50.00		1.00	1.09	27.135	29.85	314.94	0.650	0.000	2.00	5.989	3.89	185.9	0.0	227.7
52.00		1.00	1.10	27.360	30.10	313.46	0.650	0.000	2.00	5.937	3.86	185.8	0.0	225.7
54.00		1.00	1.11	27.579	30.34	311.91	0.650	0.000	2.00	5.884	3.82	185.6	0.0	223.7
56.00		1.00	1.12	27.790	30.57	310.29	0.650	0.000	2.00	5.832	3.79	185.4	0.0	221.7
58.00		1.00	1.13	27.997	30.80	308.62	0.650	0.000	2.00	5.779	3.76	185.1	0.0	219.7
60.00		1.00	1.14	28.197	31.02	306.90	0.650	0.000	2.00	5.727	3.72	184.7	0.0	217.6
60.75	RT7 RB8	1.00	1.14	28.271	31.10	306.24	0.650	0.000	0.75	2.134	1.39	69.0	0.0	81.1
62.00		1.00	1.14	28.392	31.23	305.12	0.650	0.000	1.25	3.540	2.30	115.0	0.0	134.5
64.00		1.00	1.15	28.583	31.44	303.29	0.650	0.000	2.00	5.622	3.65	183.8	0.0	213.6
66.00		1.00	1.16	28.769	31.65	301.42	0.650	0.000	2.00	5.569	3.62	183.3	0.0	211.6
68.00		1.00	1.17	28.950	31.84	299.50	0.650	0.000	2.00	5.516	3.59	182.7	0.0	209.6
70.00		1.00	1.17	29.127	32.04	297.54	0.650	0.000	2.00	5.464	3.55	182.1	0.0	207.6
72.00		1.00	1.18	29.300	32.23	295.54	0.650	0.000	2.00	5.411	3.52	181.4	0.0	205.6
74.00		1.00	1.19	29.470	32.42	293.50	0.650	0.000	2.00	5.359	3.48	180.7	0.0	203.6
76.00		1.00	1.19	29.636	32.60	291.42	0.650	0.000	2.00	5.306	3.45	179.9	0.0	201.5

## Wind Loading - Shaft

<b>Structure:</b> CT13064-A-SBA	<b>Code:</b> EIA/TIA-222-G	3/17/2020
<b>Site Name:</b> Middletown 2, CT	<b>Exposure:</b> C	
<b>Height:</b> 130.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



78.00	1.00	1.20	29.798	32.78	289.31	0.650	0.000	2.00	5.254	3.41	179.1	0.0	199.5
78.50 RT8	1.00	1.20	29.838	32.82	288.78	0.650	0.000	0.50	1.305	0.85	44.6	0.0	49.6
80.00	1.00	1.21	29.958	32.95	287.16	0.650	0.000	1.50	3.896	2.53	133.5	0.0	148.0
82.00	1.00	1.21	30.114	33.13	284.99	0.650	0.000	2.00	5.148	3.35	177.4	0.0	195.5
84.00	1.00	1.22	30.267	33.29	282.78	0.650	0.000	2.00	5.096	3.31	176.4	0.0	193.5
86.00	1.00	1.23	30.417	33.46	280.54	0.650	0.000	2.00	5.043	3.28	175.5	0.0	191.5
87.42 Bot - Section 3	1.00	1.23	30.522	33.57	278.94	0.650	0.000	1.42	3.541	2.30	123.6	0.0	134.4
88.00	1.00	1.23	30.565	33.62	278.27	0.650	0.000	0.58	1.469	0.95	51.4	0.0	97.0
90.00 Appurtenance(s)	1.00	1.24	30.710	33.78	275.98	0.650	0.000	2.00	5.002	3.25	175.7	0.0	330.2
91.33 Top - Section 2	1.00	1.24	30.805	33.89	274.44	0.650	0.000	1.33	3.305	2.15	116.5	0.0	218.2
92.00	1.00	1.24	30.852	33.94	277.23	0.650	0.000	0.67	1.644	1.07	58.0	0.0	46.9
94.00 Appurtenance(s)	1.00	1.25	30.992	34.09	274.89	0.650	0.000	2.00	4.897	3.18	173.6	0.0	139.7
96.00	1.00	1.25	31.130	34.24	272.53	0.650	0.000	2.00	4.844	3.15	172.5	0.0	138.2
98.00	1.00	1.26	31.265	34.39	270.14	0.650	0.000	2.00	4.791	3.11	171.4	0.0	136.7
100.00 Appurtenance(s)	1.00	1.27	31.399	34.54	267.73	0.650	0.000	2.00	4.739	3.08	170.2	0.0	135.2
102.00	1.00	1.27	31.530	34.68	265.30	0.650	0.000	2.00	4.686	3.05	169.0	0.0	133.7
104.00	1.00	1.28	31.659	34.82	262.84	0.650	0.000	2.00	4.634	3.01	167.8	0.0	132.2
106.00	1.00	1.28	31.786	34.96	260.37	0.650	0.000	2.00	4.581	2.98	166.6	0.0	130.6
108.00	1.00	1.29	31.911	35.10	257.87	0.650	0.000	2.00	4.529	2.94	165.3	0.0	129.1
110.00 Appurtenance(s)	1.00	1.29	32.035	35.24	255.35	0.650	0.000	2.00	4.476	2.91	164.0	0.0	127.6
112.00	1.00	1.30	32.157	35.37	252.81	0.650	0.000	2.00	4.423	2.88	162.7	0.0	126.1
114.00	1.00	1.30	32.277	35.50	250.26	0.650	0.000	2.00	4.371	2.84	161.4	0.0	124.6
116.00	1.00	1.31	32.395	35.63	247.68	0.650	0.000	2.00	4.318	2.81	160.0	0.0	123.1
118.00	1.00	1.31	32.512	35.76	245.09	0.650	0.000	2.00	4.266	2.77	158.7	0.0	121.6
120.00 Top - Section 3	1.00	1.32	32.627	35.89	242.48	0.650	0.000	2.00	4.213	2.74	157.3	0.0	120.1
122.00	1.00	1.32	32.741	36.01	174.04	0.620 *	0.000	2.00	3.000	1.86	107.2	0.0	113.9
124.00	1.00	1.32	32.853	36.14	174.34	0.620 *	0.000	2.00	3.000	1.86	107.5	0.0	113.9
126.00	1.00	1.33	32.964	36.26	174.63	0.620 *	0.000	2.00	3.000	1.86	107.9	0.0	113.9
128.00	1.00	1.33	33.073	36.38	174.92	0.620 *	0.000	2.00	3.000	1.86	108.3	0.0	113.9
129.00 Appurtenance(s)	1.00	1.34	33.128	36.44	175.07	0.620 *	0.000	1.00	1.500	0.93	54.2	0.0	56.9
130.00 Appurtenance(s)	1.00	1.34	33.182	36.50	175.21	0.600	0.000	1.00	1.500	0.90	52.6	0.0	56.9
								<b>Totals:</b>	<b>130.00</b>		<b>11,057.6</b>		<b>15,212.6</b>

\* Cf Adjusted by Linear Load Ra Effect

## Discrete Appurtenance Forces

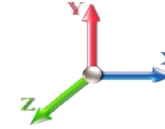
<b>Structure:</b> CT13064-A-SBA	<b>Code:</b> EIA/TIA-222-G	3/17/2020
<b>Site Name:</b> Middletown 2, CT	<b>Exposure:</b> C	
<b>Height:</b> 130.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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**Load Case:** 1.2D + 1.6W 101 mph Wind

**Dead Load Factor** 1.20  
**Wind Load Factor** 1.60



**Iterations** 26

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	130.00	6' Lightning rod	1	33.182	36.500	1.00	1.00	0.38	7.80	0.000	0.000	22.19	0.00	0.00
2	129.00	RRUS 32	6	33.182	36.500	0.50	0.75	4.97	554.40	0.000	1.000	290.52	0.00	290.52
3	129.00	MTC3607 Platform + HR	1	33.128	36.440	1.00	1.00	45.40	2400.00	0.000	0.000	2647.04	0.00	0.00
4	129.00	PRK-1245 (kicker kit)	1	33.128	36.440	1.00	1.00	9.50	557.89	0.000	0.000	553.90	0.00	0.00
5	129.00	Angle Reinforcement	1	33.128	36.440	1.00	1.00	5.80	300.00	0.000	0.000	338.17	0.00	0.00
6	129.00	OPA-65R-LCUU-H6	3	33.182	36.500	0.59	0.75	17.08	288.00	0.000	1.000	997.68	0.00	997.68
7	129.00	QS66512-2	3	33.182	36.500	0.69	0.75	16.79	399.60	0.000	1.000	980.68	0.00	980.68
8	129.00	OPA65R-KE6D	6	33.182	36.500	0.54	0.75	41.24	455.76	0.000	1.000	2408.26	0.00	2408.26
9	129.00	RRUS 4478 B14	3	33.182	36.500	0.50	0.75	2.49	213.84	0.000	1.000	145.26	0.00	145.26
10	129.00	B2 B66A 8843	3	33.182	36.500	0.50	0.75	2.47	252.00	0.000	1.000	144.38	0.00	144.38
11	129.00	4449 B5/B12	3	33.182	36.500	0.50	0.75	2.97	255.60	0.000	1.000	173.43	0.00	173.43
12	129.00	RRUS E2 B29	3	33.182	36.500	0.50	0.75	4.75	213.84	0.000	1.000	277.32	0.00	277.32
13	129.00	DC6-48-60-18-8F	2	33.182	36.500	0.75	0.75	1.38	76.32	0.000	1.000	80.59	0.00	80.59
14	129.00	DC6-48-60-0-8C	2	33.182	36.500	0.38	0.75	3.58	38.40	0.000	1.000	209.36	0.00	209.36
15	110.00	T-Arm (Round)	3	32.035	35.238	0.56	0.75	13.50	1260.00	0.000	0.000	761.15	0.00	0.00
16	110.00	DB-T1-6Z-8AB-0Z	2	32.035	35.238	0.80	0.80	7.68	45.36	0.000	0.000	433.01	0.00	0.00
17	110.00	B4 RRH2X60-4R	3	32.035	35.238	0.54	0.80	5.40	198.00	0.000	0.000	304.62	0.00	0.00
18	110.00	B13 RRH4X30-4R	3	32.035	35.238	0.54	0.80	3.47	205.92	0.000	0.000	195.83	0.00	0.00
19	110.00	SBNHH-1D65B	6	32.035	35.238	0.63	0.80	30.94	288.00	0.000	0.000	1744.59	0.00	0.00
20	110.00	CBC721-DF	3	31.973	35.171	0.50	0.80	0.68	15.84	0.000	-1.000	38.29	0.00	-38.29
21	110.00	CBC721-DF	3	32.096	35.306	0.50	0.80	0.68	15.84	0.000	1.000	38.44	0.00	38.44
22	110.00	RRH2X60-1900A-4R	3	32.035	35.238	0.54	0.80	3.02	165.60	0.000	0.000	170.44	0.00	0.00
23	100.00	LNx-6515DS-A1M	3	31.399	34.538	0.64	0.80	22.02	181.08	0.000	0.000	1216.99	0.00	0.00
24	100.00	AIR 21, 1.3M, B2A B4P	3	31.399	34.538	0.64	0.80	11.69	329.40	0.000	0.000	646.16	0.00	0.00
25	100.00	AIR 21, 1.3M, B4A B2P	3	31.399	34.538	0.64	0.80	11.69	325.44	0.000	0.000	646.16	0.00	0.00
26	100.00	782 11056	3	31.399	34.538	0.62	0.80	0.24	6.48	0.000	0.000	13.45	0.00	0.00
27	100.00	T-Arm (Round)	3	31.399	34.538	0.56	0.75	13.50	1260.00	0.000	0.000	746.03	0.00	0.00
28	94.00	1'4"x6.5"x6" Surge	1	30.992	34.091	0.80	0.80	1.71	63.60	0.000	0.000	93.38	0.00	0.00
29	90.00	ALU - 800 MHz - RRU	6	30.710	33.781	0.50	0.75	7.51	381.60	0.000	0.000	405.77	0.00	0.00
30	90.00	ALU - 1900MHz - RRU	3	30.710	33.781	0.50	0.75	5.73	158.40	0.000	0.000	309.62	0.00	0.00
31	90.00	Andrew - VHLP2-11	2	30.710	33.781	1.00	1.00	9.36	64.80	0.000	0.000	505.90	0.00	0.00
32	90.00	F3P-10W	1	30.710	33.781	1.00	1.00	51.77	2546.40	0.000	0.000	2798.12	0.00	0.00
33	90.00	NNVV-65B-R4	3	30.710	33.781	0.55	0.75	20.43	278.64	0.000	0.000	1104.20	0.00	0.00
34	90.00	AAHC	3	30.710	33.781	0.56	0.75	7.09	374.40	0.000	0.000	383.07	0.00	0.00

**Totals:** 14,178.25

**21,824.00**

## Total Applied Force Summary

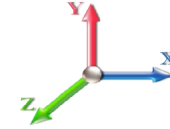
<b>Structure:</b> CT13064-A-SBA	<b>Code:</b> EIA/TIA-222-G	3/17/2020
<b>Site Name:</b> Middletown 2, CT	<b>Exposure:</b> C	
<b>Height:</b> 130.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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**Load Case:** 1.2D + 1.6W 101 mph Wind

**Dead Load Factor** 1.20  
**Wind Load Factor** 1.60



**Iterations** 26

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		172.88	445.51	0.00	0.00
4.00		171.61	443.00	0.00	0.00
6.00		170.35	440.48	0.00	0.00
8.00		169.08	437.97	0.00	0.00
10.00		167.81	435.45	0.00	0.00
10.25		20.89	54.25	0.00	0.00
12.00		145.65	378.68	0.00	0.00
14.00		165.27	430.42	0.00	0.00
16.00		166.03	427.90	0.00	0.00
18.00		168.88	425.39	0.00	0.00
20.00		171.33	422.87	0.00	0.00
20.50		42.84	105.33	0.00	0.00
22.00		129.94	315.03	0.00	0.00
24.00		175.23	417.84	0.00	0.00
26.00		176.79	415.33	0.00	0.00
26.33		29.11	68.29	0.00	0.00
27.50		103.84	241.56	0.00	0.00
28.00		44.40	102.97	0.00	0.00
30.00		179.27	410.29	0.00	0.00
32.00		180.23	407.78	0.00	0.00
34.00		181.04	405.26	0.00	0.00
36.00		181.71	402.75	0.00	0.00
38.00		182.25	400.23	0.00	0.00
40.00		182.67	397.72	0.00	0.00
40.33		30.04	65.38	0.00	0.00
40.50		15.47	33.65	0.00	0.00
42.00		137.09	296.16	0.00	0.00
43.33		121.92	262.07	0.00	0.00
44.00		61.74	208.31	0.00	0.00
46.00		185.90	621.91	0.00	0.00
48.00		185.96	617.38	0.00	0.00
50.00		185.93	332.77	0.00	0.00
52.00		185.83	330.75	0.00	0.00
54.00		185.65	328.74	0.00	0.00
56.00		185.41	326.73	0.00	0.00
58.00		185.10	324.71	0.00	0.00
60.00		184.73	322.70	0.00	0.00
60.75		69.02	120.49	0.00	0.00
62.00		114.99	200.20	0.00	0.00
64.00		183.82	318.68	0.00	0.00
66.00		183.28	316.66	0.00	0.00
68.00		182.70	314.65	0.00	0.00
70.00		182.06	312.64	0.00	0.00
72.00		181.38	310.63	0.00	0.00
74.00		180.66	308.61	0.00	0.00
76.00		179.90	306.60	0.00	0.00



## Total Applied Force Summary

<b>Structure:</b> CT13064-A-SBA	<b>Code:</b> EIA/TIA-222-G	3/17/2020
<b>Site Name:</b> Middletown 2, CT	<b>Exposure:</b> C	
<b>Height:</b> 130.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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78.00		179.09	304.59	0.00	0.00
78.50		44.55	75.83	0.00	0.00
80.00		133.52	226.74	0.00	0.00
82.00		177.36	293.36	0.00	0.00
84.00		176.45	284.15	0.00	0.00
86.00		175.49	282.14	0.00	0.00
87.42		123.63	198.63	0.00	0.00
88.00		51.36	123.41	0.00	0.00
90.00	(18) attachments	5682.40	4225.08	0.00	0.00
91.33		116.48	271.91	0.00	0.00
92.00		58.02	73.78	0.00	0.00
94.00	(1) attachments	266.99	283.92	0.00	0.00
96.00		172.51	218.81	0.00	0.00
98.00		171.38	217.30	0.00	0.00
100.00	(15) attachments	3439.01	2318.19	0.00	0.00
102.00		169.03	196.67	0.00	0.00
104.00		167.82	195.16	0.00	0.00
106.00		166.59	193.65	0.00	0.00
108.00		165.32	192.14	0.00	0.00
110.00	(26) attachments	3850.41	2385.19	0.00	0.15
112.00		162.73	153.89	0.00	0.00
114.00		161.39	152.38	0.00	0.00
116.00		160.04	150.87	0.00	0.00
118.00		158.66	149.36	0.00	0.00
120.00		157.26	147.85	0.00	0.00
122.00		107.18	141.62	0.00	0.00
124.00		107.55	141.62	0.00	0.00
126.00		107.91	141.62	0.00	0.00
128.00		108.27	141.62	0.00	0.00
129.00	(37) attachments	9300.81	6076.46	0.00	5707.49
130.00	(1) attachments	74.75	64.73	0.00	0.00
	<b>Totals:</b>	<b>32,881.62</b>	<b>35,035.35</b>	<b>0.00</b>	<b>5,707.64</b>

## Linear Appurtenance Segment Forces (Factored)

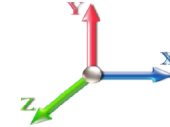
<b>Structure:</b> CT13064-A-SBA	<b>Code:</b> EIA/TIA-222-G	3/17/2020
<b>Site Name:</b> Middletown 2, CT	<b>Exposure:</b> C	
<b>Height:</b> 130.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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**Load Case:** 1.2D + 1.6W 101 mph Wind

**Dead Load Factor** 1.20  
**Wind Load Factor** 1.60



**Iterations** 26

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	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.070	0.000	21.088	0.00	11.59
2.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.070	0.000	21.088	0.00	14.40
4.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.070	0.000	21.088	0.00	11.59
4.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.070	0.000	21.088	0.00	14.40
6.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.071	0.000	21.088	0.00	11.59
6.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.071	0.000	21.088	0.00	14.40
8.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.071	0.000	21.088	0.00	11.59
8.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.071	0.000	21.088	0.00	14.40
10.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.072	0.000	21.088	0.00	11.59
10.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.072	0.000	21.088	0.00	14.40
10.25	2" Conduit	Yes	0.25	0.000	2.00	0.04	0.00	0.072	0.000	21.088	0.00	1.45
10.25	1" Reinforcing plate	Yes	0.25	0.000	1.00	0.02	0.00	0.072	0.000	21.088	0.00	1.80
12.00	2" Conduit	Yes	1.75	0.000	2.00	0.29	0.00	0.072	0.000	21.088	0.00	10.14
12.00	1" Reinforcing plate	Yes	1.75	0.000	1.00	0.15	0.00	0.072	0.000	21.088	0.00	12.60
14.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.073	0.000	21.088	0.00	11.59
14.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.073	0.000	21.088	0.00	14.40
16.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.074	0.000	21.348	0.00	11.59
16.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.074	0.000	21.348	0.00	14.40
18.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.074	0.000	21.884	0.00	11.59
18.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.074	0.000	21.884	0.00	14.40
20.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.075	0.000	22.375	0.00	11.59
20.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.075	0.000	22.375	0.00	14.40
20.50	2" Conduit	Yes	0.50	0.000	2.00	0.08	0.00	0.075	0.000	22.491	0.00	2.90
20.50	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.04	0.00	0.075	0.000	22.491	0.00	3.60
22.00	2" Conduit	Yes	1.50	0.000	2.00	0.25	0.00	0.075	0.000	22.828	0.00	8.69
22.00	1" Reinforcing plate	Yes	1.50	0.000	1.00	0.13	0.00	0.075	0.000	22.828	0.00	10.80
24.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.076	0.000	23.250	0.00	11.59
24.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.076	0.000	23.250	0.00	14.40
26.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.077	0.000	23.645	0.00	11.59
26.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.077	0.000	23.645	0.00	14.40
26.33	2" Conduit	Yes	0.33	0.000	2.00	0.05	0.00	0.077	0.000	23.708	0.00	1.91
26.33	1" Reinforcing plate	Yes	0.33	0.000	1.00	0.03	0.00	0.077	0.000	23.708	0.00	2.38
27.50	2" Conduit	Yes	1.17	0.000	2.00	0.20	0.00	0.077	0.000	23.926	0.00	6.78
27.50	1" Reinforcing plate	Yes	1.17	0.000	1.00	0.10	0.00	0.077	0.000	23.926	0.00	8.42
28.00	2" Conduit	Yes	0.50	0.000	2.00	0.08	0.00	0.077	0.000	24.017	0.00	2.90
28.00	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.04	0.00	0.077	0.000	24.017	0.00	3.60
30.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.078	0.000	24.369	0.00	11.59
30.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.078	0.000	24.369	0.00	14.40
32.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.078	0.000	24.702	0.00	11.59
32.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.078	0.000	24.702	0.00	14.40
34.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.079	0.000	25.019	0.00	11.59
34.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.079	0.000	25.019	0.00	14.40
36.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.080	0.000	25.322	0.00	11.59
36.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.080	0.000	25.322	0.00	14.40
38.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.080	0.000	25.612	0.00	11.59
38.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.080	0.000	25.612	0.00	14.40
40.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.081	0.000	25.890	0.00	11.59

## Linear Appurtenance Segment Forces (Factored)

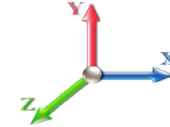
<b>Structure:</b> CT13064-A-SBA	<b>Code:</b> EIA/TIA-222-G	3/17/2020
<b>Site Name:</b> Middletown 2, CT	<b>Exposure:</b> C	
<b>Height:</b> 130.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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**Load Case:** 1.2D + 1.6W 101 mph Wind

**Dead Load Factor** 1.20  
**Wind Load Factor** 1.60



**Iterations** 26

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)
40.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.081	0.000	25.890	0.00	14.40
40.33	2" Conduit	Yes	0.33	0.000	2.00	0.05	0.00	0.081	0.000	25.935	0.00	1.91
40.33	1" Reinforcing plate	Yes	0.33	0.000	1.00	0.03	0.00	0.081	0.000	25.935	0.00	2.38
40.50	2" Conduit	Yes	0.17	0.000	2.00	0.03	0.00	0.082	0.000	25.958	0.00	0.99
40.50	1" Reinforcing plate	Yes	0.17	0.000	1.00	0.01	0.00	0.082	0.000	25.958	0.00	1.22
42.00	2" Conduit	Yes	1.50	0.000	2.00	0.25	0.00	0.082	0.000	26.157	0.00	8.69
42.00	1" Reinforcing plate	Yes	1.50	0.000	1.00	0.13	0.00	0.082	0.000	26.157	0.00	10.80
43.33	2" Conduit	Yes	1.33	0.000	2.00	0.22	0.00	0.082	0.000	26.330	0.00	7.73
43.33	1" Reinforcing plate	Yes	1.33	0.000	1.00	0.11	0.00	0.082	0.000	26.330	0.00	9.60
44.00	2" Conduit	Yes	0.67	0.000	2.00	0.11	0.00	0.083	0.000	26.415	0.00	3.86
44.00	1" Reinforcing plate	Yes	0.67	0.000	1.00	0.06	0.00	0.083	0.000	26.415	0.00	4.80
46.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.083	0.000	26.663	0.00	11.59
46.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.083	0.000	26.663	0.00	14.40
48.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.084	0.000	26.903	0.00	11.59
48.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.084	0.000	26.903	0.00	14.40
50.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.083	0.000	27.135	0.00	11.59
50.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.083	0.000	27.135	0.00	14.40
52.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.084	0.000	27.360	0.00	11.59
52.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.084	0.000	27.360	0.00	14.40
54.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.085	0.000	27.579	0.00	11.59
54.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.085	0.000	27.579	0.00	14.40
56.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.086	0.000	27.790	0.00	11.59
56.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.086	0.000	27.790	0.00	14.40
58.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.087	0.000	27.997	0.00	11.59
58.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.087	0.000	27.997	0.00	14.40
60.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.087	0.000	28.197	0.00	11.59
60.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.087	0.000	28.197	0.00	14.40
60.75	2" Conduit	Yes	0.75	0.000	2.00	0.13	0.00	0.088	0.000	28.271	0.00	4.35
60.75	1" Reinforcing plate	Yes	0.75	0.000	1.00	0.06	0.00	0.088	0.000	28.271	0.00	5.40
62.00	2" Conduit	Yes	1.25	0.000	2.00	0.21	0.00	0.088	0.000	28.392	0.00	7.25
62.00	1" Reinforcing plate	Yes	1.25	0.000	1.00	0.10	0.00	0.088	0.000	28.392	0.00	9.00
64.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.089	0.000	28.583	0.00	11.59
64.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.089	0.000	28.583	0.00	14.40
66.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.090	0.000	28.769	0.00	11.59
66.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.090	0.000	28.769	0.00	14.40
68.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.091	0.000	28.950	0.00	11.59
68.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.091	0.000	28.950	0.00	14.40
70.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.092	0.000	29.127	0.00	11.59
70.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.092	0.000	29.127	0.00	14.40
72.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.092	0.000	29.300	0.00	11.59
72.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.092	0.000	29.300	0.00	14.40
74.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.093	0.000	29.470	0.00	11.59
74.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.093	0.000	29.470	0.00	14.40
76.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.094	0.000	29.636	0.00	11.59
76.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.094	0.000	29.636	0.00	14.40
78.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.095	0.000	29.798	0.00	11.59
78.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.095	0.000	29.798	0.00	14.40

## Linear Appurtenance Segment Forces (Factored)

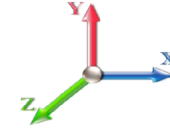
<b>Structure:</b> CT13064-A-SBA	<b>Code:</b> EIA/TIA-222-G	3/17/2020
<b>Site Name:</b> Middletown 2, CT	<b>Exposure:</b> C	
<b>Height:</b> 130.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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**Load Case:** 1.2D + 1.6W 101 mph Wind

**Dead Load Factor** 1.20  
**Wind Load Factor** 1.60



**Iterations** 26

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)
78.50	2" Conduit	Yes	0.50	0.000	2.00	0.08	0.00	0.096	0.000	29.838	0.00	2.90
78.50	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.04	0.00	0.096	0.000	29.838	0.00	3.60
80.00	2" Conduit	Yes	1.50	0.000	2.00	0.25	0.00	0.096	0.000	29.958	0.00	8.69
80.00	1" Reinforcing plate	Yes	1.50	0.000	1.00	0.13	0.00	0.096	0.000	29.958	0.00	10.80
82.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.081	0.000	30.114	0.00	11.59
82.00	1" Reinforcing plate	Yes	1.00	0.000	1.00	0.08	0.00	0.081	0.000	30.114	0.00	7.20
84.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.065	0.000	30.267	0.00	11.59
86.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.066	0.000	30.417	0.00	11.59
87.42	2" Conduit	Yes	1.42	0.000	2.00	0.24	0.00	0.067	0.000	30.522	0.00	8.21
88.00	2" Conduit	Yes	0.58	0.000	2.00	0.10	0.00	0.067	0.000	30.565	0.00	3.38
90.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.068	0.000	30.710	0.00	11.59
91.33	2" Conduit	Yes	1.33	0.000	2.00	0.22	0.00	0.068	0.000	30.805	0.00	7.73
92.00	2" Conduit	Yes	0.67	0.000	2.00	0.11	0.00	0.068	0.000	30.852	0.00	3.86
94.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.068	0.000	30.992	0.00	11.59
96.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.069	0.000	31.130	0.00	11.59
98.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.070	0.000	31.265	0.00	11.59
100.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.070	0.000	31.399	0.00	11.59
102.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.071	0.000	31.530	0.00	11.59
104.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.072	0.000	31.659	0.00	11.59
106.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.073	0.000	31.786	0.00	11.59
108.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.074	0.000	31.911	0.00	11.59
110.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.074	0.000	32.035	0.00	11.59
112.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.075	0.000	32.157	0.00	11.59
114.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.076	0.000	32.277	0.00	11.59
116.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.077	0.000	32.395	0.00	11.59
118.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.078	0.000	32.512	0.00	11.59
120.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.079	0.000	32.627	0.00	11.59
122.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.111	1.033	32.741	0.00	11.59
124.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.111	1.033	32.853	0.00	11.59
126.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.111	1.033	32.964	0.00	11.59
128.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.111	1.033	33.073	0.00	11.59
129.00	2" Conduit	Yes	1.00	0.000	2.00	0.17	0.00	0.111	1.033	33.128	0.00	5.80
<b>Totals:</b>											<b>0.0</b>	<b>1,330.9</b>

## Calculated Forces

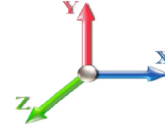
<b>Structure:</b> CT13064-A-SBA	<b>Code:</b> EIA/TIA-222-G	<b>3/17/2020</b>
<b>Site Name:</b> Middletown 2, CT	<b>Exposure:</b> C	
<b>Height:</b> 130.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



**Load Case:** 1.2D + 1.6W 101 mph Wind

**Iterations** 26

**Dead Load Factor** 1.20  
**Wind Load Factor** 1.60



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-35.01	-32.91	0.00	-3260.2	0.00	3260.22	2818.94	1409.47	4888.80	2448.04	0.00	0.000	0.000	0.636
2.00	-34.51	-32.79	0.00	-3194.4	0.00	3194.41	2805.89	1402.95	4830.09	2418.63	0.02	-0.092	0.000	0.628
4.00	-34.01	-32.67	0.00	-3128.8	0.00	3128.82	2792.73	1396.36	4771.51	2389.30	0.08	-0.184	0.000	0.620
6.00	-33.52	-32.56	0.00	-3063.4	0.00	3063.47	2779.45	1389.73	4713.08	2360.04	0.18	-0.276	0.000	0.612
8.00	-33.03	-32.44	0.00	-2998.3	0.00	2998.36	2766.06	1383.03	4654.80	2330.86	0.31	-0.368	0.000	0.604
10.00	-32.57	-32.30	0.00	-2933.4	0.00	2933.49	2752.56	1376.28	4596.67	2301.75	0.48	-0.459	0.000	0.595
10.25	-32.49	-32.30	0.00	-2925.4	0.00	2925.42	2750.86	1375.43	4589.41	2298.12	0.51	-0.470	0.000	0.623
12.00	-32.06	-32.20	0.00	-2868.8	0.00	2868.89	2738.94	1369.47	4538.70	2272.72	0.70	-0.554	0.000	0.616
14.00	-31.58	-32.08	0.00	-2804.4	0.00	2804.49	2725.20	1362.60	4480.89	2243.77	0.95	-0.649	0.000	0.607
16.00	-31.10	-31.96	0.00	-2740.3	0.00	2740.32	2711.35	1355.68	4423.25	2214.91	1.24	-0.743	0.000	0.598
18.00	-30.63	-31.84	0.00	-2676.3	0.00	2676.39	2697.39	1348.70	4365.78	2186.13	1.57	-0.837	0.000	0.589
20.00	-30.18	-31.69	0.00	-2612.7	0.00	2612.71	2683.32	1341.66	4308.48	2157.44	1.94	-0.931	0.000	0.580
20.50	-30.04	-31.67	0.00	-2596.8	0.00	2596.87	2679.78	1339.89	4294.19	2150.28	2.04	-0.954	0.000	0.578
22.00	-29.69	-31.58	0.00	-2549.3	0.00	2549.36	2669.12	1334.56	4251.37	2128.84	2.35	-1.024	0.000	0.571
24.00	-29.22	-31.44	0.00	-2486.2	0.00	2486.20	2654.82	1327.41	4194.44	2100.34	2.80	-1.117	0.000	0.562
26.00	-28.78	-31.29	0.00	-2423.3	0.00	2423.31	2640.40	1320.20	4137.70	2071.92	3.29	-1.209	0.000	0.553
26.33	-28.70	-31.27	0.00	-2412.9	0.00	2412.99	2638.01	1319.00	4128.35	2067.24	3.38	-1.225	0.000	0.484
27.50	-28.44	-31.18	0.00	-2376.4	0.00	2376.40	2629.51	1314.76	4095.27	2050.68	3.68	-1.272	0.000	0.664
28.00	-28.30	-31.17	0.00	-2360.8	0.00	2360.81	2625.87	1312.93	4081.15	2043.61	3.82	-1.300	0.000	0.661
30.00	-27.83	-31.03	0.00	-2298.4	0.00	2298.48	2611.22	1305.61	4024.80	2015.39	4.39	-1.411	0.000	0.650
32.00	-27.37	-30.89	0.00	-2236.4	0.00	2236.41	2596.46	1298.23	3968.65	1987.27	5.00	-1.520	0.000	0.639
34.00	-26.91	-30.75	0.00	-2174.6	0.00	2174.63	2581.58	1290.79	3912.71	1959.26	5.66	-1.630	0.000	0.627
36.00	-26.46	-30.61	0.00	-2113.1	0.00	2113.12	2566.59	1283.29	3856.98	1931.36	6.37	-1.738	0.000	0.616
38.00	-26.00	-30.46	0.00	-2051.9	0.00	2051.90	2551.48	1275.74	3801.46	1903.56	7.12	-1.846	0.000	0.604
40.00	-25.58	-30.30	0.00	-1990.9	0.00	1990.97	2536.26	1268.13	3746.17	1875.87	7.91	-1.953	0.000	0.593
40.33	-25.51	-30.27	0.00	-1980.9	0.00	1980.98	2533.74	1266.87	3737.07	1871.31	8.05	-1.970	0.000	0.720
40.50	-25.45	-30.28	0.00	-1975.8	0.00	1975.83	2532.44	1266.22	3732.38	1868.96	8.12	-1.981	0.000	0.719
42.00	-25.11	-30.17	0.00	-1930.4	0.00	1930.41	2520.93	1260.46	3691.10	1848.29	8.76	-2.078	0.000	0.709
43.33	-24.82	-30.07	0.00	-1890.1	0.00	1890.19	2510.64	1255.32	3654.51	1829.97	9.35	-2.164	0.000	0.700
44.00	-24.57	-30.03	0.00	-1870.1	0.00	1870.14	2505.48	1252.74	3636.25	1820.83	9.66	-2.207	0.000	0.689
46.00	-23.89	-29.87	0.00	-1810.0	0.00	1810.08	2489.92	1244.96	3581.64	1793.48	10.61	-2.332	0.000	0.675
48.00	-23.21	-29.71	0.00	-1750.3	0.00	1750.33	1854.44	927.22	2691.60	1347.80	11.61	-2.457	0.000	0.727
50.00	-22.82	-29.56	0.00	-1690.9	0.00	1690.90	1844.56	922.28	2653.53	1328.74	12.67	-2.580	0.000	0.794
52.00	-22.43	-29.42	0.00	-1631.7	0.00	1631.77	1834.56	917.28	2615.56	1309.72	13.78	-2.716	0.000	0.774
54.00	-22.04	-29.27	0.00	-1572.9	0.00	1572.94	1824.45	912.23	2577.68	1290.76	14.94	-2.850	0.000	0.754
56.00	-21.66	-29.11	0.00	-1514.4	0.00	1514.41	1814.23	907.11	2539.90	1271.84	16.17	-2.982	0.000	0.734
58.00	-21.28	-28.96	0.00	-1456.1	0.00	1456.18	1803.89	901.94	2502.23	1252.97	17.44	-3.113	0.000	0.714
60.00	-20.93	-28.79	0.00	-1398.2	0.00	1398.26	1793.44	896.72	2464.66	1234.16	18.77	-3.241	0.000	0.693
60.75	-20.78	-28.74	0.00	-1376.6	0.00	1376.67	1789.49	894.74	2450.61	1227.12	19.29	-3.289	0.000	0.686
62.00	-20.53	-28.65	0.00	-1340.7	0.00	1340.74	1782.87	891.44	2427.21	1215.41	20.16	-3.368	0.000	0.672
64.00	-20.17	-28.49	0.00	-1283.4	0.00	1283.45	1772.19	886.09	2389.88	1196.72	21.59	-3.491	0.000	0.651
66.00	-19.80	-28.33	0.00	-1226.4	0.00	1226.47	1761.39	880.70	2352.67	1178.08	23.08	-3.612	0.000	0.630
68.00	-19.44	-28.16	0.00	-1169.8	0.00	1169.82	1750.48	875.24	2315.58	1159.51	24.62	-3.731	0.000	0.608
70.00	-19.09	-28.00	0.00	-1113.4	0.00	1113.49	1739.46	869.73	2278.63	1141.01	26.21	-3.847	0.000	0.585
72.00	-18.73	-27.83	0.00	-1057.4	0.00	1057.49	1728.32	864.16	2241.81	1122.57	27.84	-3.959	0.000	0.563
74.00	-18.39	-27.67	0.00	-1001.8	0.00	1001.82	1717.07	858.54	2205.13	1104.20	29.52	-4.069	0.000	0.540
76.00	-18.04	-27.50	0.00	-946.49	0.00	946.49	1705.70	852.85	2168.59	1085.91	31.25	-4.175	0.000	0.516
78.00	-17.72	-27.32	0.00	-891.49	0.00	891.49	1694.22	847.11	2132.20	1067.69	33.02	-4.278	0.000	0.492

## Calculated Forces

<b>Structure:</b> CT13064-A-SBA	<b>Code:</b> EIA/TIA-222-G	3/17/2020
<b>Site Name:</b> Middletown 2, CT	<b>Exposure:</b> C	
<b>Height:</b> 130.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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78.50	-17.63	-27.28	0.00	-877.83	0.00	877.83	1691.33	845.67	2123.13	1063.14	33.47	-4.304	0.000	0.486
78.50	-17.63	-27.28	0.00	-877.83	0.00	877.83	1691.33	845.67	2123.13	1063.14	33.47	-4.304	0.000	0.486
80.00	-17.35	-27.17	0.00	-836.91	0.00	836.91	1682.63	841.31	2095.97	1049.54	34.83	-4.378	0.000	0.809
82.00	-17.00	-27.02	0.00	-782.57	0.00	782.57	1670.92	835.46	2059.89	1031.48	36.70	-4.543	0.000	0.770
84.00	-16.66	-26.86	0.00	-728.53	0.00	728.53	1659.09	829.55	2023.98	1013.49	38.64	-4.702	0.000	0.730
86.00	-16.33	-26.70	0.00	-674.81	0.00	674.81	1647.16	823.58	1988.23	995.59	40.64	-4.853	0.000	0.689
87.42	-16.11	-26.58	0.00	-636.98	0.00	636.98	1638.63	819.32	1963.01	982.97	42.09	-4.957	0.000	0.659
88.00	-15.95	-26.55	0.00	-621.47	0.00	621.47	1635.10	817.55	1952.65	977.78	42.70	-4.999	0.000	0.646
90.00	-12.20	-20.54	0.00	-568.38	0.00	568.38	1622.94	811.47	1917.25	960.05	44.82	-5.136	0.000	0.600
91.33	-11.92	-20.41	0.00	-541.00	0.00	541.00	1099.39	549.70	1312.06	657.00	46.27	-5.225	0.000	0.836
92.00	-11.81	-20.37	0.00	-527.39	0.00	527.39	1097.24	548.62	1304.79	653.36	47.00	-5.268	0.000	0.819
94.00	-11.50	-20.11	0.00	-486.66	0.00	486.66	1090.71	545.35	1282.99	642.45	49.24	-5.427	0.000	0.769
96.00	-11.25	-19.94	0.00	-446.45	0.00	446.45	1084.06	542.03	1261.23	631.55	51.54	-5.578	0.000	0.719
98.00	-11.00	-19.78	0.00	-406.57	0.00	406.57	1077.30	538.65	1239.51	620.68	53.91	-5.721	0.000	0.667
100.00	-9.01	-16.14	0.00	-367.02	0.00	367.02	1070.43	535.22	1217.83	609.82	56.33	-5.855	0.000	0.611
102.00	-8.80	-15.97	0.00	-334.74	0.00	334.74	1063.44	531.72	1196.21	598.99	58.81	-5.980	0.000	0.568
104.00	-8.59	-15.80	0.00	-302.80	0.00	302.80	1056.34	528.17	1174.63	588.19	61.34	-6.098	0.000	0.524
106.00	-8.38	-15.63	0.00	-271.19	0.00	271.19	1049.12	524.56	1153.11	577.41	63.91	-6.208	0.000	0.479
108.00	-8.19	-15.46	0.00	-239.94	0.00	239.94	1041.79	520.90	1131.65	566.67	66.53	-6.309	0.000	0.432
110.00	-6.22	-11.38	0.00	-209.02	0.00	209.02	1034.34	517.17	1110.26	555.96	69.19	-6.401	0.000	0.382
112.00	-6.07	-11.21	0.00	-186.27	0.00	186.27	1026.79	513.39	1088.94	545.28	71.88	-6.485	0.000	0.348
114.00	-5.93	-11.04	0.00	-163.85	0.00	163.85	1019.11	509.56	1067.70	534.64	74.61	-6.563	0.000	0.313
116.00	-5.78	-10.87	0.00	-141.78	0.00	141.78	1011.32	505.66	1046.53	524.04	77.37	-6.632	0.000	0.277
118.00	-5.64	-10.70	0.00	-120.05	0.00	120.05	1003.42	501.71	1025.45	513.49	80.16	-6.695	0.000	0.240
120.00	-5.50	-10.53	0.00	-98.65	0.00	98.65	995.40	497.70	1004.45	502.97	82.97	-6.748	0.000	0.202
120.00	-5.50	-10.53	0.00	-98.65	0.00	98.65	735.22	367.61	535.89	335.79	82.97	-6.748	0.000	0.302
122.00	-5.37	-10.41	0.00	-77.59	0.00	77.59	735.22	367.61	535.89	335.79	85.80	-6.793	0.000	0.239
124.00	-5.23	-10.29	0.00	-56.77	0.00	56.77	735.22	367.61	535.89	335.79	88.65	-6.863	0.000	0.177
126.00	-5.09	-10.17	0.00	-36.18	0.00	36.18	735.22	367.61	535.89	335.79	91.53	-6.911	0.000	0.115
128.00	-4.96	-10.05	0.00	-15.84	0.00	15.84	735.22	367.61	535.89	335.79	94.43	-6.938	0.000	0.055
129.00	-0.06	-0.08	0.00	-0.08	0.00	0.08	735.22	367.61	535.89	335.79	95.88	-6.944	0.000	0.000
130.00	0.00	-0.07	0.00	0.00	0.00	0.00	735.22	367.61	535.89	335.79	97.33	-6.944	0.000	0.000



## Wind Loading - Shaft

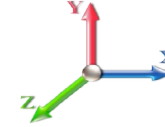
<b>Structure:</b> CT13064-A-SBA	<b>Code:</b> EIA/TIA-222-G	3/17/2020
<b>Site Name:</b> Middletown 2, CT	<b>Exposure:</b> C	
<b>Height:</b> 130.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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**Load Case:** 0.9D + 1.6W 101 mph Wind

**Dead Load Factor** 0.90  
**Wind Load Factor** 1.60



**Iterations** 26

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	RB1 RB2	1.00	0.85	21.088	23.20	334.88	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
2.00		1.00	0.85	21.088	23.20	332.43	0.650	0.000	2.00	7.166	4.66	172.9	0.0	255.3
4.00		1.00	0.85	21.088	23.20	329.98	0.650	0.000	2.00	7.114	4.62	171.6	0.0	253.5
6.00		1.00	0.85	21.088	23.20	327.54	0.650	0.000	2.00	7.061	4.59	170.3	0.0	251.6
8.00		1.00	0.85	21.088	23.20	325.09	0.650	0.000	2.00	7.009	4.56	169.1	0.0	249.7
10.00		1.00	0.85	21.088	23.20	322.64	0.650	0.000	2.00	6.956	4.52	167.8	0.0	247.8
10.25	RT2 RB3 RB4	1.00	0.85	21.088	23.20	322.34	0.650	0.000	0.25	0.866	0.56	20.9	0.0	30.8
12.00		1.00	0.85	21.088	23.20	320.19	0.650	0.000	1.75	6.038	3.92	145.7	0.0	215.1
14.00		1.00	0.85	21.088	23.20	317.75	0.650	0.000	2.00	6.851	4.45	165.3	0.0	244.0
16.00		1.00	0.86	21.348	23.48	317.24	0.650	0.000	2.00	6.798	4.42	166.0	0.0	242.1
18.00		1.00	0.88	21.884	24.07	318.71	0.650	0.000	2.00	6.746	4.38	168.9	0.0	240.3
20.00		1.00	0.90	22.375	24.61	319.74	0.650	0.000	2.00	6.693	4.35	171.3	0.0	238.4
20.50	RT1 RB5	1.00	0.91	22.491	24.74	319.94	0.650	0.000	0.50	1.665	1.08	42.8	0.0	59.3
22.00		1.00	0.92	22.828	25.11	320.42	0.650	0.000	1.50	4.976	3.23	129.9	0.0	177.2
24.00		1.00	0.94	23.250	25.58	320.80	0.650	0.000	2.00	6.588	4.28	175.2	0.0	234.6
26.00		1.00	0.95	23.645	26.01	320.92	0.650	0.000	2.00	6.536	4.25	176.8	0.0	232.7
26.33	RB6	1.00	0.96	23.708	26.08	320.92	0.650	0.000	0.33	1.073	0.70	29.1	0.0	38.2
27.50	RT3 RT4	1.00	0.96	23.926	26.32	320.86	0.650	0.000	1.17	3.794	2.47	103.8	0.0	135.1
28.00		1.00	0.97	24.017	26.42	320.82	0.650	0.000	0.50	1.616	1.05	44.4	0.0	57.5
30.00		1.00	0.98	24.369	26.81	320.53	0.650	0.000	2.00	6.430	4.18	179.3	0.0	228.9
32.00		1.00	1.00	24.702	27.17	320.06	0.650	0.000	2.00	6.378	4.15	180.2	0.0	227.0
34.00		1.00	1.01	25.019	27.52	319.45	0.650	0.000	2.00	6.325	4.11	181.0	0.0	225.2
36.00		1.00	1.02	25.322	27.85	318.69	0.650	0.000	2.00	6.273	4.08	181.7	0.0	223.3
38.00		1.00	1.03	25.612	28.17	317.82	0.650	0.000	2.00	6.220	4.04	182.3	0.0	221.4
40.00		1.00	1.04	25.890	28.48	316.82	0.650	0.000	2.00	6.168	4.01	182.7	0.0	219.5
40.33	RT6	1.00	1.05	25.935	28.53	316.65	0.650	0.000	0.33	1.013	0.66	30.0	0.0	36.0
40.50	RT5 RB7	1.00	1.05	25.958	28.55	316.56	0.650	0.000	0.17	0.521	0.34	15.5	0.0	18.5
42.00		1.00	1.05	26.157	28.77	315.73	0.650	0.000	1.50	4.581	2.98	137.1	0.0	163.0
43.33	Bot - Section 2	1.00	1.06	26.330	28.96	314.95	0.650	0.000	1.33	4.048	2.63	121.9	0.0	144.0
44.00		1.00	1.06	26.415	29.06	314.54	0.650	0.000	0.67	2.043	1.33	61.7	0.0	130.0
46.00		1.00	1.07	26.663	29.33	313.26	0.650	0.000	2.00	6.095	3.96	185.9	0.0	387.6
48.00	Top - Section 1	1.00	1.08	26.903	29.59	311.91	0.650	0.000	2.00	6.042	3.93	186.0	0.0	384.2
50.00		1.00	1.09	27.135	29.85	314.94	0.650	0.000	2.00	5.989	3.89	185.9	0.0	170.8
52.00		1.00	1.10	27.360	30.10	313.46	0.650	0.000	2.00	5.937	3.86	185.8	0.0	169.3
54.00		1.00	1.11	27.579	30.34	311.91	0.650	0.000	2.00	5.884	3.82	185.6	0.0	167.8
56.00		1.00	1.12	27.790	30.57	310.29	0.650	0.000	2.00	5.832	3.79	185.4	0.0	166.3
58.00		1.00	1.13	27.997	30.80	308.62	0.650	0.000	2.00	5.779	3.76	185.1	0.0	164.7
60.00		1.00	1.14	28.197	31.02	306.90	0.650	0.000	2.00	5.727	3.72	184.7	0.0	163.2
60.75	RT7 RB8	1.00	1.14	28.271	31.10	306.24	0.650	0.000	0.75	2.134	1.39	69.0	0.0	60.8
62.00		1.00	1.14	28.392	31.23	305.12	0.650	0.000	1.25	3.540	2.30	115.0	0.0	100.9
64.00		1.00	1.15	28.583	31.44	303.29	0.650	0.000	2.00	5.622	3.65	183.8	0.0	160.2
66.00		1.00	1.16	28.769	31.65	301.42	0.650	0.000	2.00	5.569	3.62	183.3	0.0	158.7
68.00		1.00	1.17	28.950	31.84	299.50	0.650	0.000	2.00	5.516	3.59	182.7	0.0	157.2
70.00		1.00	1.17	29.127	32.04	297.54	0.650	0.000	2.00	5.464	3.55	182.1	0.0	155.7
72.00		1.00	1.18	29.300	32.23	295.54	0.650	0.000	2.00	5.411	3.52	181.4	0.0	154.2
74.00		1.00	1.19	29.470	32.42	293.50	0.650	0.000	2.00	5.359	3.48	180.7	0.0	152.7
76.00		1.00	1.19	29.636	32.60	291.42	0.650	0.000	2.00	5.306	3.45	179.9	0.0	151.2



## Wind Loading - Shaft

<b>Structure:</b> CT13064-A-SBA	<b>Code:</b> EIA/TIA-222-G	3/17/2020
<b>Site Name:</b> Middletown 2, CT	<b>Exposure:</b> C	
<b>Height:</b> 130.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II
		<b>Page:</b> 21



78.00	1.00	1.20	29.798	32.78	289.31	0.650	0.000	2.00	5.254	3.41	179.1	0.0	149.7
78.50 RT8	1.00	1.20	29.838	32.82	288.78	0.650	0.000	0.50	1.305	0.85	44.6	0.0	37.2
80.00	1.00	1.21	29.958	32.95	287.16	0.650	0.000	1.50	3.896	2.53	133.5	0.0	111.0
82.00	1.00	1.21	30.114	33.13	284.99	0.650	0.000	2.00	5.148	3.35	177.4	0.0	146.6
84.00	1.00	1.22	30.267	33.29	282.78	0.650	0.000	2.00	5.096	3.31	176.4	0.0	145.1
86.00	1.00	1.23	30.417	33.46	280.54	0.650	0.000	2.00	5.043	3.28	175.5	0.0	143.6
87.42 Bot - Section 3	1.00	1.23	30.522	33.57	278.94	0.650	0.000	1.42	3.541	2.30	123.6	0.0	100.8
88.00	1.00	1.23	30.565	33.62	278.27	0.650	0.000	0.58	1.469	0.95	51.4	0.0	72.7
90.00 Appurtenance(s)	1.00	1.24	30.710	33.78	275.98	0.650	0.000	2.00	5.002	3.25	175.7	0.0	247.6
91.33 Top - Section 2	1.00	1.24	30.805	33.89	274.44	0.650	0.000	1.33	3.305	2.15	116.5	0.0	163.6
92.00	1.00	1.24	30.852	33.94	277.23	0.650	0.000	0.67	1.644	1.07	58.0	0.0	35.2
94.00 Appurtenance(s)	1.00	1.25	30.992	34.09	274.89	0.650	0.000	2.00	4.897	3.18	173.6	0.0	104.8
96.00	1.00	1.25	31.130	34.24	272.53	0.650	0.000	2.00	4.844	3.15	172.5	0.0	103.6
98.00	1.00	1.26	31.265	34.39	270.14	0.650	0.000	2.00	4.791	3.11	171.4	0.0	102.5
100.00 Appurtenance(s)	1.00	1.27	31.399	34.54	267.73	0.650	0.000	2.00	4.739	3.08	170.2	0.0	101.4
102.00	1.00	1.27	31.530	34.68	265.30	0.650	0.000	2.00	4.686	3.05	169.0	0.0	100.2
104.00	1.00	1.28	31.659	34.82	262.84	0.650	0.000	2.00	4.634	3.01	167.8	0.0	99.1
106.00	1.00	1.28	31.786	34.96	260.37	0.650	0.000	2.00	4.581	2.98	166.6	0.0	98.0
108.00	1.00	1.29	31.911	35.10	257.87	0.650	0.000	2.00	4.529	2.94	165.3	0.0	96.9
110.00 Appurtenance(s)	1.00	1.29	32.035	35.24	255.35	0.650	0.000	2.00	4.476	2.91	164.0	0.0	95.7
112.00	1.00	1.30	32.157	35.37	252.81	0.650	0.000	2.00	4.423	2.88	162.7	0.0	94.6
114.00	1.00	1.30	32.277	35.50	250.26	0.650	0.000	2.00	4.371	2.84	161.4	0.0	93.5
116.00	1.00	1.31	32.395	35.63	247.68	0.650	0.000	2.00	4.318	2.81	160.0	0.0	92.3
118.00	1.00	1.31	32.512	35.76	245.09	0.650	0.000	2.00	4.266	2.77	158.7	0.0	91.2
120.00 Top - Section 3	1.00	1.32	32.627	35.89	242.48	0.650	0.000	2.00	4.213	2.74	157.3	0.0	90.1
122.00	1.00	1.32	32.741	36.01	174.04	0.620 *	0.000	2.00	3.000	1.86	107.2	0.0	85.4
124.00	1.00	1.32	32.853	36.14	174.34	0.620 *	0.000	2.00	3.000	1.86	107.5	0.0	85.4
126.00	1.00	1.33	32.964	36.26	174.63	0.620 *	0.000	2.00	3.000	1.86	107.9	0.0	85.4
128.00	1.00	1.33	33.073	36.38	174.92	0.620 *	0.000	2.00	3.000	1.86	108.3	0.0	85.4
129.00 Appurtenance(s)	1.00	1.34	33.128	36.44	175.07	0.620 *	0.000	1.00	1.500	0.93	54.2	0.0	42.7
130.00 Appurtenance(s)	1.00	1.34	33.182	36.50	175.21	0.600	0.000	1.00	1.500	0.90	52.6	0.0	42.7
<b>Totals:</b>								<b>130.00</b>			<b>11,057.6</b>		<b>11,409.5</b>

\* Cf Adjusted by Linear Load Ra Effect

## Discrete Appurtenance Forces

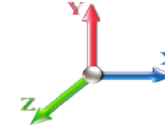
<b>Structure:</b> CT13064-A-SBA	<b>Code:</b> EIA/TIA-222-G	3/17/2020
<b>Site Name:</b> Middletown 2, CT	<b>Exposure:</b> C	
<b>Height:</b> 130.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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**Load Case:** 0.9D + 1.6W 101 mph Wind

**Dead Load Factor** 0.90  
**Wind Load Factor** 1.60



**Iterations** 26

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	130.00	6' Lightning rod	1	33.182	36.500	1.00	1.00	0.38	5.85	0.000	0.000	22.19	0.00	0.00
2	129.00	RRUS 32	6	33.182	36.500	0.50	0.75	4.97	415.80	0.000	1.000	290.52	0.00	290.52
3	129.00	MTC3607 Platform + HR	1	33.128	36.440	1.00	1.00	45.40	1800.00	0.000	0.000	2647.04	0.00	0.00
4	129.00	PRK-1245 (kicker kit)	1	33.128	36.440	1.00	1.00	9.50	418.42	0.000	0.000	553.90	0.00	0.00
5	129.00	Angle Reinforcement	1	33.128	36.440	1.00	1.00	5.80	225.00	0.000	0.000	338.17	0.00	0.00
6	129.00	OPA-65R-LCUU-H6	3	33.182	36.500	0.59	0.75	17.08	216.00	0.000	1.000	997.68	0.00	997.68
7	129.00	QS66512-2	3	33.182	36.500	0.69	0.75	16.79	299.70	0.000	1.000	980.68	0.00	980.68
8	129.00	OPA65R-KE6D	6	33.182	36.500	0.54	0.75	41.24	341.82	0.000	1.000	2408.26	0.00	2408.26
9	129.00	RRUS 4478 B14	3	33.182	36.500	0.50	0.75	2.49	160.38	0.000	1.000	145.26	0.00	145.26
10	129.00	B2 B66A 8843	3	33.182	36.500	0.50	0.75	2.47	189.00	0.000	1.000	144.38	0.00	144.38
11	129.00	4449 B5/B12	3	33.182	36.500	0.50	0.75	2.97	191.70	0.000	1.000	173.43	0.00	173.43
12	129.00	RRUS E2 B29	3	33.182	36.500	0.50	0.75	4.75	160.38	0.000	1.000	277.32	0.00	277.32
13	129.00	DC6-48-60-18-8F	2	33.182	36.500	0.75	0.75	1.38	57.24	0.000	1.000	80.59	0.00	80.59
14	129.00	DC6-48-60-0-8C	2	33.182	36.500	0.38	0.75	3.58	28.80	0.000	1.000	209.36	0.00	209.36
15	110.00	T-Arm (Round)	3	32.035	35.238	0.56	0.75	13.50	945.00	0.000	0.000	761.15	0.00	0.00
16	110.00	DB-T1-6Z-8AB-0Z	2	32.035	35.238	0.80	0.80	7.68	34.02	0.000	0.000	433.01	0.00	0.00
17	110.00	B4 RRH2X60-4R	3	32.035	35.238	0.54	0.80	5.40	148.50	0.000	0.000	304.62	0.00	0.00
18	110.00	B13 RRH4X30-4R	3	32.035	35.238	0.54	0.80	3.47	154.44	0.000	0.000	195.83	0.00	0.00
19	110.00	SBNHH-1D65B	6	32.035	35.238	0.63	0.80	30.94	216.00	0.000	0.000	1744.59	0.00	0.00
20	110.00	CBC721-DF	3	31.973	35.171	0.50	0.80	0.68	11.88	0.000	-1.000	38.29	0.00	-38.29
21	110.00	CBC721-DF	3	32.096	35.306	0.50	0.80	0.68	11.88	0.000	1.000	38.44	0.00	38.44
22	110.00	RRH2X60-1900A-4R	3	32.035	35.238	0.54	0.80	3.02	124.20	0.000	0.000	170.44	0.00	0.00
23	100.00	LNx-6515DS-A1M	3	31.399	34.538	0.64	0.80	22.02	135.81	0.000	0.000	1216.99	0.00	0.00
24	100.00	AIR 21, 1.3M, B2A B4P	3	31.399	34.538	0.64	0.80	11.69	247.05	0.000	0.000	646.16	0.00	0.00
25	100.00	AIR 21, 1.3M, B4A B2P	3	31.399	34.538	0.64	0.80	11.69	244.08	0.000	0.000	646.16	0.00	0.00
26	100.00	782 11056	3	31.399	34.538	0.62	0.80	0.24	4.86	0.000	0.000	13.45	0.00	0.00
27	100.00	T-Arm (Round)	3	31.399	34.538	0.56	0.75	13.50	945.00	0.000	0.000	746.03	0.00	0.00
28	94.00	1'4"x6.5"x6" Surge	1	30.992	34.091	0.80	0.80	1.71	47.70	0.000	0.000	93.38	0.00	0.00
29	90.00	ALU - 800 MHz - RRU	6	30.710	33.781	0.50	0.75	7.51	286.20	0.000	0.000	405.77	0.00	0.00
30	90.00	ALU - 1900MHz - RRU	3	30.710	33.781	0.50	0.75	5.73	118.80	0.000	0.000	309.62	0.00	0.00
31	90.00	Andrew - VHLP2-11	2	30.710	33.781	1.00	1.00	9.36	48.60	0.000	0.000	505.90	0.00	0.00
32	90.00	F3P-10W	1	30.710	33.781	1.00	1.00	51.77	1909.80	0.000	0.000	2798.12	0.00	0.00
33	90.00	NNVV-65B-R4	3	30.710	33.781	0.55	0.75	20.43	208.98	0.000	0.000	1104.20	0.00	0.00
34	90.00	AAHC	3	30.710	33.781	0.56	0.75	7.09	280.80	0.000	0.000	383.07	0.00	0.00

**Totals:** 10,633.69

21,824.00

## Total Applied Force Summary

<b>Structure:</b> CT13064-A-SBA	<b>Code:</b> EIA/TIA-222-G	3/17/2020
<b>Site Name:</b> Middletown 2, CT	<b>Exposure:</b> C	
<b>Height:</b> 130.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II

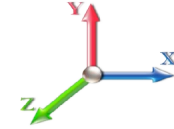


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**Load Case:** 0.9D + 1.6W 101 mph Wind

**Dead Load Factor** 0.90

**Wind Load Factor** 1.60



**Iterations** 26

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		172.88	334.14	0.00	0.00
4.00		171.61	332.25	0.00	0.00
6.00		170.35	330.36	0.00	0.00
8.00		169.08	328.48	0.00	0.00
10.00		167.81	326.59	0.00	0.00
10.25		20.89	40.69	0.00	0.00
12.00		145.65	284.01	0.00	0.00
14.00		165.27	322.82	0.00	0.00
16.00		166.03	320.93	0.00	0.00
18.00		168.88	319.04	0.00	0.00
20.00		171.33	317.15	0.00	0.00
20.50		42.84	78.99	0.00	0.00
22.00		129.94	236.27	0.00	0.00
24.00		175.23	313.38	0.00	0.00
26.00		176.79	311.49	0.00	0.00
26.33		29.11	51.22	0.00	0.00
27.50		103.84	181.17	0.00	0.00
28.00		44.40	77.22	0.00	0.00
30.00		179.27	307.72	0.00	0.00
32.00		180.23	305.83	0.00	0.00
34.00		181.04	303.95	0.00	0.00
36.00		181.71	302.06	0.00	0.00
38.00		182.25	300.17	0.00	0.00
40.00		182.67	298.29	0.00	0.00
40.33		30.04	49.04	0.00	0.00
40.50		15.47	25.24	0.00	0.00
42.00		137.09	222.12	0.00	0.00
43.33		121.92	196.55	0.00	0.00
44.00		61.74	156.23	0.00	0.00
46.00		185.90	466.43	0.00	0.00
48.00		185.96	463.03	0.00	0.00
50.00		185.93	249.57	0.00	0.00
52.00		185.83	248.06	0.00	0.00
54.00		185.65	246.56	0.00	0.00
56.00		185.41	245.05	0.00	0.00
58.00		185.10	243.54	0.00	0.00
60.00		184.73	242.03	0.00	0.00
60.75		69.02	90.37	0.00	0.00
62.00		114.99	150.15	0.00	0.00
64.00		183.82	239.01	0.00	0.00
66.00		183.28	237.50	0.00	0.00
68.00		182.70	235.99	0.00	0.00
70.00		182.06	234.48	0.00	0.00
72.00		181.38	232.97	0.00	0.00
74.00		180.66	231.46	0.00	0.00
76.00		179.90	229.95	0.00	0.00

## Total Applied Force Summary

<b>Structure:</b> CT13064-A-SBA	<b>Code:</b> EIA/TIA-222-G	3/17/2020
<b>Site Name:</b> Middletown 2, CT	<b>Exposure:</b> C	
<b>Height:</b> 130.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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78.00		179.09	228.44	0.00	0.00
78.50		44.55	56.87	0.00	0.00
80.00		133.52	170.06	0.00	0.00
82.00		177.36	220.02	0.00	0.00
84.00		176.45	213.11	0.00	0.00
86.00		175.49	211.60	0.00	0.00
87.42		123.63	148.97	0.00	0.00
88.00		51.36	92.56	0.00	0.00
90.00	(18) attachments	5682.40	3168.81	0.00	0.00
91.33		116.48	203.93	0.00	0.00
92.00		58.02	55.33	0.00	0.00
94.00	(1) attachments	266.99	212.94	0.00	0.00
96.00		172.51	164.11	0.00	0.00
98.00		171.38	162.98	0.00	0.00
100.00	(15) attachments	3439.01	1738.64	0.00	0.00
102.00		169.03	147.50	0.00	0.00
104.00		167.82	146.37	0.00	0.00
106.00		166.59	145.23	0.00	0.00
108.00		165.32	144.10	0.00	0.00
110.00	(26) attachments	3850.41	1788.89	0.00	0.15
112.00		162.73	115.41	0.00	0.00
114.00		161.39	114.28	0.00	0.00
116.00		160.04	113.15	0.00	0.00
118.00		158.66	112.02	0.00	0.00
120.00		157.26	110.89	0.00	0.00
122.00		107.18	106.21	0.00	0.00
124.00		107.55	106.21	0.00	0.00
126.00		107.91	106.21	0.00	0.00
128.00		108.27	106.21	0.00	0.00
129.00	(37) attachments	9300.81	4557.35	0.00	5707.49
130.00	(1) attachments	74.75	48.54	0.00	0.00
<b>Totals:</b>		<b>32,881.62</b>	<b>26,276.51</b>	<b>0.00</b>	<b>5,707.64</b>

## Linear Appurtenance Segment Forces (Factored)

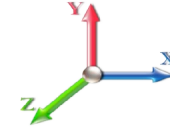
<b>Structure:</b> CT13064-A-SBA	<b>Code:</b> EIA/TIA-222-G	3/17/2020
<b>Site Name:</b> Middletown 2, CT	<b>Exposure:</b> C	
<b>Height:</b> 130.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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**Load Case:** 0.9D + 1.6W 101 mph Wind

**Dead Load Factor** 0.90  
**Wind Load Factor** 1.60



**Iterations** 26

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	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.070	0.000	21.088	0.00	8.69
2.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.070	0.000	21.088	0.00	10.80
4.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.070	0.000	21.088	0.00	8.69
4.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.070	0.000	21.088	0.00	10.80
6.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.071	0.000	21.088	0.00	8.69
6.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.071	0.000	21.088	0.00	10.80
8.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.071	0.000	21.088	0.00	8.69
8.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.071	0.000	21.088	0.00	10.80
10.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.072	0.000	21.088	0.00	8.69
10.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.072	0.000	21.088	0.00	10.80
10.25	2" Conduit	Yes	0.25	0.000	2.00	0.04	0.00	0.072	0.000	21.088	0.00	1.09
10.25	1" Reinforcing plate	Yes	0.25	0.000	1.00	0.02	0.00	0.072	0.000	21.088	0.00	1.35
12.00	2" Conduit	Yes	1.75	0.000	2.00	0.29	0.00	0.072	0.000	21.088	0.00	7.61
12.00	1" Reinforcing plate	Yes	1.75	0.000	1.00	0.15	0.00	0.072	0.000	21.088	0.00	9.45
14.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.073	0.000	21.088	0.00	8.69
14.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.073	0.000	21.088	0.00	10.80
16.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.074	0.000	21.348	0.00	8.69
16.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.074	0.000	21.348	0.00	10.80
18.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.074	0.000	21.884	0.00	8.69
18.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.074	0.000	21.884	0.00	10.80
20.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.075	0.000	22.375	0.00	8.69
20.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.075	0.000	22.375	0.00	10.80
20.50	2" Conduit	Yes	0.50	0.000	2.00	0.08	0.00	0.075	0.000	22.491	0.00	2.17
20.50	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.04	0.00	0.075	0.000	22.491	0.00	2.70
22.00	2" Conduit	Yes	1.50	0.000	2.00	0.25	0.00	0.075	0.000	22.828	0.00	6.52
22.00	1" Reinforcing plate	Yes	1.50	0.000	1.00	0.13	0.00	0.075	0.000	22.828	0.00	8.10
24.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.076	0.000	23.250	0.00	8.69
24.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.076	0.000	23.250	0.00	10.80
26.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.077	0.000	23.645	0.00	8.69
26.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.077	0.000	23.645	0.00	10.80
26.33	2" Conduit	Yes	0.33	0.000	2.00	0.05	0.00	0.077	0.000	23.708	0.00	1.43
26.33	1" Reinforcing plate	Yes	0.33	0.000	1.00	0.03	0.00	0.077	0.000	23.708	0.00	1.78
27.50	2" Conduit	Yes	1.17	0.000	2.00	0.20	0.00	0.077	0.000	23.926	0.00	5.09
27.50	1" Reinforcing plate	Yes	1.17	0.000	1.00	0.10	0.00	0.077	0.000	23.926	0.00	6.32
28.00	2" Conduit	Yes	0.50	0.000	2.00	0.08	0.00	0.077	0.000	24.017	0.00	2.17
28.00	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.04	0.00	0.077	0.000	24.017	0.00	2.70
30.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.078	0.000	24.369	0.00	8.69
30.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.078	0.000	24.369	0.00	10.80
32.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.078	0.000	24.702	0.00	8.69
32.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.078	0.000	24.702	0.00	10.80
34.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.079	0.000	25.019	0.00	8.69
34.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.079	0.000	25.019	0.00	10.80
36.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.080	0.000	25.322	0.00	8.69
36.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.080	0.000	25.322	0.00	10.80
38.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.080	0.000	25.612	0.00	8.69
38.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.080	0.000	25.612	0.00	10.80
40.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.081	0.000	25.890	0.00	8.69

## Linear Appurtenance Segment Forces (Factored)

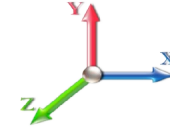
<b>Structure:</b> CT13064-A-SBA	<b>Code:</b> EIA/TIA-222-G	3/17/2020
<b>Site Name:</b> Middletown 2, CT	<b>Exposure:</b> C	
<b>Height:</b> 130.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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**Load Case:** 0.9D + 1.6W 101 mph Wind

**Dead Load Factor** 0.90  
**Wind Load Factor** 1.60



**Iterations** 26

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)
40.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.081	0.000	25.890	0.00	10.80
40.33	2" Conduit	Yes	0.33	0.000	2.00	0.05	0.00	0.081	0.000	25.935	0.00	1.43
40.33	1" Reinforcing plate	Yes	0.33	0.000	1.00	0.03	0.00	0.081	0.000	25.935	0.00	1.78
40.50	2" Conduit	Yes	0.17	0.000	2.00	0.03	0.00	0.082	0.000	25.958	0.00	0.74
40.50	1" Reinforcing plate	Yes	0.17	0.000	1.00	0.01	0.00	0.082	0.000	25.958	0.00	0.92
42.00	2" Conduit	Yes	1.50	0.000	2.00	0.25	0.00	0.082	0.000	26.157	0.00	6.52
42.00	1" Reinforcing plate	Yes	1.50	0.000	1.00	0.13	0.00	0.082	0.000	26.157	0.00	8.10
43.33	2" Conduit	Yes	1.33	0.000	2.00	0.22	0.00	0.082	0.000	26.330	0.00	5.80
43.33	1" Reinforcing plate	Yes	1.33	0.000	1.00	0.11	0.00	0.082	0.000	26.330	0.00	7.20
44.00	2" Conduit	Yes	0.67	0.000	2.00	0.11	0.00	0.083	0.000	26.415	0.00	2.90
44.00	1" Reinforcing plate	Yes	0.67	0.000	1.00	0.06	0.00	0.083	0.000	26.415	0.00	3.60
46.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.083	0.000	26.663	0.00	8.69
46.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.083	0.000	26.663	0.00	10.80
48.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.084	0.000	26.903	0.00	8.69
48.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.084	0.000	26.903	0.00	10.80
50.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.083	0.000	27.135	0.00	8.69
50.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.083	0.000	27.135	0.00	10.80
52.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.084	0.000	27.360	0.00	8.69
52.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.084	0.000	27.360	0.00	10.80
54.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.085	0.000	27.579	0.00	8.69
54.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.085	0.000	27.579	0.00	10.80
56.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.086	0.000	27.790	0.00	8.69
56.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.086	0.000	27.790	0.00	10.80
58.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.087	0.000	27.997	0.00	8.69
58.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.087	0.000	27.997	0.00	10.80
60.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.087	0.000	28.197	0.00	8.69
60.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.087	0.000	28.197	0.00	10.80
60.75	2" Conduit	Yes	0.75	0.000	2.00	0.13	0.00	0.088	0.000	28.271	0.00	3.26
60.75	1" Reinforcing plate	Yes	0.75	0.000	1.00	0.06	0.00	0.088	0.000	28.271	0.00	4.05
62.00	2" Conduit	Yes	1.25	0.000	2.00	0.21	0.00	0.088	0.000	28.392	0.00	5.43
62.00	1" Reinforcing plate	Yes	1.25	0.000	1.00	0.10	0.00	0.088	0.000	28.392	0.00	6.75
64.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.089	0.000	28.583	0.00	8.69
64.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.089	0.000	28.583	0.00	10.80
66.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.090	0.000	28.769	0.00	8.69
66.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.090	0.000	28.769	0.00	10.80
68.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.091	0.000	28.950	0.00	8.69
68.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.091	0.000	28.950	0.00	10.80
70.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.092	0.000	29.127	0.00	8.69
70.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.092	0.000	29.127	0.00	10.80
72.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.092	0.000	29.300	0.00	8.69
72.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.092	0.000	29.300	0.00	10.80
74.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.093	0.000	29.470	0.00	8.69
74.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.093	0.000	29.470	0.00	10.80
76.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.094	0.000	29.636	0.00	8.69
76.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.094	0.000	29.636	0.00	10.80
78.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.095	0.000	29.798	0.00	8.69
78.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.095	0.000	29.798	0.00	10.80

## Linear Appurtenance Segment Forces (Factored)

<b>Structure:</b> CT13064-A-SBA	<b>Code:</b> EIA/TIA-222-G	3/17/2020
<b>Site Name:</b> Middletown 2, CT	<b>Exposure:</b> C	
<b>Height:</b> 130.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II

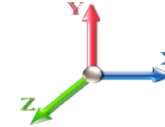


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**Load Case:** 0.9D + 1.6W 101 mph Wind

**Dead Load Factor** 0.90

**Wind Load Factor** 1.60



**Iterations** 26

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)
78.50	2" Conduit	Yes	0.50	0.000	2.00	0.08	0.00	0.096	0.000	29.838	0.00	2.17
78.50	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.04	0.00	0.096	0.000	29.838	0.00	2.70
80.00	2" Conduit	Yes	1.50	0.000	2.00	0.25	0.00	0.096	0.000	29.958	0.00	6.52
80.00	1" Reinforcing plate	Yes	1.50	0.000	1.00	0.13	0.00	0.096	0.000	29.958	0.00	8.10
82.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.081	0.000	30.114	0.00	8.69
82.00	1" Reinforcing plate	Yes	1.00	0.000	1.00	0.08	0.00	0.081	0.000	30.114	0.00	5.40
84.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.065	0.000	30.267	0.00	8.69
86.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.066	0.000	30.417	0.00	8.69
87.42	2" Conduit	Yes	1.42	0.000	2.00	0.24	0.00	0.067	0.000	30.522	0.00	6.16
88.00	2" Conduit	Yes	0.58	0.000	2.00	0.10	0.00	0.067	0.000	30.565	0.00	2.54
90.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.068	0.000	30.710	0.00	8.69
91.33	2" Conduit	Yes	1.33	0.000	2.00	0.22	0.00	0.068	0.000	30.805	0.00	5.80
92.00	2" Conduit	Yes	0.67	0.000	2.00	0.11	0.00	0.068	0.000	30.852	0.00	2.90
94.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.068	0.000	30.992	0.00	8.69
96.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.069	0.000	31.130	0.00	8.69
98.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.070	0.000	31.265	0.00	8.69
100.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.070	0.000	31.399	0.00	8.69
102.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.071	0.000	31.530	0.00	8.69
104.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.072	0.000	31.659	0.00	8.69
106.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.073	0.000	31.786	0.00	8.69
108.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.074	0.000	31.911	0.00	8.69
110.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.074	0.000	32.035	0.00	8.69
112.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.075	0.000	32.157	0.00	8.69
114.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.076	0.000	32.277	0.00	8.69
116.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.077	0.000	32.395	0.00	8.69
118.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.078	0.000	32.512	0.00	8.69
120.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.079	0.000	32.627	0.00	8.69
122.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.111	1.033	32.741	0.00	8.69
124.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.111	1.033	32.853	0.00	8.69
126.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.111	1.033	32.964	0.00	8.69
128.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.111	1.033	33.073	0.00	8.69
129.00	2" Conduit	Yes	1.00	0.000	2.00	0.17	0.00	0.111	1.033	33.128	0.00	4.35
<b>Totals:</b>											<b>0.0</b>	<b>998.2</b>



## Calculated Forces

<b>Structure:</b> CT13064-A-SBA	<b>Code:</b> EIA/TIA-222-G	3/17/2020
<b>Site Name:</b> Middletown 2, CT	<b>Exposure:</b> C	
<b>Height:</b> 130.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II

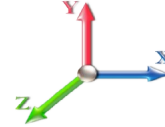


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**Load Case:** 0.9D + 1.6W 101 mph Wind

**Iterations** 26

**Dead Load Factor** 0.90  
**Wind Load Factor** 1.60



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-26.25	-32.90	0.00	-3228.0	0.00	3228.09	2818.94	1409.47	4888.80	2448.04	0.00	0.000	0.000	0.628
2.00	-25.86	-32.77	0.00	-3162.2	0.00	3162.29	2805.89	1402.95	4830.09	2418.63	0.02	-0.091	0.000	0.620
4.00	-25.48	-32.64	0.00	-3096.7	0.00	3096.75	2792.73	1396.36	4771.51	2389.30	0.08	-0.182	0.000	0.612
6.00	-25.10	-32.51	0.00	-3031.4	0.00	3031.47	2779.45	1389.73	4713.08	2360.04	0.17	-0.273	0.000	0.604
8.00	-24.72	-32.38	0.00	-2966.4	0.00	2966.46	2766.06	1383.03	4654.80	2330.86	0.31	-0.364	0.000	0.596
10.00	-24.37	-32.23	0.00	-2901.7	0.00	2901.71	2752.56	1376.28	4596.67	2301.75	0.48	-0.454	0.000	0.588
10.25	-24.30	-32.23	0.00	-2893.6	0.00	2893.65	2750.86	1375.43	4589.41	2298.12	0.50	-0.465	0.000	0.615
12.00	-23.97	-32.11	0.00	-2837.2	0.00	2837.26	2738.94	1369.47	4538.70	2272.72	0.69	-0.548	0.000	0.608
14.00	-23.59	-31.98	0.00	-2773.0	0.00	2773.03	2725.20	1362.60	4480.89	2243.77	0.94	-0.642	0.000	0.599
16.00	-23.22	-31.85	0.00	-2709.0	0.00	2709.06	2711.35	1355.68	4423.25	2214.91	1.23	-0.735	0.000	0.590
18.00	-22.85	-31.72	0.00	-2645.3	0.00	2645.36	2697.39	1348.70	4365.78	2186.13	1.56	-0.828	0.000	0.581
20.00	-22.51	-31.56	0.00	-2581.9	0.00	2581.93	2683.32	1341.66	4308.48	2157.44	1.92	-0.921	0.000	0.572
20.50	-22.40	-31.54	0.00	-2566.1	0.00	2566.15	2679.78	1339.89	4294.19	2150.28	2.02	-0.944	0.000	0.570
22.00	-22.13	-31.43	0.00	-2518.8	0.00	2518.84	2669.12	1334.56	4251.37	2128.84	2.33	-1.013	0.000	0.563
24.00	-21.77	-31.29	0.00	-2455.9	0.00	2455.98	2654.82	1327.41	4194.44	2100.34	2.77	-1.105	0.000	0.554
26.00	-21.43	-31.12	0.00	-2393.4	0.00	2393.40	2640.40	1320.20	4137.70	2071.92	3.26	-1.196	0.000	0.545
26.33	-21.36	-31.11	0.00	-2383.1	0.00	2383.13	2638.01	1319.00	4128.35	2067.24	3.34	-1.211	0.000	0.477
27.50	-21.16	-31.01	0.00	-2346.7	0.00	2346.74	2629.51	1314.76	4095.27	2050.68	3.64	-1.258	0.000	0.654
28.00	-21.05	-30.99	0.00	-2331.2	0.00	2331.24	2625.87	1312.93	4081.15	2043.61	3.78	-1.285	0.000	0.651
30.00	-20.69	-30.84	0.00	-2269.2	0.00	2269.25	2611.22	1305.61	4024.80	2015.39	4.34	-1.395	0.000	0.640
32.00	-20.33	-30.69	0.00	-2207.5	0.00	2207.57	2596.46	1298.23	3968.65	1987.27	4.95	-1.503	0.000	0.629
34.00	-19.97	-30.54	0.00	-2146.1	0.00	2146.18	2581.58	1290.79	3912.71	1959.26	5.60	-1.611	0.000	0.618
36.00	-19.62	-30.39	0.00	-2085.1	0.00	2085.10	2566.59	1283.29	3856.98	1931.36	6.30	-1.718	0.000	0.607
38.00	-19.27	-30.23	0.00	-2024.3	0.00	2024.32	2551.48	1275.74	3801.46	1903.56	7.04	-1.824	0.000	0.595
40.00	-18.95	-30.06	0.00	-1963.8	0.00	1963.86	2536.26	1268.13	3746.17	1875.87	7.83	-1.929	0.000	0.583
40.33	-18.89	-30.03	0.00	-1953.9	0.00	1953.94	2533.74	1266.87	3737.07	1871.31	7.96	-1.947	0.000	0.709
40.50	-18.84	-30.03	0.00	-1948.8	0.00	1948.83	2532.44	1266.22	3732.38	1868.96	8.03	-1.958	0.000	0.708
42.00	-18.57	-29.92	0.00	-1903.7	0.00	1903.78	2520.93	1260.46	3691.10	1848.29	8.66	-2.053	0.000	0.698
43.33	-18.35	-29.81	0.00	-1863.8	0.00	1863.89	2510.64	1255.32	3654.51	1829.97	9.25	-2.138	0.000	0.688
44.00	-18.15	-29.77	0.00	-1844.0	0.00	1844.01	2505.48	1252.74	3636.25	1820.83	9.55	-2.180	0.000	0.678
46.00	-17.63	-29.60	0.00	-1784.4	0.00	1784.48	2489.92	1244.96	3581.64	1793.48	10.49	-2.304	0.000	0.664
48.00	-17.11	-29.43	0.00	-1725.2	0.00	1725.27	2484.44	1244.96	3581.64	1793.48	10.49	-2.304	0.000	0.664
50.00	-16.80	-29.28	0.00	-1666.4	0.00	1666.40	2484.56	1244.96	3581.64	1793.48	10.49	-2.304	0.000	0.664
52.00	-16.50	-29.12	0.00	-1607.8	0.00	1607.85	2484.56	1244.96	3581.64	1793.48	10.49	-2.304	0.000	0.664
54.00	-16.19	-28.96	0.00	-1549.6	0.00	1549.61	2484.45	1244.96	3581.64	1793.48	10.49	-2.304	0.000	0.664
56.00	-15.89	-28.80	0.00	-1491.7	0.00	1491.70	2484.45	1244.96	3581.64	1793.48	10.49	-2.304	0.000	0.664
58.00	-15.60	-28.63	0.00	-1434.1	0.00	1434.11	2484.45	1244.96	3581.64	1793.48	10.49	-2.304	0.000	0.664
60.00	-15.32	-28.46	0.00	-1376.8	0.00	1376.85	2484.45	1244.96	3581.64	1793.48	10.49	-2.304	0.000	0.664
60.75	-15.20	-28.40	0.00	-1355.5	0.00	1355.50	2484.45	1244.96	3581.64	1793.48	10.49	-2.304	0.000	0.664
62.00	-15.01	-28.30	0.00	-1320.0	0.00	1320.00	2484.45	1244.96	3581.64	1793.48	10.49	-2.304	0.000	0.664
64.00	-14.73	-28.14	0.00	-1263.3	0.00	1263.39	2484.45	1244.96	3581.64	1793.48	10.49	-2.304	0.000	0.664
66.00	-14.44	-27.97	0.00	-1207.1	0.00	1207.12	2484.45	1244.96	3581.64	1793.48	10.49	-2.304	0.000	0.664
68.00	-14.16	-27.80	0.00	-1151.1	0.00	1151.18	2484.45	1244.96	3581.64	1793.48	10.49	-2.304	0.000	0.664
70.00	-13.89	-27.63	0.00	-1095.5	0.00	1095.58	2484.45	1244.96	3581.64	1793.48	10.49	-2.304	0.000	0.664
72.00	-13.61	-27.46	0.00	-1040.3	0.00	1040.32	2484.45	1244.96	3581.64	1793.48	10.49	-2.304	0.000	0.664
74.00	-13.34	-27.29	0.00	-985.40	0.00	985.40	2484.45	1244.96	3581.64	1793.48	10.49	-2.304	0.000	0.664
76.00	-13.08	-27.12	0.00	-930.82	0.00	930.82	2484.45	1244.96	3581.64	1793.48	10.49	-2.304	0.000	0.664
78.00	-12.83	-26.94	0.00	-876.59	0.00	876.59	2484.45	1244.96	3581.64	1793.48	10.49	-2.304	0.000	0.664

## Calculated Forces

<b>Structure:</b> CT13064-A-SBA	<b>Code:</b> EIA/TIA-222-G	3/17/2020
<b>Site Name:</b> Middletown 2, CT	<b>Exposure:</b> C	
<b>Height:</b> 130.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Page:</b> 29
	<b>Struct Class:</b> II	



78.50	-12.76	-26.90	0.00	-863.12	0.00	863.12	1691.33	845.67	2123.13	1063.14	33.05	-4.245	0.000	0.477
78.50	-12.76	-26.90	0.00	-863.12	0.00	863.12	1691.33	845.67	2123.13	1063.14	33.05	-4.245	0.000	0.477
80.00	-12.54	-26.78	0.00	-822.77	0.00	822.77	1682.63	841.31	2095.97	1049.54	34.40	-4.318	0.000	0.792
82.00	-12.26	-26.62	0.00	-769.22	0.00	769.22	1670.92	835.46	2059.89	1031.48	36.24	-4.480	0.000	0.754
84.00	-11.99	-26.46	0.00	-715.98	0.00	715.98	1659.09	829.55	2023.98	1013.49	38.15	-4.636	0.000	0.715
86.00	-11.74	-26.29	0.00	-663.07	0.00	663.07	1647.16	823.58	1988.23	995.59	40.12	-4.785	0.000	0.674
87.42	-11.57	-26.17	0.00	-625.82	0.00	625.82	1638.63	819.32	1963.01	982.97	41.56	-4.887	0.000	0.645
88.00	-11.44	-26.13	0.00	-610.55	0.00	610.55	1635.10	817.55	1952.65	977.78	42.16	-4.929	0.000	0.632
90.00	-8.74	-20.21	0.00	-558.30	0.00	558.30	1622.94	811.47	1917.25	960.05	44.25	-5.063	0.000	0.588
91.33	-8.53	-20.08	0.00	-531.35	0.00	531.35	1099.39	549.70	1312.06	657.00	45.67	-5.150	0.000	0.818
92.00	-8.44	-20.04	0.00	-517.96	0.00	517.96	1097.24	548.62	1304.79	653.36	46.39	-5.192	0.000	0.802
94.00	-8.20	-19.77	0.00	-477.89	0.00	477.89	1090.71	545.35	1282.99	642.45	48.60	-5.349	0.000	0.753
96.00	-8.00	-19.61	0.00	-438.35	0.00	438.35	1084.06	542.03	1261.23	631.55	50.87	-5.497	0.000	0.703
98.00	-7.81	-19.44	0.00	-399.14	0.00	399.14	1077.30	538.65	1239.51	620.68	53.20	-5.637	0.000	0.652
100.00	-6.39	-15.86	0.00	-360.26	0.00	360.26	1070.43	535.22	1217.83	609.82	55.59	-5.768	0.000	0.598
102.00	-6.23	-15.69	0.00	-328.55	0.00	328.55	1063.44	531.72	1196.21	598.99	58.03	-5.892	0.000	0.555
104.00	-6.07	-15.52	0.00	-297.17	0.00	297.17	1056.34	528.17	1174.63	588.19	60.52	-6.007	0.000	0.512
106.00	-5.91	-15.35	0.00	-266.14	0.00	266.14	1049.12	524.56	1153.11	577.41	63.06	-6.115	0.000	0.467
108.00	-5.76	-15.18	0.00	-235.45	0.00	235.45	1041.79	520.90	1131.65	566.67	65.63	-6.215	0.000	0.422
110.00	-4.39	-11.16	0.00	-205.10	0.00	205.10	1034.34	517.17	1110.26	555.96	68.25	-6.305	0.000	0.374
112.00	-4.28	-10.99	0.00	-182.77	0.00	182.77	1026.79	513.39	1088.94	545.28	70.91	-6.388	0.000	0.340
114.00	-4.17	-10.82	0.00	-160.79	0.00	160.79	1019.11	509.56	1067.70	534.64	73.60	-6.463	0.000	0.305
116.00	-4.06	-10.66	0.00	-139.14	0.00	139.14	1011.32	505.66	1046.53	524.04	76.31	-6.532	0.000	0.270
118.00	-3.96	-10.49	0.00	-117.83	0.00	117.83	1003.42	501.71	1025.45	513.49	79.06	-6.593	0.000	0.234
120.00	-3.86	-10.32	0.00	-96.85	0.00	96.85	995.40	497.70	1004.45	502.97	81.82	-6.646	0.000	0.197
120.00	-3.86	-10.32	0.00	-96.85	0.00	96.85	735.22	367.61	535.89	335.79	81.82	-6.646	0.000	0.294
122.00	-3.75	-10.21	0.00	-76.20	0.00	76.20	735.22	367.61	535.89	335.79	84.61	-6.690	0.000	0.233
124.00	-3.65	-10.09	0.00	-55.78	0.00	55.78	735.22	367.61	535.89	335.79	87.43	-6.758	0.000	0.172
126.00	-3.55	-9.98	0.00	-35.60	0.00	35.60	735.22	367.61	535.89	335.79	90.26	-6.806	0.000	0.112
128.00	-3.46	-9.86	0.00	-15.64	0.00	15.64	735.22	367.61	535.89	335.79	93.11	-6.832	0.000	0.052
129.00	-0.04	-0.08	0.00	-0.08	0.00	0.08	735.22	367.61	535.89	335.79	94.54	-6.838	0.000	0.000
130.00	0.00	-0.07	0.00	0.00	0.00	0.00	735.22	367.61	535.89	335.79	95.97	-6.838	0.000	0.000

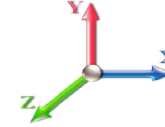
## Wind Loading - Shaft

<b>Structure:</b> CT13064-A-SBA	<b>Code:</b> EIA/TIA-222-G	3/17/2020
<b>Site Name:</b> Middletown 2, CT	<b>Exposure:</b> C	
<b>Height:</b> 130.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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

**Dead Load Factor** 1.20  
**Wind Load Factor** 1.00



**Iterations** 25

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00	RB1 RB2	1.00	0.85	5.168	5.68	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
2.00		1.00	0.85	5.168	5.68	0.00	1.200	1.133	2.00	7.544	9.05	51.5	121.8	462.2
4.00		1.00	0.85	5.168	5.68	0.00	1.200	1.215	2.00	7.519	9.02	51.3	129.8	467.8
6.00		1.00	0.85	5.168	5.68	0.00	1.200	1.265	2.00	7.483	8.98	51.0	134.4	469.8
8.00		1.00	0.85	5.168	5.68	0.00	1.200	1.302	2.00	7.443	8.93	50.8	137.4	470.3
10.00		1.00	0.85	5.168	5.68	0.00	1.200	1.331	2.00	7.400	8.88	50.5	139.6	470.0
10.25	RT2 RB3 RB4	1.00	0.85	5.168	5.68	0.00	1.200	1.334	0.25	0.921	1.11	6.3	17.5	58.6
12.00		1.00	0.85	5.168	5.68	0.00	1.200	1.356	1.75	6.433	7.72	43.9	123.5	410.3
14.00		1.00	0.85	5.168	5.68	0.00	1.200	1.377	2.00	7.310	8.77	49.9	142.4	467.7
16.00		1.00	0.86	5.232	5.76	0.00	1.200	1.395	2.00	7.263	8.72	50.2	143.3	466.1
18.00		1.00	0.88	5.363	5.90	0.00	1.200	1.412	2.00	7.216	8.66	51.1	143.9	464.3
20.00		1.00	0.90	5.483	6.03	0.00	1.200	1.427	2.00	7.169	8.60	51.9	144.4	462.2
20.50	RT1 RB5	1.00	0.91	5.512	6.06	0.00	1.200	1.430	0.50	1.784	2.14	13.0	36.1	115.2
22.00		1.00	0.92	5.595	6.15	0.00	1.200	1.440	1.50	5.336	6.40	39.4	108.6	344.8
24.00		1.00	0.94	5.698	6.27	0.00	1.200	1.453	2.00	7.072	8.49	53.2	144.9	457.7
26.00		1.00	0.95	5.795	6.37	0.00	1.200	1.465	2.00	7.024	8.43	53.7	145.0	455.3
26.33	RB6	1.00	0.96	5.810	6.39	0.00	1.200	1.467	0.33	1.154	1.38	8.9	23.9	74.9
27.50	RT3 RT4	1.00	0.96	5.864	6.45	0.00	1.200	1.473	1.17	4.081	4.90	31.6	84.8	264.9
28.00		1.00	0.97	5.886	6.47	0.00	1.200	1.476	0.50	1.739	2.09	13.5	36.2	113.0
30.00		1.00	0.98	5.972	6.57	0.00	1.200	1.486	2.00	6.926	8.31	54.6	144.9	450.1
32.00		1.00	1.00	6.054	6.66	0.00	1.200	1.495	2.00	6.876	8.25	54.9	144.7	447.4
34.00		1.00	1.01	6.132	6.74	0.00	1.200	1.504	2.00	6.827	8.19	55.3	144.5	444.7
36.00		1.00	1.02	6.206	6.83	0.00	1.200	1.513	2.00	6.777	8.13	55.5	144.2	441.9
38.00		1.00	1.03	6.277	6.90	0.00	1.200	1.521	2.00	6.727	8.07	55.7	143.8	439.0
40.00		1.00	1.04	6.345	6.98	0.00	1.200	1.529	2.00	6.677	8.01	55.9	143.4	436.1
40.33	RT6	1.00	1.05	6.356	6.99	0.00	1.200	1.530	0.33	1.097	1.32	9.2	23.6	71.7
40.50	RT5 RB7	1.00	1.05	6.362	7.00	0.00	1.200	1.531	0.17	0.564	0.68	4.7	12.2	36.9
42.00		1.00	1.05	6.410	7.05	0.00	1.200	1.537	1.50	4.966	5.96	42.0	107.2	324.6
43.33	Bot - Section 2	1.00	1.06	6.453	7.10	0.00	1.200	1.541	1.33	4.390	5.27	37.4	95.1	287.1
44.00		1.00	1.06	6.474	7.12	0.00	1.200	1.544	0.67	2.215	2.66	18.9	48.1	221.4
46.00		1.00	1.07	6.534	7.19	0.00	1.200	1.551	2.00	6.611	7.93	57.0	143.8	660.7
48.00	Top - Section 1	1.00	1.08	6.593	7.25	0.00	1.200	1.557	2.00	6.561	7.87	57.1	143.3	655.6
50.00		1.00	1.09	6.650	7.32	0.00	1.200	1.564	2.00	6.511	7.81	57.2	142.7	370.4
52.00		1.00	1.10	6.705	7.38	0.00	1.200	1.570	2.00	6.460	7.75	57.2	142.0	367.7
54.00		1.00	1.11	6.759	7.43	0.00	1.200	1.576	2.00	6.410	7.69	57.2	141.4	365.1
56.00		1.00	1.12	6.811	7.49	0.00	1.200	1.581	2.00	6.359	7.63	57.2	140.7	362.4
58.00		1.00	1.13	6.861	7.55	0.00	1.200	1.587	2.00	6.308	7.57	57.1	140.0	359.7
60.00		1.00	1.14	6.910	7.60	0.00	1.200	1.592	2.00	6.257	7.51	57.1	139.3	356.9
60.75	RT7 RB8	1.00	1.14	6.928	7.62	0.00	1.200	1.594	0.75	2.333	2.80	21.3	52.1	133.2
62.00		1.00	1.14	6.958	7.65	0.00	1.200	1.598	1.25	3.873	4.65	35.6	86.6	221.1
64.00		1.00	1.15	7.005	7.71	0.00	1.200	1.603	2.00	6.156	7.39	56.9	137.7	351.4
66.00		1.00	1.16	7.050	7.76	0.00	1.200	1.608	2.00	6.105	7.33	56.8	137.0	348.6
68.00		1.00	1.17	7.095	7.80	0.00	1.200	1.612	2.00	6.054	7.26	56.7	136.1	345.7
70.00		1.00	1.17	7.138	7.85	0.00	1.200	1.617	2.00	6.003	7.20	56.6	135.3	342.9
72.00		1.00	1.18	7.181	7.90	0.00	1.200	1.622	2.00	5.952	7.14	56.4	134.5	340.0
74.00		1.00	1.19	7.222	7.94	0.00	1.200	1.626	2.00	5.901	7.08	56.3	133.6	337.2
76.00		1.00	1.19	7.263	7.99	0.00	1.200	1.631	2.00	5.850	7.02	56.1	132.7	334.3

## Wind Loading - Shaft

<b>Structure:</b> CT13064-A-SBA	<b>Code:</b> EIA/TIA-222-G	3/17/2020
<b>Site Name:</b> Middletown 2, CT	<b>Exposure:</b> C	
<b>Height:</b> 130.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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78.00	1.00	1.20	7.303	8.03	0.00	1.200	1.635	2.00	5.798	6.96	55.9	131.8	331.3
78.50 RT8	1.00	1.20	7.313	8.04	0.00	1.200	1.636	0.50	1.441	1.73	13.9	32.9	82.5
80.00	1.00	1.21	7.342	8.08	0.00	1.200	1.639	1.50	4.306	5.17	41.7	98.2	246.1
82.00	1.00	1.21	7.380	8.12	0.00	1.200	1.643	2.00	5.696	6.84	55.5	130.0	325.5
84.00	1.00	1.22	7.418	8.16	0.00	1.200	1.647	2.00	5.645	6.77	55.3	129.0	322.5
86.00	1.00	1.23	7.454	8.20	0.00	1.200	1.651	2.00	5.594	6.71	55.0	128.1	319.6
87.42 Bot - Section 3	1.00	1.23	7.480	8.23	0.00	1.200	1.653	1.42	3.931	4.72	38.8	90.2	224.7
88.00	1.00	1.23	7.491	8.24	0.00	1.200	1.655	0.58	1.630	1.96	16.1	37.5	134.5
90.00 Appurtenance(s)	1.00	1.24	7.526	8.28	0.00	1.200	1.658	2.00	5.554	6.67	55.2	127.7	457.9
91.33 Top - Section 2	1.00	1.24	7.549	8.30	0.00	1.200	1.661	1.33	3.674	4.41	36.6	84.7	302.8
92.00	1.00	1.24	7.561	8.32	0.00	1.200	1.662	0.67	1.829	2.19	18.2	42.2	89.1
94.00 Appurtenance(s)	1.00	1.25	7.595	8.35	0.00	1.200	1.666	2.00	5.452	6.54	54.7	125.7	265.4
96.00	1.00	1.25	7.629	8.39	0.00	1.200	1.669	2.00	5.400	6.48	54.4	124.7	262.9
98.00	1.00	1.26	7.662	8.43	0.00	1.200	1.672	2.00	5.349	6.42	54.1	123.7	260.4
100.00 Appurtenance(s)	1.00	1.27	7.695	8.46	0.00	1.200	1.676	2.00	5.297	6.36	53.8	122.6	257.8
102.00	1.00	1.27	7.727	8.50	0.00	1.200	1.679	2.00	5.246	6.30	53.5	121.6	255.3
104.00	1.00	1.28	7.759	8.53	0.00	1.200	1.682	2.00	5.195	6.23	53.2	120.6	252.7
106.00	1.00	1.28	7.790	8.57	0.00	1.200	1.686	2.00	5.143	6.17	52.9	119.5	250.2
108.00	1.00	1.29	7.821	8.60	0.00	1.200	1.689	2.00	5.092	6.11	52.6	118.4	247.6
110.00 Appurtenance(s)	1.00	1.29	7.851	8.64	0.00	1.200	1.692	2.00	5.040	6.05	52.2	117.4	245.0
112.00	1.00	1.30	7.881	8.67	0.00	1.200	1.695	2.00	4.988	5.99	51.9	116.3	242.4
114.00	1.00	1.30	7.910	8.70	0.00	1.200	1.698	2.00	4.937	5.92	51.5	115.2	239.8
116.00	1.00	1.31	7.939	8.73	0.00	1.200	1.701	2.00	4.885	5.86	51.2	114.1	237.2
118.00	1.00	1.31	7.968	8.76	0.00	1.200	1.704	2.00	4.834	5.80	50.8	113.0	234.6
120.00 Top - Section 3	1.00	1.32	7.996	8.80	0.00	1.200	1.707	2.00	4.782	5.74	50.5	111.9	232.0
122.00	1.00	1.32	8.024	8.83	0.00	1.240 *	1.710	2.00	3.570	4.43	39.1	82.3	196.2
124.00	1.00	1.32	8.051	8.86	0.00	1.240 *	1.712	2.00	3.571	4.43	39.2	82.5	196.3
126.00	1.00	1.33	8.079	8.89	0.00	1.240 *	1.715	2.00	3.572	4.43	39.4	82.6	196.5
128.00	1.00	1.33	8.105	8.92	0.00	1.240 *	1.718	2.00	3.573	4.43	39.5	82.8	196.6
129.00 Appurtenance(s)	1.00	1.34	8.119	8.93	0.00	1.240 *	1.719	1.00	1.787	2.22	19.8	41.4	98.3
130.00 Appurtenance(s)	1.00	1.34	8.132	8.95	0.00	1.200	1.720	1.00	1.787	2.14	19.2	41.5	98.4
<b>Totals:</b>								<b>130.00</b>			<b>3,451.1</b>		<b>23,650.8</b>

\* Cf Adjusted by Linear Load Ra Effect

## Discrete Appurtenance Forces

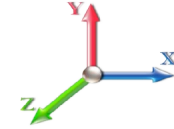
<b>Structure:</b> CT13064-A-SBA	<b>Code:</b> EIA/TIA-222-G	3/17/2020
<b>Site Name:</b> Middletown 2, CT	<b>Exposure:</b> C	
<b>Height:</b> 130.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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

**Dead Load Factor** 1.20  
**Wind Load Factor** 1.00



**Iterations** 25

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	130.00	6' Lightning rod	1	8.132	8.945	1.00	1.00	1.45	38.28	0.000	0.000	12.99	0.00	0.00
2	129.00	RRUS 32	6	8.132	8.945	0.50	0.75	6.69	1134.58	0.000	1.000	59.80	0.00	59.80
3	129.00	MTC3607 Platform + HR	1	8.119	8.931	1.00	1.00	78.49	3212.91	0.000	0.000	700.98	0.00	0.00
4	129.00	PRK-1245 (kicker kit)	1	8.119	8.931	1.00	1.00	19.30	782.49	0.000	0.000	172.35	0.00	0.00
5	129.00	Angle Reinforcement	1	8.119	8.931	1.00	1.00	11.38	842.25	0.000	0.000	101.66	0.00	0.00
6	129.00	OPA-65R-LCUU-H6	3	8.132	8.945	0.61	0.75	19.99	816.66	0.000	1.000	178.80	0.00	178.80
7	129.00	QS66512-2	3	8.132	8.945	0.70	0.75	19.62	894.61	0.000	1.000	175.47	0.00	175.47
8	129.00	OPA65R-KE6D	6	8.132	8.945	0.56	0.75	47.28	1832.06	0.000	1.000	422.90	0.00	422.90
9	129.00	RRUS 4478 B14	3	8.132	8.945	0.50	0.75	3.26	308.18	0.000	1.000	29.13	0.00	29.13
10	129.00	B2 B66A 8843	3	8.132	8.945	0.50	0.75	3.24	353.98	0.000	1.000	28.97	0.00	28.97
11	129.00	4449 B5/B12	3	8.132	8.945	0.50	0.75	3.78	372.54	0.000	1.000	33.84	0.00	33.84
12	129.00	RRUS E2 B29	3	8.132	8.945	0.50	0.75	5.79	351.90	0.000	1.000	51.82	0.00	51.82
13	129.00	DC6-48-60-18-8F	2	8.132	8.945	0.75	0.75	2.03	162.72	0.000	1.000	18.13	0.00	18.13
14	129.00	DC6-48-60-0-8C	2	8.132	8.945	0.38	0.75	4.24	222.56	0.000	1.000	37.91	0.00	37.91
15	110.00	T-Arm (Round)	3	7.851	8.636	0.56	0.75	24.92	1760.61	0.000	0.000	215.21	0.00	0.00
16	110.00	DB-T1-6Z-8AB-OZ	2	7.851	8.636	0.80	0.80	9.03	322.52	0.000	0.000	78.00	0.00	0.00
17	110.00	B4 RRH2X60-4R	3	7.851	8.636	0.54	0.80	6.72	388.05	0.000	0.000	58.00	0.00	0.00
18	110.00	B13 RRH4X30-4R	3	7.851	8.636	0.54	0.80	4.49	341.19	0.000	0.000	38.79	0.00	0.00
19	110.00	SBNHH-1D65B	6	7.851	8.636	0.66	0.80	37.07	1462.67	0.000	0.000	320.12	0.00	0.00
20	110.00	CBC721-DF	3	7.836	8.619	0.54	0.80	1.50	35.51	0.000	-1.000	12.95	0.00	-12.95
21	110.00	CBC721-DF	3	7.866	8.652	0.54	0.80	1.50	35.51	0.000	1.000	13.00	0.00	13.00
22	110.00	RRH2X60-1900A-4R	3	7.851	8.636	0.54	0.80	3.99	364.99	0.000	0.000	34.48	0.00	0.00
23	100.00	LNx-6515DS-A1M	3	7.695	8.464	0.67	0.80	29.45	653.11	0.000	0.000	249.26	0.00	0.00
24	100.00	AIR 21, 1.3M, B2A B4P	3	7.695	8.464	0.66	0.80	14.22	812.18	0.000	0.000	120.40	0.00	0.00
25	100.00	AIR 21, 1.3M, B4A B2P	3	7.695	8.464	0.66	0.80	14.22	808.22	0.000	0.000	120.40	0.00	0.00
26	100.00	782 11056	3	7.695	8.464	0.66	0.80	0.81	7.02	0.000	0.000	6.84	0.00	0.00
27	100.00	T-Arm (Round)	3	7.695	8.464	0.56	0.75	24.81	1753.86	0.000	0.000	210.02	0.00	0.00
28	94.00	1'4"x6.5"x6" Surge	1	7.595	8.355	0.80	0.80	2.49	143.60	0.000	0.000	20.80	0.00	0.00
29	90.00	ALU - 800 MHz - RRU	6	7.526	8.279	0.52	0.75	11.11	676.66	0.000	0.000	91.94	0.00	0.00
30	90.00	ALU - 1900MHz - RRU	3	7.526	8.279	0.52	0.75	7.95	375.98	0.000	0.000	65.82	0.00	0.00
31	90.00	Andrew - VHLP2-11	2	7.526	8.279	1.00	1.00	11.78	194.77	0.000	0.000	97.54	0.00	0.00
32	90.00	F3P-10W	1	7.526	8.279	1.00	1.00	113.58	3917.00	0.000	0.000	940.32	0.00	0.00
33	90.00	NNVV-65B-R4	3	7.526	8.279	0.55	0.75	22.73	895.25	0.000	0.000	188.20	0.00	0.00
34	90.00	AAHC	3	7.526	8.279	0.56	0.75	8.41	739.50	0.000	0.000	69.66	0.00	0.00

**Totals:** 27,013.95

**4,976.53**

## Total Applied Force Summary

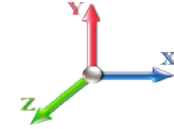
<b>Structure:</b> CT13064-A-SBA	<b>Code:</b> EIA/TIA-222-G	3/17/2020
<b>Site Name:</b> Middletown 2, CT	<b>Exposure:</b> C	
<b>Height:</b> 130.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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

**Dead Load Factor** 1.20  
**Wind Load Factor** 1.00



**Iterations** 25

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
2.00		51.46	593.86	0.00	0.00
4.00		51.29	601.59	0.00	0.00
6.00		51.05	605.02	0.00	0.00
8.00		50.77	606.57	0.00	0.00
10.00		50.48	607.06	0.00	0.00
10.25		6.29	75.75	0.00	0.00
12.00		43.89	530.86	0.00	0.00
14.00		49.87	606.15	0.00	0.00
16.00		50.16	605.08	0.00	0.00
18.00		51.09	603.71	0.00	0.00
20.00		51.89	602.11	0.00	0.00
20.50		12.98	150.18	0.00	0.00
22.00		39.40	450.01	0.00	0.00
24.00		53.19	598.37	0.00	0.00
26.00		53.73	596.28	0.00	0.00
26.33		8.85	98.15	0.00	0.00
27.50		31.59	347.56	0.00	0.00
28.00		13.51	148.28	0.00	0.00
30.00		54.60	591.76	0.00	0.00
32.00		54.95	589.35	0.00	0.00
34.00		55.25	586.87	0.00	0.00
36.00		55.52	584.31	0.00	0.00
38.00		55.74	581.68	0.00	0.00
40.00		55.93	578.99	0.00	0.00
40.33		9.20	95.29	0.00	0.00
40.50		4.74	49.06	0.00	0.00
42.00		42.02	431.95	0.00	0.00
43.33		37.39	382.65	0.00	0.00
44.00		18.93	269.20	0.00	0.00
46.00		57.03	804.28	0.00	0.00
48.00		57.10	799.39	0.00	0.00
50.00		57.15	514.38	0.00	0.00
52.00		57.18	511.93	0.00	0.00
54.00		57.18	509.45	0.00	0.00
56.00		57.17	506.93	0.00	0.00
58.00		57.13	504.39	0.00	0.00
60.00		57.08	501.81	0.00	0.00
60.75		21.34	187.58	0.00	0.00
62.00		35.57	311.77	0.00	0.00
64.00		56.92	496.58	0.00	0.00
66.00		56.82	493.93	0.00	0.00
68.00		56.70	491.25	0.00	0.00
70.00		56.56	488.55	0.00	0.00
72.00		56.42	485.83	0.00	0.00
74.00		56.25	483.09	0.00	0.00
76.00		56.08	480.34	0.00	0.00

## Total Applied Force Summary

<b>Structure:</b> CT13064-A-SBA	<b>Code:</b> EIA/TIA-222-G	3/17/2020
<b>Site Name:</b> Middletown 2, CT	<b>Exposure:</b> C	
<b>Height:</b> 130.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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78.00		55.90	477.56	0.00	0.00
78.50		13.91	119.03	0.00	0.00
80.00		41.73	355.88	0.00	0.00
82.00		55.49	456.01	0.00	0.00
84.00		55.27	437.18	0.00	0.00
86.00		55.04	434.29	0.00	0.00
87.42		38.81	305.95	0.00	0.00
88.00		16.11	167.97	0.00	0.00
90.00	(18) attachments	1508.67	7371.88	0.00	0.00
91.33		36.62	372.75	0.00	0.00
92.00		18.25	124.09	0.00	0.00
94.00	(1) attachments	75.46	513.95	0.00	0.00
96.00		54.38	367.89	0.00	0.00
98.00		54.10	365.42	0.00	0.00
100.00	(15) attachments	760.73	4397.35	0.00	0.00
102.00		53.51	342.84	0.00	0.00
104.00		53.20	340.34	0.00	0.00
106.00		52.88	337.83	0.00	0.00
108.00		52.56	335.31	0.00	0.00
110.00	(26) attachments	822.78	5043.84	0.00	0.05
112.00		51.89	295.02	0.00	0.00
114.00		51.55	292.47	0.00	0.00
116.00		51.20	289.91	0.00	0.00
118.00		50.84	287.35	0.00	0.00
120.00		50.47	284.78	0.00	0.00
122.00		39.07	249.05	0.00	0.00
124.00		39.21	249.24	0.00	0.00
126.00		39.36	249.43	0.00	0.00
128.00		39.50	249.62	0.00	0.00
129.00	(37) attachments	2031.56	11412.30	0.00	1036.78
130.00	(1) attachments	32.17	136.66	0.00	0.00
	<b>Totals:</b>	<b>8,427.64</b>	<b>58,402.41</b>	<b>0.00</b>	<b>1,036.83</b>



## Linear Appurtenance Segment Forces (Factored)

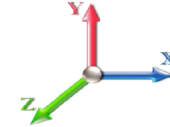
<b>Structure:</b> CT13064-A-SBA	<b>Code:</b> EIA/TIA-222-G	3/17/2020
<b>Site Name:</b> Middletown 2, CT	<b>Exposure:</b> C	
<b>Height:</b> 130.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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

**Dead Load Factor**    1.20  
**Wind Load Factor**    1.00



**Iterations**    25

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	2" Conduit	Yes	2.00	0.000	2.00	0.71	0.00	0.070	0.000	5.168	0.00	27.31
2.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.54	0.00	0.070	0.000	5.168	0.00	25.26
4.00	2" Conduit	Yes	2.00	0.000	2.00	0.74	0.00	0.070	0.000	5.168	0.00	28.54
4.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.57	0.00	0.070	0.000	5.168	0.00	26.23
6.00	2" Conduit	Yes	2.00	0.000	2.00	0.75	0.00	0.071	0.000	5.168	0.00	29.31
6.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.59	0.00	0.071	0.000	5.168	0.00	26.85
8.00	2" Conduit	Yes	2.00	0.000	2.00	0.77	0.00	0.071	0.000	5.168	0.00	29.89
8.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.60	0.00	0.071	0.000	5.168	0.00	27.31
10.00	2" Conduit	Yes	2.00	0.000	2.00	0.78	0.00	0.072	0.000	5.168	0.00	30.35
10.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.61	0.00	0.072	0.000	5.168	0.00	27.68
10.25	2" Conduit	Yes	0.25	0.000	2.00	0.10	0.00	0.072	0.000	5.168	0.00	3.80
10.25	1" Reinforcing plate	Yes	0.25	0.000	1.00	0.08	0.00	0.072	0.000	5.168	0.00	3.47
12.00	2" Conduit	Yes	1.75	0.000	2.00	0.69	0.00	0.072	0.000	5.168	0.00	26.90
12.00	1" Reinforcing plate	Yes	1.75	0.000	1.00	0.54	0.00	0.072	0.000	5.168	0.00	24.49
14.00	2" Conduit	Yes	2.00	0.000	2.00	0.79	0.00	0.073	0.000	5.168	0.00	31.08
14.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.63	0.00	0.073	0.000	5.168	0.00	28.27
16.00	2" Conduit	Yes	2.00	0.000	2.00	0.80	0.00	0.074	0.000	5.232	0.00	31.37
16.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.63	0.00	0.074	0.000	5.232	0.00	28.51
18.00	2" Conduit	Yes	2.00	0.000	2.00	0.80	0.00	0.074	0.000	5.363	0.00	31.64
18.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.64	0.00	0.074	0.000	5.363	0.00	28.72
20.00	2" Conduit	Yes	2.00	0.000	2.00	0.81	0.00	0.075	0.000	5.483	0.00	31.88
20.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.64	0.00	0.075	0.000	5.483	0.00	28.92
20.50	2" Conduit	Yes	0.50	0.000	2.00	0.20	0.00	0.075	0.000	5.512	0.00	7.99
20.50	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.16	0.00	0.075	0.000	5.512	0.00	7.24
22.00	2" Conduit	Yes	1.50	0.000	2.00	0.61	0.00	0.075	0.000	5.595	0.00	24.08
22.00	1" Reinforcing plate	Yes	1.50	0.000	1.00	0.49	0.00	0.075	0.000	5.595	0.00	21.82
24.00	2" Conduit	Yes	2.00	0.000	2.00	0.82	0.00	0.076	0.000	5.698	0.00	32.31
24.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.65	0.00	0.076	0.000	5.698	0.00	29.27
26.00	2" Conduit	Yes	2.00	0.000	2.00	0.82	0.00	0.077	0.000	5.795	0.00	32.51
26.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.65	0.00	0.077	0.000	5.795	0.00	29.42
26.33	2" Conduit	Yes	0.33	0.000	2.00	0.14	0.00	0.077	0.000	5.810	0.00	5.37
26.33	1" Reinforcing plate	Yes	0.33	0.000	1.00	0.11	0.00	0.077	0.000	5.810	0.00	4.86
27.50	2" Conduit	Yes	1.17	0.000	2.00	0.48	0.00	0.077	0.000	5.864	0.00	19.10
27.50	1" Reinforcing plate	Yes	1.17	0.000	1.00	0.38	0.00	0.077	0.000	5.864	0.00	17.28
28.00	2" Conduit	Yes	0.50	0.000	2.00	0.21	0.00	0.077	0.000	5.886	0.00	8.17
28.00	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.16	0.00	0.077	0.000	5.886	0.00	7.39
30.00	2" Conduit	Yes	2.00	0.000	2.00	0.83	0.00	0.078	0.000	5.972	0.00	32.86
30.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.66	0.00	0.078	0.000	5.972	0.00	29.71
32.00	2" Conduit	Yes	2.00	0.000	2.00	0.83	0.00	0.078	0.000	6.054	0.00	33.02
32.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.67	0.00	0.078	0.000	6.054	0.00	29.84
34.00	2" Conduit	Yes	2.00	0.000	2.00	0.83	0.00	0.079	0.000	6.132	0.00	33.17
34.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.67	0.00	0.079	0.000	6.132	0.00	29.96
36.00	2" Conduit	Yes	2.00	0.000	2.00	0.84	0.00	0.080	0.000	6.206	0.00	33.31
36.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.67	0.00	0.080	0.000	6.206	0.00	30.08
38.00	2" Conduit	Yes	2.00	0.000	2.00	0.84	0.00	0.080	0.000	6.277	0.00	33.45
38.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.67	0.00	0.080	0.000	6.277	0.00	30.19
40.00	2" Conduit	Yes	2.00	0.000	2.00	0.84	0.00	0.081	0.000	6.345	0.00	33.58

## Linear Appurtenance Segment Forces (Factored)

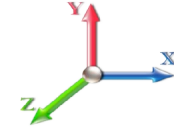
<b>Structure:</b> CT13064-A-SBA	<b>Code:</b> EIA/TIA-222-G	3/17/2020
<b>Site Name:</b> Middletown 2, CT	<b>Exposure:</b> C	
<b>Height:</b> 130.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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

**Dead Load Factor** 1.20  
**Wind Load Factor** 1.00



**Iterations** 25

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)
40.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.68	0.00	0.081	0.000	6.345	0.00	30.30
40.33	2" Conduit	Yes	0.33	0.000	2.00	0.14	0.00	0.081	0.000	6.356	0.00	5.54
40.33	1" Reinforcing plate	Yes	0.33	0.000	1.00	0.11	0.00	0.081	0.000	6.356	0.00	5.00
40.50	2" Conduit	Yes	0.17	0.000	2.00	0.07	0.00	0.082	0.000	6.362	0.00	2.86
40.50	1" Reinforcing plate	Yes	0.17	0.000	1.00	0.06	0.00	0.082	0.000	6.362	0.00	2.58
42.00	2" Conduit	Yes	1.50	0.000	2.00	0.63	0.00	0.082	0.000	6.410	0.00	25.28
42.00	1" Reinforcing plate	Yes	1.50	0.000	1.00	0.51	0.00	0.082	0.000	6.410	0.00	22.80
43.33	2" Conduit	Yes	1.33	0.000	2.00	0.56	0.00	0.082	0.000	6.453	0.00	22.52
43.33	1" Reinforcing plate	Yes	1.33	0.000	1.00	0.45	0.00	0.082	0.000	6.453	0.00	20.31
44.00	2" Conduit	Yes	0.67	0.000	2.00	0.28	0.00	0.083	0.000	6.474	0.00	11.28
44.00	1" Reinforcing plate	Yes	0.67	0.000	1.00	0.23	0.00	0.083	0.000	6.474	0.00	10.17
46.00	2" Conduit	Yes	2.00	0.000	2.00	0.85	0.00	0.083	0.000	6.534	0.00	33.94
46.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.68	0.00	0.083	0.000	6.534	0.00	30.59
48.00	2" Conduit	Yes	2.00	0.000	2.00	0.85	0.00	0.084	0.000	6.593	0.00	34.06
48.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.69	0.00	0.084	0.000	6.593	0.00	30.68
50.00	2" Conduit	Yes	2.00	0.000	2.00	0.85	0.00	0.083	0.000	6.650	0.00	34.16
50.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.69	0.00	0.083	0.000	6.650	0.00	30.77
52.00	2" Conduit	Yes	2.00	0.000	2.00	0.86	0.00	0.084	0.000	6.705	0.00	34.27
52.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.69	0.00	0.084	0.000	6.705	0.00	30.86
54.00	2" Conduit	Yes	2.00	0.000	2.00	0.86	0.00	0.085	0.000	6.759	0.00	34.37
54.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.69	0.00	0.085	0.000	6.759	0.00	30.94
56.00	2" Conduit	Yes	2.00	0.000	2.00	0.86	0.00	0.086	0.000	6.811	0.00	34.47
56.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.69	0.00	0.086	0.000	6.811	0.00	31.02
58.00	2" Conduit	Yes	2.00	0.000	2.00	0.86	0.00	0.087	0.000	6.861	0.00	34.56
58.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.70	0.00	0.087	0.000	6.861	0.00	31.10
60.00	2" Conduit	Yes	2.00	0.000	2.00	0.86	0.00	0.087	0.000	6.910	0.00	34.65
60.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.70	0.00	0.087	0.000	6.910	0.00	31.17
60.75	2" Conduit	Yes	0.75	0.000	2.00	0.32	0.00	0.088	0.000	6.928	0.00	13.01
60.75	1" Reinforcing plate	Yes	0.75	0.000	1.00	0.26	0.00	0.088	0.000	6.928	0.00	11.70
62.00	2" Conduit	Yes	1.25	0.000	2.00	0.54	0.00	0.088	0.000	6.958	0.00	21.71
62.00	1" Reinforcing plate	Yes	1.25	0.000	1.00	0.44	0.00	0.088	0.000	6.958	0.00	19.53
64.00	2" Conduit	Yes	2.00	0.000	2.00	0.87	0.00	0.089	0.000	7.005	0.00	34.83
64.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.70	0.00	0.089	0.000	7.005	0.00	31.32
66.00	2" Conduit	Yes	2.00	0.000	2.00	0.87	0.00	0.090	0.000	7.050	0.00	34.92
66.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.70	0.00	0.090	0.000	7.050	0.00	31.39
68.00	2" Conduit	Yes	2.00	0.000	2.00	0.87	0.00	0.091	0.000	7.095	0.00	35.00
68.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.70	0.00	0.091	0.000	7.095	0.00	31.45
70.00	2" Conduit	Yes	2.00	0.000	2.00	0.87	0.00	0.092	0.000	7.138	0.00	35.08
70.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.71	0.00	0.092	0.000	7.138	0.00	31.52
72.00	2" Conduit	Yes	2.00	0.000	2.00	0.87	0.00	0.092	0.000	7.181	0.00	35.16
72.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.71	0.00	0.092	0.000	7.181	0.00	31.58
74.00	2" Conduit	Yes	2.00	0.000	2.00	0.88	0.00	0.093	0.000	7.222	0.00	35.23
74.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.71	0.00	0.093	0.000	7.222	0.00	31.65
76.00	2" Conduit	Yes	2.00	0.000	2.00	0.88	0.00	0.094	0.000	7.263	0.00	35.31
76.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.71	0.00	0.094	0.000	7.263	0.00	31.71
78.00	2" Conduit	Yes	2.00	0.000	2.00	0.88	0.00	0.095	0.000	7.303	0.00	35.38
78.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.71	0.00	0.095	0.000	7.303	0.00	31.77

## Linear Appurtenance Segment Forces (Factored)

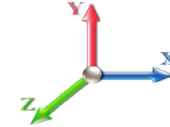
<b>Structure:</b> CT13064-A-SBA	<b>Code:</b> EIA/TIA-222-G	3/17/2020
<b>Site Name:</b> Middletown 2, CT	<b>Exposure:</b> C	
<b>Height:</b> 130.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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

**Dead Load Factor** 1.20  
**Wind Load Factor** 1.00



**Iterations** 25

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)
78.50	2" Conduit	Yes	0.50	0.000	2.00	0.22	0.00	0.096	0.000	7.313	0.00	8.85
78.50	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.18	0.00	0.096	0.000	7.313	0.00	7.95
80.00	2" Conduit	Yes	1.50	0.000	2.00	0.66	0.00	0.096	0.000	7.342	0.00	26.59
80.00	1" Reinforcing plate	Yes	1.50	0.000	1.00	0.53	0.00	0.096	0.000	7.342	0.00	23.87
82.00	2" Conduit	Yes	2.00	0.000	2.00	0.88	0.00	0.081	0.000	7.380	0.00	35.52
82.00	1" Reinforcing plate	Yes	1.00	0.000	1.00	0.36	0.00	0.081	0.000	7.380	0.00	15.94
84.00	2" Conduit	Yes	2.00	0.000	2.00	0.88	0.00	0.065	0.000	7.418	0.00	35.59
86.00	2" Conduit	Yes	2.00	0.000	2.00	0.88	0.00	0.066	0.000	7.454	0.00	35.66
87.42	2" Conduit	Yes	1.42	0.000	2.00	0.63	0.00	0.067	0.000	7.480	0.00	25.29
88.00	2" Conduit	Yes	0.58	0.000	2.00	0.26	0.00	0.067	0.000	7.491	0.00	10.42
90.00	2" Conduit	Yes	2.00	0.000	2.00	0.89	0.00	0.068	0.000	7.526	0.00	35.79
91.33	2" Conduit	Yes	1.33	0.000	2.00	0.59	0.00	0.068	0.000	7.549	0.00	23.89
92.00	2" Conduit	Yes	0.67	0.000	2.00	0.30	0.00	0.068	0.000	7.561	0.00	11.95
94.00	2" Conduit	Yes	2.00	0.000	2.00	0.89	0.00	0.068	0.000	7.595	0.00	35.92
96.00	2" Conduit	Yes	2.00	0.000	2.00	0.89	0.00	0.069	0.000	7.629	0.00	35.98
98.00	2" Conduit	Yes	2.00	0.000	2.00	0.89	0.00	0.070	0.000	7.662	0.00	36.04
100.00	2" Conduit	Yes	2.00	0.000	2.00	0.89	0.00	0.070	0.000	7.695	0.00	36.10
102.00	2" Conduit	Yes	2.00	0.000	2.00	0.89	0.00	0.071	0.000	7.727	0.00	36.16
104.00	2" Conduit	Yes	2.00	0.000	2.00	0.89	0.00	0.072	0.000	7.759	0.00	36.21
106.00	2" Conduit	Yes	2.00	0.000	2.00	0.90	0.00	0.073	0.000	7.790	0.00	36.27
108.00	2" Conduit	Yes	2.00	0.000	2.00	0.90	0.00	0.074	0.000	7.821	0.00	36.33
110.00	2" Conduit	Yes	2.00	0.000	2.00	0.90	0.00	0.074	0.000	7.851	0.00	36.38
112.00	2" Conduit	Yes	2.00	0.000	2.00	0.90	0.00	0.075	0.000	7.881	0.00	36.43
114.00	2" Conduit	Yes	2.00	0.000	2.00	0.90	0.00	0.076	0.000	7.910	0.00	36.49
116.00	2" Conduit	Yes	2.00	0.000	2.00	0.90	0.00	0.077	0.000	7.939	0.00	36.54
118.00	2" Conduit	Yes	2.00	0.000	2.00	0.90	0.00	0.078	0.000	7.968	0.00	36.59
120.00	2" Conduit	Yes	2.00	0.000	2.00	0.90	0.00	0.079	0.000	7.996	0.00	36.64
122.00	2" Conduit	Yes	2.00	0.000	2.00	0.90	0.00	0.111	1.033	8.024	0.00	36.69
124.00	2" Conduit	Yes	2.00	0.000	2.00	0.90	0.00	0.111	1.033	8.051	0.00	36.74
126.00	2" Conduit	Yes	2.00	0.000	2.00	0.91	0.00	0.111	1.033	8.079	0.00	36.79
128.00	2" Conduit	Yes	2.00	0.000	2.00	0.91	0.00	0.111	1.033	8.105	0.00	36.84
129.00	2" Conduit	Yes	1.00	0.000	2.00	0.45	0.00	0.111	1.033	8.119	0.00	18.43
<b>Totals:</b>											<b>0.0</b>	<b>3,424.1</b>

## Calculated Forces

<b>Structure:</b> CT13064-A-SBA	<b>Code:</b> EIA/TIA-222-G	3/17/2020
<b>Site Name:</b> Middletown 2, CT	<b>Exposure:</b> C	
<b>Height:</b> 130.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II

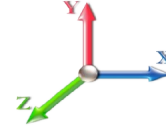


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**Load Case:** 1.2D + 1.0Di + 1.0Wi 50 mph Wind

**Iterations** 25

**Dead Load Factor** 1.20  
**Wind Load Factor** 1.00



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-58.40	-8.44	0.00	-831.40	0.00	831.40	2818.94	1409.47	4888.80	2448.04	0.00	0.000	0.000	0.170
2.00	-57.80	-8.41	0.00	-814.52	0.00	814.52	2805.89	1402.95	4830.09	2418.63	0.01	-0.024	0.000	0.168
4.00	-57.20	-8.38	0.00	-797.70	0.00	797.70	2792.73	1396.36	4771.51	2389.30	0.02	-0.047	0.000	0.166
6.00	-56.59	-8.35	0.00	-780.94	0.00	780.94	2779.45	1389.73	4713.08	2360.04	0.04	-0.070	0.000	0.164
8.00	-55.98	-8.33	0.00	-764.23	0.00	764.23	2766.06	1383.03	4654.80	2330.86	0.08	-0.094	0.000	0.161
10.00	-55.37	-8.29	0.00	-747.58	0.00	747.58	2752.56	1376.28	4596.67	2301.75	0.12	-0.117	0.000	0.159
10.25	-55.29	-8.29	0.00	-745.50	0.00	745.50	2750.86	1375.43	4589.41	2298.12	0.13	-0.120	0.000	0.167
12.00	-54.76	-8.27	0.00	-730.99	0.00	730.99	2738.94	1369.47	4538.70	2272.72	0.18	-0.141	0.000	0.165
14.00	-54.15	-8.24	0.00	-714.46	0.00	714.46	2725.20	1362.60	4480.89	2243.77	0.24	-0.165	0.000	0.162
16.00	-53.54	-8.21	0.00	-697.98	0.00	697.98	2711.35	1355.68	4423.25	2214.91	0.32	-0.189	0.000	0.160
18.00	-52.93	-8.18	0.00	-681.56	0.00	681.56	2697.39	1348.70	4365.78	2186.13	0.40	-0.213	0.000	0.158
20.00	-52.33	-8.14	0.00	-665.20	0.00	665.20	2683.32	1341.66	4308.48	2157.44	0.50	-0.237	0.000	0.155
20.50	-52.18	-8.14	0.00	-661.13	0.00	661.13	2679.78	1339.89	4294.19	2150.28	0.52	-0.243	0.000	0.155
22.00	-51.73	-8.11	0.00	-648.93	0.00	648.93	2669.12	1334.56	4251.37	2128.84	0.60	-0.261	0.000	0.153
24.00	-51.12	-8.08	0.00	-632.70	0.00	632.70	2654.82	1327.41	4194.44	2100.34	0.71	-0.285	0.000	0.150
26.00	-50.53	-8.03	0.00	-616.55	0.00	616.55	2640.40	1320.20	4137.70	2071.92	0.84	-0.308	0.000	0.148
26.33	-50.43	-8.03	0.00	-613.90	0.00	613.90	2638.01	1319.00	4128.35	2067.24	0.86	-0.312	0.000	0.129
27.50	-50.08	-8.01	0.00	-604.50	0.00	604.50	2629.51	1314.76	4095.27	2050.68	0.94	-0.324	0.000	0.177
28.00	-49.93	-8.01	0.00	-600.50	0.00	600.50	2625.87	1312.93	4081.15	2043.61	0.97	-0.331	0.000	0.176
30.00	-49.33	-7.97	0.00	-584.48	0.00	584.48	2611.22	1305.61	4024.80	2015.39	1.12	-0.359	0.000	0.173
32.00	-48.74	-7.94	0.00	-568.54	0.00	568.54	2596.46	1298.23	3968.65	1987.27	1.27	-0.387	0.000	0.170
34.00	-48.15	-7.90	0.00	-552.66	0.00	552.66	2581.58	1290.79	3912.71	1959.26	1.44	-0.415	0.000	0.167
36.00	-47.56	-7.86	0.00	-536.86	0.00	536.86	2566.59	1283.29	3856.98	1931.36	1.62	-0.443	0.000	0.164
38.00	-46.98	-7.83	0.00	-521.13	0.00	521.13	2551.48	1275.74	3801.46	1903.56	1.81	-0.470	0.000	0.161
40.00	-46.40	-7.78	0.00	-505.48	0.00	505.48	2536.26	1268.13	3746.17	1875.87	2.02	-0.497	0.000	0.158
40.33	-46.30	-7.77	0.00	-502.91	0.00	502.91	2533.74	1266.87	3737.07	1871.31	2.05	-0.501	0.000	0.192
40.50	-46.25	-7.78	0.00	-501.59	0.00	501.59	2532.44	1266.22	3732.38	1868.96	2.07	-0.504	0.000	0.192
42.00	-45.82	-7.75	0.00	-489.93	0.00	489.93	2520.93	1260.46	3691.10	1848.29	2.23	-0.529	0.000	0.189
43.33	-45.43	-7.72	0.00	-479.59	0.00	479.59	2510.64	1255.32	3654.51	1829.97	2.38	-0.551	0.000	0.187
44.00	-45.16	-7.72	0.00	-474.45	0.00	474.45	2505.48	1252.74	3636.25	1820.83	2.46	-0.562	0.000	0.184
46.00	-44.35	-7.68	0.00	-459.01	0.00	459.01	2489.92	1244.96	3581.64	1793.48	2.70	-0.593	0.000	0.180
48.00	-43.55	-7.63	0.00	-443.66	0.00	443.66	1854.44	927.22	2691.60	1347.80	2.96	-0.625	0.000	0.194
50.00	-43.03	-7.60	0.00	-428.39	0.00	428.39	1844.56	922.28	2653.53	1328.74	3.23	-0.656	0.000	0.212
52.00	-42.51	-7.56	0.00	-413.20	0.00	413.20	1834.56	917.28	2615.56	1309.72	3.51	-0.691	0.000	0.207
54.00	-42.00	-7.52	0.00	-398.08	0.00	398.08	1824.45	912.23	2577.68	1290.76	3.80	-0.725	0.000	0.201
56.00	-41.49	-7.48	0.00	-383.04	0.00	383.04	1814.23	907.11	2539.90	1271.84	4.12	-0.758	0.000	0.196
58.00	-40.98	-7.44	0.00	-368.08	0.00	368.08	1803.89	901.94	2502.23	1252.97	4.44	-0.791	0.000	0.191
60.00	-40.48	-7.39	0.00	-353.20	0.00	353.20	1793.44	896.72	2464.66	1234.16	4.78	-0.823	0.000	0.185
60.75	-40.29	-7.38	0.00	-347.66	0.00	347.66	1789.49	894.74	2450.61	1227.12	4.91	-0.835	0.000	0.183
62.00	-39.98	-7.36	0.00	-338.43	0.00	338.43	1782.87	891.44	2427.21	1215.41	5.13	-0.855	0.000	0.180
64.00	-39.48	-7.31	0.00	-323.72	0.00	323.72	1772.19	886.09	2389.88	1196.72	5.50	-0.887	0.000	0.174
66.00	-38.98	-7.27	0.00	-309.10	0.00	309.10	1761.39	880.70	2352.67	1178.08	5.87	-0.917	0.000	0.168
68.00	-38.49	-7.22	0.00	-294.56	0.00	294.56	1750.48	875.24	2315.58	1159.51	6.26	-0.947	0.000	0.163
70.00	-37.99	-7.18	0.00	-280.11	0.00	280.11	1739.46	869.73	2278.63	1141.01	6.67	-0.976	0.000	0.157
72.00	-37.51	-7.13	0.00	-265.75	0.00	265.75	1728.32	864.16	2241.81	1122.57	7.08	-1.004	0.000	0.151
74.00	-37.02	-7.08	0.00	-251.49	0.00	251.49	1717.07	858.54	2205.13	1104.20	7.51	-1.032	0.000	0.145
76.00	-36.54	-7.04	0.00	-237.32	0.00	237.32	1705.70	852.85	2168.59	1085.91	7.95	-1.059	0.000	0.139
78.00	-36.06	-6.98	0.00	-223.25	0.00	223.25	1694.22	847.11	2132.20	1067.69	8.40	-1.084	0.000	0.133

## Calculated Forces

<b>Structure:</b> CT13064-A-SBA	<b>Code:</b> EIA/TIA-222-G	3/17/2020
<b>Site Name:</b> Middletown 2, CT	<b>Exposure:</b> C	
<b>Height:</b> 130.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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78.50	-35.94	-6.97	0.00	-219.76	0.00	219.76	1691.33	845.67	2123.13	1063.14	8.51	-1.091	0.000	0.131
78.50	-35.94	-6.97	0.00	-219.76	0.00	219.76	1691.33	845.67	2123.13	1063.14	8.51	-1.091	0.000	0.131
80.00	-35.58	-6.94	0.00	-209.30	0.00	209.30	1682.63	841.31	2095.97	1049.54	8.86	-1.109	0.000	0.221
82.00	-35.12	-6.90	0.00	-195.41	0.00	195.41	1670.92	835.46	2059.89	1031.48	9.33	-1.151	0.000	0.211
84.00	-34.68	-6.86	0.00	-181.60	0.00	181.60	1659.09	829.55	2023.98	1013.49	9.82	-1.190	0.000	0.200
86.00	-34.24	-6.82	0.00	-167.88	0.00	167.88	1647.16	823.58	1988.23	995.59	10.33	-1.228	0.000	0.189
87.42	-33.94	-6.78	0.00	-158.22	0.00	158.22	1638.63	819.32	1963.01	982.97	10.70	-1.254	0.000	0.182
88.00	-33.77	-6.78	0.00	-154.26	0.00	154.26	1635.10	817.55	1952.65	977.78	10.85	-1.264	0.000	0.178
90.00	-26.43	-5.12	0.00	-140.71	0.00	140.71	1622.94	811.47	1917.25	960.05	11.39	-1.298	0.000	0.163
91.33	-26.05	-5.08	0.00	-133.89	0.00	133.89	1099.39	549.70	1312.06	657.00	11.75	-1.320	0.000	0.228
92.00	-25.93	-5.07	0.00	-130.50	0.00	130.50	1097.24	548.62	1304.79	653.36	11.94	-1.331	0.000	0.223
94.00	-25.41	-5.00	0.00	-120.36	0.00	120.36	1090.71	545.35	1282.99	642.45	12.50	-1.370	0.000	0.211
96.00	-25.04	-4.95	0.00	-110.37	0.00	110.37	1084.06	542.03	1261.23	631.55	13.09	-1.407	0.000	0.198
98.00	-24.68	-4.90	0.00	-100.46	0.00	100.46	1077.30	538.65	1239.51	620.68	13.68	-1.443	0.000	0.185
100.00	-20.30	-4.04	0.00	-90.66	0.00	90.66	1070.43	535.22	1217.83	609.82	14.30	-1.476	0.000	0.168
102.00	-19.95	-3.99	0.00	-82.58	0.00	82.58	1063.44	531.72	1196.21	598.99	14.92	-1.507	0.000	0.157
104.00	-19.61	-3.94	0.00	-74.60	0.00	74.60	1056.34	528.17	1174.63	588.19	15.56	-1.536	0.000	0.145
106.00	-19.28	-3.88	0.00	-66.72	0.00	66.72	1049.12	524.56	1153.11	577.41	16.21	-1.563	0.000	0.134
108.00	-18.94	-3.83	0.00	-58.96	0.00	58.96	1041.79	520.90	1131.65	566.67	16.87	-1.588	0.000	0.122
110.00	-13.92	-2.87	0.00	-51.30	0.00	51.30	1034.34	517.17	1110.26	555.96	17.54	-1.610	0.000	0.106
112.00	-13.63	-2.82	0.00	-45.56	0.00	45.56	1026.79	513.39	1088.94	545.28	18.22	-1.631	0.000	0.097
114.00	-13.33	-2.76	0.00	-39.92	0.00	39.92	1019.11	509.56	1067.70	534.64	18.91	-1.650	0.000	0.088
116.00	-13.04	-2.70	0.00	-34.40	0.00	34.40	1011.32	505.66	1046.53	524.04	19.60	-1.667	0.000	0.079
118.00	-12.76	-2.65	0.00	-28.99	0.00	28.99	1003.42	501.71	1025.45	513.49	20.30	-1.682	0.000	0.069
120.00	-12.47	-2.59	0.00	-23.70	0.00	23.70	995.40	497.70	1004.45	502.97	21.01	-1.695	0.000	0.060
120.00	-12.47	-2.59	0.00	-23.70	0.00	23.70	735.22	367.61	535.89	335.79	21.01	-1.695	0.000	0.088
122.00	-12.23	-2.55	0.00	-18.51	0.00	18.51	735.22	367.61	535.89	335.79	21.72	-1.706	0.000	0.072
124.00	-11.98	-2.51	0.00	-13.42	0.00	13.42	735.22	367.61	535.89	335.79	22.44	-1.722	0.000	0.056
126.00	-11.73	-2.46	0.00	-8.41	0.00	8.41	735.22	367.61	535.89	335.79	23.16	-1.734	0.000	0.041
128.00	-11.48	-2.41	0.00	-3.49	0.00	3.49	735.22	367.61	535.89	335.79	23.89	-1.740	0.000	0.026
129.00	-0.14	-0.04	0.00	-0.04	0.00	0.04	735.22	367.61	535.89	335.79	24.26	-1.741	0.000	0.000
130.00	0.00	-0.03	0.00	0.00	0.00	0.00	735.22	367.61	535.89	335.79	24.62	-1.741	0.000	0.000

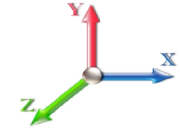
## Seismic Segment Forces (Factored)

<b>Structure:</b> CT13064-A-SBA	<b>Code:</b> EIA/TIA-222-G	3/17/2020
<b>Site Name:</b> Middletown 2, CT	<b>Exposure:</b> C	
<b>Height:</b> 130.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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<b>Load Case:</b> 1.2D + 1.0E						<b>Iterations</b> 23
<b>Gust Response Factor</b>	1.10			<b>Sds</b>	0.19	<b>Ss</b> 0.18
<b>Dead Load Factor</b>	1.20	<b>Seismic Load Factor</b>	1.00	<b>Sd1</b>	0.10	<b>S1</b> 0.06
<b>Wind Load Factor</b>	0.00	<b>Structure Frequency (f1)</b>	0.27	<b>SA</b>	0.03	<b>Seismic Importance Factor</b> 1.00



Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00	RB1 RB2	0.00	0.00	0.00	0.00	0.00	
2.00		283.72	0.00	0.02	0.01	3.57	
4.00		281.62	0.00	0.03	0.02	5.70	
6.00		279.53	0.00	0.04	0.02	7.09	
8.00		277.43	0.01	0.05	0.03	8.02	
10.00		275.33	0.01	0.06	0.03	8.64	
10.25	RT2 RB3 RB4	34.27	0.01	0.06	0.03	1.08	
12.00		238.97	0.02	0.06	0.04	7.93	
14.00		271.14	0.02	0.07	0.04	9.35	
16.00		269.04	0.03	0.07	0.04	9.53	
18.00		266.95	0.04	0.07	0.04	9.65	
20.00		264.85	0.04	0.07	0.04	9.72	
20.50	RT1 RB5	65.88	0.05	0.07	0.04	2.43	
22.00		196.87	0.05	0.07	0.04	7.32	
24.00		260.66	0.06	0.07	0.04	9.80	
26.00		258.56	0.08	0.07	0.04	9.83	
26.33	RB6	42.46	0.08	0.07	0.04	1.62	
27.50	RT3 RT4	150.08	0.08	0.07	0.04	5.76	
28.00		63.92	0.09	0.07	0.04	2.46	
30.00		254.37	0.10	0.07	0.04	9.89	
32.00		252.27	0.11	0.07	0.04	9.93	
34.00		250.18	0.13	0.07	0.03	9.95	
36.00		248.08	0.14	0.07	0.03	9.97	
38.00		245.98	0.16	0.07	0.03	9.98	
40.00		243.89	0.18	0.07	0.03	9.95	
40.33	RT6	40.04	0.18	0.06	0.03	1.64	
40.50	RT5 RB7	20.60	0.18	0.06	0.03	0.84	
42.00		181.15	0.20	0.06	0.02	7.41	
43.33	Bot - Section 2	160.03	0.21	0.06	0.02	6.54	
44.00		144.41	0.22	0.06	0.02	5.89	
46.00		430.71	0.24	0.06	0.02	17.36	
48.00	Top - Section 1	426.94	0.26	0.05	0.02	16.85	
50.00		189.76	0.28	0.05	0.01	7.23	
52.00		188.08	0.30	0.04	0.01	6.79	
54.00		186.41	0.33	0.04	0.01	6.22	
56.00		184.73	0.35	0.03	0.01	5.51	
58.00		183.05	0.38	0.03	0.01	4.64	
60.00		181.37	0.40	0.02	0.01	3.61	
60.75	RT7 RB8	67.58	0.41	0.01	0.01	1.19	
62.00		112.11	0.43	0.01	0.01	1.52	
64.00		178.02	0.46	0.00	0.01	1.16	
66.00		176.34	0.49	-0.01	0.01	-0.19	
68.00		174.67	0.52	-0.02	0.01	-1.55	
70.00		172.99	0.55	-0.03	0.01	-2.85	
72.00		171.31	0.58	-0.05	0.01	-4.05	
74.00		169.63	0.61	-0.06	0.02	-5.08	

## Seismic Segment Forces (Factored)

<b>Structure:</b> CT13064-A-SBA	<b>Code:</b> EIA/TIA-222-G	3/17/2020
<b>Site Name:</b> Middletown 2, CT	<b>Exposure:</b> C	
<b>Height:</b> 130.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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76.00		167.96	0.65	-0.07	0.02	-5.92
78.00		166.28	0.68	-0.08	0.03	-6.56
78.50	RT8	41.31	0.69	-0.08	0.03	-1.66
80.00		123.30	0.72	-0.09	0.03	-5.23
82.00		162.93	0.75	-0.10	0.04	-7.20
84.00		161.25	0.79	-0.11	0.05	-7.22
86.00		159.57	0.83	-0.12	0.06	-7.06
87.42	Bot - Section 3	112.02	0.85	-0.12	0.07	-4.83
88.00		80.81	0.87	-0.12	0.07	-3.43
90.00	Appurtenance(s)	3445.3	0.91	-0.12	0.09	-136.78
91.33	Top - Section 2	181.80	0.93	-0.12	0.10	-6.77
92.00		39.09	0.95	-0.12	0.11	-1.40
94.00	Appurtenance(s)	169.42	0.99	-0.11	0.13	-5.23
96.00		115.16	1.03	-0.10	0.15	-2.87
98.00		113.90	1.07	-0.08	0.17	-2.04
100.00	Appurtenance(s)	1864.6	1.12	-0.06	0.20	-18.32
102.00		111.39	1.16	-0.03	0.23	-0.08
104.00		110.13	1.21	0.01	0.26	1.03
106.00		108.87	1.26	0.06	0.30	2.24
108.00		107.61	1.30	0.13	0.34	3.52
110.00	Appurtenance(s)	1935.1	1.35	0.20	0.39	89.06
112.00		105.10	1.40	0.29	0.43	6.34
114.00		103.84	1.45	0.39	0.49	7.87
116.00		102.58	1.50	0.51	0.55	9.47
118.00		101.32	1.56	0.65	0.61	11.14
120.00	Top - Section 3	100.07	1.61	0.81	0.68	12.88
122.00		94.88	1.66	0.99	0.76	14.10
124.00		94.88	1.72	1.20	0.84	16.10
126.00		94.88	1.78	1.43	0.94	18.21
128.00		94.88	1.83	1.69	1.03	20.43
129.00	Appurtenance(s)	5052.1	1.86	1.83	1.09	1149.06
130.00	Appurtenance(s)	53.94	1.89	1.98	1.14	12.94
<b>Totals:</b>		<b>24,492.4</b>				<b>1,411.6</b>
						<b>Total Wind: 32,881.6</b>

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

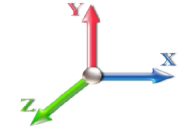


## Calculated Forces

<b>Structure:</b> CT13064-A-SBA	<b>Code:</b> EIA/TIA-222-G	3/17/2020
<b>Site Name:</b> Middletown 2, CT	<b>Exposure:</b> C	
<b>Height:</b> 130.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



<b>Load Case:</b> 1.2D + 1.0E		<b>Iterations</b> 23
<b>Gust Response Factor</b> 1.10	<b>Sds</b> 0.19	<b>Ss</b> 0.18
<b>Dead Load Factor</b> 1.20	<b>Seismic Load Factor</b> 1.00	<b>S1</b> 0.06
<b>Wind Load Factor</b> 0.00	<b>Structure Frequency (f1)</b> 0.27	<b>SA</b> 0.03
	<b>Seismic Importance Factor</b> 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	-35.04	-1.65	0.00	-191.53	0.00	191.53	2818.94	1409.47	4888.80	2448.04	0.00	0.00	0.00	0.043
2.00	-34.59	-1.65	0.00	-188.23	0.00	188.23	2805.89	1402.95	4830.09	2418.63	0.00	0.00	-0.01	0.042
4.00	-34.15	-1.65	0.00	-184.93	0.00	184.93	2792.73	1396.36	4771.51	2389.30	0.00	0.00	-0.01	0.042
6.00	-33.71	-1.64	0.00	-181.64	0.00	181.64	2779.45	1389.73	4713.08	2360.04	0.01	0.01	-0.02	0.041
8.00	-33.27	-1.64	0.00	-178.36	0.00	178.36	2766.06	1383.03	4654.80	2330.86	0.02	0.02	-0.02	0.041
10.00	-32.83	-1.63	0.00	-175.09	0.00	175.09	2752.56	1376.28	4596.67	2301.75	0.03	0.03	-0.03	0.040
10.25	-32.78	-1.63	0.00	-174.68	0.00	174.68	2750.86	1375.43	4589.41	2298.12	0.03	0.03	-0.03	0.042
12.00	-32.40	-1.62	0.00	-171.83	0.00	171.83	2738.94	1369.47	4538.70	2272.72	0.04	0.04	-0.03	0.042
14.00	-31.97	-1.62	0.00	-168.58	0.00	168.58	2725.20	1362.60	4480.89	2243.77	0.06	0.06	-0.04	0.041
16.00	-31.54	-1.61	0.00	-165.34	0.00	165.34	2711.35	1355.68	4423.25	2214.91	0.07	0.07	-0.04	0.041
18.00	-31.11	-1.60	0.00	-162.12	0.00	162.12	2697.39	1348.70	4365.78	2186.13	0.09	0.09	-0.05	0.041
20.00	-30.69	-1.60	0.00	-158.91	0.00	158.91	2683.32	1341.66	4308.48	2157.44	0.12	0.12	-0.06	0.040
20.50	-30.59	-1.60	0.00	-158.11	0.00	158.11	2679.78	1339.89	4294.19	2150.28	0.12	0.12	-0.06	0.040
22.00	-30.27	-1.59	0.00	-155.72	0.00	155.72	2669.12	1334.56	4251.37	2128.84	0.14	0.14	-0.06	0.040
24.00	-29.85	-1.58	0.00	-152.54	0.00	152.54	2654.82	1327.41	4194.44	2100.34	0.17	0.17	-0.07	0.039
26.00	-29.44	-1.57	0.00	-149.37	0.00	149.37	2640.40	1320.20	4137.70	2071.92	0.20	0.20	-0.07	0.039
26.33	-29.37	-1.57	0.00	-148.85	0.00	148.85	2638.01	1319.00	4128.35	2067.24	0.20	0.20	-0.07	0.034
27.50	-29.13	-1.57	0.00	-147.01	0.00	147.01	2629.51	1314.76	4095.27	2050.68	0.22	0.22	-0.08	0.046
28.00	-29.02	-1.57	0.00	-146.23	0.00	146.23	2625.87	1312.93	4081.15	2043.61	0.23	0.23	-0.08	0.046
30.00	-28.61	-1.56	0.00	-143.09	0.00	143.09	2611.22	1305.61	4024.80	2015.39	0.26	0.26	-0.09	0.046
32.00	-28.21	-1.55	0.00	-139.97	0.00	139.97	2596.46	1298.23	3968.65	1987.27	0.30	0.30	-0.09	0.045
34.00	-27.80	-1.55	0.00	-136.86	0.00	136.86	2581.58	1290.79	3912.71	1959.26	0.34	0.34	-0.10	0.045
36.00	-27.40	-1.54	0.00	-133.77	0.00	133.77	2566.59	1283.29	3856.98	1931.36	0.38	0.38	-0.11	0.044
38.00	-27.00	-1.53	0.00	-130.69	0.00	130.69	2551.48	1275.74	3801.46	1903.56	0.43	0.43	-0.11	0.043
40.00	-26.60	-1.52	0.00	-127.62	0.00	127.62	2536.26	1268.13	3746.17	1875.87	0.48	0.48	-0.12	0.043
40.33	-26.53	-1.52	0.00	-127.12	0.00	127.12	2533.74	1266.87	3737.07	1871.31	0.48	0.48	-0.12	0.052
40.50	-26.50	-1.52	0.00	-126.86	0.00	126.86	2532.44	1266.22	3732.38	1868.96	0.49	0.49	-0.12	0.052
42.00	-26.20	-1.52	0.00	-124.58	0.00	124.58	2520.93	1260.46	3691.10	1848.29	0.53	0.53	-0.13	0.052
43.33	-25.94	-1.51	0.00	-122.55	0.00	122.55	2510.64	1255.32	3654.51	1829.97	0.56	0.56	-0.13	0.051
44.00	-25.73	-1.51	0.00	-121.55	0.00	121.55	2505.48	1252.74	3636.25	1820.83	0.58	0.58	-0.14	0.050
46.00	-25.11	-1.49	0.00	-118.53	0.00	118.53	2489.92	1244.96	3581.64	1793.48	0.64	0.64	-0.14	0.050
48.00	-24.49	-1.48	0.00	-115.55	0.00	115.55	1854.44	927.22	2691.60	1347.80	0.70	0.70	-0.15	0.054
50.00	-24.16	-1.47	0.00	-112.59	0.00	112.59	1844.56	922.28	2653.53	1328.74	0.77	0.77	-0.16	0.059
52.00	-23.83	-1.47	0.00	-109.64	0.00	109.64	1834.56	917.28	2615.56	1309.72	0.84	0.84	-0.17	0.058
54.00	-23.50	-1.47	0.00	-106.71	0.00	106.71	1824.45	912.23	2577.68	1290.76	0.91	0.91	-0.18	0.058
56.00	-23.17	-1.46	0.00	-103.77	0.00	103.77	1814.23	907.11	2539.90	1271.84	0.99	0.99	-0.19	0.057
58.00	-22.85	-1.46	0.00	-100.85	0.00	100.85	1803.89	901.94	2502.23	1252.97	1.07	1.07	-0.20	0.056
60.00	-22.53	-1.46	0.00	-97.93	0.00	97.93	1793.44	896.72	2464.66	1234.16	1.15	1.15	-0.21	0.055
60.75	-22.41	-1.46	0.00	-96.83	0.00	96.83	1789.49	894.74	2450.61	1227.12	1.19	1.19	-0.21	0.054
62.00	-22.21	-1.46	0.00	-95.01	0.00	95.01	1782.87	891.44	2427.21	1215.41	1.24	1.24	-0.21	0.054
64.00	-21.89	-1.46	0.00	-92.09	0.00	92.09	1772.19	886.09	2389.88	1196.72	1.33	1.33	-0.22	0.053
66.00	-21.57	-1.46	0.00	-89.17	0.00	89.17	1761.39	880.70	2352.67	1178.08	1.43	1.43	-0.23	0.052
68.00	-21.26	-1.46	0.00	-86.25	0.00	86.25	1750.48	875.24	2315.58	1159.51	1.53	1.53	-0.24	0.051
70.00	-20.94	-1.47	0.00	-83.32	0.00	83.32	1739.46	869.73	2278.63	1141.01	1.63	1.63	-0.25	0.049
72.00	-20.63	-1.47	0.00	-80.39	0.00	80.39	1728.32	864.16	2241.81	1122.57	1.74	1.74	-0.26	0.048
74.00	-20.32	-1.47	0.00	-77.45	0.00	77.45	1717.07	858.54	2205.13	1104.20	1.85	1.85	-0.27	0.047
76.00	-20.02	-1.47	0.00	-74.52	0.00	74.52	1705.70	852.85	2168.59	1085.91	1.96	1.96	-0.27	0.046

## Calculated Forces

<b>Structure:</b> CT13064-A-SBA	<b>Code:</b> EIA/TIA-222-G	3/17/2020
<b>Site Name:</b> Middletown 2, CT	<b>Exposure:</b> C	
<b>Height:</b> 130.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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78.00	-19.71	-1.47	0.00	-71.57	0.00	71.57	1694.22	847.11	2132.20	1067.69	2.07	-0.28	0.045
78.50	-19.64	-1.47	0.00	-70.84	0.00	70.84	1691.33	845.67	2123.13	1063.14	2.10	-0.28	0.045
78.50	-19.64	-1.47	0.00	-70.84	0.00	70.84	1691.33	845.67	2123.13	1063.14	2.10	-0.28	0.045
80.00	-19.41	-1.47	0.00	-68.63	0.00	68.63	1682.63	841.31	2095.97	1049.54	2.19	-0.29	0.077
82.00	-19.11	-1.48	0.00	-65.68	0.00	65.68	1670.92	835.46	2059.89	1031.48	2.32	-0.30	0.075
84.00	-18.83	-1.48	0.00	-62.73	0.00	62.73	1659.09	829.55	2023.98	1013.49	2.45	-0.32	0.073
86.00	-18.55	-1.48	0.00	-59.77	0.00	59.77	1647.16	823.58	1988.23	995.59	2.59	-0.33	0.071
87.42	-18.35	-1.48	0.00	-57.67	0.00	57.67	1638.63	819.32	1963.01	982.97	2.69	-0.34	0.070
88.00	-18.23	-1.49	0.00	-56.80	0.00	56.80	1635.10	817.55	1952.65	977.78	2.73	-0.34	0.069
90.00	-14.00	-1.46	0.00	-53.83	0.00	53.83	1622.94	811.47	1917.25	960.05	2.87	-0.36	0.065
91.33	-13.73	-1.46	0.00	-51.89	0.00	51.89	1099.39	549.70	1312.06	657.00	2.98	-0.37	0.091
92.00	-13.65	-1.46	0.00	-50.91	0.00	50.91	1097.24	548.62	1304.79	653.36	3.03	-0.37	0.090
94.00	-13.37	-1.47	0.00	-47.98	0.00	47.98	1090.71	545.35	1282.99	642.45	3.18	-0.38	0.087
96.00	-13.15	-1.47	0.00	-45.05	0.00	45.05	1084.06	542.03	1261.23	631.55	3.35	-0.40	0.083
98.00	-12.93	-1.47	0.00	-42.12	0.00	42.12	1077.30	538.65	1239.51	620.68	3.52	-0.41	0.080
100.00	-10.61	-1.45	0.00	-39.18	0.00	39.18	1070.43	535.22	1217.83	609.82	3.70	-0.43	0.074
102.00	-10.42	-1.46	0.00	-36.27	0.00	36.27	1063.44	531.72	1196.21	598.99	3.88	-0.44	0.070
104.00	-10.22	-1.46	0.00	-33.36	0.00	33.36	1056.34	528.17	1174.63	588.19	4.07	-0.46	0.066
106.00	-10.03	-1.45	0.00	-30.45	0.00	30.45	1049.12	524.56	1153.11	577.41	4.26	-0.47	0.062
108.00	-9.84	-1.45	0.00	-27.55	0.00	27.55	1041.79	520.90	1131.65	566.67	4.46	-0.48	0.058
110.00	-7.45	-1.34	0.00	-24.65	0.00	24.65	1034.34	517.17	1110.26	555.96	4.66	-0.49	0.052
112.00	-7.30	-1.34	0.00	-21.96	0.00	21.96	1026.79	513.39	1088.94	545.28	4.87	-0.50	0.047
114.00	-7.14	-1.33	0.00	-19.29	0.00	19.29	1019.11	509.56	1067.70	534.64	5.08	-0.51	0.043
116.00	-6.99	-1.32	0.00	-16.63	0.00	16.63	1011.32	505.66	1046.53	524.04	5.30	-0.52	0.039
118.00	-6.84	-1.31	0.00	-14.00	0.00	14.00	1003.42	501.71	1025.45	513.49	5.51	-0.52	0.034
120.00	-6.70	-1.29	0.00	-11.38	0.00	11.38	995.40	497.70	1004.45	502.97	5.73	-0.53	0.029
120.00	-6.70	-1.29	0.00	-11.38	0.00	11.38	735.22	367.61	535.89	335.79	5.73	-0.53	0.043
122.00	-6.55	-1.28	0.00	-8.80	0.00	8.80	735.22	367.61	535.89	335.79	5.96	-0.54	0.035
124.00	-6.41	-1.26	0.00	-6.24	0.00	6.24	735.22	367.61	535.89	335.79	6.18	-0.54	0.027
126.00	-6.27	-1.24	0.00	-3.72	0.00	3.72	735.22	367.61	535.89	335.79	6.41	-0.55	0.020
128.00	-6.13	-1.22	0.00	-1.23	0.00	1.23	735.22	367.61	535.89	335.79	6.64	-0.55	0.012
129.00	-0.06	-0.01	0.00	-0.01	0.00	0.01	735.22	367.61	535.89	335.79	6.76	-0.55	0.000
130.00	0.00	-0.01	0.00	0.00	0.00	0.00	735.22	367.61	535.89	335.79	6.87	-0.55	0.000

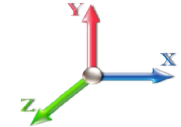
## Seismic Segment Forces (Factored)

<b>Structure:</b> CT13064-A-SBA	<b>Code:</b> EIA/TIA-222-G	3/17/2020
<b>Site Name:</b> Middletown 2, CT	<b>Exposure:</b> C	
<b>Height:</b> 130.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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<b>Load Case:</b> 0.9D + 1.0E				<b>Iterations</b> 23
<b>Gust Response Factor</b>	1.10	<b>Sds</b>	0.19	<b>Ss</b> 0.18
<b>Dead Load Factor</b>	0.90	<b>Seismic Load Factor</b>	1.00	<b>S1</b> 0.06
<b>Wind Load Factor</b>	0.00	<b>Structure Frequency (f1)</b>	0.27	<b>SA</b> 0.03
				<b>Seismic Importance Factor</b> 1.00



Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00	RB1 RB2	0.00	0.00	0.00	0.00	0.00	
2.00		283.72	0.00	0.02	0.01	3.57	
4.00		281.62	0.00	0.03	0.02	5.70	
6.00		279.53	0.00	0.04	0.02	7.09	
8.00		277.43	0.01	0.05	0.03	8.02	
10.00		275.33	0.01	0.06	0.03	8.64	
10.25	RT2 RB3 RB4	34.27	0.01	0.06	0.03	1.08	
12.00		238.97	0.02	0.06	0.04	7.93	
14.00		271.14	0.02	0.07	0.04	9.35	
16.00		269.04	0.03	0.07	0.04	9.53	
18.00		266.95	0.04	0.07	0.04	9.65	
20.00		264.85	0.04	0.07	0.04	9.72	
20.50	RT1 RB5	65.88	0.05	0.07	0.04	2.43	
22.00		196.87	0.05	0.07	0.04	7.32	
24.00		260.66	0.06	0.07	0.04	9.80	
26.00		258.56	0.08	0.07	0.04	9.83	
26.33	RB6	42.46	0.08	0.07	0.04	1.62	
27.50	RT3 RT4	150.08	0.08	0.07	0.04	5.76	
28.00		63.92	0.09	0.07	0.04	2.46	
30.00		254.37	0.10	0.07	0.04	9.89	
32.00		252.27	0.11	0.07	0.04	9.93	
34.00		250.18	0.13	0.07	0.03	9.95	
36.00		248.08	0.14	0.07	0.03	9.97	
38.00		245.98	0.16	0.07	0.03	9.98	
40.00		243.89	0.18	0.07	0.03	9.95	
40.33	RT6	40.04	0.18	0.06	0.03	1.64	
40.50	RT5 RB7	20.60	0.18	0.06	0.03	0.84	
42.00		181.15	0.20	0.06	0.02	7.41	
43.33	Bot - Section 2	160.03	0.21	0.06	0.02	6.54	
44.00		144.41	0.22	0.06	0.02	5.89	
46.00		430.71	0.24	0.06	0.02	17.36	
48.00	Top - Section 1	426.94	0.26	0.05	0.02	16.85	
50.00		189.76	0.28	0.05	0.01	7.23	
52.00		188.08	0.30	0.04	0.01	6.79	
54.00		186.41	0.33	0.04	0.01	6.22	
56.00		184.73	0.35	0.03	0.01	5.51	
58.00		183.05	0.38	0.03	0.01	4.64	
60.00		181.37	0.40	0.02	0.01	3.61	
60.75	RT7 RB8	67.58	0.41	0.01	0.01	1.19	
62.00		112.11	0.43	0.01	0.01	1.52	
64.00		178.02	0.46	0.00	0.01	1.16	
66.00		176.34	0.49	-0.01	0.01	-0.19	
68.00		174.67	0.52	-0.02	0.01	-1.55	
70.00		172.99	0.55	-0.03	0.01	-2.85	
72.00		171.31	0.58	-0.05	0.01	-4.05	
74.00		169.63	0.61	-0.06	0.02	-5.08	

## Seismic Segment Forces (Factored)

<b>Structure:</b> CT13064-A-SBA	<b>Code:</b> EIA/TIA-222-G	3/17/2020
<b>Site Name:</b> Middletown 2, CT	<b>Exposure:</b> C	
<b>Height:</b> 130.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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76.00		167.96	0.65	-0.07	0.02	-5.92
78.00		166.28	0.68	-0.08	0.03	-6.56
78.50	RT8	41.31	0.69	-0.08	0.03	-1.66
80.00		123.30	0.72	-0.09	0.03	-5.23
82.00		162.93	0.75	-0.10	0.04	-7.20
84.00		161.25	0.79	-0.11	0.05	-7.22
86.00		159.57	0.83	-0.12	0.06	-7.06
87.42	Bot - Section 3	112.02	0.85	-0.12	0.07	-4.83
88.00		80.81	0.87	-0.12	0.07	-3.43
90.00	Appurtenance(s)	3445.3	0.91	-0.12	0.09	-136.78
91.33	Top - Section 2	181.80	0.93	-0.12	0.10	-6.77
92.00		39.09	0.95	-0.12	0.11	-1.40
94.00	Appurtenance(s)	169.42	0.99	-0.11	0.13	-5.23
96.00		115.16	1.03	-0.10	0.15	-2.87
98.00		113.90	1.07	-0.08	0.17	-2.04
100.00	Appurtenance(s)	1864.6	1.12	-0.06	0.20	-18.32
102.00		111.39	1.16	-0.03	0.23	-0.08
104.00		110.13	1.21	0.01	0.26	1.03
106.00		108.87	1.26	0.06	0.30	2.24
108.00		107.61	1.30	0.13	0.34	3.52
110.00	Appurtenance(s)	1935.1	1.35	0.20	0.39	89.06
112.00		105.10	1.40	0.29	0.43	6.34
114.00		103.84	1.45	0.39	0.49	7.87
116.00		102.58	1.50	0.51	0.55	9.47
118.00		101.32	1.56	0.65	0.61	11.14
120.00	Top - Section 3	100.07	1.61	0.81	0.68	12.88
122.00		94.88	1.66	0.99	0.76	14.10
124.00		94.88	1.72	1.20	0.84	16.10
126.00		94.88	1.78	1.43	0.94	18.21
128.00		94.88	1.83	1.69	1.03	20.43
129.00	Appurtenance(s)	5052.1	1.86	1.83	1.09	1149.06
130.00	Appurtenance(s)	53.94	1.89	1.98	1.14	12.94
<b>Totals:</b>		<b>24,492.4</b>				<b>1,411.6</b>
						<b>Total Wind: 32,881.6</b>

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

## Calculated Forces

<b>Structure:</b> CT13064-A-SBA	<b>Code:</b> EIA/TIA-222-G	<b>3/17/2020</b>
<b>Site Name:</b> Middletown 2, CT	<b>Exposure:</b> C	
<b>Height:</b> 130.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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**Load Case:** 0.9D + 1.0E

**Iterations** 23

**Gust Response Factor** 1.10

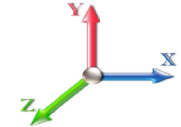
**Sds** 0.19

**Ss** 0.18

**Dead Load Factor** 0.90 **Seismic Load Factor** 1.00 **Sd1** 0.10

**S1** 0.06

**Wind Load Factor** 0.00 **Structure Frequency (f1)** 0.27 **SA** 0.03 **Seismic Importance Factor** 1.00



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-26.28	-1.65	0.00	-189.36	0.00	189.36	2818.94	1409.47	4888.80	2448.04	0.00	0.00	0.00	0.041
2.00	-25.94	-1.65	0.00	-186.06	0.00	186.06	2805.89	1402.95	4830.09	2418.63	0.00	-0.01	-0.01	0.040
4.00	-25.61	-1.64	0.00	-182.77	0.00	182.77	2792.73	1396.36	4771.51	2389.30	0.00	-0.01	-0.01	0.040
6.00	-25.28	-1.64	0.00	-179.48	0.00	179.48	2779.45	1389.73	4713.08	2360.04	0.01	-0.02	-0.02	0.040
8.00	-24.95	-1.63	0.00	-176.21	0.00	176.21	2766.06	1383.03	4654.80	2330.86	0.02	-0.02	-0.02	0.039
10.00	-24.62	-1.63	0.00	-172.94	0.00	172.94	2752.56	1376.28	4596.67	2301.75	0.03	-0.03	-0.03	0.039
10.25	-24.58	-1.63	0.00	-172.53	0.00	172.53	2750.86	1375.43	4589.41	2298.12	0.03	-0.03	-0.03	0.040
12.00	-24.30	-1.62	0.00	-169.69	0.00	169.69	2738.94	1369.47	4538.70	2272.72	0.04	-0.03	-0.03	0.040
14.00	-23.98	-1.61	0.00	-166.45	0.00	166.45	2725.20	1362.60	4480.89	2243.77	0.06	-0.04	-0.04	0.040
16.00	-23.65	-1.60	0.00	-163.23	0.00	163.23	2711.35	1355.68	4423.25	2214.91	0.07	-0.04	-0.04	0.039
18.00	-23.34	-1.60	0.00	-160.02	0.00	160.02	2697.39	1348.70	4365.78	2186.13	0.09	-0.05	-0.05	0.039
20.00	-23.02	-1.59	0.00	-156.82	0.00	156.82	2683.32	1341.66	4308.48	2157.44	0.11	-0.05	-0.05	0.038
20.50	-22.94	-1.59	0.00	-156.03	0.00	156.03	2679.78	1339.89	4294.19	2150.28	0.12	-0.06	-0.06	0.038
22.00	-22.70	-1.58	0.00	-153.65	0.00	153.65	2669.12	1334.56	4251.37	2128.84	0.14	-0.06	-0.06	0.038
24.00	-22.39	-1.57	0.00	-150.48	0.00	150.48	2654.82	1327.41	4194.44	2100.34	0.16	-0.07	-0.07	0.037
26.00	-22.08	-1.56	0.00	-147.34	0.00	147.34	2640.40	1320.20	4137.70	2071.92	0.19	-0.07	-0.07	0.037
26.33	-22.03	-1.56	0.00	-146.82	0.00	146.82	2638.01	1319.00	4128.35	2067.24	0.20	-0.07	-0.07	0.032
27.50	-21.85	-1.56	0.00	-144.99	0.00	144.99	2629.51	1314.76	4095.27	2050.68	0.22	-0.08	-0.08	0.044
28.00	-21.77	-1.56	0.00	-144.21	0.00	144.21	2625.87	1312.93	4081.15	2043.61	0.22	-0.08	-0.08	0.044
30.00	-21.46	-1.55	0.00	-141.09	0.00	141.09	2611.22	1305.61	4024.80	2015.39	0.26	-0.08	-0.08	0.044
32.00	-21.15	-1.54	0.00	-137.99	0.00	137.99	2596.46	1298.23	3968.65	1987.27	0.30	-0.09	-0.09	0.043
34.00	-20.85	-1.53	0.00	-134.91	0.00	134.91	2581.58	1290.79	3912.71	1959.26	0.33	-0.10	-0.10	0.043
36.00	-20.55	-1.53	0.00	-131.84	0.00	131.84	2566.59	1283.29	3856.98	1931.36	0.38	-0.10	-0.10	0.042
38.00	-20.25	-1.52	0.00	-128.79	0.00	128.79	2551.48	1275.74	3801.46	1903.56	0.42	-0.11	-0.11	0.042
40.00	-19.95	-1.51	0.00	-125.75	0.00	125.75	2536.26	1268.13	3746.17	1875.87	0.47	-0.12	-0.12	0.041
40.33	-19.90	-1.51	0.00	-125.26	0.00	125.26	2533.74	1266.87	3737.07	1871.31	0.48	-0.12	-0.12	0.050
40.50	-19.87	-1.51	0.00	-125.00	0.00	125.00	2532.44	1266.22	3732.38	1868.96	0.48	-0.12	-0.12	0.050
42.00	-19.65	-1.50	0.00	-122.74	0.00	122.74	2520.93	1260.46	3691.10	1848.29	0.52	-0.13	-0.13	0.049
43.33	-19.46	-1.50	0.00	-120.74	0.00	120.74	2510.64	1255.32	3654.51	1829.97	0.56	-0.13	-0.13	0.049
44.00	-19.30	-1.49	0.00	-119.74	0.00	119.74	2505.48	1252.74	3636.25	1820.83	0.58	-0.13	-0.13	0.048
46.00	-18.83	-1.48	0.00	-116.76	0.00	116.76	2489.92	1244.96	3581.64	1793.48	0.63	-0.14	-0.14	0.048
48.00	-18.37	-1.46	0.00	-113.80	0.00	113.80	1854.44	927.22	2691.60	1347.80	0.69	-0.15	-0.15	0.052
50.00	-18.12	-1.46	0.00	-110.88	0.00	110.88	1844.56	922.28	2653.53	1328.74	0.76	-0.16	-0.16	0.057
52.00	-17.87	-1.45	0.00	-107.97	0.00	107.97	1834.56	917.28	2615.56	1309.72	0.83	-0.17	-0.17	0.056
54.00	-17.62	-1.45	0.00	-105.07	0.00	105.07	1824.45	912.23	2577.68	1290.76	0.90	-0.18	-0.18	0.055
56.00	-17.38	-1.44	0.00	-102.18	0.00	102.18	1814.23	907.11	2539.90	1271.84	0.97	-0.18	-0.18	0.054
58.00	-17.14	-1.44	0.00	-99.29	0.00	99.29	1803.89	901.94	2502.23	1252.97	1.05	-0.19	-0.19	0.053
60.00	-16.89	-1.44	0.00	-96.41	0.00	96.41	1793.44	896.72	2464.66	1234.16	1.14	-0.20	-0.20	0.052
60.75	-16.80	-1.44	0.00	-95.34	0.00	95.34	1789.49	894.74	2450.61	1227.12	1.17	-0.21	-0.21	0.052
62.00	-16.65	-1.44	0.00	-93.54	0.00	93.54	1782.87	891.44	2427.21	1215.41	1.22	-0.21	-0.21	0.051
64.00	-16.41	-1.44	0.00	-90.67	0.00	90.67	1772.19	886.09	2389.88	1196.72	1.31	-0.22	-0.22	0.050
66.00	-16.18	-1.44	0.00	-87.79	0.00	87.79	1761.39	880.70	2352.67	1178.08	1.41	-0.23	-0.23	0.049
68.00	-15.94	-1.44	0.00	-84.91	0.00	84.91	1750.48	875.24	2315.58	1159.51	1.51	-0.24	-0.24	0.048
70.00	-15.71	-1.44	0.00	-82.03	0.00	82.03	1739.46	869.73	2278.63	1141.01	1.61	-0.25	-0.25	0.047
72.00	-15.47	-1.44	0.00	-79.15	0.00	79.15	1728.32	864.16	2241.81	1122.57	1.71	-0.25	-0.25	0.046
74.00	-15.24	-1.44	0.00	-76.26	0.00	76.26	1717.07	858.54	2205.13	1104.20	1.82	-0.26	-0.26	0.045
76.00	-15.01	-1.45	0.00	-73.37	0.00	73.37	1705.70	852.85	2168.59	1085.91	1.93	-0.27	-0.27	0.044

## Calculated Forces

<b>Structure:</b> CT13064-A-SBA	<b>Code:</b> EIA/TIA-222-G	3/17/2020
<b>Site Name:</b> Middletown 2, CT	<b>Exposure:</b> C	
<b>Height:</b> 130.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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78.00	-14.78	-1.45	0.00	-70.48	0.00	70.48	1694.22	847.11	2132.20	1067.69	2.05	-0.28	0.043
78.50	-14.72	-1.45	0.00	-69.76	0.00	69.76	1691.33	845.67	2123.13	1063.14	2.08	-0.28	0.043
78.50	-14.72	-1.45	0.00	-69.76	0.00	69.76	1691.33	845.67	2123.13	1063.14	2.08	-0.28	0.043
80.00	-14.55	-1.45	0.00	-67.59	0.00	67.59	1682.63	841.31	2095.97	1049.54	2.16	-0.29	0.073
82.00	-14.33	-1.45	0.00	-64.70	0.00	64.70	1670.92	835.46	2059.89	1031.48	2.29	-0.30	0.071
84.00	-14.12	-1.45	0.00	-61.80	0.00	61.80	1659.09	829.55	2023.98	1013.49	2.42	-0.31	0.069
86.00	-13.91	-1.45	0.00	-58.89	0.00	58.89	1647.16	823.58	1988.23	995.59	2.55	-0.33	0.068
87.42	-13.76	-1.45	0.00	-56.83	0.00	56.83	1638.63	819.32	1963.01	982.97	2.65	-0.34	0.066
88.00	-13.67	-1.46	0.00	-55.98	0.00	55.98	1635.10	817.55	1952.65	977.78	2.69	-0.34	0.066
90.00	-10.50	-1.44	0.00	-53.07	0.00	53.07	1622.94	811.47	1917.25	960.05	2.83	-0.35	0.062
91.33	-10.29	-1.44	0.00	-51.15	0.00	51.15	1099.39	549.70	1312.06	657.00	2.93	-0.36	0.087
92.00	-10.24	-1.44	0.00	-50.19	0.00	50.19	1097.24	548.62	1304.79	653.36	2.98	-0.36	0.086
94.00	-10.02	-1.44	0.00	-47.31	0.00	47.31	1090.71	545.35	1282.99	642.45	3.14	-0.38	0.083
96.00	-9.86	-1.44	0.00	-44.43	0.00	44.43	1084.06	542.03	1261.23	631.55	3.30	-0.39	0.079
98.00	-9.70	-1.44	0.00	-41.55	0.00	41.55	1077.30	538.65	1239.51	620.68	3.47	-0.41	0.076
100.00	-7.96	-1.43	0.00	-38.66	0.00	38.66	1070.43	535.22	1217.83	609.82	3.65	-0.42	0.071
102.00	-7.81	-1.43	0.00	-35.79	0.00	35.79	1063.44	531.72	1196.21	598.99	3.83	-0.44	0.067
104.00	-7.66	-1.43	0.00	-32.92	0.00	32.92	1056.34	528.17	1174.63	588.19	4.01	-0.45	0.063
106.00	-7.52	-1.43	0.00	-30.06	0.00	30.06	1049.12	524.56	1153.11	577.41	4.20	-0.46	0.059
108.00	-7.37	-1.43	0.00	-27.19	0.00	27.19	1041.79	520.90	1131.65	566.67	4.40	-0.47	0.055
110.00	-5.59	-1.33	0.00	-24.34	0.00	24.34	1034.34	517.17	1110.26	555.96	4.60	-0.48	0.049
112.00	-5.47	-1.32	0.00	-21.68	0.00	21.68	1026.79	513.39	1088.94	545.28	4.80	-0.49	0.045
114.00	-5.36	-1.31	0.00	-19.05	0.00	19.05	1019.11	509.56	1067.70	534.64	5.01	-0.50	0.041
116.00	-5.24	-1.30	0.00	-16.42	0.00	16.42	1011.32	505.66	1046.53	524.04	5.22	-0.51	0.037
118.00	-5.13	-1.29	0.00	-13.82	0.00	13.82	1003.42	501.71	1025.45	513.49	5.44	-0.52	0.032
120.00	-5.02	-1.28	0.00	-11.24	0.00	11.24	995.40	497.70	1004.45	502.97	5.65	-0.52	0.027
120.00	-5.02	-1.28	0.00	-11.24	0.00	11.24	735.22	367.61	535.89	335.79	5.65	-0.52	0.040
122.00	-4.91	-1.26	0.00	-8.69	0.00	8.69	735.22	367.61	535.89	335.79	5.87	-0.53	0.033
124.00	-4.81	-1.25	0.00	-6.16	0.00	6.16	735.22	367.61	535.89	335.79	6.10	-0.54	0.025
126.00	-4.70	-1.23	0.00	-3.67	0.00	3.67	735.22	367.61	535.89	335.79	6.32	-0.54	0.017
128.00	-4.59	-1.21	0.00	-1.22	0.00	1.22	735.22	367.61	535.89	335.79	6.55	-0.54	0.010
129.00	-0.05	-0.01	0.00	-0.01	0.00	0.01	735.22	367.61	535.89	335.79	6.66	-0.54	0.000
130.00	0.00	-0.01	0.00	0.00	0.00	0.00	735.22	367.61	535.89	335.79	6.78	-0.54	0.000

## Wind Loading - Shaft

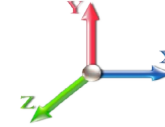
<b>Structure:</b> CT13064-A-SBA	<b>Code:</b> EIA/TIA-222-G	3/17/2020
<b>Site Name:</b> Middletown 2, CT	<b>Exposure:</b> C	
<b>Height:</b> 130.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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**Load Case:** 1.0D + 1.0W 60 mph Wind

**Dead Load Factor** 1.00  
**Wind Load Factor** 1.00



**Iterations** 24

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00	RB1 RB2	1.00	0.85	7.442	8.19	198.94	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
2.00		1.00	0.85	7.442	8.19	197.48	0.650	0.000	2.00	7.166	4.66	38.1	0.0	283.7
4.00		1.00	0.85	7.442	8.19	196.03	0.650	0.000	2.00	7.114	4.62	37.9	0.0	281.6
6.00		1.00	0.85	7.442	8.19	194.58	0.650	0.000	2.00	7.061	4.59	37.6	0.0	279.5
8.00		1.00	0.85	7.442	8.19	193.12	0.650	0.000	2.00	7.009	4.56	37.3	0.0	277.4
10.00		1.00	0.85	7.442	8.19	191.67	0.650	0.000	2.00	6.956	4.52	37.0	0.0	275.3
10.25	RT2 RB3 RB4	1.00	0.85	7.442	8.19	191.49	0.650	0.000	0.25	0.866	0.56	4.6	0.0	34.3
12.00		1.00	0.85	7.442	8.19	190.21	0.650	0.000	1.75	6.038	3.92	32.1	0.0	239.0
14.00		1.00	0.85	7.442	8.19	188.76	0.650	0.000	2.00	6.851	4.45	36.5	0.0	271.1
16.00		1.00	0.86	7.534	8.29	188.46	0.650	0.000	2.00	6.798	4.42	36.6	0.0	269.0
18.00		1.00	0.88	7.723	8.50	189.33	0.650	0.000	2.00	6.746	4.38	37.2	0.0	266.9
20.00		1.00	0.90	7.896	8.69	189.94	0.650	0.000	2.00	6.693	4.35	37.8	0.0	264.9
20.50	RT1 RB5	1.00	0.91	7.937	8.73	190.06	0.650	0.000	0.50	1.665	1.08	9.4	0.0	65.9
22.00		1.00	0.92	8.056	8.86	190.35	0.650	0.000	1.50	4.976	3.23	28.7	0.0	196.9
24.00		1.00	0.94	8.205	9.03	190.57	0.650	0.000	2.00	6.588	4.28	38.7	0.0	260.7
26.00		1.00	0.95	8.345	9.18	190.64	0.650	0.000	2.00	6.536	4.25	39.0	0.0	258.6
26.33	RB6	1.00	0.96	8.367	9.20	190.64	0.650	0.000	0.33	1.073	0.70	6.4	0.0	42.5
27.50	RT3 RT4	1.00	0.96	8.444	9.29	190.61	0.650	0.000	1.17	3.794	2.47	22.9	0.0	150.1
28.00		1.00	0.97	8.476	9.32	190.59	0.650	0.000	0.50	1.616	1.05	9.8	0.0	63.9
30.00		1.00	0.98	8.600	9.46	190.41	0.650	0.000	2.00	6.430	4.18	39.5	0.0	254.4
32.00		1.00	1.00	8.717	9.59	190.14	0.650	0.000	2.00	6.378	4.15	39.8	0.0	252.3
34.00		1.00	1.01	8.829	9.71	189.77	0.650	0.000	2.00	6.325	4.11	39.9	0.0	250.2
36.00		1.00	1.02	8.936	9.83	189.32	0.650	0.000	2.00	6.273	4.08	40.1	0.0	248.1
38.00		1.00	1.03	9.039	9.94	188.80	0.650	0.000	2.00	6.220	4.04	40.2	0.0	246.0
40.00		1.00	1.04	9.137	10.05	188.21	0.650	0.000	2.00	6.168	4.01	40.3	0.0	243.9
40.33	RT6	1.00	1.05	9.153	10.07	188.11	0.650	0.000	0.33	1.013	0.66	6.6	0.0	40.0
40.50	RT5 RB7	1.00	1.05	9.161	10.08	188.06	0.650	0.000	0.17	0.521	0.34	3.4	0.0	20.6
42.00		1.00	1.05	9.231	10.15	187.56	0.650	0.000	1.50	4.581	2.98	30.2	0.0	181.1
43.33	Bot - Section 2	1.00	1.06	9.292	10.22	187.10	0.650	0.000	1.33	4.048	2.63	26.9	0.0	160.0
44.00		1.00	1.06	9.322	10.25	186.86	0.650	0.000	0.67	2.043	1.33	13.6	0.0	144.4
46.00		1.00	1.07	9.410	10.35	186.10	0.650	0.000	2.00	6.095	3.96	41.0	0.0	430.7
48.00	Top - Section 1	1.00	1.08	9.494	10.44	185.29	0.650	0.000	2.00	6.042	3.93	41.0	0.0	426.9
50.00		1.00	1.09	9.576	10.53	187.09	0.650	0.000	2.00	5.989	3.89	41.0	0.0	189.8
52.00		1.00	1.10	9.656	10.62	186.21	0.650	0.000	2.00	5.937	3.86	41.0	0.0	188.1
54.00		1.00	1.11	9.733	10.71	185.29	0.650	0.000	2.00	5.884	3.82	40.9	0.0	186.4
56.00		1.00	1.12	9.807	10.79	184.33	0.650	0.000	2.00	5.832	3.79	40.9	0.0	184.7
58.00		1.00	1.13	9.880	10.87	183.34	0.650	0.000	2.00	5.779	3.76	40.8	0.0	183.1
60.00		1.00	1.14	9.951	10.95	182.31	0.650	0.000	2.00	5.727	3.72	40.7	0.0	181.4
60.75	RT7 RB8	1.00	1.14	9.977	10.97	181.92	0.650	0.000	0.75	2.134	1.39	15.2	0.0	67.6
62.00		1.00	1.14	10.020	11.02	181.26	0.650	0.000	1.25	3.540	2.30	25.4	0.0	112.1
64.00		1.00	1.15	10.087	11.10	180.17	0.650	0.000	2.00	5.622	3.65	40.5	0.0	178.0
66.00		1.00	1.16	10.153	11.17	179.06	0.650	0.000	2.00	5.569	3.62	40.4	0.0	176.3
68.00		1.00	1.17	10.217	11.24	177.92	0.650	0.000	2.00	5.516	3.59	40.3	0.0	174.7
70.00		1.00	1.17	10.279	11.31	176.75	0.650	0.000	2.00	5.464	3.55	40.2	0.0	173.0
72.00		1.00	1.18	10.340	11.37	175.57	0.650	0.000	2.00	5.411	3.52	40.0	0.0	171.3
74.00		1.00	1.19	10.400	11.44	174.35	0.650	0.000	2.00	5.359	3.48	39.8	0.0	169.6
76.00		1.00	1.19	10.459	11.50	173.12	0.650	0.000	2.00	5.306	3.45	39.7	0.0	168.0



## Wind Loading - Shaft

<b>Structure:</b> CT13064-A-SBA	<b>Code:</b> EIA/TIA-222-G	3/17/2020
<b>Site Name:</b> Middletown 2, CT	<b>Exposure:</b> C	
<b>Height:</b> 130.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Page:</b> 49
	<b>Struct Class:</b> II	



78.00	1.00	1.20	10.516	11.57	171.87	0.650	0.000	2.00	5.254	3.41	39.5	0.0	166.3
78.50 RT8	1.00	1.20	10.530	11.58	171.55	0.650	0.000	0.50	1.305	0.85	9.8	0.0	41.3
80.00	1.00	1.21	10.572	11.63	170.59	0.650	0.000	1.50	3.896	2.53	29.4	0.0	123.3
82.00	1.00	1.21	10.627	11.69	169.30	0.650	0.000	2.00	5.148	3.35	39.1	0.0	162.9
84.00	1.00	1.22	10.681	11.75	167.99	0.650	0.000	2.00	5.096	3.31	38.9	0.0	161.2
86.00	1.00	1.23	10.734	11.81	166.66	0.650	0.000	2.00	5.043	3.28	38.7	0.0	159.6
87.42 Bot - Section 3	1.00	1.23	10.771	11.85	165.71	0.650	0.000	1.42	3.541	2.30	27.3	0.0	112.0
88.00	1.00	1.23	10.787	11.87	165.31	0.650	0.000	0.58	1.469	0.95	11.3	0.0	80.8
90.00 Appurtenance(s)	1.00	1.24	10.838	11.92	163.95	0.650	0.000	2.00	5.002	3.25	38.8	0.0	275.2
91.33 Top - Section 2	1.00	1.24	10.871	11.96	163.03	0.650	0.000	1.33	3.305	2.15	25.7	0.0	181.8
92.00	1.00	1.24	10.888	11.98	164.69	0.650	0.000	0.67	1.644	1.07	12.8	0.0	39.1
94.00 Appurtenance(s)	1.00	1.25	10.937	12.03	163.30	0.650	0.000	2.00	4.897	3.18	38.3	0.0	116.4
96.00	1.00	1.25	10.986	12.08	161.90	0.650	0.000	2.00	4.844	3.15	38.0	0.0	115.2
98.00	1.00	1.26	11.034	12.14	160.48	0.650	0.000	2.00	4.791	3.11	37.8	0.0	113.9
100.00 Appurtenance(s)	1.00	1.27	11.081	12.19	159.05	0.650	0.000	2.00	4.739	3.08	37.5	0.0	112.6
102.00	1.00	1.27	11.127	12.24	157.60	0.650	0.000	2.00	4.686	3.05	37.3	0.0	111.4
104.00	1.00	1.28	11.173	12.29	156.14	0.650	0.000	2.00	4.634	3.01	37.0	0.0	110.1
106.00	1.00	1.28	11.218	12.34	154.67	0.650	0.000	2.00	4.581	2.98	36.7	0.0	108.9
108.00	1.00	1.29	11.262	12.39	153.19	0.650	0.000	2.00	4.529	2.94	36.5	0.0	107.6
110.00 Appurtenance(s)	1.00	1.29	11.305	12.44	151.69	0.650	0.000	2.00	4.476	2.91	36.2	0.0	106.4
112.00	1.00	1.30	11.348	12.48	150.19	0.650	0.000	2.00	4.423	2.88	35.9	0.0	105.1
114.00	1.00	1.30	11.391	12.53	148.67	0.650	0.000	2.00	4.371	2.84	35.6	0.0	103.8
116.00	1.00	1.31	11.432	12.58	147.14	0.650	0.000	2.00	4.318	2.81	35.3	0.0	102.6
118.00	1.00	1.31	11.474	12.62	145.60	0.650	0.000	2.00	4.266	2.77	35.0	0.0	101.3
120.00 Top - Section 3	1.00	1.32	11.514	12.67	144.05	0.650	0.000	2.00	4.213	2.74	34.7	0.0	100.1
122.00	1.00	1.32	11.554	12.71	103.39	0.620 *	0.000	2.00	3.000	1.86	23.6	0.0	94.9
124.00	1.00	1.32	11.594	12.75	103.57	0.620 *	0.000	2.00	3.000	1.86	23.7	0.0	94.9
126.00	1.00	1.33	11.633	12.80	103.74	0.620 *	0.000	2.00	3.000	1.86	23.8	0.0	94.9
128.00	1.00	1.33	11.672	12.84	103.92	0.620 *	0.000	2.00	3.000	1.86	23.9	0.0	94.9
129.00 Appurtenance(s)	1.00	1.34	11.691	12.86	104.00	0.620 *	0.000	1.00	1.500	0.93	12.0	0.0	47.4
130.00 Appurtenance(s)	1.00	1.34	11.710	12.88	104.08	0.600	0.000	1.00	1.500	0.90	11.6	0.0	47.4
<b>Totals:</b>								<b>130.00</b>			<b>2,438.9</b>		<b>12,677.2</b>

\* Cf Adjusted by Linear Load Ra Effect

## Discrete Appurtenance Forces

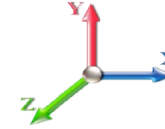
<b>Structure:</b> CT13064-A-SBA	<b>Code:</b> EIA/TIA-222-G	3/17/2020
<b>Site Name:</b> Middletown 2, CT	<b>Exposure:</b> C	
<b>Height:</b> 130.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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**Load Case:** 1.0D + 1.0W 60 mph Wind

**Dead Load Factor** 1.00  
**Wind Load Factor** 1.00



**Iterations** 24

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	130.00	6' Lightning rod	1	11.710	12.881	1.00	1.00	0.38	6.50	0.000	0.000	4.89	0.00	0.00
2	129.00	RRUS 32	6	11.710	12.881	0.50	0.75	4.97	462.00	0.000	1.000	64.08	0.00	64.08
3	129.00	MTC3607 Platform + HR	1	11.691	12.860	1.00	1.00	45.40	2000.00	0.000	0.000	583.85	0.00	0.00
4	129.00	PRK-1245 (kicker kit)	1	11.691	12.860	1.00	1.00	9.50	464.91	0.000	0.000	122.17	0.00	0.00
5	129.00	Angle Reinforcement	1	11.691	12.860	1.00	1.00	5.80	250.00	0.000	0.000	74.59	0.00	0.00
6	129.00	OPA-65R-LCUU-H6	3	11.710	12.881	0.59	0.75	17.08	240.00	0.000	1.000	220.06	0.00	220.06
7	129.00	QS66512-2	3	11.710	12.881	0.69	0.75	16.79	333.00	0.000	1.000	216.30	0.00	216.30
8	129.00	OPA65R-KE6D	6	11.710	12.881	0.54	0.75	41.24	379.80	0.000	1.000	531.18	0.00	531.18
9	129.00	RRUS 4478 B14	3	11.710	12.881	0.50	0.75	2.49	178.20	0.000	1.000	32.04	0.00	32.04
10	129.00	B2 B66A 8843	3	11.710	12.881	0.50	0.75	2.47	210.00	0.000	1.000	31.85	0.00	31.85
11	129.00	4449 B5/B12	3	11.710	12.881	0.50	0.75	2.97	213.00	0.000	1.000	38.25	0.00	38.25
12	129.00	RRUS E2 B29	3	11.710	12.881	0.50	0.75	4.75	178.20	0.000	1.000	61.17	0.00	61.17
13	129.00	DC6-48-60-18-8F	2	11.710	12.881	0.75	0.75	1.38	63.60	0.000	1.000	17.78	0.00	17.78
14	129.00	DC6-48-60-0-8C	2	11.710	12.881	0.38	0.75	3.58	32.00	0.000	1.000	46.18	0.00	46.18
15	110.00	T-Arm (Round)	3	11.305	12.436	0.56	0.75	13.50	1050.00	0.000	0.000	167.88	0.00	0.00
16	110.00	DB-T1-6Z-8AB-0Z	2	11.305	12.436	0.80	0.80	7.68	37.80	0.000	0.000	95.51	0.00	0.00
17	110.00	B4 RRH2X60-4R	3	11.305	12.436	0.54	0.80	5.40	165.00	0.000	0.000	67.19	0.00	0.00
18	110.00	B13 RRH4X30-4R	3	11.305	12.436	0.54	0.80	3.47	171.60	0.000	0.000	43.19	0.00	0.00
19	110.00	SBNHH-1D65B	6	11.305	12.436	0.63	0.80	30.94	240.00	0.000	0.000	384.80	0.00	0.00
20	110.00	CBC721-DF	3	11.284	12.412	0.50	0.80	0.68	13.20	0.000	-1.000	8.45	0.00	-8.45
21	110.00	CBC721-DF	3	11.327	12.460	0.50	0.80	0.68	13.20	0.000	1.000	8.48	0.00	8.48
22	110.00	RRH2X60-1900A-4R	3	11.305	12.436	0.54	0.80	3.02	138.00	0.000	0.000	37.59	0.00	0.00
23	100.00	LNx-6515DS-A1M	3	11.081	12.189	0.64	0.80	22.02	150.90	0.000	0.000	268.43	0.00	0.00
24	100.00	AIR 21, 1.3M, B2A B4P	3	11.081	12.189	0.64	0.80	11.69	274.50	0.000	0.000	142.52	0.00	0.00
25	100.00	AIR 21, 1.3M, B4A B2P	3	11.081	12.189	0.64	0.80	11.69	271.20	0.000	0.000	142.52	0.00	0.00
26	100.00	782 11056	3	11.081	12.189	0.62	0.80	0.24	5.40	0.000	0.000	2.97	0.00	0.00
27	100.00	T-Arm (Round)	3	11.081	12.189	0.56	0.75	13.50	1050.00	0.000	0.000	164.55	0.00	0.00
28	94.00	1'4"x6.5"x6" Surge	1	10.937	12.031	0.80	0.80	1.71	53.00	0.000	0.000	20.60	0.00	0.00
29	90.00	ALU - 800 MHz - RRU	6	10.838	11.921	0.50	0.75	7.51	318.00	0.000	0.000	89.50	0.00	0.00
30	90.00	ALU - 1900MHz - RRU	3	10.838	11.921	0.50	0.75	5.73	132.00	0.000	0.000	68.29	0.00	0.00
31	90.00	Andrew - VHLP2-11	2	10.838	11.921	1.00	1.00	9.36	54.00	0.000	0.000	111.58	0.00	0.00
32	90.00	F3P-10W	1	10.838	11.921	1.00	1.00	51.77	2122.00	0.000	0.000	617.17	0.00	0.00
33	90.00	NNVV-65B-R4	3	10.838	11.921	0.55	0.75	20.43	232.20	0.000	0.000	243.55	0.00	0.00
34	90.00	AAHC	3	10.838	11.921	0.56	0.75	7.09	312.00	0.000	0.000	84.49	0.00	0.00

**Totals:** 11,815.21

**4,813.65**

## Total Applied Force Summary

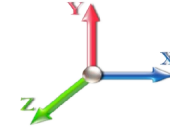
<b>Structure:</b> CT13064-A-SBA	<b>Code:</b> EIA/TIA-222-G	3/17/2020
<b>Site Name:</b> Middletown 2, CT	<b>Exposure:</b> C	
<b>Height:</b> 130.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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**Load Case:** 1.0D + 1.0W 60 mph Wind

**Dead Load Factor** 1.00  
**Wind Load Factor** 1.00



**Iterations** 24

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
2.00		38.13	371.26	0.00	0.00
4.00		37.85	369.17	0.00	0.00
6.00		37.57	367.07	0.00	0.00
8.00		37.29	364.97	0.00	0.00
10.00		37.01	362.88	0.00	0.00
10.25		4.61	45.21	0.00	0.00
12.00		32.13	315.57	0.00	0.00
14.00		36.45	358.68	0.00	0.00
16.00		36.62	356.59	0.00	0.00
18.00		37.25	354.49	0.00	0.00
20.00		37.79	352.39	0.00	0.00
20.50		9.45	87.77	0.00	0.00
22.00		28.66	262.53	0.00	0.00
24.00		38.65	348.20	0.00	0.00
26.00		38.99	346.10	0.00	0.00
26.33		6.42	56.91	0.00	0.00
27.50		22.90	201.30	0.00	0.00
28.00		9.79	85.81	0.00	0.00
30.00		39.54	341.91	0.00	0.00
32.00		39.75	339.82	0.00	0.00
34.00		39.93	337.72	0.00	0.00
36.00		40.08	335.62	0.00	0.00
38.00		40.20	333.53	0.00	0.00
40.00		40.29	331.43	0.00	0.00
40.33		6.63	54.48	0.00	0.00
40.50		3.41	28.05	0.00	0.00
42.00		30.24	246.80	0.00	0.00
43.33		26.89	218.39	0.00	0.00
44.00		13.62	173.59	0.00	0.00
46.00		41.00	518.26	0.00	0.00
48.00		41.02	514.48	0.00	0.00
50.00		41.01	277.30	0.00	0.00
52.00		40.99	275.63	0.00	0.00
54.00		40.95	273.95	0.00	0.00
56.00		40.89	272.27	0.00	0.00
58.00		40.83	270.60	0.00	0.00
60.00		40.74	268.92	0.00	0.00
60.75		15.22	100.41	0.00	0.00
62.00		25.36	166.83	0.00	0.00
64.00		40.54	265.56	0.00	0.00
66.00		40.43	263.89	0.00	0.00
68.00		40.30	262.21	0.00	0.00
70.00		40.16	260.53	0.00	0.00
72.00		40.01	258.86	0.00	0.00
74.00		39.85	257.18	0.00	0.00
76.00		39.68	255.50	0.00	0.00

## Total Applied Force Summary

<b>Structure:</b> CT13064-A-SBA	<b>Code:</b> EIA/TIA-222-G	3/17/2020
<b>Site Name:</b> Middletown 2, CT	<b>Exposure:</b> C	
<b>Height:</b> 130.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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78.00		39.50	253.82	0.00	0.00
78.50		9.83	63.19	0.00	0.00
80.00		29.45	188.95	0.00	0.00
82.00		39.12	244.47	0.00	0.00
84.00		38.92	236.79	0.00	0.00
86.00		38.71	235.12	0.00	0.00
87.42		27.27	165.53	0.00	0.00
88.00		11.33	102.84	0.00	0.00
90.00	(18) attachments	1253.35	3520.90	0.00	0.00
91.33		25.69	226.59	0.00	0.00
92.00		12.80	61.48	0.00	0.00
94.00	(1) attachments	58.89	236.60	0.00	0.00
96.00		38.05	182.34	0.00	0.00
98.00		37.80	181.08	0.00	0.00
100.00	(15) attachments	758.53	1931.83	0.00	0.00
102.00		37.28	163.89	0.00	0.00
104.00		37.02	162.63	0.00	0.00
106.00		36.74	161.37	0.00	0.00
108.00		36.46	160.11	0.00	0.00
110.00	(26) attachments	849.27	1987.66	0.00	0.03
112.00		35.89	128.24	0.00	0.00
114.00		35.60	126.98	0.00	0.00
116.00		35.30	125.72	0.00	0.00
118.00		35.00	124.46	0.00	0.00
120.00		34.69	123.21	0.00	0.00
122.00		23.64	118.02	0.00	0.00
124.00		23.72	118.02	0.00	0.00
126.00		23.80	118.02	0.00	0.00
128.00		23.88	118.02	0.00	0.00
129.00	(37) attachments	2051.45	5063.72	0.00	1258.88
130.00	(1) attachments	16.49	53.94	0.00	0.00
	<b>Totals:</b>	<b>7,252.59</b>	<b>29,196.12</b>	<b>0.00</b>	<b>1,258.91</b>

## Linear Appurtenance Segment Forces (Factored)

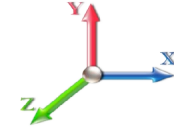
<b>Structure:</b> CT13064-A-SBA	<b>Code:</b> EIA/TIA-222-G	3/17/2020
<b>Site Name:</b> Middletown 2, CT	<b>Exposure:</b> C	
<b>Height:</b> 130.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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**Load Case:** 1.0D + 1.0W 60 mph Wind

**Dead Load Factor** 1.00  
**Wind Load Factor** 1.00



**Iterations** 24

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	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.070	0.000	7.442	0.00	9.66
2.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.070	0.000	7.442	0.00	12.00
4.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.070	0.000	7.442	0.00	9.66
4.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.070	0.000	7.442	0.00	12.00
6.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.071	0.000	7.442	0.00	9.66
6.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.071	0.000	7.442	0.00	12.00
8.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.071	0.000	7.442	0.00	9.66
8.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.071	0.000	7.442	0.00	12.00
10.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.072	0.000	7.442	0.00	9.66
10.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.072	0.000	7.442	0.00	12.00
10.25	2" Conduit	Yes	0.25	0.000	2.00	0.04	0.00	0.072	0.000	7.442	0.00	1.21
10.25	1" Reinforcing plate	Yes	0.25	0.000	1.00	0.02	0.00	0.072	0.000	7.442	0.00	1.50
12.00	2" Conduit	Yes	1.75	0.000	2.00	0.29	0.00	0.072	0.000	7.442	0.00	8.45
12.00	1" Reinforcing plate	Yes	1.75	0.000	1.00	0.15	0.00	0.072	0.000	7.442	0.00	10.50
14.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.073	0.000	7.442	0.00	9.66
14.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.073	0.000	7.442	0.00	12.00
16.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.074	0.000	7.534	0.00	9.66
16.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.074	0.000	7.534	0.00	12.00
18.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.074	0.000	7.723	0.00	9.66
18.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.074	0.000	7.723	0.00	12.00
20.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.075	0.000	7.896	0.00	9.66
20.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.075	0.000	7.896	0.00	12.00
20.50	2" Conduit	Yes	0.50	0.000	2.00	0.08	0.00	0.075	0.000	7.937	0.00	2.42
20.50	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.04	0.00	0.075	0.000	7.937	0.00	3.00
22.00	2" Conduit	Yes	1.50	0.000	2.00	0.25	0.00	0.075	0.000	8.056	0.00	7.25
22.00	1" Reinforcing plate	Yes	1.50	0.000	1.00	0.13	0.00	0.075	0.000	8.056	0.00	9.00
24.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.076	0.000	8.205	0.00	9.66
24.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.076	0.000	8.205	0.00	12.00
26.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.077	0.000	8.345	0.00	9.66
26.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.077	0.000	8.345	0.00	12.00
26.33	2" Conduit	Yes	0.33	0.000	2.00	0.05	0.00	0.077	0.000	8.367	0.00	1.59
26.33	1" Reinforcing plate	Yes	0.33	0.000	1.00	0.03	0.00	0.077	0.000	8.367	0.00	1.98
27.50	2" Conduit	Yes	1.17	0.000	2.00	0.20	0.00	0.077	0.000	8.444	0.00	5.65
27.50	1" Reinforcing plate	Yes	1.17	0.000	1.00	0.10	0.00	0.077	0.000	8.444	0.00	7.02
28.00	2" Conduit	Yes	0.50	0.000	2.00	0.08	0.00	0.077	0.000	8.476	0.00	2.42
28.00	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.04	0.00	0.077	0.000	8.476	0.00	3.00
30.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.078	0.000	8.600	0.00	9.66
30.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.078	0.000	8.600	0.00	12.00
32.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.078	0.000	8.717	0.00	9.66
32.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.078	0.000	8.717	0.00	12.00
34.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.079	0.000	8.829	0.00	9.66
34.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.079	0.000	8.829	0.00	12.00
36.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.080	0.000	8.936	0.00	9.66
36.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.080	0.000	8.936	0.00	12.00
38.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.080	0.000	9.039	0.00	9.66
38.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.080	0.000	9.039	0.00	12.00
40.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.081	0.000	9.137	0.00	9.66

## Linear Appurtenance Segment Forces (Factored)

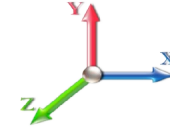
<b>Structure:</b> CT13064-A-SBA	<b>Code:</b> EIA/TIA-222-G	3/17/2020
<b>Site Name:</b> Middletown 2, CT	<b>Exposure:</b> C	
<b>Height:</b> 130.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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**Load Case:** 1.0D + 1.0W 60 mph Wind

**Dead Load Factor** 1.00  
**Wind Load Factor** 1.00



**Iterations** 24

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)
40.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.081	0.000	9.137	0.00	12.00
40.33	2" Conduit	Yes	0.33	0.000	2.00	0.05	0.00	0.081	0.000	9.153	0.00	1.59
40.33	1" Reinforcing plate	Yes	0.33	0.000	1.00	0.03	0.00	0.081	0.000	9.153	0.00	1.98
40.50	2" Conduit	Yes	0.17	0.000	2.00	0.03	0.00	0.082	0.000	9.161	0.00	0.82
40.50	1" Reinforcing plate	Yes	0.17	0.000	1.00	0.01	0.00	0.082	0.000	9.161	0.00	1.02
42.00	2" Conduit	Yes	1.50	0.000	2.00	0.25	0.00	0.082	0.000	9.231	0.00	7.25
42.00	1" Reinforcing plate	Yes	1.50	0.000	1.00	0.13	0.00	0.082	0.000	9.231	0.00	9.00
43.33	2" Conduit	Yes	1.33	0.000	2.00	0.22	0.00	0.082	0.000	9.292	0.00	6.44
43.33	1" Reinforcing plate	Yes	1.33	0.000	1.00	0.11	0.00	0.082	0.000	9.292	0.00	8.00
44.00	2" Conduit	Yes	0.67	0.000	2.00	0.11	0.00	0.083	0.000	9.322	0.00	3.22
44.00	1" Reinforcing plate	Yes	0.67	0.000	1.00	0.06	0.00	0.083	0.000	9.322	0.00	4.00
46.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.083	0.000	9.410	0.00	9.66
46.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.083	0.000	9.410	0.00	12.00
48.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.084	0.000	9.494	0.00	9.66
48.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.084	0.000	9.494	0.00	12.00
50.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.083	0.000	9.576	0.00	9.66
50.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.083	0.000	9.576	0.00	12.00
52.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.084	0.000	9.656	0.00	9.66
52.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.084	0.000	9.656	0.00	12.00
54.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.085	0.000	9.733	0.00	9.66
54.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.085	0.000	9.733	0.00	12.00
56.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.086	0.000	9.807	0.00	9.66
56.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.086	0.000	9.807	0.00	12.00
58.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.087	0.000	9.880	0.00	9.66
58.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.087	0.000	9.880	0.00	12.00
60.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.087	0.000	9.951	0.00	9.66
60.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.087	0.000	9.951	0.00	12.00
60.75	2" Conduit	Yes	0.75	0.000	2.00	0.13	0.00	0.088	0.000	9.977	0.00	3.62
60.75	1" Reinforcing plate	Yes	0.75	0.000	1.00	0.06	0.00	0.088	0.000	9.977	0.00	4.50
62.00	2" Conduit	Yes	1.25	0.000	2.00	0.21	0.00	0.088	0.000	10.020	0.00	6.04
62.00	1" Reinforcing plate	Yes	1.25	0.000	1.00	0.10	0.00	0.088	0.000	10.020	0.00	7.50
64.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.089	0.000	10.087	0.00	9.66
64.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.089	0.000	10.087	0.00	12.00
66.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.090	0.000	10.153	0.00	9.66
66.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.090	0.000	10.153	0.00	12.00
68.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.091	0.000	10.217	0.00	9.66
68.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.091	0.000	10.217	0.00	12.00
70.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.092	0.000	10.279	0.00	9.66
70.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.092	0.000	10.279	0.00	12.00
72.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.092	0.000	10.340	0.00	9.66
72.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.092	0.000	10.340	0.00	12.00
74.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.093	0.000	10.400	0.00	9.66
74.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.093	0.000	10.400	0.00	12.00
76.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.094	0.000	10.459	0.00	9.66
76.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.094	0.000	10.459	0.00	12.00
78.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.095	0.000	10.516	0.00	9.66
78.00	1" Reinforcing plate	Yes	2.00	0.000	1.00	0.17	0.00	0.095	0.000	10.516	0.00	12.00

## Linear Appurtenance Segment Forces (Factored)

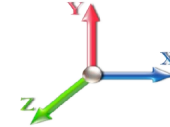
<b>Structure:</b> CT13064-A-SBA	<b>Code:</b> EIA/TIA-222-G	3/17/2020
<b>Site Name:</b> Middletown 2, CT	<b>Exposure:</b> C	
<b>Height:</b> 130.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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**Load Case:** 1.0D + 1.0W 60 mph Wind

**Dead Load Factor** 1.00  
**Wind Load Factor** 1.00



**Iterations** 24

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)
78.50	2" Conduit	Yes	0.50	0.000	2.00	0.08	0.00	0.096	0.000	10.530	0.00	2.42
78.50	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.04	0.00	0.096	0.000	10.530	0.00	3.00
80.00	2" Conduit	Yes	1.50	0.000	2.00	0.25	0.00	0.096	0.000	10.572	0.00	7.25
80.00	1" Reinforcing plate	Yes	1.50	0.000	1.00	0.13	0.00	0.096	0.000	10.572	0.00	9.00
82.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.081	0.000	10.627	0.00	9.66
82.00	1" Reinforcing plate	Yes	1.00	0.000	1.00	0.08	0.00	0.081	0.000	10.627	0.00	6.00
84.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.065	0.000	10.681	0.00	9.66
86.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.066	0.000	10.734	0.00	9.66
87.42	2" Conduit	Yes	1.42	0.000	2.00	0.24	0.00	0.067	0.000	10.771	0.00	6.84
88.00	2" Conduit	Yes	0.58	0.000	2.00	0.10	0.00	0.067	0.000	10.787	0.00	2.82
90.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.068	0.000	10.838	0.00	9.66
91.33	2" Conduit	Yes	1.33	0.000	2.00	0.22	0.00	0.068	0.000	10.871	0.00	6.44
92.00	2" Conduit	Yes	0.67	0.000	2.00	0.11	0.00	0.068	0.000	10.888	0.00	3.22
94.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.068	0.000	10.937	0.00	9.66
96.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.069	0.000	10.986	0.00	9.66
98.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.070	0.000	11.034	0.00	9.66
100.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.070	0.000	11.081	0.00	9.66
102.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.071	0.000	11.127	0.00	9.66
104.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.072	0.000	11.173	0.00	9.66
106.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.073	0.000	11.218	0.00	9.66
108.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.074	0.000	11.262	0.00	9.66
110.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.074	0.000	11.305	0.00	9.66
112.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.075	0.000	11.348	0.00	9.66
114.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.076	0.000	11.391	0.00	9.66
116.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.077	0.000	11.432	0.00	9.66
118.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.078	0.000	11.474	0.00	9.66
120.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.079	0.000	11.514	0.00	9.66
122.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.111	1.033	11.554	0.00	9.66
124.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.111	1.033	11.594	0.00	9.66
126.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.111	1.033	11.633	0.00	9.66
128.00	2" Conduit	Yes	2.00	0.000	2.00	0.33	0.00	0.111	1.033	11.672	0.00	9.66
129.00	2" Conduit	Yes	1.00	0.000	2.00	0.17	0.00	0.111	1.033	11.691	0.00	4.83
<b>Totals:</b>											<b>0.0</b>	<b>1,109.1</b>



## Calculated Forces

<b>Structure:</b> CT13064-A-SBA	<b>Code:</b> EIA/TIA-222-G	<b>3/17/2020</b>
<b>Site Name:</b> Middletown 2, CT	<b>Exposure:</b> C	
<b>Height:</b> 130.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II

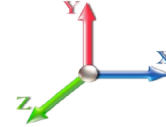


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**Load Case:** 1.0D + 1.0W 60 mph Wind

**Iterations** 24

**Dead Load Factor** 1.00  
**Wind Load Factor** 1.00



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-29.19	-7.26	0.00	-715.52	0.00	715.52	2818.94	1409.47	4888.80	2448.04	0.00	0.000	0.000	0.143
2.00	-28.82	-7.23	0.00	-701.01	0.00	701.01	2805.89	1402.95	4830.09	2418.63	0.00	-0.020	0.000	0.141
4.00	-28.45	-7.20	0.00	-686.55	0.00	686.55	2792.73	1396.36	4771.51	2389.30	0.02	-0.040	0.000	0.139
6.00	-28.08	-7.17	0.00	-672.15	0.00	672.15	2779.45	1389.73	4713.08	2360.04	0.04	-0.061	0.000	0.137
8.00	-27.71	-7.14	0.00	-657.80	0.00	657.80	2766.06	1383.03	4654.80	2330.86	0.07	-0.081	0.000	0.136
10.00	-27.35	-7.11	0.00	-643.52	0.00	643.52	2752.56	1376.28	4596.67	2301.75	0.11	-0.101	0.000	0.134
10.25	-27.30	-7.11	0.00	-641.74	0.00	641.74	2750.86	1375.43	4589.41	2298.12	0.11	-0.103	0.000	0.140
12.00	-26.98	-7.09	0.00	-629.29	0.00	629.29	2738.94	1369.47	4538.70	2272.72	0.15	-0.121	0.000	0.138
14.00	-26.62	-7.06	0.00	-615.11	0.00	615.11	2725.20	1362.60	4480.89	2243.77	0.21	-0.142	0.000	0.136
16.00	-26.26	-7.03	0.00	-600.99	0.00	600.99	2711.35	1355.68	4423.25	2214.91	0.27	-0.163	0.000	0.134
18.00	-25.91	-7.00	0.00	-586.93	0.00	586.93	2697.39	1348.70	4365.78	2186.13	0.35	-0.184	0.000	0.132
20.00	-25.55	-6.97	0.00	-572.92	0.00	572.92	2683.32	1341.66	4308.48	2157.44	0.43	-0.204	0.000	0.130
20.50	-25.46	-6.97	0.00	-569.43	0.00	569.43	2679.78	1339.89	4294.19	2150.28	0.45	-0.209	0.000	0.130
22.00	-25.20	-6.94	0.00	-558.98	0.00	558.98	2669.12	1334.56	4251.37	2128.84	0.52	-0.225	0.000	0.128
24.00	-24.85	-6.91	0.00	-545.10	0.00	545.10	2654.82	1327.41	4194.44	2100.34	0.62	-0.245	0.000	0.126
26.00	-24.50	-6.88	0.00	-531.27	0.00	531.27	2640.40	1320.20	4137.70	2071.92	0.72	-0.265	0.000	0.124
26.33	-24.44	-6.87	0.00	-529.00	0.00	529.00	2638.01	1319.00	4128.35	2067.24	0.74	-0.269	0.000	0.109
27.50	-24.24	-6.85	0.00	-520.96	0.00	520.96	2629.51	1314.76	4095.27	2050.68	0.81	-0.279	0.000	0.149
28.00	-24.15	-6.85	0.00	-517.54	0.00	517.54	2625.87	1312.93	4081.15	2043.61	0.84	-0.285	0.000	0.148
30.00	-23.81	-6.82	0.00	-503.84	0.00	503.84	2611.22	1305.61	4024.80	2015.39	0.96	-0.309	0.000	0.146
32.00	-23.47	-6.79	0.00	-490.20	0.00	490.20	2596.46	1298.23	3968.65	1987.27	1.10	-0.333	0.000	0.143
34.00	-23.13	-6.75	0.00	-476.63	0.00	476.63	2581.58	1290.79	3912.71	1959.26	1.24	-0.357	0.000	0.141
36.00	-22.79	-6.72	0.00	-463.12	0.00	463.12	2566.59	1283.29	3856.98	1931.36	1.40	-0.381	0.000	0.138
38.00	-22.45	-6.69	0.00	-449.68	0.00	449.68	2551.48	1275.74	3801.46	1903.56	1.56	-0.405	0.000	0.136
40.00	-22.12	-6.65	0.00	-436.31	0.00	436.31	2536.26	1268.13	3746.17	1875.87	1.74	-0.428	0.000	0.133
40.33	-22.07	-6.64	0.00	-434.11	0.00	434.11	2533.74	1266.87	3737.07	1871.31	1.77	-0.432	0.000	0.162
40.50	-22.04	-6.65	0.00	-432.98	0.00	432.98	2532.44	1266.22	3732.38	1868.96	1.78	-0.434	0.000	0.161
42.00	-21.79	-6.62	0.00	-423.01	0.00	423.01	2520.93	1260.46	3691.10	1848.29	1.92	-0.456	0.000	0.159
43.33	-21.57	-6.60	0.00	-414.19	0.00	414.19	2510.64	1255.32	3654.51	1829.97	2.05	-0.474	0.000	0.157
44.00	-21.39	-6.59	0.00	-409.79	0.00	409.79	2505.48	1252.74	3636.25	1820.83	2.12	-0.484	0.000	0.155
46.00	-20.87	-6.55	0.00	-396.61	0.00	396.61	2489.92	1244.96	3581.64	1793.48	2.33	-0.511	0.000	0.151
48.00	-20.35	-6.52	0.00	-383.50	0.00	383.50	1854.44	927.22	2691.60	1347.80	2.55	-0.539	0.000	0.163
50.00	-20.07	-6.48	0.00	-370.47	0.00	370.47	1844.56	922.28	2653.53	1328.74	2.78	-0.566	0.000	0.178
52.00	-19.79	-6.45	0.00	-357.50	0.00	357.50	1834.56	917.28	2615.56	1309.72	3.02	-0.595	0.000	0.174
54.00	-19.52	-6.42	0.00	-344.60	0.00	344.60	1824.45	912.23	2577.68	1290.76	3.28	-0.625	0.000	0.169
56.00	-19.24	-6.38	0.00	-331.77	0.00	331.77	1814.23	907.11	2539.90	1271.84	3.55	-0.654	0.000	0.165
58.00	-18.97	-6.35	0.00	-319.00	0.00	319.00	1803.89	901.94	2502.23	1252.97	3.83	-0.682	0.000	0.160
60.00	-18.70	-6.31	0.00	-306.31	0.00	306.31	1793.44	896.72	2464.66	1234.16	4.12	-0.710	0.000	0.156
60.75	-18.60	-6.30	0.00	-301.58	0.00	301.58	1789.49	894.74	2450.61	1227.12	4.23	-0.721	0.000	0.154
62.00	-18.43	-6.28	0.00	-293.70	0.00	293.70	1782.87	891.44	2427.21	1215.41	4.42	-0.738	0.000	0.151
64.00	-18.16	-6.24	0.00	-281.15	0.00	281.15	1772.19	886.09	2389.88	1196.72	4.74	-0.765	0.000	0.147
66.00	-17.89	-6.21	0.00	-268.66	0.00	268.66	1761.39	880.70	2352.67	1178.08	5.06	-0.792	0.000	0.142
68.00	-17.63	-6.17	0.00	-256.25	0.00	256.25	1750.48	875.24	2315.58	1159.51	5.40	-0.818	0.000	0.137
70.00	-17.37	-6.13	0.00	-243.91	0.00	243.91	1739.46	869.73	2278.63	1141.01	5.75	-0.843	0.000	0.132
72.00	-17.11	-6.10	0.00	-231.64	0.00	231.64	1728.32	864.16	2241.81	1122.57	6.11	-0.868	0.000	0.127
74.00	-16.85	-6.06	0.00	-219.45	0.00	219.45	1717.07	858.54	2205.13	1104.20	6.48	-0.892	0.000	0.122
76.00	-16.59	-6.02	0.00	-207.33	0.00	207.33	1705.70	852.85	2168.59	1085.91	6.85	-0.915	0.000	0.117
78.00	-16.34	-5.98	0.00	-195.28	0.00	195.28	1694.22	847.11	2132.20	1067.69	7.24	-0.938	0.000	0.111

## Calculated Forces

<b>Structure:</b> CT13064-A-SBA	<b>Code:</b> EIA/TIA-222-G	<b>3/17/2020</b>
<b>Site Name:</b> Middletown 2, CT	<b>Exposure:</b> C	
<b>Height:</b> 130.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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78.50	-16.27	-5.98	0.00	-192.29	0.00	192.29	1691.33	845.67	2123.13	1063.14	7.34	-0.943	0.000	0.110
78.50	-16.27	-5.98	0.00	-192.29	0.00	192.29	1691.33	845.67	2123.13	1063.14	7.34	-0.943	0.000	0.110
80.00	-16.08	-5.95	0.00	-183.33	0.00	183.33	1682.63	841.31	2095.97	1049.54	7.64	-0.960	0.000	0.184
82.00	-15.83	-5.92	0.00	-171.42	0.00	171.42	1670.92	835.46	2059.89	1031.48	8.05	-0.996	0.000	0.176
84.00	-15.59	-5.88	0.00	-159.59	0.00	159.59	1659.09	829.55	2023.98	1013.49	8.47	-1.030	0.000	0.167
86.00	-15.36	-5.85	0.00	-147.82	0.00	147.82	1647.16	823.58	1988.23	995.59	8.91	-1.064	0.000	0.158
87.42	-15.19	-5.82	0.00	-139.54	0.00	139.54	1638.63	819.32	1963.01	982.97	9.23	-1.086	0.000	0.151
88.00	-15.08	-5.81	0.00	-136.14	0.00	136.14	1635.10	817.55	1952.65	977.78	9.37	-1.096	0.000	0.149
90.00	-11.59	-4.50	0.00	-124.51	0.00	124.51	1622.94	811.47	1917.25	960.05	9.83	-1.126	0.000	0.137
91.33	-11.36	-4.47	0.00	-118.52	0.00	118.52	1099.39	549.70	1312.06	657.00	10.15	-1.145	0.000	0.191
92.00	-11.30	-4.46	0.00	-115.54	0.00	115.54	1097.24	548.62	1304.79	653.36	10.31	-1.154	0.000	0.187
94.00	-11.06	-4.40	0.00	-106.62	0.00	106.62	1090.71	545.35	1282.99	642.45	10.80	-1.189	0.000	0.176
96.00	-10.87	-4.37	0.00	-97.81	0.00	97.81	1084.06	542.03	1261.23	631.55	11.31	-1.222	0.000	0.165
98.00	-10.69	-4.33	0.00	-89.07	0.00	89.07	1077.30	538.65	1239.51	620.68	11.83	-1.254	0.000	0.153
100.00	-8.78	-3.54	0.00	-80.41	0.00	80.41	1070.43	535.22	1217.83	609.82	12.36	-1.283	0.000	0.140
102.00	-8.61	-3.50	0.00	-73.34	0.00	73.34	1063.44	531.72	1196.21	598.99	12.90	-1.310	0.000	0.131
104.00	-8.45	-3.46	0.00	-66.34	0.00	66.34	1056.34	528.17	1174.63	588.19	13.46	-1.336	0.000	0.121
106.00	-8.29	-3.42	0.00	-59.42	0.00	59.42	1049.12	524.56	1153.11	577.41	14.02	-1.360	0.000	0.111
108.00	-8.13	-3.39	0.00	-52.57	0.00	52.57	1041.79	520.90	1131.65	566.67	14.60	-1.383	0.000	0.101
110.00	-6.16	-2.49	0.00	-45.80	0.00	45.80	1034.34	517.17	1110.26	555.96	15.18	-1.403	0.000	0.088
112.00	-6.03	-2.45	0.00	-40.82	0.00	40.82	1026.79	513.39	1088.94	545.28	15.77	-1.421	0.000	0.081
114.00	-5.90	-2.42	0.00	-35.91	0.00	35.91	1019.11	509.56	1067.70	534.64	16.37	-1.438	0.000	0.073
116.00	-5.78	-2.38	0.00	-31.07	0.00	31.07	1011.32	505.66	1046.53	524.04	16.98	-1.453	0.000	0.065
118.00	-5.65	-2.34	0.00	-26.31	0.00	26.31	1003.42	501.71	1025.45	513.49	17.59	-1.467	0.000	0.057
120.00	-5.53	-2.31	0.00	-21.63	0.00	21.63	995.40	497.70	1004.45	502.97	18.21	-1.479	0.000	0.049
120.00	-5.53	-2.31	0.00	-21.63	0.00	21.63	735.22	367.61	535.89	335.79	18.21	-1.479	0.000	0.072
122.00	-5.41	-2.28	0.00	-17.01	0.00	17.01	735.22	367.61	535.89	335.79	18.83	-1.489	0.000	0.058
124.00	-5.30	-2.26	0.00	-12.45	0.00	12.45	735.22	367.61	535.89	335.79	19.45	-1.504	0.000	0.044
126.00	-5.18	-2.23	0.00	-7.94	0.00	7.94	735.22	367.61	535.89	335.79	20.09	-1.515	0.000	0.031
128.00	-5.06	-2.20	0.00	-3.48	0.00	3.48	735.22	367.61	535.89	335.79	20.72	-1.520	0.000	0.017
129.00	-0.05	-0.02	0.00	-0.02	0.00	0.02	735.22	367.61	535.89	335.79	21.04	-1.522	0.000	0.000
130.00	0.00	-0.02	0.00	0.00	0.00	0.00	735.22	367.61	535.89	335.79	21.36	-1.522	0.000	0.000

## Final Analysis Summary

<b>Structure:</b> CT13064-A-SBA	<b>Code:</b> EIA/TIA-222-G	3/17/2020
<b>Site Name:</b> Middletown 2, CT	<b>Exposure:</b> C	
<b>Height:</b> 130.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II
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### Reactions

Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)
1.2D + 1.6W 101 mph Wind	32.9	0.00	35.01	0.00	0.00	3260.22
0.9D + 1.6W 101 mph Wind	32.9	0.00	26.25	0.00	0.00	3228.09
1.2D + 1.0Di + 1.0Wi 50 mph Wind	8.4	0.00	58.40	0.00	0.00	831.40
1.2D + 1.0E	1.6	0.00	35.04	0.00	0.00	191.53
0.9D + 1.0E	1.6	0.00	26.28	0.00	0.00	189.36
1.0D + 1.0W 60 mph Wind	7.3	0.00	29.19	0.00	0.00	715.52

### Max Stresses

Load Case	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Elev (ft)	Stress Ratio
1.2D + 1.6W 101 mph Wind	-11.92	-20.41	0.00	-541.00	0.00	-541.00	1099.39	549.70	1312.06	657.00	91.33	0.836
0.9D + 1.6W 101 mph Wind	-8.53	-20.08	0.00	-531.35	0.00	-531.35	1099.39	549.70	1312.06	657.00	91.33	0.818
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-26.05	-5.08	0.00	-133.89	0.00	-133.89	1099.39	549.70	1312.06	657.00	91.33	0.228
1.2D + 1.0E	-13.73	-1.46	0.00	-51.89	0.00	-51.89	1099.39	549.70	1312.06	657.00	91.33	0.091
0.9D + 1.0E	-10.29	-1.44	0.00	-51.15	0.00	-51.15	1099.39	549.70	1312.06	657.00	91.33	0.087
1.0D + 1.0W 60 mph Wind	-11.36	-4.47	0.00	-118.52	0.00	-118.52	1099.39	549.70	1312.06	657.00	91.33	0.191

### Additional Steel Summary

Elev From (ft)	Elev To (ft)	Member	Intermediate Connectors			Lower Termination				Upper Termination				Max Member			
			VQ/I (lb/in)	Vu (kips)	phi Vn (kips)	MQ/I (kips)	phi Vn (kips)	Num Req'd	Num Actual	MQ/I (kips)	phi Vn (kips)	Num Req'd	Num Actual	Pu (kips)	phi Pn (kips)	phi Tn (kips)	Ratio
0.0	20.5	(4) PLT-6"x1" (1.25" Hole)	234.8	3.76	37.1	241.4	37.1	7	8	231.0	37.1	8	8	245.50	326.3	285.00	0.861
0.0	10.3	(4) PLT-5.5"x1 1/4" (1.25" hol)	242.6	4.37	37.1	278.1	37.1	8	9	263.7	37.1	8	9	278.10	379.1	318.75	0.872
10.3	27.5	(2) LNP-LP6X100-G-20CT	-239.7	-5.75	37.1	245.4	37.1	7	0	174.0	37.1	5	8	245.42	297.8	292.50	0.839
10.3	27.5	(2) LNP-LP6X100-G-20CT	225.8	5.42	25.3	231.6	25.3	10	0	201.9	25.3	8	8	231.56	297.8	292.50	0.792
20.5	40.5	(4) PLT-6"x1" (1.25" Hole)	-347.2	-5.55	37.1	231.0	37.1	8	8	271.9	37.1	8	8	272.26	326.3	285.00	0.955
26.3	40.3	(2) LNP-LP6X100-G-20TT	-294.6	-7.07	25.3	185.5	25.3	8	10	231.3	25.3	10	10	255.64	297.8	292.50	0.874
40.5	60.8	(4) PLT-6"x1" (1.25" Hole)	-420.8	-6.73	37.1	271.9	37.1	8	8	241.9	37.1	8	8	275.60	326.3	285.00	0.967
60.8	78.5	(4) PLT-6"x1" (1.25" Hole)	-455.4	-7.29	37.1	241.9	37.1	8	8	175.8	37.1	5	8	241.90	326.3	285.00	0.849

## Base Plate Summary

<b>Structure:</b> CT13064-A-SB	<b>Code:</b> EIA/TIA-222-G	3/17/2020
<b>Site Name:</b> Middletown 2, CT	<b>Exposure:</b> C	
<b>Height:</b> 130.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



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Reactions	Base Plate	Anchor Bolts
Original Design	<b>Yield (ksi):</b> 50.00	<b>Bolt Circle:</b> 47.25
<b>Moment (kip-ft):</b> 1864.44	<b>Width (in):</b> 51.75	<b>Number Bolts:</b> 14.00
<b>Axial (kip):</b> 38.20	<b>Style:</b> Round	<b>Bolt Type:</b> 1.5" F1554 105
<b>Shear (kip):</b> 20.10	<b>Polygon Sides:</b> 0.00	<b>Bolt Diameter (in):</b> 1.50
Analysis	<b>Clip Length (in):</b> 0.00	<b>Yield (ksi):</b> 105.00
<b>Moment (kip-ft):</b> 3260.22	<b>Effective Len (in):</b> 20.11	<b>Ultimate (ksi):</b> 125.00
<b>Axial (kip):</b> 58.40	<b>Moment (kip-in):</b> 205.83	<b>Arrangement:</b> Radial
<b>Shear (kip):</b> 32.91	<b>Allow Stress (ksi):</b> 67.50	<b>Cluster Dist (in):</b> 0.00
	<b>Applied Stress (ksi):</b> 0.00	<b>Start Angle (deg):</b> 0.00
<b>Moment Design %:</b> 174.86	<b>Stress Ratio:</b> 0.40	<b>Compression</b>
		<b>Force (kip):</b> 85.75
		<b>Allowable (kip):</b> 141.00
		<b>Ratio:</b> 0.64
		<b>Tension</b>
		<b>Force (kip):</b> 77.40
		<b>Allowable (kip):</b> 141.00
		<b>Ratio:</b> 0.58



**Check the capacities of Reinforcing Concrete:**

Strength reduction factor (Flexure and axial tension):	0.90	Strength reduction factor (Shear):	0.75		
Strength reduction factor (Axial compression):	0.65	Wind Load Factor on Concrete Design:	1.00		
<b>(1) Concrete Pier:</b>					
Vertical Steel Rebar Area (sq. in./each):	1.00	Tie / Stirrup Area (sq. in./each):	0.31		
Calculated Moment Capacity (Mn,Kips-Ft):	4245.7	> Design Factored Moment (Mu, Kips-F	3391.8	0.80	OK!
Calculated Shear Capacity (Kips):	1100.5	> Design Factored Shear (Kips):	32.9	0.03	OK!
Calculated Tension Capacity (Tn, Kips):	1620.0	> Design Factored Tension (Tu Kips):	0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	7145.4	> Design Factored Axial Load (Pu Kips):	35.0	0.00	OK!
Moment & Axial Strength Combination:	0.80	OK! Check Tie Spacing (Design/Required):		0.25	OK!
Pier Reinforcement Ratio:	0.007	Reinforcement Ratio is satisfied per ACI			
<b>(2).Concrete Pad:</b>					
One-Way Design Shear Capacity (L-Direction, Kips):	606.2	> One-Way Factored Shear (L-D. Kips):	249.6	0.41	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	606.2	> One-Way Factored Shear (W-D., Kips)	249.6	0.41	OK!
One-Way Design Shear Capacity (Corner-Corner. Kips):	540.9	> One-Way Factored Shear (C-C, Kips):	257.1	0.48	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct. ):	0.0018	OK! Lower Steel Pad Reinf. Ratio (W-Direc	0.0018		
Lower Steel Pad Moment Capacity (L-Direction. Kips-ft):	1349.0	> Moment at Bottom ( L-Dir. K-Ft):	973.0	0.72	OK!
Lower Steel Pad Moment Capacity (W-Direction. Kips-ft):	1349.0	> Moment at Bottom ( W-Dir. K-Ft):	973.0	0.72	OK!
Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):	1899.5	> Moment at Bottom ( C-C Dir. K-Ft):	1376.0	0.72	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct. ):	0.0018	OK! Upper Steel Reinf. Ratio (W-Dir. ):	0.0018		
Upper Steel Pad Moment Capacity (L-Direc. Kips-ft):	1349.0	> Moment at the top (L-Dir K-Ft):	452.7	0.34	OK!
Upper Steel Pad Moment Capacity (W-Direc. Kips-ft):	1349.0	> Moment at the top (W-Dir K-Ft):	452.7	0.34	OK!
Upper Steel Pad Moment Capacity (Corner-Corner. K-ft):	1899.5	> Moment at the top (C-C Dir. K-Ft):	426.0	0.22	OK!
<b>(3).Check Punching Shear Capacity due to Moment in the Pier:</b>					
Moment transferred by punching shear:	1304.1	k-ft. Max. factored shear stress $v_{u,CD}$ :		7.0	Psi
Max. factored shear stress $v_{u,AB}$ :	13.7	Psi Factored shear Strength $\phi v_n$ :		189.7	Psi
Max. factored shear stress $v_u$ :	13.7	Psi Check Usage of Punching Shear Capacity:		0.07	OK!

## 67 FAIRCHILD RD

**Location** 67 FAIRCHILD RD

**Map-Lot** 42 / / 0118 / /

**Acct#** R15245

**Owner** BORRELLI STEPHEN G &  
BARBARA L

**Municipality**

**Assessment** \$495,450

**Appraisal** \$707,780

**PID** 15236

**Building Count** 2

**Assessing Distr...**

### Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2017	\$394,130	\$313,650	\$707,780

Assessment			
Valuation Year	Improvements	Land	Total
2017	\$275,890	\$219,560	\$495,450

### Parcel Addresses

Additional Addresses		
Address	City, State Zip	Type
67 FAIRCHILD RD	MIDDLETOWN, CT 06457	Primary

### Owner of Record

**Owner** BORRELLI STEPHEN G & BARBARA L  
**Co-Owner**  
**Address** 67 FAIRCHILD RD  
MIDDLETOWN, CT 06457

**Sale Price** \$0  
**Certificate**  
**Book & Page** 1091/ 136  
**Sale Date** 02/28/1996  
**Instrument** 29

### Ownership History

Ownership History					
Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
BORRELLI STEPHEN G & BARBARA L	\$0		1091/ 136	29	02/28/1996

### Building Information

#### Building 1 : Section 1

**Year Built:** 2012



**Living Area:** 2,134  
**Replacement Cost:** \$292,538  
**Building Percent Good:** 95  
**Replacement Cost Less Depreciation:** \$277,910

Building Attributes	
Field	Description
Style	Cape Cod
Model	Residential
Grade	B-
Stories	1.25
Occupancy	1
Exterior Wall 1	Vinyl Siding
Exterior Wall 2	
Roof Structure	Gable
Roof Cover	Asphalt Shingl
Interior Wall 1	Drywall
Interior Wall 2	
Interior Floor 1	Hardwood
Interior Floor 2	
Heat Fuel	Propane
Heat Type	Forced Air
Bedrooms	3
Full Baths	2
Half Baths	0
Extra Fixtures	2
Total Rooms	5
Bath Remodel	Not Updated
Kitchen Remodel	Not Updated
Extra Kitchens	
Fireplaces	0
Extra Openings	
Gas Fireplace	1
Int vs Ext	Same
A/C Type	Central
A/C %	100
Fin Bsmt Area	
Bsmt Garage	

### Building 2 : Section 1

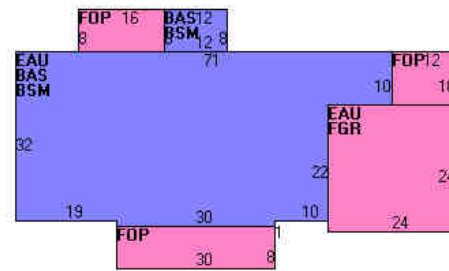
**Year Built:** 2000  
**Living Area:** 3,192  
**Replacement Cost:** \$67,875  
**Building Percent Good:** 86

### Building Photo



(<http://images.vgsi.com/photos/MiddletownCTPhotos/\\00\02\11\39.jpg>)

### Building Layout



Building Sub-Areas (sq ft)		Legend	
Code	Description	Gross Area	Living Area
BAS	First Floor	2,134	2,134
BSM	Basement	2,134	0
EAU	Expansion Attic Unfinished	2,614	0
FGR	Garage	576	0
FOP	Framed Open Porch	488	0
		7,946	2,134

### Building Photo

**Replacement Cost**

**Less Depreciation:** \$58,370

<b>Building Attributes : Bldg 2 of 2</b>	
<b>Field</b>	<b>Description</b>
STYLE	Equip Garage
MODEL	Commercial
Grade	D
Stories	1
Occupancy	1
Exterior Wall 1	Pre-finish Metl
Exterior Wall 2	
Roof Structure	Gable
Roof Cover	Metal/Tin
Interior Wall 1	Minimum
Interior Wall 2	
Interior Floor 1	Concrete
Interior Floor 2	
Heating Fuel	None
Heating Type	None
AC Type	None
Bldg Use	Res / Comm MDL 94
Cov Parking	
Uncov Parking	
Percent Fin	
1st Floor Use	
Heat/AC	None
Frame Type	Steel
Baths/Plumbing	Average
Ceiling/Walls	None
Rooms/Prtns	None
Wall Height	14



(http://images.vgsi.com/photos/MiddletownCTPhotos/\00\03\06\29.jpg)

**Building Layout**



<b>Building Sub-Areas (sq ft)</b>			<b>Legend</b>
<b>Code</b>	<b>Description</b>	<b>Gross Area</b>	<b>Living Area</b>
BAS	First Floor	3,192	3,192
		3,192	3,192

**Extra Features**

<b>Extra Features</b>	<b>Legend</b>
No Data for Extra Features	

**Land**

**Land Use**

**Use Code** 101  
**Description** Single Family  
**Zone** R-30  
**Neighborhood** 13

**Land Line Valuation**

**Size (Acres)** 18.89  
**Assessed Value** \$219,560  
**Appraised Value** \$313,650

Alt Land Appr No  
 Category

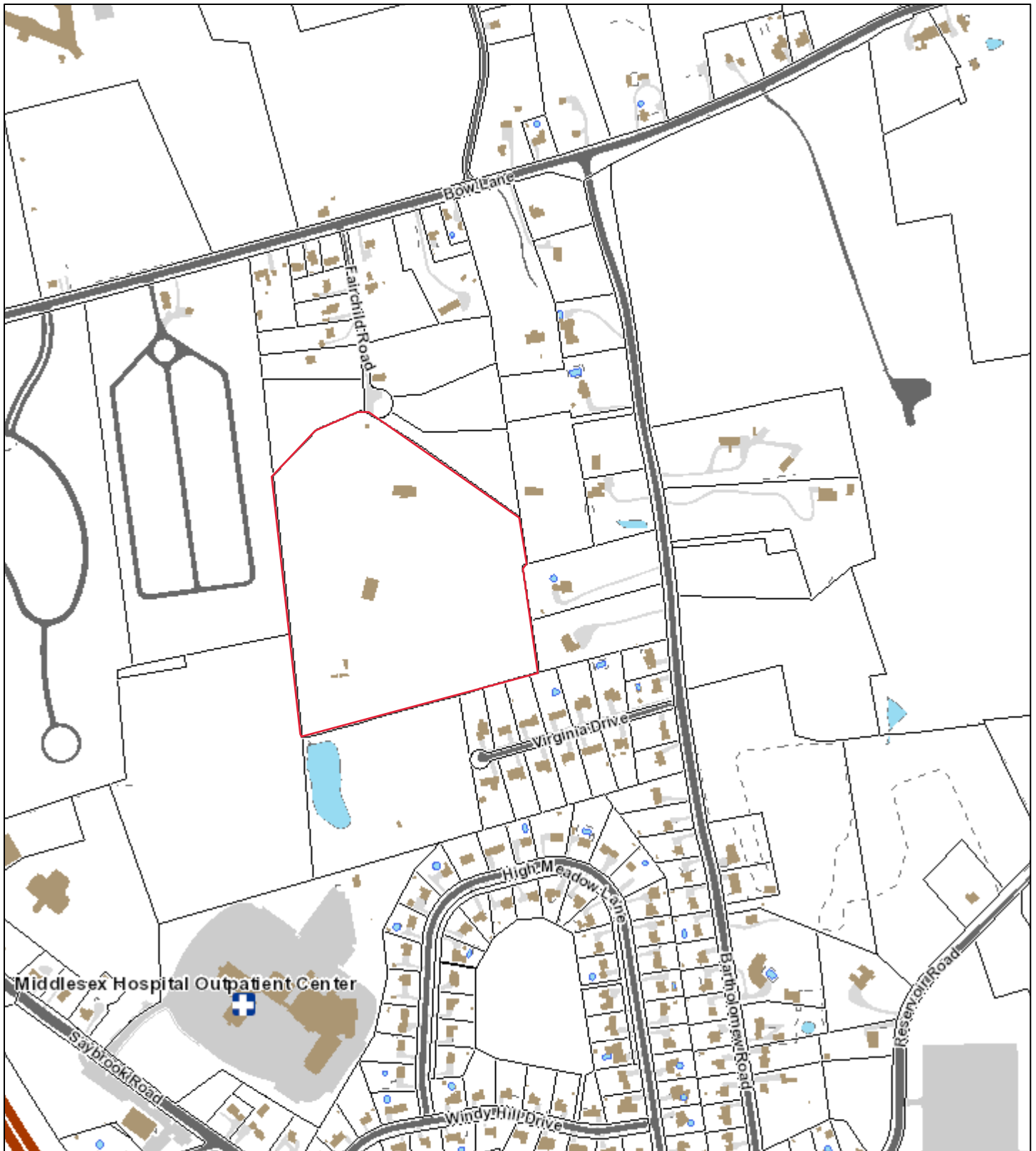
**Outbuildings**

<b>Outbuildings</b>						<b>Legend</b>
<b>Code</b>	<b>Description</b>	<b>Sub Code</b>	<b>Sub Description</b>	<b>Size</b>	<b>Value</b>	<b>Bldg #</b>
CSHD	Cell Shed			240 UNITS	\$15,000	2
CSHD	Cell Shed			240 UNITS	\$15,000	2
SHD1	Shed	MS	Masonry	143 UNITS	\$1,430	1
CSHD	Cell Shed			360 UNITS	\$22,500	2
FN4	Fence-8' Chain			280 UNITS	\$3,920	2

**Valuation History**

<b>Appraisal</b>			
<b>Valuation Year</b>	<b>Improvements</b>	<b>Land</b>	<b>Total</b>
2016	\$305,899	\$366,330	\$672,229
2015	\$305,899	\$366,330	\$672,229
2014	\$305,899	\$366,330	\$672,229

<b>Assessment</b>			
<b>Valuation Year</b>	<b>Improvements</b>	<b>Land</b>	<b>Total</b>
2016	\$214,130	\$256,430	\$470,560
2015	\$214,130	\$256,430	\$470,560
2014	\$214,130	\$256,430	\$470,560



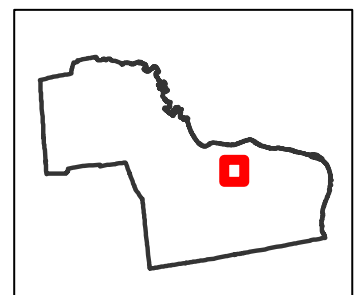
## City of Middletown, Connecticut

Map generated 3/7/2018

Map Legend: <http://gis.cityofmiddletown.com/middletownct/legend.pdf>

Property Card: <http://gis.vgsi.com/MiddletownCT/Parcel.aspx?pid=15236>

0 162.5 325 650 975 1,300 Feet 1 in = 500 ft



### MAP FOR REFERENCE ONLY - NOT A LEGAL DOCUMENT

Because of different update schedules, current property assessments may not reflect recent changes to property boundaries. Check with the Board of Assessors to confirm boundaries uses at the time of assessment.

**DOCKET NO. 316** – Optasite, Inc. application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a telecommunications facility at 50 Fairchild Road in Middletown, Connecticut. } Connecticut  
} Siting  
} Council

November 14, 2006

### **Decision and Order**

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

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

1. The tower shall be designed as a monopole and shall be constructed no taller than 120 feet above ground level to provide telecommunications services to both public and private entities.
2. All telecommunications antennas providing cellular and/or PCS service shall be flush-mounted to the tower.
3. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be served on the City of Middletown and all parties and intervenors, as listed in the service list, and submitted to and approved by the Council prior to the commencement of facility construction and shall include:
  - a) a final site plan(s) of site development to include specifications for the tower, tower foundation, tower color, antenna mountings, equipment building, access road, utility line, and landscaping; and
  - b) construction plans for site clearing, water drainage, and erosion and sedimentation control consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended.

4. The Certificate Holder shall, prior to the commencement of operation, provide the Council worst-case modeling of electromagnetic radio frequency power density of all proposed entities' antennas at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin No. 65, August 1997. The Certificate Holder shall ensure a recalculated report of electromagnetic radio frequency power density is submitted to the Council in the event other carriers locate at this facility or if circumstances in operation cause a change in power density above the levels calculated and provided pursuant to this Decision and Order.
5. Upon the establishment of any new state or federal radio frequency standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards.
6. The Certificate Holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.
7. The Certificate Holder shall provide reasonable space on the tower for no compensation for any City of Middletown public safety services (police, fire and medical services), provided such use can be accommodated and is compatible with the structural integrity of the tower.
8. If the facility authorized herein is not fully constructed and providing wireless services within eighteen months from the date of the mailing of the Council's Findings of Fact, Opinion, and Decision and Order (collectively called "Final Decision"), this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made. The time between the filing and resolution of any appeals of the Council's Final Decision shall not be counted in calculating this deadline.
9. If the facility ceases to provide wireless services for a period of one year, this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made.
10. The Certificate Holder shall remove any nonfunctioning antenna, and associated antenna mounting equipment, within 60 days of the date the antenna ceased to function.
11. Any request for extension of the time periods referred to in Conditions 8, 9, and 10 shall be filed with the Council not later than sixty days prior to the expiration date of this Certificate and shall be served on all parties and intervenors and the City of Middletown, as listed in the service list. Any proposed modifications to this Decision and Order shall likewise be so served.

12. In accordance with Section 16-50j-77 of the Regulations of Connecticut State Agencies, the Certificate Holder shall provide the Council with written notice two weeks prior to the commencement of construction activities. In addition, the Certificate Holder shall provide the Council with written notice of the completion of site construction and the commencement of site operation.

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

By this Decision and Order, the Council disposes of the legal rights, duties, and privileges of each party named or admitted to the proceeding in accordance with Section 16-50j-17 of the Regulations of Connecticut State Agencies.



The parties and intervenors in this proceeding are:

<b>Status Granted</b>	<b>Status Holder (name, address &amp; phone number)</b>	<b>Representative (name, address &amp; phone number)</b>
<b>Applicant</b>	Optasite, Inc.	<p>Lucia Chiocchio, Esq.  Cuddy &amp; Feder, LLP  90 Maple Avenue  White Plains, NY 10601  (914) 761-1300  (914) 761-5372/6405 fax  <a href="mailto:lchiocchio@cuddyfeder.com">lchiocchio@cuddyfeder.com</a></p> <p>Jennifer Young Gaudet  345 Taylor Street  Talcottville, CT 06066</p>
<b>Intervenor (approved 06/27/06)</b>	Nextel Communications of the Mid-Atlantic, Inc.	<p>Thomas J. Regan, Esq.  Brown Rudnick Berlack Israels LLP  185 Asylum Street, CityPlace I  Hartford, CT 06103-3402  (860) 509-6522  (860) 509-6501  <a href="mailto:tregan@brownrudnick.com">tregan@brownrudnick.com</a>  <a href="mailto:mkozlik@brownrudnick.com">mkozlik@brownrudnick.com</a></p>
<b>Intervenor (granted 07/27/06)</b>	Barbara Melia 379 Bow Lane Middletown, CT 06457 (860) 346-4334 bardebldave@yahoo.com	
<b>Intervenor (granted 07/27/06)</b>	Debora Bagley and Michael Bagley 393 Bow Lane Middletown, CT 06457 (860) 346-5373	
<b>Intervenor (granted 07/27/06)</b>	Earle Roberts 785 Bow Lane Middletown, CT 06457 (860) 346-0068 (860) 344-9327 eroberts4675@sbcglobal.net	

**DOCKET NO. 316A** - SBA Infrastructure LLC Certificate of } Connecticut  
Environmental Compatibility and Public Need for the }  
construction, maintenance and operation of a telecommunications } Siting  
facility at 50 Fairchild Road in Middletown, Connecticut. }  
Reopening. } Council

August 25, 2011

### **Decision and Order**

In response to the Connecticut Siting Council's (Council) reopening of the record in this docket on March 31, 2011 to consider whether changed conditions exist that would warrant a modification to the original Decision and Order's Condition 2 eliminating the requirement that all antennas on this telecommunications facility must be flush-mounted and to consider a proposed ten-foot extension of the facility, the Council hereby rescinds the Decision and Order in Docket 316 issued on November 14, 2006 and issues this new Decision and Order for the construction, maintenance and operation of a telecommunications facility located at 50 Fairchild Road in Middletown, Connecticut.

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

1. The existing monopole tower may be extended from its originally approved height of 120 feet, no taller than necessary to provide the proposed telecommunications services and sufficient to accommodate the antennas of New Cingular Wireless PCS, LLC (AT&T) and other entities, but such tower shall not exceed a height of 130 feet above ground level.
2. AT&T shall submit plans showing the extension of the existing tower and the installation of its proposed antennas. These plans shall be served on the City of Middletown for comment, and all parties and intervenors as listed in the service list, and submitted to and approved by the Council prior to the commencement of facility construction.
3. Upon the establishment of any new State or federal radio frequency standards applicable to frequencies of this facility, the facility herein shall be brought into compliance with such standards.
4. The Certificate Holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.
5. The Certificate Holder shall provide reasonable space on the tower for no compensation for any City of Middletown public safety services (police, fire and medical services), provided such use can be accommodated and is compatible with the structural integrity of the tower.

6. Unless otherwise approved by the Council, if the facility authorized herein is not fully constructed and providing wireless services within eighteen months from the date of the mailing of the Council's Findings of Fact, Opinion, and Decision and Order (collectively called "Final Decision"), this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made. The time between the filing and resolution of any appeals of the Council's Final Decision shall not be counted in calculating this deadline.
7. At least one wireless telecommunications carrier shall install their equipment and shall become operational not later than 120 days after the tower is erected. Authority to monitor and modify this schedule, as necessary, is delegated to the Executive Director. The Certificate Holder shall provide written notice to the Executive Director of any schedule changes as soon as is practicable.
8. Any request for extension of the time period referred to in Condition 7 shall be filed with the Council not later than 60 days prior to the expiration date of this Certificate and shall be served on all parties and intervenors, as listed in the service list, and the City of Middletown. Any proposed modifications to this Decision and Order shall likewise be so served.
9. If the facility ceases to provide wireless services for a period of one year, this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made.
10. The Certificate Holder shall remove any nonfunctioning antenna, and associated antenna mounting equipment, within 60 days of the date the antenna ceased to function.
11. In accordance with Section 16-50j-77 of the Regulations of Connecticut State Agencies, the Certificate Holder shall provide the Council with written notice two weeks prior to the commencement of site construction activities. In addition, the Certificate Holder shall provide the Council with written notice of tower erection, commencement of site operation, and the completion of site construction.
12. The Certificate Holder shall remit timely payments associated with annual assessments and invoices submitted by the Council for expenses attributable to the facility under Conn. Gen. Stat. §16-50v.
13. This Certificate may be transferred in accordance with Conn. Gen. Stat. §16-50k(b), provided both the Certificate Holder/transferor and the transferee are current with payments to the Council for their respective annual assessments and invoices under Conn. Gen. Stat. §16-50v. In addition, both the Certificate Holder/transferor and the transferee shall provide the Council a written agreement as to the entity responsible for any quarterly assessment charges under Conn. Gen. Stat. §16-50v(b)(2) that may be associated with this facility.

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

By this Decision and Order, the Council disposes of the legal rights, duties, and privileges of each party named or admitted to the proceeding in accordance with Section 16-50j-17 of the Regulations of Connecticut State Agencies.

The parties and intervenors to this proceeding are:

**Intervenor:**

New Cingular Wireless PCS, LLC

**Certificate Holder:**


SBA Infrastructure LLC

**Its Representative(s):**

Christopher B. Fisher, Esq.  
Cuddy & Feder LLP  
445 Hamilton Avenue, 14<sup>th</sup> Floor  
White Plains, NY 10601

**Its Representative(s):**

Christopher B. Fisher, Esq.  
Cuddy & Feder LLP  
445 Hamilton Avenue, 14<sup>th</sup> Floor  
White Plains, NY 10601




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 STORRS CT 06268-0916


**0024**

**Carrier -- Leave if No Response**

**C002**

SHIP TO: MAYOR BENJAMIN FLORSHEIM  
 CITY OF MIDDLETOWN  
 245 DEKOVEN DR  
 CC: MR JOSEPH SAMOLIS  
 MIDDLETOWN CT 06457-3460

**USPS TRACKING #**



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

### Click-N-Ship® Label Record

**USPS TRACKING # :**  
**9405 5036 9930 0333 6881 10**

Trans. #: 490305543	Priority Mail® Postage: <b>\$7.75</b>
Print Date: 04/17/2020	Total: <b>\$7.75</b>
Ship Date: 04/18/2020	
Expected Delivery Date: 04/20/2020	


**From:** MARK J ROBERTS  
 QC DEVELOPMENT  
 PO BOX 916  
 STORRS CT 06268-0916

**To:** MAYOR BENJAMIN FLORSHEIM  
 CITY OF MIDDLETOWN  
 245 DEKOVEN DR  
 CC: MR JOSEPH SAMOLIS  
 MIDDLETOWN CT 06457-3460

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 STORRS CT 06268-0916

**0024**


**Carrier -- Leave if No Response**

**C015**

SHIP TO:

STEPHEN G. & BARBARA L. BORRELLI  
 67 FAIRCHILD RD  
 MIDDLETOWN CT 06457-4815

**USPS TRACKING #**



**9405 5036 9930 0333 6881 27**

Electronic Rate Approved #038555749



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2. Place your label so it does not wrap around the edge of the package.
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4. To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.
5. Mail your package on the "Ship Date" you selected when creating this label.

### Click-N-Ship® Label Record

**USPS TRACKING # :**  
**9405 5036 9930 0333 6881 27**

Trans. #: 490305543	Priority Mail® Postage: <b>\$7.75</b>
Print Date: 04/17/2020	Total: <b>\$7.75</b>
Ship Date: 04/18/2020	
Expected Delivery Date: 04/20/2020	

**From:** MARK J ROBERTS  
 QC DEVELOPMENT  
 PO BOX 916  
 STORRS CT 06268-0916

**To:** STEPHEN G. & BARBARA L. BORRELLI  
 67 FAIRCHILD RD  
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