



QC Development

PO Box 916

Storrs, CT 06268

860-670-9068

Mark.Roberts@QCDevelopment.net

February 8, 2019

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) – CT1205
350 Burr Mountain Road, Torrington, CT 06790
N 41.87325000
W 73.08841667

Dear Ms. Bachman:

AT&T currently maintains nine (9) antennas at the 175-foot level of the existing 198-foot Monopole at 350 Burr Mountain Rd, Torrington, CT. The tower is owned by SBA and the property (aka 3345 Winsted Road) is owned by O & G Industries Inc.. AT&T now intends to replace three (3) Powerwave and (3) KMW antennas with (6) Kathrein 800-10965 antennas. AT&T will also swap (3) Ericsson RRUS-11 Remote Radio Units for (3) Ericsson 4449-B5/B12s and add (3) Ericsson 4478-B14 and (3) Ericsson RRUS-32 Remote Radio Units (RRU). The Antennas and RRUs would be installed at the 175-foot level of the tower.

This facility was approved by the Siting Council in Docket # 277 on April 26, 2004. This approval included no condition(s) that could feasibly be violated by this modification, including total facility height or mounting restrictions. 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 Elinor Carbone, Mayor of the City of Torrington, and the Torrington Land Use

Department as well as the property and 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 Elinor Carbone - Elected Official
Martin J. Connor, AICP – City Planner
O & G Industries Inc – Property Owner
SBA - Tower Owner

Power Density

Existing Loading on Tower

Carrier	# of Channels	ERP/Ch (W)	Antenna Centerline Height (ft)	Power Density (mW/cm ²)	Freq. Band (MHz ^{**})	Limit S (mW/cm ²)	%MPE
Other Carriers*							4.02%
AT&T GSM	1	281	175	0.0035	880	0.5867	0.06%
AT&T UMTS	2	281	175	0.0071	880	0.5867	0.12%
AT&T UMTS	1	535	175	0.0067	1900	1.0000	0.07%
AT&T LTE	1	1476	175	0.0186	700	0.4667	0.40%
AT&T LTE	2	3664	175	0.0923	1900	1.0000	0.92%
Site Total							5.59%

*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 ²)	Freq. Band (MHz ^{**})	Limit S (mW/cm ²)	%MPE
Other Carriers*							4.02%
AT&T UMTS	1	281	175	0.0035	850	0.5667	0.06%
AT&T LTE	2	2951	175	0.0743	700	0.4667	1.59%
AT&T LTE	1	1000	175	0.0126	850	0.5667	0.22%
AT&T 5G	1	1000	175	0.0126	850	0.5667	0.22%
AT&T LTE	2	3664	175	0.0923	1900	1.0000	0.92%
AT&T LTE	1	1285	175	0.0162	2300	1.0000	0.16%
Site Total							7.21%

*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 TOWER:

- NEW AT&T ANTENNAS: (800-10965) MOUNTED @ POSITION 3 (TYP. OF 1 PER SECTOR, TOTAL OF 3). TO REPLACE (3) EXISTING ANTENNAS
- NEW AT&T ANTENNAS: (800-10965) MOUNTED @ POSITION 4 (TYP. OF 1 PER SECTOR, TOTAL OF 3). TO REPLACE (3) EXISTING ANTENNAS
- NEW AT&T RRUS: RRUS 32 (WCS) MOUNTED @ POSITION 4 (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T RRUS: B14 4478 (700) MOUNTED @ POSITION 3 (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T RRUS: 4449 B5/B12 (700) MOUNTED @ POSITION 4 (TYP. OF 1 PER SECTOR, TOTAL OF 3)
- NEW AT&T SURGE ARRESTOR: (DC6-48-60-18-8C) (TOTAL OF 1) & (DC6-48-60-0-8C-EV) (TOTAL OF 1) WITH (4) DC POWER & (1) FIBER CABLE IN (2) 2" CONDUIT (TO FOLLOW EXISTING ROUTE).

ITEMS TO BE MOUNTED AT EQUIPMENT LOCATION:

- SWAP BB WITH 5216
- ADD XMU
- ADD RBS 6630

SITE ADDRESS: BURR MOUNTAIN ROAD
TORRINGTON, CT 06790

LATITUDE: 41.8732800 N, 41° 52' 23.80" N
LONGITUDE: 73.0886000 W, 73° 5' 18.96" W
TYPE OF SITE: MONOPOLE / INDOOR EQUIPMENT
TOWER HEIGHT: 198'±
RAD CENTER: 175'±
CURRENT USE: TELECOMMUNICATIONS FACILITY
PROPOSED USE: TELECOMMUNICATIONS FACILITY



SITE NUMBER: CT1205

SITE NAME: TORRINGTON-BURR MT ROAD

FA CODE:10035404

PACE ID: MRCTB033602, MRCTB033707, MRCTB033573, MRCTB033696

PROJECT: LTE 3C/4C/5C/4TX4RX RETROFIT 2019 UPGRADE

DRAWING INDEX

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

VICINITY MAP

DIRECTIONS TO SITE:

HEAD NORTHEAST TOWARD LEGGATT McCALL CONN. TURN LEFT ONTO LEGGATT McCALL CONN. CONTINUE ONTO BURR ST. TURN LEFT ONTO COCHITUATE RD. TAKE RAMP TO I-90 E/MASSPIKE W/SPRINGFIELD/BOSTON. KEEP LEFT AT THE FORK FOLLOW SIGNS GOT I-90 W/MASSPIKE/WORCESTER/SPRINGFIELD AND MERGE ONTO I-90 W/MASSPIKE. MERGE ONTO I-90 W/MASSPIKE. TAKE EXIT 9 FOR I-84 TOWARD US-20/HARTFORD/NEW YORK CITY. CONTINUE ONTO I-84. TAKE EXIT 39 TOWARD FARMINGTON/CT-4. CONTINUE ONTO STATE HWY 508. STATE HWY 508 TURNS SLIGHTLY RIGHT AND BECOMES CT-4. SLIGHT RIGHTON CT-4 W. CONTINUE ONTO CT-179 N. TURN RIGHT ONTO BRIDGE ST. TURN LEFT ONTO CT-179 N/RIBER RD. TURN LEFT ONTO US-202 W. TURN RIGHT ONTO CEDAR LN. TURN RIGHT ONTO TORRINGTON ST. TURN LEFT ONTO GREENWOODS RD. CONTINUE ONTO BURR MOUNTAIN RD.



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.

72 HOURS



CALL BEFORE YOU DIG



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

UNDERGROUND SERVICE ALERT

HGD HUDSON Design Group LLC
45 BEECHWOOD DRIVE NORTH ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

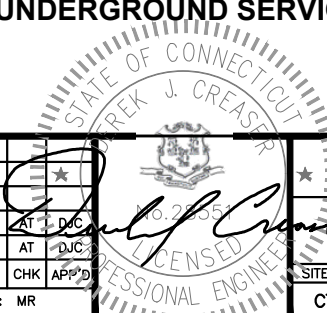
SAI
12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CT1205
SITE NAME: TORRINGTON-BURR MT ROAD
BURR MOUNTAIN ROAD
TORRINGTON, CT 06790
LITCHFIELD COUNTY

at&t
500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	01/30/19	ISSUED FOR CONSTRUCTION	AM	AT	DJC
A	12/26/18	ISSUED FOR REVIEW	MR	AT	DJC

SCALE: AS SHOWN DESIGNED BY: AT DRAWN BY: MR



AT&T
TITLE SHEET
(LTE 3C/4C/5C/4TX4RX RETROFIT)
SITE NUMBER: CT1205 DRAWING NUMBER: T-1 REV: 1

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) 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 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 AWS 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. TOUCHUP 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-G, 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: CT1205
 SITE NAME: TORRINGTON-BURR MT ROAD

BURR MOUNTAIN ROAD
 TORRINGTON, CT 06790
 LITCHFIELD COUNTY



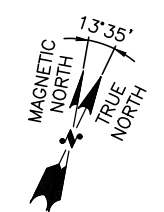
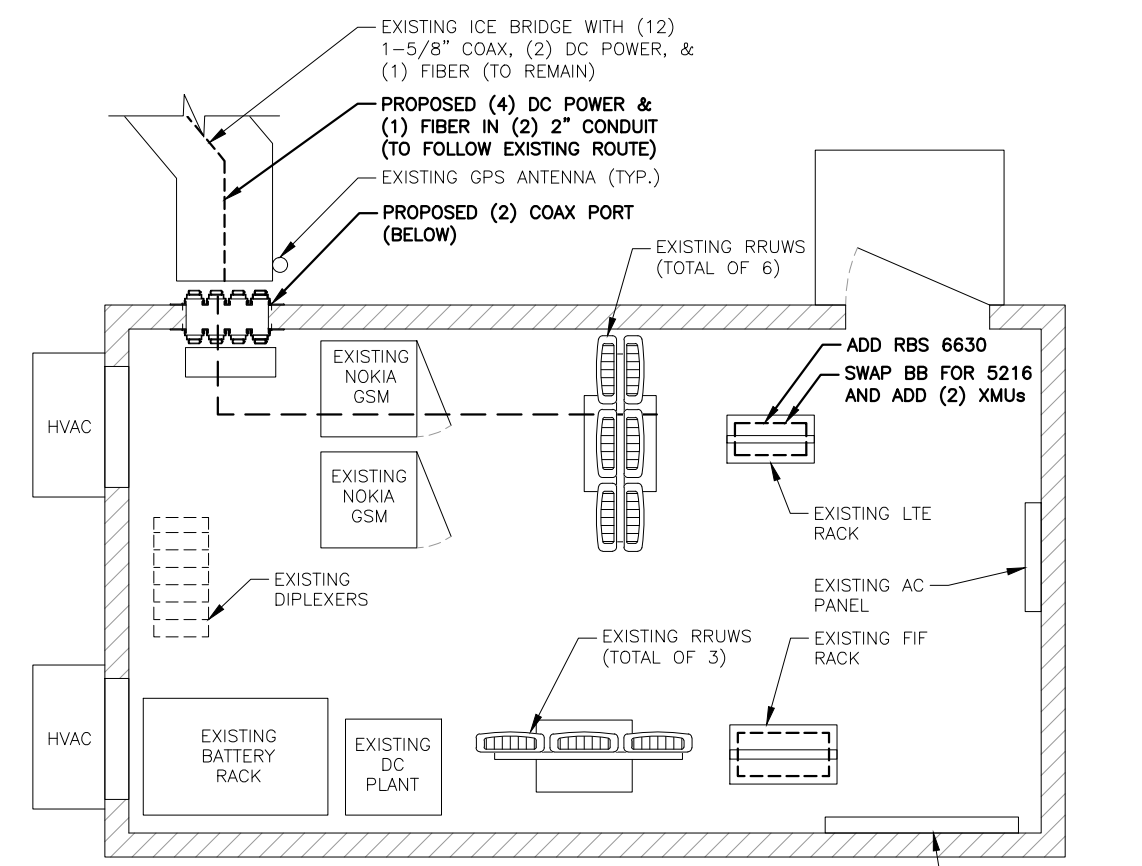
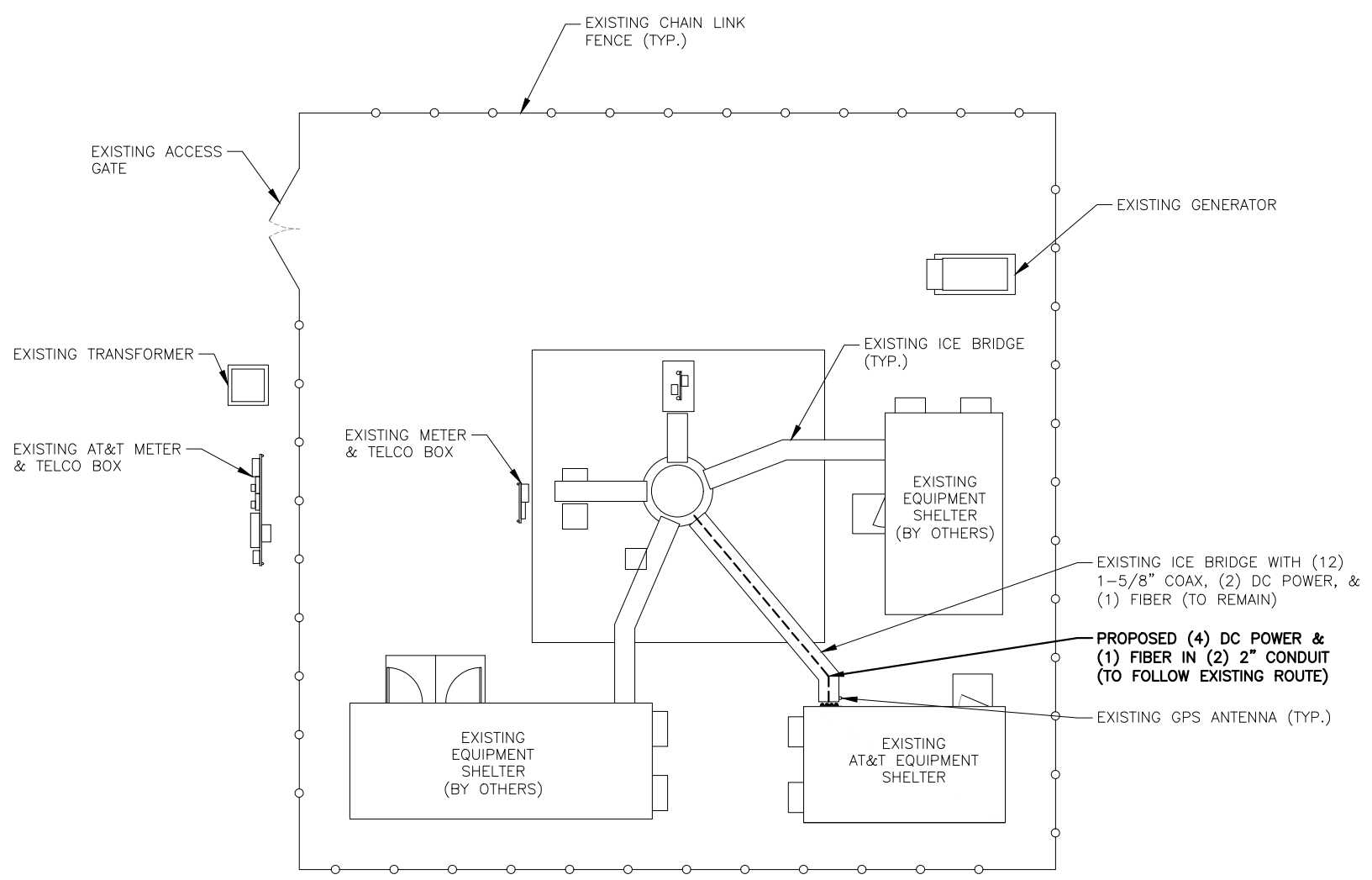
500 ENTERPRISE DRIVE, SUITE 3A
 ROCKY HILL, CT 06067

1		01/30/19	ISSUED FOR CONSTRUCTION	AM	AT	DJC		AT&T	
A		12/26/18	ISSUED FOR REVIEW	MR	AT	DJC		GENERAL NOTES	
NO.	DATE	REVISIONS		BY	CHK	APP'D	(LTE 3C/4C/5C/4TX4RX RETROFIT)		
SCALE: AS SHOWN		DESIGNED BY: AT		DRAWN BY: MR		SITE NUMBER: CT1205		DRAWING NUMBER: GN-1	
								REV: 1	

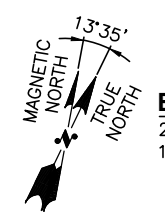
NOTE:
 REFER TO STRUCTURAL ANALYSIS
 BY: IES TOWER ENGINEERING SOLUTIONS,
 DATED: JANUARY 21, 2019
 FOR THE CAPACITY OF THE
 EXISTING STRUCTURES TO SUPPORT
 THE PROPOSED EQUIPMENT.

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: NOVEMBER 12, 2018

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



COMPOUND PLAN
 22x34 SCALE: 1/8"=1'-0"
 11x17 SCALE: 1/16"=1'-0"
 1 A-1



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

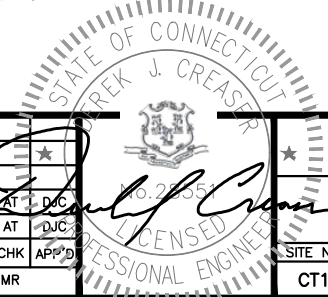
HG HUDSON
Design Group LLC
 45 BEECHWOOD DRIVE
 NORTH ANDOVER, MA 01845
 TEL: (978) 557-5553
 FAX: (978) 336-5586

SAI
 12 INDUSTRIAL WAY
 SALEM, NH 03079

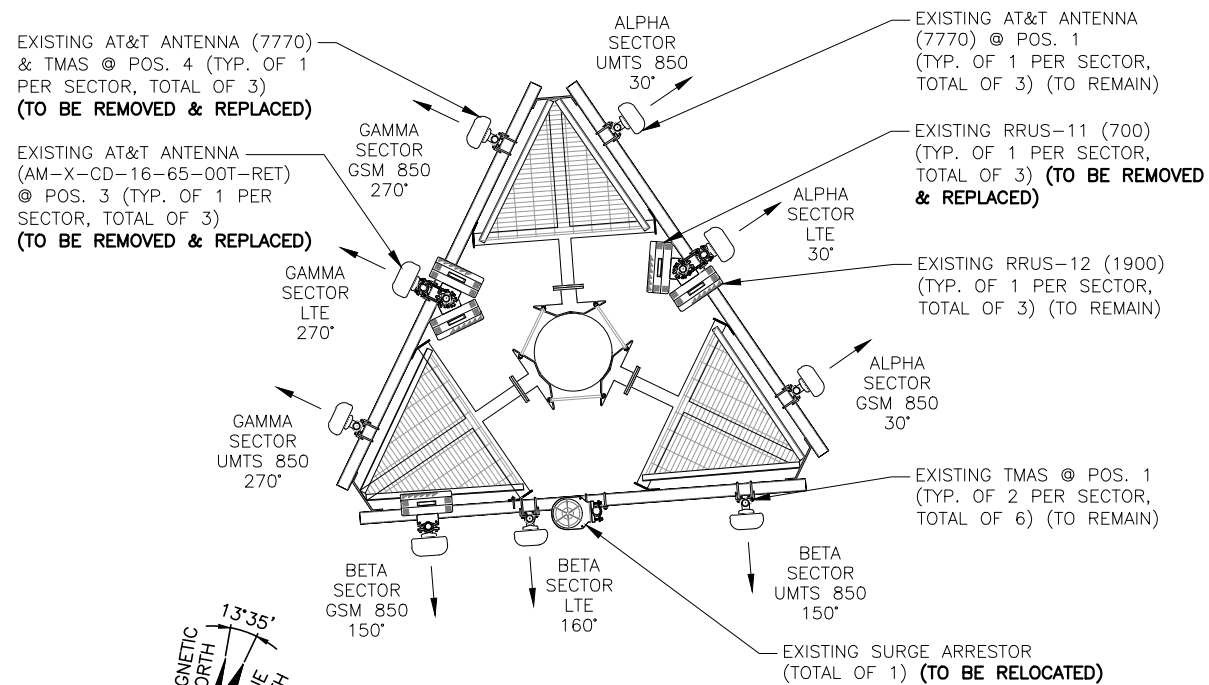
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SITE NAME: TORRINGTON-BURR MT ROAD
 BURR MOUNTAIN ROAD
 TORRINGTON, CT 06790
 LITCHFIELD COUNTY

at&t
 500 ENTERPRISE DRIVE, SUITE 3A
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1	01/30/19	ISSUED FOR CONSTRUCTION	AM	AT	DJC
A	12/26/18	ISSUED FOR REVIEW	MR	AT	DJC
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: AT	DRAWN BY: MR		



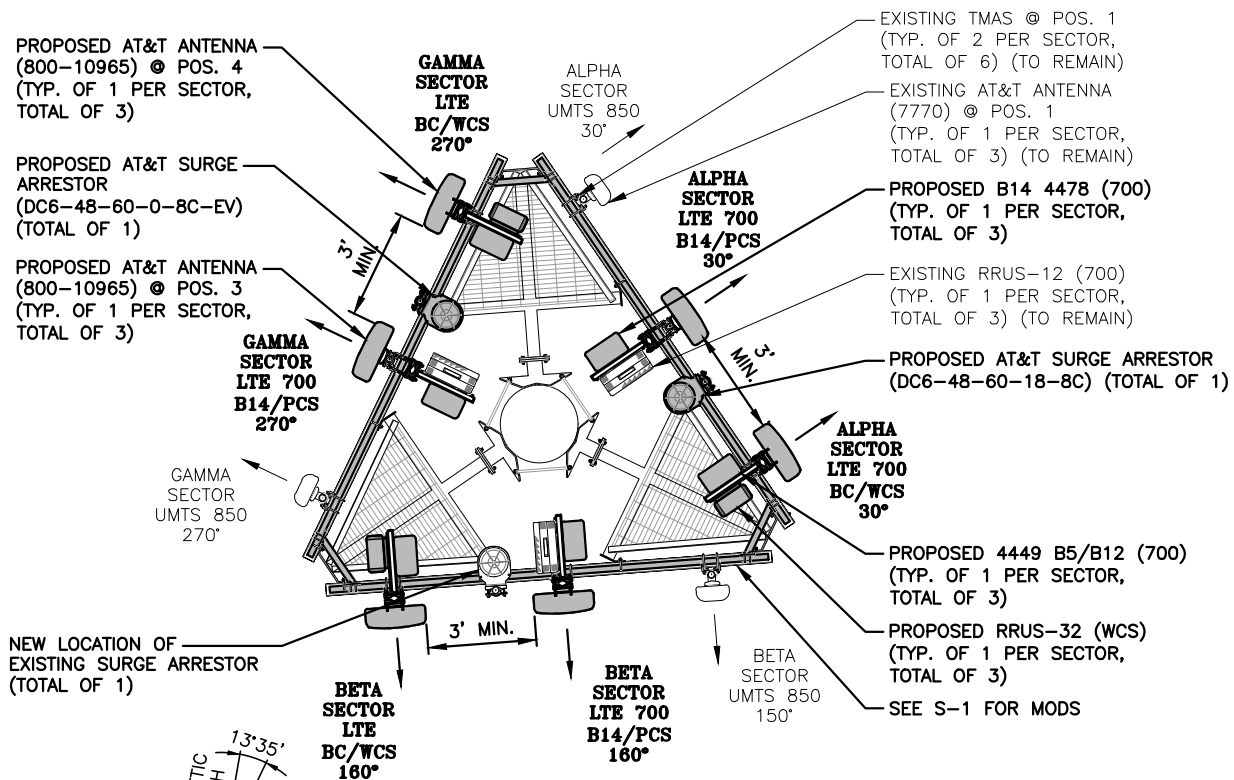
AT&T
COMPOUND & EQUIPMENT PLAN
 (LTE 3C/4C/5C/4TX4RX RETROFIT)
 SITE NUMBER: CT1205
 DRAWING NUMBER: A-1
 REV: 1



EXISTING ANTENNA LAYOUT
SCALE: N.T.S.



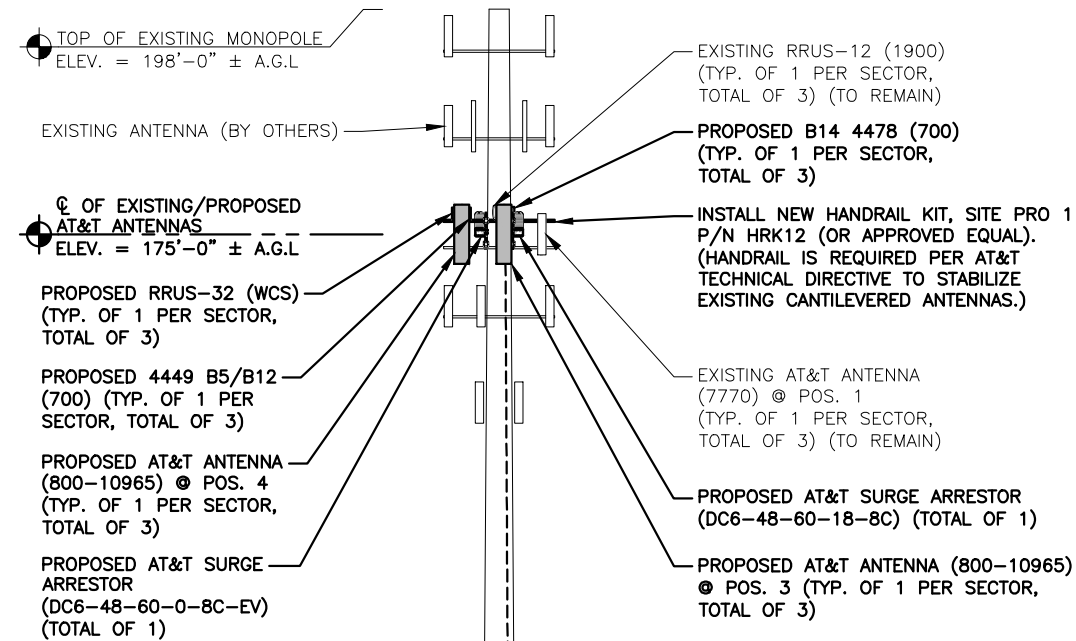
1
A-2



PROPOSED ANTENNA LAYOUT
SCALE: N.T.S.



2
A-2



GROUND LEVEL
ELEV. = 0.0' ± A.G.L.

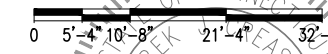
NOTE:
REFER TO STRUCTURAL ANALYSIS BY: IES TOWER ENGINEERING SOLUTIONS, DATED: JANUARY 21, 2019 FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

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: NOVEMBER 12, 2018

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

EXISTING (12) 1-5/8" COAX, (2) DC POWER, & (1) FIBER (TO REMAIN)
PROPOSED (4) DC POWER & (1) FIBER IN (2) 2" CONDUIT (TO FOLLOW EXISTING ROUTE)

ELEVATION
22x34 SCALE: 3/32"=1'-0"
11x17 SCALE: 3/64"=1'-0"



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



12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CT1205
SITE NAME: TORRINGTON-BURR MT ROAD

BURR MOUNTAIN ROAD
TORRINGTON, CT 06790
LITCHFIELD COUNTY



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

NO.	DATE	REVISIONS	BY	CHK	APP'D	SITE NUMBER	DRAWING NUMBER	REV
1	01/30/19	ISSUED FOR CONSTRUCTION	AM	AT	DJC	CT1205	A-2	1
A	12/26/18	ISSUED FOR REVIEW	MR	AT	DJC			
SCALE: AS SHOWN						DESIGNED BY: AT	DRAWN BY: MR	



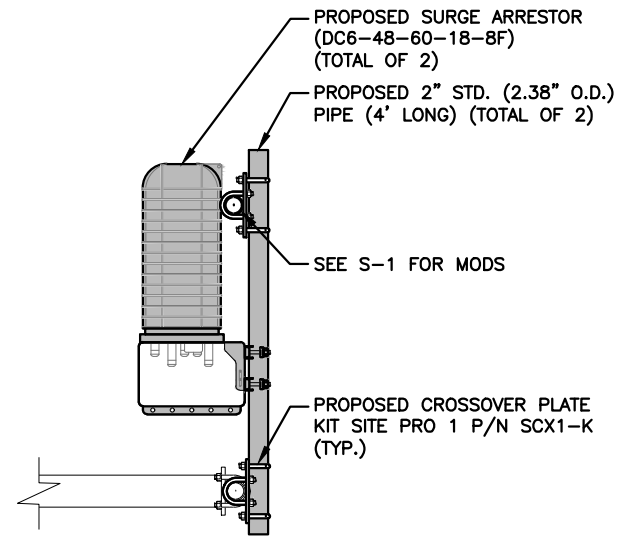
AT&T

ANTENNA LAYOUTS & ELEVATION
(LTE 3C/4C/5C/4TX4RX RETROFIT)

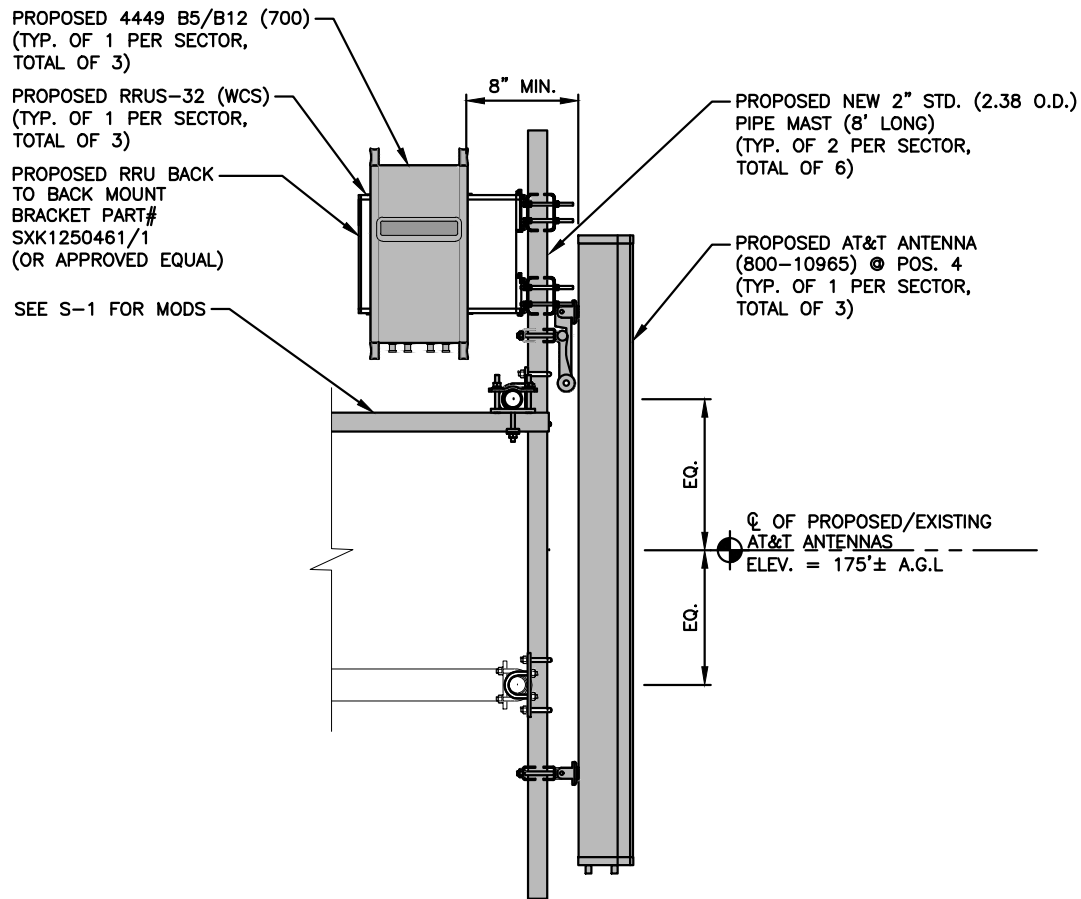
NOTE:
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NOTE:
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING ANTENNA MOUNT TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY:
HUDSON DESIGN GROUP, LLC.
DATED: NOVEMBER 12, 2018

NOTE:
REFER TO STRUCTURAL ANALYSIS BY: IES TOWER ENGINEERING SOLUTIONS, DATED: JANUARY 21, 2019 FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.



SURGE ARRESTOR MOUNTING DETAIL 1
SCALE: N.T.S. A-3



PROPOSED LTE ANTENNA & RRH MOUNTING DETAIL 2
22x34 SCALE: 1"=1'-0"
11x17 SCALE: 1/2"=1'-0" A-3

ANTENNA SCHEDULE											
SECTOR	EXISTING/ PROPOSED	BAND	ANTENNA	SIZE (INCHES) (L x W x D)	ANTENNA CL HEIGHT	AZIMUTH	TMA/ DIPLEXER	RRU	SIZE (INCHES) (L x W x D)	FEEDER	RAYCAP
A1	EXISTING	UMTS 850	7770	55X11X5	±175'	30°	(2) POWERWAVE LGP21401	---	---	(2) 1-5/8 COAX (LENGTH 225'±)	---
A2	-	-	-	-	-	-	---	-	-	-	(E) (1) RAYCAP DC6-48-60-18-8F
A3	PROPOSED	LTE 700 B14/PCS	800-10965	78.7x20x6.9	±175'	30°	---	(P) (1) B14 4478 (E) (1) RRUS-12 (PCS)	18.1x13.4x8.26 -	(2) 1-5/8 COAX (LENGTH 225'±)	(E) (1) RAYCAP DC6-48-60-18-8F
A4	PROPOSED	LTE 700 BC/WCS	800-10965	78.7x20x6.9	±175'	30°	---	(P) (1) RRUS-32 (P) (1) 4449 B5/B12	27.2X12.1X7.0 14.1X13.2X5.4	---	(E) (1) RAYCAP DC6-48-60-18-8F
B1	EXISTING	UMTS 850	7770	55X11X5	±175'	150°	(2) POWERWAVE LGP21401	---	---	(2) 1-5/8 COAX (LENGTH 225'±)	---
B2	-	-	-	-	-	-	---	-	-	-	(P) (1) RAYCAP DC6-48-60-18-8F
B3	PROPOSED	LTE 700 B14/PCS	800-10965	78.7x20x6.9	±175'	160°	---	(P) (1) B14 4478 (E) (1) RRUS-12 (PCS)	18.1x13.4x8.26 -	(2) 1-5/8 COAX (LENGTH 225'±)	(P) (1) RAYCAP DC6-48-60-18-8F
B4	PROPOSED	LTE 700 BC/WCS	800-10965	78.7x20x6.9	±175'	160°	---	(P) (1) RRUS-32 (P) (1) 4449 B5/B12	27.2X12.1X7.0 14.1X13.2X5.4	---	(P) (1) RAYCAP DC6-48-60-18-8F
C1	EXISTING	UMTS 850	7770	55X11X5	±175'	270°	(2) POWERWAVE LGP21401	---	---	(2) 1-5/8 COAX (LENGTH 225'±)	---
C2	-	-	-	-	-	-	---	-	-	-	(P) (1) RAYCAP DC6-48-60-0-8C-EV
C3	PROPOSED	LTE 700 B14/PCS	800-10965	78.7x20x6.9	±175'	270°	---	(P) (1) B14 4478 (E) (1) RRUS-12 (PCS)	18.1x13.4x8.26 -	(2) 1-5/8 COAX (LENGTH 225'±)	(P) (1) RAYCAP DC6-48-60-0-8C-EV
C4	PROPOSED	LTE 700 BC/WCS	800-10965	78.7x20x6.9	±175'	270°	---	(P) (1) RRUS-32 (P) (1) 4449 B5/B12	27.2X12.1X7.0 14.1X13.2X5.4	---	(P) (1) RAYCAP DC6-48-60-0-8C-EV

RRU CHART				
QUANTITY	MODEL	L	W	D
3(E)	RRUS-12	20.4"	18.5"	7.5"
3(P)	RRUS-32	27.2"	12.1"	7.0"
3(P)	B14 4478	18.1"	13.4"	8.3"
3(P)	4449 B5/B12	14.1"	13.2"	5.4"

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS

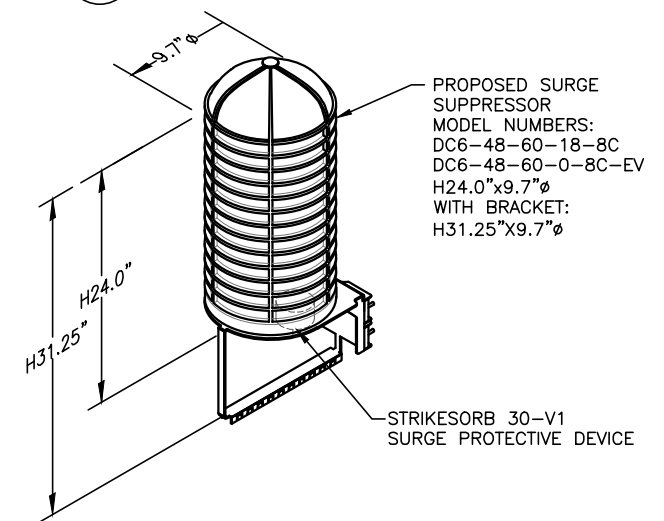
NOTE:
SEE RFDS FOR RRH FREQUENCY AND MODEL NUMBER

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

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

PROPOSED RRUS DETAIL 3
SCALE: N.T.S. A-3

FINAL ANTENNA SCHEDULE 4
SCALE: N.T.S. A-3



NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

DC SURGE SUPPRESSOR DETAIL 5
SCALE: N.T.S. A-3

STRUCTURAL NOTES:

- DESIGN REQUIREMENTS ARE PER STATE BUILDING CODE AND APPLICABLE SUPPLEMENTS, INTERNATIONAL BUILDING CODE, EIA/TIA-222-G 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 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 D.I. 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.

SPECIAL INSPECTION CHECKLIST	
BEFORE CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
N/A	ENGINEER OF RECORD APPROVED SHOP DRAWINGS ¹
N/A	MATERIAL SPECIFICATIONS REPORT ²
N/A	FABRICATOR NDE INSPECTION
N/A	PACKING SLIPS ³
ADDITIONAL TESTING AND INSPECTIONS:	
DURING CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	STEEL INSPECTIONS
N/A	HIGH STRENGTH BOLT INSPECTIONS
N/A	HIGH WIND ZONE INSPECTIONS ⁴
N/A	FOUNDATION INSPECTIONS
N/A	CONCRETE COMP. STRENGTH, SLUMP TESTS AND PLACEMENT
N/A	POST INSTALLED ANCHOR VERIFICATION ⁵
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
REQUIRED	MODIFICATION INSPECTOR REDLINE OR RECORD DRAWINGS ⁶
N/A	POST INSTALLED ANCHOR PULL-OUT TESTING
REQUIRED	PHOTOGRAPHS
ADDITIONAL TESTING AND INSPECTIONS:	

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.

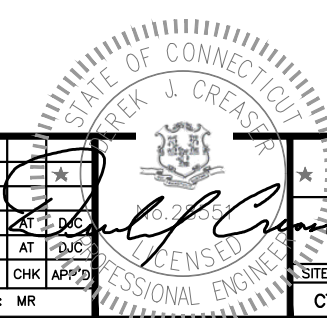
NOTES:

- 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.



SITE NUMBER: CT1205
SITE NAME: TORRINGTON-BURR MT ROAD

BURR MOUNTAIN ROAD
TORRINGTON, CT 06790
LITCHFIELD COUNTY



AT&T

STRUCTURAL NOTES
(LTE 3C/4C/5C/4TX4RX RETROFIT)

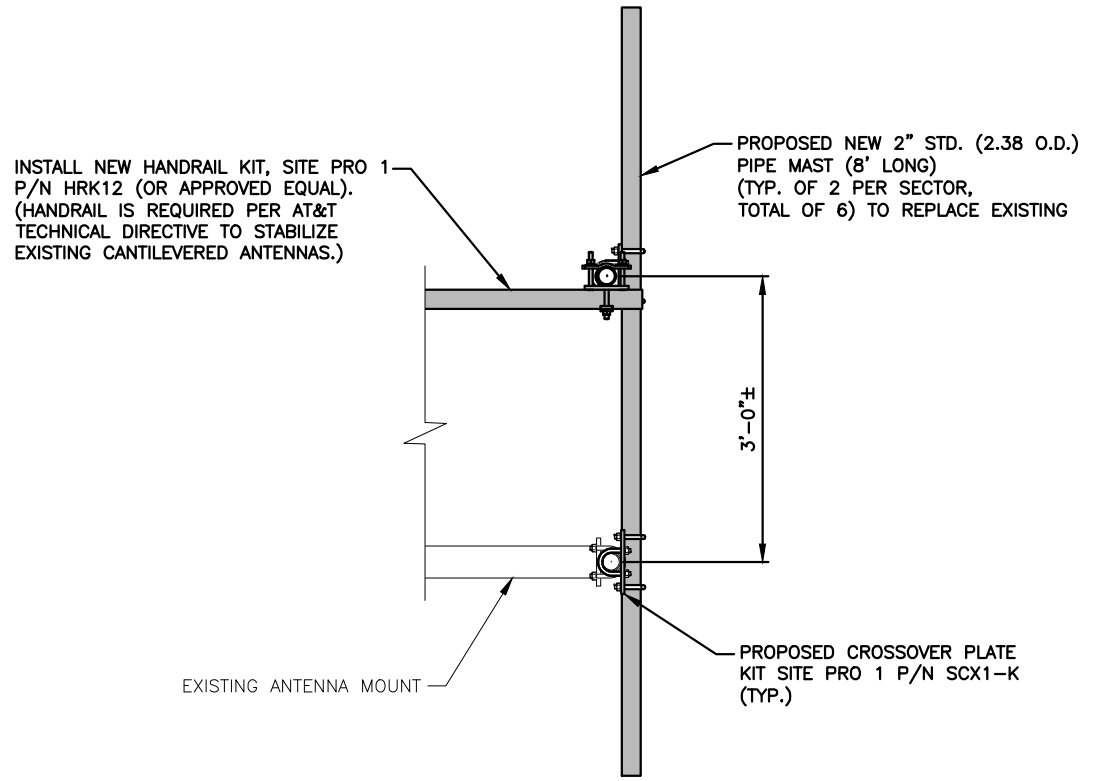
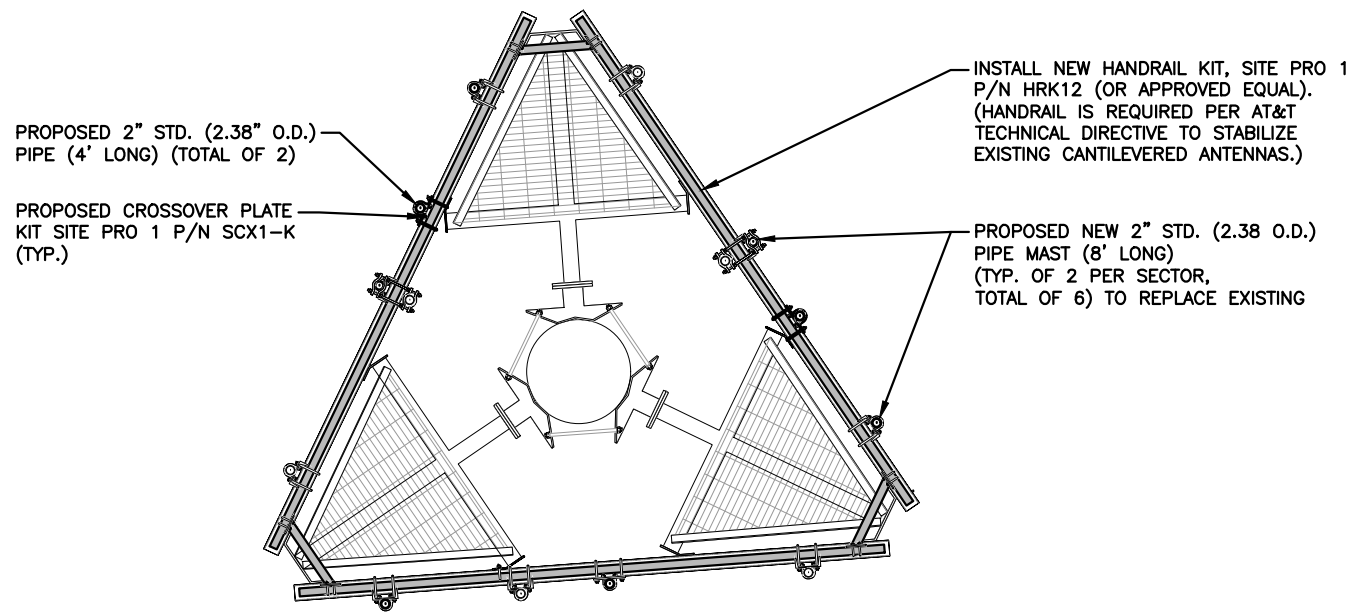
1	01/30/19	ISSUED FOR CONSTRUCTION	AM	AT	DJC
A	12/26/18	ISSUED FOR REVIEW	MR	AT	DJC
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: AT	DRAWN BY: MR		

SITE NUMBER	DRAWING NUMBER	REV
CT1205	SN-1	1

NOTE:
 REFER TO STRUCTURAL ANALYSIS
 BY: IES TOWER ENGINEERING SOLUTIONS,
 DATED: JANUARY 21, 2019
 FOR THE CAPACITY OF THE
 EXISTING STRUCTURES TO SUPPORT
 THE PROPOSED EQUIPMENT.

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: NOVEMBER 12, 2018

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



PROPOSED REINFORCEMENT PLAN

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



PROPOSED MOUNT MODIFICATIONS DETAIL

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



HGD HUDSON Design Group LLC
 45 BEECHWOOD DRIVE
 NORTH ANDOVER, MA 01845
 TEL: (978) 557-5553
 FAX: (978) 336-5586

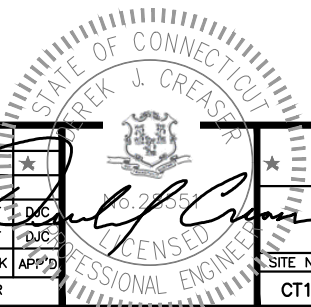
SAI
 12 INDUSTRIAL WAY
 SALEM, NH 03079

SITE NUMBER: CT1205
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 BURR MOUNTAIN ROAD
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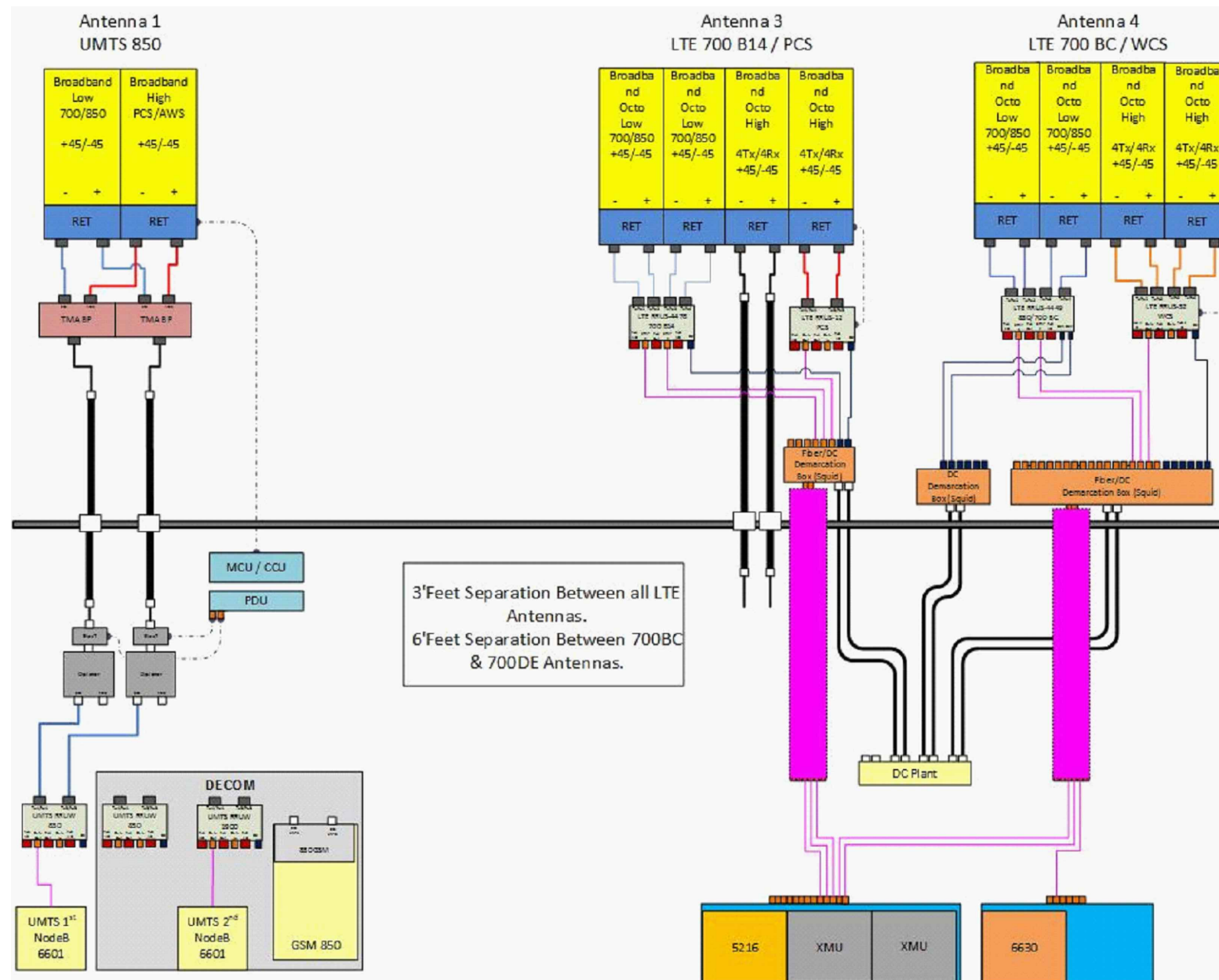
at&t
 500 ENTERPRISE DRIVE, SUITE 3A
 ROCKY HILL, CT 06067

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A	12/26/18	ISSUED FOR REVIEW	MR	AT	DJC

SCALE: AS SHOWN DESIGNED BY: AT DRAWN BY: MR



AT&T
 MOUNT MODIFICATION DESIGN
 (LTE 3C/4C/5C/4TX4RX RETROFIT)
 SITE NUMBER: CT1205 DRAWING NUMBER: S-1 REV: 1



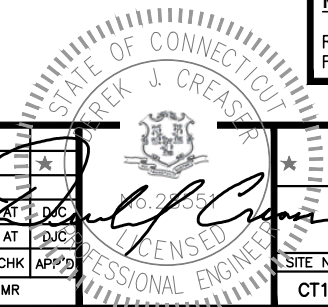
RF PLUMBING DIAGRAM 1
SCALE: N.T.S. RF-1

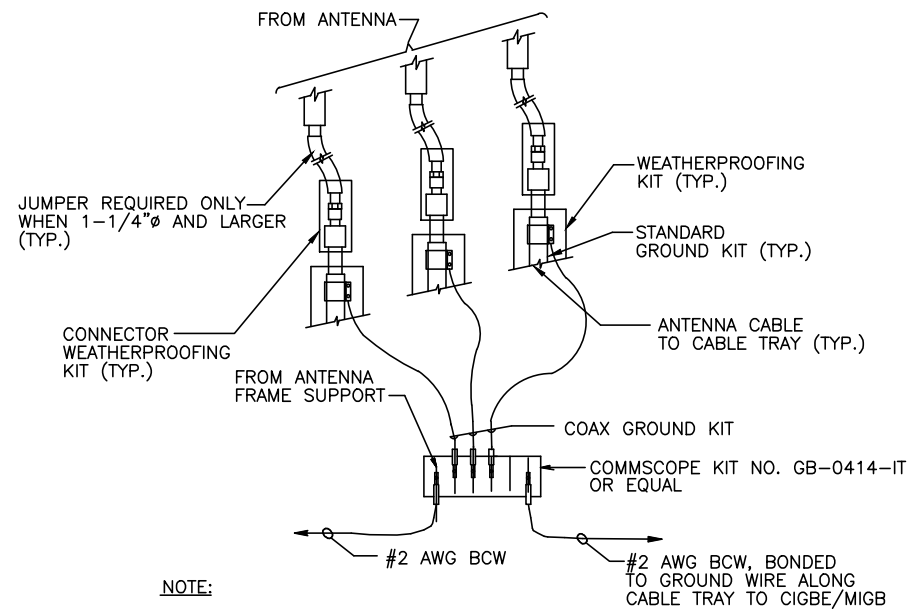
NOTE:
1. CONTRACTOR TO CONFIRM ALL PARTS.
2. INSTALL ALL EQUIPMENT TO MANUFACTURER'S RECOMMENDATIONS

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
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SCALE: AS SHOWN DESIGNED BY: AT DRAWN BY: MR





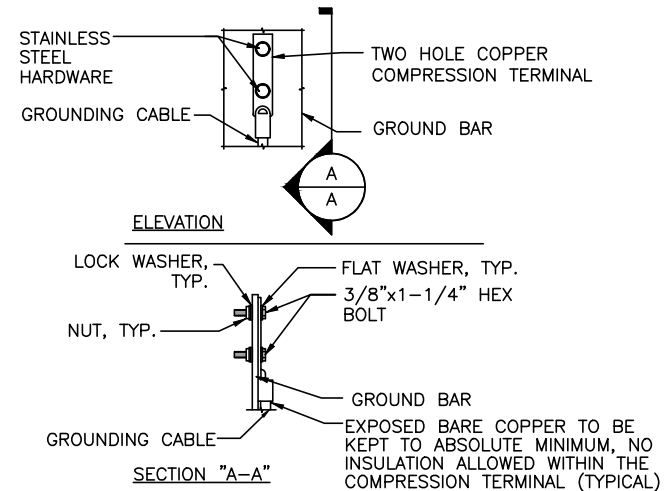
NOTE:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO CIGBE.

GROUND WIRE TO GROUND BAR CONNECTION DETAIL

SCALE: N.T.S

1
G-1



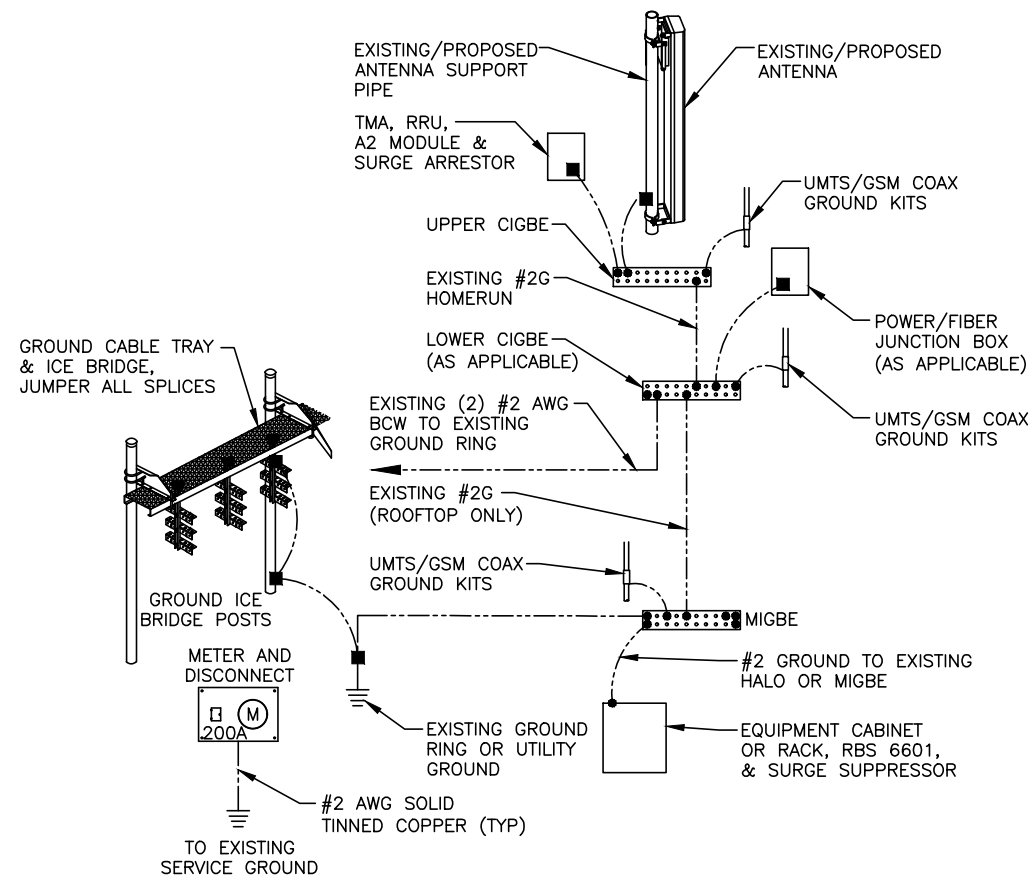
NOTE:

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

TYPICAL GROUND BAR CONNECTION DETAIL

SCALE: N.T.S

3
G-1



GROUNDING RISER DIAGRAM

SCALE: N.T.S

2
G-1

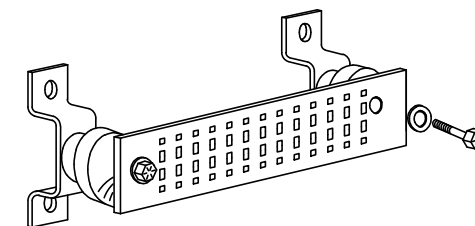
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

SECTION "P" - SURGE PRODUCERS

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

SECTION "A" - SURGE ABSORBERS

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



GROUND BAR - DETAIL

SCALE: N.T.S

4
G-1

1		01/30/19	ISSUED FOR CONSTRUCTION	AM	AT	DJC		AT&T	
A		12/26/18	ISSUED FOR REVIEW	MR	AT	DJC		GROUNDING DETAILS (LTE 3C/4C/5C/4TX4RX RETROFIT)	
NO.	DATE	REVISIONS		BY	CHK	APP'D	SITE NUMBER	DRAWING NUMBER	REV
SCALE: AS SHOWN		DESIGNED BY: AT		DRAWN BY: MR			CT1205	G-1	1



Tower Engineering Solutions

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

Structural Analysis Report

Existing 196 ft Valmont Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT46138-A

Customer Site Name: Torrington/Oandg Ind Inc

Carrier Name: AT&T (App#: 103228, v1)

Carrier Site ID / Name: CT1205 / TORRINGTON - BURR MT ROAD

Site Location: LOT 5 Burr Mountain Road

Torrington, Connecticut

Litchfield County

Latitude: 41.873255

Longitude: -73.088405

Analysis Result:

Max Structural Usage: 76.9% [Pass]

Max Foundation Usage: 73.0% [Pass]

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

Report Prepared By: Vishnu Paidimarri





Tower Engineering Solutions

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

Structural Analysis Report

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

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Introduction

The purpose of this report is to summarize the analysis results on the 196 ft Valmont Monopole to support the proposed antennas and transmission lines in addition to those currently installed. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Tower Drawings	Valmont, Order # 17566-64 Dated 08/03/2004
Foundation Drawing	Valmont, Eng File # A-402723 Dated 07/16/2004
Geotechnical Report	Geotechnical Report by Dr. Clarence Welti, P.E, P.C, Tower- CT33XC079 Dated 06/18/2004
Modification Drawings	Vertical Solutions, Project # 130499 Dated 06/28/2013

Analysis Criteria

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

Wind Speed Used in the Analysis:	Ultimate Design Wind Speed $V_{ult} = 120.0$ mph (3-Sec. Gust) Nominal Design Wind Speed $V_{asd} = 93.0$ mph (3-Sec. Gust)
Wind Speed with Ice:	40 mph (3-Sec. Gust) with 1" radial ice concurrent
Operational Wind Speed:	60 mph + 0" Radial ice
Standard/Codes:	ANSI/TIA/EIA 222-G / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	C
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft
Seismic Parameters:	$S_S = 0.182$, $S_1 = 0.065$

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

Existing Antennas, Mounts and Transmission Lines

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

Items	Elevation (ft.)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	198.0	1	RFI - BA80-41-DIN - Omni	(1) Pipe mount	(1) 7/8"	Torrington P.D.
2	191.5	3	RFS - APXVTM14-C-120 - Panel	Low Profile Platform	(6) 1 5/8" (4) 1-1/4" Fiber	Sprint
3		3	RFS - APXVSP18-C-A20 - Panel			
4		3	ALU - 800MHz - RRU			
5		3	ALU - 1900MHz - RRU			
6		3	ALU - RRH8x20-25 - RRU			
7		3	ALU - 800MHz Filter - RRU Filter			
8		4	RFS - ACU-A20-N - RET			
9		185.0	3			
10	6		Antel - LPA-80063/4CF - Panel			
11	3		Antel - BXA-70063 6CF_2 - Panel			
12	6		RFS - FD9R6004/2C-3L - Diplexer			
-	175.0	3	KMW AM-X-CD-16-65-00T-RET - Panel	Low Profile Platform	(12) 1 5/8" (2) 3/4" DC (1) 7/16" Fiber (1) 3" Conduit	AT&T
-		6	Powerwave - 7770 - Panel			
-		12	Powerwave 21401 - TMA			
-		3	Ericsson RRUS-11 - RRU			
-		3	Ericsson RRUS-12 - RRU			
-		1	Raycap DC6-48-60-18-8F - SP			
26		155.0	3			
27	3		Ericsson - AIR 21 B4A/B2P - Panel			
28	3		Commscope - LNX-6515DS-A1M - Panel			
29	3		Ericsson - KRY 112 114 TMA			
30	145.0	3	RFS - APXV18-206517S-C - Panel	(3) T-Arms	(6) 1 5/8"	Metro PCS
31	132.5	1	Telewave - ANT150F2 - Omni	(1) Standoff	(1) 7/8"	Torrington P.D.
32	116.5	5	14' Omni	(6) Standoff	(6) 1/2"	
33	111.5	1	4' Omni			
34	100.0	1	Maxrad - MPRD - Dish	(1) Standoff	(2) CAT5e	

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
13	175.0	6	Kathrein 800-10965- Panel	Low Profile Platform SitePro1 HRK12 (Handrail Kit)	(12) 1 5/8" (2) 2" Conduit (Housing (4) 3/4" & (2) 7/16" Fiber lines) (1) 3" Conduit (Housing (2) 3/4" & (1) 7/16" Fiber lines)	AT&T
14		2	Raycap DC6-48-60-18-8C-EV			
15		3	Ericsson RRUS 32 B30			
16		3	Ericsson RRUS 4478 B14			
17		3	Ericsson RRUS 4449 B5/B12			
18		12	Powerwave LGP13519 Diplexer			
19		12	Powerwave LGP21401 TMA			
22		3	Powerwave 7770- Panel			
24		3	Ericsson RRUS 12			
25		1	Raycap DC6-48-60-18-8F			

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	Reinforce Plate
Max. Usage:	68.0%	63.6%	57.5%	76.9%
Pass/Fail	Pass	Pass	Pass	Pass

Foundations

	Moment (Kip-Ft)	Shear (Kips)
Original Design Reactions	5499.0	40.8
Analysis Reactions	6215.7	45.1
Factored Reactions*	7423.7	55.0
% of Design Reactions	83.7%	82.0%

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

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

Operational Condition (Rigidity):

Operational characteristics of the tower are found to be within the limits prescribed by ANSI/TIA/EIA 222-G for the installed antennas. The maximum twist/sway at the elevation of the proposed equipment is 1.7731 degrees under the operational wind speed as specified in the Analysis Criteria.

Conclusions

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

Standard Conditions

1. This analysis was performed based on the information supplied to **(TES) Tower Engineering Solutions, LLC**. Verification of the information provided was not included in the Scope of Work for **TES**. The accuracy of the analysis is dependent on the accuracy of the information provided.
2. The structural analysis was performance based upon the evidence available at the time of this report. All information provided by the client is considered to be accurate.
3. The analyses will be performed based on the codes as specified by the client or based on the best knowledge of the engineering staff of **TES**. In the absence of information to the contrary, all work will be performed in accordance with the latest relevant revision of ANSI/TIA-222. If wind speed and/or ice loads are different from the minimum values recommended by the 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 68.06% at 140.0ft

Structure: CT46138-A-SBA
Site Name: Torrington/Oandg Ind Inc
Height: 196.00 (ft)
Base Elev: 0.000 (ft)

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

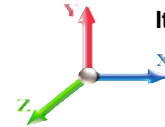
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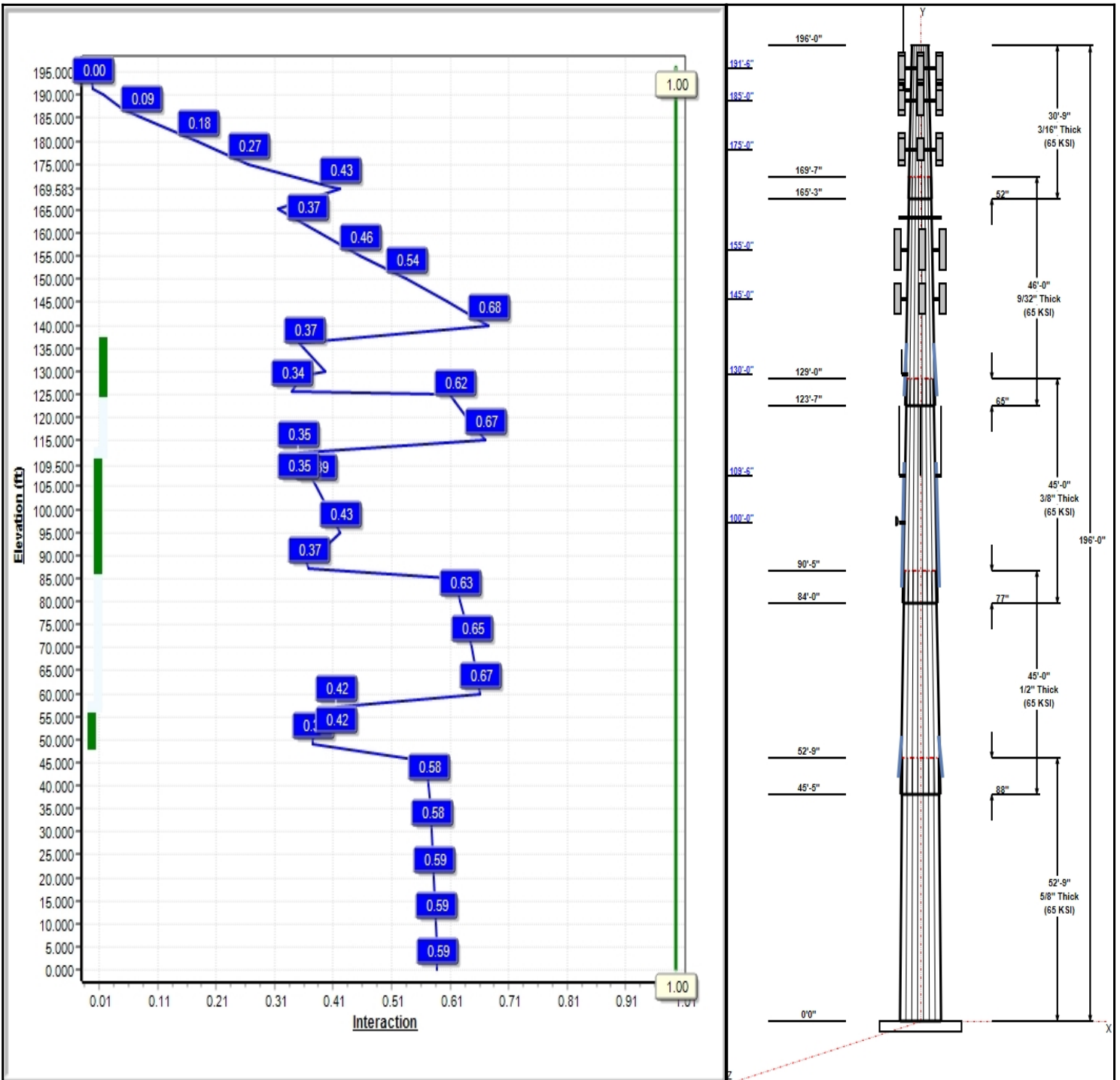
Dead Load Factor: 1.20
Wind Load Factor: 1.60

Load Case : 1.2D + 1.6W 93 mph Wind



Iterations: 27

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Structure: CT46138-A-SBA

Type: Tapered
Site Name: Torrington/Oandg Ind Inc
Height: 196.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 16 Sided
Taper: 0.21000

1/21/2019

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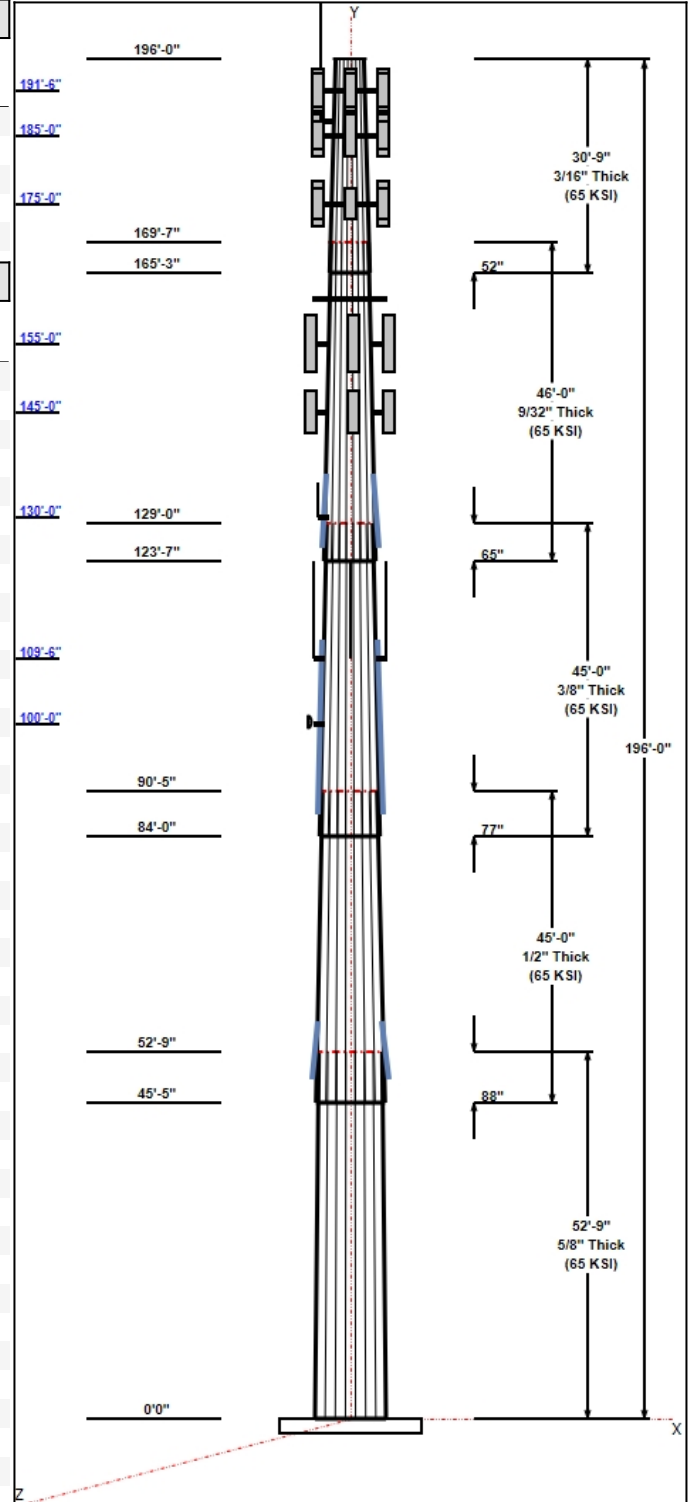


Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	52.75	48.92	60.00	0.625		0.21000	65
2	45.00	42.01	51.46	0.500	Slip	0.21000	65
3	45.00	34.66	44.11	0.375	Slip	0.21000	65
4	46.00	26.70	36.36	0.281	Slip	0.21000	65
5	30.75	21.53	27.98	0.188	Slip	0.21000	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
196.00	196.00	1	6' Lightning rod	Torrington P.D.
191.50	191.50	3	APXVTM14-C-120	Sprint
191.50	191.50	3	APXVSP18-C-A20	Sprint
191.50	191.50	3	800MHz - RRU	Sprint
191.50	191.50	3	1900MHz - RRU	Sprint
191.50	191.50	3	RRH8x20-25 - RRU	Sprint
191.50	191.50	3	800MHz Filter	Sprint
191.50	191.50	4	ACU-A20-N - RET	Sprint
191.50	191.50	1	Low Profile Platform	Sprint
187.00	197.33	1	BA80-41-DIN	Torrington P.D.
187.00	187.00	1	Pipe mount	Torrington P.D.
185.00	185.00	3	BXA-171063-8BF_2	Verizon
185.00	185.00	6	LPA-80063/4CF	Verizon
185.00	185.00	3	BXA-70063 6CF_2	Verizon
185.00	185.00	6	FD9R6004/2C-3L -	Verizon
185.00	185.00	1	Low Profile Platform	Verizon
175.00	175.00	6	Kathrein 800-10965	AT&T
175.00	175.00	1	HRK12 (Handrail Kit)	AT&T
175.00	175.00	2	Raycap	AT&T
175.00	175.00	3	Ericsson RRUS 32 B30	AT&T
175.00	175.00	3	Ericsson RRUS 4478 B14	AT&T
175.00	175.00	3	Ericsson RRUS 4449	AT&T
175.00	175.00	12	Powerwave LGP13519	AT&T
175.00	175.00	12	Powerwave LGP21401	AT&T
175.00	175.00	3	Powerwave 7770	AT&T
175.00	175.00	3	RRUS-12	AT&T
175.00	175.00	1	DC6-48-60-18-8F	AT&T
175.00	175.00	1	Low Profile Platform	AT&T
161.50	161.50	1	Low Profile Platform	Vacant
155.00	155.00	3	LNX-6515DS-A1M	T-Mobile
155.00	155.00	3	T-Arms w/ Handrail kit &	T-Mobile
155.00	155.00	3	AIR 21 B4A/B2P	T-Mobile
155.00	155.00	3	AIR 21 B2A/B4P	T-Mobile
155.00	155.00	3	KRY 112 114 TMA	T-Mobile
145.00	145.00	3	APXV18-206517S-C	Metro PCS
145.00	145.00	3	T-Arms	Metro PCS
130.00	130.00	1	Standoff	Torrington P.D.
130.00	132.50	1	ANT150F2	Torrington P.D.
109.50	116.50	5	14' Omni	Torrington P.D.
109.50	111.50	1	4' Omni	Torrington P.D.
109.50	109.50	5	Standoff	Torrington P.D.
109.50	109.50	1	Standoff	Torrington P.D.
100.00	100.00	1	MPRD	Torrington P.D.
100.00	100.00	1	Standoff	Torrington P.D.



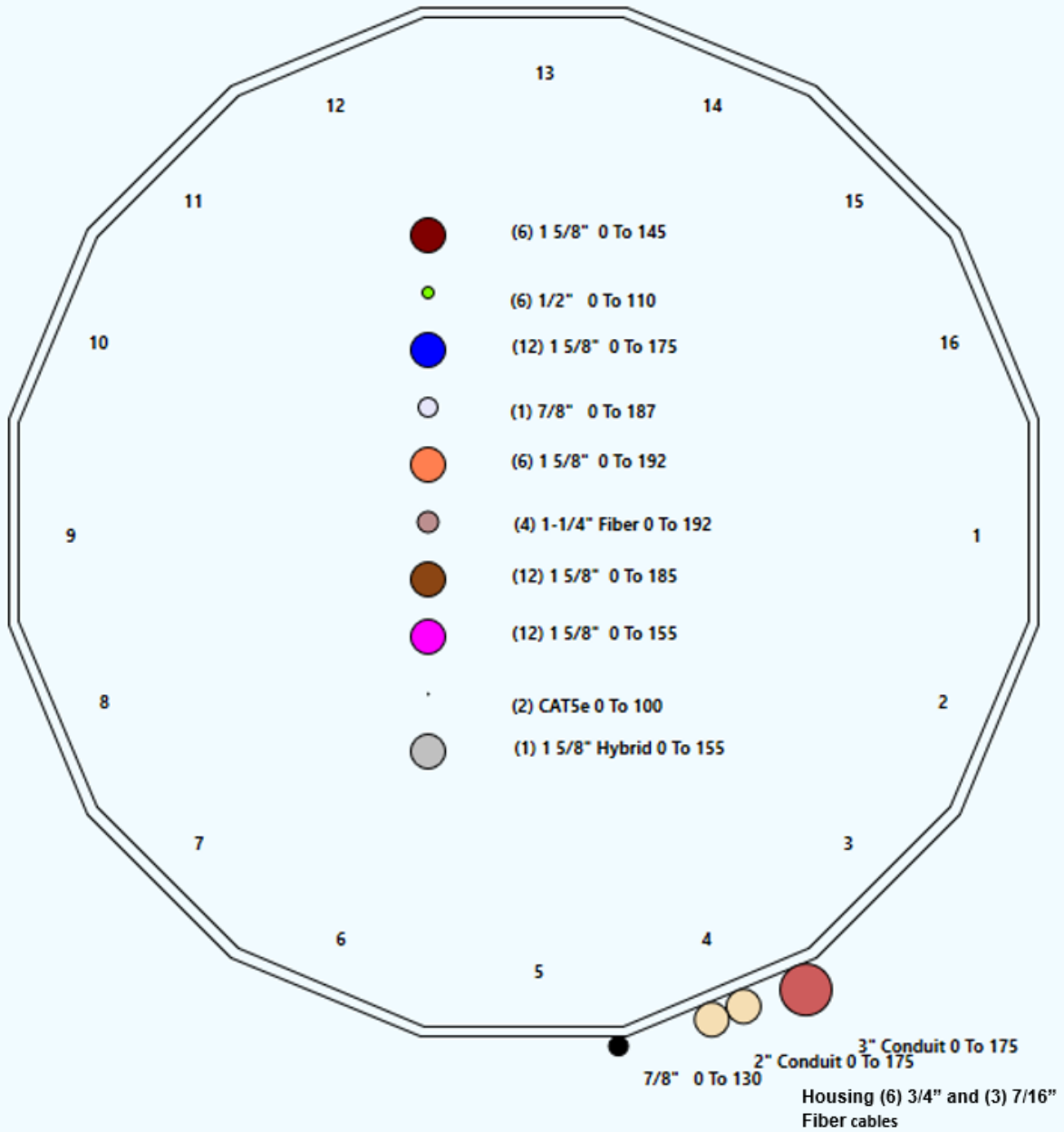
Structure: CT46138-A-SBA - Coax Line Placement

Type: Monopole
Site Name: Torrington/Oandg Ind Inc
Height: 196.00 (ft)

1/21/2019



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Shaft Properties

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/21/2019
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	16	52.750	0.6250	65		0.00	19,266
2	16	45.000	0.5000	65	Slip	88.00	11,293
3	16	45.000	0.3750	65	Slip	77.00	7,146
4	16	46.000	0.2813	65	Slip	65.00	4,388
5	16	30.750	0.1875	65	Slip	52.00	1,538
Total Shaft Weight:							43,631

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	60.00	0.00	118.3	52722.49	17.50	96.00	48.92	52.75	96.29	28376.2	13.98	78.28	0.210003
2	51.46	45.42	81.29	26670.08	18.88	102.92	42.01	90.42	66.21	14414.6	15.12	84.02	0.210003
3	44.11	84.00	52.32	12642.04	21.81	117.63	34.66	129.00	41.01	6090.27	16.79	92.43	0.210003
4	36.36	123.5	32.37	5322.81	24.12	129.28	26.70	169.58	23.70	2089.84	17.29	94.93	0.210003
5	27.98	165.2	16.63	1622.94	28.10	149.25	21.53	196.00	12.76	734.28	21.25	114.8	0.210003

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
48.90	57.15	4	PLT 7.25x1.5(31mm Hole)	50	65	0.00	AJM20&sleeve	0.00	AJM20&sleeve	3.00	14	13
87.00	112.2	4	PLT 6.5x1.5(31mm Hole)	50	65	0.00	AJM20&sleeve	0.00	AJM20&sleeve	3.00	12	11
125.6	136.2	4	PLT 4.75x1.5(31mm Hole)	50	65	0.00	AJM20&sleeve	24.00	AJM20&sleeve	3.00	8	7

Load Summary

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/21/2019
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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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	196.00	6' Lightning rod	1	6.50	0.38	1.00	56.21	1.869	1.00	0.00	0.00
2	191.50	APXVTM14-C-120	3	56.00	6.34	0.85	291.66	7.897	0.88	0.00	0.00
3	191.50	APXVSP18-C-A20	3	57.00	8.02	0.83	293.17	11.837	0.85	0.00	0.00
4	191.50	800MHz - RRU	3	53.00	2.49	0.67	154.05	4.053	0.70	0.00	0.00
5	191.50	1900MHz - RRU	3	44.00	3.80	0.67	193.15	5.699	0.70	0.00	0.00
6	191.50	RRH8x20-25 - RRU	3	70.00	4.05	0.67	232.71	5.192	0.70	0.00	0.00
7	191.50	800MHz Filter	3	8.80	0.78	0.67	32.91	1.664	0.70	0.00	0.00
8	191.50	ACU-A20-N - RET	4	1.00	0.14	0.75	6.87	0.545	0.78	0.00	0.00
9	191.50	Low Profile Platform	1	1500.00	22.00	1.00	3288.37	46.131	1.00	0.00	0.00
10	187.00	BA80-41-DIN	1	68.00	9.40	1.00	423.55	34.963	1.00	0.00	10.33
11	187.00	Pipe mount	1	40.00	2.63	0.75	149.43	10.766	0.75	0.00	0.00
12	185.00	BXA-171063-8BF_2	3	10.50	2.94	0.87	99.74	5.198	0.90	0.00	0.00
13	185.00	LPA-80063/4CF	6	20.00	6.15	0.85	317.20	7.591	0.88	0.00	0.00
14	185.00	BXA-70063 6CF_2	3	17.00	7.57	0.82	218.92	11.333	0.85	0.00	0.00
15	185.00	FD9R6004/2C-3L - Diplexer	6	3.10	0.36	0.70	14.03	0.964	0.75	0.00	0.00
16	185.00	Low Profile Platform	1	1500.00	22.00	1.00	3282.20	46.048	1.00	0.00	0.00
17	175.00	Kathrein 800-10965	6	108.60	13.81	0.71	533.85	15.983	0.71	0.00	0.00
18	175.00	HRK12 (Handrail Kit)	1	261.72	6.75	1.00	682.28	15.682	1.00	0.00	0.00
19	175.00	Raycap DC6-48-60-18-8C-EV	2	16.00	4.78	1.00	183.54	5.977	1.00	0.00	0.00
20	175.00	Ericsson RRUS 32 B30	3	60.00	2.74	0.67	189.48	3.754	0.67	0.00	0.00
21	175.00	Ericsson RRUS 4478 B14	3	59.40	1.65	0.67	115.55	2.352	0.67	0.00	0.00
22	175.00	Ericsson RRUS 4449 B5/B12	3	71.00	1.97	0.67	143.28	2.711	0.67	0.00	0.00
23	175.00	Powerwave LGP13519 Diplexer	12	5.30	0.34	1.00	18.16	0.955	1.00	0.00	0.00
24	175.00	Powerwave LGP21401 TMA	12	14.10	1.29	1.00	47.95	2.422	1.00	0.00	0.00
25	175.00	Powerwave 7770	3	35.00	5.50	0.85	233.03	6.976	0.88	0.00	0.00
26	175.00	RRUS-12	3	50.00	2.70	0.67	133.84	4.157	0.70	0.00	0.00
27	175.00	DC6-48-60-18-8F	1	32.80	0.92	1.00	119.15	1.513	1.00	0.00	0.00
28	175.00	Low Profile Platform	1	1500.00	22.00	1.00	3272.33	45.915	1.00	0.00	0.00
29	161.50	Low Profile Platform	1	1500.00	22.00	1.00	3258.15	45.723	1.00	0.00	0.00
30	155.00	LNx-6515DS-A1M	3	50.30	11.47	0.80	360.46	15.840	0.81	0.00	0.00
31	155.00	T-Arms w/ Handrail kit & v-brace kit	3	500.00	17.50	0.75	1433.84	36.130	0.75	0.00	0.00
32	155.00	AIR 21 B4A/B2P	3	90.30	6.09	0.83	329.82	7.531	0.85	0.00	0.00
33	155.00	AIR 21 B2A/B4P	3	91.50	6.09	0.83	329.93	7.531	0.85	0.00	0.00
34	155.00	KRY 112 114 TMA	3	11.00	0.41	0.75	25.42	1.046	0.78	0.00	0.00
35	145.00	APXV18-206517S-C	3	26.40	5.17	0.83	149.78	8.326	0.88	0.00	0.00
36	145.00	T-Arms	3	350.00	8.00	0.75	674.67	17.276	0.75	0.00	0.00
37	130.00	Standoff	1	40.00	2.63	0.75	145.52	10.475	0.75	0.00	0.00
38	130.00	ANT150F2	1	13.00	1.23	1.00	56.47	2.623	1.00	0.00	2.50
39	109.50	14' Omni	5	40.00	4.20	1.00	176.81	10.663	1.00	0.00	7.00
40	109.50	4' Omni	1	10.00	1.00	1.00	50.41	2.117	1.00	0.00	2.00
41	109.50	Standoff	5	40.00	2.63	0.75	143.72	10.342	0.75	0.00	0.00
42	109.50	Standoff	1	40.00	2.63	0.75	143.72	10.342	0.75	0.00	0.00
43	100.00	MPRD	1	36.00	6.10	1.00	359.41	7.638	1.00	0.00	0.00
44	100.00	Standoff	1	40.00	2.63	0.75	142.79	10.272	0.75	0.00	0.00
Totals:			133	13,180.62			40,317.24				

Linear Appurtenances

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		
Bottom	Top										
Elev.	Elev.	Description		Exposed							
(ft)	(ft)			Width	Exposed						
0.00	191.50	(6) 1 5/8" Coax		0.00	Inside						
0.00	191.50	(4) 1-1/4" Fiber		0.00	Inside						
0.00	187.00	(1) 7/8" Coax		0.00	Inside						
0.00	185.00	(12) 1 5/8" Coax		0.00	Inside						
0.00	175.00	(12) 1 5/8" Coax		0.00	Inside						
0.00	175.00	(2) 2" Conduit		0.00	Outside						
0.00	175.00	(1) 3" Conduit		3.00	Outside						
0.00	175.00	(6) 3/4" DC		0.00	Inside						
0.00	175.00	(3) 7/16" Fiber		0.00	Inside						
0.00	155.00	(12) 1 5/8" Coax		0.00	Inside						
0.00	155.00	(1) 1 5/8" Hybrid		0.00	Inside						
0.00	145.00	(6) 1 5/8" Coax		0.00	Inside						
0.00	130.00	(1) 7/8" Coax		0.52	Outside						
0.00	109.50	(6) 1/2" Coax		0.00	Inside						
0.00	100.00	(2) CAT5e		0.00	Inside						

Shaft Section Properties

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/21/2019
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Increment Length: 5 (ft)

Elev (ft)	Description	Thick (in)	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		0.6250	60.000	118.379	52722.5	17.50	96.00	65	83	0.0				
5.00		0.6250	58.950	116.285	49974.6	17.17	94.32	65	83	1996.3				
10.00		0.6250	57.900	114.192	47323.8	16.84	92.64	65	83	1960.7				
15.00		0.6250	56.850	112.099	44768.5	16.50	90.96	65	83	1925.0				
20.00		0.6250	55.800	110.005	42306.9	16.17	89.28	65	83	1889.4				
25.00		0.6250	54.750	107.912	39937.2	15.83	87.60	65	83	1853.8				
30.00		0.6250	53.700	105.818	37657.6	15.50	85.92	65	83	1818.2				
35.00		0.6250	52.650	103.725	35466.6	15.17	84.24	65	83	1782.6				
40.00		0.6250	51.600	101.631	33362.2	14.83	82.56	65	83	1747.0				
45.00		0.6250	50.550	99.538	31342.7	14.50	80.88	65	83	1711.3				
45.42	Bot - Section 2	0.6250	50.462	99.363	31178.2	14.47	80.74	65	83	141.0				
48.90	RB1	0.6250	49.731	97.905	29825.3	14.24	79.57	65	83	2125.7	43.50	14933.2	14933.2	487.8
50.00		0.6250	49.500	97.444	29406.4	14.16	79.20	65	83	664.8	43.50	14802.3	14802.3	154.0
52.75	Top - Section 1	0.5000	49.922	78.829	24324.6	18.27	99.84	65	82	1648.4	43.50	14477.5	14477.5	385.1
55.00		0.5000	49.450	78.075	23633.6	18.08	98.90	65	82	600.6	43.50	14214.5	14214.5	315.1
57.15	RT1	0.5000	48.998	77.355	22985.6	17.90	98.00	65	82	568.6	43.50	13965.4	13965.4	301.1
60.00		0.5000	48.400	76.400	22145.1	17.66	96.80	65	83	745.6				
65.00		0.5000	47.350	74.725	20720.5	17.25	94.70	65	83	1285.6				
70.00		0.5000	46.300	73.051	19358.3	16.83	92.60	65	83	1257.1				
75.00		0.5000	45.250	71.376	18057.1	16.41	90.50	65	83	1228.6				
80.00		0.5000	44.200	69.701	16815.6	15.99	88.40	65	83	1200.1				
84.00	Bot - Section 3	0.5000	43.360	68.361	15864.5	15.66	86.72	65	83	939.6				
85.00		0.5000	43.150	68.026	15632.4	15.57	86.30	65	83	409.6				
87.00	RB2	0.5000	42.730	67.356	15175.1	15.41	85.46	65	83	813.3	39.00	9935.3	9935.3	265.4
90.00		0.5000	42.100	66.352	14506.0	15.16	84.20	65	83	1205.0	39.00	9661.0	9661.0	398.2
90.42	Top - Section 2	0.3750	42.762	50.706	11509.1	21.09	114.03	65	79	165.9	39.00	9623.2	9623.2	55.3
95.00		0.3750	41.800	49.554	10742.8	20.58	111.47	65	79	781.8	39.00	9212.3	9212.3	608.3
100.00		0.3750	40.750	48.298	9946.4	20.02	108.67	65	80	832.4	39.00	8774.4	8774.4	663.6
105.00		0.3750	39.700	47.042	9190.4	19.47	105.87	65	81	811.1	39.00	8347.2	8347.2	663.6
109.50		0.3750	38.755	45.912	8543.6	18.97	103.35	65	81	711.7	39.00	7972.0	7972.0	597.2
110.00		0.3750	38.650	45.786	8473.7	18.91	103.07	65	81	78.0	39.00	7930.8	7930.8	66.4
112.25	RT2	0.3750	38.177	45.221	8163.7	18.66	101.81	65	81	348.4	39.00	7746.9	7746.9	298.6
115.00		0.3750	37.600	44.530	7795.3	18.35	100.27	65	82	419.9				
120.00		0.3750	36.550	43.274	7154.0	17.80	97.47	65	82	746.9				
123.58	Bot - Section 4	0.3750	35.797	42.374	6716.8	17.40	95.46	65	83	522.2				
125.00		0.3750	35.500	42.018	6549.0	17.24	94.67	65	83	358.8				
125.60	RB3	0.3750	35.374	41.867	6478.8	17.17	94.33	65	83	151.1	28.50	5022.2	5022.2	58.2
129.00	Top - Section 3	0.2813	35.222	31.349	4835.0	23.32	125.23	65	76	845.8	28.50	4833.6	4833.6	329.7
130.00		0.2813	35.012	31.160	4748.4	23.17	124.49	65	76	106.4	28.50	4778.8	4778.8	97.0
135.00		0.2813	33.962	30.218	4330.6	22.43	120.75	65	77	522.1	28.50	4509.5	4509.5	484.9
136.26	RT3	0.2813	33.698	29.981	4229.3	22.24	119.81	65	77	129.1	28.50	4442.9	4442.9	122.2
140.00		0.2813	32.912	29.276	3938.1	21.69	117.02	65	78	377.1				
145.00		0.2813	31.862	28.334	3570.0	20.94	113.29	65	79	490.1				
150.00		0.2813	30.812	27.392	3225.6	20.20	109.55	65	80	474.1				
155.00		0.2813	29.762	26.450	2904.1	19.46	105.82	65	81	458.0				
160.00		0.2813	28.712	25.508	2604.8	18.72	102.09	65	81	442.0				
161.50		0.2813	28.397	25.225	2519.1	18.49	100.97	65	82	129.5				
165.00		0.2813	27.662	24.566	2326.7	17.97	98.35	65	82	296.5				
165.25	Bot - Section 5	0.2813	27.610	24.519	2313.3	17.94	98.17	65	82	20.9				
169.58	Top - Section 4	0.1875	27.075	16.082	1468.7	27.13	144.40	65	72	596.7				

Increment Length: 5 (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)
170.00		0.1875	26.987	16.029	1454.4	27.04	143.93	65	72	22.8				
175.00		0.1875	25.937	15.401	1290.1	25.92	138.33	65	73	267.4				
180.00		0.1875	24.887	14.773	1138.6	24.81	132.73	65	74	256.7				
185.00		0.1875	23.837	14.145	999.5	23.70	127.13	65	76	246.0				
187.00		0.1875	23.417	13.894	947.2	23.25	124.89	65	76	95.4				
190.00		0.1875	22.787	13.517	872.2	22.58	121.53	65	77	139.9				
191.50		0.1875	22.472	13.329	836.2	22.25	119.85	65	77	68.5				
195.00		0.1875	21.737	12.889	756.2	21.47	115.93	65	78	156.1				
196.00		0.1875	21.527	12.764	734.3	21.25	114.81	65	79	43.6				
Total Weight										43630.8				
											6351.7			

Wind Loading - Shaft

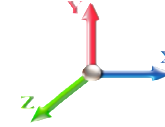
Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/21/2019
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 27

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	17.879	19.67	437.11	0.750	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	17.879	19.67	429.46	0.750	0.000	5.00	25.267	18.95	596.3	0.0	2395.5
10.00		1.00	0.85	17.879	19.67	421.81	0.750	0.000	5.00	24.821	18.62	585.8	0.0	2352.8
15.00		1.00	0.85	17.879	19.67	414.16	0.750	0.000	5.00	24.375	18.28	575.3	0.0	2310.0
20.00		1.00	0.90	18.971	20.87	418.73	0.750	0.000	5.00	23.929	17.95	599.2	0.0	2267.3
25.00		1.00	0.95	19.883	21.87	420.62	0.750	0.000	5.00	23.482	17.61	616.3	0.0	2224.6
30.00		1.00	0.98	20.661	22.73	420.55	0.750	0.000	5.00	23.036	17.28	628.3	0.0	2181.8
35.00		1.00	1.01	21.343	23.48	419.07	0.750	0.000	5.00	22.590	16.94	636.4	0.0	2139.1
40.00		1.00	1.04	21.951	24.15	416.52	0.750	0.000	5.00	22.144	16.61	641.6	0.0	2096.3
45.00		1.00	1.07	22.502	24.75	413.14	0.750	0.000	5.00	21.698	16.27	644.5	0.0	2053.6
45.42	Bot - Section 2	1.00	1.07	22.546	24.80	412.82	0.750	0.000	0.42	1.788	1.34	53.2	0.0	169.2
48.90	RB1	1.00	1.09	22.899	25.19	410.02	0.750	0.000	3.48	15.123	11.34	457.1	0.0	2550.8
50.00		1.00	1.09	23.007	25.31	409.07	0.750	0.000	1.10	4.731	3.55	143.7	0.0	797.8
52.75	Top - Section 1	1.00	1.11	23.268	25.59	406.58	0.750	0.000	2.75	11.732	8.80	360.3	0.0	1978.1
55.00		1.00	1.12	23.473	25.82	412.78	0.750	0.000	2.25	9.499	7.12	294.3	0.0	720.8
57.15	RT1	1.00	1.12	23.663	26.03	410.66	0.750	0.000	2.15	8.992	6.74	280.9	0.0	682.3
60.00		1.00	1.14	23.907	26.30	407.73	0.750	0.000	2.85	11.793	8.84	372.1	0.0	894.7
65.00		1.00	1.16	24.313	26.74	402.26	0.750	0.000	5.00	20.339	15.25	652.7	0.0	1542.7
70.00		1.00	1.17	24.696	27.17	396.42	0.750	0.000	5.00	19.893	14.92	648.5	0.0	1508.5
75.00		1.00	1.19	25.057	27.56	390.25	0.750	0.000	5.00	19.446	14.58	643.2	0.0	1474.4
80.00		1.00	1.21	25.400	27.94	383.79	0.750	0.000	5.00	19.000	14.25	637.0	0.0	1440.2
84.00	Bot - Section 3	1.00	1.22	25.662	28.23	378.44	0.750	0.000	4.00	14.879	11.16	504.0	0.0	1127.5
85.00		1.00	1.22	25.726	28.30	377.08	0.750	0.000	1.00	3.739	2.80	127.0	0.0	491.6
87.00	RB2	1.00	1.23	25.852	28.44	374.32	0.750	0.000	2.00	7.424	5.57	253.4	0.0	976.0
90.00		1.00	1.24	26.037	28.64	370.12	0.750	0.000	3.00	11.003	8.25	378.2	0.0	1446.0
90.42	Top - Section 2	1.00	1.24	26.063	28.67	369.53	0.750	0.000	0.42	1.515	1.14	52.1	0.0	199.1
95.00		1.00	1.25	26.336	28.97	369.58	0.750	0.000	4.58	16.465	12.35	572.4	0.0	938.2
100.00	Appurtenance(s)	1.00	1.27	26.621	29.28	362.25	0.750	0.000	5.00	17.535	13.15	616.2	0.0	998.9
105.00		1.00	1.28	26.896	29.59	354.73	0.750	0.000	5.00	17.089	12.82	606.7	0.0	973.3
109.50	Appurtenance(s)	1.00	1.29	27.135	29.85	347.82	0.750	0.000	4.50	14.998	11.25	537.2	0.0	854.0
110.00		1.00	1.29	27.161	29.88	347.04	0.750	0.000	0.50	1.644	1.23	58.9	0.0	93.6
112.25	RT2	1.00	1.30	27.277	30.00	343.53	0.750	0.000	2.25	7.344	5.51	264.4	0.0	418.1
115.00		1.00	1.30	27.416	30.16	339.20	0.750	0.000	2.75	8.853	6.64	320.4	0.0	503.9
120.00		1.00	1.32	27.663	30.43	331.21	0.750	0.000	5.00	15.750	11.81	575.1	0.0	896.3
123.58	Bot - Section 4	1.00	1.32	27.835	30.62	325.39	0.750	0.000	3.58	11.013	8.26	404.7	0.0	626.6
125.00		1.00	1.33	27.902	30.69	323.08	0.750	0.000	1.42	4.359	3.27	160.5	0.0	430.6
125.60	RB3	1.00	1.33	27.930	30.72	322.09	0.750	0.000	0.60	1.835	1.38	67.7	0.0	181.3
129.00	Top - Section 3	1.00	1.34	28.088	30.90	316.48	0.750	0.000	3.40	10.278	7.71	381.1	0.0	1015.0
130.00	Appurtenance(s)	1.00	1.34	28.133	30.95	319.96	0.750	0.000	1.00	2.984	2.24	110.8	0.0	127.6
135.00		1.00	1.35	28.358	31.19	311.60	0.750	0.000	5.00	14.651	10.99	548.4	0.0	626.6
136.26	RT3	1.00	1.35	28.413	31.25	309.47	0.750	0.000	1.26	3.622	2.72	135.8	0.0	154.9
140.00		1.00	1.36	28.576	31.43	303.12	0.750	0.000	3.74	10.583	7.94	399.2	0.0	452.5
145.00	Appurtenance(s)	1.00	1.37	28.788	31.67	294.54	0.750	0.000	5.00	13.759	10.32	522.8	0.0	588.1
150.00		1.00	1.38	28.994	31.89	285.85	0.750	0.000	5.00	13.313	9.98	509.5	0.0	568.9
155.00	Appurtenance(s)	1.00	1.39	29.195	32.11	277.06	0.750	0.000	5.00	12.867	9.65	495.8	0.0	549.6
160.00		1.00	1.40	29.390	32.33	268.18	0.751 *	0.000	5.00	12.421	9.33	482.8	0.0	530.4
161.50	Appurtenance(s)	1.00	1.40	29.448	32.39	265.50	0.757 *	0.000	1.50	3.639	2.75	142.8	0.0	155.4

Wind Loading - Shaft

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/21/2019
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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165.00	1.00	1.41	29.581	32.54	259.21	0.761 *	0.000	3.50	8.335	6.34	330.3	0.0	355.8		
165.25 Bot - Section 5	1.00	1.41	29.591	32.55	258.76	0.765 *	0.000	0.25	0.587	0.45	23.4	0.0	25.1		
169.58 Top - Section 4	1.00	1.41	29.753	32.73	250.92	0.769 *	0.000	4.33	10.136	7.79	408.1	0.0	716.0		
170.00	1.00	1.42	29.768	32.74	253.68	0.770 *	0.000	0.42	0.957	0.74	38.6	0.0	27.3		
175.00 Appurtenance(s)	1.00	1.42	29.950	32.95	244.56	0.775 *	0.000	5.00	11.242	8.71	459.4	0.0	320.9		
180.00	1.00	1.43	30.128	33.14	235.35	0.750	0.000	5.00	10.796	8.10	429.3	0.0	308.0		
185.00 Appurtenance(s)	1.00	1.44	30.303	33.33	226.08	0.750	0.000	5.00	10.350	7.76	414.0	0.0	295.2		
187.00 Appurtenance(s)	1.00	1.44	30.371	33.41	222.34	0.750	0.000	2.00	4.015	3.01	161.0	0.0	114.5		
190.00	1.00	1.45	30.473	33.52	216.73	0.750	0.000	3.00	5.889	4.42	236.9	0.0	167.9		
191.50 Appurtenance(s)	1.00	1.45	30.524	33.58	213.91	0.750	0.000	1.50	2.884	2.16	116.2	0.0	82.2		
195.00	1.00	1.46	30.640	33.70	207.30	0.750	0.000	3.50	6.573	4.93	265.9	0.0	187.4		
196.00 Appurtenance(s)	1.00	1.46	30.673	33.74	205.41	0.750	0.000	1.00	1.838	1.38	74.4	0.0	52.4		
Totals:								196.00				22,252.0			52,356.9

* Cf Adjusted by Linear Load Ra Effect

Discrete Appurtenance Forces

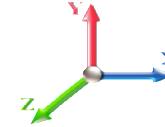
Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/21/2019
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 27

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa 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	196.00	6' Lightning rod	1	30.673	33.741	1.00	1.00	0.38	7.80	0.000	0.000	20.51	0.00	0.00
2	191.50	Low Profile Platform	1	30.524	33.576	1.00	1.00	22.00	1800.00	0.000	0.000	1181.88	0.00	0.00
3	191.50	ACU-A20-N - RET	4	30.524	33.576	0.60	0.80	0.34	4.80	0.000	0.000	18.05	0.00	0.00
4	191.50	800MHz Filter	3	30.524	33.576	0.54	0.80	1.25	31.68	0.000	0.000	67.38	0.00	0.00
5	191.50	RRH8x20-25 - RRU	3	30.524	33.576	0.54	0.80	6.51	252.00	0.000	0.000	349.86	0.00	0.00
6	191.50	1900MHz - RRU	3	30.524	33.576	0.54	0.80	6.11	158.40	0.000	0.000	328.26	0.00	0.00
7	191.50	800MHz - RRU	3	30.524	33.576	0.54	0.80	4.00	190.80	0.000	0.000	215.10	0.00	0.00
8	191.50	APXVSP18-C-A20	3	30.524	33.576	0.66	0.80	15.98	205.20	0.000	0.000	858.25	0.00	0.00
9	191.50	APXVTM14-C-120	3	30.524	33.576	0.68	0.80	12.93	201.60	0.000	0.000	694.81	0.00	0.00
10	187.00	BA80-41-DIN	1	30.717	33.789	1.00	1.00	9.40	81.60	0.000	10.333	508.18	0.00	5251.23
11	187.00	Pipe mount	1	30.371	33.408	0.56	0.75	1.48	48.00	0.000	0.000	79.08	0.00	0.00
12	185.00	BXA-70063 6CF_2	3	30.303	33.333	0.66	0.80	14.90	61.20	0.000	0.000	794.53	0.00	0.00
13	185.00	LPA-80063/4CF	6	30.303	33.333	0.68	0.80	25.09	144.00	0.000	0.000	1338.22	0.00	0.00
14	185.00	BXA-171063-8BF_2	3	30.303	33.333	0.70	0.80	6.14	37.80	0.000	0.000	327.39	0.00	0.00
15	185.00	FD9R6004/2C-3L -	6	30.303	33.333	0.56	0.80	1.21	22.32	0.000	0.000	64.51	0.00	0.00
16	185.00	Low Profile Platform	1	30.303	33.333	1.00	1.00	22.00	1800.00	0.000	0.000	1173.31	0.00	0.00
17	175.00	Low Profile Platform	1	29.950	32.945	1.00	1.00	22.00	1800.00	0.000	0.000	1159.67	0.00	0.00
18	175.00	DC6-48-60-18-8F	1	29.950	32.945	0.80	0.80	0.74	39.36	0.000	0.000	38.80	0.00	0.00
19	175.00	RRUS-12	3	29.950	32.945	0.54	0.80	4.34	180.00	0.000	0.000	228.86	0.00	0.00
20	175.00	Powerwave 7770	3	29.950	32.945	0.68	0.80	11.22	126.00	0.000	0.000	591.43	0.00	0.00
21	175.00	Powerwave LGP21401	12	29.950	32.945	0.75	0.75	11.61	203.04	0.000	0.000	611.99	0.00	0.00
22	175.00	Powerwave LGP13519	12	29.950	32.945	0.75	0.75	3.06	76.32	0.000	0.000	161.30	0.00	0.00
23	175.00	Ericsson RRUS 4449	3	29.950	32.945	0.50	0.75	2.97	255.60	0.000	0.000	156.54	0.00	0.00
24	175.00	Ericsson RRUS 32 B30	3	29.950	32.945	0.50	0.75	4.13	216.00	0.000	0.000	217.73	0.00	0.00
25	175.00	Raycap	2	29.950	32.945	1.00	1.00	9.56	38.40	0.000	0.000	503.93	0.00	0.00
26	175.00	HRK12 (Handrail Kit)	1	29.950	32.945	1.00	1.00	6.75	314.06	0.000	0.000	355.81	0.00	0.00
27	175.00	Kathrein 800-10965	6	29.950	32.945	0.53	0.75	44.12	781.92	0.000	0.000	2325.82	0.00	0.00
28	175.00	Ericsson RRUS 4478 B14	3	29.950	32.945	0.50	0.75	2.49	213.84	0.000	0.000	131.11	0.00	0.00
29	161.50	Low Profile Platform	1	29.448	32.393	1.00	1.00	22.00	1800.00	0.000	0.000	1140.23	0.00	0.00
30	155.00	AIR 21 B4A/B2P	3	29.195	32.114	0.66	0.80	12.13	325.08	0.000	0.000	623.33	0.00	0.00
31	155.00	T-Arms w/ Handrail kit &	3	29.195	32.114	0.56	0.75	29.53	1800.00	0.000	0.000	1517.39	0.00	0.00
32	155.00	LNx-6515DS-A1M	3	29.195	32.114	0.64	0.80	22.02	181.08	0.000	0.000	1131.57	0.00	0.00
33	155.00	AIR 21 B2A/B4P	3	29.195	32.114	0.66	0.80	12.13	329.40	0.000	0.000	623.33	0.00	0.00
34	155.00	KRY 112 114 TMA	3	29.195	32.114	0.60	0.80	0.74	39.60	0.000	0.000	37.92	0.00	0.00
35	145.00	T-Arms	3	28.788	31.666	0.56	0.75	13.50	1260.00	0.000	0.000	683.99	0.00	0.00
36	145.00	APXV18-206517S-C	3	28.788	31.666	0.66	0.80	10.30	95.04	0.000	0.000	521.79	0.00	0.00
37	130.00	Standoff	1	28.133	30.947	0.56	0.75	1.48	48.00	0.000	0.000	73.25	0.00	0.00
38	130.00	ANT150F2	1	28.246	31.071	1.00	1.00	1.23	15.60	0.000	2.500	61.15	0.00	152.87
39	109.50	Standoff	1	27.135	29.849	0.56	0.75	1.48	48.00	0.000	0.000	70.65	0.00	0.00
40	109.50	Standoff	5	27.135	29.849	0.56	0.75	7.40	240.00	0.000	0.000	353.26	0.00	0.00
41	109.50	4' Omni	1	27.239	29.962	1.00	1.00	1.00	12.00	0.000	2.000	47.94	0.00	95.88
42	109.50	14' Omni	5	27.491	30.240	1.00	1.00	21.00	240.00	0.000	7.000	1016.08	0.00	7112.56
43	100.00	Standoff	1	26.621	29.284	0.56	0.75	1.48	48.00	0.000	0.000	69.31	0.00	0.00
44	100.00	MPRD	1	26.621	29.284	1.00	1.00	6.10	43.20	0.000	0.000	285.81	0.00	0.00

Totals: 15,816.74

22,759.31

Total Applied Force Summary

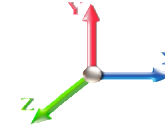
Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/21/2019
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 27

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		596.31	2781.61	0.00	0.00
10.00		585.78	2738.87	0.00	0.00
15.00		575.25	2696.12	0.00	0.00
20.00		599.20	2653.38	0.00	0.00
25.00		616.31	2610.64	0.00	0.00
30.00		628.26	2567.90	0.00	0.00
35.00		636.42	2525.16	0.00	0.00
40.00		641.64	2482.42	0.00	0.00
45.00		644.50	2439.68	0.00	0.00
45.42		53.21	201.38	0.00	0.00
48.90		457.12	2819.77	0.00	0.00
50.00		143.67	882.70	0.00	0.00
52.75		360.33	2190.45	0.00	0.00
55.00		294.31	894.51	0.00	0.00
57.15		280.87	848.29	0.00	0.00
60.00		372.14	1114.73	0.00	0.00
65.00		652.74	1928.82	0.00	0.00
70.00		648.46	1894.62	0.00	0.00
75.00		643.20	1860.43	0.00	0.00
80.00		637.04	1826.24	0.00	0.00
84.00		504.02	1436.37	0.00	0.00
85.00		126.97	568.79	0.00	0.00
87.00		253.35	1130.40	0.00	0.00
90.00		378.15	1677.65	0.00	0.00
90.42		52.14	231.30	0.00	0.00
95.00		572.38	1292.10	0.00	0.00
100.00	(2) attachments	971.30	1476.19	0.00	0.00
105.00		606.70	1359.10	0.00	0.00
109.50	(12) attachments	2025.14	1741.27	0.00	7208.44
110.00		58.95	131.62	0.00	0.00
112.25		264.41	589.10	0.00	0.00
115.00		320.38	712.96	0.00	0.00
120.00		575.13	1276.41	0.00	0.00
123.58		404.66	898.98	0.00	0.00
125.00		160.53	538.25	0.00	0.00
125.60		67.66	226.88	0.00	0.00
129.00		381.07	1273.45	0.00	0.00
130.00	(2) attachments	245.20	267.24	0.00	152.87
135.00		548.43	1003.53	0.00	0.00
136.26		135.83	249.85	0.00	0.00
140.00		399.20	734.44	0.00	0.00
145.00	(6) attachments	1728.62	2320.10	0.00	0.00
150.00		509.51	908.38	0.00	0.00
155.00	(15) attachments	4429.39	3564.31	0.00	0.00
160.00		482.79	788.44	0.00	0.00
161.50	(1) attachments	1282.99	2032.78	0.00	0.00

Total Applied Force Summary

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/21/2019
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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165.00	330.33	536.42	0.00	0.00
165.25	23.37	37.96	0.00	0.00
169.58	408.05	939.63	0.00	0.00
170.00	38.60	48.82	0.00	0.00
175.00	(50) attachments	6942.34	4823.44	0.00
180.00		429.34	446.37	0.00
185.00	(19) attachments	4111.95	2498.87	0.00
187.00	(2) attachments	748.22	269.48	0.00
190.00		236.87	204.10	5251.23
191.50	(23) attachments	3829.79	2944.80	0.00
195.00		265.86	187.35	0.00
196.00	(1) attachments	94.93	60.17	0.00
Totals:		45,011.36	81,384.99	0.00
				12,612.53

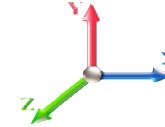
Linear Appurtenance Segment Forces (Factored)

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/21/2019
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 27

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.058	0.000	17.879	0.00	19.32
5.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.058	0.000	17.879	0.00	9.66
5.00	7/8" Coax	Yes	5.00	0.000	0.52	0.22	0.00	0.058	0.000	17.879	0.00	3.12
10.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.059	0.000	17.879	0.00	19.32
10.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.059	0.000	17.879	0.00	9.66
10.00	7/8" Coax	Yes	5.00	0.000	0.52	0.22	0.00	0.059	0.000	17.879	0.00	3.12
15.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.060	0.000	17.879	0.00	19.32
15.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.060	0.000	17.879	0.00	9.66
15.00	7/8" Coax	Yes	5.00	0.000	0.52	0.22	0.00	0.060	0.000	17.879	0.00	3.12
20.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.061	0.000	18.971	0.00	19.32
20.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.061	0.000	18.971	0.00	9.66
20.00	7/8" Coax	Yes	5.00	0.000	0.52	0.22	0.00	0.061	0.000	18.971	0.00	3.12
25.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.062	0.000	19.883	0.00	19.32
25.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.062	0.000	19.883	0.00	9.66
25.00	7/8" Coax	Yes	5.00	0.000	0.52	0.22	0.00	0.062	0.000	19.883	0.00	3.12
30.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.064	0.000	20.661	0.00	19.32
30.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.064	0.000	20.661	0.00	9.66
30.00	7/8" Coax	Yes	5.00	0.000	0.52	0.22	0.00	0.064	0.000	20.661	0.00	3.12
35.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.065	0.000	21.343	0.00	19.32
35.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.065	0.000	21.343	0.00	9.66
35.00	7/8" Coax	Yes	5.00	0.000	0.52	0.22	0.00	0.065	0.000	21.343	0.00	3.12
40.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.066	0.000	21.951	0.00	19.32
40.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.066	0.000	21.951	0.00	9.66
40.00	7/8" Coax	Yes	5.00	0.000	0.52	0.22	0.00	0.066	0.000	21.951	0.00	3.12
45.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.068	0.000	22.502	0.00	19.32
45.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.068	0.000	22.502	0.00	9.66
45.00	7/8" Coax	Yes	5.00	0.000	0.52	0.22	0.00	0.068	0.000	22.502	0.00	3.12
45.42	2" Conduit	Yes	0.42	0.000	0.00	0.00	0.00	0.068	0.000	22.546	0.00	1.61
45.42	3" Conduit	Yes	0.42	0.000	3.00	0.10	0.00	0.068	0.000	22.546	0.00	0.81
45.42	7/8" Coax	Yes	0.42	0.000	0.52	0.02	0.00	0.068	0.000	22.546	0.00	0.26
48.90	2" Conduit	Yes	3.48	0.000	0.00	0.00	0.00	0.069	0.000	22.899	0.00	13.46
48.90	3" Conduit	Yes	3.48	0.000	3.00	0.87	0.00	0.069	0.000	22.899	0.00	6.73
48.90	7/8" Coax	Yes	3.48	0.000	0.52	0.15	0.00	0.069	0.000	22.899	0.00	2.17
50.00	2" Conduit	Yes	1.10	0.000	0.00	0.00	0.00	0.070	0.000	23.007	0.00	4.25
50.00	3" Conduit	Yes	1.10	0.000	3.00	0.28	0.00	0.070	0.000	23.007	0.00	2.13
50.00	7/8" Coax	Yes	1.10	0.000	0.52	0.05	0.00	0.070	0.000	23.007	0.00	0.69
52.75	2" Conduit	Yes	2.75	0.000	0.00	0.00	0.00	0.070	0.000	23.268	0.00	10.63
52.75	3" Conduit	Yes	2.75	0.000	3.00	0.69	0.00	0.070	0.000	23.268	0.00	5.31
52.75	7/8" Coax	Yes	2.75	0.000	0.52	0.12	0.00	0.070	0.000	23.268	0.00	1.72
55.00	2" Conduit	Yes	2.25	0.000	0.00	0.00	0.00	0.069	0.000	23.473	0.00	8.69
55.00	3" Conduit	Yes	2.25	0.000	3.00	0.56	0.00	0.069	0.000	23.473	0.00	4.35
55.00	7/8" Coax	Yes	2.25	0.000	0.52	0.10	0.00	0.069	0.000	23.473	0.00	1.40
57.15	2" Conduit	Yes	2.15	0.000	0.00	0.00	0.00	0.070	0.000	23.663	0.00	8.31
57.15	3" Conduit	Yes	2.15	0.000	3.00	0.54	0.00	0.070	0.000	23.663	0.00	4.15
57.15	7/8" Coax	Yes	2.15	0.000	0.52	0.09	0.00	0.070	0.000	23.663	0.00	1.34
60.00	2" Conduit	Yes	2.85	0.000	0.00	0.00	0.00	0.071	0.000	23.907	0.00	11.01
60.00	3" Conduit	Yes	2.85	0.000	3.00	0.71	0.00	0.071	0.000	23.907	0.00	5.51

Linear Appurtenance Segment Forces (Factored)

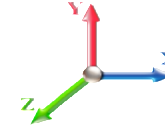
Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/21/2019
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 27

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
60.00	7/8" Coax	Yes	2.85	0.000	0.52	0.12	0.00	0.071	0.000	23.907	0.00	1.78
65.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.072	0.000	24.313	0.00	19.32
65.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.072	0.000	24.313	0.00	9.66
65.00	7/8" Coax	Yes	5.00	0.000	0.52	0.22	0.00	0.072	0.000	24.313	0.00	3.12
70.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.074	0.000	24.696	0.00	19.32
70.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.074	0.000	24.696	0.00	9.66
70.00	7/8" Coax	Yes	5.00	0.000	0.52	0.22	0.00	0.074	0.000	24.696	0.00	3.12
75.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.075	0.000	25.057	0.00	19.32
75.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.075	0.000	25.057	0.00	9.66
75.00	7/8" Coax	Yes	5.00	0.000	0.52	0.22	0.00	0.075	0.000	25.057	0.00	3.12
80.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.077	0.000	25.400	0.00	19.32
80.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.077	0.000	25.400	0.00	9.66
80.00	7/8" Coax	Yes	5.00	0.000	0.52	0.22	0.00	0.077	0.000	25.400	0.00	3.12
84.00	2" Conduit	Yes	4.00	0.000	0.00	0.00	0.00	0.079	0.000	25.662	0.00	15.46
84.00	3" Conduit	Yes	4.00	0.000	3.00	1.00	0.00	0.079	0.000	25.662	0.00	7.73
84.00	7/8" Coax	Yes	4.00	0.000	0.52	0.17	0.00	0.079	0.000	25.662	0.00	2.50
85.00	2" Conduit	Yes	1.00	0.000	0.00	0.00	0.00	0.080	0.000	25.726	0.00	3.86
85.00	3" Conduit	Yes	1.00	0.000	3.00	0.25	0.00	0.080	0.000	25.726	0.00	1.93
85.00	7/8" Coax	Yes	1.00	0.000	0.52	0.04	0.00	0.080	0.000	25.726	0.00	0.62
87.00	2" Conduit	Yes	2.00	0.000	0.00	0.00	0.00	0.080	0.000	25.852	0.00	7.73
87.00	3" Conduit	Yes	2.00	0.000	3.00	0.50	0.00	0.080	0.000	25.852	0.00	3.86
87.00	7/8" Coax	Yes	2.00	0.000	0.52	0.09	0.00	0.080	0.000	25.852	0.00	1.25
90.00	2" Conduit	Yes	3.00	0.000	0.00	0.00	0.00	0.081	0.000	26.037	0.00	11.59
90.00	3" Conduit	Yes	3.00	0.000	3.00	0.75	0.00	0.081	0.000	26.037	0.00	5.80
90.00	7/8" Coax	Yes	3.00	0.000	0.52	0.13	0.00	0.081	0.000	26.037	0.00	1.87
90.42	2" Conduit	Yes	0.42	0.000	0.00	0.00	0.00	0.082	0.000	26.063	0.00	1.61
90.42	3" Conduit	Yes	0.42	0.000	3.00	0.10	0.00	0.082	0.000	26.063	0.00	0.81
90.42	7/8" Coax	Yes	0.42	0.000	0.52	0.02	0.00	0.082	0.000	26.063	0.00	0.26
95.00	2" Conduit	Yes	4.58	0.000	0.00	0.00	0.00	0.082	0.000	26.336	0.00	17.71
95.00	3" Conduit	Yes	4.58	0.000	3.00	1.15	0.00	0.082	0.000	26.336	0.00	8.85
95.00	7/8" Coax	Yes	4.58	0.000	0.52	0.20	0.00	0.082	0.000	26.336	0.00	2.86
100.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.084	0.000	26.621	0.00	19.32
100.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.084	0.000	26.621	0.00	9.66
100.00	7/8" Coax	Yes	5.00	0.000	0.52	0.22	0.00	0.084	0.000	26.621	0.00	3.12
105.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	26.896	0.00	19.32
105.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.086	0.000	26.896	0.00	9.66
105.00	7/8" Coax	Yes	5.00	0.000	0.52	0.22	0.00	0.086	0.000	26.896	0.00	3.12
109.50	2" Conduit	Yes	4.50	0.000	0.00	0.00	0.00	0.088	0.000	27.135	0.00	17.39
109.50	3" Conduit	Yes	4.50	0.000	3.00	1.13	0.00	0.088	0.000	27.135	0.00	8.69
109.50	7/8" Coax	Yes	4.50	0.000	0.52	0.20	0.00	0.088	0.000	27.135	0.00	2.81
110.00	2" Conduit	Yes	0.50	0.000	0.00	0.00	0.00	0.089	0.000	27.161	0.00	1.93
110.00	3" Conduit	Yes	0.50	0.000	3.00	0.13	0.00	0.089	0.000	27.161	0.00	0.97
110.00	7/8" Coax	Yes	0.50	0.000	0.52	0.02	0.00	0.089	0.000	27.161	0.00	0.31
112.25	2" Conduit	Yes	2.25	0.000	0.00	0.00	0.00	0.090	0.000	27.277	0.00	8.69
112.25	3" Conduit	Yes	2.25	0.000	3.00	0.56	0.00	0.090	0.000	27.277	0.00	4.35
112.25	7/8" Coax	Yes	2.25	0.000	0.52	0.10	0.00	0.090	0.000	27.277	0.00	1.40
115.00	2" Conduit	Yes	2.75	0.000	0.00	0.00	0.00	0.091	0.000	27.416	0.00	10.63

Linear Appurtenance Segment Forces (Factored)

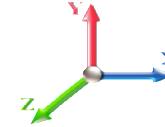
Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/21/2019
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 27

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
115.00	3" Conduit	Yes	2.75	0.000	3.00	0.69	0.00	0.091	0.000	27.416	0.00	5.31
115.00	7/8" Coax	Yes	2.75	0.000	0.52	0.12	0.00	0.091	0.000	27.416	0.00	1.72
120.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	27.663	0.00	19.32
120.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.093	0.000	27.663	0.00	9.66
120.00	7/8" Coax	Yes	5.00	0.000	0.52	0.22	0.00	0.093	0.000	27.663	0.00	3.12
123.58	2" Conduit	Yes	3.58	0.000	0.00	0.00	0.00	0.095	0.000	27.835	0.00	13.85
123.58	3" Conduit	Yes	3.58	0.000	3.00	0.90	0.00	0.095	0.000	27.835	0.00	6.92
123.58	7/8" Coax	Yes	3.58	0.000	0.52	0.16	0.00	0.095	0.000	27.835	0.00	2.24
125.00	2" Conduit	Yes	1.42	0.000	0.00	0.00	0.00	0.097	0.000	27.902	0.00	5.47
125.00	3" Conduit	Yes	1.42	0.000	3.00	0.35	0.00	0.097	0.000	27.902	0.00	2.74
125.00	7/8" Coax	Yes	1.42	0.000	0.52	0.06	0.00	0.097	0.000	27.902	0.00	0.88
125.60	2" Conduit	Yes	0.60	0.000	0.00	0.00	0.00	0.097	0.000	27.930	0.00	2.32
125.60	3" Conduit	Yes	0.60	0.000	3.00	0.15	0.00	0.097	0.000	27.930	0.00	1.16
125.60	7/8" Coax	Yes	0.60	0.000	0.52	0.03	0.00	0.097	0.000	27.930	0.00	0.37
129.00	2" Conduit	Yes	3.40	0.000	0.00	0.00	0.00	0.099	0.000	28.088	0.00	13.14
129.00	3" Conduit	Yes	3.40	0.000	3.00	0.85	0.00	0.099	0.000	28.088	0.00	6.57
129.00	7/8" Coax	Yes	3.40	0.000	0.52	0.15	0.00	0.099	0.000	28.088	0.00	2.12
130.00	2" Conduit	Yes	1.00	0.000	0.00	0.00	0.00	0.098	0.000	28.133	0.00	3.86
130.00	3" Conduit	Yes	1.00	0.000	3.00	0.25	0.00	0.098	0.000	28.133	0.00	1.93
130.00	7/8" Coax	Yes	1.00	0.000	0.52	0.04	0.00	0.098	0.000	28.133	0.00	0.62
135.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.085	0.000	28.358	0.00	19.32
135.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.085	0.000	28.358	0.00	9.66
136.26	2" Conduit	Yes	1.26	0.000	0.00	0.00	0.00	0.087	0.000	28.413	0.00	4.87
136.26	3" Conduit	Yes	1.26	0.000	3.00	0.31	0.00	0.087	0.000	28.413	0.00	2.43
140.00	2" Conduit	Yes	3.74	0.000	0.00	0.00	0.00	0.088	0.000	28.576	0.00	14.45
140.00	3" Conduit	Yes	3.74	0.000	3.00	0.94	0.00	0.088	0.000	28.576	0.00	7.23
145.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	28.788	0.00	19.32
145.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.091	0.000	28.788	0.00	9.66
150.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.094	0.000	28.994	0.00	19.32
150.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.094	0.000	28.994	0.00	9.66
155.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	29.195	0.00	19.32
155.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.097	0.000	29.195	0.00	9.66
160.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.002	29.390	0.00	19.32
160.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.101	1.002	29.390	0.00	9.66
161.50	2" Conduit	Yes	1.50	0.000	0.00	0.00	0.00	0.103	1.009	29.448	0.00	5.80
161.50	3" Conduit	Yes	1.50	0.000	3.00	0.38	0.00	0.103	1.009	29.448	0.00	2.90
165.00	2" Conduit	Yes	3.50	0.000	0.00	0.00	0.00	0.105	1.015	29.581	0.00	13.52
165.00	3" Conduit	Yes	3.50	0.000	3.00	0.88	0.00	0.105	1.015	29.581	0.00	6.76
165.25	2" Conduit	Yes	0.25	0.000	0.00	0.00	0.00	0.106	1.019	29.591	0.00	0.97
165.25	3" Conduit	Yes	0.25	0.000	3.00	0.06	0.00	0.106	1.019	29.591	0.00	0.48
169.58	2" Conduit	Yes	4.33	0.000	0.00	0.00	0.00	0.108	1.025	29.753	0.00	16.74
169.58	3" Conduit	Yes	4.33	0.000	3.00	1.08	0.00	0.108	1.025	29.753	0.00	8.37
170.00	2" Conduit	Yes	0.42	0.000	0.00	0.00	0.00	0.109	1.027	29.768	0.00	1.61
170.00	3" Conduit	Yes	0.42	0.000	3.00	0.10	0.00	0.109	1.027	29.768	0.00	0.81
175.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.111	1.034	29.950	0.00	19.32
175.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.111	1.034	29.950	0.00	9.66

Linear Appurtenance Segment Forces (Factored)

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/21/2019
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

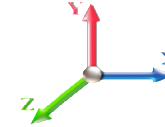


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Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 27

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
Totals:											0.0	1,095.4

Calculated Forces

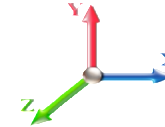
Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/21/2019
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 27

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-81.32	-45.13	0.00	-6217.6	0.00	6217.63	8794.96	4397.48	21496.0	10671.5	0.00	0.000	0.000	0.592
5.00	-78.41	-44.76	0.00	-5991.9	0.00	5991.99	8639.43	4319.71	20738.5	10295.5	0.09	-0.165	0.000	0.591
10.00	-75.54	-44.38	0.00	-5768.2	0.00	5768.20	8483.89	4241.95	19994.7	9926.22	0.35	-0.332	0.000	0.590
15.00	-72.72	-44.01	0.00	-5546.3	0.00	5546.30	8328.36	4164.18	19264.4	9563.67	0.79	-0.502	0.000	0.589
20.00	-69.94	-43.59	0.00	-5326.2	0.00	5326.28	8172.83	4086.41	18547.7	9207.87	1.41	-0.675	0.000	0.587
25.00	-67.20	-43.15	0.00	-5108.3	0.00	5108.32	8017.29	4008.65	17844.6	8858.82	2.21	-0.850	0.000	0.585
30.00	-64.51	-42.68	0.00	-4892.5	0.00	4892.59	7861.76	3930.88	17155.1	8516.51	3.19	-1.028	0.000	0.583
35.00	-61.87	-42.19	0.00	-4679.1	0.00	4679.19	7706.22	3853.11	16479.1	8180.95	4.37	-1.209	0.000	0.580
40.00	-59.27	-41.68	0.00	-4468.2	0.00	4468.24	7550.69	3775.35	15816.8	7852.13	5.73	-1.393	0.000	0.577
45.00	-56.77	-41.08	0.00	-4259.8	0.00	4259.82	7395.16	3697.58	15168.0	7530.06	7.29	-1.579	0.000	0.574
45.42	-56.52	-41.09	0.00	-4242.7	0.00	4242.71	7382.20	3691.10	15114.6	7503.52	7.43	-1.595	0.000	0.573
48.90	-53.66	-40.63	0.00	-4099.5	0.00	4099.58	7273.84	3636.92	14671.4	7283.52	8.64	-1.727	0.000	0.380
50.00	-52.74	-40.50	0.00	-4054.8	0.00	4054.89	7239.62	3619.81	14532.8	7214.73	9.04	-1.756	0.000	0.379
52.75	-50.52	-40.13	0.00	-3943.5	0.00	3943.51	5810.43	2905.21	11825.7	5870.80	10.08	-1.827	0.000	0.386
55.00	-49.59	-39.86	0.00	-3853.2	0.00	3853.21	5769.82	2884.91	11629.7	5773.48	10.95	-1.885	0.000	0.422
57.15	-48.71	-39.61	0.00	-3767.5	0.00	3767.52	5730.75	2865.38	11443.3	5680.95	11.81	-1.946	0.000	0.418
57.15	-48.71	-39.61	0.00	-3767.5	0.00	3767.52	5730.75	2865.38	11443.3	5680.95	11.81	-1.946	0.000	0.418
60.00	-47.50	-39.33	0.00	-3654.6	0.00	3654.62	5678.55	2839.28	11197.7	5559.03	13.00	-2.028	0.000	0.666
65.00	-45.44	-38.79	0.00	-3457.9	0.00	3457.97	5551.73	2775.86	10705.1	5314.51	15.25	-2.256	0.000	0.659
70.00	-43.42	-38.24	0.00	-3264.0	0.00	3264.03	5427.30	2713.65	10228.2	5077.73	17.73	-2.487	0.000	0.651
75.00	-41.44	-37.68	0.00	-3072.8	0.00	3072.85	5302.88	2651.44	9762.15	4846.34	20.46	-2.720	0.000	0.642
80.00	-39.51	-37.10	0.00	-2884.4	0.00	2884.45	5178.45	2589.22	9306.93	4620.35	23.44	-2.955	0.000	0.632
84.00	-38.02	-36.60	0.00	-2736.0	0.00	2736.05	5078.91	2539.45	8950.59	4443.45	25.99	-3.145	0.000	0.623
85.00	-37.42	-36.49	0.00	-2699.4	0.00	2699.45	5054.02	2527.01	8862.59	4399.76	26.66	-3.194	0.000	0.621
87.00	-36.25	-36.23	0.00	-2626.4	0.00	2626.47	5004.25	2502.13	8687.89	4313.04	28.01	-3.290	0.000	0.373
90.00	-34.56	-35.78	0.00	-2517.7	0.00	2517.78	4929.59	2464.80	8429.11	4184.57	30.11	-3.378	0.000	0.366
90.42	-34.29	-35.76	0.00	-2502.8	0.00	2502.87	3591.78	1795.89	6277.53	3116.43	30.40	-3.390	0.000	0.390
95.00	-32.94	-35.20	0.00	-2338.9	0.00	2338.96	3535.98	1767.99	6038.44	2997.74	33.72	-3.522	0.000	0.426
100.00	-31.44	-34.22	0.00	-2162.9	0.00	2162.98	3473.75	1736.87	5780.45	2869.66	37.49	-3.682	0.000	0.406
105.00	-30.03	-33.61	0.00	-1991.8	0.00	1991.87	3410.09	1705.04	5525.58	2743.13	41.43	-3.840	0.000	0.386
109.50	-28.39	-31.51	0.00	-1833.4	0.00	1833.43	3351.58	1675.79	5299.03	2630.66	45.12	-3.980	0.000	0.365
110.00	-28.24	-31.46	0.00	-1817.6	0.00	1817.68	3345.00	1672.50	5274.03	2618.25	45.53	-3.995	0.000	0.364
112.25	-27.63	-31.19	0.00	-1746.9	0.00	1746.90	3315.25	1657.63	5161.96	2562.62	47.43	-4.065	0.000	0.355
112.25	-27.63	-31.19	0.00	-1746.9	0.00	1746.90	3315.25	1657.63	5161.96	2562.62	47.43	-4.065	0.000	0.355
115.00	-26.84	-30.91	0.00	-1661.1	0.00	1661.12	3278.49	1639.25	5025.98	2495.11	49.80	-4.149	0.000	0.674
120.00	-25.48	-30.35	0.00	-1506.5	0.00	1506.58	3210.56	1605.28	4781.62	2373.80	54.29	-4.438	0.000	0.643
123.58	-24.54	-29.94	0.00	-1397.8	0.00	1397.83	3148.16	1574.08	4590.15	2278.75	57.70	-4.645	0.000	0.622
125.00	-23.99	-29.76	0.00	-1355.4	0.00	1355.42	3121.72	1560.86	4512.97	2240.43	59.09	-4.727	0.000	0.613
125.60	-23.73	-29.70	0.00	-1337.5	0.00	1337.57	3110.52	1555.26	4480.48	2224.30	59.69	-4.762	0.000	0.344
129.00	-22.46	-29.24	0.00	-1236.5	0.00	1236.59	2149.47	1074.74	3099.22	1538.58	63.11	-4.871	0.000	0.361
130.00	-22.16	-29.01	0.00	-1207.2	0.00	1207.20	2141.27	1070.63	3068.69	1523.43	64.14	-4.903	0.000	0.401
135.00	-21.16	-28.42	0.00	-1062.1	0.00	1062.13	2099.38	1049.69	2916.97	1448.11	69.36	-5.072	0.000	0.365
136.26	-20.88	-28.29	0.00	-1026.3	0.00	1026.32	2088.60	1044.30	2879.00	1429.26	70.70	-5.114	0.000	0.356
136.26	-20.88	-28.29	0.00	-1026.3	0.00	1026.32	2088.60	1044.30	2879.00	1429.26	70.70	-5.114	0.000	0.356
140.00	-20.08	-27.90	0.00	-920.52	0.00	920.52	2056.07	1028.04	2766.99	1373.65	74.75	-5.234	0.000	0.681
145.00	-17.79	-26.06	0.00	-781.00	0.00	781.00	2011.34	1005.67	2618.95	1300.16	80.39	-5.541	0.000	0.610
150.00	-16.82	-25.54	0.00	-650.72	0.00	650.72	1965.18	982.59	2473.01	1227.71	86.34	-5.826	0.000	0.539
155.00	-13.65	-20.82	0.00	-523.02	0.00	523.02	1917.59	958.80	2329.38	1156.40	92.57	-6.085	0.000	0.460

Calculated Forces

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/21/2019
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Page: 20
	Struct Class: II	



160.00	-12.86	-20.29	0.00	-418.90	0.00	418.90	1868.58	934.29	2188.24	1086.34	99.06	-6.316	0.000	0.393
161.50	-10.95	-18.81	0.00	-388.47	0.00	388.47	1853.60	926.80	2146.41	1065.57	101.05	-6.382	0.000	0.371
165.00	-10.43	-18.44	0.00	-322.63	0.00	322.63	1818.15	909.07	2049.77	1017.59	105.78	-6.522	0.000	0.323
165.25	-10.37	-18.42	0.00	-318.03	0.00	318.03	1815.59	907.79	2042.92	1014.19	106.12	-6.532	0.000	0.320
169.58	-9.46	-17.92	0.00	-238.20	0.00	238.20	1040.26	520.13	1155.41	573.59	112.11	-6.680	0.000	0.426
170.00	-9.38	-17.90	0.00	-230.73	0.00	230.73	1038.39	519.19	1149.55	570.68	112.69	-6.694	0.000	0.415
175.00	-5.39	-10.45	0.00	-141.26	0.00	141.26	1015.17	507.59	1079.51	535.91	119.79	-6.876	0.000	0.269
180.00	-4.98	-9.97	0.00	-89.03	0.00	89.03	990.53	495.27	1010.05	501.43	127.05	-7.003	0.000	0.183
185.00	-3.00	-5.59	0.00	-39.16	0.00	39.16	964.47	482.24	941.35	467.32	134.41	-7.083	0.000	0.087
187.00	-2.82	-4.81	0.00	-22.73	0.00	22.73	953.65	476.82	914.12	453.81	137.38	-7.102	0.000	0.053
190.00	-2.65	-4.55	0.00	-8.29	0.00	8.29	936.98	468.49	873.60	433.69	141.83	-7.116	0.000	0.022
191.50	-0.20	-0.39	0.00	-1.46	0.00	1.46	928.46	464.23	853.48	423.70	144.06	-7.118	0.000	0.004
195.00	-0.05	-0.10	0.00	-0.10	0.00	0.10	908.07	454.03	806.98	400.62	149.27	-7.119	0.000	0.000
196.00	0.00	-0.09	0.00	0.00	0.00	0.00	902.11	451.06	793.81	394.08	150.75	-7.119	0.000	0.000

Wind Loading - Shaft

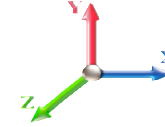
Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/21/2019
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 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		1.00	0.85	17.879	19.67	437.11	0.750	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	17.879	19.67	429.46	0.750	0.000	5.00	25.267	18.95	596.3	0.0	1796.6
10.00		1.00	0.85	17.879	19.67	421.81	0.750	0.000	5.00	24.821	18.62	585.8	0.0	1764.6
15.00		1.00	0.85	17.879	19.67	414.16	0.750	0.000	5.00	24.375	18.28	575.3	0.0	1732.5
20.00		1.00	0.90	18.971	20.87	418.73	0.750	0.000	5.00	23.929	17.95	599.2	0.0	1700.5
25.00		1.00	0.95	19.883	21.87	420.62	0.750	0.000	5.00	23.482	17.61	616.3	0.0	1668.4
30.00		1.00	0.98	20.661	22.73	420.55	0.750	0.000	5.00	23.036	17.28	628.3	0.0	1636.4
35.00		1.00	1.01	21.343	23.48	419.07	0.750	0.000	5.00	22.590	16.94	636.4	0.0	1604.3
40.00		1.00	1.04	21.951	24.15	416.52	0.750	0.000	5.00	22.144	16.61	641.6	0.0	1572.3
45.00		1.00	1.07	22.502	24.75	413.14	0.750	0.000	5.00	21.698	16.27	644.5	0.0	1540.2
45.42	Bot - Section 2	1.00	1.07	22.546	24.80	412.82	0.750	0.000	0.42	1.788	1.34	53.2	0.0	126.9
48.90	RB1	1.00	1.09	22.899	25.19	410.02	0.750	0.000	3.48	15.123	11.34	457.1	0.0	1913.1
50.00		1.00	1.09	23.007	25.31	409.07	0.750	0.000	1.10	4.731	3.55	143.7	0.0	598.3
52.75	Top - Section 1	1.00	1.11	23.268	25.59	406.58	0.750	0.000	2.75	11.732	8.80	360.3	0.0	1483.6
55.00		1.00	1.12	23.473	25.82	412.78	0.750	0.000	2.25	9.499	7.12	294.3	0.0	540.6
57.15	RT1	1.00	1.12	23.663	26.03	410.66	0.750	0.000	2.15	8.992	6.74	280.9	0.0	511.7
60.00		1.00	1.14	23.907	26.30	407.73	0.750	0.000	2.85	11.793	8.84	372.1	0.0	671.0
65.00		1.00	1.16	24.313	26.74	402.26	0.750	0.000	5.00	20.339	15.25	652.7	0.0	1157.1
70.00		1.00	1.17	24.696	27.17	396.42	0.750	0.000	5.00	19.893	14.92	648.5	0.0	1131.4
75.00		1.00	1.19	25.057	27.56	390.25	0.750	0.000	5.00	19.446	14.58	643.2	0.0	1105.8
80.00		1.00	1.21	25.400	27.94	383.79	0.750	0.000	5.00	19.000	14.25	637.0	0.0	1080.1
84.00	Bot - Section 3	1.00	1.22	25.662	28.23	378.44	0.750	0.000	4.00	14.879	11.16	504.0	0.0	845.6
85.00		1.00	1.22	25.726	28.30	377.08	0.750	0.000	1.00	3.739	2.80	127.0	0.0	368.7
87.00	RB2	1.00	1.23	25.852	28.44	374.32	0.750	0.000	2.00	7.424	5.57	253.4	0.0	732.0
90.00		1.00	1.24	26.037	28.64	370.12	0.750	0.000	3.00	11.003	8.25	378.2	0.0	1084.5
90.42	Top - Section 2	1.00	1.24	26.063	28.67	369.53	0.750	0.000	0.42	1.515	1.14	52.1	0.0	149.3
95.00		1.00	1.25	26.336	28.97	369.58	0.750	0.000	4.58	16.465	12.35	572.4	0.0	703.6
100.00	Appurtenance(s)	1.00	1.27	26.621	29.28	362.25	0.750	0.000	5.00	17.535	13.15	616.2	0.0	749.2
105.00		1.00	1.28	26.896	29.59	354.73	0.750	0.000	5.00	17.089	12.82	606.7	0.0	730.0
109.50	Appurtenance(s)	1.00	1.29	27.135	29.85	347.82	0.750	0.000	4.50	14.998	11.25	537.2	0.0	640.5
110.00		1.00	1.29	27.161	29.88	347.04	0.750	0.000	0.50	1.644	1.23	58.9	0.0	70.2
112.25	RT2	1.00	1.30	27.277	30.00	343.53	0.750	0.000	2.25	7.344	5.51	264.4	0.0	313.5
115.00		1.00	1.30	27.416	30.16	339.20	0.750	0.000	2.75	8.853	6.64	320.4	0.0	377.9
120.00		1.00	1.32	27.663	30.43	331.21	0.750	0.000	5.00	15.750	11.81	575.1	0.0	672.2
123.58	Bot - Section 4	1.00	1.32	27.835	30.62	325.39	0.750	0.000	3.58	11.013	8.26	404.7	0.0	469.9
125.00		1.00	1.33	27.902	30.69	323.08	0.750	0.000	1.42	4.359	3.27	160.5	0.0	322.9
125.60	RB3	1.00	1.33	27.930	30.72	322.09	0.750	0.000	0.60	1.835	1.38	67.7	0.0	136.0
129.00	Top - Section 3	1.00	1.34	28.088	30.90	316.48	0.750	0.000	3.40	10.278	7.71	381.1	0.0	761.2
130.00	Appurtenance(s)	1.00	1.34	28.133	30.95	319.96	0.750	0.000	1.00	2.984	2.24	110.8	0.0	95.7
135.00		1.00	1.35	28.358	31.19	311.60	0.750	0.000	5.00	14.651	10.99	548.4	0.0	469.9
136.26	RT3	1.00	1.35	28.413	31.25	309.47	0.750	0.000	1.26	3.622	2.72	135.8	0.0	116.1
140.00		1.00	1.36	28.576	31.43	303.12	0.750	0.000	3.74	10.583	7.94	399.2	0.0	339.4
145.00	Appurtenance(s)	1.00	1.37	28.788	31.67	294.54	0.750	0.000	5.00	13.759	10.32	522.8	0.0	441.1
150.00		1.00	1.38	28.994	31.89	285.85	0.750	0.000	5.00	13.313	9.98	509.5	0.0	426.7
155.00	Appurtenance(s)	1.00	1.39	29.195	32.11	277.06	0.750	0.000	5.00	12.867	9.65	495.8	0.0	412.2
160.00		1.00	1.40	29.390	32.33	268.18	0.751 *	0.000	5.00	12.421	9.33	482.8	0.0	397.8
161.50	Appurtenance(s)	1.00	1.40	29.448	32.39	265.50	0.757 *	0.000	1.50	3.639	2.75	142.8	0.0	116.5

Wind Loading - Shaft

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/21/2019	
Site Name: Torrington/Oandg Ind Inc	Exposure: C		
Height: 196.00 (ft)	Crest Height: 0.00		
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil		
Gh: 1.1	Topography: 1	Struct Class: II	Page: 22



165.00	1.00	1.41	29.581	32.54	259.21	0.761 *	0.000	3.50	8.335	6.34	330.3	0.0	266.8
165.25 Bot - Section 5	1.00	1.41	29.591	32.55	258.76	0.765 *	0.000	0.25	0.587	0.45	23.4	0.0	18.8
169.58 Top - Section 4	1.00	1.41	29.753	32.73	250.92	0.769 *	0.000	4.33	10.136	7.79	408.1	0.0	537.0
170.00	1.00	1.42	29.768	32.74	253.68	0.770 *	0.000	0.42	0.957	0.74	38.6	0.0	20.5
175.00 Appurtenance(s)	1.00	1.42	29.950	32.95	244.56	0.775 *	0.000	5.00	11.242	8.71	459.4	0.0	240.6
180.00	1.00	1.43	30.128	33.14	235.35	0.750	0.000	5.00	10.796	8.10	429.3	0.0	231.0
185.00 Appurtenance(s)	1.00	1.44	30.303	33.33	226.08	0.750	0.000	5.00	10.350	7.76	414.0	0.0	221.4
187.00 Appurtenance(s)	1.00	1.44	30.371	33.41	222.34	0.750	0.000	2.00	4.015	3.01	161.0	0.0	85.9
190.00	1.00	1.45	30.473	33.52	216.73	0.750	0.000	3.00	5.889	4.42	236.9	0.0	125.9
191.50 Appurtenance(s)	1.00	1.45	30.524	33.58	213.91	0.750	0.000	1.50	2.884	2.16	116.2	0.0	61.7
195.00	1.00	1.46	30.640	33.70	207.30	0.750	0.000	3.50	6.573	4.93	265.9	0.0	140.5
196.00 Appurtenance(s)	1.00	1.46	30.673	33.74	205.41	0.750	0.000	1.00	1.838	1.38	74.4	0.0	39.3
Totals:								196.00	22,252.0	39,267.7			

* Cf Adjusted by Linear Load Ra Effect

Discrete Appurtenance Forces

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/21/2019
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

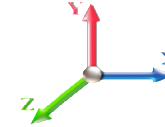


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Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 26

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa 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	196.00	6' Lightning rod	1	30.673	33.741	1.00	1.00	0.38	5.85	0.000	0.000	20.51	0.00	0.00
2	191.50	Low Profile Platform	1	30.524	33.576	1.00	1.00	22.00	1350.00	0.000	0.000	1181.88	0.00	0.00
3	191.50	ACU-A20-N - RET	4	30.524	33.576	0.60	0.80	0.34	3.60	0.000	0.000	18.05	0.00	0.00
4	191.50	800MHz Filter	3	30.524	33.576	0.54	0.80	1.25	23.76	0.000	0.000	67.38	0.00	0.00
5	191.50	RRH8x20-25 - RRU	3	30.524	33.576	0.54	0.80	6.51	189.00	0.000	0.000	349.86	0.00	0.00
6	191.50	1900MHz - RRU	3	30.524	33.576	0.54	0.80	6.11	118.80	0.000	0.000	328.26	0.00	0.00
7	191.50	800MHz - RRU	3	30.524	33.576	0.54	0.80	4.00	143.10	0.000	0.000	215.10	0.00	0.00
8	191.50	APXVSP18-C-A20	3	30.524	33.576	0.66	0.80	15.98	153.90	0.000	0.000	858.25	0.00	0.00
9	191.50	APXVTM14-C-120	3	30.524	33.576	0.68	0.80	12.93	151.20	0.000	0.000	694.81	0.00	0.00
10	187.00	BA80-41-DIN	1	30.717	33.789	1.00	1.00	9.40	61.20	0.000	10.333	508.18	0.00	5251.23
11	187.00	Pipe mount	1	30.371	33.408	0.56	0.75	1.48	36.00	0.000	0.000	79.08	0.00	0.00
12	185.00	BXA-70063 6CF_2	3	30.303	33.333	0.66	0.80	14.90	45.90	0.000	0.000	794.53	0.00	0.00
13	185.00	LPA-80063/4CF	6	30.303	33.333	0.68	0.80	25.09	108.00	0.000	0.000	1338.22	0.00	0.00
14	185.00	BXA-171063-8BF_2	3	30.303	33.333	0.70	0.80	6.14	28.35	0.000	0.000	327.39	0.00	0.00
15	185.00	FD9R6004/2C-3L -	6	30.303	33.333	0.56	0.80	1.21	16.74	0.000	0.000	64.51	0.00	0.00
16	185.00	Low Profile Platform	1	30.303	33.333	1.00	1.00	22.00	1350.00	0.000	0.000	1173.31	0.00	0.00
17	175.00	Low Profile Platform	1	29.950	32.945	1.00	1.00	22.00	1350.00	0.000	0.000	1159.67	0.00	0.00
18	175.00	DC6-48-60-18-8F	1	29.950	32.945	0.80	0.80	0.74	29.52	0.000	0.000	38.80	0.00	0.00
19	175.00	RRUS-12	3	29.950	32.945	0.54	0.80	4.34	135.00	0.000	0.000	228.86	0.00	0.00
20	175.00	Powerwave 7770	3	29.950	32.945	0.68	0.80	11.22	94.50	0.000	0.000	591.43	0.00	0.00
21	175.00	Powerwave LGP21401	12	29.950	32.945	0.75	0.75	11.61	152.28	0.000	0.000	611.99	0.00	0.00
22	175.00	Powerwave LGP13519	12	29.950	32.945	0.75	0.75	3.06	57.24	0.000	0.000	161.30	0.00	0.00
23	175.00	Ericsson RRUS 4449	3	29.950	32.945	0.50	0.75	2.97	191.70	0.000	0.000	156.54	0.00	0.00
24	175.00	Ericsson RRUS 32 B30	3	29.950	32.945	0.50	0.75	4.13	162.00	0.000	0.000	217.73	0.00	0.00
25	175.00	Raycap	2	29.950	32.945	1.00	1.00	9.56	28.80	0.000	0.000	503.93	0.00	0.00
26	175.00	HRK12 (Handrail Kit)	1	29.950	32.945	1.00	1.00	6.75	235.55	0.000	0.000	355.81	0.00	0.00
27	175.00	Kathrein 800-10965	6	29.950	32.945	0.53	0.75	44.12	586.44	0.000	0.000	2325.82	0.00	0.00
28	175.00	Ericsson RRUS 4478 B14	3	29.950	32.945	0.50	0.75	2.49	160.38	0.000	0.000	131.11	0.00	0.00
29	161.50	Low Profile Platform	1	29.448	32.393	1.00	1.00	22.00	1350.00	0.000	0.000	1140.23	0.00	0.00
30	155.00	AIR 21 B4A/B2P	3	29.195	32.114	0.66	0.80	12.13	243.81	0.000	0.000	623.33	0.00	0.00
31	155.00	T-Arms w/ Handrail kit &	3	29.195	32.114	0.56	0.75	29.53	1350.00	0.000	0.000	1517.39	0.00	0.00
32	155.00	LNx-6515DS-A1M	3	29.195	32.114	0.64	0.80	22.02	135.81	0.000	0.000	1131.57	0.00	0.00
33	155.00	AIR 21 B2A/B4P	3	29.195	32.114	0.66	0.80	12.13	247.05	0.000	0.000	623.33	0.00	0.00
34	155.00	KRY 112 114 TMA	3	29.195	32.114	0.60	0.80	0.74	29.70	0.000	0.000	37.92	0.00	0.00
35	145.00	T-Arms	3	28.788	31.666	0.56	0.75	13.50	945.00	0.000	0.000	683.99	0.00	0.00
36	145.00	APXV18-206517S-C	3	28.788	31.666	0.66	0.80	10.30	71.28	0.000	0.000	521.79	0.00	0.00
37	130.00	Standoff	1	28.133	30.947	0.56	0.75	1.48	36.00	0.000	0.000	73.25	0.00	0.00
38	130.00	ANT150F2	1	28.246	31.071	1.00	1.00	1.23	11.70	0.000	2.500	61.15	0.00	152.87
39	109.50	Standoff	1	27.135	29.849	0.56	0.75	1.48	36.00	0.000	0.000	70.65	0.00	0.00
40	109.50	Standoff	5	27.135	29.849	0.56	0.75	7.40	180.00	0.000	0.000	353.26	0.00	0.00
41	109.50	4' Omni	1	27.239	29.962	1.00	1.00	1.00	9.00	0.000	2.000	47.94	0.00	95.88
42	109.50	14' Omni	5	27.491	30.240	1.00	1.00	21.00	180.00	0.000	7.000	1016.08	0.00	7112.56
43	100.00	Standoff	1	26.621	29.284	0.56	0.75	1.48	36.00	0.000	0.000	69.31	0.00	0.00
44	100.00	MPRD	1	26.621	29.284	1.00	1.00	6.10	32.40	0.000	0.000	285.81	0.00	0.00

Totals: 11,862.56

22,759.31

Total Applied Force Summary

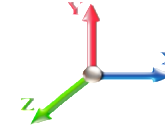
Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/21/2019
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 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
5.00		596.31	2086.21	0.00	0.00
10.00		585.78	2054.15	0.00	0.00
15.00		575.25	2022.09	0.00	0.00
20.00		599.20	1990.04	0.00	0.00
25.00		616.31	1957.98	0.00	0.00
30.00		628.26	1925.93	0.00	0.00
35.00		636.42	1893.87	0.00	0.00
40.00		641.64	1861.81	0.00	0.00
45.00		644.50	1829.76	0.00	0.00
45.42		53.21	151.03	0.00	0.00
48.90		457.12	2114.83	0.00	0.00
50.00		143.67	662.02	0.00	0.00
52.75		360.33	1642.84	0.00	0.00
55.00		294.31	670.88	0.00	0.00
57.15		280.87	636.21	0.00	0.00
60.00		372.14	836.04	0.00	0.00
65.00		652.74	1446.61	0.00	0.00
70.00		648.46	1420.97	0.00	0.00
75.00		643.20	1395.32	0.00	0.00
80.00		637.04	1369.68	0.00	0.00
84.00		504.02	1077.28	0.00	0.00
85.00		126.97	426.59	0.00	0.00
87.00		253.35	847.80	0.00	0.00
90.00		378.15	1258.24	0.00	0.00
90.42		52.14	173.48	0.00	0.00
95.00		572.38	969.08	0.00	0.00
100.00	(2) attachments	971.30	1107.14	0.00	0.00
105.00		606.70	1019.33	0.00	0.00
109.50	(12) attachments	2025.14	1305.95	0.00	7208.44
110.00		58.95	98.71	0.00	0.00
112.25		264.41	441.82	0.00	0.00
115.00		320.38	534.72	0.00	0.00
120.00		575.13	957.31	0.00	0.00
123.58		404.66	674.24	0.00	0.00
125.00		160.53	403.69	0.00	0.00
125.60		67.66	170.16	0.00	0.00
129.00		381.07	955.09	0.00	0.00
130.00	(2) attachments	245.20	200.43	0.00	152.87
135.00		548.43	752.64	0.00	0.00
136.26		135.83	187.39	0.00	0.00
140.00		399.20	550.83	0.00	0.00
145.00	(6) attachments	1728.62	1740.07	0.00	0.00
150.00		509.51	681.29	0.00	0.00
155.00	(15) attachments	4429.39	2673.23	0.00	0.00
160.00		482.79	591.33	0.00	0.00
161.50	(1) attachments	1282.99	1524.59	0.00	0.00

Total Applied Force Summary

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/21/2019
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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165.00	330.33	402.32	0.00	0.00
165.25	23.37	28.47	0.00	0.00
169.58	408.05	704.72	0.00	0.00
170.00	38.60	36.61	0.00	0.00
175.00	(50) attachments	6942.34	3617.58	0.00
180.00		429.34	334.78	0.00
185.00	(19) attachments	4111.95	1874.15	0.00
187.00	(2) attachments	748.22	202.11	0.00
190.00		236.87	153.07	0.00
191.50	(23) attachments	3829.79	2208.60	0.00
195.00		265.86	140.51	0.00
196.00	(1) attachments	94.93	45.13	0.00
Totals:		45,011.36	61,038.74	0.00
				12,612.53

Linear Appurtenance Segment Forces (Factored)

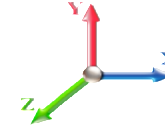
Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/21/2019
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 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)
5.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.058	0.000	17.879	0.00	14.49
5.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.058	0.000	17.879	0.00	7.25
5.00	7/8" Coax	Yes	5.00	0.000	0.52	0.22	0.00	0.058	0.000	17.879	0.00	2.34
10.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.059	0.000	17.879	0.00	14.49
10.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.059	0.000	17.879	0.00	7.25
10.00	7/8" Coax	Yes	5.00	0.000	0.52	0.22	0.00	0.059	0.000	17.879	0.00	2.34
15.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.060	0.000	17.879	0.00	14.49
15.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.060	0.000	17.879	0.00	7.25
15.00	7/8" Coax	Yes	5.00	0.000	0.52	0.22	0.00	0.060	0.000	17.879	0.00	2.34
20.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.061	0.000	18.971	0.00	14.49
20.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.061	0.000	18.971	0.00	7.25
20.00	7/8" Coax	Yes	5.00	0.000	0.52	0.22	0.00	0.061	0.000	18.971	0.00	2.34
25.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.062	0.000	19.883	0.00	14.49
25.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.062	0.000	19.883	0.00	7.25
25.00	7/8" Coax	Yes	5.00	0.000	0.52	0.22	0.00	0.062	0.000	19.883	0.00	2.34
30.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.064	0.000	20.661	0.00	14.49
30.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.064	0.000	20.661	0.00	7.25
30.00	7/8" Coax	Yes	5.00	0.000	0.52	0.22	0.00	0.064	0.000	20.661	0.00	2.34
35.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.065	0.000	21.343	0.00	14.49
35.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.065	0.000	21.343	0.00	7.25
35.00	7/8" Coax	Yes	5.00	0.000	0.52	0.22	0.00	0.065	0.000	21.343	0.00	2.34
40.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.066	0.000	21.951	0.00	14.49
40.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.066	0.000	21.951	0.00	7.25
40.00	7/8" Coax	Yes	5.00	0.000	0.52	0.22	0.00	0.066	0.000	21.951	0.00	2.34
45.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.068	0.000	22.502	0.00	14.49
45.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.068	0.000	22.502	0.00	7.25
45.00	7/8" Coax	Yes	5.00	0.000	0.52	0.22	0.00	0.068	0.000	22.502	0.00	2.34
45.42	2" Conduit	Yes	0.42	0.000	0.00	0.00	0.00	0.068	0.000	22.546	0.00	1.21
45.42	3" Conduit	Yes	0.42	0.000	3.00	0.10	0.00	0.068	0.000	22.546	0.00	0.60
45.42	7/8" Coax	Yes	0.42	0.000	0.52	0.02	0.00	0.068	0.000	22.546	0.00	0.20
48.90	2" Conduit	Yes	3.48	0.000	0.00	0.00	0.00	0.069	0.000	22.899	0.00	10.09
48.90	3" Conduit	Yes	3.48	0.000	3.00	0.87	0.00	0.069	0.000	22.899	0.00	5.05
48.90	7/8" Coax	Yes	3.48	0.000	0.52	0.15	0.00	0.069	0.000	22.899	0.00	1.63
50.00	2" Conduit	Yes	1.10	0.000	0.00	0.00	0.00	0.070	0.000	23.007	0.00	3.19
50.00	3" Conduit	Yes	1.10	0.000	3.00	0.28	0.00	0.070	0.000	23.007	0.00	1.59
50.00	7/8" Coax	Yes	1.10	0.000	0.52	0.05	0.00	0.070	0.000	23.007	0.00	0.51
52.75	2" Conduit	Yes	2.75	0.000	0.00	0.00	0.00	0.070	0.000	23.268	0.00	7.97
52.75	3" Conduit	Yes	2.75	0.000	3.00	0.69	0.00	0.070	0.000	23.268	0.00	3.98
52.75	7/8" Coax	Yes	2.75	0.000	0.52	0.12	0.00	0.070	0.000	23.268	0.00	1.29
55.00	2" Conduit	Yes	2.25	0.000	0.00	0.00	0.00	0.069	0.000	23.473	0.00	6.52
55.00	3" Conduit	Yes	2.25	0.000	3.00	0.56	0.00	0.069	0.000	23.473	0.00	3.26
55.00	7/8" Coax	Yes	2.25	0.000	0.52	0.10	0.00	0.069	0.000	23.473	0.00	1.05
57.15	2" Conduit	Yes	2.15	0.000	0.00	0.00	0.00	0.070	0.000	23.663	0.00	6.23
57.15	3" Conduit	Yes	2.15	0.000	3.00	0.54	0.00	0.070	0.000	23.663	0.00	3.12
57.15	7/8" Coax	Yes	2.15	0.000	0.52	0.09	0.00	0.070	0.000	23.663	0.00	1.01
60.00	2" Conduit	Yes	2.85	0.000	0.00	0.00	0.00	0.071	0.000	23.907	0.00	8.26
60.00	3" Conduit	Yes	2.85	0.000	3.00	0.71	0.00	0.071	0.000	23.907	0.00	4.13

Linear Appurtenance Segment Forces (Factored)

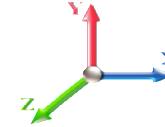
Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/21/2019
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 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)
60.00	7/8" Coax	Yes	2.85	0.000	0.52	0.12	0.00	0.071	0.000	23.907	0.00	1.33
65.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.072	0.000	24.313	0.00	14.49
65.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.072	0.000	24.313	0.00	7.25
65.00	7/8" Coax	Yes	5.00	0.000	0.52	0.22	0.00	0.072	0.000	24.313	0.00	2.34
70.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.074	0.000	24.696	0.00	14.49
70.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.074	0.000	24.696	0.00	7.25
70.00	7/8" Coax	Yes	5.00	0.000	0.52	0.22	0.00	0.074	0.000	24.696	0.00	2.34
75.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.075	0.000	25.057	0.00	14.49
75.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.075	0.000	25.057	0.00	7.25
75.00	7/8" Coax	Yes	5.00	0.000	0.52	0.22	0.00	0.075	0.000	25.057	0.00	2.34
80.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.077	0.000	25.400	0.00	14.49
80.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.077	0.000	25.400	0.00	7.25
80.00	7/8" Coax	Yes	5.00	0.000	0.52	0.22	0.00	0.077	0.000	25.400	0.00	2.34
84.00	2" Conduit	Yes	4.00	0.000	0.00	0.00	0.00	0.079	0.000	25.662	0.00	11.59
84.00	3" Conduit	Yes	4.00	0.000	3.00	1.00	0.00	0.079	0.000	25.662	0.00	5.80
84.00	7/8" Coax	Yes	4.00	0.000	0.52	0.17	0.00	0.079	0.000	25.662	0.00	1.87
85.00	2" Conduit	Yes	1.00	0.000	0.00	0.00	0.00	0.080	0.000	25.726	0.00	2.90
85.00	3" Conduit	Yes	1.00	0.000	3.00	0.25	0.00	0.080	0.000	25.726	0.00	1.45
85.00	7/8" Coax	Yes	1.00	0.000	0.52	0.04	0.00	0.080	0.000	25.726	0.00	0.47
87.00	2" Conduit	Yes	2.00	0.000	0.00	0.00	0.00	0.080	0.000	25.852	0.00	5.80
87.00	3" Conduit	Yes	2.00	0.000	3.00	0.50	0.00	0.080	0.000	25.852	0.00	2.90
87.00	7/8" Coax	Yes	2.00	0.000	0.52	0.09	0.00	0.080	0.000	25.852	0.00	0.94
90.00	2" Conduit	Yes	3.00	0.000	0.00	0.00	0.00	0.081	0.000	26.037	0.00	8.69
90.00	3" Conduit	Yes	3.00	0.000	3.00	0.75	0.00	0.081	0.000	26.037	0.00	4.35
90.00	7/8" Coax	Yes	3.00	0.000	0.52	0.13	0.00	0.081	0.000	26.037	0.00	1.40
90.42	2" Conduit	Yes	0.42	0.000	0.00	0.00	0.00	0.082	0.000	26.063	0.00	1.21
90.42	3" Conduit	Yes	0.42	0.000	3.00	0.10	0.00	0.082	0.000	26.063	0.00	0.60
90.42	7/8" Coax	Yes	0.42	0.000	0.52	0.02	0.00	0.082	0.000	26.063	0.00	0.20
95.00	2" Conduit	Yes	4.58	0.000	0.00	0.00	0.00	0.082	0.000	26.336	0.00	13.28
95.00	3" Conduit	Yes	4.58	0.000	3.00	1.15	0.00	0.082	0.000	26.336	0.00	6.64
95.00	7/8" Coax	Yes	4.58	0.000	0.52	0.20	0.00	0.082	0.000	26.336	0.00	2.14
100.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.084	0.000	26.621	0.00	14.49
100.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.084	0.000	26.621	0.00	7.25
100.00	7/8" Coax	Yes	5.00	0.000	0.52	0.22	0.00	0.084	0.000	26.621	0.00	2.34
105.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	26.896	0.00	14.49
105.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.086	0.000	26.896	0.00	7.25
105.00	7/8" Coax	Yes	5.00	0.000	0.52	0.22	0.00	0.086	0.000	26.896	0.00	2.34
109.50	2" Conduit	Yes	4.50	0.000	0.00	0.00	0.00	0.088	0.000	27.135	0.00	13.04
109.50	3" Conduit	Yes	4.50	0.000	3.00	1.13	0.00	0.088	0.000	27.135	0.00	6.52
109.50	7/8" Coax	Yes	4.50	0.000	0.52	0.20	0.00	0.088	0.000	27.135	0.00	2.11
110.00	2" Conduit	Yes	0.50	0.000	0.00	0.00	0.00	0.089	0.000	27.161	0.00	1.45
110.00	3" Conduit	Yes	0.50	0.000	3.00	0.13	0.00	0.089	0.000	27.161	0.00	0.72
110.00	7/8" Coax	Yes	0.50	0.000	0.52	0.02	0.00	0.089	0.000	27.161	0.00	0.23
112.25	2" Conduit	Yes	2.25	0.000	0.00	0.00	0.00	0.090	0.000	27.277	0.00	6.52
112.25	3" Conduit	Yes	2.25	0.000	3.00	0.56	0.00	0.090	0.000	27.277	0.00	3.26
112.25	7/8" Coax	Yes	2.25	0.000	0.52	0.10	0.00	0.090	0.000	27.277	0.00	1.05
115.00	2" Conduit	Yes	2.75	0.000	0.00	0.00	0.00	0.091	0.000	27.416	0.00	7.97

Linear Appurtenance Segment Forces (Factored)

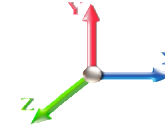
Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/21/2019
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 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)
115.00	3" Conduit	Yes	2.75	0.000	3.00	0.69	0.00	0.091	0.000	27.416	0.00	3.98
115.00	7/8" Coax	Yes	2.75	0.000	0.52	0.12	0.00	0.091	0.000	27.416	0.00	1.29
120.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	27.663	0.00	14.49
120.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.093	0.000	27.663	0.00	7.25
120.00	7/8" Coax	Yes	5.00	0.000	0.52	0.22	0.00	0.093	0.000	27.663	0.00	2.34
123.58	2" Conduit	Yes	3.58	0.000	0.00	0.00	0.00	0.095	0.000	27.835	0.00	10.38
123.58	3" Conduit	Yes	3.58	0.000	3.00	0.90	0.00	0.095	0.000	27.835	0.00	5.19
123.58	7/8" Coax	Yes	3.58	0.000	0.52	0.16	0.00	0.095	0.000	27.835	0.00	1.68
125.00	2" Conduit	Yes	1.42	0.000	0.00	0.00	0.00	0.097	0.000	27.902	0.00	4.11
125.00	3" Conduit	Yes	1.42	0.000	3.00	0.35	0.00	0.097	0.000	27.902	0.00	2.05
125.00	7/8" Coax	Yes	1.42	0.000	0.52	0.06	0.00	0.097	0.000	27.902	0.00	0.66
125.60	2" Conduit	Yes	0.60	0.000	0.00	0.00	0.00	0.097	0.000	27.930	0.00	1.74
125.60	3" Conduit	Yes	0.60	0.000	3.00	0.15	0.00	0.097	0.000	27.930	0.00	0.87
125.60	7/8" Coax	Yes	0.60	0.000	0.52	0.03	0.00	0.097	0.000	27.930	0.00	0.28
129.00	2" Conduit	Yes	3.40	0.000	0.00	0.00	0.00	0.099	0.000	28.088	0.00	9.85
129.00	3" Conduit	Yes	3.40	0.000	3.00	0.85	0.00	0.099	0.000	28.088	0.00	4.93
129.00	7/8" Coax	Yes	3.40	0.000	0.52	0.15	0.00	0.099	0.000	28.088	0.00	1.59
130.00	2" Conduit	Yes	1.00	0.000	0.00	0.00	0.00	0.098	0.000	28.133	0.00	2.90
130.00	3" Conduit	Yes	1.00	0.000	3.00	0.25	0.00	0.098	0.000	28.133	0.00	1.45
130.00	7/8" Coax	Yes	1.00	0.000	0.52	0.04	0.00	0.098	0.000	28.133	0.00	0.47
135.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.085	0.000	28.358	0.00	14.49
135.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.085	0.000	28.358	0.00	7.25
136.26	2" Conduit	Yes	1.26	0.000	0.00	0.00	0.00	0.087	0.000	28.413	0.00	3.65
136.26	3" Conduit	Yes	1.26	0.000	3.00	0.31	0.00	0.087	0.000	28.413	0.00	1.83
140.00	2" Conduit	Yes	3.74	0.000	0.00	0.00	0.00	0.088	0.000	28.576	0.00	10.84
140.00	3" Conduit	Yes	3.74	0.000	3.00	0.94	0.00	0.088	0.000	28.576	0.00	5.42
145.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	28.788	0.00	14.49
145.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.091	0.000	28.788	0.00	7.25
150.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.094	0.000	28.994	0.00	14.49
150.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.094	0.000	28.994	0.00	7.25
155.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	29.195	0.00	14.49
155.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.097	0.000	29.195	0.00	7.25
160.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.002	29.390	0.00	14.49
160.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.101	1.002	29.390	0.00	7.25
161.50	2" Conduit	Yes	1.50	0.000	0.00	0.00	0.00	0.103	1.009	29.448	0.00	4.35
161.50	3" Conduit	Yes	1.50	0.000	3.00	0.38	0.00	0.103	1.009	29.448	0.00	2.17
165.00	2" Conduit	Yes	3.50	0.000	0.00	0.00	0.00	0.105	1.015	29.581	0.00	10.14
165.00	3" Conduit	Yes	3.50	0.000	3.00	0.88	0.00	0.105	1.015	29.581	0.00	5.07
165.25	2" Conduit	Yes	0.25	0.000	0.00	0.00	0.00	0.106	1.019	29.591	0.00	0.72
165.25	3" Conduit	Yes	0.25	0.000	3.00	0.06	0.00	0.106	1.019	29.591	0.00	0.36
169.58	2" Conduit	Yes	4.33	0.000	0.00	0.00	0.00	0.108	1.025	29.753	0.00	12.56
169.58	3" Conduit	Yes	4.33	0.000	3.00	1.08	0.00	0.108	1.025	29.753	0.00	6.28
170.00	2" Conduit	Yes	0.42	0.000	0.00	0.00	0.00	0.109	1.027	29.768	0.00	1.21
170.00	3" Conduit	Yes	0.42	0.000	3.00	0.10	0.00	0.109	1.027	29.768	0.00	0.60
175.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.111	1.034	29.950	0.00	14.49
175.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.111	1.034	29.950	0.00	7.25

Linear Appurtenance Segment Forces (Factored)

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/21/2019
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

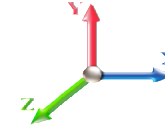


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Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 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)
Totals:											0.0	821.6

Calculated Forces

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/21/2019
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

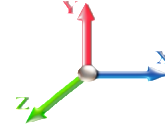


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Load Case: 0.9D + 1.6W 93 mph Wind

Iterations 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	-60.97	-45.10	0.00	-6137.0	0.00	6137.00	8794.96	4397.48	21496.0	10671.5	0.00	0.000	0.000	0.582
5.00	-58.76	-44.67	0.00	-5911.5	0.00	5911.52	8639.43	4319.71	20738.5	10295.5	0.09	-0.163	0.000	0.581
10.00	-56.58	-44.24	0.00	-5688.1	0.00	5688.19	8483.89	4241.95	19994.7	9926.22	0.35	-0.328	0.000	0.580
15.00	-54.43	-43.81	0.00	-5467.0	0.00	5467.01	8328.36	4164.18	19264.4	9563.67	0.78	-0.495	0.000	0.578
20.00	-52.32	-43.35	0.00	-5247.9	0.00	5247.97	8172.83	4086.41	18547.7	9207.87	1.39	-0.666	0.000	0.576
25.00	-50.24	-42.86	0.00	-5031.2	0.00	5031.25	8017.29	4008.65	17844.6	8858.82	2.18	-0.838	0.000	0.574
30.00	-48.19	-42.35	0.00	-4816.9	0.00	4816.97	7861.76	3930.88	17155.1	8516.51	3.15	-1.014	0.000	0.572
35.00	-46.18	-41.82	0.00	-4605.2	0.00	4605.25	7706.22	3853.11	16479.1	8180.95	4.31	-1.192	0.000	0.569
40.00	-44.21	-41.27	0.00	-4396.1	0.00	4396.17	7550.69	3775.35	15816.8	7852.13	5.65	-1.372	0.000	0.566
45.00	-42.32	-40.66	0.00	-4189.8	0.00	4189.80	7395.16	3697.58	15168.0	7530.06	7.19	-1.555	0.000	0.562
45.42	-42.12	-40.65	0.00	-4172.8	0.00	4172.86	7382.20	3691.10	15114.6	7503.52	7.32	-1.571	0.000	0.562
48.90	-39.96	-40.19	0.00	-4031.2	0.00	4031.25	7273.84	3636.92	14671.4	7283.52	8.52	-1.701	0.000	0.373
50.00	-39.27	-40.06	0.00	-3987.0	0.00	3987.04	7239.62	3619.81	14532.8	7214.73	8.91	-1.729	0.000	0.371
52.75	-37.60	-39.69	0.00	-3876.8	0.00	3876.88	5810.43	2905.21	11825.7	5870.80	9.93	-1.799	0.000	0.379
55.00	-36.90	-39.41	0.00	-3787.5	0.00	3787.57	5769.82	2884.91	11629.7	5773.48	10.79	-1.856	0.000	0.414
57.15	-36.22	-39.16	0.00	-3702.8	0.00	3702.83	5730.75	2865.38	11443.3	5680.95	11.64	-1.917	0.000	0.410
57.15	-36.22	-39.16	0.00	-3702.8	0.00	3702.83	5730.75	2865.38	11443.3	5680.95	11.64	-1.917	0.000	0.410
60.00	-35.30	-38.85	0.00	-3591.2	0.00	3591.24	5678.55	2839.28	11197.7	5559.03	12.81	-1.997	0.000	0.652
65.00	-33.72	-38.28	0.00	-3396.9	0.00	3396.98	5551.73	2775.86	10705.1	5314.51	15.02	-2.221	0.000	0.645
70.00	-32.18	-37.70	0.00	-3205.5	0.00	3205.59	5427.30	2713.65	10228.2	5077.73	17.47	-2.448	0.000	0.637
75.00	-30.67	-37.12	0.00	-3017.0	0.00	3017.09	5302.88	2651.44	9762.15	4846.34	20.16	-2.677	0.000	0.629
80.00	-29.20	-36.52	0.00	-2831.5	0.00	2831.50	5178.45	2589.22	9306.93	4620.35	23.08	-2.907	0.000	0.619
84.00	-28.07	-36.02	0.00	-2685.4	0.00	2685.41	5078.91	2539.45	8950.59	4443.45	25.60	-3.094	0.000	0.610
85.00	-27.61	-35.90	0.00	-2649.3	0.00	2649.39	5054.02	2527.01	8862.59	4399.76	26.25	-3.141	0.000	0.608
87.00	-26.72	-35.65	0.00	-2577.5	0.00	2577.58	5004.25	2502.13	8687.89	4313.04	27.59	-3.237	0.000	0.365
90.00	-25.46	-35.22	0.00	-2470.6	0.00	2470.65	4929.59	2464.80	8429.11	4184.57	29.65	-3.322	0.000	0.358
90.42	-25.24	-35.19	0.00	-2455.9	0.00	2455.97	3591.78	1795.89	6277.53	3116.43	29.94	-3.334	0.000	0.381
95.00	-24.22	-34.62	0.00	-2294.7	0.00	2294.70	3535.98	1767.99	6038.44	2997.74	33.20	-3.463	0.000	0.416
100.00	-23.09	-33.64	0.00	-2121.6	0.00	2121.60	3473.75	1736.87	5780.45	2869.66	36.91	-3.621	0.000	0.397
105.00	-22.03	-33.03	0.00	-1953.3	0.00	1953.38	3410.09	1705.04	5525.58	2743.13	40.78	-3.776	0.000	0.377
109.50	-20.82	-30.95	0.00	-1797.5	0.00	1797.54	3351.58	1675.79	5299.03	2630.66	44.40	-3.913	0.000	0.357
110.00	-20.70	-30.90	0.00	-1782.0	0.00	1782.06	3345.00	1672.50	5274.03	2618.25	44.81	-3.928	0.000	0.355
112.25	-20.24	-30.63	0.00	-1712.5	0.00	1712.54	3315.25	1657.63	5161.96	2562.62	46.68	-3.996	0.000	0.347
112.25	-20.24	-30.63	0.00	-1712.5	0.00	1712.54	3315.25	1657.63	5161.96	2562.62	46.68	-3.996	0.000	0.347
115.00	-19.63	-30.34	0.00	-1628.3	0.00	1628.31	3278.49	1639.25	5025.98	2495.11	49.01	-4.078	0.000	0.659
120.00	-18.59	-29.77	0.00	-1476.6	0.00	1476.62	3210.56	1605.28	4781.62	2373.80	53.43	-4.362	0.000	0.628
123.58	-17.88	-29.36	0.00	-1369.9	0.00	1369.94	3148.16	1574.08	4590.15	2278.75	56.77	-4.565	0.000	0.607
125.00	-17.46	-29.19	0.00	-1328.3	0.00	1328.35	3121.72	1560.86	4512.97	2240.43	58.14	-4.646	0.000	0.599
125.60	-17.26	-29.13	0.00	-1310.8	0.00	1310.83	3110.52	1555.26	4480.48	2224.30	58.73	-4.680	0.000	0.336
129.00	-16.31	-28.69	0.00	-1211.8	0.00	1211.81	2149.47	1074.74	3099.22	1538.58	62.09	-4.786	0.000	0.353
130.00	-16.08	-28.45	0.00	-1182.9	0.00	1182.97	2141.27	1070.63	3068.69	1523.43	63.10	-4.817	0.000	0.392
135.00	-15.32	-27.87	0.00	-1040.7	0.00	1040.70	2099.38	1049.69	2916.97	1448.11	68.23	-4.983	0.000	0.357
136.26	-15.11	-27.74	0.00	-1005.5	0.00	1005.59	2088.60	1044.30	2879.00	1429.26	69.55	-5.025	0.000	0.348
136.26	-15.11	-27.74	0.00	-1005.5	0.00	1005.59	2088.60	1044.30	2879.00	1429.26	69.55	-5.025	0.000	0.348
140.00	-14.49	-27.35	0.00	-901.84	0.00	901.84	2056.07	1028.04	2766.99	1373.65	73.53	-5.142	0.000	0.664
145.00	-12.79	-25.53	0.00	-765.11	0.00	765.11	2011.34	1005.67	2618.95	1300.16	79.07	-5.443	0.000	0.595
150.00	-12.05	-25.01	0.00	-637.46	0.00	637.46	1965.18	982.59	2473.01	1227.71	84.91	-5.722	0.000	0.526
155.00	-9.76	-20.38	0.00	-512.39	0.00	512.39	1917.59	958.80	2329.38	1156.40	91.04	-5.976	0.000	0.449

Calculated Forces

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/21/2019
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Page: 31
	Struct Class: II	



160.00	-9.17	-19.86	0.00	-410.52	0.00	410.52	1868.58	934.29	2188.24	1086.34	97.41	-6.202	0.000	0.383
161.50	-7.76	-18.43	0.00	-380.73	0.00	380.73	1853.60	926.80	2146.41	1065.57	99.36	-6.267	0.000	0.362
165.00	-7.37	-18.07	0.00	-316.23	0.00	316.23	1818.15	909.07	2049.77	1017.59	104.00	-6.404	0.000	0.315
165.25	-7.32	-18.05	0.00	-311.72	0.00	311.72	1815.59	907.79	2042.92	1014.19	104.34	-6.414	0.000	0.312
169.58	-6.65	-17.57	0.00	-233.51	0.00	233.51	1040.26	520.13	1155.41	573.59	110.22	-6.559	0.000	0.415
170.00	-6.58	-17.54	0.00	-226.18	0.00	226.18	1038.39	519.19	1149.55	570.68	110.79	-6.572	0.000	0.404
175.00	-3.77	-10.24	0.00	-138.47	0.00	138.47	1015.17	507.59	1079.51	535.91	117.76	-6.751	0.000	0.263
180.00	-3.47	-9.78	0.00	-87.29	0.00	87.29	990.53	495.27	1010.05	501.43	124.89	-6.875	0.000	0.178
185.00	-2.10	-5.47	0.00	-38.41	0.00	38.41	964.47	482.24	941.35	467.32	132.12	-6.954	0.000	0.085
187.00	-1.99	-4.70	0.00	-22.22	0.00	22.22	953.65	476.82	914.12	453.81	135.03	-6.972	0.000	0.051
190.00	-1.87	-4.45	0.00	-8.11	0.00	8.11	936.98	468.49	873.60	433.69	139.40	-6.986	0.000	0.021
191.50	-0.14	-0.38	0.00	-1.43	0.00	1.43	928.46	464.23	853.48	423.70	141.59	-6.988	0.000	0.004
195.00	-0.03	-0.10	0.00	-0.10	0.00	0.10	908.07	454.03	806.98	400.62	146.70	-6.989	0.000	0.000
196.00	0.00	-0.09	0.00	0.00	0.00	0.00	902.11	451.06	793.81	394.08	148.16	-6.989	0.000	0.000

Wind Loading - Shaft

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/21/2019
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

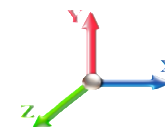


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Load Case: 1.2D + 1.0Di + 1.0Wi 40 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



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		1.00	0.85	3.308	3.64	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	3.308	3.64	0.00	1.200	1.656	5.00	26.647	31.98	116.3	634.4	3030.0
10.00		1.00	0.85	3.308	3.64	0.00	1.200	1.775	5.00	26.300	31.56	114.8	669.5	3022.3
15.00		1.00	0.85	3.308	3.64	0.00	1.200	1.848	5.00	25.915	31.10	113.1	685.7	2995.8
20.00		1.00	0.90	3.509	3.86	0.00	1.200	1.902	5.00	25.514	30.62	118.2	693.8	2961.1
25.00		1.00	0.95	3.678	4.05	0.00	1.200	1.945	5.00	25.103	30.12	121.9	697.0	2921.6
30.00		1.00	0.98	3.822	4.20	0.00	1.200	1.981	5.00	24.687	29.62	124.6	697.1	2879.0
35.00		1.00	1.01	3.948	4.34	0.00	1.200	2.012	5.00	24.267	29.12	126.5	695.0	2834.1
40.00		1.00	1.04	4.061	4.47	0.00	1.200	2.039	5.00	23.843	28.61	127.8	691.1	2787.5
45.00		1.00	1.07	4.163	4.58	0.00	1.200	2.063	5.00	23.417	28.10	128.7	685.9	2739.5
45.42	Bot - Section 2	1.00	1.07	4.171	4.59	0.00	1.200	2.065	0.42	1.931	2.32	10.6	57.1	226.3
48.90	RB1	1.00	1.09	4.236	4.66	0.00	1.200	2.080	3.48	16.330	19.60	91.3	483.7	3034.5
50.00		1.00	1.09	4.256	4.68	0.00	1.200	2.085	1.10	5.113	6.14	28.7	152.4	950.2
52.75	Top - Section 1	1.00	1.11	4.304	4.73	0.00	1.200	2.096	2.75	12.693	15.23	72.1	379.0	2357.1
55.00		1.00	1.12	4.342	4.78	0.00	1.200	2.105	2.25	10.288	12.35	59.0	308.6	1029.4
57.15	RT1	1.00	1.12	4.378	4.82	0.00	1.200	2.113	2.15	9.749	11.70	56.3	293.4	975.7
60.00		1.00	1.14	4.423	4.86	0.00	1.200	2.123	2.85	12.801	15.36	74.7	386.4	1281.0
65.00		1.00	1.16	4.498	4.95	0.00	1.200	2.140	5.00	22.122	26.55	131.3	669.3	2212.1
70.00		1.00	1.17	4.569	5.03	0.00	1.200	2.156	5.00	21.689	26.03	130.8	660.2	2168.8
75.00		1.00	1.19	4.635	5.10	0.00	1.200	2.171	5.00	21.256	25.51	130.1	650.6	2124.9
80.00		1.00	1.21	4.699	5.17	0.00	1.200	2.185	5.00	20.821	24.99	129.1	640.4	2080.6
84.00	Bot - Section 3	1.00	1.22	4.747	5.22	0.00	1.200	2.196	4.00	16.343	19.61	102.4	505.6	1633.2
85.00		1.00	1.22	4.759	5.24	0.00	1.200	2.198	1.00	4.105	4.93	25.8	128.1	619.6
87.00	RB2	1.00	1.23	4.782	5.26	0.00	1.200	2.204	2.00	8.159	9.79	51.5	254.4	1230.4
90.00		1.00	1.24	4.817	5.30	0.00	1.200	2.211	3.00	12.108	14.53	77.0	377.7	1823.7
90.42	Top - Section 2	1.00	1.24	4.821	5.30	0.00	1.200	2.212	0.42	1.669	2.00	10.6	52.4	251.5
95.00		1.00	1.25	4.872	5.36	0.00	1.200	2.223	4.58	18.164	21.80	116.8	566.8	1505.0
100.00	Appurtenance(s)	1.00	1.27	4.925	5.42	0.00	1.200	2.234	5.00	19.397	23.28	126.1	606.8	1605.7
105.00		1.00	1.28	4.976	5.47	0.00	1.200	2.245	5.00	18.960	22.75	124.5	595.0	1568.3
109.50	Appurtenance(s)	1.00	1.29	5.020	5.52	0.00	1.200	2.255	4.50	16.690	20.03	110.6	525.8	1379.8
110.00		1.00	1.29	5.025	5.53	0.00	1.200	2.256	0.50	1.832	2.20	12.2	58.3	151.9
112.25	RT2	1.00	1.30	5.046	5.55	0.00	1.200	2.260	2.25	8.191	9.83	54.6	259.9	677.9
115.00		1.00	1.30	5.072	5.58	0.00	1.200	2.266	2.75	9.891	11.87	66.2	313.9	817.8
120.00		1.00	1.32	5.117	5.63	0.00	1.200	2.276	5.00	17.647	21.18	119.2	558.1	1454.5
123.58	Bot - Section 4	1.00	1.32	5.149	5.66	0.00	1.200	2.282	3.58	12.376	14.85	84.1	393.5	1020.1
125.00		1.00	1.33	5.162	5.68	0.00	1.200	2.285	1.42	4.898	5.88	33.4	156.8	587.4
125.60	RB3	1.00	1.33	5.167	5.68	0.00	1.200	2.286	0.60	2.064	2.48	14.1	66.2	247.5
129.00	Top - Section 3	1.00	1.34	5.196	5.72	0.00	1.200	2.292	3.40	11.577	13.89	79.4	369.4	1384.4
130.00	Appurtenance(s)	1.00	1.34	5.204	5.72	0.00	1.200	2.294	1.00	3.366	4.04	23.1	108.1	235.7
135.00		1.00	1.35	5.246	5.77	0.00	1.200	2.303	5.00	16.570	19.88	114.7	527.4	1154.0
136.26	RT3	1.00	1.35	5.256	5.78	0.00	1.200	2.305	1.26	4.106	4.93	28.5	132.1	286.9
140.00		1.00	1.36	5.286	5.81	0.00	1.200	2.311	3.74	12.024	14.43	83.9	384.6	837.1
145.00	Appurtenance(s)	1.00	1.37	5.325	5.86	0.00	1.200	2.319	5.00	15.692	18.83	110.3	500.7	1088.8
150.00		1.00	1.38	5.364	5.90	0.00	1.200	2.327	5.00	15.252	18.30	108.0	487.0	1055.9
155.00	Appurtenance(s)	1.00	1.39	5.401	5.94	0.00	1.200	2.335	5.00	14.812	17.77	105.6	473.2	1022.9
160.00		1.00	1.40	5.437	5.98	0.00	1.202 *	2.342	5.00	14.372	17.28	103.3	459.3	989.7
161.50	Appurtenance(s)	1.00	1.40	5.448	5.99	0.00	1.211 *	2.344	1.50	4.225	5.12	30.7	136.5	291.9

Wind Loading - Shaft

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/21/2019
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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165.00	1.00	1.41	5.472	6.02	0.00	1.218 *	2.349	3.50	9.706	11.82	71.2	311.7	667.4	
165.25 Bot - Section 5	1.00	1.41	5.474	6.02	0.00	1.223 *	2.350	0.25	0.685	0.84	5.0	22.2	47.3	
169.58 Top - Section 4	1.00	1.41	5.504	6.05	0.00	1.230 *	2.356	4.33	11.837	14.56	88.2	379.4	1095.4	
170.00	1.00	1.42	5.507	6.06	0.00	1.232 *	2.356	0.42	1.121	1.38	8.4	36.4	63.7	
175.00 Appurtenance(s)	1.00	1.42	5.541	6.09	0.00	1.240 *	2.363	5.00	13.211	16.39	99.9	422.3	743.1	
180.00	1.00	1.43	5.574	6.13	0.00	1.200	2.370	5.00	12.771	15.32	94.0	407.8	715.9	
185.00 Appurtenance(s)	1.00	1.44	5.606	6.17	0.00	1.200	2.376	5.00	12.330	14.80	91.2	393.3	688.5	
187.00 Appurtenance(s)	1.00	1.44	5.618	6.18	0.00	1.200	2.379	2.00	4.808	5.77	35.7	155.0	269.5	
190.00	1.00	1.45	5.637	6.20	0.00	1.200	2.383	3.00	7.080	8.50	52.7	227.1	395.0	
191.50 Appurtenance(s)	1.00	1.45	5.647	6.21	0.00	1.200	2.384	1.50	3.480	4.18	25.9	112.2	194.5	
195.00	1.00	1.46	5.668	6.24	0.00	1.200	2.389	3.50	7.967	9.56	59.6	254.7	442.0	
196.00 Appurtenance(s)	1.00	1.46	5.674	6.24	0.00	1.200	2.390	1.00	2.236	2.68	16.8	72.2	124.5	
Totals:								196.00				4,571.1	74,979.5	

* Cf Adjusted by Linear Load Ra Effect

Discrete Appurtenance Forces

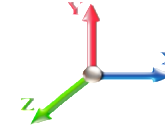
Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/21/2019
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0Di + 1.0Wi 40 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 26

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa 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	196.00	6' Lightning rod	1	5.674	6.242	1.00	1.00	1.87	52.21	0.000	0.000	11.67	0.00	0.00
2	191.50	Low Profile Platform	1	5.647	6.211	1.00	1.00	46.13	3288.37	0.000	0.000	286.53	0.00	0.00
3	191.50	ACU-A20-N - RET	4	5.647	6.211	0.62	0.80	1.36	23.08	0.000	0.000	8.46	0.00	0.00
4	191.50	800MHz Filter	3	5.647	6.211	0.56	0.80	2.80	89.00	0.000	0.000	17.36	0.00	0.00
5	191.50	RRH8x20-25 - RRU	3	5.647	6.211	0.56	0.80	8.72	740.14	0.000	0.000	54.18	0.00	0.00
6	191.50	1900MHz - RRU	3	5.647	6.211	0.56	0.80	9.57	512.25	0.000	0.000	59.47	0.00	0.00
7	191.50	800MHz - RRU	3	5.647	6.211	0.56	0.80	6.81	430.66	0.000	0.000	42.29	0.00	0.00
8	191.50	APXVSP18-C-A20	3	5.647	6.211	0.68	0.80	24.15	765.20	0.000	0.000	149.99	0.00	0.00
9	191.50	APXVTM14-C-120	3	5.647	6.211	0.70	0.80	16.68	908.58	0.000	0.000	103.59	0.00	0.00
10	187.00	BA80-41-DIN	1	5.682	6.251	1.00	1.00	34.96	362.45	0.000	10.333	218.54	0.00	2258.27
11	187.00	Pipe mount	1	5.618	6.180	0.56	0.75	6.06	134.43	0.000	0.000	37.43	0.00	0.00
12	185.00	BXA-70063 6CF_2	3	5.606	6.166	0.68	0.80	23.12	539.45	0.000	0.000	142.56	0.00	0.00
13	185.00	LPA-80063/4CF	6	5.606	6.166	0.70	0.80	32.06	1927.18	0.000	0.000	197.72	0.00	0.00
14	185.00	BXA-171063-8BF_2	3	5.606	6.166	0.72	0.80	11.23	249.13	0.000	0.000	69.23	0.00	0.00
15	185.00	FD9R6004/2C-3L -	6	5.606	6.166	0.60	0.80	3.47	74.09	0.000	0.000	21.39	0.00	0.00
16	185.00	Low Profile Platform	1	5.606	6.166	1.00	1.00	46.05	3282.20	0.000	0.000	283.95	0.00	0.00
17	175.00	Low Profile Platform	1	5.541	6.095	1.00	1.00	45.91	3272.33	0.000	0.000	279.83	0.00	0.00
18	175.00	DC6-48-60-18-8F	1	5.541	6.095	0.80	0.80	1.21	109.01	0.000	0.000	7.38	0.00	0.00
19	175.00	RRUS-12	3	5.541	6.095	0.56	0.80	6.98	337.93	0.000	0.000	42.57	0.00	0.00
20	175.00	Powerwave 7770	3	5.541	6.095	0.70	0.80	14.73	720.08	0.000	0.000	89.79	0.00	0.00
21	175.00	Powerwave LGP21401	12	5.541	6.095	0.75	0.75	21.79	524.07	0.000	0.000	132.83	0.00	0.00
22	175.00	Powerwave LGP13519	12	5.541	6.095	0.75	0.75	8.59	198.24	0.000	0.000	52.37	0.00	0.00
23	175.00	Ericsson RRUS 4449	3	5.541	6.095	0.50	0.75	4.09	431.64	0.000	0.000	24.91	0.00	0.00
24	175.00	Ericsson RRUS 32 B30	3	5.541	6.095	0.50	0.75	5.66	604.45	0.000	0.000	34.49	0.00	0.00
25	175.00	Raycap	2	5.541	6.095	1.00	1.00	11.95	313.88	0.000	0.000	72.86	0.00	0.00
26	175.00	HRK12 (Handrail Kit)	1	5.541	6.095	1.00	1.00	15.68	996.34	0.000	0.000	95.58	0.00	0.00
27	175.00	Kathrein 800-10965	6	5.541	6.095	0.53	0.75	51.07	3333.44	0.000	0.000	311.23	0.00	0.00
28	175.00	Ericsson RRUS 4478 B14	3	5.541	6.095	0.50	0.75	3.55	354.08	0.000	0.000	21.61	0.00	0.00
29	161.50	Low Profile Platform	1	5.448	5.992	1.00	1.00	45.72	3258.15	0.000	0.000	274.00	0.00	0.00
30	155.00	AIR 21 B4A/B2P	3	5.401	5.941	0.68	0.80	15.36	1043.65	0.000	0.000	91.27	0.00	0.00
31	155.00	T-Arms w/ Handrail kit &	3	5.401	5.941	0.56	0.75	60.97	4001.52	0.000	0.000	362.21	0.00	0.00
32	155.00	LNx-6515DS-A1M	3	5.401	5.941	0.65	0.80	30.79	915.65	0.000	0.000	182.94	0.00	0.00
33	155.00	AIR 21 B2A/B4P	3	5.401	5.941	0.68	0.80	15.36	1044.68	0.000	0.000	91.27	0.00	0.00
34	155.00	KRY 112 114 TMA	3	5.401	5.941	0.62	0.80	1.96	73.57	0.000	0.000	11.63	0.00	0.00
35	145.00	T-Arms	3	5.325	5.858	0.56	0.75	29.15	2024.01	0.000	0.000	170.78	0.00	0.00
36	145.00	APXV18-206517S-C	3	5.325	5.858	0.70	0.80	17.58	385.37	0.000	0.000	103.01	0.00	0.00
37	130.00	Standoff	1	5.204	5.725	0.56	0.75	5.89	130.52	0.000	0.000	33.73	0.00	0.00
38	130.00	ANT150F2	1	5.225	5.748	1.00	1.00	2.62	49.57	0.000	2.500	15.07	0.00	37.69
39	109.50	Standoff	1	5.020	5.522	0.56	0.75	5.82	128.72	0.000	0.000	32.12	0.00	0.00
40	109.50	Standoff	5	5.020	5.522	0.56	0.75	29.09	643.62	0.000	0.000	160.60	0.00	0.00
41	109.50	4' Omni	1	5.039	5.543	1.00	1.00	2.12	43.51	0.000	2.000	11.73	0.00	23.46
42	109.50	14' Omni	5	5.086	5.594	1.00	1.00	53.31	772.54	0.000	7.000	298.25	0.00	2087.73
43	100.00	Standoff	1	4.925	5.417	0.56	0.75	5.78	127.79	0.000	0.000	31.30	0.00	0.00
44	100.00	MPRD	1	4.925	5.417	1.00	1.00	7.64	324.41	0.000	0.000	41.37	0.00	0.00

Totals: 39,541.18

4,781.10

Total Applied Force Summary

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/21/2019
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

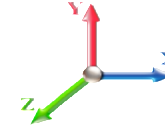


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Load Case: 1.2D + 1.0Di + 1.0Wi 40 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



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
5.00		116.34	3526.12	0.00	0.00
10.00		114.82	3529.66	0.00	0.00
15.00		113.14	3510.38	0.00	0.00
20.00		118.19	3481.07	0.00	0.00
25.00		121.88	3445.96	0.00	0.00
30.00		124.55	3407.04	0.00	0.00
35.00		126.47	3365.37	0.00	0.00
40.00		127.81	3321.63	0.00	0.00
45.00		128.67	3276.27	0.00	0.00
45.42		10.63	271.07	0.00	0.00
48.90		91.32	3409.68	0.00	0.00
50.00		28.72	1068.78	0.00	0.00
52.75		72.12	2654.24	0.00	0.00
55.00		58.97	1272.92	0.00	0.00
57.15		56.33	1208.84	0.00	0.00
60.00		74.73	1590.71	0.00	0.00
65.00		131.34	2757.20	0.00	0.00
70.00		130.80	2715.64	0.00	0.00
75.00		130.06	2673.46	0.00	0.00
80.00		129.14	2630.72	0.00	0.00
84.00		102.41	2074.20	0.00	0.00
85.00		25.79	729.97	0.00	0.00
87.00		51.51	1451.26	0.00	0.00
90.00		76.98	2155.52	0.00	0.00
90.42		10.62	297.61	0.00	0.00
95.00		116.81	2013.17	0.00	0.00
100.00	(2) attachments	198.77	2613.59	0.00	0.00
105.00		124.52	2124.97	0.00	0.00
109.50	(12) attachments	613.29	3470.14	0.00	2111.19
110.00		12.15	207.12	0.00	0.00
112.25		54.56	926.60	0.00	0.00
115.00		66.22	1122.07	0.00	0.00
120.00		119.21	2008.81	0.00	0.00
123.58		84.12	1417.89	0.00	0.00
125.00		33.37	744.76	0.00	0.00
125.60		14.08	314.17	0.00	0.00
129.00		79.40	1762.61	0.00	0.00
130.00	(2) attachments	71.93	527.11	0.00	37.69
135.00		114.74	1665.52	0.00	0.00
136.26		28.49	415.88	0.00	0.00
140.00		83.90	1220.18	0.00	0.00
145.00	(6) attachments	384.10	4011.04	0.00	0.00
150.00		107.98	1532.00	0.00	0.00
155.00	(15) attachments	844.92	8578.68	0.00	0.00
160.00		103.35	1385.59	0.00	0.00
161.50	(1) attachments	304.66	3668.87	0.00	0.00

Total Applied Force Summary

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/21/2019	
Site Name: Torrington/Oandg Ind Inc	Exposure: C		
Height: 196.00 (ft)	Crest Height: 0.00		
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil		
Gh: 1.1	Topography: 1	Struct Class: II	Page: 36



165.00	71.16	945.00	0.00	0.00	
165.25	5.05	67.11	0.00	0.00	
169.58	88.16	1439.52	0.00	0.00	
170.00	8.36	96.79	0.00	0.00	
175.00	(50) attachments	1265.31	12336.29	0.00	0.00
180.00		93.95	854.19	0.00	0.00
185.00	(19) attachments	806.09	6898.86	0.00	0.00
187.00	(2) attachments	291.63	791.71	0.00	2258.27
190.00		52.68	431.24	0.00	0.00
191.50	(23) attachments	747.82	6969.84	0.00	0.00
195.00		59.61	442.00	0.00	0.00
196.00	(1) attachments	28.42	176.75	0.00	0.00
Totals:		9,352.15	133,005.4	0.00	4,407.15

Linear Appurtenance Segment Forces (Factored)

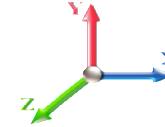
Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/21/2019
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0Di + 1.0Wi 40 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00



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)
5.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.058	0.000	3.308	0.00	65.17
5.00	3" Conduit	Yes	5.00	0.000	3.00	2.63	0.00	0.058	0.000	3.308	0.00	49.49
5.00	7/8" Coax	Yes	5.00	0.000	0.52	1.60	0.00	0.058	0.000	3.308	0.00	27.54
10.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.059	0.000	3.308	0.00	69.51
10.00	3" Conduit	Yes	5.00	0.000	3.00	2.73	0.00	0.059	0.000	3.308	0.00	53.37
10.00	7/8" Coax	Yes	5.00	0.000	0.52	1.70	0.00	0.059	0.000	3.308	0.00	30.54
15.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.060	0.000	3.308	0.00	72.28
15.00	3" Conduit	Yes	5.00	0.000	3.00	2.79	0.00	0.060	0.000	3.308	0.00	55.85
15.00	7/8" Coax	Yes	5.00	0.000	0.52	1.76	0.00	0.060	0.000	3.308	0.00	32.48
20.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.061	0.000	3.509	0.00	74.36
20.00	3" Conduit	Yes	5.00	0.000	3.00	2.84	0.00	0.061	0.000	3.509	0.00	57.72
20.00	7/8" Coax	Yes	5.00	0.000	0.52	1.80	0.00	0.061	0.000	3.509	0.00	33.95
25.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.062	0.000	3.678	0.00	76.03
25.00	3" Conduit	Yes	5.00	0.000	3.00	2.87	0.00	0.062	0.000	3.678	0.00	59.22
25.00	7/8" Coax	Yes	5.00	0.000	0.52	1.84	0.00	0.062	0.000	3.678	0.00	35.15
30.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.064	0.000	3.822	0.00	77.45
30.00	3" Conduit	Yes	5.00	0.000	3.00	2.90	0.00	0.064	0.000	3.822	0.00	60.50
30.00	7/8" Coax	Yes	5.00	0.000	0.52	1.87	0.00	0.064	0.000	3.822	0.00	36.16
35.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.065	0.000	3.948	0.00	78.68
35.00	3" Conduit	Yes	5.00	0.000	3.00	2.93	0.00	0.065	0.000	3.948	0.00	61.61
35.00	7/8" Coax	Yes	5.00	0.000	0.52	1.89	0.00	0.065	0.000	3.948	0.00	37.04
40.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.066	0.000	4.061	0.00	79.77
40.00	3" Conduit	Yes	5.00	0.000	3.00	2.95	0.00	0.066	0.000	4.061	0.00	62.60
40.00	7/8" Coax	Yes	5.00	0.000	0.52	1.92	0.00	0.066	0.000	4.061	0.00	37.83
45.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.068	0.000	4.163	0.00	80.75
45.00	3" Conduit	Yes	5.00	0.000	3.00	2.97	0.00	0.068	0.000	4.163	0.00	63.48
45.00	7/8" Coax	Yes	5.00	0.000	0.52	1.94	0.00	0.068	0.000	4.163	0.00	38.54
45.42	2" Conduit	Yes	0.42	0.000	0.00	0.00	0.00	0.068	0.000	4.171	0.00	6.74
45.42	3" Conduit	Yes	0.42	0.000	3.00	0.25	0.00	0.068	0.000	4.171	0.00	5.30
45.42	7/8" Coax	Yes	0.42	0.000	0.52	0.16	0.00	0.068	0.000	4.171	0.00	3.22
48.90	2" Conduit	Yes	3.48	0.000	0.00	0.00	0.00	0.069	0.000	4.236	0.00	56.74
48.90	3" Conduit	Yes	3.48	0.000	3.00	2.08	0.00	0.069	0.000	4.236	0.00	44.67
48.90	7/8" Coax	Yes	3.48	0.000	0.52	1.36	0.00	0.069	0.000	4.236	0.00	27.20
50.00	2" Conduit	Yes	1.10	0.000	0.00	0.00	0.00	0.070	0.000	4.256	0.00	17.96
50.00	3" Conduit	Yes	1.10	0.000	3.00	0.66	0.00	0.070	0.000	4.256	0.00	14.14
50.00	7/8" Coax	Yes	1.10	0.000	0.52	0.43	0.00	0.070	0.000	4.256	0.00	8.62
52.75	2" Conduit	Yes	2.75	0.000	0.00	0.00	0.00	0.070	0.000	4.304	0.00	45.16
52.75	3" Conduit	Yes	2.75	0.000	3.00	1.65	0.00	0.070	0.000	4.304	0.00	35.59
52.75	7/8" Coax	Yes	2.75	0.000	0.52	1.08	0.00	0.070	0.000	4.304	0.00	21.74
55.00	2" Conduit	Yes	2.25	0.000	0.00	0.00	0.00	0.069	0.000	4.342	0.00	37.11
55.00	3" Conduit	Yes	2.25	0.000	3.00	1.35	0.00	0.069	0.000	4.342	0.00	29.27
55.00	7/8" Coax	Yes	2.25	0.000	0.52	0.89	0.00	0.069	0.000	4.342	0.00	17.90
57.15	2" Conduit	Yes	2.15	0.000	0.00	0.00	0.00	0.070	0.000	4.378	0.00	35.60
57.15	3" Conduit	Yes	2.15	0.000	3.00	1.29	0.00	0.070	0.000	4.378	0.00	28.10
57.15	7/8" Coax	Yes	2.15	0.000	0.52	0.85	0.00	0.070	0.000	4.378	0.00	17.21
60.00	2" Conduit	Yes	2.85	0.000	0.00	0.00	0.00	0.071	0.000	4.423	0.00	47.44
60.00	3" Conduit	Yes	2.85	0.000	3.00	1.72	0.00	0.071	0.000	4.423	0.00	37.46

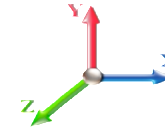
Linear Appurtenance Segment Forces (Factored)

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/21/2019
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Load Case: 1.2D + 1.0Di + 1.0Wi 40 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00



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)
60.00	7/8" Coax	Yes	2.85	0.000	0.52	1.13	0.00	0.071	0.000	4.423	0.00	22.99
65.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.072	0.000	4.498	0.00	83.93
65.00	3" Conduit	Yes	5.00	0.000	3.00	3.03	0.00	0.072	0.000	4.498	0.00	66.37
65.00	7/8" Coax	Yes	5.00	0.000	0.52	2.00	0.00	0.072	0.000	4.498	0.00	40.86
70.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.074	0.000	4.569	0.00	84.60
70.00	3" Conduit	Yes	5.00	0.000	3.00	3.05	0.00	0.074	0.000	4.569	0.00	66.97
70.00	7/8" Coax	Yes	5.00	0.000	0.52	2.01	0.00	0.074	0.000	4.569	0.00	41.34
75.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.075	0.000	4.635	0.00	85.23
75.00	3" Conduit	Yes	5.00	0.000	3.00	3.06	0.00	0.075	0.000	4.635	0.00	67.54
75.00	7/8" Coax	Yes	5.00	0.000	0.52	2.03	0.00	0.075	0.000	4.635	0.00	41.80
80.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.077	0.000	4.699	0.00	85.82
80.00	3" Conduit	Yes	5.00	0.000	3.00	3.07	0.00	0.077	0.000	4.699	0.00	68.08
80.00	7/8" Coax	Yes	5.00	0.000	0.52	2.04	0.00	0.077	0.000	4.699	0.00	42.24
84.00	2" Conduit	Yes	4.00	0.000	0.00	0.00	0.00	0.079	0.000	4.747	0.00	69.02
84.00	3" Conduit	Yes	4.00	0.000	3.00	2.46	0.00	0.079	0.000	4.747	0.00	54.79
84.00	7/8" Coax	Yes	4.00	0.000	0.52	1.64	0.00	0.079	0.000	4.747	0.00	34.05
85.00	2" Conduit	Yes	1.00	0.000	0.00	0.00	0.00	0.080	0.000	4.759	0.00	17.28
85.00	3" Conduit	Yes	1.00	0.000	3.00	0.62	0.00	0.080	0.000	4.759	0.00	13.72
85.00	7/8" Coax	Yes	1.00	0.000	0.52	0.41	0.00	0.080	0.000	4.759	0.00	8.53
87.00	2" Conduit	Yes	2.00	0.000	0.00	0.00	0.00	0.080	0.000	4.782	0.00	34.64
87.00	3" Conduit	Yes	2.00	0.000	3.00	1.23	0.00	0.080	0.000	4.782	0.00	27.51
87.00	7/8" Coax	Yes	2.00	0.000	0.52	0.82	0.00	0.080	0.000	4.782	0.00	17.12
90.00	2" Conduit	Yes	3.00	0.000	0.00	0.00	0.00	0.081	0.000	4.817	0.00	52.15
90.00	3" Conduit	Yes	3.00	0.000	3.00	1.86	0.00	0.081	0.000	4.817	0.00	41.45
90.00	7/8" Coax	Yes	3.00	0.000	0.52	1.24	0.00	0.081	0.000	4.817	0.00	25.83
90.42	2" Conduit	Yes	0.42	0.000	0.00	0.00	0.00	0.082	0.000	4.821	0.00	7.25
90.42	3" Conduit	Yes	0.42	0.000	3.00	0.26	0.00	0.082	0.000	4.821	0.00	5.76
90.42	7/8" Coax	Yes	0.42	0.000	0.52	0.17	0.00	0.082	0.000	4.821	0.00	3.59
95.00	2" Conduit	Yes	4.58	0.000	0.00	0.00	0.00	0.082	0.000	4.872	0.00	80.14
95.00	3" Conduit	Yes	4.58	0.000	3.00	2.84	0.00	0.082	0.000	4.872	0.00	63.75
95.00	7/8" Coax	Yes	4.58	0.000	0.52	1.90	0.00	0.082	0.000	4.872	0.00	39.80
100.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.084	0.000	4.925	0.00	87.92
100.00	3" Conduit	Yes	5.00	0.000	3.00	3.11	0.00	0.084	0.000	4.925	0.00	69.98
100.00	7/8" Coax	Yes	5.00	0.000	0.52	2.08	0.00	0.084	0.000	4.925	0.00	43.78
105.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	4.976	0.00	88.39
105.00	3" Conduit	Yes	5.00	0.000	3.00	3.12	0.00	0.086	0.000	4.976	0.00	70.41
105.00	7/8" Coax	Yes	5.00	0.000	0.52	2.09	0.00	0.086	0.000	4.976	0.00	44.13
109.50	2" Conduit	Yes	4.50	0.000	0.00	0.00	0.00	0.088	0.000	5.020	0.00	79.91
109.50	3" Conduit	Yes	4.50	0.000	3.00	2.82	0.00	0.088	0.000	5.020	0.00	63.70
109.50	7/8" Coax	Yes	4.50	0.000	0.52	1.89	0.00	0.088	0.000	5.020	0.00	39.98
110.00	2" Conduit	Yes	0.50	0.000	0.00	0.00	0.00	0.089	0.000	5.025	0.00	8.88
110.00	3" Conduit	Yes	0.50	0.000	3.00	0.31	0.00	0.089	0.000	5.025	0.00	7.08
110.00	7/8" Coax	Yes	0.50	0.000	0.52	0.21	0.00	0.089	0.000	5.025	0.00	4.45
112.25	2" Conduit	Yes	2.25	0.000	0.00	0.00	0.00	0.090	0.000	5.046	0.00	40.07
112.25	3" Conduit	Yes	2.25	0.000	3.00	1.41	0.00	0.090	0.000	5.046	0.00	31.95
112.25	7/8" Coax	Yes	2.25	0.000	0.52	0.95	0.00	0.090	0.000	5.046	0.00	20.07
115.00	2" Conduit	Yes	2.75	0.000	0.00	0.00	0.00	0.091	0.000	5.072	0.00	49.10

Linear Appurtenance Segment Forces (Factored)

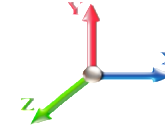
Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/21/2019
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0Di + 1.0Wi 40 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00



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)
115.00	3" Conduit	Yes	2.75	0.000	3.00	1.73	0.00	0.091	0.000	5.072	0.00	39.17
115.00	7/8" Coax	Yes	2.75	0.000	0.52	1.16	0.00	0.091	0.000	5.072	0.00	24.63
120.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	5.117	0.00	89.69
120.00	3" Conduit	Yes	5.00	0.000	3.00	3.15	0.00	0.093	0.000	5.117	0.00	71.60
120.00	7/8" Coax	Yes	5.00	0.000	0.52	2.11	0.00	0.093	0.000	5.117	0.00	45.09
123.58	2" Conduit	Yes	3.58	0.000	0.00	0.00	0.00	0.095	0.000	5.149	0.00	64.49
123.58	3" Conduit	Yes	3.58	0.000	3.00	2.26	0.00	0.095	0.000	5.149	0.00	51.50
123.58	7/8" Coax	Yes	3.58	0.000	0.52	1.52	0.00	0.095	0.000	5.149	0.00	32.47
125.00	2" Conduit	Yes	1.42	0.000	0.00	0.00	0.00	0.097	0.000	5.162	0.00	25.53
125.00	3" Conduit	Yes	1.42	0.000	3.00	0.89	0.00	0.097	0.000	5.162	0.00	20.39
125.00	7/8" Coax	Yes	1.42	0.000	0.52	0.60	0.00	0.097	0.000	5.162	0.00	12.86
125.60	2" Conduit	Yes	0.60	0.000	0.00	0.00	0.00	0.097	0.000	5.167	0.00	10.82
125.60	3" Conduit	Yes	0.60	0.000	3.00	0.38	0.00	0.097	0.000	5.167	0.00	8.64
125.60	7/8" Coax	Yes	0.60	0.000	0.52	0.25	0.00	0.097	0.000	5.167	0.00	5.45
129.00	2" Conduit	Yes	3.40	0.000	0.00	0.00	0.00	0.099	0.000	5.196	0.00	61.48
129.00	3" Conduit	Yes	3.40	0.000	3.00	2.15	0.00	0.099	0.000	5.196	0.00	49.13
129.00	7/8" Coax	Yes	3.40	0.000	0.52	1.45	0.00	0.099	0.000	5.196	0.00	31.02
130.00	2" Conduit	Yes	1.00	0.000	0.00	0.00	0.00	0.098	0.000	5.204	0.00	18.10
130.00	3" Conduit	Yes	1.00	0.000	3.00	0.63	0.00	0.098	0.000	5.204	0.00	14.46
130.00	7/8" Coax	Yes	1.00	0.000	0.52	0.43	0.00	0.098	0.000	5.204	0.00	9.14
135.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.085	0.000	5.246	0.00	90.86
135.00	3" Conduit	Yes	5.00	0.000	3.00	3.17	0.00	0.085	0.000	5.246	0.00	72.67
136.26	2" Conduit	Yes	1.26	0.000	0.00	0.00	0.00	0.087	0.000	5.256	0.00	22.92
136.26	3" Conduit	Yes	1.26	0.000	3.00	0.80	0.00	0.087	0.000	5.256	0.00	18.33
140.00	2" Conduit	Yes	3.74	0.000	0.00	0.00	0.00	0.088	0.000	5.286	0.00	68.24
140.00	3" Conduit	Yes	3.74	0.000	3.00	2.38	0.00	0.088	0.000	5.286	0.00	54.60
145.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	5.325	0.00	91.59
145.00	3" Conduit	Yes	5.00	0.000	3.00	3.18	0.00	0.091	0.000	5.325	0.00	73.32
150.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.094	0.000	5.364	0.00	91.93
150.00	3" Conduit	Yes	5.00	0.000	3.00	3.19	0.00	0.094	0.000	5.364	0.00	73.64
155.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	5.401	0.00	92.27
155.00	3" Conduit	Yes	5.00	0.000	3.00	3.20	0.00	0.097	0.000	5.401	0.00	73.95
160.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.002	5.437	0.00	92.60
160.00	3" Conduit	Yes	5.00	0.000	3.00	3.20	0.00	0.101	1.002	5.437	0.00	74.25
161.50	2" Conduit	Yes	1.50	0.000	0.00	0.00	0.00	0.103	1.009	5.448	0.00	27.81
161.50	3" Conduit	Yes	1.50	0.000	3.00	0.96	0.00	0.103	1.009	5.448	0.00	22.30
165.00	2" Conduit	Yes	3.50	0.000	0.00	0.00	0.00	0.105	1.015	5.472	0.00	65.04
165.00	3" Conduit	Yes	3.50	0.000	3.00	2.25	0.00	0.105	1.015	5.472	0.00	52.18
165.25	2" Conduit	Yes	0.25	0.000	0.00	0.00	0.00	0.106	1.019	5.474	0.00	4.65
165.25	3" Conduit	Yes	0.25	0.000	3.00	0.16	0.00	0.106	1.019	5.474	0.00	3.73
169.58	2" Conduit	Yes	4.33	0.000	0.00	0.00	0.00	0.108	1.025	5.504	0.00	80.77
169.58	3" Conduit	Yes	4.33	0.000	3.00	2.78	0.00	0.108	1.025	5.504	0.00	64.82
170.00	2" Conduit	Yes	0.42	0.000	0.00	0.00	0.00	0.109	1.027	5.507	0.00	7.77
170.00	3" Conduit	Yes	0.42	0.000	3.00	0.27	0.00	0.109	1.027	5.507	0.00	6.24
175.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.111	1.034	5.541	0.00	93.53
175.00	3" Conduit	Yes	5.00	0.000	3.00	3.22	0.00	0.111	1.034	5.541	0.00	75.10

Linear Appurtenance Segment Forces (Factored)

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/21/2019
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

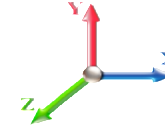


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Load Case: 1.2D + 1.0Di + 1.0Wi 40 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



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)
Totals:											0.0	6,368.9

Calculated Forces

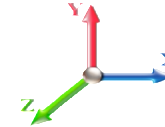
Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/21/2019
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0Di + 1.0Wi 40 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 26

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	-133.0	-9.39	0.00	-1374.2	0.00	1374.20	8794.96	4397.48	21496.0	10671.5	0.00	0.000	0.000	0.144
5.00	-129.4	-9.36	0.00	-1327.2	0.00	1327.23	8639.43	4319.71	20738.5	10295.5	0.02	-0.036	0.000	0.144
10.00	-125.9	-9.32	0.00	-1280.4	0.00	1280.43	8483.89	4241.95	19994.7	9926.22	0.08	-0.074	0.000	0.144
15.00	-122.4	-9.29	0.00	-1233.8	0.00	1233.81	8328.36	4164.18	19264.4	9563.67	0.17	-0.111	0.000	0.144
20.00	-118.9	-9.24	0.00	-1187.3	0.00	1187.37	8172.83	4086.41	18547.7	9207.87	0.31	-0.150	0.000	0.144
25.00	-115.4	-9.19	0.00	-1141.1	0.00	1141.17	8017.29	4008.65	17844.6	8858.82	0.49	-0.189	0.000	0.143
30.00	-112.0	-9.13	0.00	-1095.2	0.00	1095.23	7861.76	3930.88	17155.1	8516.51	0.71	-0.229	0.000	0.143
35.00	-108.7	-9.07	0.00	-1049.5	0.00	1049.57	7706.22	3853.11	16479.1	8180.95	0.97	-0.269	0.000	0.142
40.00	-105.3	-9.00	0.00	-1004.2	0.00	1004.24	7550.69	3775.35	15816.8	7852.13	1.27	-0.310	0.000	0.142
45.00	-102.0	-8.89	0.00	-959.25	0.00	959.25	7395.16	3697.58	15168.0	7530.06	1.62	-0.352	0.000	0.141
45.42	-101.8	-8.91	0.00	-955.54	0.00	955.54	7382.20	3691.10	15114.6	7503.52	1.65	-0.356	0.000	0.141
48.90	-98.40	-8.83	0.00	-924.51	0.00	924.51	7273.84	3636.92	14671.4	7283.52	1.92	-0.386	0.000	0.094
50.00	-97.33	-8.81	0.00	-914.80	0.00	914.80	7239.62	3619.81	14532.8	7214.73	2.01	-0.392	0.000	0.094
52.75	-94.68	-8.74	0.00	-890.58	0.00	890.58	5810.43	2905.21	11825.7	5870.80	2.24	-0.408	0.000	0.095
55.00	-93.40	-8.70	0.00	-870.91	0.00	870.91	5769.82	2884.91	11629.7	5773.48	2.44	-0.421	0.000	0.105
57.15	-92.19	-8.66	0.00	-852.21	0.00	852.21	5730.75	2865.38	11443.3	5680.95	2.63	-0.435	0.000	0.104
57.15	-92.19	-8.66	0.00	-852.21	0.00	852.21	5730.75	2865.38	11443.3	5680.95	2.63	-0.435	0.000	0.104
60.00	-90.60	-8.63	0.00	-827.54	0.00	827.54	5678.55	2839.28	11197.7	5559.03	2.90	-0.454	0.000	0.165
65.00	-87.83	-8.55	0.00	-784.41	0.00	784.41	5551.73	2775.86	10705.1	5314.51	3.40	-0.506	0.000	0.163
70.00	-85.11	-8.47	0.00	-741.65	0.00	741.65	5427.30	2713.65	10228.2	5077.73	3.96	-0.558	0.000	0.162
75.00	-82.43	-8.39	0.00	-699.28	0.00	699.28	5302.88	2651.44	9762.15	4846.34	4.57	-0.611	0.000	0.160
80.00	-79.79	-8.30	0.00	-657.31	0.00	657.31	5178.45	2589.22	9306.93	4620.35	5.24	-0.664	0.000	0.158
84.00	-77.72	-8.21	0.00	-624.11	0.00	624.11	5078.91	2539.45	8950.59	4443.45	5.82	-0.708	0.000	0.156
85.00	-76.99	-8.20	0.00	-615.90	0.00	615.90	5054.02	2527.01	8862.59	4399.76	5.96	-0.719	0.000	0.155
87.00	-75.53	-8.16	0.00	-599.50	0.00	599.50	5004.25	2502.13	8687.89	4313.04	6.27	-0.741	0.000	0.094
90.00	-73.38	-8.07	0.00	-575.03	0.00	575.03	4929.59	2464.80	8429.11	4184.57	6.74	-0.761	0.000	0.092
90.42	-73.08	-8.07	0.00	-571.67	0.00	571.67	3591.78	1795.89	6277.53	3116.43	6.81	-0.764	0.000	0.098
95.00	-71.06	-7.97	0.00	-534.67	0.00	534.67	3535.98	1767.99	6038.44	2997.74	7.56	-0.794	0.000	0.107
100.00	-68.45	-7.78	0.00	-494.82	0.00	494.82	3473.75	1736.87	5780.45	2869.66	8.41	-0.830	0.000	0.103
105.00	-66.32	-7.66	0.00	-455.93	0.00	455.93	3410.09	1705.04	5525.58	2743.13	9.30	-0.866	0.000	0.098
109.50	-62.86	-7.01	0.00	-419.35	0.00	419.35	3351.58	1675.79	5299.03	2630.66	10.13	-0.899	0.000	0.093
110.00	-62.65	-7.01	0.00	-415.84	0.00	415.84	3345.00	1672.50	5274.03	2618.25	10.22	-0.902	0.000	0.092
112.25	-61.72	-6.96	0.00	-400.07	0.00	400.07	3315.25	1657.63	5161.96	2562.62	10.65	-0.918	0.000	0.090
112.25	-61.72	-6.96	0.00	-400.07	0.00	400.07	3315.25	1657.63	5161.96	2562.62	10.65	-0.918	0.000	0.090
115.00	-60.59	-6.92	0.00	-380.94	0.00	380.94	3278.49	1639.25	5025.98	2495.11	11.19	-0.937	0.000	0.171
120.00	-58.58	-6.83	0.00	-346.34	0.00	346.34	3210.56	1605.28	4781.62	2373.80	12.20	-1.004	0.000	0.164
123.58	-57.16	-6.75	0.00	-321.88	0.00	321.88	3148.16	1574.08	4590.15	2278.75	12.98	-1.051	0.000	0.159
125.00	-56.41	-6.71	0.00	-312.32	0.00	312.32	3121.72	1560.86	4512.97	2240.43	13.29	-1.070	0.000	0.157
125.60	-56.10	-6.71	0.00	-308.29	0.00	308.29	3110.52	1555.26	4480.48	2224.30	13.43	-1.078	0.000	0.089
129.00	-54.34	-6.61	0.00	-285.48	0.00	285.48	2149.47	1074.74	3099.22	1538.58	14.20	-1.103	0.000	0.094
130.00	-53.81	-6.55	0.00	-278.83	0.00	278.83	2141.27	1070.63	3068.69	1523.43	14.43	-1.111	0.000	0.104
135.00	-52.14	-6.43	0.00	-246.06	0.00	246.06	2099.38	1049.69	2916.97	1448.11	15.62	-1.150	0.000	0.096
136.26	-51.73	-6.41	0.00	-237.96	0.00	237.96	2088.60	1044.30	2879.00	1429.26	15.92	-1.160	0.000	0.094
136.26	-51.73	-6.41	0.00	-237.96	0.00	237.96	2088.60	1044.30	2879.00	1429.26	15.92	-1.160	0.000	0.094
140.00	-50.50	-6.34	0.00	-214.00	0.00	214.00	2056.07	1028.04	2766.99	1373.65	16.84	-1.187	0.000	0.180
145.00	-46.49	-5.93	0.00	-182.28	0.00	182.28	2011.34	1005.67	2618.95	1300.16	18.13	-1.259	0.000	0.163
150.00	-44.96	-5.84	0.00	-152.63	0.00	152.63	1965.18	982.59	2473.01	1227.71	19.48	-1.326	0.000	0.147
155.00	-36.40	-4.83	0.00	-123.44	0.00	123.44	1917.59	958.80	2329.38	1156.40	20.90	-1.387	0.000	0.126

Calculated Forces

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/21/2019
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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160.00	-35.01	-4.71	0.00	-99.31	0.00	99.31	1868.58	934.29	2188.24	1086.34	22.39	-1.441	0.000	0.110
161.50	-31.35	-4.33	0.00	-92.25	0.00	92.25	1853.60	926.80	2146.41	1065.57	22.84	-1.457	0.000	0.104
165.00	-30.40	-4.24	0.00	-77.11	0.00	77.11	1818.15	909.07	2049.77	1017.59	23.92	-1.490	0.000	0.093
165.25	-30.34	-4.24	0.00	-76.05	0.00	76.05	1815.59	907.79	2042.92	1014.19	24.00	-1.493	0.000	0.092
169.58	-28.90	-4.13	0.00	-57.66	0.00	57.66	1040.26	520.13	1155.41	573.59	25.37	-1.528	0.000	0.128
170.00	-28.80	-4.13	0.00	-55.94	0.00	55.94	1038.39	519.19	1149.55	570.68	25.51	-1.531	0.000	0.126
175.00	-16.50	-2.54	0.00	-35.30	0.00	35.30	1015.17	507.59	1079.51	535.91	27.13	-1.576	0.000	0.082
180.00	-15.65	-2.43	0.00	-22.60	0.00	22.60	990.53	495.27	1010.05	501.43	28.80	-1.608	0.000	0.061
185.00	-8.77	-1.43	0.00	-10.45	0.00	10.45	964.47	482.24	941.35	467.32	30.50	-1.629	0.000	0.031
187.00	-7.99	-1.12	0.00	-5.33	0.00	5.33	953.65	476.82	914.12	453.81	31.18	-1.634	0.000	0.020
190.00	-7.56	-1.05	0.00	-1.98	0.00	1.98	936.98	468.49	873.60	433.69	32.21	-1.637	0.000	0.013
191.50	-0.62	-0.11	0.00	-0.40	0.00	0.40	928.46	464.23	853.48	423.70	32.73	-1.638	0.000	0.002
195.00	-0.18	-0.03	0.00	-0.03	0.00	0.03	908.07	454.03	806.98	400.62	33.93	-1.638	0.000	0.000
196.00	0.00	-0.03	0.00	0.00	0.00	0.00	902.11	451.06	793.81	394.08	34.27	-1.638	0.000	0.000

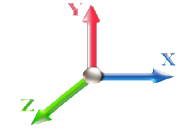
Seismic Segment Forces (Factored)

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/21/2019
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0E				Iterations 24
Gust Response Factor	1.10	Sds	0.19	Ss 0.18
Dead Load Factor	1.20	Seismic Load Factor	1.00	S1 0.07
Wind Load Factor	0.00	Structure Frequency	0.27	SA 0.03
				Seismic Importance Factor 1.00



Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1996.2	0.00	0.03	0.01	35.79	
10.00		1960.6	0.00	0.04	0.03	52.20	
15.00		1925.0	0.01	0.06	0.03	60.46	
20.00		1889.4	0.02	0.06	0.04	64.52	
25.00		1853.8	0.03	0.07	0.04	66.31	
30.00		1818.1	0.04	0.07	0.04	66.93	
35.00		1782.5	0.06	0.07	0.04	67.00	
40.00		1746.9	0.08	0.07	0.04	66.89	
45.00		1711.3	0.10	0.07	0.04	66.76	
45.42	Bot - Section 2	141.00	0.10	0.07	0.04	5.51	
48.90	RB1	2125.6	0.12	0.07	0.03	84.15	
50.00		664.80	0.12	0.07	0.03	26.43	
52.75	Top - Section 1	1648.4	0.14	0.07	0.03	66.17	
55.00		600.65	0.15	0.07	0.03	24.29	
57.15	RT1	568.56	0.16	0.07	0.03	23.13	
60.00		745.55	0.18	0.07	0.03	30.51	
65.00		1285.6	0.21	0.06	0.02	52.67	
70.00		1257.1	0.24	0.06	0.02	50.61	
75.00		1228.6	0.28	0.05	0.01	47.14	
80.00		1200.1	0.31	0.04	0.01	41.79	
84.00	Bot - Section 3	939.59	0.35	0.03	0.01	28.62	
85.00		409.65	0.36	0.03	0.01	11.93	
87.00	RB2	813.31	0.37	0.03	0.01	21.28	
90.00		1205.0	0.40	0.02	0.01	25.24	
90.42	Top - Section 2	165.94	0.40	0.02	0.01	3.34	
95.00		781.83	0.44	0.00	0.01	8.09	
100.00	Appurtenance(s)	908.43	0.49	-0.01	0.01	-1.79	
105.00		811.06	0.54	-0.03	0.01	-11.92	
109.50	Appurtenance(s)	1161.6	0.59	-0.05	0.01	-29.28	
110.00		78.01	0.60	-0.05	0.01	-2.05	
112.25	RT2	348.39	0.62	-0.06	0.02	-10.72	
115.00		419.93	0.65	-0.07	0.02	-14.89	
120.00		746.94	0.71	-0.09	0.03	-31.06	
123.58	Bot - Section 4	522.16	0.75	-0.10	0.04	-22.94	
125.00		358.80	0.77	-0.11	0.05	-15.93	
125.60	RB3	151.06	0.78	-0.11	0.05	-6.72	
129.00	Top - Section 3	845.83	0.82	-0.12	0.06	-37.46	
130.00	Appurtenance(s)	159.35	0.83	-0.12	0.06	-7.00	
135.00		522.14	0.90	-0.12	0.09	-21.07	
136.26	RT3	129.05	0.91	-0.12	0.09	-5.03	
140.00		377.06	0.96	-0.12	0.11	-12.72	
145.00	Appurtenance(s)	1619.2	1.03	-0.10	0.15	-39.18	
150.00		474.06	1.11	-0.07	0.19	-5.58	
155.00	Appurtenance(s)	2687.3	1.18	-0.01	0.24	9.51	
160.00		442.00	1.26	0.07	0.30	9.61	

Seismic Segment Forces (Factored)

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/21/2019	
Site Name: Torrington/Oandg Ind Inc	Exposure: C		
Height: 196.00 (ft)	Crest Height: 0.00		
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil		
Gh: 1.1	Topography: 1	Struct Class: II	Page: 44



161.50	Appurtenance(s)	1629.4	1.28	0.10	0.32	45.26	
165.00		296.50	1.34	0.18	0.37	12.71	
165.25	Bot - Section 5	20.88	1.34	0.19	0.38	0.92	
169.58	Top - Section 4	596.66	1.41	0.31	0.45	38.70	
170.00		22.76	1.42	0.33	0.45	1.53	
175.00	Appurtenance(s)	3804.5	1.51	0.52	0.55	358.16	
180.00		256.70	1.59	0.76	0.66	31.93	
185.00	Appurtenance(s)	1967.1	1.68	1.06	0.79	310.38	
187.00	Appurtenance(s)	203.41	1.72	1.20	0.85	34.99	
190.00		139.91	1.78	1.43	0.94	27.20	
191.50	Appurtenance(s)	2438.9	1.80	1.56	0.98	502.46	
195.00		156.13	1.87	1.88	1.10	36.58	
196.00	Appurtenance(s)	50.15	1.89	1.98	1.14	12.17	
Totals:		56,811.4				2,254.6	Total Wind: 45,011.4

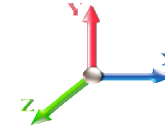
Seismic Base Shear is Less Than 50% of Wind Force - An Analysis is NOT Required

Calculated Forces

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/21/2019
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Load Case: 1.2D + 1.0E						Iterations 24
Gust Response Factor	1.10		Sds	0.19		Ss 0.18
Dead Load Factor	1.20	Seismic Load Factor	1.00	Sd1	0.10	S1 0.07
Wind Load Factor	0.00	Structure Frequency	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	-81.38	-2.54	0.00	-330.35	0.00	330.35	8794.96	4397.48	21496.0	10671.5	0.00	0.00	0.00	0.040
5.00	-78.60	-2.51	0.00	-317.68	0.00	317.68	8639.43	4319.71	20738.5	10295.5	0.00	-0.01	0.040	
10.00	-75.86	-2.47	0.00	-305.12	0.00	305.12	8483.89	4241.95	19994.7	9926.22	0.02	-0.02	0.040	
15.00	-73.17	-2.42	0.00	-292.77	0.00	292.77	8328.36	4164.18	19264.4	9563.67	0.04	-0.03	0.039	
20.00	-70.51	-2.37	0.00	-280.67	0.00	280.67	8172.83	4086.41	18547.7	9207.87	0.07	-0.04	0.039	
25.00	-67.90	-2.31	0.00	-268.84	0.00	268.84	8017.29	4008.65	17844.6	8858.82	0.12	-0.04	0.039	
30.00	-65.33	-2.25	0.00	-257.30	0.00	257.30	7861.76	3930.88	17155.1	8516.51	0.17	-0.05	0.039	
35.00	-62.81	-2.19	0.00	-246.05	0.00	246.05	7706.22	3853.11	16479.1	8180.95	0.23	-0.06	0.038	
40.00	-60.33	-2.13	0.00	-235.10	0.00	235.10	7550.69	3775.35	15816.8	7852.13	0.30	-0.07	0.038	
45.00	-57.89	-2.07	0.00	-224.44	0.00	224.44	7395.16	3697.58	15168.0	7530.06	0.39	-0.08	0.038	
45.42	-57.68	-2.06	0.00	-223.58	0.00	223.58	7382.20	3691.10	15114.6	7503.52	0.39	-0.08	0.038	
48.90	-54.86	-1.98	0.00	-216.39	0.00	216.39	7273.84	3636.92	14671.4	7283.52	0.46	-0.09	0.025	
50.00	-53.98	-1.95	0.00	-214.21	0.00	214.21	7239.62	3619.81	14532.8	7214.73	0.48	-0.09	0.025	
52.75	-51.79	-1.89	0.00	-208.84	0.00	208.84	5810.43	2905.21	11825.7	5870.80	0.53	-0.10	0.025	
55.00	-50.90	-1.87	0.00	-204.59	0.00	204.59	5769.82	2884.91	11629.7	5773.48	0.58	-0.10	0.028	
57.15	-50.05	-1.84	0.00	-200.58	0.00	200.58	5730.75	2865.38	11443.3	5680.95	0.62	-0.10	0.028	
57.15	-50.05	-1.84	0.00	-200.58	0.00	200.58	5730.75	2865.38	11443.3	5680.95	0.62	-0.10	0.028	
60.00	-48.93	-1.82	0.00	-195.32	0.00	195.32	5678.55	2839.28	11197.7	5559.03	0.69	-0.11	0.044	
65.00	-47.00	-1.77	0.00	-186.23	0.00	186.23	5551.73	2775.86	10705.1	5314.51	0.81	-0.12	0.044	
70.00	-45.11	-1.73	0.00	-177.37	0.00	177.37	5427.30	2713.65	10228.2	5077.73	0.94	-0.13	0.043	
75.00	-43.25	-1.69	0.00	-168.73	0.00	168.73	5302.88	2651.44	9762.15	4846.34	1.08	-0.14	0.043	
80.00	-41.42	-1.65	0.00	-160.30	0.00	160.30	5178.45	2589.22	9306.93	4620.35	1.24	-0.16	0.043	
84.00	-39.99	-1.62	0.00	-153.72	0.00	153.72	5078.91	2539.45	8950.59	4443.45	1.38	-0.17	0.042	
85.00	-39.42	-1.61	0.00	-152.10	0.00	152.10	5054.02	2527.01	8862.59	4399.76	1.41	-0.17	0.042	
87.00	-38.29	-1.59	0.00	-148.88	0.00	148.88	5004.25	2502.13	8687.89	4313.04	1.48	-0.18	0.026	
90.00	-36.61	-1.56	0.00	-144.12	0.00	144.12	4929.59	2464.80	8429.11	4184.57	1.60	-0.18	0.025	
90.42	-36.38	-1.56	0.00	-143.47	0.00	143.47	3591.78	1795.89	6277.53	3116.43	1.61	-0.18	0.027	
95.00	-35.09	-1.55	0.00	-136.33	0.00	136.33	3535.98	1767.99	6038.44	2997.74	1.79	-0.19	0.030	
100.00	-33.61	-1.55	0.00	-128.58	0.00	128.58	3473.75	1736.87	5780.45	2869.66	1.99	-0.20	0.029	
105.00	-32.25	-1.55	0.00	-120.83	0.00	120.83	3410.09	1705.04	5525.58	2743.13	2.21	-0.21	0.028	
109.50	-30.51	-1.55	0.00	-113.85	0.00	113.85	3351.58	1675.79	5299.03	2630.66	2.41	-0.22	0.027	
110.00	-30.38	-1.55	0.00	-113.07	0.00	113.07	3345.00	1672.50	5274.03	2618.25	2.43	-0.22	0.027	
112.25	-29.79	-1.55	0.00	-109.59	0.00	109.59	3315.25	1657.63	5161.96	2562.62	2.54	-0.22	0.027	
112.25	-29.79	-1.55	0.00	-109.59	0.00	109.59	3315.25	1657.63	5161.96	2562.62	2.54	-0.22	0.027	
115.00	-29.07	-1.55	0.00	-105.33	0.00	105.33	3278.49	1639.25	5025.98	2495.11	2.67	-0.23	0.051	
120.00	-27.80	-1.55	0.00	-97.58	0.00	97.58	3210.56	1605.28	4781.62	2373.80	2.91	-0.25	0.050	
123.58	-26.90	-1.55	0.00	-92.01	0.00	92.01	3148.16	1574.08	4590.15	2278.75	3.10	-0.26	0.049	
125.00	-26.36	-1.55	0.00	-89.81	0.00	89.81	3121.72	1560.86	4512.97	2240.43	3.18	-0.27	0.049	
125.60	-26.13	-1.56	0.00	-88.87	0.00	88.87	3110.52	1555.26	4480.48	2224.30	3.22	-0.27	0.028	
129.00	-24.86	-1.55	0.00	-83.59	0.00	83.59	2149.47	1074.74	3099.22	1538.58	3.41	-0.27	0.029	
130.00	-24.59	-1.55	0.00	-82.03	0.00	82.03	2141.27	1070.63	3068.69	1523.43	3.47	-0.28	0.033	
135.00	-23.59	-1.55	0.00	-74.27	0.00	74.27	2099.38	1049.69	2916.97	1448.11	3.76	-0.29	0.031	
136.26	-23.34	-1.55	0.00	-72.32	0.00	72.32	2088.60	1044.30	2879.00	1429.26	3.84	-0.29	0.030	
136.26	-23.34	-1.55	0.00	-72.32	0.00	72.32	2088.60	1044.30	2879.00	1429.26	3.84	-0.29	0.030	
140.00	-22.60	-1.55	0.00	-66.51	0.00	66.51	2056.07	1028.04	2766.99	1373.65	4.07	-0.30	0.059	
145.00	-20.28	-1.55	0.00	-58.74	0.00	58.74	2011.34	1005.67	2618.95	1300.16	4.40	-0.32	0.055	
150.00	-19.37	-1.55	0.00	-50.99	0.00	50.99	1965.18	982.59	2473.01	1227.71	4.75	-0.34	0.051	

Calculated Forces

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/21/2019
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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155.00	-15.81	-1.53	0.00	-43.23	0.00	43.23	1917.59	958.80	2329.38	1156.40	5.12	-0.37	0.046
160.00	-15.02	-1.51	0.00	-35.61	0.00	35.61	1868.58	934.29	2188.24	1086.34	5.51	-0.38	0.041
161.50	-12.99	-1.46	0.00	-33.34	0.00	33.34	1853.60	926.80	2146.41	1065.57	5.63	-0.39	0.038
165.00	-12.45	-1.44	0.00	-28.24	0.00	28.24	1818.15	909.07	2049.77	1017.59	5.93	-0.40	0.035
165.25	-12.41	-1.44	0.00	-27.87	0.00	27.87	1815.59	907.79	2042.92	1014.19	5.95	-0.40	0.034
169.58	-11.47	-1.40	0.00	-21.62	0.00	21.62	1040.26	520.13	1155.41	573.59	6.32	-0.42	0.049
170.00	-11.42	-1.40	0.00	-21.04	0.00	21.04	1038.39	519.19	1149.55	570.68	6.36	-0.42	0.048
175.00	-6.60	-1.01	0.00	-14.05	0.00	14.05	1015.17	507.59	1079.51	535.91	6.80	-0.43	0.033
180.00	-6.16	-0.97	0.00	-9.02	0.00	9.02	990.53	495.27	1010.05	501.43	7.27	-0.45	0.024
185.00	-3.66	-0.64	0.00	-4.16	0.00	4.16	964.47	482.24	941.35	467.32	7.74	-0.46	0.013
187.00	-3.39	-0.61	0.00	-2.87	0.00	2.87	953.65	476.82	914.12	453.81	7.93	-0.46	0.010
190.00	-3.19	-0.58	0.00	-1.05	0.00	1.05	936.98	468.49	873.60	433.69	8.22	-0.46	0.006
191.50	-0.25	-0.05	0.00	-0.19	0.00	0.19	928.46	464.23	853.48	423.70	8.36	-0.46	0.001
195.00	-0.06	-0.01	0.00	-0.01	0.00	0.01	908.07	454.03	806.98	400.62	8.70	-0.46	0.000
196.00	0.00	-0.01	0.00	0.00	0.00	0.00	902.11	451.06	793.81	394.08	8.80	-0.46	0.000

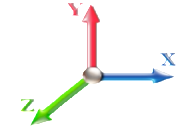
Seismic Segment Forces (Factored)

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/21/2019
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 47

Load Case: 0.9D + 1.0E				Iterations 24
Gust Response Factor	1.10	Sds	0.19	Ss 0.18
Dead Load Factor	0.90	Seismic Load Factor	1.00	S1 0.07
Wind Load Factor	0.00	Structure Frequency	0.27	SA 0.03
				Seismic Importance Factor 1.00



Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1996.2	0.00	0.03	0.01	35.79	
10.00		1960.6	0.00	0.04	0.03	52.20	
15.00		1925.0	0.01	0.06	0.03	60.46	
20.00		1889.4	0.02	0.06	0.04	64.52	
25.00		1853.8	0.03	0.07	0.04	66.31	
30.00		1818.1	0.04	0.07	0.04	66.93	
35.00		1782.5	0.06	0.07	0.04	67.00	
40.00		1746.9	0.08	0.07	0.04	66.89	
45.00		1711.3	0.10	0.07	0.04	66.76	
45.42	Bot - Section 2	141.00	0.10	0.07	0.04	5.51	
48.90	RB1	2125.6	0.12	0.07	0.03	84.15	
50.00		664.80	0.12	0.07	0.03	26.43	
52.75	Top - Section 1	1648.4	0.14	0.07	0.03	66.17	
55.00		600.65	0.15	0.07	0.03	24.29	
57.15	RT1	568.56	0.16	0.07	0.03	23.13	
60.00		745.55	0.18	0.07	0.03	30.51	
65.00		1285.6	0.21	0.06	0.02	52.67	
70.00		1257.1	0.24	0.06	0.02	50.61	
75.00		1228.6	0.28	0.05	0.01	47.14	
80.00		1200.1	0.31	0.04	0.01	41.79	
84.00	Bot - Section 3	939.59	0.35	0.03	0.01	28.62	
85.00		409.65	0.36	0.03	0.01	11.93	
87.00	RB2	813.31	0.37	0.03	0.01	21.28	
90.00		1205.0	0.40	0.02	0.01	25.24	
90.42	Top - Section 2	165.94	0.40	0.02	0.01	3.34	
95.00		781.83	0.44	0.00	0.01	8.09	
100.00	Appurtenance(s)	908.43	0.49	-0.01	0.01	-1.79	
105.00		811.06	0.54	-0.03	0.01	-11.92	
109.50	Appurtenance(s)	1161.6	0.59	-0.05	0.01	-29.28	
110.00		78.01	0.60	-0.05	0.01	-2.05	
112.25	RT2	348.39	0.62	-0.06	0.02	-10.72	
115.00		419.93	0.65	-0.07	0.02	-14.89	
120.00		746.94	0.71	-0.09	0.03	-31.06	
123.58	Bot - Section 4	522.16	0.75	-0.10	0.04	-22.94	
125.00		358.80	0.77	-0.11	0.05	-15.93	
125.60	RB3	151.06	0.78	-0.11	0.05	-6.72	
129.00	Top - Section 3	845.83	0.82	-0.12	0.06	-37.46	
130.00	Appurtenance(s)	159.35	0.83	-0.12	0.06	-7.00	
135.00		522.14	0.90	-0.12	0.09	-21.07	
136.26	RT3	129.05	0.91	-0.12	0.09	-5.03	
140.00		377.06	0.96	-0.12	0.11	-12.72	
145.00	Appurtenance(s)	1619.2	1.03	-0.10	0.15	-39.18	
150.00		474.06	1.11	-0.07	0.19	-5.58	
155.00	Appurtenance(s)	2687.3	1.18	-0.01	0.24	9.51	
160.00		442.00	1.26	0.07	0.30	9.61	

Seismic Segment Forces (Factored)

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/21/2019
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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161.50	Appurtenance(s)	1629.4	1.28	0.10	0.32	45.26	
165.00		296.50	1.34	0.18	0.37	12.71	
165.25	Bot - Section 5	20.88	1.34	0.19	0.38	0.92	
169.58	Top - Section 4	596.66	1.41	0.31	0.45	38.70	
170.00		22.76	1.42	0.33	0.45	1.53	
175.00	Appurtenance(s)	3804.5	1.51	0.52	0.55	358.16	
180.00		256.70	1.59	0.76	0.66	31.93	
185.00	Appurtenance(s)	1967.1	1.68	1.06	0.79	310.38	
187.00	Appurtenance(s)	203.41	1.72	1.20	0.85	34.99	
190.00		139.91	1.78	1.43	0.94	27.20	
191.50	Appurtenance(s)	2438.9	1.80	1.56	0.98	502.46	
195.00		156.13	1.87	1.88	1.10	36.58	
196.00	Appurtenance(s)	50.15	1.89	1.98	1.14	12.17	
Totals:		56,811.4				2,254.6	Total Wind: 45,011.4

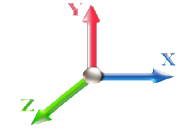
Seismic Base Shear is Less Than 50% of Wind Force - An Analysis is NOT Required

Calculated Forces

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/21/2019
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Load Case: 0.9D + 1.0E										Iterations 24
Gust Response Factor 1.10					Sds 0.19					Ss 0.18
Dead Load Factor 0.90			Seismic Load Factor 1.00			Sd1 0.10			S1 0.07	
Wind Load Factor 0.00			Structure Frequency 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	-61.04	-2.53	0.00	-325.87	0.00	325.87	8794.96	4397.48	21496.0	10671.5	0.00	0.00	0.00	0.037
5.00	-58.95	-2.51	0.00	-313.20	0.00	313.20	8639.43	4319.71	20738.5	10295.5	0.00	-0.01	0.037	
10.00	-56.90	-2.46	0.00	-300.67	0.00	300.67	8483.89	4241.95	19994.7	9926.22	0.02	-0.02	0.037	
15.00	-54.87	-2.41	0.00	-288.36	0.00	288.36	8328.36	4164.18	19264.4	9563.67	0.04	-0.03	0.037	
20.00	-52.88	-2.35	0.00	-276.31	0.00	276.31	8172.83	4086.41	18547.7	9207.87	0.07	-0.04	0.036	
25.00	-50.93	-2.29	0.00	-264.55	0.00	264.55	8017.29	4008.65	17844.6	8858.82	0.12	-0.04	0.036	
30.00	-49.00	-2.23	0.00	-253.08	0.00	253.08	7861.76	3930.88	17155.1	8516.51	0.17	-0.05	0.036	
35.00	-47.11	-2.17	0.00	-241.92	0.00	241.92	7706.22	3853.11	16479.1	8180.95	0.23	-0.06	0.036	
40.00	-45.24	-2.11	0.00	-231.06	0.00	231.06	7550.69	3775.35	15816.8	7852.13	0.30	-0.07	0.035	
45.00	-43.41	-2.04	0.00	-220.51	0.00	220.51	7395.16	3697.58	15168.0	7530.06	0.38	-0.08	0.035	
45.42	-43.26	-2.04	0.00	-219.66	0.00	219.66	7382.20	3691.10	15114.6	7503.52	0.39	-0.08	0.035	
48.90	-41.15	-1.96	0.00	-212.55	0.00	212.55	7273.84	3636.92	14671.4	7283.52	0.45	-0.09	0.023	
50.00	-40.49	-1.93	0.00	-210.40	0.00	210.40	7239.62	3619.81	14532.8	7214.73	0.47	-0.09	0.023	
52.75	-38.84	-1.87	0.00	-205.08	0.00	205.08	5810.43	2905.21	11825.7	5870.80	0.52	-0.09	0.024	
55.00	-38.17	-1.84	0.00	-200.89	0.00	200.89	5769.82	2884.91	11629.7	5773.48	0.57	-0.10	0.026	
57.15	-37.54	-1.82	0.00	-196.93	0.00	196.93	5730.75	2865.38	11443.3	5680.95	0.61	-0.10	0.026	
57.15	-37.54	-1.82	0.00	-196.93	0.00	196.93	5730.75	2865.38	11443.3	5680.95	0.61	-0.10	0.026	
60.00	-36.70	-1.79	0.00	-191.74	0.00	191.74	5678.55	2839.28	11197.7	5559.03	0.68	-0.11	0.041	
65.00	-35.25	-1.75	0.00	-182.78	0.00	182.78	5551.73	2775.86	10705.1	5314.51	0.79	-0.12	0.041	
70.00	-33.83	-1.70	0.00	-174.05	0.00	174.05	5427.30	2713.65	10228.2	5077.73	0.92	-0.13	0.041	
75.00	-32.44	-1.66	0.00	-165.56	0.00	165.56	5302.88	2651.44	9762.15	4846.34	1.06	-0.14	0.040	
80.00	-31.07	-1.62	0.00	-157.28	0.00	157.28	5178.45	2589.22	9306.93	4620.35	1.22	-0.15	0.040	
84.00	-29.99	-1.59	0.00	-150.81	0.00	150.81	5078.91	2539.45	8950.59	4443.45	1.35	-0.17	0.040	
85.00	-29.56	-1.58	0.00	-149.22	0.00	149.22	5054.02	2527.01	8862.59	4399.76	1.39	-0.17	0.040	
87.00	-28.71	-1.56	0.00	-146.07	0.00	146.07	5004.25	2502.13	8687.89	4313.04	1.46	-0.17	0.024	
90.00	-27.46	-1.53	0.00	-141.40	0.00	141.40	4929.59	2464.80	8429.11	4184.57	1.57	-0.18	0.024	
90.42	-27.28	-1.53	0.00	-140.77	0.00	140.77	3591.78	1795.89	6277.53	3116.43	1.59	-0.18	0.025	
95.00	-26.31	-1.52	0.00	-133.77	0.00	133.77	3535.98	1767.99	6038.44	2997.74	1.76	-0.19	0.028	
100.00	-25.21	-1.52	0.00	-126.18	0.00	126.18	3473.75	1736.87	5780.45	2869.66	1.96	-0.20	0.027	
105.00	-24.19	-1.52	0.00	-118.58	0.00	118.58	3410.09	1705.04	5525.58	2743.13	2.17	-0.20	0.027	
109.50	-22.88	-1.52	0.00	-111.74	0.00	111.74	3351.58	1675.79	5299.03	2630.66	2.37	-0.21	0.026	
110.00	-22.78	-1.52	0.00	-110.98	0.00	110.98	3345.00	1672.50	5274.03	2618.25	2.39	-0.21	0.026	
112.25	-22.34	-1.52	0.00	-107.57	0.00	107.57	3315.25	1657.63	5161.96	2562.62	2.49	-0.22	0.025	
112.25	-22.34	-1.52	0.00	-107.57	0.00	107.57	3315.25	1657.63	5161.96	2562.62	2.49	-0.22	0.025	
115.00	-21.80	-1.52	0.00	-103.40	0.00	103.40	3278.49	1639.25	5025.98	2495.11	2.62	-0.22	0.048	
120.00	-20.85	-1.52	0.00	-95.80	0.00	95.80	3210.56	1605.28	4781.62	2373.80	2.86	-0.24	0.047	
123.58	-20.17	-1.52	0.00	-90.34	0.00	90.34	3148.16	1574.08	4590.15	2278.75	3.05	-0.26	0.046	
125.00	-19.77	-1.52	0.00	-88.19	0.00	88.19	3121.72	1560.86	4512.97	2240.43	3.13	-0.26	0.046	
125.60	-19.60	-1.52	0.00	-87.27	0.00	87.27	3110.52	1555.26	4480.48	2224.30	3.16	-0.26	0.026	
129.00	-18.64	-1.52	0.00	-82.10	0.00	82.10	2149.47	1074.74	3099.22	1538.58	3.35	-0.27	0.028	
130.00	-18.44	-1.52	0.00	-80.58	0.00	80.58	2141.27	1070.63	3068.69	1523.43	3.41	-0.27	0.031	
135.00	-17.69	-1.52	0.00	-72.97	0.00	72.97	2099.38	1049.69	2916.97	1448.11	3.70	-0.28	0.029	
136.26	-17.50	-1.52	0.00	-71.06	0.00	71.06	2088.60	1044.30	2879.00	1429.26	3.77	-0.29	0.029	
136.26	-17.50	-1.52	0.00	-71.06	0.00	71.06	2088.60	1044.30	2879.00	1429.26	3.77	-0.29	0.029	
140.00	-16.95	-1.52	0.00	-65.37	0.00	65.37	2056.07	1028.04	2766.99	1373.65	4.00	-0.29	0.056	
145.00	-15.21	-1.52	0.00	-57.76	0.00	57.76	2011.34	1005.67	2618.95	1300.16	4.32	-0.32	0.052	
150.00	-14.53	-1.52	0.00	-50.17	0.00	50.17	1965.18	982.59	2473.01	1227.71	4.67	-0.34	0.048	

Calculated Forces

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/21/2019
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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155.00	-11.85	-1.50	0.00	-42.57	0.00	42.57	1917.59	958.80	2329.38	1156.40	5.03	-0.36	0.043
160.00	-11.26	-1.49	0.00	-35.08	0.00	35.08	1868.58	934.29	2188.24	1086.34	5.42	-0.38	0.038
161.50	-9.74	-1.43	0.00	-32.85	0.00	32.85	1853.60	926.80	2146.41	1065.57	5.54	-0.38	0.036
165.00	-9.34	-1.42	0.00	-27.83	0.00	27.83	1818.15	909.07	2049.77	1017.59	5.82	-0.40	0.032
165.25	-9.31	-1.42	0.00	-27.47	0.00	27.47	1815.59	907.79	2042.92	1014.19	5.84	-0.40	0.032
169.58	-8.60	-1.38	0.00	-21.32	0.00	21.32	1040.26	520.13	1155.41	573.59	6.21	-0.41	0.045
170.00	-8.57	-1.38	0.00	-20.75	0.00	20.75	1038.39	519.19	1149.55	570.68	6.25	-0.41	0.045
175.00	-4.95	-0.99	0.00	-13.87	0.00	13.87	1015.17	507.59	1079.51	535.91	6.69	-0.43	0.031
180.00	-4.62	-0.96	0.00	-8.90	0.00	8.90	990.53	495.27	1010.05	501.43	7.14	-0.44	0.022
185.00	-2.74	-0.63	0.00	-4.11	0.00	4.11	964.47	482.24	941.35	467.32	7.61	-0.45	0.012
187.00	-2.54	-0.60	0.00	-2.84	0.00	2.84	953.65	476.82	914.12	453.81	7.79	-0.45	0.009
190.00	-2.39	-0.57	0.00	-1.04	0.00	1.04	936.98	468.49	873.60	433.69	8.08	-0.45	0.005
191.50	-0.19	-0.05	0.00	-0.19	0.00	0.19	928.46	464.23	853.48	423.70	8.22	-0.45	0.001
195.00	-0.05	-0.01	0.00	-0.01	0.00	0.01	908.07	454.03	806.98	400.62	8.55	-0.45	0.000
196.00	0.00	-0.01	0.00	0.00	0.00	0.00	902.11	451.06	793.81	394.08	8.65	-0.45	0.000

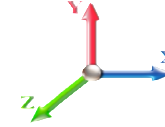
Wind Loading - Shaft

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/21/2019
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
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		1.00	0.85	7.442	8.19	282.00	0.750	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	7.442	8.19	277.07	0.750	0.000	5.00	25.267	18.95	155.1	0.0	1996.3
10.00		1.00	0.85	7.442	8.19	272.13	0.750	0.000	5.00	24.821	18.62	152.4	0.0	1960.7
15.00		1.00	0.85	7.442	8.19	267.20	0.750	0.000	5.00	24.375	18.28	149.6	0.0	1925.0
20.00		1.00	0.90	7.896	8.69	270.15	0.750	0.000	5.00	23.929	17.95	155.9	0.0	1889.4
25.00		1.00	0.95	8.276	9.10	271.37	0.750	0.000	5.00	23.482	17.61	160.3	0.0	1853.8
30.00		1.00	0.98	8.600	9.46	271.32	0.750	0.000	5.00	23.036	17.28	163.4	0.0	1818.2
35.00		1.00	1.01	8.883	9.77	270.37	0.750	0.000	5.00	22.590	16.94	165.6	0.0	1782.6
40.00		1.00	1.04	9.137	10.05	268.72	0.750	0.000	5.00	22.144	16.61	166.9	0.0	1747.0
45.00		1.00	1.07	9.366	10.30	266.54	0.750	0.000	5.00	21.698	16.27	167.7	0.0	1711.3
45.42	Bot - Section 2	1.00	1.07	9.384	10.32	266.34	0.750	0.000	0.42	1.788	1.34	13.8	0.0	141.0
48.90	RB1	1.00	1.09	9.531	10.48	264.53	0.750	0.000	3.48	15.123	11.34	118.9	0.0	2125.7
50.00		1.00	1.09	9.576	10.53	263.92	0.750	0.000	1.10	4.731	3.55	37.4	0.0	664.8
52.75	Top - Section 1	1.00	1.11	9.685	10.65	262.31	0.750	0.000	2.75	11.732	8.80	93.7	0.0	1648.4
55.00		1.00	1.12	9.770	10.75	266.31	0.750	0.000	2.25	9.499	7.12	76.6	0.0	600.6
57.15	RT1	1.00	1.12	9.850	10.83	264.94	0.750	0.000	2.15	8.992	6.74	73.1	0.0	568.6
60.00		1.00	1.14	9.951	10.95	263.05	0.750	0.000	2.85	11.793	8.84	96.8	0.0	745.6
65.00		1.00	1.16	10.120	11.13	259.52	0.750	0.000	5.00	20.339	15.25	169.8	0.0	1285.6
70.00		1.00	1.17	10.279	11.31	255.75	0.750	0.000	5.00	19.893	14.92	168.7	0.0	1257.1
75.00		1.00	1.19	10.430	11.47	251.78	0.750	0.000	5.00	19.446	14.58	167.3	0.0	1228.6
80.00		1.00	1.21	10.572	11.63	247.61	0.750	0.000	5.00	19.000	14.25	165.7	0.0	1200.1
84.00	Bot - Section 3	1.00	1.22	10.681	11.75	244.15	0.750	0.000	4.00	14.879	11.16	131.1	0.0	939.6
85.00		1.00	1.22	10.708	11.78	243.27	0.750	0.000	1.00	3.739	2.80	33.0	0.0	409.6
87.00	RB2	1.00	1.23	10.761	11.84	241.50	0.750	0.000	2.00	7.424	5.57	65.9	0.0	813.3
90.00		1.00	1.24	10.838	11.92	238.79	0.750	0.000	3.00	11.003	8.25	98.4	0.0	1205.0
90.42	Top - Section 2	1.00	1.24	10.848	11.93	238.41	0.750	0.000	0.42	1.515	1.14	13.6	0.0	165.9
95.00		1.00	1.25	10.962	12.06	238.44	0.750	0.000	4.58	16.465	12.35	148.9	0.0	781.8
100.00	Appurtenance(s)	1.00	1.27	11.081	12.19	233.71	0.750	0.000	5.00	17.535	13.15	160.3	0.0	832.4
105.00		1.00	1.28	11.195	12.31	228.86	0.750	0.000	5.00	17.089	12.82	157.8	0.0	811.1
109.50	Appurtenance(s)	1.00	1.29	11.294	12.42	224.40	0.750	0.000	4.50	14.998	11.25	139.8	0.0	711.7
110.00		1.00	1.29	11.305	12.44	223.90	0.750	0.000	0.50	1.644	1.23	15.3	0.0	78.0
112.25	RT2	1.00	1.30	11.354	12.49	221.63	0.750	0.000	2.25	7.344	5.51	68.8	0.0	348.4
115.00		1.00	1.30	11.412	12.55	218.84	0.750	0.000	2.75	8.853	6.64	83.3	0.0	419.9
120.00		1.00	1.32	11.514	12.67	213.68	0.750	0.000	5.00	15.750	11.81	149.6	0.0	746.9
123.58	Bot - Section 4	1.00	1.32	11.586	12.74	209.93	0.750	0.000	3.58	11.013	8.26	105.3	0.0	522.2
125.00		1.00	1.33	11.614	12.78	208.44	0.750	0.000	1.42	4.359	3.27	41.8	0.0	358.8
125.60	RB3	1.00	1.33	11.625	12.79	207.80	0.750	0.000	0.60	1.835	1.38	17.6	0.0	151.1
129.00	Top - Section 3	1.00	1.34	11.691	12.86	204.18	0.750	0.000	3.40	10.278	7.71	99.1	0.0	845.8
130.00	Appurtenance(s)	1.00	1.34	11.710	12.88	206.42	0.750	0.000	1.00	2.984	2.24	28.8	0.0	106.4
135.00		1.00	1.35	11.803	12.98	201.03	0.750	0.000	5.00	14.651	10.99	142.7	0.0	522.1
136.26	RT3	1.00	1.35	11.827	13.01	199.66	0.750	0.000	1.26	3.622	2.72	35.3	0.0	129.1
140.00		1.00	1.36	11.894	13.08	195.56	0.750	0.000	3.74	10.583	7.94	103.9	0.0	377.1
145.00	Appurtenance(s)	1.00	1.37	11.982	13.18	190.02	0.750	0.000	5.00	13.759	10.32	136.0	0.0	490.1
150.00		1.00	1.38	12.068	13.27	184.42	0.750	0.000	5.00	13.313	9.98	132.5	0.0	474.1
155.00	Appurtenance(s)	1.00	1.39	12.152	13.37	178.75	0.750	0.000	5.00	12.867	9.65	129.0	0.0	458.0
160.00		1.00	1.40	12.233	13.46	173.02	0.751 *	0.000	5.00	12.421	9.33	125.6	0.0	442.0
161.50	Appurtenance(s)	1.00	1.40	12.257	13.48	171.29	0.757 *	0.000	1.50	3.639	2.75	37.1	0.0	129.5

Wind Loading - Shaft

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/21/2019	
Site Name: Torrington/Oandg Ind Inc	Exposure: C		
Height: 196.00 (ft)	Crest Height: 0.00		
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil		
Gh: 1.1	Topography: 1	Struct Class: II	Page: 52



165.00	1.00	1.41	12.313	13.54	167.23	0.761 *	0.000	3.50	8.335	6.34	85.9	0.0	296.5	
165.25 Bot - Section 5	1.00	1.41	12.317	13.55	166.94	0.765 *	0.000	0.25	0.587	0.45	6.1	0.0	20.9	
169.58 Top - Section 4	1.00	1.41	12.384	13.62	161.88	0.769 *	0.000	4.33	10.136	7.79	106.2	0.0	596.7	
170.00	1.00	1.42	12.390	13.63	163.67	0.770 *	0.000	0.42	0.957	0.74	10.0	0.0	22.8	
175.00 Appurtenance(s)	1.00	1.42	12.466	13.71	157.78	0.775 *	0.000	5.00	11.242	8.71	119.5	0.0	267.4	
180.00	1.00	1.43	12.540	13.79	151.84	0.750	0.000	5.00	10.796	8.10	111.7	0.0	256.7	
185.00 Appurtenance(s)	1.00	1.44	12.613	13.87	145.86	0.750	0.000	5.00	10.350	7.76	107.7	0.0	246.0	
187.00 Appurtenance(s)	1.00	1.44	12.642	13.91	143.45	0.750	0.000	2.00	4.015	3.01	41.9	0.0	95.4	
190.00	1.00	1.45	12.684	13.95	139.82	0.750	0.000	3.00	5.889	4.42	61.6	0.0	139.9	
191.50 Appurtenance(s)	1.00	1.45	12.705	13.98	138.00	0.750	0.000	1.50	2.884	2.16	30.2	0.0	68.5	
195.00	1.00	1.46	12.753	14.03	133.74	0.750	0.000	3.50	6.573	4.93	69.2	0.0	156.1	
196.00 Appurtenance(s)	1.00	1.46	12.767	14.04	132.52	0.750	0.000	1.00	1.838	1.38	19.4	0.0	43.6	
Totals:								196.00				5,788.8	43,630.8	

* Cf Adjusted by Linear Load Ra Effect

Discrete Appurtenance Forces

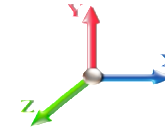
Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/21/2019
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 25

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa 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	196.00	6' Lightning rod	1	12.767	14.044	1.00	1.00	0.38	6.50	0.000	0.000	5.34	0.00	0.00
2	191.50	Low Profile Platform	1	12.705	13.975	1.00	1.00	22.00	1500.00	0.000	0.000	307.46	0.00	0.00
3	191.50	ACU-A20-N - RET	4	12.705	13.975	0.60	0.80	0.34	4.00	0.000	0.000	4.70	0.00	0.00
4	191.50	800MHz Filter	3	12.705	13.975	0.54	0.80	1.25	26.40	0.000	0.000	17.53	0.00	0.00
5	191.50	RRH8x20-25 - RRU	3	12.705	13.975	0.54	0.80	6.51	210.00	0.000	0.000	91.01	0.00	0.00
6	191.50	1900MHz - RRU	3	12.705	13.975	0.54	0.80	6.11	132.00	0.000	0.000	85.40	0.00	0.00
7	191.50	800MHz - RRU	3	12.705	13.975	0.54	0.80	4.00	159.00	0.000	0.000	55.96	0.00	0.00
8	191.50	APXVSP18-C-A20	3	12.705	13.975	0.66	0.80	15.98	171.00	0.000	0.000	223.27	0.00	0.00
9	191.50	APXVTM14-C-120	3	12.705	13.975	0.68	0.80	12.93	168.00	0.000	0.000	180.75	0.00	0.00
10	187.00	BA80-41-DIN	1	12.785	14.064	1.00	1.00	9.40	68.00	0.000	10.333	132.20	0.00	1366.08
11	187.00	Pipe mount	1	12.642	13.906	0.56	0.75	1.48	40.00	0.000	0.000	20.57	0.00	0.00
12	185.00	BXA-70063 6CF_2	3	12.613	13.874	0.66	0.80	14.90	51.00	0.000	0.000	206.69	0.00	0.00
13	185.00	LPA-80063/4CF	6	12.613	13.874	0.68	0.80	25.09	120.00	0.000	0.000	348.13	0.00	0.00
14	185.00	BXA-171063-8BF_2	3	12.613	13.874	0.70	0.80	6.14	31.50	0.000	0.000	85.17	0.00	0.00
15	185.00	FD9R6004/2C-3L -	6	12.613	13.874	0.56	0.80	1.21	18.60	0.000	0.000	16.78	0.00	0.00
16	185.00	Low Profile Platform	1	12.613	13.874	1.00	1.00	22.00	1500.00	0.000	0.000	305.23	0.00	0.00
17	175.00	Low Profile Platform	1	12.466	13.713	1.00	1.00	22.00	1500.00	0.000	0.000	301.68	0.00	0.00
18	175.00	DC6-48-60-18-8F	1	12.466	13.713	0.80	0.80	0.74	32.80	0.000	0.000	10.09	0.00	0.00
19	175.00	RRUS-12	3	12.466	13.713	0.54	0.80	4.34	150.00	0.000	0.000	59.54	0.00	0.00
20	175.00	Powerwave 7770	3	12.466	13.713	0.68	0.80	11.22	105.00	0.000	0.000	153.86	0.00	0.00
21	175.00	Powerwave LGP21401	12	12.466	13.713	0.75	0.75	11.61	169.20	0.000	0.000	159.21	0.00	0.00
22	175.00	Powerwave LGP13519	12	12.466	13.713	0.75	0.75	3.06	63.60	0.000	0.000	41.96	0.00	0.00
23	175.00	Ericsson RRUS 4449	3	12.466	13.713	0.50	0.75	2.97	213.00	0.000	0.000	40.72	0.00	0.00
24	175.00	Ericsson RRUS 32 B30	3	12.466	13.713	0.50	0.75	4.13	180.00	0.000	0.000	56.64	0.00	0.00
25	175.00	Raycap	2	12.466	13.713	1.00	1.00	9.56	32.00	0.000	0.000	131.09	0.00	0.00
26	175.00	HRK12 (Handrail Kit)	1	12.466	13.713	1.00	1.00	6.75	261.72	0.000	0.000	92.56	0.00	0.00
27	175.00	Kathrein 800-10965	6	12.466	13.713	0.53	0.75	44.12	651.60	0.000	0.000	605.05	0.00	0.00
28	175.00	Ericsson RRUS 4478 B14	3	12.466	13.713	0.50	0.75	2.49	178.20	0.000	0.000	34.11	0.00	0.00
29	161.50	Low Profile Platform	1	12.257	13.483	1.00	1.00	22.00	1500.00	0.000	0.000	296.63	0.00	0.00
30	155.00	AIR 21 B4A/B2P	3	12.152	13.367	0.66	0.80	12.13	270.90	0.000	0.000	162.16	0.00	0.00
31	155.00	T-Arms w/ Handrail kit &	3	12.152	13.367	0.56	0.75	29.53	1500.00	0.000	0.000	394.74	0.00	0.00
32	155.00	LNx-6515DS-A1M	3	12.152	13.367	0.64	0.80	22.02	150.90	0.000	0.000	294.37	0.00	0.00
33	155.00	AIR 21 B2A/B4P	3	12.152	13.367	0.66	0.80	12.13	274.50	0.000	0.000	162.16	0.00	0.00
34	155.00	KRY 112 114 TMA	3	12.152	13.367	0.60	0.80	0.74	33.00	0.000	0.000	9.86	0.00	0.00
35	145.00	T-Arms	3	11.982	13.181	0.56	0.75	13.50	1050.00	0.000	0.000	177.94	0.00	0.00
36	145.00	APXV18-206517S-C	3	11.982	13.181	0.66	0.80	10.30	79.20	0.000	0.000	135.74	0.00	0.00
37	130.00	Standoff	1	11.710	12.881	0.56	0.75	1.48	40.00	0.000	0.000	19.06	0.00	0.00
38	130.00	ANT150F2	1	11.757	12.933	1.00	1.00	1.23	13.00	0.000	2.500	15.91	0.00	39.77
39	109.50	Standoff	1	11.294	12.424	0.56	0.75	1.48	40.00	0.000	0.000	18.38	0.00	0.00
40	109.50	Standoff	5	11.294	12.424	0.56	0.75	7.40	200.00	0.000	0.000	91.90	0.00	0.00
41	109.50	4' Omni	1	11.338	12.471	1.00	1.00	1.00	10.00	0.000	2.000	12.47	0.00	24.94
42	109.50	14' Omni	5	11.443	12.587	1.00	1.00	21.00	200.00	0.000	7.000	264.33	0.00	1850.30
43	100.00	Standoff	1	11.081	12.189	0.56	0.75	1.48	40.00	0.000	0.000	18.03	0.00	0.00
44	100.00	MPRD	1	11.081	12.189	1.00	1.00	6.10	36.00	0.000	0.000	74.35	0.00	0.00

Totals: 13,180.62

5,920.74

Total Applied Force Summary

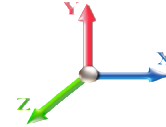
Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/21/2019
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 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
5.00		155.13	2318.01	0.00	0.00
10.00		152.39	2282.39	0.00	0.00
15.00		149.65	2246.77	0.00	0.00
20.00		155.88	2211.15	0.00	0.00
25.00		160.33	2175.53	0.00	0.00
30.00		163.44	2139.92	0.00	0.00
35.00		165.56	2104.30	0.00	0.00
40.00		166.92	2068.68	0.00	0.00
45.00		167.66	2033.06	0.00	0.00
45.42		13.84	167.81	0.00	0.00
48.90		118.92	2349.81	0.00	0.00
50.00		37.37	735.58	0.00	0.00
52.75		93.74	1825.37	0.00	0.00
55.00		76.56	745.43	0.00	0.00
57.15		73.07	706.90	0.00	0.00
60.00		96.81	928.94	0.00	0.00
65.00		169.81	1607.35	0.00	0.00
70.00		168.70	1578.85	0.00	0.00
75.00		167.33	1550.36	0.00	0.00
80.00		165.72	1521.87	0.00	0.00
84.00		131.12	1196.98	0.00	0.00
85.00		33.03	473.99	0.00	0.00
87.00		65.91	942.00	0.00	0.00
90.00		98.38	1398.04	0.00	0.00
90.42		13.56	192.75	0.00	0.00
95.00		148.90	1076.75	0.00	0.00
100.00	(2) attachments	252.68	1230.16	0.00	0.00
105.00		157.83	1132.59	0.00	0.00
109.50	(12) attachments	526.83	1451.06	0.00	1875.24
110.00		15.34	109.68	0.00	0.00
112.25		68.79	490.91	0.00	0.00
115.00		83.35	594.13	0.00	0.00
120.00		149.62	1063.67	0.00	0.00
123.58		105.27	749.15	0.00	0.00
125.00		41.76	448.54	0.00	0.00
125.60		17.60	189.07	0.00	0.00
129.00		99.13	1061.21	0.00	0.00
130.00	(2) attachments	63.79	222.70	0.00	39.77
135.00		142.67	836.27	0.00	0.00
136.26		35.34	208.21	0.00	0.00
140.00		103.85	612.03	0.00	0.00
145.00	(6) attachments	449.69	1933.42	0.00	0.00
150.00		132.55	756.99	0.00	0.00
155.00	(15) attachments	1152.29	2970.26	0.00	0.00
160.00		125.60	657.03	0.00	0.00
161.50	(1) attachments	333.76	1693.98	0.00	0.00

Total Applied Force Summary

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/21/2019
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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165.00	85.94	447.02	0.00	0.00
165.25	6.08	31.63	0.00	0.00
169.58	106.15	783.02	0.00	0.00
170.00	10.04	40.68	0.00	0.00
175.00	(50) attachments	1806.02	4019.53	0.00
180.00		111.69	371.98	0.00
185.00	(19) attachments	1069.71	2082.39	0.00
187.00	(2) attachments	194.65	224.56	0.00
190.00		61.62	170.08	0.00
191.50	(23) attachments	996.30	2454.00	0.00
195.00		69.16	156.13	0.00
196.00	(1) attachments	24.70	50.15	0.00
Totals:		11,709.51	67,820.82	0.00
				3,281.10

Linear Appurtenance Segment Forces (Factored)

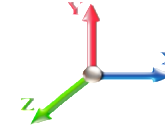
Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/21/2019
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 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)
5.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.058	0.000	7.442	0.00	16.10
5.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.058	0.000	7.442	0.00	8.05
5.00	7/8" Coax	Yes	5.00	0.000	0.52	0.22	0.00	0.058	0.000	7.442	0.00	2.60
10.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.059	0.000	7.442	0.00	16.10
10.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.059	0.000	7.442	0.00	8.05
10.00	7/8" Coax	Yes	5.00	0.000	0.52	0.22	0.00	0.059	0.000	7.442	0.00	2.60
15.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.060	0.000	7.442	0.00	16.10
15.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.060	0.000	7.442	0.00	8.05
15.00	7/8" Coax	Yes	5.00	0.000	0.52	0.22	0.00	0.060	0.000	7.442	0.00	2.60
20.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.061	0.000	7.896	0.00	16.10
20.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.061	0.000	7.896	0.00	8.05
20.00	7/8" Coax	Yes	5.00	0.000	0.52	0.22	0.00	0.061	0.000	7.896	0.00	2.60
25.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.062	0.000	8.276	0.00	16.10
25.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.062	0.000	8.276	0.00	8.05
25.00	7/8" Coax	Yes	5.00	0.000	0.52	0.22	0.00	0.062	0.000	8.276	0.00	2.60
30.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.064	0.000	8.600	0.00	16.10
30.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.064	0.000	8.600	0.00	8.05
30.00	7/8" Coax	Yes	5.00	0.000	0.52	0.22	0.00	0.064	0.000	8.600	0.00	2.60
35.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.065	0.000	8.883	0.00	16.10
35.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.065	0.000	8.883	0.00	8.05
35.00	7/8" Coax	Yes	5.00	0.000	0.52	0.22	0.00	0.065	0.000	8.883	0.00	2.60
40.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.066	0.000	9.137	0.00	16.10
40.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.066	0.000	9.137	0.00	8.05
40.00	7/8" Coax	Yes	5.00	0.000	0.52	0.22	0.00	0.066	0.000	9.137	0.00	2.60
45.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.068	0.000	9.366	0.00	16.10
45.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.068	0.000	9.366	0.00	8.05
45.00	7/8" Coax	Yes	5.00	0.000	0.52	0.22	0.00	0.068	0.000	9.366	0.00	2.60
45.42	2" Conduit	Yes	0.42	0.000	0.00	0.00	0.00	0.068	0.000	9.384	0.00	1.34
45.42	3" Conduit	Yes	0.42	0.000	3.00	0.10	0.00	0.068	0.000	9.384	0.00	0.67
45.42	7/8" Coax	Yes	0.42	0.000	0.52	0.02	0.00	0.068	0.000	9.384	0.00	0.22
48.90	2" Conduit	Yes	3.48	0.000	0.00	0.00	0.00	0.069	0.000	9.531	0.00	11.22
48.90	3" Conduit	Yes	3.48	0.000	3.00	0.87	0.00	0.069	0.000	9.531	0.00	5.61
48.90	7/8" Coax	Yes	3.48	0.000	0.52	0.15	0.00	0.069	0.000	9.531	0.00	1.81
50.00	2" Conduit	Yes	1.10	0.000	0.00	0.00	0.00	0.070	0.000	9.576	0.00	3.54
50.00	3" Conduit	Yes	1.10	0.000	3.00	0.28	0.00	0.070	0.000	9.576	0.00	1.77
50.00	7/8" Coax	Yes	1.10	0.000	0.52	0.05	0.00	0.070	0.000	9.576	0.00	0.57
52.75	2" Conduit	Yes	2.75	0.000	0.00	0.00	0.00	0.070	0.000	9.685	0.00	8.86
52.75	3" Conduit	Yes	2.75	0.000	3.00	0.69	0.00	0.070	0.000	9.685	0.00	4.43
52.75	7/8" Coax	Yes	2.75	0.000	0.52	0.12	0.00	0.070	0.000	9.685	0.00	1.43
55.00	2" Conduit	Yes	2.25	0.000	0.00	0.00	0.00	0.069	0.000	9.770	0.00	7.25
55.00	3" Conduit	Yes	2.25	0.000	3.00	0.56	0.00	0.069	0.000	9.770	0.00	3.62
55.00	7/8" Coax	Yes	2.25	0.000	0.52	0.10	0.00	0.069	0.000	9.770	0.00	1.17
57.15	2" Conduit	Yes	2.15	0.000	0.00	0.00	0.00	0.070	0.000	9.850	0.00	6.92
57.15	3" Conduit	Yes	2.15	0.000	3.00	0.54	0.00	0.070	0.000	9.850	0.00	3.46
57.15	7/8" Coax	Yes	2.15	0.000	0.52	0.09	0.00	0.070	0.000	9.850	0.00	1.12
60.00	2" Conduit	Yes	2.85	0.000	0.00	0.00	0.00	0.071	0.000	9.951	0.00	9.18
60.00	3" Conduit	Yes	2.85	0.000	3.00	0.71	0.00	0.071	0.000	9.951	0.00	4.59

Linear Appurtenance Segment Forces (Factored)

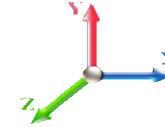
Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/21/2019
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 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)
60.00	7/8" Coax	Yes	2.85	0.000	0.52	0.12	0.00	0.071	0.000	9.951	0.00	1.48
65.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.072	0.000	10.120	0.00	16.10
65.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.072	0.000	10.120	0.00	8.05
65.00	7/8" Coax	Yes	5.00	0.000	0.52	0.22	0.00	0.072	0.000	10.120	0.00	2.60
70.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.074	0.000	10.279	0.00	16.10
70.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.074	0.000	10.279	0.00	8.05
70.00	7/8" Coax	Yes	5.00	0.000	0.52	0.22	0.00	0.074	0.000	10.279	0.00	2.60
75.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.075	0.000	10.430	0.00	16.10
75.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.075	0.000	10.430	0.00	8.05
75.00	7/8" Coax	Yes	5.00	0.000	0.52	0.22	0.00	0.075	0.000	10.430	0.00	2.60
80.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.077	0.000	10.572	0.00	16.10
80.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.077	0.000	10.572	0.00	8.05
80.00	7/8" Coax	Yes	5.00	0.000	0.52	0.22	0.00	0.077	0.000	10.572	0.00	2.60
84.00	2" Conduit	Yes	4.00	0.000	0.00	0.00	0.00	0.079	0.000	10.681	0.00	12.88
84.00	3" Conduit	Yes	4.00	0.000	3.00	1.00	0.00	0.079	0.000	10.681	0.00	6.44
84.00	7/8" Coax	Yes	4.00	0.000	0.52	0.17	0.00	0.079	0.000	10.681	0.00	2.08
85.00	2" Conduit	Yes	1.00	0.000	0.00	0.00	0.00	0.080	0.000	10.708	0.00	3.22
85.00	3" Conduit	Yes	1.00	0.000	3.00	0.25	0.00	0.080	0.000	10.708	0.00	1.61
85.00	7/8" Coax	Yes	1.00	0.000	0.52	0.04	0.00	0.080	0.000	10.708	0.00	0.52
87.00	2" Conduit	Yes	2.00	0.000	0.00	0.00	0.00	0.080	0.000	10.761	0.00	6.44
87.00	3" Conduit	Yes	2.00	0.000	3.00	0.50	0.00	0.080	0.000	10.761	0.00	3.22
87.00	7/8" Coax	Yes	2.00	0.000	0.52	0.09	0.00	0.080	0.000	10.761	0.00	1.04
90.00	2" Conduit	Yes	3.00	0.000	0.00	0.00	0.00	0.081	0.000	10.838	0.00	9.66
90.00	3" Conduit	Yes	3.00	0.000	3.00	0.75	0.00	0.081	0.000	10.838	0.00	4.83
90.00	7/8" Coax	Yes	3.00	0.000	0.52	0.13	0.00	0.081	0.000	10.838	0.00	1.56
90.42	2" Conduit	Yes	0.42	0.000	0.00	0.00	0.00	0.082	0.000	10.848	0.00	1.34
90.42	3" Conduit	Yes	0.42	0.000	3.00	0.10	0.00	0.082	0.000	10.848	0.00	0.67
90.42	7/8" Coax	Yes	0.42	0.000	0.52	0.02	0.00	0.082	0.000	10.848	0.00	0.22
95.00	2" Conduit	Yes	4.58	0.000	0.00	0.00	0.00	0.082	0.000	10.962	0.00	14.76
95.00	3" Conduit	Yes	4.58	0.000	3.00	1.15	0.00	0.082	0.000	10.962	0.00	7.38
95.00	7/8" Coax	Yes	4.58	0.000	0.52	0.20	0.00	0.082	0.000	10.962	0.00	2.38
100.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.084	0.000	11.081	0.00	16.10
100.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.084	0.000	11.081	0.00	8.05
100.00	7/8" Coax	Yes	5.00	0.000	0.52	0.22	0.00	0.084	0.000	11.081	0.00	2.60
105.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.086	0.000	11.195	0.00	16.10
105.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.086	0.000	11.195	0.00	8.05
105.00	7/8" Coax	Yes	5.00	0.000	0.52	0.22	0.00	0.086	0.000	11.195	0.00	2.60
109.50	2" Conduit	Yes	4.50	0.000	0.00	0.00	0.00	0.088	0.000	11.294	0.00	14.49
109.50	3" Conduit	Yes	4.50	0.000	3.00	1.13	0.00	0.088	0.000	11.294	0.00	7.25
109.50	7/8" Coax	Yes	4.50	0.000	0.52	0.20	0.00	0.088	0.000	11.294	0.00	2.34
110.00	2" Conduit	Yes	0.50	0.000	0.00	0.00	0.00	0.089	0.000	11.305	0.00	1.61
110.00	3" Conduit	Yes	0.50	0.000	3.00	0.13	0.00	0.089	0.000	11.305	0.00	0.81
110.00	7/8" Coax	Yes	0.50	0.000	0.52	0.02	0.00	0.089	0.000	11.305	0.00	0.26
112.25	2" Conduit	Yes	2.25	0.000	0.00	0.00	0.00	0.090	0.000	11.354	0.00	7.25
112.25	3" Conduit	Yes	2.25	0.000	3.00	0.56	0.00	0.090	0.000	11.354	0.00	3.62
112.25	7/8" Coax	Yes	2.25	0.000	0.52	0.10	0.00	0.090	0.000	11.354	0.00	1.17
115.00	2" Conduit	Yes	2.75	0.000	0.00	0.00	0.00	0.091	0.000	11.412	0.00	8.86

Linear Appurtenance Segment Forces (Factored)

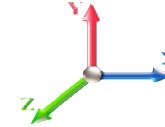
Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/21/2019
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 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)
115.00	3" Conduit	Yes	2.75	0.000	3.00	0.69	0.00	0.091	0.000	11.412	0.00	4.43
115.00	7/8" Coax	Yes	2.75	0.000	0.52	0.12	0.00	0.091	0.000	11.412	0.00	1.43
120.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.093	0.000	11.514	0.00	16.10
120.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.093	0.000	11.514	0.00	8.05
120.00	7/8" Coax	Yes	5.00	0.000	0.52	0.22	0.00	0.093	0.000	11.514	0.00	2.60
123.58	2" Conduit	Yes	3.58	0.000	0.00	0.00	0.00	0.095	0.000	11.586	0.00	11.54
123.58	3" Conduit	Yes	3.58	0.000	3.00	0.90	0.00	0.095	0.000	11.586	0.00	5.77
123.58	7/8" Coax	Yes	3.58	0.000	0.52	0.16	0.00	0.095	0.000	11.586	0.00	1.86
125.00	2" Conduit	Yes	1.42	0.000	0.00	0.00	0.00	0.097	0.000	11.614	0.00	4.56
125.00	3" Conduit	Yes	1.42	0.000	3.00	0.35	0.00	0.097	0.000	11.614	0.00	2.28
125.00	7/8" Coax	Yes	1.42	0.000	0.52	0.06	0.00	0.097	0.000	11.614	0.00	0.74
125.60	2" Conduit	Yes	0.60	0.000	0.00	0.00	0.00	0.097	0.000	11.625	0.00	1.93
125.60	3" Conduit	Yes	0.60	0.000	3.00	0.15	0.00	0.097	0.000	11.625	0.00	0.97
125.60	7/8" Coax	Yes	0.60	0.000	0.52	0.03	0.00	0.097	0.000	11.625	0.00	0.31
129.00	2" Conduit	Yes	3.40	0.000	0.00	0.00	0.00	0.099	0.000	11.691	0.00	10.95
129.00	3" Conduit	Yes	3.40	0.000	3.00	0.85	0.00	0.099	0.000	11.691	0.00	5.47
129.00	7/8" Coax	Yes	3.40	0.000	0.52	0.15	0.00	0.099	0.000	11.691	0.00	1.77
130.00	2" Conduit	Yes	1.00	0.000	0.00	0.00	0.00	0.098	0.000	11.710	0.00	3.22
130.00	3" Conduit	Yes	1.00	0.000	3.00	0.25	0.00	0.098	0.000	11.710	0.00	1.61
130.00	7/8" Coax	Yes	1.00	0.000	0.52	0.04	0.00	0.098	0.000	11.710	0.00	0.52
135.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.085	0.000	11.803	0.00	16.10
135.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.085	0.000	11.803	0.00	8.05
136.26	2" Conduit	Yes	1.26	0.000	0.00	0.00	0.00	0.087	0.000	11.827	0.00	4.06
136.26	3" Conduit	Yes	1.26	0.000	3.00	0.31	0.00	0.087	0.000	11.827	0.00	2.03
140.00	2" Conduit	Yes	3.74	0.000	0.00	0.00	0.00	0.088	0.000	11.894	0.00	12.04
140.00	3" Conduit	Yes	3.74	0.000	3.00	0.94	0.00	0.088	0.000	11.894	0.00	6.02
145.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.091	0.000	11.982	0.00	16.10
145.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.091	0.000	11.982	0.00	8.05
150.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.094	0.000	12.068	0.00	16.10
150.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.094	0.000	12.068	0.00	8.05
155.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.097	0.000	12.152	0.00	16.10
155.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.097	0.000	12.152	0.00	8.05
160.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.101	1.002	12.233	0.00	16.10
160.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.101	1.002	12.233	0.00	8.05
161.50	2" Conduit	Yes	1.50	0.000	0.00	0.00	0.00	0.103	1.009	12.257	0.00	4.83
161.50	3" Conduit	Yes	1.50	0.000	3.00	0.38	0.00	0.103	1.009	12.257	0.00	2.42
165.00	2" Conduit	Yes	3.50	0.000	0.00	0.00	0.00	0.105	1.015	12.313	0.00	11.27
165.00	3" Conduit	Yes	3.50	0.000	3.00	0.88	0.00	0.105	1.015	12.313	0.00	5.64
165.25	2" Conduit	Yes	0.25	0.000	0.00	0.00	0.00	0.106	1.019	12.317	0.00	0.81
165.25	3" Conduit	Yes	0.25	0.000	3.00	0.06	0.00	0.106	1.019	12.317	0.00	0.40
169.58	2" Conduit	Yes	4.33	0.000	0.00	0.00	0.00	0.108	1.025	12.384	0.00	13.95
169.58	3" Conduit	Yes	4.33	0.000	3.00	1.08	0.00	0.108	1.025	12.384	0.00	6.98
170.00	2" Conduit	Yes	0.42	0.000	0.00	0.00	0.00	0.109	1.027	12.390	0.00	1.34
170.00	3" Conduit	Yes	0.42	0.000	3.00	0.10	0.00	0.109	1.027	12.390	0.00	0.67
175.00	2" Conduit	Yes	5.00	0.000	0.00	0.00	0.00	0.111	1.034	12.466	0.00	16.10
175.00	3" Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.111	1.034	12.466	0.00	8.05

Linear Appurtenance Segment Forces (Factored)

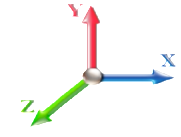
Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/21/2019
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 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)
Totals:											0.0	912.9

Calculated Forces

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/21/2019
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

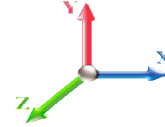


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Load Case: 1.0D + 1.0W 60 mph Wind

Iterations 25

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	-67.82	-11.73	0.00	-1606.0	0.00	1606.05	8794.96	4397.48	21496.0	10671.5	0.00	0.000	0.000	0.158
5.00	-65.49	-11.63	0.00	-1547.3	0.00	1547.39	8639.43	4319.71	20738.5	10295.5	0.02	-0.043	0.000	0.158
10.00	-63.20	-11.52	0.00	-1489.2	0.00	1489.25	8483.89	4241.95	19994.7	9926.22	0.09	-0.086	0.000	0.157
15.00	-60.94	-11.41	0.00	-1431.6	0.00	1431.66	8328.36	4164.18	19264.4	9563.67	0.20	-0.130	0.000	0.157
20.00	-58.72	-11.30	0.00	-1374.5	0.00	1374.59	8172.83	4086.41	18547.7	9207.87	0.36	-0.174	0.000	0.156
25.00	-56.54	-11.17	0.00	-1318.1	0.00	1318.11	8017.29	4008.65	17844.6	8858.82	0.57	-0.220	0.000	0.156
30.00	-54.39	-11.05	0.00	-1262.2	0.00	1262.24	7861.76	3930.88	17155.1	8516.51	0.82	-0.265	0.000	0.155
35.00	-52.28	-10.91	0.00	-1207.0	0.00	1207.01	7706.22	3853.11	16479.1	8180.95	1.13	-0.312	0.000	0.154
40.00	-50.20	-10.78	0.00	-1152.4	0.00	1152.44	7550.69	3775.35	15816.8	7852.13	1.48	-0.359	0.000	0.153
45.00	-48.17	-10.62	0.00	-1098.5	0.00	1098.57	7395.16	3697.58	15168.0	7530.06	1.88	-0.407	0.000	0.152
45.42	-47.99	-10.62	0.00	-1094.1	0.00	1094.15	7382.20	3691.10	15114.6	7503.52	1.92	-0.412	0.000	0.152
48.90	-45.64	-10.50	0.00	-1057.1	0.00	1057.16	7273.84	3636.92	14671.4	7283.52	2.23	-0.446	0.000	0.101
50.00	-44.90	-10.46	0.00	-1045.6	0.00	1045.62	7239.62	3619.81	14532.8	7214.73	2.33	-0.453	0.000	0.101
52.75	-43.08	-10.37	0.00	-1016.8	0.00	1016.84	5810.43	2905.21	11825.7	5870.80	2.60	-0.471	0.000	0.103
55.00	-42.33	-10.30	0.00	-993.52	0.00	993.52	5769.82	2884.91	11629.7	5773.48	2.83	-0.486	0.000	0.112
57.15	-41.62	-10.23	0.00	-971.38	0.00	971.38	5730.75	2865.38	11443.3	5680.95	3.05	-0.502	0.000	0.111
57.15	-41.62	-10.23	0.00	-971.38	0.00	971.38	5730.75	2865.38	11443.3	5680.95	3.05	-0.502	0.000	0.111
60.00	-40.68	-10.15	0.00	-942.22	0.00	942.22	5678.55	2839.28	11197.7	5559.03	3.36	-0.523	0.000	0.177
65.00	-39.07	-10.01	0.00	-891.45	0.00	891.45	5551.73	2775.86	10705.1	5314.51	3.94	-0.582	0.000	0.175
70.00	-37.48	-9.86	0.00	-841.41	0.00	841.41	5427.30	2713.65	10228.2	5077.73	4.58	-0.642	0.000	0.173
75.00	-35.92	-9.72	0.00	-792.10	0.00	792.10	5302.88	2651.44	9762.15	4846.34	5.28	-0.702	0.000	0.170
80.00	-34.39	-9.56	0.00	-743.52	0.00	743.52	5178.45	2589.22	9306.93	4620.35	6.05	-0.762	0.000	0.168
84.00	-33.19	-9.43	0.00	-705.27	0.00	705.27	5078.91	2539.45	8950.59	4443.45	6.71	-0.811	0.000	0.165
85.00	-32.72	-9.40	0.00	-695.84	0.00	695.84	5054.02	2527.01	8862.59	4399.76	6.88	-0.824	0.000	0.165
87.00	-31.77	-9.34	0.00	-677.03	0.00	677.03	5004.25	2502.13	8687.89	4313.04	7.23	-0.849	0.000	0.099
90.00	-30.37	-9.22	0.00	-649.02	0.00	649.02	4929.59	2464.80	8429.11	4184.57	7.77	-0.871	0.000	0.097
90.42	-30.18	-9.22	0.00	-645.18	0.00	645.18	3591.78	1795.89	6277.53	3116.43	7.85	-0.874	0.000	0.103
95.00	-29.10	-9.07	0.00	-602.93	0.00	602.93	3535.98	1767.99	6038.44	2997.74	8.70	-0.908	0.000	0.113
100.00	-27.87	-8.82	0.00	-557.57	0.00	557.57	3473.75	1736.87	5780.45	2869.66	9.68	-0.950	0.000	0.108
105.00	-26.73	-8.66	0.00	-513.47	0.00	513.47	3410.09	1705.04	5525.58	2743.13	10.69	-0.990	0.000	0.102
109.50	-25.29	-8.12	0.00	-472.63	0.00	472.63	3351.58	1675.79	5299.03	2630.66	11.64	-1.026	0.000	0.097
110.00	-25.18	-8.10	0.00	-468.57	0.00	468.57	3345.00	1672.50	5274.03	2618.25	11.75	-1.030	0.000	0.097
112.25	-24.68	-8.03	0.00	-450.34	0.00	450.34	3315.25	1657.63	5161.96	2562.62	12.24	-1.048	0.000	0.094
112.25	-24.68	-8.03	0.00	-450.34	0.00	450.34	3315.25	1657.63	5161.96	2562.62	12.24	-1.048	0.000	0.094
115.00	-24.08	-7.96	0.00	-428.24	0.00	428.24	3278.49	1639.25	5025.98	2495.11	12.85	-1.070	0.000	0.179
120.00	-23.01	-7.82	0.00	-388.44	0.00	388.44	3210.56	1605.28	4781.62	2373.80	14.01	-1.144	0.000	0.171
123.58	-22.26	-7.71	0.00	-360.43	0.00	360.43	3148.16	1574.08	4590.15	2278.75	14.89	-1.198	0.000	0.165
125.00	-21.81	-7.67	0.00	-349.51	0.00	349.51	3121.72	1560.86	4512.97	2240.43	15.25	-1.219	0.000	0.163
125.60	-21.62	-7.65	0.00	-344.91	0.00	344.91	3110.52	1555.26	4480.48	2224.30	15.40	-1.228	0.000	0.092
129.00	-20.56	-7.53	0.00	-318.90	0.00	318.90	2149.47	1074.74	3099.22	1538.58	16.29	-1.256	0.000	0.096
130.00	-20.34	-7.48	0.00	-311.32	0.00	311.32	2141.27	1070.63	3068.69	1523.43	16.55	-1.264	0.000	0.107
135.00	-19.50	-7.32	0.00	-273.95	0.00	273.95	2099.38	1049.69	2916.97	1448.11	17.90	-1.308	0.000	0.098
136.26	-19.29	-7.29	0.00	-264.72	0.00	264.72	2088.60	1044.30	2879.00	1429.26	18.25	-1.319	0.000	0.095
136.26	-19.29	-7.29	0.00	-264.72	0.00	264.72	2088.60	1044.30	2879.00	1429.26	18.25	-1.319	0.000	0.095
140.00	-18.67	-7.19	0.00	-237.46	0.00	237.46	2056.07	1028.04	2766.99	1373.65	19.29	-1.350	0.000	0.182
145.00	-16.74	-6.72	0.00	-201.50	0.00	201.50	2011.34	1005.67	2618.95	1300.16	20.75	-1.429	0.000	0.163
150.00	-15.98	-6.58	0.00	-167.92	0.00	167.92	1965.18	982.59	2473.01	1227.71	22.29	-1.503	0.000	0.145
155.00	-13.04	-5.37	0.00	-135.00	0.00	135.00	1917.59	958.80	2329.38	1156.40	23.90	-1.569	0.000	0.124

Calculated Forces

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/21/2019
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
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160.00	-12.38	-5.23	0.00	-108.17	0.00	108.17	1868.58	934.29	2188.24	1086.34	25.57	-1.629	0.000	0.106
161.50	-10.69	-4.85	0.00	-100.32	0.00	100.32	1853.60	926.80	2146.41	1065.57	26.09	-1.646	0.000	0.100
165.00	-10.25	-4.76	0.00	-83.33	0.00	83.33	1818.15	909.07	2049.77	1017.59	27.31	-1.682	0.000	0.088
165.25	-10.22	-4.76	0.00	-82.14	0.00	82.14	1815.59	907.79	2042.92	1014.19	27.40	-1.685	0.000	0.087
169.58	-9.43	-4.63	0.00	-61.54	0.00	61.54	1040.26	520.13	1155.41	573.59	28.95	-1.723	0.000	0.116
170.00	-9.39	-4.62	0.00	-59.61	0.00	59.61	1038.39	519.19	1149.55	570.68	29.10	-1.727	0.000	0.114
175.00	-5.43	-2.70	0.00	-36.49	0.00	36.49	1015.17	507.59	1079.51	535.91	30.93	-1.774	0.000	0.073
180.00	-5.06	-2.58	0.00	-23.00	0.00	23.00	990.53	495.27	1010.05	501.43	32.81	-1.806	0.000	0.051
185.00	-3.01	-1.44	0.00	-10.12	0.00	10.12	964.47	482.24	941.35	467.32	34.71	-1.827	0.000	0.025
187.00	-2.79	-1.24	0.00	-5.86	0.00	5.86	953.65	476.82	914.12	453.81	35.48	-1.832	0.000	0.016
190.00	-2.62	-1.17	0.00	-2.14	0.00	2.14	936.98	468.49	873.60	433.69	36.63	-1.836	0.000	0.008
191.50	-0.20	-0.10	0.00	-0.38	0.00	0.38	928.46	464.23	853.48	423.70	37.21	-1.836	0.000	0.001
195.00	-0.05	-0.03	0.00	-0.03	0.00	0.03	908.07	454.03	806.98	400.62	38.55	-1.836	0.000	0.000
196.00	0.00	-0.02	0.00	0.00	0.00	0.00	902.11	451.06	793.81	394.08	38.94	-1.836	0.000	0.000

Final Analysis Summary

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/21/2019	
Site Name: Torrington/Oandg Ind Inc	Exposure: C		
Height: 196.00 (ft)	Crest Height: 0.00		
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil		
Gh: 1.1	Topography: 1	Struct Class: II	
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Reactions

Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)
1.2D + 1.6W 93 mph Wind	45.1	0.00	81.32	0.00	0.00	6217.63
0.9D + 1.6W 93 mph Wind	45.1	0.00	60.97	0.00	0.00	6137.00
1.2D + 1.0Di + 1.0Wi 40 mph Wind	9.4	0.00	133.00	0.00	0.00	1374.20
1.2D + 1.0E	2.5	0.00	81.38	0.00	0.00	330.35
0.9D + 1.0E	2.5	0.00	61.04	0.00	0.00	325.87
1.0D + 1.0W 60 mph Wind	11.7	0.00	67.82	0.00	0.00	1606.05

Max Stresses

Load Case	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Elev (ft)	Stress Ratio
1.2D + 1.6W 93 mph Wind	-20.08	-27.90	0.00	-920.52	0.00	-920.52	2056.07	1028.0	2766.99	1373.65	140.00	0.681
0.9D + 1.6W 93 mph Wind	-14.49	-27.35	0.00	-901.84	0.00	-901.84	2056.07	1028.0	2766.99	1373.65	140.00	0.664
1.2D + 1.0Di + 1.0Wi 40 mph Wind	-50.50	-6.34	0.00	-214.00	0.00	-214.00	2056.07	1028.0	2766.99	1373.65	140.00	0.180
1.2D + 1.0E	-22.60	-1.55	0.00	-66.51	0.00	-66.51	2056.07	1028.0	2766.99	1373.65	140.00	0.059
0.9D + 1.0E	-16.95	-1.52	0.00	-65.37	0.00	-65.37	2056.07	1028.0	2766.99	1373.65	140.00	0.056
1.0D + 1.0W 60 mph Wind	-18.67	-7.19	0.00	-237.46	0.00	-237.46	2056.07	1028.0	2766.99	1373.65	140.00	0.182

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 Reqd	Num Actual	MQ/I (kips)	phi Vn (kips)	Num Reqd	Num Actual	Pu (kips)	phi Pn (kips)	phi Tn (kips)	Ratio
48.9	57.1	(4) PLT-7.25x1.5(31mm Hole)	294.4	0.00	37.1	312.2	37.1	9	14	336.0	37.1	10	13	338.46	489.4	440.94	0.768
87.0	112.3	(4) PLT-6.5x1.5(31mm Hole)	384.9	0.00	37.1	275.2	37.1	8	12	254.8	37.1	7	11	296.90	438.8	386.10	0.769
125.6	136.3	(4) PLT-4.75x1.5(31mm Hole)	409.1	9.82	37.1	186.1	37.1	6	8	178.1	37.1	5	7	197.78	303.1	258.13	0.766

Base Plate Summary

Structure: CT46138-A-SB	Code: EIA/TIA-222-G	1/21/2019
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 63



Reactions	Base Plate	Anchor Bolts
Original Design	Yield (ksi): 45.00	Bolt Circle: 67.68
Moment (kip-ft): 5499.00	Width (in): 73.67	Number Bolts: 28.00
Axial (kip): 55.74	Style: Polygon	Bolt Type: 2.25" 18J
Shear (kip): 40.77	Polygon Sides: 16.00	Bolt Diameter (in): 2.25
Analysis	Clip Length (in): 0.00	Yield (ksi): 75.00
Moment (kip-ft): 6217.63	Effective Len (in): 11.88	Ultimate (ksi): 100.00
Axial (kip): 133.00	Moment (kip-in): 622.99	Arrangement: Radial
Shear (kip): 45.13	Allow Stress (ksi): 60.75	Cluster Dist (in): 0.00
	Applied Stress (ksi): 0.00	Start Angle (deg): 0.00
Moment Design %: 113.07	Stress Ratio: 0.58	Compression
		Force (kip): 162.24
		Allowable (kip): 260.00
		Ratio: 0.64
		Tension
		Force (kip): 152.74
		Allowable (kip): 260.00
		Ratio: 0.60



Monopole Mat Foundation Design

Date
10/31/2017

Customer Name:	SBA Communcations Corp	EIA/TIA Standard:	EIA-222-G
Site Name:		Structure Height (Ft.):	53
Site Number:		Engineer Name:	J. Chen
Engr. Number:		Engineer Login ID:	

Foundation Info Obtained from:

Mapping Operation
Monopole
Analysis

Structure Type:

Analysis or Design?

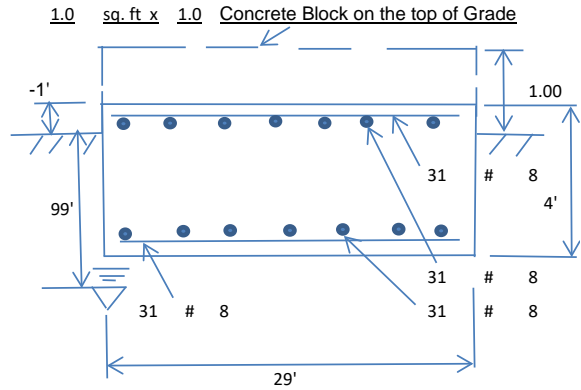
Base Reactions (Factored):

Axial Load (Kips):	80.8	Shear Force (Kips):	45.1
Uplift Force (Kips):	0.0	Moment (Kips-ft):	6215.7

Allowable overstress %: 5.0%

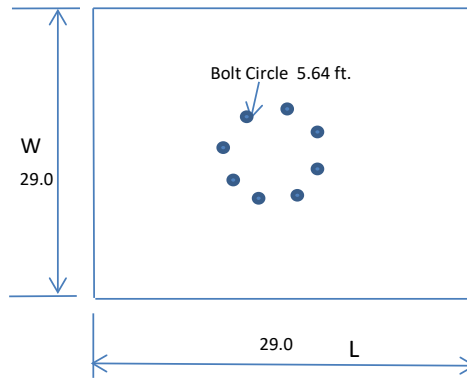
Foundation Geometries:

Anchor Bolt Circle (ft.):	5.64	Mods required -Yes/No ?:	Yes
Thickness of Pad (ft):	4.00	Depth of Base BG (ft.):	5.00
Length of Pad (ft.):	29	Width of Pad (ft.):	29
Add Concrete Width & Length (ft.):	1	Add Concrete Thick. (ft)	1
Final Length of pad (ft)	29.0	Final width of pad (ft):	29.0



Material Properties and Rebar Info:

Concrete Strength (psi):	3000	Steel Elastic Modulus:	29000 ksi
Pad Rebar Yield (Ksi):	60	Tie Spacing (in):	12.0
Pad Steel Rebar Size (#):	8	Unit Weight of Concrete:	150.0 pcf
Concrete Cover (in.):	3		
Rebar at the bottom of the concrete pad:			
Qty. of Rebar in Pad (L):	31	Qty. of Rebar in Pad (W):	31
Rebar at the top of the concrete pad:			
Qty. of Rebar in Pad (L):	31	Qty. of Rebar in Pad (W):	31



Apply 1.35 factor for e/w Per G: 1.35

Soil Design Parameters:

Water Table B.G.S. (ft):	99.0	Unit Weight of Water:	62.4 pcf	Angle from Top of Pad:	30
Ultimate Bearing Pressure (psf):	12000	Ultimate Skin Friction:	0 Psf	Angle from Bottm of Pad:	25
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	No	Angle from Bottm of Pad:	25
Consider soil hor. resist. for OTM.:	No	Reduction factor on the maximum soil bearing pressure:	1.00		

Foundation Analysis and Design:

Uplift Strength Reduction Factor:	0.75	Compression Strength Reduction Factor:	0.75
Total Dry Soil Volume (cu. Ft.):	811.39	Total Dry Soil Weight (Kips):	81.14
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	81.14	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	3340.02	Total Dry Concrete Weight (Kips):	501.00
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00
Total Effective Concrete Weight (Kips):	501.00	Total Vertical Load on Base (Kips):	662.94

Check Soil Capacities:

Calculated Maxium Net Soil Pressure under the base (psf):	3214	<	Allowable Factored Soil Bearing (psf):	9000	0.36	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	8815.5	>	Design Factored Momnt (kips-ft):	6443	0.73	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	1.37					OK!

Load/
Capacity
Ratio

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

Concrete Pad:

One-Way Design Shear Capacity (L-Direction, Kips):	1272.3	>	One-Way Factored Shear (L-D. Kips):	365.2	0.29	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	1272.3	>	One-Way Factored Shear (W-D., Kips)	365.2	0.29	OK!
One-Way Design Shear Capacity (Corner-Corner, Kips):	1529.9	>	One-Way Factored Shear (C-C, Kips):	676.6	0.44	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0016	OK!	Lower Steel Pad Reinf. Ratio (W-Direc	0.0016		
Lower Steel Pad Moment Capacity (L-Direction, Kips-ft):	4812.9	>	Moment at Bottom (L-Direct, K-Ft):	1409.9	0.29	OK!
Lower Steel Pad Moment Capacity (W-Direction, Kips-ft):	4812.9	>	Moment at Bottom (W-Direct, K-Ft):	1409.9	0.29	OK!
Lower Steel Pad Moment Capacity (Corner-Corner, K-ft):	6783.7	>	Moment at Bottom (C-C Dir, K-Ft):	1993.9	0.29	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0016	OK!	Upper Steel Reinf. Ratio (W-Direct.):	0.0016		
Upper Steel Pad Moment Capacity (L-Direction, Kips-ft):	4812.9	>	Moment at the top (L-Dir Kips-Ft):	473.5	0.10	OK!
Upper Steel Pad Moment Capacity (W-Direction, Kips-ft):	4812.9	>	Moment at the top (W-Dir Kips-Ft):	473.5	0.10	OK!
Upper Steel Pad Moment Capacity (Corner-Corner, K-ft):	6783.7	>	Moment at the top (C-C Direc, K-Ft):	904.1	0.13	OK!

November 12, 2018



SAI Communications
12 Industrial Way
Salem NH, 03079

RE: Site Number: CT1205 (LTE 3C-4C-FN-5C)
FA Number: 10035404
PACE Number: MRCTB033602
PT Number: 2051A0JDAE
Site Name: TORRINGTON - BURR MT ROAD
Site Address: Burr Mountain Road
Torrington, CT 06790

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 its capability of supporting the following loading:

- (3) 7770 Antennas (55.0"x11.0"x5.0" - Wt. = 35 lbs. /each)
- (3) RRUS-12 RRH's (20.4"x18.5"x7.5" - Wt. = 58 lbs. /each)
- (6) LGP21401 TMA's (14.4"x9.0"x2.7" - Wt. = 19 lbs. /each)
- (1) Squid Surge Arrestor (24.0"x9.7"Ø - Wt. = 33 lbs.)
- **(6) 800-10965 Antennas (78.7"x20.0"x6.9" - Wt. = 109 lbs. /each)**
- **(3) B14 4478 RRH's (18.1"x13.4"x8.3" - Wt. = 60 lbs. /each)**
- **(3) B5/B12 4449 RRH's (18.0"x13.2"x9.5" - Wt. = 71 lbs. /each)**
- **(3) RRUS-32 RRH's (27.2"x12.1"x7.0" - Wt. = 60 lbs. /each)**
- **(2) Squid Surge Arrestors (24.0"x9.7"Ø - Wt. = 33 lbs.)**

**Proposed equipment shown in bold*

No original structural design documents or fabrication drawings were available for the existing mounts. HDG's subconsultant, ProVertic LLC, conducted a survey climb and mapping of the existing AT&T antenna mounts on September 20, 2018.

Mount Analysis Methods:

- This analysis was conducted in accordance with EIA/TIA-222-G, Structural Standards for Steel Antenna Towers and Antenna Supporting Structures, the International Building Code 2015 with 2018 Connecticut State Building Code Amendments and AT&T Mount Technical Directive - R9.
- HDG considers this mount to be asymmetrical and has applied wind loads in 30 degree increments all around the mount. Per TIA-222-G Annex B, the max basic wind speed for this site is equal to 100 mph with a max basic wind speed with ice of 40 mph. Per the AT&T Mount Technical Directive and Appendix N of the Connecticut State Building Code, an ultimate wind speed of 120 mph converted to a nominal wind speed of 93 mph was used for this analysis.
- HDG considers this site to be exposure category B; tower is located in an urban/suburban and wooded area with numerous closely spaced obstructions.
- HDG considers this site to be topographic category 2; tower is located at the top or crest of an escarpment.
- 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 4.
- 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 mounts. The connection is considered OK by visual inspection.

Based on our evaluation, we have determined that the existing mount **IS CAPABLE** of supporting the proposed installation. HDG recommends the following modifications:

- **Install new handrail kit, SitePro1 P/N HRK12 (or approved equal). Handrail kit is required per AT&T Technical Directive to stabilize existing cantilevered antennas.**

	Component	Controlling Load Case	Stress Ratio	Pass/Fail
Proposed Mount Rating	164	LC2	69%	PASS

Reference Documents:

- Mount mapping report prepared by ProVertic LLC.

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
Structural Dept. Head



Daniel P. Hamm, PE
Principal

FIELD PHOTOS:







HUDSON
Design Group LLC

Wind & Ice Calculations

Date: 11/12/2018
 Project Name: Burr Mountain Road
 Project Number: CT1205
 Designed By: JN Checked By: MSC



ICE WEIGHT CALCULATIONS

Thickness of ice: 2.66 in.
 Density of ice: 56 pcf

7770 Antenna

Weight of ice based on total radial SF area:
 Height (in): 55.0
 Width (in): 11.0
 Depth (in): 5.0
 Total weight of ice on object: 220 lbs
 Weight of object: 35 lbs
Combined weight of ice and object: 255 lbs

800-10965 Antenna

Weight of ice based on total radial SF area:
 Height (in): 78.7
 Width (in): 20.0
 Depth (in): 6.9
 Total weight of ice on object: 508 lbs
 Weight of object: 109 lbs
Combined weight of ice and object: 617 lbs

RRUS-12 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: 125 lbs
 Weight of object: 58 lbs
Combined weight of ice and object: 183 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: 90 lbs
 Weight of object: 60 lbs
Combined weight of ice and object: 150 lbs

B5/B12 4449 RRH

Weight of ice based on total radial SF area:
 Height (in): 18.0
 Width (in): 13.2
 Depth (in): 9.5
 Total weight of ice on object: 92 lbs
 Weight of object: 71 lbs
Combined weight of ice and object: 163 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: 123 lbs
 Weight of object: 60 lbs
Combined weight of ice and object: 183 lbs

LGP21401 TMA

Weight of ice based on total radial SF area:
 Height (in): 14.4
 Width (in): 9.0
 Depth (in): 2.7
 Total weight of ice on object: 47 lbs
 Weight of object: 19 lbs
Combined weight of ice and object: 66 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: 80 lbs
 Weight of object: 33 lbs
Combined weight of ice and object: 113 lbs

HSS 4x4x1/4

Weight of ice based on total radial SF area:
 Height (in): 4
 Width (in): 4
Per foot weight of ice on object: 27 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: 28 plf

L 2x2x3/16 Angles

Weight of ice based on total radial SF area:
 Height (in): 2
 Width (in): 2
Per foot weight of ice on object: 18 plf

L 2-1/2x2-1/2x3/16 Angles

Weight of ice based on total radial SF area:
 Height (in): 2.5
 Width (in): 2.5
Per foot weight of ice on object: 20 plf

2" pipe

Per foot weight of ice:
 diameter (in): 2.38
Per foot weight of ice on object: 16 plf

3" Pipe

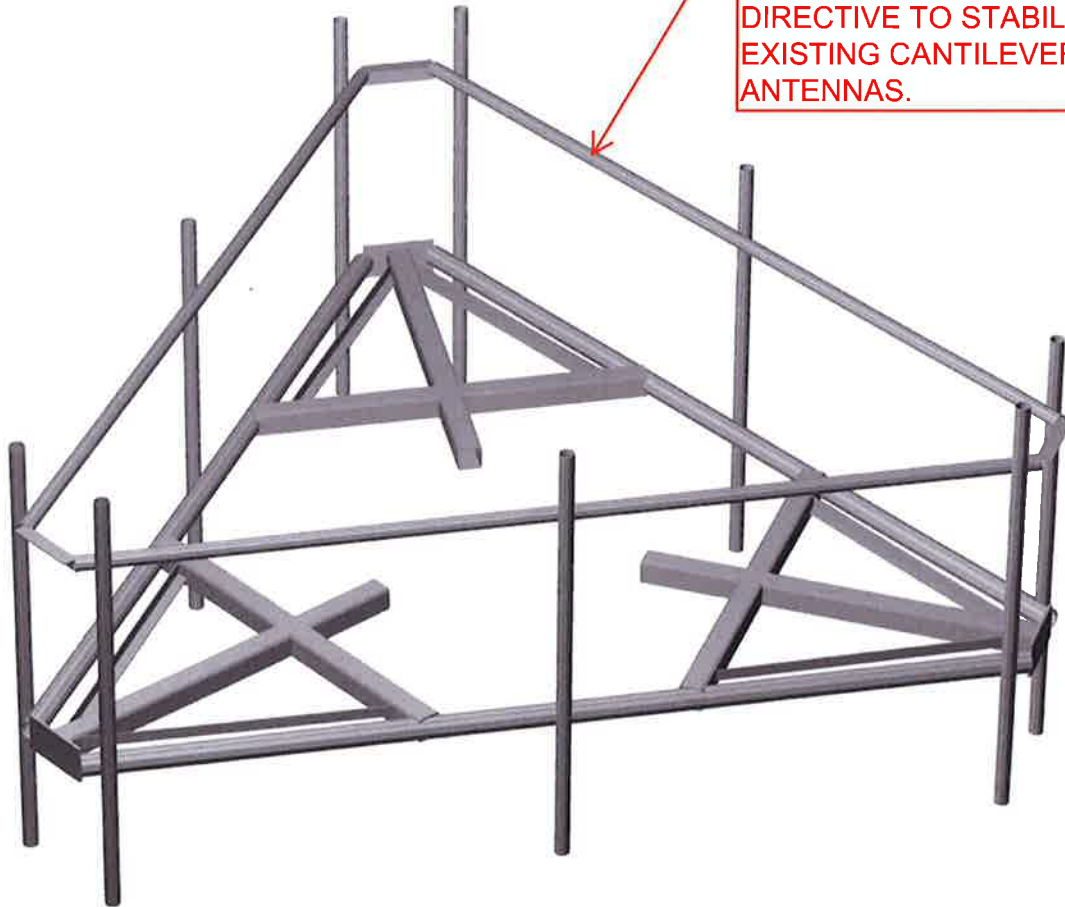
Per foot weight of ice:
 diameter (in): 3.5
Per foot weight of ice on object: 20 plf

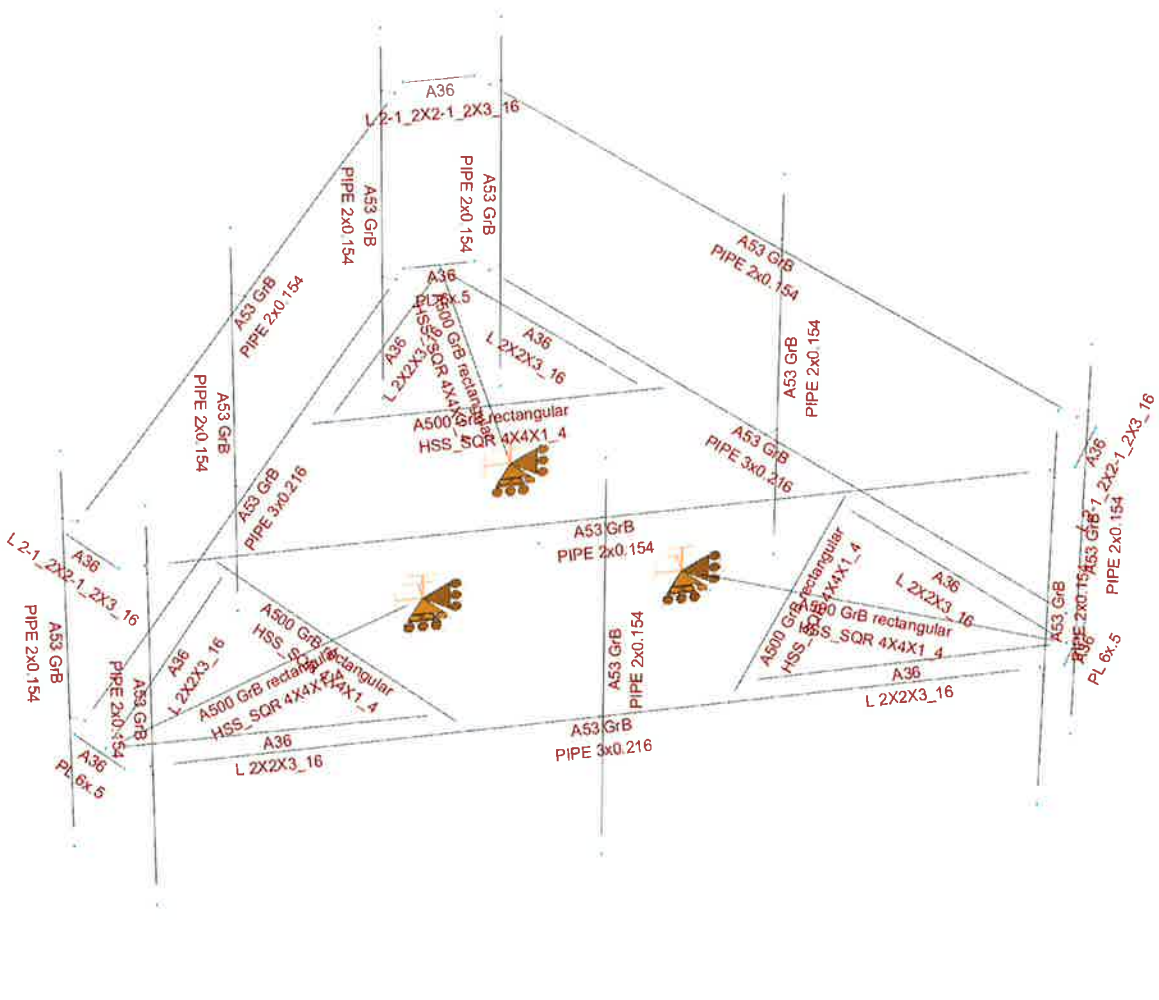


HUDSON
Design Group LLC

**Mount Calculations
(Proposed Conditions)**

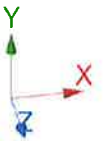
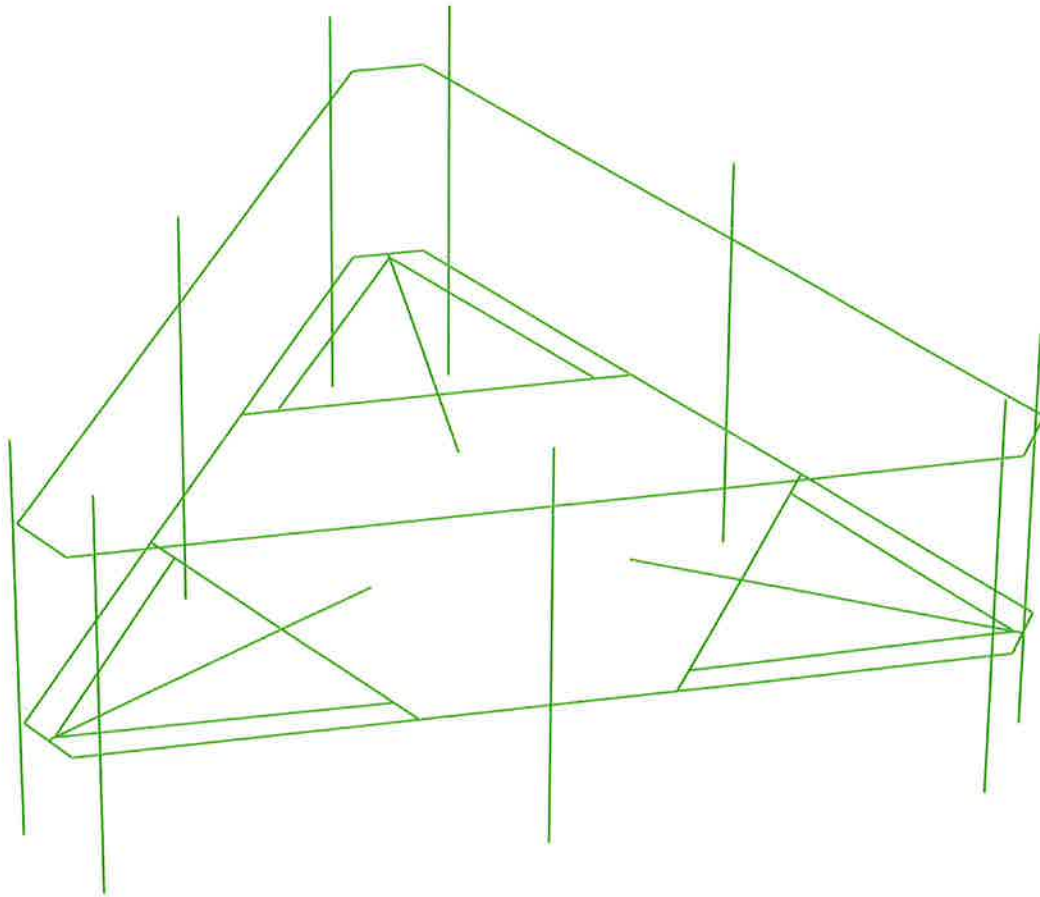
INSTALL NEW HANDRAIL KIT,
SITEPRO1 P/N HRK12
(OR APPROVED EQUAL).
HANDRAIL KIT IS REQUIRED
PER AT&T TECHNICAL
DIRECTIVE TO STABILIZE
EXISTING CANTILEVERED
ANTENNAS.

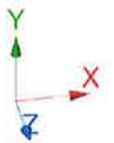
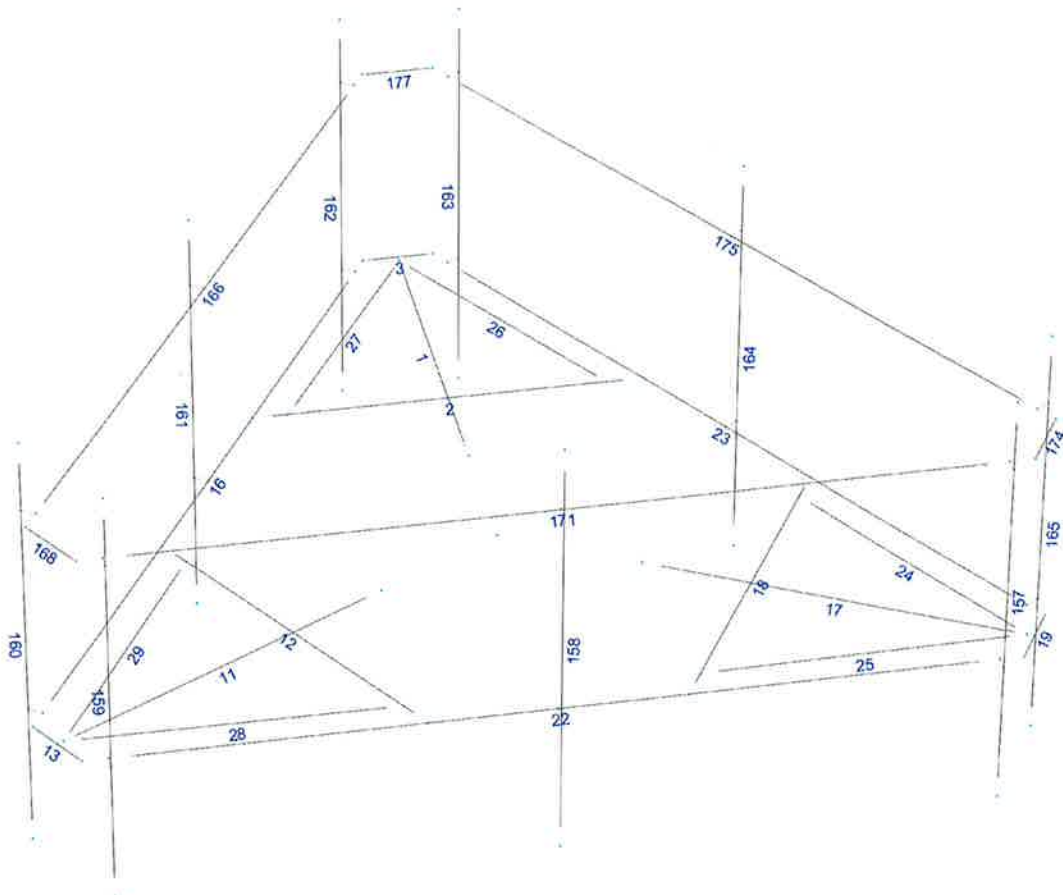




Design status

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





Current Date: 11/12/2018 5:34 PM

Units system: English

File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT1205\LTE 3C-4C-FN-5C\CT1205 (LT 3C-4C-FN-5C) (MOD).etx

Load data

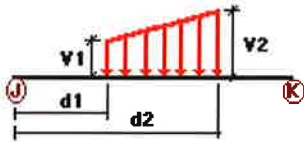
GLOSSARY

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 on Antenna 1	No	LL
LLa2	250 lb Live Load on Antenna 2	No	LL
LLa3	250 lb Live Load on Antenna 3	No	LL

Distributed force on members

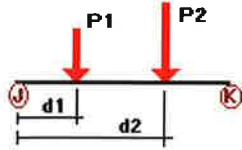


Condition	Member	Dir1	Val1 [Kip/ft]	Val2 [Kip/ft]	Dist1 [ft]	%	Dist2 [ft]	%
DL	1	y	-0.01	-0.01	1.50	No	5.00	No
	2	y	-0.01	-0.01	0.50	No	4.90	No
	11	y	-0.01	-0.01	1.50	No	5.00	No
	12	y	-0.01	-0.01	0.50	No	4.90	No
	17	y	-0.01	-0.01	1.50	No	5.00	No
	18	y	-0.01	-0.01	0.50	No	4.90	No
	24	y	-0.01	0.00	0.00	No	0.00	No
	25	y	-0.01	0.00	0.00	No	0.00	No
	26	y	-0.01	0.00	0.00	No	0.00	No
	27	y	-0.01	0.00	0.00	No	0.00	No
	28	y	-0.01	0.00	0.00	No	0.00	No
	29	y	-0.01	0.00	0.00	No	0.00	No
	W0	3	z	-0.034	0.00	0.00	No	0.00
13		z	-0.034	0.00	0.00	No	0.00	No
16		z	-0.012	0.00	0.00	No	0.00	No

	19	z	-0.034	0.00	0.00	No	0.00	No
	22	z	-0.012	0.00	0.00	No	0.00	No
	23	z	-0.012	0.00	0.00	No	0.00	No
	160	z	-0.008	0.00	0.00	No	0.00	No
	161	z	-0.008	0.00	0.00	No	0.00	No
	162	z	-0.008	0.00	0.00	No	0.00	No
	163	z	-0.008	0.00	0.00	No	0.00	No
	164	z	-0.008	0.00	0.00	No	0.00	No
	165	z	-0.008	0.00	0.00	No	0.00	No
	166	z	-0.008	0.00	0.00	No	0.00	No
	168	z	-0.014	0.00	0.00	No	0.00	No
	171	z	-0.008	0.00	0.00	No	0.00	No
	174	z	-0.014	0.00	0.00	No	0.00	No
	175	z	-0.008	0.00	0.00	No	0.00	No
	177	z	-0.014	0.00	0.00	No	0.00	No
W30	13	x	-0.034	0.00	0.00	No	0.00	No
	16	x	-0.012	0.00	0.00	No	0.00	No
	19	x	-0.034	0.00	0.00	No	0.00	No
	23	x	-0.012	0.00	0.00	No	0.00	No
	157	x	-0.008	0.00	0.00	No	0.00	No
	158	x	-0.008	0.00	0.00	No	0.00	No
	159	x	-0.008	0.00	0.00	No	0.00	No
	160	x	-0.008	0.00	0.00	No	0.00	No
	161	x	-0.008	0.00	0.00	No	0.00	No
	162	x	-0.008	0.00	0.00	No	0.00	No
	163	x	-0.008	0.00	0.00	No	0.00	No
	164	x	-0.008	0.00	0.00	No	0.00	No
	165	x	-0.008	0.00	0.00	No	0.00	No
	166	x	-0.008	0.00	0.00	No	0.00	No
	168	x	-0.014	0.00	0.00	No	0.00	No
	174	x	-0.014	0.00	0.00	No	0.00	No
	175	x	-0.008	0.00	0.00	No	0.00	No
Di	1	y	-0.027	0.00	0.00	No	0.00	No
	2	y	-0.027	0.00	0.00	No	0.00	No
	3	y	-0.028	0.00	0.00	No	0.00	No
	11	y	-0.027	0.00	0.00	No	0.00	No
	12	y	-0.027	0.00	0.00	No	0.00	No
	13	y	-0.028	0.00	0.00	No	0.00	No
	16	y	-0.02	0.00	0.00	No	0.00	No
	17	y	-0.027	0.00	0.00	No	0.00	No
	18	y	-0.027	0.00	0.00	No	0.00	No
	19	y	-0.028	0.00	0.00	No	0.00	No
	22	y	-0.02	0.00	0.00	No	0.00	No
	23	y	-0.02	0.00	0.00	No	0.00	No
	24	y	-0.018	0.00	0.00	No	0.00	No
	25	y	-0.018	0.00	0.00	No	0.00	No
	26	y	-0.018	0.00	0.00	No	0.00	No
	27	y	-0.018	0.00	0.00	No	0.00	No
	28	y	-0.018	0.00	0.00	No	0.00	No
	29	y	-0.018	0.00	0.00	No	0.00	No
	157	y	-0.016	0.00	0.00	No	0.00	No
	158	y	-0.016	0.00	0.00	No	0.00	No
	159	y	-0.016	0.00	0.00	No	0.00	No
	160	y	-0.016	0.00	0.00	No	0.00	No
	161	y	-0.016	0.00	0.00	No	0.00	No
	162	y	-0.016	0.00	0.00	No	0.00	No
	163	y	-0.016	0.00	0.00	No	0.00	No
	164	y	-0.016	0.00	0.00	No	0.00	No
	165	y	-0.016	0.00	0.00	No	0.00	No
	166	y	-0.016	0.00	0.00	No	0.00	No

168	y	-0.02	0.00	0.00	No	0.00	No
171	y	-0.016	0.00	0.00	No	0.00	No
174	y	-0.02	0.00	0.00	No	0.00	No
175	y	-0.016	0.00	0.00	No	0.00	No
177	y	-0.02	0.00	0.00	No	0.00	No

Concentrated forces on members



Condition	Member	Dir1	Value1 [Kip]	Dist1 [ft]	%	
DL	157	y	-0.018	1.00	No	
		y	-0.018	5.00	No	
		y	-0.038	2.50	No	
	158	y	-0.055	0.50	No	
		y	-0.055	5.50	No	
		y	-0.058	2.00	No	
		y	-0.06	2.50	No	
		y	-0.06	2.50	No	
	159	y	-0.055	0.50	No	
		y	-0.055	5.50	No	
		y	-0.071	2.00	No	
		y	-0.06	2.50	No	
	160	y	-0.018	1.00	No	
		y	-0.018	5.00	No	
		y	-0.038	2.50	No	
	161	y	-0.055	0.50	No	
		y	-0.055	5.50	No	
		y	-0.058	2.00	No	
		y	-0.06	2.50	No	
	162	y	-0.055	0.50	No	
		y	-0.055	5.50	No	
		y	-0.071	2.00	No	
		y	-0.06	2.50	No	
	163	y	-0.018	1.00	No	
		y	-0.018	5.00	No	
		y	-0.038	2.50	No	
	164	y	-0.055	0.50	No	
		y	-0.055	5.50	No	
		y	-0.058	2.00	No	
		y	-0.06	2.50	No	
	165	y	-0.055	0.50	No	
		y	-0.055	5.50	No	
		y	-0.071	2.00	No	
		y	-0.06	2.50	No	
	W0	157	z	-0.095	1.00	No
			z	-0.095	5.00	No
158		z	-0.237	0.50	No	
		z	-0.237	5.50	No	
159		z	-0.237	0.50	No	
		z	-0.237	5.50	No	
160		z	-0.062	1.00	No	
		z	-0.062	1.00	No	

		z	-0.062	5.00	No
		z	-0.031	2.50	No
161		z	-0.135	0.50	No
		z	-0.135	5.50	No
		z	-0.089	2.00	No
		z	-0.06	2.50	No
162		z	-0.135	0.50	No
		z	-0.135	5.50	No
		z	-0.06	2.00	No
		z	-0.082	2.50	No
163		z	-0.062	1.00	No
		z	-0.062	5.00	No
		z	-0.031	2.50	No
164		z	-0.135	0.50	No
		z	-0.135	5.50	No
		z	-0.089	2.00	No
		z	-0.06	2.50	No
165		z	-0.135	0.50	No
		z	-0.135	5.50	No
		z	-0.06	2.00	No
		z	-0.082	2.50	No
W30	157	x	-0.051	1.00	No
		x	-0.051	5.00	No
		x	-0.037	2.50	No
158		x	-0.101	0.50	No
		x	-0.101	5.50	No
		x	-0.108	2.00	No
		x	-0.069	2.50	No
159		x	-0.101	0.50	No
		x	-0.101	5.50	No
		x	-0.068	2.00	No
		x	-0.094	2.50	No
160		x	-0.084	1.00	No
		x	-0.084	5.00	No
		x	-0.018	2.50	No
161		x	-0.203	0.50	No
		x	-0.203	5.50	No
		x	-0.045	2.00	No
		x	-0.035	2.50	No
162		x	-0.203	0.50	No
		x	-0.203	5.50	No
		x	-0.036	2.00	No
		x	-0.048	2.50	No
163		x	-0.084	1.00	No
		x	-0.084	5.00	No
		x	-0.018	2.50	No
164		x	-0.203	0.50	No
		x	-0.203	5.50	No
		x	-0.045	2.00	No
		x	-0.035	2.50	No
165		x	-0.203	0.50	No
		x	-0.203	5.50	No
		x	-0.036	2.00	No
		x	-0.048	2.50	No
Di	157	y	-0.11	1.00	No
		y	-0.11	5.00	No
		y	-0.094	2.50	No
158		y	-0.254	0.50	No
		y	-0.254	5.50	No
		y	-0.125	2.00	No

		y	-0.09	2.50	No
159		y	-0.254	0.50	No
		y	-0.254	5.50	No
		y	-0.092	2.00	No
		y	-0.123	2.50	No
160		y	-0.11	1.00	No
		y	-0.11	5.00	No
		y	-0.094	2.50	No
161		y	-0.254	0.50	No
		y	-0.254	5.50	No
		y	-0.125	2.00	No
		y	-0.09	2.50	No
162		y	-0.254	0.50	No
		y	-0.254	5.50	No
		y	-0.092	2.00	No
		y	-0.123	2.50	No
163		y	-0.11	1.00	No
		y	-0.11	5.00	No
		y	-0.094	2.50	No
164		y	-0.254	0.50	No
		y	-0.254	5.50	No
		y	-0.125	2.00	No
		y	-0.09	2.50	No
165		y	-0.254	0.50	No
		y	-0.254	5.50	No
		y	-0.092	2.00	No
		y	-0.123	2.50	No
Wi0	157	z	-0.029	1.00	No
		z	-0.029	5.00	No
		z	-0.009	2.50	No
158		z	-0.06	0.50	No
		z	-0.06	5.50	No
		z	-0.018	2.00	No
		z	-0.017	2.50	No
159		z	-0.06	0.50	No
		z	-0.06	5.50	No
		z	-0.018	2.00	No
		z	-0.022	2.50	No
160		z	-0.021	1.00	No
		z	-0.021	5.00	No
		z	-0.013	2.50	No
161		z	-0.039	0.50	No
		z	-0.039	5.50	No
		z	-0.029	2.00	No
		z	-0.022	2.50	No
162		z	-0.039	0.50	No
		z	-0.039	5.50	No
		z	-0.022	2.00	No
		z	-0.028	2.50	No
163		z	-0.021	1.00	No
		z	-0.021	5.00	No
		z	-0.013	2.50	No
164		z	-0.039	0.50	No
		z	-0.039	5.50	No
		z	-0.029	2.00	No
		z	-0.022	2.50	No
165		z	-0.039	0.50	No
		z	-0.039	5.50	No
		z	-0.022	2.00	No
		z	-0.028	2.50	No

Wi30	157	x	-0.019	1.00	No	
		x	-0.019	5.00	No	
		x	-0.015	2.50	No	
	158	x	-0.032	0.50	No	
		x	-0.032	5.50	No	
		x	-0.032	2.00	No	
	159	x	-0.023	2.50	No	
		x	-0.032	0.50	No	
		x	-0.032	5.50	No	
	160	x	-0.023	2.00	No	
		x	-0.03	2.50	No	
		x	-0.026	1.00	No	
	161	x	-0.026	5.00	No	
		x	-0.01	2.50	No	
		x	-0.052	0.50	No	
	162	x	-0.052	5.50	No	
		x	-0.021	2.00	No	
		x	-0.018	2.50	No	
	163	x	-0.052	0.50	No	
		x	-0.052	5.50	No	
		x	-0.019	2.00	No	
	164	x	-0.024	2.50	No	
		x	-0.026	1.00	No	
		x	-0.026	5.00	No	
	165	x	-0.01	2.50	No	
		x	-0.052	0.50	No	
		x	-0.052	5.50	No	
	166	x	-0.021	2.00	No	
		x	-0.018	2.50	No	
		x	-0.052	0.50	No	
	167	x	-0.052	5.50	No	
		x	-0.019	2.00	No	
		x	-0.024	2.50	No	
	WLO	157	z	-0.026	1.00	No
			z	-0.026	5.00	No
			z	-0.01	2.50	No
		158	z	-0.01	1.00	No
			z	-0.01	5.00	No
			z	-0.002	2.50	No
		159	z	-0.025	0.50	No
			z	-0.025	5.50	No
			z	-0.005	2.00	No
		160	z	-0.005	2.50	No
			z	-0.025	0.50	No
			z	-0.025	5.50	No
161		z	-0.006	2.00	No	
		z	-0.006	2.50	No	
		z	-0.021	1.00	No	
162		z	-0.021	5.00	No	
		z	-0.013	2.50	No	
		z	-0.039	0.50	No	
163		z	-0.039	5.50	No	
		z	-0.029	2.00	No	
		z	-0.022	2.50	No	
164		z	-0.022	0.50	No	
		z	-0.039	5.50	No	
		z	-0.039	5.50	No	
165		z	-0.022	2.00	No	
		z	-0.028	2.50	No	
		z	-0.021	1.00	No	
166		z	-0.021	5.00	No	
		z	-0.013	2.50	No	
		z	-0.039	0.50	No	
167		z	-0.039	5.50	No	
		z	-0.039	5.50	No	
		z	-0.039	5.50	No	

		z	-0.029	2.00	No
		z	-0.022	2.50	No
	165	z	-0.039	0.50	No
		z	-0.039	5.50	No
		z	-0.022	2.00	No
		z	-0.028	2.50	No
WL30	157	x	-0.019	1.00	No
		x	-0.019	5.00	No
		x	-0.015	2.50	No
	158	x	-0.032	0.50	No
		x	-0.032	5.50	No
		x	-0.032	2.00	No
		x	-0.023	2.50	No
	159	x	-0.032	0.50	No
		x	-0.032	5.50	No
		x	-0.023	2.00	No
		x	-0.03	2.50	No
	160	x	-0.026	1.00	No
		x	-0.026	5.00	No
		x	-0.01	2.50	No
	161	x	-0.052	0.50	No
		x	-0.052	5.50	No
		x	-0.021	2.00	No
		x	-0.018	2.50	No
	162	x	-0.052	0.50	No
		x	-0.052	5.50	No
		x	-0.019	2.00	No
		x	-0.024	2.50	No
	163	x	-0.026	1.00	No
		x	-0.026	5.00	No
		x	-0.01	2.50	No
	164	x	-0.052	0.50	No
		x	-0.052	5.50	No
		x	-0.021	2.00	No
		x	-0.018	2.50	No
	165	x	-0.052	0.50	No
		x	-0.052	5.50	No
		x	-0.019	2.00	No
		x	-0.024	2.50	No
LL1	22	y	-0.25	50.00	Yes
LL2	22	y	-0.25	0.00	Yes
LLa1	157	y	-0.25	50.00	Yes
LLa2	158	y	-0.25	50.00	Yes
LLa3	159	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 on Antenna 1	No	0.00	0.00	0.00
LLa2	250 lb Live Load on Antenna 2	No	0.00	0.00	0.00
LLa3	250 lb Live Load on Antenna 3	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

Current Date: 11/12/2018 5:34 PM

Units system: English

File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT1205\LTE 3C-4C-FN-5C\CT1205 (LT 3C-4C-FN-5C) (MOD).etzl

Steel Code Check

Report: Summary - Group by member

Load conditions to be included in design :

- LC1=1.2DL+1.6W0
- LC2=1.2DL+1.6W30
- LC3=1.2DL-1.6W0
- LC4=1.2DL-1.6W30
- LC5=0.9DL+1.6W0
- LC6=0.9DL+1.6W30
- LC7=0.9DL-1.6W0
- LC8=0.9DL-1.6W30
- LC9=1.2DL+Di+Wi0
- LC10=1.2DL+Di+Wi30
- LC11=1.2DL+Di-Wi0
- LC12=1.2DL+Di-Wi30
- LC13=1.2DL
- LC14=0.9DL
- LC15=1.2DL+1.6LL1
- LC16=1.2DL+1.6LL2
- LC17=1.2DL+Wl0+LLa1
- LC18=1.2DL+Wl30+LLa1
- LC19=1.2DL-Wl0+LLa1
- LC20=1.2DL-Wl30+LLa1
- LC21=1.2DL+Wl0+LLa2
- LC22=1.2DL+Wl30+LLa2
- LC23=1.2DL-Wl0+LLa2
- LC24=1.2DL-Wl30+LLa2
- LC25=1.2DL+Wl0+LLa3
- LC26=1.2DL+Wl30+LLa3
- LC27=1.2DL-Wl0+LLa3
- LC28=1.2DL-Wl30+LLa3

Description	Section	Member	Ctrl Eq.	Ratio	Status	Reference
	<i>HSS_SQR 4X4X1_4</i>	1	LC9 at 0.00%	0.53	OK	Eq. H1-1b
		2	LC9 at 50.00%	0.24	OK	Eq. H1-1b
		11	LC11 at 0.00%	0.53	OK	Eq. H1-1b
		12	LC10 at 50.00%	0.23	OK	Eq. H1-1b
		17	LC12 at 0.00%	0.53	OK	Eq. H1-1b
		18	LC12 at 50.00%	0.24	OK	Eq. H1-1b
	<i>L 2-1_2X2-1_2X3_16</i>	168	LC1 at 0.00%	0.46	OK	Eq. H3-8
		174	LC3 at 0.00%	0.40	OK	Eq. H3-8
		177	LC4 at 0.00%	0.53	OK	Eq. H3-8
	<i>L 2X2X3_16</i>	24	LC4 at 0.00%	0.26	OK	Eq. H2-1
		25	LC11 at 0.00%	0.23	OK	Eq. H2-1
		26	LC9 at 0.00%	0.24	OK	Eq. H2-1
		27	LC1 at 0.00%	0.24	OK	Eq. H2-1
		28	LC11 at 0.00%	0.23	OK	Eq. H2-1
		29	LC2 at 100.00%	0.25	OK	Eq. H2-1
	<i>PIPE 2x0.154</i>	157	LC10 at 64.58%	0.52	OK	Eq. H1-1b
		158	LC1 at 64.58%	0.63	OK	Eq. H1-1b

159	LC12 at 64.58%	0.57	OK	Eq. H1-1b
160	LC9 at 64.58%	0.54	OK	Eq. H1-1b
161	LC4 at 64.58%	0.68	OK	Eq. H1-1b
162	LC2 at 64.58%	0.52	OK	Eq. H1-1b
163	LC4 at 64.58%	0.49	OK	Eq. H1-1b
164	LC2 at 64.58%	0.69	OK	Eq. H1-1b
165	LC9 at 64.58%	0.58	OK	Eq. H1-1b
166	LC9 at 50.00%	0.35	OK	Eq. H1-1b
171	LC12 at 50.00%	0.36	OK	Eq. H1-1b
175	LC9 at 50.00%	0.37	OK	Eq. H1-1b

PIPE 3x0.216

16	LC11 at 36.46%	0.28	OK	Eq. H1-1b
22	LC12 at 63.54%	0.28	OK	Eq. H1-1b
23	LC9 at 63.54%	0.28	OK	Eq. H1-1b

PL 6x.5

3	LC1 at 50.00%	0.13	OK	Eq. H1-1b
13	LC2 at 50.00%	0.15	OK	Eq. H1-1b
19	LC4 at 46.88%	0.14	OK	Eq. H1-1b

Current Date: 11/12/2018 5:34 PM

Units system: English

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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
3	0.00	0.00	-0.75	0
4	0.00	0.00	-2.25	0
5	0.00	0.00	-6.08	0
6	-2.709	0.00	-2.25	0
7	2.709	0.00	-2.25	0
8	-0.50	0.00	-6.08	0
9	0.50	0.00	-6.08	0
10	2.212	0.00	-2.25	0
11	-2.212	0.00	-2.25	0
15	0.00	0.00	1.25	0
28	-1.7321	0.00	2.25	0
29	-3.0311	0.00	3.00	0
30	-6.348	0.00	4.915	0
31	-1.6766	0.00	5.3461	0
32	-4.3856	0.00	0.6539	0
33	-6.098	0.00	5.348	0
34	-6.598	0.00	4.482	0
35	-4.1371	0.00	1.0844	0
36	-1.9251	0.00	4.9156	0
39	1.7321	0.00	2.25	0
40	3.0311	0.00	3.00	0

41	6.348	0.00	4.915	0
42	4.3856	0.00	0.6539	0
43	1.6766	0.00	5.3461	0
44	6.598	0.00	4.482	0
45	6.098	0.00	5.348	0
46	1.9251	0.00	4.9156	0
47	4.1371	0.00	1.0844	0
375	6.2566	0.00	4.8622	0
377	0.00	0.00	-5.9745	0
379	-6.2566	0.00	4.8622	0
581	-0.8382	-2.00	-5.8942	0
582	-6.6062	-2.00	4.0962	0
585	-0.8382	4.00	-5.8942	0
586	-6.6062	4.00	4.0962	0
610	6.6062	-2.00	4.0962	0
611	6.6062	4.00	4.0962	0
618	0.8382	-2.00	-5.8942	0
619	0.8382	4.00	-5.8942	0
626	-5.768	-2.00	5.548	0
627	-5.768	4.00	5.548	0
634	5.768	-2.00	5.548	0
635	5.768	4.00	5.548	0
638	3.7205	-2.00	-0.898	0
639	3.7205	4.00	-0.898	0
646	-3.7205	-2.00	-0.898	0
647	-3.7205	4.00	-0.898	0
650	0.00	-2.00	5.5461	0
651	0.00	4.00	5.5461	0
652	-6.598	3.00	4.482	0
655	-6.098	3.00	5.348	0
660	6.098	3.00	5.348	0
663	6.598	3.00	4.482	0
668	-0.50	3.00	-6.08	0
669	0.50	3.00	-6.08	0

Restraints

Node	TX	TY	TZ	RX	RY	RZ
3	1	1	1	1	1	1
28	1	1	1	1	1	1
39	1	1	1	1	1	1

Members

Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	Ig factor
1	3	5		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
2	7	6		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
3	8	9		PL 6x.5	A36	0.00	0.00	0.00
11	28	30		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
12	32	31		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00

13	33	34	PL 6x.5	A36	0.00	0.00	0.00
16	34	8	PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
17	39	41	HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
18	43	42	HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
19	44	45	PL 6x.5	A36	0.00	0.00	0.00
22	33	45	PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
23	44	9	PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
24	47	375	L 2X2X3_16	A36	0.00	0.00	0.00
25	46	375	L 2X2X3_16	A36	0.00	0.00	0.00
26	10	377	L 2X2X3_16	A36	0.00	0.00	0.00
27	11	377	L 2X2X3_16	A36	0.00	0.00	0.00
28	36	379	L 2X2X3_16	A36	0.00	0.00	0.00
29	379	35	L 2X2X3_16	A36	0.00	0.00	0.00
157	635	634	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
158	651	650	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
159	627	626	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
160	586	582	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
161	647	646	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
162	585	581	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
163	619	618	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
164	639	638	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
165	611	610	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
166	652	668	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
168	652	655	L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
171	655	660	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
174	660	663	L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
175	663	669	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
177	669	668	L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00

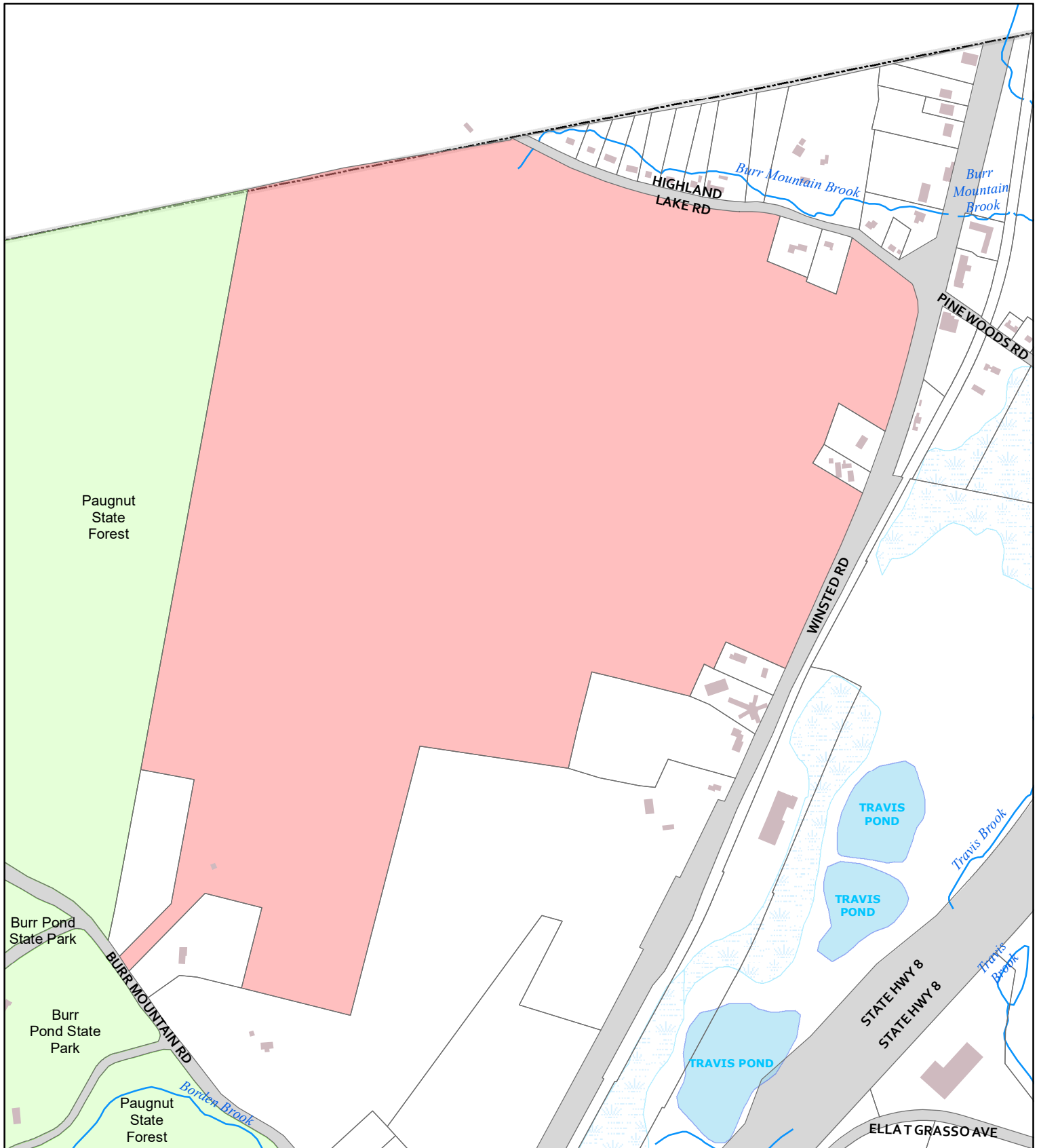
Orientation of local axes

Member	Rotation [Deg]	Axes23	NX	NY	NZ
25	270.00	0	0.00	0.00	0.00
26	270.00	0	0.00	0.00	0.00
168	90.00	0	0.00	0.00	0.00
174	90.00	0	0.00	0.00	0.00
177	90.00	0	0.00	0.00	0.00

City of Torrington, Connecticut - Assessment Parcel Map

Map/Block/Lot 242-001-005

Address: 3345 WINSTED RD



Approximate Scale: 1 inch = 600 feet

Disclaimer: This map is for informational purposes only. All information is subject to verification by any user. The City of Torrington and its mapping contractors assume no legal responsibility for the information contained herein.

Map Produced Apr 2018

The Assessor's office is responsible for the maintenance of records on the ownership of properties. Assessments are computed at 70% of the estimated market value of real property at the time of the last revaluation which was 2014.



Information on the Property Records for the Municipality of Torrington was last updated on 2/7/2019.

Property Summary Information

Parcel Data And Values

Sales

Permits

Parcel Information

Location:	3345 WINSTED RD	Property Use:	Vacant Land	Primary Use:	Commercial Vacant Land
Unique ID:	8172	Map Block Lot:	242/001/005	Acres:	193.61
490 Acres:	132.98	Zone:	I	Volume / Page:	0444/0497
Developers Map / Lot:	5417/5554	Census:	3107-0N		

Value Information


	Appraised Value	Assessed Value
Land	1,380,133	966,090
Buildings	0	0
Detached Outbuildings	0	0
Total	1,380,133	966,090

Owner's Information

Owner's Data
O & G INDUSTRIES INC 112 WALL ST TORRINGTON CT 06790

[Back To Search \(JavaScript:window.history.back\(1\);\)](#)

[Print View \(PrintPage.aspx?towncode=143&uniqueid=8172\)](#)




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02/09/2019

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PRIORITY MAIL 1-DAY™

Expected Delivery Date: 02/11/19

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

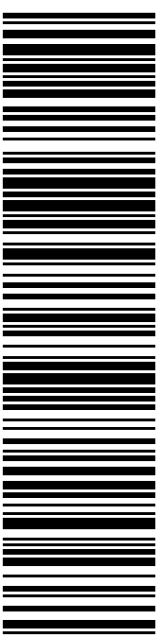
0024

Carrier -- Leave if No Response

C009

SHIP MAYOR ELINOR CARBONE
 TO: CITY OF TORRINGTON
 140 MAIN ST
 CC: MARTIN J CONNOR, AICP
 TORRINGTON CT 06790-5201

USPS TRACKING #



9405 5036 9930 0412 2796 42

Electronic Rate Approved #038555749



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Instructions

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3. Adhere your label to the package. A self-adhesive label is recommended. If tape or glue is used, DO NOT TAPE OVER BARCODE. Be sure all edges are secure.
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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 # :
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Trans. #: 456299105	Priority Mail® Postage: \$7.35
Print Date: 02/08/2019	Total: \$7.35
Ship Date: 02/09/2019	
Expected Delivery Date: 02/11/2019	


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

To: MAYOR ELINOR CARBONE
 CITY OF TORRINGTON
 140 MAIN ST
 CC: MARTIN J CONNOR, AICP
 TORRINGTON CT 06790-5201

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



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 02/09/2019



Mailed from 06268 062S0000000315

9405 5036 9930 0412 2796 59 0073 5000 0010 6790

PRIORITY MAIL 1-DAY™

Expected Delivery Date: 02/11/19

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

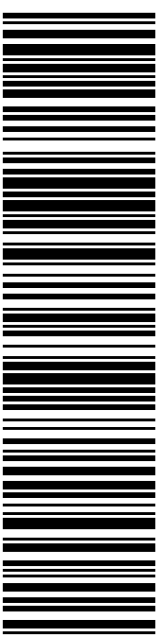
0024

Carrier -- Leave if No Response

C026

SHIP TO:
 O & G INDUSTRIES INC.
 112 WALL ST
 TORRINGTON CT 06790-5416

USPS TRACKING #



9405 5036 9930 0412 2796 59

Electronic Rate Approved #038555749



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

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0412 2796 59

Trans. #: 456299105	Priority Mail® Postage: \$7.35
Print Date: 02/08/2019	Total: \$7.35
Ship Date: 02/09/2019	
Expected Delivery Date: 02/11/2019	

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

To: O & G INDUSTRIES INC.
 112 WALL ST
 TORRINGTON CT 06790-5416

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