



Centek Engineering, Inc.
3-2 North Branford Road
Branford, Connecticut 06405
Phone: (203) 488-0580
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Steven L. Levine
Real Estate Consultant

HAND DELIVERED

January 30, 2017

Attorney Melanie Bachman
Acting Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, Connecticut 06051

Notice of Exempt Modification: Existing Telecommunications Facility at 350 Burr Mountain Road, Torrington

Dear Ms. Bachman:

In order to accommodate technological changes, implement Uniform Mobile Telecommunications System ("UMTS") and/or Long Term Evolution ("LTE") capabilities, and enhance system performance in the State of Connecticut, New Cingular Wireless PCS, LLC ("AT&T") plans to modify the equipment configurations at many of its existing cell sites. Please accept this letter and attachments as notification, pursuant to R.C.S.A. Section 16-50j-73, of construction which constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2). In compliance with R.C.S.A. Section 16-50j-73, copies of this letter are being sent to the chief elected official and the Planning & Zoning Department of the municipality in which the affected cell site is located, the property owner of record, and the tower owner or operator.

UMTS technology offers services to mobile computer and phone users anywhere in the world. Based on the Global System for Mobile ("GSM") communication standard, UMTS is the planned worldwide standard for mobile users. UMTS, fully implemented, gives computer and phone users high-speed access to the Internet as they travel. They have the same capabilities even when they roam, through both terrestrial wireless and satellite transmissions.

LTE is a high-performance air interface for cellular mobile communications. It is designed to increase the capacity and speed of mobile telephone networks.

Attached is a summary of the planned modifications, including power density calculations reflecting the change in AT&T's operations at the site. Also included is documentation of the structural sufficiency of the tower to accommodate the revised antenna configuration.

The changes to the facility do not constitute modifications as defined in Connecticut General Statutes ("C.G.S.") Section 16-50i(d) because the general physical and environmental characteristics of the site will not be significantly changed or altered. Rather, the planned changes to the facility fall squarely within those activities explicitly provided for in R.C.S.A. Section 16-50j-72(b)(2).

1. The height of the overall structure will not increase.
2. The proposed changes will not extend the site boundaries.
3. The proposed changes will not increase the noise level at the site boundary by six decibels or more, or to levels that exceed state and local criteria.
4. The changes will not add radio frequency sending or receiving capability which increases the total radio frequency electromagnetic radiation power density measured at the site boundary to or above the standards adopted by the Federal Communications Commission pursuant to Section 704 of the Telecommunications Act of 1996, as amended, and the State Department of Energy and Environmental Protection, pursuant to Section 22a-162 of the Connecticut General Statutes.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. With recommended modifications to the tower structure, the proposed equipment changes will not impair the structural integrity of the facility, as determined in a certification provided by a professional engineer licensed in Connecticut.

For the foregoing reasons, AT&T respectfully submits that the proposed changes at the referenced site constitute exempt modifications under R.C.S.A. Section 16-50j-72(b)(2).

Please feel free to call me at (860) 830-0380 with questions concerning this matter. Thank you for your consideration.

Sincerely,



Steven L. Levine
Real Estate Consultant

cc: Chief Elected Official, City of Torrington (by email)
Planning & Zoning Department, City of Torrington (by email)
Property Owner of Record – O & G Industries Inc.
Tower Owner / Operator – SBA (by email)

Attachments

**NEW CINGULAR WIRELESS PCS, LLC
Equipment Modification**

350 Burr Mountain Road, Torrington, CT
Geographic Coordinates: N 41-52-23.7 W 73-05-18.3
Site Number 1205
Prior Decisions: Docket 277
Exempt Mods: 10/04, 6/09, 12/12, 2/14

Tower Owner/Manager: SBA

Land Owner of Record: O & G Industries Inc.

Please see the attached Torrington Assessor's card and the Docket 277 D&M property map.

Original Permitting: The Burr Mountain Road facility was approved by the Council under Docket 277 in 2004. (See the attached Decision and Order). AT&T's present Notice contains no proposed modifications that would violate the conditions of approval.

Lease Area: The attached Site Layout excerpt from the Docket 277 D&M Plan shows the lease area, fenced compound, tower and equipment building layout approved in 2004. Comparison with the proposed CD's, attached, shows the current overall site size and boundaries to be as approved in Docket 277. Since all proposed modifications will occur either on the existing tower structure or within AT&T's existing equipment shelter, the proposed modifications will not extend either AT&T's lease area or the existing overall site boundaries.

Equipment Configuration: 198 ft Monopole (Maximum height per Docket 277 is 198 ft)

Current and/or Approved: Platform mount @ 175 ft
Six PowerWave 7770 antennas @ 175 ft c.l.
Three KMW AM-X-CD-16-65-00T-RET antennas @ 175 ft c.l.
Twelve PowerWave TMA's @ 175 ft
One surge arrestor @ 175 ft
Six Ericsson RRUS-11 remote radio heads @ 175 ft
Twelve lines 1 5/8 inch coax
One fiber and two DC cables
Equipment shelter

Proposed Modifications: Remove three RRUS-11 remote radio heads.
Install three RRUS-12 remote radio heads.

Power Density:

Worst-case calculations with 10 dB reduction for existing wireless operations at the site indicate a radio frequency electromagnetic radiation power density, measured at six feet above ground level beside the tower, of approximately 3.1 % of the standard adopted by the FCC. As depicted in the second table below, the total radio frequency electromagnetic radiation power density following proposed modifications would be approximately 3.5 % of the standard.

Existing

Carrier & Technology	Frequency (MHz)	Antennas (Total for All Sectors)	Centerline Ht (feet)	Number of Channels	Power Per Channel (Watts)	Power Density (mW/cm ²)	Standard Limits (mW/cm ²)	Percent of Limit
Other Users *								1.99
AT&T LTE *	734		175	1	1313	0.0165	0.4893	0.34
AT&T UMTS *	880		175	2	565	0.0142	0.5867	0.24
AT&T UMTS *	1900		175	2	875	0.0220	1.0000	0.22
AT&T GSM *	880		175	1	283	0.0036	0.5867	0.06
AT&T GSM *	1900		175	4	525	0.0264	1.0000	0.26
Total								3.12%

* Per CSC records.

Proposed

Carrier & Technology	Frequency (MHz)	Antennas (Total for All Sectors)	Centerline Ht (feet)	Number of Channels	Power Per Channel (Watts)	Power Density (mW/cm ²)	Standard Limits (mW/cm ²)	Percent of Limit
Other Users *								1.99
AT&T LTE	740	3 KMW	175	1	1476	0.0186	0.4933	0.38
AT&T LTE	1900	3 KMW	175	2	3664	0.0923	1.0000	0.92
AT&T UMTS	880	3 PowerWave	175	2	281	0.0071	0.5867	0.12
AT&T UMTS	1900	3 PowerWave	175	1	535	0.0067	1.0000	0.07
AT&T GSM	880	3 PowerWave	175	1	281	0.0035	0.5867	0.06
Total								3.54%

* Per CSC records.

Structural Information:

The attached structural analysis demonstrates that the tower and foundation will have adequate structural capacity to accommodate the proposed equipment modifications. (Tower Engineering Solutions, 1/24/17)

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

Assessor Card

Parcel Information

Location:	BURR MTN RD	Property Use:	Residential	Primary Use:	Residential
Unique ID:	920	Map Block Lot:	242/001/015	Acres:	4.30
490 Acres:	0.00	Zone:	R60	Volume / Page:	0869/0389
Developers Map / Lot:		Census:	3107-0N		

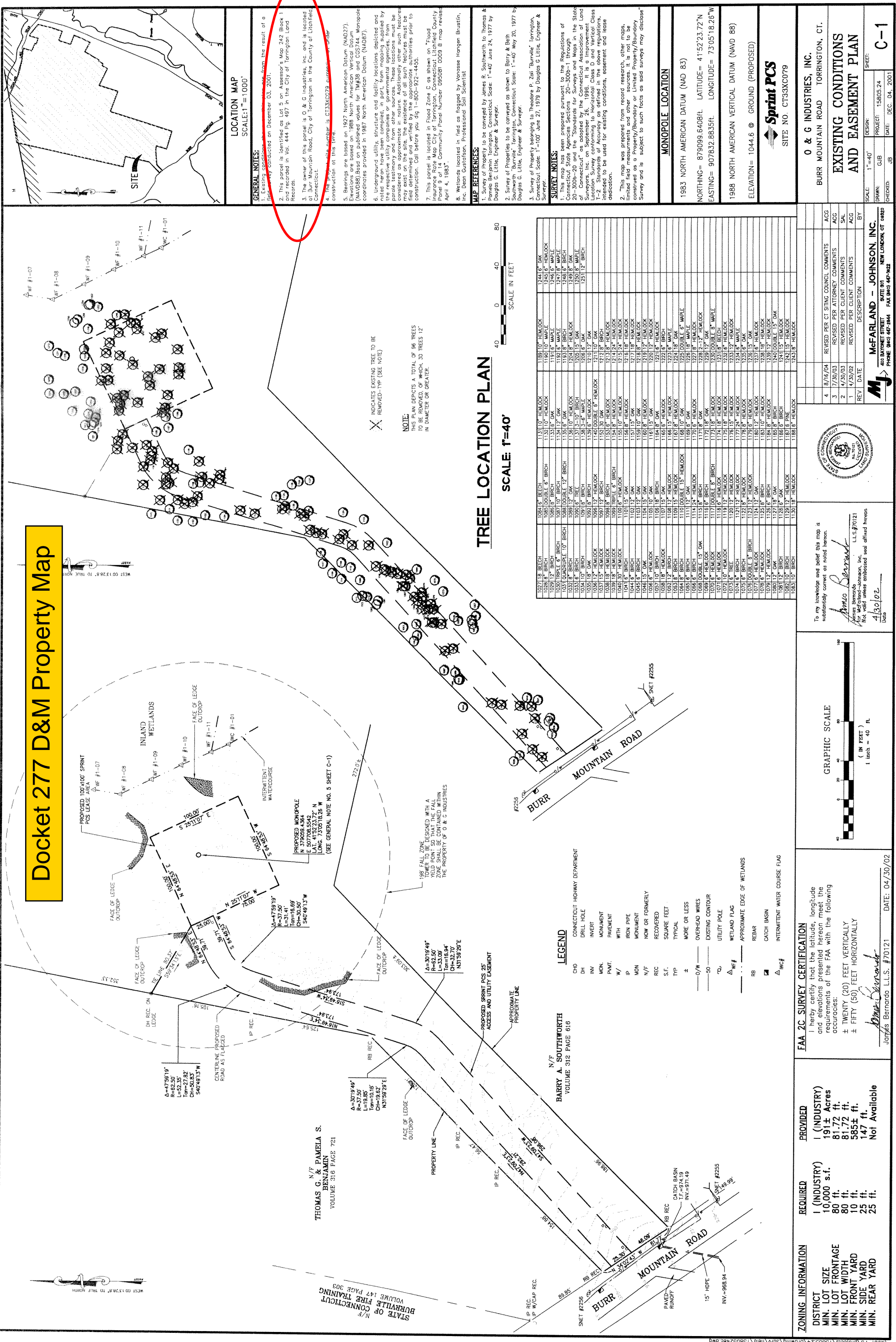
Value Information

	Appraised Value	70% Assessed Value
Land	61,800	43,260
Buildings	0	0
Detached Outbuildings	0	0
Total	61,800	43,260

Owner's Information

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

Docket 277 D&M Property Map



TREE LOCATION PLAN

SCALE: 1" = 40'

NO.	SP. / DBH	COORDINATES	SP. / DBH	COORDINATES	SP. / DBH	COORDINATES	SP. / DBH	COORDINATES
1027	18" BRCH	1081.64	1131.10	HEMLOCK	1180.10	HEMLOCK	1244.6"	OAK
1028	12" BRCH	1082.8"	1132.10	HEMLOCK	1180.10	MAPLE	1245.6"	HEMLOCK
1029	12" BRCH	1082.8"	1133.6"	BRCH	1191.6"	MAPLE	1246.6"	MAPLE
1030	TRIPLE 6" BRCH	1087.10	1134.12	OAK	1192.6"	MAPLE	1247.6"	BRCH
1031	DOUBLE 10" BRCH	1088.10	1135.6"	BRCH	1193.6"	BRCH	1248.6"	BRCH
1032	BRCH	1089.6"	1137.10	BRCH	1205.6"	OAK	1250.6"	MAPLE
1033	6" BRCH	1090.6"	1137.10	BRCH	1206.6"	MAPLE	1251.12"	BRCH
1034	10" BRCH	1091.6"	1138.6"	MAPLE	1210.12"	OAK		
1035	18" BRCH	1092.6"	1139.6"	HEMLOCK	1211.10"	OAK		
1036	12" BRCH	1093.6"	1140.12"	HEMLOCK	1213.6"	HEMLOCK		
1037	12" BRCH	1094.6"	1141.10"	HEMLOCK	1213.6"	HEMLOCK		
1038	18" BRCH	1095.6"	1142.6"	HEMLOCK	1213.6"	HEMLOCK		
1039	18" BRCH	1096.6"	1143.6"	HEMLOCK	1213.6"	HEMLOCK		
1040	10" BRCH	1097.6"	1144.6"	HEMLOCK	1215.24"	HEMLOCK		
1041	6" BRCH	1098.6"	1145.6"	HEMLOCK	1215.24"	HEMLOCK		
1042	6" BRCH	1099.6"	1146.6"	HEMLOCK	1215.24"	HEMLOCK		
1043	6" BRCH	1100.15"	1147.6"	OAK	1215.24"	HEMLOCK		
1044	15" BRCH	1101.12"	1148.6"	OAK	1215.24"	HEMLOCK		
1045	6" BRCH	1101.12"	1149.6"	OAK	1215.24"	HEMLOCK		
1046	15" BRCH	1101.12"	1150.6"	OAK	1215.24"	HEMLOCK		
1047	10" BRCH	1102.6"	1151.6"	OAK	1215.24"	HEMLOCK		
1048	6" BRCH	1103.6"	1152.6"	OAK	1215.24"	HEMLOCK		
1049	6" BRCH	1104.15"	1153.6"	OAK	1215.24"	HEMLOCK		
1050	6" BRCH	1105.10"	1154.6"	OAK	1215.24"	HEMLOCK		
1051	6" BRCH	1106.6"	1155.6"	OAK	1215.24"	HEMLOCK		
1052	6" BRCH	1107.6"	1156.6"	OAK	1215.24"	HEMLOCK		
1053	6" BRCH	1108.6"	1157.6"	OAK	1215.24"	HEMLOCK		
1054	6" BRCH	1109.6"	1158.6"	OAK	1215.24"	HEMLOCK		
1055	6" BRCH	1110.12"	1159.6"	OAK	1215.24"	HEMLOCK		
1056	6" BRCH	1111.12"	1160.6"	OAK	1215.24"	HEMLOCK		
1057	6" BRCH	1112.6"	1161.6"	OAK	1215.24"	HEMLOCK		
1058	6" BRCH	1113.6"	1162.6"	OAK	1215.24"	HEMLOCK		
1059	6" BRCH	1114.6"	1163.6"	OAK	1215.24"	HEMLOCK		
1060	6" BRCH	1115.6"	1164.6"	OAK	1215.24"	HEMLOCK		
1061	6" BRCH	1116.6"	1165.6"	OAK	1215.24"	HEMLOCK		
1062	6" BRCH	1117.6"	1166.6"	OAK	1215.24"	HEMLOCK		
1063	6" BRCH	1118.6"	1167.6"	OAK	1215.24"	HEMLOCK		
1064	6" BRCH	1119.6"	1168.6"	OAK	1215.24"	HEMLOCK		
1065	6" BRCH	1120.6"	1169.6"	OAK	1215.24"	HEMLOCK		
1066	6" BRCH	1121.6"	1170.6"	OAK	1215.24"	HEMLOCK		
1067	6" BRCH	1122.6"	1171.6"	OAK	1215.24"	HEMLOCK		
1068	6" BRCH	1123.6"	1172.6"	OAK	1215.24"	HEMLOCK		
1069	6" BRCH	1124.6"	1173.6"	OAK	1215.24"	HEMLOCK		
1070	6" BRCH	1125.6"	1174.6"	OAK	1215.24"	HEMLOCK		
1071	6" BRCH	1126.6"	1175.6"	OAK	1215.24"	HEMLOCK		
1072	6" BRCH	1127.6"	1176.6"	OAK	1215.24"	HEMLOCK		
1073	6" BRCH	1128.6"	1177.6"	OAK	1215.24"	HEMLOCK		
1074	6" BRCH	1129.6"	1178.6"	OAK	1215.24"	HEMLOCK		
1075	6" BRCH	1130.6"	1179.6"	OAK	1215.24"	HEMLOCK		
1076	6" BRCH	1131.6"	1180.6"	OAK	1215.24"	HEMLOCK		
1077	6" BRCH	1132.6"	1181.6"	OAK	1215.24"	HEMLOCK		
1078	6" BRCH	1133.6"	1182.6"	OAK	1215.24"	HEMLOCK		
1079	6" BRCH	1134.6"	1183.6"	OAK	1215.24"	HEMLOCK		
1080	6" BRCH	1135.6"	1184.6"	OAK	1215.24"	HEMLOCK		
1081	6" BRCH	1136.6"	1185.6"	OAK	1215.24"	HEMLOCK		
1082	6" BRCH	1137.6"	1186.6"	OAK	1215.24"	HEMLOCK		
1083	6" BRCH	1138.6"	1187.6"	OAK	1215.24"	HEMLOCK		

INDICATES EXISTING TREE TO BE REMOVED-TIP (SEE NOTE)

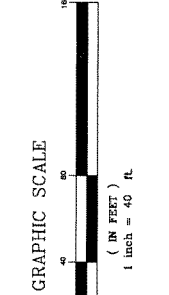
NOTE: THIS PLAN DEPICTS A TOTAL OF 86 TREES TO BE REMOVED, OF WHICH 30 TREES 12" IN DIAMETER OR GREATER.

SCALE IN FEET

To my knowledge and belief this map is substantially correct as noted herein.

James Bernardo
James Bernardo L.L.S.#70121
Not valid unless embossed seal affixed hereon

4/30/02



FAA 2C SURVEY CERTIFICATION

I herby certify that the latitude, longitude and elevations presented hereon meet the requirements of the FAA with the following accuracies:

± TWENTY (20) FEET VERTICALLY
± FIFTY (50) FEET HORIZONTALLY

James Bernardo
James Bernardo L.L.S.#70121
DATE: 04/30/02

ZONING INFORMATION	REQUIRED	PROVIDED
DISTRICT	I (INDUSTRY)	I (INDUSTRY)
MIN. LOT SIZE	10,000 s.f.	191± Acres
MIN. LOT FRONTAGE	80 ft.	81.72 ft.
MIN. LOT WIDTH	80 ft.	81.72 ft.
MIN. FRONT YARD	20 ft.	565± ft.
MIN. SIDE YARD	15 ft.	147 ft.
MIN. REAR YARD	25 ft.	Not Available

LOCATION MAP

SCALE: 1" = 1000'

GENERAL NOTES:

1. Existing conditions shown are from the result of a survey conducted on December 03, 2001.
2. This parcel is identified as Lot 5 on "Assessor's Map 242 Block 1" recorded in Vol. 444 Pg. 487 in the City of Torrington, Conn. Records.
3. The owner of this parcel is O & G Industries, Inc. and is located at Burr Mountain Road, City of Torrington in the County of Litchfield, Connecticut.
4. The parcel number is 0133X0278.
5. Bearings are based on 1927 North American Datum (NAD27). Elevations are based on 1988 North American Vertical Datum (NAVD88) based on published values for TM235 and CGS744. Monopole coordinates provided in 1987 North American Datum (NAD87).
6. Underground utility, structure and facility locations depicted and noted hereon have been completed, in part, from mapping supplied by the owner of the property. The locations of these features are based on a site visit and other sources. These locations must be considered as approximate in nature. Additionally other such features may exist on the site, the existence of all such features must be verified by the owner of the property and the appropriate authorities prior to construction. Call before you dig, 1-800-922-4455.
7. This parcel is located in Flood Zone C as shown on "Flood Insurance Rate Map City of Torrington, Connecticut Litchfield County Community Panel Number 09508 0959 B map revised April 4, 1983".
8. Wetlands located in field as flagged by Yonose Hangan Bruatlin, Inc. Brent Gustafson, Professional Soil Scientist.

MAP REFERENCES:

1. Survey of Property to be conveyed by James R. Southworth to Thomas & Pamela S. Southworth, Torrington, Connecticut. Scale: 1"=40' June 24, 1977 by Douglas G. Little, Engineer & Surveyor.
2. Survey of Properties to be conveyed as shown to Barry & Beth Southworth "Barreille" Torrington, Connecticut. Scale: 1"=40' May 20, 1977 by Douglas G. Little, Engineer & Surveyor.
3. Survey of Property belonging to Theodore P. Zak, "Barreille" Torrington, Connecticut. Scale: 1"=100' June 27, 1979 by Douglas G. Little, Engineer & Surveyor.

SURVEY NOTES:

1. This map has been prepared pursuant to the Regulations of Connecticut State Agencies Sections 20-300b-1 through 20-300b-20 and the "Standards for Surveys and Maps in the State of Connecticut" as adopted by the Connecticut Association of Land Surveyors, Inc. on September 18, 1998. This map is an improvement on the previous map of this property.
- 1-2. Standards of Accuracy as defined in the above regulations, intended to be used for establishing conditions, easement and lease dedication.
2. This map was prepared from record research, other maps, limited field measurements and other sources. It is not to be construed as a Property/Boundary or Limited Property/Boundary Survey and is subject to such facts as said surveys may disclose.

MONOPOLE LOCATION

1983 NORTH AMERICAN DATUM (NAD 83)
 NORTHING= 879099.6408ft. LATITUDE= 41°52'23.72"N
 EASTING= 907832.8835ft. LONGITUDE= 73°05'18.26"W
 1988 NORTH AMERICAN VERTICAL DATUM (NAVD 88)
 ELEVATION= 1044.6 @ GROUND (PROPOSED)



O & G INDUSTRIES, INC.
 BURR MOUNTAIN ROAD
 TORRINGTON, CT.

EXISTING CONDITIONS AND EASEMENT PLAN

SCALE: 1"=40'
 DRAWN: GJB
 CHECKED: JUB
 SHEET: C-1

REV	DATE	DESCRIPTION	BY
4	8/16/04	REVISED PER CT SITING COUNCIL COMMENTS	ACG
3	7/30/03	REVISED PER ATTORNEY COMMENTS	ACG
2	4/30/03	REVISED PER CLIENT COMMENTS	SKL
1	4/30/02	REVISED PER CLIENT COMMENTS	ACG

MJ McFarland - JOHNSON, INC.
 400 BAYVIEW STREET
 SUITE 301
 NEW LONDON, CT 06258
 PHONE (860) 447-2444 FAX (860) 447-8822

STATE OF CONNECTICUT
 DEPARTMENT OF CONSTRUCTION
 REGISTERED PROFESSIONAL ENGINEER
 LICENSE NO. 10000

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Connecticut Siting Council Decisions

Docket 277 Decision & Order

DOCKET NO. 277 – Sprint Spectrum, L.P. application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a telecommunications facility in Torrington, Connecticut.	}	Connecticut
	}	Siting
	}	Council
		April 26, 2004

Decision and Order

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, operation, and maintenance of a telecommunications facility including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate either alone or cumulatively with other effects when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes § 16-50k, be issued to Sprint Spectrum, L.P. d/b/a Sprint PCS for the construction, maintenance and operation of a wireless telecommunications facility at Candidate A, located off Burr Mountain Road, Torrington, Connecticut. The Council denies certification of Candidate B located at Jordan Lane and Laurelton Drive, Torrington, Connecticut.

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

1. The tower shall be constructed no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of Sprint and other entities, both public and private, but such tower, including all appurtenances attached thereto, shall not exceed a height of 198 feet above ground level and shall be designed with a yield point to reduce the area of the setback radius so that it shall be contained within the property of O&G Industries.
2. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be submitted to and approved by the Council prior to the commencement of facility construction and shall include:
 - a. a final site plan(s) of site development to include specifications for the tower, tower foundation, antennas, equipment building, access road, utility line, and landscaping; and
 - b. construction plans for site clearing, water drainage, and erosion and sedimentation control consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended.
3. The Certificate Holder shall, prior to the commencement of operation, provide the Council worst-case modeling of electromagnetic radio frequency power density of all proposed entities' antennas at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin No. 65, August 1997. The Certificate Holder shall ensure a recalculated report of electromagnetic radio frequency power density is submitted to the Council if and when circumstances in operation cause a change in power density above the levels

calculated and provided pursuant to this Decision and Order.

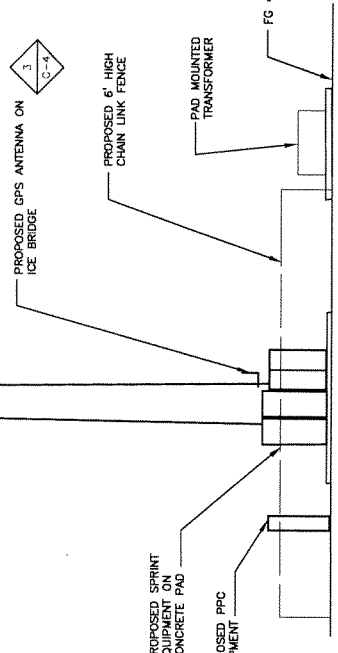
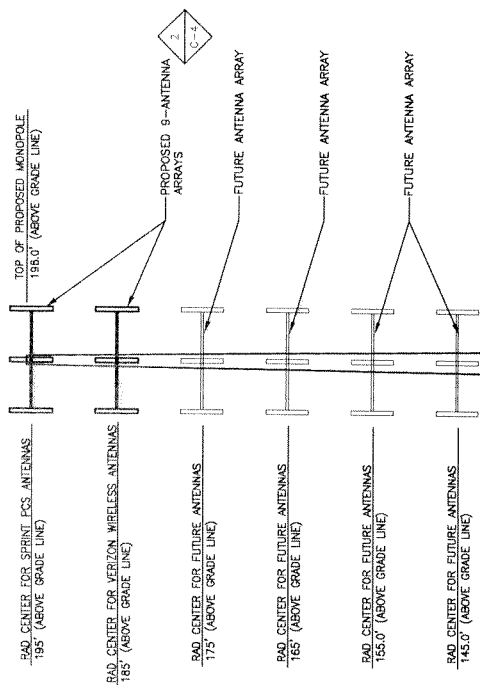
4. Upon the establishment of any new State or federal radio frequency standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards.
5. The Certificate Holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.
6. The Certificate Holder shall provide reasonable space on the tower for no compensation for any municipal antennas, provided such antennas are compatible with the structural integrity of the tower.
7. If the facility does not initially provide wireless services within one year of completion of construction or ceases to provide wireless services for a period of one year, this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made.
8. Any antenna that becomes obsolete and ceases to function shall be removed within 60 days after such antennas become obsolete and cease to function.
9. Unless otherwise approved by the Council, this Decision and Order shall be void if the facility authorized herein is not operational within one year of the effective date of this Decision and Order or within one year after all appeals to this Decision and Order have been resolved.

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

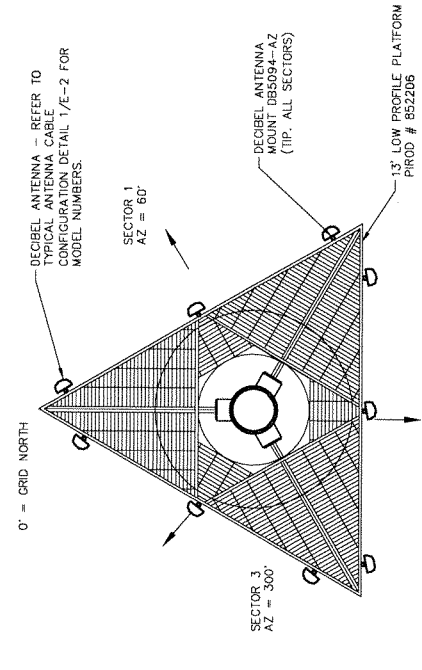
By this Decision and Order, the Council disposes of the legal rights, duties, and privileges of each party named or admitted to the proceeding in accordance with Section 16-50j-17 of the Regulations of Connecticut State Agencies.

The parties and intervenors to this proceeding are:

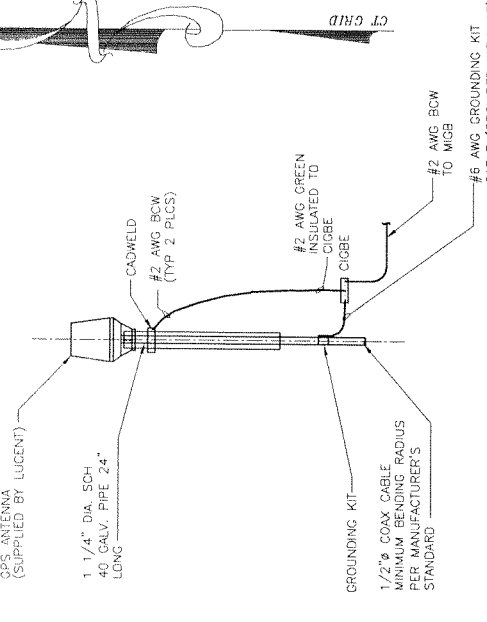
<p><u>Applicant</u></p> <p>Sprint Spectrum, L.P. d/b/a Sprint PCS</p>	<p><u>Its Representative</u></p> <p>Thomas J. Regan, Esq. Brown Rudnick Berlack Israels CityPlace 1 185 Asylum Street Hartford, CT 06103</p>
<p><u>Intervenor</u></p> <p>Cellco Partnership d/b/a Verizon Wireless</p>	<p><u>Its Representative</u></p> <p>Kenneth C. Baldwin, Esq. Robinson & Cole LLP 280 Trumbull Street Hartford, CT 06103-3597 (860) 275-8200</p>



MONOPOLE WEST ELEVATION
NOT TO SCALE



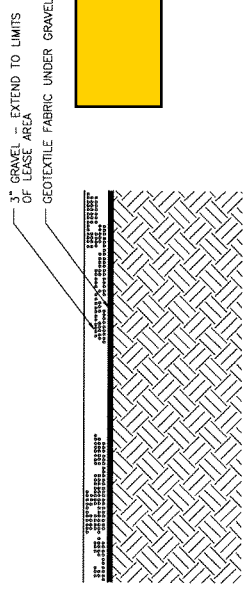
ANTENNA ORIENTATION PLAN
NOT TO SCALE



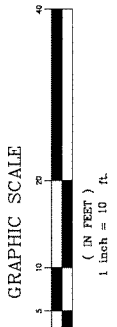
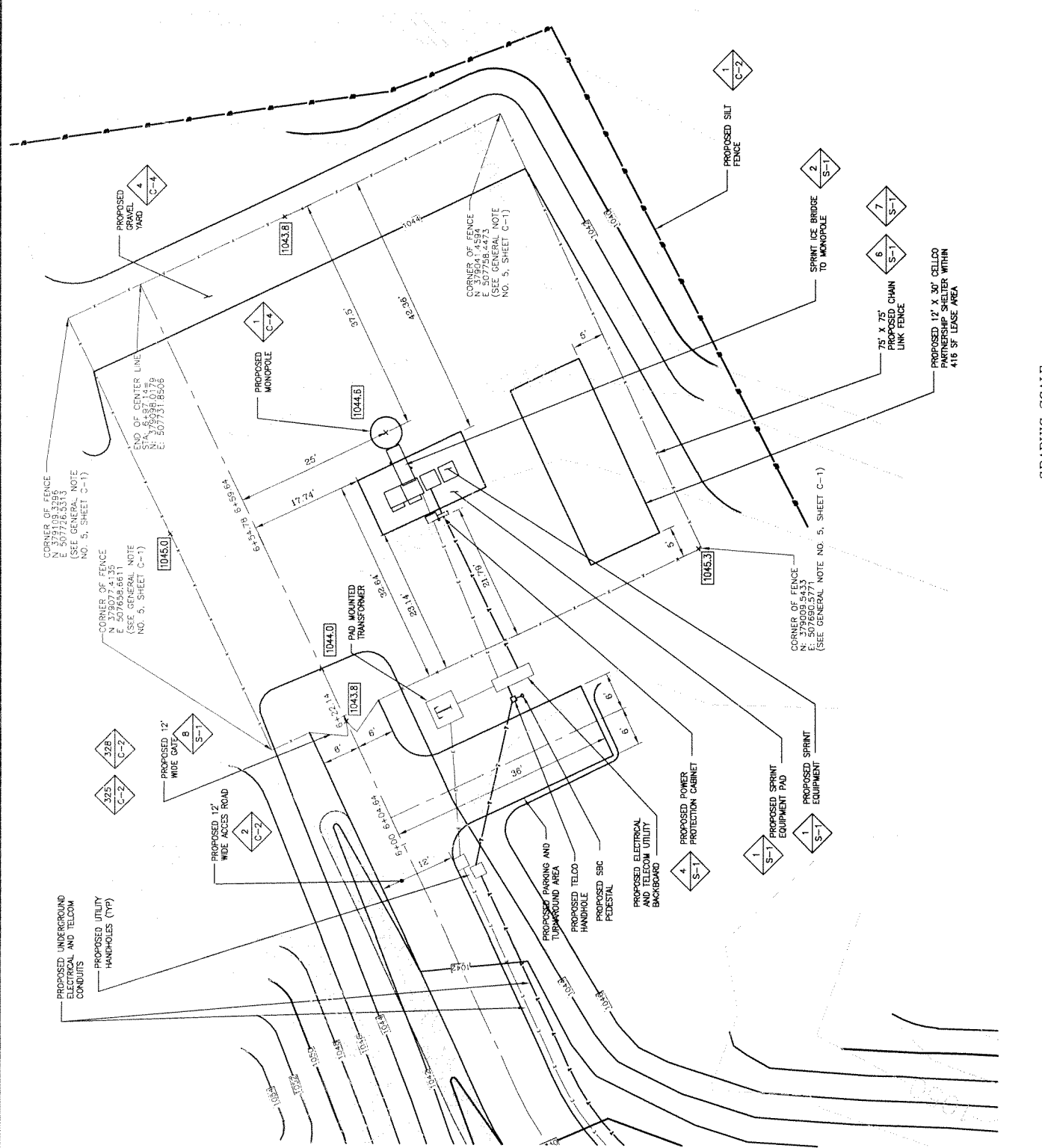
- NOTE:
1. THE ELEVATION AND LOCATION OF THE GPS ANTENNA SHALL BE IN ACCORDANCE WITH THE FINAL RF REPORT.
 2. THE GPS ANTENNA MOUNT IS DESIGNED TO FASTEN TO A STANDARD 1-1/4" DIAMETER, SCHEDULE 40, GALVANIZED STEEL OR STAINLESS STEEL PIPE. THE PIPE MUST NOT BE THREADED AT THE ANTENNA MOUNT END. THE PIPE SHALL BE CUT TO THE REQUIRED LENGTH (MINIMUM OF 18 INCHES) USING A HAND OR ROTARY PIPE CUTTER TO ASSURE A SMOOTH AND PERPENDICULAR CUT. A HACK SAW SHALL NOT BE USED. THE CUT PIPE END SHALL BE DEBURRED AND SMOOTH IN ORDER TO SEAL AGAINST THE NEOPRENE GASKET ATTACHED TO THE ANTENNA MOUNT.
 3. GPS ANTENNA WILL BE MOUNTED ON THE COMPOUND ICE BRIDGE (SEE DETAIL 5/S-1).

SPRINT GPS ANTENNA MOUNTING DETAIL
NOT TO SCALE

- NOTES:
- 1) THE MONOPOLE AND MONOPOLE FOUNDATION SHALL BE DESIGNED BY THE MONOPOLE MANUFACTURER. THESE DESIGNS SHALL BE MANUFACTURED BY A STRUCTURAL ENGINEER LICENSED IN THE STATE OF CONNECTICUT, AND BE DESIGNED TO CONFORM TO THE LATEST APPLICABLE STRUCTURAL STANDARDS AND WIND LOAD REQUIREMENTS AND REQUIREMENTS OF THE CONNECTICUT STATE BUILDING CODES.
 - 2) THE MONOPOLE SHALL BE DESIGNED TO ACCOMMODATE SIX (6) PLATFORM MOUNTED ANTENNA ARRAYS, INCLUDING THOSE PROPOSED HEREIN.



GRAVEL YARD AREA DETAIL
NOT TO SCALE



Docket 277 D&M Compound Layout

Sprint PCS
SITE NO. CT33XC079

O & G INDUSTRIES, INC.
BURR MOUNTAIN ROAD TORRINGTON, CT.

COMPOUND LAYOUT PLAN



REV	DATE	DESCRIPTION	BY	ACC
1	8/16/04	REVISED PER CT SITING COUNCIL COMMENTS		

MJ McFarland - JOHNSON, INC.
400 BAYVIEW STREET SUITE 301 NEW LONDON CT 06258
PHONE (860) 407-2844 FAX (860) 407-2822

SCALE: 1" = 10'	DESIGN: SAL	SHEET: C-4
DRAWN: SAL	PROJECT: 15805.24	
CHECKED: ACC	DATE: JUNE 28, 2004	



Tower Engineering Solutions

Phone (972) 483-0607, Fax (972) 975-9615
8445 Freeport Parkway, Suite 375, Irving, Texas 75063

Structural Analysis Report

Existing 196 ft. Valmont Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT46138-A-01

Customer Site Name: Torrington/Oandg Ind Inc

Carrier Name: AT&T

Carrier Site ID / Name: CT1205 / Torrington - Burr Mountain Road

Site Location: LOT 5 Burr Mountain Road

Torrington, Connecticut

Litchfield County

Latitude: 41.873255

Longitude: -73.088405

Analysis Result:

Max Structural Usage: 65.8% [Pass]

Max Foundation Usage: 64.0% [Pass]

Report Prepared By : Delu Zhou



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 / 2012 IBC / 2016 Connecticut State Building Code
Exposure Category:	C
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft.
Seismic Parameters:	$S_S = 0.182$, $S_1 = 0.065$

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			
-		6	Ericsson RRUS-11 - RRU			
-		1	Raycap DC6-48-60-18-8F - SP			
21	155.0	3	Ericsson - AIR 21 B4A/B2P - Panel	(3) T-Arms	(13) 1 5/8"	T-Mobile
22		3	Ericsson - AIR 21 B2A/B4P - Panel			
23		3	Ericsson - KRY 112 114-1 - Double TMA			
24	145.0	3	RFS - APXV18-206517S-C - Panel	(3) T-Arms	(6) 1 5/8"	Metro PCS
25	132.5	1	Telewave - ANT150F2 - Omni	(1) Standoff	(1) 7/8"	Torrington P.D.
26	116.5	5	14' Omni	(6) Standoff	(6) 1/2"	
27	111.5	1	4' Omni			
28	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	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
14		6	Powerwave - 7770 - Panel			
15		12	Powerwave 21401 - TMA			
16		3	Ericsson RRUS-11 - RRU			
17		3	Ericsson RRUS-12 - RRU			
18		1	Raycap DC6-48-60-18-8F - SP			

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:	58.4%	55.5%	50.2%	65.8%
Pass/Fail	Pass	Pass	Pass	Pass

Foundations

	Moment (Kip-Ft)	Shear (Kips)
Original Design Reactions	5499.0	40.8
Analysis Reactions	5413.4	40.6
Factored Reactions*	7423.7	55.0
% of Design Reactions	72.9%	73.8%

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

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

Operational Condition (Rigidity):

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 1.5328 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.

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

1/24/2017

Page: 2



Shaft Properties

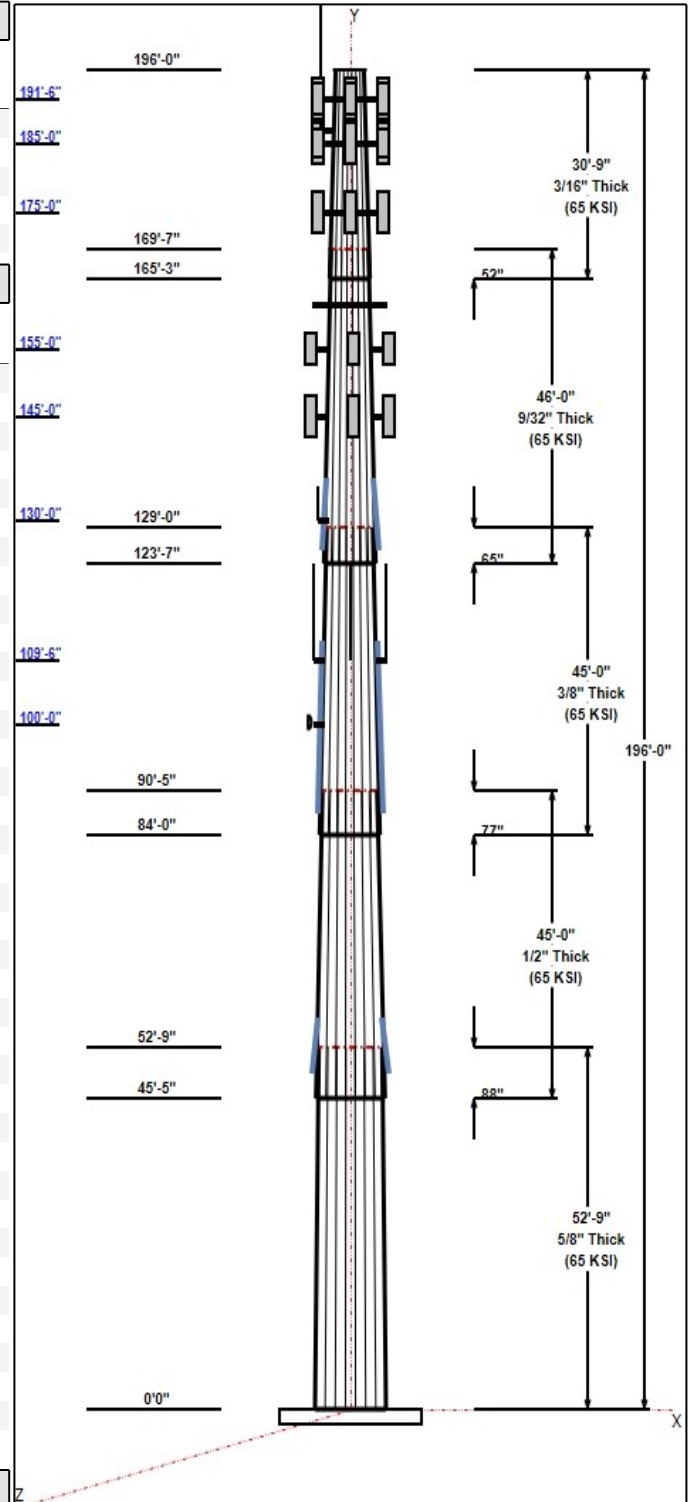
Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	52.75	48.92	60.00	0.625		0.21000	65
2	45.00	42.01	51.46	0.500	Slip	0.21000	65
3	45.00	34.66	44.11	0.375	Slip	0.21000	65
4	46.00	26.70	36.36	0.281	Slip	0.21000	65
5	30.75	21.53	27.98	0.188	Slip	0.21000	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
196.00	196.00	1	6' Lightning rod	Torrington Police Dept
191.50	191.50	3	APXVMT14-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 Police Dept
187.00	187.00	1	Pipe mount	Torrington Police Dept
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	7770	AT&T
175.00	175.00	3	RRUS-11	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
175.00	175.00	3	AM-X-CD-16-65-00T-RET	AT&T
175.00	175.00	12	21401 TMA	AT&T
161.50	161.50	1	Low Profile Platform	Vacant
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 112 114-1 Double	T-Mobile
155.00	155.00	3	T-Arms	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 Police Dept
130.00	132.50	1	ANT150F2	Torrington Police Dept
109.50	116.50	5	14' Omni	Torrington F.D.
109.50	111.50	1	4' Omni	Torrington F.D.
109.50	109.50	5	Standoff	Torrington Police Dept
109.50	109.50	1	Standoff	Torrington Police Dept
100.00	100.00	1	MPRD	Torrington Police Dept
100.00	100.00	1	Standoff	Torrington Police Dept

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	191.50	Inside	1 5/8" Coax	Sprint
0.00	191.50	Inside	1-1/4" Fiber	Sprint
0.00	187.00	Inside	7/8" Coax	Torrington Police Dept





Centek Engineering, Inc.
3-2 North Branford Road
Branford, Connecticut 06405
Phone: (203) 488-0580
Fax: (203) 488-8587

Steven L. Levine
Real Estate Consultant

January 30, 2017

O & G Industries, Inc.
112 Wall Street
Torrington, CT 06790

Notice of Exempt Modification: Existing Telecommunications Facility at 350 Burr Mountain Road, Torrington

To Whom It May Concern:

In order to accommodate technological changes, implement Uniform Mobile Telecommunications System ("UMTS") and Long Term Evolution ("LTE") capabilities, and enhance system performance in the State of Connecticut, New Cingular Wireless PCS, LLC ("AT&T") will be changing its equipment configuration at certain cell sites.

As required by Regulations of Connecticut State Agencies ("R.C.S.A.") Section 16-50j-73, the Connecticut Siting Council has been notified of the changes and will review AT&T's proposal. Please accept this letter as notification under Section 16-50j-73 of construction which constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2).

The enclosed Notice fully sets forth the AT&T proposal. However, if you have any questions or require any further information on the plans for the site or the Siting Council's procedures, please contact the undersigned at 860-830-0380 or Ms. Melanie Bachman, Acting Executive Director, Connecticut Siting Council at (860) 827-2935

Sincerely,

A handwritten signature in black ink, appearing to read "S. L. Levine".

Steven L. Levine
Real Estate Consultant

Enclosure

Email To: Elinor_Carbone@Torringtonct.org
Martin_Connor@Torringtonct.org
MLuther@SBAsite.com

New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 350 Burr Mountain Road, Torrington

In order to accommodate technological changes, implement Uniform Mobile Telecommunications System (“UMTS”) and Long Term Evolution (“LTE”) capabilities, and enhance system performance in the State of Connecticut, New Cingular Wireless PCS, LLC (“AT&T”) will be changing its equipment configuration at certain cell sites.

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Thank you.

-- Steve Levine, for AT&T



Tower Engineering Solutions

Phone (972) 483-0607, Fax (972) 975-9615
8445 Freeport Parkway, Suite 375, Irving, Texas 75063

Structural Analysis Report

Existing 196 ft. Valmont Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT46138-A-01

Customer Site Name: Torrington/Oandg Ind Inc

Carrier Name: AT&T

Carrier Site ID / Name: CT1205 / Torrington - Burr Mountain Road

Site Location: LOT 5 Burr Mountain Road

Torrington, Connecticut

Litchfield County

Latitude: 41.873255

Longitude: -73.088405

Analysis Result:

Max Structural Usage: 65.8% [Pass]

Max Foundation Usage: 64.0% [Pass]

Report Prepared By : Delu Zhou





Tower Engineering Solutions

Phone (972) 483-0607, Fax (972) 975-9615
8445 Freeport Parkway, Suite 375, Irving, Texas 75063

Structural Analysis Report

Existing 196 ft. Valmont Monopole

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Customer Site Number: CT46138-A-01

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Litchfield County

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Report Prepared By : Delu Zhou

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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 / 2012 IBC / 2016 Connecticut State Building Code
Exposure Category:	C
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft.
Seismic Parameters:	$S_S = 0.182$, $S_1 = 0.065$

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
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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			
-		6	Ericsson RRUS-11 - RRU			
-		1	Raycap DC6-48-60-18-8F - SP			
21	155.0	3	Ericsson - AIR 21 B4A/B2P - Panel	(3) T-Arms	(13) 1 5/8"	T-Mobile
22		3	Ericsson - AIR 21 B2A/B4P - Panel			
23		3	Ericsson - KRY 112 114-1 - Double TMA			
24	145.0	3	RFS - APXV18-206517S-C - Panel	(3) T-Arms	(6) 1 5/8"	Metro PCS
25	132.5	1	Telewave - ANT150F2 - Omni	(1) Standoff	(1) 7/8"	Torrington P.D.
26	116.5	5	14' Omni	(6) Standoff	(6) 1/2"	
27	111.5	1	4' Omni			
28	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	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
14		6	Powerwave - 7770 - Panel			
15		12	Powerwave 21401 - TMA			
16		3	Ericsson RRUS-11 - RRU			
17		3	Ericsson RRUS-12 - RRU			
18		1	Raycap DC6-48-60-18-8F - SP			

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:	58.4%	55.5%	50.2%	65.8%
Pass/Fail	Pass	Pass	Pass	Pass

Foundations

	Moment (Kip-Ft)	Shear (Kips)
Original Design Reactions	5499.0	40.8
Analysis Reactions	5413.4	40.6
Factored Reactions*	7423.7	55.0
% of Design Reactions	72.9%	73.8%

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

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

Operational Condition (Rigidity):

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 1.5328 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 analysis is based on the presumption that the tower members and components along with any existing reinforcement items have been correctly and properly designed, manufactured, installed and maintained.
3. All the existing structural members were assumed to be in good condition with no physical damage or deterioration associated with corrosion.
4. An initial tension of 10% of the break strength on all the existing guy wires was assumed in all the structural analyses of guyed towers unless different values were provided by the client. **TES** cannot take responsibility for the deviations in the analysis results because of differences in the initial tension forces of the existing guy wires.
5. Secondary component or connection secondary components, welds and bolts are assumed to be able to carry their intended original design loads. **TES** cannot take responsibility for verification of the adequacy on the connections, bolts and welds present in the structure.
6. 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.
7. 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.
8. 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.
9. If a feasibility analysis was performed, final acceptance of changed conditions shall be based upon a rigorous structural analysis.

Usage Diagram - Max Ratio 58.36% 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

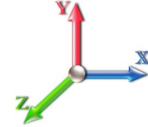
1/24/2017



Page: 1

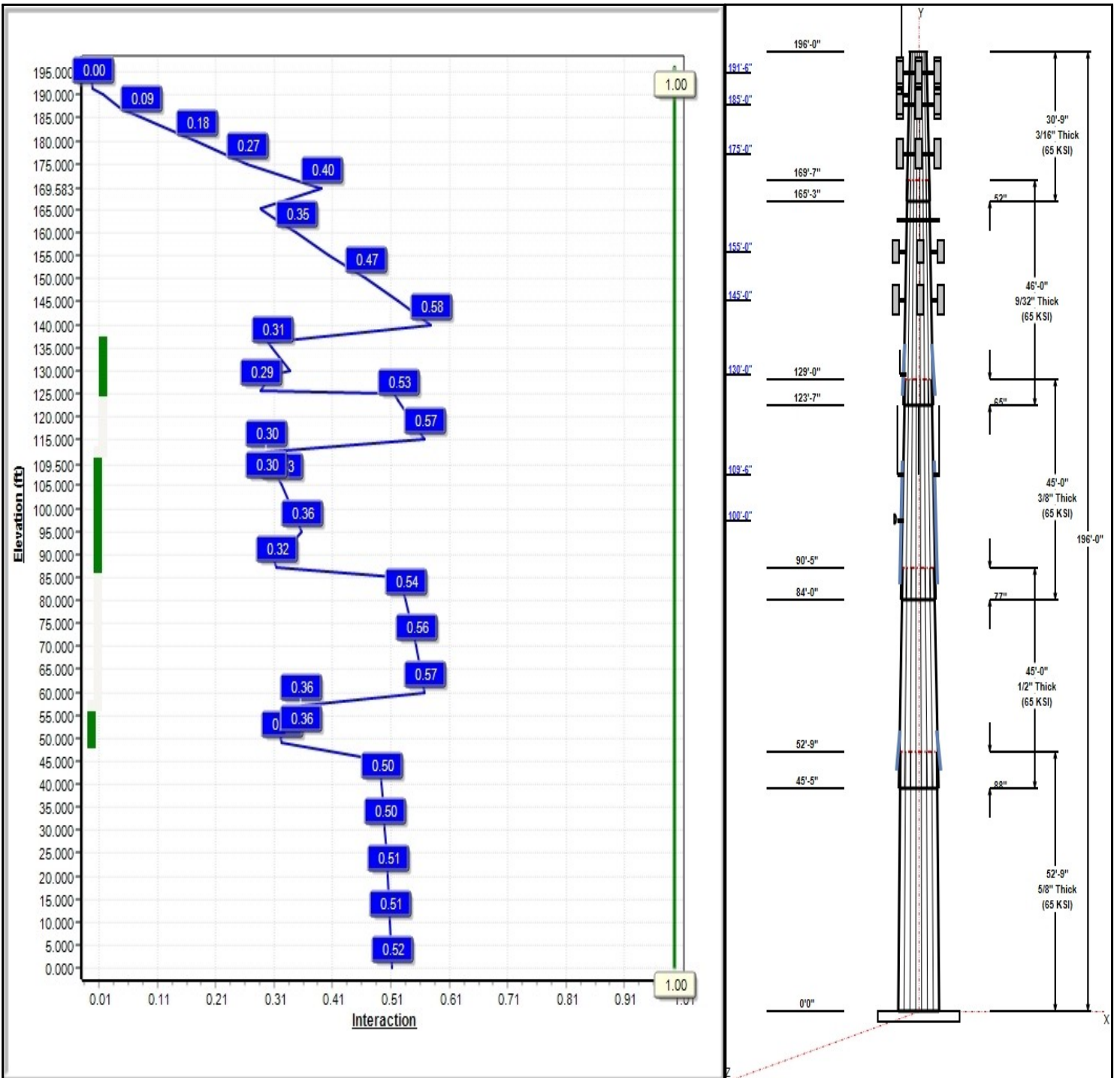
Dead Load Factor: 1.20
 Wind Load Factor: 1.60

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

1/24/2017

Page: 2



Shaft Properties

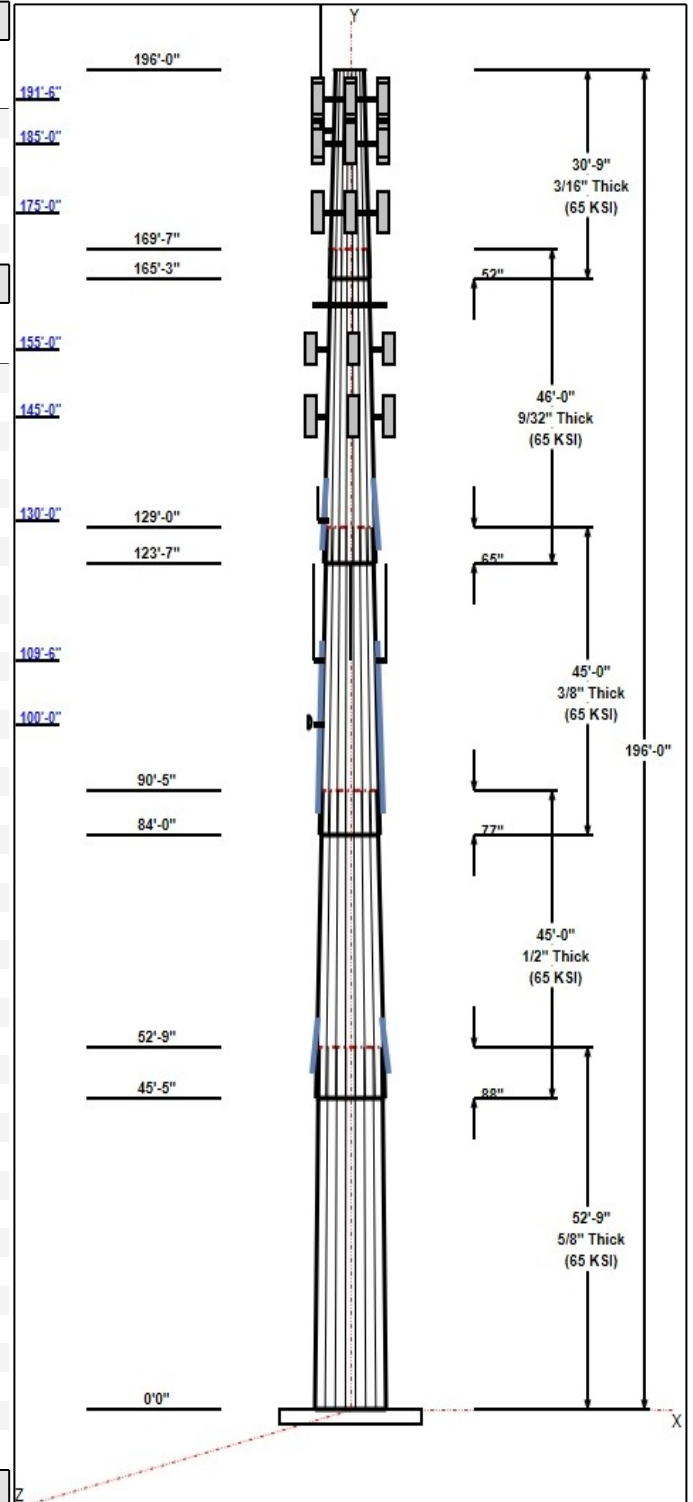
Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	52.75	48.92	60.00	0.625		0.21000	65
2	45.00	42.01	51.46	0.500	Slip	0.21000	65
3	45.00	34.66	44.11	0.375	Slip	0.21000	65
4	46.00	26.70	36.36	0.281	Slip	0.21000	65
5	30.75	21.53	27.98	0.188	Slip	0.21000	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
196.00	196.00	1	6' Lightning rod	Torrington Police Dept
191.50	191.50	3	APXVMT14-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 Police Dept
187.00	187.00	1	Pipe mount	Torrington Police Dept
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	7770	AT&T
175.00	175.00	3	RRUS-11	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
175.00	175.00	3	AM-X-CD-16-65-00T-RET	AT&T
175.00	175.00	12	21401 TMA	AT&T
161.50	161.50	1	Low Profile Platform	Vacant
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 112 114-1 Double	T-Mobile
155.00	155.00	3	T-Arms	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 Police Dept
130.00	132.50	1	ANT150F2	Torrington Police Dept
109.50	116.50	5	14' Omni	Torrington F.D.
109.50	111.50	1	4' Omni	Torrington F.D.
109.50	109.50	5	Standoff	Torrington Police Dept
109.50	109.50	1	Standoff	Torrington Police Dept
100.00	100.00	1	MPRD	Torrington Police Dept
100.00	100.00	1	Standoff	Torrington Police Dept

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	191.50	Inside	1 5/8" Coax	Sprint
0.00	191.50	Inside	1-1/4" Fiber	Sprint
0.00	187.00	Inside	7/8" Coax	Torrington Police Dept



Structure: CT46138-A-SBA

Type: Tapered	Base Shape: 16 Sided	1/24/2017
Site Name: Torrington/Oandg Ind Inc	Taper: 0.21000	
Height: 196.00 (ft)		
Base Elev: 0.00 (ft)		Page: 3



0.00	185.00	Inside	1 5/8" Coax	Verizon
0.00	175.00	Inside	1 5/8" Coax	AT&T
0.00	175.00	Outside	3" Flex Conduit	AT&T
0.00	175.00	Inside	3/4" DC	AT&T
0.00	175.00	Inside	7/16" Fiber	AT&T
0.00	155.00	Inside	1 5/8" Coax	T-Mobile
0.00	145.00	Inside	1 5/8" Coax	Metro PCS
0.00	130.00	Outside	7/8" Coax	Torrington Police Dept
0.00	109.50	Inside	1/2" Coax	Torrington F.D.
0.00	100.00	Inside	CAT5e	Torrington Police Dept

Anchor Bolts

Qty	Specifications	Grade (ksi)	Arrangement
28	2.25" 18J	75.0	Radial

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
3.0000	73.7	45.0	Polygon

Reactions

Load Case	Moment	Shear	Axial
1.2D + 1.6W 93 mph Wind	5413.4	40.6	78.1
0.9D + 1.6W 93 mph Wind	5349.4	40.6	58.5
1.2D + 1.0Di + 1.0Wi 40 mph Wind	1211.6	8.6	122.3
1.2D + 1.0E	308.3	2.4	78.1
0.9D + 1.0E	304.5	2.4	58.6
1.0D + 1.0W 60 mph Wind	1398.7	10.6	65.1

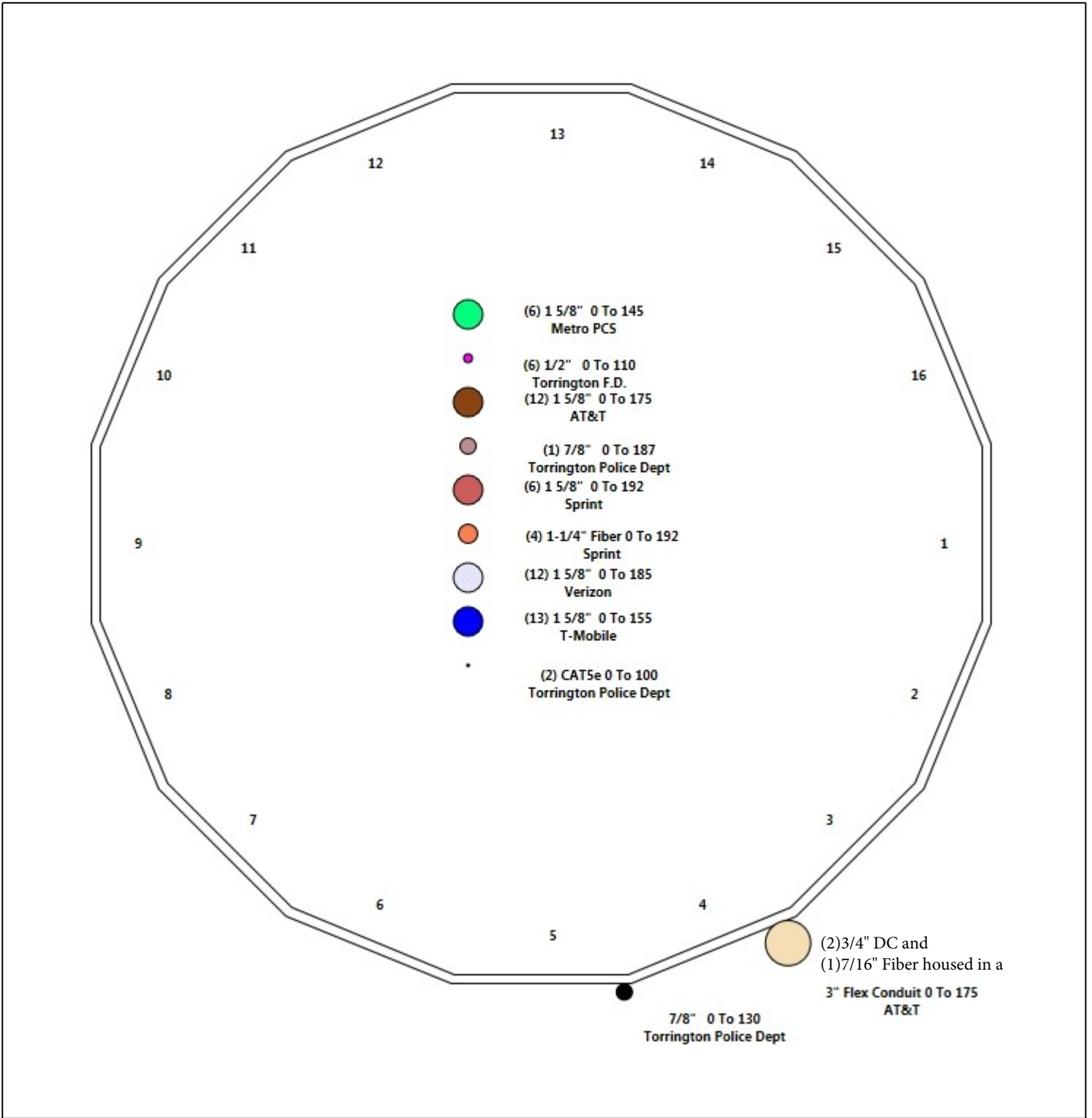
Structure: CT46138-A-SBA - Coax Line Placement

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

1/24/2017



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Shaft Properties

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/24/2017
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		
		Spacing (in)	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	1/24/2017
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	7770	6	35.00	5.50	0.85	233.03	6.976	0.88	0.00	0.00
18	175.00	RRUS-11	3	50.00	2.52	0.67	145.94	3.377	0.70	0.00	0.00
19	175.00	RRUS-12	3	50.00	2.70	0.67	133.84	4.157	0.70	0.00	0.00
20	175.00	DC6-48-60-18-8F	1	32.80	0.92	1.00	119.15	1.513	1.00	0.00	0.00
21	175.00	Low Profile Platform	1	1500.00	22.00	1.00	3272.33	45.915	1.00	0.00	0.00
22	175.00	AM-X-CD-16-65-00T-RET	3	48.50	8.02	0.75	268.23	11.803	0.76	0.00	0.00
23	175.00	21401 TMA	12	14.10	1.29	0.57	47.95	2.422	0.58	0.00	0.00
24	161.50	Low Profile Platform	1	1500.00	22.00	1.00	3258.15	45.723	1.00	0.00	0.00
25	155.00	AIR 21 B4A/B2P	3	90.40	6.09	0.83	331.33	7.591	0.85	0.00	0.00
26	155.00	AIR 21 B2A/B4P	3	91.50	6.09	0.83	332.43	7.591	0.85	0.00	0.00
27	155.00	KRY 112 114-1 Double TMA	3	11.00	0.41	0.75	25.42	1.046	0.78	0.00	0.00
28	155.00	T-Arms	3	350.00	8.00	0.75	676.84	17.338	0.75	0.00	0.00
29	145.00	APXV18-206517S-C	3	26.40	5.17	0.83	149.78	8.326	0.88	0.00	0.00
30	145.00	T-Arms	3	350.00	8.00	0.75	674.67	17.276	0.75	0.00	0.00
31	130.00	Standoff	1	40.00	2.63	0.75	145.52	10.475	0.75	0.00	0.00
32	130.00	ANT150F2	1	13.00	1.23	1.00	56.47	2.623	1.00	0.00	2.50
33	109.50	14' Omni	5	40.00	4.20	1.00	176.81	10.663	1.00	0.00	7.00
34	109.50	4' Omni	1	10.00	1.00	1.00	50.41	2.117	1.00	0.00	2.00
35	109.50	Standoff	5	40.00	2.63	0.75	143.72	10.342	0.75	0.00	0.00
36	109.50	Standoff	1	40.00	2.63	0.75	143.72	10.342	0.75	0.00	0.00
37	100.00	MPRD	1	36.00	6.10	1.00	359.41	7.638	1.00	0.00	0.00
38	100.00	Standoff	1	40.00	2.63	0.75	142.79	10.272	0.75	0.00	0.00
Totals:			109	11,400.40			33,103.20				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed 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

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)		
0.00	185.00	(12) 1 5/8" Coax		0.00						
0.00	175.00	(12) 1 5/8" Coax		0.00						
0.00	175.00	(1) 3" Flex Conduit		3.00						
0.00	175.00	(2) 3/4" DC		0.00						
0.00	175.00	(1) 7/16" Fiber		0.00						
0.00	155.00	(13) 1 5/8" Coax		0.00						
0.00	145.00	(6) 1 5/8" Coax		0.00						
0.00	130.00	(1) 7/8" Coax		1.00						
0.00	109.50	(6) 1/2" Coax		0.00						
0.00	100.00	(2) CAT5e		0.00						

Shaft Section Properties

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/24/2017
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

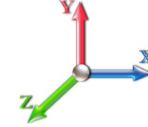
Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/24/2017
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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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	1/24/2017	
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: 11



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

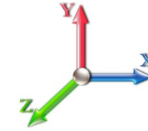
Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/24/2017
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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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	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	
13	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	
14	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	
15	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	
16	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	
17	175.00	21401 TMA	12	29.950	32.945	0.46	0.80	7.06	203.04	0.000	0.000	372.09	0.00	0.00	
18	175.00	AM-X-CD-16-65-00T-RET	3	29.950	32.945	0.60	0.80	14.44	174.60	0.000	0.000	760.95	0.00	0.00	
19	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	
20	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	
21	175.00	RRUS-11	3	29.950	32.945	0.54	0.80	4.05	180.00	0.000	0.000	213.60	0.00	0.00	
22	175.00	7770	6	29.950	32.945	0.68	0.80	22.44	252.00	0.000	0.000	1182.86	0.00	0.00	
23	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	
24	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	
25	155.00	T-Arms	3	29.195	32.114	0.56	0.75	13.50	1260.00	0.000	0.000	693.66	0.00	0.00	
26	155.00	KRY 112 114-1 Double	3	29.195	32.114	0.60	0.80	0.74	39.60	0.000	0.000	37.92	0.00	0.00	
27	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	
28	155.00	AIR 21 B4A/B2P	3	29.195	32.114	0.66	0.80	12.13	325.44	0.000	0.000	623.33	0.00	0.00	
29	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	
30	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	
31	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	
32	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	
33	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	
34	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	
35	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	
36	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	
37	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	
38	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:									13,680.48						18,277.87

Total Applied Force Summary

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/24/2017
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

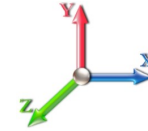


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Load Case: 1.2D + 1.6W 93 mph Wind

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	2748.85	0.00	0.00
10.00		585.78	2706.11	0.00	0.00
15.00		575.25	2663.36	0.00	0.00
20.00		599.20	2620.62	0.00	0.00
25.00		616.31	2577.88	0.00	0.00
30.00		628.26	2535.14	0.00	0.00
35.00		636.42	2492.40	0.00	0.00
40.00		641.64	2449.66	0.00	0.00
45.00		644.50	2406.92	0.00	0.00
45.42		53.21	198.65	0.00	0.00
48.90		457.12	2796.94	0.00	0.00
50.00		143.67	875.49	0.00	0.00
52.75		360.33	2172.43	0.00	0.00
55.00		294.31	879.77	0.00	0.00
57.15		280.87	834.20	0.00	0.00
60.00		372.14	1096.05	0.00	0.00
65.00		652.74	1896.06	0.00	0.00
70.00		648.46	1861.86	0.00	0.00
75.00		643.20	1827.67	0.00	0.00
80.00		637.04	1793.48	0.00	0.00
84.00		504.02	1410.16	0.00	0.00
85.00		126.97	562.24	0.00	0.00
87.00		253.35	1117.30	0.00	0.00
90.00		378.15	1658.00	0.00	0.00
90.42		52.14	228.57	0.00	0.00
95.00		572.38	1262.07	0.00	0.00
100.00	(2) attachments	971.30	1443.43	0.00	0.00
105.00		606.70	1326.34	0.00	0.00
109.50	(12) attachments	2025.14	1711.78	0.00	7208.44
110.00		58.95	128.34	0.00	0.00
112.25		264.41	574.36	0.00	0.00
115.00		320.38	694.94	0.00	0.00
120.00		575.13	1243.65	0.00	0.00
123.58		404.66	875.51	0.00	0.00
125.00		160.53	528.97	0.00	0.00
125.60		67.66	222.95	0.00	0.00
129.00		381.07	1251.17	0.00	0.00
130.00	(2) attachments	245.20	260.69	0.00	152.87
135.00		548.43	970.77	0.00	0.00
136.26		135.83	241.60	0.00	0.00
140.00		399.20	709.93	0.00	0.00
145.00	(6) attachments	1728.62	2287.34	0.00	0.00
150.00		509.51	875.62	0.00	0.00
155.00	(12) attachments	2474.10	2810.83	0.00	0.00
160.00		482.79	756.04	0.00	0.00
161.50	(1) attachments	1282.99	2023.06	0.00	0.00

Total Applied Force Summary

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/24/2017
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	513.74	0.00	0.00
165.25	23.37	36.34	0.00	0.00
169.58	408.05	911.55	0.00	0.00
170.00	38.60	46.12	0.00	0.00
175.00	(29) attachments 4416.18	3375.49	0.00	0.00
180.00	429.34	446.37	0.00	0.00
185.00	(19) attachments 4111.95	2498.87	0.00	0.00
187.00	(2) attachments 748.22	269.48	0.00	5251.23
190.00	236.87	204.10	0.00	0.00
191.50	(23) attachments 3829.79	2944.80	0.00	0.00
195.00	265.86	187.35	0.00	0.00
196.00	(1) attachments 94.93	60.17	0.00	0.00
Totals:		40,529.91	78,103.56	0.00
				12,612.53

Linear Appurtenance Segment Forces (Factored)

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/24/2017
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

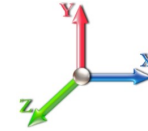


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Load Case: 1.2D + 1.6W 93 mph Wind

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)
5.00	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.058	0.000	17.879	0.00	6.78
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	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.059	0.000	17.879	0.00	6.78
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	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.060	0.000	17.879	0.00	6.78
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	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.061	0.000	18.971	0.00	6.78
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	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.062	0.000	19.883	0.00	6.78
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	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.064	0.000	20.661	0.00	6.78
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	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.065	0.000	21.343	0.00	6.78
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	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.066	0.000	21.951	0.00	6.78
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	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.068	0.000	22.502	0.00	6.78
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	3" Flex Conduit	Yes	0.42	0.000	3.00	0.10	0.00	0.068	0.000	22.546	0.00	0.57
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	3" Flex Conduit	Yes	3.48	0.000	3.00	0.87	0.00	0.069	0.000	22.899	0.00	4.72
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	3" Flex Conduit	Yes	1.10	0.000	3.00	0.28	0.00	0.070	0.000	23.007	0.00	1.49
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	3" Flex Conduit	Yes	2.75	0.000	3.00	0.69	0.00	0.070	0.000	23.268	0.00	3.73
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	3" Flex Conduit	Yes	2.25	0.000	3.00	0.56	0.00	0.069	0.000	23.473	0.00	3.05
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	3" Flex Conduit	Yes	2.15	0.000	3.00	0.54	0.00	0.070	0.000	23.663	0.00	2.92
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	3" Flex Conduit	Yes	2.85	0.000	3.00	0.71	0.00	0.071	0.000	23.907	0.00	3.86
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	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.072	0.000	24.313	0.00	6.78
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	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.074	0.000	24.696	0.00	6.78
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	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.075	0.000	25.057	0.00	6.78
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	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.077	0.000	25.400	0.00	6.78
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	3" Flex Conduit	Yes	4.00	0.000	3.00	1.00	0.00	0.079	0.000	25.662	0.00	5.42
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	3" Flex Conduit	Yes	1.00	0.000	3.00	0.25	0.00	0.080	0.000	25.726	0.00	1.36
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	3" Flex Conduit	Yes	2.00	0.000	3.00	0.50	0.00	0.080	0.000	25.852	0.00	2.71
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	3" Flex Conduit	Yes	3.00	0.000	3.00	0.75	0.00	0.081	0.000	26.037	0.00	4.07

Linear Appurtenance Segment Forces (Factored)

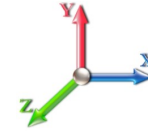
Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/24/2017
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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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)
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	3" Flex Conduit	Yes	0.42	0.000	3.00	0.10	0.00	0.082	0.000	26.063	0.00	0.57
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	3" Flex Conduit	Yes	4.58	0.000	3.00	1.15	0.00	0.082	0.000	26.336	0.00	6.21
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	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.084	0.000	26.621	0.00	6.78
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	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.086	0.000	26.896	0.00	6.78
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	3" Flex Conduit	Yes	4.50	0.000	3.00	1.13	0.00	0.088	0.000	27.135	0.00	6.10
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	3" Flex Conduit	Yes	0.50	0.000	3.00	0.13	0.00	0.089	0.000	27.161	0.00	0.68
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	3" Flex Conduit	Yes	2.25	0.000	3.00	0.56	0.00	0.090	0.000	27.277	0.00	3.05
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	3" Flex Conduit	Yes	2.75	0.000	3.00	0.69	0.00	0.091	0.000	27.416	0.00	3.73
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	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.093	0.000	27.663	0.00	6.78
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	3" Flex Conduit	Yes	3.58	0.000	3.00	0.90	0.00	0.095	0.000	27.835	0.00	4.86
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	3" Flex Conduit	Yes	1.42	0.000	3.00	0.35	0.00	0.097	0.000	27.902	0.00	1.92
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	3" Flex Conduit	Yes	0.60	0.000	3.00	0.15	0.00	0.097	0.000	27.930	0.00	0.81
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	3" Flex Conduit	Yes	3.40	0.000	3.00	0.85	0.00	0.099	0.000	28.088	0.00	4.61
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	3" Flex Conduit	Yes	1.00	0.000	3.00	0.25	0.00	0.098	0.000	28.133	0.00	1.36
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	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.085	0.000	28.358	0.00	6.78
136.26	3" Flex Conduit	Yes	1.26	0.000	3.00	0.31	0.00	0.087	0.000	28.413	0.00	1.71
140.00	3" Flex Conduit	Yes	3.74	0.000	3.00	0.94	0.00	0.088	0.000	28.576	0.00	5.07
145.00	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.091	0.000	28.788	0.00	6.78
150.00	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.094	0.000	28.994	0.00	6.78
155.00	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.097	0.000	29.195	0.00	6.78
160.00	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.101	1.002	29.390	0.00	6.78
161.50	3" Flex Conduit	Yes	1.50	0.000	3.00	0.38	0.00	0.103	1.009	29.448	0.00	2.03
165.00	3" Flex Conduit	Yes	3.50	0.000	3.00	0.88	0.00	0.105	1.015	29.581	0.00	4.75
165.25	3" Flex Conduit	Yes	0.25	0.000	3.00	0.06	0.00	0.106	1.019	29.591	0.00	0.34
169.58	3" Flex Conduit	Yes	4.33	0.000	3.00	1.08	0.00	0.108	1.025	29.753	0.00	5.88
170.00	3" Flex Conduit	Yes	0.42	0.000	3.00	0.10	0.00	0.109	1.027	29.768	0.00	0.57
175.00	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.111	1.034	29.950	0.00	6.78
Totals:											0.0	318.4

Calculated Forces

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/24/2017
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

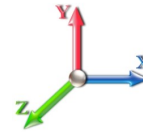


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Load Case: 1.2D + 1.6W 93 mph Wind

Iterations 27

Dead Load Factor 1.20
Wind Load Factor 1.60



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-78.05	-40.63	0.00	-5413.3	0.00	5413.37	8794.96	4397.48	21496.0	10671.5	0.00	0.000	0.000	0.516
5.00	-75.20	-40.22	0.00	-5210.2	0.00	5210.23	8639.43	4319.71	20738.5	10295.5	0.08	-0.143	0.000	0.515
10.00	-72.40	-39.81	0.00	-5009.1	0.00	5009.13	8483.89	4241.95	19994.7	9926.22	0.31	-0.289	0.000	0.513
15.00	-69.64	-39.40	0.00	-4810.1	0.00	4810.10	8328.36	4164.18	19264.4	9563.67	0.69	-0.436	0.000	0.511
20.00	-66.92	-38.95	0.00	-4613.1	0.00	4613.12	8172.83	4086.41	18547.7	9207.87	1.22	-0.586	0.000	0.509
25.00	-64.24	-38.48	0.00	-4418.3	0.00	4418.37	8017.29	4008.65	17844.6	8858.82	1.92	-0.738	0.000	0.507
30.00	-61.62	-37.98	0.00	-4225.9	0.00	4225.99	7861.76	3930.88	17155.1	8516.51	2.77	-0.892	0.000	0.504
35.00	-59.03	-37.46	0.00	-4036.1	0.00	4036.10	7706.22	3853.11	16479.1	8180.95	3.79	-1.048	0.000	0.501
40.00	-56.49	-36.93	0.00	-3848.7	0.00	3848.79	7550.69	3775.35	15816.8	7852.13	4.97	-1.206	0.000	0.498
45.00	-54.05	-36.31	0.00	-3664.1	0.00	3664.15	7395.16	3697.58	15168.0	7530.06	6.32	-1.366	0.000	0.494
45.42	-53.81	-36.31	0.00	-3649.0	0.00	3649.02	7382.20	3691.10	15114.6	7503.52	6.44	-1.380	0.000	0.494
48.90	-50.98	-35.85	0.00	-3522.5	0.00	3522.52	7273.84	3636.92	14671.4	7283.52	7.49	-1.494	0.000	0.327
50.00	-50.08	-35.72	0.00	-3483.0	0.00	3483.09	7239.62	3619.81	14532.8	7214.73	7.84	-1.518	0.000	0.326
52.75	-47.89	-35.35	0.00	-3384.8	0.00	3384.86	5810.43	2905.21	11825.7	5870.80	8.73	-1.579	0.000	0.332
55.00	-46.98	-35.07	0.00	-3305.3	0.00	3305.33	5769.82	2884.91	11629.7	5773.48	9.49	-1.629	0.000	0.363
57.15	-46.12	-34.81	0.00	-3229.9	0.00	3229.93	5730.75	2865.38	11443.3	5680.95	10.24	-1.682	0.000	0.359
57.15	-46.12	-34.81	0.00	-3229.9	0.00	3229.93	5730.75	2865.38	11443.3	5680.95	10.24	-1.682	0.000	0.359
60.00	-44.96	-34.52	0.00	-3130.7	0.00	3130.71	5678.55	2839.28	11197.7	5559.03	11.26	-1.752	0.000	0.571
65.00	-42.97	-33.95	0.00	-2958.1	0.00	2958.14	5551.73	2775.86	10705.1	5314.51	13.20	-1.947	0.000	0.565
70.00	-41.01	-33.38	0.00	-2788.4	0.00	2788.40	5427.30	2713.65	10228.2	5077.73	15.34	-2.145	0.000	0.557
75.00	-39.10	-32.80	0.00	-2621.5	0.00	2621.52	5302.88	2651.44	9762.15	4846.34	17.70	-2.343	0.000	0.548
80.00	-37.23	-32.20	0.00	-2457.5	0.00	2457.53	5178.45	2589.22	9306.93	4620.35	20.26	-2.543	0.000	0.539
84.00	-35.79	-31.70	0.00	-2328.7	0.00	2328.72	5078.91	2539.45	8950.59	4443.45	22.46	-2.705	0.000	0.531
85.00	-35.20	-31.58	0.00	-2297.0	0.00	2297.02	5054.02	2527.01	8862.59	4399.76	23.03	-2.747	0.000	0.529
87.00	-34.06	-31.32	0.00	-2233.8	0.00	2233.86	5004.25	2502.13	8687.89	4313.04	24.20	-2.829	0.000	0.317
90.00	-32.40	-30.88	0.00	-2139.9	0.00	2139.90	4929.59	2464.80	8429.11	4184.57	26.00	-2.904	0.000	0.311
90.42	-32.14	-30.86	0.00	-2127.0	0.00	2127.03	3591.78	1795.89	6277.53	3116.43	26.25	-2.914	0.000	0.331
95.00	-30.84	-30.29	0.00	-1985.6	0.00	1985.61	3535.98	1767.99	6038.44	2997.74	29.10	-3.026	0.000	0.362
100.00	-29.38	-29.31	0.00	-1834.1	0.00	1834.18	3473.75	1736.87	5780.45	2869.66	32.34	-3.162	0.000	0.345
105.00	-28.03	-28.69	0.00	-1687.6	0.00	1687.65	3410.09	1705.04	5525.58	2743.13	35.73	-3.296	0.000	0.327
109.50	-26.41	-26.60	0.00	-1551.3	0.00	1551.34	3351.58	1675.79	5299.03	2630.66	38.89	-3.414	0.000	0.310
110.00	-26.27	-26.55	0.00	-1538.0	0.00	1538.05	3345.00	1672.50	5274.03	2618.25	39.25	-3.427	0.000	0.308
112.25	-25.68	-26.28	0.00	-1478.3	0.00	1478.32	3315.25	1657.63	5161.96	2562.62	40.87	-3.486	0.000	0.300
112.25	-25.68	-26.28	0.00	-1478.3	0.00	1478.32	3315.25	1657.63	5161.96	2562.62	40.87	-3.486	0.000	0.300
115.00	-24.93	-25.98	0.00	-1406.0	0.00	1406.06	3278.49	1639.25	5025.98	2495.11	42.90	-3.557	0.000	0.571
120.00	-23.64	-25.42	0.00	-1276.1	0.00	1276.14	3210.56	1605.28	4781.62	2373.80	46.76	-3.802	0.000	0.545
123.58	-22.74	-25.00	0.00	-1185.0	0.00	1185.06	3148.16	1574.08	4590.15	2278.75	49.68	-3.977	0.000	0.528
125.00	-22.20	-24.82	0.00	-1149.6	0.00	1149.64	3121.72	1560.86	4512.97	2240.43	50.87	-4.047	0.000	0.520
125.60	-21.96	-24.76	0.00	-1134.7	0.00	1134.75	3110.52	1555.26	4480.48	2224.30	51.38	-4.077	0.000	0.292
129.00	-20.71	-24.32	0.00	-1050.5	0.00	1050.55	2149.47	1074.74	3099.22	1538.58	54.31	-4.169	0.000	0.307
130.00	-20.43	-24.08	0.00	-1026.0	0.00	1026.08	2141.27	1070.63	3068.69	1523.43	55.19	-4.196	0.000	0.341
135.00	-19.47	-23.49	0.00	-905.66	0.00	905.66	2099.38	1049.69	2916.97	1448.11	59.66	-4.340	0.000	0.312
136.26	-19.21	-23.36	0.00	-876.06	0.00	876.06	2088.60	1044.30	2879.00	1429.26	60.81	-4.376	0.000	0.304
136.26	-19.21	-23.36	0.00	-876.06	0.00	876.06	2088.60	1044.30	2879.00	1429.26	60.81	-4.376	0.000	0.304
140.00	-18.46	-22.97	0.00	-788.68	0.00	788.68	2056.07	1028.04	2766.99	1373.65	64.27	-4.479	0.000	0.584
145.00	-16.22	-21.14	0.00	-673.83	0.00	673.83	2011.34	1005.67	2618.95	1300.16	69.10	-4.743	0.000	0.527
150.00	-15.31	-20.62	0.00	-568.14	0.00	568.14	1965.18	982.59	2473.01	1227.71	74.20	-4.990	0.000	0.471
155.00	-12.66	-17.95	0.00	-465.05	0.00	465.05	1917.59	958.80	2329.38	1156.40	79.54	-5.218	0.000	0.409

Calculated Forces

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/24/2017
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: 18
	Struct Class: II	



160.00	-11.91	-17.43	0.00	-375.29	0.00	375.29	1868.58	934.29	2188.24	1086.34	85.11	-5.424	0.000	0.352
161.50	-10.00	-15.98	0.00	-349.15	0.00	349.15	1853.60	926.80	2146.41	1065.57	86.83	-5.483	0.000	0.333
165.00	-9.50	-15.61	0.00	-293.24	0.00	293.24	1818.15	909.07	2049.77	1017.59	90.89	-5.610	0.000	0.294
165.25	-9.44	-15.59	0.00	-289.34	0.00	289.34	1815.59	907.79	2042.92	1014.19	91.18	-5.619	0.000	0.291
169.58	-8.56	-15.11	0.00	-221.77	0.00	221.77	1040.26	520.13	1155.41	573.59	96.34	-5.755	0.000	0.396
170.00	-8.49	-15.08	0.00	-215.47	0.00	215.47	1038.39	519.19	1149.55	570.68	96.84	-5.768	0.000	0.387
175.00	-5.56	-10.36	0.00	-140.08	0.00	140.08	1015.17	507.59	1079.51	535.91	102.97	-5.941	0.000	0.267
180.00	-5.14	-9.89	0.00	-88.30	0.00	88.30	990.53	495.27	1010.05	501.43	109.26	-6.067	0.000	0.182
185.00	-3.09	-5.54	0.00	-38.84	0.00	38.84	964.47	482.24	941.35	467.32	115.65	-6.147	0.000	0.086
187.00	-2.90	-4.77	0.00	-22.52	0.00	22.52	953.65	476.82	914.12	453.81	118.22	-6.166	0.000	0.053
190.00	-2.72	-4.51	0.00	-8.21	0.00	8.21	936.98	468.49	873.60	433.69	122.10	-6.180	0.000	0.022
191.50	-0.21	-0.39	0.00	-1.45	0.00	1.45	928.46	464.23	853.48	423.70	124.03	-6.182	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	128.56	-6.183	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	129.85	-6.183	0.000	0.000

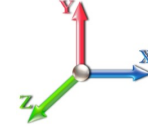
Wind Loading - Shaft

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/24/2017
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 + 1.6W 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	1/24/2017
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: 20



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

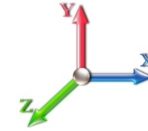
Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/24/2017
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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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	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	
13	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	
14	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	
15	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	
16	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	
17	175.00	21401 TMA	12	29.950	32.945	0.46	0.80	7.06	152.28	0.000	0.000	372.09	0.00	0.00	
18	175.00	AM-X-CD-16-65-00T-RET	3	29.950	32.945	0.60	0.80	14.44	130.95	0.000	0.000	760.95	0.00	0.00	
19	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	
20	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	
21	175.00	RRUS-11	3	29.950	32.945	0.54	0.80	4.05	135.00	0.000	0.000	213.60	0.00	0.00	
22	175.00	7770	6	29.950	32.945	0.68	0.80	22.44	189.00	0.000	0.000	1182.86	0.00	0.00	
23	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	
24	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	
25	155.00	T-Arms	3	29.195	32.114	0.56	0.75	13.50	945.00	0.000	0.000	693.66	0.00	0.00	
26	155.00	KRY 112 114-1 Double	3	29.195	32.114	0.60	0.80	0.74	29.70	0.000	0.000	37.92	0.00	0.00	
27	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	
28	155.00	AIR 21 B4A/B2P	3	29.195	32.114	0.66	0.80	12.13	244.08	0.000	0.000	623.33	0.00	0.00	
29	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	
30	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	
31	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	
32	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	
33	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	
34	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	
35	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	
36	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	
37	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	
38	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:									10,260.36						18,277.87

Total Applied Force Summary

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/24/2017
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

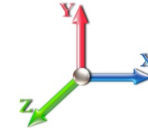


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Load Case: 0.9D + 1.6W 93 mph Wind

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	2061.64	0.00	0.00
10.00		585.78	2029.58	0.00	0.00
15.00		575.25	1997.52	0.00	0.00
20.00		599.20	1965.47	0.00	0.00
25.00		616.31	1933.41	0.00	0.00
30.00		628.26	1901.36	0.00	0.00
35.00		636.42	1869.30	0.00	0.00
40.00		641.64	1837.24	0.00	0.00
45.00		644.50	1805.19	0.00	0.00
45.42		53.21	148.99	0.00	0.00
48.90		457.12	2097.71	0.00	0.00
50.00		143.67	656.62	0.00	0.00
52.75		360.33	1629.32	0.00	0.00
55.00		294.31	659.83	0.00	0.00
57.15		280.87	625.65	0.00	0.00
60.00		372.14	822.04	0.00	0.00
65.00		652.74	1422.04	0.00	0.00
70.00		648.46	1396.40	0.00	0.00
75.00		643.20	1370.75	0.00	0.00
80.00		637.04	1345.11	0.00	0.00
84.00		504.02	1057.62	0.00	0.00
85.00		126.97	421.68	0.00	0.00
87.00		253.35	837.97	0.00	0.00
90.00		378.15	1243.50	0.00	0.00
90.42		52.14	171.43	0.00	0.00
95.00		572.38	946.55	0.00	0.00
100.00	(2) attachments	971.30	1082.57	0.00	0.00
105.00		606.70	994.76	0.00	0.00
109.50	(12) attachments	2025.14	1283.84	0.00	7208.44
110.00		58.95	96.25	0.00	0.00
112.25		264.41	430.77	0.00	0.00
115.00		320.38	521.20	0.00	0.00
120.00		575.13	932.74	0.00	0.00
123.58		404.66	656.63	0.00	0.00
125.00		160.53	396.73	0.00	0.00
125.60		67.66	167.21	0.00	0.00
129.00		381.07	938.38	0.00	0.00
130.00	(2) attachments	245.20	195.51	0.00	152.87
135.00		548.43	728.07	0.00	0.00
136.26		135.83	181.20	0.00	0.00
140.00		399.20	532.45	0.00	0.00
145.00	(6) attachments	1728.62	1715.50	0.00	0.00
150.00		509.51	656.72	0.00	0.00
155.00	(12) attachments	2474.10	2108.12	0.00	0.00
160.00		482.79	567.03	0.00	0.00
161.50	(1) attachments	1282.99	1517.30	0.00	0.00

Total Applied Force Summary

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/24/2017
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	385.31	0.00	0.00
165.25	23.37	27.25	0.00	0.00
169.58	408.05	683.66	0.00	0.00
170.00	38.60	34.59	0.00	0.00
175.00	(29) attachments	4416.18	2531.62	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:		40,529.91	58,577.67	0.00
				12,612.53

Linear Appurtenance Segment Forces (Factored)

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/24/2017
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

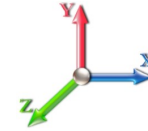


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Load Case: 0.9D + 1.6W 93 mph Wind

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	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.058	0.000	17.879	0.00	5.08
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	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.059	0.000	17.879	0.00	5.08
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	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.060	0.000	17.879	0.00	5.08
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	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.061	0.000	18.971	0.00	5.08
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	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.062	0.000	19.883	0.00	5.08
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	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.064	0.000	20.661	0.00	5.08
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	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.065	0.000	21.343	0.00	5.08
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	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.066	0.000	21.951	0.00	5.08
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	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.068	0.000	22.502	0.00	5.08
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	3" Flex Conduit	Yes	0.42	0.000	3.00	0.10	0.00	0.068	0.000	22.546	0.00	0.42
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	3" Flex Conduit	Yes	3.48	0.000	3.00	0.87	0.00	0.069	0.000	22.899	0.00	3.54
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	3" Flex Conduit	Yes	1.10	0.000	3.00	0.28	0.00	0.070	0.000	23.007	0.00	1.12
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	3" Flex Conduit	Yes	2.75	0.000	3.00	0.69	0.00	0.070	0.000	23.268	0.00	2.80
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	3" Flex Conduit	Yes	2.25	0.000	3.00	0.56	0.00	0.069	0.000	23.473	0.00	2.29
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	3" Flex Conduit	Yes	2.15	0.000	3.00	0.54	0.00	0.070	0.000	23.663	0.00	2.19
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	3" Flex Conduit	Yes	2.85	0.000	3.00	0.71	0.00	0.071	0.000	23.907	0.00	2.90
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	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.072	0.000	24.313	0.00	5.08
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	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.074	0.000	24.696	0.00	5.08
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	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.075	0.000	25.057	0.00	5.08
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	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.077	0.000	25.400	0.00	5.08
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	3" Flex Conduit	Yes	4.00	0.000	3.00	1.00	0.00	0.079	0.000	25.662	0.00	4.07
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	3" Flex Conduit	Yes	1.00	0.000	3.00	0.25	0.00	0.080	0.000	25.726	0.00	1.02
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	3" Flex Conduit	Yes	2.00	0.000	3.00	0.50	0.00	0.080	0.000	25.852	0.00	2.03
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	3" Flex Conduit	Yes	3.00	0.000	3.00	0.75	0.00	0.081	0.000	26.037	0.00	3.05

Linear Appurtenance Segment Forces (Factored)

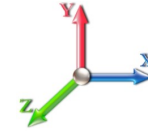
Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/24/2017
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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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)
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	3" Flex Conduit	Yes	0.42	0.000	3.00	0.10	0.00	0.082	0.000	26.063	0.00	0.42
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	3" Flex Conduit	Yes	4.58	0.000	3.00	1.15	0.00	0.082	0.000	26.336	0.00	4.66
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	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.084	0.000	26.621	0.00	5.08
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	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.086	0.000	26.896	0.00	5.08
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	3" Flex Conduit	Yes	4.50	0.000	3.00	1.13	0.00	0.088	0.000	27.135	0.00	4.58
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	3" Flex Conduit	Yes	0.50	0.000	3.00	0.13	0.00	0.089	0.000	27.161	0.00	0.51
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	3" Flex Conduit	Yes	2.25	0.000	3.00	0.56	0.00	0.090	0.000	27.277	0.00	2.29
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	3" Flex Conduit	Yes	2.75	0.000	3.00	0.69	0.00	0.091	0.000	27.416	0.00	2.80
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	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.093	0.000	27.663	0.00	5.08
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	3" Flex Conduit	Yes	3.58	0.000	3.00	0.90	0.00	0.095	0.000	27.835	0.00	3.64
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	3" Flex Conduit	Yes	1.42	0.000	3.00	0.35	0.00	0.097	0.000	27.902	0.00	1.44
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	3" Flex Conduit	Yes	0.60	0.000	3.00	0.15	0.00	0.097	0.000	27.930	0.00	0.61
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	3" Flex Conduit	Yes	3.40	0.000	3.00	0.85	0.00	0.099	0.000	28.088	0.00	3.46
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	3" Flex Conduit	Yes	1.00	0.000	3.00	0.25	0.00	0.098	0.000	28.133	0.00	1.02
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	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.085	0.000	28.358	0.00	5.08
136.26	3" Flex Conduit	Yes	1.26	0.000	3.00	0.31	0.00	0.087	0.000	28.413	0.00	1.28
140.00	3" Flex Conduit	Yes	3.74	0.000	3.00	0.94	0.00	0.088	0.000	28.576	0.00	3.80
145.00	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.091	0.000	28.788	0.00	5.08
150.00	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.094	0.000	28.994	0.00	5.08
155.00	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.097	0.000	29.195	0.00	5.08
160.00	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.101	1.002	29.390	0.00	5.08
161.50	3" Flex Conduit	Yes	1.50	0.000	3.00	0.38	0.00	0.103	1.009	29.448	0.00	1.53
165.00	3" Flex Conduit	Yes	3.50	0.000	3.00	0.88	0.00	0.105	1.015	29.581	0.00	3.56
165.25	3" Flex Conduit	Yes	0.25	0.000	3.00	0.06	0.00	0.106	1.019	29.591	0.00	0.25
169.58	3" Flex Conduit	Yes	4.33	0.000	3.00	1.08	0.00	0.108	1.025	29.753	0.00	4.41
170.00	3" Flex Conduit	Yes	0.42	0.000	3.00	0.10	0.00	0.109	1.027	29.768	0.00	0.42
175.00	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.111	1.034	29.950	0.00	5.08
Totals:											0.0	238.8

Calculated Forces

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/24/2017
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: 26

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	-58.53	-40.60	0.00	-5349.4	0.00	5349.43	8794.96	4397.48	21496.0	10671.5	0.00	0.000	0.000	0.508
5.00	-56.37	-40.14	0.00	-5146.4	0.00	5146.42	8639.43	4319.71	20738.5	10295.5	0.08	-0.142	0.000	0.506
10.00	-54.24	-39.69	0.00	-4945.7	0.00	4945.71	8483.89	4241.95	19994.7	9926.22	0.30	-0.285	0.000	0.505
15.00	-52.14	-39.23	0.00	-4747.2	0.00	4747.27	8328.36	4164.18	19264.4	9563.67	0.68	-0.431	0.000	0.503
20.00	-50.08	-38.75	0.00	-4551.1	0.00	4551.11	8172.83	4086.41	18547.7	9207.87	1.21	-0.579	0.000	0.500
25.00	-48.06	-38.24	0.00	-4357.3	0.00	4357.38	8017.29	4008.65	17844.6	8858.82	1.90	-0.728	0.000	0.498
30.00	-46.06	-37.70	0.00	-4166.2	0.00	4166.20	7861.76	3930.88	17155.1	8516.51	2.74	-0.880	0.000	0.495
35.00	-44.11	-37.16	0.00	-3977.6	0.00	3977.69	7706.22	3853.11	16479.1	8180.95	3.74	-1.034	0.000	0.492
40.00	-42.18	-36.59	0.00	-3791.9	0.00	3791.92	7550.69	3775.35	15816.8	7852.13	4.91	-1.190	0.000	0.489
45.00	-40.34	-35.97	0.00	-3608.9	0.00	3608.95	7395.16	3697.58	15168.0	7530.06	6.24	-1.348	0.000	0.485
45.42	-40.15	-35.96	0.00	-3593.9	0.00	3593.96	7382.20	3691.10	15114.6	7503.52	6.36	-1.361	0.000	0.485
48.90	-38.02	-35.49	0.00	-3468.7	0.00	3468.72	7273.84	3636.92	14671.4	7283.52	7.39	-1.473	0.000	0.321
50.00	-37.34	-35.36	0.00	-3429.6	0.00	3429.68	7239.62	3619.81	14532.8	7214.73	7.74	-1.498	0.000	0.320
52.75	-35.69	-34.99	0.00	-3332.4	0.00	3332.44	5810.43	2905.21	11825.7	5870.80	8.62	-1.557	0.000	0.326
55.00	-35.01	-34.71	0.00	-3253.7	0.00	3253.71	5769.82	2884.91	11629.7	5773.48	9.36	-1.607	0.000	0.356
57.15	-34.36	-34.45	0.00	-3179.0	0.00	3179.09	5730.75	2865.38	11443.3	5680.95	10.10	-1.659	0.000	0.352
57.15	-34.36	-34.45	0.00	-3179.0	0.00	3179.09	5730.75	2865.38	11443.3	5680.95	10.10	-1.659	0.000	0.352
60.00	-33.47	-34.13	0.00	-3080.9	0.00	3080.92	5678.55	2839.28	11197.7	5559.03	11.11	-1.727	0.000	0.560
65.00	-31.95	-33.54	0.00	-2910.2	0.00	2910.29	5551.73	2775.86	10705.1	5314.51	13.02	-1.920	0.000	0.554
70.00	-30.47	-32.94	0.00	-2742.6	0.00	2742.61	5427.30	2713.65	10228.2	5077.73	15.14	-2.114	0.000	0.546
75.00	-29.01	-32.35	0.00	-2577.8	0.00	2577.89	5302.88	2651.44	9762.15	4846.34	17.45	-2.309	0.000	0.538
80.00	-27.60	-31.74	0.00	-2416.1	0.00	2416.16	5178.45	2589.22	9306.93	4620.35	19.98	-2.506	0.000	0.528
84.00	-26.51	-31.23	0.00	-2289.2	0.00	2289.20	5078.91	2539.45	8950.59	4443.45	22.15	-2.665	0.000	0.521
85.00	-26.06	-31.12	0.00	-2257.9	0.00	2257.97	5054.02	2527.01	8862.59	4399.76	22.71	-2.706	0.000	0.519
87.00	-25.20	-30.86	0.00	-2195.7	0.00	2195.73	5004.25	2502.13	8687.89	4313.04	23.86	-2.787	0.000	0.311
90.00	-23.95	-30.43	0.00	-2103.1	0.00	2103.17	4929.59	2464.80	8429.11	4184.57	25.63	-2.860	0.000	0.305
90.42	-23.75	-30.40	0.00	-2090.4	0.00	2090.48	3591.78	1795.89	6277.53	3116.43	25.88	-2.870	0.000	0.325
95.00	-22.77	-29.83	0.00	-1951.1	0.00	1951.16	3535.98	1767.99	6038.44	2997.74	28.69	-2.980	0.000	0.354
100.00	-21.67	-28.85	0.00	-1802.0	0.00	1802.02	3473.75	1736.87	5780.45	2869.66	31.88	-3.114	0.000	0.337
105.00	-20.65	-28.23	0.00	-1657.7	0.00	1657.76	3410.09	1705.04	5525.58	2743.13	35.21	-3.245	0.000	0.320
109.50	-19.46	-26.16	0.00	-1523.5	0.00	1523.50	3351.58	1675.79	5299.03	2630.66	38.33	-3.362	0.000	0.303
110.00	-19.35	-26.11	0.00	-1510.4	0.00	1510.42	3345.00	1672.50	5274.03	2618.25	38.68	-3.375	0.000	0.301
112.25	-18.91	-25.84	0.00	-1451.6	0.00	1451.68	3315.25	1657.63	5161.96	2562.62	40.28	-3.432	0.000	0.294
112.25	-18.91	-25.84	0.00	-1451.6	0.00	1451.68	3315.25	1657.63	5161.96	2562.62	40.28	-3.432	0.000	0.294
115.00	-18.34	-25.54	0.00	-1380.6	0.00	1380.62	3278.49	1639.25	5025.98	2495.11	42.28	-3.502	0.000	0.559
120.00	-17.35	-24.97	0.00	-1252.9	0.00	1252.93	3210.56	1605.28	4781.62	2373.80	46.07	-3.742	0.000	0.533
123.58	-16.67	-24.56	0.00	-1163.4	0.00	1163.46	3148.16	1574.08	4590.15	2278.75	48.95	-3.915	0.000	0.516
125.00	-16.27	-24.38	0.00	-1128.6	0.00	1128.68	3121.72	1560.86	4512.97	2240.43	50.12	-3.983	0.000	0.509
125.60	-16.08	-24.32	0.00	-1114.0	0.00	1114.05	3110.52	1555.26	4480.48	2224.30	50.62	-4.013	0.000	0.285
129.00	-15.15	-23.89	0.00	-1031.3	0.00	1031.36	2149.47	1074.74	3099.22	1538.58	53.51	-4.103	0.000	0.300
130.00	-14.93	-23.65	0.00	-1007.3	0.00	1007.32	2141.27	1070.63	3068.69	1523.43	54.37	-4.129	0.000	0.334
135.00	-14.21	-23.07	0.00	-889.06	0.00	889.06	2099.38	1049.69	2916.97	1448.11	58.77	-4.271	0.000	0.305
136.26	-14.01	-22.94	0.00	-859.99	0.00	859.99	2088.60	1044.30	2879.00	1429.26	59.90	-4.306	0.000	0.297
136.26	-14.01	-22.94	0.00	-859.99	0.00	859.99	2088.60	1044.30	2879.00	1429.26	59.90	-4.306	0.000	0.297
140.00	-13.44	-22.55	0.00	-774.19	0.00	774.19	2056.07	1028.04	2766.99	1373.65	63.31	-4.407	0.000	0.571
145.00	-11.78	-20.74	0.00	-661.46	0.00	661.46	2011.34	1005.67	2618.95	1300.16	68.06	-4.666	0.000	0.515
150.00	-11.08	-20.22	0.00	-557.77	0.00	557.77	1965.18	982.59	2473.01	1227.71	73.08	-4.909	0.000	0.460
155.00	-9.14	-17.61	0.00	-456.67	0.00	456.67	1917.59	958.80	2329.38	1156.40	78.34	-5.132	0.000	0.400

Calculated Forces

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/24/2017
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: 27
	Struct Class: II	



160.00	-8.58	-17.09	0.00	-368.64	0.00	368.64	1868.58	934.29	2188.24	1086.34	83.81	-5.335	0.000	0.344
161.50	-7.16	-15.69	0.00	-343.00	0.00	343.00	1853.60	926.80	2146.41	1065.57	85.50	-5.393	0.000	0.326
165.00	-6.79	-15.33	0.00	-288.10	0.00	288.10	1818.15	909.07	2049.77	1017.59	89.49	-5.518	0.000	0.287
165.25	-6.75	-15.31	0.00	-284.27	0.00	284.27	1815.59	907.79	2042.92	1014.19	89.78	-5.526	0.000	0.284
169.58	-6.09	-14.85	0.00	-217.92	0.00	217.92	1040.26	520.13	1155.41	573.59	94.86	-5.660	0.000	0.387
170.00	-6.03	-14.81	0.00	-211.74	0.00	211.74	1038.39	519.19	1149.55	570.68	95.35	-5.672	0.000	0.378
175.00	-3.93	-10.18	0.00	-137.67	0.00	137.67	1015.17	507.59	1079.51	535.91	101.38	-5.843	0.000	0.261
180.00	-3.63	-9.72	0.00	-86.79	0.00	86.79	990.53	495.27	1010.05	501.43	107.56	-5.967	0.000	0.177
185.00	-2.19	-5.44	0.00	-38.19	0.00	38.19	964.47	482.24	941.35	467.32	113.85	-6.045	0.000	0.084
187.00	-2.06	-4.67	0.00	-22.07	0.00	22.07	953.65	476.82	914.12	453.81	116.38	-6.064	0.000	0.051
190.00	-1.94	-4.42	0.00	-8.05	0.00	8.05	936.98	468.49	873.60	433.69	120.19	-6.077	0.000	0.021
191.50	-0.15	-0.38	0.00	-1.42	0.00	1.42	928.46	464.23	853.48	423.70	122.09	-6.080	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	126.54	-6.081	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	127.81	-6.081	0.000	0.000

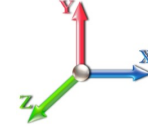
Wind Loading - Shaft

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/24/2017
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

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	1/24/2017	
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: 29



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

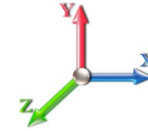
Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/24/2017
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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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	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
13	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
14	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
15	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
16	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
17	175.00	21401 TMA	12	5.541	6.095	0.46	0.80	13.48	524.07	0.000	0.000	82.18	0.00	0.00
18	175.00	AM-X-CD-16-65-00T-RET	3	5.541	6.095	0.61	0.80	21.53	694.29	0.000	0.000	131.21	0.00	0.00
19	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
20	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
21	175.00	RRUS-11	3	5.541	6.095	0.56	0.80	5.67	416.83	0.000	0.000	34.58	0.00	0.00
22	175.00	7770	6	5.541	6.095	0.70	0.80	29.47	1440.15	0.000	0.000	179.58	0.00	0.00
23	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
24	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
25	155.00	T-Arms	3	5.401	5.941	0.56	0.75	29.26	2030.53	0.000	0.000	173.82	0.00	0.00
26	155.00	KRY 112 114-1 Double	3	5.401	5.941	0.62	0.80	1.96	73.57	0.000	0.000	11.63	0.00	0.00
27	155.00	AIR 21 B2A/B4P	3	5.401	5.941	0.68	0.80	15.49	1052.20	0.000	0.000	91.99	0.00	0.00
28	155.00	AIR 21 B4A/B2P	3	5.401	5.941	0.68	0.80	15.49	1048.24	0.000	0.000	91.99	0.00	0.00
29	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
30	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
31	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
32	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
33	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
34	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
35	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
36	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
37	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
38	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:									32,265.78			4,003.10		

Total Applied Force Summary

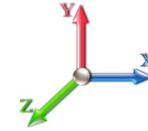
Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/24/2017
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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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	3447.51	0.00	0.00
10.00		114.82	3446.71	0.00	0.00
15.00		113.14	3424.66	0.00	0.00
20.00		118.19	3393.27	0.00	0.00
25.00		121.88	3356.49	0.00	0.00
30.00		124.55	3316.15	0.00	0.00
35.00		126.47	3273.25	0.00	0.00
40.00		127.81	3228.43	0.00	0.00
45.00		128.67	3182.08	0.00	0.00
45.42		10.63	263.21	0.00	0.00
48.90		91.32	3343.58	0.00	0.00
50.00		28.72	1047.86	0.00	0.00
52.75		72.12	2601.69	0.00	0.00
55.00		58.97	1229.76	0.00	0.00
57.15		56.33	1167.46	0.00	0.00
60.00		74.73	1535.61	0.00	0.00
65.00		131.34	2659.83	0.00	0.00
70.00		130.80	2617.60	0.00	0.00
75.00		130.06	2574.79	0.00	0.00
80.00		129.14	2531.46	0.00	0.00
84.00		102.41	1994.43	0.00	0.00
85.00		25.79	710.00	0.00	0.00
87.00		51.51	1411.25	0.00	0.00
90.00		76.98	2095.31	0.00	0.00
90.42		10.62	289.24	0.00	0.00
95.00		116.81	1920.70	0.00	0.00
100.00	(2) attachments	198.77	2512.24	0.00	0.00
105.00		124.52	2023.14	0.00	0.00
109.50	(12) attachments	613.29	3378.13	0.00	2111.19
110.00		12.15	196.89	0.00	0.00
112.25		54.56	880.49	0.00	0.00
115.00		66.22	1065.58	0.00	0.00
120.00		119.21	1905.68	0.00	0.00
123.58		84.12	1343.77	0.00	0.00
125.00		33.37	715.43	0.00	0.00
125.60		14.08	301.74	0.00	0.00
129.00		79.40	1691.99	0.00	0.00
130.00	(2) attachments	71.93	506.33	0.00	37.69
135.00		114.74	1561.22	0.00	0.00
136.26		28.49	389.57	0.00	0.00
140.00		83.90	1141.89	0.00	0.00
145.00	(6) attachments	384.10	3906.02	0.00	0.00
150.00		107.98	1426.63	0.00	0.00
155.00	(12) attachments	475.04	5598.45	0.00	0.00
160.00		103.35	1279.92	0.00	0.00
161.50	(1) attachments	304.66	3637.14	0.00	0.00

Total Applied Force Summary

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/24/2017
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	71.16	870.81	0.00	0.00
165.25	5.05	61.81	0.00	0.00
169.58	88.16	1347.41	0.00	0.00
170.00	8.36	87.93	0.00	0.00
175.00	(29) attachments	857.19	7828.80	0.00
180.00		93.95	854.19	0.00
185.00	(19) attachments	806.09	6898.86	0.00
187.00	(2) attachments	291.63	791.71	0.00
190.00		52.68	431.24	0.00
191.50	(23) attachments	747.82	6969.84	0.00
195.00		59.61	442.00	0.00
196.00	(1) attachments	28.42	176.75	0.00
Totals:		8,574.15	122,285.94	0.00
				4,407.15

Linear Appurtenance Segment Forces (Factored)

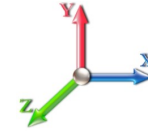
Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/24/2017
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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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	3" Flex Conduit	Yes	5.00	0.000	3.00	2.63	0.00	0.058	0.000	3.308	0.00	46.61
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	3" Flex Conduit	Yes	5.00	0.000	3.00	2.73	0.00	0.059	0.000	3.308	0.00	50.49
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	3" Flex Conduit	Yes	5.00	0.000	3.00	2.79	0.00	0.060	0.000	3.308	0.00	52.97
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	3" Flex Conduit	Yes	5.00	0.000	3.00	2.84	0.00	0.061	0.000	3.509	0.00	54.84
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	3" Flex Conduit	Yes	5.00	0.000	3.00	2.87	0.00	0.062	0.000	3.678	0.00	56.34
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	3" Flex Conduit	Yes	5.00	0.000	3.00	2.90	0.00	0.064	0.000	3.822	0.00	57.62
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	3" Flex Conduit	Yes	5.00	0.000	3.00	2.93	0.00	0.065	0.000	3.948	0.00	58.73
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	3" Flex Conduit	Yes	5.00	0.000	3.00	2.95	0.00	0.066	0.000	4.061	0.00	59.72
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	3" Flex Conduit	Yes	5.00	0.000	3.00	2.97	0.00	0.068	0.000	4.163	0.00	60.60
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	3" Flex Conduit	Yes	0.42	0.000	3.00	0.25	0.00	0.068	0.000	4.171	0.00	5.06
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	3" Flex Conduit	Yes	3.48	0.000	3.00	2.08	0.00	0.069	0.000	4.236	0.00	42.66
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	3" Flex Conduit	Yes	1.10	0.000	3.00	0.66	0.00	0.070	0.000	4.256	0.00	13.51
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	3" Flex Conduit	Yes	2.75	0.000	3.00	1.65	0.00	0.070	0.000	4.304	0.00	34.00
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	3" Flex Conduit	Yes	2.25	0.000	3.00	1.35	0.00	0.069	0.000	4.342	0.00	27.97
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	3" Flex Conduit	Yes	2.15	0.000	3.00	1.29	0.00	0.070	0.000	4.378	0.00	26.86
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	3" Flex Conduit	Yes	2.85	0.000	3.00	1.72	0.00	0.071	0.000	4.423	0.00	35.82
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	3" Flex Conduit	Yes	5.00	0.000	3.00	3.03	0.00	0.072	0.000	4.498	0.00	63.49
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	3" Flex Conduit	Yes	5.00	0.000	3.00	3.05	0.00	0.074	0.000	4.569	0.00	64.09
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	3" Flex Conduit	Yes	5.00	0.000	3.00	3.06	0.00	0.075	0.000	4.635	0.00	64.66
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	3" Flex Conduit	Yes	5.00	0.000	3.00	3.07	0.00	0.077	0.000	4.699	0.00	65.20
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	3" Flex Conduit	Yes	4.00	0.000	3.00	2.46	0.00	0.079	0.000	4.747	0.00	52.49
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	3" Flex Conduit	Yes	1.00	0.000	3.00	0.62	0.00	0.080	0.000	4.759	0.00	13.14
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	3" Flex Conduit	Yes	2.00	0.000	3.00	1.23	0.00	0.080	0.000	4.782	0.00	26.36
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	3" Flex Conduit	Yes	3.00	0.000	3.00	1.86	0.00	0.081	0.000	4.817	0.00	39.72

Linear Appurtenance Segment Forces (Factored)

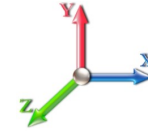
Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/24/2017
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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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)
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	3" Flex Conduit	Yes	0.42	0.000	3.00	0.26	0.00	0.082	0.000	4.821	0.00	5.52
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	3" Flex Conduit	Yes	4.58	0.000	3.00	2.84	0.00	0.082	0.000	4.872	0.00	61.11
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	3" Flex Conduit	Yes	5.00	0.000	3.00	3.11	0.00	0.084	0.000	4.925	0.00	67.10
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	3" Flex Conduit	Yes	5.00	0.000	3.00	3.12	0.00	0.086	0.000	4.976	0.00	67.53
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	3" Flex Conduit	Yes	4.50	0.000	3.00	2.82	0.00	0.088	0.000	5.020	0.00	61.11
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	3" Flex Conduit	Yes	0.50	0.000	3.00	0.31	0.00	0.089	0.000	5.025	0.00	6.79
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	3" Flex Conduit	Yes	2.25	0.000	3.00	1.41	0.00	0.090	0.000	5.046	0.00	30.65
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	3" Flex Conduit	Yes	2.75	0.000	3.00	1.73	0.00	0.091	0.000	5.072	0.00	37.58
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	3" Flex Conduit	Yes	5.00	0.000	3.00	3.15	0.00	0.093	0.000	5.117	0.00	68.72
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	3" Flex Conduit	Yes	3.58	0.000	3.00	2.26	0.00	0.095	0.000	5.149	0.00	49.44
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	3" Flex Conduit	Yes	1.42	0.000	3.00	0.89	0.00	0.097	0.000	5.162	0.00	19.57
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	3" Flex Conduit	Yes	0.60	0.000	3.00	0.38	0.00	0.097	0.000	5.167	0.00	8.30
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	3" Flex Conduit	Yes	3.40	0.000	3.00	2.15	0.00	0.099	0.000	5.196	0.00	47.17
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	3" Flex Conduit	Yes	1.00	0.000	3.00	0.63	0.00	0.098	0.000	5.204	0.00	13.89
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	3" Flex Conduit	Yes	5.00	0.000	3.00	3.17	0.00	0.085	0.000	5.246	0.00	69.79
136.26	3" Flex Conduit	Yes	1.26	0.000	3.00	0.80	0.00	0.087	0.000	5.256	0.00	17.61
140.00	3" Flex Conduit	Yes	3.74	0.000	3.00	2.38	0.00	0.088	0.000	5.286	0.00	52.45
145.00	3" Flex Conduit	Yes	5.00	0.000	3.00	3.18	0.00	0.091	0.000	5.325	0.00	70.44
150.00	3" Flex Conduit	Yes	5.00	0.000	3.00	3.19	0.00	0.094	0.000	5.364	0.00	70.76
155.00	3" Flex Conduit	Yes	5.00	0.000	3.00	3.20	0.00	0.097	0.000	5.401	0.00	71.07
160.00	3" Flex Conduit	Yes	5.00	0.000	3.00	3.20	0.00	0.101	1.002	5.437	0.00	71.37
161.50	3" Flex Conduit	Yes	1.50	0.000	3.00	0.96	0.00	0.103	1.009	5.448	0.00	21.44
165.00	3" Flex Conduit	Yes	3.50	0.000	3.00	2.25	0.00	0.105	1.015	5.472	0.00	50.16
165.25	3" Flex Conduit	Yes	0.25	0.000	3.00	0.16	0.00	0.106	1.019	5.474	0.00	3.58
169.58	3" Flex Conduit	Yes	4.33	0.000	3.00	2.78	0.00	0.108	1.025	5.504	0.00	62.33
170.00	3" Flex Conduit	Yes	0.42	0.000	3.00	0.27	0.00	0.109	1.027	5.507	0.00	6.00
175.00	3" Flex Conduit	Yes	5.00	0.000	3.00	3.22	0.00	0.111	1.034	5.541	0.00	72.22
Totals:											0.0	3,293.0

Calculated Forces

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/24/2017
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

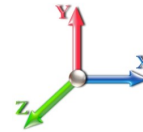


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Load Case: 1.2D + 1.0Di + 1.0Wi 40 mph Wind

Iterations 26

Dead Load Factor 1.20
Wind Load Factor 1.00



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-122.2	-8.61	0.00	-1211.5	0.00	1211.58	8794.96	4397.48	21496.0	10671.5	0.00	0.000	0.000	0.127
5.00	-118.8	-8.56	0.00	-1168.5	0.00	1168.54	8639.43	4319.71	20738.5	10295.5	0.02	-0.032	0.000	0.127
10.00	-115.3	-8.51	0.00	-1125.7	0.00	1125.75	8483.89	4241.95	19994.7	9926.22	0.07	-0.065	0.000	0.127
15.00	-111.9	-8.45	0.00	-1083.2	0.00	1083.22	8328.36	4164.18	19264.4	9563.67	0.15	-0.098	0.000	0.127
20.00	-108.5	-8.39	0.00	-1040.9	0.00	1040.95	8172.83	4086.41	18547.7	9207.87	0.27	-0.132	0.000	0.126
25.00	-105.1	-8.33	0.00	-998.98	0.00	998.98	8017.29	4008.65	17844.6	8858.82	0.43	-0.166	0.000	0.126
30.00	-101.8	-8.25	0.00	-957.35	0.00	957.35	7861.76	3930.88	17155.1	8516.51	0.62	-0.201	0.000	0.125
35.00	-98.59	-8.18	0.00	-916.08	0.00	916.08	7706.22	3853.11	16479.1	8180.95	0.85	-0.236	0.000	0.125
40.00	-95.36	-8.09	0.00	-875.20	0.00	875.20	7550.69	3775.35	15816.8	7852.13	1.12	-0.272	0.000	0.124
45.00	-92.18	-7.98	0.00	-834.73	0.00	834.73	7395.16	3697.58	15168.0	7530.06	1.42	-0.309	0.000	0.123
45.42	-91.91	-7.99	0.00	-831.40	0.00	831.40	7382.20	3691.10	15114.6	7503.52	1.45	-0.312	0.000	0.123
48.90	-88.57	-7.91	0.00	-803.56	0.00	803.56	7273.84	3636.92	14671.4	7283.52	1.69	-0.338	0.000	0.082
50.00	-87.52	-7.89	0.00	-794.86	0.00	794.86	7239.62	3619.81	14532.8	7214.73	1.77	-0.343	0.000	0.082
52.75	-84.91	-7.82	0.00	-773.18	0.00	773.18	5810.43	2905.21	11825.7	5870.80	1.97	-0.357	0.000	0.083
55.00	-83.68	-7.77	0.00	-755.59	0.00	755.59	5769.82	2884.91	11629.7	5773.48	2.14	-0.369	0.000	0.091
57.15	-82.51	-7.72	0.00	-738.89	0.00	738.89	5730.75	2865.38	11443.3	5680.95	2.31	-0.381	0.000	0.090
57.15	-82.51	-7.72	0.00	-738.89	0.00	738.89	5730.75	2865.38	11443.3	5680.95	2.31	-0.381	0.000	0.090
60.00	-80.97	-7.68	0.00	-716.87	0.00	716.87	5678.55	2839.28	11197.7	5559.03	2.54	-0.397	0.000	0.143
65.00	-78.31	-7.59	0.00	-678.47	0.00	678.47	5551.73	2775.86	10705.1	5314.51	2.98	-0.441	0.000	0.142
70.00	-75.69	-7.50	0.00	-640.50	0.00	640.50	5427.30	2713.65	10228.2	5077.73	3.47	-0.487	0.000	0.140
75.00	-73.11	-7.41	0.00	-603.00	0.00	603.00	5302.88	2651.44	9762.15	4846.34	4.00	-0.532	0.000	0.138
80.00	-70.57	-7.30	0.00	-565.97	0.00	565.97	5178.45	2589.22	9306.93	4620.35	4.58	-0.578	0.000	0.136
84.00	-68.58	-7.21	0.00	-536.75	0.00	536.75	5078.91	2539.45	8950.59	4443.45	5.08	-0.616	0.000	0.134
85.00	-67.86	-7.19	0.00	-529.54	0.00	529.54	5054.02	2527.01	8862.59	4399.76	5.21	-0.625	0.000	0.134
87.00	-66.45	-7.15	0.00	-515.16	0.00	515.16	5004.25	2502.13	8687.89	4313.04	5.48	-0.644	0.000	0.081
90.00	-64.36	-7.06	0.00	-493.72	0.00	493.72	4929.59	2464.80	8429.11	4184.57	5.89	-0.662	0.000	0.079
90.42	-64.07	-7.06	0.00	-490.78	0.00	490.78	3591.78	1795.89	6277.53	3116.43	5.95	-0.664	0.000	0.084
95.00	-62.14	-6.95	0.00	-458.43	0.00	458.43	3535.98	1767.99	6038.44	2997.74	6.60	-0.690	0.000	0.092
100.00	-59.63	-6.75	0.00	-423.68	0.00	423.68	3473.75	1736.87	5780.45	2869.66	7.34	-0.721	0.000	0.088
105.00	-57.60	-6.63	0.00	-389.92	0.00	389.92	3410.09	1705.04	5525.58	2743.13	8.11	-0.752	0.000	0.084
109.50	-54.23	-5.99	0.00	-357.97	0.00	357.97	3351.58	1675.79	5299.03	2630.66	8.83	-0.779	0.000	0.079
110.00	-54.04	-5.98	0.00	-354.98	0.00	354.98	3345.00	1672.50	5274.03	2618.25	8.91	-0.782	0.000	0.079
112.25	-53.15	-5.93	0.00	-341.53	0.00	341.53	3315.25	1657.63	5161.96	2562.62	9.29	-0.796	0.000	0.077
112.25	-53.15	-5.93	0.00	-341.53	0.00	341.53	3315.25	1657.63	5161.96	2562.62	9.29	-0.796	0.000	0.077
115.00	-52.09	-5.88	0.00	-325.23	0.00	325.23	3278.49	1639.25	5025.98	2495.11	9.75	-0.812	0.000	0.146
120.00	-50.18	-5.78	0.00	-295.83	0.00	295.83	3210.56	1605.28	4781.62	2373.80	10.63	-0.869	0.000	0.140
123.58	-48.83	-5.69	0.00	-275.13	0.00	275.13	3148.16	1574.08	4590.15	2278.75	11.30	-0.910	0.000	0.136
125.00	-48.12	-5.66	0.00	-267.07	0.00	267.07	3121.72	1560.86	4512.97	2240.43	11.57	-0.926	0.000	0.135
125.60	-47.81	-5.65	0.00	-263.67	0.00	263.67	3110.52	1555.26	4480.48	2224.30	11.69	-0.933	0.000	0.076
129.00	-46.12	-5.56	0.00	-244.46	0.00	244.46	2149.47	1074.74	3099.22	1538.58	12.36	-0.954	0.000	0.080
130.00	-45.62	-5.49	0.00	-238.86	0.00	238.86	2141.27	1070.63	3068.69	1523.43	12.56	-0.961	0.000	0.089
135.00	-44.05	-5.37	0.00	-211.41	0.00	211.41	2099.38	1049.69	2916.97	1448.11	13.59	-0.994	0.000	0.082
136.26	-43.66	-5.34	0.00	-204.65	0.00	204.65	2088.60	1044.30	2879.00	1429.26	13.85	-1.003	0.000	0.081
136.26	-43.66	-5.34	0.00	-204.65	0.00	204.65	2088.60	1044.30	2879.00	1429.26	13.85	-1.003	0.000	0.081
140.00	-42.52	-5.27	0.00	-184.66	0.00	184.66	2056.07	1028.04	2766.99	1373.65	14.64	-1.027	0.000	0.155
145.00	-38.62	-4.86	0.00	-158.31	0.00	158.31	2011.34	1005.67	2618.95	1300.16	15.75	-1.089	0.000	0.141
150.00	-37.19	-4.76	0.00	-134.03	0.00	134.03	1965.18	982.59	2473.01	1227.71	16.92	-1.147	0.000	0.128
155.00	-31.60	-4.20	0.00	-110.25	0.00	110.25	1917.59	958.80	2329.38	1156.40	18.16	-1.201	0.000	0.112

Calculated Forces

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/24/2017
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: 36
	Struct Class: II	



160.00	-30.32	-4.08	0.00	-89.27	0.00	89.27	1868.58	934.29	2188.24	1086.34	19.44	-1.250	0.000	0.098
161.50	-26.69	-3.71	0.00	-83.15	0.00	83.15	1853.60	926.80	2146.41	1065.57	19.83	-1.264	0.000	0.092
165.00	-25.82	-3.62	0.00	-70.18	0.00	70.18	1818.15	909.07	2049.77	1017.59	20.77	-1.294	0.000	0.083
165.25	-25.75	-3.63	0.00	-69.27	0.00	69.27	1815.59	907.79	2042.92	1014.19	20.84	-1.296	0.000	0.083
169.58	-24.41	-3.51	0.00	-53.56	0.00	53.56	1040.26	520.13	1155.41	573.59	22.03	-1.329	0.000	0.117
170.00	-24.32	-3.51	0.00	-52.10	0.00	52.10	1038.39	519.19	1149.55	570.68	22.15	-1.332	0.000	0.115
175.00	-16.51	-2.48	0.00	-34.53	0.00	34.53	1015.17	507.59	1079.51	535.91	23.57	-1.374	0.000	0.081
180.00	-15.66	-2.37	0.00	-22.13	0.00	22.13	990.53	495.27	1010.05	501.43	25.02	-1.405	0.000	0.060
185.00	-8.78	-1.40	0.00	-10.26	0.00	10.26	964.47	482.24	941.35	467.32	26.51	-1.426	0.000	0.031
187.00	-8.00	-1.09	0.00	-5.20	0.00	5.20	953.65	476.82	914.12	453.81	27.11	-1.431	0.000	0.020
190.00	-7.57	-1.03	0.00	-1.93	0.00	1.93	936.98	468.49	873.60	433.69	28.01	-1.434	0.000	0.013
191.50	-0.62	-0.10	0.00	-0.39	0.00	0.39	928.46	464.23	853.48	423.70	28.46	-1.434	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	29.51	-1.435	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	29.81	-1.435	0.000	0.000

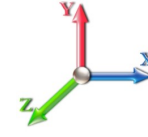
Seismic Segment Forces (Factored)

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/24/2017
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
Dead Load Factor	1.20	Seismic Load Factor	1.00	Sd1	0.10
Wind Load Factor	0.00	Structure Frequency	0.29	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	34.93	
10.00		1960.6	0.00	0.04	0.03	51.22	
15.00		1925.0	0.01	0.06	0.03	59.49	
20.00		1889.4	0.02	0.06	0.04	63.59	
25.00		1853.8	0.03	0.07	0.04	65.42	
30.00		1818.1	0.04	0.07	0.04	66.07	
35.00		1782.5	0.06	0.07	0.04	66.16	
40.00		1746.9	0.08	0.07	0.04	66.06	
45.00		1711.3	0.10	0.07	0.04	65.92	
45.42	Bot - Section 2	141.00	0.10	0.07	0.04	5.44	
48.90	RB1	2125.6	0.12	0.07	0.03	83.07	
50.00		664.80	0.12	0.07	0.03	26.09	
52.75	Top - Section 1	1648.4	0.14	0.07	0.03	65.31	
55.00		600.65	0.15	0.07	0.03	23.97	
57.15	RT1	568.56	0.16	0.07	0.03	22.82	
60.00		745.55	0.18	0.07	0.03	30.09	
65.00		1285.6	0.21	0.06	0.02	51.91	
70.00		1257.1	0.24	0.06	0.02	49.84	
75.00		1228.6	0.28	0.05	0.01	46.41	
80.00		1200.1	0.31	0.04	0.01	41.16	
84.00	Bot - Section 3	939.59	0.35	0.03	0.01	28.23	
85.00		409.65	0.36	0.03	0.01	11.78	
87.00	RB2	813.31	0.37	0.03	0.01	21.05	
90.00		1205.0	0.40	0.02	0.01	25.12	
90.42	Top - Section 2	165.94	0.40	0.02	0.01	3.33	
95.00		781.83	0.44	0.00	0.01	8.31	
100.00	Appurtenance(s)	908.43	0.49	-0.01	0.01	-1.14	
105.00		811.06	0.54	-0.03	0.01	-11.01	
109.50	Appurtenance(s)	1161.6	0.59	-0.05	0.01	-27.71	
110.00		78.01	0.60	-0.05	0.01	-1.94	
112.25	RT2	348.39	0.62	-0.06	0.02	-10.22	
115.00		419.93	0.65	-0.07	0.02	-14.28	
120.00		746.94	0.71	-0.09	0.03	-30.01	
123.58	Bot - Section 4	522.16	0.75	-0.10	0.04	-22.25	
125.00		358.80	0.77	-0.11	0.05	-15.47	
125.60	RB3	151.06	0.78	-0.11	0.05	-6.53	
129.00	Top - Section 3	845.83	0.82	-0.12	0.06	-36.48	
130.00	Appurtenance(s)	159.35	0.83	-0.12	0.06	-6.82	
135.00		522.14	0.90	-0.12	0.09	-20.56	
136.26	RT3	129.05	0.91	-0.12	0.09	-4.91	
140.00		377.06	0.96	-0.12	0.11	-12.41	
145.00	Appurtenance(s)	1619.2	1.03	-0.10	0.15	-38.03	
150.00		474.06	1.11	-0.07	0.19	-5.29	
155.00	Appurtenance(s)	2086.7	1.18	-0.01	0.24	8.48	
160.00		442.00	1.26	0.07	0.30	9.81	

Seismic Segment Forces (Factored)

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/24/2017	
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: 38



161.50	Appurtenance(s)	1629.4	1.28	0.10	0.32	45.97
165.00		296.50	1.34	0.18	0.37	12.83
165.25	Bot - Section 5	20.88	1.34	0.19	0.38	0.93
169.58	Top - Section 4	596.66	1.41	0.31	0.45	38.92
170.00		22.76	1.42	0.33	0.45	1.53
175.00	Appurtenance(s)	2624.8	1.51	0.52	0.55	247.95
180.00		256.70	1.59	0.76	0.66	32.00
185.00	Appurtenance(s)	1967.1	1.68	1.06	0.79	310.89
187.00	Appurtenance(s)	203.41	1.72	1.20	0.85	35.05
190.00		139.91	1.78	1.43	0.94	27.23
191.50	Appurtenance(s)	2438.9	1.80	1.56	0.98	503.04
195.00		156.13	1.87	1.88	1.10	36.61
196.00	Appurtenance(s)	50.15	1.89	1.98	1.14	12.18
Totals:		55,031.2				2,141.1
						Total Wind: 40,529.9

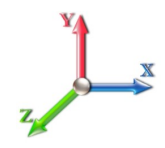
Seismic Base Shear is Less Than 50% of Wind Force - An Analysis is NOT Required

Calculated Forces

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/24/2017
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	0.29	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	-78.10	-2.41	0.00	-308.29	0.00	308.29	8794.96	4397.48	21496.0	10671.5	0.00	0.00	0.00	0.038
5.00	-75.35	-2.39	0.00	-296.24	0.00	296.24	8639.43	4319.71	20738.5	10295.5	0.00	-0.01	0.037	
10.00	-72.65	-2.35	0.00	-284.30	0.00	284.30	8483.89	4241.95	19994.7	9926.22	0.02	-0.02	0.037	
15.00	-69.98	-2.30	0.00	-272.58	0.00	272.58	8328.36	4164.18	19264.4	9563.67	0.04	-0.02	0.037	
20.00	-67.36	-2.24	0.00	-261.10	0.00	261.10	8172.83	4086.41	18547.7	9207.87	0.07	-0.03	0.037	
25.00	-64.78	-2.18	0.00	-249.90	0.00	249.90	8017.29	4008.65	17844.6	8858.82	0.11	-0.04	0.036	
30.00	-62.25	-2.12	0.00	-238.99	0.00	238.99	7861.76	3930.88	17155.1	8516.51	0.16	-0.05	0.036	
35.00	-59.76	-2.07	0.00	-228.37	0.00	228.37	7706.22	3853.11	16479.1	8180.95	0.22	-0.06	0.036	
40.00	-57.31	-2.01	0.00	-218.04	0.00	218.04	7550.69	3775.35	15816.8	7852.13	0.28	-0.07	0.035	
45.00	-54.90	-1.94	0.00	-208.01	0.00	208.01	7395.16	3697.58	15168.0	7530.06	0.36	-0.08	0.035	
45.42	-54.70	-1.94	0.00	-207.21	0.00	207.21	7382.20	3691.10	15114.6	7503.52	0.37	-0.08	0.035	
48.90	-51.90	-1.86	0.00	-200.45	0.00	200.45	7273.84	3636.92	14671.4	7283.52	0.42	-0.08	0.023	
50.00	-51.03	-1.83	0.00	-198.41	0.00	198.41	7239.62	3619.81	14532.8	7214.73	0.44	-0.09	0.023	
52.75	-48.86	-1.76	0.00	-193.38	0.00	193.38	5810.43	2905.21	11825.7	5870.80	0.50	-0.09	0.023	
55.00	-47.98	-1.74	0.00	-189.41	0.00	189.41	5769.82	2884.91	11629.7	5773.48	0.54	-0.09	0.026	
57.15	-47.14	-1.72	0.00	-185.67	0.00	185.67	5730.75	2865.38	11443.3	5680.95	0.58	-0.10	0.026	
57.15	-47.14	-1.72	0.00	-185.67	0.00	185.67	5730.75	2865.38	11443.3	5680.95	0.58	-0.10	0.026	
60.00	-46.05	-1.69	0.00	-180.77	0.00	180.77	5678.55	2839.28	11197.7	5559.03	0.64	-0.10	0.041	
65.00	-44.15	-1.65	0.00	-172.29	0.00	172.29	5551.73	2775.86	10705.1	5314.51	0.75	-0.11	0.040	
70.00	-42.29	-1.60	0.00	-164.06	0.00	164.06	5427.30	2713.65	10228.2	5077.73	0.87	-0.12	0.040	
75.00	-40.46	-1.56	0.00	-156.04	0.00	156.04	5302.88	2651.44	9762.15	4846.34	1.01	-0.13	0.040	
80.00	-38.67	-1.52	0.00	-148.24	0.00	148.24	5178.45	2589.22	9306.93	4620.35	1.15	-0.15	0.040	
84.00	-37.26	-1.49	0.00	-142.15	0.00	142.15	5078.91	2539.45	8950.59	4443.45	1.28	-0.16	0.039	
85.00	-36.69	-1.48	0.00	-140.66	0.00	140.66	5054.02	2527.01	8862.59	4399.76	1.31	-0.16	0.039	
87.00	-35.58	-1.46	0.00	-137.69	0.00	137.69	5004.25	2502.13	8687.89	4313.04	1.38	-0.16	0.024	
90.00	-33.92	-1.43	0.00	-133.31	0.00	133.31	4929.59	2464.80	8429.11	4184.57	1.48	-0.17	0.023	
90.42	-33.69	-1.43	0.00	-132.71	0.00	132.71	3591.78	1795.89	6277.53	3116.43	1.50	-0.17	0.025	
95.00	-32.43	-1.42	0.00	-126.14	0.00	126.14	3535.98	1767.99	6038.44	2997.74	1.66	-0.18	0.028	
100.00	-30.98	-1.42	0.00	-119.02	0.00	119.02	3473.75	1736.87	5780.45	2869.66	1.85	-0.18	0.027	
105.00	-29.66	-1.42	0.00	-111.90	0.00	111.90	3410.09	1705.04	5525.58	2743.13	2.05	-0.19	0.026	
109.50	-27.95	-1.42	0.00	-105.49	0.00	105.49	3351.58	1675.79	5299.03	2630.66	2.24	-0.20	0.025	
110.00	-27.82	-1.42	0.00	-104.78	0.00	104.78	3345.00	1672.50	5274.03	2618.25	2.26	-0.20	0.025	
112.25	-27.24	-1.42	0.00	-101.58	0.00	101.58	3315.25	1657.63	5161.96	2562.62	2.35	-0.21	0.025	
112.25	-27.24	-1.42	0.00	-101.58	0.00	101.58	3315.25	1657.63	5161.96	2562.62	2.35	-0.21	0.025	
115.00	-26.55	-1.42	0.00	-97.67	0.00	97.67	3278.49	1639.25	5025.98	2495.11	2.47	-0.21	0.047	
120.00	-25.30	-1.43	0.00	-90.54	0.00	90.54	3210.56	1605.28	4781.62	2373.80	2.70	-0.23	0.046	
123.58	-24.43	-1.43	0.00	-85.43	0.00	85.43	3148.16	1574.08	4590.15	2278.75	2.88	-0.24	0.045	
125.00	-23.90	-1.43	0.00	-83.41	0.00	83.41	3121.72	1560.86	4512.97	2240.43	2.95	-0.25	0.045	
125.60	-23.68	-1.43	0.00	-82.56	0.00	82.56	3110.52	1555.26	4480.48	2224.30	2.98	-0.25	0.025	
129.00	-22.42	-1.42	0.00	-77.71	0.00	77.71	2149.47	1074.74	3099.22	1538.58	3.16	-0.25	0.027	
130.00	-22.16	-1.42	0.00	-76.28	0.00	76.28	2141.27	1070.63	3068.69	1523.43	3.22	-0.26	0.030	
135.00	-21.19	-1.42	0.00	-69.16	0.00	69.16	2099.38	1049.69	2916.97	1448.11	3.49	-0.27	0.029	
136.26	-20.95	-1.42	0.00	-67.37	0.00	67.37	2088.60	1044.30	2879.00	1429.26	3.56	-0.27	0.028	
136.26	-20.95	-1.42	0.00	-67.37	0.00	67.37	2088.60	1044.30	2879.00	1429.26	3.56	-0.27	0.028	
140.00	-20.24	-1.43	0.00	-62.05	0.00	62.05	2056.07	1028.04	2766.99	1373.65	3.78	-0.28	0.055	
145.00	-17.95	-1.42	0.00	-54.92	0.00	54.92	2011.34	1005.67	2618.95	1300.16	4.08	-0.30	0.051	
150.00	-17.08	-1.42	0.00	-47.82	0.00	47.82	1965.18	982.59	2473.01	1227.71	4.41	-0.32	0.048	

Calculated Forces

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/24/2017
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	-14.27	-1.40	0.00	-40.72	0.00	40.72	1917.59	958.80	2329.38	1156.40	4.75	-0.34	0.043
160.00	-13.51	-1.39	0.00	-33.71	0.00	33.71	1868.58	934.29	2188.24	1086.34	5.12	-0.36	0.038
161.50	-11.49	-1.33	0.00	-31.63	0.00	31.63	1853.60	926.80	2146.41	1065.57	5.23	-0.36	0.036
165.00	-10.97	-1.32	0.00	-26.96	0.00	26.96	1818.15	909.07	2049.77	1017.59	5.50	-0.37	0.033
165.25	-10.94	-1.32	0.00	-26.63	0.00	26.63	1815.59	907.79	2042.92	1014.19	5.52	-0.38	0.032
169.58	-10.02	-1.27	0.00	-20.92	0.00	20.92	1040.26	520.13	1155.41	573.59	5.87	-0.39	0.046
170.00	-9.98	-1.27	0.00	-20.39	0.00	20.39	1038.39	519.19	1149.55	570.68	5.90	-0.39	0.045
175.00	-6.60	-1.00	0.00	-14.02	0.00	14.02	1015.17	507.59	1079.51	535.91	6.32	-0.41	0.033
180.00	-6.16	-0.97	0.00	-9.00	0.00	9.00	990.53	495.27	1010.05	501.43	6.75	-0.42	0.024
185.00	-3.66	-0.64	0.00	-4.15	0.00	4.15	964.47	482.24	941.35	467.32	7.19	-0.43	0.013
187.00	-3.39	-0.60	0.00	-2.87	0.00	2.87	953.65	476.82	914.12	453.81	7.37	-0.43	0.010
190.00	-3.19	-0.58	0.00	-1.05	0.00	1.05	936.98	468.49	873.60	433.69	7.64	-0.43	0.006
191.50	-0.25	-0.05	0.00	-0.19	0.00	0.19	928.46	464.23	853.48	423.70	7.78	-0.43	0.001
195.00	-0.06	-0.01	0.00	-0.01	0.00	0.01	908.07	454.03	806.98	400.62	8.10	-0.43	0.000
196.00	0.00	-0.01	0.00	0.00	0.00	0.00	902.11	451.06	793.81	394.08	8.19	-0.43	0.000

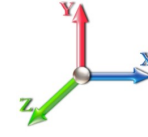
Seismic Segment Forces (Factored)

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/24/2017
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 + 1.0E					Iterations 24
Gust Response Factor	1.10			Sds	0.19
Dead Load Factor	0.90	Seismic Load Factor	1.00	Sd1	0.10
Wind Load Factor	0.00	Structure Frequency	0.29	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	34.93	
10.00		1960.6	0.00	0.04	0.03	51.22	
15.00		1925.0	0.01	0.06	0.03	59.49	
20.00		1889.4	0.02	0.06	0.04	63.59	
25.00		1853.8	0.03	0.07	0.04	65.42	
30.00		1818.1	0.04	0.07	0.04	66.07	
35.00		1782.5	0.06	0.07	0.04	66.16	
40.00		1746.9	0.08	0.07	0.04	66.06	
45.00		1711.3	0.10	0.07	0.04	65.92	
45.42	Bot - Section 2	141.00	0.10	0.07	0.04	5.44	
48.90	RB1	2125.6	0.12	0.07	0.03	83.07	
50.00		664.80	0.12	0.07	0.03	26.09	
52.75	Top - Section 1	1648.4	0.14	0.07	0.03	65.31	
55.00		600.65	0.15	0.07	0.03	23.97	
57.15	RT1	568.56	0.16	0.07	0.03	22.82	
60.00		745.55	0.18	0.07	0.03	30.09	
65.00		1285.6	0.21	0.06	0.02	51.91	
70.00		1257.1	0.24	0.06	0.02	49.84	
75.00		1228.6	0.28	0.05	0.01	46.41	
80.00		1200.1	0.31	0.04	0.01	41.16	
84.00	Bot - Section 3	939.59	0.35	0.03	0.01	28.23	
85.00		409.65	0.36	0.03	0.01	11.78	
87.00	RB2	813.31	0.37	0.03	0.01	21.05	
90.00		1205.0	0.40	0.02	0.01	25.12	
90.42	Top - Section 2	165.94	0.40	0.02	0.01	3.33	
95.00		781.83	0.44	0.00	0.01	8.31	
100.00	Appurtenance(s)	908.43	0.49	-0.01	0.01	-1.14	
105.00		811.06	0.54	-0.03	0.01	-11.01	
109.50	Appurtenance(s)	1161.6	0.59	-0.05	0.01	-27.71	
110.00		78.01	0.60	-0.05	0.01	-1.94	
112.25	RT2	348.39	0.62	-0.06	0.02	-10.22	
115.00		419.93	0.65	-0.07	0.02	-14.28	
120.00		746.94	0.71	-0.09	0.03	-30.01	
123.58	Bot - Section 4	522.16	0.75	-0.10	0.04	-22.25	
125.00		358.80	0.77	-0.11	0.05	-15.47	
125.60	RB3	151.06	0.78	-0.11	0.05	-6.53	
129.00	Top - Section 3	845.83	0.82	-0.12	0.06	-36.48	
130.00	Appurtenance(s)	159.35	0.83	-0.12	0.06	-6.82	
135.00		522.14	0.90	-0.12	0.09	-20.56	
136.26	RT3	129.05	0.91	-0.12	0.09	-4.91	
140.00		377.06	0.96	-0.12	0.11	-12.41	
145.00	Appurtenance(s)	1619.2	1.03	-0.10	0.15	-38.03	
150.00		474.06	1.11	-0.07	0.19	-5.29	
155.00	Appurtenance(s)	2086.7	1.18	-0.01	0.24	8.48	
160.00		442.00	1.26	0.07	0.30	9.81	

Seismic Segment Forces (Factored)

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/24/2017	
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: 42



161.50	Appurtenance(s)	1629.4	1.28	0.10	0.32	45.97
165.00		296.50	1.34	0.18	0.37	12.83
165.25	Bot - Section 5	20.88	1.34	0.19	0.38	0.93
169.58	Top - Section 4	596.66	1.41	0.31	0.45	38.92
170.00		22.76	1.42	0.33	0.45	1.53
175.00	Appurtenance(s)	2624.8	1.51	0.52	0.55	247.95
180.00		256.70	1.59	0.76	0.66	32.00
185.00	Appurtenance(s)	1967.1	1.68	1.06	0.79	310.89
187.00	Appurtenance(s)	203.41	1.72	1.20	0.85	35.05
190.00		139.91	1.78	1.43	0.94	27.23
191.50	Appurtenance(s)	2438.9	1.80	1.56	0.98	503.04
195.00		156.13	1.87	1.88	1.10	36.61
196.00	Appurtenance(s)	50.15	1.89	1.98	1.14	12.18
Totals:		55,031.2				2,141.1
						Total Wind: 40,529.9

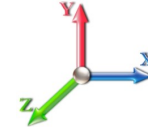
Seismic Base Shear is Less Than 50% of Wind Force - An Analysis is NOT Required

Calculated Forces

Structure: CT46138-A-SBA **Code:** EIA/TIA-222-G 1/24/2017
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: 43



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 0.29			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	-58.58	-2.41	0.00	-304.46	0.00	304.46	8794.96	4397.48	21496.0	10671.5	0.00	0.00	0.00	0.035
5.00	-56.52	-2.38	0.00	-292.42	0.00	292.42	8639.43	4319.71	20738.5	10295.5	0.00	-0.01	0.035	
10.00	-54.49	-2.34	0.00	-280.50	0.00	280.50	8483.89	4241.95	19994.7	9926.22	0.02	-0.02	0.035	
15.00	-52.49	-2.29	0.00	-268.81	0.00	268.81	8328.36	4164.18	19264.4	9563.67	0.04	-0.02	0.034	
20.00	-50.52	-2.23	0.00	-257.38	0.00	257.38	8172.83	4086.41	18547.7	9207.87	0.07	-0.03	0.034	
25.00	-48.59	-2.17	0.00	-246.24	0.00	246.24	8017.29	4008.65	17844.6	8858.82	0.11	-0.04	0.034	
30.00	-46.69	-2.11	0.00	-235.39	0.00	235.39	7861.76	3930.88	17155.1	8516.51	0.16	-0.05	0.034	
35.00	-44.82	-2.05	0.00	-224.85	0.00	224.85	7706.22	3853.11	16479.1	8180.95	0.21	-0.06	0.033	
40.00	-42.98	-1.99	0.00	-214.61	0.00	214.61	7550.69	3775.35	15816.8	7852.13	0.28	-0.07	0.033	
45.00	-41.17	-1.92	0.00	-204.68	0.00	204.68	7395.16	3697.58	15168.0	7530.06	0.35	-0.08	0.033	
45.42	-41.03	-1.92	0.00	-203.88	0.00	203.88	7382.20	3691.10	15114.6	7503.52	0.36	-0.08	0.033	
48.90	-38.93	-1.84	0.00	-197.19	0.00	197.19	7273.84	3636.92	14671.4	7283.52	0.42	-0.08	0.022	
50.00	-38.27	-1.81	0.00	-195.18	0.00	195.18	7239.62	3619.81	14532.8	7214.73	0.44	-0.08	0.022	
52.75	-36.64	-1.74	0.00	-190.20	0.00	190.20	5810.43	2905.21	11825.7	5870.80	0.49	-0.09	0.022	
55.00	-35.98	-1.72	0.00	-186.28	0.00	186.28	5769.82	2884.91	11629.7	5773.48	0.53	-0.09	0.024	
57.15	-35.36	-1.70	0.00	-182.58	0.00	182.58	5730.75	2865.38	11443.3	5680.95	0.57	-0.09	0.024	
57.15	-35.36	-1.70	0.00	-182.58	0.00	182.58	5730.75	2865.38	11443.3	5680.95	0.57	-0.09	0.024	
60.00	-34.53	-1.67	0.00	-177.73	0.00	177.73	5678.55	2839.28	11197.7	5559.03	0.63	-0.10	0.038	
65.00	-33.11	-1.62	0.00	-169.37	0.00	169.37	5551.73	2775.86	10705.1	5314.51	0.74	-0.11	0.038	
70.00	-31.71	-1.58	0.00	-161.25	0.00	161.25	5427.30	2713.65	10228.2	5077.73	0.86	-0.12	0.038	
75.00	-30.34	-1.53	0.00	-153.36	0.00	153.36	5302.88	2651.44	9762.15	4846.34	0.99	-0.13	0.037	
80.00	-29.00	-1.50	0.00	-145.69	0.00	145.69	5178.45	2589.22	9306.93	4620.35	1.14	-0.14	0.037	
84.00	-27.94	-1.47	0.00	-139.71	0.00	139.71	5078.91	2539.45	8950.59	4443.45	1.26	-0.15	0.037	
85.00	-27.52	-1.46	0.00	-138.24	0.00	138.24	5054.02	2527.01	8862.59	4399.76	1.29	-0.16	0.037	
87.00	-26.68	-1.44	0.00	-135.33	0.00	135.33	5004.25	2502.13	8687.89	4313.04	1.36	-0.16	0.022	
90.00	-25.44	-1.41	0.00	-131.02	0.00	131.02	4929.59	2464.80	8429.11	4184.57	1.46	-0.17	0.022	
90.42	-25.27	-1.41	0.00	-130.43	0.00	130.43	3591.78	1795.89	6277.53	3116.43	1.48	-0.17	0.023	
95.00	-24.32	-1.40	0.00	-123.99	0.00	123.99	3535.98	1767.99	6038.44	2997.74	1.64	-0.17	0.026	
100.00	-23.24	-1.40	0.00	-117.00	0.00	117.00	3473.75	1736.87	5780.45	2869.66	1.82	-0.18	0.025	
105.00	-22.24	-1.40	0.00	-110.01	0.00	110.01	3410.09	1705.04	5525.58	2743.13	2.02	-0.19	0.025	
109.50	-20.96	-1.40	0.00	-103.72	0.00	103.72	3351.58	1675.79	5299.03	2630.66	2.20	-0.20	0.024	
110.00	-20.86	-1.40	0.00	-103.02	0.00	103.02	3345.00	1672.50	5274.03	2618.25	2.22	-0.20	0.024	
112.25	-20.43	-1.40	0.00	-99.88	0.00	99.88	3315.25	1657.63	5161.96	2562.62	2.32	-0.20	0.023	
112.25	-20.43	-1.40	0.00	-99.88	0.00	99.88	3315.25	1657.63	5161.96	2562.62	2.32	-0.20	0.023	
115.00	-19.91	-1.40	0.00	-96.04	0.00	96.04	3278.49	1639.25	5025.98	2495.11	2.44	-0.21	0.045	
120.00	-18.98	-1.40	0.00	-89.05	0.00	89.05	3210.56	1605.28	4781.62	2373.80	2.66	-0.22	0.043	
123.58	-18.32	-1.40	0.00	-84.04	0.00	84.04	3148.16	1574.08	4590.15	2278.75	2.84	-0.24	0.043	
125.00	-17.92	-1.40	0.00	-82.06	0.00	82.06	3121.72	1560.86	4512.97	2240.43	2.91	-0.24	0.042	
125.60	-17.76	-1.40	0.00	-81.22	0.00	81.22	3110.52	1555.26	4480.48	2224.30	2.94	-0.24	0.024	
129.00	-16.82	-1.40	0.00	-76.46	0.00	76.46	2149.47	1074.74	3099.22	1538.58	3.11	-0.25	0.026	
130.00	-16.62	-1.40	0.00	-75.06	0.00	75.06	2141.27	1070.63	3068.69	1523.43	3.17	-0.25	0.029	
135.00	-15.89	-1.40	0.00	-68.08	0.00	68.08	2099.38	1049.69	2916.97	1448.11	3.44	-0.26	0.027	
136.26	-15.71	-1.40	0.00	-66.32	0.00	66.32	2088.60	1044.30	2879.00	1429.26	3.51	-0.27	0.026	
136.26	-15.71	-1.40	0.00	-66.32	0.00	66.32	2088.60	1044.30	2879.00	1429.26	3.51	-0.27	0.026	
140.00	-15.18	-1.40	0.00	-61.09	0.00	61.09	2056.07	1028.04	2766.99	1373.65	3.72	-0.27	0.052	
145.00	-13.46	-1.39	0.00	-54.10	0.00	54.10	2011.34	1005.67	2618.95	1300.16	4.02	-0.29	0.048	
150.00	-12.81	-1.40	0.00	-47.13	0.00	47.13	1965.18	982.59	2473.01	1227.71	4.34	-0.31	0.045	

Calculated Forces

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/24/2017
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	-10.70	-1.38	0.00	-40.15	0.00	40.15	1917.59	958.80	2329.38	1156.40	4.68	-0.33	0.040
160.00	-10.13	-1.37	0.00	-33.26	0.00	33.26	1868.58	934.29	2188.24	1086.34	5.04	-0.35	0.036
161.50	-8.61	-1.31	0.00	-31.21	0.00	31.21	1853.60	926.80	2146.41	1065.57	5.15	-0.36	0.034
165.00	-8.23	-1.30	0.00	-26.61	0.00	26.61	1818.15	909.07	2049.77	1017.59	5.41	-0.37	0.031
165.25	-8.20	-1.30	0.00	-26.29	0.00	26.29	1815.59	907.79	2042.92	1014.19	5.43	-0.37	0.030
169.58	-7.52	-1.26	0.00	-20.66	0.00	20.66	1040.26	520.13	1155.41	573.59	5.78	-0.38	0.043
170.00	-7.48	-1.26	0.00	-20.13	0.00	20.13	1038.39	519.19	1149.55	570.68	5.81	-0.38	0.042
175.00	-4.95	-0.99	0.00	-13.85	0.00	13.85	1015.17	507.59	1079.51	535.91	6.22	-0.40	0.031
180.00	-4.62	-0.96	0.00	-8.90	0.00	8.90	990.53	495.27	1010.05	501.43	6.65	-0.41	0.022
185.00	-2.74	-0.63	0.00	-4.10	0.00	4.10	964.47	482.24	941.35	467.32	7.08	-0.42	0.012
187.00	-2.54	-0.60	0.00	-2.83	0.00	2.83	953.65	476.82	914.12	453.81	7.26	-0.42	0.009
190.00	-2.39	-0.57	0.00	-1.04	0.00	1.04	936.98	468.49	873.60	433.69	7.53	-0.42	0.005
191.50	-0.19	-0.05	0.00	-0.19	0.00	0.19	928.46	464.23	853.48	423.70	7.66	-0.42	0.001
195.00	-0.05	-0.01	0.00	-0.01	0.00	0.01	908.07	454.03	806.98	400.62	7.97	-0.42	0.000
196.00	0.00	-0.01	0.00	0.00	0.00	0.00	902.11	451.06	793.81	394.08	8.06	-0.42	0.000

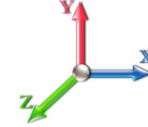
Wind Loading - Shaft

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/24/2017
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	1/24/2017	
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: 46



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

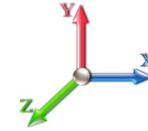
Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/24/2017
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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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	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	
13	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	
14	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	
15	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	
16	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	
17	175.00	21401 TMA	12	12.466	13.713	0.46	0.80	7.06	169.20	0.000	0.000	96.80	0.00	0.00	
18	175.00	AM-X-CD-16-65-00T-RET	3	12.466	13.713	0.60	0.80	14.44	145.50	0.000	0.000	197.96	0.00	0.00	
19	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	
20	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	
21	175.00	RRUS-11	3	12.466	13.713	0.54	0.80	4.05	150.00	0.000	0.000	55.57	0.00	0.00	
22	175.00	7770	6	12.466	13.713	0.68	0.80	22.44	210.00	0.000	0.000	307.72	0.00	0.00	
23	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	
24	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	
25	155.00	T-Arms	3	12.152	13.367	0.56	0.75	13.50	1050.00	0.000	0.000	180.45	0.00	0.00	
26	155.00	KRY 112 114-1 Double	3	12.152	13.367	0.60	0.80	0.74	33.00	0.000	0.000	9.86	0.00	0.00	
27	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	
28	155.00	AIR 21 B4A/B2P	3	12.152	13.367	0.66	0.80	12.13	271.20	0.000	0.000	162.16	0.00	0.00	
29	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	
30	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	
31	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	
32	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	
33	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	
34	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	
35	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	
36	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	
37	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	
38	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:									11,400.40						4,754.91

Total Applied Force Summary

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/24/2017
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

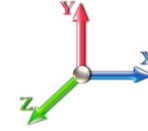


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Load Case: 1.0D + 1.0W 60 mph Wind

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	2290.71	0.00	0.00
10.00		152.39	2255.09	0.00	0.00
15.00		149.65	2219.47	0.00	0.00
20.00		155.88	2183.85	0.00	0.00
25.00		160.33	2148.23	0.00	0.00
30.00		163.44	2112.62	0.00	0.00
35.00		165.56	2077.00	0.00	0.00
40.00		166.92	2041.38	0.00	0.00
45.00		167.66	2005.76	0.00	0.00
45.42		13.84	165.54	0.00	0.00
48.90		118.92	2330.79	0.00	0.00
50.00		37.37	729.57	0.00	0.00
52.75		93.74	1810.36	0.00	0.00
55.00		76.56	733.14	0.00	0.00
57.15		73.07	695.17	0.00	0.00
60.00		96.81	913.38	0.00	0.00
65.00		169.81	1580.05	0.00	0.00
70.00		168.70	1551.55	0.00	0.00
75.00		167.33	1523.06	0.00	0.00
80.00		165.72	1494.57	0.00	0.00
84.00		131.12	1175.14	0.00	0.00
85.00		33.03	468.53	0.00	0.00
87.00		65.91	931.08	0.00	0.00
90.00		98.38	1381.66	0.00	0.00
90.42		13.56	190.48	0.00	0.00
95.00		148.90	1051.73	0.00	0.00
100.00	(2) attachments	252.68	1202.86	0.00	0.00
105.00		157.83	1105.29	0.00	0.00
109.50	(12) attachments	526.83	1426.49	0.00	1875.24
110.00		15.34	106.95	0.00	0.00
112.25		68.79	478.63	0.00	0.00
115.00		83.35	579.12	0.00	0.00
120.00		149.62	1036.37	0.00	0.00
123.58		105.27	729.59	0.00	0.00
125.00		41.76	440.81	0.00	0.00
125.60		17.60	185.79	0.00	0.00
129.00		99.13	1042.64	0.00	0.00
130.00	(2) attachments	63.79	217.24	0.00	39.77
135.00		142.67	808.97	0.00	0.00
136.26		35.34	201.33	0.00	0.00
140.00		103.85	591.61	0.00	0.00
145.00	(6) attachments	449.69	1906.12	0.00	0.00
150.00		132.55	729.69	0.00	0.00
155.00	(12) attachments	643.63	2342.36	0.00	0.00
160.00		125.60	630.03	0.00	0.00
161.50	(1) attachments	333.76	1685.88	0.00	0.00

Total Applied Force Summary

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/24/2017
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	428.12	0.00	0.00
165.25	6.08	30.28	0.00	0.00
169.58	106.15	759.62	0.00	0.00
170.00	10.04	38.43	0.00	0.00
175.00	(29) attachments	1148.85	2812.91	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:		10,543.68	65,086.30	0.00
				3,281.10

Linear Appurtenance Segment Forces (Factored)

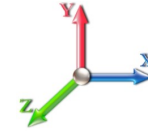
Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/24/2017
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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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	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.058	0.000	7.442	0.00	5.65
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	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.059	0.000	7.442	0.00	5.65
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	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.060	0.000	7.442	0.00	5.65
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	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.061	0.000	7.896	0.00	5.65
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	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.062	0.000	8.276	0.00	5.65
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	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.064	0.000	8.600	0.00	5.65
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	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.065	0.000	8.883	0.00	5.65
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	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.066	0.000	9.137	0.00	5.65
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	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.068	0.000	9.366	0.00	5.65
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	3" Flex Conduit	Yes	0.42	0.000	3.00	0.10	0.00	0.068	0.000	9.384	0.00	0.47
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	3" Flex Conduit	Yes	3.48	0.000	3.00	0.87	0.00	0.069	0.000	9.531	0.00	3.94
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	3" Flex Conduit	Yes	1.10	0.000	3.00	0.28	0.00	0.070	0.000	9.576	0.00	1.24
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	3" Flex Conduit	Yes	2.75	0.000	3.00	0.69	0.00	0.070	0.000	9.685	0.00	3.11
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	3" Flex Conduit	Yes	2.25	0.000	3.00	0.56	0.00	0.069	0.000	9.770	0.00	2.54
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	3" Flex Conduit	Yes	2.15	0.000	3.00	0.54	0.00	0.070	0.000	9.850	0.00	2.43
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	3" Flex Conduit	Yes	2.85	0.000	3.00	0.71	0.00	0.071	0.000	9.951	0.00	3.22
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	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.072	0.000	10.120	0.00	5.65
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	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.074	0.000	10.279	0.00	5.65
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	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.075	0.000	10.430	0.00	5.65
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	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.077	0.000	10.572	0.00	5.65
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	3" Flex Conduit	Yes	4.00	0.000	3.00	1.00	0.00	0.079	0.000	10.681	0.00	4.52
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	3" Flex Conduit	Yes	1.00	0.000	3.00	0.25	0.00	0.080	0.000	10.708	0.00	1.13
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	3" Flex Conduit	Yes	2.00	0.000	3.00	0.50	0.00	0.080	0.000	10.761	0.00	2.26
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	3" Flex Conduit	Yes	3.00	0.000	3.00	0.75	0.00	0.081	0.000	10.838	0.00	3.39

Linear Appurtenance Segment Forces (Factored)

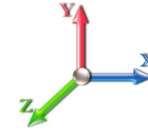
Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/24/2017
Site Name: Torrington/Oandg Ind Inc	Exposure: C	
Height: 196.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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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)
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	3" Flex Conduit	Yes	0.42	0.000	3.00	0.10	0.00	0.082	0.000	10.848	0.00	0.47
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	3" Flex Conduit	Yes	4.58	0.000	3.00	1.15	0.00	0.082	0.000	10.962	0.00	5.18
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	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.084	0.000	11.081	0.00	5.65
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	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.086	0.000	11.195	0.00	5.65
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	3" Flex Conduit	Yes	4.50	0.000	3.00	1.13	0.00	0.088	0.000	11.294	0.00	5.08
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	3" Flex Conduit	Yes	0.50	0.000	3.00	0.13	0.00	0.089	0.000	11.305	0.00	0.56
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	3" Flex Conduit	Yes	2.25	0.000	3.00	0.56	0.00	0.090	0.000	11.354	0.00	2.54
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	3" Flex Conduit	Yes	2.75	0.000	3.00	0.69	0.00	0.091	0.000	11.412	0.00	3.11
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	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.093	0.000	11.514	0.00	5.65
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	3" Flex Conduit	Yes	3.58	0.000	3.00	0.90	0.00	0.095	0.000	11.586	0.00	4.05
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	3" Flex Conduit	Yes	1.42	0.000	3.00	0.35	0.00	0.097	0.000	11.614	0.00	1.60
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	3" Flex Conduit	Yes	0.60	0.000	3.00	0.15	0.00	0.097	0.000	11.625	0.00	0.68
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	3" Flex Conduit	Yes	3.40	0.000	3.00	0.85	0.00	0.099	0.000	11.691	0.00	3.84
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	3" Flex Conduit	Yes	1.00	0.000	3.00	0.25	0.00	0.098	0.000	11.710	0.00	1.13
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	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.085	0.000	11.803	0.00	5.65
136.26	3" Flex Conduit	Yes	1.26	0.000	3.00	0.31	0.00	0.087	0.000	11.827	0.00	1.42
140.00	3" Flex Conduit	Yes	3.74	0.000	3.00	0.94	0.00	0.088	0.000	11.894	0.00	4.23
145.00	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.091	0.000	11.982	0.00	5.65
150.00	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.094	0.000	12.068	0.00	5.65
155.00	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.097	0.000	12.152	0.00	5.65
160.00	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.101	1.002	12.233	0.00	5.65
161.50	3" Flex Conduit	Yes	1.50	0.000	3.00	0.38	0.00	0.103	1.009	12.257	0.00	1.69
165.00	3" Flex Conduit	Yes	3.50	0.000	3.00	0.88	0.00	0.105	1.015	12.313	0.00	3.95
165.25	3" Flex Conduit	Yes	0.25	0.000	3.00	0.06	0.00	0.106	1.019	12.317	0.00	0.28
169.58	3" Flex Conduit	Yes	4.33	0.000	3.00	1.08	0.00	0.108	1.025	12.384	0.00	4.90
170.00	3" Flex Conduit	Yes	0.42	0.000	3.00	0.10	0.00	0.109	1.027	12.390	0.00	0.47
175.00	3" Flex Conduit	Yes	5.00	0.000	3.00	1.25	0.00	0.111	1.034	12.466	0.00	5.65
Totals:											0.0	265.4

Calculated Forces

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/24/2017
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

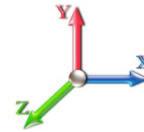


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Load Case: 1.0D + 1.0W 60 mph Wind

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	-65.08	-10.56	0.00	-1398.7	0.00	1398.74	8794.96	4397.48	21496.0	10671.5	0.00	0.000	0.000	0.138
5.00	-62.79	-10.45	0.00	-1345.9	0.00	1345.92	8639.43	4319.71	20738.5	10295.5	0.02	-0.037	0.000	0.138
10.00	-60.52	-10.33	0.00	-1293.6	0.00	1293.68	8483.89	4241.95	19994.7	9926.22	0.08	-0.075	0.000	0.137
15.00	-58.30	-10.22	0.00	-1242.0	0.00	1242.01	8328.36	4164.18	19264.4	9563.67	0.18	-0.113	0.000	0.137
20.00	-56.11	-10.10	0.00	-1190.9	0.00	1190.91	8172.83	4086.41	18547.7	9207.87	0.32	-0.151	0.000	0.136
25.00	-53.95	-9.97	0.00	-1140.4	0.00	1140.43	8017.29	4008.65	17844.6	8858.82	0.50	-0.191	0.000	0.135
30.00	-51.83	-9.83	0.00	-1090.5	0.00	1090.59	7861.76	3930.88	17155.1	8516.51	0.72	-0.230	0.000	0.135
35.00	-49.75	-9.69	0.00	-1041.4	0.00	1041.43	7706.22	3853.11	16479.1	8180.95	0.98	-0.271	0.000	0.134
40.00	-47.70	-9.55	0.00	-992.96	0.00	992.96	7550.69	3775.35	15816.8	7852.13	1.28	-0.311	0.000	0.133
45.00	-45.69	-9.39	0.00	-945.21	0.00	945.21	7395.16	3697.58	15168.0	7530.06	1.63	-0.353	0.000	0.132
45.42	-45.53	-9.39	0.00	-941.30	0.00	941.30	7382.20	3691.10	15114.6	7503.52	1.66	-0.356	0.000	0.132
48.90	-43.19	-9.27	0.00	-908.60	0.00	908.60	7273.84	3636.92	14671.4	7283.52	1.93	-0.386	0.000	0.087
50.00	-42.46	-9.23	0.00	-898.41	0.00	898.41	7239.62	3619.81	14532.8	7214.73	2.02	-0.392	0.000	0.087
52.75	-40.65	-9.14	0.00	-873.02	0.00	873.02	5810.43	2905.21	11825.7	5870.80	2.25	-0.408	0.000	0.088
55.00	-39.92	-9.06	0.00	-852.47	0.00	852.47	5769.82	2884.91	11629.7	5773.48	2.45	-0.421	0.000	0.097
57.15	-39.22	-9.00	0.00	-832.98	0.00	832.98	5730.75	2865.38	11443.3	5680.95	2.64	-0.434	0.000	0.096
57.15	-39.22	-9.00	0.00	-832.98	0.00	832.98	5730.75	2865.38	11443.3	5680.95	2.64	-0.434	0.000	0.096
60.00	-38.30	-8.91	0.00	-807.35	0.00	807.35	5678.55	2839.28	11197.7	5559.03	2.91	-0.452	0.000	0.152
65.00	-36.71	-8.76	0.00	-762.77	0.00	762.77	5551.73	2775.86	10705.1	5314.51	3.41	-0.503	0.000	0.150
70.00	-35.16	-8.61	0.00	-718.95	0.00	718.95	5427.30	2713.65	10228.2	5077.73	3.96	-0.553	0.000	0.148
75.00	-33.63	-8.46	0.00	-675.89	0.00	675.89	5302.88	2651.44	9762.15	4846.34	4.57	-0.605	0.000	0.146
80.00	-32.13	-8.30	0.00	-633.59	0.00	633.59	5178.45	2589.22	9306.93	4620.35	5.23	-0.656	0.000	0.143
84.00	-30.95	-8.17	0.00	-600.37	0.00	600.37	5078.91	2539.45	8950.59	4443.45	5.80	-0.698	0.000	0.141
85.00	-30.48	-8.14	0.00	-592.20	0.00	592.20	5054.02	2527.01	8862.59	4399.76	5.94	-0.709	0.000	0.141
87.00	-29.55	-8.08	0.00	-575.91	0.00	575.91	5004.25	2502.13	8687.89	4313.04	6.25	-0.730	0.000	0.084
90.00	-28.17	-7.96	0.00	-551.68	0.00	551.68	4929.59	2464.80	8429.11	4184.57	6.71	-0.749	0.000	0.083
90.42	-27.97	-7.96	0.00	-548.37	0.00	548.37	3591.78	1795.89	6277.53	3116.43	6.78	-0.752	0.000	0.088
95.00	-26.92	-7.81	0.00	-511.90	0.00	511.90	3535.98	1767.99	6038.44	2997.74	7.51	-0.781	0.000	0.096
100.00	-25.72	-7.55	0.00	-472.85	0.00	472.85	3473.75	1736.87	5780.45	2869.66	8.35	-0.816	0.000	0.092
105.00	-24.61	-7.40	0.00	-435.08	0.00	435.08	3410.09	1705.04	5525.58	2743.13	9.22	-0.850	0.000	0.087
109.50	-23.19	-6.85	0.00	-399.93	0.00	399.93	3351.58	1675.79	5299.03	2630.66	10.04	-0.881	0.000	0.082
110.00	-23.08	-6.84	0.00	-396.50	0.00	396.50	3345.00	1672.50	5274.03	2618.25	10.13	-0.884	0.000	0.082
112.25	-22.60	-6.77	0.00	-381.11	0.00	381.11	3315.25	1657.63	5161.96	2562.62	10.55	-0.899	0.000	0.080
112.25	-22.60	-6.77	0.00	-381.11	0.00	381.11	3315.25	1657.63	5161.96	2562.62	10.55	-0.899	0.000	0.080
115.00	-22.02	-6.69	0.00	-362.49	0.00	362.49	3278.49	1639.25	5025.98	2495.11	11.07	-0.918	0.000	0.152
120.00	-20.98	-6.55	0.00	-329.02	0.00	329.02	3210.56	1605.28	4781.62	2373.80	12.07	-0.981	0.000	0.145
123.58	-20.25	-6.44	0.00	-305.56	0.00	305.56	3148.16	1574.08	4590.15	2278.75	12.82	-1.026	0.000	0.141
125.00	-19.81	-6.39	0.00	-296.44	0.00	296.44	3121.72	1560.86	4512.97	2240.43	13.13	-1.044	0.000	0.139
125.60	-19.62	-6.38	0.00	-292.60	0.00	292.60	3110.52	1555.26	4480.48	2224.30	13.26	-1.052	0.000	0.078
129.00	-18.58	-6.27	0.00	-270.91	0.00	270.91	2149.47	1074.74	3099.22	1538.58	14.02	-1.075	0.000	0.082
130.00	-18.36	-6.21	0.00	-264.61	0.00	264.61	2141.27	1070.63	3068.69	1523.43	14.25	-1.082	0.000	0.091
135.00	-17.55	-6.05	0.00	-233.58	0.00	233.58	2099.38	1049.69	2916.97	1448.11	15.40	-1.120	0.000	0.083
136.26	-17.35	-6.02	0.00	-225.95	0.00	225.95	2088.60	1044.30	2879.00	1429.26	15.70	-1.129	0.000	0.081
136.26	-17.35	-6.02	0.00	-225.95	0.00	225.95	2088.60	1044.30	2879.00	1429.26	15.70	-1.129	0.000	0.081
140.00	-16.75	-5.92	0.00	-203.44	0.00	203.44	2056.07	1028.04	2766.99	1373.65	16.59	-1.155	0.000	0.156
145.00	-14.85	-5.45	0.00	-173.84	0.00	173.84	2011.34	1005.67	2618.95	1300.16	17.84	-1.223	0.000	0.141
150.00	-14.12	-5.31	0.00	-146.61	0.00	146.61	1965.18	982.59	2473.01	1227.71	19.15	-1.287	0.000	0.127
155.00	-11.79	-4.63	0.00	-120.05	0.00	120.05	1917.59	958.80	2329.38	1156.40	20.53	-1.346	0.000	0.110

Calculated Forces

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/24/2017
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: 53
	Struct Class: II	



160.00	-11.16	-4.49	0.00	-96.91	0.00	96.91	1868.58	934.29	2188.24	1086.34	21.97	-1.399	0.000	0.095
161.50	-9.48	-4.12	0.00	-90.17	0.00	90.17	1853.60	926.80	2146.41	1065.57	22.42	-1.414	0.000	0.090
165.00	-9.05	-4.03	0.00	-75.74	0.00	75.74	1818.15	909.07	2049.77	1017.59	23.47	-1.447	0.000	0.079
165.25	-9.02	-4.02	0.00	-74.73	0.00	74.73	1815.59	907.79	2042.92	1014.19	23.54	-1.450	0.000	0.079
169.58	-8.26	-3.90	0.00	-57.29	0.00	57.29	1040.26	520.13	1155.41	573.59	24.87	-1.485	0.000	0.108
170.00	-8.22	-3.89	0.00	-55.67	0.00	55.67	1038.39	519.19	1149.55	570.68	25.00	-1.488	0.000	0.106
175.00	-5.44	-2.68	0.00	-36.19	0.00	36.19	1015.17	507.59	1079.51	535.91	26.59	-1.533	0.000	0.073
180.00	-5.07	-2.56	0.00	-22.82	0.00	22.82	990.53	495.27	1010.05	501.43	28.21	-1.565	0.000	0.051
185.00	-3.02	-1.43	0.00	-10.04	0.00	10.04	964.47	482.24	941.35	467.32	29.86	-1.586	0.000	0.025
187.00	-2.80	-1.23	0.00	-5.81	0.00	5.81	953.65	476.82	914.12	453.81	30.53	-1.591	0.000	0.016
190.00	-2.63	-1.16	0.00	-2.12	0.00	2.12	936.98	468.49	873.60	433.69	31.53	-1.594	0.000	0.008
191.50	-0.20	-0.10	0.00	-0.37	0.00	0.37	928.46	464.23	853.48	423.70	32.03	-1.595	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	33.20	-1.595	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	33.53	-1.595	0.000	0.000

Final Analysis Summary

Structure: CT46138-A-SBA	Code: EIA/TIA-222-G	1/24/2017
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	40.6	0.00	78.05	0.00	0.00	5413.37
0.9D + 1.6W 93 mph Wind	40.6	0.00	58.53	0.00	0.00	5349.43
1.2D + 1.0Di + 1.0Wi 40 mph Wind	8.6	0.00	122.28	0.00	0.00	1211.58
1.2D + 1.0E	2.4	0.00	78.10	0.00	0.00	308.29
0.9D + 1.0E	2.4	0.00	58.58	0.00	0.00	304.46
1.0D + 1.0W 60 mph Wind	10.6	0.00	65.08	0.00	0.00	1398.74

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	-18.46	-22.97	0.00	-788.68	0.00	-788.68	2056.07	1028.0	2766.99	1373.65	140.00	0.584
0.9D + 1.6W 93 mph Wind	-13.44	-22.55	0.00	-774.19	0.00	-774.19	2056.07	1028.0	2766.99	1373.65	140.00	0.571
1.2D + 1.0Di + 1.0Wi 40 mph Wind	-42.52	-5.27	0.00	-184.66	0.00	-184.66	2056.07	1028.0	2766.99	1373.65	140.00	0.155
1.2D + 1.0E	-20.24	-1.43	0.00	-62.05	0.00	-62.05	2056.07	1028.0	2766.99	1373.65	140.00	0.055
0.9D + 1.0E	-15.18	-1.40	0.00	-61.09	0.00	-61.09	2056.07	1028.0	2766.99	1373.65	140.00	0.052
1.0D + 1.0W 60 mph Wind	-16.75	-5.92	0.00	-203.44	0.00	-203.44	2056.07	1028.0	2766.99	1373.65	140.00	0.156

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)	258.7	0.00	37.1	268.2	37.1	8	14	288.0	37.1	8	13	290.33	489.4	440.94	0.658
87.0	112.3	(4) PLT-6.5x1.5(31mm Hole)	328.6	0.00	37.1	234.1	37.1	7	12	215.7	37.1	6	11	252.05	438.8	386.10	0.653
125.6	136.3	(4) PLT-4.75x1.5(31mm Hole)	337.8	8.11	37.1	157.9	37.1	5	8	152.0	37.1	5	7	168.11	303.1	258.13	0.651

Base Plate Summary

Structure: CT46138-A-SB	Code: EIA/TIA-222-G	1/24/2017
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	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): 5413.37	Effective Len (in): 11.88	Ultimate (ksi): 100.00
Axial (kip): 122.28	Moment (kip-in): 543.30	Arrangement: Radial
Shear (kip): 40.63	Allow Stress (ksi): 60.75	Cluster Dist (in): 0.00
	Applied Stress (ksi): 0.00	Start Angle (deg): 0.00
Moment Design %: 98.44	Stress Ratio: 0.50	Compression
		Force (kip): 141.48
		Allowable (kip): 260.00
		Ratio: 0.56
		Tension
		Force (kip): 132.75
		Allowable (kip): 260.00
		Ratio: 0.52



Monopole Mat Foundation Design

Date
11/7/2016

Customer Name:	SBA	EIA/TIA Standard:	EIA-222-G
Site Name:	Torrington/Oandg Ind Inc	Structure Height (Ft.):	196
Site Number:	CT46138	Engineer Name:	D. Zhou
Engr. Number:	27518	Engineer Login ID:	

Foundation Info Obtained from:

Drawings/Calculations
Monopole
Analysis

Structure Type:

Analysis or Design?

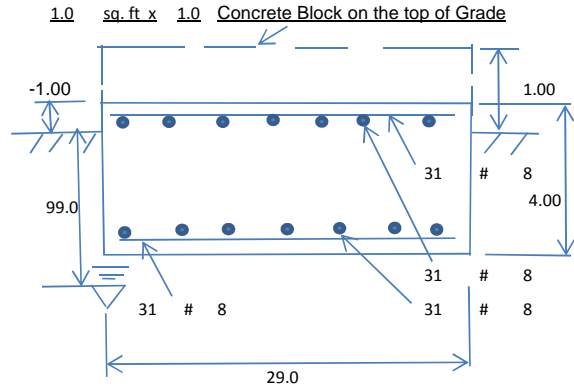
Base Reactions (Factored):

Axial Load (Kips):	78.1	Shear Force (Kips):	40.6
Uplift Force (Kips):	0.0	Moment (Kips-ft):	5413.4

Allowable overstress %: 5.0%

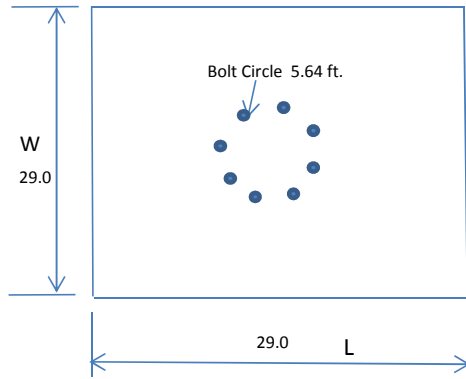
Foundation Geometries:

Anchor Bolt Circle (ft.):	5.64	Depth of Base BG (ft.):	5.00	Mods required -Yes/No ?:	Yes
Thickness of Pad (ft):	4.00	Width of Pad (ft.):	29		
Length of Pad (ft.):	29	Add Concrete Thick. (ft)	1		
Add Concrete Width & Length (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):	6.0	
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 Bottom of Pad:	25
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	No		Angle from Bottom 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):	660.24

Check Soil Capacities:

Calculated Maximum Net Soil Pressure under the base (psf):	2648	<	Allowable Factored Soil Bearing (psf):	9000	0.29	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	8776.3	>	Design Factored Moment (kips-ft):	5618	0.64	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	1.56					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):	327.0	0.26	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	1272.3	>	One-Way Factored Shear (W-D., Kips):	327.0	0.26	OK!
One-Way Design Shear Capacity (Corner-Corner, Kips):	1529.9	>	One-Way Factored Shear (C-C, Kips):	574.2	0.38	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0016	OK!	Lower Steel Pad Reinf. Ratio (W-Direct	0.0016		
Lower Steel Pad Moment Capacity (L-Direction, Kips-ft):	4812.9	>	Moment at Bottom (L-Direct. K-Ft):	1262.7	0.26	OK!
Lower Steel Pad Moment Capacity (W-Direction, Kips-ft):	4812.9	>	Moment at Bottom (W-Direct. K-Ft):	1262.7	0.26	OK!
Lower Steel Pad Moment Capacity (Corner-Corner, K-ft):	6783.7	>	Moment at Bottom (C-C Dir. K-Ft):	1785.7	0.26	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):	390.1	0.08	OK!
Upper Steel Pad Moment Capacity (W-Direction, Kips-ft):	4812.9	>	Moment at the top (W-Dir Kips-Ft):	390.1	0.08	OK!
Upper Steel Pad Moment Capacity (Corner-Corner, K-ft):	6783.7	>	Moment at the top (C-C Direc. K-Ft):	791.8	0.12	OK!