

October 5, 2016

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

Re: **Notice of Exempt Modification – Facility Modification
292 Plain Hill Road, Norwich, Connecticut**

Dear Ms. Bachman:

Cellco Partnership d/b/a Verizon Wireless (“Cellco”) currently maintains twelve (12) antennas at the 159-foot level of the existing 180-foot tower at 292 Plain Hill Road in Norwich, Connecticut (the “Property”). The tower is owned by SBA Communications Corporation (“SBA”). The Council approved Cellco’s use of this tower in 2000. Cellco now intends to modify its facility by replacing six (6) its existing antennas with three (3) model SBNHH-1D65B, 700/19000 MHz antennas and three (3) model SBNHH-1D65B, 2100 MHz antennas, all at the same level on the tower. Cellco also intends to replace six (6) remote radio heads (“RRHs”) and install three (3) new RRHs and one (1) HYBRIFLEX™ fiber optic antenna cable located inside the monopole tower. Attached behind Attachment 1 are the specifications for the replacement antennas, RRHs and HYBRIFLEX™ cable.

Please accept this letter as notification pursuant to R.C.S.A. § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this notice is being sent to Deberey A. Hinchey, Mayor for the City of Norwich. A copy of this letter is also being sent to Kelvin H. and Frances S. Stott, the owners of the Property and SBA, the tower owner.

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

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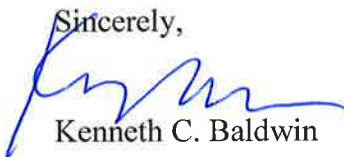
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1. The proposed modifications will not result in an increase in the height of the existing tower. Cellco's replacement antennas will be installed at the 159-foot level of the 180-foot tower.
2. The proposed modifications will not involve any change to ground-mounted equipment and, therefore, will not require the extension of the site boundary.
3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the replacement antennas will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) safety standard. A cumulative General Power Density table for Cellco's modified facility is included in Attachment 2.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The tower and its foundation, with certain modifications, can support can support Cellco's proposed modifications. (*See Post-Mod Structural Analysis Report included in Attachment 3*).

A copy of the Town Assessor's Parcel Map and property owner information is included in Attachment 4.

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

Sincerely,



Kenneth C. Baldwin

Enclosures

Copy to:

Deberey A. Hinchey, Norwich Mayor
Kelvin H. and Frances S. Stott
SBA
Tim Parks

ATTACHMENT 1



SBNHH-1D65B

Multiband Antenna, 698–896 and 2x 1695–2360 MHz, 65° horizontal beamwidth, internal RET. Both high bands share the same electrical tilt.

- Interleaved dipole technology providing for attractive, low wind load mechanical package

Electrical Specifications

Frequency Band, MHz	698–806	806–896	1695–1880	1850–1990	1920–2200	2300–2360
Gain, dBi	14.9	14.7	17.7	18.2	18.6	18.6
Beamwidth, Horizontal, degrees	68	66	69	66	63	58
Beamwidth, Vertical, degrees	12.1	10.7	5.6	5.2	5.0	4.5
Beam Tilt, degrees	0–14	0–14	0–7	0–7	0–7	0–7
USLS (First Lobe), dB	14	13	15	15	15	13
Front-to-Back Ratio at 180°, dB	27	29	28	28	28	27
Isolation, dB	25	25	25	25	25	25
Isolation, Intersystem, dB	30	30	30	30	30	30
VSWR Return Loss, dB	1.5 14.0	1.5 14.0	1.5 14.0	1.5 14.0	1.5 14.0	1.5 14.0
PIM, 3rd Order, 2 x 20 W, dBc	-153	-153	-153	-153	-153	-153
Input Power per Port, maximum, watts	350	350	350	350	350	300
Polarization	±45°	±45°	±45°	±45°	±45°	±45°
Impedance	50 ohm	50 ohm	50 ohm	50 ohm	50 ohm	50 ohm

Electrical Specifications, BASTA*

Frequency Band, MHz	698–806	806–896	1695–1880	1850–1990	1920–2200	2300–2360
Gain by all Beam Tilts, average, dBi	14.5	14.3	17.4	17.9	18.2	18.3
Gain by all Beam Tilts Tolerance, dB	±0.5	±0.8	±0.4	±0.3	±0.5	±0.3
Gain by Beam Tilt, average, dBi	0° 14.6	0° 14.5	0° 17.4	0° 17.8	0° 18.1	0° 18.2
	7° 14.6	7° 14.4	3° 17.5	3° 17.9	3° 18.3	3° 18.4
	14° 14.2	14° 13.6	7° 17.4	7° 17.9	7° 18.2	7° 18.4
Beamwidth, Horizontal Tolerance, degrees	±2.2	±3.4	±2	±4.6	±5.7	±4.3
Beamwidth, Vertical Tolerance, degrees	±0.8	±1	±0.3	±0.2	±0.3	±0.2
USLS, beampeak to 20° above beampeak, dB	16	14	16	16	16	15
Front-to-Back Total Power at 180° ± 30°, dB	25	26	27	26	26	26
CPR at Boresight, dB	22	23	21	20	20	22
CPR at Sector, dB	13	11	16	12	11	4

* CommScope® supports NGMN recommendations on Base Station Antenna Standards (BASTA). To learn more about the benefits of BASTA, [download the whitepaper Time to Raise the Bar on BSAs.](#)

General Specifications

Antenna Type	Sector with internal RET
Band	Multiband
Brand	DualPol®
Operating Frequency Band	1695 – 2360 MHz 698 – 896 MHz
Performance Note	Outdoor usage

Mechanical Specifications

Color	Light gray
Lightning Protection	dc Ground

SBNHH1D65B

Radiator Material	Aluminum Low loss circuit board
Radome Material	Fiberglass, UV resistant
Reflector Material	Aluminum
RF Connector Interface	7-16 DIN Female
RF Connector Location	Bottom
RF Connector Quantity, total	6
Wind Loading, frontal	618.0 N @ 150 km/h 138.9 lbf @ 150 km/h
Wind Loading, lateral	197.0 N @ 150 km/h 44.3 lbf @ 150 km/h
Wind Loading, rear	728.0 N @ 150 km/h 163.7 lbf @ 150 km/h
Wind Speed, maximum	241 km/h 150 mph

Dimensions

Depth	180.0 mm 7.1 in
Length	1851.0 mm 72.9 in
Width	301.0 mm 11.9 in
Net Weight, without mounting kit	18.4 kg 40.6 lb

Remote Electrical Tilt (RET) Information

Input Voltage	10–30 Vdc
Internal RET	High band (1) Low band (1)
Power Consumption, idle state, maximum	2.0 W
Power Consumption, normal conditions, maximum	13.0 W
Protocol	3GPP/AISG 2.0 (Multi-RET)
RET Interface	8-pin DIN Female 8-pin DIN Male
RET Interface, quantity	1 female 1 male

Packed Dimensions

Depth	296.0 mm 11.7 in
Length	2025.0 mm 79.7 in
Width	390.0 mm 15.4 in
Shipping Weight	31.0 kg 68.3 lb

Regulatory Compliance/Certifications

Agency

RoHS 2011/65/EU
China RoHS SJ/T 11364-2006
ISO 9001:2008

Classification

Compliant by Exemption
Above Maximum Concentration Value (MCV)
Designed, manufactured and/or distributed under this quality management system



SBNHH-1D65B

Included Products

BSAMNT-1 — Wide Profile Antenna Downtilt Mounting Kit for 2.4 - 4.5 in (60 - 115 mm) OD round members. Kit contains one scissor top bracket set and one bottom bracket set.

* Footnotes

Performance Note Severe environmental conditions may degrade optimum performance

ALCATEL-LUCENT B66A RRH4X45

The Alcatel-Lucent B66a Remote Radio Head 4x45 is the newest addition of Remote Radio Head to the extended product line of Alcatel-Lucent's distributed Base Station solutions, aimed at facilitating smooth RF site acquisition and related civil engineering. Its operational range covers beyond that of B4 (AWS) and B10 (AWS+).

Supporting 2Tx/4Tx MIMO and 2-way/4-way Rx diversity, the Alcatel-Lucent B66a RRH4x45 allows operators to have a compact radio solution to deploy LTE in the 2100 band (3GPP band 4, 10, and 66), providing them with the means to achieve high capacity, high quality, high reliability, large instantaneous bandwidth, and high coverage with minimum site requirements.

The Alcatel-Lucent B66a RRH4x45 product has four transmit RF paths, offering the possibility to **select, via software only, 2Tx or 4Tx MIMO configurations** with either 2x90W or 4x45W RF output power. It also supports 4-way Rx diversity at the 70 MHz instantaneous bandwidth.



The Alcatel-Lucent B66a RRH4x45 is a compact (near zero-footprint) solution and operates noise free, simplifying negotiations with site property owners and minimizing environmental impacts.

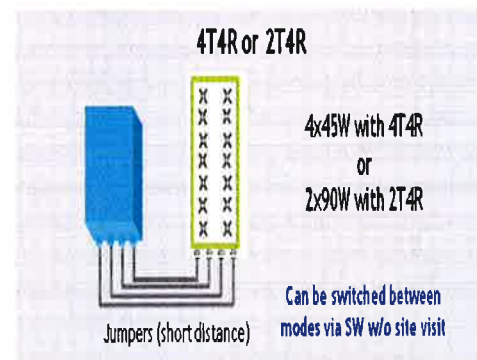
Its compactness and slim design makes the Alcatel-Lucent B66a RRH4x45 easy to install close to the antenna: operators can therefore locate this Remote Radio Head where RF design conditions are deemed ideal, minimizing trade-offs between available sites and RF optimum sites, together with reducing the RF feeder needs and installation costs.

FEATURES

- Supporting LTE in 2110 - 2180 MHz band/DL, 1710-1780MHz/UL (3GPP band 4, 10, and 66a)
- LTE 2Tx or 4Tx MIMO (SW selectable)
- Configuration: 2T2R/2T4R/4T4R
- Output power: Up to 2x90W or 4x45W (SW configurable)
- 70MHz LTE carrier with 4Rx Diversity
- Convection-cooled (fan-less)
- Supports AISG 2.0 ALD devices (RET, TMA) through RS485 or RF ports

BENEFITS

- Compact to reduce additional footprint when adding LTE in AWS 1-3 band
- Selection of MIMO configuration (2Tx or 4Tx) by software only
- Improves downlink spectral efficiency through 4Tx MIMO
- Increases LTE coverage thanks to 4Rx diversity capability and best in class Rx sensitivity
- Flexible mounting options: Pole or Wall



TECHNICAL SPECIFICATIONS

Features & Performance	
Number of TX/RX paths	4 duplexed (either 4T4R or 2T4R selectable by SW)
Frequency band	AWS 1-3, B4/B66a DL: 2110-2180 MHz / UL: 1710-1780 MHz
Instantaneous bandwidth - #carriers	70 MHz – 4 LTE MIMO carriers (in 70 MHz occupied bandwidth)
LTE carrier bandwidth	5, 10, 15, 20 MHz
RF output power	2x90W or 4x45W (selectable by SW)
Noise figure – RX Diversity scheme	2 dB typical (<2.5 dB max) – 2 or 4 way Rx diversity
Receiver Sensivity (FRC A1-3)	-104.5 dBm maximum
Sizes (HxWxD) in mm (in.)	655x299x182 (25.8x11.8x7.2) (with solar shield) 640x290x160 (25.2x11.4x6.3) (without solar shield)
Volume in Liters	35.5 (with solar shield) 29.7 (without solar shield)
Weight in kg (lb) (w/o mounting HW)	25.8kg (56.8lb) (with solar shield)
DC voltage range	Nominal: -48V, -40.5 to -57V at full performance, -38 to -57V with relaxation on power consumption
DC power consumption	750W typical @100% RF load (in 2Tx or 4Tx mode); Add 58W for 2A*29V for AISG
Environmental conditions	-40°C (-40°F) / +55°C (+131°F) UL50E Type 4 Enclosure
Wind load (@150km/h or 93mph)	250N (56lb) Frontal/150N (34lb) Lateral
Antenna ports	4 ports 4.3-10 female (50 ohms) VSWR < 1.5
CPRI ports	2 CPRI ports (HW ready for Rate 7, 9.8 Gbps) SFP: SMDF (HW supports also SMSF and MMDF)
AISG interfaces	1 AISG 2.0 output (RS485) Integrated Smart Bias Tees (x2)
Misc. Interfaces	4 external alarms (1 connector) 1 DC connector (2 pins)
Installation conditions	Pole and wall mounting
Regulatory compliance	3GPP 36.141 / 3GPP 36.113 / GR-487 / GR-1089-CORE / GR-3108-CORE / UL 60950-1 / FCC Part 27 / FCC Part 15 / GR-3178-CORE

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ALCATEL-LUCENT B13 RRH4X30-4R

Alcatel-Lucent B13 Remote Radio Head 4x30-4R is the newest addition of Remote Radio Head to the extended product line of Alcatel-Lucent's distributed Base Station solutions, aimed at facilitating smooth RF site acquisition and related civil engineering.

Supporting 2Tx/4Tx MIMO and 4-way Rx diversity, Alcatel-Lucent B13 RRH4x30-4R allows operators to have a compact radio solution to deploy LTE in the 700U band (700 MHz, 3GPP band 13), providing them with the means to achieve high capacity, high quality and high coverage with minimum site requirements.

The Alcatel-Lucent B13 RRH4x30-4R product has four transmit RF paths, offering the possibility to **select, via software only, 2Tx or 4Tx MIMO configurations** with either 2x60 W or 4x30 W RF output power. It supports also 4-way Rx diversity and up to 10MHz instantaneous bandwidth.

The Alcatel-Lucent B13 RRH4x30-4R is a near zero-footprint solution and operates noise free, simplifying negotiations with site property owners and minimizing environmental impacts.

Its compactness and slim design makes the Alcatel-Lucent B13 RRH4x30-4R easy to install close to the antenna: operators can therefore locate this Remote Radio Head where RF design conditions are deemed ideal, minimizing trade-offs between available sites and RF optimum sites, together with reducing the RF feeder needs and installation costs.

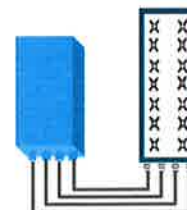


FEATURES

- Supporting LTE in 700 MHz band (700U, 3GPP band 13)
- LTE 2Tx or 4Tx MIMO (SW switchable)
- Output power: Up to 2x60W or 4x30W
- 10MHz LTE carrier with 4Rx Diversity
- Convection-cooled (fan-less)
- Supports AISG 2.0 ALD devices (RET, TMA) through RS485 or RF ports

BENEFITS

- Compact to reduce additional footprint when adding LTE in 700U band
- MIMO scheme operation selection (2Tx or 4Tx) by software only
- Improves downlink spectral efficiency through MIMO4
- Increases LTE coverage thanks to 4Rx diversity capability and best in class Rx sensitivity
- Flexible mounting options: Pole or Wall



4x30W with 4T4R
or
2x60W with 2T4R

Can be switched between modes via SW w/o site visit

TECHNICAL SPECIFICATIONS

Features & performance	
Number of TX/RX paths	4 duplexed (either 4T4R or 2T4R by SW)
Frequency band	U700 (C) (3GPP bands 13): DL: 746 - 756 MHz / UL: 777 - 787 MHz
Instantaneous bandwidth - #carriers	10MHz – 1 LTE carrier (in 10MHz occupied bandwidth)
LTE carrier bandwidth	10 MHz
RF output power	2x60W or 4x30W (by SW)
Noise figure – RX Diversity scheme	2 dB typ. (<2.5 dB max) – 2 or 4 way Rx diversity
Sizes (HxWxD) in mm (in.)	550 x 305 x 230 (21.6" x 12.0" x 9") (with solar shield)
Volume in L	38 (with solar shield)
Weight in kg (lb) (w/o mounting HW)	26 (57.2) (with solar shield)
DC voltage range	-40.5 to -57V at full performance, -38 to -57V with relaxation on power consumption
DC power consumption	550W typical @100% RF load (in 2Tx or 4Tx mode)
Environmental conditions	-40°C (-40°F) / +55°C (+131°F) IP65
Wind load (@150km/h or 93mph)	Frontal:<200N / Lateral :<150N
Antenna ports	4 ports 7/16 DIN female (50 ohms) VSWR < 1.5
CPRI ports	2 CPRI ports (HW ready for Rate7, 9.8 Gbps) SFP single mode dual fiber
AISG interfaces	1 AISG2.0 output (RS485) Integrated Smart Bias Tees (x2)
Misc. Interfaces	4 external alarms (1 connector) – 4 RF Tx & 4 RF Rx monitor ports - 1 DC connector (2 pins)
Installation conditions	Pole and wall mounting
Regulatory compliance	3GPP 36.141 / 3GPP 36.113 / GR-1089-CORE / GR-3108-CORE / UL 60950-1 / FCC Part 27

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ALCATEL-LUCENT B25 RRH4X30

Alcatel-Lucent Band 25 Remote Radio Head 4x30W is the new addition of Remote Radio Head to the extended product line of Alcatel-Lucent's distributed Base Station solutions, aimed at facilitating smooth RF site acquisition and related civil engineering.

Supporting 2Tx/4Tx MIMO and 4-way Rx diversity, Alcatel-Lucent B25 RRH4x30 allows operators to have a compact radio solution to deploy LTE in the PCS band (1.9 GHz, 3GPP band 25), providing them with the means to achieve high capacity, high quality and high coverage with minimum site requirements.

The Alcatel-Lucent B25 RRH4x30 product has four transmit RF paths, offering the possibility to **select, via software only, 2Tx or 4Tx MIMO configurations** with either 2x60 W or 4x30 W RF output power. It supports also 4-way Rx diversity, LTE carriers from 3 MHz up to 20 MHz and up to 65 MHz instantaneous bandwidth.

The Alcatel-Lucent B25 RRH4x30 is a near zero-footprint solution and operates noise free, simplifying negotiations with site property owners and minimizing environmental impacts.

Its compactness and slim design makes the Alcatel-Lucent B25 RRH4x30 easy to install close to the antenna: operators can therefore locate this Remote Radio Head where RF design conditions are deemed ideal, minimizing trade-offs between available sites and RF optimum sites, together with reducing the RF feeder needs and installation costs.

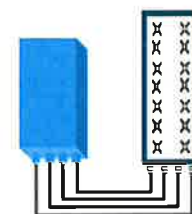


FEATURES

- Supporting LTE in 1.9 GHz band (PCS, 3GPP band 2 & 25)
- LTE 2Tx or 4Tx MIMO (SW switchable)
- Output power: Up to 2x60W or 4x30W
- Ready for 3, 5, 10, 15 or 20MHz LTE carrier operation with 4Rx Diversity
- Ready to support up to 4 carriers anywhere in 65MHz instantaneous bandwidth
- Convection-cooled (fan-less)
- Supports AISG 2.0 devices (RET, TMA) through RS485 or RF ports

BENEFITS

- Compact to reduce additional footprint when adding LTE in PCS band
- MIMO scheme operation selection (2Tx or 4Tx) by software only
- Full flexibility for multiple carriers operation over entire PCS spectrum
- Improves downlink spectral efficiency and cell edge throughput through MIMO4
- Increases LTE coverage thanks to 4-way Rx diversity capability and best in class Rx sensitivity
- Flexible mounting options (Pole or Wall)



4x30W with 4T4R
or
2x60W with 2T4R

Can be switched between modes via SW w/o site visit

TECHNICAL SPECIFICATIONS

Features & performance	
Number of TX/RX paths	4 duplexed (either 4T4R or 2T4R by SW)
Frequency band	3GPP bands 2 & 25 (PCS-G) DL: 1930 - 1995 MHz UL: 1850 - 1915 MHz
Instantaneous bandwidth - #carriers	65MHz – Up to 4 LTE carriers (in 40MHz occupied bandwidth)
LTE carrier bandwidth	3, 5, 10, 15 or 20 MHz
RF output power	2x60W or 4x30W (by SW)
Noise figure (3GPP band 2)	2.0 dB typ. (<2.5 dB max)
RX Diversity scheme	2 or 4 way Rx diversity
Sizes (HxWxD)(w/ solar shield) in mm (in.)	538 x 304 x 182 (21.2" x 12.0" x 7.2")
Volume (w/ solar shield) in L	30
Weight (w/ solar shield) in kg (lb)	24 (53)
DC voltage range	-40.5 to -57V at full performance, -38 to -57V with relaxation on power consumption
DC power consumption	580W typical @100% RF load
Environmental conditions	-40°C (-40°F) / +55°C (+131°F) IP65
Wind load (@150km/h or 93mph)	Frontal: <200N / Lateral : <150N
Antenna ports	4 ports 7/16 DIN female (50 ohms) VSWR < 1.5 (> 14dB)
CPRI ports	2 CPRI ports (HW ready for Rate7 / 9.8 Gbps)
AISG interfaces	1 AISG2.0 output (RS485), +24V/2A DC power Integrated Smart Bias Tees (x2)
Misc. Interfaces	1 external alarms connector (4 alarms) 4 RF Tx & 4 RF Rx monitor ports 1 DC connector (2 pins)
Installation conditions	Pole and wall mounting
Regulatory compliance	3GPP 36.141 / 3GPP 36.113 / GR-1089-CORE / GR-3108-CORE / UL 60950-1 / FCC Part 27

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HYBRIFLEX™ RRH Hybrid Feeder Cabling Solution, 1-5/8", Single-Mode Fiber

Product Description

RFS' HYBRIFLEX Remote Radio Head (RRH) hybrid feeder cabling solution combines optical fiber and DC power for RRHs in a single lightweight aluminum corrugated cable, making it the world's most innovative solution for RRH deployments.

It was developed to reduce installation complexity and costs at Cellular sites, HYBRIFLEX allows mobile operators deploying an RRH architecture to standardize the RRH installation process and eliminate the need for and cost of cable grounding. HYBRIFLEX combines optical fiber (multi-mode or single-mode) and power in a single corrugated cable. It eliminates the need for junction boxes and can connect multiple RRHs with a single feeder. Standard RFS CELLFLEX® accessories can be used with HYBRIFLEX cable. Both pre-connectorized and on-site options are available.

Features/Benefits

- Aluminum corrugated armor with outstanding bending characteristics - minimizes installation time and enables mechanical protection and shielding
- Same accessories as 1 5/8" coaxial cable
- Outer conductor grounding - Eliminates typical grounding requirements and saves on installation costs
- Lightweight solution and compact design - Decreases tower loading
- Robust cabling - Eliminates need for expensive cable trays and ducts
- Installation of tight bundled fiber optic cable pairs directly to the RRH - Reduces CAPEX and wind load by eliminating need for interconnection
- Optical fiber and power cables housed in single corrugated cable - Saves CAPEX by standardizing RRH cable installation and reducing installation requirements
- Outdoor polyethylene jacket - Ensures long-lasting cable protection



Figure 1: HYBRIFLEX Series

Technical Specifications

Outer Conductor Armor	Corrugated Aluminum	(mm (in))	46.5 (1.83)
Jacket	Polyethylene, PE	(mm (in))	50.3 (1.98)
UV-Protection	Individual and External Jacket		Yes
Weight, Approximate		(kg/m (lb/ft))	1.9 (1.30)
Minimum Bending Radius, Single Bending		(mm (in))	200 (8)
Minimum Bending Radius, Repeated Bending		(mm (in))	500 (20)
Recommended/Maximum Clamp Spacing		(m (ft))	1.0 / 1.2 (3.25 / 4.0)
DC-Resistance Outer Conductor Armor		(Ω/km (Ω/1000ft))	0.68 (0.205)
DC-Resistance Power Cable, 8 4mm ² (8AWG)		(Ω/km (Ω/1000ft))	2.1 (0.307)
Version			Single-mode OM3
Quantity, Fiber Count			16 (8 pairs)
Core/Clad		(μm)	50/125
Primary Coating (Acrylate)		(μm)	245
Buffer Diameter, Nominal		(μm)	900
Secondary Protection, Jacket, Nominal		(mm (in))	2.0 (0.08)
Minimum Bending Radius		(mm (in))	104 (4.1)
Insertion Loss @ wavelength 850nm		dB/km	3.0
Insertion Loss @ wavelength 1310nm		dB/km	1.0
Standards (Meets or exceeds)			UL94-V0, UL1666 RoHS Compliant
Size (Power)		(mm (AWG))	8.4 (8)
Quantity, Wire Count (Power)			16 (8 pairs)
Size (Alarm)		(mm (AWG))	0.8 (18)
Quantity, Wire Count (Alarm)			4 (2 pairs)
Type			UV protected
Strands			19
Primary Jacket Diameter, Nominal		(mm (in))	6.8 (0.27)
Standards (Meets or exceeds)			NFPA 130, ICEA S-95-658 UL Type XHHW-2, UL 44 UL-LS Limited Smoke, UL VW-1 IEEE-383 (1974), IEEE1202/FT4 RoHS Compliant
Installation Temperature		(°C (°F))	-40 to +65 (-40 to 149)
Operation Temperature		(°C (°F))	-40 to +65 (-40 to 149)

* This data is provisional and subject to change

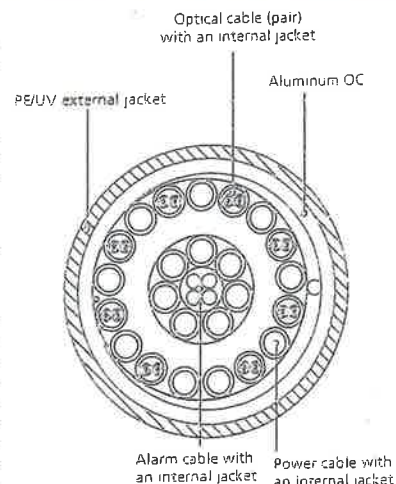


Figure 3: Construction Detail

All information contained in the present datasheet is subject to confirmation at time of ordering.

ATTACHMENT 2

ATTACHMENT 3



Tower Engineering Solutions

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

Post-Mod Structural Analysis Report

Existing 180 ft Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT01365-S

Customer Site Name: Norwich 2 CT

Carrier Name: Verizon

Carrier Site ID / Name: Norwich

Site Location: 292 Plain Hill Road

Norwich, Connecticut

New London County

Latitude: 41.578199

Longitude: -72.103675

Analysis Result:

Max Structural Usage: 84.4% [Pass]

Max Foundation Usage: 89.0% [Pass]

Report Prepared By : Haoxuan Lei



Introduction

The purpose of this report is to summarize the analysis results on the 180 ft Monopole to support the proposed antennas and transmission lines in addition to those currently installed. Any existing modification listed under Sources of Information was assumed completed and was included in this analysis.

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

Sources of Information

Tower Drawings	Tower Design prepared by Valmont, job # 18407-99, dated 06/03/1999
Foundation Drawing	Foundation Design prepared by Valmont, job # 18407-99, dated 06/03/1999
Geotechnical Report	Geotechnical Report prepared by FDH, job # 1207121EG1, dated 08/13/2012
Existing Modification	Modification Design prepared by FDH, job # 1316541400, dated 03/14/13
Proposed Modification	TES Job # 23727

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 $V_{ult} = 136.0$ mph (3-Sec. Gust)/ Nominal Design Wind Speed $V_{asd} = 105.0$ mph (3-Sec. Gust)
Basic Wind Speed with Ice:	50 mph (3-Sec. Gust) with 3/4" radial ice concurrent
Operational Wind Speed:	60 mph + 0" Radial ice
Standard/Codes:	ANSI/TIA/EIA 222-G / 2016 Connecticut State Building Code
Exposure Category:	C
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft
Seismic Parameters:	$SS = 0.17, S1 = 0.061$

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	177.0	3	RFS - APXVSP18-C-A20 - Panel	Platform w/ Hand Rails	(4) 1 1/4"	Sprint
2		3	RFS - APXVTM14C-I20 - Panel			
3		3	ALU - TD-RRH8x20-25			
4		3	ALU - 1900MHz - RRUs			
5		3	ALU - 800 MHz - RRUs			
6		3	ALU - 800MHz Filters			
7		4	RFS - ACU-A20-N			
-	159.0	3	Antel - BXA-80080/4CF - Panel	Low Profile Platform	(12) 1 5/8" (1) 1 5/8" Fiber	Verizon
-		3	Commscope - LNX-6514DS-AIM - Panel			
-		3	Antel - BXA-171085-8BF-EDIN-2 - Panel			
-		3	Antel - BXA-171063/12CF - Panel			
-		3	ALU - RRH2x40-AWS			
-		3	ALU - RRH2x40-700			
-		6	RFS - FD9R6004/2C-3L - Diplexer			
-		2	RFS - DB-T1-6Z-8AB-0Z - ODU			
15	147.0	1	CCI Antennas - HPA-65R-BUU-H6 - Panel	Low Profile Platform	(1) 1/2" Fiber (12) 1 5/8" (2) 3/4" DC	AT&T
16		2	Cci Antennas - HPA-65R-BUU-H8 - Panel			
17		3	Ericsson - RRUS 12 - RRU			
18		3	Ericsson - RRUS A2 - RRU			
19		6	Powerwave Technologies - 7770 - Panel			
20		6	Powerwave Technologies - LGP21401 - TMA			
21		12	Kathrein - 860 10025 RET - RET			
22		6	Ericsson - RRUS 11 - RRU			
23		6	Powerwave - LGP21901 Diplexer - Diplexer			
24		1	Raycap - DC6-48-60-18-8F ("Squid") - DC Surge Suppression System			
25	52.0	1	GPS	-	(1) 1/2"	Sprint

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
8	159.0	3	Antel - BXA-80080/4CF - Panel	Low Profile Platform	(11) 1 5/8" (2) 1 5/8" Fiber	Verizon
9		3	Antel - BXA-171085-8BF-EDIN-2 - Panel			
10		2	RFS - DB-T1-6Z-8AB-0Z - ODU			
11		6	Commscope - SBNHH-1D65B - Panel			
12		3	Alcatel Lucent - B25 RRH4X30 - RRH			
13		3	Alcatel Lucent - B25 RRH4X30 - RRH			
14		3	Alcatel Lucent - RRH 4X45-PCS - RRH			

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

Analysis Results

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

	Pole shafts	Anchor Bolts	Base Plate
Max. Usage:	84.0%	72.9%	54.4%
Pass/Fail	Pass	Pass	Pass

Foundations

	Moment (Kip-Ft)	Shear (Kips)
Original Design Reactions	4948.0	38.8
Analysis Reactions	5345.8	44.1
Factored Reactions*	6679.8	52.4
% of Design Reactions	80.0%	84.2%

* 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 1.3536 degrees under the operational wind speed as specified in the Analysis Criteria.

Conclusions

Based on the analysis results, the structure and its foundation will be adequate to safely support the existing and proposed equipment and meet the minimum requirements per the design ANSI/TIA/EIA 222-G standards under a basic wind speed of 105 mph no ice and 50 mph with 3/4" radial ice after the following proposed modification is successfully completed.

- Proposed modification design drawing by TES Job # 23727

Pre-Mod Installation Determination

We have also checked this tower to determine if the proposed AT&T equipment loading can be installed prior to the completion of the required modifications. We ran a reduced wind loading case as required by TIA-1019 considering a construction period of no more than 6 months.

The tower and foundations passed, so the Carrier can proceed and install their proposed loading prior to the mods completion. Please be aware that this approval is being provided and is based on the method outlined in TIA-1019. This approval is not a blanket approval and there is still a risk that the tower will experience a wind event that cannot be predicted by TIA-1019 or our Engineers. In the event of an unforeseen wind event, Tower Engineering Solutions will not be liable nor responsible for damage to the tower or the Carrier's equipment. Additionally, the tower cannot go beyond the 6 month construction period without the modifications being completed. If the modifications cannot be completed within 6 months from the completed installation of the Carrier's proposed equipment, TES must be notified immediately for further review.

Standard Conditions

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

Standard Conditions

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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 85.18% at 0.0ft

Structure: CT01365-S-SBA
Site Name: Norwich 2 CT
Height: 180.00 (ft)
Base Elev: 0.000 (ft)

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

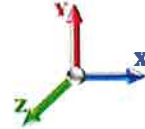
9/12/2016



Page: 1

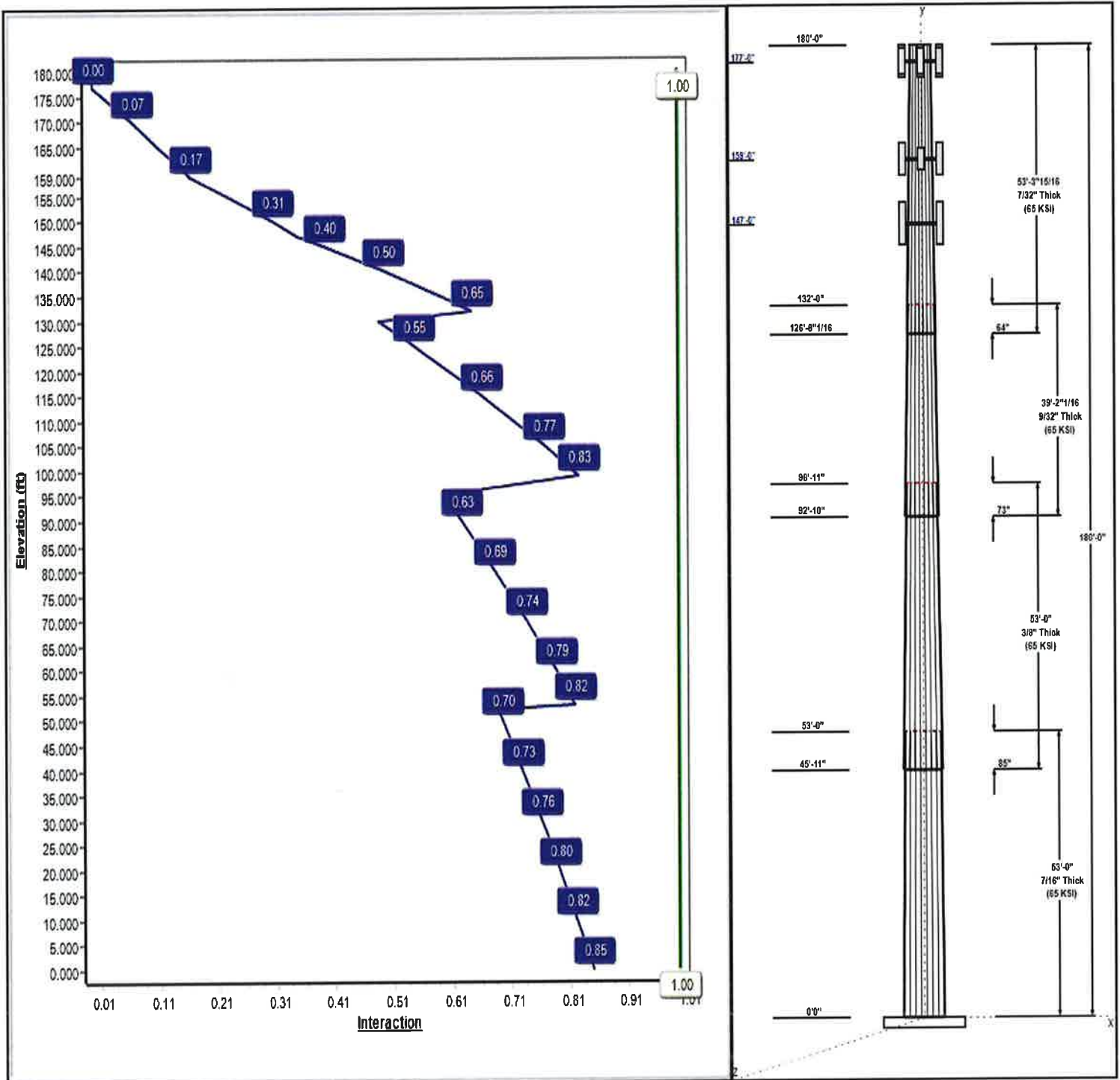
Dead Load Factor: 1.20
Wind Load Factor: 1.60

Load Case : 1.2D + 1.6W 105 mph Wind



Iterations: 26

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Structure: CT01365-S-SBA

Type: Tapered
Site Name: Norwich 2 CT
Height: 180.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 16 Sided
Taper: 0.18500

9/12/2016

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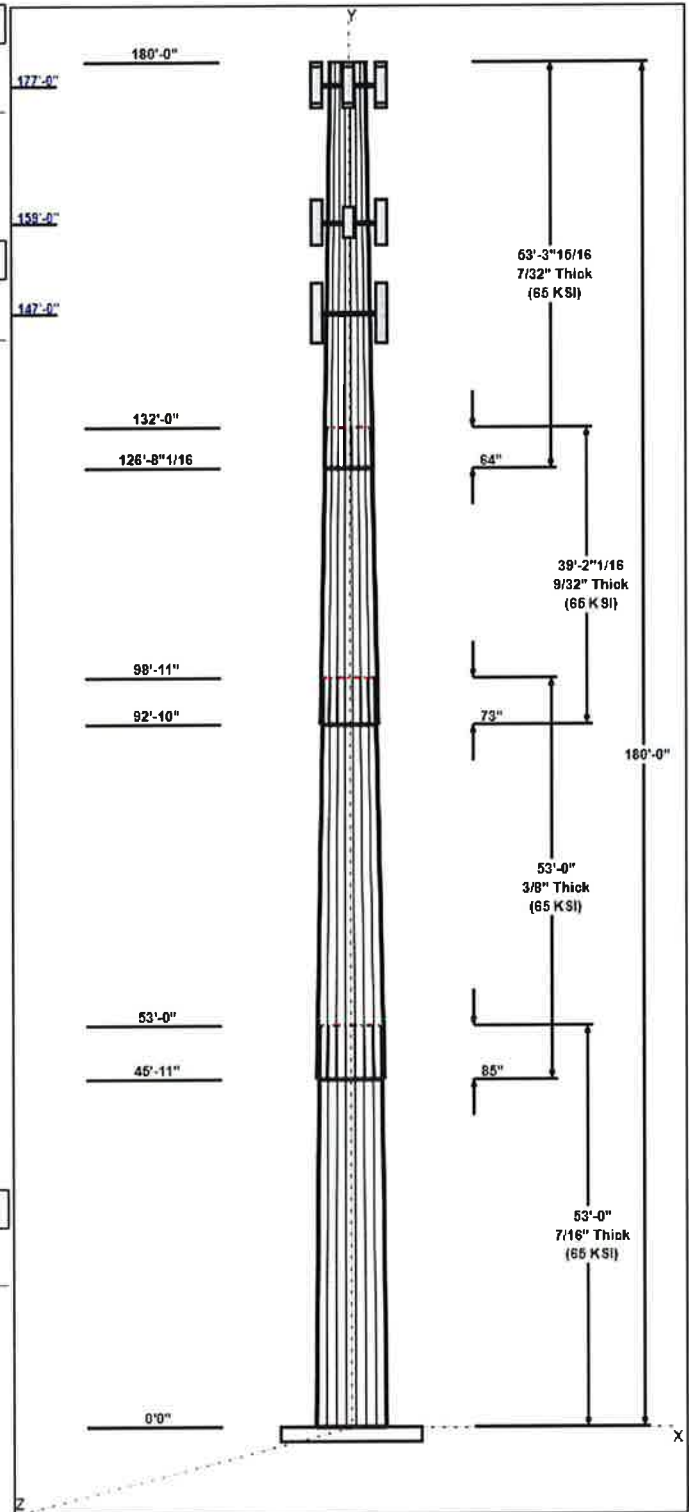


Shaft Properties							
Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	53.00	48.20	58.00	0.438		0.18500	65
2	53.00	40.45	50.26	0.375	Slip	0.18500	65
3	39.17	34.89	42.14	0.281	Slip	0.18500	65
4	53.33	26.45	36.32	0.219	Slip	0.18500	65

Discrete Appurtenances					
Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier	
180.00	180.00	1	Lightning Rod		
177.00	177.00	3	APXVSP18-C-A20	Sprint	
177.00	177.00	3	APXVTM14-C-120	Sprint	
177.00	177.00	3	TD-RRH8x20-25	Sprint	
177.00	177.00	3	1900MHz RRUs	Sprint	
177.00	177.00	3	800 MHz RRUs	Sprint	
177.00	177.00	3	ALU 800MHz External	Sprint	
177.00	177.00	4	ACU-A20-N	Sprint	
177.00	177.00	1	Platform w/ Hand Rail	Sprint	
159.00	159.00	3	B25 RRH4x30	Verizon	
159.00	159.00	3	RRH 4X45-PCS	Verizon	
159.00	159.00	2	DB-T1-6Z-8AB-OZ	Verizon	
159.00	159.00	1	Low Profile	Verizon	
159.00	159.00	6	SBNHH-1D65B	Verizon	
159.00	159.00	3	B25 RRH4x30	Verizon	
159.00	159.00	3	BXA-80080/4CF	Verizon	
159.00	159.00	3	BXA-171085-8BF-EDIN-2	Verizon	
147.00	147.00	1	HPA-65R-BUU-H6	AT&T	
147.00	147.00	2	HPA-65R-BUU-H8	AT&T	
147.00	147.00	12	860 10025 RET	AT&T	
147.00	147.00	3	RRUS 12	AT&T	
147.00	147.00	3	RRUS A2	AT&T	
147.00	147.00	6	RRUS-11	AT&T	
147.00	147.00	6	LGP21401	AT&T	
147.00	147.00	6	LGP21901 Diplexer	AT&T	
147.00	147.00	1	DC6-48-60-18-8F("Squid")	AT&T	
147.00	147.00	1	Low Profile	AT&T	
147.00	147.00	6	7770.00	AT&T	
52.00	52.00	1	GPS	Sprint	

Linear Appurtenances					
Elev From (ft)	Elev To (ft)	Placement	Description	Carrier	
0.00	177.00	Inside	1 1/4" Coax	Sprint	
0.00	159.00	Inside	1 5/8" Coax	Verizon	
0.00	159.00	Inside	1 5/8" Fiber	Verizon	
0.00	147.00	Inside	0.5" Fiber	AT&T	
0.00	147.00	Inside	1 5/8" Coax	AT&T	
0.00	147.00	Inside	3/4" DC	AT&T	
0.00	127.00	Inside	1/2" Coax	AT&T	
0.00	52.00	Outside	1/2" Coax	Sprint	

Anchor Bolts				
Qty	Specifications	Grade (ksi)	Arrangement	
20	2.25" 18J	75.0	Radial	



Structure: CT01365-S-SBA

Type: Tapered
Site Name: Norwich 2 CT
Height: 180.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 16 Sided
Taper: 0.18500

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Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
2.7500	72.5	60.0	Polygon

Reactions

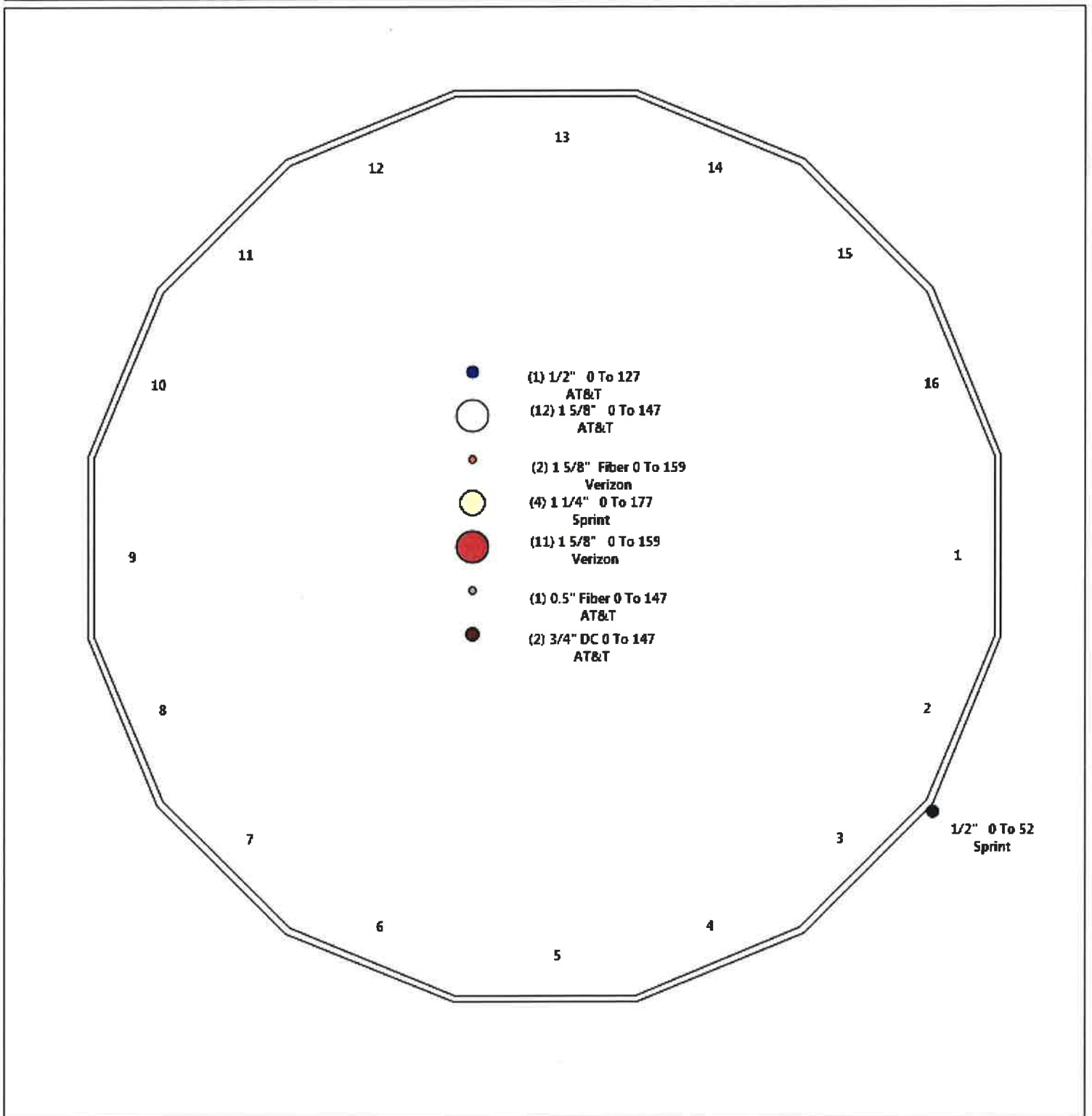
Load Case	Moment	Shear	Axial
1.2D + 1.6W 105 mph Wind	5361.4	44.1	51.8
0.9D + 1.6W 105 mph Wind	5304.6	44.1	38.8
1.2D + 1.0Di + 1.0Wi 50 mph Wind	1256.3	10.2	77.9
1.2D + 1.0E	212.3	1.7	51.9
0.9D + 1.0E	209.8	1.7	38.9
1.0D + 1.0W 60 mph Wind	1088.7	9.0	43.2

Structure: CT01365-S-SBA - Coax Line Placement

Type: Monopole
Site Name: Norwich 2 CT
Height: 180.00 (ft)

9/12/2016

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Shaft Properties

Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	9/12/2016
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (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	53.000	0.4380	65		0.00	13,269
2	16	53.000	0.3750	65	Slip	85.00	9,704
3	16	39.170	0.2810	65	Slip	73.00	4,568
4	16	53.330	0.2190	65	Slip	64.00	3,951
Total Shaft Weight:							31,492

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	58.00	0.00	80.43	33665.63	24.75	132.42	48.20	53.00	66.73	19226.0	20.30	110.0	0.185000
2	50.26	45.92	59.67	18755.41	25.07	134.01	40.45	98.92	47.94	9726.81	19.86	107.8	0.185000
3	42.14	92.83	37.52	8304.44	28.24	149.96	34.89	132.00	31.02	4694.95	23.11	124.1	0.185000
4	36.32	126.6	25.22	4151.11	31.39	165.83	26.45	180.00	18.33	1592.92	22.43	120.7	0.185000

Load Summary

Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	9/12/2016
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (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	180.00	Lightning Rod	1	5.00	0.50	1.00	26.33	2.277	1.00	0.00	0.00
2	177.00	APXVSP18-C-A20	3	57.00	8.02	0.83	232.74	10.860	0.83	0.00	0.00
3	177.00	APXVTM14-C-120	3	56.00	6.34	0.79	219.64	7.473	0.79	0.00	0.00
4	177.00	TD-RRH8x20-25	3	70.00	4.05	0.69	182.70	4.878	0.69	0.00	0.00
5	177.00	1900MHz RRUs	3	44.00	3.80	0.88	154.99	5.213	0.88	0.00	0.00
6	177.00	800 MHz RRUs	3	53.00	2.49	0.92	128.19	3.653	0.92	0.00	0.00
7	177.00	ALU 800MHz External Notch Filt	3	8.80	0.78	0.69	26.74	1.438	0.69	0.00	0.00
8	177.00	ACU-A20-N	4	1.00	0.14	0.79	5.37	0.442	0.79	0.00	0.00
9	177.00	Platform w/ Hand Rail (round)	1	1600.00	32.00	1.00	3734.89	60.389	1.00	0.00	0.00
10	159.00	B25 RRH4x30	3	51.00	2.14	0.81	109.08	2.752	0.81	0.00	0.00
11	159.00	RRH 4X45-PCS	3	60.00	2.71	0.98	141.23	3.981	0.98	0.00	0.00
12	159.00	DB-T1-6Z-8AB-0Z	2	18.90	4.80	0.71	163.62	5.679	0.71	0.00	0.00
13	159.00	Low Profile Platform-Round	1	1500.00	22.00	1.00	2816.56	39.765	1.00	0.00	0.00
14	159.00	SBNHH-1D65B	6	40.60	8.08	0.83	243.61	9.380	0.83	0.00	0.00
15	159.00	B25 RRH4x30	3	51.00	2.14	0.81	109.08	2.752	0.81	0.00	0.00
16	159.00	BXA-80080/4CF	3	14.30	4.80	0.76	123.13	6.684	0.76	0.00	0.00
17	159.00	BXA-171085-8BF-EDIN-2	3	10.50	2.94	0.84	76.43	4.608	0.84	0.00	0.00
18	147.00	HPA-65R-BUU-H6	1	51.00	9.66	1.00	298.52	11.023	1.00	1.00	0.00
19	147.00	HPA-65R-BUU-H8	2	68.00	12.98	0.89	358.36	14.592	0.89	0.00	0.00
20	147.00	860 10025 RET	12	1.20	0.18	0.92	7.18	0.558	0.92	0.00	0.00
21	147.00	RRUS 12	3	58.00	2.70	0.70	122.65	3.358	0.71	0.00	0.00
22	147.00	RRUS A2	3	22.00	1.86	0.61	59.40	2.832	0.63	0.00	0.00
23	147.00	RRUS-11	6	51.00	2.52	0.67	123.13	3.152	0.67	0.00	0.00
24	147.00	LGP21401	6	14.10	1.29	0.67	39.05	2.124	0.67	0.00	0.00
25	147.00	LGP21901 Diplexer	6	5.50	0.27	0.67	13.91	0.667	0.67	0.00	0.00
26	147.00	DC6-48-60-18-8F("Squid")	1	31.80	0.92	1.00	93.50	1.357	1.00	1.00	0.00
27	147.00	Low Profile Platform-Round	1	1500.00	22.00	1.00	2806.27	39.626	1.00	0.00	0.00
28	147.00	7770.00	6	35.00	5.50	0.75	169.84	6.563	0.75	0.00	0.00
29	52.00	GPS	1	0.20	0.11	1.00	0.92	0.542	1.00	1.00	0.00
Totals:			96	7,424.20			19,523.86				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	177.00	(4) 1 1/4" Coax	0.00	Inside
0.00	159.00	(11) 1 5/8" Coax	0.00	Inside
0.00	159.00	(2) 1 5/8" Fiber	0.00	Inside
0.00	147.00	(1) 0.5" Fiber	0.00	Inside
0.00	147.00	(12) 1 5/8" Coax	0.00	Inside
0.00	147.00	(2) 3/4" DC	0.00	Inside
0.00	127.00	(1) 1/2" Coax	0.00	Inside
0.00	52.00	(1) 1/2" Coax	1.00	Outside

Shaft Section Properties

Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	9/12/2016
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (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)	Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fpy (ksi)	S (in^3)	Weight (lb)
0.00		0.4380	58.000	80.427	33665.6	24.75	132.42	74.6	1138.	0.0
5.00		0.4380	57.075	79.134	32068.6	24.33	130.31	75.0	1102.	1357.4
10.00		0.4380	56.150	77.842	30522.9	23.91	128.20	75.5	1066.	1335.4
15.00		0.4380	55.225	76.549	29027.6	23.49	126.08	76.0	1031.	1313.4
20.00		0.4380	54.300	75.257	27582.1	23.07	123.97	76.5	996.4	1291.4
25.00		0.4380	53.375	73.965	26185.3	22.65	121.86	76.9	962.3	1269.4
30.00		0.4380	52.450	72.672	24836.5	22.23	119.75	77.4	928.9	1247.4
35.00		0.4380	51.525	71.380	23534.8	21.81	117.64	77.9	896.0	1225.4
40.00		0.4380	50.600	70.087	22279.4	21.39	115.53	78.4	863.7	1203.5
45.00		0.4380	49.675	68.795	21069.5	20.97	113.41	78.8	832.0	1181.5
45.92	Bot - Section 2	0.4380	49.505	68.558	20852.5	20.89	113.03	78.9	826.2	214.2
50.00		0.4380	48.750	67.502	19904.2	20.55	111.30	79.3	800.9	1768.1
52.00		0.4380	48.380	66.986	19450.4	20.38	110.46	79.5	788.6	856.1
53.00	Top - Section 1	0.3750	48.945	58.102	17315.7	24.37	130.52	0.0	0.0	425.6
55.00		0.3750	48.575	57.659	16923.0	24.17	129.53	75.2	683.4	393.9
60.00		0.3750	47.650	56.553	15967.3	23.68	127.07	75.8	657.3	971.6
65.00		0.3750	46.725	55.446	15048.2	23.19	124.60	76.3	631.7	952.8
70.00		0.3750	45.800	54.340	14165.1	22.70	122.13	76.9	606.7	933.9
75.00		0.3750	44.875	53.233	13317.3	22.21	119.67	77.4	582.1	915.1
80.00		0.3750	43.950	52.127	12504.0	21.72	117.20	78.0	558.1	896.3
85.00		0.3750	43.025	51.020	11724.5	21.23	114.73	78.5	534.5	877.5
90.00		0.3750	42.100	49.914	10978.1	20.74	112.27	79.1	511.5	858.6
92.83	Bot - Section 3	0.3750	41.576	49.286	10569.5	20.46	110.87	79.4	498.7	478.2
95.00		0.3750	41.175	48.807	10264.0	20.25	109.80	79.7	489.0	636.9
98.92	Top - Section 2	0.2810	41.012	36.511	7652.4	27.44	145.95	0.0	0.0	1135.6
100.00		0.2810	40.812	36.332	7540.0	27.30	145.24	71.7	362.4	134.3
105.00		0.2810	39.887	35.502	7035.5	26.64	141.95	72.4	346.0	611.1
110.00		0.2810	38.962	34.673	6554.0	25.99	138.65	73.2	330.0	597.0
115.00		0.2810	38.037	33.844	6094.9	25.33	135.36	73.9	314.3	582.9
120.00		0.2810	37.112	33.015	5657.9	24.68	132.07	74.6	299.0	568.8
125.00		0.2810	36.187	32.186	5242.2	24.02	128.78	75.4	284.2	554.7
126.67	Bot - Section 4	0.2810	35.878	31.909	5108.0	23.81	127.68	75.6	279.3	182.1
130.00		0.2810	35.262	31.357	4847.4	23.37	125.49	76.1	269.7	641.7
132.00	Top - Section 3	0.2190	35.329	24.528	3819.9	30.50	161.32	0.0	0.0	380.7
135.00		0.2190	34.775	24.141	3641.8	29.99	158.79	68.6	205.4	248.1
140.00		0.2190	33.850	23.495	3357.1	29.15	154.57	69.6	194.5	405.2
145.00		0.2190	32.925	22.849	3087.7	28.31	150.34	70.5	184.0	394.2
147.00		0.2190	32.555	22.590	2984.1	27.98	148.65	70.9	179.8	154.6
150.00		0.2190	32.000	22.203	2833.0	27.47	146.12	71.5	173.7	228.6
155.00		0.2190	31.075	21.556	2592.8	26.63	141.89	72.4	163.7	372.3
159.00		0.2190	30.335	21.039	2410.7	25.96	138.52	73.2	155.9	289.9
160.00		0.2190	30.150	20.910	2366.5	25.79	137.67	73.4	154.0	71.4
165.00		0.2190	29.225	20.264	2153.8	24.95	133.45	74.3	144.6	350.3
170.00		0.2190	28.300	19.618	1954.3	24.11	129.22	75.3	135.5	339.3
175.00		0.2190	27.375	18.971	1767.4	23.27	125.00	76.2	126.6	328.3
177.00		0.2190	27.005	18.713	1696.2	22.94	123.31	76.6	123.2	128.2
180.00		0.2190	26.450	18.325	1592.9	22.43	120.78	77.2	118.1	189.0

31491.9

Wind Loading - Shaft

Structure: CT01365-S-SBA
Site Name: Norwich 2 CT
Height: 180.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1

Topography: 1

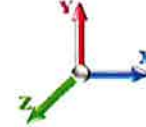
Code: EIA/TIA-222-G 9/12/2016
Exposure: C
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II



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Load Case: 1.2D + 1.6W 105 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 26

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	22.791	25.07	477.06	0.750	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	22.791	25.07	469.45	0.750	0.000	5.00	24.444	18.33	735.4	0.0	1628.9
10.00		1.00	0.85	22.791	25.07	461.84	0.750	0.000	5.00	24.051	18.04	723.5	0.0	1602.5
15.00		1.00	0.85	22.791	25.07	454.23	0.750	0.000	5.00	23.658	17.74	711.7	0.0	1576.1
20.00		1.00	0.90	24.182	26.60	460.05	0.750	0.000	5.00	23.265	17.45	742.6	0.0	1549.7
25.00		1.00	0.95	25.345	27.88	462.97	0.750	0.000	5.00	22.872	17.15	765.2	0.0	1523.3
30.00		1.00	0.98	26.337	28.97	463.76	0.750	0.000	5.00	22.479	16.86	781.5	0.0	1496.9
35.00		1.00	1.01	27.206	29.93	463.03	0.750	0.000	5.00	22.086	16.56	793.1	0.0	1470.5
40.00		1.00	1.04	27.981	30.78	461.16	0.750	0.000	5.00	21.693	16.27	801.2	0.0	1444.1
45.00		1.00	1.07	28.684	31.55	458.37	0.750	0.000	5.00	21.300	15.97	806.5	0.0	1417.8
45.92 Bot - Section 2		1.00	1.07	28.806	31.69	457.78	0.750	0.000	0.92	3.862	2.90	146.9	0.0	257.1
50.00		1.00	1.09	29.327	32.26	454.85	0.750	0.000	4.08	17.305	12.98	669.9	0.0	2121.7
52.00 Appurtenance(s)		1.00	1.10	29.570	32.53	453.27	0.750	0.000	2.00	8.380	6.29	327.1	0.0	1027.3
53.00 Top - Section 1		1.00	1.11	29.689	32.66	452.44	0.750	0.000	1.00	4.167	3.12	163.3	0.0	510.7
55.00		1.00	1.12	29.922	32.91	457.79	0.750	0.000	2.00	8.286	6.21	327.3	0.0	472.7
60.00		1.00	1.14	30.475	33.52	453.21	0.750	0.000	5.00	20.440	15.33	822.2	0.0	1165.9
65.00		1.00	1.16	30.993	34.09	448.17	0.750	0.000	5.00	20.047	15.03	820.1	0.0	1143.3
70.00		1.00	1.17	31.480	34.63	442.74	0.750	0.000	5.00	19.654	14.74	816.7	0.0	1120.7
75.00		1.00	1.19	31.941	35.13	436.96	0.750	0.000	5.00	19.261	14.45	812.1	0.0	1098.1
80.00		1.00	1.21	32.377	35.62	430.87	0.750	0.000	5.00	18.868	14.15	806.4	0.0	1075.5
85.00		1.00	1.22	32.793	36.07	424.50	0.750	0.000	5.00	18.475	13.86	799.7	0.0	1053.0
90.00		1.00	1.24	33.190	36.51	417.88	0.750	0.000	5.00	18.082	13.56	792.2	0.0	1030.4
92.83 Bot - Section 3		1.00	1.25	33.408	36.75	414.03	0.750	0.000	2.83	10.072	7.55	444.2	0.0	573.8
95.00		1.00	1.25	33.570	36.93	411.03	0.750	0.000	2.17	7.720	5.79	342.1	0.0	764.3
98.92 Top - Section 2		1.00	1.26	33.857	37.24	405.52	0.750	0.000	3.92	13.769	10.33	615.3	0.0	1362.8
100.00		1.00	1.27	33.935	37.33	409.61	0.750	0.000	1.08	3.766	2.82	168.7	0.0	161.1
105.00		1.00	1.28	34.285	37.71	402.39	0.750	0.000	5.00	17.142	12.86	775.8	0.0	733.3
110.00		1.00	1.29	34.623	38.08	394.99	0.750	0.000	5.00	16.749	12.56	765.4	0.0	716.4
115.00		1.00	1.30	34.948	38.44	387.42	0.750	0.000	5.00	16.356	12.27	754.5	0.0	699.4
120.00		1.00	1.32	35.263	38.79	379.69	0.750	0.000	5.00	15.963	11.97	743.0	0.0	682.5
125.00		1.00	1.33	35.567	39.12	371.83	0.750	0.000	5.00	15.570	11.68	731.0	0.0	665.6
126.67 Bot - Section 4		1.00	1.33	35.667	39.23	369.17	0.750	0.000	1.67	5.113	3.83	240.7	0.0	218.5
130.00		1.00	1.34	35.862	39.45	363.82	0.750	0.000	3.33	10.188	7.64	482.3	0.0	770.1
132.00 Top - Section 3		1.00	1.34	35.978	39.58	360.58	0.750	0.000	2.00	6.045	4.53	287.1	0.0	456.9
135.00		1.00	1.35	36.148	39.76	360.22	0.750	0.000	3.00	8.925	6.69	425.8	0.0	297.8
140.00		1.00	1.36	36.426	40.07	351.99	0.750	0.000	5.00	14.577	10.93	700.9	0.0	486.3
145.00		1.00	1.37	36.696	40.37	343.64	0.750	0.000	5.00	14.184	10.64	687.1	0.0	473.1
147.00 Appurtenance(s)		1.00	1.37	36.802	40.48	340.26	0.750	0.000	2.00	5.564	4.17	270.3	0.0	185.5
150.00		1.00	1.38	36.959	40.65	335.17	0.750	0.000	3.00	8.227	6.17	401.4	0.0	274.4
155.00		1.00	1.39	37.215	40.94	326.61	0.750	0.000	5.00	13.398	10.05	658.2	0.0	446.7
159.00 Appurtenance(s)		1.00	1.40	37.415	41.16	319.69	0.750	0.000	4.00	10.436	7.83	515.4	0.0	347.9
160.00		1.00	1.40	37.464	41.21	317.95	0.750	0.000	1.00	2.570	1.93	127.1	0.0	85.6
165.00		1.00	1.41	37.708	41.48	309.20	0.750	0.000	5.00	12.612	9.46	627.8	0.0	420.3
170.00		1.00	1.42	37.946	41.74	300.35	0.750	0.000	5.00	12.219	9.16	612.0	0.0	407.1
175.00		1.00	1.42	38.178	42.00	291.42	0.750	0.000	5.00	11.826	8.87	596.0	0.0	393.9
177.00 Appurtenance(s)		1.00	1.43	38.269	42.10	287.83	0.750	0.000	2.00	4.620	3.47	233.4	0.0	153.9
180.00 Appurtenance(s)		1.00	1.43	38.405	42.25	282.41	0.750	0.000	3.00	6.813	5.11	345.4	0.0	226.9

Wind Loading - Shaft

Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	9/12/2016
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Struct Class: II	Page: 9



Totals:	180.00	26,715.2	37,790.2
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Discrete Appurtenance Forces

Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	9/12/2016
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

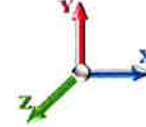


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Load Case: 1.2D + 1.6W 105 mph Wind

Dead Load Factor 1.20

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	180.00	Lightning Rod	1	38.405	42.245	1.00	1.00	0.50	6.00	0.000	0.000	33.80	0.00	0.00
2	177.00	1900MHz RRUs	3	38.269	42.096	0.70	0.80	8.03	158.40	0.000	0.000	540.56	0.00	0.00
3	177.00	APXVSP18-C-A20	3	38.269	42.096	0.66	0.80	15.98	205.20	0.000	0.000	1076.03	0.00	0.00
4	177.00	APXVTM14-C-120	3	38.269	42.096	0.63	0.80	12.02	201.60	0.000	0.000	809.64	0.00	0.00
5	177.00	TD-RRH8x20-25	3	38.269	42.096	0.55	0.80	6.71	252.00	0.000	0.000	451.73	0.00	0.00
6	177.00	800 MHz RRUs	3	38.269	42.096	0.74	0.80	5.50	190.80	0.000	0.000	370.31	0.00	0.00
7	177.00	ALU 800MHz External	3	38.269	42.096	0.55	0.80	1.29	31.68	0.000	0.000	87.00	0.00	0.00
8	177.00	ACU-A20-N	4	38.269	42.096	0.63	0.80	0.35	4.80	0.000	0.000	23.84	0.00	0.00
9	177.00	Platform w/ Hand Rail	1	38.269	42.096	1.00	1.00	32.00	1920.00	0.000	0.000	2155.32	0.00	0.00
10	159.00	BXA-171085-8BF-EDIN-2	3	37.415	41.156	0.67	0.80	5.93	37.80	0.000	0.000	390.30	0.00	0.00
11	159.00	BXA-80080/4CF	3	37.415	41.156	0.61	0.80	8.76	51.48	0.000	0.000	576.53	0.00	0.00
12	159.00	B25 RRH4x30	3	37.415	41.156	0.65	0.80	4.16	183.60	0.000	0.000	273.95	0.00	0.00
13	159.00	SBNHH-1D65B	6	37.415	41.156	0.66	0.80	32.19	292.32	0.000	0.000	2119.77	0.00	0.00
14	159.00	Low Profile	1	37.415	41.156	1.00	1.00	22.00	1800.00	0.000	0.000	1448.70	0.00	0.00
15	159.00	DB-T1-6Z-8AB-OZ	2	37.415	41.156	0.57	0.80	5.45	45.36	0.000	0.000	359.07	0.00	0.00
16	159.00	B25 RRH4x30	3	37.415	41.156	0.65	0.80	4.16	183.60	0.000	0.000	273.95	0.00	0.00
17	159.00	RRH 4X45-PCS	3	37.415	41.156	0.78	0.80	6.37	216.00	0.000	0.000	419.72	0.00	0.00
18	147.00	RRUS A2	3	36.802	40.482	0.49	0.80	2.73	79.20	0.000	0.000	176.66	0.00	0.00
19	147.00	HPA-65R-BUU-H6	1	36.802	40.482	0.80	0.80	7.73	61.20	2.383	0.000	500.55	745.52	0.00
20	147.00	HPA-65R-BUU-H8	2	36.802	40.482	0.71	0.80	18.50	163.20	0.000	0.000	1198.55	0.00	0.00
21	147.00	860 10025 RET	12	36.802	40.482	0.74	0.80	1.59	17.28	0.000	0.000	102.97	0.00	0.00
22	147.00	RRUS 12	3	36.802	40.482	0.56	0.80	4.56	208.80	0.000	0.000	295.06	0.00	0.00
23	147.00	LGP21401	6	36.802	40.482	0.54	0.80	4.15	101.52	0.000	0.000	268.71	0.00	0.00
24	147.00	RRUS-11	6	36.802	40.482	0.54	0.80	8.10	367.20	0.000	0.000	524.93	0.00	0.00
25	147.00	LGP21901 Diplexer	6	36.802	40.482	0.54	0.80	0.87	39.60	0.000	0.000	56.24	0.00	0.00
26	147.00	DC6-48-60-18-8F("Squid")	1	36.802	40.482	1.00	1.00	0.92	38.16	2.383	0.000	59.59	88.75	0.00
27	147.00	Low Profile	1	36.802	40.482	1.00	1.00	22.00	1800.00	0.000	0.000	1424.97	0.00	0.00
28	147.00	7770.00	6	36.802	40.482	0.60	0.80	19.77	252.00	0.000	0.000	1280.76	0.00	0.00
29	52.00	GPS	1	29.570	32.527	0.80	0.80	0.09	0.24	3.055	0.000	4.58	8.75	0.00
Totals:								8,909.04				17,303.78		

Total Applied Force Summary

Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	9/12/2016
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

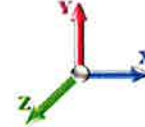


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Load Case: 1.2D + 1.6W 105 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 26

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		735.36	1796.01	0.00	0.00
10.00		723.54	1769.63	0.00	0.00
15.00		711.72	1743.24	0.00	0.00
20.00		742.62	1716.85	0.00	0.00
25.00		765.19	1690.46	0.00	0.00
30.00		781.47	1664.08	0.00	0.00
35.00		793.13	1637.69	0.00	0.00
40.00		801.23	1611.30	0.00	0.00
45.00		806.47	1584.92	0.00	0.00
45.92		146.86	287.71	0.00	0.00
50.00		669.90	2258.20	0.00	0.00
52.00	(1) attachments	331.68	1094.38	8.75	0.00
53.00		163.28	543.94	0.00	0.00
55.00		327.26	539.17	0.00	0.00
60.00		822.22	1332.11	0.00	0.00
65.00		820.11	1309.52	0.00	0.00
70.00		816.68	1286.93	0.00	0.00
75.00		812.06	1264.34	0.00	0.00
80.00		806.37	1241.75	0.00	0.00
85.00		799.72	1219.16	0.00	0.00
90.00		792.19	1196.56	0.00	0.00
92.83		444.15	668.02	0.00	0.00
95.00		342.11	836.31	0.00	0.00
98.92		615.35	1492.95	0.00	0.00
100.00		168.69	197.12	0.00	0.00
105.00		775.77	899.51	0.00	0.00
110.00		765.45	882.58	0.00	0.00
115.00		754.51	865.65	0.00	0.00
120.00		743.01	848.72	0.00	0.00
125.00		730.98	831.79	0.00	0.00
126.67		240.71	274.05	0.00	0.00
130.00		482.28	880.21	0.00	0.00
132.00		287.09	523.06	0.00	0.00
135.00		425.85	396.80	0.00	0.00
140.00		700.89	651.53	0.00	0.00
145.00		687.05	638.33	0.00	0.00
147.00	(47) attachments	6159.27	3379.80	834.27	0.00
150.00		401.38	325.48	0.00	0.00
155.00		658.16	531.90	0.00	0.00
159.00	(24) attachments	6377.37	3226.18	0.00	0.00
160.00		127.07	88.81	0.00	0.00
165.00		627.76	436.16	0.00	0.00
170.00		612.03	422.96	0.00	0.00
175.00		595.98	409.77	0.00	0.00
177.00	(23) attachments	5747.83	3124.69	0.00	0.00
180.00	(1) attachments	379.17	232.86	0.00	0.00

Total Applied Force Summary

Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	9/12/2016
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Struct Class: II	Page: 12



Totals:	44,018.98	51,853.19	843.02	0.00
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Linear Appurtenance Segment Forces (Factored)

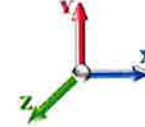
Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	9/12/2016
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Page: 13
	Struct Class: II	



Load Case: 1.2D + 1.6W 105 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 26

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.011	0.000	22.791	0.00	0.96
10.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.011	0.000	22.791	0.00	0.96
15.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.011	0.000	22.791	0.00	0.96
20.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.012	0.000	24.182	0.00	0.96
25.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.012	0.000	25.345	0.00	0.96
30.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.012	0.000	26.337	0.00	0.96
35.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.012	0.000	27.206	0.00	0.96
40.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.012	0.000	27.981	0.00	0.96
45.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.013	0.000	28.684	0.00	0.96
45.92	1/2" Coax	Yes	0.92	0.000	0.65	0.05	0.00	0.013	0.000	28.806	0.00	0.18
50.00	1/2" Coax	Yes	4.08	0.000	0.65	0.22	0.00	0.013	0.000	29.327	0.00	0.78
52.00	1/2" Coax	Yes	2.00	0.000	0.65	0.11	0.00	0.013	0.000	29.570	0.00	0.38
Totals:											0.0	10.0

Calculated Forces

Structure: CT01365-S-SBA
Site Name: Norwich 2 CT
Height: 180.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1

Topography: 1

Code: EIA/TIA-222-G
Exposure: C
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

9/12/2016

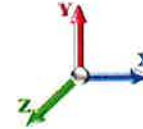
Page: 14



Load Case: 1.2D + 1.6W 105 mph Wind

Iterations 26

Dead Load Factor 1.20
Wind Load Factor 1.60



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-51.77	-44.12	-0.82	-5361.4	-0.02	5361.41	5397.55	2698.78	12826.5	6367.63	0.00	0.000	0.000	0.852
5.00	-49.80	-43.58	-0.82	-5140.8	-0.02	5140.81	5344.66	2672.33	12495.2	6203.15	0.12	-0.222	0.000	0.838
10.00	-47.87	-43.03	-0.82	-4922.9	-0.02	4922.94	5290.67	2645.34	12165.4	6039.43	0.47	-0.445	0.000	0.824
15.00	-45.97	-42.48	-0.82	-4707.8	-0.02	4707.80	5235.58	2617.79	11837.2	5876.53	1.06	-0.670	0.000	0.810
20.00	-44.09	-41.89	-0.82	-4495.3	-0.02	4495.39	5179.37	2589.69	11510.9	5714.52	1.88	-0.895	0.000	0.795
25.00	-42.26	-41.26	-0.82	-4285.9	-0.02	4285.95	5122.07	2561.03	11186.5	5553.45	2.94	-1.121	0.000	0.780
30.00	-40.45	-40.61	-0.82	-4079.6	-0.02	4079.64	5063.65	2531.83	10864.1	5393.40	4.24	-1.349	0.000	0.765
35.00	-38.67	-39.93	-0.82	-3876.6	-0.02	3876.61	5004.13	2502.07	10543.8	5234.42	5.77	-1.577	0.000	0.749
40.00	-36.93	-39.22	-0.82	-3676.9	-0.02	3676.99	4943.51	2471.75	10225.9	5076.58	7.54	-1.805	0.000	0.732
45.00	-35.28	-38.45	-0.82	-3480.8	-0.02	3480.87	4881.77	2440.89	9910.40	4919.94	9.56	-2.033	0.000	0.715
45.92	-34.92	-38.36	-0.82	-3445.6	-0.02	3445.63	4870.34	2435.17	9852.83	4891.36	9.95	-2.076	0.000	0.712
50.00	-32.60	-37.69	-0.82	-3288.9	-0.02	3288.98	4818.94	2409.47	9597.43	4764.57	11.81	-2.264	0.000	0.697
52.00	-31.47	-37.35	-0.81	-3213.6	-0.02	3213.61	4793.49	2396.75	9472.99	4702.79	12.78	-2.357	0.000	0.690
53.00	-30.89	-37.20	-0.81	-3176.2	-0.02	3176.26	3921.66	1960.83	7862.59	3903.32	13.28	-2.403	0.000	0.822
55.00	-30.25	-36.94	-0.81	-3101.8	-0.02	3101.86	3903.31	1951.65	7765.73	3855.23	14.30	-2.496	0.000	0.813
60.00	-28.80	-36.19	-0.81	-2917.1	-0.03	2917.14	3856.65	1928.33	7524.53	3735.49	17.05	-2.749	-0.001	0.789
65.00	-27.38	-35.42	-0.81	-2736.2	-0.03	2736.20	3808.89	1904.45	7284.80	3616.48	20.07	-3.001	-0.001	0.764
70.00	-25.99	-34.65	-0.82	-2559.0	-0.03	2559.09	3760.03	1880.02	7046.68	3498.27	23.34	-3.251	-0.001	0.739
75.00	-24.63	-33.87	-0.82	-2385.8	-0.03	2385.83	3710.06	1855.03	6810.28	3380.91	26.88	-3.500	-0.001	0.713
80.00	-23.30	-33.09	-0.82	-2216.4	-0.03	2216.47	3658.99	1829.49	6575.75	3264.48	30.68	-3.746	-0.001	0.686
85.00	-22.00	-32.30	-0.82	-2051.0	-0.04	2051.02	3606.81	1803.40	6343.20	3149.03	34.73	-3.988	-0.001	0.658
90.00	-20.76	-31.49	-0.82	-1889.5	-0.04	1889.51	3553.52	1776.76	6112.76	3034.63	39.03	-4.227	-0.001	0.629
92.83	-20.07	-31.04	-0.82	-1800.2	-0.04	1800.28	3522.83	1761.42	5983.17	2970.30	41.58	-4.363	-0.001	0.612
95.00	-19.18	-30.69	-0.82	-1733.0	-0.04	1733.02	3499.13	1749.56	5884.57	2921.35	43.58	-4.466	-0.001	0.599
98.92	-17.68	-29.99	-0.82	-1612.8	-0.04	1612.84	2350.25	1175.12	3954.81	1963.33	47.32	-4.647	-0.001	0.830
100.00	-17.41	-29.86	-0.82	-1580.3	-0.04	1580.36	2343.93	1171.97	3924.64	1948.36	48.38	-4.698	-0.001	0.819
105.00	-16.44	-29.09	-0.82	-1431.0	-0.05	1431.08	2314.11	1157.05	3785.67	1879.37	53.44	-4.982	-0.001	0.769
110.00	-15.50	-28.32	-0.82	-1285.6	-0.05	1285.64	2283.18	1141.59	3647.23	1810.64	58.80	-5.257	-0.002	0.717
115.00	-14.58	-27.55	-0.82	-1144.0	-0.05	1144.04	2251.15	1125.57	3509.45	1742.24	64.44	-5.520	-0.002	0.664
120.00	-13.70	-26.79	-0.83	-1006.2	-0.06	1006.28	2218.01	1109.01	3372.44	1674.22	70.35	-5.771	-0.002	0.608
125.00	-12.87	-26.01	-0.83	-872.34	-0.06	872.34	2183.77	1091.88	3236.35	1606.66	76.52	-6.008	-0.002	0.549
126.67	-12.58	-25.77	-0.83	-828.90	-0.06	828.90	2172.08	1086.04	3191.13	1584.21	78.63	-6.085	-0.002	0.530
130.00	-11.70	-25.22	-0.83	-743.10	-0.06	743.10	2148.42	1074.21	3101.30	1539.62	82.92	-6.230	-0.002	0.489
132.00	-11.17	-24.89	-0.83	-692.58	-0.07	692.58	1502.55	751.27	2180.88	1082.68	85.55	-6.315	-0.003	0.648
135.00	-10.75	-24.46	-0.83	-617.98	-0.07	617.98	1491.20	745.60	2130.02	1057.43	89.54	-6.434	-0.003	0.593
140.00	-10.10	-23.72	-0.83	-495.69	-0.07	495.69	1471.39	735.69	2045.11	1015.28	96.38	-6.651	-0.003	0.496
145.00	-9.50	-22.99	-0.83	-377.07	-0.08	377.07	1450.46	725.23	1960.22	973.13	103.44	-6.836	-0.003	0.395
147.00	-6.86	-16.48	0.00	-331.09	0.02	331.09	1441.79	720.89	1926.30	956.30	106.31	-6.901	-0.003	0.352
150.00	-6.55	-16.05	0.00	-281.66	0.02	281.66	1428.44	714.22	1875.49	931.07	110.67	-6.989	-0.003	0.308
155.00	-6.08	-15.34	0.00	-201.41	0.01	201.41	1405.30	702.65	1791.05	889.15	118.04	-7.110	-0.003	0.231
159.00	-3.66	-8.62	0.00	-140.03	0.01	140.03	1386.00	693.00	1723.78	855.76	124.01	-7.185	-0.003	0.166
160.00	-3.59	-8.48	0.00	-131.42	0.01	131.42	1381.06	690.53	1707.02	847.43	125.52	-7.201	-0.003	0.158
165.00	-3.23	-7.81	0.00	-89.01	0.01	89.01	1355.72	677.86	1623.53	805.99	133.08	-7.268	-0.003	0.113
170.00	-2.88	-7.15	0.00	-49.97	0.00	49.97	1329.27	664.63	1540.71	764.87	140.69	-7.313	-0.003	0.068
175.00	-2.55	-6.51	0.00	-14.23	0.00	14.23	1301.71	650.86	1458.68	724.15	148.35	-7.337	-0.003	0.022
177.00	-0.18	-0.41	0.00	-1.22	0.00	1.22	1290.38	645.19	1426.13	707.99	151.41	-7.339	-0.003	0.002
180.00	0.00	-0.38	0.00	0.00	0.00	0.00	1273.05	636.53	1377.59	683.89	156.01	-7.340	-0.003	0.000

Calculated Forces

Structure: CT01365-S-SBA

Site Name: Norwich 2 CT

Height: 180.00 (ft)

Base Elev: 0.000 (ft)

Gh: 1.1

Topography: 1

Code: EIA/TIA-222-G

Exposure: C

Crest Height: 0.00

Site Class: D - Stiff Soil

Struct Class: II

9/12/2016

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Wind Loading - Shaft

Structure: CT01365-S-SBA
Site Name: Norwich 2 CT
Height: 180.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1

Topography: 1

Code: EIA/TIA-222-G
Exposure: C
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

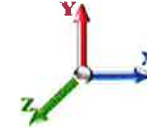
9/12/2016

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Load Case: 0.9D + 1.6W 105 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	22.791	25.07	477.06	0.750	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	22.791	25.07	469.45	0.750	0.000	5.00	24.444	18.33	735.4	0.0	1221.6
10.00		1.00	0.85	22.791	25.07	461.84	0.750	0.000	5.00	24.051	18.04	723.5	0.0	1201.8
15.00		1.00	0.85	22.791	25.07	454.23	0.750	0.000	5.00	23.658	17.74	711.7	0.0	1182.1
20.00		1.00	0.90	24.182	26.60	460.05	0.750	0.000	5.00	23.265	17.45	742.6	0.0	1162.3
25.00		1.00	0.95	25.345	27.88	462.97	0.750	0.000	5.00	22.872	17.15	765.2	0.0	1142.5
30.00		1.00	0.98	26.337	28.97	463.76	0.750	0.000	5.00	22.479	16.86	781.5	0.0	1122.7
35.00		1.00	1.01	27.206	29.93	463.03	0.750	0.000	5.00	22.086	16.56	793.1	0.0	1102.9
40.00		1.00	1.04	27.981	30.78	461.16	0.750	0.000	5.00	21.693	16.27	801.2	0.0	1083.1
45.00		1.00	1.07	28.684	31.55	458.37	0.750	0.000	5.00	21.300	15.97	806.5	0.0	1063.3
45.92	Bot - Section 2	1.00	1.07	28.806	31.69	457.78	0.750	0.000	0.92	3.862	2.90	146.9	0.0	192.8
50.00		1.00	1.09	29.327	32.26	454.85	0.750	0.000	4.08	17.305	12.98	669.9	0.0	1591.3
52.00	Appurtenance(s)	1.00	1.10	29.570	32.53	453.27	0.750	0.000	2.00	8.380	6.29	327.1	0.0	770.5
53.00	Top - Section 1	1.00	1.11	29.689	32.66	452.44	0.750	0.000	1.00	4.167	3.12	163.3	0.0	383.0
55.00		1.00	1.12	29.922	32.91	457.79	0.750	0.000	2.00	8.286	6.21	327.3	0.0	354.5
60.00		1.00	1.14	30.475	33.52	453.21	0.750	0.000	5.00	20.440	15.33	822.2	0.0	874.4
65.00		1.00	1.16	30.993	34.09	448.17	0.750	0.000	5.00	20.047	15.03	820.1	0.0	857.5
70.00		1.00	1.17	31.480	34.63	442.74	0.750	0.000	5.00	19.654	14.74	816.7	0.0	840.5
75.00		1.00	1.19	31.941	35.13	436.96	0.750	0.000	5.00	19.261	14.45	812.1	0.0	823.6
80.00		1.00	1.21	32.377	35.62	430.87	0.750	0.000	5.00	18.868	14.15	806.4	0.0	806.7
85.00		1.00	1.22	32.793	36.07	424.50	0.750	0.000	5.00	18.475	13.86	799.7	0.0	789.7
90.00		1.00	1.24	33.190	36.51	417.88	0.750	0.000	5.00	18.082	13.56	792.2	0.0	772.8
92.83	Bot - Section 3	1.00	1.25	33.408	36.75	414.03	0.750	0.000	2.83	10.072	7.55	444.2	0.0	430.4
95.00		1.00	1.25	33.570	36.93	411.03	0.750	0.000	2.17	7.720	5.79	342.1	0.0	573.2
98.92	Top - Section 2	1.00	1.26	33.857	37.24	405.52	0.750	0.000	3.92	13.769	10.33	615.3	0.0	1022.1
100.00		1.00	1.27	33.935	37.33	409.61	0.750	0.000	1.08	3.766	2.82	168.7	0.0	120.8
105.00		1.00	1.28	34.285	37.71	402.39	0.750	0.000	5.00	17.142	12.86	775.8	0.0	550.0
110.00		1.00	1.29	34.623	38.08	394.99	0.750	0.000	5.00	16.749	12.56	765.4	0.0	537.3
115.00		1.00	1.30	34.948	38.44	387.42	0.750	0.000	5.00	16.356	12.27	754.5	0.0	524.6
120.00		1.00	1.32	35.263	38.79	379.69	0.750	0.000	5.00	15.963	11.97	743.0	0.0	511.9
125.00		1.00	1.33	35.567	39.12	371.83	0.750	0.000	5.00	15.570	11.68	731.0	0.0	499.2
126.67	Bot - Section 4	1.00	1.33	35.667	39.23	369.17	0.750	0.000	1.67	5.113	3.83	240.7	0.0	163.9
130.00		1.00	1.34	35.862	39.45	363.82	0.750	0.000	3.33	10.188	7.64	482.3	0.0	577.6
132.00	Top - Section 3	1.00	1.34	35.978	39.58	360.58	0.750	0.000	2.00	6.045	4.53	287.1	0.0	342.6
135.00		1.00	1.35	36.148	39.76	360.22	0.750	0.000	3.00	8.925	6.69	425.8	0.0	223.3
140.00		1.00	1.36	36.426	40.07	351.99	0.750	0.000	5.00	14.577	10.93	700.9	0.0	364.7
145.00		1.00	1.37	36.696	40.37	343.64	0.750	0.000	5.00	14.184	10.64	687.1	0.0	354.8
147.00	Appurtenance(s)	1.00	1.37	36.802	40.48	340.26	0.750	0.000	2.00	5.564	4.17	270.3	0.0	139.2
150.00		1.00	1.38	36.959	40.65	335.17	0.750	0.000	3.00	8.227	6.17	401.4	0.0	205.8
155.00		1.00	1.39	37.215	40.94	326.61	0.750	0.000	5.00	13.398	10.05	658.2	0.0	335.0
159.00	Appurtenance(s)	1.00	1.40	37.415	41.16	319.69	0.750	0.000	4.00	10.436	7.83	515.4	0.0	260.9
160.00		1.00	1.40	37.464	41.21	317.95	0.750	0.000	1.00	2.570	1.93	127.1	0.0	64.2
165.00		1.00	1.41	37.708	41.48	309.20	0.750	0.000	5.00	12.612	9.46	627.8	0.0	315.2
170.00		1.00	1.42	37.946	41.74	300.35	0.750	0.000	5.00	12.219	9.16	612.0	0.0	305.3
175.00		1.00	1.42	38.178	42.00	291.42	0.750	0.000	5.00	11.826	8.87	596.0	0.0	295.4
177.00	Appurtenance(s)	1.00	1.43	38.269	42.10	287.83	0.750	0.000	2.00	4.620	3.47	233.4	0.0	115.4
180.00	Appurtenance(s)	1.00	1.43	38.405	42.25	282.41	0.750	0.000	3.00	6.813	5.11	345.4	0.0	170.1

Wind Loading - Shaft

Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	9/12/2016
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Struct Class: II	Page: 17



Totals: 180.00

26,715.2

28,342.7

Discrete Appurtenance Forces

Structure: CT01365-S-SBA
Site Name: Norwich 2 CT
Height: 180.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1

Topography: 1

Code: EIA/TIA-222-G
Exposure: C
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

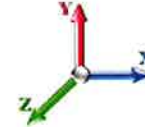
9/12/2016

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Load Case: 0.9D + 1.6W 105 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	180.00	Lightning Rod	1	38.405	42.245	1.00	1.00	0.50	4.50	0.000	0.000	33.80	0.00	0.00
2	177.00	1900MHz RRUs	3	38.269	42.096	0.70	0.80	8.03	118.80	0.000	0.000	540.56	0.00	0.00
3	177.00	APXVSP18-C-A20	3	38.269	42.096	0.66	0.80	15.98	153.90	0.000	0.000	1076.03	0.00	0.00
4	177.00	APXVTM14-C-120	3	38.269	42.096	0.63	0.80	12.02	151.20	0.000	0.000	809.64	0.00	0.00
5	177.00	TD-RRH8x20-25	3	38.269	42.096	0.55	0.80	6.71	189.00	0.000	0.000	451.73	0.00	0.00
6	177.00	800 MHz RRUs	3	38.269	42.096	0.74	0.80	5.50	143.10	0.000	0.000	370.31	0.00	0.00
7	177.00	ALU 800MHz External	3	38.269	42.096	0.55	0.80	1.29	23.76	0.000	0.000	87.00	0.00	0.00
8	177.00	ACU-A20-N	4	38.269	42.096	0.63	0.80	0.35	3.60	0.000	0.000	23.84	0.00	0.00
9	177.00	Platform w/ Hand Rail	1	38.269	42.096	1.00	1.00	32.00	1440.00	0.000	0.000	2155.32	0.00	0.00
10	159.00	BXA-171085-8BF-EDIN-2	3	37.415	41.156	0.67	0.80	5.93	28.35	0.000	0.000	390.30	0.00	0.00
11	159.00	BXA-80080/4CF	3	37.415	41.156	0.61	0.80	8.76	38.61	0.000	0.000	576.53	0.00	0.00
12	159.00	B25 RRH4x30	3	37.415	41.156	0.65	0.80	4.16	137.70	0.000	0.000	273.95	0.00	0.00
13	159.00	SBNHH-1D65B	6	37.415	41.156	0.66	0.80	32.19	219.24	0.000	0.000	2119.77	0.00	0.00
14	159.00	Low Profile	1	37.415	41.156	1.00	1.00	22.00	1350.00	0.000	0.000	1448.70	0.00	0.00
15	159.00	DB-T1-6Z-8AB-OZ	2	37.415	41.156	0.57	0.80	5.45	34.02	0.000	0.000	359.07	0.00	0.00
16	159.00	B25 RRH4x30	3	37.415	41.156	0.65	0.80	4.16	137.70	0.000	0.000	273.95	0.00	0.00
17	159.00	RRH 4X45-PCS	3	37.415	41.156	0.78	0.80	6.37	162.00	0.000	0.000	419.72	0.00	0.00
18	147.00	RRUS A2	3	36.802	40.482	0.49	0.80	2.73	59.40	0.000	0.000	176.66	0.00	0.00
19	147.00	HPA-65R-BUU-H6	1	36.802	40.482	0.80	0.80	7.73	45.90	2.383	0.000	500.55	745.52	0.00
20	147.00	HPA-65R-BUU-H8	2	36.802	40.482	0.71	0.80	18.50	122.40	0.000	0.000	1198.55	0.00	0.00
21	147.00	860 10025 RET	12	36.802	40.482	0.74	0.80	1.59	12.96	0.000	0.000	102.97	0.00	0.00
22	147.00	RRUS 12	3	36.802	40.482	0.56	0.80	4.56	156.60	0.000	0.000	295.06	0.00	0.00
23	147.00	LGP21401	6	36.802	40.482	0.54	0.80	4.15	76.14	0.000	0.000	268.71	0.00	0.00
24	147.00	RRUS-11	6	36.802	40.482	0.54	0.80	8.10	275.40	0.000	0.000	524.93	0.00	0.00
25	147.00	LGP21901 Diplexer	6	36.802	40.482	0.54	0.80	0.87	29.70	0.000	0.000	56.24	0.00	0.00
26	147.00	DC6-48-60-18-8F("Squid")	1	36.802	40.482	1.00	1.00	0.92	28.62	2.383	0.000	59.59	88.75	0.00
27	147.00	Low Profile	1	36.802	40.482	1.00	1.00	22.00	1350.00	0.000	0.000	1424.97	0.00	0.00
28	147.00	7770.00	6	36.802	40.482	0.60	0.80	19.77	189.00	0.000	0.000	1280.76	0.00	0.00
29	52.00	GPS	1	29.570	32.527	0.80	0.80	0.09	0.18	3.055	0.000	4.58	8.75	0.00
Totals:								6,681.78				17,303.78		

Total Applied Force Summary

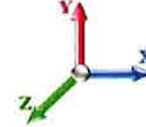
Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	9/12/2016
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.6W 105 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		735.36	1347.01	0.00	0.00
10.00		723.54	1327.22	0.00	0.00
15.00		711.72	1307.43	0.00	0.00
20.00		742.62	1287.64	0.00	0.00
25.00		765.19	1267.85	0.00	0.00
30.00		781.47	1248.06	0.00	0.00
35.00		793.13	1228.27	0.00	0.00
40.00		801.23	1208.48	0.00	0.00
45.00		806.47	1188.69	0.00	0.00
45.92		146.86	215.78	0.00	0.00
50.00		669.90	1693.65	0.00	0.00
52.00	(1) attachments	331.68	820.78	8.75	0.00
53.00		163.28	407.95	0.00	0.00
55.00		327.26	404.38	0.00	0.00
60.00		822.22	999.09	0.00	0.00
65.00		820.11	982.14	0.00	0.00
70.00		816.68	965.20	0.00	0.00
75.00		812.06	948.25	0.00	0.00
80.00		806.37	931.31	0.00	0.00
85.00		799.72	914.37	0.00	0.00
90.00		792.19	897.42	0.00	0.00
92.83		444.15	501.02	0.00	0.00
95.00		342.11	627.23	0.00	0.00
98.92		615.35	1119.71	0.00	0.00
100.00		168.69	147.84	0.00	0.00
105.00		775.77	674.63	0.00	0.00
110.00		765.45	661.93	0.00	0.00
115.00		754.51	649.24	0.00	0.00
120.00		743.01	636.54	0.00	0.00
125.00		730.98	623.84	0.00	0.00
126.67		240.71	205.54	0.00	0.00
130.00		482.28	660.16	0.00	0.00
132.00		287.09	392.30	0.00	0.00
135.00		425.85	297.60	0.00	0.00
140.00		700.89	488.64	0.00	0.00
145.00		687.05	478.75	0.00	0.00
147.00	(47) attachments	6159.27	2534.85	834.27	0.00
150.00		401.38	244.11	0.00	0.00
155.00		658.16	398.93	0.00	0.00
159.00	(24) attachments	6377.37	2419.64	0.00	0.00
160.00		127.07	66.61	0.00	0.00
165.00		627.76	327.12	0.00	0.00
170.00		612.03	317.22	0.00	0.00
175.00		595.98	307.33	0.00	0.00
177.00	(23) attachments	5747.83	2343.52	0.00	0.00
180.00	(1) attachments	379.17	174.64	0.00	0.00

Total Applied Force Summary

Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	9/12/2016
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Struct Class: II	Page: 20



Totals:	44,018.98	38,889.90	843.02	0.00
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Linear Appurtenance Segment Forces (Factored)

Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	9/12/2016
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

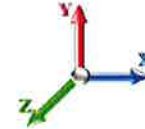


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Load Case: 0.9D + 1.6W 105 mph Wind

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	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.011	0.000	22.791	0.00	0.72
10.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.011	0.000	22.791	0.00	0.72
15.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.011	0.000	22.791	0.00	0.72
20.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.012	0.000	24.182	0.00	0.72
25.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.012	0.000	25.345	0.00	0.72
30.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.012	0.000	26.337	0.00	0.72
35.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.012	0.000	27.206	0.00	0.72
40.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.012	0.000	27.981	0.00	0.72
45.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.013	0.000	28.684	0.00	0.72
45.92	1/2" Coax	Yes	0.92	0.000	0.65	0.05	0.00	0.013	0.000	28.806	0.00	0.13
50.00	1/2" Coax	Yes	4.08	0.000	0.65	0.22	0.00	0.013	0.000	29.327	0.00	0.59
52.00	1/2" Coax	Yes	2.00	0.000	0.65	0.11	0.00	0.013	0.000	29.570	0.00	0.29
Totals:											0.0	7.5

Calculated Forces

Structure: CT01365-S-SBA
Site Name: Norwich 2 CT
Height: 180.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1

Topography: 1

Code: EIA/TIA-222-G
Exposure: C
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

9/12/2016

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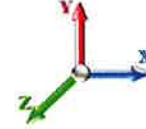


Load Case: 0.9D + 1.6W 105 mph Wind

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	-38.80	-44.09	-0.82	-5304.6	-0.01	5304.61	5397.55	2698.78	12826.5	6367.63	0.00	0.000	0.000	0.841
5.00	-37.29	-43.50	-0.82	-5084.1	-0.01	5084.14	5344.66	2672.33	12495.2	6203.15	0.12	-0.219	0.000	0.827
10.00	-35.80	-42.91	-0.82	-4866.6	-0.01	4866.64	5290.67	2645.34	12165.4	6039.43	0.47	-0.440	0.000	0.813
15.00	-34.34	-42.32	-0.82	-4652.1	-0.01	4652.11	5235.58	2617.79	11837.2	5876.53	1.05	-0.662	0.000	0.798
20.00	-32.90	-41.69	-0.82	-4440.5	-0.01	4440.53	5179.37	2589.69	11510.9	5714.52	1.86	-0.885	0.000	0.784
25.00	-31.48	-41.02	-0.82	-4232.1	-0.01	4232.11	5122.07	2561.03	11186.5	5553.45	2.91	-1.108	0.000	0.768
30.00	-30.09	-40.33	-0.82	-4027.0	-0.02	4027.00	5063.65	2531.83	10864.1	5393.40	4.19	-1.333	0.000	0.753
35.00	-28.73	-39.62	-0.82	-3825.3	-0.02	3825.34	5004.13	2502.07	10543.8	5234.42	5.70	-1.558	0.000	0.737
40.00	-27.39	-38.89	-0.82	-3627.2	-0.02	3627.24	4943.51	2471.75	10225.9	5076.58	7.46	-1.783	0.000	0.720
45.00	-26.14	-38.11	-0.82	-3432.7	-0.02	3432.78	4881.77	2440.89	9910.40	4919.94	9.44	-2.008	0.000	0.703
45.92	-25.86	-38.01	-0.82	-3397.8	-0.02	3397.85	4870.34	2435.17	9852.83	4891.36	9.83	-2.051	0.000	0.700
50.00	-24.10	-37.33	-0.82	-3242.6	-0.02	3242.66	4818.94	2409.47	9597.43	4764.57	11.67	-2.236	0.000	0.686
52.00	-23.25	-36.99	-0.81	-3168.0	-0.02	3168.00	4793.49	2396.75	9472.99	4702.79	12.63	-2.327	0.000	0.679
53.00	-22.80	-36.84	-0.81	-3131.0	-0.02	3131.01	3921.66	1960.83	7862.59	3903.32	13.12	-2.373	0.000	0.808
55.00	-22.31	-36.57	-0.81	-3057.3	-0.02	3057.32	3903.31	1951.65	7765.73	3855.23	14.13	-2.465	0.000	0.799
60.00	-21.19	-35.79	-0.81	-2874.5	-0.02	2874.50	3856.65	1928.33	7524.53	3735.49	16.85	-2.714	-0.001	0.775
65.00	-20.10	-35.01	-0.82	-2695.5	-0.02	2695.55	3808.89	1904.45	7284.80	3616.48	19.82	-2.962	-0.001	0.751
70.00	-19.03	-34.22	-0.82	-2520.5	-0.03	2520.50	3760.03	1880.02	7046.68	3498.27	23.06	-3.209	-0.001	0.726
75.00	-17.99	-33.44	-0.82	-2349.3	-0.03	2349.38	3710.06	1855.03	6810.28	3380.91	26.55	-3.453	-0.001	0.700
80.00	-16.97	-32.64	-0.82	-2182.2	-0.03	2182.20	3658.99	1829.49	6575.75	3264.48	30.29	-3.695	-0.001	0.673
85.00	-15.98	-31.85	-0.82	-2018.9	-0.03	2018.98	3606.81	1803.40	6343.20	3149.03	34.29	-3.934	-0.001	0.646
90.00	-15.05	-31.05	-0.82	-1859.7	-0.03	1859.73	3553.52	1776.76	6112.76	3034.63	38.53	-4.170	-0.001	0.617
92.83	-14.52	-30.60	-0.82	-1771.7	-0.04	1771.76	3522.83	1761.42	5983.17	2970.30	41.04	-4.303	-0.001	0.601
95.00	-13.84	-30.24	-0.82	-1705.4	-0.04	1705.47	3499.13	1749.56	5884.57	2921.35	43.02	-4.404	-0.001	0.588
98.92	-12.72	-29.57	-0.82	-1587.0	-0.04	1587.03	2350.25	1175.12	3954.81	1963.33	46.70	-4.583	-0.001	0.814
100.00	-12.50	-29.42	-0.82	-1555.0	-0.04	1555.00	2343.93	1171.97	3924.64	1948.36	47.75	-4.633	-0.001	0.804
105.00	-11.75	-28.65	-0.82	-1407.8	-0.04	1407.89	2314.11	1157.05	3785.67	1879.37	52.75	-4.912	-0.001	0.755
110.00	-11.03	-27.88	-0.82	-1264.6	-0.05	1264.64	2283.18	1141.59	3647.23	1810.64	58.03	-5.182	-0.002	0.704
115.00	-10.33	-27.11	-0.82	-1125.2	-0.05	1125.24	2251.15	1125.57	3509.45	1742.24	63.59	-5.442	-0.002	0.651
120.00	-9.66	-26.35	-0.83	-989.67	-0.05	989.67	2218.01	1109.01	3372.44	1674.22	69.42	-5.689	-0.002	0.596
125.00	-9.05	-25.59	-0.83	-857.90	-0.06	857.90	2183.77	1091.88	3236.35	1606.66	75.49	-5.921	-0.002	0.539
126.67	-8.82	-25.34	-0.83	-815.17	-0.06	815.17	2172.08	1086.04	3191.13	1584.21	77.57	-5.997	-0.002	0.519
130.00	-8.17	-24.81	-0.83	-730.78	-0.06	730.78	2148.42	1074.21	3101.30	1539.62	81.80	-6.140	-0.002	0.479
132.00	-7.76	-24.50	-0.83	-681.08	-0.06	681.08	1502.55	751.27	2180.88	1082.68	84.39	-6.223	-0.003	0.635
135.00	-7.44	-24.06	-0.83	-607.67	-0.07	607.67	1491.20	745.60	2130.02	1057.43	88.33	-6.340	-0.003	0.581
140.00	-6.96	-23.34	-0.83	-487.36	-0.07	487.36	1471.39	735.69	2045.11	1015.28	95.07	-6.554	-0.003	0.486
145.00	-6.51	-22.61	-0.83	-370.68	-0.08	370.68	1450.46	725.23	1960.22	973.13	102.02	-6.736	-0.003	0.386
147.00	-4.70	-16.20	0.00	-325.46	0.02	325.46	1441.79	720.89	1926.30	956.30	104.85	-6.800	-0.003	0.344
150.00	-4.48	-15.78	0.00	-276.85	0.02	276.85	1428.44	714.22	1875.49	931.07	109.15	-6.886	-0.003	0.301
155.00	-4.14	-15.09	0.00	-197.93	0.01	197.93	1405.30	702.65	1791.05	889.15	116.41	-7.005	-0.003	0.226
159.00	-2.51	-8.46	0.00	-137.58	0.01	137.58	1386.00	693.00	1723.78	855.76	122.30	-7.079	-0.003	0.163
160.00	-2.45	-8.33	0.00	-129.12	0.01	129.12	1381.06	690.53	1707.02	847.43	123.78	-7.095	-0.003	0.154
165.00	-2.20	-7.67	0.00	-87.46	0.01	87.46	1355.72	677.86	1623.53	805.99	131.22	-7.160	-0.003	0.110
170.00	-1.96	-7.02	0.00	-49.11	0.00	49.11	1329.27	664.63	1540.71	764.87	138.73	-7.205	-0.003	0.066
175.00	-1.73	-6.40	0.00	-13.98	0.00	13.98	1301.71	650.86	1458.68	724.15	146.27	-7.228	-0.003	0.021
177.00	-0.13	-0.40	0.00	-1.19	0.00	1.19	1290.38	645.19	1426.13	707.99	149.29	-7.230	-0.003	0.002
180.00	0.00	-0.38	0.00	0.00	0.00	0.00	1273.05	636.53	1377.59	683.89	153.82	-7.230	-0.003	0.000

Calculated Forces

Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	9/12/2016
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Struct Class: II	Page: 23
Topography: 1		



Wind Loading - Shaft

Structure: CT01365-S-SBA
Site Name: Norwich 2 CT
Height: 180.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1

Topography: 1

Code: EIA/TIA-222-G
Exposure: C
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

9/12/2016

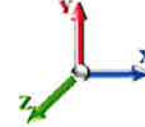
Page: 24



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

Iterations 25

Dead Load Factor 1.20
Wind Load Factor 1.00



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	5.168	5.68	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	5.168	5.68	0.00	1.200	1.242	5.00	25.479	30.57	173.8	457.9	2086.7
10.00		1.00	0.85	5.168	5.68	0.00	1.200	1.331	5.00	25.160	30.19	171.6	483.7	2086.2
15.00		1.00	0.85	5.168	5.68	0.00	1.200	1.386	5.00	24.813	29.78	169.3	496.1	2072.2
20.00		1.00	0.90	5.483	6.03	0.00	1.200	1.427	5.00	24.454	29.34	177.0	502.6	2052.3
25.00		1.00	0.95	5.747	6.32	0.00	1.200	1.459	5.00	24.088	28.91	182.7	505.7	2029.0
30.00		1.00	0.98	5.972	6.57	0.00	1.200	1.486	5.00	23.717	28.46	187.0	506.5	2003.5
35.00		1.00	1.01	6.169	6.79	0.00	1.200	1.509	5.00	23.343	28.01	190.1	505.8	1976.3
40.00		1.00	1.04	6.345	6.98	0.00	1.200	1.529	5.00	22.967	27.56	192.4	503.8	1948.0
45.00		1.00	1.07	6.504	7.15	0.00	1.200	1.547	5.00	22.589	27.11	193.9	500.9	1918.7
45.92 Bot - Section 2		1.00	1.07	6.532	7.19	0.00	1.200	1.550	0.92	4.099	4.92	35.3	91.7	348.8
50.00		1.00	1.09	6.650	7.32	0.00	1.200	1.564	4.08	18.369	22.04	161.2	412.1	2533.8
52.00 Appurtenance(s)		1.00	1.10	6.705	7.38	0.00	1.200	1.570	2.00	8.903	10.68	78.8	201.2	1228.5
53.00 Top - Section 1		1.00	1.11	6.732	7.41	0.00	1.200	1.573	1.00	4.429	5.31	39.4	100.4	611.1
55.00		1.00	1.12	6.785	7.46	0.00	1.200	1.579	2.00	8.812	10.57	78.9	200.2	672.9
60.00		1.00	1.14	6.910	7.60	0.00	1.200	1.592	5.00	21.767	26.12	198.5	495.6	1661.5
65.00		1.00	1.16	7.028	7.73	0.00	1.200	1.605	5.00	21.384	25.66	198.4	490.3	1633.6
70.00		1.00	1.17	7.138	7.85	0.00	1.200	1.617	5.00	21.001	25.20	197.9	484.6	1605.4
75.00		1.00	1.19	7.243	7.97	0.00	1.200	1.628	5.00	20.618	24.74	197.1	478.6	1576.7
80.00		1.00	1.21	7.342	8.08	0.00	1.200	1.639	5.00	20.233	24.28	196.1	472.2	1547.7
85.00		1.00	1.22	7.436	8.18	0.00	1.200	1.649	5.00	19.849	23.82	194.8	465.5	1518.5
90.00		1.00	1.24	7.526	8.28	0.00	1.200	1.658	5.00	19.464	23.36	193.4	458.6	1488.9
92.83 Bot - Section 3		1.00	1.25	7.575	8.33	0.00	1.200	1.663	2.83	10.857	13.03	108.6	257.6	831.4
95.00		1.00	1.25	7.612	8.37	0.00	1.200	1.667	2.17	8.322	9.99	83.6	198.2	962.5
98.92 Top - Section 2		1.00	1.26	7.677	8.45	0.00	1.200	1.674	3.92	14.862	17.83	150.6	353.7	1716.5
100.00		1.00	1.27	7.695	8.46	0.00	1.200	1.676	1.08	4.068	4.88	41.3	97.5	258.6
105.00		1.00	1.28	7.774	8.55	0.00	1.200	1.684	5.00	18.545	22.25	190.3	442.4	1175.7
110.00		1.00	1.29	7.851	8.64	0.00	1.200	1.692	5.00	18.159	21.79	188.2	434.7	1151.0
115.00		1.00	1.30	7.925	8.72	0.00	1.200	1.699	5.00	17.772	21.33	185.9	426.7	1126.2
120.00		1.00	1.32	7.996	8.80	0.00	1.200	1.707	5.00	17.385	20.86	183.5	418.6	1101.2
125.00		1.00	1.33	8.065	8.87	0.00	1.200	1.714	5.00	16.998	20.40	181.0	410.4	1076.0
126.67 Bot - Section 4		1.00	1.33	8.088	8.90	0.00	1.200	1.716	1.67	5.590	6.71	59.7	136.1	354.7
130.00		1.00	1.34	8.132	8.95	0.00	1.200	1.720	3.33	11.143	13.37	119.6	270.9	1041.0
132.00 Top - Section 3		1.00	1.34	8.158	8.97	0.00	1.200	1.723	2.00	6.620	7.94	71.3	161.6	618.5
135.00		1.00	1.35	8.197	9.02	0.00	1.200	1.727	3.00	9.787	11.74	105.9	238.7	536.5
140.00		1.00	1.36	8.260	9.09	0.00	1.200	1.733	5.00	16.021	19.23	174.7	389.7	876.0
145.00		1.00	1.37	8.321	9.15	0.00	1.200	1.739	5.00	15.633	18.76	171.7	380.9	854.0
147.00 Appurtenance(s)		1.00	1.37	8.345	9.18	0.00	1.200	1.742	2.00	6.144	7.37	67.7	151.0	336.5
150.00		1.00	1.38	8.381	9.22	0.00	1.200	1.745	3.00	9.100	10.92	100.7	223.3	497.6
155.00		1.00	1.39	8.439	9.28	0.00	1.200	1.751	5.00	14.857	17.83	165.5	363.1	809.8
159.00 Appurtenance(s)		1.00	1.40	8.484	9.33	0.00	1.200	1.755	4.00	11.606	13.93	130.0	284.7	632.6
160.00		1.00	1.40	8.495	9.34	0.00	1.200	1.757	1.00	2.862	3.43	32.1	70.8	156.5
165.00		1.00	1.41	8.551	9.41	0.00	1.200	1.762	5.00	14.080	16.90	158.9	344.9	765.2
170.00		1.00	1.42	8.604	9.46	0.00	1.200	1.767	5.00	13.692	16.43	155.5	335.7	742.8
175.00		1.00	1.42	8.657	9.52	0.00	1.200	1.772	5.00	13.303	15.96	152.0	326.3	720.3
177.00 Appurtenance(s)		1.00	1.43	8.678	9.55	0.00	1.200	1.774	2.00	5.212	6.25	59.7	129.0	282.9
180.00 Appurtenance(s)		1.00	1.43	8.709	9.58	0.00	1.200	1.777	3.00	7.701	9.24	88.5	190.1	417.0

Wind Loading - Shaft

Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	9/12/2016
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Struct Class: II	Page: 25



Totals: 180.00

6,534.1

53,641.2

Discrete Appurtenance Forces

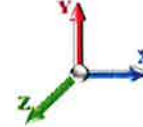
Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	9/12/2016
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 26

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

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 25

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	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	180.00	Lightning Rod	1	8.709	9.579	1.00	1.00	2.28	21.33	0.000	0.000	21.82	0.00	0.00
2	177.00	1900MHz RRUs	3	8.678	9.546	0.70	0.80	11.01	397.76	0.000	0.000	105.10	0.00	0.00
3	177.00	APXVSP18-C-A20	3	8.678	9.546	0.66	0.80	21.63	583.91	0.000	0.000	206.51	0.00	0.00
4	177.00	APXVTM14-C-120	3	8.678	9.546	0.63	0.80	14.17	692.52	0.000	0.000	135.25	0.00	0.00
5	177.00	TD-RRH8x20-25	3	8.678	9.546	0.55	0.80	8.08	590.09	0.000	0.000	77.11	0.00	0.00
6	177.00	800 MHz RRUs	3	8.678	9.546	0.74	0.80	8.07	353.08	0.000	0.000	76.99	0.00	0.00
7	177.00	ALU 800MHz External	3	8.678	9.546	0.55	0.80	2.38	70.49	0.000	0.000	22.73	0.00	0.00
8	177.00	ACU-A20-N	4	8.678	9.546	0.63	0.80	1.12	17.07	0.000	0.000	10.66	0.00	0.00
9	177.00	Platform w/ Hand Rail	1	8.678	9.546	1.00	1.00	60.39	3454.89	0.000	0.000	576.45	0.00	0.00
10	159.00	BXA-171085-8BF-EDIN-2	3	8.484	9.333	0.67	0.80	9.29	179.48	0.000	0.000	86.70	0.00	0.00
11	159.00	BXA-80080/4CF	3	8.484	9.333	0.61	0.80	12.19	284.98	0.000	0.000	113.78	0.00	0.00
12	159.00	B25 RRH4x30	3	8.484	9.333	0.65	0.80	5.35	316.15	0.000	0.000	49.92	0.00	0.00
13	159.00	SBNHH-1D65B	6	8.484	9.333	0.66	0.80	37.37	1510.39	0.000	0.000	348.76	0.00	0.00
14	159.00	Low Profile	1	8.484	9.333	1.00	1.00	39.76	2816.56	0.000	0.000	371.11	0.00	0.00
15	159.00	DB-T1-6Z-8AB-0Z	2	8.484	9.333	0.57	0.80	6.45	334.80	0.000	0.000	60.21	0.00	0.00
16	159.00	B25 RRH4x30	3	8.484	9.333	0.65	0.80	5.35	316.15	0.000	0.000	49.92	0.00	0.00
17	159.00	RRH 4X45-PCS	3	8.484	9.333	0.78	0.80	9.36	390.38	0.000	0.000	87.39	0.00	0.00
18	147.00	RRUS A2	3	8.345	9.180	0.50	0.80	4.25	160.73	0.000	0.000	38.99	0.00	0.00
19	147.00	HPA-65R-BUU-H6	1	8.345	9.180	0.80	0.80	8.82	308.72	2.383	0.000	80.95	192.91	0.00
20	147.00	HPA-65R-BUU-H8	2	8.345	9.180	0.71	0.80	20.85	743.92	0.000	0.000	191.38	0.00	0.00
21	147.00	860 10025 RET	12	8.345	9.180	0.74	0.80	4.93	69.89	0.000	0.000	45.25	0.00	0.00
22	147.00	RRUS 12	3	8.345	9.180	0.57	0.80	5.74	349.65	0.000	0.000	52.68	0.00	0.00
23	147.00	LGP21401	6	8.345	9.180	0.54	0.80	6.83	208.62	0.000	0.000	62.70	0.00	0.00
24	147.00	RRUS-11	6	8.345	9.180	0.54	0.80	10.14	703.96	0.000	0.000	93.05	0.00	0.00
25	147.00	LGP21901 Diplexer	6	8.345	9.180	0.54	0.80	2.14	75.66	0.000	0.000	19.69	0.00	0.00
26	147.00	DC6-48-60-18-8F("Squid")	1	8.345	9.180	1.00	1.00	1.36	82.16	2.383	0.000	12.46	29.69	0.00
27	147.00	Low Profile	1	8.345	9.180	1.00	1.00	39.63	2806.27	0.000	0.000	363.75	0.00	0.00
28	147.00	7770.00	6	8.345	9.180	0.60	0.80	23.75	1061.03	0.000	0.000	218.04	0.00	0.00
29	52.00	GPS	1	6.705	7.376	0.80	0.80	0.43	0.76	3.055	0.000	3.20	9.77	0.00
Totals:								18,901.44				3,582.53		

Total Applied Force Summary

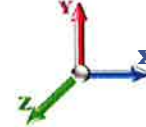
Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	9/12/2016
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 25

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		173.81	2266.65	0.00	0.00
10.00		171.64	2267.70	0.00	0.00
15.00		169.27	2254.75	0.00	0.00
20.00		177.00	2235.65	0.00	0.00
25.00		182.74	2213.01	0.00	0.00
30.00		186.96	2188.03	0.00	0.00
35.00		190.09	2161.38	0.00	0.00
40.00		192.36	2133.47	0.00	0.00
45.00		193.94	2104.56	0.00	0.00
45.92		35.34	382.87	0.00	0.00
50.00		161.25	2685.91	0.00	0.00
52.00	(1) attachments	82.00	1303.79	9.77	0.00
53.00		39.36	644.37	0.00	0.00
55.00		78.92	739.34	0.00	0.00
60.00		198.55	1827.72	0.00	0.00
65.00		198.38	1799.85	0.00	0.00
70.00		197.89	1771.56	0.00	0.00
75.00		197.11	1742.91	0.00	0.00
80.00		196.09	1713.94	0.00	0.00
85.00		194.83	1684.68	0.00	0.00
90.00		193.36	1655.15	0.00	0.00
92.83		108.57	925.60	0.00	0.00
95.00		83.63	1034.49	0.00	0.00
98.92		150.61	1846.70	0.00	0.00
100.00		41.32	294.62	0.00	0.00
105.00		190.31	1341.91	0.00	0.00
110.00		188.18	1317.23	0.00	0.00
115.00		185.91	1292.38	0.00	0.00
120.00		183.50	1267.36	0.00	0.00
125.00		180.96	1242.20	0.00	0.00
126.67		59.68	410.19	0.00	0.00
130.00		119.61	1151.13	0.00	0.00
132.00		71.29	684.69	0.00	0.00
135.00		105.90	635.52	0.00	0.00
140.00		174.68	1041.20	0.00	0.00
145.00		171.71	1019.27	0.00	0.00
147.00	(47) attachments	1246.63	6973.24	222.60	0.00
150.00		100.67	548.73	0.00	0.00
155.00		165.50	895.03	0.00	0.00
159.00	(24) attachments	1297.75	6849.63	0.00	0.00
160.00		32.10	159.63	0.00	0.00
165.00		158.92	781.07	0.00	0.00
170.00		155.51	758.62	0.00	0.00
175.00		152.02	736.09	0.00	0.00
177.00	(23) attachments	1270.50	6449.05	0.00	0.00
180.00	(1) attachments	110.35	438.33	0.00	0.00

Total Applied Force Summary

Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	9/12/2016
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Struct Class: II	Page: 28



Totals:	10,116.66	77,871.21	232.37	0.00
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Linear Appurtenance Segment Forces (Factored)

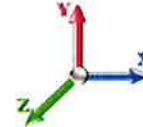
Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	9/12/2016
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Page: 29
	Struct Class: II	



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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 25

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1/2" Coax	Yes	5.00	0.000	0.65	1.31	0.00	0.011	0.000	5.168	0.00	13.70
10.00	1/2" Coax	Yes	5.00	0.000	0.65	1.38	0.00	0.011	0.000	5.168	0.00	15.33
15.00	1/2" Coax	Yes	5.00	0.000	0.65	1.43	0.00	0.011	0.000	5.168	0.00	16.38
20.00	1/2" Coax	Yes	5.00	0.000	0.65	1.46	0.00	0.012	0.000	5.483	0.00	17.18
25.00	1/2" Coax	Yes	5.00	0.000	0.65	1.49	0.00	0.012	0.000	5.747	0.00	17.83
30.00	1/2" Coax	Yes	5.00	0.000	0.65	1.51	0.00	0.012	0.000	5.972	0.00	18.38
35.00	1/2" Coax	Yes	5.00	0.000	0.65	1.53	0.00	0.012	0.000	6.169	0.00	18.86
40.00	1/2" Coax	Yes	5.00	0.000	0.65	1.55	0.00	0.012	0.000	6.345	0.00	19.29
45.00	1/2" Coax	Yes	5.00	0.000	0.65	1.56	0.00	0.013	0.000	6.504	0.00	19.67
45.92	1/2" Coax	Yes	0.92	0.000	0.65	0.29	0.00	0.013	0.000	6.532	0.00	3.62
50.00	1/2" Coax	Yes	4.08	0.000	0.65	1.29	0.00	0.013	0.000	6.650	0.00	16.35
52.00	1/2" Coax	Yes	2.00	0.000	0.65	0.63	0.00	0.013	0.000	6.705	0.00	8.06
Totals:											0.0	184.6

Calculated Forces

Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	9/12/2016
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



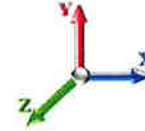
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Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Iterations 25

Dead Load Factor 1.20

Wind Load Factor 1.00



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-77.87	-10.15	-0.23	-1256.3	0.00	1256.34	5397.55	2698.78	12826.5	6367.63	0.00	0.000	0.000	0.212
5.00	-75.59	-10.05	-0.23	-1205.5	0.00	1205.58	5344.66	2672.33	12495.2	6203.15	0.03	-0.052	0.000	0.209
10.00	-73.31	-9.94	-0.23	-1155.3	0.00	1155.35	5290.67	2645.34	12165.4	6039.43	0.11	-0.104	0.000	0.205
15.00	-71.05	-9.83	-0.23	-1105.6	0.00	1105.66	5235.58	2617.79	11837.2	5876.53	0.25	-0.157	0.000	0.202
20.00	-68.81	-9.71	-0.23	-1056.5	0.00	1056.51	5179.37	2589.69	11510.9	5714.52	0.44	-0.210	0.000	0.198
25.00	-66.59	-9.58	-0.23	-1007.9	0.00	1007.97	5122.07	2561.03	11186.5	5553.45	0.69	-0.263	0.000	0.195
30.00	-64.39	-9.44	-0.23	-960.07	0.00	960.07	5063.65	2531.83	10864.1	5393.40	0.99	-0.317	0.000	0.191
35.00	-62.22	-9.30	-0.23	-912.87	0.00	912.87	5004.13	2502.07	10543.8	5234.42	1.35	-0.370	0.000	0.187
40.00	-60.08	-9.15	-0.23	-866.39	0.00	866.39	4943.51	2471.75	10225.9	5076.58	1.77	-0.424	0.000	0.183
45.00	-57.97	-8.97	-0.23	-820.66	0.00	820.66	4881.77	2440.89	9910.40	4919.94	2.24	-0.478	0.000	0.179
45.92	-57.59	-8.96	-0.23	-812.44	0.00	812.44	4870.34	2435.17	9852.83	4891.36	2.34	-0.488	0.000	0.178
50.00	-54.90	-8.80	-0.23	-775.86	0.00	775.86	4818.94	2409.47	9597.43	4764.57	2.77	-0.532	0.000	0.174
52.00	-53.59	-8.72	-0.22	-758.26	0.00	758.26	4793.49	2396.75	9472.99	4702.79	3.00	-0.554	0.000	0.172
53.00	-52.94	-8.69	-0.22	-749.54	0.00	749.54	3921.66	1960.83	7862.59	3903.32	3.12	-0.565	0.000	0.206
55.00	-52.20	-8.64	-0.22	-732.15	0.00	732.15	3903.31	1951.65	7765.73	3855.23	3.36	-0.587	0.000	0.203
60.00	-50.37	-8.48	-0.22	-688.93	0.00	688.93	3856.65	1928.33	7524.53	3735.49	4.01	-0.647	0.000	0.198
65.00	-48.56	-8.31	-0.22	-646.53	0.00	646.53	3808.89	1904.45	7284.80	3616.48	4.72	-0.706	0.000	0.192
70.00	-46.78	-8.14	-0.22	-604.99	0.00	604.99	3760.03	1880.02	7046.68	3498.27	5.49	-0.766	0.000	0.185
75.00	-45.03	-7.96	-0.22	-564.30	0.00	564.30	3710.06	1855.03	6810.28	3380.91	6.32	-0.824	0.000	0.179
80.00	-43.32	-7.78	-0.22	-524.50	0.00	524.50	3658.99	1829.49	6575.75	3264.48	7.22	-0.882	0.000	0.173
85.00	-41.63	-7.60	-0.22	-485.58	0.00	485.58	3606.81	1803.40	6343.20	3149.03	8.17	-0.940	0.000	0.166
90.00	-39.97	-7.41	-0.22	-447.56	0.00	447.56	3553.52	1776.76	6112.76	3034.63	9.19	-0.997	0.000	0.159
92.83	-39.04	-7.31	-0.22	-426.56	0.00	426.56	3522.83	1761.42	5983.17	2970.30	9.79	-1.029	0.000	0.155
95.00	-38.00	-7.23	-0.22	-410.73	0.00	410.73	3499.13	1749.56	5884.57	2921.35	10.26	-1.053	0.000	0.151
98.92	-36.16	-7.06	-0.22	-382.42	0.00	382.42	2350.25	1175.12	3954.81	1963.33	11.14	-1.096	0.000	0.210
100.00	-35.86	-7.04	-0.22	-374.77	0.00	374.77	2343.93	1171.97	3924.64	1948.36	11.39	-1.108	0.000	0.208
105.00	-34.51	-6.86	-0.22	-339.58	0.00	339.58	2314.11	1157.05	3785.67	1879.37	12.59	-1.175	0.000	0.196
110.00	-33.19	-6.68	-0.22	-305.28	0.00	305.28	2283.18	1141.59	3647.23	1810.64	13.86	-1.241	0.000	0.183
115.00	-31.90	-6.50	-0.22	-271.87	0.00	271.87	2251.15	1125.57	3509.45	1742.24	15.19	-1.303	0.000	0.170
120.00	-30.63	-6.32	-0.22	-239.37	0.00	239.37	2218.01	1109.01	3372.44	1674.22	16.59	-1.363	-0.001	0.157
125.00	-29.39	-6.13	-0.22	-207.77	0.00	207.77	2183.77	1091.88	3236.35	1606.66	18.05	-1.419	-0.001	0.143
126.67	-28.98	-6.07	-0.22	-197.54	0.00	197.54	2172.08	1086.04	3191.13	1584.21	18.55	-1.438	-0.001	0.138
130.00	-27.83	-5.94	-0.22	-177.32	0.00	177.32	2148.42	1074.21	3101.30	1539.62	19.56	-1.472	-0.001	0.128
132.00	-27.14	-5.86	-0.22	-165.44	0.00	165.44	1502.55	751.27	2180.88	1082.68	20.18	-1.492	-0.001	0.171
135.00	-26.50	-5.75	-0.22	-147.88	0.00	147.88	1491.20	745.60	2130.02	1057.43	21.13	-1.521	-0.001	0.158
140.00	-25.46	-5.57	-0.22	-119.11	-0.01	119.11	1471.39	735.69	2045.11	1015.28	22.75	-1.573	-0.001	0.135
145.00	-24.45	-5.39	-0.22	-91.25	-0.01	91.25	1450.46	725.23	1960.22	973.13	24.42	-1.618	-0.001	0.111
147.00	-17.51	-3.95	0.00	-80.48	0.00	80.48	1441.79	720.89	1926.30	956.30	25.10	-1.633	-0.001	0.096
150.00	-16.96	-3.84	0.00	-68.63	0.00	68.63	1428.44	714.22	1875.49	931.07	26.14	-1.655	-0.001	0.086
155.00	-16.07	-3.65	0.00	-49.44	0.00	49.44	1405.30	702.65	1791.05	889.15	27.89	-1.684	-0.001	0.067
159.00	-9.26	-2.16	0.00	-34.83	0.00	34.83	1386.00	693.00	1723.78	855.76	29.31	-1.703	-0.001	0.047
160.00	-9.10	-2.12	0.00	-32.67	0.00	32.67	1381.06	690.53	1707.02	847.43	29.66	-1.707	-0.001	0.045
165.00	-8.33	-1.94	0.00	-22.07	0.00	22.07	1355.72	677.86	1623.53	805.99	31.46	-1.723	-0.001	0.034
170.00	-7.57	-1.76	0.00	-12.37	0.00	12.37	1329.27	664.63	1540.71	764.87	33.27	-1.735	-0.001	0.022
175.00	-6.84	-1.59	0.00	-3.55	0.00	3.55	1301.71	650.86	1458.68	724.15	35.09	-1.740	-0.001	0.010
177.00	-0.43	-0.12	0.00	-0.37	0.00	0.37	1290.38	645.19	1426.13	707.99	35.82	-1.741	-0.001	0.001
180.00	0.00	-0.11	0.00	0.00	0.00	0.00	1273.05	636.53	1377.59	683.89	36.92	-1.741	-0.001	0.000

Calculated Forces

Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	9/12/2016
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Struct Class: II	Page: 31
Topography: 1		



Seismic Segment Forces (Factored)

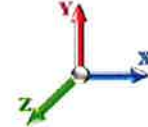
Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	9/12/2016
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0E

Gust Response Factor	1.10	Sds	0.18		Iterations	23
Dead Load Factor	1.20	Seismic Load Factor	1.00	Sd1		Ss
Wind Load Factor	0.00	Structure Frequency	0.32	SA		S1
				Seismic Importance Factor		1.00



Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1357.3	0.00	0.03	0.02	21.99	
10.00		1335.3	0.01	0.05	0.03	32.24	
15.00		1313.4	0.01	0.06	0.03	37.34	
20.00		1291.4	0.02	0.07	0.04	39.81	
25.00		1269.4	0.04	0.07	0.04	40.90	
30.00		1247.4	0.05	0.07	0.04	41.33	
35.00		1225.4	0.07	0.07	0.04	41.49	
40.00		1203.4	0.09	0.07	0.04	41.58	
45.00		1181.4	0.12	0.07	0.03	41.63	
45.92	Bot - Section 2	214.22	0.12	0.07	0.03	7.58	
50.00		1768.0	0.15	0.07	0.03	63.43	
52.00	Appurtenance(s)	856.26	0.16	0.07	0.03	30.89	
53.00	Top - Section 1	425.58	0.16	0.07	0.03	15.39	
55.00		393.91	0.18	0.07	0.03	14.30	
60.00		971.59	0.21	0.06	0.02	35.21	
65.00		952.77	0.25	0.06	0.02	33.71	
70.00		933.94	0.29	0.05	0.01	31.07	
75.00		915.12	0.33	0.04	0.01	26.93	
80.00		896.29	0.37	0.03	0.01	21.01	
85.00		877.46	0.42	0.01	0.01	13.26	
90.00		858.64	0.47	-0.01	0.01	4.09	
92.83	Bot - Section 3	478.20	0.50	-0.02	0.01	-0.80	
95.00		636.91	0.53	-0.03	0.01	-4.25	
98.92	Top - Section 2	1135.6	0.57	-0.04	0.01	-17.58	
100.00		134.26	0.58	-0.05	0.01	-2.39	
105.00		611.09	0.64	-0.07	0.02	-16.59	
110.00		596.98	0.71	-0.09	0.03	-20.14	
115.00		582.87	0.77	-0.11	0.05	-21.57	
120.00		568.77	0.84	-0.12	0.07	-20.93	
125.00		554.66	0.91	-0.12	0.09	-18.39	
126.67	Bot - Section 4	182.11	0.94	-0.12	0.10	-5.68	
130.00		641.75	0.99	-0.11	0.12	-16.78	
132.00	Top - Section 3	380.71	1.02	-0.11	0.14	-8.53	
135.00		248.14	1.06	-0.09	0.17	-3.93	
140.00		405.24	1.14	-0.04	0.21	-0.91	
145.00		394.24	1.23	0.03	0.27	5.75	
147.00	Appurtenance(s)	2761.4	1.26	0.07	0.30	61.41	
150.00		228.63	1.31	0.14	0.35	7.94	
155.00		372.25	1.40	0.29	0.43	21.65	
159.00	Appurtenance(s)	2631.6	1.47	0.44	0.51	208.84	
160.00		71.37	1.49	0.48	0.53	6.07	
165.00		350.26	1.59	0.74	0.65	40.38	
170.00		339.27	1.69	1.07	0.79	50.58	
175.00		328.28	1.79	1.48	0.95	61.21	
177.00	Appurtenance(s)	2598.6	1.83	1.67	1.03	526.04	

R: 1.50

Seismic Segment Forces (Factored)

Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	9/12/2016
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Struct Class: II	Page: 33



180.00	Appurtenance(s)	<u>194.05</u>	1.89	1.98	1.14	<u>44.15</u>	
	Totals:	38,916.1				1,510.7	Total Wind: 44,019.0

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

Calculated Forces

Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	9/12/2016
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

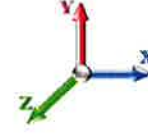


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Load Case: 1.2D + 1.0E

Iterations 23

Gust Response Factor 1.10	Sds 0.18	Ss 0.17
Dead Load Factor 1.20	Seismic Load Factor 1.00	Sd1 0.10
Wind Load Factor 0.00	Structure Frequency 0.32	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	-51.85	-1.67	0.00	-212.27	0.00	212.27	5397.55	2698.78	12826.5	6367.63	0.00	0.00	0.00	0.043
5.00	-50.06	-1.66	0.00	-203.91	0.00	203.91	5344.66	2672.33	12495.2	6203.15	0.00	-0.01	0.042	0.042
10.00	-48.29	-1.63	0.00	-195.62	0.00	195.62	5290.67	2645.34	12165.4	6039.43	0.02	-0.02	0.042	0.041
15.00	-46.54	-1.60	0.00	-187.46	0.00	187.46	5235.58	2617.79	11837.2	5876.53	0.04	-0.03	0.041	0.040
20.00	-44.83	-1.57	0.00	-179.45	0.00	179.45	5179.37	2589.69	11510.9	5714.52	0.07	-0.04	0.040	0.039
25.00	-43.14	-1.53	0.00	-171.61	0.00	171.61	5122.07	2561.03	11186.5	5553.45	0.12	-0.04	0.039	0.039
30.00	-41.47	-1.50	0.00	-163.95	0.00	163.95	5063.65	2531.83	10864.1	5393.40	0.17	-0.05	0.039	0.038
35.00	-39.83	-1.46	0.00	-156.46	0.00	156.46	5004.13	2502.07	10543.8	5234.42	0.23	-0.06	0.038	0.037
40.00	-38.22	-1.42	0.00	-149.16	0.00	149.16	4943.51	2471.75	10225.9	5076.58	0.30	-0.07	0.037	0.036
45.00	-36.64	-1.38	0.00	-142.05	0.00	142.05	4881.77	2440.89	9910.40	4919.94	0.38	-0.08	0.036	0.036
45.92	-36.35	-1.38	0.00	-140.78	0.00	140.78	4870.34	2435.17	9852.83	4891.36	0.40	-0.08	0.036	0.035
50.00	-34.09	-1.31	0.00	-135.16	0.00	135.16	4818.94	2409.47	9597.43	4764.57	0.47	-0.09	0.035	0.035
52.00	-33.00	-1.28	0.00	-132.53	0.00	132.53	4793.49	2396.75	9472.99	4702.79	0.51	-0.09	0.035	0.042
53.00	-32.45	-1.27	0.00	-131.25	0.00	131.25	3921.66	1960.83	7862.59	3903.32	0.53	-0.10	0.042	0.041
55.00	-31.91	-1.26	0.00	-128.71	0.00	128.71	3903.31	1951.65	7765.73	3855.23	0.57	-0.10	0.041	0.041
60.00	-30.58	-1.23	0.00	-122.42	0.00	122.42	3856.65	1928.33	7524.53	3735.49	0.68	-0.11	0.041	0.040
65.00	-29.27	-1.19	0.00	-116.30	0.00	116.30	3808.89	1904.45	7284.80	3616.48	0.80	-0.12	0.040	0.039
70.00	-27.98	-1.17	0.00	-110.33	0.00	110.33	3760.03	1880.02	7046.68	3498.27	0.94	-0.13	0.039	0.038
75.00	-26.72	-1.14	0.00	-104.50	0.00	104.50	3710.06	1855.03	6810.28	3380.91	1.08	-0.14	0.038	0.037
80.00	-25.48	-1.12	0.00	-98.79	0.00	98.79	3658.99	1829.49	6575.75	3264.48	1.24	-0.15	0.037	0.036
85.00	-24.26	-1.11	0.00	-93.19	0.00	93.19	3606.81	1803.40	6343.20	3149.03	1.40	-0.16	0.036	0.035
90.00	-23.06	-1.11	0.00	-87.64	0.00	87.64	3553.52	1776.76	6112.76	3034.63	1.58	-0.18	0.035	0.035
92.83	-22.39	-1.11	0.00	-84.51	0.00	84.51	3522.83	1761.42	5983.17	2970.30	1.69	-0.18	0.035	0.034
95.00	-21.56	-1.11	0.00	-82.11	0.00	82.11	3499.13	1749.56	5884.57	2921.35	1.77	-0.19	0.034	0.048
98.92	-20.06	-1.10	0.00	-77.79	0.00	77.79	2350.25	1175.12	3954.81	1963.33	1.93	-0.20	0.048	0.048
100.00	-19.87	-1.10	0.00	-76.59	0.00	76.59	2343.93	1171.97	3924.64	1948.36	1.98	-0.20	0.048	0.046
105.00	-18.97	-1.11	0.00	-71.07	0.00	71.07	2314.11	1157.05	3785.67	1879.37	2.19	-0.21	0.046	0.044
110.00	-18.08	-1.11	0.00	-65.54	0.00	65.54	2283.18	1141.59	3647.23	1810.64	2.42	-0.23	0.044	0.042
115.00	-17.22	-1.11	0.00	-60.01	0.00	60.01	2251.15	1125.57	3509.45	1742.24	2.66	-0.24	0.042	0.040
120.00	-16.37	-1.11	0.00	-54.47	0.00	54.47	2218.01	1109.01	3372.44	1674.22	2.92	-0.25	0.040	0.038
125.00	-15.54	-1.11	0.00	-48.93	0.00	48.93	2183.77	1091.88	3236.35	1606.66	3.19	-0.27	0.038	0.037
126.67	-15.26	-1.11	0.00	-47.09	0.00	47.09	2172.08	1086.04	3191.13	1584.21	3.29	-0.27	0.037	0.047
130.00	-14.38	-1.10	0.00	-43.40	0.00	43.40	2148.42	1074.21	3101.30	1539.62	3.48	-0.28	0.047	0.045
132.00	-13.86	-1.10	0.00	-41.19	0.00	41.19	1502.55	751.27	2180.88	1082.68	3.60	-0.28	0.045	0.041
135.00	-13.46	-1.10	0.00	-37.89	0.00	37.89	1491.20	745.60	2130.02	1057.43	3.78	-0.29	0.045	0.036
140.00	-12.81	-1.10	0.00	-32.37	0.00	32.37	1471.39	735.69	2045.11	1015.28	4.09	-0.30	0.041	0.032
145.00	-12.17	-1.10	0.00	-26.85	0.00	26.85	1450.46	725.23	1960.22	973.13	4.42	-0.32	0.032	0.029
147.00	-8.79	-1.02	0.00	-24.66	0.00	24.66	1441.79	720.89	1926.30	956.30	4.55	-0.32	0.029	0.024
150.00	-8.47	-1.01	0.00	-21.61	0.00	21.61	1428.44	714.22	1875.49	931.07	4.75	-0.33	0.024	0.018
155.00	-7.94	-0.98	0.00	-16.57	0.00	16.57	1405.30	702.65	1791.05	889.15	5.10	-0.34	0.018	0.017
159.00	-4.71	-0.76	0.00	-12.64	0.00	12.64	1386.00	693.00	1723.78	855.76	5.39	-0.34	0.017	0.013
160.00	-4.62	-0.75	0.00	-11.88	0.00	11.88	1381.06	690.53	1707.02	847.43	5.46	-0.35	0.013	0.009
165.00	-4.19	-0.71	0.00	-8.13	0.00	8.13	1355.72	677.86	1623.53	805.99	5.83	-0.35	0.009	0.004
170.00	-3.76	-0.65	0.00	-4.59	0.00	4.59	1329.27	664.63	1540.71	764.87	6.20	-0.36	0.004	0.000
175.00	-3.35	-0.59	0.00	-1.32	0.00	1.32	1301.71	650.86	1458.68	724.15	6.57	-0.36	0.000	
177.00	-0.23	-0.05	0.00	-0.14	0.00	0.14	1290.38	645.19	1426.13	707.99	6.72	-0.36		
180.00	0.00	-0.04	0.00	0.00	0.00	0.00	1273.05	636.53	1377.59	683.89	6.95	-0.36		

Calculated Forces

Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	9/12/2016
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Struct Class: II	Page: 35
Topography: 1		



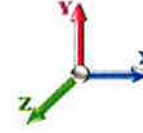
Seismic Segment Forces (Factored)

Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	9/12/2016
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (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 23
Gust Response Factor	1.10	Sds	0.18		Ss 0.17
Dead Load Factor	0.90	Seismic Load Factor	1.00	Sd1 0.10	S1 0.06
Wind Load Factor	0.00	Structure Frequency	0.32	SA 0.03	Seismic Importance Factor 1.00



Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1357.3	0.00	0.03	0.02	21.99	
10.00		1335.3	0.01	0.05	0.03	32.24	
15.00		1313.4	0.01	0.06	0.03	37.34	
20.00		1291.4	0.02	0.07	0.04	39.81	
25.00		1269.4	0.04	0.07	0.04	40.90	
30.00		1247.4	0.05	0.07	0.04	41.33	
35.00		1225.4	0.07	0.07	0.04	41.49	
40.00		1203.4	0.09	0.07	0.04	41.58	
45.00		1181.4	0.12	0.07	0.03	41.63	
45.92	Bot - Section 2	214.22	0.12	0.07	0.03	7.58	
50.00		1768.0	0.15	0.07	0.03	63.43	
52.00	Appurtenance(s)	856.26	0.16	0.07	0.03	30.89	
53.00	Top - Section 1	425.58	0.16	0.07	0.03	15.39	
55.00		393.91	0.18	0.07	0.03	14.30	
60.00		971.59	0.21	0.06	0.02	35.21	
65.00		952.77	0.25	0.06	0.02	33.71	
70.00		933.94	0.29	0.05	0.01	31.07	
75.00		915.12	0.33	0.04	0.01	26.93	
80.00		896.29	0.37	0.03	0.01	21.01	
85.00		877.46	0.42	0.01	0.01	13.26	
90.00		858.64	0.47	-0.01	0.01	4.09	
92.83	Bot - Section 3	478.20	0.50	-0.02	0.01	-0.80	
95.00		636.91	0.53	-0.03	0.01	-4.25	
98.92	Top - Section 2	1135.6	0.57	-0.04	0.01	-17.58	
100.00		134.26	0.58	-0.05	0.01	-2.39	
105.00		611.09	0.64	-0.07	0.02	-16.59	
110.00		596.98	0.71	-0.09	0.03	-20.14	
115.00		582.87	0.77	-0.11	0.05	-21.57	
120.00		568.77	0.84	-0.12	0.07	-20.93	
125.00		554.66	0.91	-0.12	0.09	-18.39	
126.67	Bot - Section 4	182.11	0.94	-0.12	0.10	-5.68	
130.00		641.75	0.99	-0.11	0.12	-16.78	
132.00	Top - Section 3	380.71	1.02	-0.11	0.14	-8.53	
135.00		248.14	1.06	-0.09	0.17	-3.93	
140.00		405.24	1.14	-0.04	0.21	-0.91	
145.00		394.24	1.23	0.03	0.27	5.75	
147.00	Appurtenance(s)	2761.4	1.26	0.07	0.30	61.41	
150.00		228.63	1.31	0.14	0.35	7.94	
155.00		372.25	1.40	0.29	0.43	21.65	
159.00	Appurtenance(s)	2631.6	1.47	0.44	0.51	208.84	
160.00		71.37	1.49	0.48	0.53	6.07	
165.00		350.26	1.59	0.74	0.65	40.38	
170.00		339.27	1.69	1.07	0.79	50.58	
175.00		328.28	1.79	1.48	0.95	61.21	
177.00	Appurtenance(s)	2598.6	1.83	1.67	1.03	526.04	

R: 1.50

Seismic Segment Forces (Factored)

Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	9/12/2016
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Struct Class: II	Page: 37
Topography: 1		



180.00	Appurtenance(s)	<u>194.05</u>	1.89	1.98	1.14	<u>44.15</u>	
	Totals:	38,916.1				1,510.7	Total Wind: 44,019.0

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

Calculated Forces

Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	9/12/2016
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

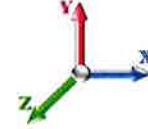


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Load Case: 0.9D + 1.0E

Iterations 23

Gust Response Factor 1.10	Sds 0.18	Ss 0.17
Dead Load Factor 0.90	Seismic Load Factor 1.00	Sd1 0.10
Wind Load Factor 0.00	Structure Frequency 0.32	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	-38.89	-1.67	0.00	-209.84	0.00	209.84	5397.55	2698.78	12826.5	6367.63	0.00	0.00	0.00	0.040
5.00	-37.54	-1.65	0.00	-201.49	0.00	201.49	5344.66	2672.33	12495.2	6203.15	0.00	-0.01	0.040	0.040
10.00	-36.22	-1.63	0.00	-193.21	0.00	193.21	5290.67	2645.34	12165.4	6039.43	0.02	-0.02	0.039	0.039
15.00	-34.91	-1.60	0.00	-185.08	0.00	185.08	5235.58	2617.79	11837.2	5876.53	0.04	-0.03	0.038	0.038
20.00	-33.62	-1.56	0.00	-177.10	0.00	177.10	5179.37	2589.69	11510.9	5714.52	0.07	-0.04	0.037	0.037
25.00	-32.35	-1.52	0.00	-169.30	0.00	169.30	5122.07	2561.03	11186.5	5553.45	0.12	-0.04	0.037	0.037
30.00	-31.10	-1.49	0.00	-161.68	0.00	161.68	5063.65	2531.83	10864.1	5393.40	0.17	-0.05	0.036	0.036
35.00	-29.87	-1.45	0.00	-154.25	0.00	154.25	5004.13	2502.07	10543.8	5234.42	0.23	-0.06	0.035	0.035
40.00	-28.67	-1.41	0.00	-147.01	0.00	147.01	4943.51	2471.75	10225.9	5076.58	0.30	-0.07	0.035	0.035
45.00	-27.48	-1.37	0.00	-139.96	0.00	139.96	4881.77	2440.89	9910.40	4919.94	0.38	-0.08	0.034	0.034
45.92	-27.26	-1.36	0.00	-138.71	0.00	138.71	4870.34	2435.17	9852.83	4891.36	0.39	-0.08	0.034	0.034
50.00	-25.57	-1.30	0.00	-133.14	0.00	133.14	4818.94	2409.47	9597.43	4764.57	0.47	-0.09	0.033	0.033
52.00	-24.75	-1.27	0.00	-130.54	0.00	130.54	4793.49	2396.75	9472.99	4702.79	0.50	-0.09	0.033	0.033
53.00	-24.34	-1.25	0.00	-129.28	0.00	129.28	3921.66	1960.83	7862.59	3903.32	0.52	-0.10	0.039	0.039
55.00	-23.93	-1.24	0.00	-126.77	0.00	126.77	3903.31	1951.65	7765.73	3855.23	0.56	-0.10	0.039	0.039
60.00	-22.94	-1.21	0.00	-120.56	0.00	120.56	3856.65	1928.33	7524.53	3735.49	0.67	-0.11	0.038	0.038
65.00	-21.95	-1.18	0.00	-114.51	0.00	114.51	3808.89	1904.45	7284.80	3616.48	0.79	-0.12	0.037	0.037
70.00	-20.99	-1.15	0.00	-108.62	0.00	108.62	3760.03	1880.02	7046.68	3498.27	0.93	-0.13	0.037	0.037
75.00	-20.04	-1.12	0.00	-102.88	0.00	102.88	3710.06	1855.03	6810.28	3380.91	1.07	-0.14	0.036	0.036
80.00	-19.11	-1.10	0.00	-97.27	0.00	97.27	3658.99	1829.49	6575.75	3264.48	1.22	-0.15	0.035	0.035
85.00	-18.19	-1.09	0.00	-91.76	0.00	91.76	3606.81	1803.40	6343.20	3149.03	1.39	-0.16	0.034	0.034
90.00	-17.30	-1.09	0.00	-86.30	0.00	86.30	3553.52	1776.76	6112.76	3034.63	1.56	-0.17	0.033	0.033
92.83	-16.79	-1.09	0.00	-83.22	0.00	83.22	3522.83	1761.42	5983.17	2970.30	1.67	-0.18	0.033	0.033
95.00	-16.17	-1.09	0.00	-80.87	0.00	80.87	3499.13	1749.56	5884.57	2921.35	1.75	-0.18	0.032	0.032
98.92	-15.05	-1.08	0.00	-76.62	0.00	76.62	2350.25	1175.12	3954.81	1963.33	1.90	-0.19	0.045	0.045
100.00	-14.90	-1.09	0.00	-75.44	0.00	75.44	2343.93	1171.97	3924.64	1948.36	1.95	-0.20	0.045	0.045
105.00	-14.22	-1.09	0.00	-70.01	0.00	70.01	2314.11	1157.05	3785.67	1879.37	2.16	-0.21	0.043	0.043
110.00	-13.56	-1.09	0.00	-64.58	0.00	64.58	2283.18	1141.59	3647.23	1810.64	2.39	-0.22	0.042	0.042
115.00	-12.91	-1.09	0.00	-59.14	0.00	59.14	2251.15	1125.57	3509.45	1742.24	2.63	-0.24	0.040	0.040
120.00	-12.28	-1.09	0.00	-53.70	0.00	53.70	2218.01	1109.01	3372.44	1674.22	2.88	-0.25	0.038	0.038
125.00	-11.65	-1.09	0.00	-48.26	0.00	48.26	2183.77	1091.88	3236.35	1606.66	3.15	-0.26	0.035	0.035
126.67	-11.45	-1.09	0.00	-46.44	0.00	46.44	2172.08	1086.04	3191.13	1584.21	3.24	-0.27	0.035	0.035
130.00	-10.79	-1.09	0.00	-42.82	0.00	42.82	2148.42	1074.21	3101.30	1539.62	3.43	-0.27	0.033	0.033
132.00	-10.39	-1.08	0.00	-40.65	0.00	40.65	1502.55	751.27	2180.88	1082.68	3.55	-0.28	0.044	0.044
135.00	-10.10	-1.09	0.00	-37.40	0.00	37.40	1491.20	745.60	2130.02	1057.43	3.73	-0.29	0.042	0.042
140.00	-9.61	-1.08	0.00	-31.97	0.00	31.97	1471.39	735.69	2045.11	1015.28	4.03	-0.30	0.038	0.038
145.00	-9.13	-1.08	0.00	-26.55	0.00	26.55	1450.46	725.23	1960.22	973.13	4.35	-0.31	0.034	0.034
147.00	-6.59	-1.00	0.00	-24.39	0.00	24.39	1441.79	720.89	1926.30	956.30	4.49	-0.32	0.030	0.030
150.00	-6.35	-0.99	0.00	-21.38	0.00	21.38	1428.44	714.22	1875.49	931.07	4.69	-0.32	0.027	0.027
155.00	-5.95	-0.97	0.00	-16.41	0.00	16.41	1405.30	702.65	1791.05	889.15	5.03	-0.33	0.023	0.023
159.00	-3.53	-0.75	0.00	-12.52	0.00	12.52	1386.00	693.00	1723.78	855.76	5.31	-0.34	0.017	0.017
160.00	-3.47	-0.74	0.00	-11.77	0.00	11.77	1381.06	690.53	1707.02	847.43	5.39	-0.34	0.016	0.016
165.00	-3.14	-0.70	0.00	-8.05	0.00	8.05	1355.72	677.86	1623.53	805.99	5.75	-0.35	0.012	0.012
170.00	-2.82	-0.65	0.00	-4.55	0.00	4.55	1329.27	664.63	1540.71	764.87	6.11	-0.35	0.008	0.008
175.00	-2.51	-0.59	0.00	-1.31	0.00	1.31	1301.71	650.86	1458.68	724.15	6.48	-0.35	0.004	0.004
177.00	-0.17	-0.05	0.00	-0.14	0.00	0.14	1290.38	645.19	1426.13	707.99	6.63	-0.35	0.000	0.000
180.00	0.00	-0.04	0.00	0.00	0.00	0.00	1273.05	636.53	1377.59	683.89	6.85	-0.35	0.000	0.000

Calculated Forces

Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	9/12/2016
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (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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Wind Loading - Shaft

Structure: CT01365-S-SBA
Site Name: Norwich 2 CT
Height: 180.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1

Topography: 1

Code: EIA/TIA-222-G
Exposure: C
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

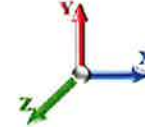
9/12/2016

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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 24

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	7.442	8.19	272.60	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	268.26	0.750	0.000	5.00	24.444	18.33	150.1	0.0	1357.4
10.00		1.00	0.85	7.442	8.19	263.91	0.750	0.000	5.00	24.051	18.04	147.7	0.0	1335.4
15.00		1.00	0.85	7.442	8.19	259.56	0.750	0.000	5.00	23.658	17.74	145.2	0.0	1313.4
20.00		1.00	0.90	7.896	8.69	262.89	0.750	0.000	5.00	23.265	17.45	151.6	0.0	1291.4
25.00		1.00	0.95	8.276	9.10	264.55	0.750	0.000	5.00	22.872	17.15	156.2	0.0	1269.4
30.00		1.00	0.98	8.600	9.46	265.00	0.750	0.000	5.00	22.479	16.86	159.5	0.0	1247.4
35.00		1.00	1.01	8.883	9.77	264.59	0.750	0.000	5.00	22.086	16.56	161.9	0.0	1225.4
40.00		1.00	1.04	9.137	10.05	263.52	0.750	0.000	5.00	21.693	16.27	163.5	0.0	1203.5
45.00		1.00	1.07	9.366	10.30	261.93	0.750	0.000	5.00	21.300	15.97	164.6	0.0	1181.5
45.92 Bot - Section 2		1.00	1.07	9.406	10.35	261.59	0.750	0.000	0.92	3.862	2.90	30.0	0.0	214.2
50.00		1.00	1.09	9.576	10.53	259.92	0.750	0.000	4.08	17.305	12.98	136.7	0.0	1768.1
52.00 Appurtenance(s)		1.00	1.10	9.656	10.62	259.01	0.750	0.000	2.00	8.380	6.29	66.8	0.0	856.1
53.00 Top - Section 1		1.00	1.11	9.694	10.66	258.54	0.750	0.000	1.00	4.167	3.12	33.3	0.0	425.6
55.00		1.00	1.12	9.770	10.75	261.60	0.750	0.000	2.00	8.286	6.21	66.8	0.0	393.9
60.00		1.00	1.14	9.951	10.95	258.98	0.750	0.000	5.00	20.440	15.33	167.8	0.0	971.6
65.00		1.00	1.16	10.120	11.13	256.10	0.750	0.000	5.00	20.047	15.03	167.4	0.0	952.8
70.00		1.00	1.17	10.279	11.31	252.99	0.750	0.000	5.00	19.654	14.74	166.7	0.0	933.9
75.00		1.00	1.19	10.430	11.47	249.69	0.750	0.000	5.00	19.261	14.45	165.7	0.0	915.1
80.00		1.00	1.21	10.572	11.63	246.21	0.750	0.000	5.00	18.868	14.15	164.6	0.0	896.3
85.00		1.00	1.22	10.708	11.78	242.57	0.750	0.000	5.00	18.475	13.86	163.2	0.0	877.5
90.00		1.00	1.24	10.838	11.92	238.79	0.750	0.000	5.00	18.082	13.56	161.7	0.0	858.6
92.83 Bot - Section 3		1.00	1.25	10.909	12.00	236.59	0.750	0.000	2.83	10.072	7.55	90.6	0.0	478.2
95.00		1.00	1.25	10.962	12.06	234.87	0.750	0.000	2.17	7.720	5.79	69.8	0.0	636.9
98.92 Top - Section 2		1.00	1.26	11.055	12.16	231.72	0.750	0.000	3.92	13.769	10.33	125.6	0.0	1135.6
100.00		1.00	1.27	11.081	12.19	234.06	0.750	0.000	1.08	3.766	2.82	34.4	0.0	134.3
105.00		1.00	1.28	11.195	12.31	229.94	0.750	0.000	5.00	17.142	12.86	158.3	0.0	611.1
110.00		1.00	1.29	11.305	12.44	225.71	0.750	0.000	5.00	16.749	12.56	156.2	0.0	597.0
115.00		1.00	1.30	11.412	12.55	221.38	0.750	0.000	5.00	16.356	12.27	154.0	0.0	582.9
120.00		1.00	1.32	11.514	12.67	216.97	0.750	0.000	5.00	15.963	11.97	151.6	0.0	568.8
125.00		1.00	1.33	11.614	12.78	212.47	0.750	0.000	5.00	15.570	11.68	149.2	0.0	554.7
126.67 Bot - Section 4		1.00	1.33	11.646	12.81	210.95	0.750	0.000	1.67	5.113	3.83	49.1	0.0	182.1
130.00		1.00	1.34	11.710	12.88	207.90	0.750	0.000	3.33	10.188	7.64	98.4	0.0	641.7
132.00 Top - Section 3		1.00	1.34	11.748	12.92	206.04	0.750	0.000	2.00	6.045	4.53	58.6	0.0	380.7
135.00		1.00	1.35	11.803	12.98	205.84	0.750	0.000	3.00	8.925	6.69	86.9	0.0	248.1
140.00		1.00	1.36	11.894	13.08	201.14	0.750	0.000	5.00	14.577	10.93	143.0	0.0	405.2
145.00		1.00	1.37	11.982	13.18	196.36	0.750	0.000	5.00	14.184	10.64	140.2	0.0	394.2
147.00 Appurtenance(s)		1.00	1.37	12.017	13.22	194.44	0.750	0.000	2.00	5.564	4.17	55.2	0.0	154.6
150.00		1.00	1.38	12.068	13.27	191.53	0.750	0.000	3.00	8.227	6.17	81.9	0.0	228.6
155.00		1.00	1.39	12.152	13.37	186.64	0.750	0.000	5.00	13.398	10.05	134.3	0.0	372.3
159.00 Appurtenance(s)		1.00	1.40	12.217	13.44	182.68	0.750	0.000	4.00	10.436	7.83	105.2	0.0	289.9
160.00		1.00	1.40	12.233	13.46	181.69	0.750	0.000	1.00	2.570	1.93	25.9	0.0	71.4
165.00		1.00	1.41	12.313	13.54	176.68	0.750	0.000	5.00	12.612	9.46	128.1	0.0	350.3
170.00		1.00	1.42	12.390	13.63	171.63	0.750	0.000	5.00	12.219	9.16	124.9	0.0	339.3
175.00		1.00	1.42	12.466	13.71	166.53	0.750	0.000	5.00	11.826	8.87	121.6	0.0	328.3
177.00 Appurtenance(s)		1.00	1.43	12.496	13.75	164.47	0.750	0.000	2.00	4.620	3.47	47.6	0.0	128.2
180.00 Appurtenance(s)		1.00	1.43	12.540	13.79	161.38	0.750	0.000	3.00	6.813	5.11	70.5	0.0	189.0

Wind Loading - Shaft

Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	9/12/2016
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Struct Class: II	Page: 41



Totals: 180.00

5,452.1

31,491.9

Discrete Appurtenance Forces

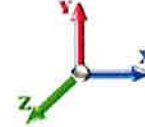
Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	9/12/2016
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 24

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	180.00	Lightning Rod	1	12.540	13.794	1.00	1.00	0.50	5.00	0.000	0.000	6.90	0.00	0.00
2	177.00	1900MHz RRUs	3	12.496	13.746	0.70	0.80	8.03	132.00	0.000	0.000	110.32	0.00	0.00
3	177.00	APXVSP18-C-A20	3	12.496	13.746	0.66	0.80	15.98	171.00	0.000	0.000	219.60	0.00	0.00
4	177.00	APXVTM14-C-120	3	12.496	13.746	0.63	0.80	12.02	168.00	0.000	0.000	165.23	0.00	0.00
5	177.00	TD-RRH8x20-25	3	12.496	13.746	0.55	0.80	6.71	210.00	0.000	0.000	92.19	0.00	0.00
6	177.00	800 MHz RRUs	3	12.496	13.746	0.74	0.80	5.50	159.00	0.000	0.000	75.57	0.00	0.00
7	177.00	ALU 800MHz External	3	12.496	13.746	0.55	0.80	1.29	26.40	0.000	0.000	17.76	0.00	0.00
8	177.00	ACU-A20-N	4	12.496	13.746	0.63	0.80	0.35	4.00	0.000	0.000	4.86	0.00	0.00
9	177.00	Platform w/ Hand Rail	1	12.496	13.746	1.00	1.00	32.00	1600.00	0.000	0.000	439.86	0.00	0.00
10	159.00	BXA-171085-8BF-EDIN-2	3	12.217	13.439	0.67	0.80	5.93	31.50	0.000	0.000	79.65	0.00	0.00
11	159.00	BXA-80080/4CF	3	12.217	13.439	0.61	0.80	8.76	42.90	0.000	0.000	117.66	0.00	0.00
12	159.00	B25 RRH4x30	3	12.217	13.439	0.65	0.80	4.16	153.00	0.000	0.000	55.91	0.00	0.00
13	159.00	SBNHH-1D65B	6	12.217	13.439	0.66	0.80	32.19	243.60	0.000	0.000	432.61	0.00	0.00
14	159.00	Low Profile	1	12.217	13.439	1.00	1.00	22.00	1500.00	0.000	0.000	295.65	0.00	0.00
15	159.00	DB-T1-6Z-8AB-OZ	2	12.217	13.439	0.57	0.80	5.45	37.80	0.000	0.000	73.28	0.00	0.00
16	159.00	B25 RRH4x30	3	12.217	13.439	0.65	0.80	4.16	153.00	0.000	0.000	55.91	0.00	0.00
17	159.00	RRH 4X45-PCS	3	12.217	13.439	0.78	0.80	6.37	180.00	0.000	0.000	85.66	0.00	0.00
18	147.00	RRUS A2	3	12.017	13.219	0.49	0.80	2.73	66.00	0.000	0.000	36.05	0.00	0.00
19	147.00	HPA-65R-BUU-H6	1	12.017	13.219	0.80	0.80	7.73	51.00	2.383	0.000	102.15	243.44	0.00
20	147.00	HPA-65R-BUU-H8	2	12.017	13.219	0.71	0.80	18.50	136.00	0.000	0.000	244.60	0.00	0.00
21	147.00	860 10025 RET	12	12.017	13.219	0.74	0.80	1.59	14.40	0.000	0.000	21.01	0.00	0.00
22	147.00	RRUS 12	3	12.017	13.219	0.56	0.80	4.56	174.00	0.000	0.000	60.22	0.00	0.00
23	147.00	LGP21401	6	12.017	13.219	0.54	0.80	4.15	84.60	0.000	0.000	54.84	0.00	0.00
24	147.00	RRUS-11	6	12.017	13.219	0.54	0.80	8.10	306.00	0.000	0.000	107.13	0.00	0.00
25	147.00	LGP21901 Diplexer	6	12.017	13.219	0.54	0.80	0.87	33.00	0.000	0.000	11.48	0.00	0.00
26	147.00	DC6-48-60-18-8F("Squid")	1	12.017	13.219	1.00	1.00	0.92	31.80	2.383	0.000	12.16	28.98	0.00
27	147.00	Low Profile	1	12.017	13.219	1.00	1.00	22.00	1500.00	0.000	0.000	290.81	0.00	0.00
28	147.00	7770.00	6	12.017	13.219	0.60	0.80	19.77	210.00	0.000	0.000	261.38	0.00	0.00
29	52.00	GPS	1	9.656	10.621	0.80	0.80	0.09	0.20	3.055	0.000	0.93	2.86	0.00
Totals:								7,424.20				3,531.38		

Total Applied Force Summary

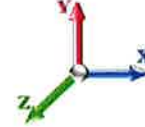
Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	9/12/2016
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 24

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		150.07	1496.68	0.00	0.00
10.00		147.66	1474.69	0.00	0.00
15.00		145.25	1452.70	0.00	0.00
20.00		151.55	1430.71	0.00	0.00
25.00		156.16	1408.72	0.00	0.00
30.00		159.48	1386.73	0.00	0.00
35.00		161.86	1364.74	0.00	0.00
40.00		163.52	1342.75	0.00	0.00
45.00		164.59	1320.76	0.00	0.00
45.92		29.97	239.75	0.00	0.00
50.00		136.71	1881.83	0.00	0.00
52.00	(1) attachments	67.69	911.98	2.86	0.00
53.00		33.32	453.28	0.00	0.00
55.00		66.79	449.31	0.00	0.00
60.00		167.80	1110.09	0.00	0.00
65.00		167.37	1091.27	0.00	0.00
70.00		166.67	1072.44	0.00	0.00
75.00		165.73	1053.62	0.00	0.00
80.00		164.57	1034.79	0.00	0.00
85.00		163.21	1015.96	0.00	0.00
90.00		161.67	997.14	0.00	0.00
92.83		90.64	556.69	0.00	0.00
95.00		69.82	696.92	0.00	0.00
98.92		125.58	1244.13	0.00	0.00
100.00		34.43	164.27	0.00	0.00
105.00		158.32	749.59	0.00	0.00
110.00		156.21	735.48	0.00	0.00
115.00		153.98	721.37	0.00	0.00
120.00		151.64	707.27	0.00	0.00
125.00		149.18	693.16	0.00	0.00
126.67		49.12	228.37	0.00	0.00
130.00		98.42	733.51	0.00	0.00
132.00		58.59	435.88	0.00	0.00
135.00		86.91	330.67	0.00	0.00
140.00		143.04	542.94	0.00	0.00
145.00		140.21	531.94	0.00	0.00
147.00	(47) attachments	1256.99	2816.50	272.42	0.00
150.00		81.91	271.23	0.00	0.00
155.00		134.32	443.25	0.00	0.00
159.00	(24) attachments	1301.50	2688.49	0.00	0.00
160.00		25.93	74.01	0.00	0.00
165.00		128.11	363.46	0.00	0.00
170.00		124.91	352.47	0.00	0.00
175.00		121.63	341.48	0.00	0.00
177.00	(23) attachments	1173.03	2603.91	0.00	0.00
180.00	(1) attachments	77.38	194.05	0.00	0.00

Total Applied Force Summary

Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	9/12/2016
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Struct Class: II	Page: 44



Totals:	8,983.46	43,211.00	275.27	0.00
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Linear Appurtenance Segment Forces (Factored)

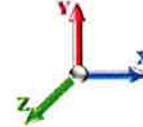
Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	9/12/2016
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.011	0.000	7.442	0.00	0.80
10.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.011	0.000	7.442	0.00	0.80
15.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.011	0.000	7.442	0.00	0.80
20.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.012	0.000	7.896	0.00	0.80
25.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.012	0.000	8.276	0.00	0.80
30.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.012	0.000	8.600	0.00	0.80
35.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.012	0.000	8.883	0.00	0.80
40.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.012	0.000	9.137	0.00	0.80
45.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.013	0.000	9.366	0.00	0.80
45.92	1/2" Coax	Yes	0.92	0.000	0.65	0.05	0.00	0.013	0.000	9.406	0.00	0.15
50.00	1/2" Coax	Yes	4.08	0.000	0.65	0.22	0.00	0.013	0.000	9.576	0.00	0.65
52.00	1/2" Coax	Yes	2.00	0.000	0.65	0.11	0.00	0.013	0.000	9.656	0.00	0.32
Totals:											0.0	8.3

Calculated Forces

Structure: CT01365-S-SBA
Site Name: Norwich 2 CT
Height: 180.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1

Topography: 1

Code: EIA/TIA-222-G
Exposure: C
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

9/12/2016

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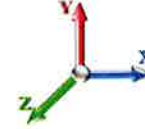


Load Case: 1.0D + 1.0W 60 mph Wind

Iterations 24

Dead Load Factor 1.00

Wind Load Factor 1.00



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-43.21	-9.00	-0.27	-1088.7	0.00	1088.70	5397.55	2698.78	12826.5	6367.63	0.00	0.000	0.000	0.179
5.00	-41.70	-8.88	-0.27	-1043.7	0.00	1043.70	5344.66	2672.33	12495.2	6203.15	0.02	-0.045	0.000	0.176
10.00	-40.22	-8.76	-0.27	-999.30	0.00	999.30	5290.67	2645.34	12165.4	6039.43	0.10	-0.090	0.000	0.173
15.00	-38.76	-8.65	-0.27	-955.48	0.00	955.48	5235.58	2617.79	11837.2	5876.53	0.21	-0.136	0.000	0.170
20.00	-37.33	-8.52	-0.27	-912.25	0.00	912.25	5179.37	2589.69	11510.9	5714.52	0.38	-0.182	0.000	0.167
25.00	-35.91	-8.39	-0.27	-869.64	0.00	869.64	5122.07	2561.03	11186.5	5553.45	0.60	-0.228	0.000	0.164
30.00	-34.52	-8.25	-0.27	-827.70	0.00	827.70	5063.65	2531.83	10864.1	5393.40	0.86	-0.274	0.000	0.160
35.00	-33.15	-8.11	-0.27	-786.45	0.00	786.45	5004.13	2502.07	10543.8	5234.42	1.17	-0.320	0.000	0.157
40.00	-31.80	-7.96	-0.27	-745.90	0.00	745.90	4943.51	2471.75	10225.9	5076.58	1.53	-0.366	0.000	0.153
45.00	-30.48	-7.80	-0.27	-706.09	0.00	706.09	4881.77	2440.89	9910.40	4919.94	1.94	-0.413	0.000	0.150
45.92	-30.23	-7.78	-0.27	-698.93	0.00	698.93	4870.34	2435.17	9852.83	4891.36	2.02	-0.421	0.000	0.149
50.00	-28.35	-7.65	-0.27	-667.15	0.00	667.15	4818.94	2409.47	9597.43	4764.57	2.40	-0.459	0.000	0.146
52.00	-27.44	-7.58	-0.27	-651.85	0.00	651.85	4793.49	2396.75	9472.99	4702.79	2.59	-0.478	0.000	0.144
53.00	-26.98	-7.55	-0.27	-644.27	0.00	644.27	3921.66	1960.83	7862.59	3903.32	2.70	-0.488	0.000	0.172
55.00	-26.53	-7.49	-0.27	-629.18	0.00	629.18	3903.31	1951.65	7765.73	3855.23	2.90	-0.507	0.000	0.170
60.00	-25.41	-7.34	-0.27	-591.71	0.00	591.71	3856.65	1928.33	7524.53	3735.49	3.46	-0.558	0.000	0.165
65.00	-24.32	-7.18	-0.27	-555.01	0.00	555.01	3808.89	1904.45	7284.80	3616.48	4.07	-0.609	0.000	0.160
70.00	-23.24	-7.02	-0.27	-519.10	0.00	519.10	3760.03	1880.02	7046.68	3498.27	4.74	-0.660	0.000	0.155
75.00	-22.18	-6.87	-0.27	-483.98	0.00	483.98	3710.06	1855.03	6810.28	3380.91	5.46	-0.710	0.000	0.149
80.00	-21.14	-6.71	-0.27	-449.66	0.00	449.66	3658.99	1829.49	6575.75	3264.48	6.23	-0.760	0.000	0.144
85.00	-20.12	-6.55	-0.27	-416.13	0.00	416.13	3606.81	1803.40	6343.20	3149.03	7.05	-0.809	0.000	0.138
90.00	-19.13	-6.38	-0.27	-383.40	0.00	383.40	3553.52	1776.76	6112.76	3034.63	7.92	-0.858	0.000	0.132
92.83	-18.57	-6.29	-0.27	-365.32	0.00	365.32	3522.83	1761.42	5983.17	2970.30	8.44	-0.885	0.000	0.128
95.00	-17.87	-6.22	-0.27	-351.69	0.00	351.69	3499.13	1749.56	5884.57	2921.35	8.85	-0.906	0.000	0.126
98.92	-16.62	-6.08	-0.27	-327.33	0.00	327.33	2350.25	1175.12	3954.81	1963.33	9.61	-0.943	0.000	0.174
100.00	-16.46	-6.05	-0.27	-320.74	0.00	320.74	2343.93	1171.97	3924.64	1948.36	9.82	-0.953	0.000	0.172
105.00	-15.70	-5.90	-0.27	-290.48	0.00	290.48	2314.11	1157.05	3785.67	1879.37	10.85	-1.011	0.000	0.161
110.00	-14.97	-5.74	-0.27	-260.99	0.00	260.99	2283.18	1141.59	3647.23	1810.64	11.94	-1.067	-0.001	0.151
115.00	-14.24	-5.59	-0.27	-232.28	0.00	232.28	2251.15	1125.57	3509.45	1742.24	13.09	-1.120	-0.001	0.140
120.00	-13.53	-5.43	-0.27	-204.34	0.00	204.34	2218.01	1109.01	3372.44	1674.22	14.29	-1.171	-0.001	0.128
125.00	-12.84	-5.28	-0.27	-177.17	0.00	177.17	2183.77	1091.88	3236.35	1606.66	15.54	-1.219	-0.001	0.116
126.67	-12.61	-5.23	-0.27	-168.36	0.00	168.36	2172.08	1086.04	3191.13	1584.21	15.97	-1.235	-0.001	0.112
130.00	-11.88	-5.12	-0.27	-150.95	0.00	150.95	2148.42	1074.21	3101.30	1539.62	16.84	-1.264	-0.001	0.104
132.00	-11.44	-5.05	-0.27	-140.69	0.00	140.69	1502.55	751.27	2180.88	1082.68	17.38	-1.281	-0.001	0.138
135.00	-11.11	-4.97	-0.27	-125.55	0.00	125.55	1491.20	745.60	2130.02	1057.43	18.19	-1.306	-0.001	0.126
140.00	-10.57	-4.82	-0.27	-100.71	0.00	100.71	1471.39	735.69	2045.11	1015.28	19.58	-1.350	-0.001	0.106
145.00	-10.04	-4.67	-0.27	-76.62	-0.01	76.62	1450.46	725.23	1960.22	973.13	21.01	-1.387	-0.001	0.086
147.00	-7.25	-3.35	0.00	-67.28	0.00	67.28	1441.79	720.89	1926.30	956.30	21.60	-1.401	-0.001	0.075
150.00	-6.98	-3.26	0.00	-57.23	0.00	57.23	1428.44	714.22	1875.49	931.07	22.48	-1.418	-0.001	0.066
155.00	-6.54	-3.12	0.00	-40.93	0.00	40.93	1405.30	702.65	1791.05	889.15	23.98	-1.443	-0.001	0.051
159.00	-3.89	-1.75	0.00	-28.45	0.00	28.45	1386.00	693.00	1723.78	855.76	25.20	-1.458	-0.001	0.036
160.00	-3.81	-1.72	0.00	-26.70	0.00	26.70	1381.06	690.53	1707.02	847.43	25.51	-1.462	-0.001	0.034
165.00	-3.45	-1.59	0.00	-18.09	0.00	18.09	1355.72	677.86	1623.53	805.99	27.04	-1.475	-0.001	0.025
170.00	-3.10	-1.45	0.00	-10.16	0.00	10.16	1329.27	664.63	1540.71	764.87	28.59	-1.484	-0.001	0.016
175.00	-2.76	-1.32	0.00	-2.89	0.00	2.89	1301.71	650.86	1458.68	724.15	30.15	-1.489	-0.001	0.006
177.00	-0.19	-0.08	0.00	-0.25	0.00	0.25	1290.38	645.19	1426.13	707.99	30.78	-1.490	-0.001	0.000
180.00	0.00	-0.08	0.00	0.00	0.00	0.00	1273.05	636.53	1377.59	683.89	31.71	-1.490	-0.001	0.000

Calculated Forces

Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	9/12/2016
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (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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Final Analysis Summary

Structure: CT01365-S-SBA	Code: EIA/TIA-222-G	9/12/2016
Site Name: Norwich 2 CT	Exposure: C	
Height: 180.00 (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 105 mph Wind	44.1	0.00	51.77	0.02	0.82	5361.41
0.9D + 1.6W 105 mph Wind	44.1	0.00	38.80	0.01	0.82	5304.61
1.2D + 1.0Di + 1.0Wi 50 mph Wind	10.2	0.00	77.87	0.00	0.23	1256.34
1.2D + 1.0E	1.7	0.00	51.85	0.00	0.00	212.27
0.9D + 1.0E	1.7	0.00	38.89	0.00	0.00	209.84
1.0D + 1.0W 60 mph Wind	9.0	0.00	43.21	0.00	0.27	1088.70

Max Stresses

Load Case	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Elev (ft)	Stress Ratio
1.2D + 1.6W 105 mph Wind	-51.77	-44.12	-0.82	-5361.4	-0.02	-5361.4	5397.55	2698.7	12826.5	6367.63	0.00	0.852
0.9D + 1.6W 105 mph Wind	-38.80	-44.09	-0.82	-5304.6	-0.01	-5304.6	5397.55	2698.7	12826.5	6367.63	0.00	0.841
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-77.87	-10.15	-0.23	-1256.3	0.00	-1256.3	5397.55	2698.7	12826.5	6367.63	0.00	0.212
1.2D + 1.0E	-20.06	-1.10	0.00	-77.79	0.00	-77.79	2350.25	1175.1	3954.81	1963.33	98.92	0.048
0.9D + 1.0E	-15.05	-1.08	0.00	-76.62	0.00	-76.62	2350.25	1175.1	3954.81	1963.33	98.92	0.045
1.0D + 1.0W 60 mph Wind	-43.21	-9.00	-0.27	-1088.7	0.00	-1088.7	5397.55	2698.7	12826.5	6367.63	0.00	0.179



Monopole Mat Foundation Design

Date
9/12/2016

Customer Name:	Verizon	EIA/TIA Standard:	EIA-222-G
Site Name:		Structure Height (Ft.):	180
Site Number:	CT01365-S-SBA	Engineer Name:	H. Lei
Engr. Number:	23727R1	Engineer Login ID:	TES

Foundation Info Obtained from:

Drawings/Calculations

Structure Type:

Monopole

Analysis or Design?

Analysis

Base Reactions (Factored):

Axial Load (Kips):	51.8	Shear Force (Kips):	44.1
Uplift Force (Kips):	0.0	Moment (Kips-ft):	5361.4

Foundation Geometries:

		Mods required -Yes/No ?:	No
Diameter of Pier (ft.):	8.0	Depth of Base BG (ft.):	11.0
Pier Height A. G. (ft.):	0.50	Thickness of Pad (ft):	2.50
Length of Pad (ft.):	22.5	Width of Pad (ft.):	22.5
Final Length of pad (ft)	22.5	Final width of pad (ft):	22.5
Control Value for Cell D18:	0	Control Value for Cell F18:	0

Material Properties and Reabr Info:

Concrete Strength (psi):	4000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield (ksi):	40	
Vertical Rebar Size #:	10	Tie / Stirrup Size #:	5	
Qty. of Vertical Rebars:	36	Tie Spacing (in):	12.0	
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	10	
Concrete Cover (in.):	3	Unit Weight of Concrete:	150.0	pcf
Rebar at the bottom of the concrete pad:				
Qty. of Rebar in Pad (L):	20	Qty. of Rebar in Pad (W):	20	
Rebar at the top of the concrete pad:				
Qty. of Rebar in Pad (L):	20	Qty. of Rebar in Pad (W):	20	

Soil Design Parameters:

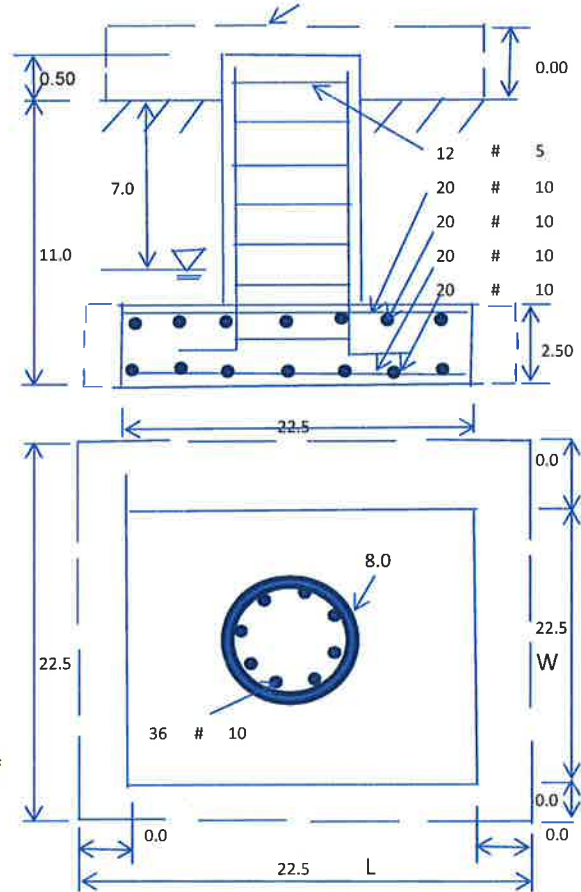
Soil Unit Weight (pcf):	125.0	Soil Buoyant Weight:	50.0	Pcf	
Water Table B.G.S. (ft):	7.0	Unit Weight of Water:	62.4	pcf	Angle from Top of Pad: 30
Ultimate Bearing Pressure (psf):	10000	Ultimate Skin Friction:	175	Psf	Angle from Bottm of Pad: 25
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	No		Angle from Bottm of Pad: 25
Consider soil hor. resist. for OTM.:	No	Reduction factor on the maximum soil bearing pressure:	1.00		

Foundation Analysis and Design:

Uplift Strength Reduction Factor:	0.75	Compression Strength Reduction Factor:	0.75
Total Dry Soil Volume (cu. Ft.):	3191.89	Total Dry Soil Weight (Kips):	398.99
Total Buoyant Soil Volume (cu. Ft.):	743.18	Total Buoyant Soil Weight (Kips):	37.16
Total Effective Soil Weight (Kips):	436.15	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	376.99	Total Dry Concrete Weight (Kips):	56.55
Total Buoyant Concrete Volume (cu. Ft.):	1341.02	Total Buoyant Concrete Weight (Kips):	117.47
Total Effective Concrete Weight (Kips):	174.02	Total Vertical Load on Base (Kips):	661.94

Check Soil Capacities:

Calculated Maxium Net Soil Pressure under the base (psf):	6689	<	Allowable Factored Soil Bearing (psf):	7500	0.89	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	6730.4	>	Design Factored Momont (kips-ft):	5869	0.87	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	1.15					OK!



Check the capacities of Reinforceing Concrete:

Strength reduction factor (Flexure and axial tension): 0.90 Strength reduction factor (Shear): 0.75
 Strength reduction factor (Axial compression): 0.65 Wind Load Factor on Concrete Design: 1.00

Load/
Capacity
Ratio

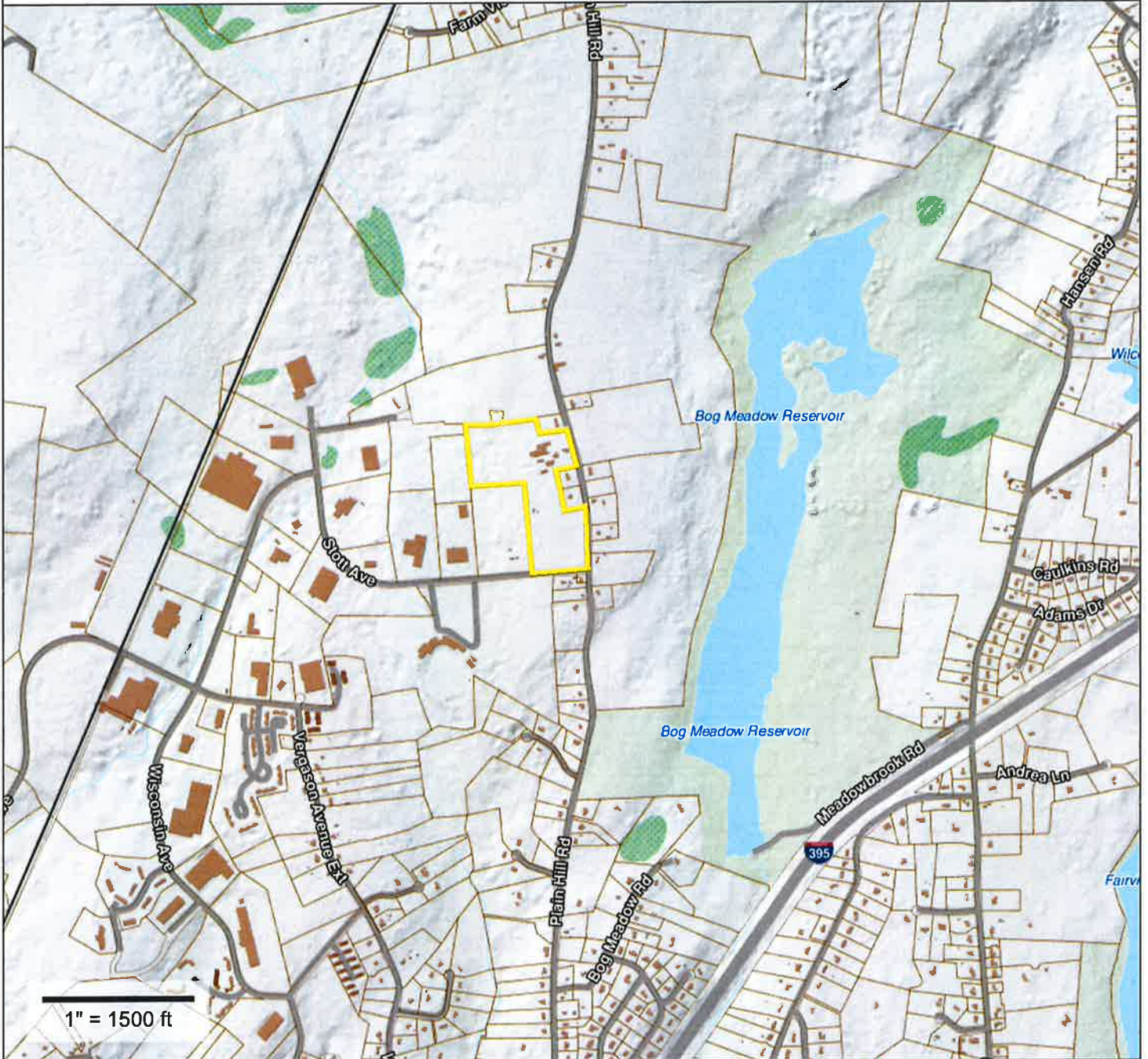
(1) Concrete Pier:

Vertical Steel Rebar Area (sq. in./each):	1.27	Tie / Stirrup Area (sq. in./each):	0.31		
Calculated Moment Capacity (Mn,Kips-Ft):	8888.9	> Design Factored Moment (Mu, Kips-Ft)	5758.3	0.65	OK!
Calculated Shear Capacity (Kips):	845.4	> Design Factored Shear (Kips):	44.1	0.05	OK!
Calculated Tension Capacity (Tn, Kips):	2468.9	> Design Factored Tension (Tu Kips):	0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	12716.4	> Design Factored Axial Load (Pu Kips):	51.8	0.00	OK!
Moment & Axial Strength Combination:	0.65	OK! Check Tie Spacing (Design/Required):		1	OK!
Pier Reinforcement Ratio:	0.006	Reinforcement Ratio is satisfied per ACI			

(2).Concrete Pad:

One-Way Design Shear Capacity (L-Direction, Kips):	675.6	> One-Way Factored Shear (L-D. Kips):	386.0	0.57	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	675.6	> One-Way Factored Shear (W-D., Kips):	386.0	0.57	OK!
One-Way Design Shear Capacity (Corner-Corner. Kips):	715.2	> One-Way Factored Shear (C-C, Kips):	401.5	0.56	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0036	OK! Lower Steel Pad Reinf. Ratio (W-Direct	0.0036		
Lower Steel Pad Moment Capacity (L-Direction. Kips-ft):	2919.8	> Moment at Bottom (L-Direct. K-Ft):	975.0	0.33	OK!
Lower Steel Pad Moment Capacity (W-Direction. Kips-ft):	2919.8	> Moment at Bottom (W-Direct. K-Ft):	975.0	0.33	OK!
Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):	4084.1	> Moment at Bottom (C-C Dir. K-Ft):	1378.9	0.34	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0036	OK! Upper Steel Reinf. Ratio (W-Direct.):	0.0036		
Upper Steel Pad Moment Capacity (L-Direction. Kips-ft):	2919.8	> Moment at the top (L-Dir Kips-Ft):	550.6	0.19	OK!
Upper Steel Pad Moment Capacity (W-Direction. Kips-ft):	2919.8	> Moment at the top (W-Dir Kips-Ft):	550.6	0.19	OK!
Upper Steel Pad Moment Capacity (Corner-Corner. K-ft):	4084.1	> Moment at the top (C-C Direc. K-Ft):	512.6	0.13	OK!

ATTACHMENT 4



Property Information

Property ID 104-028-001-013.000-0000
Location 292 PLAIN HILL RD
Owner STOTT KELVIN H + STOTT FRANCES S



**MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT**

The Town makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Parcels updated October 1, 2013



292 PLAIN HILL RD

Location 292 PLAIN HILL RD

Mblu 28/ 1/ 13/ /

Acct# 0108670001

Owner STOTT KELVIN H +

Assessment \$173,800

Appraisal \$359,500

PID 10711

Building Count 1

Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2013	\$183,600	\$175,900	\$359,500

Assessment			
Valuation Year	Improvements	Land	Total
2013	\$128,500	\$45,300	\$173,800

Parcel Addresses

Additional Addresses			
Line Number	Address	City, State Zip	Type
1	292 PLAIN HILL RD		Primary

Owner of Record

Owner STOTT KELVIN H +
STOTT FRANCES S

Sale Price \$0
Certificate

Address 292 PLAIN HILL RD
NORWICH, CT 06360

Book & Page 1691/0144
Sale Date 09/11/2002

Ownership History

Ownership History				
Owner	Sale Price	Certificate	Book & Page	Sale Date
STOTT KELVIN H + STOTT KELVIN H	\$0		1691/0144 0572/0155	09/11/2002 04/12/1982

Building Information

Building 1 : Section 1

Year Built: 1820
Living Area: 2786

Building Photo

Replacement Cost: \$180,506

Building Percent Good: 66

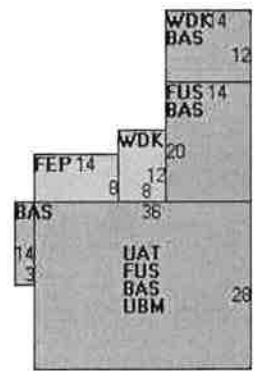
Replacement Cost Less Depreciation: \$119,100



(<http://images.vgsi.com/photos/NorwichCTPhotos//\00\01\84\4>)

Building Attributes	
Field	Description
Style	Colonial
Model	Residential
Grade:	C
Stories:	2 Stories
Occupancy	1
Exterior Wall 1	Wood Shingle
Exterior Wall 2	
Roof Structure:	Gable/Hip
Roof Cover	Asphalt Shingl
Interior Wall 1	Plastered
Interior Wall 2	
Interior Flr 1	Carpet
Interior Flr 2	Pine/Soft Wood
Heat Fuel	Oil
Heat Type:	Hot Water
AC Type:	None
Total Bedrooms:	6 Bedrooms
Total Bthrms:	2
Total Half Baths:	0
Total Xtra Fixtrs:	
Total Rooms:	10 Rooms
Bath Style:	Average
Kitchen Style:	Average
Fireplace (s)	2
Whirlpool	
park	

Building Layout



Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	1498	1498
FUS	Upper Story, Finished	1288	1288
FEP	Porch, Enclosed, Finished	112	0
UAT	Attic, Unfinished	1008	0
UBM	Basement, Unfinished	1008	0
WDK	Deck, Wood	264	0
		5178	2786

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Land Line Valuation

Use Code 1010
Description Single Family
Zone R40
Neighborhood 0050
Alt Land Appr Category No

Size (Acres) 16.45
Frontage 0
Depth 0
Assessed Value \$45,300
Appraised Value \$175,900

Outbuildings

Outbuildings						Legend
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
BRN1	Barn 1 St.			4752 S.F.	\$14,300	1
SHD1	Shed			280 S.F.	\$700	1
MLK	Milk House			196 S.F.	\$1,400	1
BRN5	Barn 2 St.			2040 S.F.	\$9,200	1
SHD1	Shed			180 S.F.	\$1,100	1
BRN1	Barn 1 St.			4980 S.F.	\$14,900	1
SHD1	Shed			1368 S.F.	\$3,300	1
BRN1	Barn 1 St.			2016 S.F.	\$6,000	1
FGR1	Garage			900 S.F.	\$7,200	1
SHD5	Shed Comm Mas			200 S.F.	\$5,400	1
SPL4	Pool AG rround			18 DIAMETER	\$1,000	1

Valuation History

Appraisal			
Valuation Year	Improvements	Land	Total
2015	\$183,600	\$175,900	\$359,500
2012	\$188,000	\$534,000	\$722,000
2011	\$188,000	\$534,000	\$722,000

Assessment			
Valuation Year	Improvements	Land	Total
2015	\$128,500	\$45,300	\$173,800
2012	\$133,000	\$90,100	\$223,100
2011	\$133,000	\$90,100	\$223,100