

April 9, 2020

*Via Electronic Mail*

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

Re: **Notice of Exempt Modification – Facility Modification  
225 Grist Mill Road, Simsbury, Connecticut**

Dear Attorney Bachman:

Cellco Partnership d/b/a Verizon Wireless (“Cellco”) currently maintains twelve (12) antennas at the 140-foot level on the existing 150-foot tower at 225 Grist Mill Road in Simsbury, Connecticut (the “Property”). The Property is owned by Ensign Bickford Realty Corporation. The tower is owned by SBA. The Siting Council approved the tower and Cellco’s shared use of the tower in 2001 in Docket No. 203. A copy of the Council’s Docket No. 203 Decision and Order is included in Attachment 1.

Cellco now intends to modify its facility by replacing three (3) of its existing antennas with three (3) new antenna/remote radio head integrated units and six (6) remote radio heads (“RRHs”) and six (6) new RRHs. The existing antenna mounts will be reinforced as part of these proposed facility modifications. A set of project plans showing the proposed facility modifications and the specifications for Cellco’s new antennas and RRHs are included in Attachment 2.

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 letter is being sent to Simsbury’s First Selectman, Eric Wellman; Michael Glidden, Simsbury’s Director of Planning and Community Development; SBA, the tower owner; and Ensign Bickford Realty Corporation, the Property owner.

Melanie A. Bachman, Esq.

April 9, 2020

Page 2

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

1. The proposed modifications will not result in an increase in the height of the existing tower. Cellco's replacement antennas will be installed at the 140-foot level on the 150-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 installation of new 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 the modified facility is included in Attachment 3.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The tower, its foundation and antenna mounts, with certain modifications, can support Cellco's proposed facility modifications. (See Structural Analysis Report included in Attachment 4 and Mount Structural Analysis Report included in Attachment 5).

A copy of the parcel map and Property owner information is included in Attachment 6. A Certificate of Mailing verifying that this filing was sent to municipal officials and the owner of the Property is included in Attachment 7.

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).

# Robinson+Cole

Melanie A. Bachman, Esq.

April 9, 2020

Page 3

Sincerely,

A handwritten signature in black ink, appearing to read "Kenneth C. Baldwin". The signature is fluid and cursive, with a long horizontal stroke at the end.

Kenneth C. Baldwin

Enclosures

Copy to:

Eric Wellman, Simsbury First Selectman

Michael Glidden, Simsbury Director of Planning and Zoning

SBA

Ensign Bickford Realty Corporation

Tim Parks

# **ATTACHMENT 1**

<b>DOCKET NO. 203</b> - New England Site Management application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of a cellular telecommunications facility located on Grist Mill Road, known as the Powder Forest, Simsbury, Connecticut.	
	Connecticut
	} Siting
	} Council } November 7, 2001

### Decision and Order

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

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

1. The tower shall be constructed as a monopole, no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of the Town of Simsbury, Cingular, Nextel, AT&T and other entities, both public and private, but such tower shall not exceed a height of 130 feet above ground level unless sufficient carriers commit to placement of antennas on the tower and no space on the tower exists below 130 feet, which, if approved by the Council through a petition pursuant to Sections 16-50j-38 through 16-50j-40 of the Regulations of Connecticut State Agencies, shall authorize the construction or extension of the tower to a maximum height of 150 feet above ground level (AGL).

2. The Certificate Holder shall prepare a D&M Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be submitted to and approved by the Council prior to the commencement of facility construction and shall include: a final site plan(s) for site development to include the location and specifications for the tower foundation, placement of carrier antennas, tower height, provisions for tower extension, equipment buildings, security fence, access road, and utility line; construction plans for site clearing, tree trimming, water drainage, and erosion and sedimentation controls consistent with the Connecticut Guidelines for Soil Erosion and Sediment Control, as amended; landscaping and provisions to protect the existing vegetative buffer that would extend around the facility compound; a tower finish that may include painting; and provisions for the prevention and containment of spills and/or other discharge into surface water and groundwater bodies.

3. The Certificate Holder shall, prior to the commencement of operation, provide the Council worst-case modeling of electromagnetic radio frequency power density of all proposed entities' antennas at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin No. 65, August 1997. The Certificate Holder shall provide a recalculated report of electromagnetic radio frequency power density if and when circumstances in operation cause a change in power density above the levels calculated and provided pursuant to this Decision and Order.

4. Upon the establishment of any new State or Federal radio frequency standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards.

5. The Certificate Holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.

6. If the facility does not initially provide, or permanently ceases to provide cellular services following completion of construction, this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made.

7. Any antenna that becomes obsolete and ceases to function shall be removed within 60 days after such antennas become obsolete and ceases to function.

8. Unless otherwise approved by the Council, this Decision and Order shall be void if all construction authorized herein is not completed within three years of the effective date of this Decision and Order or within three years after all appeals to this Decision and Order have been resolved.

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

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

The parties and intervenors to this proceeding are:

New England Site Management, LLC  
(NESM)

Wayne Kemp  
New England Site Management,  
LLP  
1050 Buckley Highway  
Union, CT 06076

Andrew Lord  
Murtha Cullina, LLP

	City Place 1, 185 Asylum Street Hartford, CT 06103-3469
	Douglas Roberts, AIA URS Corporation AES 795 Brook Street, Building 5 Rocky Hill, CT 06067
Town of Simsbury	Robert M. DeCrescenzo, Esq. Updike, Kelly & Spellacy, P.C. P.O. Box 231277 One State Street Hartford, CT 06123-1277
Crown Atlantic Company	Kenneth C. Baldwin Robinson & Cole 280 Trumbull Street Hartford, CT 06103-3597
SNET Mobility, LLC, d/b/a Cingular Wireless (Cingular)	Peter W. van Wilgen SNET Mobility, LLC 500 Enterprise Drive Rocky Hill, CT 06067-3900
AT&T Wireless Services, LLC	Christopher B. Fisher, Esq. Cuddy & Feder & Worby LLP 90 Maple Avenue White Plains, NY 10601-5196
Nextel Communications of the Mid-Atlantic, Inc. d/b/a Nextel Communications	Christopher B. Fisher, Esq. Cuddy & Feder & Worby LLP 90 Maple Avenue White Plains, NY 10601-5196

# **ATTACHMENT 2**



PLANS PREPARED FOR



PLANS PREPARED BY

**INFINIGY**

FROM ZERO TO INFINIGY

INFINIGY CONSULTING, INC.

1000 Westchester Avenue, Suite 100, Westchester, NY 10598

Phone: 914-960-0000 Fax: 914-960-0001

JOE NICHOLS, 1020-12007-C



**DRAWING NOTICE**

THESE DOCUMENTS ARE CONFIDENTIAL AND ARE THE SOLE PROPERTY OF VERIZON AND MAY NOT BE REPRODUCED OR REDISTRIBUTED WITHOUT THE EXPRESS WRITTEN CONSENT OF VERIZON.

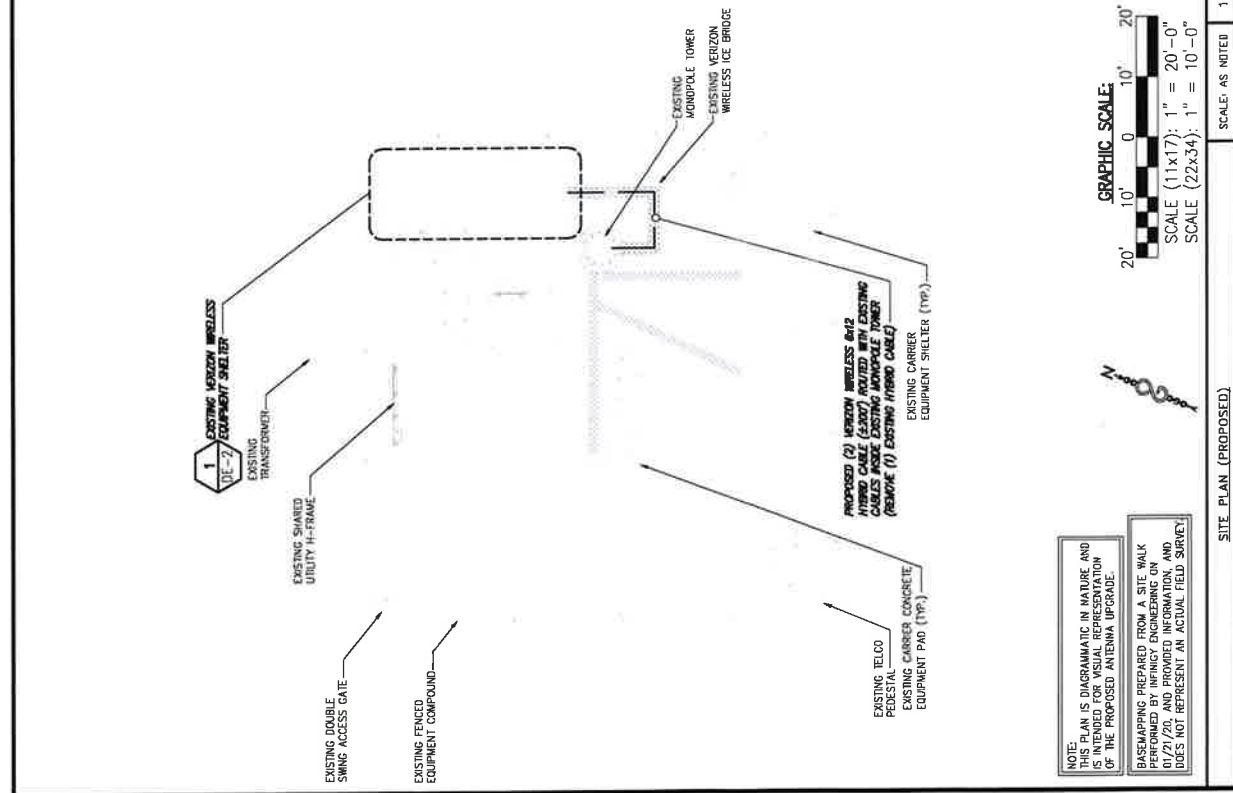
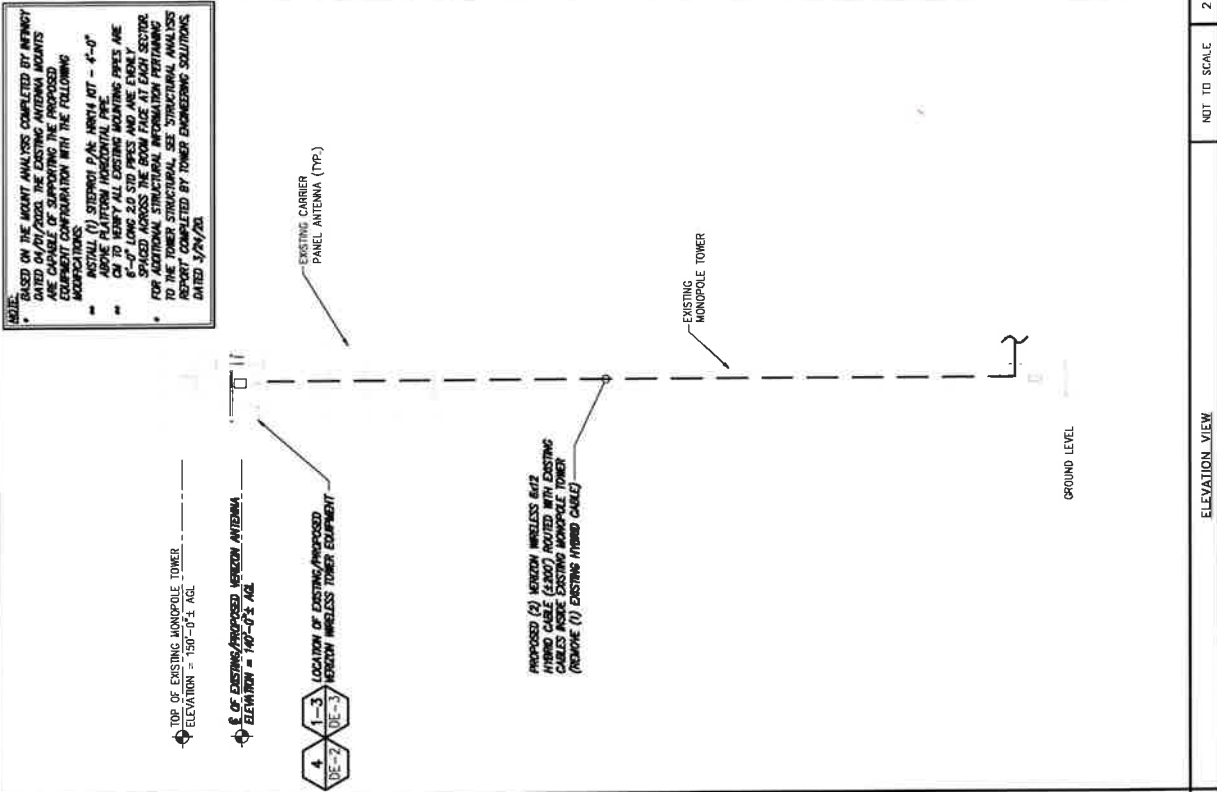
REVISION	DESCRIPTION	DATE	BY	CHK
1	REVISED FOR PERMIT	01/21/20	AK	1
2	REVISED FOR PERMIT	01/21/20	AK	2
3	REVISED FOR REVIEW	01/21/20	AK	3

**SIMS BURY CT**

**225 GRIST MILL**  
**SIMS BURY, CT 06070**

**COMPOUND PLAN & ELEVATION VIEW**

**DE-1**





PLANS PREPARED FOR:



PLANS PREPARED BY:  
**INFINIGY**  
FROM ZERO TO INFINIGY  
INFINIGY ENGINEERING, PLLC  
1000 Waterfront Center, Suite 1000, Albany, NY 12243  
Phone: 518-462-1000 Fax: 518-462-1001  
www.infinigy.com  
JOB NUMBER: 1100-2000-0-E

PRO NEERING LOCATOR



DRAWING NOTICE  
THESE DOCUMENTS ARE CONFIDENTIAL AND  
ARE THE SOLE PROPERTY OF VERIZON AND MAY  
NOT BE REPRODUCED, COPIED, OR  
REDISTRIBUTED WITHOUT THE EXPRESS  
WRITTEN CONSENT OF VERIZON.

REVISION	DESCRIPTION	DATE	BY	REV
1	REVISED FOR PERMIT	04/27/20	AWP	1
2	REVISED FOR PERMIT	04/27/20	AWP	2
3	REVISED FOR PERMIT	04/27/20	AWP	3
4	REVISED FOR PERMIT	04/27/20	AWP	4

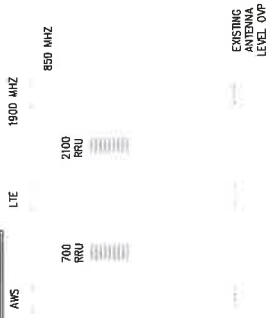
SIMS BURY CT

225 GRIST MILL  
SIMSBURY, CT 06070

ANTENNA  
CONFIGURATION

DE-3

NOTE:  
THIS PLAN IS DIAGRAMMATIC IN NATURE AND  
IS INTENDED FOR VISUAL REPRESENTATION  
OF THE PROPOSED ANTENNA UPGRADE.



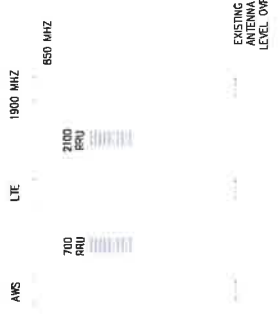
EXISTING (BEHIND ANTENNAS)

PROPOSED (BEHIND ANTENNAS)

ANTENNA MOUNTING CONFIGURATION (ALPHA)

NO SCALE

1



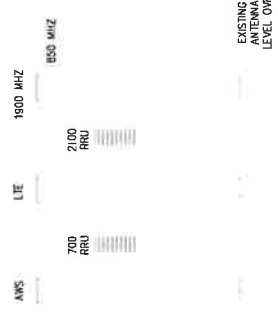
EXISTING (BEHIND ANTENNAS)

PROPOSED (BEHIND ANTENNAS)

ANTENNA MOUNTING CONFIGURATION (BETA)

NO SCALE

2



EXISTING (BEHIND ANTENNAS)

PROPOSED (BEHIND ANTENNAS)

ANTENNA MOUNTING CONFIGURATION (GAMMA)

NO SCALE

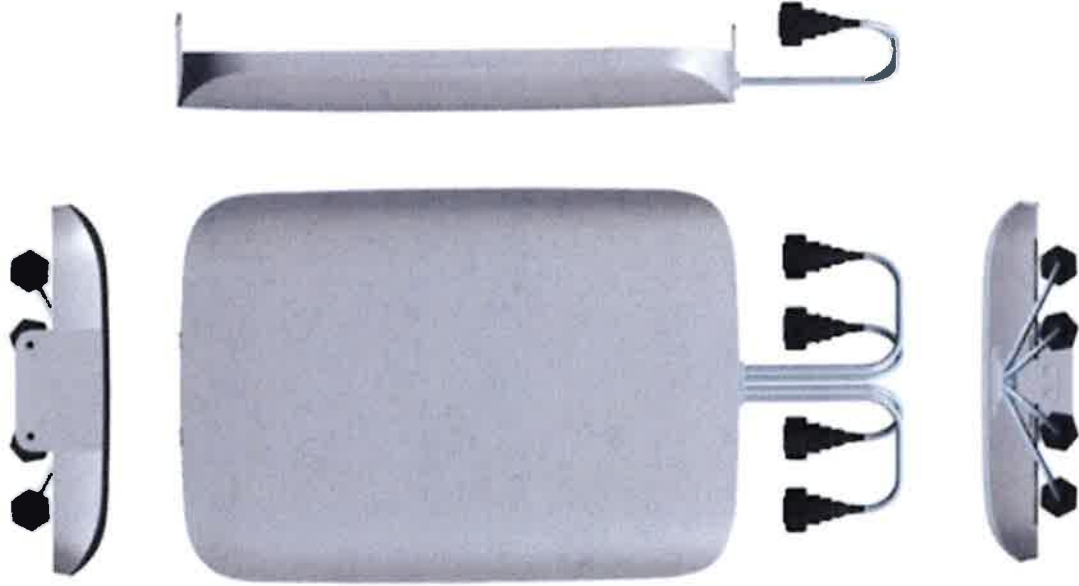
3

POSITION	EXISTING ANTENNA	ANTENNA	PROPOSED	RRU	OMP
1	AWS	(E) TO REMAIN	RRH-BRO4C	RRH-BRO4C	(E) TO REMAIN (SHARED)
2	1900 MHZ	(E) TO REMAIN	RRH-BRO4G	RRH-BRO4G	(E) TO REMAIN (SHARED)
3	LTE	XDDMM-12.5-65-RT20S	RT4401-48B	RT4401-48B	(E) TO REMAIN (SHARED)
4	850 MHZ	(E) TO REMAIN	-	-	(E) TO REMAIN (SHARED)

POSITION	EXISTING ANTENNA	ANTENNA	PROPOSED	RRU	OMP
1	AWS	(E) TO REMAIN	RRH-BRO4C	RRH-BRO4C	(E) TO REMAIN (SHARED)
2	1900 MHZ	(E) TO REMAIN	RRH-BRO4G	RRH-BRO4G	(E) TO REMAIN (SHARED)
3	LTE	XDDMM-12.5-65-RT20S	RT4401-48B	RT4401-48B	(E) TO REMAIN (SHARED)
4	850 MHZ	(E) TO REMAIN	-	-	(E) TO REMAIN (SHARED)

# [CBRS] Clip-on Antenna Specifications

VzW accepted IP45 in FLD,  
but IP55 is Samsung Spec.



Antenna includes integrated cable with connector

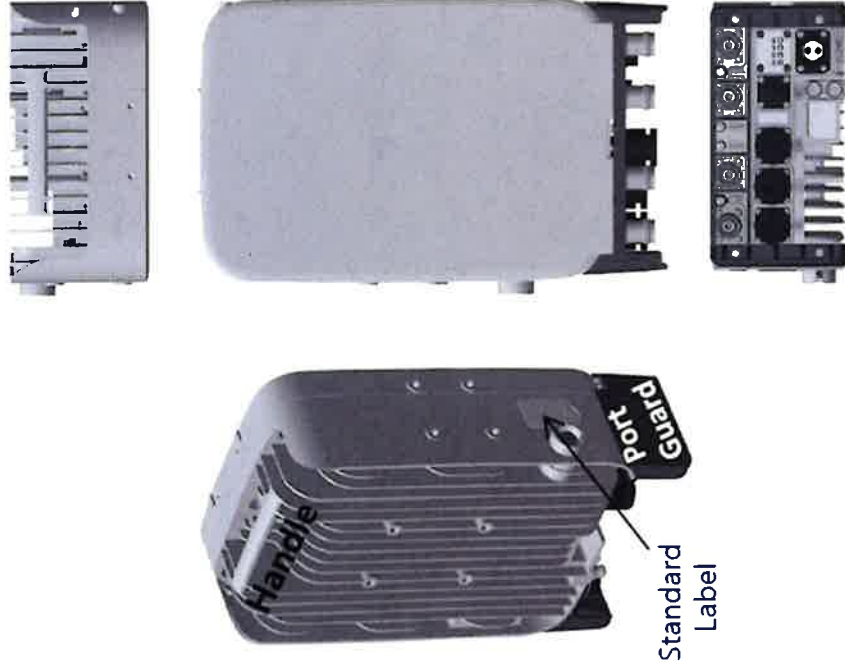
\* Design is subject to minor change

Items	Clip-on Antenna, <b>BASTA**</b>
Antenna Gain	12.5 ± 0.5 dBi (Max 13 dBi)
Horizontal BW (-3dB)	65° ± 5°
Vertical BW (-3dB)	17° ± 3°
Electrical Tilt	8° (fixed) ± 2°
Front-to-Back Ratio	> 25 dB
Port-to-Port Tracking	< 3 dB
VSWR	< 1.5
Isolation	> 25 dB
Ingress Protection	<b>IP55</b>
Size	220(W) × 313(H) × 34.3(D) mm (*) (8.7 × 12.3 × 1.4 inch.)
Weight	< 2.0 kg [Typ. 1.3 kg]
It is required that the radio should be weatherproofed properly with JMA WPS Boot with external antenna or with Weatherproof Boot for clip-on antennas.	

\*\* Ant. spec. follows NGMN recommendations on Base Station Antenna Standards (BASTA). For example, 'mean ± tolerance of 86.6%' is applied to double-sided specification of statistical RF parameters.



# [CBRS RRH] Spec.



Current Size: 216 x 307 x 105.5 mm (6.99L)  
 (8.5 x 12.1 x 4.1 inch., excluding Port Guard)  
 Design is subject to minor change

Item	Specification
Band	Band 48 (3.5 GHz)
Frequency	3550~3700 MHz
IBW	150 MHz
OBW	80 MHz
# of Carriers	5/10/15/20 MHz x 4 carriers
RF Chain	4TX / 4RX
RF Output Power & EIRP	4 path x 5 W (Total: 20 W = 43 dBm) (EIRP: 47 dBm / 10 MHz)
RX Sensitivity	Typical : -101.5 dBm @ 1 Rx (3GPP 36.104, Wide Area)
Modulation	256-QAM support (1024-QAM with 1~2dB power back-off) -48 VDC (-38 to -57 VDC, 1 SKU), with clip-on AC-DC converter (Option)
Input Power	
Power Consumption	About 160 Watt @ 100% RF load, typical conditions
Volume	Under 7L (w/o Antenna), Under 9.6L (with antenna)
Weight	Under 8.0 kg (18.64 lb) (w/o Antenna), Under 10.5 Kg (with ant.)
Operating Temperature	-40°C (-40°F) ~ 55°C (131°F) (W/o solar load)
Cooling	Natural convection
Unwanted Emission	3GPP 36.104 Category A [B48] : FCC 47 CFR 96.41 e)
Optic Interface	20km, 2 ports (9.8Gbps x 2), SFP, single mode, duplex or Bi-Di
CPRI Cascade	Not supported
# of Antenna Port	4
External Alarm (UDA)	4
RET	AISG 2.2
TMA & built-in Bias-T I//F and PIM cancellation	Not supported
Mounting Options	Pole, wall, tower, back to back, side by side (for external ant), 3 RRH with Clip-on Antenna on the pole
Antenna Type	Integrated (Clip-on) antenna (Option), External antenna (Option)
NB-IoT	Not Supported (HW Resource reserved for 1 Guard Band NB-IoT per LTE carrier)
Spectrum Analyzer	TX/RX Support
External Alarm (UDA)	4
5G NR	Support with S/W upgrade
XRAN	Support with S/W upgrade

# SAMSUNG

## Dual-Band Radio Unit AWS/PCS (B66/B2) RFV01U-D1A

Samsung's RFV01U-D1A is a compact remote Radio Unit (RU) designed for deployments that require flexibility in installation and rapid onlining, without compromising on coverage, capacity or operational expenses.



The RFV01U-D1A RU targets dual-band support across Band 66 (AWS) and Band 2 (PCS), making it an ideal product for broad coverage footprints across multiple common mid-range frequencies.

The RU handles all Radio Frequency (RF) processing in a single, compact unit, and is designed to interface via CPRI with Samsung's CDU baseband offerings, in both distributed- and central-RAN configurations.

In addition to its minimal footprint and ease of installation, the RU is also designed to reduce cost of ownership through its integrated spectrum analyzer, which allows for remote RF monitoring, greatly reducing the need for on-site maintenance visits.

### Features and Benefits

- Dual-band support for broad frequency coverage
- Minimal footprint reduces site costs
- Rapid, easy installation
- Flexibly deployable in any location
- Remote RF monitoring capability
- Convection cooled, silent operation
- Built-in Broadcast Auxiliary Services (BAS) filter ensures compliant AWS operation without impacting footprint

### Key Technical Specifications

Duplex Type: FDD

Operating Frequencies:

B66: DL(2,110-2,180MHz)/UL(1,710-1,780MHz)

B2: DL(1,930-1,990MHz)/UL(1,850-1,910MHz)

Instantaneous Bandwidth:

70MHz(B66) + 60MHz(B2)

RF Chain: 4T4R/2T4R/2T2R

Output Power: Total 320W

DU-RU Interface: CPRI (10Gbps)

Dimensions: 380 x 380 x 255mm (36.8L)

Weight: 38.3kg

Input Power: -48V DC

Operating Temp.: -40 - 55°(w/o solar load)

Cooling: Natural convection

# SAMSUNG

## Dual-Band Radio Unit 700/850MHz (B13/B5) RFV01U-D2A

Samsung's RFV01U-D2A is a compact remote Radio Unit (RU) designed for deployments that require flexibility in installation and rapid onlining, without compromising on coverage, capacity or operational expenses.



The RFV01U-D2A RU targets dual-band support across Band 13 (700MHz) and Band 5 (850MHz), making it an ideal product for broad coverage footprints across multiple common low-end, long-range frequencies.

The RU handles all Radio Frequency (RF) processing in a single, compact unit, and is designed to interface via CPRI with Samsung's CDU baseband offerings, in both distributed- and central-RAN configurations.

In addition to its minimal footprint and ease of installation, the RU is also designed to reduce cost of ownership through its integrated spectrum analyzer, which allows for remote RF monitoring, greatly reducing the need for on-site maintenance visits.

### Features and Benefits

- Dual-band support for broad frequency coverage
- Minimal footprint reduces site costs
- Rapid, easy installation
- Flexibly deployable in any location
- Remote RF monitoring capability
- Convection cooled, silent operation

### Key Technical Specifications

Duplex Type: FDD  
Operating Frequencies:  
    B13: DL(746-756MHz)/UL(777-787MHz)  
    B5: DL(869-894MHz)/UL(824-849MHz)  
Instantaneous Bandwidth: 10MHz(B13) + 25MHz(B5)  
RF Chain: 4T4R/2T4R/2T2R  
Output Power: Total 320W  
DU-RU Interface: CPRI (10Gbps)  
Dimensions: 380 x 380 x 207mm (29.9L)  
Weight: 31.9kg  
Input Power: -48V DC  
Operating Temp.: -40 - 55°(w/o solar load)  
Cooling: Natural convection

# **ATTACHMENT 3**





# **ATTACHMENT 4**



**Tower Engineering Solutions**

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

---

## **Structural Analysis Report**

**Existing 150 ft Rohn Monopole**

**Customer Name: SBA Communications Corp**

**Customer Site Number: CT10022-A**

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

**Carrier Name: Verizon (App#: 126574, V4)**

**Carrier Site ID / Name: 467522 / Simsbury CT**

**Site Location: 225 Grist Mill Road**

**Simsbury, Connecticut**

**Hartford County**

**Latitude: 41.866708**

**Longitude: -72.815772**

### **Analysis Result:**

**Max Structural Usage: 87.1% [Pass]**

**Max Foundation Usage: 65.0% [Pass]**

**Additional Usage Caused by New Mount/Mount Modification: +2.2%**

**Report Prepared By : Dipika Dhungana**





**Tower Engineering Solutions**

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

---

## **Structural Analysis Report**

**Existing 150 ft Rohn Monopole**

**Customer Name: SBA Communications Corp**

**Customer Site Number: CT10022-A**

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

**Carrier Name: Verizon (App#: 126574, V4)**

**Carrier Site ID / Name: 467522 / Simsbury CT**

**Site Location: 225 Grist Mill Road**

**Simsbury, Connecticut**

**Hartford County**

**Latitude: 41.866708**

**Longitude: -72.815772**

### **Analysis Result:**

**Max Structural Usage: 87.1% [Pass]**

**Max Foundation Usage: 65.0% [Pass]**

**Additional Usage Caused by New Mount/Mount Modification: +2.2%**

**Report Prepared By : Dipika Dhungana**

## **Introduction**

The purpose of this report is to summarize the analysis results on the 150 ft Rohn Monopole to support the proposed antennas and transmission lines in addition to those currently installed. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

## **Sources of Information**

<b>Tower Drawings</b>	Rohn Industries, Inc., File No. 50754AE, Drawing No. A020293, dated February 13, 2002
<b>Foundation Drawing</b>	Rohn Industries, Inc., File No. 50754AE, Drawing No. A020294 1-3, dated February 13, 2002
<b>Geotechnical Report</b>	FDH Engineering, Inc., Project No. 15BGSH1600, dated March 19, 2015
<b>Modification Drawings</b>	N/A

## **Analysis Criteria**

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

<b>Wind Speed Used in the Analysis:</b>	Ultimate Design Wind Speed $V_{ult} = 120.0$ mph (3-Sec. Gust)/ Nominal Design Wind Speed $V_{asd} = 93.0$ mph (3-Sec. Gust)
<b>Wind Speed with Ice:</b>	50 mph (3-Sec. Gust) with 1" radial ice concurrent
<b>Operational Wind Speed:</b>	60 mph + 0" Radial ice
<b>Standard/Codes:</b>	TIA-222-G-2 / 2015 IBC / 2018 Connecticut State Building Code
<b>Exposure Category:</b>	C
<b>Structure Class:</b>	II
<b>Topographic Category:</b>	1
<b>Crest Height:</b>	0 ft
<b>Seismic Parameters:</b>	$S_s = 0.179$ , $S_1 = 0.064$

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

## Existing Antennas, Mounts and Transmission Lines

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

Items	Elevation (ft.)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	150.7	3	Kathrein 800 10121 - Panel	Low Profile Platform	(6) 1 5/8" (1) 3" Conduit* (2) 1/2" DC * (4) 3/8" Fiber*	AT&T
2	150.0	1	Cci HPA-65R-BUU-H6 - Panel			
3		2	Cci TPA-65R-LCUUUU-H8 - Panel			
4		1	Quintel QS66512-2 - Panel			
5		2	Cci HPA-65R-BUU-H8 - Panel			
6		6	Cci DTMA BP7819VG12A TMA			
7		6	CCI TPX-070821			
8		3	Ericsson RRUS 11			
9		3	Ericsson RRUS 32 B2			
10		3	Ericsson RRUS32			
11		3	Ericsson 4426 B66			
12		3	CSS DBC-750			
13		2	Raycap DC6-48-60-18-8F			
14		3	Commscope ABT-DRDM-ADBH			
15		1	LMU Antenna - Panel			
-	141.0	3	Alcatel Lucent RRH2X60-700 - RRU	Low Profile Platform	(12) 1 5/8" (2) 1 5/8" Hybrid	Verizon
-		3	Alcatel Lucent RRH2X60-AWS - RRU			
-		3	Alcatel Lucent RRH2X60-PCS - RRU			
-		3	Antel BXA-70063-6CF-EDIN-0 - Panel			
-		3	Antel BXA-70080-4CF-EDIN-0 - Panel			
-		6	Commscope SBNHH-1D65B - Panel			
-		2	RFS DB-T1-6Z-8AB-0Z - Distribution Box			
24	131.0	3	Commscope LNX-6515DS - Panel	(3) T-Arms (Site Pro P/N UDS-NPL)	(18) 7/8"	T-Mobile
25		3	Ericsson KRY 144/1			
26		3	Kathrein 782 11056			
27		3	RFS APX16DWV-16DWVS-C - Panel			
28		3	RFS ATM1412D-1A20			
29	123.0	2	RFS - APXVSPP18-C-A20 - Panel	Platform w/ Handrail Kit [SitePro1 HRK14]	(4) 1-1/4" Fiber	Sprint Nextel
30		1	RFS - APXVSPP18-C-A20 (50 lb) - Panel			
31		3	RFS - APXVTM14-C-I20 - Panel			
32		4	RFS - ACU-A20-N - RET			
33		3	ALU - TD-RRH8x20-25 - RRU			
34		3	ALU - 1900 MHz RRH - RRU			
35		3	ALU - 800 MHz RRH - RRU			
36		3	ALU - 800 MHz Filter			

### **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
16	140.0	6	Commscope SBNHH-1D65B w/126 Mount Pipe	Modified Low Profile Platform w/ (1) handrail (HRK-14) and (3) Commscope BSAMNT-SBS-2-2	(6) 1 5/8" (2) 1 5/8" Hybrid (1) 1/2"	Verizon
17		3	Antel BXA-70080/4CF			
18		3	Samsung XXDWM-12.5-65-8T-CBRS integrated with RRH- Panel			
19		3	Samsung B2/B66A RRHBR049			
20		3	Samsung B5/B13 RRHBR04C			
21		3	Samsung CBRS RRH-RT4401-48A			
22		1	Raycap RVZDC-6627-PF-48			
23		1	GPS Receiver			

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:	<b>87.1%</b>	<b>75.8%</b>	<b>81.4%</b>
Pass/Fail	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

## **Foundations**

	Moment (Kip-Ft)	Shear (Kips)
Analysis Reactions	3678.6	32.7

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 1.2238 degrees under the operational wind speed as specified in the Analysis Criteria.

## **Conclusions**

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



## **Standard Conditions**

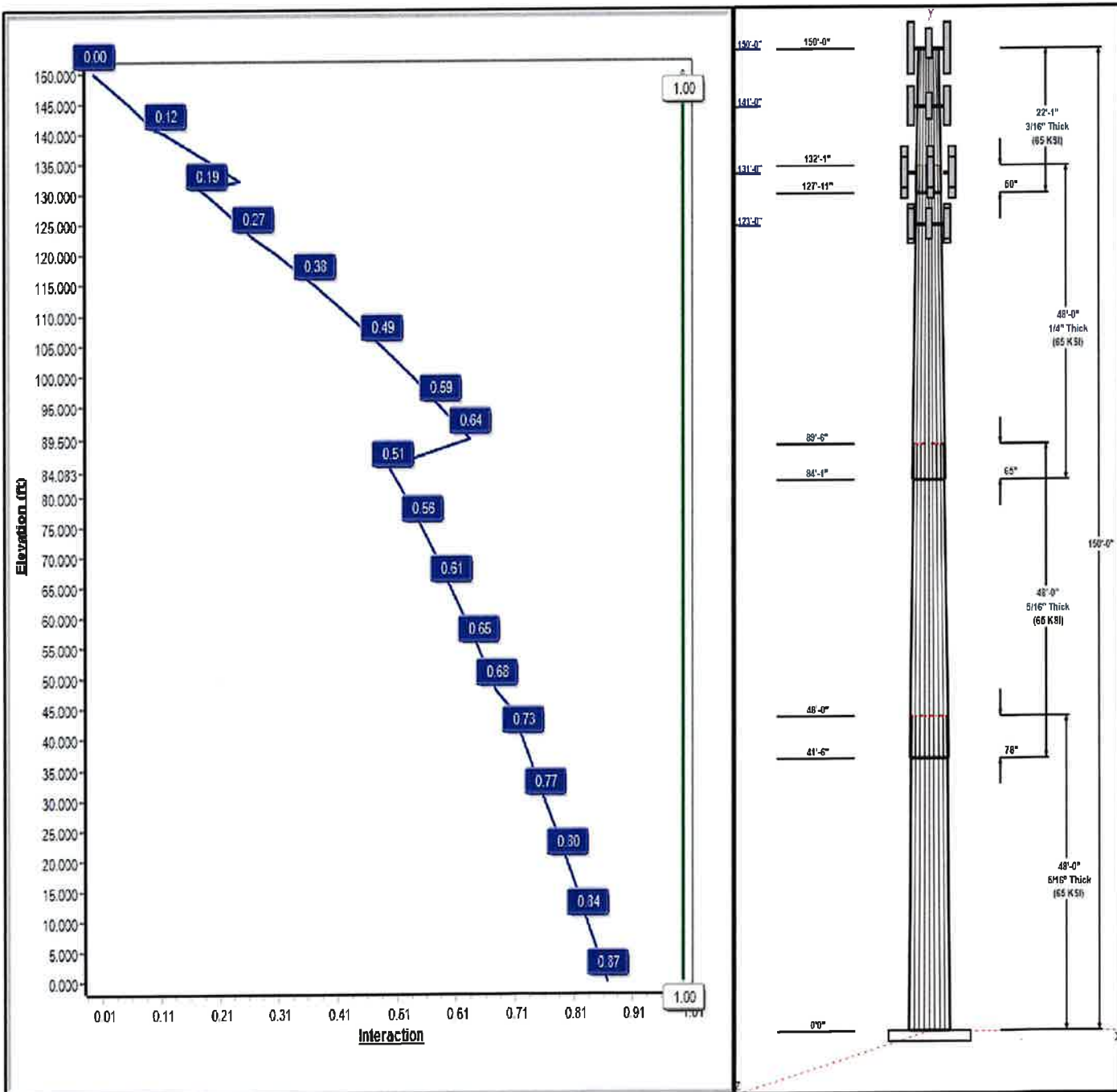
1. This analysis was performed based on the information supplied to **(TES) Tower Engineering Solutions, LLC**. Verification of the information provided was not included in the Scope of Work for **TES**. The accuracy of the analysis is dependent on the accuracy of the information provided.
2. The structural analysis was performance based upon the evidence available at the time of this report. All information provided by the client is considered to be accurate.
3. The analyses will be performed based on the codes as specified by the client or based on the best knowledge of the engineering staff of **TES**. In the absence of information to the contrary, all work will be performed in accordance with the latest relevant revision of ANSI/TIA-222. If wind speed and/or ice loads are different from the minimum values recommended by the EIA/TIA-222 standard or other codes, **TES** should be notified in writing and the applicable minimum values provided by the client.
4. The configuration of the existing mounts, antennas, coax and other appurtenances were supplied by the customer for the current structural analysis. **TES** has not visited the tower site to verify the adequacy of the information provided. If there is any discrepancy found in the report regarding the existing conditions, **TES** should be notified immediately to evaluate the effect of the discrepancy on the analysis results.
5. The client will assume responsibility for rework associated with the differences in initially provided information, including tower and foundation information, existing and/or proposed equipment and transmission lines.
6. If a feasibility analysis was performed, final acceptance of changed conditions shall be based upon a rigorous structural analysis.

Usage Diagram - Max Ratio 87.11% at 0.0ft



A 3D Cartesian coordinate system with three axes: a red vertical axis labeled 'y', a blue horizontal axis pointing to the right, and a green diagonal axis pointing towards the bottom-left. The axes are labeled 'y', 'x', and 'z' respectively.

Copyright © 2020 by Tower Engineering Solutions, LLC. All rights reserved.



# Structure: CT10022-A-SBA

Type: Tapered  
 Site Name: Simsbury 2, CT  
 Height: 150.00 (ft)  
 Base Elev: 0.00 (ft)

Base Shape: 18 Sided  
 Taper: 0.23136

3/24/2020

Page: 2



## Shaft Properties

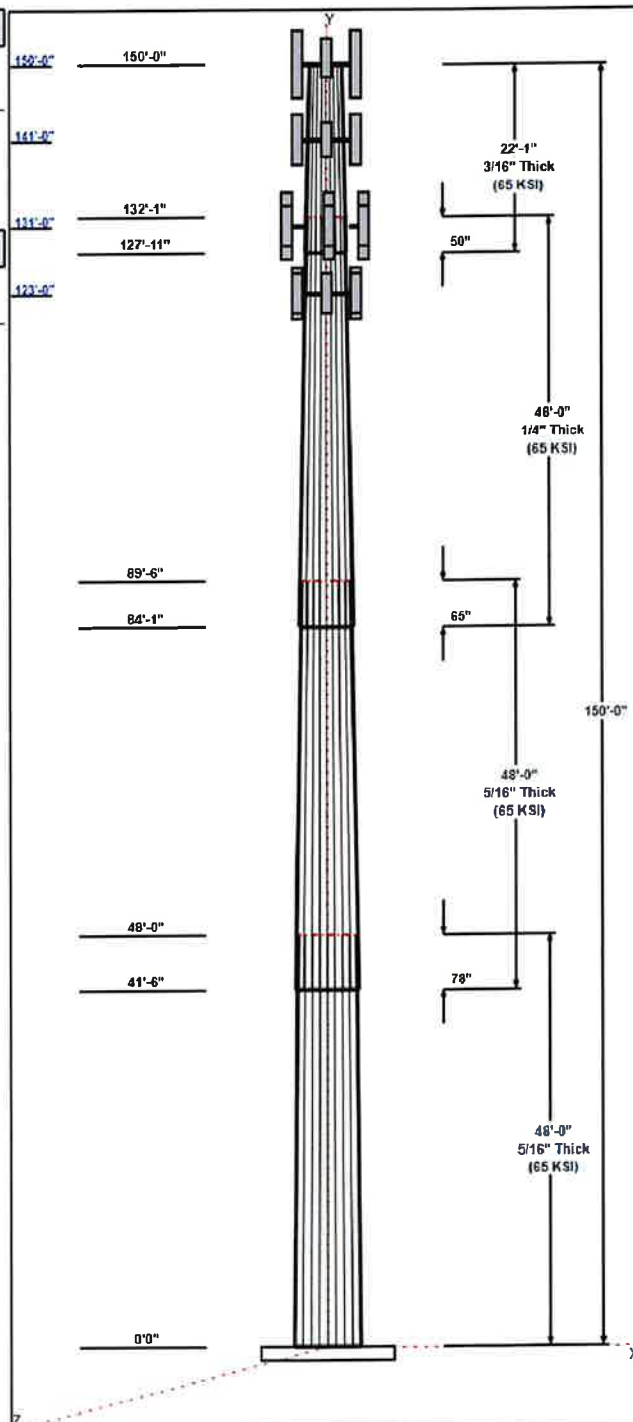
Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	48.00	50.39	61.50	0.313		0.23136	65
2	48.00	41.42	52.52	0.313	Slip	0.23136	65
3	48.00	32.07	43.17	0.250	Slip	0.23136	65
4	22.08	28.30	33.41	0.188	Slip	0.23136	65

## Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
150.00	150.73	3	800 10121	AT&T
150.00	150.00	1	HPA-65R-BUU-H6	AT&T
150.00	150.00	2	TPA-65R-LCUUUU-H8	AT&T
150.00	150.00	1	QS66512-2	AT&T
150.00	150.00	2	HPA-65R-BUU-H8	AT&T
150.00	150.00	1	Low Profile	AT&T
150.00	150.00	6	DTMABP7819VG12A	AT&T
150.00	150.00	6	TPX-070821	AT&T
150.00	150.00	3	RRUS-11	AT&T
150.00	150.00	3	RRUS-32	AT&T
150.00	150.00	3	RRUS-32	AT&T
150.00	150.00	3	4426 B66	AT&T
150.00	150.00	3	DBC-750	AT&T
150.00	150.00	2	DC6-48-60-18-8F	AT&T
150.00	150.00	3	ABT-DFDM-ADB	AT&T
150.00	150.00	1	LMU Antenna	AT&T
141.00	141.00	3	CBRS RRH-RT4401	Verizon
141.00	141.00	1	HRK12 (Handrail Kit)	Verizon
141.00	141.00	3	Antel	Verizon
141.00	141.00	6	Commscope	Verizon
141.00	141.00	1	Low Profile Platform	Verizon
141.00	141.00	3	XXDWMM-12.5-65-8T-CB	Verizon
141.00	141.00	3	BSAMNT-SBS-2-2	Verizon
141.00	141.00	3	B2/B66A RRHBR049	Verizon
141.00	141.00	3	B5/B13 RRHBR04C	Verizon
141.00	141.00	1	RVZDC-6627-PF48	Verizon
131.00	131.00	3	RFS	T-Mobile
131.00	131.00	3	Commscope LNX-6515DS	T-Mobile
131.00	131.00	3	RFS ATM1412D-1A20	T-Mobile
131.00	131.00	3	Ericsson KRY 144/1	T-Mobile
131.00	131.00	3	Kathrein 782 11056	T-Mobile
131.00	131.00	3	T-Arms (Site Pro P/N)	T-Mobile
123.00	123.00	3	APXVTM14-C-I20	Sprint Nextel
123.00	123.00	2	APXVSP18-C-A20	Sprint Nextel
123.00	123.00	3	ALU - TD-RRH8x20-25 -	Sprint Nextel
123.00	123.00	3	ALU - 1900 MHz RRH -	Sprint Nextel
123.00	123.00	1	APXVSP18-C-A20 (50 lb)	Sprint Nextel
123.00	123.00	3	ALU - 800 MHz Filter	Sprint Nextel
123.00	123.00	3	ALU - 800 MHz RRH -	Sprint Nextel
123.00	123.00	4	RFS - ACU-A20-N - RET	Sprint Nextel
123.00	123.00	1	Platform w/ HRK Handrail	Sprint Nextel

## Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	150.00	Inside	1 5/8" Coax	AT&T



## Structure: CT10022-A-SBA

**Type:** Tapered  
**Site Name:** Simsbury 2, CT  
**Height:** 150.00 (ft)  
**Base Elev:** 0.00 (ft)

**Base Shape:** 18 Sided  
**Taper:** 0.23136

3/24/2020

Page: 3



0.00	150.00	Inside	1/2" DC Power	AT&T
0.00	150.00	Inside	3" Conduit	AT&T
0.00	150.00	Inside	3/8" Fiber	AT&T
0.00	141.00	Inside	1 5/8" Coax	Verizon
0.00	141.00	Inside	1 5/8" Hybrid	Verizon
0.00	141.00	Inside	1/2" Coax	Verizon
0.00	131.00	Inside	7/8" Coax	T-Mobile
0.00	123.00	Inside	1-1/4" Fiber	Sprint Nextel

### Anchor Bolts

Qty	Specifications	Grade (ksi)	Arrangement
14	2.25" 18J	75.0	Radial

### Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
2.0000	73.5	50.0	Round

### Reactions

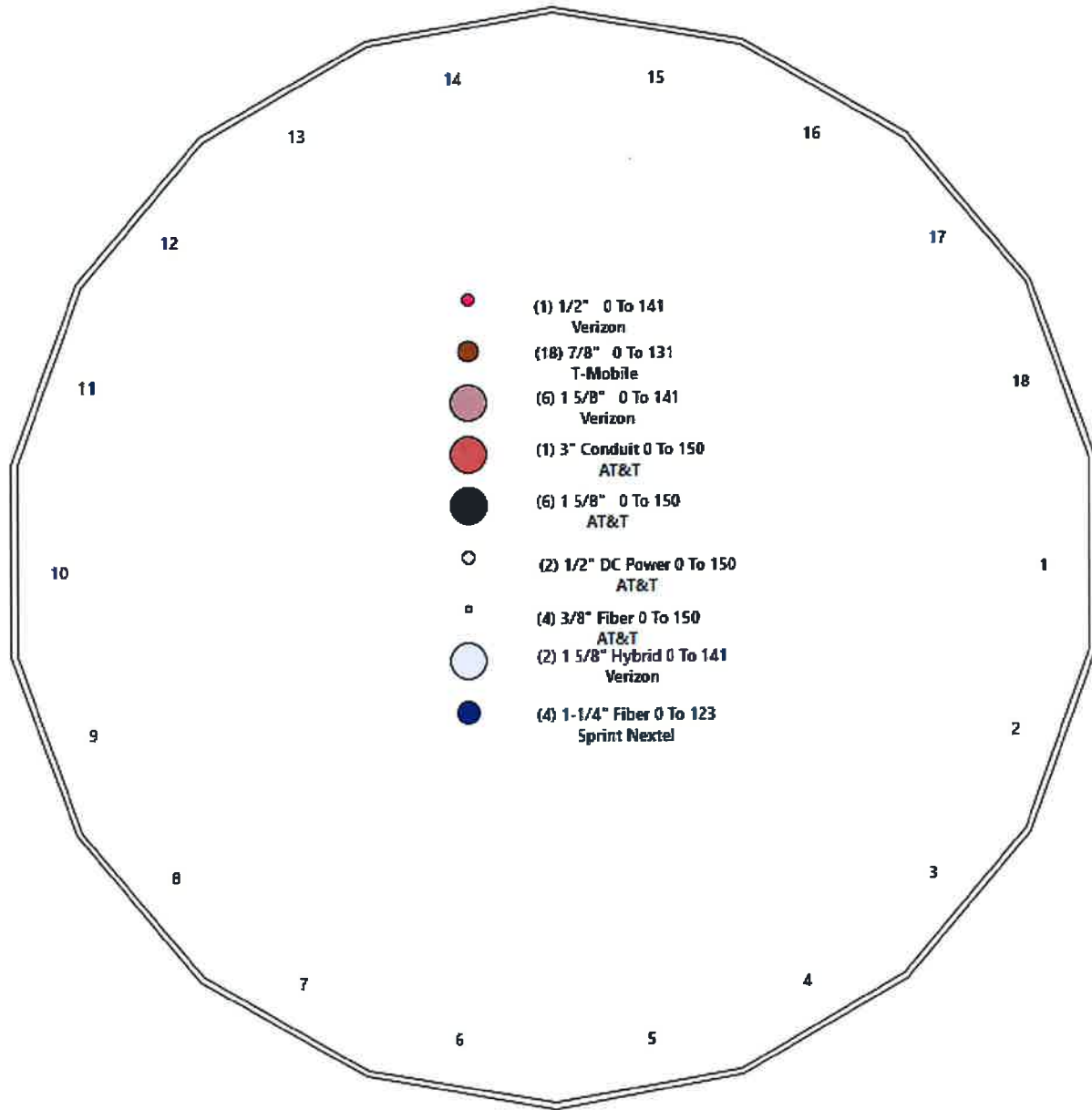
Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 93 mph Wind	3678.6	32.7	46.5
0.9D + 1.6W 93 mph Wind	3639.9	32.7	34.8
1.2D + 1.0Di + 1.0Wi 50 mph Wind	1249.1	10.9	83.9
1.2D + 1.0E	341.3	2.6	46.5
0.9D + 1.0E	337.3	2.6	34.9
1.0D + 1.0W 60 mph Wind	951.2	8.5	38.8

## Structure: CT10022-A-SBA - Coax Line Placement

Type: Monopole  
Site Name: Simsbury 2, CT  
Height: 150.00 (ft)

3/24/2020

Page: 4



## Shaft Properties

**Structure:** CT10022-A-SBA

**Code:** EIA/TIA-222-G

3/24/2020

**Site Name:** Simsbury 2, CT

**Exposure:** C

**Height:** 150.00 (ft)

**Crest Height:** 0.00

**Base Elev:** 0.000 (ft)

**Site Class:** D - Stiff Soil

**Gh:** 1.1

**Topography:** 1

**Struct Class:** II

Page: 5



Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	18	48.000	0.3125	65		0.00	9,013
2	18	48.000	0.3125	65	Slip	78.00	7,559
3	18	48.000	0.2500	65	Slip	65.00	4,843
4	18	22.083	0.1875	65	Slip	50.00	1,371
<b>Total Shaft Weight:</b>							<b>22,786</b>

### Bottom

### Top

Sec. No.	Dia (in)	Elev (ft)	Area (sqin)	Ix (in^4)	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (sqin)	Ix (in^4)	W/t Ratio	D/t Ratio	Taper
1	61.50	0.00	60.69	28706.65	33.29	196.80	50.39	48.00	49.67	15741.4	27.02	161.2	0.231360
2	52.52	41.50	51.78	17835.36	28.23	168.08	41.42	89.50	40.77	8703.68	21.96	132.5	0.231360
3	43.17	84.08	34.06	7926.99	29.04	172.69	32.07	132.08	25.25	3228.71	21.21	128.2	0.231360
4	33.41	127.9	19.77	2755.84	30.00	178.16	28.30	150.00	16.73	1669.78	25.20	150.9	0.231360



## Load Summary

**Structure:** CT10022-A-SBA

**Code:** EIA/TIA-222-G

3/24/2020

**Site Name:** Simsbury 2, CT

**Exposure:** C

**Height:** 150.00 (ft)

**Crest Height:** 0.00

**Base Elev:** 0.000 (ft)

**Site Class:** D - Stiff Soil

**Gh:** 1.1

**Topography:** 1

**Struct Class:** II

Page: 6



### 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	150.00	800 10121	3	46.30	5.15	0.79	199.46	7.959	0.81	0.00	0.73
2	150.00	HPA-65R-BUU-H6	1	51.00	9.66	0.85	400.05	11.517	0.87	0.00	0.00
3	150.00	TPA-65R-LCUUUU-H8	2	75.00	13.30	0.83	513.48	15.540	0.85	0.00	0.00
4	150.00	QS66512-2	1	111.00	8.13	0.92	431.90	9.900	0.94	0.00	0.00
5	150.00	HPA-65R-BUU-H8	2	68.00	12.98	0.79	477.60	15.177	0.81	0.00	0.00
6	150.00	Low Profile Platform-Round	1	1500.00	22.00	1.00	3245.22	45.549	1.00	0.00	0.00
7	150.00	DTMABP7819VG12A	6	19.20	1.14	0.67	53.23	2.166	0.69	0.00	0.00
8	150.00	TPX-070821	6	7.50	0.47	0.61	24.35	0.927	0.71	0.00	0.00
9	150.00	RRUS-11	3	50.00	2.79	0.71	147.03	3.725	0.73	0.00	0.00
10	150.00	RRUS-32	3	53.00	3.01	0.87	838.47	1.264	0.89	0.00	0.00
11	150.00	RRUS-32	3	777.00	0.66	0.87	838.47	1.264	0.89	0.00	0.00
12	150.00	4426 B66	3	48.40	1.64	0.73	533.59	9.028	0.75	0.00	0.00
13	150.00	DBC-750	3	4.80	0.51	1.00	17.69	1.216	1.00	0.00	0.00
14	150.00	DC6-48-60-18-8F	2	31.80	0.92	1.00	114.23	1.504	1.00	0.00	0.00
15	150.00	ABT-DFDM-ADB	3	1.10	0.05	0.98	4.07	0.307	1.00	0.00	0.00
16	150.00	LMU Antenna	1	8.50	1.67	0.50	8.51	1.672	0.52	0.00	0.00
17	141.00	CBRS RRH-RT4401	3	15.20	0.85	0.67	41.27	1.763	0.67	0.00	0.00
18	141.00	HRK12 (Handrail Kit)	1	261.72	6.75	1.00	673.29	15.492	1.00	0.00	0.00
19	141.00	Antel BXA-70080-4CF-EDIN-0	3	30.30	3.56	0.88	325.95	6.007	0.88	0.00	0.00
20	141.00	Commscope SBNHH-1D65B	6	72.70	8.08	0.83	356.08	9.802	0.83	0.00	0.00
21	141.00	Low Profile Platform	1	1500.00	22.00	1.00	3234.45	45.404	1.00	0.00	0.00
22	141.00	XXDWM-12.5-65-8T-CBRS	3	23.10	1.18	0.82	107.42	2.214	0.85	0.00	0.00
23	141.00	BSAMNT-SBS-2-2	3	67.00	3.50	1.00	190.96	8.357	1.00	0.00	0.00
24	141.00	B2/B66A RRHBR049	3	132.20	6.51	0.67	391.27	8.088	0.67	0.00	0.00
25	141.00	B5/B13 RRHBR04C	3	70.40	1.88	0.67	139.56	2.610	0.67	0.00	0.00
26	141.00	RVZDC-6627-PF48	1	32.00	3.79	1.00	210.13	4.888	1.00	0.00	0.00
27	131.00	RFS APX16DWV-16DWVS-C	3	62.70	6.46	0.62	295.76	9.313	0.62	0.00	0.00
28	131.00	Commscope LNX-6515DS	3	79.10	11.47	0.80	558.70	15.767	0.80	0.00	0.00
29	131.00	RFS ATM1412D-1A20	3	13.00	1.17	0.73	47.96	2.199	0.76	0.00	0.00
30	131.00	Ericsson KRY 144/1	3	11.00	0.41	0.70	25.18	1.035	0.73	0.00	0.00
31	131.00	Kathrein 782 11056	3	11.00	0.66	0.76	31.75	1.462	0.79	0.00	0.00
32	131.00	T-Arms (Site Pro P/N UDS-NPL)	3	132.00	8.00	0.75	253.21	17.183	0.75	0.00	0.00
33	123.00	APXVTM14-C-I20	3	55.00	6.34	0.79	277.88	7.824	0.79	0.00	0.00
34	123.00	APXVSPP18-C-A20	2	57.00	8.02	0.83	282.94	11.672	0.83	0.00	0.00
35	123.00	ALU - TD-RRH8x20-25 - RRU	3	70.00	4.05	0.67	223.81	5.138	0.67	0.00	0.00
36	123.00	ALU - 1900 MHz RRH - RRU	3	60.00	2.71	0.67	165.56	4.362	0.67	0.00	0.00
37	123.00	APXVSPP18-C-A20 (50 lb)	1	50.00	8.02	0.83	248.19	11.672	0.83	0.00	0.00
38	123.00	ALU - 800 MHz Filter	3	8.80	0.78	1.00	31.86	1.626	1.00	0.00	0.00
39	123.00	ALU - 800 MHz RRH - RRU	3	53.00	2.49	0.67	149.68	3.985	0.67	0.00	0.00
40	123.00	RFS - ACU-A20-N - RET	4	1.00	0.14	0.79	6.62	0.528	0.82	0.00	0.00
41	123.00	Platform w/ HRK Handrail Kit	1	1600.00	32.00	1.00	3424.98	65.580	1.00	0.00	0.00
<b>Totals:</b>			<b>111</b>	<b>11,801.42</b>			<b>34,791.34</b>				

### Linear Appurtenances

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

## Discrete Appurtenances

No.	Elev (ft)	Description	Qty	No Ice			Ice			Hor. Ecc. (ft)	Vert Ecc (ft)
				Weight (lb)	CaAa (sf)	CaAa Factor	Weight (lb)	CaAa (sf)	CaAa Factor		
0.00	150.00	(6) 1 5/8" Coax		0.00		Inside					
0.00	150.00	(2) 1/2" DC Power		0.00		Inside					
0.00	150.00	(1) 3" Conduit		0.00		Inside					
0.00	150.00	(4) 3/8" Fiber		0.00		Inside					
0.00	141.00	(6) 1 5/8" Coax		0.00		Inside					
0.00	141.00	(2) 1 5/8" Hybrid		0.00		Inside					
0.00	141.00	(1) 1/2" Coax		0.00		Inside					
0.00	131.00	(18) 7/8" Coax		0.00		Inside					
0.00	123.00	(4) 1-1/4" Fiber		0.00		Inside					



## Shaft Section Properties

**Structure:** CT10022-A-SBA

**Code:** EIA/TIA-222-G

3/24/2020

**Site Name:** Simsbury 2, CT

**Exposure:** C

**Height:** 150.00 (ft)

**Crest Height:** 0.00

**Base Elev:** 0.000 (ft)

**Site Class:** D - Stiff Soil

**Gh:** 1.1

**Topography:** 1

**Struct Class:** II

Page: 8



**Increment Length:** 5 (ft)

Elev (ft)	Description	Thick (in)	Dia (in)	Area (in <sup>2</sup> )	Ix (in <sup>4</sup> )	W/t Ratio	D/t Ratio	Fpy (ksi)	S (in <sup>3</sup> )	Weight (lb)
0.00		0.3125	61.500	60.688	28706.7	33.29	196.80	62.2	919.4	0.0
5.00		0.3125	60.343	59.541	27109.1	32.64	193.10	63.0	884.8	1022.8
10.00		0.3125	59.186	58.393	25571.9	31.99	189.40	63.8	851.0	1003.3
15.00		0.3125	58.030	57.246	24093.9	31.33	185.69	64.5	817.8	983.7
20.00		0.3125	56.873	56.099	22674.1	30.68	181.99	65.3	785.2	964.2
25.00		0.3125	55.716	54.951	21311.1	30.03	178.29	66.1	753.4	944.7
30.00		0.3125	54.559	53.804	20003.9	29.37	174.59	66.9	722.2	925.2
35.00		0.3125	53.402	52.657	18751.2	28.72	170.89	67.6	691.6	905.7
40.00		0.3125	52.246	51.509	17552.0	28.07	167.19	68.4	661.7	886.1
41.50	Bot - Section 2	0.3125	51.899	51.165	17202.5	27.87	166.08	68.6	652.9	262.0
45.00		0.3125	51.089	50.362	16405.0	27.42	163.48	69.2	632.5	1216.5
48.00	Top - Section 1	0.3125	51.020	50.293	16338.2	27.38	163.26	0.0	0.0	1027.5
50.00		0.3125	50.557	49.834	15895.0	27.12	161.78	69.5	619.2	340.7
55.00		0.3125	49.400	48.687	14822.2	26.46	158.08	70.3	591.0	838.1
60.00		0.3125	48.243	47.540	13798.8	25.81	154.38	71.0	563.4	818.6
65.00		0.3125	47.087	46.392	12823.6	25.16	150.68	71.8	536.4	799.1
70.00		0.3125	45.930	45.245	11895.5	24.51	146.98	72.6	510.1	779.6
75.00		0.3125	44.773	44.098	11013.3	23.85	143.27	73.3	484.5	760.0
80.00		0.3125	43.616	42.950	10175.8	23.20	139.57	74.1	459.5	740.5
84.08	Bot - Section 3	0.3125	42.671	42.013	9524.3	22.67	136.55	74.7	439.6	590.3
85.00		0.3125	42.459	41.803	9381.9	22.55	135.87	74.9	435.2	236.7
89.50	Top - Section 2	0.2500	41.918	33.063	7252.7	28.15	167.67	0.0	0.0	1144.8
90.00		0.2500	41.803	32.971	7192.5	28.07	167.21	68.4	338.9	56.2
95.00		0.2500	40.646	32.053	6608.3	27.26	162.58	69.3	320.2	553.2
100.00		0.2500	39.489	31.135	6056.7	26.44	157.96	70.3	302.1	537.5
105.00		0.2500	38.332	30.217	5536.7	25.63	153.33	71.3	284.5	521.9
110.00		0.2500	37.175	29.299	5047.3	24.81	148.70	72.2	267.4	506.3
115.00		0.2500	36.019	28.381	4587.6	23.99	144.07	73.2	250.9	490.7
120.00		0.2500	34.862	27.463	4156.8	23.18	139.45	74.1	234.8	475.1
123.00		0.2500	34.168	26.913	3911.7	22.69	136.67	74.7	225.5	277.5
125.00		0.2500	33.705	26.546	3753.8	22.36	134.82	75.1	219.4	181.9
127.92	Bot - Section 4	0.2500	33.030	26.010	3531.2	21.89	132.12	75.7	210.6	260.8
130.00		0.2500	32.548	25.628	3377.7	21.55	130.19	76.1	204.4	322.2
131.00		0.2500	32.317	25.444	3305.6	21.38	129.27	76.3	201.5	152.9
132.08	Top - Section 3	0.1875	32.441	19.194	2522.8	29.10	173.02	0.0	0.0	164.5
135.00		0.1875	31.766	18.793	2367.8	28.46	169.42	67.9	146.8	188.5
140.00		0.1875	30.610	18.104	2117.0	27.37	163.25	69.2	136.2	313.9
141.00		0.1875	30.378	17.967	2069.0	27.16	162.02	69.5	134.1	61.4
145.00		0.1875	29.453	17.416	1884.5	26.29	157.08	70.5	126.0	240.8
150.00		0.1875	28.296	16.727	1669.8	25.20	150.91	71.8	116.2	290.5
										<b>22785.8</b>

## Wind Loading - Shaft

**Structure:** CT10022-A-SBA

**Code:** EIA/TIA-222-G

3/24/2020

**Site Name:** Simsbury 2, CT

**Exposure:** C

**Height:** 150.00 (ft)

**Crest Height:** 0.00

**Base Elev:** 0.000 (ft)

**Site Class:** D - Stiff Soil

**Gh:** 1.1

**Topography:** 1

**Struct Class:** II

Page: 9

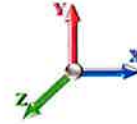


**Load Case:** 1.2D + 1.6W 93 mph Wind

**Iterations** 23

**Dead Load Factor** 1.20

**Wind Load Factor** 1.60



Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	17.879	19.67	446.21	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	17.879	19.67	437.81	0.650	0.000	5.00	25.776	16.75	527.2	0.0	1227.3
10.00		1.00	0.85	17.879	19.67	429.42	0.650	0.000	5.00	25.286	16.44	517.2	0.0	1203.9
15.00		1.00	0.85	17.879	19.67	421.03	0.650	0.000	5.00	24.797	16.12	507.2	0.0	1180.5
20.00		1.00	0.90	18.971	20.87	425.04	0.650	0.000	5.00	24.307	15.80	527.5	0.0	1157.1
25.00		1.00	0.95	19.883	21.87	426.29	0.650	0.000	5.00	23.818	15.48	541.8	0.0	1133.6
30.00		1.00	0.98	20.661	22.73	425.53	0.650	0.000	5.00	23.328	15.16	551.4	0.0	1110.2
35.00		1.00	1.01	21.343	23.48	423.32	0.650	0.000	5.00	22.839	14.85	557.6	0.0	1086.8
40.00		1.00	1.04	21.951	24.15	420.01	0.650	0.000	5.00	22.350	14.53	561.2	0.0	1063.4
41.50 Bot - Section 2		1.00	1.05	22.122	24.33	418.84	0.650	0.000	1.50	6.609	4.30	167.3	0.0	314.4
45.00		1.00	1.07	22.502	24.75	415.84	0.650	0.000	3.50	15.436	10.03	397.4	0.0	1459.8
48.00 Top - Section 1		1.00	1.08	22.810	25.09	412.98	0.650	0.000	3.00	13.040	8.48	340.3	0.0	1233.0
50.00		1.00	1.09	23.007	25.31	416.10	0.650	0.000	2.00	8.595	5.59	226.2	0.0	408.9
55.00		1.00	1.12	23.473	25.82	410.68	0.650	0.000	5.00	21.146	13.74	567.8	0.0	1005.7
60.00		1.00	1.14	23.907	26.30	404.75	0.650	0.000	5.00	20.656	13.43	564.9	0.0	982.3
65.00		1.00	1.16	24.313	26.74	398.39	0.650	0.000	5.00	20.167	13.11	560.9	0.0	958.9
70.00		1.00	1.17	24.696	27.17	391.64	0.650	0.000	5.00	19.677	12.79	555.9	0.0	935.5
75.00		1.00	1.19	25.057	27.56	384.56	0.650	0.000	5.00	19.188	12.47	550.0	0.0	912.0
80.00		1.00	1.21	25.400	27.94	377.18	0.650	0.000	5.00	18.698	12.15	543.3	0.0	888.6
84.08 Bot - Section 3		1.00	1.22	25.667	28.23	370.95	0.650	0.000	4.08	14.907	9.69	437.7	0.0	708.3
85.00		1.00	1.22	25.726	28.30	369.53	0.650	0.000	0.92	3.340	2.17	98.3	0.0	284.0
89.50 Top - Section 2		1.00	1.24	26.007	28.61	362.43	0.650	0.000	4.50	16.160	10.50	480.8	0.0	1373.8
90.00		1.00	1.24	26.037	28.64	366.01	0.650	0.000	0.50	1.771	1.15	52.8	0.0	67.4
95.00		1.00	1.25	26.336	28.97	357.91	0.650	0.000	5.00	17.442	11.34	525.5	0.0	663.8
100.00		1.00	1.27	26.621	29.28	349.61	0.650	0.000	5.00	16.952	11.02	516.3	0.0	645.0
105.00		1.00	1.28	26.896	29.59	341.11	0.650	0.000	5.00	16.463	10.70	506.6	0.0	626.3
110.00		1.00	1.29	27.161	29.88	332.44	0.650	0.000	5.00	15.973	10.38	496.3	0.0	607.6
115.00		1.00	1.30	27.416	30.16	323.61	0.650	0.000	5.00	15.484	10.06	485.6	0.0	588.8
120.00		1.00	1.32	27.663	30.43	314.62	0.650	0.000	5.00	14.995	9.75	474.5	0.0	570.1
123.00 Appurtenance(s)		1.00	1.32	27.807	30.59	309.16	0.650	0.000	3.00	8.762	5.70	278.7	0.0	333.1
125.00		1.00	1.33	27.902	30.69	305.49	0.650	0.000	2.00	5.743	3.73	183.3	0.0	218.3
127.92 Bot - Section 4		1.00	1.33	28.038	30.84	300.10	0.650	0.000	2.92	8.235	5.35	264.1	0.0	313.0
130.00		1.00	1.34	28.133	30.95	296.23	0.650	0.000	2.08	5.846	3.80	188.2	0.0	386.6
131.00 Appurtenance(s)		1.00	1.34	28.179	31.00	294.36	0.650	0.000	1.00	2.776	1.80	89.5	0.0	183.5
132.08 Top - Section 3		1.00	1.34	28.228	31.05	292.33	0.650	0.000	1.08	2.985	1.94	96.4	0.0	197.4
135.00		1.00	1.35	28.358	31.19	290.26	0.650	0.000	2.92	7.923	5.15	257.0	0.0	226.2
140.00		1.00	1.36	28.576	31.43	280.76	0.650	0.000	5.00	13.195	8.58	431.4	0.0	376.7
141.00 Appurtenance(s)		1.00	1.36	28.619	31.48	278.85	0.650	0.000	1.00	2.580	1.68	84.5	0.0	73.6
145.00		1.00	1.37	28.788	31.67	271.15	0.650	0.000	4.00	10.126	6.58	333.5	0.0	289.0
150.00 Appurtenance(s)		1.00	1.38	28.994	31.89	261.43	0.650	0.000	5.00	12.217	7.94	405.2	0.0	348.5
<b>Totals:</b>									<b>150.00</b>			<b>15,451.5</b>		<b>27,342.9</b>

## Discrete Appurtenance Forces

Structure: CT10022-A-SBA

Code: EIA/TIA-222-G

3/24/2020

Site Name: Simsbury 2, CT

Exposure: C

Height: 150.00 (ft)

Crest Height: 0.00

Base Elev: 0.000 (ft)

Site Class: D - Stiff Soil

Gh: 1.1

Topography: 1

Struct Class: II

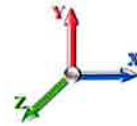
Page: 10



Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 23

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	150.00	TPX-070821	6	28.994	31.893	0.61	1.00	1.71	54.00	0.000	0.000	87.49	0.00	0.00
2	150.00	800 10121	3	29.023	31.926	0.79	1.00	12.21	166.68	0.000	0.730	623.47	0.00	455.13
3	150.00	HPA-65R-BUU-H6	1	28.994	31.893	0.85	1.00	8.21	61.20	0.000	0.000	419.00	0.00	0.00
4	150.00	TPA-65R-LCUUUU-H8	2	28.994	31.893	0.83	1.00	22.08	180.00	0.000	0.000	1126.62	0.00	0.00
5	150.00	QS66512-2	1	28.994	31.893	0.92	1.00	7.48	133.20	0.000	0.000	381.68	0.00	0.00
6	150.00	HPA-65R-BUU-H8	2	28.994	31.893	0.79	1.00	20.51	163.20	0.000	0.000	1046.52	0.00	0.00
7	150.00	Low Profile	1	28.994	31.893	1.00	1.00	22.00	1800.00	0.000	0.000	1122.64	0.00	0.00
8	150.00	DTMABP7819VG12A	6	28.994	31.893	0.67	1.00	4.58	138.24	0.000	0.000	233.86	0.00	0.00
9	150.00	LMU Antenna	1	28.994	31.893	0.50	1.00	0.83	10.20	0.000	0.000	42.61	0.00	0.00
10	150.00	DBC-750	3	28.994	31.893	1.00	1.00	1.53	17.28	0.000	0.000	78.07	0.00	0.00
11	150.00	ABT-DFDM-ADB	3	28.994	31.893	0.98	1.00	0.15	3.96	0.000	0.000	7.50	0.00	0.00
12	150.00	DC6-48-60-18-8F	2	28.994	31.893	1.00	1.00	1.84	76.32	0.000	0.000	93.89	0.00	0.00
13	150.00	RRUS-11	3	28.994	31.893	0.71	1.00	5.94	180.00	0.000	0.000	303.25	0.00	0.00
14	150.00	4426 B66	3	28.994	31.893	0.73	1.00	3.59	174.24	0.000	0.000	183.28	0.00	0.00
15	150.00	RRUS-32	3	28.994	31.893	0.87	1.00	1.72	2797.20	0.000	0.000	87.90	0.00	0.00
16	150.00	RRUS-32	3	28.994	31.893	0.87	1.00	7.86	190.80	0.000	0.000	400.89	0.00	0.00
17	141.00	RVZDC-6627-PF48	1	28.619	31.480	1.00	1.00	3.79	38.40	0.000	0.000	190.90	0.00	0.00
18	141.00	B5/B13 RRHBR04C	3	28.619	31.480	0.50	0.75	2.83	253.44	0.000	0.000	142.75	0.00	0.00
19	141.00	B2/B66A RRHBR049	3	28.619	31.480	0.50	0.75	9.81	475.92	0.000	0.000	494.31	0.00	0.00
20	141.00	BSAMNT-SBS-2-2	3	28.619	31.480	1.00	1.00	10.50	241.20	0.000	0.000	528.87	0.00	0.00
21	141.00	XXDWM-12.5-65-8T-CB	3	28.619	31.480	0.61	0.75	2.17	83.16	0.000	0.000	109.12	0.00	0.00
22	141.00	Commscope	6	28.619	31.480	0.62	0.75	30.18	523.44	0.000	0.000	1520.06	0.00	0.00
23	141.00	Antel	3	28.619	31.480	0.66	0.75	7.05	109.08	0.000	0.000	355.04	0.00	0.00
24	141.00	HRK12 (Handrail Kit)	1	28.619	31.480	1.00	1.00	6.75	314.06	0.000	0.000	339.99	0.00	0.00
25	141.00	CBRS RRH-RT4401	3	28.619	31.480	0.50	0.75	1.28	54.72	0.000	0.000	64.54	0.00	0.00
26	141.00	Low Profile Platform	1	28.619	31.480	1.00	1.00	22.00	1800.00	0.000	0.000	1108.11	0.00	0.00
27	131.00	RFS ATM1412D-1A20	3	28.179	30.997	0.58	0.80	2.05	46.80	0.000	0.000	101.66	0.00	0.00
28	131.00	RFS	3	28.179	30.997	0.50	0.80	9.61	225.72	0.000	0.000	476.73	0.00	0.00
29	131.00	Commscope LNX-6515DS	3	28.179	30.997	0.64	0.80	22.02	284.76	0.000	0.000	1092.19	0.00	0.00
30	131.00	Kathrein 782 11056	3	28.179	30.997	0.61	0.80	1.20	39.60	0.000	0.000	59.70	0.00	0.00
31	131.00	T-Arms (Site Pro P/N	3	28.179	30.997	0.56	0.75	13.50	475.20	0.000	0.000	669.53	0.00	0.00
32	131.00	Ericsson KRY 144/1	3	28.179	30.997	0.56	0.80	0.69	39.60	0.000	0.000	34.16	0.00	0.00
33	123.00	ALU - 1900 MHz RRH -	3	27.807	30.588	0.50	0.75	4.09	216.00	0.000	0.000	199.94	0.00	0.00
34	123.00	APXVTM14-C-I20	3	27.807	30.588	0.59	0.75	11.27	198.00	0.000	0.000	551.53	0.00	0.00
35	123.00	APXVSPP18-C-A20	2	27.807	30.588	0.62	0.75	9.98	136.80	0.000	0.000	488.67	0.00	0.00
36	123.00	ALU - TD-RRH8x20-25 -	3	27.807	30.588	0.50	0.75	6.11	252.00	0.000	0.000	298.80	0.00	0.00
37	123.00	ALU - 800 MHz RRH -	3	27.807	30.588	0.50	0.75	3.75	190.80	0.000	0.000	183.71	0.00	0.00
38	123.00	APXVSPP18-C-A20 (50	1	27.807	30.588	0.62	0.75	4.99	60.00	0.000	0.000	244.34	0.00	0.00
39	123.00	ALU - 800 MHz Filter	3	27.807	30.588	0.75	0.75	1.75	31.68	0.000	0.000	85.89	0.00	0.00
40	123.00	RFS - ACU-A20-N - RET	4	27.807	30.588	0.59	0.75	0.33	4.80	0.000	0.000	16.24	0.00	0.00
41	123.00	Platform w/ HRK Handrail	1	27.807	30.588	1.00	1.00	32.00	1920.00	0.000	0.000	1566.11	0.00	0.00

Totals: 14,161.70

17,161.55

## Total Applied Force Summary

**Structure:** CT10022-A-SBA

**Code:** EIA/TIA-222-G

3/24/2020

**Site Name:** Simsbury 2, CT

**Exposure:** C

**Height:** 150.00 (ft)

**Crest Height:** 0.00

**Base Elev:** 0.000 (ft)

**Site Class:** D - Stiff Soil

**Gh:** 1.1

**Topography:** 1

**Struct Class:** II

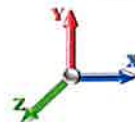
Page: 11



**Load Case:** 1.2D + 1.6W 93 mph Wind

**Dead Load Factor** 1.20

**Wind Load Factor** 1.60



**Iterations** 23

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		527.21	1408.45	0.00	0.00
10.00		517.20	1385.03	0.00	0.00
15.00		507.19	1361.60	0.00	0.00
20.00		527.53	1338.18	0.00	0.00
25.00		541.77	1314.75	0.00	0.00
30.00		551.40	1291.33	0.00	0.00
35.00		557.63	1267.90	0.00	0.00
40.00		561.24	1244.48	0.00	0.00
41.50		167.27	368.78	0.00	0.00
45.00		397.36	1586.63	0.00	0.00
48.00		340.27	1341.70	0.00	0.00
50.00		226.23	481.30	0.00	0.00
55.00		567.83	1186.86	0.00	0.00
60.00		564.94	1163.43	0.00	0.00
65.00		560.93	1140.01	0.00	0.00
70.00		555.92	1116.58	0.00	0.00
75.00		550.03	1093.16	0.00	0.00
80.00		543.33	1069.73	0.00	0.00
84.08		437.73	856.24	0.00	0.00
85.00		98.31	317.23	0.00	0.00
89.50		480.79	1536.76	0.00	0.00
90.00		52.76	85.52	0.00	0.00
95.00		525.48	844.90	0.00	0.00
100.00		516.28	826.16	0.00	0.00
105.00		506.55	807.42	0.00	0.00
110.00		496.33	788.68	0.00	0.00
115.00		485.65	769.94	0.00	0.00
120.00		474.53	751.20	0.00	0.00
123.00	(23) attachments	3913.96	3451.80	0.00	0.00
125.00		183.33	281.58	0.00	0.00
127.92		264.15	405.26	0.00	0.00
130.00		188.17	452.51	0.00	0.00
131.00	(18) attachments	2523.46	1326.86	0.00	0.00
132.08		96.41	219.47	0.00	0.00
135.00		257.04	285.74	0.00	0.00
140.00		431.37	478.72	0.00	0.00
141.00	(27) attachments	4938.17	3987.48	0.00	0.00
145.00		333.47	329.33	0.00	0.00
150.00	(43) attachments	6643.88	6545.53	0.00	455.13
<b>Totals:</b>		<b>32,613.06</b>	<b>46,508.20</b>	<b>0.00</b>	<b>455.13</b>



## Calculated Forces

Structure: CT10022-A-SBA

Code: EIA/TIA-222-G

3/24/2020

Site Name: Simsbury 2, CT

Exposure: C

Height: 150.00 (ft)

Crest Height: 0.00

Base Elev: 0.000 (ft)

Site Class: D - Stiff Soil

Gh: 1.1

Topography: 1

Struct Class: II

Page: 12

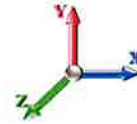


Load Case: 1.2D + 1.6W 93 mph Wind

Iterations 23

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	-46.46	-32.69	0.00	-3678.6	0.00	3678.63	3399.80	1699.90	8571.22	4291.98	0.00	0.000	0.000	0.871
5.00	-44.95	-32.30	0.00	-3515.2	0.00	3515.20	3376.67	1688.33	8351.12	4181.77	0.10	-0.178	0.000	0.854
10.00	-43.46	-31.91	0.00	-3353.7	0.00	3353.71	3351.94	1675.97	8129.40	4070.74	0.38	-0.358	0.000	0.837
15.00	-42.01	-31.53	0.00	-3194.1	0.00	3194.16	3325.63	1662.82	7906.28	3959.02	0.85	-0.541	0.000	0.820
20.00	-40.57	-31.12	0.00	-3036.5	0.00	3036.52	3297.74	1648.87	7681.99	3846.70	1.52	-0.725	0.000	0.802
25.00	-39.17	-30.68	0.00	-2880.9	0.00	2880.94	3268.26	1634.13	7456.75	3733.92	2.38	-0.910	0.000	0.784
30.00	-37.79	-30.23	0.00	-2727.5	0.00	2727.52	3237.20	1618.60	7230.79	3620.77	3.43	-1.097	0.000	0.765
35.00	-36.43	-29.77	0.00	-2576.3	0.00	2576.35	3204.54	1602.27	7004.35	3507.38	4.68	-1.286	0.000	0.746
40.00	-35.14	-29.26	0.00	-2427.5	0.00	2427.50	3170.31	1585.15	6777.64	3393.86	6.13	-1.476	0.000	0.727
41.50	-34.73	-29.14	0.00	-2383.6	0.00	2383.62	3159.73	1579.86	6709.61	3359.79	6.61	-1.534	0.000	0.721
45.00	-33.09	-28.77	0.00	-2281.6	0.00	2281.64	3134.49	1567.24	6550.90	3280.32	7.78	-1.669	0.000	0.706
48.00	-31.71	-28.44	0.00	-2195.3	0.00	2195.33	3132.30	1566.15	6537.37	3273.54	8.87	-1.786	0.000	0.681
50.00	-31.17	-28.27	0.00	-2138.4	0.00	2138.45	3117.49	1558.74	6446.72	3228.15	9.63	-1.864	0.000	0.673
55.00	-29.91	-27.76	0.00	-1997.0	0.00	1997.09	3079.35	1539.68	6220.34	3114.79	11.69	-2.049	0.000	0.651
60.00	-28.68	-27.25	0.00	-1858.2	0.00	1858.29	3039.63	1519.81	5994.49	3001.70	13.93	-2.234	0.000	0.629
65.00	-27.48	-26.73	0.00	-1722.0	0.00	1722.06	2998.32	1499.16	5769.39	2888.98	16.37	-2.419	0.000	0.606
70.00	-26.31	-26.21	0.00	-1588.4	0.00	1588.43	2955.43	1477.72	5545.28	2776.76	19.00	-2.602	0.000	0.581
75.00	-25.16	-25.69	0.00	-1457.3	0.00	1457.39	2910.95	1455.48	5322.38	2665.15	21.83	-2.784	0.000	0.556
80.00	-24.05	-25.16	0.00	-1328.9	0.00	1328.96	2864.89	1432.44	5100.92	2554.25	24.84	-2.964	0.000	0.529
84.08	-23.18	-24.71	0.00	-1226.2	0.00	1226.24	2826.09	1413.05	4921.28	2464.30	27.44	-3.110	0.000	0.506
85.00	-22.83	-24.63	0.00	-1203.5	0.00	1203.58	2817.24	1408.62	4881.12	2444.19	28.04	-3.143	0.000	0.501
89.50	-21.28	-24.10	0.00	-1092.7	0.00	1092.73	2031.94	1015.97	3485.43	1745.31	31.08	-3.300	0.000	0.637
90.00	-21.15	-24.08	0.00	-1080.6	0.00	1080.68	2029.15	1014.57	3470.92	1738.04	31.42	-3.318	0.000	0.633
95.00	-20.26	-23.58	0.00	-960.27	0.00	960.27	2000.34	1000.17	3325.82	1665.38	35.01	-3.520	0.000	0.587
100.00	-19.39	-23.08	0.00	-842.37	0.00	842.37	1969.95	984.97	3180.92	1592.82	38.80	-3.714	0.000	0.539
105.00	-18.55	-22.57	0.00	-727.00	0.00	727.00	1937.97	968.98	3036.44	1520.48	42.78	-3.898	0.000	0.488
110.00	-17.73	-22.08	0.00	-614.13	0.00	614.13	1904.40	952.20	2892.62	1448.46	46.96	-4.070	0.000	0.434
115.00	-16.94	-21.58	0.00	-503.75	0.00	503.75	1869.25	934.63	2749.69	1376.89	51.30	-4.228	0.000	0.375
120.00	-16.19	-21.08	0.00	-395.85	0.00	395.85	1832.52	916.26	2607.87	1305.87	55.81	-4.367	0.000	0.312
123.00	-13.03	-16.93	0.00	-332.61	0.00	332.61	1809.72	904.86	2523.40	1263.58	58.57	-4.442	0.000	0.271
125.00	-12.75	-16.73	0.00	-298.76	0.00	298.76	1794.20	897.10	2467.38	1235.52	60.44	-4.488	0.000	0.249
127.92	-12.35	-16.45	0.00	-249.96	0.00	249.96	1771.11	885.56	2386.14	1194.84	63.20	-4.549	0.000	0.217
130.00	-11.91	-16.23	0.00	-215.69	0.00	215.69	1754.29	877.15	2328.47	1165.96	65.19	-4.588	0.000	0.192
131.00	-10.79	-13.61	0.00	-199.46	0.00	199.46	1746.12	873.06	2300.89	1152.16	66.16	-4.605	0.000	0.180
132.08	-10.57	-13.50	0.00	-184.72	0.00	184.72	1160.48	580.24	1541.12	771.71	67.20	-4.623	0.000	0.249
135.00	-10.29	-13.24	0.00	-145.33	0.00	145.33	1148.82	574.41	1493.54	747.88	70.04	-4.666	0.000	0.204
140.00	-9.84	-12.77	0.00	-79.15	0.00	79.15	1127.58	563.79	1411.91	707.01	74.96	-4.733	0.000	0.121
141.00	-6.27	-7.52	0.00	-66.38	0.00	66.38	1123.15	561.57	1395.60	698.84	75.95	-4.743	0.000	0.101
145.00	-5.97	-7.17	0.00	-36.29	0.00	36.29	1104.76	552.38	1330.41	666.20	79.94	-4.771	0.000	0.060
150.00	0.00	-6.64	0.00	-0.46	0.00	0.46	1080.36	540.18	1249.27	625.56	84.94	-4.785	0.000	0.001

## Wind Loading - Shaft

**Structure:** CT10022-A-SBA

**Code:** EIA/TIA-222-G

3/24/2020

**Site Name:** Simsbury 2, CT

**Exposure:** C

**Height:** 150.00 (ft)

**Crest Height:** 0.00

**Base Elev:** 0.000 (ft)

**Site Class:** D - Stiff Soil

**Gh:** 1.1

**Topography:** 1

**Struct Class:** II

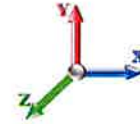
Page: 13



**Load Case:** 0.9D + 1.6W 93 mph Wind

**Dead Load Factor** 0.90

**Wind Load Factor** 1.60



**Iterations** 23

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	17.879	19.67	446.21	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	17.879	19.67	437.81	0.650	0.000	5.00	25.776	16.75	527.2	0.0	920.5
10.00		1.00	0.85	17.879	19.67	429.42	0.650	0.000	5.00	25.286	16.44	517.2	0.0	902.9
15.00		1.00	0.85	17.879	19.67	421.03	0.650	0.000	5.00	24.797	16.12	507.2	0.0	885.4
20.00		1.00	0.90	18.971	20.87	425.04	0.650	0.000	5.00	24.307	15.80	527.5	0.0	867.8
25.00		1.00	0.95	19.883	21.87	426.29	0.650	0.000	5.00	23.818	15.48	541.8	0.0	850.2
30.00		1.00	0.98	20.661	22.73	425.53	0.650	0.000	5.00	23.328	15.16	551.4	0.0	832.7
35.00		1.00	1.01	21.343	23.48	423.32	0.650	0.000	5.00	22.839	14.85	557.6	0.0	815.1
40.00		1.00	1.04	21.951	24.15	420.01	0.650	0.000	5.00	22.350	14.53	561.2	0.0	797.5
41.50 Bot - Section 2		1.00	1.05	22.122	24.33	418.84	0.650	0.000	1.50	6.609	4.30	167.3	0.0	235.8
45.00		1.00	1.07	22.502	24.75	415.84	0.650	0.000	3.50	15.436	10.03	397.4	0.0	1094.9
48.00 Top - Section 1		1.00	1.08	22.810	25.09	412.98	0.650	0.000	3.00	13.040	8.48	340.3	0.0	924.8
50.00		1.00	1.09	23.007	25.31	416.10	0.650	0.000	2.00	8.595	5.59	226.2	0.0	306.6
55.00		1.00	1.12	23.473	25.82	410.68	0.650	0.000	5.00	21.146	13.74	567.8	0.0	754.3
60.00		1.00	1.14	23.907	26.30	404.75	0.650	0.000	5.00	20.656	13.43	564.9	0.0	736.7
65.00		1.00	1.16	24.313	26.74	398.39	0.650	0.000	5.00	20.167	13.11	560.9	0.0	719.2
70.00		1.00	1.17	24.696	27.17	391.64	0.650	0.000	5.00	19.677	12.79	555.9	0.0	701.6
75.00		1.00	1.19	25.057	27.56	384.56	0.650	0.000	5.00	19.188	12.47	550.0	0.0	684.0
80.00		1.00	1.21	25.400	27.94	377.18	0.650	0.000	5.00	18.698	12.15	543.3	0.0	666.5
84.08 Bot - Section 3		1.00	1.22	25.667	28.23	370.95	0.650	0.000	4.08	14.907	9.69	437.7	0.0	531.2
85.00		1.00	1.22	25.726	28.30	369.53	0.650	0.000	0.92	3.340	2.17	98.3	0.0	213.0
89.50 Top - Section 2		1.00	1.24	26.007	28.61	362.43	0.650	0.000	4.50	16.160	10.50	480.8	0.0	1030.3
90.00		1.00	1.24	26.037	28.64	366.01	0.650	0.000	0.50	1.771	1.15	52.8	0.0	50.6
95.00		1.00	1.25	26.336	28.97	357.91	0.650	0.000	5.00	17.442	11.34	525.5	0.0	497.8
100.00		1.00	1.27	26.621	29.28	349.61	0.650	0.000	5.00	16.952	11.02	516.3	0.0	483.8
105.00		1.00	1.28	26.896	29.59	341.11	0.650	0.000	5.00	16.463	10.70	506.6	0.0	469.7
110.00		1.00	1.29	27.161	29.88	332.44	0.650	0.000	5.00	15.973	10.38	496.3	0.0	455.7
115.00		1.00	1.30	27.416	30.16	323.61	0.650	0.000	5.00	15.484	10.06	485.6	0.0	441.6
120.00		1.00	1.32	27.663	30.43	314.62	0.650	0.000	5.00	14.995	9.75	474.5	0.0	427.6
123.00 Appurtenance(s)		1.00	1.32	27.807	30.59	309.16	0.650	0.000	3.00	8.762	5.70	278.7	0.0	249.8
125.00		1.00	1.33	27.902	30.69	305.49	0.650	0.000	2.00	5.743	3.73	183.3	0.0	163.7
127.92 Bot - Section 4		1.00	1.33	28.038	30.84	300.10	0.650	0.000	2.92	8.235	5.35	264.1	0.0	234.7
130.00		1.00	1.34	28.133	30.95	296.23	0.650	0.000	2.08	5.846	3.80	188.2	0.0	289.9
131.00 Appurtenance(s)		1.00	1.34	28.179	31.00	294.36	0.650	0.000	1.00	2.776	1.80	89.5	0.0	137.7
132.08 Top - Section 3		1.00	1.34	28.228	31.05	292.33	0.650	0.000	1.08	2.985	1.94	96.4	0.0	148.0
135.00		1.00	1.35	28.358	31.19	290.26	0.650	0.000	2.92	7.923	5.15	257.0	0.0	169.7
140.00		1.00	1.36	28.576	31.43	280.76	0.650	0.000	5.00	13.195	8.58	431.4	0.0	282.5
141.00 Appurtenance(s)		1.00	1.36	28.619	31.48	278.85	0.650	0.000	1.00	2.580	1.68	84.5	0.0	55.2
145.00		1.00	1.37	28.788	31.67	271.15	0.650	0.000	4.00	10.126	6.58	333.5	0.0	216.7
150.00 Appurtenance(s)		1.00	1.38	28.994	31.89	261.43	0.650	0.000	5.00	12.217	7.94	405.2	0.0	261.4
<b>Totals:</b>									<b>150.00</b>			<b>15,451.5</b>		<b>20,507.2</b>

## Discrete Appurtenance Forces

Structure: CT10022-A-SBA

Code: EIA/TIA-222-G

3/24/2020

Site Name: Simsbury 2, CT

Exposure: C

Height: 150.00 (ft)

Crest Height: 0.00

Base Elev: 0.000 (ft)

Site Class: D - Stiff Soil

Gh: 1.1

Topography: 1

Struct Class: II

Page: 14

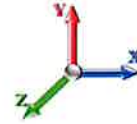


Load Case: 0.9D + 1.6W 93 mph Wind

Iterations 23

Dead Load Factor 0.90

Wind Load Factor 1.60



No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	150.00	TPX-070821	6	28.994	31.893	0.61	1.00	1.71	40.50	0.000	0.000	87.49	0.00	0.00
2	150.00	800 10121	3	29.023	31.926	0.79	1.00	12.21	125.01	0.000	0.730	623.47	0.00	455.13
3	150.00	HPA-65R-BUU-H6	1	28.994	31.893	0.85	1.00	8.21	45.90	0.000	0.000	419.00	0.00	0.00
4	150.00	TPA-65R-LCUUUU-H8	2	28.994	31.893	0.83	1.00	22.08	135.00	0.000	0.000	1126.62	0.00	0.00
5	150.00	QS66512-2	1	28.994	31.893	0.92	1.00	7.48	99.90	0.000	0.000	381.68	0.00	0.00
6	150.00	HPA-65R-BUU-H8	2	28.994	31.893	0.79	1.00	20.51	122.40	0.000	0.000	1046.52	0.00	0.00
7	150.00	Low Profile	1	28.994	31.893	1.00	1.00	22.00	1350.00	0.000	0.000	1122.64	0.00	0.00
8	150.00	DTMABP7819VG12A	6	28.994	31.893	0.67	1.00	4.58	103.68	0.000	0.000	233.86	0.00	0.00
9	150.00	LMU Antenna	1	28.994	31.893	0.50	1.00	0.83	7.65	0.000	0.000	42.61	0.00	0.00
10	150.00	DBC-750	3	28.994	31.893	1.00	1.00	1.53	12.96	0.000	0.000	78.07	0.00	0.00
11	150.00	ABT-DFDM-ADB	3	28.994	31.893	0.98	1.00	0.15	2.97	0.000	0.000	7.50	0.00	0.00
12	150.00	DC6-48-60-18-8F	2	28.994	31.893	1.00	1.00	1.84	57.24	0.000	0.000	93.89	0.00	0.00
13	150.00	RRUS-11	3	28.994	31.893	0.71	1.00	5.94	135.00	0.000	0.000	303.25	0.00	0.00
14	150.00	4426 B66	3	28.994	31.893	0.73	1.00	3.59	130.68	0.000	0.000	183.28	0.00	0.00
15	150.00	RRUS-32	3	28.994	31.893	0.87	1.00	1.72	2097.90	0.000	0.000	87.90	0.00	0.00
16	150.00	RRUS-32	3	28.994	31.893	0.87	1.00	7.86	143.10	0.000	0.000	400.89	0.00	0.00
17	141.00	RVZDC-6627-PF48	1	28.619	31.480	1.00	1.00	3.79	28.80	0.000	0.000	190.90	0.00	0.00
18	141.00	B5/B13 RRHBR04C	3	28.619	31.480	0.50	0.75	2.83	190.08	0.000	0.000	142.75	0.00	0.00
19	141.00	B2/B66A RRHBR049	3	28.619	31.480	0.50	0.75	9.81	356.94	0.000	0.000	494.31	0.00	0.00
20	141.00	BSAMNT-SBS-2-2	3	28.619	31.480	1.00	1.00	10.50	180.90	0.000	0.000	528.87	0.00	0.00
21	141.00	XXDWMM-12.5-65-8T-CB	3	28.619	31.480	0.61	0.75	2.17	62.37	0.000	0.000	109.12	0.00	0.00
22	141.00	Commscope	6	28.619	31.480	0.62	0.75	30.18	392.58	0.000	0.000	1520.06	0.00	0.00
23	141.00	Antel	3	28.619	31.480	0.66	0.75	7.05	81.81	0.000	0.000	355.04	0.00	0.00
24	141.00	HRK12 (Handrail Kit)	1	28.619	31.480	1.00	1.00	6.75	235.55	0.000	0.000	339.99	0.00	0.00
25	141.00	CBRS RRH-RT4401	3	28.619	31.480	0.50	0.75	1.28	41.04	0.000	0.000	64.54	0.00	0.00
26	141.00	Low Profile Platform	1	28.619	31.480	1.00	1.00	22.00	1350.00	0.000	0.000	1108.11	0.00	0.00
27	131.00	RFS ATM1412D-1A20	3	28.179	30.997	0.58	0.80	2.05	35.10	0.000	0.000	101.66	0.00	0.00
28	131.00	RFS	3	28.179	30.997	0.50	0.80	9.61	169.29	0.000	0.000	476.73	0.00	0.00
29	131.00	Commscope LNX-6515DS	3	28.179	30.997	0.64	0.80	22.02	213.57	0.000	0.000	1092.19	0.00	0.00
30	131.00	Kathrein 782 11056	3	28.179	30.997	0.61	0.80	1.20	29.70	0.000	0.000	59.70	0.00	0.00
31	131.00	T-Arms (Site Pro P/N)	3	28.179	30.997	0.56	0.75	13.50	356.40	0.000	0.000	669.53	0.00	0.00
32	131.00	Ericsson KRY 144/1	3	28.179	30.997	0.56	0.80	0.69	29.70	0.000	0.000	34.16	0.00	0.00
33	123.00	ALU - 1900 MHz RRH -	3	27.807	30.588	0.50	0.75	4.09	162.00	0.000	0.000	199.94	0.00	0.00
34	123.00	APXVTM14-C-I20	3	27.807	30.588	0.59	0.75	11.27	148.50	0.000	0.000	551.53	0.00	0.00
35	123.00	APXVSPP18-C-A20	2	27.807	30.588	0.62	0.75	9.98	102.60	0.000	0.000	488.67	0.00	0.00
36	123.00	ALU - TD-RRH8x20-25 -	3	27.807	30.588	0.50	0.75	6.11	189.00	0.000	0.000	298.80	0.00	0.00
37	123.00	ALU - 800 MHz RRH -	3	27.807	30.588	0.50	0.75	3.75	143.10	0.000	0.000	183.71	0.00	0.00
38	123.00	APXVSPP18-C-A20 (50	1	27.807	30.588	0.62	0.75	4.99	45.00	0.000	0.000	244.34	0.00	0.00
39	123.00	ALU - 800 MHz Filter	3	27.807	30.588	0.75	0.75	1.75	23.76	0.000	0.000	85.89	0.00	0.00
40	123.00	RFS - ACU-A20-N - RET	4	27.807	30.588	0.59	0.75	0.33	3.60	0.000	0.000	16.24	0.00	0.00
41	123.00	Platform w/ HRK Handrail	1	27.807	30.588	1.00	1.00	32.00	1440.00	0.000	0.000	1566.11	0.00	0.00
<b>Totals:</b>								<b>10,621.28</b>				<b>17,161.55</b>		

## Total Applied Force Summary

<b>Structure:</b> CT10022-A-SBA	<b>Code:</b> EIA/TIA-222-G	3/24/2020
<b>Site Name:</b> Simsbury 2, CT	<b>Exposure:</b> C	
<b>Height:</b> 150.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II

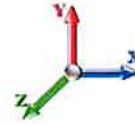


Page: 15

**Load Case:** 0.9D + 1.6W 93 mph Wind

**Dead Load Factor** 0.90

**Wind Load Factor** 1.60



**Iterations** 23

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		527.21	1056.34	0.00	0.00
10.00		517.20	1038.77	0.00	0.00
15.00		507.19	1021.20	0.00	0.00
20.00		527.53	1003.63	0.00	0.00
25.00		541.77	986.06	0.00	0.00
30.00		551.40	968.50	0.00	0.00
35.00		557.63	950.93	0.00	0.00
40.00		561.24	933.36	0.00	0.00
41.50		167.27	276.58	0.00	0.00
45.00		397.36	1189.97	0.00	0.00
48.00		340.27	1006.27	0.00	0.00
50.00		226.23	360.98	0.00	0.00
55.00		567.83	890.14	0.00	0.00
60.00		564.94	872.57	0.00	0.00
65.00		560.93	855.00	0.00	0.00
70.00		555.92	837.44	0.00	0.00
75.00		550.03	819.87	0.00	0.00
80.00		543.33	802.30	0.00	0.00
84.08		437.73	642.18	0.00	0.00
85.00		98.31	237.92	0.00	0.00
89.50		480.79	1152.57	0.00	0.00
90.00		52.76	64.14	0.00	0.00
95.00		525.48	633.67	0.00	0.00
100.00		516.28	619.62	0.00	0.00
105.00		506.55	605.56	0.00	0.00
110.00		496.33	591.51	0.00	0.00
115.00		485.65	577.45	0.00	0.00
120.00		474.53	563.40	0.00	0.00
123.00	(23) attachments	3913.96	2588.85	0.00	0.00
125.00		183.33	211.18	0.00	0.00
127.92		264.15	303.94	0.00	0.00
130.00		188.17	339.38	0.00	0.00
131.00	(18) attachments	2523.46	995.15	0.00	0.00
132.08		96.41	164.60	0.00	0.00
135.00		257.04	214.31	0.00	0.00
140.00		431.37	359.04	0.00	0.00
141.00	(27) attachments	4938.17	2990.61	0.00	0.00
145.00		333.47	246.99	0.00	0.00
150.00	(43) attachments	6643.88	4909.15	0.00	455.13
<b>Totals:</b>		<b>32,613.06</b>	<b>34,881.15</b>	<b>0.00</b>	<b>455.13</b>



## Calculated Forces

**Structure:** CT10022-A-SBA

**Code:** EIA/TIA-222-G

3/24/2020

**Site Name:** Simsbury 2, CT

**Exposure:** C

**Height:** 150.00 (ft)

**Crest Height:** 0.00

**Base Elev:** 0.000 (ft)

**Site Class:** D - Stiff Soil

**Gh:** 1.1

**Topography:** 1

**Struct Class:** II

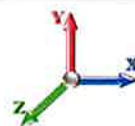
Page: 16



**Load Case:** 0.9D + 1.6W 93 mph Wind

**Dead Load Factor** 0.90

**Wind Load Factor** 1.60



**Iterations** 23

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	-34.83	-32.67	0.00	-3639.9	0.00	3639.92	3399.80	1699.90	8571.22	4291.98	0.00	0.000	0.000	0.859
5.00	-33.67	-32.24	0.00	-3476.5	0.00	3476.58	3376.67	1688.33	8351.12	4181.77	0.10	-0.176	0.000	0.842
10.00	-32.54	-31.82	0.00	-3315.3	0.00	3315.37	3351.94	1675.97	8129.40	4070.74	0.38	-0.355	0.000	0.825
15.00	-31.42	-31.41	0.00	-3156.2	0.00	3156.26	3325.63	1662.82	7906.28	3959.02	0.84	-0.535	0.000	0.807
20.00	-30.33	-30.97	0.00	-2999.2	0.00	2999.22	3297.74	1648.87	7681.99	3846.70	1.50	-0.716	0.000	0.789
25.00	-29.25	-30.50	0.00	-2844.4	0.00	2844.40	3268.26	1634.13	7456.75	3733.92	2.35	-0.900	0.000	0.771
30.00	-28.19	-30.03	0.00	-2691.8	0.00	2691.88	3237.20	1618.60	7230.79	3620.77	3.39	-1.084	0.000	0.753
35.00	-27.16	-29.54	0.00	-2541.7	0.00	2541.75	3204.54	1602.27	7004.35	3507.38	4.63	-1.270	0.000	0.734
40.00	-26.18	-29.01	0.00	-2394.0	0.00	2394.05	3170.31	1585.15	6777.64	3393.86	6.06	-1.458	0.000	0.714
41.50	-25.86	-28.88	0.00	-2350.5	0.00	2350.54	3159.73	1579.86	6709.61	3359.79	6.53	-1.515	0.000	0.708
45.00	-24.62	-28.50	0.00	-2249.4	0.00	2249.46	3134.49	1567.24	6550.90	3280.32	7.69	-1.648	0.000	0.694
48.00	-23.57	-28.17	0.00	-2163.9	0.00	2163.95	3132.30	1566.15	6537.37	3273.54	8.76	-1.763	0.000	0.669
50.00	-23.16	-27.99	0.00	-2107.6	0.00	2107.61	3117.49	1558.74	6446.72	3228.15	9.52	-1.840	0.000	0.661
55.00	-22.20	-27.46	0.00	-1967.6	0.00	1967.67	3079.35	1539.68	6220.34	3114.79	11.54	-2.023	0.000	0.639
60.00	-21.26	-26.93	0.00	-1830.3	0.00	1830.37	3039.63	1519.81	5994.49	3001.70	13.76	-2.205	0.000	0.617
65.00	-20.35	-26.40	0.00	-1695.7	0.00	1695.71	2998.32	1499.16	5769.39	2888.98	16.17	-2.387	0.000	0.594
70.00	-19.45	-25.87	0.00	-1563.7	0.00	1563.70	2955.43	1477.72	5545.28	2776.76	18.77	-2.568	0.000	0.570
75.00	-18.58	-25.34	0.00	-1434.3	0.00	1434.34	2910.95	1455.48	5322.38	2665.15	21.55	-2.747	0.000	0.545
80.00	-17.74	-24.81	0.00	-1307.6	0.00	1307.64	2864.89	1432.44	5100.92	2554.25	24.52	-2.924	0.000	0.518
84.08	-17.08	-24.36	0.00	-1206.3	0.00	1206.33	2826.09	1413.05	4921.28	2464.30	27.09	-3.067	0.000	0.496
85.00	-16.81	-24.28	0.00	-1184.0	0.00	1184.00	2817.24	1408.62	4881.12	2444.19	27.68	-3.100	0.000	0.491
89.50	-15.65	-23.76	0.00	-1074.7	0.00	1074.74	2031.94	1015.97	3485.43	1745.31	30.67	-3.254	0.000	0.624
90.00	-15.54	-23.73	0.00	-1062.8	0.00	1062.86	2029.15	1014.57	3470.92	1738.04	31.02	-3.272	0.000	0.620
95.00	-14.86	-23.22	0.00	-944.19	0.00	944.19	2000.34	1000.17	3325.82	1665.38	34.55	-3.470	0.000	0.575
100.00	-14.20	-22.72	0.00	-828.07	0.00	828.07	1969.95	984.97	3180.92	1592.82	38.29	-3.661	0.000	0.528
105.00	-13.56	-22.21	0.00	-714.50	0.00	714.50	1937.97	968.98	3036.44	1520.48	42.22	-3.842	0.000	0.477
110.00	-12.95	-21.71	0.00	-603.44	0.00	603.44	1904.40	952.20	2892.62	1448.46	46.33	-4.011	0.000	0.424
115.00	-12.35	-21.22	0.00	-494.88	0.00	494.88	1869.25	934.63	2749.69	1376.89	50.62	-4.166	0.000	0.367
120.00	-11.79	-20.73	0.00	-388.79	0.00	388.79	1832.52	916.26	2607.87	1305.87	55.05	-4.303	0.000	0.305
123.00	-9.49	-16.64	0.00	-326.61	0.00	326.61	1809.72	904.86	2523.40	1263.58	57.78	-4.377	0.000	0.264
125.00	-9.27	-16.45	0.00	-293.34	0.00	293.34	1794.20	897.10	2467.38	1235.52	59.62	-4.422	0.000	0.243
127.92	-8.98	-16.17	0.00	-245.37	0.00	245.37	1771.11	885.56	2386.14	1194.84	62.34	-4.481	0.000	0.211
130.00	-8.65	-15.96	0.00	-211.69	0.00	211.69	1754.29	877.15	2328.47	1165.96	64.30	-4.520	0.000	0.187
131.00	-7.85	-13.36	0.00	-195.74	0.00	195.74	1746.12	873.06	2300.89	1152.16	65.25	-4.537	0.000	0.175
132.08	-7.69	-13.26	0.00	-181.26	0.00	181.26	1160.48	580.24	1541.12	771.71	66.28	-4.554	0.000	0.242
135.00	-7.48	-12.99	0.00	-142.59	0.00	142.59	1148.82	574.41	1493.54	747.88	69.07	-4.596	0.000	0.198
140.00	-7.15	-12.54	0.00	-77.62	0.00	77.62	1127.58	563.79	1411.91	707.01	73.92	-4.662	0.000	0.117
141.00	-4.57	-7.38	0.00	-65.08	0.00	65.08	1123.15	561.57	1395.60	698.84	74.90	-4.672	0.000	0.097
145.00	-4.35	-7.02	0.00	-35.58	0.00	35.58	1104.76	552.38	1330.41	666.20	78.82	-4.699	0.000	0.058
150.00	0.00	-6.64	0.00	-0.46	0.00	0.46	1080.36	540.18	1249.27	625.56	83.75	-4.713	0.000	0.001

## Wind Loading - Shaft

Structure: CT10022-A-SBA

Code: EIA/TIA-222-G

3/24/2020

Site Name: Simsbury 2, CT

Exposure: C

Height: 150.00 (ft)

Crest Height: 0.00

Base Elev: 0.000 (ft)

Site Class: D - Stiff Soil

Gh: 1.1

Topography: 1

Struct Class: II

Page: 17

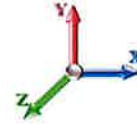


Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Iterations 23

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	1.656	5.00	27.156	32.59	185.2	643.2	1870.5
10.00		1.00	0.85	5.168	5.68	0.00	1.200	1.775	5.00	26.765	32.12	182.6	677.8	1881.7
15.00		1.00	0.85	5.168	5.68	0.00	1.200	1.848	5.00	26.337	31.60	179.7	693.2	1873.7
20.00		1.00	0.90	5.483	6.03	0.00	1.200	1.902	5.00	25.893	31.07	187.4	700.3	1857.4
25.00		1.00	0.95	5.747	6.32	0.00	1.200	1.945	5.00	25.439	30.53	193.0	702.5	1836.2
30.00		1.00	0.98	5.972	6.57	0.00	1.200	1.981	5.00	24.979	29.98	196.9	701.5	1811.8
35.00		1.00	1.01	6.169	6.79	0.00	1.200	2.012	5.00	24.515	29.42	199.6	698.2	1785.0
40.00		1.00	1.04	6.345	6.98	0.00	1.200	2.039	5.00	24.049	28.86	201.4	693.2	1756.5
41.50	Bot - Section 2	1.00	1.05	6.394	7.03	0.00	1.200	2.046	1.50	7.121	8.55	60.1	207.4	521.9
45.00		1.00	1.07	6.504	7.15	0.00	1.200	2.063	3.50	16.639	19.97	142.9	486.4	1946.2
48.00	Top - Section 1	1.00	1.08	6.593	7.25	0.00	1.200	2.076	3.00	14.078	16.89	122.5	414.3	1647.3
50.00		1.00	1.09	6.650	7.32	0.00	1.200	2.085	2.00	9.290	11.15	81.6	274.9	683.8
55.00		1.00	1.12	6.785	7.46	0.00	1.200	2.105	5.00	22.900	27.48	205.1	678.9	1684.7
60.00		1.00	1.14	6.910	7.60	0.00	1.200	2.123	5.00	22.426	26.91	204.6	669.7	1652.0
65.00		1.00	1.16	7.028	7.73	0.00	1.200	2.140	5.00	21.950	26.34	203.6	659.8	1618.7
70.00		1.00	1.17	7.138	7.85	0.00	1.200	2.156	5.00	21.474	25.77	202.3	649.3	1584.8
75.00		1.00	1.19	7.243	7.97	0.00	1.200	2.171	5.00	20.997	25.20	200.7	638.3	1550.3
80.00		1.00	1.21	7.342	8.08	0.00	1.200	2.185	5.00	20.519	24.62	198.9	626.7	1515.4
84.08	Bot - Section 3	1.00	1.22	7.419	8.16	0.00	1.200	2.196	4.08	16.402	19.68	160.6	503.9	1212.2
85.00		1.00	1.22	7.436	8.18	0.00	1.200	2.198	0.92	3.676	4.41	36.1	114.0	398.0
89.50	Top - Section 2	1.00	1.24	7.517	8.27	0.00	1.200	2.210	4.50	17.817	21.38	176.8	549.6	1923.3
90.00		1.00	1.24	7.526	8.28	0.00	1.200	2.211	0.50	1.955	2.35	19.4	60.9	128.3
95.00		1.00	1.25	7.612	8.37	0.00	1.200	2.223	5.00	19.294	23.15	193.9	596.7	1260.5
100.00		1.00	1.27	7.695	8.46	0.00	1.200	2.234	5.00	18.814	22.58	191.1	583.8	1228.8
105.00		1.00	1.28	7.774	8.55	0.00	1.200	2.245	5.00	18.334	22.00	188.1	570.5	1196.8
110.00		1.00	1.29	7.851	8.64	0.00	1.200	2.256	5.00	17.853	21.42	185.0	557.0	1164.5
115.00		1.00	1.30	7.925	8.72	0.00	1.200	2.266	5.00	17.372	20.85	181.7	543.1	1132.0
120.00		1.00	1.32	7.996	8.80	0.00	1.200	2.276	5.00	16.891	20.27	178.3	529.1	1099.2
123.00	Appurtenance(s)	1.00	1.32	8.038	8.84	0.00	1.200	2.281	3.00	9.902	11.88	105.1	312.3	645.4
125.00		1.00	1.33	8.065	8.87	0.00	1.200	2.285	2.00	6.505	7.81	69.3	205.9	424.2
127.92	Bot - Section 4	1.00	1.33	8.104	8.91	0.00	1.200	2.290	2.92	9.349	11.22	100.0	295.4	608.4
130.00		1.00	1.34	8.132	8.95	0.00	1.200	2.294	2.08	6.643	7.97	71.3	210.7	597.3
131.00	Appurtenance(s)	1.00	1.34	8.145	8.96	0.00	1.200	2.296	1.00	3.159	3.79	34.0	100.6	284.1
132.08	Top - Section 3	1.00	1.34	8.159	8.98	0.00	1.200	2.298	1.08	3.400	4.08	36.6	108.3	305.6
135.00		1.00	1.35	8.197	9.02	0.00	1.200	2.303	2.92	9.043	10.85	97.8	286.5	512.7
140.00		1.00	1.36	8.260	9.09	0.00	1.200	2.311	5.00	15.121	18.15	164.9	476.2	852.9
141.00	Appurtenance(s)	1.00	1.36	8.272	9.10	0.00	1.200	2.313	1.00	2.966	3.56	32.4	94.7	168.3
145.00		1.00	1.37	8.321	9.15	0.00	1.200	2.319	4.00	11.672	14.01	128.2	369.0	657.9
150.00	Appurtenance(s)	1.00	1.38	8.381	9.22	0.00	1.200	2.327	5.00	14.156	16.99	156.6	446.0	794.6
<b>Totals:</b>									<b>150.00</b>			<b>5,655.3</b>		<b>45,672.9</b>

## Discrete Appurtenance Forces

**Structure:** CT10022-A-SBA

**Code:** EIA/TIA-222-G

3/24/2020

**Site Name:** Simsbury 2, CT

**Exposure:** C

**Height:** 150.00 (ft)

**Crest Height:** 0.00

**Base Elev:** 0.000 (ft)

**Site Class:** D - Stiff Soil

**Gh:** 1.1

**Topography:** 1

**Struct Class:** II

Page: 18

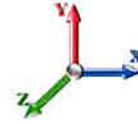


**Load Case:** 1.2D + 1.0Di + 1.0Wi 50 mph Wind

**Iterations** 23

**Dead Load Factor** 1.20

**Wind Load Factor** 1.00



No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	150.00	TPX-070821	6	8.381	9.219	0.71	1.00	3.93	200.11	0.000	0.000	36.26	0.00	0.00
2	150.00	800 10121	3	8.389	9.228	0.81	1.00	19.34	527.46	0.000	0.730	178.48	0.00	130.29
3	150.00	HPA-65R-BUU-H6	1	8.381	9.219	0.87	1.00	10.02	410.25	0.000	0.000	92.37	0.00	0.00
4	150.00	TPA-65R-LCUUUU-H8	2	8.381	9.219	0.85	1.00	26.42	1056.97	0.000	0.000	243.54	0.00	0.00
5	150.00	QS66512-2	1	8.381	9.219	0.94	1.00	9.31	454.10	0.000	0.000	85.79	0.00	0.00
6	150.00	HPA-65R-BUU-H8	2	8.381	9.219	0.81	1.00	24.59	982.40	0.000	0.000	226.66	0.00	0.00
7	150.00	Low Profile	1	8.381	9.219	1.00	1.00	45.55	3245.22	0.000	0.000	419.90	0.00	0.00
8	150.00	DTMABP7819VG12A	6	8.381	9.219	0.69	1.00	8.97	298.60	0.000	0.000	82.67	0.00	0.00
9	150.00	LMU Antenna	1	8.381	9.219	0.52	1.00	0.87	10.20	0.000	0.000	8.01	0.00	0.00
10	150.00	DBC-750	3	8.381	9.219	1.00	1.00	3.65	47.25	0.000	0.000	33.63	0.00	0.00
11	150.00	ABT-DFDM-ADB	3	8.381	9.219	1.00	1.00	0.92	10.78	0.000	0.000	8.48	0.00	0.00
12	150.00	DC6-48-60-18-8F	2	8.381	9.219	1.00	1.00	3.01	205.79	0.000	0.000	27.73	0.00	0.00
13	150.00	RRUS-11	3	8.381	9.219	0.73	1.00	8.16	420.10	0.000	0.000	75.20	0.00	0.00
14	150.00	4426 B66	3	8.381	9.219	0.75	1.00	20.31	1609.10	0.000	0.000	187.26	0.00	0.00
15	150.00	RRUS-32	3	8.381	9.219	0.89	1.00	3.38	5002.12	0.000	0.000	31.12	0.00	0.00
16	150.00	RRUS-32	3	8.381	9.219	0.89	1.00	10.76	400.26	0.000	0.000	99.19	0.00	0.00
17	141.00	RVZDC-6627-PF48	1	8.272	9.099	1.00	1.00	4.89	216.53	0.000	0.000	44.48	0.00	0.00
18	141.00	B5/B13 RRHBR04C	3	8.272	9.099	0.50	0.75	3.94	421.62	0.000	0.000	35.81	0.00	0.00
19	141.00	B2/B66A RRHBR049	3	8.272	9.099	0.50	0.75	12.19	1253.12	0.000	0.000	110.94	0.00	0.00
20	141.00	BSAMNT-SBS-2-2	3	8.272	9.099	1.00	1.00	25.07	-658.93	0.000	0.000	228.12	0.00	0.00
21	141.00	XXDWMM-12.5-65-8T-CB	3	8.272	9.099	0.64	0.75	4.25	358.32	0.000	0.000	38.71	0.00	0.00
22	141.00	Commscope	6	8.272	9.099	0.62	0.75	36.61	2223.73	0.000	0.000	333.12	0.00	0.00
23	141.00	Antel	3	8.272	9.099	0.66	0.75	11.89	900.92	0.000	0.000	108.22	0.00	0.00
24	141.00	HRK12 (Handrail Kit)	1	8.272	9.099	1.00	1.00	15.49	987.36	0.000	0.000	140.96	0.00	0.00
25	141.00	CBRS RRH-RT4401	3	8.272	9.099	0.50	0.75	2.66	116.13	0.000	0.000	24.18	0.00	0.00
26	141.00	Low Profile Platform	1	8.272	9.099	1.00	1.00	45.40	3234.45	0.000	0.000	413.15	0.00	0.00
27	131.00	RFS ATM1412D-1A20	3	8.145	8.960	0.61	0.80	4.01	128.89	0.000	0.000	35.94	0.00	0.00
28	131.00	RFS	3	8.145	8.960	0.50	0.80	13.86	801.01	0.000	0.000	124.16	0.00	0.00
29	131.00	Commscope LNX-6515DS	3	8.145	8.960	0.64	0.80	30.27	1495.87	0.000	0.000	271.23	0.00	0.00
30	131.00	Kathrein 782 11056	3	8.145	8.960	0.63	0.80	2.77	88.04	0.000	0.000	24.84	0.00	0.00
31	131.00	T-Arms (Site Pro P/N	3	8.145	8.960	0.56	0.75	29.00	-25.17	0.000	0.000	259.79	0.00	0.00
32	131.00	Ericsson KRY 144/1	3	8.145	8.960	0.58	0.80	1.81	72.84	0.000	0.000	16.25	0.00	0.00
33	123.00	ALU - 1900 MHz RRH -	3	8.038	8.842	0.50	0.75	6.58	463.37	0.000	0.000	58.14	0.00	0.00
34	123.00	APXVTM14-C-I20	3	8.038	8.842	0.59	0.75	13.91	866.62	0.000	0.000	122.96	0.00	0.00
35	123.00	APXVSP18-C-A20	2	8.038	8.842	0.62	0.75	14.53	432.28	0.000	0.000	128.48	0.00	0.00
36	123.00	ALU - TD-RRH8x20-25 -	3	8.038	8.842	0.50	0.75	7.75	713.44	0.000	0.000	68.48	0.00	0.00
37	123.00	ALU - 800 MHz RRH -	3	8.038	8.842	0.50	0.75	6.01	417.53	0.000	0.000	53.11	0.00	0.00
38	123.00	APXVSP18-C-A20 (50	1	8.038	8.842	0.62	0.75	7.27	172.99	0.000	0.000	64.24	0.00	0.00
39	123.00	ALU - 800 MHz Filter	3	8.038	8.842	0.75	0.75	3.66	85.87	0.000	0.000	32.34	0.00	0.00
40	123.00	RFS - ACU-A20-N - RET	4	8.038	8.842	0.61	0.75	1.30	22.06	0.000	0.000	11.48	0.00	0.00
41	123.00	Platform w/ HRK Handrail	1	8.038	8.842	1.00	1.00	65.58	3544.98	0.000	0.000	579.82	0.00	0.00

**Totals:** 33,214.57

5,165.25

## Total Applied Force Summary

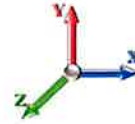
<b>Structure:</b> CT10022-A-SBA	<b>Code:</b> EIA/TIA-222-G	3/24/2020
<b>Site Name:</b> Simsbury 2, CT	<b>Exposure:</b> C	
<b>Height:</b> 150.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



Page: 19

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

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



**Iterations** 23

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		185.25	2051.62	0.00	0.00
10.00		182.59	2062.79	0.00	0.00
15.00		179.66	2054.85	0.00	0.00
20.00		187.41	2038.50	0.00	0.00
25.00		192.99	2017.29	0.00	0.00
30.00		196.92	1992.87	0.00	0.00
35.00		199.63	1966.14	0.00	0.00
40.00		201.42	1937.66	0.00	0.00
41.50		60.11	576.19	0.00	0.00
45.00		142.86	2073.01	0.00	0.00
48.00		122.52	1755.98	0.00	0.00
50.00		81.55	756.24	0.00	0.00
55.00		205.09	1865.80	0.00	0.00
60.00		204.56	1833.15	0.00	0.00
65.00		203.63	1799.82	0.00	0.00
70.00		202.34	1765.88	0.00	0.00
75.00		200.74	1731.41	0.00	0.00
80.00		198.86	1696.47	0.00	0.00
84.08		160.63	1360.13	0.00	0.00
85.00		36.09	431.21	0.00	0.00
89.50		176.80	2086.33	0.00	0.00
90.00		19.43	146.46	0.00	0.00
95.00		193.87	1441.64	0.00	0.00
100.00		191.10	1409.93	0.00	0.00
105.00		188.15	1377.92	0.00	0.00
110.00		185.02	1345.63	0.00	0.00
115.00		181.73	1313.08	0.00	0.00
120.00		178.28	1280.30	0.00	0.00
123.00	(23) attachments	1224.12	7473.21	0.00	0.00
125.00		69.25	487.51	0.00	0.00
127.92		100.01	700.66	0.00	0.00
130.00		71.31	663.24	0.00	0.00
131.00	(18) attachments	766.18	2877.24	0.00	0.00
132.08		36.62	327.73	0.00	0.00
135.00		97.84	572.21	0.00	0.00
140.00		164.87	954.96	0.00	0.00
141.00	(27) attachments	1510.07	9241.95	0.00	0.00
145.00		128.20	698.30	0.00	0.00
150.00	(43) attachments	1992.89	15725.73	0.00	130.29
<b>Totals:</b>		<b>10,820.57</b>	<b>83,891.04</b>	<b>0.00</b>	<b>130.29</b>



## Calculated Forces

**Structure:** CT10022-A-SBA

**Code:** EIA/TIA-222-G

3/24/2020

**Site Name:** Simsbury 2, CT

**Exposure:** C

**Height:** 150.00 (ft)

**Crest Height:** 0.00

**Base Elev:** 0.000 (ft)

**Site Class:** D - Stiff Soil

**Gh:** 1.1

**Topography:** 1

**Struct Class:** II

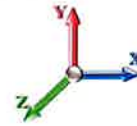
Page: 20



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

**Dead Load Factor** 1.20

**Wind Load Factor** 1.00



**Iterations** 23

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	-83.89	-10.87	0.00	-1249.1	0.00	1249.10	3399.80	1699.90	8571.22	4291.98	0.00	0.000	0.000	0.316
5.00	-81.82	-10.77	0.00	-1194.7	0.00	1194.77	3376.67	1688.33	8351.12	4181.77	0.03	-0.061	0.000	0.310
10.00	-79.75	-10.67	0.00	-1140.9	0.00	1140.94	3351.94	1675.97	8129.40	4070.74	0.13	-0.122	0.000	0.304
15.00	-77.68	-10.57	0.00	-1087.6	0.00	1087.61	3325.63	1662.82	7906.28	3959.02	0.29	-0.184	0.000	0.298
20.00	-75.63	-10.45	0.00	-1034.7	0.00	1034.79	3297.74	1648.87	7681.99	3846.70	0.52	-0.246	0.000	0.292
25.00	-73.61	-10.33	0.00	-982.52	0.00	982.52	3268.26	1634.13	7456.75	3733.92	0.81	-0.310	0.000	0.286
30.00	-71.60	-10.20	0.00	-930.86	0.00	930.86	3237.20	1618.60	7230.79	3620.77	1.17	-0.374	0.000	0.279
35.00	-69.63	-10.07	0.00	-879.84	0.00	879.84	3204.54	1602.27	7004.35	3507.38	1.59	-0.438	0.000	0.273
40.00	-67.68	-9.90	0.00	-829.50	0.00	829.50	3170.31	1585.15	6777.64	3393.86	2.09	-0.503	0.000	0.266
41.50	-67.10	-9.88	0.00	-814.65	0.00	814.65	3159.73	1579.86	6709.61	3359.79	2.25	-0.523	0.000	0.264
45.00	-65.02	-9.76	0.00	-780.08	0.00	780.08	3134.49	1567.24	6550.90	3280.32	2.65	-0.569	0.000	0.259
48.00	-63.26	-9.66	0.00	-750.80	0.00	750.80	3132.30	1566.15	6537.37	3273.54	3.02	-0.609	0.000	0.250
50.00	-62.50	-9.62	0.00	-731.49	0.00	731.49	3117.49	1558.74	6446.72	3228.15	3.28	-0.636	0.000	0.247
55.00	-60.63	-9.46	0.00	-683.41	0.00	683.41	3079.35	1539.68	6220.34	3114.79	3.98	-0.699	0.000	0.239
60.00	-58.79	-9.29	0.00	-636.12	0.00	636.12	3039.63	1519.81	5994.49	3001.70	4.75	-0.762	0.000	0.231
65.00	-56.98	-9.13	0.00	-589.65	0.00	589.65	2998.32	1499.16	5769.39	2888.98	5.58	-0.825	0.000	0.223
70.00	-55.21	-8.96	0.00	-544.01	0.00	544.01	2955.43	1477.72	5545.28	2776.76	6.48	-0.888	0.000	0.215
75.00	-53.47	-8.79	0.00	-499.21	0.00	499.21	2910.95	1455.48	5322.38	2665.15	7.44	-0.951	0.000	0.206
80.00	-51.77	-8.61	0.00	-455.27	0.00	455.27	2864.89	1432.44	5100.92	2554.25	8.47	-1.012	0.000	0.196
84.08	-50.41	-8.45	0.00	-420.11	0.00	420.11	2826.09	1413.05	4921.28	2464.30	9.36	-1.062	0.000	0.188
85.00	-49.97	-8.44	0.00	-412.36	0.00	412.36	2817.24	1408.62	4881.12	2444.19	9.56	-1.074	0.000	0.186
89.50	-47.88	-8.25	0.00	-374.39	0.00	374.39	2031.94	1015.97	3485.43	1745.31	10.60	-1.127	0.000	0.238
90.00	-47.73	-8.26	0.00	-370.27	0.00	370.27	2029.15	1014.57	3470.92	1738.04	10.72	-1.133	0.000	0.237
95.00	-46.29	-8.09	0.00	-328.99	0.00	328.99	2000.34	1000.17	3325.82	1665.38	11.95	-1.203	0.000	0.221
100.00	-44.87	-7.92	0.00	-288.56	0.00	288.56	1969.95	984.97	3180.92	1592.82	13.24	-1.269	0.000	0.204
105.00	-43.49	-7.74	0.00	-248.98	0.00	248.98	1937.97	968.98	3036.44	1520.48	14.61	-1.332	0.000	0.186
110.00	-42.14	-7.57	0.00	-210.27	0.00	210.27	1904.40	952.20	2892.62	1448.46	16.03	-1.391	0.000	0.167
115.00	-40.83	-7.39	0.00	-172.43	0.00	172.43	1869.25	934.63	2749.69	1376.89	17.52	-1.445	0.000	0.147
120.00	-39.55	-7.20	0.00	-135.48	0.00	135.48	1832.52	916.26	2607.87	1305.87	19.06	-1.493	0.000	0.125
123.00	-32.11	-5.79	0.00	-113.87	0.00	113.87	1809.72	904.86	2523.40	1263.58	20.01	-1.518	0.000	0.108
125.00	-31.62	-5.72	0.00	-102.28	0.00	102.28	1794.20	897.10	2467.38	1235.52	20.65	-1.534	0.000	0.100
127.92	-30.92	-5.61	0.00	-85.59	0.00	85.59	1771.11	885.56	2386.14	1194.84	21.59	-1.555	0.000	0.089
130.00	-30.26	-5.53	0.00	-73.90	0.00	73.90	1754.29	877.15	2328.47	1165.96	22.27	-1.568	0.000	0.081
131.00	-27.40	-4.69	0.00	-68.37	0.00	68.37	1746.12	873.06	2300.89	1152.16	22.60	-1.574	0.000	0.075
132.08	-27.07	-4.65	0.00	-63.29	0.00	63.29	1160.48	580.24	1541.12	771.71	22.96	-1.580	0.000	0.105
135.00	-26.50	-4.54	0.00	-49.74	0.00	49.74	1148.82	574.41	1493.54	747.88	23.93	-1.595	0.000	0.090
140.00	-25.55	-4.36	0.00	-27.03	0.00	27.03	1127.58	563.79	1411.91	707.01	25.61	-1.618	0.000	0.061
141.00	-16.36	-2.59	0.00	-22.68	0.00	22.68	1123.15	561.57	1395.60	698.84	25.95	-1.621	0.000	0.047
145.00	-15.66	-2.44	0.00	-12.33	0.00	12.33	1104.76	552.38	1330.41	666.20	27.32	-1.631	0.000	0.033
150.00	0.00	-1.99	0.00	-0.13	0.00	0.13	1080.36	540.18	1249.27	625.56	29.03	-1.636	0.000	0.000

## Seismic Segment Forces (Factored)

**Structure:** CT10022-A-SBA  
**Site Name:** Simsbury 2, CT  
**Height:** 150.00 (ft)  
**Base Elev:** 0.000 (ft)  
**Gh:** 1.1

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

3/24/2020

Page: 21



**Load Case:** 1.2D + 1.0E

**Iterations** 21

**Gust Response Factor** 1.10

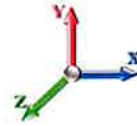
**Sds** 0.19

**Ss** 0.18

**Dead Load Factor** 1.20 **Seismic Load Factor** 1.00 **Sd1** 0.10

**S1** 0.06

**Wind Load Factor** 0.00 **Structure Frequency (f1)** 0.36 **SA** 0.04 **Seismic Importance Factor** 1.00



Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1022.7	0.00	0.03	0.02	18.14	
10.00		1003.2	0.01	0.05	0.03	25.97	
15.00		983.74	0.02	0.06	0.04	29.44	
20.00		964.22	0.03	0.07	0.04	30.88	
25.00		944.70	0.05	0.07	0.04	31.41	
30.00		925.18	0.08	0.07	0.04	31.60	
35.00		905.65	0.10	0.07	0.04	31.70	
40.00		886.13	0.13	0.07	0.03	31.72	
41.50	Bot - Section 2	262.03	0.14	0.07	0.03	9.44	
45.00		1216.5	0.17	0.07	0.03	44.25	
48.00	Top - Section 1	1027.5	0.19	0.06	0.02	37.46	
50.00		340.71	0.21	0.06	0.02	12.38	
55.00		838.12	0.25	0.05	0.02	29.48	
60.00		818.60	0.30	0.04	0.01	26.33	
65.00		799.08	0.35	0.03	0.01	21.29	
70.00		779.55	0.41	0.01	0.01	14.14	
75.00		760.03	0.47	-0.01	0.01	5.21	
80.00		740.51	0.54	-0.03	0.01	-4.45	
84.08	Bot - Section 3	590.27	0.59	-0.05	0.01	-9.61	
85.00		236.69	0.61	-0.06	0.02	-4.36	
89.50	Top - Section 2	1144.8	0.67	-0.08	0.02	-31.35	
90.00		56.17	0.68	-0.08	0.03	-1.58	
95.00		553.15	0.76	-0.10	0.04	-18.71	
100.00		537.54	0.84	-0.12	0.07	-18.56	
105.00		521.92	0.93	-0.12	0.10	-15.72	
110.00		506.30	1.02	-0.11	0.14	-10.42	
115.00		490.69	1.11	-0.06	0.19	-2.94	
120.00		475.07	1.21	0.01	0.26	6.48	
123.00	Appurtenance(s)	2785.9	1.27	0.08	0.31	77.57	
125.00		181.91	1.31	0.14	0.35	6.97	
127.92	Bot - Section 4	260.80	1.37	0.24	0.41	14.37	
130.00		322.15	1.42	0.32	0.45	21.95	
131.00	Appurtenance(s)	1079.3	1.44	0.37	0.48	80.64	
132.08	Top - Section 3	164.46	1.47	0.42	0.50	13.50	
135.00		188.51	1.53	0.58	0.58	19.44	
140.00		313.88	1.65	0.93	0.73	45.03	
141.00	Appurtenance(s)	3305.8	1.67	1.01	0.77	503.06	
145.00		240.80	1.77	1.39	0.92	45.56	
150.00	Appurtenance(s)	5412.5	1.89	1.98	1.14	1301.73	
<b>Totals:</b>		<b>34,587.2</b>				<b>2,449.4</b>	
						<b>Total Wind:</b>	<b>32,613.1</b>

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

## Calculated Forces

**Structure:** CT10022-A-SBA

**Code:** EIA/TIA-222-G

3/24/2020

**Site Name:** Simsbury 2, CT

**Exposure:** C

**Height:** 150.00 (ft)

**Crest Height:** 0.00

**Base Elev:** 0.000 (ft)

**Site Class:** D - Stiff Soil

**Gh:** 1.1

**Topography:** 1

**Struct Class:** II

Page: 22



**Load Case:** 1.2D + 1.0E

**Iterations** 21

**Gust Response Factor** 1.10

**Sds** 0.19

**Ss** 0.18

**Dead Load Factor** 1.20 **Seismic Load Factor** 1.00

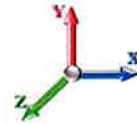
**Sd1** 0.10

**S1** 0.06

**Wind Load Factor** 0.00 **Structure Frequency (f1)** 0.36

**SA** 0.04

**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	-46.51	-2.57	0.00	-341.28	0.00	341.28	3399.80	1699.90	8571.22	4291.98	0.00	0.00	0.00	0.093
5.00	-45.10	-2.57	0.00	-328.42	0.00	328.42	3376.67	1688.33	8351.12	4181.77	0.01	-0.02	-0.02	0.092
10.00	-43.71	-2.55	0.00	-315.58	0.00	315.58	3351.94	1675.97	8129.40	4070.74	0.04	-0.03	-0.03	0.091
15.00	-42.35	-2.54	0.00	-302.81	0.00	302.81	3325.63	1662.82	7906.28	3959.02	0.08	-0.05	-0.05	0.089
20.00	-41.01	-2.52	0.00	-290.12	0.00	290.12	3297.74	1648.87	7681.99	3846.70	0.14	-0.07	-0.07	0.088
25.00	-39.70	-2.50	0.00	-277.54	0.00	277.54	3268.26	1634.13	7456.75	3733.92	0.22	-0.09	-0.09	0.086
30.00	-38.40	-2.47	0.00	-265.06	0.00	265.06	3237.20	1618.60	7230.79	3620.77	0.32	-0.10	-0.10	0.085
35.00	-37.14	-2.45	0.00	-252.69	0.00	252.69	3204.54	1602.27	7004.35	3507.38	0.44	-0.12	-0.12	0.084
40.00	-35.89	-2.43	0.00	-240.42	0.00	240.42	3170.31	1585.15	6777.64	3393.86	0.58	-0.14	-0.14	0.082
41.50	-35.52	-2.42	0.00	-236.78	0.00	236.78	3159.73	1579.86	6709.61	3359.79	0.63	-0.15	-0.15	0.082
45.00	-33.93	-2.38	0.00	-228.31	0.00	228.31	3134.49	1567.24	6550.90	3280.32	0.74	-0.16	-0.16	0.080
48.00	-32.59	-2.34	0.00	-221.17	0.00	221.17	3132.30	1566.15	6537.37	3273.54	0.84	-0.17	-0.17	0.078
50.00	-32.11	-2.34	0.00	-216.48	0.00	216.48	3117.49	1558.74	6446.72	3228.15	0.92	-0.18	-0.18	0.077
55.00	-30.92	-2.32	0.00	-204.79	0.00	204.79	3079.35	1539.68	6220.34	3114.79	1.12	-0.20	-0.20	0.076
60.00	-29.76	-2.29	0.00	-193.21	0.00	193.21	3039.63	1519.81	5994.49	3001.70	1.33	-0.22	-0.22	0.074
65.00	-28.62	-2.28	0.00	-181.74	0.00	181.74	2998.32	1499.16	5769.39	2888.98	1.57	-0.24	-0.24	0.072
70.00	-27.50	-2.27	0.00	-170.35	0.00	170.35	2955.43	1477.72	5545.28	2776.76	1.83	-0.26	-0.26	0.071
75.00	-26.41	-2.27	0.00	-159.01	0.00	159.01	2910.95	1455.48	5322.38	2665.15	2.11	-0.28	-0.28	0.069
80.00	-25.34	-2.27	0.00	-147.67	0.00	147.67	2864.89	1432.44	5100.92	2554.25	2.41	-0.30	-0.30	0.067
84.08	-24.48	-2.27	0.00	-138.40	0.00	138.40	2826.09	1413.05	4921.28	2464.30	2.67	-0.31	-0.31	0.065
85.00	-24.16	-2.27	0.00	-136.32	0.00	136.32	2817.24	1408.62	4881.12	2444.19	2.73	-0.32	-0.32	0.064
89.50	-22.63	-2.27	0.00	-126.09	0.00	126.09	2031.94	1015.97	3485.43	1745.31	3.04	-0.33	-0.33	0.083
90.00	-22.54	-2.27	0.00	-124.96	0.00	124.96	2029.15	1014.57	3470.92	1738.04	3.08	-0.34	-0.34	0.083
95.00	-21.69	-2.28	0.00	-113.59	0.00	113.59	2000.34	1000.17	3325.82	1665.38	3.44	-0.36	-0.36	0.079
100.00	-20.87	-2.28	0.00	-102.21	0.00	102.21	1969.95	984.97	3180.92	1592.82	3.83	-0.38	-0.38	0.075
105.00	-20.06	-2.28	0.00	-90.82	0.00	90.82	1937.97	968.98	3036.44	1520.48	4.24	-0.41	-0.41	0.070
110.00	-19.27	-2.28	0.00	-79.41	0.00	79.41	1904.40	952.20	2892.62	1448.46	4.68	-0.43	-0.43	0.065
115.00	-18.50	-2.28	0.00	-67.99	0.00	67.99	1869.25	934.63	2749.69	1376.89	5.14	-0.45	-0.45	0.059
120.00	-17.75	-2.28	0.00	-56.57	0.00	56.57	1832.52	916.26	2607.87	1305.87	5.62	-0.47	-0.47	0.053
123.00	-14.29	-2.17	0.00	-49.74	0.00	49.74	1809.72	904.86	2523.40	1263.58	5.92	-0.48	-0.48	0.047
125.00	-14.01	-2.16	0.00	-45.40	0.00	45.40	1794.20	897.10	2467.38	1235.52	6.12	-0.49	-0.49	0.045
127.92	-13.61	-2.15	0.00	-39.09	0.00	39.09	1771.11	885.56	2386.14	1194.84	6.42	-0.50	-0.50	0.040
130.00	-13.15	-2.12	0.00	-34.61	0.00	34.61	1754.29	877.15	2328.47	1165.96	6.64	-0.50	-0.50	0.037
131.00	-11.83	-2.03	0.00	-32.48	0.00	32.48	1746.12	873.06	2300.89	1152.16	6.74	-0.50	-0.50	0.035
132.08	-11.61	-2.02	0.00	-30.28	0.00	30.28	1160.48	580.24	1541.12	771.71	6.86	-0.51	-0.51	0.049
135.00	-11.32	-2.00	0.00	-24.40	0.00	24.40	1148.82	574.41	1493.54	747.88	7.17	-0.51	-0.51	0.042
140.00	-10.84	-1.95	0.00	-14.41	0.00	14.41	1127.58	563.79	1411.91	707.01	7.72	-0.53	-0.53	0.030
141.00	-6.86	-1.41	0.00	-12.46	0.00	12.46	1123.15	561.57	1395.60	698.84	7.83	-0.53	-0.53	0.024
145.00	-6.53	-1.36	0.00	-6.81	0.00	6.81	1104.76	552.38	1330.41	666.20	8.27	-0.53	-0.53	0.016
150.00	0.00	-1.30	0.00	0.00	0.00	0.00	1080.36	540.18	1249.27	625.56	8.83	-0.54	-0.54	0.000

# Seismic Segment Forces (Factored)

Structure: CT10022-A-SBA

Code: EIA/TIA-222-G

3/24/2020

Site Name: Simsbury 2, CT

Exposure: C

Height: 150.00 (ft)

Crest Height: 0.00

Base Elev: 0.000 (ft)

Site Class: D - Stiff Soil

Gh: 1.1

Topography: 1

Struct Class: II

Page: 23



Load Case: 0.9D + 1.0E

Iterations 21

Gust Response Factor 1.10

Sds 0.19

Ss 0.18

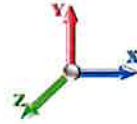
Dead Load Factor 0.90 Seismic Load Factor 1.00

Sd1 0.10

S1 0.06

Wind Load Factor 0.00 Structure Frequency (f1) 0.36

SA 0.04 Seismic Importance Factor 1.00



Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1022.7	0.00	0.03	0.02	18.14	
10.00		1003.2	0.01	0.05	0.03	25.97	
15.00		983.74	0.02	0.06	0.04	29.44	
20.00		964.22	0.03	0.07	0.04	30.88	
25.00		944.70	0.05	0.07	0.04	31.41	
30.00		925.18	0.08	0.07	0.04	31.60	
35.00		905.65	0.10	0.07	0.04	31.70	
40.00		886.13	0.13	0.07	0.03	31.72	
41.50	Bot - Section 2	262.03	0.14	0.07	0.03	9.44	
45.00		1216.5	0.17	0.07	0.03	44.25	
48.00	Top - Section 1	1027.5	0.19	0.06	0.02	37.46	
50.00		340.71	0.21	0.06	0.02	12.38	
55.00		838.12	0.25	0.05	0.02	29.48	
60.00		818.60	0.30	0.04	0.01	26.33	
65.00		799.08	0.35	0.03	0.01	21.29	
70.00		779.55	0.41	0.01	0.01	14.14	
75.00		760.03	0.47	-0.01	0.01	5.21	
80.00		740.51	0.54	-0.03	0.01	-4.45	
84.08	Bot - Section 3	590.27	0.59	-0.05	0.01	-9.61	
85.00		236.69	0.61	-0.06	0.02	-4.36	
89.50	Top - Section 2	1144.8	0.67	-0.08	0.02	-31.35	
90.00		56.17	0.68	-0.08	0.03	-1.58	
95.00		553.15	0.76	-0.10	0.04	-18.71	
100.00		537.54	0.84	-0.12	0.07	-18.56	
105.00		521.92	0.93	-0.12	0.10	-15.72	
110.00		506.30	1.02	-0.11	0.14	-10.42	
115.00		490.69	1.11	-0.06	0.19	-2.94	
120.00		475.07	1.21	0.01	0.26	6.48	
123.00	Appurtenance(s)	2785.9	1.27	0.08	0.31	77.57	
125.00		181.91	1.31	0.14	0.35	6.97	
127.92	Bot - Section 4	260.80	1.37	0.24	0.41	14.37	
130.00		322.15	1.42	0.32	0.45	21.95	
131.00	Appurtenance(s)	1079.3	1.44	0.37	0.48	80.64	
132.08	Top - Section 3	164.46	1.47	0.42	0.50	13.50	
135.00		188.51	1.53	0.58	0.58	19.44	
140.00		313.88	1.65	0.93	0.73	45.03	
141.00	Appurtenance(s)	3305.8	1.67	1.01	0.77	503.06	
145.00		240.80	1.77	1.39	0.92	45.56	
150.00	Appurtenance(s)	5412.5	1.89	1.98	1.14	1301.73	
<b>Totals:</b>		<b>34,587.2</b>				<b>2,449.4</b>	
						<b>Total Wind:</b>	<b>32,613.1</b>

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



## Calculated Forces

Structure: CT10022-A-SBA

Code: EIA/TIA-222-G

3/24/2020

Site Name: Simsbury 2, CT

Exposure: C

Height: 150.00 (ft)

Crest Height: 0.00

Base Elev: 0.000 (ft)

Site Class: D - Stiff Soil

Gh: 1.1

Topography: 1

Struct Class: II

Page: 24



Load Case: 0.9D + 1.0E

Iterations 21

Gust Response Factor 1.10

Sds 0.19

Ss 0.18

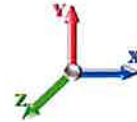
Dead Load Factor 0.90 Seismic Load Factor 1.00

Sd1 0.10

S1 0.06

Wind Load Factor 0.00 Structure Frequency (f1) 0.36

SA 0.04 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	-34.88	-2.57	0.00	-337.34	0.00	337.34	3399.80	1699.90	8571.22	4291.98	0.00	0.00	0.00	0.089
5.00	-33.82	-2.56	0.00	-324.49	0.00	324.49	3376.67	1688.33	8351.12	4181.77	0.01	-0.02	-0.02	0.088
10.00	-32.78	-2.55	0.00	-311.67	0.00	311.67	3351.94	1675.97	8129.40	4070.74	0.03	-0.03	-0.03	0.086
15.00	-31.76	-2.53	0.00	-298.94	0.00	298.94	3325.63	1662.82	7906.28	3959.02	0.08	-0.05	-0.05	0.085
20.00	-30.76	-2.50	0.00	-286.32	0.00	286.32	3297.74	1648.87	7681.99	3846.70	0.14	-0.07	-0.07	0.084
25.00	-29.77	-2.48	0.00	-273.80	0.00	273.80	3268.26	1634.13	7456.75	3733.92	0.22	-0.08	-0.08	0.082
30.00	-28.80	-2.46	0.00	-261.41	0.00	261.41	3237.20	1618.60	7230.79	3620.77	0.32	-0.10	-0.10	0.081
35.00	-27.85	-2.43	0.00	-249.13	0.00	249.13	3204.54	1602.27	7004.35	3507.38	0.44	-0.12	-0.12	0.080
40.00	-26.92	-2.40	0.00	-236.98	0.00	236.98	3170.31	1585.15	6777.64	3393.86	0.57	-0.14	-0.14	0.078
41.50	-26.64	-2.40	0.00	-233.38	0.00	233.38	3159.73	1579.86	6709.61	3359.79	0.62	-0.15	-0.15	0.078
45.00	-25.45	-2.35	0.00	-224.99	0.00	224.99	3134.49	1567.24	6550.90	3280.32	0.73	-0.16	-0.16	0.077
48.00	-24.44	-2.32	0.00	-217.92	0.00	217.92	3132.30	1566.15	6537.37	3273.54	0.83	-0.17	-0.17	0.074
50.00	-24.08	-2.31	0.00	-213.29	0.00	213.29	3117.49	1558.74	6446.72	3228.15	0.91	-0.18	-0.18	0.074
55.00	-23.19	-2.29	0.00	-201.73	0.00	201.73	3079.35	1539.68	6220.34	3114.79	1.10	-0.20	-0.20	0.072
60.00	-22.32	-2.26	0.00	-190.31	0.00	190.31	3039.63	1519.81	5994.49	3001.70	1.32	-0.22	-0.22	0.071
65.00	-21.46	-2.25	0.00	-178.99	0.00	178.99	2998.32	1499.16	5769.39	2888.98	1.55	-0.23	-0.23	0.069
70.00	-20.62	-2.24	0.00	-167.76	0.00	167.76	2955.43	1477.72	5545.28	2776.76	1.81	-0.25	-0.25	0.067
75.00	-19.80	-2.23	0.00	-156.58	0.00	156.58	2910.95	1455.48	5322.38	2665.15	2.08	-0.27	-0.27	0.066
80.00	-19.00	-2.24	0.00	-145.41	0.00	145.41	2864.89	1432.44	5100.92	2554.25	2.38	-0.29	-0.29	0.064
84.08	-18.36	-2.23	0.00	-136.29	0.00	136.29	2826.09	1413.05	4921.28	2464.30	2.64	-0.31	-0.31	0.062
85.00	-18.12	-2.24	0.00	-134.24	0.00	134.24	2817.24	1408.62	4881.12	2444.19	2.70	-0.31	-0.31	0.061
89.50	-16.97	-2.23	0.00	-124.17	0.00	124.17	2031.94	1015.97	3485.43	1745.31	3.00	-0.33	-0.33	0.080
90.00	-16.90	-2.24	0.00	-123.06	0.00	123.06	2029.15	1014.57	3470.92	1738.04	3.03	-0.33	-0.33	0.079
95.00	-16.27	-2.24	0.00	-111.87	0.00	111.87	2000.34	1000.17	3325.82	1665.38	3.39	-0.35	-0.35	0.075
100.00	-15.65	-2.24	0.00	-100.67	0.00	100.67	1969.95	984.97	3180.92	1592.82	3.78	-0.38	-0.38	0.071
105.00	-15.04	-2.24	0.00	-89.46	0.00	89.46	1937.97	968.98	3036.44	1520.48	4.19	-0.40	-0.40	0.067
110.00	-14.45	-2.24	0.00	-78.24	0.00	78.24	1904.40	952.20	2892.62	1448.46	4.62	-0.42	-0.42	0.062
115.00	-13.87	-2.25	0.00	-67.02	0.00	67.02	1869.25	934.63	2749.69	1376.89	5.07	-0.44	-0.44	0.056
120.00	-13.31	-2.24	0.00	-55.79	0.00	55.79	1832.52	916.26	2607.87	1305.87	5.54	-0.46	-0.46	0.050
123.00	-10.72	-2.14	0.00	-49.08	0.00	49.08	1809.72	904.86	2523.40	1263.58	5.84	-0.47	-0.47	0.045
125.00	-10.51	-2.13	0.00	-44.80	0.00	44.80	1794.20	897.10	2467.38	1235.52	6.04	-0.48	-0.48	0.042
127.92	-10.20	-2.12	0.00	-38.58	0.00	38.58	1771.11	885.56	2386.14	1194.84	6.33	-0.49	-0.49	0.038
130.00	-9.86	-2.09	0.00	-34.16	0.00	34.16	1754.29	877.15	2328.47	1165.96	6.55	-0.49	-0.49	0.035
131.00	-8.87	-2.01	0.00	-32.07	0.00	32.07	1746.12	873.06	2300.89	1152.16	6.65	-0.50	-0.50	0.033
132.08	-8.70	-1.99	0.00	-29.90	0.00	29.90	1160.48	580.24	1541.12	771.71	6.76	-0.50	-0.50	0.046
135.00	-8.49	-1.97	0.00	-24.09	0.00	24.09	1148.82	574.41	1493.54	747.88	7.07	-0.51	-0.51	0.040
140.00	-8.13	-1.92	0.00	-14.23	0.00	14.23	1127.58	563.79	1411.91	707.01	7.61	-0.52	-0.52	0.027
141.00	-5.14	-1.39	0.00	-12.31	0.00	12.31	1123.15	561.57	1395.60	698.84	7.72	-0.52	-0.52	0.022
145.00	-4.90	-1.35	0.00	-6.73	0.00	6.73	1104.76	552.38	1330.41	666.20	8.15	-0.53	-0.53	0.015
150.00	0.00	-1.30	0.00	0.00	0.00	0.00	1080.36	540.18	1249.27	625.56	8.71	-0.53	-0.53	0.000

## Wind Loading - Shaft

**Structure:** CT10022-A-SBA

**Code:** EIA/TIA-222-G

3/24/2020

**Site Name:** Simsbury 2, CT

**Exposure:** C

**Height:** 150.00 (ft)

**Crest Height:** 0.00

**Base Elev:** 0.000 (ft)

**Site Class:** D - Stiff Soil

**Gh:** 1.1

**Topography:** 1

**Struct Class:** II

Page: 25

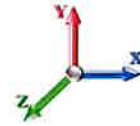


**Load Case:** 1.0D + 1.0W 60 mph Wind

**Iterations** 22

**Dead Load Factor** 1.00

**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	7.442	8.19	287.87	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	7.442	8.19	282.46	0.650	0.000	5.00	25.776	16.75	137.2	0.0	1022.8
10.00		1.00	0.85	7.442	8.19	277.04	0.650	0.000	5.00	25.286	16.44	134.5	0.0	1003.3
15.00		1.00	0.85	7.442	8.19	271.63	0.650	0.000	5.00	24.797	16.12	131.9	0.0	983.7
20.00		1.00	0.90	7.896	8.69	274.22	0.650	0.000	5.00	24.307	15.80	137.2	0.0	964.2
25.00		1.00	0.95	8.276	9.10	275.03	0.650	0.000	5.00	23.818	15.48	140.9	0.0	944.7
30.00		1.00	0.98	8.600	9.46	274.54	0.650	0.000	5.00	23.328	15.16	143.4	0.0	925.2
35.00		1.00	1.01	8.883	9.77	273.11	0.650	0.000	5.00	22.839	14.85	145.1	0.0	905.7
40.00		1.00	1.04	9.137	10.05	270.98	0.650	0.000	5.00	22.350	14.53	146.0	0.0	886.1
41.50 Bot - Section 2		1.00	1.05	9.208	10.13	270.22	0.650	0.000	1.50	6.609	4.30	43.5	0.0	262.0
45.00		1.00	1.07	9.366	10.30	268.28	0.650	0.000	3.50	15.436	10.03	103.4	0.0	1216.5
48.00 Top - Section 1		1.00	1.08	9.494	10.44	266.44	0.650	0.000	3.00	13.040	8.48	88.5	0.0	1027.5
50.00		1.00	1.09	9.576	10.53	268.45	0.650	0.000	2.00	8.595	5.59	58.9	0.0	340.7
55.00		1.00	1.12	9.770	10.75	264.95	0.650	0.000	5.00	21.146	13.74	147.7	0.0	838.1
60.00		1.00	1.14	9.951	10.95	261.13	0.650	0.000	5.00	20.656	13.43	147.0	0.0	818.6
65.00		1.00	1.16	10.120	11.13	257.02	0.650	0.000	5.00	20.167	13.11	145.9	0.0	799.1
70.00		1.00	1.17	10.279	11.31	252.67	0.650	0.000	5.00	19.677	12.79	144.6	0.0	779.6
75.00		1.00	1.19	10.430	11.47	248.10	0.650	0.000	5.00	19.188	12.47	143.1	0.0	760.0
80.00		1.00	1.21	10.572	11.63	243.34	0.650	0.000	5.00	18.698	12.15	141.3	0.0	740.5
84.08 Bot - Section 3		1.00	1.22	10.684	11.75	239.32	0.650	0.000	4.08	14.907	9.69	113.9	0.0	590.3
85.00		1.00	1.22	10.708	11.78	238.40	0.650	0.000	0.92	3.340	2.17	25.6	0.0	236.7
89.50 Top - Section 2		1.00	1.24	10.825	11.91	233.82	0.650	0.000	4.50	16.160	10.50	125.1	0.0	1144.8
90.00		1.00	1.24	10.838	11.92	236.13	0.650	0.000	0.50	1.771	1.15	13.7	0.0	56.2
95.00		1.00	1.25	10.962	12.06	230.91	0.650	0.000	5.00	17.442	11.34	136.7	0.0	553.2
100.00		1.00	1.27	11.081	12.19	225.55	0.650	0.000	5.00	16.952	11.02	134.3	0.0	537.5
105.00		1.00	1.28	11.195	12.31	220.07	0.650	0.000	5.00	16.463	10.70	131.8	0.0	521.9
110.00		1.00	1.29	11.305	12.44	214.48	0.650	0.000	5.00	15.973	10.38	129.1	0.0	506.3
115.00		1.00	1.30	11.412	12.55	208.78	0.650	0.000	5.00	15.484	10.06	126.3	0.0	490.7
120.00		1.00	1.32	11.514	12.67	202.98	0.650	0.000	5.00	14.995	9.75	123.4	0.0	475.1
123.00 Appurtenance(s)		1.00	1.32	11.574	12.73	199.46	0.650	0.000	3.00	8.762	5.70	72.5	0.0	277.5
125.00		1.00	1.33	11.614	12.78	197.09	0.650	0.000	2.00	5.743	3.73	47.7	0.0	181.9
127.92 Bot - Section 4		1.00	1.33	11.670	12.84	193.61	0.650	0.000	2.92	8.235	5.35	68.7	0.0	260.8
130.00		1.00	1.34	11.710	12.88	191.11	0.650	0.000	2.08	5.846	3.80	49.0	0.0	322.2
131.00 Appurtenance(s)		1.00	1.34	11.729	12.90	189.91	0.650	0.000	1.00	2.776	1.80	23.3	0.0	152.9
132.08 Top - Section 3		1.00	1.34	11.749	12.92	188.60	0.650	0.000	1.08	2.985	1.94	25.1	0.0	164.5
135.00		1.00	1.35	11.803	12.98	187.27	0.650	0.000	2.92	7.923	5.15	66.9	0.0	188.5
140.00		1.00	1.36	11.894	13.08	181.14	0.650	0.000	5.00	13.195	8.58	112.2	0.0	313.9
141.00 Appurtenance(s)		1.00	1.36	11.912	13.10	179.90	0.650	0.000	1.00	2.580	1.68	22.0	0.0	61.4
145.00		1.00	1.37	11.982	13.18	174.94	0.650	0.000	4.00	10.126	6.58	86.8	0.0	240.8
150.00 Appurtenance(s)		1.00	1.38	12.068	13.27	168.67	0.650	0.000	5.00	12.217	7.94	105.4	0.0	290.5
<b>Totals:</b>									<b>150.00</b>			<b>4,019.6</b>		<b>22,785.8</b>

## Discrete Appurtenance Forces

**Structure:** CT10022-A-SBA

**Code:** EIA/TIA-222-G

3/24/2020

**Site Name:** Simsbury 2, CT

**Exposure:** C

**Height:** 150.00 (ft)

**Crest Height:** 0.00

**Base Elev:** 0.000 (ft)

**Site Class:** D - Stiff Soil

**Gh:** 1.1

**Topography:** 1

**Struct Class:** II

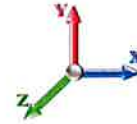
Page: 26



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

**Dead Load Factor** 1.00

**Wind Load Factor** 1.00



**Iterations** 22

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	150.00	TPX-070821	6	12.068	13.275	0.61	1.00	1.71	45.00	0.000	0.000	22.76	0.00	0.00
2	150.00	800 10121	3	12.080	13.289	0.79	1.00	12.21	138.90	0.000	0.730	162.19	0.00	118.40
3	150.00	HPA-65R-BUU-H6	1	12.068	13.275	0.85	1.00	8.21	51.00	0.000	0.000	109.00	0.00	0.00
4	150.00	TPA-65R-LCUUUU-H8	2	12.068	13.275	0.83	1.00	22.08	150.00	0.000	0.000	293.08	0.00	0.00
5	150.00	QS66512-2	1	12.068	13.275	0.92	1.00	7.48	111.00	0.000	0.000	99.29	0.00	0.00
6	150.00	HPA-65R-BUU-H8	2	12.068	13.275	0.79	1.00	20.51	136.00	0.000	0.000	272.25	0.00	0.00
7	150.00	Low Profile	1	12.068	13.275	1.00	1.00	22.00	1500.00	0.000	0.000	292.05	0.00	0.00
8	150.00	DTMABP7819VG12A	6	12.068	13.275	0.67	1.00	4.58	115.20	0.000	0.000	60.84	0.00	0.00
9	150.00	LMU Antenna	1	12.068	13.275	0.50	1.00	0.83	8.50	0.000	0.000	11.08	0.00	0.00
10	150.00	DBC-750	3	12.068	13.275	1.00	1.00	1.53	14.40	0.000	0.000	20.31	0.00	0.00
11	150.00	ABT-DFDM-ADB	3	12.068	13.275	0.98	1.00	0.15	3.30	0.000	0.000	1.95	0.00	0.00
12	150.00	DC6-48-60-18-8F	2	12.068	13.275	1.00	1.00	1.84	63.60	0.000	0.000	24.43	0.00	0.00
13	150.00	RRUS-11	3	12.068	13.275	0.71	1.00	5.94	150.00	0.000	0.000	78.89	0.00	0.00
14	150.00	4426 B66	3	12.068	13.275	0.73	1.00	3.59	145.20	0.000	0.000	47.68	0.00	0.00
15	150.00	RRUS-32	3	12.068	13.275	0.87	1.00	1.72	2331.00	0.000	0.000	22.87	0.00	0.00
16	150.00	RRUS-32	3	12.068	13.275	0.87	1.00	7.86	159.00	0.000	0.000	104.29	0.00	0.00
17	141.00	RVZDC-6627-PF48	1	11.912	13.103	1.00	1.00	3.79	32.00	0.000	0.000	49.66	0.00	0.00
18	141.00	B5/B13 RRHBR04C	3	11.912	13.103	0.50	0.75	2.83	211.20	0.000	0.000	37.14	0.00	0.00
19	141.00	B2/B66A RRHBR049	3	11.912	13.103	0.50	0.75	9.81	396.60	0.000	0.000	128.59	0.00	0.00
20	141.00	BSAMNT-SBS-2-2	3	11.912	13.103	1.00	1.00	10.50	201.00	0.000	0.000	137.58	0.00	0.00
21	141.00	XXDWMM-12.5-65-8T-CB	3	11.912	13.103	0.61	0.75	2.17	69.30	0.000	0.000	28.39	0.00	0.00
22	141.00	Commscope	6	11.912	13.103	0.62	0.75	30.18	436.20	0.000	0.000	395.44	0.00	0.00
23	141.00	Antel	3	11.912	13.103	0.66	0.75	7.05	90.90	0.000	0.000	92.36	0.00	0.00
24	141.00	HRK12 (Handrail Kit)	1	11.912	13.103	1.00	1.00	6.75	261.72	0.000	0.000	88.45	0.00	0.00
25	141.00	CBRS RRH-RT4401	3	11.912	13.103	0.50	0.75	1.28	45.60	0.000	0.000	16.79	0.00	0.00
26	141.00	Low Profile Platform	1	11.912	13.103	1.00	1.00	22.00	1500.00	0.000	0.000	288.27	0.00	0.00
27	131.00	RFS ATM1412D-1A20	3	11.729	12.902	0.58	0.80	2.05	39.00	0.000	0.000	26.45	0.00	0.00
28	131.00	RFS	3	11.729	12.902	0.50	0.80	9.61	188.10	0.000	0.000	124.02	0.00	0.00
29	131.00	Commscope LNX-6515DS	3	11.729	12.902	0.64	0.80	22.02	237.30	0.000	0.000	284.13	0.00	0.00
30	131.00	Kathrein 782 11056	3	11.729	12.902	0.61	0.80	1.20	33.00	0.000	0.000	15.53	0.00	0.00
31	131.00	T-Arms (Site Pro P/N)	3	11.729	12.902	0.56	0.75	13.50	396.00	0.000	0.000	174.17	0.00	0.00
32	131.00	Ericsson KRY 144/1	3	11.729	12.902	0.56	0.80	0.69	33.00	0.000	0.000	8.89	0.00	0.00
33	123.00	ALU - 1900 MHz RRH -	3	11.574	12.732	0.50	0.75	4.09	180.00	0.000	0.000	52.01	0.00	0.00
34	123.00	APXVTM14-C-I20	3	11.574	12.732	0.59	0.75	11.27	165.00	0.000	0.000	143.48	0.00	0.00
35	123.00	APXVSP18-C-A20	2	11.574	12.732	0.62	0.75	9.98	114.00	0.000	0.000	127.13	0.00	0.00
36	123.00	ALU - TD-RRH8x20-25 -	3	11.574	12.732	0.50	0.75	6.11	210.00	0.000	0.000	77.73	0.00	0.00
37	123.00	ALU - 800 MHz RRH -	3	11.574	12.732	0.50	0.75	3.75	159.00	0.000	0.000	47.79	0.00	0.00
38	123.00	APXVSP18-C-A20 (50	1	11.574	12.732	0.62	0.75	4.99	50.00	0.000	0.000	63.56	0.00	0.00
39	123.00	ALU - 800 MHz Filter	3	11.574	12.732	0.75	0.75	1.75	26.40	0.000	0.000	22.34	0.00	0.00
40	123.00	RFS - ACU-A20-N - RET	4	11.574	12.732	0.59	0.75	0.33	4.00	0.000	0.000	4.22	0.00	0.00
41	123.00	Platform w/ HRK Handrail	1	11.574	12.732	1.00	1.00	32.00	1600.00	0.000	0.000	407.42	0.00	0.00
<b>Totals:</b>								<b>11,801.42</b>				<b>4,464.50</b>		

## Total Applied Force Summary

**Structure:** CT10022-A-SBA

**Code:** EIA/TIA-222-G

3/24/2020

**Site Name:** Simsbury 2, CT

**Exposure:** C

**Height:** 150.00 (ft)

**Crest Height:** 0.00

**Base Elev:** 0.000 (ft)

**Site Class:** D - Stiff Soil

**Gh:** 1.1

**Topography:** 1

**Struct Class:** II

Page: 27



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

**Dead Load Factor** 1.00

**Wind Load Factor** 1.00



**Iterations** 22

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		137.15	1173.71	0.00	0.00
10.00		134.55	1154.19	0.00	0.00
15.00		131.94	1134.67	0.00	0.00
20.00		137.23	1115.15	0.00	0.00
25.00		140.94	1095.63	0.00	0.00
30.00		143.44	1076.11	0.00	0.00
35.00		145.07	1056.58	0.00	0.00
40.00		146.00	1037.06	0.00	0.00
41.50		43.51	307.31	0.00	0.00
45.00		103.37	1322.19	0.00	0.00
48.00		88.52	1118.08	0.00	0.00
50.00		58.85	401.08	0.00	0.00
55.00		147.72	989.05	0.00	0.00
60.00		146.97	969.53	0.00	0.00
65.00		145.92	950.01	0.00	0.00
70.00		144.62	930.48	0.00	0.00
75.00		143.09	910.96	0.00	0.00
80.00		141.34	891.44	0.00	0.00
84.08		113.87	713.53	0.00	0.00
85.00		25.58	264.36	0.00	0.00
89.50		125.08	1280.63	0.00	0.00
90.00		13.72	71.27	0.00	0.00
95.00		136.70	704.08	0.00	0.00
100.00		134.31	688.47	0.00	0.00
105.00		131.78	672.85	0.00	0.00
110.00		129.12	657.23	0.00	0.00
115.00		126.34	641.62	0.00	0.00
120.00		123.45	626.00	0.00	0.00
123.00	(23) attachments	1018.20	2876.50	0.00	0.00
125.00		47.69	234.65	0.00	0.00
127.92		68.72	337.71	0.00	0.00
130.00		48.95	377.09	0.00	0.00
131.00	(18) attachments	656.47	1105.72	0.00	0.00
132.08		25.08	182.89	0.00	0.00
135.00		66.87	238.12	0.00	0.00
140.00		112.22	398.93	0.00	0.00
141.00	(27) attachments	1284.64	3322.90	0.00	0.00
145.00		86.75	274.44	0.00	0.00
150.00	(43) attachments	1728.38	5454.61	0.00	118.40
<b>Totals:</b>		<b>8,484.15</b>	<b>38,756.83</b>	<b>0.00</b>	<b>118.40</b>



## Calculated Forces

**Structure:** CT10022-A-SBA

**Code:** EIA/TIA-222-G

3/24/2020

**Site Name:** Simsbury 2, CT

**Exposure:** C

**Height:** 150.00 (ft)

**Crest Height:** 0.00

**Base Elev:** 0.000 (ft)

**Site Class:** D - Stiff Soil

**Gh:** 1.1

**Topography:** 1

**Struct Class:** II

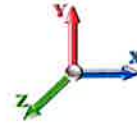
Page: 28



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

**Dead Load Factor** 1.00

**Wind Load Factor** 1.00



**Iterations** 22

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	-38.75	-8.50	0.00	-951.19	0.00	951.19	3399.80	1699.90	8571.22	4291.98	0.00	0.000	0.000	0.233
5.00	-37.57	-8.39	0.00	-908.69	0.00	908.69	3376.67	1688.33	8351.12	4181.77	0.02	-0.046	0.000	0.228
10.00	-36.41	-8.29	0.00	-866.73	0.00	866.73	3351.94	1675.97	8129.40	4070.74	0.10	-0.093	0.000	0.224
15.00	-35.27	-8.18	0.00	-825.30	0.00	825.30	3325.63	1662.82	7906.28	3959.02	0.22	-0.140	0.000	0.219
20.00	-34.15	-8.07	0.00	-784.40	0.00	784.40	3297.74	1648.87	7681.99	3846.70	0.39	-0.187	0.000	0.214
25.00	-33.05	-7.95	0.00	-744.05	0.00	744.05	3268.26	1634.13	7456.75	3733.92	0.61	-0.235	0.000	0.209
30.00	-31.97	-7.83	0.00	-704.29	0.00	704.29	3237.20	1618.60	7230.79	3620.77	0.89	-0.284	0.000	0.204
35.00	-30.90	-7.71	0.00	-665.14	0.00	665.14	3204.54	1602.27	7004.35	3507.38	1.21	-0.332	0.000	0.199
40.00	-29.86	-7.57	0.00	-626.61	0.00	626.61	3170.31	1585.15	6777.64	3393.86	1.58	-0.381	0.000	0.194
41.50	-29.55	-7.54	0.00	-615.26	0.00	615.26	3159.73	1579.86	6709.61	3359.79	1.71	-0.396	0.000	0.192
45.00	-28.23	-7.44	0.00	-588.88	0.00	588.88	3134.49	1567.24	6550.90	3280.32	2.01	-0.431	0.000	0.189
48.00	-27.11	-7.36	0.00	-566.55	0.00	566.55	3132.30	1566.15	6537.37	3273.54	2.29	-0.461	0.000	0.182
50.00	-26.70	-7.31	0.00	-551.84	0.00	551.84	3117.49	1558.74	6446.72	3228.15	2.49	-0.481	0.000	0.180
55.00	-25.71	-7.17	0.00	-515.30	0.00	515.30	3079.35	1539.68	6220.34	3114.79	3.02	-0.529	0.000	0.174
60.00	-24.73	-7.04	0.00	-479.43	0.00	479.43	3039.63	1519.81	5994.49	3001.70	3.60	-0.577	0.000	0.168
65.00	-23.78	-6.90	0.00	-444.24	0.00	444.24	2998.32	1499.16	5769.39	2888.98	4.23	-0.625	0.000	0.162
70.00	-22.85	-6.77	0.00	-409.73	0.00	409.73	2955.43	1477.72	5545.28	2776.76	4.91	-0.672	0.000	0.155
75.00	-21.93	-6.63	0.00	-375.90	0.00	375.90	2910.95	1455.48	5322.38	2665.15	5.64	-0.719	0.000	0.149
80.00	-21.04	-6.49	0.00	-342.75	0.00	342.75	2864.89	1432.44	5100.92	2554.25	6.42	-0.765	0.000	0.142
84.08	-20.32	-6.38	0.00	-316.24	0.00	316.24	2826.09	1413.05	4921.28	2464.30	7.09	-0.803	0.000	0.136
85.00	-20.06	-6.36	0.00	-310.40	0.00	310.40	2817.24	1408.62	4881.12	2444.19	7.24	-0.811	0.000	0.134
89.50	-18.77	-6.22	0.00	-281.80	0.00	281.80	2031.94	1015.97	3485.43	1745.31	8.03	-0.852	0.000	0.171
90.00	-18.70	-6.21	0.00	-278.69	0.00	278.69	2029.15	1014.57	3470.92	1738.04	8.12	-0.856	0.000	0.170
95.00	-17.99	-6.08	0.00	-247.62	0.00	247.62	2000.34	1000.17	3325.82	1665.38	9.04	-0.909	0.000	0.158
100.00	-17.30	-5.95	0.00	-217.20	0.00	217.20	1969.95	984.97	3180.92	1592.82	10.02	-0.959	0.000	0.145
105.00	-16.63	-5.82	0.00	-187.44	0.00	187.44	1937.97	968.98	3036.44	1520.48	11.05	-1.006	0.000	0.132
110.00	-15.97	-5.69	0.00	-158.33	0.00	158.33	1904.40	952.20	2892.62	1448.46	12.13	-1.050	0.000	0.118
115.00	-15.32	-5.57	0.00	-129.87	0.00	129.87	1869.25	934.63	2749.69	1376.89	13.25	-1.091	0.000	0.103
120.00	-14.70	-5.44	0.00	-102.04	0.00	102.04	1832.52	916.26	2607.87	1305.87	14.41	-1.127	0.000	0.086
123.00	-11.84	-4.36	0.00	-85.73	0.00	85.73	1809.72	904.86	2523.40	1263.58	15.13	-1.146	0.000	0.074
125.00	-11.61	-4.32	0.00	-77.01	0.00	77.01	1794.20	897.10	2467.38	1235.52	15.61	-1.158	0.000	0.069
127.92	-11.27	-4.24	0.00	-64.42	0.00	64.42	1771.11	885.56	2386.14	1194.84	16.33	-1.174	0.000	0.060
130.00	-10.89	-4.19	0.00	-55.58	0.00	55.58	1754.29	877.15	2328.47	1165.96	16.84	-1.184	0.000	0.054
131.00	-9.80	-3.51	0.00	-51.40	0.00	51.40	1746.12	873.06	2300.89	1152.16	17.09	-1.188	0.000	0.050
132.08	-9.62	-3.48	0.00	-47.60	0.00	47.60	1160.48	580.24	1541.12	771.71	17.36	-1.193	0.000	0.070
135.00	-9.38	-3.41	0.00	-37.44	0.00	37.44	1148.82	574.41	1493.54	747.88	18.09	-1.204	0.000	0.058
140.00	-8.98	-3.29	0.00	-20.39	0.00	20.39	1127.58	563.79	1411.91	707.01	19.36	-1.221	0.000	0.037
141.00	-5.69	-1.94	0.00	-17.09	0.00	17.09	1123.15	561.57	1395.60	698.84	19.62	-1.224	0.000	0.030
145.00	-5.42	-1.85	0.00	-9.35	0.00	9.35	1104.76	552.38	1330.41	666.20	20.65	-1.231	0.000	0.019
150.00	0.00	-1.73	0.00	-0.12	0.00	0.12	1080.36	540.18	1249.27	625.56	21.94	-1.235	0.000	0.000

## Final Analysis Summary

<b>Structure:</b> CT10022-A-SBA	<b>Code:</b> EIA/TIA-222-G	3/24/2020
<b>Site Name:</b> Simsbury 2, CT	<b>Exposure:</b> C	
<b>Height:</b> 150.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II



Page: 29

### Reactions

Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)
1.2D + 1.6W 93 mph Wind	32.7	0.00	46.46	0.00	0.00	3678.63
0.9D + 1.6W 93 mph Wind	32.7	0.00	34.83	0.00	0.00	3639.92
1.2D + 1.0Di + 1.0Wi 50 mph Wind	10.9	0.00	83.89	0.00	0.00	1249.10
1.2D + 1.0E	2.6	0.00	46.51	0.00	0.00	341.28
0.9D + 1.0E	2.6	0.00	34.88	0.00	0.00	337.34
1.0D + 1.0W 60 mph Wind	8.5	0.00	38.75	0.00	0.00	951.19

### Max Stresses


Load Case	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Elev (ft)	Stress Ratio
1.2D + 1.6W 93 mph Wind	-46.46	-32.69	0.00	-3678.6	0.00	-3678.6	3399.80	1699.9	8571.22	4291.98	0.00	0.871
0.9D + 1.6W 93 mph Wind	-34.83	-32.67	0.00	-3639.9	0.00	-3639.9	3399.80	1699.9	8571.22	4291.98	0.00	0.859
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-83.89	-10.87	0.00	-1249.1	0.00	-1249.1	3399.80	1699.9	8571.22	4291.98	0.00	0.316
1.2D + 1.0E	-46.51	-2.57	0.00	-341.28	0.00	-341.28	3399.80	1699.9	8571.22	4291.98	0.00	0.093
0.9D + 1.0E	-34.88	-2.57	0.00	-337.34	0.00	-337.34	3399.80	1699.9	8571.22	4291.98	0.00	0.089
1.0D + 1.0W 60 mph Wind	-38.75	-8.50	0.00	-951.19	0.00	-951.19	3399.80	1699.9	8571.22	4291.98	0.00	0.233

## Base Plate Summary

<b>Structure:</b> CT10022-A-SB	<b>Code:</b> EIA/TIA-222-G	<b>3/24/2020</b>
<b>Site Name:</b> Simsbury 2, CT	<b>Exposure:</b> C	
<b>Height:</b> 150.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 0.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 1.1	<b>Topography:</b> 1	<b>Struct Class:</b> II
		<b>Page:</b> 30



Reactions		Base Plate		Anchor Bolts	
Original Design		<b>Yield (ksi):</b>	50.00	<b>Bolt Circle:</b>	67.63
<b>Moment (kip-ft):</b>	3324.00	<b>Width (in):</b>	73.50	<b>Number Bolts:</b>	14.00
<b>Axial (kip):</b>	65.60	<b>Style:</b>	Round	<b>Bolt Type:</b>	2.25" 18J
<b>Shear (kip):</b>	26.40	<b>Polygon Sides:</b>	0.00	<b>Bolt Diameter (in):</b>	2.25
Analysis		<b>Clip Length (in):</b>	0.00	<b>Yield (ksi):</b>	75.00
<b>Moment (kip-ft):</b>	3678.63	<b>Effective Len (in):</b>	16.10	<b>Ultimate (ksi):</b>	100.00
<b>Axial (kip):</b>	83.89	<b>Moment (kip-in):</b>	589.96	<b>Arrangement:</b>	Radial
<b>Shear (kip):</b>	32.69	<b>Allow Stress (ksi):</b>	67.50	<b>Cluster Dist (in):</b>	0.00
		<b>Applied Stress (ksi):</b>	0.00	<b>Start Angle (deg):</b>	0.00
<b>Moment Design %:</b>	110.67	<b>Stress Ratio:</b>	0.81	<b>Compression</b>	
				<b>Force (kip):</b>	192.48
				<b>Allowable (kip):</b>	260.00
				<b>Ratio:</b>	0.76
				<b>Tension</b>	
				<b>Force (kip):</b>	180.50
				<b>Allowable (kip):</b>	260.00
				<b>Ratio:</b>	0.71

	Monopole Mat Foundation Design		Date
			3/24/2020
	Customer Name:	Verizon	EIA/TIA Standard:
	Site Name:		Structure Height (Ft.):
	Site Number:	CT10022-A-SBA	Engineer Name:
Engr. Number:	92787	Engineer Login ID:	

#### Foundation Info Obtained from:

#### Structure Type:

#### Analysis or Design?

#### Base Reactions (Factored):

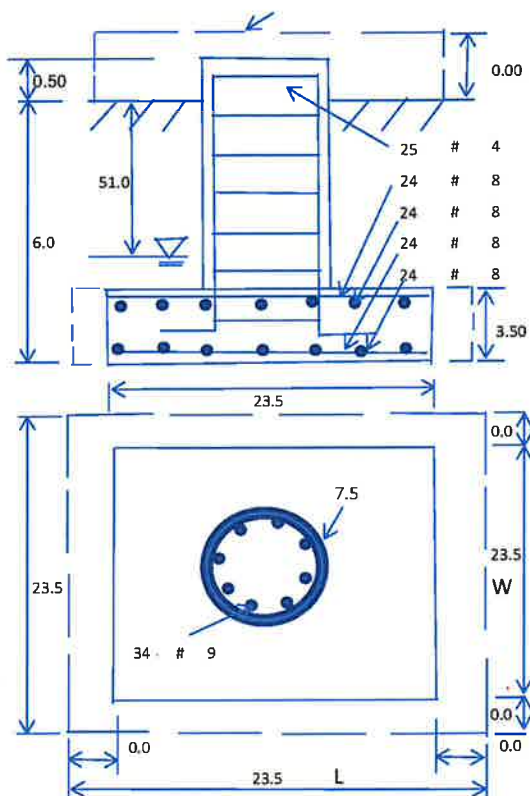
Axial Load (Kips):	83.9	Shear Force (Kips):	32.7
Uplift Force (Kips):	0.0	Moment (Kips-ft):	3678.6

#### Foundation Geometries:

		Mods required -Yes/No ?:	No
Diameter of Pier (ft.):	7.5	Depth of Base BG (ft.):	6.0
Pier Height A. G. (ft.):	0.50	Thickness of Pad (ft):	3.50
Length of Pad (ft.):	23.5	Width of Pad (ft.):	23.5
Final Length of pad (ft)	23.5	Final width of pad (ft):	23.5

#### Material Properties and Rebar Info:

Concrete Strength (psi):	3000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield (ksi):	60	
Vertical Rebar Size #:	9	Tie / Stirrup Size #:	4	
Qty. of Vertical Rebars:	34	Tie Spacing (in):	3.0	
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	8	
Concrete Cover (in.):	3	Unit Weight of Concrete:	150.0	pcf
Rebar at the bottom of the concrete pad:				
Qty. of Rebar in Pad (L):	24	Qty. of Rebar in Pad (W):	24	
Rebar at the top of the concrete pad:				
Qty. of Rebar in Pad (L):	24	Qty. of Rebar in Pad (W):	24	



#### Soil Design Parameters:

Soil Unit Weight (pcf):	125.0	Soil Buoyant Weight:	60.0	Pcf
Water Table B.G.S. (ft):	51.0	Unit Weight of Water:	62.4	pcf
Ultimate Bearing Pressure (psf):	14000	Ultimate Skin Friction:	0	Psf
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	No	
Consider soil hor. resist. for OTM.:	No	Reduction factor on the maximum soil bearing pressure:	1.00	
		Angle from Top of Pad:	30	
		Angle from Bottom of Pad:	25	
		Angle from Bottom of Pad:	25	

#### Foundation Analysis and Design:

Uplift Strength Reduction Factor:	0.75	Compression Strength Reduction Factor:	0.75
Total Dry Soil Volume (cu. Ft.):	1270.18	Total Dry Soil Weight (Kips):	158.77
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	158.77	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	2065.41	Total Dry Concrete Weight (Kips):	309.81
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00
Total Effective Concrete Weight (Kips):	309.81	Total Vertical Load on Base (Kips):	552.48

#### Check Soil Capacities:

Calculated Maximum Net Soil Pressure under the base (psf):	3390	<	Allowable Factored Soil Bearing (psf):	10500	0.32	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	5941.1	>	Design Factored Moment (kips-ft):	3891	0.65	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	1.53					OK!



**Check the capacities of Reinforcing Concrete:**

Strength reduction factor (Flexure and axial tension):

0.90

Strength reduction factor (Shear):

0.75

Strength reduction factor (Axial compression):

0.65

Wind Load Factor on Concrete Design:

1.00

Load/  
Capacity  
Ratio**(1) Concrete Pier:**

Vertical Steel Rebar Area (sq. in./each):

1.00

Tie / Stirrup Area (sq. in./each):

0.20

Calculated Moment Capacity (Mn, Kips-Ft):

6126.5

&gt;

Design Factored Moment (Mu, Kips-F

3776.7

0.62

OK!

Calculated Shear Capacity (Kips):

1098.7

&gt;

Design Factored Shear (Kips):

32.7

0.03

OK!

Calculated Tension Capacity (Tn, Kips):

1836.0

&gt;

Design Factored Tension (Tu Kips):

0.0

0.00

OK!

Calculated Compression Capacity (Pn, Kips):

8390.6

&gt;

Design Factored Axial Load (Pu Kips):

83.9

0.01

OK!

Moment &amp; Axial Strength Combination:

0.62

OK!

Check Tie Spacing (Design/Required):

0.25

OK!

Pier Reinforcement Ratio:

0.005

Reinforcement Ratio is satisfied per ACI

**(2). Concrete Pad:**

One-Way Design Shear Capacity (L-Direction, Kips):

892.0

&gt;

One-Way Factored Shear (L-D. Kips):

218.6

0.25

OK!

One-Way Design Shear Capacity (W-Direction, Kips):

892.0

&gt;

One-Way Factored Shear (W-D., Kips)

218.6

0.25

OK!

One-Way Design Shear Capacity (Corner-Corner, Kips):

733.2

&gt;

One-Way Factored Shear (C-C, Kips):

212.5

0.29

OK!

Lower Steel Pad Reinforcement Ratio (L-Direct. ):

0.0017

OK!

Lower Steel Pad Reinf. Ratio (W-Direc

0.0017

Lower Steel Pad Moment Capacity (L-Direction, Kips-ft):

3217.3

&gt;

Moment at Bottom ( L-Dir. K-Ft):

1193.9

0.37

OK!

Lower Steel Pad Moment Capacity (W-Direction, Kips-ft):

3217.3

&gt;

Moment at Bottom ( W-Dir. K-Ft):

1193.9

0.37

OK!

Lower Steel Pad Moment Capacity (Corner-Corner, K-ft):

4522.2

&gt;

Moment at Bottom ( C-C Dir. K-Ft):

1688.4

0.37

OK!

Upper Steel Pad Reinforcement Ratio (L-Direct. ):

0.0017

OK!

Upper Steel Reinf. Ratio (W-Dir. ):

0.0017

Upper Steel Pad Moment Capacity (L-Direc. Kips-ft):

3217.3

&gt;

Moment at the top (L-Dir K-Ft):

495.0

0.15

OK!

Upper Steel Pad Moment Capacity (W-Direc. Kips-ft):

3217.3

&gt;

Moment at the top (W-Dir K-Ft):

495.0

0.15

OK!

Upper Steel Pad Moment Capacity (Corner-Corner, K-ft):

4522.2

&gt;

Moment at the top (C-C Dir. K-Ft):

467.4

0.10

OK!

**(3). Check Punching Shear Capacity due to Moment in the Pier:**

Moment transferred by punching shear:

1471.4

k-ft.

Max. factored shear stress  $v_{u,cd}$ :

1.1

Psi

Max. factored shear stress  $v_{u,AB}$ :

9.4

Psi

Factored shear Strength  $\phi v_n$ :

164.3

Psi

Max. factored shear stress  $v_u$ :

9.4

Psi

Check Usage of Punching Shear Capacity:

0.06

OK!

# **ATTACHMENT 5**



FROM ZERO TO INFINIGY  
the solutions are endless

1033 WATERVLIE SHAKER RD, ALBANY, NY 12205

## Mount Analysis Report

April 1, 2020

Site Name	Simsbury CT
Project ID	15208177
Infinigy Job Number	--
Client	Verizon Wireless
Carrier	Verizon Wireless
Site Location	1 Grist Mill Rd. Simsbury, CT 06070 Hartford County 41.8667 N NAD83 72.8158 W NAD83
Mount Centerline EL.	140.0 ft
Mount Type	Low-Profile Platform
Structural Usage Ratio	49.0%
Mount Classification	M1200R(850)-4[6]
Overall Result	Contingent Pass - See Recommendations Below

Upon reviewing the results of this analysis, it is our opinion that the existing mount meets the specified TIA code requirements pending completion of the modifications listed below required to bring the existing mount into compliance:

- 1) Install (1) SitePro1 P/N: HRK14 kit - 4'-0" above platform horizontal pipe.
- 2) CM to verify all existing mounting pipes are 6'-0" long 2.0 STD pipes and are evenly spaced across the boom face at each sector.



Thomas Marr  
Project Engineer I

AZ CA CO FL GA MD NC NH NJ NY TX WA



## Mount Analysis Report

April 1, 2020

### **Contents**

Introduction.....	3
Supporting Documentation.....	3
Analysis Code Requirements.....	3
Conclusion.....	3
Final Configuration Loading.....	4
Mount Usages.....	4
Mount Connection Usages.....	4
Assumptions and Limitations.....	5
Calculations.....	Appended

## Mount Analysis Report

April 1, 2020

### **Introduction**

Infinigy Engineering has been requested to perform a mount analysis on the existing Verizon Wireless mount. All referenced supporting documents have been obtained from the client and are assumed to be accurate and applicable to this site. The mount was analyzed using RISA-3D Version 17.0.4 analysis software.

### **Supporting Documentation**

<b>RFDS</b>	Verizon RFDS Project ID #1320655, dated February 28, 2020
<b>Structural Analysis</b>	TES, Project Number: 92787, Carrier Site ID/Name: 467522/ Simsbury CT, dated March 24, 2020
<b>Site Photos</b>	Infinigy Engineering, PLLC., dated January 21, 2020
<b>Specification Sheet</b>	Commscope P/N: BSAMNT-SBS-1-2, last revised January 30, 2020
<b>Specification Sheet</b>	SitePro1 P/N: HRK14, dated May 30, 2012
<b>Specification Sheet</b>	SitePro1 P/N: RMQLP-4xx, dated July 9, 2015
<b>Engineering Letter</b>	SitePro1/Valmont Mounting System – P/N: = RMQP-xxx+HRK12, dated March 2, 2018

### **Analysis Code Requirements**

Wind Speed	93 mph (3-Second Gust, $V_{ASD}$ ) / 120 mph (3-Second Gust, $V_{ULT}$ )
Wind Speed w/ Ice	50 mph (3 Second Gust) w/ 1" Ice
TIA Revision	ANSI/TIA-222-G
Adopted IBC	2015 IBC / 2018 Connecticut State Building Code
Structure Class	II
Exposure Category	C
Topographic Category	1
Calculated Crest Height	0 ft.
Spectral Response	$S_s = 0.179$ g, $S_1 = 0.064$ g
Site Class	D - Stiff Soil (Assumed)

### **Conclusion**

Upon reviewing the results of this analysis, it is our opinion that the existing mount meets the specified TIA code requirements pending completion of the modifications listed within this report. The modified mount and connections are therefore deemed adequate to support the final loading configuration as listed in this report.

If you have any questions, require additional information, or actual conditions differ from those as detailed in this report please contact me via the information below:

Thomas Marr  
Project Engineer I | **INFINIGY**  
tmarr@infinigy.com | [www.infinigy.com](http://www.infinigy.com)  
15208177\_Simsbury CT

## Mount Analysis Report

April 1, 2020

### Final Configuration Loading

Mount CL (ft)	Vert. O/S (ft)	Rad. HT (ft)	Horiz. O/S (ft) <sup>(1)</sup>	Qty.	Appurtenance	Carrier
140.0	0.0	140.0	2.0	3	AMPHENOL BXA-70080-4BF-EDIN-0	Verizon
			5.5	6	ANDREW SBNHH-1D65B <sup>(2)</sup>	
			12.0	3	SAMSUNG XXDWMM-12.5-65-8T-CBRS	
			5.5	3	SAMSUNG B5/B13 RRH-BR04C	
			5.5	3	SAMSUNG B2/B66A RRH-BR049	
			--	1	RAYCAP RVZDC-6627-PF-48	
			--	1	RAYCAP OVP BOX	

(1) Horizontal Offset is defined as the distance from the left most edge of the mount face horizontal when viewed facing the tower

(2) The existing antennas are to utilize proposed Commscope BSAMNT-SBS-1-2 side by side brackets at each sector

### Mount Usages

Horizontals	26.6%	Pass
Standoffs	48.7%	Pass
Mount Pipes	41.2%	Pass
Bracing	39.2%	Pass
Bolts	49.0%	Pass
Support Rail	24.1%	Pass
<b>Max Usage</b>	<b>49.0%</b>	<b>Pass</b>

### Mount Connection Usages

Reaction Data	Design Capacity*	Analysis Reactions	Results
Max Tension (lbs.)	20340.15	9968.91	49.0%
Max Shear (lbs.)	12425.24	1293.83	10.4%
Unity Check	-	-	25.1%
*One (1) 3/4" A325 bolt, total (4) per connection per referenced specification sheet.			

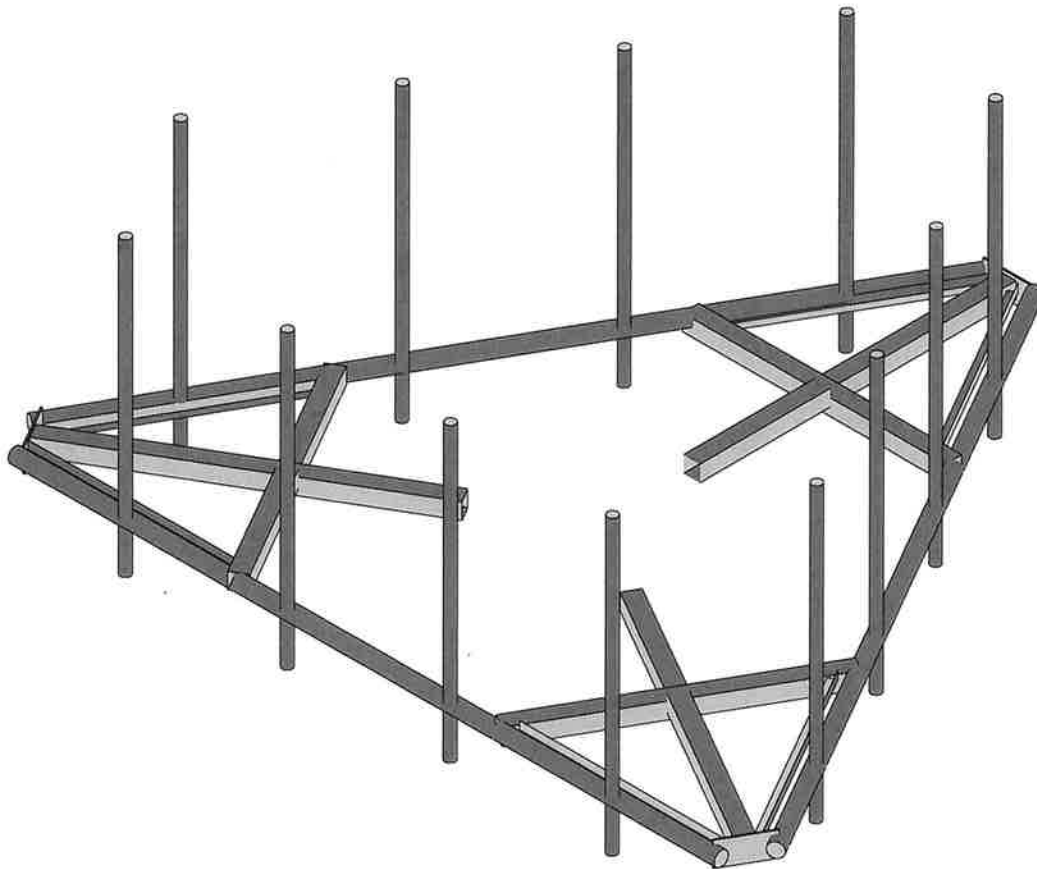
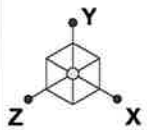
### **Assumptions and Limitations**

Our structural calculations are completed assuming all information provided to Infinigy Engineering is accurate and applicable to this site. For the purposes of calculations, we assume an overall structure condition of “like new” and all members and connections to be free of corrosion and/or structural defects. The structure owner and/or contractor shall verify the structure’s condition prior to installation of any proposed equipment. If actual conditions differ from those described in this report Infinigy Engineering should be notified immediately to complete a revised evaluation.

Our evaluation is completed using standard TIA, AISC, ACI, and ASCE methods and procedures. Our structural results are proprietary and should not be used by others as their own. Infinigy Engineering is not responsible for decisions made by others that are or are not based on our supplied assumptions and conclusions.

This report is an evaluation of the proposed carriers mount structure only and does not reflect adequacy of the existing tower, other mounts, or coax mounting attachments. These elements are assumed to be adequate for the purposes of this analysis and are assumed to have been installed per their manufacturer requirements.





Infinigy Engineering PLLC

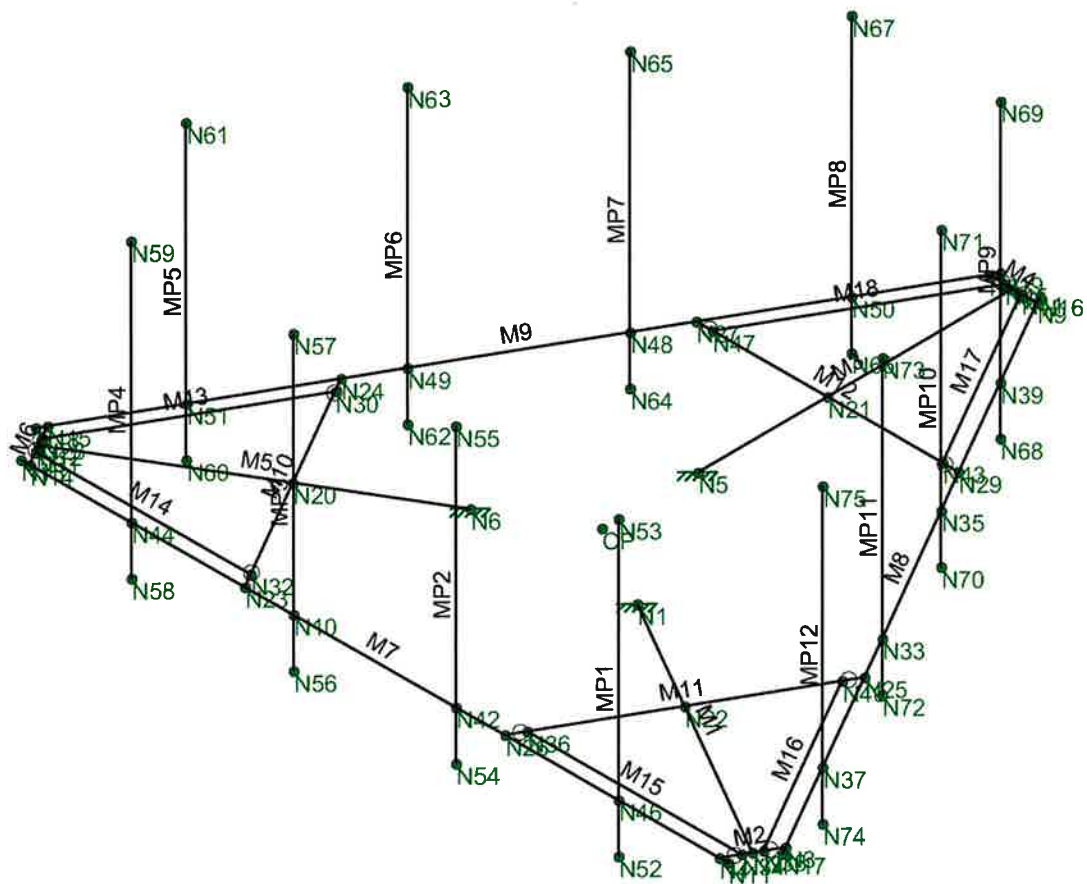
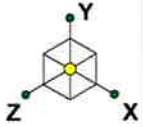
TM

Simsbury CT

Existing Rendering

Feb 3, 2020 at 1:57 PM

Simsbury CT.r3d



Infinigy Engineering PLLC

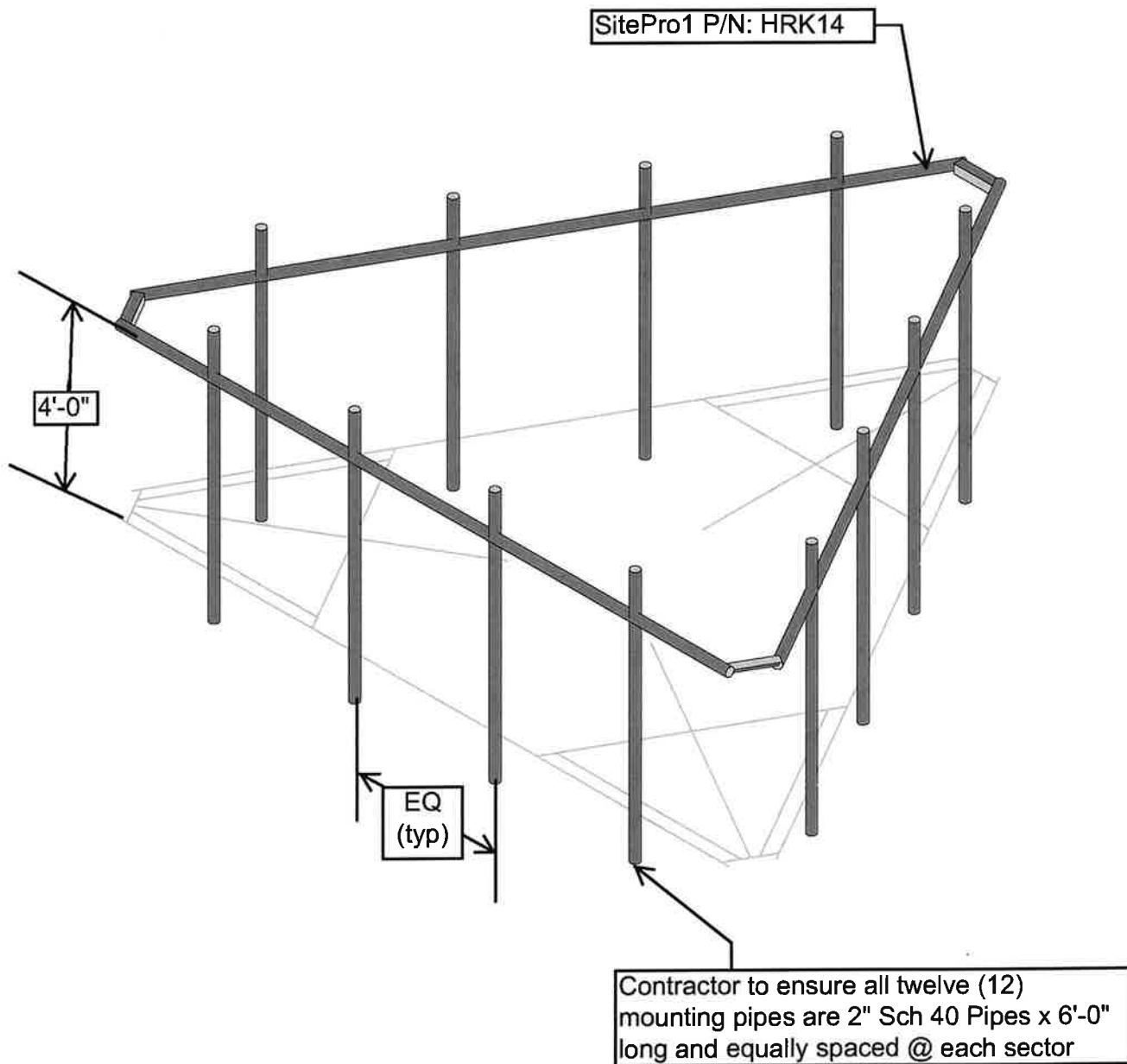
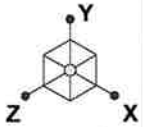
TM

Simsbury CT

Existing Wire Frame

Feb 3, 2020 at 1:56 PM

Simsbury CT.r3d



Envelope Only Solution

Infinigy Engineering PLLC

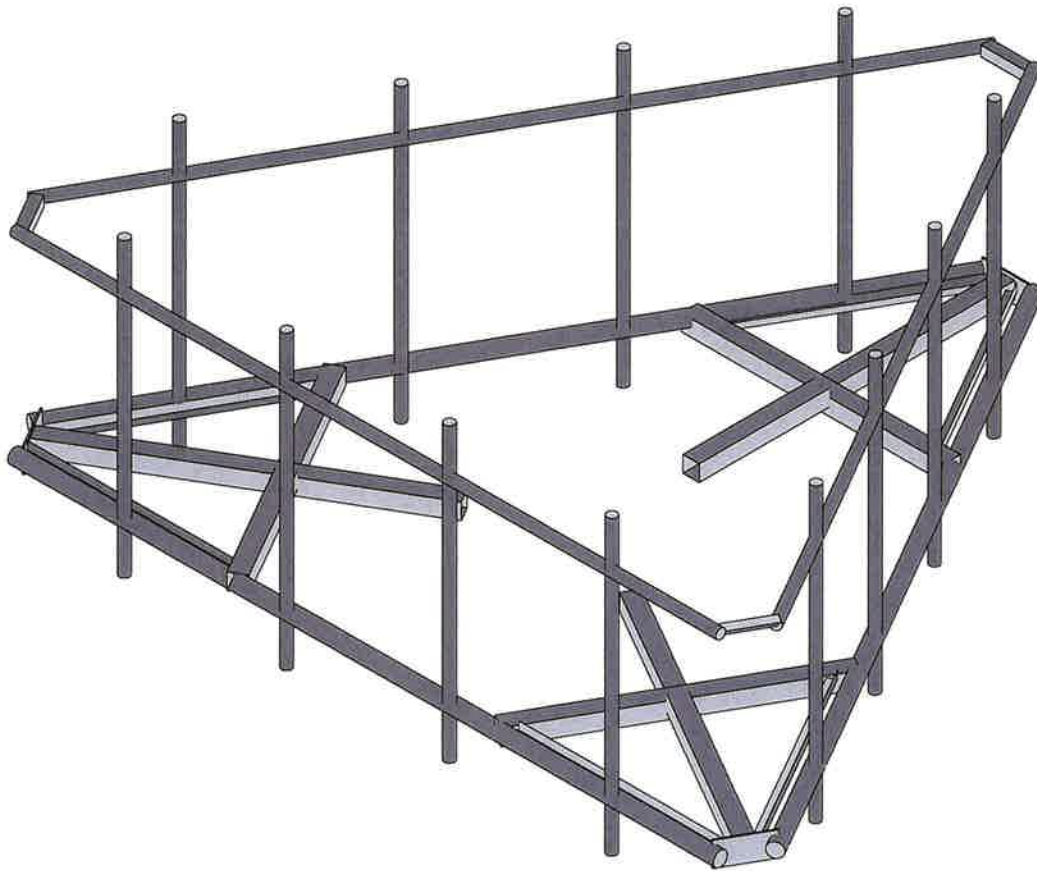
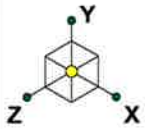
TM

Simsbury CT

Proposed Modifications

Feb 3, 2020 at 1:43 PM

Simsbury CT HK\_loaded.r3d



Envelope Only Solution

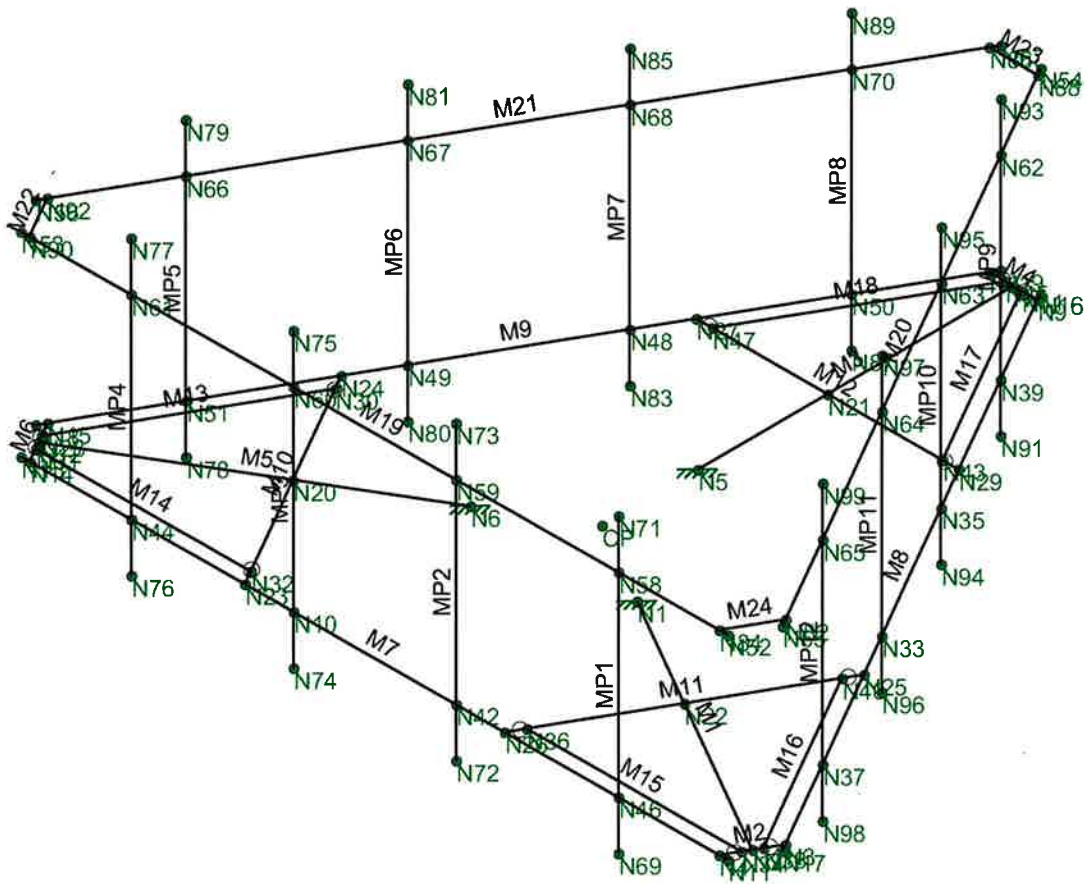
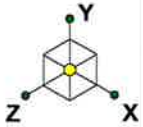
Infinigy Engineering PLLC  
TM

Simsbury CT

Proposed Rendering

Feb 3, 2020 at 1:41 PM

Simsbury CT HK\_loaded.r3d



Envelope Only Solution

Infinigy Engineering PLLC

TM

Simsbury CT

Proposed Wire Frame

Feb 3, 2020 at 1:41 PM

Simsbury CT HK\_loaded.r3d

## Program Inputs

PROJECT INFORMATION	
Client:	Verizon
Carrier:	Verizon
Engineer:	Thomas Marr

SITE INFORMATION	
Risk Category:	II
Exposure Category:	C
Topo Category:	1
Site Class:	D - Stiff Soil
Ground Elevation:	N/A
	ft *Rev H

MOUNT INFORMATION	
Mount Type:	Platform
Num Sectors:	3
Centerline AGL:	140.0
Tower Height AGL:	150.0
	ft

TOPOGRAPHIC DATA	
Topo Feature:	N/A
Slope Distance:	N/A
Crest Distance:	N/A
Crest Height:	N/A
Calculated Crest Height:	N/A
	ft *Rev G

FACTORS	
Directionality Fact. ( $K_d$ ):	0.95
Ground Ele. Factor ( $K_e$ ):	N/A
Rooftop Speed-Up ( $K_z$ ):	N/A
Topographic Factor ( $K_{at}$ ):	1.00
Gust Effect Factor ( $G_{ff}$ ):	1.0

CODE STANDARDS	
Building Code:	2015 IBC
TIA Standard:	TIA-222-G
ASCE Standard:	ASCE 7-10

WIND AND ICE DATA	
Ultimate Wind ( $V_{ult}$ ):	120
Design Wind ( $V$ ):	93
Ice Wind ( $V_{ice}$ ):	50
Base Ice Thickness ( $t_i$ ):	1
	in
Flat Pressure:	57.15
Round Pressure:	34.29
Ice Wind Pressure:	9.91
	psf

SEISMIC DATA	
Short-Period Accel. ( $S_p$ ):	0.18
1-Second Accel. ( $S_1$ ):	0.06
Short-Period Design ( $S_{DS}$ ):	0.19
1-Second Design ( $S_{D1}$ ):	0.10
Short-Period Coeff. ( $F_a$ ):	1.60
1-Second Coeff. ( $F_v$ ):	2.40
Amplification Factor ( $a_p$ ):	1.00
Response Mod. ( $R_p$ ):	2.50
Overstrength ( $\Omega_o$ ):	1.00



Infinigy Load Calculator V2.1.4





Company : Infinigy Engineering PLLC  
 Designer : TM  
 Job Number :  
 Model Name : Simsbury CT

Feb 4, 2020  
 10:06 AM  
 Checked By: \_\_\_\_\_

### Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(d...	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N1	N2			HSS 4"x4"x1/2"	Beam	None	A53 Gr.B	Typical
2	M2	N4	N3			Corner Plate	Beam	None	A36 Gr.36	Typical
3	M3	N5	N7			HSS 4"x4"x1/2"	Beam	None	A53 Gr.B	Typical
4	M4	N9	N8			Corner Plate	Beam	None	A36 Gr.36	Typical
5	M5	N6	N12			HSS 4"x4"x1/2"	Beam	None	A53 Gr.B	Typical
6	M6	N15	N14			Corner Plate	Beam	None	A36 Gr.36	Typical
7	M7	N13	N11			3" STD Pipe	Beam	None	A53 Gr.B	Typical
8	M8	N17	N16			3" STD Pipe	Beam	None	A53 Gr.B	Typical
9	M9	N19	N18			3" STD Pipe	Beam	None	A53 Gr.B	Typical
10	M10	N24	N23			HSS 4"x4"x1/2"	Beam	None	A53 Gr.B	Typical
11	M11	N26	N25			HSS 4"x4"x1/2"	Beam	None	A53 Gr.B	Typical
12	M12	N29	N27			HSS 4"x4"x1/2"	Beam	None	A53 Gr.B	Typical
13	M13	N28	N30			L2"x2"x1/8"	Beam	None	A36 Gr.36	Typical
14	M14	N31	N32		270	L2"x2"x1/8"	Beam	None	A36 Gr.36	Typical
15	M15	N34	N36			L2"x2"x1/8"	Beam	None	A36 Gr.36	Typical
16	M16	N38	N40		270	L2"x2"x1/8"	Beam	None	A36 Gr.36	Typical
17	M17	N41	N43			L2"x2"x1/8"	Beam	None	A36 Gr.36	Typical
18	M18	N45	N47		270	L2"x2"x1/8"	Beam	None	A36 Gr.36	Typical
19	M19	N53	N52			2" STD Pipe	Beam	None	A53 Gr.B	Typical
20	M20	N55	N54			2" STD Pipe	Beam	None	A53 Gr.B	Typical
21	M21	N57	N56			2" STD Pipe	Beam	None	A53 Gr.B	Typical
22	M22	N90	N92		180	L2.5"x2.5"x3/16"	Beam	None	A36 Gr.36	Typical
23	M23	N86	N88		180	L2.5"x2.5"x3/16"	Beam	None	A36 Gr.36	Typical
24	M24	N84	N82		90	L2.5"x2.5"x3/16"	Beam	None	A36 Gr.36	Typical
25	MP1	N69	N71			2" STD Pipe	Beam	None	A53 Gr.B	Typical
26	MP2	N72	N73			2" STD Pipe	Beam	None	A53 Gr.B	Typical
27	MP3	N74	N75			2" STD Pipe	Beam	None	A53 Gr.B	Typical
28	MP4	N76	N77			2" STD Pipe	Beam	None	A53 Gr.B	Typical
29	MP5	N78	N79			2" STD Pipe	Beam	None	A53 Gr.B	Typical
30	MP6	N80	N81			2" STD Pipe	Beam	None	A53 Gr.B	Typical
31	MP7	N83	N85			2" STD Pipe	Beam	None	A53 Gr.B	Typical
32	MP8	N87	N89			2" STD Pipe	Beam	None	A53 Gr.B	Typical
33	MP9	N91	N93			2" STD Pipe	Beam	None	A53 Gr.B	Typical
34	MP10	N94	N95			2" STD Pipe	Beam	None	A53 Gr.B	Typical
35	MP11	N96	N97			2" STD Pipe	Beam	None	A53 Gr.B	Typical
36	MP12	N98	N99			2" STD Pipe	Beam	None	A53 Gr.B	Typical

### Material Takeoff

	Material	Size	Pieces	Length[in]	Weight[LB]
1	Hot Rolled Steel				
2	A36 Gr.36	6"x0.37" Plate	3	36	22.662
3	A36 Gr.36	L2x2x2	6	317.4	44.193
4	A36 Gr.36	L2.5x2.5x3	3	36	9.198
5	A53 Gr.B	HSS4X4X8	6	428.1	730.869
6	A53 Gr.B	PIPE 2.0	15	1386	400.881
7	A53 Gr.B	PIPE 3.0	3	522	306.403
8	Total HR Steel		36	2725.6	1514.206

### Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribut...	Area(Me...Surface(...
1	Self Weight	DL		-1			30		3
2	Wind Load AZI 0	WLZ					60		
3	Wind Load AZI 30	None					60		

Company : Infinigy Engineering PLLC  
 Designer : TM  
 Job Number :  
 Model Name : Simsbury CT

Feb 4, 2020  
 10:06 AM  
 Checked By: \_\_\_\_\_

### Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribut...	Area(Me...	Surface(...
4	Wind Load AZI 60	None					60			
5	Wind Load AZI 90	WLX					60			
6	Wind Load AZI 120	None					60			
7	Wind Load AZI 150	None					60			
8	Wind Load AZI 180	None					60			
9	Wind Load AZI 210	None					60			
10	Wind Load AZI 240	None					60			
11	Wind Load AZI 270	None					60			
12	Wind Load AZI 300	None					60			
13	Wind Load AZI 330	None					60			
14	Distr. Wind Load Z	WLX						36		
15	Distr. Wind Load X	WLX						36		
16	Ice Weight	OL1					30	36	3	
17	Ice Wind Load AZI 0	OL2					60			
18	Ice Wind Load AZI 30	None					60			
19	Ice Wind Load AZI 60	None					60			
20	Ice Wind Load AZI 90	OL3					60			
21	Ice Wind Load AZI 120	None					60			
22	Ice Wind Load AZI 150	None					60			
23	Ice Wind Load AZI 180	None					60			
24	Ice Wind Load AZI 210	None					60			
25	Ice Wind Load AZI 240	None					60			
26	Ice Wind Load AZI 270	None					60			
27	Ice Wind Load AZI 300	None					60			
28	Ice Wind Load AZI 330	None					60			
29	Distr. Ice Wind Load Z	OL2						36		
30	Distr. Ice Wind Load X	OL3						36		
31	Seismic Load Z	ELZ			-.095		30			
32	Seismic Load X	ELX	-.095				30			
33	Service Live Loads	LL				3				
34	BLC 1 Transient Area Loads	None						48		
35	BLC 16 Transient Area Loads	None						48		

### Load Combinations

	Description	So...	P...	S...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...
1	1.4DL	Yes	Y		1	1.4									
2	1.2DL + 1.6WL A...	Yes	Y		1	1.2	2	1.6	14	1.6	15				
3	1.2DL + 1.6WL A...	Yes	Y		1	1.2	3	1.6	14	1.386	15	.8			
4	1.2DL + 1.6WL A...	Yes	Y		1	1.2	4	1.6	14	.8	15	1.386			
5	1.2DL + 1.6WL A...	Yes	Y		1	1.2	5	1.6	14		15	1.6			
6	1.2DL + 1.6WL A...	Yes	Y		1	1.2	6	1.6	14	-.8	15	1.386			
7	1.2DL + 1.6WL A...	Yes	Y		1	1.2	7	1.6	14	-1.3...	15	.8			
8	1.2DL + 1.6WL A...	Yes	Y		1	1.2	8	1.6	14	-1.6	15				
9	1.2DL + 1.6WL A...	Yes	Y		1	1.2	9	1.6	14	-1.3...	15	-.8			
10	1.2DL + 1.6WL A...	Yes	Y		1	1.2	10	1.6	14	-.8	15	-1.3...			
11	1.2DL + 1.6WL A...	Yes	Y		1	1.2	11	1.6	14		15	-1.6			
12	1.2DL + 1.6WL A...	Yes	Y		1	1.2	12	1.6	14	.8	15	-1.3...			
13	1.2DL + 1.6WL A...	Yes	Y		1	1.2	13	1.6	14	1.386	15	-.8			
14	0.9DL + 1.6WL A...	Yes	Y		1	.9	2	1.6	14	1.6	15				
15	0.9DL + 1.6WL A...	Yes	Y		1	.9	3	1.6	14	1.386	15	.8			
16	0.9DL + 1.6WL A...	Yes	Y		1	.9	4	1.6	14	.8	15	1.386			
17	0.9DL + 1.6WL A...	Yes	Y		1	.9	5	1.6	14		15	1.6			
18	0.9DL + 1.6WL A...	Yes	Y		1	.9	6	1.6	14	-.8	15	1.386			
19	0.9DL + 1.6WL A...	Yes	Y		1	.9	7	1.6	14	-1.3...	15	.8			
20	0.9DL + 1.6WL A...	Yes	Y		1	.9	8	1.6	14	-1.6	15				



Company : Infinigy Engineering PLLC  
 Designer : TM  
 Job Number :  
 Model Name : Simsbury CT

Feb 4, 2020  
 10:06 AM  
 Checked By: \_\_\_\_\_

### Load Combinations (Continued)

	Description	So...	P...	S...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...
21	0.9DL + 1.6WL A...	Yes	Y		1	.9	9	1.6	14	-1.3	15	-.8				
22	0.9DL + 1.6WL A...	Yes	Y		1	.9	10	1.6	14	-.8	15	-1.3				
23	0.9DL + 1.6WL A...	Yes	Y		1	.9	11	1.6	14		15	-1.6				
24	0.9DL + 1.6WL A...	Yes	Y		1	.9	12	1.6	14	.8	15	-1.3				
25	0.9DL + 1.6WL A...	Yes	Y		1	.9	13	1.6	14	1.386	15	-.8				
26	1.2D + 1.0Di	Yes	Y		1	1.2	16	1								
27	1.2D + 1.0Di + 1.0...	Yes	Y		1	1.2	16	1	17	1	29	1.6	30			
28	1.2D + 1.0Di + 1.0...	Yes	Y		1	1.2	16	1	18	1	29	1.386	30	.8		
29	1.2D + 1.0Di + 1.0...	Yes	Y		1	1.2	16	1	19	1	29	.8	30	1.386		
30	1.2D + 1.0Di + 1.0...	Yes	Y		1	1.2	16	1	20	1	29		30	1.6		
31	1.2D + 1.0Di + 1.0...	Yes	Y		1	1.2	16	1	21	1	29	-.8	30	1.386		
32	1.2D + 1.0Di + 1.0...	Yes	Y		1	1.2	16	1	22	1	29	-1.3	30	.8		
33	1.2D + 1.0Di + 1.0...	Yes	Y		1	1.2	16	1	23	1	29	-1.6	30			
34	1.2D + 1.0Di + 1.0...	Yes	Y		1	1.2	16	1	24	1	29	-1.3	30	-.8		
35	1.2D + 1.0Di + 1.0...	Yes	Y		1	1.2	16	1	25	1	29	-.8	30	-1.3		
36	1.2D + 1.0Di + 1.0...	Yes	Y		1	1.2	16	1	26	1	29		30	-1.6		
37	1.2D + 1.0Di + 1.0...	Yes	Y		1	1.2	16	1	27	1	29	.8	30	-1.3		
38	1.2D + 1.0Di + 1.0...	Yes	Y		1	1.2	16	1	28	1	29	1.386	30	-.8		
39	(1.2 + 0.2Sds)DL ...	Yes	Y		1	1.238	31	1	32							
40	(1.2 + 0.2Sds)DL ...	Yes	Y		1	1.238	31	.866	32	.5						
41	(1.2 + 0.2Sds)DL ...	Yes	Y		1	1.238	31	.5	32	.866						
42	(1.2 + 0.2Sds)DL ...	Yes	Y		1	1.238	31		32	1						
43	(1.2 + 0.2Sds)DL ...	Yes	Y		1	1.238	31	-.5	32	.866						
44	(1.2 + 0.2Sds)DL ...	Yes	Y		1	1.238	31	-.866	32	.5						
45	(1.2 + 0.2Sds)DL ...	Yes	Y		1	1.238	31	-.1	32							
46	(1.2 + 0.2Sds)DL ...	Yes	Y		1	1.238	31	-.866	32	-.5						
47	(1.2 + 0.2Sds)DL ...	Yes	Y		1	1.238	31	-.5	32	-.866						
48	(1.2 + 0.2Sds)DL ...	Yes	Y		1	1.238	31		32	-.1						
49	(1.2 + 0.2Sds)DL ...	Yes	Y		1	1.238	31	.5	32	-.866						
50	(1.2 + 0.2Sds)DL ...	Yes	Y		1	1.238	31	.866	32	-.5						
51	(0.9 - 0.2Sds)DL ...	Yes	Y		1	.862	31	1	32							
52	(0.9 - 0.2Sds)DL ...	Yes	Y		1	.862	31	.866	32	.5						
53	(0.9 - 0.2Sds)DL ...	Yes	Y		1	.862	31	.5	32	.866						
54	(0.9 - 0.2Sds)DL ...	Yes	Y		1	.862	31		32	1						
55	(0.9 - 0.2Sds)DL ...	Yes	Y		1	.862	31	-.5	32	.866						
56	(0.9 - 0.2Sds)DL ...	Yes	Y		1	.862	31	-.866	32	.5						
57	(0.9 - 0.2Sds)DL ...	Yes	Y		1	.862	31	-.1	32							
58	(0.9 - 0.2Sds)DL ...	Yes	Y		1	.862	31	-.866	32	-.5						
59	(0.9 - 0.2Sds)DL ...	Yes	Y		1	.862	31	-.5	32	-.866						
60	(0.9 - 0.2Sds)DL ...	Yes	Y		1	.862	31		32	-.1						
61	(0.9 - 0.2Sds)DL ...	Yes	Y		1	.862	31	.5	32	-.866						
62	(0.9 - 0.2Sds)DL ...	Yes	Y		1	.862	31	.866	32	-.5						
63	1.0DL + 1.5LL + 1...	Yes	Y		1	1	2	.416	14	.416	15		33	1.5		
64	1.0DL + 1.5LL + 1...	Yes	Y		1	1	3	.416	14	.36	15	.208	33	1.5		
65	1.0DL + 1.5LL + 1...	Yes	Y		1	1	4	.416	14	.208	15	.36	33	1.5		
66	1.0DL + 1.5LL + 1...	Yes	Y		1	1	5	.416	14		15	.416	33	1.5		
67	1.0DL + 1.5LL + 1...	Yes	Y		1	1	6	.416	14	-.208	15	.36	33	1.5		
68	1.0DL + 1.5LL + 1...	Yes	Y		1	1	7	.416	14	-.36	15	.208	33	1.5		
69	1.0DL + 1.5LL + 1...	Yes	Y		1	1	8	.416	14	-.416	15		33	1.5		
70	1.0DL + 1.5LL + 1...	Yes	Y		1	1	9	.416	14	-.36	15	-.208	33	1.5		
71	1.0DL + 1.5LL + 1...	Yes	Y		1	1	10	.416	14	-.208	15	-.36	33	1.5		
72	1.0DL + 1.5LL + 1...	Yes	Y		1	1	11	.416	14		15	-.416	33	1.5		
73	1.0DL + 1.5LL + 1...	Yes	Y		1	1	12	.416	14	.208	15	-.36	33	1.5		
74	1.0DL + 1.5LL + 1...	Yes	Y		1	1	13	.416	14	.36	15	-.208	33	1.5		



Company : Infinigy Engineering PLLC  
 Designer : TM  
 Job Number :  
 Model Name : Simsbury CT

Feb 4, 2020  
 10:06 AM  
 Checked By: \_\_\_\_\_

### Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	N1	max	1767.306	5	3753.415	35	1222.28	3	634.019	16	1512.616	19	8482.845	35
2		min	-1739.672	23	13.849	16	-1206.112	21	-4277.91	34	-1514.4...	25	-993.435	16
3	N5	max	1212.286	17	3765.434	27	1912.23	14	9507.927	27	2014.415	23	323.946	23
4		min	-1212.316	23	12.369	20	-1944.008	8	-1151.5...	20	-2016.3...	17	-697.278	30
5	N6	max	1563.052	18	3752.23	31	1466.248	13	510.502	25	1542.247	15	1019.044	24
6		min	-1590.724	12	23.721	24	-1450.151	19	-5196.8...	32	-1544.0...	21	-7947.3...	31
7	Totals:	max	4489.66	17	10268.151	38	4582.385	14						
8		min	-4489.66	11	2214.226	51	-4582.385	8						

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

	Member	Shape	Code Ch...	Loc[in]	LC	Shear C...	Loc...	LC	phi*Pn...	phi*Pn...	phi*M...	phi*M...	Eqn
1	M5	HSS4X4X8	.487	0	32	.116	0 y	33	18410...	189630	20212.5	20212.5	1 H1-1b
2	M3	HSS4X4X8	.487	0	28	.116	0 y	29	18410...	189630	20212.5	20212.5	1 H1-1b
3	M1	HSS4X4X8	.484	0	34	.116	0 y	37	18410...	189630	20212.5	20212.5	1 H1-1b
4	MP3	PIPE 2.0	.412	12	2	.052	12	6	20866...	32130	1871...	1871...	H1-1b
5	MP7	PIPE 2.0	.407	12	10	.052	12	2	20866...	32130	1871...	1871...	H1-1b
6	MP11	PIPE 2.0	.404	12	5	.058	12	10	20866...	32130	1871...	1871...	H1-1b
7	M24	L2.5x2.5x3	.392	0	11	.147	0 y	7	27702...	29192.4	872.574	1971.83	H2-1
8	M22	L2.5x2.5x3	.386	12	7	.149	0 z	3	27702...	29192.4	872.574	1971.83	H2-1
9	MP9	PIPE 2.0	.377	12	35	.120	12	12	20866...	32130	1871...	1871...	H1-1b
10	MP5	PIPE 2.0	.373	12	27	.121	12	4	20866...	32130	1871...	1871...	H1-1b
11	MP1	PIPE 2.0	.362	12	31	.125	12	8	20866...	32130	1871...	1871...	H1-1b
12	M23	L2.5x2.5x3	.357	12	3	.151	0 z	11	27702...	29192.4	872.574	1971.83	H2-1
13	MP8	PIPE 2.0	.307	12	6	.154	12	4	20866...	32130	1871...	1871...	H1-1b
14	MP10	PIPE 2.0	.305	12	5	.077	12	13	20866...	32130	1871...	1871...	H1-1b
15	MP2	PIPE 2.0	.302	12	2	.082	12	9	20866...	32130	1871...	1871...	H1-1b
16	MP12	PIPE 2.0	.300	12	2	.154	12	12	20866...	32130	1871...	1871...	H1-1b
17	MP6	PIPE 2.0	.294	12	10	.085	12	5	20866...	32130	1871...	1871...	H1-1b
18	MP4	PIPE 2.0	.293	12	10	.158	12	8	20866...	32130	1871...	1871...	H1-1b
19	M14	L2x2x2	.268	52.901	27	.020	52... z	27	10404...	15908.4	402.563	815.71	H2-1
20	M18	L2x2x2	.268	52.901	35	.020	52... z	35	10404...	15908.4	402.563	816.391	H2-1
21	M16	L2x2x2	.268	52.901	31	.020	52... z	31	10404...	15908.4	402.563	816.508	H2-1
22	M8	PIPE 3.0	.266	117.813	29	.129	56...	6	55995...	65205	5748.75	5748.75	1 H1-1b
23	M7	PIPE 3.0	.265	117.813	37	.133	56...	2	55995...	65205	5748.75	5748.75	1 H1-1b
24	M9	PIPE 3.0	.264	117.813	34	.130	56...	10	55995...	65205	5748.75	5748.75	1 H1-1b
25	M15	L2x2x2	.257	52.901	27	.019	52... y	27	10404...	15908.4	402.563	822.55	H2-1
26	M17	L2x2x2	.257	52.901	31	.019	52... y	31	10404...	15908.4	402.563	823.566	H2-1
27	M13	L2x2x2	.256	52.901	35	.019	52... y	35	10404...	15908.4	402.563	823.632	H2-1
28	M21	PIPE 2.0	.241	25.375	5	.106	27...	4	4678...	32130	1871...	1871...	H1-1b
29	M19	PIPE 2.0	.241	25.375	9	.111	27...	8	4678...	32130	1871...	1871...	H1-1b
30	M20	PIPE 2.0	.237	148.625	11	.112	27...	11	4678...	32130	1871...	1871...	H1-1b
31	M11	HSS4X4X8	.235	32.451	36	.099	32... y	38	18568...	189630	20212.5	20212.5	1 H1-1b
32	M12	HSS4X4X8	.234	32.451	28	.100	61... z	10	18568...	189630	20212.5	20212.5	1 H1-1b
33	M10	HSS4X4X8	.234	32.451	32	.101	61... z	2	18568...	189630	20212.5	20212.5	1 H1-1b
34	M2	6"x0.37" Plate	.193	6	22	.221	0 y	8	37008...	71928	554.445	8991	H1-1b
35	M4	6"x0.37" Plate	.190	6	8	.217	0 y	12	37008...	71928	554.445	8991	H1-1b
36	M6	6"x0.37" Plate	.180	6	18	.219	12 y	8	37008...	71928	554.445	8991	H1-1b

### Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design ...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	HSS 4"x4"x1/2"	HSS4X4X8	Beam	None	A53 Gr.B	Typical	6.02	11.9	11.9	21
2	3" STD Pipe	PIPE 3.0	Beam	None	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
3	L2"x2"x1/8"	L2x2x2	Beam	None	A36 Gr.36	Typical	.491	.189	.189	.003

Company : Infinigy Engineering PLLC  
 Designer : TM  
 Job Number :  
 Model Name : Simsbury CT

Feb 4, 2020  
 10:06 AM  
 Checked By: \_\_\_\_\_

### Hot Rolled Steel Section Sets (Continued)

	Label	Shape	Type	Design List	Material	Design ...	A [in <sup>2</sup> ]	I <sub>yy</sub> [in <sup>4</sup> ]	I <sub>zz</sub> [in <sup>4</sup> ]	J [in <sup>4</sup> ]
4	2" STD Pipe	PIPE 2.0	Beam	None	A53 Gr.B	Typical	1.02	.627	.627	1.25
5	LL2.5"x2.5"x3/16...	LL2.5x2.5x3x3	Beam	None	A36 Gr.36	Typical	1.8	2.46	1.07	.023
6	L2.5"x2.5"x3/16"	L2.5x2.5x3	Beam	None	A36 Gr.36	Typical	.901	.535	.535	.011
7	Corner Plate	6"x0.37" Plate	Beam	None	A36 Gr.36	Typical	2.22	.025	6.66	.097

Bolt Calculation Tool, V1.2

PROJECT DATA	
Site Name:	Simsbury CT
Site Number:	15208177
Job Code:	0
Connection Description:	1, 5, 6

APPLIED LOADS	
Bolt Tension:	9968.91 lbs
Bolt Shear:	1293.83 lbs

BOLT PROPERTIES	
Bolt Type:	Bolt -
Bolt Diameter:	0.625 in
Bolt Grade:	A325 -
# of Bolts:	4 -
Threads Excluded?	No -

BOLT CHECK	
Tensile Strength	20340.15
Shear Strength	12425.24
Tensile Usage	49.0%
Shear Usage	10.4%
Interaction Check	25.1%
Result	Pass



# **ATTACHMENT 6**





# Town of Simsbury, CT

## Property Listing Report

Map Block Lot

F11 103 005

Building #

Unique Identifier

30569027

### Property Information

Property Location	225 GRIST MILL ROAD
Mailing Address	P O BOX 711 SIMSBURY CT 06070
Land Use	Commercial Vacant Land
Zoning Code	I-2
Neighborhood	0239

Owner	ENSIGN-BICKFORD REALTY CORPORATION
Co-Owner	
Book / Page	0294/0600
Land Class	Commercial
Census Tract	
Acreage	0.23

### Valuation Summary

(Assessed value = 70% of Appraised Value)

Item	Appraised	Assessed
Buildings	0	0
Outbuildings	120000	84000
Land	490188	343130
Total	610188	427130

### Utility Information

Electric	No
Gas	No
Sewer	No
Public Water	No
Well	No



### Primary Construction Details

Year Built	
Building Desc.	
Building Style	
Stories	
Exterior Walls	
Exterior Walls 2	
Interior Walls	
Interior Walls 2	
Interior Floors 1	
Interior Floors 2	

Heating Fuel	
Heating Type	
AC Type	
Bedrooms	
Full Bathrooms	
Half Bathrooms	
Extra Fixtures	
Total Rooms	
Bath Style	
Kitchen Style	
Occupancy	

Livable Area (ft)	
Building Use	
Building Condition	
Frame Type	
Building Grade	
Fireplaces	
Wood Stoves	
Attic Access	
Roof Style	
Roof Cover	

Bsmt Area	
Fin Bsmt Area	
Fin Bsmt Quality	
Bsmt Access	
Bsmt Gar	
Bsmt Sump Pump	

Report Created On

4/6/2020



# Town of Simsbury, CT

## Property Listing Report

Map Block Lot

F11 103 005

Building #

Unique Identifier

30569027

### Detached Outbuildings

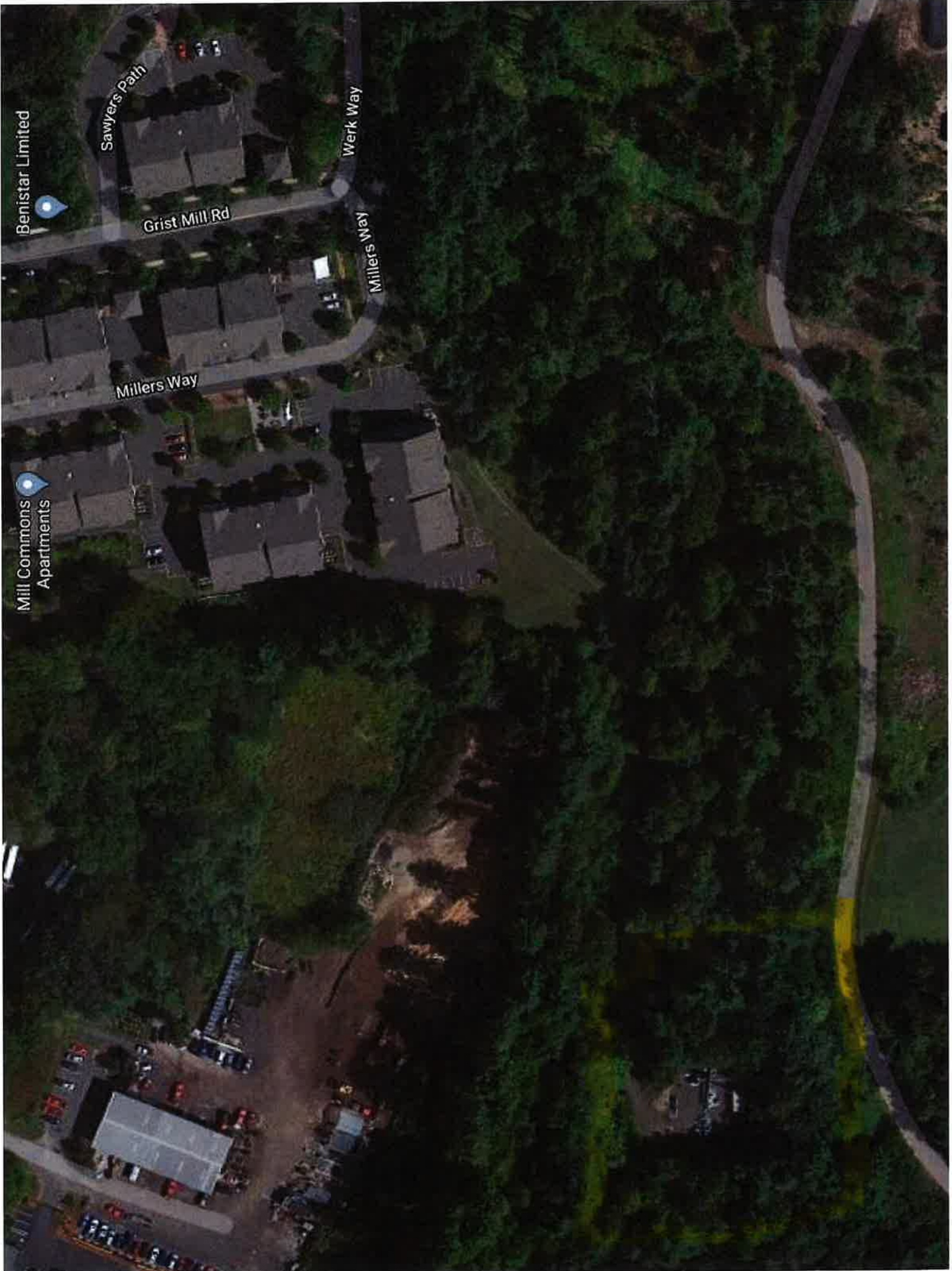
Type	Description	Area (sq ft)	Condition	Year Built
Terrace	Cell Tower	1	Average	0

### Attached Extra Features

Type	Description	Area (sq ft)	Condition	Year Built

### Sales History

Owner of Record	Book/ Page	Sale Date	Sale Price
ENSIGN-BICKFORD REALTY CORPORATION	0294_0600	11/25/1985	0



Benistar Limited

Sawyers Path

Werk Way

Grist Mill Rd

Millers Way

Millers Way

Mill Commons  
Apartments

# **ATTACHMENT 7**



# Certificate of Mailing — Firm

Name and Address of Sender  Kenneth C. Baldwin, Esq. Robinson & Cole LLP 280 Trumbull Street Hartford, CT 06103		TOTAL NO. of Pieces Listed by Sender		TOTAL NO. of Pieces Received at Post Office™		Affix Stamp Here Postmark with Date of Receipt.					
Postmaster, per (name of receiving employee)						neopost 04/09/2020 US POSTAGE \$002.84 ZIP 06103 041L12203937					
USPS® Tracking Number Firm-specific Identifier		Address (Name, Street, City, State, and ZIP Code™)		Postage		Fee		Special Handling		Parcel Airift	
1.		Eric Wellman, First Selectman Town of Simsbury 933 Hopmeadow Street Simsbury, CT 06070									
2.		Michael Glidden, Director of Planning and Community Development Town of Simsbury 933 Hopmeadow Street Simsbury, CT 06070									
3.		Ensign Bickford Realty Corporation 225 Grist Mill Road Simsbury, CT 06070									
4.											
5.											
6.											