



Filed by:

Kri Pelletier, Property Specialist - SBA Communications
134 Flanders Rd., Suite 125, Westborough, MA 01581
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March 21, 2017

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

Notice of Exempt Modification
95 Country Club Road, New Canaan, CT 06840
41 10 22.3 N
-73 29 46.8 W
T-Mobile Site #: CT11389A_L700

Dear Ms. Bachman:

T-Mobile currently maintains (3) antennas at the 106-foot level, and (3) antennas at the 99-foot level, of the existing 109-foot Monopole Tower at 95 Country Club Rd in New Canaan, CT. The tower is owned by SBA Monarch Towers III, LLC. The property is owned by The Country Club of New Canaan. T-Mobile now intends to replace the existing (3) antennas at the 106-foot level, and the existing (3) antennas at the 99-foot level, with (3) newer technology antennas at the 106-foot level and (3) newer technology antennas at the 99-foot level of the tower. T-Mobile's full scope of work is as follows:

Remove:

- *(Ground: Existing S12000 Cabinet)*

Remove and Replace:

- Remove (3) RFS APXV18-206516S-A20 Panel Antennas and replace with (3) RFS APX16DWV-16DWVS-E-A20 - Panel Antennas (at 106')
- Remove (3) RFS APXV18-206516S--A20 Panel Antennas and replace with (3) Commscope LNX-6512DS-A1M - Panel Antennas (at 99')
- Remove 18" concealment shroud and replace with 30" concealment shroud
- Remove (6) 1-5/8" lines and replace with (12) 7/8" lines (at 106')
- Remove (6) 1-5/8" lines and replace with (6) 7/8" lines (at 99')

Install:

- (3) Andrew 782 11054 Smart Bias Ts (at 99')
- *(Ground: H-frame within leased space of existing compound/(3) Ericsson RRUS11 B12 RRUs on H-Frame)*

Existing Equipment to Remain:

- (3) RFS ATMAA1512D-1A20 TMAs (at 106')
- (3) Ericsson KRY 112 144/1 TMAs (move from 99' to 106')



This facility was approved by the Council in docket # 244 on February 18, 2004. The approval called for a "silhouette structure" not to exceed 110' agl. There was to be reasonable space provided on the tower without charge for municipal antennas. A D&M plan was to be presented. And any future obsolete or non-functioning antennas were to be removed. This modification complies with the aforementioned conditions.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. §16.50j-72(b)(2). In accordance with R.C.S.A. § 16.50j-73, a copy of this letter is being sent to Robert E. Mallozzi, III, First Selectman for the Town of New Canaan, Steve Palmer, Town Planner for the Town of New Canaan, and the property owner, The Country Club of New Canaan. (Separate notice is not being sent to tower owner, as it belongs to SBA.)

The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S.A. §16.50j-72(b)(2).

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

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

Sincerely,

Kri Pelletier
Property Specialist
SBA COMMUNICATIONS CORPORATION
134 Flanders Rd., Suite 125
Westborough, MA 01581

508.251.0720 x3804 + T
508.366.2610 + F
203.446.7700 + C
kpelletier@sbsite.com

Attachments

cc: Robert E. Mallozzi III, First Selectman
Town of New Canaan Town Hall, 2nd Floor, 77 Main Street, New Canaan, CT 06840
Steve Palmer, Town Planner
Town of New Canaan Town Hall, 77 Main Street, New Canaan, CT 06840
The Country Club of New Canaan
95 Country Club Road, New Canaan, CT 06840



POWER DENSITY

T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	RFS APX16DWV-16DWVS-E-A20	Make / Model:	RFS APX16DWV-16DWVS-E-A20	Make / Model:	RFS APX16DWV-16DWVS-E-A20
Gain:	16.3 dBd	Gain:	16.3 dBd	Gain:	16.3 dBd
Height (AGL):	106	Height (AGL):	106	Height (AGL):	106
Frequency Bands	1900 MHz (PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz (PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz (PCS) / 2100 MHz (AWS)
Channel Count	8	Channel Count	8	Channel Count	8
Total TX Power(W):	300	Total TX Power(W):	300	Total TX Power(W):	300
ERP (W):	8,514.30	ERP (W):	8,514.30	ERP (W):	8,514.30
Antenna A1 MPE%	3.06	Antenna B1 MPE%	3.06	Antenna C1 MPE%	3.06
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	Commscope LNX-6512DS-AIM	Make / Model:	Commscope LNX-6512DS-AIM	Make / Model:	Commscope LNX-6512DS-AIM
Gain:	12 dBd	Gain:	12 dBd	Gain:	12 dBd
Height (AGL):	99	Height (AGL):	99	Height (AGL):	99
Frequency Bands	700 MHz	Frequency Bands	700 MHz	Frequency Bands	700 MHz
Channel Count	1	Channel Count	1	Channel Count	1
Total TX Power(W):	30	Total TX Power(W):	30	Total TX Power(W):	30
ERP (W):	379.42	ERP (W):	379.42	ERP (W):	379.42
Antenna A2 MPE%	0.34	Antenna B2 MPE%	0.34	Antenna C2 MPE%	0.34

Site Composite MPE%	
Carrier	MPE%
T-Mobile (Per Sector Max)	3.40 %
AT&T	6.86 %
Site Total MPE %:	10.26 %

T-Mobile Sector A Total:	3.40 %
T-Mobile Sector B Total:	3.40 %
T-Mobile Sector C Total:	3.40 %
Site Total:	10.26 %

T-Mobile _Max Values per sector	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu\text{W}/\text{cm}^2$)	Frequency (MHz)	Allowable MPE ($\mu\text{W}/\text{cm}^2$)	Calculated % MPE
T-Mobile AWS - 2100 MHz LTE	2	1,687.14	106	12.13	AWS - 2100 MHz	1000	1.21%
T-Mobile AWS - 2100 MHz UMTS	2	843.57	106	6.07	AWS - 2100 MHz	1000	0.61%
T-Mobile PCS - 1950 MHz UMTS	2	863.22	106	6.21	PCS - 1950 MHz	1000	0.62%
T-Mobile PCS - 1950 MHz GSM	2	863.22	106	6.21	PCS - 1950 MHz	1000	0.62%
T-Mobile 700 MHz LTE	1	379.42	99	1.58	700 MHz	467	0.34%
						Total:	3.40%



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Location	Owner	Account	MBLU
95 COUNTRY CLUB RD	COUNTRY CLUB OF N C	01297	0033/ 0034/ 0055/

Parcel Value

Item	Appraised Value	Assessed Value
Buildings	8,542,300	5,979,610
Extra Building Features	9,500	6,650
Outbuildings	8,410,700	5,887,490
Land	23,738,600	16,617,020
Total	40,701,100	28,490,770

Owner of Record

COUNTRY CLUB OF N C 95 COUNTRY CLUB RD NEW CANAAN, CT 06840

Owner History

Name	Book/Page	Sale Date	Sale Price
COUNTRY CLUB OF N C	179/ 405	01/01/1966	0
COUNTRY CLUB OF N C	75/ 581	05/20/1945	0
COUNTRY CLUB OF N C	24/ 459	10/23/1902	0

Assessment History

Year	Total Assessment
2016	28,490,770
2015	28,490,770

Building Permits

Permit ID	Issue Date	Amount	Description
16-01008	02/24/2017	20,000	GREENHOUSE STRUCTURE. AFTER THE FACT. "18 X 32 GREENHOUSE - USED TO GROW ANNUAL FLOWERS FOR CLUB PROPERTY AS WELL AS MUMS, HERBS.. TEMPORARY GREENHOUSE WITH STONE FLOOR. NO SEPTIC. POWER FOR HEAT & FANS. WATER FOR IRRIGATION.
16-00935	12/14/2016	15,000	SWAP 3 EXISTING CELL ANTENNAS WITH 3 NEWER TECHNOLOGY CELL ANTENNAS & ASSOCIATED EQUIPMENT.
12-1355	11/27/2012	450,000	COM ADDS & ALTS
11-1151	01/04/2012	20,000	COM ADDS & ALTS

Land Line Valuation

Size	Zone	Dev Map #	Appraised Value	Assessed Value
153.35 AC	4 AC	1469	23,738,600	16,617,020

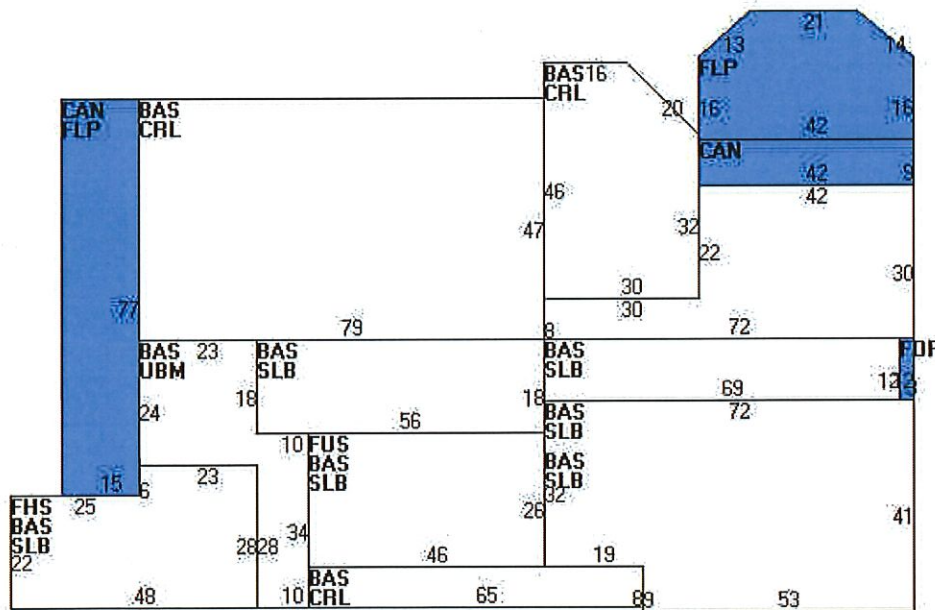
Building Details - Click Buildings Below

Building 1	Building 2	Building 3	Building 4
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Item	Value
Style	Country Club
Stories	2.00
Exterior Wall 1	Wood on Sheath
Roof Cover	Asphalt Shngl.
Roof Structure	Gable/Hip
Interior Wall 1	Brick
Interior Floor 1	Average
Heat Fuel	Typical
Heat Type	Hot Water
AC Type	None
Total Bedrooms	00
Total Bathrooms	0
Year Built	1900

Building Sketch



Outbuildings

Code	Description	Units
PAV5	Paving	20000 S.F.
GRS1	Golf Greens good	18 UNITS
SHD1	Shed	96 S.F.
SHD2	Shed Good	225 S.F.

FOP	Open Porch	36	0
FUS	Upper Story, Finished	1,196	1,196
SLB	Slab	8,507	0
UBM	Basement, Unfinished	892	0
Total Living Area:			16,707

**RADIO FREQUENCY EMISSIONS ANALYSIS REPORT
EVALUATION OF HUMAN EXPOSURE POTENTIAL
TO NON-IONIZING EMISSIONS**

T-Mobile Existing Facility

Site ID: CT11389A

**CT398/New Canaan C C
95 Country Club Road
New Canaan, CT 06840**

March 8, 2017

EBI Project Number: 6217000852

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	10.26 %

March 8, 2017

T-Mobile USA
Attn: Jason Overbey, RF Manager
35 Griffin Road South
Bloomfield, CT 06002

Emissions Analysis for Site: **CT11389A – CT398/New Canaan C C**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **95 Country Club Road, New Canaan, CT**, for the purpose of determining whether the emissions from the Proposed T-Mobile Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01 and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The number of $\mu\text{W}/\text{cm}^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

All results were compared to the FCC (Federal Communications Commission) radio frequency exposure rules, 47 CFR 1.1307(b)(1) – (b)(3), to determine compliance with the Maximum Permissible Exposure (MPE) limits for General Population/Uncontrolled environments as defined below.

General population/uncontrolled exposure limits apply to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general public would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The general population exposure limit for the 700 MHz Band is approximately 467 $\mu\text{W}/\text{cm}^2$, and the general population exposure limit for the 1900 MHz (PCS) and 2100 MHz (AWS) bands is 1000 $\mu\text{W}/\text{cm}^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at **95 Country Club Road, New Canaan, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

For all calculations, all equipment was calculated using the following assumptions:

- 1) 2 GSM channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 2) 2 UMTS channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 3) 2 UMTS channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 4) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel
- 5) 1 LTE channel (700 MHz Band) was considered for each sector of the proposed installation. This channel has a transmit power of 30 Watts.

- 6) Since all radios are ground mounted there are additional cabling losses accounted for. For each ground mounted RF path the following losses were calculated. 0.98 dB of additional cable loss for all ground mounted 700 MHz Channels, 1.71 dB of additional cable loss for all ground mounted 1900 MHz channels and 1.81 dB of additional cable loss for all ground mounted 2100 MHz channels were factored into the calculations used for this analysis. This is based on manufacturers Specifications for 140 feet of 7/8" coax cable on each path.
- 7) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.
- 8) For the following calculations the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufactures supplied specifications minus 10 dB was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 9) The antennas used in this modeling are the **RFS APX16DWV-16DWVS-E-A20** for 1900 MHz (PCS) and 2100 MHz (AWS) channels and the **Commscope LNX-6512DS-A1M** for 700 MHz channels. This is based on feedback from the carrier with regards to anticipated antenna selection. The **RFS APX16DWV-16DWVS-E-A20** has a maximum gain of **16.3 dBd** at its main lobe at 1900 MHz and 2100 MHz. The **Commscope LNX-6512DS-A1M** has a maximum gain of **12 dBd** at its main lobe at 700 MHz. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 10) The antenna mounting height centerlines of the proposed antennas are **106 feet & 99 feet** above ground level (AGL).
- 11) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.
- 12) All calculations were done with respect to uncontrolled / general public threshold limits.

T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	RFS APX16DWV-16DWVS-E-A20	Make / Model:	RFS APX16DWV-16DWVS-E-A20	Make / Model:	RFS APX16DWV-16DWVS-E-A20
Gain:	16.3 dBd	Gain:	16.3 dBd	Gain:	16.3 dBd
Height (AGL):	106	Height (AGL):	106	Height (AGL):	106
Frequency Bands	1900 MHz (PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz (PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz (PCS) / 2100 MHz (AWS)
Channel Count	8	Channel Count	8	Channel Count	8
Total TX Power(W):	300	Total TX Power(W):	300	Total TX Power(W):	300
ERP (W):	8,514.30	ERP (W):	8,514.30	ERP (W):	8,514.30
Antenna A1 MPE%	3.06	Antenna B1 MPE%	3.06	Antenna C1 MPE%	3.06
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	Commscope LNX-6512DS-A1M	Make / Model:	Commscope LNX-6512DS-A1M	Make / Model:	Commscope LNX-6512DS-A1M
Gain:	12 dBd	Gain:	12 dBd	Gain:	12 dBd
Height (AGL):	99	Height (AGL):	99	Height (AGL):	99
Frequency Bands	700 MHz	Frequency Bands	700 MHz	Frequency Bands	700 MHz
Channel Count	1	Channel Count	1	Channel Count	1
Total TX Power(W):	30	Total TX Power(W):	30	Total TX Power(W):	30
ERP (W):	379.42	ERP (W):	379.42	ERP (W):	379.42
Antenna A2 MPE%	0.34	Antenna B2 MPE%	0.34	Antenna C2 MPE%	0.34

Site Composite MPE%	
Carrier	MPE%
T-Mobile (Per Sector Max)	3.40 %
AT&T	6.86 %
Site Total MPE %:	10.26 %

T-Mobile Sector A Total:	3.40 %
T-Mobile Sector B Total:	3.40 %
T-Mobile Sector C Total:	3.40 %
Site Total:	10.26 %

T-Mobile_Max Values per sector	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu\text{W}/\text{cm}^2$)	Frequency (MHz)	Allowable MPE ($\mu\text{W}/\text{cm}^2$)	Calculated % MPE
T-Mobile AWS - 2100 MHz LTE	2	1,687.14	106	12.13	AWS - 2100 MHz	1000	1.21%
T-Mobile AWS - 2100 MHz UMTS	2	843.57	106	6.07	AWS - 2100 MHz	1000	0.61%
T-Mobile PCS - 1950 MHz UMTS	2	863.22	106	6.21	PCS - 1950 MHz	1000	0.62%
T-Mobile PCS - 1950 MHz GSM	2	863.22	106	6.21	PCS - 1950 MHz	1000	0.62%
T-Mobile 700 MHz LTE	1	379.42	99	1.58	700 MHz	467	0.34%
Total:							3.40%

Summary

All calculations performed for this analysis yielded results that were **within** the allowable limits for general public exposure to RF Emissions.

The anticipated maximum composite contributions from the T-Mobile facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general public exposure to RF Emissions are shown here:

T-Mobile Sector	Power Density Value (%)
Sector A:	3.40 %
Sector B:	3.40 %
Sector C:	3.40 %
T-Mobile Per Sector Maximum:	3.40 %
Site Total:	10.26 %
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **10.26%** of the allowable FCC established general public limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

FCC guidelines state that if a site is found to be out of compliance (over allowable thresholds), that carriers over a 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite values calculated were well within the allowable 100% threshold standard per the federal government.



Tower Engineering Solutions

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

Structural Analysis Report

Existing 109 ft. EEI Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT40876-T

Customer Site Name: CT389/New Canaan C C

Carrier Name: T-Mobile

Carrier Site ID / Name: CT11389A / New Canaan CC

Site Location: 95 Country Club Road

New Canaan, Connecticut

Fairfield County

Latitude: 41.172860

Longitude: -73.496333

Analysis Result:

Max Structural Usage: 96.4% [Pass]

Max Foundation Usage: 24.0% [Pass]

Report Prepared By : Billy Davis



2/14/17

Introduction

The purpose of this report is to summarize the analysis results on the 109 ft. EEI Monopole to support the proposed antennas and transmission lines in addition to those currently installed. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Tower Drawings	EEI Job #15040, Drawing #GS56879, Date 09/06/07
Foundation Drawing	EEI Job #15040, Drawing #1504D-110.0, Date 09/06/07
Geotechnical Report	Jaworski Geotech, Inc. Project #04193G
Modification Drawings	Allpro Consulting Job #11-5047, Date 09/15/11

Analysis Criteria

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

Wind Speed Used in the Analysis:	Ultimate Design Wind Speed $V_{ult} = 120.0$ mph (3-Sec. Gust)/ Nominal Design Wind Speed $V_{asd} = 93.0$ mph (3-Sec. Gust)
Wind Speed with Ice:	50.0 mph (3-Sec. Gust) with 3/4" radial ice concurrent
Operational Wind Speed:	60.0 mph + 0" Radial ice
Standard/Codes:	ANSI/TIA/EIA 222-G / 2012 IBC / 2016 Connecticut State Building Code
Exposure Category:	C
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft.
Seismic Parameters:	$S_S = 0.239$, $S_1 = 0.068$

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
-	106.0	3	RFS APXV18-206516S--A20 - Panel	Flush Mounted inside existing 18" Concealment Shroud	(6) 1 5/8"	T-Mobile
-		3	RFS ATMAA1412D-1A20 TMA			
-	99.0	3	RFS APXV18-206516S--A20 - Panel	Flush Mounted inside existing 18" Concealment Shroud	(6) 1 5/8"	
-		3	Ericsson KRY 112 144/1 TMA			
6	89.0	3	CCI - HPA-65R-BUU-H6 - Panel	Flush Mounted inside existing 30" Concealment Shroud	(12) 7/8"	AT&T
7		6	CCI - DTMAPB7819VG12A - TMA			

Proposed Carrier's Final Configuration of Antennas, Mounts and Transmission Lines

Information pertaining to the proposed carrier's final configuration of antennas and transmission lines was provided by SBA Communications Corp. The proposed antennas and lines are listed below.

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	106.0	3	RFS APX16DWV-16DWVS-E-A20 - Panel	Flush Mounted inside new 30" Concealment Shroud	(12) 7/8"	T-Mobile
2		3	RFS ATMAA1412D-1A20 TMA			
4	99.0	3	Commscope LNX-6512DS-A1M - Panel	Flush Mounted inside new 30" Concealment Shroud	(6) 7/8"	
5		3	Ericsson KRY 112 144/1 TMA			
6		3	Andrew 782 11054			

All transmission lines are considered running inside of the pole shafts.

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:	96.4%	91.4%	74.5%
Pass/Fail	Pass	Pass	Pass

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Original Design Reactions	272.0	4.7	5.9
Analysis Reactions	389.4	6.0	17.0
Factored Reactions*	367.2	6.3	8.0

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

The foundation has been 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 3.0812 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. However, the following modifications to the existing structure will be required to accommodate the proposed antennas and equipment.

- Expand the existing 18" canister to a 30" canister from the 81 ft. to the 109 ft. elevations.

A modification packet (including design drawings) can be provided under a separate scope of work.

Standard Conditions

1. This analysis was performed based on the information supplied to **(TES) Tower Engineering Solutions, LLC**. Verification of the information provided was not included in the Scope of Work for **TES**. The accuracy of the analysis is dependent on the accuracy of the information provided.
2. The analysis is based on the presumption that the tower members and components along with any existing reinforcement items have been correctly and properly designed, manufactured, installed and maintained.
3. All the existing structural members were assumed to be in good condition with no physical damage or deterioration associated with corrosion.
4. An initial tension of 10% of the break strength on all the existing guy wires was assumed in all the structural analyses of guyed towers unless different values were provided by the client. **TES** cannot take responsibility for the deviations in the analysis results because of differences in the initial tension forces of the existing guy wires.
5. Secondary component or connection secondary components, welds and bolts are assumed to be able to carry their intended original design loads. **TES** cannot take responsibility for verification of the adequacy on the connections, bolts and welds present in the structure.
6. The analyses will be performed based on the codes as specified by the client or based on the best knowledge of the engineering staff of **TES**. In the absence of information to the contrary, all work will be performed in accordance with the latest relevant revision of ANSI/TIA-222. If wind speed and/or ice loads are different from the minimum values recommended by the EIA/TIA-222 standard or other codes, **TES** should be notified in writing and the applicable minimum values provided by the client.
7. The configuration of the existing mounts, antennas, coax and other appurtenances were supplied by the customer for the current structural analysis. **TES** has not visited the tower site to verify the adequacy of the information provided. If there is any discrepancy found in the report regarding the existing conditions, **TES** should be notified immediately to evaluate the effect of the discrepancy on the analysis results.
8. The client will assume responsibility for rework associated with the differences in initially provided information, including tower and foundation information, existing and/or proposed equipment and transmission lines.
9. If a feasibility analysis was performed, final acceptance of changed conditions shall be based upon a rigorous structural analysis.

Usage Diagram - Max Ratio 96.39% at 91.0ft

Structure: CT40876-T-SBA
Site Name: CT389/New Canaan C C
Height: 109.00 (ft)
Base Elev: 0.000 (ft)

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

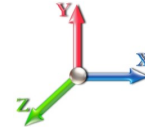
2/10/2017



Page: 1

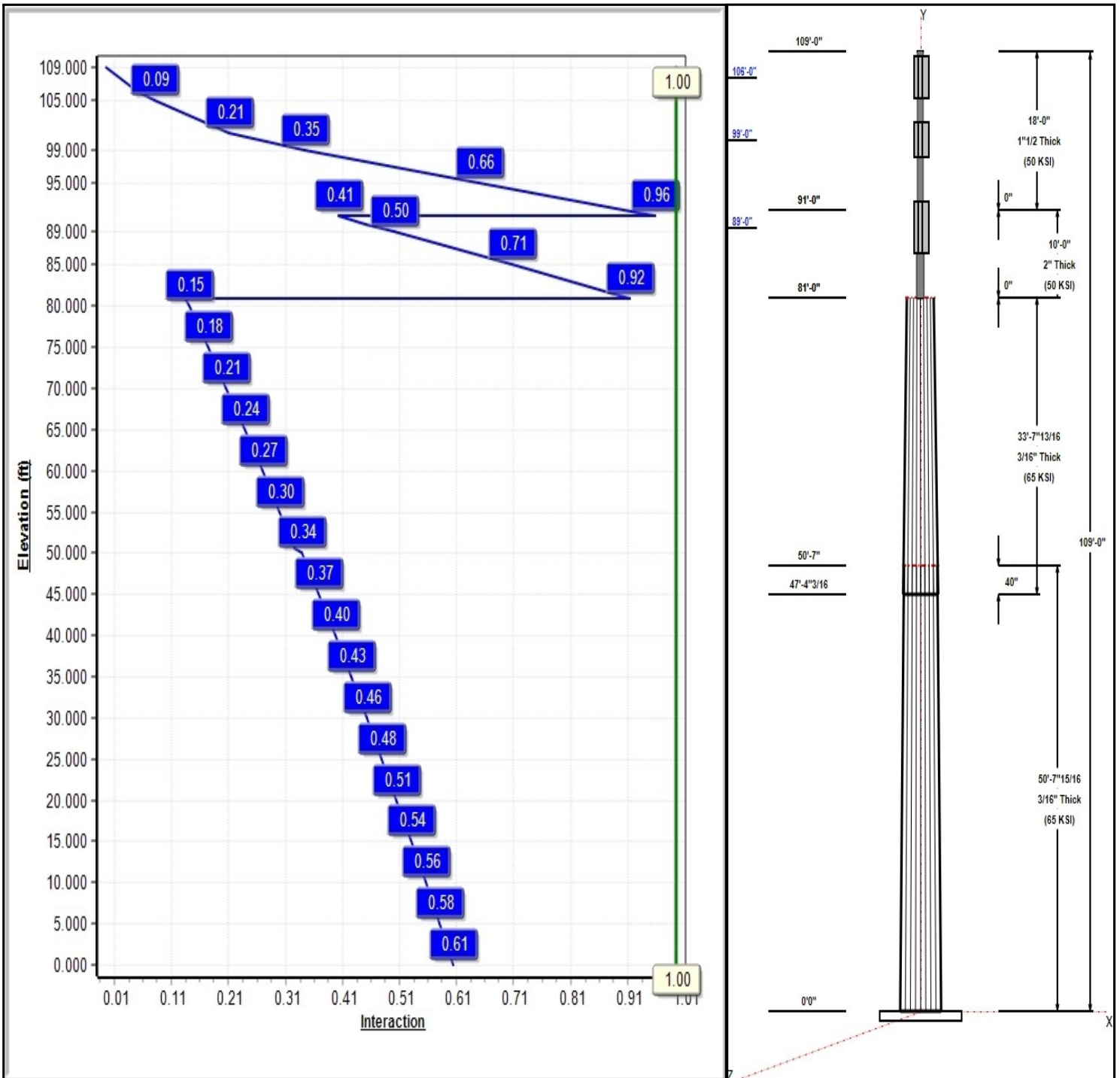
Dead Load Factor: 1.20
Wind Load Factor: 1.60

Load Case : 1.2D + 1.6W 93 mph Wind



Iterations: 37

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Structure: CT40876-T-SBA

Type: Custom
Site Name: CT389/New Canaan C C
Height: 109.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.00000

2/10/2017

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Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	50.66	21.57	29.00	0.188		0.14660	65
2	33.65	17.50	22.43	0.188	Slip	0.14660	65
3	10.00	4.00	4.00	2.000	Butt	0.00000	50
4	18.00	3.00	3.00	1.500	Butt	0.00000	50

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
109.00	109.00	1	Cannister 30" x 4'	T-Mobile
106.00	106.00	3	APX16DWV-16DWVS-E-A	T-Mobile
106.00	106.00	3	ATMAA1412D-1A20	T-Mobile
106.00	106.00	1	Flush Mount	T-Mobile
101.00	101.00	1	Cannister 30" x 4'	T-Mobile
101.00	101.00	1	Cannister 30" x 5'	T-Mobile
99.00	99.00	3	LNx-6512DS-A1M	T-Mobile
99.00	99.00	3	KRY 112 144/1	T-Mobile
99.00	99.00	3	782 11054	T-Mobile
99.00	99.00	1	Flush Mount	T-Mobile
91.00	91.00	1	Cannister 30" x 10'	T-Mobile
89.00	89.00	3	HPA-65R-BUU-H6	AT&T
89.00	89.00	6	DTMABP7819VG12A	AT&T
89.00	89.00	1	Flush Mount	AT&T
81.00	81.00	1	Cannister 30" x 5'	T-Mobile

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	106.00	Inside	7/8" Coax	T-Mobile
0.00	99.00	Inside	7/8" Coax	T-Mobile
0.00	89.00	Inside	7/8" Coax	AT&T

Anchor Bolts

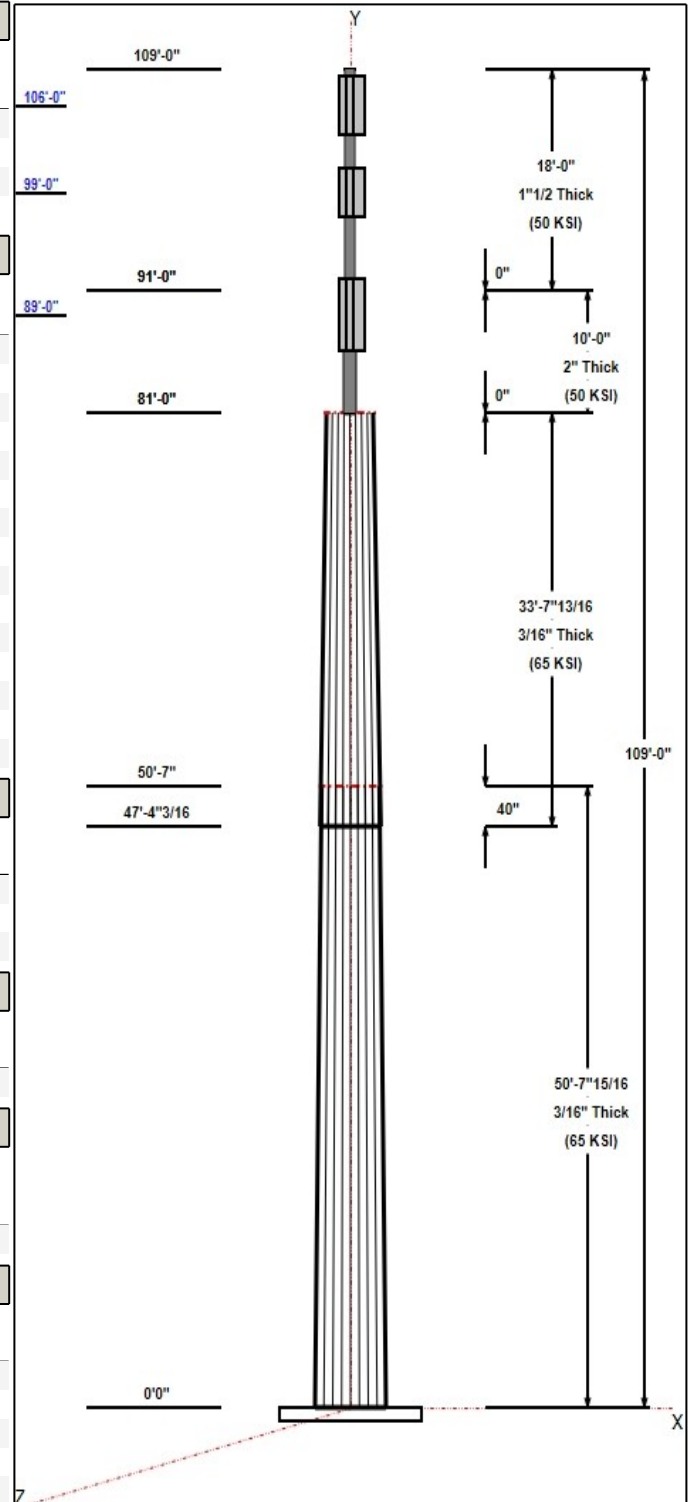
Qty	Specifications	Grade (ksi)	Arrangement
4	1.75" #18J	75.0	Radial

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
1.7500	36.0	50.0	Clipped

Reactions

Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 93 mph Wind	389.4	6.0	10.1
0.9D + 1.6W 93 mph Wind	382.4	6.0	7.6
1.2D + 1.0Di + 1.0Wi 50 mph Wind	153.1	2.3	17.0
1.2D + 1.0E	46.1	0.5	10.1
0.9D + 1.0E	45.0	0.5	7.6
1.0D + 1.0W 60 mph Wind	100.5	1.6	8.4

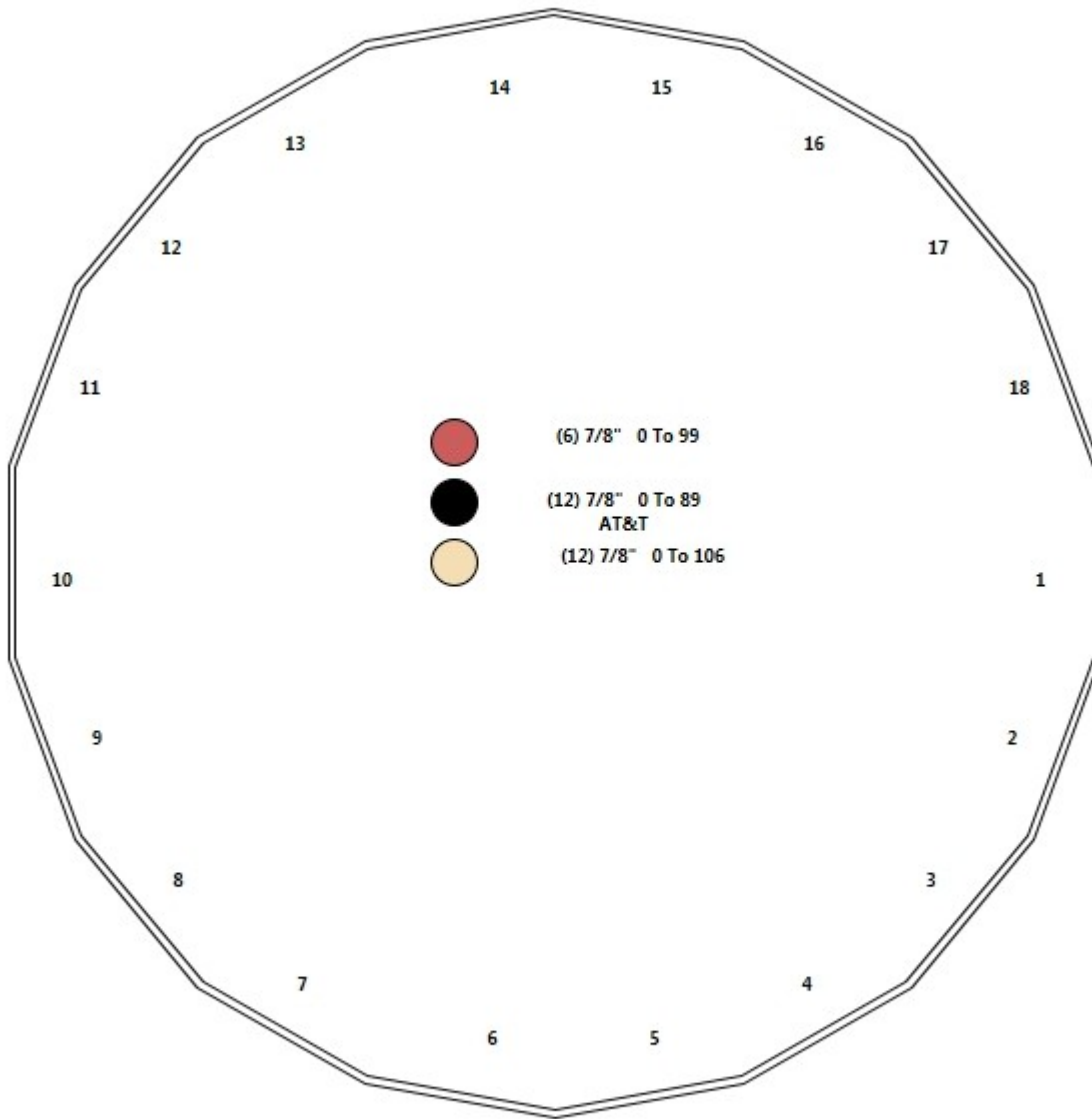


Structure: CT40876-T-SBA - Coax Line Placement

Type: Monopole
Site Name: CT389/New Canaan C C
Height: 109.00 (ft)

2/10/2017

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Shaft Properties

Structure: CT40876-T-SBA	Code: EIA/TIA-222-G	2/10/2017
Site Name: CT389/New Canaan C C	Exposure: C	
Height: 109.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	18	50.660	0.1875	65		0.00	2,575
2	18	33.650	0.1875	65	Slip	39.72	1,348
3	RS	10.000	2.0000	50	Flange	0.00	428
4	RS	18.000	1.5000	50	Flange	0.00	433
Total Shaft Weight:							4,783

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	29.00	0.00	17.15	1798.41	25.86	154.67	21.57	50.66	12.73	735.37	18.88	115.0	0.146605
2	22.43	47.35	13.24	827.73	19.69	119.64	17.50	81.00	10.30	390.14	15.05	93.33	0.146605
3	4.00	81.00	12.57	12.57	0.00	2.00	4.00	91.00	12.57	12.57	0.00	2.00	0.000000
4	3.00	91.00	7.07	3.98	0.00	2.00	3.00	109.00	7.07	3.98	0.00	2.00	0.000000

Load Summary

Structure: CT40876-T-SBA	Code: EIA/TIA-222-G	2/10/2017
Site Name: CT389/New Canaan C C	Exposure: C	
Height: 109.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Discrete Appurtenances

No.	Elev (ft)	Description	Qty	No Ice			Ice			Hor. Ecc. (ft)	Vert Ecc (ft)
				Weight (lb)	CaAa (sf)	CaAa Factor	Weight (lb)	CaAa (sf)	CaAa Factor		
1	109.00	Cannister 30" x 4'	1	78.00	5.00	1.00	373.34	5.775	1.00	0.00	0.00
2	106.00	APX16DWV-16DWVS-E-A20	3	40.70	0.00	0.00	153.76	0.000	0.00	0.00	0.00
3	106.00	ATMAA1412D-1A20	3	13.00	0.00	0.00	38.67	0.000	0.00	0.00	0.00
4	106.00	Flush Mount	1	350.00	0.00	0.00	633.19	0.000	0.00	0.00	0.00
5	101.00	Cannister 30" x 4'	1	78.00	5.00	1.00	371.10	5.769	1.00	0.00	0.00
6	101.00	Cannister 30" x 5'	1	94.00	6.25	1.00	447.22	7.211	1.00	0.00	0.00
7	99.00	LNx-6512DS-A1M	3	28.70	0.00	0.00	149.07	0.000	0.00	0.00	0.00
8	99.00	KRY 112 144/1	3	11.00	0.00	0.00	21.34	0.000	0.00	0.00	0.00
9	99.00	782 11054	3	1.80	0.00	0.00	6.14	0.000	0.00	0.00	0.00
10	99.00	Flush Mount	1	350.00	0.00	0.00	631.26	0.000	0.00	0.00	0.00
11	91.00	Cannister 30" x 10'	1	188.00	13.33	1.00	887.12	15.359	1.00	0.00	0.00
12	89.00	HPA-65R-BUU-H6	3	51.00	0.00	0.00	284.53	10.953	0.00	0.00	0.00
13	89.00	DTMABP7819VG12A	6	19.20	0.00	0.00	43.42	0.000	0.00	0.00	0.00
14	89.00	Flush Mount	1	350.00	0.00	0.00	628.28	0.000	0.00	0.00	0.00
15	81.00	Cannister 30" x 5'	1	94.00	6.25	1.00	439.51	7.190	1.00	0.00	0.00
Totals:			32	2,135.80			6,632.12				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	106.00	(12) 7/8" Coax	0.00	Inside
0.00	99.00	(6) 7/8" Coax	0.00	Inside
0.00	89.00	(12) 7/8" Coax	0.00	Inside

Shaft Section Properties

Structure: CT40876-T-SBA	Code: EIA/TIA-222-G	2/10/2017
Site Name: CT389/New Canaan C C	Exposure: C	
Height: 109.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Increment Length: 5 (ft)

Elev (ft)	Description	Thick (in)	Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fpy (ksi)	S (in^3)	Weight (lb)
0.00		0.1875	29.000	17.146	1798.4	25.86	154.67	71.0	122.1	0.0
5.00		0.1875	28.267	16.710	1664.6	25.17	150.76	71.8	116.0	288.0
10.00		0.1875	27.534	16.274	1537.6	24.48	146.85	72.6	110.0	280.6
15.00		0.1875	26.801	15.838	1417.3	23.79	142.94	73.4	104.2	273.2
20.00		0.1875	26.068	15.402	1303.3	23.10	139.03	74.2	98.5	265.8
25.00		0.1875	25.335	14.965	1195.7	22.41	135.12	75.0	93.0	258.3
30.00		0.1875	24.602	14.529	1094.2	21.73	131.21	75.8	87.6	250.9
35.00		0.1875	23.869	14.093	998.5	21.04	127.30	76.7	82.4	243.5
40.00		0.1875	23.136	13.657	908.7	20.35	123.39	77.5	77.4	236.1
45.00		0.1875	22.403	13.220	824.3	19.66	119.48	78.3	72.5	228.6
47.35	Bot - Section 2	0.1875	22.058	13.015	786.6	19.33	117.64	78.7	70.2	104.9
50.00		0.1875	21.670	12.784	745.4	18.97	115.57	79.1	67.8	234.7
50.66	Top - Section 1	0.1875	21.948	12.950	774.7	19.23	117.06	0.0	0.0	57.8
55.00		0.1875	21.312	12.571	708.7	18.63	113.66	79.5	65.5	188.4
60.00		0.1875	20.579	12.135	637.5	17.94	109.75	80.3	61.0	210.2
65.00		0.1875	19.846	11.699	571.2	17.25	105.84	81.1	56.7	202.8
70.00		0.1875	19.113	11.262	509.6	16.56	101.93	81.9	52.5	195.3
75.00		0.1875	18.380	10.826	452.7	15.87	98.02	82.5	48.5	187.9
80.00		0.1875	17.647	10.390	400.1	15.18	94.12	82.5	44.7	180.5
81.00	Top - Section 2	0.1875	17.500	10.303	390.1	15.05	93.33	82.5	43.9	35.2
81.00	Bot - Section 3	2.0000	4.000	12.566	12.6	1.41	8.75	50.0	6.3	
85.00		2.0000	4.000	12.566	12.6	0.00	2.00	50.0	6.3	171.0
89.00		2.0000	4.000	12.566	12.6	0.00	2.00	50.0	6.3	171.0
90.00		2.0000	4.000	12.566	12.6	0.00	2.00	50.0	6.3	42.8
91.00	Top - Section 3	2.0000	4.000	12.566	12.6	0.00	2.00	50.0	6.3	42.8
91.00	Bot - Section 4	1.5000	3.000	7.069	4.0	0.00	2.67	50.0	2.7	
95.00		1.5000	3.000	7.069	4.0	0.00	2.00	50.0	2.7	96.2
99.00		1.5000	3.000	7.069	4.0	0.00	2.00	50.0	2.7	96.2
100.00		1.5000	3.000	7.069	4.0	0.00	2.00	50.0	2.7	24.1
101.00		1.5000	3.000	7.069	4.0	0.00	2.00	50.0	2.7	24.1
105.00		1.5000	3.000	7.069	4.0	0.00	2.00	50.0	2.7	96.2
106.00		1.5000	3.000	7.069	4.0	0.00	2.00	50.0	2.7	24.1
109.00		1.5000	3.000	7.069	4.0	0.00	2.00	50.0	2.7	72.2

4783.2

Wind Loading - Shaft

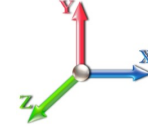
Structure: CT40876-T-SBA	Code: EIA/TIA-222-G	2/10/2017
Site Name: CT389/New Canaan C C	Exposure: C	
Height: 109.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 37

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	210.41	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	205.09	0.650	0.000	5.00	12.115	7.87	247.8	0.0	345.6
10.00		1.00	0.85	17.879	19.67	199.77	0.650	0.000	5.00	11.805	7.67	241.4	0.0	336.7
15.00		1.00	0.85	17.879	19.67	194.45	0.650	0.000	5.00	11.494	7.47	235.1	0.0	327.8
20.00		1.00	0.90	18.971	20.87	194.82	0.650	0.000	5.00	11.184	7.27	242.7	0.0	318.9
25.00		1.00	0.95	19.883	21.87	193.84	0.650	0.000	5.00	10.874	7.07	247.3	0.0	310.0
30.00		1.00	0.98	20.661	22.73	191.88	0.650	0.000	5.00	10.564	6.87	249.7	0.0	301.1
35.00		1.00	1.01	21.343	23.48	189.21	0.650	0.000	5.00	10.254	6.66	250.4	0.0	292.2
40.00		1.00	1.04	21.951	24.15	185.99	0.650	0.000	5.00	9.944	6.46	249.7	0.0	283.3
45.00		1.00	1.07	22.502	24.75	182.35	0.650	0.000	5.00	9.634	6.26	248.0	0.0	274.4
47.35 Bot - Section 2		1.00	1.08	22.745	25.02	180.51	0.650	0.000	2.35	4.421	2.87	115.0	0.0	125.9
50.00		1.00	1.09	23.007	25.31	178.35	0.650	0.000	2.65	4.987	3.24	131.3	0.0	281.6
50.66 Top - Section 1		1.00	1.10	23.070	25.38	177.80	0.650	0.000	0.66	1.228	0.80	32.4	0.0	69.4
55.00		1.00	1.12	23.473	25.82	177.17	0.650	0.000	4.34	7.943	5.16	213.3	0.0	226.1
60.00		1.00	1.14	23.907	26.30	172.65	0.650	0.000	5.00	8.862	5.76	242.4	0.0	252.2
65.00		1.00	1.16	24.313	26.74	167.91	0.650	0.000	5.00	8.552	5.56	237.9	0.0	243.3
70.00		1.00	1.17	24.696	27.17	162.97	0.650	0.000	5.00	8.242	5.36	232.8	0.0	234.4
75.00		1.00	1.19	25.057	27.56	157.87	0.650	0.000	5.00	7.931	5.16	227.4	0.0	225.5
80.00		1.00	1.21	25.400	27.94	152.60	0.650	0.000	5.00	7.621	4.95	221.5	0.0	216.6
81.00 Top - Section 2		1.00	1.21	25.466	28.01	151.53	0.650	0.000	1.00	1.487	0.97	43.3	0.0	42.2
85.00		1.00	1.22	25.726	28.30	34.28	1.120	0.000	4.00	1.333	1.49	67.6	0.0	205.3
89.00 Appurtenance(s)		1.00	1.23	25.976	28.57	34.45	1.115	0.000	4.00	1.333	1.49	67.9	0.0	205.3
90.00		1.00	1.24	26.037	28.64	34.49	1.113	0.000	1.00	0.333	0.37	17.0	0.0	51.3
91.00 Top - Section 3		1.00	1.24	26.098	28.71	34.53	1.112	0.000	1.00	0.333	0.37	17.0	0.0	51.3
95.00		1.00	1.25	26.336	28.97	26.02	1.200	0.000	4.00	1.000	1.20	55.6	0.0	115.5
99.00 Appurtenance(s)		1.00	1.26	26.565	29.22	26.13	1.200	0.000	4.00	1.000	1.20	56.1	0.0	115.5
100.00		1.00	1.27	26.621	29.28	26.16	1.200	0.000	1.00	0.250	0.30	14.1	0.0	28.9
101.00 Appurtenance(s)		1.00	1.27	26.677	29.35	26.18	1.200	0.000	1.00	0.250	0.30	14.1	0.0	28.9
105.00		1.00	1.28	26.896	29.59	26.29	1.200	0.000	4.00	1.000	1.20	56.8	0.0	115.5
106.00 Appurtenance(s)		1.00	1.28	26.950	29.65	26.32	1.200	0.000	1.00	0.250	0.30	14.2	0.0	28.9
109.00 Appurtenance(s)		1.00	1.29	27.109	29.82	26.39	1.200	0.000	3.00	0.750	0.90	42.9	0.0	86.6
Totals:								109.00				4,332.8		5,739.8

Discrete Appurtenance Forces

Structure: CT40876-T-SBA	Code: EIA/TIA-222-G	2/10/2017
Site Name: CT389/New Canaan C C	Exposure: C	
Height: 109.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 37

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	109.00	Cannister 30" x 4'	1	27.109	29.820	1.00	1.00	5.00	93.60	0.000	0.000	238.56	0.00	0.00
2	106.00	Flush Mount	1	26.950	29.645	0.00	1.00	0.00	420.00	0.000	0.000	0.00	0.00	0.00
3	106.00	ATMAA1412D-1A20	3	26.950	29.645	0.00	1.00	0.00	46.80	0.000	0.000	0.00	0.00	0.00
4	106.00	APX16DWV-16DWVS-E-	3	26.950	29.645	0.00	1.00	0.00	146.52	0.000	0.000	0.00	0.00	0.00
5	101.00	Cannister 30" x 5'	1	26.677	29.345	1.00	1.00	6.25	112.80	0.000	0.000	293.45	0.00	0.00
6	101.00	Cannister 30" x 4'	1	26.677	29.345	1.00	1.00	5.00	93.60	0.000	0.000	234.76	0.00	0.00
7	99.00	Flush Mount	1	26.565	29.222	0.00	1.00	0.00	420.00	0.000	0.000	0.00	0.00	0.00
8	99.00	782 11054	3	26.565	29.222	0.00	1.00	0.00	6.48	0.000	0.000	0.00	0.00	0.00
9	99.00	KRY 112 144/1	3	26.565	29.222	0.00	1.00	0.00	39.60	0.000	0.000	0.00	0.00	0.00
10	99.00	LNx-6512DS-A1M	3	26.565	29.222	0.00	1.00	0.00	103.32	0.000	0.000	0.00	0.00	0.00
11	91.00	Cannister 30" x 10'	1	26.098	28.708	1.00	1.00	13.33	225.60	0.000	0.000	612.28	0.00	0.00
12	89.00	Flush Mount	1	25.976	28.574	0.00	1.00	0.00	420.00	0.000	0.000	0.00	0.00	0.00
13	89.00	DTMABP7819VG12A	6	25.976	28.574	0.00	1.00	0.00	138.24	0.000	0.000	0.00	0.00	0.00
14	89.00	HPA-65R-BUU-H6	3	25.976	28.574	0.00	1.00	0.00	183.60	0.000	0.000	0.00	0.00	0.00
15	81.00	Cannister 30" x 5'	1	25.466	28.013	1.00	1.00	6.25	112.80	0.000	0.000	280.13	0.00	0.00
Totals:									2,562.96			1,659.18		

Total Applied Force Summary

Structure: CT40876-T-SBA	Code: EIA/TIA-222-G	2/10/2017
Site Name: CT389/New Canaan C C	Exposure: C	
Height: 109.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 37

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		247.79	439.22	0.00	0.00
10.00		241.45	430.31	0.00	0.00
15.00		235.10	421.41	0.00	0.00
20.00		242.72	412.50	0.00	0.00
25.00		247.34	403.59	0.00	0.00
30.00		249.69	394.69	0.00	0.00
35.00		250.36	385.78	0.00	0.00
40.00		249.71	376.88	0.00	0.00
45.00		247.99	367.97	0.00	0.00
47.35		115.02	169.87	0.00	0.00
50.00		131.25	331.20	0.00	0.00
50.66		32.42	81.71	0.00	0.00
55.00		213.31	307.38	0.00	0.00
60.00		242.37	345.81	0.00	0.00
65.00		237.86	336.90	0.00	0.00
70.00		232.84	327.99	0.00	0.00
75.00		227.36	319.09	0.00	0.00
80.00		221.45	310.18	0.00	0.00
81.00	(1) attachments	323.45	173.77	0.00	0.00
85.00		67.62	280.13	0.00	0.00
89.00	(10) attachments	67.95	1021.97	0.00	0.00
90.00		17.01	62.54	0.00	0.00
91.00	(1) attachments	629.31	288.14	0.00	0.00
95.00		55.62	160.38	0.00	0.00
99.00	(10) attachments	56.11	729.78	0.00	0.00
100.00		14.06	36.35	0.00	0.00
101.00	(2) attachments	542.30	242.75	0.00	0.00
105.00		56.81	145.41	0.00	0.00
106.00	(7) attachments	14.23	649.67	0.00	0.00
109.00	(1) attachments	281.50	180.19	0.00	0.00
	Totals:	5,991.99	10,133.57	0.00	0.00

Calculated Forces

Structure: CT40876-T-SBA	Code: EIA/TIA-222-G	2/10/2017
Site Name: CT389/New Canaan C C	Exposure: C	
Height: 109.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

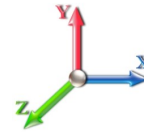


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Load Case: 1.2D + 1.6W 93 mph Wind

Iterations 37

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	-10.12	-6.02	0.00	-389.41	0.00	389.41	1095.40	547.70	1298.60	650.26	0.00	0.000	0.000	0.608
5.00	-9.65	-5.82	0.00	-359.32	0.00	359.32	1079.72	539.86	1247.24	624.55	0.16	-0.296	0.000	0.584
10.00	-9.19	-5.62	0.00	-330.22	0.00	330.22	1063.41	531.71	1196.12	598.95	0.63	-0.591	0.000	0.560
15.00	-8.75	-5.43	0.00	-302.11	0.00	302.11	1046.46	523.23	1145.29	573.49	1.40	-0.883	0.000	0.535
20.00	-8.31	-5.22	0.00	-274.98	0.00	274.98	1028.88	514.44	1094.81	548.22	2.48	-1.173	0.000	0.510
25.00	-7.89	-5.00	0.00	-248.89	0.00	248.89	1010.66	505.33	1044.74	523.15	3.86	-1.459	0.000	0.484
30.00	-7.48	-4.78	0.00	-223.89	0.00	223.89	991.80	495.90	995.14	498.31	5.54	-1.740	0.000	0.457
35.00	-7.08	-4.55	0.00	-200.02	0.00	200.02	972.31	486.15	946.07	473.74	7.51	-2.016	0.000	0.430
40.00	-6.69	-4.31	0.00	-177.28	0.00	177.28	952.17	476.09	897.58	449.45	9.77	-2.284	0.000	0.402
45.00	-6.32	-4.07	0.00	-155.71	0.00	155.71	931.41	465.70	849.73	425.49	12.30	-2.545	0.000	0.373
47.35	-6.15	-3.96	0.00	-146.14	0.00	146.14	921.43	460.71	827.47	414.35	13.58	-2.667	0.000	0.359
50.00	-5.82	-3.82	0.00	-135.64	0.00	135.64	910.00	455.00	802.58	401.88	15.10	-2.802	0.000	0.344
50.66	-5.73	-3.80	0.00	-133.12	0.00	133.12	918.20	459.10	820.39	410.80	15.49	-2.836	0.000	0.330
55.00	-5.42	-3.59	0.00	-116.63	0.00	116.63	899.32	449.66	779.82	390.49	18.17	-3.046	0.000	0.305
60.00	-5.08	-3.35	0.00	-98.67	0.00	98.67	876.96	438.48	733.82	367.45	21.47	-3.262	0.000	0.274
65.00	-4.74	-3.11	0.00	-81.92	0.00	81.92	853.97	426.99	688.66	344.84	25.00	-3.463	0.000	0.243
70.00	-4.42	-2.87	0.00	-66.38	0.00	66.38	830.35	415.17	644.40	322.68	28.72	-3.648	0.000	0.211
75.00	-4.11	-2.63	0.00	-52.04	0.00	52.04	804.33	402.17	599.80	300.34	32.63	-3.813	0.000	0.178
80.00	-3.81	-2.40	0.00	-38.87	0.00	38.87	771.92	385.96	552.20	276.51	36.70	-3.956	0.000	0.146
81.00	-3.66	-2.07	0.00	-36.48	0.00	36.48	765.44	382.72	542.91	271.86	37.53	-3.983	0.000	0.139
81.00	-3.66	-2.07	0.00	-36.48	0.00	36.48	565.49	282.74	47.12	40.00	37.53	-3.983	0.000	0.919
85.00	-3.34	-2.05	0.00	-28.22	0.00	28.22	565.49	282.74	47.12	40.00	40.91	-4.077	0.000	0.711
89.00	-2.29	-1.94	0.00	-20.03	0.00	20.03	565.49	282.74	47.12	40.00	45.28	-6.262	0.000	0.505
90.00	-2.22	-1.93	0.00	-18.09	0.00	18.09	565.49	282.74	47.12	40.00	46.64	-6.693	0.000	0.456
91.00	-1.99	-1.30	0.00	-16.16	0.00	16.16	565.49	282.74	47.12	40.00	48.08	-7.081	0.000	0.407
91.00	-1.99	-1.30	0.00	-16.16	0.00	16.16	318.09	159.04	19.88	16.88	48.08	-7.081	0.000	0.964
95.00	-1.79	-1.28	0.00	-10.96	0.00	10.96	318.09	159.04	19.88	16.88	54.54	-8.309	0.000	0.655
99.00	-1.06	-1.13	0.00	-5.83	0.00	5.83	318.09	159.04	19.88	16.88	62.57	-10.711	0.000	0.349
100.00	-1.02	-1.12	0.00	-4.70	0.00	4.70	318.09	159.04	19.88	16.88	64.84	-11.087	0.000	0.282
101.00	-0.88	-0.54	0.00	-3.58	0.00	3.58	318.09	159.04	19.88	16.88	67.18	-11.383	0.000	0.215
105.00	-0.75	-0.46	0.00	-1.40	0.00	1.40	318.09	159.04	19.88	16.88	76.99	-12.097	0.000	0.086
106.00	-0.12	-0.31	0.00	-0.94	0.00	0.94	318.09	159.04	19.88	16.88	79.51	-12.181	0.000	0.056
109.00	0.00	-0.28	0.00	0.00	0.00	0.00	318.09	159.04	19.88	16.88	87.15	-12.282	0.000	0.000

Wind Loading - Shaft

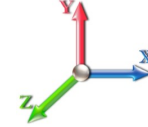
Structure: CT40876-T-SBA	Code: EIA/TIA-222-G	2/10/2017
Site Name: CT389/New Canaan C C	Exposure: C	
Height: 109.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 37

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	210.41	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	205.09	0.650	0.000	5.00	12.115	7.87	247.8	0.0	259.2
10.00		1.00	0.85	17.879	19.67	199.77	0.650	0.000	5.00	11.805	7.67	241.4	0.0	252.5
15.00		1.00	0.85	17.879	19.67	194.45	0.650	0.000	5.00	11.494	7.47	235.1	0.0	245.9
20.00		1.00	0.90	18.971	20.87	194.82	0.650	0.000	5.00	11.184	7.27	242.7	0.0	239.2
25.00		1.00	0.95	19.883	21.87	193.84	0.650	0.000	5.00	10.874	7.07	247.3	0.0	232.5
30.00		1.00	0.98	20.661	22.73	191.88	0.650	0.000	5.00	10.564	6.87	249.7	0.0	225.8
35.00		1.00	1.01	21.343	23.48	189.21	0.650	0.000	5.00	10.254	6.66	250.4	0.0	219.1
40.00		1.00	1.04	21.951	24.15	185.99	0.650	0.000	5.00	9.944	6.46	249.7	0.0	212.5
45.00		1.00	1.07	22.502	24.75	182.35	0.650	0.000	5.00	9.634	6.26	248.0	0.0	205.8
47.35 Bot - Section 2		1.00	1.08	22.745	25.02	180.51	0.650	0.000	2.35	4.421	2.87	115.0	0.0	94.4
50.00		1.00	1.09	23.007	25.31	178.35	0.650	0.000	2.65	4.987	3.24	131.3	0.0	211.2
50.66 Top - Section 1		1.00	1.10	23.070	25.38	177.80	0.650	0.000	0.66	1.228	0.80	32.4	0.0	52.0
55.00		1.00	1.12	23.473	25.82	177.17	0.650	0.000	4.34	7.943	5.16	213.3	0.0	169.6
60.00		1.00	1.14	23.907	26.30	172.65	0.650	0.000	5.00	8.862	5.76	242.4	0.0	189.2
65.00		1.00	1.16	24.313	26.74	167.91	0.650	0.000	5.00	8.552	5.56	237.9	0.0	182.5
70.00		1.00	1.17	24.696	27.17	162.97	0.650	0.000	5.00	8.242	5.36	232.8	0.0	175.8
75.00		1.00	1.19	25.057	27.56	157.87	0.650	0.000	5.00	7.931	5.16	227.4	0.0	169.1
80.00		1.00	1.21	25.400	27.94	152.60	0.650	0.000	5.00	7.621	4.95	221.5	0.0	162.4
81.00 Top - Section 2		1.00	1.21	25.466	28.01	151.53	0.650	0.000	1.00	1.487	0.97	43.3	0.0	31.7
85.00		1.00	1.22	25.726	28.30	34.28	1.120	0.000	4.00	1.333	1.49	67.6	0.0	153.9
89.00 Appurtenance(s)		1.00	1.23	25.976	28.57	34.45	1.115	0.000	4.00	1.333	1.49	67.9	0.0	153.9
90.00		1.00	1.24	26.037	28.64	34.49	1.113	0.000	1.00	0.333	0.37	17.0	0.0	38.5
91.00 Top - Section 3		1.00	1.24	26.098	28.71	34.53	1.112	0.000	1.00	0.333	0.37	17.0	0.0	38.5
95.00		1.00	1.25	26.336	28.97	26.02	1.200	0.000	4.00	1.000	1.20	55.6	0.0	86.6
99.00 Appurtenance(s)		1.00	1.26	26.565	29.22	26.13	1.200	0.000	4.00	1.000	1.20	56.1	0.0	86.6
100.00		1.00	1.27	26.621	29.28	26.16	1.200	0.000	1.00	0.250	0.30	14.1	0.0	21.6
101.00 Appurtenance(s)		1.00	1.27	26.677	29.35	26.18	1.200	0.000	1.00	0.250	0.30	14.1	0.0	21.6
105.00		1.00	1.28	26.896	29.59	26.29	1.200	0.000	4.00	1.000	1.20	56.8	0.0	86.6
106.00 Appurtenance(s)		1.00	1.28	26.950	29.65	26.32	1.200	0.000	1.00	0.250	0.30	14.2	0.0	21.6
109.00 Appurtenance(s)		1.00	1.29	27.109	29.82	26.39	1.200	0.000	3.00	0.750	0.90	42.9	0.0	64.9
Totals:								109.00				4,332.8		4,304.8

Discrete Appurtenance Forces

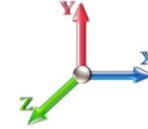
Structure: CT40876-T-SBA	Code: EIA/TIA-222-G	2/10/2017
Site Name: CT389/New Canaan C C	Exposure: C	
Height: 109.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 37

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	109.00	Cannister 30" x 4'	1	27.109	29.820	1.00	1.00	5.00	70.20	0.000	0.000	238.56	0.00	0.00
2	106.00	Flush Mount	1	26.950	29.645	0.00	1.00	0.00	315.00	0.000	0.000	0.00	0.00	0.00
3	106.00	ATMAA1412D-1A20	3	26.950	29.645	0.00	1.00	0.00	35.10	0.000	0.000	0.00	0.00	0.00
4	106.00	APX16DWV-16DWVS-E-	3	26.950	29.645	0.00	1.00	0.00	109.89	0.000	0.000	0.00	0.00	0.00
5	101.00	Cannister 30" x 5'	1	26.677	29.345	1.00	1.00	6.25	84.60	0.000	0.000	293.45	0.00	0.00
6	101.00	Cannister 30" x 4'	1	26.677	29.345	1.00	1.00	5.00	70.20	0.000	0.000	234.76	0.00	0.00
7	99.00	Flush Mount	1	26.565	29.222	0.00	1.00	0.00	315.00	0.000	0.000	0.00	0.00	0.00
8	99.00	782 11054	3	26.565	29.222	0.00	1.00	0.00	4.86	0.000	0.000	0.00	0.00	0.00
9	99.00	KRY 112 144/1	3	26.565	29.222	0.00	1.00	0.00	29.70	0.000	0.000	0.00	0.00	0.00
10	99.00	LNx-6512DS-A1M	3	26.565	29.222	0.00	1.00	0.00	77.49	0.000	0.000	0.00	0.00	0.00
11	91.00	Cannister 30" x 10'	1	26.098	28.708	1.00	1.00	13.33	169.20	0.000	0.000	612.28	0.00	0.00
12	89.00	Flush Mount	1	25.976	28.574	0.00	1.00	0.00	315.00	0.000	0.000	0.00	0.00	0.00
13	89.00	DTMABP7819VG12A	6	25.976	28.574	0.00	1.00	0.00	103.68	0.000	0.000	0.00	0.00	0.00
14	89.00	HPA-65R-BUU-H6	3	25.976	28.574	0.00	1.00	0.00	137.70	0.000	0.000	0.00	0.00	0.00
15	81.00	Cannister 30" x 5'	1	25.466	28.013	1.00	1.00	6.25	84.60	0.000	0.000	280.13	0.00	0.00
Totals:									1,922.22			1,659.18		

Total Applied Force Summary

Structure: CT40876-T-SBA	Code: EIA/TIA-222-G	2/10/2017
Site Name: CT389/New Canaan C C	Exposure: C	
Height: 109.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 37

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		247.79	329.41	0.00	0.00
10.00		241.45	322.74	0.00	0.00
15.00		235.10	316.06	0.00	0.00
20.00		242.72	309.38	0.00	0.00
25.00		247.34	302.70	0.00	0.00
30.00		249.69	296.02	0.00	0.00
35.00		250.36	289.34	0.00	0.00
40.00		249.71	282.66	0.00	0.00
45.00		247.99	275.98	0.00	0.00
47.35		115.02	127.40	0.00	0.00
50.00		131.25	248.40	0.00	0.00
50.66		32.42	61.28	0.00	0.00
55.00		213.31	230.54	0.00	0.00
60.00		242.37	259.36	0.00	0.00
65.00		237.86	252.68	0.00	0.00
70.00		232.84	246.00	0.00	0.00
75.00		227.36	239.32	0.00	0.00
80.00		221.45	232.64	0.00	0.00
81.00	(1) attachments	323.45	130.33	0.00	0.00
85.00		67.62	210.10	0.00	0.00
89.00	(10) attachments	67.95	766.48	0.00	0.00
90.00		17.01	46.91	0.00	0.00
91.00	(1) attachments	629.31	216.11	0.00	0.00
95.00		55.62	120.29	0.00	0.00
99.00	(10) attachments	56.11	547.34	0.00	0.00
100.00		14.06	27.26	0.00	0.00
101.00	(2) attachments	542.30	182.06	0.00	0.00
105.00		56.81	109.05	0.00	0.00
106.00	(7) attachments	14.23	487.25	0.00	0.00
109.00	(1) attachments	281.50	135.14	0.00	0.00
	Totals:	5,991.99	7,600.18	0.00	0.00

Calculated Forces

Structure: CT40876-T-SBA	Code: EIA/TIA-222-G	2/10/2017
Site Name: CT389/New Canaan C C	Exposure: C	
Height: 109.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

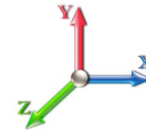


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Load Case: 0.9D + 1.6W 93 mph Wind

Iterations 37

Dead Load Factor 0.90
Wind Load Factor 1.60



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-7.58	-6.01	0.00	-382.39	0.00	382.39	1095.40	547.70	1298.60	650.26	0.00	0.000	0.000	0.595
5.00	-7.23	-5.80	0.00	-352.34	0.00	352.34	1079.72	539.86	1247.24	624.55	0.16	-0.291	0.000	0.571
10.00	-6.88	-5.59	0.00	-323.34	0.00	323.34	1063.41	531.71	1196.12	598.95	0.61	-0.579	0.000	0.546
15.00	-6.54	-5.38	0.00	-295.39	0.00	295.39	1046.46	523.23	1145.29	573.49	1.37	-0.865	0.000	0.521
20.00	-6.21	-5.17	0.00	-268.47	0.00	268.47	1028.88	514.44	1094.81	548.22	2.43	-1.148	0.000	0.496
25.00	-5.89	-4.94	0.00	-242.64	0.00	242.64	1010.66	505.33	1044.74	523.15	3.79	-1.427	0.000	0.470
30.00	-5.58	-4.71	0.00	-217.94	0.00	217.94	991.80	495.90	995.14	498.31	5.43	-1.701	0.000	0.443
35.00	-5.27	-4.47	0.00	-194.39	0.00	194.39	972.31	486.15	946.07	473.74	7.35	-1.969	0.000	0.416
40.00	-4.98	-4.24	0.00	-172.02	0.00	172.02	952.17	476.09	897.58	449.45	9.56	-2.230	0.000	0.388
45.00	-4.70	-3.99	0.00	-150.84	0.00	150.84	931.41	465.70	849.73	425.49	12.03	-2.483	0.000	0.360
47.35	-4.57	-3.88	0.00	-141.46	0.00	141.46	921.43	460.71	827.47	414.35	13.28	-2.602	0.000	0.346
50.00	-4.33	-3.75	0.00	-131.17	0.00	131.17	910.00	455.00	802.58	401.88	14.76	-2.732	0.000	0.331
50.66	-4.26	-3.72	0.00	-128.70	0.00	128.70	918.20	459.10	820.39	410.80	15.14	-2.765	0.000	0.318
55.00	-4.03	-3.51	0.00	-112.56	0.00	112.56	899.32	449.66	779.82	390.49	17.75	-2.968	0.000	0.293
60.00	-3.77	-3.27	0.00	-95.02	0.00	95.02	876.96	438.48	733.82	367.45	20.97	-3.176	0.000	0.263
65.00	-3.52	-3.03	0.00	-78.69	0.00	78.69	853.97	426.99	688.66	344.84	24.40	-3.370	0.000	0.232
70.00	-3.28	-2.79	0.00	-63.56	0.00	63.56	830.35	415.17	644.40	322.68	28.02	-3.547	0.000	0.201
75.00	-3.05	-2.55	0.00	-49.62	0.00	49.62	804.33	402.17	599.80	300.34	31.82	-3.705	0.000	0.169
80.00	-2.83	-2.32	0.00	-36.85	0.00	36.85	771.92	385.96	552.20	276.51	35.77	-3.841	0.000	0.137
81.00	-2.72	-1.99	0.00	-34.53	0.00	34.53	765.44	382.72	542.91	271.86	36.58	-3.866	0.000	0.131
81.00	-2.72	-1.99	0.00	-34.53	0.00	34.53	565.49	282.74	47.12	40.00	36.58	-3.866	0.000	0.868
85.00	-2.48	-1.96	0.00	-26.56	0.00	26.56	565.49	282.74	47.12	40.00	39.85	-3.955	0.000	0.668
89.00	-1.68	-1.86	0.00	-18.72	0.00	18.72	565.49	282.74	47.12	40.00	44.07	-6.005	0.000	0.471
90.00	-1.62	-1.85	0.00	-16.86	0.00	16.86	565.49	282.74	47.12	40.00	45.37	-6.408	0.000	0.424
91.00	-1.46	-1.22	0.00	-15.01	0.00	15.01	565.49	282.74	47.12	40.00	46.75	-6.769	0.000	0.378
91.00	-1.46	-1.22	0.00	-15.01	0.00	15.01	318.09	159.04	19.88	16.88	46.75	-6.769	0.000	0.894
95.00	-1.32	-1.19	0.00	-10.14	0.00	10.14	318.09	159.04	19.88	16.88	52.91	-7.907	0.000	0.605
99.00	-0.76	-1.06	0.00	-5.38	0.00	5.38	318.09	159.04	19.88	16.88	60.52	-10.128	0.000	0.321
100.00	-0.73	-1.05	0.00	-4.32	0.00	4.32	318.09	159.04	19.88	16.88	62.67	-10.475	0.000	0.258
101.00	-0.65	-0.49	0.00	-3.27	0.00	3.27	318.09	159.04	19.88	16.88	64.88	-10.746	0.000	0.196
105.00	-0.55	-0.41	0.00	-1.32	0.00	1.32	318.09	159.04	19.88	16.88	74.14	-11.403	0.000	0.080
106.00	-0.08	-0.30	0.00	-0.91	0.00	0.91	318.09	159.04	19.88	16.88	76.52	-11.483	0.000	0.054
109.00	0.00	-0.28	0.00	0.00	0.00	0.00	318.09	159.04	19.88	16.88	83.73	-11.580	0.000	0.000

Wind Loading - Shaft

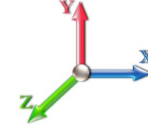
Structure: CT40876-T-SBA	Code: EIA/TIA-222-G	2/10/2017
Site Name: CT389/New Canaan C C	Exposure: C	
Height: 109.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 35

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	5.168	5.68	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	5.168	5.68	0.00	1.200	1.242	5.00	13.150	15.78	89.7	229.5	575.2
10.00		1.00	0.85	5.168	5.68	0.00	1.200	1.331	5.00	12.914	15.50	88.1	240.6	577.3
15.00		1.00	0.85	5.168	5.68	0.00	1.200	1.386	5.00	12.650	15.18	86.3	244.7	572.5
20.00		1.00	0.90	5.483	6.03	0.00	1.200	1.427	5.00	12.373	14.85	89.6	245.6	564.5
25.00		1.00	0.95	5.747	6.32	0.00	1.200	1.459	5.00	12.090	14.51	91.7	244.8	554.8
30.00		1.00	0.98	5.972	6.57	0.00	1.200	1.486	5.00	11.802	14.16	93.0	242.7	543.8
35.00		1.00	1.01	6.169	6.79	0.00	1.200	1.509	5.00	11.511	13.81	93.7	239.7	531.9
40.00		1.00	1.04	6.345	6.98	0.00	1.200	1.529	5.00	11.218	13.46	94.0	236.1	519.4
45.00		1.00	1.07	6.504	7.15	0.00	1.200	1.547	5.00	10.923	13.11	93.8	232.0	506.4
47.35 Bot - Section 2		1.00	1.08	6.574	7.23	0.00	1.200	1.555	2.35	5.030	6.04	43.6	108.1	233.9
50.00		1.00	1.09	6.650	7.32	0.00	1.200	1.564	2.65	5.677	6.81	49.8	122.5	404.1
50.66 Top - Section 1		1.00	1.10	6.669	7.34	0.00	1.200	1.566	0.66	1.401	1.68	12.3	30.4	99.8
55.00		1.00	1.12	6.785	7.46	0.00	1.200	1.579	4.34	9.085	10.90	81.4	196.3	422.5
60.00		1.00	1.14	6.910	7.60	0.00	1.200	1.592	5.00	10.189	12.23	92.9	221.0	473.2
65.00		1.00	1.16	7.028	7.73	0.00	1.200	1.605	5.00	9.889	11.87	91.7	215.5	458.8
70.00		1.00	1.17	7.138	7.85	0.00	1.200	1.617	5.00	9.589	11.51	90.4	209.8	444.2
75.00		1.00	1.19	7.243	7.97	0.00	1.200	1.628	5.00	9.288	11.15	88.8	203.9	429.4
80.00		1.00	1.21	7.342	8.08	0.00	1.200	1.639	5.00	8.987	10.78	87.1	197.8	414.4
81.00 Top - Section 2		1.00	1.21	7.361	8.10	0.00	1.200	1.641	1.00	1.761	2.11	17.1	39.3	81.6
85.00		1.00	1.22	7.436	8.18	18.43	1.200	1.649	4.00	2.433	2.92	23.9	46.0	251.2
89.00 Appurtenance(s)		1.00	1.23	7.508	8.26	18.52	1.200	1.656	4.00	2.438	2.93	24.2	46.3	251.5
90.00		1.00	1.24	7.526	8.28	18.54	1.200	1.658	1.00	0.610	0.73	6.1	11.6	62.9
91.00 Top - Section 3		1.00	1.24	7.544	8.30	18.56	1.200	1.660	1.00	0.610	0.73	6.1	11.6	62.9
95.00		1.00	1.25	7.612	8.37	13.99	1.200	1.667	4.00	2.112	2.53	21.2	38.4	153.9
99.00 Appurtenance(s)		1.00	1.26	7.679	8.45	14.05	1.200	1.674	4.00	2.116	2.54	21.4	38.6	154.1
100.00		1.00	1.27	7.695	8.46	14.06	1.200	1.676	1.00	0.529	0.64	5.4	9.7	38.5
101.00 Appurtenance(s)		1.00	1.27	7.711	8.48	14.08	1.200	1.678	1.00	0.530	0.64	5.4	9.7	38.5
105.00		1.00	1.28	7.774	8.55	14.13	1.200	1.684	4.00	2.123	2.55	21.8	38.9	154.4
106.00 Appurtenance(s)		1.00	1.28	7.790	8.57	14.15	1.200	1.686	1.00	0.531	0.64	5.5	9.7	38.6
109.00 Appurtenance(s)		1.00	1.29	7.836	8.62	14.19	1.200	1.690	3.00	1.595	1.91	16.5	29.4	115.9
Totals:								109.00				1,632.4		9,730.2

Discrete Appurtenance Forces

Structure: CT40876-T-SBA	Code: EIA/TIA-222-G	2/10/2017
Site Name: CT389/New Canaan C C	Exposure: C	
Height: 109.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 35

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	109.00	Cannister 30" x 4'	1	7.836	8.619	1.00	1.00	5.77	151.94	0.000	0.000	49.78	0.00	0.00
2	106.00	Flush Mount	1	7.790	8.569	0.00	1.00	0.00	603.19	0.000	0.000	0.00	0.00	0.00
3	106.00	ATMAA1412D-1A20	3	7.790	8.569	0.00	1.00	0.00	101.02	0.000	0.000	0.00	0.00	0.00
4	106.00	APX16DWV-16DWVS-E-	3	7.790	8.569	0.00	1.00	0.00	385.21	0.000	0.000	0.00	0.00	0.00
5	101.00	Cannister 30" x 5'	1	7.711	8.482	1.00	1.00	7.21	245.02	0.000	0.000	61.17	0.00	0.00
6	101.00	Cannister 30" x 4'	1	7.711	8.482	1.00	1.00	5.77	149.70	0.000	0.000	48.93	0.00	0.00
7	99.00	Flush Mount	1	7.679	8.447	0.00	1.00	0.00	601.26	0.000	0.000	0.00	0.00	0.00
8	99.00	782 11054	3	7.679	8.447	0.00	1.00	0.00	11.39	0.000	0.000	0.00	0.00	0.00
9	99.00	KRY 112 144/1	3	7.679	8.447	0.00	1.00	0.00	61.33	0.000	0.000	0.00	0.00	0.00
10	99.00	LNx-6512DS-A1M	3	7.679	8.447	0.00	1.00	0.00	362.74	0.000	0.000	0.00	0.00	0.00
11	91.00	Cannister 30" x 10'	1	7.544	8.298	1.00	1.00	15.36	797.72	0.000	0.000	127.45	0.00	0.00
12	89.00	Flush Mount	1	7.508	8.259	0.00	1.00	0.00	598.28	0.000	0.000	0.00	0.00	0.00
13	89.00	DTMABP7819VG12A	6	7.508	8.259	0.00	1.00	0.00	239.77	0.000	0.000	0.00	0.00	0.00
14	89.00	HPA-65R-BUU-H6	3	7.508	8.259	0.00	1.00	32.86	884.19	0.000	0.000	271.39	0.00	0.00
15	81.00	Cannister 30" x 5'	1	7.361	8.097	1.00	1.00	7.19	237.31	0.000	0.000	58.22	0.00	0.00
Totals:									5,430.08			616.93		

Total Applied Force Summary

Structure: CT40876-T-SBA	Code: EIA/TIA-222-G	2/10/2017
Site Name: CT389/New Canaan C C	Exposure: C	
Height: 109.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 35

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		89.70	668.75	0.00	0.00
10.00		88.10	670.94	0.00	0.00
15.00		86.29	666.09	0.00	0.00
20.00		89.56	658.13	0.00	0.00
25.00		91.72	648.36	0.00	0.00
30.00		93.04	637.37	0.00	0.00
35.00		93.74	625.52	0.00	0.00
40.00		93.95	613.01	0.00	0.00
45.00		93.78	599.96	0.00	0.00
47.35		43.65	277.92	0.00	0.00
50.00		49.84	453.68	0.00	0.00
50.66		12.33	112.13	0.00	0.00
55.00		81.37	503.73	0.00	0.00
60.00		92.94	566.81	0.00	0.00
65.00		91.74	552.44	0.00	0.00
70.00		90.35	537.82	0.00	0.00
75.00		88.80	523.00	0.00	0.00
80.00		87.09	507.99	0.00	0.00
81.00	(1) attachments	75.33	337.59	0.00	0.00
85.00		23.88	326.12	0.00	0.00
89.00	(10) attachments	295.55	2048.64	0.00	0.00
90.00		6.06	74.13	0.00	0.00
91.00	(1) attachments	133.52	871.86	0.00	0.00
95.00		21.22	198.80	0.00	0.00
99.00	(10) attachments	21.45	1235.74	0.00	0.00
100.00		5.38	46.02	0.00	0.00
101.00	(2) attachments	115.49	440.76	0.00	0.00
105.00		21.78	184.35	0.00	0.00
106.00	(7) attachments	5.46	1135.52	0.00	0.00
109.00	(1) attachments	66.27	267.89	0.00	0.00
	Totals:	2,249.38	16,991.09	0.00	0.00

Calculated Forces

Structure: CT40876-T-SBA	Code: EIA/TIA-222-G	2/10/2017
Site Name: CT389/New Canaan C C	Exposure: C	
Height: 109.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

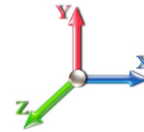


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Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Iterations 35

Dead Load Factor 1.20
Wind Load Factor 1.00



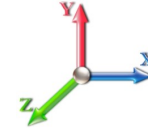
Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-16.99	-2.27	0.00	-153.05	0.00	153.05	1095.40	547.70	1298.60	650.26	0.00	0.000	0.000	0.251
5.00	-16.32	-2.21	0.00	-141.72	0.00	141.72	1079.72	539.86	1247.24	624.55	0.06	-0.117	0.000	0.242
10.00	-15.64	-2.15	0.00	-130.67	0.00	130.67	1063.41	531.71	1196.12	598.95	0.25	-0.233	0.000	0.233
15.00	-14.97	-2.09	0.00	-119.92	0.00	119.92	1046.46	523.23	1145.29	573.49	0.55	-0.349	0.000	0.223
20.00	-14.31	-2.03	0.00	-109.46	0.00	109.46	1028.88	514.44	1094.81	548.22	0.98	-0.464	0.000	0.214
25.00	-13.66	-1.96	0.00	-99.33	0.00	99.33	1010.66	505.33	1044.74	523.15	1.53	-0.578	0.000	0.203
30.00	-13.02	-1.88	0.00	-89.55	0.00	89.55	991.80	495.90	995.14	498.31	2.19	-0.690	0.000	0.193
35.00	-12.39	-1.80	0.00	-80.15	0.00	80.15	972.31	486.15	946.07	473.74	2.97	-0.801	0.000	0.182
40.00	-11.78	-1.72	0.00	-71.14	0.00	71.14	952.17	476.09	897.58	449.45	3.87	-0.908	0.000	0.171
45.00	-11.18	-1.63	0.00	-62.53	0.00	62.53	931.41	465.70	849.73	425.49	4.88	-1.013	0.000	0.159
47.35	-10.90	-1.59	0.00	-58.70	0.00	58.70	921.43	460.71	827.47	414.35	5.39	-1.062	0.000	0.153
50.00	-10.44	-1.54	0.00	-54.47	0.00	54.47	910.00	455.00	802.58	401.88	5.99	-1.116	0.000	0.147
50.66	-10.33	-1.54	0.00	-53.46	0.00	53.46	918.20	459.10	820.39	410.80	6.15	-1.130	0.000	0.141
55.00	-9.83	-1.46	0.00	-46.79	0.00	46.79	899.32	449.66	779.82	390.49	7.22	-1.214	0.000	0.131
60.00	-9.26	-1.37	0.00	-39.50	0.00	39.50	876.96	438.48	733.82	367.45	8.53	-1.301	0.000	0.118
65.00	-8.71	-1.27	0.00	-32.67	0.00	32.67	853.97	426.99	688.66	344.84	9.94	-1.381	0.000	0.105
70.00	-8.17	-1.18	0.00	-26.30	0.00	26.30	830.35	415.17	644.40	322.68	11.43	-1.455	0.000	0.091
75.00	-7.65	-1.09	0.00	-20.40	0.00	20.40	804.33	402.17	599.80	300.34	12.99	-1.520	0.000	0.077
80.00	-7.14	-0.99	0.00	-14.97	0.00	14.97	771.92	385.96	552.20	276.51	14.61	-1.575	0.000	0.063
81.00	-6.81	-0.91	0.00	-13.99	0.00	13.99	765.44	382.72	542.91	271.86	14.94	-1.586	0.000	0.060
81.00	-6.81	-0.91	0.00	-13.99	0.00	13.99	565.49	282.74	47.12	40.00	14.94	-1.586	0.000	0.362
85.00	-6.48	-0.92	0.00	-10.36	0.00	10.36	565.49	282.74	47.12	40.00	16.28	-1.621	0.000	0.270
89.00	-4.43	-0.59	0.00	-6.67	0.00	6.67	565.49	282.74	47.12	40.00	17.99	-2.392	0.000	0.175
90.00	-4.36	-0.59	0.00	-6.08	0.00	6.08	565.49	282.74	47.12	40.00	18.50	-2.536	0.000	0.160
91.00	-3.49	-0.43	0.00	-5.49	0.00	5.49	565.49	282.74	47.12	40.00	19.05	-2.667	0.000	0.143
91.00	-3.49	-0.43	0.00	-5.49	0.00	5.49	318.09	159.04	19.88	16.88	19.05	-2.667	0.000	0.336
95.00	-3.29	-0.44	0.00	-3.76	0.00	3.76	318.09	159.04	19.88	16.88	21.47	-3.086	0.000	0.233
99.00	-2.05	-0.36	0.00	-2.00	0.00	2.00	318.09	159.04	19.88	16.88	24.43	-3.910	0.000	0.125
100.00	-2.01	-0.35	0.00	-1.64	0.00	1.64	318.09	159.04	19.88	16.88	25.27	-4.040	0.000	0.104
101.00	-1.58	-0.21	0.00	-1.29	0.00	1.29	318.09	159.04	19.88	16.88	26.12	-4.145	0.000	0.081
105.00	-1.39	-0.18	0.00	-0.44	0.00	0.44	318.09	159.04	19.88	16.88	29.71	-4.392	0.000	0.030
106.00	-0.26	-0.09	0.00	-0.26	0.00	0.26	318.09	159.04	19.88	16.88	30.63	-4.417	0.000	0.016
109.00	0.00	-0.07	0.00	0.00	0.00	0.00	318.09	159.04	19.88	16.88	33.42	-4.445	0.000	0.000

Seismic Segment Forces (Factored)

Structure: CT40876-T-SBA	Code: EIA/TIA-222-G	2/10/2017
Site Name: CT389/New Canaan C C	Exposure: C	
Height: 109.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0E						Iterations 33
Gust Response Factor	1.10			Sds	0.25	Ss 0.24
Dead Load Factor	1.20	Seismic Load Factor	1.00	Sd1	0.11	S1 0.07
Wind Load Factor	0.00	Structure Frequency	0.32	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		288.02	0.00	0.04	0.02	9.85	
10.00		280.59	0.02	0.06	0.04	12.52	
15.00		273.17	0.04	0.07	0.04	13.26	
20.00		265.75	0.06	0.07	0.04	13.42	
25.00		258.33	0.10	0.07	0.04	13.49	
30.00		250.91	0.14	0.07	0.03	13.55	
35.00		243.48	0.19	0.06	0.02	13.41	
40.00		236.06	0.25	0.05	0.02	12.61	
45.00		228.64	0.32	0.04	0.01	10.45	
47.35	Bot - Section 2	104.90	0.36	0.03	0.01	4.07	
50.00		234.66	0.40	0.02	0.01	6.57	
50.66	Top - Section 1	57.79	0.41	0.02	0.01	1.43	
55.00		188.45	0.48	-0.01	0.01	-0.04	
60.00		210.17	0.57	-0.04	0.01	-6.53	
65.00		202.75	0.67	-0.08	0.02	-10.75	
70.00		195.33	0.78	-0.11	0.05	-11.91	
75.00		187.91	0.89	-0.12	0.09	-10.35	
80.00		180.48	1.02	-0.10	0.14	-6.57	
81.00	Top - Section 2	129.21	1.04	-0.10	0.15	-4.03	
85.00		171.04	1.15	-0.04	0.22	-0.95	
89.00	Appurtenance(s)	789.24	1.26	0.07	0.30	21.99	
90.00		42.76	1.29	0.10	0.33	1.60	
91.00	Top - Section 3	230.76	1.32	0.15	0.35	10.97	
95.00		96.21	1.44	0.35	0.47	8.94	
99.00	Appurtenance(s)	570.71	1.56	0.66	0.62	83.63	
100.00		24.05	1.59	0.75	0.66	3.88	
101.00	Appurtenance(s)	196.05	1.62	0.85	0.70	34.61	
105.00		96.21	1.75	1.34	0.90	23.37	
106.00	Appurtenance(s)	535.15	1.79	1.48	0.96	139.64	
109.00	Appurtenance(s)	150.16	1.89	1.98	1.14	47.79	
Totals:		6,919.0				449.9	Total Wind: 5,992.0

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

Calculated Forces

Structure: CT40876-T-SBA	Code: EIA/TIA-222-G	2/10/2017
Site Name: CT389/New Canaan C C	Exposure: C	
Height: 109.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

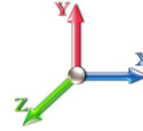


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Load Case: 1.2D + 1.0E

Iterations 33

Gust Response Factor 1.10	Sds 0.25	Ss 0.24
Dead Load Factor 1.20	Seismic Load Factor 1.00	Sd1 0.11
Wind Load Factor 0.00	Structure Frequency 0.32	SA 0.04
	Seismic Importance Factor 1.00	



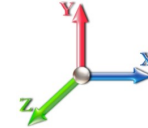
Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-10.13	-0.50	0.00	-46.14	0.00	46.14	1095.40	547.70	1298.60	650.26	0.00	0.00	0.00	0.080
5.00	-9.69	-0.50	0.00	-43.62	0.00	43.62	1079.72	539.86	1247.24	624.55	0.02	-0.04	0.079	
10.00	-9.26	-0.49	0.00	-41.12	0.00	41.12	1063.41	531.71	1196.12	598.95	0.08	-0.07	0.077	
15.00	-8.84	-0.48	0.00	-38.66	0.00	38.66	1046.46	523.23	1145.29	573.49	0.17	-0.11	0.076	
20.00	-8.43	-0.48	0.00	-36.23	0.00	36.23	1028.88	514.44	1094.81	548.22	0.30	-0.15	0.074	
25.00	-8.02	-0.47	0.00	-33.85	0.00	33.85	1010.66	505.33	1044.74	523.15	0.48	-0.18	0.073	
30.00	-7.63	-0.46	0.00	-31.52	0.00	31.52	991.80	495.90	995.14	498.31	0.69	-0.22	0.071	
35.00	-7.24	-0.45	0.00	-29.23	0.00	29.23	972.31	486.15	946.07	473.74	0.95	-0.26	0.069	
40.00	-6.87	-0.44	0.00	-27.00	0.00	27.00	952.17	476.09	897.58	449.45	1.24	-0.30	0.067	
45.00	-6.50	-0.43	0.00	-24.81	0.00	24.81	931.41	465.70	849.73	425.49	1.58	-0.34	0.065	
47.35	-6.33	-0.43	0.00	-23.80	0.00	23.80	921.43	460.71	827.47	414.35	1.76	-0.36	0.064	
50.00	-6.00	-0.42	0.00	-22.67	0.00	22.67	910.00	455.00	802.58	401.88	1.96	-0.39	0.063	
50.66	-5.92	-0.42	0.00	-22.40	0.00	22.40	918.20	459.10	820.39	410.80	2.02	-0.39	0.061	
55.00	-5.61	-0.42	0.00	-20.58	0.00	20.58	899.32	449.66	779.82	390.49	2.39	-0.43	0.059	
60.00	-5.26	-0.42	0.00	-18.48	0.00	18.48	876.96	438.48	733.82	367.45	2.86	-0.47	0.056	
65.00	-4.92	-0.42	0.00	-16.38	0.00	16.38	853.97	426.99	688.66	344.84	3.37	-0.51	0.053	
70.00	-4.60	-0.42	0.00	-14.27	0.00	14.27	830.35	415.17	644.40	322.68	3.92	-0.54	0.050	
75.00	-4.28	-0.42	0.00	-12.16	0.00	12.16	804.33	402.17	599.80	300.34	4.51	-0.58	0.046	
80.00	-3.97	-0.42	0.00	-10.06	0.00	10.06	771.92	385.96	552.20	276.51	5.13	-0.62	0.042	
81.00	-3.79	-0.42	0.00	-9.64	0.00	9.64	765.44	382.72	542.91	271.86	5.26	-0.62	0.040	
81.00	-3.79	-0.42	0.00	-9.64	0.00	9.64	565.49	282.74	47.12	40.00	5.26	-0.62	0.248	
85.00	-3.51	-0.44	0.00	-7.96	0.00	7.96	565.49	282.74	47.12	40.00	5.79	-0.65	0.205	
89.00	-2.49	-0.41	0.00	-6.22	0.00	6.22	565.49	282.74	47.12	40.00	6.62	-1.29	0.160	
90.00	-2.42	-0.42	0.00	-5.81	0.00	5.81	565.49	282.74	47.12	40.00	6.90	-1.43	0.149	
91.00	-2.13	-0.41	0.00	-5.39	0.00	5.39	565.49	282.74	47.12	40.00	7.21	-1.55	0.139	
91.00	-2.13	-0.41	0.00	-5.39	0.00	5.39	318.09	159.04	19.88	16.88	7.21	-1.55	0.326	
95.00	-1.97	-0.42	0.00	-3.76	0.00	3.76	318.09	159.04	19.88	16.88	8.70	-1.97	0.229	
99.00	-1.24	-0.31	0.00	-2.09	0.00	2.09	318.09	159.04	19.88	16.88	10.73	-2.80	0.128	
100.00	-1.20	-0.31	0.00	-1.78	0.00	1.78	318.09	159.04	19.88	16.88	11.33	-2.94	0.109	
101.00	-0.96	-0.27	0.00	-1.47	0.00	1.47	318.09	159.04	19.88	16.88	11.96	-3.06	0.090	
105.00	-0.82	-0.24	0.00	-0.41	0.00	0.41	318.09	159.04	19.88	16.88	14.66	-3.33	0.027	
106.00	-0.18	-0.06	0.00	-0.17	0.00	0.17	318.09	159.04	19.88	16.88	15.36	-3.35	0.011	
109.00	0.00	-0.05	0.00	0.00	0.00	0.00	318.09	159.04	19.88	16.88	17.47	-3.37	0.000	

Seismic Segment Forces (Factored)

Structure: CT40876-T-SBA	Code: EIA/TIA-222-G	2/10/2017
Site Name: CT389/New Canaan C C	Exposure: C	
Height: 109.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.0E						Iterations 33
Gust Response Factor	1.10			Sds	0.25	Ss 0.24
Dead Load Factor	0.90	Seismic Load Factor	1.00	Sd1	0.11	S1 0.07
Wind Load Factor	0.00	Structure Frequency	0.32	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		288.02	0.00	0.04	0.02	9.85	
10.00		280.59	0.02	0.06	0.04	12.52	
15.00		273.17	0.04	0.07	0.04	13.26	
20.00		265.75	0.06	0.07	0.04	13.42	
25.00		258.33	0.10	0.07	0.04	13.49	
30.00		250.91	0.14	0.07	0.03	13.55	
35.00		243.48	0.19	0.06	0.02	13.41	
40.00		236.06	0.25	0.05	0.02	12.61	
45.00		228.64	0.32	0.04	0.01	10.45	
47.35	Bot - Section 2	104.90	0.36	0.03	0.01	4.07	
50.00		234.66	0.40	0.02	0.01	6.57	
50.66	Top - Section 1	57.79	0.41	0.02	0.01	1.43	
55.00		188.45	0.48	-0.01	0.01	-0.04	
60.00		210.17	0.57	-0.04	0.01	-6.53	
65.00		202.75	0.67	-0.08	0.02	-10.75	
70.00		195.33	0.78	-0.11	0.05	-11.91	
75.00		187.91	0.89	-0.12	0.09	-10.35	
80.00		180.48	1.02	-0.10	0.14	-6.57	
81.00	Top - Section 2	129.21	1.04	-0.10	0.15	-4.03	
85.00		171.04	1.15	-0.04	0.22	-0.95	
89.00	Appurtenance(s)	789.24	1.26	0.07	0.30	21.99	
90.00		42.76	1.29	0.10	0.33	1.60	
91.00	Top - Section 3	230.76	1.32	0.15	0.35	10.97	
95.00		96.21	1.44	0.35	0.47	8.94	
99.00	Appurtenance(s)	570.71	1.56	0.66	0.62	83.63	
100.00		24.05	1.59	0.75	0.66	3.88	
101.00	Appurtenance(s)	196.05	1.62	0.85	0.70	34.61	
105.00		96.21	1.75	1.34	0.90	23.37	
106.00	Appurtenance(s)	535.15	1.79	1.48	0.96	139.64	
109.00	Appurtenance(s)	150.16	1.89	1.98	1.14	47.79	
Totals:		6,919.0				449.9	Total Wind: 5,992.0

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

Calculated Forces

Structure: CT40876-T-SBA	Code: EIA/TIA-222-G	2/10/2017
Site Name: CT389/New Canaan C C	Exposure: C	
Height: 109.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

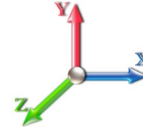


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Load Case: 0.9D + 1.0E

Iterations 33

Gust Response Factor 1.10	Sds 0.25	Ss 0.24
Dead Load Factor 0.90	Seismic Load Factor 1.00	Sd1 0.11
Wind Load Factor 0.00	Structure Frequency 0.32	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	-7.60	-0.50	0.00	-44.99	0.00	44.99	1095.40	547.70	1298.60	650.26	0.00	0.00	0.00	0.076
5.00	-7.27	-0.50	0.00	-42.48	0.00	42.48	1079.72	539.86	1247.24	624.55	0.02	-0.03	0.075	
10.00	-6.95	-0.49	0.00	-39.99	0.00	39.99	1063.41	531.71	1196.12	598.95	0.07	-0.07	0.073	
15.00	-6.63	-0.48	0.00	-37.54	0.00	37.54	1046.46	523.23	1145.29	573.49	0.17	-0.11	0.072	
20.00	-6.32	-0.47	0.00	-35.14	0.00	35.14	1028.88	514.44	1094.81	548.22	0.30	-0.14	0.070	
25.00	-6.02	-0.46	0.00	-32.80	0.00	32.80	1010.66	505.33	1044.74	523.15	0.46	-0.18	0.069	
30.00	-5.72	-0.45	0.00	-30.50	0.00	30.50	991.80	495.90	995.14	498.31	0.67	-0.22	0.067	
35.00	-5.43	-0.44	0.00	-28.26	0.00	28.26	972.31	486.15	946.07	473.74	0.92	-0.26	0.065	
40.00	-5.15	-0.43	0.00	-26.07	0.00	26.07	952.17	476.09	897.58	449.45	1.21	-0.29	0.063	
45.00	-4.87	-0.42	0.00	-23.94	0.00	23.94	931.41	465.70	849.73	425.49	1.54	-0.33	0.061	
47.35	-4.75	-0.41	0.00	-22.95	0.00	22.95	921.43	460.71	827.47	414.35	1.70	-0.35	0.061	
50.00	-4.50	-0.41	0.00	-21.86	0.00	21.86	910.00	455.00	802.58	401.88	1.91	-0.37	0.059	
50.66	-4.44	-0.41	0.00	-21.59	0.00	21.59	918.20	459.10	820.39	410.80	1.96	-0.38	0.057	
55.00	-4.21	-0.41	0.00	-19.82	0.00	19.82	899.32	449.66	779.82	390.49	2.32	-0.41	0.055	
60.00	-3.95	-0.41	0.00	-17.78	0.00	17.78	876.96	438.48	733.82	367.45	2.77	-0.45	0.053	
65.00	-3.69	-0.41	0.00	-15.74	0.00	15.74	853.97	426.99	688.66	344.84	3.26	-0.49	0.050	
70.00	-3.45	-0.41	0.00	-13.69	0.00	13.69	830.35	415.17	644.40	322.68	3.80	-0.53	0.047	
75.00	-3.21	-0.41	0.00	-11.65	0.00	11.65	804.33	402.17	599.80	300.34	4.37	-0.56	0.043	
80.00	-2.97	-0.41	0.00	-9.60	0.00	9.60	771.92	385.96	552.20	276.51	4.97	-0.59	0.039	
81.00	-2.84	-0.41	0.00	-9.20	0.00	9.20	765.44	382.72	542.91	271.86	5.10	-0.60	0.038	
81.00	-2.84	-0.41	0.00	-9.20	0.00	9.20	565.49	282.74	47.12	40.00	5.10	-0.60	0.235	
85.00	-2.63	-0.42	0.00	-7.57	0.00	7.57	565.49	282.74	47.12	40.00	5.61	-0.63	0.194	
89.00	-1.86	-0.40	0.00	-5.89	0.00	5.89	565.49	282.74	47.12	40.00	6.40	-1.23	0.151	
90.00	-1.82	-0.40	0.00	-5.49	0.00	5.49	565.49	282.74	47.12	40.00	6.67	-1.36	0.141	
91.00	-1.60	-0.39	0.00	-5.10	0.00	5.10	565.49	282.74	47.12	40.00	6.97	-1.48	0.130	
91.00	-1.60	-0.39	0.00	-5.10	0.00	5.10	318.09	159.04	19.88	16.88	6.97	-1.48	0.307	
95.00	-1.47	-0.39	0.00	-3.54	0.00	3.54	318.09	159.04	19.88	16.88	8.39	-1.87	0.214	
99.00	-0.93	-0.29	0.00	-1.97	0.00	1.97	318.09	159.04	19.88	16.88	10.32	-2.66	0.120	
100.00	-0.90	-0.29	0.00	-1.68	0.00	1.68	318.09	159.04	19.88	16.88	10.89	-2.79	0.102	
101.00	-0.72	-0.25	0.00	-1.38	0.00	1.38	318.09	159.04	19.88	16.88	11.49	-2.90	0.084	
105.00	-0.61	-0.22	0.00	-0.39	0.00	0.39	318.09	159.04	19.88	16.88	14.04	-3.16	0.025	
106.00	-0.13	-0.06	0.00	-0.17	0.00	0.17	318.09	159.04	19.88	16.88	14.71	-3.18	0.010	
109.00	0.00	-0.05	0.00	0.00	0.00	0.00	318.09	159.04	19.88	16.88	16.71	-3.19	0.000	

Wind Loading - Shaft

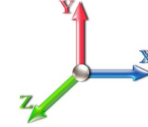
Structure: CT40876-T-SBA	Code: EIA/TIA-222-G	2/10/2017
Site Name: CT389/New Canaan C C	Exposure: C	
Height: 109.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 33

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	135.75	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	132.31	0.650	0.000	5.00	12.115	7.87	64.5	0.0	288.0
10.00		1.00	0.85	7.442	8.19	128.88	0.650	0.000	5.00	11.805	7.67	62.8	0.0	280.6
15.00		1.00	0.85	7.442	8.19	125.45	0.650	0.000	5.00	11.494	7.47	61.2	0.0	273.2
20.00		1.00	0.90	7.896	8.69	125.69	0.650	0.000	5.00	11.184	7.27	63.1	0.0	265.8
25.00		1.00	0.95	8.276	9.10	125.06	0.650	0.000	5.00	10.874	7.07	64.3	0.0	258.3
30.00		1.00	0.98	8.600	9.46	123.79	0.650	0.000	5.00	10.564	6.87	65.0	0.0	250.9
35.00		1.00	1.01	8.883	9.77	122.07	0.650	0.000	5.00	10.254	6.66	65.1	0.0	243.5
40.00		1.00	1.04	9.137	10.05	120.00	0.650	0.000	5.00	9.944	6.46	65.0	0.0	236.1
45.00		1.00	1.07	9.366	10.30	117.64	0.650	0.000	5.00	9.634	6.26	64.5	0.0	228.6
47.35 Bot - Section 2		1.00	1.08	9.467	10.41	116.46	0.650	0.000	2.35	4.421	2.87	29.9	0.0	104.9
50.00		1.00	1.09	9.576	10.53	115.06	0.650	0.000	2.65	4.987	3.24	34.1	0.0	234.7
50.66 Top - Section 1		1.00	1.10	9.603	10.56	114.71	0.650	0.000	0.66	1.228	0.80	8.4	0.0	57.8
55.00		1.00	1.12	9.770	10.75	114.30	0.650	0.000	4.34	7.943	5.16	55.5	0.0	188.4
60.00		1.00	1.14	9.951	10.95	111.39	0.650	0.000	5.00	8.862	5.76	63.1	0.0	210.2
65.00		1.00	1.16	10.120	11.13	108.33	0.650	0.000	5.00	8.552	5.56	61.9	0.0	202.8
70.00		1.00	1.17	10.279	11.31	105.14	0.650	0.000	5.00	8.242	5.36	60.6	0.0	195.3
75.00		1.00	1.19	10.430	11.47	101.85	0.650	0.000	5.00	7.931	5.16	59.1	0.0	187.9
80.00		1.00	1.21	10.572	11.63	98.45	0.650	0.000	5.00	7.621	4.95	57.6	0.0	180.5
81.00 Top - Section 2		1.00	1.21	10.600	11.66	97.76	0.650	0.000	1.00	1.487	0.97	11.3	0.0	35.2
85.00		1.00	1.22	10.708	11.78	22.12	1.200	0.000	4.00	1.333	1.60	18.8	0.0	171.0
89.00 Appurtenance(s)		1.00	1.23	10.812	11.89	22.23	1.200	0.000	4.00	1.333	1.60	19.0	0.0	171.0
90.00		1.00	1.24	10.838	11.92	22.25	1.200	0.000	1.00	0.333	0.40	4.8	0.0	42.8
91.00 Top - Section 3		1.00	1.24	10.863	11.95	22.28	1.200	0.000	1.00	0.333	0.40	4.8	0.0	42.8
95.00		1.00	1.25	10.962	12.06	16.78	1.200	0.000	4.00	1.000	1.20	14.5	0.0	96.2
99.00 Appurtenance(s)		1.00	1.26	11.057	12.16	16.86	1.200	0.000	4.00	1.000	1.20	14.6	0.0	96.2
100.00		1.00	1.27	11.081	12.19	16.87	1.200	0.000	1.00	0.250	0.30	3.7	0.0	24.1
101.00 Appurtenance(s)		1.00	1.27	11.104	12.21	16.89	1.200	0.000	1.00	0.250	0.30	3.7	0.0	24.1
105.00		1.00	1.28	11.195	12.31	16.96	1.200	0.000	4.00	1.000	1.20	14.8	0.0	96.2
106.00 Appurtenance(s)		1.00	1.28	11.218	12.34	16.98	1.200	0.000	1.00	0.250	0.30	3.7	0.0	24.1
109.00 Appurtenance(s)		1.00	1.29	11.284	12.41	17.03	1.200	0.000	3.00	0.750	0.90	11.2	0.0	72.2
Totals:								109.00				1,130.5		4,783.2

Discrete Appurtenance Forces

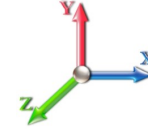
Structure: CT40876-T-SBA	Code: EIA/TIA-222-G	2/10/2017
Site Name: CT389/New Canaan C C	Exposure: C	
Height: 109.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 33

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	109.00	Cannister 30" x 4'	1	11.284	12.412	1.00	1.00	5.00	78.00	0.000	0.000	62.06	0.00	0.00
2	106.00	Flush Mount	1	11.218	12.339	0.00	1.00	0.00	350.00	0.000	0.000	0.00	0.00	0.00
3	106.00	ATMAA1412D-1A20	3	11.218	12.339	0.00	1.00	0.00	39.00	0.000	0.000	0.00	0.00	0.00
4	106.00	APX16DWV-16DWVS-E-	3	11.218	12.339	0.00	1.00	0.00	122.10	0.000	0.000	0.00	0.00	0.00
5	101.00	Cannister 30" x 5'	1	11.104	12.214	1.00	1.00	6.25	94.00	0.000	0.000	76.34	0.00	0.00
6	101.00	Cannister 30" x 4'	1	11.104	12.214	1.00	1.00	5.00	78.00	0.000	0.000	61.07	0.00	0.00
7	99.00	Flush Mount	1	11.057	12.163	0.00	1.00	0.00	350.00	0.000	0.000	0.00	0.00	0.00
8	99.00	782 11054	3	11.057	12.163	0.00	1.00	0.00	5.40	0.000	0.000	0.00	0.00	0.00
9	99.00	KRY 112 144/1	3	11.057	12.163	0.00	1.00	0.00	33.00	0.000	0.000	0.00	0.00	0.00
10	99.00	LNx-6512DS-A1M	3	11.057	12.163	0.00	1.00	0.00	86.10	0.000	0.000	0.00	0.00	0.00
11	91.00	Cannister 30" x 10'	1	10.863	11.949	1.00	1.00	13.33	188.00	0.000	0.000	159.28	0.00	0.00
12	89.00	Flush Mount	1	10.812	11.893	0.00	1.00	0.00	350.00	0.000	0.000	0.00	0.00	0.00
13	89.00	DTMABP7819VG12A	6	10.812	11.893	0.00	1.00	0.00	115.20	0.000	0.000	0.00	0.00	0.00
14	89.00	HPA-65R-BUU-H6	3	10.812	11.893	0.00	1.00	0.00	153.00	0.000	0.000	0.00	0.00	0.00
15	81.00	Cannister 30" x 5'	1	10.600	11.660	1.00	1.00	6.25	94.00	0.000	0.000	72.87	0.00	0.00
Totals:									2,135.80			431.63		

Total Applied Force Summary

Structure: CT40876-T-SBA	Code: EIA/TIA-222-G	2/10/2017
Site Name: CT389/New Canaan C C	Exposure: C	
Height: 109.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 33

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		64.46	366.02	0.00	0.00
10.00		62.81	358.59	0.00	0.00
15.00		61.16	351.17	0.00	0.00
20.00		63.14	343.75	0.00	0.00
25.00		64.35	336.33	0.00	0.00
30.00		64.96	328.91	0.00	0.00
35.00		65.13	321.48	0.00	0.00
40.00		64.96	314.06	0.00	0.00
45.00		64.51	306.64	0.00	0.00
47.35		29.92	141.56	0.00	0.00
50.00		34.15	276.00	0.00	0.00
50.66		8.43	68.09	0.00	0.00
55.00		55.49	256.15	0.00	0.00
60.00		63.05	288.17	0.00	0.00
65.00		61.88	280.75	0.00	0.00
70.00		60.57	273.33	0.00	0.00
75.00		59.15	265.91	0.00	0.00
80.00		57.61	258.48	0.00	0.00
81.00	(1) attachments	84.14	144.81	0.00	0.00
85.00		18.85	233.44	0.00	0.00
89.00	(10) attachments	19.03	851.64	0.00	0.00
90.00		4.77	52.12	0.00	0.00
91.00	(1) attachments	164.06	240.12	0.00	0.00
95.00		14.47	133.65	0.00	0.00
99.00	(10) attachments	14.60	608.15	0.00	0.00
100.00		3.66	30.29	0.00	0.00
101.00	(2) attachments	141.08	202.29	0.00	0.00
105.00		14.78	121.17	0.00	0.00
106.00	(7) attachments	3.70	541.39	0.00	0.00
109.00	(1) attachments	73.23	150.16	0.00	0.00
	Totals:	1,562.09	8,444.64	0.00	0.00

Calculated Forces

Structure: CT40876-T-SBA	Code: EIA/TIA-222-G	2/10/2017
Site Name: CT389/New Canaan C C	Exposure: C	
Height: 109.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

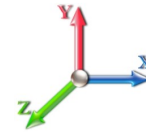


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Load Case: 1.0D + 1.0W 60 mph Wind

Iterations 33

Dead Load Factor 1.00
Wind Load Factor 1.00



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-8.44	-1.57	0.00	-100.50	0.00	100.50	1095.40	547.70	1298.60	650.26	0.00	0.000	0.000	0.162
5.00	-8.08	-1.51	0.00	-92.66	0.00	92.66	1079.72	539.86	1247.24	624.55	0.04	-0.076	0.000	0.156
10.00	-7.72	-1.46	0.00	-85.10	0.00	85.10	1063.41	531.71	1196.12	598.95	0.16	-0.152	0.000	0.149
15.00	-7.36	-1.41	0.00	-77.79	0.00	77.79	1046.46	523.23	1145.29	573.49	0.36	-0.228	0.000	0.143
20.00	-7.02	-1.35	0.00	-70.76	0.00	70.76	1028.88	514.44	1094.81	548.22	0.64	-0.302	0.000	0.136
25.00	-6.68	-1.29	0.00	-64.00	0.00	64.00	1010.66	505.33	1044.74	523.15	1.00	-0.376	0.000	0.129
30.00	-6.35	-1.23	0.00	-57.53	0.00	57.53	991.80	495.90	995.14	498.31	1.43	-0.448	0.000	0.122
35.00	-6.03	-1.17	0.00	-51.35	0.00	51.35	972.31	486.15	946.07	473.74	1.94	-0.519	0.000	0.115
40.00	-5.71	-1.11	0.00	-45.48	0.00	45.48	952.17	476.09	897.58	449.45	2.52	-0.588	0.000	0.107
45.00	-5.41	-1.05	0.00	-39.92	0.00	39.92	931.41	465.70	849.73	425.49	3.17	-0.655	0.000	0.100
47.35	-5.26	-1.02	0.00	-37.45	0.00	37.45	921.43	460.71	827.47	414.35	3.50	-0.686	0.000	0.096
50.00	-4.99	-0.99	0.00	-34.74	0.00	34.74	910.00	455.00	802.58	401.88	3.89	-0.721	0.000	0.092
50.66	-4.92	-0.98	0.00	-34.09	0.00	34.09	918.20	459.10	820.39	410.80	3.99	-0.729	0.000	0.088
55.00	-4.66	-0.92	0.00	-29.84	0.00	29.84	899.32	449.66	779.82	390.49	4.68	-0.783	0.000	0.082
60.00	-4.38	-0.86	0.00	-25.22	0.00	25.22	876.96	438.48	733.82	367.45	5.53	-0.838	0.000	0.074
65.00	-4.09	-0.80	0.00	-20.91	0.00	20.91	853.97	426.99	688.66	344.84	6.43	-0.890	0.000	0.065
70.00	-3.82	-0.74	0.00	-16.92	0.00	16.92	830.35	415.17	644.40	322.68	7.39	-0.937	0.000	0.057
75.00	-3.56	-0.68	0.00	-13.23	0.00	13.23	804.33	402.17	599.80	300.34	8.39	-0.979	0.000	0.048
80.00	-3.30	-0.61	0.00	-9.86	0.00	9.86	771.92	385.96	552.20	276.51	9.44	-1.015	0.000	0.040
81.00	-3.16	-0.53	0.00	-9.24	0.00	9.24	765.44	382.72	542.91	271.86	9.65	-1.022	0.000	0.038
81.00	-3.16	-0.53	0.00	-9.24	0.00	9.24	565.49	282.74	47.12	40.00	9.65	-1.022	0.000	0.237
85.00	-2.92	-0.52	0.00	-7.12	0.00	7.12	565.49	282.74	47.12	40.00	10.52	-1.046	0.000	0.183
89.00	-2.07	-0.49	0.00	-5.04	0.00	5.04	565.49	282.74	47.12	40.00	11.64	-1.597	0.000	0.130
90.00	-2.01	-0.49	0.00	-4.54	0.00	4.54	565.49	282.74	47.12	40.00	11.99	-1.705	0.000	0.117
91.00	-1.78	-0.33	0.00	-4.05	0.00	4.05	565.49	282.74	47.12	40.00	12.35	-1.802	0.000	0.104
91.00	-1.78	-0.33	0.00	-4.05	0.00	4.05	318.09	159.04	19.88	16.88	12.35	-1.802	0.000	0.246
95.00	-1.64	-0.32	0.00	-2.75	0.00	2.75	318.09	159.04	19.88	16.88	14.00	-2.110	0.000	0.168
99.00	-1.03	-0.29	0.00	-1.46	0.00	1.46	318.09	159.04	19.88	16.88	16.05	-2.712	0.000	0.090
100.00	-1.00	-0.28	0.00	-1.18	0.00	1.18	318.09	159.04	19.88	16.88	16.62	-2.807	0.000	0.073
101.00	-0.81	-0.13	0.00	-0.89	0.00	0.89	318.09	159.04	19.88	16.88	17.22	-2.881	0.000	0.055
105.00	-0.69	-0.11	0.00	-0.36	0.00	0.36	318.09	159.04	19.88	16.88	19.72	-3.060	0.000	0.023
106.00	-0.15	-0.08	0.00	-0.24	0.00	0.24	318.09	159.04	19.88	16.88	20.36	-3.081	0.000	0.015
109.00	0.00	-0.07	0.00	0.00	0.00	0.00	318.09	159.04	19.88	16.88	22.31	-3.107	0.000	0.000

Final Analysis Summary

Structure: CT40876-T-SBA	Code: EIA/TIA-222-G	2/10/2017
Site Name: CT389/New Canaan C C	Exposure: C	
Height: 109.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Reactions

Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)
1.2D + 1.6W 93 mph Wind	6.0	0.00	10.12	0.00	0.00	389.41
0.9D + 1.6W 93 mph Wind	6.0	0.00	7.58	0.00	0.00	382.39
1.2D + 1.0Di + 1.0Wi 50 mph Wind	2.3	0.00	16.99	0.00	0.00	153.05
1.2D + 1.0E	0.5	0.00	10.13	0.00	0.00	46.14
0.9D + 1.0E	0.5	0.00	7.60	0.00	0.00	44.99
1.0D + 1.0W 60 mph Wind	1.6	0.00	8.44	0.00	0.00	100.50

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	-1.99	-1.30	0.00	-16.16	0.00	-16.16	565.49	282.74	47.12	40.00	91.00	0.964
0.9D + 1.6W 93 mph Wind	-1.46	-1.22	0.00	-15.01	0.00	-15.01	565.49	282.74	47.12	40.00	91.00	0.894
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-6.81	-0.91	0.00	-13.99	0.00	-13.99	765.44	382.72	542.91	271.86	81.00	0.362
1.2D + 1.0E	-2.13	-0.41	0.00	-5.39	0.00	-5.39	565.49	282.74	47.12	40.00	91.00	0.326
0.9D + 1.0E	-1.60	-0.39	0.00	-5.10	0.00	-5.10	565.49	282.74	47.12	40.00	91.00	0.307
1.0D + 1.0W 60 mph Wind	-1.78	-0.33	0.00	-4.05	0.00	-4.05	565.49	282.74	47.12	40.00	91.00	0.246


Base Plate Summary

Structure: CT40876-T-SB	Code: EIA/TIA-222-G	2/10/2017
Site Name: CT389/New Canaan C C	Exposure: C	
Height: 109.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Reactions	Base Plate	Anchor Bolts
Original Design	Yield (ksi): 50.00	Bolt Circle: 35.50
Moment (kip-ft): 272.00	Width (in): 36.00	Number Bolts: 4.00
Axial (kip): 5.90	Style: Clipped	Bolt Type: 1.75" #18J
Shear (kip): 4.70	Polygon Sides: 4.00	Bolt Diameter (in): 1.75
Analysis	Clip Length (in): 6.00	Yield (ksi): 75.00
Moment (kip-ft): 389.41	Effective Len (in): 17.21	Ultimate (ksi): 100.00
Axial (kip): 16.99	Moment (kip-in): 441.60	Arrangement: Radial
Shear (kip): 6.02	Allow Stress (ksi): 67.50	Cluster Dist (in): 6.00
	Applied Stress (ksi): 0.00	Start Angle (deg): 45.00
Moment Design %: 143.16	Stress Ratio: 0.74	Compression
		Force (kip): 135.88
		Allowable (kip): 152.00
		Ratio: 0.91
		Tension
		Force (kip): 127.38
		Allowable (kip): 152.00
		Ratio: 0.86

	Pier Foundation Design For Monopole			Date
				2/10/2017
	Customer Name:	T-Mobile	EIA/TIA Standard:	EIA-222-G
	Site Name:		Structure Height (Ft.):	109
	Site Number:	CT40876-T-SBA	Engineer Name:	B. Davis
Engr. Number:	30275	Engineer Login ID:		

Foundation Info Obtained from:

Drawings/Calculations	Acceptable overstress (%)
Monopole	
Analysis	

Structure Type:

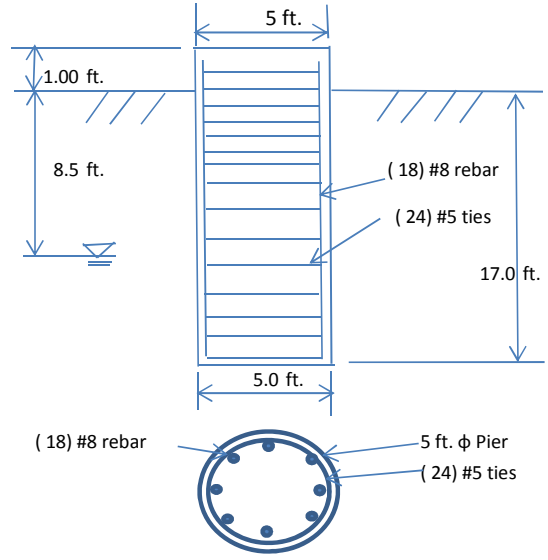
Analysis or Design?

Base Reactions (Factored):

Axial Load (Kips):	10.1	Shear Force (Kips):	6.0
Uplift Force (Kips):	0.0	Moment (Kips-ft):	389.4

Foundation Geometries:

Mods required -Yes/No ?:	No		ft.
Diameter of Pier (ft.):	5.0	Depth of Base B. G. S. :	17.0 ft.
Pier Height A. G. (ft.):	1.00		



Monopole Pier Foundation

Material Properties and Rebar Info:

Concrete Strength (psi):	4000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield strength:	60	ksi
Vertical Rebar Size #:	8	Tie / Stirrup Size #:	5	
Qty. of Vertical Rebars:	18	Tie Spacing:	12.0	in.
Concrete Cover (in.):	3	Concrete unit weight:	150.0	pcf

Soil Design Parameters:

Water Table B.G.S. (ft):	8.5	Unit weight of water:	62.4	psf
Ratio of Uplift/Axial Skin Friction:	1.0	Pullout failure Angle:	30	(°)
Skin Frictions are to be obtained from:	Soil Report			

Depth of Layers (ft)		γ_{soil} (pcf)	ϕ (°)	Cohesion (psf)	Ultimate Skin Friction (psf)	Ultimate Bearing (psf)	Soil Types					
Top	Bottom											
0.0	4.0	135	0	0	0	0						
4.0	17.0	135	32	0	1000	20000						
17.0	22.0											

Soil weight Increase Factor for bouyant soils (1.0 to 1.15): 1.1

Foundation Analysis and Design:

Uplift Strength Reduction Factor:	0.75	Soil Bearing Strength Reduction Factor:	0.75
Total Dry Soil Volume from Conical Failure (cu. Ft.):	2464	Dry Soil Weight from Conical Failure:	333 Kips
Total Buoyant Soil Volume from Conical Failure (cu. Ft.):	542	Buoyant Soil Weight from Conical Failure (K)	19 Kips
Total Dry Concrete Volume (cu. Ft.):	187	Total Dry Concrete Weight:	28.0 Kips
Total Buoyant Concrete Volume (cu. Ft.):	166.9	Total Buoyant Concrete Weight:	14.62 Kips
Total Effective Concrete Weight (Kips):	42.6	Total Effective Soil Weight:	351.8 Kips
Total Effective Vertical Load on Base (Kips):	24.3		

Check Soil Capacities:

Allowable Foundation Overturning Resistance (kips-ft.):	1578.1	>	Design Factored Moment (kips-ft):	464	Usage	0.29	OK!
Factor of Safety of Passive Soil Resistance against Moment:	3.40	OK!					

Check the capacities of Reinforceing Concrete:

Strength reduction factor (Flexure and axial tension):	0.90		Strength reduction factor (Shear):	0.75			
Strength reduction factor (Axial compression):	0.65		Wind Load Factor on Concrete Design:	1.00			
Reinforcing Concrete Pier:					Usage		
Vertical Steel Rebar Area (sq. in./each):	0.79		Tie / Stirrup Area (sq. in./each):	0.31			
Calculated Moment Capacity (Mn,Kips-Ft):	1705.0	>	Design Factored Moment (Mu, K-Ft):	411.5	Usage	0.24	OK!
Calculated Shear Capacity (Kips):	562.8	>	Design Factored Shear (Kips):	63.8	Usage	0.11	OK!
Calculated Tension Capacity (Tn, Kips):	767.9	>	Design Factored Tension (Tu Kips):	0.0	Usage	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	4974	>	Design Factored Axial Load (Pu Kips):	10.1	Usage	0.00	OK!
Moment & Axial Strength Combination:	0.24	OK!	Max. Allowable Tie/Stirrup Spacing:	12.00		in.	
Pier Reinforcement Ratio:	0.005		Reinforcement Ratio is too small				

SITE NAME: CT389/NEW CANAAN C C

95 COUNTRY ROAD
NEW CANAAN, CT 06840
FAIRFIELD COUNTY

SITE NUMBER: CT11389A
PROJECT: T-MOBILE L700

CONFIGURATION: 704Bu

T-MOBILE TECHNICIAN SITE SAFETY NOTES	
LOCATION	SPECIAL RESTRICTIONS
ANTENNA/TMA	
SECTOR A:	ACCESS NOT PERMITTED
SECTOR B:	ACCESS NOT PERMITTED
SECTOR C:	ACCESS NOT PERMITTED
GPS/LMU:	UNRESTRICTED*
	(*CAUTION: OSHA-APPROVED PORTABLE 8' STEP-LADDER REQUIRED)
RRUs:	UNRESTRICTED
RADIO CABINETS:	UNRESTRICTED
PPC DISCONNECT:	UNRESTRICTED
MAIN CIRCUIT D/C:	UNRESTRICTED
NIU/T DEMARC:	UNRESTRICTED
OTHER/SPECIAL:	NONE



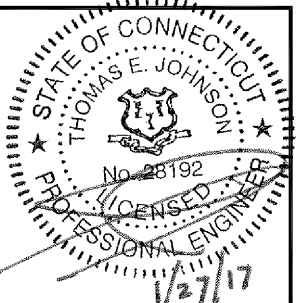
T-MOBILE NORTHEAST LLC
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
OFFICE: (860) 648-1116



SBA COMMUNICATIONS CORP.
33 BOSTON POST ROAD WEST, SUITE 320
MARLBOROUGH, MA 01752 TEL: (508) 251-0720



4 Bay Road, Building A
Suite 200
Hadley, MA 01035 Ph: (413) 320-4918



CHECKED BY: JMM/TEJ

APPROVED BY: JMM/TEJ

SUBMITTALS			
REV.	DATE	DESCRIPTION	BY
0	01/27/17	ISSUED FOR CONSTRUCTION	TBD

SITE NUMBER:
CT11389A
SITE NAME:
CT389/NEW CANAAN C C

SITE ADDRESS:
95 COUNTRY ROAD
NEW CANAAN, CT 06840
FAIRFIELD COUNTY

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

GENERAL NOTES

- THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF T-MOBILE NORTHEAST, LLC. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.
- THE FACILITY IS AN UNMANNED PRIVATE AND SECURED EQUIPMENT INSTALLATION. IT IS ONLY ACCESSED BY TRAINED TECHNICIANS FOR PERIODIC ROUTINE MAINTENANCE AND THEREFORE DOES NOT REQUIRE ANY WATER OR SANITARY SEWER SERVICE. THE FACILITY IS NOT GOVERNED BY REGULATIONS REQUIRING PUBLIC ACCESS PER ADA REQUIREMENTS.
- CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE T-MOBILE NORTHEAST, LLC REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

SPECIAL CONSTRUCTION NOTES

- TOWER OWNER SHALL PROVIDE GLOBAL STRUCTURAL STABILITY ANALYSIS OF EXISTING ANTENNA SUPPORT STRUCTURE. GENERAL CONTRACTOR SCOPE OF WORK SHALL INCLUDE ALL REQUIRED STRUCTURAL MODIFICATIONS, RE-BUNDLING OF COAXIAL CABLES OR OTHER SPECIAL MODIFICATIONS AS OUTLINED THEREIN.
- ENGINEER-OF-RECORD HAS MADE A VISUAL ASSESSMENT ONLY OF EXISTING ANTENNA MOUNT ASSEMBLIES, WITHOUT THE BENEFIT OF A RIGOROUS ANTENNA MOUNT STRUCTURAL ANALYSIS, AND RECOMMENDS THAT EXISTING AND PROPOSED TOWER TOP EQUIPMENT BE INSTALLED AS DEPICTED HEREIN. STRUCTURAL DETAILS AS DEPICTED HEREIN FOR MODIFICATION OF EXISTING ANTENNA MOUNT ASSEMBLIES ARE PRELIMINARY ONLY AND THAT FINAL CONSTRUCTION DETAILS MAY BE SUBJECT TO CHANGE PENDING THE COMPLETION OF A SEPARATE SUPPLEMENTAL ANTENNA MOUNT STRUCTURAL ASSESSMENT, SUPPLEMENTAL STRUCTURAL MAPPING/CONDITIONS ASSESSMENT REPORT AND/OR SUPPLEMENTAL RIGOROUS ANTENNA MOUNT STRUCTURAL ANALYSIS.
- PROTERRA DESIGN GROUP ASSUMES THAT THE TOWER IS PROPERLY CONSTRUCTED AND MAINTAINED. ALL STRUCTURAL MEMBERS AND THEIR CONNECTIONS ARE ASSUMED TO BE IN GOOD CONDITION AND ARE FREE FROM DEFECTS WITH NO DETERIORATION TO ITS MEMBER CAPACITIES



PROJECT INFORMATION

SCOPE OF WORK: UNMANNED TELECOMMUNICATIONS FACILITY T-MOBILE EQUIPMENT MODERNIZATION

ZONING JURISDICTION: SPECIAL ZONING NOTE (ELIGIBLE FACILITY REQUEST): BASED ON INFORMATION PROVIDED BY T-MOBILE REGULATORY COMPLIANCE PROFESSIONALS AND LEGAL COUNSEL, THIS TELECOMMUNICATIONS EQUIPMENT DEPLOYMENT IS CONSIDERED AN ELIGIBLE FACILITY UNDER THE MIDDLE CLASS TAX RELIEF AND JOB CREATION ACT OF 2012, 47 USC 1455(A), SECTION 6409(A), AND IS SUBJECT TO AN ELIGIBLE FACILITY REQUEST, EXPEDITED REVIEW AND LIMITED/PARTIAL ZONING PRE-EMPTION FOR LOCAL DISCRETIONARY PERMITS (VARIANCE, SPECIAL PERMIT, SITE PLAN REVIEW OR ADMINISTRATIVE REVIEW).

T-MOBILE E911 ADDRESS: 95 COUNTRY ROAD NEW CANAAN, CT 06840

SBA BUSINESS ADDRESS: 95 COUNTRY ROAD NEW CANAAN, CT 06840

LATITUDE: 41.173802 (FROM T-MOBILE RFDS)

LONGITUDE: -73.496958 (FROM T-MOBILE RFDS)

JURISDICTION: TOWN OF NEW CANAAN

CURRENT USE: TELECOMMUNICATIONS FACILITY

PROPOSED USE: TELECOMMUNICATIONS FACILITY

TOWER OWNER: SBA MONARCH TOWERS III, LLC

SBA SITE ID: CT40876-T

SBA SITE NAME: CT389/NEW CANAAN C C

SBA REGIONAL SITE MANAGER: SUSAN HART (919) 625-2286

APPROVALS

APPROVAL	DATE
PROJECT MANAGER	DATE
CONSTRUCTION	DATE
RF ENGINEERING	DATE
ZONING / SITE ACQ.	DATE
OPERATIONS	DATE
TOWER OWNER	DATE



DIG SAFE SYSTEM
(MA, ME, NH, RI, VT):
1-888-344-7233



CALL BEFORE YOU DIG
(CT): 1-800-922-4455

UNDERGROUND SERVICE ALERT

DRAWING INDEX

SHEET NO.	DESCRIPTION	REV.
T-1	TITLE SHEET	0
GN-1	GENERAL NOTES	0
A-1	COMPOUND & ELEVATION PLAN	0
A-2	EXISTING & PROPOSED ANTENNA PLAN	0
A-3	DETAILS	0
A-4	DETAILS	0
A-5	DETAILS	0
E-1	ONE-LINE DIAGRAM & GROUNDING DETAILS	0

GROUNDING NOTES

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

GENERAL NOTES

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:

CONTRACTOR – SBA COMMUNICATIONS CORP.
SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
OWNER – T-MOBILE
2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.
3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
4. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.
5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
6. "KITTING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY CONTRACTOR. ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.
7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.
9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.
10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.
11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
13. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.
14. ANY NEW CONCRETE NEEDED FOR CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.
15. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (FY = 36 KSI) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E (FY = 35 KSI). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCHUP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.
16. CONSTRUCTION SHALL COMPLY WITH UMS SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF T-MOBILE SITES."
17. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
18. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
19. SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.
20. APPLICABLE BUILDING CODES:
SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.

BUILDING CODE: 2016 CONNECTICUT STATE BUILDING CODE WITH AMENDMENTS

ELECTRICAL CODE: 2014 NATIONAL ELECTRICAL CODE AND AMENDMENTS

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

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

AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)

MANUAL OF STEEL CONSTRUCTION, ASD, NINTH EDITION;

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

ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES; REFER TO ELECTRICAL DRAWINGS FOR SPECIFIC ELECTRICAL STANDARDS.

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

ABBREVIATIONS

AGL	ABOVE GRADE LEVEL	EQ	EQUAL	REQ	REQUIRED
AWG	AMERICAN WIRE GAUGE	G.C.	GENERAL CONTRACTOR	RF	RADIO FREQUENCY
BTCW	BARE TINNED SOLID COPPER WIRE	GRC	GALVANIZED RIGID CONDUIT	TBD	TO BE DETERMINED
BGR	BURIED GROUND RING	MGB	MASTER GROUND BAR	TBR	TO BE REMOVED
BTS	BASE TRANSCEIVER STATION	MIN	MINIMUM	TBRR	TO BE REMOVED AND REPLACED
EXISTING	EXISTING OR (E)	PROPOSED	NEW OR (P)	TYP	TYPICAL
EGB	EQUIPMENT GROUND BAR	N.T.S.	NOT TO SCALE	VIF	VERIFY IN FIELD
EGR	EQUIPMENT GROUND RING	RAD	RADIATION CENTERLINE (ANTENNA)		
		REF	REFERENCE		

T-Mobile

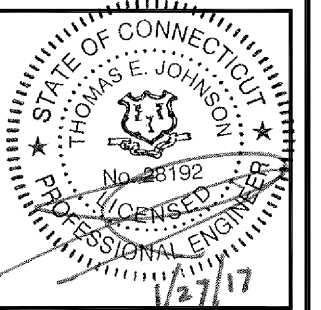
T-MOBILE NORTHEAST LLC
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
OFFICE: (860) 648-1116



SBA COMMUNICATIONS CORP.
33 BOSTON POST ROAD WEST, SUITE 320
MARLBOROUGH, MA 01752 TEL: (508) 251-0720

ProTerra
DESIGN GROUP, LLC

4 Bay Road, Building A
Suite 200
Hadley, MA 01035 Ph: (413) 320-4918



CHECKED BY: JMM/TEJ

APPROVED BY: JMM/TEJ

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
0	01/27/17	ISSUED FOR CONSTRUCTION	TBD

SITE NUMBER:

CT11389A

SITE NAME:

CT389/NEW CANAAN C C

SITE ADDRESS:

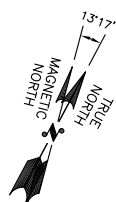
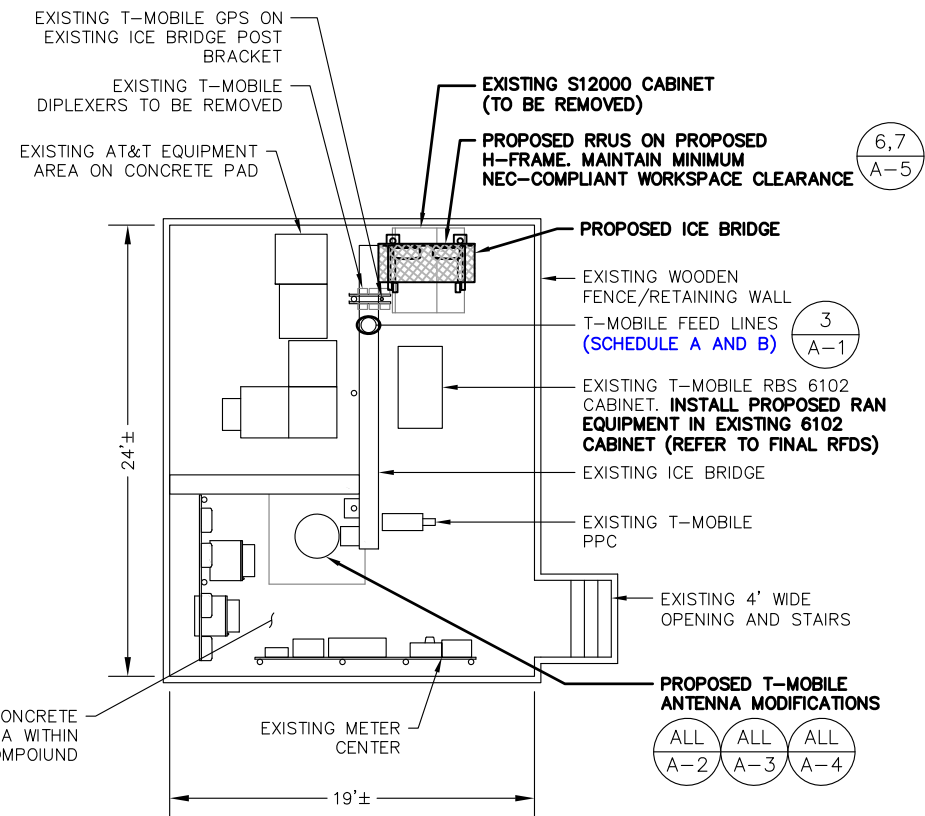
95 COUNTRY ROAD
NEW CANAAN, CT 06840
FAIRFIELD COUNTY

SHEET TITLE

GENERAL NOTES

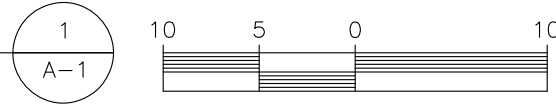
SHEET NUMBER

GN-1



COMPOUND PLAN

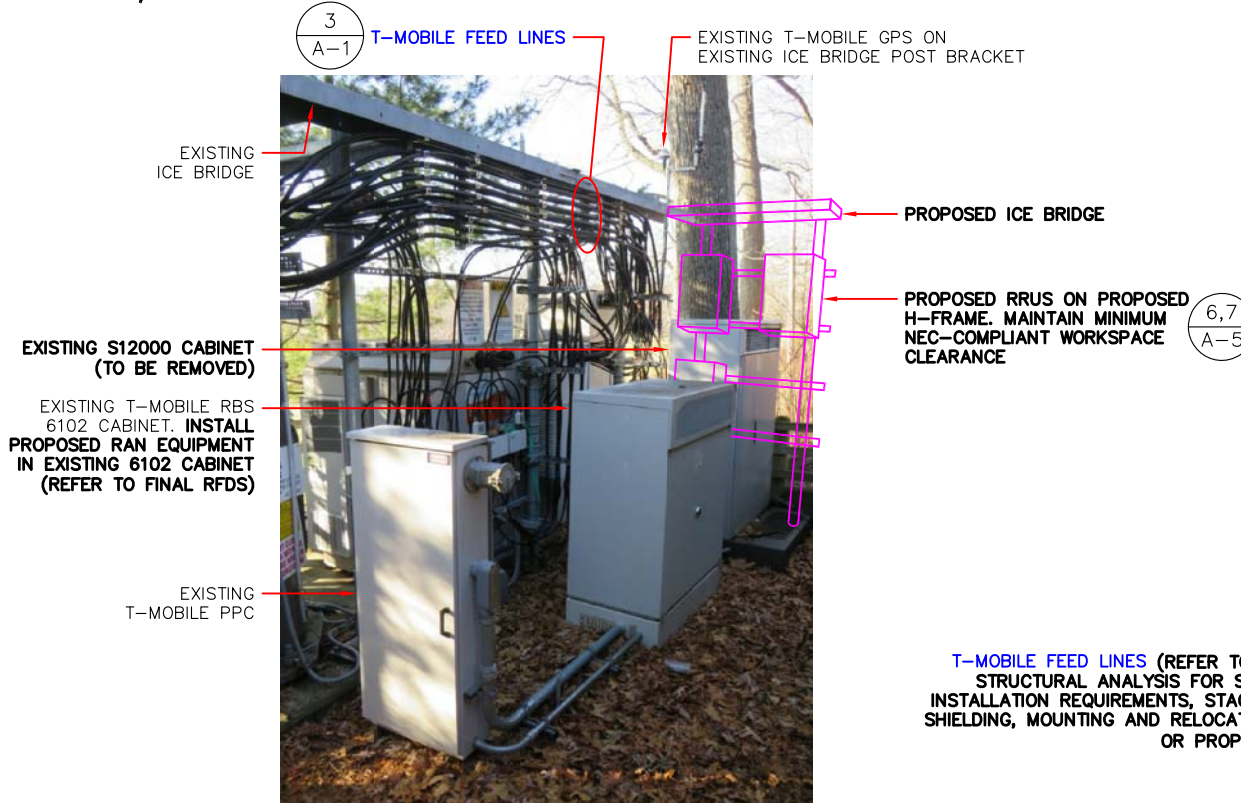
SCALE: 1"=10' (11"x17")
1"=5' (22"x34")



ANTENNA MOUNT STRUCTURAL DESIGN NOTE:
ENGINEER-OF-RECORD HAS MADE A VISUAL ASSESSMENT ONLY OF EXISTING ANTENNA MOUNT ASSEMBLIES, WITHOUT THE BENEFIT OF A RIGOROUS ANTENNA MOUNT STRUCTURAL ANALYSIS, AND RECOMMENDS THAT EXISTING AND PROPOSED TOWER TOP EQUIPMENT BE INSTALLED AS DEPICTED HEREIN. STRUCTURAL DETAILS AS DEPICTED HEREIN FOR MODIFICATION OF EXISTING ANTENNA MOUNT ASSEMBLIES ARE PRELIMINARY ONLY AND THAT FINAL CONSTRUCTION DETAILS MAY BE SUBJECT TO CHANGE PENDING THE COMPLETION OF A SEPARATE SUPPLEMENTAL ANTENNA MOUNT STRUCTURAL ASSESSMENT, SUPPLEMENTAL STRUCTURAL MAPPING/CONDITIONS ASSESSMENT REPORT AND/OR SUPPLEMENTAL RIGOROUS ANTENNA MOUNT STRUCTURAL ANALYSIS.

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EQUIPMENT PHOTO DETAIL
SCALE: N.T.S.

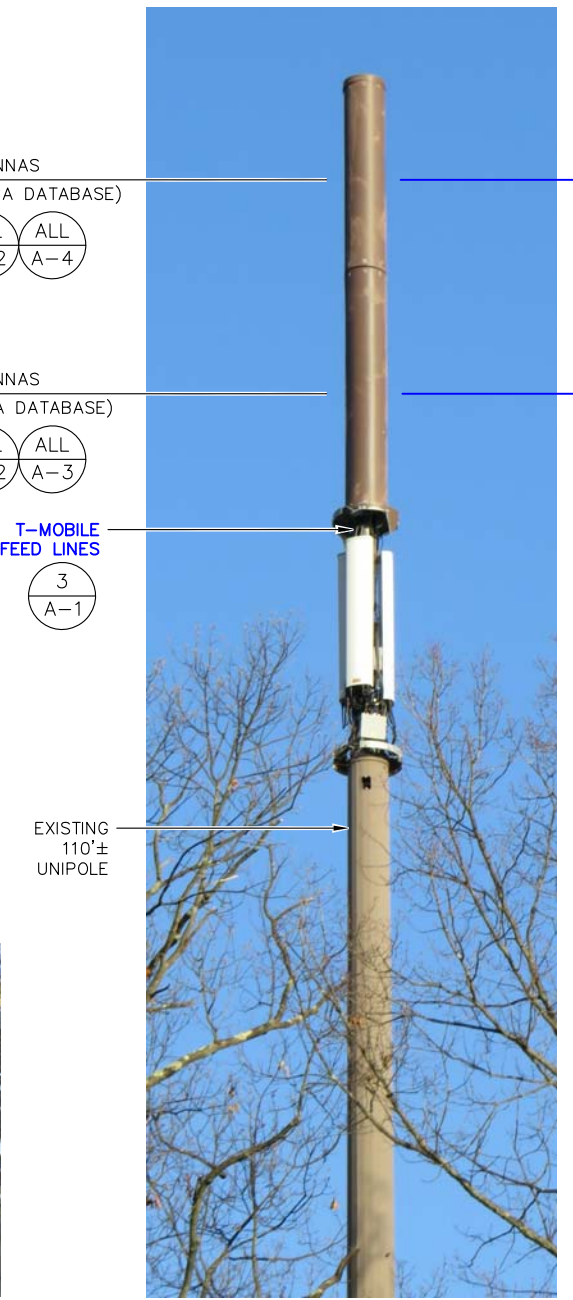
IMAGE SOURCE: PROTERRA 01/20/17

FEEDLINE SCHEDULE	FEEDLINE DESCRIPTION	LOCATION
A	EXISTING: TO BE REMOVED: (12) 1 1/2" COAX TO 106' RAD PROPOSED: (12) 1/2" COAX TO 106' RAD	UP INSIDE UNIPOLE TO RAD
B	PROPOSED: (6) 1/2" COAX TO 99' RAD	UP INSIDE UNIPOLE TO RAD

NOTE: EXISTING T-MOBILE EQUIPMENT FEEDLINE INVENTORY BASED ON OBSERVED FIELD CONDITIONS. RFDS AND FEEDLINE LEASING ENTITLEMENTS MAY DIFFER



FEEDLINE PHOTO DETAIL AT TOWER BASE
SCALE: N.T.S.

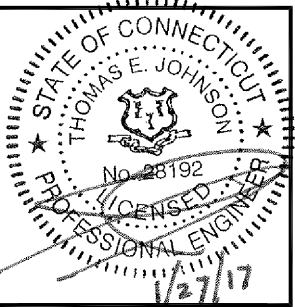


PARTIAL ELEVATION PHOTO DETAIL
SCALE: N.T.S.

T-Mobile
T-MOBILE NORTHEAST LLC
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
OFFICE: (860) 648-1116

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SBA COMMUNICATIONS CORP.
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Hadley, MA 01035 Ph: (413)320-4918



CHECKED BY: JMM/TEJ

APPROVED BY: JMM/TEJ

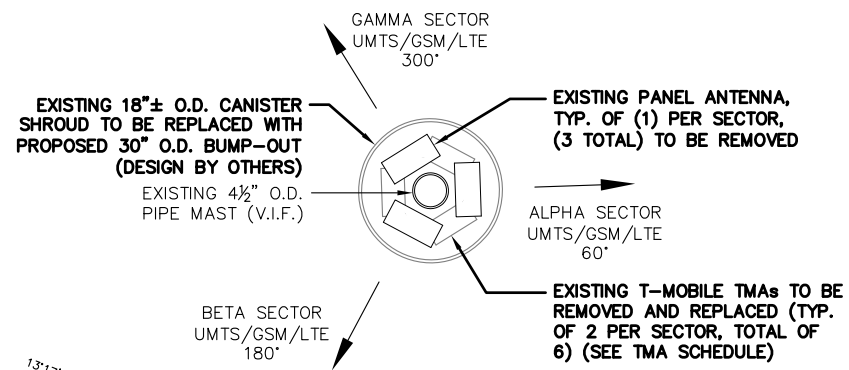
SUBMITTALS

REV.	DATE	DESCRIPTION	BY
0	01/27/17	ISSUED FOR CONSTRUCTION	TBD

SITE NUMBER:
CT11389A
SITE NAME:
CT389/NEW CANAAN C C
SITE ADDRESS:
95 COUNTRY ROAD
NEW CANAAN, CT 06840
FAIRFIELD COUNTY

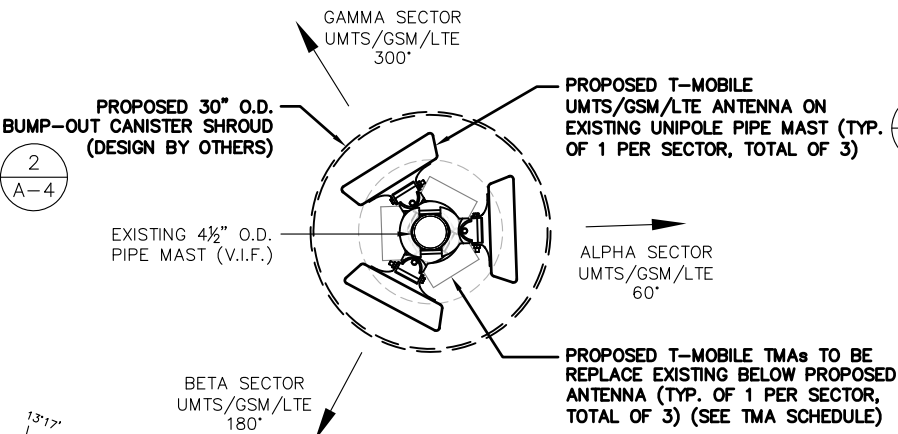
SHEET TITLE
COMPOUND & ELEVATION PLAN

SHEET NUMBER
A-1



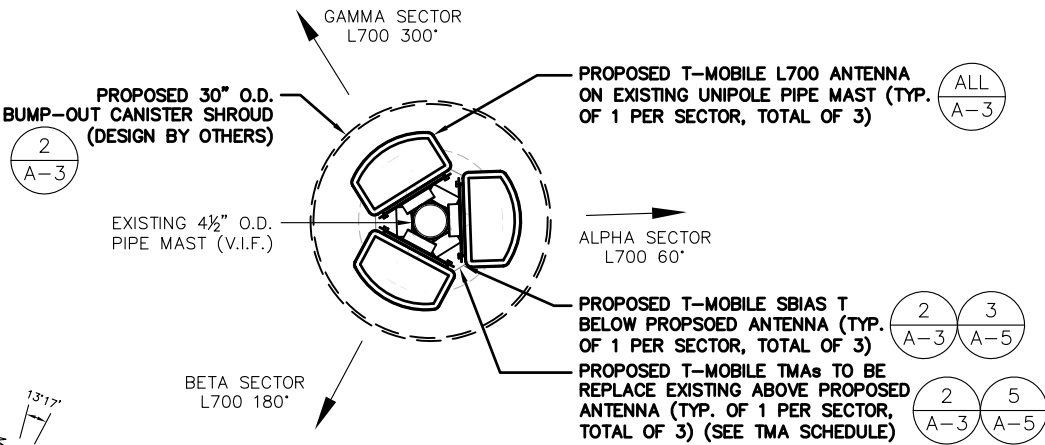
EXISTING ANTENNA PLAN AT 106' RAD CENTER ELEVATION
SCALE: N.T.S.

1
A-2



PROPOSED ANTENNA PLAN AT 106' RAD CENTER ELEVATION
SCALE: N.T.S.

2
A-2



PROPOSED ANTENNA PLAN AT 99' RAD CENTER ELEVATION
SCALE: N.T.S.

3
A-2

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

TMA SCHEDULE		
RAD ELEVATION	EXISTING	PROPOSED
106'±	(3) PCS TWIN TMAs TO BE REMOVED; (3) AWS TWIN TMAs TO BE REUSED;	PROPOSED (3) TWIN PCS TMAs
99'±	N/A	PROPOSED (3) TWIN AWS TMAs

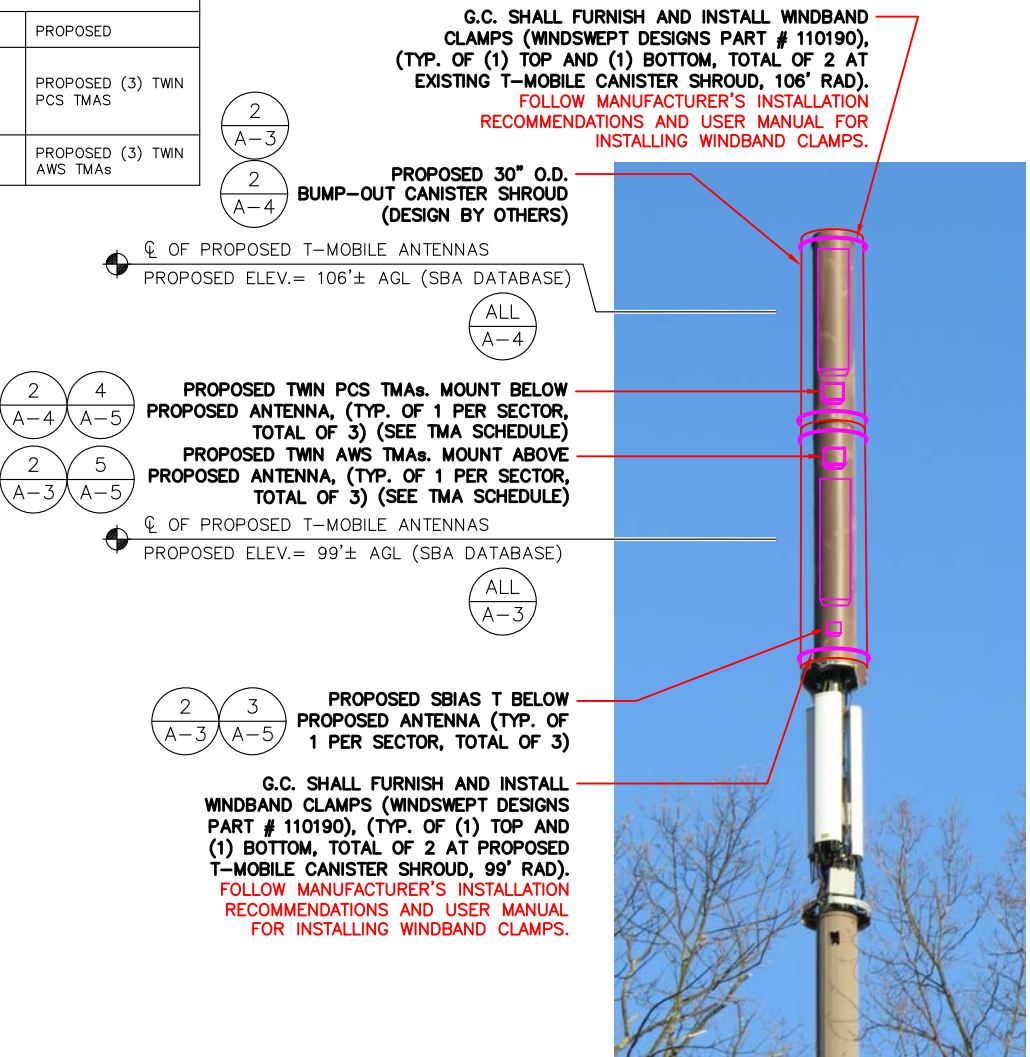


IMAGE SOURCE: PROTERRA 01/20/17
NOTE: ONE SECTOR SHOWN FOR CLARITY

ANTENNA PHOTO DETAIL
SCALE: N.T.S.

3
A-2

T-Mobile
T-MOBILE NORTHEAST LLC
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
OFFICE: (860) 648-1116

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STATE OF CONNECTICUT
THOMAS E. JOHNSON
No. 28192
PROFESSIONAL ENGINEER
1/27/17

CHECKED BY: JMM/TEJ

APPROVED BY: JMM/TEJ

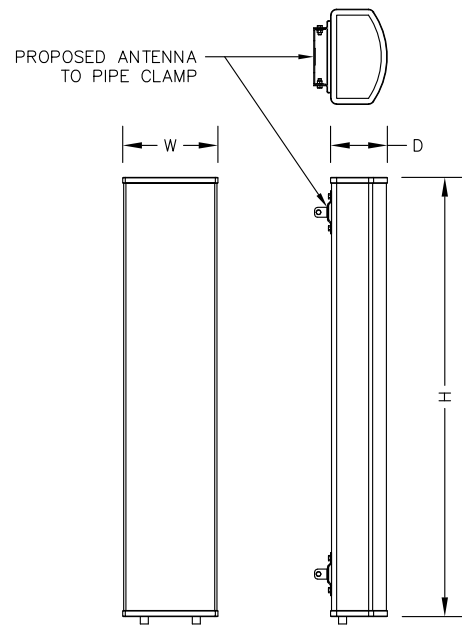
SUBMITTALS

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SITE NUMBER:
CT11389A
SITE NAME:
CT389/NEW CANAAN C C
SITE ADDRESS:
95 COUNTRY ROAD
NEW CANAAN, CT 06840
FAIRFIELD COUNTY

SHEET TITLE
EXISTING & PROPOSED
ANTENNA PLAN

SHEET NUMBER
A-2



L700 ANTENNA SPECIFICATIONS

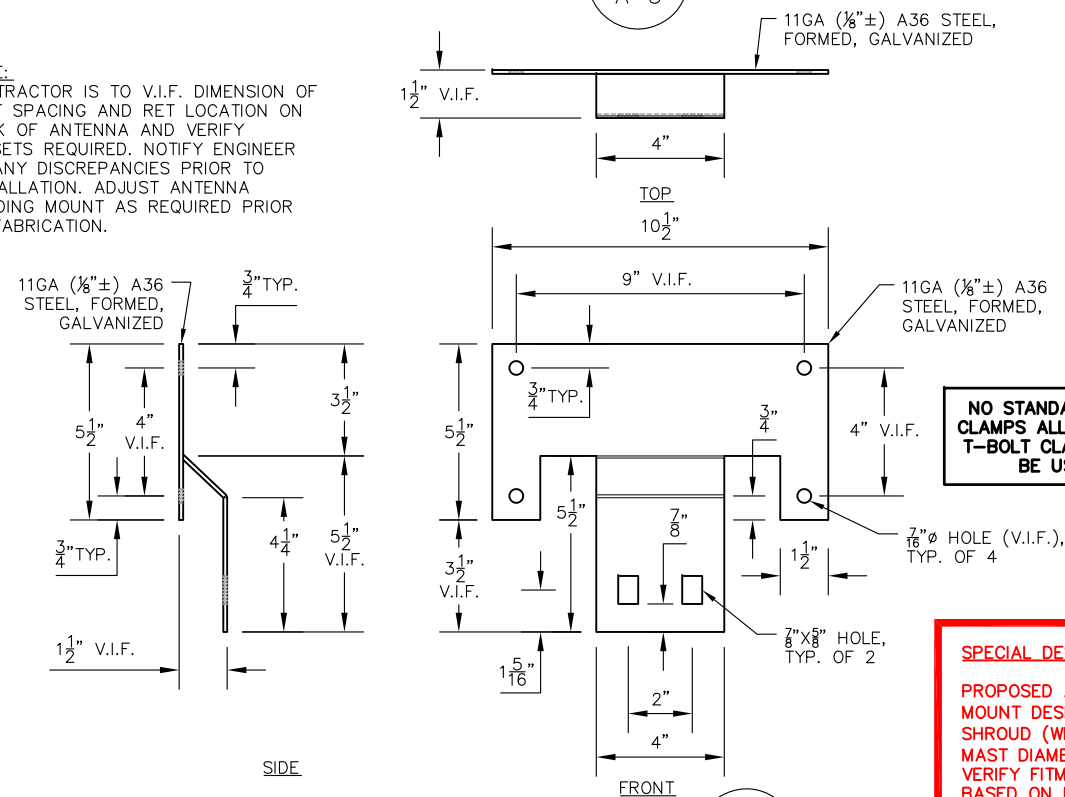
MANUF.	COMMSCOPE
MODEL #	LNx-6512DS-A1M
HEIGHT	48.5"
WIDTH	11.9"
DEPTH	7.1"
WEIGHT	28.7± LBS.

L700 ANTENNA DETAIL

SCALE: N.T.S.

1
A-3

NOTE:
CONTRACTOR IS TO V.I.F. DIMENSION OF BOLT SPACING AND RET LOCATION ON BACK OF ANTENNA AND VERIFY OFFSETS REQUIRED. NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO INSTALLATION. ADJUST ANTENNA BANDING MOUNT AS REQUIRED PRIOR TO FABRICATION.



ANTENNA BANDING MOUNT

SCALE: N.T.S.

2
A-3

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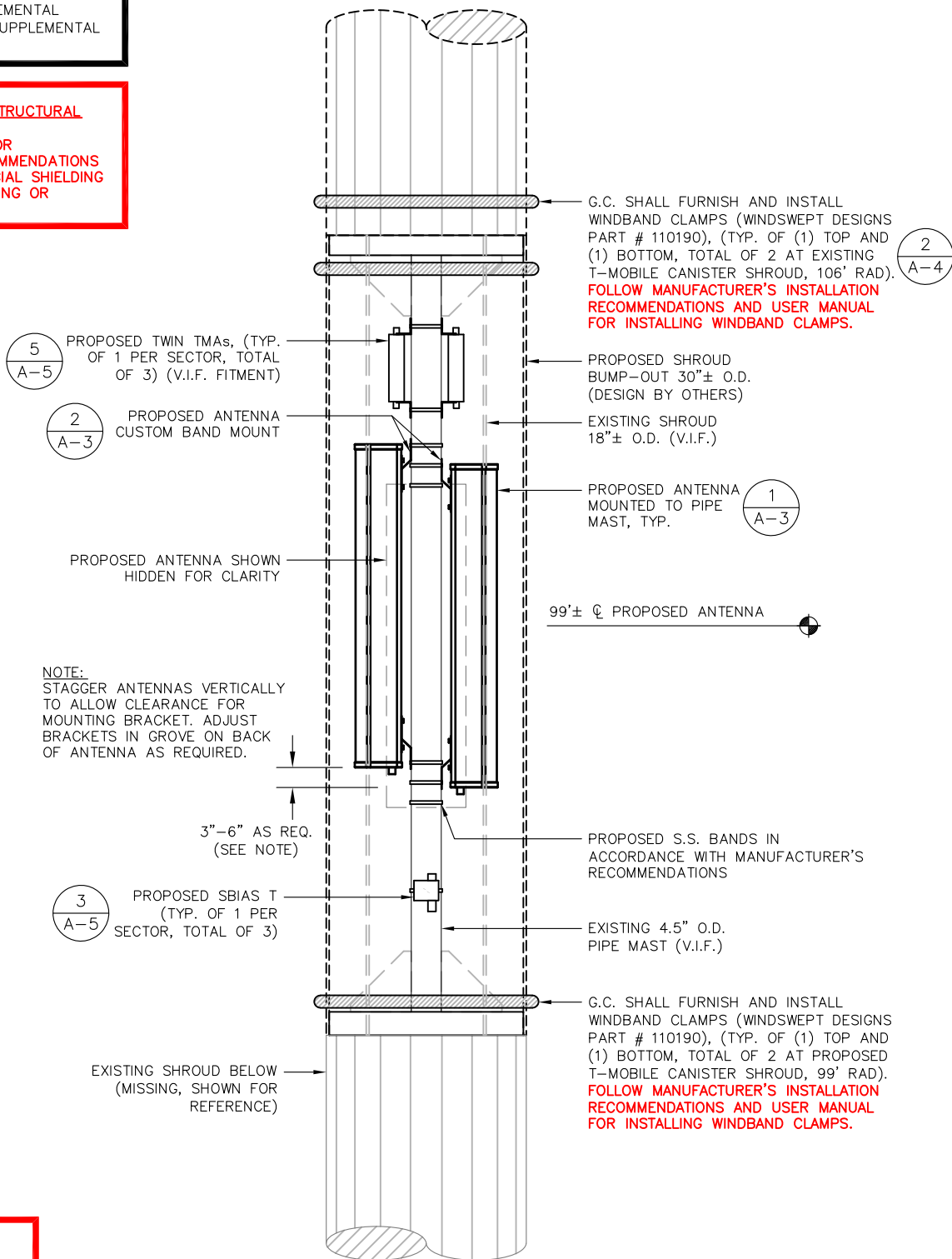
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NOTE:
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

NO STANDARD HOSE CLAMPS ALLOWED. S.S. T-BOLT CLAMPS MAY BE USED.

SPECIAL DESIGN NOTE:
PROPOSED ANTENNAS INSTALLED WITH CUSTOM BAND MOUNT DESIGNED TO FIT WITHIN PROPOSED 30" O.D. SHROUD (WITH MAX. 3/8" WALL THICKNESS) FOR PIPE MAST DIAMETER OF 4.5" O.D. CONTRACTOR SHALL VERIFY FITMENT OF ANTENNAS UTILIZING THIS BRACKET BASED ON FINAL DESIGN OF PROPOSED BUMP-OUT (DESIGN BY OTHERS) AND NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO INSTALLATION.



PROPOSED ANTENNA MOUNTING DETAIL AT 99' RAD

SCALE: N.T.S.

3
A-3

T-Mobile
T-MOBILE NORTHEAST LLC
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
OFFICE: (860) 648-1116

SBA
SBA COMMUNICATIONS CORP.
33 BOSTON POST ROAD WEST, SUITE 320
MARLBOROUGH, MA 01752 TEL: (508) 251-0720

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STATE OF CONNECTICUT
THOMAS E. JOHNSON
No. 28192
PROFESSIONAL ENGINEER
1/27/17

CHECKED BY: JMM/TEJ

APPROVED BY: JMM/TEJ

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
0	01/27/17	ISSUED FOR CONSTRUCTION	TBD

SITE NUMBER:
CT11389A
SITE NAME:
CT389/NEW CANAAN C C
SITE ADDRESS:
95 COUNTRY ROAD
NEW CANAAN, CT 06840
FAIRFIELD COUNTY

SHEET TITLE
DETAILS

SHEET NUMBER
A-3

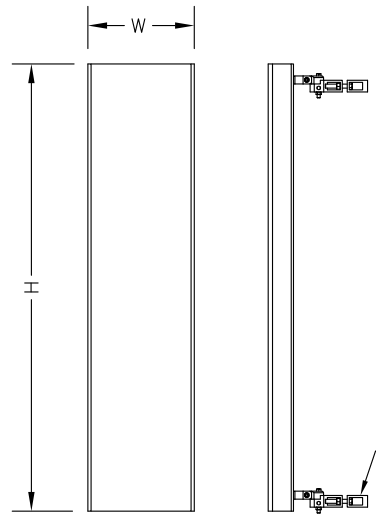
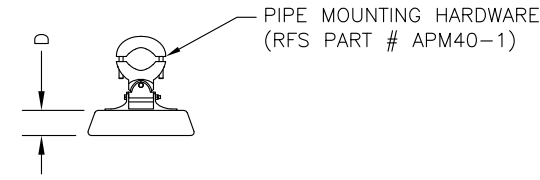
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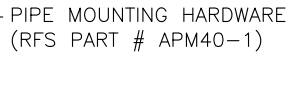
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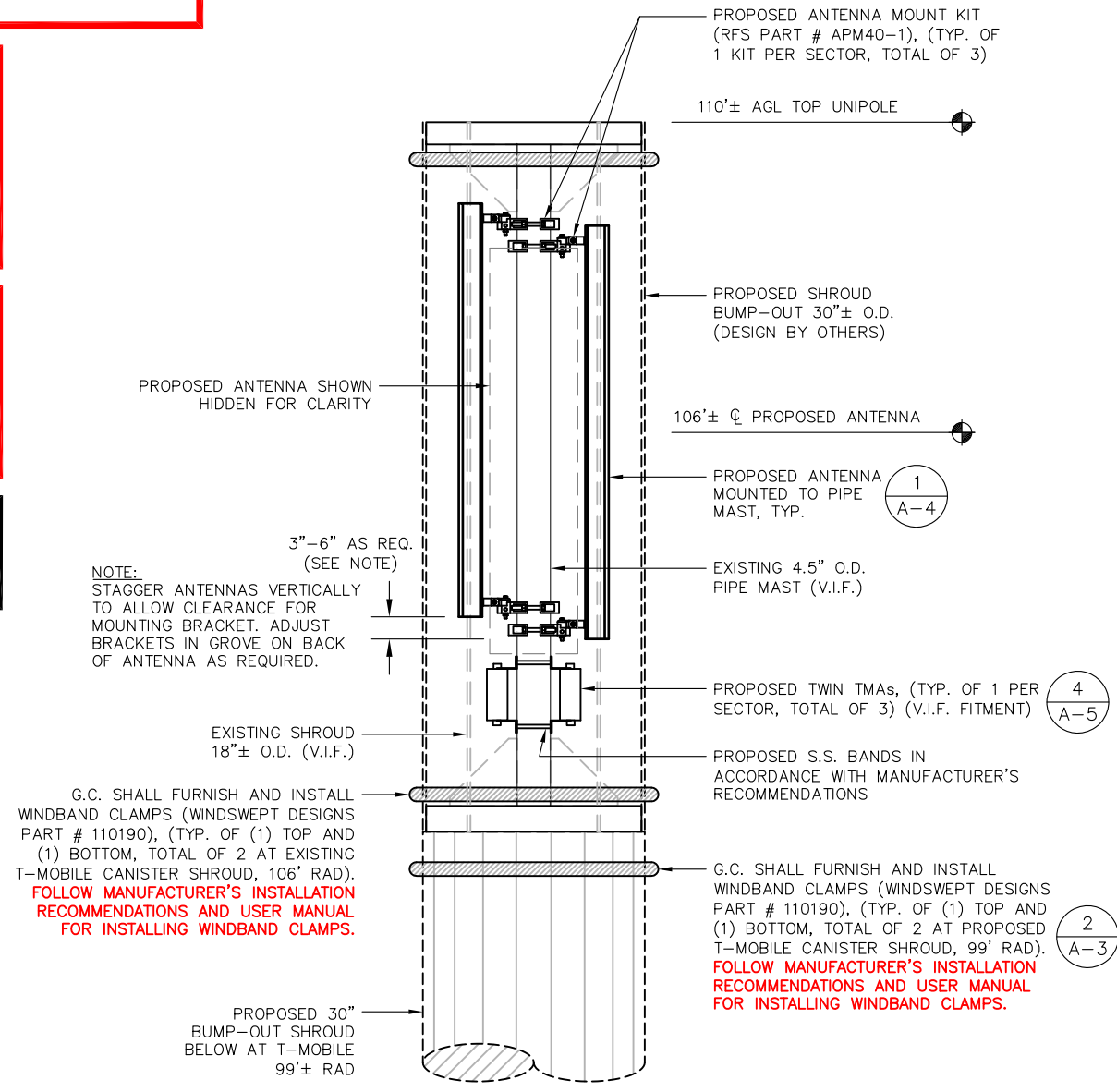
NOTE:
 REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.



GSM/UMTS/LTE ANTENNA DIMENSIONS	
MODEL#	APX16DWV
MANUF.	RFS
HEIGHT	55.9"
WIDTH	13.3"
DEPTH	3.15"
WEIGHT	40.7 lbs.



GSM/UMTS/LTE ANTENNA DETAIL 1
 SCALE: N.T.S. A-4



PROPOSED ANTENNA MOUNTING DETAIL AT 106' RAD 2
 SCALE: N.T.S. A-4

T-Mobile
T-MOBILE NORTHEAST LLC
 35 GRIFFIN ROAD SOUTH
 BLOOMFIELD, CT 06002
 OFFICE: (860) 648-1116

SBA

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STATE OF CONNECTICUT
 THOMAS E. JOHNSON
 No. 28192
 PROFESSIONAL ENGINEER
 1/27/17

CHECKED BY: JMM/TEJ

APPROVED BY: JMM/TEJ

SUBMITTALS

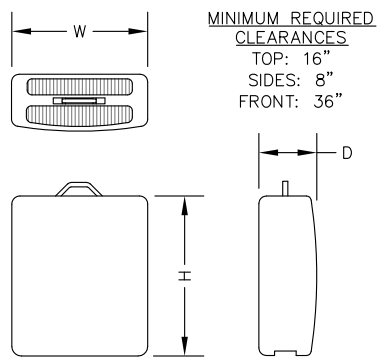
REV.	DATE	DESCRIPTION	BY
0	01/27/17	ISSUED FOR CONSTRUCTION	TBD

SITE NUMBER:
CT11389A
 SITE NAME:
CT389/NEW CANAAN C C

SITE ADDRESS:
 95 COUNTRY ROAD
 NEW CANAAN, CT 06840
 FAIRFIELD COUNTY

SHEET TITLE
 DETAILS

SHEET NUMBER
 A-4



SBT SPECIFICATIONS	
MANUF.	COMMSCOPE
MODEL #	ATSBT-TOP-FM-4G
HEIGHT	5.63"
WIDTH	3.7"
DEPTH	2.0"
WEIGHT	1.8 LBS.

SMART BIAS TEE (SBT)
SCALE: N.T.S.

TWIN TMA SPECIFICATIONS	
MANUF.	ERICSSON
MODEL #	KRY 112 144/1
HEIGHT	6.9"
WIDTH	6.1"
DEPTH	2.8"
WEIGHT	11 LBS.

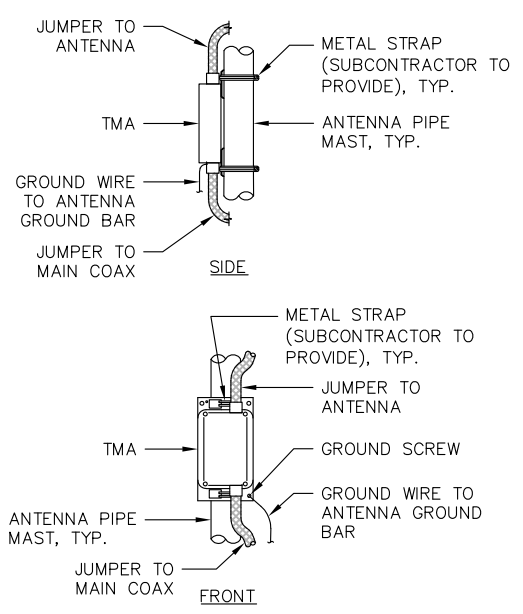
TWIN TMA
SCALE: N.T.S.

TWIN TMA SPECIFICATIONS	
MANUF.	RFS
MODEL #	ATMAA1412D-1A20
HEIGHT	12"
WIDTH	10"
DEPTH	4"
WEIGHT	13 LBS

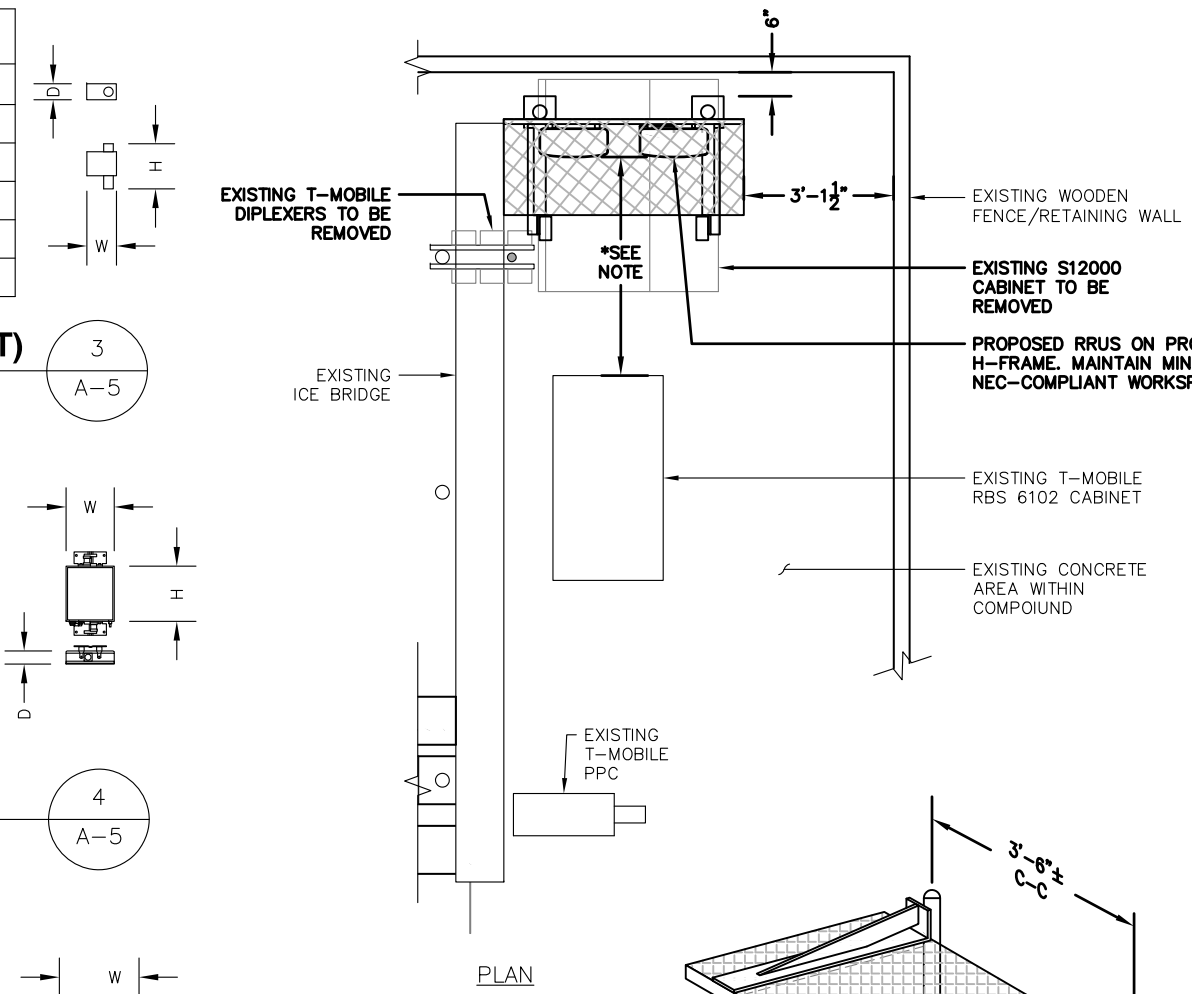
TWIN TMA
SCALE: N.T.S.

RRU SPECIFICATIONS	
MANUF.	ERICSSON
MODEL #	RRUS11 B12
HEIGHT	20"
WIDTH	17"
DEPTH	7"
WEIGHT	50.7 LBS.

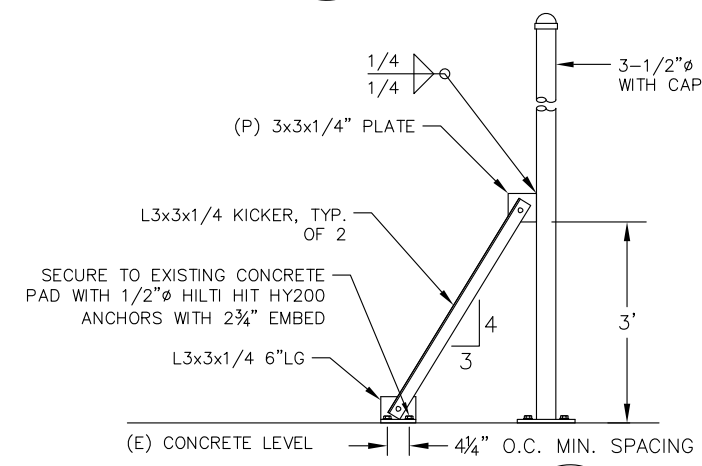
REMOTE RADIO UNIT (RRU)
SCALE: N.T.S.



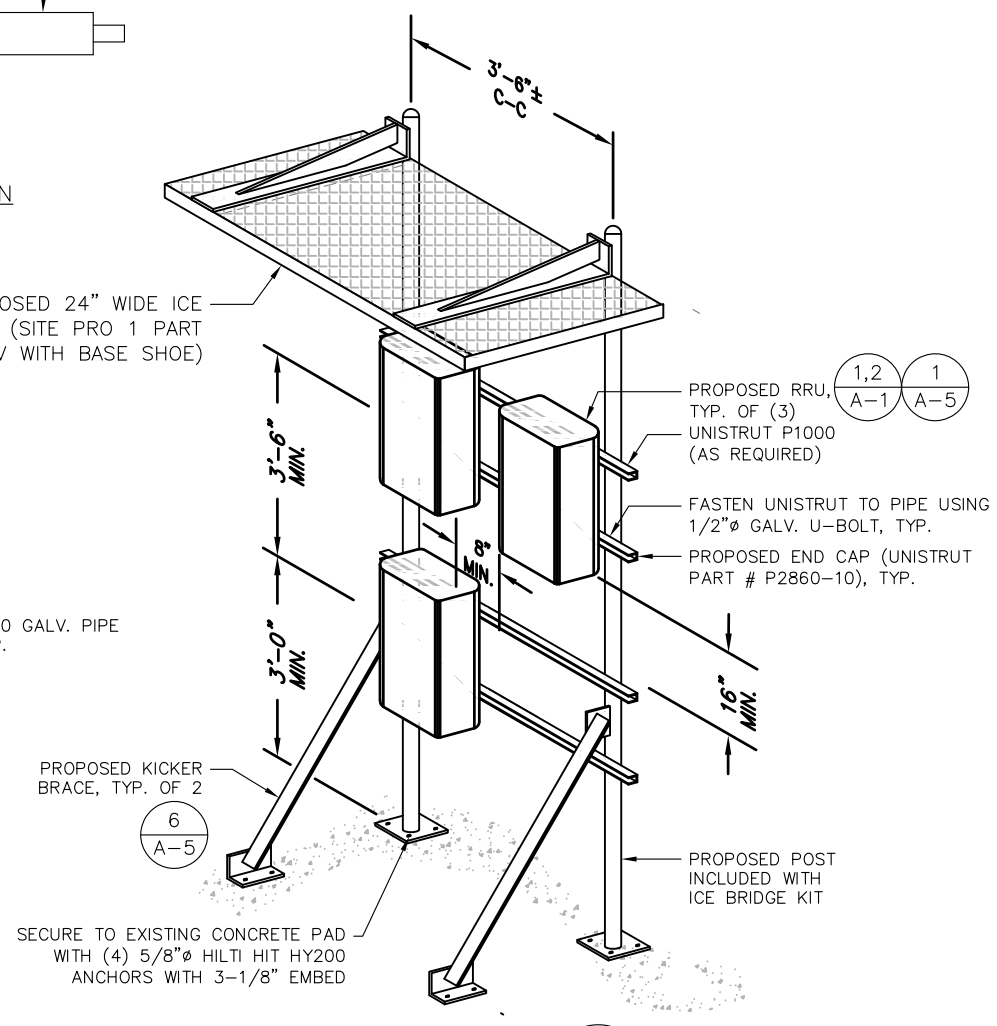
TMA MOUNTING DETAIL
SCALE: N.T.S.



PROPOSED 24" WIDE ICE BRIDGE KIT (SITE PRO 1 PART # 1B24D-V WITH BASE SHOE)



KICKER DETAIL
SCALE: N.T.S.



OUTDOOR RRU RACK
SCALE: N.T.S.

T-Mobile
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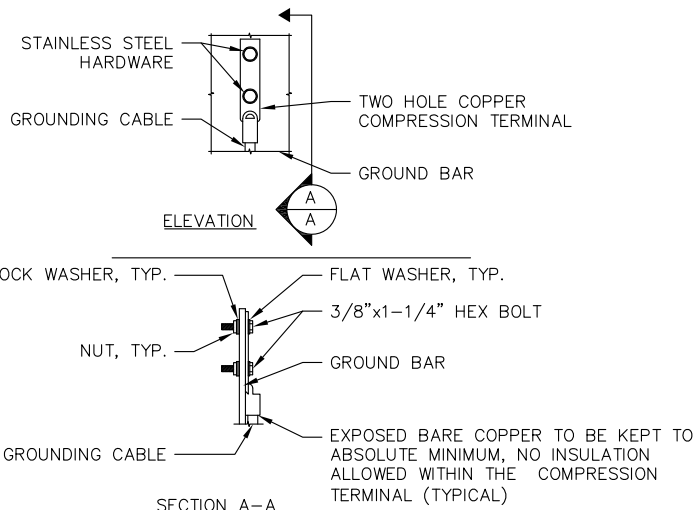
SUBMITTALS			
REV.	DATE	DESCRIPTION	BY
0	01/27/17	ISSUED FOR CONSTRUCTION	TBD

SITE NUMBER:
CT11389A
SITE NAME:
CT389/NEW CANAAN C C

SITE ADDRESS:
95 COUNTRY ROAD
NEW CANAAN, CT 06840
FAIRFIELD COUNTY

SHEET TITLE
DETAILS

SHEET NUMBER
A-5

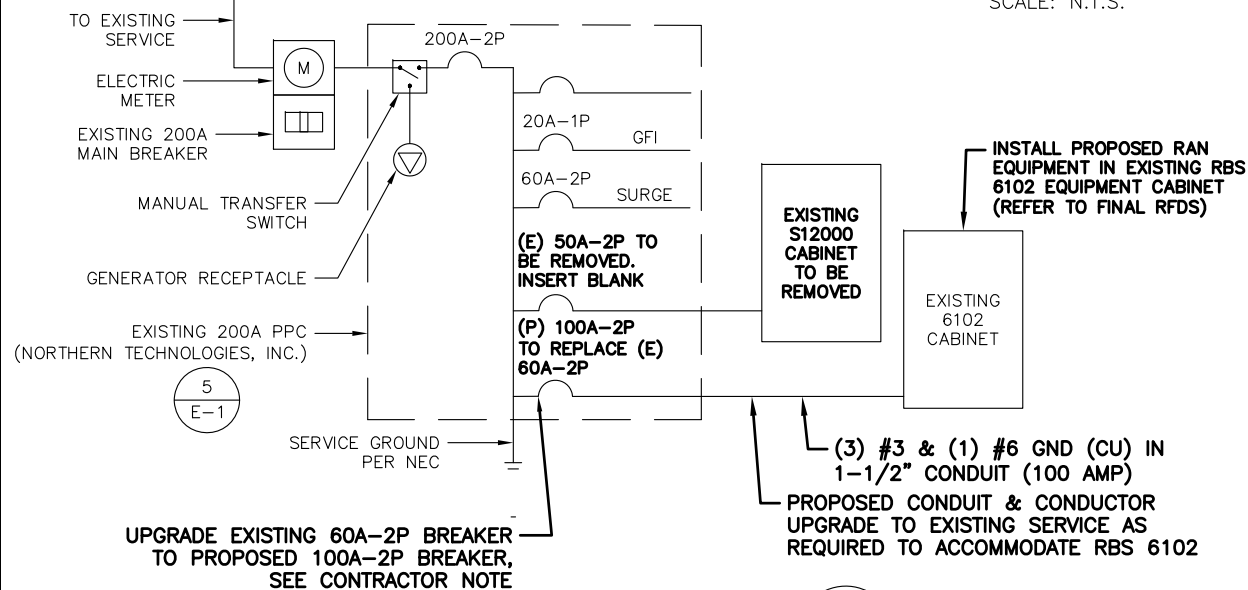


- NOTES:**
- "DOUBLING UP" OR "STACKING" OF CONNECTION IS NOT PERMITTED.
 - OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.
 - CADWELD DOWNLEADS FROM UPPER EGB, LOWER EGB, AND MGB.

TYPICAL GROUND BAR CONNECTION DETAIL

SCALE: N.T.S.

1
E-1



UPGRADE EXISTING 60A-2P BREAKER TO PROPOSED 100A-2P BREAKER, SEE CONTRACTOR NOTE

ONE LINE POWER SCHEMATIC

SCALE: N.T.S.

4
E-1

ELECTRICAL LEGEND

A	AMPERE		
V	VOLT		
KWH	KILOWATT - HOUR		
C	CONDUIT		
GRC	GALVANIZED RIGID CONDUIT		
BTCW	BARE TINNED (SOLID) COPPER WIRE (#2 AWG, UNLESS NOTES OTHERWISE)		
G	GROUND		
MGB	MASTER GROUND BAR	○ MECHANICAL CONNECTION	
AGB/EGB	EQUIPMENT GROUND BAR/ANTENNA GROUND BAR	● CADWELD CONNECTION	
C	GROUND COPPER WIRE, SIZE AS NOTED		
—	EXPOSED WIRING		
—	INSULATED GROUNDING CONDUCTOR (#6 AWG STRANDED, UNLESS NOTED OTHERWISE)		
○	5/8"x10" COPPER CLAD STAINLESS STEEL GROUND ROD		
○	EXOTHERMIC (CAD WELD) OR MECHANICAL (COMPRESSION TYPE) CONNECTION		
PPC	POWER PROTECTION CABINET		
⊗	OMNI-DIRECTIONAL ELECTRONIC MARKER SYSTEM (EMS) BALL		

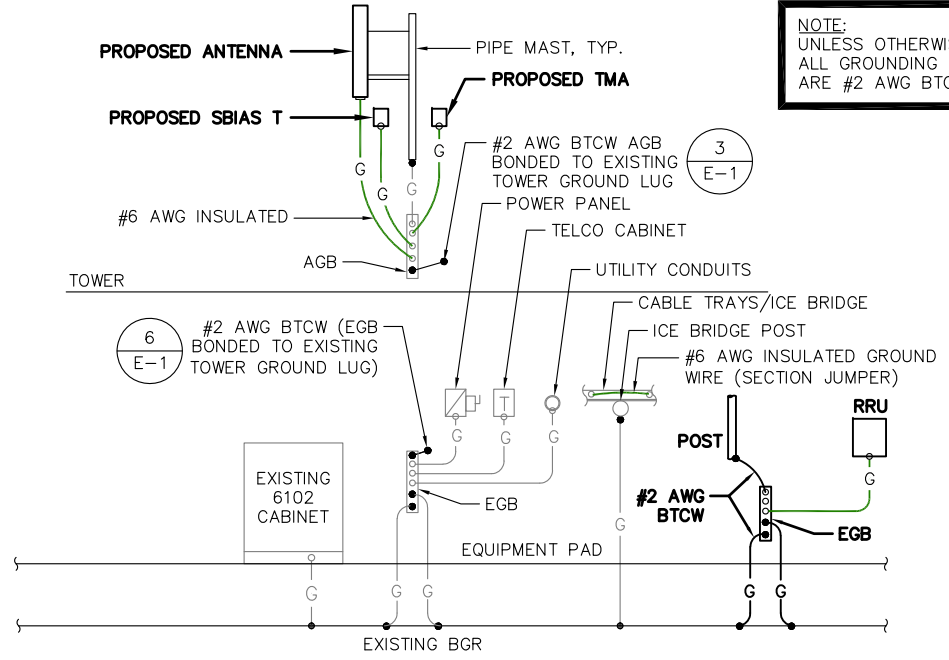
CONTRACTOR NOTE:

G.C. TO VERIFY THAT THE EXISTING CONDUITS AND WIRE SIZES ARE ADEQUATE FOR THE PROPOSED LOADING IN ACCORDANCE WITH NEC AND INCLUDE ELECTRICAL UPGRADES IN THE SCOPE OF WORK AS REQUIRED.

ELECTRICAL & GROUNDING NOTES:

- ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) 2014 AS WELL AS APPLICABLE STATE AND LOCAL CODES.
- ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED PER SPECIFICATION REQUIREMENTS.
- THE ELECTRICAL WORK INCLUDES ALL LABOR AND MATERIAL DESCRIBED BY DRAWINGS AND SPECIFICATIONS INCLUDING INCIDENTAL WORK TO PROVIDE COMPLETE OPERATING AND APPROVED ELECTRICAL SYSTEM.
- GENERAL CONTRACTOR SHALL PAY FEES FOR PERMITS, AND IS RESPONSIBLE FOR OBTAINING SAID PERMITS AND COORDINATION OF INSPECTIONS.
- ELECTRICAL AND TELCO WIRING OUTSIDE A BUILDING AND EXPOSED TO WEATHER SHALL BE IN WATER TIGHT GALVANIZED RIGID STEEL CONDUITS OR SCHEDULE 80 PVC (AS PERMITTED BY CODE) AND WHERE REQUIRED IN LIQUID TIGHT FLEXIBLE METAL OR NONMETALLIC CONDUITS.
- RIGID STEEL CONDUITS SHALL BE GROUNDED AT BOTH ENDS.
- ELECTRICAL WIRING SHALL BE COPPER WITH TYPE XHHW, THWN, OR THHN INSULATION AS REQUIRED BY NEC.
- RUN ELECTRICAL CONDUIT OR CABLE BETWEEN ELECTRICAL ROOM AND PROPOSED CELL SITE POWER PEDESTAL AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE. COORDINATE INSTALLATION WITH UTILITY COMPANY.
- RUN TELCO CONDUIT OR CABLE BETWEEN TELEPHONE UTILITY DEMARCATION POINT AND PROPOSED CELL SITE TELCO CABINET AND BTS CABINET AS INDICATED ON DRAWING A-1. PROVIDE FULL LENGTH PULL ROPE IN INSTALLED TELCO CONDUIT. PROVIDE GREENLEE CONDUIT MEASURING TAPE AT EACH END.
- ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.
- GROUNDING SHALL COMPLY WITH NEC ART. 250.

NOTE:
UNLESS OTHERWISE NOTED, ALL GROUNDING CONDUCTORS ARE #2 AWG BTCW



TYPICAL GROUNDING RISER DIAGRAM

SCALE: N.T.S.

2
E-1



IMAGE SOURCE: PROTERRA 01/20/17

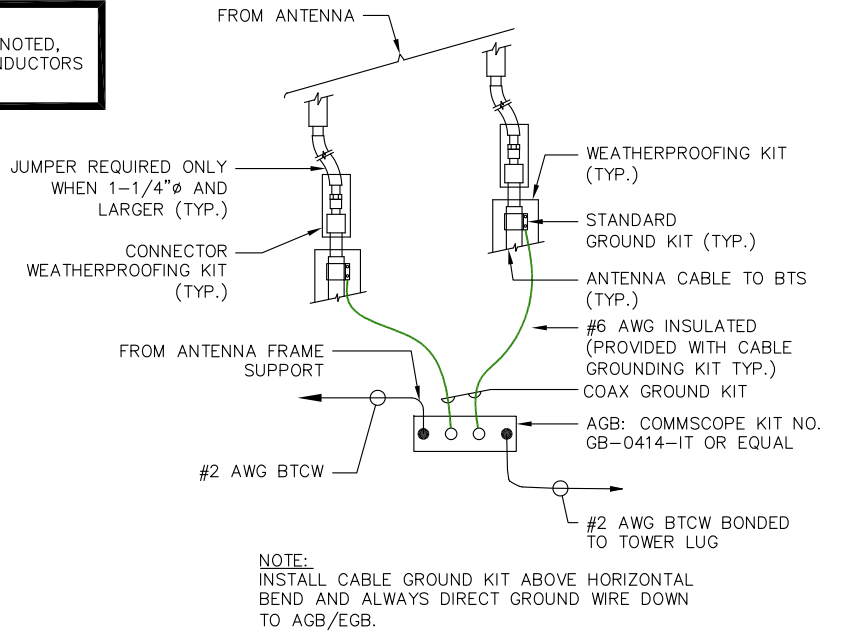


IMAGE SOURCE: PROTERRA 01/20/17

PHOTO DETAIL: PPC PANEL

SCALE: N.T.S.

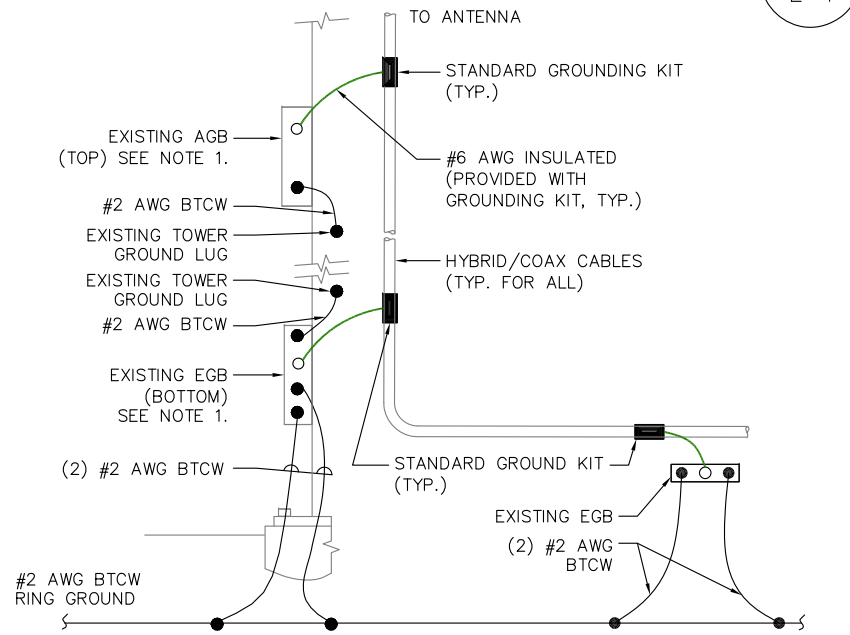
5
E-1



TOWER TOP CABLE GROUNDING DETAIL

SCALE: N.T.S.

3
E-1



- NOTE:**
- NUMBER OF GROUND BARS MAY VARY DEPENDING ON THE TYPE OF TOWER, ANTENNA LOCATION, AND CONNECTION ORIENTATION. PROVIDE ADDITIONAL AGB/EGB AS REQUIRED.
 - A SEPARATE GROUND BAR TO BE USED FOR GPS ANTENNA IF REQUIRED

TOWER BOTTOM CABLE GROUNDING DETAIL

SCALE: N.T.S.

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E-1

T-Mobile
T-MOBILE NORTHEAST LLC
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SBA
SBA COMMUNICATIONS CORP.
33 BOSTON POST ROAD WEST, SUITE 320
MARLBOROUGH, MA 01752
TEL: (508) 251-0720

ProTerra
DESIGN GROUP, LLC
4 Bay Road, Building A
Suite 200
Hadley, MA 01035 Ph: (413) 320-4918

STATE OF CONNECTICUT
THOMAS E. JOHNSON
No. 28192
PROFESSIONAL ENGINEER
1/27/17

CHECKED BY: JMM/TEJ

APPROVED BY: JMM/TEJ

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SHEET TITLE
ONE-LINE DIAGRAM & GROUNDING DETAILS

SHEET NUMBER
E-1