



Filed by:

*Kri Pelletier, Property Specialist - SBA Communications
134 Flanders Rd., Suite 125, Westborough, MA 01581
508.251.0720 x 3804 - kpelletier@sbsite.com*

February 1, 2016

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

Notice of Exempt Modification
151 Sand Hill Road, South Windsor, CT 06074
41.8359919 N
-72.5519989 W
AT&T #: 10035389_LTE

Dear Ms. Bachman:

AT&T currently maintains nine (9) antennas at the 170-foot level of the existing 188-foot Monopole Tower at 151 Sand Hill Road. The tower is owned by SBA Properties, Inc. The property is owned by the Town of South Windsor. AT&T now intends to swap three (3) existing LTE antennas with three (3) new LTE antennas. These antennas would be installed at the 170-foot level of the tower. AT&T also intends to:

Remove:

- None

Remove and Replace:

- Remove (3) existing KMW AM-X-CD-16-65 panel antennas and replace with (3) new CCI HPA-65R-BUU-H6 panel antennas

Install:

- (3) Ericsson RRUS-12 Remote Radio Units with (3) RRUS A2 Modules
- (1) 1/2" Fiber Cable

Existing Equipment to Remain (Entitlements):

- All Existing Equipment located within existing Equipment shelter
- (6) Powerwave 7770 panel antenna
- (3) KMW AM-X-CD-16-65 panel antennas (Reserved Entitlement)
- (3) Ericsson RRUS-11 Remote Radio Unit



- (3) Ericsson RRUS-11 Remote Radio Unit (Reserved Entitlement)
- (1) Raycap DC6 Surge Suppressor
- (6) CCI DTMAPB - TMA/TTA (3 Reserved, 3 Installed)
- (6) ADC CG-1900 - TMA/TTA (3 Reserved, 3 Installed)
- (12) Kathrein 782 Diplexer
- (3) CSS DBC Combiner
- (3) Commscope ABT-DRDM Bias-T
- (12) 1-5/8" Coax Lines
- (1) 3" conduit with fiber/DC power cables listed below:
 - (1) 1/2" Fiber Cable
 - (2) 3/4" DC Power Cable

This facility was approved by the Town of South Windsor's Planning and Zoning Commission under Application #00-30P on 10/3/2000 after receiving a variance from the Zoning Board of Appeals on February 3, 2000. The approval included the condition that the tower be painted non-contrasting blue, gray or black, designed to collapse upon itself, must accommodate at least two additional users and all utilities were to be installed underground. 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 the Honorable Saud Anwar, Mayor of the Town of South Windsor, as well as the property owner. (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.



For the foregoing reasons, AT&T 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,

A handwritten signature in blue ink, appearing to read "Kri Pelletier", is positioned below the word "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: The Honorable Saud Anwar, Mayor of the Town of South Windsor—as elected official
Town Hall, 1540 Sullivan Ave, South Windsor, CT 06074
The Town of South Windsor— as property owner
c/o Town Manager, Town Hall, 1540 Sullivan Avenue, South Windsor, CT 06074



POWER DENSITY
AT&T Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	Powerwave 7770.00	Make / Model:	Powerwave 7770.00	Make / Model:	Powerwave 7770.00
Gain:	11.4 / 13.4 dBd	Gain:	11.4 / 13.4 dBd	Gain:	11.4 / 13.4 dBd
Height (AGL):	170 feet	Height (AGL):	170 feet	Height (AGL):	170 feet
Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	120	Total TX Power(W):	120	Total TX Power(W):	120
ERP (W):	2,140.89	ERP (W):	2,140.89	ERP (W):	2,140.89
Antenna A1 MPE%	0.37	Antenna B1 MPE%	0.37	Antenna C1 MPE%	0.37
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	CCI HPA-65R-BUU-H6	Make / Model:	CCI HPA-65R-BUU-H6	Make / Model:	CCI HPA-65R-BUU-H6
Gain:	11.95 / 14.75 dBd	Gain:	11.95 / 14.75 dBd	Gain:	11.95 / 14.75 dBd
Height (AGL):	170 feet	Height (AGL):	170 feet	Height (AGL):	170 feet
Frequency Bands	700 MHz / 1900 MHz (PCS)	Frequency Bands	700 MHz / 1900 MHz (PCS)	Frequency Bands	700 MHz / 1900 MHz (PCS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	240	Total TX Power(W):	240	Total TX Power(W):	240
ERP (W):	5,462.56	ERP (W):	5,462.56	ERP (W):	5,462.56
Antenna A2 MPE%	1.02	Antenna B2 MPE%	1.02	Antenna C2 MPE%	1.02
Antenna #:	3	Antenna #:	3	Antenna #:	3
Make / Model:	KMW AM-X-CD-16-65-00T-RET	Make / Model:	KMW AM-X-CD-16-65-00T-RET	Make / Model:	KMW AM-X-CD-16-65-00T-RET
Gain:	13.85 / 15.254 dBd	Gain:	13.85 / 15.254 dBd	Gain:	13.85 / 15.254 dBd
Height (AGL):	170 feet	Height (AGL):	170 feet	Height (AGL):	170 feet
Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	120	Total TX Power(W):	120	Total TX Power(W):	120
ERP (W):	3,465.76	ERP (W):	3,465.76	ERP (W):	3,465.76
Antenna A3 MPE%	0.61	Antenna B3 MPE%	0.61	Antenna C3 MPE%	0.61

Site Composite MPE%	
Carrier	MPE%
AT&T – Max per sector	2.00 %
Town	0.77 %
Sprint	0.84 %
MetroPCS	0.22 %
Clearwire	0.09 %
Nextel	0.28 %
Verizon Wireless	2.87 %
T-Mobile	1.70 %
Site Total MPE %:	8.77 %

AT&T Sector 1 Total:	2.00 %
AT&T Sector 2 Total:	2.00 %
AT&T Sector 3 Total:	2.00 %
Site Total:	8.77 %

AT&T _ 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
AT&T 850 MHz UMTS	2	414.12	170	1.11	850	567	0.20 %
&T 1900 MHz (PCS) UMTS	2	656.33	170	1.75	1900	1000	0.18 %
AT&T 850 MHz LTE	2	940.05	170	2.51	700	467	0.54 %
T&T 1900 MHz (PCS) LTE	2	1791.23	170	4.79	1900	1000	0.48 %
AT&T 850 MHz GSM	2	727.98	170	1.95	850	567	0.34 %
T&T 1900 MHz (PCS) GSM	2	1004.90	170	2.69	1900	1000	0.27 %
Total:							2.00 %



Tower Engineering Solutions

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

Structural Analysis Report

Existing 187 ft SABRE Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT07824-S

Customer Site Name: South Windsor

Carrier Name: AT&T

Carrier Site ID / Name: FA# 10035389 USID# 59386

Site Location: 151 Sand Hill Road

South Windsor, Connecticut

Hartford County

Latitude: 41.836000

Longitude: -72.552000

Analysis Result:

Max Structural Usage: 71.3% [Pass]

Max Foundation Usage: 83% [Pass]

Report Prepared By : Jarryd Tibbetts



Introduction

The purpose of this report is to summarize the analysis results on the 187 ft SABRE 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	Tower Drawing prepared by Sabre, Job #02-10062 dated 11/1/01
Foundation Drawing	Foundation Drawing prepared by Sabre, Job #02-10062 dated 10/11/01
Geotechnical Report	Geotechnical Report prepared by Dr. Clarence Welti, dated 9/29/00
Modification Drawings	N/A

Analysis Criteria

The analysis was performed in accordance with the requirements and stipulations of the ANSI/TIA/EIA 222-F. 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.

Basic Wind Speed Used in the Analysis:	80.0 mph (fastest mile)
Basic Wind Speed with Ice:	69 mph (fastest mile) with 1/2" radial ice concurrent
Operational Wind Speed:	50 mph + 0" Radial ice
Standard/Codes:	ANSI/TIA/EIA 222-F / 2005 Connecticut State Building Code

Existing Antennas, Mounts and Transmission Lines

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

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	187.0	1	Telewave - ANT450F6 - Whip	Low Profile Platform	(4) 1/2" (3) 7/8"	Town of South Windsor
2		2	Telewave - ANT900D6-9 - Whip			
3		2	Decibel - DB201 - Whip			
4		2	Scala - MF-900B - Dish			
5	170.0	3	Powerwave - 7770.00 - Panel	Low Profile Platform	(12) 1 5/8" with (2) 3/4" DC (1) 1/2" Fiber inside (1) 3" Conduit	AT&T
6		12	Kathrein - 782 10250 - Diplexer			
8		3	Andrew - ABT-DFDM-ADBH - Surge Arrestor			
10		9	KMW - AM-X-CD-16-65-00T-RET - Panel			
13		3	CSS - DBC-750 - Diplexer			
14		1	Raycap - DC6-48-60-18-8F - Surge Suppressor			
15		6	CCI - DTMABP7819VG12A - TMA/TTA			
16		6	Ericsson - RRUS 11 - RRU			
18	160.0	3	Ericsson - AIR 21 B2A B4P - Panel	Platform w/ Hand Rail	(12) 1 5/8" (1) 1 5/8" Fiber	T-Mobile
19		3	Ericsson - AIR 21 B4A B2P - Panel			
20		3	Commscope - LNX-6515DS - Panel			
21		3	Ericsson - Double TMA 17/21 - TMA/TTA			
22		3	Ericsson - S11B12 - RRU			
23	140.0	1	RFS - DB-T1-6Z-8AB-0Z - Surge Suppressor	Low Profile Platform	(12) 1 5/8" (1) 1 5/8" Hybrid (1) 1/2"	Verizon
24		6	RFS - FD9R6004/2C-3L - Diplexer			
25		6	Commscope - HBXX-6517DS-A2M - Panel			
26		6	Alcatel Lucent - KS24019 - GPS			
27		3	Commscope - LNX-6514DS-A1M - Panel			
28		3	Commscope - LNX-6514DS-VTM - Panel			
29		3	Alcatel Lucent - RRH2x40-07-U - RRU			
30		3	Alcatel Lucent - RRH2x60-1900 - RRU			
31	130.0	3	Alcatel Lucent - 1900MHz - RRH	Low Profile Platform	(1) 0.7" Fiber (3) 1-1/4"	Sprint
32		3	Alcatel Lucent - 800 MHz - RRH			
33		3	Alcatel Lucent - 800MHz - Filter			
34		4	RFS - ACU-A20-N - RET			
35		3	RFS - APXVSP18-C-A20 - Panel			
36		3	RFS - APXVTM14-C-120 - Panel			
37		3	RF Filters			
38		3	Alcatel Lucent - TD-RRH8x20-25 - RRU			
39	92.0	1	Telewave - ANT150D3 - Whip	Low Profile Platform	(6) 1/2"	Town of South Windsor
40		1	Telewave - ANT4506-9 - Whip			
41		1	Telewave - ANT450Y10-WR - Yagi			
42		1	Decibel - DB205 - Whip			
43		2	Scala - MF-900B - Dish			

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
5	170.0	6	Powerwave - 7770.00 - Panel	Low Profile Platform	(12) 1 5/8" (1) 1/2" with (2) 3/4" DC (1) 1/2" Fiber inside (1) 3" Conduit	AT&T
7		3	CCI - HPA-65R-BUU-H6 - Panel			
8		6	CCI - DTMABP7819VG12A - TMA/TTA			
9		6	ADC - CG-1900W850BP - TMA/TTA			
10		6	Ericsson - RRUS 11 - RRU			
11		3	Ericsson - RRUS 12 - RRU			
12		3	Ericsson - RRUS A2 - RRU			
13		12	Kathrein - 782 10250 - Diplexer			
14		1	Nokia - CS72188.01 - LMU			
15		3	CSS - DBC-750 - Combiners			
16		1	Raycap - DC6-48-60-18-8F - Surge Suppressor			
17		3	Commscope - ABT-DFDM-ADBH - Bias T's			

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:	71.3%	65.0%	60.6%
Pass/Fail	Pass	Pass	Pass

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Original Design Reactions	6540.5	47.9	82.8
Analysis Reactions	4844.4	37.5	67.0
% of Design Reactions	74.1%	78.4%	81.0%

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):

Maximum twist and sway of the microwave dishes under the operational wind speed as specified in the Analysis Criteria are listed in the table below:

Elevation (ft)	Dish	Carrier	Twist (deg)	Sway (deg)
187.0	Scala - MF-900B - Dish	Town of South Windsor	0.002	1.778
92.0	Scala - MF-900B - Dish		0.000	1.032

It is recommended that the carrier reviews the twist and sway values of the microwave dishes.

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-F Standard under the design basic wind speed as specified in the Analysis Criteria.

Standard Conditions

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

Usage Diagram - Max Stress 71.3% at 53.3ft

Structure: CT07824-S-SBA
Site Name: South Windsor
Height: 187.00 (ft)
Base Elev: 1.000 (ft)

Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69

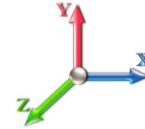
1/8/2016



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Dead Load Factor: 1.00
Wind Load Factor: 1.00

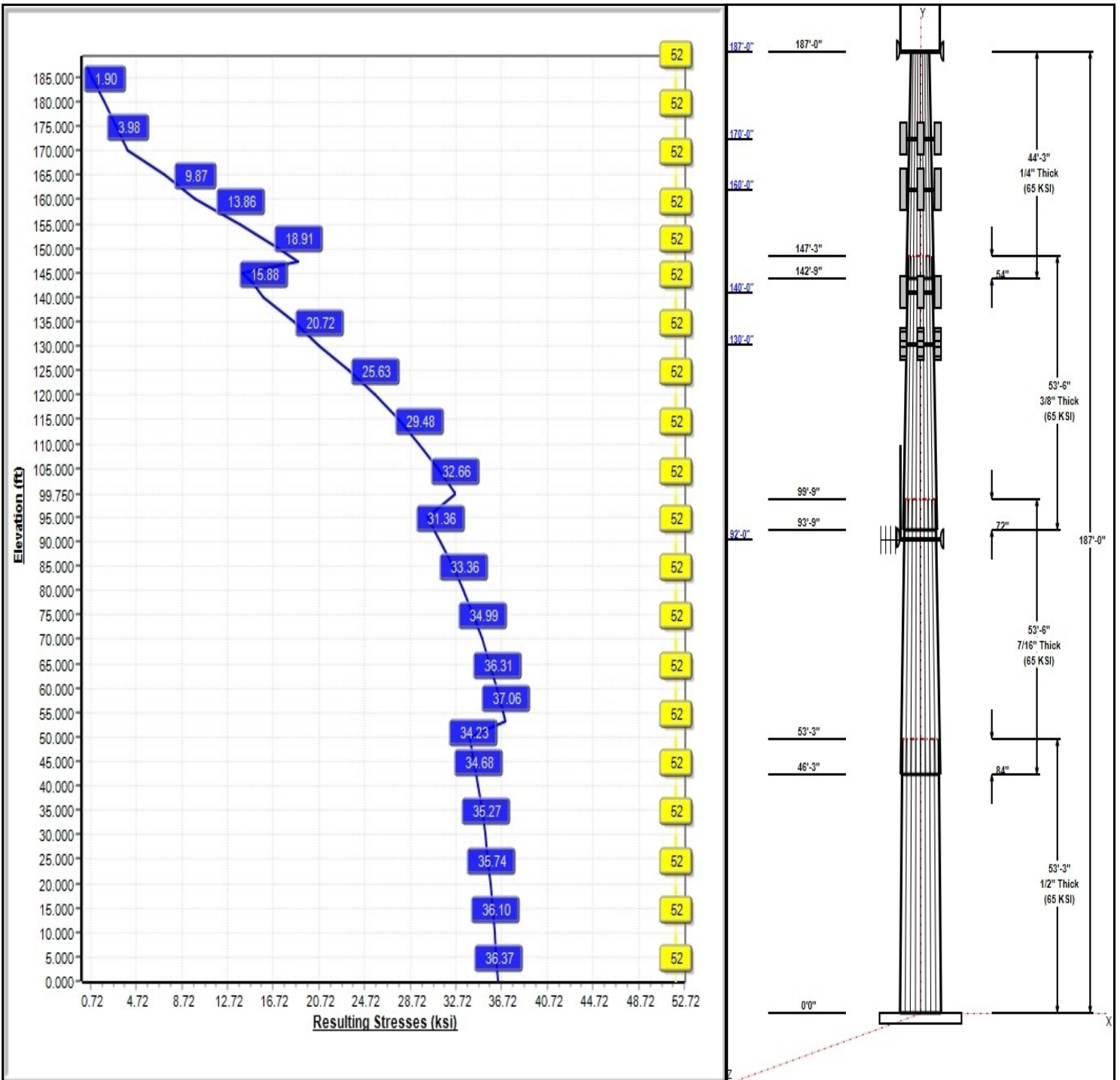
Load Case : 80 mph Wind with 0 in Ice



Iterations: 25

52 Allowable Stress
37 Resulting Stress

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Structure: CT07824-S-SBA

Type: Tapered
Site Name: South Windsor
Height: 187.00 (ft)
Base Elev: 1.00 (ft)

Base Shape: 18 Sided
Taper: 0.22997

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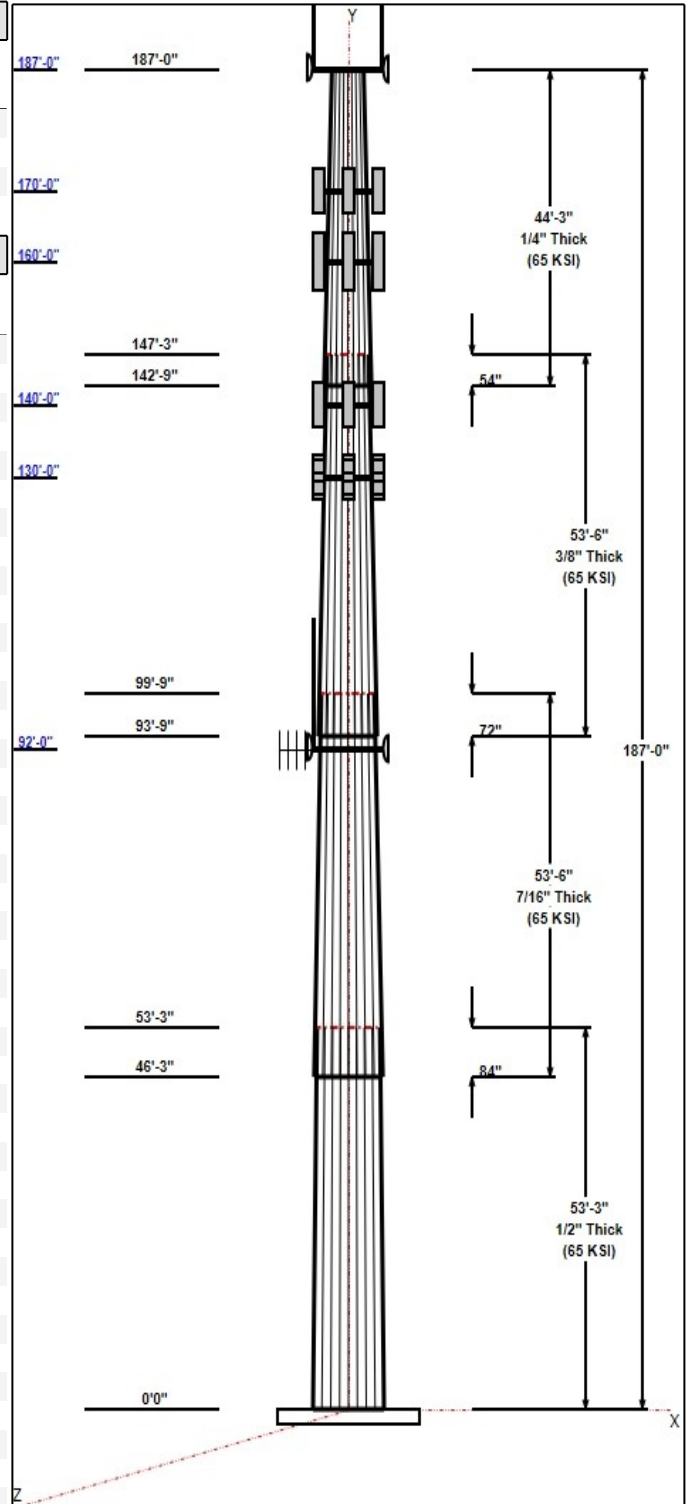


Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	53.25	52.63	64.88	0.500		0.22997	65
2	53.50	42.82	55.12	0.438	Slip	0.22997	65
3	53.50	32.64	44.95	0.375	Slip	0.22997	65
4	44.25	24.00	34.18	0.250	Slip	0.22997	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
187.00	187.00	1	6' Lightning rod	
187.00	190.92	1	ANT450F6	Town of South
187.00	189.04	2	ANT900D6-9	Town of South
187.00	191.75	2	DB201	Town of South
187.00	187.00	1	Low Profile Platform	Town of South
187.00	187.00	2	MF-900B	Town of South
170.00	170.00	6	7770.00	AT&T
170.00	170.00	12	782 10250	AT&T
170.00	170.00	3	ABT-DFDM-ADBH	AT&T
170.00	170.00	6	CG1900W800BP	AT&T
170.00	170.00	1	CS72188.01	AT&T
170.00	170.00	3	DBC-750	AT&T
170.00	170.00	1	DC6-48-60-18-8F	AT&T
170.00	170.00	6	DTMABP7819VG12A	AT&T
170.00	170.00	3	HPA-65R-BUU-H6	AT&T
170.00	170.00	1	Low Profile Platform	AT&T
170.00	170.00	6	RRUS 11	AT&T
170.00	170.00	3	RRUS 12	AT&T
170.00	170.00	3	RRUS A2 Module	AT&T
160.00	160.00	3	AIR 21 B2A B4P	T-Mobile
160.00	160.00	3	AIR 21 B4A B2P	T-Mobile
160.00	160.00	3	Double TMA 17/21	T-Mobile
160.00	160.00	3	LNX-6515DS	T-Mobile
160.00	160.00	1	Platform w/ Hand Rail	T-Mobile
160.00	160.00	3	S11B12	T-Mobile
140.00	140.00	1	DB-T1-6Z-8AB-0Z	Verizon
140.00	140.00	6	FD9R6004/2C-3L	Verizon
140.00	140.00	6	HBXX-6517DS-A2M	Verizon
140.00	140.00	6	KS-24019	Verizon
140.00	140.00	3	LNX-6514DS-A1M	Verizon
140.00	140.00	3	LNX-6514DS-VTM	Verizon
140.00	140.00	1	Low Profile Platform	Verizon
140.00	140.00	3	RRH2x40-07-U	Verizon
140.00	140.00	3	RRH2x60-1900	Verizon
130.00	130.00	3	1900MHz RRH	Sprint
130.00	130.00	3	800 MHz RRH	Sprint
130.00	130.00	3	800MHz Filter	Sprint
130.00	130.00	4	ACU-A20-N	Sprint
130.00	130.00	3	APXVSP18-C-A20	Sprint
130.00	130.00	3	APXVTM14-C-120	Sprint
130.00	130.00	1	Low Profile Platform	Sprint
130.00	130.00	3	RF Filters	Sprint
130.00	130.00	3	TD-RRH8x20-25	Sprint
92.00	97.00	1	ANT150D3	Town of South
92.00	95.00	1	ANT4506-9	Town of South



Structure: CT07824-S-SBA

Type: Tapered
Site Name: South Windsor
Height: 187.00 (ft)
Base Elev: 1.00 (ft)

Base Shape: 18 Sided
Taper: 0.22997

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92.00	92.00	1	ANT450Y10-WR	Town of South
92.00	101.00	1	DB205	Town of South
92.00	92.00	1	Low Profile Platform	Town of South
92.00	92.00	2	MF-900B	Town of South

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	187.00	Inside	1/2" Coax	Town of South
0.00	187.00	Inside	7/8" Coax	Town of South
0.00	170.00	Inside	1 5/8" Coax	AT&T
0.00	170.00	Inside	1/2"	AT&T
0.00	170.00	Inside	1/2" Fiber	AT&T
0.00	170.00	Inside	3" Conduit	AT&T
0.00	170.00	Inside	3/4" DC	AT&T
0.00	160.00	Inside	1 5/8" Coax	T-Mobile
0.00	160.00	Inside	1 5/8" Hybrid	T-Mobile
0.00	140.00	Inside	1 5/8" Coax	Verizon
0.00	140.00	Inside	1 5/8" Hybrid	Verizon
0.00	140.00	Inside	1/2" Coax	Verizon
0.00	130.00	Inside	0.7" Fiber	Sprint
0.00	130.00	Inside	1-1/4" Hybrid	Sprint
0.00	92.00	Inside	1/2" Coax	Town of South

Anchor Bolts

Qty	Specifications	Grade (ksi)	Arrangement
26	2.25" 18J	75.0	Radial

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
2.5000	78.0	60.0	Round

Reactions

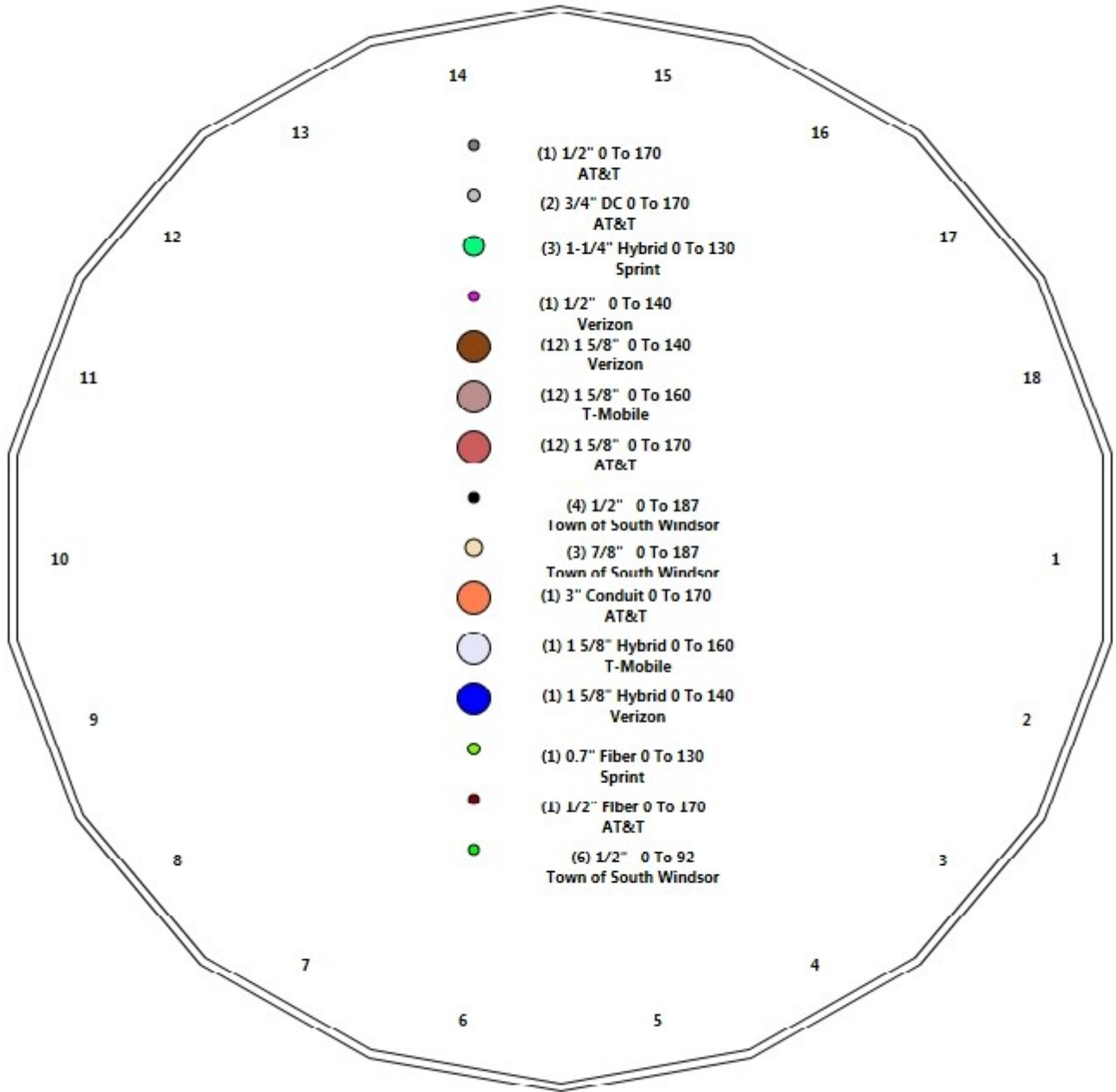
Load Case	Moment	Shear	Axial
80 mph Wind with 0" Ice	4844.5	37.5	57.0
69.28 mph Wind with 0.5" Ice	4232.4	31.9	67.0
50 mph Wind with 0" Ice	1893.7	14.7	57.1

Structure: CT07824-S-SBA - Coax Line Placement

Type: Monopole
Site Name: South Windsor
Height: 187.00 (ft)

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Shaft Properties

Structure: CT07824-S-SBA
Site Name: South Windsor
Height: 187.00 (ft)
Base Elev: 1.000 (ft)

Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

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Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	18	53.250	0.5000	65		0.00	16,752
2	18	53.500	0.4375	65	Slip	84.00	12,268
3	18	53.500	0.3750	65	Slip	72.00	8,324
4	18	44.250	0.2500	65	Slip	54.00	3,445
Total Shaft Weight:							40,789

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	64.88	0.00	102.1	53501.66	21.46	129.7	52.63	53.25	82.73	28410.2	17.15	105.2	0.229973
2	55.12	46.25	75.93	28683.85	20.80	125.9	42.82	99.75	58.84	13351.6	15.84	97.86	0.229973
3	44.95	93.75	53.05	13313.85	19.72	119.8	32.64	147.2	38.40	5051.60	13.93	87.04	0.229973
4	34.18	142.7	26.92	3914.66	22.69	136.7	24.00	187.0	18.84	1343.00	15.51	96	0.229973

Loading Summary

Structure: CT07824-S-SBA
Site Name: South Windsor
Height: 187.00 (ft)
Base Elev: 1.000 (ft)

Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
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	187.0	6' Lightning rod	1	6.50	0.38	1.00	11.80	0.980	1.00	0.00	0.00
2	187.0	ANT450F6	1	21.00	1.86	1.00	35.00	2.670	1.00	0.00	3.92
3	187.0	ANT900D6-9	2	11.00	0.98	1.00	21.90	1.670	1.00	0.00	2.04
4	187.0	DB201	2	25.00	3.54	1.00	56.40	6.660	1.00	0.00	4.75
5	187.0	Low Profile Platform	1	1500.00	22.00	1.00	1800.00	27.00	1.00	0.00	0.00
6	187.0	MF-900B	2	13.00	3.45	1.00	45.20	10.43	1.00	1.00	0.00
7	170.0	7770.00	6	35.00	5.88	0.75	64.92	6.250	0.75	0.00	0.00
8	170.0	782 10250	12	6.40	0.52	0.98	10.00	0.620	0.98	0.00	0.00
9	170.0	ABT-DFDM-ADBH	3	1.14	0.05	0.98	1.56	0.080	0.98	0.00	0.00
10	170.0	CG1900W800BP	6	12.10	1.28	0.62	17.72	1.420	0.64	0.00	0.00
11	170.0	CS72188.01	1	0.32	0.20	1.00	1.74	0.250	1.00	0.00	0.00
12	170.0	DBC-750	3	4.88	0.51	0.59	7.08	0.590	0.63	0.00	0.00
13	170.0	DC6-48-60-18-8F	1	32.80	4.32	1.00	56.36	4.560	1.00	0.00	0.00
14	170.0	DTMABP7819VG12A	6	19.18	1.59	0.68	26.76	1.740	0.70	0.00	0.00
15	170.0	HPA-65R-BUU-H6	3	51.00	10.36	0.81	108.40	10.85	0.81	0.00	0.00
16	170.0	Low Profile Platform	1	1500.00	22.00	1.00	1800.00	27.00	1.00	0.00	0.00
17	170.0	RRUS 11	6	55.00	2.94	0.71	69.41	3.140	0.72	0.00	0.00
18	170.0	RRUS 12	3	60.00	3.15	0.72	75.68	3.360	0.73	0.00	0.00
19	170.0	RRUS A2 Module	3	21.10	1.87	0.63	29.36	2.030	0.65	0.00	0.00
20	160.0	AIR 21 B2A B4P	3	91.50	6.52	0.83	128.79	6.900	0.83	0.00	0.00
21	160.0	AIR 21 B4A B2P	3	90.30	6.52	0.83	127.59	6.900	0.83	0.00	0.00
22	160.0	Double TMA 17/21	3	11.00	0.41	0.72	13.14	0.490	0.75	0.00	0.00
23	160.0	LNx-6515DS	3	50.30	11.45	0.84	112.11	11.92	0.84	0.00	0.00
24	160.0	Platform w/ Hand Rail	1	1600.00	32.00	1.00	2200.00	40.00	1.00	0.00	0.00
25	160.0	S11B12	3	51.00	3.31	0.71	67.07	3.520	0.72	0.00	0.00
26	140.0	DB-T1-6Z-8AB-OZ	1	21.40	4.78	1.00	51.10	5.040	1.00	0.00	0.00
27	140.0	FD9R6004/2C-3L	6	3.10	0.36	0.75	5.40	0.500	0.77	0.00	0.00
28	140.0	HBXX-6517DS-A2M	6	40.80	8.73	0.77	91.20	9.590	0.79	0.00	0.00
29	140.0	KS-24019	6	0.50	0.12	1.00	2.30	0.180	1.00	0.00	0.00
30	140.0	LNx-6514DS-A1M	3	38.40	8.41	0.83	88.90	9.240	0.85	0.00	0.00
31	140.0	LNx-6514DS-VTM	3	33.10	8.33	0.80	83.10	9.150	0.82	0.00	0.00
32	140.0	Low Profile Platform	1	1500.00	22.00	1.00	1800.00	27.00	1.00	0.00	0.00
33	140.0	RRH2x40-07-U	3	50.70	2.23	0.78	67.50	2.540	0.80	0.00	0.00
34	140.0	RRH2x60-1900	3	19.50	1.76	0.90	48.40	1.930	0.91	0.00	0.00
35	130.0	1900MHz RRH	3	44.00	3.80	0.88	75.20	4.200	0.89	0.00	0.00
36	130.0	800 MHz RRH	3	53.00	2.49	0.92	74.10	2.820	0.93	0.00	0.00
37	130.0	800MHz Filter	3	8.80	0.78	0.69	13.80	0.960	0.71	0.00	0.00
38	130.0	ACU-A20-N	4	1.00	0.14	0.79	2.30	0.220	0.81	0.00	0.00
39	130.0	APXVSP18-C-A20	3	57.00	8.26	0.83	106.50	9.080	0.85	0.00	0.00
40	130.0	APXVTM14-C-120	3	56.00	6.90	0.79	91.90	7.290	0.81	0.00	0.00
41	130.0	Low Profile Platform	1	1500.00	22.00	1.00	1800.00	27.00	1.00	0.00	0.00
42	130.0	RF Filters	3	15.50	1.09	0.67	22.00	1.270	0.69	0.00	0.00
43	130.0	TD-RRH8x20-25	3	70.00	4.72	0.69	92.00	4.970	0.71	0.00	0.00
44	92.00	ANT150D3	1	18.00	2.18	1.00	38.90	4.620	1.00	0.00	5.00
45	92.00	ANT4506-9	1	18.00	2.77	1.00	41.60	3.630	1.00	0.00	3.00
46	92.00	ANT450Y10-WR	1	5.00	0.49	1.00	10.80	0.820	1.00	0.00	0.00
47	92.00	DB205	1	38.00	1.80	1.00	54.60	3.610	1.00	0.00	9.00
48	92.00	Low Profile Platform	1	1500.00	22.00	1.00	1800.00	27.00	1.00	0.00	0.00
49	92.00	MF-900B	2	13.00	3.45	1.00	45.20	10.43	1.00	1.00	0.00

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		
Totals:			144	13,094.56			17,937.30				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	No Ice		Ice		Exposed
			Weight (lb/ft)	CaAa (sf/ft)	Weight (lb/ft)	CaAa (sf/ft)	
0.00	187.0	(4) 1/2" Coax	0.32	0.00	0.00	0.00	Inside
0.00	187.0	(3) 7/8" Coax	1.04	0.00	0.00	0.00	Inside
0.00	170.0	(12) 1 5/8" Coax	1.04	0.00	0.00	0.00	Inside
0.00	170.0	(1) 1/2"	0.16	0.00	0.00	0.00	Inside
0.00	170.0	(1) 1/2" Fiber	0.16	0.00	0.00	0.00	Inside
0.00	170.0	(1) 3" Conduit	4.83	0.00	0.00	0.00	Inside
0.00	170.0	(2) 3/4" DC	0.40	0.00	0.00	0.00	Inside
0.00	160.0	(12) 1 5/8" Coax	1.04	0.00	0.00	0.00	Inside
0.00	160.0	(1) 1 5/8" Hybrid	3.30	0.00	0.00	0.00	Inside
0.00	140.0	(12) 1 5/8" Coax	1.04	0.00	0.00	0.00	Inside
0.00	140.0	(1) 1 5/8" Hybrid	3.30	0.00	0.00	0.00	Inside
0.00	140.0	(1) 1/2" Coax	0.48	0.00	0.00	0.00	Inside
0.00	130.0	(1) 0.7" Fiber	0.40	0.00	0.00	0.00	Inside
0.00	130.0	(3) 1-1/4" Hybrid	2.86	0.00	0.00	0.00	Inside
0.00	92.00	(6) 1/2" Coax	0.32	0.00	0.00	0.00	Inside
Totals:			3,197.32		0.00		

Shaft Section Properties

Structure: CT07824-S-SBA
Site Name: South Windsor
Height: 187.00 (ft)
Base Elev: 1.000 (ft)

Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

1/8/2016
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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	Fy (ksi)	Fb (ksi)	Weight (lb)
0.00		0.5000	64.880	102.167	53501.7	21.47	129.76	65	52	0.0
5.00		0.5000	63.730	100.343	50685.8	21.06	127.46	65	52	1722.7
10.00		0.5000	62.580	98.518	47970.6	20.66	125.16	65	52	1691.7
15.00		0.5000	61.430	96.693	45354.1	20.25	122.86	65	52	1660.6
20.00		0.5000	60.281	94.868	42834.5	19.85	120.56	65	52	1629.6
25.00		0.5000	59.131	93.044	40410.0	19.44	118.26	65	52	1598.6
30.00		0.5000	57.981	91.219	38078.8	19.04	115.96	65	52	1567.5
35.00		0.5000	56.831	89.394	35839.0	18.63	113.66	65	52	1536.5
40.00		0.5000	55.681	87.569	33688.7	18.23	111.36	65	52	1505.4
45.00		0.5000	54.531	85.744	31626.3	17.82	109.06	65	52	1474.4
46.25	Bot - Section 2	0.5000	54.244	85.288	31124.2	17.72	108.49	65	52	363.7
50.00		0.5000	53.381	83.920	29649.8	17.41	106.76	65	52	2040.8
53.25	Top - Section 1	0.4375	53.509	73.694	26224.3	20.16	122.31	65	52	1742.2
55.00		0.4375	53.106	73.135	25632.3	19.99	121.39	65	52	437.2
60.00		0.4375	51.957	71.538	23989.8	19.53	118.76	65	52	1230.7
65.00		0.4375	50.807	69.941	22419.1	19.07	116.13	65	52	1203.6
70.00		0.4375	49.657	68.345	20918.5	18.60	113.50	65	52	1176.4
75.00		0.4375	48.507	66.748	19486.4	18.14	110.87	65	52	1149.2
80.00		0.4375	47.357	65.151	18121.2	17.68	108.24	65	52	1122.1
85.00		0.4375	46.207	63.555	16821.3	17.21	105.62	65	52	1094.9
90.00		0.4375	45.057	61.958	15585.1	16.75	102.99	65	52	1067.7
92.00		0.4375	44.597	61.319	15108.1	16.56	101.94	65	52	419.5
93.75	Bot - Section 3	0.4375	44.195	60.761	14698.7	16.40	101.02	65	52	363.5
95.00		0.4375	43.908	60.361	14410.9	16.29	100.36	65	52	482.5
99.75	Top - Section 2	0.3750	43.565	51.405	12115.2	19.07	116.17	65	52	1804.8
100.00		0.3750	43.508	51.337	12066.9	19.05	116.02	65	52	43.7
105.00		0.3750	42.358	49.968	11127.3	18.51	112.95	65	52	861.8
110.00		0.3750	41.208	48.600	10237.8	17.97	109.89	65	52	838.5
115.00		0.3750	40.058	47.231	9397.1	17.42	106.82	65	52	815.2
120.00		0.3750	38.908	45.862	8603.6	16.88	103.76	65	52	791.9
125.00		0.3750	37.758	44.494	7856.2	16.34	100.69	65	52	768.7
130.00		0.3750	36.608	43.125	7153.3	15.80	97.62	65	52	745.4
135.00		0.3750	35.459	41.757	6493.6	15.26	94.56	65	52	722.1
140.00		0.3750	34.309	40.388	5875.9	14.72	91.49	65	52	698.8
142.75	Bot - Section 4	0.3750	33.676	39.635	5553.4	14.42	89.80	65	52	374.4
145.00		0.3750	33.159	39.020	5298.5	14.18	88.42	65	52	505.6
147.25	Top - Section 3	0.2500	33.141	26.098	3567.2	21.96	132.57	65	52	497.8
150.00		0.2500	32.509	25.597	3365.4	21.52	130.04	65	52	241.9
155.00		0.2500	31.359	24.684	3018.2	20.71	125.44	65	52	427.7
160.00		0.2500	30.209	23.772	2695.7	19.90	120.84	65	52	412.2
165.00		0.2500	29.059	22.859	2397.1	19.09	116.24	65	52	396.7
170.00		0.2500	27.910	21.947	2121.4	18.27	111.64	65	52	381.2
175.00		0.2500	26.760	21.035	1867.7	17.46	107.04	65	52	365.6
180.00		0.2500	25.610	20.122	1635.0	16.65	102.44	65	52	350.1
185.00		0.2500	24.460	19.210	1422.5	15.84	97.84	65	52	334.6
187.00		0.2500	24.000	18.845	1343.0	15.52	96.00	65	52	129.5

40789.2

Wind Loading - Shaft

Structure: CT07824-S-SBA
Site Name: South Windsor
Height: 187.00 (ft)
Base Elev: 1.000 (ft)

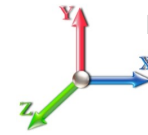
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

1/8/2016
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Load Case: 80 mph Wind with 0" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 25

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		0.00	1.00	16.384	27.69	432.53	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		0.00	1.00	16.384	27.69	424.87	0.650	0.000	5.00	26.794	17.42	482.2	0.0	1722.7
10.00		0.00	1.00	16.384	27.69	417.20	0.650	0.000	5.00	26.315	17.10	473.6	0.0	1691.7
15.00		0.00	1.00	16.384	27.69	409.54	0.650	0.000	5.00	25.836	16.79	465.0	0.0	1660.6
20.00		0.00	1.00	16.384	27.69	401.87	0.650	0.000	5.00	25.356	16.48	456.4	0.0	1629.6
25.00		0.00	1.00	16.384	27.69	394.20	0.650	0.000	5.00	24.877	16.17	447.7	0.0	1598.6
30.00		0.00	1.00	16.384	27.69	386.54	0.650	0.000	5.00	24.398	15.86	439.1	0.0	1567.5
35.00		0.00	1.03	16.796	28.39	383.61	0.650	0.000	5.00	23.919	15.55	441.3	0.0	1536.5
40.00		0.00	1.06	17.432	29.46	382.90	0.650	0.000	5.00	23.440	15.24	448.9	0.0	1505.4
45.00		0.00	1.10	18.015	30.45	381.21	0.650	0.000	5.00	22.961	14.92	454.4	0.0	1474.4
46.25	Bot - Section 2	0.00	1.11	18.153	30.68	380.65	0.650	0.000	1.25	5.665	3.68	113.0	0.0	363.7
50.00		0.00	1.13	18.554	31.36	378.71	0.650	0.000	3.75	17.090	11.11	348.3	0.0	2040.8
53.25	Top - Section 1	0.00	1.15	18.884	31.91	376.72	0.650	0.000	3.25	14.593	9.49	302.7	0.0	1742.2
55.00		0.00	1.16	19.056	32.21	381.83	0.650	0.000	1.75	7.774	5.05	162.7	0.0	437.2
60.00		0.00	1.19	19.528	33.00	378.15	0.650	0.000	5.00	21.888	14.23	469.5	0.0	1230.7
65.00		0.00	1.22	19.972	33.75	373.97	0.650	0.000	5.00	21.409	13.92	469.7	0.0	1203.6
70.00		0.00	1.24	20.393	34.46	369.34	0.650	0.000	5.00	20.930	13.60	468.9	0.0	1176.4
75.00		0.00	1.27	20.794	35.14	364.31	0.650	0.000	5.00	20.451	13.29	467.1	0.0	1149.2
80.00		0.00	1.29	21.176	35.79	358.93	0.650	0.000	5.00	19.972	12.98	464.6	0.0	1122.1
85.00		0.00	1.31	21.541	36.40	353.22	0.650	0.000	5.00	19.493	12.67	461.3	0.0	1094.9
90.00		0.00	1.34	21.892	37.00	347.22	0.650	0.000	5.00	19.013	12.36	457.2	0.0	1067.7
92.00	Appurtenance(s)	0.00	1.34	22.028	37.23	344.75	0.650	0.000	2.00	7.471	4.86	180.8	0.0	419.5
93.75	Bot - Section 3	0.00	1.35	22.146	37.43	342.55	0.650	0.000	1.75	6.474	4.21	157.5	0.0	363.5
95.00		0.00	1.36	22.229	37.57	340.96	0.650	0.000	1.25	4.667	3.03	114.0	0.0	482.5
99.75	Top - Section 2	0.00	1.38	22.538	38.09	334.78	0.650	0.000	4.75	17.461	11.35	432.3	0.0	1804.8
100.00		0.00	1.38	22.554	38.12	340.31	0.650	0.000	0.25	0.907	0.59	22.5	0.0	43.7
105.00		0.00	1.40	22.867	38.65	333.61	0.650	0.000	5.00	17.889	11.63	449.4	0.0	861.8
110.00		0.00	1.41	23.171	39.16	326.70	0.650	0.000	5.00	17.410	11.32	443.1	0.0	838.5
115.00		0.00	1.43	23.464	39.65	319.59	0.650	0.000	5.00	16.930	11.00	436.4	0.0	815.2
120.00		0.00	1.45	23.749	40.14	312.29	0.650	0.000	5.00	16.451	10.69	429.2	0.0	791.9
125.00		0.00	1.47	24.025	40.60	304.82	0.650	0.000	5.00	15.972	10.38	421.5	0.0	768.7
130.00	Appurtenance(s)	0.00	1.48	24.294	41.06	297.19	0.650	0.000	5.00	15.493	10.07	413.5	0.0	745.4
135.00		0.00	1.50	24.555	41.50	289.40	0.650	0.000	5.00	15.014	9.76	405.0	0.0	722.1
140.00	Appurtenance(s)	0.00	1.51	24.810	41.93	281.46	0.650	0.000	5.00	14.535	9.45	396.1	0.0	698.8
142.75	Bot - Section 4	0.00	1.52	24.947	42.16	277.03	0.650	0.000	2.75	7.790	5.06	213.5	0.0	374.4
145.00		0.00	1.53	25.058	42.35	273.38	0.650	0.000	2.25	6.360	4.13	175.1	0.0	505.6
147.25	Top - Section 3	0.00	1.54	25.168	42.53	269.71	0.650	0.000	2.25	6.263	4.07	173.1	0.0	497.8
150.00		0.00	1.54	25.300	42.76	269.32	0.650	0.000	2.75	7.522	4.89	209.1	0.0	241.9
155.00		0.00	1.56	25.537	43.16	261.00	0.650	0.000	5.00	13.306	8.65	373.3	0.0	427.7
160.00	Appurtenance(s)	0.00	1.57	25.768	43.55	252.57	0.650	0.000	5.00	12.827	8.34	363.1	0.0	412.2
165.00		0.00	1.59	25.994	43.93	244.02	0.650	0.000	5.00	12.348	8.03	352.6	0.0	396.7
170.00	Appurtenance(s)	0.00	1.60	26.215	44.30	235.36	0.650	0.000	5.00	11.869	7.71	341.8	0.0	381.2
175.00		0.00	1.61	26.432	44.67	226.59	0.650	0.000	5.00	11.389	7.40	330.7	0.0	365.6
180.00		0.00	1.63	26.645	45.03	217.73	0.650	0.000	5.00	10.910	7.09	319.3	0.0	350.1
185.00		0.00	1.64	26.853	45.38	208.76	0.650	0.000	5.00	10.431	6.78	307.7	0.0	334.6
187.00	Appurtenance(s)	0.00	1.64	26.935	45.52	205.15	0.650	0.000	2.00	4.038	2.62	119.5	0.0	129.5
Totals:									187.00			15,873.5		40,789.2

Discrete Appurtenance Forces

Structure: CT07824-S-SB
Site Name: South Windsor
Height: 187.00 (ft)
Base Elev: 1.000 (ft)

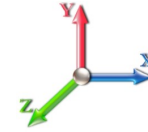
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

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Load Case: 80 mph Wind with 0" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 25

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa Factor	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	187.00	ANT900D6-9	2	27.018	45.661	1.00	1.96	22.00	0.000	2.042	89.50	0.00	182.72
2	187.00	6' Lightning rod	1	26.935	45.520	1.00	0.38	6.50	0.000	0.000	17.30	0.00	0.00
3	187.00	ANT450F6	1	27.094	45.789	1.00	1.86	21.00	0.000	3.917	85.17	0.00	333.58
4	187.00	MF-900B	2	26.935	45.520	1.00	6.90	26.00	2.015	0.000	314.09	633.03	0.00
5	187.00	DB201	2	27.128	45.846	1.00	7.08	50.00	0.000	4.750	324.59	0.00	1541.80
6	187.00	Low Profile Platform	1	26.935	45.520	1.00	22.00	1500.00	0.000	0.000	1001.45	0.00	0.00
7	170.00	7770.00	6	26.215	44.304	0.75	26.42	210.00	0.000	0.000	1170.72	0.00	0.00
8	170.00	782 10250	12	26.215	44.304	0.98	6.12	76.80	0.000	0.000	270.93	0.00	0.00
9	170.00	ABT-DFDM-ADBH	3	26.215	44.304	0.98	0.15	3.42	0.000	0.000	6.49	0.00	0.00
10	170.00	CG1900W800BP	6	26.215	44.304	0.62	4.78	72.60	0.000	0.000	211.64	0.00	0.00
11	170.00	CS72188.01	1	26.215	44.304	1.00	0.20	0.32	0.000	0.000	8.86	0.00	0.00
12	170.00	DBC-750	3	26.215	44.304	0.59	0.91	14.64	0.000	0.000	40.26	0.00	0.00
13	170.00	DTMABP7819VG12A	6	26.215	44.304	0.68	6.51	115.08	0.000	0.000	288.26	0.00	0.00
14	170.00	RRUS 11	6	26.215	44.304	0.71	12.56	330.00	0.000	0.000	556.45	0.00	0.00
15	170.00	RRUS A2 Module	3	26.215	44.304	0.63	3.55	63.30	0.000	0.000	157.33	0.00	0.00
16	170.00	RRUS 12	3	26.215	44.304	0.72	6.85	180.00	0.000	0.000	303.54	0.00	0.00
17	170.00	DC6-48-60-18-8F	1	26.215	44.304	1.00	4.32	32.80	0.000	0.000	191.39	0.00	0.00
18	170.00	Low Profile Platform	1	26.215	44.304	1.00	22.00	1500.00	0.000	0.000	974.69	0.00	0.00
19	170.00	HPA-65R-BUJ-H6	3	26.215	44.304	0.81	25.21	153.00	0.000	0.000	1116.73	0.00	0.00
20	160.00	S11B12	3	25.768	43.548	0.71	7.01	153.00	0.000	0.000	305.30	0.00	0.00
21	160.00	Platform w/ Hand Rail	1	25.768	43.548	1.00	32.00	1600.00	0.000	0.000	1393.53	0.00	0.00
22	160.00	LNx-6515DS	3	25.768	43.548	0.84	28.72	150.90	0.000	0.000	1250.55	0.00	0.00
23	160.00	Double TMA 17/21	3	25.768	43.548	0.72	0.89	33.00	0.000	0.000	38.62	0.00	0.00
24	160.00	AIR 21 B4A B2P	3	25.768	43.548	0.83	16.16	270.90	0.000	0.000	703.58	0.00	0.00
25	160.00	AIR 21 B2A B4P	3	25.768	43.548	0.83	16.16	274.50	0.000	0.000	703.58	0.00	0.00
26	140.00	RRH2x60-1900	3	24.810	41.928	0.90	4.75	58.50	0.000	0.000	199.24	0.00	0.00
27	140.00	RRH2x40-07-U	3	24.810	41.928	0.78	5.22	152.10	0.000	0.000	218.79	0.00	0.00
28	140.00	Low Profile Platform	1	24.810	41.928	1.00	22.00	1500.00	0.000	0.000	922.42	0.00	0.00
29	140.00	LNx-6514DS-VTM	3	24.810	41.928	0.80	19.99	99.30	0.000	0.000	838.23	0.00	0.00
30	140.00	LNx-6514DS-A1M	3	24.810	41.928	0.83	20.94	115.20	0.000	0.000	878.02	0.00	0.00
31	140.00	KS-24019	6	24.810	41.928	1.00	0.72	3.00	0.000	0.000	30.19	0.00	0.00
32	140.00	HBXX-6517DS-A2M	6	24.810	41.928	0.77	40.33	244.80	0.000	0.000	1691.08	0.00	0.00
33	140.00	FD9R6004/2C-3L	6	24.810	41.928	0.75	1.62	18.60	0.000	0.000	67.92	0.00	0.00
34	140.00	DB-T1-6Z-8AB-0Z	1	24.810	41.928	1.00	4.78	21.40	0.000	0.000	200.42	0.00	0.00
35	130.00	800MHz Filter	3	24.294	41.056	0.69	1.61	26.40	0.000	0.000	66.29	0.00	0.00
36	130.00	ACU-A20-N	4	24.294	41.056	0.79	0.44	4.00	0.000	0.000	18.16	0.00	0.00
37	130.00	800 MHz RRH	3	24.294	41.056	0.92	6.87	159.00	0.000	0.000	282.16	0.00	0.00
38	130.00	1900MHz RRH	3	24.294	41.056	0.88	10.03	132.00	0.000	0.000	411.88	0.00	0.00
39	130.00	Low Profile Platform	1	24.294	41.056	1.00	22.00	1500.00	0.000	0.000	903.24	0.00	0.00
40	130.00	APXVSP18-C-A20	3	24.294	41.056	0.83	20.57	171.00	0.000	0.000	844.42	0.00	0.00
41	130.00	APXVTM14-C-120	3	24.294	41.056	0.79	16.35	168.00	0.000	0.000	671.39	0.00	0.00
42	130.00	RF Filters	3	24.294	41.056	0.67	2.19	46.50	0.000	0.000	89.95	0.00	0.00
43	130.00	TD-RRH8x20-25	3	24.294	41.056	0.69	9.77	210.00	0.000	0.000	401.14	0.00	0.00
44	92.00	MF-900B	2	22.028	37.228	1.00	6.90	26.00	2.887	0.000	256.87	741.56	0.00
45	92.00	Low Profile Platform	1	22.028	37.228	1.00	22.00	1500.00	0.000	0.000	819.02	0.00	0.00
46	92.00	DB205	1	22.617	38.224	1.00	1.80	38.00	0.000	9.000	68.80	0.00	619.22
47	92.00	ANT450Y10-WR	1	22.028	37.228	1.00	0.49	5.00	0.000	0.000	18.24	0.00	0.00
48	92.00	ANT4506-9	1	22.229	37.567	1.00	2.77	18.00	0.000	3.000	104.06	0.00	312.18
49	92.00	ANT150D3	1	22.360	37.789	1.00	2.18	18.00	0.000	5.000	82.38	0.00	411.90

Discrete Appurtenance Forces

Structure: CT07824-S-SB
Site Name: South Windsor
Height: 187.00 (ft)
Base Elev: 1.000 (ft)

Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

1/8/2016
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Totals: 13,094.56

21,608.86

Total Applied Force Summary

Structure: CT07824-S-SB
Site Name: South Windsor
Height: 187.00 (ft)
Base Elev: 1.000 (ft)

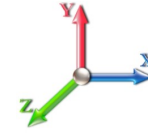
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

1/8/2016
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Load Case: 80 mph Wind with 0" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 25

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		482.23	1826.20	0.00	0.00
10.00		473.61	1795.15	0.00	0.00
15.00		464.98	1764.11	0.00	0.00
20.00		456.36	1733.06	0.00	0.00
25.00		447.74	1702.02	0.00	0.00
30.00		439.11	1670.97	0.00	0.00
35.00		441.33	1639.92	0.00	0.00
40.00		448.86	1608.88	0.00	0.00
45.00		454.38	1577.83	0.00	0.00
46.25		112.98	389.61	0.00	0.00
50.00		348.32	2118.42	0.00	0.00
53.25		302.73	1809.48	0.00	0.00
55.00		162.74	473.38	0.00	0.00
60.00		469.53	1334.18	0.00	0.00
65.00		469.71	1307.02	0.00	0.00
70.00		468.88	1279.85	0.00	0.00
75.00		467.14	1252.69	0.00	0.00
80.00		464.57	1225.52	0.00	0.00
85.00		461.26	1198.36	0.00	0.00
90.00		457.24	1171.19	0.00	0.00
92.00	(7) appurtenances	1530.16	2065.87	741.56	1343.31
93.75		157.51	399.14	0.00	0.00
95.00		113.96	507.97	0.00	0.00
99.75		432.29	1901.52	0.00	0.00
100.00		22.47	48.79	0.00	0.00
105.00		449.36	963.66	0.00	0.00
110.00		443.12	940.37	0.00	0.00
115.00		436.39	917.09	0.00	0.00
120.00		429.18	893.80	0.00	0.00
125.00		421.53	870.52	0.00	0.00
130.00	(26) appurtenances	4102.09	3264.13	0.00	0.00
135.00		404.98	807.64	0.00	0.00
140.00	(32) appurtenances	5442.45	2997.25	0.00	0.00
142.75		213.48	408.21	0.00	0.00
145.00		175.05	533.29	0.00	0.00
147.25		173.14	525.43	0.00	0.00
150.00		209.07	275.67	0.00	0.00
155.00		373.26	489.19	0.00	0.00
160.00	(16) appurtenances	4758.24	2955.96	0.00	0.00
165.00		352.58	436.44	0.00	0.00
170.00	(54) appurtenances	5639.07	3172.88	0.00	0.00
175.00		330.70	372.44	0.00	0.00
180.00		319.34	356.92	0.00	0.00
185.00		307.70	341.40	0.00	0.00
187.00	(9) appurtenances	1951.57	1757.71	633.03	2058.10
	Totals:	37,482.37	57,081.12	1,374.59	3,401.41

Resulting Forces and Deflections

Structure: CT07824-S-SB
Site Name: South Windsor
Height: 187.00 (ft)
Base Elev: 1.000 (ft)

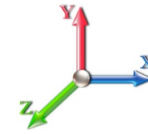
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

1/8/2016
 Page: 13



Load Case: 80 mph Wind with 0" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 25

Elev (ft)	Lateral FX (-) (kips)	Axial FY (-) (kips)	Lateral FZ (kips)	Moment MX (ft-kips)	Torsion MY (ft-kips)	Moment MZ (ft-kips)	Deflect X (in)	Deflect Z (in)	Deflect Resultant (in)	Rotation Sway (deg)	Rotation Twist (deg)
0.00	-37.547	-57.039	0.000	-0.012	-1.363	-4844.5	0.000	0.000	0.000	0.000	0.000
5.00	-37.185	-55.130	0.000	-0.012	-1.363	-4656.7	-0.068	0.000	0.068	-0.126	0.000
10.00	-36.826	-53.254	0.000	-0.012	-1.363	-4470.8	-0.269	0.000	0.269	-0.254	0.000
15.00	-36.468	-51.410	0.000	-0.012	-1.363	-4286.7	-0.606	0.000	0.606	-0.384	0.000
20.00	-36.113	-49.597	0.000	-0.013	-1.363	-4104.4	-1.079	0.000	1.079	-0.516	0.000
25.00	-35.760	-47.816	0.000	-0.013	-1.363	-3923.8	-1.691	0.000	1.691	-0.649	0.000
30.00	-35.409	-46.067	0.000	-0.014	-1.363	-3745.0	-2.444	0.000	2.444	-0.784	0.000
35.00	-35.050	-44.350	0.000	-0.015	-1.363	-3568.0	-3.339	0.000	3.339	-0.921	0.000
40.00	-34.677	-42.665	0.000	-0.016	-1.363	-3392.7	-4.377	0.000	4.377	-1.059	0.000
45.00	-34.254	-41.044	0.000	-0.015	-1.363	-3219.3	-5.561	0.000	5.561	-1.198	0.000
46.25	-34.183	-40.614	0.000	-0.017	-1.364	-3176.5	-5.880	0.000	5.880	-1.234	0.000
50.00	-33.855	-38.445	0.000	-0.017	-1.364	-3048.3	-6.893	0.000	6.893	-1.341	0.000
53.25	-33.554	-36.601	0.000	-0.018	-1.364	-2938.3	-7.839	0.000	7.839	-1.434	-0.001
55.00	-33.445	-36.072	0.000	-0.019	-1.364	-2879.6	-8.375	0.000	8.375	-1.485	-0.001
60.00	-33.033	-34.661	0.000	-0.021	-1.364	-2712.4	-10.014	0.000	10.014	-1.641	-0.001
65.00	-32.615	-33.280	0.000	-0.023	-1.365	-2547.2	-11.816	0.000	11.816	-1.797	-0.001
70.00	-32.192	-31.929	0.000	-0.025	-1.365	-2384.1	-13.782	0.000	13.782	-1.953	-0.001
75.00	-31.765	-30.606	0.000	-0.027	-1.366	-2223.2	-15.911	0.000	15.911	-2.110	-0.001
80.00	-31.334	-29.314	0.000	-0.029	-1.366	-2064.3	-18.205	0.000	18.205	-2.266	-0.001
85.00	-30.900	-28.052	0.001	-0.032	-1.367	-1907.7	-20.662	0.001	20.662	-2.422	-0.001
90.00	-30.443	-26.845	0.001	-0.033	-1.367	-1753.2	-23.282	0.001	23.282	-2.577	-0.001
92.00	-28.846	-24.821	0.001	0.000	-0.626	-1690.9	-24.375	0.001	24.375	-2.640	-0.001
93.75	-28.690	-24.406	0.001	-0.001	-0.626	-1640.5	-25.353	0.001	25.353	-2.695	-0.001
95.00	-28.590	-23.858	0.001	-0.002	-0.626	-1604.6	-26.064	0.001	26.064	-2.734	-0.001
99.75	-28.094	-21.943	0.001	-0.004	-0.626	-1468.8	-28.857	0.001	28.857	-2.878	-0.001
100.00	-28.103	-21.853	0.001	-0.005	-0.626	-1461.8	-29.008	0.001	29.008	-2.886	-0.001
105.00	-27.663	-20.835	0.001	-0.008	-0.627	-1321.3	-32.118	0.001	32.118	-3.050	-0.001
110.00	-27.224	-19.846	0.001	-0.011	-0.627	-1183.0	-35.398	0.001	35.398	-3.210	-0.002
115.00	-26.786	-18.884	0.001	-0.015	-0.627	-1046.8	-38.842	0.002	38.842	-3.365	-0.002
120.00	-26.349	-17.952	0.001	-0.018	-0.628	-912.96	-42.446	0.002	42.446	-3.513	-0.002
125.00	-25.914	-17.048	0.001	-0.022	-0.628	-781.21	-46.200	0.002	46.200	-3.653	-0.002
130.00	-21.639	-14.010	0.001	-0.025	-0.628	-651.64	-50.095	0.002	50.095	-3.783	-0.002
135.00	-21.207	-13.190	0.001	-0.028	-0.629	-543.45	-54.120	0.003	54.120	-3.902	-0.002
140.00	-15.585	-10.554	0.001	-0.032	-0.629	-437.42	-58.263	0.003	58.263	-4.009	-0.002
142.75	-15.352	-10.149	0.001	-0.033	-0.629	-394.56	-60.587	0.003	60.587	-4.065	-0.002
145.00	-15.147	-9.618	0.001	-0.034	-0.629	-360.02	-62.512	0.004	62.512	-4.108	-0.002
147.25	-14.943	-9.095	0.001	-0.035	-0.629	-325.94	-64.457	0.004	64.457	-4.150	-0.002
150.00	-14.727	-8.815	0.001	-0.037	-0.630	-284.84	-66.859	0.004	66.859	-4.197	-0.002
155.00	-14.332	-8.331	0.001	-0.040	-0.630	-211.21	-71.310	0.005	71.310	-4.302	-0.003
160.00	-9.370	-5.733	0.000	-0.043	-0.631	-139.55	-75.859	0.006	75.859	-4.384	-0.003
165.00	-8.990	-5.317	0.000	-0.045	-0.631	-92.702	-80.482	0.006	80.482	-4.446	-0.003
170.00	-3.122	-2.591	0.000	-0.047	-0.631	-47.752	-85.158	0.008	85.158	-4.487	-0.004
175.00	-2.764	-2.245	0.000	-0.048	-0.631	-32.141	-89.868	0.009	89.868	-4.514	-0.004
180.00	-2.418	-1.914	0.000	-0.049	-0.631	-18.319	-94.602	0.010	94.602	-4.533	-0.005
185.00	-2.085	-1.598	0.000	-0.050	-0.631	-6.228	-99.351	0.012	99.351	-4.544	-0.005
187.00	-1.952	0.000	0.000	0.000	-0.633	-2.058	0.000	0.000	101.253	-4.546	-0.006

Resulting Stresses

Structure: CT07824-S-SBA
Site Name: South Windsor
Height: 187.00 (ft)
Base Elev: 1.000 (ft)

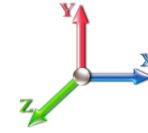
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

1/8/2016
 Page: 14



Load Case: 80 mph Wind with 0" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 25

Applied Stresses

Elev (ft)	fa Axial (Y) (ksi)	fvx Shear (X) (ksi)	fvz Shear (Z) (ksi)	fvT Torsion (ksi)	fbx Bending (X) (ksi)	fbz Bending (Z) (ksi)	fb Combined (ksi)	Fb Allow Stress (ksi)	f/Fb Stress Ratio
0.00	0.56	0.74	0.00	0.01	0.00	35.79	36.37	52.0	0.700
5.00	0.55	0.75	0.00	0.01	0.00	35.67	36.25	52.0	0.697
10.00	0.54	0.75	0.00	0.01	0.00	35.53	36.10	52.0	0.694
15.00	0.53	0.76	0.00	0.01	0.00	35.37	35.93	52.0	0.691
20.00	0.52	0.77	0.00	0.01	0.00	35.19	35.74	52.0	0.688
25.00	0.51	0.77	0.00	0.01	0.00	34.98	35.52	52.0	0.683
30.00	0.51	0.78	0.00	0.01	0.00	34.74	35.27	52.0	0.679
35.00	0.50	0.79	0.00	0.01	0.00	34.47	34.99	52.0	0.673
40.00	0.49	0.80	0.00	0.01	0.00	34.16	34.68	52.0	0.667
45.00	0.48	0.81	0.00	0.01	0.00	33.82	34.33	52.0	0.660
46.25	0.48	0.81	0.00	0.01	0.00	33.73	34.23	52.0	0.659
50.00	0.46	0.81	0.00	0.01	0.00	33.44	33.93	52.0	0.653
53.25	0.50	0.92	0.00	0.01	0.00	36.53	37.06	52.0	0.713
55.00	0.49	0.92	0.00	0.01	0.00	36.35	36.88	52.0	0.709
60.00	0.48	0.93	0.00	0.01	0.00	35.79	36.31	52.0	0.699
65.00	0.48	0.94	0.00	0.01	0.00	35.17	35.68	52.0	0.686
70.00	0.47	0.95	0.00	0.01	0.00	34.48	34.99	52.0	0.673
75.00	0.46	0.96	0.00	0.01	0.00	33.72	34.22	52.0	0.658
80.00	0.45	0.97	0.00	0.01	0.00	32.87	33.36	52.0	0.642
85.00	0.44	0.98	0.00	0.01	0.00	31.93	32.41	52.0	0.624
90.00	0.43	0.99	0.00	0.01	0.00	30.88	31.36	52.0	0.603
92.00	0.40	0.95	0.00	0.01	0.00	30.41	30.86	52.0	0.594
93.75	0.40	0.95	0.00	0.01	0.00	30.05	30.50	52.0	0.587
95.00	0.40	0.95	0.00	0.01	0.00	29.79	30.23	52.0	0.582
99.75	0.43	1.10	0.00	0.01	0.00	32.18	32.66	52.0	0.628
100.00	0.43	1.10	0.00	0.01	0.00	32.11	32.59	52.0	0.627
105.00	0.42	1.12	0.00	0.01	0.00	30.64	31.12	52.0	0.599
110.00	0.41	1.13	0.00	0.01	0.00	29.01	29.48	52.0	0.567
115.00	0.40	1.14	0.00	0.01	0.00	27.19	27.66	52.0	0.532
120.00	0.39	1.16	0.00	0.01	0.00	25.15	25.63	52.0	0.493
125.00	0.38	1.17	0.00	0.01	0.00	22.88	23.35	52.0	0.449
130.00	0.32	1.01	0.00	0.01	0.00	20.32	20.72	52.0	0.399
135.00	0.32	1.02	0.00	0.01	0.00	18.08	18.48	52.0	0.356
140.00	0.26	0.78	0.00	0.01	0.00	15.56	15.88	52.0	0.306
142.75	0.26	0.78	0.00	0.01	0.00	14.58	14.90	52.0	0.287
145.00	0.25	0.78	0.00	0.01	0.00	13.73	14.04	52.0	0.270
147.25	0.35	1.15	0.00	0.02	0.00	18.45	18.91	52.0	0.364
150.00	0.34	1.16	0.00	0.02	0.00	16.76	17.23	52.0	0.331
155.00	0.34	1.17	0.00	0.02	0.00	13.37	13.86	52.0	0.267
160.00	0.24	0.79	0.00	0.02	0.00	9.53	9.87	52.0	0.190
165.00	0.23	0.79	0.00	0.02	0.00	6.85	7.22	52.0	0.139
170.00	0.12	0.29	0.00	0.03	0.00	3.83	3.98	52.0	0.077
175.00	0.11	0.26	0.00	0.03	0.00	2.81	2.96	52.0	0.057
180.00	0.10	0.24	0.00	0.03	0.00	1.75	1.90	52.0	0.037
185.00	0.08	0.22	0.00	0.03	0.01	0.65	0.86	52.0	0.016
187.00	0.00	0.21	0.00	0.03	0.00	0.22	0.48	52.0	0.009

Wind Loading - Shaft

Structure: CT07824-S-SBA
Site Name: South Windsor
Height: 187.00 (ft)
Base Elev: 1.000 (ft)

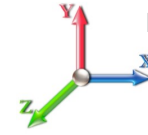
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

1/8/2016
 Page: 15



Load Case: 69.28 mph Wind with 0.5" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 25

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		0.00	1.00	12.287	20.77	374.57	0.650	0.500	0.00	0.000	0.00	0.0	0.0	0.0
5.00		0.00	1.00	12.287	20.77	367.94	0.650	0.500	5.00	27.210	17.69	367.3	198.2	1920.9
10.00		0.00	1.00	12.287	20.77	361.30	0.650	0.500	5.00	26.731	17.38	360.8	194.6	1886.3
15.00		0.00	1.00	12.287	20.77	354.66	0.650	0.500	5.00	26.252	17.06	354.3	191.1	1851.7
20.00		0.00	1.00	12.287	20.77	348.02	0.650	0.500	5.00	25.773	16.75	347.9	187.6	1817.2
25.00		0.00	1.00	12.287	20.77	341.38	0.650	0.500	5.00	25.294	16.44	341.4	184.0	1782.6
30.00		0.00	1.00	12.287	20.77	334.74	0.650	0.500	5.00	24.815	16.13	334.9	180.5	1748.0
35.00		0.00	1.03	12.597	21.29	332.21	0.650	0.500	5.00	24.336	15.82	336.7	176.9	1713.4
40.00		0.00	1.06	13.073	22.09	331.59	0.650	0.500	5.00	23.857	15.51	342.6	173.4	1678.8
45.00		0.00	1.10	13.510	22.83	330.12	0.650	0.500	5.00	23.378	15.20	347.0	169.8	1644.2
46.25	Bot - Section 2	0.00	1.11	13.614	23.01	329.64	0.650	0.500	1.25	5.770	3.75	86.3	42.2	406.0
50.00		0.00	1.13	13.915	23.52	327.96	0.650	0.500	3.75	17.402	11.31	266.0	126.7	2167.5
53.25	Top - Section 1	0.00	1.15	14.162	23.93	326.24	0.650	0.500	3.25	14.864	9.66	231.2	108.3	1850.6
55.00		0.00	1.16	14.291	24.15	330.66	0.650	0.500	1.75	7.920	5.15	124.3	57.9	495.1
60.00		0.00	1.19	14.645	24.75	327.48	0.650	0.500	5.00	22.305	14.50	358.8	161.9	1392.6
65.00		0.00	1.22	14.978	25.31	323.86	0.650	0.500	5.00	21.826	14.19	359.1	158.3	1361.9
70.00		0.00	1.24	15.294	25.85	319.85	0.650	0.500	5.00	21.347	13.88	358.6	154.8	1331.2
75.00		0.00	1.27	15.594	26.35	315.49	0.650	0.500	5.00	20.867	13.56	357.5	151.2	1300.4
80.00		0.00	1.29	15.881	26.84	310.83	0.650	0.500	5.00	20.388	13.25	355.7	147.7	1269.7
85.00		0.00	1.31	16.155	27.30	305.89	0.650	0.500	5.00	19.909	12.94	353.3	144.1	1239.0
90.00		0.00	1.34	16.418	27.75	300.69	0.650	0.500	5.00	19.430	12.63	350.4	140.6	1208.3
92.00	Appurtenance(s)	0.00	1.34	16.520	27.92	298.55	0.650	0.500	2.00	7.638	4.96	138.6	55.7	475.1
93.75	Bot - Section 3	0.00	1.35	16.609	28.07	296.65	0.650	0.500	1.75	6.620	4.30	120.8	48.3	411.8
95.00		0.00	1.36	16.671	28.17	295.27	0.650	0.500	1.25	4.771	3.10	87.4	34.8	517.3
99.75	Top - Section 2	0.00	1.38	16.902	28.57	289.92	0.650	0.500	4.75	17.857	11.61	331.5	129.2	1933.9
100.00		0.00	1.38	16.914	28.59	294.71	0.650	0.500	0.25	0.928	0.60	17.2	6.8	50.5
105.00		0.00	1.40	17.150	28.98	288.91	0.650	0.500	5.00	18.305	11.90	344.9	132.2	994.0
110.00		0.00	1.41	17.377	29.37	282.92	0.650	0.500	5.00	17.826	11.59	340.3	128.7	967.2
115.00		0.00	1.43	17.597	29.74	276.76	0.650	0.500	5.00	17.347	11.28	335.3	125.2	940.4
120.00		0.00	1.45	17.811	30.10	270.44	0.650	0.500	5.00	16.868	10.96	330.0	121.6	913.5
125.00		0.00	1.47	18.018	30.45	263.97	0.650	0.500	5.00	16.389	10.65	324.4	118.1	886.7
130.00	Appurtenance(s)	0.00	1.48	18.219	30.79	257.36	0.650	0.500	5.00	15.910	10.34	318.4	114.5	859.9
135.00		0.00	1.50	18.415	31.12	250.62	0.650	0.500	5.00	15.431	10.03	312.1	111.0	833.0
140.00	Appurtenance(s)	0.00	1.51	18.606	31.44	243.74	0.650	0.500	5.00	14.952	9.72	305.6	107.4	806.2
142.75	Bot - Section 4	0.00	1.52	18.709	31.62	239.91	0.650	0.500	2.75	8.019	5.21	164.8	58.0	432.4
145.00		0.00	1.53	18.792	31.76	236.75	0.650	0.500	2.25	6.547	4.26	135.2	47.4	553.1
147.25	Top - Section 3	0.00	1.54	18.875	31.90	233.56	0.650	0.500	2.25	6.450	4.19	133.7	46.7	544.5
150.00		0.00	1.54	18.974	32.07	233.23	0.650	0.500	2.75	7.752	5.04	161.6	56.0	297.9
155.00		0.00	1.56	19.151	32.37	226.03	0.650	0.500	5.00	13.723	8.92	288.7	98.3	526.0
160.00	Appurtenance(s)	0.00	1.57	19.325	32.66	218.72	0.650	0.500	5.00	13.243	8.61	281.1	94.8	507.0
165.00		0.00	1.59	19.494	32.95	211.32	0.650	0.500	5.00	12.764	8.30	273.3	91.2	487.9
170.00	Appurtenance(s)	0.00	1.60	19.660	33.23	203.82	0.650	0.500	5.00	12.285	7.99	265.3	87.7	468.8
175.00		0.00	1.61	19.823	33.50	196.23	0.650	0.500	5.00	11.806	7.67	257.1	84.1	449.8
180.00		0.00	1.63	19.982	33.77	188.55	0.650	0.500	5.00	11.327	7.36	248.6	80.6	430.7
185.00		0.00	1.64	20.138	34.03	180.79	0.650	0.500	5.00	10.848	7.05	240.0	77.0	411.6
187.00	Appurtenance(s)	0.00	1.64	20.200	34.14	177.66	0.650	0.500	2.00	4.205	2.73	93.3	30.2	159.7
Totals:									187.00			12,183.6		45,924.4

Discrete Appurtenance Forces

Structure: CT07824-S-SB
Site Name: South Windsor
Height: 187.00 (ft)
Base Elev: 1.000 (ft)

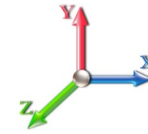
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

1/8/2016
 Page: 16



Load Case: 69.28 mph Wind with 0.5" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 25

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa Factor	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	187.00	ANT900D6-9	2	20.263	34.244	1.00	3.34	43.80	0.000	2.042	114.37	0.00	233.52
2	187.00	6' Lightning rod	1	20.200	34.138	1.00	0.98	11.80	0.000	0.000	33.46	0.00	0.00
3	187.00	ANT450F6	1	20.319	34.340	1.00	2.67	35.00	0.000	3.917	91.69	0.00	359.11
4	187.00	MF-900B	2	20.200	34.138	1.00	20.86	90.40	2.015	0.000	712.12	1435.2	0.00
5	187.00	DB201	2	20.345	34.382	1.00	13.32	112.80	0.000	4.750	457.97	0.00	2175.38
6	187.00	Low Profile Platform	1	20.200	34.138	1.00	27.00	1800.00	0.000	0.000	921.73	0.00	0.00
7	170.00	7770.00	6	19.660	33.226	0.75	28.27	389.52	0.000	0.000	939.47	0.00	0.00
8	170.00	782 10250	12	19.660	33.226	0.98	7.31	120.00	0.000	0.000	242.75	0.00	0.00
9	170.00	ABT-DFDM-ADBH	3	19.660	33.226	0.98	0.24	4.68	0.000	0.000	7.84	0.00	0.00
10	170.00	CG1900W800BP	6	19.660	33.226	0.64	5.45	106.32	0.000	0.000	181.18	0.00	0.00
11	170.00	CS72188.01	1	19.660	33.226	1.00	0.25	1.74	0.000	0.000	8.31	0.00	0.00
12	170.00	DBC-750	3	19.660	33.226	0.63	1.11	21.24	0.000	0.000	36.93	0.00	0.00
13	170.00	DTMABP7819VG12A	6	19.660	33.226	0.70	7.28	160.56	0.000	0.000	241.78	0.00	0.00
14	170.00	RRUS 11	6	19.660	33.226	0.72	13.58	416.46	0.000	0.000	451.33	0.00	0.00
15	170.00	RRUS A2 Module	3	19.660	33.226	0.65	3.95	88.08	0.000	0.000	131.32	0.00	0.00
16	170.00	RRUS 12	3	19.660	33.226	0.73	7.39	227.04	0.000	0.000	245.50	0.00	0.00
17	170.00	DC6-48-60-18-8F	1	19.660	33.226	1.00	4.56	56.36	0.000	0.000	151.51	0.00	0.00
18	170.00	Low Profile Platform	1	19.660	33.226	1.00	27.00	1800.00	0.000	0.000	897.11	0.00	0.00
19	170.00	HPA-65R-BUU-H6	3	19.660	33.226	0.81	26.50	325.20	0.000	0.000	880.35	0.00	0.00
20	160.00	S11B12	3	19.325	32.659	0.72	7.56	201.21	0.000	0.000	246.93	0.00	0.00
21	160.00	Platform w/ Hand Rail	1	19.325	32.659	1.00	40.00	2200.00	0.000	0.000	1306.36	0.00	0.00
22	160.00	LNx-6515DS	3	19.325	32.659	0.84	30.04	336.33	0.000	0.000	981.02	0.00	0.00
23	160.00	Double TMA 17/21	3	19.325	32.659	0.75	1.10	39.42	0.000	0.000	35.81	0.00	0.00
24	160.00	AIR 21 B4A B2P	3	19.325	32.659	0.83	17.24	382.77	0.000	0.000	563.14	0.00	0.00
25	160.00	AIR 21 B2A B4P	3	19.325	32.659	0.83	17.24	386.37	0.000	0.000	563.14	0.00	0.00
26	140.00	RRH2x60-1900	3	18.606	31.444	0.91	5.27	145.20	0.000	0.000	165.68	0.00	0.00
27	140.00	RRH2x40-07-U	3	18.606	31.444	0.80	6.10	202.50	0.000	0.000	191.69	0.00	0.00
28	140.00	Low Profile Platform	1	18.606	31.444	1.00	27.00	1800.00	0.000	0.000	849.00	0.00	0.00
29	140.00	LNx-6514DS-VTM	3	18.606	31.444	0.82	22.51	249.30	0.000	0.000	707.78	0.00	0.00
30	140.00	LNx-6514DS-A1M	3	18.606	31.444	0.85	23.56	266.70	0.000	0.000	740.89	0.00	0.00
31	140.00	KS-24019	6	18.606	31.444	1.00	1.08	13.80	0.000	0.000	33.96	0.00	0.00
32	140.00	HBXX-6517DS-A2M	6	18.606	31.444	0.79	45.46	547.20	0.000	0.000	1429.36	0.00	0.00
33	140.00	FD9R6004/2C-3L	6	18.606	31.444	0.77	2.31	32.40	0.000	0.000	72.64	0.00	0.00
34	140.00	DB-T1-6Z-8AB-0Z	1	18.606	31.444	1.00	5.04	51.10	0.000	0.000	158.48	0.00	0.00
35	130.00	800MHz Filter	3	18.219	30.790	0.71	2.04	41.40	0.000	0.000	62.96	0.00	0.00
36	130.00	ACU-A20-N	4	18.219	30.790	0.81	0.71	9.20	0.000	0.000	21.95	0.00	0.00
37	130.00	800 MHz RRH	3	18.219	30.790	0.93	7.87	222.30	0.000	0.000	242.25	0.00	0.00
38	130.00	1900MHz RRH	3	18.219	30.790	0.89	11.21	225.60	0.000	0.000	345.28	0.00	0.00
39	130.00	Low Profile Platform	1	18.219	30.790	1.00	27.00	1800.00	0.000	0.000	831.34	0.00	0.00
40	130.00	APXVSP18-C-A20	3	18.219	30.790	0.85	23.15	319.50	0.000	0.000	712.92	0.00	0.00
41	130.00	APXVTM14-C-120	3	18.219	30.790	0.81	17.71	275.70	0.000	0.000	545.44	0.00	0.00
42	130.00	RF Filters	3	18.219	30.790	0.69	2.63	66.00	0.000	0.000	80.94	0.00	0.00
43	130.00	TD-RRH8x20-25	3	18.219	30.790	0.71	10.59	276.00	0.000	0.000	325.95	0.00	0.00
44	92.00	MF-900B	2	16.520	27.919	1.00	20.86	90.40	2.887	0.000	582.40	1681.3	0.00
45	92.00	Low Profile Platform	1	16.520	27.919	1.00	27.00	1800.00	0.000	0.000	753.82	0.00	0.00
46	92.00	DB205	1	16.962	28.666	1.00	3.61	54.60	0.000	9.000	103.48	0.00	931.36
47	92.00	ANT450Y10-WR	1	16.520	27.919	1.00	0.82	10.80	0.000	0.000	22.89	0.00	0.00
48	92.00	ANT4506-9	1	16.671	28.174	1.00	3.63	41.60	0.000	3.000	102.27	0.00	306.81
49	92.00	ANT150D3	1	16.769	28.340	1.00	4.62	38.90	0.000	5.000	130.93	0.00	654.66

Discrete Appurtenance Forces

Structure: CT07824-S-SB
Site Name: South Windsor
Height: 187.00 (ft)
Base Elev: 1.000 (ft)

Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

1/8/2016
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Totals: 17,937.30

19,657.46

Total Applied Force Summary

Structure: CT07824-S-SB
Site Name: South Windsor
Height: 187.00 (ft)
Base Elev: 1.000 (ft)

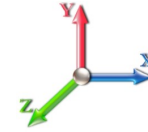
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

1/8/2016
 Page: 18



Load Case: 69.28 mph Wind with 0.5" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 25

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		367.28	2024.40	0.00	0.00
10.00		360.81	1989.80	0.00	0.00
15.00		354.34	1955.21	0.00	0.00
20.00		347.87	1920.61	0.00	0.00
25.00		341.41	1886.02	0.00	0.00
30.00		334.94	1851.42	0.00	0.00
35.00		336.74	1816.83	0.00	0.00
40.00		342.61	1782.24	0.00	0.00
45.00		346.95	1747.64	0.00	0.00
46.25		86.29	431.84	0.00	0.00
50.00		266.00	2245.14	0.00	0.00
53.25		231.25	1917.81	0.00	0.00
55.00		124.34	531.28	0.00	0.00
60.00		358.83	1496.05	0.00	0.00
65.00		359.11	1465.34	0.00	0.00
70.00		358.64	1434.62	0.00	0.00
75.00		357.47	1403.91	0.00	0.00
80.00		355.68	1373.20	0.00	0.00
85.00		353.32	1342.48	0.00	0.00
90.00		350.43	1311.77	0.00	0.00
92.00	(7) appurtenances	1834.41	2552.83	1681.32	1892.83
93.75		120.78	447.41	0.00	0.00
95.00		87.37	542.80	0.00	0.00
99.75		331.55	2030.70	0.00	0.00
100.00		17.24	55.58	0.00	0.00
105.00		344.85	1095.90	0.00	0.00
110.00		340.28	1069.07	0.00	0.00
115.00		335.33	1042.24	0.00	0.00
120.00		330.02	1015.40	0.00	0.00
125.00		324.38	988.57	0.00	0.00
130.00	(26) appurtenances	3487.46	4197.44	0.00	0.00
135.00		312.15	918.60	0.00	0.00
140.00	(32) appurtenances	4655.07	4199.96	0.00	0.00
142.75		164.81	466.22	0.00	0.00
145.00		135.15	580.72	0.00	0.00
147.25		133.73	572.14	0.00	0.00
150.00		161.57	331.69	0.00	0.00
155.00		288.69	587.49	0.00	0.00
160.00	(16) appurtenances	3977.55	4114.52	0.00	0.00
165.00		273.34	527.65	0.00	0.00
170.00	(54) appurtenances	4680.70	4225.78	0.00	0.00
175.00		257.08	456.56	0.00	0.00
180.00		248.63	437.49	0.00	0.00
185.00		239.98	418.42	0.00	0.00
187.00	(9) appurtenances	2424.65	2256.25	1435.23	2768.01
	Totals:	31,841.06	67,059.04	3,116.55	4,660.84

Resulting Forces and Deflections

Structure: CT07824-S-SB
Site Name: South Windsor
Height: 187.00 (ft)
Base Elev: 1.000 (ft)

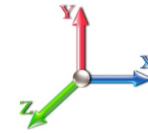
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

1/8/2016
 Page: 19



Load Case: 69.28 mph Wind with 0.5" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 25

Elev (ft)	Lateral FX (-) (kips)	Axial FY (-) (kips)	Lateral FZ (kips)	Moment MX (ft-kips)	Torsion MY (ft-kips)	Moment MZ (ft-kips)	Deflect X (in)	Deflect Z (in)	Deflect Resultant (in)	Rotation Sway (deg)	Rotation Twist (deg)
0.00	-31.907	-67.027	0.000	-0.029	-3.094	-4232.4	0.000	0.000	0.000	0.000	0.000
5.00	-31.664	-64.942	0.000	-0.029	-3.094	-4072.8	-0.059	0.000	0.059	-0.110	0.000
10.00	-31.422	-62.891	0.000	-0.030	-3.094	-3914.5	-0.235	0.000	0.235	-0.222	0.000
15.00	-31.180	-60.876	0.000	-0.030	-3.095	-3757.4	-0.530	0.000	0.530	-0.336	0.000
20.00	-30.938	-58.895	0.000	-0.031	-3.095	-3601.5	-0.944	0.000	0.944	-0.452	0.000
25.00	-30.697	-56.949	0.000	-0.032	-3.095	-3446.8	-1.480	0.000	1.480	-0.569	0.000
30.00	-30.457	-55.038	0.000	-0.033	-3.095	-3293.3	-2.140	0.000	2.140	-0.687	-0.001
35.00	-30.208	-53.162	0.000	-0.035	-3.095	-3141.1	-2.924	0.000	2.924	-0.808	-0.001
40.00	-29.949	-51.321	0.000	-0.037	-3.096	-2990.0	-3.835	0.000	3.835	-0.929	-0.001
45.00	-29.638	-49.540	0.000	-0.037	-3.096	-2840.3	-4.875	0.000	4.875	-1.052	-0.001
46.25	-29.598	-49.077	0.000	-0.039	-3.096	-2803.2	-5.155	0.000	5.155	-1.084	-0.001
50.00	-29.360	-46.793	0.001	-0.040	-3.097	-2692.3	-6.044	0.000	6.044	-1.178	-0.001
53.25	-29.137	-44.848	0.001	-0.041	-3.097	-2596.8	-6.875	0.000	6.875	-1.261	-0.001
55.00	-29.072	-44.273	0.001	-0.044	-3.097	-2545.8	-7.346	0.000	7.346	-1.306	-0.001
60.00	-28.780	-42.717	0.001	-0.047	-3.098	-2400.5	-8.788	0.000	8.788	-1.443	-0.001
65.00	-28.482	-41.193	0.001	-0.051	-3.098	-2256.6	-10.373	0.000	10.373	-1.581	-0.002
70.00	-28.179	-39.701	0.001	-0.055	-3.099	-2114.2	-12.104	0.001	12.104	-1.720	-0.002
75.00	-27.870	-38.242	0.001	-0.059	-3.100	-1973.3	-13.980	0.001	13.980	-1.859	-0.002
80.00	-27.558	-36.815	0.001	-0.063	-3.101	-1833.9	-16.001	0.001	16.001	-1.998	-0.002
85.00	-27.242	-35.420	0.001	-0.068	-3.102	-1696.2	-18.168	0.001	18.168	-2.136	-0.002
90.00	-26.898	-34.078	0.001	-0.071	-3.102	-1560.0	-20.479	0.001	20.479	-2.274	-0.003
92.00	-24.992	-31.578	0.001	-0.004	-1.421	-1504.3	-21.444	0.002	21.444	-2.330	-0.003
93.75	-24.875	-31.118	0.001	-0.006	-1.422	-1460.5	-22.307	0.002	22.307	-2.379	-0.003
95.00	-24.809	-30.543	0.001	-0.008	-1.422	-1429.4	-22.935	0.002	22.935	-2.414	-0.003
99.75	-24.423	-28.500	0.001	-0.012	-1.422	-1311.6	-25.402	0.002	25.402	-2.542	-0.003
100.00	-24.443	-28.412	0.001	-0.014	-1.423	-1305.5	-25.535	0.002	25.535	-2.549	-0.003
105.00	-24.117	-27.272	0.001	-0.020	-1.423	-1183.3	-28.284	0.002	28.284	-2.696	-0.003
110.00	-23.790	-26.162	0.001	-0.026	-1.424	-1062.7	-31.184	0.003	31.184	-2.840	-0.003
115.00	-23.462	-25.082	0.001	-0.032	-1.425	-943.79	-34.233	0.003	34.233	-2.979	-0.004
120.00	-23.134	-24.033	0.001	-0.039	-1.425	-826.48	-37.424	0.004	37.424	-3.113	-0.004
125.00	-22.804	-23.015	0.001	-0.046	-1.426	-710.82	-40.753	0.004	40.753	-3.240	-0.004
130.00	-19.118	-18.988	0.001	-0.053	-1.426	-596.80	-44.210	0.005	44.210	-3.358	-0.004
135.00	-18.785	-18.055	0.001	-0.059	-1.427	-501.21	-47.785	0.006	47.785	-3.468	-0.005
140.00	-13.899	-14.131	0.001	-0.065	-1.428	-407.28	-51.470	0.006	51.470	-3.567	-0.005
142.75	-13.716	-13.665	0.001	-0.067	-1.428	-369.06	-53.539	0.007	53.539	-3.619	-0.005
145.00	-13.554	-13.085	0.001	-0.070	-1.428	-338.20	-55.253	0.007	55.253	-3.660	-0.005
147.25	-13.393	-12.513	0.001	-0.072	-1.428	-307.70	-56.986	0.008	56.986	-3.699	-0.005
150.00	-13.226	-12.175	0.001	-0.076	-1.430	-270.87	-59.129	0.008	59.129	-3.743	-0.006
155.00	-12.918	-11.587	0.001	-0.081	-1.430	-204.74	-63.103	0.010	63.103	-3.844	-0.006
160.00	-8.680	-7.741	0.001	-0.087	-1.431	-140.16	-67.173	0.011	67.173	-3.925	-0.007
165.00	-8.377	-7.226	0.001	-0.091	-1.431	-96.765	-71.316	0.013	71.316	-3.988	-0.008
170.00	-3.414	-3.336	0.000	-0.095	-1.431	-54.879	-75.516	0.015	75.516	-4.033	-0.009
175.00	-3.127	-2.897	0.000	-0.097	-1.432	-37.807	-79.753	0.018	79.753	-4.064	-0.010
180.00	-2.849	-2.478	0.000	-0.099	-1.432	-22.171	-84.018	0.021	84.018	-4.087	-0.011
185.00	-2.580	-2.077	0.000	-0.101	-1.432	-7.928	-88.303	0.024	88.303	-4.100	-0.012
187.00	-2.425	0.000	0.000	0.000	-1.435	-2.768	0.000	0.000	90.019	-4.102	-0.012

Resulting Stresses

Structure: CT07824-S-SBA
Site Name: South Windsor
Height: 187.00 (ft)
Base Elev: 1.000 (ft)

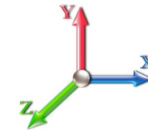
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

1/8/2016
 Page: 20



Load Case: 69.28 mph Wind with 0.5" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 25

Applied Stresses

Elev (ft)	fa Axial (Y) (ksi)	fvx Shear (X) (ksi)	fvz Shear (Z) (ksi)	fvT Torsion (ksi)	fbx Bending (X) (ksi)	fbz Bending (Z) (ksi)	fb Combined (ksi)	Fb Allow Stress (ksi)	f/Fb Stress Ratio
0.00	0.66	0.63	0.00	0.01	0.00	31.27	31.95	52.0	0.615
5.00	0.65	0.64	0.00	0.01	0.00	31.20	31.87	52.0	0.613
10.00	0.64	0.64	0.00	0.01	0.00	31.11	31.77	52.0	0.611
15.00	0.63	0.65	0.00	0.01	0.00	31.01	31.66	52.0	0.609
20.00	0.62	0.66	0.00	0.01	0.00	30.88	31.52	52.0	0.606
25.00	0.61	0.66	0.00	0.01	0.00	30.73	31.36	52.0	0.603
30.00	0.60	0.67	0.00	0.01	0.00	30.55	31.18	52.0	0.600
35.00	0.59	0.68	0.00	0.01	0.00	30.35	30.97	52.0	0.596
40.00	0.59	0.69	0.00	0.02	0.00	30.11	30.72	52.0	0.591
45.00	0.58	0.70	0.00	0.02	0.00	29.84	30.44	52.0	0.586
46.25	0.58	0.70	0.00	0.02	0.00	29.77	30.37	52.0	0.584
50.00	0.56	0.71	0.00	0.02	0.00	29.53	30.12	52.0	0.579
53.25	0.61	0.80	0.00	0.02	0.00	32.28	32.92	52.0	0.633
55.00	0.61	0.80	0.00	0.02	0.00	32.14	32.77	52.0	0.630
60.00	0.60	0.81	0.00	0.02	0.00	31.68	32.30	52.0	0.621
65.00	0.59	0.82	0.00	0.02	0.00	31.16	31.78	52.0	0.611
70.00	0.58	0.83	0.00	0.02	0.00	30.58	31.19	52.0	0.600
75.00	0.57	0.84	0.00	0.02	0.00	29.93	30.54	52.0	0.587
80.00	0.57	0.85	0.00	0.02	0.00	29.20	29.80	52.0	0.573
85.00	0.56	0.86	0.00	0.03	0.00	28.39	28.99	52.0	0.558
90.00	0.55	0.87	0.00	0.03	0.00	27.48	28.07	52.0	0.540
92.00	0.51	0.82	0.00	0.01	0.00	27.05	27.61	52.0	0.531
93.75	0.51	0.83	0.00	0.01	0.00	26.76	27.31	52.0	0.525
95.00	0.51	0.83	0.00	0.01	0.00	26.54	27.08	52.0	0.521
99.75	0.55	0.96	0.00	0.02	0.00	28.74	29.34	52.0	0.564
100.00	0.55	0.96	0.00	0.02	0.00	28.68	29.28	52.0	0.563
105.00	0.55	0.97	0.00	0.02	0.00	27.44	28.04	52.0	0.539
110.00	0.54	0.99	0.00	0.02	0.00	26.06	26.66	52.0	0.513
115.00	0.53	1.00	0.00	0.02	0.00	24.51	25.11	52.0	0.483
120.00	0.52	1.02	0.00	0.02	0.00	22.77	23.36	52.0	0.449
125.00	0.52	1.03	0.00	0.02	0.00	20.81	21.41	52.0	0.412
130.00	0.44	0.89	0.00	0.02	0.00	18.61	19.11	52.0	0.368
135.00	0.43	0.91	0.00	0.02	0.00	16.67	17.18	52.0	0.331
140.00	0.35	0.69	0.00	0.03	0.00	14.49	14.89	52.0	0.286
142.75	0.34	0.70	0.00	0.03	0.00	13.64	14.04	52.0	0.270
145.00	0.34	0.70	0.00	0.03	0.00	12.90	13.29	52.0	0.256
147.25	0.48	1.03	0.00	0.04	0.00	17.42	17.99	52.0	0.346
150.00	0.48	1.04	0.00	0.04	0.00	15.94	16.52	52.0	0.318
155.00	0.47	1.05	0.00	0.05	0.01	12.96	13.56	52.0	0.261
160.00	0.33	0.74	0.00	0.05	0.01	9.57	9.99	52.0	0.192
165.00	0.32	0.74	0.00	0.05	0.01	7.15	7.59	52.0	0.146
170.00	0.15	0.31	0.00	0.06	0.01	4.40	4.60	52.0	0.088
175.00	0.14	0.30	0.00	0.06	0.01	3.30	3.49	52.0	0.067
180.00	0.12	0.29	0.00	0.07	0.01	2.12	2.32	52.0	0.045
185.00	0.11	0.27	0.00	0.08	0.01	0.83	1.11	52.0	0.021
187.00	0.00	0.26	0.00	0.08	0.00	0.30	0.66	52.0	0.013

Wind Loading - Shaft

Structure: CT07824-S-SBA
Site Name: South Windsor
Height: 187.00 (ft)
Base Elev: 1.000 (ft)

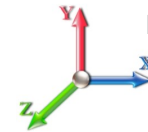
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

1/8/2016
 Page: 21



Load Case: 50 mph Wind with 0" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 23

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		0.00	1.00	6.400	10.82	270.33	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		0.00	1.00	6.400	10.82	265.54	0.650	0.000	5.00	26.794	17.42	188.4	0.0	1722.7
10.00		0.00	1.00	6.400	10.82	260.75	0.650	0.000	5.00	26.315	17.10	185.0	0.0	1691.7
15.00		0.00	1.00	6.400	10.82	255.96	0.650	0.000	5.00	25.836	16.79	181.6	0.0	1660.6
20.00		0.00	1.00	6.400	10.82	251.17	0.650	0.000	5.00	25.356	16.48	178.3	0.0	1629.6
25.00		0.00	1.00	6.400	10.82	246.38	0.650	0.000	5.00	24.877	16.17	174.9	0.0	1598.6
30.00		0.00	1.00	6.400	10.82	241.59	0.650	0.000	5.00	24.398	15.86	171.5	0.0	1567.5
35.00		0.00	1.03	6.561	11.09	239.76	0.650	0.000	5.00	23.919	15.55	172.4	0.0	1536.5
40.00		0.00	1.06	6.809	11.51	239.31	0.650	0.000	5.00	23.440	15.24	175.3	0.0	1505.4
45.00		0.00	1.10	7.037	11.89	238.25	0.650	0.000	5.00	22.961	14.92	177.5	0.0	1474.4
46.25	Bot - Section 2	0.00	1.11	7.091	11.98	237.91	0.650	0.000	1.25	5.665	3.68	44.1	0.0	363.7
50.00		0.00	1.13	7.248	12.25	236.69	0.650	0.000	3.75	17.090	11.11	136.1	0.0	2040.8
53.25	Top - Section 1	0.00	1.15	7.377	12.47	235.45	0.650	0.000	3.25	14.593	9.49	118.3	0.0	1742.2
55.00		0.00	1.16	7.444	12.58	238.64	0.650	0.000	1.75	7.774	5.05	63.6	0.0	437.2
60.00		0.00	1.19	7.628	12.89	236.34	0.650	0.000	5.00	21.888	14.23	183.4	0.0	1230.7
65.00		0.00	1.22	7.802	13.18	233.73	0.650	0.000	5.00	21.409	13.92	183.5	0.0	1203.6
70.00		0.00	1.24	7.966	13.46	230.84	0.650	0.000	5.00	20.930	13.60	183.2	0.0	1176.4
75.00		0.00	1.27	8.123	13.73	227.69	0.650	0.000	5.00	20.451	13.29	182.5	0.0	1149.2
80.00		0.00	1.29	8.272	13.98	224.33	0.650	0.000	5.00	19.972	12.98	181.5	0.0	1122.1
85.00		0.00	1.31	8.415	14.22	220.76	0.650	0.000	5.00	19.493	12.67	180.2	0.0	1094.9
90.00		0.00	1.34	8.552	14.45	217.01	0.650	0.000	5.00	19.013	12.36	178.6	0.0	1067.7
92.00	Appurtenance(s)	0.00	1.34	8.605	14.54	215.47	0.650	0.000	2.00	7.471	4.86	70.6	0.0	419.5
93.75	Bot - Section 3	0.00	1.35	8.651	14.62	214.09	0.650	0.000	1.75	6.474	4.21	61.5	0.0	363.5
95.00		0.00	1.36	8.683	14.67	213.10	0.650	0.000	1.25	4.667	3.03	44.5	0.0	482.5
99.75	Top - Section 2	0.00	1.38	8.804	14.88	209.23	0.650	0.000	4.75	17.461	11.35	168.9	0.0	1804.8
100.00		0.00	1.38	8.810	14.89	212.69	0.650	0.000	0.25	0.907	0.59	8.8	0.0	43.7
105.00		0.00	1.40	8.933	15.10	208.51	0.650	0.000	5.00	17.889	11.63	175.5	0.0	861.8
110.00		0.00	1.41	9.051	15.30	204.19	0.650	0.000	5.00	17.410	11.32	173.1	0.0	838.5
115.00		0.00	1.43	9.166	15.49	199.74	0.650	0.000	5.00	16.930	11.00	170.5	0.0	815.2
120.00		0.00	1.45	9.277	15.68	195.18	0.650	0.000	5.00	16.451	10.69	167.6	0.0	791.9
125.00		0.00	1.47	9.385	15.86	190.51	0.650	0.000	5.00	15.972	10.38	164.7	0.0	768.7
130.00	Appurtenance(s)	0.00	1.48	9.490	16.04	185.74	0.650	0.000	5.00	15.493	10.07	161.5	0.0	745.4
135.00		0.00	1.50	9.592	16.21	180.87	0.650	0.000	5.00	15.014	9.76	158.2	0.0	722.1
140.00	Appurtenance(s)	0.00	1.51	9.691	16.38	175.91	0.650	0.000	5.00	14.535	9.45	154.7	0.0	698.8
142.75	Bot - Section 4	0.00	1.52	9.745	16.47	173.15	0.650	0.000	2.75	7.790	5.06	83.4	0.0	374.4
145.00		0.00	1.53	9.788	16.54	170.86	0.650	0.000	2.25	6.360	4.13	68.4	0.0	505.6
147.25	Top - Section 3	0.00	1.54	9.831	16.61	168.57	0.650	0.000	2.25	6.263	4.07	67.6	0.0	497.8
150.00		0.00	1.54	9.883	16.70	168.32	0.650	0.000	2.75	7.522	4.89	81.7	0.0	241.9
155.00		0.00	1.56	9.975	16.86	163.13	0.650	0.000	5.00	13.306	8.65	145.8	0.0	427.7
160.00	Appurtenance(s)	0.00	1.57	10.066	17.01	157.86	0.650	0.000	5.00	12.827	8.34	141.8	0.0	412.2
165.00		0.00	1.59	10.154	17.16	152.51	0.650	0.000	5.00	12.348	8.03	137.7	0.0	396.7
170.00	Appurtenance(s)	0.00	1.60	10.240	17.31	147.10	0.650	0.000	5.00	11.869	7.71	133.5	0.0	381.2
175.00		0.00	1.61	10.325	17.45	141.62	0.650	0.000	5.00	11.389	7.40	129.2	0.0	365.6
180.00		0.00	1.63	10.408	17.59	136.08	0.650	0.000	5.00	10.910	7.09	124.7	0.0	350.1
185.00		0.00	1.64	10.489	17.73	130.48	0.650	0.000	5.00	10.431	6.78	120.2	0.0	334.6
187.00	Appurtenance(s)	0.00	1.64	10.522	17.78	128.22	0.650	0.000	2.00	4.038	2.62	46.7	0.0	129.5
Totals:									187.00			6,200.6		40,789.2

Discrete Appurtenance Forces

Structure: CT07824-S-SB
Site Name: South Windsor
Height: 187.00 (ft)
Base Elev: 1.000 (ft)

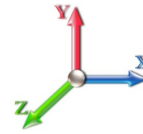
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

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Load Case: 50 mph Wind with 0" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 23

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa Factor	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	187.00	ANT900D6-9	2	10.554	17.836	1.00	1.96	22.00	0.000	2.042	34.96	0.00	71.38
2	187.00	6' Lightning rod	1	10.522	17.781	1.00	0.38	6.50	0.000	0.000	6.76	0.00	0.00
3	187.00	ANT450F6	1	10.584	17.886	1.00	1.86	21.00	0.000	3.917	33.27	0.00	130.30
4	187.00	MF-900B	2	10.522	17.781	1.00	6.90	26.00	2.015	0.000	122.69	247.28	0.00
5	187.00	DB201	2	10.597	17.909	1.00	7.08	50.00	0.000	4.750	126.79	0.00	602.27
6	187.00	Low Profile Platform	1	10.522	17.781	1.00	22.00	1500.00	0.000	0.000	391.19	0.00	0.00
7	170.00	7770.00	6	10.240	17.306	0.75	26.42	210.00	0.000	0.000	457.31	0.00	0.00
8	170.00	782 10250	12	10.240	17.306	0.98	6.12	76.80	0.000	0.000	105.83	0.00	0.00
9	170.00	ABT-DFDM-ADBH	3	10.240	17.306	0.98	0.15	3.42	0.000	0.000	2.53	0.00	0.00
10	170.00	CG1900W800BP	6	10.240	17.306	0.62	4.78	72.60	0.000	0.000	82.67	0.00	0.00
11	170.00	CS72188.01	1	10.240	17.306	1.00	0.20	0.32	0.000	0.000	3.46	0.00	0.00
12	170.00	DBC-750	3	10.240	17.306	0.59	0.91	14.64	0.000	0.000	15.73	0.00	0.00
13	170.00	DTMABP7819VG12A	6	10.240	17.306	0.68	6.51	115.08	0.000	0.000	112.60	0.00	0.00
14	170.00	RRUS 11	6	10.240	17.306	0.71	12.56	330.00	0.000	0.000	217.36	0.00	0.00
15	170.00	RRUS A2 Module	3	10.240	17.306	0.63	3.55	63.30	0.000	0.000	61.46	0.00	0.00
16	170.00	RRUS 12	3	10.240	17.306	0.72	6.85	180.00	0.000	0.000	118.57	0.00	0.00
17	170.00	DC6-48-60-18-8F	1	10.240	17.306	1.00	4.32	32.80	0.000	0.000	74.76	0.00	0.00
18	170.00	Low Profile Platform	1	10.240	17.306	1.00	22.00	1500.00	0.000	0.000	380.74	0.00	0.00
19	170.00	HPA-65R-BUJ-H6	3	10.240	17.306	0.81	25.21	153.00	0.000	0.000	436.22	0.00	0.00
20	160.00	S11B12	3	10.066	17.011	0.71	7.01	153.00	0.000	0.000	119.26	0.00	0.00
21	160.00	Platform w/ Hand Rail	1	10.066	17.011	1.00	32.00	1600.00	0.000	0.000	544.35	0.00	0.00
22	160.00	LNx-6515DS	3	10.066	17.011	0.84	28.72	150.90	0.000	0.000	488.50	0.00	0.00
23	160.00	Double TMA 17/21	3	10.066	17.011	0.72	0.89	33.00	0.000	0.000	15.09	0.00	0.00
24	160.00	AIR 21 B4A B2P	3	10.066	17.011	0.83	16.16	270.90	0.000	0.000	274.84	0.00	0.00
25	160.00	AIR 21 B2A B4P	3	10.066	17.011	0.83	16.16	274.50	0.000	0.000	274.84	0.00	0.00
26	140.00	RRH2x60-1900	3	9.691	16.378	0.90	4.75	58.50	0.000	0.000	77.83	0.00	0.00
27	140.00	RRH2x40-07-U	3	9.691	16.378	0.78	5.22	152.10	0.000	0.000	85.47	0.00	0.00
28	140.00	Low Profile Platform	1	9.691	16.378	1.00	22.00	1500.00	0.000	0.000	360.32	0.00	0.00
29	140.00	LNx-6514DS-VTM	3	9.691	16.378	0.80	19.99	99.30	0.000	0.000	327.43	0.00	0.00
30	140.00	LNx-6514DS-A1M	3	9.691	16.378	0.83	20.94	115.20	0.000	0.000	342.98	0.00	0.00
31	140.00	KS-24019	6	9.691	16.378	1.00	0.72	3.00	0.000	0.000	11.79	0.00	0.00
32	140.00	HBXX-6517DS-A2M	6	9.691	16.378	0.77	40.33	244.80	0.000	0.000	660.58	0.00	0.00
33	140.00	FD9R6004/2C-3L	6	9.691	16.378	0.75	1.62	18.60	0.000	0.000	26.53	0.00	0.00
34	140.00	DB-T1-6Z-8AB-0Z	1	9.691	16.378	1.00	4.78	21.40	0.000	0.000	78.29	0.00	0.00
35	130.00	800MHz Filter	3	9.490	16.038	0.69	1.61	26.40	0.000	0.000	25.89	0.00	0.00
36	130.00	ACU-A20-N	4	9.490	16.038	0.79	0.44	4.00	0.000	0.000	7.10	0.00	0.00
37	130.00	800 MHz RRH	3	9.490	16.038	0.92	6.87	159.00	0.000	0.000	110.22	0.00	0.00
38	130.00	1900MHz RRH	3	9.490	16.038	0.88	10.03	132.00	0.000	0.000	160.89	0.00	0.00
39	130.00	Low Profile Platform	1	9.490	16.038	1.00	22.00	1500.00	0.000	0.000	352.83	0.00	0.00
40	130.00	APXVSP18-C-A20	3	9.490	16.038	0.83	20.57	171.00	0.000	0.000	329.85	0.00	0.00
41	130.00	APXVTM14-C-120	3	9.490	16.038	0.79	16.35	168.00	0.000	0.000	262.26	0.00	0.00
42	130.00	RF Filters	3	9.490	16.038	0.67	2.19	46.50	0.000	0.000	35.14	0.00	0.00
43	130.00	TD-RRH8x20-25	3	9.490	16.038	0.69	9.77	210.00	0.000	0.000	156.69	0.00	0.00
44	92.00	MF-900B	2	8.605	14.542	1.00	6.90	26.00	2.887	0.000	100.34	289.67	0.00
45	92.00	Low Profile Platform	1	8.605	14.542	1.00	22.00	1500.00	0.000	0.000	319.93	0.00	0.00
46	92.00	DB205	1	8.835	14.931	1.00	1.80	38.00	0.000	9.000	26.88	0.00	241.88
47	92.00	ANT450Y10-WR	1	8.605	14.542	1.00	0.49	5.00	0.000	0.000	7.13	0.00	0.00
48	92.00	ANT4506-9	1	8.683	14.675	1.00	2.77	18.00	0.000	3.000	40.65	0.00	121.95
49	92.00	ANT150D3	1	8.735	14.761	1.00	2.18	18.00	0.000	5.000	32.18	0.00	160.90

Discrete Appurtenance Forces

Structure: CT07824-S-SB
Site Name: South Windsor
Height: 187.00 (ft)
Base Elev: 1.000 (ft)

Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

1/8/2016
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Totals: 13,094.56

8,440.96

Total Applied Force Summary

Structure: CT07824-S-SB
Site Name: South Windsor
Height: 187.00 (ft)
Base Elev: 1.000 (ft)

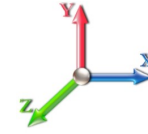
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

1/8/2016
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Load Case: 50 mph Wind with 0" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 23

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		188.37	1826.20	0.00	0.00
10.00		185.00	1795.15	0.00	0.00
15.00		181.63	1764.11	0.00	0.00
20.00		178.27	1733.06	0.00	0.00
25.00		174.90	1702.02	0.00	0.00
30.00		171.53	1670.97	0.00	0.00
35.00		172.39	1639.92	0.00	0.00
40.00		175.34	1608.88	0.00	0.00
45.00		177.49	1577.83	0.00	0.00
46.25		44.13	389.61	0.00	0.00
50.00		136.06	2118.42	0.00	0.00
53.25		118.25	1809.48	0.00	0.00
55.00		63.57	473.38	0.00	0.00
60.00		183.41	1334.18	0.00	0.00
65.00		183.48	1307.02	0.00	0.00
70.00		183.15	1279.85	0.00	0.00
75.00		182.48	1252.69	0.00	0.00
80.00		181.47	1225.52	0.00	0.00
85.00		180.18	1198.36	0.00	0.00
90.00		178.61	1171.19	0.00	0.00
92.00	(7) appurtenances	597.72	2065.87	289.67	524.73
93.75		61.53	399.14	0.00	0.00
95.00		44.51	507.97	0.00	0.00
99.75		168.86	1901.52	0.00	0.00
100.00		8.78	48.79	0.00	0.00
105.00		175.53	963.66	0.00	0.00
110.00		173.09	940.37	0.00	0.00
115.00		170.46	917.09	0.00	0.00
120.00		167.65	893.80	0.00	0.00
125.00		164.66	870.52	0.00	0.00
130.00	(26) appurtenances	1602.38	3264.13	0.00	0.00
135.00		158.20	807.64	0.00	0.00
140.00	(32) appurtenances	2125.96	2997.25	0.00	0.00
142.75		83.39	408.21	0.00	0.00
145.00		68.38	533.29	0.00	0.00
147.25		67.63	525.43	0.00	0.00
150.00		81.67	275.67	0.00	0.00
155.00		145.80	489.19	0.00	0.00
160.00	(16) appurtenances	1858.69	2955.96	0.00	0.00
165.00		137.73	436.44	0.00	0.00
170.00	(54) appurtenances	2202.76	3172.88	0.00	0.00
175.00		129.18	372.44	0.00	0.00
180.00		124.74	356.92	0.00	0.00
185.00		120.19	341.40	0.00	0.00
187.00	(9) appurtenances	762.33	1757.71	247.28	803.95
Totals:		14,641.55	57,081.12	536.95	1,328.67

Resulting Forces and Deflections

Structure: CT07824-S-SB
Site Name: South Windsor
Height: 187.00 (ft)
Base Elev: 1.000 (ft)

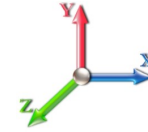
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

1/8/2016
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Load Case: 50 mph Wind with 0" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 23

Elev (ft)	Lateral FX (-) (kips)	Axial FY (-) (kips)	Lateral FZ (kips)	Moment MX (ft-kips)	Torsion MY (ft-kips)	Moment MZ (ft-kips)	Deflect X (in)	Deflect Z (in)	Deflect Resultant (in)	Rotation Sway (deg)	Rotation Twist (deg)
0.00	-14.666	-57.075	0.000	-0.002	-0.536	-1893.7	0.000	0.000	0.000	0.000	0.000
5.00	-14.525	-55.236	0.000	-0.002	-0.536	-1820.4	-0.027	0.000	0.027	-0.049	0.000
10.00	-14.384	-53.428	0.000	-0.002	-0.536	-1747.7	-0.105	0.000	0.105	-0.099	0.000
15.00	-14.245	-51.652	0.000	-0.002	-0.536	-1675.8	-0.237	0.000	0.237	-0.150	0.000
20.00	-14.106	-49.907	0.000	-0.002	-0.536	-1604.6	-0.422	0.000	0.422	-0.202	0.000
25.00	-13.969	-48.193	0.000	-0.002	-0.536	-1534.1	-0.661	0.000	0.661	-0.254	0.000
30.00	-13.832	-46.510	0.000	-0.002	-0.536	-1464.2	-0.955	0.000	0.955	-0.307	0.000
35.00	-13.692	-44.858	0.000	-0.002	-0.536	-1395.1	-1.305	0.000	1.305	-0.360	0.000
40.00	-13.547	-43.238	0.000	-0.002	-0.536	-1326.6	-1.711	0.000	1.711	-0.414	0.000
45.00	-13.382	-41.653	0.000	-0.002	-0.536	-1258.9	-2.174	0.000	2.174	-0.469	0.000
46.25	-13.355	-41.257	0.000	-0.003	-0.536	-1242.1	-2.299	0.000	2.299	-0.483	0.000
50.00	-13.227	-39.131	0.000	-0.003	-0.536	-1192.1	-2.695	0.000	2.695	-0.524	0.000
53.25	-13.110	-37.317	0.000	-0.003	-0.536	-1149.1	-3.065	0.000	3.065	-0.561	0.000
55.00	-13.068	-36.835	0.000	-0.003	-0.536	-1126.1	-3.274	0.000	3.274	-0.581	0.000
60.00	-12.908	-35.489	0.000	-0.003	-0.536	-1060.8	-3.915	0.000	3.915	-0.641	0.000
65.00	-12.746	-34.170	0.000	-0.003	-0.536	-996.29	-4.620	0.000	4.620	-0.702	0.000
70.00	-12.581	-32.880	0.000	-0.004	-0.536	-932.56	-5.389	0.000	5.389	-0.764	0.000
75.00	-12.415	-31.616	0.000	-0.004	-0.536	-869.66	-6.222	0.000	6.222	-0.825	0.000
80.00	-12.248	-30.381	0.000	-0.004	-0.536	-807.58	-7.119	0.000	7.119	-0.886	0.000
85.00	-12.080	-29.172	0.000	-0.005	-0.536	-746.34	-8.080	0.000	8.080	-0.947	0.000
90.00	-11.902	-27.996	0.000	-0.005	-0.536	-685.95	-9.104	0.000	9.104	-1.008	0.000
92.00	-11.278	-25.936	0.000	0.000	-0.247	-661.62	-9.532	0.000	9.532	-1.032	0.000
93.75	-11.217	-25.535	0.000	0.000	-0.247	-641.88	-9.915	0.000	9.915	-1.054	-0.001
95.00	-11.179	-25.021	0.000	0.000	-0.247	-627.86	-10.193	0.000	10.193	-1.069	-0.001
99.75	-10.986	-23.117	0.000	-0.001	-0.247	-574.76	-11.285	0.000	11.285	-1.126	-0.001
100.00	-10.990	-23.062	0.000	-0.001	-0.247	-572.02	-11.344	0.000	11.344	-1.129	-0.001
105.00	-10.819	-22.090	0.000	-0.001	-0.247	-517.07	-12.561	0.000	12.561	-1.193	-0.001
110.00	-10.649	-21.142	0.000	-0.002	-0.247	-462.98	-13.845	0.000	13.845	-1.255	-0.001
115.00	-10.479	-20.218	0.000	-0.002	-0.247	-409.73	-15.192	0.000	15.192	-1.316	-0.001
120.00	-10.309	-19.318	0.000	-0.003	-0.247	-357.34	-16.602	0.000	16.602	-1.374	-0.001
125.00	-10.140	-18.443	0.000	-0.003	-0.247	-305.80	-18.072	0.000	18.072	-1.429	-0.001
130.00	-8.468	-15.213	0.000	-0.004	-0.247	-255.09	-19.596	0.000	19.596	-1.480	-0.001
135.00	-8.300	-14.404	0.000	-0.004	-0.247	-212.75	-21.171	0.000	21.171	-1.526	-0.001
140.00	-6.100	-11.462	0.000	-0.005	-0.247	-171.25	-22.793	0.000	22.793	-1.568	-0.001
142.75	-6.009	-11.054	0.000	-0.005	-0.247	-154.48	-23.703	0.001	23.703	-1.590	-0.001
145.00	-5.929	-10.521	0.000	-0.005	-0.247	-140.96	-24.457	0.001	24.457	-1.607	-0.001
147.25	-5.850	-9.996	0.000	-0.005	-0.247	-127.62	-25.218	0.001	25.218	-1.623	-0.001
150.00	-5.766	-9.720	0.000	-0.006	-0.247	-111.53	-26.159	0.001	26.159	-1.642	-0.001
155.00	-5.612	-9.231	0.000	-0.006	-0.247	-82.704	-27.901	0.001	27.901	-1.683	-0.001
160.00	-3.669	-6.330	0.000	-0.007	-0.247	-54.646	-29.682	0.001	29.682	-1.715	-0.001
165.00	-3.521	-5.897	0.000	-0.007	-0.247	-36.300	-31.492	0.001	31.492	-1.739	-0.001
170.00	-1.223	-2.792	0.000	-0.007	-0.247	-18.697	-33.323	0.001	33.323	-1.756	-0.001
175.00	-1.082	-2.424	0.000	-0.007	-0.247	-12.584	-35.167	0.001	35.167	-1.766	-0.002
180.00	-0.947	-2.071	0.000	-0.007	-0.247	-7.172	-37.021	0.002	37.021	-1.774	-0.002
185.00	-0.816	-1.733	0.000	-0.008	-0.247	-2.437	-38.880	0.002	38.880	-1.778	-0.002
187.00	-0.762	0.000	0.000	0.000	-0.247	-0.804	0.000	0.000	39.625	-1.778	-0.002

Resulting Stresses

Structure: CT07824-S-SBA
Site Name: South Windsor
Height: 187.00 (ft)
Base Elev: 1.000 (ft)

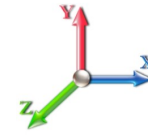
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

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Load Case: 50 mph Wind with 0" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 23

Applied Stresses

Elev (ft)	fa Axial (Y) (ksi)	fvx Shear (X) (ksi)	fvz Shear (Z) (ksi)	fvT Torsion (ksi)	fbx Bending (X) (ksi)	fbz Bending (Z) (ksi)	fb Combined (ksi)	Fb Allow Stress (ksi)	f/Fb Stress Ratio
0.00	0.56	0.29	0.00	0.00	0.00	13.99	14.56	52.0	0.280
5.00	0.55	0.29	0.00	0.00	0.00	13.95	14.50	52.0	0.279
10.00	0.54	0.29	0.00	0.00	0.00	13.89	14.44	52.0	0.278
15.00	0.53	0.30	0.00	0.00	0.00	13.83	14.37	52.0	0.277
20.00	0.53	0.30	0.00	0.00	0.00	13.76	14.29	52.0	0.275
25.00	0.52	0.30	0.00	0.00	0.00	13.68	14.20	52.0	0.273
30.00	0.51	0.31	0.00	0.00	0.00	13.58	14.10	52.0	0.271
35.00	0.50	0.31	0.00	0.00	0.00	13.48	13.99	52.0	0.269
40.00	0.49	0.31	0.00	0.00	0.00	13.36	13.86	52.0	0.267
45.00	0.49	0.31	0.00	0.00	0.00	13.22	13.72	52.0	0.264
46.25	0.48	0.32	0.00	0.00	0.00	13.19	13.68	52.0	0.263
50.00	0.47	0.32	0.00	0.00	0.00	13.08	13.55	52.0	0.261
53.25	0.51	0.36	0.00	0.00	0.00	14.29	14.80	52.0	0.285
55.00	0.50	0.36	0.00	0.00	0.00	14.22	14.73	52.0	0.283
60.00	0.50	0.36	0.00	0.00	0.00	14.00	14.51	52.0	0.279
65.00	0.49	0.37	0.00	0.00	0.00	13.76	14.26	52.0	0.274
70.00	0.48	0.37	0.00	0.00	0.00	13.49	13.98	52.0	0.269
75.00	0.47	0.37	0.00	0.00	0.00	13.19	13.68	52.0	0.263
80.00	0.47	0.38	0.00	0.00	0.00	12.86	13.34	52.0	0.257
85.00	0.46	0.38	0.00	0.00	0.00	12.49	12.97	52.0	0.249
90.00	0.45	0.39	0.00	0.00	0.00	12.08	12.55	52.0	0.241
92.00	0.42	0.37	0.00	0.00	0.00	11.90	12.34	52.0	0.237
93.75	0.42	0.37	0.00	0.00	0.00	11.76	12.20	52.0	0.235
95.00	0.41	0.37	0.00	0.00	0.00	11.66	12.09	52.0	0.233
99.75	0.45	0.43	0.00	0.00	0.00	12.59	13.06	52.0	0.251
100.00	0.45	0.43	0.00	0.00	0.00	12.57	13.04	52.0	0.251
105.00	0.44	0.44	0.00	0.00	0.00	11.99	12.46	52.0	0.240
110.00	0.44	0.44	0.00	0.00	0.00	11.35	11.81	52.0	0.227
115.00	0.43	0.45	0.00	0.00	0.00	10.64	11.10	52.0	0.213
120.00	0.42	0.45	0.00	0.00	0.00	9.85	10.30	52.0	0.198
125.00	0.41	0.46	0.00	0.00	0.00	8.95	9.40	52.0	0.181
130.00	0.35	0.40	0.00	0.00	0.00	7.95	8.34	52.0	0.160
135.00	0.34	0.40	0.00	0.00	0.00	7.08	7.46	52.0	0.143
140.00	0.28	0.30	0.00	0.00	0.00	6.09	6.40	52.0	0.123
142.75	0.28	0.31	0.00	0.00	0.00	5.71	6.01	52.0	0.116
145.00	0.27	0.31	0.00	0.00	0.00	5.37	5.67	52.0	0.109
147.25	0.38	0.45	0.00	0.01	0.00	7.22	7.65	52.0	0.147
150.00	0.38	0.45	0.00	0.01	0.00	6.56	6.99	52.0	0.134
155.00	0.37	0.46	0.00	0.01	0.00	5.24	5.67	52.0	0.109
160.00	0.27	0.31	0.00	0.01	0.00	3.73	4.04	52.0	0.078
165.00	0.26	0.31	0.00	0.01	0.00	2.68	2.99	52.0	0.058
170.00	0.13	0.11	0.00	0.01	0.00	1.50	1.64	52.0	0.032
175.00	0.12	0.10	0.00	0.01	0.00	1.10	1.23	52.0	0.024
180.00	0.10	0.09	0.00	0.01	0.00	0.68	0.81	52.0	0.016
185.00	0.09	0.09	0.00	0.01	0.00	0.26	0.39	52.0	0.007
187.00	0.00	0.08	0.00	0.01	0.00	0.09	0.19	52.0	0.004

Final Analysis Summary

Structure: CT07824-S-SBA
Site Name: South Windsor
Height: 187.00 (ft)
Base Elev: 1.000 (ft)

Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
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)
80 mph Wind with 0" Ice	37.5	0.00	57.04	0.01	1.36	4844.52
69.28 mph Wind with 0.5" Ice	31.9	0.00	67.03	0.03	3.09	4232.42
50 mph Wind with 0" Ice	14.7	0.00	57.07	0.00	0.54	1893.74

Max Stresses

Load Case	fa Axial (Y) (ksi)	fvx Shear (X) (ksi)	fvz Shear (Z) (ksi)	fvT Torsion (ksi)	fbx Bending (X) (ksi)	fbz Bending (Z) (ksi)	Combined Stress (ksi)	Allowable Stress (ksi)	Elev (ft)	Stress Ratio
80 mph Wind with 0" Ice	0.50	0.92	0.00	0.01	0.00	36.53	37.06	52.0	53.25	0.713
69.28 mph Wind with 0.5" Ice	0.61	0.80	0.00	0.02	0.00	32.28	32.92	52.0	53.25	0.633
50 mph Wind with 0" Ice	0.51	0.36	0.00	0.00	0.00	14.29	14.80	52.0	53.25	0.285



Monopole Mat Foundation Design

Date

1/8/2016

Customer Name:	AT&T	EIA/TIA Standard:	EIA-222-F
Site Name:	South Windsor	Structure Height (Ft.):	187
Site Number:	CT07824-S-SBA	Engineer Name:	J. Tibbetts
Engr. Number:	19859	Engineer Login ID:	

Foundation Info Obtained from:

Drawings/Calculations

Structure Type:

Monopole

Analysis or Design?

Analysis

Base Reactions (Unfactored)

Axial Load (Kips):	57.0	Shear Force (Kips):	37.5
Uplift Force (Kips):	0.0	Moment (Kips-ft):	4844.4

Allowable overstress %: 5.0%

Foundation Geometries:

		Mods required -Yes/No ?:	No
Diameter of Pier (ft.):	8.0	Depth of Base BG (ft.):	12.0
Pier Height A. G. (ft.):	1.00	Thickness of Pad (ft):	2.50
Length of Pad (ft.):	24.5	Width of Pad (ft.):	24.5

Final Length of pad (ft)	24.5	Final width of pad (ft):	24.5
Control Value for Cell D18:	0	Control Value for Cell F18:	0

Material Properties and Rebar Info:

Concrete Strength (psi):	4000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield (ksi):	60	
Vertical Rebar Size #:	10	Tie / Stirrup Size #:	4	
Qty. of Vertical Rebars:	36	Tie Spacing (in):	6.0	
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	10	
Concrete Cover (in.):	3	Unit Weight of Concrete:	150.0	pcf

Rebar at the bottom of the concrete pad:			
Qty. of Rebar in Pad (L):	42	Qty. of Rebar in Pad (W):	42
Rebar at the top of the concrete pad:			
Qty. of Rebar in Pad (L):	42	Qty. of Rebar in Pad (W):	42

Apply 1.35 factor for e/w Per G: 1.35

Soil Design Parameters:

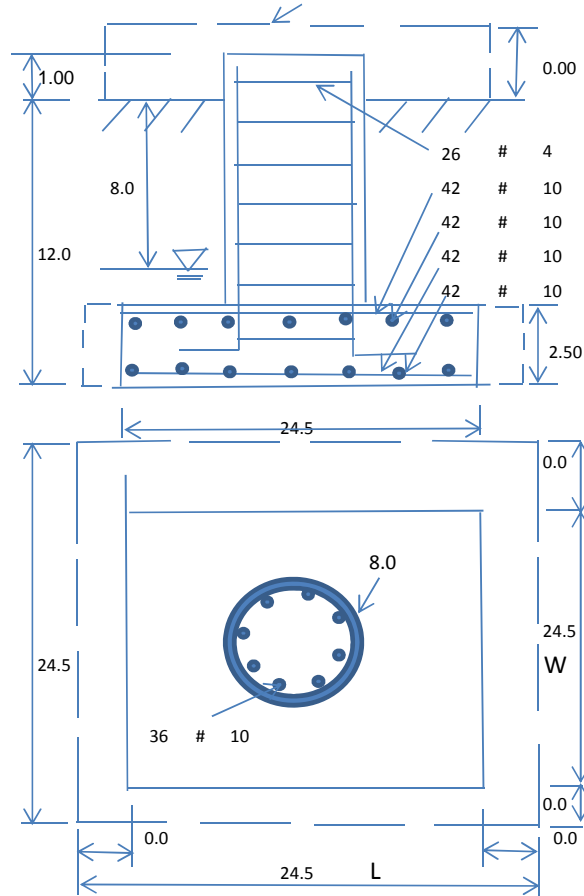
Soil Unit Weight (pcf):	120.0	Soil Buoyant Weight:	50.0	Pcf		
Water Table B.G.S. (ft):	8.0	Unit Weight of Water:	62.4	pcf	Angle from Top of Pad:	30
Allowable Net Soil Bearing (psf):	8000	Allowable Skin Friction:	0	Psf	Angle from Bottm of Pad:	25
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	No		Angle from Bottm of Pad:	25
Consider soil hori. force for O.T.M.:	No	Reduction factor on the maximum soil bearing pressure:	1.00			

Foundation Analysis and Design:

Total Dry Soil Volume (cu. Ft.):	4399.88	Total Dry Soil Weight (Kips):	527.99
Total Buoyant Soil Volume (cu. Ft.):	889.38	Total Buoyant Soil Weight (Kips):	44.47
Total Effective Soil Weight (Kips):	572.45	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	452.39	Total Dry Concrete Weight (Kips):	67.86
Total Buoyant Concrete Volume (cu. Ft.):	1576.02	Total Buoyant Concrete Weight (Kips):	138.06
Total Effective Concrete Weight (Kips):	205.92	Total Vertical Load on Base (Kips):	835.38

Check Soil Capacities:

Calculated Maxium Net Soil Pressure under the base (psf):	4125	<	Allowable Soil Bearing (psf):	8000	0.52	OK!
Allowable Foundation Overturning Resistance (SF=1.5, kips-ft.):	6796.0	>	Applied Momont (kips-ft):	5332	0.78	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	1.91					OK!



Check the capacities of Reinforcing Concrete:

Strength reduction factor (Flexure and axial tension):	0.90	Strength reduction factor (Shear):	0.75	
Strength reduction factor (Axial compression):	0.65	Wind Load Factor on Concrete Design:	1.30	

Load/
Capacity
Ratio

(1) Concrete Pier:

Vertical Steel Rebar Area (sq. in./each):	1.27	Tie / Stirrup Area (sq. in./each):	0.20		
Calculated Moment Capacity (Mn,Kips-Ft):	8929.3	> Design Factored Moment (Mu, Kips-Ft)	6809.6	0.76	OK!
Calculated Shear Capacity (Kips):	993.9	> Design Factored Shear (Kips):	48.8	0.05	OK!
Calculated Tension Capacity (Tn, Kips):	2468.9	> Design Factored Tension (Tu Kips):	0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	12716.4	> Design Factored Axial Load (Pu Kips):	74.1	0.01	OK!
Moment & Axial Strength Combination(Pu/Pn+Mu/Mn):	0.77	OK! Check Tie Spacing (Design/Required):		0.5	OK!
Pier Reinforcement Ratio:	0.006	Reinforcement Ratio is satisfied per ACI			

(2).Concrete Pad:

One-Way Design Shear Capacity (L-Direction, Kips):	735.6	> One-Way Factored Shear (L-D. Kips):	446.6	0.61	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	735.6	> One-Way Factored Shear (W-D., Kips)	446.6	0.61	OK!
One-Way Design Shear Capacity (Corner-Corner. Kips):	800.1	> One-Way Factored Shear (C-C, Kips):	661.1	0.83	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0069	OK! Lower Steel Pad Reinf. Ratio (W-Direc	0.0069		
Lower Steel Pad Moment Capacity (L-Direction. Kips-ft):	5946.5	> Moment at Bottom (L-Direct. K-Ft):	1039.6	0.17	OK!
Lower Steel Pad Moment Capacity (W-Direction. Kips-ft):	5946.5	> Moment at Bottom (W-Direct. K-Ft):	1039.6	0.17	OK!
Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):	8246.5	> Moment at Bottom (C-C Dir. K-Ft):	1470.2	0.18	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0069	OK! Upper Steel Reinf. Ratio (W-Direct.):	0.0069		
Upper Steel Pad Moment Capacity (L-Direction. Kips-ft):	5946.5	> Moment at the top (L-Dir Kips-Ft):	633.7	0.11	OK!
Upper Steel Pad Moment Capacity (W-Direction. Kips-ft):	5946.5	> Moment at the top (W-Dir Kips-Ft):	633.7	0.11	OK!
Upper Steel Pad Moment Capacity (Corner-Corner. K-ft):	8246.5	> Moment at the top (C-C Direc. K-Ft):	912.0	0.11	OK!

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

AT&T Existing Facility

Site ID: CT1139

**S. Windsor Sand Hill Road
151 Sand Hill Road
South Windsor, CT 06074**

January 19, 2016

EBI Project Number: 6216000144

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	8.77 %

January 19, 2016

AT&T Mobility – New England
Attn: Cameron Syme, RF Manager
550 Cochituate Road
Suite 550 – 13&14
Framingham, MA 06040

Emissions Analysis for Site: **CT1139 – S. Windsor Sand Hill Road**

EBI Consulting was directed to analyze the proposed AT&T facility located at **151 Sand Hill Road, South Windsor, CT**, for the purpose of determining whether the emissions from the Proposed AT&T 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 limits for the 700 and 850 MHz Bands are approximately $467 \mu\text{W}/\text{cm}^2$ and $567 \mu\text{W}/\text{cm}^2$ respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 2300 MHz (WCS) 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 AT&T Wireless antenna facility located at **151 Sand Hill Road, South Windsor, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since AT&T 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 UMTS channels (850 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 LTE channels (700 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.
- 4) 2 LTE channels (PCS Band – 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.
- 5) 2 GSM channels (850 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 6) 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.

- 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 six 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 **Powerwave 7770.00, CCI HPA-65R-BUU-H6 and the KMW AM-X-CD-16-65-00T-RET** for transmission in the 700 MHz, 850 MHz and 1900 MHz (PCS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. 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 centerline of the proposed antennas is **170 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.

All calculations were done with respect to uncontrolled / general public threshold limits.

AT&T Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	Powerwave 7770.00	Make / Model:	Powerwave 7770.00	Make / Model:	Powerwave 7770.00
Gain:	11.4 / 13.4 dBd	Gain:	11.4 / 13.4 dBd	Gain:	11.4 / 13.4 dBd
Height (AGL):	170 feet	Height (AGL):	170 feet	Height (AGL):	170 feet
Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	120	Total TX Power(W):	120	Total TX Power(W):	120
ERP (W):	2,140.89	ERP (W):	2,140.89	ERP (W):	2,140.89
Antenna A1 MPE%	0.37	Antenna B1 MPE%	0.37	Antenna C1 MPE%	0.37
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	CCI HPA-65R-BUU-H6	Make / Model:	CCI HPA-65R-BUU-H6	Make / Model:	CCI HPA-65R-BUU-H6
Gain:	11.95 / 14.75 dBd	Gain:	11.95 / 14.75 dBd	Gain:	11.95 / 14.75 dBd
Height (AGL):	170 feet	Height (AGL):	170 feet	Height (AGL):	170 feet
Frequency Bands	700 MHz / 1900 MHz (PCS)	Frequency Bands	700 MHz / 1900 MHz (PCS)	Frequency Bands	700 MHz / 1900 MHz (PCS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	240	Total TX Power(W):	240	Total TX Power(W):	240
ERP (W):	5,462.56	ERP (W):	5,462.56	ERP (W):	5,462.56
Antenna A2 MPE%	1.02	Antenna B2 MPE%	1.02	Antenna C2 MPE%	1.02
Antenna #:	3	Antenna #:	3	Antenna #:	3
Make / Model:	KMW AM-X-CD-16-65-00T-RET	Make / Model:	KMW AM-X-CD-16-65-00T-RET	Make / Model:	KMW AM-X-CD-16-65-00T-RET
Gain:	13.85 / 15.254 dBd	Gain:	13.85 / 15.254 dBd	Gain:	13.85 / 15.254 dBd
Height (AGL):	170 feet	Height (AGL):	170 feet	Height (AGL):	170 feet
Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	120	Total TX Power(W):	120	Total TX Power(W):	120
ERP (W):	3,465.76	ERP (W):	3,465.76	ERP (W):	3,465.76
Antenna A3 MPE%	0.61	Antenna B3 MPE%	0.61	Antenna C3 MPE%	0.61

Site Composite MPE%	
Carrier	MPE%
AT&T – Max per sector	2.00 %
Town	0.77 %
Sprint	0.84 %
MetroPCS	0.22 %
Clearwire	0.09 %
Nextel	0.28 %
Verizon Wireless	2.87 %
T-Mobile	1.70 %
Site Total MPE %:	8.77 %

AT&T Sector 1 Total:	2.00 %
AT&T Sector 2 Total:	2.00 %
AT&T Sector 3 Total:	2.00 %
Site Total:	8.77 %

AT&T _ 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
AT&T 850 MHz UMTS	2	414.12	170	1.11	850	567	0.20 %
AT&T 1900 MHz (PCS) UMTS	2	656.33	170	1.75	1900	1000	0.18 %
AT&T 850 MHz LTE	2	940.05	170	2.51	700	467	0.54 %
AT&T 1900 MHz (PCS) LTE	2	1791.23	170	4.79	1900	1000	0.48 %
AT&T 850 MHz GSM	2	727.98	170	1.95	850	567	0.34 %
AT&T 1900 MHz (PCS) GSM	2	1004.90	170	2.69	1900	1000	0.27 %
						Total:	2.00 %

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 AT&T 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:

AT&T Sector	Power Density Value (%)
Sector 1:	2.00 %
Sector 2:	2.00 %
Sector 3 :	2.00 %
AT&T Maximum Total (per sector):	2.00 %
Site Total:	8.77 %
Site Compliance Status:	COMPLIANT

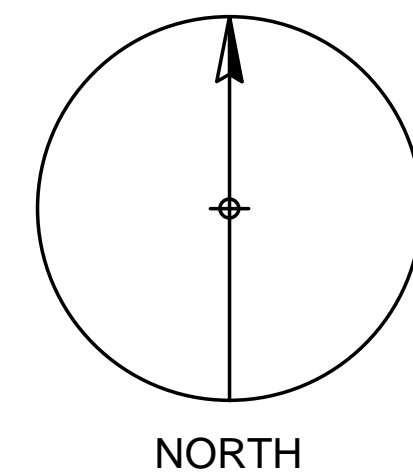
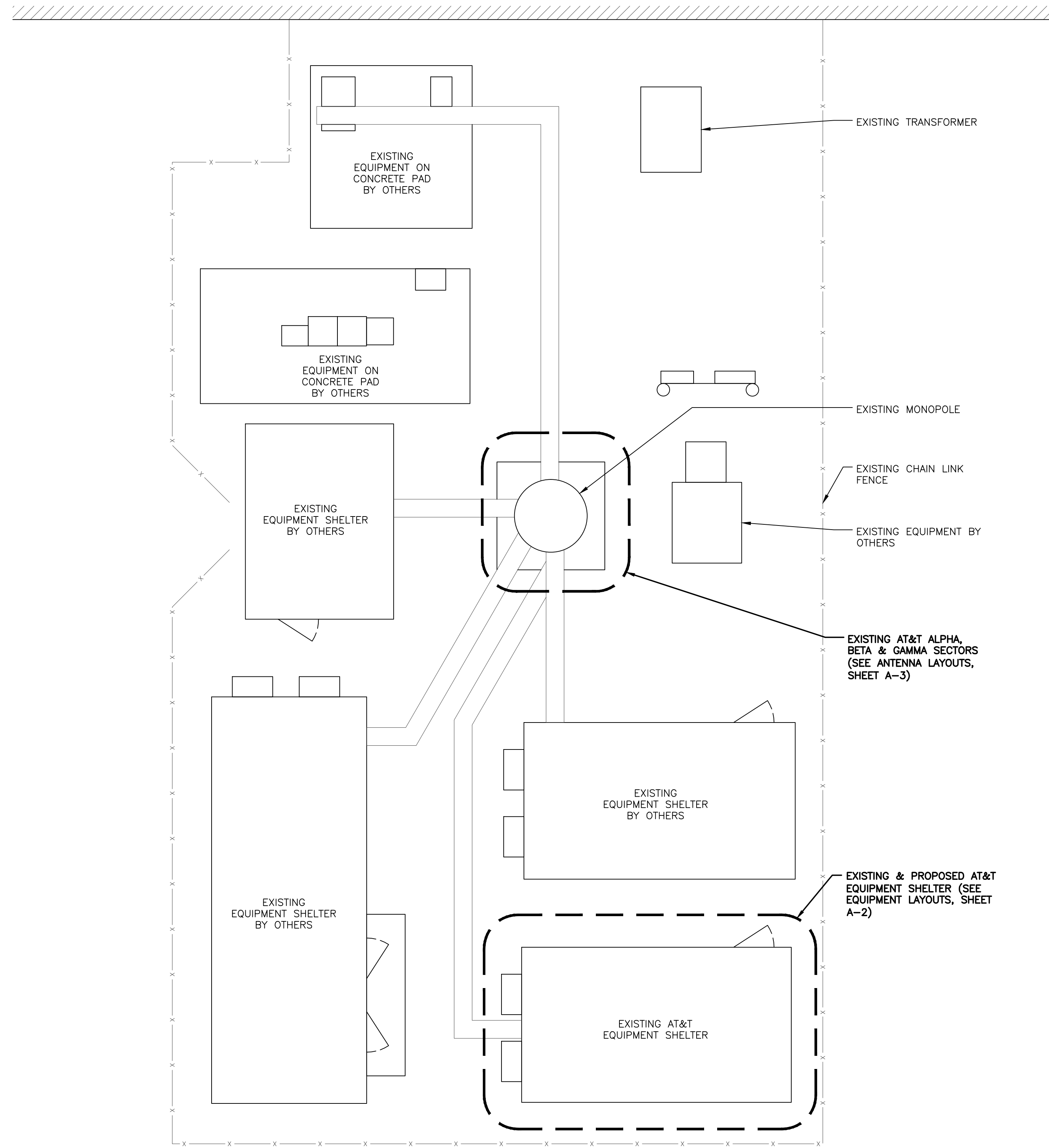
The anticipated composite MPE value for this site assuming all carriers present is **8.77%** of the allowable FCC established general public limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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.

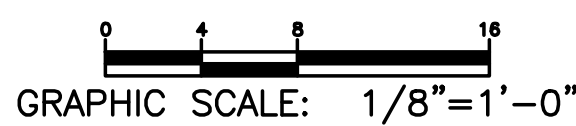


Scott Heffernan
RF Engineering Director

EBI Consulting
21 B Street
Burlington, MA 01803



COMPOUND LAYOUT
SCALE: 3/16" = 1'-0"



NOTE:
CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, ELEVATIONS, ANGLES, AND EXISTING CONDITIONS AT THE SITE PRIOR TO FABRICATION AND/OR INSTALLATION OF ANY WORK IN THE CONTRACT AREA AND SUBMIT TO THE ENGINEER ANY DISCREPANCIES FROM THE DRAWINGS.

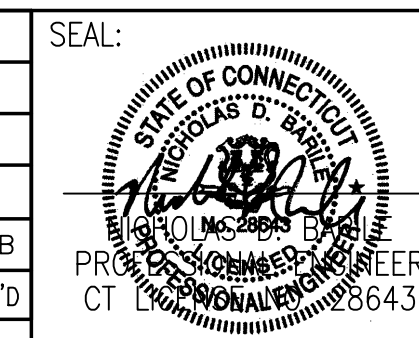
COM-EX
Consultants
115 ROUTE 46
SUITE E39
MOUNTAIN LAKES, NJ 07046
PHONE: 862.209.4300
FAX: 862.209.4301

EMPIRE
telecom
16 ESQUIRE ROAD
BILLERICA, MA 01821

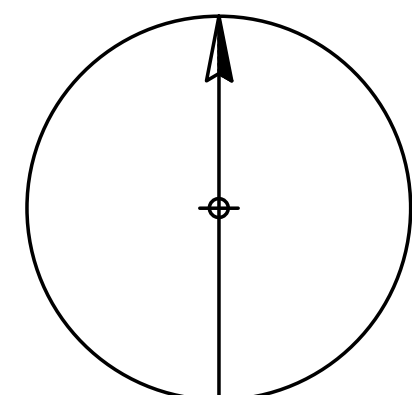
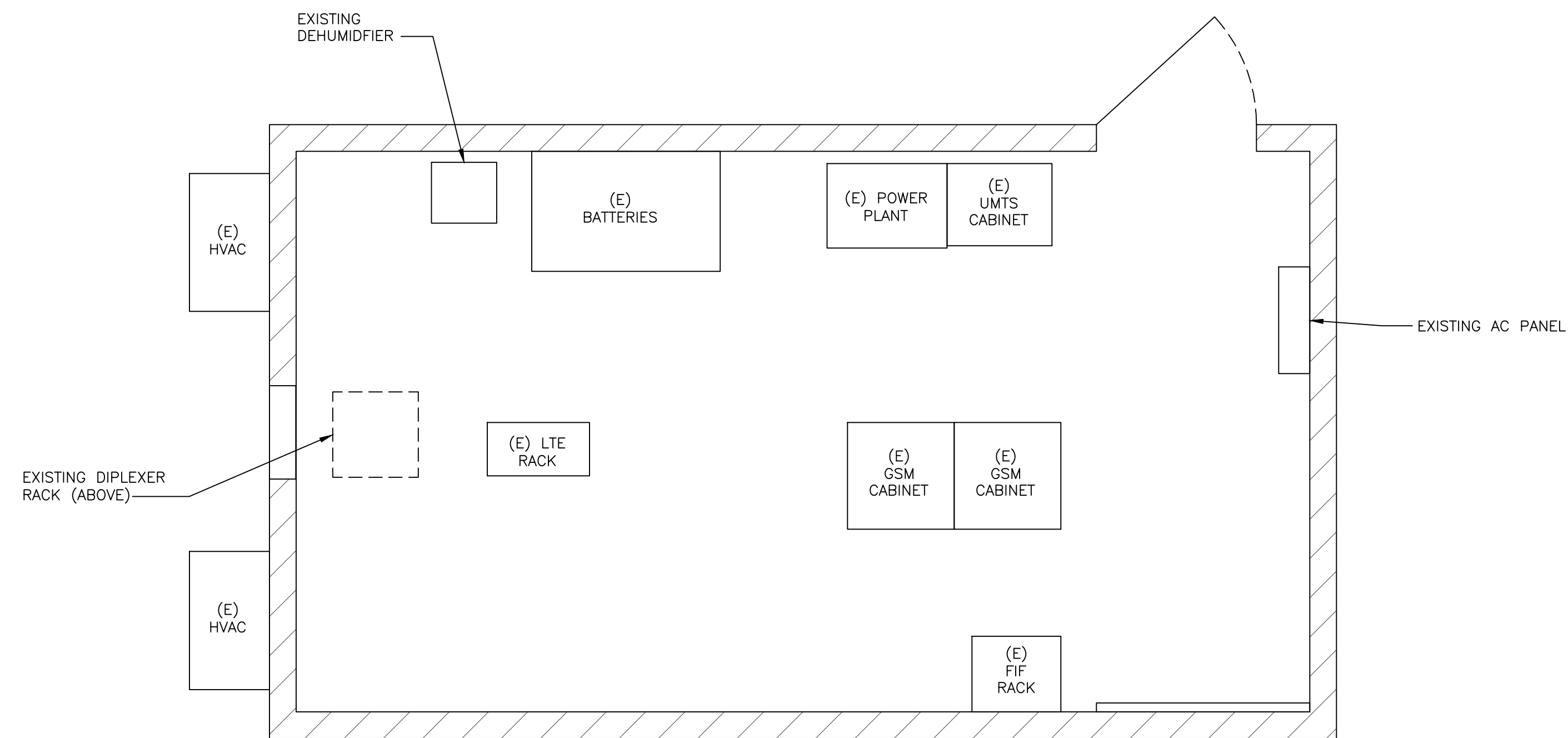
SITE NUMBER: CTV1139
SITE NAME: SOUTH WINDSOR
SAND HILL RD
151 SAND HILL ROAD
SOUTH WINDSOR, CT 06074
HARTFORD COUNTY

at&t
MOBILITY
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

0	01/27/16	ISSUED AS FINAL	NJM	NDB	NDB
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: NJM	DRAWN BY: NJM		



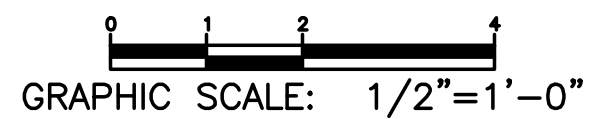
AT&T		
DRAWING TITLE: COMPOUND LAYOUT		
JOB NUMBER 15106-EMP	DRAWING NUMBER A-1	REV 0



NORTH

EXISTING EQUIPMENT LAYOUT

SCALE: 1/2" = 1'-0"



NO GROUND EQUIPMENT MODIFICATIONS ARE BEING MADE AS PART OF THIS SCOPE. EXISTING GROUND EQUIPMENT CONFIGURATION TO REMAIN.

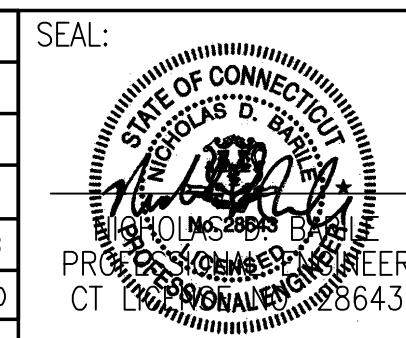
COM-EX
Consultants
115 ROUTE 46
SUITE E39
MOUNTAIN LAKES, NJ 07046
PHONE: 862.209.4300
FAX: 862.209.4301

EMPIRE
telecom
16 ESQUIRE ROAD
BILLERICA, MA 01821

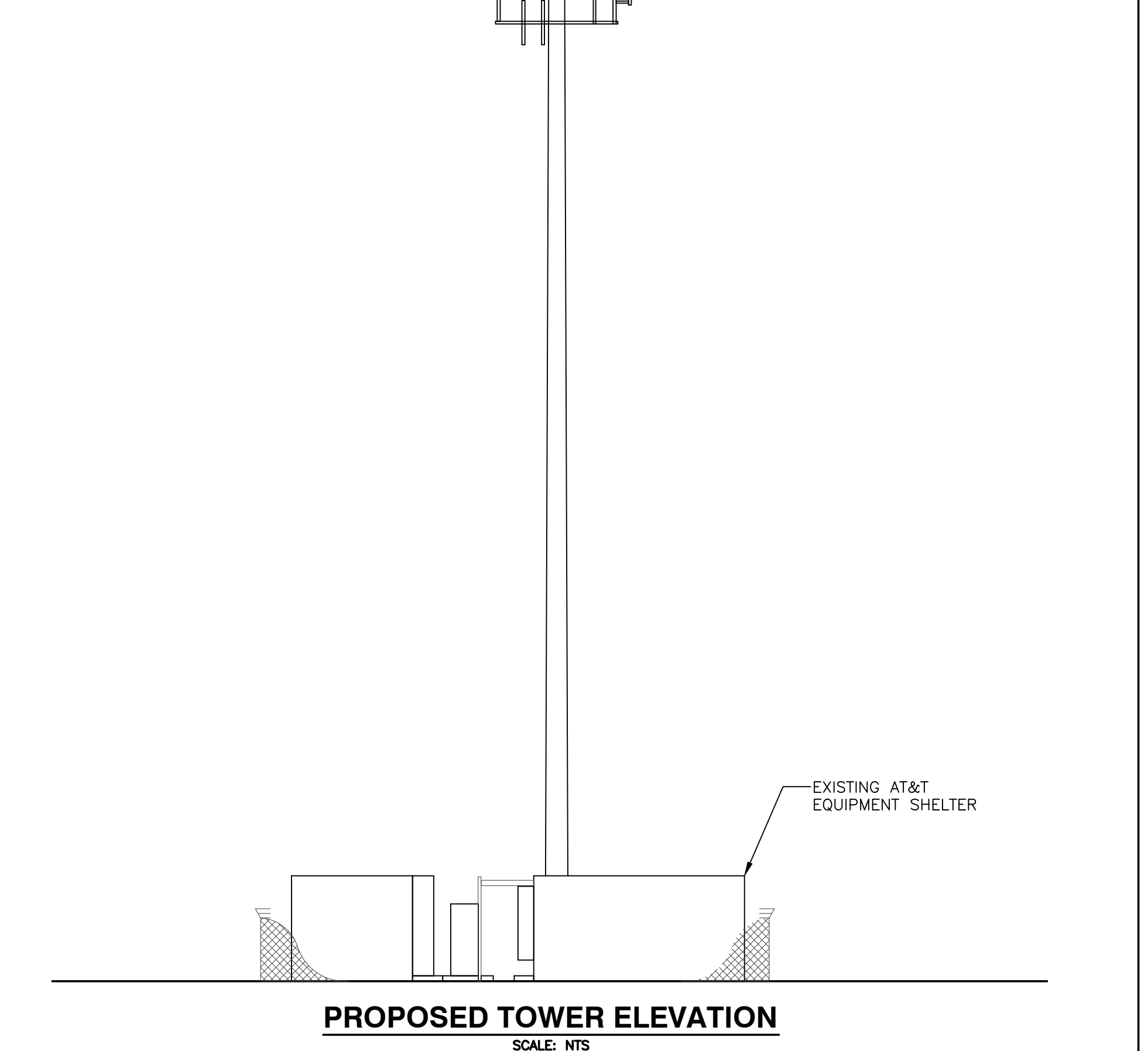
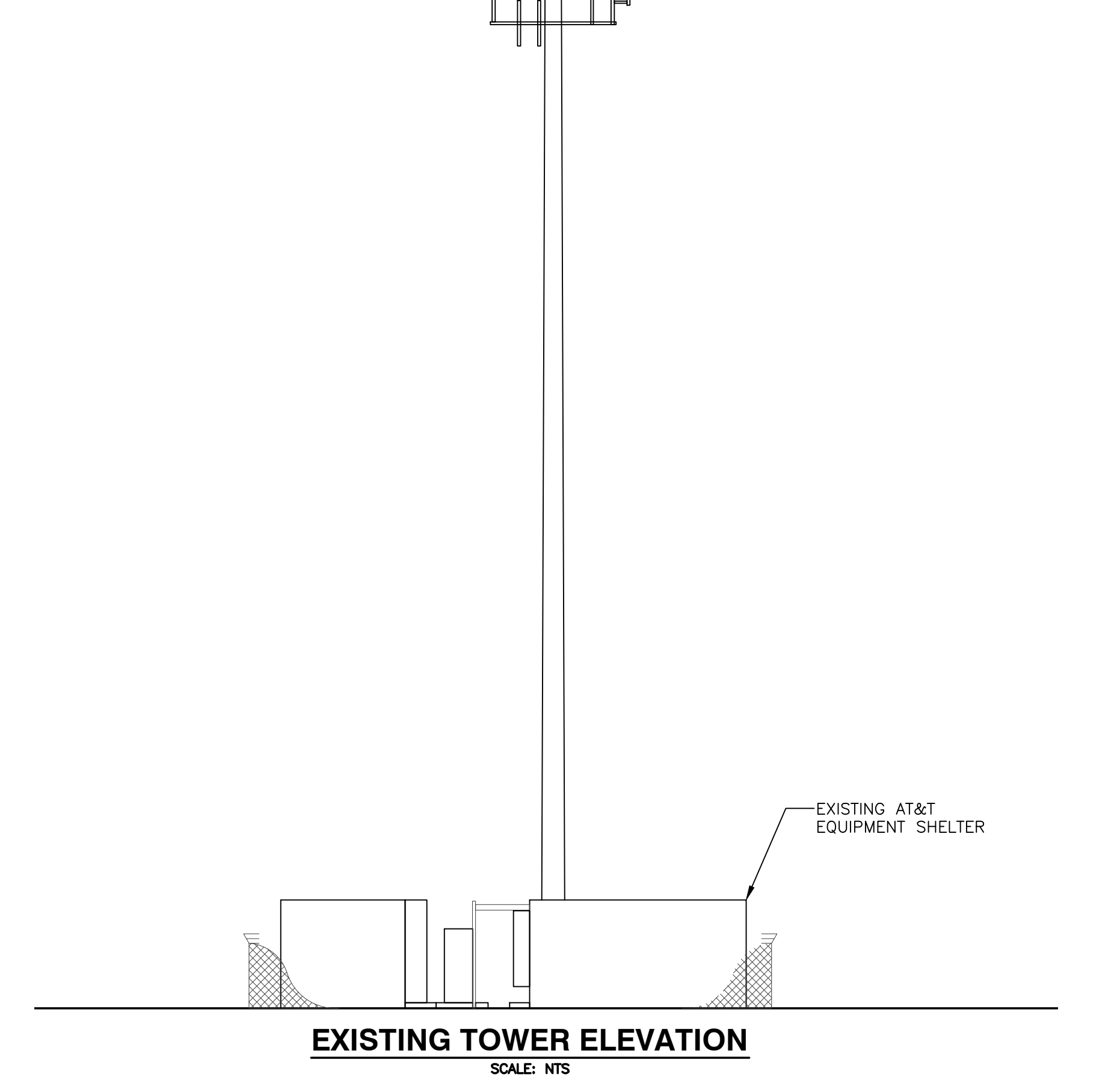
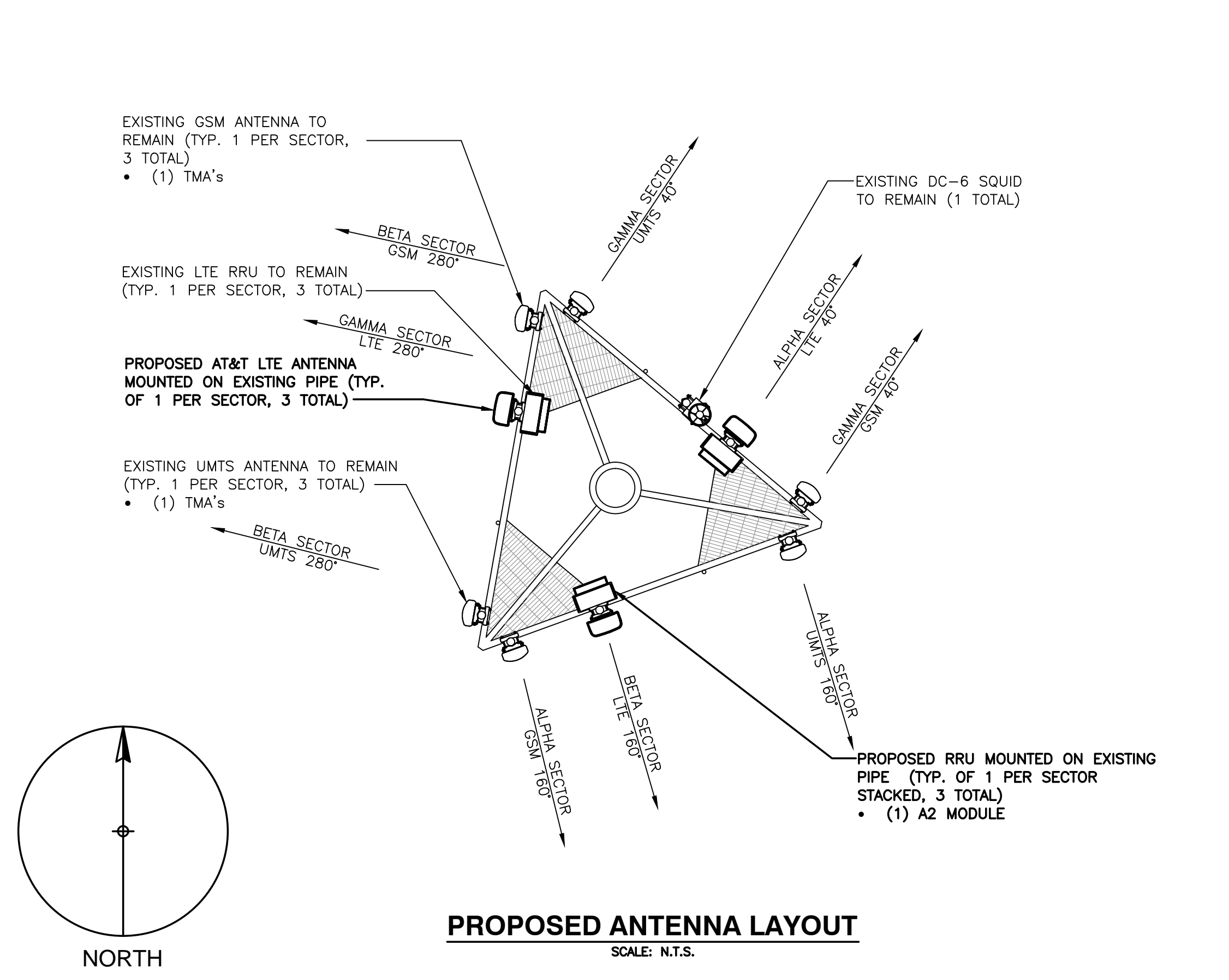
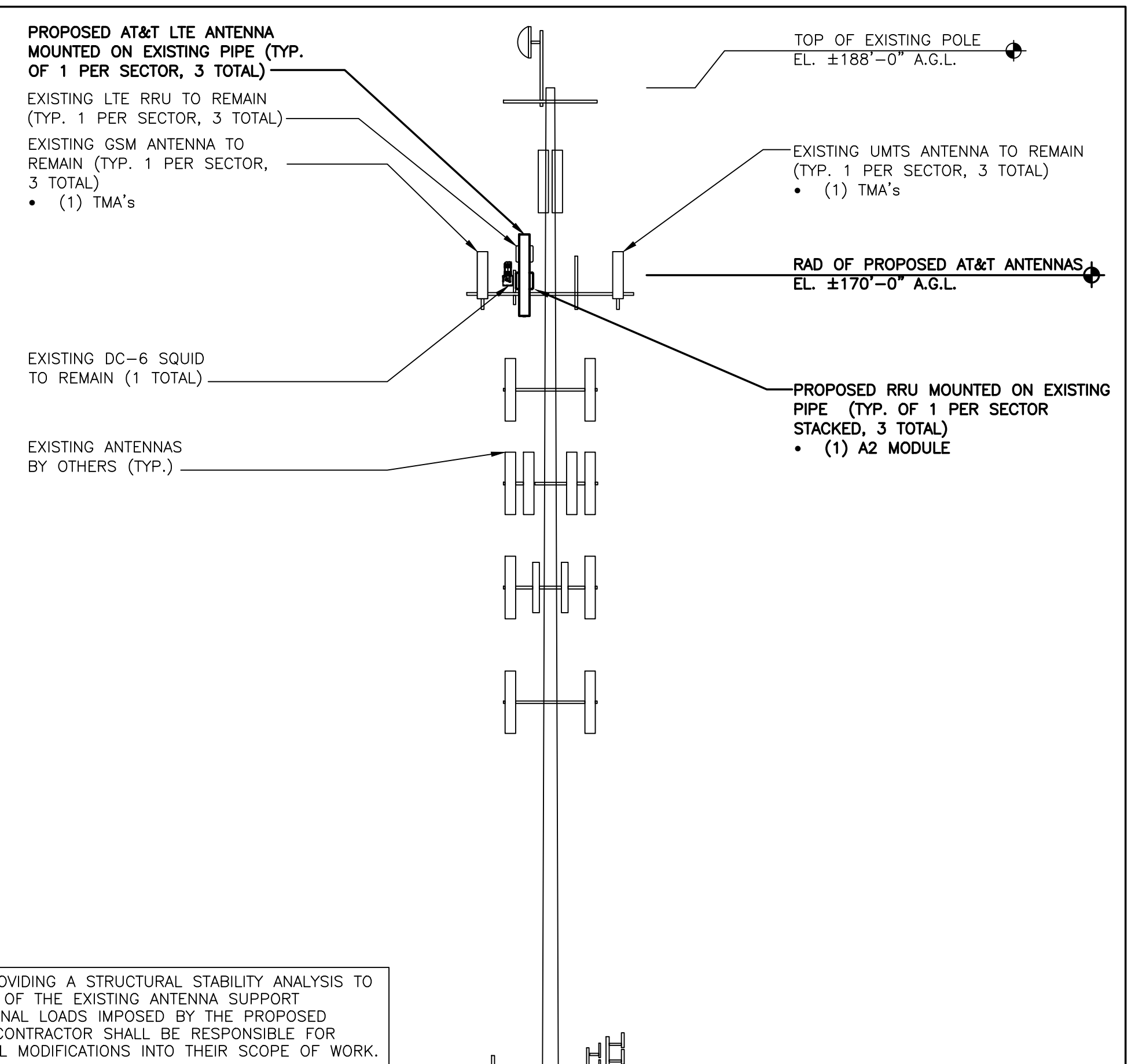
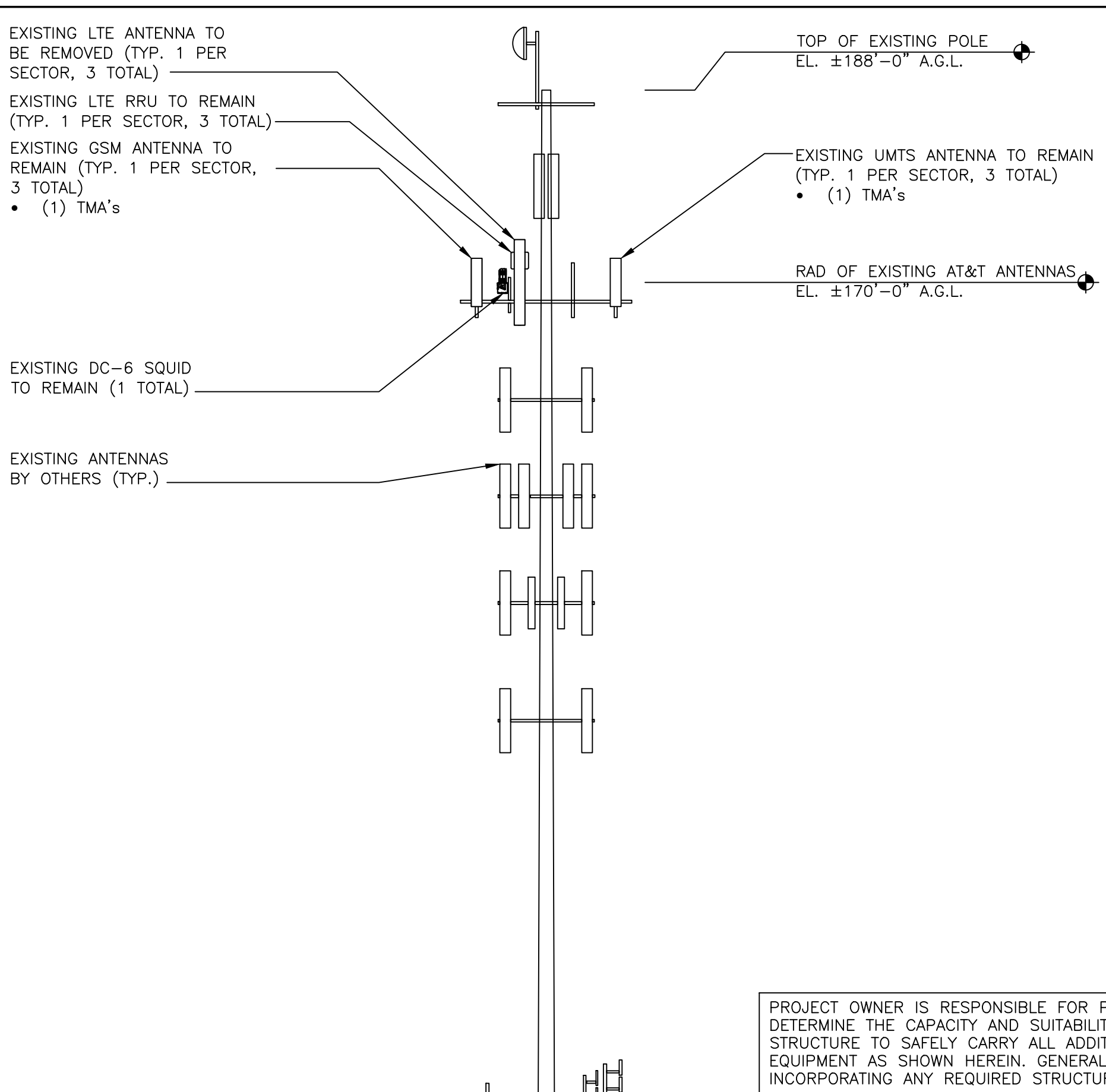
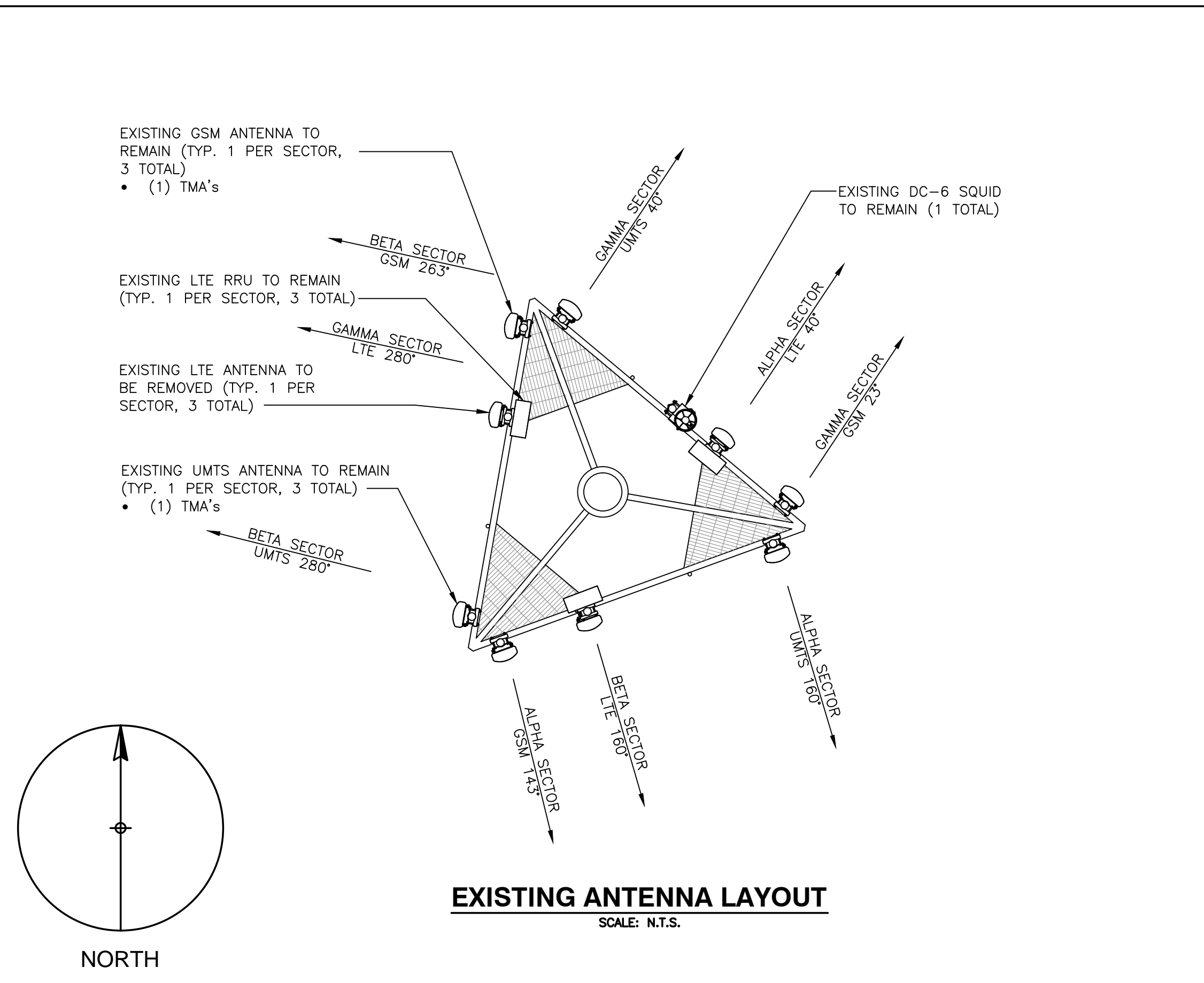
SITE NUMBER: CTV1139
SITE NAME: SOUTH WINDSOR
SAND HILL RD
151 SAND HILL ROAD
SOUTH WINDSOR, CT 06074
HARTFORD COUNTY

at&t
MOBILITY
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

0	01/27/16	ISSUED AS FINAL	NJM	NDB	NDB
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: NJM	DRAWN BY: NJM		



AT&T		
DRAWING TITLE: EQUIPMENT LAYOUT		
JOB NUMBER 15106-EMP	DRAWING NUMBER A-2	REV 0



PROJECT OWNER IS RESPONSIBLE FOR PROVIDING A STRUCTURAL STABILITY ANALYSIS TO DETERMINE THE CAPACITY AND SUITABILITY OF THE EXISTING ANTENNA SUPPORT STRUCTURE TO SAFELY CARRY ALL ADDITIONAL LOADS IMPOSED BY THE PROPOSED EQUIPMENT AS SHOWN HEREIN. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR INCORPORATING ANY REQUIRED STRUCTURAL MODIFICATIONS INTO THEIR SCOPE OF WORK.

COM-EX
Consultants
115 ROUTE 46
SUITE E39
MOUNTAIN LAKES, NJ 07046
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EMPIRE
telecom
16 ESQUIRE ROAD
BILLERICA, MA 01821

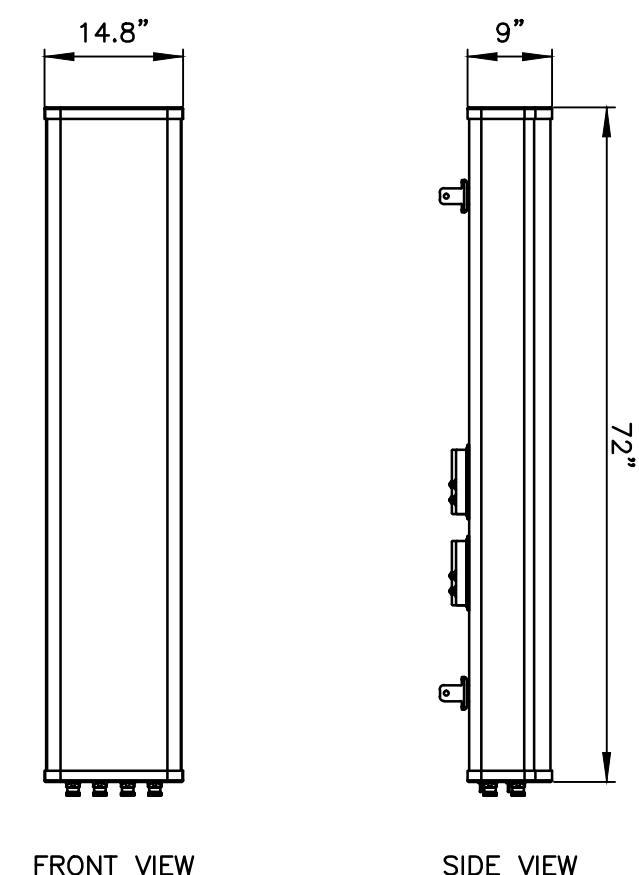
SITE NUMBER: CTV1139
SITE NAME: SOUTH WINDSOR
SAND HILL RD
151 SAND HILL ROAD
SOUTH WINDSOR, CT 06074
HARTFORD COUNTY

at&t
MOBILITY
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

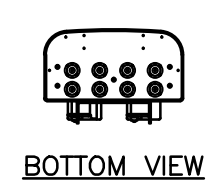
0	01/27/16	ISSUED AS FINAL	NJM	NDB	NDB
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: NJM	DRAWN BY: NJM		

SEAL:
STATE OF CONNECTICUT
PROFESSIONAL ENGINEER
CT LICENSE NO. 28643

AT&T
DRAWING TITLE:
ANTENNA LAYOUTS & ELEVATIONS
JOB NUMBER: 15106-EMP
DRAWING NUMBER: A-3
REV: 0



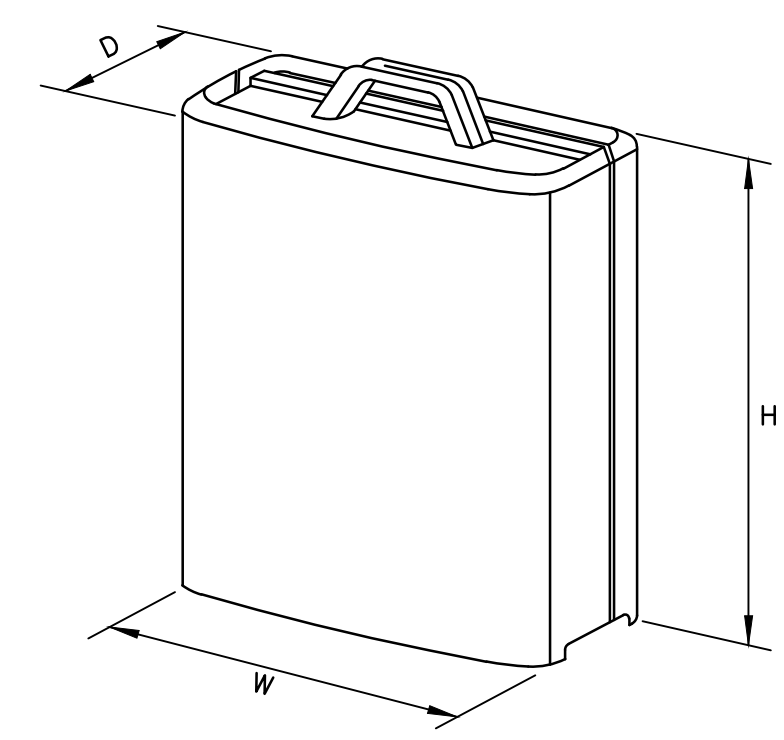
FRONT VIEW SIDE VIEW



BOTTOM VIEW

MANUFACTURER	CCI
MODEL	HPA-65R-BUU-H6
WEIGHT	50.7 LBS

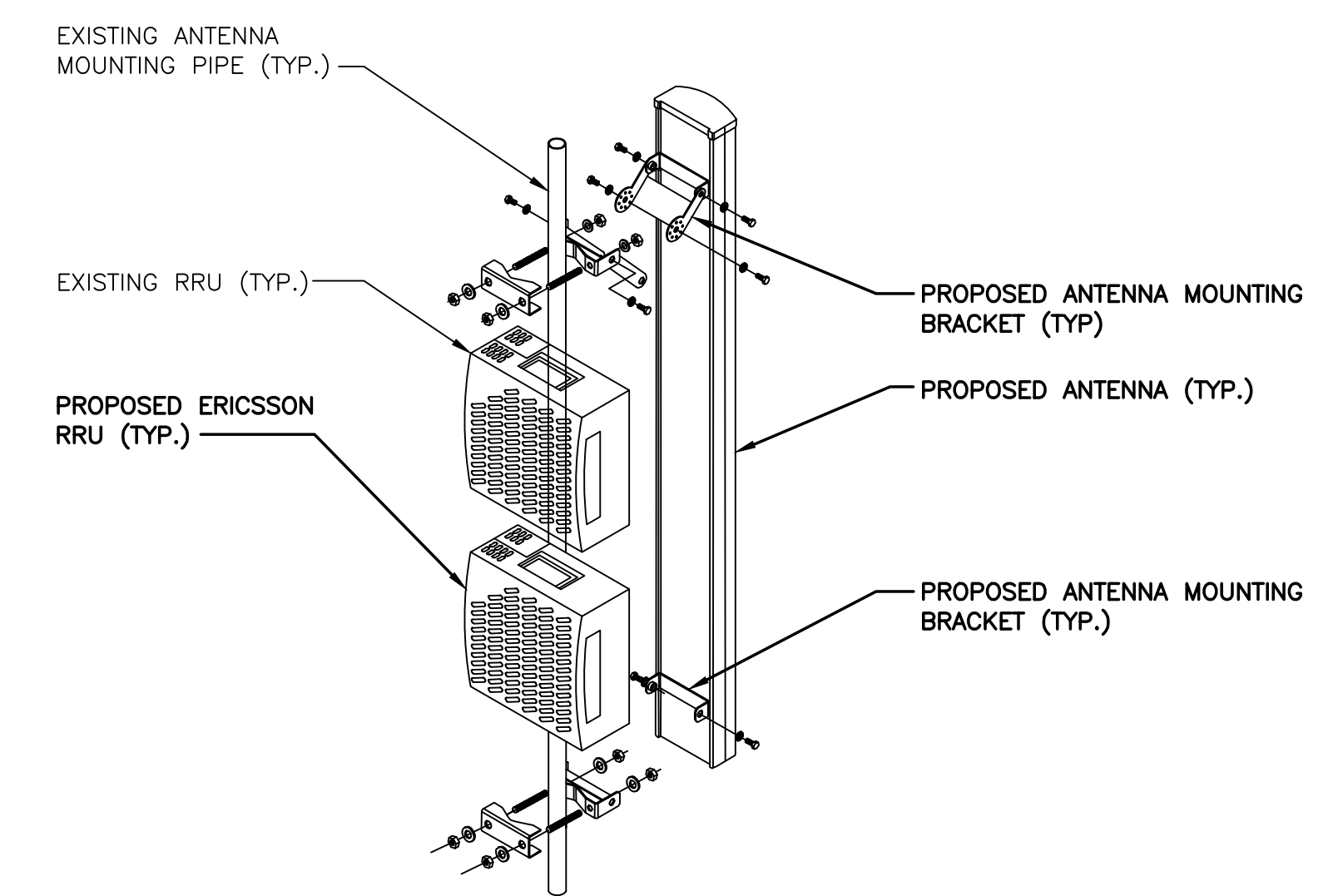
LTE ANTENNA DETAIL
SCALE: N.T.S.



MODEL	L x W x H	WEIGHT
*RRUS-11	19.69" x 16.97" x 7.17"	50.7 LBS
RRUS-12	20.4"x18.5"x7.5"	58 LBS

*DENOTES EXISTING.

RRUS DETAIL
SCALE: N.T.S.



ANTENNA AND RRU MOUNTING DETAIL
SCALE: N.T.S.

EXISTING ANTENNA SCHEDULE

SECTOR	POSITION	MAKE	MODEL	SIZE (INCHES)
ALPHA	A1	POWERWAVE	7770.00.850.06	55"x11"x5"
	A2	-	-	-
	A3	KMW	AM-X-CD-16-65-00T-RET	72"x11.8"x5.9"
	A4	POWERWAVE	7770.00.850.06	55"x11"x5"
BETA	B1	POWERWAVE	7770.00.850.06	55"x11"x5"
	B2	-	-	-
	B3	KMW	AM-X-CD-16-65-00T-RET	72"x11.8"x5.9"
	B4	POWERWAVE	7770.00.850.06	55"x11"x5"
GAMMA	G1	POWERWAVE	7770.00.850.06	55"x11"x5"
	G2	-	-	-
	G3	KMW	AM-X-CD-16-65-00T-RET	72"x11.8"x5.9"
	G4	POWERWAVE	7770.00.850.06	55"x11"x5"

FINAL ANTENNA SCHEDULE

SECTOR	POSITION	MAKE	MODEL	SIZE (INCHES)
ALPHA	A1	POWERWAVE	7770.00.850.06	55"x11"x5"
	A2	-	-	-
	A3	CCI	HPA-65R-BUU-H6	72"x14.8"x9"
	A4	POWERWAVE	7770.00.850.06	55"x11"x5"
BETA	B1	POWERWAVE	7770.00.850.06	55"x11"x5"
	B2	-	-	-
	B3	CCI	HPA-65R-BUU-H6	72"x14.8"x9"
	B4	POWERWAVE	7770.00.850.06	55"x11"x5"
GAMMA	G1	POWERWAVE	7770.00.850.06	55"x11"x5"
	G2	-	-	-
	G3	CCI	HPA-65R-BUU-H6	72"x14.8"x9"
	G4	POWERWAVE	7770.00.850.06	55"x11"x5"

PROPOSED RRU SCHEDULE

SECTOR	MAKE	MODEL	SIZE (INCHES)	ADDITIONAL COMPONENT	SIZE (INCHES)
ALPHA	ERICSSON	RRUS-12	20.4"x18.5"x9.5"	A2 MODULE	-
	ERICSSON	RRUS-11 (EXISTING)	19.7"x16.9"x7.2"	-	-
	-	-	-	-	-
BETA	ERICSSON	RRUS-12	20.4"x18.5"x9.5"	A2 MODULE	-
	ERICSSON	RRUS-11 (EXISTING)	19.7"x16.9"x7.2"	-	-
	-	-	-	-	-
GAMMA	ERICSSON	RRUS-12	20.4"x18.5"x9.5"	A2 MODULE	-
	ERICSSON	RRUS-11 (EXISTING)	19.7"x16.9"x7.2"	-	-
	-	-	-	-	-

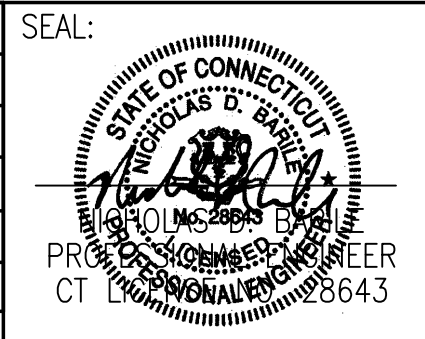
PROJECT OWNER IS RESPONSIBLE FOR PROVIDING A STRUCTURAL STABILITY ANALYSIS TO DETERMINE THE CAPACITY AND SUITABILITY OF THE EXISTING ANTENNA SUPPORT STRUCTURE TO SAFELY CARRY ALL ADDITIONAL LOADS IMPOSED BY THE PROPOSED EQUIPMENT AS SHOWN HEREIN. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR INCORPORATING ANY REQUIRED STRUCTURAL MODIFICATIONS INTO THEIR SCOPE OF WORK.



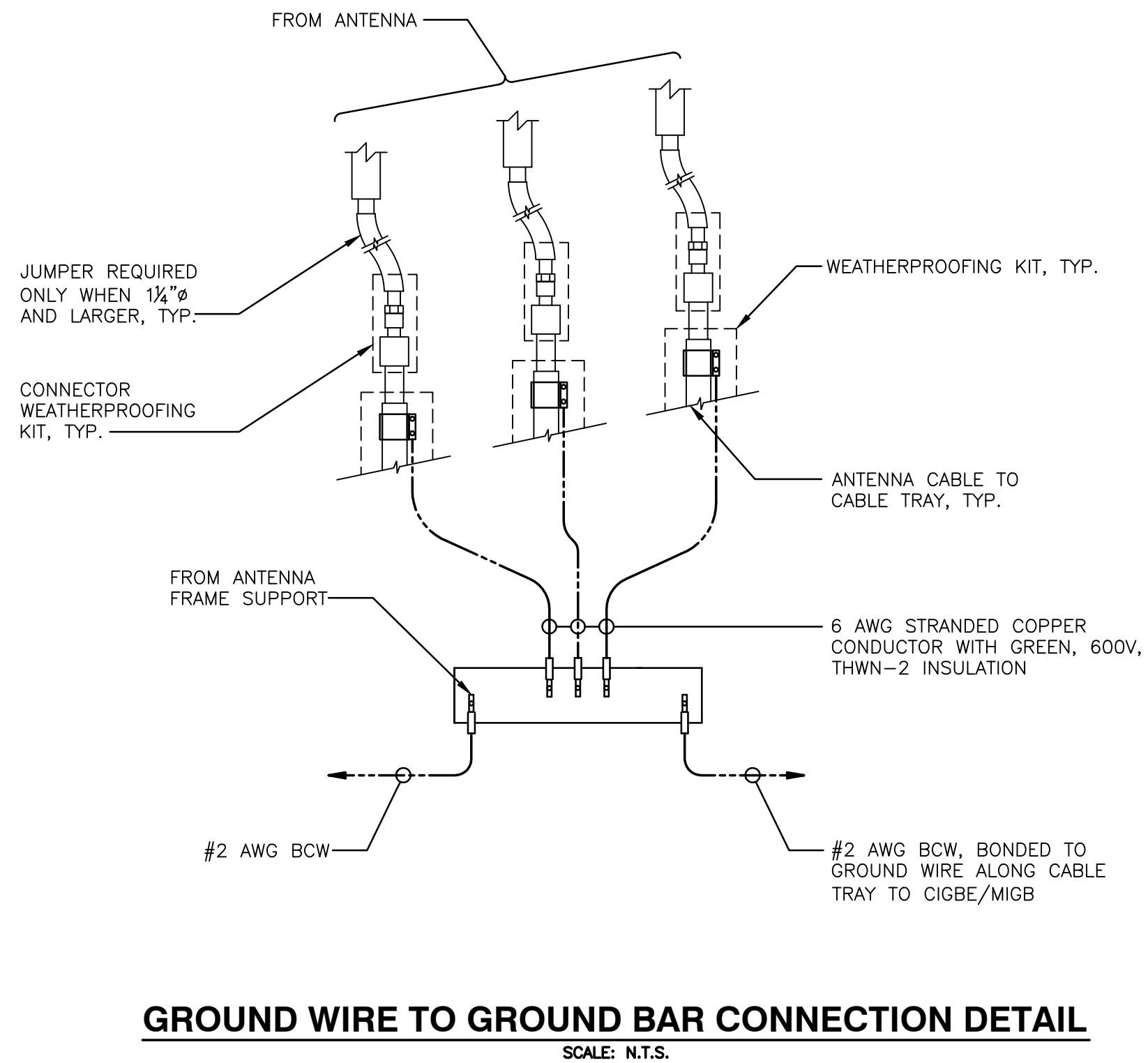
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SITE NAME: SOUTH WINDSOR SAND HILL RD
151 SAND HILL ROAD
SOUTH WINDSOR, CT 06074
HARTFORD COUNTY



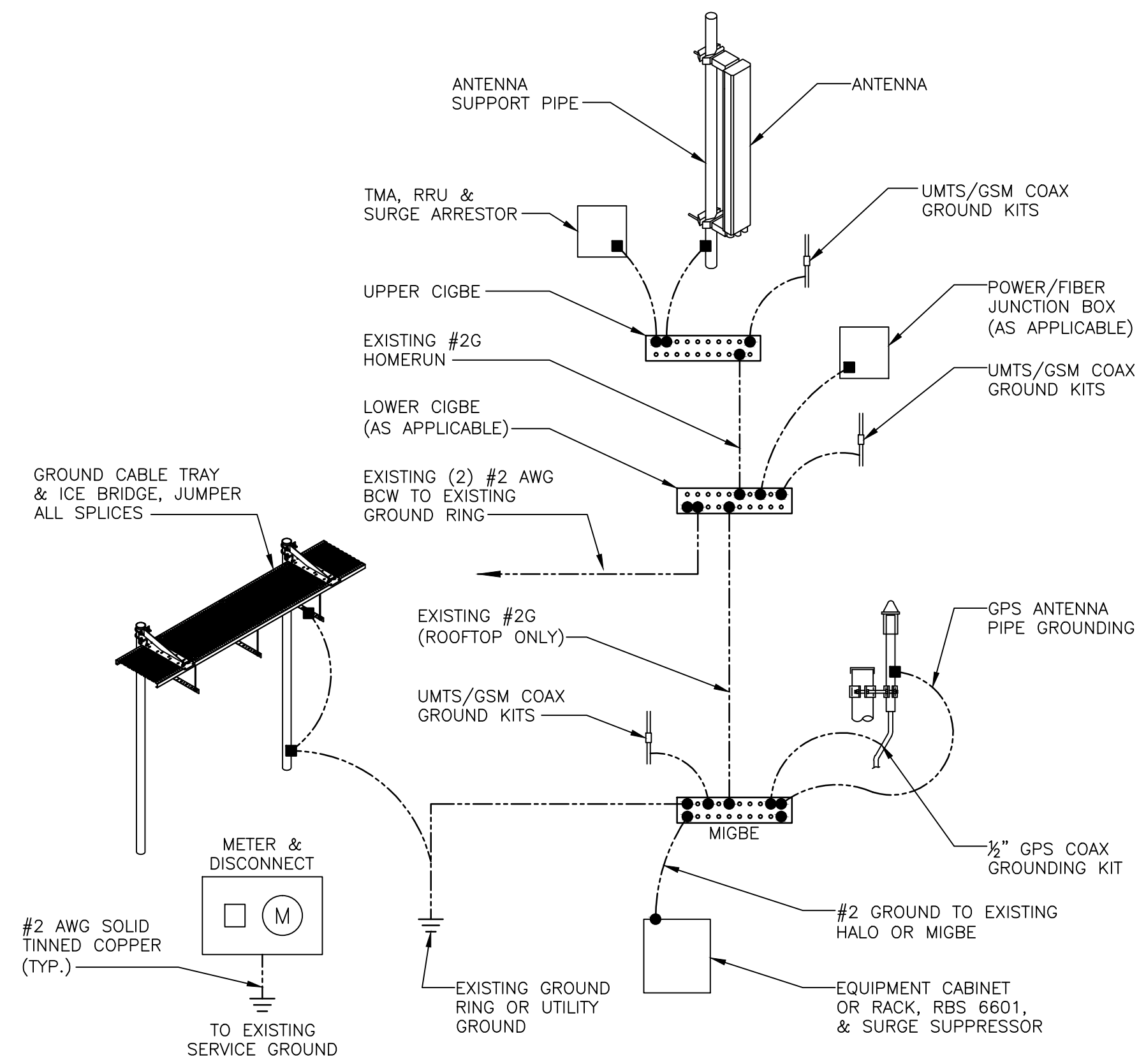
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NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: NJM	DRAWN BY: NJM		



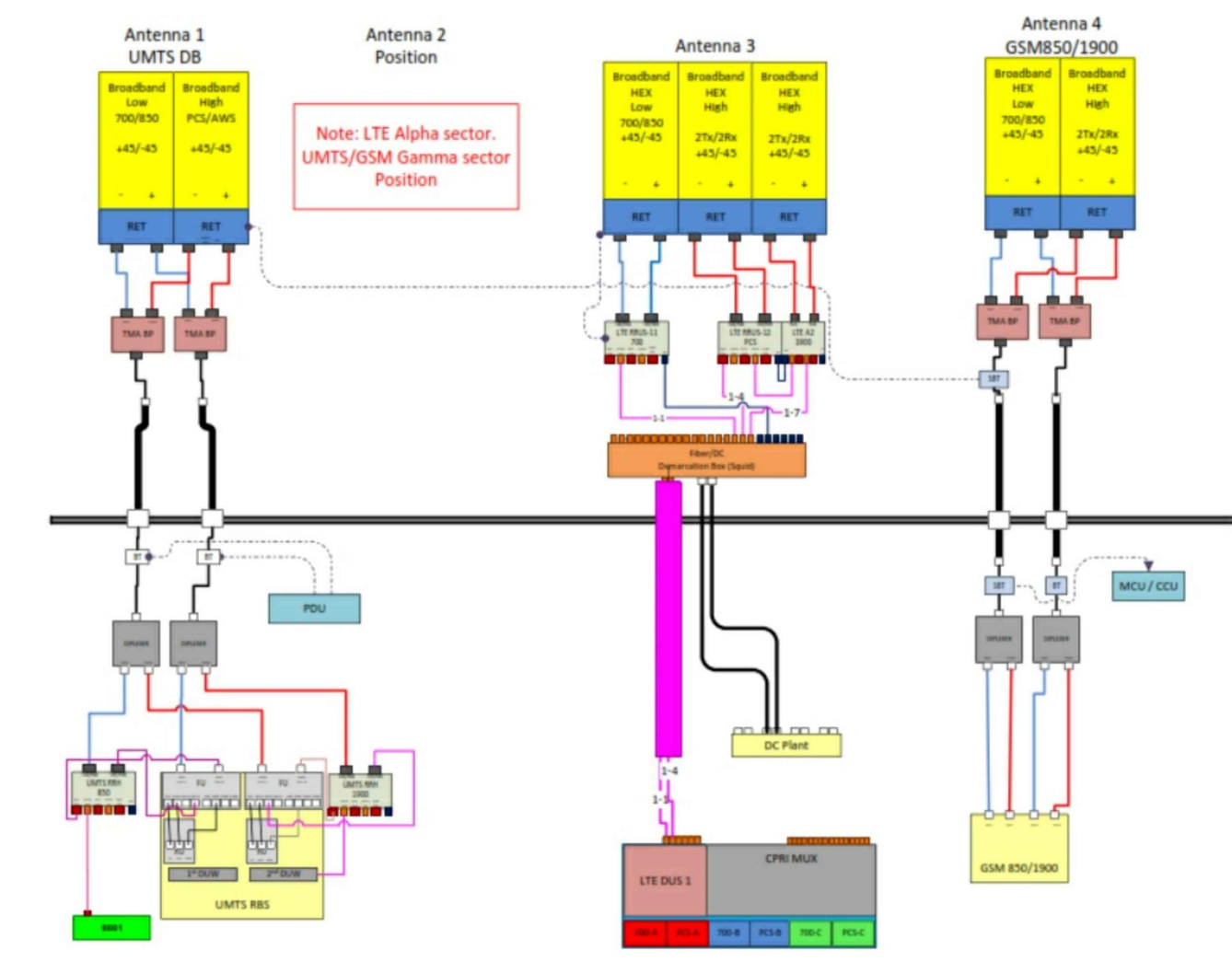
AT&T		
DRAWING TITLE: DETAILS		
JOB NUMBER 15106-EMP	DRAWING NUMBER A-4	REV 0



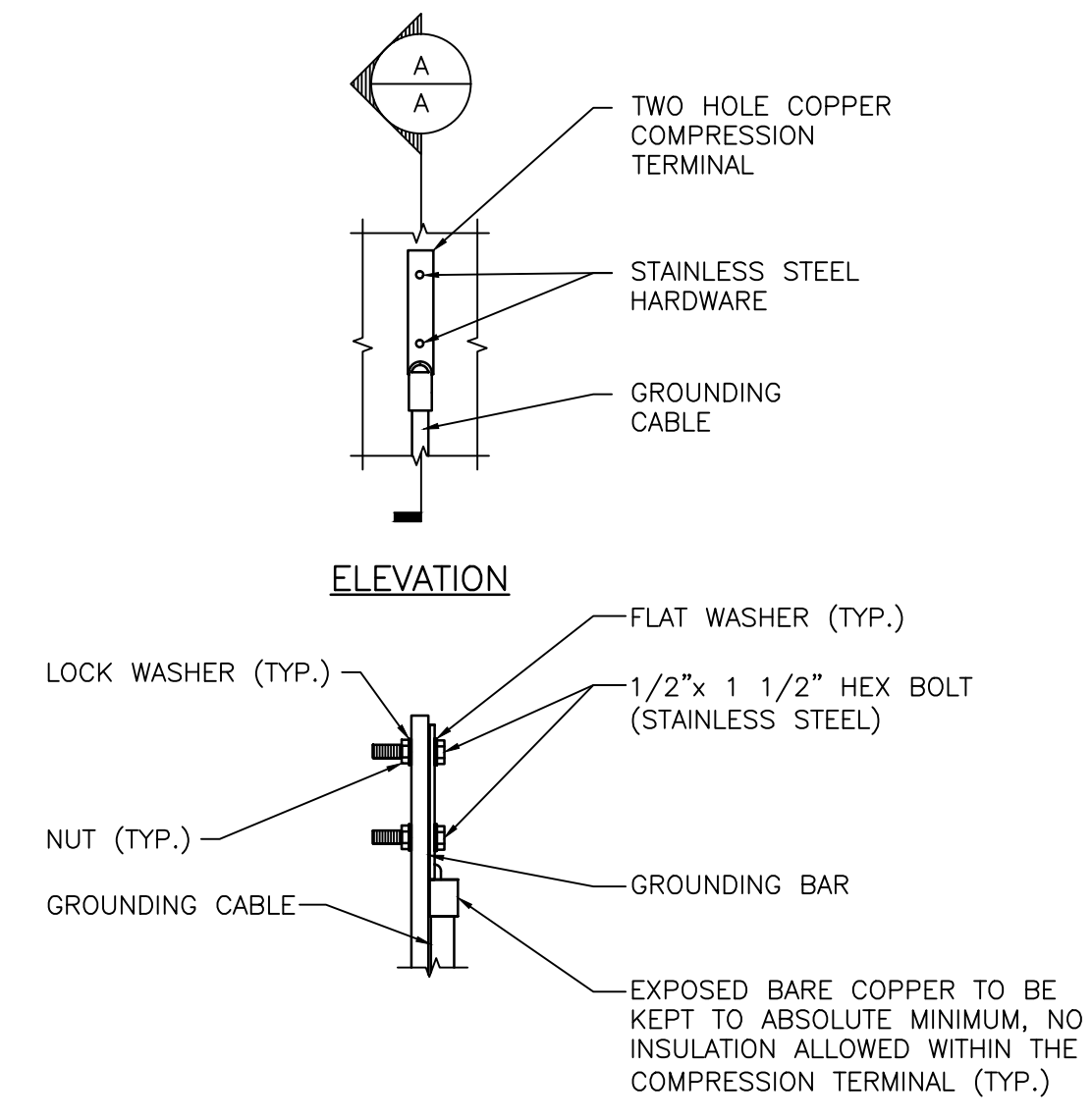
GROUND WIRE TO GROUND BAR CONNECTION DETAIL
SCALE: N.T.S.



GROUNDING RISER DIAGRAM
SCALE: N.T.S.



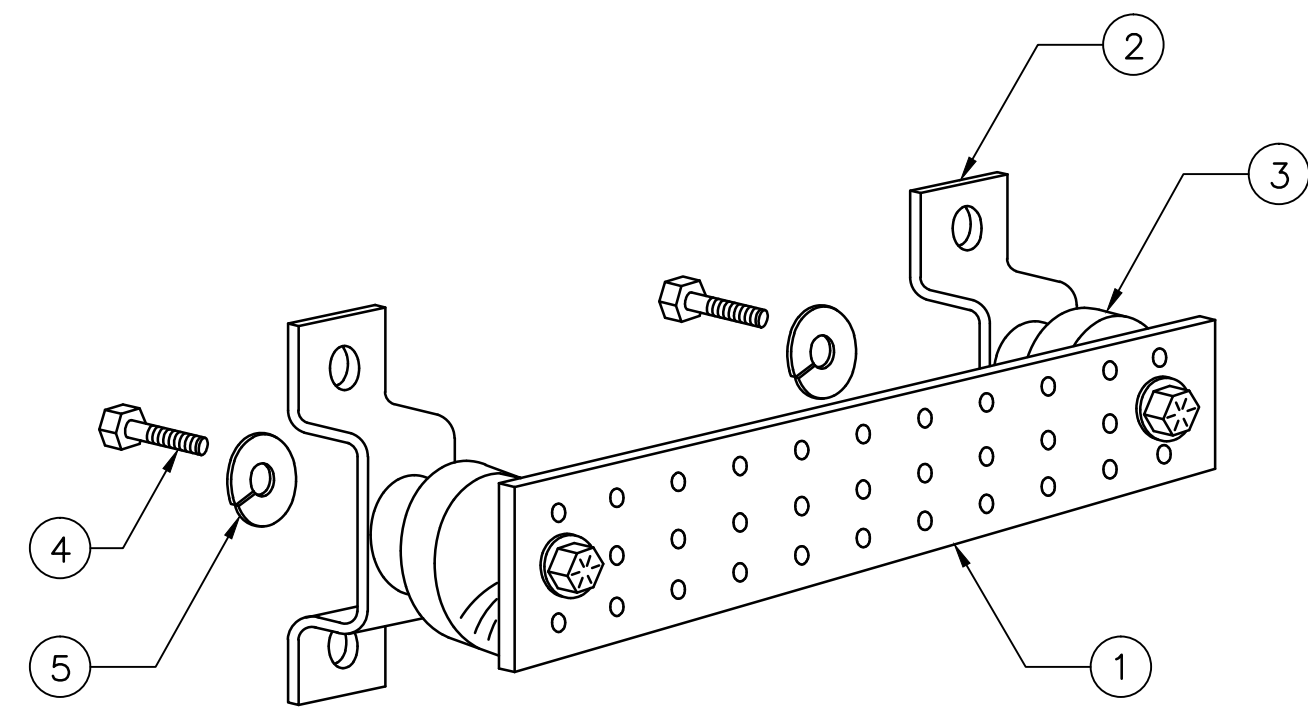
TYPICAL PLUMBING DIAGRAM (PER SECTOR)
SCALE: N.T.S.



NOTE:

- "DOUBLING UP" OR "STACKING" OF CONNECTIONS 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.



ITEM NO.	QTY.	DESCRIPTION
1	1	SOLID GROUND BAR (20"x 4"x 1/4")
2	2	WALL MOUNTING BRACKET
3	2	INSULATORS
4	4	5/8"-11x1" H.H.C.S.
5	4	5/8" LOCK WASHER

NOTES:

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

SECTION "P" - SURGE PRODUCERS

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

SECTION "A" - SURGE ABSORBERS

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

GROUND BAR DETAIL
SCALE: N.T.S.