Aidan Griffin, Site Acquisition Consultant
c/o New Cingular Wireless, PCS LLC (AT&T)
Centerline Communications, LLC
750 W Center St., Suite 301
West Bridgewater, MA 02379
Mobile: (617) 838-6796
agriffin@clinellc.com

October 7, 2019

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

RE: Notice of Exempt Modification // Site Number: CT5289
10 Redwood Lane, Avon, CT 06001 (Site Name: Avon South West)
N 41.772191° // W -72.879998°

Dear Ms. Bachman:

New Cingular Wireless, PCS, LLC ("AT&T") currently maintains six (6) antennas at the 100-foot level of the existing 105-foot monopole tower at 10 Redwood Lane, Avon, CT 06001. The tower is owned by SBA Communications Corporation. The property is owned by Avon Water Company C/O Connecticut Water Company. AT&T now intends to swap out and replace three (3) antennas while also adding six (6) antennas for its LTE upgrade. These antennas would be installed at the same 100-foot level of the tower. AT&T also intends to swap out three (3) RRU radios and install six (6) new RRU (radios), add two (2) Surge Arrestors with associated four (4) DC lines and one (1) fiber line along existing runs.

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 Heather Maguire, the Chairperson for the Town Council for the town of Avon, to Raymond Steadward who is the town of Avon Building Department Official, Donnel Dillon who is the property owner contact, and Ashley Masuda who is the tower owner contact.

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

Attached to accommodate this filing are construction drawings dated 10/04/2019 by Hudson Design Group LLC, a structural analysis dated 09/10/2019 by SBA Communications Corporation, a mount analysis dated 04/03/2019 by Hudson Design Group, LLC and an Emissions Analysis Report dated 09/30/2019 by Centerline Communications, LLC.

1. The proposed modifications will not result in an increase in the height of the existing structure.

2. The proposed modifications 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 modifications 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 as shown in the attached structural analysis by SBA Communications Corporation, dated 09/10/2019, and the mount analysis by Hudson Design Group, LLC, dated 04/03/2019.

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

Sincerely,

Aidan Griffin

Aidan Griffin, Site Acquisition Consultant
c/o New Cingular Wireless, PCS LLC (AT&T)
Centerline Communications, LLC
750 W Center St., Suite 301
West Bridgewater, MA 02379
Mobile: (617) 838-6796
agriffin@clinellc.com

Attachments: Property Card, Structural Analysis, Mount Analysis, Emissions Analysis, Construction Drawings, Original Zoning Approval

cc: Heather Maguire, Town Council Chairperson, Town of Avon- as elected official
Ashley Masuda, SBA Communications Corporation - as tower owner
Donnel Dillon, Avon Water Company C/O Connecticut Water Company- as property owner
Raymond Steadward, Building Official, Town of Avon Building & Zoning

Property at 00010 REDWOOD LANE | Prop ID 3680010 | Printed 14-Feb-2019 10:35 PM | Design and Layout (C) Right/Angles

Administrative Information

Owner name: AVON WATER COMPANY
Second name: C/O CONNECTICUT WATER CO
Address: 93 WEST MAIN STREET
City/state: CLINTON CT Zip: 06413

Location Information

Map: Clerk map:
Lot: 3680010 Neigh.: FW Zone: Vol: 218 Page: 362

Assessments

Assmt category	Qty	Amount
Pub Util Land	1.00	7,000

Exemptions

Exempt	Cat	Amount

Last sale

Sale date: 02-Feb-1989
Sale price:
Sale valid:

Values

Mkt value :
Cost value: 10,000

Summary

Total assessments	7,000
Total exemptions	
Net assessment	7,000

Utilities

Water	None
Sewer	None
Gas	None

Sales ratios

Cost/sale :
Mkt/sale :
Assmt/sale:

No sketch for this property

SBA Communications Corporation
8051 Congress Avenue
Boca Raton, FL 33487-1307

T + 561 995 7670
F + 561 995 7626

sbasite.com

Structural Analysis Report

Client: AT&T

Client Site ID / Name: CT5289 / Avon South West
AppID : 119153, v3

SBA Site ID / Name: CT01498-S / Avon

105 ft Monopole

10 Redwood Lane
Avon, Connecticut 06001
Lat: 41.772499, Long: -72.879999

Project number: CT01498-ATT-091019

Analysis Results

Tower	73.2%	Pass
Foundation	48.0%	Pass

Change in tower stress due to mount modification / replacement	4.0%

Prepared by:

Asmerom Hagos, P.E.
Sr. Structural Engineer
214-570-8110 ext 2612
ahagos@sbasite.com

Reviewed by:

Nitesh Ahuja, P.E.
Director of Engineering
561-226-9452
nahuja@sbasite.com

STATE OF CONNECTICUT
NITESH AHUJA
No. 27942
LICENSED
PROFESSIONAL ENGINEER

9/17/19

September 10, 2019

Prepared in compliance with:

- *ANSI/TIA/EIA 222-G Structural Standard for Antennas and Antenna Supporting Structures*
- *2015 International Building Code (IBC) / 2018 Connecticut State Building Code*

Table of Contents

Executive Summary

The enclosed structural analysis was performed for AT&T on September 10, 2019 to verify the structural capacity of the 105 ft Monopole located at 10 Redwood Lane, Avon, Connecticut 06001 to support the proposed antenna, transmission lines and mounting equipment in addition to those currently installed. The following documents were used to determine the geotechnical characteristics, foundation data, tower geometry and member sizes/type:

Table 1 List of Documents Used

Item	Document
Tower design/drawings	Pirod, Inc., Eng. File #A-117586 dated September 26, 2000
Foundation drawings	Pirod, Inc., Eng. File #A-117586 dated September 26, 2000
Geotechnical report	Jaworski Geotech, Inc., Project #00301G dated August 31, 2000
Latest SA	TES, Project # 63477, Dated 10/24/2018

The analysis was performed in accordance with the following requirements:

Table 2 Code Related Data

Jurisdiction (State/County/City)	Connecticut / Hartford / Avon
Governing Codes	ANSI/TIA/EIA 222-G, 2015 IBC / 2018 CSBC
Basic Wind Speed	93.0 mph (Ultimate wind speed of 120 mph 3-Sec. Gust)
Wind Speed with Ice	50 mph (3-Sec. Gust)
Ice Thickness	1.00"
Structural Class	II
Exposure Category	B
Topographic Category	1
Crest Height	0 ft

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

The SBA Communications Corporation verifies that the 105 ft Monopole located at 10 Redwood Lane, Avon, Connecticut 06001 is ***Sufficient*** to support the proposed loadings for AT&T in addition to those currently existing based on standards set forth in governing building codes and dependent on AT&T satisfying all Installation Requirements provided herein. The analysis performed assumes the site information provided is accurate and the tower/foundation has been properly designed, manufactured, installed and maintained. Additional details regarding the assumptions and limitations are provided within the Assumptions and Limitations section of this report.

Assumptions

This analysis was completed based on the following assumptions:

- Tower has been properly maintained
- Tower erection was in accordance to manufacturer drawings
- Leg flanges have been properly designed by manufacturer to not be a limiting reaction
- Welds have been properly designed and installed by manufacturer to not be a limiting reaction
- Foundation was constructed in accordance to manufacturer drawings
- Foundation does not have structural damage
- Bolts have been properly tightened according to manufacturer specifications
- Appurtenance, mount and transmission line sizes and weights are best estimates using the TES database and manufacturer information

Limitations

The computer generated analysis performed by the TES software is limited to theoretical capacities of the towers structural members and does not account for any missing or damaged members or connections. The tower and foundation are assumed to have been properly designed, fabricated, installed and maintained, barring any conflicting findings from the most recent inspection. All leg flanges, welds and bolts are assumed to be designed by the manufacturer in such a way that these are not limiting reactions.
SBA Communications Corporation has used its due diligence to verify the information provided to perform this analysis. It is unreasonable to perform a more detailed inspection of a tower and its components. This report is not a condition assessment of the tower or foundation.

Installation Requirements

This analysis was performed under the assumption that AT&T will place the proposed equipment and feed lines at a height of 97 ft and in accordance with the coax layout shown. RRUs are to be installed on existing mounts behind tenant's antennas unless otherwise noted. No equipment is to be installed directly in the climbing path. All equipment is to be installed per mount manufacturer specifications. In case site conditions do not allow for the required installation parameters to be met AT&T must notify SBA Communications Corporation engineers for approval of an alternative placement.

Appurtenance Loading

Existing Loading:

The existing antenna and feed line information was obtained from the Site Summary and/or previous Structural Analysis. SBA Communications Corporation uses due diligence to ensure reasonably accurate information has been recorded. The existing loadings are shown in Table 3.

Table 3 Existing Appurtenances

Mount Elev. (ft)	CL Elev. (ft)	Carrier	Type	Qty	Manufacturer	Model	Qty	Feed Line Size	Mount Type Qty
105	116	Farmington Woods	Omni	1	-	20' Omni	1	7/8"	(1) Direct Mount
105	105	T-Mobile	Panel	3	Ericsson	AIR 21 B2A/B4P	11 2	1 5/8" 1 1/4" hybrid	Low Profile Platform (1) Perfect 10 Kicker kit (PV-PKBK) (1) Collar mount (PV-RM3060) + Inner bracing members
			Panel	3	Ericsson	AIR32 KRD901146-1_B66A (Octa)			
			Panel	3	RFS	APXVAARR24_43-U-NA20 (Octa)			
			TMA	3	Ericsson	KRY 112 144/2			
			RRU	3	Ericsson	Radio 4449 B71 + B12			
98	98	AT&T	RRU	6	Ericsson	RRUS-11	12 1 1 2	1-5/8" 10 mm 3" DC Power	(3) Standoffs
			Other	1	Raycap	DC2-48-60-18-8F			
97	97		Panel	3	Kathrein Scala	800-10121			Low Profile Platform
			Panel	9	KMW	AM-X-CD-16-65-00T-RET			
			RET	6	Kathrein	860-10035			
			Diplexer	6	Kathrein	782-10250			
			TMA	6	Powerwave	LGP21401 TMA			
91	91	Clearwire	Dish	3	Andrew	VHLP2.5	3 6	1/2" 5/16"	(3) Dish Mount
			RRU	3	Samsung	RRU Radios			
			ODU	3	Horizon	DUO Radios			
87	87	Sprint	Panel	3	RFS	APXVSPP18-C-A20	4	1 1/4" Hybrid	Low Profile Platform
			Panel	3	RFS	APXVTM14-C-120			
			RRU	3	Alcatel Lucent	1900 MHz			
			RRU	3	Alcatel Lucent	800 MHz			
			RRU	3	Alcatel Lucent	TD-RRH8x20-25			
			RET	4	RFS	ACU-A20-N			
			Fiter	3	Alcatel Lucent	800MHz Filter			
75	75		-	1	-	GPS	1	1/2"	(1) Standoff

Proposed Loading:

Information pertaining to proposed antennas and transmission lines were based upon the APP ID 119153, v3 from AT&T and is listed in Table 4.

Table 4 Proposed Appurtenances

Mount Elev. (ft)	CL Elev. (ft)	Carrier	Type	Qty	Manufacturer	Model	Qty	Feed Line Size	Mount Type Qty
97	97	AT&T	Panel	3	Kathrein	800 10121	6 4 2 1	1 5/8" 3/4" DC 1/2" Fiber 3" Conduit	(1) Low Profile Platform w/ [Support rail Kit (SitePro1 HRK-14) & Platform Reinforcement Kit (SitePro 1 PRK-1245L) & (6) Pipe masts (30"x2.88") & (6) Steel Angles (L2-1/2x2-1/2x1/4)] & (1) Universal Ring Mount w/ (3) 8" standoff arms
			Panel	3	CCI	HPA65R-BU6A			
			Panel	6	Kathrein	800 10965			
			TMA	6	Powerwave	LGP21401 TMA			
			Diplexer	6	Kathrein	782 10250			
			RET	6	Kathrein	860 10025 RET			
			RRU	3	Ericsson	RRUS 4415 B30			
			RRU	3	Ericsson	RRUS 8843 B2 B66A			
			RRU	3	Ericsson	RRUS 4449 B5/B12			
			Other	3	Raycap	DC6-48-60-18-8F			

Results

Tower

The results of the structural analysis performed with the TES software are shown below. Table 5 shows the most critical member elements and the percentage of the force in the member with respect to the member capacity. Capacities of up to 105% are considered acceptable. The foundation reactions obtained from TES are shown in Table 6. Table 7 displays the twist and sway at service wind speeds. These reactions are used for the analysis of the foundation systems. Additional information for the tower analysis is provided within the Appendix.

Table 5 Tower Analysis Summary

	Pole shafts	Anchor Bolts	Base Plate
Max. Usage:	50.8%	41.3%	73.2%
Pass/Fail	Pass	Pass	Pass

Table 6 Tower Base Reactions

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Analysis Reactions	1751.0	21.1	39.3

Table 7 Twist and Sway with a 10 dB Degradation Limit (for dishes only)

Elev (ft)	Model	Frequency (GHz)	Calculated Twist/Sway (°)	Allowable Twist/Sway (°)	Analysis Results
91	VHLP2.5	10.000	0.278	2.124	Sufficient
		10.700	0.278	1.985	Sufficient

Foundation System

The results of the foundation based on the geotechnical report and foundation mapping or design drawings are shown below in Table 8. Additional information for the foundation analysis is provided within the Appendix.

Table 8 Foundation Analysis Summary

Structural Component	% capacity	Analysis Result
Foundation	48.0%	Pass

Appendix

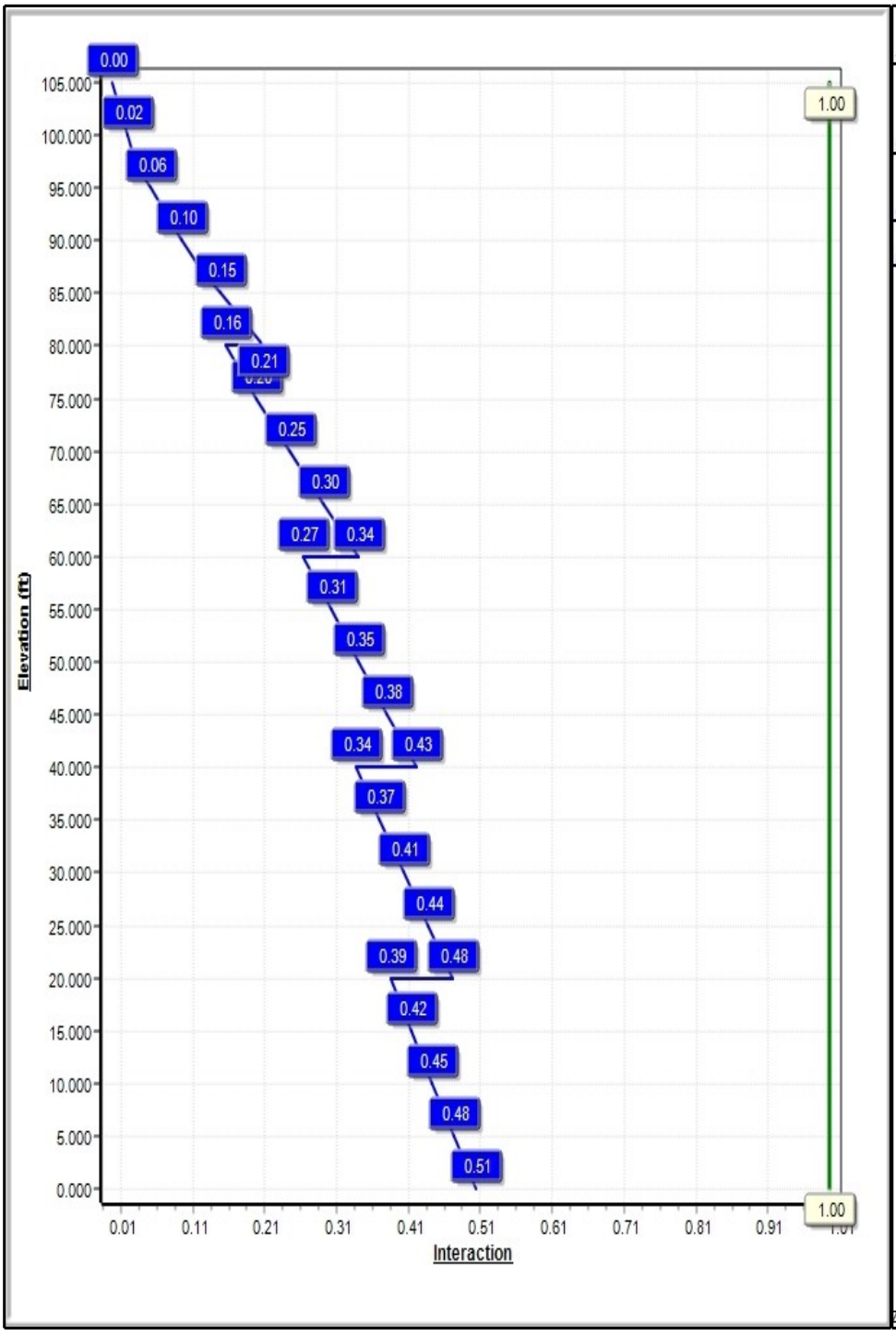
Usage Diagram - Max Ratio 50.82% at 0.0ft

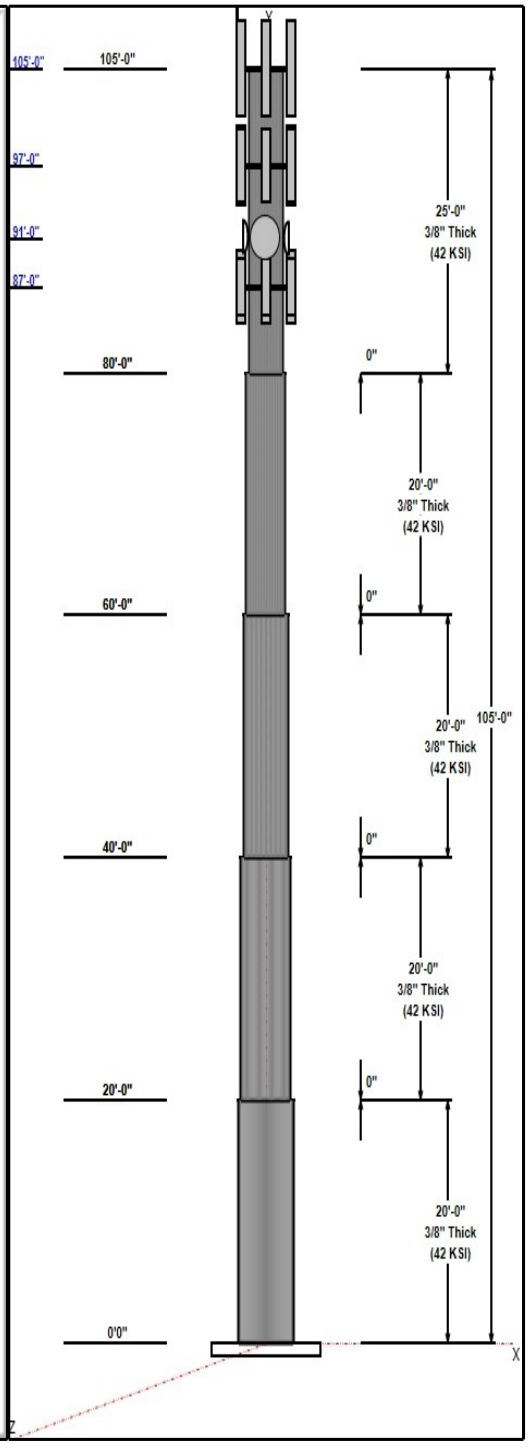
Structure:	CT01498-ATT-091019	**Code:**	EIA/TIA-222-G	9/10/2019
Site Name:	Avon	**Exposure:**	B	
Height:	105.00 (ft)	**Gh:**	1.1	
Base Elev:	0.000 (ft)			Page: 1

SBA

Dead Load Factor:	1.20	**Iterations:**	16
Wind Load Factor:	1.60		

Load Case : 1.2D + 1.6W 93 mph Wind





Structure: CT01498-ATT-091019

Type: Stepped
Site Name: Avon
Height: 105.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: Round
Taper: 0.00000

9/10/2019

Shaft Properties

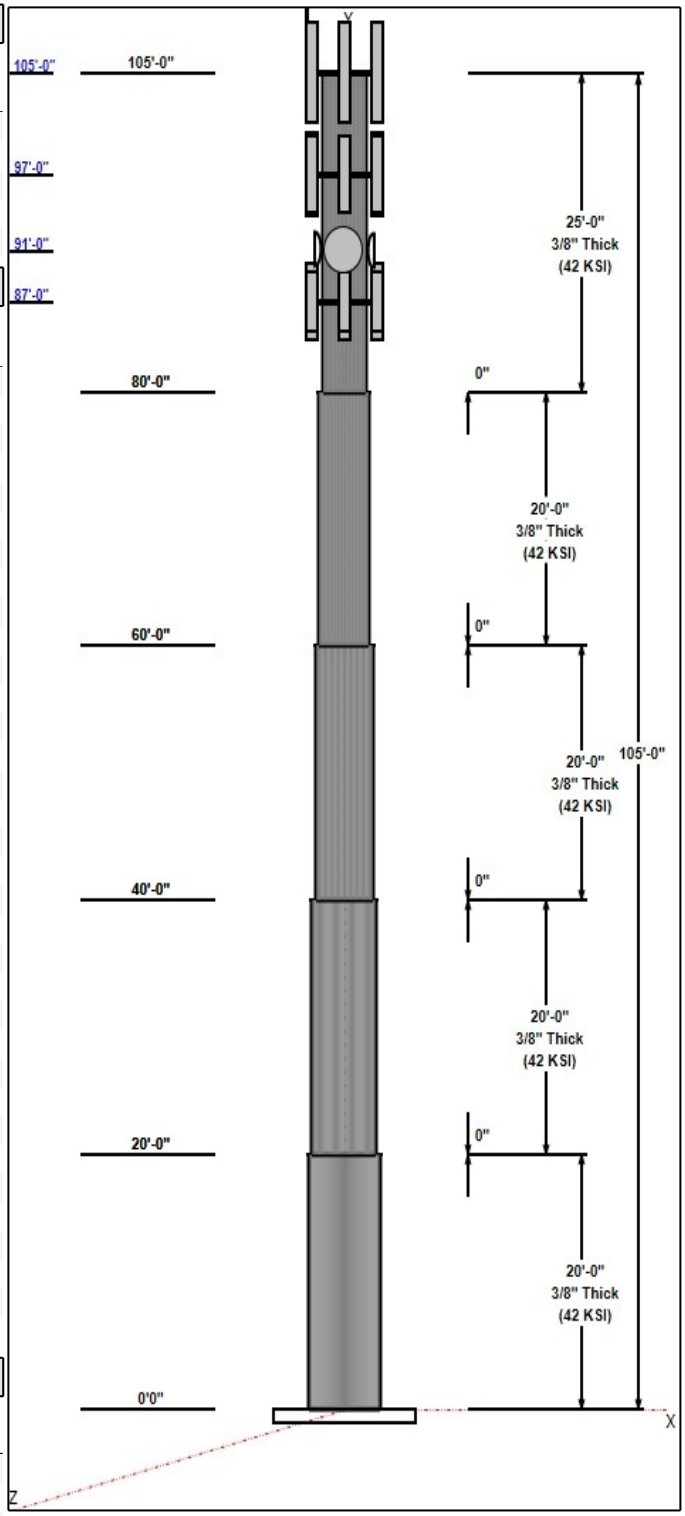
Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	20.00	60.00	60.00	0.375		0.00000	42
2	20.00	54.00	54.00	0.375		0.00000	42
3	20.00	48.00	48.00	0.375		0.00000	42
4	20.00	42.00	42.00	0.375		0.00000	42
5	25.00	36.00	36.00	0.375		0.00000	42

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
105.00	105.00	1	Low Profile	T-Mobile
105.00	116.00	1	20' Omni	Farmington Woods
105.00	105.00	3	AIR 21 B2A/B4P	T-Mobile
105.00	105.00	3	KRY 112 144/2 TMA	T-Mobile
105.00	105.00	3	AIR32	T-Mobile
105.00	105.00	3	APXVAARR24_43-U-NA20	T-Mobile
105.00	105.00	3	Ericsson Radio 4449 B71	T-Mobile
97.00	97.00	3	HPA65R-BU6A	AT&T
97.00	97.00	6	800 10965	AT&T
97.00	97.00	3	RRUS 8843 B2 B66A	AT&T
97.00	97.00	3	RRUS 4449 B5/B12	AT&T
97.00	97.00	1	Support rail kit (SitePro1	AT&T
97.00	97.00	1	Platform Reinforcement Kit	AT&T
97.00	97.00	6	782 10250	AT&T
97.00	97.00	1	Low Profile	AT&T
97.00	97.00	1	Flush Mount	AT&T
97.00	97.00	3	DC6-48-60-18-8F	AT&T
97.00	97.00	3	800-10121	AT&T
97.00	97.00	6	LGP21401	AT&T
97.00	97.00	6	860 10025 RET	AT&T
97.00	97.00	3	RRUS 4415 B30	AT&T
91.00	91.00	3	VHLP2.5	Clearwire
91.00	91.00	3	Horizon DUO Radios	Clearwire
91.00	91.00	3	RRU	Clearwire
87.00	87.00	3	RRUS-11 1900 MHz	Sprint
87.00	87.00	3	RRUS-11 800 MHz	Sprint
87.00	87.00	1	Low Profile	Sprint
87.00	87.00	3	APXVSPP18-C-A20	Sprint
87.00	87.00	3	APXVTM14-C-120	Sprint
87.00	87.00	3	800MHz Filter	Sprint
87.00	87.00	3	TD-RRH8x20-25	Sprint
87.00	87.00	4	ACU-A20-N	Sprint
75.00	75.00	1	Standoff Mount	
75.00	75.00	1	GPS	

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	105.00	Inside	1 1/4" Hybrid	T-Mobile
0.00	105.00	Inside	1 5/8" Coax	T-Mobile
0.00	105.00	Inside	7/8" Coax	Farmington Woods
0.00	105.00	Outside	Step bolts (ladder)	
0.00	97.00	Inside	1 5/8" Coax	AT&T
0.00	97.00	Inside	1/2" Coax	AT&T
0.00	97.00	Inside	3" Conduit	AT&T



0.00	97.00	Inside	3/4" DC	AT&T
0.00	91.00	Inside	1/2" Coax	Clearwire
0.00	91.00	Inside	5/16" Coax	Clearwire
0.00	87.00	Inside	1-1/4" Hybrid	Sprint
0.00	75.00	Outside	1/2" Coax	Sprint

Anchor Bolts

Qty	Specifications	Grade (ksi)	Arrangement
48	1.00" A687	105.0	Radial

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
1.2500	66.1	36.0	Round

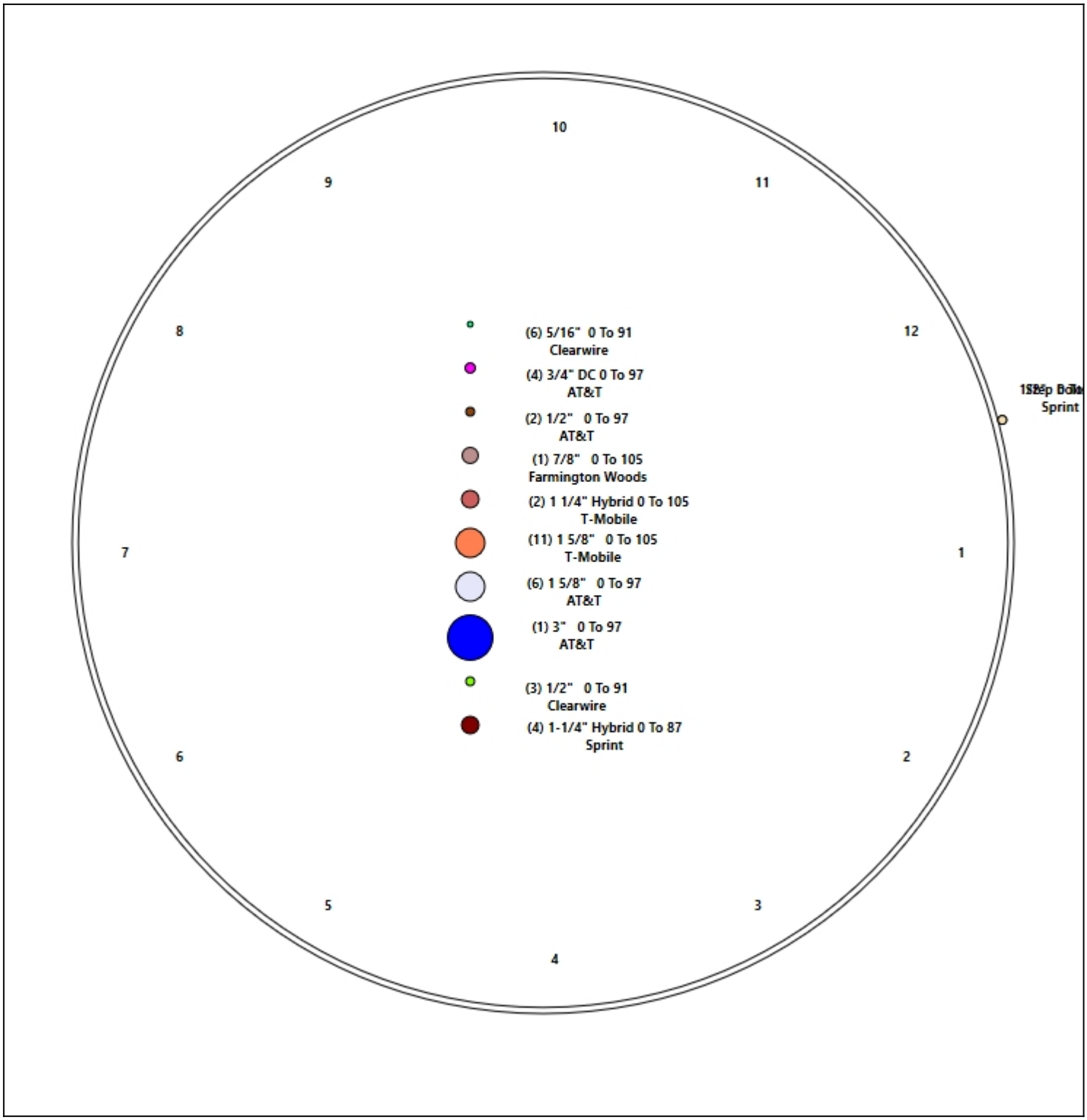
Reactions

Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.0D + 1.0W 60 mph Wind	454.5	5.5	32.7

Structure: CT01498-ATT-091019 - Coax Line Placement

Type: Monopole
Site Name: Avon
Height: 105.00 (ft)

9/18/2019



Shaft Properties

Structure:	CT01498-ATT-091019		**Code:**	EIA/TIA-222-G	9/10/2019
Site Name:	Avon		**Exposure:**	B	
Height:	105.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 5

Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	R	20.000	0.3750	42		0.00	4,780
2	R	20.000	0.3750	42		0.00	4,299
3	R	20.000	0.3750	42		0.00	3,818
4	R	20.000	0.3750	42		0.00	3,337
5	R	25.000	0.3750	42		0.00	3,570
					Total Shaft Weight:		**19,806**

	Bottom						Top						
Sec. No.	**Dia (in)**	**Elev (ft)**	**Area (sqin)**	**Ix (in^4)**	**W/t Ratio**	**D/t Ratio**	**Dia (in)**	**Elev (ft)**	**Area (sqin)**	**Ix (in^4)**	**W/t Ratio**	**D/t Ratio**	**Taper**
1	60.00	0.00	70.24	31239.85	0.00	160.00	60.00	20.00	70.24	31239.8	0.00	160.0	0.000000
2	54.00	20.00	63.18	22726.14	0.00	144.00	54.00	40.00	63.18	22726.1	0.00	144.0	0.000000
3	48.00	40.00	56.11	15919.48	0.00	128.00	48.00	60.00	56.11	15919.4	0.00	128.0	0.000000
4	42.00	60.00	49.04	10628.86	0.00	112.00	42.00	80.00	49.04	10628.8	0.00	112.0	0.000000
5	36.00	80.00	41.97	6663.29	0.00	96.00	36.00	105.00	41.97	6663.29	0.00	96.00	0.000000

Load Summary

Structure:	CT01498-ATT-091019	**Code:**	EIA/TIA-222-G	9/10/2019	
Site Name:	Avon	**Exposure:**	B		
Height:	105.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 6	

Discrete Appurtenances

				No Ice			Ice				
No.	Elev (ft)	Description	Qty	Weight (lb)	CaAa (sf)	CaAa Factor	Weight (lb)	CaAa (sf)	CaAa Factor	Hor. Ecc. (ft)	Vert Ecc (ft)
1	105.00	Low Profile Platform-Round	1	1500.00	40.00	1.00	3184.06	81.316	1.00	0.00	0.00
2	105.00	20' Omni	1	55.00	6.00	1.00	248.84	15.129	1.00	0.00	11.00
3	105.00	AIR 21 B2A/B4P	3	90.40	6.09	0.86	319.92	7.529	0.86	0.00	0.00
4	105.00	KRY 112 144/2 TMA	3	11.00	0.41	0.67	24.87	1.021	0.67	0.00	0.00
5	105.00	AIR32 KRD901146-1_B66A (Octa)	3	132.20	6.51	0.87	382.02	8.040	0.87	0.00	0.00
6	105.00	APXVAARR24_43-U-NA20 (Octa)	3	128.00	20.24	0.70	685.47	22.711	0.70	0.00	0.00
7	105.00	Ericsson Radio 4449 B71 + B12	3	70.00	1.65	0.67	164.43	2.364	0.67	0.00	0.00
8	97.00	HPA65R-BU6A	3	51.00	7.84	0.85	268.23	10.404	0.85	0.00	0.00
9	97.00	800 10965	6	108.60	13.81	0.71	441.88	16.234	0.71	0.00	0.00
10	97.00	RRUS 8843 B2 B66A	3	72.00	1.64	0.91	147.45	2.571	0.91	0.00	0.00
11	97.00	RRUS 4449 B5/B12	3	73.00	1.64	0.90	146.70	2.545	0.90	0.00	0.00
12	97.00	Support rail kit (SitePro1 HRK-14)	1	461.50	13.00	1.00	975.54	26.322	1.00	0.00	0.00
13	97.00	Platform Reinforcement Kit (SitePro1	1	275.00	11.84	1.00	581.31	23.973	1.00	0.00	0.00
14	97.00	782 10250	6	6.40	0.45	0.77	21.28	0.880	0.77	0.00	0.00
15	97.00	Low Profile Platform-Round	1	1500.00	22.00	1.00	3170.77	44.544	1.00	0.00	0.00
16	97.00	Flush Mount	1	350.00	5.00	1.00	724.25	9.455	1.00	0.00	0.00
17	97.00	DC6-48-60-18-8F	3	18.90	3.00	0.80	154.41	3.941	0.80	0.00	0.00
18	97.00	800-10121	3	44.10	5.15	0.79	190.72	7.839	0.79	0.00	0.00
19	97.00	LGP21401	6	14.10	1.29	0.67	46.01	2.357	0.67	0.00	0.00
20	97.00	860 10025 RET	6	1.16	0.14	0.93	7.16	0.456	0.93	0.00	0.00
21	97.00	RRUS 4415 B30	3	46.00	1.84	0.72	106.01	2.542	0.72	0.00	0.00
22	91.00	VHLP2.5	3	47.60	8.43	1.00	266.63	10.595	1.00	0.00	0.00
23	91.00	Horizon DUO Radios	3	11.50	0.84	0.76	40.08	1.683	0.76	0.00	0.00
24	91.00	RRU	3	42.00	1.92	0.88	111.54	3.202	0.88	0.00	0.00
25	87.00	RRUS-11 1900 MHz	3	44.00	2.94	0.70	129.13	4.474	0.70	0.00	0.00
26	87.00	RRUS-11 800 MHz	3	54.00	2.94	0.75	149.39	4.474	0.75	0.00	0.00
27	87.00	Low Profile Platform-Round	1	1500.00	22.00	1.00	3152.69	44.300	1.00	0.00	0.00
28	87.00	APXVSPP18-C-A20	3	57.00	8.02	0.83	275.25	11.547	0.83	0.00	0.00
29	87.00	APXVTM14-C-120	3	56.00	6.34	0.79	269.42	7.769	0.79	0.00	0.00
30	87.00	800MHz Filter	3	10.00	0.49	0.70	30.26	1.198	0.70	0.00	0.00
31	87.00	TD-RRH8x20-25	3	70.00	4.05	0.69	217.24	5.098	0.69	0.00	0.00
32	87.00	ACU-A20-N	4	1.00	0.14	0.79	6.42	0.515	0.79	0.00	0.00
33	75.00	Standoff Mount	1	20.00	2.00	1.00	40.84	3.737	1.00	0.00	0.00
34	75.00	GPS	1	10.00	1.00	1.00	46.47	1.886	1.00	0.00	0.00
		Totals:	**97**	**9,843.16**			**27,486.00**				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	105.00	(2) 1 1/4" Hybrid	0.00	Inside
0.00	105.00	(11) 1 5/8" Coax	0.00	Inside
0.00	105.00	(1) 7/8" Coax	0.00	Inside
0.00	105.00	(1) Step bolts (ladder)	0.63	Outside
0.00	97.00	(6) 1 5/8" Coax	0.00	Inside
0.00	97.00	(2) 1/2" Coax	0.00	Inside
0.00	97.00	(1) 2" Conduit	0.00	Inside

Discrete Appurtenances

No.	Elev (ft)	Description	Qty	No Ice Weight (lb)	No Ice CaAa (sf)	No Ice CaAa Factor	Ice Weight (lb)	Ice CaAa (sf)	Ice CaAa Factor	Hor. Ecc. (ft)	Vert Ecc (ft)
0.00	97.00	(4) 3/4" DC			0.00	Inside					
0.00	91.00	(3) 1/2" Coax			0.00	Inside					
0.00	91.00	(6) 5/16" Coax			0.00	Inside					
0.00	87.00	(4) 1-1/4" Hybrid			0.00	Inside					
0.00	75.00	(1) 1/2" Coax			0.65	Outside					

Shaft Section Properties

Structure:	CT01498-ATT-091019	**Code:**	EIA/TIA-222-G	9/10/2019	
Site Name:	Avon	**Exposure:**	B		
Height:	105.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 8	

Increment Length: **5 (ft)**

Elev (ft)	Description	Thick (in)	Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fpy (ksi)	S (in^3)	Weight (lb)
0.00		0.3750	60.000	70.244	31239.9	0.00	160.00	34.9	1041.	0.0
5.00		0.3750	60.000	70.244	31239.9	0.00	160.00	34.9	1041.	1195.1
10.00		0.3750	60.000	70.244	31239.9	0.00	160.00	34.9	1041.	1195.1
15.00		0.3750	60.000	70.244	31239.9	0.00	160.00	34.9	1041.	1195.1
20.00	Top - Section 1	0.3750	60.000	70.244	31239.9	0.00	160.00	34.9	1041.	1195.1
20.00	Bot - Section 2	0.3750	54.000	63.175	22726.1	0.00	160.00	35.6	841.7	
25.00		0.3750	54.000	63.175	22726.1	0.00	144.00	35.6	841.7	1074.9
30.00		0.3750	54.000	63.175	22726.1	0.00	144.00	35.6	841.7	1074.9
35.00		0.3750	54.000	63.175	22726.1	0.00	144.00	35.6	841.7	1074.9
40.00	Top - Section 2	0.3750	54.000	63.175	22726.1	0.00	144.00	35.6	841.7	1074.9
40.00	Bot - Section 3	0.3750	48.000	56.107	15919.5	0.00	144.00	36.6	663.3	
45.00		0.3750	48.000	56.107	15919.5	0.00	128.00	36.6	663.3	954.6
50.00		0.3750	48.000	56.107	15919.5	0.00	128.00	36.6	663.3	954.6
55.00		0.3750	48.000	56.107	15919.5	0.00	128.00	36.6	663.3	954.6
60.00	Top - Section 3	0.3750	48.000	56.107	15919.5	0.00	128.00	36.6	663.3	954.6
60.00	Bot - Section 4	0.3750	42.000	49.038	10628.9	0.00	128.00	37.8	506.1	
65.00		0.3750	42.000	49.038	10628.9	0.00	112.00	37.8	506.1	834.3
70.00		0.3750	42.000	49.038	10628.9	0.00	112.00	37.8	506.1	834.3
75.00		0.3750	42.000	49.038	10628.9	0.00	112.00	37.8	506.1	834.3
80.00	Top - Section 4	0.3750	42.000	49.038	10628.9	0.00	112.00	37.8	506.1	834.3
80.00	Bot - Section 5	0.3750	36.000	41.970	6663.3	0.00	112.00	39.4	370.2	
85.00		0.3750	36.000	41.970	6663.3	0.00	96.00	39.4	370.2	714.1
87.00		0.3750	36.000	41.970	6663.3	0.00	96.00	39.4	370.2	285.6
90.00		0.3750	36.000	41.970	6663.3	0.00	96.00	39.4	370.2	428.4
91.00		0.3750	36.000	41.970	6663.3	0.00	96.00	39.4	370.2	142.8
95.00		0.3750	36.000	41.970	6663.3	0.00	96.00	39.4	370.2	571.3
97.00		0.3750	36.000	41.970	6663.3	0.00	96.00	39.4	370.2	285.6
100.00		0.3750	36.000	41.970	6663.3	0.00	96.00	39.4	370.2	428.4
105.00		0.3750	36.000	41.970	6663.3	0.00	96.00	39.4	370.2	714.1
										19806.0

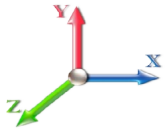
Wind Loading - Shaft

Structure:	CT01498-ATT-091019	**Code:**	EIA/TIA-222-G	9/10/2019	
Site Name:	Avon	**Exposure:**	B		
Height:	105.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 9	

Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 16

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	14.724	16.20	389.05	0.600	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	14.724	16.20	389.05	0.600	0.000	5.00	25.000	15.00	388.7	0.0	1434.1
10.00		1.00	0.70	14.724	16.20	389.05	0.600	0.000	5.00	25.000	15.00	388.7	0.0	1434.1
15.00		1.00	0.70	14.724	16.20	389.05	0.600	0.000	5.00	25.000	15.00	388.7	0.0	1434.1
20.00	Top - Section 1	1.00	0.70	14.724	16.20	389.05	0.600	0.000	5.00	25.000	15.00	388.7	0.0	1434.1
25.00		1.00	0.70	14.724	16.20	350.14	0.600	0.000	5.00	22.500	13.50	349.8	0.0	1289.8
30.00		1.00	0.70	14.736	16.21	350.29	0.600	0.000	5.00	22.500	13.50	350.1	0.0	1289.8
35.00		1.00	0.73	15.400	16.94	358.09	0.600	0.000	5.00	22.500	13.50	365.9	0.0	1289.8
40.00	Top - Section 2	1.00	0.76	15.999	17.60	364.99	0.600	0.000	5.00	22.500	13.50	380.1	0.0	1289.8
45.00		1.00	0.79	16.546	18.20	329.94	0.600	0.000	5.00	20.000	12.00	349.5	0.0	1145.5
50.00		1.00	0.81	17.052	18.76	334.94	0.600	0.000	5.00	20.000	12.00	360.1	0.0	1145.5
55.00		1.00	0.83	17.523	19.28	339.53	0.600	0.000	5.00	20.000	12.00	370.1	0.0	1145.5
60.00	Top - Section 3	1.00	0.85	17.964	19.76	343.78	0.600	0.000	5.00	20.000	12.00	379.4	0.0	1145.5
65.00		1.00	0.87	18.380	20.22	304.27	0.600	0.000	5.00	17.500	10.50	339.7	0.0	1001.2
70.00		1.00	0.89	18.773	20.65	307.50	0.600	0.000	5.00	17.500	10.50	346.9	0.0	1001.2
75.00	Appurtenance(s)	1.00	0.91	19.147	21.06	310.55	0.600	0.000	5.00	17.500	10.50	353.8	0.0	1001.2
80.00	Top - Section 4	1.00	0.93	19.503	21.45	313.43	0.600	0.000	5.00	17.500	10.50	360.4	0.0	1001.2
85.00		1.00	0.94	19.844	21.83	270.99	0.600	0.000	5.00	15.000	9.00	314.3	0.0	856.9
87.00	Appurtenance(s)	1.00	0.95	19.976	21.97	271.89	0.600	0.000	2.00	6.000	3.60	126.6	0.0	342.8
90.00		1.00	0.96	20.170	22.19	273.21	0.600	0.000	3.00	9.000	5.40	191.7	0.0	514.1
91.00	Appurtenance(s)	1.00	0.96	20.234	22.26	273.64	0.600	0.000	1.00	3.000	1.80	64.1	0.0	171.4
95.00		1.00	0.97	20.484	22.53	275.33	0.600	0.000	4.00	12.000	7.20	259.6	0.0	685.5
97.00	Appurtenance(s)	1.00	0.98	20.607	22.67	276.15	0.600	0.000	2.00	6.000	3.60	130.6	0.0	342.8
100.00		1.00	0.99	20.787	22.87	277.35	0.600	0.000	3.00	9.000	5.40	197.6	0.0	514.1
105.00	Appurtenance(s)	1.00	1.00	21.079	23.19	279.29	0.600	0.000	5.00	15.000	9.00	333.9	0.0	856.9
								Totals:	**105.00**			**7,479.1**		**23,767.2**

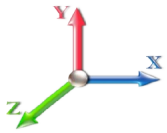
Discrete Appurtenance Forces

Structure:	CT01498-ATT-091019	**Code:**	EIA/TIA-222-G	9/10/2019	
Site Name:	Avon	**Exposure:**	B		
Height:	105.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 10	

Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 16

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	105.00	APXVAARR24 43-U-NA2	3	21.079	23.186	0.70	1.00	42.50	460.80	0.000	0.000	1576.83	0.00	0.00
2	105.00	AIR32	3	21.079	23.186	0.87	1.00	16.99	475.92	0.000	0.000	630.34	0.00	0.00
3	105.00	KRY 112 144/2 TMA	3	21.079	23.186	0.67	1.00	0.82	39.60	0.000	0.000	30.57	0.00	0.00
4	105.00	AIR 21 B2A/B4P	3	21.079	23.186	0.86	1.00	15.71	325.44	0.000	0.000	582.90	0.00	0.00
5	105.00	20' Omni	1	21.687	23.856	1.00	1.00	6.00	66.00	0.000	11.000	229.02	0.00	2519.19
6	105.00	Low Profile	1	21.079	23.186	1.00	1.00	40.00	1800.00	0.000	0.000	1483.93	0.00	0.00
7	105.00	Ericsson Radio 4449 B71	3	21.079	23.186	0.67	1.00	3.32	252.00	0.000	0.000	123.04	0.00	0.00
8	97.00	782 10250	6	20.607	22.667	0.62	0.80	1.66	46.08	0.000	0.000	60.32	0.00	0.00
9	97.00	Low Profile	1	20.607	22.667	1.00	1.00	22.00	1800.00	0.000	0.000	797.89	0.00	0.00
10	97.00	Flush Mount	1	20.607	22.667	1.00	1.00	5.00	420.00	0.000	0.000	181.34	0.00	0.00
11	97.00	Platform Reinforcement	1	20.607	22.667	1.00	1.00	11.84	330.00	0.000	0.000	429.41	0.00	0.00
12	97.00	Support rail kit (SitePro1	1	20.607	22.667	1.00	1.00	13.00	553.80	0.000	0.000	471.48	0.00	0.00
13	97.00	860 10025 RET	6	20.607	22.667	0.74	0.80	0.62	8.35	0.000	0.000	22.67	0.00	0.00
14	97.00	DC6-48-60-18-8F	3	20.607	22.667	0.64	0.80	5.76	68.04	0.000	0.000	208.90	0.00	0.00
15	97.00	800-10121	3	20.607	22.667	0.63	0.80	9.76	158.76	0.000	0.000	354.13	0.00	0.00
16	97.00	LGP21401	6	20.607	22.667	0.54	0.80	4.15	101.52	0.000	0.000	150.46	0.00	0.00
17	97.00	RRUS 4415 B30	3	20.607	22.667	0.58	0.80	3.18	165.60	0.000	0.000	115.31	0.00	0.00
18	97.00	RRUS 4449 B5/B12	3	20.607	22.667	0.72	0.80	3.54	262.80	0.000	0.000	128.48	0.00	0.00
19	97.00	800 10965	6	20.607	22.667	0.57	0.80	47.06	781.92	0.000	0.000	1706.93	0.00	0.00
20	97.00	HPA65R-BU6A	3	20.607	22.667	0.68	0.80	15.99	183.60	0.000	0.000	580.05	0.00	0.00
21	97.00	RRUS 8843 B2 B66A	3	20.607	22.667	0.73	0.80	3.58	259.20	0.000	0.000	129.90	0.00	0.00
22	91.00	RRU	3	20.234	22.258	0.88	1.00	5.07	151.20	0.000	0.000	180.51	0.00	0.00
23	91.00	Horizon DUO Radios	3	20.234	22.258	0.76	1.00	1.92	41.40	0.000	0.000	68.20	0.00	0.00
24	91.00	VHLP2.5	3	20.234	22.258	1.00	1.00	25.29	171.36	0.000	0.000	900.63	0.00	0.00
25	87.00	APXVSPP18-C-A20	3	19.976	21.974	0.66	0.80	15.98	205.20	0.000	0.000	561.67	0.00	0.00
26	87.00	RRUS-11 1900 MHz	3	19.976	21.974	0.56	0.80	4.94	158.40	0.000	0.000	173.65	0.00	0.00
27	87.00	RRUS-11 800 MHz	3	19.976	21.974	0.60	0.80	5.29	194.40	0.000	0.000	186.05	0.00	0.00
28	87.00	Low Profile	1	19.976	21.974	1.00	1.00	22.00	1800.00	0.000	0.000	773.47	0.00	0.00
29	87.00	TD-RRH8x20-25	3	19.976	21.974	0.55	0.80	6.71	252.00	0.000	0.000	235.80	0.00	0.00
30	87.00	APXVTM14-C-120	3	19.976	21.974	0.63	0.80	12.02	201.60	0.000	0.000	422.62	0.00	0.00
31	87.00	800MHz Filter	3	19.976	21.974	0.56	0.80	0.82	36.00	0.000	0.000	28.94	0.00	0.00
32	87.00	ACU-A20-N	4	19.976	21.974	0.63	0.80	0.35	4.80	0.000	0.000	12.44	0.00	0.00
33	75.00	GPS	1	19.147	21.061	1.00	1.00	1.00	12.00	0.000	0.000	33.70	0.00	0.00
34	75.00	Standoff Mount	1	19.147	21.061	1.00	1.00	2.00	24.00	0.000	0.000	67.40	0.00	0.00
							Totals:		**11,811.79**			**13,638.99**		

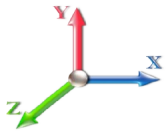
Total Applied Force Summary

Structure:	CT01498-ATT-091019		**Code:**	EIA/TIA-222-G	9/10/2019
Site Name:	Avon		**Exposure:**	B	
Height:	105.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 11

Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 16

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		388.72	1619.59	0.00	0.00
10.00		388.72	1619.59	0.00	0.00
15.00		388.72	1619.59	0.00	0.00
20.00		388.72	1619.59	0.00	0.00
25.00		349.84	1475.27	0.00	0.00
30.00		350.14	1475.27	0.00	0.00
35.00		365.90	1475.27	0.00	0.00
40.00		380.13	1475.27	0.00	0.00
45.00		349.46	1330.95	0.00	0.00
50.00		360.14	1330.95	0.00	0.00
55.00		370.08	1330.95	0.00	0.00
60.00		379.40	1330.95	0.00	0.00
65.00		339.65	1186.63	0.00	0.00
70.00		346.92	1186.63	0.00	0.00
75.00	(2) attachments	454.92	1222.63	0.00	0.00
80.00		360.41	1185.67	0.00	0.00
85.00		314.32	1041.36	0.00	0.00
87.00	(23) attachments	2521.22	3268.94	0.00	0.00
90.00		191.70	611.08	0.00	0.00
91.00	(9) attachments	1213.45	567.65	0.00	0.00
95.00		259.58	810.16	0.00	0.00
97.00	(46) attachments	5467.84	5544.75	0.00	0.00
100.00		197.56	568.85	0.00	0.00
105.00	(17) attachments	4990.51	4367.84	0.00	2519.19
	Totals:	**21,118.06**	**39,265.43**	**0.00**	**2,519.19**

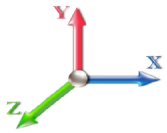
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01498-ATT-091019	**Code:**	EIA/TIA-222-G	9/10/2019	
Site Name:	Avon	**Exposure:**	B		
Height:	105.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 12	

Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 16

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.021	0.000	14.724	0.00	6.24
5.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.021	0.000	14.724	0.00	0.96
10.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.021	0.000	14.724	0.00	6.24
10.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.021	0.000	14.724	0.00	0.96
15.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.021	0.000	14.724	0.00	6.24
15.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.021	0.000	14.724	0.00	0.96
20.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.021	0.000	14.724	0.00	6.24
20.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.021	0.000	14.724	0.00	0.96
25.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.024	0.000	14.724	0.00	6.24
25.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.024	0.000	14.724	0.00	0.96
30.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.024	0.000	14.736	0.00	6.24
30.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.024	0.000	14.736	0.00	0.96
35.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.024	0.000	15.400	0.00	6.24
35.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.024	0.000	15.400	0.00	0.96
40.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.024	0.000	15.999	0.00	6.24
40.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.024	0.000	15.999	0.00	0.96
45.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.027	0.000	16.546	0.00	6.24
45.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.027	0.000	16.546	0.00	0.96
50.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.027	0.000	17.052	0.00	6.24
50.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.027	0.000	17.052	0.00	0.96
55.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.027	0.000	17.523	0.00	6.24
55.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.027	0.000	17.523	0.00	0.96
60.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.027	0.000	17.964	0.00	6.24
60.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.027	0.000	17.964	0.00	0.96
65.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.030	0.000	18.380	0.00	6.24
65.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.030	0.000	18.380	0.00	0.96
70.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.030	0.000	18.773	0.00	6.24
70.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.030	0.000	18.773	0.00	0.96
75.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.030	0.000	19.147	0.00	6.24
75.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.030	0.000	19.147	0.00	0.96
80.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.015	0.000	19.503	0.00	6.24
85.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.017	0.000	19.844	0.00	6.24
87.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.018	0.000	19.976	0.00	2.50
90.00	Step bolts (ladder)	Yes	3.00	0.000	0.63	0.16	0.00	0.018	0.000	20.170	0.00	3.74
91.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.05	0.00	0.018	0.000	20.234	0.00	1.25
95.00	Step bolts (ladder)	Yes	4.00	0.000	0.63	0.21	0.00	0.018	0.000	20.484	0.00	4.99
97.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.018	0.000	20.607	0.00	2.50
100.00	Step bolts (ladder)	Yes	3.00	0.000	0.63	0.16	0.00	0.018	0.000	20.787	0.00	3.74
105.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.017	0.000	21.079	0.00	6.24
									Totals:		**0.0**	**145.4**

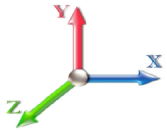
Calculated Forces

Structure:	CT01498-ATT-091019	**Code:**	EIA/TIA-222-G	9/10/2019	
Site Name:	Avon	**Exposure:**	B		
Height:	105.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 13	

Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 16

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-39.25	-21.15	0.00	-1750.9	0.00	1750.96	2204.43	1102.21	5439.15	3573.20	0.00	0.000	0.000	0.508
5.00	-37.60	-20.80	0.00	-1645.2	0.00	1645.23	2204.43	1102.21	5439.15	3573.20	0.04	-0.077	0.000	0.478
10.00	-35.96	-20.46	0.00	-1541.2	0.00	1541.21	2204.43	1102.21	5439.15	3573.20	0.16	-0.150	0.000	0.448
15.00	-34.32	-20.10	0.00	-1438.9	0.00	1438.93	2204.43	1102.21	5439.15	3573.20	0.36	-0.218	0.000	0.419
20.00	-32.68	-19.74	0.00	-1338.4	0.00	1338.42	2204.43	1102.21	5439.15	3573.20	0.62	-0.281	0.000	0.390
20.00	-32.68	-19.74	0.00	-1338.4	0.00	1338.42	2026.00	1013.00	4492.72	2914.55	0.62	-0.281	0.000	0.476
25.00	-31.18	-19.42	0.00	-1239.7	0.00	1239.72	2026.00	1013.00	4492.72	2914.55	0.95	-0.340	0.000	0.441
30.00	-29.69	-19.10	0.00	-1142.6	0.00	1142.62	2026.00	1013.00	4492.72	2914.55	1.34	-0.414	0.000	0.407
35.00	-28.19	-18.75	0.00	-1047.1	0.00	1047.14	2026.00	1013.00	4492.72	2914.55	1.81	-0.483	0.000	0.374
40.00	-26.70	-18.39	0.00	-953.38	0.00	953.38	2026.00	1013.00	4492.72	2914.55	2.35	-0.545	0.000	0.341
40.00	-26.70	-18.39	0.00	-953.38	0.00	953.38	1847.49	923.75	3635.30	2322.74	2.35	-0.545	0.000	0.425
45.00	-25.35	-18.05	0.00	-861.45	0.00	861.45	1847.49	923.75	3635.30	2322.74	2.96	-0.602	0.000	0.385
50.00	-24.01	-17.71	0.00	-771.19	0.00	771.19	1847.49	923.75	3635.30	2322.74	3.63	-0.675	0.000	0.345
55.00	-22.66	-17.34	0.00	-682.66	0.00	682.66	1847.49	923.75	3635.30	2322.74	4.37	-0.740	0.000	0.307
60.00	-21.32	-16.97	0.00	-595.95	0.00	595.95	1847.49	923.75	3635.30	2322.74	5.18	-0.797	0.000	0.268
60.00	-21.32	-16.97	0.00	-595.95	0.00	595.95	1668.87	834.44	2866.90	1797.79	5.18	-0.797	0.000	0.345
65.00	-20.12	-16.63	0.00	-511.12	0.00	511.12	1668.87	834.44	2866.90	1797.79	6.04	-0.847	0.000	0.297
70.00	-18.93	-16.28	0.00	-427.97	0.00	427.97	1668.87	834.44	2866.90	1797.79	6.96	-0.909	0.000	0.250
75.00	-17.70	-15.82	0.00	-346.56	0.00	346.56	1668.87	834.44	2866.90	1797.79	7.94	-0.961	0.000	0.204
80.00	-16.51	-15.45	0.00	-267.45	0.00	267.45	1668.87	834.44	2866.90	1797.79	8.97	-1.002	0.000	0.159
80.00	-16.51	-15.45	0.00	-267.45	0.00	267.45	1490.10	745.05	2187.51	1339.68	8.97	-1.002	0.000	0.211
85.00	-15.47	-15.13	0.00	-190.18	0.00	190.18	1490.10	745.05	2187.51	1339.68	10.04	-1.033	0.000	0.153
87.00	-12.24	-12.55	0.00	-159.93	0.00	159.93	1490.10	745.05	2187.51	1339.68	10.48	-1.048	0.000	0.128
90.00	-11.63	-12.35	0.00	-122.29	0.00	122.29	1490.10	745.05	2187.51	1339.68	11.14	-1.066	0.000	0.099
91.00	-11.08	-11.13	0.00	-109.94	0.00	109.94	1490.10	745.05	2187.51	1339.68	11.37	-1.071	0.000	0.090
95.00	-10.28	-10.85	0.00	-65.44	0.00	65.44	1490.10	745.05	2187.51	1339.68	12.27	-1.086	0.000	0.056
97.00	-4.84	-5.28	0.00	-43.73	0.00	43.73	1490.10	745.05	2187.51	1339.68	12.73	-1.091	0.000	0.036
100.00	-4.27	-5.07	0.00	-27.89	0.00	27.89	1490.10	745.05	2187.51	1339.68	13.42	-1.095	0.000	0.024
105.00	0.00	-4.99	0.00	-2.52	0.00	2.52	1490.10	745.05	2187.51	1339.68	14.56	-1.098	0.000	0.002

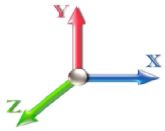
Wind Loading - Shaft

Structure:	CT01498-ATT-091019	**Code:**	EIA/TIA-222-G	9/10/2019	
Site Name:	Avon	**Exposure:**	B		
Height:	105.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 14	

Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 16

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	14.724	16.20	389.05	0.600	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	14.724	16.20	389.05	0.600	0.000	5.00	25.000	15.00	388.7	0.0	1075.6
10.00		1.00	0.70	14.724	16.20	389.05	0.600	0.000	5.00	25.000	15.00	388.7	0.0	1075.6
15.00		1.00	0.70	14.724	16.20	389.05	0.600	0.000	5.00	25.000	15.00	388.7	0.0	1075.6
20.00	Top - Section 1	1.00	0.70	14.724	16.20	389.05	0.600	0.000	5.00	25.000	15.00	388.7	0.0	1075.6
25.00		1.00	0.70	14.724	16.20	350.14	0.600	0.000	5.00	22.500	13.50	349.8	0.0	967.4
30.00		1.00	0.70	14.736	16.21	350.29	0.600	0.000	5.00	22.500	13.50	350.1	0.0	967.4
35.00		1.00	0.73	15.400	16.94	358.09	0.600	0.000	5.00	22.500	13.50	365.9	0.0	967.4
40.00	Top - Section 2	1.00	0.76	15.999	17.60	364.99	0.600	0.000	5.00	22.500	13.50	380.1	0.0	967.4
45.00		1.00	0.79	16.546	18.20	329.94	0.600	0.000	5.00	20.000	12.00	349.5	0.0	859.1
50.00		1.00	0.81	17.052	18.76	334.94	0.600	0.000	5.00	20.000	12.00	360.1	0.0	859.1
55.00		1.00	0.83	17.523	19.28	339.53	0.600	0.000	5.00	20.000	12.00	370.1	0.0	859.1
60.00	Top - Section 3	1.00	0.85	17.964	19.76	343.78	0.600	0.000	5.00	20.000	12.00	379.4	0.0	859.1
65.00		1.00	0.87	18.380	20.22	304.27	0.600	0.000	5.00	17.500	10.50	339.7	0.0	750.9
70.00		1.00	0.89	18.773	20.65	307.50	0.600	0.000	5.00	17.500	10.50	346.9	0.0	750.9
75.00	Appurtenance(s)	1.00	0.91	19.147	21.06	310.55	0.600	0.000	5.00	17.500	10.50	353.8	0.0	750.9
80.00	Top - Section 4	1.00	0.93	19.503	21.45	313.43	0.600	0.000	5.00	17.500	10.50	360.4	0.0	750.9
85.00		1.00	0.94	19.844	21.83	270.99	0.600	0.000	5.00	15.000	9.00	314.3	0.0	642.7
87.00	Appurtenance(s)	1.00	0.95	19.976	21.97	271.89	0.600	0.000	2.00	6.000	3.60	126.6	0.0	257.1
90.00		1.00	0.96	20.170	22.19	273.21	0.600	0.000	3.00	9.000	5.40	191.7	0.0	385.6
91.00	Appurtenance(s)	1.00	0.96	20.234	22.26	273.64	0.600	0.000	1.00	3.000	1.80	64.1	0.0	128.5
95.00		1.00	0.97	20.484	22.53	275.33	0.600	0.000	4.00	12.000	7.20	259.6	0.0	514.1
97.00	Appurtenance(s)	1.00	0.98	20.607	22.67	276.15	0.600	0.000	2.00	6.000	3.60	130.6	0.0	257.1
100.00		1.00	0.99	20.787	22.87	277.35	0.600	0.000	3.00	9.000	5.40	197.6	0.0	385.6
105.00	Appurtenance(s)	1.00	1.00	21.079	23.19	279.29	0.600	0.000	5.00	15.000	9.00	333.9	0.0	642.7
								Totals:	**105.00**			**7,479.1**		**17,825.4**

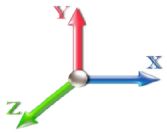
Discrete Appurtenance Forces

Structure:	CT01498-ATT-091019	**Code:**	EIA/TIA-222-G	9/10/2019	
Site Name:	Avon	**Exposure:**	B		
Height:	105.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 15	

Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 16

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	105.00	APXVAARR24 43-U-NA2	3	21.079	23.186	0.70	1.00	42.50	345.60	0.000	0.000	1576.83	0.00	0.00
2	105.00	AIR32	3	21.079	23.186	0.87	1.00	16.99	356.94	0.000	0.000	630.34	0.00	0.00
3	105.00	KRY 112 144/2 TMA	3	21.079	23.186	0.67	1.00	0.82	29.70	0.000	0.000	30.57	0.00	0.00
4	105.00	AIR 21 B2A/B4P	3	21.079	23.186	0.86	1.00	15.71	244.08	0.000	0.000	582.90	0.00	0.00
5	105.00	20' Omni	1	21.687	23.856	1.00	1.00	6.00	49.50	0.000	11.000	229.02	0.00	2519.19
6	105.00	Low Profile	1	21.079	23.186	1.00	1.00	40.00	1350.00	0.000	0.000	1483.93	0.00	0.00
7	105.00	Ericsson Radio 4449 B71	3	21.079	23.186	0.67	1.00	3.32	189.00	0.000	0.000	123.04	0.00	0.00
8	97.00	782 10250	6	20.607	22.667	0.62	0.80	1.66	34.56	0.000	0.000	60.32	0.00	0.00
9	97.00	Low Profile	1	20.607	22.667	1.00	1.00	22.00	1350.00	0.000	0.000	797.89	0.00	0.00
10	97.00	Flush Mount	1	20.607	22.667	1.00	1.00	5.00	315.00	0.000	0.000	181.34	0.00	0.00
11	97.00	Platform Reinforcement	1	20.607	22.667	1.00	1.00	11.84	247.50	0.000	0.000	429.41	0.00	0.00
12	97.00	Support rail kit (SitePro1	1	20.607	22.667	1.00	1.00	13.00	415.35	0.000	0.000	471.48	0.00	0.00
13	97.00	860 10025 RET	6	20.607	22.667	0.74	0.80	0.62	6.26	0.000	0.000	22.67	0.00	0.00
14	97.00	DC6-48-60-18-8F	3	20.607	22.667	0.64	0.80	5.76	51.03	0.000	0.000	208.90	0.00	0.00
15	97.00	800-10121	3	20.607	22.667	0.63	0.80	9.76	119.07	0.000	0.000	354.13	0.00	0.00
16	97.00	LGP21401	6	20.607	22.667	0.54	0.80	4.15	76.14	0.000	0.000	150.46	0.00	0.00
17	97.00	RRUS 4415 B30	3	20.607	22.667	0.58	0.80	3.18	124.20	0.000	0.000	115.31	0.00	0.00
18	97.00	RRUS 4449 B5/B12	3	20.607	22.667	0.72	0.80	3.54	197.10	0.000	0.000	128.48	0.00	0.00
19	97.00	800 10965	6	20.607	22.667	0.57	0.80	47.06	586.44	0.000	0.000	1706.93	0.00	0.00
20	97.00	HPA65R-BU6A	3	20.607	22.667	0.68	0.80	15.99	137.70	0.000	0.000	580.05	0.00	0.00
21	97.00	RRUS 8843 B2 B66A	3	20.607	22.667	0.73	0.80	3.58	194.40	0.000	0.000	129.90	0.00	0.00
22	91.00	RRU	3	20.234	22.258	0.88	1.00	5.07	113.40	0.000	0.000	180.51	0.00	0.00
23	91.00	Horizon DUO Radios	3	20.234	22.258	0.76	1.00	1.92	31.05	0.000	0.000	68.20	0.00	0.00
24	91.00	VHLP2.5	3	20.234	22.258	1.00	1.00	25.29	128.52	0.000	0.000	900.63	0.00	0.00
25	87.00	APXVSPP18-C-A20	3	19.976	21.974	0.66	0.80	15.98	153.90	0.000	0.000	561.67	0.00	0.00
26	87.00	RRUS-11 1900 MHz	3	19.976	21.974	0.56	0.80	4.94	118.80	0.000	0.000	173.65	0.00	0.00
27	87.00	RRUS-11 800 MHz	3	19.976	21.974	0.60	0.80	5.29	145.80	0.000	0.000	186.05	0.00	0.00
28	87.00	Low Profile	1	19.976	21.974	1.00	1.00	22.00	1350.00	0.000	0.000	773.47	0.00	0.00
29	87.00	TD-RRH8x20-25	3	19.976	21.974	0.55	0.80	6.71	189.00	0.000	0.000	235.80	0.00	0.00
30	87.00	APXVTM14-C-120	3	19.976	21.974	0.63	0.80	12.02	151.20	0.000	0.000	422.62	0.00	0.00
31	87.00	800MHz Filter	3	19.976	21.974	0.56	0.80	0.82	27.00	0.000	0.000	28.94	0.00	0.00
32	87.00	ACU-A20-N	4	19.976	21.974	0.63	0.80	0.35	3.60	0.000	0.000	12.44	0.00	0.00
33	75.00	GPS	1	19.147	21.061	1.00	1.00	1.00	9.00	0.000	0.000	33.70	0.00	0.00
34	75.00	Standoff Mount	1	19.147	21.061	1.00	1.00	2.00	18.00	0.000	0.000	67.40	0.00	0.00
							Totals:		**8,858.84**			**13,638.99**		

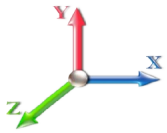
Total Applied Force Summary

Structure:	CT01498-ATT-091019		**Code:**	EIA/TIA-222-G	9/10/2019
Site Name:	Avon		**Exposure:**	B	
Height:	105.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 16

Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 16

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		388.72	1214.69	0.00	0.00
10.00		388.72	1214.69	0.00	0.00
15.00		388.72	1214.69	0.00	0.00
20.00		388.72	1214.69	0.00	0.00
25.00		349.84	1106.45	0.00	0.00
30.00		350.14	1106.45	0.00	0.00
35.00		365.90	1106.45	0.00	0.00
40.00		380.13	1106.45	0.00	0.00
45.00		349.46	998.21	0.00	0.00
50.00		360.14	998.21	0.00	0.00
55.00		370.08	998.21	0.00	0.00
60.00		379.40	998.21	0.00	0.00
65.00		339.65	889.98	0.00	0.00
70.00		346.92	889.98	0.00	0.00
75.00	(2) attachments	454.92	916.98	0.00	0.00
80.00		360.41	889.26	0.00	0.00
85.00		314.32	781.02	0.00	0.00
87.00	(23) attachments	2521.22	2451.71	0.00	0.00
90.00		191.70	458.31	0.00	0.00
91.00	(9) attachments	1213.45	425.74	0.00	0.00
95.00		259.58	607.62	0.00	0.00
97.00	(46) attachments	5467.84	4158.56	0.00	0.00
100.00		197.56	426.64	0.00	0.00
105.00	(17) attachments	4990.51	3275.88	0.00	2519.19
	Totals:	**21,118.06**	**29,449.08**	**0.00**	**2,519.19**

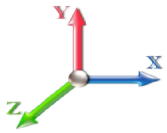
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01498-ATT-091019	**Code:**	EIA/TIA-222-G	9/10/2019	
Site Name:	Avon	**Exposure:**	B		
Height:	105.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 17	

Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 16

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.021	0.000	14.724	0.00	4.68
5.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.021	0.000	14.724	0.00	0.72
10.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.021	0.000	14.724	0.00	4.68
10.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.021	0.000	14.724	0.00	0.72
15.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.021	0.000	14.724	0.00	4.68
15.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.021	0.000	14.724	0.00	0.72
20.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.021	0.000	14.724	0.00	4.68
20.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.021	0.000	14.724	0.00	0.72
25.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.024	0.000	14.724	0.00	4.68
25.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.024	0.000	14.724	0.00	0.72
30.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.024	0.000	14.736	0.00	4.68
30.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.024	0.000	14.736	0.00	0.72
35.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.024	0.000	15.400	0.00	4.68
35.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.024	0.000	15.400	0.00	0.72
40.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.024	0.000	15.999	0.00	4.68
40.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.024	0.000	15.999	0.00	0.72
45.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.027	0.000	16.546	0.00	4.68
45.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.027	0.000	16.546	0.00	0.72
50.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.027	0.000	17.052	0.00	4.68
50.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.027	0.000	17.052	0.00	0.72
55.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.027	0.000	17.523	0.00	4.68
55.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.027	0.000	17.523	0.00	0.72
60.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.027	0.000	17.964	0.00	4.68
60.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.027	0.000	17.964	0.00	0.72
65.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.030	0.000	18.380	0.00	4.68
65.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.030	0.000	18.380	0.00	0.72
70.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.030	0.000	18.773	0.00	4.68
70.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.030	0.000	18.773	0.00	0.72
75.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.030	0.000	19.147	0.00	4.68
75.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.030	0.000	19.147	0.00	0.72
80.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.015	0.000	19.503	0.00	4.68
85.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.017	0.000	19.844	0.00	4.68
87.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.018	0.000	19.976	0.00	1.87
90.00	Step bolts (ladder)	Yes	3.00	0.000	0.63	0.16	0.00	0.018	0.000	20.170	0.00	2.81
91.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.05	0.00	0.018	0.000	20.234	0.00	0.94
95.00	Step bolts (ladder)	Yes	4.00	0.000	0.63	0.21	0.00	0.018	0.000	20.484	0.00	3.74
97.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.018	0.000	20.607	0.00	1.87
100.00	Step bolts (ladder)	Yes	3.00	0.000	0.63	0.16	0.00	0.018	0.000	20.787	0.00	2.81
105.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.017	0.000	21.079	0.00	4.68
									Totals:		**0.0**	**109.1**

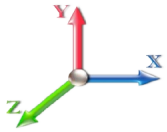
Calculated Forces

Structure:	CT01498-ATT-091019	**Code:**	EIA/TIA-222-G	9/10/2019	
Site Name:	Avon	**Exposure:**	B		
Height:	105.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 18	

Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 16

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-29.43	-21.14	0.00	-1745.0	0.00	1745.09	2204.43	1102.21	5439.15	3573.20	0.00	0.000	0.000	0.502
5.00	-28.19	-20.79	0.00	-1639.4	0.00	1639.40	2204.43	1102.21	5439.15	3573.20	0.04	-0.077	0.000	0.472
10.00	-26.95	-20.43	0.00	-1535.4	0.00	1535.48	2204.43	1102.21	5439.15	3573.20	0.16	-0.149	0.000	0.442
15.00	-25.72	-20.06	0.00	-1433.3	0.00	1433.34	2204.43	1102.21	5439.15	3573.20	0.36	-0.217	0.000	0.413
20.00	-24.48	-19.70	0.00	-1333.0	0.00	1333.02	2204.43	1102.21	5439.15	3573.20	0.62	-0.280	0.000	0.384
20.00	-24.48	-19.70	0.00	-1333.0	0.00	1333.02	2026.00	1013.00	4492.72	2914.55	0.62	-0.280	0.000	0.470
25.00	-23.36	-19.37	0.00	-1234.5	0.00	1234.54	2026.00	1013.00	4492.72	2914.55	0.94	-0.338	0.000	0.435
30.00	-22.23	-19.04	0.00	-1137.7	0.00	1137.71	2026.00	1013.00	4492.72	2914.55	1.34	-0.413	0.000	0.402
35.00	-21.10	-18.69	0.00	-1042.5	0.00	1042.52	2026.00	1013.00	4492.72	2914.55	1.81	-0.481	0.000	0.368
40.00	-19.98	-18.32	0.00	-949.09	0.00	949.09	2026.00	1013.00	4492.72	2914.55	2.35	-0.543	0.000	0.336
40.00	-19.98	-18.32	0.00	-949.09	0.00	949.09	1847.49	923.75	3635.30	2322.74	2.35	-0.543	0.000	0.420
45.00	-18.97	-17.98	0.00	-857.50	0.00	857.50	1847.49	923.75	3635.30	2322.74	2.95	-0.600	0.000	0.380
50.00	-17.95	-17.63	0.00	-767.60	0.00	767.60	1847.49	923.75	3635.30	2322.74	3.61	-0.672	0.000	0.341
55.00	-16.94	-17.27	0.00	-679.45	0.00	679.45	1847.49	923.75	3635.30	2322.74	4.35	-0.737	0.000	0.302
60.00	-15.93	-16.89	0.00	-593.13	0.00	593.13	1847.49	923.75	3635.30	2322.74	5.16	-0.794	0.000	0.264
60.00	-15.93	-16.89	0.00	-593.13	0.00	593.13	1668.87	834.44	2866.90	1797.79	5.16	-0.794	0.000	0.340
65.00	-15.03	-16.55	0.00	-508.69	0.00	508.69	1668.87	834.44	2866.90	1797.79	6.02	-0.843	0.000	0.292
70.00	-14.13	-16.20	0.00	-425.94	0.00	425.94	1668.87	834.44	2866.90	1797.79	6.93	-0.906	0.000	0.246
75.00	-13.21	-15.74	0.00	-344.92	0.00	344.92	1668.87	834.44	2866.90	1797.79	7.91	-0.957	0.000	0.200
80.00	-12.31	-15.38	0.00	-266.20	0.00	266.20	1668.87	834.44	2866.90	1797.79	8.94	-0.998	0.000	0.156
80.00	-12.31	-15.38	0.00	-266.20	0.00	266.20	1490.10	745.05	2187.51	1339.68	8.94	-0.998	0.000	0.207
85.00	-11.53	-15.05	0.00	-189.32	0.00	189.32	1490.10	745.05	2187.51	1339.68	10.00	-1.029	0.000	0.149
87.00	-9.12	-12.49	0.00	-159.21	0.00	159.21	1490.10	745.05	2187.51	1339.68	10.43	-1.043	0.000	0.125
90.00	-8.67	-12.29	0.00	-121.74	0.00	121.74	1490.10	745.05	2187.51	1339.68	11.10	-1.061	0.000	0.097
91.00	-8.26	-11.07	0.00	-109.45	0.00	109.45	1490.10	745.05	2187.51	1339.68	11.32	-1.066	0.000	0.087
95.00	-7.66	-10.80	0.00	-65.16	0.00	65.16	1490.10	745.05	2187.51	1339.68	12.22	-1.081	0.000	0.054
97.00	-3.60	-5.26	0.00	-43.55	0.00	43.55	1490.10	745.05	2187.51	1339.68	12.68	-1.086	0.000	0.035
100.00	-3.18	-5.05	0.00	-27.78	0.00	27.78	1490.10	745.05	2187.51	1339.68	13.36	-1.091	0.000	0.023
105.00	0.00	-4.99	0.00	-2.52	0.00	2.52	1490.10	745.05	2187.51	1339.68	14.50	-1.094	0.000	0.002

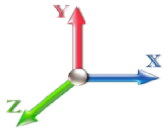
Wind Loading - Shaft

Structure:	CT01498-ATT-091019	**Code:**	EIA/TIA-222-G	9/10/2019	
Site Name:	Avon	**Exposure:**	B		
Height:	105.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 19	

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 15

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	4.256	4.68	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	4.256	4.68	0.00	1.200	1.656	5.00	26.380	31.66	148.2	623.7	2057.9
10.00		1.00	0.70	4.256	4.68	0.00	1.200	1.775	5.00	26.479	31.77	148.8	669.8	2103.9
15.00		1.00	0.70	4.256	4.68	0.00	1.200	1.848	5.00	26.540	31.85	149.1	698.3	2132.5
20.00	Top - Section 1	1.00	0.70	4.256	4.68	0.00	1.200	1.902	5.00	26.585	31.90	149.4	719.3	2153.5
25.00		1.00	0.70	4.256	4.68	0.00	1.200	1.945	5.00	24.121	28.95	135.5	664.8	1954.6
30.00		1.00	0.70	4.260	4.69	0.00	1.200	1.981	5.00	24.151	28.98	135.8	677.4	1967.3
35.00		1.00	0.73	4.451	4.90	0.00	1.200	2.012	5.00	24.177	29.01	142.1	688.4	1978.2
40.00	Top - Section 2	1.00	0.76	4.625	5.09	0.00	1.200	2.039	5.00	24.199	29.04	147.7	697.9	1987.8
45.00		1.00	0.79	4.783	5.26	0.00	1.200	2.063	5.00	21.719	26.06	137.1	630.9	1776.4
50.00		1.00	0.81	4.929	5.42	0.00	1.200	2.085	5.00	21.737	26.08	141.4	637.9	1783.4
55.00		1.00	0.83	5.065	5.57	0.00	1.200	2.105	5.00	21.754	26.10	145.4	644.2	1789.7
60.00	Top - Section 3	1.00	0.85	5.193	5.71	0.00	1.200	2.123	5.00	21.769	26.12	149.2	650.1	1795.6
65.00		1.00	0.87	5.313	5.84	0.00	1.200	2.140	5.00	19.284	23.14	135.2	577.1	1578.3
70.00		1.00	0.89	5.426	5.97	0.00	1.200	2.156	5.00	19.297	23.16	138.2	581.6	1582.8
75.00	Appurtenance(s)	1.00	0.91	5.534	6.09	0.00	1.200	2.171	5.00	19.309	23.17	141.1	585.8	1587.0
80.00	Top - Section 4	1.00	0.93	5.637	6.20	0.00	1.200	2.185	5.00	19.321	23.19	143.8	589.8	1591.0
85.00		1.00	0.94	5.736	6.31	0.00	1.200	2.198	5.00	16.832	20.20	127.4	513.0	1369.9
87.00	Appurtenance(s)	1.00	0.95	5.774	6.35	0.00	1.200	2.204	2.00	6.735	8.08	51.3	205.7	548.5
90.00		1.00	0.96	5.830	6.41	0.00	1.200	2.211	3.00	10.106	12.13	77.8	309.7	823.8
91.00	Appurtenance(s)	1.00	0.96	5.849	6.43	0.00	1.200	2.214	1.00	3.369	4.04	26.0	103.3	274.7
95.00		1.00	0.97	5.921	6.51	0.00	1.200	2.223	4.00	13.482	16.18	105.4	415.3	1100.8
97.00	Appurtenance(s)	1.00	0.98	5.956	6.55	0.00	1.200	2.228	2.00	6.743	8.09	53.0	208.1	550.8
100.00		1.00	0.99	6.008	6.61	0.00	1.200	2.234	3.00	10.117	12.14	80.2	313.1	827.3
105.00	Appurtenance(s)	1.00	1.00	6.093	6.70	0.00	1.200	2.245	5.00	16.871	20.25	135.7	524.6	1381.5
								Totals:	**105.00**			**2,944.8**		**36,697.1**

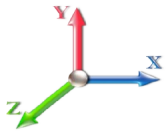
Discrete Appurtenance Forces

Structure:	CT01498-ATT-091019	**Code:**	EIA/TIA-222-G	9/10/2019	
Site Name:	Avon	**Exposure:**	B		
Height:	105.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 20	

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 15

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	105.00	APXVAARR24 43-U-NA2	3	6.093	6.702	0.70	1.00	47.69	2133.22	0.000	0.000	319.64	0.00	0.00
2	105.00	AIR32	3	6.093	6.702	0.87	1.00	20.98	1225.39	0.000	0.000	140.64	0.00	0.00
3	105.00	KRY 112 144/2 TMA	3	6.093	6.702	0.67	1.00	2.05	71.91	0.000	0.000	13.76	0.00	0.00
4	105.00	AIR 21 B2A/B4P	3	6.093	6.702	0.86	1.00	19.42	1014.00	0.000	0.000	130.18	0.00	0.00
5	105.00	20' Omni	1	6.269	6.896	1.00	1.00	15.13	216.74	0.000	11.000	104.32	0.00	1147.56
6	105.00	Low Profile	1	6.093	6.702	1.00	1.00	81.32	3184.06	0.000	0.000	544.98	0.00	0.00
7	105.00	Ericsson Radio 4449 B71	3	6.093	6.702	0.67	1.00	4.75	535.29	0.000	0.000	31.84	0.00	0.00
8	97.00	782 10250	6	5.956	6.552	0.62	0.80	3.25	156.99	0.000	0.000	21.32	0.00	0.00
9	97.00	Low Profile	1	5.956	6.552	1.00	1.00	44.54	3170.77	0.000	0.000	291.86	0.00	0.00
10	97.00	Flush Mount	1	5.956	6.552	1.00	1.00	9.46	694.25	0.000	0.000	61.95	0.00	0.00
11	97.00	Platform Reinforcement	1	5.956	6.552	1.00	1.00	23.97	-888.69	0.000	0.000	157.07	0.00	0.00
12	97.00	Support rail kit (SitePro1	1	5.956	6.552	1.00	1.00	26.32	-270.66	0.000	0.000	172.46	0.00	0.00
13	97.00	860 10025 RET	6	5.956	6.552	0.74	0.80	2.04	34.51	0.000	0.000	13.34	0.00	0.00
14	97.00	DC6-48-60-18-8F	3	5.956	6.552	0.64	0.80	7.57	433.46	0.000	0.000	49.58	0.00	0.00
15	97.00	800-10121	3	5.956	6.552	0.63	0.80	14.86	499.91	0.000	0.000	97.38	0.00	0.00
16	97.00	LGP21401	6	5.956	6.552	0.54	0.80	7.58	250.40	0.000	0.000	49.66	0.00	0.00
17	97.00	RRUS 4415 B30	3	5.956	6.552	0.58	0.80	4.39	453.63	0.000	0.000	28.78	0.00	0.00
18	97.00	RRUS 4449 B5/B12	3	5.956	6.552	0.72	0.80	5.50	672.90	0.000	0.000	36.01	0.00	0.00
19	97.00	800 10965	6	5.956	6.552	0.57	0.80	55.33	2971.20	0.000	0.000	362.50	0.00	0.00
20	97.00	HPA65R-BU6A	3	5.956	6.552	0.68	0.80	21.22	757.28	0.000	0.000	139.06	0.00	0.00
21	97.00	RRUS 8843 B2 B66A	3	5.956	6.552	0.73	0.80	5.61	671.55	0.000	0.000	36.79	0.00	0.00
22	91.00	RRU	3	5.849	6.434	0.88	1.00	8.45	312.72	0.000	0.000	54.38	0.00	0.00
23	91.00	Horizon DUO Radios	3	5.849	6.434	0.76	1.00	3.84	107.94	0.000	0.000	24.68	0.00	0.00
24	91.00	VHLP2.5	3	5.849	6.434	1.00	1.00	31.78	680.25	0.000	0.000	204.48	0.00	0.00
25	87.00	APXVSPP18-C-A20	3	5.774	6.351	0.66	0.80	23.00	711.45	0.000	0.000	146.10	0.00	0.00
26	87.00	RRUS-11 1900 MHz	3	5.774	6.351	0.56	0.80	7.52	355.89	0.000	0.000	47.74	0.00	0.00
27	87.00	RRUS-11 800 MHz	3	5.774	6.351	0.60	0.80	8.05	415.76	0.000	0.000	51.15	0.00	0.00
28	87.00	Low Profile	1	5.774	6.351	1.00	1.00	44.30	3152.69	0.000	0.000	281.37	0.00	0.00
29	87.00	TD-RRH8x20-25	3	5.774	6.351	0.55	0.80	8.44	693.72	0.000	0.000	53.62	0.00	0.00
30	87.00	APXVTM14-C-120	3	5.774	6.351	0.63	0.80	14.73	841.87	0.000	0.000	93.56	0.00	0.00
31	87.00	800MHz Filter	3	5.774	6.351	0.56	0.80	2.01	82.99	0.000	0.000	12.79	0.00	0.00
32	87.00	ACU-A20-N	4	5.774	6.351	0.63	0.80	1.30	21.30	0.000	0.000	8.26	0.00	0.00
33	75.00	GPS	1	5.534	6.088	1.00	1.00	1.89	40.47	0.000	0.000	11.48	0.00	0.00
34	75.00	Standoff Mount	1	5.534	6.088	1.00	1.00	3.74	4.84	0.000	0.000	22.75	0.00	0.00
							Totals:		**25,409.99**			**3,815.48**		

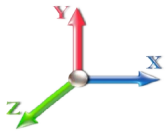
Total Applied Force Summary

Structure:	CT01498-ATT-091019		**Code:**	EIA/TIA-222-G	9/10/2019
Site Name:	Avon		**Exposure:**	B	
Height:	105.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 21

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 15

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		148.20	2285.37	0.00	0.00
10.00		148.76	2337.00	0.00	0.00
15.00		149.10	2369.16	0.00	0.00
20.00		149.35	2392.91	0.00	0.00
25.00		135.51	2196.27	0.00	0.00
30.00		135.79	2210.83	0.00	0.00
35.00		142.06	2223.38	0.00	0.00
40.00		147.72	2234.44	0.00	0.00
45.00		137.12	2024.42	0.00	0.00
50.00		141.43	2032.60	0.00	0.00
55.00		145.44	2040.08	0.00	0.00
60.00		149.21	2046.99	0.00	0.00
65.00		135.23	1830.65	0.00	0.00
70.00		138.22	1836.07	0.00	0.00
75.00	(2) attachments	175.29	1886.47	0.00	0.00
80.00		143.77	1810.12	0.00	0.00
85.00		127.44	1589.38	0.00	0.00
87.00	(23) attachments	745.92	6911.98	0.00	0.00
90.00		77.77	941.98	0.00	0.00
91.00	(9) attachments	309.55	1415.04	0.00	0.00
95.00		105.37	1254.02	0.00	0.00
97.00	(46) attachments	1570.76	10235.01	0.00	0.00
100.00		80.24	903.64	0.00	0.00
105.00	(17) attachments	1421.05	9889.71	0.00	1147.56
	Totals:	**6,760.32**	**66,897.52**	**0.00**	**1,147.56**

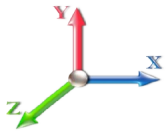
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01498-ATT-091019	**Code:**	EIA/TIA-222-G	9/10/2019	
Site Name:	Avon	**Exposure:**	B		
Height:	105.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 22	

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 15

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.64	0.00	0.021	0.000	4.256	0.00	27.18
5.00	1/2" Coax	Yes	5.00	0.000	0.65	1.65	0.00	0.021	0.000	4.256	0.00	22.08
10.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.74	0.00	0.021	0.000	4.256	0.00	29.96
10.00	1/2" Coax	Yes	5.00	0.000	0.65	1.75	0.00	0.021	0.000	4.256	0.00	24.87
15.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.80	0.00	0.021	0.000	4.256	0.00	31.77
15.00	1/2" Coax	Yes	5.00	0.000	0.65	1.81	0.00	0.021	0.000	4.256	0.00	26.68
20.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.85	0.00	0.021	0.000	4.256	0.00	33.13
20.00	1/2" Coax	Yes	5.00	0.000	0.65	1.86	0.00	0.021	0.000	4.256	0.00	28.05
25.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.88	0.00	0.024	0.000	4.256	0.00	34.25
25.00	1/2" Coax	Yes	5.00	0.000	0.65	1.89	0.00	0.024	0.000	4.256	0.00	29.17
30.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.91	0.00	0.024	0.000	4.260	0.00	35.19
30.00	1/2" Coax	Yes	5.00	0.000	0.65	1.92	0.00	0.024	0.000	4.260	0.00	30.12
35.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.94	0.00	0.024	0.000	4.451	0.00	36.02
35.00	1/2" Coax	Yes	5.00	0.000	0.65	1.95	0.00	0.024	0.000	4.451	0.00	30.95
40.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.96	0.00	0.024	0.000	4.625	0.00	36.75
40.00	1/2" Coax	Yes	5.00	0.000	0.65	1.97	0.00	0.024	0.000	4.625	0.00	31.68
45.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.98	0.00	0.027	0.000	4.783	0.00	37.42
45.00	1/2" Coax	Yes	5.00	0.000	0.65	1.99	0.00	0.027	0.000	4.783	0.00	32.35
50.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	2.00	0.00	0.027	0.000	4.929	0.00	38.02
50.00	1/2" Coax	Yes	5.00	0.000	0.65	2.01	0.00	0.027	0.000	4.929	0.00	32.96
55.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	2.02	0.00	0.027	0.000	5.065	0.00	38.58
55.00	1/2" Coax	Yes	5.00	0.000	0.65	2.02	0.00	0.027	0.000	5.065	0.00	33.52
60.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	2.03	0.00	0.027	0.000	5.193	0.00	39.10
60.00	1/2" Coax	Yes	5.00	0.000	0.65	2.04	0.00	0.027	0.000	5.193	0.00	34.04
65.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	2.05	0.00	0.030	0.000	5.313	0.00	39.59
65.00	1/2" Coax	Yes	5.00	0.000	0.65	2.05	0.00	0.030	0.000	5.313	0.00	34.53
70.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	2.06	0.00	0.030	0.000	5.426	0.00	40.04
70.00	1/2" Coax	Yes	5.00	0.000	0.65	2.07	0.00	0.030	0.000	5.426	0.00	34.99
75.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	2.07	0.00	0.030	0.000	5.534	0.00	40.47
75.00	1/2" Coax	Yes	5.00	0.000	0.65	2.08	0.00	0.030	0.000	5.534	0.00	35.42
80.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	2.08	0.00	0.015	0.000	5.637	0.00	40.88
85.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	2.09	0.00	0.017	0.000	5.736	0.00	41.27
87.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.84	0.00	0.018	0.000	5.774	0.00	16.57
90.00	Step bolts (ladder)	Yes	3.00	0.000	0.63	1.26	0.00	0.018	0.000	5.830	0.00	24.98
91.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.42	0.00	0.018	0.000	5.849	0.00	8.34
95.00	Step bolts (ladder)	Yes	4.00	0.000	0.63	1.69	0.00	0.018	0.000	5.921	0.00	33.60
97.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.85	0.00	0.018	0.000	5.956	0.00	16.85
100.00	Step bolts (ladder)	Yes	3.00	0.000	0.63	1.27	0.00	0.018	0.000	6.008	0.00	25.40
105.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	2.13	0.00	0.017	0.000	6.093	0.00	42.66
										Totals:	**0.0**	**1,249.4**

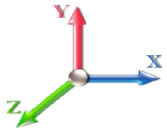
Calculated Forces

Structure:	CT01498-ATT-091019	**Code:**	EIA/TIA-222-G	9/10/2019	
Site Name:	Avon	**Exposure:**	B		
Height:	105.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 23	

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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 15

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-66.90	-6.77	0.00	-544.03	0.00	544.03	2204.43	1102.21	5439.15	3573.20	0.00	0.000	0.000	0.183
5.00	-64.61	-6.65	0.00	-510.16	0.00	510.16	2204.43	1102.21	5439.15	3573.20	0.01	-0.024	0.000	0.172
10.00	-62.27	-6.53	0.00	-476.90	0.00	476.90	2204.43	1102.21	5439.15	3573.20	0.05	-0.046	0.000	0.162
15.00	-59.90	-6.39	0.00	-444.28	0.00	444.28	2204.43	1102.21	5439.15	3573.20	0.11	-0.067	0.000	0.152
20.00	-57.50	-6.26	0.00	-412.30	0.00	412.30	2204.43	1102.21	5439.15	3573.20	0.19	-0.087	0.000	0.142
20.00	-57.50	-6.26	0.00	-412.30	0.00	412.30	2026.00	1013.00	4492.72	2914.55	0.19	-0.087	0.000	0.170
25.00	-55.30	-6.14	0.00	-381.00	0.00	381.00	2026.00	1013.00	4492.72	2914.55	0.29	-0.105	0.000	0.158
30.00	-53.09	-6.02	0.00	-350.29	0.00	350.29	2026.00	1013.00	4492.72	2914.55	0.42	-0.128	0.000	0.146
35.00	-50.87	-5.89	0.00	-320.18	0.00	320.18	2026.00	1013.00	4492.72	2914.55	0.56	-0.149	0.000	0.135
40.00	-48.63	-5.75	0.00	-290.72	0.00	290.72	2026.00	1013.00	4492.72	2914.55	0.73	-0.168	0.000	0.124
40.00	-48.63	-5.75	0.00	-290.72	0.00	290.72	1847.49	923.75	3635.30	2322.74	0.73	-0.168	0.000	0.152
45.00	-46.60	-5.63	0.00	-261.95	0.00	261.95	1847.49	923.75	3635.30	2322.74	0.91	-0.185	0.000	0.138
50.00	-44.57	-5.49	0.00	-233.82	0.00	233.82	1847.49	923.75	3635.30	2322.74	1.12	-0.207	0.000	0.125
55.00	-42.53	-5.35	0.00	-206.35	0.00	206.35	1847.49	923.75	3635.30	2322.74	1.35	-0.227	0.000	0.112
60.00	-40.48	-5.21	0.00	-179.58	0.00	179.58	1847.49	923.75	3635.30	2322.74	1.59	-0.244	0.000	0.099
60.00	-40.48	-5.21	0.00	-179.58	0.00	179.58	1668.87	834.44	2866.90	1797.79	1.59	-0.244	0.000	0.124
65.00	-38.65	-5.08	0.00	-153.54	0.00	153.54	1668.87	834.44	2866.90	1797.79	1.86	-0.259	0.000	0.109
70.00	-36.81	-4.94	0.00	-128.15	0.00	128.15	1668.87	834.44	2866.90	1797.79	2.14	-0.278	0.000	0.093
75.00	-34.93	-4.76	0.00	-103.45	0.00	103.45	1668.87	834.44	2866.90	1797.79	2.44	-0.294	0.000	0.079
80.00	-33.12	-4.62	0.00	-79.63	0.00	79.63	1668.87	834.44	2866.90	1797.79	2.76	-0.306	0.000	0.064
80.00	-33.12	-4.62	0.00	-79.63	0.00	79.63	1490.10	745.05	2187.51	1339.68	2.76	-0.306	0.000	0.082
85.00	-31.53	-4.49	0.00	-56.54	0.00	56.54	1490.10	745.05	2187.51	1339.68	3.08	-0.315	0.000	0.063
87.00	-24.62	-3.70	0.00	-47.57	0.00	47.57	1490.10	745.05	2187.51	1339.68	3.21	-0.319	0.000	0.052
90.00	-23.68	-3.62	0.00	-36.46	0.00	36.46	1490.10	745.05	2187.51	1339.68	3.42	-0.325	0.000	0.043
91.00	-22.26	-3.31	0.00	-32.84	0.00	32.84	1490.10	745.05	2187.51	1339.68	3.49	-0.326	0.000	0.039
95.00	-21.01	-3.19	0.00	-19.62	0.00	19.62	1490.10	745.05	2187.51	1339.68	3.76	-0.331	0.000	0.029
97.00	-10.78	-1.56	0.00	-13.23	0.00	13.23	1490.10	745.05	2187.51	1339.68	3.90	-0.332	0.000	0.017
100.00	-9.88	-1.48	0.00	-8.54	0.00	8.54	1490.10	745.05	2187.51	1339.68	4.11	-0.334	0.000	0.013
105.00	0.00	-1.42	0.00	-1.15	0.00	1.15	1490.10	745.05	2187.51	1339.68	4.46	-0.335	0.000	0.001

Seismic Segment Forces (Factored)

Structure:	CT01498-ATT-091019	**Code:**	EIA/TIA-222-G	9/10/2019	
Site Name:	Avon	**Exposure:**	B		
Height:	105.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 24	

Load Case:	1.2D + 1.0E							**Iterations**	15
Gust Response Factor	1.10				**Sds**	0.19		**Ss**	0.18
Dead Load Factor	1.20	**Seismic Load Factor**	1.00		**Sd1**	0.10		**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.74		**SA**	0.08	**Seismic Importance Factor**		1.00

Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1195.1	0.00	0.04	0.02	15.78	
10.00		1195.1	0.02	0.06	0.04	23.00	
15.00		1195.1	0.04	0.07	0.04	26.56	
20.00	Top - Section 1	1195.1	0.07	0.07	0.04	28.85	
25.00		1074.8	0.11	0.07	0.04	27.81	
30.00		1074.8	0.15	0.07	0.03	29.66	
35.00		1074.8	0.21	0.06	0.02	31.13	
40.00	Top - Section 2	1074.8	0.27	0.05	0.01	31.51	
45.00		954.60	0.35	0.03	0.01	26.64	
50.00		954.60	0.43	0.01	0.01	23.10	
55.00		954.60	0.52	-0.02	0.01	17.44	
60.00	Top - Section 3	954.60	0.62	-0.06	0.02	10.69	
65.00		834.33	0.72	-0.09	0.03	4.30	
70.00		834.33	0.84	-0.12	0.07	2.54	
75.00	Appurtenance(s)	864.33	0.96	-0.12	0.11	6.73	
80.00	Top - Section 4	834.33	1.10	-0.07	0.19	18.01	
85.00		714.07	1.24	0.04	0.28	32.74	
87.00	Appurtenance(s)	2662.6	1.30	0.12	0.33	156.19	
90.00		428.44	1.39	0.26	0.42	34.84	
91.00	Appurtenance(s)	446.11	1.42	0.32	0.45	40.06	
95.00		571.25	1.55	0.62	0.60	73.35	
97.00	Appurtenance(s)	4568.6	1.61	0.82	0.69	687.81	
100.00		428.44	1.71	1.18	0.84	80.27	
105.00	Appurtenance(s)	3563.8	1.89	1.98	1.14	920.71	
	Totals:	**29,649.2**				**2,349.7**	**Total Wind:** **21,118.1**

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

Calculated Forces

Structure:	CT01498-ATT-091019		**Code:**	EIA/TIA-222-G	9/10/2019
Site Name:	Avon		**Exposure:**	B	
Height:	105.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 25

Load Case:	1.2D + 1.0E							**Iterations**	15
Gust Response Factor	1.10				**Sds**	0.19		**Ss**	0.18
Dead Load Factor	1.20	**Seismic Load Factor**	1.00		**Sd1**	0.10		**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.74		**SA**	0.08	**Seismic Importance Factor**		1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-39.27	-2.35	0.00	-216.09	0.00	216.09	2204.43	1102.21	5439.15	3573.20		0.00	0.00	0.078
5.00	-37.65	-2.34	0.00	-204.32	0.00	204.32	2204.43	1102.21	5439.15	3573.20		0.01	-0.01	0.074
10.00	-36.03	-2.33	0.00	-192.61	0.00	192.61	2204.43	1102.21	5439.15	3573.20		0.02	-0.02	0.070
15.00	-34.41	-2.30	0.00	-180.98	0.00	180.98	2204.43	1102.21	5439.15	3573.20		0.04	-0.03	0.066
20.00	-32.79	-2.28	0.00	-169.47	0.00	169.47	2204.43	1102.21	5439.15	3573.20		0.08	-0.04	0.062
20.00	-32.79	-2.28	0.00	-169.47	0.00	169.47	2026.00	1013.00	4492.72	2914.55		0.08	-0.04	0.074
25.00	-31.31	-2.25	0.00	-158.08	0.00	158.08	2026.00	1013.00	4492.72	2914.55		0.12	-0.04	0.070
30.00	-29.83	-2.23	0.00	-146.81	0.00	146.81	2026.00	1013.00	4492.72	2914.55		0.17	-0.05	0.065
35.00	-28.36	-2.20	0.00	-135.67	0.00	135.67	2026.00	1013.00	4492.72	2914.55		0.23	-0.06	0.061
40.00	-26.88	-2.17	0.00	-124.68	0.00	124.68	2026.00	1013.00	4492.72	2914.55		0.30	-0.07	0.056
40.00	-26.88	-2.17	0.00	-124.68	0.00	124.68	1847.49	923.75	3635.30	2322.74		0.30	-0.07	0.068
45.00	-25.55	-2.14	0.00	-113.83	0.00	113.83	1847.49	923.75	3635.30	2322.74		0.37	-0.08	0.063
50.00	-24.22	-2.12	0.00	-103.11	0.00	103.11	1847.49	923.75	3635.30	2322.74		0.46	-0.09	0.058
55.00	-22.89	-2.11	0.00	-92.49	0.00	92.49	1847.49	923.75	3635.30	2322.74		0.55	-0.09	0.052
60.00	-21.56	-2.10	0.00	-81.95	0.00	81.95	1847.49	923.75	3635.30	2322.74		0.66	-0.10	0.047
60.00	-21.56	-2.10	0.00	-81.95	0.00	81.95	1668.87	834.44	2866.90	1797.79		0.66	-0.10	0.059
65.00	-20.37	-2.09	0.00	-71.46	0.00	71.46	1668.87	834.44	2866.90	1797.79		0.77	-0.11	0.052
70.00	-19.18	-2.09	0.00	-60.99	0.00	60.99	1668.87	834.44	2866.90	1797.79		0.89	-0.12	0.045
75.00	-17.96	-2.08	0.00	-50.54	0.00	50.54	1668.87	834.44	2866.90	1797.79		1.02	-0.13	0.039
80.00	-16.78	-2.07	0.00	-40.12	0.00	40.12	1668.87	834.44	2866.90	1797.79		1.15	-0.13	0.032
80.00	-16.78	-2.07	0.00	-40.12	0.00	40.12	1490.10	745.05	2187.51	1339.68		1.15	-0.13	0.041
85.00	-15.73	-2.03	0.00	-29.79	0.00	29.79	1490.10	745.05	2187.51	1339.68		1.29	-0.14	0.033
87.00	-12.47	-1.87	0.00	-25.73	0.00	25.73	1490.10	745.05	2187.51	1339.68		1.35	-0.14	0.028
90.00	-11.85	-1.83	0.00	-20.12	0.00	20.12	1490.10	745.05	2187.51	1339.68		1.44	-0.14	0.023
91.00	-11.29	-1.79	0.00	-18.29	0.00	18.29	1490.10	745.05	2187.51	1339.68		1.47	-0.14	0.021
95.00	-10.48	-1.72	0.00	-11.13	0.00	11.13	1490.10	745.05	2187.51	1339.68		1.59	-0.15	0.015
97.00	-4.93	-1.01	0.00	-7.70	0.00	7.70	1490.10	745.05	2187.51	1339.68		1.65	-0.15	0.009
100.00	-4.37	-0.93	0.00	-4.66	0.00	4.66	1490.10	745.05	2187.51	1339.68		1.74	-0.15	0.006
105.00	0.00	-0.92	0.00	0.00	0.00	0.00	1490.10	745.05	2187.51	1339.68		1.90	-0.15	0.000

Seismic Segment Forces (Factored)

Structure:	CT01498-ATT-091019	**Code:**	EIA/TIA-222-G	9/10/2019	
Site Name:	Avon	**Exposure:**	B		
Height:	105.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 26	

Load Case:	0.9D + 1.0E							**Iterations**	15
Gust Response Factor	1.10				**Sds**	0.19		**Ss**	0.18
Dead Load Factor	0.90	**Seismic Load Factor**	1.00		**Sd1**	0.10		**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.74		**SA**	0.08	**Seismic Importance Factor**		1.00

Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1195.1	0.00	0.04	0.02	15.78	
10.00		1195.1	0.02	0.06	0.04	23.00	
15.00		1195.1	0.04	0.07	0.04	26.56	
20.00	Top - Section 1	1195.1	0.07	0.07	0.04	28.85	
25.00		1074.8	0.11	0.07	0.04	27.81	
30.00		1074.8	0.15	0.07	0.03	29.66	
35.00		1074.8	0.21	0.06	0.02	31.13	
40.00	Top - Section 2	1074.8	0.27	0.05	0.01	31.51	
45.00		954.60	0.35	0.03	0.01	26.64	
50.00		954.60	0.43	0.01	0.01	23.10	
55.00		954.60	0.52	-0.02	0.01	17.44	
60.00	Top - Section 3	954.60	0.62	-0.06	0.02	10.69	
65.00		834.33	0.72	-0.09	0.03	4.30	
70.00		834.33	0.84	-0.12	0.07	2.54	
75.00	Appurtenance(s)	864.33	0.96	-0.12	0.11	6.73	
80.00	Top - Section 4	834.33	1.10	-0.07	0.19	18.01	
85.00		714.07	1.24	0.04	0.28	32.74	
87.00	Appurtenance(s)	2662.6	1.30	0.12	0.33	156.19	
90.00		428.44	1.39	0.26	0.42	34.84	
91.00	Appurtenance(s)	446.11	1.42	0.32	0.45	40.06	
95.00		571.25	1.55	0.62	0.60	73.35	
97.00	Appurtenance(s)	4568.6	1.61	0.82	0.69	687.81	
100.00		428.44	1.71	1.18	0.84	80.27	
105.00	Appurtenance(s)	3563.8	1.89	1.98	1.14	920.71	
	Totals:	**29,649.2**				**2,349.7**	**Total Wind:** **21,118.1**

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

Calculated Forces

Structure:	CT01498-ATT-091019	**Code:**	EIA/TIA-222-G	9/10/2019	
Site Name:	Avon	**Exposure:**	B		
Height:	105.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 27	

Load Case:	0.9D + 1.0E							**Iterations**	15
Gust Response Factor	1.10			**Sds**	0.19			**Ss**	0.18
Dead Load Factor	0.90	**Seismic Load Factor**	1.00	**Sd1**	0.10			**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.74	**SA**	0.08	**Seismic Importance Factor**			1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-29.45	-2.35	0.00	-215.33	0.00	215.33	2204.43	1102.21	5439.15	3573.20		0.00	0.00	0.074
5.00	-28.23	-2.34	0.00	-203.57	0.00	203.57	2204.43	1102.21	5439.15	3573.20		0.01	-0.01	0.070
10.00	-27.02	-2.32	0.00	-191.87	0.00	191.87	2204.43	1102.21	5439.15	3573.20		0.02	-0.02	0.066
15.00	-25.80	-2.30	0.00	-180.26	0.00	180.26	2204.43	1102.21	5439.15	3573.20		0.04	-0.03	0.062
20.00	-24.59	-2.27	0.00	-168.77	0.00	168.77	2204.43	1102.21	5439.15	3573.20		0.08	-0.03	0.058
20.00	-24.59	-2.27	0.00	-168.77	0.00	168.77	2026.00	1013.00	4492.72	2914.55		0.08	-0.03	0.070
25.00	-23.48	-2.25	0.00	-157.41	0.00	157.41	2026.00	1013.00	4492.72	2914.55		0.12	-0.04	0.066
30.00	-22.38	-2.22	0.00	-146.17	0.00	146.17	2026.00	1013.00	4492.72	2914.55		0.17	-0.05	0.061
35.00	-21.27	-2.19	0.00	-135.07	0.00	135.07	2026.00	1013.00	4492.72	2914.55		0.23	-0.06	0.057
40.00	-20.16	-2.16	0.00	-124.12	0.00	124.12	2026.00	1013.00	4492.72	2914.55		0.29	-0.07	0.053
40.00	-20.16	-2.16	0.00	-124.12	0.00	124.12	1847.49	923.75	3635.30	2322.74		0.29	-0.07	0.064
45.00	-19.16	-2.14	0.00	-113.32	0.00	113.32	1847.49	923.75	3635.30	2322.74		0.37	-0.08	0.059
50.00	-18.16	-2.11	0.00	-102.64	0.00	102.64	1847.49	923.75	3635.30	2322.74		0.46	-0.09	0.054
55.00	-17.17	-2.10	0.00	-92.07	0.00	92.07	1847.49	923.75	3635.30	2322.74		0.55	-0.09	0.049
60.00	-16.17	-2.09	0.00	-81.58	0.00	81.58	1847.49	923.75	3635.30	2322.74		0.65	-0.10	0.044
60.00	-16.17	-2.09	0.00	-81.58	0.00	81.58	1668.87	834.44	2866.90	1797.79		0.65	-0.10	0.055
65.00	-15.28	-2.08	0.00	-71.14	0.00	71.14	1668.87	834.44	2866.90	1797.79		0.76	-0.11	0.049
70.00	-14.39	-2.08	0.00	-60.73	0.00	60.73	1668.87	834.44	2866.90	1797.79		0.88	-0.12	0.042
75.00	-13.47	-2.07	0.00	-50.32	0.00	50.32	1668.87	834.44	2866.90	1797.79		1.01	-0.13	0.036
80.00	-12.58	-2.06	0.00	-39.95	0.00	39.95	1668.87	834.44	2866.90	1797.79		1.15	-0.13	0.030
80.00	-12.58	-2.06	0.00	-39.95	0.00	39.95	1490.10	745.05	2187.51	1339.68		1.15	-0.13	0.038
85.00	-11.80	-2.02	0.00	-29.67	0.00	29.67	1490.10	745.05	2187.51	1339.68		1.29	-0.14	0.030
87.00	-9.35	-1.86	0.00	-25.63	0.00	25.63	1490.10	745.05	2187.51	1339.68		1.34	-0.14	0.025
90.00	-8.89	-1.82	0.00	-20.05	0.00	20.05	1490.10	745.05	2187.51	1339.68		1.43	-0.14	0.021
91.00	-8.46	-1.78	0.00	-18.23	0.00	18.23	1490.10	745.05	2187.51	1339.68		1.46	-0.14	0.019
95.00	-7.86	-1.71	0.00	-11.09	0.00	11.09	1490.10	745.05	2187.51	1339.68		1.58	-0.14	0.014
97.00	-3.70	-1.01	0.00	-7.68	0.00	7.68	1490.10	745.05	2187.51	1339.68		1.64	-0.15	0.008
100.00	-3.27	-0.93	0.00	-4.65	0.00	4.65	1490.10	745.05	2187.51	1339.68		1.74	-0.15	0.006
105.00	0.00	-0.92	0.00	0.00	0.00	0.00	1490.10	745.05	2187.51	1339.68		1.89	-0.15	0.000

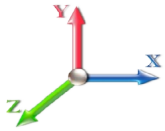
Wind Loading - Shaft

Structure:	CT01498-ATT-091019	**Code:**	EIA/TIA-222-G	9/10/2019	
Site Name:	Avon	**Exposure:**	B		
Height:	105.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 28	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 15

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	6.129	6.74	251.00	0.600	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	6.129	6.74	251.00	0.600	0.000	5.00	25.000	15.00	101.1	0.0	1195.1
10.00		1.00	0.70	6.129	6.74	251.00	0.600	0.000	5.00	25.000	15.00	101.1	0.0	1195.1
15.00		1.00	0.70	6.129	6.74	251.00	0.600	0.000	5.00	25.000	15.00	101.1	0.0	1195.1
20.00	Top - Section 1	1.00	0.70	6.129	6.74	251.00	0.600	0.000	5.00	25.000	15.00	101.1	0.0	1195.1
25.00		1.00	0.70	6.129	6.74	225.90	0.600	0.000	5.00	22.500	13.50	91.0	0.0	1074.9
30.00		1.00	0.70	6.134	6.75	225.99	0.600	0.000	5.00	22.500	13.50	91.1	0.0	1074.9
35.00		1.00	0.73	6.410	7.05	231.03	0.600	0.000	5.00	22.500	13.50	95.2	0.0	1074.9
40.00	Top - Section 2	1.00	0.76	6.659	7.33	235.47	0.600	0.000	5.00	22.500	13.50	98.9	0.0	1074.9
45.00		1.00	0.79	6.887	7.58	212.86	0.600	0.000	5.00	20.000	12.00	90.9	0.0	954.6
50.00		1.00	0.81	7.098	7.81	216.09	0.600	0.000	5.00	20.000	12.00	93.7	0.0	954.6
55.00		1.00	0.83	7.294	8.02	219.05	0.600	0.000	5.00	20.000	12.00	96.3	0.0	954.6
60.00	Top - Section 3	1.00	0.85	7.477	8.22	221.79	0.600	0.000	5.00	20.000	12.00	98.7	0.0	954.6
65.00		1.00	0.87	7.650	8.42	196.30	0.600	0.000	5.00	17.500	10.50	88.4	0.0	834.3
70.00		1.00	0.89	7.814	8.60	198.39	0.600	0.000	5.00	17.500	10.50	90.3	0.0	834.3
75.00	Appurtenance(s)	1.00	0.91	7.969	8.77	200.35	0.600	0.000	5.00	17.500	10.50	92.0	0.0	834.3
80.00	Top - Section 4	1.00	0.93	8.118	8.93	202.21	0.600	0.000	5.00	17.500	10.50	93.8	0.0	834.3
85.00		1.00	0.94	8.260	9.09	174.83	0.600	0.000	5.00	15.000	9.00	81.8	0.0	714.1
87.00	Appurtenance(s)	1.00	0.95	8.315	9.15	175.41	0.600	0.000	2.00	6.000	3.60	32.9	0.0	285.6
90.00		1.00	0.96	8.396	9.24	176.26	0.600	0.000	3.00	9.000	5.40	49.9	0.0	428.4
91.00	Appurtenance(s)	1.00	0.96	8.422	9.26	176.54	0.600	0.000	1.00	3.000	1.80	16.7	0.0	142.8
95.00		1.00	0.97	8.526	9.38	177.63	0.600	0.000	4.00	12.000	7.20	67.5	0.0	571.3
97.00	Appurtenance(s)	1.00	0.98	8.577	9.43	178.16	0.600	0.000	2.00	6.000	3.60	34.0	0.0	285.6
100.00		1.00	0.99	8.652	9.52	178.94	0.600	0.000	3.00	9.000	5.40	51.4	0.0	428.4
105.00	Appurtenance(s)	1.00	1.00	8.774	9.65	180.19	0.600	0.000	5.00	15.000	9.00	86.9	0.0	714.1
								Totals:	**105.00**			**1,945.6**		**19,806.0**

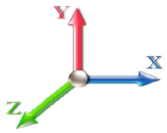
Discrete Appurtenance Forces

Structure:	CT01498-ATT-091019	**Code:**	EIA/TIA-222-G	9/10/2019	
Site Name:	Avon	**Exposure:**	B		
Height:	105.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 29	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 15

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	105.00	APXVAARR24 43-U-NA2	3	8.774	9.651	0.70	1.00	42.50	384.00	0.000	0.000	410.21	0.00	0.00
2	105.00	AIR32	3	8.774	9.651	0.87	1.00	16.99	396.60	0.000	0.000	163.98	0.00	0.00
3	105.00	KRY 112 144/2 TMA	3	8.774	9.651	0.67	1.00	0.82	33.00	0.000	0.000	7.95	0.00	0.00
4	105.00	AIR 21 B2A/B4P	3	8.774	9.651	0.86	1.00	15.71	271.20	0.000	0.000	151.64	0.00	0.00
5	105.00	20' Omni	1	9.027	9.930	1.00	1.00	6.00	55.00	0.000	11.000	59.58	0.00	655.36
6	105.00	Low Profile	1	8.774	9.651	1.00	1.00	40.00	1500.00	0.000	0.000	386.04	0.00	0.00
7	105.00	Ericsson Radio 4449 B71	3	8.774	9.651	0.67	1.00	3.32	210.00	0.000	0.000	32.01	0.00	0.00
8	97.00	782 10250	6	8.577	9.435	0.62	0.80	1.66	38.40	0.000	0.000	15.69	0.00	0.00
9	97.00	Low Profile	1	8.577	9.435	1.00	1.00	22.00	1500.00	0.000	0.000	207.57	0.00	0.00
10	97.00	Flush Mount	1	8.577	9.435	1.00	1.00	5.00	350.00	0.000	0.000	47.17	0.00	0.00
11	97.00	Platform Reinforcement	1	8.577	9.435	1.00	1.00	11.84	275.00	0.000	0.000	111.71	0.00	0.00
12	97.00	Support rail kit (SitePro1	1	8.577	9.435	1.00	1.00	13.00	461.50	0.000	0.000	122.65	0.00	0.00
13	97.00	860 10025 RET	6	8.577	9.435	0.74	0.80	0.62	6.96	0.000	0.000	5.90	0.00	0.00
14	97.00	DC6-48-60-18-8F	3	8.577	9.435	0.64	0.80	5.76	56.70	0.000	0.000	54.35	0.00	0.00
15	97.00	800-10121	3	8.577	9.435	0.63	0.80	9.76	132.30	0.000	0.000	92.13	0.00	0.00
16	97.00	LGP21401	6	8.577	9.435	0.54	0.80	4.15	84.60	0.000	0.000	39.14	0.00	0.00
17	97.00	RRUS 4415 B30	3	8.577	9.435	0.58	0.80	3.18	138.00	0.000	0.000	30.00	0.00	0.00
18	97.00	RRUS 4449 B5/B12	3	8.577	9.435	0.72	0.80	3.54	219.00	0.000	0.000	33.42	0.00	0.00
19	97.00	800 10965	6	8.577	9.435	0.57	0.80	47.06	651.60	0.000	0.000	444.05	0.00	0.00
20	97.00	HPA65R-BU6A	3	8.577	9.435	0.68	0.80	15.99	153.00	0.000	0.000	150.90	0.00	0.00
21	97.00	RRUS 8843 B2 B66A	3	8.577	9.435	0.73	0.80	3.58	216.00	0.000	0.000	33.79	0.00	0.00
22	91.00	RRU	3	8.422	9.264	0.88	1.00	5.07	126.00	0.000	0.000	46.96	0.00	0.00
23	91.00	Horizon DUO Radios	3	8.422	9.264	0.76	1.00	1.92	34.50	0.000	0.000	17.74	0.00	0.00
24	91.00	VHLP2.5	3	8.422	9.264	1.00	1.00	25.29	142.80	0.000	0.000	234.30	0.00	0.00
25	87.00	APXVSPP18-C-A20	3	8.315	9.146	0.66	0.80	15.98	171.00	0.000	0.000	146.12	0.00	0.00
26	87.00	RRUS-11 1900 MHz	3	8.315	9.146	0.56	0.80	4.94	132.00	0.000	0.000	45.17	0.00	0.00
27	87.00	RRUS-11 800 MHz	3	8.315	9.146	0.60	0.80	5.29	162.00	0.000	0.000	48.40	0.00	0.00
28	87.00	Low Profile	1	8.315	9.146	1.00	1.00	22.00	1500.00	0.000	0.000	201.21	0.00	0.00
29	87.00	TD-RRH8x20-25	3	8.315	9.146	0.55	0.80	6.71	210.00	0.000	0.000	61.34	0.00	0.00
30	87.00	APXVTM14-C-120	3	8.315	9.146	0.63	0.80	12.02	168.00	0.000	0.000	109.94	0.00	0.00
31	87.00	800MHz Filter	3	8.315	9.146	0.56	0.80	0.82	30.00	0.000	0.000	7.53	0.00	0.00
32	87.00	ACU-A20-N	4	8.315	9.146	0.63	0.80	0.35	4.00	0.000	0.000	3.24	0.00	0.00
33	75.00	GPS	1	7.969	8.766	1.00	1.00	1.00	10.00	0.000	0.000	8.77	0.00	0.00
34	75.00	Standoff Mount	1	7.969	8.766	1.00	1.00	2.00	20.00	0.000	0.000	17.53	0.00	0.00
							Totals:		**9,843.16**			**3,548.13**		

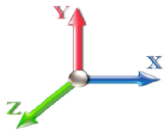
Total Applied Force Summary

Structure:	CT01498-ATT-091019		**Code:**	EIA/TIA-222-G	9/10/2019
Site Name:	Avon		**Exposure:**	B	
Height:	105.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 30

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 15

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		101.12	1349.65	0.00	0.00
10.00		101.12	1349.65	0.00	0.00
15.00		101.12	1349.65	0.00	0.00
20.00		101.12	1349.65	0.00	0.00
25.00		91.01	1229.39	0.00	0.00
30.00		91.09	1229.39	0.00	0.00
35.00		95.19	1229.39	0.00	0.00
40.00		98.89	1229.39	0.00	0.00
45.00		90.91	1109.13	0.00	0.00
50.00		93.69	1109.13	0.00	0.00
55.00		96.28	1109.13	0.00	0.00
60.00		98.70	1109.13	0.00	0.00
65.00		88.36	988.86	0.00	0.00
70.00		90.25	988.86	0.00	0.00
75.00	(2) attachments	118.35	1018.86	0.00	0.00
80.00		93.76	988.06	0.00	0.00
85.00		81.77	867.80	0.00	0.00
87.00	(23) attachments	655.88	2724.12	0.00	0.00
90.00		49.87	509.23	0.00	0.00
91.00	(9) attachments	315.67	473.04	0.00	0.00
95.00		67.53	675.13	0.00	0.00
97.00	(46) attachments	1422.44	4620.63	0.00	0.00
100.00		51.39	474.04	0.00	0.00
105.00	(17) attachments	1298.26	3639.87	0.00	655.36
	Totals:	**5,493.77**	**32,721.19**	**0.00**	**655.36**

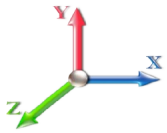
Linear Appurtenance Segment Forces (Factored)

Structure:	CT01498-ATT-091019	**Code:**	EIA/TIA-222-G	9/10/2019	
Site Name:	Avon	**Exposure:**	B		
Height:	105.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 31	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 15

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.021	0.000	6.129	0.00	5.20
5.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.021	0.000	6.129	0.00	0.80
10.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.021	0.000	6.129	0.00	5.20
10.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.021	0.000	6.129	0.00	0.80
15.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.021	0.000	6.129	0.00	5.20
15.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.021	0.000	6.129	0.00	0.80
20.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.021	0.000	6.129	0.00	5.20
20.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.021	0.000	6.129	0.00	0.80
25.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.024	0.000	6.129	0.00	5.20
25.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.024	0.000	6.129	0.00	0.80
30.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.024	0.000	6.134	0.00	5.20
30.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.024	0.000	6.134	0.00	0.80
35.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.024	0.000	6.410	0.00	5.20
35.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.024	0.000	6.410	0.00	0.80
40.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.024	0.000	6.659	0.00	5.20
40.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.024	0.000	6.659	0.00	0.80
45.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.027	0.000	6.887	0.00	5.20
45.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.027	0.000	6.887	0.00	0.80
50.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.027	0.000	7.098	0.00	5.20
50.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.027	0.000	7.098	0.00	0.80
55.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.027	0.000	7.294	0.00	5.20
55.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.027	0.000	7.294	0.00	0.80
60.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.027	0.000	7.477	0.00	5.20
60.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.027	0.000	7.477	0.00	0.80
65.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.030	0.000	7.650	0.00	5.20
65.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.030	0.000	7.650	0.00	0.80
70.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.030	0.000	7.814	0.00	5.20
70.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.030	0.000	7.814	0.00	0.80
75.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.030	0.000	7.969	0.00	5.20
75.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.030	0.000	7.969	0.00	0.80
80.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.015	0.000	8.118	0.00	5.20
85.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.017	0.000	8.260	0.00	5.20
87.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.018	0.000	8.315	0.00	2.08
90.00	Step bolts (ladder)	Yes	3.00	0.000	0.63	0.16	0.00	0.018	0.000	8.396	0.00	3.12
91.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.05	0.00	0.018	0.000	8.422	0.00	1.04
95.00	Step bolts (ladder)	Yes	4.00	0.000	0.63	0.21	0.00	0.018	0.000	8.526	0.00	4.16
97.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.018	0.000	8.577	0.00	2.08
100.00	Step bolts (ladder)	Yes	3.00	0.000	0.63	0.16	0.00	0.018	0.000	8.652	0.00	3.12
105.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.017	0.000	8.774	0.00	5.20
									Totals:		**0.0**	**121.2**

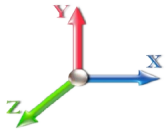
Calculated Forces

Structure:	CT01498-ATT-091019	**Code:**	EIA/TIA-222-G	9/10/2019	
Site Name:	Avon	**Exposure:**	B		
Height:	105.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 32	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 15

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-32.72	-5.50	0.00	-454.49	0.00	454.49	2204.43	1102.21	5439.15	3573.20	0.00	0.000	0.000	0.142
5.00	-31.37	-5.41	0.00	-426.99	0.00	426.99	2204.43	1102.21	5439.15	3573.20	0.01	-0.020	0.000	0.134
10.00	-30.02	-5.32	0.00	-399.95	0.00	399.95	2204.43	1102.21	5439.15	3573.20	0.04	-0.039	0.000	0.126
15.00	-28.67	-5.22	0.00	-373.37	0.00	373.37	2204.43	1102.21	5439.15	3573.20	0.09	-0.057	0.000	0.118
20.00	-27.32	-5.13	0.00	-347.25	0.00	347.25	2204.43	1102.21	5439.15	3573.20	0.16	-0.073	0.000	0.110
20.00	-27.32	-5.13	0.00	-347.25	0.00	347.25	2026.00	1013.00	4492.72	2914.55	0.16	-0.073	0.000	0.133
25.00	-26.08	-5.04	0.00	-321.62	0.00	321.62	2026.00	1013.00	4492.72	2914.55	0.25	-0.088	0.000	0.123
30.00	-24.85	-4.96	0.00	-296.40	0.00	296.40	2026.00	1013.00	4492.72	2914.55	0.35	-0.107	0.000	0.114
35.00	-23.62	-4.87	0.00	-271.62	0.00	271.62	2026.00	1013.00	4492.72	2914.55	0.47	-0.125	0.000	0.105
40.00	-22.39	-4.77	0.00	-247.28	0.00	247.28	2026.00	1013.00	4492.72	2914.55	0.61	-0.141	0.000	0.096
40.00	-22.39	-4.77	0.00	-247.28	0.00	247.28	1847.49	923.75	3635.30	2322.74	0.61	-0.141	0.000	0.119
45.00	-21.28	-4.68	0.00	-223.43	0.00	223.43	1847.49	923.75	3635.30	2322.74	0.77	-0.156	0.000	0.108
50.00	-20.17	-4.59	0.00	-200.01	0.00	200.01	1847.49	923.75	3635.30	2322.74	0.94	-0.175	0.000	0.097
55.00	-19.06	-4.50	0.00	-177.05	0.00	177.05	1847.49	923.75	3635.30	2322.74	1.13	-0.192	0.000	0.087
60.00	-17.95	-4.40	0.00	-154.55	0.00	154.55	1847.49	923.75	3635.30	2322.74	1.34	-0.207	0.000	0.076
60.00	-17.95	-4.40	0.00	-154.55	0.00	154.55	1668.87	834.44	2866.90	1797.79	1.34	-0.207	0.000	0.097
65.00	-16.96	-4.31	0.00	-132.55	0.00	132.55	1668.87	834.44	2866.90	1797.79	1.57	-0.220	0.000	0.084
70.00	-15.97	-4.22	0.00	-110.99	0.00	110.99	1668.87	834.44	2866.90	1797.79	1.81	-0.236	0.000	0.071
75.00	-14.95	-4.10	0.00	-89.88	0.00	89.88	1668.87	834.44	2866.90	1797.79	2.06	-0.249	0.000	0.059
80.00	-13.97	-4.01	0.00	-69.37	0.00	69.37	1668.87	834.44	2866.90	1797.79	2.33	-0.260	0.000	0.047
80.00	-13.97	-4.01	0.00	-69.37	0.00	69.37	1490.10	745.05	2187.51	1339.68	2.33	-0.260	0.000	0.061
85.00	-13.10	-3.92	0.00	-49.33	0.00	49.33	1490.10	745.05	2187.51	1339.68	2.61	-0.268	0.000	0.046
87.00	-10.38	-3.25	0.00	-41.49	0.00	41.49	1490.10	745.05	2187.51	1339.68	2.72	-0.272	0.000	0.038
90.00	-9.87	-3.20	0.00	-31.72	0.00	31.72	1490.10	745.05	2187.51	1339.68	2.89	-0.277	0.000	0.030
91.00	-9.40	-2.89	0.00	-28.52	0.00	28.52	1490.10	745.05	2187.51	1339.68	2.95	-0.278	0.000	0.028
95.00	-8.72	-2.82	0.00	-16.98	0.00	16.98	1490.10	745.05	2187.51	1339.68	3.18	-0.282	0.000	0.019
97.00	-4.11	-1.37	0.00	-11.35	0.00	11.35	1490.10	745.05	2187.51	1339.68	3.30	-0.283	0.000	0.011
100.00	-3.63	-1.32	0.00	-7.24	0.00	7.24	1490.10	745.05	2187.51	1339.68	3.48	-0.284	0.000	0.008
105.00	0.00	-1.30	0.00	-0.66	0.00	0.66	1490.10	745.05	2187.51	1339.68	3.78	-0.285	0.000	0.000

Final Analysis Summary

Structure:	CT01498-ATT-091019		**Code:**	EIA/TIA-222-G	9/10/2019
Site Name:	Avon		**Exposure:**	B	
Height:	105.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 33

Reactions

Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)
1.2D + 1.6W 93 mph Wind	21.1	0.00	39.25	0.00	0.00	1750.96
0.9D + 1.6W 93 mph Wind	21.1	0.00	29.43	0.00	0.00	1745.09
1.2D + 1.0Di + 1.0Wi 50 mph Wind	6.8	0.00	66.90	0.00	0.00	544.03
1.2D + 1.0E	2.4	0.00	39.27	0.00	0.00	216.09
0.9D + 1.0E	2.4	0.00	29.45	0.00	0.00	215.33
1.0D + 1.0W 60 mph Wind	5.5	0.00	32.72	0.00	0.00	454.49

Max Stresses

Load Case	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Elev (ft)	Stress Ratio
1.2D + 1.6W 93 mph Wind	-39.25	-21.15	0.00	-1750.9	0.00	-1750.9	2204.43	1102.2	5439.15	3573.20	0.00	0.508
0.9D + 1.6W 93 mph Wind	-29.43	-21.14	0.00	-1745.0	0.00	-1745.0	2204.43	1102.2	5439.15	3573.20	0.00	0.502
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-66.90	-6.77	0.00	-544.03	0.00	-544.03	2204.43	1102.2	5439.15	3573.20	0.00	0.183
1.2D + 1.0E	-39.27	-2.35	0.00	-216.09	0.00	-216.09	2204.43	1102.2	5439.15	3573.20	0.00	0.078
0.9D + 1.0E	-29.45	-2.35	0.00	-215.33	0.00	-215.33	2204.43	1102.2	5439.15	3573.20	0.00	0.074
1.0D + 1.0W 60 mph Wind	-32.72	-5.50	0.00	-454.49	0.00	-454.49	2204.43	1102.2	5439.15	3573.20	0.00	0.142

Base Plate Summary

Structure:	CT01498-ATT-		**Code:**	EIA/TIA-222-G	9/10/2019
Site Name:	Avon		**Exposure:**	B	
Height:	105.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 34

Reactions	
Original Design	
Moment (kip-ft):	2555.30
Axial (kip):	40.60
Shear (kip):	31.10
Analysis	
Moment (kip-ft):	1750.96
Axial (kip):	66.90
Shear (kip):	21.15
Moment Design %:	68.52

Base Plate	
Yield (ksi):	36.00
Width (in):	66.13
Style:	Round
Polygon Sides:	0.00
Clip Length (in):	0.00
Effective Len (in):	4.73
Moment (kip-in):	43.78
Allow Stress (ksi):	48.60
Applied Stress (ksi):	0.00
Stress Ratio:	0.73

Anchor Bolts	
Bolt Circle:	63.00
Number Bolts:	48.00
Bolt Type:	1.00" A687
Bolt Diameter (in):	1.00
Yield (ksi):	105.00
Ultimate (ksi):	150.00
Arrangement:	Radial
Cluster Dist (in):	0.00
Start Angle (deg):	0.00
Compression	
Force (kip):	29.19
Allowable (kip):	72.72
Ratio:	0.41
Tension	
Force (kip):	26.40
Allowable (kip):	72.72
Ratio:	0.38

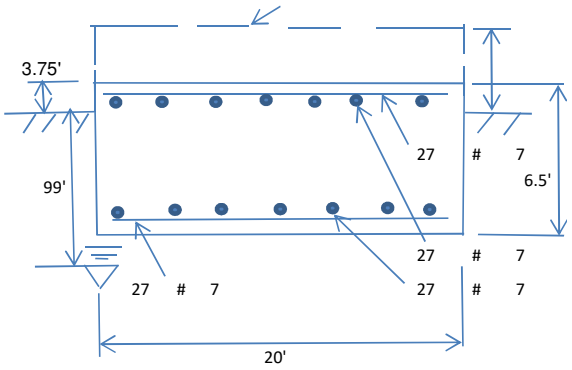
Monopole Mat Foundation Design

			Date: 9/10/2019
Customer Name:	AT&T	**EIA/TIA Standard:**	EIA-222-G
Site Name:		**Structure Height (Ft.):**	105
Site Number:		**Engineer Name:**	A. Hagos
Engr. Number:		**Engineer Login ID:**	

Foundation Info Obtained from: Drawings/Calculations

Structure Type: Monopole

Analysis or Design? Analysis

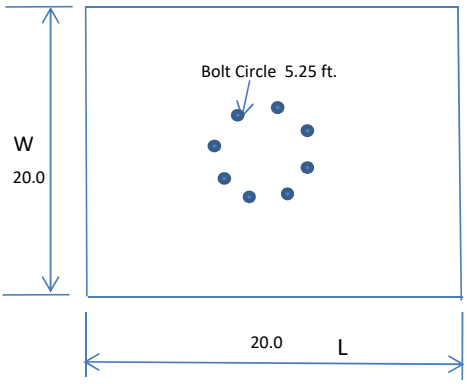


Base Reactions (Factored):

Axial Load (Kips):	39.3	Shear Force (Kips):	21.1
Uplift Force (Kips):	0.0	Moment (Kips-ft):	1751.0
Allowable overstress %:	5.0%		

Foundation Geometries:

		Mods required -Yes/No ?:	No
Anchor Bolt Circle (ft.):	5.25	Depth of Base BG (ft.):	2.75
Thickness of Pad (ft):	6.50		
Length of Pad (ft.):	20	Width of Pad (ft.):	20
Final Length of pad (ft)	20.0	Final width of pad (ft):	20.0



Material Properties and Reabr Info:

Concrete Strength (psi):	4000	Steel Elastic Modulus:	29000	ksi
Pad Rebar Yield (Ksi):	60	Tie Spacing (in):	12.0	
Pad Steel Rebar Size (#):	7			
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):	27	Qty. of Rebar in Pad (W):	27	
Rebar at the top of the concrete pad:				
Qty. of Rebar in Pad (L):	27	Qty. of Rebar in Pad (W):	27	
Apply 1.35 factor for e/w Per G:	1.35			

Soil Design Parameters:

Water Table B.G.S. (ft):	99.0	Unit Weight of Water:	62.4	pcf	Angle from Top of Pad:	30
Ultimate Bearing Pressure (psf):	60000	Ultimate 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 hor. resist. for OTM.:	No	Reduction factor on the maximum soil bearing pressure:	1.00			

Foundation Analysis and Design: Uplift Strength Reduction Factor: 0.75 — Compression Strength Reduction Factor: 0.75

Total Dry Soil Volume (cu. Ft.):	0.00	Total Dry Soil Weight (Kips):	0.00
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	0.00	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	2600.00	Total Dry Concrete Weight (Kips):	390.00
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00
Total Effective Concrete Weight (Kips):	390.00	Total Vertical Load on Base (Kips):	429.25

Check Soil Capacities:

				Load/ Capacity Ratio	
Calculated Maxium Net Soil Pressure under the base (psf):	3166	<	Allowable Factored Soil Bearing (psf): 45000	0.07	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	3902.5	>	Design Factored Momont (kips-ft): 1889	0.48	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	2.07	OK!			

Check the capacities of Reinforceing Concrete:

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

Concrete Pad:

One-Way Design Shear Capacity (L-Direction, Kips):	1697.7	>	One-Way Factored Shear (L-D. Kips):	44.3	0.03	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	1697.7	>	One-Way Factored Shear (W-D., Kips):	44.3	0.03	OK!
One-Way Design Shear Capacity (Corner-Corner. Kips):	1912.8	>	One-Way Factored Shear (C-C, Kips):	386.1	0.20	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0009	OK!	Lower Steel Pad Reinf. Ratio (W-Direc	0.0009		
Lower Steel Pad Moment Capacity (L-Direction. Kips-ft):	5392.2	>	Moment at Bottom (L-Direct. K-Ft):	20.2	0.00	OK!
Lower Steel Pad Moment Capacity (W-Direction. Kips-ft):	5392.2	>	Moment at Bottom (W-Direct. K-Ft):	20.2	0.00	OK!
Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):	7610.0	>	Moment at Bottom (C-C Dir. K-Ft):	28.5	0.00	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0009	OK!	Upper Steel Reinf. Ratio (W-Direct.):	0.0009		
Upper Steel Pad Moment Capacity (L-Direction. Kips-ft):	5392.2	>	Moment at the top (L-Dir Kips-Ft):	34.8	0.01	OK!
Upper Steel Pad Moment Capacity (W-Direction. Kips-ft):	5392.2	>	Moment at the top (W-Dir Kips-Ft):	34.8	0.01	OK!
Upper Steel Pad Moment Capacity (Corner-Corner. K-ft):	7610.0	>	Moment at the top (C-C Direc. K-Ft):	225.1	0.03	OK!

April 3, 2019

CENTERLINE COMMUNICATIONS at&t

Centerline Communications
750 West Center Street, Suite #301
West Bridgewater, MA 02379

RE:		
	Site Number:	CT5289 (LTE 2C/3C/4C)
	FA Number:	10070918
	PACE Number:	MRCTB037967
	PT Number:	2051A0MC7T
	Site Name:	AVON SOUTH WEST
	Site Address:	10 Redwood Lane Avon, CT 06001

To Whom It May Concern:

Hudson Design Group LLC (HDG) has been authorized by Centerline Communications to perform a mount analysis on the existing AT&T antenna/RRH mount to determine its capability of supporting the following additional loading:

- (3) 800-10121 Antennas (54.5"x10.3"x5.9" – Wt. = 47 lbs. /each)
- (6) LGP21401 TMA's (14.4"x9.0"x2.7" – Wt. = 19 lbs. /each)
- (1) Squid Surge Arrestor (24.0"x9.7" Ø – Wt. = 33 lbs.) (Tower Mounted)
- **(3) HPA65R-BU6A Antennas (71.1"x11.7"x7.6" – Wt. = 42 lbs. /each)**
- **(6) 800-10965 Antennas (78.7"x20.0"x6.9" – Wt. = 109 lbs. /each)**
- **(3) 4415 B25 RRH's (16.5"x13.4"x5.9" – Wt. = 46 lbs. /each)**
- **(3) B2/B66A 8843 RRH's (14.9"x13.2"x10.9" – Wt. = 72 lbs. /each)**
- **(3) B5/B12 4449 RRH's (14.9"x13.2"x10.4" – Wt. = 73 lbs. /each)**
- **(2) Squid Surge Arrestors (24.0"x9.7" Ø – Wt. = 33 lbs. /each) (Tower Mounted)**

**Proposed equipment shown in bold.*

No original structural design documents or fabrication drawings were available for the existing mount. HDG's subconsultant, ProVertic LLC, conducted a survey climb and mapping of the existing AT&T antenna mount on March 27, 2019.

Mount Analysis Methods:

- This analysis was conducted in accordance with EIA/TIA-222-H, Structural Standards for Steel Antenna Towers and Antenna Supporting Structures, the International Building Code 2015 with 2018 Connecticut State Building Code, and AT&T Mount Technical Directive – R12.
- HDG considers this mount to be asymmetrical and has applied wind loads in 30 degree increments all around the mount. Per TIA-222-H and Appendix N of the Connecticut State Building Code, the max basic wind speed for this site is equal to 120 mph with a max basic wind speed with ice of 50 mph and a max ice thickness of 1.5 in. An escalated ice thickness of 1.88 in was used for this analysis.
- HDG considers this site to be exposure category B; tower is located in an urban/suburban or wooded area with numerous closely spaced obstructions.
- HDG considers this site to be topographic category 3; tower is located at the upper half of a hill.
- The mount has been analyzed with load combinations consisting of 250 lbs. live load using a service wind speed of 30 mph wind on the worst case antenna. Analysis performed on each antenna pipe to determine worst case location; worst case location was antenna position 4.
- The mount has been analyzed with load combinations consisting of a 250 lbs. live load in a worst case location on the mount.
- The existing mount is secured to the existing monopole with a ring mount. The connection is considered OK by visual inspection.

Based on our evaluation, we have determined that the existing mount **IS NOT CAPABLE** of supporting the proposed installation. HDG recommends the following modifications:

- **Install new handrail kit, SitePro1 P/N HRK-14 (or approved equal).**
- **Install new platform reinforcement kit, SitePro1 P/N PRK-1245L (or approved equal).**
- **Vertically center new and existing antennas and pipe masts on the existing mount (typ. of 4 per sector, total of 12).**
- **Install new 2-1/2" std. (2.88" O.D.) pipe masts behind new 800-10965 antennas secured to the existing mount (typ. of 2 per sector, total of 6).**
- **Reinforce existing L2-1/2x2-1/2x1/4 steel angles with new L2-1/2x2-1/2x1/4 steel angles (typ. of 2 per sector, total of 6).**

	Component	Controlling Load Case	Stress Ratio	Pass/Fail
Existing (LTE 2C/3C/4C) Mount Rating	43	LC10	293%	**FAIL**
Modified (LTE 2C/3C/4C) Mount Rating	86	LC2	72%	**PASS**

Reference Documents:

- Mount mapping report prepared by ProVertic LLC.

This determination was based on the following limitations and assumptions:

1. HDG is not responsible for any modifications completed prior to and hereafter which HDG was not directly involved.
2. All structural members and their connections are assumed to be in good condition and are free from defects with no deterioration to its member capacities.
3. All antennas, coax cables and waveguide cables are assumed to be properly installed and supported as per the manufacturer's requirements.
4. The existing mount has been adequately secured to the tower structure per the mount manufacturer's specifications.
5. All components pertaining to AT&T's mounts must be tightened and re-plumbed prior to the installation of new appurtenances.
6. HDG performed a localized analysis on the mount itself and not on the supporting tower structure.

Please feel free to contact our office should you have any questions.

Respectfully Submitted,
Hudson Design Group LLC

Michael Cabral
Structural Dept. Head

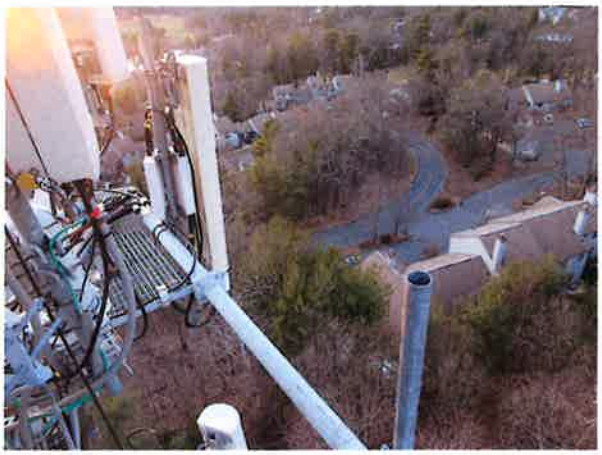
Daniel P. Hamm, PE
Principal

FIELD PHOTOS:











p: 978.557.5553 f: 978.336.5586 a: 45 Beechwood Drive, N. Andover, MA 01845
p: 203.208.3919 f: 203.234.6398 a: 110 Washington Avenue, 4th Floor, North Haven CT 06473

HUDSON
Design Group LLC

Wind & Ice
Calculations

Date: 4/2/2019
Project Name: AVON SOUTH WEST
Project No.: CT5289
Designed By: BD **Checked By:** MSC

HUDSON Design Group LLC

2.6.5.2 Velocity Pressure Coeff:

$K_z = 2.01\ (z/z_g)^{2/\alpha}$

	z=	100 (ft)
	z_g=	1200 (ft)
K_z= **0.988**	α=	7.0

Kzmin ≤ Kz ≤ 2.01

Table 2-4

Exposure	Z_g	α	K_{zmin}	K_c
B	1200 ft	7.0	0.70	0.9
C	900 ft	9.5	0.85	1.0
D	700 ft	11.5	1.03	1.1

2.6.6.2 Topographic Factor:

Table 2-5

Topo. Category	K_t	f
2	0.43	1.25
3	0.53	2.0
4	0.72	1.5

$K_{zt} = [1+(K_c K_t/K_h)]^2$ $K_h = e^{(f*z/H)}$

K_{zt}= **1.381749689**

(If Category 1 then K_{zt}=1.0)

Category=	3

K_h=	2.7182818	
K_c=	0.9	(from Table 2-4)
K_t=	0.53	(from Table 2-5)
f=	2	(from Table 2-5)
z=	100	
z_s=	447	(Mean elevation of base of structure above sea level)
H=	200	(Ht. of the crest above surrounding terrain)
K_{zt}=	1.38	(from 2.6.6.2.1)
K_e=	0.98	(from 2.6.8)

2.6.10 Design Ice Thickness

Max Ice Thickness =	t_i =	1.50 in
Importance Factor =	I=	1.0 (from Table 2-3)
	K_{iz} =	1.12 (from Sec. 2.6.10)

$t_{iz} = t_i * I * K_{iz} * (K_{zt})^{0.35}$ t_{iz} = **1.88** in

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2.6.9 Gust Effect Factor

2.6.9.1 Self Supporting Lattice Structures

G_h = 1.0 Latticed Structures > 600 ft

G_h = 0.85 Latticed Structures 450 ft or less

G_h = 0.85 + 0.15 [h/150 - 3.0] h= ht. of structure

h=	105	G_h=	0.85

2.6.9.2 Guyed Masts G_h= 0.85

2.6.9.3 Pole Structures G_h= 1.1

2.6.9 Appurtenances G_h= 1.0

2.6.9.4 Structures Supported on Other Structures

(Cantilivered tubular or latticed spines, pole, structures on buildings (ht. : width ratio > 5)

G_h=	1.35	**Gh=**	**1.00**

2.6.11.2 Design Wind Force on Appurtenances

$F = q_z * G_h * (EPA)_A$

$q_z = 0.00256 * K_z * K_{zt} * K_s * K_e * K_d * V_{max}^2$

		K_z=	0.988 (from 2.6.5.2)
		K_{zt}=	1.4 (from 2.6.6.2.1)
		K_s=	1.0 (from 2.6.7)
q_z=	**47.05**	K_e=	0.98 (from 2.6.8)
$q_{z\,(ice)}$=	**8.17**	K_d=	0.95 (from Table 2-2)
$q_{z\,(30)}$=	**2.94**	V_{max}=	120 mph (Ultimate Wind Speed)
		$V_{max\,(ice)}$=	50 mph
		V_{30}=	30 mph

Table 2-2

Structure Type	Wind Direction Probability Factor, Kd
Latticed structures with triangular, square or rectangular cross sections	0.85
Tubular pole structures, latticed structures with other cross sections, appurtenances	0.95
Tubular pole structures supporting antennas enclosed within a cylindrical shroud	1.00

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Determine Ca:

Table 2-9

Force Coefficients (Ca) for Appurtenances				
Member Type		Aspect Ratio ≤ 2.5	Aspect Ratio = 7	Aspect Ratio ≥ 25
		Ca	Ca	Ca
Flat		1.2	1.4	2.0
Square/Rectangular HSS		1.2 - 2.8(r_s) ≥ 0.85	1.4 - 4.0(r_s) ≥ 0.90	2.0 - 6.0(r_s) ≥ 1.25
Round	C < 39 (Subcritical)	0.7	0.8	1.2
	39 ≤ C ≤ 78 (Transitional)	$4.14/(C^{0.485})$	$3.66/(C^{0.415})$	$46.8/(C^{1.0})$
	C > 78 (Supercritical)	0.5	0.6	0.6

Aspect Ratio is the overall length/width ratio in the plane normal to the wind direction.
(Aspect ratio is independent of the spacing between support points of a linear appurtenance,

Note: Linear interpolation may be used for aspect ratios other than those shown.

Ice Thickness = **1.88 in** **Angle = 0 (deg)** **Equivalent Angle = 180 (deg)**

Appurtenances	Height	Width	Depth	Flat Area	Aspect Ratio	Ca	Force (lbs)	Force (lbs) (w/ Ice)	Force (lbs) (30 mph)
800-10121 Antenna	54.5	10.3	5.9	3.90	5.29	1.32	243	61	15
HPA65R-BU6A Antenna	71.1	11.7	7.6	5.78	6.08	1.36	369	89	23
800-10965 Antenna	78.7	20.0	6.9	10.93	3.94	1.26	650	140	41
4415 B25 RRH	16.5	13.4	5.9	1.54	1.23	1.20	87	24	5
4415 B25 RRH (Shielded)	16.5	1.7	5.9	0.19	9.71	1.49	14	9	1
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.20	77	22	5
B2/B66A 8843 RRH (Shielded)	14.9	0.0	10.9	0.00	0.00	1.20	0	0	0
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.13	1.20	77	22	5
B5/B12 4449 RRH (Shielded)	14.9	0.0	10.4	0.00	0.00	1.20	0	0	0
LGP21401 TMA	14.4	2.7	9.0	0.27	5.33	1.33	17	9	1
Surge Arrestor	24.0	9.7	9.7	1.62	2.47	0.70	53	15	3
2" Pipe	2.4	12.0		0.20	0.20	1.20	11	7	1
3" Pipe	3.5	12.0		0.29	0.29	1.20	16	8	1
L 2-1/2x2-1/2 Angles	2.5	12.0		0.21	0.21	2.00	20	11	1
HSS 3x3	3.0	12.0		0.25	0.25	1.25	15	8	1
PL 6x5/8	6.0	12.0		0.50	0.50	1.25	29	11	2

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HUDSON Design Group LLC

WIND LOADS

Angle = 30 (deg)

Ice Thickness = 1.88 in.

Equivalent Angle = 210 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Aspect Ratio	Aspect Ratio	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
800-10121 Antenna	54.5	10.3	5.9	3.90	2.23	5.29	9.24	1.32	1.47	243	155	221
HPA65R-BU6A Antenna	71.1	11.7	7.6	5.78	3.75	6.08	9.36	1.36	1.48	369	261	342
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	650	274	556
4415 B25 RRH	16.5	13.4	5.9	1.54	0.68	1.23	2.80	1.20	1.21	87	39	75
4415 B25 RRH (Shielded)	16.5	6.7	5.9	0.77	0.68	2.46	2.80	1.20	1.21	43	39	42
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	77	64	74
B2/B66A 8843 RRH (Shielded)	14.9	6.6	10.9	0.68	1.13	2.26	1.37	1.20	1.20	39	64	45
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	77	61	73
B5/B12 4449 RRH (Shielded)	14.9	6.6	10.4	0.68	1.08	2.26	1.43	1.20	1.20	39	61	44
LGP21401 TMA	14.4	2.7	9.0	0.27	0.90	5.33	1.60	1.33	1.20	17	51	25

WIND LOADS WITH ICE:

800-10121 Antenna	58.3	14.1	9.7	5.69	3.91	4.15	6.03	1.27	1.36	59	43	55
HPA65R-BU6A Antenna	74.9	15.5	11.4	8.03	5.90	4.84	6.59	1.30	1.38	86	67	81
800-10965 Antenna	82.5	23.8	10.7	13.60	6.10	3.47	7.74	1.24	1.42	138	71	121
4415 B25 RRH	20.3	17.2	9.7	2.41	1.36	1.18	2.10	1.20	1.20	24	13	21
4415 B25 RRH (Shielded)	20.3	8.6	9.7	1.21	1.36	2.36	2.10	1.20	1.20	12	13	12
B2/B66A 8843 RRH	18.7	17.0	14.7	2.20	1.90	1.10	1.27	1.20	1.20	22	19	21
B2/B66A 8843 RRH (Shielded)	18.7	8.5	14.7	1.10	1.90	2.20	1.27	1.20	1.20	11	19	13
B5/B12 4449 RRH	18.7	17.0	14.2	2.20	1.83	1.10	1.32	1.20	1.20	22	18	21
B5/B12 4449 RRH (Shielded)	18.7	8.5	14.2	1.10	1.83	2.20	1.32	1.20	1.20	11	18	13
LGP21401 TMA	18.2	6.5	12.8	0.81	1.61	2.81	1.42	1.21	1.20	8	16	10

WIND LOADS AT 30 MPH:

800-10121 Antenna	54.5	10.3	5.9	3.90	2.23	5.29	9.24	1.32	1.47	15	10	14
HPA65R-BU6A Antenna	71.1	11.7	7.6	5.78	3.75	6.08	9.36	1.36	1.48	23	16	21
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	41	17	35
4415 B25 RRH	16.5	13.4	5.9	1.54	0.68	1.23	2.80	1.20	1.21	5	2	5
4415 B25 RRH (Shielded)	16.5	6.7	5.9	0.77	0.68	2.46	2.80	1.20	1.21	3	2	3
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	5	4	5
B2/B66A 8843 RRH (Shielded)	14.9	6.6	10.9	0.68	1.13	2.26	1.37	1.20	1.20	2	4	3
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	5	4	5
B5/B12 4449 RRH (Shielded)	14.9	6.6	10.4	0.68	1.08	2.26	1.43	1.20	1.20	2	4	3
LGP21401 TMA	14.4	2.7	9.0	0.27	0.90	5.33	1.60	1.33	1.20	1	3	2

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HUDSON Design Group LLC

WIND LOADS

Angle =	60	(deg)	Ice Thickness =	1.88	in.	Equivalent Angle =	240	(deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
800-10121 Antenna	54.5	10.3	5.9	3.90	2.23	5.29	9.24	1.32	1.47	243	155	177
HPA65R-BU6A Antenna	71.1	11.7	7.6	5.78	3.75	6.08	9.36	1.36	1.48	369	261	288
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	650	274	368
4415 B25 RRH	16.5	13.4	5.9	1.54	0.68	1.23	2.80	1.20	1.21	87	39	51
4415 B25 RRH (Shielded)	16.5	10.1	5.9	1.15	0.68	1.64	2.80	1.20	1.21	65	39	45
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	77	64	67
B2/B66A 8843 RRH (Shielded)	14.9	9.9	10.9	1.02	1.13	1.51	1.37	1.20	1.20	58	64	62
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	77	61	65
B5/B12 4449 RRH (Shielded)	14.9	9.9	10.4	1.02	1.08	1.51	1.43	1.20	1.20	58	61	60
LGP21401 TMA	14.4	2.7	9.0	0.27	0.90	5.33	1.60	1.33	1.20	17	51	42

WIND LOADS WITH ICE:

800-10121 Antenna	58.3	14.1	9.7	5.69	3.91	4.15	6.03	1.27	1.36	59	43	47
HPA65R-BU6A Antenna	74.9	15.5	11.4	8.03	5.90	4.84	6.59	1.30	1.38	86	67	71
800-10965 Antenna	82.5	23.8	10.7	13.60	6.10	3.47	7.74	1.24	1.42	138	71	88
4415 B25 RRH	20.3	17.2	9.7	2.41	1.36	1.18	2.10	1.20	1.20	24	13	16
4415 B25 RRH (Shielded)	20.3	12.9	9.7	1.81	1.36	1.57	2.10	1.20	1.20	18	13	14
B2/B66A 8843 RRH	18.7	17.0	14.7	2.20	1.90	1.10	1.27	1.20	1.20	22	19	19
B2/B66A 8843 RRH (Shielded)	18.7	12.7	14.7	1.65	1.90	1.47	1.27	1.20	1.20	16	19	18
B5/B12 4449 RRH	18.7	17.0	14.2	2.20	1.83	1.10	1.32	1.20	1.20	22	18	19
B5/B12 4449 RRH (Shielded)	18.7	12.7	14.2	1.65	1.83	1.47	1.32	1.20	1.20	16	18	18
LGP21401 TMA	18.2	6.5	12.8	0.81	1.61	2.81	1.42	1.21	1.20	8	16	14

WIND LOADS AT 30 MPH:

800-10121 Antenna	54.5	10.3	5.9	3.90	2.23	5.29	9.24	1.32	1.47	15	10	11
HPA65R-BU6A Antenna	71.1	11.7	7.6	5.78	3.75	6.08	9.36	1.36	1.48	23	16	18
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	41	17	23
4415 B25 RRH	16.5	13.4	5.9	1.54	0.68	1.23	2.80	1.20	1.21	5	2	3
4415 B25 RRH (Shielded)	16.5	10.1	5.9	1.15	0.68	1.64	2.80	1.20	1.21	4	2	3
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	5	4	4
B2/B66A 8843 RRH (Shielded)	14.9	9.9	10.9	1.02	1.13	1.51	1.37	1.20	1.20	4	4	4
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	5	4	4
B5/B12 4449 RRH (Shielded)	14.9	9.9	10.4	1.02	1.08	1.51	1.43	1.20	1.20	4	4	4
LGP21401 TMA	14.4	2.7	9.0	0.27	0.90	5.33	1.60	1.33	1.20	1	3	3

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Project No.: CT5289
Designed By: BD Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle =	90	(deg)	Ice Thickness =	1.88	in.	Equivalent Angle =	270	(deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
800-10121 Antenna	54.5	10.3	5.9	3.90	2.23	5.29	9.24	1.32	1.47	243	155	155
HPA65R-BU6A Antenna	71.1	11.7	7.6	5.78	3.75	6.08	9.36	1.36	1.48	369	261	261
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	650	274	274
4415 B25 RRH	16.5	13.4	5.9	1.54	0.68	1.23	2.80	1.20	1.21	87	39	39
4415 B25 RRH (Shielded)	16.5	1.7	5.9	0.19	0.68	0.00	2.80	1.20	1.21	11	39	39
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	77	64	64
B2/B66A 8843 RRH (Shielded)	14.9	0.0	10.9	0.00	1.13	0.00	1.37	1.20	1.20	0	64	64
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	77	61	61
B5/B12 4449 RRH (Shielded)	14.9	0.0	10.4	0.00	1.08	0.00	1.43	1.20	1.20	0	61	61
LGP21401 TMA	14.4	2.7	9.0	0.27	0.90	5.33	1.60	1.33	1.20	17	51	51

WIND LOADS WITH ICE:

800-10121 Antenna	58.3	14.1	9.7	5.69	3.91	4.15	6.03	1.27	1.36	59	43	43
HPA65R-BU6A Antenna	74.9	15.5	11.4	8.03	5.90	4.84	6.59	1.30	1.38	86	67	67
800-10965 Antenna	82.5	23.8	10.7	13.60	6.10	3.47	7.74	1.24	1.42	138	71	71
4415 B25 RRH	20.3	17.2	9.7	2.41	1.36	1.18	2.10	1.20	1.20	24	13	13
4415 B25 RRH (Shielded)	20.3	5.5	9.7	0.77	1.36	3.71	2.10	1.25	1.20	8	13	13
B2/B66A 8843 RRH	18.7	17.0	14.7	2.20	1.90	1.10	1.27	1.20	1.20	22	19	19
B2/B66A 8843 RRH (Shielded)	18.7	3.8	14.7	0.49	1.90	4.97	1.27	1.31	1.20	5	19	19
B5/B12 4449 RRH	18.7	17.0	14.2	2.20	1.83	1.10	1.32	1.20	1.20	22	18	18
B5/B12 4449 RRH (Shielded)	18.7	3.8	14.2	0.49	1.83	4.97	1.32	1.31	1.20	5	18	18
LGP21401 TMA	18.2	6.5	12.8	0.81	1.61	2.81	1.42	1.21	1.20	8	16	16

WIND LOADS AT 30 MPH:

800-10121 Antenna	54.5	10.3	5.9	3.90	2.23	5.29	9.24	1.32	1.47	15	10	10
HPA65R-BU6A Antenna	71.1	11.7	7.6	5.78	3.75	6.08	9.36	1.36	1.48	23	16	16
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	41	17	17
4415 B25 RRH	16.5	13.4	5.9	1.54	0.68	1.23	2.80	1.20	1.21	5	2	2
4415 B25 RRH (Shielded)	16.5	1.7	5.9	0.19	0.68	0.00	2.80	1.20	1.21	1	2	2
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	5	4	4
B2/B66A 8843 RRH (Shielded)	14.9	0.0	10.9	0.00	1.13	0.00	1.37	1.20	1.20	0	4	4
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	5	4	4
B5/B12 4449 RRH (Shielded)	14.9	0.0	10.4	0.00	1.08	0.00	1.43	1.20	1.20	0	4	4
LGP21401 TMA	14.4	2.7	9.0	0.27	0.90	5.33	1.60	1.33	1.20	1	3	3

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Project No.: CT5289
Designed By: BD Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle =	120	(deg)	Ice Thickness =	1.88	in.	Equivalent Angle =	300	(deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
800-10121 Antenna	54.5	10.3	5.9	3.90	2.23	5.29	9.24	1.32	1.47	243	155	177
HPA65R-BU6A Antenna	71.1	11.7	7.6	5.78	3.75	6.08	9.36	1.36	1.48	369	261	288
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	650	274	368
4415 B25 RRH	16.5	13.4	5.9	1.54	0.68	1.23	2.80	1.20	1.21	87	39	51
4415 B25 RRH (Shielded)	16.5	10.1	5.9	1.15	0.68	1.64	2.80	1.20	1.21	65	39	45
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	77	64	67
B2/B66A 8843 RRH (Shielded)	14.9	9.9	10.9	1.02	1.13	1.51	1.37	1.20	1.20	58	64	62
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	77	61	65
B5/B12 4449 RRH (Shielded)	14.9	9.9	10.4	1.02	1.08	1.51	1.43	1.20	1.20	58	61	60
LGP21401 TMA	14.4	2.7	9.0	0.27	0.90	5.33	1.60	1.33	1.20	17	51	42

WIND LOADS WITH ICE:

800-10121 Antenna	58.3	14.1	9.7	5.69	3.91	4.15	6.03	1.27	1.36	59	43	47
HPA65R-BU6A Antenna	74.9	15.5	11.4	8.03	5.90	4.84	6.59	1.30	1.38	86	67	71
800-10965 Antenna	82.5	23.8	10.7	13.60	6.10	3.47	7.74	1.24	1.42	138	71	88
4415 B25 RRH	20.3	17.2	9.7	2.41	1.36	1.18	2.10	1.20	1.20	24	13	16
4415 B25 RRH (Shielded)	20.3	12.9	9.7	1.81	1.36	1.57	2.10	1.20	1.20	18	13	14
B2/B66A 8843 RRH	18.7	17.0	14.7	2.20	1.90	1.10	1.27	1.20	1.20	22	19	19
B2/B66A 8843 RRH (Shielded)	18.7	12.7	14.7	1.65	1.90	1.47	1.27	1.20	1.20	16	19	18
B5/B12 4449 RRH	18.7	17.0	14.2	2.20	1.83	1.10	1.32	1.20	1.20	22	18	19
B5/B12 4449 RRH (Shielded)	18.7	12.7	14.2	1.65	1.83	1.47	1.32	1.20	1.20	16	18	18
LGP21401 TMA	18.2	6.5	12.8	0.81	1.61	2.81	1.42	1.21	1.20	8	16	14

WIND LOADS AT 30 MPH:

800-10121 Antenna	54.5	10.3	5.9	3.90	2.23	5.29	9.24	1.32	1.47	15	10	11
HPA65R-BU6A Antenna	71.1	11.7	7.6	5.78	3.75	6.08	9.36	1.36	1.48	23	16	18
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	41	17	23
4415 B25 RRH	16.5	13.4	5.9	1.54	0.68	1.23	2.80	1.20	1.21	5	2	3
4415 B25 RRH (Shielded)	16.5	10.1	5.9	1.15	0.68	1.64	2.80	1.20	1.21	4	2	3
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	5	4	4
B2/B66A 8843 RRH (Shielded)	14.9	9.9	10.9	1.02	1.13	1.51	1.37	1.20	1.20	4	4	4
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	5	4	4
B5/B12 4449 RRH (Shielded)	14.9	9.9	10.4	1.02	1.08	1.51	1.43	1.20	1.20	4	4	4
LGP21401 TMA	14.4	2.7	9.0	0.27	0.90	5.33	1.60	1.33	1.20	1	3	3

Date: 4/2/2019
Project Name: AVON SOUTH WEST
Project No.: CT5289
Designed By: BD Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle = 150 (deg)

Ice Thickness = 1.88 in.

Equivalent Angle = 330 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
800-10121 Antenna	54.5	10.3	5.9	3.90	2.23	5.29	9.24	1.32	1.47	243	155	221
HPA65R-BU6A Antenna	71.1	11.7	7.6	5.78	3.75	6.08	9.36	1.36	1.48	369	261	342
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	650	274	556
4415 B25 RRH	16.5	13.4	5.9	1.54	0.68	1.23	2.80	1.20	1.21	87	39	75
4415 B25 RRH (Shielded)	16.5	6.7	5.9	0.77	0.68	2.46	2.80	1.20	1.21	43	39	42
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	77	64	74
B2/B66A 8843 RRH (Shielded)	14.9	6.6	10.9	0.68	1.13	2.26	1.37	1.20	1.20	39	64	45
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	77	61	73
B5/B12 4449 RRH (Shielded)	14.9	6.6	10.4	0.68	1.08	2.26	1.43	1.20	1.20	39	61	44
LGP21401 TMA	14.4	2.7	9.0	0.27	0.90	5.33	1.60	1.33	1.20	17	51	25

WIND LOADS WITH ICE:

800-10121 Antenna	58.3	14.1	9.7	5.69	3.91	4.15	6.03	1.27	1.36	59	43	55
HPA65R-BU6A Antenna	74.9	15.5	11.4	8.03	5.90	4.84	6.59	1.30	1.38	86	67	81
800-10965 Antenna	82.5	23.8	10.7	13.60	6.10	3.47	7.74	1.24	1.42	138	71	121
4415 B25 RRH	20.3	17.2	9.7	2.41	1.36	1.18	2.10	1.20	1.20	24	13	21
4415 B25 RRH (Shielded)	20.3	8.6	9.7	1.21	1.36	2.36	2.10	1.20	1.20	12	13	12
B2/B66A 8843 RRH	18.7	17.0	14.7	2.20	1.90	1.10	1.27	1.20	1.20	22	19	21
B2/B66A 8843 RRH (Shielded)	18.7	8.5	14.7	1.10	1.90	2.20	1.27	1.20	1.20	11	19	13
B5/B12 4449 RRH	18.7	17.0	14.2	2.20	1.83	1.10	1.32	1.20	1.20	22	18	21
B5/B12 4449 RRH (Shielded)	18.7	8.5	14.2	1.10	1.83	2.20	1.32	1.20	1.20	11	18	13
LGP21401 TMA	18.2	6.5	12.8	0.81	1.61	2.81	1.42	1.21	1.20	8	16	10

WIND LOADS AT 30 MPH:

800-10121 Antenna	54.5	10.3	5.9	3.90	2.23	5.29	9.24	1.32	1.47	15	10	14
HPA65R-BU6A Antenna	71.1	11.7	7.6	5.78	3.75	6.08	9.36	1.36	1.48	23	16	21
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	41	17	35
4415 B25 RRH	16.5	13.4	5.9	1.54	0.68	1.23	2.80	1.20	1.21	5	2	5
4415 B25 RRH (Shielded)	16.5	6.7	5.9	0.77	0.68	2.46	2.80	1.20	1.21	3	2	3
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	5	4	5
B2/B66A 8843 RRH (Shielded)	14.9	6.6	10.9	0.68	1.13	2.26	1.37	1.20	1.20	2	4	3
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	5	4	5
B5/B12 4449 RRH (Shielded)	14.9	6.6	10.4	0.68	1.08	2.26	1.43	1.20	1.20	2	4	3
LGP21401 TMA	14.4	2.7	9.0	0.27	0.90	5.33	1.60	1.33	1.20	1	3	2

Date: 4/2/2019
Project Name: AVON SOUTH WEST
Project No.: CT5289
Designed By: BD **Checked By:** MSC

HUDSON Design Group LLC

ICE WEIGHT CALCULATIONS

Thickness of ice: 1.88 in.
Density of ice: 56 pcf

800-10121 Antenna

Weight of ice based on total radial SF area:

Height (in):	54.5	
Width (in):	10.3	
Depth (in):	5.9	
Total weight of ice on object:		143 lbs
Weight of object:	47.0 lbs	
Combined weight of ice and object:		190 lbs

HPA65R-BU6A Antenna

Weight of ice based on total radial SF area:

Height (in):	71.1	
Width (in):	11.7	
Depth (in):	7.6	
Total weight of ice on object:		215 lbs
Weight of object:	42.0 lbs	
Combined weight of ice and object:		257 lbs

800-10965 Antenna

Weight of ice based on total radial SF area:

Height (in):	78.7	
Width (in):	20.0	
Depth (in):	6.9	
Total weight of ice on object:		347 lbs
Weight of object:	109.0 lbs	
Combined weight of ice and object:		456 lbs

4415 B25 RRH

Weight of ice based on total radial SF area:

Height (in):	16.5	
Width (in):	13.4	
Depth (in):	5.9	
Total weight of ice on object:		52 lbs
Weight of object:	46.0 lbs	
Combined weight of ice and object:		98 lbs

B2/B66A 8843 RRH

Weight of ice based on total radial SF area:

Height (in):	14.9	
Width (in):	13.2	
Depth (in):	10.9	
Total weight of ice on object:		54 lbs
Weight of object:	72.0 lbs	
Combined weight of ice and object:		126 lbs

B5/B12 4449 RRH

Weight of ice based on total radial SF area:

Height (in):	14.9	
Width (in):	13.2	
Depth (in):	10.4	
Total weight of ice on object:		53 lbs
Weight of object:	73.0 lbs	
Combined weight of ice and object:		126 lbs

LGP21401 TMA

Weight of ice based on total radial SF area:

Height (in):	14.4	
Width (in):	2.7	
Depth (in):	9.0	
Total weight of ice on object:		31 lbs
Weight of object:	19.0 lbs	
Combined weight of ice and object:		50 lbs

Squid Surge Arrestor

Weight of ice based on total radial SF area:

Depth (in):	24.0	
Diameter(in):	9.7	
Total weight of ice on object:		53 lbs
Weight of object:	33 lbs	
Combined weight of ice and object:		86 lbs

2" pipe

Per foot weight of ice:

diameter (in):	2.38	
Per foot weight of ice on object:		10 plf

3" pipe

Per foot weight of ice:

diameter (in):	3.5	
Per foot weight of ice on object:		12 plf

L 2-1/2x2-1/2x1/4 Angles

Weight of ice based on total radial SF area:

Height (in):	2.5	
Width (in):	2.5	
Per foot weight of ice on object:		12 plf

HSS 3x3

Weight of ice based on total radial SF area:

Height (in):	3	
Width (in):	3	
Per foot weight of ice on object:		14 plf

PL 6x5/8

Weight of ice based on total radial SF area:

Height (in):	6	
Width (in):	0.63	
Per foot weight of ice on object:		18 plf

HUDSON
Design Group LLC

Mount Calculations
(Existing Conditions)

Bentley

Current Date: 4/3/2019 9:44 AM
Units system: English
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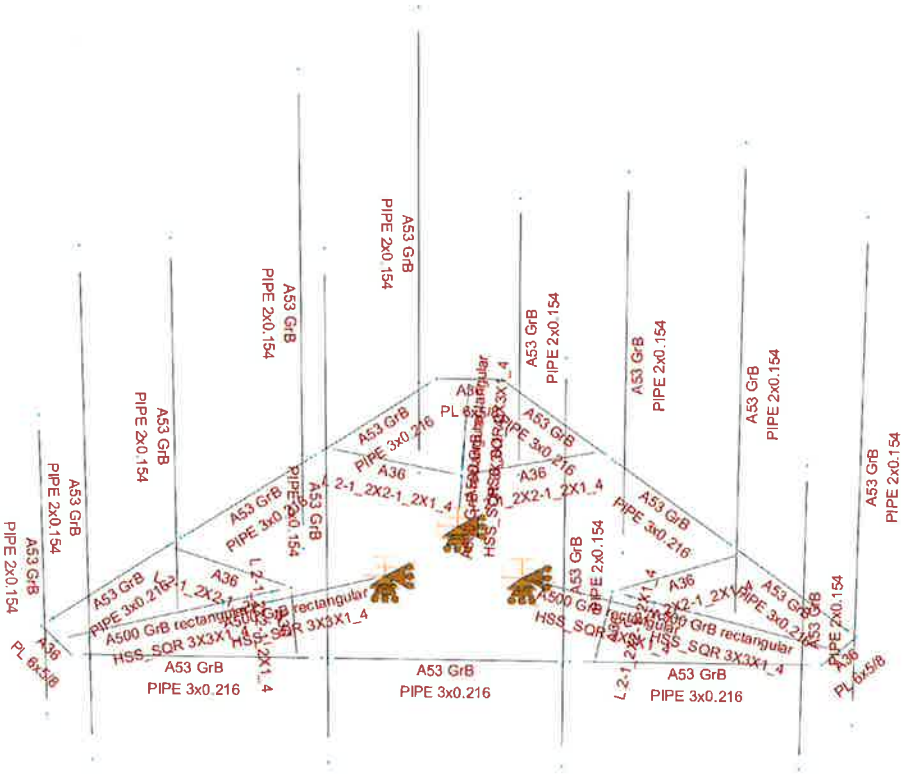
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PIPE 2x0.154
A53 GrB
PIPE 3x0.216
A36
PL 6x5/8
A500 GrB rectangular
HSS_SQR 3X3X1_4
L 2-1_2X2-1_2X1_4
A53 GrB
PIPE 3x0.216
A53 GrB
PIPE 3x0.216
A53 GrB
PIPE 3x0.216

Bentley

Current Date: 4/3/2019 9:44 AM
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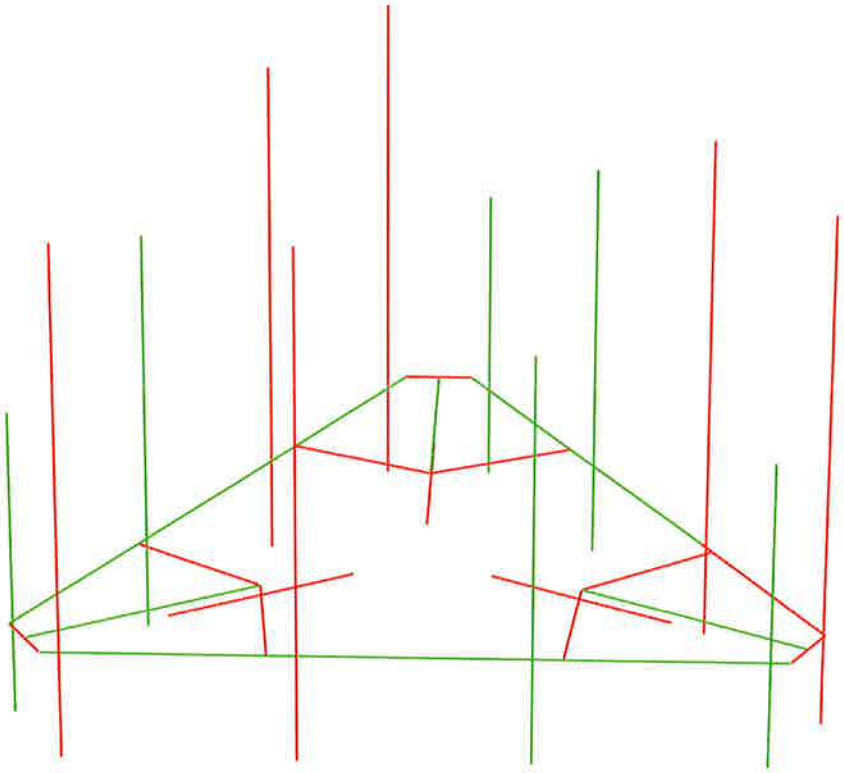
Design status

- Not designed
- Error on design
- Design O.K.
- With warnings



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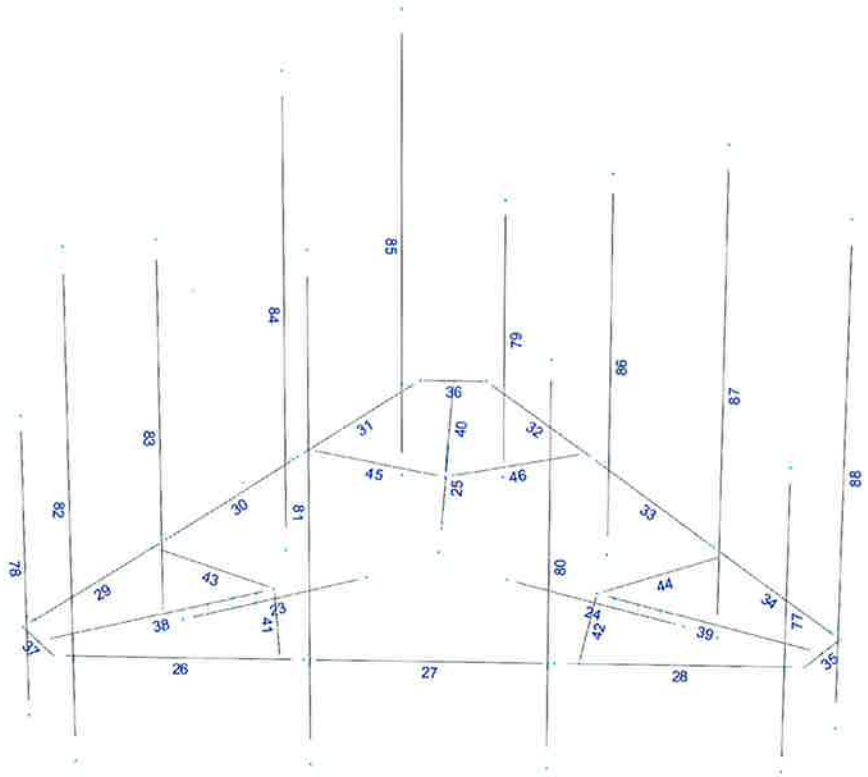

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Load data

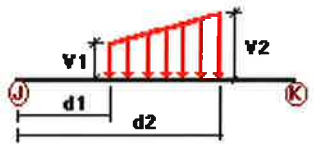
GLOSSARY

Comb : Indicates if load condition is a load combination

Load Conditions

Condition	Description	Comb.	Category
DL	Dead Load	No	DL
W0	Wind Load 0/60/120 deg	No	WIND
W30	Wind Load 30/90/150 deg	No	WIND
Di	Ice Load	No	LL
Wi0	Ice Wind Load 0/60/120 deg	No	WIND
Wi30	Ice Wind Load 30/90/150 deg	No	WIND
WL0	WL 30 mph 0/60/120 deg	No	WIND
WL30	WL 30 mph 30/90/150 deg	No	WIND
LL1	250 lb Live Load Center of Mount	No	LL
LL2	250 lb Live Load End of Mount	No	LL
LLa1	250 lb Live Load Antenna 1	No	LL
LLa2	250 lb Live Load Antenna 2	No	LL
LLa3	250 lb Live Load Antenna 3	No	LL
LLa4	250 lb Live Load Antenna 4	No	LL

Distributed force on members

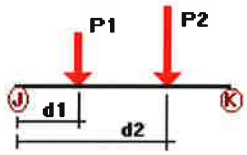


Condition	Member	Dir1	Val1 [Kip/ft]	Val2 [Kip/ft]	Dist1 [ft]	%	Dist2 [ft]	%
DL	26	Y	-0.01	-0.01	0.00	Yes	90.00	Yes
	28	Y	-0.01	-0.01	10.00	Yes	100.00	Yes
	29	Y	-0.01	-0.01	0.00	Yes	90.00	Yes
	31	Y	-0.01	-0.01	10.00	Yes	100.00	Yes
	32	Y	-0.01	-0.01	0.00	Yes	90.00	Yes
	34	Y	-0.01	-0.01	10.00	Yes	100.00	Yes
W0	23	Z	-0.015	-0.015	0.00	Yes	100.00	Yes
	24	Z	-0.015	-0.015	0.00	Yes	100.00	Yes
	26	Z	-0.016	-0.016	0.00	Yes	100.00	Yes
	27	Z	-0.016	-0.016	0.00	Yes	100.00	Yes
	28	Z	-0.016	-0.016	0.00	Yes	100.00	Yes
	29	Z	-0.016	-0.016	0.00	Yes	100.00	Yes
	30	Z	-0.016	-0.016	0.00	Yes	100.00	Yes
	31	Z	-0.016	-0.016	0.00	Yes	100.00	Yes
	32	Z	-0.016	-0.016	0.00	Yes	100.00	Yes

	33	Z	-0.016	-0.016	0.00	Yes	100.00	Yes
	34	Z	-0.016	-0.016	0.00	Yes	100.00	Yes
	38	Z	-0.015	-0.015	0.00	Yes	100.00	Yes
	39	Z	-0.015	-0.015	0.00	Yes	100.00	Yes
	41	Z	-0.02	-0.02	0.00	Yes	100.00	Yes
	42	Z	-0.02	-0.02	0.00	Yes	100.00	Yes
	43	Z	-0.02	-0.02	0.00	Yes	100.00	Yes
	44	Z	-0.02	-0.02	0.00	Yes	100.00	Yes
	45	Z	-0.02	-0.02	0.00	Yes	100.00	Yes
	46	Z	-0.02	-0.02	0.00	Yes	100.00	Yes
	78	Z	-0.011	-0.011	0.00	Yes	100.00	Yes
	79	Z	-0.011	-0.011	0.00	Yes	100.00	Yes
	83	Z	-0.011	-0.011	0.00	Yes	100.00	Yes
	84	Z	-0.011	-0.011	0.00	Yes	100.00	Yes
	85	Z	-0.011	-0.011	0.00	Yes	100.00	Yes
	86	Z	-0.011	-0.011	0.00	Yes	100.00	Yes
	87	Z	-0.011	-0.011	0.00	Yes	100.00	Yes
	88	Z	-0.011	-0.011	0.00	Yes	100.00	Yes
W30	23	X	-0.015	-0.015	0.00	Yes	100.00	Yes
	24	X	-0.015	-0.015	0.00	Yes	100.00	Yes
	25	X	-0.015	-0.015	0.00	Yes	100.00	Yes
	29	X	-0.016	-0.016	0.00	Yes	100.00	Yes
	30	X	-0.016	-0.016	0.00	Yes	100.00	Yes
	31	X	-0.016	-0.016	0.00	Yes	100.00	Yes
	32	X	-0.016	-0.016	0.00	Yes	100.00	Yes
	33	X	-0.016	-0.016	0.00	Yes	100.00	Yes
	34	X	-0.016	-0.016	0.00	Yes	100.00	Yes
	38	X	-0.015	-0.015	0.00	Yes	100.00	Yes
	39	X	-0.015	-0.015	0.00	Yes	100.00	Yes
	40	X	-0.015	-0.015	0.00	Yes	100.00	Yes
	41	X	-0.02	-0.02	0.00	Yes	100.00	Yes
	42	X	-0.02	-0.02	0.00	Yes	100.00	Yes
	43	X	-0.02	-0.02	0.00	Yes	100.00	Yes
	44	X	-0.02	-0.02	0.00	Yes	100.00	Yes
	45	X	-0.02	-0.02	0.00	Yes	100.00	Yes
	46	X	-0.02	-0.02	0.00	Yes	100.00	Yes
	77	X	-0.011	-0.011	0.00	Yes	100.00	Yes
	78	X	-0.011	-0.011	0.00	Yes	100.00	Yes
	79	X	-0.011	-0.011	0.00	Yes	100.00	Yes
	80	X	-0.011	-0.011	0.00	Yes	100.00	Yes
	81	X	-0.011	-0.011	0.00	Yes	100.00	Yes
	82	X	-0.011	-0.011	0.00	Yes	100.00	Yes
	83	X	-0.011	-0.011	0.00	Yes	100.00	Yes
	84	X	-0.011	-0.011	0.00	Yes	100.00	Yes
	85	X	-0.011	-0.011	0.00	Yes	100.00	Yes
	86	X	-0.011	-0.011	0.00	Yes	100.00	Yes
	87	X	-0.011	-0.011	0.00	Yes	100.00	Yes
	88	X	-0.011	-0.011	0.00	Yes	100.00	Yes
Di	23	Y	-0.014	-0.014	0.00	Yes	100.00	Yes
	24	Y	-0.014	-0.014	0.00	Yes	100.00	Yes
	25	Y	-0.014	-0.014	0.00	Yes	100.00	Yes
	26	Y	-0.012	-0.012	0.00	Yes	100.00	Yes
	27	Y	-0.012	-0.012	0.00	Yes	100.00	Yes
	28	Y	-0.012	-0.012	0.00	Yes	100.00	Yes
	29	Y	-0.012	-0.012	0.00	Yes	100.00	Yes
	30	Y	-0.012	-0.012	0.00	Yes	100.00	Yes
	31	Y	-0.012	-0.012	0.00	Yes	100.00	Yes
	32	Y	-0.012	-0.012	0.00	Yes	100.00	Yes
	33	Y	-0.012	-0.012	0.00	Yes	100.00	Yes
	34	Y	-0.012	-0.012	0.00	Yes	100.00	Yes

35	Y	-0.018	-0.018	0.00	Yes	100.00	Yes
36	Y	-0.018	-0.018	0.00	Yes	100.00	Yes
37	Y	-0.018	-0.018	0.00	Yes	100.00	Yes
38	Y	-0.014	-0.014	0.00	Yes	100.00	Yes
39	Y	-0.014	-0.014	0.00	Yes	100.00	Yes
40	Y	-0.014	-0.014	0.00	Yes	100.00	Yes
41	Y	-0.012	-0.012	0.00	Yes	100.00	Yes
42	Y	-0.012	-0.012	0.00	Yes	100.00	Yes
43	Y	-0.012	-0.012	0.00	Yes	100.00	Yes
44	Y	-0.012	-0.012	0.00	Yes	100.00	Yes
45	Y	-0.012	-0.012	0.00	Yes	100.00	Yes
46	Y	-0.012	-0.012	0.00	Yes	100.00	Yes
77	Y	-0.01	-0.01	0.00	Yes	100.00	Yes
78	Y	-0.01	-0.01	0.00	Yes	100.00	Yes
79	Y	-0.01	-0.01	0.00	Yes	100.00	Yes
80	Y	-0.01	-0.01	0.00	Yes	100.00	Yes
81	Y	-0.01	-0.01	0.00	Yes	100.00	Yes
82	Y	-0.01	-0.01	0.00	Yes	100.00	Yes
83	Y	-0.01	-0.01	0.00	Yes	100.00	Yes
84	Y	-0.01	-0.01	0.00	Yes	100.00	Yes
85	Y	-0.01	-0.01	0.00	Yes	100.00	Yes
86	Y	-0.01	-0.01	0.00	Yes	100.00	Yes
87	Y	-0.01	-0.01	0.00	Yes	100.00	Yes
88	Y	-0.01	-0.01	0.00	Yes	100.00	Yes

Concentrated forces on members



Condition	Member	Dir1	Value1 [Kip]	Dist1 [ft]	%
DL	77	y	-0.024	0.50	No
		y	-0.024	5.04	No
		y	-0.038	3.00	No
	78	y	-0.024	0.50	No
		y	-0.024	5.04	No
		y	-0.038	3.00	No
	79	y	-0.024	0.50	No
		y	-0.024	5.04	No
		y	-0.038	3.00	No
	80	y	-0.021	0.50	No
		y	-0.021	6.43	No
		y	-0.046	4.50	No
	81	y	-0.055	1.50	No
		y	-0.055	8.06	No
		y	-0.072	6.50	No
	82	y	-0.055	1.50	No
		y	-0.055	8.06	No
		y	-0.073	6.50	No
	83	y	-0.021	0.50	No
		y	-0.021	6.43	No
		y	-0.046	4.50	No

	84	y	-0.055	1.50	No
		y	-0.055	8.06	No
		y	-0.072	6.50	No
	85	y	-0.055	1.50	No
		y	-0.055	8.06	No
		y	-0.073	6.50	No
	86	y	-0.021	0.50	No
		y	-0.021	6.43	No
		y	-0.046	4.50	No
	87	y	-0.055	1.50	No
		y	-0.055	8.06	No
		y	-0.072	6.50	No
	88	y	-0.055	1.50	No
		y	-0.055	8.06	No
		y	-0.073	6.50	No
W0	77	z	-0.122	0.50	No
		z	-0.122	5.04	No
	78	z	-0.089	0.50	No
		z	-0.089	5.04	No
	79	z	-0.089	0.50	No
		z	-0.089	5.04	No
	80	z	-0.185	0.50	No
		z	-0.185	6.43	No
	81	z	-0.325	1.50	No
		z	-0.325	8.06	No
	82	z	-0.325	1.50	No
		z	-0.325	8.06	No
	83	z	-0.144	0.50	No
		z	-0.144	6.43	No
	84	z	-0.184	1.50	No
		z	-0.184	8.06	No
	85	z	-0.184	1.50	No
		z	-0.184	8.06	No
	86	z	-0.144	0.50	No
		z	-0.144	6.43	No
	87	z	-0.184	1.50	No
		z	-0.184	8.06	No
	88	z	-0.184	1.50	No
		z	-0.184	8.06	No
W30	77	x	-0.078	0.50	No
		x	-0.078	5.04	No
		x	-0.051	3.00	No
	78	x	-0.111	0.50	No
		x	-0.111	5.04	No
		x	-0.025	3.00	No
	79	x	-0.111	0.50	No
		x	-0.111	5.04	No
		x	-0.025	3.00	No
	80	x	-0.131	0.50	No
		x	-0.131	6.43	No
		x	-0.039	4.50	No
	81	x	-0.137	1.50	No
		x	-0.137	8.06	No
		x	-0.064	6.50	No
	82	x	-0.137	1.50	No
		x	-0.137	8.06	No
		x	-0.061	6.50	No
	83	x	-0.171	0.50	No
		x	-0.171	6.43	No
		x	-0.042	4.50	No

	84	x	-0.278	1.50	No
		x	-0.278	8.06	No
		x	-0.045	6.50	No
	85	x	-0.278	1.50	No
		x	-0.278	8.06	No
		x	-0.044	6.50	No
	86	x	-0.171	0.50	No
		x	-0.171	6.43	No
		x	-0.042	4.50	No
	87	x	-0.278	1.50	No
		x	-0.278	8.06	No
		x	-0.045	6.50	No
	88	x	-0.278	1.50	No
		x	-0.278	8.06	No
		x	-0.044	6.50	No
Di	77	y	-0.072	0.50	No
		y	-0.072	5.04	No
		y	-0.062	3.00	No
	78	y	-0.072	0.50	No
		y	-0.072	5.04	No
		y	-0.062	3.00	No
	79	y	-0.072	0.50	No
		y	-0.072	5.04	No
		y	-0.062	3.00	No
	80	y	-0.108	0.50	No
		y	-0.108	6.43	No
		y	-0.052	4.50	No
	81	y	-0.174	1.50	No
		y	-0.174	8.06	No
		y	-0.054	6.50	No
	82	y	-0.174	1.50	No
		y	-0.174	8.06	No
		y	-0.053	6.50	No
	83	y	-0.108	0.50	No
		y	-0.108	6.43	No
		y	-0.052	4.50	No
	84	y	-0.174	1.50	No
		y	-0.174	8.06	No
		y	-0.054	6.50	No
	85	y	-0.174	1.50	No
		y	-0.174	8.06	No
		y	-0.053	6.50	No
	86	y	-0.108	0.50	No
		y	-0.108	6.43	No
		y	-0.052	4.50	No
	87	y	-0.174	1.50	No
		y	-0.174	8.06	No
		y	-0.054	6.50	No
	88	y	-0.174	1.50	No
		y	-0.174	8.06	No
		y	-0.053	6.50	No
Wi0	77	z	-0.031	0.50	No
		z	-0.031	5.04	No
	78	z	-0.024	0.50	No
		z	-0.024	5.04	No
	79	z	-0.024	0.50	No
		z	-0.024	5.04	No
	80	z	-0.045	0.50	No
		z	-0.045	6.43	No
	81	z	-0.07	1.50	No

		z	-0.07	8.06	No
	82	z	-0.07	1.50	No
		z	-0.07	8.06	No
	83	z	-0.036	0.50	No
		z	-0.036	6.43	No
	84	z	-0.044	1.50	No
		z	-0.044	8.06	No
	85	z	-0.044	1.50	No
		z	-0.044	8.06	No
	86	z	-0.036	0.50	No
		z	-0.036	6.43	No
	87	z	-0.044	1.50	No
		z	-0.044	8.06	No
	88	z	-0.044	1.50	No
		z	-0.044	8.06	No
Wi30	77	x	-0.022	0.50	No
		x	-0.022	5.04	No
		x	-0.016	3.00	No
	78	x	-0.028	0.50	No
		x	-0.028	5.04	No
		x	-0.01	3.00	No
	79	x	-0.028	0.50	No
		x	-0.028	5.04	No
		x	-0.01	3.00	No
	80	x	-0.034	0.50	No
		x	-0.034	6.43	No
		x	-0.013	4.50	No
	81	x	-0.036	1.50	No
		x	-0.036	8.06	No
		x	-0.019	6.50	No
	82	x	-0.036	1.50	No
		x	-0.036	8.06	No
		x	-0.018	6.50	No
	83	x	-0.041	0.50	No
		x	-0.041	6.43	No
		x	-0.012	4.50	No
	84	x	-0.061	1.50	No
		x	-0.061	8.06	No
		x	-0.013	6.50	No
	85	x	-0.061	1.50	No
		x	-0.061	8.06	No
		x	-0.013	6.50	No
	86	x	-0.041	0.50	No
		x	-0.041	6.43	No
		x	-0.012	4.50	No
	87	x	-0.061	1.50	No
		x	-0.061	8.06	No
		x	-0.013	6.50	No
	88	x	-0.061	1.50	No
		x	-0.061	8.06	No
		x	-0.013	6.50	No
WL0	77	z	-0.008	0.50	No
		z	-0.008	5.04	No
	78	z	-0.006	0.50	No
		z	-0.006	5.04	No
	79	z	-0.006	0.50	No
		z	-0.006	5.04	No
	80	z	-0.012	0.50	No
		z	-0.012	6.43	No
	81	z	-0.021	1.50	No

		z	-0.021	8.06	No
	82	z	-0.021	1.50	No
		z	-0.021	8.06	No
	83	z	-0.009	0.50	No
		z	-0.009	6.43	No
	84	z	-0.012	1.50	No
		z	-0.012	8.06	No
	85	z	-0.012	1.50	No
		z	-0.012	8.06	No
	86	z	-0.009	0.50	No
		z	-0.009	6.43	No
	87	z	-0.012	1.50	No
		z	-0.012	8.06	No
	88	z	-0.012	1.50	No
		z	-0.012	8.06	No
WL30	77	x	-0.005	0.50	No
		x	-0.005	5.04	No
		x	-0.003	3.00	No
	78	x	-0.007	0.50	No
		x	-0.007	5.04	No
		x	-0.002	3.00	No
	79	x	-0.007	0.50	No
		x	-0.007	5.04	No
		x	-0.002	3.00	No
	80	x	-0.008	0.50	No
		x	-0.008	6.43	No
		x	-0.002	4.50	No
	81	x	-0.009	1.50	No
		x	-0.009	8.06	No
		x	-0.004	6.50	No
	82	x	-0.009	1.50	No
		x	-0.009	8.06	No
		x	-0.004	6.50	No
	83	x	-0.011	0.50	No
		x	-0.011	6.43	No
		x	-0.003	4.50	No
	84	x	-0.018	1.50	No
		x	-0.018	8.06	No
		x	-0.003	6.50	No
	85	x	-0.018	1.50	No
		x	-0.018	8.06	No
		x	-0.003	6.50	No
	86	x	-0.011	0.50	No
		x	-0.011	6.43	No
		x	-0.003	4.50	No
	87	x	-0.018	1.50	No
		x	-0.018	8.06	No
		x	-0.003	6.50	No
	88	x	-0.018	1.50	No
		x	-0.018	8.06	No
		x	-0.003	6.50	No
LL1	27	y	-0.25	50.00	Yes
LL2	26	y	-0.25	0.00	No
LLa1	77	y	-0.25	50.00	Yes
LLa2	80	y	-0.25	50.00	Yes
LLa3	81	y	-0.25	50.00	Yes
LLa4	82	y	-0.25	50.00	Yes

Self weight multipliers for load conditions

Condition	Description	Self weight multiplier			
		Comb.	MultX	MultY	MultZ
DL	Dead Load	No	0.00	-1.00	0.00
W0	Wind Load 0/60/120 deg	No	0.00	0.00	0.00
W30	Wind Load 30/90/150 deg	No	0.00	0.00	0.00
Di	Ice Load	No	0.00	0.00	0.00
Wi0	Ice Wind Load 0/60/120 deg	No	0.00	0.00	0.00
Wi30	Ice Wind Load 30/90/150 deg	No	0.00	0.00	0.00
WL0	WL 30 mph 0/60/120 deg	No	0.00	0.00	0.00
WL30	WL 30 mph 30/90/150 deg	No	0.00	0.00	0.00
LL1	250 lb Live Load Center of Mount	No	0.00	0.00	0.00
LL2	250 lb Live Load End of Mount	No	0.00	0.00	0.00
LLa1	250 lb Live Load Antenna 1	No	0.00	0.00	0.00
LLa2	250 lb Live Load Antenna 2	No	0.00	0.00	0.00
LLa3	250 lb Live Load Antenna 3	No	0.00	0.00	0.00
LLa4	250 lb Live Load Antenna 4	No	0.00	0.00	0.00

Earthquake (Dynamic analysis only)

Condition	a/g	Ang. [Deg]	Damp. [%]
DL	0.00	0.00	0.00
W0	0.00	0.00	0.00
W30	0.00	0.00	0.00
Di	0.00	0.00	0.00
Wi0	0.00	0.00	0.00
Wi30	0.00	0.00	0.00
WL0	0.00	0.00	0.00
WL30	0.00	0.00	0.00
LL1	0.00	0.00	0.00
LL2	0.00	0.00	0.00
LLa1	0.00	0.00	0.00
LLa2	0.00	0.00	0.00
LLa3	0.00	0.00	0.00
LLa4	0.00	0.00	0.00

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Steel Code Check

Report: Summary - Group by member

Load conditions to be included in design :

LC1=1.2DL+W0
LC2=1.2DL+W30
LC3=1.2DL-W0
LC4=1.2DL-W30
LC5=0.9DL+W0
LC6=0.9DL+W30
LC7=0.9DL-W0
LC8=0.9DL-W30
LC9=1.2DL+Di+Wi0
LC10=1.2DL+Di+Wi30
LC11=1.2DL+Di-Wi0
LC12=1.2DL+Di-Wi30
LC13=1.2DL
LC15=1.2DL+1.5LL1
LC16=1.2DL+1.5LL2
LC17=1.2DL+WL0+1.5LLa1
LC18=1.2DL+WL30+1.5LLa1
LC19=1.2DL-WL0+1.5LLa1
LC20=1.2DL-WL30+1.5LLa1
LC21=1.2DL+WL0+1.5LLa2
LC22=1.2DL+WL30+1.5LLa2
LC23=1.2DL-WL0+1.5LLa2
LC24=1.2DL-WL30+1.5LLa2
LC25=1.2DL+WL0+1.5LLa3
LC26=1.2DL+WL30+1.5LLa3
LC27=1.2DL-WL0+1.5LLa3
LC28=1.2DL-WL30+1.5LLa3
LC29=1.2DL+WL0+1.5LLa4
LC30=1.2DL+WL30+1.5LLa4
LC31=1.2DL-WL0+1.5LLa4
LC32=1.2DL-WL30+1.5LLa4

Description	Section	Member	Ctrl Eq.	Ratio	Status	Reference
	HSS_SQR 3X3X1_4	**23**	LC10 at 0.00%	1.92	N.G.	Eq. H1-1b
		24	LC4 at 0.00%	**1.95**	**N.G.**	Eq. H3-6
		25	LC9 at 0.00%	1.92	N.G.	Eq. H1-1b
		38	LC3 at 29.69%	0.49	OK	Eq. H3-6
		39	LC4 at 29.69%	0.53	OK	Eq. H3-6
		40	LC9 at 0.00%	0.40	OK	Eq. H1-1b
	L 2-1_2X2-1_2X1_4	**41**	LC10 at 0.00%	2.87	N.G.	Sec. F1
		42	LC12 at 0.00%	2.91	N.G.	Sec. F1
		43	LC10 at 0.00%	**2.93**	**N.G.**	Sec. F1
		44	LC12 at 0.00%	2.87	N.G.	Sec. F1
		45	LC9 at 0.00%	2.89	N.G.	Sec. F1
		46	LC9 at 0.00%	2.92	N.G.	Sec. F1
	PIPE 2x0.154	**77**	LC1 at 65.63%	0.34	OK	Eq. H1-1b
		78	LC2 at 65.63%	0.40	OK	Eq. H1-1b
		79	LC2 at 65.63%	0.40	OK	Eq. H1-1b
		80	LC1 at 71.88%	0.79	OK	Eq. H1-1b

	81	LC1 at 78.13%	1.66	N.G.	Eq. H1-1b
	82	LC1 at 78.13%	1.66	N.G.	Eq. H1-1b
	83	LC4 at 71.88%	0.91	OK	Eq. H1-1b
	84	LC2 at 78.13%	1.74	N.G.	Eq. H1-1b
	85	LC2 at 78.13%	1.74	N.G.	Eq. H1-1b
	86	LC2 at 71.88%	0.91	OK	Eq. H1-1b
	87	LC2 at 78.13%	**1.74**	**N.G.**	Eq. H1-1b
	88	LC2 at 78.13%	1.74	N.G.	Eq. H1-1b
PIPE 3x0.216	**26**	LC3 at 0.00%	0.96	OK	Eq. H3-6
	27	LC12 at 95.83%	0.72	OK	Eq. H1-1b
	28	LC12 at 10.42%	0.99	OK	Eq. H3-6
	29	LC11 at 89.58%	0.98	OK	Eq. H3-6
	30	LC11 at 4.17%	0.73	OK	Eq. H1-1b
	31	LC12 at 10.42%	0.76	OK	Eq. H3-6
	32	LC9 at 89.58%	0.95	OK	Eq. H3-6
	33	LC10 at 4.17%	0.70	OK	Eq. H1-1b
	34	LC4 at 100.00%	**1.02**	**N.G.**	Eq. H3-6
PL 6x5/8	**35**	LC12 at 50.00%	**1.61**	**N.G.**	Eq. H3-6
	36	LC10 at 50.00%	1.61	N.G.	Eq. H3-6
	37	LC9 at 50.00%	1.59	N.G.	Eq. H3-6

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Geometry data

GLOSSARY

Cb22, Cb33	: Moment gradient coefficients
Cm22, Cm33	: Coefficients applied to bending term in interaction formula
d0	: Tapered member section depth at J end of member
DJX	: Rigid end offset distance measured from J node in axis X
DJY	: Rigid end offset distance measured from J node in axis Y
DJZ	: Rigid end offset distance measured from J node in axis Z
DKX	: Rigid end offset distance measured from K node in axis X
DKY	: Rigid end offset distance measured from K node in axis Y
DKZ	: Rigid end offset distance measured from K node in axis Z
dL	: Tapered member section depth at K end of member
Ig factor	: Inertia reduction factor (Effective Inertia/Gross Inertia) for reinforced concrete members
K22	: Effective length factor about axis 2
K33	: Effective length factor about axis 3
L22	: Member length for calculation of axial capacity
L33	: Member length for calculation of axial capacity
LB pos	: Lateral unbraced length of the compression flange in the positive side of local axis 2
LB neg	: Lateral unbraced length of the compression flange in the negative side of local axis 2
RX	: Rotation about X
RY	: Rotation about Y
RZ	: Rotation about Z
TO	: 1 = Tension only member 0 = Normal member
TX	: Translation in X
TY	: Translation in Y
TZ	: Translation in Z

Nodes

Node	X [ft]	Y [ft]	Z [ft]	Rigid Floor
1	0.00	0.00	0.00	0
6	0.00	-0.20	-1.50	0
7	0.00	0.00	-8.177	0
8	-7.415	0.00	3.5109	0
14	7.415	0.00	3.5109	0
15	0.667	0.00	-8.177	0
16	-0.667	0.00	-8.177	0
17	6.75	0.00	4.667	0
18	-6.75	0.00	4.667	0
19	-7.0825	0.00	4.0889	0
20	7.0825	0.00	4.0889	0
22	-1.299	-0.20	0.75	0
25	1.299	-0.20	0.75	0
30	2.9167	0.00	-4.2821	0
31	5.1667	0.00	-0.3849	0
51	-5.1667	0.00	-0.3849	0
52	-2.9167	0.00	-4.2821	0
54	0.8542	0.00	-7.8544	0
55	1.0274	0.00	-7.9544	0
56	7.2292	0.00	3.1874	0
57	7.4024	0.00	3.0874	0
58	2.25	0.00	4.667	0

59	-2.25	0.00	4.667	0
89	-4.5992	-0.20	2.6563	0
92	4.60	-0.20	2.6549	0
95	-0.0008	-0.20	-5.3112	0
114	5.381	0.00	-0.0138	0
116	-2.9754	0.00	1.7188	0
119	2.9762	0.00	1.7174	0
120	-0.0008	0.00	-3.4362	0
159	2.7025	0.00	-4.6532	0
164	-2.7025	0.00	-4.6532	0
165	-5.381	0.00	-0.0138	0
166	-2.6786	0.00	4.667	0
167	2.6786	0.00	4.667	0
178	-3.3002	0.00	1.9063	0
179	-3.7332	0.00	2.1563	0
180	-4.1662	0.00	2.4063	0
181	-3.3002	-0.20	1.9063	0
182	-3.7332	-0.20	2.1563	0
183	-4.1662	-0.20	2.4063	0
196	-0.0008	0.00	-3.8112	0
197	-0.0008	0.00	-4.3112	0
198	-0.0008	0.00	-4.8112	0
199	-0.0008	-0.20	-3.8112	0
200	-0.0008	-0.20	-4.3112	0
201	-0.0008	-0.20	-4.8112	0
202	3.3009	0.00	1.9049	0
203	3.734	0.00	2.1549	0
204	4.167	0.00	2.4049	0
205	3.3009	-0.20	1.9049	0
206	3.734	-0.20	2.1549	0
207	4.167	-0.20	2.4049	0
208	2.9792	0.00	-4.1738	0
209	5.1042	0.00	-0.4932	0
210	3.1524	0.00	-4.2738	0
211	5.2774	0.00	-0.5932	0
228	-7.2292	0.00	3.1874	0
229	-7.4024	0.00	3.0874	0
230	-5.1042	0.00	-0.4932	0
231	-5.2774	0.00	-0.5932	0
232	-2.9792	0.00	-4.1738	0
233	-3.1524	0.00	-4.2738	0
234	-0.8542	0.00	-7.8544	0
235	-1.0274	0.00	-7.9544	0
236	6.375	0.00	4.667	0
237	6.375	0.00	4.867	0
238	2.125	0.00	4.667	0
239	2.125	0.00	4.867	0
240	-2.125	0.00	4.667	0
241	-2.125	0.00	4.867	0
242	-6.375	0.00	4.667	0
243	-6.375	0.00	4.867	0
244	6.375	-2.00	4.867	0
245	-7.4024	-2.00	3.0874	0
246	1.0274	-2.00	-7.9544	0
247	6.375	4.00	4.867	0
248	-7.4024	4.00	3.0874	0
249	1.0274	4.00	-7.9544	0
250	2.125	-2.00	4.867	0
251	-2.125	-2.00	4.867	0
252	-6.375	-2.00	4.867	0

253	-5.2774	-2.00	-0.5932	0
254	-3.1524	-2.00	-4.2738	0
255	-1.0274	-2.00	-7.9544	0
256	3.1524	-2.00	-4.2738	0
257	5.2774	-2.00	-0.5932	0
258	7.4024	-2.00	3.0874	0
259	2.125	6.00	4.867	0
260	-2.125	8.00	4.867	0
261	-5.2774	6.00	-0.5932	0
262	-3.1524	8.00	-4.2738	0
263	-1.0274	8.00	-7.9544	0
264	3.1524	6.00	-4.2738	0
265	5.2774	8.00	-0.5932	0
266	7.4024	8.00	3.0874	0
267	-6.375	8.00	4.867	0

Restraints

Node	TX	TY	TZ	RX	RY	RZ
6	1	1	1	1	1	1
22	1	1	1	1	1	1
25	1	1	1	1	1	1

Members

Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	lg factor
23	22	89		HSS_SQR 3X3X1_4	A500 GrB rectangular	0.00	0.00	0.00
24	25	92		HSS_SQR 3X3X1_4	A500 GrB rectangular	0.00	0.00	0.00
25	6	95		HSS_SQR 3X3X1_4	A500 GrB rectangular	0.00	0.00	0.00
26	18	59		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
27	59	58		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
28	58	17		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
29	8	51		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
30	51	52		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
31	52	16		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
32	15	30		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
33	30	31		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
34	31	14		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
35	14	17		PL 6x5/8	A36	0.00	0.00	0.00
36	16	15		PL 6x5/8	A36	0.00	0.00	0.00
37	8	18		PL 6x5/8	A36	0.00	0.00	0.00
38	116	19		HSS_SQR 3X3X1_4	A500 GrB rectangular	0.00	0.00	0.00
39	119	20		HSS_SQR 3X3X1_4	A500 GrB rectangular	0.00	0.00	0.00
40	120	7		HSS_SQR 3X3X1_4	A500 GrB rectangular	0.00	0.00	0.00
41	116	166		L 2-1_2X2-1_2X1_4	A36	0.00	0.00	0.00
42	119	167		L 2-1_2X2-1_2X1_4	A36	0.00	0.00	0.00
43	116	165		L 2-1_2X2-1_2X1_4	A36	0.00	0.00	0.00
44	119	114		L 2-1_2X2-1_2X1_4	A36	0.00	0.00	0.00
45	120	164		L 2-1_2X2-1_2X1_4	A36	0.00	0.00	0.00
46	120	159		L 2-1_2X2-1_2X1_4	A36	0.00	0.00	0.00

77	247	244	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
78	248	245	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
79	249	246	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
80	259	250	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
81	260	251	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
82	267	252	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
83	261	253	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
84	262	254	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
85	263	255	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
86	264	256	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
87	265	257	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
88	266	258	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00

Orientation of local axes

Member	Rotation [Deg]	Axes23	NX	NY	NZ
42	270.00	0	0.00	0.00	0.00
43	270.00	0	0.00	0.00	0.00
46	270.00	0	0.00	0.00	0.00

HUDSON
Design Group LLC

Mount Calculations
(Modified Conditions)

Bentley

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Units system: English
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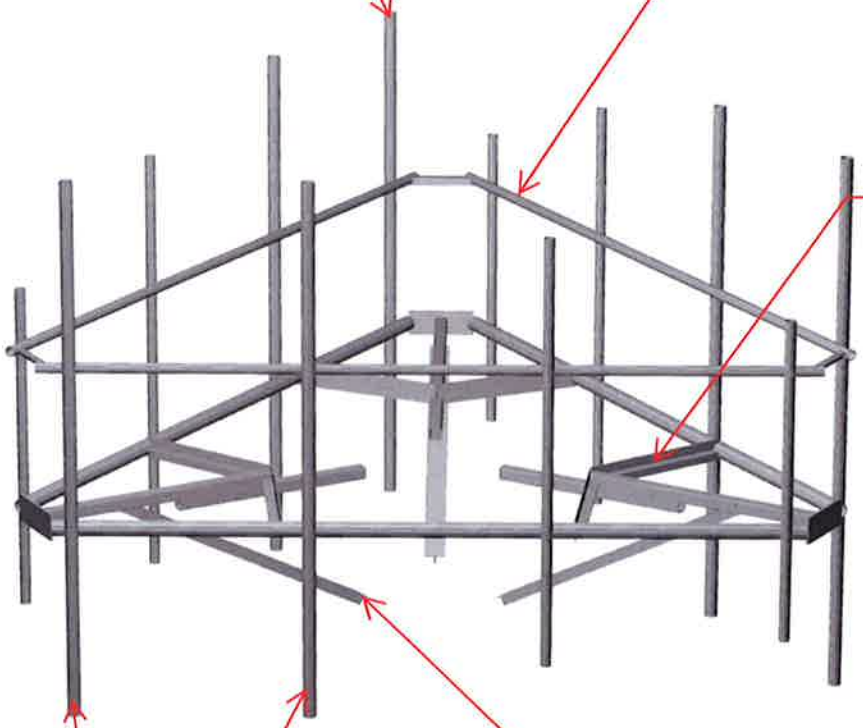
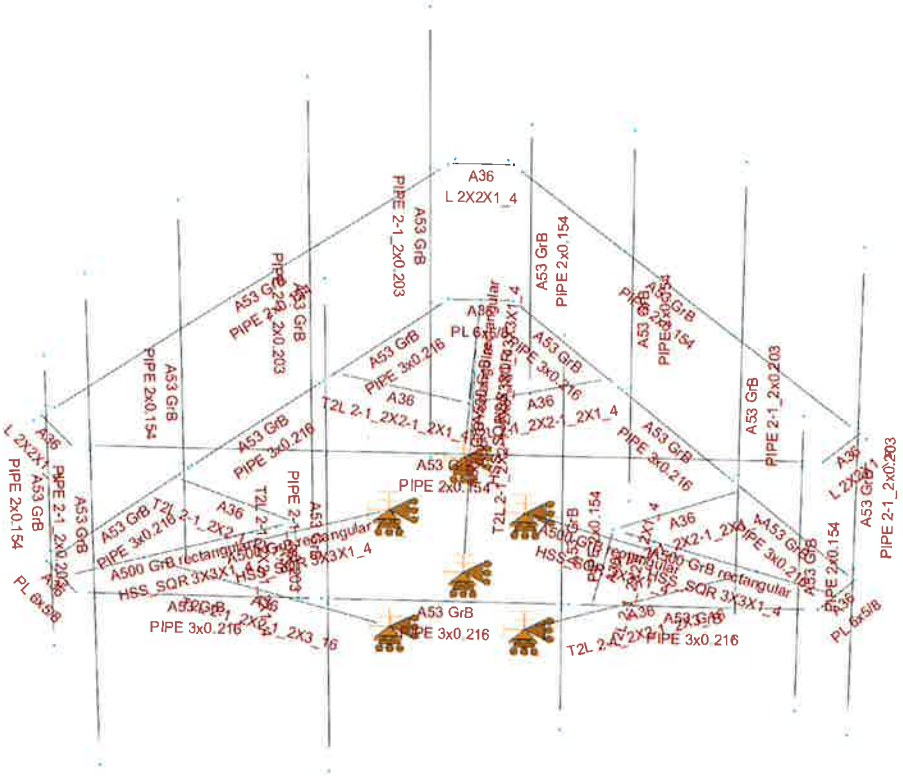
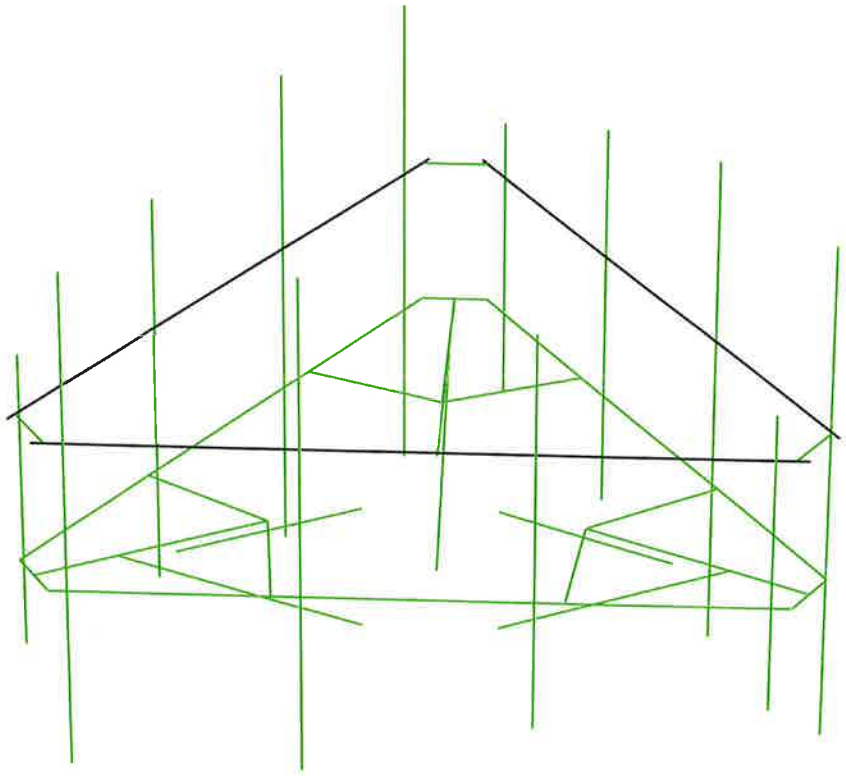



A36
L 2X2X1_4
PIPE 2-1_2x0.203
A53 GrB
PIPE 2x0.154
PIPE 3x0.216
T2L 2-1_2X2-1_2X1_4
A36
PL 6x5/8
A500 GrB rectangular
HSS_SQR 3X3X1_4
PIPE 2x0.154


Y
X
Z

Design status

- Not designed
- Error on design
- Design O.K.
- With warnings



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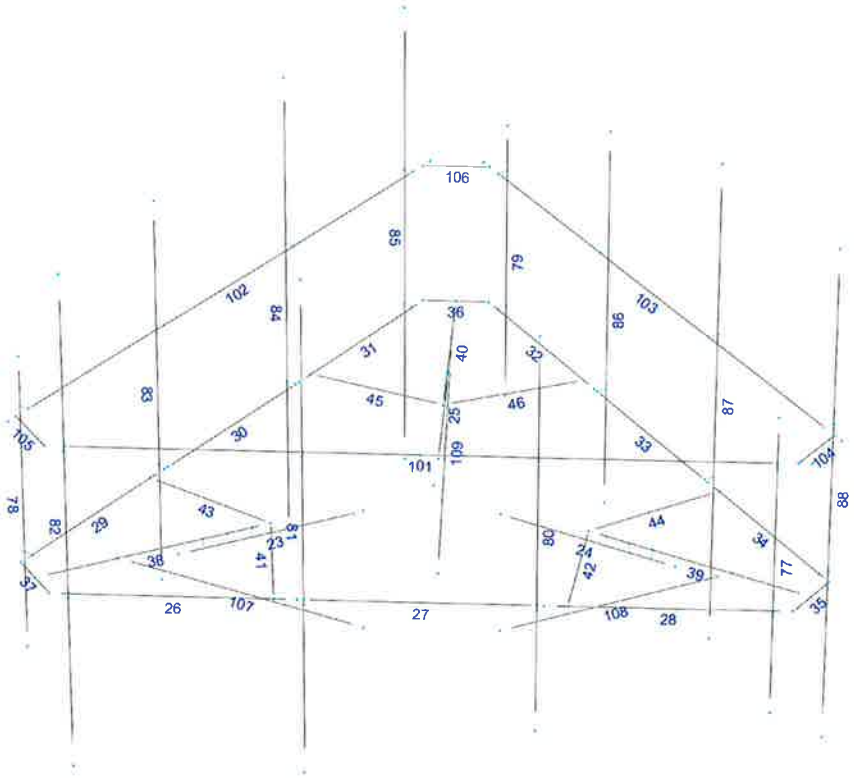

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Steel Code Check

Report: Summary - Group by member

Load conditions to be included in design :

LC1=1.2DL+W0
LC2=1.2DL+W30
LC3=1.2DL-W0
LC4=1.2DL-W30
LC5=0.9DL+W0
LC6=0.9DL+W30
LC7=0.9DL-W0
LC8=0.9DL-W30
LC9=1.2DL+Di+Wi0
LC10=1.2DL+Di+Wi30
LC11=1.2DL+Di-Wi0
LC12=1.2DL+Di-Wi30
LC13=1.2DL
LC15=1.2DL+1.5LL1
LC16=1.2DL+1.5LL2
LC17=1.2DL+WL0+1.5LLa1
LC18=1.2DL+WL30+1.5LLa1
LC19=1.2DL-WL0+1.5LLa1
LC20=1.2DL-WL30+1.5LLa1
LC21=1.2DL+WL0+1.5LLa2
LC22=1.2DL+WL30+1.5LLa2
LC23=1.2DL-WL0+1.5LLa2
LC24=1.2DL-WL30+1.5LLa2
LC25=1.2DL+WL0+1.5LLa3
LC26=1.2DL+WL30+1.5LLa3
LC27=1.2DL-WL0+1.5LLa3
LC28=1.2DL-WL30+1.5LLa3
LC29=1.2DL+WL0+1.5LLa4
LC30=1.2DL+WL30+1.5LLa4
LC31=1.2DL-WL0+1.5LLa4
LC32=1.2DL-WL30+1.5LLa4

Description	Section	Member	Ctrl Eq.	Ratio	Status	Reference
	HSS_SQR 3X3X1_4	**23**	LC1 at 0.00%	0.35	OK	Eq. H1-1b
		24	LC1 at 0.00%	0.24	OK	Eq. H1-1b
		25	LC2 at 0.00%	**0.49**	**OK**	Eq. H1-1b
		38	LC10 at 65.00%	0.42	OK	Eq. H1-1b
		39	LC12 at 63.75%	0.42	OK	Eq. H1-1b
		40	LC9 at 65.00%	0.41	OK	Eq. H1-1b
	L 2X2X1_4	**104**	LC4 at 100.00%	**0.59**	**OK**	Eq. H2-1
		105	LC3 at 0.00%	0.52	OK	Sec. F1
		106	LC4 at 0.00%	0.58	OK	Sec. F1
	PIPE 2-1_2x0.203	**81**	LC1 at 64.58%	0.62	OK	Eq. H1-1b
		82	LC1 at 64.58%	0.31	OK	Eq. H1-1b
		84	LC4 at 64.58%	**0.63**	**OK**	Eq. H1-1b
		85	LC1 at 64.58%	0.35	OK	Eq. H1-1b
		87	LC2 at 64.58%	0.63	OK	Eq. H1-1b
		88	LC4 at 64.58%	0.43	OK	Eq. H1-1b

PIPE 2x0.154	**77**	LC2 at 64.58%	0.31	OK	Eq. H1-1b
	78	LC6 at 64.58%	0.43	OK	Eq. H1-1b
	79	LC1 at 64.58%	0.36	OK	Eq. H1-1b
	80	LC4 at 66.67%	0.54	OK	Eq. H1-1b
	83	LC2 at 66.67%	0.61	OK	Eq. H1-1b
	86	LC2 at 66.67%	**0.72**	**OK**	Eq. H1-1b
	101	LC4 at 35.16%	0.50	With warnings	Eq. H1-1b
	102	LC6 at 95.54%	0.53	With warnings	Eq. H1-1b
	103	LC4 at 65.18%	0.50	With warnings	Eq. H1-1b
PIPE 3x0.216	**26**	LC1 at 89.58%	0.21	OK	Eq. H1-1b
	27	LC4 at 3.13%	0.27	OK	Eq. H1-1b
	28	LC4 at 8.33%	0.21	OK	Eq. H1-1b
	29	LC2 at 8.33%	0.26	OK	Eq. H1-1b
	30	LC4 at 97.92%	0.17	OK	Eq. H3-1
	31	LC1 at 91.67%	0.24	OK	Eq. H1-1b
	32	LC1 at 8.33%	0.23	OK	Eq. H1-1b
	33	LC1 at 95.83%	0.20	OK	Eq. H1-1b
	34	LC4 at 91.67%	**0.28**	**OK**	Eq. H1-1b
PL 6x5/8	**35**	LC2 at 0.00%	**0.46**	**OK**	Eq. H1-1b
	36	LC1 at 50.00%	0.42	OK	Eq. H1-1b
	37	LC4 at 0.00%	0.42	OK	Eq. H1-1b
T2L 2-1_2X2-1_2X1_4	**41**	LC10 at 0.00%	**0.65**	**OK**	Eq. H2-1
	42	LC12 at 0.00%	0.65	OK	Eq. H2-1
	43	LC11 at 0.00%	0.65	OK	Eq. H2-1
	44	LC11 at 0.00%	0.65	OK	Eq. H2-1
	45	LC12 at 0.00%	0.65	OK	Eq. H2-1
	46	LC10 at 0.00%	0.64	OK	Eq. H2-1
T2L 2-1_2X2-1_2X3_16	**107**	LC10 at 100.00%	0.58	OK	Eq. H2-1
	108	LC12 at 100.00%	**0.60**	**OK**	Eq. H2-1
	109	LC9 at 100.00%	0.59	OK	Eq. H2-1

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Geometry data

GLOSSARY

Cb22, Cb33	: Moment gradient coefficients
Cm22, Cm33	: Coefficients applied to bending term in interaction formula
d0	: Tapered member section depth at J end of member
DJX	: Rigid end offset distance measured from J node in axis X
DJY	: Rigid end offset distance measured from J node in axis Y
DJZ	: Rigid end offset distance measured from J node in axis Z
DKX	: Rigid end offset distance measured from K node in axis X
DKY	: Rigid end offset distance measured from K node in axis Y
DKZ	: Rigid end offset distance measured from K node in axis Z
dL	: Tapered member section depth at K end of member
Ig factor	: Inertia reduction factor (Effective Inertia/Gross Inertia) for reinforced concrete members
K22	: Effective length factor about axis 2
K33	: Effective length factor about axis 3
L22	: Member length for calculation of axial capacity
L33	: Member length for calculation of axial capacity
LB pos	: Lateral unbraced length of the compression flange in the positive side of local axis 2
LB neg	: Lateral unbraced length of the compression flange in the negative side of local axis 2
RX	: Rotation about X
RY	: Rotation about Y
RZ	: Rotation about Z
TO	: 1 = Tension only member 0 = Normal member
TX	: Translation in X
TY	: Translation in Y
TZ	: Translation in Z

Nodes

Node	X [ft]	Y [ft]	Z [ft]	Rigid Floor
1	0.00	0.00	0.00	0
6	0.00	-0.20	-1.50	0
7	0.00	0.00	-8.177	0
8	-7.415	0.00	3.5109	0
14	7.415	0.00	3.5109	0
15	0.667	0.00	-8.177	0
16	-0.667	0.00	-8.177	0
17	6.75	0.00	4.667	0
18	-6.75	0.00	4.667	0
19	-7.0825	0.00	4.0889	0
20	7.0825	0.00	4.0889	0
22	-1.299	-0.20	0.75	0
25	1.299	-0.20	0.75	0
30	2.9167	0.00	-4.2821	0
31	5.1667	0.00	-0.3849	0
51	-5.1667	0.00	-0.3849	0
52	-2.9167	0.00	-4.2821	0
54	0.8542	0.00	-7.8544	0
55	1.0274	0.00	-7.9544	0
56	7.2292	0.00	3.1874	0
57	7.4024	0.00	3.0874	0

58	2.25	0.00	4.667	0
59	-2.25	0.00	4.667	0
89	-4.5992	-0.20	2.6563	0
92	4.60	-0.20	2.6549	0
95	-0.0008	-0.20	-5.3112	0
114	5.381	0.00	-0.0138	0
116	-2.9754	0.00	1.7188	0
119	2.9762	0.00	1.7174	0
120	-0.0008	0.00	-3.4362	0
159	2.7025	0.00	-4.6532	0
164	-2.7025	0.00	-4.6532	0
165	-5.381	0.00	-0.0138	0
166	-2.6786	0.00	4.667	0
167	2.6786	0.00	4.667	0
178	-3.3002	0.00	1.9063	0
179	-3.7332	0.00	2.1563	0
180	-4.1662	0.00	2.4063	0
181	-3.3002	-0.20	1.9063	0
182	-3.7332	-0.20	2.1563	0
183	-4.1662	-0.20	2.4063	0
196	-0.0008	0.00	-3.8112	0
197	-0.0008	0.00	-4.3112	0
198	-0.0008	0.00	-4.8112	0
199	-0.0008	-0.20	-3.8112	0
200	-0.0008	-0.20	-4.3112	0
201	-0.0008	-0.20	-4.8112	0
202	3.3009	0.00	1.9049	0
203	3.734	0.00	2.1549	0
204	4.167	0.00	2.4049	0
205	3.3009	-0.20	1.9049	0
206	3.734	-0.20	2.1549	0
207	4.167	-0.20	2.4049	0
208	2.9792	0.00	-4.1738	0
209	5.1042	0.00	-0.4932	0
210	3.1524	0.00	-4.2738	0
211	5.2774	0.00	-0.5932	0
228	-7.2292	0.00	3.1874	0
229	-7.4024	0.00	3.0874	0
230	-5.1042	0.00	-0.4932	0
231	-5.2774	0.00	-0.5932	0
232	-2.9792	0.00	-4.1738	0
233	-3.1524	0.00	-4.2738	0
234	-0.8542	0.00	-7.8544	0
235	-1.0274	0.00	-7.9544	0
236	6.375	0.00	4.667	0
237	6.375	0.00	4.867	0
238	2.125	0.00	4.667	0
239	2.125	0.00	4.867	0
240	-2.125	0.00	4.667	0
241	-2.125	0.00	4.867	0
242	-6.375	0.00	4.667	0
243	-6.375	0.00	4.867	0
244	6.375	-2.00	4.867	0
245	-7.4024	-2.00	3.0874	0
246	1.0274	-2.00	-7.9544	0
247	6.375	4.00	4.867	0
248	-7.4024	4.00	3.0874	0
249	1.0274	4.00	-7.9544	0
250	2.125	-2.50	4.867	0
251	-2.125	-3.50	4.867	0

252	-6.375	-3.50	4.867	0
253	-5.2774	-2.50	-0.5932	0
254	-3.1524	-3.50	-4.2738	0
255	-1.0274	-3.50	-7.9544	0
256	3.1524	-2.50	-4.2738	0
257	5.2774	-3.50	-0.5932	0
258	7.4024	-3.50	3.0874	0
259	2.125	5.50	4.867	0
260	-2.125	6.50	4.867	0
261	-5.2774	5.50	-0.5932	0
262	-3.1524	6.50	-4.2738	0
263	-1.0274	6.50	-7.9544	0
264	3.1524	5.50	-4.2738	0
265	5.2774	6.50	-0.5932	0
266	7.4024	6.50	3.0874	0
267	-6.375	6.50	4.867	0
268	6.375	3.00	4.667	0
269	6.375	3.00	4.867	0
270	2.125	3.00	4.667	0
271	2.125	3.00	4.867	0
272	-2.125	3.00	4.667	0
273	-2.125	3.00	4.867	0
274	-6.375	3.00	4.667	0
275	-6.375	3.00	4.867	0
276	-7.2292	3.00	3.1874	0
277	-7.4024	3.00	3.0874	0
278	-5.1042	3.00	-0.4932	0
279	-5.2774	3.00	-0.5932	0
280	-2.9792	3.00	-4.1738	0
281	-3.1524	3.00	-4.2738	0
282	-0.8542	3.00	-7.8544	0
283	-1.0274	3.00	-7.9544	0
284	0.8542	3.00	-7.8544	0
285	1.0274	3.00	-7.9544	0
286	2.9792	3.00	-4.1738	0
287	3.1524	3.00	-4.2738	0
288	5.1042	3.00	-0.4932	0
289	5.2774	3.00	-0.5932	0
290	7.2292	3.00	3.1874	0
291	7.4024	3.00	3.0874	0
292	0.00	0.00	4.667	0
293	0.00	3.00	4.667	0
294	0.5417	3.00	-8.3957	0
295	7.5417	3.00	3.7287	0
296	7.4167	3.00	3.5122	0
297	0.6667	3.00	-8.1792	0
306	-7.5417	3.00	3.7287	0
307	-7.4167	3.00	3.5122	0
308	-0.5417	3.00	-8.3957	0
309	-0.6667	3.00	-8.1792	0
310	7.00	3.00	4.667	0
311	6.75	3.00	4.667	0
312	-7.00	3.00	4.667	0
313	-6.75	3.00	4.667	0
314	-5.6243	0.00	3.2476	0
315	5.6247	0.00	3.2469	0
316	-0.0004	0.00	-6.4941	0
317	1.299	-2.70	0.75	0
318	0.00	-2.70	-1.50	0
319	-1.299	-2.70	0.75	0

Restraints

Node	TX	TY	TZ	RX	RY	RZ
6	1	1	1	1	1	1
22	1	1	1	1	1	1
25	1	1	1	1	1	1
317	1	1	1	1	1	1
318	1	1	1	1	1	1
319	1	1	1	1	1	1

Members

Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	lg factor
23	22	89		HSS_SQR 3X3X1_4	A500 GrB rectangular	0.00	0.00	0.00
24	25	92		HSS_SQR 3X3X1_4	A500 GrB rectangular	0.00	0.00	0.00
25	6	95		HSS_SQR 3X3X1_4	A500 GrB rectangular	0.00	0.00	0.00
26	18	59		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
27	59	58		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
28	58	17		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
29	8	51		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
30	51	52		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
31	52	16		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
32	15	30		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
33	30	31		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
34	31	14		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
35	14	17		PL 6x5/8	A36	0.00	0.00	0.00
36	16	15		PL 6x5/8	A36	0.00	0.00	0.00
37	8	18		PL 6x5/8	A36	0.00	0.00	0.00
38	116	19		HSS_SQR 3X3X1_4	A500 GrB rectangular	0.00	0.00	0.00
39	119	20		HSS_SQR 3X3X1_4	A500 GrB rectangular	0.00	0.00	0.00
40	120	7		HSS_SQR 3X3X1_4	A500 GrB rectangular	0.00	0.00	0.00
41	116	166		T2L 2-1_2X2-1_2X1_4	A36	0.00	0.00	0.00
42	119	167		T2L 2-1_2X2-1_2X1_4	A36	0.00	0.00	0.00
43	116	165		T2L 2-1_2X2-1_2X1_4	A36	0.00	0.00	0.00
44	119	114		T2L 2-1_2X2-1_2X1_4	A36	0.00	0.00	0.00
45	120	164		T2L 2-1_2X2-1_2X1_4	A36	0.00	0.00	0.00
46	120	159		T2L 2-1_2X2-1_2X1_4	A36	0.00	0.00	0.00
77	247	244		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
78	248	245		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
79	249	246		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
80	259	250		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
81	260	251		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
82	267	252		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
83	261	253		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
84	262	254		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
85	263	255		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
86	264	256		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
87	265	257		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
88	266	258		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00

101	312	310	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
102	306	308	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
103	294	295	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
104	296	311	L 2X2X1_4	A36	0.00	0.00	0.00
105	307	313	L 2X2X1_4	A36	0.00	0.00	0.00
106	309	297	L 2X2X1_4	A36	0.00	0.00	0.00
107	319	314	T2L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
108	317	315	T2L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
109	318	316	T2L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00

Orientation of local axes

Member	Rotation [Deg]	Axes23	NX	NY	NZ
41	270.00	0	0.00	0.00	0.00
42	90.00	0	0.00	0.00	0.00
43	90.00	0	0.00	0.00	0.00
44	270.00	0	0.00	0.00	0.00
45	270.00	0	0.00	0.00	0.00
46	90.00	0	0.00	0.00	0.00
104	180.00	0	0.00	0.00	0.00
105	90.00	0	0.00	0.00	0.00
106	180.00	0	0.00	0.00	0.00

Radio Frequency Emissions Analysis Report

AT&T Existing Facility

Site ID: CT5289

Avon South West
10 Redwood Lane

Avon, CT 06001

September 30, 2019

Centerline Communications Project Number: 950012-289

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**20.40 %**

September 30, 2019

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

Emissions Analysis for Site: **CT5289 – Avon South West**

Centerline Communications, LLC ("Centerline") was directed to analyze the proposed AT&T facility located at **10 Redwood Lane in Avon, Connecticut** 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 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu W/cm^2$). The number of $\mu W/cm^2$ 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 population 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 population 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.

Population exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limits for the 700 and 850 MHz Bands are approximately 467 $\mu W/cm^2$ and 567 $\mu W/cm^2$ respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 2300 MHz (WCS) bands is 1000 $\mu W/cm^2$. 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 performed for the proposed AT&T Wireless antenna facility located at **10 Redwood Lane in Avon, Connecticut**, 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.

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. All power values expressed and analyzed are maximum power levels expected to be used on all radios.

All emissions values for additional carriers were taken from the Connecticut Siting Council (CSC) active MPE database. Values in this database are provided by the individual carriers themselves

For each sector the following channel counts, frequency bands and power levels were utilized as shown in *Table 1*:

Technology	Frequency Band	Channel Count	Transmit Power per Channel (W)
UMTS	850 MHz	2	30
5G	850 MHz	2	25
LTE	850 MHz	2	30
LTE	700 MHz	2	40
LTE	2100 MHz (AWS)	4	30
LTE	1900 MHz (PCS)	4	40

Table 1: Channel Data Table

The following antennas listed in Table 2 were used in the modeling for transmission in the 700 MHz, 850 MHz, 1900 MHz (PCS), and 2100 MHz (AWS) 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.

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	Kathrein 800-10121	100
A	2	CCI HPA65R-BU4A	100
A	3	Kathrein 800-10965	100
A	4	Kathrein 800-10965	100
B	1	Kathrein 800-10121	100
B	2	CCI HPA65R-BU4A	100
B	3	Kathrein 800-10965	100
B	4	Kathrein 800-10965	100
C	1	Kathrein 800-10121	100
C	2	CCI HPA65R-BU4A	100
C	3	Kathrein 800-10965	100
C	4	Kathrein 800-10965	100

Table 2: Antenna Data

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

RESULTS

Per the calculations completed for the proposed AT&T configurations *Table 3* shows resulting emissions power levels and percentages of the FCC's allowable general population limit.

Antenna ID	Antenna Make / Model	Frequency Bands	Antenna Gain (dBd)	Channel Count	Total TX	ERP (W)	MPE %
Antenna A1	Kathrein 800-10121	850 MHz	11.25 dBd	2	60	900.11	0.51
Antenna A2	CCI HPA65R-BU4A	1900 MHz / 1900 MHz	14.75 dBd / 14.75 dBd	8	320	9,553.22	3.43
Antenna A3	Kathrein 800-10965	1900 MHz	15.65 dBd	4	160	5,876.52	2.11
Antenna A4	Kathrein 800-10965	700 MHz / 850 MHz / 2100 MHz / 850 MHz	12.65 dBd / 13.45 dBd / 15.95 dBd / 13.45 dBd	10	330	9,072.24	4.66
						Sector A Composite MPE%	**10.71**
Antenna B1	Kathrein 800-10121	850 MHz	11.25 dBd	2	60	900.11	0.51
Antenna B2	CCI HPA65R-BU4A	1900 MHz / 1900 MHz	14.75 dBd / 14.75 dBd	8	320	9,553.22	3.43
Antenna B3	Kathrein 800-10965	1900 MHz	15.65 dBd	4	160	5,876.52	2.11
Antenna B4	Kathrein 800-10965	700 MHz / 850 MHz / 2100 MHz / 850 MHz	12.65 dBd / 13.45 dBd / 15.95 dBd / 13.45 dBd	10	330	9,072.24	4.66
						Sector B Composite MPE%	**10.71**
Antenna C1	Kathrein 800-10121	850 MHz	11.25 dBd	2	60	900.11	0.51
Antenna C2	CCI HPA65R-BU4A	1900 MHz / 1900 MHz	14.75 dBd / 14.75 dBd	8	320	9,553.22	3.43
Antenna C3	Kathrein 800-10965	1900 MHz	15.65 dBd	4	160	5,876.52	2.11
Antenna C4	Kathrein 800-10965	700 MHz / 850 MHz / 2100 MHz / 850 MHz	12.65 dBd / 13.45 dBd / 15.95 dBd / 13.45 dBd	10	330	9,072.24	4.66
						Sector C Composite MPE%	**10.71**

Table 3: AT&T Emissions Levels

The Following table (*table 4*) shows all additional carriers on site and their MPE% as recorded in the CSC active MPE database for this facility along with the newly calculated maximum AT&T MPE contributions per this report. FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. For this site, all three sectors have the same configuration yielding the same results on all three sectors. *Table 5* below shows a summary for each AT&T Sector as well as the composite MPE value for the site.

Site Composite MPE%	
Carrier	**MPE%**
AT&T – Max Per Sector Value	**10.71 %**
Metro PCS	2.41%
T-Mobile	5.77%
Clearwire	0.26%
Sprint	0.05%
Farm Woods	1.2%
Site Total MPE %:	**20.40 %**

Table 4: All Carrier MPE Contributions

AT&T Sector A Total:	10.71 %
AT&T Sector B Total:	10.71 %
AT&T Sector C Total:	10.71 %
Site Total:	20.40 %

Table 5: Site MPE Summary

FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. *Table 6* below details a breakdown by frequency band and technology for the MPE power values for the maximum calculated AT&T sector(s). For this site, all three sectors have the same configuration yielding the same results on all three sectors.

AT&T _ Frequency Band / Technology Max Power Values (Per Sector)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($i.tW/cm^2$)	Frequency (MHz)	Allowable MPE ($i.tW/cm^2$)	Calculated % MPE
AT&T 850 MHz UMTS	2	400.06	100.0	2.88	850 MHz UMTS	567	0.51%
AT&T 1900 MHz LTE	4	1194.15	100.0	17.17	1900 MHz LTE	1000	1.72%
AT&T 1900 MHz LTE	4	1194.15	100.0	17.17	1900 MHz LTE	1000	1.72%
AT&T 1900 MHz LTE	4	1469.13	100.0	21.13	1900 MHz LTE	1000	2.11%
AT&T 700 MHz LTE	2	736.31	100.0	5.29	700 MHz LTE	467	1.13%
AT&T 850 MHz LTE	2	885.24	100.0	6.37	850 MHz LTE	567	1.12%
AT&T 2100 MHz LTE	4	1180.65	100.0	16.98	2100 MHz LTE	1000	1.70%
AT&T 850 MHz 5G	2	553.27	100.0	3.98	850 MHz 5G	567	0.70%
						Total:	**10.71%**

Table 6: AT&T Maximum Sector MPE Power Values

Summary

All calculations performed for this analysis yielded results that were **within** the allowable limits for general population 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 population exposure to RF Emissions are shown here:

AT&T Sector	Power Density Value (%)
Sector A:	10.71 %
Sector B:	10.71 %
Sector C:	10.71 %
AT&T Maximum Total (per sector):	10.71 %
Site Total:	20.40 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **20.40 %** of the allowable FCC established general population 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.

Ryan McManus
Senior RF EME Compliance Manager
Centerline Communications, LLC
95 Ryan Drive, Suite 1
Raynham, MA 02767

PROJECT INFORMATION

SCOPE OF WORK:

ITEMS TO BE MOUNTED ON THE EXISTING MONOPOLE:
- NEW AT&T ANTENNAS: (HPA-65R-BU4AA) MOUNTED @ POSITION 2 (TYP. OF 1 SECTOR, TOTAL OF 3)
- NEW AT&T ANTENNAS: (800-10965) MOUNTED @ POSITION 3 & 4 (TYP. OF 2 SECTOR, TOTAL OF 6)
- NEW AT&T RRUS: 4449 B5/B12 (700) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T RRUS: 8843 B2/B66 (PCS-AWS) (TOTAL OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T RRUS: 4415 B30 (WCS) (TOTAL OF 1 PER SECTOR, TOTAL OF 3).
- ADD (1) DC/FIBER SQUID WITH (2) DC LINES, (1) FIBER LINE & ADD (1) DC ONLY SQUID WITH (2) DC LINES.

ITEMS TO BE MOUNTED AT EQUIPMENT LOCATION:
- ADD 5G 6630
- SWAP BB WITH (1) 6630
- ADD (1) XMU.

ITEMS TO REMAIN:
- (3) ANTENNAS, (6) TMAS, (1) SURGE ARRESTOR, (6) COAX CABLES, (2) DC POWER & (1) FIBER.

SITE ADDRESS:	10 REDWOOD LANE AVON, CT 06001
LATITUDE:	41.772191° N 41° 46' 19.89" N
LONGITUDE:	72.879998° W 72° 52' 47.99" W
TYPE OF SITE:	MONOPOLE/OUTDOOR EQUIPMENT
TOWER HEIGHT:	105'-0"±
RAD CENTER:	100'-0"±
CURRENT USE:	TELECOMMUNICATIONS FACILITY
PROPOSED USE:	TELECOMMUNICATIONS FACILITY

SITE NUMBER: CT5289

SITE NAME: AVON SOUTH WEST

PACE ID: MRCTB037967, MRCTB037933, MRCTB038083, MRCTB038081
PROJECT: LTE 2C/3C/4C/4TX4RX 2019 UPGRADE

FOR ZONING
NOT FOR CONSTRUCTION

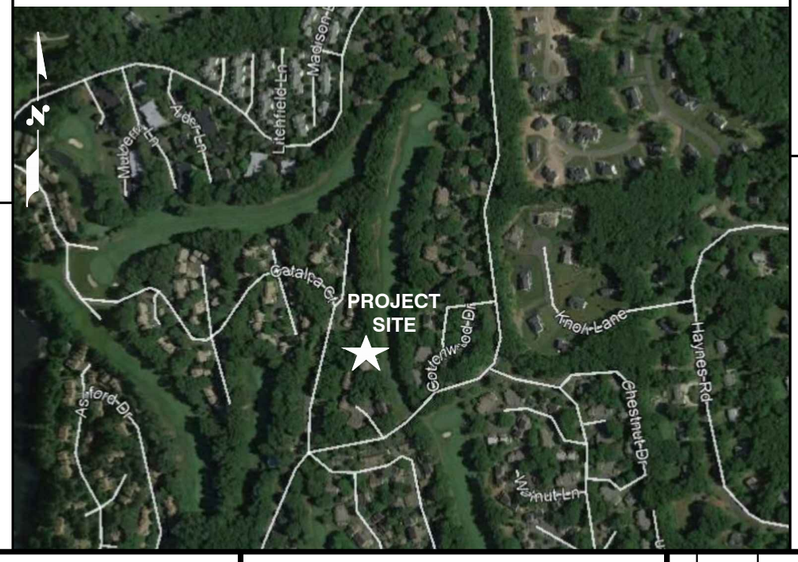
DRAWING INDEX

SHEET NO.	DESCRIPTION	REV.
T-1	TITLE SHEET	0
GN-1	GENERAL NOTES	0
A-1	COMPOUND PLAN AND EQUIPMENT PLAN	0
A-2	ANTENNA LAYOUTS & ELEVATION	0
A-3	DETAILS	0
A-4	DETAILS	0
SN-1	STRUCTURAL NOTES	0
S-1	STRUCTURAL DETAILS	0
RF-1	RF PLUMBING DIAGRAM	0
G-1	GROUNDING DETAILS	0

SBA SITE #: CT01498-S

VICINITY MAP

DIRECTIONS TO SITE:
START OUT GOING NORTHEAST ON ENTERPRISE DR TOWARD CAPITOL BLVD. 0.4 MI. TURN LEFT ONTO CAPITOL BLVD. 0.3 MI. TURN LEFT ONTO WEST ST. 0.3 MI. MERGE ONTO I-91 S VIA THE RAMP ON THE LEFT TOWARD NEW HAVEN. IF YOU REACH CORPORATE PL YOU'VE GONE A LITTLE TOO FAR 1.7 MI. MERGE ONTO CT-9 N VIA EXIT 22N TOWARD NEW BRITAIN. 11.1 MI. MERGE ONTO I-84 W/US-6 W VIA EXIT 32 ON THE LEFT TOWARD WATERBURY/CT-4. 1.2 MI. MERGE ONTO CT-4 W/FARMINGTON AVE VIA EXIT 39 TOWARD FARMINGTON. 5.6 MI 8. TURN RIGHT ONTO W AVON RD/CT-167. W AVON RD IS 0.2 MILES PAST WALNUT ST. 0.5 MI. TAKE THE 2ND LEFT ONTO MALLARD DR. MALLARD DR IS 0.4 MILES PAST COTTAGE ST. IF YOU REACH CEDAR LN YOU'VE GONE A LITTLE TOO FAR. 0.06 MI. TURN RIGHT ONTO HERITAGE DR. 0.7 MI. TURN LEFT ONTO BYRON DR. 0.06 MI. TAKE THE 1ST RIGHT ONTO REDWOOD LN. 0.01 MI. 10 REDWOOD LN.



GENERAL NOTES

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

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UNDERGROUND SERVICE ALERT

STATE OF CONNECTICUT · DEPARTMENT OF ·
Daniel P. Hamm
No. 24178
LICENSED PROFESSIONAL ENGINEER

HUDSON Design Group LLC
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NORTH ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

CENTERLINE COMMUNICATIONS
750 WEST CENTER STREET, SUITE #301
WEST BRIDGEWATER, MA 02379

SITE NUMBER: CT5289
SITE NAME:
AVON SOUTH WEST
10 REDWOOD LANE
AVON, CT 06001
HARTFORD COUNTY

550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

NO.	DATE	REVISIONS	BY	CHK	APP'D
0	10/04/19	ISSUED FOR ZONING	MR	AT	DPH
A	03/18/19	ISSUED FOR REVIEW	MR	AT	DPH

SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: MR

AT&T

TITLE SHEET
(LTE 2C/3C/4C/4TX4RX)

SITE NUMBER	DRAWING NUMBER	REV
CT5289	T-1	0

GROUNDING NOTES

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.

2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.

3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81 STANDARDS) FOR NEW GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.

4. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.

5. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, #6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS AND #2 AWG STRANDED COPPER FOR OUTDOOR BTS.

6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.

7. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.

8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO GROUND BAR.

9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.

10. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.

11. METAL CONDUIT SHALL BE MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.

12. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE OF 1/2 IN. OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID BARE TINNED COPPER GROUND WIRE, PER NEC 250.50

GENERAL NOTES

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

   CONTRACTOR – EMPIRE
   SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
   OWNER – AT&T MOBILITY

2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.

3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.

4. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.

5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.

6. "KITTING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY CONTRACTOR. ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.

7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.

8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.

9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.

10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.

11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.

12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.

13. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.

14. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.

15. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy = 36 ksi) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E (Fy = 36 ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCH UP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.

16. CONSTRUCTION SHALL COMPLY WITH SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF AT&T SITES."

17. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.

18. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.

19. SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.

20. **APPLICABLE BUILDING CODES:**
    SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.

    BUILDING CODE: IBC 2015 WITH 2018 CT STATE BUILDING CODE AMENDMENTS
    ELECTRICAL CODE: 2017 NATIONAL ELECTRICAL CODE (NFPA 70-2017)

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

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

    AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) MANUAL OF STEEL CONSTRUCTION, ASD, FOURTEENTH EDITION;

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

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

ABBREVIATIONS

AGL	ABOVE GRADE LEVEL	EQ	EQUAL	REQ	REQUIRED
AWG	AMERICAN WIRE GAUGE	GC	GENERAL CONTRACTOR	RF	RADIO FREQUENCY
BBU	BATTERY BACKUP UNIT	GRC	GALVANIZED RIGID CONDUIT	TBD	TO BE DETERMINED
BTCW	BARE TINNED SOLID COPPER WIRE	MGB	MASTER GROUND BAR	TBR	TO BE REMOVED
BGR	BURIED GROUND RING	MIN	MINIMUM	TBRR	TO BE REMOVED AND REPLACED
BTS	BASE TRANSCEIVER STATION	P	PROPOSED	TYP	TYPICAL
E	EXISTING	NTS	NOT TO SCALE	UG	UNDER GROUND
EGB	EQUIPMENT GROUND BAR	RAD	RADIATION CENTER LINE (ANTENNA)	VIF	VERIFY IN FIELD
EGR	EQUIPMENT GROUND RING	REF	REFERENCE		

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SITE NUMBER: CT5289
SITE NAME:
AVON SOUTH WEST
10 REDWOOD LANE
AVON, CT 06001
HARTFORD COUNTY

at&t
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

NO.	DATE	REVISIONS	BY	CHK	APP'D
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A	03/18/19	ISSUED FOR REVIEW	MR	AT	DPH

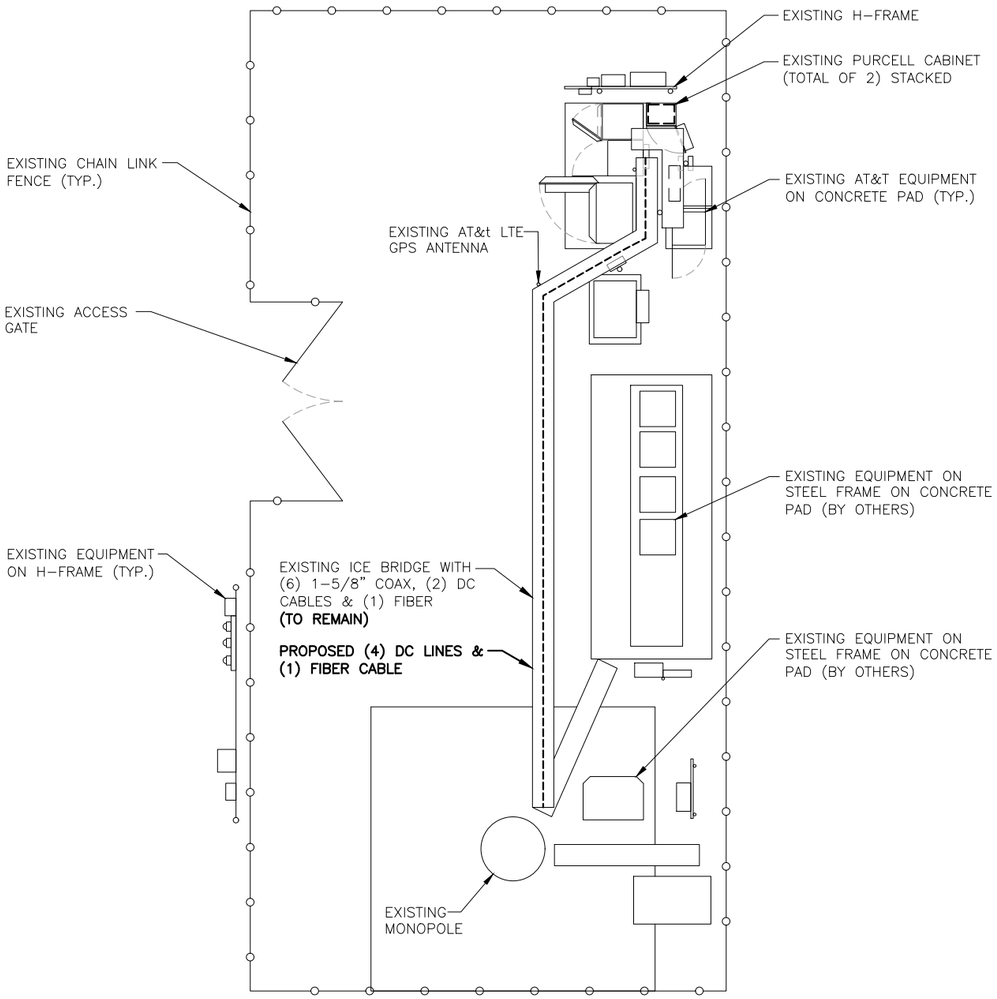
SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: MR

STATE OF CONNECTICUT — DANIEL P. HAMM — No. 24178 — LICENSED PROFESSIONAL ENGINEER

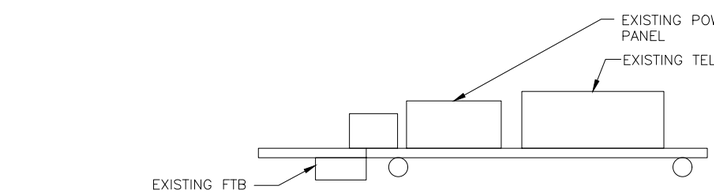
AT&T

GENERAL NOTES
(LTE 2C/3C/4C/4TX4RX)

SITE NUMBER	DRAWING NUMBER	REV
CT5289	GN-1	0



COMPOUND PLAN (1 / A-1)
22x34 SCALE: 3/16"=1'-0"
11x17 SCALE: 3/32"=1'-0"

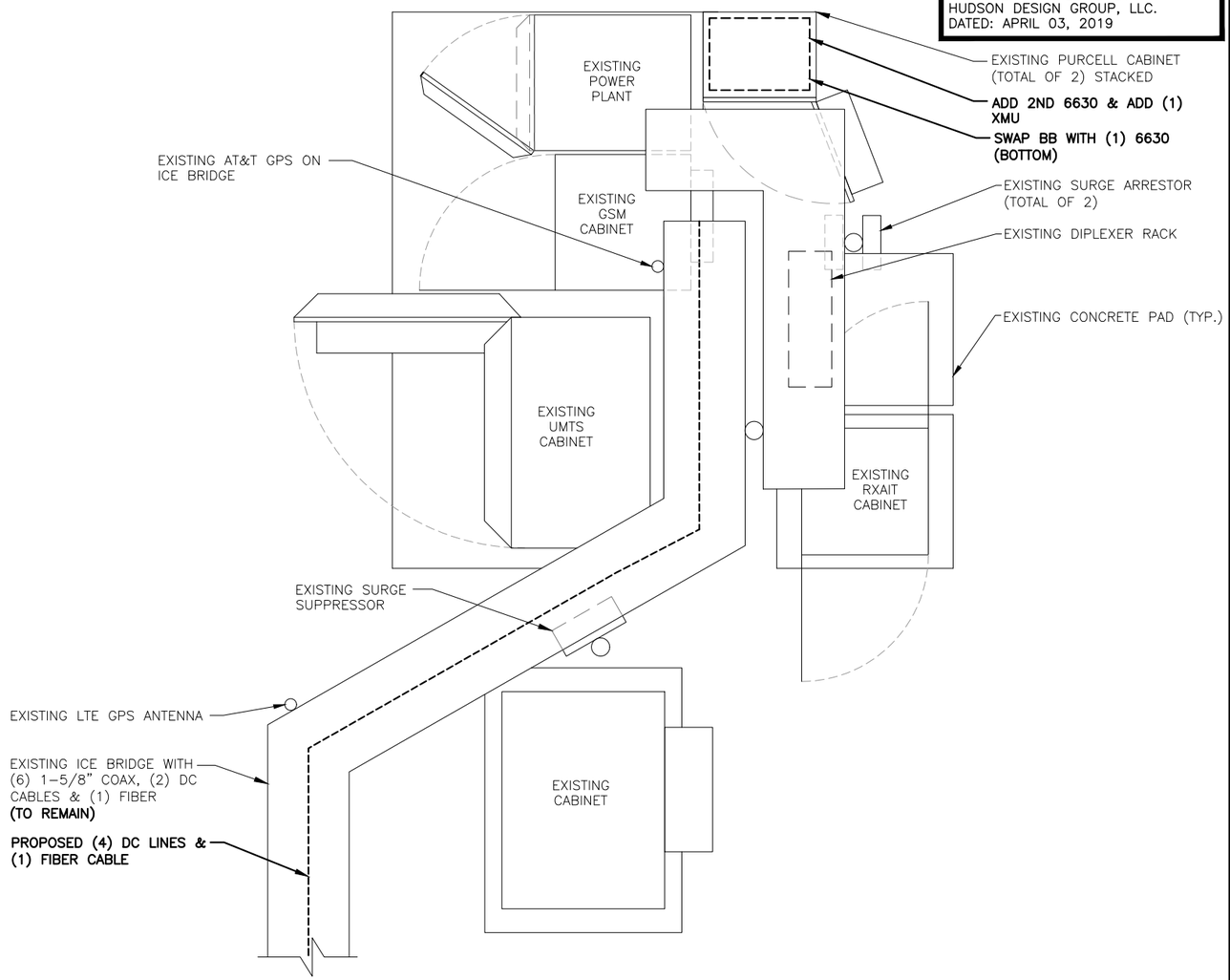


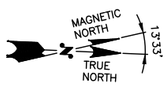
NOTE:

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

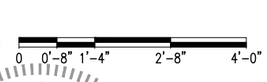
NOTE:

AN ANALYSIS FOR THE CAPACITY OF THE EXISTING **ANTENNA MOUNT** TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY:
HUDSON DESIGN GROUP, LLC.
DATED: APRIL 03, 2019





EQUIPMENT PLAN (2 / A-1)
22x34 SCALE: 1/2"=1'-0"
11x17 SCALE: 1/4"=1'-0"



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FRAMINGHAM, MA 01701

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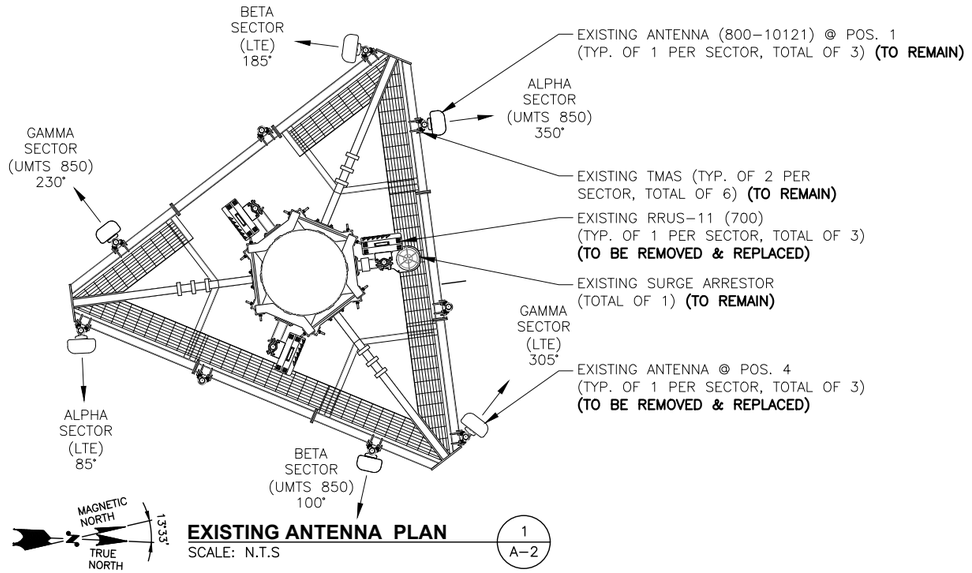
SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: MR

STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED PROFESSIONAL ENGINEER

AT&T

COMPOUND & EQUIPMENT PLAN
(LTE 2C/3C/4C/4TX4RX)

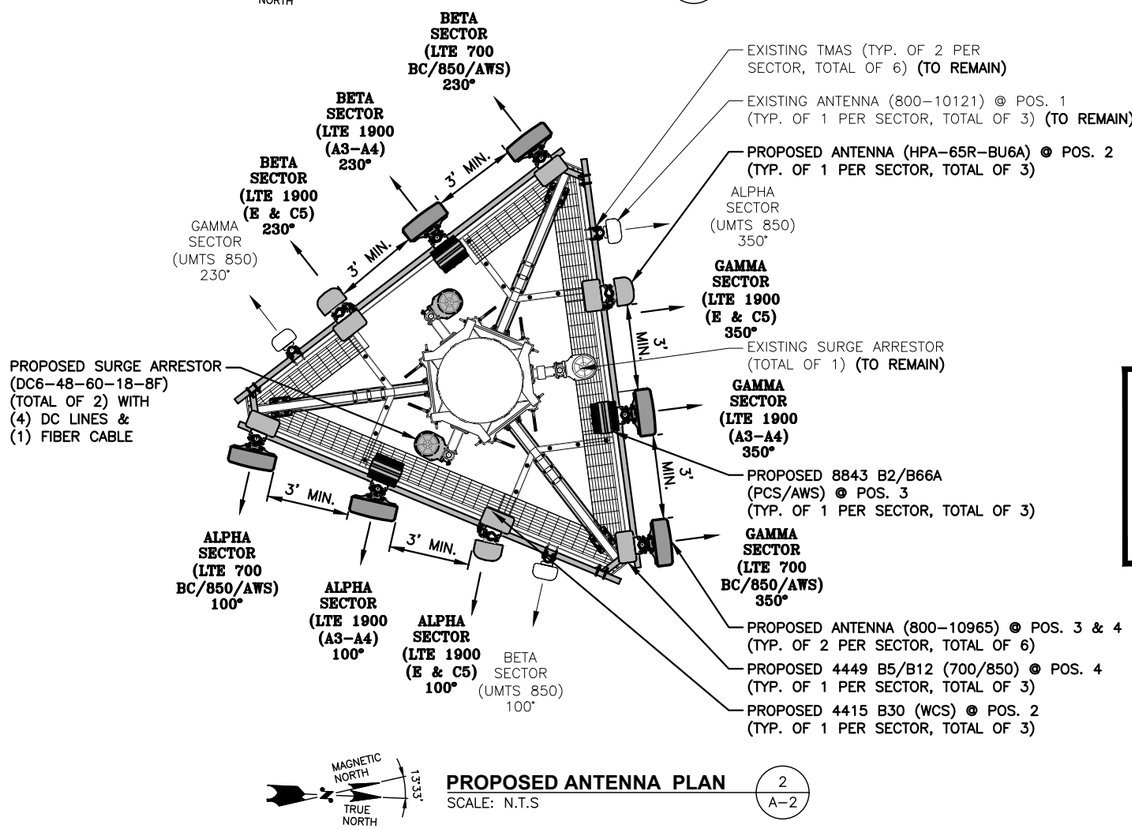
SITE NUMBER	DRAWING NUMBER	REV
CT5289	A-1	0



EXISTING ANTENNA PLAN

SCALE: N.T.S

1 / A-2



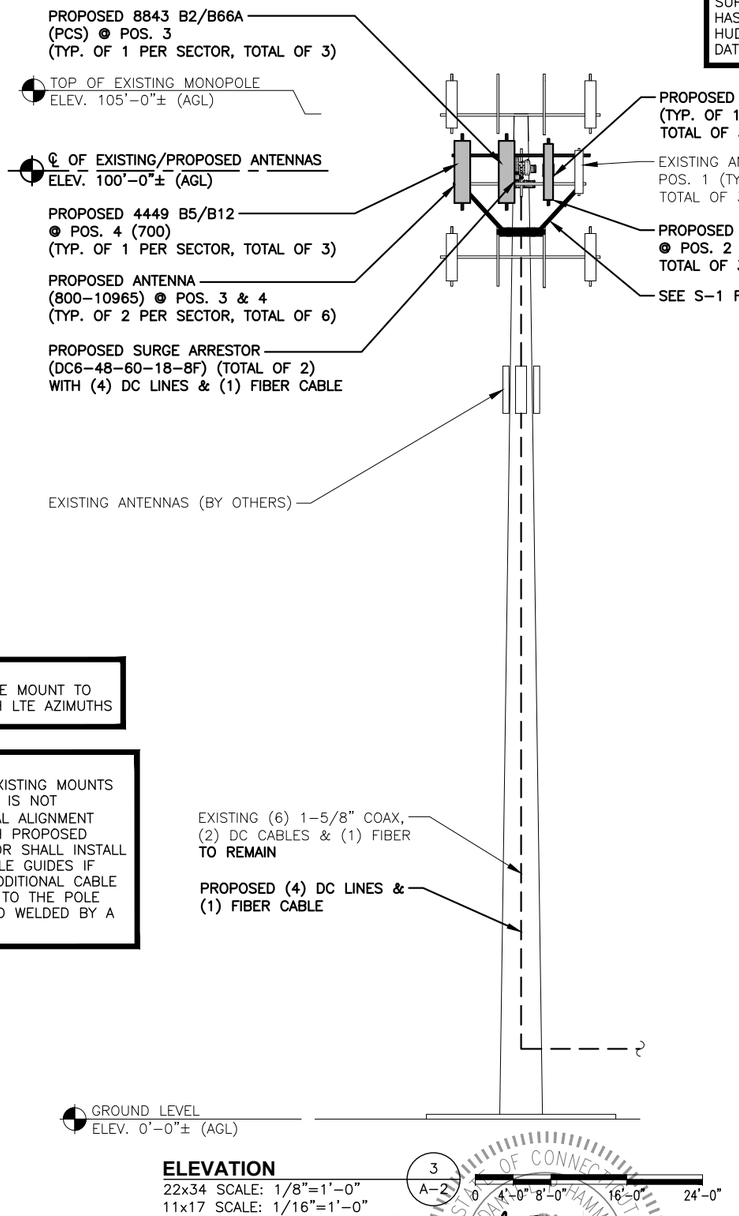
PROPOSED ANTENNA PLAN

SCALE: N.T.S

2 / A-2

NOTE:
GENERAL CONTRACTOR SHALL ORIENT EXISTING MOUNTS SO THAT EXISTING SAFETY CLIMB CABLE IS NOT OBSTRUCTED/RE-ROUTED FROM VERTICAL ALIGNMENT AND IS NOT IN PHYSICAL CONTACT WITH PROPOSED MOUNT HARDWARE. GENERAL CONTRACTOR SHALL INSTALL NEW OR ADDITIONAL SAFETY-CLIMB CABLE GUIDES IF ADDITIONAL CLEARANCE IS REQUIRED. ADDITIONAL CABLE GUIDES SHALL BE ATTACHED SECURELY TO THE POLE USING MECHANICAL FASTENERS OR FIELD WELDED BY A CERTIFIED WELDING TECHNICIAN.

NOTE:
ROTATE MOUNT TO MATCH LTE AZIMUTHS



ELEVATION

22x34 SCALE: 1/8"=1'-0"
11x17 SCALE: 1/16"=1'-0"

3 / A-2

0 4'-0" 8'-0" 16'-0" 24'-0"

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

NOTE:
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING **ANTENNA MOUNT** TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY:
HUDSON DESIGN GROUP, LLC.
DATED: APRIL 03, 2019

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SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: MR

STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED PROFESSIONAL ENGINEER

Daniel P. Hamm

AT&T

ANTENNA LAYOUTS & ELEVATION
(LTE 2C/3C/4C/4TX4RX)

SITE NUMBER	DRAWING NUMBER	REV
CT5289	A-2	0

ANTENNA SCHEDULE

SECTOR	EXISTING/ PROPOSED	BAND	ANTENNA	SIZE (INCHES) (L x W x D)	ANTENNA ℄ HEIGHT	AZIMUTH	TMA/ DIPLEXER	RRU	SIZE (INCHES) (L x W x D)	FEEDER	RAYCAP
A1	EXISTING	UMTS 850	800-10121	54.5X10.3X5.9	±100'	350°	(E)(2) LPG21401	–	–	(2) 1-5/8 COAX	--
A2	**PROPOSED**	**LTE 1900 (E & C5)**	**HPA-65R-BU6A**	**71X11.7X7.6**	**±100'**	**100°**	–	**(P) 4415 B30 (PCS)**	**16.5X13.4X5.9**	–	**(E) (1) RAYCAP DC6-48-60-18-8F**
A3	**PROPOSED**	**LTE 1900 (A3-A4)**	**800-10965**	**78.7X20X6.9**	**±100'**	**100°**	–	–	–	–	
A4	**PROPOSED**	**LTE 700 BC/850/AWS**	**800-10965**	**78.7X20X6.9**	**±100'**	**100°**	–	**(P) 8843 B2/B66A (PCS) (P) 4449 B5/B12 (700)**	**14.9X13.2X10.9 14.9X13.2X10.4**		
B1	EXISTING	UMTS 850	800-10121	54.5X10.3X5.9	±100'	100°	(E)(2) LPG21401	–	–	(2) 1-5/8 COAX	
B2	**PROPOSED**	**LTE 1900 (E & C5)**	**HPA-65R-BU6A**	**71X11.7X7.6**	**±100'**	**230°**	–	**(P) 4415 B30 (PCS)**	**16.5X13.4X5.9**	–	**(P) (1) RAYCAP DC6-48-60-18-8F**
B3	**PROPOSED**	**LTE 1900 (A3-A4)**	**800-10965**	**78.7X20X6.9**	**±100'**	**230°**	–	–	–	–	
B4	**PROPOSED**	**LTE 700 BC/850/AWS**	**800-10965**	**78.7X20X6.9**	**±100'**	**230°**	–	**(P) 8843 B2/B66A (PCS) (P) 4449 B5/B12 (700)**	**14.9X13.2X10.9 14.9X13.2X10.4**		
C1	EXISTING	UMTS 850	800-10121	54.5X10.3X5.9	±100'	230°	(E)(2) LPG21401	–	–	(2) 1-5/8 COAX	
C2	**PROPOSED**	**LTE 1900 (E & C5)**	**HPA-65R-BU6A**	**71X11.7X7.6**	**±100'**	**350°**	–	**(P) 4415 B30 (PCS)**	**16.5X13.4X5.9**	–	**(P) (1) RAYCAP DC6-48-60-0-8F (DC ONLY)**
C3	**PROPOSED**	**LTE 1900 (A3-A4)**	**800-10965**	**78.7X20X6.9**	**±100'**	**350°**	–	–	–	–	
C4	**PROPOSED**	**LTE 700 BC/850/AWS**	**800-10965**	**78.7X20X6.9**	**±100'**	**350°**	–	**(P) 8843 B2/B66A (PCS) (P) 4449 B5/B12 (700)**	**14.9X13.2X10.9 14.9X13.2X10.4**		

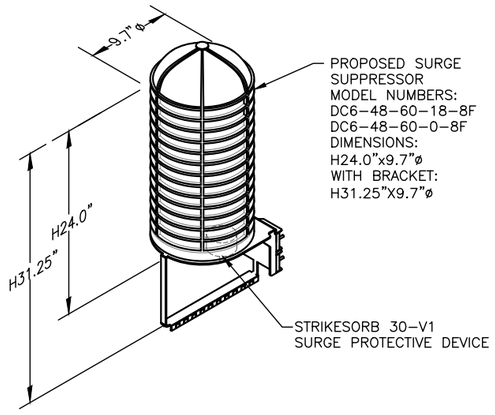
FINAL ANTENNA CONFIGURATION TABLE (1 / A-3)

NOTE:

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

NOTE:

AN ANALYSIS FOR THE CAPACITY OF THE EXISTING **ANTENNA MOUNT** TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY:
HUDSON DESIGN GROUP, LLC.
DATED: APRIL 03, 2019

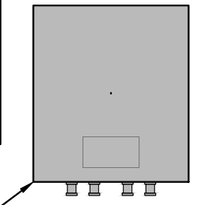


NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

DC SURGE SUPPRESSOR DETAIL (2 / A-3)
SCALE: N.T.S

RRU CHART				
QUANTITY	MODEL	L	W	D
3(P)	4415 B30	16.5"	13.4"	5.9"
3(P)	4449 B5/B12	14.9"	13.2"	10.4"
3(P)	8843 B2/B66A	14.9"	13.2"	10.9"

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS



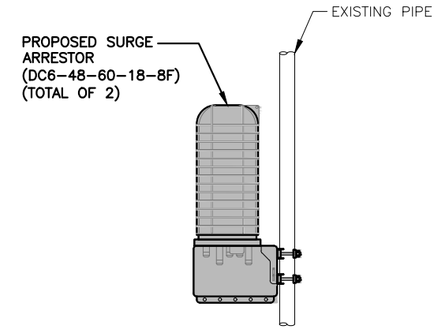
PROPOSED RRU REFER TO THE FINAL RFDS AND CHART FOR QUANTITY, MODEL AND DIMENSIONS

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

NOTE:

SEE RFDS FOR RRH FREQUENCY AND MODEL NUMBER

RRU DETAIL (3 / A-3)
SCALE: N.T.S



SURGE ARRESTOR MOUNTING DETAIL (4 / A-3)
22x34 SCALE: 1"=1'-0"
11x17 SCALE: 1/2"=1'-0"

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A	03/18/19	ISSUED FOR REVIEW	MR	AT	DPH

SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: MR

STATE OF CONNECTICUT · DANIEL P. HAMM · No. 24178 · LICENSED PROFESSIONAL ENGINEER

Daniel P. Hamm

AT&T

DETAILS
(LTE 2C/3C/4C/4TX4RX)

SITE NUMBER	DRAWING NUMBER	REV
CT5289	A-3	0

NOTE:

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

NOTE:

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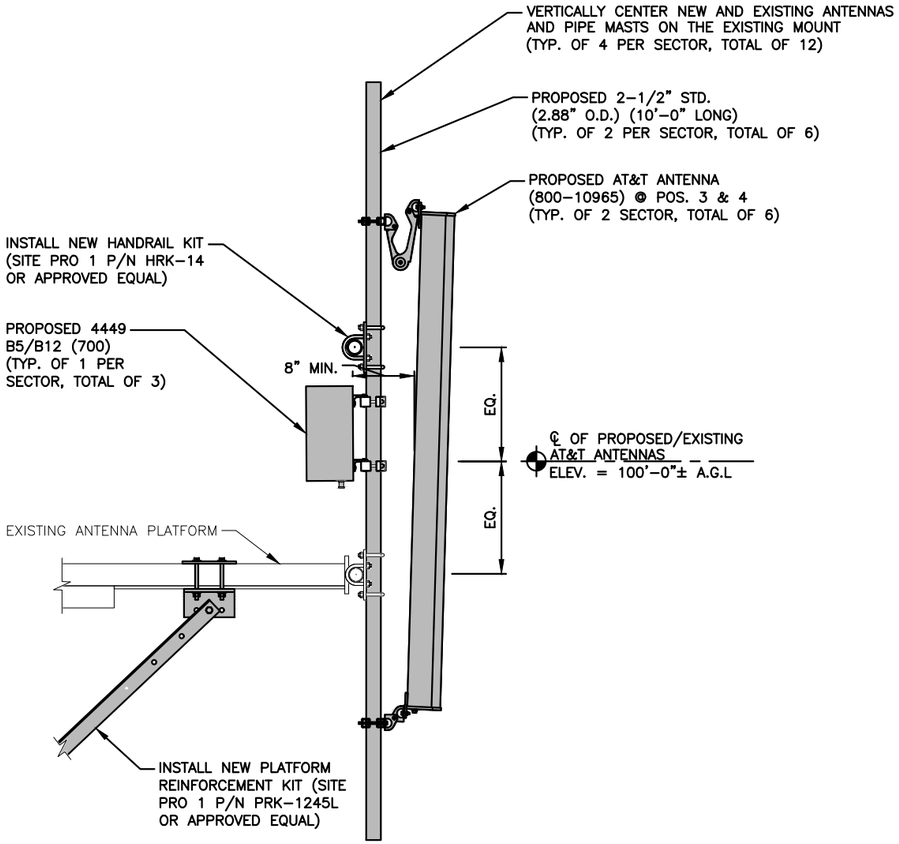
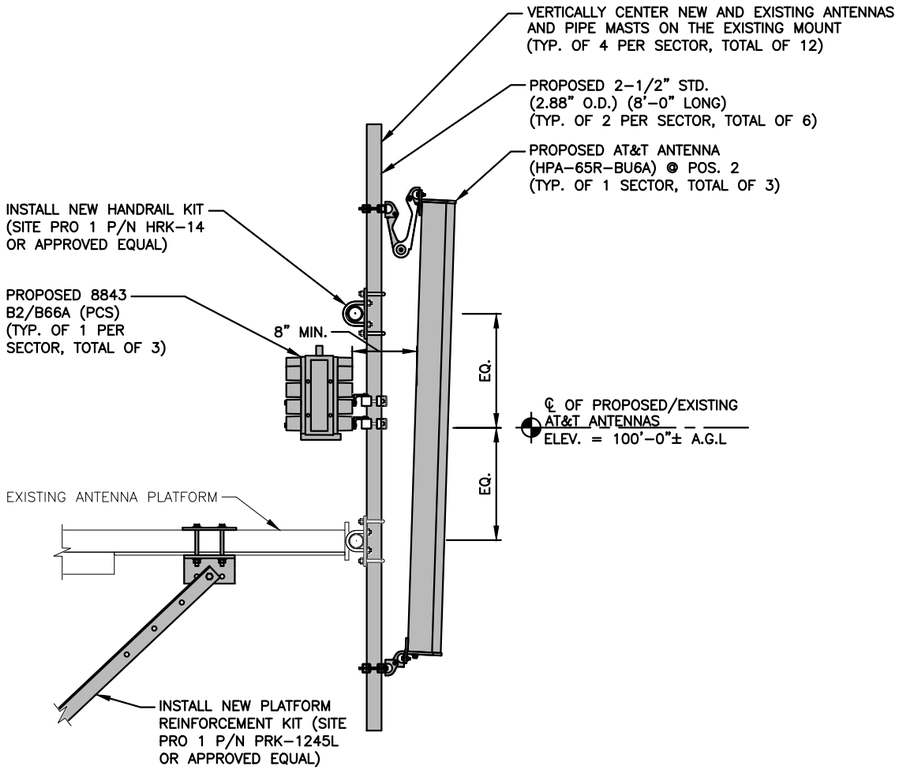


PROPOSED ANTENNA & RRH'S MOUNTING DETAIL @ POS. 3 & 4 (1 / A-4)

22x34 SCALE: 1"=1'-0"
11x17 SCALE: 1/2"=1'-0"

0 0'-6" 1'-0" 2'-0" 3'-0"



PROPOSED ANTENNA & RRU'S MOUNTING DETAIL @ POS. 2 (2 / A-4)

22x34 SCALE: 1"=1'-0"
11x17 SCALE: 1/2"=1'-0"

0 0'-6" 1'-0" 2'-0" 3'-0"

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at&t
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SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: MR

STATE OF CONNECTICUT
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LICENSED PROFESSIONAL ENGINEER

AT&T

DETAILS
(LTE 2C/3C/4C/4TX4RX)

SITE NUMBER	DRAWING NUMBER	REV
CT5289	A-4	0

STRUCTURAL NOTES:

1. DESIGN REQUIREMENTS ARE PER STATE BUILDING CODE AND APPLICABLE SUPPLEMENTS, INTERNATIONAL BUILDING CODE, EIA/TIA-222-G STRUCTURAL STANDARDS FOR STEEL ANTENNA, TOWERS AND ANTENNA SUPPORTING STRUCTURES.
2. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE CONSTRUCTION MANAGER AND ENGINEER OF RECORD.
3. DESIGN AND CONSTRUCTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".
4. STRUCTURAL STEEL SHALL CONFORM TO ASTM A992 (Fy=50 ksi), MISCELLANEOUS STEEL SHALL CONFORM TO ASTM A36 UNLESS OTHERWISE INDICATED.
5. STEEL PIPE SHALL CONFORM TO ASTM A500 "COLD-FORMED WELDED & SEAMLESS CARBON STEEL STRUCTURAL TUBING", GRADE B, OR ASTM A53 PIPE STEEL BLACK AND HOT-DIPPED ZINC-COATED WELDED AND SEAMLESS TYPE E OR S, GRADE B. PIPE SIZES INDICATED ARE NOMINAL. ACTUAL OUTSIDE DIAMETER IS LARGER.
6. STRUCTURAL CONNECTION BOLTS SHALL BE HIGH STRENGTH BOLTS (BEARING TYPE) AND CONFORM TO ASTM A325 TYPE-X "HIGH STRENGTH BOLTS FOR STRUCTURAL JOINTS, INCLUDING SUITABLE NUTS AND PLAIN HARDENED WASHERS". ALL BOLTS SHALL BE 3/4" DIA UON.
7. ALL STEEL MATERIALS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS", UNLESS OTHERWISE NOTED.
8. ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC-COATING (HOT-DIP) ON IRON AND STEEL HARDWARE", UNLESS OTHERWISE NOTED.
9. FIELD WELDS, DRILL HOLES, SAW CUTS AND ALL DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED WITH AN ORGANIC ZINC REPAIR PAINT COMPLYING WITH REQUIREMENTS OF ASTM A780. GALVANIZING REPAIR PAINT SHALL HAVE 65 PERCENT ZINC BY WEIGHT, ZIRP BY DUNCAN GALVANIZING, GALVA BRIGHT PREMIUM BY CROWN OR EQUAL. THICKNESS OF APPLIED GALVANIZING REPAIR PAINT SHALL BE NOT NOT LESS THAN 4 COATS (ALLOW TIME TO DRY BETWEEN COATS) WITH A RESULTING COATING THICKNESS REQUIRED BY ASTM A123 OR A153 AS APPLICABLE.
10. CONTRACTOR SHALL COMPLY WITH AWS CODE FOR PROCEDURES, APPEARANCE AND QUALITY OF WELDS, AND FOR METHODS USED IN CORRECTING WELDING. ALL WELDERS AND WELDING PROCESSES SHALL BE QUALIFIED IN ACCORDANCE WITH AWS "STANDARD QUALIFICATION PROCEDURES". ALL WELDING SHALL BE DONE USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND DI.I. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "STEEL CONSTRUCTION MANUAL". 14TH EDITION.
11. INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NON-CONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE CONSTRUCTION MANAGER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE CONSTRUCTION MANAGER APPROVAL.
12. UNISTRUT SHALL BE FORMED STEEL CHANNEL STRUT FRAMING AS MANUFACTURED BY UNISTRUT CORP., WAYNE, MI OR EQUAL. STRUT MEMBERS SHALL BE 1 5/8"x1 5/8"x12GA, UNLESS OTHERWISE NOTED, AND SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION.
13. EPOXY ANCHOR ASSEMBLY SHALL CONSIST OF STAINLESS STEEL ANCHOR ROD WITH NUTS & WASHERS. AN INTERNALLY THREADED INSERT, A SCREEN TUBE AND A EPOXY ADHESIVE. THE ANCHORING SYSTEM SHALL BE THE HILTI-HIT HY-270 AND OR HY-200 SYSTEMS (AS SPECIFIED IN DWG.) OR ENGINEERS APPROVED EQUAL.
14. EXPANSION BOLTS SHALL CONFORM TO FEDERAL SPECIFICATION FF-S-325, GROUP II, TYPE 4, CLASS I, HILTI KWIK BOLT III OR APPROVED EQUAL. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
15. LUMBER SHALL COMPLY WITH THE REQUIREMENTS OF THE AMERICAN INSTITUTE OF TIMBER CONSTRUCTION AND THE NATIONAL FOREST PRODUCTS ASSOCIATION'S NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION. ALL LUMBER SHALL BE PRESSURE TREATED AND SHALL BE STRUCTURAL GRADE NO. 2 OR BETTER.
16. WHERE ROOF PENETRATIONS ARE REQUIRED, THE CONTRACTOR SHALL CONTACT AND COORDINATE RELATED WORK WITH THE BUILDING OWNER AND THE EXISTING ROOF INSTALLER. WORK SHALL BE PERFORMED IN SUCH A MANNER AS TO NOT VOID THE EXISTING ROOF WARRANTY. ROOF SHALL BE WATERTIGHT.
17. ALL FIBERGLASS MEMBERS USED ARE AS MANUFACTURED BY STRONGWELL COMPANY OF BRISTOL, VA 24203. ALL DESIGN CRITERIA FOR THESE MEMBERS IS BASED ON INFORMATION PROVIDED IN THE DESIGN MANUAL. ALL REQUIREMENTS PUBLISHED IN SAID MANUAL MUST BE STRICTLY ADHERED TO.
18. NO MATERIALS TO BE ORDERED AND NO WORK TO BE COMPLETED UNTIL SHOP DRAWINGS HAVE BEEN REVIEWED AND APPROVED IN WRITING.
19. SUBCONTRACTOR SHALL FIREPROOF ALL STEEL TO PRE-EXISTING CONDITIONS.

SPECIAL INSPECTIONS (REFERENCE IBC CHAPTER 17):

GENERAL: WHERE APPLICATION IS MADE FOR CONSTRUCTION, THE OWNER OR THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE ACTING AS THE OWNER'S AGENT SHALL EMPLOY ONE OR MORE APPROVED AGENCIES TO PERFORM INSPECTIONS DURING CONSTRUCTION ON THE TYPES OF WORK LISTED IN THE INSPECTION CHECKLIST ABOVE.

THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE AND ENGINEERS OF RECORD INVOLVED IN THE DESIGN OF THE PROJECT ARE PERMITTED TO ACT AS THE APPROVED AGENCY AND THEIR PERSONNEL ARE PERMITTED TO ACT AS THE SPECIAL INSPECTOR FOR THE WORK DESIGNED BY THEM, PROVIDED THOSE PERSONNEL MEET THE QUALIFICATION REQUIREMENTS.

STATEMENT OF SPECIAL INSPECTIONS: THE APPLICANT SHALL SUBMIT A STATEMENT OF SPECIAL INSPECTIONS PREPARED BY THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE IN ACCORDANCE WITH SECTION 107.1 AS A CONDITION FOR ISSUANCE. THIS STATEMENT SHALL BE IN ACCORDANCE WITH SECTION 1705.

REPORT REQUIREMENT: SPECIAL INSPECTORS SHALL KEEP RECORDS OF INSPECTIONS. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. REPORTS SHALL INDICATE THAT WORK INSPECTED WAS OR WAS NOT COMPLETED IN CONFORMANCE TO APPROVED CONSTRUCTION DOCUMENTS. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF THEY ARE NOT CORRECTED, THE DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. A FINAL REPORT DOCUMENTING REQUIRED SPECIAL INSPECTIONS SHALL BE SUBMITTED.

NOTES:

1. REQUIRED FOR ANY NEW SHOP FABRICATED FRP OR STEEL.
2. PROVIDED BY MANUFACTURER, REQUIRED IF HIGH STRENGTH BOLTS OR STEEL.
3. PROVIDED BY GENERAL CONTRACTOR; PROOF OF MATERIALS.
4. HIGH WIND ZONE INSPECTION CATB 120MPH OR CAT C,D 110MPH INSPECT FRAMING OF WALLS, ANCHORING, FASTENING SCHEDULE.
5. ADHESIVE FOR REBAR AND ANCHORS SHALL HAVE BEEN TESTED IN ACCORDANCE WITH ACI 355.4 AND ICC-ES AC308 FOR CRACKED CONCRETE AND SEISMIC APPLICATIONS. DESIGN ADHESIVE BOND STRENGTH HAS BEEN BASED ON ACI 355.4 TEMPERATURE CATEGORY B WITH INSTALLATIONS INTO DRY HOLES DRILLED USING A CARBIDE BIT INTO CRACKED CONCRETE THAT HAS CURED FOR AT LEAST 21 DAYS. ADHESIVE ANCHORS REQUIRING CERTIFIED INSTALLATIONS SHALL BE INSTALLED BY A CERTIFIED ADHESIVE ANCHOR INSTALLER PER ACI 318-11 D.9.2.2. INSTALLATIONS REQUIRING CERTIFIED INSTALLERS SHALL BE INSPECTED PER ACI 318-11 D.8.2.4.
6. AS REQUIRED; FOR ANY FIELD CHANGES TO THE ITEMS IN THIS TABLE.

SPECIAL INSPECTION CHECKLIST

BEFORE CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	ENGINEER OF RECORD APPROVED SHOP DRAWINGS [1]
REQUIRED	MATERIAL SPECIFICATIONS REPORT [2]
N/A	FABRICATOR NDE INSPECTION
REQUIRED	PACKING SLIPS [3]
ADDITIONAL TESTING AND INSPECTIONS:	
DURING CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	STEEL INSPECTIONS
N/A	HIGH STRENGTH BOLT INSPECTIONS
N/A	HIGH WIND ZONE INSPECTIONS [4]
N/A	FOUNDATION INSPECTIONS
N/A	CONCRETE COMP. STRENGTH, SLUMP TESTS AND PLACEMENT
N/A	POST INSTALLED ANCHOR VERIFICATION [5]
N/A	GROUT VERIFICATION
N/A	CERTIFIED WELD INSPECTION
N/A	EARTHWORK: LIFT AND DENSITY
N/A	ON SITE COLD GALVANIZING VERIFICATION
N/A	GUY WIRE TENSION REPORT
ADDITIONAL TESTING AND INSPECTIONS:	
AFTER CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	MODIFICATION INSPECTOR REDLINE OR RECORD DRAWINGS [6]
N/A	POST INSTALLED ANCHOR PULL-OUT TESTING
REQUIRED	PHOTOGRAPHS
ADDITIONAL TESTING AND INSPECTIONS:	

HUDSON Design Group LLC
45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

CENTERLINE COMMUNICATIONS
750 WEST CENTER STREET, SUITE #301
WEST BRIDGEWATER, MA 02379

SITE NUMBER: CT5289
SITE NAME:
AVON SOUTH WEST
10 REDWOOD LANE
AVON, CT 06001
HARTFORD COUNTY

at&t
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

NO.	DATE	REVISIONS	BY	CHK	APP'D
0	10/04/19	ISSUED FOR ZONING	MR	AT	DPH
A	03/18/19	ISSUED FOR REVIEW	MR	AT	DPH

SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: MR

STATE OF CONNECTICUT · DANIEL P. HAMM · No. 24178 · LICENSED PROFESSIONAL ENGINEER

AT&T

STRUCTURAL NOTES
(LTE 2C/3C/4C/4TX4RX)

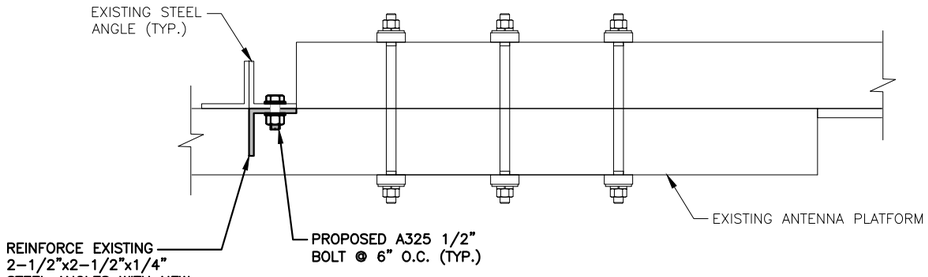
SITE NUMBER	DRAWING NUMBER	REV
CT5289	SN-1	0

NOTE:

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

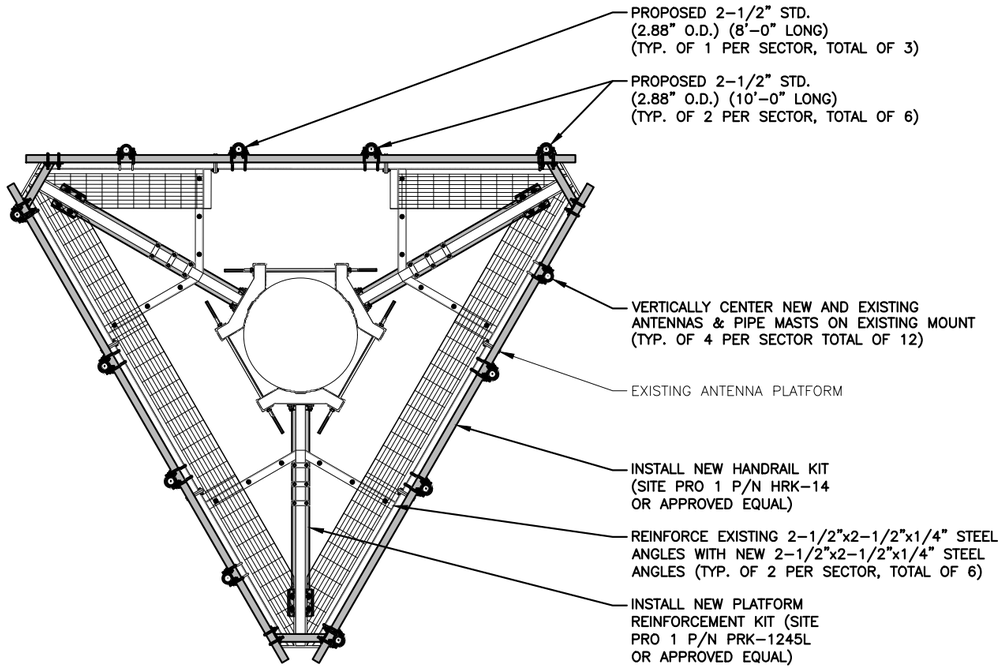
NOTE:

AN ANALYSIS FOR THE CAPACITY OF THE EXISTING **ANTENNA MOUNT** TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY:
HUDSON DESIGN GROUP, LLC.
DATED: APRIL 03, 2019



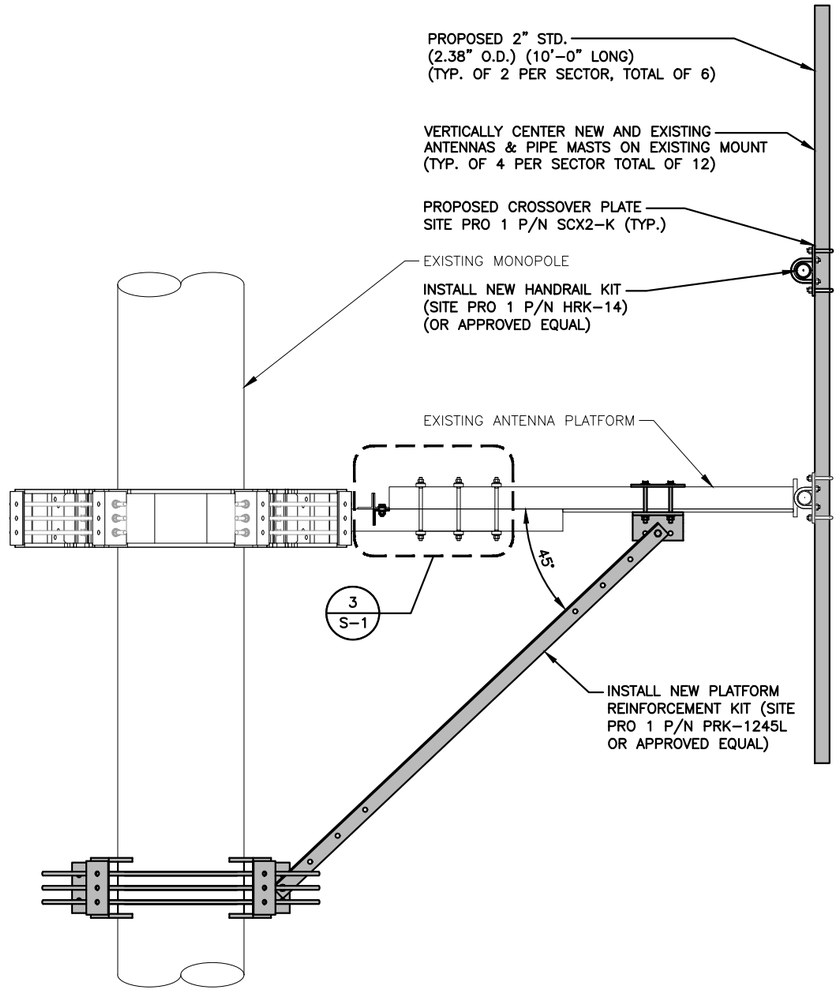
DETAIL 3 / S–1
22x34 SCALE: 3"=1'–0"
11x17 SCALE: 1–1/2"=1'–0"

0 0'–2" 0'–4" 0'–8" 1'–0"



PROPOSED REINFORCEMENT PLAN 1 / S–1
22x34 SCALE: 1/2"=1'–0"
11x17 SCALE: 1/4"=1'–0"

0 1'–0" 2'–0" 4'–0" 6'–0"



PROPOSED REINFORCEMENT ELEVATION 2 / S–1
22x34 SCALE: 1"=1'–0"
11x17 SCALE: 1/2"=1'–0"

0 0'–6" 1'–0" 2'–0" 3'–0"

HUDSON Design Group LLC
45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

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750 WEST CENTER STREET, SUITE #301
WEST BRIDGEWATER, MA 02379

SITE NUMBER: CT5289
SITE NAME:
AVON SOUTH WEST
10 REDWOOD LANE
AVON, CT 06001
HARTFORD COUNTY

at&t
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

NO.	DATE	REVISIONS	BY	CHK	APP'D
0	10/04/19	ISSUED FOR ZONING	MR	AT	DPH
A	03/18/19	ISSUED FOR REVIEW	MR	AT	DPH

SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: MR

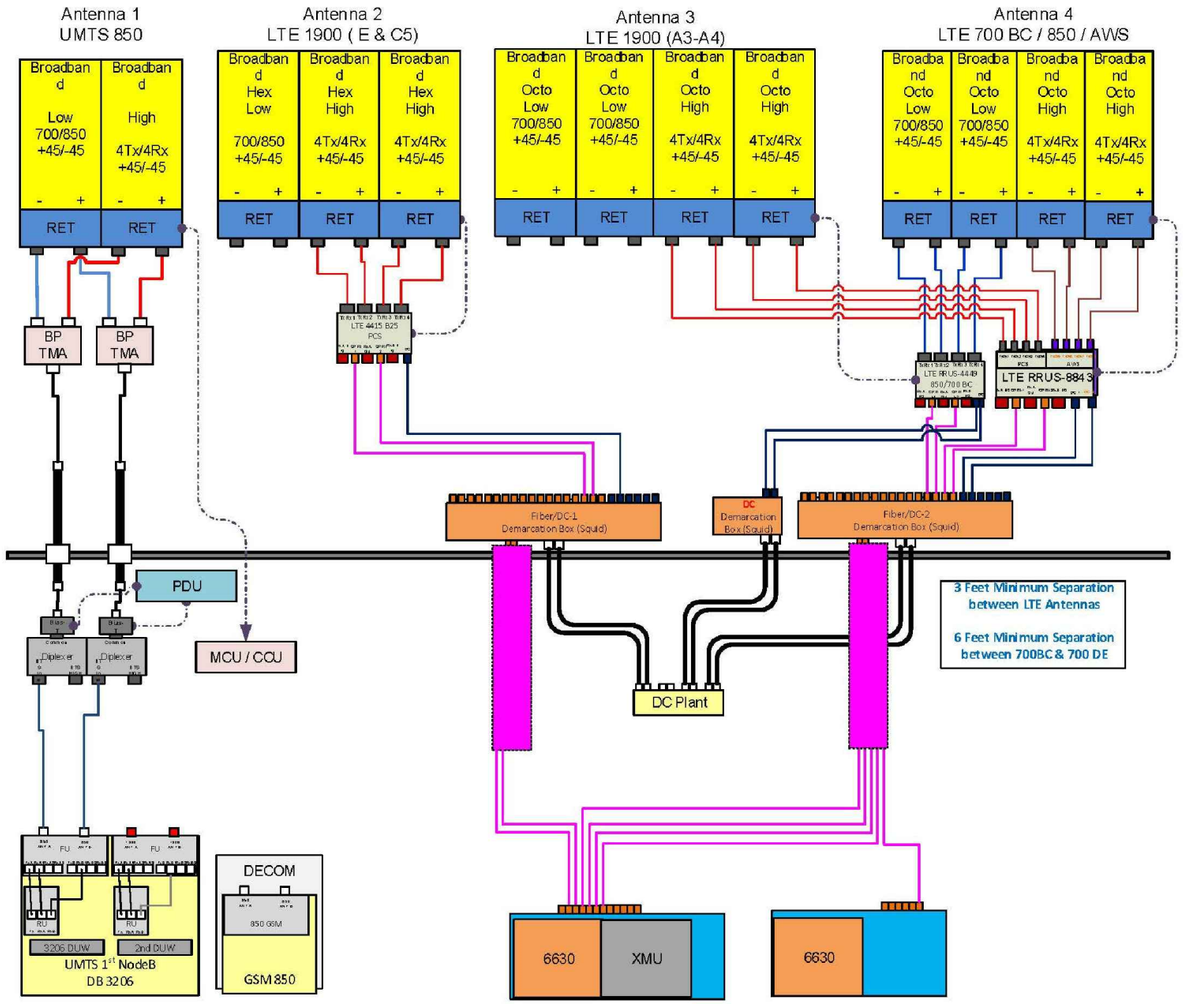
STATE OF CONNECTICUT · DANIEL P. HAMM · No. 24178 · LICENSED PROFESSIONAL ENGINEER

Daniel P. Hamm

AT&T

STRUCTURAL DETAILS
(LTE 2C/3C/4C/4TX4RX)

SITE NUMBER	DRAWING NUMBER	REV
CT5289	S–1	0



RF PLUMBING DIAGRAM (1 / RF–1)
SCALE: N.T.S

NOTE:
1. CONTRACTOR TO CONFIRM ALL PARTS.
2. INSTALL ALL EQUIPMENT TO MANUFACTURER'S RECOMMENDATIONS

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

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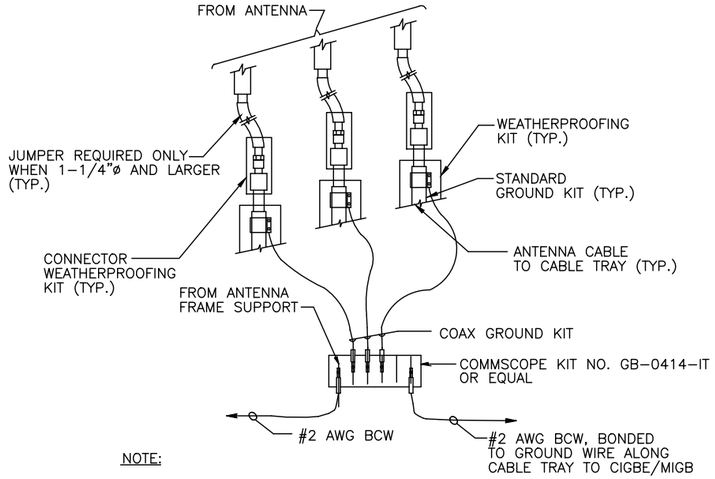
LICENSED PROFESSIONAL ENGINEER
STATE OF CONNECTICUT

AT&T

RF PLUMBING DIAGRAM
(LTE 2C/3C/4C/4TX4RX)

SITE NUMBER	DRAWING NUMBER	REV
CT5289	RF–1	0

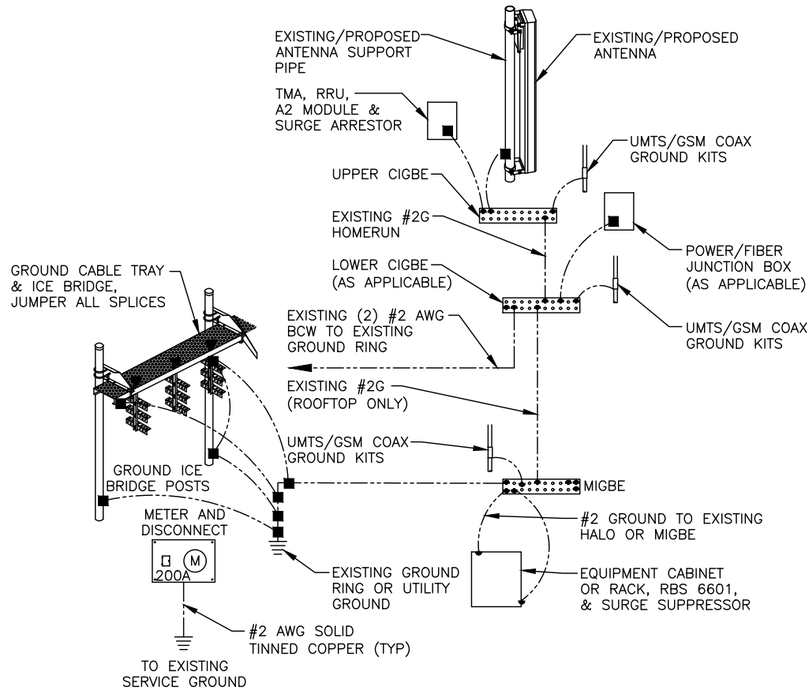


NOTE:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO CIGBE.

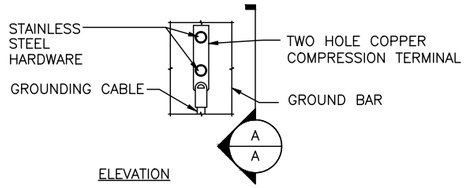
GROUND WIRE TO GROUND BAR CONNECTION DETAIL (1 / G-1)

SCALE: N.T.S



GROUNDING RISER DIAGRAM (2 / G-1)

SCALE: N.T.S



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

TYPICAL GROUND BAR CONNECTION DETAIL (3 / G-1)

SCALE: N.T.S

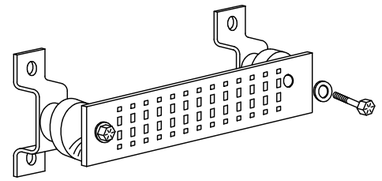
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

SECTION "P" – SURGE PRODUCERS

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

SECTION "A" – SURGE ABSORBERS

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



GROUND BAR - DETAIL (4 / G-1)

SCALE: N.T.S

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45 BEECHWOOD DRIVE
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SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: MR

STATE OF CONNECTICUT · DANIEL P. HAMM · No. 24178 · LICENSED PROFESSIONAL ENGINEER

Daniel P. Hamm

AT&T

GROUNDING DETAILS
(LTE 2C/3C/4C/4TX4RX)

SITE NUMBER	DRAWING NUMBER	REV
CT5289	G-1	0

SITE ID #4275-009

SITE NAME: AVON

CTO 1498-S

JOB COST #001498

ZONING/PERMITTING COMPLETION FORM

Zoning Classification for Site: R-30

Special Relief (setback, height variance, special use permit, wetlands permit etc.):

Special Permit Approval

* Date of Zoning Decision: 07/25/00

Summary of zoning conditions **(Include details of any conditions relative to time restrictions, expiration dates, renewal obligations, monetary obligations, performance obligation, inspection fees).**

See attached.

Submitted by: Esther McNany

Title: Territory Manager

Territory Manager Approval:

* Attach a copy of the Zoning decision and forward to the Regional Compliance Manager as soon as possible, after the decision.

Site Name: AVON

Site #: 4275-009/001498

TOWN OF AVON

60 West Main St. Avon, CT 06001-3743

POLICE, FIRE & MEDICAL EMERGENCY - 911

TOWN MANAGER'S OFFICE
Tel. (860) 409-4300
Fax (860) 409-4368

ACCOUNTING
Tel. (860) 409-4339
Fax (860) 409-4366

ASSESSOR'S OFFICE
Tel. (860) 409-4335
Fax (860) 409-4366

BUILDING DEPARTMENT
Tel. (860) 409-4316
Fax (860) 409-4364

COLLECTOR OF REVENUE
Tel. (860) 409-4306
Fax (860) 677-8428

ENGINEERING DEPARTMENT
Tel. (860) 409-4322
Fax (860) 409-4364

FINANCE DEPARTMENT
Tel. (860) 409-4339
Fax (860) 409-4366

FIRE MARSHAL
Tel. (860) 409-4319
Fax (860) 409-4364

LANDFILL
281 Huckleberry Hill Rd.
Tel. (860) 673-3677

PLANNING & ZONING
Tel. (860) 409-4328
Fax (860) 409-4364

POLICE DEPARTMENT
Tel. (860) 409-4200
Fax (860) 409-4206

PROBATE
Tel. (860) 409-4348
Fax (860) 409-4368

PUBLIC LIBRARY
281 Country Club Road
Tel. (860) 673-9712
Fax (860) 675-6364

PUBLIC WORKS
11 Arch Road
Tel. (860) 673-6151
Fax (860) 673-0338

RECREATION AND PARKS
Tel. (860) 409-4332
Fax (860) 409-4366
Cancellation (860) 409-4365

REGISTRAR OF VOTERS
Tel. (860) 409-4350
Fax (860) 409-4368

SOCIAL SERVICES
Tel. (860) 409-4346
Fax (860) 409-4366

TOWN CLERK
Tel. (860) 409-4310
Fax (860) 677-8428

TDD HEARING IMPAIRED
Tel. (860) 409-4361

July 27, 2000

Mr. Thomas F. Flynn III
SBA Inc.
80 Eastern Boulevard
Glastonbury, CT 06033

Dear Mr. Flynn:

At a meeting held on Tuesday, July 25, 2000, the Planning and Zoning Commission of the Town of Avon voted as follows:

App. #3624 - The Avon Water Company, owner, SBA Inc., applicant, request for Special Exception under Section IV.A.4.a. of Avon Zoning Regulations to remove existing 80-foot tower and replace with a 110-foot wireless telecommunications facility, 10 Redwood Lane in Farmington Woods, Assessor's Map 17, Parcel 7, in a R-30 Zone. APPROVED WITH CONDITIONS.

App. #3626 - The Avon Water Company, owner, SBA Inc., applicant, request for Site Plan Approval to remove existing tower and replace with 110-foot wireless telecommunications facility, 10 Redwood Lane in Farmington Woods, Assessor's Map 17, Parcel 7, in a R-30 Zone. APPROVED WITH CONDITIONS.

The Commission approved App. #3624 subject to the following conditions:

1. The color of the tower shall be matte gray.

2. The applicant shall post a bond in the amount of $50,000 to provide for removal of the tower if the tower is inactive for a period of one year or if the Town Engineer determines that it is a hazard.

3. Approval is for 5 antenna clusters on the tower and ancillary cabinets and sheds. Any modest changes in antenna appearance or structure or in structures on the ground may be approved by the Town Planner. If the Town Planner so chooses, such changes may be brought to the Commission for approval.

The Commission approved App. #3626 subject to the following condition:

1. Approval is for 5 antenna clusters on the tower and ancillary cabinets and sheds. Any modest changes in antenna appearance or structure or in structures on the ground may be approved by the Town Planner. If the Town Planner so chooses, such changes may be brought to the Commission for approval.

In addition, please note that the Commission has adopted a standard condition of approval relating to inspections of the property as may be necessary, which is as follows: Until the final permanent certificate of occupancy is issued, Town staff members, officials, and consultants as designated by the Town Planner or the Chairman shall be authorized and permitted to conduct inspections upon the property.

Please note that prior to your Special Exception becoming effective, a certified copy must be filed with the Town Clerk. The fee is $13 per page. Please return the enclosed Grant of Special Exception to this office for the Chairman's signature along with the recording fee (check should be payable to Town of Avon). No building permit shall be issued until this certification has been returned and the 15-day appeal period has expired.

Upon compliance with the foregoing conditions, the Chairman of the Planning and Zoning Commission has been authorized to sign the mylar maps for filing. This letter of approval shall be reproduced on the mylars. Please submit 1 set of fixed-line photo mylars and 4 copies. Please include a signature block for the Chairman's signature (sample enclosed).

Please note that this approval is valid for one year from the date of approval unless construction is in progress or unless an extension of time has been granted by the Commission. It is the applicant's responsibility to apply for renewal.

Sincerely yours,

Jean Frey

Jean Frey, Clerk
Planning and Zoning Commission

Enclosures

CERTIFIED MAIL 7099 3400 0010 2712 1020

cc: Building Official
Town Engineer
Assessor
The Avon Water Company

Signature Block For Site Plan Approval:

APPROVED BY THE PLANNING AND ZONING COMMISSION
OF THE TOWN OF AVON AT ITS MEETING ON _____
AND SIGNED BY CHAIRMAN

_____

ACCORDING TO CGS SEC. 8-3i, ALL WORK IN CONNECTION
WITH THE ABOVE SITE PLAN SHALL BE COMPLETED WITHIN
FIVE (5) YEARS _____

Signature block to go on each sheet.

Application # 3624

TOWN OF AVON, CONNECTICUT

GRANT OF VARIANCE AND SPECIAL EXCEPTION

On the application of SBA Inc.,

the Planning and Zoning Commission of the Town of Avon, Connecticut, did grant a

____ Variance

X Special Exception

effective on the 25th day of July, 20 00, in relation to the following property:

Street Address: 10 Redwood Lane

Description of Premises:

Assessor's Aerial Map No. 17

Lot No. 7

Owner of Record: The Avon Water Company

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Avon Land Records

This grant is made in accordance with the provisions of Section IV.A.4.a. of the regulations of the Commission. The applicant was granted the right to:

remove existing 80-foot tower and replace with a 110-foot wireless telecommunications facility subject to conditions.

Certified this _____ day of _____, 20____.

By _____

Chairman, Planning and Zoning Commission

UPS CampusShip: View/Print Label

1. **Ensure there are no other shipping or tracking labels attached to your package.** Select the Print button on the print dialog box that appears. Note: If your browser does not support this function select Print from the File menu to print the label.

2. **Fold the printed label at the solid line below.** Place the label in a UPS Shipping Pouch. If you do not have a pouch, affix the folded label using clear plastic shipping tape over the entire label.

3. **GETTING YOUR SHIPMENT TO UPS**
   Customers with a Daily Pickup
   Your driver will pickup your shipment(s) as usual.

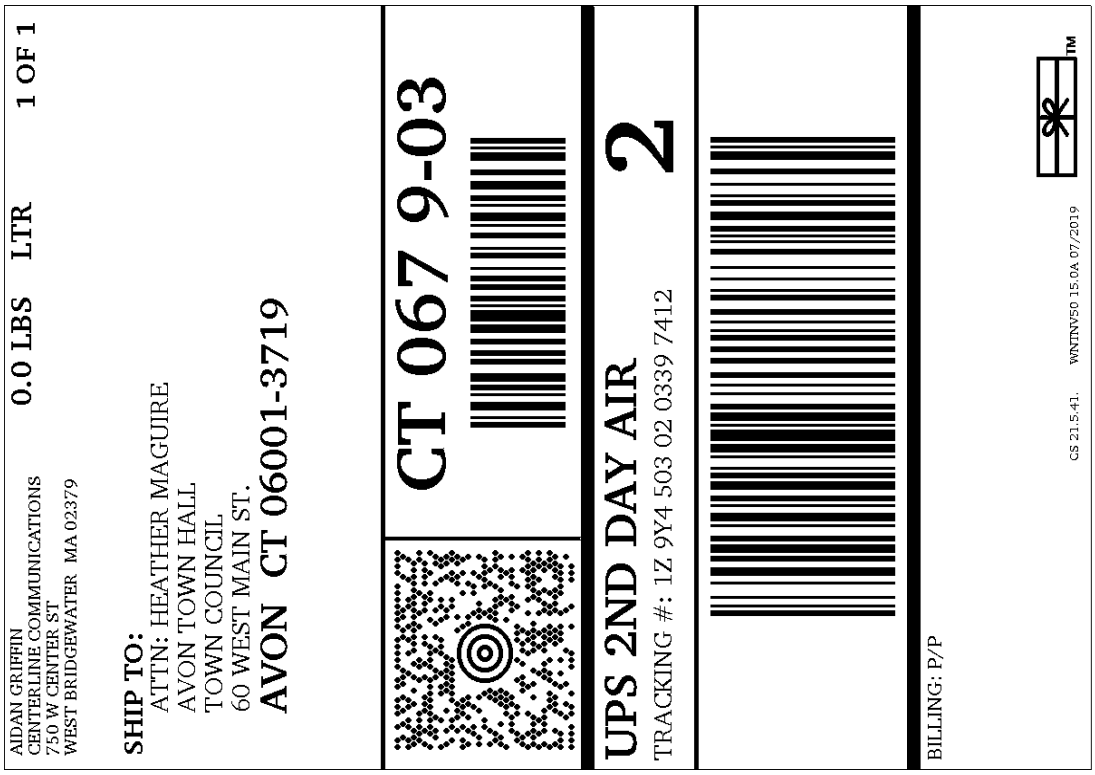
   Customers without a Daily Pickup
   Take your package to any location of The UPS Store®, UPS Access Point(TM) location, UPS Drop Box, UPS Customer Center, Staples® or Authorized Shipping Outlet near you. Items sent via UPS Return Services(SM) (including via Ground) are also accepted at Drop Boxes. To find the location nearest you, please visit the Resources area of CampusShip and select UPS Locations.
   Schedule a same day or future day Pickup to have a UPS driver pickup all your CampusShip packages.
   Hand the package to any UPS driver in your area.

UPS Access Point™
TOWN LINE GENERAL STORE
450 E CENTER ST
WEST BRIDGEWATER ,MA 02379

UPS Access Point™
M&M SEAFOOD
1124 MAIN ST
BROCKTON ,MA 02301

UPS Access Point™
BOOST MOBILE 649
649 WARREN AVE
BROCKTON ,MA 02301

FOLD HERE



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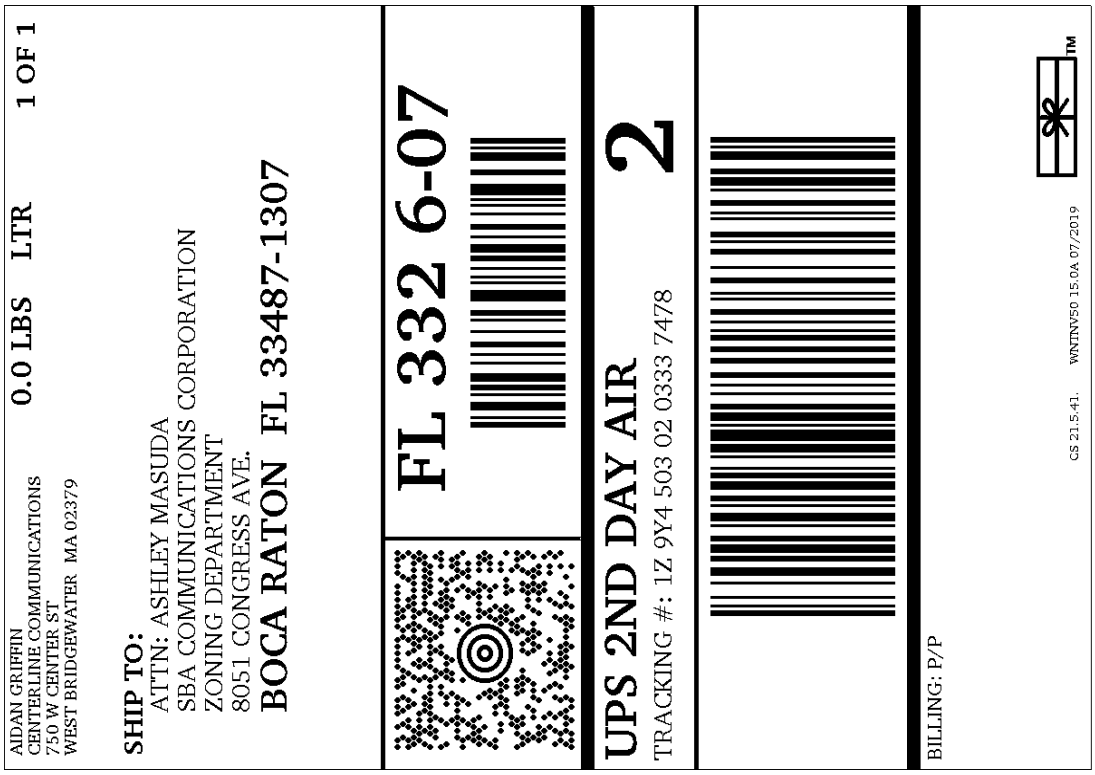

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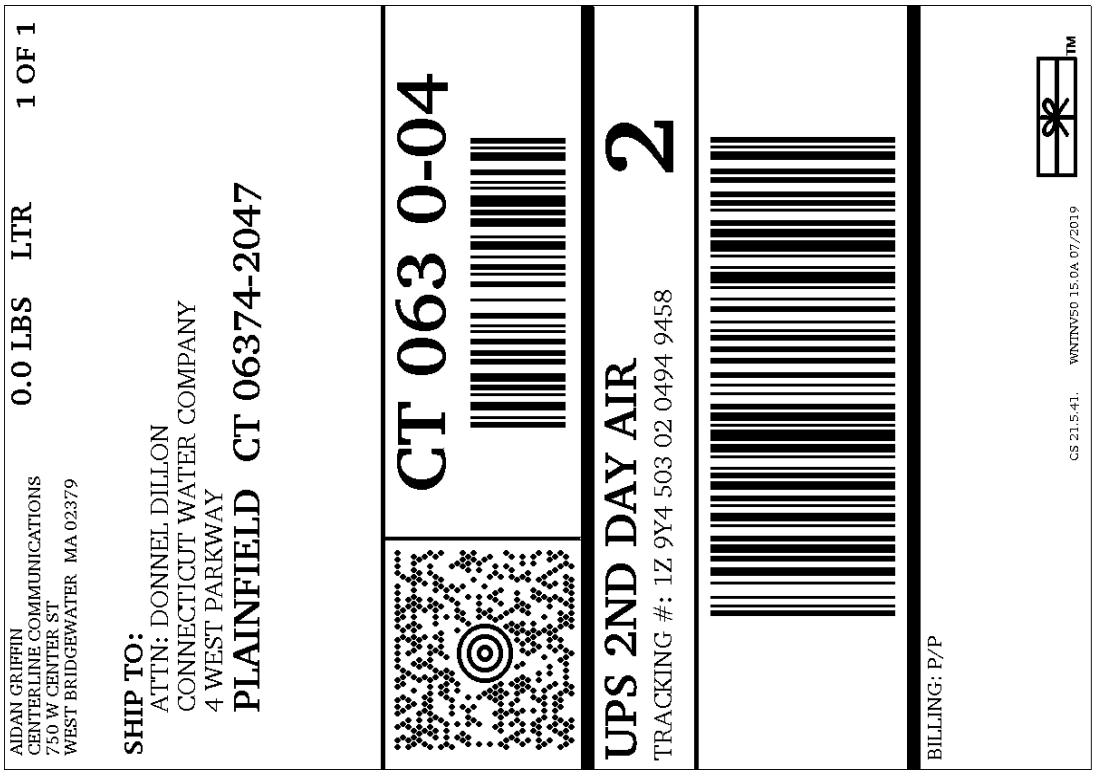

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