Alex Murshteyn, Site Acquisition Consultant
c/o Cellco Partnership d/b/a Verizon Wireless
Centerline Communications, LLC
750 West Center Street, Floor 3
West Bridgewater, MA 02379
Mobile: (508) 821-0159
AMurshteyn@centerlinecommunications.com

November 6, 2018

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

RE: Notice of Exempt Modification // Site: West Farms CT (ATC: 370627)
605 Willard Avenue, Newington, CT 06111
N 41.69837 // W 72.7371

Dear Ms. Bachman:

Cellco Partnership d/b/a Verizon Wireless currently maintains 12 antennas at the 110-foot mount on the existing 179-foot monopole tower, located at 605 Willard Avenue, Newington, CT. The tower is owned by American Tower. The property is owned by the Town of Newington. Verizon Wireless facility was approved for tower sharing in 2002. Verizon Wireless now intends install upgraded mounts and mount reinforcement kit with 3 relocated and 3 LTE antenna (700/850/1900/2100 MHz) replacements for its PCS/AWS/LTE upgrade. Additionally, Verizon Wireless will replace 9 remote radio head units (RRUs) with 6 new RRUs, add 1 over-voltage protector (OVP) and remove certain cabling; altogether updating leased equipment rights, as reflected by the final configuration outlined in the structural analysis and proposed hereby.

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 Roy Zartarian, Mayor for the Town of Newington, its Town Planner Craig Minor, including for the Town Plan & Zoning Commission department and American Tower, the tower owner.

The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S.A. § 16-50j-72(b)(2). Enclosed to accommodate this filing are construction drawings dated November 1, 2018 and a structural analysis dated August 2, 2018 by A.T. Engineering Service, PLLC, a structural mount analysis by Trylon Engineering Services dated October 11, 2018 and radio frequency (RF) analysis table showing worst-case RF emission calculation by Verizon Wireless RF Design Engineering.

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 new 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, with mount reinforcement, as shown in the attached structural analyses by A.T. Engineering Service, PLLC, dated August 2, 2018 and Trylon Engineering Services, dated October 11, 2018.

For the foregoing reasons, Verizon Wireless 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,

Alex Mirshteyn, Site Acquisition Consultant
c/o Cellco Partnership d/b/a Verizon Wireless
Centerline Communications, LLC
750 West Center Street, Floor 3
West Bridgewater, MA 02379
Mobile: (508) 821-0159
AMurshteyn@centerlinecommunications.com

Attachments

cc: Roy Zartarian, Mayor - as chief elected official
Craig Minor, Town Planner - as P&Z official
American Tower Corporation - as tower owner
Town of Newington - as property owner/see CEO above

ALEX MURSHTEYN
508-821-0159
CENTERLINE COMMUNICATIONS, LLC
750 WEST CENTER STREET
WEST BRIDGEWATER MA 023791518

1 LBS

1 OF 1

DWT: 14,10,1

SHIP TO:
ROY ZARTARIAN, MAYOR
25 STUART STREET
NEWINGTON CT 06111-3742

CT 061 9-02

UPS GROUND
TRACKING #: 1Z 9Y4 503 03 3016 5771

BILLING: P/P

Reference#1: 370627 aka West Farms CT
Reference#2: CSC EM - CEO & PO

UIS 20 6.13 WNTNV50 06.0A 10/2018

CECILIA AKINS
5088449030
CENTERLINE COMMUNICATIONS
750 WEST CENTER STREET
WEST BRIDGEWATER MA 02379

1 LBS

1 OF 1

DWT: 14,10,1

SHIP TO:
TOWN PLANNER
CRAIG MINOR
C/O TOWN PLAN & ZONING COMMISSION
131 CEDAR STREET
NEWINGTON CT 06111-2657

CT 061 9-02

UPS GROUND
TRACKING #: 1Z 9Y4 503 03 2568 6389

BILLING: P/P

Reference#1: 370627 aka West Farms CT
Reference#2: CSC BM - P&Z

UIS 20.6.13. WNTNV50 06.0A 10/2018

ALEX MURSHTEYN
508-821-0159
CENTERLINE COMMUNICATIONS, LLC
750 WEST CENTER STREET
WEST BRIDGEWATER MA 023791518

1 LBS

1 OF 1

DWT: 14,10,1

SHIP TO:
BLAKE E. PAYNTER
AMERICAN TOWER CORPORATION
NETWORK DEVELOPMENT - NORTHEAST
10 PRESIDENTIAL WAY
WOBURN MA 01801-1053

MA 018 9-04

UPS GROUND
TRACKING #: 1Z 9Y4 503 03 3799 9993

BILLING: P/P

Reference#1: 370627 aka West Parms CT
Reference#2: CSC EM - TO

UIS 20.6.13. WNTNV50 06.0A 10/2018

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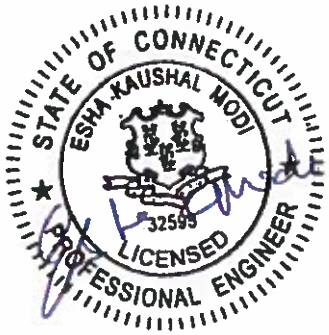
Structural Analysis Report

Structure	:	**179 ft Monopole**
ATC Site Name	:	**Newington CT, CT**
ATC Site Number	:	**370627**
Engineering Number	:	**12600288**
Proposed Carrier	:	**Verizon**
Carrier Site Name	:	**West Farms Ct**
Carrier Site Number	:	**PSLC# 469196 - PROJ# 15246401**
Site Location	:	**605 Willard Ave.** **Newington, CT 06111-0000** **41.698400,-72.737100**
County	:	**Hartford**
Date	:	**August 2, 2018**
Max Usage	:	**64%**
Result	:	**Pass**

Prepared By:
Timothy Kassakatis
Structural Engineer I

Reviewed By:



Authorized by "EOR"
Aug 2 2018 4:37 PM cosign

COA: PEC.0001553

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Table of Contents

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Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 179 ft monopole to reflect the change in loading by Verizon.

Supporting Documents

Tower Drawings	PiRod Engineering File #A-118092, dated August 10, 2001
Foundation Drawing	PiRod Engineering File #A-118092, dated August 10, 2001
Geotechnical Report	Clarence Welti, dated August 1, 2001

Analysis

The tower was analyzed using American Tower Corporation's tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/TIA-222.

Basic Wind Speed:	97 mph (3-Second Gust, Vasd) / 125 mph (3-Second Gust, Vult)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 1" radial ice concurrent
Code:	ANSI/TIA-222-G / 2012 IBC / 2016 Connecticut State Building Code
Structure Class:	II
Exposure Category:	B
Topographic Category:	1
Crest Height:	0 ft
Spectral Response:	Ss = 0.18, S_1 = 0.06
Site Class:	D - Stiff Soil

Conclusion

Based on the analysis results, the structure meets the requirements per the applicable codes listed above. The tower and foundation can support the equipment as described in this report.

If you have any questions or require additional information, please contact American Tower via email at Engineering@americantower.com. Please include the American Tower site name, site number, and engineering number in the subject line for any questions.

Existing and Reserved Equipment

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
179.0	188.0	1	18' Dipole	Low Profile Platform	(3) 7/8" Coax	Town Of Newington, CT
	179.0	1	5' Dipole			
		1	10' Omni			
		1	8' Yagi			
170.0	170.0	3	Ericsson KRY 112 144/1	Low Profile Platform	(12) 1 5/8" Coax (1) 1 1/4" Hybriflex	Metro PCS
		3	Ericsson RRUS 11 B12			
		3	Ericsson AIR 21, 1.3 M, B2A B4P			
		3	Ericsson AIR 21, 1.3M, B4A B2P			
		3	Andrew LNX-6515DS-VTM			
160.0	160.0	3	RCU	Side Arms	(3) 0.28" Fiber (3) 5/8" Coax (3) 1/2" Coax (1) 0.32" Cable	Clearwire
		3	DragonWave Horizon Compact			
		3	Samsung U-RAS Premium-F FRH			
		3	Argus LLPX310R			
		3	DragonWave A-ANT-18G-2-C			
154.0	154.0	6	Powerwave LGP21401	Low Profile Platform	(6) 1 5/8" Coax (6) 0.78" 8 AWG 6 (2) 0.39" Fiber Trunk (2) 2" Conduit (1) 3" Conduit (1) 3/8" RET Control Cable	AT&T Mobility
		2	Raycap DC6-48-60-18-8F			
		3	Ericsson RRUS 4478 B14			
		3	Ericsson RRUS 11 (Band 12) (55 lb)			
		3	Ericsson RRUS 32			
		3	Ericsson RRUS 12			
		3	Ericsson RRUS 32 B2			
		3	Ericsson RRUS 32 B66			
		1	Raycap DC6-48-60-0-8F			
		3	Kathrein 800 10121			
		1	Quintel QS66512-2			
		3	CCI OPA-65R-LCUU-H8			
		2	CCI TPA-65R-LCUUUU-H8			
140.0	140.0	3	Alcatel-Lucent 800MHz 2X50W RRH w/ Filter	Low Profile Platform	(4) 1 1/4" Hybriflex	Sprint Nextel
		3	Alcatel-Lucent 1900MHz RRH			
		3	Alcatel-Lucent TD-RRH8x20			
		3	RFS APXVTM14-C-I20			
		1	RFS APXV9ERR18-C-A20			
		2	RFS APXVSPP18-C-A20			
110.0	110.0	6	Commscope SBNHH-1D65B	Low Profile Platform	(6) 1 5/8" Coax (1) 1 5/8" Hybriflex	Verizon
		1	RFS DB-T1-6Z-8AB-0Z			

Equipment to be Removed

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
110.0	110.0	3	Antel BXA-70063-6CF-EDIN-X	-	(6) 1 5/8" Coax (1) 1 5/8" Fiber	Verizon
		3	Alcatel-Lucent RRH2x60 700			
		3	Alcatel-Lucent RRH2X60-AWS			
		3	Alcatel-Lucent RRH2X60-1900			

Proposed Equipment

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
110.0	110.0	3	Samsung 700/850MHz Dual Band RRH	Low Profile Platform	(1) 1 5/8" Hybriflex	Verizon
		3	Samsung PCS/AWS Dual Band RRH			
		6	Antel BXA-80063/4CF ___ 5°			
		1	RFS DB-T1-6Z-8AB-0Z			

[1]Mount elevation is defined as height above bottom of steel structure to the bottom of mount, RAD elevation is defined as center of antenna above ground level (AGL).

Install proposed coax inside the pole shaft.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	62%	Pass
Shaft	64%	Pass
Base Plate	45%	Pass

Foundations

Reaction Component	Original Design Reactions	Factored Design Reactions*	Analysis Reactions	% of Design
Moment (Kips-Ft)	4,601.2	6,211.6	3,747.1	60%
Shear (Kips)	37.2	50.2	29.7	59%

*** The design reactions are factored by 1.35 per ANSI/TIA-222-G, Sec. 15.5.1**

The structure base reactions resulting from this analysis are acceptable when compared to those shown on the original structure drawings, therefore no modification or reinforcement of the foundation will be required.

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
160.0	DragonWave A-ANT-18G-2-C	Clearwire	2.056	1.623
110.0	Samsung PCS/AWS Dual Band RRH	Verizon	0.889	1.029
	Samsung 700/850MHz Dual Band RRH			
	Antel BXA-80063/4CF ___ 5°			
	RFS DB-T1-6Z-8AB-0Z			

***Deflection and Sway was evaluated considering a design wind speed of 60 mph (3-Second Gust) per ANSI/TIA-222-G**

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Standard Conditions

All engineering services performed by A.T. Engineering Service, PLLC are prepared on the basis that the information used is current and correct. This information may consist of, but is not limited to the following:

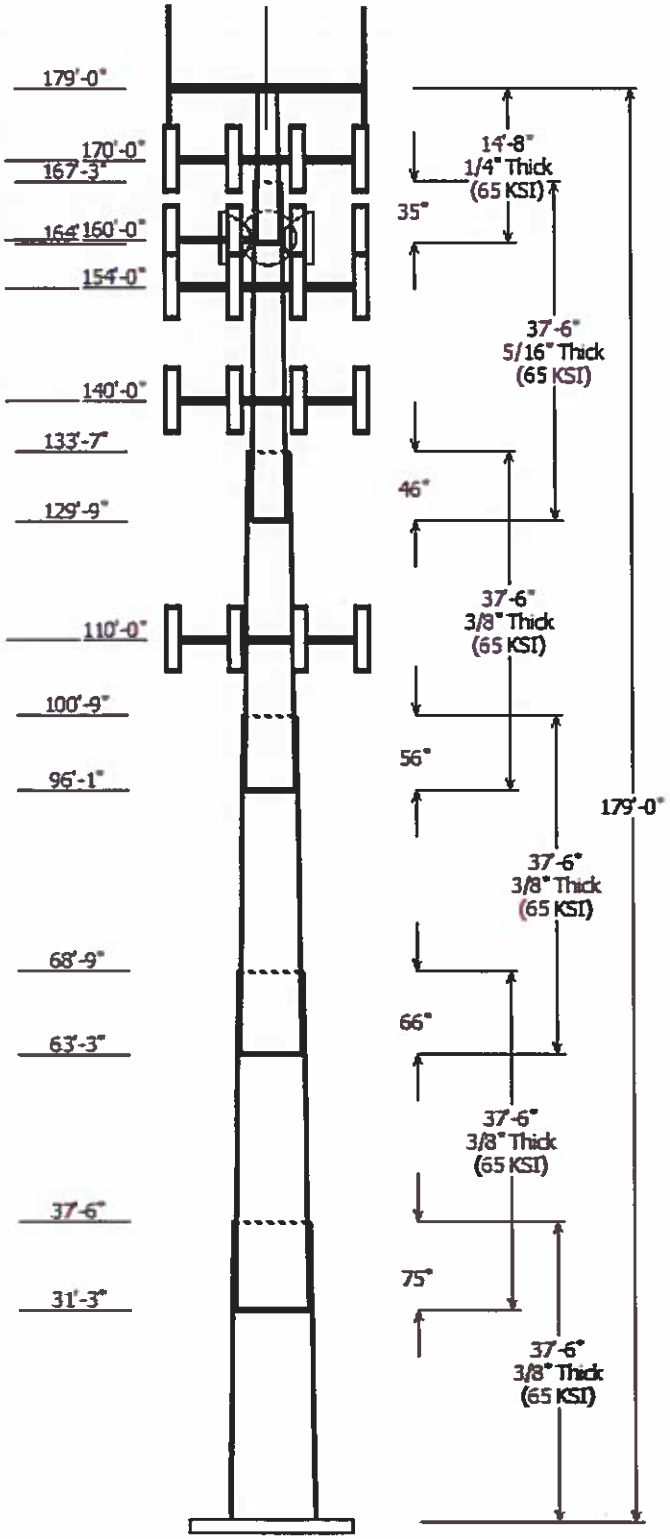
- Information supplied by the client regarding antenna, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Service, PLLC

It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete.

All assets of American Tower Corporation, its affiliates and subsidiaries (collectively "American Tower") are inspected at regular intervals. Based upon these inspections and in the absence of information to the contrary, American Tower assumes that all structures were constructed in accordance with the drawings and specifications.

Unless explicitly agreed by both the client and A.T. Engineering Service, PLLC, all services will be performed in accordance with the current revision of ANSI/TIA-222.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. A.T. Engineering Service, PLLC is not responsible for the conclusions, opinions and recommendations made by others based on the information supplied herein.



Job Information

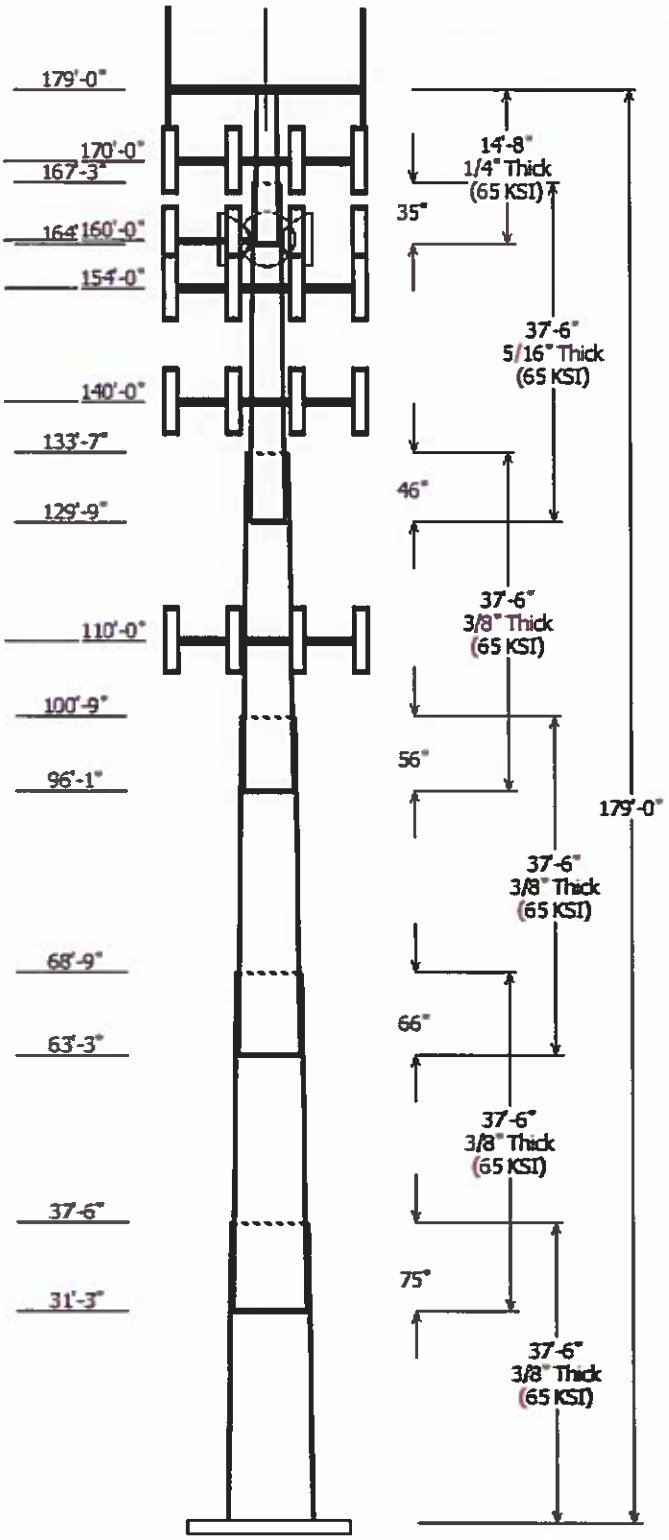
Pole : 370627		Code: ANSI/TIA-222-G	
Location : Newington CT, CT			
Description : 179' Pirod Monopole			
Client : VERIZON WIRELESS		Struct Class : II	
Shape : 18 Sides		Exposure : B	
Height : 179.00 (ft)		Topo : 1	
Base Elev (ft): 0.00			
Taper: 0.30377 (in/ft)			

Sections Properties

Shaft Section	Length (ft)	Diameter (in) Accross Flats Top	Bottom	Thick (in)	Joint Type	Overlap Length (in)	Shape	Steel Grade (ksi)
1	37.500	51.60	63.00	0.375		0.000	18 Sides	65
2	37.500	42.86	54.25	0.375	Slip Joint	75.000	18 Sides	65
3	37.500	33.89	45.28	0.375	Slip Joint	66.000	18 Sides	65
4	37.500	24.67	36.06	0.375	Slip Joint	56.000	18 Sides	65
5	37.500	15.06	26.46	0.313	Slip Joint	46.000	18 Sides	65
6	14.667	12.00	16.45	0.250	Slip Joint	35.000	18 Sides	65

Discrete Appurtenance

Attach Elev (ft)	Force Elev (ft)	Qty	Description
179.000	179.000	1	5' Dipole
179.000	179.000	1	10' Omni
179.000	179.000	1	Round Low Profile Platform
179.000	179.000	1	8' Yagi
179.000	188.000	1	18' Dipole
170.000	170.000	3	Andrew LNX-6515DS-VTM
170.000	170.000	3	Ericsson RRUS 11 B12
170.000	170.000	3	Ericsson AIR 21, 1.3M, B4A B2P
170.000	170.000	3	Ericsson AIR 21, 1.3 M, B2A B4
170.000	170.000	3	Ericsson KRY 112 144/1
170.000	170.000	1	Round Low Profile Platform
160.000	160.000	3	Argus LLPX310R
160.000	160.000	3	Samsung U-RAS Premium-F
160.000	160.000	3	DragonWave A-ANT-18G-2-C
160.000	160.000	3	DragonWave Horizon Compact
160.000	160.000	3	RCU
160.000	160.000	1	Side Arms
154.000	154.000	2	CCI TPA-65R-LCUUUU-H8
154.000	154.000	1	Quintel QS66512-2
154.000	154.000	1	Raycap DC6-48-60-0-8F
154.000	154.000	3	Kathrein Scala 800 10121
154.000	154.000	3	Ericsson RRUS 12
154.000	154.000	3	Ericsson RRUS 32
154.000	154.000	3	Ericsson RRUS 32 B66
154.000	154.000	3	CCI OPA-65R-LCUU-H8
154.000	154.000	3	Ericsson RRUS 4478 B14
154.000	154.000	3	Ericsson RRUS 32 B2
154.000	154.000	3	Ericsson RRUS 11 (Band 12) (55
154.000	154.000	2	Raycap DC6-48-60-18-8F
154.000	154.000	6	Powerwave LGP21401
154.000	154.000	1	Round Low Profile Platform
140.000	140.000	3	RFS APXVTM14-C-I20
140.000	140.000	3	Alcatel-Lucent TD-RRH8x20
140.000	140.000	2	RFS APXVSPP18-C-A20
140.000	140.000	1	RFS APXV9ERR18-C-A20
140.000	140.000	3	Alcatel-Lucent 1900MHz RRH
140.000	140.000	3	Alcatel-Lucent 800 MHz 2X50W
140.000	140.000	1	Round Low Profile Platform
110.000	110.000	6	Commscope SBNHH-1D65B
110.000	110.000	1	Flat Low Profile Platform
110.000	110.000	3	Samsung 700/850MHz Dual



110.000	110.000	2	RFS DB-T1-6Z-8AB-0Z
110.000	110.000	6	Antel BXA-80063/4CF ___ 5°
110.000	110.000	3	Samsung PCS/AWS Dual Band

Linear Appurtenance

Elev (ft) From	To	Description	Exposed To Wind
0.000	110.0	1 5/8" Coax	No
0.000	110.0	1 5/8" Hybriflex	No
0.000	140.0	1 1/4" Hybriflex	No
0.000	154.0	0.39" Fiber Trunk	No
0.000	154.0	0.78" 8 AWG 6	No
0.000	154.0	1 5/8" Coax	No
0.000	154.0	2" Conduit	No
0.000	154.0	3" Conduit	No
0.000	154.0	3/8" RET Control	No
0.000	160.0	0.28" Fiber	No
0.000	160.0	0.32" Cable	No
0.000	160.0	1/2" Coax	No
0.000	160.0	5/8" Coax	No
0.000	170.0	1 1/4" Hybriflex	No
0.000	170.0	1 5/8" Coax	No
0.000	179.0	7/8" Coax	No

Load Cases

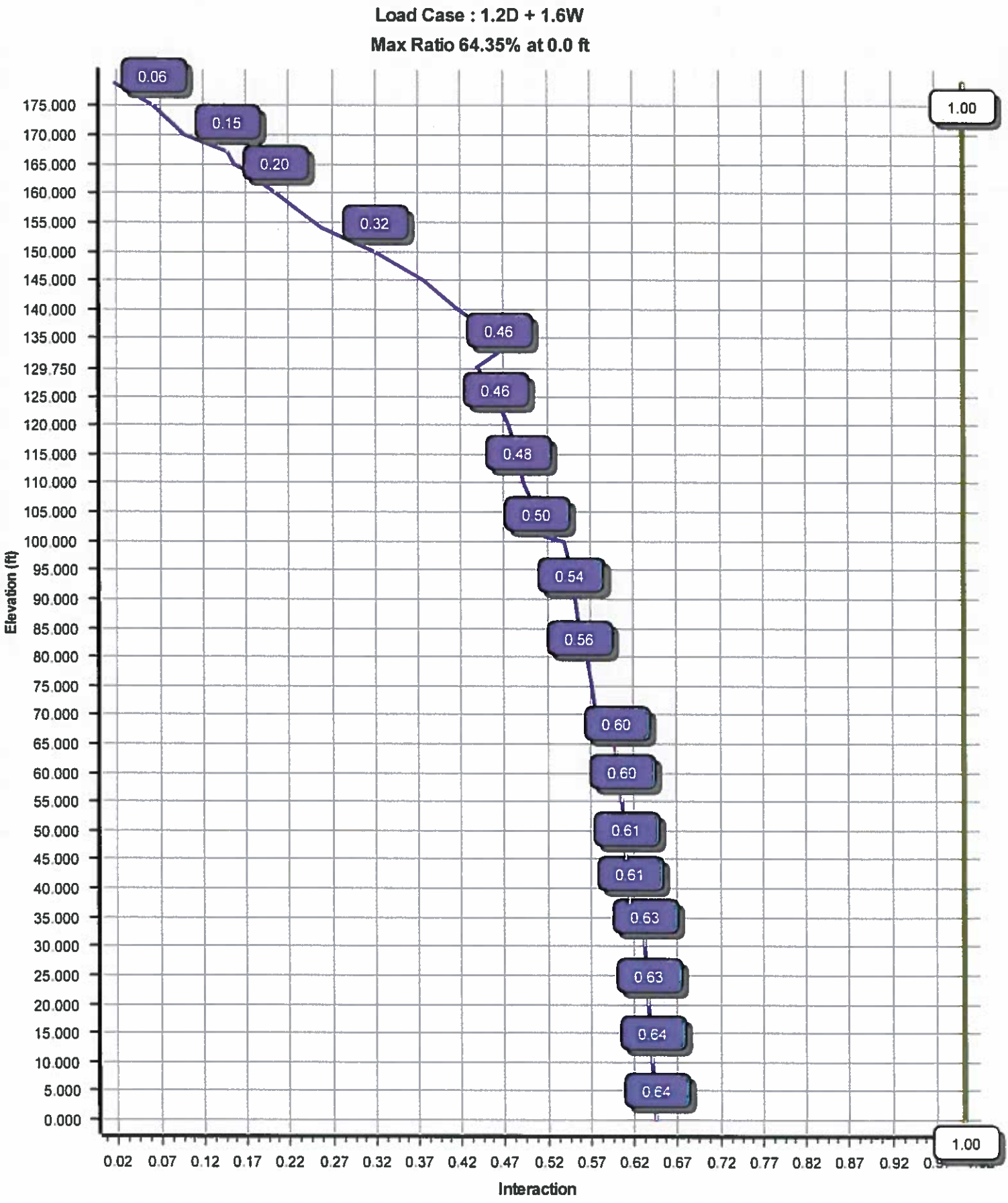
1.2D + 1.6W	97 mph with No Ice
0.9D + 1.6W	97 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 1.00 in Radial Ice
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Lateral
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Modal
1.0D + 1.0W	Serviceability 60 mph

Reactions

Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
1.2D + 1.6W	3747.06	29.69	59.61
0.9D + 1.6W	3689.49	29.67	44.70
1.2D + 1.0Di + 1.0Wi	1223.53	9.15	99.09
(1.2 + 0.2Sds) * DL + E ELFM	281.60	1.94	59.73
(1.2 + 0.2Sds) * DL + E EMAM	308.46	2.32	59.73
(0.9 - 0.2Sds) * DL + E ELFM	276.19	1.94	41.52
(0.9 - 0.2Sds) * DL + E EMAM	301.76	2.32	41.52
1.0D + 1.0W	888.07	7.09	49.70

Dish Deflections

Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
1.0D + 1.0W	160.00	24.669	1.623


Load Case : 1.2D + 1.6W
Max Ratio 64.35% at 0.0 ft
0.06
0.15
0.20
0.32
0.46
0.46
0.48
0.50
0.54
0.56
0.60
0.60
0.61
0.61
0.63
0.63
0.64
0.64
1.00
1.00
175.000
170.000
165.000
160.000
155.000
150.000
145.000
140.000
135.000
129.750
125.000
120.000
115.000
110.000
105.000
100.000
95.000
90.000
85.000
80.000
75.000
70.000
65.000
60.000
55.000
50.000
45.000
40.000
35.000
30.000
25.000
20.000
15.000
10.000
5.000
0.000
Elevation (ft)
0.02 0.07 0.12 0.17 0.22 0.27 0.32 0.37 0.42 0.47 0.52 0.57 0.62 0.67 0.72 0.77 0.82 0.87 0.92
Interaction

Site Number: 370627 Code: ANSI/TIA-222-G

Site Name: Newington CT, CT Engineering Number:12600288 8/2/2018 10:28:33 AM

Customer: VERIZON WIRELESS

Analysis Parameters

Location :	HARTFORD County, CT	Height (ft) :	179
Code :	ANSI/TIA-222-G	Base Diameter (in) :	63.00
Shape :	18 Sides	Top Diameter (in) :	12.00
Pole Type :	Taper	Taper (in/ft) :	0.304
Pole Manfacturer :	Pirod	Rotation (deg) :	0.00

Ice & Wind Parameters

Structure Class:	II	Design Wind Speed Without Ice:	97 mph
Exposure Category:	B	Design Wind Speed With Ice:	50 mph
Topographic Category:	1	Operational Wind Speed:	60 mph
Crest Height:	0 ft	Design Ice Thickness:	1.00 in

Seismic Parameters

Analysis Method:	Equivalent Modal Analysis & Equivalent Lateral Force Methods				
Site Class:	D - Stiff Soil				
Period Based on Rayleigh Method (sec):	2.90				
T_L (sec):	6	ρ:	1.3	C_s:	0.030
S_s:	0.182	S_1:	0.064	C_s Max:	0.030
F_a:	1.600	F_v:	2.400	C_s Min:	0.030
S_{ds}:	0.194	S_{d1}:	0.102		

Load Cases

1.2D + 1.6W	97 mph with No Ice
0.9D + 1.6W	97 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 1.00 in Radial Ice
(1.2 + 0.2Sds) * DL + E ELFM	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E EMAM	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E ELFM	Seismic (Reduced DL) Equivalent Lateral Forces Method
(0.9 - 0.2Sds) * DL + E EMAM	Seismic (Reduced DL) Equivalent Modal Analysis Method
1.0D + 1.0W	Serviceability 60 mph

Shaft Section Properties

							Bottom						Top						
Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint Len (in)	Weight (lb)	Dia (in)	Elev (ft)	Area (in²)	Ix (in⁴)	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (in²)	Ix (in⁴)	W/t Ratio	D/t Ratio	Taper (in/ft)
1-18	37.500	0.3750	65		0.00	8,646	63.00	0.00	74.54	36933.4	27.86	168.00	51.60	37.50	60.98	20222.7	22.50	137.62	0.303771
2-18	37.500	0.3750	65	Slip	75.00	7,318	54.25	31.25	64.13	23524.0	23.75	144.69	42.86	68.75	50.57	11536.1	18.39	114.31	0.303771
3-18	37.500	0.3750	65	Slip	66.00	5,956	45.28	63.25	53.45	13622.2	19.53	120.76	33.89	100.75	39.90	5663.6	14.17	90.39	0.303771
4-18	37.500	0.3750	65	Slip	56.00	4,555	36.06	96.08	42.48	6834.9	15.19	96.17	24.67	133.58	28.92	2156.7	9.84	65.79	0.303771
5-18	37.500	0.3125	65	Slip	46.00	2,589	26.46	129.75	25.93	2240.4	13.17	84.67	15.06	167.25	14.64	402.7	6.74	48.22	0.303771
6-18	14.667	0.2500	65	Slip	35.00	554	16.45	164.33	12.86	426.6	9.84	65.82	12.00	179.00	9.32	162.6	6.70	48.00	0.303771
				Shaft Weight		29,617													

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	Distance From Face (ft)	Vert Ecc (ft)	No Ice Weight (lb)	No Ice EPAa (sf)	Orientation Factor
179.00	10' Omni	1	0.000	0.000	25.00	3.000	1.00
179.00	18' Dipole	1	0.000	9.000	55.00	6.770	1.00
179.00	5' Dipole	1	0.000	0.000	15.00	1.740	1.00
179.00	8' Yagi	1	0.000	0.000	30.00	12.000	1.00
179.00	Round Low Profile Platform	1	0.000	0.000	1500.00	21.700	1.00
170.00	Andrew LNX-6515DS-VTM	3	0.000	0.000	51.30	11.430	0.70
170.00	Ericsson AIR 21, 1.3 M, B2A B4	3	0.000	0.000	83.00	6.050	0.71
170.00	Ericsson AIR 21, 1.3M, B4A B2P	3	0.000	0.000	81.50	6.090	0.70
170.00	Ericsson KRY 112 144/1	3	0.000	0.000	11.00	0.410	0.50
170.00	Ericsson RRUS 11 B12	3	0.000	0.000	50.70	2.790	0.67
170.00	Round Low Profile Platform	1	0.000	0.000	1500.00	21.700	1.00
160.00	Argus LLPX310R	3	0.000	0.000	28.60	4.290	0.63
160.00	DragonWave A-ANT-18G-2-C	3	0.000	0.000	27.10	4.690	0.67
160.00	DragonWave Horizon Compact	3	0.000	0.000	11.50	0.840	0.50
160.00	RCU	3	0.000	0.000	1.00	0.160	0.50
160.00	Samsung U-RAS Premium-F FRH	3	0.000	0.000	33.00	1.560	0.50
160.00	Side Arms	1	0.000	0.000	560.00	8.500	1.00
154.00	CCI OPA-65R-LCUU-H8	3	0.000	0.000	88.00	12.980	0.79
154.00	CCI TPA-65R-LCUUUU-H8	2	0.000	0.000	81.60	13.300	0.69
154.00	Ericsson RRUS 11 (Band 12) (55	3	0.000	0.000	55.00	2.520	0.50
154.00	Ericsson RRUS 12	3	0.000	0.000	50.00	3.150	0.67
154.00	Ericsson RRUS 32	3	0.000	0.000	55.10	2.850	0.67
154.00	Ericsson RRUS 32 B2	3	0.000	0.000	53.00	3.200	0.77
154.00	Ericsson RRUS 32 B66	3	0.000	0.000	53.00	3.200	1.00
154.00	Ericsson RRUS 4478 B14	3	0.000	0.000	59.90	1.840	0.50
154.00	Kathrein Scala 800 10121	3	0.000	0.000	46.30	5.160	0.68
154.00	Powerwave LGP21401	6	0.000	0.000	14.10	1.100	0.50
154.00	Quintel QS66512-2	1	0.000	0.000	111.00	8.130	0.74
154.00	Raycap DC6-48-60-0-8F	1	0.000	0.000	16.00	4.790	0.67
154.00	Raycap DC6-48-60-18-8F	2	0.000	0.000	31.80	1.280	1.00
154.00	Round Low Profile Platform	1	0.000	0.000	1500.00	21.700	1.00
140.00	Alcatel-Lucent 1900MHz RRH	3	0.000	0.000	44.00	3.260	0.67
140.00	Alcatel-Lucent 800 MHz 2X50W R	3	0.000	0.000	64.00	2.060	0.67
140.00	Alcatel-Lucent TD-RRH8x20	3	0.000	0.000	66.10	3.690	0.67
140.00	RFS APXV9ERR18-C-A20	1	0.000	0.000	62.00	8.020	0.71
140.00	RFS APXVSPP18-C-A20	2	0.000	0.000	57.00	8.020	0.69
140.00	RFS APXVTM14-C-I20	3	0.000	0.000	56.20	6.340	0.66
140.00	Round Low Profile Platform	1	0.000	0.000	1500.00	21.700	1.00
110.00	Antel BXA-80063/4CF ___ 5°	6	0.000	0.000	9.90	4.710	0.64
110.00	Commscope SBNHH-1D65B	6	0.000	0.000	40.60	8.080	0.69
110.00	Flat Low Profile Platform	1	0.000	0.000	1500.00	26.100	1.00
110.00	RFS DB-T1-6Z-8AB-0Z	2	0.000	0.000	44.00	4.800	0.67
110.00	Samsung 700/850MHz Dual Band	3	0.000	0.000	70.30	1.880	0.50
110.00	Samsung PCS/AWS Dual Band	3	0.000	0.000	84.40	1.880	0.50

Totals Num Loadings:44 111 12862.40

Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Diameter (in)	Coax Weight (lb/ft)	Flat	Projected Width (in)	Exposed To Wind	Carrier
0.00	179.00	3	7/8" Coax	1.09	0.33	N	0.00	N	Town of Newington, CT
0.00	170.00	1	1 1/4" Hybriflex Cable	1.54	1.00	N	0.00	N	Metro PCS
0.00	170.00	12	1 5/8" Coax	1.98	0.82	N	0.00	N	Metro PCS
0.00	160.00	3	0.28" Fiber	0.28	0.03	N	0.00	N	Clearwire
0.00	160.00	1	0.32" Cable	0.32	0.06	N	0.00	N	Clearwire
0.00	160.00	3	1/2" Coax	0.63	0.15	N	0.00	N	Clearwire
0.00	160.00	3	5/8" Coax	0.87	0.15	N	0.00	N	Clearwire
0.00	154.00	2	0.39" Fiber Trunk	0.39	0.07	N	0.00	N	AT&T Mobility
0.00	154.00	6	0.78" 8 AWG 6	0.78	0.59	N	0.00	N	AT&T Mobility
0.00	154.00	6	1 5/8" Coax	1.98	0.82	N	0.00	N	AT&T Mobility
0.00	154.00	2	2" Conduit	2.38	3.65	N	0.00	N	AT&T Mobility
0.00	154.00	1	3" Conduit	3.50	7.58	N	0.00	N	AT&T Mobility
0.00	154.00	1	3/8" RET Control Cable	0.38	0.23	N	0.00	N	AT&T Mobility
0.00	140.00	4	1 1/4" Hybriflex Cable	1.54	1.00	N	0.00	N	Sprint Nextel
0.00	110.00	6	1 5/8" Coax	1.98	0.82	N	0.00	N	Verizon
0.00	110.00	2	1 5/8" Hybriflex Cable	1.98	1.30	N	0.00	N	Verizon

Segment Properties (Max Len : 5. ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	F'y (ksi)	S (in^3)	Z (in^3)	Weight (lb)
0.00		0.3750	63.000	74.537	36,933.4	27.86	168.00	68.6	1154.	0.0	0.0
5.00		0.3750	61.481	72.729	34,310.8	27.15	163.95	69.5	1099.	0.0	1,252.8
10.00		0.3750	59.962	70.921	31,815.3	26.43	159.90	70.3	1045.	0.0	1,222.0
15.00		0.3750	58.443	69.113	29,443.9	25.72	155.85	71.2	992.3	0.0	1,191.3
20.00		0.3750	56.925	67.306	27,193.4	25.00	151.80	72.0	940.9	0.0	1,160.5
25.00		0.3750	55.406	65.498	25,060.6	24.29	147.75	72.8	890.9	0.0	1,129.8
30.00		0.3750	53.887	63.690	23,042.3	23.57	143.70	73.7	842.2	0.0	1,099.0
31.25	Bot - Section 2	0.3750	53.507	63.238	22,555.3	23.40	142.69	73.9	830.3	0.0	269.9
35.00		0.3750	52.368	61.882	21,135.4	22.86	139.65	74.5	794.9	0.0	1,608.0
37.50	Top - Section 1	0.3750	52.359	61.871	21,123.9	22.86	139.62	74.5	794.6	0.0	1,052.8
40.00		0.3750	51.599	60.967	20,211.6	22.50	137.60	74.9	771.5	0.0	522.5
45.00		0.3750	50.080	59.160	18,466.5	21.78	133.55	75.8	726.3	0.0	1,021.9
50.00		0.3750	48.561	57.352	16,824.8	21.07	129.50	76.6	682.4	0.0	991.2
55.00		0.3750	47.043	55.544	15,283.5	20.36	125.45	77.5	639.9	0.0	960.4
60.00		0.3750	45.524	53.736	13,839.3	19.64	121.40	78.3	598.8	0.0	929.6
63.25	Bot - Section 3	0.3750	44.536	52.561	12,951.1	19.18	118.76	78.8	572.8	0.0	587.8
65.00		0.3750	44.005	51.929	12,489.0	18.93	117.35	79.1	559.0	0.0	627.5
68.75	Top - Section 2	0.3750	43.616	51.465	12,157.8	18.75	116.31	79.4	549.0	0.0	1,319.4
70.00		0.3750	43.236	51.014	11,840.3	18.57	115.30	79.6	539.4	0.0	217.9
75.00		0.3750	41.717	49.206	10,625.7	17.85	111.25	80.4	501.7	0.0	852.6
80.00		0.3750	40.198	47.398	9,497.0	17.14	107.20	81.2	465.3	0.0	821.8
85.00		0.3750	38.679	45.590	8,451.3	16.42	103.15	82.1	430.4	0.0	791.0
90.00		0.3750	37.161	43.783	7,485.3	15.71	99.09	82.6	396.7	0.0	760.3
95.00		0.3750	35.642	41.975	6,595.9	15.00	95.04	82.6	364.5	0.0	729.5
96.08	Bot - Section 4	0.3750	35.313	41.583	6,412.9	14.84	94.17	82.6	357.7	0.0	154.0
100.0		0.3750	34.123	40.167	5,779.8	14.28	90.99	82.6	333.6	0.0	1,101.4
100.7	Top - Section 3	0.3750	34.645	40.788	6,052.3	14.53	92.39	82.6	344.1	0.0	206.6
105.0		0.3750	33.354	39.252	5,393.7	13.92	88.94	82.6	318.5	0.0	578.8
110.0		0.3750	31.835	37.444	4,682.3	13.21	84.89	82.6	289.7	0.0	652.4
115.0		0.3750	30.316	35.636	4,036.4	12.49	80.84	82.6	262.2	0.0	621.7
120.0		0.3750	28.797	33.829	3,452.7	11.78	76.79	82.6	236.2	0.0	590.9
125.0		0.3750	27.279	32.021	2,928.3	11.06	72.74	82.6	211.4	0.0	560.2
129.7	Bot - Section 5	0.3750	25.836	30.304	2,481.9	10.38	68.90	82.6	189.2	0.0	503.7
130.0		0.3750	25.760	30.213	2,459.8	10.35	68.69	82.6	188.1	0.0	47.8
133.5	Top - Section 4	0.3125	25.296	24.780	1,954.2	12.51	80.95	82.6	152.2	0.0	669.2
135.0		0.3125	24.866	24.353	1,854.9	12.27	79.57	82.6	146.9	0.0	118.4
140.0		0.3125	23.347	22.847	1,531.6	11.41	74.71	82.6	129.2	0.0	401.5
145.0		0.3125	21.828	21.340	1,248.1	10.55	69.85	82.6	112.6	0.0	375.9
150.0		0.3125	20.309	19.834	1,002.0	9.70	64.99	82.6	97.2	0.0	350.3
154.0		0.3125	19.094	18.629	830.2	9.01	61.10	82.6	85.6	0.0	261.8
155.0		0.3125	18.791	18.327	790.6	8.84	60.13	82.6	82.9	0.0	62.9
160.0		0.3125	17.272	16.821	611.2	7.98	55.27	82.6	69.7	0.0	299.0
164.3	Bot - Section 6	0.3125	15.955	15.515	479.7	7.24	51.06	82.6	59.2	0.0	238.4
165.0		0.3125	15.753	15.314	461.3	7.13	50.41	82.6	57.7	0.0	64.0
167.2	Top - Section 5	0.2500	15.569	12.155	360.4	9.22	62.28	82.6	45.6	0.0	209.8
170.0		0.2500	14.734	11.493	304.6	8.63	58.94	82.6	40.7	0.0	110.6
175.0		0.2500	13.215	10.287	218.5	7.56	52.86	82.6	32.6	0.0	185.3
179.0		0.2500	12.000	9.323	162.6	6.70	48.00	82.6	26.7	0.0	133.5
											29,617.5

Load Case: 1.2D + 1.6W — 97 mph with No Ice — 27 Iterations

Gust Response Factor :1.10
Dead Load Factor :1.20
Wind Load Factor :1.60

Wind Importance Factor :1.00

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces Wind FX (lb)	Shaft Forces Dead Load (lb)	Discrete Forces Wind FX (lb)	Discrete Forces Torsion MY (lb-ft)	Discrete Forces Moment MZ (lb-ft)	Discrete Forces Dead Load (lb)	Linear Forces Wind FX (lb)	Linear Forces Dead Load (lb)	Sum of Forces Wind FX (lb)	Sum of Forces Dead Load (lb)	Sum of Forces Torsion MY (lb-ft)	Sum of Forces Moment MZ (lb)
0.00		241.3	0.0					0.0	0.0	241.3	0.0	0.0	0.0
5.00		476.7	1,503.3					0.0	288.7	476.7	1,792.0	0.0	0.0
10.00		464.9	1,466.4					0.0	288.7	464.9	1,755.1	0.0	0.0
15.00		453.1	1,429.5					0.0	288.7	453.1	1,718.2	0.0	0.0
20.00		441.3	1,392.6					0.0	288.7	441.3	1,681.3	0.0	0.0
25.00		429.6	1,355.7					0.0	288.7	429.6	1,644.4	0.0	0.0
30.00		264.2	1,318.8					0.0	288.7	264.2	1,607.5	0.0	0.0
31.25	Bot - Section 2	213.1	323.9					0.0	72.2	213.1	396.1	0.0	0.0
35.00		268.7	1,929.6					0.0	216.5	268.7	2,146.1	0.0	0.0
37.50	Top - Section 1	216.5	1,263.3					0.0	144.3	216.5	1,407.6	0.0	0.0
40.00		326.4	627.0					0.0	144.3	326.4	771.3	0.0	0.0
45.00		436.1	1,226.3					0.0	288.7	436.1	1,515.0	0.0	0.0
50.00		435.8	1,189.4					0.0	288.7	435.8	1,478.0	0.0	0.0
55.00		433.9	1,152.5					0.0	288.7	433.9	1,441.1	0.0	0.0
60.00		355.7	1,115.6					0.0	288.7	355.7	1,404.2	0.0	0.0
63.25	Bot - Section 3	215.4	705.3					0.0	187.6	215.4	893.0	0.0	0.0
65.00		237.6	753.0					0.0	101.0	237.6	854.1	0.0	0.0
68.75	Top - Section 2	215.2	1,583.2					0.0	216.5	215.2	1,799.7	0.0	0.0
70.00		265.6	261.5					0.0	72.2	265.6	333.7	0.0	0.0
75.00		420.5	1,023.1					0.0	288.7	420.5	1,311.7	0.0	0.0
80.00		412.7	986.2					0.0	288.7	412.7	1,274.8	0.0	0.0
85.00		404.0	949.3					0.0	288.7	404.0	1,237.9	0.0	0.0
90.00		394.6	912.3					0.0	288.7	394.6	1,201.0	0.0	0.0
95.00		236.3	875.4					0.0	288.7	236.3	1,164.1	0.0	0.0
96.08	Bot - Section 4	192.7	184.8					0.0	62.5	192.7	247.4	0.0	0.0
100.00		179.8	1,321.7					0.0	226.1	179.8	1,547.8	0.0	0.0
100.75	Top - Section 3	188.0	247.9					0.0	43.3	188.0	291.2	0.0	0.0
105.00		341.5	694.5					0.0	245.4	341.5	939.9	0.0	0.0
110.00	Appurtenance(s)	358.0	782.9	3,148.7	0.0	0.0	2,826.1	0.0	288.7	3,506.7	3,897.7	0.0	0.0
115.00		345.3	746.0					0.0	243.5	345.3	989.6	0.0	0.0
120.00		332.0	709.1					0.0	243.5	332.0	952.7	0.0	0.0
125.00		310.6	672.2					0.0	243.5	310.6	915.8	0.0	0.0
129.75	Bot - Section 5	155.7	604.4					0.0	231.4	155.7	835.8	0.0	0.0
130.00		117.5	57.3					0.0	12.2	117.5	69.5	0.0	0.0
133.58	Top - Section 4	152.0	803.1					0.0	174.5	152.0	977.6	0.0	0.0
135.00		186.8	142.1					0.0	69.0	186.8	211.1	0.0	0.0
140.00	Appurtenance(s)	281.3	481.8	2,613.2	0.0	0.0	2,840.3	0.0	243.5	2,894.4	3,565.6	0.0	0.0
145.00		265.6	451.1					0.0	219.5	265.6	670.6	0.0	0.0
150.00		226.1	420.3					0.0	219.5	226.1	639.9	0.0	0.0
154.00	Appurtenance(s)	120.7	314.1	4,950.8	0.0	0.0	3,983.2	0.0	175.6	5,071.5	4,472.9	0.0	0.0
155.00		135.8	75.5					0.0	15.5	135.8	90.9	0.0	0.0
160.00	Appurtenance(s)	202.8	358.8	1,165.3	0.0	0.0	1,036.3	0.0	77.3	1,368.1	1,472.4	0.0	0.0
164.33	Bot - Section 6	104.2	286.1					0.0	61.5	104.2	347.6	0.0	0.0
165.00		59.1	76.7					0.0	9.5	59.1	86.2	0.0	0.0
167.25	Top - Section 5	98.2	251.8					0.0	31.9	98.2	283.7	0.0	0.0
170.00	Appurtenance(s)	142.3	132.8	3,076.3	0.0	0.0	2,799.0	0.0	39.0	3,218.6	2,970.8	0.0	0.0
175.00		154.3	222.3					0.0	5.9	154.3	228.3	0.0	0.0
179.00	Appurtenance(s)	65.0	160.2	1,923.9	0.0	2,323.4	1,950.0	0.0	4.8	1,988.9	2,114.9	0.0	0.0

Load Case: 1.2D + 1.6W 97 mph with No Ice 27 Iterations

Gust Response Factor :1.10 Wind Importance Factor :1.00
Dead Load Factor :1.20
Wind Load Factor :1.60

Totals:	29,852.5	59,647.7	0.00	0.00

Site Number: 370627 Code: ANSI/TIA-222-G

Site Name: Newington CT, CT Engineering Number:12600288 8/2/2018 10:28:40 AM

Customer: VERIZON WIRELESS

Load Case: 1.2D + 1.6W 97 mph with No Ice 27 Iterations

Gust Response Factor :1.10 Wind Importance Factor :1.00

Dead Load Factor :1.20

Wind Load Factor :1.60

Calculated Forces

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 (deg)	Ratio
0.00	-59.61	-29.69	0.00	-3,747.06	0.00	3,747.06	4,604.11	2,302.05	11,869.6	5,943.65	0.00	0.00	0.644
5.00	-57.75	-29.35	0.00	-3,598.63	0.00	3,598.63	4,547.42	2,273.71	11,437.5	5,727.25	0.08	-0.14	0.641
10.00	-55.92	-29.03	0.00	-3,451.87	0.00	3,451.87	4,488.01	2,244.00	11,005.7	5,511.07	0.30	-0.29	0.639
15.00	-54.12	-28.71	0.00	-3,306.75	0.00	3,306.75	4,425.86	2,212.93	10,575.0	5,295.36	0.69	-0.44	0.637
20.00	-52.37	-28.40	0.00	-3,163.21	0.00	3,163.21	4,360.98	2,180.49	10,145.6	5,080.38	1.23	-0.60	0.635
25.00	-50.65	-28.09	0.00	-3,021.23	0.00	3,021.23	4,293.36	2,146.68	9,718.32	4,866.38	1.94	-0.76	0.633
30.00	-48.99	-27.90	0.00	-2,880.77	0.00	2,880.77	4,223.01	2,111.51	9,293.47	4,653.64	2.82	-0.92	0.631
31.25	-48.56	-27.75	0.00	-2,845.90	0.00	2,845.90	4,205.00	2,102.50	9,187.70	4,600.68	3.07	-0.97	0.630
35.00	-46.36	-27.53	0.00	-2,741.84	0.00	2,741.84	4,149.93	2,074.96	8,871.62	4,442.40	3.88	-1.10	0.629
37.50	-44.92	-27.36	0.00	-2,673.01	0.00	2,673.01	4,149.47	2,074.73	8,869.01	4,441.10	4.49	-1.19	0.613
40.00	-44.09	-27.12	0.00	-2,604.61	0.00	2,604.61	4,111.89	2,055.95	8,659.38	4,336.13	5.13	-1.28	0.612
45.00	-42.50	-26.79	0.00	-2,469.00	0.00	2,469.00	4,034.69	2,017.35	8,243.04	4,127.64	6.58	-1.46	0.609
50.00	-40.95	-26.44	0.00	-2,335.07	0.00	2,335.07	3,954.76	1,977.38	7,830.99	3,921.32	8.21	-1.65	0.606
55.00	-39.43	-26.10	0.00	-2,202.85	0.00	2,202.85	3,872.09	1,936.05	7,423.76	3,717.40	10.04	-1.84	0.603
60.00	-37.97	-25.81	0.00	-2,072.34	0.00	2,072.34	3,786.70	1,893.35	7,021.86	3,516.15	12.07	-2.04	0.600
63.25	-37.03	-25.63	0.00	-1,988.46	0.00	1,988.46	3,729.72	1,864.86	6,763.73	3,386.89	13.51	-2.17	0.597
65.00	-36.14	-25.43	0.00	-1,943.61	0.00	1,943.61	3,698.56	1,849.28	6,625.81	3,317.83	14.32	-2.25	0.596
68.75	-34.30	-25.21	0.00	-1,848.24	0.00	1,848.24	3,675.54	1,837.77	6,525.34	3,267.52	16.15	-2.41	0.575
70.00	-33.92	-25.01	0.00	-1,816.72	0.00	1,816.72	3,652.91	1,826.45	6,427.71	3,218.63	16.79	-2.47	0.574
75.00	-32.54	-24.65	0.00	-1,691.67	0.00	1,691.67	3,560.66	1,780.33	6,041.44	3,025.21	19.49	-2.68	0.569
80.00	-31.19	-24.30	0.00	-1,568.40	0.00	1,568.40	3,465.68	1,732.84	5,662.31	2,835.36	22.41	-2.90	0.562
85.00	-29.88	-23.95	0.00	-1,446.90	0.00	1,446.90	3,367.96	1,683.98	5,290.83	2,649.35	25.56	-3.12	0.555
90.00	-28.60	-23.61	0.00	-1,327.14	0.00	1,327.14	3,252.82	1,626.41	4,905.37	2,456.33	28.96	-3.36	0.549
95.00	-27.40	-23.37	0.00	-1,209.09	0.00	1,209.09	3,118.51	1,559.26	4,506.69	2,256.70	32.60	-3.60	0.545
96.08	-27.11	-23.23	0.00	-1,183.77	0.00	1,183.77	3,089.41	1,544.71	4,422.54	2,214.56	33.42	-3.65	0.544
100.00	-25.53	-23.00	0.00	-1,092.80	0.00	1,092.80	2,984.21	1,492.10	4,124.91	2,065.52	36.50	-3.85	0.538
100.75	-25.20	-22.85	0.00	-1,075.56	0.00	1,075.56	3,030.38	1,515.19	4,254.26	2,130.29	37.11	-3.89	0.513
105.00	-24.19	-22.54	0.00	-978.45	0.00	978.45	2,916.22	1,458.11	3,938.09	1,971.97	40.67	-4.11	0.505
110.00	-20.49	-18.84	0.00	-865.75	0.00	865.75	2,781.91	1,390.96	3,581.76	1,793.54	45.11	-4.35	0.490
115.00	-19.44	-18.51	0.00	-771.54	0.00	771.54	2,647.61	1,323.80	3,242.33	1,623.57	49.80	-4.60	0.483
120.00	-18.44	-18.18	0.00	-679.01	0.00	679.01	2,513.30	1,256.65	2,919.79	1,462.07	54.75	-4.86	0.472
125.00	-17.48	-17.87	0.00	-588.10	0.00	588.10	2,378.99	1,189.50	2,614.15	1,309.02	59.97	-5.12	0.457
129.75	-16.62	-17.68	0.00	-503.22	0.00	503.22	2,251.40	1,125.70	2,339.44	1,171.46	65.19	-5.37	0.437
130.00	-16.53	-17.58	0.00	-498.80	0.00	498.80	2,244.69	1,122.34	2,325.40	1,164.43	65.47	-5.39	0.436
133.58	-15.53	-17.38	0.00	-435.79	0.00	435.79	1,841.02	920.51	1,881.29	942.04	69.58	-5.58	0.471
135.00	-15.28	-17.22	0.00	-411.17	0.00	411.17	1,809.31	904.65	1,816.65	909.67	71.25	-5.66	0.461
140.00	-11.96	-14.04	0.00	-325.08	0.00	325.08	1,697.39	848.69	1,597.52	799.95	77.32	-5.94	0.414
145.00	-11.26	-13.75	0.00	-254.90	0.00	254.90	1,585.46	792.73	1,392.48	697.27	83.68	-6.21	0.373
150.00	-10.60	-13.50	0.00	-186.14	0.00	186.14	1,473.54	736.77	1,201.51	601.65	90.31	-6.46	0.317
154.00	-6.72	-7.96	0.00	-132.15	0.00	132.15	1,384.00	692.00	1,058.88	530.23	95.79	-6.64	0.254
155.00	-6.63	-7.83	0.00	-124.19	0.00	124.19	1,361.62	680.81	1,024.63	513.08	97.18	-6.69	0.247
160.00	-5.31	-6.31	0.00	-85.04	0.00	85.04	1,249.70	624.85	861.82	431.55	104.27	-6.87	0.201
164.33	-4.97	-6.17	0.00	-57.69	0.00	57.69	1,152.70	576.35	732.11	366.60	110.57	-7.02	0.162
165.00	-4.88	-6.11	0.00	-53.58	0.00	53.58	1,137.78	568.89	713.10	357.08	111.55	-7.04	0.154
167.25	-4.61	-5.98	0.00	-39.83	0.00	39.83	903.09	451.54	563.74	282.29	114.87	-7.10	0.146
170.00	-2.06	-2.42	0.00	-23.39	0.00	23.39	853.84	426.92	503.47	252.11	118.97	-7.17	0.095
175.00	-1.85	-2.24	0.00	-11.29	0.00	11.29	764.30	382.15	402.61	201.60	126.51	-7.25	0.058
179.00	0.00	-1.99	0.00	-2.32	0.00	2.32	692.67	346.34	330.04	165.26	132.58	-7.28	0.014

Load Case: 0.9D + 1.6W — 97 mph with No Ice (Reduced DL) — 27 Iterations

Gust Response Factor :1.10
Dead Load Factor :0.90
Wind Load Factor :1.60

Wind Importance Factor :1.00

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces Wind FX (lb)	Shaft Forces Dead Load (lb)	Discrete Forces Wind FX (lb)	Discrete Forces Torsion MY (lb-ft)	Discrete Forces Moment MZ (lb-ft)	Discrete Forces Dead Load (lb)	Linear Forces Wind FX (lb)	Linear Forces Dead Load (lb)	Sum of Forces Wind FX (lb)	Sum of Forces Dead Load (lb)	Sum of Forces Torsion MY (lb-ft)	Sum of Forces Moment MZ (lb)
0.00		241.3	0.0					0.0	0.0	241.3	0.0	0.0	0.0
5.00		476.7	1,127.5					0.0	216.5	476.7	1,344.0	0.0	0.0
10.00		464.9	1,099.8					0.0	216.5	464.9	1,316.3	0.0	0.0
15.00		453.1	1,072.1					0.0	216.5	453.1	1,288.6	0.0	0.0
20.00		441.3	1,044.5					0.0	216.5	441.3	1,261.0	0.0	0.0
25.00		429.6	1,016.8					0.0	216.5	429.6	1,233.3	0.0	0.0
30.00		264.2	989.1					0.0	216.5	264.2	1,205.6	0.0	0.0
31.25	Bot - Section 2	213.1	242.9					0.0	54.1	213.1	297.1	0.0	0.0
35.00		268.7	1,447.2					0.0	162.4	268.7	1,609.6	0.0	0.0
37.50	Top - Section 1	216.5	947.5					0.0	108.2	216.5	1,055.7	0.0	0.0
40.00		326.4	470.2					0.0	108.2	326.4	578.5	0.0	0.0
45.00		436.1	919.7					0.0	216.5	436.1	1,136.2	0.0	0.0
50.00		435.8	892.0					0.0	216.5	435.8	1,108.5	0.0	0.0
55.00		433.9	864.4					0.0	216.5	433.9	1,080.9	0.0	0.0
60.00		355.7	836.7					0.0	216.5	355.7	1,053.2	0.0	0.0
63.25	Bot - Section 3	215.4	529.0					0.0	140.7	215.4	669.7	0.0	0.0
65.00		237.6	564.8					0.0	75.8	237.6	640.6	0.0	0.0
68.75	Top - Section 2	215.2	1,187.4					0.0	162.4	215.2	1,349.8	0.0	0.0
70.00		265.6	196.2					0.0	54.1	265.6	250.3	0.0	0.0
75.00		420.5	767.3					0.0	216.5	420.5	983.8	0.0	0.0
80.00		412.7	739.6					0.0	216.5	412.7	956.1	0.0	0.0
85.00		404.0	711.9					0.0	216.5	404.0	928.4	0.0	0.0
90.00		394.6	684.3					0.0	216.5	394.6	900.8	0.0	0.0
95.00		236.3	656.6					0.0	216.5	236.3	873.1	0.0	0.0
96.08	Bot - Section 4	192.7	138.6					0.0	46.9	192.7	185.5	0.0	0.0
100.00		179.8	991.3					0.0	169.6	179.8	1,160.9	0.0	0.0
100.75	Top - Section 3	188.0	185.9					0.0	32.5	188.0	218.4	0.0	0.0
105.00		341.5	520.9					0.0	184.0	341.5	704.9	0.0	0.0
110.00	Appurtenance(s)	358.0	587.2	3,148.7	0.0	0.0	2,119.6	0.0	216.5	3,506.7	2,923.3	0.0	0.0
115.00		345.3	559.5					0.0	182.7	345.3	742.2	0.0	0.0
120.00		332.0	531.8					0.0	182.7	332.0	714.5	0.0	0.0
125.00		310.6	504.2					0.0	182.7	310.6	686.8	0.0	0.0
129.75	Bot - Section 5	155.7	453.3					0.0	173.5	155.7	626.8	0.0	0.0
130.00		117.5	43.0					0.0	9.1	117.5	52.1	0.0	0.0
133.58	Top - Section 4	152.0	602.3					0.0	130.9	152.0	733.2	0.0	0.0
135.00		186.8	106.6					0.0	51.8	186.8	158.3	0.0	0.0
140.00	Appurtenance(s)	281.3	361.4	2,613.2	0.0	0.0	2,130.2	0.0	182.7	2,894.4	2,674.2	0.0	0.0
145.00		265.6	338.3					0.0	164.7	265.6	503.0	0.0	0.0
150.00		226.1	315.2					0.0	164.7	226.1	479.9	0.0	0.0
154.00	Appurtenance(s)	120.7	235.6	4,950.8	0.0	0.0	2,987.4	0.0	131.7	5,071.5	3,354.7	0.0	0.0
155.00		135.8	56.6					0.0	11.6	135.8	68.2	0.0	0.0
160.00	Appurtenance(s)	202.8	269.1	1,165.3	0.0	0.0	777.2	0.0	58.0	1,368.1	1,104.3	0.0	0.0
164.33	Bot - Section 6	104.2	214.6					0.0	46.1	104.2	260.7	0.0	0.0
165.00		59.1	57.6					0.0	7.1	59.1	64.7	0.0	0.0
167.25	Top - Section 5	98.2	188.8					0.0	24.0	98.2	212.8	0.0	0.0
170.00	Appurtenance(s)	142.3	99.6	3,076.3	0.0	0.0	2,099.2	0.0	29.3	3,218.6	2,228.1	0.0	0.0
175.00		154.3	166.8					0.0	4.5	154.3	171.2	0.0	0.0
179.00	Appurtenance(s)	65.0	120.1	1,923.9	0.0	2,323.4	1,462.5	0.0	3.6	1,988.9	1,586.2	0.0	0.0

Load Case: 0.9D + 1.6W — 97 mph with No Ice (Reduced DL) — 27 Iterations

Gust Response Factor :1.10 — Wind Importance Factor :1.00
Dead Load Factor :0.90
Wind Load Factor :1.60

Totals:	29,852.5	44,735.8	0.00	0.00

Load Case: 0.9D + 1.6W — 97 mph with No Ice (Reduced DL) — 27 Iterations

Gust Response Factor :1.10
Dead Load Factor :0.90
Wind Load Factor :1.60
Wind Importance Factor :1.00

Calculated Forces

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 (deg)	Ratio
0.00	-44.70	-29.67	0.00	-3,689.49	0.00	3,689.49	4,604.11	2,302.05	11,869.6	5,943.65	0.00	0.00	0.631
5.00	-43.28	-29.30	0.00	-3,541.16	0.00	3,541.16	4,547.42	2,273.71	11,437.5	5,727.25	0.08	-0.14	0.628
10.00	-41.89	-28.93	0.00	-3,394.68	0.00	3,394.68	4,488.01	2,244.00	11,005.7	5,511.07	0.30	-0.28	0.625
15.00	-40.53	-28.58	0.00	-3,250.02	0.00	3,250.02	4,425.86	2,212.93	10,575.0	5,295.36	0.67	-0.43	0.623
20.00	-39.20	-28.23	0.00	-3,107.13	0.00	3,107.13	4,360.98	2,180.49	10,145.6	5,080.38	1.21	-0.59	0.621
25.00	-37.89	-27.90	0.00	-2,965.97	0.00	2,965.97	4,293.36	2,146.68	9,718.32	4,866.38	1.91	-0.74	0.618
30.00	-36.64	-27.68	0.00	-2,826.49	0.00	2,826.49	4,223.01	2,111.51	9,293.47	4,653.64	2.78	-0.91	0.616
31.25	-36.31	-27.52	0.00	-2,791.89	0.00	2,791.89	4,205.00	2,102.50	9,187.70	4,600.68	3.02	-0.95	0.616
35.00	-34.65	-27.29	0.00	-2,688.70	0.00	2,688.70	4,149.93	2,074.96	8,871.62	4,442.40	3.82	-1.08	0.614
37.50	-33.56	-27.10	0.00	-2,620.49	0.00	2,620.49	4,149.47	2,074.73	8,869.01	4,441.10	4.41	-1.17	0.598
40.00	-32.92	-26.84	0.00	-2,552.73	0.00	2,552.73	4,111.89	2,055.95	8,659.38	4,336.13	5.05	-1.26	0.597
45.00	-31.71	-26.48	0.00	-2,418.53	0.00	2,418.53	4,034.69	2,017.35	8,243.04	4,127.64	6.46	-1.44	0.594
50.00	-30.53	-26.11	0.00	-2,286.16	0.00	2,286.16	3,954.76	1,977.38	7,830.99	3,921.32	8.06	-1.62	0.591
55.00	-29.38	-25.74	0.00	-2,155.61	0.00	2,155.61	3,872.09	1,936.05	7,423.76	3,717.40	9.86	-1.81	0.588
60.00	-28.27	-25.43	0.00	-2,026.90	0.00	2,026.90	3,786.70	1,893.35	7,021.86	3,516.15	11.85	-2.00	0.584
63.25	-27.56	-25.24	0.00	-1,944.25	0.00	1,944.25	3,729.72	1,864.86	6,763.73	3,386.89	13.26	-2.13	0.582
65.00	-26.88	-25.04	0.00	-1,900.08	0.00	1,900.08	3,698.56	1,849.28	6,625.81	3,317.83	14.06	-2.21	0.580
68.75	-25.49	-24.81	0.00	-1,806.20	0.00	1,806.20	3,675.54	1,837.77	6,525.34	3,267.52	15.86	-2.37	0.560
70.00	-25.20	-24.60	0.00	-1,775.18	0.00	1,775.18	3,652.91	1,826.45	6,427.71	3,218.63	16.48	-2.42	0.559
75.00	-24.14	-24.22	0.00	-1,652.21	0.00	1,652.21	3,560.66	1,780.33	6,041.44	3,025.21	19.13	-2.63	0.553
80.00	-23.12	-23.85	0.00	-1,531.10	0.00	1,531.10	3,465.68	1,732.84	5,662.31	2,835.36	21.99	-2.84	0.547
85.00	-22.12	-23.49	0.00	-1,411.85	0.00	1,411.85	3,367.96	1,683.98	5,290.83	2,649.35	25.08	-3.06	0.540
90.00	-21.15	-23.13	0.00	-1,294.43	0.00	1,294.43	3,252.82	1,626.41	4,905.37	2,456.33	28.41	-3.29	0.534
95.00	-20.24	-22.89	0.00	-1,178.79	0.00	1,178.79	3,118.51	1,559.26	4,506.69	2,256.70	31.97	-3.52	0.529
96.08	-20.01	-22.73	0.00	-1,153.99	0.00	1,153.99	3,089.41	1,544.71	4,422.54	2,214.56	32.78	-3.58	0.528
100.00	-18.82	-22.51	0.00	-1,064.96	0.00	1,064.96	2,984.21	1,492.10	4,124.91	2,065.52	35.79	-3.77	0.522
100.75	-18.57	-22.35	0.00	-1,048.08	0.00	1,048.08	3,030.38	1,515.19	4,254.26	2,130.29	36.39	-3.81	0.498
105.00	-17.80	-22.04	0.00	-953.08	0.00	953.08	2,916.22	1,458.11	3,938.09	1,971.97	39.88	-4.02	0.490
110.00	-15.06	-18.39	0.00	-842.90	0.00	842.90	2,781.91	1,390.96	3,581.76	1,793.54	44.21	-4.26	0.476
115.00	-14.27	-18.05	0.00	-750.96	0.00	750.96	2,647.61	1,323.80	3,242.33	1,623.57	48.80	-4.50	0.468
120.00	-13.51	-17.72	0.00	-660.71	0.00	660.71	2,513.30	1,256.65	2,919.79	1,462.07	53.64	-4.75	0.457
125.00	-12.77	-17.41	0.00	-572.11	0.00	572.11	2,378.99	1,189.50	2,614.15	1,309.02	58.75	-5.00	0.443
129.75	-12.12	-17.22	0.00	-489.42	0.00	489.42	2,251.40	1,125.70	2,339.44	1,171.46	63.85	-5.25	0.423
130.00	-12.05	-17.12	0.00	-485.11	0.00	485.11	2,244.69	1,122.34	2,325.40	1,164.43	64.12	-5.26	0.422
133.58	-11.30	-16.93	0.00	-423.75	0.00	423.75	1,841.02	920.51	1,881.29	942.04	68.14	-5.45	0.456
135.00	-11.10	-16.76	0.00	-399.76	0.00	399.76	1,809.31	904.65	1,816.65	909.67	69.77	-5.53	0.446
140.00	-8.67	-13.66	0.00	-315.94	0.00	315.94	1,697.39	848.69	1,597.52	799.95	75.70	-5.80	0.400
145.00	-8.13	-13.38	0.00	-247.64	0.00	247.64	1,585.46	792.73	1,392.48	697.27	81.91	-6.06	0.361
150.00	-7.63	-13.13	0.00	-180.74	0.00	180.74	1,473.54	736.77	1,201.51	601.65	88.38	-6.31	0.306
154.00	-4.85	-7.73	0.00	-128.21	0.00	128.21	1,384.00	692.00	1,058.88	530.23	93.74	-6.48	0.245
155.00	-4.78	-7.59	0.00	-120.48	0.00	120.48	1,361.62	680.81	1,024.63	513.08	95.10	-6.53	0.238
160.00	-3.83	-6.12	0.00	-82.51	0.00	82.51	1,249.70	624.85	861.82	431.55	102.02	-6.71	0.194
164.33	-3.57	-5.99	0.00	-56.00	0.00	56.00	1,152.70	576.35	732.11	366.60	108.16	-6.85	0.156
165.00	-3.51	-5.93	0.00	-52.01	0.00	52.01	1,137.78	568.89	713.10	357.08	109.12	-6.87	0.149
167.25	-3.31	-5.81	0.00	-38.68	0.00	38.68	903.09	451.54	563.74	282.29	112.37	-6.93	0.141
170.00	-1.48	-2.34	0.00	-22.71	0.00	22.71	853.84	426.92	503.47	252.11	116.37	-6.99	0.092
175.00	-1.33	-2.17	0.00	-11.00	0.00	11.00	764.30	382.15	402.61	201.60	123.72	-7.07	0.056
179.00	0.00	-1.99	0.00	-2.32	0.00	2.32	692.67	346.34	330.04	165.26	129.65	-7.11	0.014

Load Case: 1.2D + 1.0Di + 1.0Wi — 50 mph with 1.00 in Radial Ice — 27 Iterations

Gust Response Factor :1.10 | Ice Dead Load Factor :1.00 | Wind Importance Factor :1.00
Dead Load Factor :1.20 | Ice Importance Factor :1.00
Wind Load Factor :1.00

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces Wind FX (lb)	Shaft Forces Dead Load (lb)	Discrete Forces Wind FX (lb)	Discrete Forces Torsion MY (lb-ft)	Discrete Forces Moment MZ (lb-ft)	Discrete Forces Dead Load (lb)	Linear Forces Wind FX (lb)	Linear Forces Dead Load (lb)	Sum of Forces Wind FX (lb)	Sum of Forces Dead Load (lb)	Sum of Forces Torsion MY (lb-ft)	Sum of Forces Moment MZ (lb)
0.00		77.6	0.0					0.0	0.0	77.6	0.0	0.0	0.0
5.00		153.8	2,113.4					0.0	288.7	153.8	2,402.1	0.0	0.0
10.00		150.8	2,132.8					0.0	288.7	150.8	2,421.5	0.0	0.0
15.00		147.6	2,114.6					0.0	288.7	147.6	2,403.2	0.0	0.0
20.00		144.2	2,084.0					0.0	288.7	144.2	2,372.6	0.0	0.0
25.00		140.8	2,046.9					0.0	288.7	140.8	2,335.6	0.0	0.0
30.00		86.8	2,005.8					0.0	288.7	86.8	2,294.4	0.0	0.0
31.25	Bot - Section 2	70.1	496.4					0.0	72.2	70.1	568.6	0.0	0.0
35.00		88.5	2,447.6					0.0	216.5	88.5	2,664.1	0.0	0.0
37.50	Top - Section 1	71.4	1,607.1					0.0	144.3	71.4	1,751.4	0.0	0.0
40.00		107.9	968.3					0.0	144.3	107.9	1,112.7	0.0	0.0
45.00		144.5	1,896.0					0.0	288.7	144.5	2,184.7	0.0	0.0
50.00		144.9	1,847.2					0.0	288.7	144.9	2,135.8	0.0	0.0
55.00		144.7	1,797.2					0.0	288.7	144.7	2,085.8	0.0	0.0
60.00		119.0	1,746.3					0.0	288.7	119.0	2,035.0	0.0	0.0
63.25	Bot - Section 3	72.2	1,109.7					0.0	187.6	72.2	1,297.3	0.0	0.0
65.00		79.8	972.7					0.0	101.0	79.8	1,073.8	0.0	0.0
68.75	Top - Section 2	72.3	2,044.5					0.0	216.5	72.3	2,261.0	0.0	0.0
70.00		89.5	414.6					0.0	72.2	89.5	486.8	0.0	0.0
75.00		142.1	1,617.6					0.0	288.7	142.1	1,906.3	0.0	0.0
80.00		140.1	1,564.2					0.0	288.7	140.1	1,852.8	0.0	0.0
85.00		137.7	1,510.2					0.0	288.7	137.7	1,798.9	0.0	0.0
90.00		135.1	1,455.8					0.0	288.7	135.1	1,744.5	0.0	0.0
95.00		81.2	1,401.0					0.0	288.7	81.2	1,689.6	0.0	0.0
96.08	Bot - Section 4	66.4	298.1					0.0	62.5	66.4	360.6	0.0	0.0
100.00		62.0	1,727.5					0.0	226.1	62.0	1,953.6	0.0	0.0
100.75	Top - Section 3	65.1	325.3					0.0	43.3	65.1	368.6	0.0	0.0
105.00		118.7	1,119.0					0.0	245.4	118.7	1,364.3	0.0	0.0
110.00	Appurtenance(s)	125.1	1,263.2	775.6	0.0	0.0	7,053.8	0.0	288.7	900.7	8,605.7	0.0	0.0
115.00		121.4	1,207.1					0.0	243.5	121.4	1,450.7	0.0	0.0
120.00		117.6	1,150.7					0.0	243.5	117.6	1,394.3	0.0	0.0
125.00		110.9	1,094.1					0.0	243.5	110.9	1,337.7	0.0	0.0
129.75	Bot - Section 5	55.9	987.2					0.0	231.4	55.9	1,218.6	0.0	0.0
130.00		42.3	77.9					0.0	12.2	42.3	90.1	0.0	0.0
133.58	Top - Section 4	54.8	1,087.4					0.0	174.5	54.8	1,261.9	0.0	0.0
135.00		68.0	253.0					0.0	69.0	68.0	322.0	0.0	0.0
140.00	Appurtenance(s)	103.0	852.2	707.2	0.0	0.0	6,157.0	0.0	243.5	810.2	7,252.7	0.0	0.0
145.00		98.5	800.8					0.0	219.5	98.5	1,020.4	0.0	0.0
150.00		84.8	749.3					0.0	219.5	84.8	968.8	0.0	0.0
154.00	Appurtenance(s)	45.7	564.0	1,183.6	0.0	0.0	10,666.6	0.0	175.6	1,229.3	11,406.2	0.0	0.0
155.00		52.2	137.1					0.0	15.5	52.2	152.6	0.0	0.0
160.00	Appurtenance(s)	78.7	645.6	313.9	0.0	0.0	2,746.7	0.0	77.3	392.6	3,469.6	0.0	0.0
164.33	Bot - Section 6	40.9	518.7					0.0	61.5	40.9	580.2	0.0	0.0
165.00		23.3	113.2					0.0	9.5	23.3	122.6	0.0	0.0
167.25	Top - Section 5	39.1	370.3					0.0	31.9	39.1	402.3	0.0	0.0
170.00	Appurtenance(s)	57.7	271.1	794.3	0.0	0.0	6,531.0	0.0	39.0	852.0	6,841.2	0.0	0.0
175.00		63.8	452.1					0.0	5.9	63.8	458.1	0.0	0.0
179.00	Appurtenance(s)	27.3	330.1	945.4	0.0	1,213.2	3,473.5	0.0	4.8	972.7	3,808.4	0.0	0.0

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph with 1.00 in Radial Ice 27 Iterations

Gust Response Factor :1.10 Ice Dead Load Factor :1.00 Wind Importance Factor :1.00
Dead Load Factor :1.20 Ice Importance Factor :1.00
Wind Load Factor :1.00

Totals:	9,185.88	99,089.5	0.00	0.00

Site Number: 370627 Code: ANSI/TIA-222-G

Site Name: Newington CT, CT Engineering Number:12600288 8/2/2018 10:28:52 AM

Customer: VERIZON WIRELESS

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph with 1.00 in Radial Ice 27 Iterations

Gust Response Factor :1.10 Ice Dead Load Factor :1.00 Wind Importance Factor :1.00

Dead Load Factor :1.20 Ice Importance Factor :1.00

Wind Load Factor :1.00

Calculated Forces

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 (deg)	Ratio
0.00	-99.09	-9.15	0.00	-1,223.53	0.00	1,223.53	4,604.11	2,302.05	11,869.6	5,943.65	0.00	0.00	0.227
5.00	-96.68	-9.07	0.00	-1,177.78	0.00	1,177.78	4,547.42	2,273.71	11,437.5	5,727.25	0.02	-0.05	0.227
10.00	-94.25	-9.00	0.00	-1,132.42	0.00	1,132.42	4,488.01	2,244.00	11,005.7	5,511.07	0.10	-0.09	0.226
15.00	-91.84	-8.93	0.00	-1,087.42	0.00	1,087.42	4,425.86	2,212.93	10,575.0	5,295.36	0.22	-0.14	0.226
20.00	-89.46	-8.86	0.00	-1,042.78	0.00	1,042.78	4,360.98	2,180.49	10,145.6	5,080.38	0.40	-0.20	0.226
25.00	-87.11	-8.79	0.00	-998.48	0.00	998.48	4,293.36	2,146.68	9,718.32	4,866.38	0.64	-0.25	0.225
30.00	-84.81	-8.75	0.00	-954.53	0.00	954.53	4,223.01	2,111.51	9,293.47	4,653.64	0.93	-0.30	0.225
31.25	-84.24	-8.72	0.00	-943.59	0.00	943.59	4,205.00	2,102.50	9,187.70	4,600.68	1.01	-0.32	0.225
35.00	-81.57	-8.66	0.00	-910.91	0.00	910.91	4,149.93	2,074.96	8,871.62	4,442.40	1.28	-0.36	0.225
37.50	-79.82	-8.62	0.00	-889.25	0.00	889.25	4,149.47	2,074.73	8,869.01	4,441.10	1.47	-0.39	0.219
40.00	-78.70	-8.57	0.00	-867.69	0.00	867.69	4,111.89	2,055.95	8,659.38	4,336.13	1.69	-0.42	0.219
45.00	-76.51	-8.49	0.00	-824.84	0.00	824.84	4,034.69	2,017.35	8,243.04	4,127.64	2.16	-0.48	0.219
50.00	-74.36	-8.41	0.00	-782.40	0.00	782.40	3,954.76	1,977.38	7,830.99	3,921.32	2.70	-0.55	0.218
55.00	-72.27	-8.32	0.00	-740.36	0.00	740.36	3,872.09	1,936.05	7,423.76	3,717.40	3.31	-0.61	0.218
60.00	-70.23	-8.25	0.00	-698.74	0.00	698.74	3,786.70	1,893.35	7,021.86	3,516.15	3.98	-0.68	0.217
63.25	-68.93	-8.21	0.00	-671.92	0.00	671.92	3,729.72	1,864.86	6,763.73	3,386.89	4.46	-0.72	0.217
65.00	-67.85	-8.16	0.00	-657.56	0.00	657.56	3,698.56	1,849.28	6,625.81	3,317.83	4.73	-0.75	0.217
68.75	-65.58	-8.10	0.00	-626.96	0.00	626.96	3,675.54	1,837.77	6,525.34	3,267.52	5.34	-0.80	0.210
70.00	-65.09	-8.06	0.00	-616.84	0.00	616.84	3,652.91	1,826.45	6,427.71	3,218.63	5.55	-0.82	0.209
75.00	-63.18	-7.97	0.00	-576.56	0.00	576.56	3,560.66	1,780.33	6,041.44	3,025.21	6.45	-0.89	0.208
80.00	-61.32	-7.88	0.00	-536.74	0.00	536.74	3,465.68	1,732.84	5,662.31	2,835.36	7.43	-0.97	0.207
85.00	-59.51	-7.79	0.00	-497.36	0.00	497.36	3,367.96	1,683.98	5,290.83	2,649.35	8.48	-1.05	0.205
90.00	-57.76	-7.70	0.00	-458.41	0.00	458.41	3,252.82	1,626.41	4,905.37	2,456.33	9.62	-1.13	0.204
95.00	-56.06	-7.64	0.00	-419.89	0.00	419.89	3,118.51	1,559.26	4,506.69	2,256.70	10.84	-1.21	0.204
96.08	-55.70	-7.61	0.00	-411.62	0.00	411.62	3,089.41	1,544.71	4,422.54	2,214.56	11.12	-1.23	0.204
100.00	-53.74	-7.54	0.00	-381.83	0.00	381.83	2,984.21	1,492.10	4,124.91	2,065.52	12.16	-1.30	0.203
100.75	-53.37	-7.51	0.00	-376.17	0.00	376.17	3,030.38	1,515.19	4,254.26	2,130.29	12.36	-1.31	0.194
105.00	-51.99	-7.43	0.00	-344.25	0.00	344.25	2,916.22	1,458.11	3,938.09	1,971.97	13.57	-1.39	0.192
110.00	-43.40	-6.38	0.00	-307.09	0.00	307.09	2,781.91	1,390.96	3,581.76	1,793.54	15.07	-1.47	0.187
115.00	-41.95	-6.29	0.00	-275.17	0.00	275.17	2,647.61	1,323.80	3,242.33	1,623.57	16.66	-1.56	0.185
120.00	-40.55	-6.20	0.00	-243.72	0.00	243.72	2,513.30	1,256.65	2,919.79	1,462.07	18.34	-1.65	0.183
125.00	-39.20	-6.11	0.00	-212.73	0.00	212.73	2,378.99	1,189.50	2,614.15	1,309.02	20.13	-1.75	0.179
129.75	-37.98	-6.05	0.00	-183.70	0.00	183.70	2,251.40	1,125.70	2,339.44	1,171.46	21.91	-1.84	0.174
130.00	-37.89	-6.03	0.00	-182.19	0.00	182.19	2,244.69	1,122.34	2,325.40	1,164.43	22.01	-1.85	0.173
133.58	-36.62	-5.97	0.00	-160.58	0.00	160.58	1,841.02	920.51	1,881.29	942.04	23.42	-1.92	0.190
135.00	-36.30	-5.93	0.00	-152.13	0.00	152.13	1,809.31	904.65	1,816.65	909.67	24.00	-1.95	0.187
140.00	-29.07	-4.92	0.00	-122.48	0.00	122.48	1,697.39	848.69	1,597.52	799.95	26.09	-2.05	0.170
145.00	-28.04	-4.83	0.00	-97.88	0.00	97.88	1,585.46	792.73	1,392.48	697.27	28.29	-2.15	0.158
150.00	-27.07	-4.75	0.00	-73.72	0.00	73.72	1,473.54	736.77	1,201.51	601.65	30.60	-2.25	0.141
154.00	-15.72	-3.08	0.00	-54.71	0.00	54.71	1,384.00	692.00	1,058.88	530.23	32.52	-2.32	0.115
155.00	-15.57	-3.03	0.00	-51.63	0.00	51.63	1,361.62	680.81	1,024.63	513.08	33.01	-2.34	0.112
160.00	-12.12	-2.51	0.00	-36.46	0.00	36.46	1,249.70	624.85	861.82	431.55	35.51	-2.42	0.094
164.33	-11.54	-2.45	0.00	-25.57	0.00	25.57	1,152.70	576.35	732.11	366.60	37.73	-2.48	0.080
165.00	-11.41	-2.43	0.00	-23.94	0.00	23.94	1,137.78	568.89	713.10	357.08	38.08	-2.49	0.077
167.25	-11.01	-2.38	0.00	-18.47	0.00	18.47	903.09	451.54	563.74	282.29	39.26	-2.52	0.078
170.00	-4.22	-1.23	0.00	-11.93	0.00	11.93	853.84	426.92	503.47	252.11	40.73	-2.55	0.052
175.00	-3.76	-1.14	0.00	-5.79	0.00	5.79	764.30	382.15	402.61	201.60	43.42	-2.59	0.034
179.00	0.00	-0.97	0.00	-1.21	0.00	1.21	692.67	346.34	330.04	165.26	45.60	-2.61	0.007

Load Case: 1.0D + 1.0W Serviceability 60 mph 25 Iterations

Gust Response Factor :1.10 Wind Importance Factor :1.00
Dead Load Factor :1.00
Wind Load Factor :1.00

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces Wind FX (lb)	Shaft Forces Dead Load (lb)	Discrete Forces Wind FX (lb)	Discrete Forces Torsion MY (lb-ft)	Discrete Forces Moment MZ (lb-ft)	Discrete Forces Dead Load (lb)	Linear Forces Wind FX (lb)	Linear Forces Dead Load (lb)	Sum of Forces Wind FX (lb)	Sum of Forces Dead Load (lb)	Sum of Forces Torsion MY (lb-ft)	Sum of Forces Moment MZ (lb)
0.00		57.7	0.0					0.0	0.0	57.7	0.0	0.0	0.0
5.00		114.0	1,252.8					0.0	240.6	114.0	1,493.3	0.0	0.0
10.00		111.2	1,222.0					0.0	240.6	111.2	1,462.6	0.0	0.0
15.00		108.4	1,191.3					0.0	240.6	108.4	1,431.8	0.0	0.0
20.00		105.5	1,160.5					0.0	240.6	105.5	1,401.1	0.0	0.0
25.00		102.7	1,129.8					0.0	240.6	102.7	1,370.3	0.0	0.0
30.00		63.2	1,099.0					0.0	240.6	63.2	1,339.5	0.0	0.0
31.25	Bot - Section 2	51.0	269.9					0.0	60.1	51.0	330.1	0.0	0.0
35.00		64.3	1,608.0					0.0	180.4	64.3	1,788.4	0.0	0.0
37.50	Top - Section 1	51.8	1,052.8					0.0	120.3	51.8	1,173.0	0.0	0.0
40.00		78.0	522.5					0.0	120.3	78.0	642.8	0.0	0.0
45.00		104.3	1,021.9					0.0	240.6	104.3	1,262.5	0.0	0.0
50.00		104.2	991.2					0.0	240.6	104.2	1,231.7	0.0	0.0
55.00		103.8	960.4					0.0	240.6	103.8	1,200.9	0.0	0.0
60.00		85.1	929.6					0.0	240.6	85.1	1,170.2	0.0	0.0
63.25	Bot - Section 3	51.5	587.8					0.0	156.4	51.5	744.1	0.0	0.0
65.00		56.8	627.5					0.0	84.2	56.8	711.7	0.0	0.0
68.75	Top - Section 2	51.5	1,319.4					0.0	180.4	51.5	1,499.8	0.0	0.0
70.00		63.5	217.9					0.0	60.1	63.5	278.1	0.0	0.0
75.00		100.5	852.6					0.0	240.6	100.5	1,093.1	0.0	0.0
80.00		98.7	821.8					0.0	240.6	98.7	1,062.4	0.0	0.0
85.00		96.6	791.0					0.0	240.6	96.6	1,031.6	0.0	0.0
90.00		94.4	760.3					0.0	240.6	94.4	1,000.8	0.0	0.0
95.00		56.5	729.5					0.0	240.6	56.5	970.1	0.0	0.0
96.08	Bot - Section 4	46.1	154.0					0.0	52.1	46.1	206.1	0.0	0.0
100.00		43.0	1,101.4					0.0	188.4	43.0	1,289.9	0.0	0.0
100.75	Top - Section 3	45.0	206.6					0.0	36.1	45.0	242.7	0.0	0.0
105.00		81.7	578.8					0.0	204.5	81.7	783.2	0.0	0.0
110.00	Appurtenance(s)	85.6	652.4	752.9	0.0	0.0	2,355.1	0.0	240.6	838.6	3,248.1	0.0	0.0
115.00		82.6	621.7					0.0	203.0	82.6	824.6	0.0	0.0
120.00		79.4	590.9					0.0	203.0	79.4	793.9	0.0	0.0
125.00		74.3	560.2					0.0	203.0	74.3	763.1	0.0	0.0
129.75	Bot - Section 5	37.2	503.7					0.0	192.8	37.2	696.5	0.0	0.0
130.00		28.1	47.8					0.0	10.1	28.1	57.9	0.0	0.0
133.58	Top - Section 4	36.3	669.2					0.0	145.4	36.3	814.7	0.0	0.0
135.00		44.7	118.4					0.0	57.5	44.7	175.9	0.0	0.0
140.00	Appurtenance(s)	67.3	401.5	624.9	0.0	0.0	2,366.9	0.0	203.0	692.2	2,971.4	0.0	0.0
145.00		63.5	375.9					0.0	183.0	63.5	558.8	0.0	0.0
150.00		54.1	350.3					0.0	183.0	54.1	533.2	0.0	0.0
154.00	Appurtenance(s)	28.9	261.8	1,183.9	0.0	0.0	3,319.3	0.0	146.4	1,212.8	3,727.4	0.0	0.0
155.00		32.5	62.9					0.0	12.9	32.5	75.8	0.0	0.0
160.00	Appurtenance(s)	48.5	299.0	278.7	0.0	0.0	863.6	0.0	64.4	327.2	1,227.0	0.0	0.0
164.33	Bot - Section 6	24.9	238.4					0.0	51.3	24.9	289.7	0.0	0.0
165.00		14.1	64.0					0.0	7.9	14.1	71.8	0.0	0.0
167.25	Top - Section 5	23.5	209.8					0.0	26.6	23.5	236.4	0.0	0.0
170.00	Appurtenance(s)	34.0	110.6	735.6	0.0	0.0	2,332.5	0.0	32.5	769.7	2,475.7	0.0	0.0
175.00		36.9	185.3					0.0	5.0	36.9	190.2	0.0	0.0
179.00	Appurtenance(s)	15.5	133.5	460.1	0.0	555.6	1,625.0	0.0	4.0	475.6	1,762.4	0.0	0.0

Load Case: 1.0D + 1.0W Serviceability 60 mph 25 Iterations

Gust Response Factor :1.10 Wind Importance Factor :1.00
Dead Load Factor :1.00
Wind Load Factor :1.00

Totals:	7,138.73	49,706.4	0.00	0.00

Load Case: 1.0D + 1.0W Serviceability 60 mph 25 Iterations

Gust Response Factor :1.10 Wind Importance Factor :1.00
Dead Load Factor :1.00
Wind Load Factor :1.00

Calculated Forces

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 (deg)	Ratio
0.00	-49.70	-7.09	0.00	-888.07	0.00	888.07	4,604.11	2,302.05	11,869.6	5,943.65	0.00	0.00	0.160
5.00	-48.21	-7.01	0.00	-852.60	0.00	852.60	4,547.42	2,273.71	11,437.5	5,727.25	0.02	-0.03	0.159
10.00	-46.74	-6.93	0.00	-817.56	0.00	817.56	4,488.01	2,244.00	11,005.7	5,511.07	0.07	-0.07	0.159
15.00	-45.30	-6.84	0.00	-782.93	0.00	782.93	4,425.86	2,212.93	10,575.0	5,295.36	0.16	-0.10	0.158
20.00	-43.90	-6.76	0.00	-748.71	0.00	748.71	4,360.98	2,180.49	10,145.6	5,080.38	0.29	-0.14	0.157
25.00	-42.52	-6.69	0.00	-714.90	0.00	714.90	4,293.36	2,146.68	9,718.32	4,866.38	0.46	-0.18	0.157
30.00	-41.18	-6.64	0.00	-681.47	0.00	681.47	4,223.01	2,111.51	9,293.47	4,653.64	0.67	-0.22	0.156
31.25	-40.85	-6.60	0.00	-673.17	0.00	673.17	4,205.00	2,102.50	9,187.70	4,600.68	0.73	-0.23	0.156
35.00	-39.06	-6.54	0.00	-648.43	0.00	648.43	4,149.93	2,074.96	8,871.62	4,442.40	0.92	-0.26	0.155
37.50	-37.88	-6.50	0.00	-632.07	0.00	632.07	4,149.47	2,074.73	8,869.01	4,441.10	1.06	-0.28	0.151
40.00	-37.24	-6.44	0.00	-615.81	0.00	615.81	4,111.89	2,055.95	8,659.38	4,336.13	1.22	-0.30	0.151
45.00	-35.97	-6.36	0.00	-583.60	0.00	583.60	4,034.69	2,017.35	8,243.04	4,127.64	1.56	-0.35	0.150
50.00	-34.73	-6.27	0.00	-551.82	0.00	551.82	3,954.76	1,977.38	7,830.99	3,921.32	1.94	-0.39	0.150
55.00	-33.53	-6.19	0.00	-520.46	0.00	520.46	3,872.09	1,936.05	7,423.76	3,717.40	2.38	-0.44	0.149
60.00	-32.36	-6.11	0.00	-489.53	0.00	489.53	3,786.70	1,893.35	7,021.86	3,516.15	2.86	-0.48	0.148
63.25	-31.61	-6.07	0.00	-469.66	0.00	469.66	3,729.72	1,864.86	6,763.73	3,386.89	3.20	-0.51	0.147
65.00	-30.90	-6.02	0.00	-459.03	0.00	459.03	3,698.56	1,849.28	6,625.81	3,317.83	3.39	-0.53	0.147
68.75	-29.39	-5.97	0.00	-436.45	0.00	436.45	3,675.54	1,837.77	6,525.34	3,267.52	3.82	-0.57	0.142
70.00	-29.11	-5.92	0.00	-428.99	0.00	428.99	3,652.91	1,826.45	6,427.71	3,218.63	3.97	-0.58	0.141
75.00	-28.02	-5.83	0.00	-399.40	0.00	399.40	3,560.66	1,780.33	6,041.44	3,025.21	4.61	-0.63	0.140
80.00	-26.95	-5.75	0.00	-370.24	0.00	370.24	3,465.68	1,732.84	5,662.31	2,835.36	5.30	-0.69	0.138
85.00	-25.91	-5.66	0.00	-341.51	0.00	341.51	3,367.96	1,683.98	5,290.83	2,649.35	6.05	-0.74	0.137
90.00	-24.91	-5.58	0.00	-313.21	0.00	313.21	3,252.82	1,626.41	4,905.37	2,456.33	6.85	-0.79	0.135
95.00	-23.94	-5.52	0.00	-285.32	0.00	285.32	3,118.51	1,559.26	4,506.69	2,256.70	7.71	-0.85	0.134
96.08	-23.73	-5.48	0.00	-279.34	0.00	279.34	3,089.41	1,544.71	4,422.54	2,214.56	7.91	-0.86	0.134
100.00	-22.44	-5.43	0.00	-257.86	0.00	257.86	2,984.21	1,492.10	4,124.91	2,065.52	8.64	-0.91	0.132
100.75	-22.19	-5.40	0.00	-253.79	0.00	253.79	3,030.38	1,515.19	4,254.26	2,130.29	8.78	-0.92	0.126
105.00	-21.40	-5.32	0.00	-230.85	0.00	230.85	2,916.22	1,458.11	3,938.09	1,971.97	9.62	-0.97	0.124
110.00	-18.17	-4.44	0.00	-204.25	0.00	204.25	2,781.91	1,390.96	3,581.76	1,793.54	10.67	-1.03	0.120
115.00	-17.34	-4.37	0.00	-182.02	0.00	182.02	2,647.61	1,323.80	3,242.33	1,623.57	11.78	-1.09	0.119
120.00	-16.54	-4.29	0.00	-160.20	0.00	160.20	2,513.30	1,256.65	2,919.79	1,462.07	12.95	-1.15	0.116
125.00	-15.78	-4.21	0.00	-138.76	0.00	138.76	2,378.99	1,189.50	2,614.15	1,309.02	14.19	-1.21	0.113
129.75	-15.08	-4.17	0.00	-118.74	0.00	118.74	2,251.40	1,125.70	2,339.44	1,171.46	15.42	-1.27	0.108
130.00	-15.02	-4.15	0.00	-117.69	0.00	117.69	2,244.69	1,122.34	2,325.40	1,164.43	15.49	-1.27	0.108
133.58	-14.20	-4.10	0.00	-102.83	0.00	102.83	1,841.02	920.51	1,881.29	942.04	16.46	-1.32	0.117
135.00	-14.03	-4.06	0.00	-97.02	0.00	97.02	1,809.31	904.65	1,816.65	909.67	16.85	-1.34	0.114
140.00	-11.07	-3.31	0.00	-76.71	0.00	76.71	1,697.39	848.69	1,597.52	799.95	18.29	-1.40	0.102
145.00	-10.51	-3.25	0.00	-60.15	0.00	60.15	1,585.46	792.73	1,392.48	697.27	19.79	-1.47	0.093
150.00	-9.97	-3.19	0.00	-43.91	0.00	43.91	1,473.54	736.77	1,201.51	601.65	21.36	-1.53	0.080
154.00	-6.28	-1.88	0.00	-31.17	0.00	31.17	1,384.00	692.00	1,058.88	530.23	22.66	-1.57	0.063
155.00	-6.20	-1.85	0.00	-29.29	0.00	29.29	1,361.62	680.81	1,024.63	513.08	22.99	-1.58	0.062
160.00	-4.99	-1.49	0.00	-20.06	0.00	20.06	1,249.70	624.85	861.82	431.55	24.67	-1.62	0.050
164.33	-4.70	-1.46	0.00	-13.61	0.00	13.61	1,152.70	576.35	732.11	366.60	26.16	-1.66	0.041
165.00	-4.62	-1.44	0.00	-12.64	0.00	12.64	1,137.78	568.89	713.10	357.08	26.39	-1.66	0.039
167.25	-4.39	-1.41	0.00	-9.40	0.00	9.40	903.09	451.54	563.74	282.29	27.18	-1.68	0.038
170.00	-1.94	-0.57	0.00	-5.52	0.00	5.52	853.84	426.92	503.47	252.11	28.15	-1.69	0.024
175.00	-1.75	-0.53	0.00	-2.67	0.00	2.67	764.30	382.15	402.61	201.60	29.93	-1.71	0.016
179.00	0.00	-0.48	0.00	-0.56	0.00	0.56	692.67	346.34	330.04	165.26	31.37	-1.72	0.003

Equivalent Lateral Forces Method Analysis

(Based on ASCE7-10 Chapters 11, 12, 15)

Spectral Response Acceleration for Short Period (S_s):	0.18
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06
Long-Period Transition Period (T_L):	6
Importance Factor (I_E):	1.00
Site Coefficient F_a:	1.60
Site Coeffiecient F_v:	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.19
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Seismic Response Coefficient (C_s):	0.03
Upper Limit C_s	0.03
Lower Limit C_s	0.03
Period based on Rayleigh Method (sec):	2.90
Redundancy Factor (p):	1.30
Seismic Force Distribution Exponent (k):	2.00
Total Unfactored Dead Load:	49.71 k
Seismic Base Shear (E):	1.94 k

Load Case (1.2 + 0.2Sds) * DL + E ELFM Seismic Equivalent Lateral Forces Method

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
47	177.00	137	4,305	0.008	15	170
46	172.50	190	5,661	0.010	20	236
45	168.63	143	4,071	0.007	14	177
44	166.13	236	6,524	0.012	23	293
43	164.67	72	1,948	0.004	7	89
42	162.17	290	7,618	0.014	27	359
41	157.50	363	9,015	0.017	32	450
40	154.50	76	1,808	0.003	6	94
39	152.00	408	9,429	0.017	33	506
38	147.50	533	11,601	0.021	41	661
37	142.50	559	11,348	0.021	40	692
36	137.50	604	11,428	0.021	41	749
35	134.29	176	3,173	0.006	11	218
34	131.79	815	14,150	0.026	50	1,009
33	129.88	58	977	0.002	3	72
32	127.38	696	11,300	0.021	40	863
31	122.50	763	11,452	0.021	41	945
30	117.50	794	10,961	0.020	39	983
29	112.50	825	10,437	0.019	37	1,022
28	107.50	893	10,320	0.019	37	1,106
27	102.88	783	8,289	0.015	29	970
26	100.38	243	2,445	0.004	9	301
25	98.04	1,290	12,398	0.023	44	1,598

24	95.54	206	1,882	0.003	7	255
23	92.50	970	8,300	0.015	29	1,202
22	87.50	1,001	7,663	0.014	27	1,240
21	82.50	1,032	7,021	0.013	25	1,278
20	77.50	1,062	6,381	0.012	23	1,316
19	72.50	1,093	5,746	0.011	20	1,354
18	69.38	278	1,338	0.002	5	344
17	66.88	1,500	6,707	0.012	24	1,858
16	64.13	712	2,927	0.005	10	882
15	61.63	744	2,826	0.005	10	922
14	57.50	1,170	3,869	0.007	14	1,450
13	52.50	1,201	3,310	0.006	12	1,488
12	47.50	1,232	2,779	0.005	10	1,526
11	42.50	1,262	2,280	0.004	8	1,564
10	38.75	643	965	0.002	3	796
9	36.25	1,173	1,541	0.003	5	1,453
8	33.13	1,788	1,962	0.004	7	2,216
7	30.63	330	310	0.001	1	409
6	27.50	1,340	1,013	0.002	4	1,659
5	22.50	1,370	694	0.001	2	1,698
4	17.50	1,401	429	0.001	2	1,736
3	12.50	1,432	224	0.000	1	1,774
2	7.50	1,463	82	0.000	0	1,812
1	2.50	1,493	9	0.000	0	1,850
5' Dipole	179.00	15	481	0.001	2	19
10' Omni	179.00	25	801	0.001	3	31
18' Dipole	179.00	55	1,762	0.003	6	68
8' Yagi	179.00	30	961	0.002	3	37
Round Low Profile Pl	179.00	1,500	48,062	0.088	171	1,858
Ericsson KRY 112 144	170.00	33	954	0.002	3	41
Ericsson RRUS 11 B12	170.00	152	4,396	0.008	16	188
Ericsson AIR 21, 1.3	170.00	249	7,196	0.013	26	308
Ericsson AIR 21, 1.3	170.00	244	7,066	0.013	25	303
Andrew LNX-6515DS-VT	170.00	154	4,448	0.008	16	191
Round Low Profile Pl	170.00	1,500	43,350	0.079	154	1,858
RCU	160.00	3	77	0.000	0	4
DragonWave Horizon C	160.00	34	883	0.002	3	43
Samsung U-RAS Premiu	160.00	99	2,534	0.005	9	123
Argus LLPX310R	160.00	86	2,196	0.004	8	106
DragonWave A-ANT-18G	160.00	81	2,081	0.004	7	101
Side Arms	160.00	560	14,336	0.026	51	694
Powerwave LGP21401	154.00	85	2,006	0.004	7	105
Raycap DC6-48-60-18-	154.00	64	1,508	0.003	5	79
Ericsson RRUS 4478 B	154.00	180	4,262	0.008	15	223
Ericsson RRUS 11 (Ba	154.00	165	3,913	0.007	14	204
Ericsson RRUS 32	154.00	165	3,920	0.007	14	205
Ericsson RRUS 12	154.00	150	3,557	0.007	13	186
Ericsson RRUS 32 B66	154.00	159	3,771	0.007	13	197
Ericsson RRUS 32 B2	154.00	159	3,771	0.007	13	197
Raycap DC6-48-60-0-8	154.00	16	379	0.001	1	20
Kathrein Scala 800 1	154.00	139	3,294	0.006	12	172
Quintel QS66512-2	154.00	111	2,632	0.005	9	138
CCI OPA-65R-LCUU-H8	154.00	264	6,261	0.011	22	327
CCI TPA-65R-LCUUUU-H	154.00	163	3,870	0.007	14	202
Round Low Profile Pl	154.00	1,500	35,574	0.065	126	1,858
Alcatel-Lucent 800 M	140.00	192	3,763	0.007	13	238
Alcatel-Lucent 1900M	140.00	132	2,587	0.005	9	164
Alcatel-Lucent TD-RR	140.00	198	3,887	0.007	14	246
RFS APXVTM14-C-I20	140.00	169	3,305	0.006	12	209
RFS APXV9ERR18-C-A20	140.00	62	1,215	0.002	4	77
RFS APXVSPP18-C-A20	140.00	114	2,234	0.004	8	141
Round Low Profile Pl	140.00	1,500	29,400	0.054	104	1,858
Samsung PCS/AWS Dual	110.00	253	3,064	0.006	11	314
Samsung 700/850MHz D	110.00	211	2,552	0.005	9	261

Antel BXA-80063/4CF	110.00	59	719	0.001	3	74
RFS DB-T1-6Z-8AB-0Z	110.00	88	1,065	0.002	4	109
Commscope SBNHH-1D65	110.00	244	2,948	0.005	10	302
Flat Low Profile Pla	110.00	1,500	18,150	0.033	64	1,858
		49,706	546,109	1.000	1,939	61,578

Load Case (0.9 - 0.2Sds) * DL + E ELFM Seismic (Reduced DL) Equivalent Lateral Forces Method

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
47	177.00	137	4,305	0.008	15	118
46	172.50	190	5,661	0.010	20	164
45	168.63	143	4,071	0.007	14	123
44	166.13	236	6,524	0.012	23	204
43	164.67	72	1,948	0.004	7	62
42	162.17	290	7,618	0.014	27	249
41	157.50	363	9,015	0.017	32	313
40	154.50	76	1,808	0.003	6	65
39	152.00	408	9,429	0.017	33	351
38	147.50	533	11,601	0.021	41	459
37	142.50	559	11,348	0.021	40	481
36	137.50	604	11,428	0.021	41	521
35	134.29	176	3,173	0.006	11	152
34	131.79	815	14,150	0.026	50	702
33	129.88	58	977	0.002	3	50
32	127.38	696	11,300	0.021	40	600
31	122.50	763	11,452	0.021	41	657
30	117.50	794	10,961	0.020	39	684
29	112.50	825	10,437	0.019	37	710
28	107.50	893	10,320	0.019	37	769
27	102.88	783	8,289	0.015	29	674
26	100.38	243	2,445	0.004	9	209
25	98.04	1,290	12,398	0.023	44	1,111
24	95.54	206	1,882	0.003	7	178
23	92.50	970	8,300	0.015	29	835
22	87.50	1,001	7,663	0.014	27	862
21	82.50	1,032	7,021	0.013	25	888
20	77.50	1,062	6,381	0.012	23	915
19	72.50	1,093	5,746	0.011	20	941
18	69.38	278	1,338	0.002	5	239
17	66.88	1,500	6,707	0.012	24	1,292
16	64.13	712	2,927	0.005	10	613
15	61.63	744	2,826	0.005	10	641
14	57.50	1,170	3,869	0.007	14	1,008
13	52.50	1,201	3,310	0.006	12	1,034
12	47.50	1,232	2,779	0.005	10	1,061
11	42.50	1,262	2,280	0.004	8	1,087
10	38.75	643	965	0.002	3	554
9	36.25	1,173	1,541	0.003	5	1,010
8	33.13	1,788	1,962	0.004	7	1,540
7	30.63	330	310	0.001	1	284
6	27.50	1,340	1,013	0.002	4	1,154
5	22.50	1,370	694	0.001	2	1,180
4	17.50	1,401	429	0.001	2	1,207
3	12.50	1,432	224	0.000	1	1,233
2	7.50	1,463	82	0.000	0	1,260
1	2.50	1,493	9	0.000	0	1,286
5' Dipole	179.00	15	481	0.001	2	13
10' Omni	179.00	25	801	0.001	3	22
18' Dipole	179.00	55	1,762	0.003	6	47

8' Yagi	179.00	30	961	0.002	3	26
Round Low Profile Pl	179.00	1,500	48,062	0.088	171	1,292
Ericsson KRY 112 144	170.00	33	954	0.002	3	28
Ericsson RRUS 11 B12	170.00	152	4,396	0.008	16	131
Ericsson AIR 21, 1.3	170.00	249	7,196	0.013	26	214
Ericsson AIR 21, 1.3	170.00	244	7,066	0.013	25	211
Andrew LNX-6515DS-VT	170.00	154	4,448	0.008	16	133
Round Low Profile Pl	170.00	1,500	43,350	0.079	154	1,292
RCU	160.00	3	77	0.000	0	3
DragonWave Horizon C	160.00	34	883	0.002	3	30
Samsung U-RAS Premiu	160.00	99	2,534	0.005	9	85
Argus LLPX310R	160.00	86	2,196	0.004	8	74
DragonWave A-ANT-18G	160.00	81	2,081	0.004	7	70
Side Arms	160.00	560	14,336	0.026	51	482
Powerwave LGP21401	154.00	85	2,006	0.004	7	73
Raycap DC6-48-60-18-	154.00	64	1,508	0.003	5	55
Ericsson RRUS 4478 B	154.00	180	4,262	0.008	15	155
Ericsson RRUS 11 (Ba	154.00	165	3,913	0.007	14	142
Ericsson RRUS 32	154.00	165	3,920	0.007	14	142
Ericsson RRUS 12	154.00	150	3,557	0.007	13	129
Ericsson RRUS 32 B66	154.00	159	3,771	0.007	13	137
Ericsson RRUS 32 B2	154.00	159	3,771	0.007	13	137
Raycap DC6-48-60-0-8	154.00	16	379	0.001	1	14
Kathrein Scala 800 1	154.00	139	3,294	0.006	12	120
Quintel QS66512-2	154.00	111	2,632	0.005	9	96
CCI OPA-65R-LCUU-H8	154.00	264	6,261	0.011	22	227
CCI TPA-65R-LCUUUU-H	154.00	163	3,870	0.007	14	141
Round Low Profile Pl	154.00	1,500	35,574	0.065	126	1,292
Alcatel-Lucent 800 M	140.00	192	3,763	0.007	13	165
Alcatel-Lucent 1900M	140.00	132	2,587	0.005	9	114
Alcatel-Lucent TD-RR	140.00	198	3,887	0.007	14	171
RFS APXVTM14-C-I20	140.00	169	3,305	0.006	12	145
RFS APXV9ERR18-C-A20	140.00	62	1,215	0.002	4	53
RFS APXVSPP18-C-A20	140.00	114	2,234	0.004	8	98
Round Low Profile Pl	140.00	1,500	29,400	0.054	104	1,292
Samsung PCS/AWS Dual	110.00	253	3,064	0.006	11	218
Samsung 700/850MHz D	110.00	211	2,552	0.005	9	182
Antel BXA-80063/4CF	110.00	59	719	0.001	3	51
RFS DB-T1-6Z-8AB-0Z	110.00	88	1,065	0.002	4	76
Commscope SBNHH-1D65	110.00	244	2,948	0.005	10	210
Flat Low Profile Pla	110.00	1,500	18,150	0.033	64	1,292
		49,706	546,109	1.000	1,939	42,806

Load Case (1.2 + 0.2Sds) * DL + E ELFM Seismic Equivalent Lateral Forces Method

Calculated Forces

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 (deg)	Ratio
0.00	-59.73	-1.94	0.00	-281.60	0.00	281.60	4,604.11	2,302.05	11,869.6	5,943.65	0.00	0.00	0.060
5.00	-57.92	-1.95	0.00	-271.89	0.00	271.89	4,547.42	2,273.71	11,437.5	5,727.25	0.01	-0.01	0.060
10.00	-56.14	-1.96	0.00	-262.12	0.00	262.12	4,488.01	2,244.00	11,005.7	5,511.07	0.02	-0.02	0.060
15.00	-54.41	-1.97	0.00	-252.31	0.00	252.31	4,425.86	2,212.93	10,575.0	5,295.36	0.05	-0.03	0.060
20.00	-52.71	-1.98	0.00	-242.45	0.00	242.45	4,360.98	2,180.49	10,145.6	5,080.38	0.09	-0.05	0.060
25.00	-51.05	-1.99	0.00	-232.55	0.00	232.55	4,293.36	2,146.68	9,718.32	4,866.38	0.15	-0.06	0.060
30.00	-50.64	-1.99	0.00	-222.62	0.00	222.62	4,223.01	2,111.51	9,293.47	4,653.64	0.21	-0.07	0.060
31.25	-48.42	-1.99	0.00	-220.13	0.00	220.13	4,205.00	2,102.50	9,187.70	4,600.68	0.23	-0.07	0.059
35.00	-46.97	-1.99	0.00	-212.68	0.00	212.68	4,149.93	2,074.96	8,871.62	4,442.40	0.30	-0.08	0.059
37.50	-46.17	-1.99	0.00	-207.71	0.00	207.71	4,149.47	2,074.73	8,869.01	4,441.10	0.34	-0.09	0.058
40.00	-44.61	-1.99	0.00	-202.74	0.00	202.74	4,111.89	2,055.95	8,659.38	4,336.13	0.39	-0.10	0.058
45.00	-43.08	-1.98	0.00	-192.81	0.00	192.81	4,034.69	2,017.35	8,243.04	4,127.64	0.50	-0.11	0.057
50.00	-41.59	-1.98	0.00	-182.90	0.00	182.90	3,954.76	1,977.38	7,830.99	3,921.32	0.63	-0.13	0.057
55.00	-40.14	-1.97	0.00	-173.00	0.00	173.00	3,872.09	1,936.05	7,423.76	3,717.40	0.77	-0.14	0.057
60.00	-39.22	-1.97	0.00	-163.13	0.00	163.13	3,786.70	1,893.35	7,021.86	3,516.15	0.93	-0.16	0.057
63.25	-38.34	-1.96	0.00	-156.73	0.00	156.73	3,729.72	1,864.86	6,763.73	3,386.89	1.04	-0.17	0.057
65.00	-36.48	-1.94	0.00	-153.30	0.00	153.30	3,698.56	1,849.28	6,625.81	3,317.83	1.10	-0.17	0.056
68.75	-36.14	-1.94	0.00	-146.03	0.00	146.03	3,675.54	1,837.77	6,525.34	3,267.52	1.24	-0.19	0.055
70.00	-34.78	-1.92	0.00	-143.60	0.00	143.60	3,652.91	1,826.45	6,427.71	3,218.63	1.29	-0.19	0.054
75.00	-33.46	-1.90	0.00	-134.00	0.00	134.00	3,560.66	1,780.33	6,041.44	3,025.21	1.50	-0.21	0.054
80.00	-32.19	-1.88	0.00	-124.49	0.00	124.49	3,465.68	1,732.84	5,662.31	2,835.36	1.73	-0.23	0.053
85.00	-30.95	-1.86	0.00	-115.07	0.00	115.07	3,367.96	1,683.98	5,290.83	2,649.35	1.97	-0.24	0.053
90.00	-29.74	-1.84	0.00	-105.77	0.00	105.77	3,252.82	1,626.41	4,905.37	2,456.33	2.24	-0.26	0.052
95.00	-29.49	-1.83	0.00	-96.59	0.00	96.59	3,118.51	1,559.26	4,506.69	2,256.70	2.52	-0.28	0.052
96.08	-27.89	-1.79	0.00	-94.60	0.00	94.60	3,089.41	1,544.71	4,422.54	2,214.56	2.59	-0.29	0.052
100.00	-27.59	-1.78	0.00	-87.61	0.00	87.61	2,984.21	1,492.10	4,124.91	2,065.52	2.83	-0.30	0.052
100.75	-26.62	-1.75	0.00	-86.27	0.00	86.27	3,030.38	1,515.19	4,254.26	2,130.29	2.88	-0.30	0.049
105.00	-25.51	-1.72	0.00	-78.83	0.00	78.83	2,916.22	1,458.11	3,938.09	1,971.97	3.15	-0.32	0.049
110.00	-21.57	-1.56	0.00	-70.24	0.00	70.24	2,781.91	1,390.96	3,581.76	1,793.54	3.50	-0.34	0.047
115.00	-20.59	-1.53	0.00	-62.42	0.00	62.42	2,647.61	1,323.80	3,242.33	1,623.57	3.87	-0.36	0.046
120.00	-19.64	-1.49	0.00	-54.79	0.00	54.79	2,513.30	1,256.65	2,919.79	1,462.07	4.26	-0.38	0.045
125.00	-18.78	-1.45	0.00	-47.36	0.00	47.36	2,378.99	1,189.50	2,614.15	1,309.02	4.67	-0.40	0.044
129.75	-18.71	-1.45	0.00	-40.48	0.00	40.48	2,251.40	1,125.70	2,339.44	1,171.46	5.09	-0.42	0.043
130.00	-17.70	-1.39	0.00	-40.12	0.00	40.12	2,244.69	1,122.34	2,325.40	1,164.43	5.11	-0.43	0.042
133.58	-17.48	-1.38	0.00	-35.13	0.00	35.13	1,841.02	920.51	1,881.29	942.04	5.43	-0.44	0.047
135.00	-16.73	-1.34	0.00	-33.17	0.00	33.17	1,809.31	904.65	1,816.65	909.67	5.57	-0.45	0.046
140.00	-13.11	-1.11	0.00	-26.47	0.00	26.47	1,697.39	848.69	1,597.52	799.95	6.05	-0.47	0.041
145.00	-12.45	-1.07	0.00	-20.91	0.00	20.91	1,585.46	792.73	1,392.48	697.27	6.55	-0.49	0.038
150.00	-11.94	-1.04	0.00	-15.57	0.00	15.57	1,473.54	736.77	1,201.51	601.65	7.08	-0.51	0.034
154.00	-7.74	-0.71	0.00	-11.42	0.00	11.42	1,384.00	692.00	1,058.88	530.23	7.52	-0.53	0.027
155.00	-7.29	-0.68	0.00	-10.71	0.00	10.71	1,361.62	680.81	1,024.63	513.08	7.63	-0.53	0.026
160.00	-5.86	-0.56	0.00	-7.32	0.00	7.32	1,249.70	624.85	861.82	431.55	8.19	-0.55	0.022
164.33	-5.77	-0.55	0.00	-4.89	0.00	4.89	1,152.70	576.35	732.11	366.60	8.70	-0.56	0.018
165.00	-5.48	-0.53	0.00	-4.53	0.00	4.53	1,137.78	568.89	713.10	357.08	8.77	-0.56	0.017
167.25	-5.30	-0.51	0.00	-3.34	0.00	3.34	903.09	451.54	563.74	282.29	9.04	-0.57	0.018
170.00	-2.18	-0.22	0.00	-1.93	0.00	1.93	853.84	426.92	503.47	252.11	9.37	-0.57	0.010
175.00	-2.01	-0.21	0.00	-0.82	0.00	0.82	764.30	382.15	402.61	201.60	9.97	-0.58	0.007
179.00	0.00	-0.18	0.00	0.00	0.00	0.00	692.67	346.34	330.04	165.26	10.46	-0.58	0.000

Load Case (0.9 - 0.2Sds) * DL + E ELFM Seismic (Reduced DL) Equivalent Lateral Forces Method

Calculated Forces

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 (deg)	Ratio
0.00	-41.52	-1.94	0.00	-276.19	0.00	276.19	4,604.11	2,302.05	11,869.6	5,943.65	0.00	0.00	0.055
5.00	-40.26	-1.95	0.00	-266.48	0.00	266.48	4,547.42	2,273.71	11,437.5	5,727.25	0.01	-0.01	0.055
10.00	-39.03	-1.95	0.00	-256.74	0.00	256.74	4,488.01	2,244.00	11,005.7	5,511.07	0.02	-0.02	0.055
15.00	-37.82	-1.96	0.00	-246.97	0.00	246.97	4,425.86	2,212.93	10,575.0	5,295.36	0.05	-0.03	0.055
20.00	-36.64	-1.96	0.00	-237.16	0.00	237.16	4,360.98	2,180.49	10,145.6	5,080.38	0.09	-0.04	0.055
25.00	-35.48	-1.97	0.00	-227.34	0.00	227.34	4,293.36	2,146.68	9,718.32	4,866.38	0.14	-0.06	0.055
30.00	-35.20	-1.97	0.00	-217.50	0.00	217.50	4,223.01	2,111.51	9,293.47	4,653.64	0.21	-0.07	0.055
31.25	-33.66	-1.97	0.00	-215.04	0.00	215.04	4,205.00	2,102.50	9,187.70	4,600.68	0.23	-0.07	0.055
35.00	-32.65	-1.96	0.00	-207.67	0.00	207.67	4,149.93	2,074.96	8,871.62	4,442.40	0.29	-0.08	0.055
37.50	-32.10	-1.96	0.00	-202.76	0.00	202.76	4,149.47	2,074.73	8,869.01	4,441.10	0.33	-0.09	0.053
40.00	-31.01	-1.96	0.00	-197.85	0.00	197.85	4,111.89	2,055.95	8,659.38	4,336.13	0.38	-0.10	0.053
45.00	-29.95	-1.96	0.00	-188.05	0.00	188.05	4,034.69	2,017.35	8,243.04	4,127.64	0.49	-0.11	0.053
50.00	-28.91	-1.95	0.00	-178.28	0.00	178.28	3,954.76	1,977.38	7,830.99	3,921.32	0.61	-0.12	0.053
55.00	-27.90	-1.94	0.00	-168.53	0.00	168.53	3,872.09	1,936.05	7,423.76	3,717.40	0.75	-0.14	0.053
60.00	-27.26	-1.93	0.00	-158.84	0.00	158.84	3,786.70	1,893.35	7,021.86	3,516.15	0.90	-0.15	0.052
63.25	-26.65	-1.93	0.00	-152.55	0.00	152.55	3,729.72	1,864.86	6,763.73	3,386.89	1.01	-0.16	0.052
65.00	-25.36	-1.90	0.00	-149.18	0.00	149.18	3,698.56	1,849.28	6,625.81	3,317.83	1.07	-0.17	0.052
68.75	-25.12	-1.90	0.00	-142.05	0.00	142.05	3,675.54	1,837.77	6,525.34	3,267.52	1.21	-0.18	0.050
70.00	-24.18	-1.88	0.00	-139.67	0.00	139.67	3,652.91	1,826.45	6,427.71	3,218.63	1.26	-0.19	0.050
75.00	-23.26	-1.86	0.00	-130.27	0.00	130.27	3,560.66	1,780.33	6,041.44	3,025.21	1.47	-0.20	0.050
80.00	-22.37	-1.84	0.00	-120.95	0.00	120.95	3,465.68	1,732.84	5,662.31	2,835.36	1.69	-0.22	0.049
85.00	-21.51	-1.82	0.00	-111.75	0.00	111.75	3,367.96	1,683.98	5,290.83	2,649.35	1.93	-0.24	0.049
90.00	-20.67	-1.79	0.00	-102.67	0.00	102.67	3,252.82	1,626.41	4,905.37	2,456.33	2.19	-0.26	0.048
95.00	-20.50	-1.79	0.00	-93.72	0.00	93.72	3,118.51	1,559.26	4,506.69	2,256.70	2.46	-0.27	0.048
96.08	-19.39	-1.74	0.00	-91.78	0.00	91.78	3,089.41	1,544.71	4,422.54	2,214.56	2.53	-0.28	0.048
100.00	-19.18	-1.73	0.00	-84.96	0.00	84.96	2,984.21	1,492.10	4,124.91	2,065.52	2.76	-0.29	0.048
100.75	-18.50	-1.70	0.00	-83.66	0.00	83.66	3,030.38	1,515.19	4,254.26	2,130.29	2.81	-0.30	0.045
105.00	-17.73	-1.67	0.00	-76.41	0.00	76.41	2,916.22	1,458.11	3,938.09	1,971.97	3.08	-0.31	0.045
110.00	-14.99	-1.52	0.00	-68.07	0.00	68.07	2,781.91	1,390.96	3,581.76	1,793.54	3.42	-0.33	0.043
115.00	-14.31	-1.48	0.00	-60.46	0.00	60.46	2,647.61	1,323.80	3,242.33	1,623.57	3.78	-0.35	0.043
120.00	-13.65	-1.44	0.00	-53.05	0.00	53.05	2,513.30	1,256.65	2,919.79	1,462.07	4.16	-0.37	0.042
125.00	-13.05	-1.40	0.00	-45.83	0.00	45.83	2,378.99	1,189.50	2,614.15	1,309.02	4.56	-0.39	0.040
129.75	-13.00	-1.40	0.00	-39.16	0.00	39.16	2,251.40	1,125.70	2,339.44	1,171.46	4.96	-0.41	0.039
130.00	-12.30	-1.35	0.00	-38.81	0.00	38.81	2,244.69	1,122.34	2,325.40	1,164.43	4.98	-0.41	0.039
133.58	-12.15	-1.34	0.00	-33.98	0.00	33.98	1,841.02	920.51	1,881.29	942.04	5.30	-0.43	0.043
135.00	-11.63	-1.30	0.00	-32.08	0.00	32.08	1,809.31	904.65	1,816.65	909.67	5.43	-0.43	0.042
140.00	-9.11	-1.08	0.00	-25.60	0.00	25.60	1,697.39	848.69	1,597.52	799.95	5.89	-0.46	0.037
145.00	-8.65	-1.03	0.00	-20.22	0.00	20.22	1,585.46	792.73	1,392.48	697.27	6.38	-0.48	0.034
150.00	-8.30	-1.00	0.00	-15.05	0.00	15.05	1,473.54	736.77	1,201.51	601.65	6.90	-0.50	0.031
154.00	-5.38	-0.69	0.00	-11.05	0.00	11.05	1,384.00	692.00	1,058.88	530.23	7.32	-0.51	0.025
155.00	-5.07	-0.66	0.00	-10.36	0.00	10.36	1,361.62	680.81	1,024.63	513.08	7.43	-0.52	0.024
160.00	-4.07	-0.54	0.00	-7.08	0.00	7.08	1,249.70	624.85	861.82	431.55	7.98	-0.53	0.020
164.33	-4.01	-0.53	0.00	-4.73	0.00	4.73	1,152.70	576.35	732.11	366.60	8.47	-0.54	0.016
165.00	-3.81	-0.51	0.00	-4.38	0.00	4.38	1,137.78	568.89	713.10	357.08	8.54	-0.55	0.016
167.25	-3.69	-0.49	0.00	-3.23	0.00	3.23	903.09	451.54	563.74	282.29	8.80	-0.55	0.016
170.00	-1.52	-0.21	0.00	-1.87	0.00	1.87	853.84	426.92	503.47	252.11	9.12	-0.56	0.009
175.00	-1.40	-0.20	0.00	-0.79	0.00	0.79	764.30	382.15	402.61	201.60	9.71	-0.56	0.006
179.00	0.00	-0.18	0.00	0.00	0.00	0.00	692.67	346.34	330.04	165.26	10.18	-0.56	0.000

Equivalent Modal Forces Analysis

(Based on ASCE7-10 Chapters 11, 12 & 15 and ANSI/TIA-G, section 2.7)

Spectral Response Acceleration for Short Period (S_s):	0.18
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06
Importance Factor (I_E):	1.00
Site Coefficient F_a:	1.60
Site Coefficient F_v	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.19
Desing Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Period Based on Rayleigh Method (sec):	2.90
Redundancy Factor (p):	1.30

Load Case (1.2 + 0.2Sds) * DL + E EMAM Seismic Equivalent Modal Analysis Method

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
47	177.00	137	1.848	1.766	1.062	0.339	40	170
46	172.50	190	1.755	1.343	0.902	0.281	46	236
45	168.63	143	1.677	1.038	0.780	0.235	29	177
44	166.13	236	1.628	0.867	0.709	0.208	43	293
43	164.67	72	1.599	0.777	0.669	0.192	12	89
42	162.17	290	1.551	0.635	0.606	0.167	42	359
41	157.50	363	1.463	0.415	0.500	0.123	39	450
40	154.50	76	1.408	0.299	0.440	0.098	6	94
39	152.00	408	1.363	0.217	0.394	0.078	28	506
38	147.50	533	1.283	0.098	0.322	0.046	21	661
37	142.50	559	1.198	0.003	0.253	0.015	7	692
36	137.50	604	1.115	-0.061	0.196	-0.010	-5	749
35	134.29	176	1.064	-0.088	0.165	-0.023	-4	218
34	131.79	815	1.025	-0.103	0.144	-0.032	-23	1,009
33	129.88	58	0.995	-0.111	0.129	-0.038	-2	72
32	127.38	696	0.957	-0.118	0.111	-0.044	-27	863
31	122.50	763	0.885	-0.121	0.082	-0.053	-35	945
30	117.50	794	0.814	-0.114	0.058	-0.056	-39	983
29	112.50	825	0.747	-0.100	0.040	-0.054	-39	1,022
28	107.50	893	0.682	-0.081	0.026	-0.047	-36	1,106
27	102.88	783	0.624	-0.062	0.018	-0.035	-24	970
26	100.38	243	0.594	-0.051	0.014	-0.028	-6	301
25	98.04	1,290	0.567	-0.041	0.011	-0.020	-23	1,598
24	95.54	206	0.538	-0.030	0.009	-0.012	-2	255
23	92.50	970	0.505	-0.018	0.007	-0.001	-1	1,202
22	87.50	1,001	0.452	0.001	0.006	0.016	14	1,240
21	82.50	1,032	0.401	0.018	0.006	0.030	27	1,278
20	77.50	1,062	0.354	0.032	0.008	0.041	38	1,316
19	72.50	1,093	0.310	0.043	0.011	0.049	46	1,354
18	69.38	278	0.284	0.049	0.014	0.052	13	344
17	66.88	1,500	0.264	0.053	0.016	0.054	70	1,858
16	64.13	712	0.243	0.057	0.018	0.056	34	882
15	61.63	744	0.224	0.059	0.020	0.056	36	922
14	57.50	1,170	0.195	0.063	0.024	0.057	58	1,450

13	52.50	1,201	0.163	0.067	0.028	0.057	59	1,488
12	47.50	1,232	0.133	0.069	0.033	0.056	60	1,526
11	42.50	1,262	0.107	0.071	0.036	0.055	60	1,564
10	38.75	643	0.089	0.071	0.039	0.054	30	796
9	36.25	1,173	0.078	0.072	0.040	0.053	54	1,453
8	33.13	1,788	0.065	0.072	0.041	0.053	82	2,216
7	30.63	330	0.055	0.071	0.042	0.052	15	409
6	27.50	1,340	0.045	0.071	0.042	0.051	59	1,659
5	22.50	1,370	0.030	0.068	0.040	0.049	59	1,698
4	17.50	1,401	0.018	0.063	0.037	0.047	56	1,736
3	12.50	1,432	0.009	0.054	0.031	0.041	51	1,774
2	7.50	1,463	0.003	0.039	0.022	0.032	41	1,812
1	2.50	1,493	0.000	0.016	0.008	0.015	19	1,850
5' Dipole	179.00	15	1.890	1.980	1.140	0.366	5	19
10' Omni	179.00	25	1.890	1.980	1.140	0.366	8	31
18' Dipole	179.00	55	1.890	1.980	1.140	0.366	17	68
8' Yagi	179.00	30	1.890	1.980	1.140	0.366	10	37
Round Low Profile Pl	179.00	1,500	1.890	1.980	1.140	0.366	476	1,858
Ericsson KRY 112 144	170.00	33	1.705	1.140	0.822	0.251	7	41
Ericsson RRUS 11 B12	170.00	152	1.705	1.140	0.822	0.251	33	188
Ericsson AIR 21, 1.3	170.00	249	1.705	1.140	0.822	0.251	54	308
Ericsson AIR 21, 1.3	170.00	244	1.705	1.140	0.822	0.251	53	303
Andrew LNX-6515DS-VT	170.00	154	1.705	1.140	0.822	0.251	34	191
Round Low Profile Pl	170.00	1,500	1.705	1.140	0.822	0.251	327	1,858
RCU	160.00	3	1.510	0.526	0.555	0.146	0	4
DragonWave Horizon C	160.00	34	1.510	0.526	0.555	0.146	4	43
Samsung U-RAS	160.00	99	1.510	0.526	0.555	0.146	13	123
Argus LLPX310R	160.00	86	1.510	0.526	0.555	0.146	11	106
DragonWave A-ANT-18G	160.00	81	1.510	0.526	0.555	0.146	10	101
Side Arms	160.00	560	1.510	0.526	0.555	0.146	71	694
Powerwave LGP21401	154.00	85	1.399	0.282	0.431	0.094	7	105
Raycap DC6-48-60-18-	154.00	64	1.399	0.282	0.431	0.094	5	79
Ericsson RRUS 4478 B	154.00	180	1.399	0.282	0.431	0.094	15	223
Ericsson RRUS 11 (Ba	154.00	165	1.399	0.282	0.431	0.094	13	204
Ericsson RRUS 32	154.00	165	1.399	0.282	0.431	0.094	13	205
Ericsson RRUS 12	154.00	150	1.399	0.282	0.431	0.094	12	186
Ericsson RRUS 32 B66	154.00	159	1.399	0.282	0.431	0.094	13	197
Ericsson RRUS 32 B2	154.00	159	1.399	0.282	0.431	0.094	13	197
Raycap DC6-48-60-0-8	154.00	16	1.399	0.282	0.431	0.094	1	20
Kathrein Scala 800 1	154.00	139	1.399	0.282	0.431	0.094	11	172
Quintel QS66512-2	154.00	111	1.399	0.282	0.431	0.094	9	138
CCI OPA-65R-LCUU-H8	154.00	264	1.399	0.282	0.431	0.094	21	327
CCI TPA-65R-LCUUUU-H	154.00	163	1.399	0.282	0.431	0.094	13	202
Round Low Profile Pl	154.00	1,500	1.399	0.282	0.431	0.094	122	1,858
Alcatel-Lucent 800 M	140.00	192	1.156	-0.033	0.223	0.002	0	238
Alcatel-Lucent 1900M	140.00	132	1.156	-0.033	0.223	0.002	0	164
Alcatel-Lucent TD-RR	140.00	198	1.156	-0.033	0.223	0.002	0	246
RFS APXVTM14-C-I20	140.00	169	1.156	-0.033	0.223	0.002	0	209
RFS APXV9ERR18-C-A20	140.00	62	1.156	-0.033	0.223	0.002	0	77
RFS APXVSPP18-C-A20	140.00	114	1.156	-0.033	0.223	0.002	0	141
Round Low Profile Pl	140.00	1,500	1.156	-0.033	0.223	0.002	3	1,858
Samsung PCS/AWS	110.00	253	0.714	-0.091	0.033	-0.051	-11	314
Samsung 700/850MHz D	110.00	211	0.714	-0.091	0.033	-0.051	-9	261
Antel BXA-80063/4CF	110.00	59	0.714	-0.091	0.033	-0.051	-3	74
RFS DB-T1-6Z-8AB-0Z	110.00	88	0.714	-0.091	0.033	-0.051	-4	109
Commscope SBNHH-	110.00	244	0.714	-0.091	0.033	-0.051	-11	302
Flat Low Profile Pla	110.00	1,500	0.714	-0.091	0.033	-0.051	-66	1,858
		49,706	92.106	30.604	29.959	7.585	2,333	61,578

Load Case (0.9 - 0.2Sds) * DL + E EMAM Seismic (Reduced DL) Equivalent Modal Analysis Method

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
47	177.00	137	1.848	1.766	1.062	0.339	40	118
46	172.50	190	1.755	1.343	0.902	0.281	46	164
45	168.63	143	1.677	1.038	0.780	0.235	29	123
44	166.13	236	1.628	0.867	0.709	0.208	43	204
43	164.67	72	1.599	0.777	0.669	0.192	12	62
42	162.17	290	1.551	0.635	0.606	0.167	42	249
41	157.50	363	1.463	0.415	0.500	0.123	39	313
40	154.50	76	1.408	0.299	0.440	0.098	6	65
39	152.00	408	1.363	0.217	0.394	0.078	28	351
38	147.50	533	1.283	0.098	0.322	0.046	21	459
37	142.50	559	1.198	0.003	0.253	0.015	7	481
36	137.50	604	1.115	-0.061	0.196	-0.010	-5	521
35	134.29	176	1.064	-0.088	0.165	-0.023	-4	152
34	131.79	815	1.025	-0.103	0.144	-0.032	-23	702
33	129.88	58	0.995	-0.111	0.129	-0.038	-2	50
32	127.38	696	0.957	-0.118	0.111	-0.044	-27	600
31	122.50	763	0.885	-0.121	0.082	-0.053	-35	657
30	117.50	794	0.814	-0.114	0.058	-0.056	-39	684
29	112.50	825	0.747	-0.100	0.040	-0.054	-39	710
28	107.50	893	0.682	-0.081	0.026	-0.047	-36	769
27	102.88	783	0.624	-0.062	0.018	-0.035	-24	674
26	100.38	243	0.594	-0.051	0.014	-0.028	-6	209
25	98.04	1,290	0.567	-0.041	0.011	-0.020	-23	1,111
24	95.54	206	0.538	-0.030	0.009	-0.012	-2	178
23	92.50	970	0.505	-0.018	0.007	-0.001	-1	835
22	87.50	1,001	0.452	0.001	0.006	0.016	14	862
21	82.50	1,032	0.401	0.018	0.006	0.030	27	888
20	77.50	1,062	0.354	0.032	0.008	0.041	38	915
19	72.50	1,093	0.310	0.043	0.011	0.049	46	941
18	69.38	278	0.284	0.049	0.014	0.052	13	239
17	66.88	1,500	0.264	0.053	0.016	0.054	70	1,292
16	64.13	712	0.243	0.057	0.018	0.056	34	613
15	61.63	744	0.224	0.059	0.020	0.056	36	641
14	57.50	1,170	0.195	0.063	0.024	0.057	58	1,008
13	52.50	1,201	0.163	0.067	0.028	0.057	59	1,034
12	47.50	1,232	0.133	0.069	0.033	0.056	60	1,061
11	42.50	1,262	0.107	0.071	0.036	0.055	60	1,087
10	38.75	643	0.089	0.071	0.039	0.054	30	554
9	36.25	1,173	0.078	0.072	0.040	0.053	54	1,010
8	33.13	1,788	0.065	0.072	0.041	0.053	82	1,540
7	30.63	330	0.055	0.071	0.042	0.052	15	284
6	27.50	1,340	0.045	0.071	0.042	0.051	59	1,154
5	22.50	1,370	0.030	0.068	0.040	0.049	59	1,180
4	17.50	1,401	0.018	0.063	0.037	0.047	56	1,207
3	12.50	1,432	0.009	0.054	0.031	0.041	51	1,233
2	7.50	1,463	0.003	0.039	0.022	0.032	41	1,260
1	2.50	1,493	0.000	0.016	0.008	0.015	19	1,286
5' Dipole	179.00	15	1.890	1.980	1.140	0.366	5	13
10' Omni	179.00	25	1.890	1.980	1.140	0.366	8	22
18' Dipole	179.00	55	1.890	1.980	1.140	0.366	17	47
8' Yagi	179.00	30	1.890	1.980	1.140	0.366	10	26
Round Low Profile Pl	179.00	1,500	1.890	1.980	1.140	0.366	476	1,292
Ericsson KRY 112 144	170.00	33	1.705	1.140	0.822	0.251	7	28
Ericsson RRUS 11 B12	170.00	152	1.705	1.140	0.822	0.251	33	131
Ericsson AIR 21, 1.3	170.00	249	1.705	1.140	0.822	0.251	54	214
Ericsson AIR 21, 1.3	170.00	244	1.705	1.140	0.822	0.251	53	211

Andrew LNX-6515DS-VT	170.00	154	1.705	1.140	0.822	0.251	34	133
Round Low Profile Pl	170.00	1,500	1.705	1.140	0.822	0.251	327	1,292
RCU	160.00	3	1.510	0.526	0.555	0.146	0	3
DragonWave Horizon C	160.00	34	1.510	0.526	0.555	0.146	4	30
Samsung U-RAS	160.00	99	1.510	0.526	0.555	0.146	13	85
Argus LLPX310R	160.00	86	1.510	0.526	0.555	0.146	11	74
DragonWave A-ANT-18G	160.00	81	1.510	0.526	0.555	0.146	10	70
Side Arms	160.00	560	1.510	0.526	0.555	0.146	71	482
Powerwave LGP21401	154.00	85	1.399	0.282	0.431	0.094	7	73
Raycap DC6-48-60-18-	154.00	64	1.399	0.282	0.431	0.094	5	55
Ericsson RRUS 4478 B	154.00	180	1.399	0.282	0.431	0.094	15	155
Ericsson RRUS 11 (Ba	154.00	165	1.399	0.282	0.431	0.094	13	142
Ericsson RRUS 32	154.00	165	1.399	0.282	0.431	0.094	13	142
Ericsson RRUS 12	154.00	150	1.399	0.282	0.431	0.094	12	129
Ericsson RRUS 32 B66	154.00	159	1.399	0.282	0.431	0.094	13	137
Ericsson RRUS 32 B2	154.00	159	1.399	0.282	0.431	0.094	13	137
Raycap DC6-48-60-0-8	154.00	16	1.399	0.282	0.431	0.094	1	14
Kathrein Scala 800 1	154.00	139	1.399	0.282	0.431	0.094	11	120
Quintel QS66512-2	154.00	111	1.399	0.282	0.431	0.094	9	96
CCI OPA-65R-LCUU-H8	154.00	264	1.399	0.282	0.431	0.094	21	227
CCI TPA-65R-LCUUUU-H	154.00	163	1.399	0.282	0.431	0.094	13	141
Round Low Profile Pl	154.00	1,500	1.399	0.282	0.431	0.094	122	1,292
Alcatel-Lucent 800 M	140.00	192	1.156	-0.033	0.223	0.002	0	165
Alcatel-Lucent 1900M	140.00	132	1.156	-0.033	0.223	0.002	0	114
Alcatel-Lucent TD-RR	140.00	198	1.156	-0.033	0.223	0.002	0	171
RFS APXVTM14-C-I20	140.00	169	1.156	-0.033	0.223	0.002	0	145
RFS APXV9ERR18-C-A20	140.00	62	1.156	-0.033	0.223	0.002	0	53
RFS APXVSPP18-C-A20	140.00	114	1.156	-0.033	0.223	0.002	0	98
Round Low Profile Pl	140.00	1,500	1.156	-0.033	0.223	0.002	3	1,292
Samsung PCS/AWS	110.00	253	0.714	-0.091	0.033	-0.051	-11	218
Samsung 700/850MHz D	110.00	211	0.714	-0.091	0.033	-0.051	-9	182
Antel BXA-80063/4CF	110.00	59	0.714	-0.091	0.033	-0.051	-3	51
RFS DB-T1-6Z-8AB-0Z	110.00	88	0.714	-0.091	0.033	-0.051	-4	76
Commscope SBNHH-	110.00	244	0.714	-0.091	0.033	-0.051	-11	210
Flat Low Profile Pla	110.00	1,500	0.714	-0.091	0.033	-0.051	-66	1,292
		49,706	92.106	30.604	29.959	7.585	2,333	42,806

Load Case (1.2 + 0.2Sds) * DL + E EMAM Seismic Equivalent Modal Analysis Method

Calculated Forces

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 (deg)	Ratio
0.00	-59.73	-2.32	0.00	-308.46	0.00	308.46	4,604.11	2,302.05	11,869.6	5,943.65	0.00	0.00	0.065
5.00	-57.92	-2.29	0.00	-296.86	0.00	296.86	4,547.42	2,273.71	11,437.5	5,727.25	0.01	-0.01	0.065
10.00	-56.14	-2.25	0.00	-285.41	0.00	285.41	4,488.01	2,244.00	11,005.7	5,511.07	0.02	-0.02	0.064
15.00	-54.40	-2.20	0.00	-274.16	0.00	274.16	4,425.86	2,212.93	10,575.0	5,295.36	0.06	-0.04	0.064
20.00	-52.71	-2.16	0.00	-263.14	0.00	263.14	4,360.98	2,180.49	10,145.6	5,080.38	0.10	-0.05	0.064
25.00	-51.05	-2.11	0.00	-252.35	0.00	252.35	4,293.36	2,146.68	9,718.32	4,866.38	0.16	-0.06	0.064
30.00	-50.64	-2.10	0.00	-241.81	0.00	241.81	4,223.01	2,111.51	9,293.47	4,653.64	0.23	-0.08	0.064
31.25	-48.42	-2.02	0.00	-239.19	0.00	239.19	4,205.00	2,102.50	9,187.70	4,600.68	0.25	-0.08	0.064
35.00	-46.97	-1.97	0.00	-231.60	0.00	231.60	4,149.93	2,074.96	8,871.62	4,442.40	0.32	-0.09	0.063
37.50	-46.17	-1.95	0.00	-226.67	0.00	226.67	4,149.47	2,074.73	8,869.01	4,441.10	0.37	-0.10	0.062
40.00	-44.61	-1.89	0.00	-221.80	0.00	221.80	4,111.89	2,055.95	8,659.38	4,336.13	0.43	-0.11	0.062
45.00	-43.08	-1.84	0.00	-212.32	0.00	212.32	4,034.69	2,017.35	8,243.04	4,127.64	0.55	-0.12	0.062
50.00	-41.59	-1.79	0.00	-203.10	0.00	203.10	3,954.76	1,977.38	7,830.99	3,921.32	0.68	-0.14	0.062
55.00	-40.14	-1.74	0.00	-194.13	0.00	194.13	3,872.09	1,936.05	7,423.76	3,717.40	0.84	-0.16	0.063
60.00	-39.22	-1.72	0.00	-185.41	0.00	185.41	3,786.70	1,893.35	7,021.86	3,516.15	1.01	-0.17	0.063
63.25	-38.34	-1.69	0.00	-179.84	0.00	179.84	3,729.72	1,864.86	6,763.73	3,386.89	1.13	-0.19	0.063
65.00	-36.48	-1.62	0.00	-176.89	0.00	176.89	3,698.56	1,849.28	6,625.81	3,317.83	1.20	-0.19	0.063
68.75	-36.14	-1.61	0.00	-170.83	0.00	170.83	3,675.54	1,837.77	6,525.34	3,267.52	1.36	-0.21	0.062
70.00	-34.78	-1.56	0.00	-168.82	0.00	168.82	3,652.91	1,826.45	6,427.71	3,218.63	1.41	-0.21	0.062
75.00	-33.47	-1.53	0.00	-161.00	0.00	161.00	3,560.66	1,780.33	6,041.44	3,025.21	1.64	-0.23	0.063
80.00	-32.19	-1.51	0.00	-153.33	0.00	153.33	3,465.68	1,732.84	5,662.31	2,835.36	1.90	-0.25	0.063
85.00	-30.95	-1.51	0.00	-145.77	0.00	145.77	3,367.96	1,683.98	5,290.83	2,649.35	2.18	-0.28	0.064
90.00	-29.74	-1.51	0.00	-138.24	0.00	138.24	3,252.82	1,626.41	4,905.37	2,456.33	2.48	-0.30	0.065
95.00	-29.49	-1.52	0.00	-130.67	0.00	130.67	3,118.51	1,559.26	4,506.69	2,256.70	2.80	-0.32	0.067
96.08	-27.89	-1.54	0.00	-129.02	0.00	129.02	3,089.41	1,544.71	4,422.54	2,214.56	2.88	-0.33	0.067
100.00	-27.59	-1.55	0.00	-122.97	0.00	122.97	2,984.21	1,492.10	4,124.91	2,065.52	3.16	-0.35	0.069
100.75	-26.62	-1.58	0.00	-121.81	0.00	121.81	3,030.38	1,515.19	4,254.26	2,130.29	3.21	-0.36	0.066
105.00	-25.51	-1.62	0.00	-115.10	0.00	115.10	2,916.22	1,458.11	3,938.09	1,971.97	3.54	-0.38	0.067
110.00	-21.57	-1.75	0.00	-107.00	0.00	107.00	2,781.91	1,390.96	3,581.76	1,793.54	3.96	-0.41	0.067
115.00	-20.59	-1.79	0.00	-98.27	0.00	98.27	2,647.61	1,323.80	3,242.33	1,623.57	4.41	-0.44	0.068
120.00	-19.64	-1.83	0.00	-89.32	0.00	89.32	2,513.30	1,256.65	2,919.79	1,462.07	4.89	-0.48	0.069
125.00	-18.77	-1.86	0.00	-80.17	0.00	80.17	2,378.99	1,189.50	2,614.15	1,309.02	5.41	-0.51	0.069
129.75	-18.70	-1.87	0.00	-71.34	0.00	71.34	2,251.40	1,125.70	2,339.44	1,171.46	5.93	-0.55	0.069
130.00	-17.69	-1.88	0.00	-70.87	0.00	70.87	2,244.69	1,122.34	2,325.40	1,164.43	5.96	-0.55	0.069
133.58	-17.47	-1.89	0.00	-64.12	0.00	64.12	1,841.02	920.51	1,881.29	942.04	6.38	-0.58	0.078
135.00	-16.72	-1.90	0.00	-61.44	0.00	61.44	1,809.31	904.65	1,816.65	909.67	6.56	-0.59	0.077
140.00	-13.10	-1.86	0.00	-51.95	0.00	51.95	1,697.39	848.69	1,597.52	799.95	7.20	-0.63	0.073
145.00	-12.44	-1.84	0.00	-42.67	0.00	42.67	1,585.46	792.73	1,392.48	697.27	7.88	-0.68	0.069
150.00	-11.93	-1.81	0.00	-33.48	0.00	33.48	1,473.54	736.77	1,201.51	601.65	8.61	-0.72	0.064
154.00	-7.73	-1.49	0.00	-26.23	0.00	26.23	1,384.00	692.00	1,058.88	530.23	9.23	-0.75	0.055
155.00	-7.28	-1.44	0.00	-24.74	0.00	24.74	1,361.62	680.81	1,024.63	513.08	9.39	-0.76	0.054
160.00	-5.85	-1.28	0.00	-17.52	0.00	17.52	1,249.70	624.85	861.82	431.55	10.21	-0.80	0.045
164.33	-5.76	-1.27	0.00	-11.99	0.00	11.99	1,152.70	576.35	732.11	366.60	10.95	-0.83	0.038
165.00	-5.47	-1.22	0.00	-11.14	0.00	11.14	1,137.78	568.89	713.10	357.08	11.06	-0.83	0.036
167.25	-5.29	-1.19	0.00	-8.40	0.00	8.40	903.09	451.54	563.74	282.29	11.46	-0.85	0.036
170.00	-2.17	-0.59	0.00	-5.13	0.00	5.13	853.84	426.92	503.47	252.11	11.95	-0.86	0.023
175.00	-2.00	-0.55	0.00	-2.19	0.00	2.19	764.30	382.15	402.61	201.60	12.86	-0.88	0.013
179.00	0.00	-0.52	0.00	0.00	0.00	0.00	692.67	346.34	330.04	165.26	13.60	-0.88	0.000

Load Case (0.9 - 0.2Sds) * DL + E EMAM Seismic (Reduced DL) Equivalent Modal Analysis Method

Calculated Forces

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 (deg)	Ratio
0.00	-41.52	-2.32	0.00	-301.76	0.00	301.76	4,604.11	2,302.05	11,869.6	5,943.65	0.00	0.00	0.060
5.00	-40.26	-2.28	0.00	-290.18	0.00	290.18	4,547.42	2,273.71	11,437.5	5,727.25	0.01	-0.01	0.060
10.00	-39.03	-2.24	0.00	-278.76	0.00	278.76	4,488.01	2,244.00	11,005.7	5,511.07	0.02	-0.02	0.059
15.00	-37.82	-2.19	0.00	-267.56	0.00	267.56	4,425.86	2,212.93	10,575.0	5,295.36	0.06	-0.04	0.059
20.00	-36.64	-2.14	0.00	-256.60	0.00	256.60	4,360.98	2,180.49	10,145.6	5,080.38	0.10	-0.05	0.059
25.00	-35.48	-2.09	0.00	-245.91	0.00	245.91	4,293.36	2,146.68	9,718.32	4,866.38	0.16	-0.06	0.059
30.00	-35.20	-2.08	0.00	-235.47	0.00	235.47	4,223.01	2,111.51	9,293.47	4,653.64	0.23	-0.07	0.059
31.25	-33.66	-2.00	0.00	-232.87	0.00	232.87	4,205.00	2,102.50	9,187.70	4,600.68	0.25	-0.08	0.059
35.00	-32.65	-1.95	0.00	-225.38	0.00	225.38	4,149.93	2,074.96	8,871.62	4,442.40	0.31	-0.09	0.059
37.50	-32.10	-1.92	0.00	-220.51	0.00	220.51	4,149.47	2,074.73	8,869.01	4,441.10	0.36	-0.10	0.057
40.00	-31.01	-1.87	0.00	-215.71	0.00	215.71	4,111.89	2,055.95	8,659.38	4,336.13	0.42	-0.10	0.057
45.00	-29.95	-1.81	0.00	-206.39	0.00	206.39	4,034.69	2,017.35	8,243.04	4,127.64	0.53	-0.12	0.057
50.00	-28.91	-1.76	0.00	-197.33	0.00	197.33	3,954.76	1,977.38	7,830.99	3,921.32	0.67	-0.13	0.058
55.00	-27.90	-1.71	0.00	-188.54	0.00	188.54	3,872.09	1,936.05	7,423.76	3,717.40	0.82	-0.15	0.058
60.00	-27.26	-1.68	0.00	-180.00	0.00	180.00	3,786.70	1,893.35	7,021.86	3,516.15	0.98	-0.17	0.058
63.25	-26.65	-1.64	0.00	-174.56	0.00	174.56	3,729.72	1,864.86	6,763.73	3,386.89	1.10	-0.18	0.059
65.00	-25.36	-1.57	0.00	-171.68	0.00	171.68	3,698.56	1,849.28	6,625.81	3,317.83	1.17	-0.19	0.059
68.75	-25.12	-1.56	0.00	-165.78	0.00	165.78	3,675.54	1,837.77	6,525.34	3,267.52	1.32	-0.20	0.058
70.00	-24.18	-1.52	0.00	-163.83	0.00	163.83	3,652.91	1,826.45	6,427.71	3,218.63	1.38	-0.21	0.058
75.00	-23.26	-1.49	0.00	-156.23	0.00	156.23	3,560.66	1,780.33	6,041.44	3,025.21	1.60	-0.23	0.058
80.00	-22.37	-1.46	0.00	-148.80	0.00	148.80	3,465.68	1,732.84	5,662.31	2,835.36	1.85	-0.25	0.059
85.00	-21.51	-1.46	0.00	-141.47	0.00	141.47	3,367.96	1,683.98	5,290.83	2,649.35	2.12	-0.27	0.060
90.00	-20.67	-1.46	0.00	-134.20	0.00	134.20	3,252.82	1,626.41	4,905.37	2,456.33	2.41	-0.29	0.061
95.00	-20.50	-1.47	0.00	-126.90	0.00	126.90	3,118.51	1,559.26	4,506.69	2,256.70	2.73	-0.32	0.063
96.08	-19.39	-1.49	0.00	-125.31	0.00	125.31	3,089.41	1,544.71	4,422.54	2,214.56	2.80	-0.32	0.063
100.00	-19.18	-1.50	0.00	-119.48	0.00	119.48	2,984.21	1,492.10	4,124.91	2,065.52	3.07	-0.34	0.064
100.75	-18.50	-1.52	0.00	-118.35	0.00	118.35	3,030.38	1,515.19	4,254.26	2,130.29	3.13	-0.35	0.062
105.00	-17.73	-1.56	0.00	-111.89	0.00	111.89	2,916.22	1,458.11	3,938.09	1,971.97	3.45	-0.37	0.063
110.00	-14.99	-1.69	0.00	-104.08	0.00	104.08	2,781.91	1,390.96	3,581.76	1,793.54	3.85	-0.40	0.063
115.00	-14.31	-1.74	0.00	-95.61	0.00	95.61	2,647.61	1,323.80	3,242.33	1,623.57	4.29	-0.43	0.064
120.00	-13.65	-1.77	0.00	-86.93	0.00	86.93	2,513.30	1,256.65	2,919.79	1,462.07	4.76	-0.46	0.065
125.00	-13.05	-1.80	0.00	-78.06	0.00	78.06	2,378.99	1,189.50	2,614.15	1,309.02	5.26	-0.50	0.065
129.75	-13.00	-1.81	0.00	-69.50	0.00	69.50	2,251.40	1,125.70	2,339.44	1,171.46	5.77	-0.53	0.065
130.00	-12.29	-1.83	0.00	-69.05	0.00	69.05	2,244.69	1,122.34	2,325.40	1,164.43	5.80	-0.53	0.065
133.58	-12.14	-1.83	0.00	-62.50	0.00	62.50	1,841.02	920.51	1,881.29	942.04	6.21	-0.56	0.073
135.00	-11.62	-1.84	0.00	-59.90	0.00	59.90	1,809.31	904.65	1,816.65	909.67	6.38	-0.57	0.072
140.00	-9.10	-1.81	0.00	-50.71	0.00	50.71	1,697.39	848.69	1,597.52	799.95	7.00	-0.61	0.069
145.00	-8.64	-1.79	0.00	-41.66	0.00	41.66	1,585.46	792.73	1,392.48	697.27	7.67	-0.66	0.065
150.00	-8.29	-1.76	0.00	-32.72	0.00	32.72	1,473.54	736.77	1,201.51	601.65	8.38	-0.70	0.060
154.00	-5.37	-1.45	0.00	-25.67	0.00	25.67	1,384.00	692.00	1,058.88	530.23	8.98	-0.73	0.052
155.00	-5.05	-1.41	0.00	-24.22	0.00	24.22	1,361.62	680.81	1,024.63	513.08	9.13	-0.74	0.051
160.00	-4.06	-1.25	0.00	-17.16	0.00	17.16	1,249.70	624.85	861.82	431.55	9.93	-0.78	0.043
164.33	-4.00	-1.24	0.00	-11.75	0.00	11.75	1,152.70	576.35	732.11	366.60	10.65	-0.81	0.036
165.00	-3.80	-1.19	0.00	-10.92	0.00	10.92	1,137.78	568.89	713.10	357.08	10.76	-0.81	0.034
167.25	-3.67	-1.16	0.00	-8.24	0.00	8.24	903.09	451.54	563.74	282.29	11.15	-0.83	0.033
170.00	-1.51	-0.58	0.00	-5.04	0.00	5.04	853.84	426.92	503.47	252.11	11.63	-0.84	0.022
175.00	-1.39	-0.54	0.00	-2.15	0.00	2.15	764.30	382.15	402.61	201.60	12.52	-0.85	0.012
179.00	0.00	-0.52	0.00	0.00	0.00	0.00	692.67	346.34	330.04	165.26	13.24	-0.86	0.000

Analysis Summary

	Reactions						Max Usage	
Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Elev (ft)	Interaction Ratio
1.2D + 1.6W	29.69	0.00	59.61	0.00	0.00	3747.06	0.00	0.64
0.9D + 1.6W	29.67	0.00	44.70	0.00	0.00	3689.49	0.00	0.63
1.2D + 1.0Di + 1.0Wi	9.15	0.00	99.09	0.00	0.00	1223.53	0.00	0.23
(1.2 + 0.2Sds) * DL + E ELFM	1.94	0.00	59.73	0.00	0.00	281.60	0.00	0.06
(1.2 + 0.2Sds) * DL + E EMAM	2.32	0.00	59.73	0.00	0.00	308.46	133.58	0.08
(0.9 - 0.2Sds) * DL + E ELFM	1.94	0.00	41.52	0.00	0.00	276.19	0.00	0.06
(0.9 - 0.2Sds) * DL + E EMAM	2.32	0.00	41.52	0.00	0.00	301.76	133.58	0.07
1.0D + 1.0W	7.09	0.00	49.70	0.00	0.00	888.07	0.00	0.16

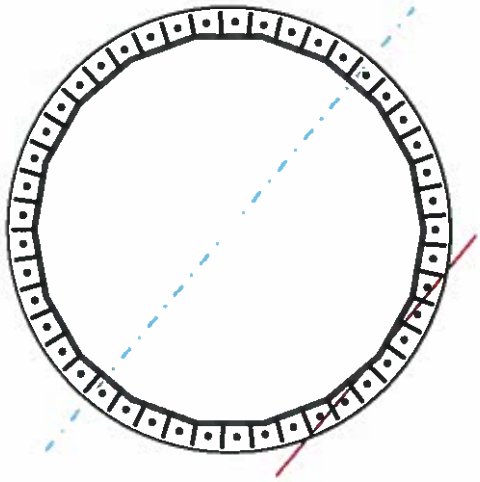
Base Plate & Anchor Rod Analysis

Pole Dimensions		
Number of Sides	18	-
Diameter	63	in
Thickness	0.375	in
Orientation Offset	0	°

Base Reactions		
Moment, Mu	3747.1	k-ft
Axial, Pu	59.6	k
Shear, Vu	29.7	k
Neutral Axis	230	°

Report Capacities		
Component	Capacity	Result
Base Plate	45%	Pass
Anchor Rods	62%	Pass
Dwyidag	-	-

Base Plate		
Shape	Round	-
Diameter, ø	73	in
Thickness	1 1/2	in
Grade	A572-50	-
Yield Strength, Fy	50	ksi
Tensile Strength, Fu	65	ksi
Clip	N/A	in
Orientation Offset	0	°
Anchor Rod Detail	d	η=0.5
Clear Distance	3	in
Applied Moment, Mu	508.4	k
Bending Stress, ϕMn	1118.5	k



Original Anchor Rods		
Arrangement	Radial	-
Quantity	45	-
Diameter, ø	1 1/4	in
Bolt Circle	68	in
Grade	A687	
Yield Strength, Fy	105	ksi
Tensile Strength, Fu	125	ksi
Spacing	4.7	in
Orientation Offset	0	°
Applied Force, Pu	60.1	k
Anchor Rods, ϕPn	96.9	k

Stiffeners		
Arrangement	Radial	-
Quantity	45	-
Height	12	in
Width	4	in
Effective Width	4.000	in
Thickness	1	in
Effective Thickness	0.230	in
Notch	0.5	in
Flat Edge	1.5	in
Grade	A36	-
Yield Strength, Fy	36	ksi
Tensile Strength, Fu	58	ksi
Horizontal Weld	Fillet	
Horizontal Fillet Size	3/16	in
Bevel Depth	3/16	in
Vertical Weld	Fillet	
Vertical Fillet Size	3/16	in
Weld Strength	70	ksi
Electrode Coefficient	1	-
Orientation Offset	0	°
Vertical Weld, ϕRn	100.4	k
Horz. Weld, ϕRn	20.9	k
Ten. Capacity, ϕTn	113.4	k
Comp. Capacity, ϕPn	67.2	k

Calculations for Monopole Base Plate & Anchor Rod Analysis

Reaction Distribution

Reaction	Shear Vu	Moment Mu	Factor
-	k	k-ft	-
Base Forces	29.7	3747.1	1.00
Anchor Rod Forces	29.7	3747.1	1.00
Additional Bolt (Grp1) Forces			
Additional Bolt (Grp2) Forces			
Dywidag Forces			
Stiffener Forces	10.0	1264.1	0.34

Geometric Properties

Section	Gross Area	Net Area	Individual Inertia	Threads per Inch	Moment of Inertia
-	in^2	in^2	in^4	#	in^4
Pole	73.4043	4.0780	0.1917		35988.93
Bolt	1.2272	0.9691	0.0747	7	25209.96
Bolt1					
Bolt2					
Dywidag					
Stiffener	0.8050	0.7245	4.9067		18321.77

Base Plate		
Shape	Round	-
Diameter, D	73	in
Thickness, t	1.5	in
Yield Strength, Fy	50	ksi
Tensile Strength, Fu	65	ksi
Base Plate Chord	36.878	in
Detail Type	d	-
Detail Factor	0.50	-
Clear Distance	3	-

External Base Plate		
Chord Length AA	28.804	in
Additional AA	15.382	in
Section Modulus, Z	24.855	in^3
Applied Moment, Mu	508.4	k-ft
Bending Capacity, ϕMn	1118.5	k-ft
Capacity, Mu/ϕMn	0.455	OK
Chord Length AB	26.558	in
Additional AB	11.573	in
Section Modulus, Z	21.449	in^3
Applied Moment, Mu	364.6	k-ft
Bending Capacity, ϕMn	965.2	k-ft
Capacity, Mu/ϕMn	0.378	OK
Bend Line Length	25.220	in
Additional Bend Line	32.149	in
Section Modulus, Z	32.270	in^3
Applied Moment, Mu	508.4	k-ft
Bending Capacity, ϕMn	1452.2	k-ft
Capacity, Mu/ϕMn	0.350	OK

Internal Base Plate		
Arc Length	0.000	in
Section Modulus, Z	0.000	in^3
Moment Arm	0.000	in
Applied Moment, Mu	0.0	k-ft
Bending Capacity, ϕMn	0.0	k-ft
Capacity, Mu/ϕMn		

Anchor Rods		
Anchor Rod Quantity, N	45	-
Rod Diameter, d	1.25	in
Bolt Circle, BC	68	in
Yield Strength, Fy	105	ksi
Tensile Strength, Fu	125	ksi
Applied Axial, Pu	60.1	k
Applied Shear, Vu	0.0	k
Compressive Capacity, ϕPn	96.9	k
Tensile Capacity, ϕRnt	0.620	OK
Interaction Capacity	0.385	OK

Additional Bolt Group 1		
Bolt Quantity, N	0	-
Bolt Diameter, d	0	in
Bolt Circle, BC	0	in
Yield Strength, Fy	0	ksi
Tensile Strength, Fu	0	ksi
Applied Axial, Pu	0.0	k
Applied Shear, Vu	0.0	k
Compressive Capacity, ϕPn	0.0	k
Compressive Capacity, ϕPn		
Interaction Capacity		

Additional Bolt Group 2		
Bolt Quantity, N	0	-
Bolt Diameter, d	0	in
Bolt Circle, BC	0	in
Yield Strength, Fy	0	ksi
Tensile Strength, Fu	0	ksi
Applied Axial, Pu	0.0	k
Applied Shear, Vu	0.0	k
Compressive Capacity, ϕPn	0.0	k
Compressive Capacity, ϕPn		
Interaction Capacity		

Dywidag Reinforcement		
Dywidag Quantity, N	0	-
Dywidag Diameter, d	2.5	in
Bolt Circle, BC	69.88	in
Yield Strength, Fy	80	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	0.0	k
Compressive Capacity, ϕPn	0.0	k
Capacity, Pu/ϕPn		

Base Plate Stiffeners		
Applied Axial Force, Pu	20.5	k
Applied Horizontal Force, Vu	0.11	k

Vertical Weld		
Vert.-to-Stiffener a=e_z/l	0.111	-
Spacing Ratio, k	0.083	-
Weld Coefficient, C	3.720	-
Compressive Capacity, ϕPn	100.4	k
Vert.-to-Plate a=e_x/l	0.333	-
Spacing Ratio, k	0.083	-
Weld Coefficient, C	2.940	-
Shear Capacity, ϕVn	79.4	k
$P_u/\phi_P P_n + V_u/\phi_V V_n$	0.205	OK

Horizontal Weld		
Horz.-to-Stiffener a=e_x/l	0.167	-
Spacing Ratio, k	0.250	-
Weld Coefficient, C	2.240	-
Effective Fillet	0.188	in
Compressive Capacity, ϕPn	20.2	k
Horz.-to-Pole a=e_x/l	0.500	-
Spacing Ratio, k	0.250	-
Weld Coefficient, C	2.320	-
Shear Capacity, ϕVn	20.9	k
$P_u/\phi_P P_n + V_u/\phi_V V_n$	1.022	OK

Plate Tension		
Gross Cross Section	0.805	in^2
Net Cross Section	0.724	in^2
Tensile Capacity, ϕTn	113.4	k
Capacity, Tu/ϕTn	0.090	OK

Plate Compression		
Radius of Gyration	0.066	in^3
kl/r	108.44	-
4.71 √(E/Fy)	133.68	-
Buckling Stress(Fe)	24.3	-
Crit. Buckling Stress(Fcr)	21.3	ksi
Compressive Capacity, ϕPn	67.2	k
Capacity, Pu/ϕPn	0.152	OK

Trylon

Prepared For

AMERICAN TOWER®

Mount Analysis

Michael F. Plahovinsak, P.E.
Sole Proprietor – Independent Engineer
18301 SR 161, Plain City, Ohio
614-398-6250 / mike@mfpeng.com
MFP Project #23218-256

NEWINGTON CT

ATC 370627

10/11/18

PASSING

W/REINFORCEMENT (71.6%)

MOUNT ANALYSIS REPORT

American Tower Corporation
10 Presidential Way
Woburn, MA 01801

Attention: **Mr. Blake Paynter**

Reference: Analysis of the existing Platform mount at **110-ft**elevation

Trylon Job No.:	141800
ATC Site Name:	Newington CT
ATC Asset Number:	370627
Verizon Site Name:	West Farms CT
Verizon Site Number:	325089
Site Address:	605 Willard Ave, Newington, CT, 06111
Tower Profile:	Monopole Tower

Dear Sir:

We have been provided with RF information, photos and sketches of the structure for above-referenced site. Verizon is proposing to change the equipment configuration on the existing mounting hardware.

A revised antenna, coax and miscellaneous equipment schematic have been provided to us. We have been asked to evaluate this information to determine whether or not the existing mounts are adequate to safely support the proposed loading change. The structural evaluation refers tothe Platform mount sat **110-ft**elevation of the existing Monopole located at 605 Willard Ave, Newington, CT, 06111.

The proposed changes were provided to us in aRFDS document dated 08/22/2018.The antennas are located at 110-ft elevation on all sectors.

According to the RFDS document, the finalconfiguration of antennas for each sector consists of:

- (2) Andrew antenna_SBNHH-1D65B_(72.72” x 23.7” x 7.1” – 126.82lbs) mounted side by side on commscope mounting bracket **BSAMNT-SBS-1-2** in position #1;
- (1) Antel antenna_BXA-80063_(94.7” x 11.2” x 4.5” – 24lbs) in position #3;
- (1) Antel antenna _BXA-80063_((94.7” x 11.2” x 4.5” – 24lbs) in position #4;

According to the RFDS document, the finalconfiguration of RRHs for each sector consists of:

- **(1) RRUS B5/B13 RRH-BR04C** in position #2;
- **(1) RRUS B2/B66A RRH-BR049** in position #3;

TMA and Power Squid considered for this analysis:

- (1) RAYCAP are installed in Tower, not consider for this analysis.

The member dimensions that we considered in our evaluation are as per sketches and pictures provided by the site visit crew. The structural members that we considered in our analysis arepresented in the attached model sketches.

Steel grades have been assumed as follows, unless noted otherwise:

Channel, Solid Round, Angle, Plate	ASTM A36 (GR 36)
HSS (Rectangular)	ASTM 500 (GR B-46)
Pipe	ASTM A53 (GR 35)
Connection Bolts	ASTM A325

CONCLUSIONS AND RECOMMENDATIONS

Based on information provided, our calculations conclude that the existing Verizon Platform mount located at **110-ft** elevationof the Monopole at the specified address, are **ADEQUATE WITH REINFORCEMENT** to safely support the proposed equipment, subject to the attached Standard Conditions on page 3.

Reinforcement:
We recommend to install New PRK-1245 Kit at a distance of 35" below the existing Stand off arm.

Should you have any questions, comments or require additional information, please do not hesitate to call.

Sincerely,

Analysis performed by:

Bathrudeen Ishak

Reviewed by:

Michael Plahovinsak, P.E.

Standard Conditions for Providing Structural Consulting Services on Existing Structures

1. Mounting hardware is analyzed to the best of our ability using all information that is provided or can be obtained during fieldwork (if authorizes by client). If the existing conditions are not as we have represented in this analysis, we should be contacted to evaluate the significance of the deviation and revise the assessment accordingly.

2. The structural analysis has been performed assuming that hardware is in "like new" condition. No allowance was made for excessive corrosion, damaged or missing structural members, loose bolts, misaligned parts, or any reduction in strength due to the age or fatigue of the product.

3. The structural analysis provided is an assessment of the primary load carrying capacity of the hardware. We provide a limited scope of service. In some cases we cannot verify the capacity of every weld, plate, connection detail, etc. In some cases, structural fabrication details are unknown at the time of our analysis, and the detailed field measurement of some of the required details may not be possible. In instances where we cannot perform connection capacity calculations, it is assumed that the existing manufactured connections develop the full capacity of the primary members being connected.

4. We cannot be held responsible for mounting hardware that is installed improperly or hardware that is loose or has a tendency of working loose over the lifetime of the mounting hardware. Our analysis has been performed assuming fully tightened connections, and proper installation and symmetry of the mounting hardware per manufacturer's instructions.

5. The structural analysis has been performed using information currently provided by the client and potentially field verified. We have been provided with a mounting arrangement for all telecommunications equipment, including antennas RRH's, TMA's, RRU's, diplexers, surge protection devices, etc. Our analysis has been based upon a particular mounting arrangement. We are not responsible for deviations in the mounting arrangement that may occur over time. If deviations in equipment type or mounting arrangements are proposed, then we should be contacted to revise the recommendations of this structural report.

6. We cannot be held responsible for temporary and unbalanced loads on mounting hardware. Our analysis is based on a particular mounting arrangement or as-built field condition. We are not responsible for the methods and means of how the mounting arrangement is accomplished by the contractor. These methods and means may include rigging of equipment or hardware to lift and locate, temporary hanging of equipment in locations other than the final arrangement, movement and tie off of tower riggers, personnel, and their equipment, etc.

7. Steel grade and strength is unknown and cannot be field tested. We cannot be held responsible for equipment manufactured from inferior steel or bolts. Our analysis assumes that standard structural grade steel has been used by the equipment manufacturer for all assembled parts of the mounting apparatus. Acceptable steels and connection components are specified by the American Institute of Steel Construction. It is assumed all welded connections are performed in the shop under the latest American Welding Society Code. No field welds are permitted or assumed for the existing pre-manufactured equipment.

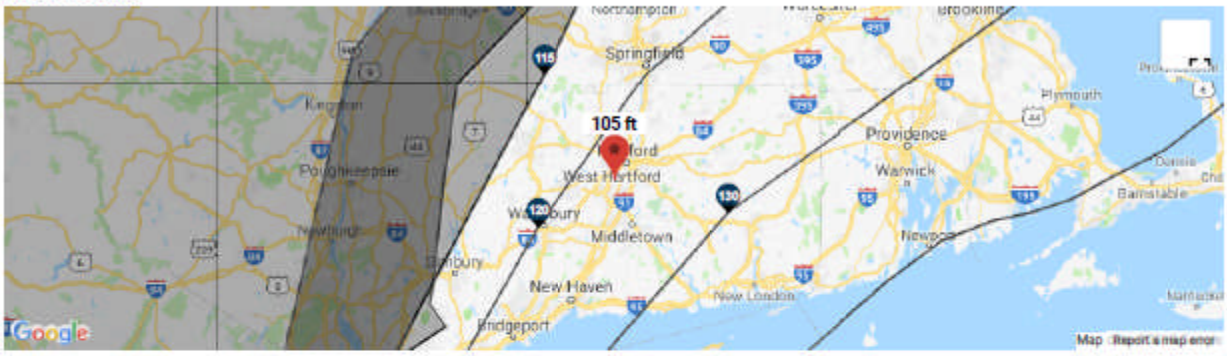
Trylon

ATC Hazards by Location

Search Information

Coordinates:	41.698372, -72.737147
Timestamp:	2018-08-22T06:50:24.205Z
Hazard Type:	Wind

Map Results



Text Results

ASCE 7-16

MRI 10-Year	75 mph
MRI 25-Year	84 mph
MRI 50-Year	90 mph
MRI 100-Year	97 mph
Risk Category I	108 mph
Risk Category II	118 mph
Risk Category III	127 mph
Risk Category IV	⚠ 131 mph

You are in a wind-borne debris region if you are also within 1 mile of the coastal mean high water line.

ASCE 7-10

MRI 10-Year	77 mph
MRI 25-Year	87 mph
MRI 50-Year	93 mph
MRI 100-Year	100 mph
Risk Category I	112 mph
Risk Category II	123 mph
Risk Category III-IV	⚠ 132 mph

If the structure under consideration is a healthcare facility, you are in a wind-borne debris region. If other occupancy, use the Risk Category II basic wind speed contours to determine if you are in a wind-borne debris region.

ASCE 7-05

Trylon

General Info

Site Code :	**370627**
Site Name :	**Newington CT**
State	**Connecticut**
County	**Hartford**
Trylon job number:	**141800**
Design by:	**BSI**

Trylon
1825 W. WALNUT HILL LANE, SUITE 120
IRVING, TEXAS 75038

Analysis Criteria

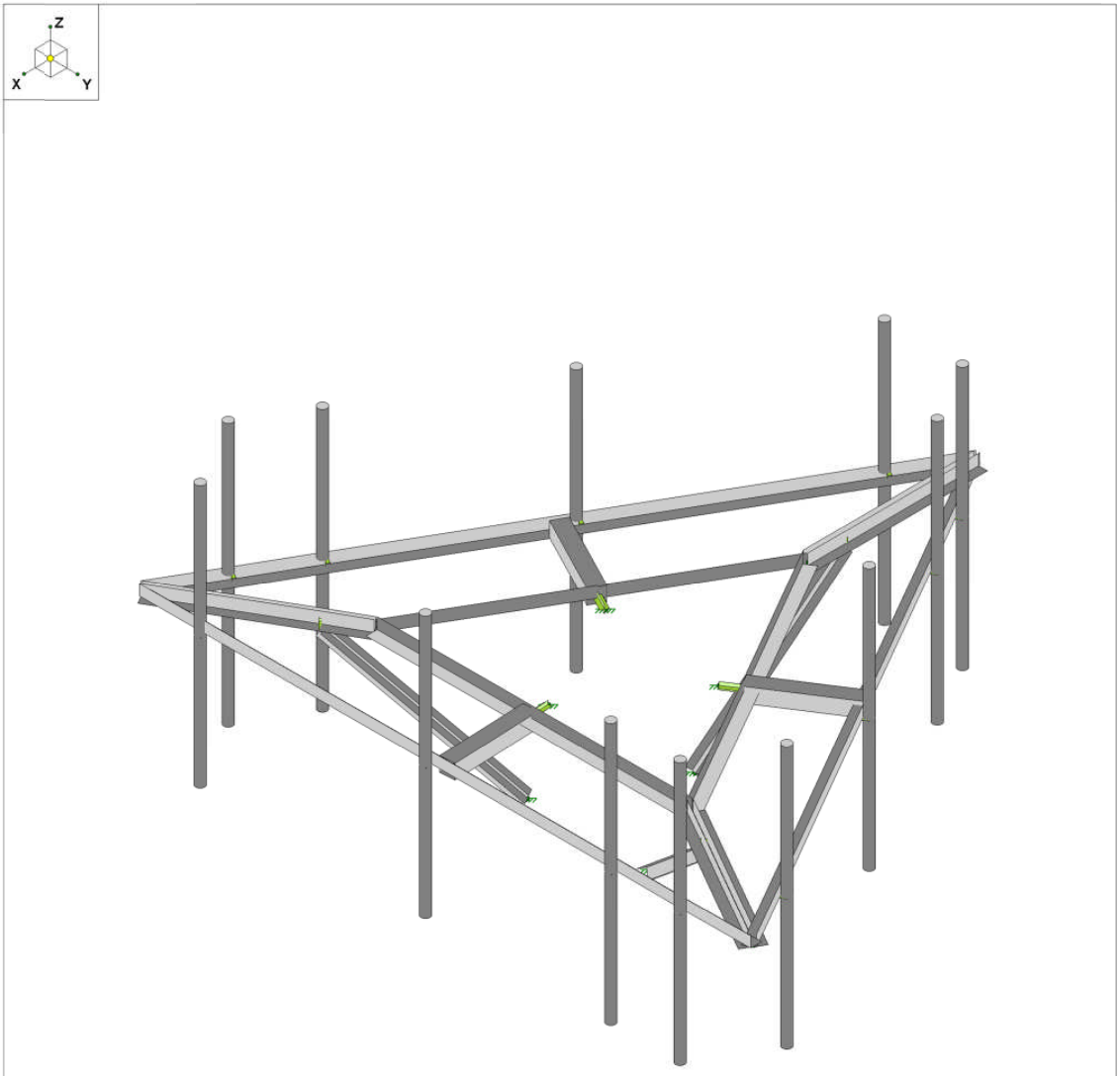
Standard 2015 IBC / ASCE 7-10 / TIA-222-G

The mount structural analysis was performed in accordance with the requirements of TIA-222-G Structural Standards for Steel Antenna Supporting structure using a 3-second gust wind speed of 95.3 mph with no ice, 50.0 mph with 1.00 inch escalated ice thickness, Exposure Category C and Topographic Category 1 with a crest height of 0 ft.

In addition, the platform has been analysed for various live loading conditions consisting of a 250-pound man live load applied individually at the midpoint and cantilevered ends of horizontal members as well as a 500-pound man live load applied individually at mount pipe locations using a 3-second gust wind speed of 30 mph.

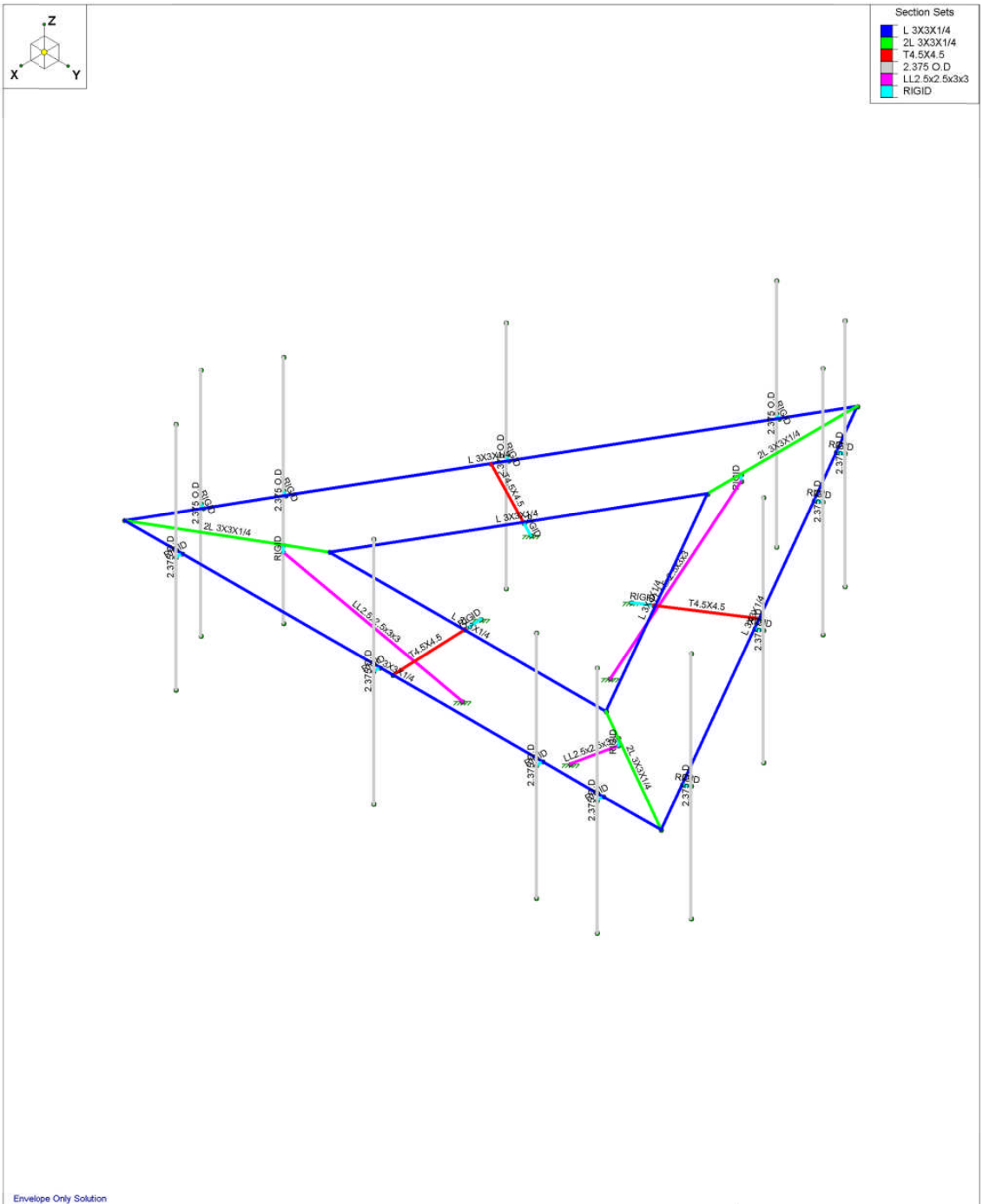
Design Loads

Appurtenances			Dimensions					Wind Forces without ice				Wind Forces with ice			
			Height	Width	Thk.	Weight	ICE Weight	0°	30°	60°	90°	0°	30°	60°	90°
No.	Manufacturer	Model	[in]	[in]	[in]	[lbs]	[lbs]	[lbs]	[lbs]	[lbs]	[lbs]	[lbs]	[lbs]	[lbs]	[lbs]
3	Andrew	2XSBNHH-1D65B+Mnt Brckt	72.7	23.7	7.1	126.8	450.9	418.0	352.1	220.1	154.1	143.8	124.8	86.7	67.7
6	Antel	BXA80063	94.7	11.2	4.5	24.0	311.6	304.1	267.5	194.2	157.6	116.4	106.0	85.2	74.8
3	Samsung	B5/B13 RRH-BR04C	15.0	15.0	8.1	70.3	66.5	28.9	35.0	47.3	53.4	16.1	18.3	22.7	24.9
3	Samsung	B2/B66A RRH-BR049	15.0	15.0	10.0	84.4	69.9	35.6	40.1	49.0	53.4	18.5	20.1	23.3	24.9

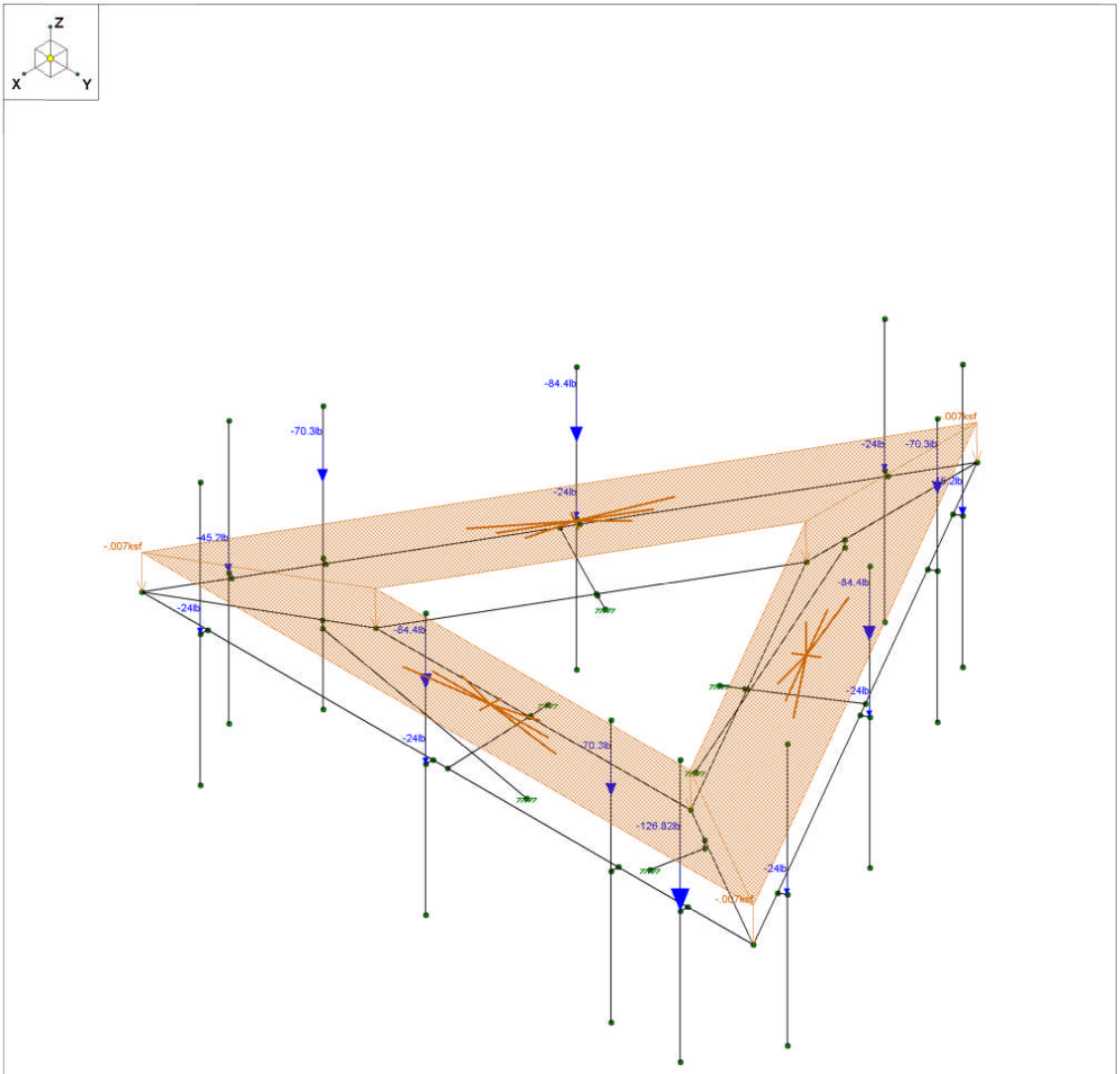


Envelope Only Solution

Trylon	NEWINGTON CT_ATC_370627	SK - 1
BSI		Oct 11, 2018 at 4:51 PM
		NEWINGTON - REIN .R3D

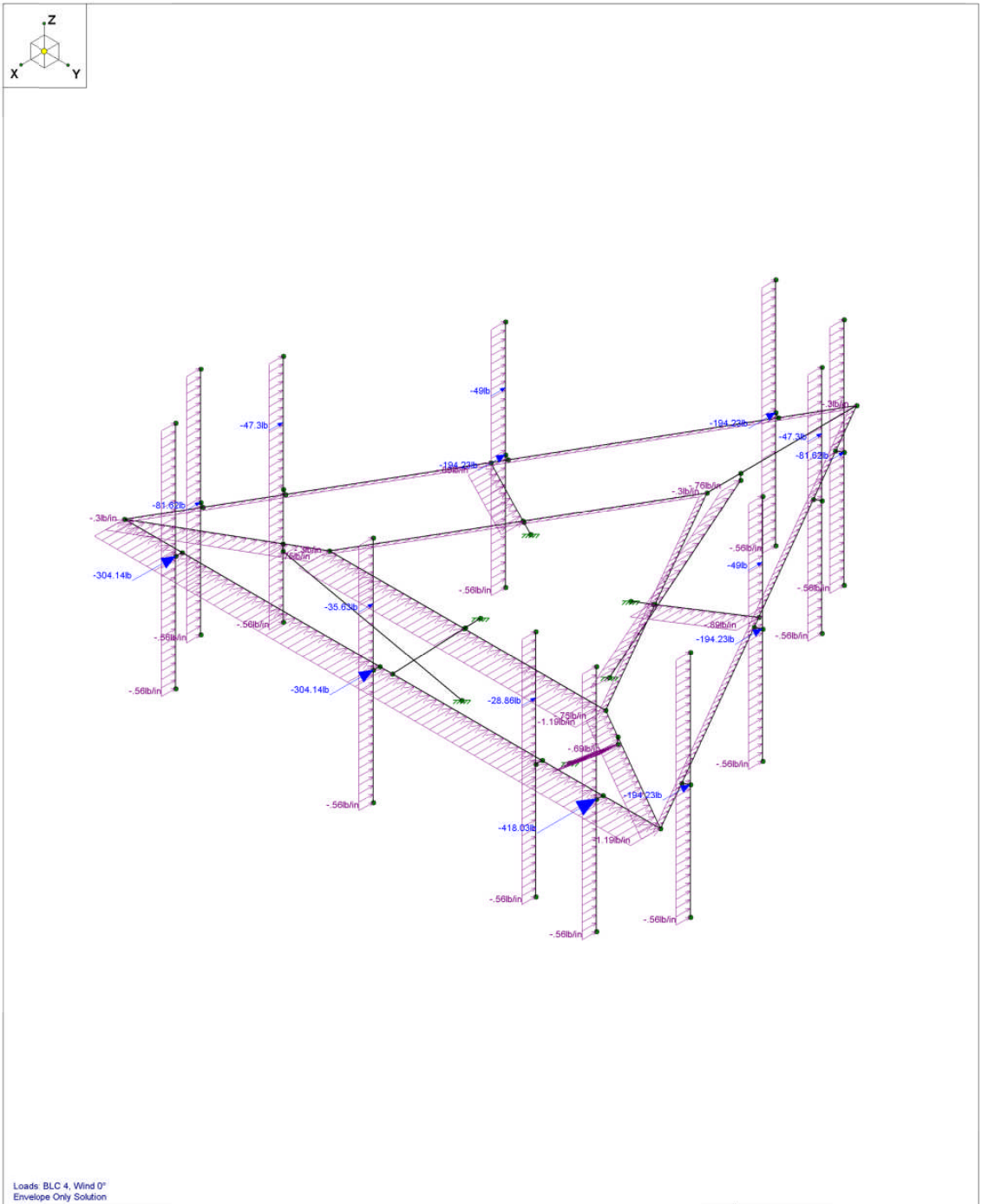


Trylon	NEWINGTON CT_ATC_370627	SK - 2
BSI		Oct 11, 2018 at 4:51 PM
		NEWINGTON - REIN .R3D

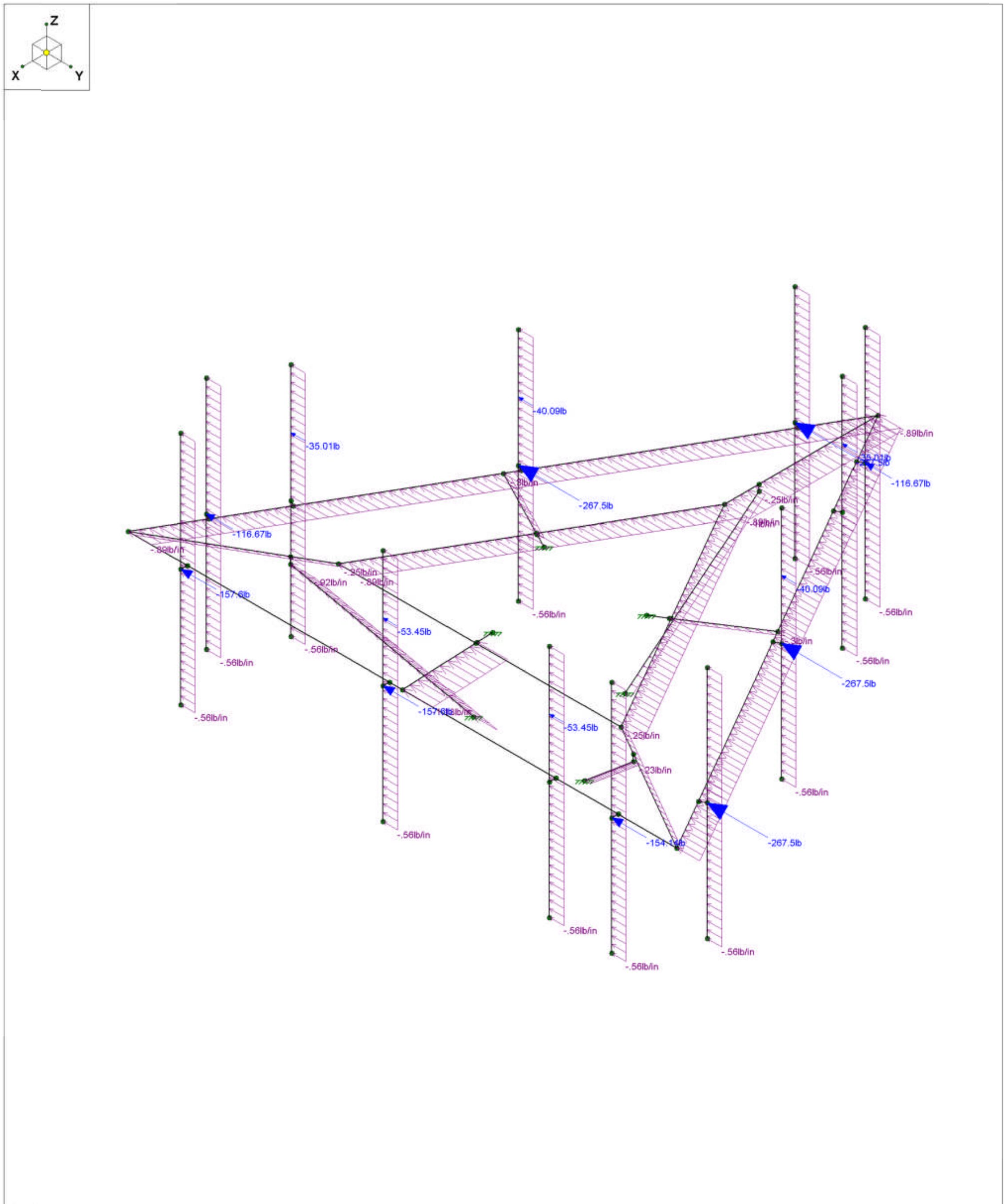


Loads: BLC 2, Weights
Envelope Only Solution

Trylon	NEWINGTON CT_ATC_370627	SK - 3
BSI		Oct 11, 2018 at 4:51 PM
		NEWINGTON - REIN .R3D

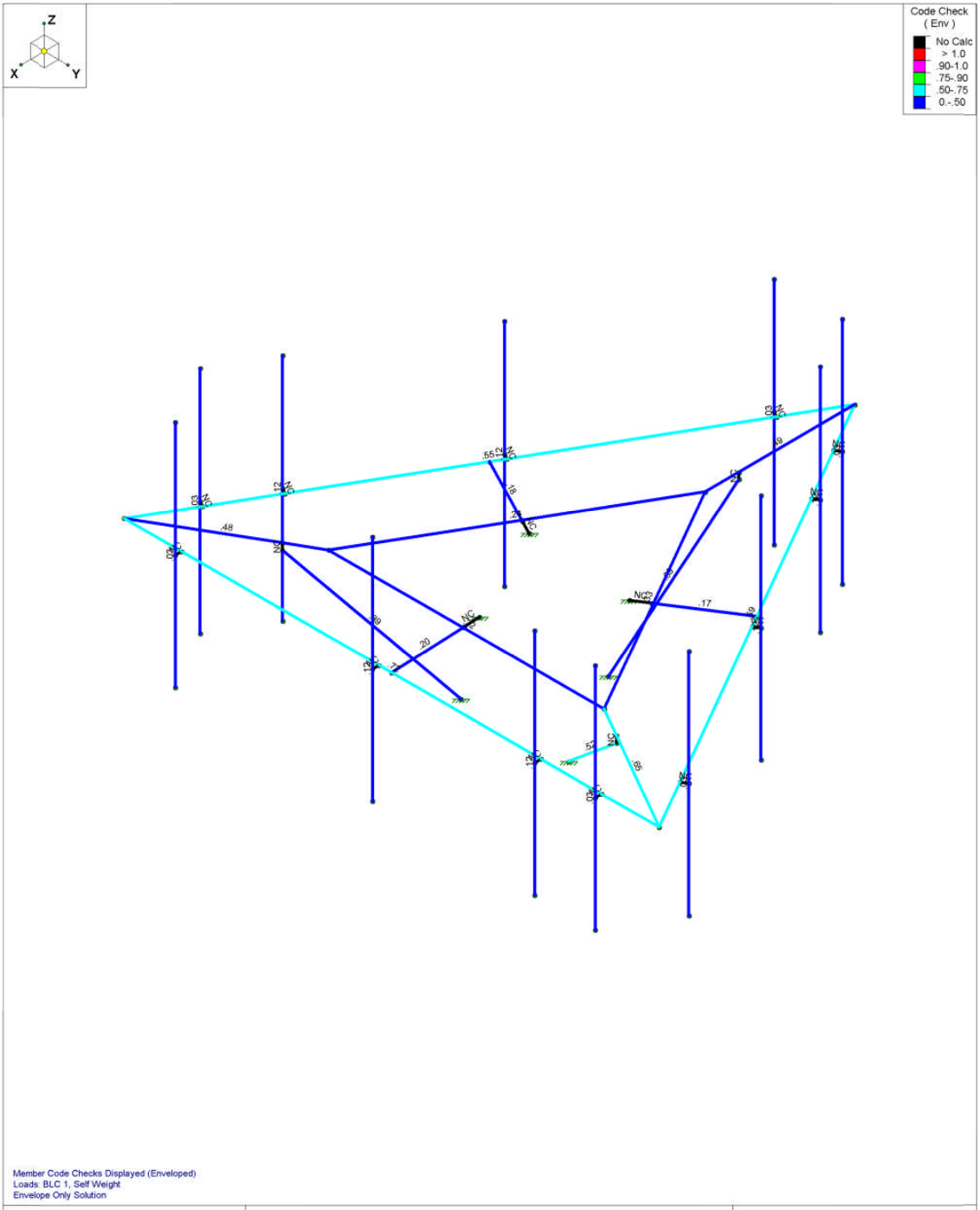


Trylon	NEWINGTON CT_ATC_370627	SK - 4
BSI		Oct 11, 2018 at 4:51 PM
		NEWINGTON - REIN .R3D

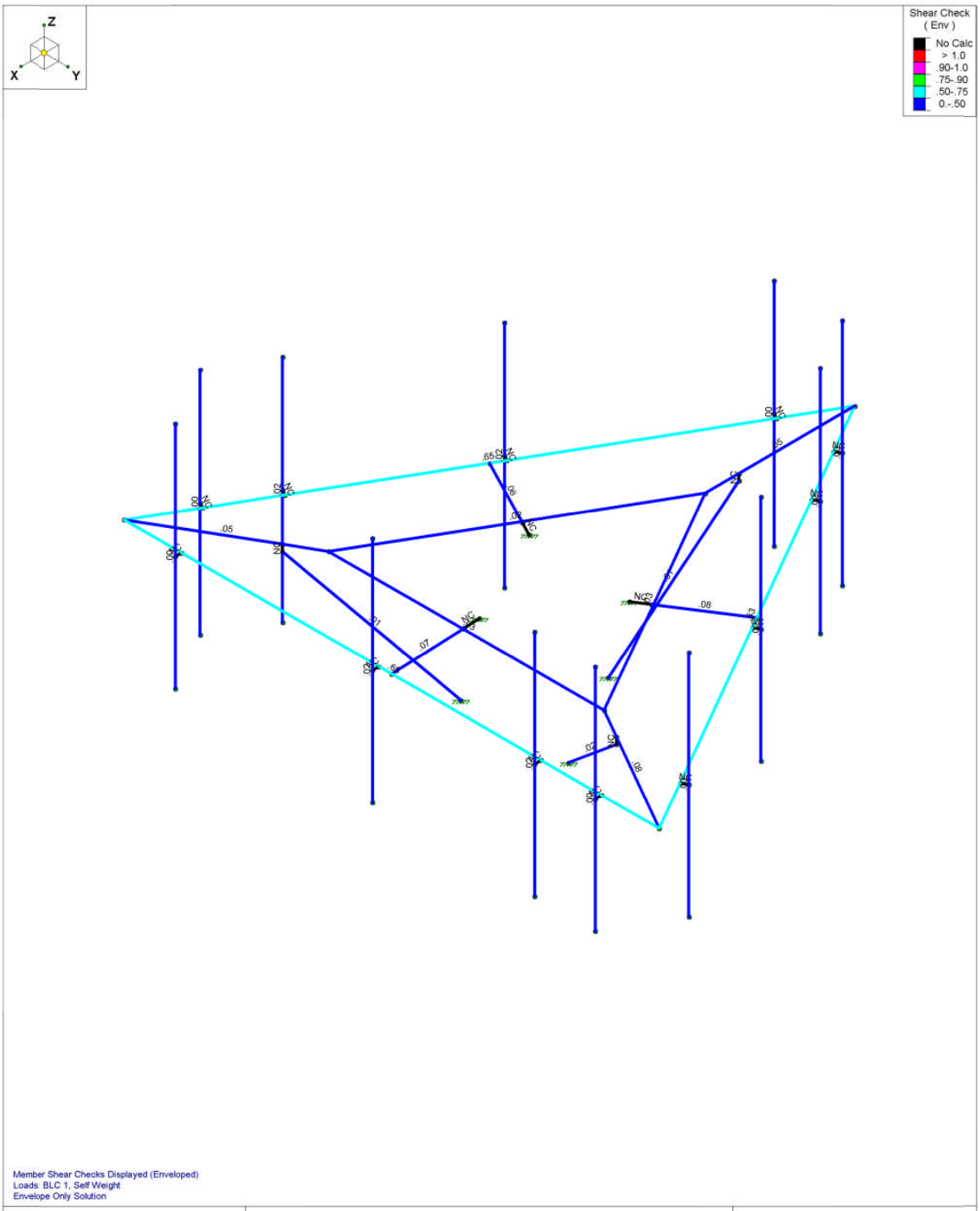


Loads: BLC 7, Wind 90°
Envelope Only Solution

Trylon	NEWINGTON CT_ATC_370627	SK - 5
BSI		Oct 11, 2018 at 4:52 PM
		NEWINGTON - REIN .R3D



Trylon	NEWINGTON CT_ATC_370627	SK - 6
BSI		Oct 11, 2018 at 4:52 PM
		NEWINGTON - REIN .R3D



Trylon	NEWINGTON CT_ATC_370627	SK - 7
BSI		Oct 11, 2018 at 4:52 PM
		NEWINGTON - REIN .R3D

Far Field Approximation
with downtilt variation

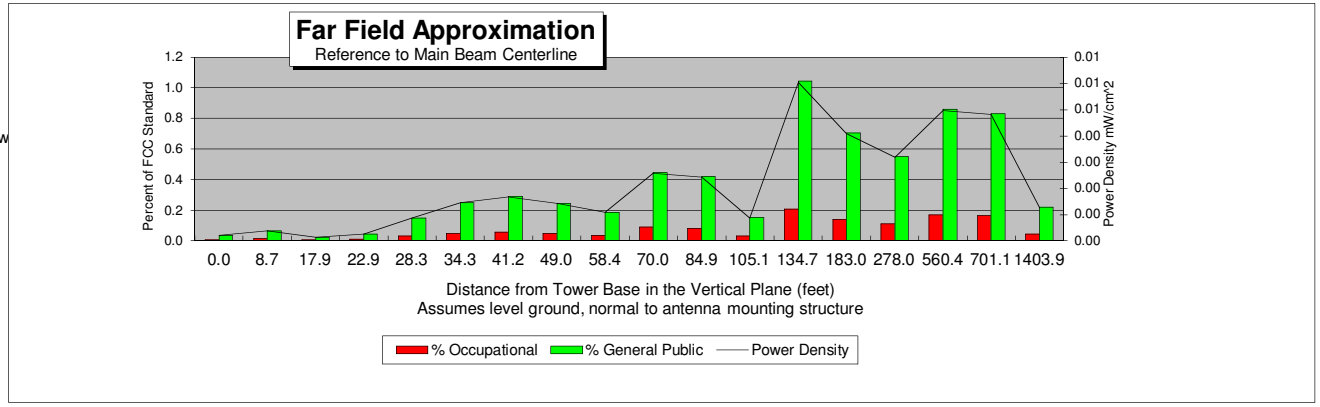
Estimated Radiated Emission

Single Emitter Far Field Model

Dipole / Wire/ Yagi Antenna Types

Location:	West Farms Mall, CT
Site #:	
Date:	09/20/18
Name:	Mark Brauer
File Name:	West Farms Mall, CT - FF Pow

Operating Freq. (MHz	**869.0**
Antenna Height (ft):	**52.0**
Antenna Gain (dBi):	**15.5**
Antenna Size (in.):	**72.0**
Downtilt (degrees):	**0.0**
Feedline Loss (dB):	**0.0**
Power @ J4 (w):	**320.0**
Number of Channels	**1**



Distance in feet below:

Calc Angle	90.0	80.0	70.0	65.0	60.0	55.0	50.0	45.0	40.0	35.0	30.0	25.0	20.0	15.0	10.0	5.0	4.0	2.0	
Solve for r, dx to antenna	49.0	49.8	52.2	54.1	56.6	59.8	64.0	69.3	76.3	85.5	98.0	116.0	143.3	189.4	282.3	562.5	702.8	1404.7	
Distance from Antenna Structure Base in Horizontal plane	0.0	8.7	17.9	22.9	28.3	34.3	41.2	49.0	58.4	70.0	84.9	105.1	134.7	183.0	278.0	560.4	701.1	1403.9	
Angle from Main Beam (reference to horizontal plane)	90	80	70	65	60	55	50	45	40	35	30	25	20	15	10	5	4	2	
dB down from centerline (referenced to centerline)	36.76	34.35	38.52	35.34	29.54	26.8	25.59	25.63	25.99	21.21	20.29	23.24	13.03	12.3	9.92	2	0.2	0	
Reflection Coefficient (1 to 4, 2.56 typical)	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	
Power Density (mW/cm^2)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	
Percent of Occupational Standard	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.2	0.1	0.1	0.2	0.2	0.0	
Percent of General Population Standard	0.0	0.1	0.0	0.0	0.1	0.3	0.3	0.2	0.2	0.4	0.4	0.2	1.0	0.7	0.5	0.9	0.8	0.2	

Antenna Type SBNHH-1D65B
Max% 1.04%

Instructions:

1) Fill in Site Location, Site number, Date, Name of Person Responsible for Date, and enter File Name to ba saved as.
2) References to J4 refer to a point where the transmission line exits the equipment shelter and proceeds to the antenna(s). There is typically a connector located here where power measurements are made.
3) Enter Antenna Height (in feet to bottom of antenna), Antenna Gain (expressed as dBi, add 2.17 to dBd to obtain dBi), Antenna Size (vertical size in inches), Downtilt (in Degrees, enter zero if none), Feedline loss from J4 to Antenna, and J4 Power (in
4) From manufacturer's plots, or data sheet, input Angle from mainbeam and dB below mainbeam centerline.
5) Enter Reflection coefficient (2.56 would be typical, 1 for free space)
6) Spreadsheet calculates actual power density, then relates as Occupational or General Population percentage of FCC Standard.
7) An odd distance may be entered in the rightmost column of the lower table.

Far Field Approximation
with downtilt variation

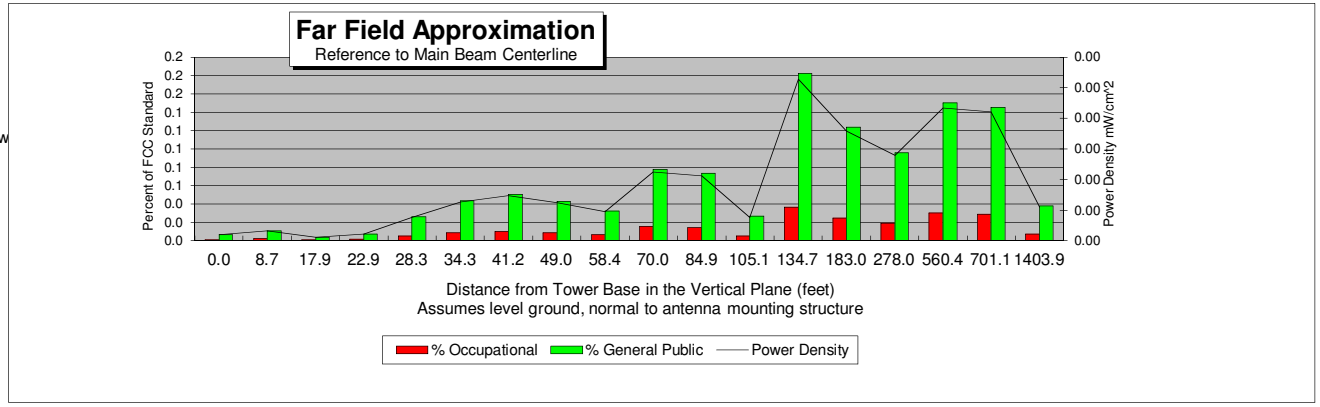
Estimated Radiated Emission

Single Emitter Far Field Model

Dipole / Wire/ Yagi Antenna Types

Location:	West Farms Mall, CT
Site #:	
Date:	09/20/18
Name:	Mark Brauer
File Name:	West Farms Mall, CT - FF Pow

Operating Freq. (MHz	**869.0**
Antenna Height (ft):	**52.0**
Antenna Gain (dBi):	**15.2**
Antenna Size (in.):	**48.0**
Downtilt (degrees):	**0.0**
Feedline Loss (dB):	**0.0**
Power @ J4 (w):	**60.0**
Number of Channels	**3**



Distance in feet below:

Calc Angle	90.0	80.0	70.0	65.0	60.0	55.0	50.0	45.0	40.0	35.0	30.0	25.0	20.0	15.0	10.0	5.0	4.0	2.0	
Solve for r, dx to antenna	49.0	49.8	52.2	54.1	56.6	59.8	64.0	69.3	76.3	85.5	98.0	116.0	143.3	189.4	282.3	562.5	702.8	1404.7	
Distance from Antenna Structure Base in Horizontal plane	0.0	8.7	17.9	22.9	28.3	34.3	41.2	49.0	58.4	70.0	84.9	105.1	134.7	183.0	278.0	560.4	701.1	1403.9	
Angle from Main Beam (reference to horizontal plane)	90	80	70	65	60	55	50	45	40	35	30	25	20	15	10	5	4	2	
dB down from centerline (referenced to centerline)	36.76	34.35	38.52	35.34	29.54	26.8	25.59	25.63	25.99	21.21	20.29	23.24	13.03	12.3	9.92	2	0.2	0	
Reflection Coefficient (1 to 4, 2.56 typical)	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	
Power Density (mW/cm^2)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Percent of Occupational Standard	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Percent of General Population Standard	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.2	0.1	0.1	0.2	0.1	0.0	

Antenna Type LPA-80063-4CF
Max% 0.18%

Instructions:

1) Fill in Site Location, Site number, Date, Name of Person Responsible for Date, and enter File Name to ba saved as.
2) References to J4 refer to a point where the transmission line exits the equipment shelter and proceeds to the antenna(s). There is typically a connector located here where power measurements are made.
3) Enter Antenna Height (in feet to bottom of antenna), Antenna Gain (expressed as dBi, add 2.17 to dBd to obtain dBi), Antenna Size (vertical size in inches), Downtilt (in Degrees, enter zero if none), Feedline loss from J4 to Antenna, and J4 Power (in
4) From manufacturer's plots, or data sheet, input Angle from mainbeam and dB below mainbeam centerline.
5) Enter Reflection coefficient (2.56 would be typical, 1 for free space)
6) Spreadsheet calculates actual power density, then relates as Occupational or General Population percentage of FCC Standard.
7) An odd distance may be entered in the rightmost column of the lower table.

Far Field Approximation
with downtilt variation

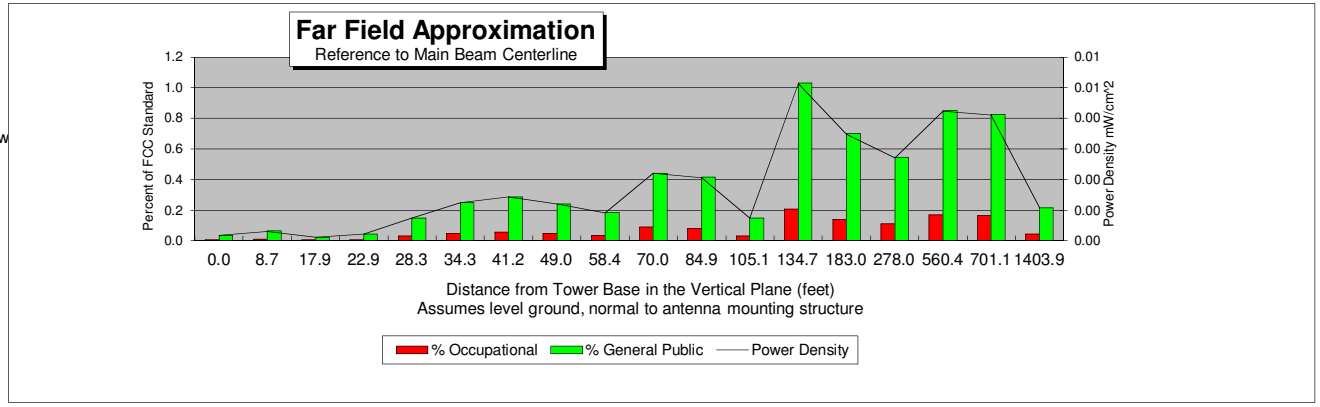
Estimated Radiated Emission

Single Emitter Far Field Model

Dipole / Wire/ Yagi Antenna Types

Location:	West Farms Mall, CT
Site #:	
Date:	09/20/18
Name:	Mark Brauer
File Name:	West Farms Mall, CT - FF Pow

Operating Freq. (MHz	**746.0**
Antenna Height (ft):	**52.0**
Antenna Gain (dBi):	**14.8**
Antenna Size (in.):	**72.0**
Downtilt (degrees):	**0.0**
Feedline Loss (dB):	**0.0**
Power @ J4 (w):	**320.0**
Number of Channels	**1**



Distance in feet below:

Calc Angle	90.0	80.0	70.0	65.0	60.0	55.0	50.0	45.0	40.0	35.0	30.0	25.0	20.0	15.0	10.0	5.0	4.0	2.0	
Solve for r, dx to antenna	49.0	49.8	52.2	54.1	56.6	59.8	64.0	69.3	76.3	85.5	98.0	116.0	143.3	189.4	282.3	562.5	702.8	1404.7	
Distance from Antenna Structure Base in Horizontal plane	0.0	8.7	17.9	22.9	28.3	34.3	41.2	49.0	58.4	70.0	84.9	105.1	134.7	183.0	278.0	560.4	701.1	1403.9	
Angle from Main Beam (reference to horizontal plane)	90	80	70	65	60	55	50	45	40	35	30	25	20	15	10	5	4	2	
dB down from centerline (referenced to centerline)	36.76	34.35	38.52	35.34	29.54	26.8	25.59	25.63	25.99	21.21	20.29	23.24	13.03	12.3	9.92	2	0.2	0	
Reflection Coefficient (1 to 4, 2.56 typical)	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	
Power Density (mW/cm^2)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	
Percent of Occupational Standard	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.2	0.1	0.1	0.2	0.2	0.0	
Percent of General Population Standard	0.0	0.1	0.0	0.0	0.1	0.2	0.3	0.2	0.2	0.4	0.4	0.2	1.0	0.7	0.5	0.9	0.8	0.2	

Antenna Type SBNHH-1D65B
Max% 1.03%

Instructions:

1) Fill in Site Location, Site number, Date, Name of Person Responsible for Date, and enter File Name to ba saved as.
2) References to J4 refer to a point where the transmission line exits the equipment shelter and proceeds to the antenna(s). There is typically a connector located here where power measurements are made.
3) Enter Antenna Height (in feet to bottom of antenna), Antenna Gain (expressed as dBi, add 2.17 to dBd to obtain dBi), Antenna Size (vertical size in inches), Downtilt (in Degrees, enter zero if none), Feedline loss from J4 to Antenna, and J4 Power (in watts).
4) From manufacturer's plots, or data sheet, input Angle from mainbeam and dB below mainbeam centerline.
5) Enter Reflection coefficient (2.56 would be typical, 1 for free space)
6) Spreadsheet calculates actual power density, then relates as Occupational or General Population percentage of FCC Standard.
7) An odd distance may be entered in the rightmost column of the lower table.

Far Field Approximation
with downtilt variation

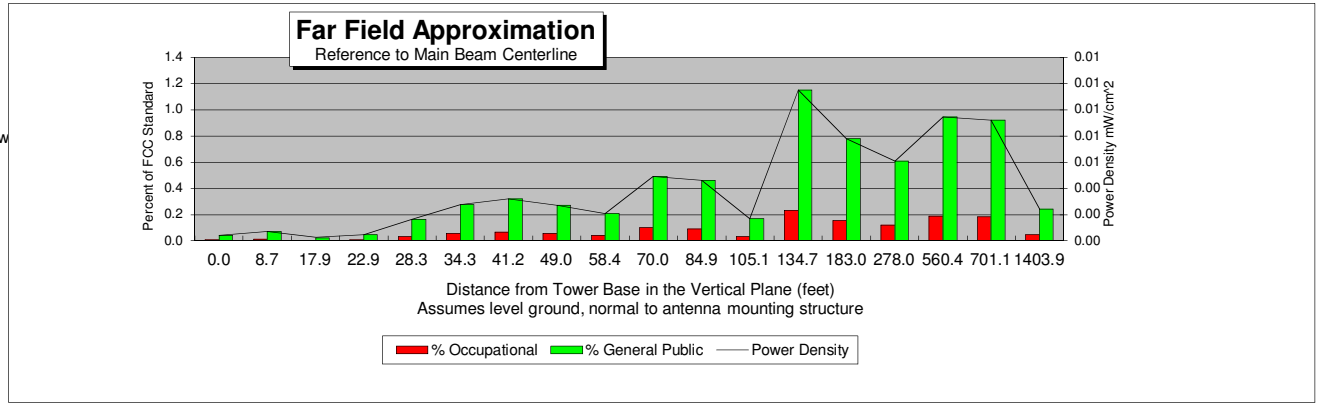
Estimated Radiated Emission

Single Emitter Far Field Model

Dipole / Wire/ Yagi Antenna Types

Location:	West Farms Mall, CT
Site #:	
Date:	09/20/18
Name:	Mark Brauer
File Name:	West Farms Mall, CT - FF Pow

Operating Freq. (MHz	**1970.0**
Antenna Height (ft):	**52.0**
Antenna Gain (dBi):	**18.3**
Antenna Size (in.):	**72.0**
Downtilt (degrees):	**0.0**
Feedline Loss (dB):	**0.0**
Power @ J4 (w):	**320.0**
Number of Channels	**1**



Distance in feet below:

Calc Angle	90.0	80.0	70.0	65.0	60.0	55.0	50.0	45.0	40.0	35.0	30.0	25.0	20.0	15.0	10.0	5.0	4.0	2.0	
Solve for r, dx to antenna	49.0	49.8	52.2	54.1	56.6	59.8	64.0	69.3	76.3	85.5	98.0	116.0	143.3	189.4	282.3	562.5	702.8	1404.7	
Distance from Antenna Structure Base in Horizontal plane	0.0	8.7	17.9	22.9	28.3	34.3	41.2	49.0	58.4	70.0	84.9	105.1	134.7	183.0	278.0	560.4	701.1	1403.9	
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Reflection Coefficient (1 to 4, 2.56 typical)	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	
Power Density (mW/cm^2)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.00	
Percent of Occupational Standard	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.2	0.2	0.1	0.2	0.2	0.0	
Percent of General Population Standard	0.0	0.1	0.0	0.0	0.2	0.3	0.3	0.3	0.2	0.5	0.5	0.2	1.1	0.8	0.6	0.9	0.9	0.2	

Antenna Type SBNHH-1D65B
Max% 1.15%

Instructions:

1) Fill in Site Location, Site number, Date, Name of Person Responsible for Date, and enter File Name to ba saved as.
2) References to J4 refer to a point where the transmission line exits the equipment shelter and proceeds to the antenna(s). There is typically a connector located here where power measurements are made.
3) Enter Antenna Height (in feet to bottom of antenna), Antenna Gain (expressed as dBi, add 2.17 to dBd to obtain dBi), Antenna Size (vertical size in inches), Downtilt (in Degrees, enter zero if none), Feedline loss from J4 to Antenna, and J4 Power (in
4) From manufacturer's plots, or data sheet, input Angle from mainbeam and dB below mainbeam centerline.
5) Enter Reflection coefficient (2.56 would be typical, 1 for free space)
6) Spreadsheet calculates actual power density, then relates as Occupational or General Population percentage of FCC Standard.
7) An odd distance may be entered in the rightmost column of the lower table.

Far Field Approximation
with downtilt variation

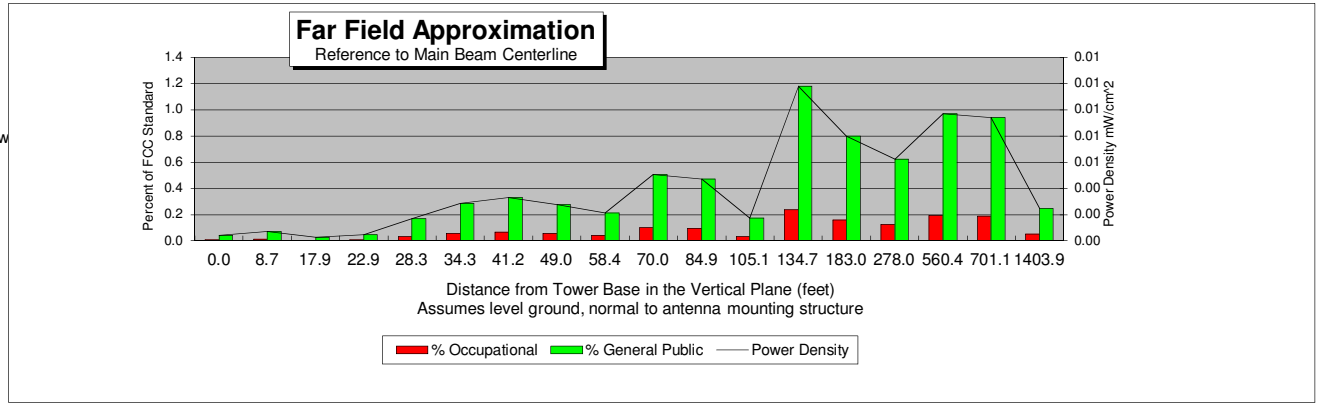
Estimated Radiated Emission

Single Emitter Far Field Model

Dipole / Wire/ Yagi Antenna Types

Location:	West Farms Mall, CT
Site #:	
Date:	09/20/18
Name:	Mark Brauer
File Name:	West Farms Mall, CT - FF Pow

Operating Freq. (MHz	**2110.0**
Antenna Height (ft):	**52.0**
Antenna Gain (dBi):	**18.4**
Antenna Size (in.):	**72.0**
Downtilt (degrees):	**0.0**
Feedline Loss (dB):	**0.0**
Power @ J4 (w):	**320.0**
Number of Channels	**1**



Distance in feet below:

Calc Angle	90.0	80.0	70.0	65.0	60.0	55.0	50.0	45.0	40.0	35.0	30.0	25.0	20.0	15.0	10.0	5.0	4.0	2.0	
Solve for r, dx to antenna	49.0	49.8	52.2	54.1	56.6	59.8	64.0	69.3	76.3	85.5	98.0	116.0	143.3	189.4	282.3	562.5	702.8	1404.7	
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Reflection Coefficient (1 to 4, 2.56 typical)	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	
Power Density (mW/cm^2)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.00	
Percent of Occupational Standard	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.2	0.2	0.1	0.2	0.2	0.0	
Percent of General Population Standard	0.0	0.1	0.0	0.0	0.2	0.3	0.3	0.3	0.2	0.5	0.5	0.2	1.2	0.8	0.6	1.0	0.9	0.2	

Antenna Type SBNHH-1D65B
Max% 1.18%

Instructions:

1) Fill in Site Location, Site number, Date, Name of Person Responsible for Date, and enter File Name to ba saved as.
2) References to J4 refer to a point where the transmission line exits the equipment shelter and proceeds to the antenna(s). There is typically a connector located here where power measurements are made.
3) Enter Antenna Height (in feet to bottom of antenna), Antenna Gain (expressed as dBi, add 2.17 to dBd to obtain dBi), Antenna Size (vertical size in inches), Downtilt (in Degrees, enter zero if none), Feedline loss from J4 to Antenna, and J4 Power (in
4) From manufacturer's plots, or data sheet, input Angle from mainbeam and dB below mainbeam centerline.
5) Enter Reflection coefficient (2.56 would be typical, 1 for free space)
6) Spreadsheet calculates actual power density, then relates as Occupational or General Population percentage of FCC Standard.
7) An odd distance may be entered in the rightmost column of the lower table.


Alumni Rd
Newington Arena
09/303/003
09/303/004
09/302/000
09/086/000
Connecticut Foot Care Center LLC
08/021/000
Memorial Rd
Veterans Cir
VA Connecticut Healthcare System
VA Medical Center-Newington
Victory Way
Alumni Field
09/300/000
09/301/000
Newington High School
Kellogg-Eddy Open Space
Old Farm Dr
Arrowhead Dr
Kellogg-Eddy House & Museum
Newington Parks Garage
09/296/000
09/295/000
09/299/000
09/298/000
09/297/000
09/105/000
09/106/000
09/107/000
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09/129/000
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09/131/000
09/132/000
09/133/000
09/163/0
09/164/
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08/035/000
08/038/000
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09/259/000
09/262/000
09/263/000
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09/253/000
09/240/000
09/243/000
09/237/000
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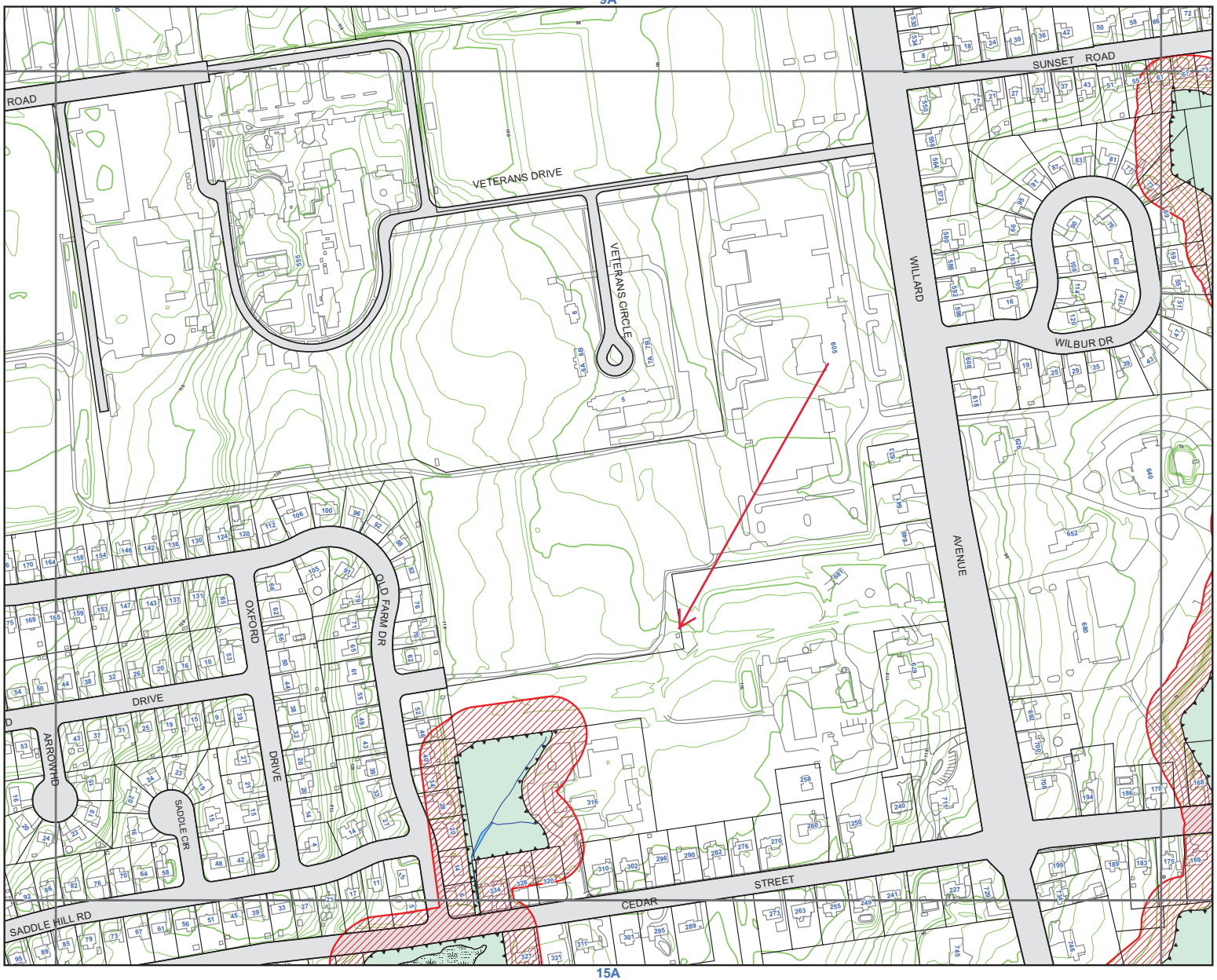
Map data ©2018 Google
200 ft
Terms of Use

TOWN OF NEWINGTON
MAP OF INLAND WETLANDS & WATERCOURSES

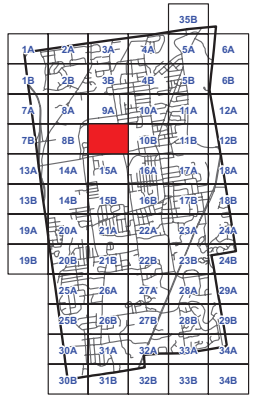


MAPS ADOPTED MARCH 21, 2006 BY THE NEWINGTON CONSERVATION COMMISSION

MAPS APPROVED MAY 9, 2006 BY THE NEWINGTON TOWN COUNCIL

MAP AMENDMENTS

DATE	PERMIT #	LOCATION



KEY MAP

DATE PRINTED: JUNE 1, 2006

LEGEND

Regulated Areas

Wetlands

100' Buffer "Upland Review Area"

Water Bodies

Water

Water Course

Marsh

NOTE:

AN ACTIVITY WITHIN THE LEGEND ITEMS NOTED ABOVE **REQUIRES A PERMIT FROM THE NEWINGTON CONSERVATION COMMISSION TO INCLUDE THE 100 FOOT UPLAND REVIEW AREA**

Digital Base Mapping: Provided by the Metropolitan District Commission (MDC)
Horizontal Datum: North American Datum 1983 (NAD 83)
Spheroid: Geographic Reference System (GRS 80)
Vertical Datum: North American Vertical Datum 1988 (NAVD 88)
Units: Mean Sea Level (MSL) Feet

0 100 200 400 Feet

SCALE 1" = 200'

SHEET NUMBER **9B**

The Assessor's office is responsible for the maintenance of records on the ownership of properties. Assessments are computed at 70% of the estimated market value of real property at the time of the last revaluation which was 2015.

Information on the Property Records for the Municipality of Newington was last updated on 11/2/2018.

Parcel Information

Location:	605 WILLARD AVE	Property Use:	School	Primary Use:	Elementary School
Unique ID:	N0046500	Map Block Lot:	09/300/000	Acres:	80.59
490 Acres:	0.00	Zone:	R-12/	Volume / Page:	189/67
Developers Map / Lot:	N/W 1860 & 1969	Census:			

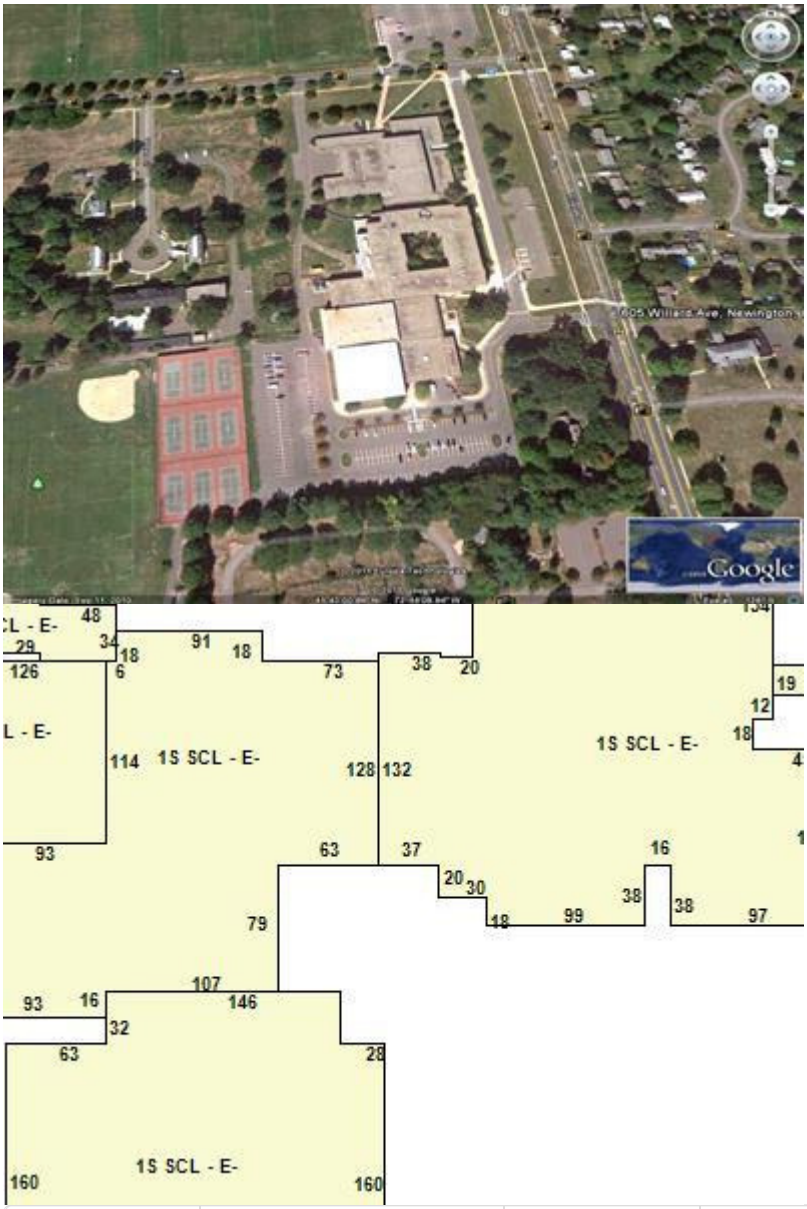
Value Information

	Appraised Value	Assessed Value
Land	8,147,790	5,703,450
Buildings	22,823,428	15,976,410
Detached Outbuildings	534,775	374,340
Total	31,505,993	22,054,200

Owner's Information

Owner's Data
NEWINGTON TOWN OF NEWINGTON HIGH SCHOOL 131 CEDAR ST

Building 1



Category:	School	Use:	High School	GLA:	171,729
Stories:	1.00	Construction:	Masonry	Year Built:	1971

Heating:	Forced Hot Air	Fuel:	Natural Gas	Cooling Percent:	100
Siding:	Brick	Roof Material:	Asphalt	Beds/Units:	0

Special Features

Attached Components

Detached Outbuildings

Type:	Year Built:	Length:	Width:	Area:
Tennis Courts	1971	0.00	0.00	10,000
4 Ft Chain Fence	1978	1.00	25,000.00	25,000
Paving	1978	1.00	175,000.00	175,000
Gunite Pool	1971	1.00	3,344.00	3,344
Frame Shed	1978	1.00	288.00	288

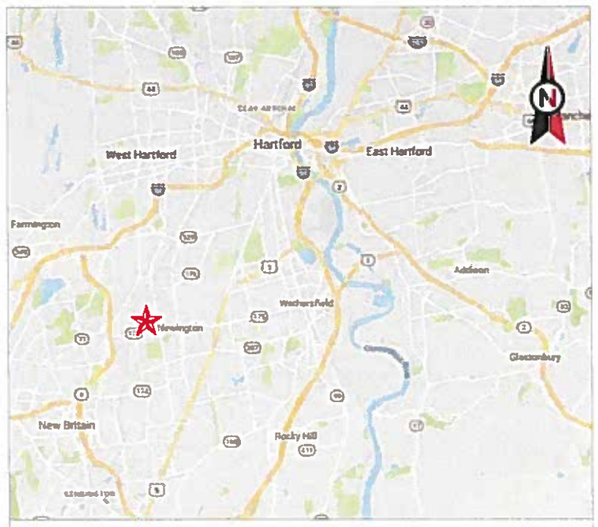
Owner History - Sales

Owner Name	Volume	Page	Sale Date	Deed Type	Valid Sale	Sale Price
NEWINGTON TOWN OF	189	67	09/20/1968		No	$0
NEWINGTON TOWN OF	182	151	10/03/1967		No	$0
NEWINGTON TOWN OF	180	281	07/27/1967		No	$0
U S GOVT	27	488	01/11/1930		No	$0

Building Permits

Permit Number	Permit Type	Date Opened	Date Closed	Permit Status	Reason
M-18-209	Mechanical	08/08/2018		Closed	Install HVAC per plans and specifications. Includes ductless heat-pump system with air to air heat
M-18-192	Mechanical	07/30/2018		Closed	INSTALL NEW GAS LINE & REPLACE BURNER
P-18-149	Fire Sprinkler	07/27/2018		Closed	INSTALL SPRINKLER HEADS IN NEW CEILINGS OF ART ROOMS 415, 415A, 416, 417, 418.
P-18-139	Plumbing	07/12/2018		Closed	INSTALL MEN & WOMEN'S HANDICAP BATHROOM, 3 W/C, 2 LAVS OFF KITCHEN
B-18-387	Comm Renovations	07/11/2018		Closed	INSTALL NEW SUSPENDED CEILING, REWORK SPRINKLERS.
B-18-290	Comm Renovations	06/01/2018		Closed	DEMO OF EXISTING EMPLOYEES TOILETS TO MAKE ADA ACCESSABLE
B-18-265	Remodel	05/24/2018		Closed	AT&T, an existing tenant on the existing wireless communication tower proposes to upgrade its equip
E-18-167	Electrical	05/22/2018		Closed	Install 120 Volt power to 10 auto door openers
E-18-162	Other	05/17/2018		Closed	Replace existing generator and transfer switch
B-17-686	Comm Renovations	12/05/2017		Closed	ADDITION OF THREE (3) ANTENNAS AND THREE (3) RRHS ONTO EXISTING COMMUNICATION TOWER AT THE CURRENT
E-17-451	Other	11/28/2017		Closed	Newington High School, Running fiber cable from the MDF to the Mech Room, through drop ceiling in r
E-17-229	Electrical	07/18/2017		Closed	RENOVATION OF ART CLASS ROOMS. INCLUDES DEMO AND ALL NEW WIRING, BOTH HIGH & LOW VOLTAGE. PER PLA
P-17-126	Plumbing	07/10/2017		Closed	INSTALL PLUMBING FOR SINKS & EMERGENCY EYE WASH & SHOWERS ART ROOMS 414, 415, 416, 417, 418. MOVE
E-17-161	Electrical	05/25/2017		Closed	RELOCATION OF LOW-VOLTAGE FIBER CABLING IN ROOMS 418, 413, AND THE OFFICE
B-17-121	Comm Renovations	03/29/2017		Closed	RENOVATION OF ART ROOMS AT HIGH SCHOOL NORTH END
E-17-28	Electrical	01/24/2017		Closed	Install Burglar, access control and CCTV system.
E-16-549	Electrical	12/23/2016		Closed	COMPLETE CONTROL WIRING FOR (5) RTU'S, (1) EXHAUST FAN, (2) CABINET UNIT HEATERS, (2) RADIATORS AND

Permit Number	Permit Type	Date Opened	Date Closed	Permit Status	Reason
E-16-539	Electrical	12/15/2016		Closed	ELECTRICAL ALTERATIONS AS PER PLANS & SPECS ON FILE. POWER LIGHTING FIRE ALARM
P-16-259	Fire Sprinkler	12/13/2016		Closed	RELOCATE 4" MAIN FOR DUCTWORK BEING INSTALLED & RELOCATED. MISC. BRANCH PIPING AND DROP NEW HEADS
P-16-242	Plumbing	11/23/2016		Closed	Plumbing Fixtures, Piping & Gas line
M-16-305	Air Conditioning	11/23/2016		Closed	New Sheet Metal, New Roof Top Units, New Cabinet Unit Heaters, New Gas Lines, New Radiators
P-16-195	Plumbing	09/21/2016		Closed	ROUGH UNDERGROUND PLUMBING FOR PHASE 1 CULINARY ARTS AREA. 2 H/C BATHROOMS, 2 F.O., 2 HANDSINKS, G
B-16-589	Comm Renovations	08/04/2016		Closed	10,00 SQ FT CONVERT INDUSTRIAL TECH PROGRAM TO A STEM PROGRAM.
TB-16-475	Commercial Demolition	05/30/2016		Closed	DEMO OF EXISTING SPACE.
M-16-75	Air Conditioning	04/20/2016		Closed	AC
B-15-606	Comm Renovations	02/23/2016		Closed	(3) PANEL ANTENNAS AND ADD A NEW COMMSCOPE
TB-14-295	Addition	05/20/2014		Closed	ADDITION TO BAND ROOM
TB-13-197	Remodel	04/26/2013		Closed	AAUDITORIUM, BAND AND CHORUS ROOMS
B-11-429	Commercial New	08/16/2011		Closed	New construct
B-11-352	Remodel	08/03/2011		Closed	remodel
TB-11-352	Remodel	06/28/2011		Closed	Remodel
	Addition	06/28/2010		Closed	Gym flr replacement / misc



VICINITY MAP

AMERICAN TOWER®

ATC SITE NAME: NEWINGTON CT
ATC SITE NUMBER: 370627
VERIZON SITE NAME: 469196
VERIZON SITE NUMBER:WEST FARMS CT
SITE ADDRESS: 605 WILLARD AVE.
NEWINGTON, CT 06111

VERIZON WIRELESS
ANTENNA AMENDMENT DRAWINGS

LOCATION MAP

COMPLIANCE CODE

ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNMENT AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.

1. INTERNATIONAL BUILDING CODE (IBC)
2. NATIONAL ELECTRIC CODE (NEC)
3. LOCAL BUILDING CODE
4. CITY/COUNTY ORDINANCES

PROJECT SUMMARY

SITE ADDRESS:

605 WILLARD AVE.
NEWINGTON, CT 06111
COUNTY: HARTFORD

GEOGRAPHIC COORDINATES:

LATITUDE: 41.69837222
LONGITUDE: -72.73714722
GROUND ELEVATION: 103' AMSL

PROJECT DESCRIPTION

THE PROPOSED PROJECT INCLUDES MODIFYING GROUND BASED AND TOWER MOUNTED EQUIPMENT AS INDICATED PER BELOW:

REMOVE (9) RRUs AND (6) 1-5/8" COAX CABLES

INSTALL (6) RRUs AND (3) DUAL ANTENNA MOUNTS

EXISTING (12) PANELS, (6) 1-5/8" COAX CABLES, (2) 1-5/8" HYBRID CABLES, AND (2) OVPs TO REMAIN

PROJECT NOTES

1. THE FACILITY IS UNMANNED.
2. A TECHNICIAN WILL VISIT THE SITE APPROXIMATELY ONCE A MONTH FOR ROUTINE INSPECTION AND MAINTENANCE.
3. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT LAND DISTURBANCE OR EFFECT OF STORM WATER DRAINAGE.
4. NO SANITARY SEWER, POTABLE WATER OR TRASH DISPOSAL IS REQUIRED.
5. HANDICAP ACCESS IS NOT REQUIRED.

PROJECT LOCATION DIRECTIONS

FROM DOWNTOWN HARTFORD, CT:

START OUT GOING SOUTH ON MAIN ST TOWARD WELLS ST. TURN LEFT ONTO SHELDON ST. TURN SLIGHT LEFT ONTO RAMP. MERGE ONTO WHITEHEAD HWY E. MERGE ONTO I-91 S TOWARD NEW HAVEN. MERGE ONTO US-5 S/CT-15 S VIA EXIT 28 TOWARD BERLIN TPKE/WETHERSFIELD/NEWINGTON. TAKE THE CT-175 E EXIT TOWARD WETHERSFIELD. TURN LEFT ONTO E CEDAR ST/CT-175. TURN RIGHT ONTO OLD FARM DR. 60 OLD FARM DR IS ON THE RIGHT.

UTILITY COMPANIES

POWER COMPANY: CONNECTICUT LIGHT AND POWER
PHONE: (888) 783-6617

TELEPHONE COMPANY: FRONTIER COMMUNICATIONS
PHONE: (800) 921-8102

811 Know what's below. Call before you dig.

PROJECT TEAM

TOWER OWNER:

AMERICAN TOWER
10 PRESIDENTIAL WAY
WOBURN, MA 01801

ENGINEER:

ATC TOWER SERVICES, LLC
3500 REGENCY PKWY STE 100
CARY, NC 27518

PROPERTY OWNER:

TOWN OF NEWINGTON
131 CEDAR ST
NEWINGTON, CT, 06111

APPLICANT:

VERIZON WIRELESS
99 EAST RIVER DRIVE, 9TH FLOOR
EAST HARTFORD, CT 06108

SHEET INDEX

SHEET NO:	DESCRIPTION:	REV:	DATE:	BY:
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AMERICAN TOWER®
A.T. ENGINEERING SERVICE, PLLC
3500 REGENCY PARKWAY
SUITE 100
CARY, NC 27518
PHONE: (919) 468-0112
COA: PEC.0001553

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	NS	11/01/18

ATC SITE NUMBER:
370627

ATC SITE NAME:
NEWINGTON CT

SITE ADDRESS:
605 WILLARD AVE.
NEWINGTON, CT 06111

SEAL:

Authorized by "EOR"
Nov 2 2018 1:46 PM cosign

verizon

DRAWN BY:	NS
APPROVED BY:	PBB
DATE DRAWN:	11/01/18
ATC JOB NO:	12601693
CUSTOMER ID:	469196
CUSTOMER #:	WEST FARMS CT

COVER SHEET

SHEET NUMBER:	REVISION:
G-001	0

GENERAL CONSTRUCTION NOTES:

1. ALL WORK SHALL CONFORM TO ALL CURRENT APPLICABLE FEDERAL, STATE, AND LOCAL CODES, INCLUDING ANSI/EIA/TIA-222, AND COMPLY WITH ATC MASTER SPECIFICATIONS.
2. CONTRACTOR SHALL CONTACT LOCAL 811 FOR IDENTIFICATION OF UNDERGROUND UTILITIES PRIOR TO START OF CONSTRUCTION.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL REQUIRED INSPECTIONS.
4. ALL DIMENSIONS TO, OF, AND ON EXISTING BUILDINGS, DRAINAGE STRUCTURES, AND SITE IMPROVEMENTS SHALL BE VERIFIED IN FIELD BY CONTRACTOR WITH ALL DISCREPANCIES REPORTED TO THE ENGINEER.
5. DO NOT CHANGE SIZE OR SPACING OF STRUCTURAL ELEMENTS.
6. DETAILS SHOWN ARE TYPICAL; SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS UNLESS OTHERWISE NOTED.
7. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY WHICH SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
8. CONTRACTOR SHALL BRACE STRUCTURES UNTIL ALL STRUCTURAL ELEMENTS NEEDED FOR STABILITY ARE INSTALLED. THESE ELEMENTS ARE AS FOLLOWS: LATERAL BRACING, ANCHOR BOLTS, ETC.
9. CONTRACTOR SHALL DETERMINE EXACT LOCATION OF EXISTING UTILITIES, GROUNDS DRAINS, DRAIN PIPES, VENTS, ETC. BEFORE COMMENCING WORK.
10. INCORRECTLY FABRICATED, DAMAGED, OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE VERIZON WIRELESS REP PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH REMEDIAL ACTION SHALL REQUIRE WRITTEN APPROVAL BY THE VERIZON WIRELESS REP PRIOR TO PROCEEDING.
11. EACH CONTRACTOR SHALL COOPERATE WITH THE VERIZON WIRELESS REP, AND COORDINATE HIS WORK WITH THE WORK OF OTHERS.
12. CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED BY CONSTRUCTION OF THIS PROJECT TO MATCH EXISTING PRE-CONSTRUCTION CONDITIONS TO THE SATISFACTION OF THE VERIZON WIRELESS CONSTRUCTION MANAGER.
13. ALL CABLE/CONDUIT ENTRY/EXIT PORTS SHALL BE WEATHERPROOFED DURING INSTALLATION USING A SILICONE SEALANT.
14. WHERE EXISTING CONDITIONS DO NOT MATCH THOSE SHOWN IN THIS PLAN SET, CONTRACTOR SHALL NOTIFY THE VERIZON WIRELESS REP IMMEDIATELY.
15. CONTRACTOR SHALL ENSURE ALL SUBCONTRACTORS ARE PROVIDED WITH A COMPLETE AND CURRENT SET OF DRAWINGS AND SPECIFICATIONS FOR THIS PROJECT.
16. CONTRACTOR SHALL REMOVE ALL RUBBISH AND DEBRIS FROM THE SITE AT THE END OF EACH DAY.
17. CONTRACTOR SHALL COORDINATE WORK SCHEDULE WITH LANDLORD AND TAKE PRECAUTIONS TO MINIMIZE IMPACT AND DISRUPTION OF OTHER OCCUPANTS OF THE FACILITY.
18. CONTRACTOR SHALL FURNISH VERIZON WIRELESS WITH A PDF MARKED UP AS-BUILT SET OF DRAWINGS UPON COMPLETION OF WORK.
19. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH VERIZON WIRELESS REP TO DETERMINE WHAT, IF ANY, ITEMS WILL BE PROVIDED. ALL ITEMS NOT PROVIDED SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR. CONTRACTOR WILL INSTALL ALL ITEMS PROVIDED.
20. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH VERIZON WIRELESS REP TO DETERMINE IF ANY PERMITS WILL BE OBTAINED BY CONTRACTOR. ALL REQUIRED PERMITS NOT OBTAINED BY VERIZON WIRELESS MUST BE OBTAINED, AND PAID FOR, BY THE CONTRACTOR.
21. CONTRACTOR SHALL INSTALL ALL SITE SIGNAGE IN ACCORDANCE WITH VERIZON WIRELESS SPECIFICATIONS AND REQUIREMENTS.
22. CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS TO VERIZON WIRELESS FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
23. ALL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND LOCATED ACCORDING TO VERIZON WIRELESS SPECIFICATIONS, AND AS SHOWN IN THESE PLANS.
24. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
25. CONTRACTOR SHALL NOTIFY VERIZON WIRELESS REP A MINIMUM OF 48 HOURS IN ADVANCE OF POURING CONCRETE OR BACKFILLING ANY UNDERGROUND UTILITIES, FOUNDATIONS OR SEALING ANY WALL, FLOOR OR ROOF PENETRATIONS FOR ENGINEERING REVIEW AND APPROVAL.
26. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SAFETY INCLUDING COMPLIANCE WITH ALL APPLICABLE OSHA STANDARDS AND RECOMMENDATIONS AND SHALL PROVIDE ALL NECESSARY SAFETY DEVICES INCLUDING PPE AND PPM AND CONSTRUCTION DEVICES SUCH AS WELDING AND FIRE PREVENTION, TEMPORARY SHORING, SCAFFOLDING, TRENCH BOXES/SLOPING, BARRIERS, ETC.
27. THE CONTRACTOR SHALL PROTECT AT HIS OWN EXPENSE, ALL EXISTING FACILITIES AND SUCH OF HIS NEW WORK LIABLE TO INJURY DURING THE CONSTRUCTION PERIOD. ANY DAMAGE CAUSED BY NEGLECT ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, OR BY THE ELEMENTS DUE TO NEGLECT ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, EITHER TO THE EXISTING WORK, OR TO HIS WORK OR THE WORK OF ANY OTHER CONTRACTOR, SHALL BE REPAIRED AT HIS EXPENSE TO THE OWNER'S SATISFACTION.
28. ALL WORK SHALL BE INSTALLED IN A FIRST CLASS, NEAT AND WORKMANLIKE MANNER BY MECHANICS SKILLED IN THE TRADE INVOLVED. THE QUALITY OF WORKMANSHIP SHALL BE SUBJECT TO THE APPROVAL OF THE VERIZON WIRELESS REP. ANY WORK FOUND BY THE VERIZON WIRELESS REP TO BE OF INFERIOR QUALITY AND/OR WORKMANSHIP SHALL BE REPLACED AND/OR REWORKED AT CONTRACTOR EXPENSE UNTIL APPROVAL IS OBTAINED.
29. IN ORDER TO ESTABLISH STANDARDS OF QUALITY AND PERFORMANCE, ALL TYPES OF MATERIALS LISTED HEREINAFTER BY MANUFACTURER'S NAMES AND/OR MANUFACTURER'S CATALOG NUMBER SHALL BE PROVIDED BY THESE MANUFACTURERS AS SPECIFIED.

STRUCTURAL STEEL NOTES:

1. STRUCTURAL STEEL SHALL CONFORM TO THE LATEST EDITION OF THE AISC "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS."
2. STRUCTURAL STEEL ROLLED SHAPES, PLATES AND BARS SHALL CONFORM TO THE FOLLOWING ASTM DESIGNATIONS:
   - A. ASTM A-572, GRADE 50 - ALL W SHAPES, UNLESS NOTED OR A992 OTHERWISE
   - B. ASTM A-36 - ALL OTHER ROLLED SHAPES, PLATES AND BARS UNLESS NOTED OTHERWISE.
   - C. ASTM A-500, GRADE B - HSS SECTION (SQUARE, RECTANGULAR, AND ROUND)
   - D. ASTM A-325, TYPE SC OR N - ALL BOLTS FOR CONNECTING STRUCTURAL MEMBERS
   - E. ASTM F-1554 07 - ALL ANCHOR BOLTS, UNLESS NOTED OTHERWISE
3. ALL EXPOSED STRUCTURAL STEEL MEMBERS SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION PER ASTM A123. EXPOSED STEEL HARDWARE AND ANCHOR BOLTS SHALL BE GALVANIZED PER ASTM A153 OR B695.
4. ALL FIELD CUT SURFACES, FIELD DRILLED HOLES AND GROUND SURFACES WHERE EXISTING PAINT OR GALVANIZATION REMOVAL WAS REQUIRED SHALL BE REPAIRED WITH (2) BRUSHED COATS OF ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURER'S RECOMMENDATIONS.
5. DO NOT DRILL HOLES THROUGH STRUCTURAL STEEL MEMBERS EXCEPT AS SHOWN AND DETAILED ON STRUCTURAL DRAWINGS.
6. CONNECTIONS:
   - A. ALL WELDING TO BE PERFORMED BY AWS CERTIFIED WELDERS AND CONDUCTED IN ACCORDANCE WITH THE LATEST EDITION OF THE AWS WELDING CODE D1.1.
   - B. ALL WELDS SHALL BE INSPECTED VISUALLY. 25% OF WELDS SHALL BE INSPECTED WITH DYE PENETRANT OR MAGNETIC PARTICLE TO MEET THE ACCEPTANCE CRITERIA OF AWS D1.1. REPAIR ALL WELDS AS NECESSARY.
   - C. INSPECTION SHALL BE PERFORMED BY AN AWS CERTIFIED WELD INSPECTOR.
   - D. IT IS THE CONTRACTORS RESPONSIBILITY TO PROVIDE BURNING/WELDING PERMITS AS REQUIRED BY LOCAL GOVERNING AUTHORITY AND IF REQUIRED SHALL HAVE FIRE DEPARTMENT DETAIL FOR ANY WELDING ACTIVITY.
   - E. ALL ELECTRODES TO BE LOW HYDROGEN, MATCHING FILLER METAL, PER AWS D1.1, UNLESS NOTED OTHERWISE.
   - F. MINIMUM WELD SIZE TO BE 0.1875 INCH FILLET WELDS, UNLESS NOTED OTHERWISE.
   - G. PRIOR TO FIELD WELDING GALVANIZING MATERIAL, CONTRACTOR SHALL GRIND OFF GALVANIZING ½" BEYOND ALL FIELD WELD SURFACES. AFTER WELD AND WELD INSPECTION IS COMPLETE, REPAIR ALL GROUND AND WELDED SURFACES WITH ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURERS RECOMMENDATIONS.

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verizon

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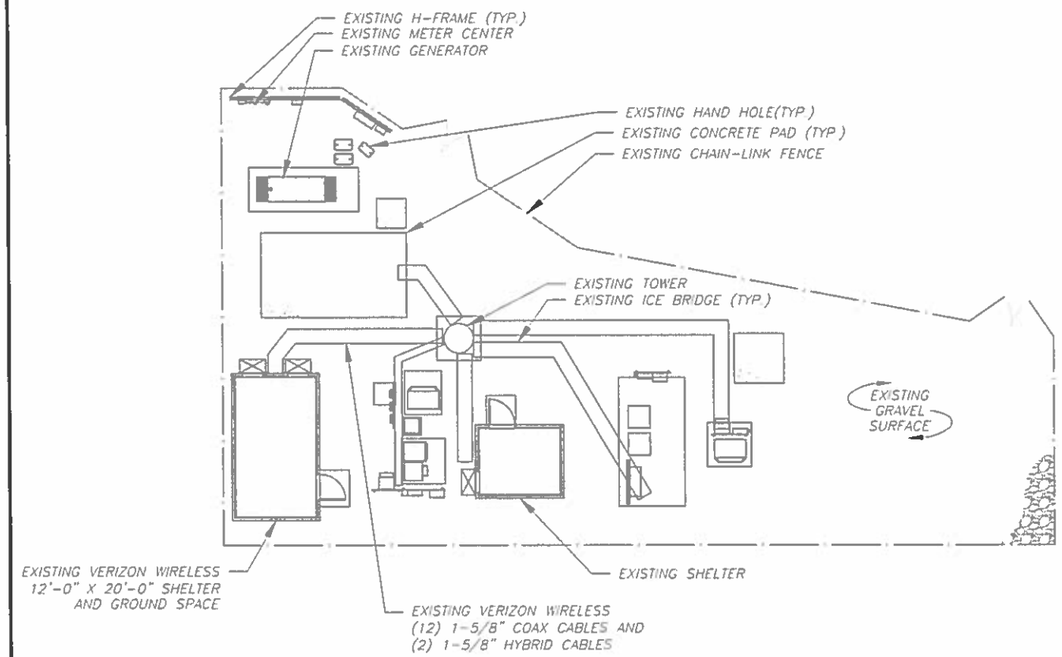
ATC JOB NO:	12601693
CUSTOMER ID:	469196
CUSTOMER #:	WEST FARMS CT

GENERAL NOTES

SHEET NUMBER:	REVISION:
G-002	0

SITE PLAN NOTES:

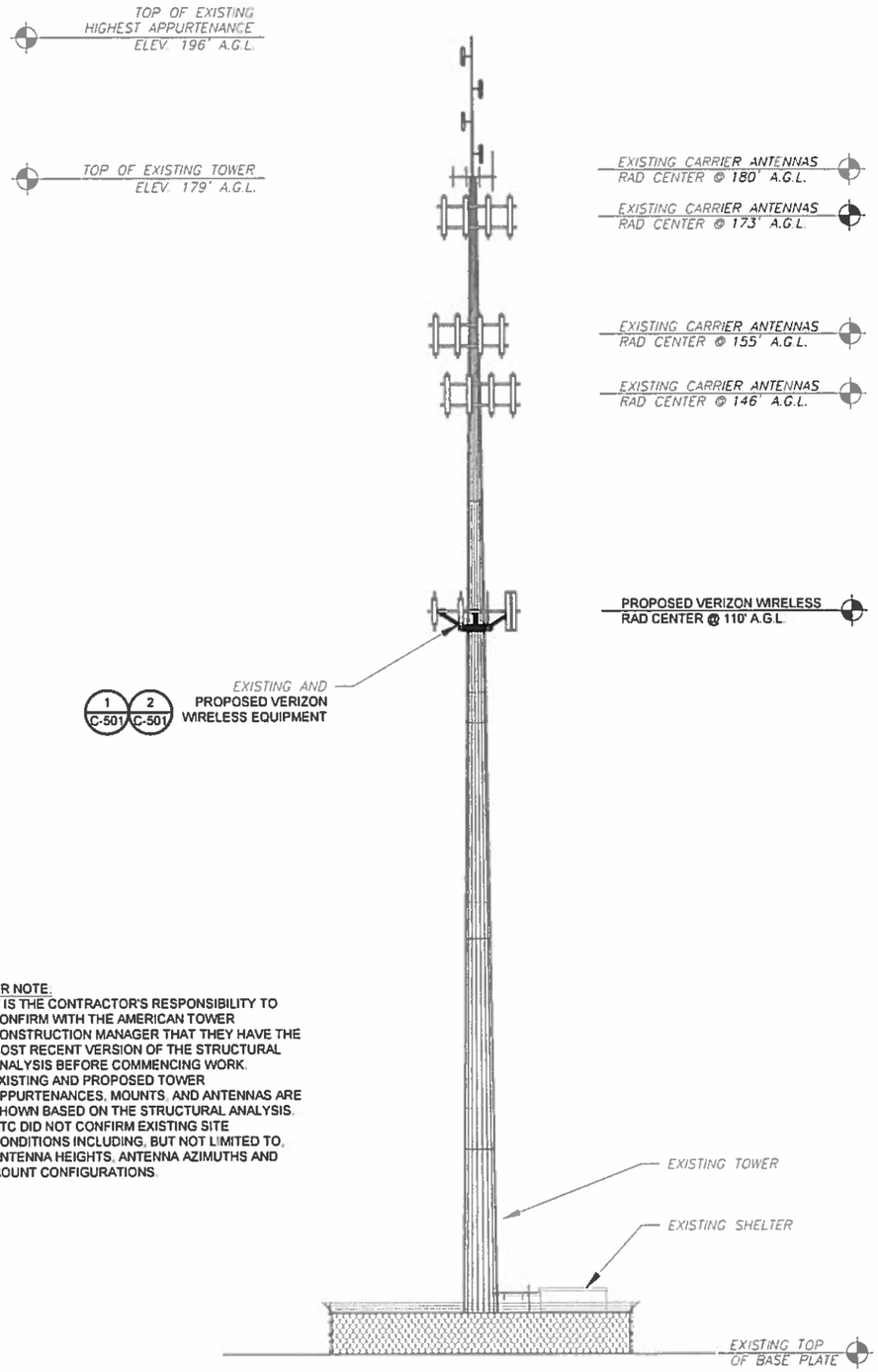
1. THIS SITE PLAN REPRESENTS THE BEST PRESENT KNOWLEDGE AVAILABLE TO THE ENGINEER AT THE TIME OF THIS DESIGN. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO CONSTRUCTION AND VERIFY ALL EXISTING CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT.
2. ICE BRIDGE, CABLE LADDER, COAX PORT, CABLE SUPPORTS, AND CABLES ARE SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL CONFIRM THE EXACT LOCATION OF ALL PROPOSED AND EXISTING EQUIPMENT AND STRUCTURES DEPICTED ON THIS PLAN. BEFORE INSTALLING NEW CABLE SUPPORT STRUCTURES, COAX PORTS, OR ANY OTHER EQUIPMENT, CONTRACTOR SHALL VERIFY ALL ASPECTS OF THE COMPONENTS MEET THE ATC SPECIFICATIONS.
3. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE ATC CONSTRUCTION MANAGER AND LOCAL UTILITY COMPANY FOR THE INSTALLATION OF CONDUITS, CONDUCTORS, BREAKERS, DISCONNECTS, OR ANY OTHER EQUIPMENT REQUIRED FOR ELECTRICAL SERVICE. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH LATEST EDITION OF THE STATE AND NATIONAL CODES, ORDINANCES AND REGULATIONS APPLICABLE TO THIS PROJECT.



1 DETAILED SITE PLAN

0 20' 40'

SCALE: 1"=20' (11X17)
1"=10' (22X34)



TOWER NOTE:
1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM WITH THE AMERICAN TOWER CONSTRUCTION MANAGER THAT THEY HAVE THE MOST RECENT VERSION OF THE STRUCTURAL ANALYSIS BEFORE COMMENCING WORK. EXISTING AND PROPOSED TOWER APPURTENANCES, MOUNTS, AND ANTENNAS ARE SHOWN BASED ON THE STRUCTURAL ANALYSIS.
2. ATC DID NOT CONFIRM EXISTING SITE CONDITIONS INCLUDING, BUT NOT LIMITED TO, ANTENNA HEIGHTS, ANTENNA AZIMUTHS AND MOUNT CONFIGURATIONS.

2 TOWER ELEVATION
SCALE: NOT TO SCALE

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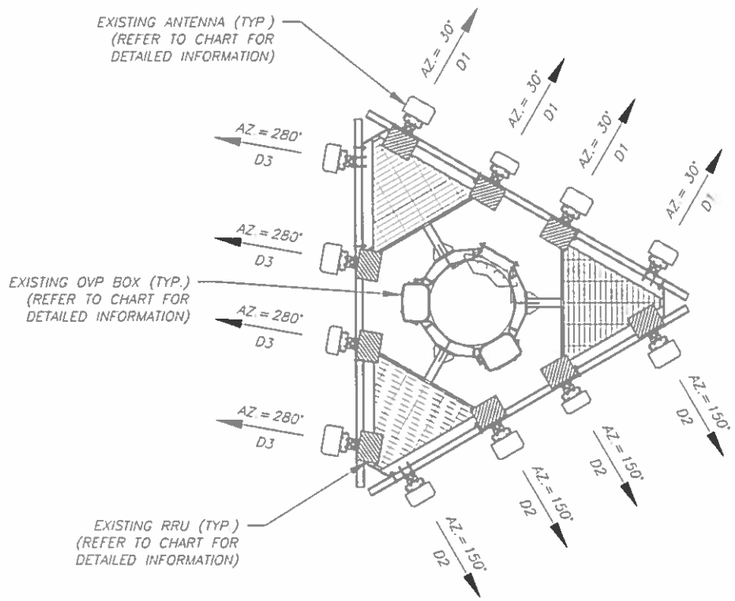
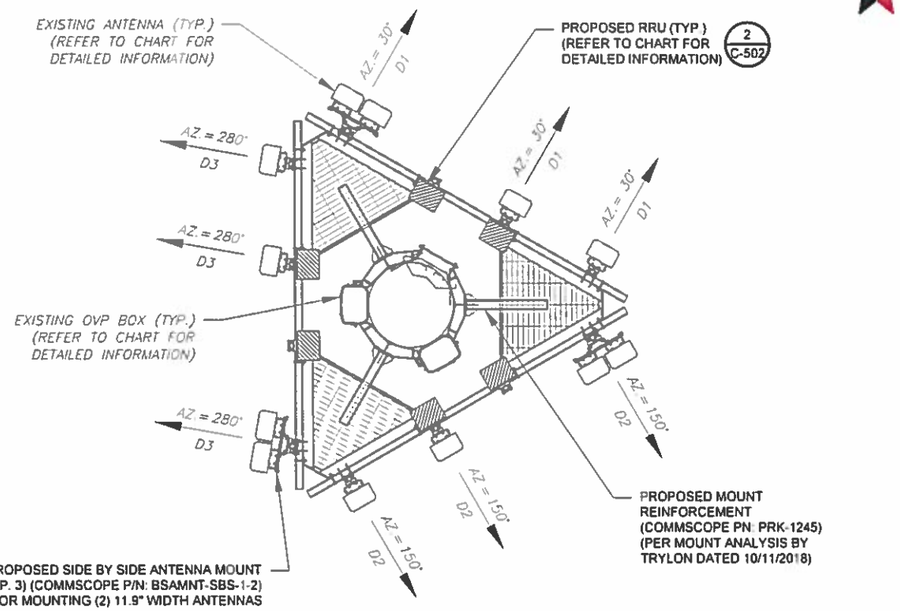
CUSTOMER #:	WEST FARMS CT

DETAILED SITE PLAN AND TOWER ELEVATION

SHEET NUMBER:	REVISION:
C-101	0



1 CURRENT ANTENNA PLAN



2 PROPOSED ANTENNA PLAN

CURRENT ANTENNA AND RF EQUIPMENT SCHEDULE

LOCATION			ANTENNA SUMMARY				NON ANTENNA SUMMARY		
SECTOR	RAD	AZ	POS	BAND	MODEL NUMBER	STATUS	POS	MODEL NUMBER	STATUS
D1	110'	30°	1	700/850/1900 LTE	SBNHH-1D65B	RMN	1	RRH2X60 700	RMV
			2	850 CDMA	BXA-70063/4CF_5'	REL	2	RRH2X60-AWS	RMV
			3	700/850/1900 LTE	SBNHH-1D65B	REL	3	RRH2X60-1900	RMV
			4	850 CDMA	BXA-80063/4CF_5'	RMN	4	-	-
			-	-	-	-	-	-	-
D2	110'	150°	1	700/850/1900 LTE	SBNHH-1D65B	RMN	1	RRH2X60 700	RMV
			2	850 CDMA	BXA-70063/4CF_5'	REL	2	RRH2X60-AWS	RMV
			3	700/850/1900 LTE	SBNHH-1D65B	REL	3	RRH2X60-1900	RMV
			4	850 CDMA	BXA-80063/4CF_5'	RMN	4	-	-
			-	-	-	-	-	-	-
D3	110'	280°	1	700/850/1900 LTE	SBNHH-1D65B	RMN	1	RRH2X60 700	RMV
			2	850 CDMA	BXA-70063/4CF_5'	REL	2	RRH2X60-AWS	RMV
			3	700/850/1900 LTE	SBNHH-1D65B	REL	3	RRH2X60-1900	RMV
			4	850 CDMA	BXA-80063/4CF_5'	RMN	4	-	-
			-	-	-	-	-	-	-

CURRENT FIBER DISTRIBUTION / OVP BOX					CURRENT CABLING SUMMARY		
LOCATION	POS	BAND	MODEL NUMBER	STATUS	COAX	HYBRID	STATUS
TOWER	-	-	(2) DB-T1-6Z-8AB-0Z	RMN	(6) 1-5/8"	(2) 1-5/8"	RMN
-	-	-	-	-	(6) 1-5/8"	-	RMV

NOTES

1. BASED ON APPROVED ATC APPLICATION 12500288 DATED 07/23/18 CONFIRM WITH VERIZON WIRELESS REP FOR APPLICABLE UPDATES/REVISIONS AND MOST RECENT RFDS.
2. ATC HAS NOT YET VERIFIED ANY EXISTING ANTENNA CONFIGURATION OR MOUNT CONFIGURATION. CONTRACTOR TO VERIFY MOUNT CONFIGURATION HAS SUFFICIENT SPACE FOR PROPOSED LESSEE EQUIPMENT (I.E. CLEARANCES, MOUNT PIPE OR SUFFICIENT LENGTH, ETC.) ATC DID NOT ANALYZE ANTENNA MOUNT TO DETERMINE ADEQUATE STRUCTURAL CAPACITY FOR ANY LESSEE LOADING.
3. ALL PROPOSED EQUIPMENT INCLUDING ANTENNAS, COAX, ETC. SHALL BE MOUNTED IN ACCORDANCE WITH THE TOWER STRUCTURAL ANALYSIS ON FILE WITH THE ATC CM.
4. CONFIRM SPACING OF PROPOSED EQUIPMENT DOES NOT CAUSE TOWER CONFLICTS NOR IMPEDE TOWER CLIMBING PEGS.
5. POSITIONS START WITH FIRST PIPE ON THE LEFT SIDE (AS VIEWED FROM BEHIND THE MOUNT).
6. CABLE LENGTHS SHOWN ESTIMATE MAXIMUM TYPICAL RUN AND INCORPORATE A 15% SAFETY FACTOR.

PROPOSED ANTENNA AND RF EQUIPMENT SCHEDULE

LOCATION			ANTENNA SUMMARY				NON ANTENNA SUMMARY		
SECTOR	RAD	AZ	POS	BAND	MODEL NUMBER	STATUS	POS	MODEL NUMBER	STATUS
D1	110'	30°	1	700/850/1900 LTE	SBNHH-1D65B	RMN	1	-	-
			2	700/850/2100 LTE	SBNHH-1D65B	RMN	2	700/850 MHZ DUALBANDRRH	ADD
			3	850 CDMA	BXA-70063/4CF_5'	RMN	3	PCS/AWS DUALBANDRRH	ADD
			4	850 CDMA	BXA-80063/4CF_5'	RMN	4	-	-
			-	-	-	-	-	-	-
D2	110'	150°	1	700/850/1900 LTE	SBNHH-1D65B	RMN	1	-	-
			2	700/850/2100 LTE	SBNHH-1D65B	RMN	2	700/850 MHZ DUALBANDRRH	ADD
			3	850 CDMA	BXA-70063/4CF_5'	RMN	3	PCS/AWS DUALBANDRRH	ADD
			4	850 CDMA	BXA-80063/4CF_5'	RMN	4	-	-
			-	-	-	-	-	-	-
D3	110'	280°	1	700/850/1900 LTE	SBNHH-1D65B	RMN	1	-	-
			2	700/850/2100 LTE	SBNHH-1D65B	RMN	2	700/850 MHZ DUALBANDRRH	ADD
			3	850 CDMA	BXA-70063/4CF_5'	RMN	3	PCS/AWS DUALBANDRRH	ADD
			4	850 CDMA	BXA-80063/4CF_5'	RMN	4	-	-
			5	-	-	-	-	-	-

PROPOSED FIBER DISTRIBUTION / OVP BOX					PROPOSED CABLING SUMMARY		
LOCATION	POS	BAND	MODEL NUMBER	STATUS	COAX	HYBRID	STATUS
TOWER	-	-	(2) DB-T1-6Z-8AB-0Z	RMN	(6) 1-5/8"	(2) 1-5/8"	RMN
-	-	-	-	-	-	-	-

STATUS ABBREVIATIONS
RMV: TO BE REMOVED — DSC: TO BE DISCONNECTED AND TO REMAIN
RMN: TO REMAIN
REL: TO BE RELOCATED

CABLE LENGTHS FOR FOR FIBER AND DC JUMPERS
FROM FIBER DISTRIBUTION / OVP BOX TO RRU: 20' JUMPERS
FROM RRU TO ANTENNA: 10' JUMPERS

3 ANTENNA AND RF EQUIPMENT SCHEDULES

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APPROVED BY:	PBB
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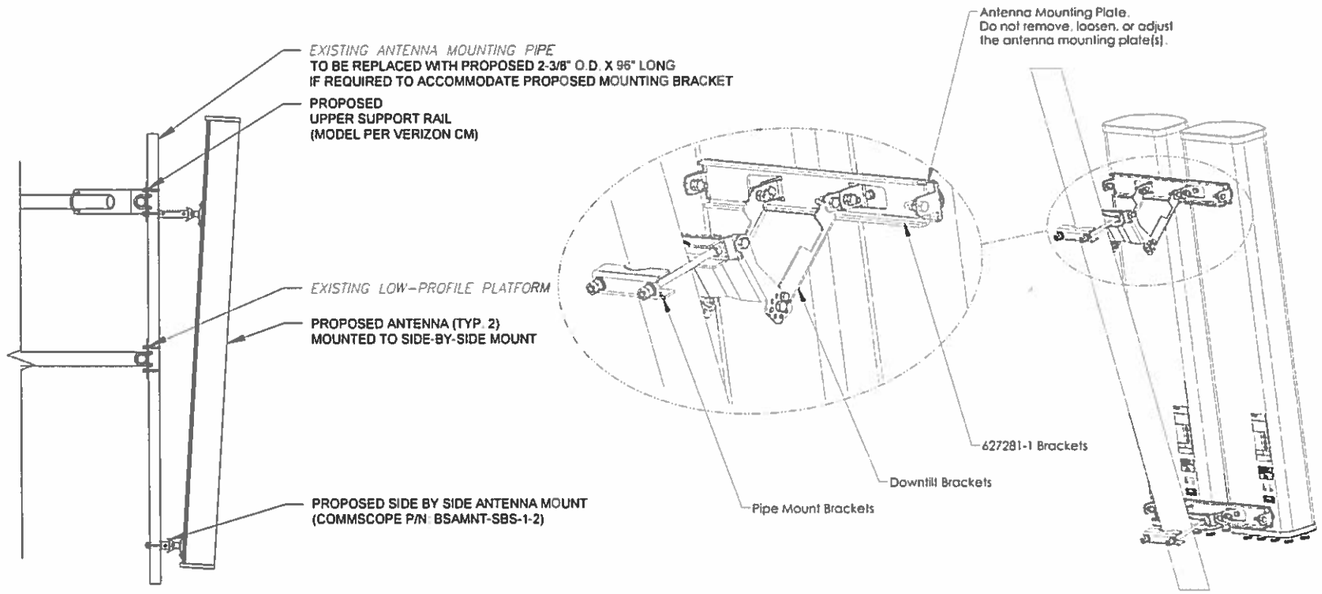
CUSTOMER #:	WEST FARMS CT

RF SCHEDULE AND ANTENNA INSTALLATION

SHEET NUMBER:	REVISION:
C-501	0

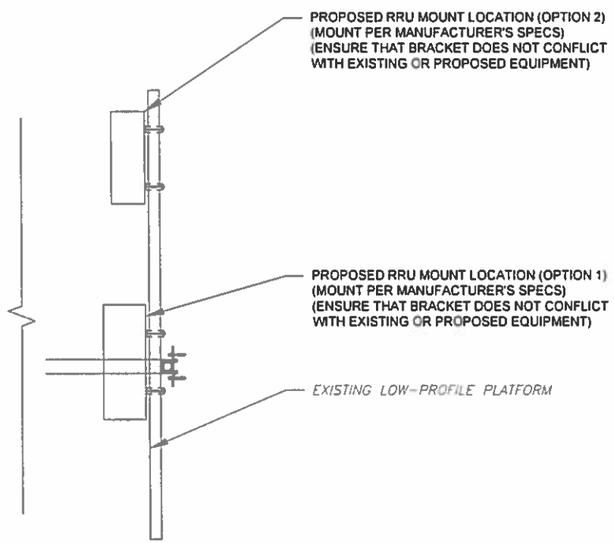


PROFILE VIEW

ISOMETRIC VIEW (BY MANUFACTURER)

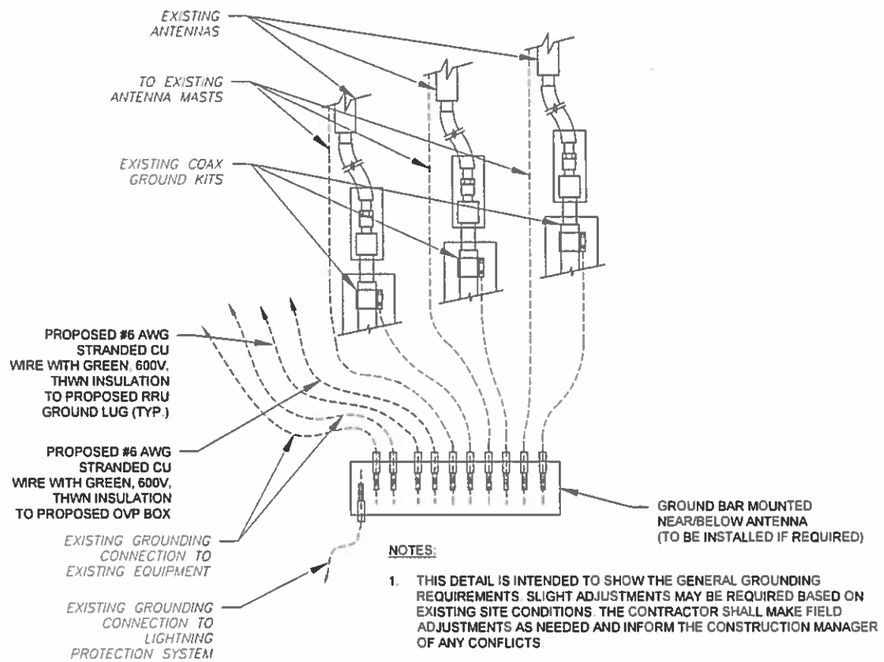
1 PROPOSED SIDE-BY-SIDE MOUNT

SCALE: NOT TO SCALE



2 PROPOSED RRU MOUNTING DETAIL - TYPICAL

SCALE: NOT TO SCALE



NOTES:

1. THIS DETAIL IS INTENDED TO SHOW THE GENERAL GROUNDING REQUIREMENTS. SLIGHT ADJUSTMENTS MAY BE REQUIRED BASED ON EXISTING SITE CONDITIONS. THE CONTRACTOR SHALL MAKE FIELD ADJUSTMENTS AS NEEDED AND INFORM THE CONSTRUCTION MANAGER OF ANY CONFLICTS.
2. SITE GROUNDING SHALL COMPLY WITH VERIZON WIRELESS GROUNDING STANDARDS, LATEST EDITION, AND COMPLY WITH VERIZON WIRELESS GROUNDING CHECKLIST, LATEST VERSION. WHEN NATIONAL AND LOCAL GROUNDING CODES ARE MORE STRINGENT THEY SHALL GOVERN.

3 TYPICAL ANTENNA GROUNDING DIAGRAM

SCALE: NOT TO SCALE

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CONSTRUCTION DETAILS

SHEET NUMBER:	REVISION:
C-502	0

Trylon

Mount Analysis

Prepared For

AMERICAN TOWER®

NEWINGTON CT

ATC 370627

10/11/18

PASSING

W/REINFORCEMENT (71.6%)

Michael F. Plahovinsak, P.E.
Sole Proprietor - Independent Engineer
18301 SR 161, Plain City, Ohio
614-398-6250 / mike@mfpeng.com
MFP Project #23218-256

Trylon

MOUNT ANALYSIS REPORT

American Tower Corporation
10 Presidential Way
Woburn, MA 01801

Attention: **Mr. Blake Paynter**

Reference: Analysis of the existing Platform mount at **110-ft**elevation

Trylon Job No.:	141800
ATC Site Name:	Newington CT
ATC Asset Number:	370627
Verizon Site Name:	West Farms CT
Verizon Site Number:	325089
Site Address:	605 Willard Ave, Newington, CT, 06111
Tower Profile:	Monopole Tower

Dear Sir:

We have been provided with RF information, photos and sketches of the structure for above-referenced site. Verizon is proposing to change the equipment configuration on the existing mounting hardware.

A revised antenna, coax and miscellaneous equipment schematic have been provided to us. We have been asked to evaluate this information to determine whether or not the existing mounts are adequate to safely support the proposed loading change. The structural evaluation refers tothe Platform mount **sat 110-ft**elevation of the existing Monopole located at 605 Willard Ave, Newington, CT, 06111.

The proposed changes were provided to us in aRFDS document dated 08/22/2018.The antennas are located at 110-ft elevation on all sectors.

According to the RFDS document, the finalconfiguration of antennas for each sector consists of:

- (2) Andrew antenna_SBNHH-1D65B_(72.72" x 23.7" x 7.1" – 126.82lbs) mounted side by side on commscope mounting bracket **BSAMNT-SBS-1-2** in position #1;
- (1) Antel antenna_BXA-80063_(94.7" x 11.2" x 4.5" – 24lbs) in position #3;
- (1) Antel antenna_BXA-80063_(94.7" x 11.2" x 4.5" – 24lbs) in position #4;

According to the RFDS document, the finalconfiguration of RRHs for each sector consists of:

- **(1) RRUS B5/B13 RRH-BR04C** in position #2,
- **(1) RRUS B2/B66A RRH-BR049** in position #3;

TMA and Power Squid considered for this analysis:

- (1) RAYCAP are installed in Tower, not consider for this analysis.

1 MOUNT ANALYSIS
SCALE: NOT TO SCALE

NOTE: THIS SHEET CREATED BY OTHERS AND PROVIDED BY REQUEST OF CUSTOMER WITHOUT EDIT.

CUSTOMER #:	WEST FARMS CT
SUPPLEMENTAL	
SHEET NUMBER: R-601	REVISION: 0

The member dimensions that we considered in our evaluation are as per sketches and pictures provided by the site visit crew. The structural members that we considered in our analysis arepresented in the attached model sketches

Steel grades have been assumed as follows, unless noted otherwise:

Channel, Solid Round, Angle, Plate	ASTM A36 (GR 36)
HSS (Rectangular)	ASTM 500 (GR B-46)
Pipe	ASTM A53 (GR 35)
Connection Bolts	ASTM A325

CONCLUSIONS AND RECOMMENDATIONS

Based on information provided, our calculations conclude that the existing Verizon Platform mount located at **110-ft** elevationof the Monopole at the specified address, are **ADEQUATE WITH REINFORCEMENT** to safely support the proposed equipment, subject to the attached Standard Conditions on page 3.

Reinforcement:
We recommend to install New PRK-1245 Kit at a distance of 35" below the existing Stand off arm.

Should you have any questions, comments or require additional information, please do not hesitate to call.

Sincerely,

Analysis performed by:

Bathrudeen Ishak

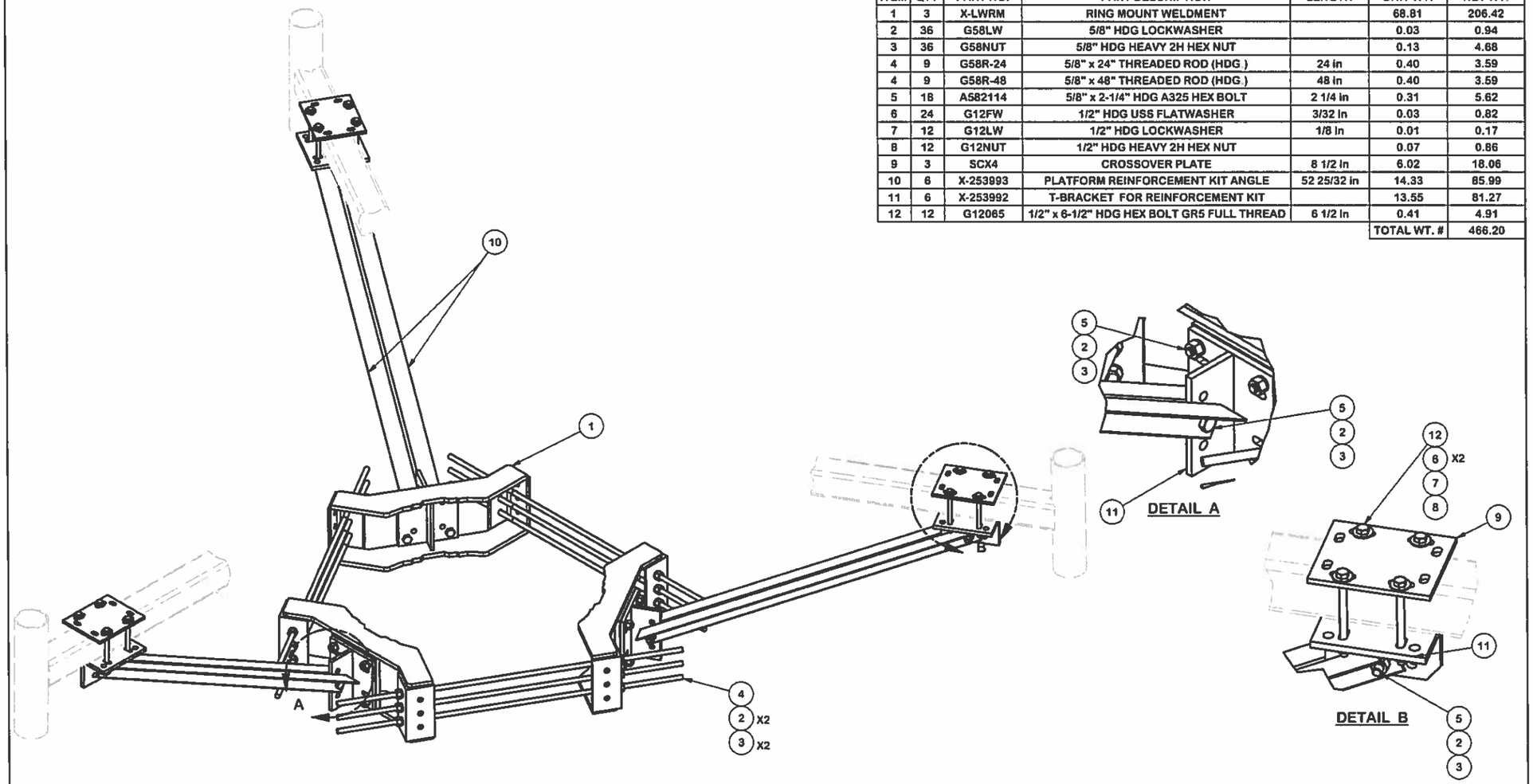
Reviewed by:

Michael Plahovinsak, P.E.

1 MOUNT ANALYSIS
SCALE: NOT TO SCALE

NOTE: THIS SHEET CREATED BY OTHERS AND PROVIDED BY REQUEST OF CUSTOMER WITHOUT EDIT.

CUSTOMER #:	WEST FARMS CT
SUPPLEMENTAL	
SHEET NUMBER: R-602	REVISION: 0



PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	3	X-LWRM	RING MOUNT WELDMENT		68.81	206.42
2	36	G58LW	5/8" HDG LOCKWASHER		0.03	0.94
3	36	G58NUT	5/8" HDG HEAVY 2H HEX NUT		0.13	4.68
4	9	G58R-24	5/8" x 24" THREADED ROD (HDG.)	24 in	0.40	3.59
4	9	G58R-48	5/8" x 48" THREADED ROD (HDG.)	48 in	0.40	3.59
5	18	A582114	5/8" x 2-1/4" HDG A325 HEX BOLT	2 1/4 in	0.31	5.62
6	24	G12FW	1/2" HDG USS FLATWASHER	3/32 in	0.03	0.82
7	12	G12LW	1/2" HDG LOCKWASHER	1/8 in	0.01	0.17
8	12	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	0.86
9	3	SCX4	CROSSOVER PLATE	8 1/2 in	6.02	18.06
10	6	X-253993	PLATFORM REINFORCEMENT KIT ANGLE	52 25/32 in	14.33	85.99
11	6	X-253992	T-BRACKET FOR REINFORCEMENT KIT		13.55	81.27
12	12	G12065	1/2" x 6-1/2" HDG HEX BOLT GR5 FULL THREAD	6 1/2 in	0.41	4.91
					TOTAL WT. #	466.20

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
A	CHANGED ALL 5/8" BOLTS TO A582114	4488	CEK	10/1/2015

REVISION HISTORY

TOLERANCE NOTES

TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:
SAWED, SHEARED AND GAS CUT EDGES *(± 0.030")*
DRILLED AND GAS CUT HOLES *(± 0.030")* - NO CONING OF HOLES
LASER CUT EDGES AND HOLES *(± 0.010")* - NO CONING OF HOLES
BENDS ARE ± 1/2 DEGREE
ALL OTHER MACHINING *(± 0.030")*
ALL OTHER ASSEMBLY *(± 0.060")*

DESCRIPTION
PLATFORM REINFORCEMENT
ON A 12" TO 45" POLE
4' 6" ANGLE

SITE PRO 1 — A valmont COMPANY

Engineering Support Team: 1-888-753-7446

Locations:
New York, NY
Atlanta, GA
Los Angeles, CA
Plymouth, IN
Salem, OR
Dallas, TX

CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.	PAGE
4488	CEK 4/11/2014		PRK-1245	1 OF 2
CLASS / SUB	DRAWING USAGE	CHECKED BY	DWG. NO.	
81 / 01	CUSTOMER	BMC 1/18/2016	PRK-1245	

1 MOUNT ANALYSIS
SCALE: NOT TO SCALE

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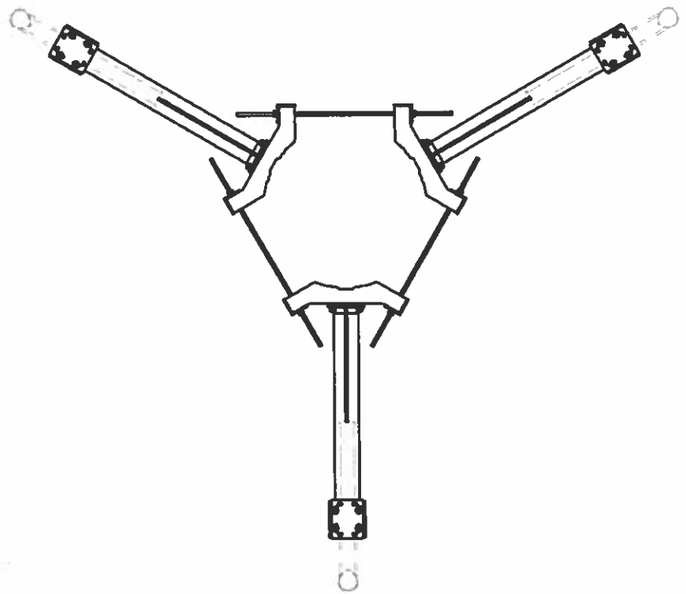
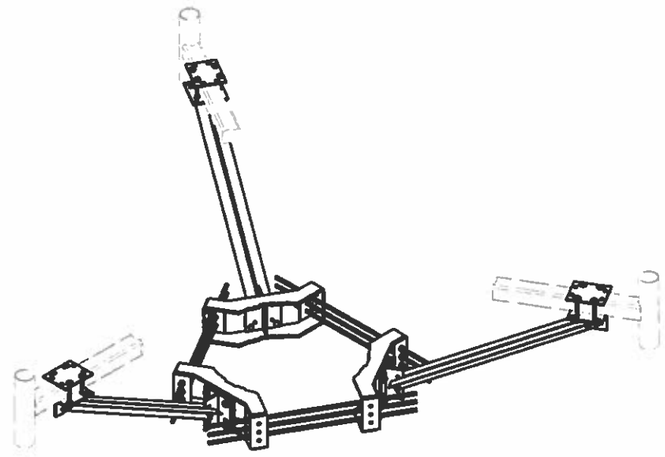
CUSTOMER #: WEST FARMS CT

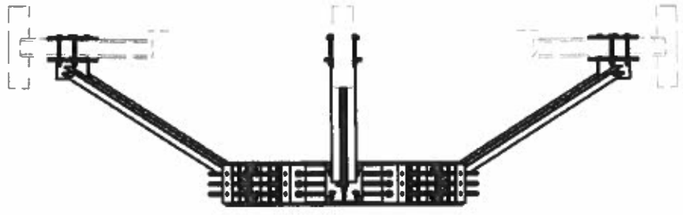
SUPPLEMENTAL

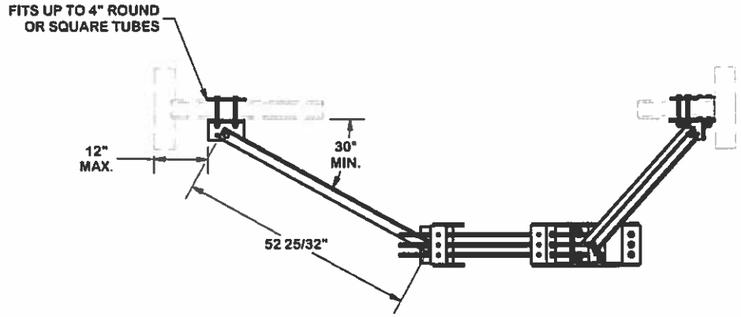
SHEET NUMBER: R-603

REVISION: 0









REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
A	CHANGED ALL 5/8" BOLTS TO A582114	4488	CEK	10/1/2015

REVISION HISTORY

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LASER CUT EDGES AND HOLES *(± 0.010")* - NO CONING OF HOLES
BENDS ARE ± 1/2 DEGREE
ALL OTHER MACHINING *(± 0.030")*
ALL OTHER ASSEMBLY *(± 0.060")*

DESCRIPTION
PLATFORM RENIFORCEMENT
ON A 12" TO 45" POLE
4' 6" ANGLE

SITE PRO 1 — A valmont COMPANY

Engineering Support Team:
1-888-753-7446

Locations:
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CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.	PAGE
4488	CEK 4/11/2014		PRK-1245	2 OF 2

CLASS	SUB	DRAWING USAGE	CHECKED BY	DWG. NO.
81	01	CUSTOMER	BMC 1/18/2016	PRK-1245

1 MOUNT ANALYSIS
SCALE: NOT TO SCALE

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CUSTOMER #: WEST FARMS CT

SUPPLEMENTAL

SHEET NUMBER: R-604

REVISION: 0