

MJ Umali, 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: (978) 568-7906  
[MUmali@centerlinecommunications.com](mailto:MUmali@centerlinecommunications.com)

August 11, 2021

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

**RE: Notice of Exempt Modification // Site: WATERFORD REBUILD CT (ATC: 310972)  
15 Miner Lane, Waterford, CT, 06385  
N 41.3292 // W 72.7371**

Dear Ms. Bachman:

Cellco Partnership d/b/a Verizon Wireless currently maintains 6 antennas at the 160-ft level on the existing 180-foot monopole tower, located at 15 Miner Lane, Waterford, CT. The tower is owned by American Tower. The property is owned by the A Meltel, LLC. Verizon Wireless now intends to remove 6 antennas and install 9 new ones for the LTE (3700 MHz) replacements for its 5G upgrade. Additionally, Verizon Wireless will remove 12 Remote Radio Heads (RRHs) and replace them with 6 new ones, remove 2 Hybrid cables and replace with 2 new ones, install 3 mounting kits, and 3 diplexers; 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 Robert J. Brule, First Selectman, Jill Pisechko, Zoning Official for Waterford CT, American Tower, the tower owner, and the property owner, A Meltell, LLC.

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 July 26, 2021, by RPM Engineering, a structural analysis dated June 4, 2021, by A.T. Engineering, PLLC., and a structural mount analysis by Maser Consulting Connecticut date June 30, 2021, 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, as shown in the attached structural analysis by A.T. Engineering, PLLC, dated June 4, 2021, and a structural mount analysis by Maser Consulting Connecticut, dated June 30, 2021, pursuant to certain conditions defined therein. Design and engineering are fully illustrated within final construction drawings, signed, and stamped dated July 26, 2021.

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,

*MJ Umali*

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Attachments

cc: Robert J. Brule, First Selectman - as chief elected official  
Jill Pisechko, Zoning Official for Waterford CT - as P&Z official  
American Tower Corporation – as the tower owner  
A Meltell, LLC – as the ground owner

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<p style="text-align: right;"><b>1 OF 1</b></p> <p style="text-align: center;"><b>1 LBS</b></p> <p>MIJMAIL 9785687906 CENTERLINE COMMUNICATIONS 750 W. CENTER ST. WEST BRIDGEWATER MA 02379</p> <p><b>SHIP TO:</b> ROBERT J. BRULE, FIRST SELECTMAN 15 ROPE FERRY ROAD <b>WATERFORD CT 06385-2886</b></p>	<p style="font-size: 2em;"><b>CT 063 5-02</b></p> 	<p style="font-size: 1.5em;"><b>UPS GROUND</b></p> <p>TRACKING #: 1Z 9Y4 503 03 1046 4502</p> 	<p style="text-align: center;"><b>BILLING: P/P</b></p> <p style="text-align: center;">  </p> <p>Reference # 1: 310972 Reference # 2: Waterford Rebutild CT <small>CS 221 0-18 W/NV50 32.0A 08/2021*</small></p>
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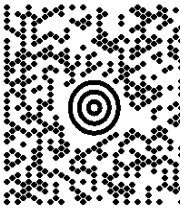

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<p style="text-align: right;"><b>1 OF 1</b></p> <p style="text-align: center;"><b>1 LBS</b></p> <p><b>SHIP TO:</b>          JILL PISECHKO, ZONING OFFICIAL          15 ROPE FERRY ROAD  <b>WATERFORD CT 06385-2806</b></p> <p>MIJUMALI          9785687906          CENTERLINE COMMUNICATIONS          750 W. CENTER ST.          WEST BRIDGEWATER MA 02379</p>	<p style="font-size: 2em;"><b>CT 063 5-02</b></p>  	<p style="font-size: 1.5em;"><b>UPS GROUND</b></p> <p>TRACKING #: 1Z 9Y4 503 03 0336 7514</p> 	<p style="text-align: center;"><b>BILLING: P/P</b></p> <p style="text-align: center;">  </p> <p>Reference # 1: 310972          Reference # 2: Waterford Rebutild CT  <small>CS 221 0618 WAT NV50 32.0A 08/2021*</small></p>
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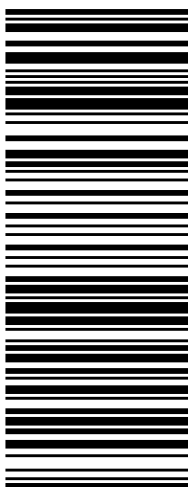

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<p style="text-align: right;"><b>1 OF 1</b></p> <p style="text-align: center;"><b>5 LBS</b></p> <p>MJ UMALT 9785687906 CENTERLINE COMMUNICATIONS, LLC 750 WEST CENTER STREET WEST BRIDGEWATER MA 02379</p> <p><b>SHIP TO:</b> LAND MANAGEMENT 7814287250 AMERICAN TOWER CORPORATION 10 PRESIDENTIAL WAY <b>WOBURN MA 01801-1053</b></p>	<p style="font-size: 2em;"><b>MA 018 9-04</b></p> 	<p style="font-size: 1.5em;"><b>UPS GROUND</b></p> <p>TRACKING #: 1Z 9Y4 503 03 0742 7577</p> 	<p style="text-align: center;"><b>BILLING: P/P</b></p> <p style="text-align: center;">Reference # 1: ATC CSC Hard Copies</p> <p style="font-size: 0.8em;">CS 22.0.18. WNTNV50 32.0A 08/2021*</p> 
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<p style="text-align: right;"><b>1 OF 1</b></p> <p style="text-align: center;"><b>1 LBS</b></p> <p>SHIP TO: A MELTELL LLC 381 LOVEJOY TRAIL <b>CULLODEN WV 25510-9457</b></p> <p>MJUMAIL 9785687906 CENTERLINE COMMUNICATIONS 750 W. CENTER ST. WEST BRIDGEWATER MA 02379</p>	<p style="font-size: 2em;"><b>WV 257 0-10</b></p> 	<p><b>UPS GROUND</b></p> <p>TRACKING #: 1Z 9Y4 503 03 1687 2524</p> 	<p style="text-align: center;"><b>BILLING: P/P</b></p> <p>Reference # 1: 310972 Reference # 2: Waterford Rebutild CT <small>CS 221 0-18 WV NJ NV 50 32.0A 08/2021 *</small></p> 
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**AMERICAN TOWER®**  
CORPORATION

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## Structural Analysis Report

**Structure** : 180 ft Monopole  
**ATC Site Name** : WATERFORD REBUILD CT, CT  
**ATC Asset Number** : 310972  
**Engineering Number** : 13685301\_C3\_02  
**Proposed Carrier** : VERIZON WIRELESS  
**Carrier Site Name** : WATERFORD SE CT  
**Carrier Site Number** : 469063  
**Site Location** : 15 Miner Lane  
Waterford, CT 06385-3016  
41.329100,-72.124600  
**County** : New London  
**Date** : June 4, 2021  
**Max Usage** : 63%  
**Result** : Pass

Prepared By:  
Hussam Al Tahan  
Structural Engineer II

*Hussam Al Tahan*

Reviewed By:



**COA: PEC.0001553**



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## Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 180 ft monopole to reflect the change in loading by VERIZON WIRELESS.

## Supporting Documents

<b>Tower Drawings</b>	FWT Job #23766000, dated July 18, 2001
<b>Foundation Drawing</b>	ATC Job #42693971, dated December 8, 2008
<b>Geotechnical Report</b>	Tower Engineering Professionals Project #082973.01, dated November 7, 2008
<b>Modifications</b>	ATC Job #442108F2, dated November 9, 2009

## 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.

<b>Basic Wind Speed:</b>	127 mph (3-Second Gust)
<b>Basic Wind Speed w/ Ice:</b>	50 mph (3-Second Gust) w/ 1" radial ice concurrent
<b>Code:</b>	ANSI/TIA-222-H / 2015 IBC / 2018 Connecticut State Building Code
<b>Exposure Category:</b>	B
<b>Risk Category:</b>	II
<b>Topographic Factor Procedure:</b>	Method 1
<b>Topographic Category:</b>	1
<b>Crest Height (H):</b>	0 ft
<b>Spectral Response:</b>	$S_s = 0.19, S_1 = 0.05$
<b>Site Class:</b>	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](mailto: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**

Elev. <sup>1</sup> (ft)	Qty	Equipment	Mount Type	Lines	Carrier
184.0	2	Generic 11' Omni	Triangular Low Profile Platform	(2) 1 5/8" Coax	OTHER
	1	Generic TTA			
170.0	3	KMW HB-X-WM-17-65-00T	Side Arm	(6) 1 5/8" Coax	CLEARWIRE CORPORATION
	3	KMW HB-X-WM-17-65-00T-TTLNA (w/BKT)			
160.0	2	RFS DB-T1-6Z-8AB-OZ	Triangular Platform with Handrails	(2) 1 5/8" (1.63"-41.3mm) Fiber (12) 1 5/8" Coax	VERIZON WIRELESS
153.0	6	Powerwave Allgon LGP17201	Triangular Platform with Handrails	(1) 3" conduit (3) 0.39" (10mm) Fiber Trunk (6) 0.78" (19.7mm) 8 AWG 6 (12) 1 1/4" Coax (3) 2" conduit	AT&T MOBILITY
	3	Ericsson RRUS 11 (Band 12)			
	3	Ericsson RRUS 32 B66A			
	3	Ericsson RRUS 32 B2			
	3	Powerwave Allgon 7770.00			
	6	Commscope SBNHH-1D65A			
	3	Kathrein Scala 80010965			
	3	Ericsson RRUS 32 B30 (60 lbs)			
	3	Ericsson RRUS 4478 B14 (15")			
	1	Raycap DC6-48-60-18-8F ("Squid")			
	1	Raycap DC6-48-60-18-8F			
	6	CCI TPX-070821			
	6	Powerwave Allgon 7020.00 Dual Band RET			
1	Raycap DC6-48-60-18-8C				
130.0	3	Ericsson Radio 4449 B71 B85A	Triangular Platform with Handrails (PV-LPPGS-12M-HR2-AP1)	(5) 1 5/8" Hybriflex	T-MOBILE
	3	Ericsson 4424 B25			
	3	Ericsson Air6449 B41			
	3	RFS APX16DWV-16DWVS-E-A20			
	3	RFS APXVAARR24_43-U-NA20			
	3	Ericsson RRUS 4415 B66			

**Equipment to be Removed**

Elev. <sup>1</sup> (ft)	Qty	Equipment	Mount Type	Lines	Carrier
160.0	3	Alcatel-Lucent RRH 2X60-1900	-	-	VERIZON WIRELESS
	3	Alcatel-Lucent RRH2x60 700			
	3	Amphenol Antel QUAD656C0000X			
	3	Antel BXA-70063/6CF_			
	6	Commscope HBXX-6517DS-A2M			
	3	Alcatel-Lucent B66a RRH4x45 (AWS-3)			



**Proposed Equipment**

Elev. <sup>1</sup> (ft)	Qty	Equipment	Mount Type	Lines	Carrier
160.0	3	Commscope CBC78T-DS-43-2X	Triangular Platform with Handrails	-	VERIZON WIRELESS
	3	Samsung B2/B66A RRH-BR049			
	3	Samsung B5/B13 RRH-BR04C			
	3	Samsung MT6407-77A			
	6	Commscope JAHH-65B-R3B			

<sup>1</sup> Contracted elevations are shown for appurtenances within contracted installation tolerances. Appurtenances outside of contract limits are shown at installed elevations.

Install proposed coax inside the pole shaft.

**Structure Usages**

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	61%	Pass
Shaft	56%	Pass
Base Plate	11%	Pass
Flange Plate	19%	Pass

**Foundations**

Reaction Component	Original Design Reactions	Factored Design Reactions*	Analysis Reactions	% of Design
Moment (Kips-Ft)	5,615.0	7,580.3	4,014.8	53%
Shear (Kips)	38.5	52.0	32.9	63%
* The design reactions are factored by 1.35 per ANSI/TIA-222-H, Sec. 15.6.2				

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	Commscope CBC78T-DS-43-2X	VERIZON WIRELESS	1.237	0.817
	Samsung B2/B66A RRH-BR049			
	Samsung B5/B13 RRH-BR04C			
	Samsung MT6407-77A			
	Commscope JAHH-65B-R3B			

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



## 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.

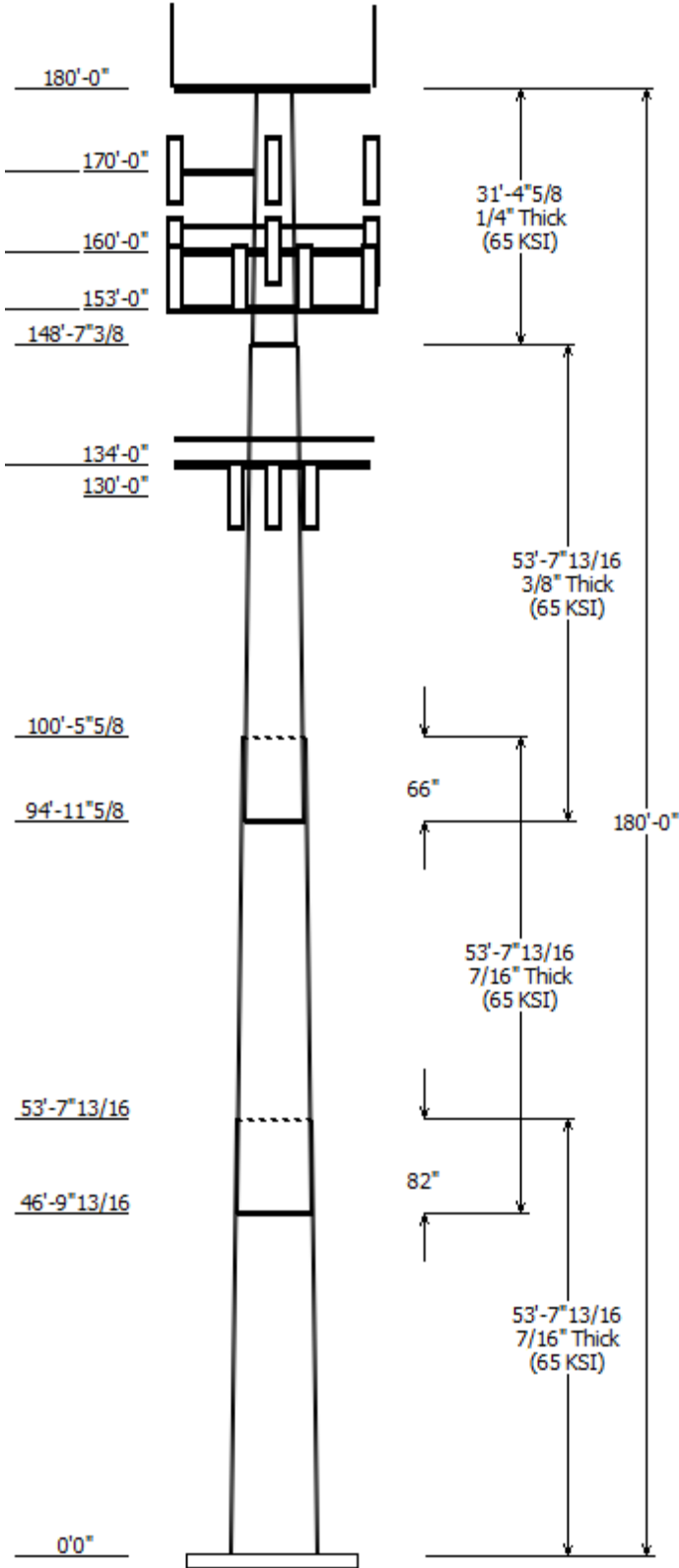
All assets of American Tower Corporation, its affiliates and subsidiaries (collectively "American Tower") are inspected at regular intervals. Based upon these inspections and in the absence of information to the contrary, American Tower assumes that all structures were constructed in accordance with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



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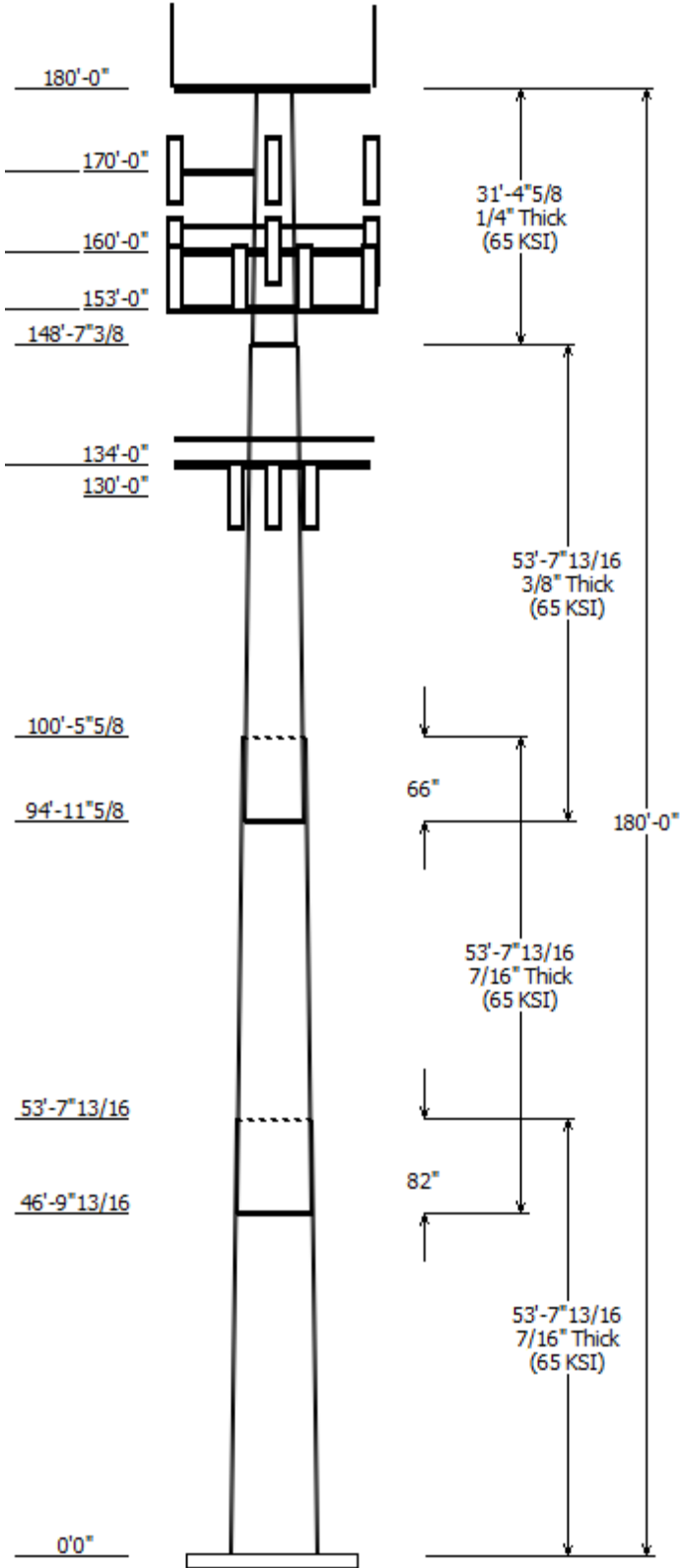
Job Information	
Client : VERIZON WIRELESS	Code: ANSI/TIA-222-H
Pole : 310972	
Location : WATERFORD REBUILD CT, CT	
Description : 180' FWT monopole	Risk Category : II
Shape : 18 Sides	Exposure : B
Height : 180.00 (ft)	Topo Method : Method 1
Base Elev (ft): 0.00	Topographic Category : 1
Taper: 0.228194(in/ft)	

Sections Properties							
Shaft Section	Length (ft)	Diameter (in)		Thick (in)	Joint Type	Overlap Length (in)	Steel Grade (ksi)
		Accross Top	Flats Bottom				
1	53.650	50.17	62.45	0.438		0.000	18 Sides 65
2	53.650	40.34	52.61	0.438	Slip Joint	82.000	18 Sides 65
3	53.650	30.08	42.35	0.375	Slip Joint	66.000	18 Sides 65
4	31.383	23.40	30.57	0.250	Butt Joint	0.000	18 Sides 65

Discrete Appurtenance			
Attach Elev (ft)	Force Elev (ft)	Qty	Description
180.000	184.000	2	Generic 11' Omni
180.000	184.000	1	Generic TTA
180.000	180.000	1	Round Low Profile Platform
170.000	170.000	1	Side Arms
170.000	170.000	3	KMW HB-X-WM-17-65-00T
170.000	170.000	3	KMW HB-X-WM-17-65-00T-
160.000	160.000	1	Generic Round Platform with
160.000	160.000	6	Commscope JAHH-65B-R3B
160.000	160.000	3	Samsung MT6407-77A
160.000	160.000	2	RFS DB-T1-6Z-8AB-0Z
160.000	160.000	3	Samsung B5/B13 RRH-BR04C
160.000	160.000	3	Samsung B2/B66A RRH-BR049
160.000	160.000	3	Commscope CBC78T-DS-43-2X
153.000	156.000	3	Kathrein Scala 80010965
153.000	156.000	6	Commscope SBNHH-1D65A
153.000	156.000	3	Powerwave Allgon 7770.00
153.000	156.000	3	Ericsson RRUS 32 B2
153.000	156.000	3	Ericsson RRUS 32 B66A
153.000	156.000	3	Ericsson RRUS 11 (Band 12)
153.000	156.000	1	Raycap DC6-48-60-18-8C
153.000	156.000	6	Powerwave Allgon LGP17201
153.000	156.000	3	Ericsson RRUS 32 B30 (60 lbs)
153.000	156.000	3	Ericsson RRUS 4478 B14 (15")
153.000	153.000	1	Raycap DC6-48-60-18-8F
153.000	156.000	1	Raycap DC6-48-60-18-8F
153.000	153.000	6	CCI TPX-070821
153.000	153.000	6	Powerwave Allgon 7020.00
153.000	153.000	1	Flat Platform w/ Round Handrai
134.000	134.000	1	Perfect Vision PV-LPP12M-HR-
130.000	130.000	3	RFS APXVAARR24_43-U-NA20
130.000	130.000	3	RFS APX16DWV-16DWVS-E-A20
130.000	130.000	3	Ericsson Air6449 B41
130.000	130.000	3	Ericsson 4424 B25
130.000	130.000	3	Ericsson Radio 4449 B71 B85A
130.000	130.000	3	Ericsson RRUS 4415 B66

Linear Appurtenance			
From Elev (ft)	To Elev (ft)	Description	Exposed To Wind
0.000	130.0	1 5/8" Hybriflex	No
0.000	130.0	1 5/8" Hybriflex	No
0.000	153.0	0.39" (10mm)	No

0.000	153.0	0.78" (19.7mm) 8	No
0.000	153.0	1 1/4" Coax	No
0.000	153.0	2" conduit	No
0.000	156.0	3" conduit	No
0.000	160.0	1 5/8" (1.63"-	No
0.000	160.0	1 5/8" Coax	No
0.000	170.0	1 5/8" Coax	No
0.000	184.0	1 5/8" Coax	No

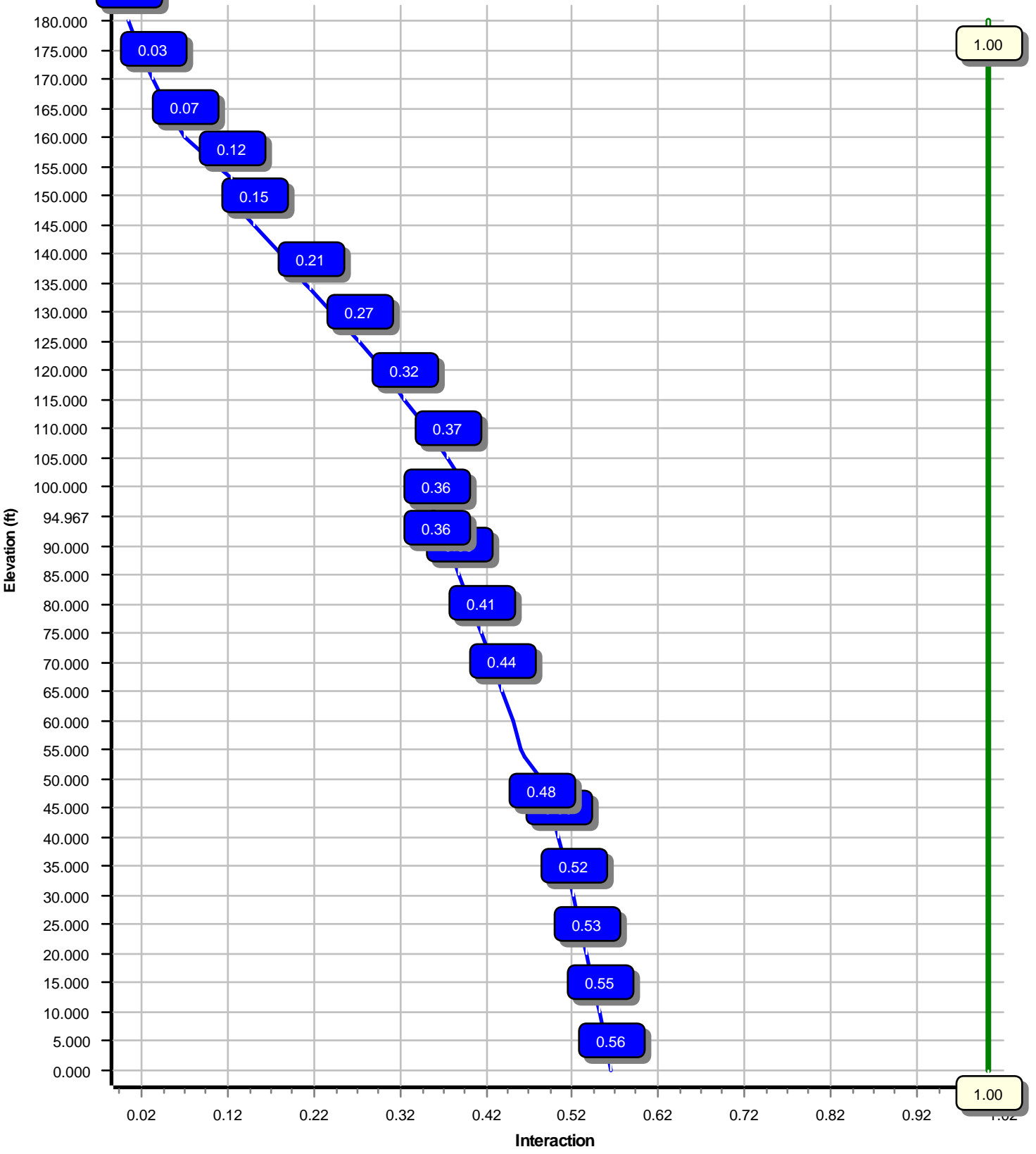


Load Cases	
1.2D + 1.0W	127 mph with No Ice
0.9D + 1.0W	127 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 1.00 in Radial Ice
1.2D + 1.0Ev + 1.0Eh	Seismic
0.9D - 1.0Ev + 1.0Eh	Seismic (Reduced DL)
1.0D + 1.0W	Serviceability 60 mph

Reactions			
Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
1.2D + 1.0W	4014.82	32.93	69.36
0.9D + 1.0W	3964.58	32.91	52.01
1.2D + 1.0Di + 1.0Wi	969.78	8.02	87.25
1.2D + 1.0Ev + 1.0Eh	247.97	1.74	69.61
0.9D - 1.0Ev + 1.0Eh	244.07	1.74	48.21
1.0D + 1.0W	795.62	6.57	57.83

Dish Deflections			
Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
	0.00	0.000	0.000

Load Case : 1.2D + 1.0W  
Max Ratio 56.18% at 0.0 ft



Site Number: 310972

Code: ANSI/TIA-222-H

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Site Name: WATERFORD REBUILD CT, CT Engineering Number: 13685301\_C3\_02

6/4/2021 7:30:40 PM

Customer: VERIZON WIRELESS

Analysis Parameters

Location :	New London County, CT	Height (ft) :	180
Code :	ANSI/TIA-222-H	Base Diameter (in) :	62.45
Shape :	18 Sides	Top Diameter (in) :	23.40
Pole Type :	Custom	Taper (in/ft) :	0.228
Pole Manufacturer :	FWT Inc	Rotation (deg) :	0.00
Kd (non-service) :	0.95	Ke :	1.00

Ice & Wind Parameters

Exposure Category:	B	Design Wind Speed Without Ice:	127 mph
Risk Category:	II	Design Wind Speed With Ice:	50 mph
Topographic Factor Procedure:	Method 1	Operational Wind Speed:	60 mph
Topographic Category:	1	Design Ice Thickness:	1.00 in
Crest Height:	0 ft	HMSL:	94.00 ft

Seismic Parameters

Analysis Method:	Equivalent Lateral Force Method		
Site Class:	D - Stiff Soil		
Period Based on Rayleigh Method (sec):	2.62		
T <sub>L</sub> (sec):	6	p:	1
S <sub>s</sub> :	0.191	S <sub>1</sub> :	0.052
F <sub>a</sub> :	1.600	F <sub>v</sub> :	2.400
S <sub>ds</sub> :	0.204	S <sub>d1</sub> :	0.083
		C <sub>s</sub> :	0.030
		C <sub>s</sub> Max:	0.030
		C <sub>s</sub> Min:	0.030

Load Cases

1.2D + 1.0W	127 mph with No Ice
0.9D + 1.0W	127 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 1.00 in Radial Ice
1.2D + 1.0Ev + 1.0Eh	Seismic
0.9D - 1.0Ev + 1.0Eh	Seismic (Reduced DL)
1.0D + 1.0W	Serviceability 60 mph

Site Number: 310972

Code: ANSI/TIA-222-H

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Site Name: WATERFORD REBUILD CT, CT Engineering Number: 13685301\_C3\_02

6/4/2021 7:30:40 PM

Customer: VERIZON WIRELESS

**Shaft Section Properties**

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Joint Len (in)	Weight (lb)	Bottom						Top						
							Dia (in)	Elev (ft)	Area (in <sup>2</sup> )	Ix (in <sup>4</sup> )	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (in <sup>2</sup> )	Ix (in <sup>4</sup> )	W/t Ratio	D/t Ratio	Taper (in/ft)
1-18	53.650	0.4375	65		0.00	14,165	62.45	0.00	86.11	41837.0	23.41	142.74	50.17	53.65	69.07	21590.1	18.46	114.69	0.228740
2-18	53.650	0.4375	65	Slip	82.00	11,672	52.61	46.82	72.45	24923.0	19.44	120.27	40.34	100.47	55.41	11149.7	14.50	92.22	0.228740
3-18	53.650	0.3750	65	Slip	66.00	7,788	42.35	94.97	49.96	11123.0	18.15	112.94	30.08	148.62	35.36	3941.7	12.38	80.21	0.228740
4-18	31.383	0.2500	65	Butt	0.00	2,266	30.57	148.62	24.06	2796.2	19.80	122.31	23.40	180.00	18.37	1244.1	14.74	93.61	0.228623
Shaft Weight						35,890													

**Discrete Appurtenance Properties**

Attach Elev (ft)	Description	Qty	Ka	Vert Ecc (ft)	Weight (lb)	No Ice EPAa (sf)	Orientation Factor	Weight (lb)	Ice EPAa (sf)	Orientation Factor
180.00	Generic TTA	1	0.80	4.000	10.00	1.200	1.00	34.46	1.693	1.00
180.00	Generic 11' Omni	2	1.00	4.000	40.00	3.300	1.00	96.62	5.982	1.00
180.00	Round Low Profile Platform	1	1.00	0.000	1,500.00	21.700	1.00	1,940.16	34.743	1.00
170.00	KMW HB-X-WM-17-65-00T-	3	0.80	0.000	15.90	0.967	0.50	33.50	1.440	0.50
170.00	KMW HB-X-WM-17-65-00T	3	0.80	0.000	30.00	1.950	1.00	79.10	2.685	1.00
170.00	Side Arms	1	1.00	0.000	560.00	8.500	1.00	876.21	13.300	1.00
160.00	Commscope CBC78T-DS-43-2X	3	0.75	0.000	20.70	0.552	0.50	35.53	0.893	0.50
160.00	Samsung B2/B66A RRH-BR049	3	0.75	0.000	84.40	1.875	0.50	127.23	2.481	0.50
160.00	Samsung B5/B13 RRH-BR04C	3	0.75	0.000	70.30	1.875	0.50	108.70	2.481	0.50
160.00	Samsung MT6407-77A	3	0.75	0.000	81.60	4.709	0.61	150.02	5.729	0.61
160.00	RFS DB-T1-6Z-8AB-OZ	2	0.75	0.000	44.00	4.800	0.72	128.49	5.754	0.72
160.00	Commscope JAHH-65B-R3B	6	0.75	0.000	60.60	9.113	0.69	196.41	10.975	0.69
160.00	Generic Round Platform with	1	1.00	0.000	2,500.00	27.200	1.00	3,587.33	43.609	1.00
153.00	Powerwave Allgon 7020.00 Dual	6	0.75	0.000	2.20	0.339	0.50	9.03	0.613	0.50
153.00	CCI TPX-070821	6	0.75	0.000	7.50	0.469	0.50	15.61	0.789	0.50
153.00	Raycap DC6-48-60-18-8F	1	0.75	3.000	20.00	1.260	0.50	55.21	1.700	0.50
153.00	Raycap DC6-48-60-18-8F	1	0.75	0.000	31.80	1.470	0.50	73.06	1.937	0.50
153.00	Ericsson RRUS 4478 B14 (15")	3	0.75	3.000	59.40	1.650	0.50	92.63	2.217	0.50
153.00	Powerwave Allgon LGP17201	6	0.75	3.000	31.00	1.668	0.50	56.50	2.237	0.50
153.00	Raycap DC6-48-60-18-8C	1	0.75	3.000	16.00	2.030	0.50	54.93	2.538	0.50
153.00	Ericsson RRUS 11 (Band 12)	3	0.75	3.000	50.00	2.566	0.67	95.58	3.266	0.67
153.00	Ericsson RRUS 32 B30 (60 lbs)	3	0.75	3.000	60.00	2.692	0.67	107.52	3.465	0.67
153.00	Ericsson RRUS 32 B66A	3	0.75	3.000	50.70	2.720	0.67	99.71	3.498	0.67
153.00	Ericsson RRUS 32 B2	3	0.75	3.000	53.00	2.743	0.67	102.18	3.525	0.67
153.00	Powerwave Allgon 7770.00	3	0.75	3.000	35.00	5.508	0.65	118.47	6.196	0.65
153.00	Commscope SBNHH-1D65A	6	0.75	3.000	33.50	5.883	0.69	124.02	7.305	0.69
153.00	Kathrein Scala 80010965	3	0.75	3.000	97.60	13.814	0.62	275.88	15.854	0.62
153.00	Flat Platform w/ Round Handrails	1	1.00	0.000	2,000.00	34.800	1.00	2,931.71	51.012	1.00
134.00	Perfect Vision PV-LPP12M-HR-	1	1.00	0.000	2,117.00	34.400	1.00	3,021.63	54.790	1.00
130.00	Ericsson RRUS 4415 B66	3	0.75	0.000	46.00	1.650	0.50	74.46	2.208	0.50
130.00	Ericsson Radio 4449 B71 B85A	3	0.75	0.000	75.00	1.650	0.50	114.53	2.208	0.50
130.00	Ericsson 4424 B25	3	0.75	0.000	86.00	2.052	0.67	133.92	2.672	0.67
130.00	Ericsson Air6449 B41	3	0.75	0.000	104.00	5.682	0.63	193.57	6.725	0.63
130.00	RFS APX16DWV-16DWVS-E-A20	3	0.75	0.000	40.70	6.586	0.60	117.48	8.009	0.60
130.00	RFS APXVAARR24_43-U-NA20	3	0.75	0.000	127.90	20.243	0.63	385.93	22.681	0.63
Totals	Num Loadings:35				13,296.20			22,772.17		

**Linear Appurtenance Properties**

Load Case Azimuth (deg) :

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Dia (in)	Coax Wt (lb/ft)	Max Coax / Row	Dist Between Rows (in)	Dist Between Cols (in)	Dist Azimuth (deg)	Dist From Face (in)	Exposed To Wind Carrier
0.00	184.00	2	1 5/8" Coax	1.98	0.82	N 0	0.00	0.00	0	0.00	N Other
0.00	170.00	6	1 5/8" Coax	1.98	0.82	N 0	0.00	0.00	0	0.00	N CLEARWIRE

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Site Number: 310972

Code: ANSI/TIA-222-H

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Site Name: WATERFORD REBUILD CT, CT Engineering Number: 13685301\_C3\_02

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Customer: VERIZON WIRELESS

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0.00	160.00	2	1 5/8" (1.63"-41.3mm)	1.63	1.61	N	0	0.00	0.00	0	0.00	N	VERIZON WIRELESS
0.00	160.00	12	1 5/8" Coax	1.98	0.82	N	0	0.00	0.00	0	0.00	N	VERIZON WIRELESS
0.00	156.00	1	3" conduit	3.50	7.58	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	153.00	3	0.39" (10mm) Fiber	0.39	0.06	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	153.00	6	0.78" (19.7mm) 8 AWG	0.78	0.59	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	153.00	12	1 1/4" Coax	1.55	0.63	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	153.00	3	2" conduit	2.38	3.65	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	130.00	2	1 5/8" Hybriflex	1.98	1.30	N	0	0.00	0.00	0	0.00	N	T-MOBILE
0.00	130.00	3	1 5/8" Hybriflex	1.98	1.30	N	0	0.00	0.00	0	0.00	N	T-MOBILE

Segment Properties (Max Len : 5. ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in <sup>2</sup> )	Ix (in <sup>4</sup> )	W/t Ratio	D/t Ratio	F'y (ksi)	S (in <sup>3</sup> )	Z (in <sup>3</sup> )	Weight (lb)
0.00		0.4375	62.450	86.109	41,837.0	23.41	142.74	73.9	1319.	0.0	0.0
5.00		0.4375	61.306	84.521	39,564.6	22.95	140.13	74.4	1271.	0.0	1,451.5
10.00		0.4375	60.163	82.933	37,376.0	22.48	137.51	75.0	1223.	0.0	1,424.5
15.00		0.4375	59.019	81.345	35,269.7	22.02	134.90	75.5	1177.	0.0	1,397.5
20.00		0.4375	57.875	79.757	33,244.0	21.56	132.29	76.0	1131.	0.0	1,370.5
25.00		0.4375	56.731	78.168	31,297.4	21.10	129.67	76.6	1086.	0.0	1,343.5
30.00		0.4375	55.588	76.580	29,428.4	20.64	127.06	77.1	1042.	0.0	1,316.4
35.00		0.4375	54.444	74.992	27,635.2	20.18	124.44	77.7	999.8	0.0	1,289.4
40.00		0.4375	53.300	73.404	25,916.4	19.72	121.83	78.2	957.7	0.0	1,262.4
45.00		0.4375	52.157	71.816	24,270.4	19.26	119.22	78.8	916.5	0.0	1,235.4
46.82	Bot - Section 2	0.4375	51.741	71.239	23,690.1	19.09	118.27	78.9	901.8	0.0	442.2
50.00		0.4375	51.013	70.228	22,695.7	18.80	116.60	79.3	876.3	0.0	1,545.6
53.65	Top - Section 1	0.4375	51.053	70.284	22,749.7	18.81	116.69	79.3	877.7	0.0	1,745.2
55.00		0.4375	50.744	69.855	22,335.9	18.69	115.99	79.4	867.0	0.0	321.9
60.00		0.4375	49.601	68.267	20,846.8	18.23	113.37	80.0	827.8	0.0	1,175.0
65.00		0.4375	48.457	66.679	19,425.5	17.77	110.76	80.5	789.6	0.0	1,148.0
70.00		0.4375	47.313	65.090	18,070.3	17.31	108.14	81.0	752.3	0.0	1,121.0
75.00		0.4375	46.170	63.502	16,779.7	16.84	105.53	81.6	715.8	0.0	1,093.9
80.00		0.4375	45.026	61.914	15,552.0	16.38	102.92	82.1	680.3	0.0	1,066.9
85.00		0.4375	43.882	60.326	14,385.7	15.92	100.30	82.6	645.7	0.0	1,039.9
90.00		0.4375	42.738	58.738	13,279.2	15.46	97.69	82.6	612.0	0.0	1,012.9
94.97	Bot - Section 3	0.4375	41.602	57.160	12,237.7	15.00	95.09	82.6	579.4	0.0	979.4
95.00		0.4375	41.595	57.150	12,230.9	15.00	95.07	82.6	579.2	0.0	12.1
100.0		0.4375	40.451	55.562	11,239.4	14.54	92.46	82.6	547.3	0.0	1,797.1
100.4	Top - Section 2	0.3750	41.094	48.464	10,152.6	17.56	109.58	80.7	486.6	0.0	165.2
105.0		0.3750	40.057	47.230	9,396.5	17.07	106.82	81.3	462.0	0.0	738.1
110.0		0.3750	38.914	45.869	8,607.2	16.53	103.77	82.0	435.7	0.0	792.0
115.0		0.3750	37.770	44.508	7,863.4	16.00	100.72	82.6	410.1	0.0	768.8
120.0		0.3750	36.626	43.146	7,163.8	15.46	97.67	82.6	385.2	0.0	745.7
125.0		0.3750	35.483	41.785	6,506.9	14.92	94.62	82.6	361.2	0.0	722.5
130.0		0.3750	34.339	40.424	5,891.5	14.38	91.57	82.6	337.9	0.0	699.3
134.0		0.3750	33.424	39.335	5,428.1	13.95	89.13	82.6	319.9	0.0	542.8
135.0		0.3750	33.195	39.063	5,316.1	13.85	88.52	82.6	315.4	0.0	133.4
140.0		0.3750	32.051	37.701	4,779.5	13.31	85.47	82.6	293.7	0.0	653.0
145.0		0.3750	30.908	36.340	4,280.3	12.77	82.42	82.6	272.8	0.0	629.9
148.6	Top - Section 3	0.3750	30.080	35.356	3,941.7	12.38	80.21	82.6	258.1	0.0	441.2
148.6	Bot - Section 4	0.2500	30.577	24.064	2,796.2	19.80	122.31	78.1	180.1	0.0	
150.0		0.2500	30.261	23.813	2,709.6	19.58	121.04	78.4	176.4	0.0	112.7
153.0		0.2500	29.575	23.268	2,528.1	19.10	118.30	78.9	168.4	0.0	240.3
155.0		0.2500	29.118	22.906	2,411.6	18.77	116.47	79.3	163.1	0.0	157.1
160.0		0.2500	27.974	21.999	2,136.3	17.97	111.90	80.3	150.4	0.0	382.0
165.0		0.2500	26.831	21.091	1,882.8	17.16	107.33	81.2	138.2	0.0	366.6
170.0		0.2500	25.688	20.184	1,650.2	16.35	102.75	82.2	126.5	0.0	351.1
175.0		0.2500	24.545	19.277	1,437.6	15.55	98.18	82.6	115.4	0.0	335.7
180.0		0.2500	23.402	18.370	1,244.1	14.74	93.61	82.6	104.7	0.0	320.3
											35,889.7

<b>Load Case: 1.2D + 1.0W</b>	<b>127 mph with No Ice</b>	<b>24 Iterations</b>
Gust Response Factor :1.10		
Dead Load Factor :1.20		
Wind Load Factor :1.00		

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		287.6	0.0					0.0	0.0	287.6	0.0	0.0	0.0
5.00		570.0	1,741.8					0.0	335.6	570.0	2,077.4	0.0	0.0
10.00		559.3	1,709.4					0.0	335.6	559.3	2,045.0	0.0	0.0
15.00		548.7	1,677.0					0.0	335.6	548.7	2,012.6	0.0	0.0
20.00		538.1	1,644.6					0.0	335.6	538.1	1,980.2	0.0	0.0
25.00		527.4	1,612.2					0.0	335.6	527.4	1,947.7	0.0	0.0
30.00		522.9	1,579.7					0.0	335.6	522.9	1,915.3	0.0	0.0
35.00		529.0	1,547.3					0.0	335.6	529.0	1,882.9	0.0	0.0
40.00		538.1	1,514.9					0.0	335.6	538.1	1,850.5	0.0	0.0
45.00		370.1	1,482.5					0.0	335.6	370.1	1,818.0	0.0	0.0
46.82	Bot - Section 2	276.6	530.6					0.0	121.9	276.6	652.5	0.0	0.0
50.00		381.8	1,854.7					0.0	213.7	381.8	2,068.3	0.0	0.0
53.65	Top - Section 1	280.1	2,094.2					0.0	245.0	280.1	2,339.2	0.0	0.0
55.00		356.9	386.3					0.0	90.6	356.9	476.9	0.0	0.0
60.00		562.4	1,410.0					0.0	335.6	562.4	1,745.6	0.0	0.0
65.00		562.2	1,377.6					0.0	335.6	562.2	1,713.1	0.0	0.0
70.00		560.7	1,345.1					0.0	335.6	560.7	1,680.7	0.0	0.0
75.00		558.0	1,312.7					0.0	335.6	558.0	1,648.3	0.0	0.0
80.00		554.4	1,280.3					0.0	335.6	554.4	1,615.9	0.0	0.0
85.00		549.7	1,247.9					0.0	335.6	549.7	1,583.4	0.0	0.0
90.00		542.4	1,215.4					0.0	335.6	542.4	1,551.0	0.0	0.0
94.97	Bot - Section 3	270.7	1,175.2					0.0	333.3	270.7	1,508.6	0.0	0.0
95.00		274.0	14.6					0.0	2.2	274.0	16.8	0.0	0.0
100.00		297.4	2,156.6					0.0	335.6	297.4	2,492.1	0.0	0.0
100.47	Top - Section 2	268.5	198.2					0.0	31.3	268.5	229.5	0.0	0.0
105.00		507.8	885.7					0.0	304.3	507.8	1,190.0	0.0	0.0
110.00		524.8	950.4					0.0	335.6	524.8	1,286.0	0.0	0.0
115.00		515.9	922.6					0.0	335.6	515.9	1,258.2	0.0	0.0
120.00		506.4	894.8					0.0	335.6	506.4	1,230.4	0.0	0.0
125.00		496.3	867.0					0.0	335.6	496.3	1,202.6	0.0	0.0
130.00	Appurtenance(s)	438.1	839.2	2,402.2	0.0	0.0	1,726.6	0.0	335.6	2,840.3	2,901.4	0.0	0.0
134.00	Appurtenance(s)	240.1	651.4	1,589.3	0.0	0.0	2,540.4	0.0	237.3	1,829.5	3,429.0	0.0	0.0
135.00		282.1	160.1					0.0	59.3	282.1	219.4	0.0	0.0
140.00		463.1	783.6					0.0	296.6	463.1	1,080.2	0.0	0.0
145.00		390.1	755.8					0.0	296.6	390.1	1,052.4	0.0	0.0
148.62	Top - Section 3	223.5	529.4					0.0	214.5	223.5	743.9	0.0	0.0
150.00		194.6	135.2					0.0	82.1	194.6	217.3	0.0	0.0
153.00	Appurtenance(s)	219.8	288.4	5,093.6	0.0	9,930.1	4,476.1	0.0	177.9	5,313.4	4,942.4	0.0	0.0
155.00		300.4	188.5					0.0	65.3	300.4	253.8	0.0	0.0
160.00	Appurtenance(s)	419.9	458.4	3,498.6	0.0	0.0	4,467.1	0.0	126.8	3,918.5	5,052.3	0.0	0.0
165.00		406.3	439.9					0.0	39.4	406.3	479.2	0.0	0.0
170.00	Appurtenance(s)	392.3	421.4	709.2	0.0	0.0	837.2	0.0	39.4	1,101.5	1,298.0	0.0	0.0
175.00		378.0	402.8					0.0	9.8	378.0	412.7	0.0	0.0
180.00	Appurtenance(s)	185.4	384.3	1,473.2	0.0	1,529.6	1,908.0	0.0	9.8	1,658.6	2,302.2	0.0	0.0
<b>Totals:</b>										<b>33,138.0</b>	<b>69,402.9</b>	<b>0.00</b>	<b>0.00</b>



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

127 mph with No Ice

24 Iterations

Gust Response Factor :1.10  
 Dead Load Factor :1.20  
 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	-69.36	-32.93	0.00	-4,014.82	0.00	4,014.82	5,724.86	1,511.21	8,464.29	7,310.45	0.00	0.00	0.562
5.00	-67.21	-32.52	0.00	-3,850.16	0.00	3,850.16	5,660.51	1,483.34	8,154.99	7,094.04	0.07	-0.13	0.555
10.00	-65.09	-32.11	0.00	-3,687.57	0.00	3,687.57	5,594.62	1,455.47	7,851.45	6,878.77	0.29	-0.27	0.548
15.00	-63.01	-31.70	0.00	-3,527.04	0.00	3,527.04	5,527.18	1,427.60	7,553.66	6,664.77	0.64	-0.41	0.541
20.00	-60.95	-31.29	0.00	-3,368.55	0.00	3,368.55	5,458.18	1,399.73	7,261.62	6,452.13	1.14	-0.55	0.534
25.00	-58.94	-30.89	0.00	-3,212.09	0.00	3,212.09	5,387.64	1,371.86	6,975.35	6,240.97	1.79	-0.69	0.526
30.00	-56.95	-30.48	0.00	-3,057.65	0.00	3,057.65	5,315.55	1,343.98	6,694.83	6,031.39	2.58	-0.83	0.518
35.00	-55.00	-30.07	0.00	-2,905.23	0.00	2,905.23	5,241.91	1,316.11	6,420.07	5,823.52	3.53	-0.97	0.510
40.00	-53.09	-29.63	0.00	-2,754.90	0.00	2,754.90	5,166.71	1,288.24	6,151.07	5,617.45	4.63	-1.12	0.501
45.00	-51.22	-29.31	0.00	-2,606.76	0.00	2,606.76	5,089.97	1,260.37	5,887.82	5,413.30	5.88	-1.27	0.492
46.82	-50.54	-29.09	0.00	-2,553.52	0.00	2,553.52	5,061.71	1,250.24	5,793.60	5,339.62	6.37	-1.32	0.489
50.00	-48.43	-28.74	0.00	-2,460.93	0.00	2,460.93	5,011.68	1,232.50	5,630.33	5,211.18	7.28	-1.42	0.482
53.65	-46.06	-28.46	0.00	-2,356.02	0.00	2,356.02	5,014.45	1,233.48	5,639.26	5,218.23	8.41	-1.53	0.461
55.00	-45.55	-28.17	0.00	-2,317.59	0.00	2,317.59	4,993.06	1,225.95	5,570.67	5,164.00	8.85	-1.57	0.458
60.00	-43.75	-27.66	0.00	-2,176.76	0.00	2,176.76	4,912.86	1,198.08	5,320.29	4,964.54	10.57	-1.71	0.448
65.00	-41.99	-27.16	0.00	-2,038.44	0.00	2,038.44	4,831.10	1,170.21	5,075.66	4,767.35	12.44	-1.86	0.437
70.00	-40.26	-26.64	0.00	-1,902.66	0.00	1,902.66	4,747.80	1,142.34	4,836.80	4,572.55	14.46	-2.00	0.425
75.00	-38.57	-26.12	0.00	-1,769.47	0.00	1,769.47	4,662.94	1,114.47	4,603.69	4,380.25	16.63	-2.14	0.413
80.00	-36.91	-25.60	0.00	-1,638.87	0.00	1,638.87	4,576.54	1,086.59	4,376.33	4,190.55	18.95	-2.29	0.400
85.00	-35.29	-25.07	0.00	-1,510.89	0.00	1,510.89	4,481.93	1,058.72	4,154.74	3,997.63	21.43	-2.43	0.386
90.00	-33.70	-24.54	0.00	-1,385.54	0.00	1,385.54	4,363.94	1,030.85	3,938.90	3,788.90	24.05	-2.58	0.374
94.97	-32.18	-24.24	0.00	-1,263.64	0.00	1,263.64	4,246.74	1,003.17	3,730.20	3,587.10	26.81	-2.72	0.360
95.00	-32.14	-24.01	0.00	-1,262.83	0.00	1,262.83	4,245.95	1,002.98	3,728.82	3,585.76	26.83	-2.72	0.360
100.00	-29.64	-23.63	0.00	-1,142.79	0.00	1,142.79	4,127.96	975.11	3,524.49	3,388.23	29.75	-2.86	0.345
100.47	-29.39	-23.39	0.00	-1,131.76	0.00	1,131.76	3,522.04	850.55	3,128.34	2,946.90	30.03	-2.87	0.393
105.00	-28.18	-22.89	0.00	-1,025.74	0.00	1,025.74	3,456.72	828.89	2,971.06	2,817.93	32.81	-3.00	0.373
110.00	-26.86	-22.36	0.00	-911.32	0.00	911.32	3,383.20	805.00	2,802.29	2,677.76	36.03	-3.14	0.349
115.00	-25.58	-21.84	0.00	-799.52	0.00	799.52	3,306.70	781.11	2,638.45	2,538.79	39.40	-3.28	0.323
120.00	-24.34	-21.31	0.00	-690.34	0.00	690.34	3,205.56	757.22	2,479.56	2,385.12	42.91	-3.42	0.298
125.00	-23.12	-20.80	0.00	-583.77	0.00	583.77	3,104.43	733.33	2,325.59	2,236.25	46.55	-3.55	0.269
130.00	-20.37	-17.81	0.00	-479.79	0.00	479.79	3,003.30	709.44	2,176.56	2,092.18	50.33	-3.66	0.237
134.00	-17.06	-15.78	0.00	-408.54	0.00	408.54	2,922.39	690.33	2,060.89	1,980.38	53.43	-3.75	0.213
135.00	-16.84	-15.50	0.00	-392.76	0.00	392.76	2,902.16	685.55	2,032.46	1,952.91	54.22	-3.77	0.207
140.00	-15.77	-14.99	0.00	-315.24	0.00	315.24	2,801.03	661.66	1,893.30	1,818.43	58.22	-3.86	0.180
145.00	-14.73	-14.55	0.00	-240.27	0.00	240.27	2,699.90	637.77	1,759.08	1,688.75	62.30	-3.95	0.148
148.62	-13.99	-14.28	0.00	-187.65	0.00	187.65	2,626.75	620.49	1,665.06	1,597.93	65.31	-4.00	0.123
148.62	-13.99	-14.28	0.00	-187.65	0.00	187.65	1,691.62	422.31	1,156.82	1,055.16	65.31	-4.00	0.187
150.00	-13.78	-14.08	0.00	-167.89	0.00	167.89	1,679.60	417.91	1,132.82	1,036.65	66.47	-4.01	0.171
153.00	-9.22	-8.44	0.00	-115.72	0.00	115.72	1,653.13	408.36	1,081.64	996.80	69.01	-4.06	0.122
155.00	-8.98	-8.13	0.00	-98.84	0.00	98.84	1,635.17	401.99	1,048.18	970.47	70.72	-4.09	0.108
160.00	-4.22	-3.86	0.00	-58.20	0.00	58.20	1,589.20	386.07	966.82	905.51	75.02	-4.13	0.067
165.00	-3.77	-3.42	0.00	-38.90	0.00	38.90	1,541.67	370.16	888.75	841.89	79.36	-4.16	0.049
170.00	-2.56	-2.23	0.00	-21.79	0.00	21.79	1,492.60	354.24	813.96	779.71	83.73	-4.19	0.030

Site Number: 310972

Code: ANSI/TIA-222-H

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Site Name: WATERFORD REBUILD CT, CT Engineering Number: 13685301\_C3\_02

6/4/2021 7:30:43 PM

Customer: VERIZON WIRELESS

Load Case: 1.2D + 1.0W

127 mph with No Ice

24 Iterations

Gust Response Factor :1.10

Dead Load Factor :1.20

Wind Load Factor :1.00

175.00	-2.17	-1.82	0.00	-10.64	0.00	10.64	1,432.22	338.32	742.46	714.22	88.12	-4.20	0.016
180.00	0.00	-1.66	0.00	-1.53	0.00	1.53	1,364.83	322.40	674.25	648.27	92.52	-4.21	0.002

<b>Load Case: 0.9D + 1.0W</b>	<b>127 mph with No Ice (Reduced DL)</b>	<b>24 Iterations</b>
Gust Response Factor :1.10		
Dead Load Factor :0.90		
Wind Load Factor :1.00		

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		287.6	0.0					0.0	0.0	287.6	0.0	0.0	0.0
5.00		570.0	1,306.4					0.0	251.7	570.0	1,558.1	0.0	0.0
10.00		559.3	1,282.1					0.0	251.7	559.3	1,533.8	0.0	0.0
15.00		548.7	1,257.7					0.0	251.7	548.7	1,509.4	0.0	0.0
20.00		538.1	1,233.4					0.0	251.7	538.1	1,485.1	0.0	0.0
25.00		527.4	1,209.1					0.0	251.7	527.4	1,460.8	0.0	0.0
30.00		522.9	1,184.8					0.0	251.7	522.9	1,436.5	0.0	0.0
35.00		529.0	1,160.5					0.0	251.7	529.0	1,412.2	0.0	0.0
40.00		538.1	1,136.2					0.0	251.7	538.1	1,387.8	0.0	0.0
45.00		370.1	1,111.8					0.0	251.7	370.1	1,363.5	0.0	0.0
46.82	Bot - Section 2	276.6	397.9					0.0	91.4	276.6	489.4	0.0	0.0
50.00		381.8	1,391.0					0.0	160.2	381.8	1,551.2	0.0	0.0
53.65	Top - Section 1	280.1	1,570.7					0.0	183.7	280.1	1,754.4	0.0	0.0
55.00		356.9	289.7					0.0	68.0	356.9	357.6	0.0	0.0
60.00		562.4	1,057.5					0.0	251.7	562.4	1,309.2	0.0	0.0
65.00		562.2	1,033.2					0.0	251.7	562.2	1,284.9	0.0	0.0
70.00		560.7	1,008.9					0.0	251.7	560.7	1,260.5	0.0	0.0
75.00		558.0	984.5					0.0	251.7	558.0	1,236.2	0.0	0.0
80.00		554.4	960.2					0.0	251.7	554.4	1,211.9	0.0	0.0
85.00		549.7	935.9					0.0	251.7	549.7	1,187.6	0.0	0.0
90.00		542.4	911.6					0.0	251.7	542.4	1,163.3	0.0	0.0
94.97	Bot - Section 3	270.7	881.4					0.0	250.0	270.7	1,131.4	0.0	0.0
95.00		274.0	10.9					0.0	1.7	274.0	12.6	0.0	0.0
100.00		297.4	1,617.4					0.0	251.7	297.4	1,869.1	0.0	0.0
100.47	Top - Section 2	268.5	148.7					0.0	23.5	268.5	172.1	0.0	0.0
105.00		507.8	664.3					0.0	228.2	507.8	892.5	0.0	0.0
110.00		524.8	712.8					0.0	251.7	524.8	964.5	0.0	0.0
115.00		515.9	691.9					0.0	251.7	515.9	943.6	0.0	0.0
120.00		506.4	671.1					0.0	251.7	506.4	922.8	0.0	0.0
125.00		496.3	650.3					0.0	251.7	496.3	901.9	0.0	0.0
130.00	Appurtenance(s)	438.1	629.4	2,402.2	0.0	0.0	1,294.9	0.0	251.7	2,840.3	2,176.0	0.0	0.0
134.00	Appurtenance(s)	240.1	488.5	1,589.3	0.0	0.0	1,905.3	0.0	177.9	1,829.5	2,571.8	0.0	0.0
135.00		282.1	120.0					0.0	44.5	282.1	164.5	0.0	0.0
140.00		463.1	587.7					0.0	222.4	463.1	810.2	0.0	0.0
145.00		390.1	566.9					0.0	222.4	390.1	789.3	0.0	0.0
148.62	Top - Section 3	223.5	397.1					0.0	160.9	223.5	557.9	0.0	0.0
150.00		194.6	101.4					0.0	61.5	194.6	163.0	0.0	0.0
153.00	Appurtenance(s)	219.8	216.3	5,093.6	0.0	9,930.1	3,357.1	0.0	133.5	5,313.4	3,706.8	0.0	0.0
155.00		300.4	141.4					0.0	49.0	300.4	190.4	0.0	0.0
160.00	Appurtenance(s)	419.9	343.8	3,498.6	0.0	0.0	3,350.3	0.0	95.1	3,918.5	3,789.2	0.0	0.0
165.00		406.3	329.9					0.0	29.5	406.3	359.4	0.0	0.0
170.00	Appurtenance(s)	392.3	316.0	709.2	0.0	0.0	627.9	0.0	29.5	1,101.5	973.5	0.0	0.0
175.00		378.0	302.1					0.0	7.4	378.0	309.5	0.0	0.0
180.00	Appurtenance(s)	185.4	288.2	1,473.2	0.0	1,529.6	1,431.0	0.0	7.4	1,658.6	1,726.6	0.0	0.0
<b>Totals:</b>										<b>33,138.0</b>	<b>52,052.2</b>	<b>0.00</b>	<b>0.00</b>

**Load Case: 0.9D + 1.0W**

127 mph with No Ice (Reduced DL)

24 Iterations

Gust Response Factor :1.10

Dead Load Factor :0.90

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	-52.01	-32.91	0.00	-3,964.58	0.00	3,964.58	5,724.86	1,511.21	8,464.29	7,310.45	0.00	0.00	0.552
5.00	-50.38	-32.46	0.00	-3,800.02	0.00	3,800.02	5,660.51	1,483.34	8,154.99	7,094.04	0.07	-0.13	0.545
10.00	-48.77	-32.01	0.00	-3,637.74	0.00	3,637.74	5,594.62	1,455.47	7,851.45	6,878.77	0.28	-0.27	0.538
15.00	-47.19	-31.56	0.00	-3,477.71	0.00	3,477.71	5,527.18	1,427.60	7,553.66	6,664.77	0.63	-0.40	0.531
20.00	-45.64	-31.12	0.00	-3,319.91	0.00	3,319.91	5,458.18	1,399.73	7,261.62	6,452.13	1.13	-0.54	0.523
25.00	-44.11	-30.69	0.00	-3,164.31	0.00	3,164.31	5,387.64	1,371.86	6,975.35	6,240.97	1.77	-0.68	0.516
30.00	-42.60	-30.25	0.00	-3,010.88	0.00	3,010.88	5,315.55	1,343.98	6,694.83	6,031.39	2.55	-0.82	0.508
35.00	-41.13	-29.80	0.00	-2,859.64	0.00	2,859.64	5,241.91	1,316.11	6,420.07	5,823.52	3.48	-0.96	0.499
40.00	-39.67	-29.34	0.00	-2,710.64	0.00	2,710.64	5,166.71	1,288.24	6,151.07	5,617.45	4.56	-1.10	0.491
45.00	-38.27	-29.01	0.00	-2,563.96	0.00	2,563.96	5,089.97	1,260.37	5,887.82	5,413.30	5.80	-1.25	0.482
46.82	-37.75	-28.77	0.00	-2,511.27	0.00	2,511.27	5,061.71	1,250.24	5,793.60	5,339.62	6.28	-1.30	0.478
50.00	-36.16	-28.41	0.00	-2,419.69	0.00	2,419.69	5,011.68	1,232.50	5,630.33	5,211.18	7.18	-1.40	0.472
53.65	-34.37	-28.13	0.00	-2,315.99	0.00	2,315.99	5,014.45	1,233.48	5,639.26	5,218.23	8.29	-1.50	0.451
55.00	-33.98	-27.82	0.00	-2,278.01	0.00	2,278.01	4,993.06	1,225.95	5,570.67	5,164.00	8.72	-1.54	0.448
60.00	-32.62	-27.30	0.00	-2,138.91	0.00	2,138.91	4,912.86	1,198.08	5,320.29	4,964.54	10.42	-1.69	0.438
65.00	-31.29	-26.78	0.00	-2,002.40	0.00	2,002.40	4,831.10	1,170.21	5,075.66	4,767.35	12.26	-1.83	0.427
70.00	-29.98	-26.25	0.00	-1,868.51	0.00	1,868.51	4,747.80	1,142.34	4,836.80	4,572.55	14.25	-1.97	0.415
75.00	-28.70	-25.72	0.00	-1,737.26	0.00	1,737.26	4,662.94	1,114.47	4,603.69	4,380.25	16.38	-2.11	0.403
80.00	-27.45	-25.19	0.00	-1,608.67	0.00	1,608.67	4,576.54	1,086.59	4,376.33	4,190.55	18.67	-2.25	0.390
85.00	-26.23	-24.65	0.00	-1,482.73	0.00	1,482.73	4,481.93	1,058.72	4,154.74	3,997.63	21.11	-2.39	0.377
90.00	-25.03	-24.12	0.00	-1,359.46	0.00	1,359.46	4,363.94	1,030.85	3,938.90	3,788.90	23.69	-2.53	0.365
94.97	-23.88	-23.83	0.00	-1,239.65	0.00	1,239.65	4,246.74	1,003.17	3,730.20	3,587.10	26.40	-2.67	0.352
95.00	-23.85	-23.59	0.00	-1,238.85	0.00	1,238.85	4,245.95	1,002.98	3,728.82	3,585.76	26.42	-2.67	0.352
100.00	-21.97	-23.23	0.00	-1,120.93	0.00	1,120.93	4,127.96	975.11	3,524.49	3,388.23	29.29	-2.81	0.337
100.47	-21.78	-22.98	0.00	-1,110.09	0.00	1,110.09	3,522.04	850.55	3,128.34	2,946.90	29.56	-2.82	0.384
105.00	-20.87	-22.47	0.00	-1,005.93	0.00	1,005.93	3,456.72	828.89	2,971.06	2,817.93	32.30	-2.95	0.364
110.00	-19.88	-21.95	0.00	-893.56	0.00	893.56	3,383.20	805.00	2,802.29	2,677.76	35.47	-3.09	0.340
115.00	-18.91	-21.43	0.00	-783.82	0.00	783.82	3,306.70	781.11	2,638.45	2,538.79	38.78	-3.23	0.315
120.00	-17.97	-20.91	0.00	-676.70	0.00	676.70	3,205.56	757.22	2,479.56	2,385.12	42.23	-3.36	0.290
125.00	-17.06	-20.39	0.00	-572.16	0.00	572.16	3,104.43	733.33	2,325.59	2,236.25	45.82	-3.48	0.262
130.00	-15.03	-17.45	0.00	-470.20	0.00	470.20	3,003.30	709.44	2,176.56	2,092.18	49.53	-3.60	0.230
134.00	-12.57	-15.47	0.00	-400.40	0.00	400.40	2,922.39	690.33	2,060.89	1,980.38	52.58	-3.68	0.207
135.00	-12.41	-15.19	0.00	-384.93	0.00	384.93	2,902.16	685.55	2,032.46	1,952.91	53.35	-3.70	0.202
140.00	-11.61	-14.69	0.00	-308.97	0.00	308.97	2,801.03	661.66	1,893.30	1,818.43	57.28	-3.80	0.175
145.00	-10.83	-14.27	0.00	-235.50	0.00	235.50	2,699.90	637.77	1,759.08	1,688.75	61.29	-3.88	0.144
148.62	-10.28	-14.01	0.00	-183.91	0.00	183.91	2,626.75	620.49	1,665.06	1,597.93	64.25	-3.93	0.120
148.62	-10.28	-14.01	0.00	-183.91	0.00	183.91	1,691.62	422.31	1,156.82	1,055.16	64.25	-3.93	0.181
150.00	-10.12	-13.81	0.00	-164.53	0.00	164.53	1,679.60	417.91	1,132.82	1,036.65	65.39	-3.94	0.166
153.00	-6.79	-8.26	0.00	-113.16	0.00	113.16	1,653.13	408.36	1,081.64	996.80	67.88	-3.99	0.118
155.00	-6.61	-7.95	0.00	-96.65	0.00	96.65	1,635.17	401.99	1,048.18	970.47	69.56	-4.01	0.104
160.00	-3.11	-3.77	0.00	-56.91	0.00	56.91	1,589.20	386.07	966.82	905.51	73.79	-4.06	0.065
165.00	-2.78	-3.35	0.00	-38.04	0.00	38.04	1,541.67	370.16	888.75	841.89	78.05	-4.09	0.047
170.00	-1.88	-2.18	0.00	-21.31	0.00	21.31	1,492.60	354.24	813.96	779.71	82.34	-4.11	0.029

Site Number: 310972

Code: ANSI/TIA-222-H

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Site Name: WATERFORD REBUILD CT, CT Engineering Number: 13685301\_C3\_02

6/4/2021 7:30:47 PM

Customer: VERIZON WIRELESS

Load Case: 0.9D + 1.0W

127 mph with No Ice (Reduced DL)

24 Iterations

Gust Response Factor :1.10

Dead Load Factor :0.90

Wind Load Factor :1.00

175.00	-1.60	-1.78	0.00	-10.42	0.00	10.42	1,432.22	338.32	742.46	714.22	86.66	-4.13	0.016
180.00	0.00	-1.66	0.00	-1.53	0.00	1.53	1,364.83	322.40	674.25	648.27	90.98	-4.13	0.002

<b>Load Case:</b> 1.2D + 1.0Di + 1.0Wi	50 mph with 1.00 in Radial Ice	23 Iterations
Gust Response Factor :1.10	Ice Dead Load 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		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		75.1	0.0					0.0	0.0	75.1	0.0	0.0	0.0
5.00		149.0	2,042.3					0.0	335.6	149.0	2,377.9	0.0	0.0
10.00		146.6	2,039.1					0.0	335.6	146.6	2,374.7	0.0	0.0
15.00		144.1	2,017.7					0.0	335.6	144.1	2,353.3	0.0	0.0
20.00		141.5	1,990.4					0.0	335.6	141.5	2,326.0	0.0	0.0
25.00		138.9	1,960.0					0.0	335.6	138.9	2,295.6	0.0	0.0
30.00		137.9	1,927.7					0.0	335.6	137.9	2,263.3	0.0	0.0
35.00		139.7	1,894.1					0.0	335.6	139.7	2,229.7	0.0	0.0
40.00		142.3	1,859.5					0.0	335.6	142.3	2,195.1	0.0	0.0
45.00		97.9	1,824.2					0.0	335.6	97.9	2,159.7	0.0	0.0
46.82	Bot - Section 2	73.2	654.8					0.0	121.9	73.2	776.7	0.0	0.0
50.00		101.1	2,074.0					0.0	213.7	101.1	2,287.7	0.0	0.0
53.65	Top - Section 1	74.2	2,343.5					0.0	245.0	74.2	2,588.4	0.0	0.0
55.00		94.7	478.3					0.0	90.6	94.7	569.0	0.0	0.0
60.00		149.3	1,745.5					0.0	335.6	149.3	2,081.0	0.0	0.0
65.00		149.5	1,708.3					0.0	335.6	149.5	2,043.8	0.0	0.0
70.00		149.3	1,670.8					0.0	335.6	149.3	2,006.3	0.0	0.0
75.00		148.8	1,633.0					0.0	335.6	148.8	1,968.5	0.0	0.0
80.00		148.0	1,594.9					0.0	335.6	148.0	1,930.5	0.0	0.0
85.00		147.0	1,556.7					0.0	335.6	147.0	1,892.2	0.0	0.0
90.00		145.2	1,518.2					0.0	335.6	145.2	1,853.8	0.0	0.0
94.97	Bot - Section 3	72.5	1,469.9					0.0	333.3	72.5	1,803.2	0.0	0.0
95.00		73.5	16.6					0.0	2.2	73.5	18.8	0.0	0.0
100.00		79.8	2,452.0					0.0	335.6	79.8	2,787.5	0.0	0.0
100.47	Top - Section 2	72.1	225.8					0.0	31.3	72.1	257.1	0.0	0.0
105.00		136.5	1,147.7					0.0	304.3	136.5	1,452.0	0.0	0.0
110.00		141.3	1,232.6					0.0	335.6	141.3	1,568.2	0.0	0.0
115.00		139.2	1,198.1					0.0	335.6	139.2	1,533.6	0.0	0.0
120.00		136.9	1,163.4					0.0	335.6	136.9	1,498.9	0.0	0.0
125.00		134.5	1,128.6					0.0	335.6	134.5	1,464.1	0.0	0.0
130.00	Appurtenance(s)	119.0	1,093.6	436.6	0.0	0.0	2,993.5	0.0	335.6	555.5	4,422.7	0.0	0.0
134.00	Appurtenance(s)	65.3	850.4	392.4	0.0	0.0	3,248.1	0.0	237.3	457.7	4,335.8	0.0	0.0
135.00		76.9	209.6					0.0	59.3	76.9	268.9	0.0	0.0
140.00		126.4	1,023.5					0.0	296.6	126.4	1,320.1	0.0	0.0
145.00		106.7	988.3					0.0	296.6	106.7	1,284.9	0.0	0.0
148.62	Top - Section 3	61.2	693.7					0.0	214.5	61.2	908.2	0.0	0.0
150.00		53.4	198.5					0.0	82.1	53.4	280.6	0.0	0.0
153.00	Appurtenance(s)	60.3	422.9	1,034.4	0.0	1,878.3	7,115.0	0.0	177.9	1,094.7	7,715.8	0.0	0.0
155.00		82.7	277.0					0.0	65.3	82.7	342.3	0.0	0.0
160.00	Appurtenance(s)	115.8	671.8	740.9	0.0	0.0	6,483.3	0.0	126.8	856.7	7,281.9	0.0	0.0
165.00		112.4	645.6					0.0	39.4	112.4	684.9	0.0	0.0
170.00	Appurtenance(s)	109.0	619.3	164.6	0.0	0.0	1,243.8	0.0	39.4	273.6	1,902.4	0.0	0.0
175.00		105.4	592.9					0.0	9.8	105.4	602.8	0.0	0.0
180.00	Appurtenance(s)	51.8	566.5	375.1	0.0	417.7	2,363.8	0.0	9.8	426.9	2,940.1	0.0	0.0
<b>Totals:</b>										8,070.15	87,248.4	0.00	0.00

Load Case: 1.2D + 1.0Di + 1.0Wi

50 mph with 1.00 in Radial Ice

23 Iterations

Gust Response Factor :1.10

Ice Dead Load 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	-87.25	-8.02	0.00	-969.78	0.00	969.78	5,724.86	1,511.21	8,464.29	7,310.45	0.00	0.00	0.148
5.00	-84.86	-7.92	0.00	-929.68	0.00	929.68	5,660.51	1,483.34	8,154.99	7,094.04	0.02	-0.03	0.146
10.00	-82.48	-7.82	0.00	-890.09	0.00	890.09	5,594.62	1,455.47	7,851.45	6,878.77	0.07	-0.07	0.144
15.00	-80.13	-7.72	0.00	-851.01	0.00	851.01	5,527.18	1,427.60	7,553.66	6,664.77	0.15	-0.10	0.142
20.00	-77.80	-7.62	0.00	-812.43	0.00	812.43	5,458.18	1,399.73	7,261.62	6,452.13	0.28	-0.13	0.140
25.00	-75.50	-7.52	0.00	-774.35	0.00	774.35	5,387.64	1,371.86	6,975.35	6,240.97	0.43	-0.17	0.138
30.00	-73.23	-7.41	0.00	-736.78	0.00	736.78	5,315.55	1,343.98	6,694.83	6,031.39	0.62	-0.20	0.136
35.00	-71.00	-7.31	0.00	-699.70	0.00	699.70	5,241.91	1,316.11	6,420.07	5,823.52	0.85	-0.23	0.134
40.00	-68.80	-7.20	0.00	-663.16	0.00	663.16	5,166.71	1,288.24	6,151.07	5,617.45	1.12	-0.27	0.131
45.00	-66.64	-7.12	0.00	-627.16	0.00	627.16	5,089.97	1,260.37	5,887.82	5,413.30	1.42	-0.31	0.129
46.82	-65.86	-7.06	0.00	-614.22	0.00	614.22	5,061.71	1,250.24	5,793.60	5,339.62	1.54	-0.32	0.128
50.00	-63.57	-6.98	0.00	-591.74	0.00	591.74	5,011.68	1,232.50	5,630.33	5,211.18	1.76	-0.34	0.126
53.65	-60.98	-6.91	0.00	-566.28	0.00	566.28	5,014.45	1,233.48	5,639.26	5,218.23	2.03	-0.37	0.121
55.00	-60.41	-6.83	0.00	-556.96	0.00	556.96	4,993.06	1,225.95	5,570.67	5,164.00	2.13	-0.38	0.120
60.00	-58.32	-6.70	0.00	-522.81	0.00	522.81	4,912.86	1,198.08	5,320.29	4,964.54	2.55	-0.41	0.117
65.00	-56.27	-6.57	0.00	-489.30	0.00	489.30	4,831.10	1,170.21	5,075.66	4,767.35	3.00	-0.45	0.114
70.00	-54.27	-6.44	0.00	-456.45	0.00	456.45	4,747.80	1,142.34	4,836.80	4,572.55	3.49	-0.48	0.111
75.00	-52.30	-6.30	0.00	-424.26	0.00	424.26	4,662.94	1,114.47	4,603.69	4,380.25	4.01	-0.52	0.108
80.00	-50.36	-6.17	0.00	-392.74	0.00	392.74	4,576.54	1,086.59	4,376.33	4,190.55	4.57	-0.55	0.105
85.00	-48.47	-6.03	0.00	-361.90	0.00	361.90	4,481.93	1,058.72	4,154.74	3,997.63	5.16	-0.59	0.101
90.00	-46.61	-5.89	0.00	-331.74	0.00	331.74	4,363.94	1,030.85	3,938.90	3,788.90	5.80	-0.62	0.098
94.97	-44.81	-5.82	0.00	-302.47	0.00	302.47	4,246.74	1,003.17	3,730.20	3,587.10	6.46	-0.65	0.095
95.00	-44.79	-5.75	0.00	-302.27	0.00	302.27	4,245.95	1,002.98	3,728.82	3,585.76	6.46	-0.65	0.095
100.00	-42.00	-5.66	0.00	-273.50	0.00	273.50	4,127.96	975.11	3,524.49	3,388.23	7.16	-0.69	0.091
100.47	-41.74	-5.59	0.00	-270.86	0.00	270.86	3,522.04	850.55	3,128.34	2,946.90	7.23	-0.69	0.104
105.00	-40.29	-5.46	0.00	-245.51	0.00	245.51	3,456.72	828.89	2,971.06	2,817.93	7.90	-0.72	0.099
110.00	-38.72	-5.32	0.00	-218.20	0.00	218.20	3,383.20	805.00	2,802.29	2,677.76	8.68	-0.76	0.093
115.00	-37.19	-5.18	0.00	-191.59	0.00	191.59	3,306.70	781.11	2,638.45	2,538.79	9.49	-0.79	0.087
120.00	-35.69	-5.05	0.00	-165.67	0.00	165.67	3,205.56	757.22	2,479.56	2,385.12	10.33	-0.82	0.081
125.00	-34.22	-4.91	0.00	-140.44	0.00	140.44	3,104.43	733.33	2,325.59	2,236.25	11.21	-0.85	0.074
130.00	-29.81	-4.30	0.00	-115.90	0.00	115.90	3,003.30	709.44	2,176.56	2,092.18	12.11	-0.88	0.065
134.00	-25.48	-3.78	0.00	-98.71	0.00	98.71	2,922.39	690.33	2,060.89	1,980.38	12.86	-0.90	0.059
135.00	-25.21	-3.70	0.00	-94.93	0.00	94.93	2,902.16	685.55	2,032.46	1,952.91	13.05	-0.91	0.057
140.00	-23.89	-3.57	0.00	-76.41	0.00	76.41	2,801.03	661.66	1,893.30	1,818.43	14.01	-0.93	0.051
145.00	-22.60	-3.44	0.00	-58.58	0.00	58.58	2,699.90	637.77	1,759.08	1,688.75	14.99	-0.95	0.043
148.62	-21.70	-3.37	0.00	-46.12	0.00	46.12	2,626.75	620.49	1,665.06	1,597.93	15.72	-0.96	0.037
148.62	-21.70	-3.37	0.00	-46.12	0.00	46.12	1,691.62	422.31	1,156.82	1,055.16	15.72	-0.96	0.057
150.00	-21.42	-3.32	0.00	-41.46	0.00	41.46	1,679.60	417.91	1,132.82	1,036.65	16.00	-0.97	0.053
153.00	-13.72	-2.09	0.00	-29.64	0.00	29.64	1,653.13	408.36	1,081.64	996.80	16.61	-0.98	0.038
155.00	-13.38	-2.01	0.00	-25.45	0.00	25.45	1,635.17	401.99	1,048.18	970.47	17.02	-0.98	0.034
160.00	-6.11	-1.03	0.00	-15.42	0.00	15.42	1,589.20	386.07	966.82	905.51	18.06	-1.00	0.021
165.00	-5.43	-0.90	0.00	-10.29	0.00	10.29	1,541.67	370.16	888.75	841.89	19.10	-1.00	0.016
170.00	-3.53	-0.59	0.00	-5.79	0.00	5.79	1,492.60	354.24	813.96	779.71	20.16	-1.01	0.010

Site Number: 310972

Code: ANSI/TIA-222-H

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Site Name: WATERFORD REBUILD CT, CT Engineering Number: 13685301\_C3\_02

6/4/2021 7:30:50 PM

Customer: VERIZON WIRELESS

Load Case: 1.2D + 1.0Di + 1.0Wi

50 mph with 1.00 in Radial Ice

23 Iterations

Gust Response Factor :1.10

Ice Dead Load Factor :1.00

Dead Load Factor :1.20

Ice Importance Factor :1.00

Wind Load Factor :1.00

175.00	-2.93	-0.48	0.00	-2.81	0.00	2.81	1,432.22	338.32	742.46	714.22	21.22	-1.01	0.006
180.00	0.00	-0.43	0.00	-0.42	0.00	0.42	1,364.83	322.40	674.25	648.27	22.28	-1.02	0.001



<b>Load Case: 1.0D + 1.0W</b>	<b>Serviceability 60 mph</b>	<b>23 Iterations</b>
Gust Response Factor :1.10		
Dead Load Factor :1.00		
Wind Load Factor :1.00		

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		57.4	0.0					0.0	0.0	57.4	0.0	0.0	0.0
5.00		113.8	1,451.5					0.0	279.7	113.8	1,731.2	0.0	0.0
10.00		111.7	1,424.5					0.0	279.7	111.7	1,704.2	0.0	0.0
15.00		109.6	1,397.5					0.0	279.7	109.6	1,677.1	0.0	0.0
20.00		107.5	1,370.5					0.0	279.7	107.5	1,650.1	0.0	0.0
25.00		105.3	1,343.5					0.0	279.7	105.3	1,623.1	0.0	0.0
30.00		104.4	1,316.4					0.0	279.7	104.4	1,596.1	0.0	0.0
35.00		105.6	1,289.4					0.0	279.7	105.6	1,569.1	0.0	0.0
40.00		107.5	1,262.4					0.0	279.7	107.5	1,542.0	0.0	0.0
45.00		73.9	1,235.4					0.0	279.7	73.9	1,515.0	0.0	0.0
46.82	Bot - Section 2	55.2	442.2					0.0	101.6	55.2	543.8	0.0	0.0
50.00		76.2	1,545.6					0.0	178.0	76.2	1,723.6	0.0	0.0
53.65	Top - Section 1	55.9	1,745.2					0.0	204.1	55.9	1,949.3	0.0	0.0
55.00		71.3	321.9					0.0	75.5	71.3	397.4	0.0	0.0
60.00		112.3	1,175.0					0.0	279.7	112.3	1,454.6	0.0	0.0
65.00		112.3	1,148.0					0.0	279.7	112.3	1,427.6	0.0	0.0
70.00		112.0	1,121.0					0.0	279.7	112.0	1,400.6	0.0	0.0
75.00		111.4	1,093.9					0.0	279.7	111.4	1,373.6	0.0	0.0
80.00		110.7	1,066.9					0.0	279.7	110.7	1,346.6	0.0	0.0
85.00		109.8	1,039.9					0.0	279.7	109.8	1,319.5	0.0	0.0
90.00		108.3	1,012.9					0.0	279.7	108.3	1,292.5	0.0	0.0
94.97	Bot - Section 3	54.1	979.4					0.0	277.8	54.1	1,257.2	0.0	0.0
95.00		54.7	12.1					0.0	1.9	54.7	14.0	0.0	0.0
100.00		59.4	1,797.1					0.0	279.7	59.4	2,076.8	0.0	0.0
100.47	Top - Section 2	53.6	165.2					0.0	26.1	53.6	191.3	0.0	0.0
105.00		101.4	738.1					0.0	253.5	101.4	991.6	0.0	0.0
110.00		104.8	792.0					0.0	279.7	104.8	1,071.6	0.0	0.0
115.00		103.0	768.8					0.0	279.7	103.0	1,048.5	0.0	0.0
120.00		101.1	745.7					0.0	279.7	101.1	1,025.3	0.0	0.0
125.00		99.1	722.5					0.0	279.7	99.1	1,002.2	0.0	0.0
130.00	Appurtenance(s)	87.5	699.3	479.7	0.0	0.0	1,438.8	0.0	279.7	567.2	2,417.8	0.0	0.0
134.00	Appurtenance(s)	48.0	542.8	317.4	0.0	0.0	2,117.0	0.0	197.7	365.4	2,857.5	0.0	0.0
135.00		56.3	133.4					0.0	49.4	56.3	182.8	0.0	0.0
140.00		92.5	653.0					0.0	247.2	92.5	900.2	0.0	0.0
145.00		77.9	629.9					0.0	247.2	77.9	877.0	0.0	0.0
148.62	Top - Section 3	44.6	441.2					0.0	178.8	44.6	619.9	0.0	0.0
150.00		38.9	112.7					0.0	68.4	38.9	181.1	0.0	0.0
153.00	Appurtenance(s)	43.9	240.3	1,017.2	0.0	1,983.1	3,730.1	0.0	148.3	1,061.1	4,118.7	0.0	0.0
155.00		60.0	157.1					0.0	54.4	60.0	211.5	0.0	0.0
160.00	Appurtenance(s)	83.9	382.0	698.7	0.0	0.0	3,722.6	0.0	105.7	782.5	4,210.3	0.0	0.0
165.00		81.1	366.6					0.0	32.8	81.1	399.4	0.0	0.0
170.00	Appurtenance(s)	78.3	351.1	141.6	0.0	0.0	697.7	0.0	32.8	220.0	1,081.6	0.0	0.0
175.00		75.5	335.7					0.0	8.2	75.5	343.9	0.0	0.0
180.00	Appurtenance(s)	37.0	320.3	294.2	0.0	305.5	1,590.0	0.0	8.2	331.2	1,918.5	0.0	0.0
<b>Totals:</b>										<b>6,617.86</b>	<b>57,835.7</b>	<b>0.00</b>	<b>0.00</b>

Load Case: 1.0D + 1.0W

Serviceability 60 mph

23 Iterations

Gust Response Factor :1.10

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	-57.83	-6.57	0.00	-795.62	0.00	795.62	5,724.86	1,511.21	8,464.29	7,310.45	0.00	0.00	0.119
5.00	-56.10	-6.49	0.00	-762.76	0.00	762.76	5,660.51	1,483.34	8,154.99	7,094.04	0.01	-0.03	0.117
10.00	-54.39	-6.40	0.00	-730.33	0.00	730.33	5,594.62	1,455.47	7,851.45	6,878.77	0.06	-0.05	0.116
15.00	-52.71	-6.31	0.00	-698.34	0.00	698.34	5,527.18	1,427.60	7,553.66	6,664.77	0.13	-0.08	0.114
20.00	-51.06	-6.23	0.00	-666.78	0.00	666.78	5,458.18	1,399.73	7,261.62	6,452.13	0.23	-0.11	0.113
25.00	-49.43	-6.14	0.00	-635.65	0.00	635.65	5,387.64	1,371.86	6,975.35	6,240.97	0.35	-0.14	0.111
30.00	-47.84	-6.06	0.00	-604.94	0.00	604.94	5,315.55	1,343.98	6,694.83	6,031.39	0.51	-0.16	0.109
35.00	-46.26	-5.97	0.00	-574.66	0.00	574.66	5,241.91	1,316.11	6,420.07	5,823.52	0.70	-0.19	0.108
40.00	-44.72	-5.88	0.00	-544.81	0.00	544.81	5,166.71	1,288.24	6,151.07	5,617.45	0.92	-0.22	0.106
45.00	-43.20	-5.81	0.00	-515.42	0.00	515.42	5,089.97	1,260.37	5,887.82	5,413.30	1.16	-0.25	0.104
46.82	-42.66	-5.77	0.00	-504.85	0.00	504.85	5,061.71	1,250.24	5,793.60	5,339.62	1.26	-0.26	0.103
50.00	-40.93	-5.70	0.00	-486.50	0.00	486.50	5,011.68	1,232.50	5,630.33	5,211.18	1.44	-0.28	0.102
53.65	-38.98	-5.64	0.00	-465.70	0.00	465.70	5,014.45	1,233.48	5,639.26	5,218.23	1.67	-0.30	0.097
55.00	-38.58	-5.58	0.00	-458.08	0.00	458.08	4,993.06	1,225.95	5,570.67	5,164.00	1.75	-0.31	0.096
60.00	-37.13	-5.48	0.00	-430.18	0.00	430.18	4,912.86	1,198.08	5,320.29	4,964.54	2.09	-0.34	0.094
65.00	-35.70	-5.38	0.00	-402.79	0.00	402.79	4,831.10	1,170.21	5,075.66	4,767.35	2.46	-0.37	0.092
70.00	-34.29	-5.27	0.00	-375.91	0.00	375.91	4,747.80	1,142.34	4,836.80	4,572.55	2.86	-0.40	0.089
75.00	-32.92	-5.17	0.00	-349.56	0.00	349.56	4,662.94	1,114.47	4,603.69	4,380.25	3.29	-0.42	0.087
80.00	-31.57	-5.06	0.00	-323.73	0.00	323.73	4,576.54	1,086.59	4,376.33	4,190.55	3.75	-0.45	0.084
85.00	-30.25	-4.96	0.00	-298.42	0.00	298.42	4,481.93	1,058.72	4,154.74	3,997.63	4.24	-0.48	0.081
90.00	-28.96	-4.85	0.00	-273.65	0.00	273.65	4,363.94	1,030.85	3,938.90	3,788.90	4.76	-0.51	0.079
94.97	-27.70	-4.79	0.00	-249.56	0.00	249.56	4,246.74	1,003.17	3,730.20	3,587.10	5.30	-0.54	0.076
95.00	-27.68	-4.74	0.00	-249.40	0.00	249.40	4,245.95	1,002.98	3,728.82	3,585.76	5.31	-0.54	0.076
100.00	-25.61	-4.67	0.00	-225.69	0.00	225.69	4,127.96	975.11	3,524.49	3,388.23	5.89	-0.57	0.073
100.47	-25.41	-4.62	0.00	-223.51	0.00	223.51	3,522.04	850.55	3,128.34	2,946.90	5.94	-0.57	0.083
105.00	-24.42	-4.52	0.00	-202.56	0.00	202.56	3,456.72	828.89	2,971.06	2,817.93	6.49	-0.59	0.079
110.00	-23.35	-4.42	0.00	-179.95	0.00	179.95	3,383.20	805.00	2,802.29	2,677.76	7.13	-0.62	0.074
115.00	-22.30	-4.31	0.00	-157.87	0.00	157.87	3,306.70	781.11	2,638.45	2,538.79	7.80	-0.65	0.069
120.00	-21.27	-4.21	0.00	-136.31	0.00	136.31	3,205.56	757.22	2,479.56	2,385.12	8.49	-0.68	0.064
125.00	-20.27	-4.11	0.00	-115.26	0.00	115.26	3,104.43	733.33	2,325.59	2,236.25	9.21	-0.70	0.058
130.00	-17.86	-3.52	0.00	-94.73	0.00	94.73	3,003.30	709.44	2,176.56	2,092.18	9.96	-0.72	0.051
134.00	-15.01	-3.12	0.00	-80.67	0.00	80.67	2,922.39	690.33	2,060.89	1,980.38	10.57	-0.74	0.046
135.00	-14.82	-3.06	0.00	-77.55	0.00	77.55	2,902.16	685.55	2,032.46	1,952.91	10.73	-0.74	0.045
140.00	-13.92	-2.96	0.00	-62.25	0.00	62.25	2,801.03	661.66	1,893.30	1,818.43	11.52	-0.76	0.039
145.00	-13.05	-2.87	0.00	-47.45	0.00	47.45	2,699.90	637.77	1,759.08	1,688.75	12.33	-0.78	0.033
148.62	-12.43	-2.82	0.00	-37.05	0.00	37.05	2,626.75	620.49	1,665.06	1,597.93	12.92	-0.79	0.028
148.62	-12.43	-2.82	0.00	-37.05	0.00	37.05	1,691.62	422.31	1,156.82	1,055.16	12.92	-0.79	0.043
150.00	-12.25	-2.78	0.00	-33.15	0.00	33.15	1,679.60	417.91	1,132.82	1,036.65	13.15	-0.79	0.039
153.00	-8.14	-1.66	0.00	-22.82	0.00	22.82	1,653.13	408.36	1,081.64	996.80	13.65	-0.80	0.028
155.00	-7.93	-1.60	0.00	-19.49	0.00	19.49	1,635.17	401.99	1,048.18	970.47	13.99	-0.81	0.025
160.00	-3.73	-0.76	0.00	-11.48	0.00	11.48	1,589.20	386.07	966.82	905.51	14.84	-0.82	0.015
165.00	-3.33	-0.67	0.00	-7.67	0.00	7.67	1,541.67	370.16	888.75	841.89	15.70	-0.82	0.011
170.00	-2.26	-0.44	0.00	-4.30	0.00	4.30	1,492.60	354.24	813.96	779.71	16.56	-0.83	0.007

Site Number: 310972

Code: ANSI/TIA-222-H

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Site Name: WATERFORD REBUILD CT, CT Engineering Number: 13685301\_C3\_02

6/4/2021 7:30:54 PM

Customer: VERIZON WIRELESS

Load Case: 1.0D + 1.0W

Serviceability 60 mph

23 Iterations

Gust Response Factor :1.10

Dead Load Factor :1.00

Wind Load Factor :1.00

175.00	-1.91	-0.36	0.00	-2.10	0.00	2.10	1,432.22	338.32	742.46	714.22	17.43	-0.83	0.004
180.00	0.00	-0.33	0.00	-0.31	0.00	0.31	1,364.83	322.40	674.25	648.27	18.30	-0.83	0.000

### Equivalent Lateral Forces Method Analysis

Spectral Response Acceleration for Short Period ( $S_s$ ):	0.19
Spectral Response Acceleration at 1.0 Second Period ( $S_{d1}$ ):	0.05
Long-Period Transition Period ( $T_L$ ):	6
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 ( $S_{ds}$ ):	0.20
Design Spectral Response Acceleration at 1.0 Second Period ( $S_{d1}$ ):	0.08
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):	2.62
Redundancy Factor ( $\rho$ ):	1.00
Seismic Force Distribution Exponent (k):	2.00
Total Unfactored Dead Load:	57.84 k
Seismic Base Shear (E):	1.74 k

Load Case 1.2D + 1.0Ev + 1.0Eh

Seismic

Segment	Height Above Base (ft)	Weight (lb)	$W_z$ (lb-ft)	$C_{vx}$	Horizontal Force (lb)	Vertical Force (lb)
43	177.50	328	10,349	0.016	28	408
42	172.50	344	10,233	0.016	28	427
41	167.50	384	10,772	0.017	29	476
40	162.50	399	10,546	0.017	29	496
39	157.50	488	12,097	0.019	33	605
38	154.00	212	5,016	0.008	14	262
37	151.50	389	8,919	0.014	24	482
36	149.31	181	4,036	0.006	11	225
35	146.81	620	13,361	0.021	36	769
34	142.50	877	17,809	0.028	48	1,088
33	137.50	900	17,019	0.027	46	1,117
32	134.50	183	3,307	0.005	9	227
31	132.00	741	12,903	0.020	35	919
30	127.50	979	15,915	0.025	43	1,215
29	122.50	1,002	15,039	0.024	41	1,243
28	117.50	1,025	14,156	0.022	38	1,272
27	112.50	1,048	13,270	0.021	36	1,301
26	107.50	1,072	12,384	0.019	34	1,330
25	102.73	992	10,466	0.016	28	1,230
24	100.23	191	1,922	0.003	5	237
23	97.50	2,077	19,742	0.031	54	2,577
22	94.98	14	126	0.000	0	17
21	92.48	1,257	10,753	0.017	29	1,560
20	87.50	1,293	9,896	0.015	27	1,604
19	82.50	1,320	8,981	0.014	24	1,637

18	77.50	1,347	8,088	0.013	22	1,671
17	72.50	1,374	7,220	0.011	20	1,704
16	67.50	1,401	6,381	0.010	17	1,738
15	62.50	1,428	5,577	0.009	15	1,771
14	57.50	1,455	4,809	0.008	13	1,805
13	54.33	397	1,173	0.002	3	493
12	51.83	1,949	5,236	0.008	14	2,419
11	48.41	1,724	4,039	0.006	11	2,139
10	45.91	544	1,146	0.002	3	675
9	42.50	1,515	2,737	0.004	7	1,880
8	37.50	1,542	2,169	0.003	6	1,913
7	32.50	1,569	1,657	0.003	5	1,947
6	27.50	1,596	1,207	0.002	3	1,980
5	22.50	1,623	822	0.001	2	2,014
4	17.50	1,650	505	0.001	1	2,047
3	12.50	1,677	262	0.000	1	2,081
2	7.50	1,704	96	0.000	0	2,114
1	2.50	1,731	11	0.000	0	2,148
Generic TTA	180.00	10	324	0.001	1	12
Generic 11' Omni	180.00	80	2,592	0.004	7	99
Round Low Profile PI	180.00	1,500	48,600	0.076	132	1,861
KMW HB-X-WM-17-65-00	170.00	48	1,379	0.002	4	59
KMW HB-X-WM-17-65-00	170.00	90	2,601	0.004	7	112
Side Arms	170.00	560	16,184	0.025	44	695
Commscope CBC78T-DS-	160.00	62	1,590	0.002	4	77
Samsung B2/B66A RRH-	160.00	253	6,482	0.010	18	314
Samsung B5/B13 RRH-B	160.00	211	5,399	0.008	15	262
Samsung MT6407-77A	160.00	245	6,267	0.010	17	304
RFS DB-T1-6Z-8AB-0Z	160.00	88	2,253	0.004	6	109
Commscope JAHH-65B-R	160.00	364	9,308	0.015	25	451
Generic Round Platfo	160.00	2,500	64,000	0.100	174	3,102
Powerwave Allgon 702	153.00	13	309	0.000	1	16
CCI TPX-070821	153.00	45	1,053	0.002	3	56
Raycap DC6-48-60-18-	153.00	20	468	0.001	1	25
Raycap DC6-48-60-18-	153.00	32	744	0.001	2	39
Ericsson RRUS 4478 B	153.00	178	4,171	0.007	11	221
Powerwave Allgon LGP	153.00	186	4,354	0.007	12	231
Raycap DC6-48-60-18-	153.00	16	375	0.001	1	20
Ericsson RRUS 11 (Ba	153.00	150	3,511	0.005	10	186
Ericsson RRUS 32 B30	153.00	180	4,214	0.007	11	223
Ericsson RRUS 32 B66	153.00	152	3,561	0.006	10	189
Ericsson RRUS 32 B2	153.00	159	3,722	0.006	10	197
Powerwave Allgon 777	153.00	105	2,458	0.004	7	130
Commscope SBNHH-1D65	153.00	201	4,705	0.007	13	249
Kathrein Scala 80010	153.00	293	6,854	0.011	19	363
Flat Platform w/ Rou	153.00	2,000	46,818	0.073	127	2,481
Perfect Vision PV-LP	134.00	2,117	38,013	0.060	103	2,627
Ericsson RRUS 4415 B	130.00	138	2,332	0.004	6	171
Ericsson Radio 4449	130.00	225	3,803	0.006	10	279
Ericsson 4424 B25	130.00	258	4,360	0.007	12	320
Ericsson Air6449 B41	130.00	312	5,273	0.008	14	387
RFS APX16DWV-16DWVS-	130.00	122	2,063	0.003	6	151
RFS APXVAARR24_43-U-	130.00	384	6,485	0.010	18	476
		57,836	638,776	1.000	1,735	71,760

Load Case 0.9D - 1.0Ev + 1.0Eh

Seismic (Reduced DL)

Segment	Height Above Base (ft)	Weight (lb)	W <sub>z</sub> (lb-ft)	C <sub>vx</sub>	Horizontal Force (lb)	Vertical Force (lb)
43	177.50	328	10,349	0.016	28	282
42	172.50	344	10,233	0.016	28	295

41	167.50	384	10,772	0.017	29	330
40	162.50	399	10,546	0.017	29	343
39	157.50	488	12,097	0.019	33	419
38	154.00	212	5,016	0.008	14	182
37	151.50	389	8,919	0.014	24	334
36	149.31	181	4,036	0.006	11	156
35	146.81	620	13,361	0.021	36	533
34	142.50	877	17,809	0.028	48	754
33	137.50	900	17,019	0.027	46	773
32	134.50	183	3,307	0.005	9	157
31	132.00	741	12,903	0.020	35	636
30	127.50	979	15,915	0.025	43	841
29	122.50	1,002	15,039	0.024	41	861
28	117.50	1,025	14,156	0.022	38	881
27	112.50	1,048	13,270	0.021	36	901
26	107.50	1,072	12,384	0.019	34	921
25	102.73	992	10,466	0.016	28	852
24	100.23	191	1,922	0.003	5	164
23	97.50	2,077	19,742	0.031	54	1,784
22	94.98	14	126	0.000	0	12
21	92.48	1,257	10,753	0.017	29	1,080
20	87.50	1,293	9,896	0.015	27	1,111
19	82.50	1,320	8,981	0.014	24	1,134
18	77.50	1,347	8,088	0.013	22	1,157
17	72.50	1,374	7,220	0.011	20	1,180
16	67.50	1,401	6,381	0.010	17	1,203
15	62.50	1,428	5,577	0.009	15	1,227
14	57.50	1,455	4,809	0.008	13	1,250
13	54.33	397	1,173	0.002	3	341
12	51.83	1,949	5,236	0.008	14	1,675
11	48.41	1,724	4,039	0.006	11	1,481
10	45.91	544	1,146	0.002	3	467
9	42.50	1,515	2,737	0.004	7	1,302
8	37.50	1,542	2,169	0.003	6	1,325
7	32.50	1,569	1,657	0.003	5	1,348
6	27.50	1,596	1,207	0.002	3	1,371
5	22.50	1,623	822	0.001	2	1,395
4	17.50	1,650	505	0.001	1	1,418
3	12.50	1,677	262	0.000	1	1,441
2	7.50	1,704	96	0.000	0	1,464
1	2.50	1,731	11	0.000	0	1,488
Generic TTA	180.00	10	324	0.001	1	9
Generic 11' Omni	180.00	80	2,592	0.004	7	69
Round Low Profile PI	180.00	1,500	48,600	0.076	132	1,289
KMW HB-X-WM-17-65-00	170.00	48	1,379	0.002	4	41
KMW HB-X-WM-17-65-00	170.00	90	2,601	0.004	7	77
Side Arms	170.00	560	16,184	0.025	44	481
Commscope CBC78T-DS-	160.00	62	1,590	0.002	4	53
Samsung B2/B66A RRH-	160.00	253	6,482	0.010	18	218
Samsung B5/B13 RRH-B	160.00	211	5,399	0.008	15	181
Samsung MT6407-77A	160.00	245	6,267	0.010	17	210
RFS DB-T1-6Z-8AB-0Z	160.00	88	2,253	0.004	6	76
Commscope JAHH-65B-R	160.00	364	9,308	0.015	25	312
Generic Round Platfo	160.00	2,500	64,000	0.100	174	2,148
Powerwave Allgon 702	153.00	13	309	0.000	1	11
CCI TPX-070821	153.00	45	1,053	0.002	3	39
Raycap DC6-48-60-18-	153.00	20	468	0.001	1	17
Raycap DC6-48-60-18-	153.00	32	744	0.001	2	27
Ericsson RRUS 4478 B	153.00	178	4,171	0.007	11	153
Powerwave Allgon LGP	153.00	186	4,354	0.007	12	160
Raycap DC6-48-60-18-	153.00	16	375	0.001	1	14
Ericsson RRUS 11 (Ba	153.00	150	3,511	0.005	10	129
Ericsson RRUS 32 B30	153.00	180	4,214	0.007	11	155
Ericsson RRUS 32 B66	153.00	152	3,561	0.006	10	131

Site Number: 310972

Code: ANSI/TIA-222-H

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Site Name: WATERFORD REBUILD CT, CT Engineering Number: 13685301\_C3\_02

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Customer: VERIZON WIRELESS

Ericsson RRUS 32 B2	153.00	159	3,722	0.006	10	137
Powerwave Allgon 777	153.00	105	2,458	0.004	7	90
Commscope SBNHH-1D65	153.00	201	4,705	0.007	13	173
Kathrein Scala 80010	153.00	293	6,854	0.011	19	252
Flat Platform w/ Rou	153.00	2,000	46,818	0.073	127	1,719
Perfect Vision PV-LP	134.00	2,117	38,013	0.060	103	1,819
Ericsson RRUS 4415 B	130.00	138	2,332	0.004	6	119
Ericsson Radio 4449	130.00	225	3,803	0.006	10	193
Ericsson 4424 B25	130.00	258	4,360	0.007	12	222
Ericsson Air6449 B41	130.00	312	5,273	0.008	14	268
RFS APX16DWV-16DWVS-	130.00	122	2,063	0.003	6	105
RFS APXVAARR24_43-U-	130.00	384	6,485	0.010	18	330
		57,836	638,776	1.000	1,735	49,696

Load Case 1.2D + 1.0Ev + 1.0Eh

Seismic

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	-69.61	-1.74	0.00	-247.97	0.00	247.97	5,724.86	1,511.21	8,464.29	7,310.45	0.00	0.00	0.046
5.00	-67.50	-1.75	0.00	-239.27	0.00	239.27	5,660.51	1,483.34	8,154.99	7,094.04	0.00	-0.01	0.046
10.00	-65.42	-1.76	0.00	-230.53	0.00	230.53	5,594.62	1,455.47	7,851.45	6,878.77	0.02	-0.02	0.045
15.00	-63.37	-1.77	0.00	-221.74	0.00	221.74	5,527.18	1,427.60	7,553.66	6,664.77	0.04	-0.03	0.045
20.00	-61.35	-1.77	0.00	-212.92	0.00	212.92	5,458.18	1,399.73	7,261.62	6,452.13	0.07	-0.03	0.044
25.00	-59.37	-1.78	0.00	-204.06	0.00	204.06	5,387.64	1,371.86	6,975.35	6,240.97	0.11	-0.04	0.044
30.00	-57.43	-1.78	0.00	-195.18	0.00	195.18	5,315.55	1,343.98	6,694.83	6,031.39	0.16	-0.05	0.043
35.00	-55.51	-1.78	0.00	-186.29	0.00	186.29	5,241.91	1,316.11	6,420.07	5,823.52	0.22	-0.06	0.043
40.00	-53.63	-1.78	0.00	-177.38	0.00	177.38	5,166.71	1,288.24	6,151.07	5,617.45	0.29	-0.07	0.042
45.00	-52.96	-1.78	0.00	-168.49	0.00	168.49	5,089.97	1,260.37	5,887.82	5,413.30	0.37	-0.08	0.042
46.82	-50.82	-1.77	0.00	-165.25	0.00	165.25	5,061.71	1,250.24	5,793.60	5,339.62	0.40	-0.08	0.041
50.00	-48.40	-1.76	0.00	-159.61	0.00	159.61	5,011.68	1,232.50	5,630.33	5,211.18	0.46	-0.09	0.040
53.65	-47.91	-1.76	0.00	-153.19	0.00	153.19	5,014.45	1,233.48	5,639.26	5,218.23	0.53	-0.10	0.039
55.00	-46.10	-1.75	0.00	-150.81	0.00	150.81	4,993.06	1,225.95	5,570.67	5,164.00	0.56	-0.10	0.038
60.00	-44.33	-1.74	0.00	-142.07	0.00	142.07	4,912.86	1,198.08	5,320.29	4,964.54	0.67	-0.11	0.038
65.00	-42.59	-1.72	0.00	-133.39	0.00	133.39	4,831.10	1,170.21	5,075.66	4,767.35	0.79	-0.12	0.037
70.00	-40.89	-1.71	0.00	-124.77	0.00	124.77	4,747.80	1,142.34	4,836.80	4,572.55	0.92	-0.13	0.036
75.00	-39.22	-1.69	0.00	-116.23	0.00	116.23	4,662.94	1,114.47	4,603.69	4,380.25	1.06	-0.14	0.035
80.00	-37.58	-1.67	0.00	-107.80	0.00	107.80	4,576.54	1,086.59	4,376.33	4,190.55	1.20	-0.15	0.034
85.00	-35.98	-1.64	0.00	-99.47	0.00	99.47	4,481.93	1,058.72	4,154.74	3,997.63	1.36	-0.16	0.033
90.00	-34.42	-1.61	0.00	-91.27	0.00	91.27	4,363.94	1,030.85	3,938.90	3,788.90	1.53	-0.17	0.032
94.97	-34.40	-1.61	0.00	-83.26	0.00	83.26	4,246.74	1,003.17	3,730.20	3,587.10	1.71	-0.18	0.031
95.00	-31.82	-1.56	0.00	-83.21	0.00	83.21	4,245.95	1,002.98	3,728.82	3,585.76	1.71	-0.18	0.031
100.00	-31.58	-1.55	0.00	-75.43	0.00	75.43	4,127.96	975.11	3,524.49	3,388.23	1.90	-0.18	0.030
100.47	-30.35	-1.52	0.00	-74.70	0.00	74.70	3,522.04	850.55	3,128.34	2,946.90	1.92	-0.19	0.034
105.00	-29.02	-1.49	0.00	-67.80	0.00	67.80	3,456.72	828.89	2,971.06	2,817.93	2.10	-0.19	0.032
110.00	-27.72	-1.45	0.00	-60.36	0.00	60.36	3,383.20	805.00	2,802.29	2,677.76	2.31	-0.20	0.031
115.00	-26.45	-1.41	0.00	-53.09	0.00	53.09	3,306.70	781.11	2,638.45	2,538.79	2.52	-0.21	0.029
120.00	-25.21	-1.37	0.00	-46.02	0.00	46.02	3,205.56	757.22	2,479.56	2,385.12	2.75	-0.22	0.027
125.00	-23.99	-1.33	0.00	-39.15	0.00	39.15	3,104.43	733.33	2,325.59	2,236.25	2.99	-0.23	0.025
130.00	-21.29	-1.22	0.00	-32.51	0.00	32.51	3,003.30	709.44	2,176.56	2,092.18	3.23	-0.24	0.023
134.00	-18.44	-1.10	0.00	-27.64	0.00	27.64	2,922.39	690.33	2,060.89	1,980.38	3.44	-0.24	0.020
135.00	-17.32	-1.05	0.00	-26.55	0.00	26.55	2,902.16	685.55	2,032.46	1,952.91	3.49	-0.25	0.020
140.00	-16.23	-0.99	0.00	-21.32	0.00	21.32	2,801.03	661.66	1,893.30	1,818.43	3.75	-0.25	0.018
145.00	-15.46	-0.96	0.00	-16.35	0.00	16.35	2,699.90	637.77	1,759.08	1,688.75	4.01	-0.26	0.015
148.62	-15.24	-0.94	0.00	-12.89	0.00	12.89	2,626.75	620.49	1,665.06	1,597.93	4.21	-0.26	0.014
148.62	-15.24	-0.94	0.00	-12.89	0.00	12.89	1,691.62	422.31	1,156.82	1,055.16	4.21	-0.26	0.021
150.00	-14.75	-0.92	0.00	-11.58	0.00	11.58	1,679.60	417.91	1,132.82	1,036.65	4.29	-0.26	0.020
153.00	-9.87	-0.65	0.00	-8.83	0.00	8.83	1,653.13	408.36	1,081.64	996.80	4.45	-0.27	0.015
155.00	-9.26	-0.61	0.00	-7.53	0.00	7.53	1,635.17	401.99	1,048.18	970.47	4.56	-0.27	0.013
160.00	-4.15	-0.30	0.00	-4.48	0.00	4.48	1,589.20	386.07	966.82	905.51	4.84	-0.27	0.008
165.00	-3.67	-0.27	0.00	-2.98	0.00	2.98	1,541.67	370.16	888.75	841.89	5.13	-0.27	0.006
170.00	-2.38	-0.18	0.00	-1.64	0.00	1.64	1,492.60	354.24	813.96	779.71	5.42	-0.27	0.004
175.00	-1.97	-0.15	0.00	-0.75	0.00	0.75	1,432.22	338.32	742.46	714.22	5.70	-0.28	0.002
180.00	0.00	-0.14	0.00	0.00	0.00	0.00	1,364.83	322.40	674.25	648.27	5.99	-0.28	0.000



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Site Number: 310972

Code: ANSI/TIA-222-H

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Site Name: WATERFORD REBUILD CT, CT Engineering Number: 13685301\_C3\_02

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Customer: VERIZON WIRELESS

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Load Case 0.9D - 1.0Ev + 1.0Eh

Seismic (Reduced DL)

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	-48.21	-1.74	0.00	-244.07	0.00	244.07	5,724.86	1,511.21	8,464.29	7,310.45	0.00	0.00	0.042
5.00	-46.74	-1.74	0.00	-235.38	0.00	235.38	5,660.51	1,483.34	8,154.99	7,094.04	0.00	-0.01	0.041
10.00	-45.30	-1.75	0.00	-226.65	0.00	226.65	5,594.62	1,455.47	7,851.45	6,878.77	0.02	-0.02	0.041
15.00	-43.88	-1.75	0.00	-217.91	0.00	217.91	5,527.18	1,427.60	7,553.66	6,664.77	0.04	-0.02	0.041
20.00	-42.49	-1.76	0.00	-209.13	0.00	209.13	5,458.18	1,399.73	7,261.62	6,452.13	0.07	-0.03	0.040
25.00	-41.12	-1.76	0.00	-200.34	0.00	200.34	5,387.64	1,371.86	6,975.35	6,240.97	0.11	-0.04	0.040
30.00	-39.77	-1.76	0.00	-191.54	0.00	191.54	5,315.55	1,343.98	6,694.83	6,031.39	0.16	-0.05	0.039
35.00	-38.44	-1.76	0.00	-182.74	0.00	182.74	5,241.91	1,316.11	6,420.07	5,823.52	0.22	-0.06	0.039
40.00	-37.14	-1.76	0.00	-173.94	0.00	173.94	5,166.71	1,288.24	6,151.07	5,617.45	0.29	-0.07	0.038
45.00	-36.67	-1.76	0.00	-165.15	0.00	165.15	5,089.97	1,260.37	5,887.82	5,413.30	0.36	-0.08	0.038
46.82	-35.19	-1.75	0.00	-161.96	0.00	161.96	5,061.71	1,250.24	5,793.60	5,339.62	0.39	-0.08	0.037
50.00	-33.52	-1.73	0.00	-156.40	0.00	156.40	5,011.68	1,232.50	5,630.33	5,211.18	0.45	-0.09	0.037
53.65	-33.18	-1.73	0.00	-150.07	0.00	150.07	5,014.45	1,233.48	5,639.26	5,218.23	0.52	-0.10	0.035
55.00	-31.93	-1.72	0.00	-147.73	0.00	147.73	4,993.06	1,225.95	5,570.67	5,164.00	0.55	-0.10	0.035
60.00	-30.70	-1.71	0.00	-139.12	0.00	139.12	4,912.86	1,198.08	5,320.29	4,964.54	0.66	-0.11	0.034
65.00	-29.50	-1.69	0.00	-130.58	0.00	130.58	4,831.10	1,170.21	5,075.66	4,767.35	0.77	-0.12	0.033
70.00	-28.31	-1.68	0.00	-122.11	0.00	122.11	4,747.80	1,142.34	4,836.80	4,572.55	0.90	-0.13	0.033
75.00	-27.16	-1.66	0.00	-113.72	0.00	113.72	4,662.94	1,114.47	4,603.69	4,380.25	1.04	-0.13	0.032
80.00	-26.02	-1.63	0.00	-105.44	0.00	105.44	4,576.54	1,086.59	4,376.33	4,190.55	1.18	-0.14	0.031
85.00	-24.91	-1.61	0.00	-97.27	0.00	97.27	4,481.93	1,058.72	4,154.74	3,997.63	1.34	-0.15	0.030
90.00	-23.83	-1.58	0.00	-89.23	0.00	89.23	4,363.94	1,030.85	3,938.90	3,788.90	1.50	-0.16	0.029
94.97	-23.82	-1.58	0.00	-81.39	0.00	81.39	4,246.74	1,003.17	3,730.20	3,587.10	1.68	-0.17	0.028
95.00	-22.04	-1.52	0.00	-81.34	0.00	81.34	4,245.95	1,002.98	3,728.82	3,585.76	1.68	-0.17	0.028
100.00	-21.87	-1.52	0.00	-73.72	0.00	73.72	4,127.96	975.11	3,524.49	3,388.23	1.86	-0.18	0.027
100.47	-21.02	-1.49	0.00	-73.01	0.00	73.01	3,522.04	850.55	3,128.34	2,946.90	1.88	-0.18	0.031
105.00	-20.10	-1.46	0.00	-66.25	0.00	66.25	3,456.72	828.89	2,971.06	2,817.93	2.06	-0.19	0.029
110.00	-19.20	-1.42	0.00	-58.97	0.00	58.97	3,383.20	805.00	2,802.29	2,677.76	2.26	-0.20	0.028
115.00	-18.32	-1.38	0.00	-51.87	0.00	51.87	3,306.70	781.11	2,638.45	2,538.79	2.48	-0.21	0.026
120.00	-17.46	-1.34	0.00	-44.95	0.00	44.95	3,205.56	757.22	2,479.56	2,385.12	2.70	-0.22	0.024
125.00	-16.61	-1.30	0.00	-38.25	0.00	38.25	3,104.43	733.33	2,325.59	2,236.25	2.93	-0.23	0.022
130.00	-14.74	-1.19	0.00	-31.77	0.00	31.77	3,003.30	709.44	2,176.56	2,092.18	3.17	-0.23	0.020
134.00	-12.77	-1.07	0.00	-27.01	0.00	27.01	2,922.39	690.33	2,060.89	1,980.38	3.37	-0.24	0.018
135.00	-11.99	-1.02	0.00	-25.94	0.00	25.94	2,902.16	685.55	2,032.46	1,952.91	3.42	-0.24	0.017
140.00	-11.24	-0.97	0.00	-20.83	0.00	20.83	2,801.03	661.66	1,893.30	1,818.43	3.67	-0.25	0.015
145.00	-10.71	-0.93	0.00	-15.98	0.00	15.98	2,699.90	637.77	1,759.08	1,688.75	3.93	-0.25	0.013
148.62	-10.55	-0.92	0.00	-12.60	0.00	12.60	2,626.75	620.49	1,665.06	1,597.93	4.13	-0.26	0.012
148.62	-10.55	-0.92	0.00	-12.60	0.00	12.60	1,691.62	422.31	1,156.82	1,055.16	4.13	-0.26	0.018
150.00	-10.22	-0.90	0.00	-11.32	0.00	11.32	1,679.60	417.91	1,132.82	1,036.65	4.20	-0.26	0.017
153.00	-6.83	-0.63	0.00	-8.63	0.00	8.63	1,653.13	408.36	1,081.64	996.80	4.36	-0.26	0.013
155.00	-6.41	-0.60	0.00	-7.37	0.00	7.37	1,635.17	401.99	1,048.18	970.47	4.47	-0.26	0.012
160.00	-2.87	-0.29	0.00	-4.39	0.00	4.39	1,589.20	386.07	966.82	905.51	4.75	-0.26	0.007
165.00	-2.54	-0.26	0.00	-2.92	0.00	2.92	1,541.67	370.16	888.75	841.89	5.03	-0.27	0.005
170.00	-1.65	-0.18	0.00	-1.61	0.00	1.61	1,492.60	354.24	813.96	779.71	5.31	-0.27	0.003
175.00	-1.37	-0.15	0.00	-0.73	0.00	0.73	1,432.22	338.32	742.46	714.22	5.59	-0.27	0.002
180.00	0.00	-0.14	0.00	0.00	0.00	0.00	1,364.83	322.40	674.25	648.27	5.87	-0.27	0.000

Analysis Summary

Load Case	Reactions						Max Usage	
	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 + 1.0W	32.93	0.00	69.36	0.00	0.00	4014.82	0.00	0.56
0.9D + 1.0W	32.91	0.00	52.01	0.00	0.00	3964.58	0.00	0.55
1.2D + 1.0Di + 1.0Wi	8.02	0.00	87.25	0.00	0.00	969.78	0.00	0.15
1.2D + 1.0Ev + 1.0Eh	1.74	0.00	69.61	0.00	0.00	247.97	0.00	0.05
0.9D - 1.0Ev + 1.0Eh	1.74	0.00	48.21	0.00	0.00	244.07	0.00	0.04
1.0D + 1.0W	6.57	0.00	57.83	0.00	0.00	795.62	0.00	0.12



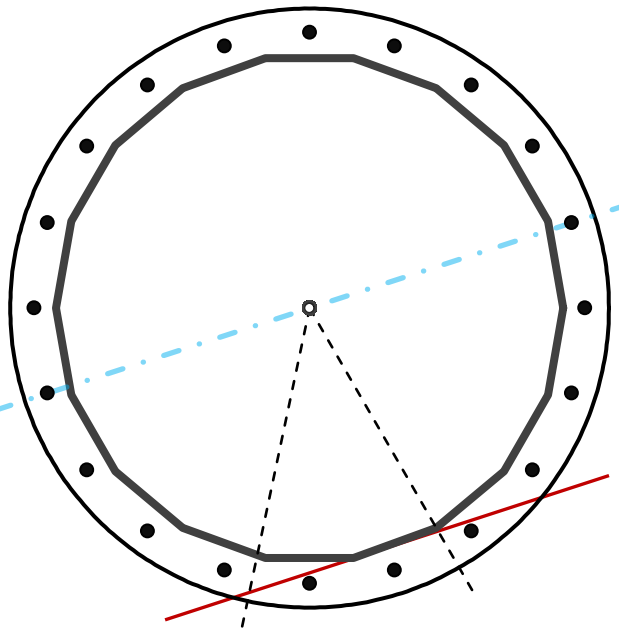
## Base Plate & Anchor Rod Analysis

Pole Dimensions		
Number of Sides	18	-
Diameter	62.45	in
Thickness	7/16	in
Orientation Offset		°

Base Reactions		
Moment, Mu	4,014.8	k-ft
Axial, Pu	69.4	k
Shear, Vu	32.9	k
Neutral Axis	198	°

Report Capacities		
Component	Capacity	Result
Base Plate	11%	Pass
Anchor Rods	61%	Pass
Dwyidag	-	-

Base Plate		
Shape	Round	-
Diameter, $\phi$	75	in
Thickness	2 3/4	in
Grade	A572-60	
Yield Strength, Fy	60	ksi
Tensile Strength, Fu	75	ksi
Clip	N/A	in
Orientation Offset		°
Anchor Rod Detail	d	$\eta=0.5$
Clear Distance	3	in
Applied Moment, Mu	299.7	k
Bending Stress, $\phi Mn$	2835.0	k



Original Anchor Rods		
Arrangement	Radial	-
Quantity	20	-
Diameter, $\phi$	2 1/4	in
Bolt Circle	69	in
Grade	A615-75	
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Spacing	10.8	in
Orientation Offset		°
Applied Force, Pu	148.0	k
Anchor Rods, $\phi Pn$	243.6	k

# Calculations for Monopole Base Plate & Anchor Rod Analysis

## Reaction Distribution

Reaction	Shear Vu	Moment Mu	Factor
-	k	k-ft	-
Base Forces	32.9	4014.8	1.00
Anchor Rod Forces	32.9	4014.8	1.00
Additional Bolt (Grp1) Forces	0.0	0.0	0.00
Additional Bolt (Grp2) Forces	0.0	0.0	0.00
Dywidag Forces	0.0	0.0	0.00
Stiffener Forces	0.0	0.0	0.00

## Geometric Properties

Section	Gross Area	Net Area	Individual Inertia	Threads per Inch	Moment of Inertia
-	in <sup>2</sup>	in <sup>2</sup>	in <sup>4</sup>	#	in <sup>4</sup>
Pole	84.8008	4.7112	0.3016		40768.65
Bolt	3.9761	3.2477	0.8393	4.5	36057.13
Bolt1	0.0000	0.0000	0.0000	0	0.00
Bolt2	0.0000	0.0000	0.0000	0	0.00
Dywidag	0.0000	0.0000	0.0000		0.00
Stiffener	0.0000	0.0000	0.0000		0.00

### Base Plate

Shape	Round	-
Diameter, D	75	in
Thickness, t	2.75	in
Yield Strength, Fy	60	ksi
Tensile Strength, Fu	75	ksi
Base Plate Chord	41.533	in
Detail Type	d	-
Detail Factor	0.50	-
Clear Distance	3	-

### Anchor Rods

Anchor Rod Quantity, N	20	-
Rod Diameter, d	2.25	in
Bolt Circle, BC	69	in
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	148.0	k
Applied Shear, Vu	0.8	k
Compressive Capacity, $\phi P_n$	243.6	k
Tensile Capacity, $\phi R_n$	0.608	OK
Interaction Capacity	0.614	OK

### External Base Plate

Chord Length AA	34.592	in
Additional AA	5.500	in
Section Modulus, Z	75.799	in <sup>3</sup>
Applied Moment, Mu	411.0	k-ft
Bending Capacity, $\phi M_n$	4093.2	k-ft
Capacity, Mu/ $\phi M_n$	0.100	OK

Chord Length AB	32.785	in
Additional AB	5.500	in
Section Modulus, Z	72.383	in <sup>3</sup>
Applied Moment, Mu	228.3	k-ft
Bending Capacity, $\phi M_n$	3908.7	k-ft
Capacity, Mu/ $\phi M_n$	0.058	OK

Bend Line Length	27.768	in
Additional Bend Line	0.000	in
Section Modulus, Z	52.499	in <sup>3</sup>
Applied Moment, Mu	299.7	k-ft
Bending Capacity, $\phi M_n$	2835.0	k-ft
Capacity, Mu/ $\phi M_n$	0.106	OK

### Internal Base Plate

Arc Length	0.000	in
Section Modulus, Z	0.000	in <sup>3</sup>
Moment Arm	0.000	in
Applied Moment, Mu	0.0	k-ft
Bending Capacity, $\phi M_n$	0.0	k-ft
Capacity, Mu/ $\phi M_n$		

# Flange Plate Analysis

Flange Plate	Plate Type	<b>Flange</b>	<b>@ 149 ft</b>
	Pole Diameter	30.08	in
	Pole Thickness	0.25	in
	Plate Diameter	37.5	in
	Plate Thickness	2	in
	Plate Fy	50	ksi
	Weld Length	5/16	in
	f <sub>s</sub> Resistance	177.19	k-in
	Applied	13.74	k-in

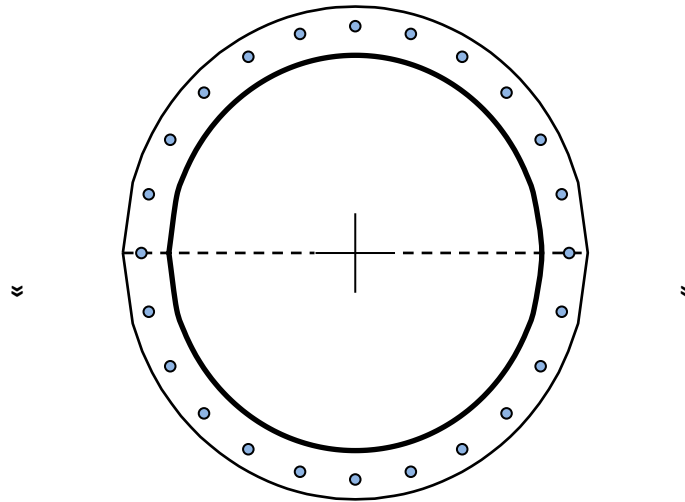
Code Rev.	<b>H</b>
Moment	187.7 k-ft
Axial	14.0 k

Date	6/4/2021
Engineer	H.Altahan
Site #	310972
Carrier	VZW

Required Flange Thickness:  
0.56 in OK

Stiffeners	#	
------------	---	--

Bolts	#	<b>24</b>	
	Bolt Circle	34.5	in
	(R)adial / (S)quare	R	
	Diameter	1	in
	Hole Diameter	1 1/8	in
	Type	A325	
	Fy	92	ksi
	Fu	120	ksi
	f <sub>s</sub> Resistance	54.52	k
	Applied	10.29	k



Reinforcement	#	
---------------	---	--

**Plate Stress Ratio:**  
8% Pass

**Bolt Stress Ratio:**  
19% Pass

Extra Bolts O	#	
---------------	---	--



Maser Consulting Connecticut  
2000 Midlantic Drive, Suite 100  
Mt. Laurel, NJ 08054  
856.797.0412  
Peter.Albano@colliersengineering.com

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## Post-Mod Antenna Mount Analysis Report and PMI Requirements

Mount Fix

SMART Tool Project #: 10069540  
Maser Consulting Connecticut Project #: 21777880A

June 30, 2021

### Site Information

Site ID: 469063-VZW / NE WATERFORD SE CT  
Site Name: NE WATERFORD SE CT  
Carrier Name: Verizon Wireless  
Address: 15 Miner Lane  
Waterford, Connecticut 06385  
New London County  
Latitude: 41.329167°  
Longitude: -72.124444°

### Structure Information

Tower Type: Monopole  
Mount Type: 12.50-Ft Platform

FUZE ID # 16067742

### Analysis Results

Platform: 73.2% Pass

### \*\*\*Contractor PMI Requirements:

*Included at the end of this MA report*

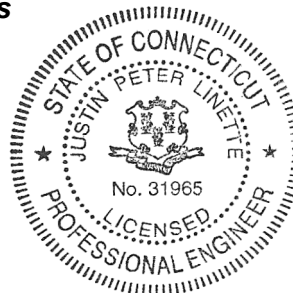
*Available & Submitted via portal at <https://pmi.vzwsmart.com>*

*Contractor - Please Review Specific Site PMI Requirements Upon Award*

*Requirements also Noted on Mount Modification Drawings*

*Requirements may also be Noted on A & E drawings*

Report Prepared By: Selene Chen



**Executive Summary:**

The objective of this report is to summarize the analysis results of the antenna support mount including the proposed modifications at the subject facility for the final wireless telecommunications configuration, per the applicable codes and standards.

This analysis is inclusive of the mount structure only and does not address the structural capacity of the supporting structure. This mounting frame was not analyzed as an anchor attachment point for fall protection. All climbing activities are required to have a fall protection plan completed by a competent person.

**Sources of Information:**

Document Type	Remarks
<i>Radio Frequency Data Sheet (RFDS)</i>	<i>Verizon Wireless, Site ID: 1708491, dated March 22, 2021</i>
<i>Mount Mapping Report</i>	<i>HighTower Solutions, Inc., Site #: 469063, dated May 7, 2020</i>
<i>Mount Analysis Report</i>	<i>Maser Consulting Connecticut, Project #: 21777880A, dated May 7, 2021</i>
<i>Mount Modification Drawings</i>	<i>Maser Consulting Connecticut, Project #: 21777880A, dated June 30, 2021</i>

**Analysis Criteria:**

Codes and Standards:	ANSI/TIA-222-H
Wind Parameters:	Basic Wind Speed (Ultimate 3-sec. Gust), $V_{ULT}$ : 127 mph
	Ice Wind Speed (3-sec. Gust): 50 mph
	Design Ice Thickness: 1.00 in
	Risk Category: II
	Exposure Category: C
	Topographic Category: 1
	Topographic Feature Considered: N/A
	Topographic Method: N/A
	Ground Elevation Factor, $K_e$ : 0.997
Seismic Parameters:	$S_s$ : 0.191
	$S_1$ : 0.052
Maintenance Parameters:	Wind Speed (3-sec. Gust): 30 mph
	Maintenance Live Load, $L_v$ : 250 lbs.
	Maintenance Live Load, $L_m$ : 500 lbs.
Analysis Software:	RISA-3D (V17)



**Final Loading Configuration:**

The following equipment has been considered for the analysis of the mount:

Mount Elevation (ft)	Equipment Elevation (ft)	Quantity	Manufacturer	Model	Status
157.00	160.04	6	Commscope	JAHH-65B-R3B	Added
		3	Samsung	MT6407-77A	
		3	Commscope	CBC78T-DS-43-2X	
		3	Samsung	B2/B66A RRH-BR049	
		3	Samsung	B5/B13 RRH-BR04C	
		2	Raycap	RRFDC-3315-PF-48*	Retained

\* Equipment is flush mounted directly to the Monopole. They are not mounted on platform mount and are not included in this mount analysis.

The recent mount mapping reported existing OVP units. It is acceptable to install up to any three (3) of the OVP model numbers listed below as required at any location other than the mount face without affecting the structural capacity of the mount. If OVP units are installed on the mount face, a mount re-analysis may be required unless replacing an existing OVP.

Model Number	Ports	AKA
DB-B1-6C-12AB-0Z	6	OVP-6
RVZDC-6627-PF-48	12	OVP-12

**Standard Conditions:**

1. All engineering services are performed on the basis that the information provided to Maser Consulting Connecticut and used in this analysis is current and correct. The existing equipment loading has been applied at locations determined from the supplied documentation. Any deviation from the loading locations specified in this report shall be communicated to Maser Consulting Connecticut to verify deviation will not adversely impact the analysis.
2. Mounts are assumed to have been properly fabricated, installed and maintained in good condition, twist free and plumb in accordance with its original design and manufacturer’s specifications.

Obvious safety and structural issues/deficiencies noticed at the time of the mount mapping and reported in the Mount Mapping Report are assumed to be corrected and documented as part of the PMI process and are not considered in the mount analysis.

The mount analysis and the mount mapping are not a condition assessment of the mount. Proper maintenance and condition assessments are still required post analysis.

3. For mount analyses completed from other data sources (including new replacement mounts) and not specifically mapped by Maser Consulting Connecticut, the mounts are assumed to have been properly fabricated, installed and maintained in good condition, twist free and plumb in accordance with its original design and manufacturer’s specifications.
4. All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report.

5. The mount was checked up to, and including, the bolts that fasten it to the mount collar/attachment and threaded rod connections in collar members if applicable. Local deformation and interaction between the mount collar/attachment and the supporting tower structure are outside the scope of this analysis.
6. All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. Maser Consulting Connecticut is not responsible for the conclusion, opinions, and recommendations made by others based on the information supplied.
7. Structural Steel Grades have been assumed as follows, if applicable, unless otherwise noted in this analysis:
  - o Channel, Solid Round, Angle, Plate      ASTM A36 (Gr. 36)
  - o HSS (Rectangular)                              ASTM 500 (Gr. B-46)
  - o Pipe    ASTM A53 (Gr. B-35)
  - o Threaded Rod                                      F1554 (Gr. 36)
  - o Bolts    ASTM A325
8. Any mount modifications listed under Sources of Information are assumed to have been installed per the design specifications.

**Discrepancies between in-field conditions and the assumptions listed above may render this analysis invalid unless explicitly approved by Maser Consulting Connecticut.**

**Analysis Results:**

Component	Utilization %	Pass/Fail
Face Horizontal	25.5 %	Pass
Standoff Horizontal	13.3 %	Pass
Platform Crossmember	11.4 %	Pass
Mount Pipe	51.2 %	Pass
Corner Plate	29.2 %	Pass
Grating Support	15.7 %	Pass
Cross Arm Plate	32.5 %	Pass
Support Rail	42.5 %	Pass
Connection Angle	73.2 %	Pass
Kicker	10.4 %	Pass
Mount Connection	25.2 %	Pass

<b>Structure Rating – (Controlling Utilization of all Components)</b>	<b>73.2%</b>
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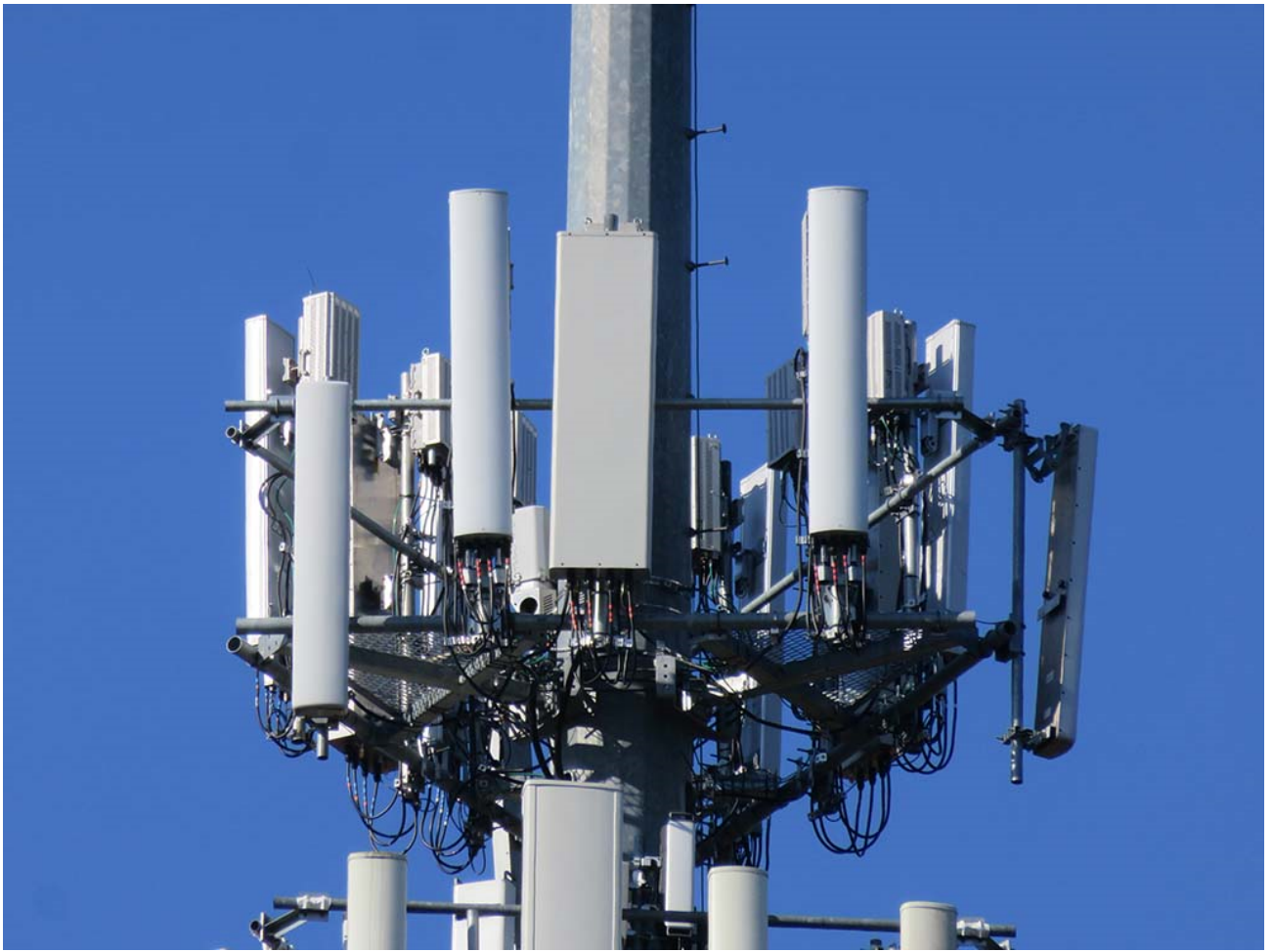
**Recommendation:**

The existing mount will be **SUFFICIENT** for the final loading after the proposed modifications are successfully completed.

ANSI/ASSP rigging plan review services compliant with the requirements of ANSI/TIA 322 are available for a Construction Class IV site or other, if required. Separate review fees will apply.

**Attachments:**

1. Mount Photos
2. Mount Mapping Report (for reference only)
3. Analysis Calculations
- 4. Contractor Required PMI Report Deliverables**
5. Antenna Placement Diagrams
6. TIA Adoption and Wind Speed Usage Letter



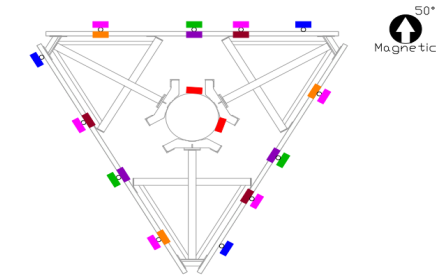


# Antenna Mount Mapping Form (PATENT PENDING)

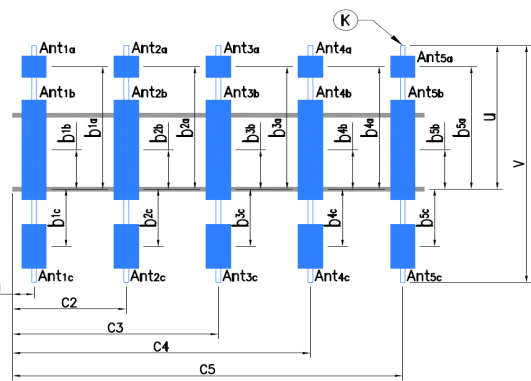
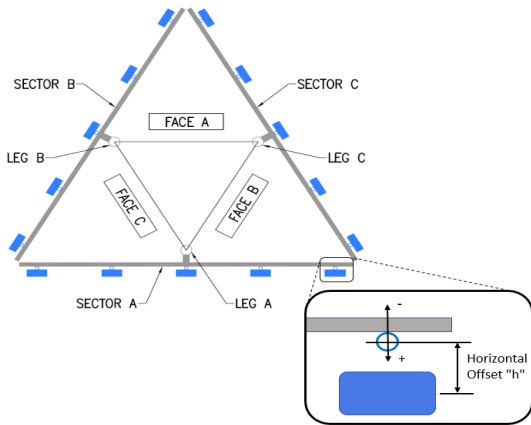
FCC #  
1268713

<b>Tower Owner:</b>	American Tower Corp.	<b>Mapping Date:</b>	5/7/2020
<b>Site Name:</b>	NE WATERFORD SE CT	<b>Tower Type:</b>	Monopole
<b>Site Number or ID:</b>	469063	<b>Tower Height (Ft.):</b>	N/A
<b>Mapping Contractor:</b>	HighTower Solutions, Inc.	<b>Mount Elevation (Ft.):</b>	160'

This antenna mapping form is the property of TES and under **PATENT PENDING**. The formation contained herein is considered confidential in nature and is to be used only for the specific customer it was intended for. Reproduction, transmission, publication, modification or disclosure by any method is prohibited except by express written permission of TES. All means and methods are the responsibility of the contractor and the work shall be compliant with ANSI/ASSE A 10.48, OSHA, FCC, FAA and other safety requirements that may apply. TES is not warranting the usability of the safety climb as it must be assessed prior to each use in compliance with OSHA requirements.



- Legend**
- Antenna #1
  - Antenna #2
  - Antenna #3
  - Antenna #4
  - Antenna #5
  - Antenna #6
  - Antenna #7



**Antenna Layout**

Mount Pipe Configuration and Geometries [Unit = Inches]							
Sector / Position	Mount Pipe Size & Length	Vertical Offset Dimension "u"	Horizontal Offset "C1, C2, C3, etc."	Sector / Position	Mount Pipe Size & Length	Vertical Offset Dimension "u"	Horizontal Offset "C1, C2, C3, etc."
A1	7"/2.38"Dia.Pipe x.15"	53.00	18.00	C1	7"/2.38"Dia.Pipe x.15"	53.00	5.00
A2	9"/2.88"Dia.Pipe x.18"	89.50	50.00	C2	9"/2.88"Dia.Pipe x.18"	87.00	48.50
A3	9"/2.88"Dia.Pipe x.18"	89.50	74.00	C3	9"/2.88"Dia.Pipe x.18"	87.00	84.50
A4	9"/2.88"Dia.Pipe x.18"	89.50	122.00	C4	9"/2.88"Dia.Pipe x.18"	87.00	125.50
A5				C5			
A6				C6			
B1	7"/2.38"Dia.Pipe x.15"	54.00	17.00	D1			
B2	9"/2.88"Dia.Pipe x.18"	87.00	48.50	D2			
B3	9"/2.88"Dia.Pipe x.18"	87.00	76.50	D3			
B4	9"/2.88"Dia.Pipe x.18"	87.00	118.50	D4			
B5				D5			
B6				D6			

Distance from top of bottom support rail to lowest tip of ant./eqpt. of Carrier above. (N/A if > 10 ft.)

Distance from top of bottom support rail to highest tip of ant./eqpt. of Carrier below. (N/A if > 10 ft.)

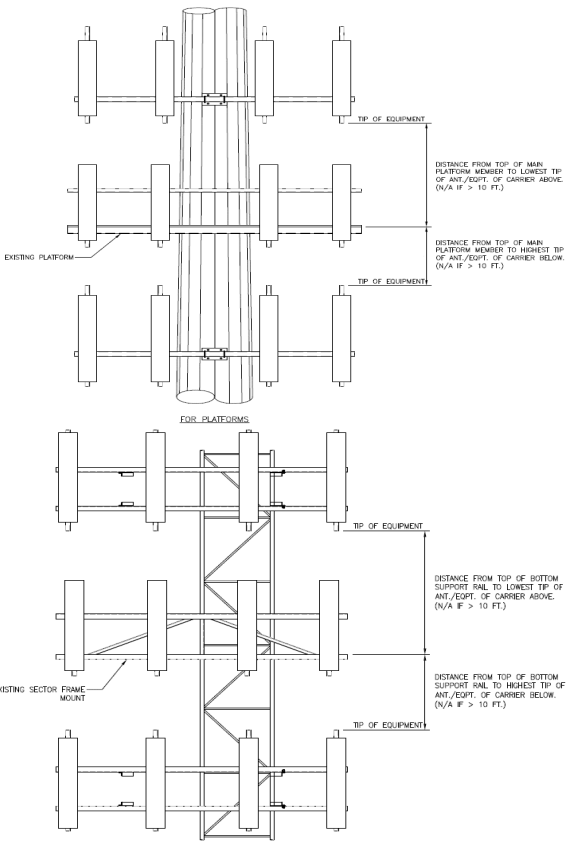
Please enter additional information or comments below.

There are (2) RFS Squids (RRFDC-3315-PF-48) mounted to the tower at 55° and 155° / Height - 162'6" to Base / Dimensions - 19"Tx16"Wx11"

Tower Face Width at Mount Elev. (ft.): \_\_\_\_\_ Tower Leg Size or Pole Shaft Diameter at Mount Elev. (in.): 27.75

Ants. Items	Enter antenna model. If not labeled, enter "Unknown".					Mounting Locations [Units are inches and degrees]			Photos of antennas Photo Numbers
	Antenna Models if Known	Width (in.)	Depth (in.)	Height (in.)	Coax Size and Qty	Vertical Distances "b <sub>1a</sub> , b <sub>2a</sub> , b <sub>3a</sub> , b <sub>1b</sub> ..." (In.)	Horiz. Offset "h" (Use "-" if Ant. is behind)	Antenna Azimuth (Degrees)	
<b>Sector A</b>									
Ant <sub>1a</sub>									
Ant <sub>1b</sub>	BXA-70063-6CF-EDIN-	11.25	5.25	70.50	N/A	12.00	11.50	50.00	3867
Ant <sub>1c</sub>									
Ant <sub>2a</sub>									
Ant <sub>2b</sub>	HBXX-6517DS-A2M	12.00	6.50	75.00	(2) 1 1/4"	51.00	9.00	50.00	3877
Ant <sub>2c</sub>	UHFA, B25 RRH 4x30	12.25	7.00	21.00	(2) 1 1/4"	78.00	-7.50		3889
Ant <sub>3a</sub>									
Ant <sub>3b</sub>	QUAD656C0000G	20.50	7.25	74.25	(2) 1 1/4"	41.00	10.00	50.00	3872
Ant <sub>3c</sub>	B13 RRH 4x30	12.00	7.50	21.00	(2) 1 1/4"	78.00	-6.50		3893
Ant <sub>4a</sub>									
Ant <sub>4b</sub>	HBXX-6517DS-A2M	12.00	6.50	75.00	(2) 1 1/4"	52.00	9.00	50.00	3877
Ant <sub>4c</sub>	UHIE, B66a RRH 4x45	11.75	7.25	25.50	(2) 1 1/4"	78.00	-7.50		3885
Ant <sub>5a</sub>									
Ant <sub>5b</sub>									
Ant <sub>5c</sub>									
<b>Sector B</b>									
Ant <sub>1a</sub>									
Ant <sub>1b</sub>	BXA-70063-6CF-EDIN-	11.25	5.25	70.50	N/A	12.00	10.50	170.00	3867
Ant <sub>1c</sub>									
Ant <sub>2a</sub>									
Ant <sub>2b</sub>	HBXX-6517DS-A2M	12.00	6.50	75.00	(2) 1 1/4"	51.00	9.50	170.00	3877
Ant <sub>2c</sub>	UHFA, B25 RRH 4x30	12.25	7.00	21.00	(2) 1 1/4"	78.00	-7.50		3889
Ant <sub>3a</sub>									
Ant <sub>3b</sub>	QUAD656C0000G	20.50	7.25	74.25	(2) 1 1/4"	42.00	10.50	170.00	3872
Ant <sub>3c</sub>	B13 RRH 4x30	12.00	7.50	21.00	(2) 1 1/4"	79.00	-7.00		3893
Ant <sub>4a</sub>									
Ant <sub>4b</sub>	HBXX-6517DS-A2M	12.00	6.50	75.00	(2) 1 1/4"	49.00	8.50	170.00	3877
Ant <sub>4c</sub>	UHIE, B66a RRH 4x45	11.75	7.25	25.50	(2) 1 1/4"	76.00	-7.00		3885
Ant <sub>5a</sub>									
Ant <sub>5b</sub>									
Ant <sub>5c</sub>									

Mount Azimuth (Degree) for Each Sector and Climbing Information		
Sector A:	50.00	Deg
Sector B:	170.00	Deg
Sector C:	290.00	Deg
Sector D:		Deg
Climbing:	270.00	Deg N/A
Climbing Facility	Corrosion Type:	Good condition.
	Access:	Climbing path was obstructed.
	Condition:	N/A



Sector C									
Ant <sub>1a</sub>									
Ant <sub>1b</sub>	BXA-70063-6CF-EDIN-	11.25	5.25	70.50	N/A	12.00	11.00	290.00	3867
Ant <sub>1c</sub>									
Ant <sub>2a</sub>									
Ant <sub>2b</sub>	HBXX-6517DS-A2M	12.00	6.50	75.00	(2) 1 1/4"	50.00	8.50	290.00	3877
Ant <sub>2c</sub>	UHFA, B25 RRH 4x30	12.25	7.00	21.00	(2) 1 1/4"	76.00	-7.50		3889
Ant <sub>3a</sub>									
Ant <sub>3b</sub>	QUAD656C0000G	20.50	7.25	74.25	(2) 1 1/4"	42.00	10.50	290.00	3872
Ant <sub>3c</sub>	B13 RRH 4x30	12.00	7.50	21.00	(2) 1 1/4"	78.00	-7.00		3893
Ant <sub>4a</sub>									
Ant <sub>4b</sub>	HBXX-6517DS-A2M	12.00	6.50	75.00	(2) 1 1/4"	49.00	9.00	290.00	3877
Ant <sub>4c</sub>	UHIE, B66a RRH 4x45	11.75	7.25	25.50	(2) 1 1/4"	76.00	-7.50		3885
Ant <sub>5a</sub>									
Ant <sub>5b</sub>									
Ant <sub>5c</sub>									
Sector D									
Ant <sub>1a</sub>									
Ant <sub>1b</sub>									
Ant <sub>1c</sub>									
Ant <sub>2a</sub>									
Ant <sub>2b</sub>									
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Ant <sub>4a</sub>									
Ant <sub>4b</sub>									
Ant <sub>4c</sub>									
Ant <sub>5a</sub>									
Ant <sub>5b</sub>									
Ant <sub>5c</sub>									

Observed Safety and Structural Issues During the Mount Mapping		
Issue #	Description of Issue	Photo #
1		
2		
3		
4		
5		
6		
7	a	
8		

- Mapping Notes**
1. Please report any visible structural or safety issues observed on the antenna mounts (Damaged members, loose connections, tilting mounts, safety climb issues, etc.)
  2. If the thickness of the existing pipes or tubing can't be obtained from a general tool (such as Caliper), please use an ultrasonic measurement tool (thickness gauge) to measure the thickness.
  3. Please create all required detail sketches of the mounts and insert them into the "Sketches" tab.
  4. Please measure and enter the bolt sizes and types under the Members Box in the spreadsheet of the mount type.
  5. Take and label the photos of the tower, mounts, connections, antennas and all measurements. Minimum 50 photos are required.
  6. Please measure and report the size and length of all existing antenna mounting pipes.
  7. Please measure and report the antenna information for all sectors.
  8. Don't delete or rearrange any sheet or contents of any sheet from this mapping form.

**Standard Conditions**

1. Obvious safety and structural issues/deficiencies noticed at the time of the mount mapping are to be reported in this mapping. However, this mount mapping is not a condition assessment of the mount.





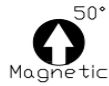
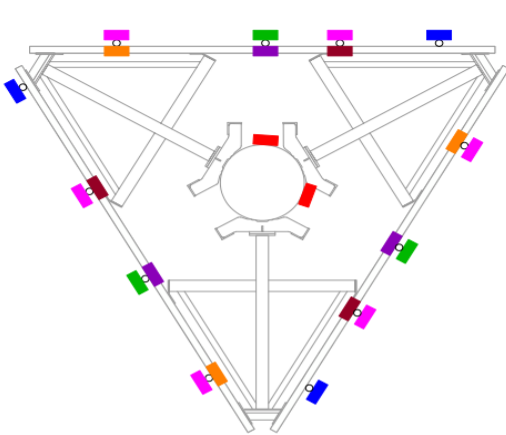
## Antenna Mount Mapping Form (PATENT PENDING)

FCC #  
1268713

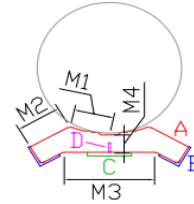
<b>Tower Owner:</b>	American Tower Corp.	<b>Mapping Date:</b>	5/7/2020
<b>Site Name:</b>	NE WATERFORD SE CT	<b>Tower Type:</b>	Monopole
<b>Site Number or ID:</b>	469063	<b>Tower Height (Ft.):</b>	N/A
<b>Mapping Contractor:</b>	HighTower Solutions, Inc.	<b>Mount Elevation (Ft.):</b>	160'

This antenna mapping form is the property of TES and under **PATENT PENDING**. The formation contained herein is considered confidential in nature and is to be used only for the specific customer it was intended for. Reproduction, transmission, publication, modification or disclosure by any method is prohibited except by express written permission of TES. All means and methods are the responsibility of the contractor and the work shall be compliant with ANSI/ASSE A 10.48, OSHA, FCC, FAA and other safety requirements that may apply. TES is not warranting the usability of the safety climb as it must be assessed prior to each use in compliance with OSHA requirements.

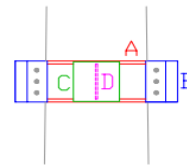
### Please Insert Sketches of the Antenna Mount



Plan View

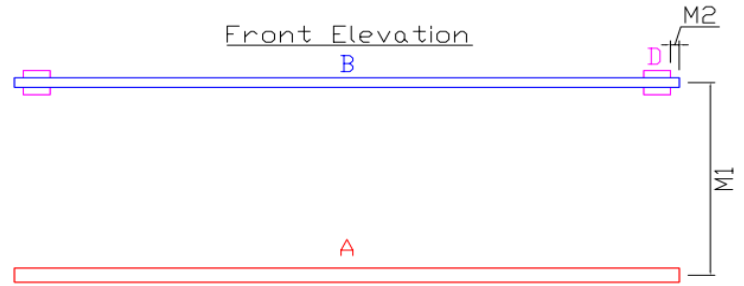
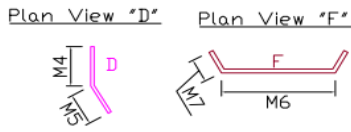
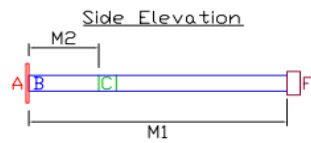
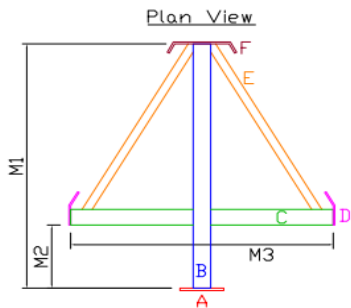


Front Elevation



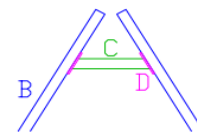
- Legend**
- - Antenna #1
  - - Antenna #2
  - - Antenna #3
  - - Antenna #4
  - - Antenna #5
  - - Antenna #6
  - - Antenna #7

A	.62" Flat	Welded
B	8.50" T/4" x 4" x .38" Angle	3-.62" All Thread
C	8.25" Tx 8.50" Wx .75" Flat	Welded
D	8.25" Tx 2" Wx .38" Flat	Welded
M1	6.75"	
M2	7.50"	
M3	16.50"	
M4	3.25"	
	Measurement of Gap at All Thread	15"



A	8" Tx 8" Wx .75" Flat	4-.62"
B	5'2" L/4" Sq. Tube x .237"	Welded
C	2'4.50" L/4" Sq. Tube x .237"	Welded
D	6" Tx .38"	Welded
E	4'4" L/2" x 2" x .25" Angle	Welded
F	6" Tx .50"	Welded
M1	5'2"	
M2	16"	
M3	5'1"	
M4	5.25"	
M5	3.50"	
M6	12.75"	
M7	3.25"	

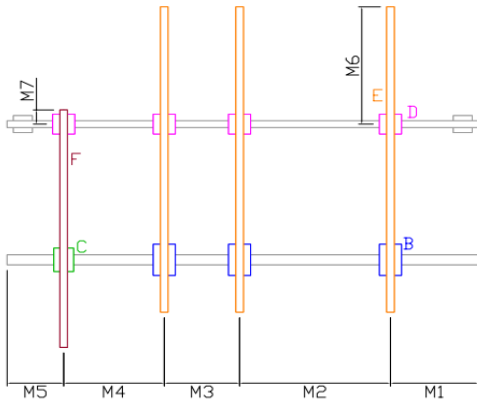
Plan View



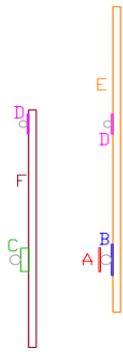
A	12'6" L/3.50" Dia. Pipe x .20"	1-.50" U-Bolt
B	12'6.25" L/2.38" Dia. Pipe x .15"	2-.50" U-Bolt
C	15.50" L/2.50" x 2.50" x .22" Angle	Welded
D	6" Tx 6" Wx .38" Flat	2-.50" U-Bolt
M1	4'	
M2	2"	

Please Insert Sketches of the Antenna Mount, cont'd

Front Elevation  
Alpha

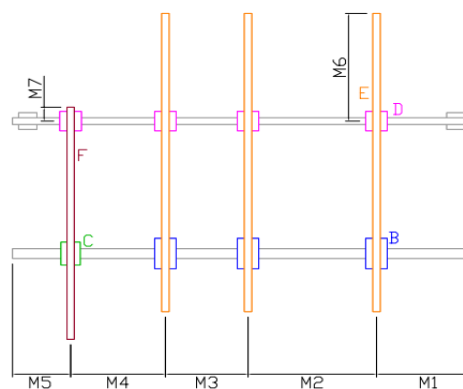


Side Elevation

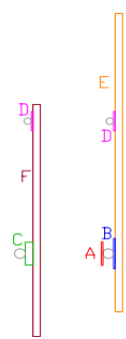


A	8.50"Tx1.50"Wx.38"Flat	2-.50" All Thread
B	11"Tx7"Wx.38" Flat	Sharing A
C	8.25"Tx2.50"x6.25"x.32" Channel	2-.50" U-Bolt
D	7"Tx7"Wx.38"Flat	2-.50" U-Bolt
E	9"Tx2.88"Dia.Pipe x.18"	2-.50" U-Bolt
F	7"Tx2.38"Dia.Pipe x.15"	2-.50" U-Bolt
M1	2'4"	
M2	4'	
M3	2'	
M4	2'8"	
M5	1'6"	
M6	3'5.50"	
M7	5"	

Front Elevation  
Beta

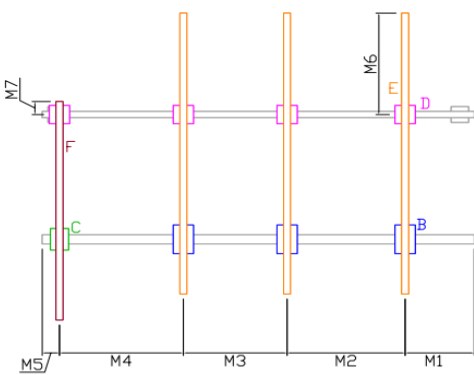


Side Elevation

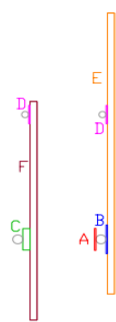


A	8.50"Tx1.50"Wx.38"Flat	2-.50" All Thread
B	11"Tx7"Wx.38" Flat	Sharing A
C	8.25"Tx2.50"x6.25"x.32" Channel	2-.50" U-Bolt
D	7"Tx7"Wx.38"Flat	2-.50" U-Bolt
E	9"Tx2.88"Dia.Pipe x.18"	2-.50" U-Bolt
F	7"Tx2.38"Dia.Pipe x.15"	2-.50" U-Bolt
M1	2'7.5"	
M2	3'6"	
M3	2'4"	
M4	2'7.5"	
M5	1'5"	
M6	3'3"	
M7	6"	

Front Elevation  
Gamma

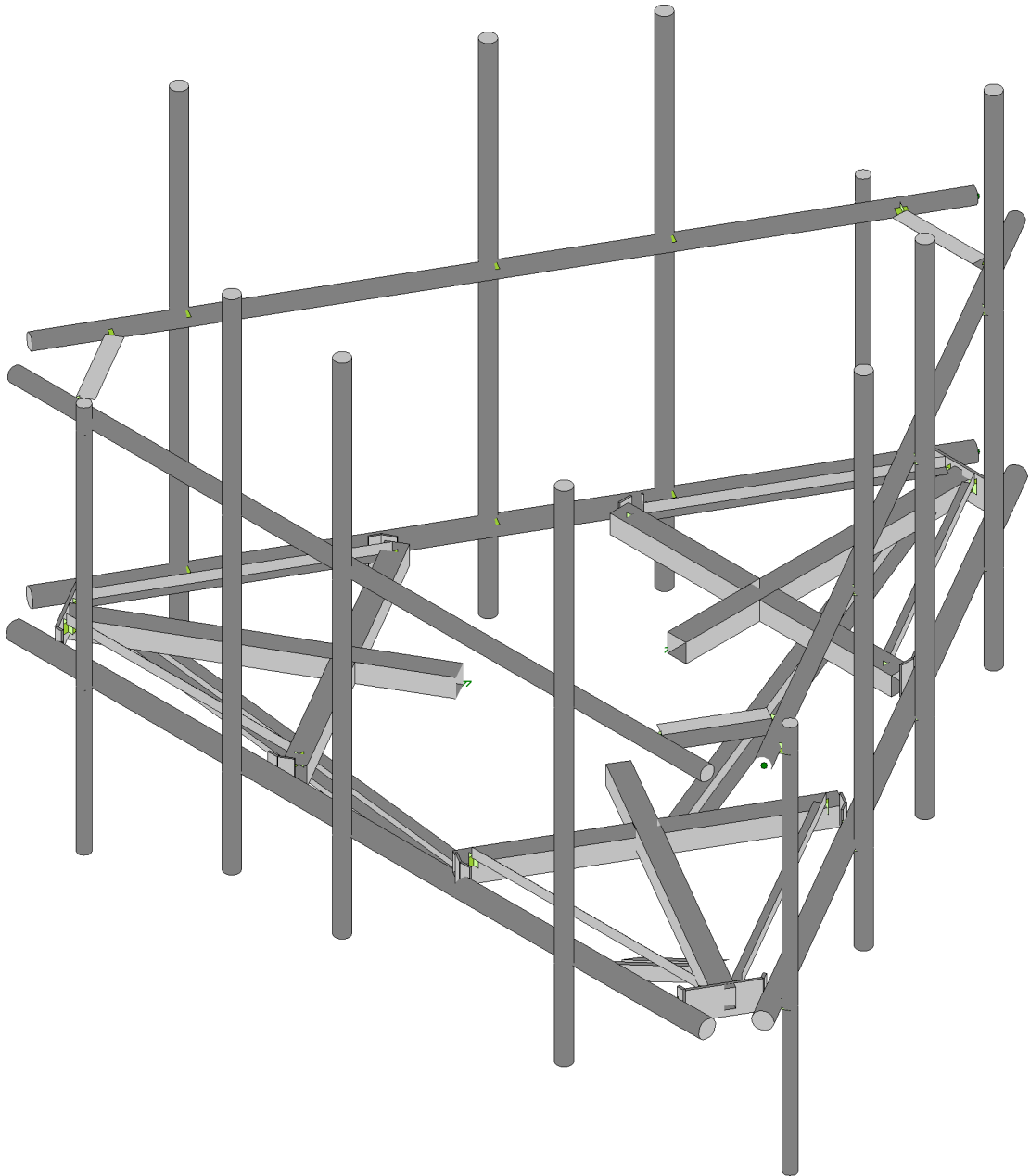
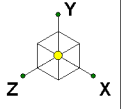


Side Elevation



A	8.50"Tx1.50"Wx.38"Flat	2-.50" All Thread
B	11"Tx7"Wx.38" Flat	Sharing A
C	8.25"Tx2.50"x6.25"x.32" Channel	2-.50" U-Bolt
D	7"Tx7"Wx.38"Flat	2-.50" U-Bolt
E	9"Tx2.88"Dia.Pipe x.18"	2-.50" U-Bolt
F	7"Tx2.38"Dia.Pipe x.15"	2-.50" U-Bolt
M1	2'.5"	
M2	3'5"	
M3	3'	
M4	3'7.5"	
M5	5"	
M6	3'3"	
M7	5"	



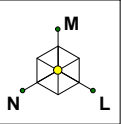


Envelope Only Solution

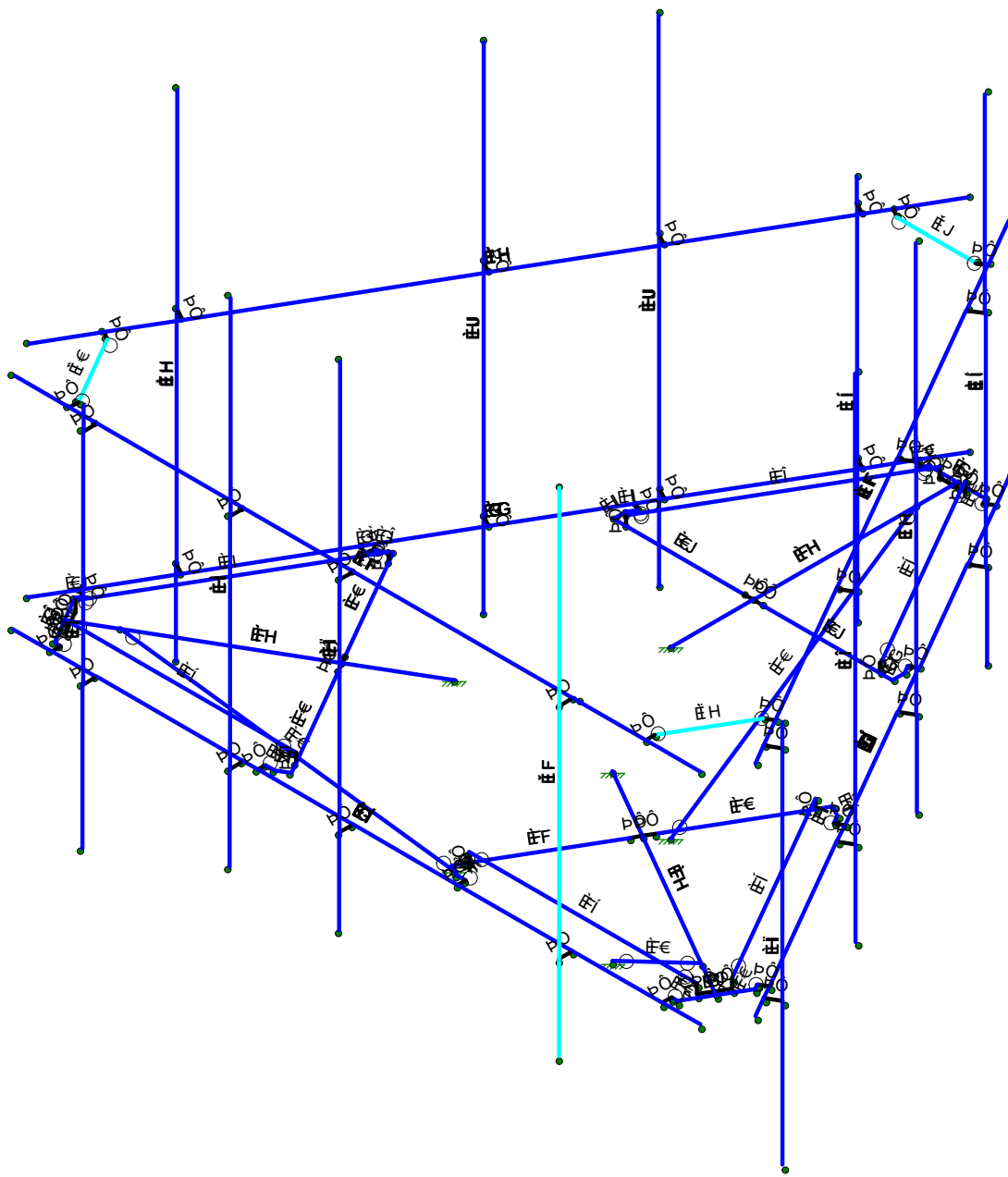
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June 30, 2021 at 10:19 AM

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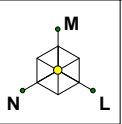


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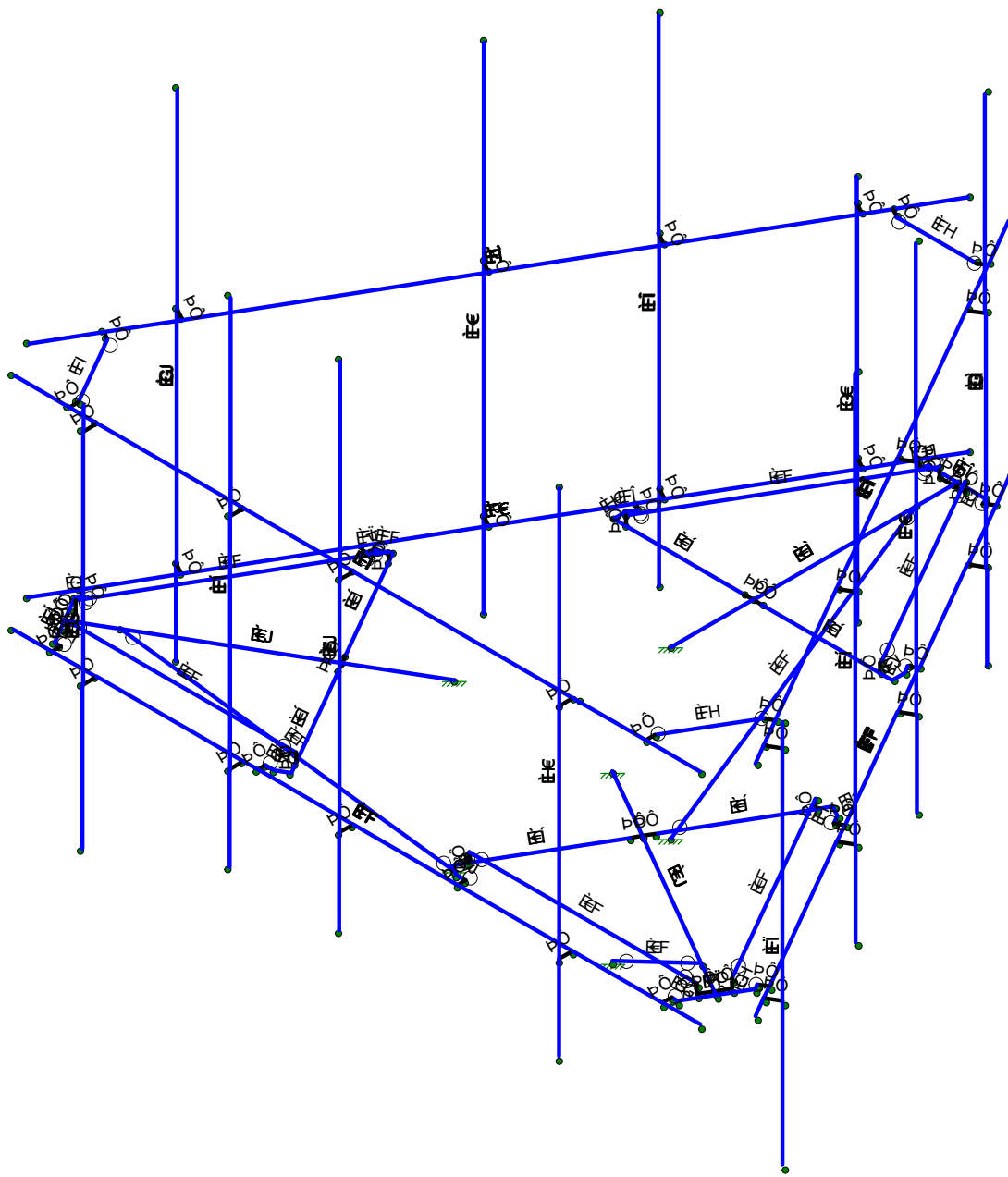


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**A Ya Vyf'Dc]bh@UXg f6 @ '&' : '5 bhYbbUK]fB+\$'8 Yl k'**

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**A Ya Vyf'8 ]qlf]Vi hYX' @ UXq'f6 @ ) + : 'Gfi Wñ fy'K ]'fp\$ \$ '8 Yl LL'f7 c bh]bi YXL**

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**A Ya Vyf'8 ]qlf]Vi hYX' @ UXq'f6 @ ) , : 'Gfi Wñ fy'K ]'fp\$ \$ '8 Yl LL**

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FG	T ÚGOE	Z	HÉ G	HÉ G	€	À FEE
FH	T ÚFOE	Y	FÉÍ I	FÉÍ I	€	À FEE
FI	T ÚFOE	Z	HÉ G	HÉ G	€	À FEE
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GF	T Í GÓ	Y	FÉÍ J	FÉÍ J	€	À FEE
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**A Ya Vyf'8 ]g]f]Vi hYX' @ UXg'f6 @' ) - : 'Gfi Wñ fY'K ]''fB, \$ '8 Y] tL'fT c b]bi YXL**

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ìÍ	T ÙHÔ	Z	HÈ Í	HÈ Í	€	À FEE
ìÏ	T ÙÌ Ô	Ý	€	€	€	À FEE
ìÏ	T ÙÌ Ô	Z	HÈ Í	HÈ Í	€	À FEE
ìJ	T ÙGÔ	Ý	€	€	€	À FEE
J€	T ÙGÔ	Z	HÈ Í	HÈ Í	€	À FEE
JF	T ÙFÔ	Ý	€	€	€	À FEE
JG	T ÙFÔ	Z	HÈ Í	HÈ Í	€	À FEE
JH	T JFÖ	Ý	€	€	€	À FEE
JÌ	T JFÖ	Z	FÈ Ì	FÈ Ì	€	À FEE
JÍ	T ÙHÔ	Ý	€	€	€	À FEE
JÍ	T ÙHÔ	Z	HÈ Í	HÈ Í	€	À FEE
JÏ	T ÙÌ Ô	Ý	€	€	€	À FEE
JÏ	T ÙÌ Ô	Z	HÈ Í	HÈ Í	€	À FEE
JJ	T ÙGÔ	Ý	€	€	€	À FEE
F€€	T ÙGÔ	Z	HÈ Í	HÈ Í	€	À FEE
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F€G	T ÙFÔ	Z	HÈ Í	HÈ Í	€	À FEE
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F€Ï	T F€€	Ý	€	€	€	À FEE
F€Ï	T F€€	Z	È Ì J	È Ì J	€	À FEE
F€J	T FGF	Ý	€	€	€	À FEE
FF€	T FGF	Z	È Ì H	È Ì H	€	À FEE
FFF	T FGG	Ý	€	€	€	À FEE
FFG	T FGG	Z	È Ì H	È Ì H	€	À FEE
FFH	T FGH	Ý	€	€	€	À FEE
FFÌ	T FGH	Z	HÈ Í G	HÈ Í G	€	À FEE
FFÍ	T FG	Ý	€	€	€	À FEE
FFÍ	T FG	Z	GÈ Í	GÈ Í	€	À FEE
FFÏ	T FG	Ý	€	€	€	À FEE
FFÏ	T FG	Z	I È GG	I È GG	€	À FEE
FFJ	T FG	Ý	€	€	€	À FEE
FO€	T FG	Z	I È GG	I È GG	€	À FEE

**A Ya Vyf'8 ]g]f]Vi hYX' @ UXg'f6 @' \*\$ : 'Gfi Wñ fY'K ]''fB,\$ '8 Y] tL**

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**A Ya Vyf'8 ]gfi]Vi hYX'@ UXg'f6 @'\*) : 'Gfi Wi fy'Ka ''f\$'8 Yl'f7 cb]bi YXL**

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I	T Í€	Z	€	€



**A Ya Vyf'8 jqlf]Vi hYX'@ UXg'f6 @'\*) : Gfi Wi fy'Ka ''f\$'8 Yl'f7 cb]bi YXL**

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**A Ya Vyf'8 jqlf]Vi hYX'@ UXg'f6 @'\*\*) : Gfi Wi fy'Ka ''f\$'8 Yl'f7**

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Í	T F€	Y	ÈH	ÈH
Î	T F€	Z	ËËH	ËËH
Ï	T ÚHCE	Y	ÈUH	ÈUH
Ì	T ÚHCE	Z	ËËI	ËËI
J	T ÚI CE	Y	ÈG	ÈG
F€	T ÚI CE	Z	ËËI G	ËËI G
FF	T ÚGOE	Y	ÈUH	ÈUH
FG	T ÚGOE	Z	ËËI	ËËI
FH	T ÚFOE	Y	ÈUH	ÈUH
FI	T ÚFOE	Z	ËËI	ËËI
FÍ	TI H	Y	ÈH	ÈH
FÎ	TI H	Z	ËËH	ËËH
FÏ	TI Î	Y	ÈFÍ	ÈFÍ
FÌ	TI Î	Z	ËËFÍ	ËËFÍ
FJ	TÍ FÓ	Y	ÈI F	ÈI F
G€	TÍ FÓ	Z	ËËJF	ËËJF
GF	TÍ GÓ	Y	€	€
GG	TÍ GÓ	Z	€	€
GH	TÍ Î	Y	ÈI	ÈI
G	TÍ Î	Z	ËËI	ËËI
G	TÍ Î	Y	ÈG	ÈG
G	TÍ Î	Z	ËËI	ËËI
G	TÍ €	Y	ÈI	ÈI
G	TÍ €	Z	ËËI G	ËËI G
GJ	TÍ Î	Y	ÈI	ÈI
H€	TÍ Î	Z	ËËI	ËËI
HF	TÍ Î	Y	€	€
HG	TÍ Î	Z	€	€
HH	TJF	Y	€	€
HI	TJF	Z	€	€
HÍ	THI	Y	ÈGF	ÈGF
HÎ	THI	Z	ËËF	ËËF
HÏ	THÍ	Y	ÈH	ÈH
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IF	THÍ	Y	ÈFÍ	ÈFÍ
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II	TI €	Z	€	€































**A Ya Vyf'8 ]g]f]Vi hYX'@ UXg'f6 @' +%. 'Gfi Wñ fY'Ka ''f% \$'8 Y] ŁŁfV cb]bi YXL**

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**A Ya Vyf'8 ]g]f]Vi hYX'@ UXg'f6 @' +&. 'Gfi Wñ fY'Ka ''f&\$'8 Y] Ł**

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Î	T FÉ	Z	ĚH	ĚH
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Ì	T ÚHOE	Z	ĚI	ĚI
J	T ÚI OE	Ý	ĚG	ĚG
FÉ	T ÚI OE	Z	ĚÍ G	ĚÍ G
FF	T ÚGOE	Ý	ĚJH	ĚJH
FG	T ÚGOE	Z	ĚI	ĚI
FH	T ÚFOE	Ý	ĚJH	ĚJH
FI	T ÚFOE	Z	ĚI	ĚI
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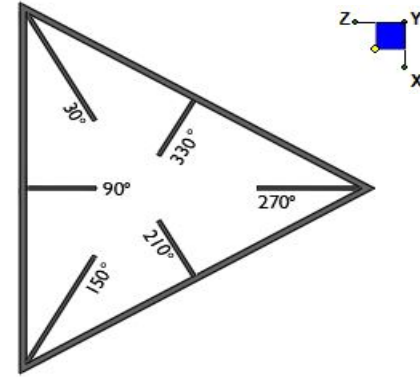




## I. Mount-to-Tower Connection Check

### RISA Model Data

Nodes (labeled per RISA)	Orientation (per graphic of typical platform)
N3	270
N52	30
N81	150



TYPICAL PLATFORM

### Tower Connection Bolt Checks

Any moment resistance?:

Bolt Quantity per Reaction:

$d_x$  (in) (Delta X of typ. bolt config. sketch):

$d_y$  (in) (Delta Y of typ. bolt config. sketch):

Bolt Type:

Bolt Diameter (in):

Required Tensile Strength (kips):

Required Shear Strength (kips):

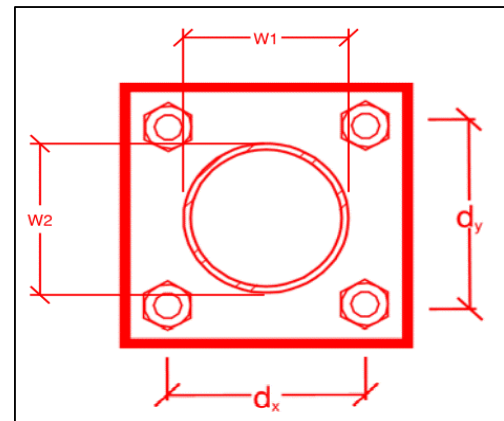
Tensile Strength / bolt (kips):

Shear Strength / bolt (kips):

Tensile Capacity Overall:

Shear Capacity Overall:

yes
4
6
6
A325N
0.625
8.5
4.7
20.7
12.4
10.3%*
9.5%



\*Note: Tension reduction not required if tension or shear capacity < 30%

### Tower Connection Plate and Weld Check

Connecting Standoff Member Shape:

Plate Width (in):

Plate Height (in):

W1 (in):

W2 (in):

Fy (ksi, plate):

$t_{plate}$  (in):

Weld Size (1/16 in):

$\Phi * R_n$  (kip/in):

Required Weld Strength (kip/in):

Plate Bending Capacity:

Weld Capacity:

Rect
8
8
4
4
36
0.75
3
4.18
1.05
12.8%
25.2%

### Max Plate Bending Strengths

$Mu_{xx}$ (kip-in):	1.5
$\Phi * Mn_{xx}$ (kip-in):	36.5
$Mu_{yy}$ (kip-in):	3.2
$\Phi * Mn_{yy}$ (kip-in):	36.5

# Mount Desktop – Post Modification Inspection (PMI) Report Requirements

## Documents & Photos Required from Contractor – Mount Modification

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**Purpose** – to provide Maser Consulting Connecticut the proper documentation in order to complete the required Mount Desktop review of the Post Modification Inspection Report.

- Contractor is responsible for making certain the photos provided as noted below provide confirmation that the modification was completed in accordance with the modification drawings.
- Contractor shall relay any data that can impact the performance of the mount or the mount modification, this includes safety issues.

### **Base Requirements:**

- Any special photos outside of the standard requirements will be indicated on the drawings
- Provide “as built drawings” showing contractor’s name, preparer’s signature, and date. Any deviations from the drawings (proposed modification) must be shown.
- Notation that all hardware was properly installed, and the existing hardware was inspected for any issues.
- Verification that loading is as communicated in the modification drawings. NOTE If loading is different than what is conveyed in the modification drawing contact Maser Consulting Connecticut immediately.
- Each photo should be time and date stamped
- Photos should be high resolution and submitted in a Zip File and should be organized in the file structure as depicted in Schedule A attached.
- Contractor shall ensure that the safety climb wire rope is supported and not adversely impacted by the install of the modification components. This may involve the install of wire rope guides, or other items to protect the wire rope.
- The photos in the file structure should be uploaded to <https://pmi.vzwsmart.com> as depicted on the drawings

### **Photo Requirements:**

- Base and “During Installation Photos”
  - Base pictures include
    - Photo of Gate Signs showing the tower owner, site name, and number
    - Photo of carrier shelter showing the carrier site name and number if available
    - Photos of the galvanizing compound and/or paint used (if applicable), clearly showing the label and name
  - “During Installation Photos if provided - must be placed only in this folder
- Photos taken at ground level
  - Overall tower structure before and after installation of the modifications
  - Photos of the appropriate mount before and after installation of the modifications; if the mounts are at different rad elevations, pictures must be provided for all elevations that the modifications were installed

- Photos taken at Mount Elevation
  - Photos showing each individual sector before and also after installation of modifications. Each entire sector must be in one photo to show in the inter-connection of members.
    - These photos should also certify that the placement and geometry of the equipment on the mount is as depicted on the sketch and table in the mount analysis
  - Close-up photos of each installed modification per the modification drawings; pictures should also include connection hardware (U-bolts, bolts, nuts, all-threaded rods, etc.)
  - Photos showing the measurements of the installed modification member sizes (i.e. lengths, widths, depths, diameters, thicknesses)
  - Photos showing the elevation or distances of the installed modifications from the appropriate reference locations shown in the modification drawings
  - Photos showing the installed modifications onto the tower with tape drop measurements (if applicable) (i.e. ring/collar mounts, tie-backs, V-bracing kits, etc.); if the existing mount elevation needs to be changed according to the modification drawings, a tape drop measurement shall be provided before the elevation change
  - Photos showing the safety climb wire rope above and below the mount prior to modification.
  - Photos showing the climbing facility and safety climb if present.

**Material Certification:**

- Materials utilized must be as per specification on the drawings or the equivalent as validated by Maser Consulting Connecticut.
  - If the drawings are as specified on the drawings
    - The contractor should provide the packing list or the materials utilized to perform the mount modification
  - If an equivalent is utilized
    - It is required that the Maser Consulting Connecticut certification of such is included in the contractor submission package. There may be an additional charge for this certification if the equivalent submission doesn't meet specifications as prescribed in the drawings.
- The contractor must certify that the materials meet these specifications by one of these methods.

The Material utilized was as specified on the Maser Consulting Connecticut Mount Modification Drawings and included in the Material certification folder is a packing list or invoice for these materials

The material utilized was an "equivalent" and included as part of the contractor submission is the Maser Consulting Connecticut certification, invoices, or specifications validating accepted status


















Certifying Individual: Company \_\_\_\_\_

Name \_\_\_\_\_

Signature \_\_\_\_\_



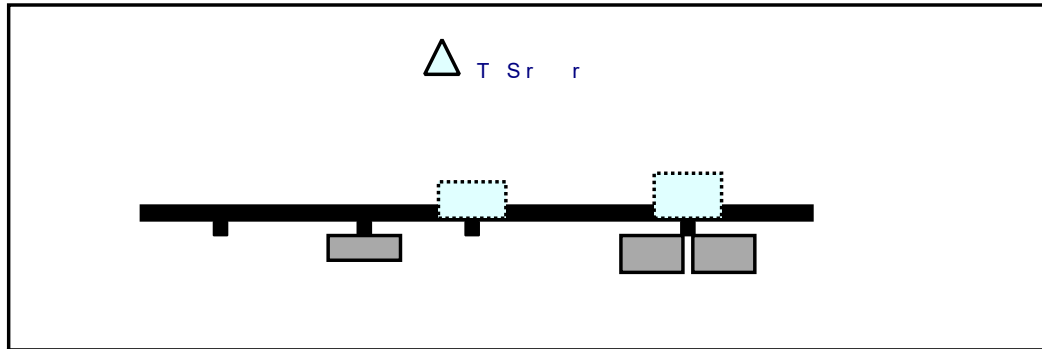
## Schedule A – Photo & Document File Structure

-  VzW Site Number / Name
  -  Base & “During Installation” Photos
  -  Pre-Installation Photos
    -  Alpha
    -  Beta
    -  Gamma
    -  Ground Level
    -  Tape Drop
  -  Post-Installation Photos
    -  Alpha
    -  Beta
    -  Gamma
    -  Ground Level
    -  Tape Drop
    -  Photos of climbing facility and safety climb – If Present
-  Certifications – Submission of this document including certifications
-  Specific Required Additional Photos

S r A  
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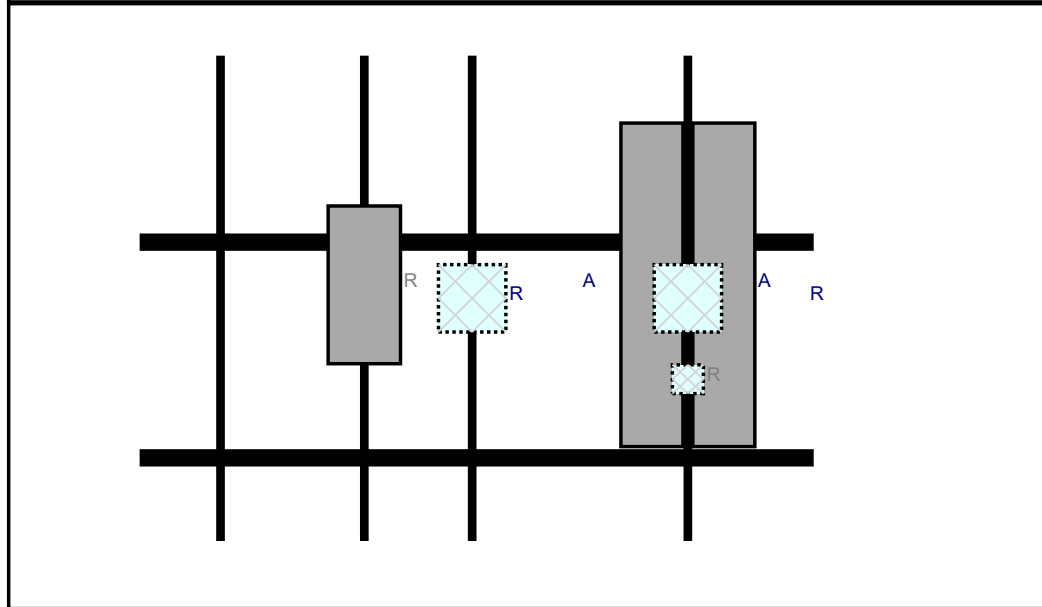
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Plan View



Front View

L Sr r



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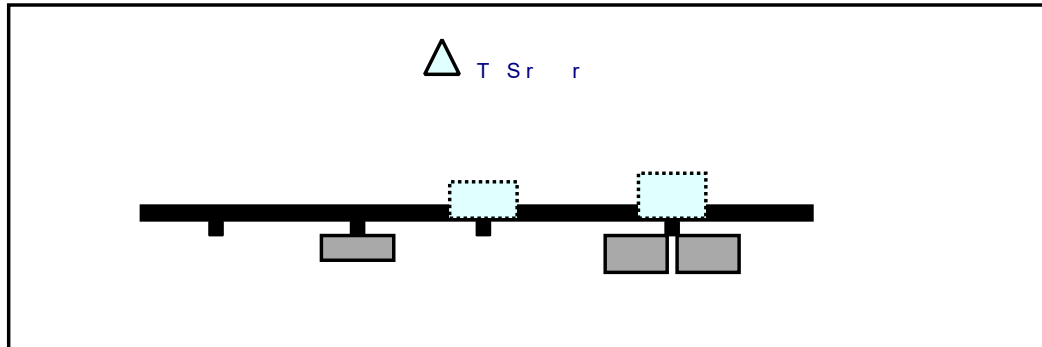
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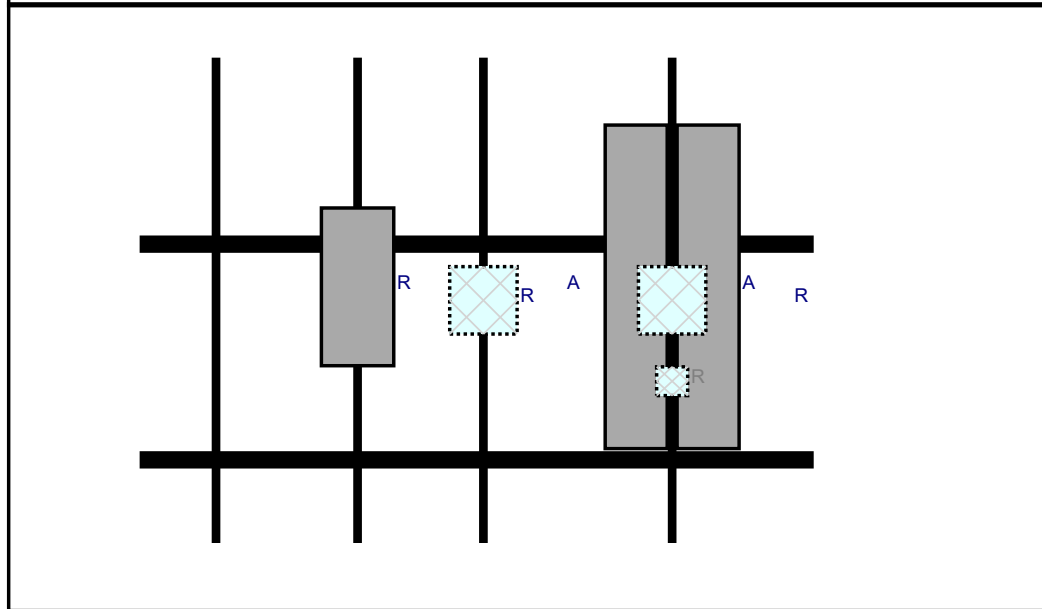
P

Plan View



Front View

L Sr r

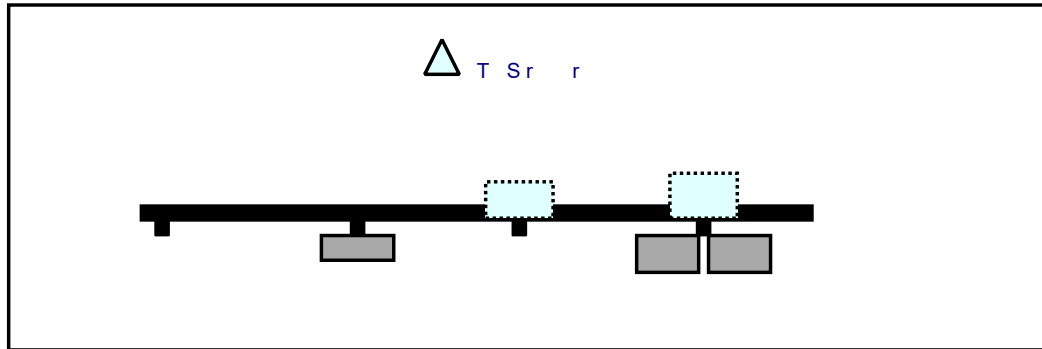


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S r C  
 Sr r T M  
 M E .

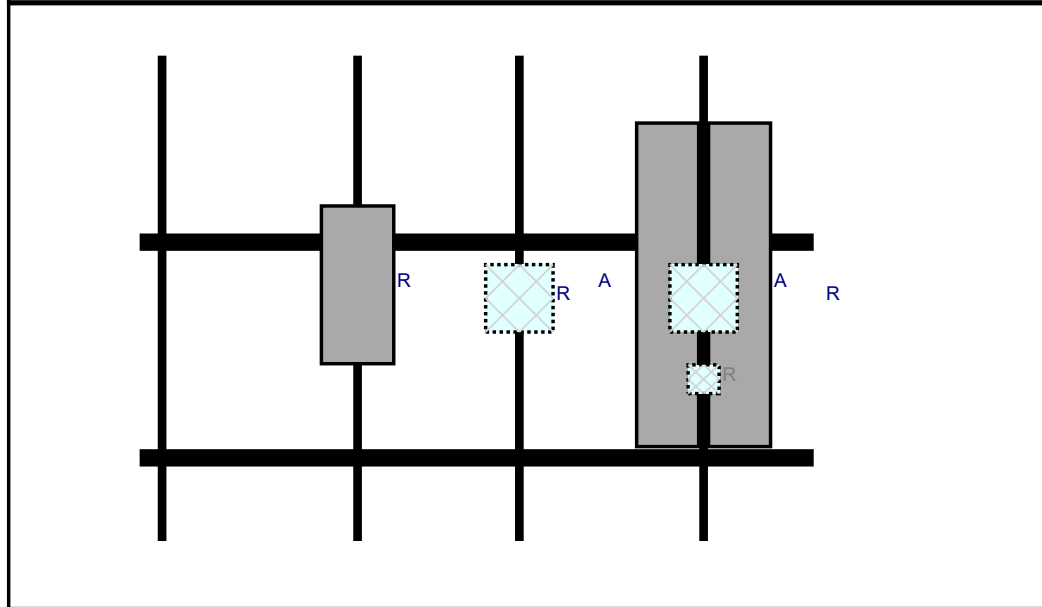
P

Plan View



Front View

L Sr r



R	M d	d	D	P	P	A	.A	A	r T.	O	S	d
A	A	BR B	.	.		r						Add d
A	A	BR B	.	.		r						Add d
R	B	T DS	.	.		B	d					Add d
R	B B	ARR BR	R	D A	.	B	d					Add d
R	B B	RR BR	R	D A	.	B	d					Add d
R	MT	A	.	.	.	r						Add d



# Maser Consulting Connecticut

**Subject**

TIA-222-H Usage

**Site Information**

Site ID: 469063-VZW / NE WATERFORD SE CT  
Site Name: NE WATERFORD SE CT  
Carrier Name: Verizon Wireless  
Address: 15 Miner Lane  
Waterford, Connecticut 06385  
New London County  
Latitude: 41.329167°  
Longitude: -72.124444°

**Structure Information**

Tower Type: Monopole  
Mount Type: 12.50-Ft Platform

To Whom It May Concern,

We respectfully submit the above referenced Antenna Mount Structural Analysis report in conformance with ANSI/TIA-222-H, Structural Standard for Antenna Supporting Structures and Antennas and Small Wind Turbine Support Structures.

The 2015 International Building Code states that, in Section 3108, telecommunication towers shall be designed and constructed in accordance with the provisions of TIA-222. TIA-222-H is the latest revision of the TIA-222 Standard, effective as of January 01, 2018.

As with all ANSI standards and engineering best practice is to apply the most current revision of the standard. This ensures the engineer is applying all updates. As an example, the TIA-222-H Standard includes updates to bring it in line with the latest AISC and ACI standards and it also incorporates the latest wind speed maps by ASCE 7 based on updated studies of the wind data.

The TIA-222-H standard clarifies these specific requirements for the antenna mount analysis such as modeling methods, seismic analysis, 30-degree increment wind directions and maintenance loading. Therefore, it is our opinion that TIA-222-H is the most appropriate standard for antenna mount structural analysis and is acceptable for use at this site to ensure the engineer is taking into account the most current engineering standard available.

Sincerely,

Justin Linette, PE  
Sr. Technical Manager

## PROJECT NOTES

- SEE MODIFICATION NOTES
- THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES, ORDINANCES, LAWS AND REGULATIONS OF ALL MUNICIPALITIES, UTILITY COMPANIES OR OTHER PUBLIC/GOVERNING AUTHORITIES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS THAT MAY BE REQUIRED BY ANY FEDERAL, STATE, COUNTY OR MUNICIPAL AUTHORITIES.
- THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER, IN WRITING, OF ANY CONFLICTS, ERRORS OR OMISSIONS PRIOR TO THE SUBMISSION OF BIDS OR PERFORMANCE OF WORK.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING SITE IMPROVEMENTS PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL REPAIR ANY DAMAGE AS A RESULT OF CONSTRUCTION OF THIS FACILITY AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.
- THE SCOPE OF WORK FOR THIS PROJECT SHALL INCLUDE PROVIDING ALL MATERIALS, EQUIPMENT AND LABOR REQUIRED TO COMPLETE THIS PROJECT. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- THE CONTRACTOR SHALL VISIT THE PROJECT SITE PRIOR TO SUBMITTING THE BID TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND CONSTRUCTION DRAWINGS.
- THE CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THESE DRAWINGS MUST BE VERIFIED. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
- SINCE THE CELL SITE MAY BE ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE REQUIRED TO BE WORN TO ALERT OF ANY POTENTIALLY DANGEROUS EXPOSURE LEVELS.
- NO NOISE, SMOKE, DUST OR ODOR WILL RESULT FROM THIS FACILITY AS TO CAUSE A NUISANCE.
- THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION (NO HANDICAP ACCESS IS REQUIRED).



## MOUNT MODIFICATION DRAWINGS EXISTING 12.50' PLATFORM

SITE NAME: WATERFORD SE CT  
SITE NUMBER: 469063

15 MINER LANE  
WATERFORD, CT 06385  
NEW LONDON COUNTY

PROJECT INFORMATION	
<b>SITE INFORMATION</b>	
LATITUDE:	41.329167° N
LONGITUDE:	72.124444° W
JURISDICTION:	NEW LONDON COUNTY
<b>APPLICANT/LESSEE</b>	
COMPANY:	VERIZON WIRELESS
<b>CLIENT REPRESENTATIVE</b>	
COMPANY:	VERIZON WIRELESS
ADDRESS:	118 FLANDERS ROAD, THIRD FLOOR
CITY, STATE, ZIP:	WESTBOROUGH, MA 01581
CONTACT:	ANDREW CANDIELLO
EMAIL:	ANDREW.CANDIELLO@VERIZONWIRELESS.COM
<b>PROJECT MANAGER</b>	
COMPANY:	MASER CONSULTING CONNECTICUT
CONTACT:	PETER ALBANO
PHONE:	856-797-0412
E-MAIL:	PETER.ALBANO@COLLIERSENGINEERING.COM

SHEET INDEX	
SHEET	DESCRIPTION
T-1	TITLE SHEET
S-1	BILL OF MATERIALS
S-2	MODIFICATION NOTES
S-3	MODIFICATION NOTES
S-4	MODIFICATION DETAILS
S-5	MODIFICATION DETAILS
S-6	MOUNT PHOTOS
	SPECIFICATION SHEETS

CONTRACTOR PMI REQUIREMENTS	
PMI LOCATION:	HTTPS://PMI.VZWSMART.COM
SMART TOOL PROJECT #:	10069540
VZW LOCATION CODE (PSLC):	469063
FUZE ID:	16067742
PMI REQUIREMENTS EMBEDDED WITHIN MOUNT MODIFICATION REPORT	

REFERENCED DOCUMENTS	
FAILING MOUNT ANALYSIS REPORT	
SMART TOOL PROJECT #:	10009025
MASER CONSULTING CONNECTICUT PROJECT #:	21777880A
ANALYSIS DATE:	5/7/2021

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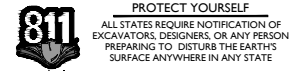
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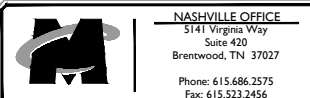


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SITE NAME:

WATERFORD SE CT  
469063

15 MINER LANE  
WATERFORD, CT 06385  
NEW LONDON COUNTY



NASHVILLE OFFICE  
5141 Virginia Way  
Suite 420  
Brentwood, TN 37027  
Phone: 615.686.2575  
Fax: 615.523.2456

SHEET TITLE:  
TITLE SHEET

SHEET NUMBER:  
T-1

# BILL OF MATERIALS

VZWSMART KITS				
QUANTITY	MANUFACTURER	PART NUMBER	DESCRIPTION	NOTES
1	VZWSMART	VZWSMART-PLK1	SUPPORT RAIL KIT	CONTRACTOR TO VERIFY THE LENGTH REQUIRED AND TRIM AS NECESSARY IN ACCORDANCE WITH THE 'STRUCTURAL STEEL' NOTES ON SHEET S-2
1		VZWSMART-PLK5	KICKER KIT	CONTRACTOR TO VERIFY THE LENGTH REQUIRED AND TRIM AS NECESSARY IN ACCORDANCE WITH THE 'STRUCTURAL STEEL' NOTES ON SHEET S-2
1		VZWSMART-PLK7	MONOPOLE COLLAR MOUNT ASSEMBLY	

OTHER REQUIRED PARTS				
QUANTITY	MANUFACTURER	PART NUMBER	DESCRIPTION	NOTES
-	-	-	48" LONG 5/8" DIA. A193-B7 THREADED ROD	

**NOTE: ALL MATERIALS REQUIRED FOR THE DESIGNED MODIFICATIONS BUT NOT LISTED IN THIS SHEET ARE ASSUMED TO BE PROVIDED BY THE CONTRACTOR**

VZWSMART KITS - APPROVED VENDORS	
<b>COMMSCOPE</b>	
CONTACT	SALVADOR ANGUIANO
PHONE	(817) 304-7492
EMAIL	SALVADOR.ANGUIANO@COMMSCOPE.COM
WEBSITE	WWW.COMMSCOPE.COM
<b>METROSITE FABRICATORS, LLC</b>	
CONTACT	KENT RAMEY
PHONE	(706) 335-7045 (O), (706) 982-9788 (M)
EMAIL	KENT@METROSITELLC.COM
WEBSITE	METROSITEFABRICATORS.COM
<b>PERFECTVISION</b>	
CONTACT	WIRELESS SALES
PHONE	(844) 887-6723
EMAIL	WWW.PERFECT-VISION.COM
WEBSITE	WIRELESSALES@PERFECT-VISION.COM
<b>SABRE INDUSTRIES, INC.</b>	
CONTACT	ANGIE WELCH
PHONE	(866) 428-6937
EMAIL	AKWELCH@SABREINDUSTRIES.COM
WEBSITE	WWW.SABRESITESOLUTIONS.COM
<b>SITE PRO 1</b>	
CONTACT	PAULA BOSWELL
PHONE	(972) 236-9843
EMAIL	PAULA.BOSWELL@VALMONT.COM
WEBSITE	WWW.SITEPRO1.COM

NOTE: WHEN SPECIFIED, VZWSMART KITS SHALL BE REQUIRED AND WILL BE VERIFIED DURING THE DESKTOP PMI



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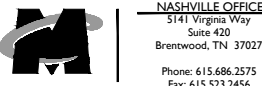
REV	DATE	DESCRIPTION	DRAWN BY	CHECKED BY
0	6/30/2021	ISSUED FOR CONSTRUCTION	MSG	JPL



Justin R. Linette  
 LICENSED PROFESSIONAL ENGINEER  
 LICENSE NUMBER: 31965  
 MASER CONSULTING / C.T. COA #: JPC.0000131  
 Digitally signed by Justin R. Linette  
 Date: 2021.07.01 09:57:44-04'00'

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 5141 Virginia Way  
 Suite 420  
 Brentwood, TN 37027  
 Phone: 615.686.2575  
 Fax: 615.523.2456

SHEET TITLE:  
**BILL OF MATERIALS**

SHEET NUMBER:  
**S-1**

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**GENERAL NOTES**

- THESE MODIFICATIONS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE GOVERNING PROVISIONS OF THE TELECOMMUNICATIONS INDUSTRY STANDARD TIA-222-H. MATERIALS AND SERVICES PROVIDED BY THE CONTRACTOR SHALL CONFORM TO THE ABOVE MENTIONED CODES.
- CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PREVENT DAMAGE TO EXISTING STRUCTURES. ANY DAMAGE TO EXISTING STRUCTURES AS A RESULT OF THE CONTRACTOR'S WORK OR FROM DAMAGE DUE TO OTHER CAUSES SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.
- CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS BEFORE BEGINNING WORK, ORDERING MATERIAL, AND PREPARING OF SHOP DRAWINGS. ANY DISCREPANCIES BETWEEN FIELD CONDITIONS AND THE CONTRACT DOCUMENTS SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ENGINEER. IF THE CONTRACTOR DISCOVERS ANY EXISTING CONDITIONS THAT ARE NOT REPRESENTED ON THESE DRAWINGS, OR ANY CONDITIONS THAT WOULD INTERFERE WITH THE INSTALLATION OF THE MODIFICATIONS, NOTIFY THE ENGINEER IMMEDIATELY.
- IT IS ASSUMED THAT ANY STRUCTURAL MODIFICATION WORK SPECIFIED ON THESE PLANS WILL BE ACCOMPLISHED BY KNOWLEDGEABLE WORKMEN WITH TOWER CONSTRUCTION EXPERIENCE.
- THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION METHODS, MEANS, TECHNIQUES, SEQUENCES, AND PROCEDURES.
- ALL CONSTRUCTION MEANS AND METHODS; INCLUDING BUT NOT LIMITED TO, ERECTION PLANS, RIGGING PLANS, CLIMBING PLANS, AND RESCUE PLANS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR RESPONSIBLE FOR THE EXECUTION OF THE WORK CONTAINED HEREIN AND SHALL MEET ANSITIA-322 (LATEST EDITION), OSHA, AND GENERAL INDUSTRY STANDARDS. ALL RIGGING PLANS SHALL ADHERE TO ANSITIA-322 (LATEST EDITION) INCLUDING THE REQUIRED INVOLVEMENT OF A QUALIFIED ENGINEER FOR CLASS IV CONSTRUCTION.
- THE CONTRACTOR IS SOLELY RESPONSIBLE FOR INITIATING, MAINTAINING, AND SUPERVISING ALL SAFETY PROGRAMS IN ACCORDANCE WITH APPLICABLE SAFETY CODES.
- WORK SHALL ONLY BE PERFORMED DURING CALM DRY DAYS (WINDS LESS THAN 30-MPH). THE STRUCTURE SHOWN ON THE DRAWINGS IS STRUCTURALLY SOUND ONLY IN THE COMPLETED FORM. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE STRENGTH AND STABILITY OF THE STRUCTURE DURING ERECTION. CONTRACTOR SHALL PROVIDE TEMPORARY SUPPORT, SHORING, BRACING AND ANY OTHER STRUCTURAL SYSTEMS AS REQUIRED TO RESIST ALL FORCES THAT MAY OCCUR DURING HANDLING AND ERECTION UNTIL THE STRUCTURE IS FULLY COMPLETED. TEMPORARY SUPPORTS, BRACING AND OTHER STRUCTURAL SYSTEMS REQUIRED DURING CONSTRUCTION SHALL REMAIN THE CONTRACTOR'S PROPERTY AFTER THEIR USE.
- ALL INSTALLATIONS PERFORMED ON THIS STRUCTURE SHALL BE COMPLETED IN ACCORDANCE WITH THE GOVERNING PROVISIONS OF THE STANDARD FOR INSTALLATION, ALTERATION AND MAINTENANCE OF ANTENNA SUPPORTING STRUCTURES AND ANTENNAS, ANSITIA-322.
- CONTRACTOR SHALL SECURE SITE BACK TO EXISTING CONDITION UNDER SUPERVISION OF OWNER. ALL FENCE, STONE, GEOFABRIC, GROUNDING, AND SURROUNDING GRADE SHALL BE REPLACED AND REPAIRED AS REQUIRED TO ACHIEVE OWNER APPROVAL. POSITIVE DRAINAGE AWAY FROM TOWER SITE SHALL BE MAINTAINED.
- CONNECTIONS BETWEEN ITEMS SUPPORTED BY THE STRUCTURE AND THE STRUCTURE NOT SPECIFICALLY DETAILED IN THE CONTRACT DOCUMENTS ARE THE RESPONSIBILITY OF THE CONTRACTOR. SUCH CONNECTIONS SHALL BE DESIGNED, COORDINATED AND INSPECTED BY A PROFESSIONAL STRUCTURAL ENGINEER LICENSED IN THE STATE OF THE PROJECT. SUBMIT SIGNED AND SEALED CALCULATIONS DURING SHOP DRAWING REVIEW.
- DO NOT SCALE DRAWINGS.
- DO NOT USE THESE DRAWINGS FOR ANY OTHER SITE.
- ALL MATERIAL UTILIZED FOR THIS PROJECT MUST BE NEW AND FREE OF ANY DEFECTS. ANY MATERIAL SUBSTITUTIONS, INCLUDING BUT NOT LIMITED TO ALTERED SIZE AND/OR STRENGTHS, MUST BE APPROVED BY THE OWNER AND ENGINEER IN WRITING.
- THE MOUNT UNDER NO CIRCUMSTANCES SHOULD BE USED AS A TIE OFF POINT.

**DESIGN LOADS**

- WIND LOADS
- BASIC WIND SPEED (3 SECOND GUST), V = 127 MPH
  - EXPOSURE CATEGORY C
  - TOPOGRAPHIC CATEGORY 1
  - MEAN BASE ELEVATION (AMSL) = 92.15'

- ICE LOADS
- ICE WIND SPEED (3 SECOND GUST), V = 50 MPH
  - ICE THICKNESS = 1.00 IN

- SEISMIC LOADS
- SEISMIC DESIGN CATEGORY B
  - SHORT TERM MCER GROUND MOTION, S<sub>s</sub> = .191
  - LONG TERM MCER GROUND MOTION, S<sub>l</sub> = .052

**STRUCTURAL STEEL**

- DESIGN, DETAILING, FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING PUBLICATIONS EXCEPT AS SPECIFICALLY INDICATED IN THE CONTRACT DOCUMENTS.
  - AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) MANUAL OF STEEL CONSTRUCTION (15TH EDITION)
  - SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS
  - AISC CODE OF STANDARD PRACTICE
- STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING UNLESS OTHERWISE SHOWN:

CHANNELS, ANGLES, PLATES, ETC.	ASTM A36 (GR 36)
STEEL PIPE	ASTM A53 (GR 35)
BOLTS	ASTM A325
NUTS	ASTM A563
LOCK WASHERS	LOCKING STRUCTURAL GRADE

- ALL SUBSTITUTIONS PROPOSED BY THE CONTRACTOR SHALL BE APPROVED IN WRITING BY THE ENGINEER. CONTRACTOR SHALL PROVIDE DOCUMENTATION TO ENGINEER FOR VERIFYING THE SUBSTITUTE IS SUITABLE FOR USE AND MEETS ORIGINAL DESIGN CRITERIA. DIFFERENCES FROM THE ORIGINAL DESIGN, INCLUDING MAINTENANCE, REPAIR AND REPLACEMENT, SHALL BE NOTED. ESTIMATES OF COSTS/CREDITS ASSOCIATED WITH THE SUBSTITUTION (INCLUDING RE-DESIGN COSTS AND COSTS TO SUB-CONTRACTORS) SHALL BE PROVIDED TO THE ENGINEER. CONTRACTOR SHALL PROVIDE ADDITIONAL DOCUMENTATION AND/OR SPECIFICATIONS TO THE ENGINEER AS REQUESTED.
- PROVIDE STRUCTURAL STEEL SHOP DRAWINGS TO ENGINEER FOR APPROVAL PRIOR TO FABRICATION.
  - SUBMIT SHOP DRAWINGS TO PETER.ALBANO@COLLIERSENGINEERING.COM
  - PROVIDE MASER CONSULTING CONNECTICUT PROJECT # AND MASER CONSULTING CONNECTICUT PROJECT ENGINEER CONTACT IN THE BODY OF THE EMAIL.
- DRILL NO HOLES IN ANY NEW OR EXISTING STRUCTURAL STEEL MEMBERS OTHER THAN THOSE SHOWN ON STRUCTURAL DRAWINGS WITHOUT THE APPROVAL OF THE ENGINEER OF RECORD.
- GALVANIZED ASTM A325 BOLTS SHALL NOT BE REUSED.
- ALL NEW STEEL SHALL BE HOT BE DIPPED GALVANIZED FOR FULL WEATHER PROTECTION. IN ADDITION ALL NEW STEEL SHALL BE PAINTED TO MATCH EXISTING STEEL. CONTRACTOR SHALL OBTAIN WRITTEN PERMISSION TO PROTECT STEEL BY ANY OTHER MEANS.
- ALL BOLT ASSEMBLIES FOR STRUCTURAL MEMBERS REPRESENTED IN THIS DRAWING REQUIRE LOCKING DEVICES TO BE INSTALLED IN ACCORDANCE WITH TIA-222-H SECTION 4.9.2 REQUIREMENTS.
- WHERE CONNECTIONS ARE NOT FULLY DETAILED ON THESE DRAWINGS, FABRICATOR SHALL DESIGN CONNECTIONS TO RESIST LOADS AND FORCES WHERE SHOWN ON DRAWINGS AND AS OUTLINED IN SPECIFICATIONS.
- FOR MEMBERS BEING REPLACED, PROVIDE NEW BOLTS AND MATCH EXISTING SIZE AND GRADE. MAINTAIN AISC REQUIREMENTS FOR MINIMUM BOLT DISTANCE AND SPACING.
- ALL PROPOSED AND/OR REPLACED BOLTS SHALL BE OF SUFFICIENT LENGTH SUCH THAT THE END OF THE BOLT IS AT LEAST FLUSH WITH THE FACE OF THE NUT. IT IS NOT PERMITTED FOR THE BOLT END TO BE BELOW THE FACE OF THE NUT AFTER TIGHTENING IS COMPLETED.
- GALVANIZED ASTM A325 BOLTS SHALL NOT BE REUSED.

- ALL NEW STEEL SHALL BE HOT BE DIPPED GALVANIZED FOR FULL WEATHER PROTECTION. CONTRACTOR SHALL OBTAIN WRITTEN PERMISSION TO PROTECT STEEL BY ANY OTHER MEANS.
- ALL EXISTING PAINTED/GALVANIZED SURFACES DAMAGED DURING REHAB INCLUDING AREAS UNDER STIFFENER PLATES SHALL BE WIRE BRUSHED CLEAN, REPAIRED BY COLD GALVANIZING (ZINGA OR ZINC COTE), AND REPAINTED TO MATCH THE EXISTING FINISH (IF APPLICABLE).
- ALL HOLES IN STEEL MEMBERS SHALL BE SIZED 1/16" LARGER THAN THE BOLT DIAMETER. STANDARD HOLES SHALL BE USED UNLESS NOTED OTHERWISE.

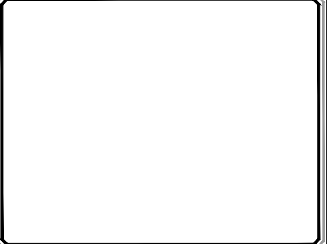


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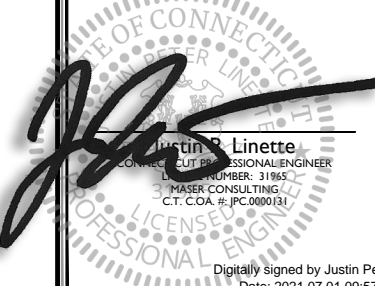


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Justin R. Linette  
CONNECTICUT PROFESSIONAL ENGINEER  
LICENSE NUMBER: 31965  
MASER CONSULTING / C.T. COA #: JPC0000131

Digitally signed by Justin Peter Linette  
Date: 2021.07.01 09:57:44 -04'00'

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NASHVILLE OFFICE  
5141 Virginia Way  
Suite 420  
Brentwood, TN 37027

Phone: 615.686.2575  
Fax: 615.523.2456

SHEET TITLE:  
**MODIFICATION NOTES**

SHEET NUMBER:  
**S-2**

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**MODIFICATION INSPECTION NOTES**

MI CHECKLIST	
CONSTRUCTION/ INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY EOR)	REPORT ITEM
PRE-CONSTRUCTION	
X	MI CHECKLIST DRAWING
X	EOB APPROVED SHOP DRAWINGS
NA	FABRICATION INSPECTION
NA	FABRICATOR CERTIFIED WELD INSPECTION
X	MATERIAL TEST REPORT (MTR)
NA	FABRICATOR NDE INSPECTION
X	PACKING SLIPS
ADDITIONAL TESTING AND INSPECTIONS:	
CONSTRUCTION	
X	CONSTRUCTION INSPECTIONS
NA	CONTRACTOR'S CERTIFIED WELD INSPECTION AND NDE REPORTS
X	ON SITE COLD GALVANIZING VERIFICATION
X	GC AS-BUILT DOCUMENTS
ADDITIONAL TESTING AND INSPECTIONS:	
POST-CONSTRUCTION	
X	MI INSPECTOR REDLINE OR RECORD DRAWING(S)
X	VZW PMI DOCUMENTS
X	PHOTOGRAPHS
ADDITIONAL TESTING AND INSPECTIONS:	

NOTE: X DENOTES A DOCUMENT REQUIRED FOR THE MI REPORT  
 NA DENOTES A DOCUMENT THAT IS NOT REQUIRED FOR THE MI REPORT

THE MODIFICATION INSPECTION (MI) IS A VISUAL INSPECTION OF MODIFICATIONS AND A REVIEW OF CONSTRUCTION INSPECTIONS AND OTHER REPORTS TO ENSURE THE INSTALLATION WAS CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, NAMELY THE MODIFICATION DRAWINGS, AS DESIGNED BY THE ENGINEER OF RECORD (EOR).

THE MI IS TO CONFIRM INSTALLATION CONFIGURATION AND WORKMANSHIP ONLY AND IS NOT A REVIEW OF THE MODIFICATION DESIGN ITSELF, NOR DOES THE MI INSPECTOR TAKE OWNERSHIP OF THE MODIFICATION DESIGN. OWNERSHIP OF THE STRUCTURAL MODIFICATION DESIGN EFFECTIVENESS AND INTEGRITY RESIDES WITH THE EOR AT ALL TIMES.

TO ENSURE THAT THE REQUIREMENTS OF THE MI ARE MET, IT IS VITAL THAT THE GENERAL CONTRACTOR (GC) AND THE MI INSPECTOR BEGIN COMMUNICATING AND COORDINATING AS SOON AS A PURCHASE ORDER ( PO) IS RECEIVED. IT IS EXPECTED THAT EACH PARTY WILL BE PROACTIVE IN REACHING OUT TO THE OTHER PARTY.

**MI INSPECTOR**

THE MI INSPECTOR IS REQUIRED TO CONTACT THE GC AS SOON AS RECEIVING A PO FOR THE MI TO, AT A MINIMUM:

- REVIEW THE REQUIREMENTS OF THE MI CHECKLIST
- WORK WITH THE GC TO DEVELOP A SCHEDULE TO CONDUCT ON-SITE INSPECTIONS

THE MI INSPECTOR IS RESPONSIBLE FOR COLLECTING ALL GC INSPECTION AND TEST REPORTS, REVIEWING THE DOCUMENTS FOR ADHERENCE TO THE CONTRACT DOCUMENTS, CONDUCTING THE IN-FIELD INSPECTIONS, AND SUBMITTING THE MI REPORT TO EOR.

**GENERAL CONTRACTOR**

THE GC IS REQUIRED TO CONTACT THE MI INSPECTOR AS SOON AS RECEIVING A PO FOR THE MODIFICATION INSTALLATION OR TURNKEY PROJECT TO, AT A MINIMUM:

- REVIEW THE REQUIREMENTS OF THE MI CHECKLIST
- WORK WITH THE MI INSPECTOR TO DEVELOP A SCHEDULE TO CONDUCT ON-SITE MI INSPECTIONS, INCLUDING FOUNDATION INSPECTIONS
- BETTER UNDERSTAND ALL INSPECTION AND TESTING REQUIREMENTS

THE GC SHALL PERFORM AND RECORD THE TEST AND INSPECTION RESULTS IN ACCORDANCE WITH THE REQUIREMENTS OF THE MI CHECKLIST.

**RECOMMENDATIONS**

THE FOLLOWING RECOMMENDATIONS AND SUGGESTIONS ARE OFFERED TO ENHANCE THE EFFICIENCY AND EFFECTIVENESS OF DELIVERING AN MI REPORT:

- IT IS SUGGESTED THAT THE GC PROVIDE A MINIMUM OF 5 BUSINESS DAYS NOTICE, PREFERABLY 10, TO THE MI INSPECTOR AS TO WHEN THE SITE WILL BE READY FOR THE MI TO BE CONDUCTED.
- THE GC AND MI INSPECTOR COORDINATE CLOSELY THROUGHOUT THE ENTIRE PROJECT.
- WHEN POSSIBLE, IT IS PREFERRED TO HAVE THE GC AND MI INSPECTOR ON-SITE SIMULTANEOUSLY FOR ANY GUY WIRE TENSIONING OR RE-TENSIONING OPERATIONS.
- IT MAY BE BENEFICIAL TO INSTALL ALL MODIFICATIONS PRIOR TO CONDUCTING THE FOUNDATION INSPECTIONS TO ALLOW THE FOUNDATION AND MI INSPECTION(S) TO COMMENCE WITH ONE SITE VISIT.
- WHEN POSSIBLE, IT IS PREFERRED TO HAVE THE GC AND MI INSPECTOR ON-SITE DURING THE MI TO HAVE ANY DEFICIENCIES CORRECTED DURING THE INITIAL MI. THEREFORE, THE GC MAY CHOOSE TO COORDINATE THE MI CAREFULLY TO ENSURE ALL CONSTRUCTION FACILITIES ARE AT THEIR DISPOSAL WHEN THE MI INSPECTOR IS ON SITE.

**CORRECTION OF FAILING MI'S**

IF THE MODIFICATION INSTALLATION WOULD FAIL THE MI ("FAILED MI"), THE GC SHALL WORK WITH THE OWNER TO COORDINATE A REMEDIATION PLAN:

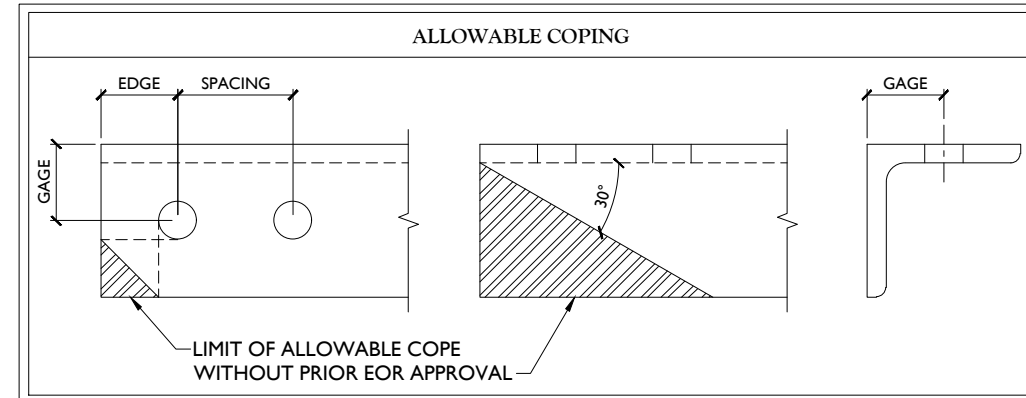
- CORRECT FAILING ISSUES TO COMPLY WITH THE SPECIFICATIONS CONTAINED IN THE ORIGINAL CONTRACT DOCUMENTS AND COORDINATE A SUPPLEMENT MI.

**REQUIRED PHOTOS**

BETWEEN THE GC AND THE MI INSPECTOR THE FOLLOWING PHOTOGRAPHS, AT A MINIMUM, ARE TO BE TAKEN AND INCLUDED IN THE MI REPORT:

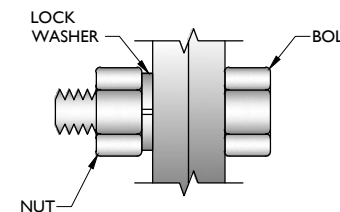
- PRE-CONSTRUCTION GENERAL SITE CONDITION
- PHOTOGRAPHS DURING THE REINFORCEMENT MODIFICATION CONSTRUCTION/ERECTION AND INSPECTION
  - RAW MATERIALS
  - PHOTOS OF ALL CRITICAL DETAILS
  - FOUNDATION MODIFICATIONS
  - WELD PREPARATION
  - BOLT INSTALLATION
  - FINAL INSTALLED CONDITION
  - SURFACE COATING REPAIR
- POST CONSTRUCTION PHOTOGRAPHS
  - FINAL INFIELD CONDITION

PHOTOS OF ELEVATED MODIFICATIONS TAKEN ONLY FROM THE GROUND SHALL BE CONSIDERED INADEQUATE.



BOLT DIAMETER	STANDARD HOLE	SHORT SLOT	MIN. EDGE DISTANCE	SPACING
1/2	9/16	9/16 x 11/16	7/8	1 1/2
5/8	11/16	11/16 x 7/8	1 1/8	1 7/8
3/4	13/16	13/16 x 1	1 1/4	2 1/4
7/8	15/16	15/16 x 1 1/8	1 1/2	2 5/8
1	1 1/16	1 1/16 x 1 5/16	1 3/4	3

LEG	GAGE
4	2 1/2
3 1/2	2
3	1 3/4
2 1/2	1 3/8
2	1 1/8



TYP. BOLT ASSEMBLY

**NOTES:**

- ALL DIMENSIONS REPRESENTED IN THE ABOVE TABLES ARE AISC MINIMUM REQUIREMENTS. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS IN FIELD AND NOTIFY ENGINEER IF DISTANCES ARE LESS THAN THOSE PROVIDED.
- THE DIMENSIONS PROVIDED ARE MINIMUM REQUIREMENTS. ACTUAL DIMENSIONS OF PROPOSED MEMBERS WITHIN THESE DRAWINGS MAY VARY FROM THE AISC MINIMUM REQUIREMENTS.
- SHORT SLOT HOLES SHALL ONLY BE USED WHEN DEPICTED IN THE DRAWINGS
- MATCH EXISTING GAGES WHEN APPLICABLE, UNLESS MINIMUM EDGE DISTANCES ARE COMPROMISED.

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SCALE: AS SHOWN	JOB NUMBER: 21777880A			
REV	DATE	DESCRIPTION	DRAWN BY	CHECKED BY
0	6/30/2021	ISSUED FOR CONSTRUCTION	HSG	JPL

Justin R. Linette  
 REGISTERED PROFESSIONAL ENGINEER  
 LICENSE NUMBER: 31965  
 M.C.A. #: JPC0000131  
 Digitally signed by Justin R. Linette  
 Date: 2021.07.01 09:57:44-04'00'

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 469063  
 15 MINER LANE  
 WATERFORD, CT 06385  
 NEW LONDON COUNTY

**NASHVILLE OFFICE**  
 5141 Virginia Way  
 Suite 420  
 Brentwood, TN 37027  
 Phone: 615.686.2575  
 Fax: 615.523.2456

SHEET TITLE:  
**MODIFICATION NOTES**

SHEET NUMBER:  
**S-3**



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REV	DATE	DESCRIPTION	DRAWN BY / CHECKED BY
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*Justin R. Linette*  
 JUSTIN R. LINETTE  
 REGISTERED PROFESSIONAL ENGINEER  
 LICENSE NUMBER: 31965  
 MASA CONSULTING / C.T. C.O.A. #: JPC.0000131  
 Digitally signed by Justin R. Linette  
 Date: 2021.07.01 09:57:48 -04'00'

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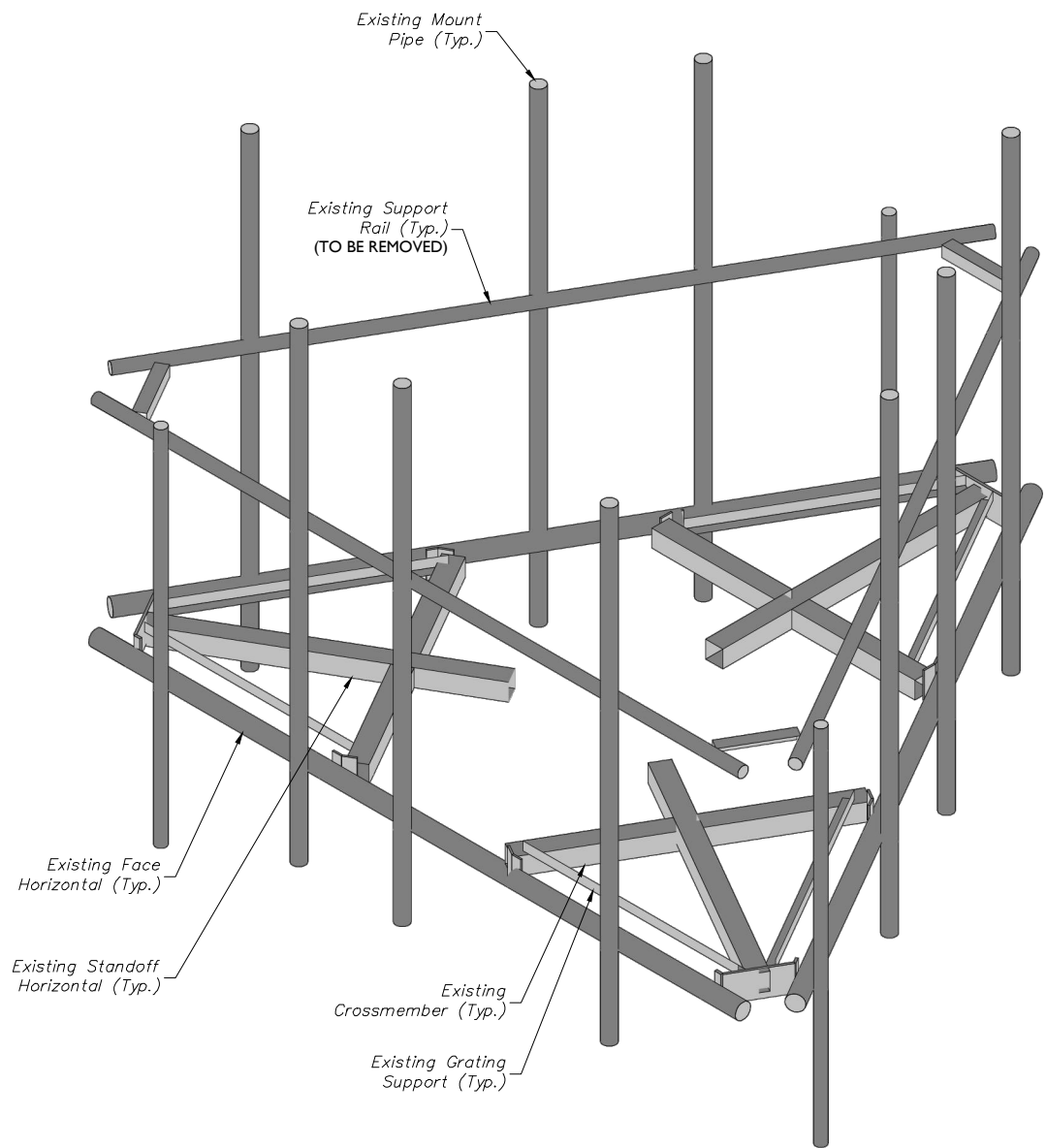
**SITE NAME:**  
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 15 MINER LANE  
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 NEW LONDON COUNTY

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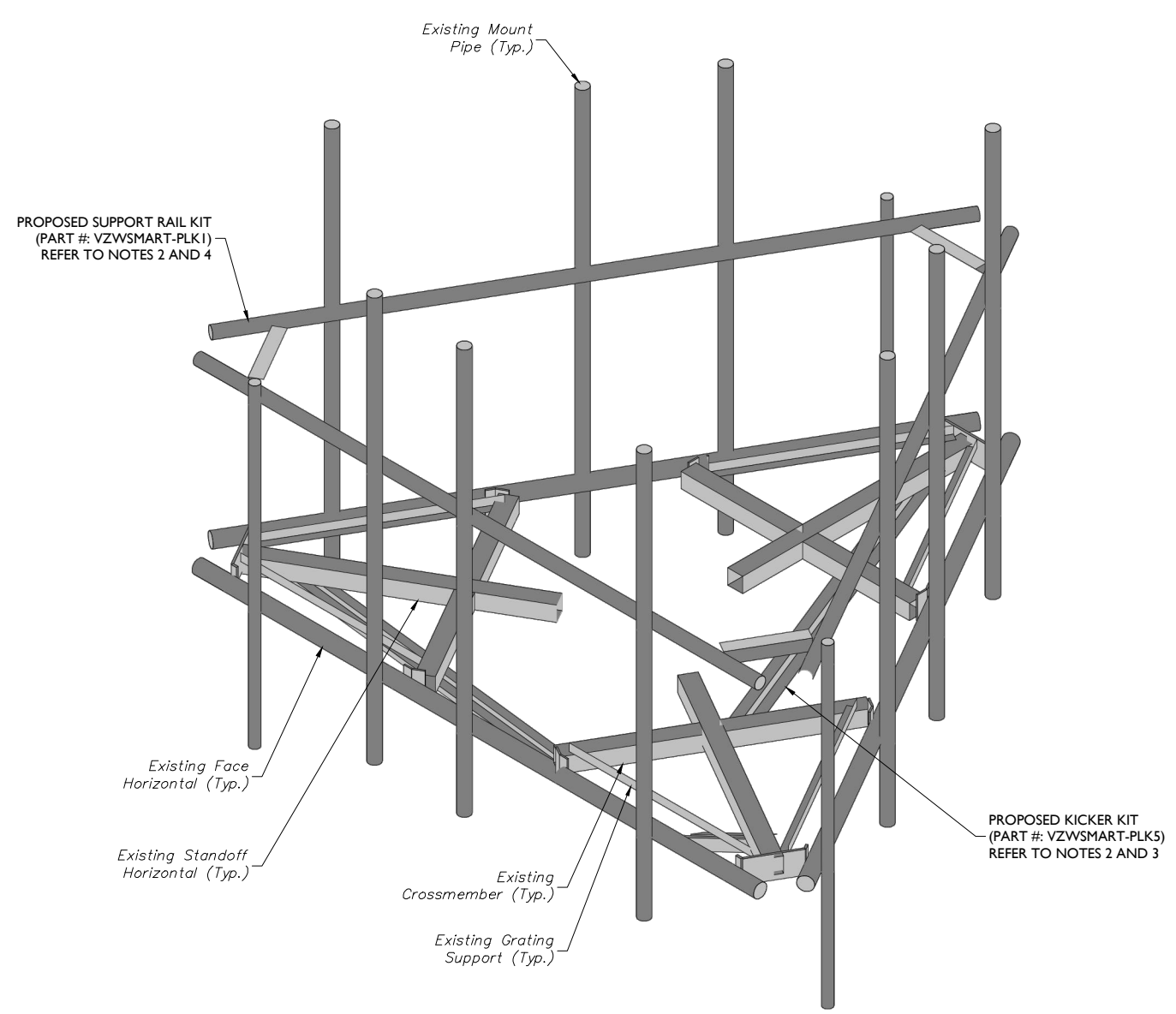
SHEET TITLE:  
 MODIFICATION DETAILS

SHEET NUMBER:  
 S-4

NOTE: DO NOT SCALE DRAWINGS FOR CONSTRUCTION.



**1** EXISTING PLATFORM ISOMETRIC VIEW  
 SCALE : N.T.S.



**2** PROPOSED PLATFORM ISOMETRIC VIEW  
 SCALE : N.T.S.

**STRUCTURAL NOTES:**

- PER THE MOUNT MAPPING COMPLETED BY HIGH TOWER SOLUTIONS, INC. ON 5/7/2020, THE SAFETY CLIMB AND CLIMBING FACILITIES UP TO THE VERIZON MOUNT ELEVATION (157'-0") ARE IN GOOD CONDITION. MASER DOES NOT WARRANT THIS INFORMATION.
- INSTALL SHALL NOT CAUSE HARM TO THE STRUCTURE, CLIMBING FACILITY, SAFETY CLIMB, OR ANY SYSTEM INSTALLED ON THE STRUCTURE. TIMELY NOTICE AND DOCUMENTATION SHALL BE PROVIDED BY CONTRACTORS TO THE EOR (OF STRUCTURAL DESIGN) IF AN OBSTRUCTION WAS REQUIRED TO MEET THE RF SYSTEM DESIGN REQUIREMENTS AND PERFORMANCES.

**MODIFICATION NOTES:**

- MOUNT MEMBERS NOT SHOWN FOR CLARITY U.N.O.
- CONTRACTOR TO VERIFY THE LENGTH REQUIRED AND TRIM AS NECESSARY IN ACCORDANCE WITH THE 'STRUCTURAL STEEL' NOTES ON SHEET S-2.
- CONNECT OTHER END OF KICKER KIT TO MONOPOLE COLLAR MOUNT ASSEMBLY (PART #: VZWSMART-PLK7).
- RADIO AND/OR TME POSITIONS SHALL BE ADJUSTED VERTICALLY AS NEEDED IN ORDER TO ACHIEVE INSTALLATION OF HORIZONTAL AS SHOWN. EOR SHALL BE NOTIFIED IF EQUIPMENT NEEDS TO BE RELOCATED TO ANOTHER MOUNT PIPE.
- CONTRACTOR SHALL FLOAT MOUNT AND SECURE IN NEW POSITION 6" ABOVE EXISTING LOCATION FOLLOWING GUIDELINES BELOW:  
 - CARE SHALL BE TAKEN NOT TO DAMAGE EXISTING COAX/JUMPERS  
 -INSPECT POLE AND STEP BOLTS FOR DAMAGE BENEATH WHERE MOUNT WAS PREVIOUSLY LOCATED AND ESCALATE TO ENGINEER OF RECORD IMMEDIATELY IF ANY VISIBLE DAMAGE IS PRESENT.  
 -AFTER FULLY SECURING COLLAR AT NEW LOCATION, CONTRACTOR SHALL REPLACE ALL THREADED RODS ON MOUNT COLLAR. RODS SHALL NOT BE REPLACED UNTIL MOUNT HAS BEEN FULLY SECURED.  
 -CONTRACTOR SHALL NOT LOOSEN OR REPLACE MORE THAN ONE ROD AT A TIME.

W:\Projects\21746\903 - WATERFORD SE CT - Tower\Drawings\PLK - 20101030.dwg:54  
 By: MDR/AMH



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REGISTERED PROFESSIONAL ENGINEER  
LICENSE NUMBER: 31965  
M.A.S.E.R. CONSULTING / C.T. C.O.A. #: JPC.0000131  
Digitally signed by Justin R. Linette  
Date: 2021.07.01 09:57:48 -04'00'

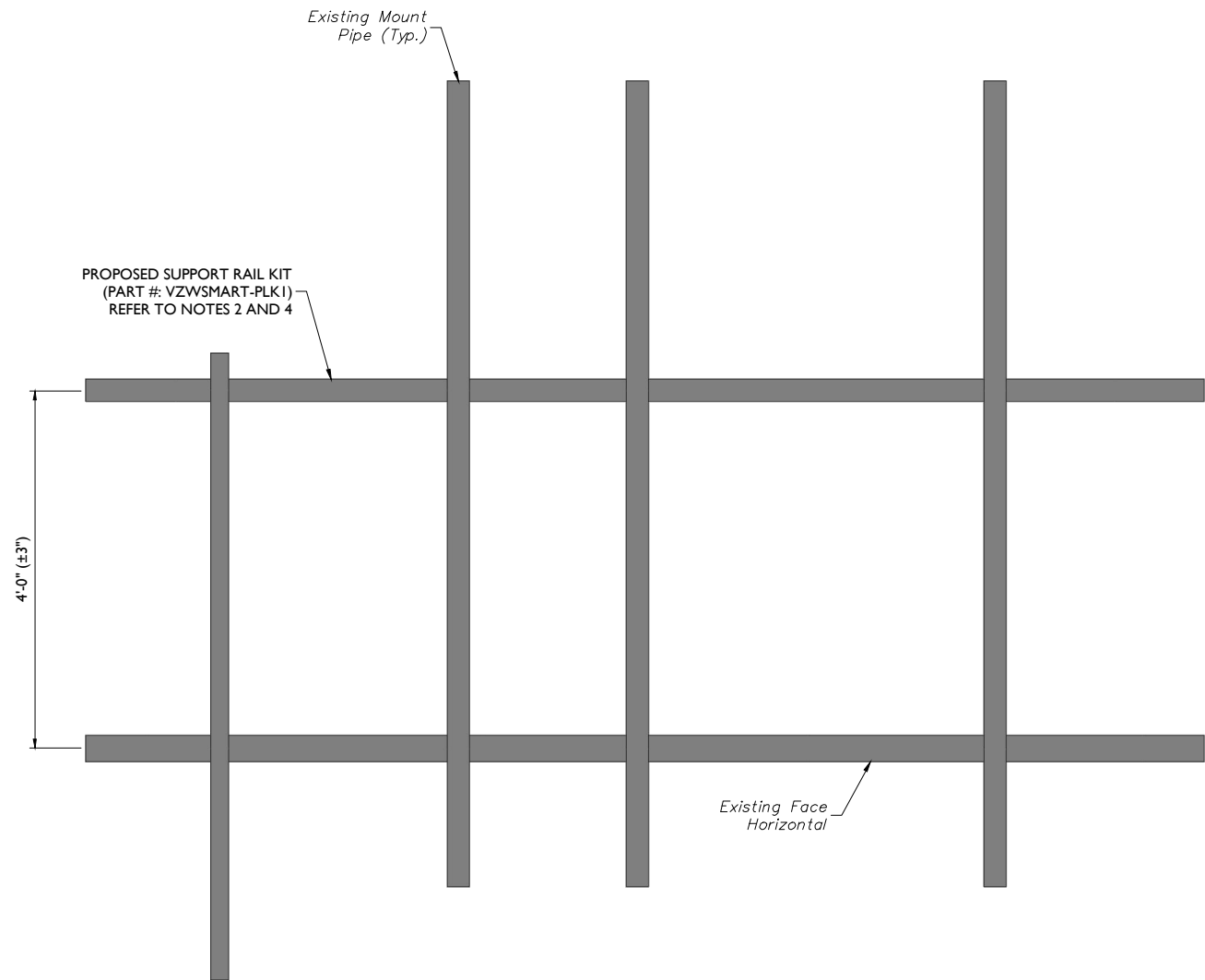
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Fax: 615.523.2456

SHEET TITLE:  
**MODIFICATION DETAILS**

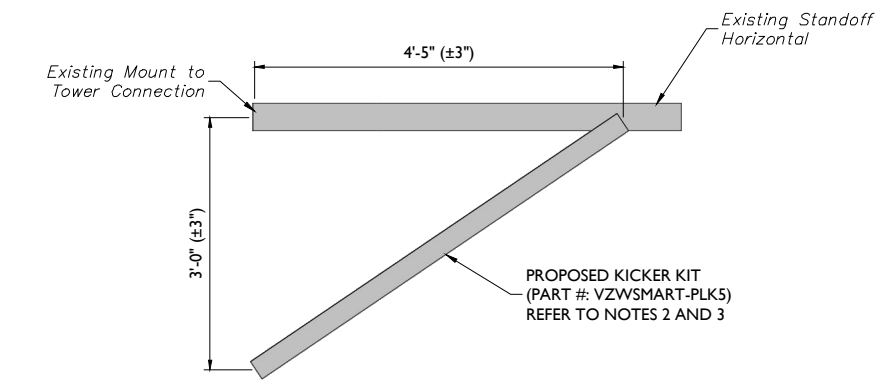
SHEET NUMBER:  
**S-5**



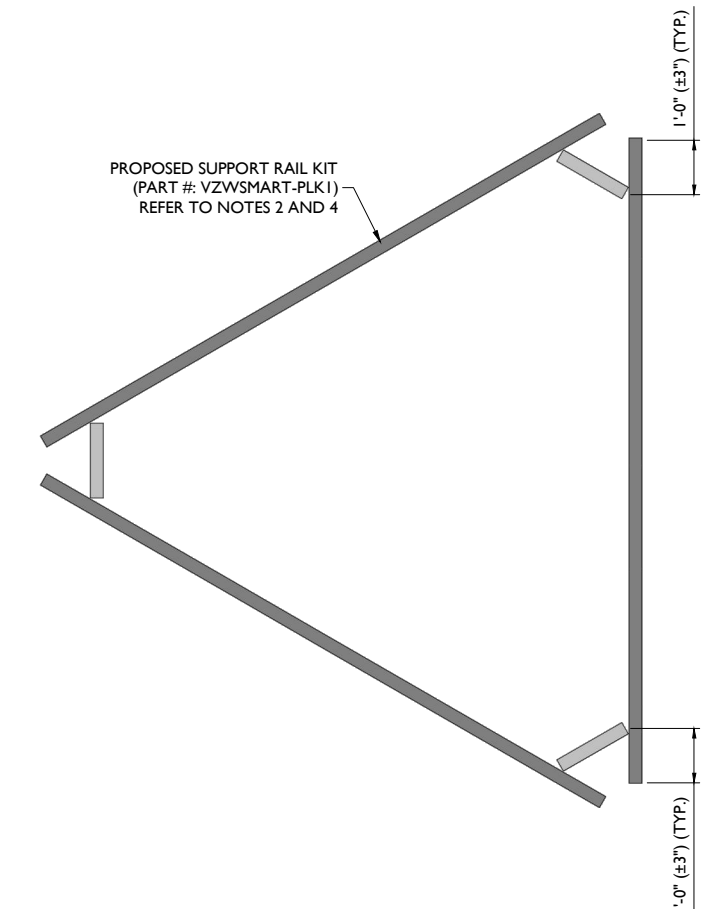
**1** PROPOSED FRONT ELEVATION (TYP. ALL SECTORS)  
SCALE: N.T.S.

**MODIFICATION NOTES:**

1. MOUNT MEMBERS NOT SHOWN FOR CLARITY U.N.O.
2. CONTRACTOR TO VERIFY THE LENGTH REQUIRED AND TRIM AS NECESSARY IN ACCORDANCE WITH THE 'STRUCTURAL STEEL' NOTES ON SHEET S-2.
3. CONNECT OTHER END OF KICKER KIT TO MONOPOLE COLLAR MOUNT ASSEMBLY (PART #: VZWSMART-PLK7).
4. RADIO AND/OR TME POSITIONS SHALL BE ADJUSTED VERTICALLY AS NEEDED IN ORDER TO ACHIEVE INSTALLATION OF HORIZONTAL AS SHOWN. EOR SHALL BE NOTIFIED IF EQUIPMENT NEEDS TO BE RELOCATED TO ANOTHER MOUNT PIPE.
5. CONTRACTOR SHALL FLOAT MOUNT AND SECURE IN NEW POSITION 6" ABOVE EXISTING LOCATION FOLLOWING GUIDELINES BELOW:
  - CARE SHALL BE TAKEN NOT TO DAMAGE EXISTING COAX/JUMPERS
  - INSPECT POLE AND STEP BOLTS FOR DAMAGE BENEATH WHERE MOUNT WAS PREVIOUSLY LOCATED AND ESCALATE TO ENGINEER OF RECORD IMMEDIATELY IF ANY VISIBLE DAMAGE IS PRESENT.
  - AFTER FULLY SECURING COLLAR AT NEW LOCATION, CONTRACTOR SHALL REPLACE ALL THREADED RODS ON MOUNT COLLAR. RODS SHALL NOT BE REPLACED UNTIL MOUNT HAS BEEN FULLY SECURED.
  - CONTRACTOR SHALL NOT LOOSEN OR REPLACE MORE THAN ONE ROD AT A TIME.

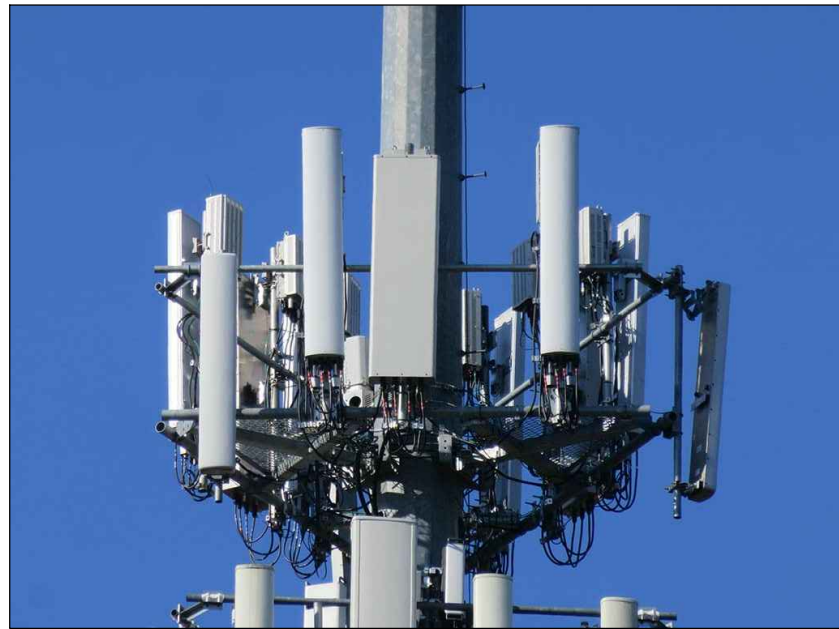


**2** PROPOSED SIDE ELEVATION (TYP. ALL SECTORS)  
SCALE: N.T.S.



**3** PROPOSED PLAN VIEW  
SCALE: N.T.S.





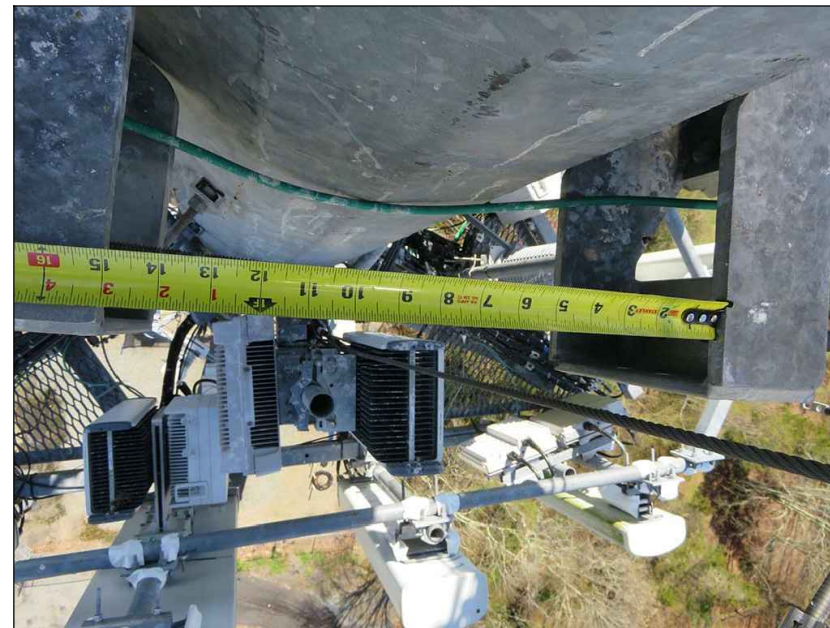
MOUNT PHOTO 1



MOUNT PHOTO 2



MOUNT PHOTO 3



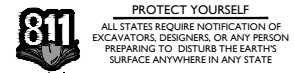
MOUNT PHOTO 4



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REV	DATE	DESCRIPTION	DRAWN BY	CHECKED BY
0	6/30/2021	ISSUED FOR CONSTRUCTION	MSG	JPL

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 Justin P. Linette  
 LICENSED PROFESSIONAL ENGINEER  
 LICENSE NUMBER: 31965  
 MASER CONSULTING / C.T. COA #: JPC0000131  
 Digitally signed by Justin P. Linette  
 Date: 2021.07.01 09:57:04-04'00'

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 WATERFORD, CT 06385  
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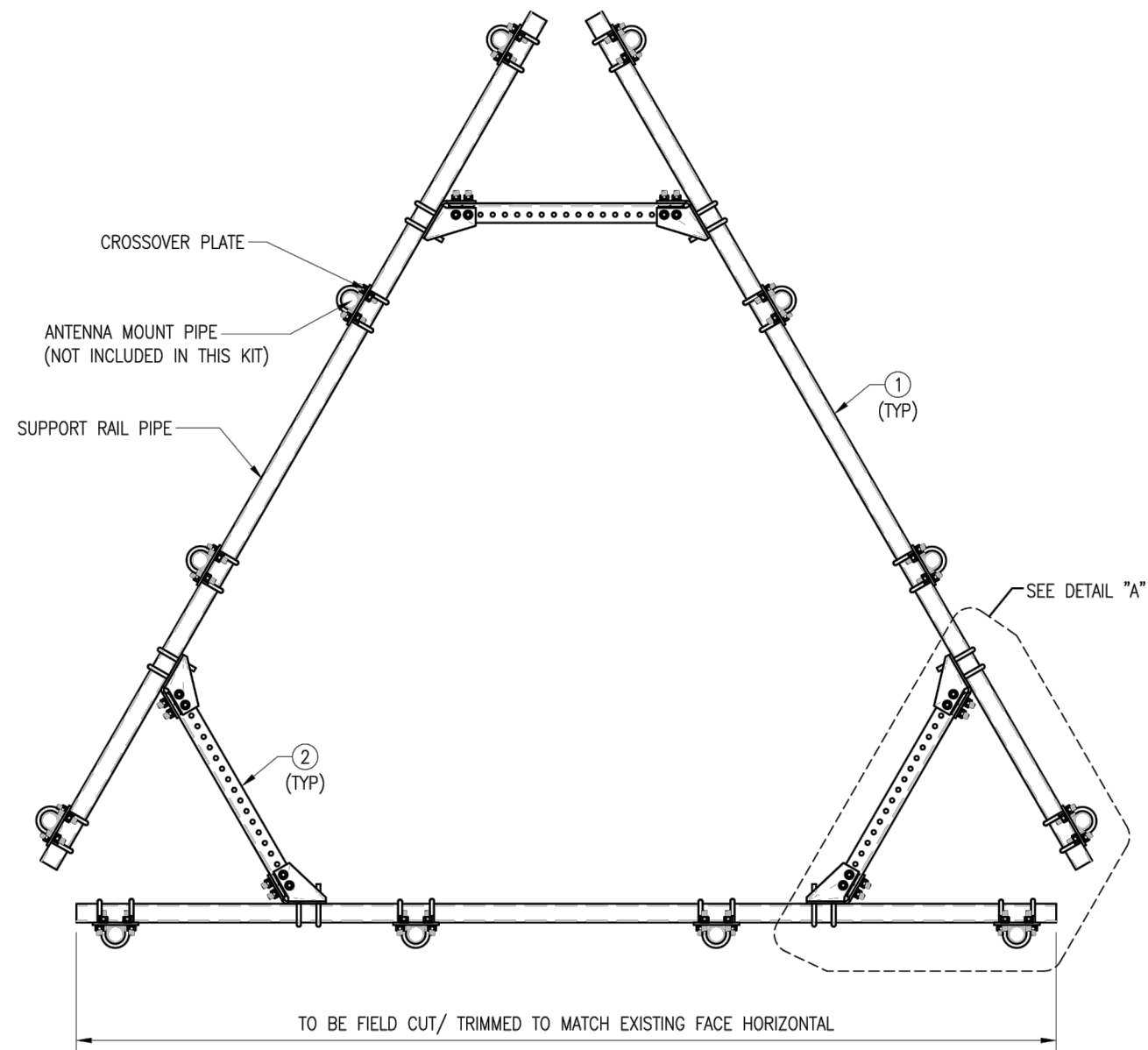
NASHVILLE OFFICE  
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 Brentwood, TN 37027  
 Phone: 615.686.2575  
 Fax: 615.523.2456

SHEET TITLE:  
 MOUNT PHOTOS

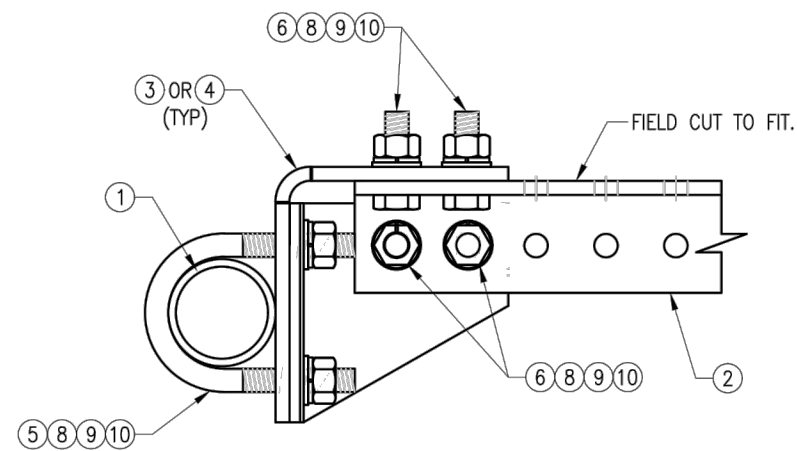
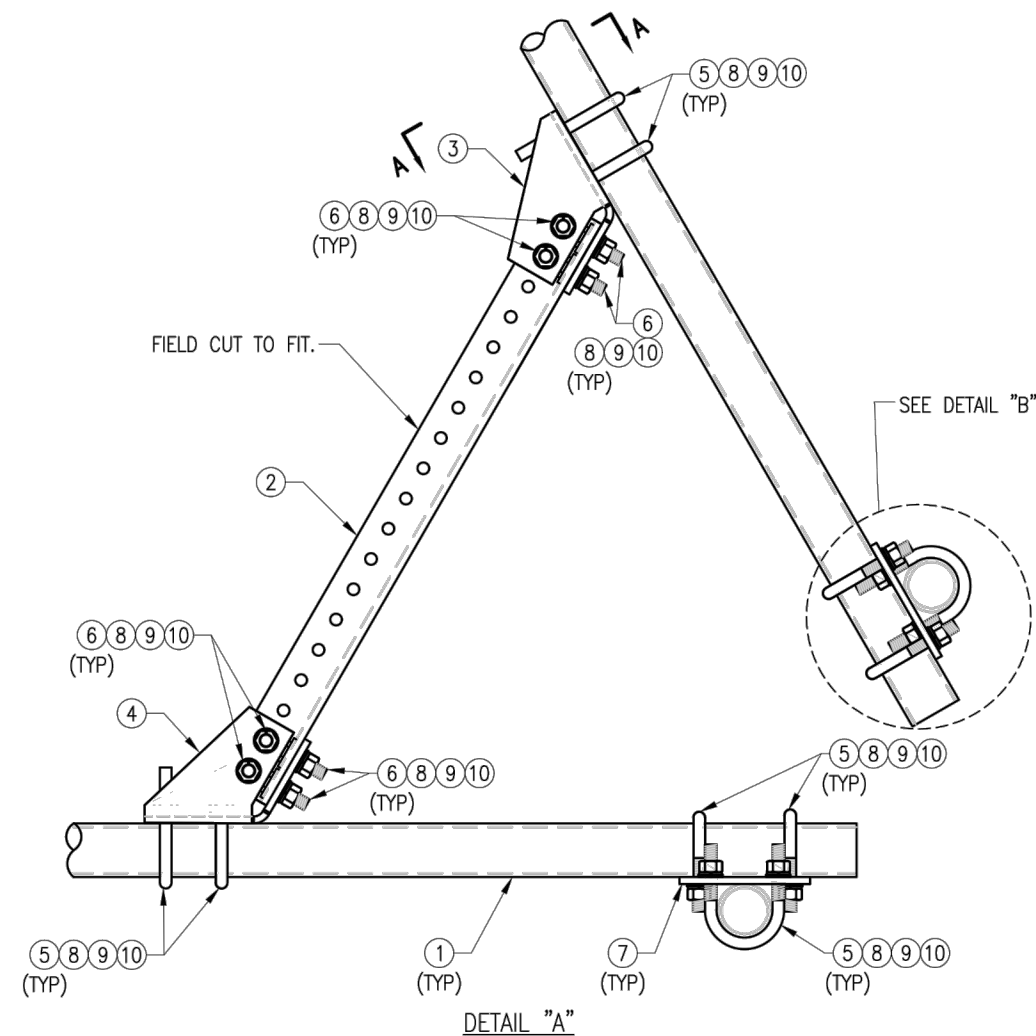
SHEET NUMBER:  
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M:\Projects\217466903\_WATERFORD SE CT\_Humans\Drawings\PALE\_20101030.dwg:54 By: MBRAMAH

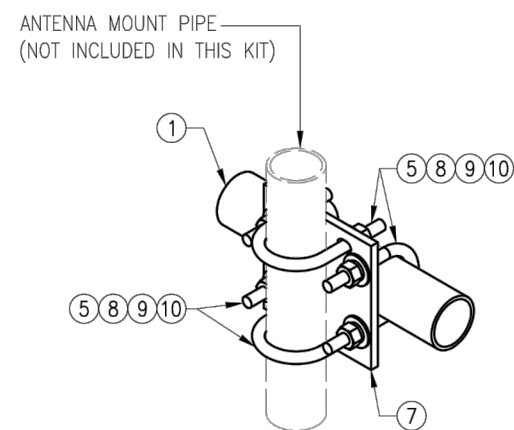




PLAN VIEW



SECTION "A-A"



DETAIL "B"

NOTES:

- HOT-DIPPED GALVANIZED PER ASTM A123.

VZW SMART-PLK1 (SUPPORT RAIL KIT)					
ITEM NO.	QTY.	PART NO.	DESCRIPTION	SHEET #	WT
1	3	PST2875-12.5	2.5" PST (2.875" O.D. X 0.203" THK.) X 12'-6" A53 GR-B	PLK1-F1	292
2	3	L33375-3	L 3" X 3" X 3/8" X 3'-0" A36	PLK1-F1	66
3	3	CBP-L	CORNER BENT PLATE BRACKET	PLK1-F2	28
4	3	CBP-R	CORNER BENT PLATE BRACKET	PLK1-F2	28
5	60	MS02-625-300-500	RU-BOLT 5/8" X 3" I.W. X 5" I.L. A36 (OR EQUIV.)	RBC-1	82
6	24	---	BOLT 5/8" X 2" A325	---	9
7	12	PL375-857	PL 3/8" X 8 1/2" X 7'-0" A36	PLK1-F3	77
8	144	FW-625	5/8" HDG USS FLAT WASHER	---	12
9	144	LW-625	5/8" HDG LOCK WASHER	---	3
10	144	NUT-625	5/8" HDG HEX NUT	---	17
GALVANIZED WT					504

DRAWN BY: H.R. CHECKED BY: HMA

REV.	DESCRIPTION	BY	DATE
1	FIRST ISSUE	H.R.	05/08/20

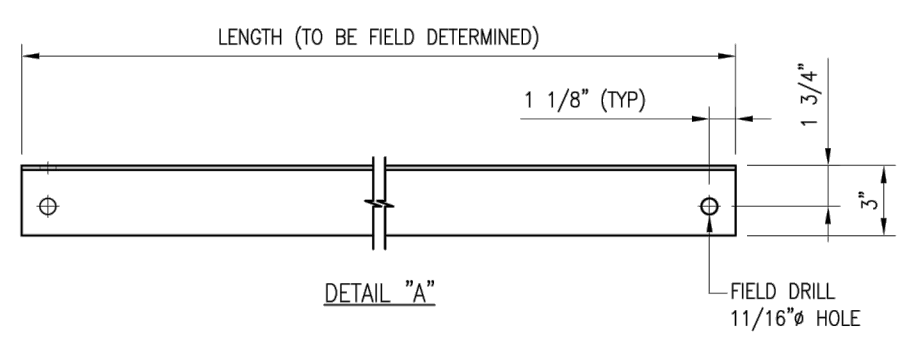
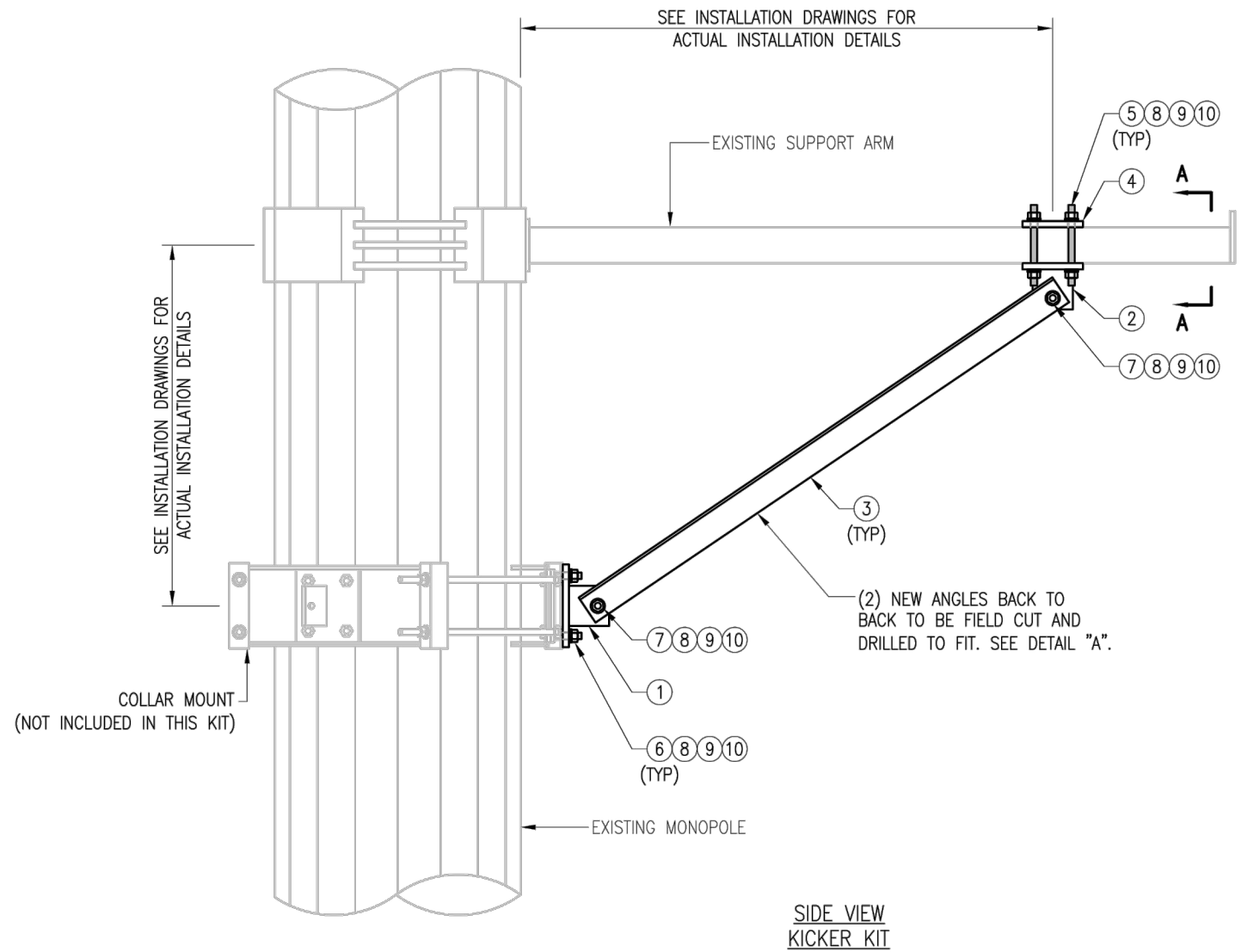
SHEET TITLE:

VZW SMART-PLK1  
SUPPORT RAIL KIT

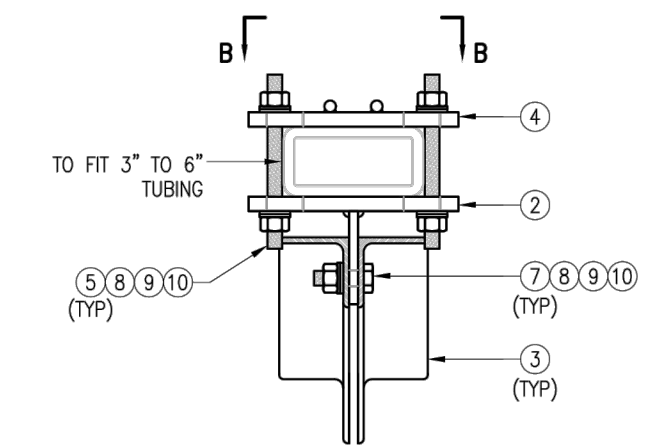
SHEET NUMBER: REV #:

VZW SMART-PLK1 0

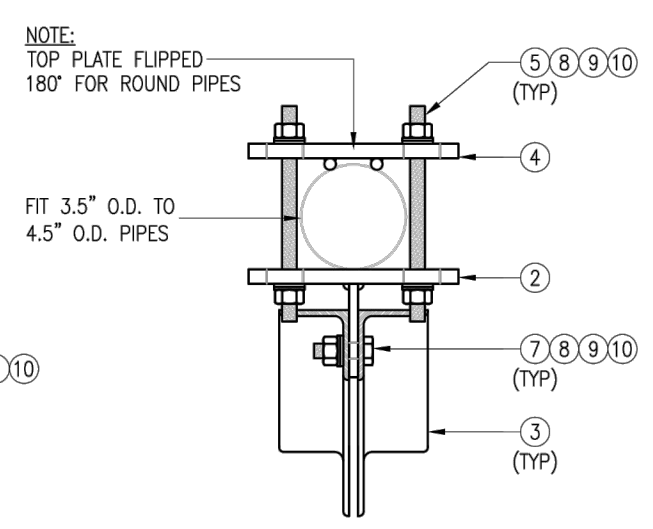
NOTE:  
THE LOCATION OF KICKER AND EXISTING ANTENNA MOUNT SHOWN ON THE DRAWING IS FOR REPRESENTATION PURPOSE ONLY. SEE INSTALLATION DRAWINGS FOR ACTUAL INSTALLATION OF DETAILS.



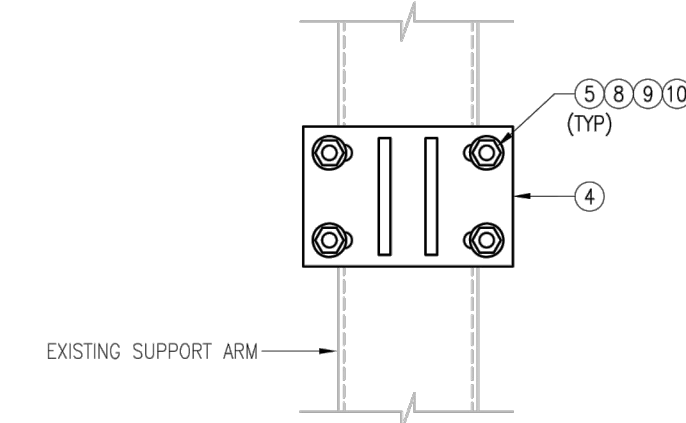
NOTES:  
1. ALL HOLES ARE 11/16" DIA. U.N.O  
2. HOT-DIPPED GALVANIZED PER ASTM A123.  
3. FIT UP TO 6" SQ. TUBING OR 4 1/2" O.D. PIPE



SECTION "A-A"  
RECT. HSS MOUNTING



SECTION "A-A"  
ROUND PIPE MOUNTING



SECTION "B-B"

VZSMART-PLK5 (KICKER KIT)					
ITEM NO.	QTY.	PART NO.	DESCRIPTION	SHEET #	WT
1	3	BRKW-XXX	BRACKET WELDMNT A36	PLK5-F3	43.8
2	3	BRKW-XXXX	BRACKET WELDMNT A36	PLK5-F2	35.7
3	6	L331875-8	L 3" X 3" X 3/16" X 8'-0" A36	PLK5-F4	182.9
4	3	PL-KI	PL 5/8" X 6" X 9" A36	PLK5-F1	29.0
5	12	---	THREADED ROD 5/8" DIA. X 1'-0" F1554-36 HDG	---	---
6	6	---	BOLT 5/8" X 2" A325	---	---
7	12	---	BOLT 5/8" X 2 1/2" A325	---	---
8	42	FW-625	5/8" HDG USS FLAT WASHER	---	3
9	42	LW-625	5/8" HDG LOCK WASHER	---	1
10	42	NUT-625	5/8" HDG HEX NUT	---	5
GALVANIZED WT					291

VzW  
**SMART Tool**<sup>®</sup>  
Vendor



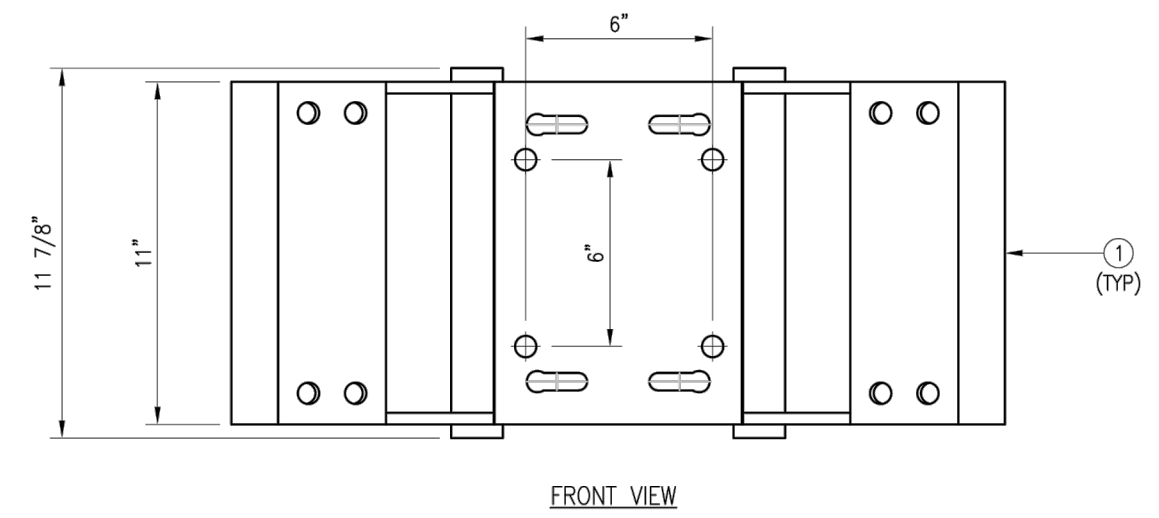
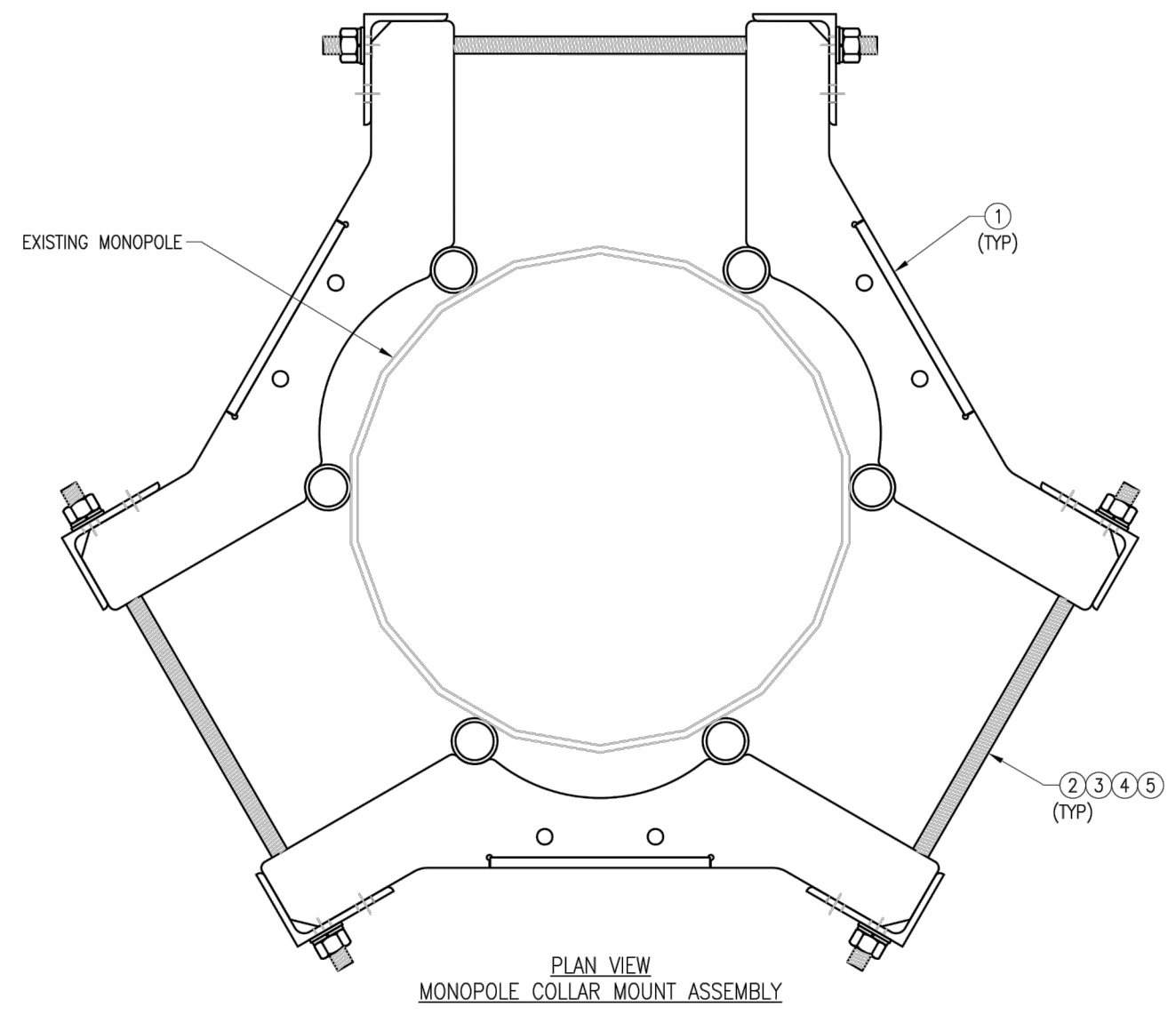
DRAWN BY: MN CHECKED BY: HMA/KW

REV.	DESCRIPTION	BY	DATE
1	FIRST ISSUE	MN	05/08/20

SHEET TITLE:

VZSMART-PLK5  
KICKER KIT

SHEET NUMBER: VZSMART-PLK5 REV #: 0



**NOTES:**  
 1. FIT 12" TO 45" DIA MONOPOLE.  
 2. HOT-DIPPED GALVANIZED PER ASTM A123.

VZSMART-PLK7 (MONOPOLE COLLAR MOUNT ASSEMBLY)						
ITEM NO.	QTY.	PART NO.	DESCRIPTION	SHEET #	WT	
1	3	CM-1245	COLLAR MOUNT ASSEMBLY	PLK7-F1	147	
2	6	---	THREADED ROD 5/8" X 4'-0" A193-B7	---		
3	12	FW-625	5/8" HDG USS FLAT WASHER	---	1	
4	12	LW-625	5/8" HDG LOCK WASHER	---	0	
5	12	NUT-625	5/8" HDG HEX NUT	---	1	
					GALVANIZED WT	150

DRAWN BY: BT      CHECKED BY: HMA/KW

REV.	DESCRIPTION	BY	DATE
1	FIRST ISSUE	BT	05/11/20

SHEET TITLE:  
 VZSMART-PLK7  
 MONOPOLE COLLAR  
 MOUNT ASSEMBLY

SHEET NUMBER: VZSMART-PLK7      REV #: 0

Site Name: **WATERFORD SE CT**  
 Cumulative Power Density

Operator	Operating Frequency	Number of Trans.	ERP Per Trans.	Total ERP	Distance to Target	Calculated Power Density	Maximum Permissible Exposure*	Fraction of MPE
	(MHz)		(watts)	(watts)	(feet)	(mW/cm <sup>2</sup> )	(mW/cm <sup>2</sup> )	(%)
VZW 700	751	4	621	2483	160.04	0.0035	0.5007	0.70%
VZW Cellular	872.5	4	38	151	160.04	0.0002	0.5817	0.04%
VZW PCS	1977.5	4	1565	6258	160.04	0.0088	1.0000	0.88%
VZW AWS	2120	4	1633	6534	160.04	0.0092	1.0000	0.92%
VZW CBAND	3730.08	4	6531	26125	160.04	0.0367	1.0000	3.67%
<b>Total Percentage of Maximum Permissible Exposure</b>								<b>6.20%</b>

\*Guidelines adopted by the FCC on August 1, 1996, 47 CFR Part 1 based on NCRP Report 86, 1986 and generally on ANSI/IEEE C95.1-1992

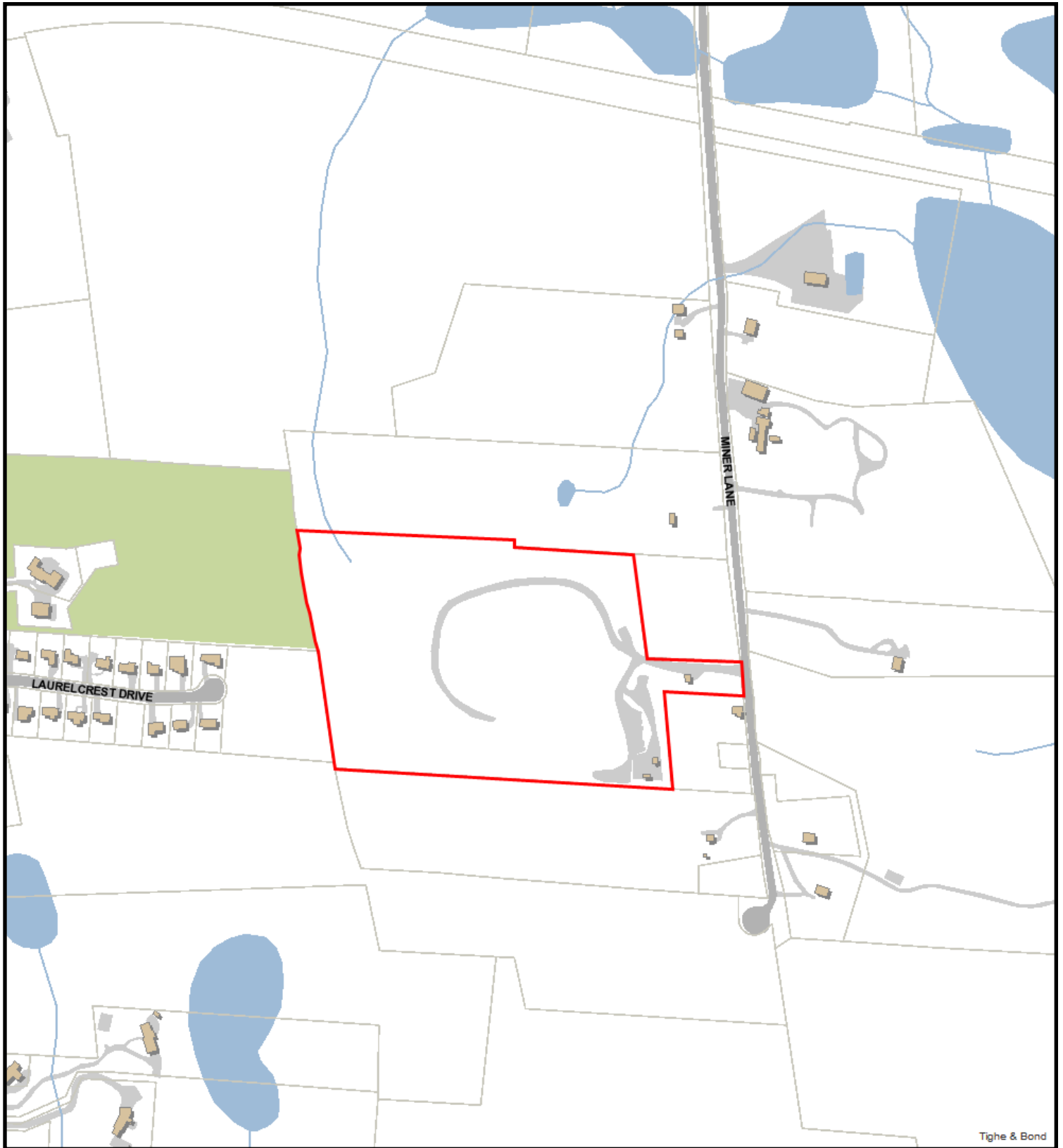
\*\*Calculation includes a -10 dB Off Beam Antenna Pattern Adjustment pursuant to Attachments B and C of the Siting Council's November 10, 2015 Memorandum for Exempt Modification filings

MHz = Megahertz

mW/cm<sup>2</sup> = milliwatts per square centimeter

ERP = Effective Radiated Power

Absolute worst case maximum values used.



8/13/2021 11:52:34 AM

Scale: 1"=500'

Scale is approximate

The information depicted on this map is for planning purposes only.  
It is not adequate for legal boundary definition, regulatory interpretation, or parcel-level analyses.



# 85 MINER LANE

**Location** 85 MINER LANE

**Mblu** 153 / / 4766 / /

**Acct#** 00433700

**Owner** WATERFORD TOWN OF

**Assessment** \$395,920

**Appraisal** \$565,580

**PID** 4766

**Building Count** 1

## Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2017	\$224,800	\$340,780	\$565,580

Assessment			
Valuation Year	Improvements	Land	Total
2017	\$157,370	\$238,550	\$395,920

## Parcel Addresses

Additional Addresses
No Additional Addresses available for this parcel

## Owner of Record

**Owner** WATERFORD TOWN OF  
**Co-Owner**

**Sale Price** \$0  
**Certificate**  
**Book & Page** 0259/0774  
**Sale Date** 05/14/1981  
**Instrument** 00

## Ownership History

Ownership History					
Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
WATERFORD TOWN OF	\$0		0259/0774	00	05/14/1981

## Building Information

## Building 1 : Section 1

Year Built:

Living Area: 0

Replacement Cost: \$0

Building Percent Good:


Building Attributes	
Field	Description
Style	Outbuildings
Model	
Grade:	
Stories	
Occupancy	
Exterior Wall 1	
Exterior Wall 2	
Roof Structure	
Roof Cover	
Interior Wall 1	
Interior Wall 2	
Interior Flr 1	
Interior Flr 2	
Heat Fuel	
Heat Type:	
AC Percent	
Total Bedrooms:	
Full Bthrms:	
Half Baths:	
Extra Fixtures	
Total Rooms:	
Bath Style:	
Kitchen Style:	
Num Kitchens	
Fireplace(s)	
Extra Opening(s)	
Gas Fireplace(s)	
% Attic Fin	
LF Dormer	
Foundation	
Bsmt Gar(s)	
Bsmt %	
SF FBM	
SF Rec Rm	

## Building Photo



(<http://images.vgsi.com/photos/WaterfordCTPhotos//A000165\33.jpg>)

## Building Layout

 Building Layout

([http://images.vgsi.com/photos/WaterfordCTPhotos//Sketches/4766\\_4766.j](http://images.vgsi.com/photos/WaterfordCTPhotos//Sketches/4766_4766.j))

Building Sub-Areas (sq ft)	Legend
No Data for Building Sub-Areas	

Fin Bsmt Qual	
Bsmt Access	
Usrflid 300	
Usrflid 301	

### Extra Features

Extra Features	<a href="#">Legend</a>
No Data for Extra Features	

### Land

#### Land Use

**Use Code** 900  
**Description** Exempt Vac  
**Zone** R-40  
**Neighborhood** 1100  
**Alt Land Appr** No  
**Category**

#### Land Line Valuation

**Size (Acres)** 25.67  
**Frontage** 0  
**Depth** 0  
**Assessed Value** \$238,550  
**Appraised Value** \$340,780

### Outbuildings

Outbuildings						<a href="#">Legend</a>
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
SHD1	Shed	MS	Masonry	400.00 S.F.	\$5,760	1
SHD1	Shed	FR	Frame	480.00 S.F.	\$10,580	1
MSC14	RADIO TOWER			200.00 UNIT	\$200,000	1
FN3	FENCE-6' CHAIN			96.00 L.F.	\$580	1
SHP	Work Shop	MS	Masonry	240.00 S.F.	\$7,880	1

### Valuation History

Appraisal			
Valuation Year	Improvements	Land	Total
2020	\$224,800	\$340,780	\$565,580
4000	\$224,800	\$340,780	\$565,580

Assessment			
Valuation Year	Improvements	Land	Total
2020	\$157,370	\$238,550	\$395,920
4000	\$157,370	\$238,550	\$395,920







**GENERAL CONSTRUCTION NOTES:**

1. OWNER FURNISHED MATERIALS, VERIZON WIRELESS "THE COMPANY" WILL PROVIDE AND THE CONTRACTOR WILL INSTALL
  - A. BTS EQUIPMENT FRAME (PLATFORM) AND ICEBRIDGE SHELTER (GROUND BUILD/CO-LOCATE ONLY)
  - B. AC/TELCO INTERFACE BOX (PPC)
  - C. ICE BRIDGE (CABLE TRAY WITH COVER) (GROUND BUILD/CO-LOCATE ONLY, GC TO FURNISH AND INSTALL FOR ROOFTOP INSTALLATION)
  - D. TOWERS, MONOPOLES
  - E. TOWER LIGHTING
  - F. GENERATORS & LIQUID PROPANE TANK
  - G. ANTENNA STANDARD BRACKETS, FRAMES AND PIPES FOR MOUNTING
  - H. ANTENNAS (INSTALLED BY OTHERS)
  - I. TRANSMISSION LINE
  - J. TRANSMISSION LINE JUMPERS
  - K. TRANSMISSION LINE CONNECTORS WITH WEATHERPROOFING KITS
  - L. TRANSMISSION LINE GROUND KITS
  - M. HANGERS
  - N. HOISTING GRIPS
  - O. BTS EQUIPMENT
2. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL OTHER MATERIALS FOR THE COMPLETE INSTALLATION OF THE SITE INCLUDING, BUT NOT LIMITED TO, SUCH MATERIALS AS FENCING, STRUCTURAL STEEL SUPPORTING SUB-FRAME FOR PLATFORM, ROOFING LABOR AND MATERIALS, GROUNDING RINGS, GROUNDING WIRES, COPPER-CLAD OR XIT CHEMICAL GROUND ROD(S), BUSS BARS, TRANSFORMERS AND DISCONNECT SWITCHES WHERE APPLICABLE, TEMPORARY ELECTRICAL POWER, CONDUIT, LANDSCAPING COMPOUND STONE, CRANES, CORE DRILLING, SLEEPERS AND RUBBER MATTING, REBAR, CONCRETE CAISSONS, PADS AND/OR AUGER MOUNTS, MISCELLANEOUS FASTENERS, CABLE TRAYS, NON-STANDARD ANTENNA FRAMES AND ALL OTHER MATERIAL AND LABOR REQUIRED TO COMPLETE THE JOB ACCORDING TO THE DRAWINGS AND SPECIFICATIONS. IT IS THE POSITION OF VERIZON WIRELESS TO APPLY FOR PERMITTING AND CONTRACTOR RESPONSIBLE FOR PICKUP AND PAYMENT OF REQUIRED PERMITS.
3. ALL WORK SHALL CONFORM TO ALL CURRENT APPLICABLE FEDERAL, STATE, AND LOCAL CODES, INCLUDING ANSI/EIA/TIA-222, AND COMPLY WITH ATC CONSTRUCTION SPECIFICATIONS.
4. CONTRACTOR SHALL CONTACT LOCAL 811 FOR IDENTIFICATION OF UNDERGROUND UTILITIES PRIOR TO START OF CONSTRUCTION.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL REQUIRED INSPECTIONS.
6. 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.
7. DO NOT CHANGE SIZE OR SPACING OF STRUCTURAL ELEMENTS.
8. DETAILS SHOWN ARE TYPICAL; SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS UNLESS OTHERWISE NOTED.
9. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY WHICH SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
10. CONTRACTOR SHALL BRACE STRUCTURES UNTIL ALL STRUCTURAL ELEMENTS NEEDED FOR STABILITY ARE INSTALLED. THESE ELEMENTS ARE AS FOLLOWS: LATERAL BRACING, ANCHOR BOLTS, ETC.
11. CONTRACTOR SHALL DETERMINE EXACT LOCATION OF EXISTING UTILITIES, GROUNDS DRAINS, DRAIN PIPES, VENTS, ETC. BEFORE COMMENCING WORK.
12. 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.
13. EACH CONTRACTOR SHALL COOPERATE WITH THE VERIZON WIRELESS REP, AND COORDINATE HIS WORK WITH THE WORK OF OTHERS.
14. 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.
15. ALL CABLE/CONDUIT ENTRY/EXIT PORTS SHALL BE WEATHERPROOFED DURING INSTALLATION USING A SILICONE SEALANT.
16. WHERE EXISTING CONDITIONS DO NOT MATCH THOSE SHOWN IN THIS PLAN SET, CONTRACTOR SHALL NOTIFY THE VERIZON WIRELESS REP AND ENGINEER OF RECORD IMMEDIATELY.
17. CONTRACTOR SHALL ENSURE ALL SUBCONTRACTORS ARE PROVIDED WITH A COMPLETE AND CURRENT SET OF DRAWINGS AND SPECIFICATIONS FOR THIS PROJECT.
18. CONTRACTOR SHALL REMOVE ALL RUBBISH AND DEBRIS FROM THE SITE AT THE END OF EACH DAY.
19. CONTRACTOR SHALL COORDINATE WORK SCHEDULE WITH AMERICAN TOWER CORPORATION (ATC) AND TAKE PRECAUTIONS TO MINIMIZE IMPACT AND DISRUPTION OF OTHER OCCUPANTS OF THE FACILITY.
20. CONTRACTOR SHALL FURNISH VERIZON WIRELESS AND AMERICAN TOWER CORPORATION (ATC) WITH A PDF MARKED UP AS-BUILT SET OF DRAWINGS UPON COMPLETION OF WORK.
21. 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.

22. 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.
23. CONTRACTOR SHALL INSTALL ALL SITE SIGNAGE IN ACCORDANCE WITH VERIZON WIRELESS SPECIFICATIONS AND REQUIREMENTS.
24. CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS TO VERIZON WIRELESS FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
25. ALL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND LOCATED ACCORDING TO VERIZON WIRELESS SPECIFICATIONS, AND AS SHOWN IN THESE PLANS.
26. 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.
27. 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.
28. 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.
29. 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 NEGLIGENCE ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, OR BY THE ELEMENTS DUE TO NEGLIGENCE 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.
30. 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.
31. 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.
32. VERIZON WIRELESS FURNISHED EQUIPMENT SHALL BE PICKED-UP AT THE VERIZON WIRELESS WAREHOUSE, NO LATER THAN 48HR AFTER BEING NOTIFIED INSURED, STORED, UNCRATE, PROTECTED AND INSTALLED BY THE CONTRACTOR WITH ALL APPURTENANCES REQUIRED TO PLACE THE EQUIPMENT IN OPERATION, READY FOR USE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE EQUIPMENT AFTER PICKING IT UP.
33. VERIZON WIRELESS OR HIS ARCHITECT/ENGINEER RESERVES THE RIGHT TO REJECT ANY EQUIPMENT OR MATERIALS WHICH, IN HIS OWN OPINION ARE NOT IN COMPLIANCE WITH THE CONTRACT DOCUMENTS, EITHER BEFORE OR AFTER INSTALLATION AND THE EQUIPMENT SHALL BE REPLACED WITH EQUIPMENT CONFORMING TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS BY THE CONTRACTOR AT NO COST TO VERIZON WIRELESS OR THEIR ARCHITECT/ENGINEER.

**SPECIAL CONSTRUCTION**

**ANTENNA INSTALLATION NOTES:**

1. WORK INCLUDED:
  - A. ANTENNA AND COAXIAL CABLES ARE FURNISHED BY VERIZON WIRELESS UNDER A SEPARATE CONTRACT. THE CONTRACTOR SHALL ASSIST ANTENNA INSTALLATION CONTRACTOR IN TERMS OF COORDINATION AND SITE ACCESS. ERECTION SUBCONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF PERSONNEL AND
  - B. INSTALL ANTENNA AS INDICATE ON DRAWINGS AND VERIZON WIRELESS SPECIFICATIONS.
  - C. INSTALL GALVANIZED STEEL ANTENNA MOUNTS AS INDICATED ON DRAWINGS
  - D. INSTALL FURNISHED GALVANIZED STEEL OR ALUMINUM WAVEGUIDE.
  - E. CONTRACTOR SHALL PROVIDE FOUR (4) SETS OF SWEEP TESTS USING ANRITZU-PACKARD 8713B RF SCALAR NETWORK ANALYZER. SUBMIT FREQUENCY DOMAIN REFLECTOMETER(FDR) TESTS RESULTS TO THE PROJECT MANAGER. SWEEP TESTS SHALL BE AS PER ATTACHED RFS "MINIMUM FIELD TESTING RECOMMENDED FOR ANTENNA AND HELIAX COAXIAL CABLE SYSTEMS" DATED 10/5/93. TESTING SHALL BE PERFORMED BY AN INDEPENDENT TESTING SERVICE AND BE BOUND AND SUBMITTED WITHIN ONE WEEK OF WORK COMPLETION.
  - F. INSTALL COAXIAL CABLES AND TERMINATING BETWEEN ANTENNAS AND EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS. WEATHERPROOF ALL CONNECTIONS BETWEEN THE ANTENNA AND EQUIPMENT PER MANUFACTURER'S REQUIREMENTS. TERMINATE ALL COAXIAL CABLE THREE (3) FEET IN EXCESS OF ENTRY PORT LOCATION UNLESS OTHERWISE STATED.
  - G. ANTENNA AND COAXIAL CABLE GROUNDING:
2. ALL EXTERIOR #6 GREED GROUND WIRE "DAISY CHAIN" CONNECTIONS ARE TO BE WEATHER SEALED WITH RFS CONNECTORS/SPLICE WEATHERPROOFING KIT #221213 OR

EQUAL.

3. ALL COAXIAL CABLE GROUNDING KITS ARE TO BE INSTALLED ON STRAIGHT RUNS OF COAXIAL CABLE (NOT WITHIN BENDS)

**ALL DISCREPANCIES FROM WHAT IS SHOWN ON THESE CONSTRUCTION DRAWINGS SHALL BE COMMUNICATED TO ATC ENGINEERING IMMEDIATELY FOR CORRECTION OR RE-DESIGN. FAILURE TO COMMUNICATE DIRECTLY WITH ATC ENGINEERING OR ANY CHANGES FROM THE DESIGN CONDUCTED WITHOUT PRIOR APPROVAL FROM ATC ENGINEERING SHALL BE THE SOLE RESPONSIBILITY OF THE GENERAL CONTRACTOR.**



REV.	DESCRIPTION	BY	DATE
A	PRELIM	BJC	06/10/21

ATC SITE NUMBER:  
**310972**

ATC SITE NAME:  
**WATERFORD REBUILD CT**

VERIZON WIRELESS SITE NAME:  
**WATERFORD SE CT**

SITE ADDRESS:  
15 MINER LANE  
WATERFORD, CT 06385



DATE DRAWN:	06/10/21
ATC JOB NO:	13685301
CUSTOMER ID:	469063
CUSTOMER #:	N/A

**GENERAL NOTES**

SHEET NUMBER: <b>G-002</b>	REVISION: <b>0</b>
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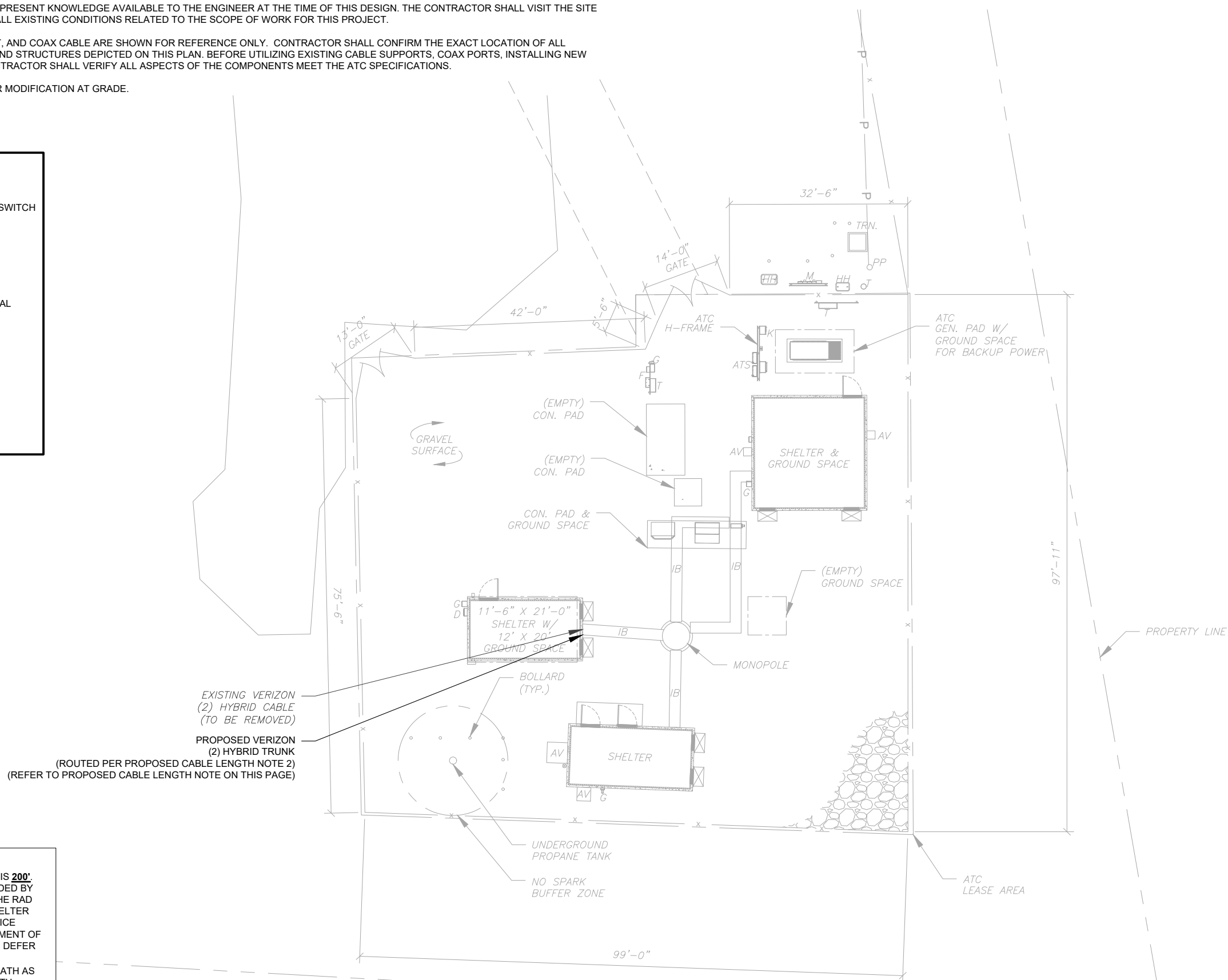
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**SITE PLAN NOTES:**

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, AND COAX CABLE ARE SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL CONFIRM THE EXACT LOCATION OF ALL PROPOSED AND EXISTING EQUIPMENT AND STRUCTURES DEPICTED ON THIS PLAN. BEFORE UTILIZING EXISTING CABLE SUPPORTS, COAX PORTS, INSTALLING NEW PORTS OR ANY OTHER EQUIPMENT, CONTRACTOR SHALL VERIFY ALL ASPECTS OF THE COMPONENTS MEET THE ATC SPECIFICATIONS.
3. THIS PROJECT INCLUDES NO INSTALL OR MODIFICATION AT GRADE.

LEGEND	
⊗	GROUNDING TEST WELL
ATS	AUTOMATIC TRANSFER SWITCH
B	BOLLARD
CSC	CELL SITE CABINET
D	DISCONNECT
E	ELECTRICAL
F	FIBER
GEN	GENERATOR
G	GENERATOR RECEPTACAL
HH, V	HAND HOLE, VAULT
IB	ICE BRIDGE
K	KENTROX BOX
LC	LIGHTING CONTROL
M	METER
PB	PULL BOX
PP	POWER POLE
T	TELCO
TRN	TRANSFORMER
x	CHAINLINK FENCE



- PROPOSED CABLE LENGTH:**
1. ESTIMATED LENGTH OF PROPOSED CABLE IS **200'**. ESTIMATED LENGTH OF CABLE WAS PROVIDED BY CUSTOMER OR CALCULATED BY ADDING THE RAD CENTER AND THE DISTANCE FROM THE SHELTER ENTRY PLATE TO THE TOWER (ALONG THE ICE BRIDGE) AND A SAFETY FACTOR MEASUREMENT OF 15% (OF THE TWO PREVIOUS VALUES). CDS DEFER TO GREATEST CABLE LENGTH.
  2. ROUTE PROPOSED CABLES ALONG SAME PATH AS EXISTING CABLES AND IN ACCORDANCE WITH STRUCTURAL ANALYSIS. WHERE POSSIBLE UTILIZE EXISTING CABLE SUPPORT STRUCTURES AS PROVIDED FOR CARRIER TO ADEQUATELY SECURE CABLES, USING EITHER APPROPRIATELY SIZED STAINLESS STEEL SNAP-INS OR MOUNTING HARDWARE AND BRACKETS AS SPECIFIED BY CABLE MANUFACTURER. OTHERWISE, ATTACH CABLES TO HORIZONTAL OR DIAGONAL TOWER MEMBERS USING PROPOSED STAINLESS STEEL ADAPTERS (DO NOT ATTACH TO TOWER LEG).

**1 DETAILED SITE PLAN**

GRAPHIC SCALE  
  
 (IN FEET)  
 1 UNIT = 20 FEET

**AMERICAN TOWER®**  
**ATC TOWER SERVICES**  
 3500 REGENCY PARKWAY  
 SUITE 100  
 CARY, NC 27518  
 PHONE: (919) 468-0112  
 COA: C01229-00

**RPM ENGINEERING**  
*With Integrity*

REV.	DESCRIPTION	BY	DATE
A	PRELIM	BJC	06/10/21

ATC SITE NUMBER:  
**310972**

ATC SITE NAME:  
**WATERFORD REBUILD CT**

VERIZON WIRELESS SITE NAME:  
**WATERFORD SE CT**

SITE ADDRESS:  
 15 MINER LANE  
 WATERFORD, CT 06385

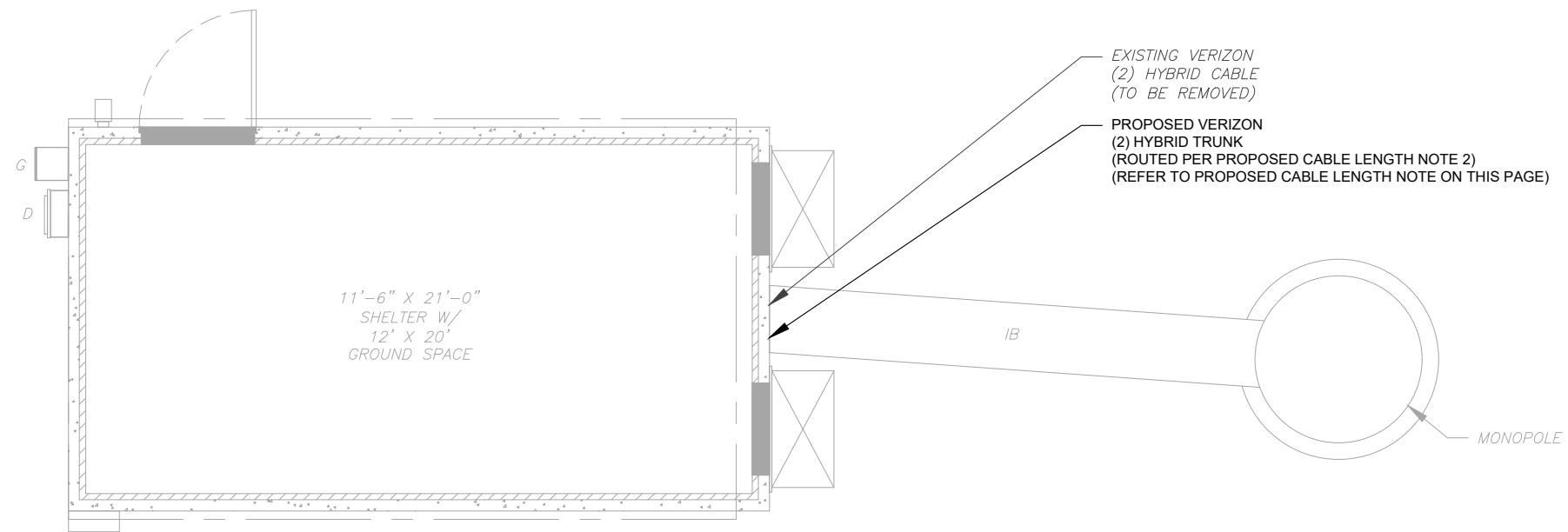
SEAL:

DATE DRAWN:	06/10/21
ATC JOB NO:	13685301
CUSTOMER ID:	469063
CUSTOMER #:	N/A

**DETAILED SITE PLAN**

SHEET NUMBER: <b>C-101</b>	REVISION: <b>0</b>
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1 DETAILED EQUIPMENT PLAN

0 5' 10'

SCALE: 1"=5' (11X17)  
1"=2.5' (22X34)



**AMERICAN TOWER®**  
**ATC TOWER SERVICES**  
 3500 REGENCY PARKWAY  
 SUITE 100  
 CARY, NC 27518  
 PHONE: (919) 468-0112  
 COA: C01229-00

**RPM ENGINEERING**  
*With Integrity*

REV.	DESCRIPTION	BY	DATE
A	PRELIM	BJC	06/10/21

ATC SITE NUMBER:  
310972

ATC SITE NAME:  
WATERFORD REBUILD CT

VERIZON WIRELESS SITE NAME:  
WATERFORD SE CT

SITE ADDRESS:  
15 MINER LANE  
WATERFORD, CT 06385



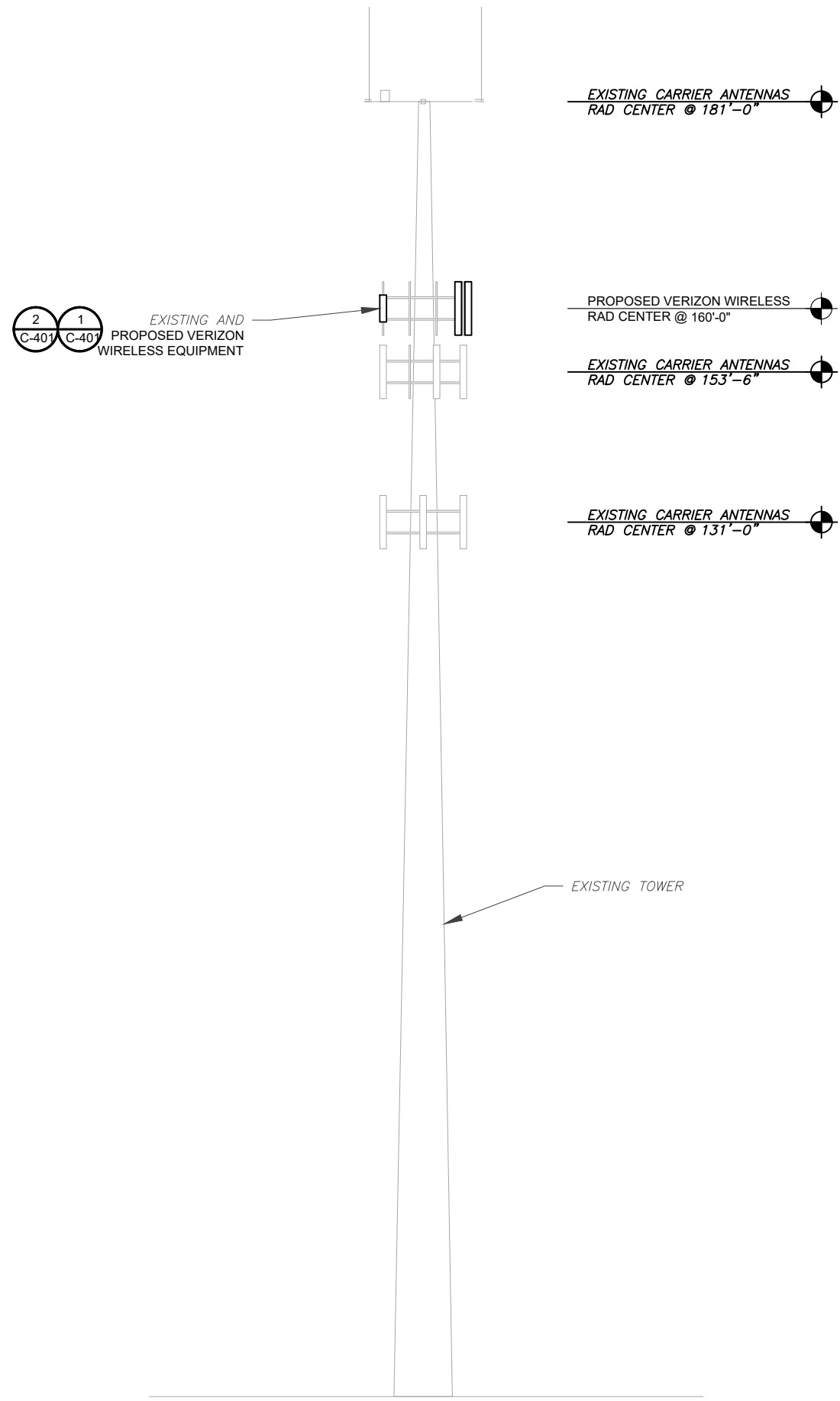
**verizon**

DATE DRAWN:	06/10/21
ATC JOB NO:	13685301
CUSTOMER ID:	469063
CUSTOMER #:	N/A

DETAILED EQUIPMENT  
LAYOUT

SHEET NUMBER: <b>C-102</b>	REVISION: <b>0</b>
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ATC IS ANALYZING THE ANTENNA MOUNT UNDER A SEPARATE PROJECT. CONSTRUCTION IS NOT TO PROCEED UNTIL THE MOUNT ANALYSIS IS COMPLETE AND INDICATES THE ADDITIONAL LOADING DOES NOT OVERSTRESS THE MOUNT

**TOWER NOTE:**

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM WITH THE PROJECT 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. WHERE APPLICABLE, ALL NEW ANTENNAS, EQUIPMENT, MOUNTS, CABLING, ETC. SHALL BE PAINTED/SOCKED TO MATCH EXISTING EQUIPMENT IN ACCORDANCE WITH FAA, JURISDICTION, AND/OR OTHER LOCAL REQUIREMENTS.
3. ROUTE PROPOSED CABLES ALONG SAME PATH AS EXISTING CABLES AND IN ACCORDANCE WITH STRUCTURAL ANALYSIS. IF ADEQUATE SPACE EXISTS, ROUTE CABLES THROUGH ENTRY PORT HOLE, UP INSIDE OF MONOPOLE, AND THROUGH EXIT PORT HOLE. IF ROUTING OUTSIDE THE MONOPOLE, ATTACH CABLES USING STAND-OFF ADAPTERS MOUNTED TO TOWER USING STAINLESS STEEL BANDING. ADEQUATELY SECURE CABLES USING EITHER APPROPRIATELY SIZED STAINLESS STEEL SNAP-INS OR MOUNTING HARDWARE AND BRACKETS AS SPECIFIED BY CABLE MANUFACTURER.
4. TOWER ELEVATIONS ARE MEASURED FROM TOP OF BASE PLATE TO MATCH STRUCTURAL ANALYSIS. ELEVATIONS DO NOT REFLECT TRUE ABOVE GROUND LEVEL (A.G.L.)

1 TOWER ELEVATION  
SCALE: N.T.S.

**AMERICAN TOWER®**  
**ATC TOWER SERVICES**  
 3500 REGENCY PARKWAY  
 SUITE 100  
 CARY, NC 27518  
 PHONE: (919) 468-0112  
 COA: C01229-00

**RPM ENGINEERING**  
*With Integrity*

REV.	DESCRIPTION	BY	DATE
A	PRELIM	BJC	06/10/21

ATC SITE NUMBER:  
310972

ATC SITE NAME:  
WATERFORD REBUILD CT

VERIZON WIRELESS SITE NAME:  
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SITE ADDRESS:  
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WATERFORD, CT 06385

SEAL:

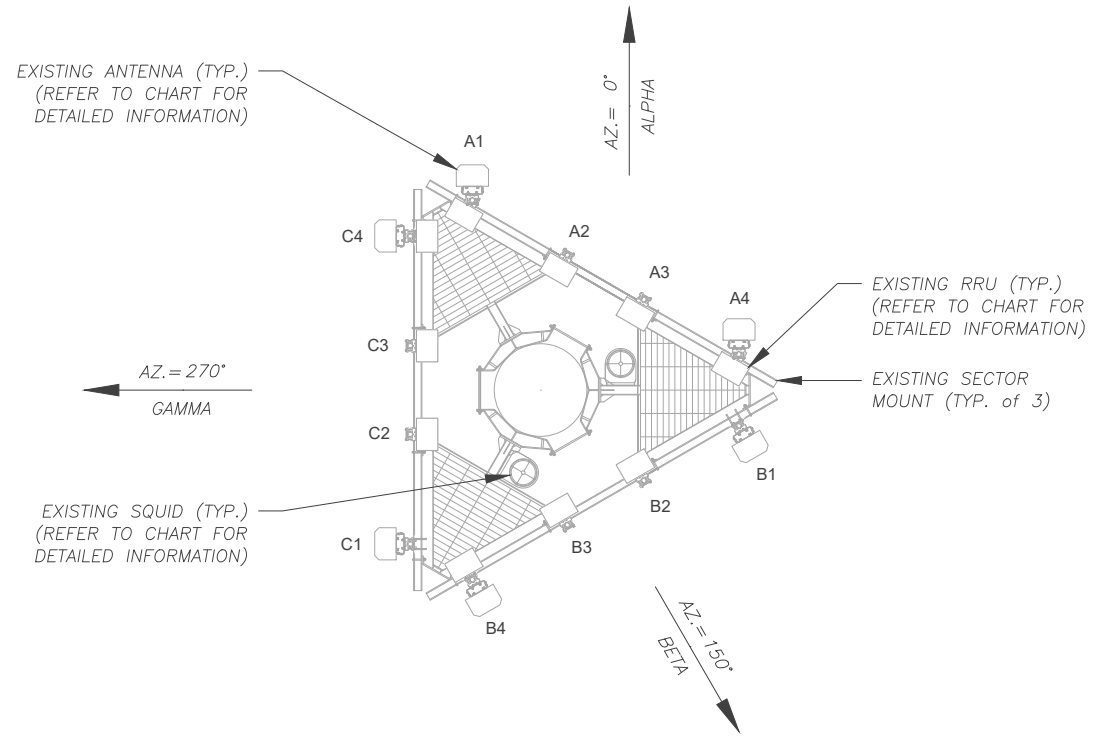


DATE DRAWN:	06/10/21
ATC JOB NO:	13685301
CUSTOMER ID:	469063
CUSTOMER #:	N/A

TOWER ELEVATION

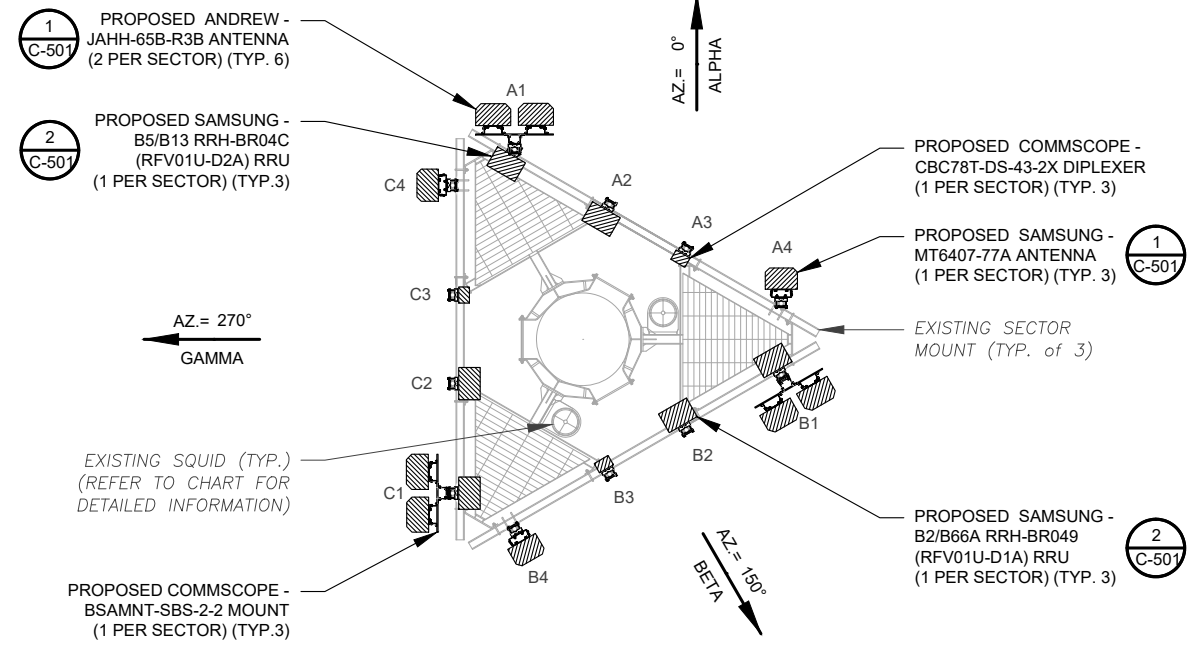
SHEET NUMBER: <b>C-201</b>	REVISION: <b>A</b>
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EXISTING CONFIGURATIONS ARE BASED ON RFDS. CONTRACTOR TO VERIFY EXISTING CONDITIONS.



1 CURRENT ANTENNA PLAN  
SCALE: N.T.S.

ATC IS ANALYZING THE ANTENNA MOUNT UNDER A SEPARATE PROJECT. CONSTRUCTION IS NOT TO PROCEED UNTIL THE MOUNT ANALYSIS IS COMPLETE AND INDICATES THE ADDITIONAL LOADING DOES NOT OVERSTRESS THE MOUNT



2 FINAL ANTENNA PLAN  
SCALE: N.T.S.

EXISTING ANTENNA SCHEDULE							
LOCATION			ANTENNA SUMMARY			NON ANTENNA SUMMARY	
SECTOR	RAD	AZ	POS	ANTENNA	BAND	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT
ALPHA	160'	0°	A1	AMPHENOL - BXA-171063-12CF-EDIN-2	LTE AWS	RMV	(1) RRH 2X40 AWS
			A2	-	-	-	(1) UHID B4 RRH 2X40
			A3	-	-	-	(1) UHBB B13 RRH 2X40
			A4	ANTEL - BXA-70063-6CF-2-750MHZ	LTE 700	RMV	(1) RRH 2X40 700
BETA	160'	150°	B1	AMPHENOL - BXA-171063-12CF-EDIN-2	LTE AWS	RMV	(1) RRH 2X40 AWS
			B2	-	-	-	(1) UHID B4 RRH 2X40
			B3	-	-	-	(1) UHBB B13 RRH 2X40
			B4	ANTEL - BXA-70063-6CF-2-750MHZ	LTE 700	RMV	(1) RRH 2X40 700
GAMMA	160'	270°	C1	AMPHENOL - BXA-171063-12CF-EDIN-2	LTE AWS	RMV	(1) RRH 2X40 AWS
			C2	-	-	-	(1) UHID B4 RRH 2X40
			C3	-	-	-	(1) UHBB B13 RRH 2X40
			C4	ANTEL - BXA-70063-6CF-2-750MHZ	LTE 700	RMV	(1) RRH 2X40 700

**NOTES**

- CONFIRM WITH VERIZON WIRELESS REP FOR APPLICABLE UPDATES/REVISIONS AND MOST RECENT RFDS FOR NSN CONFIGURATION (CONFIG). GC TO CAP ALL UNUSED PORTS.
- CONFIRM SPACING OF PROPOSED EQUIP DOES NOT CAUSE TOWER CONFLICTS NOR IMPEDE TOWER CLIMBING PEGS.
- THE ANTENNA ORIENTATION PLAN IS A SCHEMATIC. ATC DID NOT CONFIRM EXISTING SITE CONDITIONS INCLUDING, BUT NOT LIMITED TO, ANTENNA AZIMUTHS, MOUNT CONFIGURATIONS AND TOWER ORIENTATION. SCALES SHOWN ARE FOR REFERENCE ONLY AND EXISTING DIMENSIONS ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS PRIOR TO INSTALLATION AND NOTIFY ATC OF ANY DISCREPANCIES. CONTRACTOR TO ENSURE PROPER SEPARATION IN ACCORDANCE WITH VERIZON'S FIRSTNET REQUIREMENTS (SEE SHEET R-602)
- CONTRACTOR TO ENSURE PROPER SEPARATION IN ACCORDANCE WITH VERIZON'S FIRSTNET REQUIREMENTS (SEE SHEET R-602)

PROPOSED ANTENNA SCHEDULE							
LOCATION			ANTENNA SUMMARY			NON ANTENNA SUMMARY	
SECTOR	RAD	AZ	POS	ANTENNA	BAND	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT
ALPHA	160'	0°	A1	(2) COMMSCOPE - JAHH-65B-R3B	LTE 700, LTE 850, LTE 1900, LTE AWS	ADD	(1) B5/B13 RRH-BR04C (RFV01U-D2A)
			A2	-	-	-	(1) B2/B66A RRH-BR049 (RFV01U-D1A)
			A3	-	-	-	(1) CBC78T-DS-43-2X
			A4	SAMSUNG - MT6407-77A	5G	ADD	-
BETA	160'	150°	B1	(2) COMMSCOPE - JAHH-65B-R3B	LTE 700, LTE 850, LTE 1900, LTE AWS	ADD	(1) B5/B13 RRH-BR04C (RFV01U-D2A)
			B2	-	-	-	(1) B2/B66A RRH-BR049 (RFV01U-D1A)
			B3	-	-	-	(1) CBC78T-DS-43-2X
			B4	SAMSUNG - MT6407-77A	5G	ADD	-
GAMMA	160'	270°	C1	(2) COMMSCOPE - JAHH-65B-R3B	LTE 700, LTE 850, LTE 1900, LTE AWS	ADD	(1) B5/B13 RRH-BR04C (RFV01U-D2A)
			C2	-	-	-	(1) B2/B66A RRH-BR049 (RFV01U-D1A)
			C3	-	-	-	(1) CBC78T-DS-43-2X
			C4	SAMSUNG - MT6407-77A	5G	ADD	-

EXISTING FIBER DISTRIBUTION/SQUID		EXISTING CABLING SUMMARY			
MODEL NUMBER	STATUS	COAX	DC	FIBER	STATUS
(2) DB-T1-6Z-8AB-OZ	RMN	-	-	-	-
-	-	-	-	(2) HYBRID	RMV
-	-	-	-	-	-

**STATUS ABBREVIATIONS**  
 RMV: TO BE REMOVED  
 RMN: TO REMAIN  
 REL: TO BE RELOCATED  
 ADD: TO BE ADDED

**CABLE LENGTHS FOR JUMPERS**  
 JUNCTION BOX TO RRU: 15'  
 RRU TO ANTENNA: 10'

3 EQUIPMENT SCHEDULES

PROPOSED FIBER DISTRIBUTION/SQUID		PROPOSED CABLING SUMMARY			
MODEL NUMBER	STATUS	COAX	DC	FIBER	STATUS
(2) DB-T1-6Z-8AB-OZ	RMN	-	-	(2) HYBRID	ADD
-	-	-	-	-	-
-	-	-	-	-	-

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 SUITE 100  
 CARY, NC 27518  
 PHONE: (919) 468-0112  
 COA: C01229-00

**RPM ENGINEERING**  
*With Integrity*

REV.	DESCRIPTION	BY	DATE
A	PRELIM	BJC	06/10/21

ATC SITE NUMBER:  
310972

ATC SITE NAME:  
WATERFORD REBUILD CT

VERIZON WIRELESS SITE NAME:  
WATERFORD SE CT

SITE ADDRESS:  
15 MINER LANE  
WATERFORD, CT 06385



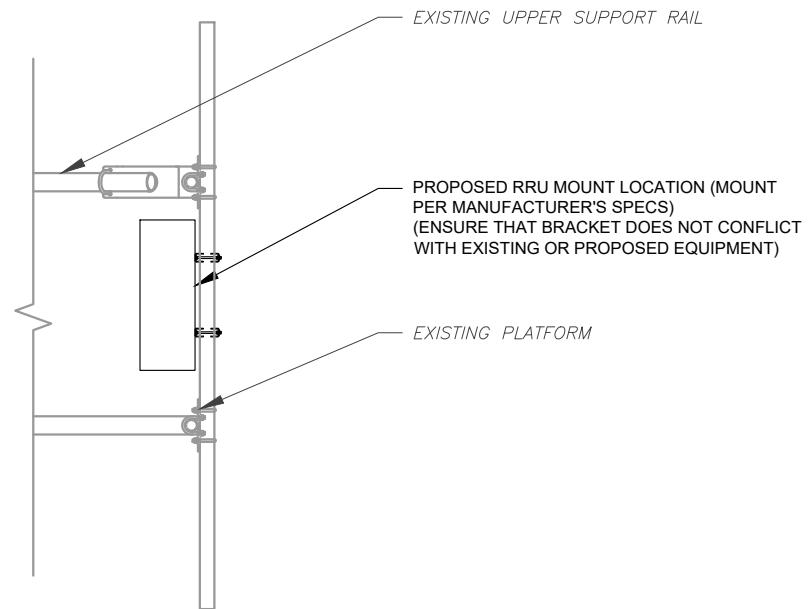
**verizon**

DATE DRAWN: 06/10/21  
 ATC JOB NO: 13685301  
 CUSTOMER ID: 469063  
 CUSTOMER #: N/A

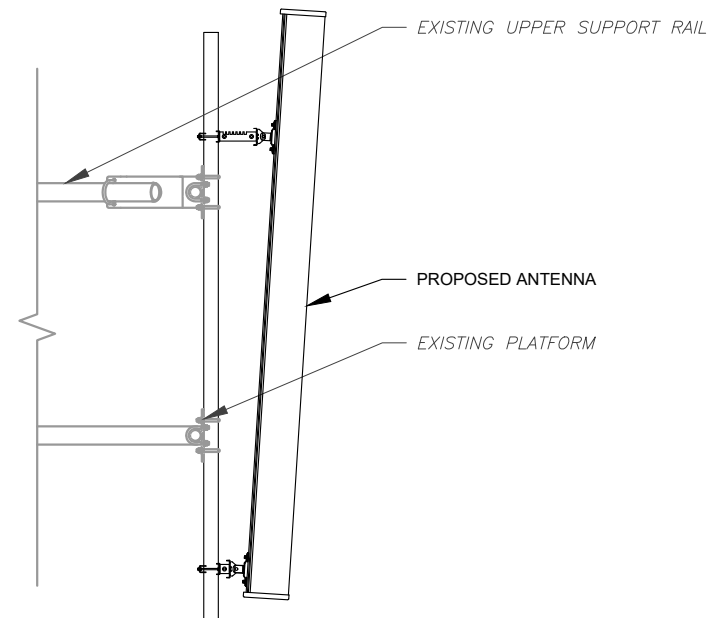
**RF SCHEDULE AND ANTENNA INSTALLATION**

SHEET NUMBER: **C-401** REVISION: **0**

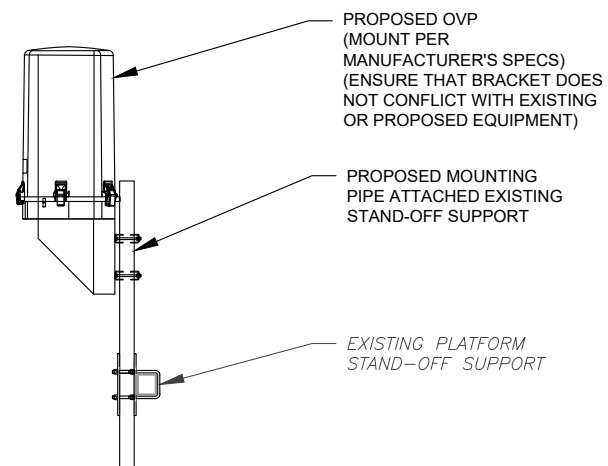
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1 PROPOSED RRU MOUNTING DETAIL - TYPICAL  
SCALE: N.T.S.



2 PROPOSED ANTENNA MOUNTING DETAIL - TYPICAL  
SCALE: N.T.S.



3 PROPOSED OVP MOUNTING  
SCALE: N.T.S.

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**RPM ENGINEERING**  
*With Integrity*

REV.	DESCRIPTION	BY	DATE
A	PRELIMINARY	GV	04/28/21

ATC SITE NUMBER:  
310972

ATC SITE NAME:  
WATERFORD REBUILD CT

VERIZON WIRELESS SITE NAME:  
WATERFORD SE CT

SITE ADDRESS:  
15 MINER LANE  
WATERFORD, CT 06385

SEAL:

**verizon** ✓

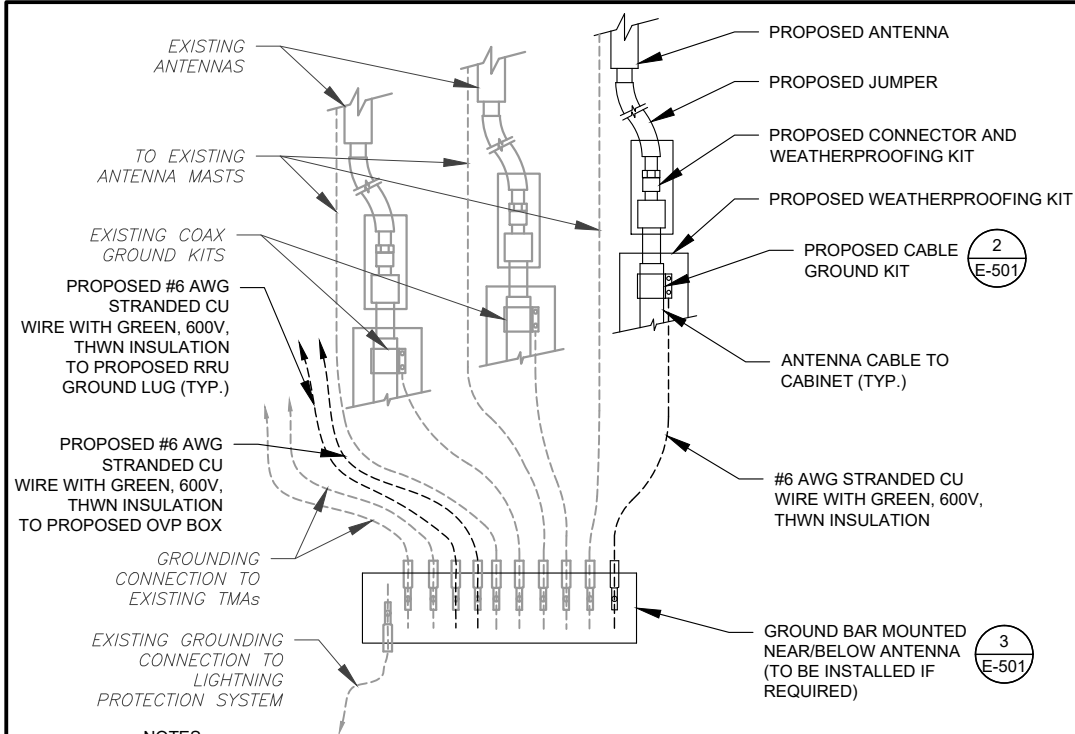
DATE DRAWN:	06/10/21
ATC JOB NO:	13685301
CUSTOMER ID:	469063
CUSTOMER #:	N/A

**CONSTRUCTION  
DETAILS**

SHEET NUMBER:	REVISION:
<b>C-501</b>	<b>0</b>

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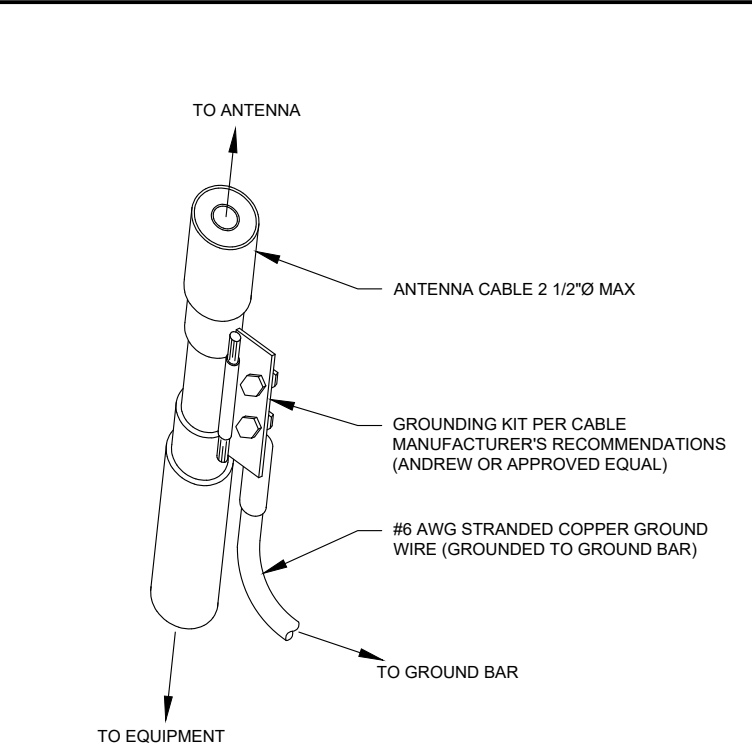




**NOTES:**

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.

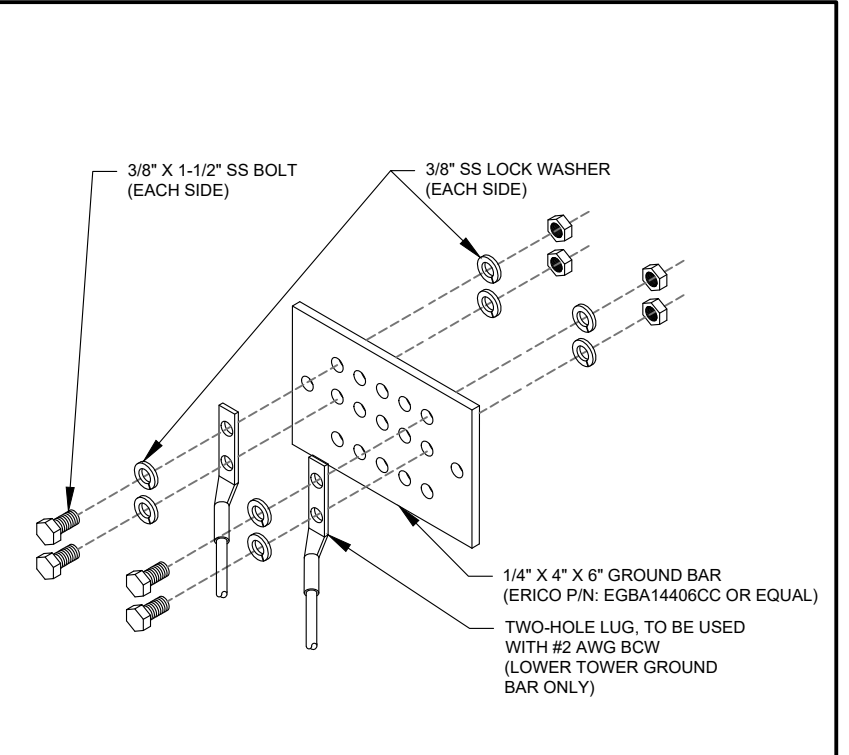
**1 TYPICAL ANTENNA GROUNDING DIAGRAM**  
SCALE: N.T.S.



**GROUND KIT NOTES:**

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
2. CONTRACTOR SHALL PROVIDE WEATHERPROOFING KIT (ANDREW PART NUMBER 221213) AND INSTALL/TAPE PER MANUFACTURER'S SPECIFICATIONS.

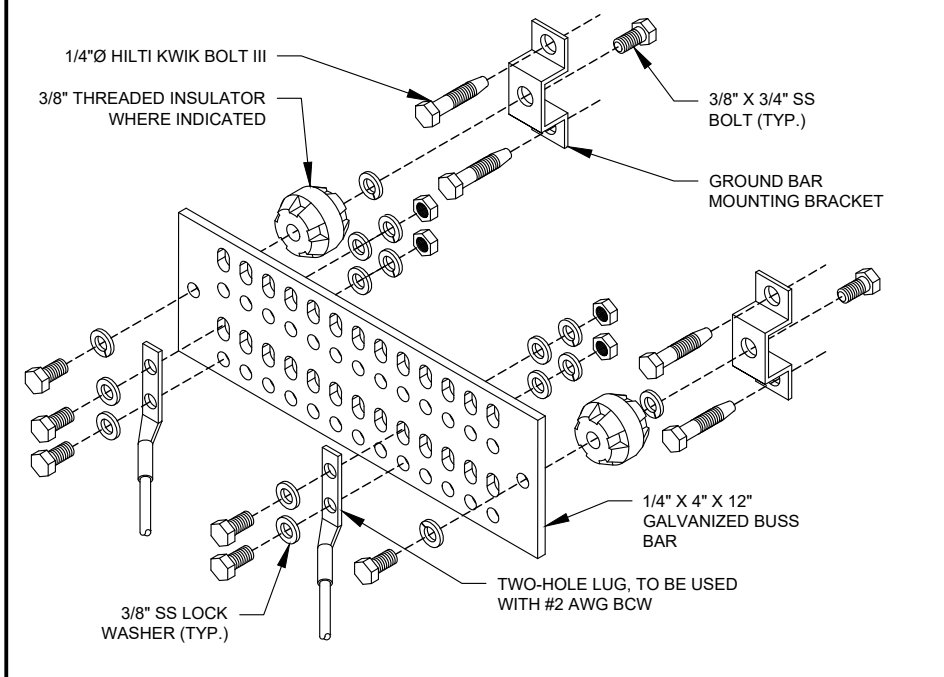
**2 CABLE GROUND KIT CONNECTION DETAIL**  
SCALE: N.T.S.



**GROUND BAR NOTES:**

1. GROUND BAR KITS COME WITH ALL HARDWARE, NUTS, BOLTS, WASHERS, ETC. EXCEPT THE STRUCTURAL MOUNTING MEMBER(S).
2. GROUND BAR TO BE BONDED DIRECTLY TO TOWER.

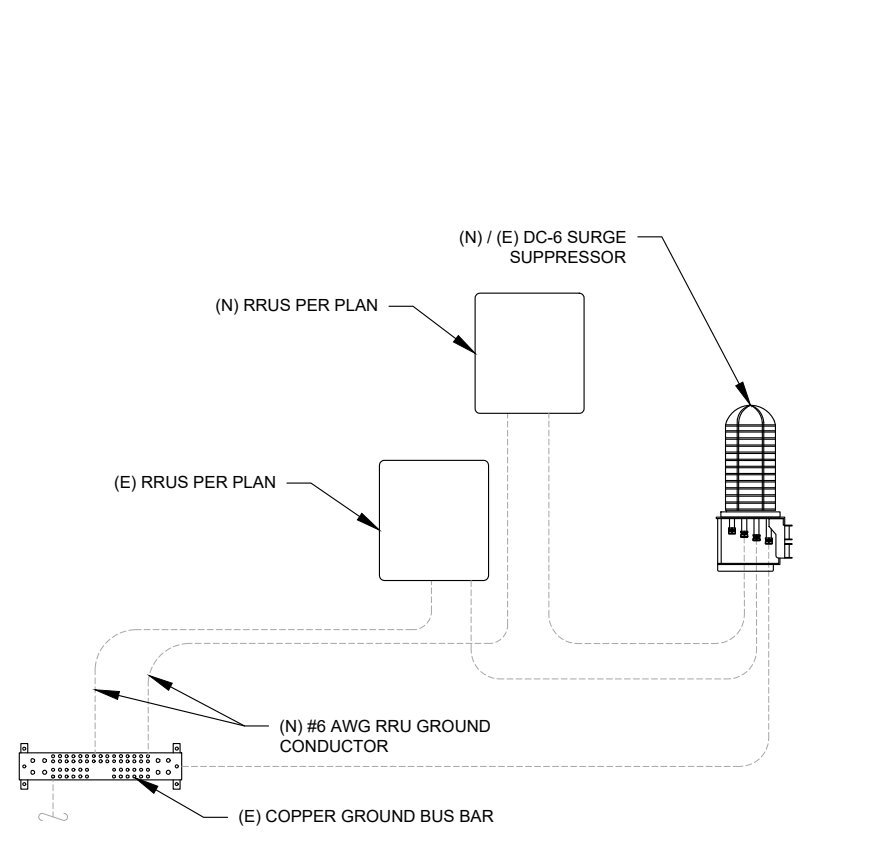
**3 TOWER GROUND BAR DETAIL**  
SCALE: N.T.S.



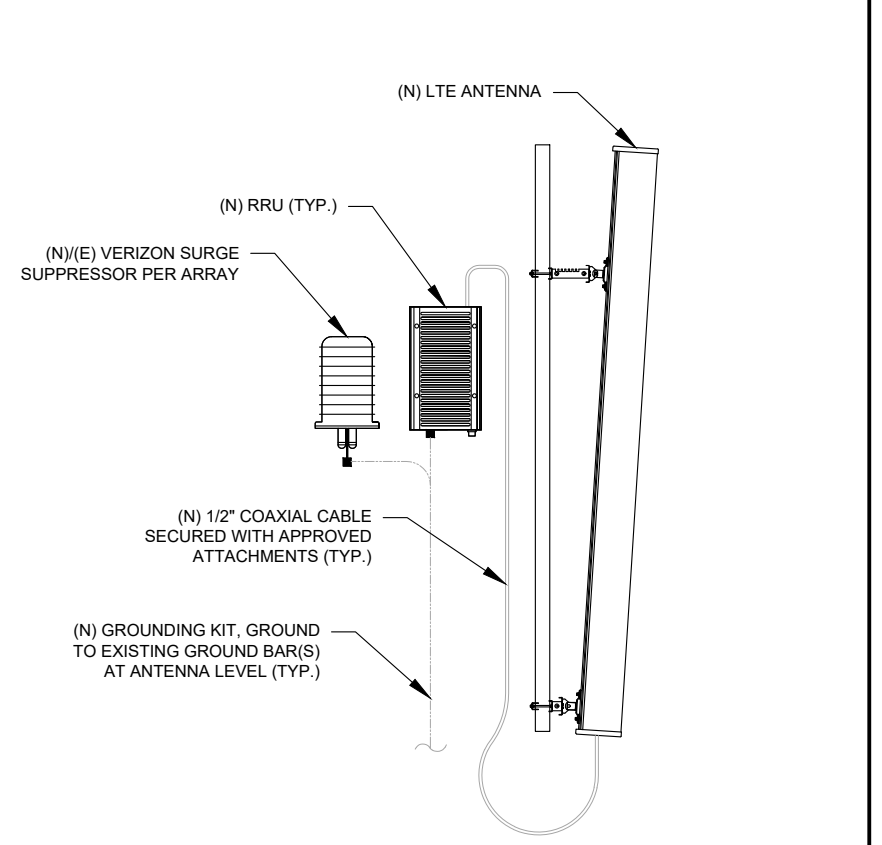
**GROUND BAR NOTES**

1. GROUND KITS COME WITH ALL HARDWARE, NUTS, BOLTS, WASHERS, ETC. EXCEPT THE STRUCTURAL MOUNTING MEMBER(S).
2. GROUND BAR SHALL BE BOLTED TO STRUCTURAL MEMBER OR ANCHORED TO CONCRETE SLAB W/ HILTI KWIK BOLT III.

**4 MAIN GROUND BAR DETAIL**  
SCALE: N.T.S.



**5 RRU GROUNDING**  
SCALE: N.T.S.



**6 ANTENNA/RRU GROUNDING**  
SCALE: N.T.S.

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**RPM ENGINEERING**  
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REV.	DESCRIPTION	BY	DATE
A	PRELIM	BJC	06/10/21

ATC SITE NUMBER:  
**310972**

ATC SITE NAME:  
**WATERFORD REBUILD CT**

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**WATERFORD SE CT**

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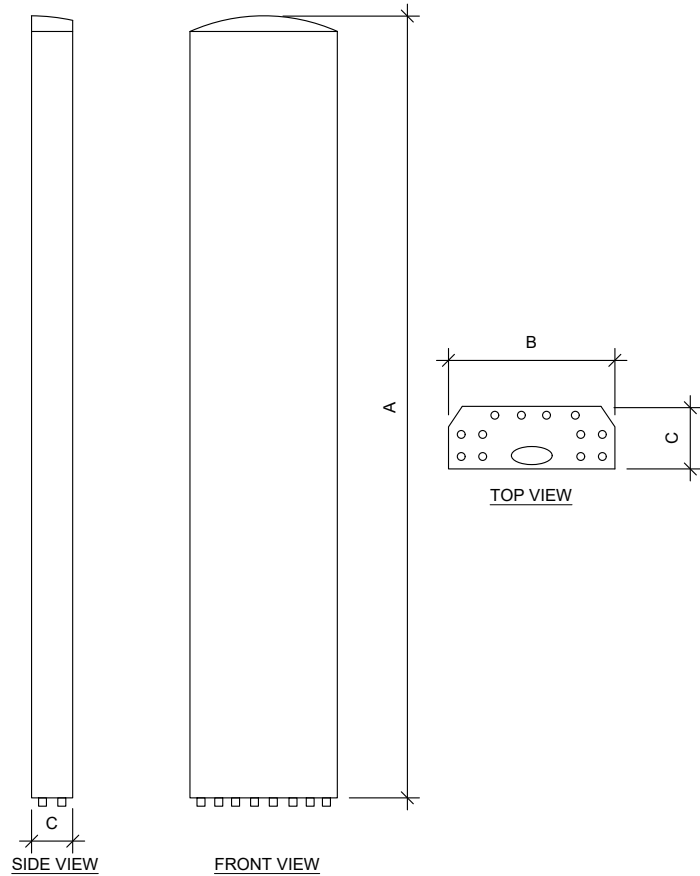
SEAL:

DATE DRAWN:	06/10/21
ATC JOB NO:	13685301
CUSTOMER ID:	469063
CUSTOMER #:	N/A

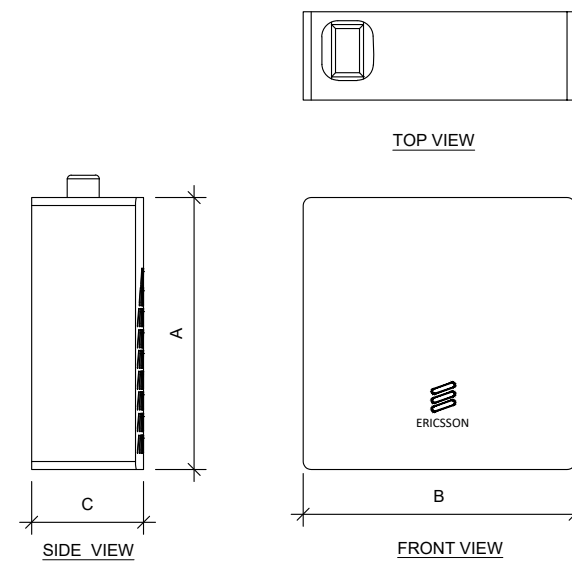
**GROUNDING DETAILS**

SHEET NUMBER: <b>E-501</b>	REVISION: <b>0</b>
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ANTENNA SPECIFICATIONS				
ANTENNA MODEL	A	B	C	WEIGHT (LBS)
MT6407-77A	35.1"	16.1"	5.5"	81.6
JAHH-65B-R3B	72"	13.8"	8.2"	60.6



RRU SPECIFICATIONS				
RRU MODEL	A	B	C	WEIGHT (LBS)
B5/B13 RRH-BR04C	15"	15"	8.1"	70.3
B2/B66A RRH-BR049	15"	15"	10"	84.4