

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

March 15, 2020

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

**RE: Notice of Exempt Modification // Site: Westport S CT (ATC: 302511)  
20 (Off) Post Office Lane (0 Maple Lane), Westport, CT  
N 41.1234 // W -73.3131**

Dear Ms. Bachman:

Cellco Partnership d/b/a Verizon Wireless currently maintains 12 antennas at the 100-foot mount on the existing 142-foot monopole tower, located at 0 Maple (aka 20 Post Office) Lane, Westport, CT. The Council approved Verizon Wireless shared use of the existing tower in 2004. The tower is owned by American Tower. Jay Sherwood owns the land. Verizon Wireless now intends to remove 6 antennas and install 6 new antennas on side-by-side mounts for its LTE (700/850/1900/2100/3500 MHz) as part of its PCS/LTE/AWS/CBRS upgrade. Additionally, Verizon Wireless will replace all of its remote radio head units (RRUs) with 6 new RRUs; 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 First Selectman Jim Marpe, for the Town of Westport, to its Director of Planning and Zoning Mary Young, to American Tower, the tower owner and to the ground owner, Jay Sherwood.

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 March 11, 2020 by Tower Engineering Professionals, a structural analysis dated November 25, 2019 plus structural mount analysis dated February 24, 2020 by A.T. Engineering Service, PLLC, 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 and mount analyses by A.T. Engineering, PLLC, dated November 25, 2019 and February 24, 2020, respectively.

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,



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West Bridgewater, MA 02379  
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[AMurshteyn@centerlinecommunications.com](mailto:AMurshteyn@centerlinecommunications.com)

Attachments

cc: Jim Marpe, First Selectman, Town of Westport - as elected official  
Mary Young, Director of Planning and Zoning, Town of Westport - as P&Z official  
Jay Sherwood - as ground owner  
American Tower Corporation - as tower owner

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ALEX MURSHTEYN 5088210159 CENTERLINE COMMUNICATIONS, LLC 750 WEST CENTER STREET WEST BRIDGEWATER MA 023791518	<b>1 LBS</b>	<b>1 OF 1</b>
DWT: 14,11,1		
<b>SHIP TO:</b> JIM MARPE, FIRST SELECTMAN WESTPORT TOWN HALL SELECTMANT'S OFFICE ROOM 310 110 MYRTLE AVENUE <b>WESTPORT CT 06880-3514</b>		
	<b>CT 066 9-02</b> 	
<b>UPS GROUND</b> TRACKING #: 1Z 9Y4 503 03 0736 9765		
		
BILLING: P/P		
Reference # 1: 302511 aka Westport S CT Reference # 2: 12996862 / CSC EM - CEO CS 22.0.11. WNTINV50 83.0A 12/2019		

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DWT: 14,11,1		
<b>SHIP TO:</b> MARY YOUNG, PLANNING AND ZONING DIR WESTPORT TOWN HALL PLANNING AND ZONING DEPARTMENT ROOM 203 110 MYRTLE AVENUE <b>WESTPORT CT 06880-3514</b>		
	<b>CT 066 9-02</b> 	
<b>UPS GROUND</b> TRACKING #: 1Z 9Y4 503 03 0132 4779		
		
BILLING: P/P		
Reference # 1: 302511 aka Westport S CT Reference # 2: 12996862 / CSC EM - P&Z <small>CS 22.0.11. WNTNV50 83.0A 12/2019</small>		

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DWT: 14,11,1		
<b>SHIP TO:</b> JAY SHERWOOD P O BOX 48 <b>WESTPORT CT 06881-0001</b>		
	<b>CT 066 9-02</b> 	
<b>UPS GROUND</b> TRACKING #: 1Z 9Y4 503 03 1800 7625		
		
BILLING: P/P		
Reference # 1: <i>302511 aka Westport CT</i> Reference # 2: <i>CSC EM - PO / 12996962</i>		

CS 2.2.0.11 WNTNVS0 83.0A.12/2019

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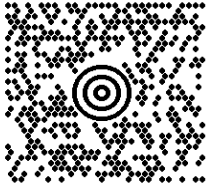

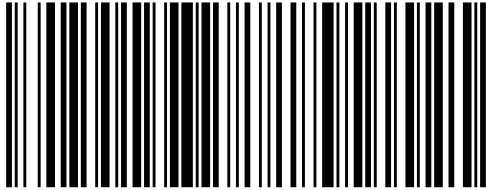

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DWT: 14,11,1		
<b>SHIP TO:</b> BLAKE PAYNTER AMERICAN TOWER CORP 10 PRESIDENTIAL WAY <b>WOBURN MA 01801-1053</b>		
	<b>MA 018 9-04</b> 	
<b>UPS GROUND</b> TRACKING #: 1Z 9Y4 503 03 1086 5749		
		
BILLING: P/P		
Reference # 1: 302470 aka Ansonia CT & Reference # 2: 302511 aka Westport S CT		CS 22.0.11. WNTINV50 83.0A 12/2019

<b>PETITION NO. 394</b> - Springwich Cellular Limited Partnership (Springwich) Petition for a Declaratory Ruling that no amendment to the Certificate of Environmental Compatibility and Public Need is required to replace the existing tower and expand the site boundaries to accommodate tower sharing at an existing telecommunications facility located at 20 Post Office Lane in Westport, Connecticut.	} } } } }	Connecticut  Siting  Council  August 25, 1998
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**Decision & Order**

Pursuant to the foregoing Findings of Fact and Opinion, and in accordance with the provisions of Regulations of Connecticut State Agencies §§ 16-50j-38 through 16-50j-39, the proposed modifications to an existing telecommunications facility located at 20 Post Office Lane in Westport, Connecticut will not have a substantial adverse environmental effect; therefore, an amendment to the Certificate of Environmental Compatibility and Public Need issued in Docket 166 on August 29, 1995, is not required.

The modifications shall be implemented substantially as specified in the Council’s record in this matter and subject to the following conditions:

1. Springwich Cellular Limited Partnership (SCLP) shall provide the Council a recalculated report of electromagnetic radio frequency power density when circumstances in operation cause a change in power density above the levels originally calculated and provided in the petition.
2. If the facility does not provide, or permanently ceases to provide the proposed telecommunications services following completion of construction, this Decision and Order shall be void, and the petitioner shall dismantle and remove the tower, antennas, and all associated equipment within 60 days after such equipment ceases to provide the proposed telecommunications services or reapply to the Council for any proposed new use.
3. SCLP shall provide advance notice two days prior to the commencement of construction. SCLP shall notify the Council upon completion of construction and commencement of operations.
4. No fill material or structures shall be placed in the area adjacent to the facility compound designated as a 100-year flood zone.
5. Low profile platforms, similar in design and appearance, shall be used and painted blue to match the color of the replacement tower.
6. The antenna canister for Omnipoint Communications may not be located above the top of the replacement tower.
7. All other applicable orders issued in the Council’s Decision and Order for Docket 166 remain in effect.



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## Structural Analysis Report

**Structure** : 142 ft Monopole  
**ATC Site Name** : WSPT - South, CT  
**ATC Asset Number** : 302511  
**Engineering Number** : 12996862\_C3\_02  
**Proposed Carrier** : VERIZON WIRELESS  
**Carrier Site Name** : WESTPORT S CT  
**Carrier Site Number** : 467426  
**Site Location** : 20 Post Office Lane  
Westport, CT 06880-6226  
41.123400, -73.313100  
**County** : Fairfield  
**Date** : November 25, 2019  
**Max Usage** : 92%  
**Result** : Pass

Prepared By:  
Kyle MacPetrie  
Structural Engineer

Reviewed By:



Authorized by "EOR"  
Nov 26 2019 4:11 PM **cosign**

COA: PEC.0001553





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## Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 142 ft monopole to reflect the change in loading by VERIZON WIRELESS.

## Supporting Documents

<b>Tower Drawings</b>	EI Drawing #GS50841, dated March 2, 1998
<b>Foundation Drawing</b>	Mapping by TEP Project #65218-72422, dated December 28, 2015
<b>Geotechnical Report</b>	MB&A Project #011105, dated July 17, 2001
<b>Modifications</b>	EI Drawing #GS54696, dated July 24, 2003 ATC Job #42046633, dated October 16, 2008

## 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>	95 mph (3-Second Gust, $V_{asd}$ ) / 122 mph (3-Second Gust, $V_{ult}$ )
<b>Basic Wind Speed w/ Ice:</b>	50 mph (3-Second Gust) w/ 3/4" radial ice concurrent
<b>Code:</b>	ANSI/TIA-222-G / 2015 IBC / 2018 Connecticut State Building Code
<b>Structure Class:</b>	II
<b>Exposure Category:</b>	C
<b>Topographic Category:</b>	1
<b>Crest Height:</b>	0 ft
<b>Spectral Response:</b>	$S_s = 0.22$ , $S_1 = 0.07$
<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	Antenna	Mount Type	Lines	Carrier
140.0	3	Kathrein Scala 742-218 / AP20-1940/045D/ADT/XP	Flush	(6) 1 5/8" Coax (1) 3/8" Coax	METRO PCS INC
136.0	3	Generic RCU (Remote Control Unit)			
131.0	1	Raycap DC6-48-60-0-8C-EV	Platform with Handrails	(2) 0.39" (10mm) Fiber Trunk (2) 0.65" (16.4mm) 8 AWG 2C (8) 0.78" (19.7mm) 8 AWG 6 (12) 1 1/4" Coax (4) 2" conduit (1) 3/8" (0.38"-9.5mm) RET Control Cable	AT&T MOBILITY
	3	Kaelus DBC0061F1V51-2			
	1	Raycap DC6-48-60-0-8C-EV			
	6	Powerwave Allgon LGP21401			
	2	Raycap DC6-48-60-18-8F ("Squid")			
	3	Ericsson RRUS 8843 B2, B66A			
	12	Powerwave Allgon 7020.00 Dual Band RET			
	3	Ericsson RRUS 32 B30			
	3	Powerwave Allgon 7770.00			
	3	Quintel QS66512-2			
	3	Kathrein Scala 80010965			
	3	Ericsson RRUS 4449 B5, B12			
120.0	3	Argus LLPX310R	Platform with Handrails	(2) 1/2" Coax (2) 2" conduit (6) 5/16" (0.31"-7.9mm) Coax	CLEARWIRE CORPORATION
	3	NextNet BTS-2500			
	2	DragonWave A-ANT-18G-2-C			
	2	DragonWave Horizon Compact			
	3	Alcatel-Lucent 1900 MHz 4X45 RRH		(3) 1 1/4" Hybriflex Cable (2) 1.7" (43.2mm) Hybrid	SPRINT NEXTEL
	3	Alcatel-Lucent RRH2x50-08			
	3	Commscope NNVV-65B-R4			
	3	Nokia 2.5G MAA - AAHC(64T64R)			
3	Alcatel-Lucent 800 MHz 2X50W RRH w/ Filter				
111.0	9	Decibel DB844G90A-XY	Platform with Handrails	(1) 1/2" Coax (12) 7/8" Coax	
101.0	1	Generic GPS			
100.0	3	Rymsa MGD3-800TX	Platform with Handrails	(6) 1 5/8" Coax (2) 1 5/8" Hybriflex	VERIZON WIRELESS
	3	Antel BXA-70080/6CF			
	2	Commscope RC2DC-3315-PF-48			
90.0	3	RFS APXVAARR24_43-U-NA20	Platform with Handrails	(2) 1 1/4" (1.25"-31.8mm) Fiber (1) 1 5/8" (1.63"-41.3mm) Fiber (12) 1 5/8" Coax	T-MOBILE
	4	Ericsson AIR 32 B2A/B66A			
	3	Ericsson Radio 4449 B12,B71			
	4	RFS ATMAA1412D-1A20			
	4	Ericsson AIR 21, 1.3 M, B2A B4P			
79.0	2	Generic 6' Omni	Side Arm	(2) 0.405" (10.3mm) Coax	OTHER
63.0	1	PCTEL GPS-TMG-HR-26N	Stand-Off	(1) 1/2" Coax	SPRINT NEXTEL

**Equipment to be Removed**

Elev. <sup>1</sup> (ft)	Qty	Antenna	Mount Type	Lines	Carrier
100.0	3	Alcatel-Lucent RRH2x60 700	-	(5) 1 5/8" Coax	VERIZON WIRELESS
	6	Commscope NHH-65B-R2B			
	3	Alcatel-Lucent B66A RRH 4x45			



**Proposed Equipment**

Elev. <sup>1</sup> (ft)	Qty	Antenna	Mount Type	Lines	Carrier
100.0	3	Samsung B5/B13 RRH-BR04C	Platform with Handrails	(1) 1/2" Coax	VERIZON WIRELESS
	3	Samsung B2/B66A RRH-BR049			
	6	Quintel QS6656-5D			

<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 lines inside the pole shaft.

**Structure Usages**

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	61%	Pass
Shaft	92%	Pass
Base Plate	61%	Pass
Reinforcement	79%	Pass
Flanges	51%	Pass
Interface	86%	Pass

**Foundations**

Reaction Component	Analysis Reactions	% of Design
Moment (Kips-Ft)	3,787.1	46%
Axial (Kips)	55.9	4%
Shear (Kips)	41.0	39%

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) (°)
131.0	Raycap DC6-48-60-0-8C-EV	AT&T MOBILITY	1.782	1.539
120.0	DragonWave A-ANT-18G-2-C	CLEARWIRE CORPORATION	1.489	1.498
100.0	Samsung B5/B13 RRH-BR04C	VERIZON WIRELESS	0.995	1.288
	Samsung B2/B66A RRH-BR049			
	Quintel QS6656-5D			

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



## Standard Conditions

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

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

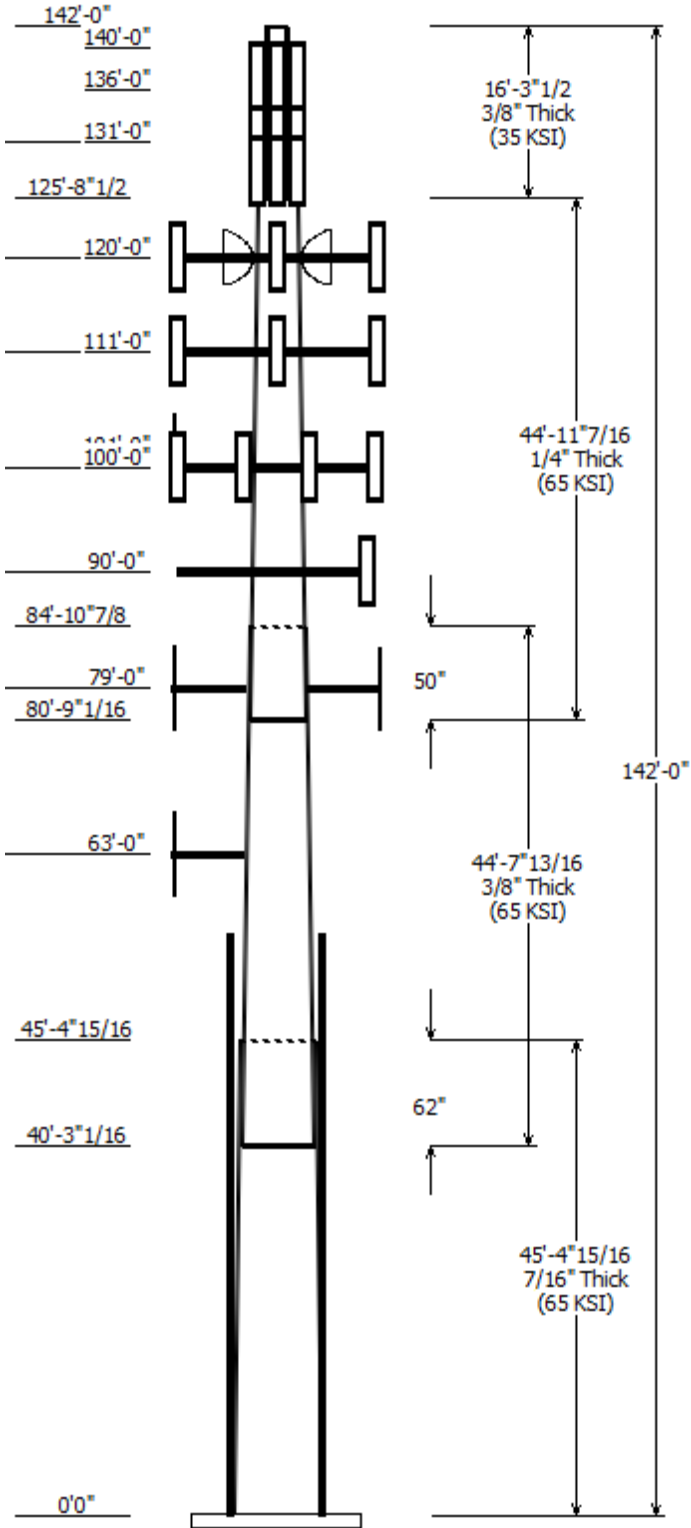
It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete.

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

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

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

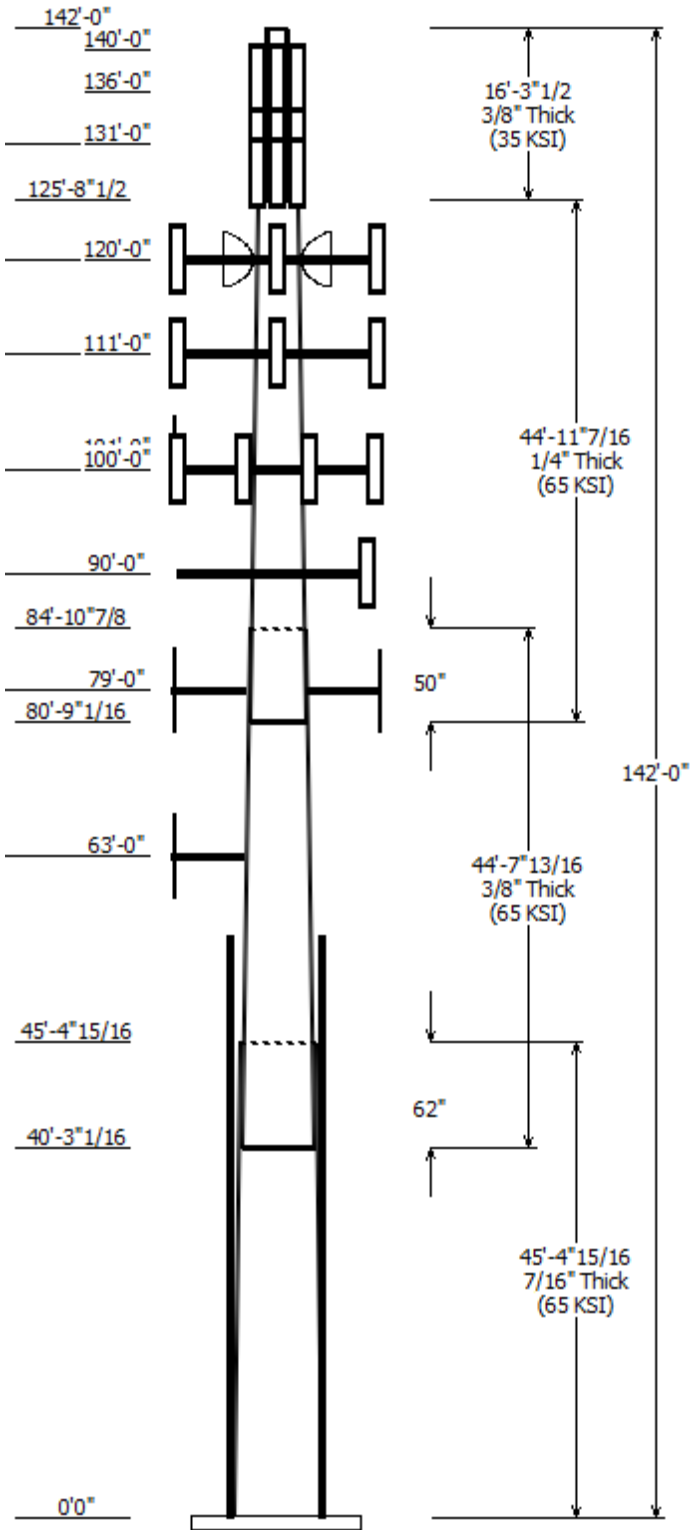
Job Information	
Client : VERIZON WIRELESS	Code: ANSI/TIA-222-G
Pole : 302511	
Location : WSPT - South, CT	Struct Class : II
Description : 142 ft EEI Monopole	Exposure : C
Shape : 12 Sides	Topo : 1
Height : 142.00 (ft)	
Base Elev (ft): 0.00	
Taper: 0.212634in/ft)	



Sections Properties						
Shaft Section	Length (ft)	Diameter (in)		Thick Joint (in)	Overlap Length (in)	Steel Grade (ksi)
		Top	Bottom			
1	45.411	35.34	45.00	0.438	0.000	12 Sides 65
2	44.654	27.69	37.19	0.375	61.875	12 Sides 65
3	44.951	19.52	29.07	0.250	49.813	12 Sides 65
4	16.291	10.75	10.75	0.365	0.000	Round 35

Discrete Appurtenance			
Attach Elev (ft)	Force Elev (ft)	Qty	Description
140.000	139.000	3	Kathrein Scala 742-218 / AP20-
136.000	139.000	3	Generic RCU (Remote Control
131.000	131.000	1	Flat Platform w/ Handrails
131.000	131.000	1	Raycap DC6-48-60-0-8C-EV
131.000	127.000	3	Kathrein Scala 80010965
131.000	131.000	3	Quintel QS66512-2
131.000	127.000	3	Powerwave Allgon 7770.00
131.000	127.000	3	Ericsson RRUS 32 B30
131.000	127.000	3	Ericsson RRUS 4449 B5, B12
131.000	127.000	3	Ericsson RRUS 8843 B2, B66A
131.000	127.000	2	Raycap DC6-48-60-18-8F
131.000	127.000	6	Powerwave Allgon LGP21401
131.000	127.000	1	Raycap DC6-48-60-0-8C-EV
131.000	127.000	3	Kaelus DBC0061F1V51-2
131.000	131.000	12	Powerwave Allgon 7020.00
120.000	120.000	1	Flat Platform w/ Handrails
120.000	120.000	3	Commscope NNVV-65B-R4
120.000	120.000	3	Nokia 2.5G MAA -
120.000	120.000	3	Alcatel-Lucent 1900 MHz 4X45
120.000	120.000	3	Alcatel-Lucent 800 MHz 2X50W
120.000	120.000	3	Alcatel-Lucent RRH2x50-08
120.000	120.000	2	DragonWave A-ANT-18G-2-C
120.000	120.000	3	Argus LLPX310R
120.000	120.000	3	NextNet BTS-2500
120.000	120.000	2	DragonWave Horizon Compact
111.000	111.000	1	Flat Platform w/ Handrails
111.000	111.000	9	Decibel DB844G90A-XY
101.000	101.000	1	Generic GPS
100.000	100.000	1	Flat Platform w/ Handrails
100.000	100.000	6	Quintel QS6656-5D
100.000	100.000	3	Antel BXA-70080/6CF
100.000	100.000	2	Commscope RC2DC-3315-PF-
100.000	100.000	3	Rymasa MGD3-800TX
100.000	100.000	3	Samsung B2/B66A RRH-BR049
100.000	100.000	3	Samsung B5/B13 RRH-BR04C
90.000	90.000	1	Flat Platform w/ Handrails
90.000	90.000	3	RFS APXVAARR24_43-U-NA20
90.000	90.000	4	Ericsson AIR 32 B2A/B66A
90.000	90.000	4	Ericsson AIR 21, 1.3 M, B2A B4
90.000	90.000	3	Ericsson Radio 4449 B12,B71
90.000	90.000	4	RFS ATMAA1412D-1A20
79.000	79.000	1	Stand-Off
79.000	79.000	1	Round Side Arm
79.000	79.000	2	Generic 6' Omni

63.000	63.000	1	Stand-Off
63.000	63.000	1	PCTEL GPS-TMG-HR-26N



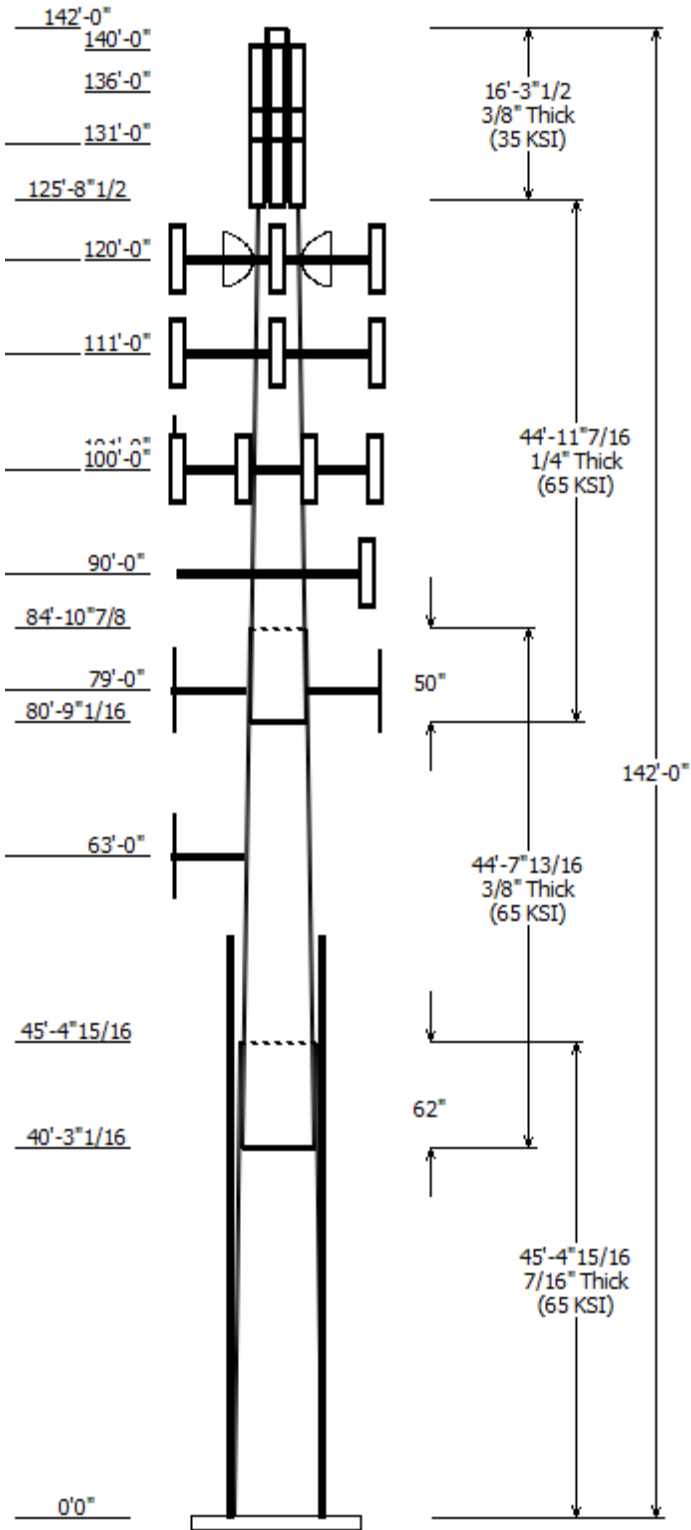
Linear Appurtenance			
Elev (ft)		Description	Exposed To Wind
From	To		
0.000	63.000	1/2" Coax	No
0.000	63.000	Reinforcement	Yes
0.000	63.000	Reinforcement	Yes
0.000	63.000	Reinforcement	Yes
0.000	63.000	Reinforcement	Yes
0.000	79.000	0.405" (10.3mm)	No
0.000	90.000	1 1/4" (1.25"-	Yes
0.000	90.000	1 5/8" (1.63"-	Yes
0.000	90.000	1 5/8" Coax	No
0.000	90.000	1 5/8" Coax	Yes
0.000	100.0	1 5/8" Coax	No
0.000	100.0	1 5/8" Hybriflex	No
0.000	100.0	1/2" Coax	No
0.000	111.0	1/2" Coax	No
0.000	111.0	7/8" Coax	No
0.000	120.0	1 1/4" Hybriflex	Yes
0.000	120.0	1.7" (43.2mm)	No
0.000	120.0	1/2" Coax	Yes
0.000	120.0	2" conduit	Yes
0.000	120.0	5/16" (0.31"-	No
0.000	127.0	0.78" (19.7mm) 8	No
0.000	127.0	2" conduit	No
0.000	131.0	0.39" (10mm)	No
0.000	131.0	0.65" (16.4mm) 8	No
0.000	131.0	0.78" (19.7mm) 8	No
0.000	131.0	0.78" (19.7mm) 8	No
0.000	131.0	1 1/4" Coax	No
0.000	131.0	2" conduit	No
0.000	131.0	3/8" (0.38"-	No
0.000	136.0	3/8" Coax	No
0.000	140.0	1 5/8" Coax	Yes

Load Cases	
1.2D + 1.6W	95 mph with No Ice
0.9D + 1.6W	95 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Lateral
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Modal
1.0D + 1.0W	Serviceability 60 mph

Reactions			
Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
1.2D + 1.6W	3787.05	40.96	55.87
0.9D + 1.6W	3712.35	39.96	41.88
1.2D + 1.0Di + 1.0Wi	1859.87	24.25	85.00
(1.2 + 0.2Sds) * DL + E ELFM	154.89	1.42	55.96
(1.2 + 0.2Sds) * DL + E EMAM	125.85	1.39	55.96
(0.9 - 0.2Sds) * DL + E ELFM	152.35	1.42	38.27
(0.9 - 0.2Sds) * DL + E EMAM	123.55	1.39	38.27
1.0D + 1.0W	833.50	8.92	46.62

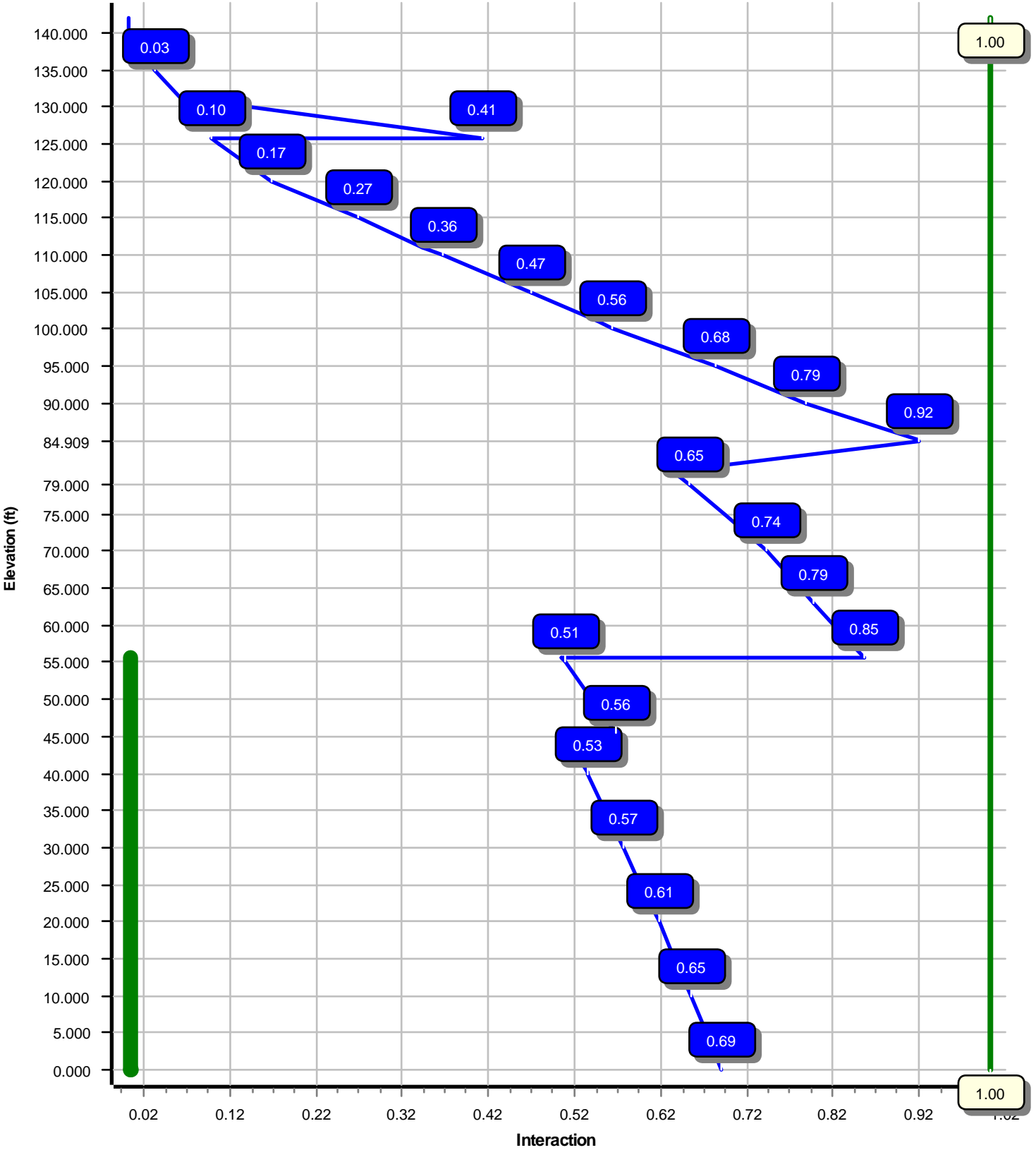
### Dish Deflections

Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
<b>1.0D + 1.0W</b>	<b>120.00</b>	<b>17.869</b>	<b>1.503</b>





Load Case : 1.2D + 1.6W  
Max Ratio 91.67% at 84.9 ft



Site Number: 302511

Code: ANSI/TIA-222-G

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Site Name: WSPT - South, CT

Engineering Number: 12996862\_C3\_02

11/25/2019 4:22:43 PM

Customer: VERIZON WIRELESS

Analysis Parameters

Location :	Fairfield County, CT	Height (ft) :	142
Code :	ANSI/TIA-222-G	Base Diameter (in) :	45.00
Shape :	12 Sides, Sect 4: Round	Top Diameter (in) :	10.75
Pole Type :	Custom	Taper (in/ft) :	0.213
Pole Manufacturer :	EEl	Rotation (deg) :	0.00

Ice & Wind Parameters

Structure Class:	II	Design Wind Speed Without Ice:	95 mph
Exposure Category:	C	Design Wind Speed With Ice:	50 mph
Topographic Category:	1	Operational Wind Speed:	60 mph
Crest Height:	0 ft	Design Ice Thickness:	0.75 in

Seismic Parameters

Analysis Method: Equivalent Modal Analysis & Equivalent Lateral Force Methods

Site Class: D - Stiff Soil

Period Based on Rayleigh Method (sec): 2.32

$T_L$ (sec):	6	$p$ :	1	$C_s$ :	0.030
$S_s$ :	0.221	$S_1$ :	0.066	$C_s$ Max:	0.030
$F_a$ :	1.600	$F_v$ :	2.400	$C_s$ Min:	0.030
$S_{ds}$ :	0.236	$S_{d1}$ :	0.106		

Load Cases

1.2D + 1.6W	95 mph with No Ice
0.9D + 1.6W	95 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice
(1.2 + 0.2Sds) * DL + E ELFM	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E EMAM	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E ELFM	Seismic (Reduced DL) Equivalent Lateral Forces Method
(0.9 - 0.2Sds) * DL + E EMAM	Seismic (Reduced DL) Equivalent Modal Analysis Method
1.0D + 1.0W	Serviceability 60 mph

Site Number: 302511

Code: ANSI/TIA-222-G

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Site Name: WSPT - South, CT

Engineering Number: 12996862\_C3\_02

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Customer: VERIZON WIRELESS

**Shaft Section Properties**

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip 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)	
1-12	45.411	0.4375	65		0.00	8,650	45.00	0.00	62.78	15912.1	25.42	102.86	35.34	45.41	49.17	7647.7	19.50	80.79	0.212638	
2-12	44.654	0.3750	65	Slip	61.88	5,884	37.19	40.26	44.45	7690.5	24.43	99.17	27.69	84.91	32.99	3142.8	17.65	73.85	0.212638	
3-12	44.951	0.2500	65	Slip	49.81	2,961	29.07	80.76	23.21	2461.6	29.02	116.31	19.51	125.71	15.51	735.2	18.78	78.08	0.212638	
4-R	16.291	0.3650	35	Butt	0.00	660	10.75	125.71	11.91	160.7	0.00	29.45	10.75	142.00	11.91	160.7	0.00	29.45	0.000000	
Shaft Weight						18,155														

**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
140.00	Kathrein Scala 742-218 / AP20-	3	1.00	-1.000	22.50	3.850	0.63	110.78	4.768	0.63
136.00	Generic RCU (Remote Control	3	1.00	3.000	1.00	0.140	1.00	6.49	0.473	1.00
131.00	Powerwave Allgon 7020.00 Dual	12	0.75	0.000	2.20	0.340	0.50	12.29	0.746	0.50
131.00	Kaelus DBC0061F1V51-2	3	0.75	-4.000	25.50	0.430	0.50	43.76	0.871	0.50
131.00	Raycap DC6-48-60-0-8C-EV	1	0.75	-4.000	16.00	1.020	1.00	60.75	1.578	1.00
131.00	Raycap DC6-48-60-0-8C-EV	1	0.75	0.000	16.00	1.020	0.67	60.75	1.578	0.67
131.00	Powerwave Allgon LGP21401	6	0.75	-4.000	14.10	1.100	0.50	38.76	1.803	0.50
131.00	Raycap DC6-48-60-18-8F	2	0.75	-4.000	31.80	1.470	1.00	92.77	2.160	1.00
131.00	Ericsson RRUS 8843 B2, B66A	3	0.75	-4.000	72.00	1.640	0.50	132.57	2.475	0.50
131.00	Ericsson RRUS 4449 B5, B12	3	0.75	-4.000	71.00	1.970	0.50	134.69	2.892	0.50
131.00	Ericsson RRUS 32 B30	3	0.75	-4.000	60.00	2.740	0.67	132.70	3.894	0.67
131.00	Powerwave Allgon 7770.00	3	0.75	-4.000	35.00	5.510	0.65	167.88	6.549	0.65
131.00	Quintel QS66512-2	3	0.75	0.000	111.00	8.130	0.74	307.92	10.884	0.74
131.00	Kathrein Scala 80010965	3	0.75	-4.000	97.60	13.810	0.62	361.06	16.824	0.62
131.00	Flat Platform w/ Handrails	1	1.00	0.000	2,000.00	42.400	1.00	3,404.40	63.125	1.00
120.00	DragonWave Horizon Compact	2	0.75	0.000	10.60	0.720	0.50	32.59	1.276	0.50
120.00	Alcatel-Lucent RRH2x50-08	3	0.75	0.000	52.90	1.700	0.50	110.85	2.543	0.50
120.00	NextNet BTS-2500	3	0.75	0.000	35.00	1.820	0.50	80.35	2.718	0.50
120.00	Alcatel-Lucent 800 MHz 2X50W	3	0.75	0.000	64.00	2.060	0.67	139.34	2.997	0.67
120.00	Alcatel-Lucent 1900 MHz 4X45	3	0.75	0.000	60.00	2.320	0.67	138.81	3.376	0.67
120.00	Nokia 2.5G MAA - AAHC(64T64R)	3	0.75	0.000	103.60	4.200	0.64	213.84	5.510	0.64
120.00	Argus LLPX310R	3	0.75	0.000	28.60	4.290	0.63	116.72	5.906	0.63
120.00	DragonWave A-ANT-18G-2-C	2	1.00	0.000	27.10	4.690	1.00	122.53	5.936	1.00
120.00	Commscope NNVV-65B-R4	3	0.75	0.000	77.40	12.270	0.64	323.11	15.012	0.64
120.00	Flat Platform w/ Handrails	1	1.00	0.000	2,000.00	42.400	1.00	3,389.74	62.908	1.00
111.00	Decibel DB844G90A-XY	9	0.75	0.000	14.00	3.610	0.73	120.53	3.894	0.73
111.00	Flat Platform w/ Handrails	1	1.00	0.000	2,000.00	42.400	1.00	3,381.23	62.783	1.00
101.00	Generic GPS	1	0.75	0.000	10.00	0.900	1.00	38.17	1.516	1.00
100.00	Samsung B5/B13 RRH-BR04C	3	0.75	0.000	70.30	1.880	0.50	125.20	2.749	0.50
100.00	Samsung B2/B66A RRH-BR049	3	0.75	0.000	84.40	1.880	0.50	145.63	2.749	0.50
100.00	Ryma MGD3-800TX	3	0.75	0.000	15.40	3.340	0.69	80.83	5.051	0.69
100.00	Commscope RC2DC-3315-PF-48	2	0.75	0.000	32.00	3.780	0.77	137.21	5.049	0.77
100.00	Antel BXA-70080/6CF__	3	0.75	0.000	18.00	5.840	0.72	138.62	8.124	0.72
100.00	Quintel QS6656-5D	6	0.75	0.000	88.00	8.130	0.74	279.23	10.805	0.74
100.00	Flat Platform w/ Handrails	1	1.00	0.000	2,000.00	42.400	1.00	3,364.05	62.529	1.00
90.00	RFS ATMAA1412D-1A20	4	0.75	0.000	13.00	1.000	0.50	38.19	1.634	0.50
90.00	Ericsson Radio 4449 B12,B71	3	0.75	0.000	74.00	1.640	0.50	127.16	2.442	0.50
90.00	Ericsson AIR 21, 1.3 M, B2A B4P	4	0.75	0.000	83.00	6.050	0.71	221.57	8.103	0.71
90.00	Ericsson AIR 32 B2A/B66A	4	0.75	0.000	143.30	6.870	0.75	316.66	9.047	0.75
90.00	RFS APXVAARR24_43-U-NA20	3	0.75	0.000	127.90	20.240	0.63	500.65	23.761	0.63
90.00	Flat Platform w/ Handrails	1	1.00	0.000	2,000.00	42.400	1.00	3,349.37	62.312	1.00
79.00	Generic 6' Omni	2	1.00	0.000	25.00	1.760	1.00	68.22	2.939	1.00
79.00	Stand-Off	1	1.00	0.000	100.00	3.000	0.67	145.71	4.469	0.67
79.00	Round Side Arm	1	1.00	0.000	150.00	5.200	0.67	218.57	7.747	0.67
63.00	PCTEL GPS-TMG-HR-26N	1	1.00	0.000	0.60	0.090	1.00	5.04	0.255	1.00
63.00	Stand-Off	1	1.00	0.000	30.00	1.000	0.67	43.41	1.479	0.67

Site Number: 302511

Code: ANSI/TIA-222-G

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Site Name: WSPT - South, CT

Engineering Number: 12996862\_C3\_02

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Customer: VERIZON WIRELESS

Totals Num Loadings:46 133 16,219.10 34,730.69

Linear Appurtenance Properties Load Case Azimuth (deg) : 140

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Dia (in)	Coax Wt (lb/ft)	Max Coax / Flat Row	Dist Between Rows (in)	Dist Between Cols (in)	Azimuth (deg)	Dist From Face (in)	Dist To Face (in)	Exposed Wind	Carrier
0.00	140.00	6	1 5/8" Coax	1.98	0.82	N 6	0.00	0.00	0	0.00	0.00	Y	METRO PCS INC
0.00	136.00	1	3/8" Coax	0.44	0.08	N 1	0.00	0.00	0	0.00	0.00	N	METRO PCS INC
0.00	131.00	2	0.39" (10mm) Fiber	0.39	0.06	N 0	0.00	0.00	0	0.00	0.00	N	AT&T MOBILITY
0.00	131.00	2	0.65" (16.4mm) 8 AWG	0.65	0.31	N 0	0.00	0.00	0	0.00	0.00	N	AT&T MOBILITY
0.00	131.00	4	0.78" (19.7mm) 8 AWG	0.78	0.59	N 0	0.00	0.00	0	0.00	0.00	N	AT&T MOBILITY
0.00	131.00	2	0.78" (19.7mm) 8 AWG	0.78	0.59	N 0	0.00	0.00	0	0.00	0.00	N	AT&T MOBILITY
0.00	131.00	12	1 1/4" Coax	1.55	0.63	N 0	0.00	0.00	0	0.00	0.00	N	AT&T MOBILITY
0.00	131.00	3	2" conduit	2.38	3.65	N 0	0.00	0.00	0	0.00	0.00	N	AT&T MOBILITY
0.00	131.00	1	3/8" (0.38"- 9.5mm)	0.38	0.23	N 0	0.00	0.00	0	0.00	0.00	N	AT&T MOBILITY
0.00	127.00	2	0.78" (19.7mm) 8 AWG	0.78	0.59	N 0	0.00	0.00	0	0.00	0.00	N	AT&T MOBILITY
0.00	127.00	1	2" conduit	2.38	3.65	N 0	0.00	0.00	0	0.00	0.00	N	AT&T MOBILITY
0.00	120.00	3	1 1/4" Hybriflex Cable	1.54	1.00	N 3	0.00	0.00	75	0.00	0.00	Y	SPRINT NEXTEL
0.00	120.00	2	1.7" (43.2mm) Hybrid	1.70	1.78	N 0	0.00	0.00	0	0.00	0.00	N	SPRINT NEXTEL
0.00	120.00	2	1/2" Coax	0.63	0.15	N 2	0.00	0.00	85	0.00	0.00	Y	CLEARWIRE
0.00	120.00	2	2" conduit	2.38	3.65	N 2	0.00	0.00	95	0.00	0.00	Y	CLEARWIRE
0.00	120.00	6	5/16" (0.31"-7.9mm)	0.31	0.05	N 0	0.00	0.00	0	0.00	0.00	N	CLEARWIRE
0.00	111.00	1	1/2" Coax	0.63	0.15	N 0	0.00	0.00	0	0.00	0.00	N	SPRINT NEXTEL
0.00	111.00	12	7/8" Coax	1.09	0.33	N 0	0.00	0.00	0	0.00	0.00	N	SPRINT NEXTEL
0.00	100.00	6	1 5/8" Coax	1.98	0.82	N 0	0.00	0.00	0	0.00	0.00	N	VERIZON WIRELESS
0.00	100.00	2	1 5/8" Hybriflex	1.98	1.30	N 0	0.00	0.00	0	0.00	0.00	N	VERIZON WIRELESS
0.00	100.00	1	1/2" Coax	0.63	0.15	N 0	0.00	0.00	0	0.00	0.00	N	VERIZON WIRELESS
0.00	90.00	2	1 1/4" (1.25"- 31.8mm)	1.25	1.05	N 2	0.00	0.00	262	0.00	0.00	Y	T-MOBILE
0.00	90.00	1	1 5/8" (1.63"-41.3mm)	1.63	1.61	N 1	0.00	0.00	269	0.00	0.00	Y	T-MOBILE
0.00	90.00	8	1 5/8" Coax	1.98	0.82	N 0	0.00	0.00	0	0.00	0.00	N	T-MOBILE
0.00	90.00	4	1 5/8" Coax	1.98	0.82	N 4	0.00	0.00	285	0.00	0.00	Y	T- MOBILE
0.00	79.00	2	0.405" (10.3mm) Coax	0.41	0.11	N 0	0.00	0.00	0	0.00	0.00	N	OTHER
0.00	63.00	1	1/2" Coax	0.63	0.15	N 0	0.00	0.00	0	0.00	0.00	N	SPRINT NEXTEL
0.00	63.00	1	Reinforcement	4.00	0.00	N 1	0.00	0.00	40	0.00	0.00	Y	REINFORCEMENT
0.00	63.00	1	Reinforcement	4.00	0.00	N 1	0.00	0.00	130	0.00	0.00	Y	REINFORCEMENT
0.00	63.00	1	Reinforcement	4.00	0.00	N 1	0.00	0.00	220	0.00	0.00	Y	REINFORCEMENT
0.00	63.00	1	Reinforcement	4.00	0.00	N 1	0.00	0.00	310	0.00	0.00	Y	REINFORCEMENT

Additional Steel

Elev From (ft)	Elev To (ft)	Qty	Description	Fy (ksi)	Offset (in)	— Intermediate Connections —		Connectors	Continuation?	
			Description			Spacing (in)	Len (in)			
0.00	55.68	4	SOL #20 All Thread	80	2.19	6" Angle Bracket	30.0	3.31	5/8" A36 U-Bolt	Yes

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)	Additional Reinforcing		
												Area (in <sup>2</sup> )	Ix (in <sup>4</sup> )	Weight (lb)
0.00		0.4375	45.000	62.777	15,912.1	25.42	102.86	77.0	683.1	0.0	0.0	19.64	6,615	0.0
5.00		0.4375	43.937	61.280	14,800.2	24.77	100.43	77.7	650.7	0.0	1,055.3	19.64	6,347	334.0
10.00		0.4375	42.874	59.782	13,741.3	24.11	98.00	78.4	619.2	0.0	1,029.9	19.64	6,084	334.0
15.00		0.4375	41.810	58.284	12,734.1	23.46	95.57	79.1	588.4	0.0	1,004.4	19.64	5,827	334.0
20.00		0.4375	40.747	56.786	11,777.4	22.81	93.14	79.8	558.4	0.0	978.9	19.64	5,576	334.0
25.00		0.4375	39.684	55.289	10,869.9	22.16	90.71	80.5	529.2	0.0	953.4	19.64	5,330	334.0
30.00		0.4375	38.621	53.791	10,010.2	21.51	88.28	81.3	500.7	0.0	927.9	19.64	5,090	334.0
35.00		0.4375	37.558	52.293	9,197.1	20.86	85.85	81.9	473.1	0.0	902.4	19.64	4,855	334.0
40.00		0.4375	36.494	50.795	8,429.2	20.21	83.42	81.9	446.2	0.0	877.0	19.64	4,626	334.0
40.26	Bot - Section 2	0.4375	36.440	50.719	8,391.2	20.17	83.29	81.9	444.9	0.0	44.1	19.64	4,614	17.1
45.00		0.4375	35.431	49.297	7,705.4	19.56	80.99	81.9	420.1	0.0	1,515.3	19.64	4,559	316.9
45.41	Top - Section 1	0.3750	36.094	43.130	7,023.6	23.65	96.25	78.9	375.9	0.0	129.4	19.64	4,541	27.5
50.00		0.3750	35.118	41.952	6,463.7	22.95	93.65	79.7	355.6	0.0	664.2	19.64	4,337	306.5
55.00		0.3750	34.055	40.668	5,888.2	22.19	90.81	80.5	334.0	0.0	702.9	19.64	4,121	334.0
55.68	Reinf. Top	0.3750	33.911	40.495	5,813.1	22.09	90.43	80.6	331.2	0.0	93.5	19.64	4,092	45.2
60.00		0.3750	32.992	39.385	5,348.0	21.43	87.98	81.3	313.2	0.0	587.5			
63.00		0.3750	32.354	38.614	5,040.3	20.97	86.28	81.8	301.0	0.0	398.1			
65.00		0.3750	31.929	38.101	4,841.9	20.67	85.14	81.9	293.0	0.0	261.0			
70.00		0.3750	30.865	36.817	4,368.8	19.91	82.31	81.9	273.4	0.0	637.3			
75.00		0.3750	29.802	35.533	3,927.5	19.15	79.47	81.9	254.6	0.0	615.5			
79.00		0.3750	28.952	34.506	3,596.7	18.54	77.20	81.9	240.0	0.0	476.7			
80.00		0.3750	28.739	34.249	3,517.0	18.39	76.64	81.9	236.4	0.0	117.0			
80.76	Bot - Section 3	0.3750	28.578	34.055	3,457.4	18.28	76.21	81.9	233.7	0.0	88.1			
84.91	Top - Section 2	0.2500	28.195	22.496	2,242.3	28.08	112.78	74.1	153.6	0.0	796.3			
85.00		0.2500	28.176	22.480	2,237.7	28.06	112.70	74.1	153.4	0.0	7.0			
90.00		0.2500	27.113	21.624	1,991.7	26.92	108.45	75.4	141.9	0.0	375.2			
95.00		0.2500	26.049	20.768	1,764.4	25.78	104.20	76.6	130.9	0.0	360.6			
100.0		0.2500	24.986	19.913	1,555.2	24.64	99.94	77.8	120.2	0.0	346.1			
101.0		0.2500	24.774	19.741	1,515.4	24.41	99.09	78.1	118.2	0.0	67.5			
105.0		0.2500	23.923	19.057	1,363.1	23.50	95.69	79.1	110.1	0.0	264.0			
110.0		0.2500	22.860	18.201	1,187.6	22.36	91.44	80.3	100.4	0.0	316.9			
111.0		0.2500	22.647	18.030	1,154.4	22.13	90.59	80.6	98.5	0.0	61.6			
115.0		0.2500	21.797	17.345	1,027.8	21.22	87.19	81.6	91.1	0.0	240.7			
120.0		0.2500	20.733	16.489	883.1	20.08	82.93	81.9	82.3	0.0	287.8			
125.0		0.2500	19.670	15.633	752.6	18.94	78.68	81.9	73.9	0.0	273.3			
125.7	Top - Section 3	0.2500	19.519	15.512	735.2	18.78	78.08	81.9	72.8	0.0	37.6			
125.7	Bot - Section 4	0.3650	10.750	11.908	160.7	0.00	29.45	35.0	29.9	39.4				
130.0		0.3650	10.750	11.908	160.7	0.00	29.45	35.0	29.9	39.4	173.9			
131.0		0.3650	10.750	11.908	160.7	0.00	29.45	35.0	29.9	39.4	40.5			
135.0		0.3650	10.750	11.908	160.7	0.00	29.45	35.0	29.9	39.4	162.1			
136.0		0.3650	10.750	11.908	160.7	0.00	29.45	35.0	29.9	39.4	40.5			
140.0		0.3650	10.750	11.908	160.7	0.00	29.45	35.0	29.9	39.4	162.1			
142.0		0.3650	10.750	11.908	160.7	0.00	29.45	35.0	29.9	39.4	81.0			
											18,154.6			3,719.2

<b>Load Case: 1.2D + 1.6W</b>	<b>95 mph with No Ice</b>	<b>25 Iterations</b>
Gust Response Factor :1.10		Wind Importance Factor :1.00
Dead Load Factor :1.20		
Wind Load Factor :1.60		

**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		384.6	0.0					0.0	0.0	384.6	0.0	0.0	0.0
5.00		764.0	1,266.4					0.0	838.9	764.0	2,105.3	0.0	0.0
10.00		753.4	1,235.8					0.0	838.9	753.4	2,074.7	0.0	0.0
15.00		754.6	1,205.3					0.0	838.9	754.6	2,044.1	0.0	0.0
20.00		775.9	1,174.7					0.0	838.9	775.9	2,013.5	0.0	0.0
25.00		801.9	1,144.1					0.0	838.9	801.9	1,983.0	0.0	0.0
30.00		786.9	1,113.5					0.0	838.9	786.9	1,952.4	0.0	0.0
35.00		761.5	1,082.9					154.4	838.9	915.9	1,921.8	0.0	0.0
40.00		400.5	1,052.4					158.5	838.9	559.1	1,891.2	0.0	0.0
40.26	Bot - Section 2	387.6	52.9					8.2	42.8	395.7	95.7	0.0	0.0
45.00		400.0	1,818.4					152.8	796.0	552.8	2,614.4	0.0	0.0
45.41	Top - Section 1	385.7	155.3					13.3	69.0	399.0	224.3	0.0	0.0
50.00		735.9	797.1					149.8	769.8	885.7	1,566.9	0.0	0.0
55.00		433.5	843.4					165.2	838.9	598.7	1,682.3	0.0	0.0
55.68	Reinf. Top	377.5	112.2					22.5	113.6	400.0	225.8	0.0	0.0
60.00		550.1	705.0					144.6	378.7	694.6	1,083.8	0.0	0.0
63.00	Appurtenance(s)	347.3	477.7	33.7	0.0	0.0	36.7	101.1	262.8	482.2	777.3	0.0	0.0
65.00		428.2	313.3					0.0	174.9	428.2	488.1	0.0	0.0
70.00		603.7	764.8					0.0	437.2	603.7	1,201.9	0.0	0.0
75.00		533.5	738.6					0.0	437.2	533.5	1,175.7	0.0	0.0
79.00	Appurtenance(s)	292.5	572.0	419.4	0.0	0.0	360.0	0.0	349.7	711.9	1,281.7	0.0	0.0
80.00		101.7	140.4					0.0	87.2	101.7	227.5	0.0	0.0
80.76	Bot - Section 3	284.7	105.7					0.0	66.1	284.7	171.7	0.0	0.0
84.91	Top - Section 2	246.2	955.5					0.0	361.8	246.2	1,317.4	0.0	0.0
85.00		288.7	8.4					0.0	7.9	288.7	16.3	0.0	0.0
90.00	Appurtenance(s)	559.2	450.2	4,914.7	0.0	0.0	4,275.5	0.0	435.8	5,473.9	5,161.6	0.0	0.0
95.00		543.4	432.8					0.0	354.5	543.4	787.3	0.0	0.0
100.00	Appurtenance(s)	320.2	415.3	4,532.9	0.0	0.0	3,787.6	0.0	354.5	4,853.1	4,557.4	0.0	0.0
101.00	Appurtenance(s)	259.2	81.0	33.1	0.0	0.0	12.0	0.0	61.7	292.3	154.7	0.0	0.0
105.00		457.1	316.9					0.0	246.8	457.1	563.7	0.0	0.0
110.00		299.4	380.3					0.0	308.5	299.4	688.9	0.0	0.0
111.00	Appurtenance(s)	241.4	74.0	3,008.0	0.0	0.0	2,551.2	0.0	61.7	3,249.4	2,686.9	0.0	0.0
115.00		424.3	288.9					0.0	227.1	424.3	516.0	0.0	0.0
120.00	Appurtenance(s)	454.3	345.4	4,708.5	0.0	0.0	4,007.9	0.0	283.9	5,162.8	4,637.1	0.0	0.0
125.00		253.0	327.9					0.0	197.1	253.0	525.0	0.0	0.0
125.71	Top - Section 3	104.6	45.1					0.0	27.9	104.6	73.0	0.0	0.0
130.00		91.2	208.7					0.0	151.8	91.2	360.4	0.0	0.0
131.00	Appurtenance(s)	86.8	48.6	5,131.2	0.0	-8,523.1	4,347.5	0.0	33.6	5,218.0	4,429.7	0.0	0.0
135.00		86.9	194.5					0.0	24.0	86.9	218.5	0.0	0.0
136.00	Appurtenance(s)	87.4	48.6	22.0	0.0	66.0	3.6	0.0	6.0	109.4	58.2	0.0	0.0
140.00	Appurtenance(s)	98.2	194.5	381.3	0.0	-381.3	81.0	0.0	23.6	479.5	299.1	0.0	0.0
142.00		28.3	97.3					0.0	0.0	28.3	97.3	0.0	0.0
<b>Totals:</b>										<b>41,230.2</b>	<b>55,951.6</b>	<b>0.00</b>	<b>0.00</b>

<b>Load Case: 1.2D + 1.6W</b>	<b>95 mph with No Ice</b>	<b>25 Iterations</b>
Gust Response Factor :1.10		Wind Importance Factor :1.00
Dead Load Factor :1.20		
Wind Load Factor :1.60		

**Calculated Forces**

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-55.87	-40.96	0.00	-3,787.05	0.00	3,787.05	4,350.13	2,175.06	7,987.32	3,944.64	0.00	0.00	0.688
5.00	-53.60	-40.41	0.00	-3,582.25	0.00	3,582.25	4,285.51	2,142.75	7,679.11	3,792.42	0.13	-0.23	0.671
10.00	-51.37	-39.86	0.00	-3,380.19	0.00	3,380.19	4,218.97	2,109.49	7,373.27	3,641.38	0.50	-0.47	0.653
15.00	-49.17	-39.28	0.00	-3,180.91	0.00	3,180.91	4,150.52	2,075.26	7,070.06	3,491.64	1.11	-0.70	0.634
20.00	-47.01	-38.67	0.00	-2,984.49	0.00	2,984.49	4,080.16	2,040.08	6,769.73	3,343.32	1.98	-0.94	0.615
25.00	-44.88	-38.02	0.00	-2,791.13	0.00	2,791.13	4,007.88	2,003.94	6,472.54	3,196.54	3.09	-1.18	0.594
30.00	-42.79	-37.37	0.00	-2,601.03	0.00	2,601.03	3,933.69	1,966.85	6,178.73	3,051.44	4.44	-1.41	0.573
35.00	-40.75	-36.57	0.00	-2,414.19	0.00	2,414.19	3,854.52	1,927.26	5,883.88	2,905.83	6.05	-1.65	0.552
40.00	-38.80	-36.03	0.00	-2,231.36	0.00	2,231.36	3,744.12	1,872.06	5,549.75	2,740.81	7.90	-1.88	0.533
40.26	-38.64	-35.72	0.00	-2,222.16	0.00	2,222.16	3,738.48	1,869.24	5,532.95	2,732.52	8.01	-1.90	0.532
45.00	-35.97	-35.15	0.00	-2,052.70	0.00	2,052.70	3,633.72	1,816.86	5,225.39	2,580.62	10.00	-2.12	0.507
45.41	-35.69	-34.81	0.00	-2,038.24	0.00	2,038.24	3,063.65	1,531.82	4,505.80	2,225.25	10.19	-2.14	0.565
50.00	-34.03	-34.00	0.00	-1,878.51	0.00	1,878.51	3,008.67	1,504.34	4,302.82	2,125.00	12.34	-2.35	0.537
55.00	-32.30	-33.40	0.00	-1,708.52	0.00	1,708.52	2,946.93	1,473.46	4,084.17	2,017.02	14.93	-2.58	0.506
55.68	-32.02	-33.06	0.00	-1,685.91	0.00	1,685.91	2,938.42	1,469.21	4,054.78	2,002.51	15.30	-2.62	0.502
55.68	-32.02	-33.06	0.00	-1,685.91	0.00	1,685.91	2,938.42	1,469.21	4,054.78	2,002.51	15.30	-2.62	0.853
60.00	-30.85	-32.43	0.00	-1,543.00	0.00	1,543.00	2,883.27	1,441.64	3,868.42	1,910.47	17.76	-2.82	0.819
63.00	-29.99	-32.01	0.00	-1,445.71	0.00	1,445.71	2,844.16	1,422.08	3,740.46	1,847.27	19.61	-3.05	0.794
65.00	-29.37	-31.70	0.00	-1,381.68	0.00	1,381.68	2,808.41	1,404.21	3,643.77	1,799.52	20.92	-3.21	0.779
70.00	-28.00	-31.21	0.00	-1,223.18	0.00	1,223.18	2,713.79	1,356.89	3,400.96	1,679.60	24.49	-3.60	0.739
75.00	-26.69	-30.76	0.00	-1,067.13	0.00	1,067.13	2,619.16	1,309.58	3,166.52	1,563.83	28.46	-3.97	0.693
79.00	-25.37	-30.03	0.00	-944.10	0.00	944.10	2,543.45	1,271.73	2,985.00	1,474.18	31.91	-4.26	0.651
80.00	-25.11	-29.94	0.00	-914.07	0.00	914.07	2,524.53	1,262.26	2,940.46	1,452.18	32.81	-4.33	0.640
80.76	-24.87	-29.72	0.00	-891.38	0.00	891.38	2,510.19	1,255.09	2,906.93	1,435.62	33.50	-4.39	0.631
84.91	-23.51	-29.43	0.00	-768.00	0.00	768.00	1,500.12	750.06	1,728.77	853.77	37.44	-4.67	0.917
85.00	-23.40	-29.24	0.00	-765.32	0.00	765.32	1,499.54	749.77	1,726.89	852.85	37.53	-4.68	0.914
90.00	-18.55	-23.48	0.00	-619.14	0.00	619.14	1,466.64	733.32	1,624.12	802.09	42.67	-5.12	0.786
95.00	-17.67	-22.98	0.00	-501.75	0.00	501.75	1,431.82	715.91	1,522.23	751.77	48.25	-5.52	0.681
100.00	-13.55	-17.75	0.00	-386.85	0.00	386.85	1,395.09	697.54	1,421.47	702.01	54.22	-5.88	0.561
101.00	-13.38	-17.48	0.00	-369.11	0.00	369.11	1,387.51	693.76	1,401.48	692.14	55.45	-5.95	0.544
105.00	-12.79	-17.02	0.00	-299.19	0.00	299.19	1,356.44	678.22	1,322.10	652.93	60.54	-6.20	0.468
110.00	-12.09	-16.68	0.00	-214.08	0.00	214.08	1,315.88	657.94	1,224.36	604.67	67.17	-6.47	0.364
111.00	-9.76	-13.17	0.00	-197.40	0.00	197.40	1,307.54	653.77	1,205.03	595.12	68.52	-6.52	0.340
115.00	-9.26	-12.71	0.00	-144.72	0.00	144.72	1,273.40	636.70	1,128.51	557.33	74.05	-6.68	0.267
120.00	-5.25	-7.05	0.00	-81.15	0.00	81.15	1,215.41	607.71	1,023.37	505.40	81.12	-6.84	0.165
125.00	-4.76	-6.74	0.00	-45.89	0.00	45.89	1,152.33	576.16	919.28	454.00	88.33	-6.94	0.105
125.71	-4.69	-6.63	0.00	-41.11	0.00	41.11	1,143.39	571.69	904.98	446.93	89.36	-6.95	0.096
125.71	-4.69	-6.63	0.00	-41.11	0.00	41.11	375.11	187.56	156.71	103.37	89.36	-6.95	0.411
130.00	-4.34	-6.50	0.00	-12.65	0.00	12.65	375.11	187.56	156.71	103.37	95.62	-7.00	0.135
131.00	-0.58	-0.78	0.00	-6.15	0.00	6.15	375.11	187.56	156.71	103.37	97.08	-7.02	0.061
135.00	-0.38	-0.67	0.00	-3.02	0.00	3.02	375.11	187.56	156.71	103.37	102.96	-7.05	0.030
136.00	-0.33	-0.55	0.00	-2.29	0.00	2.29	375.11	187.56	156.71	103.37	104.43	-7.05	0.023
140.00	-0.09	-0.04	0.00	-0.08	0.00	0.08	375.11	187.56	156.71	103.37	110.33	-7.06	0.001

Site Number: 302511

Code: ANSI/TIA-222-G

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Site Name: WSPT - South, CT

Engineering Number: 12996862\_C3\_02

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Customer: VERIZON WIRELESS

Load Case: 1.2D + 1.6W

95 mph with No Ice

25 Iterations

Gust Response Factor :1.10

Wind Importance Factor :1.00

Dead Load Factor :1.20

Wind Load Factor :1.60

142.00 0.00 -0.03 0.00 0.00 0.00 0.00 0.00 375.11 187.56 156.71 103.37 113.28 -7.06 0.000



<b>Load Case:</b> 0.9D + 1.6W	95 mph with No Ice (Reduced DL)	25 Iterations
Gust Response Factor :1.10		Wind Importance Factor :1.00
Dead Load Factor :0.90		
Wind Load Factor :1.60		

**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		314.9	0.0					0.0	0.0	314.9	0.0	0.0	0.0
5.00		622.3	949.8					0.0	629.1	622.3	1,579.0	0.0	0.0
10.00		607.3	926.9					0.0	629.1	607.3	1,556.0	0.0	0.0
15.00		601.5	903.9					0.0	629.1	601.5	1,533.1	0.0	0.0
20.00		611.4	881.0					0.0	629.1	611.4	1,510.2	0.0	0.0
25.00		624.4	858.1					0.0	629.1	624.4	1,487.2	0.0	0.0
30.00		695.0	835.1					0.0	629.1	695.0	1,464.3	0.0	0.0
35.00		761.5	812.2					154.4	629.1	915.9	1,441.3	0.0	0.0
40.00		400.5	789.3					158.5	629.1	559.1	1,418.4	0.0	0.0
40.26	Bot - Section 2	387.6	39.7					8.2	32.1	395.7	71.8	0.0	0.0
45.00		400.0	1,363.8					152.8	597.0	552.8	1,960.8	0.0	0.0
45.41	Top - Section 1	385.7	116.5					13.3	51.8	399.0	168.2	0.0	0.0
50.00		735.9	597.8					149.8	577.4	885.7	1,175.2	0.0	0.0
55.00		433.5	632.6					165.2	629.1	598.7	1,261.7	0.0	0.0
55.68	Reinf. Top	377.5	84.1					22.5	85.2	400.0	169.3	0.0	0.0
60.00		550.1	528.8					144.6	284.1	694.6	812.8	0.0	0.0
63.00	Appurtenance(s)	347.3	358.3	33.7	0.0	0.0	27.5	101.1	197.1	482.2	583.0	0.0	0.0
65.00		428.2	234.9					0.0	131.1	428.2	366.1	0.0	0.0
70.00		603.7	573.6					0.0	327.9	603.7	901.5	0.0	0.0
75.00		533.5	553.9					0.0	327.9	533.5	881.8	0.0	0.0
79.00	Appurtenance(s)	292.5	429.0	419.4	0.0	0.0	270.0	0.0	262.3	711.9	961.3	0.0	0.0
80.00		101.7	105.3					0.0	65.4	101.7	170.7	0.0	0.0
80.76	Bot - Section 3	284.7	79.3					0.0	49.5	284.7	128.8	0.0	0.0
84.91	Top - Section 2	246.2	716.6					0.0	271.4	246.2	988.0	0.0	0.0
85.00		288.7	6.3					0.0	6.0	288.7	12.2	0.0	0.0
90.00	Appurtenance(s)	559.2	337.7	4,914.7	0.0	0.0	3,206.6	0.0	326.9	5,473.9	3,871.2	0.0	0.0
95.00		543.4	324.6					0.0	265.9	543.4	590.5	0.0	0.0
100.00	Appurtenance(s)	320.2	311.5	4,532.9	0.0	0.0	2,840.7	0.0	265.9	4,853.1	3,418.0	0.0	0.0
101.00	Appurtenance(s)	259.2	60.7	33.1	0.0	0.0	9.0	0.0	46.3	292.3	116.0	0.0	0.0
105.00		457.1	237.6					0.0	185.1	457.1	422.8	0.0	0.0
110.00		299.4	285.3					0.0	231.4	299.4	516.6	0.0	0.0
111.00	Appurtenance(s)	241.4	55.5	3,008.0	0.0	0.0	1,913.4	0.0	46.3	3,249.4	2,015.2	0.0	0.0
115.00		424.3	216.7					0.0	170.3	424.3	387.0	0.0	0.0
120.00	Appurtenance(s)	454.3	259.0	4,708.5	0.0	0.0	3,005.9	0.0	212.9	5,162.8	3,477.8	0.0	0.0
125.00		253.0	245.9					0.0	147.8	253.0	393.8	0.0	0.0
125.71	Top - Section 3	90.1	33.8					0.0	21.0	90.1	54.8	0.0	0.0
130.00		73.3	156.5					0.0	113.8	73.3	270.3	0.0	0.0
131.00	Appurtenance(s)	69.7	36.5	5,131.2	0.0	-8,523.1	3,260.6	0.0	25.2	5,200.9	3,322.3	0.0	0.0
135.00		69.8	145.9					0.0	18.0	69.8	163.9	0.0	0.0
136.00	Appurtenance(s)	70.3	36.5	22.0	0.0	66.0	2.7	0.0	4.5	92.3	43.7	0.0	0.0
140.00	Appurtenance(s)	84.5	145.9	381.3	0.0	-381.3	60.8	0.0	17.7	465.8	224.3	0.0	0.0
142.00		28.3	72.9					0.0	0.0	28.3	72.9	0.0	0.0
<b>Totals:</b>										40,188.1	41,963.7	0.00	0.00

Load Case: 0.9D + 1.6W

95 mph with No Ice (Reduced DL)

25 Iterations

Gust Response Factor :1.10

Wind Importance Factor :1.00

Dead Load Factor :0.90

Wind Load Factor :1.60

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-41.88	-39.96	0.00	-3,712.35	0.00	3,712.35	4,350.13	2,175.06	7,987.32	3,944.64	0.00	0.00	0.672
5.00	-40.15	-39.49	0.00	-3,512.57	0.00	3,512.57	4,285.51	2,142.75	7,679.11	3,792.42	0.12	-0.23	0.656
10.00	-38.44	-39.03	0.00	-3,315.10	0.00	3,315.10	4,218.97	2,109.49	7,373.27	3,641.38	0.49	-0.46	0.638
15.00	-36.76	-38.56	0.00	-3,119.94	0.00	3,119.94	4,150.52	2,075.26	7,070.06	3,491.64	1.09	-0.69	0.620
20.00	-35.10	-38.07	0.00	-2,927.13	0.00	2,927.13	4,080.16	2,040.08	6,769.73	3,343.32	1.94	-0.92	0.601
25.00	-33.47	-37.56	0.00	-2,736.76	0.00	2,736.76	4,007.88	2,003.94	6,472.54	3,196.54	3.03	-1.15	0.581
30.00	-31.87	-36.96	0.00	-2,548.97	0.00	2,548.97	3,933.69	1,966.85	6,178.73	3,051.44	4.36	-1.38	0.560
35.00	-30.31	-36.13	0.00	-2,364.17	0.00	2,364.17	3,854.52	1,927.26	5,883.88	2,905.83	5.93	-1.62	0.539
40.00	-28.84	-35.59	0.00	-2,183.53	0.00	2,183.53	3,744.12	1,872.06	5,549.75	2,740.81	7.75	-1.85	0.520
40.26	-28.71	-35.25	0.00	-2,174.45	0.00	2,174.45	3,738.48	1,869.24	5,532.95	2,732.52	7.85	-1.86	0.519
45.00	-26.70	-34.68	0.00	-2,007.20	0.00	2,007.20	3,633.72	1,816.86	5,225.39	2,580.62	9.81	-2.08	0.494
45.41	-26.47	-34.33	0.00	-1,992.93	0.00	1,992.93	3,063.65	1,531.82	4,505.80	2,225.25	9.99	-2.09	0.550
50.00	-25.21	-33.50	0.00	-1,835.41	0.00	1,835.41	3,008.67	1,504.34	4,302.82	2,125.00	12.10	-2.30	0.523
55.00	-23.90	-32.90	0.00	-1,667.93	0.00	1,667.93	2,946.93	1,473.46	4,084.17	2,017.02	14.64	-2.53	0.492
55.68	-23.68	-32.54	0.00	-1,645.66	0.00	1,645.66	2,938.42	1,469.21	4,054.78	2,002.51	15.00	-2.56	0.488
55.68	-23.68	-32.54	0.00	-1,645.66	0.00	1,645.66	2,938.42	1,469.21	4,054.78	2,002.51	15.00	-2.56	0.830
60.00	-22.78	-31.89	0.00	-1,504.99	0.00	1,504.99	2,883.27	1,441.64	3,868.42	1,910.47	17.41	-2.76	0.796
63.00	-22.12	-31.46	0.00	-1,409.31	0.00	1,409.31	2,844.16	1,422.08	3,740.46	1,847.27	19.22	-2.99	0.771
65.00	-21.63	-31.11	0.00	-1,346.40	0.00	1,346.40	2,808.41	1,404.21	3,643.77	1,799.52	20.50	-3.15	0.756
70.00	-20.57	-30.59	0.00	-1,190.84	0.00	1,190.84	2,713.79	1,356.89	3,400.96	1,679.60	24.00	-3.52	0.717
75.00	-19.55	-30.11	0.00	-1,037.90	0.00	1,037.90	2,619.16	1,309.58	3,166.52	1,563.83	27.88	-3.88	0.672
79.00	-18.56	-29.39	0.00	-917.46	0.00	917.46	2,543.45	1,271.73	2,985.00	1,474.18	31.25	-4.16	0.630
80.00	-18.36	-29.30	0.00	-888.07	0.00	888.07	2,524.53	1,262.26	2,940.46	1,452.18	32.13	-4.24	0.619
80.76	-18.17	-29.06	0.00	-865.87	0.00	865.87	2,510.19	1,255.09	2,906.93	1,435.62	32.80	-4.29	0.611
84.91	-17.13	-28.77	0.00	-745.27	0.00	745.27	1,500.12	750.06	1,728.77	853.77	36.66	-4.56	0.886
85.00	-17.03	-28.55	0.00	-742.64	0.00	742.64	1,499.54	749.77	1,726.89	852.85	36.74	-4.57	0.884
90.00	-13.47	-22.87	0.00	-599.88	0.00	599.88	1,466.64	733.32	1,624.12	802.09	41.76	-5.00	0.758
95.00	-12.79	-22.36	0.00	-485.53	0.00	485.53	1,431.82	715.91	1,522.23	751.77	47.20	-5.39	0.656
100.00	-9.80	-17.23	0.00	-373.74	0.00	373.74	1,395.09	697.54	1,421.47	702.01	53.02	-5.73	0.540
101.00	-9.67	-16.95	0.00	-356.51	0.00	356.51	1,387.51	693.76	1,401.48	692.14	54.23	-5.80	0.523
105.00	-9.22	-16.50	0.00	-288.69	0.00	288.69	1,356.44	678.22	1,322.10	652.93	59.19	-6.04	0.450
110.00	-8.70	-16.17	0.00	-206.21	0.00	206.21	1,315.88	657.94	1,224.36	604.67	65.65	-6.30	0.348
111.00	-7.03	-12.73	0.00	-190.04	0.00	190.04	1,307.54	653.77	1,205.03	595.12	66.97	-6.35	0.325
115.00	-6.66	-12.28	0.00	-139.13	0.00	139.13	1,273.40	636.70	1,128.51	557.33	72.35	-6.51	0.255
120.00	-3.78	-6.76	0.00	-77.72	0.00	77.72	1,215.41	607.71	1,023.37	505.40	79.24	-6.66	0.157
125.00	-3.41	-6.47	0.00	-43.91	0.00	43.91	1,152.33	576.16	919.28	454.00	86.25	-6.76	0.100
125.71	-3.37	-6.37	0.00	-39.33	0.00	39.33	1,143.39	571.69	904.98	446.93	87.25	-6.77	0.091
125.71	-3.37	-6.37	0.00	-39.33	0.00	39.33	375.11	187.56	156.71	103.37	87.25	-6.77	0.391
130.00	-3.10	-6.27	0.00	-11.98	0.00	11.98	375.11	187.56	156.71	103.37	93.35	-6.81	0.125
131.00	-0.42	-0.71	0.00	-5.71	0.00	5.71	375.11	187.56	156.71	103.37	94.77	-6.83	0.056
135.00	-0.27	-0.62	0.00	-2.87	0.00	2.87	375.11	187.56	156.71	103.37	100.49	-6.86	0.028
136.00	-0.24	-0.53	0.00	-2.18	0.00	2.18	375.11	187.56	156.71	103.37	101.92	-6.86	0.022
140.00	-0.07	-0.04	0.00	-0.07	0.00	0.07	375.11	187.56	156.71	103.37	107.66	-6.87	0.001

Site Number: 302511

Code: ANSI/TIA-222-G

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Site Name: WSPT - South, CT

Engineering Number: 12996862\_C3\_02

11/25/2019 4:22:59 PM

Customer: VERIZON WIRELESS

Load Case: 0.9D + 1.6W

95 mph with No Ice (Reduced DL)

25 Iterations

Gust Response Factor :1.10

Wind Importance Factor :1.00

Dead Load Factor :0.90

Wind Load Factor :1.60

142.00 0.00 -0.03 0.00 0.00 0.00 0.00 0.00 375.11 187.56 156.71 103.37 110.53 -6.87 0.000

<b>Load Case:</b> 1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice	25 Iterations
Gust Response Factor :1.10	Ice Dead Load Factor :1.00	Wind Importance Factor :1.00
Dead Load Factor :1.20		Ice Importance Factor :1.00
Wind Load Factor :1.00		

**Applied Segment Forces Summary**

Seg Elev (ft)	Description	Shaft Forces		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		68.7	0.0					0.0	0.0	68.7	0.0	0.0	0.0
5.00		136.3	1,604.9					704.9	1,086.8	841.1	2,691.6	0.0	0.0
10.00		133.7	1,605.8					696.8	1,117.9	830.5	2,723.7	0.0	0.0
15.00		133.0	1,585.8					686.0	1,134.1	819.0	2,719.9	0.0	0.0
20.00		135.6	1,558.9					695.6	1,145.3	831.2	2,704.3	0.0	0.0
25.00		138.9	1,528.5					720.2	1,154.1	859.1	2,682.6	0.0	0.0
30.00		141.0	1,495.8					737.2	1,161.3	878.2	2,657.1	0.0	0.0
35.00		142.1	1,461.6					748.8	1,167.4	890.9	2,629.0	0.0	0.0
40.00		74.9	1,426.2					658.2	1,172.8	733.0	2,599.0	0.0	0.0
40.26	Bot - Section 2	72.5	72.1					33.7	60.0	106.3	132.1	0.0	0.0
45.00		74.9	2,174.9					629.3	1,117.6	704.2	3,292.5	0.0	0.0
45.41	Top - Section 1	72.4	186.3					54.7	97.1	127.1	283.4	0.0	0.0
50.00		138.4	1,136.1					620.1	1,084.8	758.5	2,220.9	0.0	0.0
55.00		81.7	1,205.7					676.6	1,185.9	758.2	2,391.6	0.0	0.0
55.68	Reinf. Top	71.3	161.3					91.6	160.9	162.9	322.2	0.0	0.0
60.00		104.1	1,012.0					584.3	682.2	688.4	1,694.2	0.0	0.0
63.00	Appurtenance(s)	70.5	688.2	9.6	0.0	0.0	46.8	404.6	474.9	484.7	1,209.9	0.0	0.0
65.00		97.7	452.4					251.9	279.3	349.6	731.6	0.0	0.0
70.00		138.1	1,103.4					626.7	699.8	764.8	1,803.2	0.0	0.0
75.00		122.5	1,068.6					621.5	701.9	744.0	1,770.5	0.0	0.0
79.00	Appurtenance(s)	67.3	830.4	113.3	0.0	0.0	454.7	492.8	563.0	673.4	1,848.2	0.0	0.0
80.00		23.5	204.8					122.5	140.7	146.0	345.4	0.0	0.0
80.76	Bot - Section 3	65.7	154.3					92.7	106.7	158.4	260.9	0.0	0.0
84.91	Top - Section 2	56.8	1,219.1					504.6	585.1	561.5	1,804.2	0.0	0.0
85.00		66.9	14.2					11.2	12.9	78.1	27.0	0.0	0.0
90.00	Appurtenance(s)	129.9	758.0	1,149.1	0.0	0.0	7,056.7	608.0	706.4	1,887.1	8,521.1	0.0	0.0
95.00		126.9	730.8					500.1	530.4	627.0	1,261.3	0.0	0.0
100.00	Appurtenance(s)	75.0	703.5	1,113.3	0.0	0.0	6,338.8	491.7	531.5	1,680.0	7,573.8	0.0	0.0
101.00	Appurtenance(s)	61.0	138.3	9.6	0.0	0.0	31.7	97.3	97.2	167.9	267.2	0.0	0.0
105.00		108.0	539.5					385.5	389.3	493.4	928.8	0.0	0.0
110.00		70.9	648.3					473.3	487.5	544.2	1,135.8	0.0	0.0
111.00	Appurtenance(s)	57.5	127.3	709.2	0.0	0.0	4,491.2	93.5	97.6	860.2	4,716.1	0.0	0.0
115.00		101.5	495.1					369.9	371.1	471.4	866.1	0.0	0.0
120.00	Appurtenance(s)	109.4	592.4	1,136.3	0.0	0.0	6,650.7	453.0	464.7	1,698.7	7,707.8	0.0	0.0
125.00		61.2	564.3					29.8	271.0	91.0	835.3	0.0	0.0
125.71	Top - Section 3	34.6	78.4					4.4	38.4	39.0	116.9	0.0	0.0
130.00		33.5	320.9					39.4	215.4	72.9	536.3	0.0	0.0
131.00	Appurtenance(s)	31.9	74.8	1,249.5	0.0	-1,937.5	7,513.5	9.2	48.5	1,290.6	7,636.9	0.0	0.0
135.00		31.9	299.6					37.1	83.6	69.0	383.2	0.0	0.0
136.00	Appurtenance(s)	32.2	74.9	12.9	0.0	38.6	15.3	9.3	20.9	54.3	111.2	0.0	0.0
140.00	Appurtenance(s)	38.7	300.0	81.8	0.0	-81.8	345.8	37.4	83.4	157.9	729.3	0.0	0.0
142.00		12.9	150.1					0.0	0.0	12.9	150.1	0.0	0.0
<b>Totals:</b>										24,235.4	85,022.2	0.00	0.00

<b>Load Case: 1.2D + 1.0Di + 1.0Wi</b>			<b>50 mph with 0.75 in Radial Ice</b>				<b>25 Iterations</b>			
Gust Response Factor :1.10		Ice Dead Load Factor :1.00				Wind Importance Factor :1.00				
Dead Load Factor :1.20						Ice Importance Factor :1.00				
Wind Load Factor :1.00										

**Calculated Forces**

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-85.00	-24.25	0.00	-1,859.87	0.00	1,859.87	4,350.13	2,175.06	7,987.32	3,944.64	0.00	0.00	0.348
5.00	-82.26	-23.57	0.00	-1,738.60	0.00	1,738.60	4,285.51	2,142.75	7,679.11	3,792.42	0.06	-0.11	0.335
10.00	-79.49	-22.89	0.00	-1,620.74	0.00	1,620.74	4,218.97	2,109.49	7,373.27	3,641.38	0.24	-0.23	0.323
15.00	-76.74	-22.21	0.00	-1,506.30	0.00	1,506.30	4,150.52	2,075.26	7,070.06	3,491.64	0.54	-0.34	0.310
20.00	-74.00	-21.50	0.00	-1,395.26	0.00	1,395.26	4,080.16	2,040.08	6,769.73	3,343.32	0.96	-0.45	0.297
25.00	-71.28	-20.75	0.00	-1,287.77	0.00	1,287.77	4,007.88	2,003.94	6,472.54	3,196.54	1.49	-0.56	0.284
30.00	-68.60	-19.98	0.00	-1,184.00	0.00	1,184.00	3,933.69	1,966.85	6,178.73	3,051.44	2.13	-0.67	0.270
35.00	-65.94	-19.17	0.00	-1,084.13	0.00	1,084.13	3,854.52	1,927.26	5,883.88	2,905.83	2.89	-0.78	0.257
40.00	-63.34	-18.46	0.00	-988.26	0.00	988.26	3,744.12	1,872.06	5,549.75	2,740.81	3.76	-0.88	0.245
40.26	-63.19	-18.41	0.00	-983.55	0.00	983.55	3,738.48	1,869.24	5,532.95	2,732.52	3.81	-0.89	0.245
45.00	-59.89	-17.71	0.00	-896.19	0.00	896.19	3,633.72	1,816.86	5,225.39	2,580.62	4.74	-0.98	0.230
45.41	-59.60	-17.63	0.00	-888.91	0.00	888.91	3,063.65	1,531.82	4,505.80	2,225.25	4.82	-0.99	0.256
50.00	-57.36	-16.93	0.00	-808.01	0.00	808.01	3,008.67	1,504.34	4,302.82	2,125.00	5.82	-1.08	0.241
55.00	-54.97	-16.18	0.00	-723.38	0.00	723.38	2,946.93	1,473.46	4,084.17	2,017.02	7.01	-1.18	0.224
55.68	-54.64	-16.05	0.00	-712.43	0.00	712.43	2,938.42	1,469.21	4,054.78	2,002.51	7.18	-1.20	0.221
55.68	-54.64	-16.05	0.00	-712.43	0.00	712.43	2,938.42	1,469.21	4,054.78	2,002.51	7.18	-1.20	0.374
60.00	-52.93	-15.41	0.00	-643.03	0.00	643.03	2,883.27	1,441.64	3,868.42	1,910.47	8.30	-1.28	0.355
63.00	-51.71	-14.97	0.00	-596.80	0.00	596.80	2,844.16	1,422.08	3,740.46	1,847.27	9.14	-1.38	0.341
65.00	-50.96	-14.71	0.00	-566.85	0.00	566.85	2,808.41	1,404.21	3,643.77	1,799.52	9.73	-1.45	0.333
70.00	-49.14	-14.03	0.00	-493.32	0.00	493.32	2,713.79	1,356.89	3,400.96	1,679.60	11.33	-1.60	0.312
75.00	-47.36	-13.34	0.00	-423.20	0.00	423.20	2,619.16	1,309.58	3,166.52	1,563.83	13.09	-1.75	0.289
79.00	-45.52	-12.66	0.00	-369.85	0.00	369.85	2,543.45	1,271.73	2,985.00	1,474.18	14.61	-1.87	0.269
80.00	-45.18	-12.53	0.00	-357.18	0.00	357.18	2,524.53	1,262.26	2,940.46	1,452.18	15.00	-1.89	0.264
80.76	-44.91	-12.41	0.00	-347.69	0.00	347.69	2,510.19	1,255.09	2,906.93	1,435.62	15.31	-1.92	0.260
84.91	-43.11	-11.83	0.00	-296.18	0.00	296.18	1,500.12	750.06	1,728.77	853.77	17.02	-2.03	0.376
85.00	-43.07	-11.82	0.00	-295.10	0.00	295.10	1,499.54	749.77	1,726.89	852.85	17.06	-2.03	0.375
90.00	-34.60	-9.71	0.00	-236.02	0.00	236.02	1,466.64	733.32	1,624.12	802.09	19.28	-2.20	0.318
95.00	-33.34	-9.12	0.00	-187.45	0.00	187.45	1,431.82	715.91	1,522.23	751.77	21.66	-2.35	0.273
100.00	-25.83	-7.15	0.00	-141.86	0.00	141.86	1,395.09	697.54	1,421.47	702.01	24.19	-2.48	0.221
101.00	-25.57	-7.00	0.00	-134.71	0.00	134.71	1,387.51	693.76	1,401.48	692.14	24.72	-2.51	0.213
105.00	-24.65	-6.51	0.00	-106.70	0.00	106.70	1,356.44	678.22	1,322.10	652.93	26.86	-2.60	0.182
110.00	-23.54	-5.93	0.00	-74.16	0.00	74.16	1,315.88	657.94	1,224.36	604.67	29.63	-2.69	0.141
111.00	-18.86	-4.86	0.00	-68.23	0.00	68.23	1,307.54	653.77	1,205.03	595.12	30.20	-2.71	0.129
115.00	-18.02	-4.37	0.00	-48.77	0.00	48.77	1,273.40	636.70	1,128.51	557.33	32.49	-2.77	0.102
120.00	-10.40	-2.31	0.00	-26.92	0.00	26.92	1,215.41	607.71	1,023.37	505.40	35.42	-2.82	0.062
125.00	-9.57	-2.18	0.00	-15.39	0.00	15.39	1,152.33	576.16	919.28	454.00	38.39	-2.85	0.042
125.71	-9.45	-2.13	0.00	-13.85	0.00	13.85	1,143.39	571.69	904.98	446.93	38.81	-2.86	0.039
125.71	-9.45	-2.13	0.00	-13.85	0.00	13.85	375.11	187.56	156.71	103.37	38.81	-2.86	0.159
130.00	-8.92	-2.03	0.00	-4.70	0.00	4.70	375.11	187.56	156.71	103.37	41.39	-2.87	0.069
131.00	-1.36	-0.36	0.00	-2.67	0.00	2.67	375.11	187.56	156.71	103.37	41.99	-2.88	0.029
135.00	-0.98	-0.27	0.00	-1.21	0.00	1.21	375.11	187.56	156.71	103.37	44.41	-2.89	0.014
136.00	-0.87	-0.21	0.00	-0.90	0.00	0.90	375.11	187.56	156.71	103.37	45.01	-2.89	0.011
140.00	-0.15	-0.02	0.00	-0.04	0.00	0.04	375.11	187.56	156.71	103.37	47.44	-2.90	0.001

Site Number: 302511

Code: ANSI/TIA-222-G

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Site Name: WSPT - South, CT

Engineering Number: 12996862\_C3\_02

11/25/2019 4:23:07 PM

Customer: VERIZON WIRELESS

Load Case: 1.2D + 1.0Di + 1.0Wi

50 mph with 0.75 in Radial Ice

25 Iterations

Gust Response Factor :1.10

Ice Dead Load Factor :1.00

Wind Importance Factor :1.00

Dead Load Factor :1.20

Ice Importance Factor :1.00

Wind Load Factor :1.00

142.00 0.00 -0.01 0.00 0.00 0.00 0.00 0.00 375.11 187.56 156.71 103.37 48.65 -2.90 0.000

<b>Load Case: 1.0D + 1.0W</b>	<b>Serviceability 60 mph</b>	<b>24 Iterations</b>
Gust Response Factor :1.10		Wind Importance Factor :1.00
Dead Load Factor :1.00		
Wind Load Factor :1.00		

**Applied Segment Forces Summary**

Seg Elev (ft)	Description	Shaft Forces		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		70.2	0.0					0.0	0.0	70.2	0.0	0.0	0.0
5.00		138.8	1,055.3					0.0	699.0	138.8	1,754.4	0.0	0.0
10.00		135.5	1,029.9					0.0	699.0	135.5	1,728.9	0.0	0.0
15.00		134.2	1,004.4					0.0	699.0	134.2	1,703.4	0.0	0.0
20.00		136.4	978.9					0.0	699.0	136.4	1,677.9	0.0	0.0
25.00		139.3	953.4					0.0	699.0	139.3	1,652.5	0.0	0.0
30.00		155.0	927.9					0.0	699.0	155.0	1,627.0	0.0	0.0
35.00		169.9	902.4					34.4	699.0	204.3	1,601.5	0.0	0.0
40.00		89.3	877.0					35.5	699.0	124.8	1,576.0	0.0	0.0
40.26	Bot - Section 2	86.5	44.1					1.8	35.7	88.3	79.8	0.0	0.0
45.00		89.2	1,515.3					34.6	663.4	123.8	2,178.7	0.0	0.0
45.41	Top - Section 1	86.0	129.4					3.0	57.5	89.1	186.9	0.0	0.0
50.00		164.2	664.2					34.3	641.5	198.4	1,305.7	0.0	0.0
55.00		96.7	702.9					38.1	699.0	134.8	1,401.9	0.0	0.0
55.68	Reinf. Top	84.2	93.5					5.2	94.7	89.4	188.1	0.0	0.0
60.00		122.7	587.5					33.6	315.6	156.3	903.1	0.0	0.0
63.00	Appurtenance(s)	77.5	398.1	7.5	0.0	0.0	30.6	23.6	219.0	108.6	647.8	0.0	0.0
65.00		95.5	261.0					0.0	145.7	95.5	406.8	0.0	0.0
70.00		134.7	637.3					0.0	364.3	134.7	1,001.6	0.0	0.0
75.00		119.0	615.5					0.0	364.3	119.0	979.8	0.0	0.0
79.00	Appurtenance(s)	65.3	476.7	93.5	0.0	0.0	300.0	0.0	291.4	158.8	1,068.1	0.0	0.0
80.00		22.7	117.0					0.0	72.6	22.7	189.6	0.0	0.0
80.76	Bot - Section 3	63.5	88.1					0.0	55.0	63.5	143.1	0.0	0.0
84.91	Top - Section 2	54.9	796.3					0.0	301.5	54.9	1,097.8	0.0	0.0
85.00		64.4	7.0					0.0	6.6	64.4	13.6	0.0	0.0
90.00	Appurtenance(s)	124.7	375.2	1,096.3	0.0	0.0	3,562.9	0.0	363.2	1,221.0	4,301.3	0.0	0.0
95.00		121.2	360.6					0.0	295.4	121.2	656.1	0.0	0.0
100.00	Appurtenance(s)	71.4	346.1	1,011.1	0.0	0.0	3,156.3	0.0	295.4	1,082.5	3,797.8	0.0	0.0
101.00	Appurtenance(s)	57.8	67.5	7.4	0.0	0.0	10.0	0.0	51.4	65.2	128.9	0.0	0.0
105.00		102.0	264.0					0.0	205.7	102.0	469.7	0.0	0.0
110.00		66.8	316.9					0.0	257.1	66.8	574.0	0.0	0.0
111.00	Appurtenance(s)	53.8	61.6	671.0	0.0	0.0	2,126.0	0.0	51.4	724.8	2,239.1	0.0	0.0
115.00		94.7	240.7					0.0	189.2	94.7	430.0	0.0	0.0
120.00	Appurtenance(s)	101.3	287.8	1,050.3	0.0	0.0	3,339.9	0.0	236.5	1,151.6	3,864.3	0.0	0.0
125.00		56.4	273.3					0.0	164.2	56.4	437.5	0.0	0.0
125.71	Top - Section 3	20.5	37.6					0.0	23.3	20.5	60.8	0.0	0.0
130.00		16.9	173.9					0.0	126.5	16.9	300.4	0.0	0.0
131.00	Appurtenance(s)	16.0	40.5	1,144.6	0.0	-1,901.2	3,622.9	0.0	28.0	1,160.6	3,691.4	0.0	0.0
135.00		16.0	162.1					0.0	20.0	16.0	182.1	0.0	0.0
136.00	Appurtenance(s)	16.0	40.5	4.9	0.0	14.7	3.0	0.0	5.0	20.9	48.5	0.0	0.0
140.00	Appurtenance(s)	19.3	162.1	85.1	0.0	-85.1	67.5	0.0	19.7	104.3	249.3	0.0	0.0
142.00		6.4	81.0					0.0	0.0	6.4	81.0	0.0	0.0
								Totals:		8,972.68	46,626.3	0.00	0.00

Load Case: 1.0D + 1.0W

Serviceability 60 mph

24 Iterations

Gust Response Factor :1.10

Wind Importance Factor :1.00

Dead Load Factor :1.00

Wind Load Factor :1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-46.62	-8.92	0.00	-833.50	0.00	833.50	4,350.13	2,175.06	7,987.32	3,944.64	0.00	0.00	0.157
5.00	-44.86	-8.82	0.00	-788.88	0.00	788.88	4,285.51	2,142.75	7,679.11	3,792.42	0.03	-0.05	0.154
10.00	-43.12	-8.73	0.00	-744.76	0.00	744.76	4,218.97	2,109.49	7,373.27	3,641.38	0.11	-0.10	0.149
15.00	-41.41	-8.62	0.00	-701.14	0.00	701.14	4,150.52	2,075.26	7,070.06	3,491.64	0.24	-0.15	0.145
20.00	-39.73	-8.52	0.00	-658.01	0.00	658.01	4,080.16	2,040.08	6,769.73	3,343.32	0.43	-0.21	0.141
25.00	-38.07	-8.41	0.00	-615.42	0.00	615.42	4,007.88	2,003.94	6,472.54	3,196.54	0.68	-0.26	0.136
30.00	-36.43	-8.28	0.00	-573.38	0.00	573.38	3,933.69	1,966.85	6,178.73	3,051.44	0.98	-0.31	0.131
35.00	-34.83	-8.10	0.00	-531.99	0.00	531.99	3,854.52	1,927.26	5,883.88	2,905.83	1.33	-0.36	0.126
40.00	-33.25	-7.98	0.00	-491.51	0.00	491.51	3,744.12	1,872.06	5,549.75	2,740.81	1.74	-0.42	0.122
40.26	-33.16	-7.90	0.00	-489.48	0.00	489.48	3,738.48	1,869.24	5,532.95	2,732.52	1.76	-0.42	0.122
45.00	-30.98	-7.78	0.00	-451.98	0.00	451.98	3,633.72	1,816.86	5,225.39	2,580.62	2.20	-0.47	0.116
45.41	-30.79	-7.70	0.00	-448.78	0.00	448.78	3,063.65	1,531.82	4,505.80	2,225.25	2.24	-0.47	0.129
50.00	-29.48	-7.51	0.00	-413.46	0.00	413.46	3,008.67	1,504.34	4,302.82	2,125.00	2.72	-0.52	0.123
55.00	-28.08	-7.38	0.00	-375.89	0.00	375.89	2,946.93	1,473.46	4,084.17	2,017.02	3.29	-0.57	0.116
55.68	-27.89	-7.30	0.00	-370.89	0.00	370.89	2,938.42	1,469.21	4,054.78	2,002.51	3.37	-0.58	0.115
55.68	-27.89	-7.30	0.00	-370.89	0.00	370.89	2,938.42	1,469.21	4,054.78	2,002.51	3.37	-0.58	0.195
60.00	-26.98	-7.16	0.00	-339.32	0.00	339.32	2,883.27	1,441.64	3,868.42	1,910.47	3.91	-0.62	0.187
63.00	-26.33	-7.06	0.00	-317.85	0.00	317.85	2,844.16	1,422.08	3,740.46	1,847.27	4.32	-0.67	0.181
65.00	-25.92	-6.99	0.00	-303.72	0.00	303.72	2,808.41	1,404.21	3,643.77	1,799.52	4.61	-0.71	0.178
70.00	-24.91	-6.88	0.00	-268.77	0.00	268.77	2,713.79	1,356.89	3,400.96	1,679.60	5.40	-0.79	0.169
75.00	-23.92	-6.78	0.00	-234.38	0.00	234.38	2,619.16	1,309.58	3,166.52	1,563.83	6.27	-0.87	0.159
79.00	-22.85	-6.62	0.00	-207.28	0.00	207.28	2,543.45	1,271.73	2,985.00	1,474.18	7.03	-0.94	0.150
80.00	-22.66	-6.60	0.00	-200.67	0.00	200.67	2,524.53	1,262.26	2,940.46	1,452.18	7.23	-0.95	0.147
80.76	-22.51	-6.54	0.00	-195.67	0.00	195.67	2,510.19	1,255.09	2,906.93	1,435.62	7.38	-0.97	0.145
84.91	-21.41	-6.48	0.00	-168.50	0.00	168.50	1,500.12	750.06	1,728.77	853.77	8.25	-1.03	0.212
85.00	-21.39	-6.44	0.00	-167.91	0.00	167.91	1,499.54	749.77	1,726.89	852.85	8.27	-1.03	0.211
90.00	-17.11	-5.16	0.00	-135.73	0.00	135.73	1,466.64	733.32	1,624.12	802.09	9.40	-1.13	0.181
95.00	-16.45	-5.05	0.00	-109.92	0.00	109.92	1,431.82	715.91	1,522.23	751.77	10.63	-1.21	0.158
100.00	-12.67	-3.90	0.00	-84.67	0.00	84.67	1,395.09	697.54	1,421.47	702.01	11.94	-1.29	0.130
101.00	-12.54	-3.84	0.00	-80.77	0.00	80.77	1,387.51	693.76	1,401.48	692.14	12.22	-1.31	0.126
105.00	-12.07	-3.73	0.00	-65.43	0.00	65.43	1,356.44	678.22	1,322.10	652.93	13.34	-1.36	0.109
110.00	-11.50	-3.66	0.00	-46.76	0.00	46.76	1,315.88	657.94	1,224.36	604.67	14.80	-1.42	0.086
111.00	-9.28	-2.88	0.00	-43.10	0.00	43.10	1,307.54	653.77	1,205.03	595.12	15.10	-1.43	0.080
115.00	-8.85	-2.78	0.00	-31.57	0.00	31.57	1,273.40	636.70	1,128.51	557.33	16.31	-1.47	0.064
120.00	-5.01	-1.53	0.00	-17.65	0.00	17.65	1,215.41	607.71	1,023.37	505.40	17.87	-1.50	0.039
125.00	-4.58	-1.47	0.00	-9.97	0.00	9.97	1,152.33	576.16	919.28	454.00	19.46	-1.52	0.026
125.71	-4.52	-1.45	0.00	-8.93	0.00	8.93	1,143.39	571.69	904.98	446.93	19.68	-1.53	0.024
125.71	-4.52	-1.45	0.00	-8.93	0.00	8.93	375.11	187.56	156.71	103.37	19.68	-1.53	0.098
130.00	-4.22	-1.42	0.00	-2.72	0.00	2.72	375.11	187.56	156.71	103.37	21.06	-1.54	0.038
131.00	-0.56	-0.16	0.00	-1.30	0.00	1.30	375.11	187.56	156.71	103.37	21.38	-1.54	0.014
135.00	-0.38	-0.14	0.00	-0.65	0.00	0.65	375.11	187.56	156.71	103.37	22.68	-1.55	0.007
136.00	-0.33	-0.12	0.00	-0.50	0.00	0.50	375.11	187.56	156.71	103.37	23.00	-1.55	0.006
140.00	-0.08	-0.01	0.00	-0.02	0.00	0.02	375.11	187.56	156.71	103.37	24.30	-1.55	0.000



Site Number: 302511

Code: ANSI/TIA-222-G

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Site Name: WSPT - South, CT

Engineering Number: 12996862\_C3\_02

11/25/2019 4:23:15 PM

Customer: VERIZON WIRELESS

Load Case: 1.0D + 1.0W

Serviceability 60 mph

24 Iterations

Gust Response Factor :1.10

Wind Importance Factor :1.00

Dead Load Factor :1.00

Wind Load Factor :1.00

142.00 0.00 -0.01 0.00 0.00 0.00 0.00 0.00 375.11 187.56 156.71 103.37 24.95 -1.55 0.000

### Equivalent Lateral Forces Method Analysis

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

Spectral Response Acceleration for Short Period ( $S_s$ ):	0.22
Spectral Response Acceleration at 1.0 Second Period ( $S_{d1}$ ):	0.07
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 ( $S_{ds}$ ):	0.24
Design Spectral Response Acceleration at 1.0 Second Period ( $S_{d1}$ ):	0.11
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):	2.32
Redundancy Factor ( $\rho$ ):	1.00
Seismic Force Distribution Exponent (k):	1.91
Total Unfactored Dead Load:	46.63 k
Seismic Base Shear (E):	1.41 k

#### Load Case (1.2 + 0.2Sds) \* DL + E ELFM

#### Seismic Equivalent Lateral Forces Method

Segment	Height Above Base (ft)	Weight (lb)	$W_z$ (lb-ft)	$C_{vx}$	Horizontal Force (lb)	Vertical Force (lb)
41	141.00	81	1,033	0.005	7	101
40	138.00	182	2,223	0.011	15	227
39	135.50	46	538	0.003	4	57
38	133.00	182	2,075	0.010	14	227
37	130.50	69	753	0.004	5	85
36	127.85	300	3,174	0.015	21	375
35	125.35	61	619	0.003	4	76
34	122.50	438	4,261	0.020	29	546
33	117.50	524	4,716	0.023	32	654
32	113.00	430	3,589	0.017	24	536
31	110.50	113	904	0.004	6	141
30	107.50	574	4,356	0.021	29	716
29	103.00	470	3,285	0.016	22	586
28	100.50	119	793	0.004	5	148
27	97.50	642	4,040	0.019	27	800
26	92.50	656	3,736	0.018	25	818
25	87.50	738	3,782	0.018	26	921
24	84.95	14	66	0.000	0	17
23	82.83	1,098	5,064	0.024	34	1,369
22	80.38	143	623	0.003	4	178
21	79.50	190	809	0.004	5	236
20	77.00	768	3,082	0.015	21	958
19	72.50	980	3,504	0.017	24	1,222

18	67.50	1,002	3,125	0.015	21	1,249
17	64.00	407	1,146	0.005	8	507
16	61.50	617	1,612	0.008	11	770
15	57.84	903	2,098	0.010	14	1,126
14	55.34	188	402	0.002	3	235
13	52.50	1,402	2,706	0.013	18	1,748
12	47.71	1,306	2,099	0.010	14	1,628
11	45.21	187	271	0.001	2	233
10	42.63	2,179	2,825	0.013	19	2,717
9	40.13	80	92	0.000	1	99
8	37.50	1,576	1,600	0.008	11	1,966
7	32.50	1,601	1,237	0.006	8	1,997
6	27.50	1,627	913	0.004	6	2,029
5	22.50	1,652	632	0.003	4	2,061
4	17.50	1,678	397	0.002	3	2,093
3	12.50	1,703	212	0.001	1	2,124
2	7.50	1,729	81	0.000	1	2,156
1	2.50	1,754	10	0.000	0	2,188
Kathrein Scala 742-2	140.00	68	848	0.004	6	84
Generic RCU (Remote	136.00	3	36	0.000	0	4
Powerwave Allgon 702	131.00	26	292	0.001	2	33
Kaelus DBC0061F1V51-	131.00	76	847	0.004	6	95
Raycap DC6-48-60-0-8	131.00	16	177	0.001	1	20
Raycap DC6-48-60-0-8	131.00	16	177	0.001	1	20
Powerwave Allgon LGP	131.00	85	937	0.004	6	106
Raycap DC6-48-60-18-	131.00	64	704	0.003	5	79
Ericsson RRUS 8843 B	131.00	216	2,391	0.011	16	269
Ericsson RRUS 4449 B	131.00	213	2,358	0.011	16	266
Ericsson RRUS 32 B30	131.00	180	1,993	0.010	13	224
Powerwave Allgon 777	131.00	105	1,162	0.006	8	131
Quintel QS66512-2	131.00	333	3,686	0.018	25	415
Kathrein Scala 80010	131.00	293	3,241	0.015	22	365
Flat Platform w/ Han	131.00	2,000	22,141	0.106	150	2,494
DragonWave Horizon C	120.00	21	198	0.001	1	26
Alcatel-Lucent RRH2x	120.00	159	1,486	0.007	10	198
NextNet BTS-2500	120.00	105	983	0.005	7	131
Alcatel-Lucent 800 M	120.00	192	1,798	0.009	12	239
Alcatel-Lucent 1900	120.00	180	1,685	0.008	11	224
Nokia 2.5G MAA - AAH	120.00	311	2,910	0.014	20	388
Argus LLPX310R	120.00	86	803	0.004	5	107
DragonWave A-ANT-18G	120.00	54	507	0.002	3	68
Commscope NNVV-65B-R	120.00	232	2,174	0.010	15	290
Flat Platform w/ Han	120.00	2,000	18,726	0.089	126	2,494
Decibel DB844G90A-XY	111.00	126	1,017	0.005	7	157
Flat Platform w/ Han	111.00	2,000	16,135	0.077	109	2,494
Generic GPS	101.00	10	67	0.000	0	12
Samsung B5/B13 RRH-B	100.00	211	1,394	0.007	9	263
Samsung B2/B66A RRH-	100.00	253	1,674	0.008	11	316
Ryma MGD3-800TX	100.00	46	305	0.001	2	58
Commscope RC2DC-3315	100.00	64	423	0.002	3	80
Antel BXA-70080/6CF_	100.00	54	357	0.002	2	67
Quintel QS6656-5D	100.00	528	3,490	0.017	24	658
Flat Platform w/ Han	100.00	2,000	13,219	0.063	89	2,494
RFS ATMAA1412D-1A20	90.00	52	281	0.001	2	65
Ericsson Radio 4449	90.00	222	1,200	0.006	8	277
Ericsson AIR 21, 1.3	90.00	332	1,794	0.009	12	414
Ericsson AIR 32 B2A/	90.00	573	3,098	0.015	21	715
RFS APXVAARR24_43-U-	90.00	384	2,074	0.010	14	479
Flat Platform w/ Han	90.00	2,000	10,809	0.052	73	2,494
Generic 6' Omni	79.00	50	211	0.001	1	62
Stand-Off	79.00	100	421	0.002	3	125
Round Side Arm	79.00	150	632	0.003	4	187
PCTEL GPS-TMG-HR-26N	63.00	1	2	0.000	0	1
Stand-Off	63.00	30	82	0.000	1	37



Site Number: 302511

Code: ANSI/TIA-222-G

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Customer: VERIZON WIRELESS

Kathrein Scala 80010	131.00	293	3,241	0.015	22	250
Flat Platform w/ Han	131.00	2,000	22,141	0.106	150	1,706
DragonWave Horizon C	120.00	21	198	0.001	1	18
Alcatel-Lucent RRH2x	120.00	159	1,486	0.007	10	135
NextNet BTS-2500	120.00	105	983	0.005	7	90
Alcatel-Lucent 800 M	120.00	192	1,798	0.009	12	164
Alcatel-Lucent 1900	120.00	180	1,685	0.008	11	154
Nokia 2.5G MAA - AAH	120.00	311	2,910	0.014	20	265
Argus LLPX310R	120.00	86	803	0.004	5	73
DragonWave A-ANT-18G	120.00	54	507	0.002	3	46
Commscope NNVV-65B-R	120.00	232	2,174	0.010	15	198
Flat Platform w/ Han	120.00	2,000	18,726	0.089	126	1,706
Decibel DB844G90A-XY	111.00	126	1,017	0.005	7	107
Flat Platform w/ Han	111.00	2,000	16,135	0.077	109	1,706
Generic GPS	101.00	10	67	0.000	0	9
Samsung B5/B13 RRH-B	100.00	211	1,394	0.007	9	180
Samsung B2/B66A RRH-	100.00	253	1,674	0.008	11	216
Rymosa MGD3-800TX	100.00	46	305	0.001	2	39
Commscope RC2DC-3315	100.00	64	423	0.002	3	55
Antel BXA-70080/6CF_	100.00	54	357	0.002	2	46
Quintel QS6656-5D	100.00	528	3,490	0.017	24	450
Flat Platform w/ Han	100.00	2,000	13,219	0.063	89	1,706
RFS ATMAA1412D-1A20	90.00	52	281	0.001	2	44
Ericsson Radio 4449	90.00	222	1,200	0.006	8	189
Ericsson AIR 21, 1.3	90.00	332	1,794	0.009	12	283
Ericsson AIR 32 B2A/	90.00	573	3,098	0.015	21	489
RFS APXVAARR24_43-U-	90.00	384	2,074	0.010	14	327
Flat Platform w/ Han	90.00	2,000	10,809	0.052	73	1,706
Generic 6' Omni	79.00	50	211	0.001	1	43
Stand-Off	79.00	100	421	0.002	3	85
Round Side Arm	79.00	150	632	0.003	4	128
PCTEL GPS-TMG-HR-26N	63.00	1	2	0.000	0	1
Stand-Off	63.00	30	82	0.000	1	26
		46,626	209,432	1.000	1,415	39,765

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

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-55.96	-1.42	0.00	-154.89	0.00	154.89	4,350.13	2,175.06	7,987.32	3,944.64	0.00	0.00	0.038
5.00	-53.81	-1.43	0.00	-147.80	0.00	147.80	4,285.51	2,142.75	7,679.11	3,792.42	0.01	-0.01	0.037
10.00	-51.68	-1.43	0.00	-140.67	0.00	140.67	4,218.97	2,109.49	7,373.27	3,641.38	0.02	-0.02	0.036
15.00	-49.59	-1.44	0.00	-133.50	0.00	133.50	4,150.52	2,075.26	7,070.06	3,491.64	0.05	-0.03	0.035
20.00	-47.53	-1.44	0.00	-126.31	0.00	126.31	4,080.16	2,040.08	6,769.73	3,343.32	0.08	-0.04	0.034
25.00	-45.50	-1.44	0.00	-119.10	0.00	119.10	4,007.88	2,003.94	6,472.54	3,196.54	0.13	-0.05	0.033
30.00	-43.50	-1.44	0.00	-111.89	0.00	111.89	3,933.69	1,966.85	6,178.73	3,051.44	0.18	-0.06	0.032
35.00	-41.53	-1.43	0.00	-104.70	0.00	104.70	3,854.52	1,927.26	5,883.88	2,905.83	0.25	-0.07	0.031
40.00	-41.43	-1.44	0.00	-97.53	0.00	97.53	3,744.12	1,872.06	5,549.75	2,740.81	0.33	-0.08	0.031
40.26	-38.72	-1.42	0.00	-97.16	0.00	97.16	3,738.48	1,869.24	5,532.95	2,732.52	0.33	-0.08	0.030
45.00	-38.48	-1.42	0.00	-90.44	0.00	90.44	3,633.72	1,816.86	5,225.39	2,580.62	0.42	-0.09	0.030
45.41	-36.86	-1.41	0.00	-89.85	0.00	89.85	3,063.65	1,531.82	4,505.80	2,225.25	0.43	-0.09	0.033
50.00	-35.11	-1.39	0.00	-83.40	0.00	83.40	3,008.67	1,504.34	4,302.82	2,125.00	0.52	-0.10	0.031
55.00	-34.87	-1.39	0.00	-76.45	0.00	76.45	2,946.93	1,473.46	4,084.17	2,017.02	0.63	-0.11	0.030
55.68	-33.75	-1.38	0.00	-75.51	0.00	75.51	2,938.42	1,469.21	4,054.78	2,002.51	0.65	-0.11	0.030
55.68	-33.75	-1.38	0.00	-75.51	0.00	75.51	2,938.42	1,469.21	4,054.78	2,002.51	0.65	-0.11	0.049
60.00	-32.98	-1.37	0.00	-69.56	0.00	69.56	2,883.27	1,441.64	3,868.42	1,910.47	0.75	-0.12	0.048
63.00	-32.43	-1.37	0.00	-65.45	0.00	65.45	2,844.16	1,422.08	3,740.46	1,847.27	0.83	-0.13	0.047
65.00	-31.18	-1.35	0.00	-62.71	0.00	62.71	2,808.41	1,404.21	3,643.77	1,799.52	0.89	-0.14	0.046
70.00	-29.96	-1.33	0.00	-55.97	0.00	55.97	2,713.79	1,356.89	3,400.96	1,679.60	1.04	-0.16	0.044
75.00	-29.00	-1.32	0.00	-49.31	0.00	49.31	2,619.16	1,309.58	3,166.52	1,563.83	1.22	-0.17	0.043
79.00	-28.39	-1.30	0.00	-44.05	0.00	44.05	2,543.45	1,271.73	2,985.00	1,474.18	1.37	-0.19	0.041
80.00	-28.21	-1.30	0.00	-42.75	0.00	42.75	2,524.53	1,262.26	2,940.46	1,452.18	1.41	-0.19	0.041
80.76	-26.84	-1.27	0.00	-41.77	0.00	41.77	2,510.19	1,255.09	2,906.93	1,435.62	1.44	-0.19	0.040
84.91	-26.82	-1.27	0.00	-36.51	0.00	36.51	1,500.12	750.06	1,728.77	853.77	1.61	-0.21	0.061
85.00	-25.90	-1.24	0.00	-36.40	0.00	36.40	1,499.54	749.77	1,726.89	852.85	1.62	-0.21	0.060
90.00	-20.64	-1.08	0.00	-30.18	0.00	30.18	1,466.64	733.32	1,624.12	802.09	1.84	-0.23	0.052
95.00	-19.84	-1.05	0.00	-24.80	0.00	24.80	1,431.82	715.91	1,522.23	751.77	2.09	-0.25	0.047
100.00	-15.76	-0.89	0.00	-19.54	0.00	19.54	1,395.09	697.54	1,421.47	702.01	2.36	-0.27	0.039
101.00	-15.16	-0.87	0.00	-18.65	0.00	18.65	1,387.51	693.76	1,401.48	692.14	2.42	-0.27	0.038
105.00	-14.44	-0.84	0.00	-15.18	0.00	15.18	1,356.44	678.22	1,322.10	652.93	2.65	-0.28	0.034
110.00	-14.30	-0.83	0.00	-10.99	0.00	10.99	1,315.88	657.94	1,224.36	604.67	2.95	-0.30	0.029
111.00	-11.12	-0.68	0.00	-10.16	0.00	10.16	1,307.54	653.77	1,205.03	595.12	3.01	-0.30	0.026
115.00	-10.46	-0.64	0.00	-7.45	0.00	7.45	1,273.40	636.70	1,128.51	557.33	3.27	-0.31	0.022
120.00	-5.75	-0.38	0.00	-4.23	0.00	4.23	1,215.41	607.71	1,023.37	505.40	3.59	-0.31	0.013
125.00	-5.68	-0.37	0.00	-2.34	0.00	2.34	1,152.33	576.16	919.28	454.00	3.93	-0.32	0.010
125.71	-5.30	-0.35	0.00	-2.07	0.00	2.07	1,143.39	571.69	904.98	446.93	3.97	-0.32	0.009
125.71	-5.30	-0.35	0.00	-2.07	0.00	2.07	375.11	187.56	156.71	103.37	3.97	-0.32	0.034
130.00	-5.22	-0.35	0.00	-0.57	0.00	0.57	375.11	187.56	156.71	103.37	4.26	-0.32	0.019
131.00	-0.47	-0.03	0.00	-0.22	0.00	0.22	375.11	187.56	156.71	103.37	4.33	-0.32	0.003
135.00	-0.42	-0.03	0.00	-0.08	0.00	0.08	375.11	187.56	156.71	103.37	4.60	-0.32	0.002
136.00	-0.19	-0.01	0.00	-0.05	0.00	0.05	375.11	187.56	156.71	103.37	4.67	-0.32	0.001
140.00	0.00	0.00	0.00	0.00	0.00	0.00	375.11	187.56	156.71	103.37	4.94	-0.32	0.000
142.00	0.00	0.00	0.00	0.00	0.00	0.00	375.11	187.56	156.71	103.37	5.08	-0.32	0.000

Load Case (0.9 - 0.2Sds) \* DL + E ELMF

Seismic (Reduced DL) Equivalent Lateral Forces Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-38.27	-1.42	0.00	-152.35	0.00	152.35	4,350.13	2,175.06	7,987.32	3,944.64	0.00	0.00	0.034
5.00	-36.79	-1.42	0.00	-145.27	0.00	145.27	4,285.51	2,142.75	7,679.11	3,792.42	0.01	-0.01	0.033
10.00	-35.34	-1.43	0.00	-138.16	0.00	138.16	4,218.97	2,109.49	7,373.27	3,641.38	0.02	-0.02	0.033
15.00	-33.91	-1.43	0.00	-131.02	0.00	131.02	4,150.52	2,075.26	7,070.06	3,491.64	0.05	-0.03	0.032
20.00	-32.50	-1.43	0.00	-123.88	0.00	123.88	4,080.16	2,040.08	6,769.73	3,343.32	0.08	-0.04	0.031
25.00	-31.11	-1.43	0.00	-116.73	0.00	116.73	4,007.88	2,003.94	6,472.54	3,196.54	0.13	-0.05	0.030
30.00	-29.75	-1.42	0.00	-109.59	0.00	109.59	3,933.69	1,966.85	6,178.73	3,051.44	0.18	-0.06	0.029
35.00	-28.40	-1.42	0.00	-102.48	0.00	102.48	3,854.52	1,927.26	5,883.88	2,905.83	0.25	-0.07	0.028
40.00	-28.33	-1.42	0.00	-95.40	0.00	95.40	3,744.12	1,872.06	5,549.75	2,740.81	0.32	-0.08	0.028
40.26	-26.48	-1.40	0.00	-95.04	0.00	95.04	3,738.48	1,869.24	5,532.95	2,732.52	0.33	-0.08	0.028
45.00	-26.32	-1.40	0.00	-88.40	0.00	88.40	3,633.72	1,816.86	5,225.39	2,580.62	0.41	-0.09	0.027
45.41	-25.20	-1.39	0.00	-87.83	0.00	87.83	3,063.65	1,531.82	4,505.80	2,225.25	0.42	-0.09	0.030
50.00	-24.01	-1.37	0.00	-81.47	0.00	81.47	3,008.67	1,504.34	4,302.82	2,125.00	0.51	-0.10	0.028
55.00	-23.85	-1.37	0.00	-74.63	0.00	74.63	2,946.93	1,473.46	4,084.17	2,017.02	0.62	-0.11	0.027
55.68	-23.08	-1.35	0.00	-73.70	0.00	73.70	2,938.42	1,469.21	4,054.78	2,002.51	0.63	-0.11	0.027
55.68	-23.08	-1.35	0.00	-73.70	0.00	73.70	2,938.42	1,469.21	4,054.78	2,002.51	0.63	-0.11	0.045
60.00	-22.55	-1.35	0.00	-67.84	0.00	67.84	2,883.27	1,441.64	3,868.42	1,910.47	0.74	-0.12	0.043
63.00	-22.18	-1.34	0.00	-63.80	0.00	63.80	2,844.16	1,422.08	3,740.46	1,847.27	0.82	-0.13	0.042
65.00	-21.32	-1.32	0.00	-61.12	0.00	61.12	2,808.41	1,404.21	3,643.77	1,799.52	0.87	-0.14	0.042
70.00	-20.49	-1.30	0.00	-54.51	0.00	54.51	2,713.79	1,356.89	3,400.96	1,679.60	1.02	-0.15	0.040
75.00	-19.83	-1.29	0.00	-48.00	0.00	48.00	2,619.16	1,309.58	3,166.52	1,563.83	1.19	-0.17	0.038
79.00	-19.41	-1.27	0.00	-42.86	0.00	42.86	2,543.45	1,271.73	2,985.00	1,474.18	1.34	-0.18	0.037
80.00	-19.29	-1.27	0.00	-41.59	0.00	41.59	2,524.53	1,262.26	2,940.46	1,452.18	1.38	-0.19	0.036
80.76	-18.35	-1.23	0.00	-40.62	0.00	40.62	2,510.19	1,255.09	2,906.93	1,435.62	1.41	-0.19	0.036
84.91	-18.34	-1.24	0.00	-35.50	0.00	35.50	1,500.12	750.06	1,728.77	853.77	1.58	-0.20	0.054
85.00	-17.71	-1.21	0.00	-35.39	0.00	35.39	1,499.54	749.77	1,726.89	852.85	1.58	-0.20	0.053
90.00	-14.11	-1.05	0.00	-29.33	0.00	29.33	1,466.64	733.32	1,624.12	802.09	1.81	-0.22	0.046
95.00	-13.57	-1.02	0.00	-24.09	0.00	24.09	1,431.82	715.91	1,522.23	751.77	2.05	-0.24	0.042
100.00	-10.77	-0.87	0.00	-18.98	0.00	18.98	1,395.09	697.54	1,421.47	702.01	2.31	-0.26	0.035
101.00	-10.37	-0.84	0.00	-18.11	0.00	18.11	1,387.51	693.76	1,401.48	692.14	2.37	-0.26	0.034
105.00	-9.88	-0.81	0.00	-14.74	0.00	14.74	1,356.44	678.22	1,322.10	652.93	2.59	-0.27	0.030
110.00	-9.78	-0.81	0.00	-10.68	0.00	10.68	1,315.88	657.94	1,224.36	604.67	2.89	-0.29	0.025
111.00	-7.60	-0.66	0.00	-9.87	0.00	9.87	1,307.54	653.77	1,205.03	595.12	2.95	-0.29	0.022
115.00	-7.15	-0.62	0.00	-7.24	0.00	7.24	1,273.40	636.70	1,128.51	557.33	3.20	-0.30	0.019
120.00	-3.93	-0.37	0.00	-4.11	0.00	4.11	1,215.41	607.71	1,023.37	505.40	3.51	-0.31	0.011
125.00	-3.88	-0.36	0.00	-2.27	0.00	2.27	1,152.33	576.16	919.28	454.00	3.84	-0.31	0.008
125.71	-3.62	-0.34	0.00	-2.01	0.00	2.01	1,143.39	571.69	904.98	446.93	3.88	-0.31	0.008
125.71	-3.62	-0.34	0.00	-2.01	0.00	2.01	375.11	187.56	156.71	103.37	3.88	-0.31	0.029
130.00	-3.57	-0.34	0.00	-0.55	0.00	0.55	375.11	187.56	156.71	103.37	4.17	-0.31	0.015
131.00	-0.32	-0.03	0.00	-0.21	0.00	0.21	375.11	187.56	156.71	103.37	4.23	-0.32	0.003
135.00	-0.28	-0.03	0.00	-0.08	0.00	0.08	375.11	187.56	156.71	103.37	4.50	-0.32	0.002
136.00	-0.13	-0.01	0.00	-0.05	0.00	0.05	375.11	187.56	156.71	103.37	4.56	-0.32	0.001
140.00	0.00	0.00	0.00	0.00	0.00	0.00	375.11	187.56	156.71	103.37	4.83	-0.32	0.000
142.00	0.00	0.00	0.00	0.00	0.00	0.00	375.11	187.56	156.71	103.37	4.96	-0.32	0.000

### Equivalent Modal Analysis Method

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

Spectral Response Acceleration for Short Period ( $S_s$ ):	0.22
Spectral Response Acceleration at 1.0 Second Period ( $S_1$ ):	0.07
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 ( $S_{ds}$ ):	0.24
Design Spectral Response Acceleration at 1.0 Second Period ( $S_{d1}$ ):	0.11
Period Based on Rayleigh Method (sec):	2.32
Redundancy Factor ( $p$ ):	1.00

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

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
41	141.00	81	1.863	1.843	1.090	0.425	23	101
40	138.00	182	1.785	1.471	0.952	0.365	44	227
39	135.50	46	1.721	1.203	0.847	0.318	10	57
38	133.00	182	1.658	0.969	0.752	0.274	33	227
37	130.50	69	1.596	0.767	0.665	0.232	11	85
36	127.85	300	1.532	0.584	0.582	0.192	38	375
35	125.35	61	1.473	0.436	0.511	0.156	6	76
34	122.50	438	1.407	0.296	0.439	0.119	35	546
33	117.50	524	1.294	0.112	0.331	0.062	22	654
32	113.00	430	1.197	0.002	0.252	0.020	6	536
31	110.50	113	1.144	-0.041	0.215	0.001	0	141
30	107.50	574	1.083	-0.079	0.177	-0.020	-8	716
29	103.00	470	0.994	-0.111	0.129	-0.043	-13	586
28	100.50	119	0.947	-0.119	0.107	-0.052	-4	148
27	97.50	642	0.891	-0.122	0.084	-0.060	-26	800
26	92.50	656	0.802	-0.112	0.054	-0.064	-28	818
25	87.50	738	0.718	-0.092	0.033	-0.058	-29	921
24	84.95	14	0.676	-0.079	0.025	-0.051	0	17
23	82.83	1,098	0.643	-0.068	0.020	-0.044	-32	1,369
22	80.38	143	0.606	-0.055	0.015	-0.033	-3	178
21	79.50	190	0.592	-0.050	0.014	-0.029	-4	236
20	77.00	768	0.556	-0.037	0.010	-0.017	-9	958
19	72.50	980	0.493	-0.013	0.007	0.005	4	1,222
18	67.50	1,002	0.427	0.009	0.006	0.029	19	1,249
17	64.00	407	0.384	0.023	0.007	0.042	11	507
16	61.50	617	0.355	0.032	0.008	0.049	20	770
15	57.84	903	0.314	0.042	0.011	0.058	35	1,126
14	55.34	188	0.287	0.048	0.013	0.062	8	235
13	52.50	1,402	0.258	0.054	0.016	0.065	60	1,748
12	47.71	1,306	0.213	0.061	0.021	0.067	58	1,628
11	45.21	187	0.192	0.064	0.024	0.067	8	233
10	42.63	2,179	0.170	0.066	0.027	0.067	98	2,717
9	40.13	80	0.151	0.068	0.030	0.067	4	99
8	37.50	1,576	0.132	0.069	0.033	0.066	69	1,966



7	32.50	1,601	0.099	0.071	0.037	0.064	69	1,997
6	27.50	1,627	0.071	0.072	0.041	0.063	68	2,029
5	22.50	1,652	0.047	0.071	0.042	0.061	67	2,061
4	17.50	1,678	0.029	0.068	0.040	0.058	65	2,093
3	12.50	1,703	0.015	0.060	0.035	0.053	60	2,124
2	7.50	1,729	0.005	0.045	0.026	0.043	49	2,156
1	2.50	1,754	0.001	0.019	0.010	0.021	24	2,188
Kathrein Scala 742-2	140.00	68	1.837	1.713	1.042	0.404	18	84
Generic RCU (Remote	136.00	3	1.734	1.254	0.867	0.327	1	4
Powerwave Allgon 702	131.00	26	1.609	0.805	0.682	0.241	4	33
Kaelus DBC0061F1V51-	131.00	76	1.609	0.805	0.682	0.241	12	95
Raycap DC6-48-60-0-8	131.00	16	1.609	0.805	0.682	0.241	3	20
Raycap DC6-48-60-0-8	131.00	16	1.609	0.805	0.682	0.241	3	20
Powerwave Allgon LGP	131.00	85	1.609	0.805	0.682	0.241	14	106
Raycap DC6-48-60-18-	131.00	64	1.609	0.805	0.682	0.241	10	79
Ericsson RRUS 8843 B	131.00	216	1.609	0.805	0.682	0.241	35	269
Ericsson RRUS 4449 B	131.00	213	1.609	0.805	0.682	0.241	34	266
Ericsson RRUS 32 B30	131.00	180	1.609	0.805	0.682	0.241	29	224
Powerwave Allgon 777	131.00	105	1.609	0.805	0.682	0.241	17	131
Quintel QS66512-2	131.00	333	1.609	0.805	0.682	0.241	53	415
Kathrein Scala 80010	131.00	293	1.609	0.805	0.682	0.241	47	365
Flat Platform w/ Han	131.00	2,000	1.609	0.805	0.682	0.241	321	2,494
DragonWave Horizon C	120.00	21	1.350	0.195	0.382	0.089	1	26
Alcatel-Lucent RRH2x	120.00	159	1.350	0.195	0.382	0.089	9	198
NextNet BTS-2500	120.00	105	1.350	0.195	0.382	0.089	6	131
Alcatel-Lucent 800 M	120.00	192	1.350	0.195	0.382	0.089	11	239
Alcatel-Lucent 1900	120.00	180	1.350	0.195	0.382	0.089	11	224
Nokia 2.5G MAA - AAH	120.00	311	1.350	0.195	0.382	0.089	19	388
Argus LLPX310R	120.00	86	1.350	0.195	0.382	0.089	5	107
DragonWave A-ANT-18G	120.00	54	1.350	0.195	0.382	0.089	3	68
Commscope NNVV-	120.00	232	1.350	0.195	0.382	0.089	14	290
Flat Platform w/ Han	120.00	2,000	1.350	0.195	0.382	0.089	119	2,494
Decibel DB844G90A-XY	111.00	126	1.155	-0.034	0.223	0.004	0	157
Flat Platform w/ Han	111.00	2,000	1.155	-0.034	0.223	0.004	6	2,494
Generic GPS	101.00	10	0.956	-0.118	0.111	-0.051	0	12
Samsung B5/B13 RRH-B	100.00	211	0.937	-0.120	0.102	-0.054	-8	263
Samsung B2/B66A RRH-	100.00	253	0.937	-0.120	0.102	-0.054	-9	316
Rymosa MGD3-800TX	100.00	46	0.937	-0.120	0.102	-0.054	-2	58
Commscope RC2DC-	100.00	64	0.937	-0.120	0.102	-0.054	-2	80
Antel BXA-70080/6CF_	100.00	54	0.937	-0.120	0.102	-0.054	-2	67
Quintel QS6656-5D	100.00	528	0.937	-0.120	0.102	-0.054	-19	658
Flat Platform w/ Han	100.00	2,000	0.937	-0.120	0.102	-0.054	-72	2,494
RFS ATMAA1412D-1A20	90.00	52	0.759	-0.103	0.043	-0.062	-2	65
Ericsson Radio 4449	90.00	222	0.759	-0.103	0.043	-0.062	-9	277
Ericsson AIR 21, 1.3	90.00	332	0.759	-0.103	0.043	-0.062	-14	414
Ericsson AIR 32 B2A/	90.00	573	0.759	-0.103	0.043	-0.062	-24	715
RFS APXVAARR24_43-U-	90.00	384	0.759	-0.103	0.043	-0.062	-16	479
Flat Platform w/ Han	90.00	2,000	0.759	-0.103	0.043	-0.062	-83	2,494
Generic 6' Omni	79.00	50	0.585	-0.047	0.013	-0.027	-1	62
Stand-Off	79.00	100	0.585	-0.047	0.013	-0.027	-2	125
Round Side Arm	79.00	150	0.585	-0.047	0.013	-0.027	-3	187
PCTEL GPS-TMG-HR-	63.00	1	0.372	0.027	0.008	0.045	0	1
Stand-Off	63.00	30	0.372	0.027	0.008	0.045	1	37
		46,626	83.681	21.298	23.915	6.669	1,409	58,150

Load Case (0.9 - 0.2Sds) \* DL + E EMAM

Seismic (Reduced DL) Equivalent Modal Analysis Method

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
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41	141.00	81	1.863	1.843	1.090	0.425	23	69
40	138.00	182	1.785	1.471	0.952	0.365	44	155
39	135.50	46	1.721	1.203	0.847	0.318	10	39
38	133.00	182	1.658	0.969	0.752	0.274	33	155
37	130.50	69	1.596	0.767	0.665	0.232	11	58
36	127.85	300	1.532	0.584	0.582	0.192	38	256
35	125.35	61	1.473	0.436	0.511	0.156	6	52
34	122.50	438	1.407	0.296	0.439	0.119	35	373
33	117.50	524	1.294	0.112	0.331	0.062	22	447
32	113.00	430	1.197	0.002	0.252	0.020	6	367
31	110.50	113	1.144	-0.041	0.215	0.001	0	96
30	107.50	574	1.083	-0.079	0.177	-0.020	-8	490
29	103.00	470	0.994	-0.111	0.129	-0.043	-13	401
28	100.50	119	0.947	-0.119	0.107	-0.052	-4	101
27	97.50	642	0.891	-0.122	0.084	-0.060	-26	547
26	92.50	656	0.802	-0.112	0.054	-0.064	-28	560
25	87.50	738	0.718	-0.092	0.033	-0.058	-29	630
24	84.95	14	0.676	-0.079	0.025	-0.051	0	12
23	82.83	1,098	0.643	-0.068	0.020	-0.044	-32	936
22	80.38	143	0.606	-0.055	0.015	-0.033	-3	122
21	79.50	190	0.592	-0.050	0.014	-0.029	-4	162
20	77.00	768	0.556	-0.037	0.010	-0.017	-9	655
19	72.50	980	0.493	-0.013	0.007	0.005	4	836
18	67.50	1,002	0.427	0.009	0.006	0.029	19	854
17	64.00	407	0.384	0.023	0.007	0.042	11	347
16	61.50	617	0.355	0.032	0.008	0.049	20	526
15	57.84	903	0.314	0.042	0.011	0.058	35	770
14	55.34	188	0.287	0.048	0.013	0.062	8	160
13	52.50	1,402	0.258	0.054	0.016	0.065	60	1,196
12	47.71	1,306	0.213	0.061	0.021	0.067	58	1,114
11	45.21	187	0.192	0.064	0.024	0.067	8	159
10	42.63	2,179	0.170	0.066	0.027	0.067	98	1,858
9	40.13	80	0.151	0.068	0.030	0.067	4	68
8	37.50	1,576	0.132	0.069	0.033	0.066	69	1,344
7	32.50	1,601	0.099	0.071	0.037	0.064	69	1,366
6	27.50	1,627	0.071	0.072	0.041	0.063	68	1,388
5	22.50	1,652	0.047	0.071	0.042	0.061	67	1,409
4	17.50	1,678	0.029	0.068	0.040	0.058	65	1,431
3	12.50	1,703	0.015	0.060	0.035	0.053	60	1,453
2	7.50	1,729	0.005	0.045	0.026	0.043	49	1,475
1	2.50	1,754	0.001	0.019	0.010	0.021	24	1,496
Kathrein Scala 742-2	140.00	68	1.837	1.713	1.042	0.404	18	58
Generic RCU (Remote	136.00	3	1.734	1.254	0.867	0.327	1	3
Powerwave Allgon 702	131.00	26	1.609	0.805	0.682	0.241	4	23
Kaelus DBC0061F1V51-	131.00	76	1.609	0.805	0.682	0.241	12	65
Raycap DC6-48-60-0-8	131.00	16	1.609	0.805	0.682	0.241	3	14
Raycap DC6-48-60-0-8	131.00	16	1.609	0.805	0.682	0.241	3	14
Powerwave Allgon LGP	131.00	85	1.609	0.805	0.682	0.241	14	72
Raycap DC6-48-60-18-	131.00	64	1.609	0.805	0.682	0.241	10	54
Ericsson RRUS 8843 B	131.00	216	1.609	0.805	0.682	0.241	35	184
Ericsson RRUS 4449 B	131.00	213	1.609	0.805	0.682	0.241	34	182
Ericsson RRUS 32 B30	131.00	180	1.609	0.805	0.682	0.241	29	154
Powerwave Allgon 777	131.00	105	1.609	0.805	0.682	0.241	17	90
Quintel QS66512-2	131.00	333	1.609	0.805	0.682	0.241	53	284
Kathrein Scala 80010	131.00	293	1.609	0.805	0.682	0.241	47	250
Flat Platform w/ Han	131.00	2,000	1.609	0.805	0.682	0.241	321	1,706
DragonWave Horizon C	120.00	21	1.350	0.195	0.382	0.089	1	18
Alcatel-Lucent RRH2x	120.00	159	1.350	0.195	0.382	0.089	9	135
NextNet BTS-2500	120.00	105	1.350	0.195	0.382	0.089	6	90
Alcatel-Lucent 800 M	120.00	192	1.350	0.195	0.382	0.089	11	164
Alcatel-Lucent 1900	120.00	180	1.350	0.195	0.382	0.089	11	154
Nokia 2.5G MAA - AAH	120.00	311	1.350	0.195	0.382	0.089	19	265
Argus LLPX310R	120.00	86	1.350	0.195	0.382	0.089	5	73
DragonWave A-ANT-18G	120.00	54	1.350	0.195	0.382	0.089	3	46

Site Number: 302511

Code: ANSI/TIA-222-G

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Site Name: WSPT - South, CT

Engineering Number: 12996862\_C3\_02

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Customer: VERIZON WIRELESS

Commscope NNVV-	120.00	232	1.350	0.195	0.382	0.089	14	198
Flat Platform w/ Han	120.00	2,000	1.350	0.195	0.382	0.089	119	1,706
Decibel DB844G90A-XY	111.00	126	1.155	-0.034	0.223	0.004	0	107
Flat Platform w/ Han	111.00	2,000	1.155	-0.034	0.223	0.004	6	1,706
Generic GPS	101.00	10	0.956	-0.118	0.111	-0.051	0	9
Samsung B5/B13 RRH-B	100.00	211	0.937	-0.120	0.102	-0.054	-8	180
Samsung B2/B66A RRH-	100.00	253	0.937	-0.120	0.102	-0.054	-9	216
Rymosa MGD3-800TX	100.00	46	0.937	-0.120	0.102	-0.054	-2	39
Commscope RC2DC-	100.00	64	0.937	-0.120	0.102	-0.054	-2	55
Antel BXA-70080/6CF_	100.00	54	0.937	-0.120	0.102	-0.054	-2	46
Quintel QS6656-5D	100.00	528	0.937	-0.120	0.102	-0.054	-19	450
Flat Platform w/ Han	100.00	2,000	0.937	-0.120	0.102	-0.054	-72	1,706
RFS ATMAA1412D-1A20	90.00	52	0.759	-0.103	0.043	-0.062	-2	44
Ericsson Radio 4449	90.00	222	0.759	-0.103	0.043	-0.062	-9	189
Ericsson AIR 21, 1.3	90.00	332	0.759	-0.103	0.043	-0.062	-14	283
Ericsson AIR 32 B2A/	90.00	573	0.759	-0.103	0.043	-0.062	-24	489
RFS APXVAARR24_43-U-	90.00	384	0.759	-0.103	0.043	-0.062	-16	327
Flat Platform w/ Han	90.00	2,000	0.759	-0.103	0.043	-0.062	-83	1,706
Generic 6' Omni	79.00	50	0.585	-0.047	0.013	-0.027	-1	43
Stand-Off	79.00	100	0.585	-0.047	0.013	-0.027	-2	85
Round Side Arm	79.00	150	0.585	-0.047	0.013	-0.027	-3	128
PCTEL GPS-TMG-HR-	63.00	1	0.372	0.027	0.008	0.045	0	1
Stand-Off	63.00	30	0.372	0.027	0.008	0.045	1	26
		46,626	83.681	21.298	23.915	6.669	1,409	39,765

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

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-55.96	-1.39	0.00	-125.85	0.00	125.85	4,350.13	2,175.06	7,987.32	3,944.64	0.00	0.00	0.032
5.00	-53.81	-1.35	0.00	-118.91	0.00	118.91	4,285.51	2,142.75	7,679.11	3,792.42	0.00	-0.01	0.031
10.00	-51.68	-1.29	0.00	-112.18	0.00	112.18	4,218.97	2,109.49	7,373.27	3,641.38	0.02	-0.02	0.031
15.00	-49.59	-1.23	0.00	-105.72	0.00	105.72	4,150.52	2,075.26	7,070.06	3,491.64	0.04	-0.02	0.030
20.00	-47.53	-1.17	0.00	-99.56	0.00	99.56	4,080.16	2,040.08	6,769.73	3,343.32	0.07	-0.03	0.029
25.00	-45.50	-1.11	0.00	-93.70	0.00	93.70	4,007.88	2,003.94	6,472.54	3,196.54	0.10	-0.04	0.028
30.00	-43.50	-1.04	0.00	-88.16	0.00	88.16	3,933.69	1,966.85	6,178.73	3,051.44	0.15	-0.05	0.027
35.00	-41.53	-0.98	0.00	-82.94	0.00	82.94	3,854.52	1,927.26	5,883.88	2,905.83	0.20	-0.06	0.027
40.00	-41.44	-0.98	0.00	-78.04	0.00	78.04	3,744.12	1,872.06	5,549.75	2,740.81	0.26	-0.06	0.026
40.26	-38.72	-0.88	0.00	-77.79	0.00	77.79	3,738.48	1,869.24	5,532.95	2,732.52	0.27	-0.06	0.026
45.00	-38.49	-0.87	0.00	-73.61	0.00	73.61	3,633.72	1,816.86	5,225.39	2,580.62	0.33	-0.07	0.025
45.41	-36.86	-0.82	0.00	-73.25	0.00	73.25	3,063.65	1,531.82	4,505.80	2,225.25	0.34	-0.07	0.028
50.00	-35.11	-0.76	0.00	-69.51	0.00	69.51	3,008.67	1,504.34	4,302.82	2,125.00	0.41	-0.08	0.028
55.00	-34.87	-0.75	0.00	-65.71	0.00	65.71	2,946.93	1,473.46	4,084.17	2,017.02	0.50	-0.09	0.027
55.68	-33.75	-0.72	0.00	-65.20	0.00	65.20	2,938.42	1,469.21	4,054.78	2,002.51	0.51	-0.09	0.027
55.68	-33.75	-0.72	0.00	-65.20	0.00	65.20	2,938.42	1,469.21	4,054.78	2,002.51	0.51	-0.09	0.044
60.00	-32.98	-0.70	0.00	-62.09	0.00	62.09	2,883.27	1,441.64	3,868.42	1,910.47	0.60	-0.10	0.044
63.00	-32.43	-0.70	0.00	-59.97	0.00	59.97	2,844.16	1,422.08	3,740.46	1,847.27	0.66	-0.11	0.044
65.00	-31.18	-0.68	0.00	-58.58	0.00	58.58	2,808.41	1,404.21	3,643.77	1,799.52	0.71	-0.11	0.044
70.00	-29.96	-0.68	0.00	-55.18	0.00	55.18	2,713.79	1,356.89	3,400.96	1,679.60	0.84	-0.13	0.044
75.00	-29.00	-0.70	0.00	-51.77	0.00	51.77	2,619.16	1,309.58	3,166.52	1,563.83	0.99	-0.15	0.044
79.00	-28.39	-0.71	0.00	-48.98	0.00	48.98	2,543.45	1,271.73	2,985.00	1,474.18	1.12	-0.16	0.044
80.00	-28.21	-0.71	0.00	-48.27	0.00	48.27	2,524.53	1,262.26	2,940.46	1,452.18	1.15	-0.17	0.044
80.76	-26.84	-0.75	0.00	-47.73	0.00	47.73	2,510.19	1,255.09	2,906.93	1,435.62	1.18	-0.17	0.044
84.91	-26.83	-0.75	0.00	-44.63	0.00	44.63	1,500.12	750.06	1,728.77	853.77	1.33	-0.19	0.070
85.00	-25.91	-0.78	0.00	-44.56	0.00	44.56	1,499.54	749.77	1,726.89	852.85	1.34	-0.19	0.070
90.00	-20.64	-0.95	0.00	-40.65	0.00	40.65	1,466.64	733.32	1,624.12	802.09	1.55	-0.21	0.065
95.00	-19.84	-0.98	0.00	-35.90	0.00	35.90	1,431.82	715.91	1,522.23	751.77	1.78	-0.24	0.062
100.00	-15.76	-1.09	0.00	-30.99	0.00	30.99	1,395.09	697.54	1,421.47	702.01	2.05	-0.27	0.055
101.00	-15.16	-1.10	0.00	-29.91	0.00	29.91	1,387.51	693.76	1,401.48	692.14	2.11	-0.27	0.054
105.00	-14.44	-1.11	0.00	-25.51	0.00	25.51	1,356.44	678.22	1,322.10	652.93	2.35	-0.29	0.050
110.00	-14.30	-1.11	0.00	-19.96	0.00	19.96	1,315.88	657.94	1,224.36	604.67	2.67	-0.32	0.044
111.00	-11.11	-1.08	0.00	-18.85	0.00	18.85	1,307.54	653.77	1,205.03	595.12	2.73	-0.32	0.040
115.00	-10.46	-1.06	0.00	-14.51	0.00	14.51	1,273.40	636.70	1,128.51	557.33	3.01	-0.34	0.034
120.00	-5.75	-0.80	0.00	-9.20	0.00	9.20	1,215.41	607.71	1,023.37	505.40	3.37	-0.36	0.023
125.00	-5.67	-0.79	0.00	-5.19	0.00	5.19	1,152.33	576.16	919.28	454.00	3.75	-0.37	0.016
125.71	-5.30	-0.75	0.00	-4.63	0.00	4.63	1,143.39	571.69	904.98	446.93	3.81	-0.37	0.015
125.71	-5.30	-0.75	0.00	-4.63	0.00	4.63	375.11	187.56	156.71	103.37	3.81	-0.37	0.059
130.00	-5.21	-0.74	0.00	-1.39	0.00	1.39	375.11	187.56	156.71	103.37	4.14	-0.37	0.027
131.00	-0.47	-0.10	0.00	-0.65	0.00	0.65	375.11	187.56	156.71	103.37	4.22	-0.37	0.008
135.00	-0.42	-0.09	0.00	-0.26	0.00	0.26	375.11	187.56	156.71	103.37	4.54	-0.38	0.004
136.00	-0.18	-0.04	0.00	-0.17	0.00	0.17	375.11	187.56	156.71	103.37	4.61	-0.38	0.002
140.00	0.00	0.00	0.00	0.00	0.00	0.00	375.11	187.56	156.71	103.37	4.93	-0.38	0.000
142.00	0.00	0.00	0.00	0.00	0.00	0.00	375.11	187.56	156.71	103.37	5.09	-0.38	0.000

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

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-38.27	-1.39	0.00	-123.55	0.00	123.55	4,350.13	2,175.06	7,987.32	3,944.64	0.00	0.00	0.029
5.00	-36.79	-1.34	0.00	-116.62	0.00	116.62	4,285.51	2,142.75	7,679.11	3,792.42	0.00	-0.01	0.028
10.00	-35.34	-1.29	0.00	-109.91	0.00	109.91	4,218.97	2,109.49	7,373.27	3,641.38	0.02	-0.02	0.027
15.00	-33.91	-1.23	0.00	-103.47	0.00	103.47	4,150.52	2,075.26	7,070.06	3,491.64	0.04	-0.02	0.026
20.00	-32.50	-1.16	0.00	-97.35	0.00	97.35	4,080.16	2,040.08	6,769.73	3,343.32	0.06	-0.03	0.026
25.00	-31.11	-1.10	0.00	-91.54	0.00	91.54	4,007.88	2,003.94	6,472.54	3,196.54	0.10	-0.04	0.025
30.00	-29.75	-1.03	0.00	-86.05	0.00	86.05	3,933.69	1,966.85	6,178.73	3,051.44	0.14	-0.05	0.024
35.00	-28.40	-0.96	0.00	-80.90	0.00	80.90	3,854.52	1,927.26	5,883.88	2,905.83	0.20	-0.05	0.024
40.00	-28.33	-0.96	0.00	-76.07	0.00	76.07	3,744.12	1,872.06	5,549.75	2,740.81	0.26	-0.06	0.023
40.26	-26.48	-0.87	0.00	-75.83	0.00	75.83	3,738.48	1,869.24	5,532.95	2,732.52	0.26	-0.06	0.023
45.00	-26.32	-0.86	0.00	-71.72	0.00	71.72	3,633.72	1,816.86	5,225.39	2,580.62	0.33	-0.07	0.023
45.41	-25.20	-0.80	0.00	-71.37	0.00	71.37	3,063.65	1,531.82	4,505.80	2,225.25	0.33	-0.07	0.025
50.00	-24.01	-0.74	0.00	-67.69	0.00	67.69	3,008.67	1,504.34	4,302.82	2,125.00	0.40	-0.08	0.024
55.00	-23.85	-0.74	0.00	-63.98	0.00	63.98	2,946.93	1,473.46	4,084.17	2,017.02	0.49	-0.09	0.024
55.68	-23.08	-0.70	0.00	-63.48	0.00	63.48	2,938.42	1,469.21	4,054.78	2,002.51	0.50	-0.09	0.024
55.68	-23.08	-0.70	0.00	-63.48	0.00	63.48	2,938.42	1,469.21	4,054.78	2,002.51	0.50	-0.09	0.040
60.00	-22.55	-0.68	0.00	-60.45	0.00	60.45	2,883.27	1,441.64	3,868.42	1,910.47	0.59	-0.10	0.039
63.00	-22.18	-0.67	0.00	-58.40	0.00	58.40	2,844.16	1,422.08	3,740.46	1,847.27	0.65	-0.11	0.039
65.00	-21.32	-0.66	0.00	-57.05	0.00	57.05	2,808.41	1,404.21	3,643.77	1,799.52	0.70	-0.11	0.039
70.00	-20.49	-0.66	0.00	-53.76	0.00	53.76	2,713.79	1,356.89	3,400.96	1,679.60	0.82	-0.13	0.040
75.00	-19.83	-0.67	0.00	-50.46	0.00	50.46	2,619.16	1,309.58	3,166.52	1,563.83	0.96	-0.14	0.040
79.00	-19.41	-0.68	0.00	-47.78	0.00	47.78	2,543.45	1,271.73	2,985.00	1,474.18	1.09	-0.16	0.040
80.00	-19.29	-0.69	0.00	-47.10	0.00	47.10	2,524.53	1,262.26	2,940.46	1,452.18	1.13	-0.16	0.040
80.76	-18.36	-0.72	0.00	-46.57	0.00	46.57	2,510.19	1,255.09	2,906.93	1,435.62	1.15	-0.17	0.040
84.91	-18.34	-0.72	0.00	-43.59	0.00	43.59	1,500.12	750.06	1,728.77	853.77	1.30	-0.18	0.063
85.00	-17.71	-0.75	0.00	-43.53	0.00	43.53	1,499.54	749.77	1,726.89	852.85	1.31	-0.18	0.063
90.00	-14.12	-0.92	0.00	-39.77	0.00	39.77	1,466.64	733.32	1,624.12	802.09	1.51	-0.21	0.059
95.00	-13.57	-0.95	0.00	-35.15	0.00	35.15	1,431.82	715.91	1,522.23	751.77	1.74	-0.23	0.056
100.00	-10.77	-1.06	0.00	-30.39	0.00	30.39	1,395.09	697.54	1,421.47	702.01	2.00	-0.26	0.051
101.00	-10.36	-1.08	0.00	-29.33	0.00	29.33	1,387.51	693.76	1,401.48	692.14	2.06	-0.27	0.050
105.00	-9.87	-1.08	0.00	-25.03	0.00	25.03	1,356.44	678.22	1,322.10	652.93	2.29	-0.29	0.046
110.00	-9.78	-1.09	0.00	-19.61	0.00	19.61	1,315.88	657.94	1,224.36	604.67	2.60	-0.31	0.040
111.00	-7.60	-1.06	0.00	-18.52	0.00	18.52	1,307.54	653.77	1,205.03	595.12	2.67	-0.31	0.037
115.00	-7.15	-1.04	0.00	-14.27	0.00	14.27	1,273.40	636.70	1,128.51	557.33	2.94	-0.33	0.031
120.00	-3.93	-0.79	0.00	-9.06	0.00	9.06	1,215.41	607.71	1,023.37	505.40	3.30	-0.35	0.021
125.00	-3.88	-0.78	0.00	-5.12	0.00	5.12	1,152.33	576.16	919.28	454.00	3.67	-0.36	0.015
125.71	-3.62	-0.74	0.00	-4.56	0.00	4.56	1,143.39	571.69	904.98	446.93	3.72	-0.36	0.013
125.71	-3.62	-0.74	0.00	-4.56	0.00	4.56	375.11	187.56	156.71	103.37	3.72	-0.36	0.054
130.00	-3.56	-0.73	0.00	-1.38	0.00	1.38	375.11	187.56	156.71	103.37	4.05	-0.36	0.023
131.00	-0.32	-0.10	0.00	-0.64	0.00	0.64	375.11	187.56	156.71	103.37	4.12	-0.37	0.007
135.00	-0.28	-0.09	0.00	-0.25	0.00	0.25	375.11	187.56	156.71	103.37	4.43	-0.37	0.003
136.00	-0.13	-0.04	0.00	-0.17	0.00	0.17	375.11	187.56	156.71	103.37	4.51	-0.37	0.002
140.00	0.00	0.00	0.00	0.00	0.00	0.00	375.11	187.56	156.71	103.37	4.82	-0.37	0.000
142.00	0.00	0.00	0.00	0.00	0.00	0.00	375.11	187.56	156.71	103.37	4.98	-0.37	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 + 1.6W	40.96	0.00	55.87	0.00	0.00	3787.05	84.91	0.92
0.9D + 1.6W	39.96	0.00	41.88	0.00	0.00	3712.35	84.91	0.89
1.2D + 1.0Di + 1.0Wi	24.25	0.00	85.00	0.00	0.00	1859.87	84.91	0.38
(1.2 + 0.2Sds) * DL + E ELFM	1.42	0.00	55.96	0.00	0.00	154.89	84.91	0.06
(1.2 + 0.2Sds) * DL + E EMAM	1.39	0.00	55.96	0.00	0.00	125.85	84.91	0.07
(0.9 - 0.2Sds) * DL + E ELFM	1.42	0.00	38.27	0.00	0.00	152.35	84.91	0.05
(0.9 - 0.2Sds) * DL + E EMAM	1.39	0.00	38.27	0.00	0.00	123.55	84.91	0.06
1.0D + 1.0W	8.92	0.00	46.62	0.00	0.00	833.50	84.91	0.21

Site Number: 302511

Code: ANSI/TIA-222-G

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Site Name: WSPT - South, CT

Engineering Number: 12996862\_C3\_02

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Customer: VERIZON WIRELESS

Additional Steel Summary

			Intermediate Connectors				Max Member		
Elev From (ft)	Elev To (ft)	Member	VQ/I (lb/in)	Shear Applied (kips)	Shear phiVn (kips)	Ratio	Pu (kip)	phiPn (kip)	Ratio
0.00	55.68	(4) SOL-#20 All Thread Bar	335.4	10.1	16.8	0.598	260.3	330.5	0.788

			Upper Termination Connectors				Lower Termination Connectors					
Elev From (ft)	Elev To (ft)	Member	MQ/I (kips)	phiVn (kips)	Num Reqd	Num Actual	Ratio	MQ/I (kips)	phiVn (kips)	Num Reqd	Num Actual	Ratio
0.00	55.68	(4) SOL-#20 All Thread Bar	204.5	12.0	18	22	0.775	0.0	12.0	0	0	0.000

**Site Name:** WSPT - South, CT  
**Site Number:** 302511  
**Tower Type:** MP  
**Design Loads (Factored) - Analysis per TIA-222-G Standards**

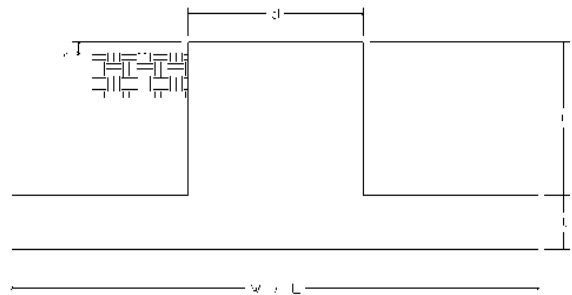
## Monolithic Mat & Pier Foundation Analysis

Foundation Analysis Parameters		
Design / Analysis / Mapping:	Mapping	-
Compression/Leg:	55.9	k
Uplift/Leg:	0.0	k
Total Shear:	41.0	k
Moment:	3,787.1	k-ft
Tower + Appurtenance Weight:	55.9	k
Depth to Base of Foundation (l + t - h):	7	ft
Diameter of Pier (d):	6.5	ft
Length of Pier (l):	4.5	ft
Height of Pier above Ground (h):	0.5	ft
Width of Pad (W):	26.5	ft
Length of Pad (L):	26.5	ft
Thickness of Pad (t):	3	ft
Tower Leg Center to Center:	0	ft
Number of Tower Legs:	1	-
Tower Center from Mat Center:	0	ft
Depth Below Ground Surface to Water Table:	9.5	ft
Unit Weight of Concrete:	150	pcf
Unit Weight of Soil Above Water Table:	120	pcf
Unit Weight of Water:	62.4	pcf
Unit Weight of Soil Below Water Table:	57.6	pcf
Friction Angle of Uplift:	15	°
Coefficient of Shear Friction:	0.2	-
Ultimate Compressive Bearing Pressure:	50,400	psf
Ultimate Passive Pressure on Pad Face:	0	psf
$f_{\text{Soil and Concrete Weight}}$ :	0.9	-
$f_{\text{Soil}}$ :	0.75	-

Overturning Moment Usage		
Design OTM:	4094.3	k-ft
OTM Resistance:	8930.1	k-ft
Design OTM / OTM Resistance:	46%	Pass

Soil Bearing Pressure Usage		
Net Bearing Pressure:	1568	psf
Factored Nominal Bearing Pressure:	37800	psf
Factored Nominal (Net) Bearing Pressure:	4%	Pass
Load Direction Controlling Design Bearing Pressure:	<i>Diagonal to Pad Edge</i>	

Sliding Factor of Safety		
Ultimate Friction Resistance:	141.2	k
Ultimate Passive Pressure Resistance:	0.0	k
Total Factored Sliding Resistance:	105.9	k
Sliding Design / Sliding Resistance:	39%	Pass





## Base Plate & Anchor Rod Analysis

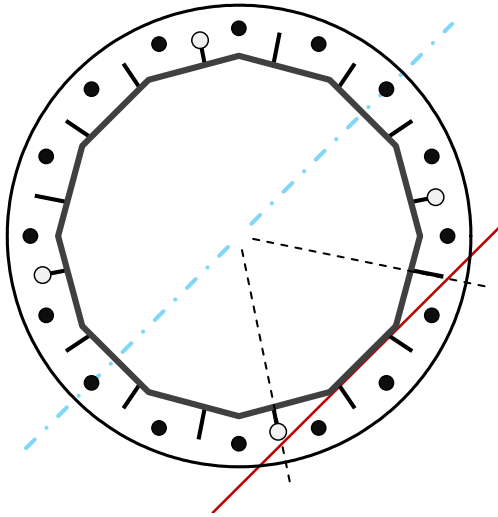
Pole Dimensions		
Number of Sides	12	-
Diameter	45	in
Thickness	0.4375	in
Orientation Offset	0	°

Base Reactions		
Moment, Mu	3787.1	k-ft
Axial, Pu	55.9	k
Shear, Vu	41.0	k
Neutral Axis	225	°

Report Capacities		
Component	Capacity	Result
Base Plate	61%	Pass
Anchor Rods	61%	Pass
Dwyidag	58%	Pass

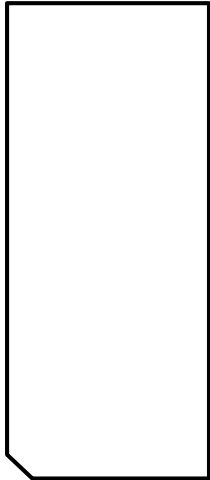
Base Plate		
Shape	Round	-
Diameter, $\phi$	60	in
Thickness	2	in
Grade	A36	
Yield Strength, Fy	36	ksi
Tensile Strength, Fu	58	ksi
Clip	N/A	in
Orientation Offset	0	°
Anchor Rod Detail	c	$\eta=0.55$
Clear Distance	N/A	in
Applied Moment, Mu	845.5	k
Bending Stress, $\phi Mn$	1379.8	k

Dwyidag Reinforcement		
Quantity	4	-
Bar Size	#20	in
Diameter, $\phi$	2.5	in
Bracket Type	Angle	-
Circle	51.88	in
Orientation Offset	11.25	°
Applied Force, Pu	226.5	k
Dwyidag Bar, $\phi Pn$	392.7	k



Original Anchor Rods		
Arrangement	Radial	-
Quantity	16	-
Diameter, $\phi$	2 1/4	in
Bolt Circle	54	in
Grade	A615-75	
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Spacing	10.6	in
Orientation Offset	0	°
Applied Force, Pu	155.1	k
Anchor Rods, $\phi Pn$	259.8	k

Stiffeners		
Arrangement	Radial	-
Quantity	16	-
Height	10	in
Width	4	in
Effective Width	4.000	in
Thickness	1/2	in
Effective Thickness	0.500	in
Notch	0.5	in
Flat Edge	4	in
Grade	A36	-
Yield Strength, Fy	36	ksi
Tensile Strength, Fu	58	ksi
Horizontal Weld	Fillet	
Horizontal Fillet Size	5/16	in
Bevel Depth	0	in
Vertical Weld	Fillet	
Vertical Fillet Size	5/16	in
Weld Strength	70	ksi
Electrode Coefficient	1	-
Orientation Offset	0	°
Vertical Weld, $\phi Rn$	139.5	k
Horz. Weld, $\phi Rn$	59.1	k
Ten. Capacity, $\phi Tn$	56.7	k
Comp. Capacity, $\phi Pn$	228.8	k



# Calculations for Monopole Base Plate & Anchor Rod Analysis

## Reaction Distribution

Reaction	Shear Vu	Moment Mu	Factor
-	k	k-ft	-
Base Forces	41.0	2630.1	0.69
Anchor Rod Forces	41.0	2630.1	0.69
Additional Bolt (Grp1) Forces	0.0	0.0	0.00
Additional Bolt (Grp2) Forces	0.0	0.0	0.00
Dywidag Forces	0.0	1157.0	0.31
Stiffener Forces	13.7	881.9	0.23

## 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	60.5515	5.0460	0.3235		15034.41
Bolt	3.9761	3.2477	0.8393	4.5	17324.53
Bolt1	0.0000	0.0000	0.0000	0	0.00
Bolt2	0.0000	0.0000	0.0000	0	0.00
Dywidag	4.9087	4.9087	1.9175		6613.69
Stiffener	1.7500	1.5750	10.6667		7584.82

Base Plate		
Shape	Round	-
Diameter, D	60	in
Thickness, t	2	in
Yield Strength, Fy	36	ksi
Tensile Strength, Fu	58	ksi
Base Plate Chord	39.686	in
Detail Type	c	-
Detail Factor	0.55	-
Clear Distance	N/A	-

Anchor Rods		
Anchor Rod Quantity, N	16	-
Rod Diameter, d	2.25	in
Bolt Circle, BC	54	in
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	155.1	k
Applied Shear, Vu	1.2	k
Compressive Capacity, φPn	259.8	k
Tensile Capacity, φRnt	0.597	OK
Interaction Capacity	0.606	OK

Base Plate Stiffeners		
Applied Axial Force, Pu	53.6	k
Applied Horizontal Force, Vu	0.43	k

Vertical Weld		
Vert.-to-Stiffener a=e <sub>x</sub> /l	0.133	-
Spacing Ratio, k	0.050	-
Weld Coefficient, C	3.720	-
Compressive Capacity, φPn	139.5	k
Vert.-to-Plate a=e <sub>x</sub> /l	0.333	-
Spacing Ratio, k	0.050	-
Weld Coefficient, C	2.940	-
Shear Capacity, φVn	110.3	k
P <sub>u</sub> /φ <sub>p</sub> P <sub>n</sub> + V <sub>u</sub> /φ <sub>v</sub> V <sub>n</sub>	0.388	OK

External Base Plate		
Chord Length AA	33.833	in
Additional AA	8.753	in
Section Modulus, Z	42.586	in <sup>3</sup>
Applied Moment, Mu	845.5	k-ft
Bending Capacity, φMn	1379.8	k-ft
Capacity, Mu/φMn	0.613	OK

Chord Length AB	31.586	in
Additional AB	6.620	in
Section Modulus, Z	38.206	in <sup>3</sup>
Applied Moment, Mu	492.5	k-ft
Bending Capacity, φMn	1237.9	k-ft
Capacity, Mu/φMn	0.398	OK

Bend Line Length	33.351	in
Additional Bend Line	50.762	in
Section Modulus, Z	84.113	in <sup>3</sup>
Applied Moment, Mu	845.5	k-ft
Bending Capacity, φMn	2725.3	k-ft
Capacity, Mu/φMn	0.310	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, φMn	0.0	k-ft
Capacity, Mu/φMn		

Dywidag Reinforcement		
Dywidag Quantity, N	4	-
Dywidag Diameter, d	2.5	in
Bolt Circle, BC	51.88	in
Yield Strength, Fy	80	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	226.5	k
Compressive Capacity, φPn	392.7	k
Capacity, Pu/φPn	0.577	OK

Horizontal Weld		
Horz.-to-Stiffener a=e <sub>x</sub> /l	0.167	-
Spacing Ratio, k	0.125	-
Weld Coefficient, C	3.940	-
Effective Fillet	0.313	in
Compressive Capacity, φPn	59.1	k
Horz.-to-Pole a=e <sub>x</sub> /l	0.417	-
Spacing Ratio, k	0.125	-
Weld Coefficient, C	2.670	-
Shear Capacity, φVn	40.1	k
P <sub>u</sub> /φ <sub>p</sub> P <sub>n</sub> + V <sub>u</sub> /φ <sub>v</sub> V <sub>n</sub>	0.918	OK

Plate Tension		
Gross Cross Section	1.750	in <sup>2</sup>
Net Cross Section	1.575	in <sup>2</sup>
Tensile Capacity, φTn	56.7	k
Capacity, Tu/φTn	0.473	OK

Plate Compression		
Radius of Gyration	0.144	in <sup>3</sup>
kl/r	41.57	-
4.71 √(E/Fy)	133.68	-
Buckling Stress(F <sub>e</sub> )	165.6	-
Crit. Buckling Stress(F <sub>cr</sub> )	145.3	ksi
Compressive Capacity, φPn	228.8	k
Capacity, Pu/φPn	0.117	OK

# Flange Plate Analysis

Flange Plate	Plate Type	<b>Flange</b>	<b>@ 125 ft</b>
	Pole Diameter	10.75	in
	Pole Thickness	0.365	in
	Plate Diameter	28.5	in
	Plate Thickness	0.75	in
	Plate Fy	36	ksi
	Weld Length	0.3125	in
	f <sub>s</sub> Resistance	71.42	k-in
	Applied	36.34	k-in

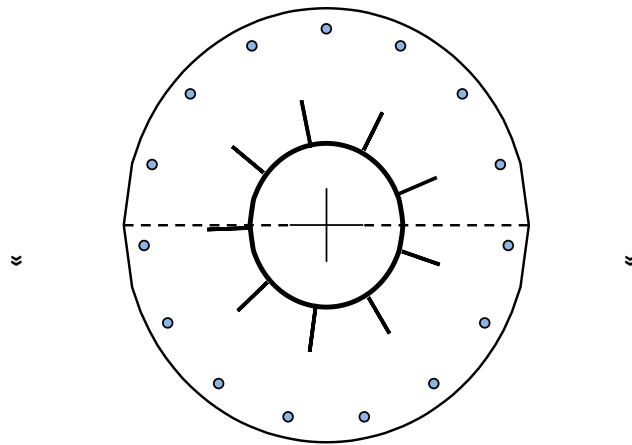
Code Rev. **G**

Date	11/25/2019
Engineer	Kyle MacPetrie
Site #	302511
Carrier	Verizon Wireless

Moment **45.9 k-ft**  
Axial **4.8 k**

Stiffeners	#	<b>9</b>	<b>Show</b>
	Thickness	0.375	in
	Length	3.5	in
	Height	5	in
	Chamfer	0.5	in
	Offset Angle	0	°
	Fy	36	ksi

Bolts	#	<b>15</b>	
	Bolt Circle (R)adial / (S)quare	25.75	in
		R	
	Bolt Gap	6	in
	Diameter	0.75	in
	Hole Diameter	0.875	in
	Type	A325	
	Fy	92	ksi
	Fu	120	ksi
f <sub>s</sub> Resistance	30.10	k	
Applied	5.38	k	



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

**Plate Stress Ratio:**  
51% Pass

**Bolt Stress Ratio:**  
18% Pass

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

Site ID	302511
Site Name	WSPT-South
Project #	12996862_C3_02
Date	Thursday, November 15, 2018
Engineer	K. MacPetrie

Version  
1.0  
12/6/2017



## EXTENSION INTERFACE

Analysis Details	
Strength Reduction Factor, $\phi$	0.9
$k = Z/S$	1.75
Weld Strength Reduction Factor, $\phi$	0.75

Section & Loading	
Extension Interface Elevation	125 ft
Total Moment, $Mu\_t$	45.9 kip-ft
Total Shear, $Vu\_t$	6.7 kip
Total Axial Load, $Pu\_t$	4.8 kip

Forces on Single Interface Weldment		
Axial Compression, $Pu$	40.69	kip
Flexure (from Compression), $Mu\_P$	198.21	kip-in
Axial Tension, $Tu$	37.52	kip
Flexure (from Tension), $Mu\_T$	182.76	kip-in

Design Tensile Strength		
Design Tensile Strength, $\phi Pn$	380.5	k
Usage	9.9%	Pass

Design Compressive Strength		
Effective Length Factor, $k$	1.0	-
Unbraced Length, $Lu$	22 1/2	in
Radius of Gyration, $r$	1.79	in
$kl/r$	12.60	-
$Fcr$	35.70	ksi
Design Compressive Strength, $\phi Pn$	377.38	k
Usage	10.8%	Pass

Design Flexural Strength		
Yield Moment, $My$	257.3	kip-in
Plastic Moment (Stem in T), $Mp\_T$	411.72	kip-in
Plastic Moment (Stem in C), $Mp\_C$	257.33	kip-in
Lateral Torsional Bucking Variable, $B$	3.30	-
Nominal Moment (Stem in T), $Mn\_T$	153032.76	kip-in
Nominal Moment (Stem in C), $Mn\_C$	3366.26	kip-in
Limiting w-t Ratio (Flange), $\lambda p$	10.79	-
w-t Ratio (Flange), $\lambda$	1.46	-
FLB Apply?	NO	-
Design Flexural Strength, $\phi Mn\_T$	370.55	kip-in
Usage	49.3%	Pass
Design Flexural Strength, $\phi Mn\_C$	231.59	kip-in
Usage	85.6%	Pass

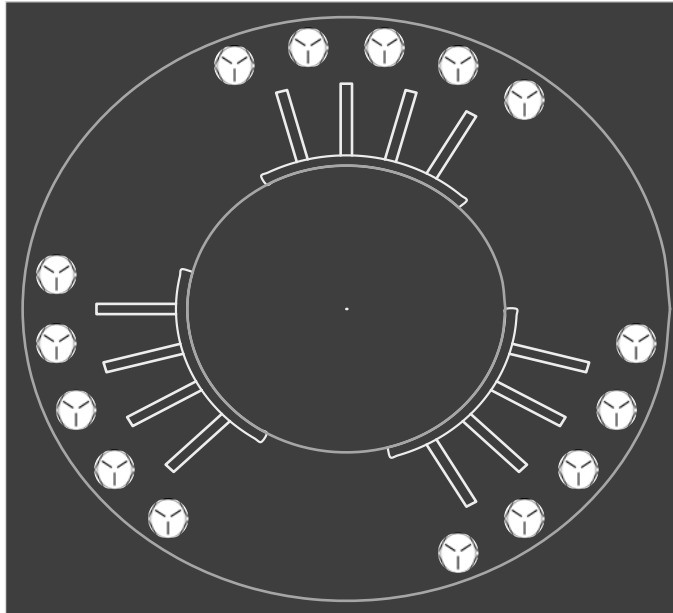
Weld Strength		
Weld Size, $D/16$	5/16	in
Weld Electrode Strength	70	ksi
Eccentricity, $e_x$	1.75	in
Weld Length	22 1/2	in
$a = (e_x/L)$	0.08	-
Weld Coefficient, $C$	3.72	-
Electrode Strength Coefficient, $C_1$	1.0	-
$Pu\_weld$	63.0	kip
Design Strength, $\phi Rn$	313.7	k
Usage	20.1%	Pass

Single Interface Weldment Section Properties		
Distance From Center to Centroid, $d$	8.00	in
Distance Between Centroids, $e$	4.87	in
Width of Stiffener, $W$	3.50	in
Thickness of Stiffener, $t$	0.50	in
Width of Pipe b/t Stiffener Plates, $bf$	1.46	in
Gross Area, $Ag$	11.75	in <sup>2</sup>
Min Radius of Gyration, $r$	1.79	in
Section Modulus - Stiffener, $Sx\_s$	7.15	in <sup>3</sup>
Plastic Section Modulus, $Zx$	12.51	in <sup>3</sup>
Moment of Inertia, $Iy$	83.120	in <sup>4</sup>
Torsional Constant, $J$	0.979	in <sup>4</sup>

Material Properties		
Stiffener Plate Grade	A36	-
Yield Strength, $Fy$ (ksi)	36	ksi
Tensile Strength, $Fu$ (ksi)	58	ksi
Modulus of Elasticity, $E$	29000	ksi
Shear Modulus of Elasticity, $G$	11200	ksi

Top of Tower Flange Details			Show Top Flange?	Y
Tower Flange Diameter	28.5	(in)		
Tower Flange Opening Dia	14	(in)		
Flange Bolt Circle	25.75	(in)		
Flange Bolt Size	1	(in)		
Number of bolts on flange	24	Works best with 3 and 4 pieces!		
Rotation of bolts	15.0°	7.5° half bolt rotation angle		

Interface Weldment Section Properties		
Rotation of shapes	7.5°	
Length of Stiffener Plate, $L$	22.50	(in)
Number of Pieces	3	3 or 4
Interface angles	75.0°	40° to 115°
Stiffener offset angle	15.0°	Min ang: 4.375°
Opening angles and width	45° & 10.61"	
Pipe Diameter	15	(in)
Pipe Thickness	0.5	(in)
Stiffener Base	3.5	(in)
Stiffener Thickness	0.5	(in)
Internal Stiffeners	2	



Stiffener Angle Overrides	

Equivalent Round Section for SES	



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CORPORATION

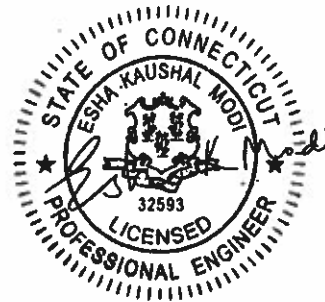
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## Antenna Mount Analysis Report

**ATC Site Name** : WSPT - South, CT  
**ATC Site Number** : 302511  
**Engineering Number** : 12996862\_C8\_06  
**Mount Elevation** : 99 ft  
**Carrier** : Verizon Wireless  
**Carrier Site Name** : WESTPORT S CT  
**Carrier Site Number** : 467426  
**Site Location** : 20 Post Office Lane  
Westport, CT 06880-6226  
41.12344444 , -73.3131  
**County** : Fairfield  
**Date** : February 24, 2020  
**Max Usage** : 93%  
**Result** : Pass

Prepared By:  
Steven McGinnis  
Structural Engineer II

Reviewed By:



Authorized by "EOR"  
24 Feb 2020 03:49:31

**COA: PEC.0001553**



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Calculations ..... Attached



## Introduction

The purpose of this report is to summarize results of the antenna mount analysis performed for Verizon Wireless at 99 ft.

## Supporting Documents

<b>Mount Mapping</b>	Infinigy Project #1009-Z0003-H/317-505, dated November 15, 2019
<b>RFDS</b>	RFDS dated October 30, 2019
<b>Photos</b>	Site photos from 2019

## Analysis

This antenna mount was analyzed using American Tower Corporation's Mount Analysis Program and RISA-3D

<b>Basic Wind Speed:</b>	95 mph (3-Second Gust, Vasd) / 125 mph (3-Second Gust, Vult)
<b>Basic Wind Speed w/ Ice:</b>	50 mph (3-Second Gust) w/ 3/4" radial ice concurrent
<b>Codes:</b>	ANSI/TIA-222-G / 2015 IBC / 2018 Connecticut State Building Code
<b>Structure Class:</b>	II
<b>Exposure Category:</b>	C
<b>Topographic Category:</b>	1
<b>Crest Height:</b>	0 ft
<b>Spectral Response:</b>	$S_s = 0.226$ , $S_1 = 0.067$
<b>Site Class:</b>	D - Stiff Soil
<b>Live Loads:</b>	$L_m = 500$ lbs, $L_v = 250$ lbs

## Conclusion

Based on the analysis results, the antenna mount meets the requirements per the applicable codes listed above. The mount 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.



**Application Loading**

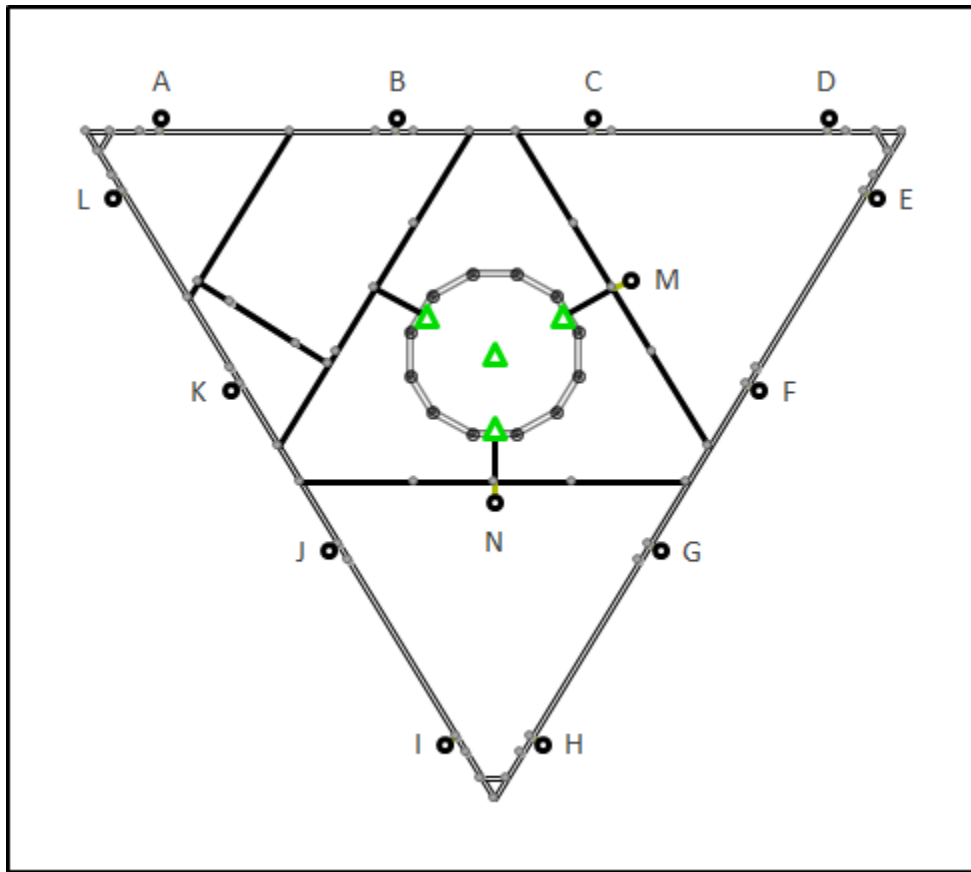
Mount Centerline (ft)	Antenna Centerline (ft)	Qty	Antenna Model
99.0	100.0	6	Quintel QS6656-5D
		3	Ryma MGD3-800TX
		3	Antel BXA-70080/6CF__
		2	Commscope RC2DC-3315-PF-48
		3	Samsung B2/B66A RRH-BR049
		3	Samsung B5/B13 RRH-BR04C
		1	Generic GPS

**Structure Usages**

Structural Component	Controlling Usage	Pass/Fail
Horizontals	65%	Pass
Verticals	23%	Pass
Diagonals	40%	Pass
Mount Pipes	32%	Pass
Handrails	59%	Pass
Climbing Ladder	93%	Pass

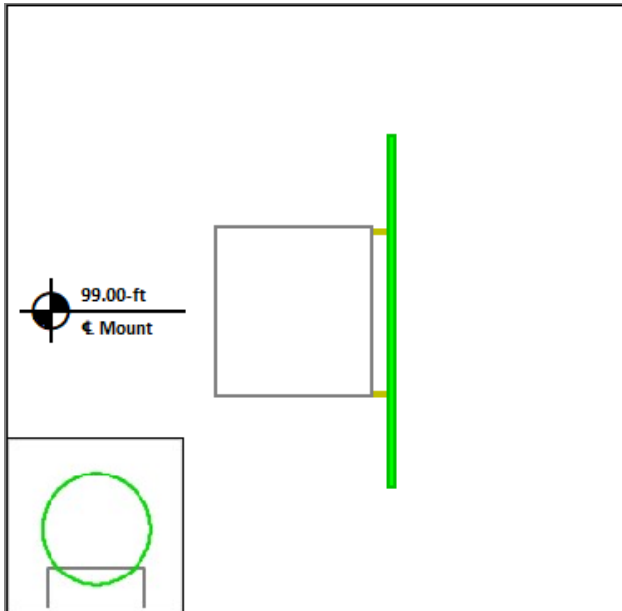


**Mount Layout**

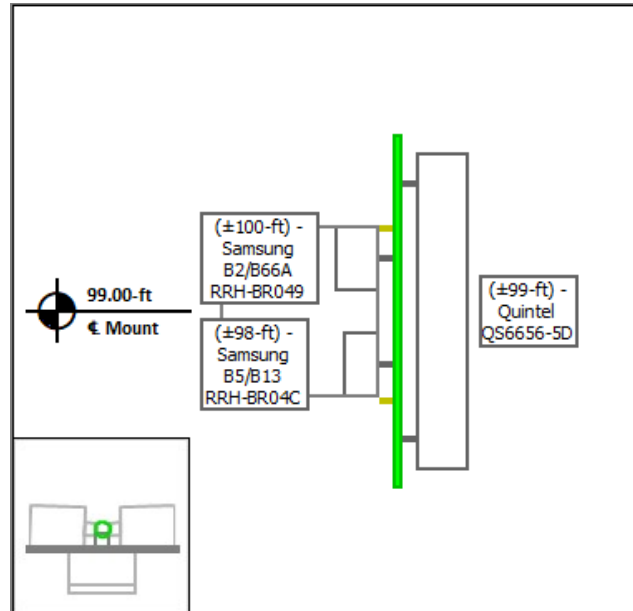


**Equipment Layout**

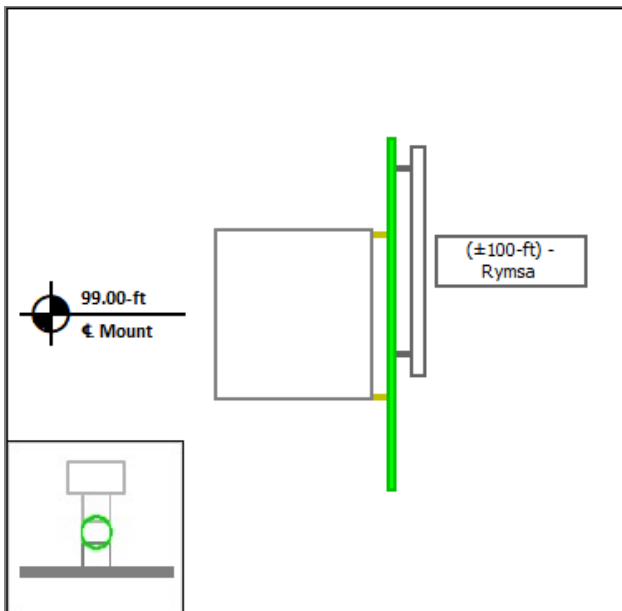
**Mount Pipe A**



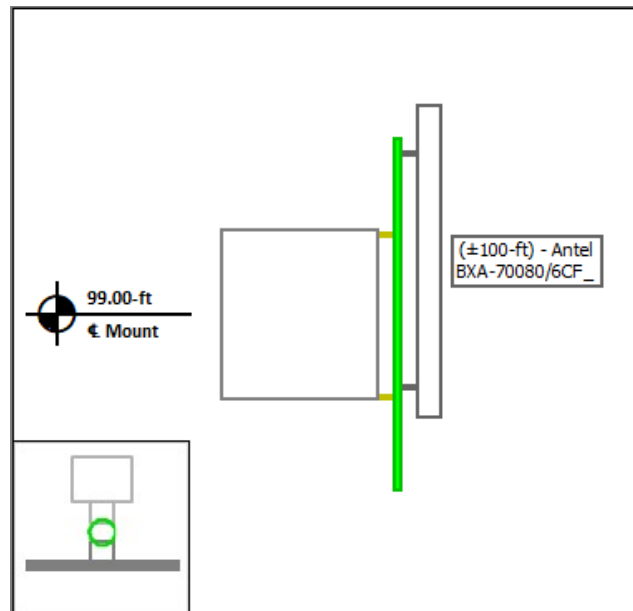
**Mount Pipe B**



**Mount Pipe C**

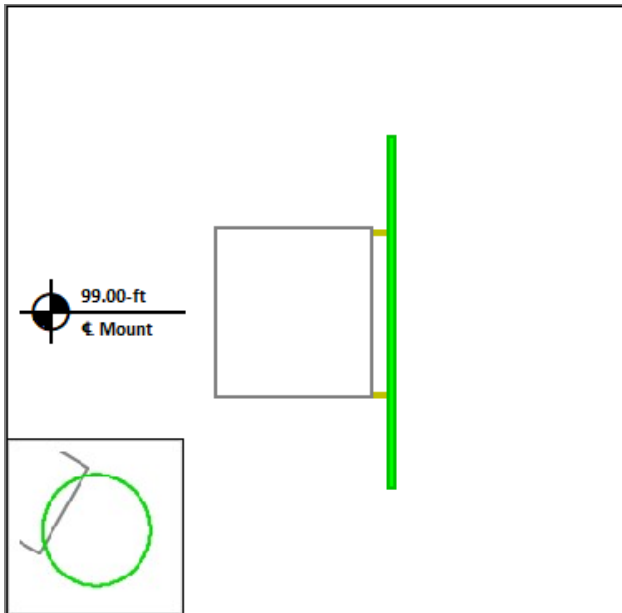


**Mount Pipe D**

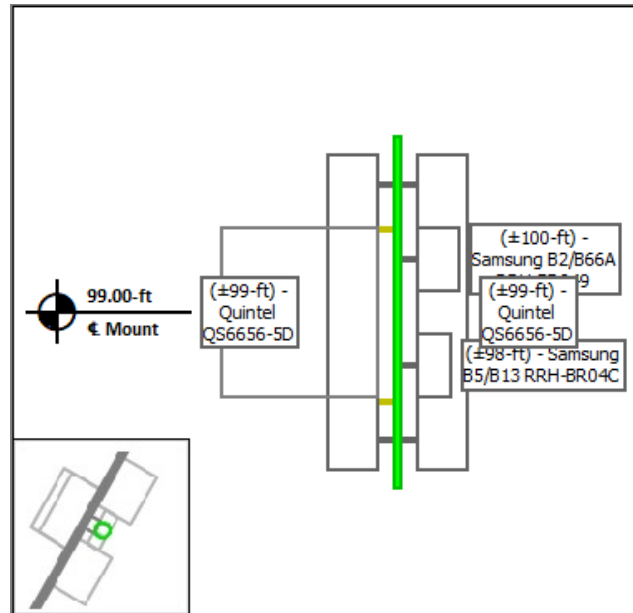


**Equipment Layout Cont'd.**

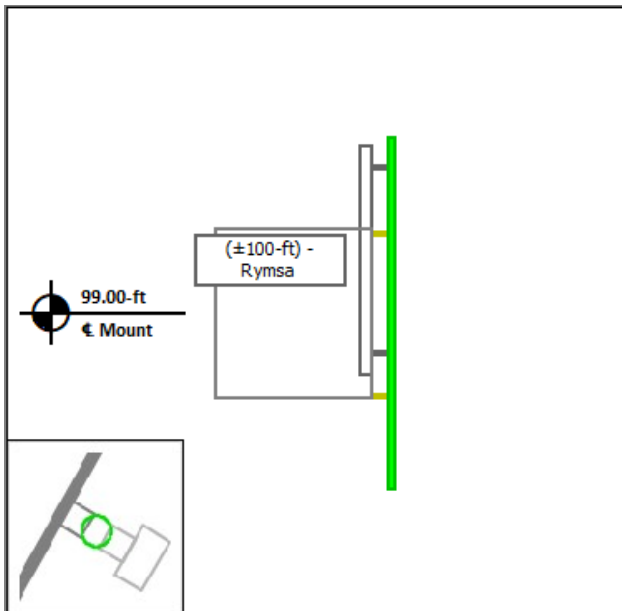
**Mount Pipe E**



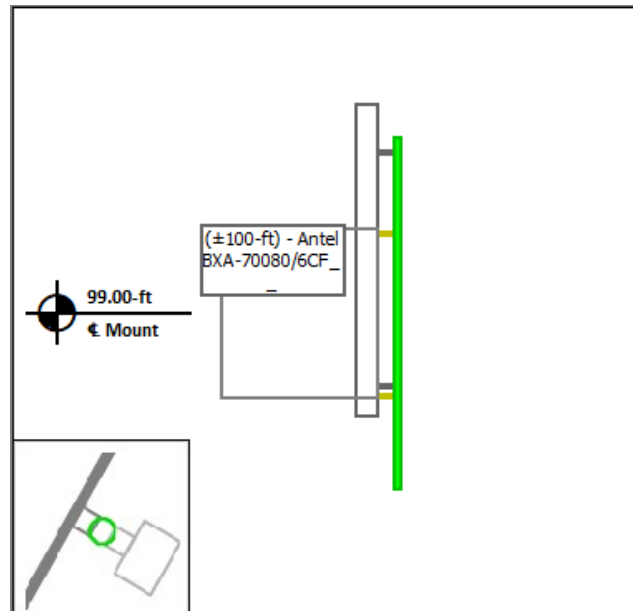
**Mount Pipe F**



**Mount Pipe G**

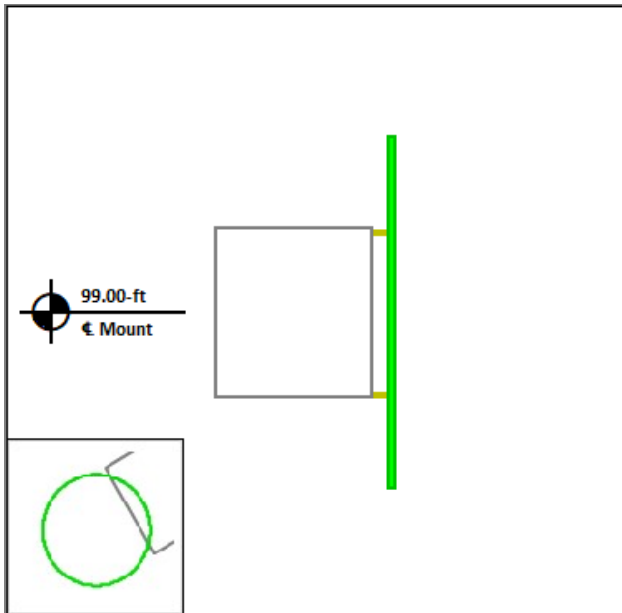


**Mount Pipe H**

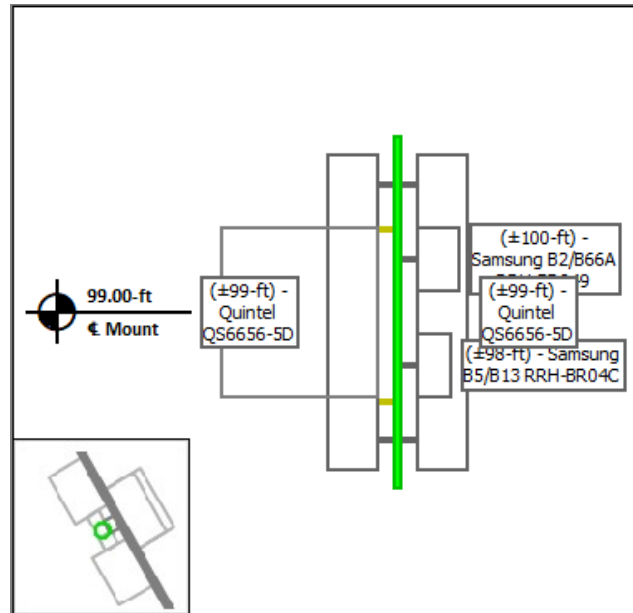


**Equipment Layout Cont'd.**

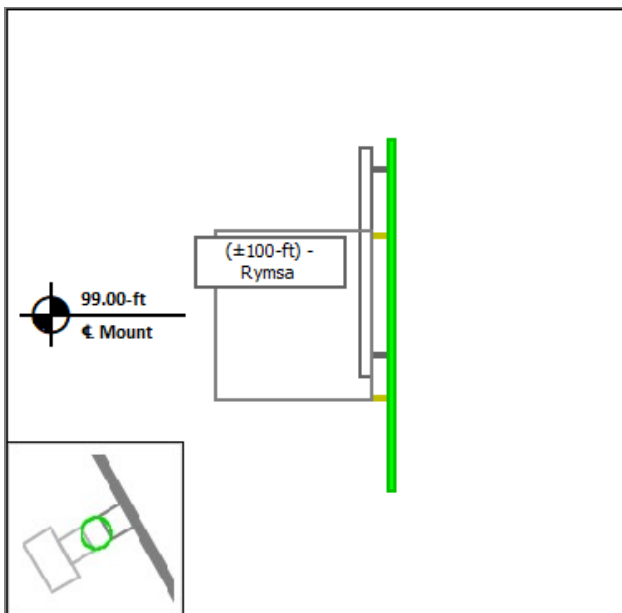
**Mount Pipe I**



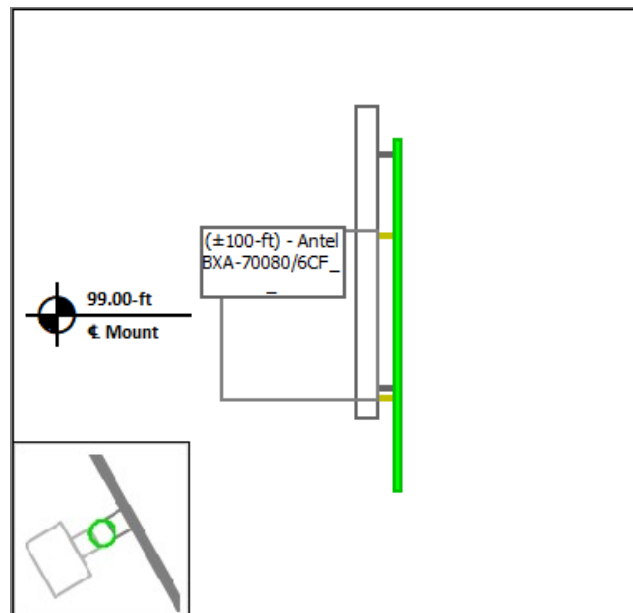
**Mount Pipe J**



**Mount Pipe K**

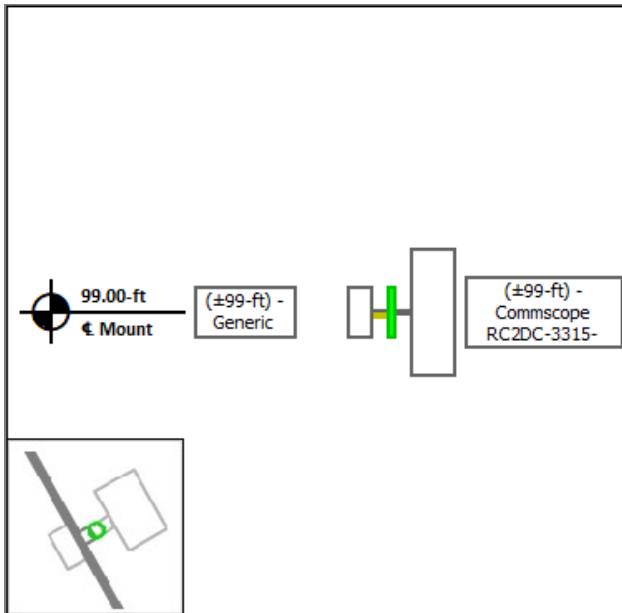


**Mount Pipe L**

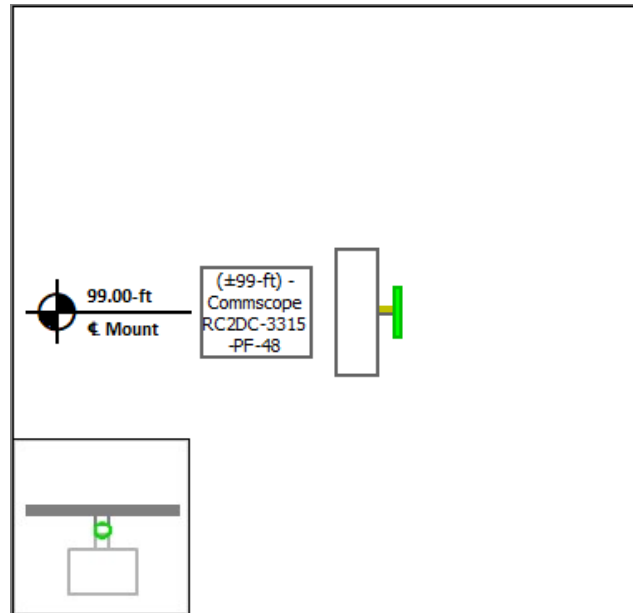


**Equipment Layout Cont'd.**

**Mount Pipe M**



**Mount Pipe N**





### **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.

All connections are to be verified for condition and tightness by the installation contractor preceding any changes to the appurtenance mounting system and/or equipment attached to it.

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.



**Site Number:** 302511  
**Project Number:** 12996862\_C8\_06  
**Carrier:** Verizon Wireless  
**Mount Elevation:** 99 ft  
**Date:** 2/24/2020

## Mount Analysis Force Calculations

### Wind & Ice Load Calculations

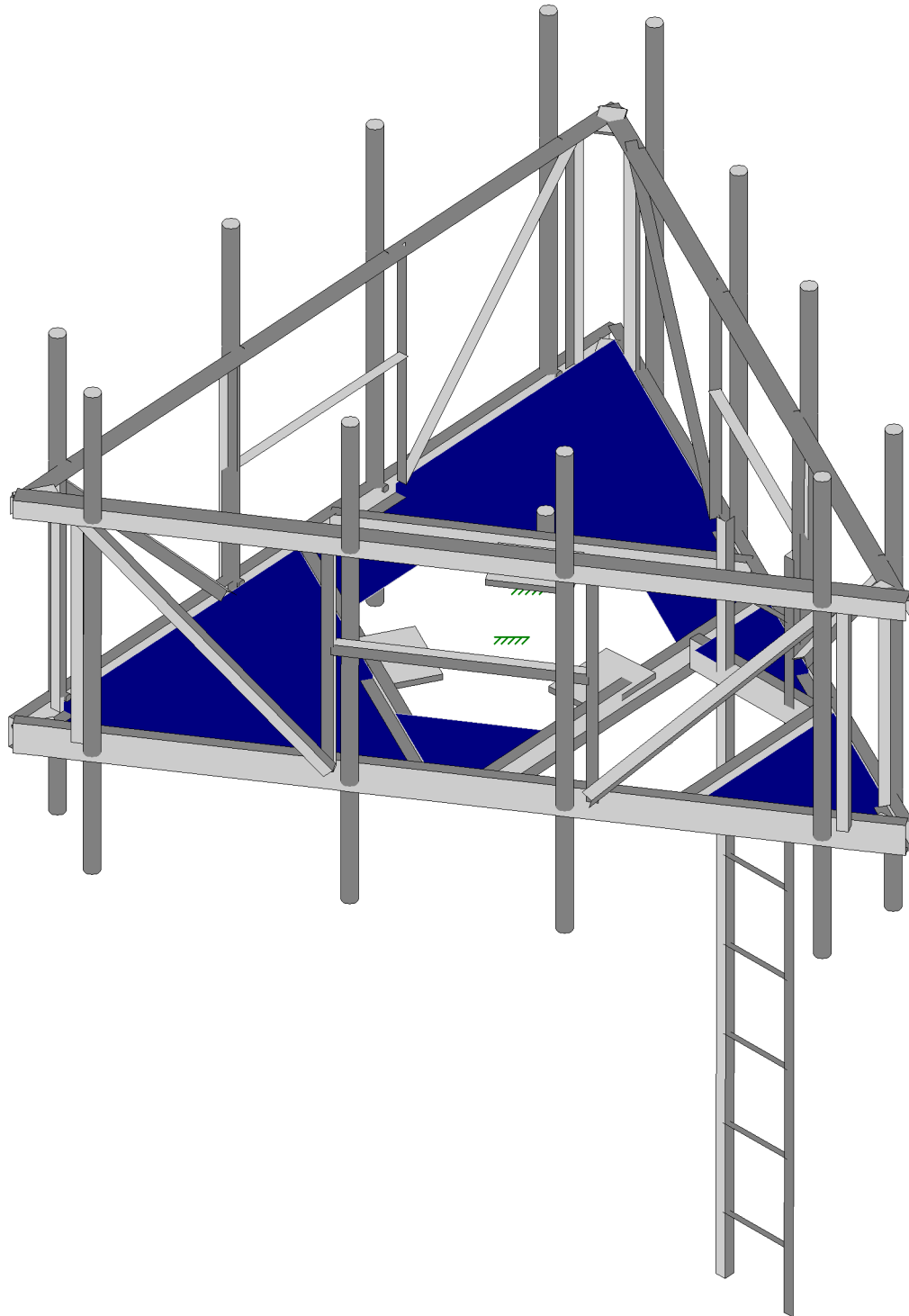
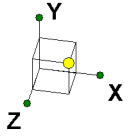
Shielding Factor	$K_z$	1.26	
Topographic Factor	$K_{zt}$	1.00	
Rooftop Wind Speed-up Factor	$K_s$	1.00	
Shielding Factor	$K_a$	0.90	
Ground Elevation Factor	$K_e$	1.00	
Wind Direction Probability Factor	$K_d$	0.95	
Basic Wind Speed	$V$	95	mph
Velocity Pressure	$q_z$	27.7	psf
Height Escalation Factor	$K_{iz}$	1.12	
Thickness of Radial Glaze Ice	$T_{iz}$	1.67	in

### Seismic Load Calculations

Short Period DSRAP	$S_{DS}$	0.241	
1 Second DSRAP	$S_{D1}$	0.107	
Importance Factor	$I$	1.0	
Response Modification Coefficient	$R$	2.0	
Seismic Response Coefficient	$C_s$	0.121	
Amplification Factor	$A$	1.0	
Total Weight	$W$	2146.2	lbs
Total Shear Force	$V_s$	258.7	lbs
Horizontal Seismic Load	$E_h$	258.7	lbs
Vertical Seismic Load	$E_v$	103.5	lbs

### Antenna Calculations

Equipment	Height	Width	Depth	Weight	$EPA_N$	$EPA_T$	$EPA_{Ni}$	$EPA_{Ti}$
Model #	in	in	in	lbs	sqft	sqft	sqft	sqft
Quintel QS6656-5D	72.0	12.0	9.6	88.0	8.13	2.88	10.89	4.07
Ryma MGD3-800TX	52.8	6.3	3.5	15.4	3.34	1.26	5.44	2.62
Antel BXA-70080/6CF__	71.1	8.1	5.7	18.0	5.84	2.19	8.64	3.65
Commscope RC2DC-3315-PF-48	28.9	15.7	10.3	32.0	3.78	2.51	5.12	3.71
Samsung B2/B66A RRH-BR049	15.0	15.0	10.0	84.4	1.88	1.25	2.81	2.04
Samsung B5/B13 RRH-BR04C	15.0	15.0	8.1	70.3	1.88	1.01	2.81	1.75
Generic GPS	12.0	9.0	6.0	10.0	0.90	0.60	1.58	1.20



American Tower Corp.

Steven.McGinnis

12996862\_C8\_06

302511, WSPT - South

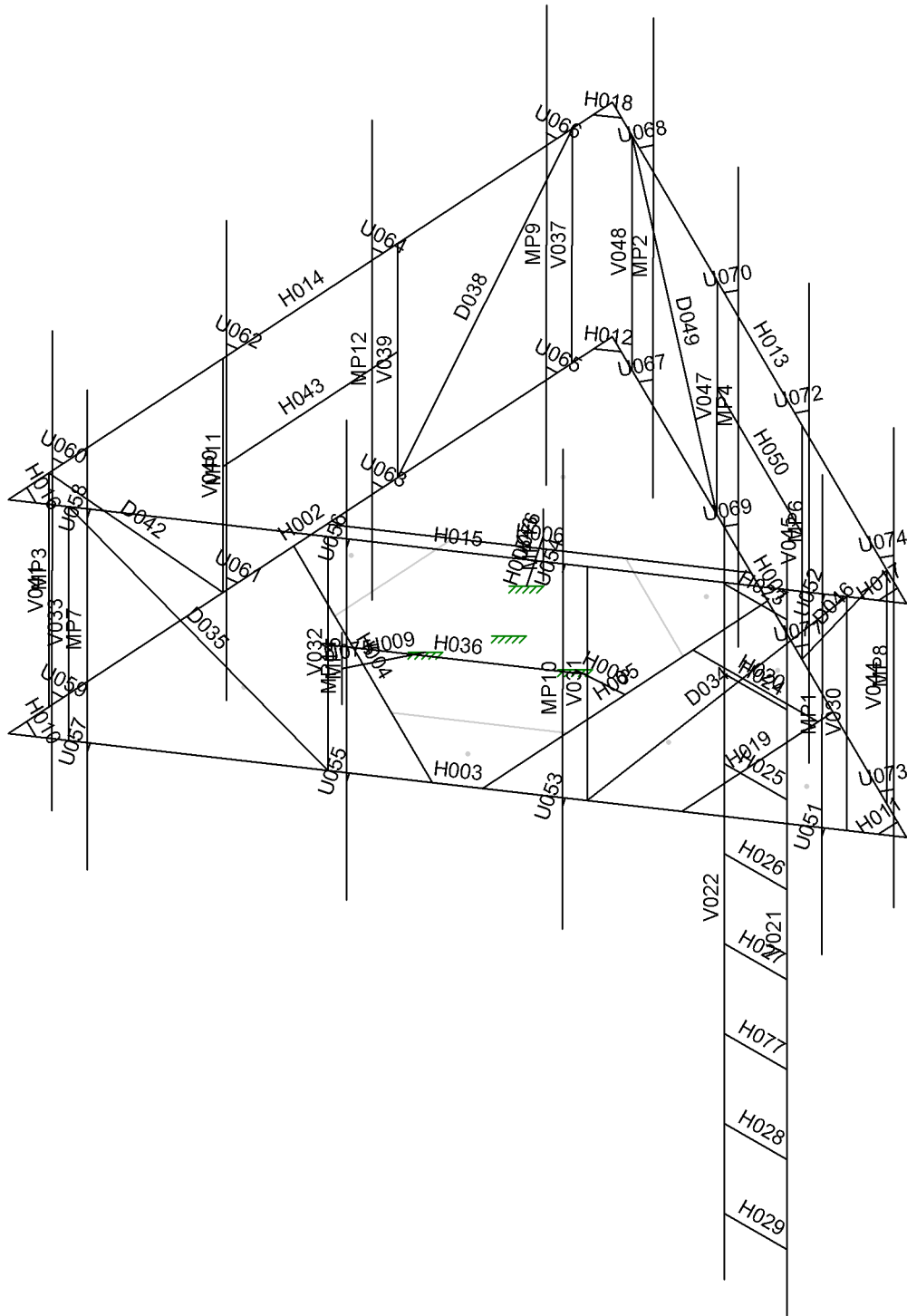
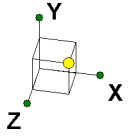
3D Rendering

SK - 1

Feb 24, 2020 at 11:57 AM

R3D. VERIZON WIRELESS @ 302...





American Tower Corp.	302511, WSPT - South Member Labels	SK - 2
Steven.McGinnis		Feb 24, 2020 at 11:57 AM
12996862_C8_06		R3D. VERIZON WIRELESS @ 302...



























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HF	X E H F	S F E I o F E E	E E G	H U	F H	E H	F I E I :	:	I	F I F I E F H	G I F J E	H I F E H F	F G H E E G	F E I P G E
HG	X E H G	S F E I o F E E	E F G H	E	H	E H G	G F E G :	:	G	F I F I E F H	G I F J E	H I F E H F	F G H E E G	G E G P G E
HH	X E H H	S F E I o F E E	E I H	H U	F I	E G	E ^	:	J	F I F I E F H	G I F J E	H I F E H F	F G H E E G	F E I J P G E
HI	O E H I	S F E I o F E E	E H	H U G I	I	E F I	E :	:	F H	F G H E E I I	G I F J E	H I F E H F	F e J B e H	F E I P G E
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HI	X E H I	S F E I o F E E	E I H	E	G H	E H F	H U :	:	I	F I F I E F H	G I F J E	H I F E H F	F G H E E G	F e H P G E
HI	O E H I	S F E I o F E E	E I I	H G E I	I	E F I	E ^	:	F F	F G H E E I I	G I F J E	H I F E H F	F e G I	F I E G P G E
HU	X E H U	S F E I o F E E	E I E	H U	F F	E H I	F I E I ^	:	F E	F I F I E F H	G I F J E	H I F E H F	F G H E E G	F e J P G E
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I G	O E I G	S F E I o F E E	E H U	G E F I	H	E F I	I H E I ^	:	J	F G H E E I I	G I F J E	H I F E H F	F e E I F	F I E G P G E
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**Site Name: WESTPORT S 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 PCS	1970	1	2088	2088.33	100	0.0751	1.0	7.51%
VZW Cellular CDMA	869	1	498	498	100	0.0179	0.5793333333	3.09%
VZW Cellular LTE	880	1	498	498	100	0.0179	0.5866666667	3.05%
VZW AWS	2145	1	2454	2453.57	100	0.0882	1.0	8.82%
VZW 700	746	1	589	588.57	100	0.0212	0.4973333333	4.26%
VZW CBRS	3550	0	50	0	100	0.0000	2.3666666667	0.00%

**Total Percentage of Maximum Permissible Exposure** 26.73%

\*Guidelines adopted by the FCC on August 1, 1996, 47 CFR Section 1.13101 based on NCRP Report 86, 1986 and generally on ANSI/IEEE C95.1-1992

MHz = Megahertz

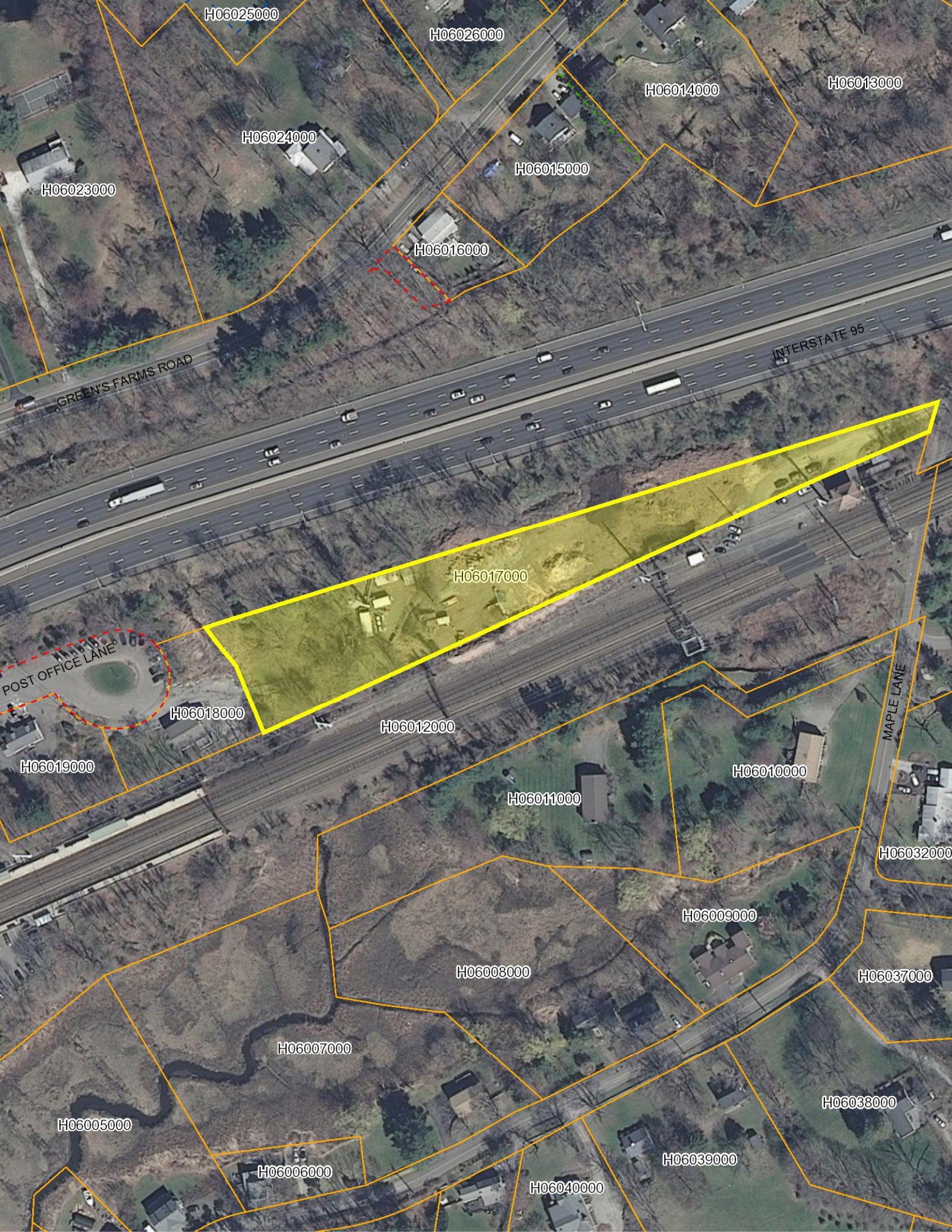
mW/cm<sup>2</sup> = milliwatts per square centimeter

ERP = Effective Radiated Power

Absolute worst case maximum values used, including the following assumptions:

1. closest accessible point is distance from antenna to base of pole;
2. continuous transmission from all available channels at full power for indefinite time period; and,
3. all RF energy is assumed to be directed solely to the base of the pole.





H06025000

H06026000

H06014000

H06013000

H06024000

H06015000

H06023000

H06016000

GREEN'S FARMS ROAD

INTERSTATE 95

H06017000

POST OFFICE LANE

H06018000

H06012000

MAPLE LANE

H06019000

H06011000

H06010000

H06032000

H06009000

H06008000

H06037000

H06007000

H06005000

H06006000

H06040000

H06039000

H06038000



CURRENT OWNER		TOPO	UTILITIES	STRT / ROAD	LOCATION	CURRENT ASSESSMENT				
SHERWOOD JAY			2 Public Water	1 Public		Description	Code	Assessed	Assessed	6158  WESTPORT, CT
P O BOX 48						DWELLING	1-3	69	0	
WESTPORT CT 06881						VAC RS LN	5-1	59,360	41,600	
<b>SUPPLEMENTAL DATA</b>						VAC OUTBL	5-5	1,253,900	877,730	<b>VISION</b>
1		Alt Prcl ID	5452217-C		Lift Hse	Total				
		Historic ID				1,313,329				
		Census	506			919,330				
		WestportC	L3							
		Survey Ma	3206							
		Survey Ma								
		GIS ID	H06017000		Assoc Pid#					

RECORD OF OWNERSHIP		BK-VOL/PAGE	SALE DATE	Q/U	V/I	SALE PRICE	VC	PREVIOUS ASSESSMENTS (HISTORY)					
SHERWOOD JAY		0469 0137	12-08-1977	U	V	0	29	Year	Code	Assessed	Year	Code	Assessed
								2018	5-1	41,600	2017	5-1	41,600
									5-5	877,730		5-5	877,730
								Total		919330	Total		919330
								Total		919330	Total		919330

EXEMPTIONS			OTHER ASSESSMENTS					APPRAISED VALUE SUMMARY				
Year	Code	Description	Amount	Code	Description	Number	Amount	Comm Int	This signature acknowledges a visit by a Data Collector or Assessor			
									Appraised Bldg. Value (Card) 69			
Total			0.00						Appraised Xf (B) Value (Bldg) 0			
									Appraised Ob (B) Value (Bldg) 1,253,900			
									Appraised Land Value (Bldg) 59,360			
									Special Land Value 0			
									Total Appraised Parcel Value 1,313,329			
									Valuation Method 0			
									Total Appraised Parcel Value 1,313,329			

BUILDING PERMIT RECORD								VISIT / CHANGE HISTORY						
Permit Id	Issue Date	Type	Description	Amount	Insp Date	% Comp	Date Comp	Comments	Date	Id	Type	Is	Cd	Purpost/Result
82271	01-13-2017	NA	Miscellaneous	5,000	04-11-2017	100		NEW WORK ON EXISTING T	04-11-2017	TM	2		55	NOAH - Visual
81426	05-12-2016	AL	Alterations	25,000	04-11-2017	100	03-06-2017	AKA 20 POST OFFICE LN UP	10-01-2015	AG	2		69	Partial Int Inspn (See Perm
81189	03-07-2016	AL	Alterations	15,000	04-11-2017	100	04-01-2016	INSTALL 3 ANTENNAS FOR "	05-14-2015	VA			66	INSPECTION NOTICE SE
79224	10-28-2014	AL	Alterations	27,000	10-01-2015	100		INSTALL 3 PANEL ANTENNA	08-02-2011	TM	2		55	NOAH - Visual
73207	06-15-2011	NA	Miscellaneous	20,000	08-02-2011	100		AKA 19 - 20 POST OFFICE L	01-20-2011	J			41	Hearing - Change
71770	05-21-2010	AL	Alterations	15,000	08-02-2011	100	02-15-2012	AKA 20 POST OFFICE LN-RE	08-29-2005	MJ	1		99	Vacant Lot Inspection
54726	12-01-1998		12 X 26 TELEP	0		100		12 X 26 TELEPHONE EQUIP.						

LAND LINE VALUATION SECTION															
B	Use Code	Description	Zone	Land Type	Land Units	Unit Price	Size Adj	Site Index	Cond.	Nbhd.	Nbhd. Adj	Notes	Location Adjustment	Adj Unit P	Land Value
1	100	Res Vacant Lnd	AAA		2.070 AC	380,000	0.48989	5	0.10	140	1.400	GRAVEL STORAGE	VAC	1.1001	59,360
Total Card Land Units					2.070 AC	Parcel Total Land Area					2.0700	Total Land Value			59,360

CONSTRUCTION DETAIL							CONSTRUCTION DETAIL (CONTINUED)					
Element	Cd	Description					Element	Cd	Description			
Style:	94	Outbuildings					Fireplaces					
Model	00	Vacant					Ceiling Height					
Grade:							Elevator					
Stories:							<b>CONDO DATA</b>					
Occupancy							Parcel Id		C		Own	
Exterior Wall 1										B		S
Exterior Wall 2							Adjust Type	Code	Description	Factor%		
Roof Structure:							Condo Flr					
Roof Cover							Condo Unit					
Interior Wall 1							<b>COST / MARKET VALUATION</b>					
Interior Wall 2							Building Value New			0		
Interior Flr 1							Year Built			0		
Interior Flr 2							Effective Year Built					
Heat Fuel							Depreciation Code					
Heat Type:							Remodel Rating					
AC Type:							Year Remodeled					
Total Bedrooms							Depreciation %			0		
Total Bthrms:							Functional Obsol			0		
Total Half Baths							External Obsol			0		
Total Xtra Fixtrs							Trend Factor			1		
Total Rooms:							Condition					
Bath Style:							Condition %			100		
Kitchen Style:							Percent Good					
Kitchens							Cns Sect Rcnd			0		
Whirlpool Tubs							Dep % Ovr					
Hot Tubs							Dep Ovr Comment					
Sauna (SF Area)							Misc Imp Ovr					
Fin Basement							Misc Imp Ovr Comment					
Fin Bsmt Qual							Cost to Cure Ovr					
Bsmt. Garages							Cost to Cure Ovr Comment					
Interior Cond												
Fireplaces												
Ceiling Height												

No Sketch

**OB - OUTBUILDING & YARD ITEMS(L) / XF - BUILDING EXTRA FEATURES(B)**

Code	Descript	Sub	Sub Ty	L/B	Units	Unit Pric	Yr Blt	Cond. C	% Gd	Grade	Grade A	Appr. V
CELL	Cell on	TW		L	5	328000.	2010		100	2	0.75	1,253,9

**BUILDING SUB-AREA SUMMARY SECTION**

Code	Description	Living Area	Floor Area	Eff Area	Unit Cost	Undeprec Value
Ttl Gross Liv / Lease Area		0	0			0



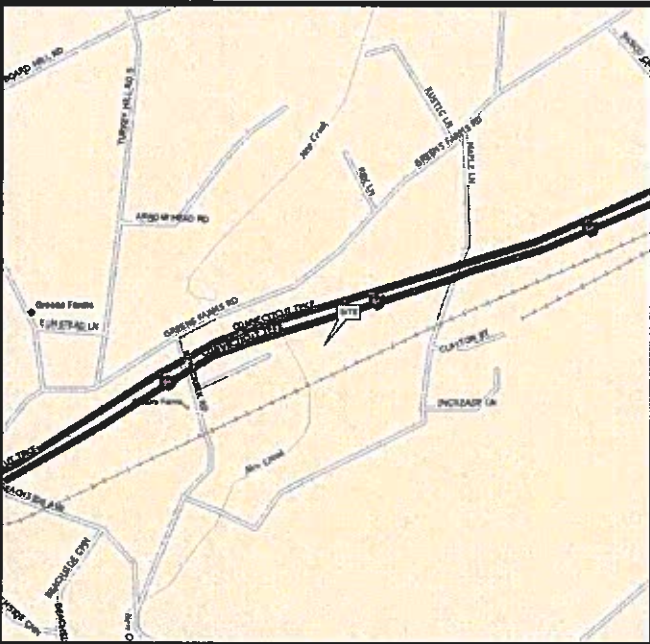


VZW LOCATION CODE: 467426  
 VZW SITE NAME: WESTPORT S CT  
 PROJECT DESCRIPTION: CBRS ANTENNA RELOCATION /RECONFIGURATION  
 TOWER TYPE: 142' MONOPOLE  
 SITE ADDRESS: 20 POST OFFICE LN  
 WESTPORT, CT 06880  
 (FAIRFIELD COUNTY)  
 JURISDICTION: CITY OF WESTPORT  
 PRESENT OCCUPANCY TYPE: TELECOMMUNICATIONS FACILITY  
 CURRENT ZONING: AAA  
 PARCEL #: H06017000

**PROJECT INFORMATION**

\*LATITUDE N 41° 07' 24.39"  
 \*LONGITUDE W 73° 18' 47.04"  
 \*GROUND ELEVATION (AMSL) = 15' ±  
 \*INFORMATION PROVIDED BY ATC

**SITE COORDINATES**



**LOCATION MAP**

FROM HARTFORD TAKE I-81 SOUTH TO I-95 SOUTH. TAKE EXIT 18 STAYING TO THE RIGHT OFF THE EXIT. AT SECOND LIGHT TAKE A RIGHT AND FOLLOW ABOUT 1.25 MILES AND TURN RIGHT ONTO NEW CREEK ROAD. GO UNDER BRIDGE AND TURN LEFT ONTO POST OFFICE LANE. FOLLOW TO END PAST THE HOUSE TO THE SITE.

**DRIVING DIRECTIONS**



20 ALEXANDER DR, 2ND FLOOR  
 WALLINGFORD, CT 06492

VZW LOCATION CODE: 467426  
 VZW SITE NAME: WESTPORT S CT

20 POST OFFICE LN  
 WESTPORT, CT 06880  
 (FAIRFIELD COUNTY)

PLANS PREPARED BY:



TOWER ENGINEERING PROFESSIONALS  
 326 TRYON ROAD  
 RALEIGH, NC 27603-3530  
 OFFICE: (919) 661-6351  
 www.tepgroup.net

REV	DATE	ISSUED FOR:
I	03-11-20	CONSTRUCTION
O	01-30-20	CONSTRUCTION
A	11-26-19	PRELIMINARY

DRAWN BY: KLP CHECKED BY: DEL

**LESSEE:**  
 NAME: VERIZON WIRELESS  
 ADDRESS: 20 ALEXANDER DR, 2ND FLOOR  
 CITY, STATE, ZIP: WALLINGFORD, CT 06492

**TOWER MANAGER:**  
 NAME: AMERICAN TOWER CORPORATION  
 ADDRESS: 19100 VON KARMAN AVE, STE 200  
 CITY, STATE, ZIP: IRVINE, CA 92612  
 CONTACT: JULIAN PERRY  
 PHONE: (480) 703-3313  
 SITE NAME: WSPT - SOUTH  
 SITE NUMBER: 302511

**CIVIL ENGINEER:**  
 NAME: TOWER ENGINEERING PROFESSIONALS  
 ADDRESS: 326 TRYON ROAD  
 CITY, STATE, ZIP: RALEIGH, NC 27603  
 CONTACT: GRAHAM M. ANDRES, P.E.  
 PHONE: (919) 661-6351

**PROPERTY OWNER:**  
 NAME: SHERWOOD JAY  
 ADDRESS: PO BOX 48  
 CITY, STATE, ZIP: WESTPORT, CT 06881

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

- CONNECTICUT STATE BUILDING CODE (2018 EDITION)
- CONNECTICUT CODE COUNCIL
- ANSI/ITA-222-G-2-2009
- LOCAL BUILDING CODE
- CITY/COUNTY ORDINANCES

**CODE COMPLIANCE**

- REMOVE (8) ANTENNAS
- REMOVE (6) RRHs
- REMOVE (3) DUAL ANTENNA MOUNTS
- INSTALL (6) ANTENNAS
- INSTALL (6) RRHs
- INSTALL (3) DUAL ANTENNA MOUNTS

**SCOPE OF WORK**

SHEET	DESCRIPTION	REV
T1	TITLE SHEET	1
N1	PROJECT NOTES	0
C1	SITE PLAN	0
C2	COMPOUND LAYOUT	0
C3	TOWER ELEVATION	1
C4	ANTENNA LAYOUT	1
C5	FINAL ANTENNA SCHEDULE	1
C6A	EQUIPMENT DETAILS I	0
C6B	EQUIPMENT DETAILS II	0

SEAL:



March 11, 2020

SHEET NUMBER: **T-1** REVISION: **1**  
 TEP#: 65218.205893


**INDEX OF SHEETS**

**CONTACT INFORMATION**

**PROJECT NOTES:**

1. ALL REFERENCES TO THE OWNER IN THESE DOCUMENTS SHALL BE CONSIDERED VERIZON WIRELESS OR ITS DESIGNATED REPRESENTATIVE.
2. ALL WORK PRESENTED ON THESE DRAWINGS MUST BE COMPLETED BY THE CONTRACTOR UNLESS NOTED OTHERWISE. THE CONTRACTOR MUST HAVE CONSIDERABLE EXPERIENCE IN PERFORMANCE OF WORK SIMILAR TO THAT DESCRIBED HEREIN. BY ACCEPTANCE OF THIS ASSIGNMENT, THE CONTRACTOR IS ATTESTING THAT HE DOES HAVE SUFFICIENT EXPERIENCE AND ABILITY, THAT HE IS KNOWLEDGEABLE OF THE WORK TO BE PERFORMED AND THAT HE IS PROPERLY LICENSED AND PROPERLY REGISTERED TO DO THIS WORK IN THE STATE OF CONNECTICUT.
3. WORK SHALL BE COMPLETED IN ACCORDANCE WITH THE 2018 CONNECTICUT STATE BUILDING CODE.
4. UNLESS SHOWN OR NOTED OTHERWISE ON THE CONTRACT DRAWINGS, OR IN THE SPECIFICATIONS, THE FOLLOWING NOTES SHALL APPLY TO THE MATERIALS LISTED HEREIN, AND TO THE PROCEDURES TO BE USED ON THIS PROJECT.
5. ALL HARDWARE ASSEMBLY MANUFACTURER'S INSTRUCTIONS SHALL BE FOLLOWED EXACTLY AND SHALL SUPERSEDE ANY CONFLICTING NOTES ENCLOSED HEREIN.
6. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE TO INSURE THE SAFETY OF THE STRUCTURE AND IT'S COMPONENT PARTS DURING ERECTION AND/OR FIELD MODIFICATIONS. THIS INCLUDES, BUT IS NOT LIMITED TO, THE ADDITION OF TEMPORARY BRACING, GUYS OR TIE DOWNS THAT MAY BE NECESSARY. SUCH MATERIAL SHALL BE REMOVED AND SHALL REMAIN THE PROPERTY OF THE CONTRACTOR AFTER THE COMPLETION OF THE PROJECT.
7. ALL DIMENSIONS, ELEVATIONS, AND EXISTING CONDITIONS SHOWN ON THE DRAWINGS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO BEGINNING ANY MATERIALS ORDERING, FABRICATION OR CONSTRUCTION WORK ON THIS PROJECT. CONTRACTOR SHALL NOT SCALE CONTRACT DRAWINGS IN LIEU OF FIELD VERIFICATIONS. ANY DISCREPANCIES SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER AND THE OWNER'S ENGINEER. THE DISCREPANCIES MUST BE RESOLVED BEFORE THE CONTRACTOR IS TO PROCEED WITH THE WORK. THE CONTRACT DOCUMENTS DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. OBSERVATION VISITS TO THE SITE BY THE OWNER AND/OR THE ENGINEER SHALL NOT INCLUDE INSPECTION OF THE PROTECTIVE MEASURES OR THE PROCEDURES.
8. ALL MATERIALS AND EQUIPMENT FURNISHED SHALL BE NEW AND OF GOOD QUALITY, FREE FROM FAULTS AND DEFECTS AND IN CONFORMANCE WITH THE CONTRACT DOCUMENTS. ANY AND ALL SUBSTITUTIONS MUST BE PROPERLY APPROVED AND AUTHORIZED IN WRITING BY THE OWNER AND ENGINEER PRIOR TO INSTALLATION. THE CONTRACTOR SHALL FURNISH SATISFACTORY EVIDENCE AS TO THE KIND AND QUALITY OF THE MATERIALS AND EQUIPMENT BEING SUBSTITUTED.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INITIATING, MAINTAINING, AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT THIS PROJECT AND RELATED WORK COMPLIES WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL SAFETY CODES AND REGULATIONS GOVERNING THIS WORK.
10. ACCESS TO THE PROPOSED WORK SITE MAY BE RESTRICTED. THE CONTRACTOR SHALL COORDINATE INTENDED CONSTRUCTION ACTIVITY, INCLUDING WORK SCHEDULE AND MATERIALS ACCESS, WITH THE RESIDENT LEASING AGENT FOR APPROVAL.
11. ALL PERMITS THAT MUST BE OBTAINED ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR WILL BE RESPONSIBLE FOR ABIDING BY ALL CONDITIONS AND REQUIREMENTS OF THE PERMITS.
12. IF APPLICABLE, ALL CONCRETE WORK SHALL COMPLY TO LOCAL CODES AND THE ACI 318-11, "BUILDING REQUIREMENTS FOR STRUCTURAL CONCRETE".
13. ALL TOWER DIMENSIONS SHALL BE VERIFIED WITH THE PLANS (LATEST REVISION) PRIOR TO COMMENCING CONSTRUCTION. NOTIFY THE ENGINEER IMMEDIATELY IF ANY DISCREPANCIES ARE DISCOVERED. THE OWNER SHALL HAVE A SET OF APPROVED PLANS AVAILABLE AT THE SITE AT ALL TIMES WHILE WORK IS BEING PERFORMED. A DESIGNATED RESPONSIBLE EMPLOYEE SHALL BE AVAILABLE FOR CONTACT BY GOVERNING AGENCY INSPECTORS.
14. ALL TOWER MODIFICATION WORK SHALL BE IN ACCORDANCE WITH TIA-1019-A STANDARD FOR INSTALLATION, ALTERATION AND MAINTENANCE OF ANTENNA SUPPORTING STRUCTURES AND ANTENNAS.

PLANS PREPARED FOR:



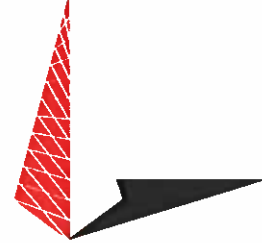
20 ALEXANDER DR, 2ND FLOOR  
WALLINGFORD, CT 06492

PROJECT INFORMATION:

**VZW LOCATION  
CODE: 467426  
VZW SITE NAME:  
WESTPORT S CT**


20 POST OFFICE LN  
WESTPORT, CT 06880  
(FAIRFIELD COUNTY)

PLANS PREPARED BY:



**TOWER ENGINEERING PROFESSIONALS**  
326 TRYON ROAD  
RALEIGH, NC 27603-3530  
OFFICE: (919) 661-6351  
www.tepgroup.net

SEAL:



January 30, 2020

O	01-30-20	CONSTRUCTION
A	11-26-19	PRELIMINARY
REV	DATE	ISSUED FOR:

DRAWN BY: KLP | CHECKED BY: DEL

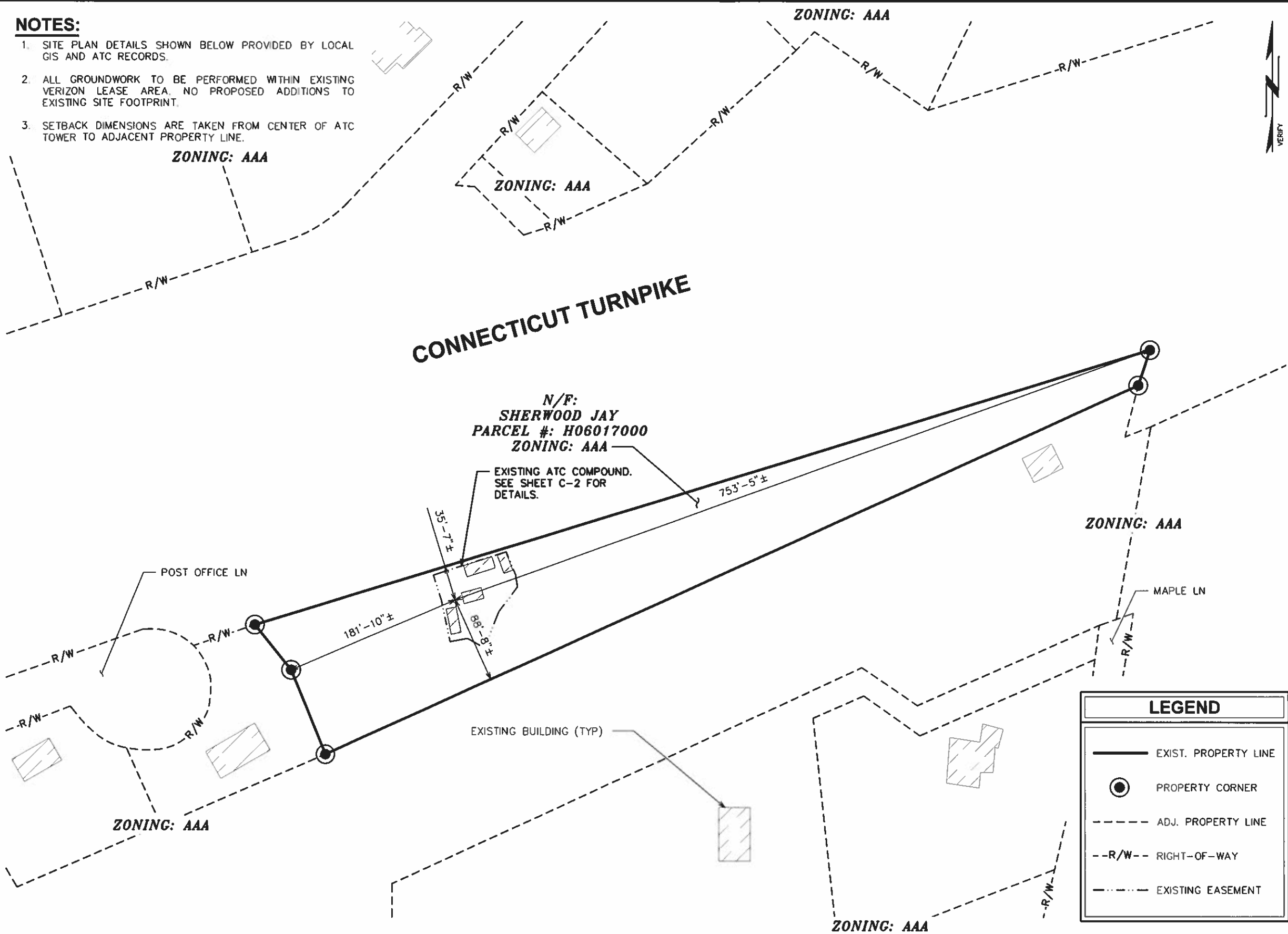
SHEET TITLE:

**PROJECT  
NOTES**

SHEET NUMBER: **N-1** | REVISION: **0**  
TEP#: 65218.205893

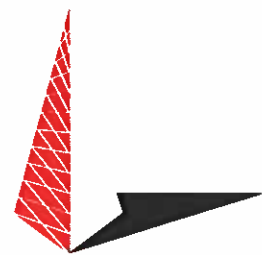
**NOTES:**


1. SITE PLAN DETAILS SHOWN BELOW PROVIDED BY LOCAL GIS AND ATC RECORDS.
2. ALL GROUNDWORK TO BE PERFORMED WITHIN EXISTING VERIZON LEASE AREA. NO PROPOSED ADDITIONS TO EXISTING SITE FOOTPRINT.
3. SETBACK DIMENSIONS ARE TAKEN FROM CENTER OF ATC TOWER TO ADJACENT PROPERTY LINE.



PLANS PREPARED FOR:  
**verizon**  
 20 ALEXANDER DR, 2ND FLOOR  
 WALLINGFORD, CT 06492

PROJECT INFORMATION:  
**VZW LOCATION CODE: 467426**  
**VZW SITE NAME: WESTPORT S CT**  
 20 POST OFFICE LN  
 WESTPORT, CT 06880  
 (FAIRFIELD COUNTY)

PLANS PREPARED BY:  
  
**TOWER ENGINEERING PROFESSIONALS**  
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 www.tepgroup.net

SEAL:  
  
 January 30, 2020



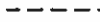


REV	DATE	ISSUED FOR:
0	01-30-20	CONSTRUCTION
A	11-26-19	PRELIMINARY

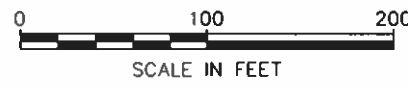
DRAWN BY: KLP | CHECKED BY: DEL

SHEET TITLE:  
**SITE PLAN**

SHEET NUMBER: **C-1** | REVISION: **0**  
 TEP#: 65218.205893

**LEGEND**

-  EXIST. PROPERTY LINE
-  PROPERTY CORNER
-  ADJ. PROPERTY LINE
-  RIGHT-OF-WAY
-  EXISTING EASEMENT

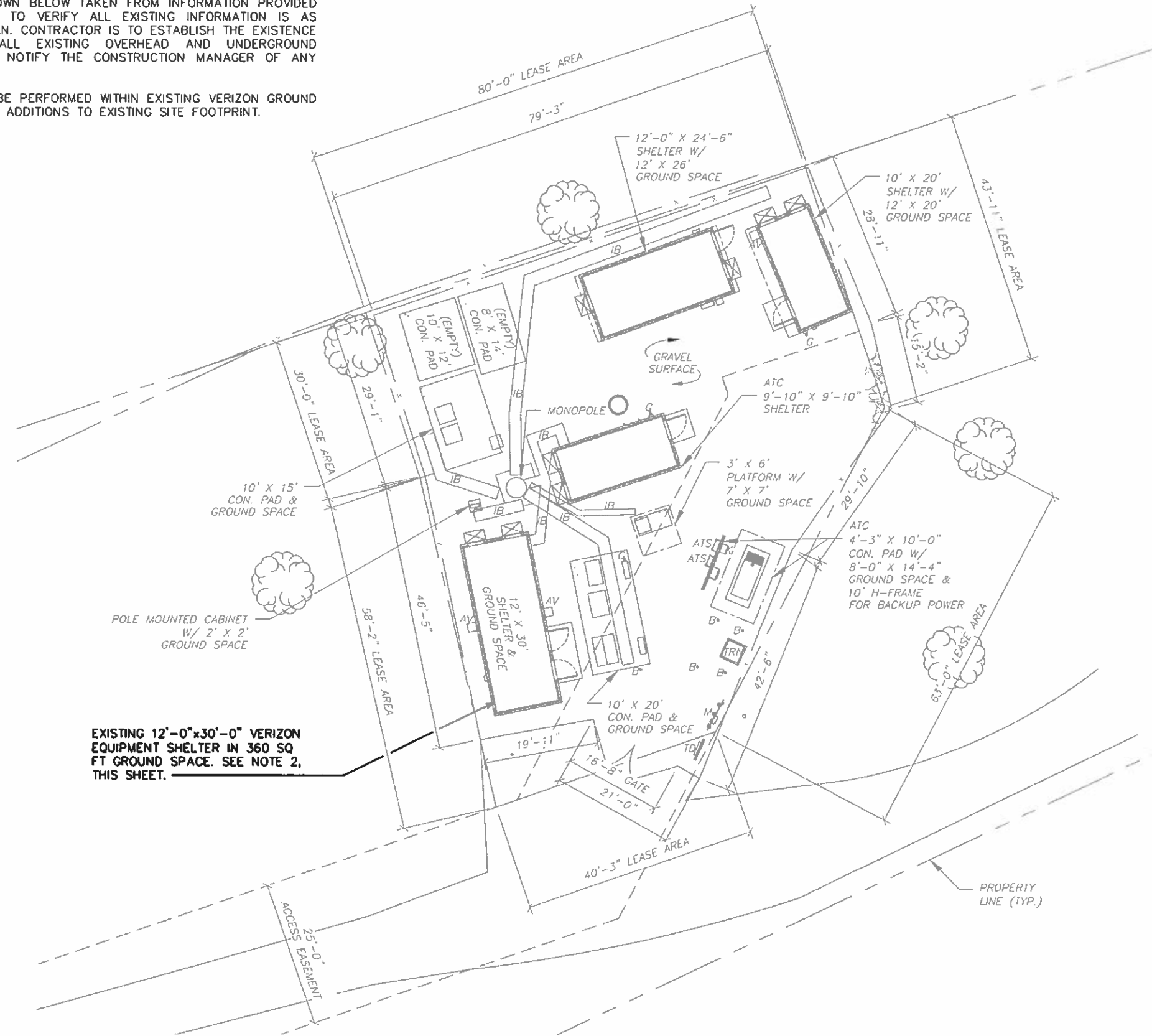


**SITE PLAN**  
 SCALE: 1" = 100'



**NOTES:**

1. COMPOUND DETAIL SHOWN BELOW TAKEN FROM INFORMATION PROVIDED BY ATC. CONTRACTOR TO VERIFY ALL EXISTING INFORMATION IS AS INDICATED ON SITE PLAN. CONTRACTOR IS TO ESTABLISH THE EXISTENCE AND LOCATION OF ALL EXISTING OVERHEAD AND UNDERGROUND UTILITIES. IMMEDIATELY NOTIFY THE CONSTRUCTION MANAGER OF ANY DISCREPANCIES.
2. ALL GROUNDWORK TO BE PERFORMED WITHIN EXISTING VERIZON GROUND SPACE. NO PROPOSED ADDITIONS TO EXISTING SITE FOOTPRINT.





EXISTING 12'-0" x 30'-0" VERIZON EQUIPMENT SHELTER IN 360 SQ FT GROUND SPACE. SEE NOTE 2, THIS SHEET.



PLANS PREPARED FOR:  
**verizon**  
 20 ALEXANDER DR, 2ND FLOOR  
 WALLINGFORD, CT 06492

PROJECT INFORMATION:  
**VZW LOCATION CODE: 467426**  
**VZW SITE NAME: WESTPORT S CT**  
 20 POST OFFICE LN  
 WESTPORT, CT 06880  
 (FAIRFIELD COUNTY)

PLANS PREPARED BY:  
  
**TOWER ENGINEERING PROFESSIONALS**  
 326 TRYON ROAD  
 RALEIGH, NC 27603-3530  
 OFFICE: (919) 661-6351  
 www.tepgroup.net

SEAL:  
  
 January 30, 2020

0	01-30-20	CONSTRUCTION
A	11-26-19	PRELIMINARY
REV	DATE	ISSUED FOR:

DRAWN BY: KLF CHECKED BY: DEL

SHEET TITLE:  
**COMPOUND DETAIL**

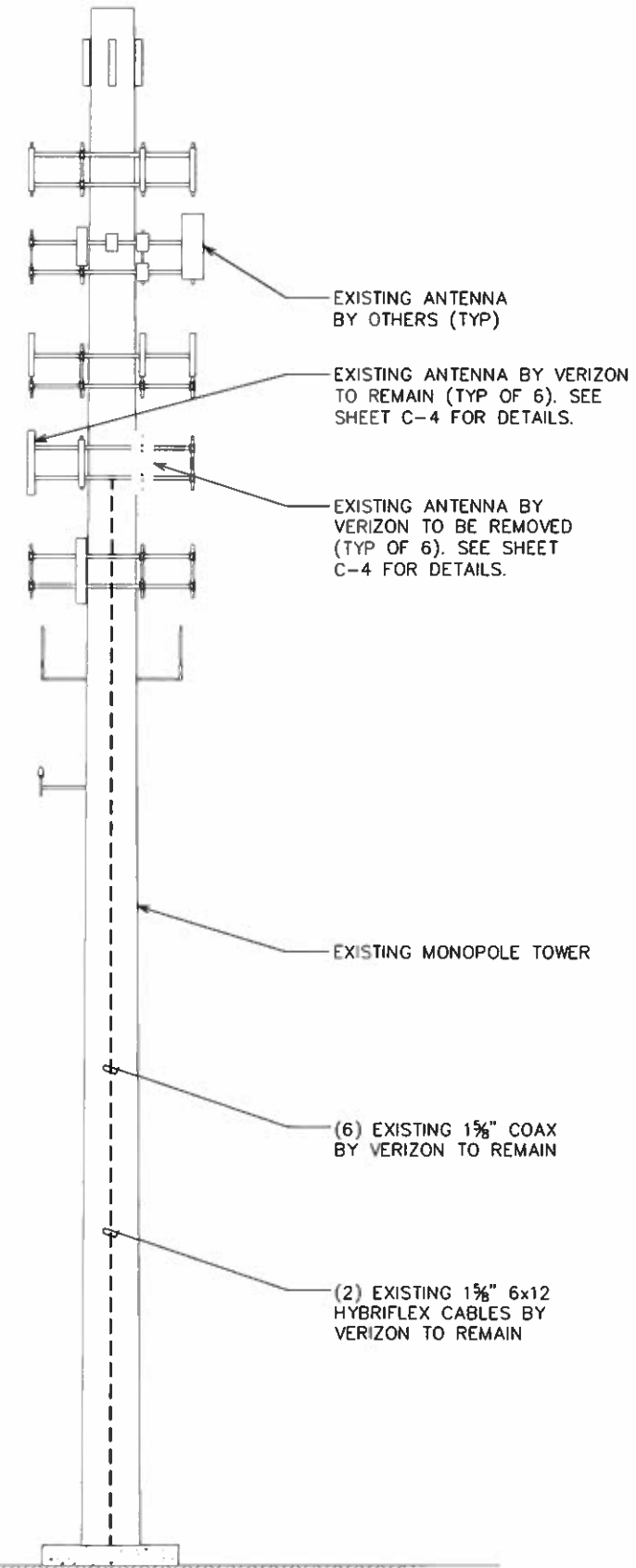
SHEET NUMBER: **C-2** REVISION: **0**  
 TEP#: 65218.205893

**COMPOUND DETAIL**  
 SCALE: N.T.S.

142'-0"±  
T/TOWER

100'-0"±  
CL/VERIZON ANTENNAS

0'-0" (REFERENCE)  
T/CONCRETE



**NOTE:**  
TOWER ELEVATION IS FOR SCHEMATIC PURPOSES ONLY. TEP DID NOT CONFIRM EXISTING SITE CONDITIONS INCLUDING, BUT NOT LIMITED TO, ANTENNA HEIGHTS, ANTENNA AZIMUTHS, AND MOUNT CONFIGURATIONS.

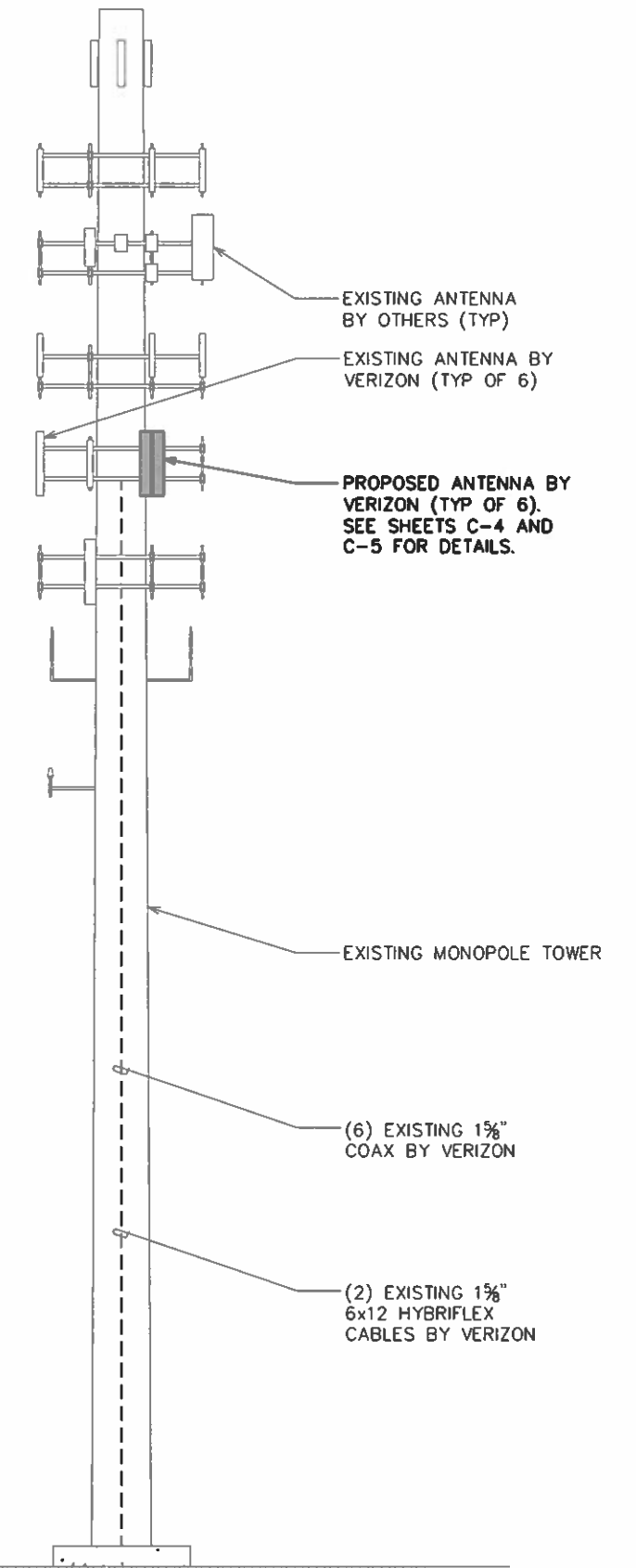
**EXISTING TOWER ELEVATION**  
SCALE: 1/8" = 1'-0"



142'-0"±  
T/TOWER

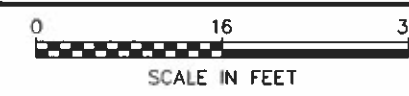
100'-0"±  
CL/VERIZON ANTENNAS

0'-0" (REFERENCE)  
T/CONCRETE



**NOTE:**  
TOWER ELEVATION IS FOR SCHEMATIC PURPOSES ONLY. TEP DID NOT CONFIRM EXISTING SITE CONDITIONS INCLUDING, BUT NOT LIMITED TO, ANTENNA HEIGHTS, ANTENNA AZIMUTHS, AND MOUNT CONFIGURATIONS.

**PROPOSED TOWER ELEVATION**  
SCALE: 1/8" = 1'-0"



PLANS PREPARED FOR:

20 ALEXANDER DR, 2ND FLOOR  
WALLINGFORD, CT 06492

PROJECT INFORMATION:  
**VZW LOCATION CODE: 467426**  
**VZW SITE NAME: WESTPORT S CT**  
20 POST OFFICE LN  
WESTPORT, CT 06880  
(FAIRFIELD COUNTY)

PLANS PREPARED BY:

**TOWER ENGINEERING PROFESSIONALS**  
326 TRYON ROAD  
RALEIGH, NC 27603-3530  
OFFICE: (919) 661-6351  
www.tepgroup.net

SEAL:

March 11, 2020

1	03-11-20	CONSTRUCTION
0	01-30-20	CONSTRUCTION
A	11-26-19	PRELIMINARY
REV	DATE	ISSUED FOR:
DRAWN BY: KLP		CHECKED BY: DEL

SHEET TITLE:  
**TOWER ELEVATION**

SHEET NUMBER: <b>C-3</b>	REVISION: <b>1</b>
TEP#: 65218.205893	

**NOTE:**

TEP HAS NOT VERIFIED ANY EXISTING ANTENNA CONFIGURATION OR MOUNT CONFIGURATION. CONTRACTOR TO VERIFY MOUNT CONFIGURATION HAS SUFFICIENT SPACE FOR PROPOSED LESSEE EQUIPMENT (I.E. CLEARANCES, MOUNT PIPE OF SUFFICIENT LENGTH, ETC.). TEP DID NOT ANALYZE ANTENNA MOUNT TO DETERMINE ADEQUATE STRUCTURAL CAPACITY FOR ANY LESSEE LOADING.




**NOTES:**

1. TEP HAS NOT VERIFIED ANY EXISTING ANTENNA CONFIGURATION OR MOUNT CONFIGURATION. CONTRACTOR TO VERIFY MOUNT CONFIGURATION HAS SUFFICIENT SPACE FOR PROPOSED LESSEE EQUIPMENT (I.E. CLEARANCES, MOUNT PIPE OF SUFFICIENT LENGTH, ETC.). TEP DID NOT ANALYZE ANTENNA MOUNT TO DETERMINE ADEQUATE STRUCTURAL CAPACITY FOR ANY LESSEE LOADING.
2. CONTRACTOR TO VERIFY PROPOSED LOADING WITH TOWER STRUCTURAL ANALYSIS PRIOR TO CONSTRUCTION.



PLANS PREPARED FOR:



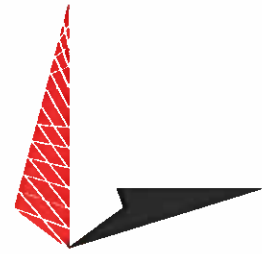
20 ALEXANDER DR, 2ND FLOOR  
WALLINGFORD, CT 06492

PROJECT INFORMATION:

**VZW LOCATION  
CODE: 467426  
VZW SITE NAME:  
WESTPORT S CT**

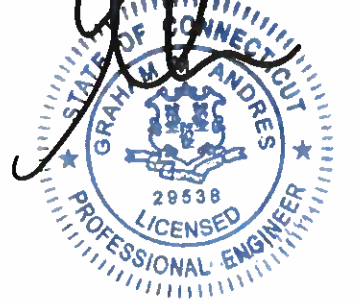
20 POST OFFICE LN  
WESTPORT, CT 06880  
(FAIRFIELD COUNTY)

PLANS PREPARED BY:



**TOWER ENGINEERING PROFESSIONALS**  
326 TRYON ROAD  
RALEIGH, NC 27603-3530  
OFFICE: (919) 661-6351  
www.tepgroup.net

SEAL:



March 11, 2020

REV	DATE	ISSUED FOR:
I	03-11-20	CONSTRUCTION
O	01-30-20	CONSTRUCTION
A	11-26-19	PRELIMINARY

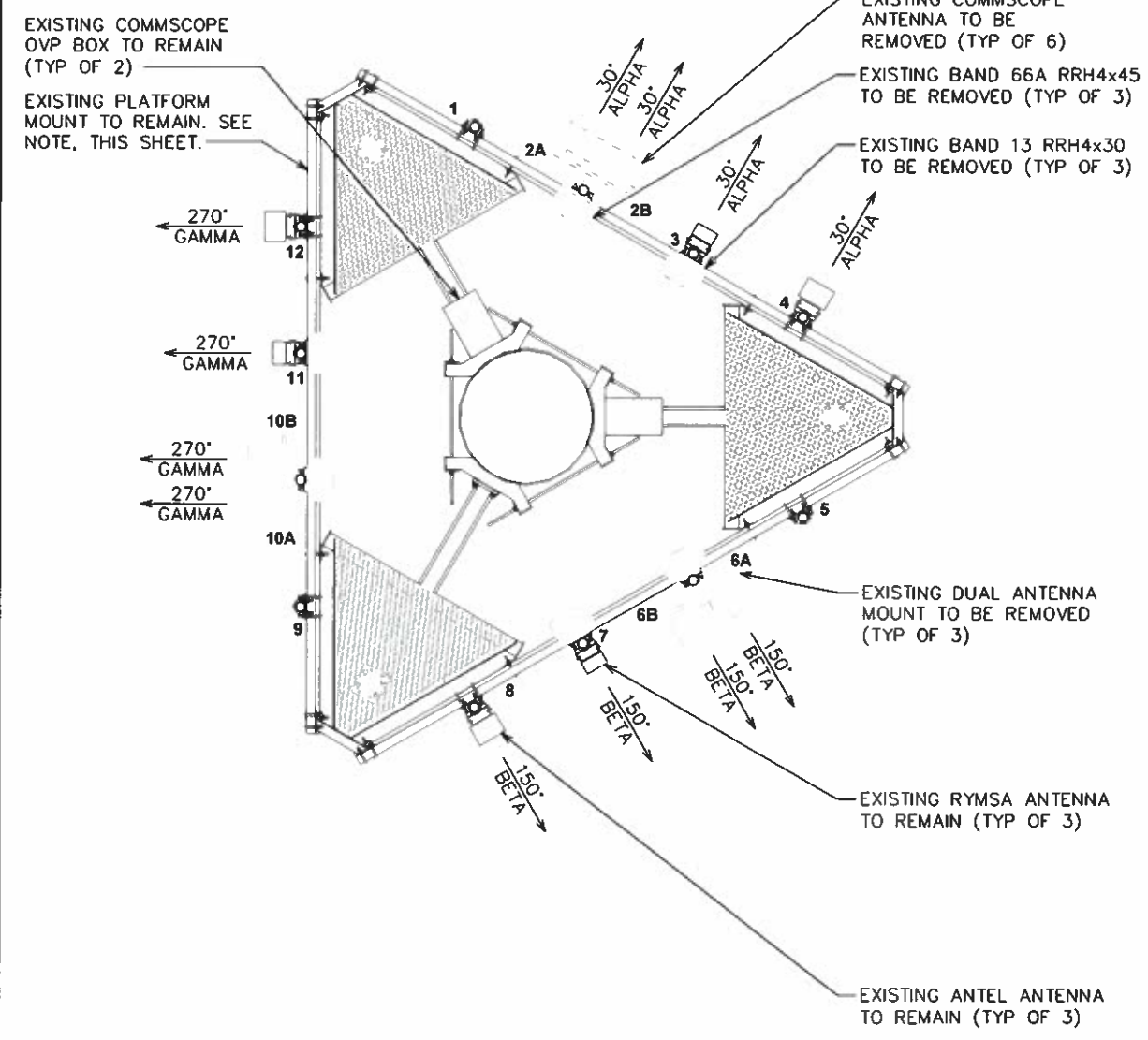
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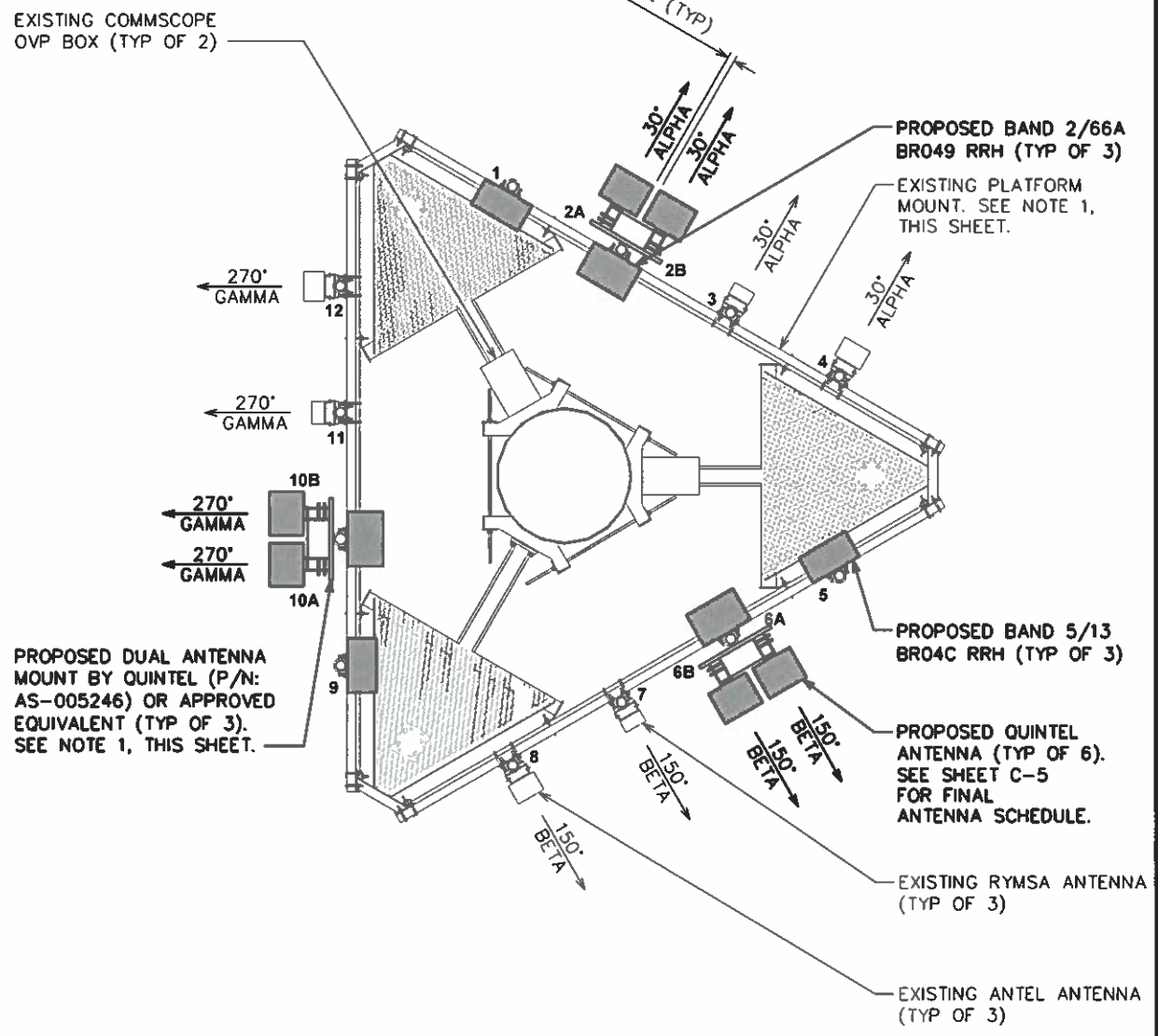
**ANTENNA LAYOUT**

SHEET NUMBER: <b>C-4</b>	REVISION: <b>1</b>
-----------------------------	-----------------------

TEP#: 65218.205893



**EXISTING ANTENNA PLAN**  
SCALE: 1/4" = 1'-0"



**PROPOSED ANTENNA PLAN**  
SCALE: 1/4" = 1'-0"

**NOTES:**

1. CONTRACTOR TO REFERENCE VERIZON ISSUED RFDS AND GIVE PRECEDENCE TO INFORMATION PROVIDED IN RFDS OVER INFORMATION PROVIDED IN THIS TABLE.
2. VERIFY LOADING WITH STRUCTURAL ANALYSIS PRIOR TO CONSTRUCTION.
3. IF STRUCTURAL ANALYSIS AND RFDS DO NOT MATCH CONTRACTOR IS TO CONTACT AMERICAN TOWER CORPORATION IMMEDIATELY.

PROPOSED EQUIPMENT IN BOLD

FINAL ANTENNA/FEEDLINE SCHEDULE								
SECTOR	POS.	MANUFACTURER MODEL #	MOUNTING HEIGHT	CABLE SIZE	AZIMUTH (TN)	*CABLE LENGTH	OVP/RRH/TMA/DIPLEXER [MODEL #]	
ALPHA	1	-	-		-			
ALPHA	2A	<b>QUINTEL QS6656-5D</b>	☉ 100'-0"±	(6) 1 1/2" COAX (2) 1 1/2" 6x12 HYBRIFLEX	30°	160'±	(1) COMMSCOPE OVP [RC2DC-3315-PF-48] (1) SAMSUNG RRH [B5/B13 RRH-BR04C] (1) SAMSUNG RRH [B2/B66A RRH-BR049]	
ALPHA	2B	<b>QUINTEL QS6656-5D</b>	☉ 100'-0"±		30°			
ALPHA	3	RYMSA MGD3-800TX	☉ 100'-0"±		30°			
ALPHA	4	ANTEL BXA-70080/6CF	☉ 100'-0"±		30°			
BETA	5	-	-		-			(1) COMMSCOPE OVP [RC2DC-3315-PF-48] (1) SAMSUNG RRH [B5/B13 RRH-BR04C] (1) SAMSUNG RRH [B2/B66A RRH-BR049]
BETA	6A	<b>QUINTEL QS6656-5D</b>	☉ 100'-0"±		150°			
BETA	6B	<b>QUINTEL QS6656-5D</b>	☉ 100'-0"±		150°			
BETA	7	RYMSA MGD3-800TX	☉ 100'-0"±		150°			
BETA	8	ANTEL BXA-70080/6CF	☉ 100'-0"±		150°			(1) SAMSUNG RRH [B5/B13 RRH-BR04C] (1) SAMSUNG RRH [B2/B66A RRH-BR049]
GAMMA	9	-	-		-			
GAMMA	10A	<b>QUINTEL QS6656-5D</b>	☉ 100'-0"±		270°			
GAMMA	10B	<b>QUINTEL QS6656-5D</b>	☉ 100'-0"±		270°			
GAMMA	11	RYMSA MGD3-800TX	☉ 100'-0"±	270°				
GAMMA	12	ANTEL BXA-70080/6CF	☉ 100'-0"±	270°				

\*CONTRACTOR TO VERIFY CABLE LENGTH PRIOR TO CONSTRUCTION.

\*\*ANTENNA DESIGN BASED ON INFORMATION PROVIDED BY AMERICAN TOWER CORPORATION IN THE FORM OF AN APPLICATION (ID: 12996862).

PLANS PREPARED FOR:

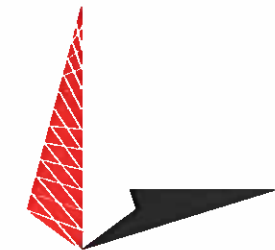


20 ALEXANDER DR, 2ND FLOOR  
WALLINGFORD, CT 06492

PROJECT INFORMATION:

**VZW LOCATION  
CODE: 467426  
VZW SITE NAME:  
WESTPORT S CT**  
20 POST OFFICE LN  
WESTPORT, CT 06880  
(FAIRFIELD COUNTY)

PLANS PREPARED BY:



**TOWER ENGINEERING PROFESSIONALS**  
326 TRYON ROAD  
RALEIGH, NC 27603-3530  
OFFICE: (919) 661-6351  
www.tepgroup.net

SEAL:



March 11, 2020

REV	DATE	ISSUED FOR:
I	03-11-20	CONSTRUCTION
O	01-30-20	CONSTRUCTION
A	11-26-19	PRELIMINARY

DRAWN BY: KLP CHECKED BY: DEL

SHEET TITLE:

**FINAL ANTENNA  
SCHEDULE**

SHEET NUMBER: REVISION:

**C-5**

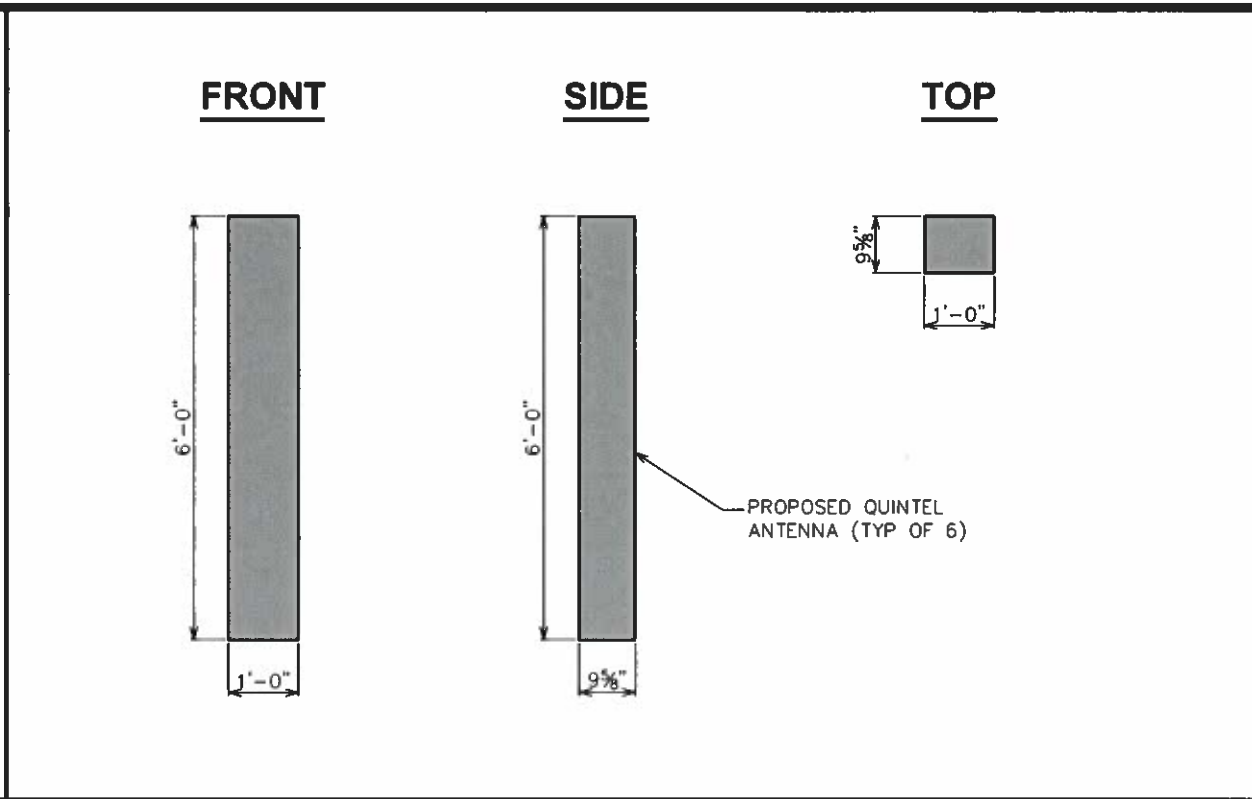
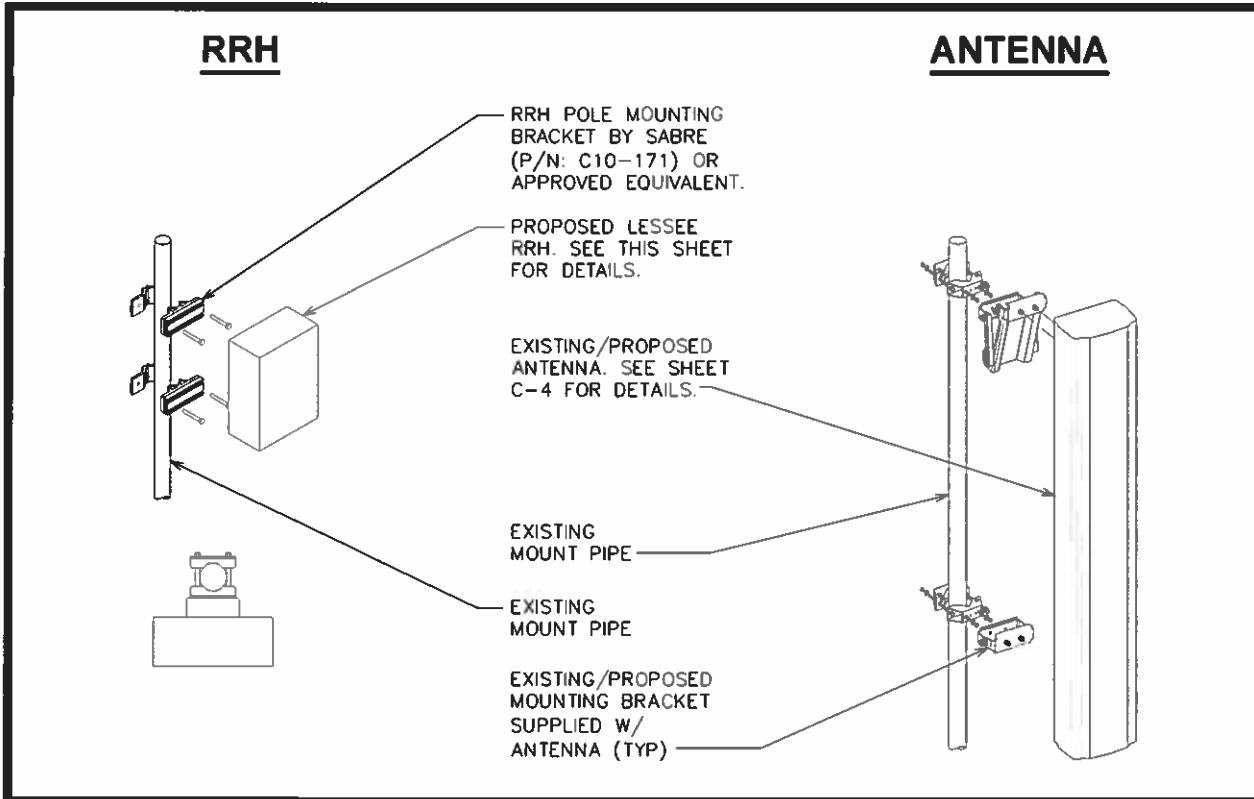
**1**

TEP#: 65218.205893

**FINAL ANTENNA SCHEDULE**

SCALE: N.T.S.





PLANS PREPARED FOR:

**verizon**

20 ALEXANDER DR, 2ND FLOOR  
WALLINGFORD, CT 06492

PROJECT INFORMATION:

**VZW LOCATION  
CODE: 467426  
VZW SITE NAME:  
WESTPORT S CT**

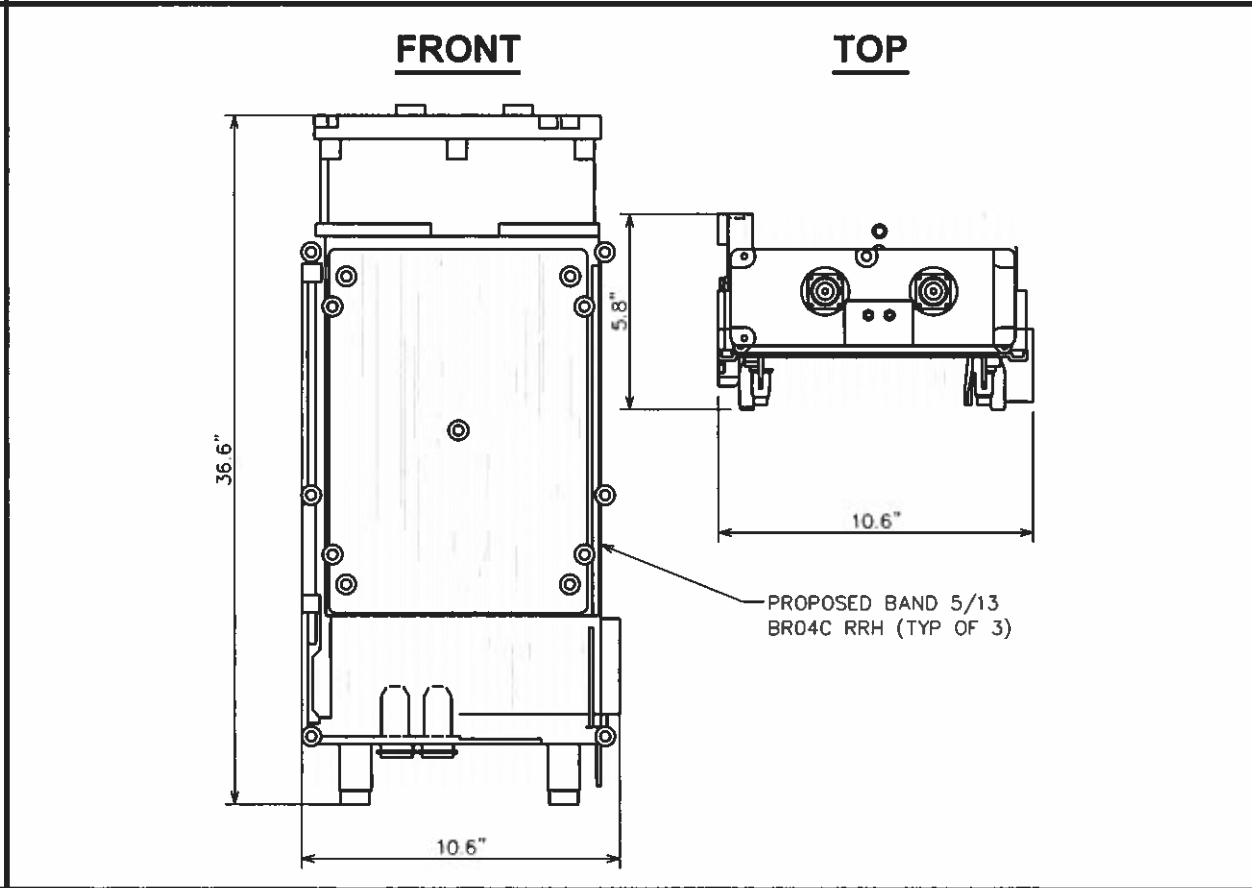
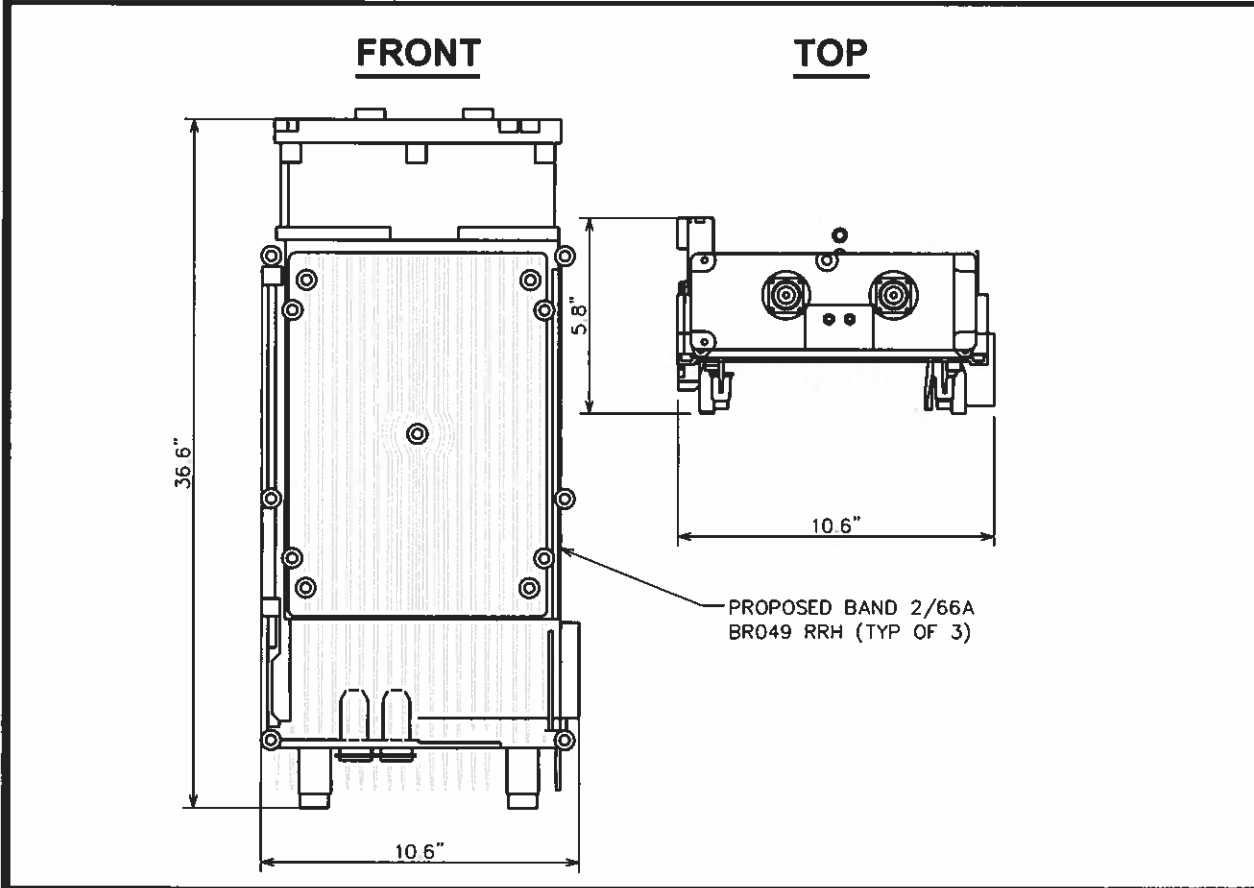
20 POST OFFICE LN  
WESTPORT, CT 06880  
(FAIRFIELD COUNTY)

PLANS PREPARED BY:

**TOWER ENGINEERING PROFESSIONALS**  
326 TRYON ROAD  
RALEIGH, NC 27603-3530  
OFFICE: (919) 601-6351  
www.tepgroup.net

**EQUIPMENT MOUNTING DETAIL**  
SCALE: N.T.S.

**PROPOSED QINTEL ANTENNA DETAIL**  
SCALE: N.T.S.



SEAL:

January 30, 2020

0	01-30-20	CONSTRUCTION
A	11-26-19	PRELIMINARY
REV	DATE	ISSUED FOR:

DRAWN BY: KLP CHECKED BY: DEL

SHEET TITLE:

**EQUIPMENT  
DETAILS I**

**PROPOSED BAND 2/66A BR049 RRH DETAIL**  
SCALE: N.T.S.

**PROPOSED BAND 5/13 BR04C RRH DETAIL**  
SCALE: N.T.S.

SHEET NUMBER: **C-6A** REVISION: **0**  
TEP#: 65218.205893





AS-005246 QOS Dual Mount Antenna Bracket –Variable Spacing

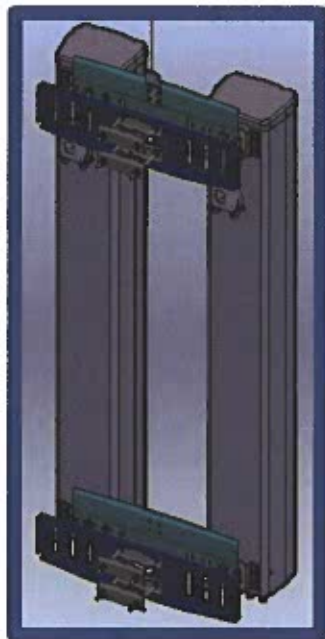


Mobile operators are now moving from 2T2R and 2T4R to 4T4R radios, embracing higher order MIMO, including precoder based beamforming for LTE services at Low-Band spectrum such as 700 and 850MHz bands to enhance capacity and Quality of Service (QoS). When operating 4T4R radios with closely spaced correlated antenna arrays, there are preferred separation distances for optimizing coverage and/or capacity.

The **Quintel Optimal Separation (QOS)** Antenna Bracket allows a selection of one of five optimized horizontal separations for a single band or across multiple bands, to be selected across two Quintel MultiServ™ antennas when operating with 4T4R Radios, and using one mounting position or pole. The choice of separation distance, number of spectrum bands, and resulting network performance attributes are Patent Pending.

The QOS Antenna Bracket is compatible with all of Quintel's 45° and 65° Antenna models, for 6 Port, 8 Port, 10 Port and 12 port MultiServ™ Antenna portfolio. For more information on optimizing array distances when operating 4T4R radios for LTE services at Low-Band using the QOS Antenna Bracket, please contact Quintel

Mechanical Characteristics	AS-005246
Allowable Mast Diameter	3.75 - 4.75 inches / 95 - 120mm
Material (incl. Fasteners)	Hot Dipped Galvanized Steel
Weight of Bracket	64 lbs (29.0kg)
Mechanical Tilt	0-10° Down Tilt or 0-2° Up Tilt
Wind Load Survival	150mph



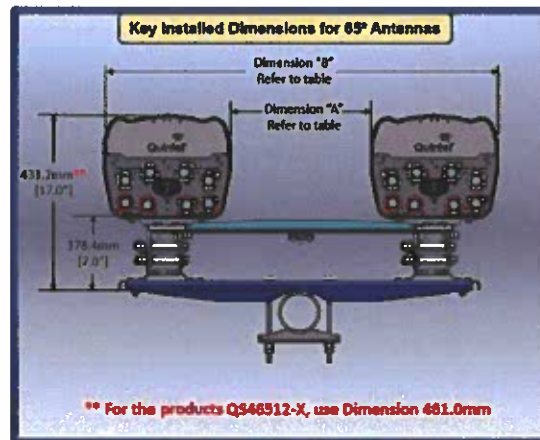
Quintel Product Datasheet AS-005246 Dual Bracket (rev 1.4)



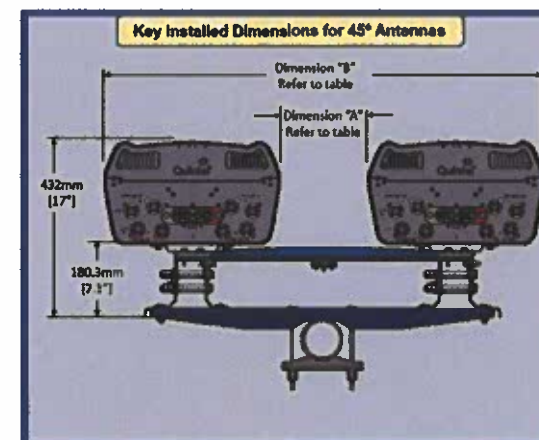
AS-005246 QOS Dual Mount Antenna Bracket –Variable Spacing



Products	Center to Center	Dim A - Inside to Inside Edge	Dim B - Outside to Outside Edge	Lambda Spacing					Suggested Use
				Band 12	Band 13	Band 14	Band 17	Band 5	
45°	654mm / 26"	224mm / 9"	1084mm / 43"	1.62	1.66	1.69	1.64	1.95	700MHz - Max Capacity
	580mm / 23"	151mm / 6"	1010.5mm / 40"	1.43	1.47	1.49	1.45	1.72	850MHz or 700/850MHz Dual Band - Max Capacity
	507mm / 20"	77mm / 3"	937mm / 37"	1.24	1.25	1.3	1.26	1.5	NOT USED
65°	654mm / 26"	349mm / 14"	959mm / 38"	1.62	1.66	1.69	1.64	1.95	700MHz - Max Capacity
	580mm / 23"	278mm / 11"	885.5mm / 35"	1.43	1.47	1.49	1.45	1.72	850MHz or 700/850MHz Dual Band - Max Capacity
	507mm / 20"	202mm / 8"	812mm / 32"	1.24	1.25	1.3	1.26	1.5	NOT USED
	434mm / 17"	128mm / 5"	738.5mm / 29"	1.06	1.09	1.1	1.07	1.27	NOT USED
	360mm / 14"	55mm / 2"	665mm / 26"	0.87	0.89	0.91	0.88	1.05	Max Coverage - Refer to Site Design Authority



\*\* For the products QS46512-X, use Dimension 461.0mm



**About Quintel**

Quintel is a leading innovator in the design, development, and delivery of network-efficient antenna solutions for wireless operators worldwide. The company's products enable global wireless operators to independently deploy and optimize multiple air interfaces or services on a single standard antenna platform. Quintel is the only antenna maker whose products can increase a wireless network's capacity and provide additional services, without increasing the number or size of antennas. Quintel is headquartered in Rochester, New York with additional offices throughout North America and Europe. More information about Quintel is available at [www.quintelsolutions.com](http://www.quintelsolutions.com).

This document provides a general description of the product and shall not form part of any contract.

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PLANS PREPARED FOR:

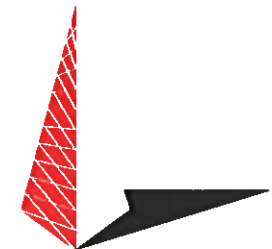


20 ALEXANDER DR, 2ND FLOOR  
WALLINGFORD, CT 06492

PROJECT INFORMATION:

**VZW LOCATION CODE: 467426**  
**VZW SITE NAME: WESTPORT S CT**  
20 POST OFFICE LN  
WESTPORT, CT 06880  
(FAIRFIELD COUNTY)

PLANS PREPARED BY:



**TOWER ENGINEERING PROFESSIONALS**  
326 TRYON ROAD  
RALEIGH, NC 27603-3530  
OFFICE: (919) 661-8351  
[www.tepgroup.net](http://www.tepgroup.net)

SEAL:



January 30, 2020

REV	DATE	ISSUED FOR:
0	01-30-20	CONSTRUCTION
A	11-26-19	PRELIMINARY

DRAWN BY: KLP CHECKED BY: DEL

SHEET TITLE:

**EQUIPMENT DETAILS II**

SHEET NUMBER:	REVISION:
<b>C-6B</b>	0

TEP#: 65218.205893

**PROPOSED DUAL ANTENNA MOUNT DETAIL**

SCALE: N.T.S.