



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)

July 1, 2019

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

**RE: Notice of Exempt Modification // Site: Middlefield CT (ATC: 411260)  
484 Meriden Rd (& Rt 66), Middlefield, CT 06455  
N 41.5355 // W 72.7321**

Dear Ms. Bachman:

Cellco Partnership d/b/a Verizon Wireless currently maintains 12 antennas at the 150-foot mount on the existing 150-foot monopole tower, located at 484 Meriden Rd, Middlefield, CT. The Council approved Verizon Wireless use of the existing tower under Docket 223 in 2002. The property is owned by Land Management Inc. The tower is owned by American Tower. Verizon Wireless now intends to remove 6 of its existing antennas to replace with 3 and install them on side-by-side mounts for the LTE (700/850/1900/2100 MHz) replacements for its PCS/AWS/LTE upgrade. Additionally, Verizon Wireless will install 6 remote radio head units (RRUs), 1 over-voltage protector (OVP) and remove and upgrade certain cabling; altogether updating leased equipment rights, as reflected by the final configuration outlined in the structural analysis and proposed hereby.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Edward P. Bailey, First Selectman for the Town of Middlefield, its Zoning Enforcement Officer, Jerry Russ, American Tower, the tower owner, and to the ground owner Land Management Inc.

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 June 27, 2019 and a structural analysis dated June 17, 2019 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 analyses by A.T. Engineering Service, PLLC, dated June 27, 2018.

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

Sincerely,



---

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Attachments

cc: Edward P. Bailey, First Selectman - as chief elected official  
Jerry Russ, Zoning Enforcement Officer - as P&Z official  
American Tower Corporation - as tower owner  
Land Management Inc - as property owner

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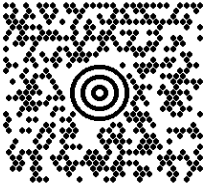

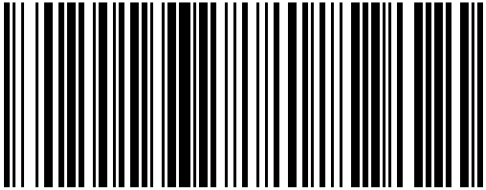

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DWT: 14,11,1		
<b>SHIP TO:</b> TOWN OF MIDDLEFIELD 860-349-7114 EDWARD P. BAILEY, FIRST SELECTMAN P.O. BOX 179 <b>MIDDLEFIELD CT 06455-0151</b>		
	<b>CT 061 9-01</b> 	
<b>UPS GROUND</b> TRACKING #: 1Z 9Y4 503 03 2809 2363		
		
BILLING: P/P		
Reference # 1: 411260 aka Middlefield CT Reference # 2: CSC EM - CEO	CS 21.1.23. WNTNV50 12.0A 04/2019	

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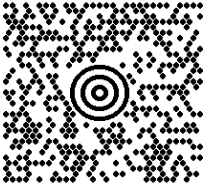

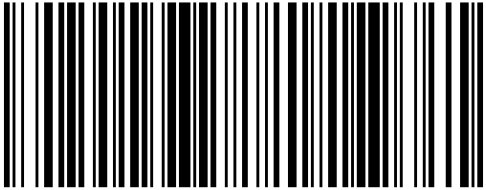

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DWT: 14,11,1		
<b>SHIP TO:</b> JERRY RUSS, ZONING ENFORCEMENT OFCR TOWN OF MIDDLEFIELD LAND USE OFFICE COMMUNITY CENTER 405 MAIN STREET <b>MIDDLEFIELD CT 06455-1268</b>		
	<b>CT 061 9-01</b> 	
<b>UPS GROUND</b> TRACKING #: 1Z 9Y4 503 03 2817 9976		
		
BILLING: P/P		
Reference # 1: 411260 aka Middlefield CT Reference # 2: CSC EM - P&Z	CS 21.1.23. WNTNV50 12.0A 04/2019	

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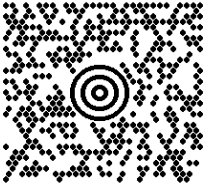

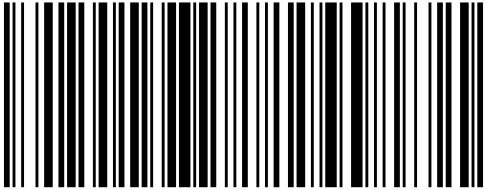

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DWT: 14,11,1		
<b>SHIP TO:</b> PROJECT MANAGER, SITE DEVELOPMENT AMERICAN TOWER CORP - KARLA HANNA 10 PRESIDENTIAL WAY <b>WOBURN MA 01801-1053</b>		
	<b>MA 018 9-04</b> 	
<b>UPS GROUND</b> TRACKING #: 1Z 9Y4 503 03 2195 8637		
		
BILLING: P/P		
Reference # 1: 411260 aka Middlefield CT Reference # 2: 311014 aka Norwich West CT		
<small>CS 21.1.23. WNTINV50 12.0A 04/2019</small>		

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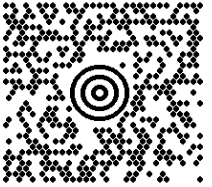
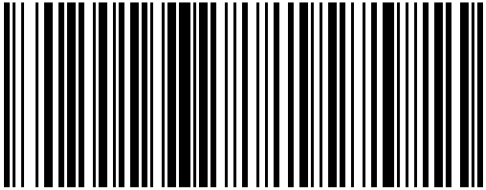
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<b>SHIP TO:</b> LAND MANAGEMENT INC 482 MERIDEN RD <b>MIDDLEFIELD CT 06455-3003</b>		
	<b>CT 061 9-01</b> 	
<b>UPS GROUND</b> TRACKING #: 1Z 9Y4 503 03 2216 0586		
		
BILLING: P/P		
Reference # 1: 411260 aka Middlefield CT Reference # 2: CSC EM - PO	CS 21.1.23. WNTNV50 12.0A 04/2019	 <b>TM</b>



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CORPORATION

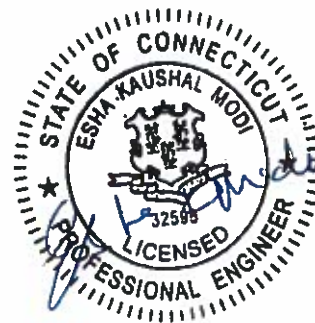
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## Structural Analysis Report

**Structure** : 150 ft Monopole  
**ATC Site Name** : Middlefield CT, CT  
**ATC Site Number** : 411260  
**Engineering Number** : 12913130\_C3\_01  
**Proposed Carrier** : Verizon Wireless  
**Carrier Site Name** : Middlefield CT  
**Carrier Site Number** : 2173631  
**Site Location** : 484 Meriden Rd.  
Middlefield, CT 06455-1013  
41.535500,-72.732100  
**County** : Middlesex  
**Date** : June 17, 2019  
**Max Usage** : 56%  
**Result** : Pass

Prepared By:  
Travis J. Gatling  
Structural Engineer II

Reviewed By:



Authorized by "EOR"  
Jun 18 2019 10:37 AM

COA: PEC.0001553



**Table of Contents**

Introduction .....	1
Supporting Documents .....	1
Analysis .....	1
Conclusion.....	1
Existing and Reserved Equipment.....	2
Equipment to be Removed.....	2
Proposed Equipment .....	2
Structure Usages .....	3
Foundations .....	3
Deflection, Twist, and Sway.....	3
Standard Conditions .....	4
Calculations .....	Attached





## Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 150 ft monopole to reflect the change in loading by Verizon Wireless.

## Supporting Documents

<b>Tower Drawings</b>	EI Project #11121, dated September 17, 2002
<b>Foundation Drawing</b>	EI Project #11121, dated September 19, 2002
<b>Geotechnical Report</b>	Clarence Welti Project #Tower at Guidas Drive-In, dated September 12, 2002

## 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>	97 mph (3-Second Gust $V_{ASD}$ ) / 125 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>	B
<b>Topographic Category:</b>	1
<b>Crest Height:</b>	0 ft
<b>Spectral Response:</b>	$S_s = 0.18, S_1 = 0.06$
<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
150.0	2	Commscope NHH-65B-R2B	Low Profile Platform	(6) 1 5/8" Coax	VERIZON WIRELESS
	1	RFS DB-C1-12C-24AB-OZ			
	3	Samsung B2/B66A RRH-BR049			
	3	Samsung B5/B13 RRH-BR04C			
	6	Antel LPA-80063/6CF			
	4	Commscope NHH-45B-R2B			
140.0	3	Ericsson AIR32 B66Aa/B2a	T-Arms	(3) 1 5/8" (1.63"-41.3mm) Fiber (6) 1 5/8" Coax	T-MOBILE
	3	Ericsson AIR 21, 1.3 M, B2A B4P			
	3	Ericsson Radio 4449 B12,B71			
	3	Ericsson KRY 112 144/1			
	3	RFS APXVAARR24_43-U-NA20			
138.0	3	Generic 6.7" x 10.7" TTA			
130.0	6	Powerwave Allgon LGP 21902	Low Profile Platform	(1) 0.39" (10mm) Fiber Trunk (2) 0.78" (19.7mm) 8 AWG 6 (12) 1 5/8" Hybriflex (1) 3" conduit	AT&T MOBILITY
	6	Powerwave Allgon LGP21401			
	1	Raycap DC6-48-60-18-8F			
	3	Spinner Bias-T			
	6	Ericsson RRUS-11 (50 lbs.)			
	3	KMW AM-X-CD-16-65-00T-RET			
	6	Powerwave Allgon 7770.00 (27 lbs)			
115.0	2	Ericsson RRUS 4415 B30	Stand-Offs	(1) 1.39" (35.3mm) Hybrid	DISH NETWORK CORPORATION
	3	Ericsson Radio 0208			
	3	Comba OD12-065R18K-GQ			

**Equipment to be Removed**

Elev. <sup>1</sup> (ft)	Qty	Antenna	Mount Type	Lines	Carrier
150.0	-	-	-	(1) 1 5/8" (1.63"-41.3mm) Fiber	VERIZON WIRELESS

**Proposed Equipment**

Elev. <sup>1</sup> (ft)	Qty	Antenna	Mount Type	Lines	Carrier
150.0	-	-	-	(1) 2.02 (51.2mm) Hybrid	VERIZON WIRELESS
90.0	1	Generic GPS	Stand-Off	(1) 1 5/8" Coax	

<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	44%	Pass
Shaft	56%	Pass
Base Plate	54%	Pass

**Foundations**

Reaction Component	Original Design Reactions	Factored Design Reactions*	Analysis Reactions	% of Design
Moment (Kips-Ft)	3,405.8	4,597.8	2,481.1	54%
Shear (Kips)	31.3	42.2	22.4	53%

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

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

**Deflection and Sway\***

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
90.0	Generic GPS	VERIZON WIRELESS	0.426	0.567

\*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.

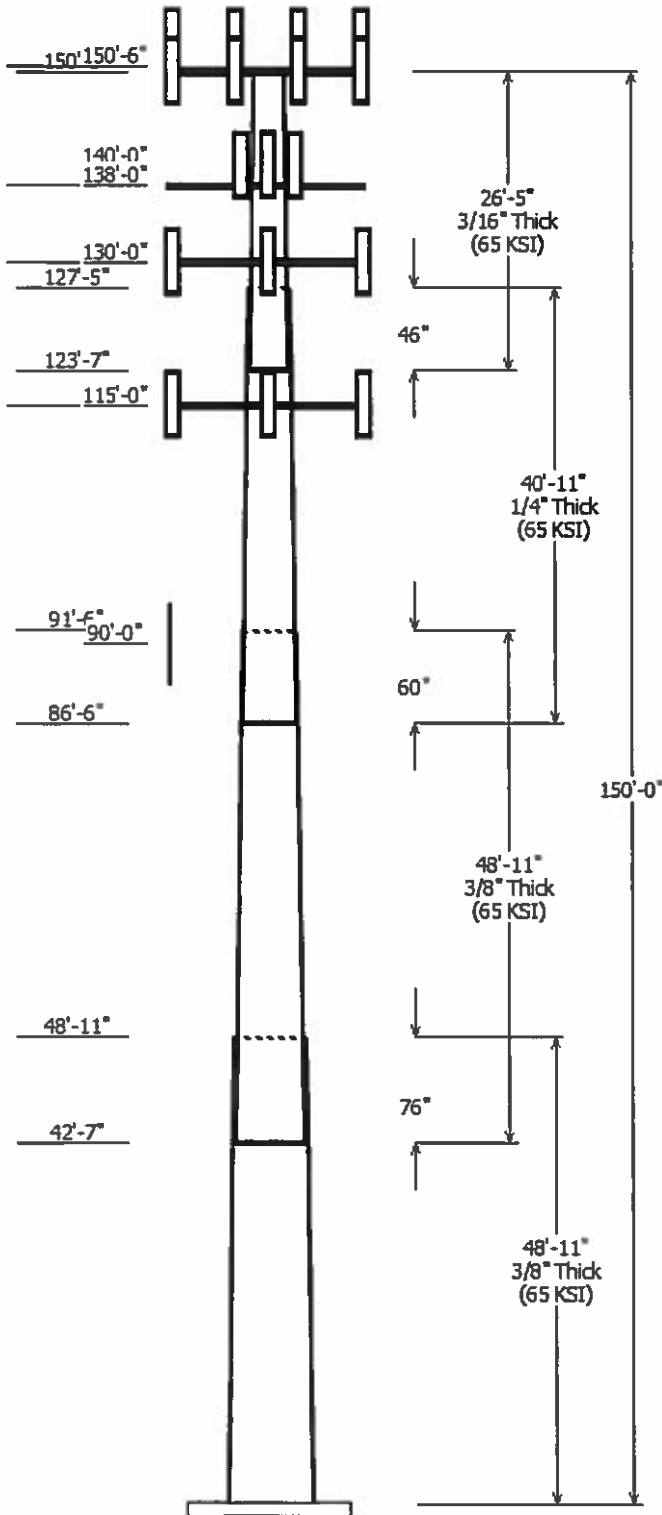
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Job Information	
Client : VERIZON WIRELESS	Code: ANSI/TIA-222-G
Pole : 411260	
Location : MIDDLEFIELD CT, CT	
Description :	Struct Class : II
Shape : 18 Sides	Exposure : B
Height : 150.00 (ft)	Topo : 1
Base Elev (ft): 0.00	
Taper: 0.257477(in/ft)	

Sections Properties							
Shaft Section	Length (ft)	Diameter (in)		Thick Joint (in)	Type	Overlap Length (in)	Steel Grade
		Accross Flats Top	Bottom				
1	48.917	43.90	56.49	0.375		0.000	18 Sides 65
2	48.917	33.68	46.28	0.375	Slip Joint	76.000	18 Sides 65
3	40.917	24.94	35.47	0.250	Slip Joint	60.000	18 Sides 65
4	26.417	19.50	26.30	0.188	Slip Joint	46.000	18 Sides 65

Discrete Appurtenance				
Attach Elev (ft)	Force Elev (ft)	Qty	Description	
150.500	150.500	1	VZW Unused Reserve: 0 sq in	
150.000	150.000	1	Generic Flat Low Profile Platf	
150.000	150.000	4	Commscope NHH-45B-R2B	
150.000	152.000	6	Antel LPA-80063/6CF	
150.000	150.000	2	Commscope NHH-65B-R2B	
150.000	150.000	1	RFS DB-C1-12C-24AB-0Z	
150.000	150.000	3	Samsung B2/B66A RRH-BR049	
150.000	150.000	3	Samsung B5/B13 RRH-BR04C	
140.000	140.000	3	RFS APXVAARR24_43-U-NA20	
140.000	140.000	3	Ericsson AIR32 B66Aa/B2a	
140.000	140.000	3	Ericsson AIR 21, 1.3 M, B2A B4	
140.000	140.000	3	Ericsson Radio 4449 B12,B71	
140.000	140.000	3	Ericsson KRY 112 144/1	
138.000	138.000	3	Generic Round T-Arm	
138.000	138.000	3	Generic 6.7" x 10.7" TTA	
130.000	130.000	1	Generic Round Low Profile	
130.000	130.000	3	KMW AM-X-CD-16-65-00T-RET	
130.000	130.000	6	Powerwave Allgon 7770.00 (27	
130.000	130.000	6	Ericsson RRUS-11 (50 lbs.)	
130.000	130.000	1	Raycap DC6-48-60-18-8F	
130.000	130.000	6	Powerwave Allgon LGP21401	
130.000	130.000	6	Powerwave Allgon LGP 21902	
130.000	130.000	3	Spinner Bias-T	
115.000	115.000	3	Generic Round Stand-Off	
115.000	115.000	3	Comba ODI2-065R18K-GQ	
115.000	115.000	2	Ericsson RRUS 4415 B30	
115.000	115.000	3	Ericsson Radio 0208	
90.000	90.000	1	Generic GPS	

Linear Appurtenance			
Elev (ft) From	To	Description	Exposed To Wind
0.000	90.000	1 5/8" Coax	No
0.000	115.0	1.39" (35.3mm)	No
0.000	130.0	0.39" (10mm)	No
0.000	130.0	0.78" (19.7mm) 8	No
0.000	130.0	1 5/8" Hybriflex	No
0.000	130.0	3" conduit	No
0.000	140.0	1 5/8" (1.63")	No
0.000	140.0	1 5/8" Coax	No

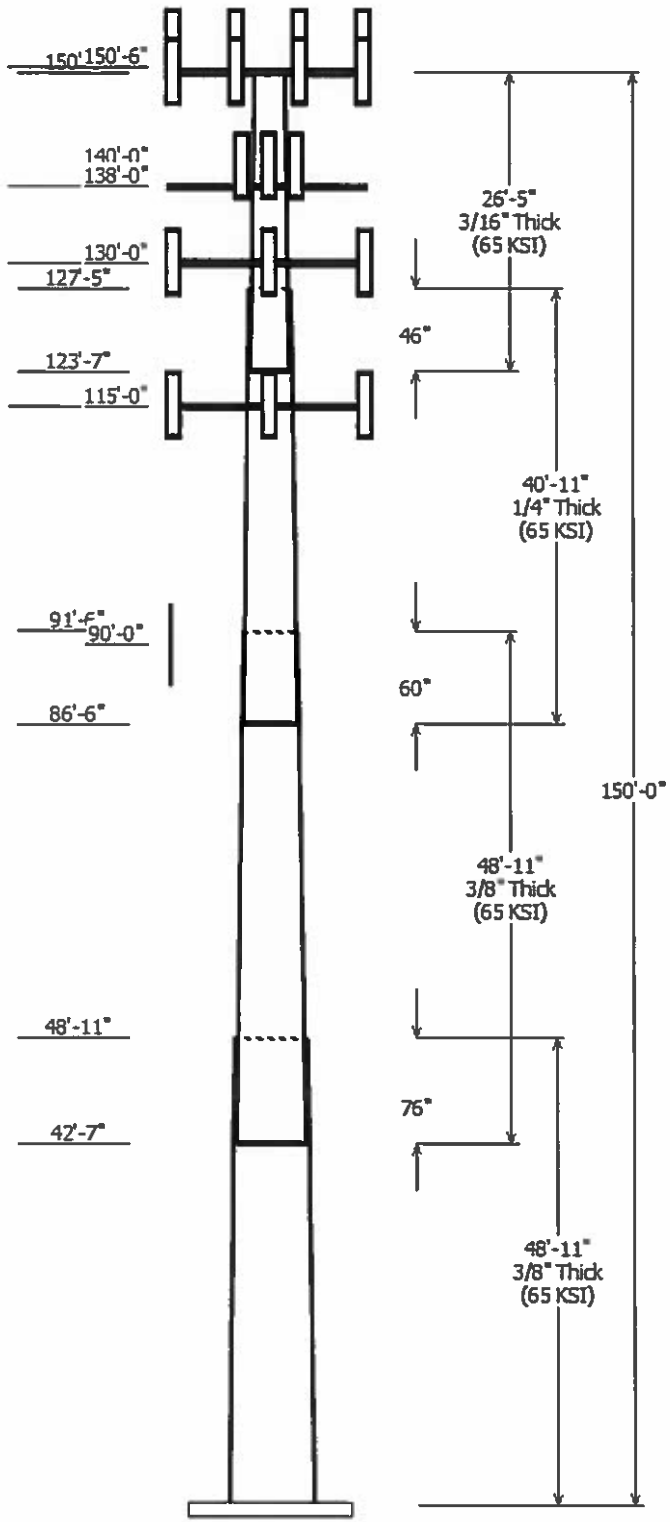


0.000	150.0	1 5/8" Coax	Yes
0.000	150.0	2.02 (51.2mm)	No

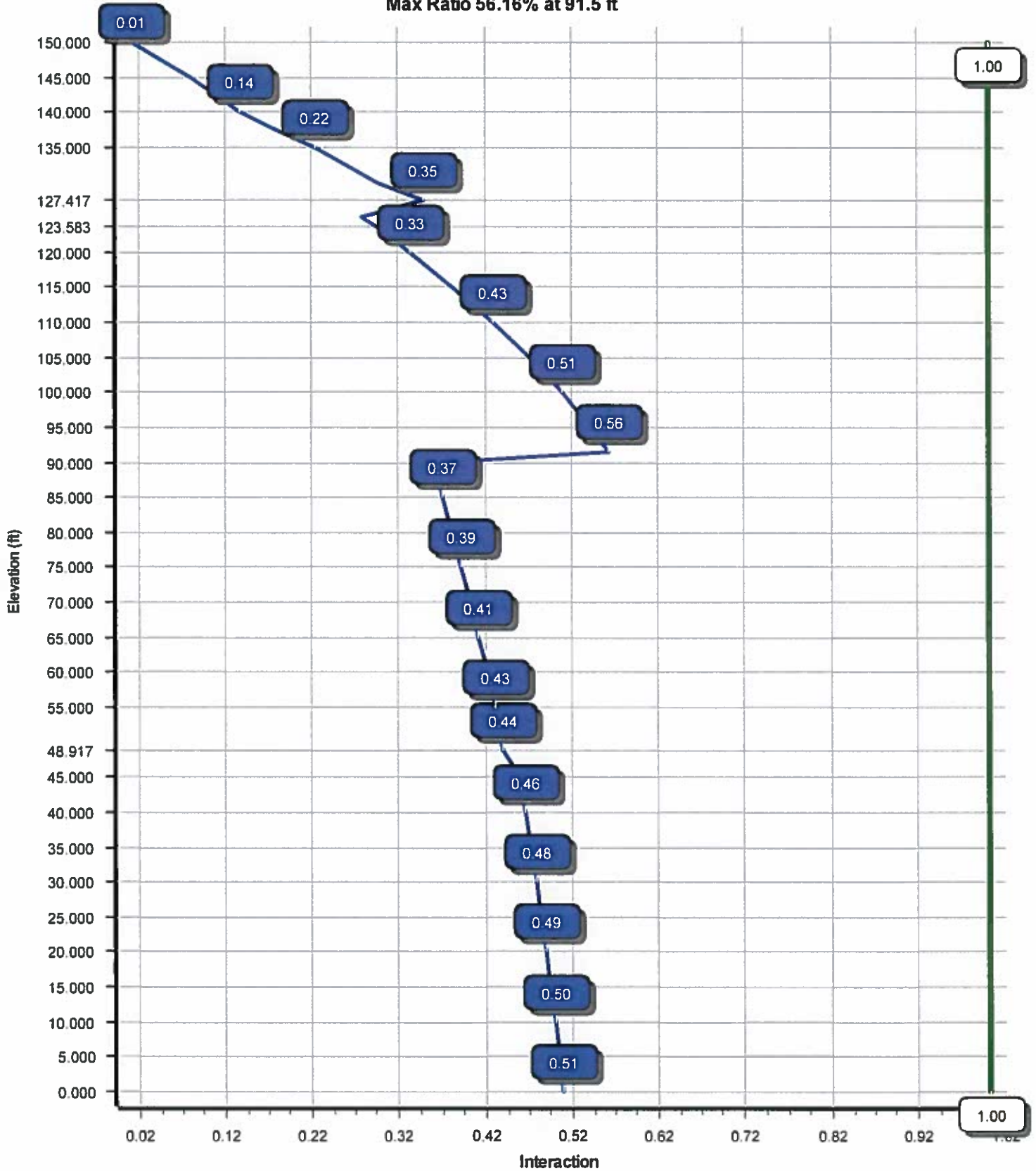
Load Cases	
1.2D + 1.6W	97 mph with No Ice
0.9D + 1.6W	97 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E	Seismic (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	2481.05	22.39	44.13
0.9D + 1.6W	2386.81	21.84	33.09
1.2D + 1.0Di + 1.0Wi	1054.10	11.16	65.24
(1.2 + 0.2Sds) * DL + E ELFM	176.41	1.44	43.90
(1.2 + 0.2Sds) * DL + E EMAM	288.87	2.39	43.90
(0.9 - 0.2Sds) * DL + E ELFM	174.20	1.44	30.55
(0.9 - 0.2Sds) * DL + E EMAM	284.99	2.39	30.54
1.0D + 1.0W	512.80	4.67	36.80

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



Load Case : 1.2D + 1.6W  
Max Ratio 56.16% at 91.5 ft



Site Number: 411260

Code: ANSI/TIA-222-G

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Site Name: MIDDLEFIELD CT, CT

Engineering Number: 12913130\_C3\_01

6/17/2019 2:55:00 PM

Customer: VERIZON WIRELESS

### Analysis Parameters

Location :	Middlesex County, CT	Height (ft) :	150
Code :	ANSI/TIA-222-G	Base Diameter (in) :	56.50
Shape :	18 Sides	Top Diameter (in) :	19.50
Pole Type :	Taper	Taper (in/ft) :	0.257
Pole Manufacturer :	EEL	Rotation (deg) :	0.00

### Ice & Wind Parameters

Structure Class:	II	Design Wind Speed Without Ice:	97 mph
Exposure Category:	B	Design Wind Speed With Ice:	50 mph
Topographic Category:	1	Operational Wind Speed:	60 mph
Crest Height:	0 ft	Design Ice Thickness:	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): 2.22

$T_L$ (sec):	6	$p$ :	1.3	$C_s$ :	0.030
$S_s$ :	0.180	$S_1$ :	0.060	$C_s$ Max:	0.030
$F_s$ :	1.600	$F_v$ :	2.400	$C_s$ Min:	0.030
$S_{ds}$ :	0.192	$S_{d1}$ :	0.096		

### Load Cases

1.2D + 1.6W	97 mph with No Ice
0.9D + 1.6W	97 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice
(1.2 + 0.2S <sub>ds</sub> ) * DL + E ELFM	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2S <sub>ds</sub> ) * DL + E EMAM	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2S <sub>ds</sub> ) * DL + E ELFM	Seismic (Reduced DL) Equivalent Lateral Forces Method
(0.9 - 0.2S <sub>ds</sub> ) * DL + E EMAM	Seismic (Reduced DL) Equivalent Modal Analysis Method
1.0D + 1.0W	Serviceability 60 mph



Site Number: 411260

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Site Name: MIDDLEFIELD CT, CT

Engineering Number:12913130\_C3\_01

6/17/2019 2:55:00 PM

Customer: VERIZON WIRELESS

**Shaft Section Properties**

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Slip		Weight (lb)	Bottom					Top					Taper (in/ft)		
				Joint Type	Joint Len (in)		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
1-18	48.917	0.3750	65		0.00	9,871	56.49	0.00	66.80	26580.7	25.15	150.66	43.90	48.92	51.81	12400.6	19.23	117.07	0.257477
2-18	48.917	0.3750	65	Slip	76.00	7,847	46.28	42.58	54.64	14548.7	20.35	123.42	33.68	91.50	39.65	5559.0	14.43	89.83	0.257477
3-18	40.917	0.2500	65	Slip	60.00	3,310	35.47	86.50	27.95	4381.6	23.61	141.90	24.94	127.42	19.59	1508.8	16.18	99.76	0.257477
4-18	26.417	0.1875	65	Slip	46.00	1,215	26.30	123.58	15.54	1339.0	23.32	140.28	19.50	150.00	11.49	541.6	16.93	104.00	0.257477
Shaft Weight						22,243													

**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	
150.50	VZW Unused Reserve: 0 sq in	1	1.00	0.000	0.00	0.000	1.00	0.00	0.000	1.00	
150.00	Samsung B5/B13 RRH-BR04C	3	0.80	0.000	70.30	1.880	0.50	127.52	2.785	0.50	
150.00	Samsung B2/B66A RRH-BR049	3	0.80	0.000	84.40	1.880	0.50	148.22	2.785	0.50	
150.00	RFS DB-C1-12C-24AB-0Z	1	0.80	0.000	32.00	4.060	0.67	159.14	5.427	0.67	
150.00	Commscope NHH-65B-R2B	2	0.80	0.000	43.70	8.080	0.77	218.12	10.867	0.77	
150.00	Antel LPA-80063/6CF	6	0.80	2.000	27.00	9.590	0.76	314.50	10.950	0.76	
150.00	Commscope NHH-45B-R2B	4	0.80	0.000	73.60	11.400	0.63	302.16	14.189	0.63	
150.00	Generic Flat Low Profile Platform	1	1.00	0.000	1,875.00	26.100	1.00	2,685.16	45.199	1.00	
140.00	Ericsson KRY 112 144/1	3	0.80	0.000	11.00	0.350	0.50	21.70	0.753	0.50	
140.00	Ericsson Radio 4449 B12,B71	3	0.80	0.000	74.00	1.640	0.50	129.68	2.480	0.50	
140.00	Ericsson AIR 21, 1.3 M, B2A B4P	3	0.80	0.000	83.00	6.050	0.71	228.13	8.200	0.71	
140.00	Ericsson AIR32 B66Aa/B2a	3	0.80	0.000	132.20	6.510	0.71	290.92	8.688	0.71	
140.00	RFS APXVAARR24_43-U-NA20	3	0.80	0.000	127.90	20.240	0.63	518.31	23.928	0.63	
138.00	Generic 6.7" x 10.7" TTA	3	1.00	0.000	9.90	0.600	0.50	18.72	1.132	0.50	
138.00	Generic Round T-Arm	3	0.75	0.000	312.50	9.700	0.67	571.83	17.884	0.67	
130.00	Spinner Bias-T	3	0.80	0.000	1.50	0.140	0.50	6.85	0.422	0.50	
130.00	Powerwave Allgon LGP 21902	6	0.80	0.000	5.50	0.230	0.50	13.78	0.564	0.50	
130.00	Powerwave Allgon LGP21401	6	0.80	0.000	14.10	1.100	0.50	38.72	1.802	0.50	
130.00	Raycap DC6-48-60-18-8F	1	0.80	0.000	20.00	1.260	1.00	71.96	1.910	1.00	
130.00	Ericsson RRUS-11 (50 lbs.)	6	0.80	0.000	50.00	2.570	0.67	117.27	3.605	0.67	
130.00	Powerwave Allgon 7770.00 (27	6	0.80	0.000	27.00	5.510	0.65	139.17	7.609	0.65	
130.00	KMW AM-X-CD-16-65-00T-RET	3	0.80	0.000	48.50	8.020	0.67	208.31	10.771	0.67	
130.00	Generic Round Low Profile	1	1.00	0.000	1,875.00	21.700	1.00	2,674.20	40.646	1.00	
115.00	Ericsson Radio 0208	3	0.80	0.000	19.80	1.400	0.50	50.47	2.162	0.50	
115.00	Ericsson RRUS 4415 B30	2	0.80	0.000	46.00	1.840	0.50	93.74	2.712	0.50	
115.00	Comba OD12-065R18K-GQ	3	0.80	0.000	25.10	4.850	0.60	106.75	6.867	0.60	
115.00	Generic Round Stand-Off	3	1.00	0.000	187.50	5.200	0.67	276.53	7.845	0.67	
90.00	Generic GPS	1	1.00	0.000	10.00	0.900	1.00	37.80	1.508	1.00	
Totals	Num Loadings:28				86			8,590.20			19,313.07

**Linear Appurtenance Properties**

Load Case Azimuth (deg) : 0

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)	Dist Azimuth (deg)	Dist From Face (in)	Exposed To Wind Carrier
0.00	150.00	6	1 5/8" Coax	1.98	0.82	N	3	0.00	0.00	270	Y VERIZON WIRELESS
0.00	150.00	1	2.02 (51.2mm) Hybrid	2.02	3.04	N	0	0.00	0.00	0	N VERIZON WIRELESS
0.00	140.00	3	1 5/8" (1.63"-41.3mm)	1.63	1.61	N	0	0.00	0.00	0	N T-MOBILE
0.00	140.00	6	1 5/8" Coax	1.98	0.82	N	0	0.00	0.00	0	N T-MOBILE
0.00	130.00	1	0.39" (10mm) Fiber	0.39	0.06	N	0	0.00	0.00	0	N AT&T MOBILITY
0.00	130.00	2	0.78" (19.7mm) 8 AWG	0.78	0.59	N	0	0.00	0.00	0	N AT&T MOBILITY
0.00	130.00	12	1 5/8" Hybriflex	1.98	1.30	N	0	0.00	0.00	0	N AT&T MOBILITY

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Site Number: 411260

Code: ANSITIA-222-G

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Site Name: MIDDLEFIELD CT, CT

Engineering Number:12913130\_C3\_01

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Customer: VERIZON WIRELESS

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0.00	130.00	1	3" conduit	3.50	7.58	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	115.00	1	1.39" (35.3mm) Hybrid	1.39	1.36	N	0	0.00	0.00	0	0.00	N	DISH NETWORK
0.00	90.00	1	1 5/8" Coax	1.98	0.82	N	0	0.00	0.00	0	0.00	N	VERIZON WIRELESS

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Site Name: MIDDLEFIELD CT, CT

Engineering Number:12913130\_C3\_01

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Customer: VERIZON WIRELESS

**Segment Properties** (Max Len : 5. ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in <sup>2</sup> )	Ix (in <sup>4</sup> )	W/t Ratio	D/t Ratio	F'y (ksi)	S (in <sup>3</sup> )	Z (in <sup>3</sup> )	Weight (lb)
0.00		0.3750	56.497	66.796	26,580.7	25.15	150.66	71.8	926.7	0.0	0.0
5.00		0.3750	55.209	65.264	24,793.1	24.55	147.22	72.5	884.5	0.0	1,123.4
10.00		0.3750	53.922	63.732	23,087.5	23.94	143.79	73.2	843.3	0.0	1,097.4
15.00		0.3750	52.634	62.200	21,462.0	23.34	140.36	74.0	803.1	0.0	1,071.3
20.00		0.3750	51.347	60.667	19,914.6	22.73	136.93	74.7	763.9	0.0	1,045.2
25.00		0.3750	50.060	59.135	18,443.5	22.13	133.49	75.4	725.7	0.0	1,019.2
30.00		0.3750	48.772	57.603	17,046.6	21.52	130.06	76.1	688.4	0.0	993.1
35.00		0.3750	47.485	56.071	15,722.2	20.92	126.63	76.8	652.1	0.0	967.0
40.00		0.3750	46.198	54.538	14,468.1	20.31	123.19	77.5	616.8	0.0	940.9
42.58	Bot - Section 2	0.3750	45.532	53.747	13,847.2	20.00	121.42	77.9	599.0	0.0	475.9
45.00		0.3750	44.910	53.006	13,282.6	19.71	119.76	78.2	582.5	0.0	885.2
48.92	Top - Section 1	0.3750	44.652	52.698	13,052.7	19.58	119.07	78.4	575.8	0.0	1,408.8
50.00		0.3750	44.373	52.366	12,807.6	19.45	118.33	78.5	568.5	0.0	193.7
55.00		0.3750	43.085	50.834	11,715.9	18.85	114.89	79.2	535.6	0.0	877.9
60.00		0.3750	41.798	49.302	10,688.1	18.24	111.46	79.9	503.6	0.0	851.9
65.00		0.3750	40.511	47.770	9,722.2	17.64	108.03	80.7	472.7	0.0	825.8
70.00		0.3750	39.223	46.237	8,816.3	17.03	104.60	81.4	442.7	0.0	799.7
75.00		0.3750	37.936	44.705	7,968.6	16.43	101.16	82.1	413.7	0.0	773.6
80.00		0.3750	36.648	43.173	7,177.0	15.82	97.73	82.6	385.7	0.0	747.6
85.00		0.3750	35.361	41.641	6,439.6	15.22	94.30	82.6	358.7	0.0	721.5
86.50	Bot - Section 3	0.3750	34.975	41.181	6,228.7	15.03	93.27	82.6	350.8	0.0	211.4
90.00		0.3750	34.074	40.108	5,754.6	14.61	90.86	82.6	332.6	0.0	812.7
91.50	Top - Section 2	0.2500	34.187	26.928	3,918.5	22.70	136.75	74.7	225.8	0.0	341.8
95.00		0.2500	33.286	26.213	3,614.6	22.07	133.15	75.4	213.9	0.0	316.5
100.0		0.2500	31.999	25.192	3,208.3	21.16	128.00	76.5	197.5	0.0	437.3
105.0		0.2500	30.711	24.170	2,833.6	20.25	122.85	77.6	181.7	0.0	419.9
110.0		0.2500	29.424	23.149	2,489.3	19.34	117.70	78.7	166.6	0.0	402.5
115.0		0.2500	28.137	22.127	2,174.1	18.43	112.55	79.7	152.2	0.0	385.2
120.0		0.2500	26.849	21.106	1,886.7	17.53	107.40	80.8	138.4	0.0	367.8
123.5	Bot - Section 4	0.2500	25.927	20.374	1,697.1	16.88	103.71	81.6	128.9	0.0	252.9
125.0		0.2500	25.562	20.084	1,625.8	16.62	102.25	81.9	125.3	0.0	171.9
127.4	Top - Section 3	0.1875	25.315	14.953	1,192.8	22.40	135.01	75.1	92.8	0.0	287.6
130.0		0.1875	24.650	14.557	1,100.6	21.77	131.46	75.8	87.9	0.0	129.7
135.0		0.1875	23.362	13.791	935.8	20.56	124.60	77.2	78.9	0.0	241.2
138.0		0.1875	22.590	13.332	845.3	19.83	120.48	78.1	73.7	0.0	138.4
140.0		0.1875	22.075	13.025	788.4	19.35	117.73	78.6	70.3	0.0	89.7
145.0		0.1875	20.787	12.259	657.3	18.14	110.87	80.1	62.3	0.0	215.1
150.0		0.1875	19.500	11.493	541.6	16.93	104.00	81.5	54.7	0.0	202.1
22,242.6											

Site Number: 411260

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Site Name: MIDDLEFIELD CT, CT

Engineering Number:12913130\_C3\_01

6/17/2019 2:55:00 PM

Customer: VERIZON WIRELESS

<b>Load Case: 1.2D + 1.6W</b>	<b>97 mph with No Ice</b>	<b>23 Iterations</b>
<b>Gust Response Factor :1.10</b>		<b>Wind Importance Factor 1.00</b>
<b>Dead Load Factor :1.20</b>		
<b>Wind Load Factor :1.60</b>		

**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		216.5	0.0					0.0	0.0	216.5	0.0	0.0	0.0
5.00		428.0	1,348.1					0.0	265.9	428.0	1,614.0	0.0	0.0
10.00		418.1	1,316.8					0.0	265.9	418.1	1,582.7	0.0	0.0
15.00		408.1	1,285.5					0.0	265.9	408.1	1,551.4	0.0	0.0
20.00		398.1	1,254.3					0.0	265.9	398.1	1,520.1	0.0	0.0
25.00		388.1	1,223.0					0.0	265.9	388.1	1,488.8	0.0	0.0
30.00		382.6	1,191.7					0.0	265.9	382.6	1,457.6	0.0	0.0
35.00		384.7	1,160.4					0.0	265.9	384.7	1,426.3	0.0	0.0
40.00		294.4	1,129.1					0.0	265.9	294.4	1,395.0	0.0	0.0
42.58	Bot - Section 2	196.8	571.1					0.0	137.4	196.8	708.5	0.0	0.0
45.00		252.0	1,062.2					0.0	128.5	252.0	1,190.7	0.0	0.0
48.92	Top - Section 1	199.1	1,690.5					0.0	208.3	199.1	1,898.8	0.0	0.0
50.00		242.2	232.4					0.0	57.6	242.2	290.0	0.0	0.0
55.00		397.4	1,053.5					0.0	265.9	397.4	1,319.4	0.0	0.0
60.00		395.2	1,022.2					0.0	265.9	395.2	1,288.1	0.0	0.0
65.00		391.9	990.9					0.0	265.9	391.9	1,256.8	0.0	0.0
70.00		388.2	959.7					0.0	265.9	388.2	1,225.5	0.0	0.0
75.00		385.6	928.4					0.0	265.9	385.6	1,194.2	0.0	0.0
80.00		383.5	897.1					0.0	265.9	383.5	1,162.9	0.0	0.0
85.00		248.2	865.8					0.0	265.9	248.2	1,131.7	0.0	0.0
86.50	Bot - Section 3	191.6	253.6					0.0	79.8	191.6	333.4	0.0	0.0
90.00	Appurtenance(s)	191.9	975.2	34.8	0.0	0.0	12.0	0.0	186.1	226.6	1,173.3	0.0	0.0
91.50	Top - Section 2	190.0	410.1					0.0	78.3	190.0	488.4	0.0	0.0
95.00		320.3	379.7					0.0	182.7	320.3	562.4	0.0	0.0
100.00		373.2	524.8					0.0	260.9	373.2	785.7	0.0	0.0
105.00		368.4	503.9					0.0	260.9	368.4	764.8	0.0	0.0
110.00		363.2	483.0					0.0	260.9	363.2	744.0	0.0	0.0
115.00	Appurtenance(s)	357.6	462.2	852.8	0.0	0.0	947.0	0.0	260.9	1,210.4	1,670.2	0.0	0.0
120.00		302.5	441.3					0.0	252.8	302.5	694.1	0.0	0.0
123.58	Bot - Section 4	174.9	303.5					0.0	181.2	174.9	484.6	0.0	0.0
125.00		134.0	206.3					0.0	71.6	134.0	277.9	0.0	0.0
127.42	Top - Section 3	173.0	345.1					0.0	122.2	173.0	467.3	0.0	0.0
130.00	Appurtenance(s)	257.7	155.6	2,763.5	0.0	0.0	3,149.5	0.0	130.6	3,021.2	3,435.8	0.0	0.0
135.00		268.8	289.4					0.0	106.3	268.8	395.7	0.0	0.0
138.00	Appurtenance(s)	165.4	166.1	677.3	0.0	0.0	1,160.6	0.0	63.8	842.8	1,390.5	0.0	0.0
140.00	Appurtenance(s)	227.4	107.6	2,383.3	0.0	0.0	1,541.2	0.0	42.5	2,610.7	1,691.3	0.0	0.0
145.00		319.5	258.1					0.0	47.8	319.5	305.9	0.0	0.0
150.00	Appurtenance(s)	157.8	242.5	4,506.4	0.0	3,138.6	3,497.9	0.0	47.8	4,664.2	3,788.1	0.0	0.0
<b>Totals:</b>										<b>22,554.1</b>	<b>44,155.9</b>	<b>0.00</b>	<b>0.00</b>

Site Number: 411260

Code: ANSI/TIA-222-G

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Site Name: MIDDLEFIELD CT, CT

Engineering Number:12913130\_C3\_01

6/17/2019 2:55:04 PM

Customer: VERIZON WIRELESS

Load Case: 1.2D + 1.6W

97 mph with No Ice

23 Iterations

Gust Response Factor :1.10

Wind Importance Factor 1.00

Dead Load Factor :1.20

Wind Load Factor :1.60

Calculated Forces 1

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-44.13	-22.39	0.00	-2,481.05	0.00	2,481.05	4,317.26	2,158.63	9,967.46	4,991.14	0.00	0.00	0.507
5.00	-42.47	-22.06	0.00	-2,369.12	0.00	2,369.12	4,260.05	2,130.02	9,608.26	4,811.27	0.07	-0.13	0.502
10.00	-40.83	-21.73	0.00	-2,258.84	0.00	2,258.84	4,200.87	2,100.44	9,250.82	4,632.29	0.28	-0.26	0.497
15.00	-39.23	-21.41	0.00	-2,150.20	0.00	2,150.20	4,139.73	2,069.86	8,895.48	4,454.35	0.63	-0.40	0.492
20.00	-37.67	-21.09	0.00	-2,043.18	0.00	2,043.18	4,076.62	2,038.31	8,542.54	4,277.62	1.12	-0.54	0.487
25.00	-36.13	-20.77	0.00	-1,937.75	0.00	1,937.75	4,011.55	2,005.78	8,192.33	4,102.25	1.76	-0.68	0.481
30.00	-34.62	-20.46	0.00	-1,833.88	0.00	1,833.88	3,944.52	1,972.26	7,845.14	3,928.40	2.55	-0.82	0.476
35.00	-33.15	-20.14	0.00	-1,731.58	0.00	1,731.58	3,875.52	1,937.76	7,501.31	3,756.23	3.49	-0.97	0.470
40.00	-31.72	-19.89	0.00	-1,630.87	0.00	1,630.87	3,804.56	1,902.28	7,161.13	3,585.89	4.59	-1.13	0.463
42.58	-30.99	-19.72	0.00	-1,579.50	0.00	1,579.50	3,767.13	1,883.56	6,986.91	3,498.65	5.22	-1.21	0.460
45.00	-29.77	-19.49	0.00	-1,531.85	0.00	1,531.85	3,731.63	1,865.82	6,824.93	3,417.54	5.86	-1.28	0.456
48.92	-27.85	-19.29	0.00	-1,455.51	0.00	1,455.51	3,716.76	1,858.38	6,757.94	3,383.99	6.96	-1.41	0.438
50.00	-27.53	-19.08	0.00	-1,434.62	0.00	1,434.62	3,700.61	1,850.31	6,685.84	3,347.89	7.29	-1.45	0.436
55.00	-26.17	-18.72	0.00	-1,339.20	0.00	1,339.20	3,624.90	1,812.45	6,355.82	3,182.63	8.88	-1.60	0.428
60.00	-24.85	-18.36	0.00	-1,245.59	0.00	1,245.59	3,547.23	1,773.62	6,030.53	3,019.74	10.64	-1.76	0.420
65.00	-23.55	-17.99	0.00	-1,153.79	0.00	1,153.79	3,467.60	1,733.80	5,710.28	2,859.38	12.57	-1.92	0.410
70.00	-22.29	-17.63	0.00	-1,063.83	0.00	1,063.83	3,386.00	1,693.00	5,395.40	2,701.71	14.66	-2.08	0.400
75.00	-21.06	-17.26	0.00	-975.70	0.00	975.70	3,302.44	1,651.22	5,086.20	2,546.88	16.93	-2.24	0.390
80.00	-19.87	-16.88	0.00	-889.42	0.00	889.42	3,207.53	1,603.77	4,769.04	2,388.06	19.37	-2.41	0.379
85.00	-18.72	-16.62	0.00	-805.00	0.00	805.00	3,093.69	1,546.85	4,434.86	2,220.73	21.98	-2.58	0.369
86.50	-18.37	-16.44	0.00	-780.07	0.00	780.07	3,059.54	1,529.77	4,336.97	2,171.71	22.80	-2.63	0.365
90.00	-17.18	-16.19	0.00	-722.51	0.00	722.51	2,979.85	1,489.93	4,112.82	2,059.47	24.77	-2.75	0.357
91.50	-16.68	-16.00	0.00	-698.23	0.00	698.23	1,810.37	905.19	2,525.79	1,264.77	25.64	-2.80	0.562
95.00	-16.08	-15.70	0.00	-642.23	0.00	642.23	1,779.94	889.97	2,416.91	1,210.25	27.74	-2.92	0.540
100.00	-15.26	-15.35	0.00	-563.72	0.00	563.72	1,734.79	867.39	2,263.11	1,133.24	30.93	-3.16	0.507
105.00	-14.45	-15.00	0.00	-486.96	0.00	486.96	1,687.67	843.84	2,111.68	1,057.41	34.37	-3.39	0.469
110.00	-13.68	-14.64	0.00	-411.97	0.00	411.97	1,638.60	819.30	1,962.92	982.92	38.04	-3.62	0.428
115.00	-12.04	-13.37	0.00	-338.76	0.00	338.76	1,587.56	793.78	1,817.14	909.92	41.95	-3.83	0.380
120.00	-11.33	-13.05	0.00	-271.91	0.00	271.91	1,534.56	767.28	1,674.67	838.58	46.07	-4.03	0.332
123.58	-10.84	-12.86	0.00	-225.14	0.00	225.14	1,495.36	747.68	1,574.76	788.55	49.15	-4.17	0.293
125.00	-10.56	-12.72	0.00	-206.92	0.00	206.92	1,479.59	739.79	1,535.81	769.04	50.39	-4.22	0.276
127.42	-10.09	-12.53	0.00	-176.18	0.00	176.18	1,010.15	505.07	1,043.37	522.46	52.55	-4.30	0.348
130.00	-6.87	-9.27	0.00	-143.82	0.00	143.82	993.05	496.52	998.35	499.92	54.89	-4.38	0.295
135.00	-6.48	-8.98	0.00	-97.48	0.00	97.48	958.46	479.23	912.49	456.92	59.56	-4.53	0.220
138.00	-5.15	-8.04	0.00	-70.53	0.00	70.53	936.76	468.38	861.87	431.57	62.44	-4.61	0.169
140.00	-3.67	-5.30	0.00	-54.46	0.00	54.46	921.91	460.95	828.54	414.89	64.38	-4.65	0.135
145.00	-3.39	-4.96	0.00	-27.95	0.00	27.95	883.39	441.70	746.83	373.97	69.29	-4.73	0.079
150.00	0.00	-4.66	0.00	-3.14	0.00	3.14	842.91	421.46	667.67	334.33	74.25	-4.76	0.010

Site Number: 411260

Code: ANSI/TIA-222-G

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Site Name: MIDDLEFIELD CT, CT

Engineering Number:12913130\_C3\_01

6/17/2019 2:55:04 PM

Customer: VERIZON WIRELESS

**Load Case: 0.9D + 1.6W**

**97 mph with No Ice (Reduced DL)**

**23 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		216.5	0.0					0.0	0.0	216.5	0.0	0.0	0.0
5.00		428.0	1,011.1					0.0	199.4	428.0	1,210.5	0.0	0.0
10.00		418.1	987.6					0.0	199.4	418.1	1,187.0	0.0	0.0
15.00		408.1	964.2					0.0	199.4	408.1	1,163.6	0.0	0.0
20.00		398.1	940.7					0.0	199.4	398.1	1,140.1	0.0	0.0
25.00		388.1	917.2					0.0	199.4	388.1	1,116.6	0.0	0.0
30.00		382.6	893.8					0.0	199.4	382.6	1,093.2	0.0	0.0
35.00		384.7	870.3					0.0	199.4	384.7	1,069.7	0.0	0.0
40.00		294.4	846.8					0.0	199.4	294.4	1,046.2	0.0	0.0
42.58	Bot - Section 2	196.8	428.3					0.0	103.0	196.8	531.4	0.0	0.0
45.00		252.0	796.7					0.0	96.4	252.0	893.1	0.0	0.0
48.92	Top - Section 1	199.1	1,267.9					0.0	156.2	199.1	1,424.1	0.0	0.0
50.00		242.2	174.3					0.0	43.2	242.2	217.5	0.0	0.0
55.00		397.4	790.1					0.0	199.4	397.4	989.5	0.0	0.0
60.00		395.2	766.7					0.0	199.4	395.2	966.1	0.0	0.0
65.00		391.9	743.2					0.0	199.4	391.9	942.6	0.0	0.0
70.00		387.6	719.7					0.0	199.4	387.6	919.1	0.0	0.0
75.00		382.4	696.3					0.0	199.4	382.4	895.7	0.0	0.0
80.00		376.3	672.8					0.0	199.4	376.3	872.2	0.0	0.0
85.00		241.8	649.4					0.0	199.4	241.8	848.7	0.0	0.0
86.50	Bot - Section 3	184.7	190.2					0.0	59.8	184.7	250.1	0.0	0.0
90.00	Appurtenance(s)	184.4	731.4	34.8	0.0	0.0	9.0	0.0	139.6	219.1	880.0	0.0	0.0
91.50	Top - Section 2	181.6	307.6					0.0	58.7	181.6	366.3	0.0	0.0
95.00		304.0	284.8					0.0	137.0	304.0	421.8	0.0	0.0
100.00		350.2	393.6					0.0	195.7	350.2	589.3	0.0	0.0
105.00		340.8	377.9					0.0	195.7	340.8	573.6	0.0	0.0
110.00		330.9	362.3					0.0	195.7	330.9	558.0	0.0	0.0
115.00	Appurtenance(s)	320.5	346.6	852.8	0.0	0.0	710.3	0.0	195.7	1,173.2	1,252.6	0.0	0.0
120.00		267.0	331.0					0.0	189.6	267.0	520.6	0.0	0.0
123.58	Bot - Section 4	152.6	227.6					0.0	135.9	152.6	363.5	0.0	0.0
125.00		115.5	154.7					0.0	53.7	115.5	208.4	0.0	0.0
127.42	Top - Section 3	148.4	258.9					0.0	91.6	148.4	350.5	0.0	0.0
130.00	Appurtenance(s)	218.3	116.7	2,763.5	0.0	0.0	2,362.1	0.0	98.0	2,981.8	2,576.8	0.0	0.0
135.00		224.8	217.0					0.0	79.7	224.8	296.7	0.0	0.0
138.00	Appurtenance(s)	136.2	124.6	677.3	0.0	0.0	870.5	0.0	47.8	813.5	1,042.9	0.0	0.0
140.00	Appurtenance(s)	183.5	80.7	2,383.3	0.0	0.0	1,155.9	0.0	31.9	2,566.8	1,268.5	0.0	0.0
145.00		253.0	193.6					0.0	35.8	253.0	229.4	0.0	0.0
150.00	Appurtenance(s)	123.2	181.9	4,506.4	0.0	3,138.6	2,623.4	0.0	35.8	4,629.6	2,841.1	0.0	0.0
<b>Totals:</b>										<b>22,018.8</b>	<b>33,116.9</b>	<b>0.00</b>	<b>0.00</b>

Site Number: 411260

Code: ANSI/TIA-222-G

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Site Name: MIDDLEFIELD CT, CT

Engineering Number:12913130\_C3\_01

6/17/2019 2:55:07 PM

Customer: VERIZON WIRELESS

Load Case: 0.9D + 1.6W

97 mph with No Ice (Reduced DL)

23 Iterations

Gust Response Factor :1.10

Wind Importance Factor 1.00

Dead Load Factor :0.90

Wind Load Factor :1.60

Calculated Forces 1

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	-33.09	-21.84	0.00	-2,386.81	0.00	2,386.81	4,317.26	2,158.63	9,967.46	4,991.14	0.00	0.00	0.486
5.00	-31.84	-21.48	0.00	-2,277.62	0.00	2,277.62	4,260.05	2,130.02	9,608.26	4,811.27	0.07	-0.12	0.481
10.00	-30.60	-21.13	0.00	-2,170.22	0.00	2,170.22	4,200.87	2,100.44	9,250.82	4,632.29	0.27	-0.25	0.476
15.00	-29.39	-20.78	0.00	-2,064.59	0.00	2,064.59	4,139.73	2,069.86	8,895.48	4,454.35	0.60	-0.38	0.471
20.00	-28.21	-20.44	0.00	-1,960.70	0.00	1,960.70	4,076.62	2,038.31	8,542.54	4,277.62	1.07	-0.52	0.465
25.00	-27.05	-20.10	0.00	-1,858.50	0.00	1,858.50	4,011.55	2,005.78	8,192.33	4,102.25	1.69	-0.65	0.460
30.00	-25.91	-19.77	0.00	-1,757.98	0.00	1,757.98	3,944.52	1,972.26	7,845.14	3,928.40	2.45	-0.79	0.454
35.00	-24.80	-19.43	0.00	-1,659.12	0.00	1,659.12	3,875.52	1,937.76	7,501.31	3,756.23	3.35	-0.93	0.448
40.00	-23.72	-19.17	0.00	-1,561.95	0.00	1,561.95	3,804.56	1,902.28	7,161.13	3,585.89	4.41	-1.08	0.442
42.58	-23.17	-18.99	0.00	-1,512.44	0.00	1,512.44	3,767.13	1,883.56	6,986.91	3,498.65	5.02	-1.16	0.439
45.00	-22.25	-18.76	0.00	-1,466.55	0.00	1,466.55	3,731.63	1,865.82	6,824.93	3,417.54	5.62	-1.23	0.435
48.92	-20.80	-18.55	0.00	-1,393.08	0.00	1,393.08	3,716.76	1,858.38	6,757.94	3,383.99	6.68	-1.35	0.417
50.00	-20.56	-18.34	0.00	-1,372.98	0.00	1,372.98	3,700.61	1,850.31	6,685.84	3,347.89	7.00	-1.39	0.416
55.00	-19.54	-17.97	0.00	-1,281.28	0.00	1,281.28	3,624.90	1,812.45	6,355.82	3,182.63	8.53	-1.53	0.408
60.00	-18.54	-17.60	0.00	-1,191.44	0.00	1,191.44	3,547.23	1,773.62	6,030.53	3,019.74	10.21	-1.68	0.400
65.00	-17.56	-17.22	0.00	-1,103.46	0.00	1,103.46	3,467.60	1,733.80	5,710.28	2,859.38	12.06	-1.84	0.391
70.00	-16.61	-16.85	0.00	-1,017.35	0.00	1,017.35	3,386.00	1,693.00	5,395.40	2,701.71	14.07	-1.99	0.382
75.00	-15.68	-16.48	0.00	-933.11	0.00	933.11	3,302.44	1,651.22	5,086.20	2,546.88	16.24	-2.15	0.371
80.00	-14.78	-16.11	0.00	-850.72	0.00	850.72	3,207.53	1,603.77	4,769.04	2,388.06	18.57	-2.31	0.361
85.00	-13.91	-15.86	0.00	-770.17	0.00	770.17	3,093.69	1,546.85	4,434.86	2,220.73	21.08	-2.47	0.351
86.50	-13.65	-15.68	0.00	-746.39	0.00	746.39	3,059.54	1,529.77	4,336.97	2,171.71	21.86	-2.52	0.348
90.00	-12.76	-15.44	0.00	-691.50	0.00	691.50	2,979.85	1,489.93	4,112.82	2,059.47	23.75	-2.63	0.340
91.50	-12.38	-15.26	0.00	-668.34	0.00	668.34	1,810.37	905.19	2,525.79	1,264.77	24.59	-2.69	0.536
95.00	-11.93	-14.97	0.00	-614.92	0.00	614.92	1,779.94	889.97	2,416.91	1,210.25	26.60	-2.80	0.515
100.00	-11.30	-14.64	0.00	-540.05	0.00	540.05	1,734.79	867.39	2,263.11	1,133.24	29.65	-3.03	0.483
105.00	-10.69	-14.31	0.00	-466.86	0.00	466.86	1,687.67	843.84	2,111.68	1,057.41	32.95	-3.25	0.448
110.00	-10.10	-13.98	0.00	-395.32	0.00	395.32	1,638.60	819.30	1,962.92	982.92	36.47	-3.47	0.409
115.00	-8.88	-12.76	0.00	-325.40	0.00	325.40	1,587.56	793.78	1,817.14	909.92	40.21	-3.67	0.363
120.00	-8.34	-12.49	0.00	-261.58	0.00	261.58	1,534.56	767.28	1,674.67	838.58	44.16	-3.86	0.318
123.58	-7.97	-12.32	0.00	-216.84	0.00	216.84	1,495.36	747.68	1,574.76	788.55	47.11	-3.99	0.281
125.00	-7.76	-12.20	0.00	-199.38	0.00	199.38	1,479.59	739.79	1,535.81	769.04	48.30	-4.04	0.265
127.42	-7.40	-12.04	0.00	-169.90	0.00	169.90	1,010.15	505.07	1,043.37	522.46	50.37	-4.12	0.333
130.00	-5.03	-8.89	0.00	-138.80	0.00	138.80	993.05	496.52	998.35	499.92	52.62	-4.20	0.283
135.00	-4.73	-8.65	0.00	-94.36	0.00	94.36	958.46	479.23	912.49	456.92	57.09	-4.35	0.212
138.00	-3.75	-7.76	0.00	-68.41	0.00	68.41	936.76	468.38	861.87	431.57	59.85	-4.42	0.163
140.00	-2.68	-5.11	0.00	-52.88	0.00	52.88	921.91	460.95	828.54	414.89	61.71	-4.46	0.130
145.00	-2.46	-4.84	0.00	-27.34	0.00	27.34	883.39	441.70	746.83	373.97	66.42	-4.53	0.076
150.00	0.00	-4.63	0.00	-3.14	0.00	3.14	842.91	421.46	667.67	334.33	71.19	-4.57	0.010

Site Number: 411260

Code: ANSI/TIA-222-G

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Site Name: MIDDLEFIELD CT, CT

Engineering Number:12913130\_C3\_01

6/17/2019 2:55:07 PM

Customer: VERIZON WIRELESS

<b>Load Case:</b> 1.2D + 1.0Di + 1.0Wi	<b>50 mph with 0.75 in Radial Ice</b>	<b>23 Iterations</b>
<b>Gust Response Factor</b> :1.10	<b>Ice Dead Load Factor</b> :1.00	<b>Wind Importance Factor</b> :1.00
<b>Dead Load Factor</b> :1.20		<b>Ice Importance Factor</b> :1.00
<b>Wind Load Factor</b> :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		69.1	0.0					0.0	0.0	69.1	0.0	0.0	0.0
5.00		137.0	1,757.3					184.3	312.1	321.3	2,069.5	0.0	0.0
10.00		134.4	1,764.2					181.3	317.0	315.7	2,081.3	0.0	0.0
15.00		131.6	1,746.0					177.8	319.6	309.4	2,065.5	0.0	0.0
20.00		128.7	1,719.5					174.3	321.3	303.0	2,040.8	0.0	0.0
25.00		125.8	1,688.7					170.7	322.7	296.5	2,011.4	0.0	0.0
30.00		124.3	1,655.3					167.0	323.8	291.4	1,979.1	0.0	0.0
35.00		125.3	1,619.9					167.3	324.8	292.6	1,944.7	0.0	0.0
40.00		96.1	1,583.2					170.3	325.6	266.4	1,908.8	0.0	0.0
42.58	Bot - Section 2	64.3	804.8					88.9	168.5	153.2	973.3	0.0	0.0
45.00		82.5	1,282.8					83.5	157.8	166.0	1,440.6	0.0	0.0
48.92	Top - Section 1	65.2	2,042.8					136.0	256.1	201.2	2,298.9	0.0	0.0
50.00		79.5	329.7					38.3	70.9	117.8	400.7	0.0	0.0
55.00		130.6	1,493.0					177.0	327.6	307.6	1,820.6	0.0	0.0
60.00		130.3	1,453.1					177.1	328.2	307.4	1,781.3	0.0	0.0
65.00		129.5	1,412.6					176.8	328.7	306.3	1,741.3	0.0	0.0
70.00		128.5	1,371.7					176.0	329.2	304.5	1,700.9	0.0	0.0
75.00		127.1	1,330.4					174.8	329.7	301.9	1,660.1	0.0	0.0
80.00		125.5	1,288.8					173.2	330.1	298.7	1,618.8	0.0	0.0
85.00		80.8	1,246.8					171.3	330.5	252.1	1,577.3	0.0	0.0
86.50	Bot - Section 3	61.9	367.2					51.0	99.2	112.9	466.4	0.0	0.0
90.00	Appurtenance(s)	61.8	1,238.1	9.7	0.0	0.0	31.3	118.1	231.7	189.6	1,501.0	0.0	0.0
91.50	Top - Section 2	61.0	521.9					50.2	97.9	111.3	619.8	0.0	0.0
95.00		102.5	634.7					117.8	228.5	220.2	863.2	0.0	0.0
100.00		118.4	877.2					165.9	326.7	284.3	1,203.9	0.0	0.0
105.00		115.8	844.7					162.9	327.0	278.7	1,171.7	0.0	0.0
110.00		112.9	811.9					159.7	327.3	272.6	1,139.2	0.0	0.0
115.00	Appurtenance(s)	109.9	778.9	209.3	0.0	0.0	1,406.6	156.3	327.6	475.4	2,513.1	0.0	0.0
120.00		92.0	745.8					152.6	319.8	244.7	1,065.6	0.0	0.0
123.58	Bot - Section 4	52.8	515.4					107.0	229.3	159.8	744.8	0.0	0.0
125.00		40.1	290.3					41.8	90.7	81.8	381.0	0.0	0.0
127.42	Top - Section 3	51.6	485.4					70.5	154.8	122.1	640.2	0.0	0.0
130.00	Appurtenance(s)	76.3	302.2	719.6	0.0	0.0	4,861.2	75.2	165.5	871.0	5,329.0	0.0	0.0
135.00		78.8	560.1					142.3	174.1	221.1	734.2	0.0	0.0
138.00	Appurtenance(s)	48.0	324.0	207.7	0.0	0.0	1,764.0	83.3	104.6	339.0	2,192.6	0.0	0.0
140.00	Appurtenance(s)	65.1	210.9	500.9	0.0	0.0	3,164.7	54.6	69.8	620.6	3,445.3	0.0	0.0
145.00		90.3	502.9					133.4	116.1	223.8	619.0	0.0	0.0
150.00	Appurtenance(s)	44.2	474.1	1,015.8	0.0	595.1	6,908.1	128.8	116.3	1,188.8	7,498.5	0.0	0.0
<b>Totals:</b>										<b>11,199.5</b>	<b>65,243.2</b>	<b>0.00</b>	<b>0.00</b>



Site Number: 411260

Code: ANSI/TIA-222-G

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Site Name: MIDDLEFIELD CT, CT

Engineering Number:12913130\_C3\_01

6/17/2019 2:55:10 PM

Customer: VERIZON WIRELESS

**Load Case: 1.2D + 1.0Di + 1.0Wi**

**50 mph with 0.75 in Radial Ice**

**23 Iterations**

Gust Response Factor :1.10

Ice Dead Load Factor :1.00

Wind Importance Factor :1.00

Dead Load Factor :1.20

Ice Importance Factor :1.00

Wind Load Factor :1.00

**Calculated Forces 1**

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	-65.24	-11.16	0.00	-1,054.10	0.00	1,054.10	4,317.26	2,158.63	9,967.46	4,991.14	0.00	0.00	0.226
5.00	-63.16	-10.90	0.00	-998.29	0.00	998.29	4,260.05	2,130.02	9,608.26	4,811.27	0.03	-0.05	0.222
10.00	-61.07	-10.64	0.00	-943.79	0.00	943.79	4,200.87	2,100.44	9,250.82	4,632.29	0.12	-0.11	0.218
15.00	-58.99	-10.39	0.00	-890.58	0.00	890.58	4,139.73	2,069.86	8,895.48	4,454.35	0.26	-0.17	0.214
20.00	-56.94	-10.13	0.00	-838.65	0.00	838.65	4,076.62	2,038.31	8,542.54	4,277.62	0.47	-0.22	0.210
25.00	-54.92	-9.88	0.00	-787.98	0.00	787.98	4,011.55	2,005.78	8,192.33	4,102.25	0.74	-0.28	0.206
30.00	-52.93	-9.64	0.00	-738.56	0.00	738.56	3,944.52	1,972.26	7,845.14	3,928.40	1.06	-0.34	0.201
35.00	-50.98	-9.39	0.00	-690.38	0.00	690.38	3,875.52	1,937.76	7,501.31	3,756.23	1.45	-0.40	0.197
40.00	-49.07	-9.14	0.00	-643.45	0.00	643.45	3,804.56	1,902.28	7,161.13	3,585.89	1.91	-0.46	0.192
42.58	-48.09	-9.01	0.00	-619.83	0.00	619.83	3,767.13	1,883.56	6,986.91	3,498.65	2.17	-0.49	0.190
45.00	-46.65	-8.86	0.00	-598.06	0.00	598.06	3,731.63	1,865.82	6,824.93	3,417.54	2.42	-0.52	0.188
48.92	-44.34	-8.66	0.00	-563.36	0.00	563.36	3,716.76	1,858.38	6,757.94	3,383.99	2.87	-0.57	0.178
50.00	-43.94	-8.57	0.00	-553.97	0.00	553.97	3,700.61	1,850.31	6,685.84	3,347.89	3.00	-0.59	0.177
55.00	-42.11	-8.29	0.00	-511.13	0.00	511.13	3,624.90	1,812.45	6,355.82	3,182.63	3.65	-0.65	0.172
60.00	-40.33	-8.00	0.00	-469.70	0.00	469.70	3,547.23	1,773.62	6,030.53	3,019.74	4.36	-0.70	0.167
65.00	-38.58	-7.71	0.00	-429.70	0.00	429.70	3,467.60	1,733.80	5,710.28	2,859.38	5.13	-0.76	0.161
70.00	-36.88	-7.42	0.00	-391.15	0.00	391.15	3,386.00	1,693.00	5,395.40	2,701.71	5.96	-0.82	0.156
75.00	-35.22	-7.13	0.00	-354.04	0.00	354.04	3,302.44	1,651.22	5,086.20	2,546.88	6.86	-0.89	0.150
80.00	-33.59	-6.84	0.00	-318.38	0.00	318.38	3,207.53	1,603.77	4,769.04	2,388.06	7.82	-0.95	0.144
85.00	-32.02	-6.59	0.00	-284.17	0.00	284.17	3,093.69	1,546.85	4,434.86	2,220.73	8.84	-1.00	0.138
86.50	-31.55	-6.48	0.00	-274.29	0.00	274.29	3,059.54	1,529.77	4,336.97	2,171.71	9.16	-1.02	0.137
90.00	-30.05	-6.28	0.00	-251.61	0.00	251.61	2,979.85	1,489.93	4,112.82	2,059.47	9.93	-1.07	0.132
91.50	-29.43	-6.17	0.00	-242.19	0.00	242.19	1,810.37	905.19	2,525.79	1,264.77	10.26	-1.08	0.208
95.00	-28.56	-5.97	0.00	-220.59	0.00	220.59	1,779.94	889.97	2,416.91	1,210.25	11.07	-1.13	0.198
100.00	-27.36	-5.70	0.00	-190.75	0.00	190.75	1,734.79	867.39	2,263.11	1,133.24	12.30	-1.21	0.184
105.00	-26.18	-5.43	0.00	-162.28	0.00	162.28	1,687.67	843.84	2,111.68	1,057.41	13.60	-1.28	0.169
110.00	-25.05	-5.16	0.00	-135.14	0.00	135.14	1,638.60	819.30	1,962.92	982.92	14.99	-1.36	0.153
115.00	-22.54	-4.65	0.00	-109.35	0.00	109.35	1,587.56	793.78	1,817.14	909.92	16.45	-1.43	0.134
120.00	-21.48	-4.40	0.00	-86.10	0.00	86.10	1,534.56	767.28	1,674.67	838.58	17.98	-1.49	0.117
123.58	-20.73	-4.23	0.00	-70.35	0.00	70.35	1,495.36	747.68	1,574.76	788.55	19.12	-1.53	0.103
125.00	-20.35	-4.14	0.00	-64.36	0.00	64.36	1,479.59	739.79	1,535.81	769.04	19.58	-1.55	0.097
127.42	-19.71	-4.01	0.00	-54.34	0.00	54.34	1,010.15	505.07	1,043.37	522.46	20.37	-1.58	0.124
130.00	-14.41	-3.00	0.00	-43.98	0.00	43.98	993.05	496.52	998.35	499.92	21.23	-1.60	0.103
135.00	-13.68	-2.77	0.00	-28.96	0.00	28.96	958.46	479.23	912.49	456.92	22.93	-1.65	0.078
138.00	-11.50	-2.37	0.00	-20.66	0.00	20.66	936.76	468.38	861.87	431.57	23.97	-1.67	0.060
140.00	-8.07	-1.65	0.00	-15.91	0.00	15.91	921.91	460.95	828.54	414.89	24.68	-1.68	0.047
145.00	-7.46	-1.41	0.00	-7.65	0.00	7.65	883.39	441.70	746.83	373.97	26.45	-1.70	0.029
150.00	0.00	-1.19	0.00	-0.60	0.00	0.60	842.91	421.46	667.67	334.33	28.24	-1.71	0.002

Site Number: 411260

Code: ANSITIA-222-G

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Site Name: MIDDLEFIELD CT, CT

Engineering Number:12913130\_C3\_01

6/17/2019 2:55:11 PM

Customer: VERIZON WIRELESS

<b>Load Case: 1.0D + 1.0W</b>	<b>Serviceability 60 mph</b>	<b>22 Iterations</b>
<b>Gust Response Factor :1.10</b>		<b>Wind Importance Factor 1.00</b>
<b>Dead Load Factor :1.00</b>		
<b>Wind Load Factor :1.00</b>		

**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		46.3	0.0					0.0	0.0	46.3	0.0	0.0	0.0
5.00		91.6	1,123.4					0.0	221.6	91.6	1,345.0	0.0	0.0
10.00		89.4	1,097.4					0.0	221.6	89.4	1,318.9	0.0	0.0
15.00		87.3	1,071.3					0.0	221.6	87.3	1,292.8	0.0	0.0
20.00		85.2	1,045.2					0.0	221.6	85.2	1,266.8	0.0	0.0
25.00		83.0	1,019.2					0.0	221.6	83.0	1,240.7	0.0	0.0
30.00		81.9	993.1					0.0	221.6	81.9	1,214.6	0.0	0.0
35.00		82.3	967.0					0.0	221.6	82.3	1,188.6	0.0	0.0
40.00		63.0	940.9					0.0	221.6	63.0	1,162.5	0.0	0.0
42.58	Bot - Section 2	42.1	475.9					0.0	114.5	42.1	590.4	0.0	0.0
45.00		53.9	885.2					0.0	107.1	53.9	992.3	0.0	0.0
48.92	Top - Section 1	42.6	1,408.8					0.0	173.5	42.6	1,582.3	0.0	0.0
50.00		51.8	193.7					0.0	48.0	51.8	241.7	0.0	0.0
55.00		85.0	877.9					0.0	221.6	85.0	1,099.5	0.0	0.0
60.00		84.6	851.9					0.0	221.6	84.6	1,073.4	0.0	0.0
65.00		83.9	825.8					0.0	221.6	83.9	1,047.3	0.0	0.0
70.00		82.9	799.7					0.0	221.6	82.9	1,021.3	0.0	0.0
75.00		81.8	773.6					0.0	221.6	81.8	995.2	0.0	0.0
80.00		80.5	747.6					0.0	221.6	80.5	969.1	0.0	0.0
85.00		51.7	721.5					0.0	221.6	51.7	943.1	0.0	0.0
86.50	Bot - Section 3	39.5	211.4					0.0	66.5	39.5	277.8	0.0	0.0
90.00	Appurtenance(s)	39.4	812.7	7.4	0.0	0.0	10.0	0.0	155.1	46.9	977.8	0.0	0.0
91.50	Top - Section 2	38.9	341.8					0.0	65.2	38.9	407.0	0.0	0.0
95.00		65.1	316.5					0.0	152.2	65.1	468.7	0.0	0.0
100.00		74.9	437.3					0.0	217.5	74.9	654.8	0.0	0.0
105.00		72.9	419.9					0.0	217.5	72.9	637.4	0.0	0.0
110.00		70.8	402.5					0.0	217.5	70.8	620.0	0.0	0.0
115.00	Appurtenance(s)	68.6	385.2	182.5	0.0	0.0	789.2	0.0	217.5	251.0	1,391.8	0.0	0.0
120.00		57.1	367.8					0.0	210.7	57.1	578.4	0.0	0.0
123.58	Bot - Section 4	32.6	252.9					0.0	151.0	32.6	403.9	0.0	0.0
125.00		24.7	171.9					0.0	59.7	24.7	231.6	0.0	0.0
127.42	Top - Section 3	31.7	287.6					0.0	101.8	31.7	389.4	0.0	0.0
130.00	Appurtenance(s)	46.7	129.7	591.3	0.0	0.0	2,624.6	0.0	108.8	638.0	2,863.1	0.0	0.0
135.00		48.1	241.2					0.0	88.6	48.1	329.7	0.0	0.0
138.00	Appurtenance(s)	29.1	138.4	144.9	0.0	0.0	967.2	0.0	53.1	174.1	1,158.8	0.0	0.0
140.00	Appurtenance(s)	39.3	89.7	509.9	0.0	0.0	1,284.3	0.0	35.4	549.2	1,409.4	0.0	0.0
145.00		54.1	215.1					0.0	39.8	54.1	254.9	0.0	0.0
150.00	Appurtenance(s)	26.4	202.1	964.2	0.0	671.5	2,914.9	0.0	39.8	990.6	3,156.8	0.0	0.0
<b>Totals:</b>										<b>4,711.18</b>	<b>36,796.6</b>	<b>0.00</b>	<b>0.00</b>

Site Number: 411260

Code: ANSITIA-222-G

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Site Name: MIDDLEFIELD CT, CT

Engineering Number:12913130\_C3\_01

6/17/2019 2:55:14 PM

Customer: VERIZON WIRELESS

Load Case: 1.0D + 1.0W

Serviceability 60 mph

22 Iterations

Gust Response Factor :1.10

Wind Importance Factor :1.00

Dead Load Factor :1.00

Wind Load Factor :1.00

Calculated Forces 1

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	-36.80	-4.67	0.00	-512.80	0.00	512.80	4,317.26	2,158.63	9,967.46	4,991.14	0.00	0.00	0.111
5.00	-35.45	-4.60	0.00	-489.44	0.00	489.44	4,260.05	2,130.02	9,608.26	4,811.27	0.01	-0.03	0.110
10.00	-34.13	-4.52	0.00	-466.45	0.00	466.45	4,200.87	2,100.44	9,250.82	4,632.29	0.06	-0.05	0.109
15.00	-32.83	-4.45	0.00	-443.83	0.00	443.83	4,139.73	2,069.86	8,895.48	4,454.35	0.13	-0.08	0.108
20.00	-31.56	-4.38	0.00	-421.57	0.00	421.57	4,076.62	2,038.31	8,542.54	4,277.62	0.23	-0.11	0.106
25.00	-30.32	-4.31	0.00	-399.67	0.00	399.67	4,011.55	2,005.78	8,192.33	4,102.25	0.36	-0.14	0.105
30.00	-29.10	-4.24	0.00	-378.12	0.00	378.12	3,944.52	1,972.26	7,845.14	3,928.40	0.53	-0.17	0.104
35.00	-27.91	-4.17	0.00	-356.92	0.00	356.92	3,875.52	1,937.76	7,501.31	3,756.23	0.72	-0.20	0.102
40.00	-26.75	-4.11	0.00	-336.07	0.00	336.07	3,804.56	1,902.28	7,161.13	3,585.89	0.95	-0.23	0.101
42.58	-26.16	-4.08	0.00	-325.45	0.00	325.45	3,767.13	1,883.56	6,986.91	3,498.65	1.08	-0.25	0.100
45.00	-25.16	-4.03	0.00	-315.60	0.00	315.60	3,731.63	1,865.82	6,824.93	3,417.54	1.21	-0.27	0.099
48.92	-23.58	-3.98	0.00	-299.83	0.00	299.83	3,716.76	1,858.38	6,757.94	3,383.99	1.44	-0.29	0.095
50.00	-23.34	-3.94	0.00	-295.51	0.00	295.51	3,700.61	1,850.31	6,685.84	3,347.89	1.50	-0.30	0.095
55.00	-22.24	-3.86	0.00	-275.82	0.00	275.82	3,624.90	1,812.45	6,355.82	3,182.63	1.83	-0.33	0.093
60.00	-21.16	-3.78	0.00	-256.52	0.00	256.52	3,547.23	1,773.62	6,030.53	3,019.74	2.20	-0.36	0.091
65.00	-20.11	-3.70	0.00	-237.62	0.00	237.62	3,467.60	1,733.80	5,710.28	2,859.38	2.59	-0.40	0.089
70.00	-19.09	-3.62	0.00	-219.11	0.00	219.11	3,386.00	1,693.00	5,395.40	2,701.71	3.03	-0.43	0.087
75.00	-18.09	-3.54	0.00	-201.00	0.00	201.00	3,302.44	1,651.22	5,086.20	2,546.88	3.49	-0.46	0.084
80.00	-17.12	-3.47	0.00	-183.28	0.00	183.28	3,207.53	1,603.77	4,769.04	2,388.06	4.00	-0.50	0.082
85.00	-16.18	-3.41	0.00	-165.96	0.00	165.96	3,093.69	1,546.85	4,434.86	2,220.73	4.53	-0.53	0.080
86.50	-15.90	-3.37	0.00	-160.84	0.00	160.84	3,059.54	1,529.77	4,336.97	2,171.71	4.70	-0.54	0.079
90.00	-14.92	-3.32	0.00	-149.03	0.00	149.03	2,979.85	1,489.93	4,112.82	2,059.47	5.11	-0.57	0.077
91.50	-14.52	-3.28	0.00	-144.05	0.00	144.05	1,810.37	905.19	2,525.79	1,264.77	5.29	-0.58	0.122
95.00	-14.05	-3.22	0.00	-132.55	0.00	132.55	1,779.94	889.97	2,416.91	1,210.25	5.72	-0.60	0.117
100.00	-13.39	-3.15	0.00	-116.43	0.00	116.43	1,734.79	867.39	2,263.11	1,133.24	6.38	-0.65	0.110
105.00	-12.75	-3.08	0.00	-100.67	0.00	100.67	1,687.67	843.84	2,111.68	1,057.41	7.09	-0.70	0.103
110.00	-12.13	-3.01	0.00	-85.25	0.00	85.25	1,638.60	819.30	1,962.92	982.92	7.85	-0.75	0.094
115.00	-10.74	-2.75	0.00	-70.18	0.00	70.18	1,587.56	793.78	1,817.14	909.92	8.65	-0.79	0.084
120.00	-10.16	-2.69	0.00	-56.42	0.00	56.42	1,534.56	767.28	1,674.67	838.58	9.50	-0.83	0.074
123.58	-9.75	-2.66	0.00	-46.77	0.00	46.77	1,495.36	747.68	1,574.76	788.55	10.14	-0.86	0.066
125.00	-9.52	-2.63	0.00	-43.01	0.00	43.01	1,479.59	739.79	1,535.81	769.04	10.40	-0.87	0.062
127.42	-9.13	-2.60	0.00	-36.65	0.00	36.65	1,010.15	505.07	1,043.37	522.46	10.84	-0.89	0.079
130.00	-6.28	-1.92	0.00	-29.94	0.00	29.94	993.05	496.52	998.35	499.92	11.33	-0.90	0.066
135.00	-5.95	-1.87	0.00	-20.35	0.00	20.35	958.46	479.23	912.49	456.92	12.29	-0.94	0.051
138.00	-4.79	-1.67	0.00	-14.75	0.00	14.75	936.76	468.38	861.87	431.57	12.89	-0.95	0.039
140.00	-3.39	-1.10	0.00	-11.40	0.00	11.40	921.91	460.95	828.54	414.89	13.29	-0.96	0.031
145.00	-3.14	-1.04	0.00	-5.89	0.00	5.89	883.39	441.70	746.83	373.97	14.30	-0.98	0.019
150.00	0.00	-0.99	0.00	-0.67	0.00	0.67	842.91	421.46	667.67	334.33	15.33	-0.98	0.002

Site Number: 411260

Code: ANSI/TIA-222-G

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Site Name: MIDDLEFIELD CT, CT

Engineering Number: 12913130\_C3\_01

6/17/2019 2:55:15 PM

Customer: VERIZON WIRELESS

### Equivalent Lateral Forces Method Analysis

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

Spectral Response Acceleration for Short Period ( $S_{ps}$ ):	0.18
Spectral Response Acceleration at 1.0 Second Period ( $S_{p1}$ ):	0.06
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 ( $S_{ds}$ ):	0.19
Design Spectral Response Acceleration at 1.0 Second Period ( $S_{d1}$ ):	0.10
Seismic Response Coefficient ( $C_s$ ):	0.03
Upper Limit $C_s$	0.03
Lower Limit $C_s$	0.03
Period based on Rayleigh Method (sec):	2.22
Redundancy Factor (p):	1.30
Seismic Force Distribution Exponent (k):	1.86
Total Unfactored Dead Load:	36.80 k
Seismic Base Shear (E):	1.44 k

#### Load Case (1.2 + 0.2S<sub>ds</sub>) \* 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)
37	147.50	242	2,644	0.017	24	300
36	142.50	255	2,613	0.017	24	316
35	139.00	125	1,224	0.008	11	155
34	136.50	192	1,813	0.011	16	237
33	132.50	330	2,952	0.019	27	408
32	128.71	239	2,023	0.013	18	295
31	126.21	389	3,184	0.020	29	482
30	124.29	232	1,840	0.012	17	287
29	121.79	404	3,090	0.020	28	500
28	117.50	578	4,140	0.026	38	716
27	112.50	603	3,978	0.025	36	746
26	107.50	620	3,760	0.024	34	768
25	102.50	637	3,537	0.022	32	789
24	97.50	655	3,311	0.021	30	811
23	93.25	469	2,181	0.014	20	580
22	90.75	407	1,801	0.011	16	504
21	88.25	968	4,065	0.026	37	1,198
20	85.75	278	1,106	0.007	10	344
19	82.50	943	3,494	0.022	32	1,168
18	77.50	969	3,196	0.020	29	1,200
17	72.50	995	2,898	0.018	26	1,232
16	67.50	1,021	2,604	0.016	24	1,265
15	62.50	1,047	2,314	0.015	21	1,297

Site Number: 411260

Code: ANSITIA-222-G

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Site Name: MIDDLEFIELD CT, CT

Engineering Number:12913130\_C3\_01

6/17/2019 2:55:15 PM

Customer: VERIZON WIRELESS

14	57.50	1,073	2,030	0.013	18	1,329
13	52.50	1,099	1,756	0.011	16	1,362
12	49.46	242	345	0.002	3	299
11	46.96	1,582	2,053	0.013	19	1,960
10	43.79	992	1,130	0.007	10	1,229
9	41.29	590	603	0.004	5	731
8	37.50	1,162	992	0.006	9	1,440
7	32.50	1,189	777	0.005	7	1,472
6	27.50	1,215	582	0.004	5	1,504
5	22.50	1,241	409	0.003	4	1,536
4	17.50	1,267	261	0.002	2	1,569
3	12.50	1,293	143	0.001	1	1,601
2	7.50	1,319	56	0.000	1	1,633
1	2.50	1,345	7	0.000	0	1,666
VZW Unused Reserve:	150.00	0	0	0.000	0	0
Samsung B5/B13 RRH-B	150.00	211	2,379	0.015	22	261
Samsung B2/B66A RRH-	150.00	253	2,856	0.018	26	314
RFS DB-C1-12C-24AB-0	150.00	32	361	0.002	3	40
Commscope NHH-65B-R2	150.00	87	986	0.006	9	108
Antel LPA-80063/6CF	150.00	162	1,827	0.012	17	201
Commscope NHH-45B-R2	150.00	294	3,320	0.021	30	365
Generic Flat Low Pro	150.00	1,875	21,147	0.134	192	2,322
Ericsson KRY 112 144	140.00	33	327	0.002	3	41
Ericsson Radio 4449	140.00	222	2,202	0.014	20	275
Ericsson AIR 21, 1.3	140.00	249	2,470	0.016	22	308
Ericsson AIR32 B66Aa	140.00	397	3,934	0.025	36	491
RFS APXVAARR24_43-U-	140.00	384	3,806	0.024	35	475
Generic 6.7" x 10.7"	138.00	30	287	0.002	3	37
Generic Round T-Arm	138.00	938	9,053	0.057	82	1,161
Spinner Bias-T	130.00	4	39	0.000	0	6
Powerwave Allgon LGP	130.00	33	285	0.002	3	41
Powerwave Allgon LGP	130.00	85	731	0.005	7	105
Raycap DC6-48-60-18-	130.00	20	173	0.001	2	25
Ericsson RRUS-11 (50	130.00	300	2,592	0.016	24	372
Powerwave Allgon 777	130.00	162	1,400	0.009	13	201
KMW AM-X-CD-16-65-00	130.00	146	1,257	0.008	11	180
Generic Round Low Pr	130.00	1,875	16,200	0.103	147	2,322
Ericsson Radio 0208	115.00	59	408	0.003	4	74
Ericsson RRUS 4415 B	115.00	92	633	0.004	6	114
Comba ODI2-065R18K-G	115.00	75	518	0.003	5	93
Generic Round Stand-	115.00	563	3,868	0.024	35	697
Generic GPS	90.00	10	44	0.000	0	12
		36,797	158,009	1.000	1,435	45,569

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

**Seismic (Reduced DL) Equivalent Lateral Forces Method**

Segment	Height Above Base (ft)	Weight (lb)	W <sub>z</sub> (lb-ft)	C <sub>vx</sub>	Horizontal Force (lb)	Vertical Force (lb)
37	147.50	242	2,644	0.017	24	208
36	142.50	255	2,613	0.017	24	220
35	139.00	125	1,224	0.008	11	108
34	136.50	192	1,813	0.011	16	165
33	132.50	330	2,952	0.019	27	284
32	128.71	239	2,023	0.013	18	206
31	126.21	389	3,184	0.020	29	336
30	124.29	232	1,840	0.012	17	200
29	121.79	404	3,090	0.020	28	348
28	117.50	578	4,140	0.026	38	498
27	112.50	603	3,978	0.025	36	519
26	107.50	620	3,760	0.024	34	534

Site Number: 411260

Code: ANSI/TIA-222-G

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Site Name: MIDDLEFIELD CT, CT

Engineering Number:12913130\_C3\_01

6/17/2019 2:55:15 PM

Customer: VERIZON WIRELESS

25	102.50	637	3,537	0.022	32	549
24	97.50	655	3,311	0.021	30	564
23	93.25	469	2,181	0.014	20	404
22	90.75	407	1,801	0.011	16	351
21	88.25	968	4,065	0.026	37	834
20	85.75	278	1,106	0.007	10	239
19	82.50	943	3,494	0.022	32	813
18	77.50	969	3,196	0.020	29	835
17	72.50	995	2,898	0.018	26	857
16	67.50	1,021	2,604	0.016	24	880
15	62.50	1,047	2,314	0.015	21	902
14	57.50	1,073	2,030	0.013	18	925
13	52.50	1,099	1,756	0.011	16	947
12	49.46	242	345	0.002	3	208
11	46.96	1,582	2,053	0.013	19	1,363
10	43.79	992	1,130	0.007	10	855
9	41.29	590	603	0.004	5	509
8	37.50	1,162	992	0.006	9	1,002
7	32.50	1,189	777	0.005	7	1,024
6	27.50	1,215	582	0.004	5	1,047
5	22.50	1,241	409	0.003	4	1,069
4	17.50	1,267	261	0.002	2	1,091
3	12.50	1,293	143	0.001	1	1,114
2	7.50	1,319	56	0.000	1	1,136
1	2.50	1,345	7	0.000	0	1,159
VZW Unused Reserve:	150.00	0	0	0.000	0	0
Samsung B5/B13 RRH-B	150.00	211	2,379	0.015	22	182
Samsung B2/B66A RRH-	150.00	253	2,856	0.018	26	218
RFS DB-C1-12C-24AB-0	150.00	32	361	0.002	3	28
Commscope NHH-65B-R2	150.00	87	986	0.006	9	75
Antel LPA-80063/6CF	150.00	162	1,827	0.012	17	140
Commscope NHH-45B-R2	150.00	294	3,320	0.021	30	254
Generic Flat Low Pro	150.00	1,875	21,147	0.134	192	1,615
Ericsson KRY 112 144	140.00	33	327	0.002	3	28
Ericsson Radio 4449	140.00	222	2,202	0.014	20	191
Ericsson AIR 21, 1.3	140.00	249	2,470	0.016	22	215
Ericsson AIR32 B66Aa	140.00	397	3,934	0.025	36	342
RFS APXVAARR24_43-U-	140.00	384	3,806	0.024	35	331
Generic 6.7" x 10.7"	138.00	30	287	0.002	3	26
Generic Round T-Arm	138.00	938	9,053	0.057	82	808
Spinner Bias-T	130.00	4	39	0.000	0	4
Powerwave Allgon LGP	130.00	33	285	0.002	3	28
Powerwave Allgon LGP	130.00	85	731	0.005	7	73
Raycap DC6-48-60-18-	130.00	20	173	0.001	2	17
Ericsson RRUS-11 (50	130.00	300	2,592	0.016	24	258
Powerwave Allgon 777	130.00	162	1,400	0.009	13	140
KMW AM-X-CD-16-65-00	130.00	146	1,257	0.008	11	125
Generic Round Low Pr	130.00	1,875	16,200	0.103	147	1,615
Ericsson Radio 0208	115.00	59	408	0.003	4	51
Ericsson RRUS 4415 B	115.00	92	633	0.004	6	79
Comba ODI2-065R18K-G	115.00	75	518	0.003	5	65
Generic Round Stand-	115.00	563	3,868	0.024	35	485
Generic GPS	90.00	10	44	0.000	0	9
		36,797	158,009	1.000	1,435	31,704

Site Number: 411260

Code: ANSI/TIA-222-G

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Site Name: MIDDLEFIELD CT, CT

Engineering Number:12913130\_C3\_01

6/17/2019 2:55:15 PM

Customer: VERIZON WIRELESS

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	-43.90	-1.44	0.00	-176.41	0.00	176.41	4,317.26	2,158.63	9,967.46	4,991.14	0.00	0.00	0.046
5.00	-42.27	-1.44	0.00	-169.22	0.00	169.22	4,260.05	2,130.02	9,608.26	4,811.27	0.00	-0.01	0.045
10.00	-40.67	-1.45	0.00	-162.00	0.00	162.00	4,200.87	2,100.44	9,250.82	4,632.29	0.02	-0.02	0.045
15.00	-39.10	-1.45	0.00	-154.75	0.00	154.75	4,139.73	2,069.86	8,895.48	4,454.35	0.04	-0.03	0.044
20.00	-37.56	-1.46	0.00	-147.48	0.00	147.48	4,076.62	2,038.31	8,542.54	4,277.62	0.08	-0.04	0.044
25.00	-36.06	-1.46	0.00	-140.21	0.00	140.21	4,011.55	2,005.78	8,192.33	4,102.25	0.13	-0.05	0.043
30.00	-34.59	-1.45	0.00	-132.93	0.00	132.93	3,944.52	1,972.26	7,845.14	3,928.40	0.18	-0.06	0.043
35.00	-33.15	-1.45	0.00	-125.67	0.00	125.67	3,875.52	1,937.76	7,501.31	3,756.23	0.25	-0.07	0.042
40.00	-32.41	-1.45	0.00	-118.42	0.00	118.42	3,804.56	1,902.28	7,161.13	3,585.89	0.33	-0.08	0.042
42.58	-31.19	-1.44	0.00	-114.69	0.00	114.69	3,767.13	1,883.56	6,986.91	3,498.65	0.38	-0.09	0.041
45.00	-29.23	-1.42	0.00	-111.21	0.00	111.21	3,731.63	1,865.82	6,824.93	3,417.54	0.42	-0.09	0.040
48.92	-28.93	-1.42	0.00	-105.65	0.00	105.65	3,716.76	1,858.38	6,757.94	3,383.99	0.50	-0.10	0.039
50.00	-27.56	-1.40	0.00	-104.11	0.00	104.11	3,700.61	1,850.31	6,685.84	3,347.89	0.52	-0.10	0.039
55.00	-26.24	-1.39	0.00	-97.09	0.00	97.09	3,624.90	1,812.45	6,355.82	3,182.63	0.64	-0.12	0.038
60.00	-24.94	-1.37	0.00	-90.14	0.00	90.14	3,547.23	1,773.62	6,030.53	3,019.74	0.77	-0.13	0.037
65.00	-23.67	-1.35	0.00	-83.29	0.00	83.29	3,467.60	1,733.80	5,710.28	2,859.38	0.91	-0.14	0.036
70.00	-22.44	-1.32	0.00	-76.55	0.00	76.55	3,386.00	1,693.00	5,395.40	2,701.71	1.06	-0.15	0.035
75.00	-21.24	-1.30	0.00	-69.94	0.00	69.94	3,302.44	1,651.22	5,086.20	2,546.88	1.22	-0.16	0.034
80.00	-20.07	-1.26	0.00	-63.46	0.00	63.46	3,207.53	1,603.77	4,769.04	2,388.06	1.40	-0.17	0.033
85.00	-19.73	-1.26	0.00	-57.14	0.00	57.14	3,093.69	1,546.85	4,434.86	2,220.73	1.59	-0.19	0.032
86.50	-18.53	-1.22	0.00	-55.25	0.00	55.25	3,059.54	1,529.77	4,336.97	2,171.71	1.64	-0.19	0.031
90.00	-18.01	-1.20	0.00	-50.99	0.00	50.99	2,979.85	1,489.93	4,112.82	2,059.47	1.79	-0.20	0.031
91.50	-17.43	-1.18	0.00	-49.19	0.00	49.19	1,810.37	905.19	2,525.79	1,264.77	1.85	-0.20	0.049
95.00	-16.62	-1.15	0.00	-45.06	0.00	45.06	1,779.94	889.97	2,416.91	1,210.25	2.00	-0.21	0.047
100.00	-15.83	-1.12	0.00	-39.30	0.00	39.30	1,734.79	867.39	2,263.11	1,133.24	2.23	-0.23	0.044
105.00	-15.06	-1.09	0.00	-33.70	0.00	33.70	1,687.67	843.84	2,111.68	1,057.41	2.48	-0.24	0.041
110.00	-14.32	-1.05	0.00	-28.26	0.00	28.26	1,638.60	819.30	1,962.92	982.92	2.74	-0.26	0.037
115.00	-12.62	-0.96	0.00	-23.00	0.00	23.00	1,587.56	793.78	1,817.14	909.92	3.02	-0.27	0.033
120.00	-12.12	-0.93	0.00	-18.19	0.00	18.19	1,534.56	767.28	1,674.67	838.58	3.31	-0.29	0.030
123.58	-11.84	-0.92	0.00	-14.85	0.00	14.85	1,495.36	747.68	1,574.76	788.55	3.53	-0.30	0.027
125.00	-11.35	-0.89	0.00	-13.56	0.00	13.56	1,479.59	739.79	1,535.81	769.04	3.62	-0.30	0.025
127.42	-11.06	-0.87	0.00	-11.42	0.00	11.42	1,010.15	505.07	1,043.37	522.46	3.77	-0.30	0.033
130.00	-7.40	-0.61	0.00	-9.18	0.00	9.18	993.05	496.52	998.35	499.92	3.94	-0.31	0.026
135.00	-7.16	-0.60	0.00	-6.11	0.00	6.11	958.46	479.23	912.49	456.92	4.27	-0.32	0.021
138.00	-5.81	-0.49	0.00	-4.31	0.00	4.31	936.76	468.38	861.87	431.57	4.47	-0.32	0.016
140.00	-3.91	-0.34	0.00	-3.32	0.00	3.32	921.91	460.95	828.54	414.89	4.61	-0.33	0.012
145.00	-3.61	-0.32	0.00	-1.60	0.00	1.60	883.39	441.70	746.83	373.97	4.95	-0.33	0.008
150.00	0.00	-0.30	0.00	0.00	0.00	0.00	842.91	421.46	667.67	334.33	5.30	-0.33	0.000

Site Number: 411260

Code: ANSITIA-222-G

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Site Name: MIDDLEFIELD CT, CT

Engineering Number:12913130\_C3\_01

6/17/2019 2:55:15 PM

Customer: VERIZON WIRELESS

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

Seismic (Reduced DL) Equivalent Lateral Forces Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-30.55	-1.44	0.00	-174.20	0.00	174.20	4,317.26	2,158.63	9,967.46	4,991.14	0.00	0.00	0.042
5.00	-29.41	-1.44	0.00	-167.02	0.00	167.02	4,260.05	2,130.02	9,608.26	4,811.27	0.00	-0.01	0.042
10.00	-28.29	-1.44	0.00	-159.81	0.00	159.81	4,200.87	2,100.44	9,250.82	4,632.29	0.02	-0.02	0.041
15.00	-27.20	-1.45	0.00	-152.59	0.00	152.59	4,139.73	2,069.86	8,895.48	4,454.35	0.04	-0.03	0.041
20.00	-26.13	-1.45	0.00	-145.36	0.00	145.36	4,076.62	2,038.31	8,542.54	4,277.62	0.08	-0.04	0.040
25.00	-25.09	-1.44	0.00	-138.13	0.00	138.13	4,011.55	2,005.78	8,192.33	4,102.25	0.12	-0.05	0.040
30.00	-24.06	-1.44	0.00	-130.91	0.00	130.91	3,944.52	1,972.26	7,845.14	3,928.40	0.18	-0.06	0.039
35.00	-23.06	-1.44	0.00	-123.71	0.00	123.71	3,875.52	1,937.76	7,501.31	3,756.23	0.25	-0.07	0.039
40.00	-22.55	-1.43	0.00	-116.53	0.00	116.53	3,804.56	1,902.28	7,161.13	3,585.89	0.33	-0.08	0.038
42.58	-21.70	-1.42	0.00	-112.83	0.00	112.83	3,767.13	1,883.56	6,986.91	3,498.65	0.37	-0.09	0.038
45.00	-20.33	-1.40	0.00	-109.39	0.00	109.39	3,731.63	1,865.82	6,824.93	3,417.54	0.42	-0.09	0.037
48.92	-20.12	-1.40	0.00	-103.89	0.00	103.89	3,716.76	1,858.38	6,757.94	3,383.99	0.49	-0.10	0.036
50.00	-19.18	-1.39	0.00	-102.37	0.00	102.37	3,700.61	1,850.31	6,685.84	3,347.89	0.52	-0.10	0.036
55.00	-18.25	-1.37	0.00	-95.43	0.00	95.43	3,624.90	1,812.45	6,355.82	3,182.63	0.63	-0.11	0.035
60.00	-17.35	-1.35	0.00	-88.57	0.00	88.57	3,547.23	1,773.62	6,030.53	3,019.74	0.76	-0.13	0.034
65.00	-16.47	-1.33	0.00	-81.82	0.00	81.82	3,467.60	1,733.80	5,710.28	2,859.38	0.89	-0.14	0.033
70.00	-15.61	-1.30	0.00	-75.17	0.00	75.17	3,386.00	1,693.00	5,395.40	2,701.71	1.04	-0.15	0.032
75.00	-14.78	-1.28	0.00	-68.65	0.00	68.65	3,302.44	1,651.22	5,086.20	2,546.88	1.20	-0.16	0.031
80.00	-13.96	-1.24	0.00	-62.27	0.00	62.27	3,207.53	1,603.77	4,769.04	2,388.06	1.38	-0.17	0.030
85.00	-13.72	-1.24	0.00	-56.04	0.00	56.04	3,093.69	1,546.85	4,434.86	2,220.73	1.56	-0.18	0.030
86.50	-12.89	-1.20	0.00	-54.19	0.00	54.19	3,059.54	1,529.77	4,336.97	2,171.71	1.62	-0.19	0.029
90.00	-12.53	-1.18	0.00	-50.00	0.00	50.00	2,979.85	1,489.93	4,112.82	2,059.47	1.76	-0.19	0.028
91.50	-12.13	-1.16	0.00	-48.23	0.00	48.23	1,810.37	905.19	2,525.79	1,264.77	1.82	-0.20	0.045
95.00	-11.56	-1.13	0.00	-44.16	0.00	44.16	1,779.94	889.97	2,416.91	1,210.25	1.97	-0.21	0.043
100.00	-11.01	-1.10	0.00	-38.51	0.00	38.51	1,734.79	867.39	2,263.11	1,133.24	2.20	-0.22	0.040
105.00	-10.48	-1.07	0.00	-33.01	0.00	33.01	1,687.67	843.84	2,111.68	1,057.41	2.44	-0.24	0.037
110.00	-9.96	-1.03	0.00	-27.67	0.00	27.67	1,638.60	819.30	1,962.92	982.92	2.70	-0.25	0.034
115.00	-8.78	-0.94	0.00	-22.52	0.00	22.52	1,587.56	793.78	1,817.14	909.92	2.97	-0.27	0.030
120.00	-8.43	-0.91	0.00	-17.81	0.00	17.81	1,534.56	767.28	1,674.67	838.58	3.26	-0.28	0.027
123.58	-8.23	-0.90	0.00	-14.54	0.00	14.54	1,495.36	747.68	1,574.76	788.55	3.47	-0.29	0.024
125.00	-7.90	-0.87	0.00	-13.27	0.00	13.27	1,479.59	739.79	1,535.81	769.04	3.56	-0.29	0.023
127.42	-7.69	-0.85	0.00	-11.18	0.00	11.18	1,010.15	505.07	1,043.37	522.46	3.71	-0.30	0.029
130.00	-5.15	-0.60	0.00	-8.99	0.00	8.99	993.05	496.52	998.35	499.92	3.87	-0.30	0.023
135.00	-4.98	-0.59	0.00	-5.98	0.00	5.98	958.46	479.23	912.49	456.92	4.20	-0.31	0.018
138.00	-4.04	-0.48	0.00	-4.22	0.00	4.22	936.76	468.38	861.87	431.57	4.40	-0.32	0.014
140.00	-2.72	-0.34	0.00	-3.25	0.00	3.25	921.91	460.95	828.54	414.89	4.53	-0.32	0.011
145.00	-2.51	-0.31	0.00	-1.56	0.00	1.56	883.39	441.70	746.83	373.97	4.87	-0.32	0.007
150.00	0.00	-0.30	0.00	0.00	0.00	0.00	842.91	421.46	667.67	334.33	5.21	-0.33	0.000



Site Number: 411260

Code: ANSI/TIA-222-G

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Site Name: MIDDLEFIELD CT, CT

Engineering Number:12913130\_C3\_01

6/17/2019 2:55:15 PM

Customer: VERIZON WIRELESS

### 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 ( $S_{sa}$ ):	0.18
Spectral Response Acceleration at 1.0 Second Period ( $S_{s1}$ ):	0.06
Importance Factor ( $I_E$ ):	1.00
Site Coefficient $F_a$ :	1.60
Site Coefficient $F_v$ :	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period ( $S_{ds}$ ):	0.19
Design Spectral Response Acceleration at 1.0 Second Period ( $S_{d1}$ ):	0.10
Period Based on Rayleigh Method (sec):	2.22
Redundancy Factor ( $\rho$ ):	1.30

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

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
37	147.50	242	1.828	1.667	1.025	0.326	68	300
36	142.50	255	1.706	1.144	0.823	0.253	56	316
35	139.00	125	1.623	0.851	0.702	0.207	22	155
34	136.50	192	1.565	0.674	0.624	0.176	29	237
33	132.50	330	1.475	0.441	0.513	0.132	38	408
32	128.71	239	1.392	0.268	0.423	0.094	20	295
31	126.21	389	1.338	0.177	0.371	0.072	24	482
30	124.29	232	1.298	0.117	0.334	0.057	11	287
29	121.79	404	1.246	0.052	0.290	0.038	13	500
28	117.50	578	1.160	-0.030	0.226	0.010	5	716
27	112.50	603	1.063	-0.088	0.165	-0.014	-7	746
26	107.50	620	0.971	-0.116	0.117	-0.031	-17	768
25	102.50	637	0.883	-0.121	0.081	-0.041	-22	789
24	97.50	655	0.799	-0.112	0.053	-0.042	-24	811
23	93.25	469	0.730	-0.096	0.036	-0.038	-16	580
22	90.75	407	0.692	-0.084	0.028	-0.034	-12	504
21	88.25	968	0.654	-0.072	0.022	-0.028	-23	1,198
20	85.75	278	0.618	-0.059	0.017	-0.021	-5	344
19	82.50	943	0.572	-0.043	0.012	-0.011	-9	1,168
18	77.50	969	0.505	-0.018	0.007	0.006	5	1,200
17	72.50	995	0.442	0.005	0.006	0.022	19	1,232
16	67.50	1,021	0.383	0.023	0.007	0.034	30	1,265
15	62.50	1,047	0.328	0.039	0.010	0.043	39	1,297
14	57.50	1,073	0.278	0.050	0.014	0.048	45	1,329
13	52.50	1,099	0.232	0.058	0.019	0.051	49	1,362
12	49.46	242	0.205	0.062	0.022	0.051	11	299
11	46.96	1,582	0.185	0.065	0.025	0.052	71	1,960
10	43.79	992	0.161	0.067	0.029	0.051	44	1,229
9	41.29	590	0.143	0.068	0.031	0.051	26	731
8	37.50	1,162	0.118	0.070	0.035	0.050	50	1,440
7	32.50	1,189	0.089	0.071	0.039	0.049	50	1,472
6	27.50	1,215	0.064	0.072	0.041	0.047	50	1,504
5	22.50	1,241	0.043	0.070	0.042	0.046	49	1,536
4	17.50	1,267	0.026	0.067	0.040	0.044	48	1,569

Site Number: 411260

Code: ANSI/TIA-222-G

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Site Name: MIDDLEFIELD CT, CT

Engineering Number:12913130\_C3\_01

6/17/2019 2:55:15 PM

Customer: VERIZON WIRELESS

3	12.50	1,293	0.013	0.059	0.034	0.039	44	1,601
2	7.50	1,319	0.005	0.044	0.025	0.031	35	1,633
1	2.50	1,345	0.001	0.018	0.010	0.014	17	1,666
VZW Unused Reserve:	150.00	0	1.890	1.980	1.140	0.365	0	0
Samsung B5/B13 RRH-B	150.00	211	1.890	1.980	1.140	0.365	67	261
Samsung B2/B66A RRH-	150.00	253	1.890	1.980	1.140	0.365	80	314
RFS DB-C1-12C-24AB-0	150.00	32	1.890	1.980	1.140	0.365	10	40
Commscope NHH-65B-	150.00	87	1.890	1.980	1.140	0.365	28	108
Antel LPA-80063/6CF	150.00	162	1.890	1.980	1.140	0.365	51	201
Commscope NHH-45B-	150.00	294	1.890	1.980	1.140	0.365	93	365
Generic Flat Low Pro	150.00	1,875	1.890	1.980	1.140	0.365	593	2,322
Ericsson KRY 112 144	140.00	33	1.646	0.929	0.735	0.219	6	41
Ericsson Radio 4449	140.00	222	1.646	0.929	0.735	0.219	42	275
Ericsson AIR 21, 1.3	140.00	249	1.646	0.929	0.735	0.219	47	308
Ericsson AIR32 B66Aa	140.00	397	1.646	0.929	0.735	0.219	75	491
RFS APXVAARR24_43-U-	140.00	384	1.646	0.929	0.735	0.219	73	475
Generic 6.7" x 10.7"	138.00	30	1.600	0.778	0.670	0.194	5	37
Generic Round T-Arm	138.00	938	1.600	0.778	0.670	0.194	158	1,161
Spinner Bias-T	130.00	4	1.420	0.322	0.452	0.107	0	6
Powerwave Allgon LGP	130.00	33	1.420	0.322	0.452	0.107	3	41
Powerwave Allgon LGP	130.00	85	1.420	0.322	0.452	0.107	8	105
Raycap DC6-48-60-18-	130.00	20	1.420	0.322	0.452	0.107	2	25
Ericsson RRUS-11 (50	130.00	300	1.420	0.322	0.452	0.107	28	372
Powerwave Allgon 777	130.00	162	1.420	0.322	0.452	0.107	15	201
KMW AM-X-CD-16-65-00	130.00	146	1.420	0.322	0.452	0.107	13	180
Generic Round Low Pr	130.00	1,875	1.420	0.322	0.452	0.107	173	2,322
Ericsson Radio 0208	115.00	59	1.111	-0.064	0.194	-0.003	0	74
Ericsson RRUS 4415 B	115.00	92	1.111	-0.064	0.194	-0.003	0	114
Comba ODI2-065R18K-G	115.00	75	1.111	-0.064	0.194	-0.003	0	93
Generic Round Stand-	115.00	563	1.111	-0.064	0.194	-0.003	-1	697
Generic GPS	90.00	10	0.680	-0.081	0.026	-0.032	0	12
		36,797	67.860	29.743	24.851	7.050	2,403	45,569

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)
37	147.50	242	1.828	1.667	1.025	0.326	68	208
36	142.50	255	1.706	1.144	0.823	0.253	56	220
35	139.00	125	1.623	0.851	0.702	0.207	22	108
34	136.50	192	1.565	0.674	0.624	0.176	29	165
33	132.50	330	1.475	0.441	0.513	0.132	38	284
32	128.71	239	1.392	0.268	0.423	0.094	20	206
31	126.21	389	1.338	0.177	0.371	0.072	24	336
30	124.29	232	1.298	0.117	0.334	0.057	11	200
29	121.79	404	1.246	0.052	0.290	0.038	13	348
28	117.50	578	1.160	-0.030	0.226	0.010	5	498
27	112.50	603	1.063	-0.088	0.165	-0.014	-7	519
26	107.50	620	0.971	-0.116	0.117	-0.031	-17	534
25	102.50	637	0.883	-0.121	0.081	-0.041	-22	549
24	97.50	655	0.799	-0.112	0.053	-0.042	-24	564
23	93.25	469	0.730	-0.096	0.036	-0.038	-16	404
22	90.75	407	0.692	-0.084	0.028	-0.034	-12	351
21	88.25	968	0.654	-0.072	0.022	-0.028	-23	834
20	85.75	278	0.618	-0.059	0.017	-0.021	-5	239
19	82.50	943	0.572	-0.043	0.012	-0.011	-9	813
18	77.50	969	0.505	-0.018	0.007	0.006	5	835
17	72.50	995	0.442	0.005	0.006	0.022	19	857
16	67.50	1,021	0.383	0.023	0.007	0.034	30	880

Site Number: 411260

Code: ANSI/TIA-222-G

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Site Name: MIDDLEFIELD CT, CT

Engineering Number:12913130\_C3\_01

6/17/2019 2:55:15 PM

Customer: VERIZON WIRELESS

15	62.50	1,047	0.328	0.039	0.010	0.043	39	902
14	57.50	1,073	0.278	0.050	0.014	0.048	45	925
13	52.50	1,099	0.232	0.058	0.019	0.051	49	947
12	49.46	242	0.205	0.062	0.022	0.051	11	208
11	46.96	1,582	0.185	0.065	0.025	0.052	71	1,363
10	43.79	992	0.161	0.067	0.029	0.051	44	855
9	41.29	590	0.143	0.068	0.031	0.051	26	509
8	37.50	1,162	0.118	0.070	0.035	0.050	50	1,002
7	32.50	1,189	0.089	0.071	0.039	0.049	50	1,024
6	27.50	1,215	0.064	0.072	0.041	0.047	50	1,047
5	22.50	1,241	0.043	0.070	0.042	0.046	49	1,069
4	17.50	1,267	0.026	0.067	0.040	0.044	48	1,091
3	12.50	1,293	0.013	0.059	0.034	0.039	44	1,114
2	7.50	1,319	0.005	0.044	0.025	0.031	35	1,136
1	2.50	1,345	0.001	0.018	0.010	0.014	17	1,159
VZW Unused Reserve:	150.00	0	1.890	1.980	1.140	0.365	0	0
Samsung B5/B13 RRH-B	150.00	211	1.890	1.980	1.140	0.365	67	182
Samsung B2/B66A RRH-	150.00	253	1.890	1.980	1.140	0.365	80	218
RFS DB-C1-12C-24AB-0	150.00	32	1.890	1.980	1.140	0.365	10	28
Commscope NHH-65B-	150.00	87	1.890	1.980	1.140	0.365	28	75
Antel LPA-80063/6CF	150.00	162	1.890	1.980	1.140	0.365	51	140
Commscope NHH-45B-	150.00	294	1.890	1.980	1.140	0.365	93	254
Generic Flat Low Pro	150.00	1,875	1.890	1.980	1.140	0.365	593	1,615
Ericsson KRY 112 144	140.00	33	1.646	0.929	0.735	0.219	6	28
Ericsson Radio 4449	140.00	222	1.646	0.929	0.735	0.219	42	191
Ericsson AIR 21, 1.3	140.00	249	1.646	0.929	0.735	0.219	47	215
Ericsson AIR32 B66Aa	140.00	397	1.646	0.929	0.735	0.219	75	342
RFS APXVAARR24_43-U-	140.00	384	1.646	0.929	0.735	0.219	73	331
Generic 6.7" x 10.7"	138.00	30	1.600	0.778	0.670	0.194	5	26
Generic Round T-Arm	138.00	938	1.600	0.778	0.670	0.194	158	808
Spinner Bias-T	130.00	4	1.420	0.322	0.452	0.107	0	4
Powerwave Allgon LGP	130.00	33	1.420	0.322	0.452	0.107	3	28
Powerwave Allgon LGP	130.00	85	1.420	0.322	0.452	0.107	8	73
Raycap DC6-48-60-18-	130.00	20	1.420	0.322	0.452	0.107	2	17
Ericsson RRUS-11 (50	130.00	300	1.420	0.322	0.452	0.107	28	258
Powerwave Allgon 777	130.00	162	1.420	0.322	0.452	0.107	15	140
KMW AM-X-CD-16-65-00	130.00	146	1.420	0.322	0.452	0.107	13	125
Generic Round Low Pr	130.00	1,875	1.420	0.322	0.452	0.107	173	1,615
Ericsson Radio 0208	115.00	59	1.111	-0.064	0.194	-0.003	0	51
Ericsson RRUS 4415 B	115.00	92	1.111	-0.064	0.194	-0.003	0	79
Comba ODI2-065R18K-G	115.00	75	1.111	-0.064	0.194	-0.003	0	65
Generic Round Stand-	115.00	563	1.111	-0.064	0.194	-0.003	-1	485
Generic GPS	90.00	10	0.680	-0.081	0.026	-0.032	0	9
		36,797	67.860	29.743	24.851	7.050	2,403	31,704

Site Number: 411260

Code: ANSI/TIA-222-G

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Site Name: MIDDLEFIELD CT, CT

Engineering Number:12913130\_C3\_01

6/17/2019 2:55:15 PM

Customer: VERIZON WIRELESS

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	-43.90	-2.39	0.00	-288.87	0.00	288.87	4,317.26	2,158.63	9,967.46	4,991.14	0.00	0.00	0.068
5.00	-42.27	-2.37	0.00	-276.92	0.00	276.92	4,260.05	2,130.02	9,608.26	4,811.27	0.01	-0.02	0.067
10.00	-40.67	-2.33	0.00	-265.08	0.00	265.08	4,200.87	2,100.44	9,250.82	4,632.29	0.03	-0.03	0.067
15.00	-39.10	-2.30	0.00	-253.41	0.00	253.41	4,139.73	2,069.86	8,895.48	4,454.35	0.07	-0.05	0.066
20.00	-37.56	-2.26	0.00	-241.93	0.00	241.93	4,076.62	2,038.31	8,542.54	4,277.62	0.13	-0.06	0.066
25.00	-36.06	-2.22	0.00	-230.65	0.00	230.65	4,011.55	2,005.78	8,192.33	4,102.25	0.21	-0.08	0.065
30.00	-34.58	-2.17	0.00	-219.58	0.00	219.58	3,944.52	1,972.26	7,845.14	3,928.40	0.30	-0.10	0.065
35.00	-33.14	-2.13	0.00	-208.71	0.00	208.71	3,875.52	1,937.76	7,501.31	3,756.23	0.41	-0.12	0.064
40.00	-32.41	-2.11	0.00	-198.06	0.00	198.06	3,804.56	1,902.28	7,161.13	3,585.89	0.54	-0.13	0.064
42.58	-31.18	-2.07	0.00	-192.61	0.00	192.61	3,767.13	1,883.56	6,986.91	3,498.65	0.62	-0.14	0.063
45.00	-29.22	-2.00	0.00	-187.60	0.00	187.60	3,731.63	1,865.82	6,824.93	3,417.54	0.69	-0.15	0.063
48.92	-28.92	-1.99	0.00	-179.77	0.00	179.77	3,716.76	1,858.38	6,757.94	3,383.99	0.82	-0.17	0.061
50.00	-27.56	-1.95	0.00	-177.61	0.00	177.61	3,700.61	1,850.31	6,685.84	3,347.89	0.86	-0.17	0.061
55.00	-26.23	-1.91	0.00	-167.88	0.00	167.88	3,624.90	1,812.45	6,355.82	3,182.63	1.05	-0.19	0.060
60.00	-24.93	-1.87	0.00	-158.35	0.00	158.35	3,547.23	1,773.62	6,030.53	3,019.74	1.26	-0.21	0.059
65.00	-23.67	-1.84	0.00	-149.00	0.00	149.00	3,467.60	1,733.80	5,710.28	2,859.38	1.50	-0.23	0.059
70.00	-22.44	-1.83	0.00	-139.77	0.00	139.77	3,386.00	1,693.00	5,395.40	2,701.71	1.75	-0.25	0.058
75.00	-21.23	-1.83	0.00	-130.63	0.00	130.63	3,302.44	1,651.22	5,086.20	2,546.88	2.03	-0.28	0.058
80.00	-20.07	-1.84	0.00	-121.49	0.00	121.49	3,207.53	1,603.77	4,769.04	2,388.06	2.33	-0.30	0.057
85.00	-19.72	-1.85	0.00	-112.31	0.00	112.31	3,093.69	1,546.85	4,434.86	2,220.73	2.65	-0.32	0.057
86.50	-18.52	-1.87	0.00	-109.54	0.00	109.54	3,059.54	1,529.77	4,336.97	2,171.71	2.76	-0.33	0.056
90.00	-18.01	-1.88	0.00	-103.01	0.00	103.01	2,979.85	1,489.93	4,112.82	2,059.47	3.00	-0.35	0.056
91.50	-17.42	-1.90	0.00	-100.19	0.00	100.19	1,810.37	905.19	2,525.79	1,264.77	3.11	-0.35	0.089
95.00	-16.61	-1.92	0.00	-93.55	0.00	93.55	1,779.94	889.97	2,416.91	1,210.25	3.38	-0.37	0.087
100.00	-15.82	-1.95	0.00	-83.94	0.00	83.94	1,734.79	867.39	2,263.11	1,133.24	3.78	-0.41	0.083
105.00	-15.05	-1.97	0.00	-74.20	0.00	74.20	1,687.67	843.84	2,111.68	1,057.41	4.23	-0.44	0.079
110.00	-14.31	-1.98	0.00	-64.35	0.00	64.35	1,638.60	819.30	1,962.92	982.92	4.71	-0.47	0.074
115.00	-12.61	-1.97	0.00	-54.45	0.00	54.45	1,587.56	793.78	1,817.14	909.92	5.22	-0.51	0.068
120.00	-12.11	-1.96	0.00	-44.61	0.00	44.61	1,534.56	767.28	1,674.67	838.58	5.77	-0.54	0.061
123.58	-11.82	-1.95	0.00	-37.60	0.00	37.60	1,495.36	747.68	1,574.76	788.55	6.19	-0.56	0.056
125.00	-11.34	-1.92	0.00	-34.84	0.00	34.84	1,479.59	739.79	1,535.81	769.04	6.36	-0.57	0.053
127.42	-11.04	-1.90	0.00	-30.20	0.00	30.20	1,010.15	505.07	1,043.37	522.46	6.65	-0.59	0.069
130.00	-7.39	-1.58	0.00	-25.30	0.00	25.30	993.05	496.52	998.35	499.92	6.97	-0.60	0.058
135.00	-7.15	-1.56	0.00	-17.38	0.00	17.38	958.46	479.23	912.49	456.92	7.61	-0.63	0.045
138.00	-5.80	-1.36	0.00	-12.71	0.00	12.71	936.76	468.38	861.87	431.57	8.01	-0.64	0.036
140.00	-3.90	-1.04	0.00	-10.00	0.00	10.00	921.91	460.95	828.54	414.89	8.28	-0.65	0.028
145.00	-3.60	-0.96	0.00	-4.82	0.00	4.82	883.39	441.70	746.83	373.97	8.97	-0.66	0.017
150.00	0.00	-0.92	0.00	0.00	0.00	0.00	842.91	421.46	667.67	334.33	9.67	-0.67	0.000

Site Number: 411260

Code: ANSI/TIA-222-G

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Site Name: MIDDLEFIELD CT, CT

Engineering Number:12913130\_C3\_01

6/17/2019 2:55:15 PM

Customer: VERIZON WIRELESS

**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	-30.54	-2.39	0.00	-284.99	0.00	284.99	4,317.26	2,158.63	9,967.46	4,991.14	0.00	0.00	0.064
5.00	-29.41	-2.36	0.00	-273.05	0.00	273.05	4,260.05	2,130.02	9,608.26	4,811.27	0.01	-0.01	0.064
10.00	-28.29	-2.33	0.00	-261.24	0.00	261.24	4,200.87	2,100.44	9,250.82	4,632.29	0.03	-0.03	0.063
15.00	-27.20	-2.28	0.00	-249.61	0.00	249.61	4,139.73	2,069.86	8,895.48	4,454.35	0.07	-0.05	0.063
20.00	-26.13	-2.24	0.00	-238.19	0.00	238.19	4,076.62	2,038.31	8,542.54	4,277.62	0.13	-0.06	0.062
25.00	-25.08	-2.20	0.00	-226.98	0.00	226.98	4,011.55	2,005.78	8,192.33	4,102.25	0.20	-0.08	0.062
30.00	-24.06	-2.15	0.00	-215.99	0.00	215.99	3,944.52	1,972.26	7,845.14	3,928.40	0.29	-0.10	0.061
35.00	-23.06	-2.11	0.00	-205.23	0.00	205.23	3,875.52	1,937.76	7,501.31	3,756.23	0.40	-0.11	0.061
40.00	-22.55	-2.09	0.00	-194.69	0.00	194.69	3,804.56	1,902.28	7,161.13	3,585.89	0.53	-0.13	0.060
42.58	-21.69	-2.04	0.00	-189.30	0.00	189.30	3,767.13	1,883.56	6,986.91	3,498.65	0.61	-0.14	0.060
45.00	-20.33	-1.97	0.00	-184.36	0.00	184.36	3,731.63	1,865.82	6,824.93	3,417.54	0.68	-0.15	0.059
48.92	-20.12	-1.97	0.00	-176.63	0.00	176.63	3,716.76	1,858.38	6,757.94	3,383.99	0.81	-0.17	0.058
50.00	-19.17	-1.92	0.00	-174.50	0.00	174.50	3,700.61	1,850.31	6,685.84	3,347.89	0.85	-0.17	0.057
55.00	-18.25	-1.88	0.00	-164.91	0.00	164.91	3,624.90	1,812.45	6,355.82	3,182.63	1.04	-0.19	0.057
60.00	-17.35	-1.84	0.00	-155.52	0.00	155.52	3,547.23	1,773.62	6,030.53	3,019.74	1.25	-0.21	0.056
65.00	-16.47	-1.81	0.00	-146.32	0.00	146.32	3,467.60	1,733.80	5,710.28	2,859.38	1.47	-0.23	0.056
70.00	-15.61	-1.80	0.00	-137.25	0.00	137.25	3,386.00	1,693.00	5,395.40	2,701.71	1.72	-0.25	0.055
75.00	-14.77	-1.79	0.00	-128.27	0.00	128.27	3,302.44	1,651.22	5,086.20	2,546.88	2.00	-0.27	0.055
80.00	-13.96	-1.80	0.00	-119.30	0.00	119.30	3,207.53	1,603.77	4,769.04	2,388.06	2.29	-0.29	0.054
85.00	-13.72	-1.81	0.00	-110.29	0.00	110.29	3,093.69	1,546.85	4,434.86	2,220.73	2.61	-0.32	0.054
86.50	-12.88	-1.83	0.00	-107.57	0.00	107.57	3,059.54	1,529.77	4,336.97	2,171.71	2.71	-0.32	0.054
90.00	-12.52	-1.84	0.00	-101.16	0.00	101.16	2,979.85	1,489.93	4,112.82	2,059.47	2.95	-0.34	0.053
91.50	-12.12	-1.86	0.00	-98.39	0.00	98.39	1,810.37	905.19	2,525.79	1,264.77	3.06	-0.35	0.084
95.00	-11.55	-1.89	0.00	-91.88	0.00	91.88	1,779.94	889.97	2,416.91	1,210.25	3.32	-0.36	0.082
100.00	-11.00	-1.91	0.00	-82.45	0.00	82.45	1,734.79	867.39	2,263.11	1,133.24	3.72	-0.40	0.079
105.00	-10.47	-1.93	0.00	-72.89	0.00	72.89	1,687.67	843.84	2,111.68	1,057.41	4.16	-0.43	0.075
110.00	-9.95	-1.94	0.00	-63.23	0.00	63.23	1,638.60	819.30	1,962.92	982.92	4.63	-0.47	0.070
115.00	-8.77	-1.93	0.00	-53.53	0.00	53.53	1,587.56	793.78	1,817.14	909.92	5.14	-0.50	0.064
120.00	-8.42	-1.92	0.00	-43.87	0.00	43.87	1,534.56	767.28	1,674.67	838.58	5.68	-0.53	0.058
123.58	-8.22	-1.91	0.00	-36.99	0.00	36.99	1,495.36	747.68	1,574.76	788.55	6.09	-0.55	0.052
125.00	-7.88	-1.88	0.00	-34.28	0.00	34.28	1,479.59	739.79	1,535.81	769.04	6.25	-0.56	0.050
127.42	-7.68	-1.86	0.00	-29.73	0.00	29.73	1,010.15	505.07	1,043.37	522.46	6.54	-0.58	0.065
130.00	-5.14	-1.56	0.00	-24.92	0.00	24.92	993.05	496.52	998.35	499.92	6.85	-0.59	0.055
135.00	-4.97	-1.53	0.00	-17.12	0.00	17.12	958.46	479.23	912.49	456.92	7.49	-0.62	0.043
138.00	-4.03	-1.34	0.00	-12.53	0.00	12.53	936.76	468.38	861.87	431.57	7.88	-0.63	0.033
140.00	-2.71	-1.02	0.00	-9.86	0.00	9.86	921.91	460.95	828.54	414.89	8.14	-0.64	0.027
145.00	-2.50	-0.95	0.00	-4.76	0.00	4.76	883.39	441.70	746.83	373.97	8.82	-0.65	0.016
150.00	0.00	-0.92	0.00	0.00	0.00	0.00	842.91	421.46	667.67	334.33	9.51	-0.66	0.000

Site Number: 411260

Code: ANSI/TIA-222-G

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Site Name: MIDDLEFIELD CT, CT

Engineering Number:12913130\_C3\_01

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Customer: VERIZON WIRELESS

### 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	22.39	0.00	44.13	0.00	0.00	2481.05	91.50	0.56
0.9D + 1.6W	21.84	0.00	33.09	0.00	0.00	2386.81	91.50	0.54
1.2D + 1.0DI + 1.0WI	11.16	0.00	65.24	0.00	0.00	1054.10	0.00	0.23
(1.2 + 0.2Sds) * DL + E ELFM	1.44	0.00	43.90	0.00	0.00	176.41	91.50	0.05
(1.2 + 0.2Sds) * DL + E EMAM	2.39	0.00	43.90	0.00	0.00	288.87	91.50	0.09
(0.9 - 0.2Sds) * DL + E ELFM	1.44	0.00	30.55	0.00	0.00	174.20	91.50	0.04
(0.9 - 0.2Sds) * DL + E EMAM	2.39	0.00	30.54	0.00	0.00	284.99	91.50	0.08
1.0D + 1.0W	4.67	0.00	36.80	0.00	0.00	512.80	91.50	0.12

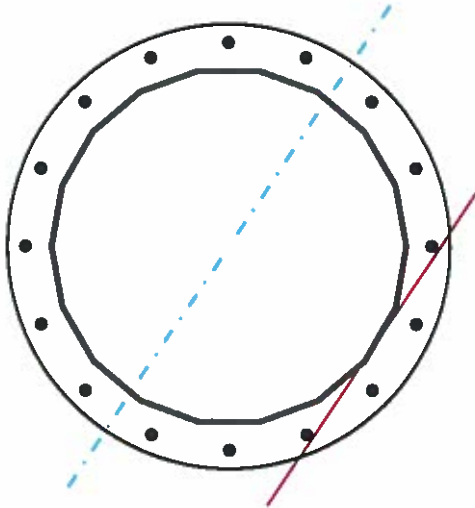
## Base Plate & Anchor Rod Analysis

Pole Dimensions		
Number of Sides	18	-
Diameter	56.5	in
Thickness	0.375	in
Orientation Offset	0	°

Base Reactions		
Moment, Mu	2481.1	k-ft
Axial, Pu	44.1	k
Shear, Vu	22.4	k
Neutral Axis	236	°

Report Capacities		
Component	Capacity	Result
Base Plate	54%	Pass
Anchor Rods	44%	Pass
Dwyldag	-	-

Base Plate		
Shape	Round	-
Diameter, $\phi$	72	in
Thickness	2	in
Grade	A572-60	-
Yield Strength, Fy	60	ksi
Tensile Strength, Fu	75	ksi
Clip	N/A	in
Orientation Offset	0	°
Anchor Rod Detail	d	$\eta=0.5$
Clear Distance	3	in
Applied Moment, Mu	904.4	k
Bending Stress, $\phi Mn$	1661.0	k



Original Anchor Rods		
Arrangement	Radial	-
Quantity	16	-
Diameter, $\phi$	2 1/4	in
Bolt Circle	66	in
Grade	A615-75	-
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Spacing	13.0	in
Orientation Offset	0	°
Applied Force, Pu	113.4	k
Anchor Rods, $\phi Pn$	259.8	k

## Calculations for Monopole Base Plate & Anchor Rod Analysis

### Reaction Distribution

Reaction	Shear Vu	Moment Mu	Factor
-	k	k-ft	-
Base Forces	22.4	2481.1	1.00
Anchor Rod Forces	22.4	2481.1	1.00
Additional Bolt (Grp1) Forces			
Additional Bolt (Grp2) Forces			
Dywidag Forces			
Stiffener Forces			

### 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	65.7855	3.6548	0.1719		25906.27
Bolt	3.9761	3.2477	0.8393	4.5	28307.30
Bolt1					
Bolt2					
Dywidag					
Stiffener					

Base Plate		
Shape	Round	-
Diameter, D	72	in
Thickness, t	2	in
Yield Strength, Fy	60	ksi
Tensile Strength, Fu	75	ksi
Base Plate Chord	44.629	in
Detail Type	d	-
Detail Factor	0.50	-
Clear Distance	3	-

Anchor Rods		
Anchor Rod Quantity, N	16	-
Rod Diameter, d	2.25	in
Bolt Circle, BC	66	in
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	113.4	k
Applied Shear, Vu	0.4	k
Compressive Capacity, φPn	259.8	k
Tensile Capacity, φRnt	0.436	OK
Interaction Capacity	0.440	OK

External Base Plate		
Chord Length AA	38.363	in
Additional AA	4.000	in
Section Modulus, Z	42.363	in <sup>3</sup>
Applied Moment, Mu	904.4	k-ft
Bending Capacity, φMn	2287.6	k-ft
Capacity, Mu/φMn	0.395	OK
Chord Length AB	37.035	in
Additional AB	4.000	in
Section Modulus, Z	41.035	in <sup>3</sup>
Applied Moment, Mu	805.2	k-ft
Bending Capacity, φMn	2215.9	k-ft
Capacity, Mu/φMn	0.363	OK
Bend Line Length	30.759	in
Additional Bend Line	0.000	in
Section Modulus, Z	30.759	in <sup>3</sup>
Applied Moment, Mu	904.4	k-ft
Bending Capacity, φMn	1661.0	k-ft
Capacity, Mu/φMn	0.544	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		



General Power Density

Site Name: MIDDLEFIELD, 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	2259	2259	148	0.0371	1.00	3.71%
VZW 850 LTE	869	1	489	489	148	0.0080	0.58	1.38%
VZW Cellular	876	3	370	1109	148	0.0182	0.58	3.12%
VZW AWS	2145	1	2535	2535	148	0.0416	1.00	4.16%
VZW 700	698	1	1119	1119	148	0.0184	0.47	3.95%

**Total Percentage of Maximum Permissible Exposure**

16.32%

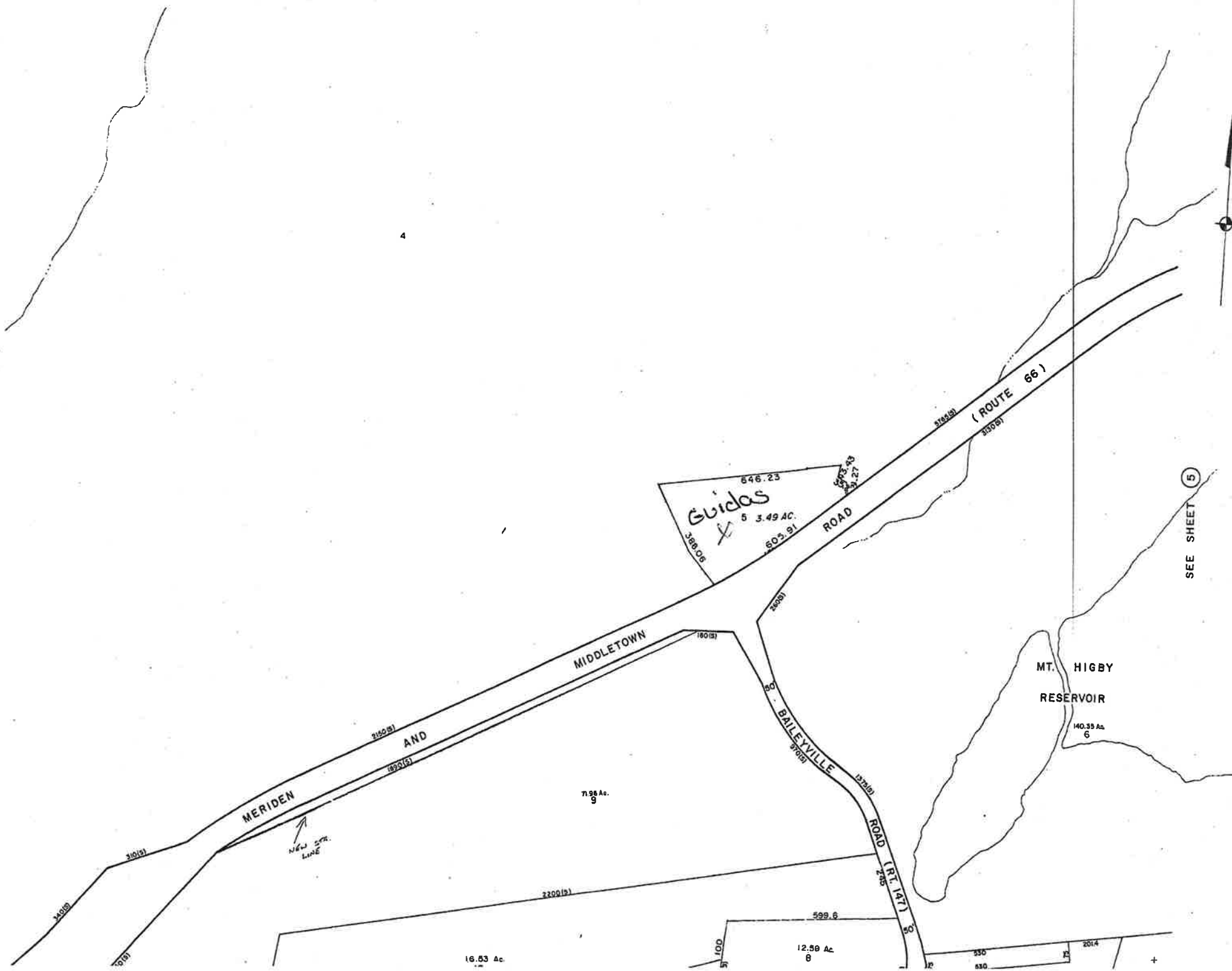
\*Guidelines adopted by the FCC on August 1, 1996, 47 CFR Part 1 based on NCRP Report 86, 1986 and generally on ANSI/IEEE C95.1-1992

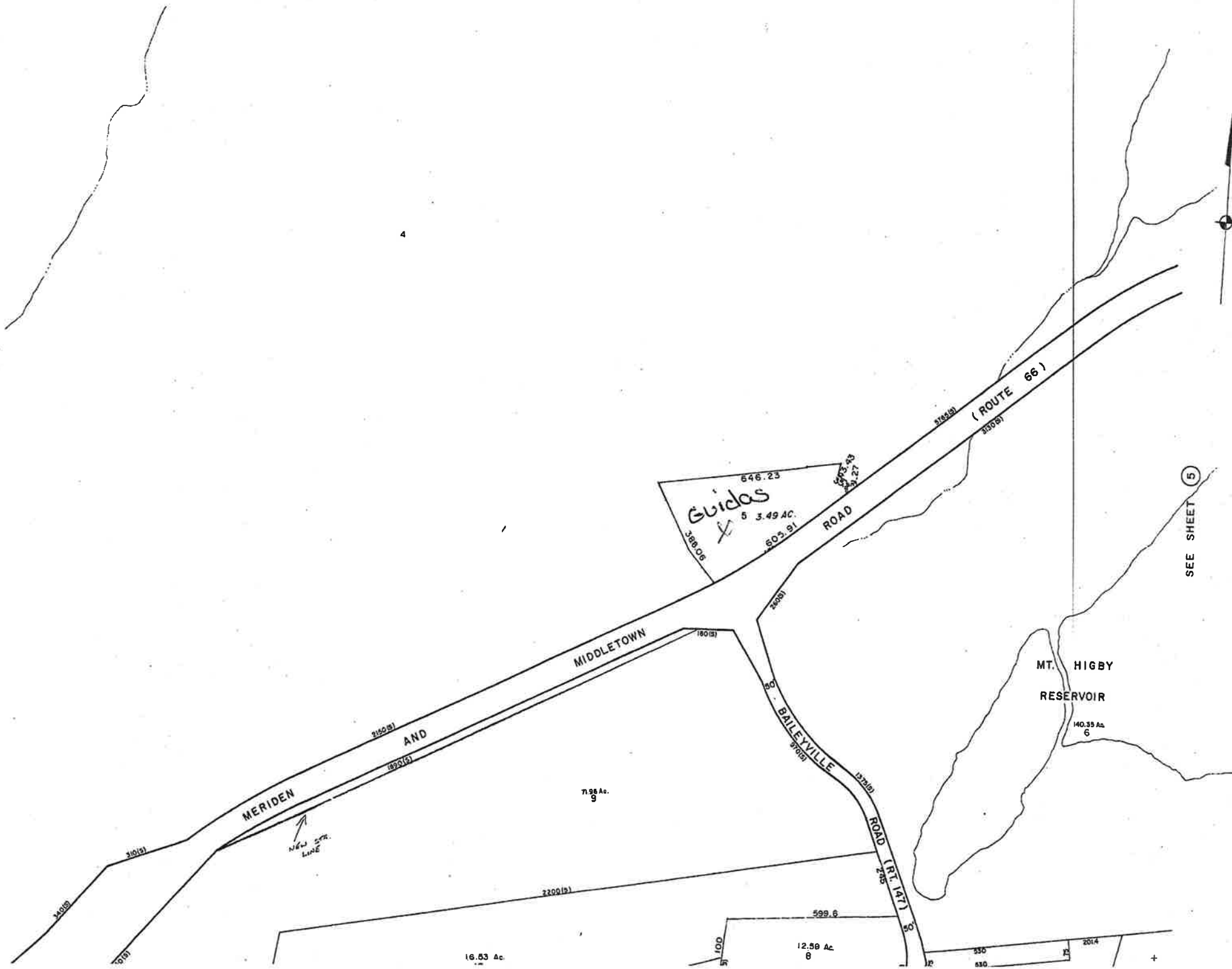
MHz = Megahertz

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

ERP = Effective Radiated Power

Absolute worst case maximum values used.





# 484 MERIDEN RD & RT 66

**Location** 484 MERIDEN RD & RT 66

**Mblu** 4 / / 5 / /

**Acct#** 00146700

**Owner** LAND MANAGMENT INC

**Assessment** \$388,500

**PID** 1566

**Building Count** 3

## Current Value

Assessment			
Valuation Year	Improvements	Land	Total
2016	\$154,900	\$233,600	\$388,500

## Owner of Record

**Owner** LAND MANAGMENT INC

**Sale Price** \$0

**Co-Owner**

**Certificate**

**Address** 482 RT 66 & MERIDEN RD  
MIDDLEFIELD, CT 06455

**Book & Page** 66/ 682

**Sale Date** 09/30/1988

## Ownership History

Ownership History				
Owner	Sale Price	Certificate	Book & Page	Sale Date
LAND MANAGMENT INC	\$0		66/ 682	09/30/1988

## Building Information

### Building 1 : Section 1

**Year Built:** 1958

**Living Area:** 1,878


**Replacement Cost:** \$166,389

**Building Percent Good:** 45

**Replacement Cost**

**Less Depreciation:** \$74,900

### Building Photo

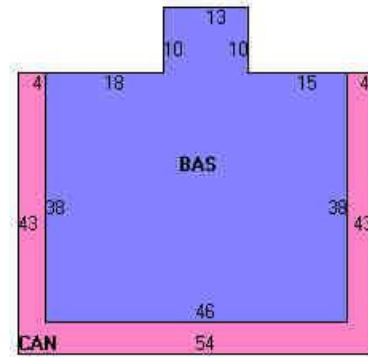
 Building Photo

(<http://images.vgsi.com/photos/MiddlefieldCTPhotos/\\01\00\21/>)

Building Attributes	
Field	Description
STYLE	Restaurant
MODEL	Comm/Ind
Grade	Average

Stories:	1
Occupancy	1
Exterior Wall 1	Single Siding
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	Rolled Compos
Interior Wall 1	Plywood Panel
Interior Wall 2	
Interior Floor 1	Concr-Finished
Interior Floor 2	Terrazzo Monol
Heating Fuel	Gas/Oil
Heating Type	Forced Air-Duc
AC Type	Heat Pump
Bldg Use	REST/CLUBS
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	3260
Heat/AC	HEAT/AC PKGS
Frame Type	WOOD FRAME
Baths/Plumbing	AVERAGE
Ceiling/Wall	CEIL & WALLS
Rooms/Prtns	AVERAGE
Wall Height	9
% Comn Wall	

## Building Layout



(<http://images.vgsi.com/photos/MiddlefieldCTPhotos//Sketches/1>)

Building Sub-Areas (sq ft)			<u>Legend</u>
Code	Description	Gross Area	Living Area
BAS	First Floor	1,878	1,878
CAN	Canopy	574	0
		2,452	1,878

## Building 2 : Section 1

**Year Built:** 1969  
**Living Area:** 2,400  
**Replacement Cost:** \$195,644  
**Building Percent Good:** 52  
**Replacement Cost Less Depreciation:** \$101,700

Building Attributes : Bldg 2 of 3	
Field	Description
STYLE	Store
MODEL	Ind/Comm
Grade	Average
Stories:	1
Occupancy	2
Exterior Wall 1	Concr/Cinder

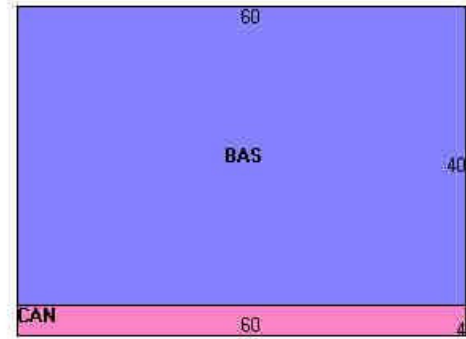
## Building Photo



(<http://images.vgsi.com/photos/MiddlefieldCTPhotos/\01\00\17/>)

Exterior Wall 2	Brick
Roof Structure	Flat
Roof Cover	Rolled Compos
Interior Wall 1	Drywall
Interior Wall 2	
Interior Floor 1	Concr-Finished
Interior Floor 2	Carpet
Heating Fuel	Gas/Oil
Heating Type	Forced Air-Duc
AC Type	None
Bldg Use	STORE/SHOP
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	3220
Heat/AC	NONE
Frame Type	MASONRY
Baths/Plumbing	AVERAGE
Ceiling/Wall	SUS-CEIL & WL
Rooms/Prtns	AVERAGE
Wall Height	9
% Comn Wall	

## Building Layout



(<http://images.vgsi.com/photos/MiddlefieldCTPhotos//Sketches/1>)

Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	2,400	2,400
CAN	Canopy	240	0
		2,640	2,400

## Building 3 : Section 1

**Year Built:** 1953  
**Living Area:** 984  
**Replacement Cost:** \$80,868  
**Building Percent Good:** 30  
**Replacement Cost Less Depreciation:** \$24,300

Building Attributes : Bldg 3 of 3	
Field	Description
Style	Ranch
Model	Residential
Grade:	Below Average
Stories:	1 Story
Occupancy	1
Exterior Wall 1	Aluminum Sidng
Exterior Wall 2	Pre-Fab Wood
Roof Structure:	Gable
Roof Cover	Asphalt Shingl

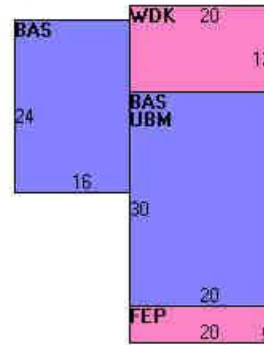
## Building Photo



(<http://images.vgsi.com/photos/MiddlefieldCTPhotos//\01\00\17/>)

Interior Wall 1	Drywall
Interior Wall 2	
Interior Flr 1	Linoleum
Interior Flr 2	Carpet
Heat Fuel	Electric
Heat Type:	Electr Basebrd
AC Type:	None
Total Bedrooms:	2 Bedrooms
Total Bthrms:	1
Total Half Baths:	0
Total Xtra Fixtrs:	
Total Rooms:	5 Rooms
Bath Style:	Average
Kitchen Style:	Average
Whirlpool	
Interior	

## Building Layout



(<http://images.vgsi.com/photos/MiddlefieldCTPhotos//Sketches/1>)

Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	984	984
FEP	Porch, Enclosed	100	0
UBM	Basement, Unfinished	600	0
WDK	Deck, Wood	240	0
		1,924	984

## Extra Features

Extra Features	Legend
No Data for Extra Features	

## Land

### Land Use

<b>Use Code</b>	3260
<b>Description</b>	REST/CLUBS
<b>Zone</b>	PC
<b>Neighborhood</b>	A
<b>Alt Land Appr Category</b>	No

### Land Line Valuation

<b>Size (Acres)</b>	3.49
<b>Frontage</b>	605
<b>Depth</b>	
<b>Assessed Value</b>	\$233,600

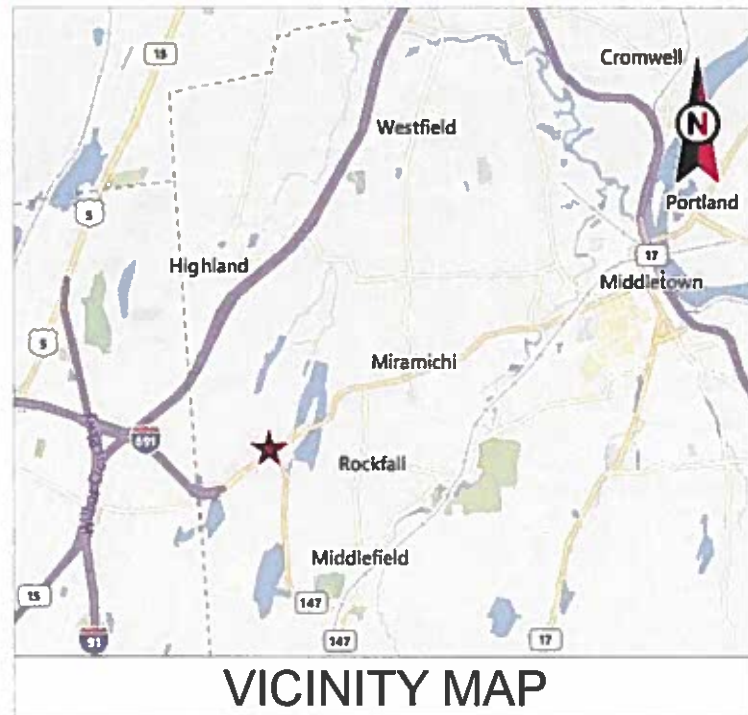
## Outbuildings

Outbuildings						Legend
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
PAV1	PAVING-ASPHALT			20000 S.F.	\$17,500	1
SHD2	SHED FR GD			280 S.F.	\$1,700	1

SHD7	COM MAS			64 S.F.	\$1,200	1
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**AMERICAN TOWER®**

ATC SITE NAME: MIDDLEFIELD CT  
 ATC SITE NUMBER: 411260  
 VERIZON SITE NAME: MIDDLEFIELD CT  
 VERIZON SITE NUMBER: 469410  
 SITE ADDRESS: 484 MERIDEN RD.  
 MIDDLEFIELD, CT 06455



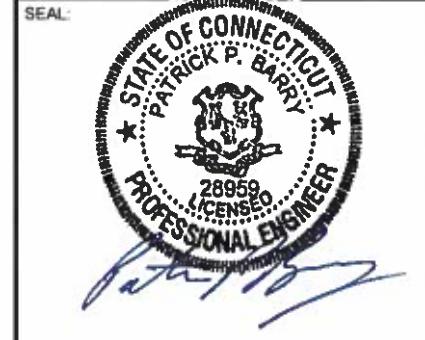
**VERIZON WIRELESS  
 ANTENNA AMENDMENT DRAWINGS**

**AMERICAN TOWER®**  
 A.T. ENGINEERING SERVICE, PLLC  
 3500 REGENCY PARKWAY  
 SUITE 100  
 CARY, NC 27518  
 PHONE: (919) 468-0112  
 COA: PEC.0001553

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REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	TC	06/21/19
1	RAD HEIGHT	TC	06/27/19

ATC SITE NUMBER:  
**411260**  
 ATC SITE NAME:  
**MIDDLEFIELD CT**  
 SITE ADDRESS:  
 484 MERIDEN RD.  
 MIDDLEFIELD, CT 06455



Authorized by "EOR"  
**Verizon** *esign*

DRAWN BY:	TC
APPROVED BY:	PPB
DATE DRAWN:	06/21/19
ATC JOB NO:	12964561
CUSTOMER ID:	MIDDLEFIELD CT
CUSTOMER #:	469410

**COVER SHEET**  
 SHEET NUMBER: **G-001**  
 REVISION: **1**

COMPLIANCE CODE	PROJECT SUMMARY	PROJECT DESCRIPTION	SHEET INDEX				
ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNMENT AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.  1. INTERNATIONAL BUILDING CODE (IBC) 2. NATIONAL ELECTRIC CODE (NEC) 3. LOCAL BUILDING CODE 4. CITY/COUNTY ORDINANCES	<u>SITE ADDRESS:</u> 484 MERIDEN RD MIDDLEFIELD, CT 06455 COUNTY: MIDDLESEX  <u>GEOGRAPHIC COORDINATES:</u> LATITUDE: 41.535514 LONGITUDE: -72.732094 GROUND ELEVATION: 427' AMSL	THE PROPOSED PROJECT INCLUDES MODIFYING GROUND BASED AND TOWER MOUNTED EQUIPMENT AS INDICATED PER BELOW:  <u>TOWER:</u> REMOVE (6) PANELS AND (12) 1-5/8" COAX CABLES  INSTALL (6) NEW PANELS, (6) RRUs, (3) DUAL MOUNTS, (1) 12X24 HYBRID CABLE, AND (1) OVP  EXISTING (6) PANELS AND (6) 1-5/8" COAX CABLES TO REMAIN  <u>GROUND:</u> REMOVE (3) RRU	SHEET NO:	DESCRIPTION:	REV:	DATE	BY:
	<u>PROJECT TEAM</u>  <u>TOWER OWNER:</u> AMERICAN TOWER 10 PRESIDENTIAL WAY WOBURN, MA 01801  <u>ENGINEER:</u> ATC TOWER SERVICES, LLC 3500 REGENCY PKWY STE 100 CARY, NC 27518  <u>PROPERTY OWNER:</u> LAND MANAGEMENT INC 484 MERIDEN RD RTE 66 MIDDLEFIELD, CT 06455  <u>APPLICANT:</u> VERIZON WIRELESS 20 ALEXANDER DRIVE, 2ND FLOOR WALLINGFORD, CT 06492	<u>PROJECT NOTES</u> 1. THE FACILITY IS UNMANNED. 2. A TECHNICIAN WILL VISIT THE SITE APPROXIMATELY ONCE A MONTH FOR ROUTINE INSPECTION AND MAINTENANCE. 3. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT LAND DISTURBANCE OR EFFECT OF STORM WATER DRAINAGE. 4. NO SANITARY SEWER, POTABLE WATER OR TRASH DISPOSAL IS REQUIRED. 5. HANDICAP ACCESS IS NOT REQUIRED.	G-001 COVER SHEET G-002 GENERAL NOTES C-101 DETAILED SITE PLAN AND TOWER ELEVATION C-501 RF SCHEDULE AND ANTENNA INSTALLATION C-502 CONSTRUCTION DETAILS R-601 SUPPLEMENTAL				
<u>UTILITY COMPANIES</u>  POWER COMPANY: NORTHEAST UTILITIES PHONE: (800) 286-2000  TELEPHONE COMPANY: AT&T PHONE: (800) 288-2020	<u>PROJECT LOCATION DIRECTIONS</u>  FROM WALLINGFORD TAKE RT 91 NORTH TO EXIT 16 (E MAIN ST) TAKE A RIGHT ONTO EAST MAIN STREET FOLLOW TO RT. 66 AT 1ST TRAFFIC LIGHT ON 66 TAKE A LEFT INTO GUIDA'S DAIRY BAR SITE IS IN LEFT CORNER OF REAR PARKING LOT. GATE COMBO IS 2370						



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**GENERAL CONSTRUCTION NOTES:**

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

27. THE CONTRACTOR SHALL PROTECT AT HIS OWN EXPENSE, ALL EXISTING FACILITIES AND SUCH OF HIS NEW WORK LIABLE TO INJURY DURING THE CONSTRUCTION PERIOD. ANY DAMAGE CAUSED BY NEGLIGENCE ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, OR BY THE ELEMENTS DUE TO NEGLIGENCE ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, EITHER TO THE EXISTING WORK, OR TO HIS WORK OR THE WORK OF ANY OTHER CONTRACTOR, SHALL BE REPAIRED AT HIS EXPENSE TO THE OWNER'S SATISFACTION.
28. ALL WORK SHALL BE INSTALLED IN A FIRST CLASS, NEAT AND WORKMANLIKE MANNER BY MECHANICS SKILLED IN THE TRADE INVOLVED. THE QUALITY OF WORKMANSHIP SHALL BE SUBJECT TO THE APPROVAL OF THE VERIZON WIRELESS REP. ANY WORK FOUND BY THE VERIZON WIRELESS REP TO BE OF INFERIOR QUALITY AND/OR WORKMANSHIP SHALL BE REPLACED AND/OR REWORKED AT CONTRACTOR EXPENSE UNTIL APPROVAL IS OBTAINED.
29. IN ORDER TO ESTABLISH STANDARDS OF QUALITY AND PERFORMANCE, ALL TYPES OF MATERIALS LISTED HEREINAFTER BY MANUFACTURER'S NAMES AND/OR MANUFACTURER'S CATALOG NUMBER SHALL BE PROVIDED BY THESE MANUFACTURERS AS SPECIFIED.

**STRUCTURAL STEEL NOTES:**

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



**AMERICAN TOWER®**  
**A.T. ENGINEERING SERVICE, PLLC**  
 3500 REGENCY PARKWAY  
 SUITE 100  
 CARY, NC 27518  
 PHONE: (919) 468-0112  
 COA: PEC.0001553

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REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	TC	06/21/19

ATC SITE NUMBER:  
**411260**

ATC SITE NAME:  
**MIDDLEFIELD CT**

SITE ADDRESS:  
 484 MERIDEN RD  
 MIDDLEFIELD, CT 06455

SEAL:



Authorized by "EOR"

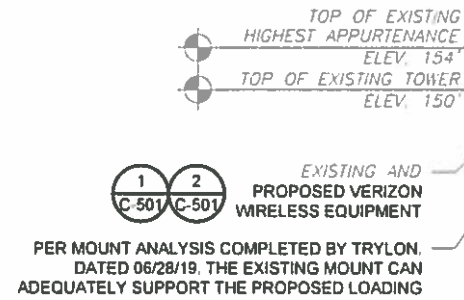
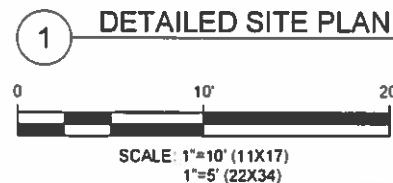
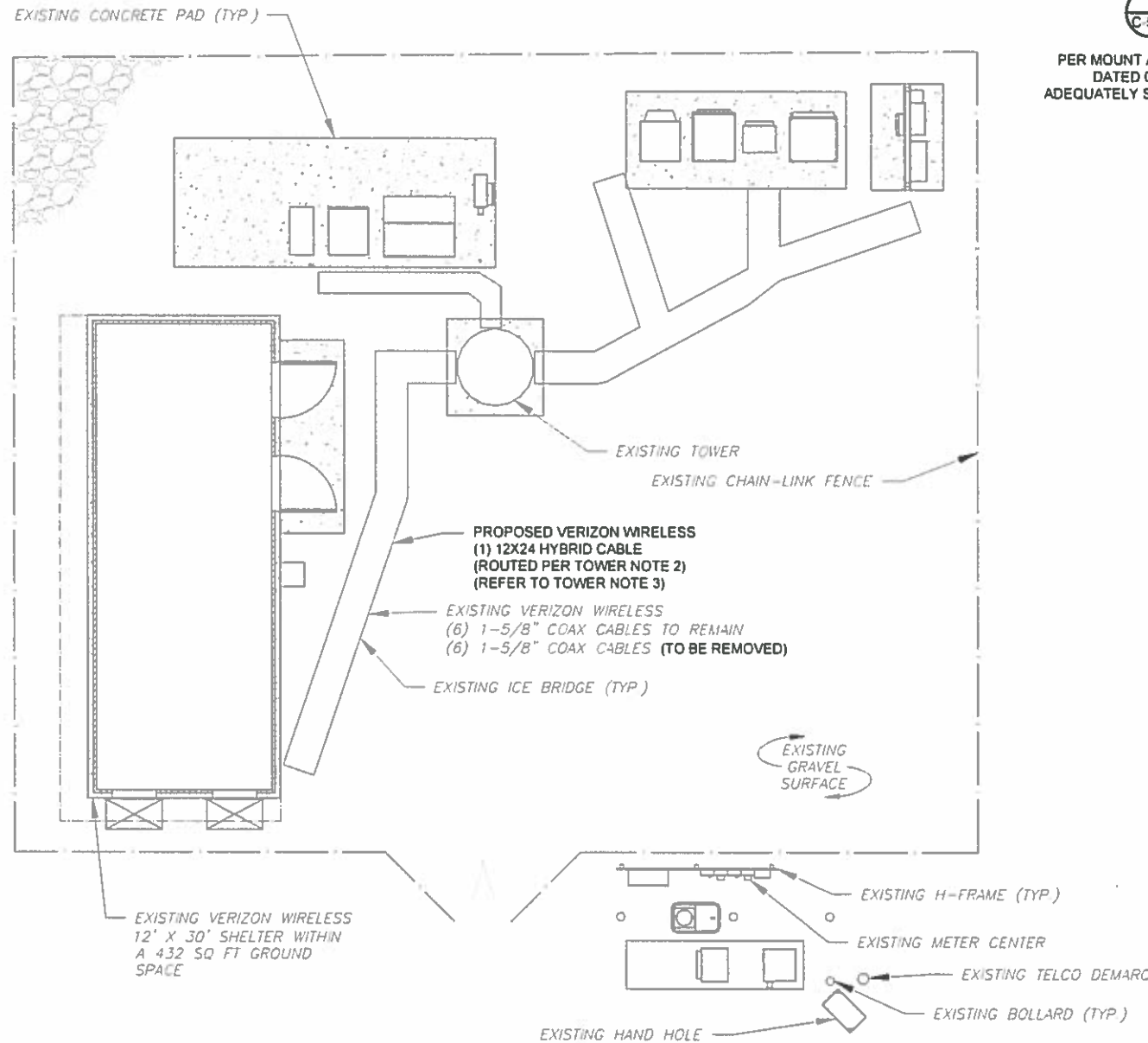
DRAWN BY:	TC
APPROVED BY:	PPB
DATE DRAWN:	06/21/19
ATC JOB NO:	12964561
CUSTOMER ID:	MIDDLEFIELD CT
CUSTOMER #:	469410

**GENERAL NOTES**

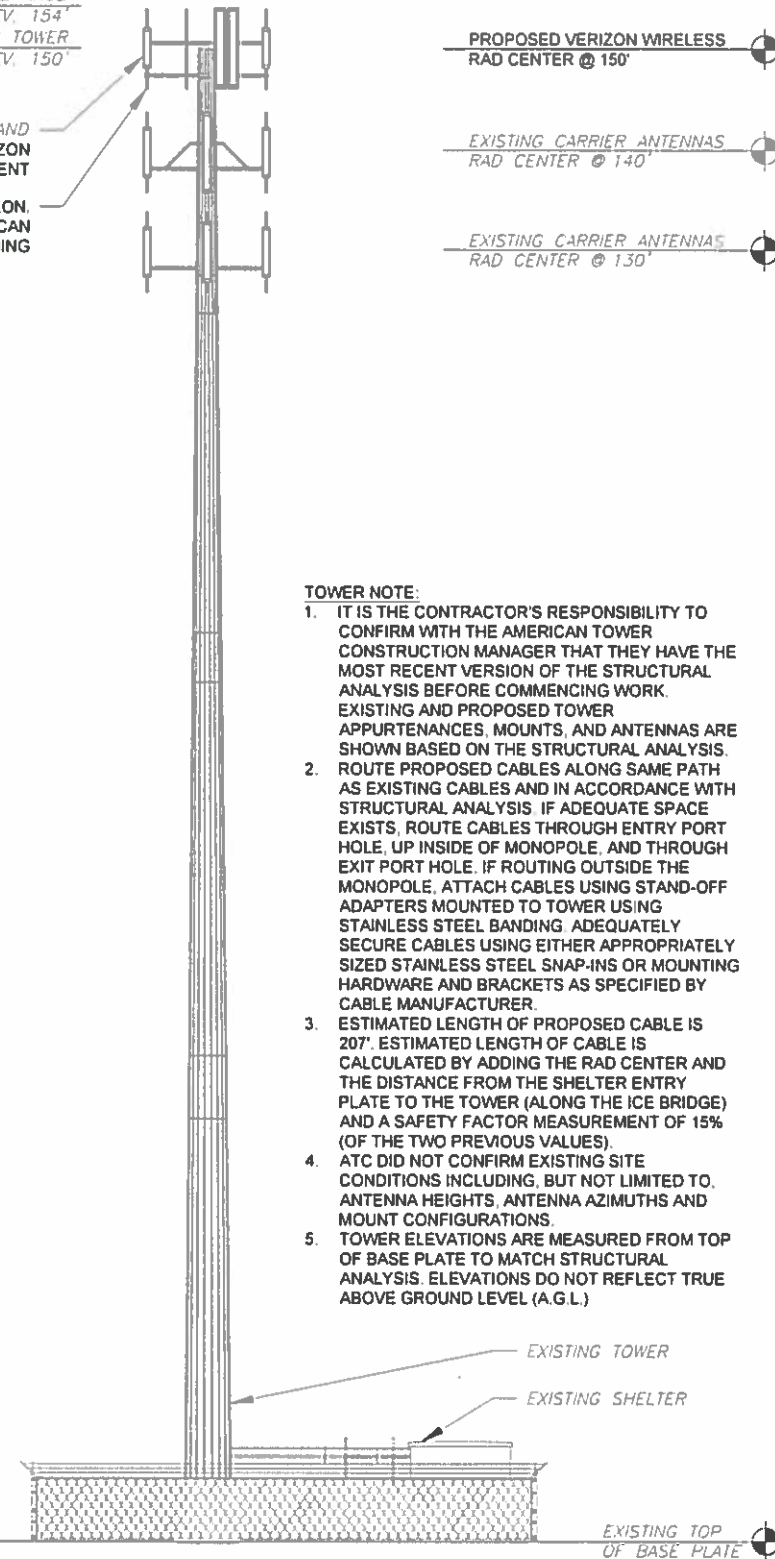
SHEET NUMBER:	REVISION:
<b>G-002</b>	<b>0</b>

**SITE PLAN NOTES:**

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



PER MOUNT ANALYSIS COMPLETED BY TRYLON, DATED 06/28/19, THE EXISTING MOUNT CAN ADEQUATELY SUPPORT THE PROPOSED LOADING



**TOWER NOTE:**

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM WITH THE AMERICAN TOWER CONSTRUCTION MANAGER THAT THEY HAVE THE MOST RECENT VERSION OF THE STRUCTURAL ANALYSIS BEFORE COMMENCING WORK. EXISTING AND PROPOSED TOWER APPURTENANCES, MOUNTS, AND ANTENNAS ARE SHOWN BASED ON THE STRUCTURAL ANALYSIS.
2. ROUTE PROPOSED CABLES ALONG SAME PATH AS EXISTING CABLES AND IN ACCORDANCE WITH STRUCTURAL ANALYSIS IF ADEQUATE SPACE EXISTS, ROUTE CABLES THROUGH ENTRY PORT HOLE, UP INSIDE OF MONOPOLE, AND THROUGH EXIT PORT HOLE. IF ROUTING OUTSIDE THE MONOPOLE, ATTACH CABLES USING STAND-OFF ADAPTERS MOUNTED TO TOWER USING STAINLESS STEEL BANDING ADEQUATELY SECURE CABLES USING EITHER APPROPRIATELY SIZED STAINLESS STEEL SNAP-INS OR MOUNTING HARDWARE AND BRACKETS AS SPECIFIED BY CABLE MANUFACTURER.
3. ESTIMATED LENGTH OF PROPOSED CABLE IS 207'. ESTIMATED LENGTH OF CABLE IS CALCULATED BY ADDING THE RAD CENTER AND THE DISTANCE FROM THE SHELTER ENTRY PLATE TO THE TOWER (ALONG THE ICE BRIDGE) AND A SAFETY FACTOR MEASUREMENT OF 15% (OF THE TWO PREVIOUS VALUES).
4. ATC DID NOT CONFIRM EXISTING SITE CONDITIONS INCLUDING, BUT NOT LIMITED TO, ANTENNA HEIGHTS, ANTENNA AZIMUTHS AND MOUNT CONFIGURATIONS.
5. TOWER ELEVATIONS ARE MEASURED FROM TOP OF BASE PLATE TO MATCH STRUCTURAL ANALYSIS. ELEVATIONS DO NOT REFLECT TRUE ABOVE GROUND LEVEL (A.G.L.)

**2 TOWER ELEVATION**  
SCALE: NOT TO SCALE

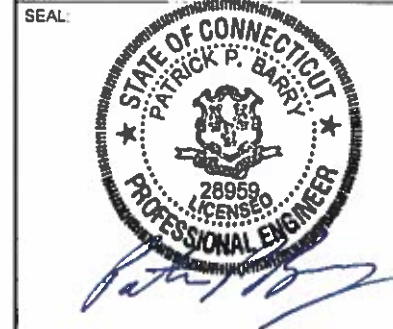


**AMERICAN TOWER®**  
A.T. ENGINEERING SERVICE, PLLC  
3500 REGENCY PARKWAY  
SUITE 100  
CARY, NC 27518  
PHONE: (919) 468-0112  
COA: PEC.0001553

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REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	TC	06/21/19
1	RAD HEIGHT	TC	06/27/19

ATC SITE NUMBER:  
**411260**  
ATC SITE NAME:  
**MIDDLEFIELD CT**  
SITE ADDRESS:  
484 MERIDEN RD  
MIDDLEFIELD, CT 06455

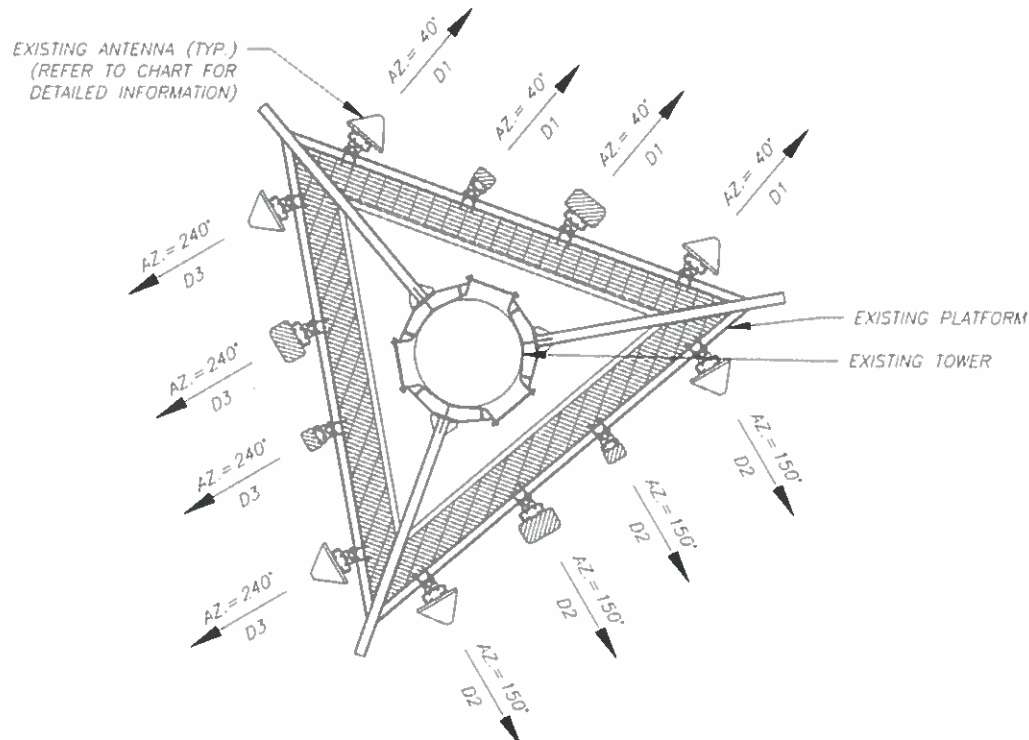


Authorized by "EOR"  
Verizon

DRAWN BY:	TC
APPROVED BY:	PPB
DATE DRAWN:	06/21/19
ATC JOB NO:	12964561
CUSTOMER ID:	MIDDLEFIELD CT
CUSTOMER #:	469410

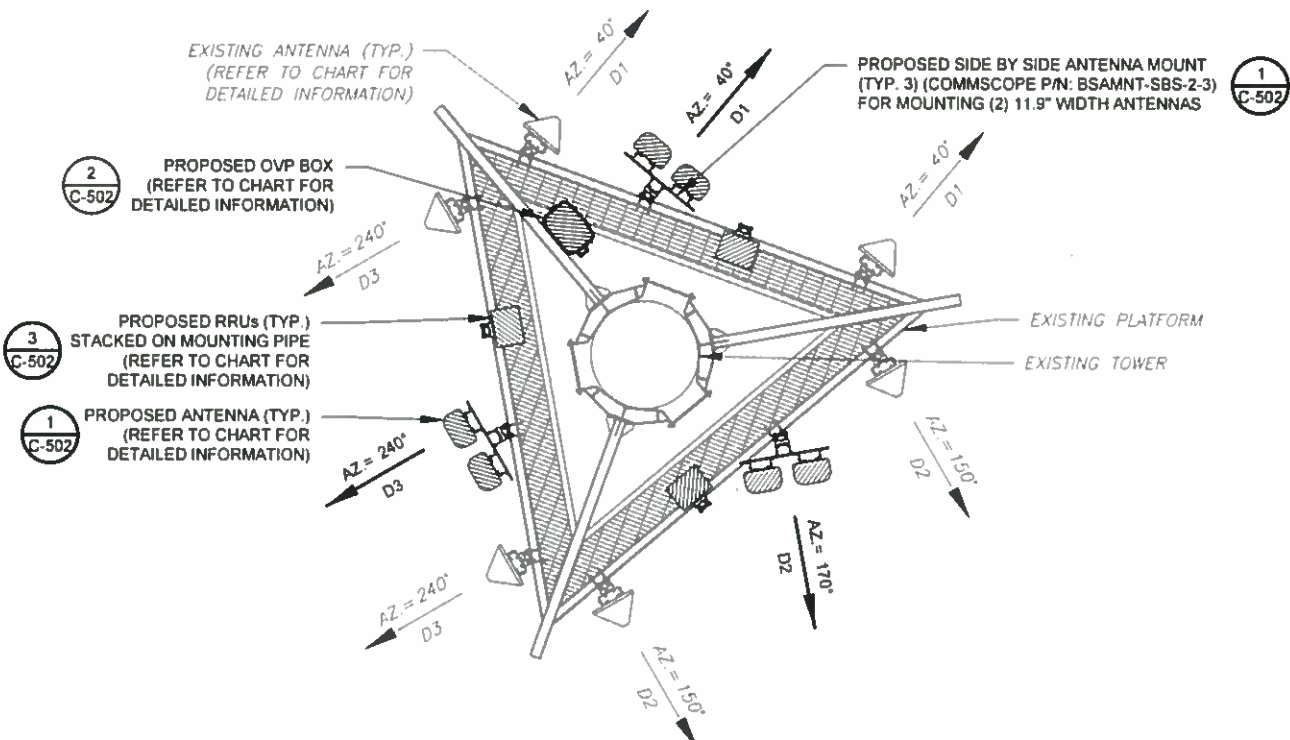
**DETAILED SITE PLAN AND TOWER ELEVATION**

SHEET NUMBER:	REVISION:
<b>C-101</b>	<b>1</b>



1 CURRENT ANTENNA PLAN

PER MOUNT ANALYSIS COMPLETED BY TRYLON, DATED 06/28/19. THE EXISTING MOUNT CAN ADEQUATELY SUPPORT THE PROPOSED LOADING



2 FINAL ANTENNA PLAN

**AMERICAN TOWER®**  
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 CARY, NC 27518  
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REV	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	TC	06/21/19
1	RAD HEIGHT	TC	06/27/19

ATC SITE NUMBER:  
**411260**

ATC SITE NAME:  
**MIDDLEFIELD CT**

SITE ADDRESS  
 484 MERIDEN RD  
 MIDDLEFIELD, CT 06455

SEAL:

Authorized by "EOR"

DRAWN BY:	TC
APPROVED BY:	PPB
DATE DRAWN:	06/21/19
ATC JOB NO:	12964561
CUSTOMER ID:	MIDDLEFIELD CT
CUSTOMER #:	469410

**RF SCHEDULE AND ANTENNA INSTALLATION**

SHEET NUMBER:	REVISION:
<b>C-501</b>	<b>1</b>

EXISTING ANTENNA SCHEDULE

LOCATION		ANTENNA SUMMARY				NON ANTENNA SUMMARY		
SECTOR	RAD	AZ	POS	ANTENNA	BAND	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT	STATUS
D1	150'	40°	A1	LPA-80063/6CF	850CDMA	RMN	-	-
			A2	BXA-171063/12CF	-	RMV	-	-
			A3	SBNHH-1D65B	700LTE	RMV	-	-
			A4	LPA-80063/6CF	850CDMA	RMN	-	-
D2	150'	150°	B1	LPA-80063/6CF	850CDMA	RMN	-	-
			B2	BXA-171063/12CF	-	RMV	-	-
			B3	SBNHH-1D45B	700LTE	RMV	-	-
			B4	LPA-80063/6CF	850CDMA	RMN	-	-
D3	150'	240°	C1	LPA-80063/6CF	850CDMA	RMN	-	-
			C2	BXA-171063/12CF	-	RMV	-	-
			C3	SBNHH-1D45B	700LTE	RMV	-	-
			C4	LPA-80063/6CF	850CDMA	RMN	-	-

NOTES

- BASED ON APPROVED ATC APPLICATION OAA745087, DATED 01/03/19. CONFIRM WITH VERIZON WIRELESS REP FOR APPLICABLE UPDATES/REVISIONS AND MOST RECENT RFDS FOR NSN CONFIGURATION (CONFIG). GC TO CAP ALL UNUSED PORTS.
- ATC HAS NOT YET VERIFIED ANY EXISTING ANTENNA CONFIG OR MOUNT CONFIG. CONTRACTOR TO VERIFY MOUNT CONFIG HAS SUFFICIENT SPACE FOR PROPOSED LESSEE EQUIPMENT (EQUIP) (I.E. CLEARANCES, MOUNT PIPE, SUFFICIENT LENGTH, ETC.) ATC DID NOT ANALYZE ANTENNA MOUNT TO DETERMINE ADEQUATE STRUCTURAL CAPACITY FOR ANY LESSEE LOADING.
- ALL PROPOSED EQUIP INCLUDING ANTENNAS, COAX, ETC. SHALL BE MOUNTED IN ACCORDANCE WITH THE TOWER STRUCTURAL ANALYSIS ON FILE WITH ATC'S CM.
- CONFIRM SPACING OF PROPOSED EQUIP DOES NOT CAUSE TOWER CONFLICTS NOR IMPEDE TOWER CLIMBING PEGS.
- POSITIONS START WITH FIRST PIPE ON THE LEFT SIDE (AS VIEWED FROM BEHIND THE MOUNT).

FINAL ANTENNA SCHEDULE

LOCATION		ANTENNA SUMMARY				NON ANTENNA SUMMARY		
SECTOR	RAD	AZ	POS	ANTENNA	BAND	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT	STATUS
D1	150'	40°	A1	LPA-80063/6CF	850CDMA	RMN	-	-
			A2	(2) NHH-65B-R2B	700/850/1900/2100LTE	ADD	-	-
			A3	-	-	-	B5/B13 RRH-BR04C B2/B66A RRH-BR049	ADD
			A4	LPA-80063/6CF	850CDMA	RMN	-	-
D2	150'	170°	B1	LPA-80063/6CF	850CDMA	RMN	-	-
			B2	(2) NHH-45B-R2B	700/850/1900/2100LTE	ADD	-	-
			B3	-	-	-	B5/B13 RRH-BR04C B2/B66A RRH-BR049	ADD
			B4	LPA-80063/6CF	850CDMA	RMN	-	-
D3	150'	240°	C1	LPA-80063/6CF	850CDMA	RMN	-	-
			C2	(2) NHH-45B-R2B	700/850/1900/2100LTE	ADD	-	-
			C3	-	-	-	B5/B13 RRH-BR04C B2/B66A RRH-BR049	ADD
			C4	LPA-80063/6CF	850CDMA	RMN	-	-

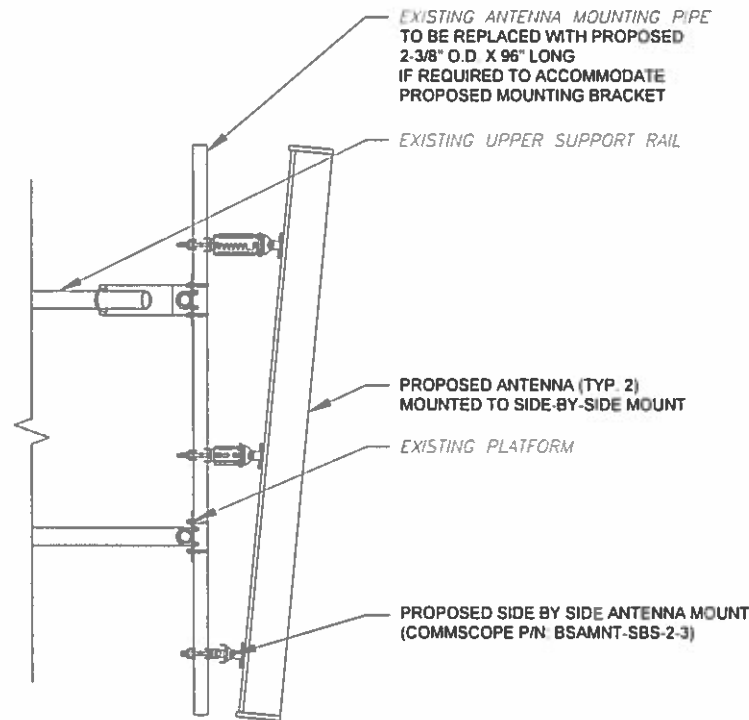
EXISTING FIBER DISTRIBUTION/OVP BOX		EXISTING CABLING SUMMARY		
MODEL NUMBER	STATUS	COAX	HYBRID	STATUS
-	-	(12) 1-5/8"	-	RMV
-	-	(6) 1-5/8"	-	RMN

STATUS ABBREVIATIONS	
RMV:	TO BE REMOVED
RMN:	TO REMAIN
REL:	TO BE RELOCATED
DSC:	TO BE DISCONNECTED & REMAIN
ADD:	TO BE ADDED

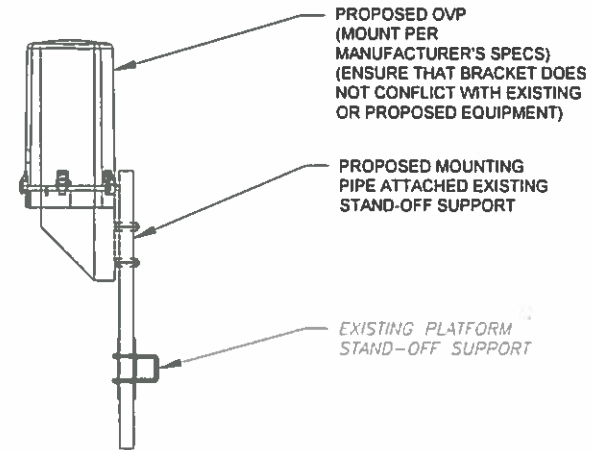
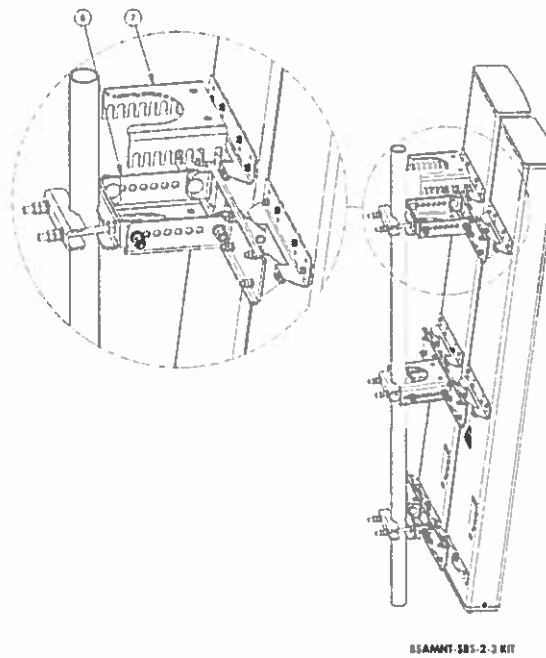
3 EQUIPMENT SCHEDULES

CABLE LENGTHS FOR JUMPERS  
 FIBER DISTRIBUTION/OVP TO RRU: 15'  
 RRU TO ANTENNA: 10'

FINAL FIBER DISTRIBUTION/OVP BOX		FINAL CABLING SUMMARY		
MODEL NUMBER	STATUS	COAX	HYBRID	STATUS
DB-C1-12C-24AB-02	ADD	(6) 1-5/8"	-	RMN
-	-	-	(1) 1-5/8"	ADD

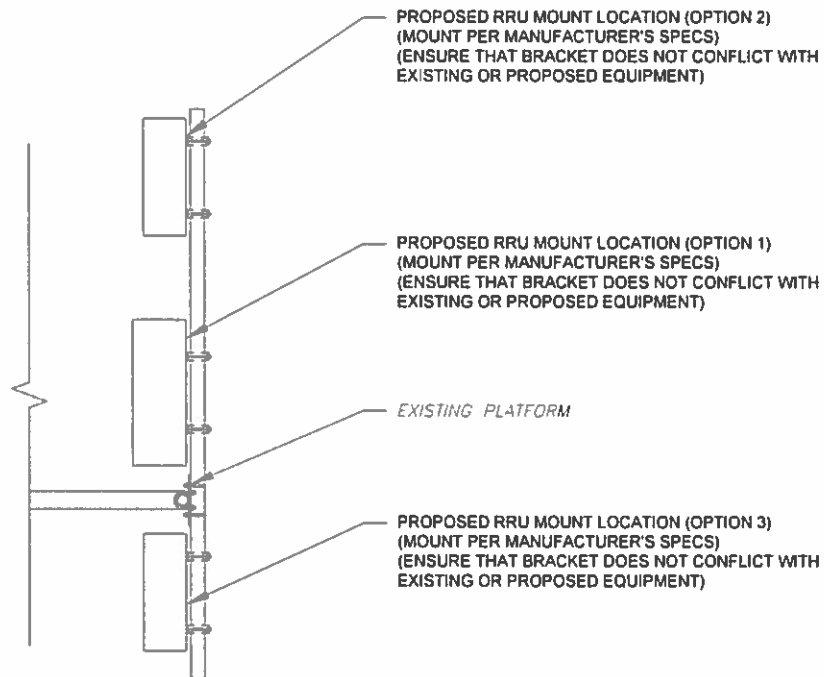


PROFILE VIEW

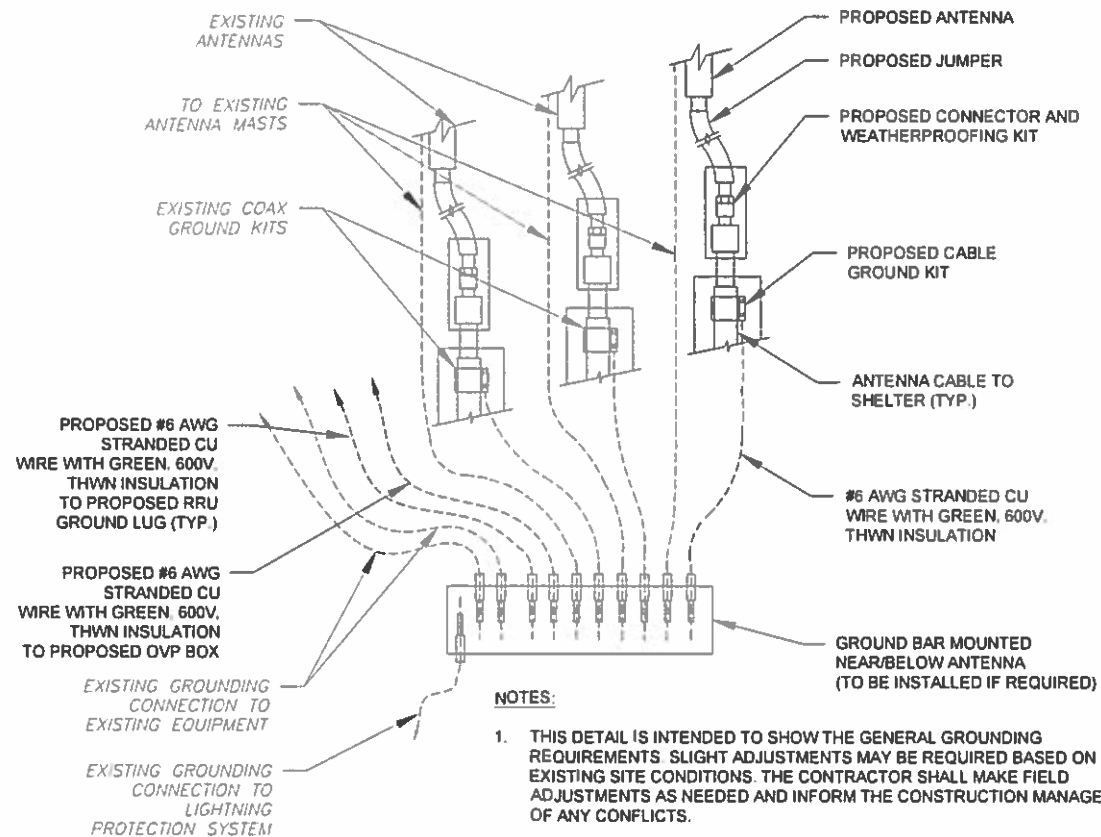


2 PROPOSED OVP MOUNTING SCALE: NOT TO SCALE

1 PROPOSED ANTENNA MOUNTING DETAIL SCALE: NOT TO SCALE



3 PROPOSED RRU MOUNTING DETAIL - TYPICAL SCALE: NOT TO SCALE



NOTES:

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

4 TYPICAL ANTENNA GROUNDING DIAGRAM SCALE: NOT TO SCALE



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REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	TC	06/21/19

ATC SITE NUMBER:  
**411260**

ATC SITE NAME:  
**MIDDLEFIELD CT**

SITE ADDRESS:  
 484 MERIDEN RD  
 MIDDLEFIELD, CT 06455

SEAL:



Authorized by "EOR"  
 Jun **verizon** **cosign**

DRAWN BY:	TC
APPROVED BY:	PPB
DATE DRAWN:	06/21/19
ATC JOB NO:	12964561
CUSTOMER ID:	MIDDLEFIELD CT
CUSTOMER #:	469410

**CONSTRUCTION  
 DETAILS**

SHEET NUMBER	REVISION
<b>C-502</b>	<b>0</b>



Prepared For



# Mount Analysis Report

411260  
Middlefield CT

6-28-2019

PASS -70%



Analysis date: 06-28-2019

## 6. Conclusions and recommendations

Based on information provided, our calculations conclude that the Existing Verizon Platform located at 150-ft elevation on the existing Monopole at the specified address, is ADEQUATE to safely support the proposed equipment, subject to the attached Standard Conditions on page 3.

Category	Classification
Mount Classification (w/ Ice, w/ Vertical Offset):	M1000R(500) - 4[2]

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

Sincerely,  
Analysis performed by:

Sarathi

Reviewed by:

Cliff Abernathy, P.E.



1825 W. Walnut Hill Lane Suite 120 Irving, Texas 75038

**NOTE:** THIS SHEET WAS CREATED BY OTHERS AND PROVIDED AT THE REQUEST OF THE CUSTOMER WITHOUT EDIT. PLEASE REFERENCE THE MOUNT ANALYSIS REPORT FOR COMPLETE MOUNT ANALYSIS CALCULATIONS AND DETAILS. SUPPLEMENTAL PAGES INCLUDED IN THE CONSTRUCTION DRAWINGS ARE FOR REFERENCE ONLY. GENERAL CONTRACTOR IS TO VERIFY THEY HAVE THE MOST RECENT MOUNT ANALYSIS PRIOR TO CONTRUCTION.

SUPPLEMENTAL

SHEET NUMBER:  
**R-601**

REVISION:  
**0**