John Coleman, Project Manager
c/o Cellco Partnership d/b/a Verizon Wireless
Centerline Communications, LLC
750 West Center Street, Floor 3
West Bridgewater, MA 02379
Mobile: (240) 615 -7389
JColeman@clinellc.com

October 20, 2021

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

RE: Notice of Exempt Modification // Site: NEPAUG CT (ATC: 411182)
20 ANTOLINI ROAD, NEW HARTFORD, CT 06057
N 41.828061 // W -73.015683

Dear Ms. Bachman,

Cellco Partnership d/b/a Verizon Wireless currently maintains twelve (12) antenna at the 142-ft level on the existing 145ft Monopole tower, located at 20 AntoliniRoad, New Hartford, CT. The tower is owned by American Tower. The property is also owned by the Town of New Hartford. The Council approved Verizon Wireless use of the existing tower under EM-VER-092-040517 which is unavailable to print. Verizon Wireless now intends to remove six (6) antenna, three (3) TTA's and associated cabling, and install nine (9) new antenna for the LTE (3700 MHz) replacements for its 5G upgrade. Additionally, Verizon Wireless intends to install six (6) new Remote Radio Heads (RRHs), one (1) OVP and associated 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 Daniel V. Jerram, First Selectman, its Building Inspector, Gerald Monroe, American Tower, the tower owner, and the property owner, South End Fire District.

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 October 6, 2021, by A.T. Engineering Service PLLC, a structural analysis dated September 3, 2021, by American Tower Corp., and a structural mount analysis by Paul J. Ford &

Co. date February 15, 2021, and radio frequency (RF) analysis table showing worst-case RF emission calculation by Verizon Wireless RF Design Engineering.

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

2. The proposed modifications will not require the extension of the site boundary.

3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.

4. The operation of the new antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.

5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.

6. The existing structure and its foundation can support the proposed loading, as shown in the attached structural analysis by American Tower Corp., dated September 3, 2021, and a structural mount analysis by Paul J. Ford & Co., dated February 15, 2021, pursuant to certain conditions defined therein. Design and engineering are fully illustrated within final construction drawings, signed and stamped dated October 6, 2021.

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

Sincerely,

John Coleman

John Coleman, Project Manager
c/o Cellco Partnership d/b/a Verizon Wireless
Centerline Communications, LLC
750 West Center Street, Floor 3
West Bridgewater, MA 02379
Mobile: (240) 615 -7389
JColeman@clinellc.com

Attachments
cc: Daniel V. Jerram – First Selectman – Chief Elected Official
Gerald Monroe, Building Official - as P&Z official
American Tower Corporation - as tower owner
American Tower Corporation – as ground owner

UPS CampusShip: View/Print Label

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

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

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

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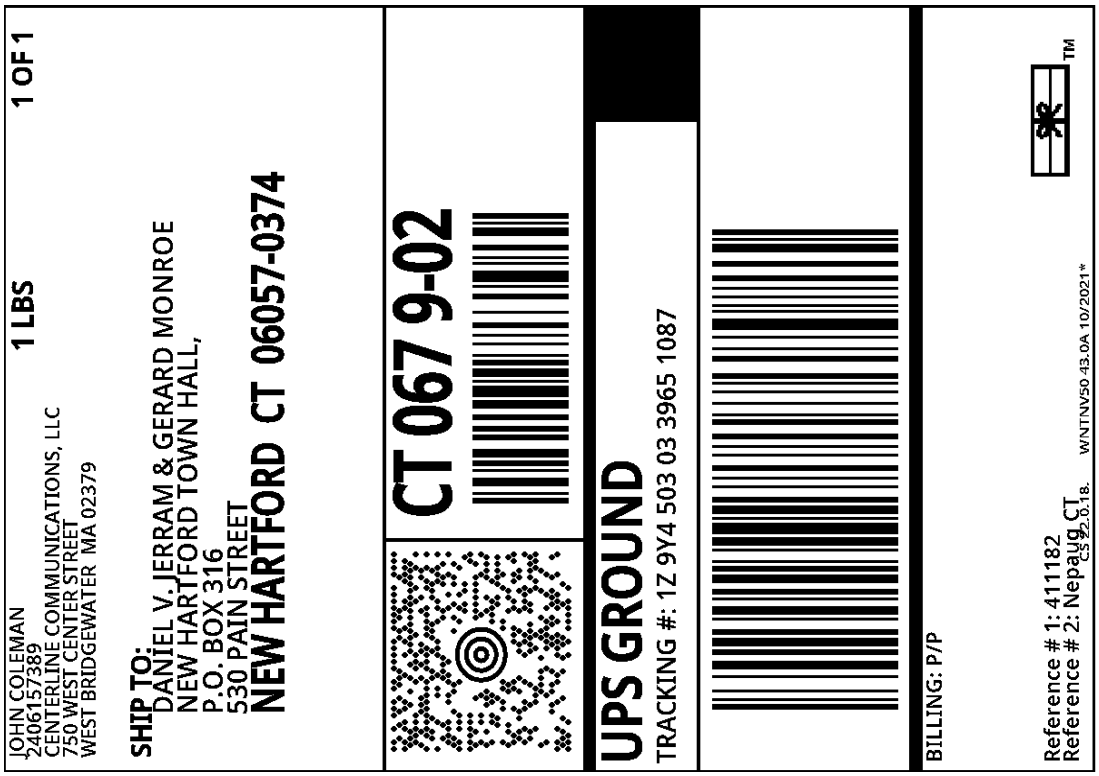

From: UPS
To: John Coleman
Subject: UPS Delivery Notification, Tracking Number 1Z9Y45030339651087
Date: Monday, October 25, 2021 10:53:09 AM

Hello, your package has been delivered.

Delivery Date: Monday, 10/25/2021
Delivery Time: 10:51 AM
Left At: RECEIVER
Signed by: HAYWARD

CENTERLINE SITE ACQUISITION

Tracking Number:	1Z9Y45030339651087
Ship To:	NEW HARTFORD TOWN HALL, 530 PAIN STREET P.O. BOX 316 NEW HARTFORD, CT 060570374 US
Number of Packages:	1
UPS Service:	UPS Ground
Package Weight:	0.5 LBS
Reference Number:	411182
Reference Number:	NEPAUG CT

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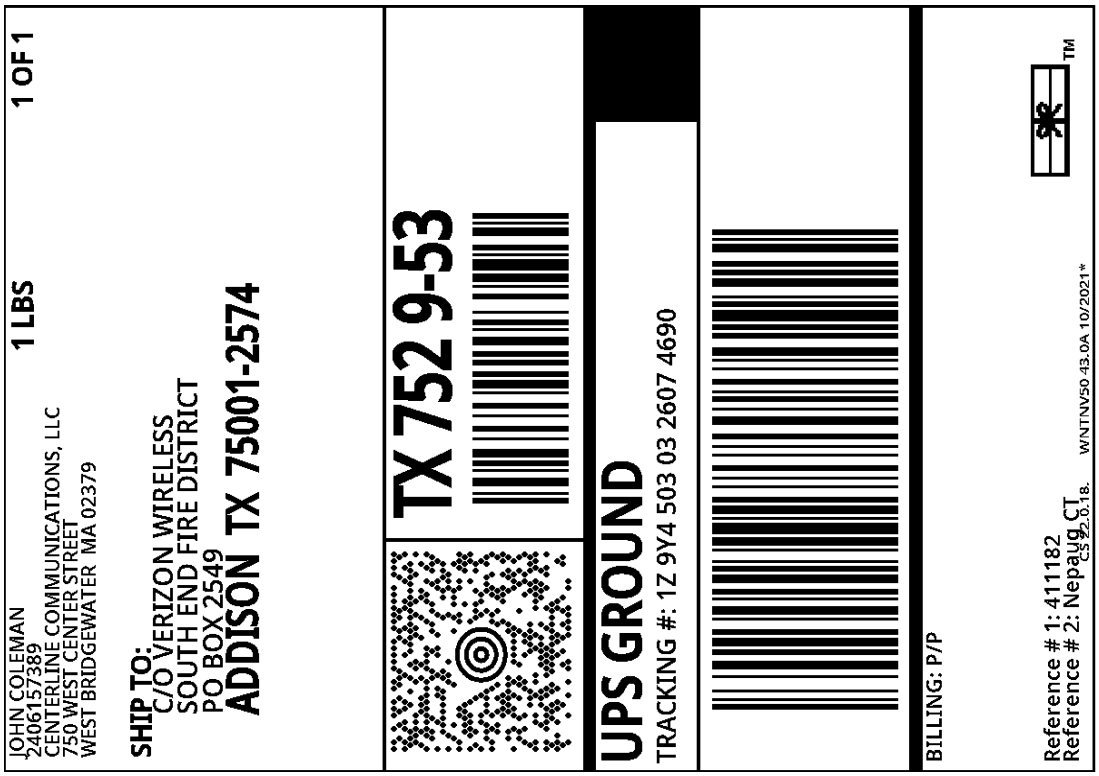

From: UPS
To: John Coleman
Subject: UPS Exception Notification, Tracking Number 1Z9Y45030326074690
Date: Tuesday, October 26, 2021 8:34:55 AM

The status of your package has changed.

Exception Reason:	The apartment number is either missing or incorrect. This may delay delivery. We're attempting to update the address.

At the request of CENTERLINE SITE ACQUISITION, this notice alerts you that the status of the shipment listed below has changed.

Shipment Details

Tracking Number:	1Z9Y45030326074690
Ship To:	South End Fire District PO Box 2549 ADDISON, TX 750012574 US
UPS Service:	UPS GROUND
Package Weight:	0.5 LBS
Reference Number 1:	411182
Reference Number 2:	Nepaug CT

Connecticut Siting Council(/CSC)

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Meetings and Minutes (/CSC/Common-Elements/v4-template/Council-Activity) >

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Docket 184A: Decision and Order

DOCKET NO. 184A - Sprint Spectrum, L.P. d/b/a Sprint PCS and Litchfield Acquisition Corporation d/b/a AT&T Wireless Services amendment to the Certificate of Environmental Compatibility and Public Need for the existing telecommunications facility located at 20 Antolini Road, New Hartford, Connecticut.	}	Connecticut
	}	Siting
	}	Council
	}	May 7, 2002

Decision and Order

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the extension of a telecommunications tower and installation of associated equipment at the existing facility located at 20 Antolini Road, New Hartford, Connecticut, including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate either alone or cumulatively with other effects when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the amendment to the Certificate; therefore, the Council directs that an amended Certificate of Environmental Compatibility and Public Need, as provided by General Statutes § 16-50k,

be issued to Sprint Spectrum L.P. d/b/a Sprint PCS and Litchfield Acquisition Corporation d/b/a AT&T Wireless Services (AT&T) for the extension of a telecommunications tower, and installation of associated equipment at 20 Antolini Road, in the Town of New Hartford, Connecticut.

The facility shall be constructed, operated, and maintained substantially as specified in the Council's record in this matter, and subject to the following conditions:

1. The tower extension shall be compatible with and installed on the existing monopole, no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of Sprint, AT&T, SNET, Nextel, South End Fire District, and other entities, both public and private, but such tower shall not exceed a height of 145 feet above ground level (AGL).

2. Relocation of antennas and supporting appurtenances by AT&T, SNET, Nextel and South End Fire District shall be permitted and subject to Council approval through Section 3 of this Decision and Order.
3. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be submitted to and approved by the Council prior to the commencement of facility construction and shall include: a final site plan(s) for site development to include the specifications for the tower extension, location of antennas, security fence, site clearing, and erosion and sedimentation controls consistent with the Connecticut Guidelines for Soil Erosion and Sediment Control, as amended; provisions for the tower finish to maintain a blue/gray color; and provisions for the prevention and containment of spills and/or other discharge into surface water and groundwater bodies.

4. Upon the establishment of any new State or federal radio frequency standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards.
5. The Certificate Holder shall provide electromagnetic radio frequency power density measurements within sixty days following the installation of all antennas and commencement of commercial operation.
6. The Certificate Holder shall provide the Council with a recalculated report of electromagnetic radio frequency power density, if and when circumstances in operation cause a change in power density above those levels originally calculated and provided in the application.
7. The Certificate Holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.
8. Following completion of construction, if the facility permanently ceases to provide wireless services, this Decision and Order shall be void, and the Certificate Holder shall dismantle the

tower and remove all associated equipment within sixty days, or reapply for any continued or new use to the Council, before any such use is made.

9. Any antenna that becomes obsolete and ceases to function shall be removed within sixty days after such antennas become obsolete and cease to function.
10. Unless otherwise approved by the Council, this Decision and Order shall be void if the facility authorized herein is not operational within one year of the effective date of this Decision and Order or within one year after all appeals to this Decision and Order have been resolved.

Pursuant to General Statute § 16-50p, we hereby direct that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed below, and notice of issuance shall be published in The Hartford Courant.

By this Decision and Order, the Council disposes of the legal rights, duties, and privileges of each party named or admitted to the proceeding in accordance with Section 16-50j-17 of the Regulations of Connecticut State Agencies.

The parties and intervenors to this proceeding are:

Applicant Sprint Spectrum, d/b/a Sprint PCS Litchfield Acquisition Corporation d/b/a AT&T Wireless Services	Julie M. Donaldson, Esq. Hurwitz & Sagarin, LLC 147 N. Broad Street Milford, CT 06460 Christopher B. Fisher, Esq. Cuddy, Feder & Worby 90 Maple Avenue White Plains, NY 10601-5196

AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure	:	**145 ft Monopole**
ATC Site Name	:	**Nepaug CT,CT**
ATC Site Number	:	**411182**
Engineering Number	:	**13714584_C3_02**
Proposed Carrier	:	**VERIZON WIRELESS**
Carrier Site Name	:	**NEW HARTFORD CT**
Carrier Site Number	:	**467415**
Site Location	:	**20 Antolini Road** **New Hartford, CT 06057-3326** **41.8281, -73.0157**
County	:	**Litchfield**
Date	:	**September 3, 2021**
Max Usage	:	**85%**
Result	:	**Pass**

Prepared By:

Brady Layton
Structural Engineer

Reviewed By:

COA : PEC.0001553

Table of Contents

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 145 ft Monopole to reflect the change in loading by VERIZON WIRELESS.

Supporting Documents

Tower Drawings	EEI Project #8859 Rev. 2, dated March 30, 2001 Tower Mapping by TEP, Poject#05598, dated July 7, 2005
Foundation Drawing	URS Grenier Woodward Clyde Project #F301682.04, dated October 13, 2000
Geotechnical Report	Dr. Clarence Welti Site Location: 20 Antolini Road, New Hartford, CT., dated March 27, 2000

Analysis

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

Basic Wind Speed:	115 mph (3-second gust)
Basic Wind Speed w/ Ice:	50 mph (3-second gust) w/ 1.00" radial ice concurrent
Code:	ANSI/TIA-222-H / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	B
Risk Category:	II
Topographic Factor Procedure:	Method 1
Topographic Category:	1
Crest Height (H):	0 ft
Crest Length (L):	0 ft
Spectral Response:	Ss = 0.17, S_1 = 0.05
Site Class:	D - Stiff Soil - Default

Conclusion

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

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

Existing and Reserved Equipment

Elev.[1] (ft)	Qty	Equipment	Mount Type	Lines	Carrier
160.0	1	RFS PD620-2	Triangular Low Profile Platform	(1) 7/8" Coax	OTHER
155.0	1	Generic 12' Omni	Triangular Low Profile Platform	(1) 7/8" Coax	
151.0	3	Alcatel-Lucent RRH2x50-08	Triangular Low Profile Platform	(4) 1 1/4" Hybriflex Cable (1) 1/2" Coax	SPRINT NEXTEL
	1	PCTEL GPS-TMG-HR-26N			
	3	Alcatel-Lucent ALU 800MHz External Notch Filter			
	3	Alcatel-Lucent 800 MHz RRH			
	3	Alcatel-Lucent 1900MHz RRH			
	3	Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield			
	3	RFS APXVSPP18-C-A20			
	3	Commscope DT465B-2XR			
142.0	6	Amphenol Antel LPA-80040-4CF-EDIN-X	T-Arm	(6) 1 5/8" Coax	VERIZON WIRELESS
125.0	6	RFS APX16DWV-16DWV-S-E-ACU	T-Arm	(36) 1 5/8" Coax (1) 1/2" Coax	T-MOBILE
	3	RFS ATMAA1412D-1A20			
	3	RFS ATM1900D-1CWA			
	1	Generic E-911 GPS			
	3	Commscope LNX-6515DS-A1M (43.7 lb)			
114.0	3	Fujitsu TA08025-B605	Triangular Platform with Handrails	(1) 1.60" (40.6mm) Hybrid	DISH WIRELESS L.L.C.
	3	Fujitsu TA08025-B604			
	1	Commscope RDIDC-9181-PF-48			
	3	JMA Wireless MX08FRO665-21			
82.0	6	Powerwave Allgon LGP21401	Triangular Platform with Handrails	(2) 0.39" (10mm) Fiber Trunk (1) 0.45" (11.5mm) Fiber (5) 0.78" (19.7mm) 8 AWG 6 (2) 2" conduit (3) 3" conduit (12) 7/8" Coax	AT&T MOBILITY
	6	Powerwave Allgon LGP21901			
	3	Spinner 756529			
	1	Raycap DC6-48-60-18-8F(32.8 lbs)			
	3	Ericsson RRUS 4478 B14			
	3	Ericsson RRUS 4449 B5, B12			
	3	Ericsson Radio 8843 - B2 + B66A (w/ protruding items)			
	1	Raycap DC9-48-60-24-8C-EV			
	3	Powerwave Allgon 7770.00			
	4	CCI DMP65R-BU6DA			
	2	CCI DMP65R-BU8D			
52.0	1	PCTEL GPS-TMG-HR-26N	Stand-Off	(1) 1/2" Coax	SPRINT NEXTEL

Equipment to be Removed

Elev.[1] (ft)	Qty	Equipment	Mount Type	Lines	Carrier
142.0	3	Amphenol Antel BXA-70040/6CF	-	(6) 1 5/8" Coax (1) 7/8" Coax	VERIZON WIRELESS
141.0	1	Generic GPS			
	6	Generic TTA			
140.0	3	Amphenol Antel BXA-171040-8CF			

Proposed Equipment

Elev.[1] (ft)	Qty	Equipment	Mount Type	Lines	Carrier
142.0	3	Samsung B2/B66A RRH-BR049	T-Arm	(2) 1 5/8" Hybriflex	VERIZON WIRELESS
	3	Samsung B5/B13 RRH-BR04C			
	1	RFS DB-C1-12C-24AB-0Z			
	3	Samsung MT6407-77A			
	6	JMA Wireless MX06FRO640-02			

[1] 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	38%	Pass
Shaft	53%	Pass
Base Plate	85%	Pass
Flanges	66%	Pass

Foundations

Reaction Component	Original Design Reactions	Factored Design Reactions*	Analysis Reactions	% of Design
Moment (Kips-Ft)	3128.4	4223.3	2544.0	60%
Shear (Kips)	29.2	39.4	24.0	61%
* The design reactions are factored by 1.35 per ANSI/TIA-222-H, Sec. 15.6.2				

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

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
142.0	Samsung B2/B66A RRH-BR049	VERIZON WIRELESS	1.701	1.410
	Samsung B5/B13 RRH-BR04C			
	JMA Wireless MX06FRO640-02			
	Samsung MT6407-77A			
	RFS DB-C1-12C-24AB-0Z			

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

Standard Conditions

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

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

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

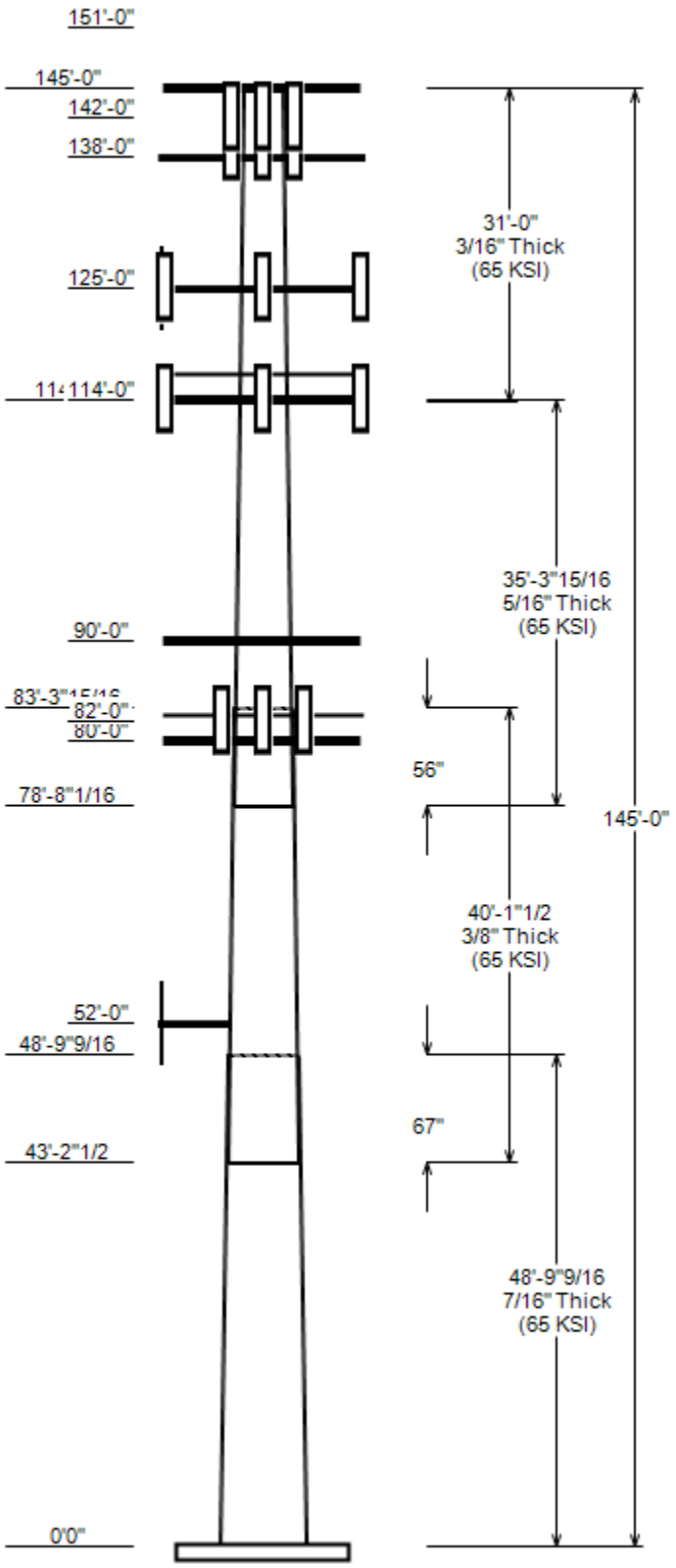
All assets of American Tower Corporation, its affiliates, and subsidiaries (collectively "American Tower") are inspected at regular intervals. Based upon these inspections and in the absence of information to the contrary, American Tower assumes that all structures were constructed in accordance with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

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

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

JOB INFORMATION

Asset :	411182, Nepaug CT	Height :	145 ft
Client :	VERIZON WIRELESS	Base Width :	49.75
Code :	ANSI/TIA-222-H	Shape :	18 Sides



SITE PARAMETERS

Base Elev (ft):	0.00	Structure Class:	II
Taper :	0.22800 (In/ft)	Exposure :	B
Topographic Category :	1	Topographic Feature:	
Topo Method :	Method 1		

SECTION PROPERTIES

Shaft Section	Length (ft)	Diameter (in) Across Flats Top	Diameter (in) Across Flats Bottom	Thick (in)	Joint Type	Overlap Length (in)	Shape	Steel Grade (ksi)
1	48.794	38.60	49.75	0.438		0.000	18 Sides	65
2	40.122	31.46	40.63	0.375	Slip Joint	67.060	18 Sides	65
3	35.328	25.08	33.15	0.312	Slip Joint	55.910	18 Sides	65
4	31.003	18.00	25.08	0.188	Butt Joint	0.000	18 Sides	65

DISCRETE APPURTENANCE

Attach Elev (ft)	Force Elev (ft)	Qty	Description
160.0	160.0	1	RFS PD620-2
155.0	155.0	1	Generic 12' Omni
151.0	151.0	1	PCTEL GPS-TMG-HR-26N
151.0	151.0	3	Alcatel-Lucent ALU 800MHz Exte
151.0	151.0	3	Alcatel-Lucent RRH2x50-08
151.0	151.0	3	Alcatel-Lucent 800 MHz RRH
151.0	151.0	3	Alcatel-Lucent 1900MHz RRH
151.0	151.0	3	Alcatel-Lucent TD-RRH8x20-25 w
151.0	151.0	3	RFS APXVSPP18-C-A20
151.0	151.0	3	Commscope DT465B-2XR
145.0	145.0	1	Flat Low Profile Platform
142.0	142.0	3	Samsung B5/B13 RRH-BR04C
142.0	142.0	3	Samsung B2/B66A RRH-BR049
142.0	142.0	1	RFS DB-C1-12C-24AB-0Z
142.0	142.0	3	Samsung MT6407-77A
142.0	141.0	6	Amphenol Antel LPA-80040-4CF-E
142.0	142.0	6	JMA Wireless MX06FRO640-02
138.0	138.0	3	Round T-Arm
125.0	125.0	1	Generic E-911 GPS
125.0	125.0	3	RFS ATM1900D-1CWA
125.0	125.0	3	RFS ATMAA1412D-1A20
125.0	125.0	6	RFS APX16DWV-16DWV-S-E-ACU
125.0	125.0	3	Round T-Arm
125.0	125.0	3	Commscope LNX-6515DS-A1M (43.7
114.0	114.0	1	Commscope RDIDC-9181-PF-48
114.0	114.0	3	Fujitsu TA08025-B605
114.0	114.0	3	Fujitsu TA08025-B604
114.0	114.0	3	JMA Wireless MX08FRO665-21
114.0	114.0	1	Generic Flat Platform with Han
90.0	90.0	1	Empty Flat Low Profile Platfor
82.0	82.0	3	Spinner 756529
82.0	82.0	6	Powerwave Allgon LGP21901
82.0	82.0	6	Powerwave Allgon LGP21401
82.0	82.0	1	Raycap DC6-48-60-18-8F(32.8 lb
82.0	82.0	3	Ericsson RRUS 4478 B14
82.0	82.0	3	Ericsson RRUS 4449 B5, B12
82.0	82.0	3	Ericsson Radio 8843 - B2 + B66
82.0	82.0	1	Raycap DC9-48-60-24-8C-EV
82.0	82.0	3	Powerwave Allgon 7770.00
82.0	82.0	4	CCI DMP65R-BU6DA
82.0	82.0	2	CCI DMP65R-BU8D
80.0	80.0	1	Generic Flat Platform with Han
52.0	52.0	1	PCTEL GPS-TMG-HR-26N
52.0	52.0	1	Stand-Off

JOB INFORMATION

Asset :	411182, Nepaug CT	Height :	145 ft
Client :	VERIZON WIRELESS	Base Width :	49.75
Code :	ANSI/TIA-222-H	Shape :	18 Sides

LINEAR APPURTENANCE

Elev From (ft)	Elev To (ft)	Description	Exp To Wind
0.0	160.0	7/8" Coax	No
0.0	155.0	7/8" Coax	No
0.0	151.0	1/2" Coax	No
0.0	151.0	1 1/4" Hybriflex Cable	No
0.0	142.0	1 5/8" Hybriflex	No
0.0	142.0	1 5/8" Coax	No
0.0	125.0	1/2" Coax	No
0.0	125.0	1 5/8" Coax	No
0.0	125.0	1 5/8" Coax	Yes
0.0	125.0	1 5/8" Coax	No
0.0	114.0	1.60" (40.6mm) Hybrid	No
0.0	82.0	7/8" Coax	No
0.0	82.0	3" conduit	No
0.0	82.0	3" conduit	No
0.0	82.0	2" conduit	No
0.0	82.0	0.78" (19.7mm) 8 AWG 6	No
0.0	82.0	0.45" (11.5mm) Fiber	No
0.0	82.0	0.39" (10mm) Fiber Trunk	No
0.0	82.0	0.39" (10mm) Fiber Trunk	No
0.0	52.0	1/2" Coax	Yes

LOAD CASES

1.2D + 1.0W Normal	115 mph wind with no ice
0.9D + 1.0W Normal	115 mph wind with no ice
1.2D + 1.0Di + 1.0Wi Nor	50 mph wind with 1" radial ice
1.2D + 1.0Ev + 1.0Eh Nor	Seismic
0.9D - 1.0Ev + 1.0Eh Nor	Seismic (Reduced DL)
1.0D + 1.0W Service Norm	60 mph Wind with No Ice

REACTIONS

Load Case	Moment (kip-ft)	Shear (Kip)	Axial (Kip)
1.2D + 1.0W Normal	2544.00	23.96	52.67
0.9D + 1.0W Normal	2509.62	23.94	39.49
1.2D + 1.0Di + 1.0Wi Normal	700.85	6.63	69.29
1.2D + 1.0Ev + 1.0Eh Normal	152.60	1.32	52.41
0.9D - 1.0Ev + 1.0Eh Normal	150.12	1.32	36.55
1.0D + 1.0W Service Normal	614.61	5.83	43.92

DISH DEFLECTIONS

Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)

ANALYSIS PARAMETERS

Location:	Litchfield County,CT	Height:	145 ft
Type and Shape:	Taper, 18 Sides	Base Diameter:	49.75 in
Manufacturer:	EEI	Top Diameter:	18.00 in
K_d (non-service):	0.95	Taper:	0.2280 in/ft
K_e:	0.97	Rotation:	0.000°

ICE & WIND PARAMETERS

Exposure Category:	B	Design Wind Speed w/o Ice:	115 mph
Risk Category:	II	Design Wind Speed w/Ice:	50 mph
Topo Factor Procedure:	Method 1	Operational Wind Speed:	60 mph
Topographic Category:	1	Design Ice Thickness:	1.00 in
Crest Height:	0 ft	HMSL:	744.00 ft

SEISMIC PARAMETERS

Analysis Method:	Equivalent Lateral Force Method				
Site Class:	D - Stiff Soil			Period Based on Rayleigh Method (sec):	2.42
T_L (sec):	6	P:	1	$C_{s:}$	0.030
$S_{s:}$	0.174	$S_{1:}$	0.054	C_s Max:	0.030
$F_{a:}$	1.600	$F_{v:}$	2.400	C_s Min:	0.030
$S_{ds:}$	0.186	$S_{d1:}$	0.086		

LOAD CASES

1.2D + 1.0W Normal	115 mph wind with no ice
0.9D + 1.0W Normal	115 mph wind with no ice
1.2D + 1.0Di + 1.0Wi Normal	50 mph wind with 1" radial ice
1.2D + 1.0Ev + 1.0Eh Normal	Seismic
0.9D - 1.0Ev + 1.0Eh Normal	Seismic (Reduced DL)
1.0D + 1.0W Service Normal	60 mph Wind with No Ice

SHAFT SECTION PROPERTIES

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint len (in)	Weight (lb)	Bottom Dia (in)	Bottom Elev (ft)	Bottom Area (in²)	Bottom Ix (in⁴)	Bottom W/t Ratio	Bottom D/t Ratio	Top Dia (in)	Top Elev (in)	Top Area (in²)	Top Ix (in⁴)	Top W/t Ratio	Top D/t Ratio	Taper (in/ft)
1-18	48.79	0.4375	65		0.00	10,084	49.75	-0.004	68.47	21,037.5	18.29	113.71	38.60	48.79	53.00	9,753.0	13.80	88.24	0.2284
2-18	40.12	0.3750	65	Slip	67.06	5,797	40.63	43.208	47.91	9,809.0	17.34	108.35	31.46	83.33	37.00	4,518.4	13.03	83.90	0.2284
3-18	35.33	0.3125	65	Slip	55.91	3,435	33.15	78.672	32.57	4,438.4	16.94	106.09	25.08	114.00	24.57	1,904.5	12.39	80.27	0.2284
4-18	31.00	0.1880	65	Butt	0.00	1,344	25.08	113.997	14.85	1,163.1	21.76	133.42	18.00	145.00	10.63	426.0	15.12	95.74	0.2284
				Shaft Weight		20,660													

DISCRETE APPURTENANCE PROPERTIES

Attach Elev (ft)	Description	Qty	Ka	Vert Ecc (ft)	No Ice Weight (lb)	No Ice EPAa (sf)	No Ice Orientation Factor	Ice Weight (lb)	Ice EPAa (sf)	Ice Orientation Factor
160.00	RFS PD620-2	1	1.00	0.000	53.00	7.170	1.00	170.23	12.004	1.00
155.00	Generic 12' Omni	1	1.00	0.000	40.00	3.600	1.00	100.38	6.457	1.00
151.00	Alcatel-Lucent TD-RRH8x20-25 w	3	0.80	0.000	70.00	4.046	0.61	132.86	4.929	0.61
151.00	RFS APXVSPP18-C-A20	3	0.80	0.000	57.00	8.024	0.69	171.73	9.879	0.69
151.00	Alcatel-Lucent 1900MHz RRH	3	0.80	0.000	44.00	3.258	0.72	116.45	4.049	0.72
151.00	Commscope DT465B-2XR	3	0.80	0.000	58.00	9.098	0.69	192.37	10.940	0.69
151.00	Alcatel-Lucent 800 MHz RRH	3	0.80	0.000	53.00	2.134	0.67	102.09	2.785	0.67
151.00	Alcatel-Lucent RRH2x50-08	3	0.80	0.000	52.90	1.701	0.50	92.31	2.275	0.50
151.00	Alcatel-Lucent ALU 800MHz Exte	3	0.80	0.000	8.80	0.667	0.50	20.51	1.034	0.50
151.00	PCTEL GPS-TMG-HR-26N	1	1.00	0.000	0.60	0.090	1.00	3.82	0.210	1.00
145.00	Flat Low Profile Platform	1	1.00	0.000	1500.00	26.100	1.00	1930.90	38.798	1.00
142.00	Amphenol Antel LPA-80040-4CF-E	6	0.80	-1.000	18.00	4.995	0.74	109.52	6.222	0.74
142.00	JMA Wireless MX06FRO640-02	6	0.80	0.000	70.00	12.380	0.67	258.20	14.241	0.67
142.00	Samsung MT6407-77A	3	0.80	0.000	81.60	4.709	0.61	149.27	5.717	0.61
142.00	RFS DB-C1-12C-24AB-0Z	1	0.80	0.000	32.00	4.056	1.00	116.38	4.962	1.00
142.00	Samsung B5/B13 RRH-BR04C	3	0.80	0.000	70.30	1.875	0.50	108.28	2.474	0.50
142.00	Samsung B2/B66A RRH-BR049	3	0.80	0.000	84.40	1.875	0.50	126.75	2.474	0.50
138.00	Round T-Arm	3	0.75	0.000	250.00	9.700	0.67	388.31	15.156	0.67
125.00	RFS ATM1900D-1CWA	3	0.80	0.000	8.40	0.717	0.50	19.97	1.090	0.50
125.00	Generic E-911 GPS	1	0.80	0.000	5.00	0.580	1.00	21.77	0.870	1.00
125.00	RFS ATMAA1412D-1A20	3	0.80	0.000	13.00	1.000	0.50	30.37	1.437	0.50
125.00	RFS APX16DWV-16DWV-S-E-ACU	6	0.80	0.000	39.60	6.077	0.60	93.29	7.424	0.60
125.00	Round T-Arm	3	0.75	0.000	250.00	9.700	0.67	386.82	15.097	0.67
125.00	Commscope LNX-6515DS-A1M (43.7	3	0.80	0.000	43.70	11.445	0.70	193.89	13.564	0.70
114.00	Generic Flat Platform with Han	1	1.00	0.000	2500.00	42.400	1.00	3654.62	56.031	1.00
114.00	JMA Wireless MX08FRO665-21	3	0.75	0.000	64.50	12.489	0.64	231.55	14.316	0.64
114.00	Fujitsu TA08025-B605	3	0.75	0.000	75.00	1.962	0.50	115.72	2.560	0.50
114.00	Commscope RDIDC-9181-PF-48	1	0.75	0.000	21.90	1.867	1.00	58.89	2.452	1.00
114.00	Fujitsu TA08025-B604	3	0.75	0.000	63.90	1.962	0.50	101.80	2.560	0.50
90.00	Empty Flat Low Profile Platfor	1	1.00	0.000	1500.00	26.100	1.00	1910.10	38.185	1.00
82.00	Ericsson RRUS 4478 B14	3	0.75	0.000	59.90	1.842	0.50	94.63	2.405	0.50
82.00	CCI DMP65R-BU8D	2	0.75	0.000	95.70	17.871	0.72	309.19	20.186	0.72
82.00	CCI DMP65R-BU6DA	4	0.75	0.000	79.40	12.709	0.63	241.20	14.461	0.63
82.00	Spinner 756529	3	0.75	0.000	1.50	0.142	0.50	4.90	0.324	0.50
82.00	Powerwave Allgon LGP21901	6	0.75	0.000	5.50	0.200	0.50	10.32	0.401	0.50
82.00	Powerwave Allgon LGP21401	6	0.75	0.000	14.10	1.104	0.50	29.77	1.552	0.50
82.00	Raycap DC6-48-60-18-8F(32.8 lb	1	0.75	0.000	32.80	1.470	1.00	71.55	1.909	1.00
82.00	Ericsson RRUS 4449 B5, B12	3	0.75	0.000	71.00	1.969	0.50	111.48	2.555	0.50
82.00	Ericsson Radio 8843 - B2 + B66	3	0.75	0.000	75.00	1.980	0.50	119.93	2.567	0.50
82.00	Raycap DC9-48-60-24-8C-EV	1	0.75	0.000	16.00	4.788	1.00	97.09	5.712	1.00
82.00	Powerwave Allgon 7770.00	3	0.75	0.000	35.00	5.508	0.65	112.65	6.152	0.65
80.00	Generic Flat Platform with Han	1	1.00	0.000	2500.00	42.400	1.00	3613.51	55.546	1.00
52.00	PCTEL GPS-TMG-HR-26N	1	1.00	0.000	0.60	0.090	1.00	3.51	0.198	1.00
52.00	Stand-Off	1	1.00	0.000	100.00	3.000	1.00	129.25	3.940	1.00
Totals	Num Loadings: 44	119			14,466.80			25,845.70		

LINEAR APPURTENANCE PROPERTIES

Load Case Azimuth (deg) : _

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Dia (in)	Coax Wt (lb/ft)	Flat	Max Coax/ Row	Dist Between Rows(in)	Dist Between Cols(in)	Azimuth (deg)	Dist From Face (in)	Exposed To Wind	Carrier
0.00	160.00	1	7/8" Coax	1.09	0.33	N	0	0	0	0	0	N	Other
0.00	155.00	1	7/8" Coax	1.09	0.33	N	0	0	0	0	0	N	Other

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Dia (in)	Coax Wt (lb/ft)	Flat	Max Coax/ Row	Dist Between Rows(in)	Dist Between Cols(in)	Azimuth (deg)	Dist From Face (in)	Exposed To Wind	Carrier
0.00	151.00	4	1 1/4" Hybriflex Cabl	1.54	1	N	0	0	0	0	0	N	SPRINT NEXTEL
0.00	151.00	1	1/2" Coax	0.63	0.15	N	0	0	0	0	0	N	SPRINT NEXTEL
0.00	142.00	6	1 5/8" Coax	1.98	0.82	N	0	0	0	0	0	N	VERIZON WIREL
0.00	142.00	2	1 5/8" Hybriflex	1.98	1.3	N	0	0	0	0	0	N	VERIZON WIREL
0.00	125.00	18	1 5/8" Coax	1.98	0.82	N	0	0	0	0	0	N	T-MOBILE
0.00	125.00	12	1 5/8" Coax	1.98	0.82	N	0	0	0	0	0	N	T-MOBILE
0.00	125.00	6	1 5/8" Coax	1.98	0.82	N	6	0	0	90	0	Y	T-MOBILE
0.00	125.00	1	1/2" Coax	0.63	0.15	N	0	0	0	0	0	N	T-MOBILE
0.00	114.00	1	1.60" (40.6mm) Hybrid	1.6	2.34	N	0	0	0	0	0	N	DISH WIRELESS
0.00	82.00	12	7/8" Coax	1.09	0.33	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	82.00	5	0.78" (19.7mm) 8 AWG	0.78	0.59	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	82.00	2	3" conduit	3.5	7.58	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	82.00	2	2" conduit	2.38	3.65	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	82.00	1	0.45" (11.5mm) Fiber	0.45	0.08	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	82.00	1	0.39" (10mm) Fiber Tr	0.39	0.06	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	82.00	1	0.39" (10mm) Fiber Tr	0.39	0.06	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	82.00	1	3" conduit	3.5	7.58	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	52.00	1	1/2" Coax	0.63	0.15	N	1	0	0	90	0	Y	SPRINT NEXTEL

SEGMENT PROPERTIES

(Max Len: 5.ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	F'y (ksi)	S (in^3)	Z (in^3)	Weight (lb)
0.00		0.4375	49.750	68.474	21,037.50	18.29	113.71	79.9	832.9	0.0	0.0
5.00		0.4375	48.608	66.888	19,609.20	17.83	111.10	80.4	794.6	0.0	1,151.5
10.00		0.4375	47.466	65.302	18,247.00	17.37	108.49	81	757.2	0.0	1,124.5
15.00		0.4375	46.323	63.716	16,949.50	16.91	105.88	81.5	720.7	0.0	1,097.5
20.00		0.4375	45.181	62.130	15,715.00	16.45	103.27	82.1	685.1	0.0	1,070.6
25.00		0.4375	44.039	60.544	14,541.90	15.99	100.66	82.6	650.4	0.0	1,043.6
30.00		0.4375	42.897	58.958	13,428.70	15.53	98.05	82.6	616.6	0.0	1,016.6
35.00		0.4375	41.754	57.371	12,373.80	15.07	95.44	82.6	583.7	0.0	989.6
40.00		0.4375	40.612	55.785	11,375.60	14.60	92.83	82.6	551.7	0.0	962.6
43.21	Bot - Section 2	0.4375	39.880	54.768	10,764.80	14.31	91.15	82.6	531.7	0.0	603.0
45.00		0.4375	39.470	54.199	10,432.70	14.14	90.22	82.6	520.6	0.0	623.7
48.79	Top - Section 1	0.3750	39.353	46.392	8,905.00	16.74	104.94	81.7	445.7	0.0	1,297.6
50.00		0.3750	39.078	46.064	8,717.60	16.61	104.21	81.9	439.4	0.0	189.7
52.00		0.3750	38.621	45.520	8,412.50	16.40	102.99	82.1	429.0	0.0	311.6
55.00		0.3750	37.935	44.705	7,968.30	16.07	101.16	82.5	413.7	0.0	460.5
60.00		0.3750	36.793	43.345	7,263.20	15.54	98.11	82.6	388.8	0.0	749.0
65.00		0.3750	35.651	41.986	6,601.00	15.00	95.07	82.6	364.7	0.0	725.9
70.00		0.3750	34.509	40.626	5,980.30	14.46	92.02	82.6	341.3	0.0	702.8
75.00		0.3750	33.366	39.267	5,399.80	13.93	88.98	82.6	318.7	0.0	679.6
78.67	Bot - Section 3	0.3750	32.528	38.269	4,998.60	13.53	86.74	82.6	302.7	0.0	484.0
80.00		0.3750	32.224	37.907	4,858.10	13.39	85.93	82.6	296.9	0.0	319.3
82.00		0.3750	31.767	37.363	4,652.00	13.17	84.71	82.6	288.4	0.0	474.2
83.33	Top - Section 2	0.3125	32.089	31.517	4,020.70	16.34	102.68	82.2	246.8	0.0	311.2
85.00		0.3125	31.707	31.138	3,877.50	16.13	101.46	82.4	240.9	0.0	178.2
90.00		0.3125	30.565	30.005	3,469.50	15.48	97.81	82.6	223.6	0.0	520.1
95.00		0.3125	29.422	28.872	3,091.10	14.84	94.15	82.6	206.9	0.0	500.9
100.00		0.3125	28.280	27.739	2,741.30	14.19	90.50	82.6	190.9	0.0	481.6
105.00		0.3125	27.138	26.607	2,419.00	13.55	86.84	82.6	175.6	0.0	462.3
110.00		0.3125	25.996	25.474	2,123.00	12.90	83.19	82.6	160.9	0.0	443.0
114.00	Top - Section 3	0.3125	25.082	24.568	1,904.50	12.39	80.26	82.6	149.5	0.0	340.3
114.00	Bot - Section 4	0.1880	25.082	14.854	1,163.10	21.76	133.42	75.8	91.3	0.0	
114.00		0.1880	25.082	14.854	1,163.00	21.76	133.41	75.8	91.3	0.0	0.1
115.00		0.1880	24.853	14.718	1,131.30	21.55	132.20	76.1	89.7	0.0	50.3
120.00		0.1880	23.711	14.036	981.30	20.48	126.12	77.3	81.5	0.0	244.6
125.00		0.1880	22.569	13.355	845.20	19.40	120.05	78.6	73.8	0.0	233.0
130.00		0.1880	21.427	12.673	722.20	18.33	113.97	79.8	66.4	0.0	221.4
135.00		0.1880	20.284	11.991	611.90	17.26	107.90	81.1	59.4	0.0	209.8
138.00		0.1880	19.599	11.582	551.40	16.62	104.25	81.9	55.4	0.0	120.3
140.00		0.1880	19.142	11.310	513.40	16.19	101.82	82.4	52.8	0.0	77.9
142.00		0.1880	18.685	11.037	477.10	15.76	99.39	82.6	50.3	0.0	76.0
145.00		0.1880	18.000	10.628	426.00	15.12	95.74	82.6	46.6	0.0	110.6
									Totals:		20,659.0

Load Case: 1.2D + 1.0W Normal 115 mph wind with no ice 24 Iterations
Gust Response Factor: 1.10
Dead load Factor: 1.20
Wind Load Factor: 1.00

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-52.67	-23.96	0.00	-2,544.0	0.00	2,544.00	4,923.42	1,201.72	5,352.67	4,990.47	0	0	0.521
5.00	-50.73	-23.75	0.00	-2,424.2	0.00	2,424.18	4,841.97	1,173.88	5,107.60	4,793.23	0.09	-0.17	0.517
10.00	-48.82	-23.54	0.00	-2,305.4	0.00	2,305.43	4,758.98	1,146.05	4,868.28	4,598.35	0.36	-0.34	0.512
15.00	-46.94	-23.32	0.00	-2,187.8	0.00	2,187.75	4,674.44	1,118.21	4,634.70	4,405.95	0.81	-0.51	0.507
20.00	-45.10	-23.11	0.00	-2,071.1	0.00	2,071.14	4,588.36	1,090.38	4,406.86	4,216.14	1.44	-0.69	0.502
25.00	-43.29	-22.90	0.00	-1,955.6	0.00	1,955.59	4,498.09	1,062.54	4,184.76	4,026.66	2.27	-0.88	0.496
30.00	-41.51	-22.68	0.00	-1,841.1	0.00	1,841.10	4,380.25	1,034.71	3,968.40	3,817.43	3.28	-1.06	0.492
35.00	-39.77	-22.46	0.00	-1,727.7	0.00	1,727.69	4,262.41	1,006.87	3,757.79	3,613.78	4.5	-1.25	0.488
40.00	-38.07	-22.25	0.00	-1,615.4	0.00	1,615.42	4,144.58	979.03	3,552.92	3,415.71	5.91	-1.44	0.483
43.21	-37.00	-22.12	0.00	-1,544.1	0.00	1,544.08	4,069.02	961.19	3,424.59	3,291.65	6.92	-1.57	0.479
45.00	-36.03	-21.98	0.00	-1,504.4	0.00	1,504.39	4,026.74	951.20	3,353.79	3,223.22	7.52	-1.64	0.476
48.79	-34.07	-21.81	0.00	-1,421.0	0.00	1,420.99	3,411.63	814.18	2,866.55	2,731.35	8.89	-1.79	0.531
50.00	-33.70	-21.74	0.00	-1,394.7	0.00	1,394.69	3,393.84	808.42	2,826.18	2,697.72	9.35	-1.84	0.528
52.00	-32.98	-21.52	0.00	-1,351.2	0.00	1,351.22	3,364.13	798.88	2,759.86	2,642.23	10.14	-1.93	0.522
55.00	-32.08	-21.32	0.00	-1,286.6	0.00	1,286.65	3,319.09	784.57	2,661.85	2,559.69	11.4	-2.07	0.513
60.00	-30.62	-21.06	0.00	-1,180.0	0.00	1,180.03	3,220.32	760.71	2,502.44	2,407.25	13.68	-2.29	0.500
65.00	-29.20	-20.78	0.00	-1,074.8	0.00	1,074.75	3,119.32	736.85	2,347.95	2,257.87	16.19	-2.51	0.486
70.00	-27.80	-20.50	0.00	-970.8	0.00	970.85	3,018.31	712.99	2,198.38	2,113.27	18.94	-2.73	0.469
75.00	-26.45	-20.24	0.00	-868.4	0.00	868.36	2,917.31	689.13	2,053.73	1,973.46	21.91	-2.95	0.450
78.67	-25.48	-20.08	0.00	-794.1	0.00	794.09	2,843.19	671.62	1,950.71	1,873.90	24.24	-3.11	0.434
80.00	-22.03	-18.46	0.00	-767.4	0.00	767.37	2,816.31	665.27	1,914.01	1,838.43	25.11	-3.17	0.426
82.00	-19.69	-16.13	0.00	-730.5	0.00	730.46	2,775.90	655.73	1,859.49	1,785.76	26.46	-3.25	0.417
83.33	-19.23	-16.03	0.00	-709.0	0.00	709.03	2,331.02	553.12	1,587.63	1,521.08	27.37	-3.31	0.475
85.00	-18.90	-15.85	0.00	-682.2	0.00	682.24	2,310.11	546.48	1,549.70	1,489.14	28.54	-3.39	0.467
90.00	-16.23	-14.58	0.00	-603.0	0.00	602.97	2,229.24	526.59	1,439.00	1,384.22	32.21	-3.62	0.444
95.00	-15.32	-14.28	0.00	-530.1	0.00	530.06	2,145.07	506.71	1,332.40	1,281.15	36.13	-3.85	0.422
100.00	-14.45	-13.99	0.00	-458.6	0.00	458.64	2,060.90	486.83	1,229.90	1,182.06	40.28	-4.08	0.396
105.00	-13.60	-13.69	0.00	-388.7	0.00	388.71	1,976.73	466.94	1,131.51	1,086.97	44.67	-4.3	0.365
110.00	-12.78	-13.42	0.00	-320.3	0.00	320.27	1,892.56	447.06	1,037.22	995.86	49.29	-4.51	0.329
114.00	-12.15	-13.27	0.00	-266.6	0.00	266.64	1,825.27	431.17	964.78	925.89	53.13	-4.67	0.296
114.00	-8.59	-10.61	0.00	-266.6	0.00	266.61	1,013.41	260.69	586.14	519.24	53.13	-4.67	0.524
114.00	-12.15	-13.27	0.00	-266.6	0.00	266.64	1,013.43	260.69	586.17	519.26	53.13	-4.67	0.528
115.00	-8.46	-10.47	0.00	-256.0	0.00	255.99	1,007.45	258.29	575.44	511.41	54.11	-4.73	0.511
120.00	-7.89	-10.20	0.00	-203.6	0.00	203.65	976.71	246.33	523.38	472.67	59.22	-5.02	0.441
125.00	-6.11	-7.85	0.00	-152.6	0.00	152.65	944.43	234.37	473.79	434.68	64.61	-5.28	0.359
130.00	-5.77	-7.60	0.00	-113.4	0.00	113.40	910.60	222.41	426.67	397.54	70.26	-5.5	0.293
135.00	-5.44	-7.39	0.00	-75.4	0.00	75.41	875.23	210.45	382.02	361.37	76.11	-5.69	0.216
138.00	-4.42	-6.63	0.00	-53.2	0.00	53.23	853.26	203.27	356.41	340.17	79.71	-5.78	0.163
140.00	-4.30	-6.54	0.00	-40.0	0.00	39.96	838.31	198.49	339.83	326.27	82.14	-5.83	0.129
142.00	-2.95	-3.56	0.00	-26.9	0.00	26.89	820.01	193.70	323.65	311.38	84.58	-5.86	0.090
145.00	0.00	-3.24	0.00	-16.2	0.00	16.20	789.63	186.53	300.11	288.62	88.27	-5.9	0.056

Load Case: 0.9D + 1.0W Normal — 115 mph wind with no ice — 24 Iterations
Gust Response Factor: 1.10
Dead load Factor: 0.90
Wind Load Factor: 1.00

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-39.49	-23.94	0.00	-2,509.6	0.00	2,509.62	4,923.42	1,201.72	5,352.67	4,990.47	0	0	0.511
5.00	-38.02	-23.69	0.00	-2,389.9	0.00	2,389.90	4,841.97	1,173.88	5,107.60	4,793.23	0.09	-0.17	0.507
10.00	-36.57	-23.44	0.00	-2,271.4	0.00	2,271.44	4,758.98	1,146.05	4,868.28	4,598.35	0.35	-0.33	0.502
15.00	-35.15	-23.19	0.00	-2,154.2	0.00	2,154.24	4,674.44	1,118.21	4,634.70	4,405.95	0.8	-0.51	0.497
20.00	-33.75	-22.95	0.00	-2,038.3	0.00	2,038.28	4,588.36	1,090.38	4,406.86	4,216.14	1.42	-0.68	0.491
25.00	-32.38	-22.70	0.00	-1,923.5	0.00	1,923.54	4,498.09	1,062.54	4,184.76	4,026.66	2.23	-0.86	0.485
30.00	-31.03	-22.46	0.00	-1,810.0	0.00	1,810.02	4,380.25	1,034.71	3,968.40	3,817.43	3.23	-1.05	0.482
35.00	-29.71	-22.21	0.00	-1,697.7	0.00	1,697.72	4,262.41	1,006.87	3,757.79	3,613.78	4.43	-1.23	0.477
40.00	-28.42	-21.99	0.00	-1,586.7	0.00	1,586.68	4,144.58	979.03	3,552.92	3,415.71	5.82	-1.42	0.472
43.21	-27.61	-21.85	0.00	-1,516.2	0.00	1,516.20	4,069.02	961.19	3,424.59	3,291.65	6.82	-1.54	0.468
45.00	-26.88	-21.69	0.00	-1,477.0	0.00	1,477.00	4,026.74	951.20	3,353.79	3,223.22	7.41	-1.62	0.465
48.79	-25.40	-21.53	0.00	-1,394.7	0.00	1,394.69	3,411.63	814.18	2,866.55	2,731.35	8.75	-1.76	0.519
50.00	-25.12	-21.44	0.00	-1,368.7	0.00	1,368.74	3,393.84	808.42	2,826.18	2,697.72	9.21	-1.81	0.515
52.00	-24.57	-21.21	0.00	-1,325.9	0.00	1,325.86	3,364.13	798.88	2,759.86	2,642.23	9.98	-1.9	0.510
55.00	-23.88	-21.00	0.00	-1,262.2	0.00	1,262.22	3,319.09	784.57	2,661.85	2,559.69	11.22	-2.03	0.501
60.00	-22.78	-20.71	0.00	-1,157.2	0.00	1,157.24	3,220.32	760.71	2,502.44	2,407.25	13.46	-2.25	0.489
65.00	-21.69	-20.42	0.00	-1,053.7	0.00	1,053.69	3,119.32	736.85	2,347.95	2,257.87	15.93	-2.46	0.474
70.00	-20.63	-20.13	0.00	-951.6	0.00	951.59	3,018.31	712.99	2,198.38	2,113.27	18.63	-2.68	0.458
75.00	-19.61	-19.86	0.00	-851.0	0.00	850.97	2,917.31	689.13	2,053.73	1,973.46	21.55	-2.89	0.439
78.67	-18.87	-19.70	0.00	-778.1	0.00	778.09	2,843.19	671.62	1,950.71	1,873.90	23.84	-3.05	0.423
80.00	-16.30	-18.12	0.00	-751.9	0.00	751.88	2,816.31	665.27	1,914.01	1,838.43	24.7	-3.11	0.416
82.00	-14.57	-15.82	0.00	-715.6	0.00	715.65	2,775.90	655.73	1,859.49	1,785.76	26.02	-3.2	0.407
83.33	-14.22	-15.72	0.00	-694.6	0.00	694.64	2,331.02	553.12	1,587.63	1,521.08	26.91	-3.25	0.464
85.00	-13.97	-15.53	0.00	-668.4	0.00	668.36	2,310.11	546.48	1,549.70	1,489.14	28.07	-3.32	0.456
90.00	-11.97	-14.29	0.00	-590.7	0.00	590.68	2,229.24	526.59	1,439.00	1,384.22	31.67	-3.56	0.433
95.00	-11.28	-13.99	0.00	-519.2	0.00	519.24	2,145.07	506.71	1,332.40	1,281.15	35.52	-3.78	0.411
100.00	-10.62	-13.69	0.00	-449.3	0.00	449.30	2,060.90	486.83	1,229.90	1,182.06	39.6	-4.01	0.386
105.00	-9.98	-13.39	0.00	-380.8	0.00	380.85	1,976.73	466.94	1,131.51	1,086.97	43.9	-4.22	0.356
110.00	-9.36	-13.13	0.00	-313.9	0.00	313.88	1,892.56	447.06	1,037.22	995.86	48.43	-4.43	0.321
114.00	-8.89	-12.99	0.00	-261.4	0.00	261.41	1,825.27	431.17	964.78	925.89	52.2	-4.58	0.288
114.00	-6.26	-10.41	0.00	-261.4	0.00	261.38	1,013.41	260.69	586.14	519.24	52.21	-4.58	0.511
114.00	-8.89	-12.99	0.00	-261.4	0.00	261.41	1,013.43	260.69	586.17	519.26	52.2	-4.58	0.515
115.00	-6.16	-10.26	0.00	-251.0	0.00	250.97	1,007.45	258.29	575.44	511.41	53.17	-4.64	0.498
120.00	-5.72	-9.99	0.00	-199.7	0.00	199.67	976.71	246.33	523.38	472.67	58.18	-4.93	0.430
125.00	-4.43	-7.68	0.00	-149.7	0.00	149.70	944.43	234.37	473.79	434.68	63.48	-5.18	0.350
130.00	-4.17	-7.43	0.00	-111.3	0.00	111.29	910.60	222.41	426.67	397.54	69.02	-5.4	0.286
135.00	-3.93	-7.23	0.00	-74.1	0.00	74.13	875.23	210.45	382.02	361.37	74.76	-5.58	0.211
138.00	-3.17	-6.50	0.00	-52.4	0.00	52.43	853.26	203.27	356.41	340.17	78.3	-5.67	0.159
140.00	-3.08	-6.40	0.00	-39.4	0.00	39.43	838.31	198.49	339.83	326.27	80.68	-5.72	0.126
142.00	-2.14	-3.47	0.00	-26.6	0.00	26.63	820.01	193.70	323.65	311.38	83.08	-5.75	0.088
145.00	0.00	-3.24	0.00	-16.2	0.00	16.20	789.63	186.53	300.11	288.62	86.7	-5.79	0.056

Load Case: 1.2D + 1.0Di + 1.0Wi Normal		50 mph wind with 1" radial ice			24 Iterations
Gust Response Factor:	1.10	Ice Dead Load Factor	1.00		
Dead load Factor:	1.20			Ice Importance Factor	1.00
Wind Load Factor:	1.00				

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-69.29	-6.63	0.00	-700.8	0.00	700.85	4,923.42	1,201.72	5,352.67	4,990.47	0	0	0.155
5.00	-67.13	-6.57	0.00	-667.7	0.00	667.68	4,841.97	1,173.88	5,107.60	4,793.23	0.02	-0.05	0.153
10.00	-64.99	-6.51	0.00	-634.8	0.00	634.82	4,758.98	1,146.05	4,868.28	4,598.35	0.1	-0.09	0.152
15.00	-62.86	-6.45	0.00	-602.3	0.00	602.27	4,674.44	1,118.21	4,634.70	4,405.95	0.22	-0.14	0.150
20.00	-60.77	-6.39	0.00	-570.0	0.00	570.03	4,588.36	1,090.38	4,406.86	4,216.14	0.4	-0.19	0.148
25.00	-58.70	-6.32	0.00	-538.1	0.00	538.10	4,498.09	1,062.54	4,184.76	4,026.66	0.62	-0.24	0.147
30.00	-56.67	-6.26	0.00	-506.5	0.00	506.49	4,380.25	1,034.71	3,968.40	3,817.43	0.9	-0.29	0.146
35.00	-54.67	-6.19	0.00	-475.2	0.00	475.19	4,262.41	1,006.87	3,757.79	3,613.78	1.24	-0.34	0.144
40.00	-52.71	-6.13	0.00	-444.2	0.00	444.23	4,144.58	979.03	3,552.92	3,415.71	1.63	-0.4	0.143
43.21	-51.47	-6.09	0.00	-424.6	0.00	424.57	4,069.02	961.19	3,424.59	3,291.65	1.91	-0.43	0.142
45.00	-50.43	-6.05	0.00	-413.6	0.00	413.63	4,026.74	951.20	3,353.79	3,223.22	2.07	-0.45	0.141
48.79	-48.26	-6.00	0.00	-390.7	0.00	390.67	3,411.63	814.18	2,866.55	2,731.35	2.45	-0.49	0.157
50.00	-47.84	-5.98	0.00	-383.4	0.00	383.43	3,393.84	808.42	2,826.18	2,697.72	2.57	-0.51	0.156
52.00	-47.00	-5.92	0.00	-371.5	0.00	371.48	3,364.13	798.88	2,759.86	2,642.23	2.79	-0.53	0.155
55.00	-45.97	-5.86	0.00	-353.7	0.00	353.72	3,319.09	784.57	2,661.85	2,559.69	3.14	-0.57	0.152
60.00	-44.28	-5.78	0.00	-324.4	0.00	324.41	3,220.32	760.71	2,502.44	2,407.25	3.77	-0.63	0.149
65.00	-42.62	-5.70	0.00	-295.5	0.00	295.51	3,119.32	736.85	2,347.95	2,257.87	4.46	-0.69	0.145
70.00	-41.00	-5.61	0.00	-267.0	0.00	267.03	3,018.31	712.99	2,198.38	2,113.27	5.21	-0.75	0.140
75.00	-39.41	-5.53	0.00	-239.0	0.00	238.96	2,917.31	689.13	2,053.73	1,973.46	6.03	-0.81	0.135
78.67	-38.26	-5.48	0.00	-218.7	0.00	218.66	2,843.19	671.62	1,950.71	1,873.90	6.67	-0.85	0.130
80.00	-33.82	-5.06	0.00	-211.4	0.00	211.36	2,816.31	665.27	1,914.01	1,838.43	6.91	-0.87	0.127
82.00	-29.73	-4.50	0.00	-201.2	0.00	201.25	2,775.90	655.73	1,859.49	1,785.76	7.28	-0.9	0.123
83.33	-29.21	-4.47	0.00	-195.3	0.00	195.27	2,331.02	553.12	1,587.63	1,521.08	7.53	-0.91	0.141
85.00	-28.82	-4.42	0.00	-187.8	0.00	187.79	2,310.11	546.48	1,549.70	1,489.14	7.86	-0.93	0.139
90.00	-25.55	-4.05	0.00	-165.7	0.00	165.72	2,229.24	526.59	1,439.00	1,384.22	8.87	-1	0.131
95.00	-24.41	-3.95	0.00	-145.5	0.00	145.48	2,145.07	506.71	1,332.40	1,281.15	9.94	-1.06	0.125
100.00	-23.31	-3.86	0.00	-125.7	0.00	125.72	2,060.90	486.83	1,229.90	1,182.06	11.09	-1.12	0.118
105.00	-22.24	-3.76	0.00	-106.4	0.00	106.43	1,976.73	466.94	1,131.51	1,086.97	12.3	-1.18	0.109
110.00	-21.21	-3.67	0.00	-87.6	0.00	87.63	1,892.56	447.06	1,037.22	995.86	13.57	-1.24	0.099
114.00	-20.40	-3.62	0.00	-73.0	0.00	72.95	1,825.27	431.17	964.78	925.89	14.62	-1.28	0.090
114.00	-15.15	-2.94	0.00	-72.9	0.00	72.94	1,013.41	260.69	586.14	519.24	14.62	-1.28	0.156
114.00	-20.40	-3.62	0.00	-73.0	0.00	72.95	1,013.43	260.69	586.17	519.26	14.62	-1.28	0.161
115.00	-14.99	-2.89	0.00	-70.0	0.00	70.01	1,007.45	258.29	575.44	511.41	14.89	-1.3	0.152
120.00	-14.22	-2.80	0.00	-55.6	0.00	55.55	976.71	246.33	523.38	472.67	16.3	-1.38	0.132
125.00	-11.05	-2.17	0.00	-41.5	0.00	41.53	944.43	234.37	473.79	434.68	17.78	-1.45	0.107
130.00	-10.55	-2.08	0.00	-30.7	0.00	30.70	910.60	222.41	426.67	397.54	19.33	-1.51	0.089
135.00	-10.07	-2.01	0.00	-20.3	0.00	20.30	875.23	210.45	382.02	361.37	20.94	-1.56	0.068
138.00	-8.57	-1.77	0.00	-14.3	0.00	14.27	853.26	203.27	356.41	340.17	21.93	-1.58	0.052
140.00	-8.39	-1.74	0.00	-10.7	0.00	10.73	838.31	198.49	339.83	326.27	22.6	-1.6	0.043
142.00	-4.98	-0.99	0.00	-7.3	0.00	7.26	820.01	193.70	323.65	311.38	23.27	-1.61	0.029
145.00	0.00	-0.85	0.00	-4.3	0.00	4.29	789.63	186.53	300.11	288.62	24.28	-1.62	0.015

Load Case: 1.0D + 1.0W Service Normal 60 mph Wind with No Ice 23 Iterations
Gust Response Factor: 1.10
Dead load Factor: 1.00
Wind Load Factor: 1.00

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-43.92	-5.83	0.00	-614.6	0.00	614.61	4,923.42	1,201.72	5,352.67	4,990.47	0	0	0.132
5.00	-42.36	-5.77	0.00	-585.4	0.00	585.45	4,841.97	1,173.88	5,107.60	4,793.23	0.02	-0.04	0.131
10.00	-40.82	-5.72	0.00	-556.6	0.00	556.58	4,758.98	1,146.05	4,868.28	4,598.35	0.09	-0.08	0.130
15.00	-39.31	-5.66	0.00	-528.0	0.00	528.00	4,674.44	1,118.21	4,634.70	4,405.95	0.2	-0.12	0.128
20.00	-37.83	-5.60	0.00	-499.7	0.00	499.70	4,588.36	1,090.38	4,406.86	4,216.14	0.35	-0.17	0.127
25.00	-36.37	-5.55	0.00	-471.7	0.00	471.69	4,498.09	1,062.54	4,184.76	4,026.66	0.55	-0.21	0.125
30.00	-34.94	-5.49	0.00	-444.0	0.00	443.96	4,380.25	1,034.71	3,968.40	3,817.43	0.79	-0.26	0.124
35.00	-33.54	-5.43	0.00	-416.5	0.00	416.52	4,262.41	1,006.87	3,757.79	3,613.78	1.09	-0.3	0.123
40.00	-32.17	-5.38	0.00	-389.4	0.00	389.37	4,144.58	979.03	3,552.92	3,415.71	1.43	-0.35	0.122
43.21	-31.30	-5.35	0.00	-372.1	0.00	372.13	4,069.02	961.19	3,424.59	3,291.65	1.67	-0.38	0.121
45.00	-30.53	-5.31	0.00	-362.5	0.00	362.54	4,026.74	951.20	3,353.79	3,223.22	1.82	-0.4	0.120
48.79	-28.92	-5.27	0.00	-342.4	0.00	342.40	3,411.63	814.18	2,866.55	2,731.35	2.15	-0.43	0.134
50.00	-28.63	-5.25	0.00	-336.0	0.00	336.05	3,393.84	808.42	2,826.18	2,697.72	2.26	-0.44	0.133
52.00	-28.05	-5.19	0.00	-325.6	0.00	325.56	3,364.13	798.88	2,759.86	2,642.23	2.45	-0.47	0.132
55.00	-27.34	-5.14	0.00	-310.0	0.00	309.97	3,319.09	784.57	2,661.85	2,559.69	2.75	-0.5	0.129
60.00	-26.18	-5.08	0.00	-284.3	0.00	284.26	3,220.32	760.71	2,502.44	2,407.25	3.3	-0.55	0.126
65.00	-25.04	-5.01	0.00	-258.9	0.00	258.88	3,119.32	736.85	2,347.95	2,257.87	3.91	-0.6	0.123
70.00	-23.93	-4.94	0.00	-233.8	0.00	233.85	3,018.31	712.99	2,198.38	2,113.27	4.57	-0.66	0.119
75.00	-22.84	-4.87	0.00	-209.2	0.00	209.16	2,917.31	689.13	2,053.73	1,973.46	5.29	-0.71	0.114
78.67	-22.06	-4.83	0.00	-191.3	0.00	191.28	2,843.19	671.62	1,950.71	1,873.90	5.85	-0.75	0.110
80.00	-19.13	-4.45	0.00	-184.8	0.00	184.85	2,816.31	665.27	1,914.01	1,838.43	6.06	-0.76	0.107
82.00	-17.10	-3.88	0.00	-176.0	0.00	175.96	2,775.90	655.73	1,859.49	1,785.76	6.38	-0.78	0.105
83.33	-16.73	-3.86	0.00	-170.8	0.00	170.80	2,331.02	553.12	1,587.63	1,521.08	6.6	-0.8	0.120
85.00	-16.47	-3.82	0.00	-164.4	0.00	164.35	2,310.11	546.48	1,549.70	1,489.14	6.89	-0.82	0.118
90.00	-14.23	-3.51	0.00	-145.3	0.00	145.27	2,229.24	526.59	1,439.00	1,384.22	7.77	-0.87	0.111
95.00	-13.51	-3.44	0.00	-127.7	0.00	127.72	2,145.07	506.71	1,332.40	1,281.15	8.72	-0.93	0.106
100.00	-12.80	-3.37	0.00	-110.5	0.00	110.53	2,060.90	486.83	1,229.90	1,182.06	9.72	-0.98	0.100
105.00	-12.12	-3.29	0.00	-93.7	0.00	93.70	1,976.73	466.94	1,131.51	1,086.97	10.78	-1.04	0.092
110.00	-11.45	-3.23	0.00	-77.2	0.00	77.23	1,892.56	447.06	1,037.22	995.86	11.89	-1.09	0.084
114.00	-10.93	-3.20	0.00	-64.3	0.00	64.32	1,825.27	431.17	964.78	925.89	12.82	-1.12	0.076
114.00	-7.81	-2.56	0.00	-64.3	0.00	64.31	1,013.41	260.69	586.14	519.24	12.82	-1.12	0.132
114.00	-10.93	-3.20	0.00	-64.3	0.00	64.32	1,013.43	260.69	586.17	519.26	12.82	-1.12	0.135
115.00	-7.72	-2.52	0.00	-61.8	0.00	61.75	1,007.45	258.29	575.44	511.41	13.05	-1.14	0.129
120.00	-7.26	-2.46	0.00	-49.1	0.00	49.13	976.71	246.33	523.38	472.67	14.29	-1.21	0.111
125.00	-5.64	-1.89	0.00	-36.8	0.00	36.84	944.43	234.37	473.79	434.68	15.59	-1.27	0.091
130.00	-5.36	-1.83	0.00	-27.4	0.00	27.38	910.60	222.41	426.67	397.54	16.95	-1.33	0.075
135.00	-5.09	-1.78	0.00	-18.2	0.00	18.22	875.23	210.45	382.02	361.37	18.37	-1.37	0.056
138.00	-4.18	-1.60	0.00	-12.9	0.00	12.88	853.26	203.27	356.41	340.17	19.23	-1.39	0.043
140.00	-4.08	-1.58	0.00	-9.7	0.00	9.67	838.31	198.49	339.83	326.27	19.82	-1.4	0.035
142.00	-2.73	-0.86	0.00	-6.5	0.00	6.52	820.01	193.70	323.65	311.38	20.41	-1.41	0.024
145.00	0.00	-0.79	0.00	-4.0	0.00	3.95	789.63	186.53	300.11	288.62	21.3	-1.42	0.014

EQUIVALENT LATERAL FORCES METHOD ANALYSIS

(Based on ASCE7-16 Chapters 11, 12 and 15)

Spectral Response Acceleration for Short Period (S_S):	0.174
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.054
Long-Period Transition Period (T_L – Seconds):	6
Importance Factor (I_e):	1.000
Site Coefficient F_a:	1.600
Site Coefficient F_v:	2.400
Response Modification Coefficient (R):	1.500
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.186
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.086
Seismic Response Coefficient (C_s):	0.030
Upper Limit C_S:	0.030
Lower Limit C_S:	0.030
Period based on Rayleigh Method (sec):	2.420
Redundancy Factor (p):	1.000
Seismic Force Distribution Exponent (k):	1.960
Total Unfactored Dead Load:	43.920 k
Seismic Base Shear (E):	1.320 k

1.2D + 1.0Ev + 1.0Eh Normal **Seismic**

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
39	143.5	125	2,086	0.008	11	155
38	141	101	1,623	0.006	8	125
37	139	103	1,608	0.006	8	127
36	136.5	157	2,380	0.009	12	195
35	132.5	271	3,874	0.015	20	336
34	127.5	283	3,747	0.014	19	350
33	122.5	443	5,422	0.021	28	548
32	117.5	455	5,128	0.020	26	562
31	114.5	92	990	0.004	5	114
30	113.9987	0	3	0.000	0	0
29	111.9987	518	5,316	0.020	27	640
28	107.5	665	6,301	0.024	32	822
27	102.5	684	5,906	0.023	30	846
26	97.5	703	5,506	0.021	28	870
25	92.5	723	5,103	0.020	26	894
24	87.5	742	4,699	0.018	24	918
23	84.1641	252	1,481	0.006	8	312
22	82.6641	370	2,097	0.008	11	458
21	81	637	3,470	0.013	18	788
20	79.3347	428	2,237	0.009	11	529
19	76.8347	783	3,846	0.015	20	969
18	72.5	1,087	4,765	0.018	24	1,345
17	67.5	1,110	4,231	0.016	21	1,373
16	62.5	1,133	3,715	0.014	19	1,402
15	57.5	1,156	3,220	0.012	16	1,431
14	53.5	705	1,705	0.007	9	872
13	51	475	1,046	0.004	5	588
12	49.3972	288	596	0.002	3	356
11	46.8972	1,607	3,003	0.012	15	1,989
10	44.1029	770	1,276	0.005	6	953
9	41.6029	865	1,278	0.005	6	1,070
8	37.5	1,371	1,653	0.006	8	1,696
7	32.5	1,398	1,274	0.005	6	1,729
6	27.5	1,425	936	0.004	5	1,763

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
5	22.5	1,452	644	0.002	3	1,796
4	17.5	1,479	401	0.002	2	1,829
3	12.5	1,506	211	0.001	1	1,863
2	7.5	1,533	79	0.000	0	1,896
1	2.5	1,560	9	0.000	0	1,930
RFS PD620-2	145	53	902	0.004	5	66
Generic 12' Omni	145	40	681	0.003	3	49
PCTEL GPS-TMG-HR-26N	145	1	10	0.000	0	1
PCTEL GPS-TMG-HR-26N	52	1	1	0.000	0	1
Alcatel-Lucent ALU 800MHz External Notch Filter	145	26	450	0.002	2	33
Alcatel-Lucent RRH2x50-08	145	159	2,702	0.010	14	196
Alcatel-Lucent 800 MHz RRH	145	159	2,707	0.010	14	197
Alcatel-Lucent 1900MHz RRH	145	132	2,248	0.009	11	163
Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield	145	210	3,576	0.014	18	260
RFS APXVSPP18-C-A20	145	171	2,912	0.011	15	212
Commscope DT465B-2XR	145	174	2,963	0.011	15	215
Flat Low Profile Platform	145	1,500	25,540	0.098	130	1,856
Samsung B2/B66A RRH-BR049	142	253	4,138	0.016	21	313
Samsung B5/B13 RRH-BR04C	142	211	3,447	0.013	17	261
RFS DB-C1-12C-24AB-0Z	142	32	523	0.002	3	40
Samsung MT6407-77A	142	245	4,001	0.015	20	303
Amphenol Antel LPA-80040-4CF-EDIN-X	142	108	1,765	0.007	9	134
JMA Wireless MX06FRO640-02	142	420	6,865	0.026	35	520
Round T-Arm	138	750	11,591	0.045	59	928
Round T-Arm	125	750	9,550	0.037	48	928
Generic E-911 GPS	125	5	64	0.000	0	6
RFS ATM1900D-1CWA	125	25	321	0.001	2	31
RFS ATMAA1412D-1A20	125	39	497	0.002	3	48
RFS APX16DWV-16DWV-S-E-ACU	125	238	3,026	0.012	15	294
Commscope LNX-6515DS-A1M (43.7 lb)	125	131	1,669	0.006	8	162
Commscope RDIDC-9181-PF-48	114	22	233	0.001	1	27
Fujitsu TA08025-B604	114	192	2,038	0.008	10	237
Fujitsu TA08025-B605	114	225	2,392	0.009	12	278
JMA Wireless MX08FRO665-21	114	194	2,057	0.008	10	239
Generic Flat Platform with Handrails	114	2,500	26,581	0.102	135	3,093
Generic Flat Platform with Handrails	80	2,500	13,288	0.051	67	3,093
Empty Flat Low Profile Platform	90	1,500	10,041	0.039	51	1,856
Spinner 756529	82	4	25	0.000	0	6
Powerwave Allgon LGP21901	82	33	184	0.001	1	41
Powerwave Allgon LGP21401	82	85	472	0.002	2	105
Raycap DC6-48-60-18-8F(32.8 lbs)	82	33	183	0.001	1	41
Ericsson RRUS 4478 B14	82	180	1,002	0.004	5	222
Ericsson RRUS 4449 B5, B12	82	213	1,188	0.005	6	264
Ericsson Radio 8843 - B2 + B66A (w/ protruding items)	82	225	1,255	0.005	6	278
Raycap DC9-48-60-24-8C-EV	82	16	89	0.000	0	20
Powerwave Allgon 7770.00	82	105	586	0.002	3	130
CCI DMP65R-BU6DA	82	318	1,772	0.007	9	393
CCI DMP65R-BU8D	82	191	1,068	0.004	5	237
Stand-Off	52	100	229	0.001	1	124
		43,921	259,701	1.000	1,318	54,336

0.9D - 1.0Ev + 1.0Eh Normal **Seismic (Reduced DL)**

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
39	143.5	125	2,086	0.008	11	108
38	141	101	1,623	0.006	8	87
37	139	103	1,608	0.006	8	88
36	136.5	157	2,380	0.009	12	136
35	132.5	271	3,874	0.015	20	234
34	127.5	283	3,747	0.014	19	244
33	122.5	443	5,422	0.021	28	382

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
32	117.5	455	5,128	0.020	26	392
31	114.5	92	990	0.004	5	80
30	113.9987	0	3	0.000	0	0
29	111.9987	518	5,316	0.020	27	447
28	107.5	665	6,301	0.024	32	574
27	102.5	684	5,906	0.023	30	590
26	97.5	703	5,506	0.021	28	607
25	92.5	723	5,103	0.020	26	623
24	87.5	742	4,699	0.018	24	640
23	84.1641	252	1,481	0.006	8	218
22	82.6641	370	2,097	0.008	11	319
21	81	637	3,470	0.013	18	550
20	79.3347	428	2,237	0.009	11	369
19	76.8347	783	3,846	0.015	20	676
18	72.5	1,087	4,765	0.018	24	938
17	67.5	1,110	4,231	0.016	21	958
16	62.5	1,133	3,715	0.014	19	978
15	57.5	1,156	3,220	0.012	16	998
14	53.5	705	1,705	0.007	9	608
13	51	475	1,046	0.004	5	410
12	49.3972	288	596	0.002	3	249
11	46.8972	1,607	3,003	0.012	15	1,387
10	44.1029	770	1,276	0.005	6	665
9	41.6029	865	1,278	0.005	6	746
8	37.5	1,371	1,653	0.006	8	1,183
7	32.5	1,398	1,274	0.005	6	1,206
6	27.5	1,425	936	0.004	5	1,229
5	22.5	1,452	644	0.002	3	1,253
4	17.5	1,479	401	0.002	2	1,276
3	12.5	1,506	211	0.001	1	1,299
2	7.5	1,533	79	0.000	0	1,323
1	2.5	1,560	9	0.000	0	1,346
RFS PD620-2	145	53	902	0.004	5	46
Generic 12' Omni	145	40	681	0.003	3	35
PCTEL GPS-TMG-HR-26N	145	1	10	0.000	0	1
PCTEL GPS-TMG-HR-26N	52	1	1	0.000	0	1
Alcatel-Lucent ALU 800MHz External Notch Filter	145	26	450	0.002	2	23
Alcatel-Lucent RRH2x50-08	145	159	2,702	0.010	14	137
Alcatel-Lucent 800 MHz RRH	145	159	2,707	0.010	14	137
Alcatel-Lucent 1900MHz RRH	145	132	2,248	0.009	11	114
Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield	145	210	3,576	0.014	18	181
RFS APXVSPP18-C-A20	145	171	2,912	0.011	15	148
Commscope DT465B-2XR	145	174	2,963	0.011	15	150
Flat Low Profile Platform	145	1,500	25,540	0.098	130	1,294
Samsung B2/B66A RRH-BR049	142	253	4,138	0.016	21	218
Samsung B5/B13 RRH-BR04C	142	211	3,447	0.013	17	182
RFS DB-C1-12C-24AB-0Z	142	32	523	0.002	3	28
Samsung MT6407-77A	142	245	4,001	0.015	20	211
Amphenol Antel LPA-80040-4CF-EDIN-X	142	108	1,765	0.007	9	93
JMA Wireless MX06FRO640-02	142	420	6,865	0.026	35	362
Round T-Arm	138	750	11,591	0.045	59	647
Round T-Arm	125	750	9,550	0.037	48	647
Generic E-911 GPS	125	5	64	0.000	0	4
RFS ATM1900D-1CWA	125	25	321	0.001	2	22
RFS ATMAA1412D-1A20	125	39	497	0.002	3	34
RFS APX16DWV-16DWV-S-E-ACU	125	238	3,026	0.012	15	205
Commscope LNX-6515DS-A1M (43.7 lb)	125	131	1,669	0.006	8	113
Commscope RDIDC-9181-PF-48	114	22	233	0.001	1	19
Fujitsu TA08025-B604	114	192	2,038	0.008	10	165
Fujitsu TA08025-B605	114	225	2,392	0.009	12	194
JMA Wireless MX08FRO665-21	114	194	2,057	0.008	10	167
Generic Flat Platform with Handrails	114	2,500	26,581	0.102	135	2,157
Generic Flat Platform with Handrails	80	2,500	13,288	0.051	67	2,157
Empty Flat Low Profile Platform	90	1,500	10,041	0.039	51	1,294
Spinner 756529	82	4	25	0.000	0	4
Powerwave Allgon LGP21901	82	33	184	0.001	1	28
Powerwave Allgon LGP21401	82	85	472	0.002	2	73
Raycap DC6-48-60-18-8F(32.8 lbs)	82	33	183	0.001	1	28
Ericsson RRUS 4478 B14	82	180	1,002	0.004	5	155
Ericsson RRUS 4449 B5, B12	82	213	1,188	0.005	6	184

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
Ericsson Radio 8843 - B2 + B66A (w/ protruding items)	82	225	1,255	0.005	6	194
Raycap DC9-48-60-24-8C-EV	82	16	89	0.000	0	14
Powerwave Allgon 7770.00	82	105	586	0.002	3	91
CCI DMP65R-BU6DA	82	318	1,772	0.007	9	274
CCI DMP65R-BU8D	82	191	1,068	0.004	5	165
Stand-Off	52	100	229	0.001	1	86
		43,921	259,701	1.000	1,318	37,899

1.2D + 1.0Ev + 1.0Eh Normal **Seismic**

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-52.41	-1.32	0.00	-152.60	0.00	152.60	4,923.42	1,201.72	5,353	4,990.47	0.00	0.00	0.04
5.00	-50.51	-1.33	0.00	-146.00	0.00	146.00	4,841.97	1,173.88	5,108	4,793.23	0.01	-0.01	0.04
10.00	-48.65	-1.34	0.00	-139.35	0.00	139.35	4,758.98	1,146.05	4,868	4,598.35	0.02	-0.02	0.04
15.00	-46.82	-1.34	0.00	-132.66	0.00	132.66	4,674.44	1,118.21	4,635	4,405.95	0.05	-0.03	0.04
20.00	-45.02	-1.35	0.00	-125.95	0.00	125.95	4,588.36	1,090.38	4,407	4,216.14	0.09	-0.04	0.04
25.00	-43.26	-1.35	0.00	-119.21	0.00	119.21	4,498.09	1,062.54	4,185	4,026.66	0.14	-0.05	0.04
30.00	-41.53	-1.35	0.00	-112.46	0.00	112.46	4,380.25	1,034.71	3,968	3,817.43	0.20	-0.06	0.04
35.00	-39.83	-1.35	0.00	-105.71	0.00	105.71	4,262.41	1,006.87	3,758	3,613.78	0.27	-0.08	0.04
40.00	-38.76	-1.35	0.00	-98.97	0.00	98.97	4,144.58	979.03	3,553	3,415.71	0.36	-0.09	0.04
43.21	-37.81	-1.34	0.00	-94.66	0.00	94.66	4,069.02	961.19	3,425	3,291.65	0.42	-0.10	0.04
45.00	-35.82	-1.33	0.00	-92.25	0.00	92.25	4,026.74	951.20	3,354	3,223.22	0.46	-0.10	0.04
48.79	-35.46	-1.33	0.00	-87.21	0.00	87.21	3,411.63	814.18	2,867	2,731.35	0.54	-0.11	0.04
50.00	-34.88	-1.32	0.00	-85.61	0.00	85.61	3,393.84	808.42	2,826	2,697.72	0.57	-0.11	0.04
52.00	-33.88	-1.32	0.00	-82.97	0.00	82.97	3,364.13	798.88	2,760	2,642.23	0.62	-0.12	0.04
55.00	-32.45	-1.30	0.00	-79.02	0.00	79.02	3,319.09	784.57	2,662	2,559.69	0.69	-0.13	0.04
60.00	-31.05	-1.29	0.00	-72.50	0.00	72.50	3,220.32	760.71	2,502	2,407.25	0.83	-0.14	0.04
65.00	-29.67	-1.27	0.00	-66.06	0.00	66.06	3,119.32	736.85	2,348	2,257.87	0.98	-0.15	0.04
70.00	-28.33	-1.25	0.00	-59.71	0.00	59.71	3,018.31	712.99	2,198	2,113.27	1.15	-0.17	0.04
75.00	-27.36	-1.23	0.00	-53.46	0.00	53.46	2,917.31	689.13	2,054	1,973.46	1.33	-0.18	0.04
78.67	-26.83	-1.22	0.00	-48.94	0.00	48.94	2,843.19	671.62	1,951	1,873.90	1.48	-0.19	0.04
80.00	-22.95	-1.13	0.00	-47.32	0.00	47.32	2,816.31	665.27	1,914	1,838.43	1.53	-0.19	0.03
82.00	-20.76	-1.07	0.00	-45.06	0.00	45.06	2,775.90	655.73	1,859	1,785.76	1.61	-0.20	0.03
83.33	-20.44	-1.06	0.00	-43.64	0.00	43.64	2,331.02	553.12	1,588	1,521.08	1.67	-0.20	0.04
85.00	-19.53	-1.04	0.00	-41.87	0.00	41.87	2,310.11	546.48	1,550	1,489.14	1.74	-0.21	0.04
90.00	-16.78	-0.96	0.00	-36.67	0.00	36.67	2,229.24	526.59	1,439	1,384.22	1.96	-0.22	0.03
95.00	-15.91	-0.93	0.00	-31.89	0.00	31.89	2,145.07	506.71	1,332	1,281.15	2.20	-0.24	0.03
100.00	-15.06	-0.90	0.00	-27.25	0.00	27.25	2,060.90	486.83	1,230	1,182.06	2.46	-0.25	0.03
105.00	-14.24	-0.87	0.00	-22.76	0.00	22.76	1,976.73	466.94	1,132	1,086.97	2.73	-0.26	0.03
110.00	-13.60	-0.84	0.00	-18.43	0.00	18.43	1,892.56	447.06	1,037	995.86	3.01	-0.27	0.03
114.00	-13.60	-0.84	0.00	-15.07	0.00	15.07	1,825.27	431.17	965	925.89	3.24	-0.28	0.02
114.00	-13.60	-0.84	0.00	-15.07	0.00	15.07	1,013.43	260.69	586	519.26	3.24	-0.28	0.04
114.00	-9.61	-0.65	0.00	-15.07	0.00	15.07	1,013.41	260.69	586	519.24	3.24	-0.28	0.04
115.00	-9.05	-0.62	0.00	-14.43	0.00	14.43	1,007.45	258.29	575	511.41	3.30	-0.29	0.04
120.00	-8.50	-0.59	0.00	-11.33	0.00	11.33	976.71	246.33	523	472.67	3.61	-0.30	0.03
125.00	-6.68	-0.49	0.00	-8.38	0.00	8.38	944.43	234.37	474	434.68	3.93	-0.32	0.03
130.00	-6.34	-0.47	0.00	-5.94	0.00	5.94	910.60	222.41	427	397.54	4.27	-0.33	0.02
135.00	-6.15	-0.45	0.00	-3.61	0.00	3.61	875.23	210.45	382	361.37	4.62	-0.34	0.02
138.00	-5.09	-0.38	0.00	-2.25	0.00	2.25	853.26	203.27	356	340.17	4.84	-0.34	0.01
140.00	-4.97	-0.37	0.00	-1.48	0.00	1.48	838.31	198.49	340	326.27	4.98	-0.34	0.01
142.00	-3.25	-0.25	0.00	-0.74	0.00	0.74	820.01	193.70	324	311.38	5.13	-0.35	0.01
145.00	0.00	-0.23	0.00	0.00	0.00	0.00	789.63	186.53	300	288.62	5.34	-0.35	0.00

0.9D - 1.0Ev + 1.0Eh Normal **Seismic (Reduced DL)**

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-36.55	-1.32	0.00	-150.12	0.00	150.12	4,923.42	1,201.72	5,353	4,990.47	0.00	0.00	0.04
5.00	-35.23	-1.33	0.00	-143.52	0.00	143.52	4,841.97	1,173.88	5,108	4,793.23	0.01	-0.01	0.04
10.00	-33.93	-1.33	0.00	-136.89	0.00	136.89	4,758.98	1,146.05	4,868	4,598.35	0.02	-0.02	0.04
15.00	-32.65	-1.33	0.00	-130.24	0.00	130.24	4,674.44	1,118.21	4,635	4,405.95	0.05	-0.03	0.04
20.00	-31.40	-1.34	0.00	-123.57	0.00	123.57	4,588.36	1,090.38	4,407	4,216.14	0.09	-0.04	0.04
25.00	-30.17	-1.34	0.00	-116.89	0.00	116.89	4,498.09	1,062.54	4,185	4,026.66	0.13	-0.05	0.04
30.00	-28.97	-1.33	0.00	-110.21	0.00	110.21	4,380.25	1,034.71	3,968	3,817.43	0.19	-0.06	0.04
35.00	-27.78	-1.33	0.00	-103.54	0.00	103.54	4,262.41	1,006.87	3,758	3,613.78	0.27	-0.07	0.04
40.00	-27.04	-1.33	0.00	-96.89	0.00	96.89	4,144.58	979.03	3,553	3,415.71	0.35	-0.09	0.04
43.21	-26.37	-1.32	0.00	-92.64	0.00	92.64	4,069.02	961.19	3,425	3,291.65	0.41	-0.09	0.04
45.00	-24.98	-1.31	0.00	-90.27	0.00	90.27	4,026.74	951.20	3,354	3,223.22	0.45	-0.10	0.03
48.79	-24.74	-1.31	0.00	-85.31	0.00	85.31	3,411.63	814.18	2,867	2,731.35	0.53	-0.11	0.04
50.00	-24.33	-1.30	0.00	-83.73	0.00	83.73	3,393.84	808.42	2,826	2,697.72	0.56	-0.11	0.04
52.00	-23.63	-1.29	0.00	-81.13	0.00	81.13	3,364.13	798.88	2,760	2,642.23	0.60	-0.12	0.04
55.00	-22.63	-1.28	0.00	-77.25	0.00	77.25	3,319.09	784.57	2,662	2,559.69	0.68	-0.12	0.04
60.00	-21.65	-1.26	0.00	-70.85	0.00	70.85	3,220.32	760.71	2,502	2,407.25	0.82	-0.14	0.04
65.00	-20.70	-1.24	0.00	-64.54	0.00	64.54	3,119.32	736.85	2,348	2,257.87	0.97	-0.15	0.04
70.00	-19.76	-1.22	0.00	-58.32	0.00	58.32	3,018.31	712.99	2,198	2,113.27	1.13	-0.16	0.03
75.00	-19.08	-1.20	0.00	-52.21	0.00	52.21	2,917.31	689.13	2,054	1,973.46	1.31	-0.18	0.03
78.67	-18.71	-1.19	0.00	-47.79	0.00	47.79	2,843.19	671.62	1,951	1,873.90	1.45	-0.19	0.03
80.00	-16.01	-1.10	0.00	-46.20	0.00	46.20	2,816.31	665.27	1,914	1,838.43	1.50	-0.19	0.03
82.00	-14.48	-1.05	0.00	-44.00	0.00	44.00	2,775.90	655.73	1,859	1,785.76	1.58	-0.19	0.03
83.33	-14.26	-1.04	0.00	-42.61	0.00	42.61	2,331.02	553.12	1,588	1,521.08	1.63	-0.20	0.03
85.00	-13.62	-1.02	0.00	-40.87	0.00	40.87	2,310.11	546.48	1,550	1,489.14	1.70	-0.20	0.03
90.00	-11.70	-0.93	0.00	-35.79	0.00	35.79	2,229.24	526.59	1,439	1,384.22	1.92	-0.22	0.03
95.00	-11.09	-0.91	0.00	-31.12	0.00	31.12	2,145.07	506.71	1,332	1,281.15	2.16	-0.23	0.03
100.00	-10.50	-0.88	0.00	-26.58	0.00	26.58	2,060.90	486.83	1,230	1,182.06	2.41	-0.24	0.03
105.00	-9.93	-0.84	0.00	-22.19	0.00	22.19	1,976.73	466.94	1,132	1,086.97	2.67	-0.26	0.03
110.00	-9.48	-0.82	0.00	-17.97	0.00	17.97	1,892.56	447.06	1,037	995.86	2.94	-0.27	0.02
114.00	-9.48	-0.82	0.00	-14.70	0.00	14.70	1,825.27	431.17	965	925.89	3.17	-0.28	0.02
114.00	-9.48	-0.82	0.00	-14.70	0.00	14.70	1,013.43	260.69	586	519.26	3.17	-0.28	0.04
114.00	-6.70	-0.63	0.00	-14.70	0.00	14.70	1,013.41	260.69	586	519.24	3.17	-0.28	0.04
115.00	-6.31	-0.60	0.00	-14.07	0.00	14.07	1,007.45	258.29	575	511.41	3.23	-0.28	0.03
120.00	-5.93	-0.58	0.00	-11.05	0.00	11.05	976.71	246.33	523	472.67	3.53	-0.30	0.03
125.00	-4.66	-0.47	0.00	-8.17	0.00	8.17	944.43	234.37	474	434.68	3.85	-0.31	0.02
130.00	-4.42	-0.45	0.00	-5.79	0.00	5.79	910.60	222.41	427	397.54	4.18	-0.32	0.02
135.00	-4.29	-0.44	0.00	-3.52	0.00	3.52	875.23	210.45	382	361.37	4.53	-0.33	0.02
138.00	-3.55	-0.37	0.00	-2.19	0.00	2.19	853.26	203.27	356	340.17	4.74	-0.34	0.01
140.00	-3.47	-0.36	0.00	-1.45	0.00	1.45	838.31	198.49	340	326.27	4.88	-0.34	0.01
142.00	-2.26	-0.24	0.00	-0.72	0.00	0.72	820.01	193.70	324	311.38	5.02	-0.34	0.01
145.00	0.00	-0.23	0.00	0.00	0.00	0.00	789.63	186.53	300	288.62	5.23	-0.34	0.00

ANALYSIS SUMMARY

	Reactions						Max Usage	
Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Elev (ft)	Interaction Ratio
1.2D + 1.0W Normal	23.96	0.00	52.67	0.00	0.00	2544.00	48.79	0.53
0.9D + 1.0W Normal	23.94	0.00	39.49	0.00	0.00	2509.62	48.79	0.52
1.2D + 1.0Di + 1.0Wi Normal	6.63	0.00	69.29	0.00	0.00	700.85	114.00	0.16
1.2D + 1.0Ev + 1.0Eh Normal	1.35	0.00	52.41	0.00	0.00	152.60	114.00	0.04
0.9D - 1.0Ev + 1.0Eh Normal	1.34	0.00	36.55	0.00	0.00	150.12	48.79	0.04
1.0D + 1.0W Service Normal	5.83	0.00	43.92	0.00	0.00	614.61	114.00	0.13

Base Plate & Anchor Rod Analysis

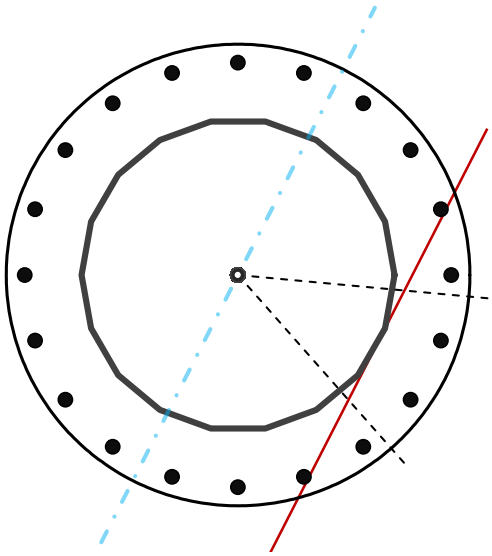
Pole Dimensions		
Number of Sides	18	-
Diameter	49.75	in
Thickness	7/16	in
Orientation Offset		°

Base Reactions		
Moment, Mu	2,544.0	k-ft
Axial, Pu	52.7	k
Shear, Vu	24.0	k
Neutral Axis	243	°

Report Capacities		
Component	Capacity	Result
Base Plate	85%	Pass
Anchor Rods	38%	Pass
Dwyidag	-	-

Base Plate		
Shape	Round	-
Diameter, ø	75	in
Thickness	2 3/4	in
Grade	A572-60	
Yield Strength, Fy	60	ksi
Tensile Strength, Fu	75	ksi
Clip	N/A	in
Orientation Offset		°
Anchor Rod Detail	d	η=0.5
Clear Distance	4	in
Applied Moment, Mu	2282.5	k
Bending Stress, ϕMn	2676.2	k

Original Anchor Rods		
Arrangement	Radial	-
Quantity	20	-
Diameter, ø	2 1/4	in
Bolt Circle	69	in
Grade	A615-75	
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Spacing	10.8	in
Orientation Offset		°
Applied Force, Pu	93.1	k
Anchor Rods, ϕPn	243.6	k



Calculations for Monopole Base Plate & Anchor Rod Analysis

Reaction Distribution

Reaction	Shear Vu	Moment Mu	Factor
-	k	k-ft	-
Base Forces	24.0	2544.0	1.00
Anchor Rod Forces	24.0	2544.0	1.00
Additional Bolt (Grp1) Forces	0.0	0.0	0.00
Additional Bolt (Grp2) Forces	0.0	0.0	0.00
Dywidag Forces	0.0	0.0	0.00
Stiffener Forces	0.0	0.0	0.00

Geometric Properties

Section	Gross Area	Net Area	Individual Inertia	Threads per Inch	Moment of Inertia
-	in^2	in^2	in^4	#	in^4
Pole	67.4338	3.7463	0.2401		20501.87
Bolt	3.9761	3.2477	0.8393	4.5	36057.13
Bolt1	0.0000	0.0000	0.0000	0	0.00
Bolt2	0.0000	0.0000	0.0000	0	0.00
Dywidag	0.0000	0.0000	0.0000		0.00
Stiffener	0.0000	0.0000	0.0000		0.00

Base Plate		
Shape	Round	-
Diameter, D	75	in
Thickness, t	2.75	in
Yield Strength, Fy	60	ksi
Tensile Strength, Fu	75	ksi
Base Plate Chord	56.124	in
Detail Type	d	-
Detail Factor	0.50	-
Clear Distance	4	-

Anchor Rods		
Anchor Rod Quantity, N	20	-
Rod Diameter, d	2.25	in
Bolt Circle, BC	69	in
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	93.1	k
Applied Shear, Vu	0.3	k
Compressive Capacity, ϕPn	243.6	k
Tensile Capacity, ϕRnt	0.382	OK
Interaction Capacity	0.385	OK

External Base Plate		
Chord Length AA	51.232	in
Additional AA	5.500	in
Section Modulus, Z	107.259	in^3
Applied Moment, Mu	2282.5	k-ft
Bending Capacity, ϕMn	5792.0	k-ft
Capacity, Mu/ϕMn	0.394	OK
Chord Length AB	50.472	in
Additional AB	5.500	in
Section Modulus, Z	105.822	in^3
Applied Moment, Mu	2146.0	k-ft
Bending Capacity, ϕMn	5714.4	k-ft
Capacity, Mu/ϕMn	0.376	OK
Bend Line Length	26.213	in
Additional Bend Line	0.000	in
Section Modulus, Z	49.559	in^3
Applied Moment, Mu	2282.5	k-ft
Bending Capacity, ϕMn	2676.2	k-ft
Capacity, Mu/ϕMn	0.853	OK

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

Flange Plate Analysis

Flange Plate

Plate Type	***Flange***	***114ft***
Pole Diameter	25.125	in
Pole Thickness	0.1875	in
Plate Diameter	32	in
Plate Thickness	1 1/2	in
Plate Fy	65	ksi
Weld Length	3/16	in
f_s Resistance	199.48	k-in
Applied	42.44	k-in

Code Rev.	***H***
Moment	266.6 k-ft
Axial	12.2 k

Required Flange Thickness:
0.69 in OK

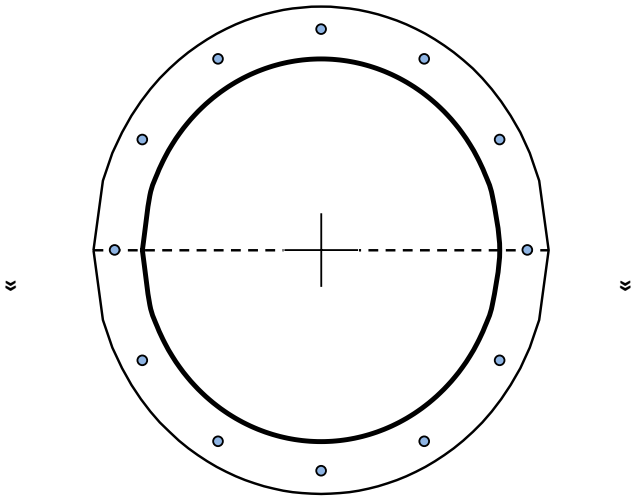
Date	9/3/2021
Engineer	BLL
Site #	411182
Carrier	VERIZON WIRELESS

Stiffeners

#	

Bolts

#	***12***	
Bolt Circle	29	in
(R)adial / (S)quare	R	
Diameter	1	in
Hole Diameter	1 1/8	in
Type	A325	
Fy	92	ksi
Fu	120	ksi
f_s Resistance	54.52	k
Applied	35.74	k



Reinforcement

#	

Plate Stress Ratio:
21% Pass

Bolt Stress Ratio:
66% Pass

Extra Bolts O

#	

Paul J. Ford and Company
250 East Broad Street Suite 600
Columbus, OH 43215
(614)221-6679
mtimas@pauljford.com

Post-Mod Antenna Mount Analysis Report and PMI Requirements

Mount Fix

SMART Tool Project #: 10032680

Maser Project #: 20777373

Paul J. Ford Project #: A22720-0002.002.7191

February 15, 2021

Site Information	*Site ID:*	*467415-VZW / New Hartford CT*
	Site Name:	*New Hartford CT*
	Carrier Name:	*Verizon Wireless*
	Address:	*20 ANTOLINI RD NEW HARTFORD, Connecticut 06057, Litchfield County*
	Latitude:	*41.828055°*
	Longitude:	*-73.015683°*
Structure Information	*Tower Type:*	*151-Ft Monopole*
	Mount Type:	*12.50-Ft T-Frame*

FUZE ID # 16244603

Analysis Results

T-Frame: **78.6% Pass**

******Contractor PMI Requirements*:**
Included at the end of this MA report
Available & Submitted via portal at https://pmi.vzwsmart.com
Contractor - Please Review Specific Site PMI Requirements Upon Award
Requirements also Noted on Mount Modification Drawings
Requirements may also be Noted on A & E drawings

Report Prepared By:

Michael Timas

D.S.

STATE OF CONNECTICUT
JUSTIN T. KLINE
No. 30301
LICENSED PROFESSIONAL ENGINEER

2021.02.16
15:51:33 -05'00'

Executive Summary:

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

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

Sources of Information:

Document Type	Remarks
Radio Frequency Data Sheet (RFDS)	*Verizon 16244603, dated December 7, 2020*
Mount Mapping Report	*TEP, Project # 467415, dated November 19, 2020*
Previous Failing Mount Analysis Report	*PJF, Project # A22720-0002.001.7190, dated December 30, 2020*
Proposed Mount Modification	*PJF, Project # A22720-0002.002.7191, dated February 12, 2021*

Analysis Criteria:

Codes and Standards:	ANSI/TIA-222-H	
Wind Parameters:	Basic Wind Speed (Ultimate 3-sec. Gust), V_{ULT}:	115 mph
	Ice Wind Speed (3-sec. Gust):	50 mph
	Design Ice Thickness:	1.00 in
	Risk Category:	II
	Exposure Category:	C
	Topographic Category:	1
	Topographic Feature Considered:	N/A
	Topographic Method:	N/A
	Ground Elevation Factor, K_e:	0.973
Seismic Parameters:	S_S:	0.174
	S_1:	0.054
Maintenance Parameters:	Wind Speed (3-sec. Gust):	30 mph
	Maintenance Live Load, Lv:	0 lbs.
	Maintenance Live Load, Lm:	0 lbs.
Analysis Software:	RISA-3D (V17.0.3)	

Final Loading Configuration:

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

Mount Elevation (ft)	Equipment Elevation (ft)	Quantity	Manufacturer	Model	Status
135.00	135.00	6	JMA Wireless	MX06FRO840-02	Added
		3	JMA Wireless	2'' Edge-to-Edge bracket	
		3	Samsung	VES01	
		3	Samsung	RFV01U-D2A	
		3	Samsung	RFV01U-D1A	
		1	RFS	DB-C1-12C-24AB-0Z	
		6	Amphenol Antel	LPA-80040-4CF-EDIN-X	Retained

Standard Conditions:

1. All engineering services are performed on the basis that the information provided to Paul J. Ford and used in this analysis is current and correct. The existing equipment loading has been applied at locations determined from the supplied documentation. Any deviation from the loading locations specified in this report shall be communicated to Paul J. Ford to verify deviation will not adversely impact the analysis.

2. Mounts are assumed to have been properly fabricated, installed and maintained in good condition, twist free and plumb in accordance with its original design and manufacturer's specifications.

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

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

3. For mount analyses completed from other data sources (including new replacement mounts) and not specifically mapped by PJF, the mounts are assumed to have been properly fabricated, installed and maintained in good condition, twist free and plumb in accordance with its original design and manufacturer's specifications.

4. All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report.

5. The mount was checked up to, and including, the bolts that fasten it to the mount collar/attachment and threaded rod connections in collar members if applicable. Local deformation and interaction between the mount collar/attachment and the supporting tower structure are outside the scope of this analysis.

6. All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. Paul J. Ford is not responsible for the conclusion, opinions, and recommendations made by others based on the information supplied.

7. Structural Steel Grades have been assumed as follows, if applicable, unless otherwise noted in this analysis:

   - Channel, Solid Round, Angle, Plate — ASTM A36 (Gr. 36)
   - HSS (Rectangular) — ASTM 500 (Gr. B-46)
   - Pipe — ASTM A53 (Gr. B-35)
   - Threaded Rod — F1554 (Gr. 36)
   - Bolts — ASTM A325

8. Any mount modifications listed under Sources of Information are assumed to have been installed per the design specifications.

Discrepancies between in-field conditions and the assumptions listed above may render this analysis invalid unless explicitly approved by Paul J. Ford.

Analysis Results:

Component	Utilization %	Pass/Fail
Face Horizontals	*41.0%*	*Pass*
Standoff Members	*78.6%*	*Pass*
Mount Pipes	*73.5%*	*Pass*
V-Bracing	*20.3%*	*Pass*
Mount to Tower Connection	*62.2%*	*Pass*

Structure Rating – *(Controlling Utilization of all Components)*	**78.6%**

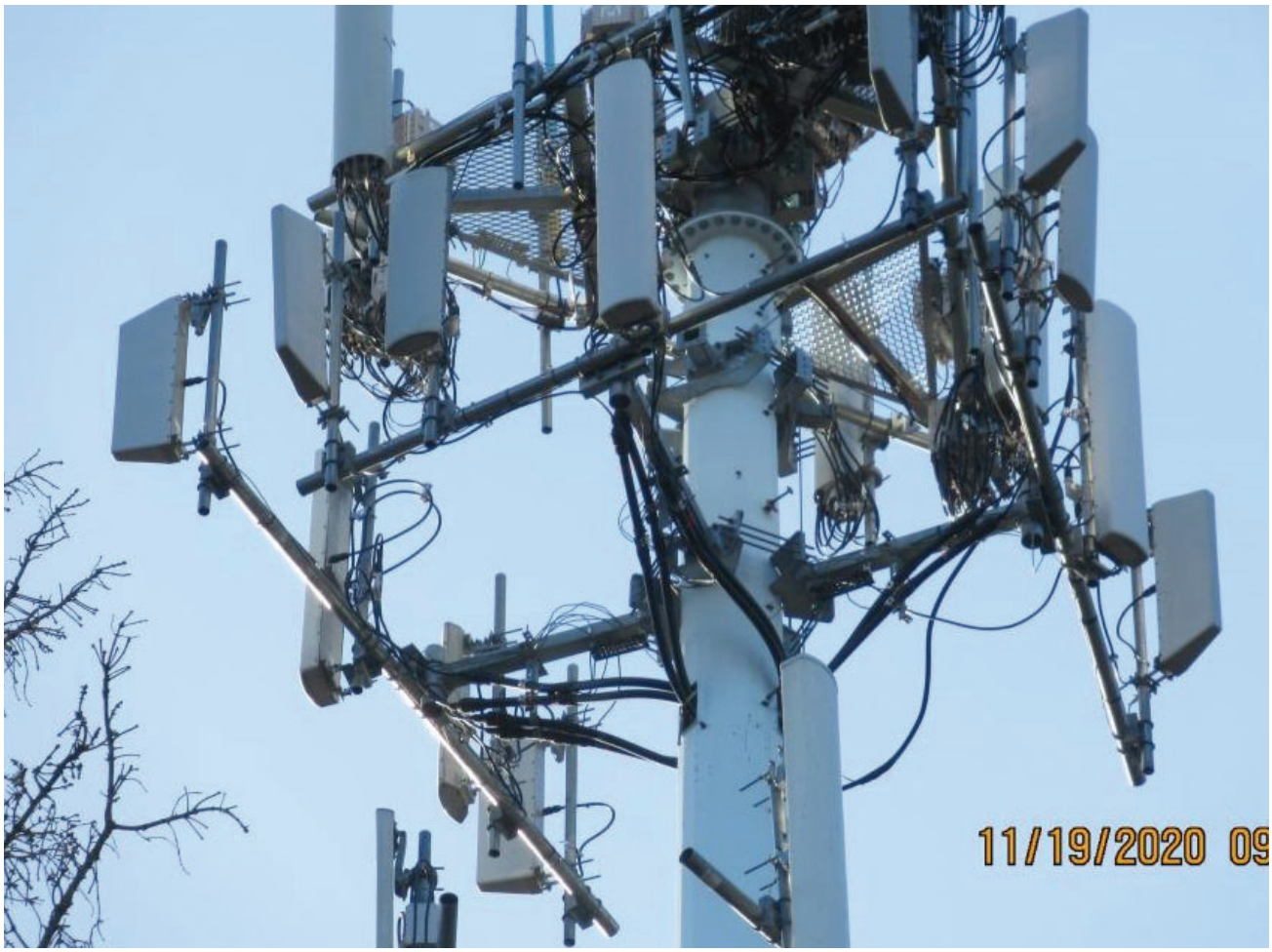
Recommendation:

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

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

Attachments:

1. Mount Photos
2. Mount Mapping Report (for reference only)
3. Analysis Calculations
4. **Contractor Required PMI Report Deliverables**
5. Antenna Placement Diagrams

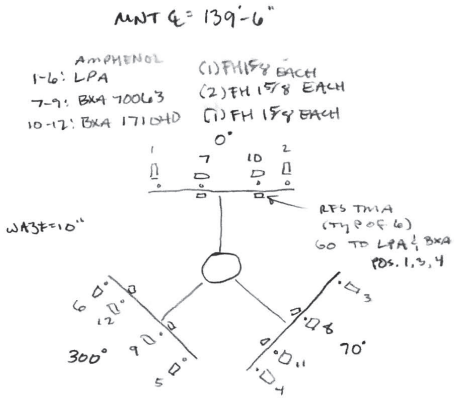

11/19/2020 09

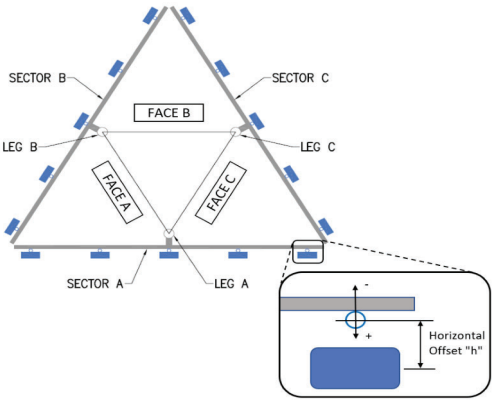
V3.0 Updated on 8-31-2020

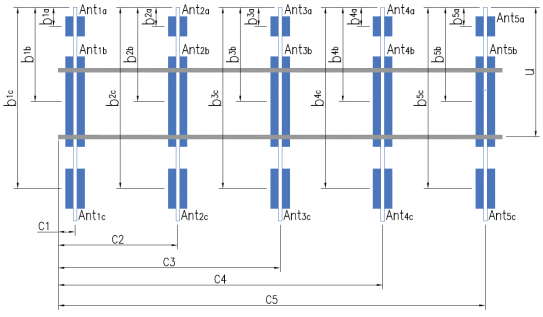
Antenna Mount Mapping Form (PATENT PENDING)

FCC # Not Posted

Tower Owner:	American Tower Corporation	**Mapping Date:**	11/19/2020
Site Name:	New Hartford CT	**Tower Type:**	Monopole
Site Number or ID:	467415	**Tower Height (Ft.):**	151
Mapping Contractor:	TEP	**Mount Elevation (Ft.):**	139.5







Antenna Layout (Looking Out From Tower)

Mount Pipe Configuration and Geometries [Unit = Inches]

Sector / Position	Mount Pipe Size & Length	Vertical Offset Dimension "u"	Horizontal Offset "C1, C2, C3, etc."	Sector / Position	Mount Pipe Size & Length	Vertical Offset Dimension "u"	Horizontal Offset "C1, C2, C3, etc."
A1	2.4"Ø x 5/32" x 7'-0"	74.50	10.50	C1	2.4"Ø x 5/32" x 7'-0"	74.50	10.50
A2	2.4"Ø x 5/32" x 7'-0"	74.50	33.50	C2	2.4"Ø x 5/32" x 7'-0"	74.50	33.50
A3	2.4"Ø x 5/32" x 7'-0"	74.50	87.00	C3	2.4"Ø x 5/32" x 7'-0"	74.50	87.00
A4	2.4"Ø x 5/32" x 7'-0"	74.50	138.00	C4	2.4"Ø x 5/32" x 7'-0"	74.50	138.00
A5				C5			
A6				C6			
B1	2.4"Ø x 5/32" x 7'-0"	74.50	10.50	D1			
B2	2.4"Ø x 5/32" x 7'-0"	74.50	33.50	D2			
B3	2.4"Ø x 5/32" x 7'-0"	74.50	87.00	D3			
B4	2.4"Ø x 5/32" x 7'-0"	74.50	138.00	D4			
B5				D5			
B6				D6			

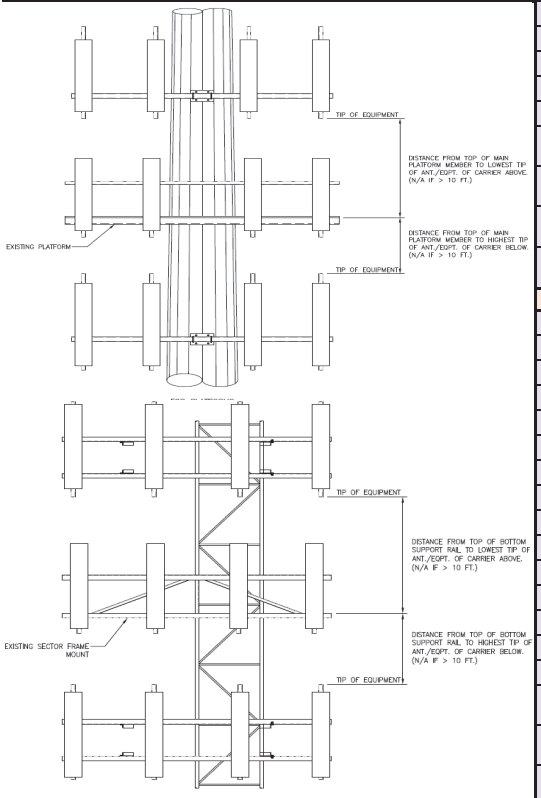
Distance between bottom rail and mount CL elevation (dim d). Unit is inches. See 'Mount Elev Ref' tab for details. :	0.00
Distance from top of bottom support rail to lowest tip of ant./eqpt. of Carrier above. (N/A if > 10 ft.) :	8
Distance from top of bottom support rail to highest tip of ant./eqpt. of Carrier below. (N/A if > 10 ft.) :	
Please enter additional infomation or comments below.	

Tower Face Width at Mount Elev. (ft.):		Tower Leg Size or Pole Shaft Diameter at Mount Elev. (in.):	18.9

Ants. Items	Enter antenna model. If not labeled, enter "Unknown". Antenna Models if Known	Width (in.)	Depth (in.)	Height (in.)	Coax Size and Qty	Antenna Center-line (Ft.)	Mounting Locations [Units are inches and degrees] Vertical Distances"b_{1a}, b_{2a}, b_{3a}, b_{1b}...." (Inches)	Horiz. Offset "h" (Use "-" if Ant. is behind)	Antenna Azimuth (Degrees)	Photos of antennas Photo Numbers
Sector A										
Ant_{1a}	LPA-80080-4CF-EDIN	5.50	13.20	47.20	(1) 1.625	142.792	35.00	13.50	0.00	42-43
Ant_{1b}										
Ant_{1c}										
Ant_{2a}	BXA-70063-6CF-EDIN	11.20	5.20	71.00	Diplexer	141.833	46.50	8.00	0.00	44-45
Ant_{2b}	FD9R6004 Diplexer	6.50	1.50	5.80	(1) 1.625	141.208	54.00	-3.00		44
Ant_{2c}										
Ant_{3a}	BXA-171040-8CF-EDIN	11.80	4.70	48.80	Diplexer	142.667	36.50	8.50	0.00	46-47
Ant_{3b}	FD9R6004 Diplexer	6.50	1.50	5.80	(1) 1.625	141.208	54.00	-3.00		46
Ant_{3c}										
Ant_{4a}	LPA-80080-4CF-EDIN	5.50	13.20	47.20	(1) 1.625	142.792	35.00	13.50	0.00	48-49
Ant_{4b}										
Ant_{4c}										
Ant_{5a}										
Ant_{5b}										
Ant_{5c}										
Ant on Standoff										
Ant on Standoff										
Ant on Tower										
Ant on Tower										

Mount Azimuth (Degree) for Each Sector			Tower Leg Azimuth (Degree) for Each Sector		
Sector A:	0.00	Deg	Leg A:		Deg
Sector B:	90.00	Deg	Leg B:		Deg
Sector C:	270.00	Deg	Leg C:		Deg
Sector D:		Deg	Leg D:		Deg

Climbing Facility Information			
Location:	230.00	Deg	Sector C
Climbing Facility	Corrosion Type:		Good condition.
	Access:		Climbing path was obstructed.
	Condition:		Good condition.



Sector B										
Ant_{1a}	LPA-80080-4CF-EDIN	5.50	13.20	47.20	(1) 1.625	142.792	35.00	13.50	90.00	50-51
Ant_{1b}										
Ant_{1c}										
Ant_{2a}	BXA-70063-6CF-EDIN-	11.20	5.20	71.00	Diplexer	141.833	46.50	8.00	90.00	52-53
Ant_{2b}	FD9R6004 Diplexer	6.50	1.50	5.80	(1) 1.625	141.208	54.00	-3.00		52
Ant_{2c}										
Ant_{3a}	BXA-171040-8CF-EDIN	11.80	4.70	48.80	Diplexer	142.667	36.50	8.50	90.00	54-55
Ant_{3b}	FD9R6004 Diplexer	6.50	1.50	5.80	(1) 1.625	141.208	54.00	-3.00		54
Ant_{3c}										
Ant_{4a}	LPA-80080-4CF-EDIN	5.50	13.20	47.20	(1) 1.625	142.792	35.00	13.50	90.00	56-57
Ant_{4b}										
Ant_{4c}										
Ant_{5a}										
Ant_{5b}										
Ant_{5c}										
Ant on Standoff										
Ant on Standoff										
Ant on Tower										
Ant on Tower										
Sector C										
Ant_{1a}	LPA-80080-4CF-EDIN	5.50	13.20	47.20	(1) 1.625	142.792	35.00	13.50	300.00	58-59
Ant_{1b}										
Ant_{1c}										
Ant_{2a}	BXA-70063-6CF-EDIN-	11.20	5.20	71.00	Diplexer	141.833	46.50	8.00	300.00	60-61
Ant_{2b}	FD9R6004 Diplexer	6.50	1.50	5.80	(1) 1.625	141.208	54.00	-3.00		60
Ant_{2c}										
Ant_{3a}	BXA-171040-8CF-EDIN	11.80	4.70	48.80	Diplexer	142.667	36.50	8.50	300.00	62-64
Ant_{3b}	FD9R6004 Diplexer	6.50	1.50	5.80	(1) 1.625	141.208	54.00	-3.00		62
Ant_{3c}										
Ant_{4a}	LPA-80080-4CF-EDIN	5.50	13.20	47.20	(1) 1.625	142.792	35.00	13.50	300.00	65-66
Ant_{4b}										
Ant_{4c}										
Ant_{5a}										
Ant_{5b}										
Ant_{5c}										
Ant on Standoff										
Ant on Standoff										
Ant on Tower										
Ant on Tower										
Sector D										
Ant_{1a}										
Ant_{1b}										
Ant_{1c}										
Ant_{2a}										
Ant_{2b}										
Ant_{2c}										
Ant_{3a}										
Ant_{3b}										
Ant_{3c}										
Ant_{4a}										
Ant_{4b}										
Ant_{4c}										
Ant_{5a}										
Ant_{5b}										
Ant_{5c}										
Ant on Standoff										
Ant on Standoff										
Ant on Tower										
Ant on Tower										

Observed Safety and Structural Issues During the Mount Mapping		
Issue #	Description of Issue	Photo #

1		
2		
3		
4		
5		
6		
7		
8		

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

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

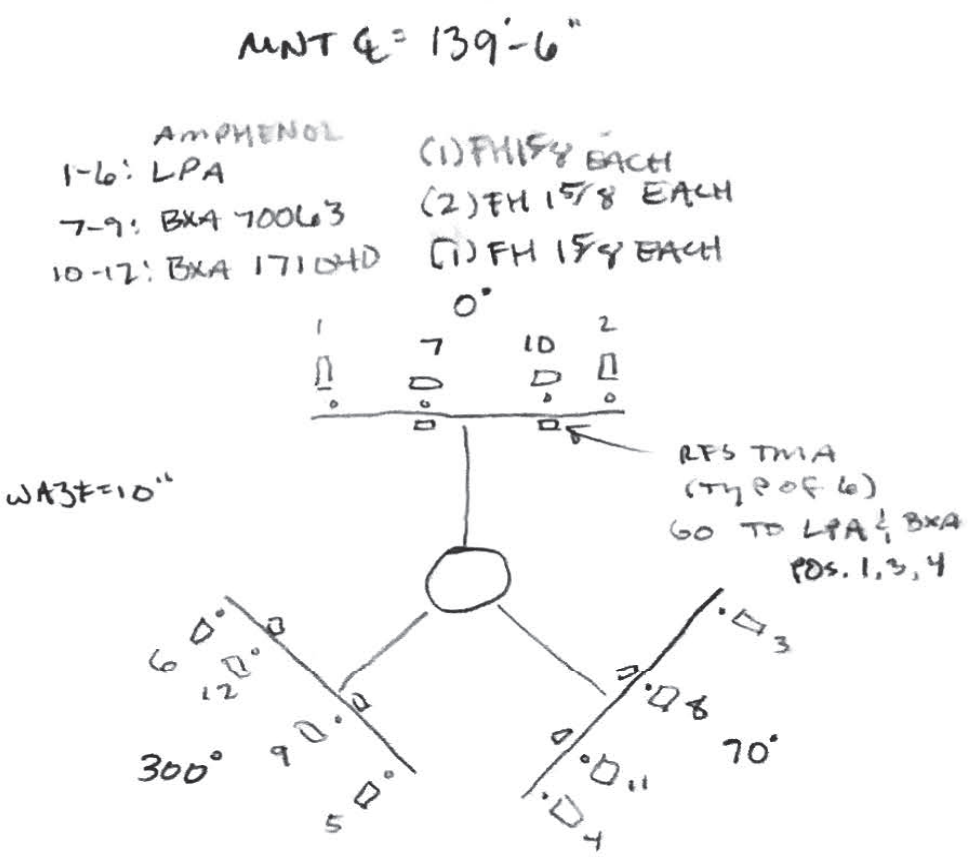
V3.0 Updated on 8-31-2020

Antenna Mount Mapping Form (PATENT PENDING)

FCC # Not Posted

Tower Owner:	American Tower Corporation	**Mapping Date:**	11/19/2020
Site Name:	New Hartford CT	**Tower Type:**	Monopole
Site Number or ID:	467415	**Tower Height (Ft.):**	151
Mapping Contractor:	TEP	**Mount Elevation (Ft.):**	139.5

Please Insert Sketches of the Antenna Mount

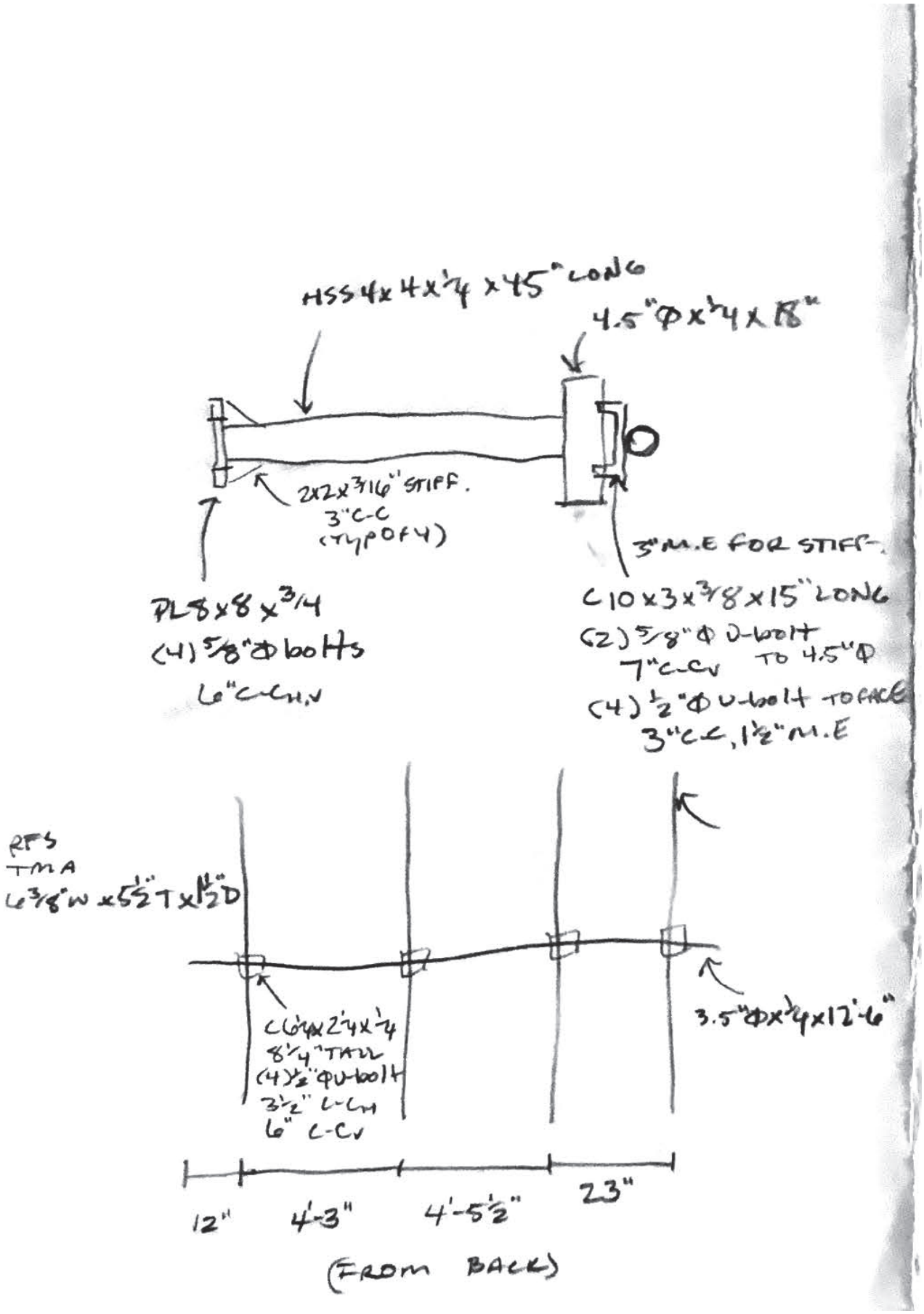


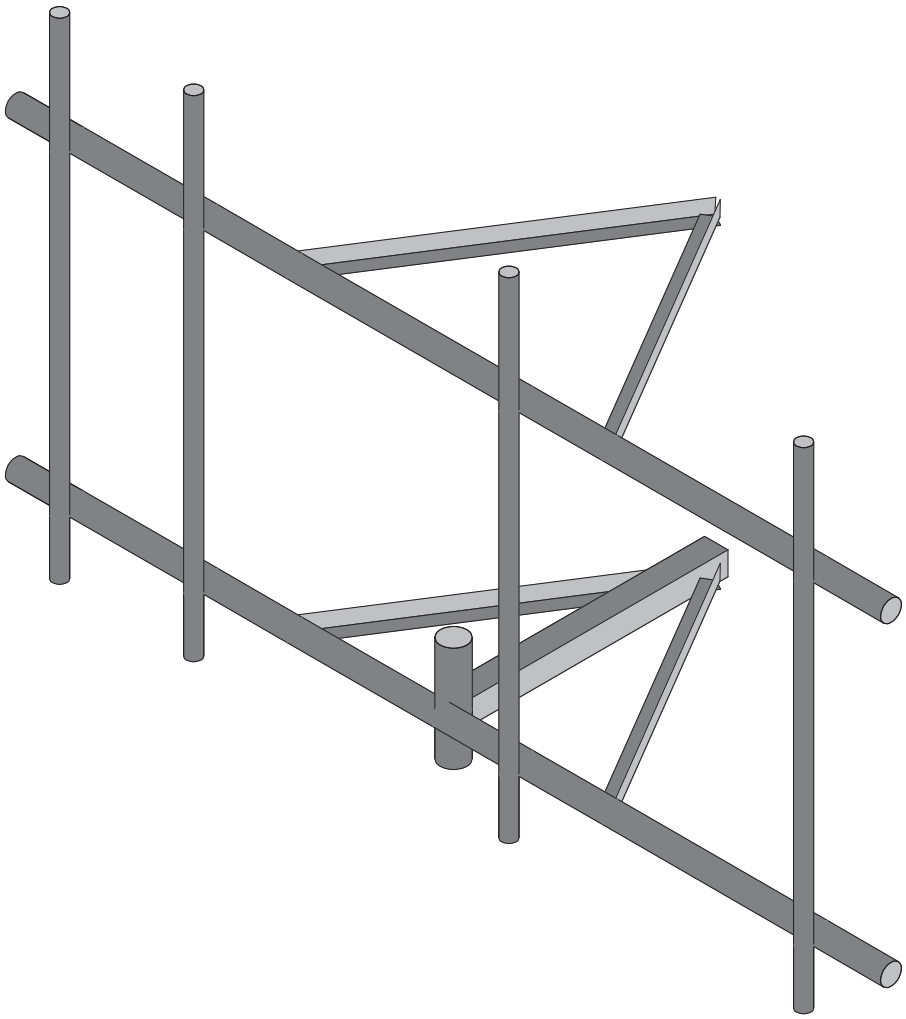
	B	U	H
1-6	35	74½"	13½
7-9	46½		8
10-12	36½		8½
RFS	54		3

M.P. (TYP)

2.4"Φ x 5/32 x 7'

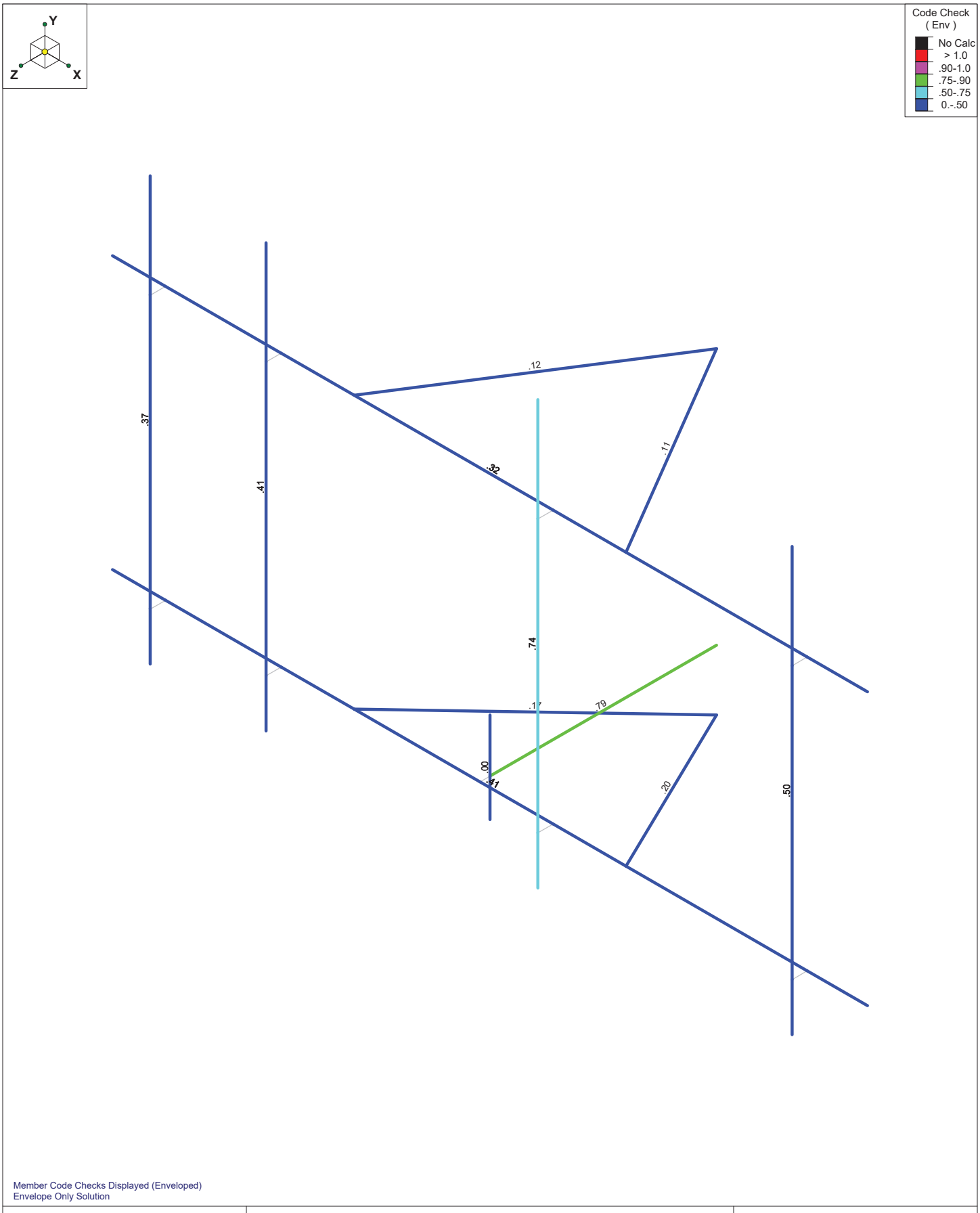
Please Insert Sketches of the Antenna Mount, cont'd





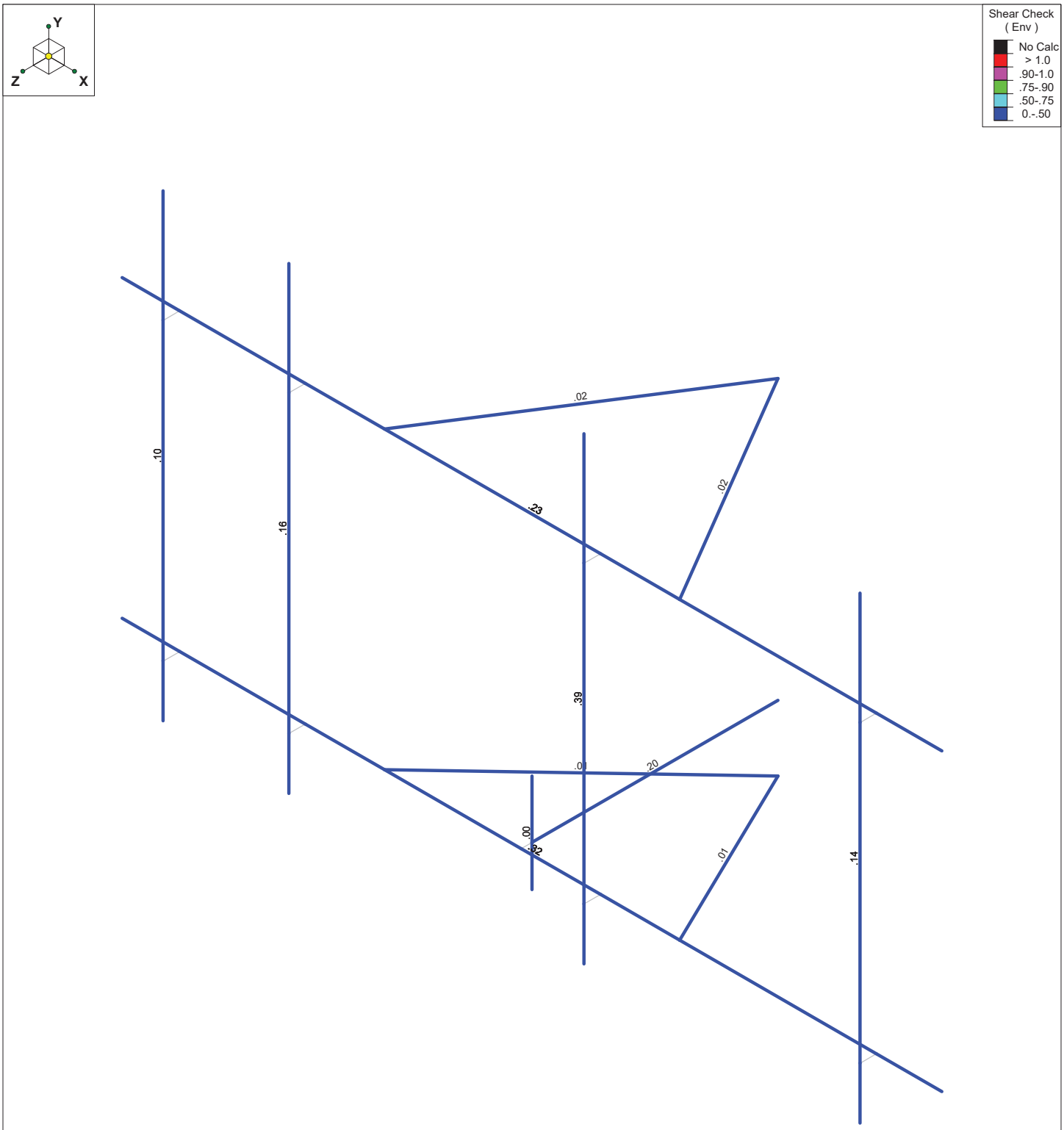
Envelope Only Solution

Paul J. Ford & Company	PSLC # 467415 | NEW HARTFORD CT	SK - 1
MJT		Feb 12, 2021 at 11:22 AM
Project No. 10032680		467415-VZW_MT_LOT_A_H.r3d



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

Paul J. Ford & Company	PSLC # 467415 | NEW HARTFORD CT	SK - 2
MJT		Feb 15, 2021 at 5:46 PM
Project No. 10032680		467415-VZW_MT_LOT_A_H.r3d



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

Paul J. Ford & Company	PSLC # 467415 | NEW HARTFORD CT	SK - 3
MJT		Feb 15, 2021 at 5:47 PM
Project No. 10032680		467415-VZW_MT_LOT_A_H.r3d

(Global) Model Settings

Display Sections for Member Calcs	5
Max Internal Sections for Member Calcs	97
Include Shear Deformation?	Yes
Increase Nailing Capacity for Wind?	Yes
Include Warping?	Yes
Trans Load Btwn Intersecting Wood Wall?	Yes
Area Load Mesh (in^2)	144
Merge Tolerance (in)	.12
P-Delta Analysis Tolerance	0.50%
Include P-Delta for Walls?	Yes
Automatically Iterate Stiffness for Walls?	No
Max Iterations for Wall Stiffness	3
Gravity Acceleration (ft/sec^2)	386.4
Wall Mesh Size (in)	12
Eigensolution Convergence Tol. (1.E-)	4
Vertical Axis	Y
Global Member Orientation Plane	XZ
Static Solver	Sparse Accelerated
Dynamic Solver	Accelerated Solver

Hot Rolled Steel Code	AISC 15th(360-16): LRFD
Adjust Stiffness?	Yes(Iterative)
RISAConnection Code	None
Cold Formed Steel Code	None
Wood Code	None
Wood Temperature	< 100F
Concrete Code	None
Masonry Code	None
Aluminum Code	None - Building
Stainless Steel Code	None

Number of Shear Regions	4
Region Spacing Increment (in)	4
Biaxial Column Method	Exact Integration
Parme Beta Factor (PCA)	.65
Concrete Stress Block	Rectangular
Use Cracked Sections?	No
Use Cracked Sections Slab?	Yes
Bad Framing Warnings?	No
Unused Force Warnings?	No
Min 1 Bar Diam. Spacing?	No
Concrete Rebar Set	REBAR_SET_ASTMA615
Min % Steel for Column	1
Max % Steel for Column	0

(Global) Model Settings, Continued

Seismic Code	None
Seismic Base Elevation (ft)	Not Entered
Add Base Weight?	No
Ct X	0
Ct Z	0
T X (sec)	Not Entered
T Z (sec)	Not Entered
R X	1
R Z	1

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (/1...	Density[k/...	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
2	A500 Gr.46	29000	11154	.3	.65	.49	46	1.4	58	1.3
3	A53 Gr. B (35 ksi)	29000	11154	.3	.65	.49	35	1.5	60	1.2

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	CROSSC1	N30	B2			PIPE_3.0	None	None	A53 Gr. B (...	Typical
2	C11	C1	C2			HSS4X4X4	None	None	A500 Gr.46	Typical
3	M8A	N18	N17			PIPE_4.0	None	None	A53 Gr. B (...	Typical
4	MP4A	N29	N27			PIPE_2.0	None	None	A53 Gr. B (...	Typical
5	M18	N28B	N31			RIGID	None	None	RIGID	Typical
6	M12	C2	N38A			RIGID	None	None	RIGID	Typical
7	MP1A	N14	N12			PIPE_2.0	None	None	A53 Gr. B (...	Typical
8	M8	N13	N15			RIGID	None	None	RIGID	Typical
9	MP2A	N18A	N16			PIPE_2.0	None	None	A53 Gr. B (...	Typical
10	M10	N17A	N19			RIGID	None	None	RIGID	Typical
11	MP3A	N22	N20			PIPE_2.0	None	None	A53 Gr. B (...	Typical
12	M12A	N21	N23			RIGID	None	None	RIGID	Typical
13	M15	N29A	N27A			PIPE_3.0	None	None	A53 Gr. B (...	Typical
14	M16	N28	N30A			RIGID	None	None	RIGID	Typical
15	M17	N31A	N32			RIGID	None	None	RIGID	Typical
16	M18A	N33	N34			RIGID	None	None	RIGID	Typical
17	M19	N35	N36			RIGID	None	None	RIGID	Typical
18	M20	N39	N37			L2.5x2x4	Beam	Wide Fla...	A36 Gr.36	Typical
19	M21	N37	N38			L2.5x2x4	Beam	Wide Fla...	A36 Gr.36	Typical
20	M20A	N39A	N37A			L2.5x2x4	Beam	Wide Fla...	A36 Gr.36	Typical
21	M21A	N37A	N38B			L2.5x2x4	Beam	Wide Fla...	A36 Gr.36	Typical

Member Advanced Data

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Ra...	Analysis ...	Inactive	Seismi...
1	CROSSC1						Yes	** NA **			None
2	C11		OOOOOO				Yes	** NA **			None
3	M8A						Yes	** NA **			None
4	MP4A						Yes	** NA **			None
5	M18						Yes	** NA **			None
6	M12						Yes	** NA **			None
7	MP1A						Yes	** NA **			None
8	M8						Yes	** NA **			None
9	MP2A						Yes	** NA **			None
10	M10						Yes	** NA **			None
11	MP3A						Yes	** NA **			None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Ra...	Analysis ...	Inactive	Seismi...
12	M12A						Yes	** NA **			None
13	M15						Yes	** NA **			None
14	M16						Yes	** NA **			None
15	M17						Yes	** NA **			None
16	M18A						Yes	** NA **			None
17	M19						Yes	** NA **			None
18	M20	BenPIN					Yes	Default			None
19	M21		BenPIN				Yes	Default			None
20	M20A	BenPIN					Yes	Default			None
21	M21A		BenPIN				Yes	Default			None

Hot Rolled Steel Design Parameters

	Label	Shape	Length[...	Lbyy[ft]	Lbzz[ft]	Lcomp top...	Lcomp bot...	L-torq...	Kyy	Kzz	Cb	Function
1	CROSSC1	PIPE_3.0	12.5			Lbyy						Lateral
2	C11	HSS4X4X4	3.75			Lbyy						Lateral
3	M8A	PIPE_4.0	1.5									Lateral
4	MP4A	PIPE_2.0	7			Lbyy						Lateral
5	MP1A	PIPE_2.0	7			Lbyy						Lateral
6	MP2A	PIPE_2.0	7			Lbyy						Lateral
7	MP3A	PIPE_2.0	7			Lbyy						Lateral
8	M15	PIPE_3.0	12.5			Lbyy						Lateral
9	M20	L2.5x2x4	4.443			Lbyy						Lateral
10	M21	L2.5x2x4	4.609			Lbyy						Lateral
11	M20A	L2.5x2x4	4.548			Lbyy						Lateral
12	M21A	L2.5x2x4	4.71			Lbyy						Lateral

Basic Load Cases

	BLC Description	Category	X Gra...	Y Gra...	Z Gra...	Joint	Point	Distri...	Area(Memb...	Surface(Plate/Wall)
1	Antenna D	None					48			
2	Antenna Di	None					48			
3	Antenna Wo (0 Deg)	None					48			
4	Antenna Wo (30 Deg)	None					48			
5	Antenna Wo (60 Deg)	None					48			
6	Antenna Wo (90 Deg)	None					48			
7	Antenna Wo (120 Deg)	None					48			
8	Antenna Wo (150 Deg)	None					48			
9	Antenna Wo (180 Deg)	None					48			
10	Antenna Wo (210 Deg)	None					48			
11	Antenna Wo (240 Deg)	None					48			
12	Antenna Wo (270 Deg)	None					48			
13	Antenna Wo (300 Deg)	None					48			
14	Antenna Wo (330 Deg)	None					48			
15	Antenna Wi (0 Deg)	None					48			
16	Antenna Wi (30 Deg)	None					48			
17	Antenna Wi (60 Deg)	None					48			
18	Antenna Wi (90 Deg)	None					48			
19	Antenna Wi (120 Deg)	None					48			
20	Antenna Wi (150 Deg)	None					48			
21	Antenna Wi (180 Deg)	None					48			
22	Antenna Wi (210 Deg)	None					48			
23	Antenna Wi (240 Deg)	None					48			
24	Antenna Wi (270 Deg)	None					48			
25	Antenna Wi (300 Deg)	None					48			
26	Antenna Wi (330 Deg)	None					48			

Basic Load Cases (Continued)

	BLC Description	Category	X Gra...	Y Gra...	Z Gra...	Joint	Point	Distri...	Area(Memb...	Surface(Plate/Wall)
27	Antenna Wm (0 Deg)	None					48			
28	Antenna Wm (30 Deg)	None					48			
29	Antenna Wm (60 Deg)	None					48			
30	Antenna Wm (90 Deg)	None					48			
31	Antenna Wm (120 Deg)	None					48			
32	Antenna Wm (150 Deg)	None					48			
33	Antenna Wm (180 Deg)	None					48			
34	Antenna Wm (210 Deg)	None					48			
35	Antenna Wm (240 Deg)	None					48			
36	Antenna Wm (270 Deg)	None					48			
37	Antenna Wm (300 Deg)	None					48			
38	Antenna Wm (330 Deg)	None					48			
39	Structure D	None		-1						
40	Structure Di	None						12		
41	Structure Wo (0 Deg)	None						24		
42	Structure Wo (30 Deg)	None						24		
43	Structure Wo (60 Deg)	None						24		
44	Structure Wo (90 Deg)	None						24		
45	Structure Wo (120 Deg)	None						24		
46	Structure Wo (150 Deg)	None						24		
47	Structure Wo (180 Deg)	None						24		
48	Structure Wo (210 Deg)	None						24		
49	Structure Wo (240 Deg)	None						24		
50	Structure Wo (270 Deg)	None						24		
51	Structure Wo (300 Deg)	None						24		
52	Structure Wo (330 Deg)	None						24		
53	Structure Wi (0 Deg)	None						24		
54	Structure Wi (30 Deg)	None						24		
55	Structure Wi (60 Deg)	None						24		
56	Structure Wi (90 Deg)	None						24		
57	Structure Wi (120 Deg)	None						24		
58	Structure Wi (150 Deg)	None						24		
59	Structure Wi (180 Deg)	None						24		
60	Structure Wi (210 Deg)	None						24		
61	Structure Wi (240 Deg)	None						24		
62	Structure Wi (270 Deg)	None						24		
63	Structure Wi (300 Deg)	None						24		
64	Structure Wi (330 Deg)	None						24		
65	Structure Wm (0 Deg)	None						24		
66	Structure Wm (30 Deg)	None						24		
67	Structure Wm (60 Deg)	None						24		
68	Structure Wm (90 Deg)	None						24		
69	Structure Wm (120 Deg)	None						24		
70	Structure Wm (150 Deg)	None						24		
71	Structure Wm (180 Deg)	None						24		
72	Structure Wm (210 Deg)	None						24		
73	Structure Wm (240 Deg)	None						24		
74	Structure Wm (270 Deg)	None						24		
75	Structure Wm (300 Deg)	None						24		
76	Structure Wm (330 Deg)	None						24		
77	Lm1	None					1			
78	Lm2	None					1			
79	Lv1	None					1			
80	Lv2	None					1			

Load Combinations

	Description	Solve	PDe..	SRSS	B...	Fa..	B...	Fa..	B...	Fa..	B...	Fa..	B...	Fa..	B...	Fa..	B...	Fa..	B...	Fa..	B...	Fa..	B...	Fa..	B...	Fa..
1	1.2D+1.0Wo (0 Deg)	Yes	Y		1	1.2	39	1.2	3	1	41	1														
2	1.2D+1.0Wo (30 Deg)	Yes	Y		1	1.2	39	1.2	4	1	42	1														
3	1.2D+1.0Wo (60 Deg)	Yes	Y		1	1.2	39	1.2	5	1	43	1														
4	1.2D+1.0Wo (90 Deg)	Yes	Y		1	1.2	39	1.2	6	1	44	1														
5	1.2D+1.0Wo (120 Deg)	Yes	Y		1	1.2	39	1.2	7	1	45	1														
6	1.2D+1.0Wo (150 Deg)	Yes	Y		1	1.2	39	1.2	8	1	46	1														
7	1.2D+1.0Wo (180 Deg)	Yes	Y		1	1.2	39	1.2	9	1	47	1														
8	1.2D+1.0Wo (210 Deg)	Yes	Y		1	1.2	39	1.2	10	1	48	1														
9	1.2D+1.0Wo (240 Deg)	Yes	Y		1	1.2	39	1.2	11	1	49	1														
10	1.2D+1.0Wo (270 Deg)	Yes	Y		1	1.2	39	1.2	12	1	50	1														
11	1.2D+1.0Wo (300 Deg)	Yes	Y		1	1.2	39	1.2	13	1	51	1														
12	1.2D+1.0Wo (330 Deg)	Yes	Y		1	1.2	39	1.2	14	1	52	1														
13	1.2D + 1.0Di + 1.0Wi (0 Deg)	Yes	Y		1	1.2	39	1.2	2	1	40	1	15	1	53	1										
14	1.2D + 1.0Di + 1.0Wi (30 Deg)	Yes	Y		1	1.2	39	1.2	2	1	40	1	16	1	54	1										
15	1.2D + 1.0Di + 1.0Wi (60 Deg)	Yes	Y		1	1.2	39	1.2	2	1	40	1	17	1	55	1										
16	1.2D + 1.0Di + 1.0Wi (90 Deg)	Yes	Y		1	1.2	39	1.2	2	1	40	1	18	1	56	1										
17	1.2D + 1.0Di + 1.0Wi (120 Deg)	Yes	Y		1	1.2	39	1.2	2	1	40	1	19	1	57	1										
18	1.2D + 1.0Di + 1.0Wi (150 Deg)	Yes	Y		1	1.2	39	1.2	2	1	40	1	20	1	58	1										
19	1.2D + 1.0Di + 1.0Wi (180 Deg)	Yes	Y		1	1.2	39	1.2	2	1	40	1	21	1	59	1										
20	1.2D + 1.0Di + 1.0Wi (210 Deg)	Yes	Y		1	1.2	39	1.2	2	1	40	1	22	1	60	1										
21	1.2D + 1.0Di + 1.0Wi (240 Deg)	Yes	Y		1	1.2	39	1.2	2	1	40	1	23	1	61	1										
22	1.2D + 1.0Di + 1.0Wi (270 Deg)	Yes	Y		1	1.2	39	1.2	2	1	40	1	24	1	62	1										
23	1.2D + 1.0Di + 1.0Wi (300 Deg)	Yes	Y		1	1.2	39	1.2	2	1	40	1	25	1	63	1										
24	1.2D + 1.0Di + 1.0Wi (330 Deg)	Yes	Y		1	1.2	39	1.2	2	1	40	1	26	1	64	1										
25	1.2D + 1.5Lm1 + 1.0Wm (0 Deg)	Yes	Y		1	1.2	39	1.2	77	1.5	27	1	65	1												
26	1.2D + 1.5Lm1 + 1.0Wm (30 Deg)	Yes	Y		1	1.2	39	1.2	77	1.5	28	1	66	1												
27	1.2D + 1.5Lm1 + 1.0Wm (60 Deg)	Yes	Y		1	1.2	39	1.2	77	1.5	29	1	67	1												
28	1.2D + 1.5Lm1 + 1.0Wm (90 Deg)	Yes	Y		1	1.2	39	1.2	77	1.5	30	1	68	1												
29	1.2D + 1.5Lm1 + 1.0Wm (120 D...	Yes	Y		1	1.2	39	1.2	77	1.5	31	1	69	1												
30	1.2D + 1.5Lm1 + 1.0Wm (150 D...	Yes	Y		1	1.2	39	1.2	77	1.5	32	1	70	1												
31	1.2D + 1.5Lm1 + 1.0Wm (180 D...	Yes	Y		1	1.2	39	1.2	77	1.5	33	1	71	1												
32	1.2D + 1.5Lm1 + 1.0Wm (210 D...	Yes	Y		1	1.2	39	1.2	77	1.5	34	1	72	1												
33	1.2D + 1.5Lm1 + 1.0Wm (240 D...	Yes	Y		1	1.2	39	1.2	77	1.5	35	1	73	1												
34	1.2D + 1.5Lm1 + 1.0Wm (270 D...	Yes	Y		1	1.2	39	1.2	77	1.5	36	1	74	1												
35	1.2D + 1.5Lm1 + 1.0Wm (300 D...	Yes	Y		1	1.2	39	1.2	77	1.5	37	1	75	1												
36	1.2D + 1.5Lm1 + 1.0Wm (330 D...	Yes	Y		1	1.2	39	1.2	77	1.5	38	1	76	1												
37	1.2D + 1.5Lm2 + 1.0Wm (0 Deg)	Yes	Y		1	1.2	39	1.2	78	1.5	27	1	65	1												
38	1.2D + 1.5Lm2 + 1.0Wm (30 Deg)	Yes	Y		1	1.2	39	1.2	78	1.5	28	1	66	1												
39	1.2D + 1.5Lm2 + 1.0Wm (60 Deg)	Yes	Y		1	1.2	39	1.2	78	1.5	29	1	67	1												
40	1.2D + 1.5Lm2 + 1.0Wm (90 Deg)	Yes	Y		1	1.2	39	1.2	78	1.5	30	1	68	1												
41	1.2D + 1.5Lm2 + 1.0Wm (120 D...	Yes	Y		1	1.2	39	1.2	78	1.5	31	1	69	1												
42	1.2D + 1.5Lm2 + 1.0Wm (150 D...	Yes	Y		1	1.2	39	1.2	78	1.5	32	1	70	1												
43	1.2D + 1.5Lm2 + 1.0Wm (180 D...	Yes	Y		1	1.2	39	1.2	78	1.5	33	1	71	1												
44	1.2D + 1.5Lm2 + 1.0Wm (210 D...	Yes	Y		1	1.2	39	1.2	78	1.5	34	1	72	1												
45	1.2D + 1.5Lm2 + 1.0Wm (240 D...	Yes	Y		1	1.2	39	1.2	78	1.5	35	1	73	1												
46	1.2D + 1.5Lm2 + 1.0Wm (270 D...	Yes	Y		1	1.2	39	1.2	78	1.5	36	1	74	1												
47	1.2D + 1.5Lm2 + 1.0Wm (300 D...	Yes	Y		1	1.2	39	1.2	78	1.5	37	1	75	1												
48	1.2D + 1.5Lm2 + 1.0Wm (330 D...	Yes	Y		1	1.2	39	1.2	78	1.5	38	1	76	1												
49	1.2D + 1.5Lv1	Yes	Y		1	1.2	39	1.2	79	1.5																
50	1.2D + 1.5Lv2	Yes	Y		1	1.2	39	1.2	80	1.5																
51	1.4D	Yes	Y		1	1.4	39	1.4																		
52	Seismic Mass		Y		1	1	39	1																		
53	1.2D + 1.0Ev + 1.0Eh (0 Deg)		Y		1	1.2	39	1.2	SX		SY	1	SZ	-1												
54	1.2D + 1.0Ev + 1.0Eh (30 Deg)		Y		1	1.2	39	1.2	SX	.5	SY	1	SZ	-.8...												
55	1.2D + 1.0Ev + 1.0Eh (60 Deg)		Y		1	1.2	39	1.2	SX	.866	SY	1	SZ	-.5												
56	1.2D + 1.0Ev + 1.0Eh (90 Deg)		Y		1	1.2	39	1.2	SX	1	SY	1	SZ													

Load Combinations (Continued)

	Description	Solve	PDe..	SRSS	B...	Fa..	B...	Fa..	B...	Fa..	B...	Fa..	B...	Fa..	B...	Fa..	B...	Fa..	B...	Fa..	B...	Fa..	B...	Fa..
57	1.2D + 1.0Ev + 1.0Eh (120 Deg)		Y		1	1.2	39	1.2	SX	.866	SY	1	SZ	.5										
58	1.2D + 1.0Ev + 1.0Eh (150 Deg)		Y		1	1.2	39	1.2	SX	.5	SY	1	SZ	.866										
59	1.2D + 1.0Ev + 1.0Eh (180 Deg)		Y		1	1.2	39	1.2	SX		SY	1	SZ	1										
60	1.2D + 1.0Ev + 1.0Eh (210 Deg)		Y		1	1.2	39	1.2	SX	-.5	SY	1	SZ	.866										
61	1.2D + 1.0Ev + 1.0Eh (240 Deg)		Y		1	1.2	39	1.2	SX	-.8...	SY	1	SZ	.5										
62	1.2D + 1.0Ev + 1.0Eh (270 Deg)		Y		1	1.2	39	1.2	SX	-1	SY	1	SZ											
63	1.2D + 1.0Ev + 1.0Eh (300 Deg)		Y		1	1.2	39	1.2	SX	-.8...	SY	1	SZ	-.5										
64	1.2D + 1.0Ev + 1.0Eh (330 Deg)		Y		1	1.2	39	1.2	SX	-.5	SY	1	SZ	-.8...										

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	C1	max	2511.693	9	1957.713	19	-659.372	1	-1.466	1	9.332	9	1.867	3
2		min	-2556.1...	3	588.737	1	-1882.1...	19	-6.325	19	-9.5	3	-1.695	9
3	N37	max	902.984	9	129.571	1	1770.636	1	0	51	0	51	0	51
4		min	-867.867	3	-105.892	7	-2173.3...	7	0	1	0	1	0	1
5	N37A	max	1342.757	3	690.415	13	2575.553	13	0	51	0	51	0	51
6		min	-1333.4...	9	139.78	7	459.249	7	0	1	0	1	0	1
7	Totals:	max	2081.229	9	2555.269	14	2737.184	1						
8		min	-2081.23	3	1147.001	9	-2737.2...	7						

Envelope AISC 15th(360-16): LRFD Steel Code Checks

	Member	Shape	Code Check	Loc[ft]	LC	Shear Ch...	Loc[ft]	Dir	LC	phi*Pn...	phi*Pnt [...	phi*Mn...	phi*Mn ...	Cb	Eqn
1	C11	HSS4...	.786	0	9	.203	0	z	3	13154...	139518	16.181	16.181	1.768	H1-...
2	MP2A	PIPE_...	.735	6.198	3	.387	3.937		3	17855....	32130	1.872	1.872	2.031	H3-6
3	MP1A	PIPE_...	.499	6.198	3	.141	6.198		3	17855....	32130	1.872	1.872	1.686	H1-...
4	CROS...	PIPE_...	.410	6.12	17	.324	7.292		3	28250....	65205	5.749	5.749	1.867	H1-...
5	MP3A	PIPE_...	.409	6.198	9	.160	2.042		9	17855....	32130	1.872	1.872	1.69	H1-...
6	MP4A	PIPE_...	.368	6.198	9	.102	6.198		10	17855....	32130	1.872	1.872	1.838	H1-...
7	M15	PIPE_...	.323	4.036	8	.234	2.865		9	28250....	65205	5.749	5.749	2.14	H1-...
8	M21A	L2.5x2...	.203	2.649	3	.012	0	z	3	13545....	34668	.803	1.938	1.79	H2-1
9	M20A	L2.5x2...	.169	1.99	11	.013	4.548	y	21	14434....	34668	.803	1.943	1.751	H2-1
10	M20	L2.5x2...	.124	4.443	2	.016	4.443	y	20	15019....	34668	.803	1.73	1.121	H2-1
11	M21	L2.5x2...	.106	0	12	.017	0	y	18	14094....	34668	.803	1.716	1.117	H2-1
12	M8A	PIPE_...	.000	.625	9	.000	.625		9	92571....	93240	10.631	10.631	1.907	H1-...

PAUL J. FORD & COMPANY
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Job Number:	A22720-0002.002.7191
Engineer:	MJT
Date:	2/15/2021
Site Name:	New Hartford CT
Site Number:	467415
Client Project 1:	

Mount to Tower Connection Checks

(Version v5.3 - Effective Date 02/9/2021)

Total Populated Members: 21
Total Populated Nodes: 39

Risa File Path: G:\TOWER\227_Maser\2020\22720-0002_467415_New Hartford CT\22720-0002.002.7191_MDD_J20777373\Risa3D\467415-VZW_MT_LOT_A_H.r3d

Settings

☐ Apply Capcity Normalization Per Section 15.5

Code:	TIA-222-H
Main Check(s) Performed:	Bolts & Welds
Consider Epoxy Capacity:	No

Risa-3D Member Reactions

☐ Input Forces Manually

Consider Tie-Backs:	No	
Consider Kickers:	No	
Consider Horizontal Members Only:	Yes	
Controlling Load Case:	9	
Controlling Member:	C11	
Member Orientation:	Horizontal	*(in global Risa coordinate system)*
Member Local Rotation:	0	*(about its longitudinal axis)*

	Shear (kip)	Moment (kip-ft)
Local Z Axis (Global Horizontal):	2.504	3.331
Local Y Axis (Global Vertical):	0.979	9.332
	Axial (kip)	**Torque (kip-ft)**
Local X Axis (Global Horizontal):	0.874	1.695

Note: Forces are relative to member local axis

Bolt Information

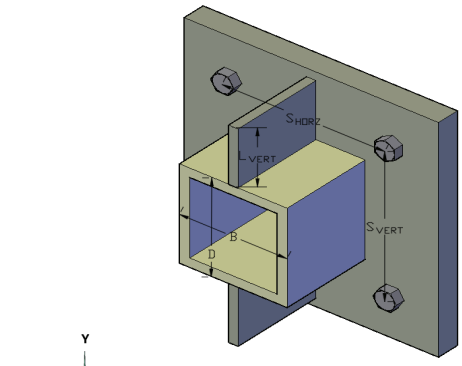
Type:	A325-N	
Diameter:	0.625	in
Quantity:	4	
Vertical Spacing (S_{VERT}):	6.00	in
Horizontal Spacing (S_{HORZ}):	6.00	in

Standoff Member Information

Type:	Rectangular	
Width (B):	4	in
Depth (D):	4	in
Thickness:	0.25	in
Weld Size:	0.25	in
Weld Size Assummed:	Yes	

Stiffener Information

Present:	Yes	
	Vertical Stiffener (in)	**Horizontal Stiffener (in)**
Quantity:	2	0
Length (L):	2	
Thickness:	0.2500	
Notch:	0.5	
Sides Welded:	2	2



Member Local Axis

Connection Type: Collar

Analysis Results

62.2% Pass

Bolt Capacity 62.2%

Tension:	Applied Load: 12.88 kip Capacity: 20.71 kip	62.2%
Shear:	Applied Load: 1.87 kip Capacity: 12.43 kip	15.1%
Tension-Shear Interaction:	Applied Load: - Capacity: -	OK

Weld Capacity 43.1%

	Applied Resultant Load: 2.40 kip/in Capacity: 5.57 kip/in	43.1%

(Bolts Controls)

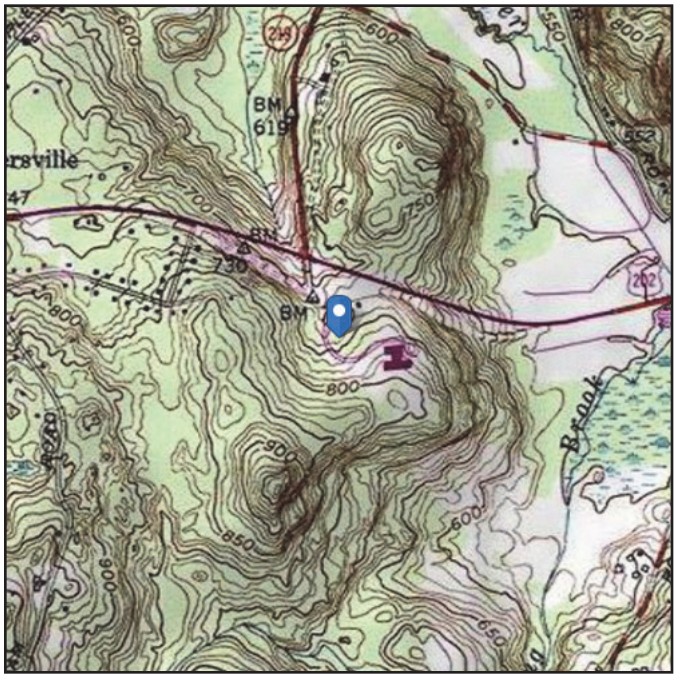
Notes:
1. Connection is considered fixed.
2. Allowable capacity limit is 105%.
3. Calculations are in accordance with TIA-222-H and AISC 15th Ed.
4. Bolt tension reduction not required as tension and/or shear capacity is below 30%.

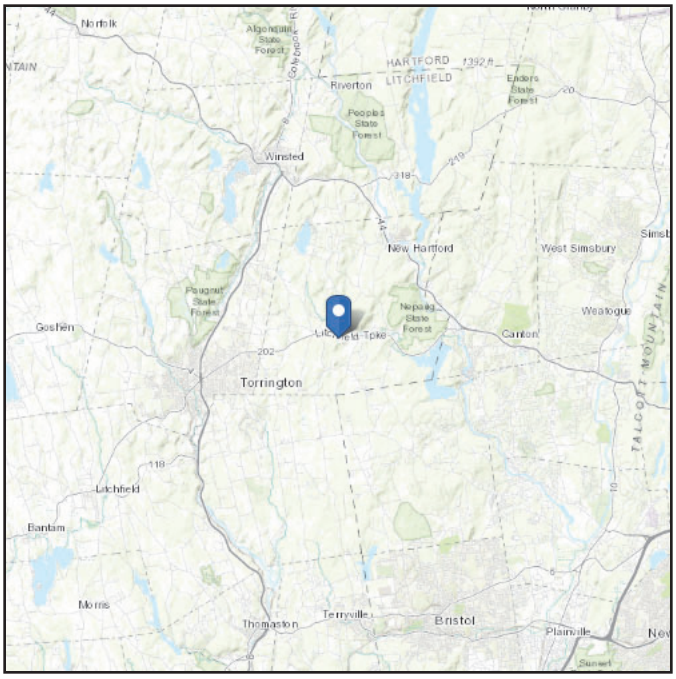
ASCE 7 Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-16
Risk Category: II
Soil Class: D - Stiff Soil

Elevation: 746.3 ft (NAVD 88)
Latitude: 41.828055
Longitude: -73.015683





Wind

Results:

Wind Speed:	115 Vmph
10-year MRI	75 Vmph
25-year MRI	84 Vmph
50-year MRI	89 Vmph
100-year MRI	95 Vmph
Data Source:	ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4
Date Accessed:	Mon Dec 28 2020

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-16 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

Site is not in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2.

Mountainous terrain, gorges, ocean promontories, and special wind regions should be examined for unusual wind conditions.

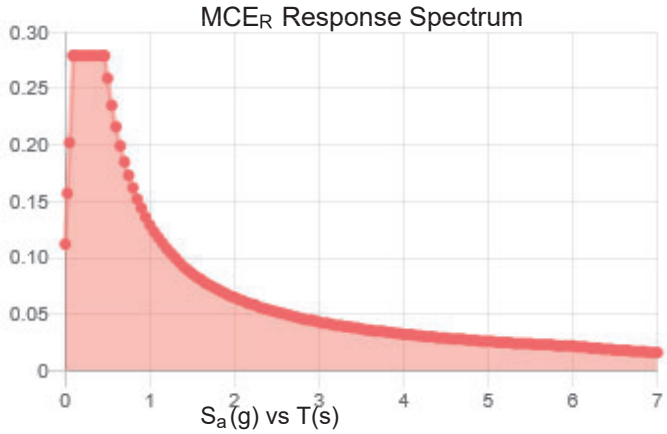
Seismic

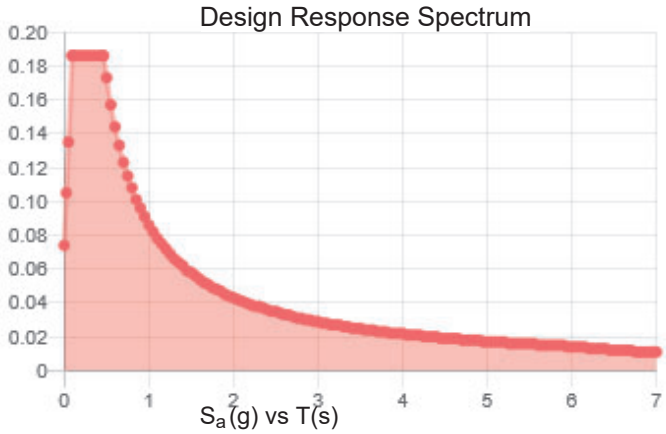
Site Soil Class: D - Stiff Soil

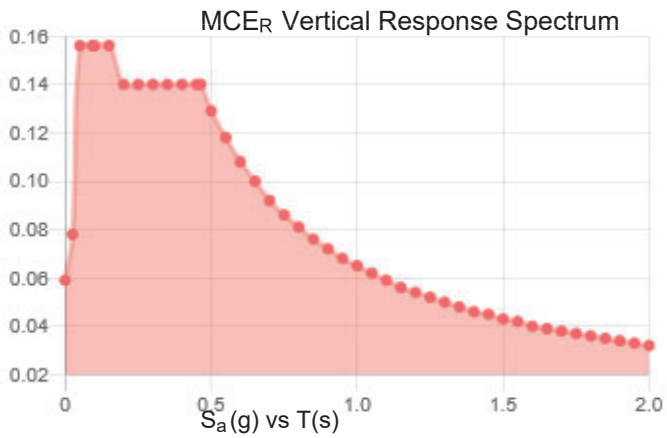
Results:

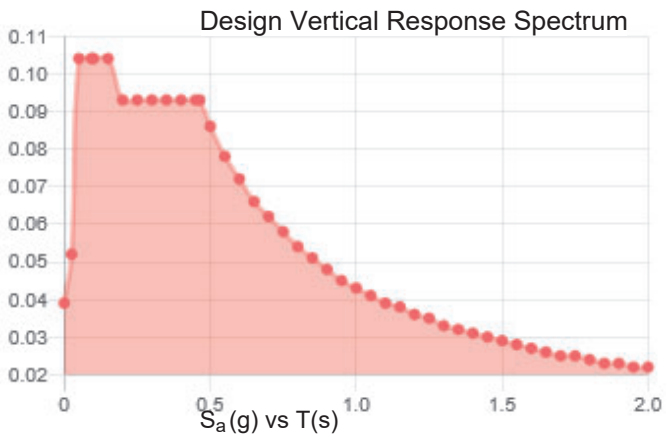
S_S :	0.174	S_{D1} :	0.086
S_1 :	0.054	T_L :	6
F_a :	1.6	PGA :	0.092
F_v :	2.4	PGA_M :	0.148
S_{MS} :	0.279	F_{PGA} :	1.6
S_{M1} :	0.129	I_e :	1
S_{DS} :	0.186	C_v :	0.7

Seismic Design Category B









Data Accessed: Mon Dec 28 2020

Date Source: USGS Seismic Design Maps based on ASCE/SEI 7-16 and ASCE/SEI 7-16 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-16 Ch. 21 are available from USGS.

Ice

Results:

Ice Thickness:	1.00 in.
Concurrent Temperature:	5 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8
Date Accessed:	Mon Dec 28 2020

Ice thicknesses on structures in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 500-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Mount Desktop – Post Modification Inspection (PMI) Report Requirements

Documents & Photos Required from Contractor – Mount Modification

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

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

Base Requirements:

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

Photo Requirements:

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

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

Material Certification:

- Materials utilized must be as per specification on the drawings or the equivalent as validated by PJF.

    - If the drawings are as specified on the drawings
        - The contractor should provide the packing list or the materials utilized to perform the mount modification
    - If an equivalent is utilized
        - It is required that the PJF certification of such is included in the contractor submission package. There may be an additional charge for this certification if the equivalent submission doesn't meet specifications as prescribed in the drawings.

- The contractor must certify that the materials meet these specifications by one of these methods.

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

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

Certifying Individual: Company _____

Name _____

Signature _____

Antenna & equipment placement and Geometry Confirmation:

- The contractor must certify that the antenna & equipment placement and geometry is in accordance with the antenna placement diagrams as included in this mount analysis.

☐ The contractor certifies that the photos support and the equipment on the mount is as depicted on the antenna placement diagrams as included in this mount analysis.

☐ The contractor notes that the equipment on the mount is not in accordance with the antenna placement diagrams and has accordingly marked up the diagrams or provided a diagram outlining the differences.

Certifying Individual: Company _____

Name _____

Signature _____

Special Instructions / Validation as required from the MA or Mod Drawings:

Issue:

_____

_____

_____

Response:

_____

_____

Schedule A – Photo & Document File Structure

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

PAUL J. FORD & COMPANY

Subject	TIA-222-H Usage	
Site Information	*Site ID:*	*467415-VZW / New Hartford CT*
	Site Name:	*New Hartford CT*
	Carrier Name:	*Verizon Wireless*
	Address:	*20 ANTOLINI RD* *NEW HARTFORD, Connecticut 06057, Litchfield County*
	Latitude: 41.828055 Longitude: -73.015683	
Structure Information	*Tower Type:*	*151-Ft Monopole*
	Mount Type:	*12.50-Ft T-Frame*

To Whom It May Concern,

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

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

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

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

Sincerely,

Michael Timas

250 E Broad St., Suite 600 Columbus, OH 43215 Phone: (614) 221-6679

Structure: 467415-VZW - New Hartford CT

Sector: **A**

Structure Type: Monopole

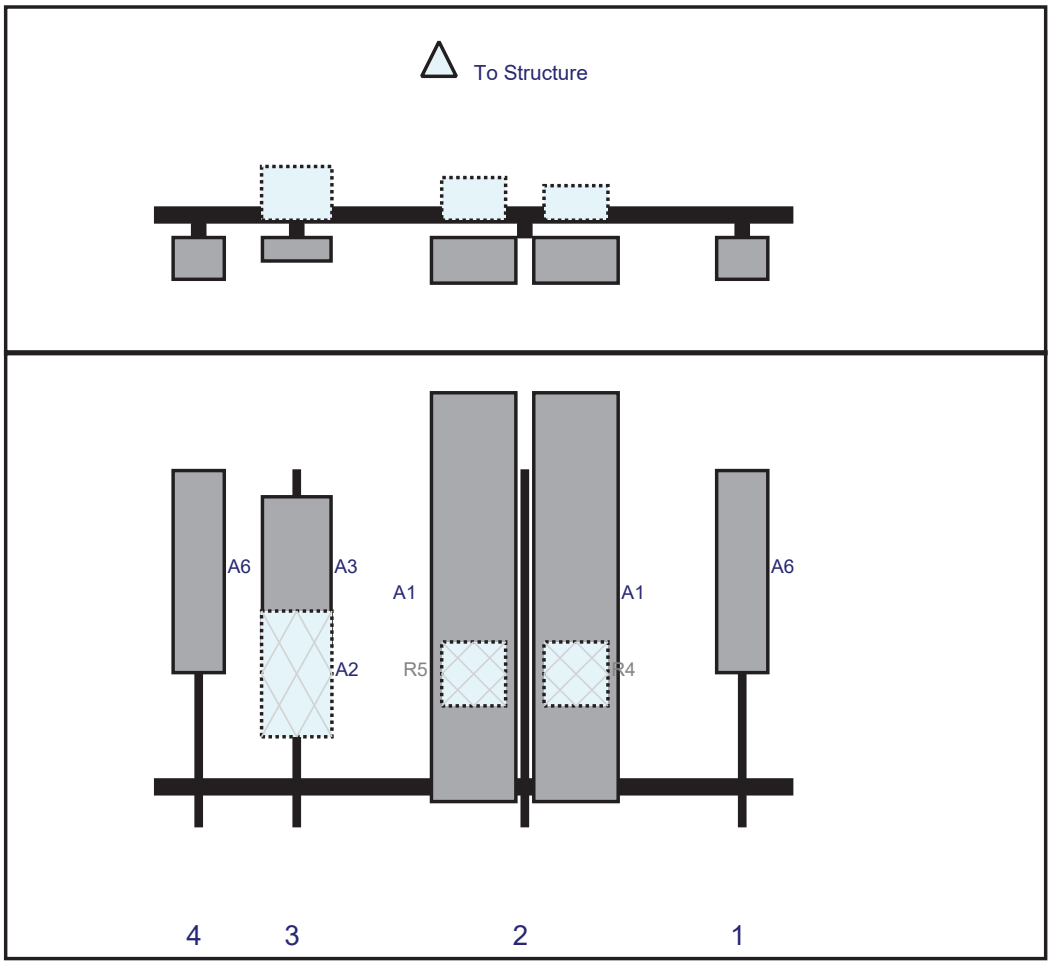
Mount Elev: 135.00

2/12/2021

PAUL J. FORD & COMPANY

Plan View

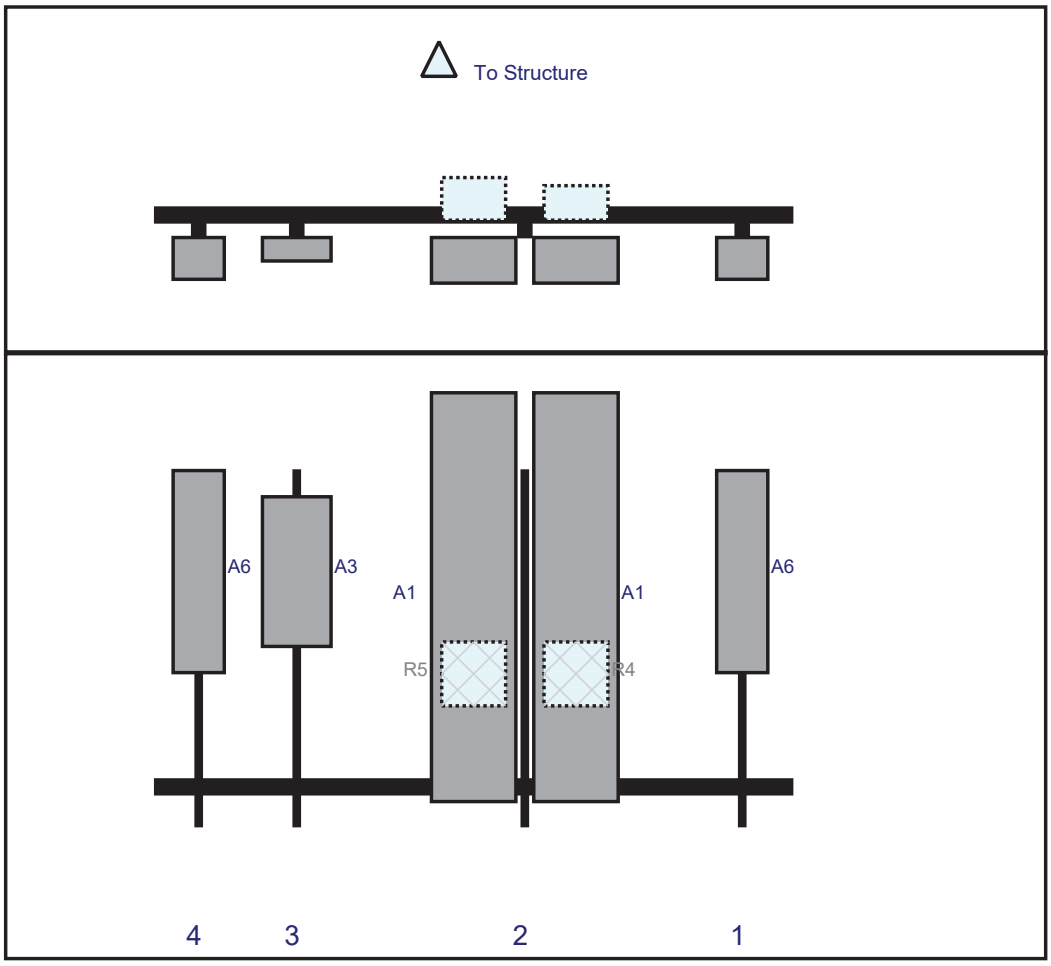
Front View
Looking at Structure



Ref#	Model	Height (in)	Width (in)	H Dist Frm L.	Pipe #	Pipe Pos V	Ant Pos	C. Ant Frm T.	Ant H Off	Status	Validation
A6	LPA-80040-4CF-EDIN-X	47.4	12	138	1	a	Front	24	0	Retained	11/19/2020
A1	MX06FRO840-02	95.9	19.8	87	2	a	Front	30	-12	Added	
A1	MX06FRO840-02	95.9	19.8	87	2	b	Front	30	12	Added	
R4	RFV01U-D2A	15	15	87	2	a	Behind	48	12	Added	
R5	RFV01U-D1A	15	15	87	2	b	Behind	48	-12	Added	
A3	VZS01	35.1	16.1	33.5	3	a	Front	24	0	Added	
A2	DB-C1-12C-24AB-0Z	29.5	16.5	33.5	3	a	Behind	48	0	Added	
A6	LPA-80040-4CF-EDIN-X	47.4	12	10.5	4	a	Front	24	0	Retained	11/19/2020

Plan View

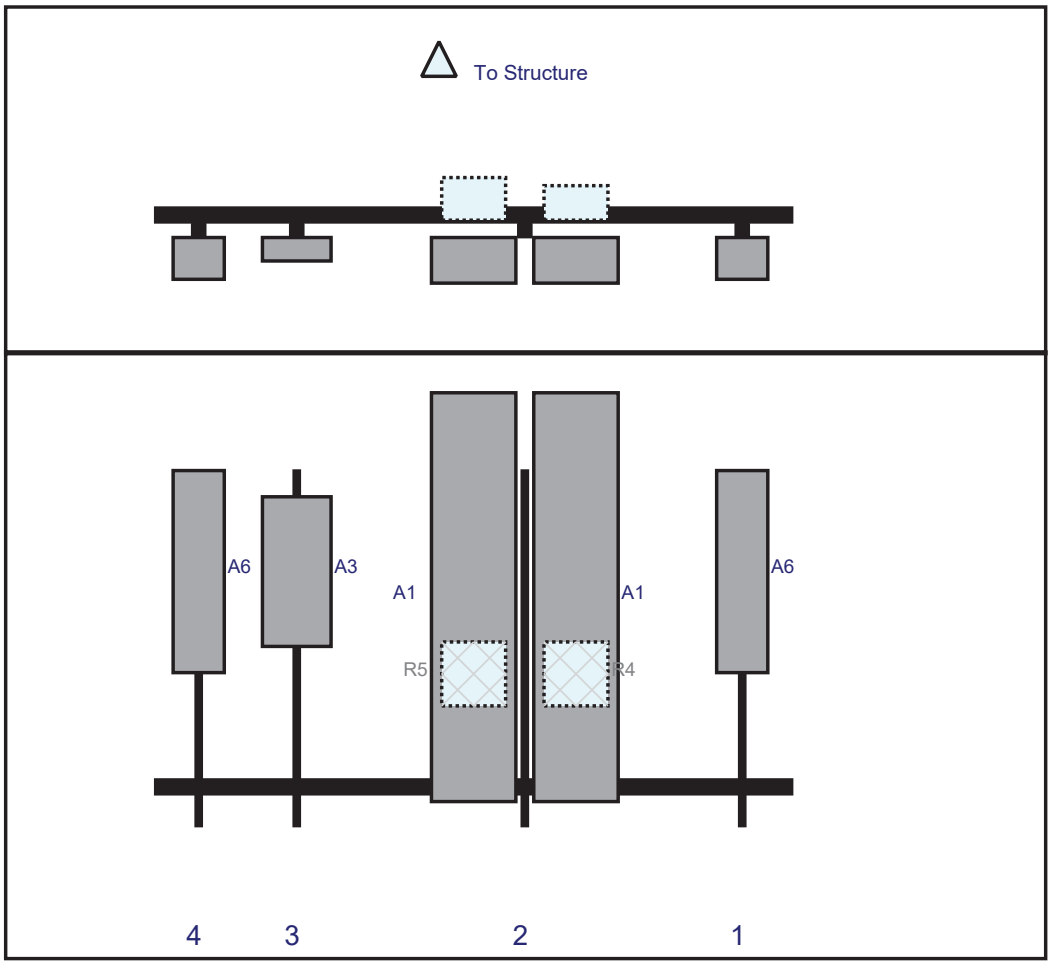
Front View
Looking at Structure



Ref#	Model	Height (in)	Width (in)	H Dist Frm L.	Pipe #	Pipe Pos V	Ant Pos	C. Ant Frm T.	Ant H Off	Status	Validation
A6	LPA-80040-4CF-EDIN-X	47.4	12	138	1	a	Front	24	0	Retained	11/19/2020
A1	MX06FRO840-02	95.9	19.8	87	2	a	Front	30	-12	Added	
A1	MX06FRO840-02	95.9	19.8	87	2	b	Front	30	12	Added	
R4	RFV01U-D2A	15	15	87	2	a	Behind	48	12	Added	
R5	RFV01U-D1A	15	15	87	2	b	Behind	48	-12	Added	
A3	VZS01	35.1	16.1	33.5	3	a	Front	24	0	Added	
A6	LPA-80040-4CF-EDIN-X	47.4	12	10.5	4	a	Front	24	0	Retained	11/19/2020

Plan View

Front View
Looking at Structure



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A6	LPA-80040-4CF-EDIN-X	47.4	12	138	1	a	Front	24	0	Retained	11/19/2020
A1	MX06FRO840-02	95.9	19.8	87	2	a	Front	30	-12	Added	
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R5	RFV01U-D1A	15	15	87	2	b	Behind	48	-12	Added	
A3	VZS01	35.1	16.1	33.5	3	a	Front	24	0	Added	
A6	LPA-80040-4CF-EDIN-X	47.4	12	10.5	4	a	Front	24	0	Retained	11/19/2020

Site Name: ***NEW HARTFORD 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^2)	(mW/cm^2)	(%)
VZW 700	751	4	724	2898	142	0.0052	0.5007	1.03%
VZW CDMA	878.49	2	493	986	142	0.0018	0.5857	0.30%
VZW Cellular	874	4	794	3177	142	0.0057	0.5827	0.97%
VZW PCS	1975	4	1096	4386	142	0.0078	1.0000	0.78%
VZW AWS	2120	4	1288	5153	142	0.0092	1.0000	0.92%
VZW CBAND	3730.08	4	6531	26125	142	0.0466	1.0000	4.66%
Total Percentage of Maximum Permissible Exposure								8.67%

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

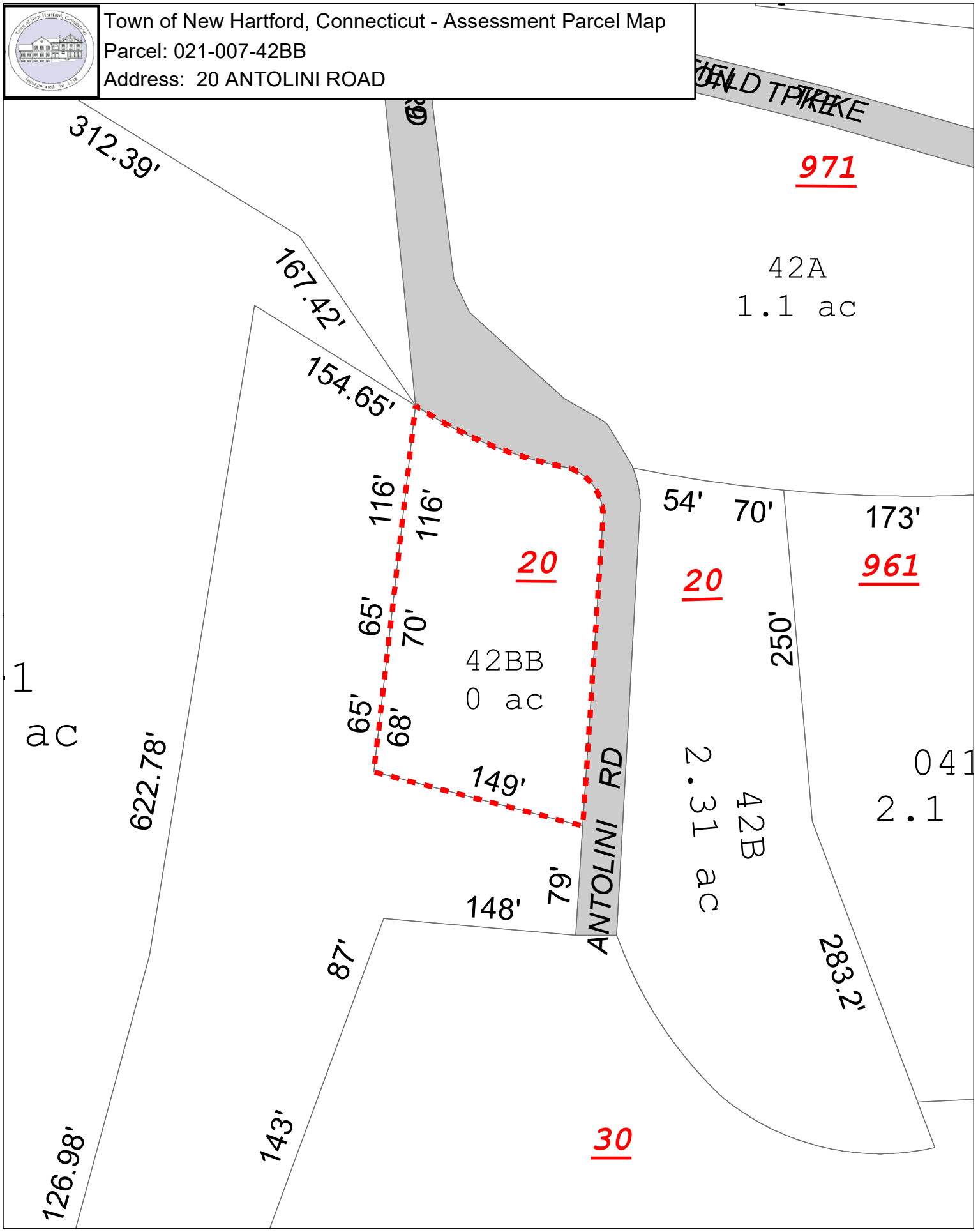
**Calculation includes a -10 dB Off Beam Antenna Pattern Adjustment pursuant to Attachments B and C of the Siting Council's November 10, 2015 Memorandum for Exempt Modification filings

MHz = Megahertz

mW/cm^2 = milliwatts per square centimeter

ERP = Effective Radiated Power

Absolute worst case maximum values used.



Disclaimer: This map is for informational purposes only. All information is subject to verification by any user. The Town of New Hartford and its mapping contractors assume no legal responsibility for the information contained herein.

Map Produced May 2021

Property Location 20 ANTOLINI ROAD | Map ID 021/ 007/ 42BB/ / | Bldg Name | State Use 3900
Vision ID 5959 | Account # 00247301 | Bldg # 1 | Sec # 1 of 1 | Card # 1 of 1 | Print Date

CURRENT OWNER

SOUTH END FIRE DISTRICT
C/O VERIZON WIRELESS
PO BOX 2549

ADDISON TX 75001

TOPO		UTILITIES		STRT / ROAD		LOCATION	
1	Level	5	Well	1	Paved	3	Rural
4	Rolling	6	Septic				

SUPPLEMENTAL DATA

Alt Prcl ID		REVAL 20	
Census	3061		
Rout		no zone?	
NBHD	1	Section#	3
Zone	R2	MBL	021 007 42BB
AUDIT			
GIS ID	247301	Assoc Pid#	

CURRENT ASSESSMENT

Description	Code	Assessed	Assessed
COM LAND	2-1	324,000	226,800
COM OUTBL	2-5	194,600	136,220
	Total	518,600	363,020

6092
NEW HARTFORD, CT

VISION

RECORD OF OWNERSHIP

RECORD OF OWNERSHIP	BK-VOL/PAGE		SALE DATE	Q/U	V/I	SALE PRICE	VC
SOUTH END FIRE DISTRICT	0103	0417	10-04-1984	U	V	0	

PREVIOUS ASSESSMENTS (HISTORY)

Year	Code	Assessed	Year	Code	Assessed V	Year	Code	Assessed
2020	2-1	226,800	2019	2-1	226,800	2018	2-1	226,800
	2-5	136,220		2-5	136,220		2-5	136,220
	Total	363020		Total	363020		Total	363020

EXEMPTIONS

Year	Code	Description	Amount
		Total	0.00

OTHER ASSESSMENTS

Code	Description	Number	Amount	Comm Int

This signature acknowledges a visit by a Data Collector or Assessor

ASSESSING NEIGHBORHOOD

Nbhd	Nbhd Name	B	Tracing	Batch
0001				

NOTES

10/1/01 ADDED CELL SITE
4 TENANTS
TYPICAL LAND LEASE 32,400 PER YR
-10% EXP / .09% CAP = $324,000 VALUE
5 TENANTS 05-01-13

APPRAISED VALUE SUMMARY

Appraised Bldg. Value (Card)	0
Appraised Xf (B) Value (Bldg)	0
Appraised Ob (B) Value (Bldg)	194,600
Appraised Land Value (Bldg)	324,000
Special Land Value	0
Total Appraised Parcel Value	518,600
Valuation Method	C
Total Appraised Parcel Value	518,600

BUILDING PERMIT RECORD

Permit Id	Issue Date	Type	Description	Amount	Insp Date	% Comp	Date Comp	Comments
19-651	12-06-2019	ME	Mechanical	40,000		100		SWAP 6 ANTENNAS
19-038	01-14-2019	GEN	Generator	13,500		100		GENERATOR
18-355	09-21-2018	EL	Electric	20,000		100		ADD 3 ANTENNAS
15-021	01-30-2015	RE	Remodel	15,000	02-27-2015	100	02-27-2015	REMOVE AND REPLACE 3 E
14-365	09-24-2014	AD	Addition	15,000		100		VOID REPLACED BY 15-021
14-120	05-07-2014	ME	MECHANICAL	7,500		100		REPLACE 6 ANTENNAS AND
13-022	01-14-2013	RE	Remodel	30,000		100		ANTENNAS,NOTCH FILTERS

VISIT / CHANGE HISTORY

Date	Id	Type	Is	Cd	Purpost/Result
05-31-2018	KTL			98	Review
04-26-2018	JW			01	Measured
08-28-2013	ES			63	Permit-Ext Inspection - No
05-01-2013	EP	1		00	Measur+Listed
05-08-2008	JL			99	Vacant Lot Ins

LAND LINE VALUATION SECTION

B	Use Code	Description	Zone	Land Type	Land Units		Unit Price	Size Adj	Site Index	Cond.	Nbhd.	Nbhd. Adj	Notes	Location Adjustment		Adj Unit P	Land Value
1	3900	COM VACANT			0.400	AC	0	1.00000	0	1.00	D	1.000			0.0000	0	0
1	3900	COM VACANT			1.000	BL	324,000	1.00000	0	1.00		1.000	CELL SITE		1.0000	324,000	324,000
				Total Card Land Units	0.400	AC	Parcel Total Land Area	0.4000							Total Land Value		324,000

Property Location	20 ANTOLINI ROAD		Map ID	021/ 007/ 42BB/ /		Bldg Name	State Use 3900
Vision ID 5959		Account # 00247301		Bldg # 1	Sec # 1 of 1	Card # 1 of 1	Print Date

CONSTRUCTION DETAIL

Element	Cd	Description
Style:	94	Outbuildings
Model	00	Vacant
Grade:		
Stories:		
Occupancy		
Exterior Wall 1		
Exterior Wall 2		
Roof Structure:		
Roof Cover		
Interior Wall 1		
Interior Wall 2		
Interior Flr 1		
Interior Flr 2		
Heat Fuel		
Heat Type:		
AC Type:		
Total Bedrooms		
Total Full Bthrm		
Total Half Baths		
Total Xtra Fixtrs		
Total Rooms:		
Bath Style:		
Kitchen Style:		
Extra Kitchens		
Fireplaces		
Extra Openings		
Basement Gara		
Whirlpool		

CONSTRUCTION DETAIL (CONTINUED)

Element	Cd	Description

CONDO DATA

Parcel Id		C		Owne	
		B		S	

Adjust Type	Code	Description	Factor%
Condo Flr			
Condo Unit			

COST / MARKET VALUATION

Building Value New	0
Year Built	
Effective Year Built	
Depreciation Code	A
Remodel Rating	
Year Remodeled	
Depreciation %	
Functional Obsol	
External Obsol	
Trend Factor	1
Condition	
Condition %	
Percent Good	
RCNLD	0
Dep % Ovr	
Dep Ovr Comment	
Misc Imp Ovr	
Misc Imp Ovr Comment	
Cost to Cure Ovr	
Cost to Cure Ovr Comment	

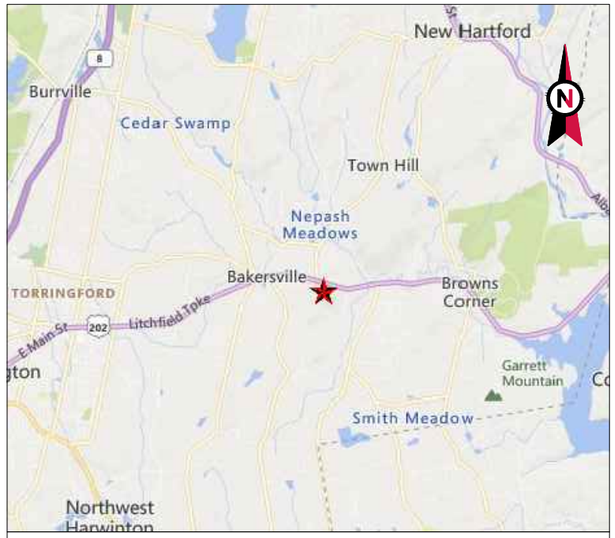
No Sketch

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

Code	Description	L/B	Units	Unit Price	Yr Blt	Cond. Cd	% Gd	Grade	Grade Adj.	Appr. Value
SHD8	Pre Cast Cell	L	240	350.00	2003	A	50	C	1.00	42,000
SHD8	Pre Cast Cell	L	200	350.00	2003	A	50	C	1.00	35,000
SHD8	Pre Cast Cell	L	312	350.00	2003	A	50	C	1.00	54,600
SHD8	Pre Cast Cell	L	360	350.00	2003	A	50	C	1.00	63,000

BUILDING SUB-AREA SUMMARY SECTION

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



VICINITY MAP

AMERICAN TOWER®

ATC SITE NAME: NEPAUG CT
ATC SITE NUMBER: 411182
VERIZON SITE NAME: NEW HARTFORD CT
VERIZON SITE NUMBER:467415
SITE ADDRESS: 20 ANTOLINI ROAD
NEW HARTFORD, CT 06057

LOCATION MAP

VERIZON
ANTENNA AMENDMENT DRAWINGS

COMPLIANCE CODE

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

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

UTILITY COMPANIES

POWER COMPANY: UNKNOWN
PHONE: N/A

TELEPHONE COMPANY: UNKNOWN
PHONE: N/A

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

PROJECT SUMMARY

SITE ADDRESS:

20 ANTOLINI ROAD

NEW HARTFORD, CT 06057

COUNTY: LITCHFIELD

GEOGRAPHIC COORDINATES:

LATITUDE: 41.828061

LONGITUDE: -73.015683

GROUND ELEVATION: 744' AMSL

PROJECT TEAM

TOWER OWNER:

AMERICAN TOWER
10 PRESIDENTIAL WAY
WOBURN, MA 01801

APPLICANT:

VERIZON WIRELESS

ENGINEER:

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

PROPERTY OWNER:

TOWN OF NEW HARTFORD
20 ANTOLINI ROAD
NEW HARTFORD, CT 06057

PROJECT DESCRIPTION

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

REMOVE (6) ANTENNA(s), (3) TTA(s), AND (6) 1 5/8" & (1) 7/8" COAX CABLE(s)

INSTALL MOUNT MODIFICATIONS, (9) ANTENNA(s), (6) RRH(s), (1) OVP, AND (2) 1 5/8" HYBRID CABLE(s)

EXISTING (6) ANTENNA(s), AND (6) 1 5/8" COAX CABLE(s) TO REMAIN

PROJECT NOTES

1. THE FACILITY IS UNMANNED.
2. A TECHNICIAN WILL VISIT THE SITE APPROXIMATELY ONCE A MONTH FOR ROUTINE INSPECTION AND MAINTENANCE.
3. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT LAND DISTURBANCE OR EFFECT OF STORM WATER DRAINAGE.
4. NO SANITARY SEWER, POTABLE WATER OR TRASH DISPOSAL IS REQUIRED.
5. HANDICAP ACCESS IS NOT REQUIRED.
6. THE PROJECT DEPICTED IN THESE PLANS QUALIFIES AS AN ELIGIBLE FACILITIES REQUEST ENTITLED TO EXPEDITED REVIEW UNDER 47 U.S.C. § 1455(A) AS A MODIFICATION OF AN EXISTING WIRELESS TOWER THAT INVOLVES THE COLLOCATION, REMOVAL, AND/OR REPLACEMENT OF TRANSMISSION EQUIPMENT THAT IS NOT A SUBSTANTIAL CHANGE UNDER CFR § 1.61000 (B)(7).

PROJECT LOCATION DIRECTIONS

DIRECTIONS FROM WINDSOR SWITCH 1. TAKE I-91 TO EXIT 32B (TRUMBULL ST). 2. FOLLOW UP THE HILL AND TAKE RIGHT ON TO RT 44 (MAIN ST). 3. FOLLOW RT 44 UNTIL IT SPLITS. BEAR LEFT ON TO RT 202 WEST. 4. FOLLOW RT 202 W TO 219 JCT. 5. TAKE LEFT AT 219 JCT. 6. FOLLOW ANTOLINI ROAD UP HILL. ACCESS ROAD ON LEFT AFTER FIRE STATION.

SHEET INDEX

SHEET NO:	DESCRIPTION:	REV:	DATE:	BY:
G-001	TITLE SHEET	0	10/06/21	JD
G-002	GENERAL NOTES	0	10/06/21	JD
C-101	DETAILED SITE PLAN	0	10/06/21	JD
C-201	TOWER ELEVATION	0	10/06/21	JD
C-401	ANTENNA INFORMATION & SCHEDULE	0	10/06/21	JD
C-501	CONSTRUCTION DETAILS	0	10/06/21	JD
E-501	GROUNDING DETAILS	0	10/06/21	JD
R-601	SUPPLEMENTAL			
MODS	MOUNT MODIFICATIONS			

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

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	JD	10/06/21

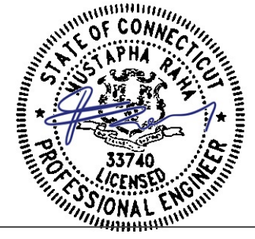
ATC SITE NUMBER:
411182

ATC SITE NAME:
NEPAUG CT

VERIZON SITE NAME:
NEW HARTFORD CT

SITE ADDRESS:
20 ANTOLINI ROAD
NEW HARTFORD, CT 06057

SEAL:



verizon

DATE DRAWN:	10/05/21
ATC JOB NO:	13714584_D1
CUSTOMER ID:	NEW HARTFORD CT
CUSTOMER #:	467415

TITLE SHEET

SHEET NUMBER:	REVISION:
G-001	0

GENERAL CONSTRUCTION NOTES:

1. OWNER FURNISHED MATERIALS, VERIZON "THE COMPANY" WILL PROVIDE AND THE CONTRACTOR WILL INSTALL
   - A. BTS EQUIPMENT FRAME (PLATFORM) AND ICEBRIDGE SHELTER (GROUND BUILD/CO-LOCATE ONLY)
   - B. AC/TELCO INTERFACE BOX (PPC)
   - C. ICE BRIDGE (CABLE TRAY WITH COVER) (GROUND BUILD/CO-LOCATE ONLY, GC TO FURNISH AND INSTALL FOR ROOFTOP INSTALLATION)
   - D. TOWERS, MONOPOLES
   - E. TOWER LIGHTING
   - F. GENERATORS & LIQUID PROPANE TANK
   - G. ANTENNA STANDARD BRACKETS, FRAMES AND PIPES FOR MOUNTING
   - H. ANTENNAS (INSTALLED BY OTHERS)
   - I. TRANSMISSION LINE
   - J. TRANSMISSION LINE JUMPERS
   - K. TRANSMISSION LINE CONNECTORS WITH WEATHERPROOFING KITS
   - L. TRANSMISSION LINE GROUND KITS
   - M. HANGERS
   - N. HOISTING GRIPS
   - O. BTS EQUIPMENT
2. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL OTHER MATERIALS FOR THE COMPLETE INSTALLATION OF THE SITE INCLUDING, BUT NOT LIMITED TO, SUCH MATERIALS AS FENCING, STRUCTURAL STEEL SUPPORTING SUB-FRAME FOR PLATFORM, ROOFING LABOR AND MATERIALS, GROUNDING RINGS, GROUNDING WIRES, COPPER-CLAD OR XIT CHEMICAL GROUND ROD(S), BUSS BARS, TRANSFORMERS AND DISCONNECT SWITCHES WHERE APPLICABLE, TEMPORARY ELECTRICAL POWER, CONDUIT, LANDSCAPING COMPOUND STONE, CRANES, CORE DRILLING, SLEEPERS AND RUBBER MATTING, REBAR, CONCRETE CAISSONS, PADS AND/OR AUGER MOUNTS, MISCELLANEOUS FASTENERS, CABLE TRAYS, NON-STANDARD ANTENNA FRAMES AND ALL OTHER MATERIAL AND LABOR REQUIRED TO COMPLETE THE JOB ACCORDING TO THE DRAWINGS AND SPECIFICATIONS. IT IS THE POSITION OF VERIZON TO APPLY FOR PERMITTING AND CONTRACTOR RESPONSIBLE FOR PICKUP AND PAYMENT OF REQUIRED PERMITS.
3. ALL WORK SHALL CONFORM TO ALL CURRENT APPLICABLE FEDERAL, STATE, AND LOCAL CODES, INCLUDING ANSI/EIA/TIA-222, AND COMPLY WITH ATC CONSTRUCTION SPECIFICATIONS.
4. CONTRACTOR SHALL CONTACT LOCAL 811 FOR IDENTIFICATION OF UNDERGROUND UTILITIES PRIOR TO START OF CONSTRUCTION.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL REQUIRED INSPECTIONS.
6. ALL DIMENSIONS TO, OF, AND ON EXISTING BUILDINGS, DRAINAGE STRUCTURES, AND SITE IMPROVEMENTS SHALL BE VERIFIED IN FIELD BY CONTRACTOR WITH ALL DISCREPANCIES REPORTED TO THE ENGINEER.
7. DO NOT CHANGE SIZE OR SPACING OF STRUCTURAL ELEMENTS.
8. DETAILS SHOWN ARE TYPICAL; SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS UNLESS OTHERWISE NOTED.
9. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY WHICH SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
10. CONTRACTOR SHALL BRACE STRUCTURES UNTIL ALL STRUCTURAL ELEMENTS NEEDED FOR STABILITY ARE INSTALLED. THESE ELEMENTS ARE AS FOLLOWS: LATERAL BRACING, ANCHOR BOLTS, ETC.
11. CONTRACTOR SHALL DETERMINE EXACT LOCATION OF EXISTING UTILITIES, GROUNDS DRAINS, DRAIN PIPES, VENTS, ETC. BEFORE COMMENCING WORK.
12. INCORRECTLY FABRICATED, DAMAGED, OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE VERIZON REP PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH REMEDIAL ACTION SHALL REQUIRE WRITTEN APPROVAL BY THE VERIZON REP PRIOR TO PROCEEDING.
13. EACH CONTRACTOR SHALL COOPERATE WITH THE VERIZON REP, AND COORDINATE HIS WORK WITH THE WORK OF OTHERS.
14. CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED BY CONSTRUCTION OF THIS PROJECT TO MATCH EXISTING PRE-CONSTRUCTION CONDITIONS TO THE SATISFACTION OF THE VERIZON CONSTRUCTION MANAGER.
15. ALL CABLE/CONDUIT ENTRY/EXIT PORTS SHALL BE WEATHERPROOFED DURING INSTALLATION USING A SILICONE SEALANT.
16. WHERE EXISTING CONDITIONS DO NOT MATCH THOSE SHOWN IN THIS PLAN SET, CONTRACTOR SHALL NOTIFY THE VERIZON REP AND ENGINEER OF RECORD IMMEDIATELY.
17. CONTRACTOR SHALL ENSURE ALL SUBCONTRACTORS ARE PROVIDED WITH A COMPLETE AND CURRENT SET OF DRAWINGS AND SPECIFICATIONS FOR THIS PROJECT.
18. CONTRACTOR SHALL REMOVE ALL RUBBISH AND DEBRIS FROM THE SITE AT THE END OF EACH DAY.
19. CONTRACTOR SHALL COORDINATE WORK SCHEDULE WITH AMERICAN TOWER CORPORATION (ATC) AND TAKE PRECAUTIONS TO MINIMIZE IMPACT AND DISRUPTION OF OTHER OCCUPANTS OF THE FACILITY.
20. CONTRACTOR SHALL FURNISH VERIZON AND AMERICAN TOWER CORPORATION (ATC) WITH A PDF MARKED UP AS-BUILT SET OF DRAWINGS UPON COMPLETION OF WORK.
21. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH VERIZON REP TO DETERMINE WHAT, IF ANY, ITEMS WILL BE PROVIDED. ALL ITEMS NOT PROVIDED SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR. CONTRACTOR WILL INSTALL ALL ITEMS PROVIDED.
22. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH VERIZON REP TO DETERMINE IF ANY PERMITS WILL BE OBTAINED BY CONTRACTOR. ALL REQUIRED PERMITS NOT OBTAINED BY VERIZON MUST BE OBTAINED, AND PAID FOR, BY THE CONTRACTOR.
23. CONTRACTOR SHALL INSTALL ALL SITE SIGNAGE IN ACCORDANCE WITH VERIZON SPECIFICATIONS AND REQUIREMENTS.
24. CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS TO VERIZON FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
25. ALL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND LOCATED ACCORDING TO VERIZON SPECIFICATIONS, AND AS SHOWN IN THESE PLANS.
26. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
27. CONTRACTOR SHALL NOTIFY VERIZON REP A MINIMUM OF 48 HOURS IN ADVANCE OF POURING CONCRETE OR BACKFILLING ANY UNDERGROUND UTILITIES, FOUNDATIONS OR SEALING ANY WALL, FLOOR OR ROOF PENETRATIONS FOR ENGINEERING REVIEW AND APPROVAL.
28. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SAFETY INCLUDING COMPLIANCE WITH ALL APPLICABLE OSHA STANDARDS AND RECOMMENDATIONS AND SHALL PROVIDE ALL NECESSARY SAFETY DEVICES INCLUDING PPE AND PPM AND CONSTRUCTION DEVICES SUCH AS WELDING AND FIRE PREVENTION, TEMPORARY SHORING, SCAFFOLDING, TRENCH BOXES/SLOPING, BARRIERS, ETC.
29. THE CONTRACTOR SHALL PROTECT AT HIS OWN EXPENSE, ALL EXISTING FACILITIES AND SUCH OF HIS NEW WORK LIABLE TO INJURY DURING THE CONSTRUCTION PERIOD. ANY DAMAGE CAUSED BY NEGLECT ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, OR BY THE ELEMENTS DUE TO NEGLECT ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, EITHER TO THE EXISTING WORK, OR TO HIS WORK OR THE WORK OF ANY OTHER CONTRACTOR, SHALL BE REPAIRED AT HIS EXPENSE TO THE OWNER'S SATISFACTION.
30. ALL WORK SHALL BE INSTALLED IN A FIRST CLASS, NEAT AND WORKMANLIKE MANNER BY MECHANICS SKILLED IN THE TRADE INVOLVED. THE QUALITY OF WORKMANSHIP SHALL BE SUBJECT TO THE APPROVAL OF THE VERIZON REP. ANY WORK FOUND BY THE VERIZON REP TO BE OF INFERIOR QUALITY AND/OR WORKMANSHIP SHALL BE REPLACED AND/OR REWORKED AT CONTRACTOR EXPENSE UNTIL APPROVAL IS OBTAINED.
31. IN ORDER TO ESTABLISH STANDARDS OF QUALITY AND PERFORMANCE, ALL TYPES OF MATERIALS LISTED HEREINAFTER BY MANUFACTURER'S NAMES AND/OR MANUFACTURER'S CATALOG NUMBER SHALL BE PROVIDED BY THESE MANUFACTURERS AS SPECIFIED.
32. VERIZON FURNISHED EQUIPMENT SHALL BE PICKED-UP AT THE VERIZON WAREHOUSE, NO LATER THAN 48HR AFTER BEING NOTIFIED INSURED, STORED, UNCRATE, PROTECTED AND INSTALLED BY THE CONTRACTOR WITH ALL APPURTENANCES REQUIRED TO PLACE THE EQUIPMENT IN OPERATION, READY FOR USE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE EQUIPMENT AFTER PICKING IT UP.
33. VERIZON OR HIS ARCHITECT/ENGINEER RESERVES THE RIGHT TO REJECT ANY EQUIPMENT OR MATERIALS WHICH, IN HIS OWN OPINION ARE NOT IN COMPLIANCE WITH THE CONTRACT DOCUMENTS, EITHER BEFORE OR AFTER INSTALLATION AND THE EQUIPMENT SHALL BE REPLACED WITH EQUIPMENT CONFORMING TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS BY THE CONTRACTOR AT NO COST TO VERIZON OR THEIR ARCHITECT/ENGINEER.

SPECIAL CONSTRUCTION ANTENNA INSTALLATION NOTES:

1. WORK INCLUDED:
   - A. ANTENNA AND COAXIAL CABLES ARE FURNISHED BY VERIZON UNDER A SEPARATE CONTRACT. THE CONTRACTOR SHALL ASSIST ANTENNA INSTALLATION CONTRACTOR IN TERMS OD COORDINATION AND SITE ACCESS. ERECTION SUBCONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF PERSONNEL AND
   - B. INSTALL ANTENNA AS INDICATE ON DRAWINGS AND VERIZON SPECIFICATIONS.
   - C. INSTALL GALVANIZED STEEL ANTENNA MOUNTS AS INDICATED ON DRAWINGS
   - D. INSTALL FURNISHED GALVANIZED STEEL OR ALUMINUM WAVEGUIDE.
   - E. CONTRACTOR SHALL PROVIDE FOUR (4) SETS OF SWEEP TESTS USING ANRITZU-PACKARD 8713B RF SCALAR NETWORK ANALYZER. SUBMIT FREQUENCY DOMAIN REFLECTOMETER(FDR) TESTS RESULTS TO THE PROJECT MANAGER. SWEEP TESTS SHALL BE AS PER ATTACHED RFS "MINIMUM FIELD TESTING RECOMMENDED FOR ANTENNA AND HELIAX COAXIAL CABLE SYSTEMS" DATED 10/5/93. TESTING SHALL BE PERFORMED BY AN INDEPENDENT TESTING SERVICE AND BE BOUND AND SUBMITTED WITHIN ONE WEEK OF WORK COMPLETION.
   - F. INSTALL COAXIAL CABLES AND TERMINATING BETWEEN ANTENNAS AND EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS. WEATHERPROOF ALL CONNECTIONS BETWEEN THE ANTENNA AND EQUIPMENT PER MANUFACTURER'S REQUIREMENTS. TERMINATE ALL COAXIAL CABLE THREE (3) FEET IN EXCESS OF ENTRY PORT LOCATION UNLESS OTHERWISE STATED.
   - G. ANTENNA AND COAXIAL CABLE GROUNDING:
2. ALL EXTERIOR #6 GREED GROUND WIRE "DAISY CHAIN" CONNECTIONS ARE TO BE WEATHER SEALED WITH RFS CONNECTORS/SPLICE WEATHERPROOFING KIT #221213 OR EQUAL.
3. ALL COAXIAL CABLE GROUNDING KITS ARE TO BE INSTALLED ON STRAIGHT RUNS OF COAXIAL CABLE (NOT WITHIN BENDS)

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

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

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	JD	10/06/21

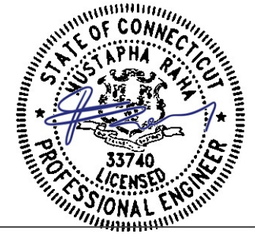
ATC SITE NUMBER:
411182

ATC SITE NAME:
NEPAUG CT

VERIZON SITE NAME:
NEW HARTFORD CT

SITE ADDRESS:
20 ANTOLINI ROAD
NEW HARTFORD, CT 06057

SEAL:



DATE DRAWN:	10/05/21
ATC JOB NO:	13714584_D1
CUSTOMER ID:	NEW HARTFORD CT
CUSTOMER #:	467415

GENERAL NOTES

SHEET NUMBER:	REVISION:
G-002	0

SITE PLAN NOTES:

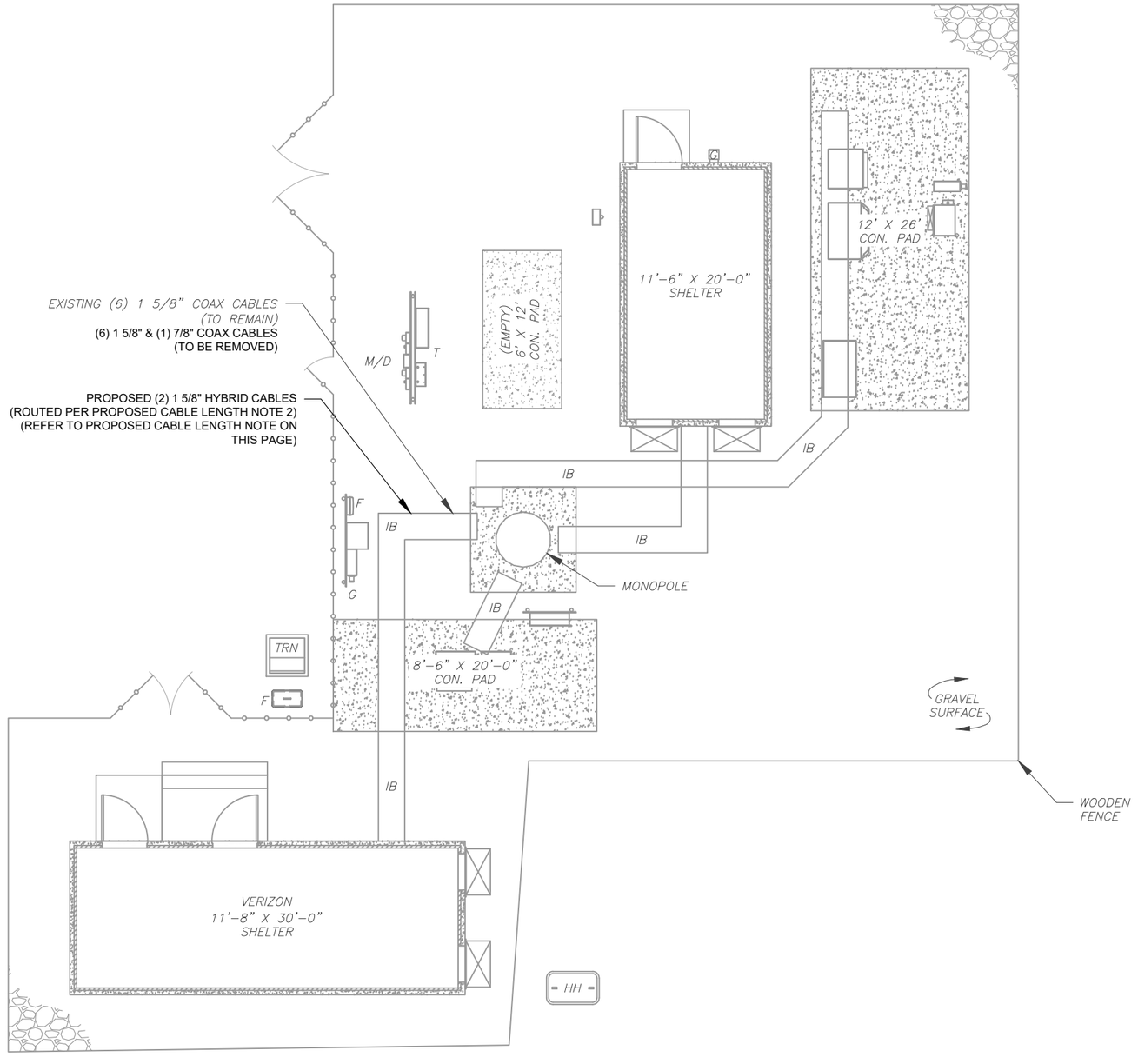
1. THIS SITE PLAN REPRESENTS THE BEST PRESENT KNOWLEDGE AVAILABLE TO THE ENGINEER AT THE TIME OF THIS DESIGN. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO CONSTRUCTION AND VERIFY ALL EXISTING CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT.

2. ICE BRIDGE, CABLE LADDER, COAX PORT, AND COAX CABLE ARE SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL CONFIRM THE EXACT LOCATION OF ALL PROPOSED AND EXISTING EQUIPMENT AND STRUCTURES DEPICTED ON THIS PLAN. BEFORE UTILIZING EXISTING CABLE SUPPORTS, COAX PORTS, INSTALLING NEW PORTS OR ANY OTHER EQUIPMENT, CONTRACTOR SHALL VERIFY ALL ASPECTS OF THE COMPONENTS MEET THE ATC SPECIFICATIONS.

3. THIS PROJECT INCLUDES NO INSTALL OR MODIFICATION AT GRADE.

LEGEND

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



1 DETAILED SITE PLAN

GRAPHIC SCALE

10 0 5 10

(IN FEET)
1 UNIT = 10 FEET

PROPOSED CABLE LENGTH:

1. ESTIMATED LENGTH OF PROPOSED CABLE IS **212'**. ESTIMATED LENGTH OF CABLE WAS PROVIDED BY CUSTOMER OR CALCULATED BY ADDING THE RAD CENTER AND THE DISTANCE FROM THE SHELTER ENTRY PLATE TO THE TOWER (ALONG THE ICE BRIDGE) AND A SAFETY FACTOR MEASUREMENT OF 15% (OF THE TWO PREVIOUS VALUES), CDS DEFER TO GREATEST CABLE LENGTH.
2. ROUTE PROPOSED CABLES ALONG SAME PATH AS EXISTING CABLES AND IN ACCORDANCE WITH STRUCTURAL ANALYSIS. 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.

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REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	JD	10/06/21

ATC SITE NUMBER:
411182

ATC SITE NAME:
NEPAUG CT

VERIZON SITE NAME:
NEW HARTFORD CT

SITE ADDRESS:
20 ANTOLINI ROAD
NEW HARTFORD, CT 06057

SEAL:

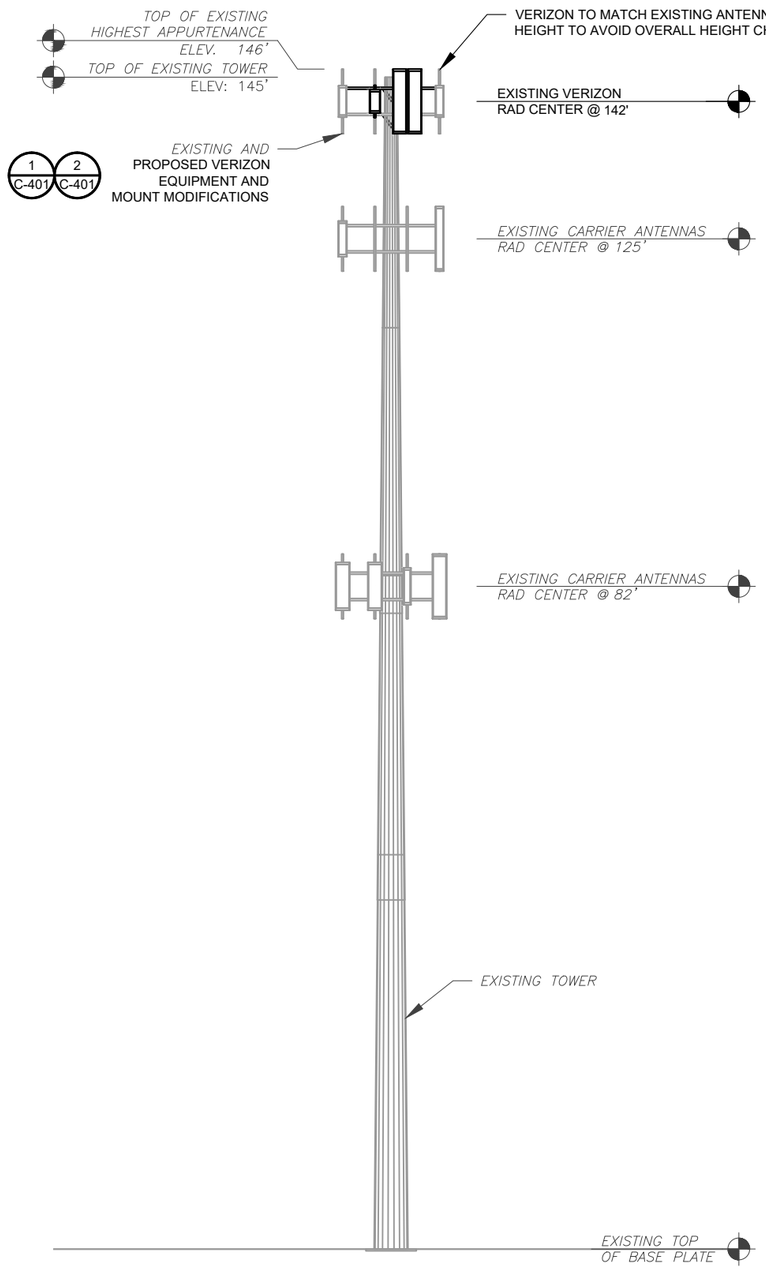
STATE OF CONNECTICUT
MUSTAPHA RAHA
33740
LICENSED
PROFESSIONAL ENGINEER

verizon

DATE DRAWN:	10/05/21
ATC JOB NO:	13714584_D1
CUSTOMER ID:	NEW HARTFORD CT
CUSTOMER #:	467415

DETAILED SITE PLAN

SHEET NUMBER:	REVISION:
C-101	0



1 TOWER ELEVATION
SCALE: N.T.S.

PER MOUNT ANALYSIS COMPLETED BY PJF, DATED 02/15/21, THE EXISTING MOUNT MUST BE MODIFIED TO ADEQUATELY SUPPORT THE PROPOSED LOADING. THE MOUNT MODIFICATION PROPOSED IN THE MOUNT ANALYSIS, INCLUDED AT THE END OF THIS PLAN SET, MUST BE INSTALLED PRIOR TO THE INSTALLATION OF THE PROPOSED ANTENNAS AND OTHER EQUIPMENT.

TOWER NOTE:

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

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0	FOR CONSTRUCTION	JD	10/06/21

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VERIZON SITE NAME:
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SITE ADDRESS:
20 ANTOLINI ROAD
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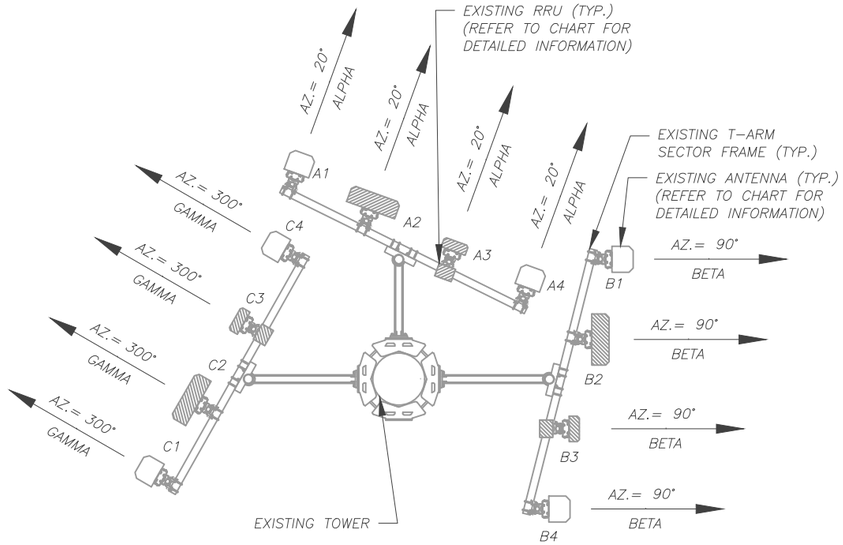
SEAL:

verizon

DATE DRAWN:	10/05/21
ATC JOB NO:	13714584_D1
CUSTOMER ID:	NEW HARTFORD CT
CUSTOMER #:	467415

TOWER ELEVATION

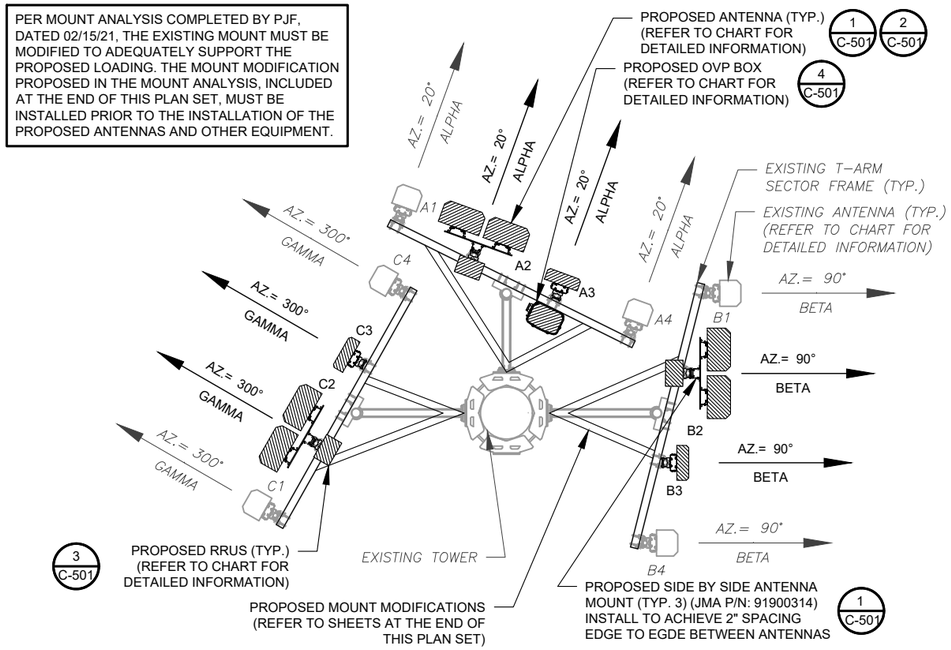
SHEET NUMBER:	REVISION:
C-201	0



1 EXISTING ANTENNA PLAN

SCALE: N.T.S.

PER MOUNT ANALYSIS COMPLETED BY PJF, DATED 02/15/21, THE EXISTING MOUNT MUST BE MODIFIED TO ADEQUATELY SUPPORT THE PROPOSED LOADING. THE MOUNT MODIFICATION PROPOSED IN THE MOUNT ANALYSIS, INCLUDED AT THE END OF THIS PLAN SET, MUST BE INSTALLED PRIOR TO THE INSTALLATION OF THE PROPOSED ANTENNAS AND OTHER EQUIPMENT.



2 FINAL ANTENNA PLAN

SCALE: N.T.S.

EXISTING ANTENNA SCHEDULE

LOCATION			ANTENNA SUMMARY				NON ANTENNA SUMMARY	
SECTOR	RAD	AZ	POS	ANTENNA	BAND	MECH-ELEC TILT (DEG)	STATUS	ADDL TOWER MOUNTED EQUIPMENT	STATUS
ALPHA	142.0	20	A1	LPA-80040-4CF-EDIN-X	850 CDMA	-----	RMN	-	-
			A2	BXA-70040/6CF	700 LTE	-----	RMV	-	-
			A3	BXA-171040-8CF	700 LTE	-----	RMV	TTA	RMV
			A4	LPA-80040-4CF-EDIN-X	850 CDMA	-----	RMN	-	-
BETA		90	B1	LPA-80040-4CF-EDIN-X	850 CDMA	-----	RMN	-	-
			B2	BXA-70040/6CF	700 LTE	-----	RMV	-	-
			B3	BXA-171040-8CF	700 LTE	-----	RMV	TTA	RMV
			B4	LPA-80040-4CF-EDIN-X	850 CDMA	-----	RMN	-	-
GAMMA		300	C1	LPA-80040-4CF-EDIN-X	850 CDMA	-----	RMN	-	-
			C2	BXA-70040/6CF	700 LTE	-----	RMV	-	-
			C3	BXA-171040-8CF	700 LTE	-----	RMV	TTA	RMV
			C4	LPA-80040-4CF-EDIN-X	850 CDMA	-----	RMN	-	-

EXISTING FIBER DIST/SQUID			EXISTING CABLING SUMMARY		
QTY	MODEL NUMBER	STATUS	QTY	LINE SIZE	STATUS
-	-	RMN	6	1 5/8" COAX	RMN
-	-	RMV	6 1	1 5/8" COAX 7/8" COAX	RMV

NOTES

1. CONFIRM WITH VERIZON REP FOR APPLICABLE UPDATES/REVISIONS AND MOST RECENT RFDS FOR NSN CONFIGURATION (CONFIG). GC TO CAP ALL UNUSED PORTS.
2. CONFIRM SPACING OF PROPOSED EQUIP DOES NOT CAUSE TOWER CONFLICTS NOR IMPEDE TOWER CLIMBING PEGS.

STATUS ABBREVIATIONS

RMV: TO BE REMOVED
RMN: TO REMAIN
REL: TO BE RELOCATED
ADD: TO BE ADDED

CABLE LENGTHS FOR JUMPERS

JUNCTION BOX TO RRU: 15'
RRU TO ANTENNA: 10'

FINAL ANTENNA SCHEDULE

LOCATION			ANTENNA SUMMARY				NON ANTENNA SUMMARY	
SECTOR	RAD	AZ	POS	ANTENNA	BAND	MECH-ELEC TILT (DEG)	STATUS	ADDL TOWER MOUNTED EQUIPMENT	STATUS
ALPHA	142.0	20	A1	LPA-80040-4CF-EDIN-X	850 CDMA	-----	RMN	-	-
			A2	MX06FRO640-02	700/850/1900/AWS LTE & 850 5G	-----	ADD	B2/B66A RRH-BR049	ADD
			A3	MT6407-77A	L-SUB6 5G	-----	ADD	-	-
			A4	LPA-80040-4CF-EDIN-X	850 CDMA	-----	RMN	-	-
BETA		90	B1	LPA-80040-4CF-EDIN-X	850 CDMA	-----	RMN	-	-
			B2	MX06FRO640-02	700/850/1900/AWS LTE & 850 5G	-----	ADD	B2/B66A RRH-BR049	ADD
				MX06FRO640-02	700/850/1900/AWS LTE & 850 5G	-----	ADD	B5/B13 RRH-BR04C	ADD
			B3	MT6407-77A	L-SUB6 5G	-----	ADD	-	-
			B4	LPA-80040-4CF-EDIN-X	850 CDMA	-----	RMN	-	-
GAMMA		300	C1	LPA-80040-4CF-EDIN-X	850 CDMA	-----	RMN	-	-
			C2	MX06FRO640-02	700/850/1900/AWS LTE & 850 5G	-----	ADD	B2/B66A RRH-BR049	ADD
				MX06FRO640-02	700/850/1900/AWS LTE & 850 5G	-----	ADD	B5/B13 RRH-BR04C	ADD
			C3	MT6407-77A	L-SUB6 5G	-----	ADD		
			C4	LPA-80040-4CF-EDIN-X	850 CDMA	-----	RMN		

FINAL FIBER DIST/SQUID			FINAL CABLING SUMMARY		
QTY	MODEL NUMBER	STATUS	QTY	LINE SIZE	STATUS
-	-	RMN	6	1 5/8" COAX	RMN
1	DB-C1-12C-24AB-0Z	ADD	2	1 5/8" HYBRIFLEX	ADD

3 EQUIPMENT SCHEDULES

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

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	JD	10/06/21

ATC SITE NUMBER:
411182

ATC SITE NAME:
NEPAUG CT

VERIZON SITE NAME:
NEW HARTFORD CT

SITE ADDRESS:
20 ANTOLINI ROAD
NEW HARTFORD, CT 06057

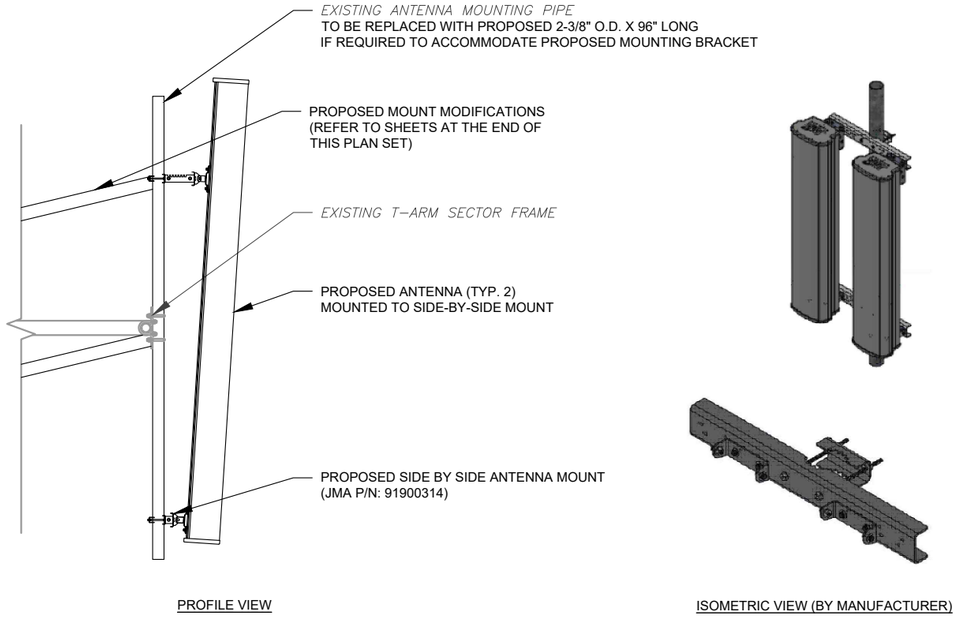
SEAL:

verizon

DATE DRAWN:	10/05/21
ATC JOB NO:	13714584_D1
CUSTOMER ID:	NEW HARTFORD CT
CUSTOMER #:	467415

ANTENNA INFORMATION & SCHEDULE

SHEET NUMBER:	REVISION:
C-401	0

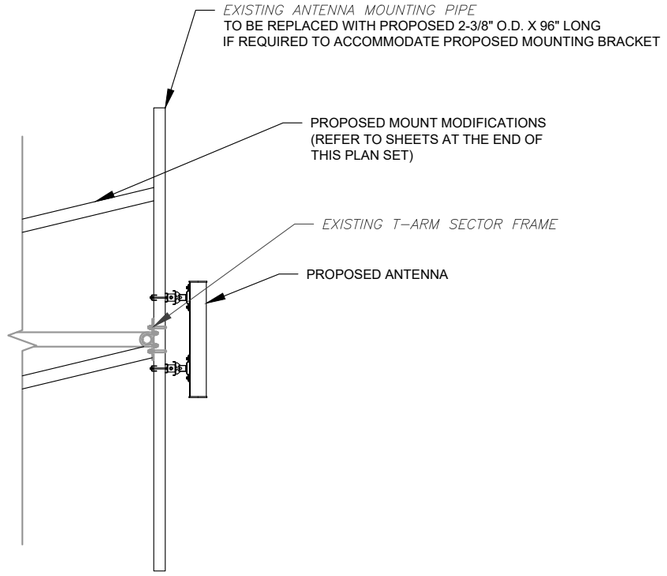


PROFILE VIEW

ISOMETRIC VIEW (BY MANUFACTURER)

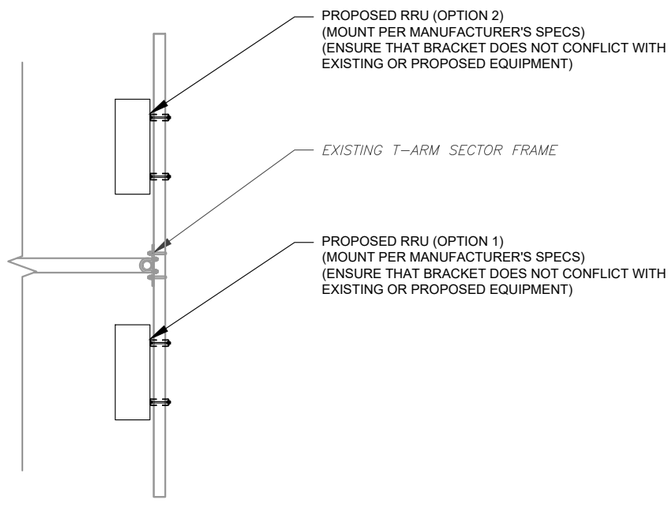
1 PROPOSED SIDE-BY-SIDE MOUNT

SCALE: NOT TO SCALE



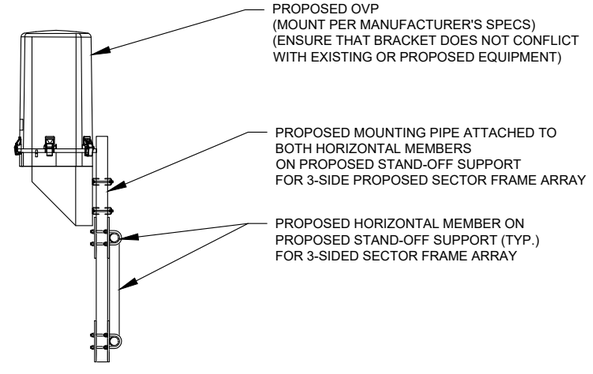
2 PROPOSED 5G ANTENNA MOUNTING DETAIL - TYPICAL

SCALE: N.T.S.



3 PROPOSED RRU MOUNTING DETAIL - TYPICAL

SCALE: N.T.S.



4 PROPOSED OVP MOUNTING

SCALE: N.T.S.

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

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	JD	10/06/21

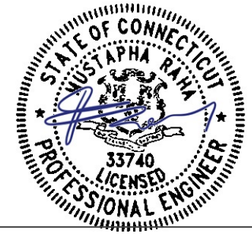
ATC SITE NUMBER:
411182

ATC SITE NAME:
NEPAUG CT

VERIZON SITE NAME:
NEW HARTFORD CT

SITE ADDRESS:
20 ANTOLINI ROAD
NEW HARTFORD, CT 06057

SEAL:

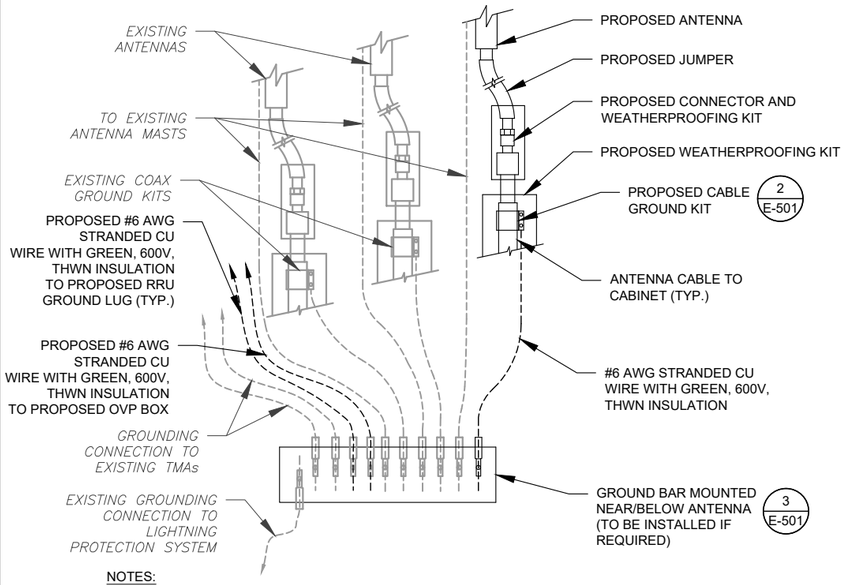


verizon

DATE DRAWN:	10/05/21
ATC JOB NO:	13714584_D1
CUSTOMER ID:	NEW HARTFORD CT
CUSTOMER #:	467415

CONSTRUCTION DETAILS

SHEET NUMBER:	REVISION:
C-501	0

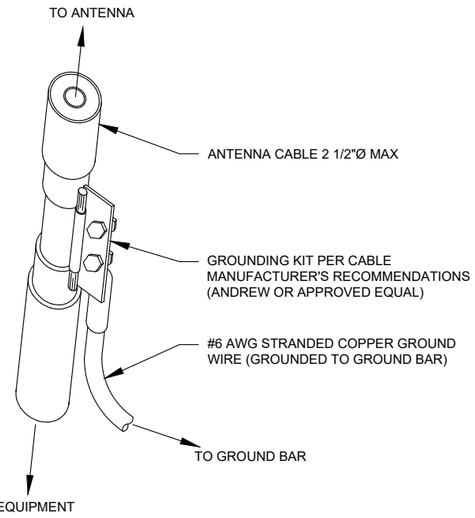


NOTES:

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 GROUNDING STANDARDS, LATEST EDITION, AND COMPLY WITH VERIZON GROUNDING CHECKLIST, LATEST VERSION. WHEN NATIONAL AND LOCAL GROUNDING CODES ARE MORE STRINGENT THEY SHALL GOVERN.

1 TYPICAL ANTENNA GROUNDING DIAGRAM

SCALE: N.T.S.

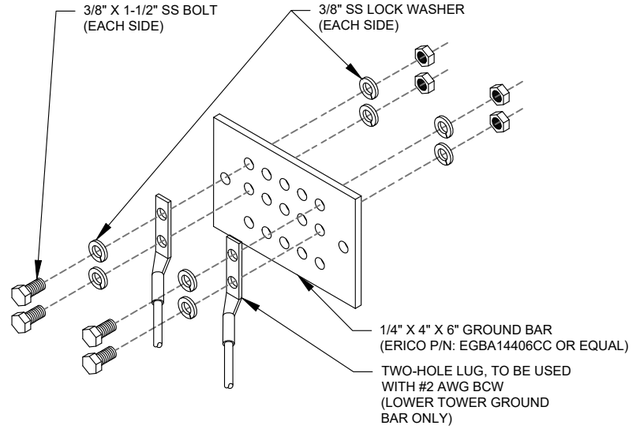


GROUND KIT NOTES:

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

2 CABLE GROUND KIT CONNECTION DETAIL

SCALE: N.T.S.



GROUND BAR NOTES:

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

3 TOWER GROUND BAR DETAIL

SCALE: N.T.S.

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

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	JD	10/06/21

ATC SITE NUMBER:
411182

ATC SITE NAME:
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NEW HARTFORD CT

SITE ADDRESS:
20 ANTOLINI ROAD
NEW HARTFORD, CT 06057

SEAL:

verizon

DATE DRAWN:	10/05/21
ATC JOB NO:	13714584_D1
CUSTOMER ID:	NEW HARTFORD CT
CUSTOMER #:	467415

GROUNDING DETAILS

SHEET NUMBER:	REVISION:
E-501	0

Paul J. Ford and Company
250 East Broad Street Suite 600
Columbus, OH 43215
(614)221-6679
mtimas@pauljford.com

Post-Mod Antenna Mount Analysis Report and PMI Requirements

Mount Fix

SMART Tool Project #: 10032680

Maser Project #: 20777373

Paul J. Ford Project #: A22720-0002.002.7191

February 15, 2021

Site Information

Site ID:	*467415-VZW / New Hartford CT*
Site Name:	*New Hartford CT*
Carrier Name:	*Verizon Wireless*
Address:	*20 ANTOLINI RD NEW HARTFORD, Connecticut 06057, Litchfield County*
Latitude:	*41.828055°*
Longitude:	*-73.015683°*

Structure Information

Tower Type:	*151-Ft Monopole*
Mount Type:	*12.50-Ft T-Frame*

FUZE ID # 16244603

Analysis Results

T-Frame: **78.6% Pass**

******Contractor PMI Requirements:***
Included at the end of this MA report
Available & Submitted via portal at https://pmi.vzwsmart.com
Contractor - Please Review Specific Site PMI Requirements Upon Award
Requirements also Noted on Mount Modification Drawings
Requirements may also be Noted on A & E drawings

Report Prepared By:

Michael Timas

D.S.

STATE OF CONNECTICUT
JUSTIN T. KLINE
No. 30301
LICENSED
PROFESSIONAL ENGINEER
2021.02.16
13:51:39 -05'00'

7. Structural Steel Grades have been assumed as follows, if applicable, unless otherwise noted in this analysis:
   - Channel, Solid Round, Angle, Plate — ASTM A36 (Gr. 36)
   - HSS (Rectangular) — ASTM 500 (Gr. B-46)
   - Pipe — ASTM A53 (Gr. B-35)
   - Threaded Rod — F1554 (Gr. 36)
   - Bolts — ASTM A325
8. Any mount modifications listed under Sources of Information are assumed to have been installed per the design specifications.

Discrepancies between in-field conditions and the assumptions listed above may render this analysis invalid unless explicitly approved by Paul J. Ford.

Analysis Results:

Component	Utilization %	Pass/Fail
Face Horizontals	*41.0%*	*Pass*
Standoff Members	*78.6%*	*Pass*
Mount Pipes	*73.5%*	*Pass*
V-Bracing	*20.3%*	*Pass*
Mount to Tower Connection	*62.2%*	*Pass*

Structure Rating – *(Controlling Utilization of all Components)*	**78.6%**

Recommendation:

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

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

Attachments:

1. Mount Photos
2. Mount Mapping Report (for reference only)
3. Analysis Calculations
4. **Contractor Required PMI Report Deliverables**
5. Antenna Placement Diagrams

1 MOUNT ANALYSIS

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 VERYIFY THEY HAVE THE MOST RECENT MOUNT ANALYSIS PRIOR TO CONTRUCTION.

SUPPLEMENTAL

SHEET NUMBER: R-601

REVISION: 0

MOUNT MODIFICATION DESIGN DRAWINGS

PSLC #467415;NEW HARTFORD CT

20 ANTOLINI ROAD
NEW HARTFORD, CT 06057
LITCHFIELD COUNTY
LAT: 41° 49' 41.00"; LONG: -73° 0' 56.46"

PJF PAUL J. FORD & COMPANY
250 E Broad St, Ste 600- Columbus, OH 43215
Phone 614.221.6679 www.pauljford.com

VERIZON WIRELESS
118 FLANDERS ROAD, 3RD FLOOR WESTBOROUGH, MA 01581
PH: (508)439-3278

PROJECT CONTACTS

CLIENT:
VERIZON WIRELESS
CONTACT: ANDREW CANDIELLO AT ANDREW .CANDIELLO@VERIZONWIRELESS.COM
PH: (508) 439-3278

ENGINEER OF RECORD:
PJFMOUNT@PAULJFORD.COM

WIND DESIGN DATA	
REFERENCE STANDARD	ANSI/TIA-222-H-1-2019
ULTIMATE WIND SPEED (3-SECOND GUST)	115 MPH
ICE THICKNESS	1.0 IN
ICE WIND SPEED	50 MPH
MAINTENANCE WIND SPEED	30 MPH
RISK CATEGORY	II
EXPOSURE CATEGORY	C
TOPOGRAPHIC CATEGORY	1

SEISMIC DESIGN DATA	
SEISMIC IMPORTANCE FACTOR	1.00
S_S	0.174
S_1	0.054
S_{DS}	0.186
S_{D1}	0.086
SEISMIC DESIGN CATEGORY	B
R	2.0

SHEET INDEX	
SHEET NUMBER	DESCRIPTION
T-1	TITLE SHEET
N-1	NOTES
SC-1	SAFETY CLIMB INFORMATION
S-1	MOUNT INFORMATION
S-2	MOUNT REINFORCING DETAILS

** ADDITIONAL SPEC SHEETS INCLUDED IN PACKAGE FOR INSTALLATION REFERENCE ONLY

SPECIAL INSTRUCTIONS / VALIDATION AS REQUIRED FROM THE MA OR MOD DRAWINGS:

ISSUE:

RESPONSE:

VZW MOUNT MOD KITS - APPROVED VENDORS			
VENDOR	CONTACT	EMAIL	PHONE NUMBER
PERFECT VISION	WIRELESS SALES	WIRELESSSALES@PERFECT-VISION.COM	(844) 884-6723
SITEPRO	PAULA BOSWELL	PAULA.BOSWELL@VALMONT.COM	(972) 236-9843
SABRE INDUSTRIES INC.	ANGIE WELCH	AKWELCH@SABREINDUSTRIES.COM	(866) 428-6937
METROSITE FABRICATORS, LLC	KENT RAMEY	KENT@METROSITELLC.COM	(706) 335-7045
COMMSCOPE	SALVADOR ANGUIANO	SALVADOR.ANGUIANO@COMMSCOPE.COM	(817) 304-7492

CONTRACTOR PMI REQUIREMENTS	
PMI LOCATION	HTTPS://PMI.VZWSMART.COM
SMART TOOL PROJECT #	10032680
VZW LOCATION CODE (PSLC)	467415
PMI REQUIREMENTS EMBEDDED WITHIN MOUNT MODIFICATION REPORT	

REFERENCED DOCUMENTS	
FAILING MOUNT ANALYSIS REPORT	
SMART TOOL PROJECT #	10019470
PJF PROJECT #	A22720-0002.001.7190
ANALYSIS DATE	12/30/2021

PSLC #467415;NEW HARTFORD CT
NEW HARTFORD, CT
MOUNT MODIFICATION DESIGN DRAWINGS

PROJECT No:	A22720-0002.002.7191
DRAWN BY:	MJT
DESIGNED BY:	MJT
CHECKED BY:	DS
DATE:	2/12/2021

TITLE SHEET

T-1

STATE OF CONNECTICUT · KEITH J. KLINE · No. 30301 · LICENSED PROFESSIONAL ENGINEER

2021.02.16 15:50:57-05'00'

REV	DATE	DESCRIPTION

V1.0 A22720-0002.002.7191.DWG

GENERAL NOTES:

1. THESE MOUNT MODIFICATION DRAWINGS ARE TO BE INSTALLED PER STRUCTURAL MODIFICATION REPORT BY PAUL J. FORD AND COMPANY DATED 2/12/2021

2. PAUL J. FORD AND COMPANY WAS NOT PROVIDED WITH THE EXACT LOCATION OF EVERY EXISTING ANTENNA MOUNT CONNECTION, CABLE CLIP, ETC THAT COULD POTENTIALLY INTERFERE WITH THE MODIFICATIONS AS INDICATED ON THESE DRAWINGS. THE CONTRACTOR SHALL FIELD VERIFY THAT THE MATERIAL CAN BE INSTALLED AS SHOWN ON THESE DRAWINGS BEFORE FABRICATING ANY MATERIAL. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE PROPER FIT AND CLEARANCE OF THE REINFORCING MATERIAL IN THE FIELD. IF THE CONTRACTOR DISCOVERS ANY EXISTING CONDITIONS THAT ARE NOT AS REPRESENTED ON THESE DRAWINGS, PAUL J. FORD AND COMPANY SHALL BE CONTACTED IMMEDIATELY TO EVALUATE THE STRUCTURAL SIGNIFICANCE OF THE DEVIATION.

3. WORK SHALL BE IN ACCORDANCE WITH LOCAL CODES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE LOCAL BUILDING OFFICIALS FOR ANY INSPECTIONS THAT MAY BE REQUIRED.

4. THE CONTRACTOR MUST BE EXPERIENCED IN THE PERFORMANCE OF WORK SIMILAR TO THAT DESCRIBED ON THESE DRAWINGS. BY ACCEPTANCE OF THIS PROJECT, THE CONTRACTOR IS ATTESTING THAT HE DOES HAVE SUFFICIENT EXPERIENCE AND ABILITY, THAT HE IS KNOWLEDGEABLE OF THE WORK TO BE PERFORMED AND THAT HE IS PROPERLY LICENSED TO DO THIS WORK IN THE JURISDICTION IN WHICH THE WORK IS TO BE PERFORMED.

5. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION. ALL STRUCTURES ARE DESIGNED TO BE STABLE AND SELF-SUPPORTING AT THE COMPLETION OF CONSTRUCTION. THIS DRAWING DOES NOT INDICATE THE METHOD OF CONSTRUCTION. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE THE ERECTION PROCEDURES, METHODS, MEANS, TECHNIQUES, AND SEQUENCES TO ENSURE THE STABILITY AND SAFETY OF THE STRUCTURE AND ITS COMPONENT PARTS, AND THE ADEQUACY OF TEMPORARY OR INCOMPLETE CONNECTIONS DURING CONSTRUCTION. THIS INCLUDES, BUT IS NOT LIMITED TO, THE ADDITION OF WHATEVER TEMPORARY BRACING THAT MAY BE NECESSARY AND ENGINEERING ASSESSMENT OF CONSTRUCTION STRESSES WITH INSTALLATION MAXIMUM WIND SPEED AND/OR TEMPORARY BRACING AND SHORING. SUCH MATERIAL IS NOT INDICATED ON THE DRAWINGS AND, IF PROVIDED, SHALL BE REMOVED, AS CONDITIONS PERMIT AND REMAIN THE PROPERTY OF THE CONTRACTOR.

6. ANY EXISTING ATTACHMENTS AND/OR PROJECTIONS ON THE STRUCTURE THAT MAY INTERFERE WITH THE INSTALLATION OF THE MODIFICATION SYSTEM WILL HAVE TO BE REMOVED AND RELOCATED, REPLACED, OR RE-INSTALLED AS REQUIRED AFTER THE MODIFICATION IS SUCCESSFULLY COMPLETED. THE CONTRACTOR SHALL IDENTIFY AND COORDINATE THESE ITEMS PRIOR TO CONSTRUCTION WITH OWNER, TESTING AGENCY, AND EOR.

7. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR INITIATING, MAINTAINING, AND SUPERVISING ALL SAFETY PROGRAMS AND PRECAUTIONS IN CONNECTION WITH THE WORK.

8. CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PREVENT DAMAGE TO EXISTING STRUCTURES, EQUIPMENT AND UTILITIES. ANY DAMAGE TO EXISTING STRUCTURES, EQUIPMENT, AND UTILITIES AS A RESULT OF THE CONTRACTOR'S WORK OR FROM DAMAGE DUE TO OTHER CAUSES SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.

9. WORK SHALL BE PERFORMED DURING CALM DRY DAYS (WINDS LESS THAN 30-MPH) IN ACCORDANCE WITH OPERATIONAL WIND CONDITIONS PER TIA-322.

10. THE MOUNTING SYSTEM SHALL NOT BE USED AS A TIE OFF POINT.

11. THE STRUCTURAL ANALYSIS ASSUMES THAT ALL STRUCTURAL COMPONENTS ARE IN BRAND-NEW CONDITION, FREE FROM FAULTS AND DEFECTS AND IN CONFORMANCE WITH THE CONTRACT DOCUMENTS. NO ALLOWANCE WAS MADE FOR ANY DAMAGED, MISSING, OR RUSTED MEMBERS. IF ANY OF THESE CONDITIONS ARE DISCOVERED, THE CONTRACTOR SHALL BRING THEM TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE. ANY AND ALL SUBSTITUTIONS MUST BE PROPERLY APPROVED AND AUTHORIZED IN WRITING BY OWNER AND EOR PRIOR TO INSTALLATION. THE CONTRACTOR SHALL FURNISH SATISFACTORY EVIDENCE AS TO THE KIND AND QUALITY OF MATERIALS AND EQUIPMENT BEING SUBSTITUTED.

12. IF MATERIALS, QUANTITIES, STRENGTHS, OR SIZES INDICATED BY THE DRAWINGS OR SPECIFICATIONS ARE NOT IN AGREEMENT WITH THESE NOTES, THE BETTER QUALITY AND/OR GREATER QUANTITY, STRENGTH, OR SIZE INDICATED, SPECIFIED, OR NOTED SHALL BE PROVIDED.

13. OBSERVATION VISITS TO THE SITE BY OWNER AND/OR THE EOR SHALL NOT INCLUDE INSPECTIONS OF THE PROTECTIVE MEASURES OR THE CONSTRUCTION PROCEDURES.

14. ANY SUPPORT SERVICES PERFORMED BY THE EOR DURING CONSTRUCTION ARE SOLELY FOR THE PURPOSE OF ASSISTING IN QUALITY CONTROL AND IN ACHIEVING GENERAL PERFORMANCE WITH CONTRACT DOCUMENTS. THEY DO NOT GUARANTEE CONTRACTORS PERFORMANCE AND SHALL NOT BE CONSTRUED AS SUPERVISION OF CONSTRUCTION.

15. THE CLIMBING FACILITIES, SAFETY CLIMB, AND ALL PARTS THEREOF SHALL NOT BE IMPEDED, MODIFIED, OR ALTERED WITHOUT THE APPROVAL OF THE EOR.

16. AFTER THE CONTRACTOR HAS SUCCESSFULLY COMPLETED THE INSTALLATION OF THE MODIFICATION SYSTEM AND THE WORK HAS BEEN ACCEPTED BY THE OWNER, THE OWNER WILL BE RESPONSIBLE FOR THE LONG TERM/PERPETUAL INSPECTION AND MAINTENANCE OF THE STRUCTURE AND MODIFICATION SYSTEM.

17. DO NOT SCALE DRAWINGS.

18. THE MOUNTING SYSTEM SHALL NOT BE USED FOR RIGGING PURPOSES. IF RIGGING TO THE MOUNT IS REQUIRED, ALL RIGGING PLANS SHALL ADHERE TO ANSI/ASSE A10.48 (LATEST EDITION), INCLUDING THE REQUIRED INVOLVEMENT OF A QUALIFIED ENGINEER FOR CLASS IV CONSTRUCTION TO CERTIFY THE SUPPORTING STRUCTURE(S) IN ACCORDANCE WITH THE ANSI/TIA-322 (LATEST EDITION).

19. ALL MANUFACTURER'S HARDWARE ASSEMBLY INSTRUCTIONS SHALL BE FOLLOWED, UNO. CONFLICTING NOTES SHALL BE BROUGHT TO THE ATTENTION OF THE EOR.

20. IF REMOVAL OF EXISTING MODIFICATIONS IS REQUIRED PER THE MODIFICATION SCOPE, THE GC SHALL CLEAN AND COLD GALVANIZE ANY EXISTING EMPTY BOLT HOLES, UNO. IF ADDITIONAL UNEXPECTED, OVERSIZED, OR SLOTTED HOLES ARE FOUND, THE GC SHALL CONTACT THE EOR FOR GUIDANCE PRIOR TO PROCEEDING WITH THE MODIFICATION.

STRUCTURAL STEEL:

1. STRUCTURAL STEEL MATERIALS, FABRICATION, DETAILING, AND WORKMANSHIP SHALL CONFORM TO THE LATEST ADDITION OF THE FOLLOWING REFERENCE STANDARDS:
   A. BY THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC):
      "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS"
      "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM HIGH STRENGTH BOLTS" AS APPROVED BY THE RESEARCH COUNCIL ON STRUCTURAL CONNECTIONS.
      "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES"
   B. BY THE AMERICAN WELDING SOCIETY (AWS):
      "STRUCTURAL WELDING CODE- STEEL D1.1"
      "STANDARD SYMBOLS FOR WELDING, BRAZING, AND NON-DESTRUCTIVE EXAMINATION"

2. NEW STEEL (UNLESS NOTED OTHERWISE) SHALL CONFORM TO THE REQUIREMENTS OF THE ASTM STANDARD SPECIFICATION FOR STRUCTURAL STEEL NOTED BELOW:
   W - ASTM A992 (50 KSI YIELD POINT MATERIAL)
   HSS RECTANGULAR - ASTM A500 GR. B (46 KSI YIELD POINT MATERIAL)
   HSS ROUND - ASTM A500 GR. B (42 KSI YIELD POINT MATERIAL)
   PIPE - ASTM A53 GR. B (35 KSI YIELD POINT MATERIAL)
   C, MC, L, PLATES, BARS & ALL OTHER STEEL - ASTM A36 (36KSI YIELD POINT MATERIAL)
   BOLTS - ASTM A325
   U-BOLTS - ASTM A307 GRADE A, OR SAE J429 GRADE 2
   THREADED RODS - ASTM A36
   NUTS - ASTM A563 GRADE DH
   WASHERS - ASTM F436 TYPE 1

3. ALL NEW STEEL SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123, ASTM 153/A153M, OR ASTM A653 G90.

4. ALL BOLTS, U-BOLTS, AND THREADED RODS SHALL BE PROVIDED WITH LOCK-WASHERS, OR LOCK-NUTS, OR PAL-NUTS TORQUED TO THE SNUG-TIGHT CONDITION AS DEFINED BY AISC.

5. ALL HOLES, EITHER PUNCHED OR DRILLED, IN THE EXISTING STEEL MEMBERS SHALL BE 1/16 INCH LARGER THAN THE BOLT DIAMETER, UNLESS NOTED OTHERWISE. BURNING OF MEMBERS SHALL NOT BE PERMITTED. SLOTTED HOLES ARE NOT PERMITTED. THE MINIMUM BOLT SPACING SHALL BE 3 TIMES THE BOLT DIAMETER AND THE MINIMUM EDGE DISTANCE SHALL BE 1.5 TIMES THE BOLT DIAMETER UNLESS NOTED OTHERWISE. ALL BOLT HOLES SHALL BE PLACED AT AISC STANDARD GAGE DIMENSIONS, UNLESS NOTED OTHERWISE.

6. IF ANY EXISTING ASTM A325 BOLTS ARE REMOVED, THEY MUST BE REPLACED WITH NEW A325 BOLTS OR GREATER.

7. ALL EXISTING PAINTED OR GALVANIZED SURFACES DAMAGED DURING CONSTRUCTION SHALL BE WIRE BRUSHED CLEAN, REPAIRED BY COLD GALVANIZING BRUSH APPLIED PAINT (ZRC OR EQUAL), AND REPAINTED TO MATCH THE EXISTING FINISH CONFORMING TO ASTM A780.

8. ALL PARTS ARE TO MARKED WITH ITEM NUMBERS USING 3/4" HIGH STEEL STENCILS.

9. SHOP SHALL ASSEMBLE AND VERIFY FIT AND GAPS BEFORE BREAKDOWN FOR GALVANIZING.

10. NO FIELD WELDING SHALL BE DONE TO THE EXISTING STRUCTURE WITHOUT THE PRIOR APPROVAL OF THE OWNER AND SUPERVISION BY THE INSPECTION/TESTING AGENCY.

11. ALL REQUIRED CUTS SHALL BE CUT WITHIN THE DIMENSIONS SHOWN ON THE DRAWINGS. NO CUTS SHALL EXTEND BEYOND THE OUTLINE OF THE DIMENSIONS SHOWN ON THE DRAWINGS. ALL CUT EDGES SHALL BE GROUND SMOOTH AND DE-BURRED. CONTRACTOR TO AVOID 90 DEGREE CORNERS. IT MAY BE NECESSARY TO DRILL STARTER HOLES AS REQUIRED TO MAKE THE CUT.

12. ALL JOINTS ARE BEARING TYPE CONNECTIONS, UNO. IF NO BOLT LENGTH IS GIVEN IN THE BILL OF MATERIALS, THE CONNECTION MAY INCLUDE THREADS IN THE SHEAR PLANE, AND THE GC IS RESPONSIBLE FOR SIZING THE LENGTH OF THE BOLT. IT IS NOT PERMITTED FOR THE BOLT END TO BE BELOW THE FACE OF THE NUT AFTER TIGHTENING IS COMPLETED.

2-16-21

REV	DATE	DESCRIPTION

PAUL J. FORD & COMPANY
250 E Broad St, Ste 600- Columbus, OH 43215
Phone 614.221.6679
www.pauljford.com

VERIZON WIRELESS
118 FLANDERS ROAD, 3RD FLOOR WESTBOROUGH, MA 01581
PH: (508)439-3278

PSLC #467415;NEW HARTFORD CT
NEW HARTFORD, CT
MOUNT MODIFICATION DESIGN DRAWINGS

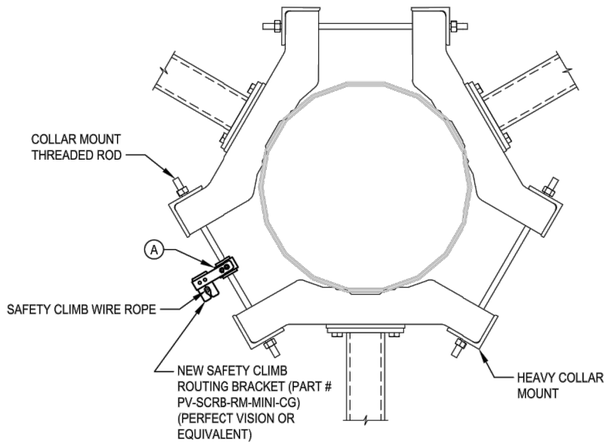
PROJECT No:	A22720-0002.002.7191
DRAWN BY:	MJT
DESIGNED BY:	MJT
CHECKED BY:	DS
DATE:	2/12/2021

NOTES

N-1

V1.0 A22720-0002.002.7191.DWG

LOCATION OF SAFETY CLIMB



TYPE - 3 (1 / SC-1)

ITEM #	QTY	PART NUMBER	DESCRIPTIONS
A	1	PV-SCRB-RM-MINI-CG	SAFETY CABLE GUIDE (PERFECT VISION OR EQUIV)

NOTE: CONTRACTOR TO PROVIDE AS NECESSARY

REV	DATE	DESCRIPTION

PAUL J. FORD & COMPANY
250 E Broad St, Ste 600- Columbus, OH 43215
Phone 614.221.6679
www.pauljford.com

VERIZON WIRELESS
118 FLANDERS ROAD, 3RD FLOOR WESTBOROUGH, MA 01581
PH: (508)439-3278

PSLC #467415;NEW HARTFORD CT
NEW HARTFORD, CT
MOUNT MODIFICATION DESIGN DRAWINGS

PROJECT No:	A22720-0002.002.7191
DRAWN BY:	MJT
DESIGNED BY:	MJT
CHECKED BY:	DS
DATE:	2/12/2021

SAFETY CLIMB INFORMATION

SC-1

STATE OF CONNECTICUT
JUSTIN T. KLINE
No. 30301
LICENSED
PROFESSIONAL ENGINEER
2-16-21

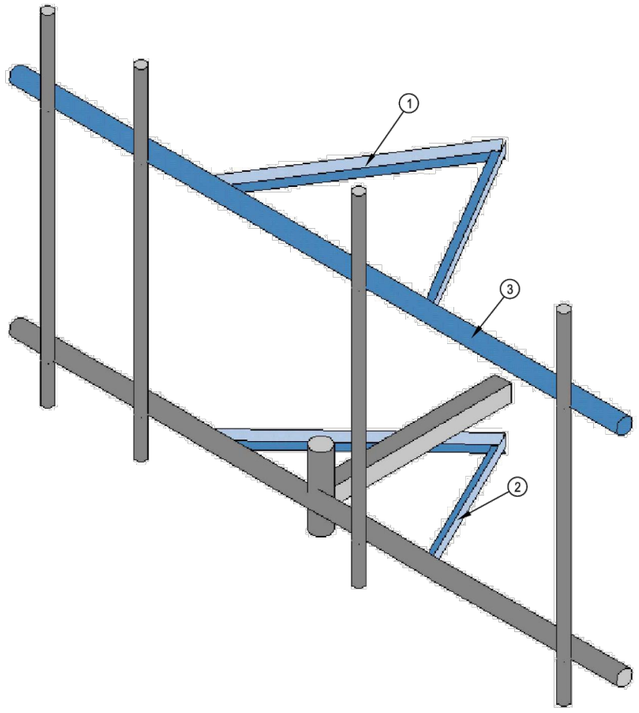
V1.0 A22720-0002.002.7191.DWG

NOTES:
1. CONTRACTOR TO VERIFY LOCATION OF EXISTING EQUIPMENT PRIOR TO INSTALLATION OF PROPOSED EQUIPMENT. NOTIFY EOR FOR ANY DEVIATIONS.
2. INSTALL SHALL NOT CAUSE HARM TO THE STRUCTURE, CLIMBING FACILITY, SAFETY CLIMB OR ANY SYSTEM INSTALLED ON THIS STRUCTURE.

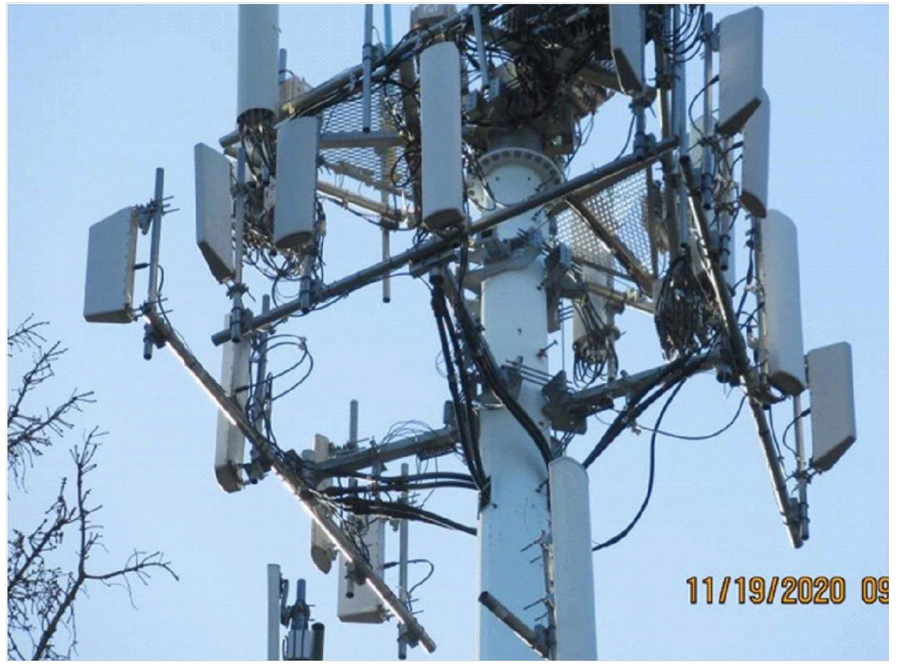
MOUNT MODIFICATION SCHEDULE

	ELEVATION	MOUNT MODIFICATION DESCRIPTION	REFERENCE SHEETS
1	135'-0"	INSTALL V-STYLE KICKER KIT ON NEW BRACING MEMBER	S1 & S2
2		INSTALL V-STYLE KICKER KIT ON EXISTING MOUNT MEMBER	
3		INSTALL HORIZONTAL BRACING PIPE USING CROSSOVER PLATES AT EACH EXISTING MOUNT PIPE LOCATION	

PRIOR TO FABRICATION AND INSTALLATION, CONTRACTOR SHALL FIELD VERIFY ALL LENGTHS AND QUANTITIES GIVEN. LENGTH AND QUANTITIES PROVIDED ARE FOR QUOTING PURPOSE ONLY AND SHALL NOT BE USED FOR FABRICATION.



OVERALL MODIFIED MOUNT VIEW 1/S-1
SCALE: NTS



PICTURE OF THE MOUNTING FRAME 2/S-1
SCALE: NTS

PJF PAUL J. FORD & COMPANY
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PSLC #467415;NEW HARTFORD CT
NEW HARTFORD, CT
MOUNT MODIFICATION DESIGN DRAWINGS

PROJECT No:	A22720-0002.002.7191
DRAWN BY:	MJT
DESIGNED BY:	MJT
CHECKED BY:	DS
DATE:	2/12/2021

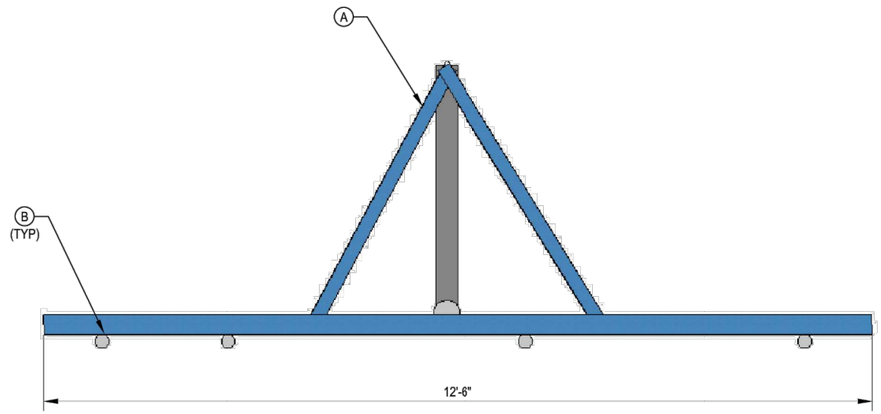
MOUNT INFORMATION

S-1

STATE OF CONNECTICUT
JUSTIN T. KLINE
No. 30301
LICENSED
PROFESSIONAL ENGINEER
2-16-21

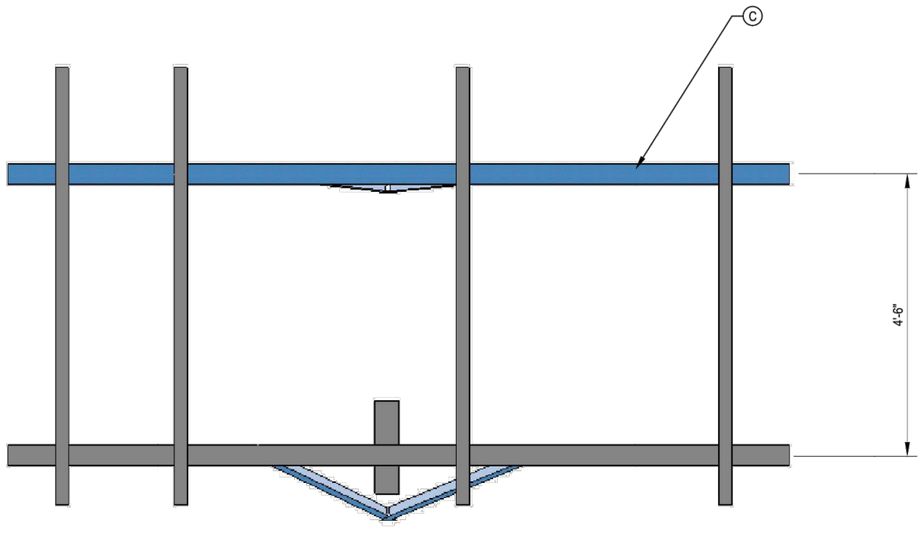
REV	DATE	DESCRIPTION

V1.0 A22720-0002.002.7191.DWG



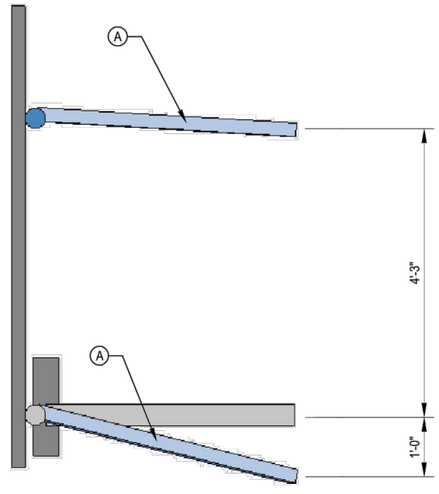
TOP DOWN VIEW 2 / S-2

SCALE: NTS



FRONT VIEW 1 / S-2

SCALE: NTS



SIDE VIEW 3 / S-2

SCALE: NTS

MATERIAL LIST			
PART #	QTY	MATERIAL	LENGTH
A	2	SITEPRO1 PQ-SFS	N/A
B	12	VZWSMART-MSK2	N/A
C	3	P3STD (3.5" x 0.125" THK)	12'-6"
THE ABOVE MATERIAL LIST IS PROVIDED TO CLEARLY IDENTIFY MEMBER SIZES. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE PROPER FIT AND CLEARANCE OF THE REINFORCING MATERIAL IN THE FIELD. THE CONTRACTOR IS EXPECTED TO PERFORM A SITE VISIT BEFORE FABRICATING ANY MATERIAL.			
THE ABOVE MATERIAL LIST IS FOR THREE SECTORS			
FIELD CUTTING/TRIMMING MAY BE REQUIRED FOR FIT UP. CONTACT EOR FOR APPROVAL UNLESS NOTED OTHERWISE			

NOTE: SOME EXISTING MOUNT MEMBERS NOTE SHOWN FOR CLARITY

REV	DATE	DESCRIPTION

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Phone 614.221.6679
www.pauljford.com

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PSLC #467415;NEW HARTFORD CT
NEW HARTFORD, CT
MOUNT MODIFICATION DESIGN DRAWINGS

PROJECT No:	A22720-0002.002.7191
DRAWN BY:	MJT
DESIGNED BY:	MJT
CHECKED BY:	DS
DATE:	2/12/2021

MOUNT REINFORCING DETAILS

S-2

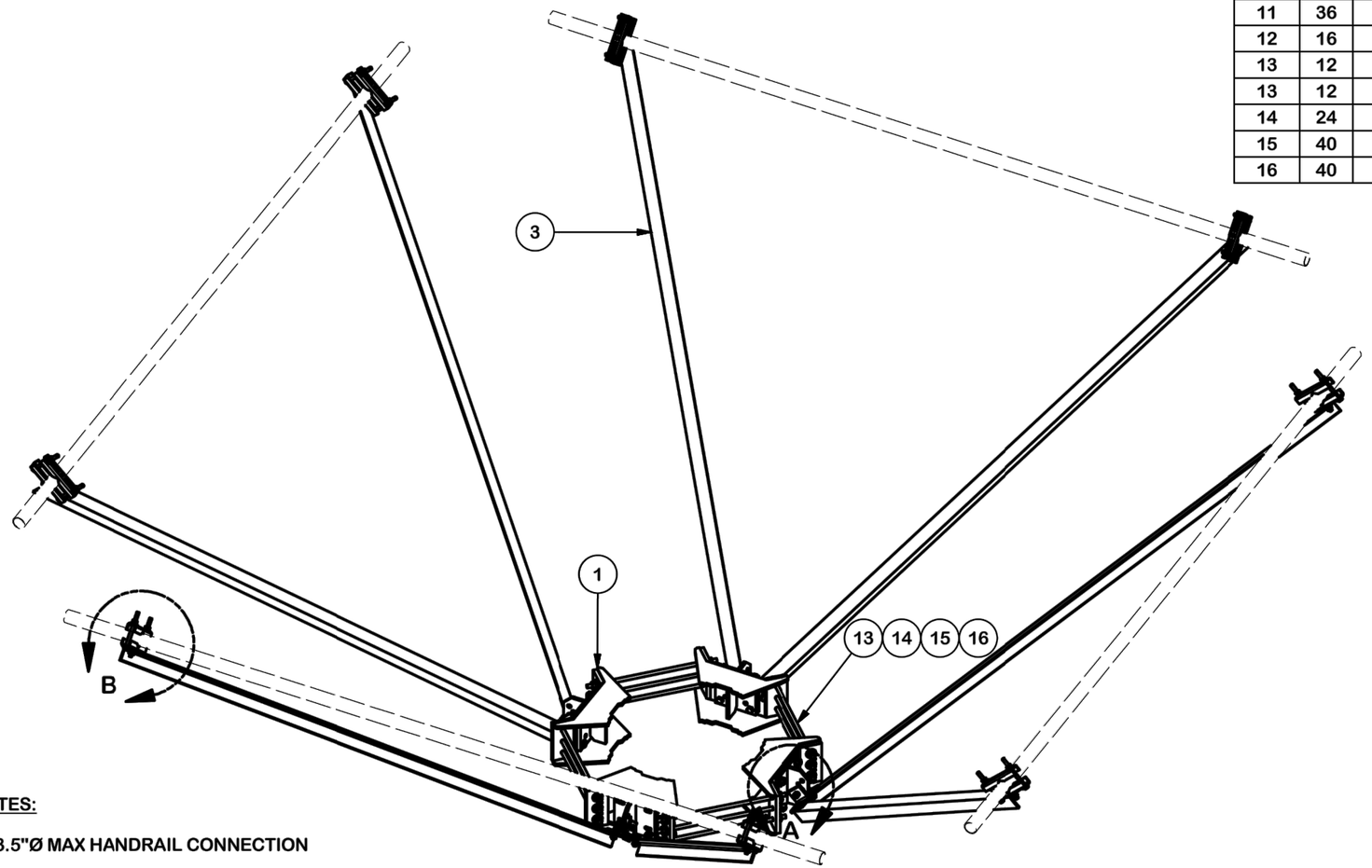
STATE OF CONNECTICUT
JUSTIN T. KLINE
No. 30301
LICENSED PROFESSIONAL ENGINEER
2-16-21

V1.0 A22720-0002.002.7191.DWG

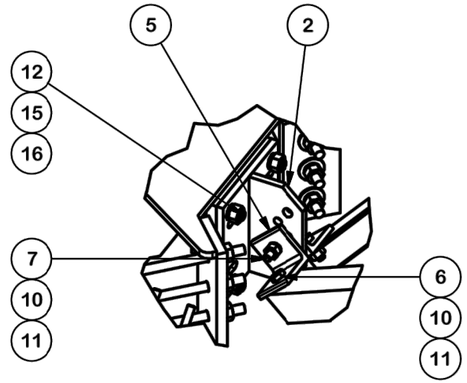
FIELD CUT AND DRILL TO FIT AND THEN COLD GALVANIZE.

*SEE NOTES

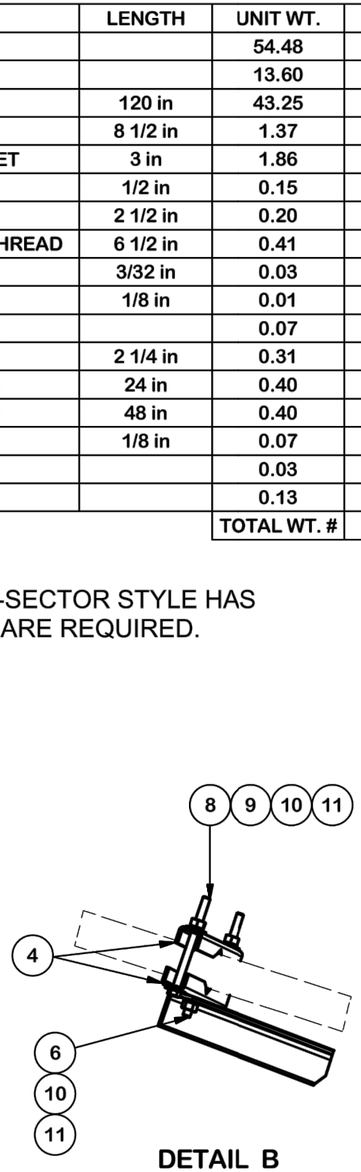
PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	4	X-162290	QUAD BRACKET		54.48	217.94
2	4	X-TBW	T-BRACKET WELDMENT		13.60	54.40
3	8	ANG21214-10-50	L 2 1/2" x 2 1/2" x 1/4" ANGLE	120 in	43.25	346.01
4	16	X-STU	STIFF ARM CHANNEL BRACKET	8 1/2 in	1.37	21.95
5	8	SHCM-T	CHAIN MOUNT TIGHTENER BRACKET	3 in	1.86	14.87
6	16	G12112	1/2" x 1-1/2" HDG HEX BOLT GR5	1/2 in	0.15	2.36
7	4	G12212	1/2" x 2-1/2" HDG HEX BOLT GR5	2 1/2 in	0.20	0.81
8	16	G12065	1/2" x 6-1/2" HDG HEX BOLT GR5 FULL THREAD	6 1/2 in	0.41	6.55
9	32	G12FW	1/2" HDG USS FLATWASHER	3/32 in	0.03	1.09
10	36	G12LW	1/2" HDG LOCKWASHER	1/8 in	0.01	0.50
11	36	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	2.58
12	16	A582114	5/8" x 2-1/4" HDG A325 HEX BOLT	2 1/4 in	0.31	5.00
13	12	G58R-24	5/8" x 24" THREADED ROD (HDG.)	24 in	0.40	4.79
13	12	G58R-48	5/8" x 48" THREADED ROD (HDG.)	48 in	0.40	4.79
14	24	G58FW	5/8" HDG USS FLATWASHER	1/8 in	0.07	1.69
15	40	G58LW	5/8" HDG LOCKWASHER		0.03	1.04
16	40	G58NUT	5/8" HDG HEAVY 2H HEX NUT		0.13	5.20
					TOTAL WT. #	757.27



NOTE: DUE TO MOUNT ORIENTATIONS, 4-SECTOR STYLE HAS BEEN SPECIFIED, BUT ONLY 3-SECTORS ARE REQUIRED.



DETAIL A



DETAIL B

NOTES:

1. 3.5"Ø MAX HANDRAIL CONNECTION
2. 12" TO 60" POLE Ø
3. FIELD CUT/DRILL ANG21214-10-50 TO SUIT
4. PLACE A FLAT WASHER OVER EVERY SLOT

TOLERANCE NOTES

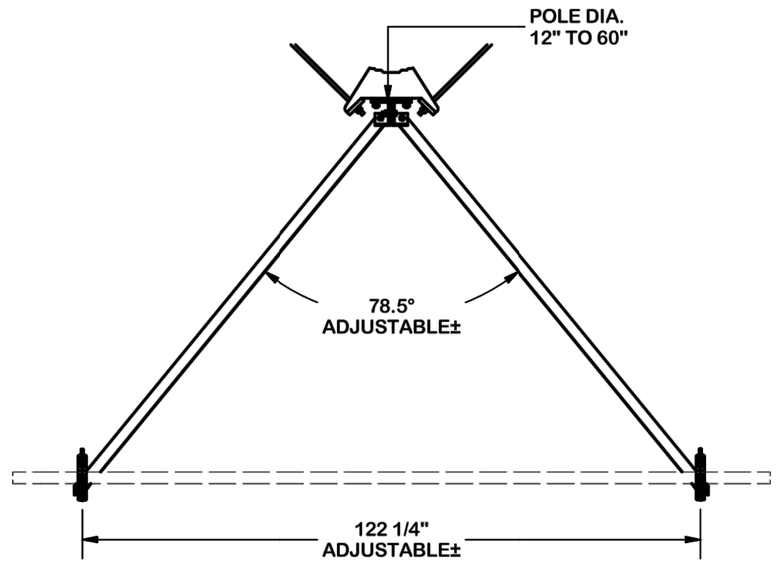
TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:
SAWED, SHEARED AND GAS CUT EDGES (± 0.030")
DRILLED AND GAS CUT HOLES (± 0.030") - NO CONING OF HOLES
LASER CUT EDGES AND HOLES (± 0.010") - NO CONING OF HOLES
BENDS ARE ± 1/2 DEGREE
ALL OTHER MACHINING (± 0.030")
ALL OTHER ASSEMBLY (± 0.060")

DESCRIPTION
HANDRAIL REINFORCEMENT KIT
(QUAD)

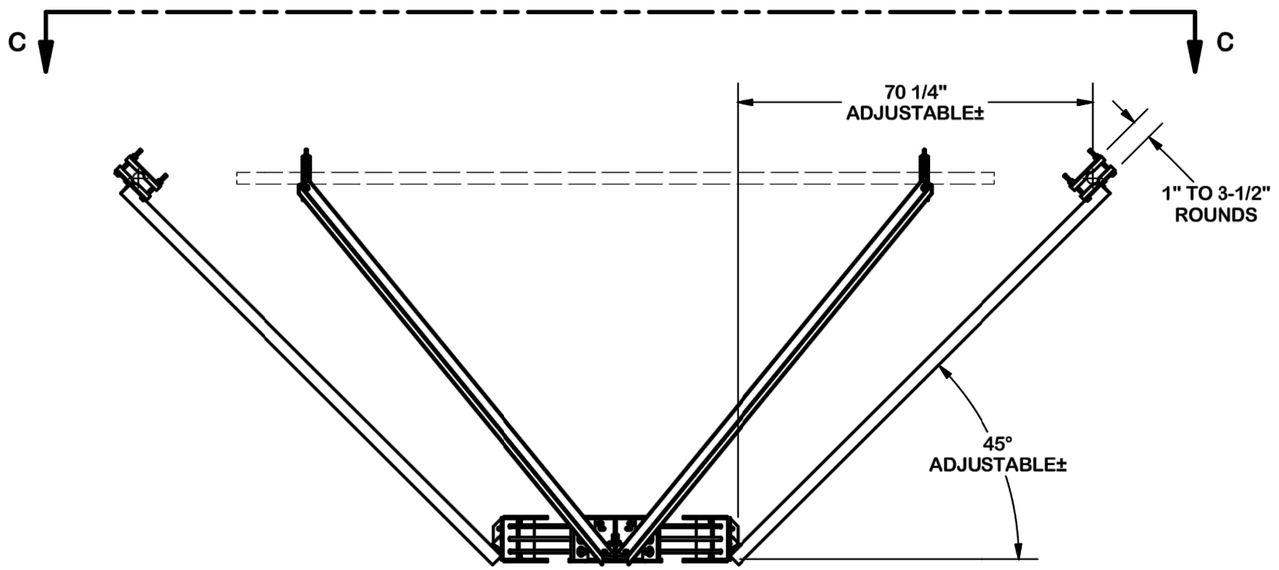
SITE PRO 1
A valmont COMPANY
Engineering Support Team: 1-888-753-7446
Locations:
New York, NY
Atlanta, GA
Los Angeles, CA
Plymouth, IN
Salem, OR
Dallas, TX

CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.	PAGE
SP1	CSL 10/23/2017		PQ-SFS	1 OF 3
CLASS 81 / SUB 01	DRAWING USAGE: CUSTOMER	CHECKED BY	DWG. NO.: PQ-SFS	

VERTICAL POSITION



VIEW C-C



NOTES:

1. 3.5"Ø MAX HANDRAIL CONNECTION
2. 12" TO 60" POLE Ø
3. FIELD CUT/DRILL ANG21214-10-50 TO SUIT
4. PLACE A FLAT WASHER OVER EVERY SLOT

TOLERANCE NOTES

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

DESCRIPTION
HANDRAIL REINFORCEMENT KIT
(QUAD)

CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.
SP1	CSL 10/23/2017		PQ-SFS

CLASS	SUB	DRAWING USAGE	CHECKED BY	DWG. NO.
81	01	CUSTOMER		PQ-SFS

SITE PRO 1
A valmont COMPANY
Engineering Support Team: 1-888-753-7446
Locations:
New York, NY
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Plymouth, IN
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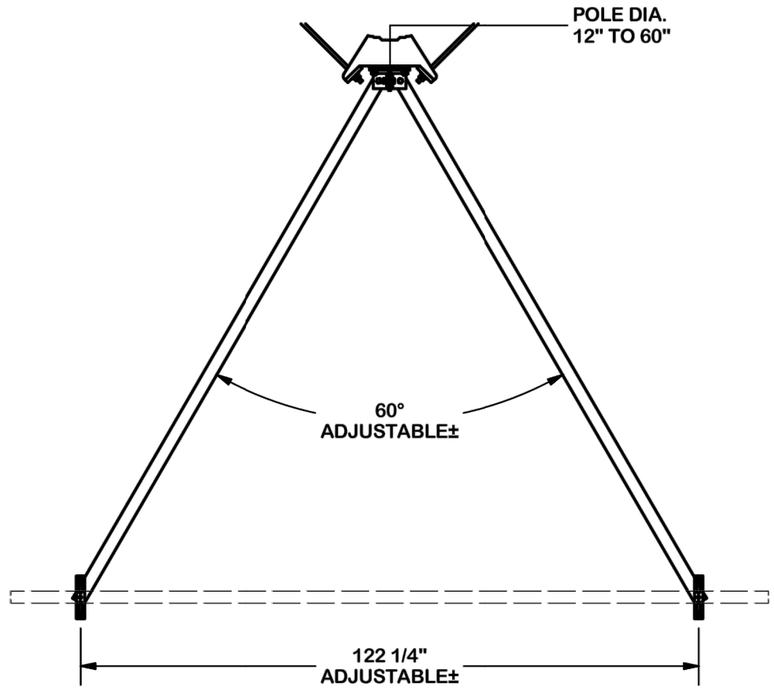
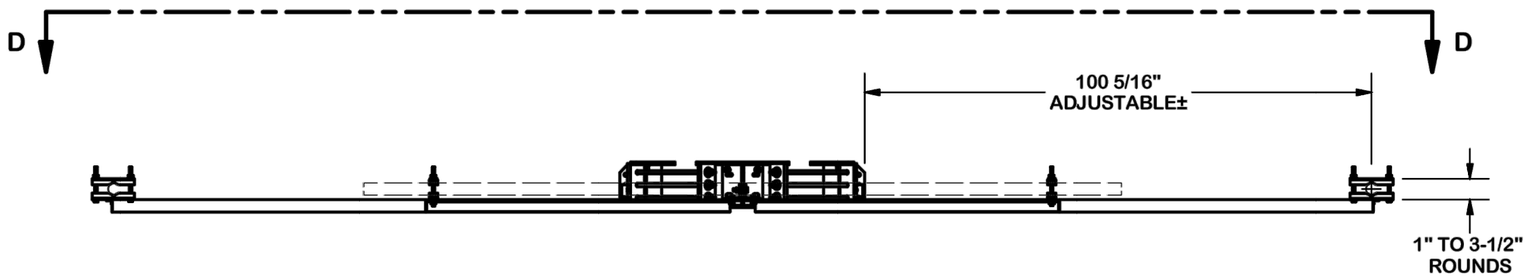
Dallas, TX



VIEW D-D

HORIZONTAL POSITION



NOTES:

1. 3.5"Ø MAX HANDRAIL CONNECTION
2. 12" TO 60" POLE Ø
3. FIELD CUT/DRILL ANG21214-10-50 TO SUIT
4. PLACE A FLAT WASHER OVER EVERY SLOT

TOLERANCE NOTES

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

DESCRIPTION
HANDRAIL REINFORCEMENT KIT
(QUAD)

CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.
SP1	CSL 10/23/2017		PQ-SFS

CLASS	SUB	DRAWING USAGE	CHECKED BY	DWG. NO.
81	01	CUSTOMER		PQ-SFS

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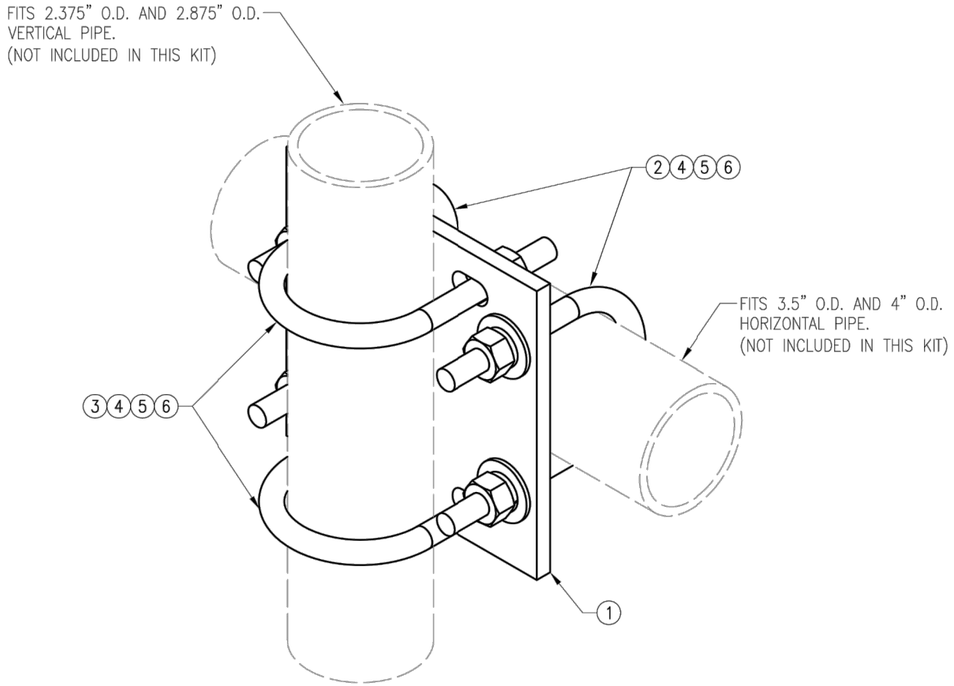
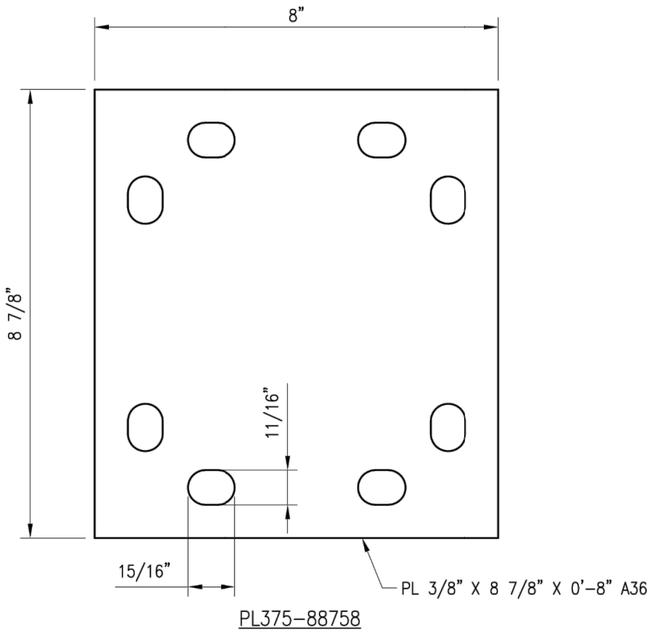




PL375-88758

NOTES:
1. HOT-DIPPED GALVANIZED PER ASTM A123.

VZWSMART-MSK2 (CROSSOVER PLATE)

ITEM NO.	QTY.	PART NO.	DESCRIPTION	SHEET #	WT
1	1	PL375-88758	PL 3/8" X 8 3/4" X 0'-8" A36	MSK2-F1	8
2	2	MS02-625-4125-600	RU-BOLT 5/8" X 4 1/8" I.W. X 6" I.L. A36 (OR EQUIV.)	RBC-1	3
3	2	MS02-625-300-500	RU-BOLT 5/8" X 3" I.W. X 5" I.L. A36 (OR EQUIV.)	RBC-1	3
4	8	FW-625	5/8" HDG USS FLAT WASHER	---	1
5	8	LW-625	5/8" HDG LOCK WASHER	---	0
6	8	NUT-625	5/8" HDG HEX NUT	---	1
				GALVANIZED WT	15

VzW SMART Tool© Vendor

verizon

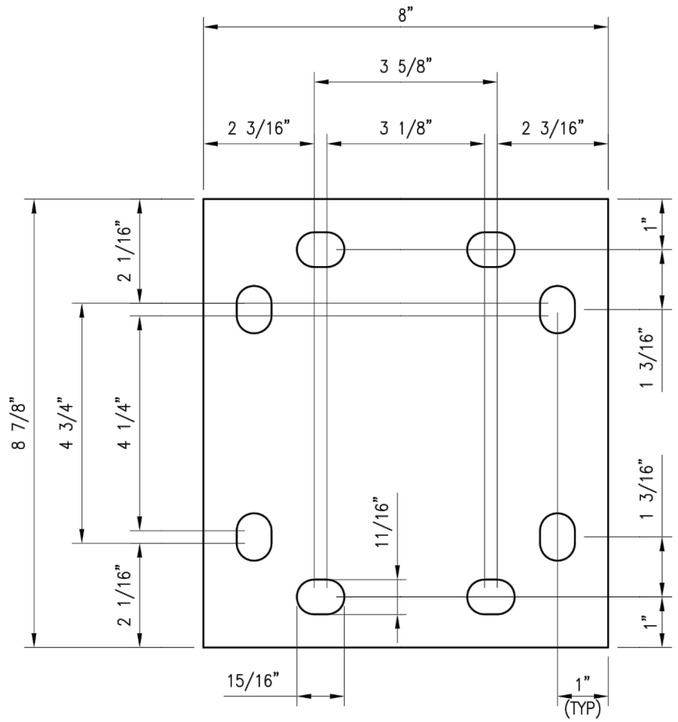
DRAWN BY: H.R | CHECKED BY: HMA

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

SHEET TITLE:
VZWSMART-MSK2
CROSSOVER PLATE

SHEET NUMBER: VZWSMART-MSK2

REV #: 0



PL375-88758
PL 3/8" X 8 7/8" X 0'-8" A36
(7.65 LBS)

NOTES:
1. HOT-DIPPED GALVANIZED PER ASTM A123.

VzW
SMART Tool©
Vendor

verizon

DRAWN BY: H.R | CHECKED BY: HMA

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

SHEET TITLE:

FABRICATION DETAILS

SHEET NUMBER: MSK2-F1

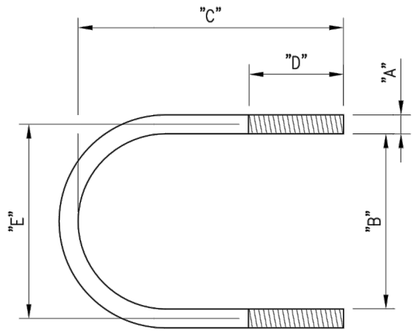
REV #: 0

STANDARD RU-BOLT CHART							
DESCRIPTION	(EQUIVALENT PART NO.)	"A"	"B"	"C"	"D"	"E"	"WGT"
3/8" RU-BOLT	MS02-375-8125-1625	3/8"	13/16"	1 5/8"	7/8"	1 3/16"	0.26
3/8" RU-BOLT	MS02-375-100-225	3/8"	1"	2 1/4"	1 1/4"	1 3/8"	0.30
3/8" RU-BOLT	MS02-375-125-225	3/8"	1 1/4"	2 1/4"	1 1/4"	1 5/8"	0.30
3/8" RU-BOLT	MS02-375-1125-18125	3/8"	1 1/8"	1 13/16"	1 1/4"	1 1/2"	0.27
3/8" RU-BOLT	MS02-375-150-250	3/8"	1 1/2"	2 1/2"	1 1/4"	1 7/8"	0.32
3/8" RU-BOLT	MS02-375-150-275	3/8"	1 1/2"	2 3/4"	1 5/8"	1 7/8"	0.34
3/8" RU-BOLT	MS02-375-150-300	3/8"	1 1/2"	3"	1 3/4"	1 7/8"	0.35
3/8" RU-BOLT	MS02-375-175-275	3/8"	1 3/4"	2 3/4"	1 1/8"	2 1/8"	0.34
3/8" RU-BOLT	MS02-375-200-2625	3/8"	2"	2 5/8"	1 1/4"	2 3/8"	0.34
3/8" RU-BOLT	MS02-375-200-125	3/8"	2"	3"	1-1/4"	2-3/8"	0.40
3/8" RU-BOLT	MS02-375-2125-300	3/8"	2 1/8"	3"	1 1/4"	2 1/2"	0.36
3/8" RU-BOLT	MS02-375-250-30625	3/8"	2 1/2"	3 1/16"	1 1/4"	2 7/8"	0.38
3/8" RU-BOLT	MS02-375-250-3125	3/8"	2 1/2"	3 1/8"	1 1/4"	2 7/8"	0.37
3/8" RU-BOLT	MS02-375-250-3625	3/8"	2 1/2"	3-5/8"	1 3/4"	2 7/8"	0.45
3/8" RU-BOLT	MS02-375-300-3625	3/8"	3"	3 5/8"	1 1/4"	3 3/8"	0.42
3/8" RU-BOLT	MS02-375-300-425	3/8"	3"	4 1/4"	2"	3 3/8"	0.50
3/8" RU-BOLT	MS02-375-300-6625	3/8"	3	6 5/8"	3	3 3/8"	0.53
3/8" RU-BOLT	MS02-375-350-4125	3/8"	3 1/2"	4 1/8"	1 1/4"	3 7/8"	0.46
3/8" RU-BOLT	MS02-375-350-475	3/8"	3 1/2"	4 3/4"	2"	3 7/8"	0.50
3/8" RU-BOLT	MS02-375-400-575	3/8"	4"	5 3/4"	2 1/2"	4 3/8"	0.60
1/2" RU-BOLT	MS02-500-75-350	1/2"	3/4"	3 1/2"	2 1/2"	1 1/4"	0.60
1/2" RU-BOLT	MS02-500-1563-350	1/2"	1 9/16"	3 1/2"	2"	2 1/16"	0.62
1/2" RU-BOLT	MS02-500-200-300	1/2"	2"	3"	1 1/4"	2 1/2"	0.55
1/2" RU-BOLT	MS02-500-200-375	1/2"	2"	3 3/4"	1 3/4"	2 1/2"	0.67
1/2" RU-BOLT	MS02-500-20625-500	1/2"	2 1/16"	5	3"	2 9/16"	0.80
1/2" RU-BOLT	MS02-500-225-450	1/2"	2 1/4"	4 1/2"	2 1/2"	2 3/4"	0.76
1/2" RU-BOLT	MS02-500-2438-3625	1/2"	2 7/16"	3 5/8"	1 3/4"	2 15/16"	0.67
1/2" RU-BOLT	MS02-500-2438-5375	1/2"	2 7/16"	5 3/8"	3"	2 15/16"	0.86
1/2" RU-BOLT	MS02-500-250-400	1/2"	2 1/2"	4"	2 1/2"	3"	0.70
1/2" RU-BOLT	MS02-500-250-450	1/2"	2 1/2"	4 1/2"	2 1/2"	3"	0.76
1/2" RU-BOLT	MS02-500-29375-575	1/2"	2 15/16"	5 3/4"	3"	3 7/16"	0.92
1/2" RU-BOLT	MS02-500-300-4125	1/2"	3"	4 1/8"	2"	3 1/2"	0.74
1/2" RU-BOLT	MS02-500-300-450	1/2"	3"	4 1/2"	1 5/8"	3 1/2"	0.73
1/2" RU-BOLT	MS02-500-300-500	1/2"	3"	5"	2 1/2"	3 1/2"	0.84
1/2" RU-BOLT	MS02-500-350-500	1/2"	3 1/2"	5"	1 1/2"	4"	0.78
1/2" RU-BOLT	MS02-500-350-850	1/2"	3 1/2"	8 1/2"	3"	4"	1.09
1/2" RU-BOLT	MS02-500-3625-550	1/2"	3 5/8"	5 1/2"	3"	4 1/8"	1.10
1/2" RU-BOLT	MS02-500-3625-600	1/2"	3 5/8"	6"	2 1/2"	4 1/8"	0.97
1/2" RU-BOLT	MS02-500-3563-450	1/2"	3 9/16"	4 1/2"	2"	4 1/16"	0.80
1/2" RU-BOLT	MS02-500-3563-650	1/2"	3 9/16"	6 1/2"	3"	4 1/16"	1.02
1/2" RU-BOLT	MS02-500-400-550-B	1/2"	4"	5 1/2"	1 1/2"	4 1/2"	0.84
1/2" RU-BOLT	MS02-500-400-550	1/2"	4"	5 1/2"	2"	4 1/2"	0.92
1/2" RU-BOLT	MS02-500-4063-700	1/2"	4 1/16"	7"	3"	4 9/16"	1.09
1/2" RU-BOLT	MS02-500-4125-600	1/2"	4 1/8"	6"	2 1/2"	4 5/8"	0.98
1/2" RU-BOLT	MS02-500-450-600	1/2"	4 1/2"	6"	1 1/2"	5"	0.89
1/2" RU-BOLT	MS02-500-4625-700	1/2"	4 5/8"	7"	2 1/2"	5 1/8"	1.11
1/2" RU-BOLT	MS02-500-4563-750	1/2"	4 9/16"	7 1/2"	3"	5 1/16"	1.16
1/2" RU-BOLT	MS02-500-5625-725	1/2"	5 5/8"	7 1/4"	2"	6 1/8"	1.04
1/2" RU-BOLT	MS02-500-4563-575	1/2"	4 9/16"	5 3/4"	2"	5 1/16"	0.97
1/2" RU-BOLT	MS02-500-5563-700	1/2"	5 9/16"	7"	2"	6 1/16"	1.14
1/2" RU-BOLT	MS02-500-575-750	1/2"	5 3/4"	7 1/2"	2 1/2"	6 1/4"	1.22
1/2" RU-BOLT	MS02-500-6625-800	1/2"	6 5/8"	8"	3"	7 1/8"	1.28
1/2" RU-BOLT	MS02-500-675-850	1/2"	6 3/4"	8 1/2"	2 1/2"	7 1/4"	1.17
1/2" RU-BOLT	MS02-500-675-8375	1/2"	6 3/4"	8 3/8"	2"	7 1/4"	1.24
1/2" RU-BOLT	MS02-500-8750-1025	1/2"	8 3/4"	10 1/4"	3"	9 1/4"	1.60
1/2" RU-BOLT	MS02-500-875-10375	1/2"	8 3/4"	10 3/8"	2"	9 1/4"	1.34
1/2" RU-BOLT	MS02-500-10875-1300	1/2"	10 7/8"	1'-1"	3"	11 3/8"	1.98

NOTES:

IF EQUIVALENT U–BOLTS ARE USED, THE FOLLOWING SPECIFICATIONS ARE REQUIRED:

1. THE MATERIAL SHALL BE HOT ROLLED STEEL WITH A MINIMUM YIELD STRENGTH OF 36 KSI.
2. ALL U–BOLTS SHALL BE HOT DIP GALVANIZED PER ASTM A153–78.
3. TOLERANCE: FOR "C" AND "D" +/– 1/16", "B" AND "E" + 1/16", "A" +/– 1/32".



STANDARD RU-BOLT CHART							
DESCRIPTION	(EQUIVALENT PART NO.)	"A"	"B"	"C"	"D"	"E"	"WGT"
5/8" RU-BOLT	MS02-625-200-375	5/8"	2"	3 3/4"	2"	2 5/8"	1.15
5/8" RU-BOLT	MS02-625-2063-500	5/8"	2 1/16"	5"	3"	2 11/16"	1.32
5/8" RU-BOLT	MS02-625-2438-5375	5/8"	2 7/16"	5 3/8"	3"	3 1/16"	1.40
5/8" RU-BOLT	MS02-625-250-400	5/8"	2 1/2"	4"	2 1/2"	3 1/8"	1.17
5/8" RU-BOLT	MS02-625-2625-450	5/8"	2 5/8"	4 1/2"	2"	3 1/4"	1.20
5/8" RU-BOLT	MS02-625-2563-550	5/8"	2 9/16"	5 1/2"	3"	3 3/16"	1.43
5/8" RU-BOLT	MS02-625-2938-5875	5/8"	2 15/16"	5 7/8"	3"	3 9/16"	1.52
5/8" RU-BOLT	MS02-625-300-400	5/8"	3"	4"	2"	3 5/8"	1.20
5/8" RU-BOLT	MS02-625-300-500	5/8"	3"	5"	3"	3 5/8"	1.37
5/8" RU-BOLT	MS02-625-3063-600	5/8"	3 1/16"	6"	3"	3 11/16"	1.54
5/8" RU-BOLT	MS02-625-3625-600	5/8"	3 5/8"	6"	3"	4 1/4"	1.45
5/8" RU-BOLT	MS02-625-3563-650	5/8"	3 9/16"	6 1/2"	3"	4 3/16"	1.65
5/8" RU-BOLT	MS02-625-4063-700	5/8"	4 1/16"	7"	3"	4 11/16"	1.77
5/8" RU-BOLT	MS02-625-4125-600	5/8"	4 1/8"	6"	3"	4 3/4"	1.60
5/8" RU-BOLT	MS02-625-4625-700	5/8"	4 5/8"	7"	3"	5 1/4"	1.60
5/8" RU-BOLT	MS02-625-4563-750	5/8"	4 9/16"	7 1/2"	3"	5 3/16"	1.87
5/8" RU-BOLT	MS02-625-4813-775	5/8"	4 13/16"	7 3/4"	3"	5 7/16"	1.93
5/8" RU-BOLT	MS02-625-500-700	5/8"	5"	7"	3"	5 5/8"	1.96
5/8" RU-BOLT	MS02-625-5063-800	5/8"	5 1/16"	8"	3"	5 11/16"	1.99
5/8" RU-BOLT	MS02-625-5625-85625	5/8"	5 5/8"	8 9/16"	3"	6 1/4"	2.11
5/8" RU-BOLT	MS02-625-575-800	5/8"	5 3/4"	8"	3"	6 3/8"	2.02
5/8" RU-BOLT	MS02-625-6688-9625	5/8"	6 11/16"	9 5/8"	3"	7 5/16"	2.35
5/8" RU-BOLT	MS02-625-6750-900	5/8"	6 3/4"	9"	3"	7 3/8"	2.24
5/8" RU-BOLT	MS02-625-8688-11625	5/8"	8 11/16"	11 5/8"	3"	9 3/16"	2.80
5/8" RU-BOLT	MS02-625-875-1100	5/8"	8 3/4"	11"	3"	9 3/8"	2.70
5/8" RU-BOLT	MS02-625-10688-1375	5/8"	10 13/16	13 3/4"	3"	11 7/16"	3.27
5/8" RU-BOLT	MS02-625-12875-1575	5/8"	12 7/8"	15 3/4"	3"	13 1/2"	3.72
5/8" RU-BOLT	MS02-625-14125-1700	5/8"	14 1/8"	17"	3"	14 3/4"	4.01

VzW SMART Tool© Vendor

verizon

DRAWN BY: H.R | CHECKED BY: HMA

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

SHEET TITLE:

RU–BOLT CHART

SHEET NUMBER: RBC–1

REV #: 0