



January 8, 2024

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

**RE: Notice of Exempt Modification // Site: Naugatuck West CT (ATC: 415438)
0 Old Shelton Rd (off Lane St) aka 15 Soundview Ave, Shelton, CT
N 41.295 // W -73.137**

Dear Ms. Bachman:

Cellco Partnership d/b/a Verizon Wireless currently maintains 15 antennas at the 120-foot level on the existing 120.6-foot monopine tower, located off Lane St (0 Old Shelton Rd) at the Harry B. Brownson Country Club, 15 Soundview Ave, Shelton, CT. The Council approved Verizon Wireless use of the tower in 2009. The tower is owned by American Tower. The property is owned by Harry B. Brownson Country Club. Verizon Wireless now intends to remove 6 of its existing antennas and to replace with 3 installing 3 on T-Arm mounts for the LTE (700/850/1900/2100/3500 MHz) PCS/AWS/CBRS upgrade. 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 City of Shelton's Mayor Mark A. Lauretti, to its Planning & Zoning Administrator Rick Schultz, to American Tower, the tower owner, and to the ground owner, Brownson Country Club.

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 December 29, 2023, structural analysis dated November 28, 2023 and antenna mount analysis dated October 10, 2023, as well as radio frequency (RF) analysis table showing worst-case RF emission calculation by Verizon Wireless RF Design Engineering.

1. The proposed modifications will not result in an increase in the height of the existing structure.
2. The proposed modifications will not require the extension of the site boundary.
3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.



-
4. The operation of the new antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.
 5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
 6. The existing structure and its foundation can support the proposed loading, as shown in the attached structural analysis by A.T. Engineering Service, PLLC, dated November 28, 2023 and stamped December 6, 2023 and mount analysis dated and stamped October 10, 2023.

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,

A handwritten signature in black ink that reads "Cassandra Darmody". The signature is written in a cursive, flowing style.

Cassandra Darmody
Agent for American Tower
c/o Pyramid Network Services, LLC
6615 Towpath Road
East Syracuse, NY 13057
Cell (315) 569-9241
Fax (315) 445-0653

Attachments

cc: Mark A. Lauretti, Mayor, City of Shelton - as elected official
Richard Schultz, AICP, Planning & Zoning Administrator, City of Shelton - as P&Z official
Harry B. Brownson Country Club - as ground owner
American Tower Corporation - as tower owner

ORIGIN ID:SYRA (315) 569-9241
CASSANDRA DARMODY
PYRAMID NETWORK SERVICES LLC
6615 TOWPATH RD

SHIP DATE: 09JAN24
ACTWGT: 0.50 LB
CAD: 114425996/INET4660

E SYRACUSE, NY 13057
UNITED STATES US

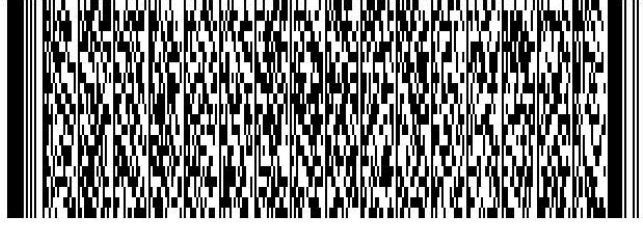
BILL SENDER

TO **MAYOR MARK LAURETTI**
CITY OF SHELTON
54 HILL STREET

583J3/B014QAE3

SHELTON CT 06484

(203) 924-1555 REF: ATCNY2000 BROWNSON CO CLUB
INV: ATCNY2000 BROWNSON CO CLUB
PO: ATCNY2000 BROWNSON CO CLUB DEPT:

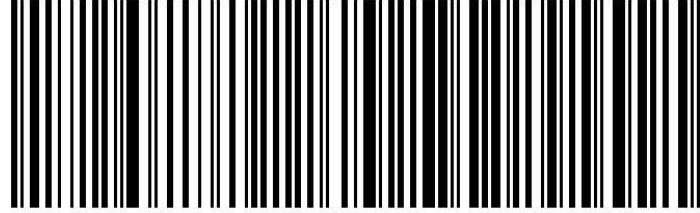


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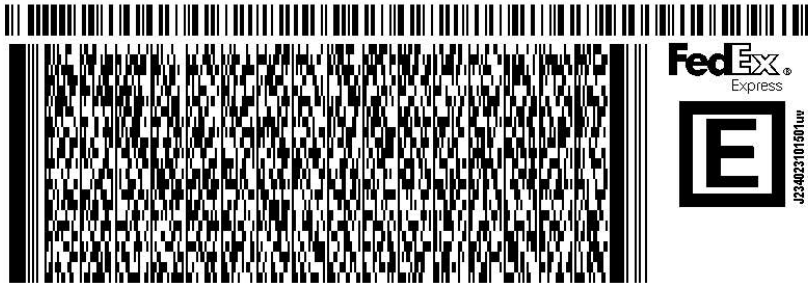
E SYRACUSE, NY 13057
UNITED STATES US

BILL SENDER

TO **RICHARD SCHULTZ, AICP**
CITY OF SHELTON
PLANNING & ZONING ADMINISTRATOR
54 HILL STREET
SHELTON CT 06484

583J3/B014QAE3

(203) 924-1555 X 1510 REF: ATCNY2000 BROWNSON CO CLUB
INV: ATCNY2000 BROWNSON CO CLUB
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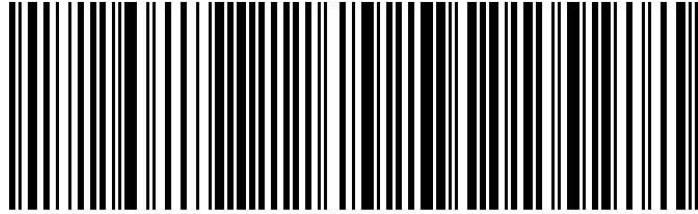


THU - 11 JAN 5:00P
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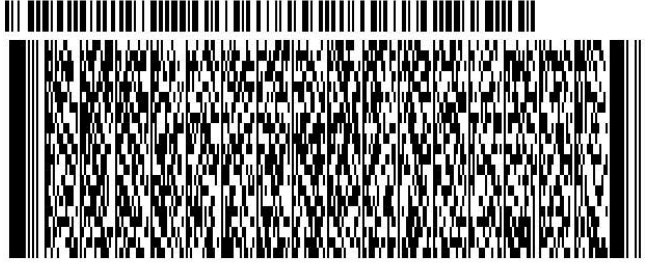
TO **HARRY B. BROWNSON COUNTRY CLUB**

15 SOUNDVIEW AVENUE

SHELTON CT 06484

(203) 929-0555 REF: ATCNY2000 BROWNSON CO CLUB
INV: ATCNY2000 BROWNSON CO CLUB
PO: ATCNY2000 BROWNSON CO CLUB DEPT:

583J3/B014QAE3

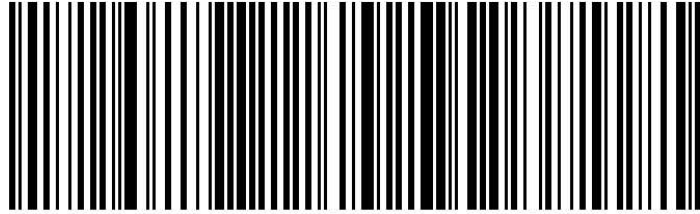


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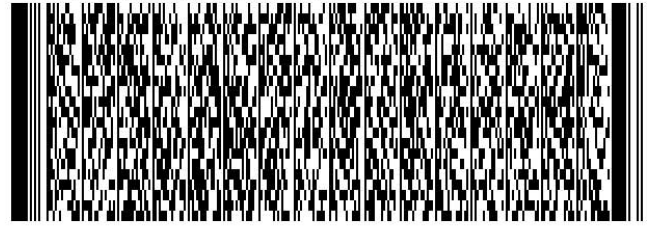
E SYRACUSE, NY 13057
UNITED STATES US

BILL SENDER

TO **DEVON CARTWRIGHT**
AMERICAN TOWER CORP
1 FENTON MAIN
SUITE 300
CARY NC 27511

583J3/B014QAE3

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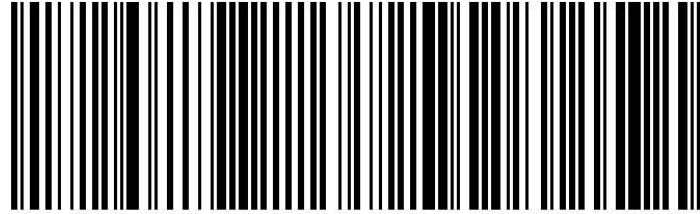


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DOCKET NO. 382 – Cellco Partnership d/b/a Verizon Wireless } Connecticut
application for a Certificate of Environmental Compatibility and }
Public need for the construction, maintenance and operation of a } Siting
telecommunications facility located off Lane Street, Shelton, } Council
Connecticut. }

December 3, 2009

Decision and Order

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, operation, and maintenance of a telecommunications facility, 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 application, and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes § 16-50k, be issued to Cellco Partnership d/b/a Verizon Wireless, hereinafter referred to as the Certificate Holder, for a telecommunications facility located at the Brownson Country Club off Lane Street, Shelton, 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 monopole tower shall be designed and constructed as a monopole, no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of the Certificate Holder and other entities, both public and private, but such monopole shall not exceed a height of 120 feet above ground level. The Certificate Holder shall provide plans and photo-simulations of a monopole in the form of a simulated pine tree for Council consideration. The final form of the tower will be decided by the Council during the Development and Management Plan approval.
2. 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 with a monopole option and a stealth tree design option, shall be served on the City of Shelton for comment, and all parties and intervenors as listed in the service list, and submitted to the Council for review and approval prior to the commencement of facility construction and shall include:
 - a) a final site plan(s) of site development to include specifications for the tower, tower foundation, antennas, equipment compound, radio equipment, access road, utility line, and landscaping;
 - b) construction plans for site clearing, grading, landscaping, water drainage, and erosion and sedimentation controls consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended.
 - c) the width of access road shall be minimized to the greatest practical extent.
 - d) the access gate at the entrance on Lane Street shall conform to the character of the neighborhood; and
 - e) screening vegetation along the west side of the compound.

3. The Certificate Holder shall, prior to the commencement of operation, provide the Council worst-case modeling of the electromagnetic radio frequency power density of all proposed entities' antennas at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin No. 65, August 1997. The Certificate Holder shall ensure a recalculated report of the electromagnetic radio frequency power density be submitted to the Council if and when circumstances in operation cause a change in power density above the levels calculated and provided pursuant to this Decision and Order.
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 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.
6. The Certificate Holder shall provide reasonable space on the tower for no compensation for any City of Shelton public safety services (police, fire and medical services), provided such use can be accommodated and is compatible with the structural integrity of the tower.
7. Unless otherwise approved by the Council, if the facility authorized herein is not fully constructed and providing wireless services within eighteen months from the date of the mailing of the Council's Findings of Fact, Opinion, and Decision and Order (collectively called "Final Decision"), this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made. The time between the filing and resolution of any appeals of the Council's Final Decision shall not be counted in calculating this deadline.
8. Any request for extension of the time period referred to in Condition 7 shall be filed with the Council not later than 60 days prior to the expiration date of this Certificate and shall be served on all parties and intervenors, as listed in the service list, and the City of Shelton. Any proposed modifications to this Decision and Order shall likewise be so served.
9. At least one wireless telecommunications carrier shall install their equipment and shall become operational not later than 120 days after the tower is erected. Authority to monitor and modify this schedule, as necessary, is delegated to the Executive Director. The Certificate Holder shall provide written notice to the Executive Director of any schedule changes as soon as is practicable.
10. If the facility ceases to provide wireless services for a period of one year, this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made.
11. The Certificate Holder shall remove any nonfunctioning antenna, and associated antenna mounting equipment, within 60 days of the date the antenna ceased to function.
12. In accordance with Section 16-50j-77 of the Regulations of Connecticut State Agencies, the Certificate Holder shall provide the Council with written notice two weeks prior to the commencement of site construction activities. In addition, the Certificate Holder shall provide the Council with written notice of the completion of site construction and the commencement of site operation.

Pursuant to General Statutes § 16-50p, the Council hereby directs 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 Connecticut Post.

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

Cellco Partnership d/b/a
Verizon Wireless

Its Representative

Kenneth C. Baldwin, Esq.
Robinson & Cole LLP
280 Trumbull Street
Hartford, CT 06103-3597

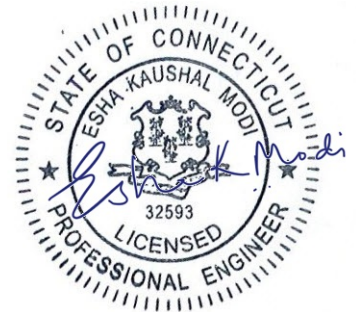
Sandy Carter, Regulatory Manager
Verizon Wireless
99 East River Drive
East Hartford, CT 06108



AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure : 121 ft Monopine
ATC Asset Name : Brownson Country Club CT
ATC Asset Number : 415438
Engineering Number : 14568691_C3_01
Proposed Carrier : VERIZON WIRELESS
Carrier Site Name : HUNTINGTON CT
Carrier Site Number : 5000062640
Site Location : 15 Soundview Avenue
SHELTON, CT 06484-2844
41.2951° N, 73.1374° W
County : Fairfield
Date : November 28, 2023
Max Usage : 45%
Analysis Result : Pass



COA: PEC.0001553



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Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 121 ft Monopine tower to reflect the change in loading by VERIZON WIRELESS.

Supporting Documents

Tower:	EI Project #16219, dated March 1, 2012 Mapping by Hightower Solutions Job #415438, dated August 12, 2015
Foundation:	Mapping by TPS Report #TPS-FL-CT-438, dated September 10, 2015
Geotechnical:	FDH Velocitel Project #15BXNW1600, dated August 21, 2015

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:	118 mph (3-second gust)
Basic Wind Speed w/ Ice:	50 mph (3-second gust) w/ 1.00" radial ice concurrent
Code(s):	ANSI/TIA-222-H / 2021 IBC / 2022 Connecticut State Building Code
Exposure Category:	B
Risk Category:	II
Topographic Factor Procedure:	Method 1
Topographic Category:	1
Spectral Response:	$S_s = 0.21$, $S_1 = 0.05$
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 reach out to your American Tower contact. If you do not have an American Tower contact and have an Engineering question, please contact Engineering@americantower.com. Please include the American Tower asset name, asset number, and engineering number in the subject line for any questions.

Structure Usages

Structural Component	Usage	Control	Result
Pole Shaft	45.7%	1.2D + 1.0W	Pass
Serviceability Usage	16.3%	1.0D + 1.0W	Pass
Base Plate @ 0.0 ft	42.9%	Rods	Pass
Pier	14.2%	Moment [Soil]	Pass

Maximum Reactions

Foundation	Moment (k-ft)	Axial (k)	Shear (k)
Monopole Base	5,003.8	54.3	58.8

**Reactions shown reflect the results from the Load Case with maximum Moment*

Structure base reactions were analyzed using available geotechnical and foundation information.

VERIZON WIRELESS Final Loading

Elev (ft)	Qty	Equipment	Lines
120.0	1	RFS DB-C1-12C-24AB-0Z	(6) 1 5/8" Coax (1) 2.02 (51.2mm) Hybrid
	3	T-Arm	
	3	Samsung B2/B66A RRH-BR049	
	3	Samsung B5/B13 RRH-BR04C	
	3	Samsung MT6413-77A	
	3	Samsung Outdoor CBRS 20W RRH –Clip-on Antenna	
	3	Samsung RT4401-48A	
	6	Quintel QS6656-5D	
118.0	1	Unused Reserve (20929.7400 sqin)	-

Other Existing/Reserved Loading

Elev (ft)	Qty	Equipment	Lines	Carrier
105.0	1	Raycap RDIDC-9181-PF-48	(1) 1.41" (35.8mm) Hybrid	DISH WIRELESS L.L.C.
	3	Commscope FFVV-65B-R2		
	3	Fujitsu TA08025-B604		
	3	Fujitsu TA08025-B605		
	3	T-Arm		

(If table breaks across pages, please see previous page for data in merged cells)



Standard Conditions

All engineering services performed by A.T. Engineering Services LLC 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 Services LLC

It is the responsibility of the client to ensure that the information provided to A.T. Engineering Services LLC 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 Services LLC, 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 Services LLC is not responsible for the conclusions, opinions and recommendations made by others based on the information supplied herein.

ANALYSIS PARAMETERS

Nominal Wind: 118 mph	Ice Wind: 50 mph w/ 1" ice	Service Wind: 60 mph
Risk Category: II	Exposure: B	S _c : 0.205 S _i : 0.054
Topo Category: 1	Topo Factor: Method 1	Topo Feature:
Structure Height: 120.65 ft	Base Elevation: 0.00 ft	Structure Type: Taper
Base Diameter: 66 in	Base Rotation: 0°	Taper: 0.3100 (in/ft)

POLE SECTION PROPERTIES

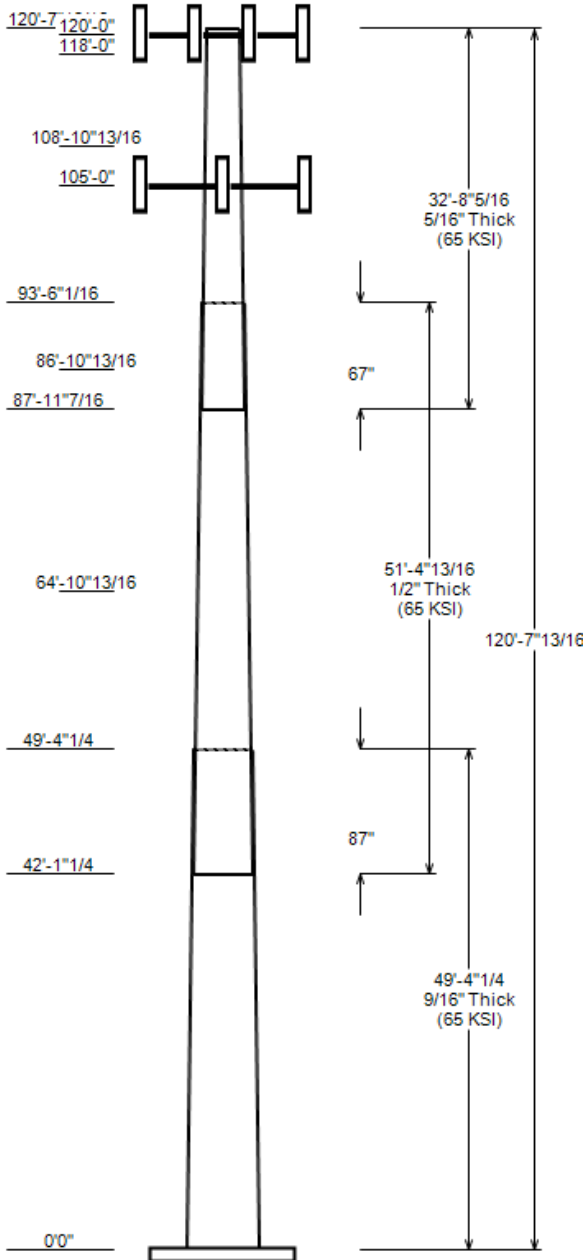
Section	Length (ft)	Flat Diameter (in)		Thick (in)	Joint Type	Joint Length (in)	Pole Shape	Yield Strength (ksi)
		Top	Bottom					
1	49.354	50.70	66.00	0.562		0.000	18 Sides	65
2	51.401	38.01	53.94	0.500	Slip Joint	86.970	18 Sides	65
3	32.695	30.22	40.36	0.312	Slip Joint	66.630	18 Sides	65

DISCRETE APPURTENANCE

Elev (ft)	Description
120.0	(3) Samsung Outdoor CBRS 20W RRH -
120.0	(3) Samsung RT4401-48A
120.0	(3) Samsung B5/B13 RRH-BR04C
120.0	(3) Samsung B2/B66A RRH-BR049
120.0	(3) Samsung MT6413-77A
120.0	(1) RFS DB-C1-12C-24AB-0Z
120.0	(6) Quintel QS6656-5D
120.0	(3) Generic Flat T-Arm
118.0	(1) VZW Unused Reserve (20604.27 s
118.0	(1) Unused Reserve (20929.7400 sqi
108.9	(1) Branches
105.0	(1) Raycap RDIDC-9181-PF-48
105.0	(3) Fujitsu TA08025-B605
105.0	(3) Fujitsu TA08025-B604
105.0	(3) Commscope FFVV-65B-R2
105.0	(3) Generic Flat T-Arm
86.9	(1) Branches
64.9	(1) Branches

LINEAR APPURTENANCE

Elev To (ft)	Description
120.0	(1) 2.02 (51.2mm) Hybrid
120.0	(6) 1 5/8" Coax
105.0	(1) 1.41" (35.8mm) Hybrid



GLOBAL BASE REACTIONS

Load Case	Moment (kip-ft)	Axial (kip)	Shear (kip)
1.2D + 1.0W	5003.78	54.29	58.79
0.9D + 1.0W	4990.61	40.70	58.78
1.2D + 1.0Di + 1.0Wi	1319.91	67.30	15.62
1.2D + 1.0Ev + 1.0Eh	218.71	53.82	2.55
0.9D - 1.0Ev + 1.0Eh	218.00	37.06	2.55
1.0D + 1.0W	1155.66	45.29	13.60

ANALYSIS PARAMETERS

Location:	Fairfield County,CT	Height:	120.65 ft
Type and Shape:	Taper, 18 Sides	Base Diameter:	66.00 in
Manufacturer:	EEL	Top Diameter:	30.22 in
K_d (non-service):	0.95	Taper:	0.3100 in/ft
K_e:	0.99	Rotation:	0.000°

ICE & WIND PARAMETERS

Risk Category:	II	Design Wind Speed:	118 mph
Exposure Category:	B	Design Wind Speed w/ Ice:	50 mph
Topo Factor Procedure:	Method 1	Design Ice Thickness:	1.00 in
Topographic Category:	1	Service Wind Speed:	60 mph
Crest Height:	0 ft	HMSL:	304.00 ft

SEISMIC PARAMETERS

Analysis Method:	Equivalent Lateral Force Method		
Site Class:	D - Stiff Soil	Period Based on Rayleigh Method (sec):	1.02
T_L (sec):	6	P:	1
S_s:	0.205	S₁:	0.054
F_a:	1.600	F_v:	2.400
S_{ds}:	0.219	S_{d1}:	0.086
		C_s:	0.056
		C_s Max:	0.056
		C_s Min:	0.030

LOAD CASES

1.2D + 1.0W	118 mph Wind with No Ice
0.9D + 1.0W	118 mph Wind with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph Wind with 1" Radial Ice
1.2D + 1.0Ev + 1.0Eh	Seismic
0.9D - 1.0Ev + 1.0Eh	Seismic (Reduced DL)
1.0D + 1.0W	60 mph Wind with No Ice

SHAFT SECTION PROPERTIES

Section	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Joint Len (in)	Weight (lb)	Bottom						Top							
							Dia (in)	Elev (ft)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Taper (in/ft)	
1-18	49.35	0.5625	65		0.00	17,326	66.00	-0.004	116.83	63,204.4	19.28	117.33	50.70	49.35	89.51	28,425.	14.48	90.13	0.3100	
2-18	51.40	0.5000	65	Slip	86.97	12,623	53.94	42.109	84.81	30,608.5	17.61	107.89	38.01	93.51	59.52	10,580.	11.99	76.02	0.3100	
3-18	32.70	0.3125	65	Slip	66.63	3,859	40.36	87.955	39.72	8,045.7	21.36	129.14	30.22	120.65	29.66	3,351.8	15.64	96.70	0.3100	
Total Shaft Weight						33,808														

DISCRETE APPURTENANCE PROPERTIES

Attach Elev (ft)	Description	Qty	Vert Ecc (ft)	No Ice			Ice			
				Weight (lb)	EPAA (sf)	Orientation Factor	Weight (lb)	EPAA (sf)	Orientation Factor	
120.00	Quintel QS6656-5D	6	0.80	0.000	88.00	8.133	0.74	218.06	9.953	0.74
120.00	RFS DB-C1-12C-24AB-0Z	1	0.80	0.000	32.00	4.056	1.00	114.96	4.947	1.00
120.00	Samsung MT6413-77A	3	0.80	0.000	57.30	3.805	0.61	112.72	4.672	0.61
120.00	Samsung B2/B66A RRH-BR049	3	0.80	0.000	84.40	1.875	0.50	126.04	2.464	0.50
120.00	Samsung B5/B13 RRH-BR04C	3	0.80	0.000	70.30	1.875	0.50	107.64	2.464	0.50
120.00	Generic Flat T-Arm	3	0.75	0.000	450.00	12.900	0.67	859.27	18.238	0.67
120.00	Samsung RT4401-48A	3	0.80	0.000	18.60	0.996	0.50	36.23	1.443	0.50
120.00	Samsung Outdoor CBRS 20W RRH -	3	0.80	0.000	4.40	0.892	0.50	16.15	1.309	0.50
118.00	Unused Reserve (20929.7400 sqj	1	0.80	0.000	1235.00	145.345	0.90	1795.41	211.299	0.90
108.90	Branches	1	1.00	0.000	1125.00	290.500	1.00	1631.15	421.199	1.00
105.00	Generic Flat T-Arm	3	0.75	0.000	450.00	12.900	0.67	853.20	18.159	0.67
105.00	Commscope FFVV-65B-R2	3	0.80	0.000	70.80	12.271	0.64	232.41	14.074	0.64
105.00	Fujitsu TA08025-B605	3	0.80	0.000	75.00	1.962	0.50	115.29	2.554	0.50
105.00	Raycap RDIDC-9181-PF-48	1	0.80	0.000	21.90	1.867	1.00	58.42	2.446	1.00
105.00	Fujitsu TA08025-B604	3	0.80	0.000	63.90	1.962	0.50	101.40	2.554	0.50
86.90	Branches	1	1.00	0.000	1575.00	406.700	1.00	2268.29	585.722	1.00
64.90	Branches	1	1.00	0.000	1800.00	464.800	1.00	2567.42	662.965	1.00
Totals		Row Count: 17	42		10,351.00			17,425.06		

LINEAR APPURTENANCE PROPERTIES

Load Case Azimuth (deg): 0.00

Elev From (ft)	Elev To (ft)	Qty	Description	Diameter (in)	Weight (lb/ft)	Flat	Max/Row	Distance Between Rows (in)	Distance Between Cols (in)	Azimuth (deg)	Distance From Face (in)	Exposed To Wind	Carrier
0.00	120.00	6	1 5/8" Coax	1.98	0.82	N	0	0	0	0	0	N	VERIZON WIRELESS
0.00	120.00	1	2.02 (51.2mm) Hybrid	2.02	3.04	N	0	0	0	0	0	N	VERIZON WIRELESS
0.00	105.00	1	1.41" (35.8mm) Hybrid	1.41	1.66	N	0	0	0	0	0	N	DISH WIRELESS L.L.C.

SEGMENT PROPERTIES

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		0.5625	66.000	116.826	63,204.40	19.28	117.33	78.7	1886.2	0.0	0.0
5.00		0.5625	64.450	114.059	58,818.00	18.79	114.58	79.3	1797.5	0.0	1,964.1
10.00		0.5625	62.900	111.291	54,639.50	18.31	111.82	79.9	1711.0	0.0	1,917.0
15.00		0.5625	61.349	108.523	50,663.70	17.82	109.07	80.4	1626.6	0.0	1,870.0
20.00		0.5625	59.799	105.756	46,885.60	17.33	106.31	81	1544.3	0.0	1,822.9
25.00		0.5625	58.249	102.988	43,300.10	16.85	103.55	81.6	1464.1	0.0	1,775.8
30.00		0.5625	56.699	100.221	39,902.30	16.36	100.80	82.2	1386.1	0.0	1,728.7
35.00		0.5625	55.149	97.453	36,687.00	15.88	98.04	82.6	1310.3	0.0	1,681.6
40.00		0.5625	53.598	94.686	33,649.30	15.39	95.29	82.6	1236.5	0.0	1,634.5
42.11	Bot - Section 2	0.5625	52.945	93.519	32,421.40	15.19	94.12	82.6	1206.1	0.0	674.5
45.00		0.5625	52.048	91.918	30,784.10	14.90	92.53	82.6	1164.9	0.0	1,740.9
49.35	Top - Section 1	0.5000	51.698	81.249	26,907.90	16.82	103.40	81.6	1025.1	0.0	2,563.6
50.00		0.5000	51.498	80.931	26,593.40	16.75	103.00	81.7	1017.1	0.0	178.3
55.00		0.5000	49.948	78.471	24,241.20	16.20	99.90	82.3	955.9	0.0	1,356.0
60.00		0.5000	48.398	76.011	22,032.00	15.66	96.80	82.6	896.6	0.0	1,314.2
64.90		0.5000	46.878	73.600	20,001.40	15.12	93.76	82.6	840.4	0.0	1,247.3
65.00		0.5000	46.847	73.551	19,961.30	15.11	93.69	82.6	839.2	0.0	25.0

SEGMENT PROPERTIES

Seg Top Elev (ft)	Description	(Max Length: 5 ft)	Thick (in)	Flat Dia (in)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Fy (ksi)	S (in ³)	Z (in ³)	Weight (lb)
70.00			0.5000	45.297	71.091	18,024.60	14.56	90.59	82.6	783.7	0.0	1,230.5
75.00			0.5000	43.747	68.630	16,217.40	14.02	87.49	82.6	730.2	0.0	1,188.6
80.00			0.5000	42.197	66.170	14,535.20	13.47	84.39	82.6	678.5	0.0	1,146.7
85.00			0.5000	40.647	63.710	12,973.60	12.92	81.29	82.6	628.7	0.0	1,104.9
86.90			0.5000	40.057	62.775	12,410.80	12.72	80.11	82.6	610.2	0.0	408.9
87.96	Bot - Section 3		0.5000	39.730	62.256	12,105.30	12.60	79.46	82.6	600.1	0.0	224.5
90.00			0.5000	39.096	61.250	11,528.00	12.38	78.19	82.6	580.8	0.0	703.7
93.51	Top - Section 2		0.3125	38.634	38.009	7,052.10	20.39	123.63	77.4	359.5	0.0	1,180.8
95.00			0.3125	38.171	37.550	6,799.70	20.13	122.15	77.7	350.9	0.0	191.9
100.00			0.3125	36.621	36.012	5,998.10	19.25	117.19	78.8	322.6	0.0	625.8
105.00			0.3125	35.071	34.475	5,262.20	18.38	112.23	79.8	295.5	0.0	599.6
108.90			0.3125	33.862	33.275	4,731.90	17.70	108.36	80.6	275.2	0.0	449.5
110.00			0.3125	33.521	32.937	4,589.10	17.50	107.27	80.8	269.6	0.0	123.9
115.00			0.3125	31.970	31.399	3,975.90	16.63	102.31	81.8	244.9	0.0	547.3
118.00			0.3125	31.040	30.477	3,635.70	16.10	99.33	82.5	230.7	0.0	315.8
120.00			0.3125	30.420	29.862	3,420.00	15.75	97.34	82.6	221.4	0.0	205.3
120.65			0.3125	30.219	29.662	3,351.80	15.64	96.70	82.6	218.5	0.0	65.8
Total:												33,807.9

CALCULATED FORCES

Load Case: 1.2D + 1.0W

118 mph Wind with No Ice

17 Iterations

Gust Response Factor: 1.10
 Dead load Factor: 1.20
 Wind Load Factor: 1.00

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	-54.29	-58.79	0.00	-5,003.8	0.00	5,003.78	8,277.51	2,050.30	12,118.55	11,136.85	0	0	0.457
5.00	-51.76	-58.37	0.00	-4,709.8	0.00	4,709.83	8,140.09	2,001.73	11,551.25	10,690.30	0.06	-0.11	0.448
10.00	-49.29	-57.96	0.00	-4,418.0	0.00	4,417.97	7,999.82	1,953.16	10,997.55	10,248.93	0.23	-0.22	0.438
15.00	-46.88	-57.55	0.00	-4,128.2	0.00	4,128.17	7,856.70	1,904.59	10,457.45	9,813.03	0.53	-0.33	0.428
20.00	-44.53	-57.15	0.00	-3,840.4	0.00	3,840.41	7,710.74	1,856.02	9,930.94	9,382.86	0.93	-0.44	0.416
25.00	-42.23	-56.75	0.00	-3,554.7	0.00	3,554.67	7,561.93	1,807.44	9,418.04	8,958.71	1.46	-0.55	0.403
30.00	-40.00	-56.35	0.00	-3,270.9	0.00	3,270.94	7,410.27	1,758.87	8,918.73	8,540.84	2.1	-0.67	0.389
35.00	-37.82	-55.93	0.00	-2,989.2	0.00	2,989.21	7,240.28	1,710.30	8,433.03	8,112.19	2.86	-0.78	0.375
40.00	-35.73	-55.63	0.00	-2,709.5	0.00	2,709.54	7,034.66	1,661.73	7,960.92	7,655.69	3.74	-0.89	0.360
42.11	-34.84	-55.41	0.00	-2,592.4	0.00	2,592.36	6,948.03	1,641.27	7,766.08	7,467.32	4.14	-0.94	0.353
45.00	-32.65	-55.08	0.00	-2,432.0	0.00	2,432.03	6,829.04	1,613.16	7,502.41	7,212.41	4.73	-1	0.343
49.35	-29.48	-54.81	0.00	-2,192.2	0.00	2,192.24	5,968.08	1,425.91	6,594.33	6,275.12	5.69	-1.09	0.356
50.00	-29.20	-54.57	0.00	-2,156.8	0.00	2,156.83	5,950.78	1,420.34	6,542.84	6,232.22	5.84	-1.11	0.352
55.00	-27.43	-54.11	0.00	-1,884.0	0.00	1,884.00	5,815.30	1,377.16	6,151.17	5,903.41	7.06	-1.22	0.325
60.00	-25.71	-53.65	0.00	-1,613.4	0.00	1,613.45	5,647.21	1,333.99	5,771.59	5,551.25	8.39	-1.32	0.297
64.90	-22.33	-38.40	0.00	-1,350.6	0.00	1,350.55	5,468.10	1,291.68	5,411.33	5,202.93	9.79	-1.41	0.265
65.00	-22.28	-38.18	0.00	-1,346.7	0.00	1,346.71	5,464.44	1,290.81	5,404.10	5,195.94	9.82	-1.41	0.264
70.00	-20.70	-37.71	0.00	-1,155.8	0.00	1,155.82	5,281.67	1,247.64	5,048.70	4,852.38	11.35	-1.5	0.243
75.00	-19.17	-37.24	0.00	-967.3	0.00	967.27	5,098.90	1,204.46	4,705.38	4,520.57	12.97	-1.59	0.219
80.00	-17.71	-36.78	0.00	-781.0	0.00	781.05	4,916.13	1,161.29	4,374.15	4,200.51	14.68	-1.66	0.191
85.00	-16.30	-36.45	0.00	-597.1	0.00	597.14	4,733.36	1,118.12	4,055.01	3,892.20	16.46	-1.73	0.158
86.90	-14.33	-22.03	0.00	-527.9	0.00	527.89	4,663.90	1,101.71	3,936.91	3,778.12	17.15	-1.75	0.143
87.96	-14.05	-21.90	0.00	-504.6	0.00	504.63	4,625.32	1,092.59	3,872.05	3,715.49	17.54	-1.77	0.139
90.00	-13.18	-21.64	0.00	-459.9	0.00	459.87	4,550.58	1,074.94	3,747.96	3,595.64	18.31	-1.79	0.131
93.51	-11.72	-21.38	0.00	-384.0	0.00	383.98	2,648.37	667.05	2,308.88	2,087.59	19.63	-1.83	0.189
95.00	-11.46	-21.11	0.00	-352.1	0.00	352.07	2,626.77	659.00	2,253.46	2,045.36	20.21	-1.84	0.178
100.00	-10.65	-20.68	0.00	-246.5	0.00	246.52	2,552.56	632.01	2,072.72	1,905.52	22.17	-1.9	0.135
105.00	-7.53	-18.58	0.00	-143.1	0.00	143.11	2,475.49	605.03	1,899.53	1,768.42	24.2	-1.95	0.085
108.90	-5.98	-7.49	0.00	-70.6	0.00	70.65	2,413.41	583.98	1,769.68	1,663.56	25.8	-1.97	0.045
110.00	-5.83	-7.25	0.00	-62.4	0.00	62.41	2,395.59	578.04	1,733.89	1,634.33	26.25	-1.98	0.041
115.00	-5.13	-6.93	0.00	-26.2	0.00	26.16	2,312.83	551.06	1,575.81	1,503.53	28.33	-1.99	0.020
118.00	-3.39	-2.68	0.00	-5.4	0.00	5.38	2,261.81	534.87	1,484.59	1,426.74	29.59	-1.99	0.005
120.00	-0.08	-0.02	0.00	-0.0	0.00	0.01	2,218.59	524.08	1,425.28	1,370.95	30.42	-1.99	0.000
120.65	0.00	-0.02	0.00	0.0	0.00	0.00	2,203.74	520.57	1,406.27	1,352.57	30.69	-1.99	0.000

CALCULATED FORCES

Load Case: 0.9D + 1.0W 118 mph Wind with No Ice (Reduced DL) 17 Iterations
 Gust Response Factor: 1.10
 Dead load Factor: 0.90
 Wind Load Factor: 1.00

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	-40.70	-58.78	0.00	-4,990.6	0.00	4,990.61	8,277.51	2,050.30	12,118.55	11,136.85	0	0	0.454
5.00	-38.78	-58.34	0.00	-4,696.7	0.00	4,696.74	8,140.09	2,001.73	11,551.25	10,690.30	0.06	-0.11	0.445
10.00	-36.90	-57.90	0.00	-4,405.1	0.00	4,405.06	7,999.82	1,953.16	10,997.55	10,248.93	0.23	-0.22	0.435
15.00	-35.06	-57.47	0.00	-4,115.6	0.00	4,115.56	7,856.70	1,904.59	10,457.45	9,813.03	0.52	-0.33	0.425
20.00	-33.27	-57.05	0.00	-3,828.2	0.00	3,828.21	7,710.74	1,856.02	9,930.94	9,382.86	0.93	-0.44	0.413
25.00	-31.53	-56.63	0.00	-3,543.0	0.00	3,542.97	7,561.93	1,807.44	9,418.04	8,958.71	1.46	-0.55	0.401
30.00	-29.82	-56.22	0.00	-3,259.8	0.00	3,259.81	7,410.27	1,758.87	8,918.73	8,540.84	2.1	-0.67	0.387
35.00	-28.16	-55.79	0.00	-2,978.7	0.00	2,978.73	7,240.28	1,710.30	8,433.03	8,112.19	2.85	-0.78	0.372
40.00	-26.58	-55.48	0.00	-2,699.8	0.00	2,699.77	7,034.66	1,661.73	7,960.92	7,655.69	3.73	-0.89	0.358
42.11	-25.90	-55.26	0.00	-2,582.9	0.00	2,582.90	6,948.03	1,641.27	7,766.08	7,467.32	4.13	-0.93	0.351
45.00	-24.24	-54.92	0.00	-2,423.0	0.00	2,423.02	6,829.04	1,613.16	7,502.41	7,212.41	4.72	-1	0.341
49.35	-21.85	-54.66	0.00	-2,183.9	0.00	2,183.90	5,968.08	1,425.91	6,594.33	6,275.12	5.67	-1.09	0.353
50.00	-21.63	-54.41	0.00	-2,148.6	0.00	2,148.59	5,950.78	1,420.34	6,542.84	6,232.22	5.82	-1.1	0.350
55.00	-20.28	-53.95	0.00	-1,876.5	0.00	1,876.53	5,815.30	1,377.16	6,151.17	5,903.41	7.04	-1.21	0.323
60.00	-18.97	-53.49	0.00	-1,606.8	0.00	1,606.78	5,647.21	1,333.99	5,771.59	5,551.25	8.36	-1.31	0.294
64.90	-16.52	-38.25	0.00	-1,344.7	0.00	1,344.68	5,468.10	1,291.68	5,411.33	5,202.93	9.76	-1.41	0.262
65.00	-16.47	-38.03	0.00	-1,340.8	0.00	1,340.85	5,464.44	1,290.81	5,404.10	5,195.94	9.79	-1.41	0.262
70.00	-15.28	-37.56	0.00	-1,150.7	0.00	1,150.71	5,281.67	1,247.64	5,048.70	4,852.38	11.32	-1.5	0.241
75.00	-14.12	-37.10	0.00	-962.9	0.00	962.90	5,098.90	1,204.46	4,705.38	4,520.57	12.93	-1.58	0.217
80.00	-13.02	-36.64	0.00	-777.4	0.00	777.40	4,916.13	1,161.29	4,374.15	4,200.51	14.63	-1.66	0.189
85.00	-11.96	-36.32	0.00	-594.2	0.00	594.20	4,733.36	1,118.12	4,055.01	3,892.20	16.41	-1.72	0.156
86.90	-10.59	-21.92	0.00	-525.2	0.00	525.20	4,663.90	1,101.71	3,936.91	3,778.12	17.1	-1.75	0.142
87.96	-10.37	-21.78	0.00	-502.1	0.00	502.07	4,625.32	1,092.59	3,872.05	3,715.49	17.48	-1.76	0.138
90.00	-9.72	-21.53	0.00	-457.5	0.00	457.54	4,550.58	1,074.94	3,747.96	3,595.64	18.24	-1.78	0.130
93.51	-8.62	-21.28	0.00	-382.0	0.00	382.04	2,648.37	667.05	2,308.88	2,087.59	19.57	-1.82	0.187
95.00	-8.43	-21.01	0.00	-350.3	0.00	350.28	2,626.77	659.00	2,253.46	2,045.36	20.14	-1.83	0.175
100.00	-7.82	-20.59	0.00	-245.2	0.00	245.23	2,552.56	632.01	2,072.72	1,905.52	22.1	-1.9	0.133
105.00	-5.49	-18.51	0.00	-142.3	0.00	142.31	2,475.49	605.03	1,899.53	1,768.42	24.11	-1.94	0.084
108.90	-4.42	-7.43	0.00	-70.1	0.00	70.12	2,413.41	583.98	1,769.68	1,663.56	25.71	-1.96	0.044
110.00	-4.31	-7.20	0.00	-61.9	0.00	61.94	2,395.59	578.04	1,733.89	1,634.33	26.16	-1.97	0.040
115.00	-3.79	-6.88	0.00	-26.0	0.00	25.96	2,312.83	551.06	1,575.81	1,503.53	28.23	-1.98	0.019
118.00	-2.52	-2.65	0.00	-5.3	0.00	5.32	2,261.81	534.87	1,484.59	1,426.74	29.48	-1.99	0.005
120.00	-0.06	-0.02	0.00	-0.0	0.00	0.01	2,218.59	524.08	1,425.28	1,370.95	30.31	-1.99	0.000
120.65	0.00	-0.02	0.00	0.0	0.00	0.00	2,203.74	520.57	1,406.27	1,352.57	30.58	-1.99	0.000

CALCULATED FORCES

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind with 1" Radial Ice 16 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

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	-67.30	-15.62	0.00	-1,319.9	0.00	1,319.91	8,277.51	2,050.30	12,118.55	11,136.85	0	0	0.127
5.00	-64.56	-15.49	0.00	-1,241.8	0.00	1,241.83	8,140.09	2,001.73	11,551.25	10,690.30	0.02	-0.03	0.124
10.00	-61.85	-15.37	0.00	-1,164.4	0.00	1,164.37	7,999.82	1,953.16	10,997.55	10,248.93	0.06	-0.06	0.121
15.00	-59.19	-15.25	0.00	-1,087.5	0.00	1,087.52	7,856.70	1,904.59	10,457.45	9,813.03	0.14	-0.09	0.118
20.00	-56.58	-15.13	0.00	-1,011.3	0.00	1,011.27	7,710.74	1,856.02	9,930.94	9,382.86	0.25	-0.12	0.115
25.00	-54.02	-15.01	0.00	-935.6	0.00	935.63	7,561.93	1,807.44	9,418.04	8,958.71	0.38	-0.15	0.112
30.00	-51.53	-14.89	0.00	-860.6	0.00	860.59	7,410.27	1,758.87	8,918.73	8,540.84	0.55	-0.18	0.108
35.00	-49.10	-14.77	0.00	-786.2	0.00	786.15	7,240.28	1,710.30	8,433.03	8,112.19	0.75	-0.21	0.104
40.00	-46.73	-14.67	0.00	-712.3	0.00	712.32	7,034.66	1,661.73	7,960.92	7,655.69	0.99	-0.23	0.100
42.11	-45.74	-14.61	0.00	-681.4	0.00	681.41	6,948.03	1,641.27	7,766.08	7,467.32	1.09	-0.25	0.098
45.00	-43.41	-14.51	0.00	-639.2	0.00	639.15	6,829.04	1,613.16	7,502.41	7,212.41	1.25	-0.26	0.095
49.35	-39.99	-14.43	0.00	-576.0	0.00	575.98	5,968.08	1,425.91	6,594.33	6,275.12	1.5	-0.29	0.099
50.00	-39.72	-14.36	0.00	-566.7	0.00	566.66	5,950.78	1,420.34	6,542.84	6,232.22	1.54	-0.29	0.098
55.00	-37.69	-14.22	0.00	-494.9	0.00	494.88	5,815.30	1,377.16	6,151.17	5,903.41	1.86	-0.32	0.090
60.00	-35.72	-14.08	0.00	-423.8	0.00	423.79	5,647.21	1,333.99	5,771.59	5,551.25	2.21	-0.35	0.083
64.90	-31.13	-10.15	0.00	-354.8	0.00	354.81	5,468.10	1,291.68	5,411.33	5,202.93	2.58	-0.37	0.074
65.00	-31.09	-10.09	0.00	-353.8	0.00	353.79	5,464.44	1,290.81	5,404.10	5,195.94	2.59	-0.37	0.074
70.00	-29.24	-9.95	0.00	-303.4	0.00	303.35	5,281.67	1,247.64	5,048.70	4,852.38	2.99	-0.4	0.068
75.00	-27.45	-9.80	0.00	-253.6	0.00	253.63	5,098.90	1,204.46	4,705.38	4,520.57	3.42	-0.42	0.062
80.00	-25.72	-9.66	0.00	-204.6	0.00	204.62	4,916.13	1,161.29	4,374.15	4,200.51	3.86	-0.44	0.054
85.00	-24.05	-9.56	0.00	-156.3	0.00	156.32	4,733.36	1,118.12	4,055.01	3,892.20	4.33	-0.46	0.045
86.90	-21.03	-5.82	0.00	-138.2	0.00	138.16	4,663.90	1,101.71	3,936.91	3,778.12	4.52	-0.46	0.041
87.96	-20.69	-5.77	0.00	-132.0	0.00	132.02	4,625.32	1,092.59	3,872.05	3,715.49	4.62	-0.46	0.040
90.00	-19.71	-5.69	0.00	-120.2	0.00	120.21	4,550.58	1,074.94	3,747.96	3,595.64	4.82	-0.47	0.038
93.51	-18.06	-5.62	0.00	-100.2	0.00	100.24	2,648.37	667.05	2,308.88	2,087.59	5.17	-0.48	0.055
95.00	-17.73	-5.53	0.00	-91.9	0.00	91.86	2,626.77	659.00	2,253.46	2,045.36	5.32	-0.48	0.052
100.00	-16.66	-5.40	0.00	-64.2	0.00	64.21	2,552.56	632.01	2,072.72	1,905.52	5.83	-0.5	0.040
105.00	-11.70	-4.86	0.00	-37.2	0.00	37.22	2,475.49	605.03	1,899.53	1,768.42	6.37	-0.51	0.026
108.90	-9.21	-1.96	0.00	-18.2	0.00	18.25	2,413.41	583.98	1,769.68	1,663.56	6.79	-0.52	0.015
110.00	-9.00	-1.88	0.00	-16.1	0.00	16.09	2,395.59	578.04	1,733.89	1,634.33	6.91	-0.52	0.014
115.00	-8.06	-1.78	0.00	-6.7	0.00	6.67	2,312.83	551.06	1,575.81	1,503.53	7.45	-0.52	0.008
118.00	-5.61	-0.66	0.00	-1.3	0.00	1.32	2,261.81	534.87	1,484.59	1,426.74	7.78	-0.52	0.003
120.00	-0.11	-0.01	0.00	-0.0	0.00	0.01	2,218.59	524.08	1,425.28	1,370.95	8	-0.52	0.000
120.65	0.00	-0.01	0.00	0.0	0.00	0.00	2,203.74	520.57	1,406.27	1,352.57	8.07	-0.52	0.000

CALCULATED FORCES

Load Case: 1.0D + 1.0W													60 mph Wind with No Ice		16 Iterations
Gust Response Factor:		1.10													
Dead load Factor:		1.00													
Wind Load Factor:		1.00													
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	-45.29	-13.60	0.00	-1,155.7	0.00	1,155.66	8,277.51	2,050.30	12,118.55	11,136.85	0	0	0.109		
5.00	-43.27	-13.50	0.00	-1,087.7	0.00	1,087.67	8,140.09	2,001.73	11,551.25	10,690.30	0.01	-0.03	0.107		
10.00	-41.30	-13.40	0.00	-1,020.2	0.00	1,020.19	7,999.82	1,953.16	10,997.55	10,248.93	0.05	-0.05	0.105		
15.00	-39.37	-13.30	0.00	-953.2	0.00	953.20	7,856.70	1,904.59	10,457.45	9,813.03	0.12	-0.08	0.102		
20.00	-37.50	-13.20	0.00	-886.7	0.00	886.69	7,710.74	1,856.02	9,930.94	9,382.86	0.22	-0.1	0.099		
25.00	-35.67	-13.11	0.00	-820.7	0.00	820.67	7,561.93	1,807.44	9,418.04	8,958.71	0.34	-0.13	0.096		
30.00	-33.88	-13.02	0.00	-755.1	0.00	755.12	7,410.27	1,758.87	8,918.73	8,540.84	0.49	-0.15	0.093		
35.00	-32.15	-12.92	0.00	-690.0	0.00	690.05	7,240.28	1,710.30	8,433.03	8,112.19	0.66	-0.18	0.090		
40.00	-30.46	-12.85	0.00	-625.5	0.00	625.46	7,034.66	1,661.73	7,960.92	7,655.69	0.86	-0.21	0.086		
42.11	-29.76	-12.80	0.00	-598.4	0.00	598.40	6,948.03	1,641.27	7,766.08	7,467.32	0.96	-0.22	0.084		
45.00	-27.99	-12.72	0.00	-561.4	0.00	561.37	6,829.04	1,613.16	7,502.41	7,212.41	1.09	-0.23	0.082		
49.35	-25.38	-12.66	0.00	-506.0	0.00	506.00	5,968.08	1,425.91	6,594.33	6,275.12	1.31	-0.25	0.085		
50.00	-25.20	-12.60	0.00	-497.8	0.00	497.82	5,950.78	1,420.34	6,542.84	6,232.22	1.35	-0.26	0.084		
55.00	-23.79	-12.50	0.00	-434.8	0.00	434.82	5,815.30	1,377.16	6,151.17	5,903.41	1.63	-0.28	0.078		
60.00	-22.42	-12.39	0.00	-372.3	0.00	372.34	5,647.21	1,333.99	5,771.59	5,551.25	1.94	-0.3	0.071		
64.90	-19.34	-8.86	0.00	-311.6	0.00	311.63	5,468.10	1,291.68	5,411.33	5,202.93	2.26	-0.33	0.063		
65.00	-19.32	-8.81	0.00	-310.8	0.00	310.75	5,464.44	1,290.81	5,404.10	5,195.94	2.27	-0.33	0.063		
70.00	-18.04	-8.70	0.00	-266.7	0.00	266.69	5,281.67	1,247.64	5,048.70	4,852.38	2.62	-0.35	0.058		
75.00	-16.80	-8.60	0.00	-223.2	0.00	223.18	5,098.90	1,204.46	4,705.38	4,520.57	3	-0.37	0.053		
80.00	-15.60	-8.49	0.00	-180.2	0.00	180.19	4,916.13	1,161.29	4,374.15	4,200.51	3.39	-0.38	0.046		
85.00	-14.45	-8.41	0.00	-137.7	0.00	137.74	4,733.36	1,118.12	4,055.01	3,892.20	3.8	-0.4	0.038		
86.90	-12.47	-5.08	0.00	-121.8	0.00	121.76	4,663.90	1,101.71	3,936.91	3,778.12	3.96	-0.4	0.035		
87.96	-12.23	-5.05	0.00	-116.4	0.00	116.39	4,625.32	1,092.59	3,872.05	3,715.49	4.05	-0.41	0.034		
90.00	-11.51	-4.99	0.00	-106.1	0.00	106.07	4,550.58	1,074.94	3,747.96	3,595.64	4.23	-0.41	0.032		
93.51	-10.29	-4.93	0.00	-88.6	0.00	88.57	2,648.37	667.05	2,308.88	2,087.59	4.53	-0.42	0.046		
95.00	-10.09	-4.87	0.00	-81.2	0.00	81.21	2,626.77	659.00	2,253.46	2,045.36	4.67	-0.42	0.044		
100.00	-9.41	-4.77	0.00	-56.9	0.00	56.86	2,552.56	632.01	2,072.72	1,905.52	5.12	-0.44	0.034		
105.00	-6.77	-4.29	0.00	-33.0	0.00	33.00	2,475.49	605.03	1,899.53	1,768.42	5.59	-0.45	0.021		
108.90	-5.18	-1.72	0.00	-16.3	0.00	16.27	2,413.41	583.98	1,769.68	1,663.56	5.96	-0.46	0.012		
110.00	-5.05	-1.67	0.00	-14.4	0.00	14.37	2,395.59	578.04	1,733.89	1,634.33	6.06	-0.46	0.011		
115.00	-4.46	-1.60	0.00	-6.0	0.00	6.02	2,312.83	551.06	1,575.81	1,503.53	6.54	-0.46	0.006		
118.00	-2.90	-0.62	0.00	-1.2	0.00	1.24	2,261.81	534.87	1,484.59	1,426.74	6.83	-0.46	0.002		
120.00	-0.07	-0.01	0.00	0.0	0.00	0.00	2,218.59	524.08	1,425.28	1,370.95	7.02	-0.46	0.000		
120.65	0.00	0.00	0.00	0.0	0.00	0.00	2,203.74	520.57	1,406.27	1,352.57	7.09	-0.46	0.000		

EQUIVALENT LATERAL FORCES METHOD ANALYSIS

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

Spectral Response Acceleration for Short Period (S_S):	0.205
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}):	0.219
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.086
Seismic Response Coefficient (C_s):	0.056
Upper Limit C_s :	0.056
Lower Limit C_s :	0.030
Period based on Rayleigh Method (sec):	1.020
Redundancy Factor (p):	1.000
Seismic Force Distribution Exponent (k):	1.260
Total Unfactored Dead Load:	45.290 k
Seismic Base Shear (E):	2.550 k

SEISMIC FORCES

1.2D + 1.0Ev + 1.0Eh

Seismic

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
33	120.325	66	28	0.003	8	82
32	119	221	92	0.011	27	275
31	116.5	340	138	0.016	41	423
30	112.5	587	228	0.026	67	730
29	109.45	133	50	0.006	15	165
28	106.95	481	175	0.020	52	598
27	102.5	648	224	0.026	66	806
26	97.5	674	218	0.025	65	838
25	94.2538	206	64	0.007	19	256
24	91.7538	1,215	364	0.042	108	1,511
23	88.9778	723	209	0.024	62	900
22	87.4278	235	66	0.008	20	292
21	85.95	427	118	0.014	35	531
20	82.5	1,153	303	0.035	89	1,434
19	77.5	1,195	290	0.034	86	1,486
18	72.5	1,237	276	0.032	81	1,538
17	67.5	1,279	260	0.030	77	1,590
16	64.95	26	5	0.001	1	32
15	62.45	1,294	239	0.028	71	1,610
14	57.5	1,362	227	0.026	67	1,694
13	52.5	1,404	208	0.024	62	1,746
12	49.677	184	26	0.003	8	229
11	47.177	2,605	338	0.039	100	3,241
10	43.5533	1,769	207	0.024	61	2,200
9	41.0533	695	76	0.009	22	864
8	37.5	1,683	163	0.019	48	2,093
7	32.5	1,730	140	0.016	41	2,151
6	27.5	1,777	117	0.014	34	2,210
5	22.5	1,824	93	0.011	27	2,268
4	17.5	1,871	69	0.008	20	2,327
3	12.5	1,918	46	0.005	14	2,386
2	7.5	1,965	25	0.003	7	2,444
1	2.5	2,012	6	0.001	2	2,503
Samsung Outdoor CBRS 20W RRH –Clip-on Antenna	120	13	6	0.001	2	16
Samsung RT4401-48A	120	56	23	0.003	7	69
Samsung B5/B13 RRH-BR04C	120	211	89	0.010	26	262
Samsung B2/B66A RRH-BR049	120	253	107	0.012	32	315
Samsung MT6413-77A	120	172	72	0.008	21	214

SEISMIC FORCES

1.2D + 1.0Ev + 1.0Eh

Seismic

Segment	Height Above Base (ft)	Weight (lb)	W _z (lb-ft)	C _{vx}	Horizontal Force (lb)	Vertical Force (lb)
RFS DB-C1-12C-24AB-0Z	120	32	13	0.002	4	40
Quintel QS6656-5D	120	528	222	0.026	66	657
Generic Flat T-Arm	120	1,350	568	0.066	168	1,679
Generic Flat T-Arm	105	1,350	480	0.056	142	1,679
Unused Reserve (20929.7400 sqin)	118	1,235	509	0.059	150	1,536
Branches	108.9	1,125	419	0.049	124	1,399
Branches	86.9	1,575	441	0.051	130	1,959
Branches	64.9	1,800	349	0.040	103	2,239
Raycap RDIDC-9181-PF-48	105	22	8	0.001	2	27
Fujitsu TA08025-B604	105	192	68	0.008	20	238
Fujitsu TA08025-B605	105	225	80	0.009	24	280
Commscope FFVV-65B-R2	105	212	76	0.009	22	264
Totals:		45,289	8,618	1.000	2,546	56,327

SEISMIC FORCES

0.9D - 1.0Ev + 1.0Eh

Seismic (Reduced DL)

Segment	Height Above Base (ft)	Weight (lb)	W _z (lb-ft)	C _{vx}	Horizontal Force (lb)	Vertical Force (lb)
33	120.325	66	28	0.003	8	56
32	119	221	92	0.011	27	189
31	116.5	340	138	0.016	41	291
30	112.5	587	228	0.026	67	503
29	109.45	133	50	0.006	15	114
28	106.95	481	175	0.020	52	412
27	102.5	648	224	0.026	66	555
26	97.5	674	218	0.025	65	577
25	94.2538	206	64	0.007	19	177
24	91.7538	1,215	364	0.042	108	1,040
23	88.9778	723	209	0.024	62	619
22	87.4278	235	66	0.008	20	201
21	85.95	427	118	0.014	35	366
20	82.5	1,153	303	0.035	89	987
19	77.5	1,195	290	0.034	86	1,023
18	72.5	1,237	276	0.032	81	1,059
17	67.5	1,279	260	0.030	77	1,095
16	64.95	26	5	0.001	1	22
15	62.45	1,294	239	0.028	71	1,108
14	57.5	1,362	227	0.026	67	1,166
13	52.5	1,404	208	0.024	62	1,202
12	49.677	184	26	0.003	8	158
11	47.177	2,605	338	0.039	100	2,231
10	43.5533	1,769	207	0.024	61	1,515
9	41.0533	695	76	0.009	22	595
8	37.5	1,683	163	0.019	48	1,441
7	32.5	1,730	140	0.016	41	1,481
6	27.5	1,777	117	0.014	34	1,521
5	22.5	1,824	93	0.011	27	1,562
4	17.5	1,871	69	0.008	20	1,602
3	12.5	1,918	46	0.005	14	1,642
2	7.5	1,965	25	0.003	7	1,683
1	2.5	2,012	6	0.001	2	1,723
Samsung Outdoor CBRS 20W RRH –Clip-on Antenna	120	13	6	0.001	2	11
Samsung RT4401-48A	120	56	23	0.003	7	48
Samsung B5/B13 RRH-BR04C	120	211	89	0.010	26	181
Samsung B2/B66A RRH-BR049	120	253	107	0.012	32	217
Samsung MT6413-77A	120	172	72	0.008	21	147
RFS DB-C1-12C-24AB-0Z	120	32	13	0.002	4	27
Quintel QS6656-5D	120	528	222	0.026	66	452
Generic Flat T-Arm	120	1,350	568	0.066	168	1,156
Generic Flat T-Arm	105	1,350	480	0.056	142	1,156
Unused Reserve (20929.7400 sqin)	118	1,235	509	0.059	150	1,057

SEISMIC FORCES

0.9D - 1.0Ev + 1.0Eh

Seismic (Reduced DL)

Segment	Height Above Base (ft)	Weight (lb)	W _z (lb-ft)	C _{vx}	Horizontal Force (lb)	Vertical Force (lb)
Branches	108.9	1,125	419	0.049	124	963
Branches	86.9	1,575	441	0.051	130	1,349
Branches	64.9	1,800	349	0.040	103	1,541
Raycap RDIDC-9181-PF-48	105	22	8	0.001	2	19
Fujitsu TA08025-B604	105	192	68	0.008	20	164
Fujitsu TA08025-B605	105	225	80	0.009	24	193
Commscope FFV-65B-R2	105	212	76	0.009	22	182
Totals:		45,289	8,618	1.000	2,546	38,779

1.2D + 1.0Ev + 1.0Eh

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	-53.82	-2.55	0.00	-218.71	0.00	218.71	8,277.51	2,050.30	12,119	11,136.85	0.00	0.00	0.03
5.00	-51.38	-2.54	0.00	-205.98	0.00	205.98	8,140.09	2,001.73	11,551	10,690.30	0.00	0.00	0.03
10.00	-48.99	-2.53	0.00	-193.27	0.00	193.27	7,999.82	1,953.16	10,998	10,248.93	0.01	-0.01	0.03
15.00	-46.67	-2.52	0.00	-180.60	0.00	180.60	7,856.70	1,904.59	10,457	9,813.03	0.02	-0.01	0.02
20.00	-44.40	-2.49	0.00	-168.02	0.00	168.02	7,710.74	1,856.02	9,931	9,382.86	0.04	-0.02	0.02
25.00	-42.19	-2.46	0.00	-155.56	0.00	155.56	7,561.93	1,807.44	9,418	8,958.71	0.06	-0.02	0.02
30.00	-40.04	-2.42	0.00	-143.26	0.00	143.26	7,410.27	1,758.87	8,919	8,540.84	0.09	-0.03	0.02
35.00	-37.94	-2.38	0.00	-131.15	0.00	131.15	7,240.28	1,710.30	8,433	8,112.19	0.13	-0.03	0.02
40.00	-37.08	-2.35	0.00	-119.28	0.00	119.28	7,034.66	1,661.73	7,961	7,655.69	0.16	-0.04	0.02
42.11	-34.88	-2.29	0.00	-114.32	0.00	114.32	6,948.03	1,641.27	7,766	7,467.32	0.18	-0.04	0.02
45.00	-31.64	-2.19	0.00	-107.68	0.00	107.68	6,829.04	1,613.16	7,502	7,212.41	0.21	-0.04	0.02
49.35	-31.41	-2.19	0.00	-98.14	0.00	98.14	5,968.08	1,425.91	6,594	6,275.12	0.25	-0.05	0.02
50.00	-29.66	-2.13	0.00	-96.72	0.00	96.72	5,950.78	1,420.34	6,543	6,232.22	0.26	-0.05	0.02
55.00	-27.97	-2.06	0.00	-86.10	0.00	86.10	5,815.30	1,377.16	6,151	5,903.41	0.31	-0.05	0.02
60.00	-26.36	-1.99	0.00	-75.80	0.00	75.80	5,647.21	1,333.99	5,772	5,551.25	0.37	-0.06	0.02
64.90	-24.09	-1.88	0.00	-66.06	0.00	66.06	5,468.10	1,291.68	5,411	5,202.93	0.43	-0.06	0.02
65.00	-22.50	-1.81	0.00	-65.87	0.00	65.87	5,464.44	1,290.81	5,404	5,195.94	0.43	-0.06	0.02
70.00	-20.96	-1.72	0.00	-56.85	0.00	56.85	5,281.67	1,247.64	5,049	4,852.38	0.50	-0.07	0.02
75.00	-19.47	-1.64	0.00	-48.23	0.00	48.23	5,098.90	1,204.46	4,705	4,520.57	0.57	-0.07	0.01
80.00	-18.04	-1.55	0.00	-40.04	0.00	40.04	4,916.13	1,161.29	4,374	4,200.51	0.65	-0.08	0.01
85.00	-17.51	-1.51	0.00	-32.31	0.00	32.31	4,733.36	1,118.12	4,055	3,892.20	0.73	-0.08	0.01
86.90	-15.26	-1.36	0.00	-29.43	0.00	29.43	4,663.90	1,101.71	3,937	3,778.12	0.76	-0.08	0.01
87.96	-14.36	-1.30	0.00	-28.00	0.00	28.00	4,625.32	1,092.59	3,872	3,715.49	0.78	-0.08	0.01
90.00	-12.85	-1.19	0.00	-25.35	0.00	25.35	4,550.58	1,074.94	3,748	3,595.64	0.81	-0.08	0.01
93.51	-12.59	-1.17	0.00	-21.18	0.00	21.18	2,648.37	667.05	2,309	2,087.59	0.88	-0.08	0.02
95.00	-11.75	-1.10	0.00	-19.44	0.00	19.44	2,626.77	659.00	2,253	2,045.36	0.90	-0.08	0.01
100.00	-10.95	-1.04	0.00	-13.92	0.00	13.92	2,552.56	632.01	2,073	1,905.52	0.99	-0.09	0.01
105.00	-7.86	-0.77	0.00	-8.74	0.00	8.74	2,475.49	605.03	1,900	1,768.42	1.09	-0.09	0.01
108.90	-6.30	-0.63	0.00	-5.73	0.00	5.73	2,413.41	583.98	1,770	1,663.56	1.16	-0.09	0.01
110.00	-5.57	-0.56	0.00	-5.04	0.00	5.04	2,395.59	578.04	1,734	1,634.33	1.18	-0.09	0.01
115.00	-5.14	-0.52	0.00	-2.24	0.00	2.24	2,312.83	551.06	1,576	1,503.53	1.28	-0.09	0.00
118.00	-3.33	-0.34	0.00	-0.68	0.00	0.68	2,261.81	534.87	1,485	1,426.74	1.34	-0.09	0.00
120.00	0.00	0.00	0.00	0.00	0.00	0.00	2,218.59	524.08	1,425	1,370.95	1.38	-0.09	0.00
120.65	0.00	0.00	0.00	0.00	0.00	0.00	2,203.74	520.57	1,406	1,352.57	1.39	-0.09	0.00

0.9D - 1.0Ev + 1.0Eh

Seismic (Reduced DL)

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (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	-37.06	-2.55	0.00	-218.00	0.00	218.00	8,277.51	2,050.30	12,119	11,136.85	0.00	0.00	0.02
5.00	-35.37	-2.54	0.00	-205.27	0.00	205.27	8,140.09	2,001.73	11,551	10,690.30	0.00	0.00	0.02
10.00	-33.73	-2.53	0.00	-192.57	0.00	192.57	7,999.82	1,953.16	10,998	10,248.93	0.01	-0.01	0.02
15.00	-32.13	-2.51	0.00	-179.92	0.00	179.92	7,856.70	1,904.59	10,457	9,813.03	0.02	-0.01	0.02
20.00	-30.57	-2.49	0.00	-167.36	0.00	167.36	7,710.74	1,856.02	9,931	9,382.86	0.04	-0.02	0.02
25.00	-29.04	-2.45	0.00	-154.93	0.00	154.93	7,561.93	1,807.44	9,418	8,958.71	0.06	-0.02	0.02

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
30.00	-27.56	-2.41	0.00	-142.66	0.00	142.66	7,410.27	1,758.87	8,919	8,540.84	0.09	-0.03	0.02
35.00	-26.12	-2.37	0.00	-130.59	0.00	130.59	7,240.28	1,710.30	8,433	8,112.19	0.12	-0.03	0.02
40.00	-25.53	-2.35	0.00	-118.75	0.00	118.75	7,034.66	1,661.73	7,961	7,655.69	0.16	-0.04	0.02
42.11	-24.01	-2.29	0.00	-113.81	0.00	113.81	6,948.03	1,641.27	7,766	7,467.32	0.18	-0.04	0.02
45.00	-21.78	-2.18	0.00	-107.20	0.00	107.20	6,829.04	1,613.16	7,502	7,212.41	0.21	-0.04	0.02
49.35	-21.62	-2.18	0.00	-97.68	0.00	97.68	5,968.08	1,425.91	6,594	6,275.12	0.25	-0.05	0.02
50.00	-20.42	-2.12	0.00	-96.28	0.00	96.28	5,950.78	1,420.34	6,543	6,232.22	0.25	-0.05	0.02
55.00	-19.25	-2.05	0.00	-85.69	0.00	85.69	5,815.30	1,377.16	6,151	5,903.41	0.31	-0.05	0.02
60.00	-18.15	-1.98	0.00	-75.44	0.00	75.44	5,647.21	1,333.99	5,772	5,551.25	0.37	-0.06	0.02
64.90	-16.58	-1.87	0.00	-65.74	0.00	65.74	5,468.10	1,291.68	5,411	5,202.93	0.43	-0.06	0.02
65.00	-15.49	-1.80	0.00	-65.55	0.00	65.55	5,464.44	1,290.81	5,404	5,195.94	0.43	-0.06	0.02
70.00	-14.43	-1.72	0.00	-56.57	0.00	56.57	5,281.67	1,247.64	5,049	4,852.38	0.50	-0.07	0.01
75.00	-13.41	-1.63	0.00	-47.99	0.00	47.99	5,098.90	1,204.46	4,705	4,520.57	0.57	-0.07	0.01
80.00	-12.42	-1.54	0.00	-39.84	0.00	39.84	4,916.13	1,161.29	4,374	4,200.51	0.65	-0.07	0.01
85.00	-12.05	-1.50	0.00	-32.14	0.00	32.14	4,733.36	1,118.12	4,055	3,892.20	0.73	-0.08	0.01
86.90	-10.50	-1.35	0.00	-29.28	0.00	29.28	4,663.90	1,101.71	3,937	3,778.12	0.76	-0.08	0.01
87.96	-9.88	-1.29	0.00	-27.86	0.00	27.86	4,625.32	1,092.59	3,872	3,715.49	0.78	-0.08	0.01
90.00	-8.84	-1.18	0.00	-25.22	0.00	25.22	4,550.58	1,074.94	3,748	3,595.64	0.81	-0.08	0.01
93.51	-8.67	-1.16	0.00	-21.07	0.00	21.07	2,648.37	667.05	2,309	2,087.59	0.87	-0.08	0.01
95.00	-8.09	-1.10	0.00	-19.34	0.00	19.34	2,626.77	659.00	2,253	2,045.36	0.90	-0.08	0.01
100.00	-7.54	-1.03	0.00	-13.85	0.00	13.85	2,552.56	632.01	2,073	1,905.52	0.99	-0.09	0.01
105.00	-5.41	-0.77	0.00	-8.69	0.00	8.69	2,475.49	605.03	1,900	1,768.42	1.08	-0.09	0.01
108.90	-4.34	-0.63	0.00	-5.70	0.00	5.70	2,413.41	583.98	1,770	1,663.56	1.16	-0.09	0.01
110.00	-3.83	-0.56	0.00	-5.01	0.00	5.01	2,395.59	578.04	1,734	1,634.33	1.18	-0.09	0.01
115.00	-3.54	-0.52	0.00	-2.23	0.00	2.23	2,312.83	551.06	1,576	1,503.53	1.28	-0.09	0.00
118.00	-2.29	-0.34	0.00	-0.67	0.00	0.67	2,261.81	534.87	1,485	1,426.74	1.33	-0.09	0.00
120.00	0.00	0.00	0.00	0.00	0.00	0.00	2,218.59	524.08	1,425	1,370.95	1.37	-0.09	0.00
120.65	0.00	0.00	0.00	0.00	0.00	0.00	2,203.74	520.57	1,406	1,352.57	1.39	-0.09	0.00

ANALYSIS SUMMARY

Load Case	Base Reactions						Max Usage	
	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Elev (ft)	Interaction Ratio
1.2D + 1.0W	58.79	0.00	54.29	0.00	0.00	5003.78	0.00	0.46
0.9D + 1.0W	58.78	0.00	40.70	0.00	0.00	4990.61	0.00	0.45
1.2D + 1.0Di + 1.0Wi	15.62	0.00	67.30	0.00	0.00	1319.91	0.00	0.13
1.2D + 1.0Ev + 1.0Eh	2.55	0.00	53.82	0.00	0.00	218.71	0.00	0.03
0.9D - 1.0Ev + 1.0Eh	2.55	0.00	37.06	0.00	0.00	218.00	0.00	0.02
1.0D + 1.0W	13.60	0.00	45.29	0.00	0.00	1155.66	0.00	0.11

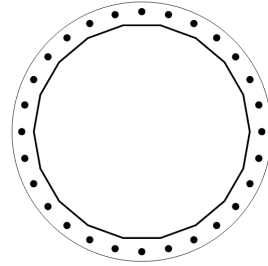
BASE PLATE ANALYSIS @ 0 FT

APPLIED REACTIONS

Moment (k-ft)	Axial (k)	Shear (k)
5003.78	54.29	58.79

PLATE PARAMETERS (ID# 10676)

Width:	80	in
Shape:	Round	
Thickness:	3.25	in
Grade:	A572-50	
Yield Strength:	50	ksi
Tensile Strength:	65	ksi
Rod Detail Type:	d	
Clear Distance	3	in
Base Weld Size:	0.125	in
Orientation Offset:	-	°
Analysis Type:	Plastic	
Neutral Axis:	45	°



ANCHOR ROD PARAMETERS

Class	Arrangement	Quantity	Diameter (in)	Circle (in)	Grade	F _y (ksi)	F _u (ksi)	Spacing (in)	Offset (°)
Original [ID#9706]	Radial	28	2.25	74	A615-75	75	100	-	-

COMPONENT PROPERTIES

Component	ID	Gross Area (in ²)	Net Area (in ²)	Individual Inertia (in ⁴)	Moment of Inertia (in ⁴)	Threads/in
Pole	66"ø x 0.5625" (18 Sides)	115.0514	-	-	61594.41	-
Bolt Group	Original (28) 2.25"ø	3.9761	3.2477	0.8393	57931.00	4.5

REACTION DISTRIBUTION

Component	ID	Moment M _u (k-ft)	Axial Load P _u (k)	Shear V _u (k)	Moment Factor
Pole	66"ø x 0.5625" (18 Sides)	5003.8	54.29	58.79	1.000
Bolt Group	Original (28) 2.25"ø	5003.8	-	58.79	1.000

BASE PLATE BEND LINE ANALYSIS @ 0 FT

POLE PROPERTIES

Flat-to-Flat Diameter:	66.12	in	Flat Width:	11.660	in
Point-to-Point Diameter:	67.14	in	Flat Radians:	0.349	rad
Orientation Offset:	-	°			

PLATE PROPERTIES

Neutral Axis:	45	°
Bend Line Limits:	1.917 to 2.795	rad

Bend Line	Chord Length (in)	Additional Length (in)	Section Modulus (in ³)	Applied Moment M _u (k-in)	Moment Capacity ΦM _n (k-in)	Flexure Result M _u /ΦM _n
Flats	40.208	0.00	106.175	726.0	4777.9	15.2% <input checked="" type="checkbox"/>
Corners	38.481	0.00	101.613	484.6	4572.6	10.6% <input checked="" type="checkbox"/>
Circumferential	45.448	0.00	120.011	1001.0	5400.5	18.5% <input checked="" type="checkbox"/>

PLASTIC ANCHOR ROD ANALYSIS

Class	Group Quantity	Rod Diameter (in)	Applied Axial Load P _u (k)	Applied Shear Load V _u (k)	Compressive Capacity ΦP _n (k)	Interaction Result
Original	28	2.25	98.2	3.3	243.6	42.9% <input checked="" type="checkbox"/>

PIER FOUNDATION ANALYSIS

GLOBAL REACTIONS

Moment (k-ft)	Axial (k)	Shear (k)
5,003.78	54.29	58.79

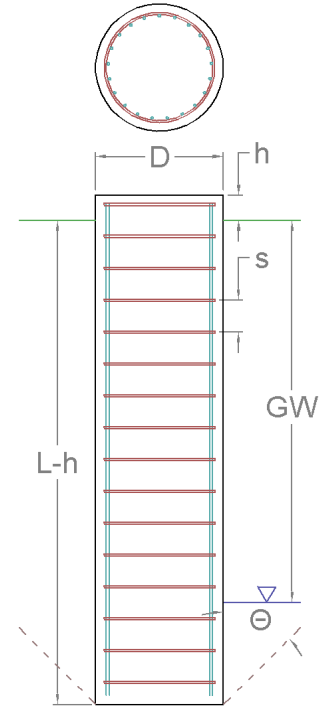
FOUNDATION PARAMETERS

Pier Diameter:	D	8.00	ft
Pier Embedment Depth:	L-h	24.0	ft
Pier Height above Grade:	h	0.50	ft

SOIL PARAMETERS

Water Table Depth [BGL]: GW - ft

Layer Depth (ft)		Unit Weight pcf	Cohesion psf	Friction Angle °	Ultimate Skin Friction psf	Ultimate Net Bearing psf
Top	Bottom					
0	2	135	0	0	0	0
2	4	115	0	30	0	0
4	6	135	0	36	0	0
6	9	150	15,000	0	0	0
9	25	140	10,000	0	0	26,400



SOIL STRENGTH ANALYSIS

Volume of Concrete (ft ³)	Buoyant Weight of Concrete (k)	Skin Friction Resistance (k)	Inflection Point [BGL] (ft)
1,231.50	184.73	0.00	14.37

SOIL MOMENT ANALYSIS

Total Lateral Resistance (k)	Moment at Inflection Point, M _u (k-ft)	Additional Resistance (k-ft)	Nominal Moment Capacity, ΦM _n (k-ft)	Soil Moment Usage, M _u / ΦM _n
11,560.65	5,878.01	0.00	41,396.12	14.2% ✓

SOIL COMPRESSION ANALYSIS

Compressive Bearing Resistance (k)	Compressive Force, P _u (k)	Additional Resistance (k)	Nominal Compressive Capacity, ΦP _n (k)	Soil Compressive Usage, P _u / ΦP _n
1,327.01	71.18	0.00	995.26	7.2% ✓

Colliers Engineering & Design, Architecture,
Landscape Architecture, Surveying, CT P.C.
1055 Washington Boulevard
Stamford, CT 06901
203.324.0800
peter.albano@collierseng.com

New/Replacement Antenna Mount Analysis Report and PMI Requirements

Mount ReAnalysis-R

SMART Tool Project #: 10210599
Colliers Engineering & Design Project #: 23777001 (REV 1)

October 10, 2023

Site Information

Site ID: 5000062640-VZW / HUNTINGTON CT
Site Name: HUNTINGTON CT
Carrier Name: Verizon Wireless
Address: Lane Street
Huntington, Connecticut 06484
Fairfield County
Latitude: 41.295141°
Longitude: -73.137401°

Structure Information

Tower Type: 125-Ft Monopole
Mount Type: 12.50-Ft T-Arm

FUZE ID # 16244172

Analysis Results

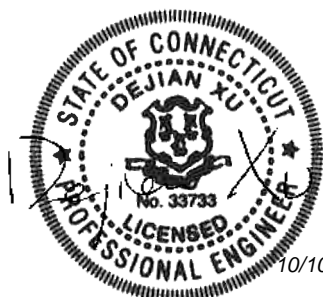
T-Arm: 81.7% **Pass w/ Mount Replacement***
(3) Site Pro 1 – RMV12-496

***Antennas and equipment to be installed in compliance with PMI Requirements of this mount analysis.**

***Contractor PMI Requirements:

**Included at the end of this MA report
Available & Submitted via portal at <https://pmi.vzwsmart.com>
For additional questions and support, please reach out to:
pmisupport@colliersengineering.com**

Report Prepared By: Andy Hanes



10/10/2023

Executive Summary:

The objective of this report is to determine the capacity of the proposed antenna support mount at the subject facility for the final wireless telecommunications configuration, per the applicable codes and standards. The proposed mount was assumed to be installed properly to the existing tower per the manufacturer’s instructions. Colliers Engineering & Design cannot verify that the proposed mount will fit properly and is not liable for any fit-up issues during installation.

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 RFDS, Site ID: 688423, dated September 21, 2023
Previous Mount Analysis	Colliers Engineering & Design, Project #: 23777001, dated April 26, 2023
Mount Specification	Site Pro 1, P/N: RMV12-496
Mount Specification	VZWSMART-SFK1

Analysis Criteria:

Codes and Standards: ANSI/TIA-222-H
 2022 Connecticut State Building Code (CSBC), Effective October 1, 2022

Wind Parameters: Basic Wind Speed (Ultimate 3-sec. Gust), V_{ULT} : 120 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 : 0.989

Seismic Parameters: S_s : 0.203 g
 S_1 : 0.054 g

Maintenance Parameters: Wind Speed (3-sec. Gust): 30 mph
 Maintenance Load, L_v : 250 lbs.
 Maintenance Load, L_m : 250 lbs.*

*Reduced as allowed per ANSI/TIA-222-H 16.9

Analysis Software: RISA-3D (V17)

Final Loading Configuration:

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

Mount Elevation (ft)	Equipment Elevation (ft)	Quantity	Manufacturer	Model	Status
119.50	120.00	6	Quintel	QS6656-5	Retained
		3	Samsung	XXDWMM-12.5-65-8T-CBRS	
		3	Samsung	B2/B66A RR-BR049	
		3	Samsung	B5/B13 RRH-BR04C	
		1	Raycap	OVP12	
		3	Samsung	MT6413-77A	Added

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

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

Standard Conditions:

1. All engineering services are performed on the basis that the information provided to Colliers Engineering & Design 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 Colliers Engineering & Design 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.
3. For mount analyses completed from other data sources (including new replacement mounts) and not specifically mapped in accordance with the NSTD-446 Standard, 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. Colliers Engineering & Design 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

Discrepancies between in-field conditions and the assumptions listed above may render this analysis invalid unless explicitly approved by Colliers Engineering & Design.

Analysis Results:

Component	Utilization %	Pass/Fail
Connection Check	35.1 %	Pass
Face Horizontal	81.7 %	Pass
Mount Pipe	72.4 %	Pass
Standoff Horizontal	50.9 %	Pass
Tie Back	6.1 %	Pass

Structure Rating – (Controlling Utilization of all Components)	81.7%
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Mount Steel (EPA)a per ANSI/TIA-222-H Section 2.6.11.2:

Ice Thickness (In)	Mount Pipes Excluded		Mount Pipes Included	
	Front (EPA)a (Sq. Ft.)	Side (EPA)a (Sq. Ft.)	Front (EPA)a (Sq. Ft.)	Side (EPA)a (Sq. Ft.)
0	11.8	11.8	30.1	30.1
0.5	15.9	15.9	41.9	41.9
1	19.6	19.6	53.2	53.2

Notes:

- (EPA)a values listed above may be used in the absence of more precise information
- (EPA)a values in the table above include 3 sector(s).
- Ka factors included in (EPA)a calculations

Requirements:

The proposed antenna mounts are **SUFFICIENT** for the final loading configuration (attachment 2) upon completion of the mount replacement (attachment 3) and requirements below.

Refer to document at the end of this form for special instructions. Contact EOR if special instructions are not available.

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. **Contractor Required Post Installation Inspection (PMI) Report Deliverables**
2. Antenna Placement Diagrams
3. Mount Manufacturer Drawings
4. Existing Mount Photos
5. Analysis Calculations

Mount Desktop – Post Modification Inspection (PMI) Report Requirements

Documents & Photos Required from Contractor – New Mount Passing MA

Electronic pdf version of this can be downloaded at <https://pmi.vzwsmart.com>

For additional questions and support, please reach out to pmisupport@colliersengineering.com

MDG #: 5000062640

SMART Project #: 10210599

Fuze Project ID: 16244172

Purpose – to provide SMART Tool structural vendor 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 installation was completed in accordance with this Passing Mount Analysis.
- Contractor shall relay any data that can impact the performance of the mount, this includes safety issues.

Base Requirements:

- If installation will cause damage to the structure, the climbing facility, or safety climb if present or any installed system, SMART Tool vendor to be notified prior to install. Any special photos outside of the standard requirements will be indicated on the drawings.
- Provide “as built mount drawings” showing contractor’s name, contact information, preparer’s signature, and date. Any deviations from the drawings (Proposed modification) shall be shown. NOTE: If loading is different than what is conveyed in the passing mount analysis (MA) contact the SMART Tool vendor immediately.
- Each photo should be time and date stamped.
- Photos should be high resolution.
- 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. If there is conflict, contact the SMART Tool engineer for recommendations.
- The PMI can be accessed at the following portal: <https://pmi.vzwsmart.com>

Photo Requirements:

- Photos taken at ground level
 - Photo of Gate Signs showing the tower owner, site name, and number.
 - Overall tower structure after installation.
 - Photos of the mount after installation; if the mounts are at different rad elevations, pictures must be provided for all elevations that equipment was installed.
- Photos taken at Mount Elevation
 - Photos showing the safety climb wire rope above and below the mount prior to installation.
 - Photos showing the climbing facility and safety climb if present.
 - Photos showing each individual sector after installation of mounts. Each entire sector shall be in one photo to show the interconnection of members.

- These photos shall also certify that the placement and geometry of the equipment on the mount is as depicted in the antenna placement diagram in this form.
- Photos that show the model number of each antenna and piece of equipment installed per sector.
- Photos of each installed mount; pictures shall also include connection hardware (U-bolts, bolts, nuts, all-threaded rods, etc.)
- Photos showing the installed mount elevation.

Antenna & Equipment Placement and Geometry Confirmation:

- The contractor shall certify that the antenna & equipment placement and geometry is in accordance with the sketch and table as included in the mount analysis and noted below.
 - The contractor certifies that the photos support and the equipment on the mount is as depicted on the sketch and table included in this form and with the mount analysis provided.

OR

- The contractor notes that the equipment on the mount is not in accordance with the sketch and has noted the differences below and provided photo documentation of any alterations.

Special Instructions / Validation as required from the MA or any other information the contractor deems necessary to share that was identified:

Issue:

Refer to document at the end of this form for special instructions. Contact EOR if special instructions are not available.

Response:

Special Instruction Confirmation:

- The contractor has read and acknowledges the above special instructions.

Contractor certifies that the climbing facility / safety climb was not damaged prior to starting work:

- Yes No

Contractor certifies no new damage created during the current installation:

- Yes No

Contractor to certify the condition of the safety climb and verify no damage when leaving the site:

Safety Climb in Good Condition

Safety Climb Damaged

Comments:

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New Mount Certification:

- The contractor certifies that the New Mount installed is as specified in the Passing Mount Analysis.
- The contractor notes that the New Mount installed is not as specified and engineering approval was received for the New Mount installed.

Certifying Individual:

Company:	
Employee Name:	
Contact Phone:	
Email:	
Date:	

PMI ADDITIONAL REQUIREMENTS

Contractor shall verify existing monopole diameter at mount elevation to be 48". Escalate any discrepancies to EOR immediately as it may render the results of this analysis invalid and require additional modifications.

Contractor shall remove existing mount and associated hardware. Contractor shall restore any degradation in galvanization on tower due to removed mount and protect with two (2) coats of cold galvanization (Zinga or Zinc Kote). Paint to match existing.

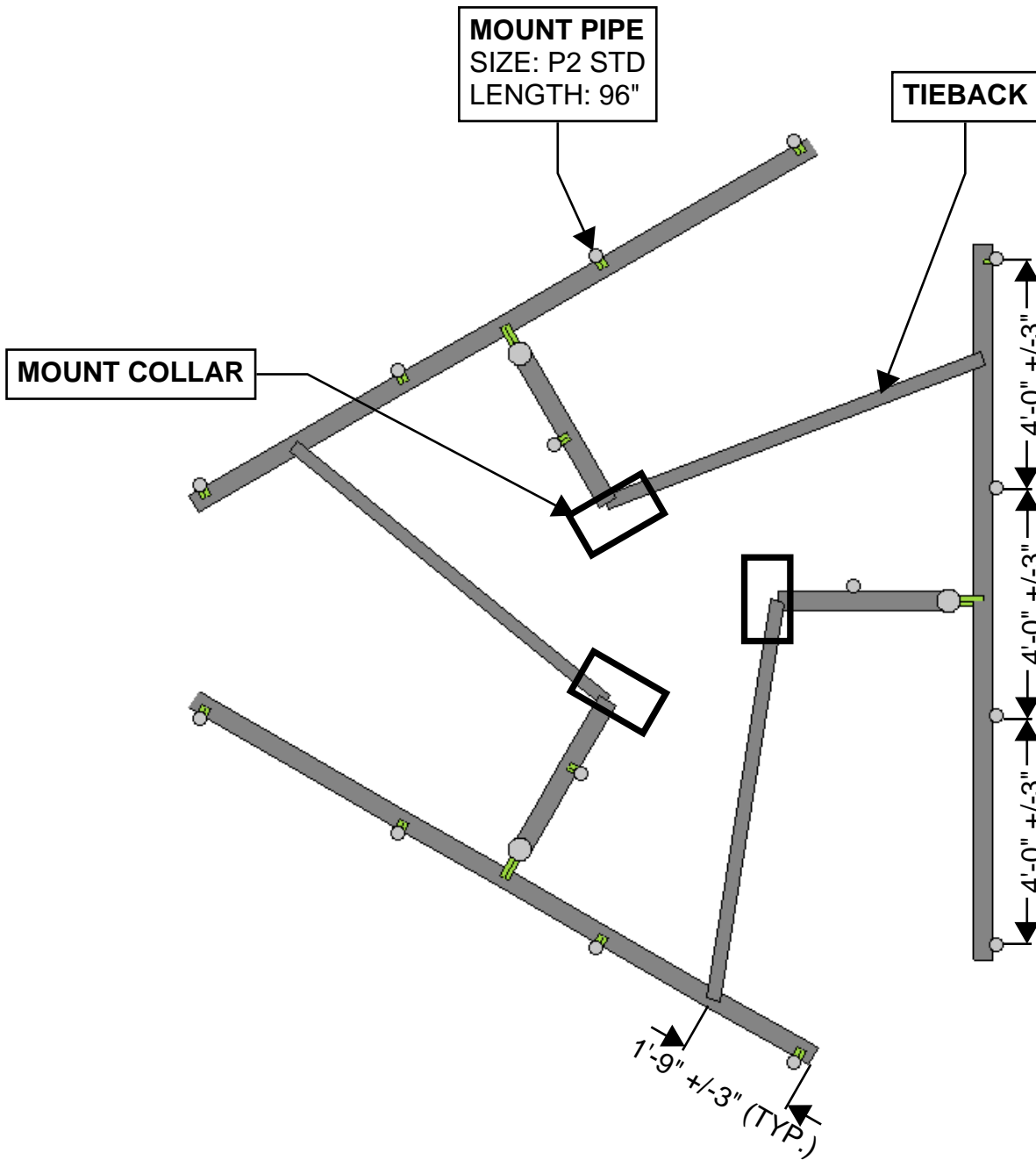
Contractor shall install the proposed mount model Site Pro 1 – RMV12-496 mounts in accordance with manufacturer specifications and the Mount Replacement Sketch. Contact EOR if these documents are not available.

Contractor shall install a new 48" long PIPE 2 SCH 40 OVP pipe on the alpha sector standoff horizontal.

Contractor shall install (1) VZWSMART-SFK1 tieback assembly per sector. Connect tower leg connection to mount face horizontal. Connect tieback mount connection to the adjacent t-arms collar. Contractor shall drill an 11/16" hole in the top plate of the collar maintaining a 1" edge distance. Apply (2) coats of cold galvanization (Zinga or Zinc Kote) to drilled holes. Trim tieback pipes so they extend no more than 12" past connection. Treat cut ends with (2) coats of cold galvanization (Zinga or Zinc Kote). Refer to mount replacement sketch.

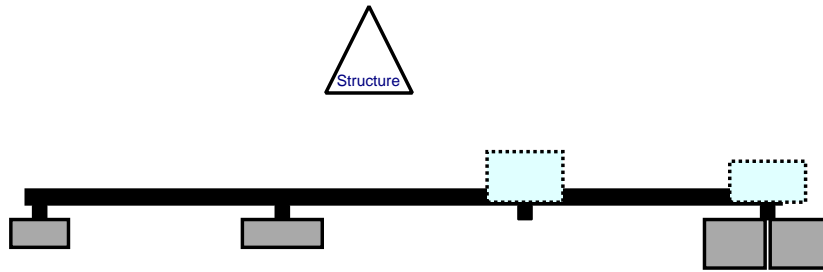
A safety climb swivel head assembly is recommended (Perfect Vision, P/N: PV-CMX-P-TB-B), to be approved by tower owner. Install per manufacturer specifications. Contractor shall inspect climbing facilities and safety climb, if present, and ensure they are in good condition. Contractor shall install safety climb wire rope guides in locations where wire rope is rubbing against the mount or mount-to-tower connection steel. Wire brush clean any observed corrosion and protect with two (2) coats of cold galvanization (Zinga or Zinc Kote). Contractor shall provide photos of wire rope guide installation as part of PMI documents. Contact EOR if additional guidance is required.

Mount Replacement Sketch

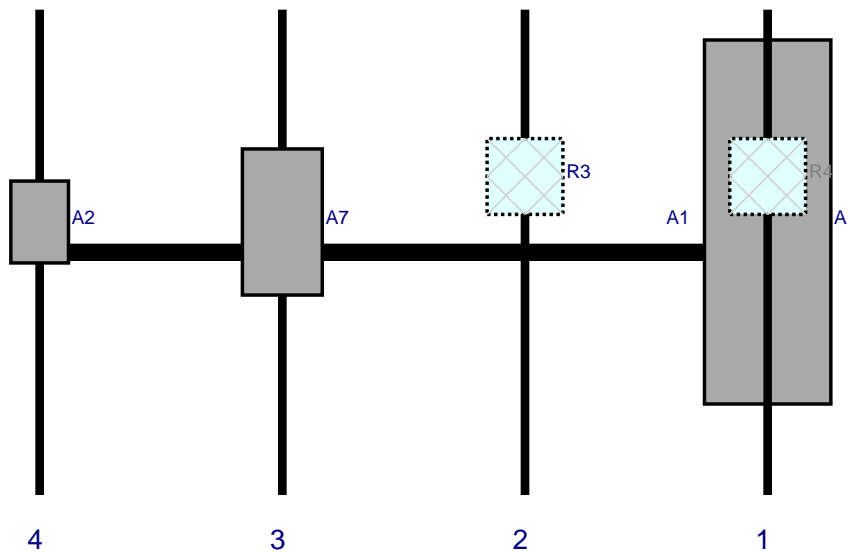


MOUNT PLAN VIEW
N.T.S

Plan View

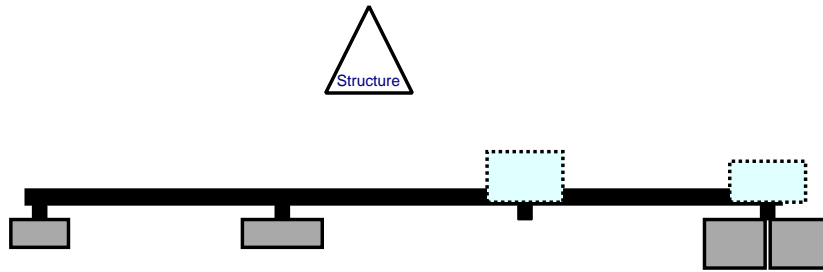


Front View - Looking at Structure

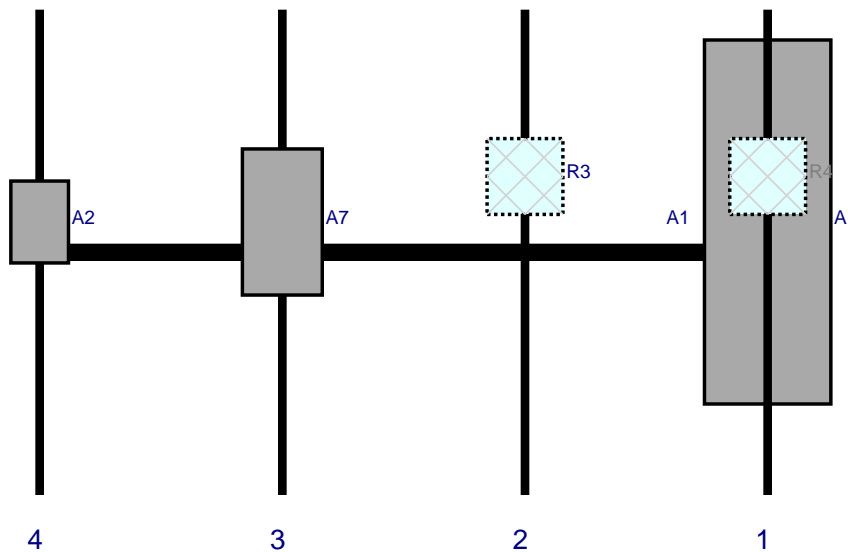


Ref#	Model	Height (in)	Width (in)	H Dist Frm L.	Pipe #	Pipe Pos V	Ant Pos	C. Ant Frm T.	Ant H Off	Status	Validation
A1	QS6656-5	72	12	147	1	a	Front	42	6.5	Retained	08/21/2020
A1	QS6656-5	72	12	147	1	b	Front	42	-6.5	Retained	08/21/2020
R4	B5/B13 RRH-BR04C	15	15	147	1	a	Behind	33	0	Retained	08/21/2020
R3	B2/B66A RR-BR049	15	15	99	2	a	Behind	33	0	Retained	08/21/2020
A7	MT6413-77A	28.9	15.8	51	3	a	Front	42	0	Added	
A2	XXDWMM-12.5-65-8T-CBRS	16.2	11.4	3	4	a	Front	42	0	Retained	08/21/2020
OVP	RVZDC-6627-PF-48	29.5	16.5			Member				Retained	08/21/2020

Plan View

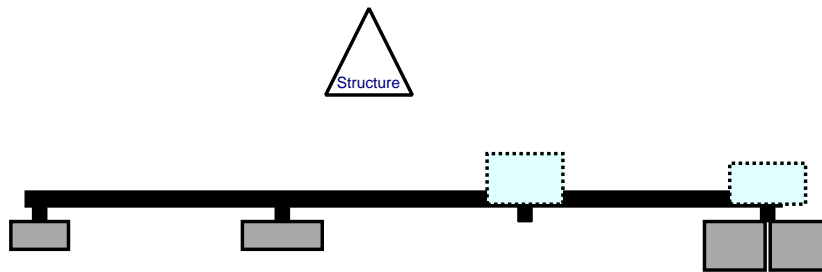


Front View - Looking at Structure

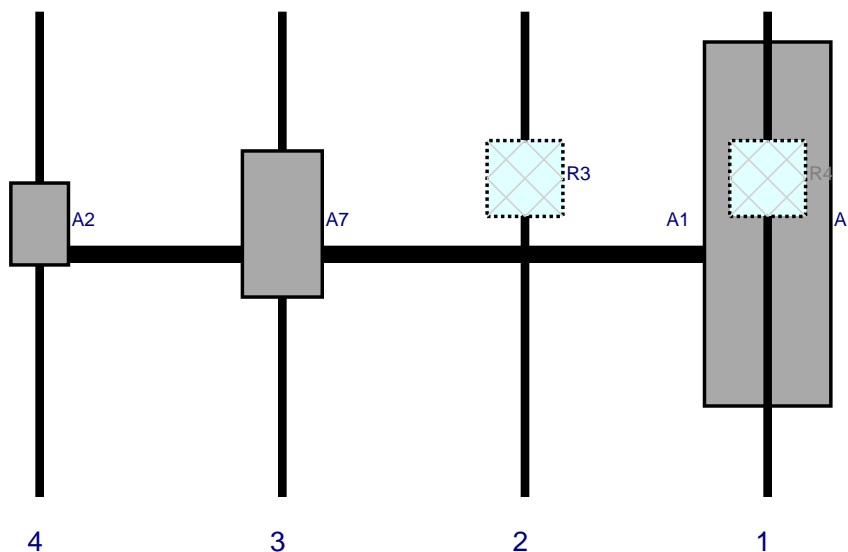


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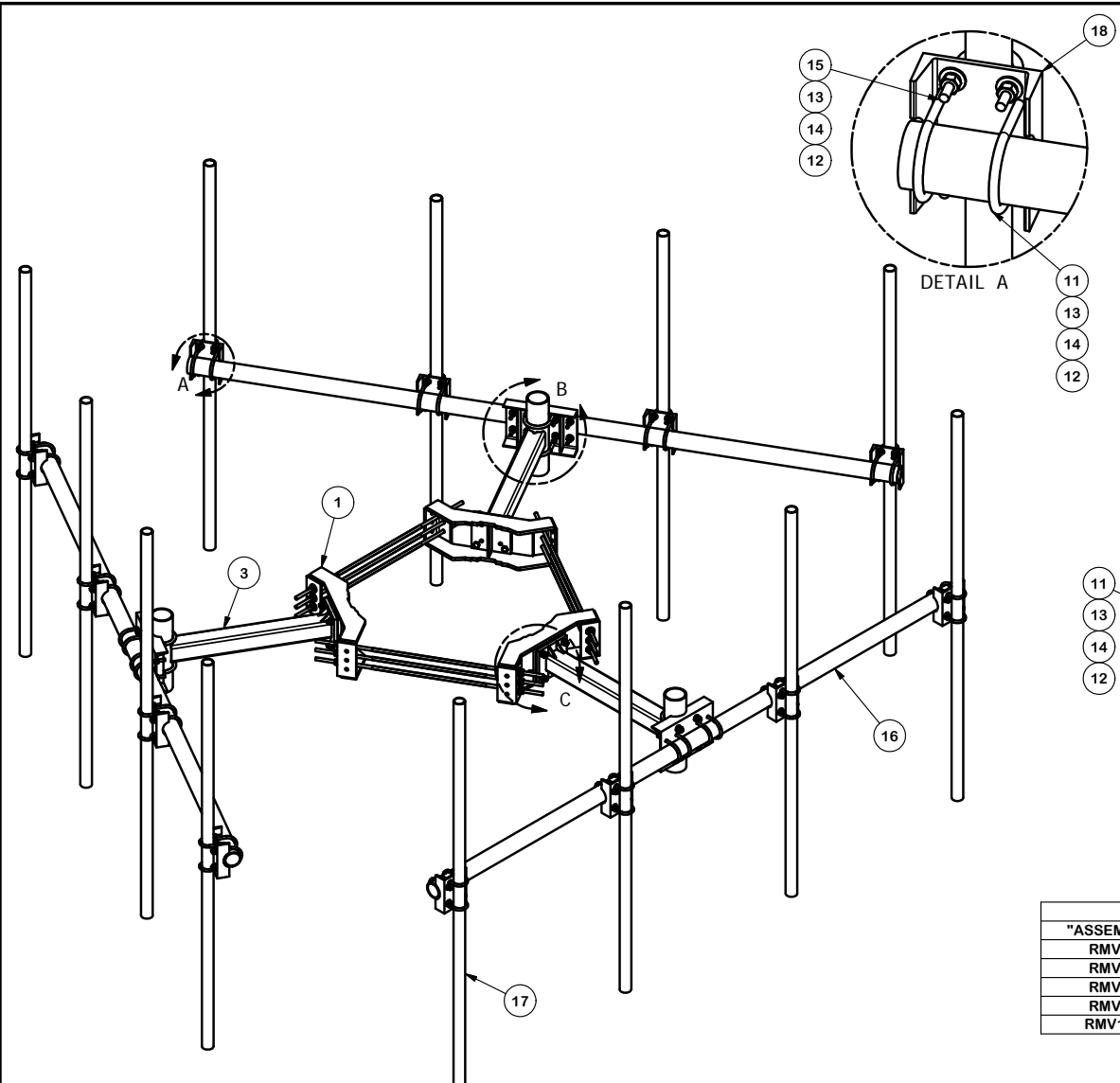
Plan View



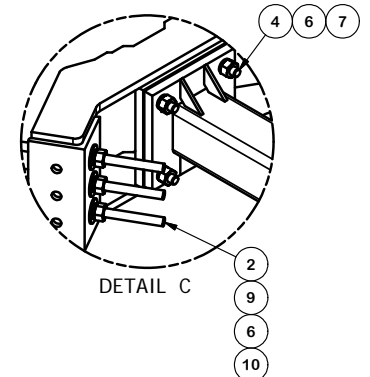
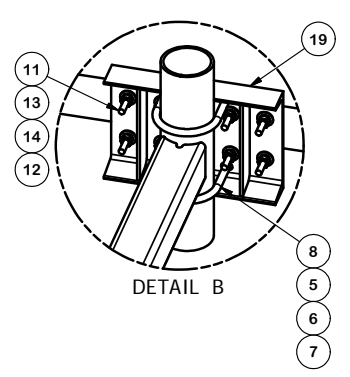
Front View - Looking at Structure



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PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	3	X-LWRM	RING MOUNT WELDMENT		68.81	206.42
2	9	G58R-24	5/8" x 24" THREADED ROD (HDG.)		0.40	3.59
2	9	G58R-48	5/8" X 48" GALV THREADED ROD		4.39	39.52
3	3	X-SV197-36	SUPPORT ARM WELDMENT - 36"		67.29	201.88
4	12	A58234	5/8" x 2-3/4" HDG A325 HEX BOLT	2.75	0.36	4.27
5	12	A58FW	5/8" HDG A325 FLATWASHER		0.03	0.41
6	42	G58LW	5/8" HDG LOCKWASHER		0.03	1.10
7	24	A58NUT	5/8" HDG A325 HEX NUT		0.13	3.12
8	6	X-UB5458	5/8" X 4-5/8" X 7" X 3" U-BOLT (HDG.)		0.26	1.54
9	18	G58FW	5/8" HDG USS FLATWASHER		0.07	1.27
10	18	G58NUT	5/8" HDG HEAVY 2H HEX NUT		0.13	2.34
11	36	X-UB1306	1/2" X 3-5/8" X 6" X 3" U-BOLT (HDG.)		0.26	9.25
12	114	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	8.17
13	114	G12FW	1/2" HDG USS FLATWASHER		0.03	3.89
14	114	G12LW	1/2" HDG LOCKWASHER		0.01	1.59
15	24	X-UB1212	1/2" X 2-1/2" X 4-1/2" X 2" U-BOLT (HDG.)		0.26	6.17
16	3	P3150	3-1/2" X 150" SCH 40 GALVANIZED PIPE	150.000 in	94.80	284.40
17	12	A	B	C	D	
18	12	X-SP219	SMALL SUPPORT CROSS PLATE	8.250 in	8.61	103.33
19	3	X-SP216	LARGE SUPPORT CROSS PLATE		20.83	62.48



ANTENNA PIPES					
"ASSEMBLY NO."	PART NO. "A"	PART DESCRIPTION "B"	LENGTH "C"	UNIT WT. "D"	TOTAL WT.
RMV12-463	P263	2-3/8" O.D. SCH. 40 PIPE	63"	19.22	1,219.29
RMV12-472	P272	2-3/8" O.D. SCH. 40 PIPE	72"	23.07	1,265.49
RMV12-484	P284	2-3/8" O.D. SCH. 40 PIPE	84"	26.91	1,311.57
RMV12-496	P296	2-3/8" O.D. SCH. 40 PIPE	96"	30.76	1,357.77
RMV12-4126	P126	2-3/8" O.D. SCH. 40 PIPE	126"	40.76	1477.77

RE	DESCRIPTION OF REVISIONS	CPD	BY	DATE
B	ADDED 10' 6" ANTENNA MOUNTING PIPES	4516	CEK	7/2/2015
A	REMOVED FLATWASH. AT ARM TO CLAMP RING CONNECTION	4516	CEK	11/4/2011

REVISION HISTORY

TOLERANCE NOTES

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

PROPRIETARY NOTE:
 THE DATA AND TECHNIQUES CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.

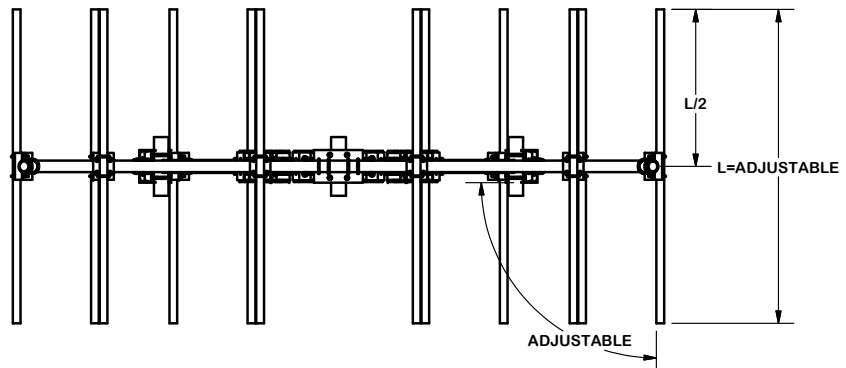
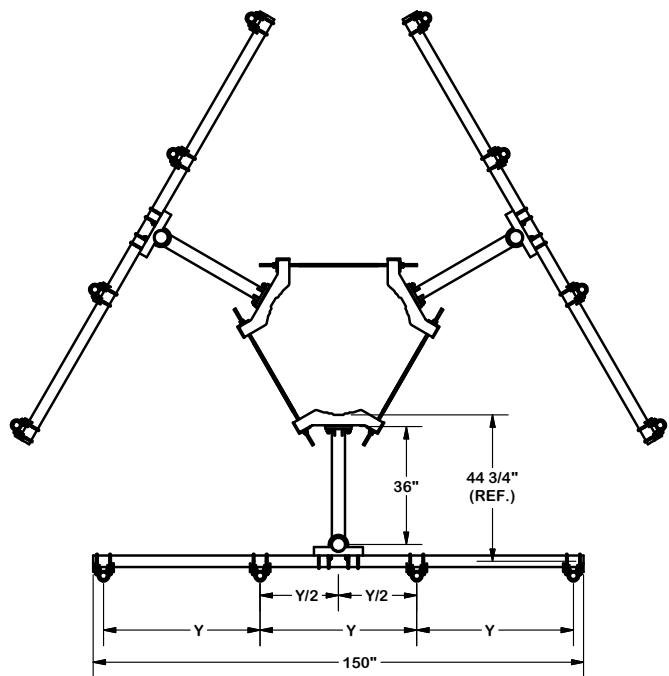
DESCRIPTION			
MONOPOLE TRIPLE T-ARM FOR 12 ANTENNAS			
CPD NO.	DRAWN BY	ENG. APPROVAL	
4516	CEK 4/15/2011		
CLASS	SUB	DRAWING USAGE	CHECKED BY
81	01	CUSTOMER	BMC 7/2/2015

A valmont COMPANY

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

Engineering
 Support Team:
 1-888-753-7446

PART NO.	SEE "ASSEMBLY NO."	PAGE
DWG. NO.	RMV12-4XX	1 OF 2



TOLERANCE NOTES

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DESCRIPTION
**MONOPOLE TRIPLE T-ARM
 FOR 12 ANTENNAS**

SITE PRO 1
 A valmont COMPANY

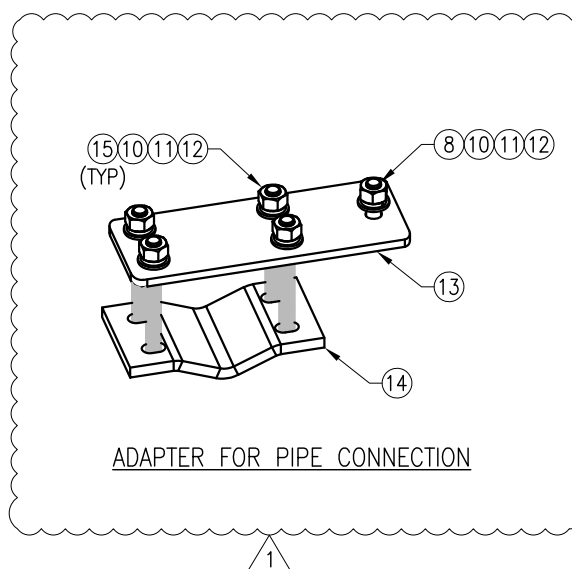
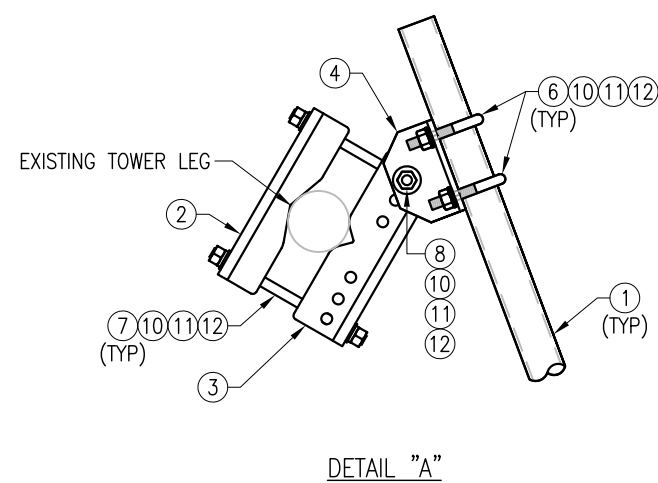
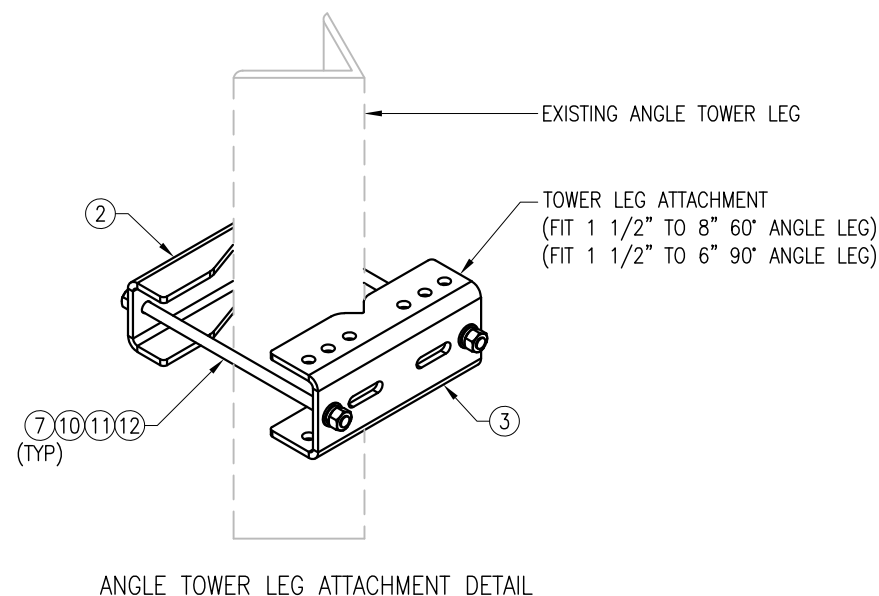
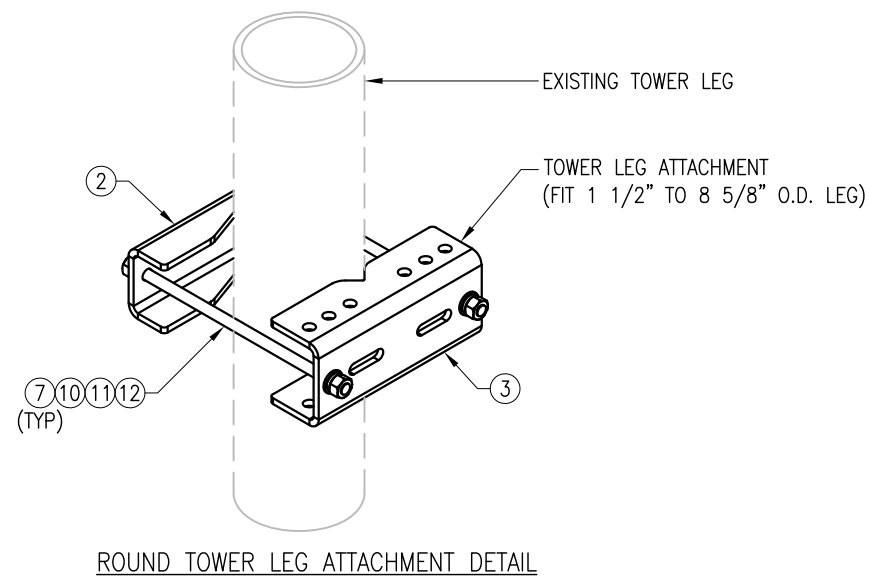
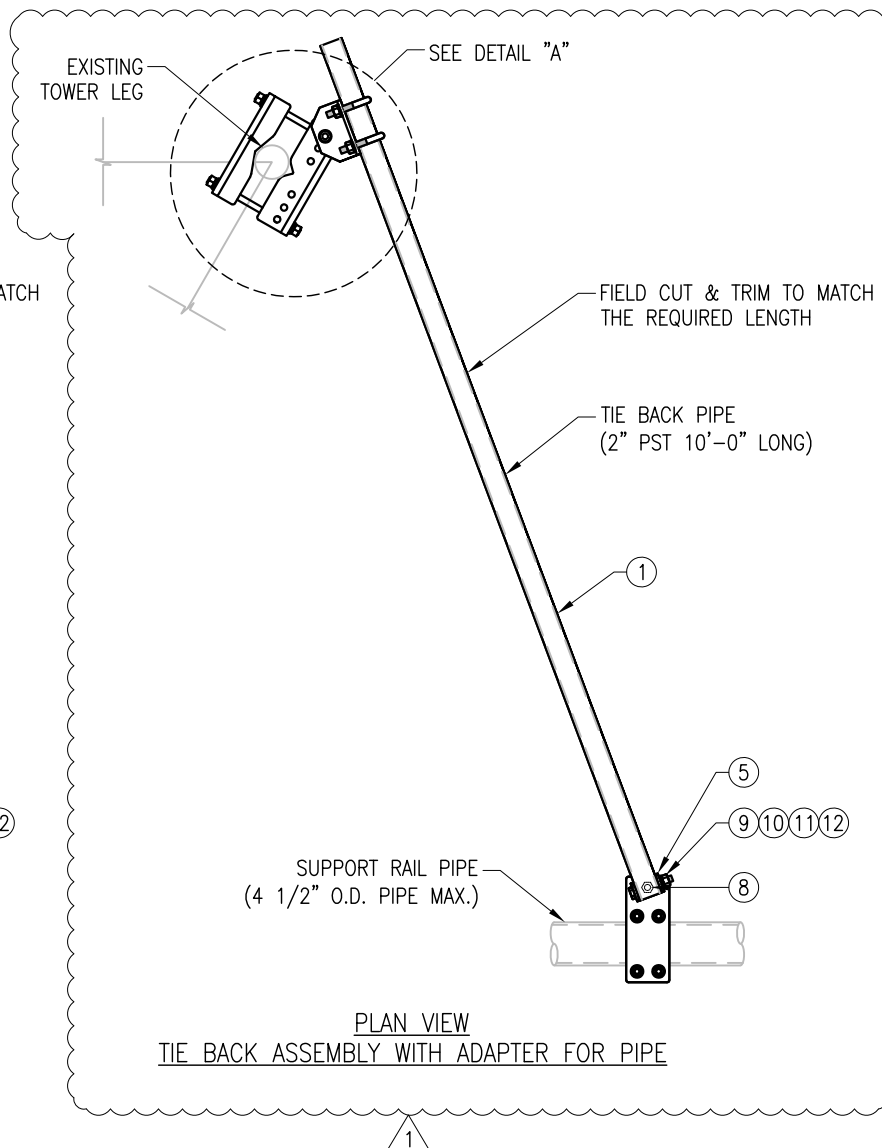
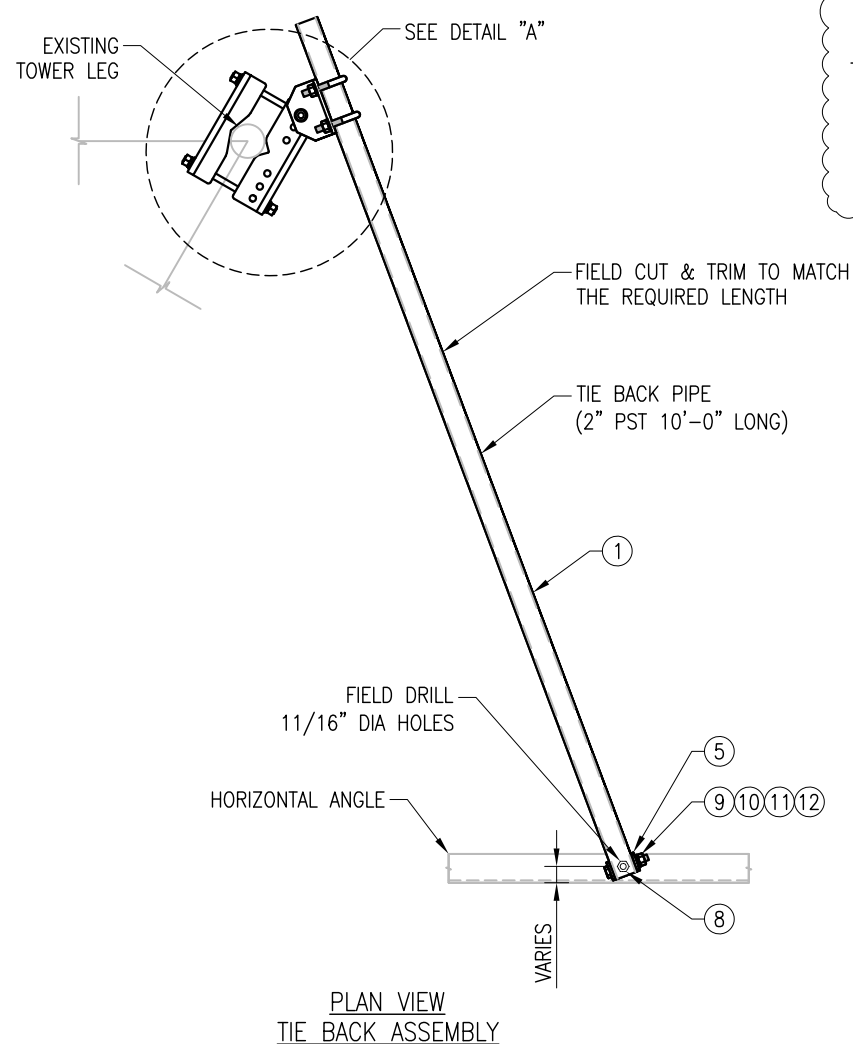
Locations:
 New York, NY
 Atlanta, GA
 Los Angeles, CA
 Plymouth, IN
 Salem, OR
 Dallas, TX

Engineering
 Support Team:
 1-888-753-7446

RE	DESCRIPTION OF REVISIONS	CPD	BY	DATE
B	ADDED 10' 6" ANTENNA MOUNTING PIPES	4516	CEK	7/2/2015
A	REMOVED FLATWASH. AT ARM TO CLAMP RING CONNECTION	4516	CEK	11/4/2011

CPD NO.	DRAWN BY	ENG. APPROVAL
4516	CEK 4/15/2011	
CLASS	SUB	DRAWING USAGE
81	01	CUSTOMER
CHECKED BY	DATE	
BMC	7/2/2015	

PART NO.	DWG. NO.
SEE "ASSEMBLY NO."	RMV12-4XX



VZWSMART-SFK1 (TIE BACK ASSEMBLY)						
ITEM NO.	QTY.	PART NO.	DESCRIPTION	SHEET #	WT	
1	1	PST2375-10	2" PST (2.375" O.D. X 0.154" THK) X 10'-0" A53 GR-B 35KSI	SFK1-F1	38	
2	1	BP825-12	PL 3/8" X 8 1/4" X 1'-0" A36 BENT PLATE	SFK1-F2	11	
3	1	BP11125-12	PL 3/8" X 11 1/8" X 1'-0" A36 BENT PLATE	SFK1-F3	14	
4	1	BP6-9375	PL 3/8" X 6" X 9 3/8" A36 BENT PLATE	SFK1-F4	6	
5	1	BP2-875	PL 1/4" X 2" X 8 3/4" A36 BENT PLATE	SFK1-F4	1	
6	2	MS02-625-300-500	RU-BOLT 5/8" X 3" I.W. X 5" I.L. A36 (OR EQUIV.)	RBC-1	2	
7	2	---	THREADED ROD 5/8" DIA. X 1'-6" F1554-36 HDG	---	0	
8	2	---	BOLT 5/8" X 2" A325	---	0	
9	1	---	BOLT 5/8" X 4 1/4" A325	---	0	
10	15	FW-625	5/8" HDG USS FLAT WASHER	---	1	
11	15	LW-625	5/8" HDG LOCK WASHER	---	0	
12	15	NUT-625	5/8" HDG HEX NUT	---	2	
13	1	PL375-4511	PL 3/8" X 4 1/2" X 11" A36	SFK1-F1	4	
14	1	V-CLAMP	PL 1/2" X 4 1/4" X 8 5/8" A36 BEND PLATE	SFK1-F5	5	
15	4	---	BOLT 5/8" X 6" FULL THREAD SAE GR 5	---	0	
					GALVANIZED WT	84

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

FOR REFERENCE ONLY

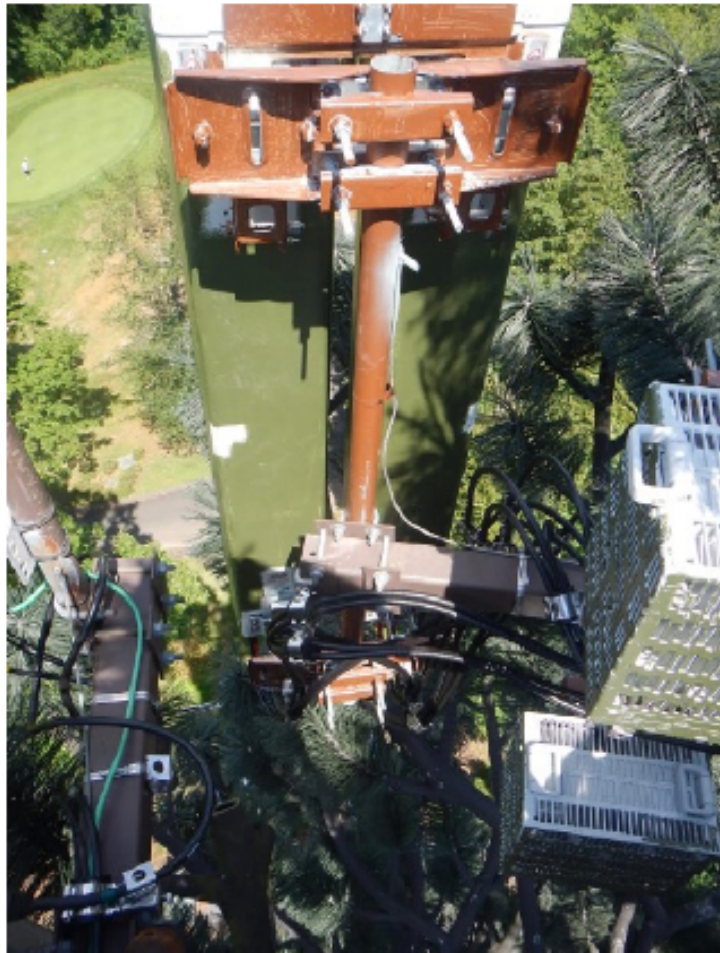
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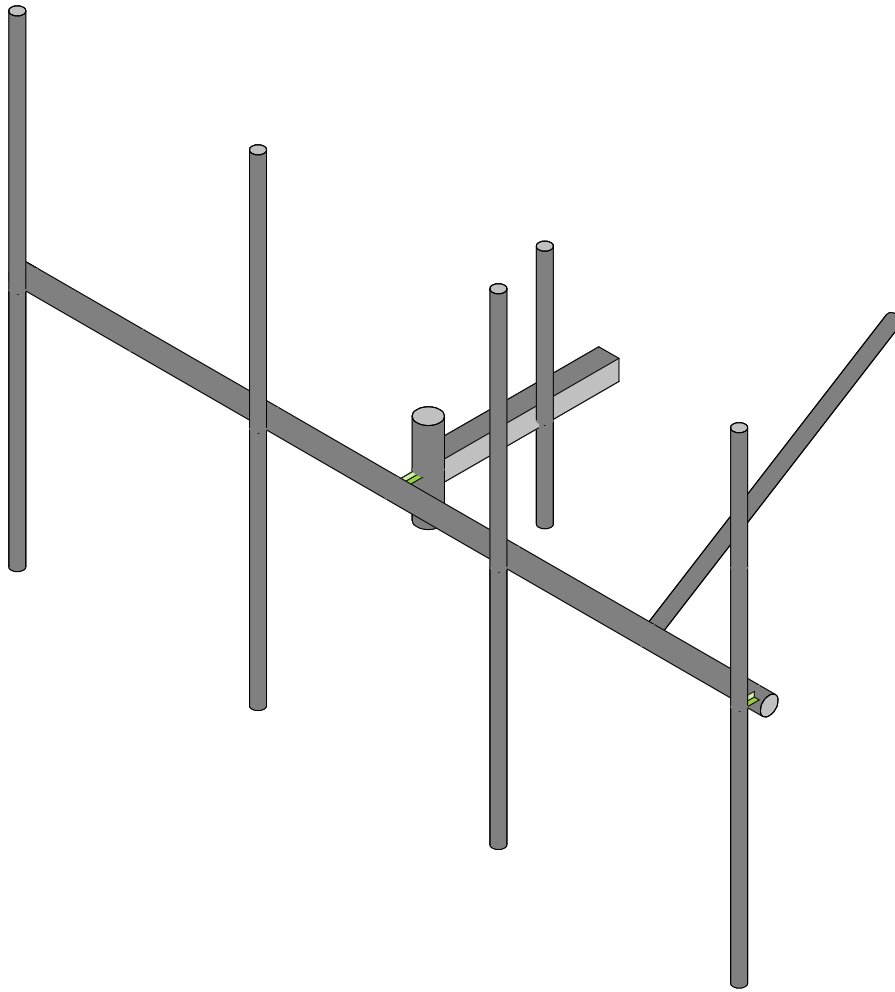
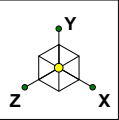
REV.	DESCRIPTION	BY	DATE
1	FIRST ISSUE	BT	05/08/20
2	REVISED	BT	04/10/21

SHEET TITLE:

VZWSMART-SFK1
TIE BACK ASSEMBLY

SHEET NUMBER: VZWSMART-SFK1 REV #: 1





Colliers Engineering & De...

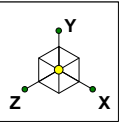
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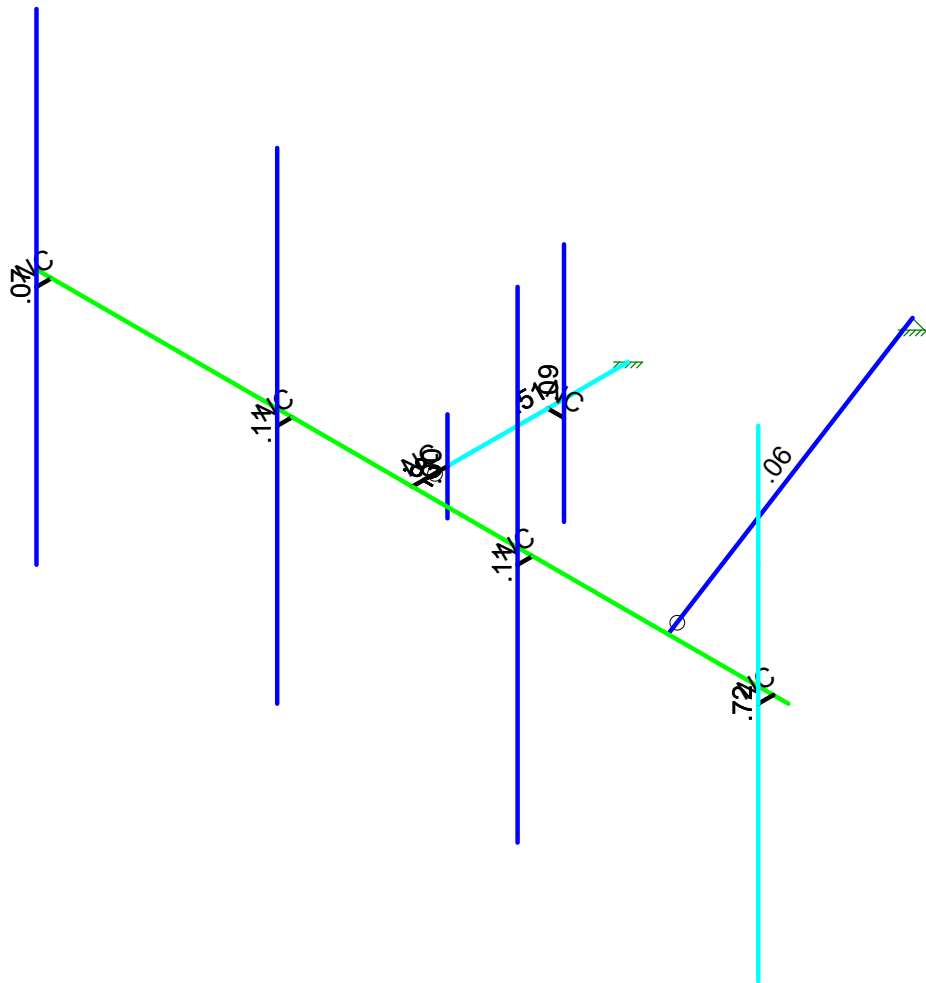
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Oct 10, 2023 at 3:08 PM

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Code Check (Env)	
Black	No Calc
Red	> 1.0
Magenta	.90-1.0
Green	.75-.90
Cyan	.50-.75
Blue	0-.50



Member Code Checks Displayed (Enveloped)
Results for LC 1, 1.2D+1.0Wo (0 Deg)

Colliers Engineering & De...	5000062640-VZW_MT_LOT_SectorA_H	SK - 2
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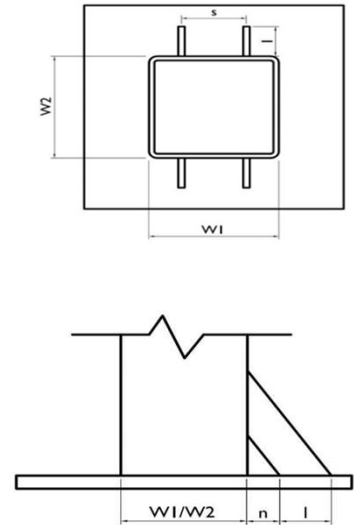
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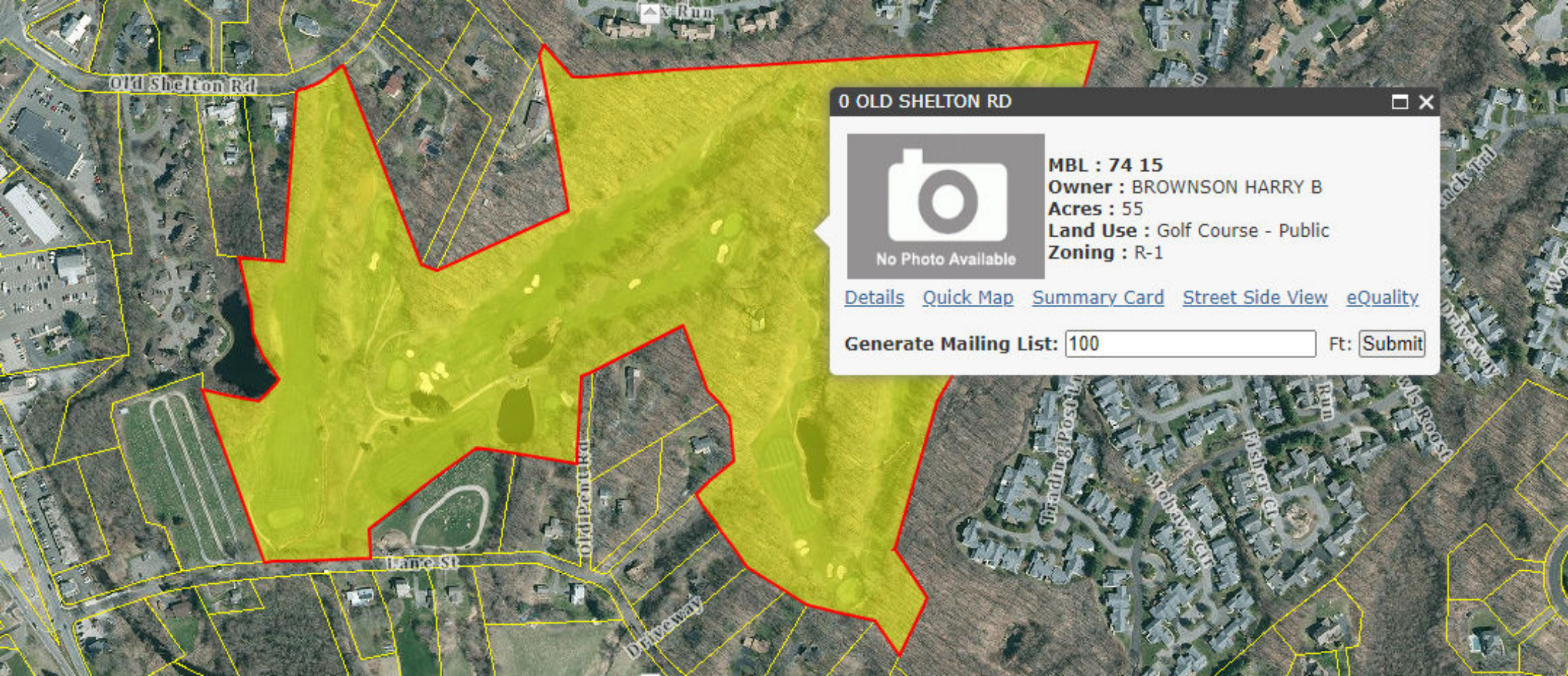
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Tower Connection Weld Checks

Weld Shape:
Weld Stiffener Configuration:
Stiffener Notch Present?
Stiffener Length, l (in):
Stiffener Spacing/Width, s (in):
Stiffener Notch Length, n (in):
Weld Size (1/16 in):
W1 (in):
W2 (in):
Weld Total Length (in):
 Z_x (in³/in):
 Z_y (in³/in):
 J_p (in⁴/in):
 c_x (in)
 c_y (in)
Required combined strength (kip/in):
Weld Capacity (kip/in):
Weld Utilization:

Yes
Rectangle
(2) Stiffeners on top/bottom
Yes
1.5
3
0.5
4
4
4
28.00
73.08
30.33
265.33
4
4
1.47
5.57
26.4%





Old Shelton Rd

0 OLD SHELTON RD □ ×



MBL : 74 15
Owner : BROWNSON HARRY B
Acres : 55
Land Use : Golf Course - Public
Zoning : R-1

[Details](#) [Quick Map](#) [Summary Card](#) [Street Side View](#) [eQuality](#)

Generate Mailing List: Ft:

Lane St

Old Pontiac Dr

Driveway

Trading Post

Mohave Cir

Harbor Cir

Rain

Wes Roosa

Cluck Crab

1001

City of Shelton

Geographic Information System (GIS)

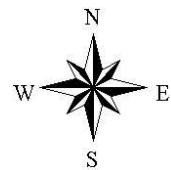


Date Printed: 1/8/2024



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Town of Shelton, CT

Property Listing Report

Map Block Lot **74 15**

Building #

Unique Identifier

74 15

Property Information

Property Location	0 OLD SHELTON RD
Mailing Address	15 SOUNDVIEW AVE SHELTON CT 06484
Land Use	Golf Course - Public
Zoning Code	R-1
Neighborhood	24000

Owner	BROWNSON HARRY B
Co-Owner	COUNTRY CLUB
Book / Page	0193/0448
Land Class	Commercial
Census Tract	
Acreage	55

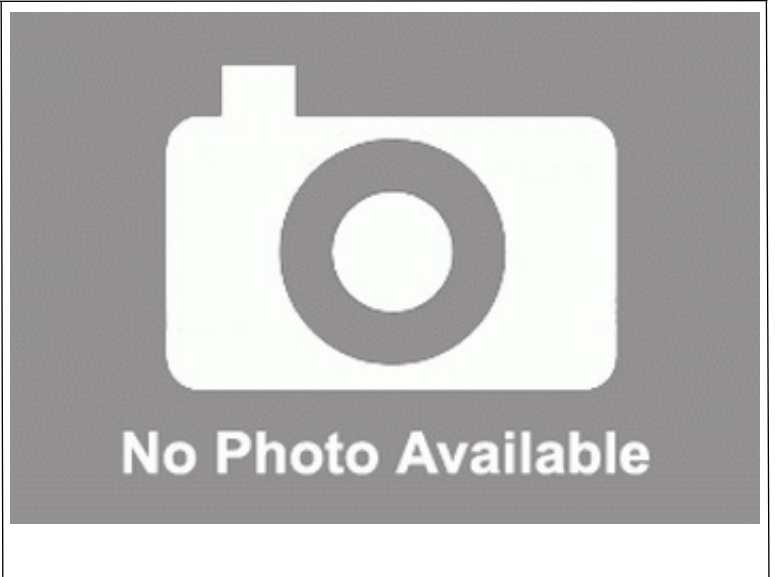
Valuation Summary

(Assessed value = 70% of Appraised Value)

Item	Appraised	Assessed
Buildings	0	0
Outbuildings	67500	47250
Land	1001000	700700
Total	1068500	747950

Utility Information

Electric	NA
Gas	NA
Sewer	NA
Public Water	NA
Well	NA



Primary Construction Details

Year Built	
Building Desc.	
Building Style	
Stories	
Exterior Walls	
Exterior Walls 2	
Interior Walls	
Interior Walls 2	
Interior Floors 1	
Interior Floors 2	

Heating Fuel	
Heating Type	
AC Type	
Bedrooms	
Full Bathrooms	
Half Bathrooms	
Extra Fixtures	
Total Rooms	
Bath Style	
Kitchen Style	
Occupancy	

Building Use	
Building Condition	
Frame Type	
Fireplaces	
Bsmt Gar	
Fin Bsmt Area	
Fin Bsmt Quality	
Building Grade	
Roof Style	
Roof Cover	

Report Created On

1/8/2024

Town of Shelton, CT

Property Listing Report

Map Block Lot **74 15**

Building #

Unique Identifier **74 15**

Detached Outbuildings

Type	Description	Area (sq ft)	Condition	Year Built
Golf	Holes	9	Average	1959

Attached Extra Features

Type	Description	Area (sq ft)	Condition	Year Built

Sales History

Owner of Record	Book/ Page	Sale Date	Sale Price
BROWNSON HARRY B	0193_0448	9/12/1963	0



VICINITY MAP



AMERICAN TOWER®

ATC SITE NAME: BROWNSON COUNTRY CLUB CT
 ATC SITE NUMBER: 415438
 VERIZON SITE NAME: HUNTINGTON CT
 VERIZON SITE NUMBER: 5000062640
 VERIZON FUZE PID: 16244172
 SITE ADDRESS: 15 SOUNDVIEW AVENUE
 SHELTON, CT 06484



LOCATION MAP

AMERICAN TOWER®
 A.T. ENGINEERING SERVICES, PLLC
 1 FENTON MAIN STREET
 SUITE 300
 CARY, NC 27511
 PHONE: (919) 468-0112
 COA: PEC.0001553

THE USE AND PUBLICATION OF THESE DRAWINGS SHALL BE RESTRICTED TO THE ORIGINAL SITE FOR WHICH THEY ARE PREPARED. ANY USE OR DISCLOSURE OTHER THAN THAT WHICH RELATES TO AMERICAN TOWER OR THE SPECIFIED CARRIER IS STRICTLY PROHIBITED. NEITHER THE ARCHITECT NOR THE ENGINEER WILL BE PROVIDING ON-SITE CONSTRUCTION REVIEW OF THIS PROJECT. CONTRACTOR(S) MUST VERIFY ALL DIMENSIONS AND ADVISE AMERICAN TOWER OR THE SPECIFIED CARRIER OF ANY DISCREPANCIES. ANY PRIOR ISSUANCE OF THIS DRAWING IS SUPERSEDED BY THE LATEST VERSION.

REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	JMB	12/26/23

ATC SITE NUMBER:
 415438
 ATC SITE NAME:
 BROWNSON COUNTRY CLUB CT
 VERIZON SITE NAME:
 HUNTINGTON CT
 SITE ADDRESS:
 15 SOUNDVIEW AVENUE
 SHELTON, CT 06484



VERIZON AMENDMENT DRAWINGS

COMPLIANCE CODE	PROJECT SUMMARY	PROJECT DESCRIPTION	SHEET INDEX				
ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNMENT AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES. 1. INTERNATIONAL BUILDING CODE (IBC) 2. NATIONAL ELECTRIC CODE (NEC) 3. LOCAL BUILDING CODE 4. CITY/COUNTY ORDINANCES	<u>SITE ADDRESS:</u> 15 SOUNDVIEW AVENUE SHELTON, CT 06484 COUNTY: FAIRFIELD <u>GEOGRAPHIC COORDINATES:</u> LATITUDE: 41° 17' 42.000" N LONGITUDE: 73° 8' 13.999" W GROUND ELEVATION: 304' AMSL	THE PROPOSED PROJECT INCLUDES MODIFYING GROUND BASED AND TOWER MOUNTED EQUIPMENT AS INDICATED PER BELOW: REMOVE (6) ANTENNA(S) INSTALL (3) T-ARM(S), MOUNT MODIFICATIONS, AND (3) ANTENNA(S) EXISTING (9) ANTENNA(S), (6) RRH(S), (1) OVP(S), (6) 1-5/8" COAX CABLE(S) AND (1) 2.02" HYBRID CABLE(S) TO REMAIN	SHEET NO:	DESCRIPTION:	REV:	DATE:	BY:
	<u>PROJECT TEAM</u> <u>TOWER OWNER:</u> AMERICAN TOWER 10 PRESIDENTIAL WAY WOBURN, MA 01801 <u>ENGINEER:</u> ATC TOWER SERVICES, LLC 1 FENTON MAIN, STE 300 CARY, NC 27511 <u>PROPERTY OWNER:</u> UNISON WIRELESS US LLC 15 SOUNDVIEW AVENUE SHELTON, CT 06484	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).	G-001	TITLE SHEET	0	12/26/23	JMB
<u>UTILITY COMPANIES</u> POWER COMPANY: NORTHEAST UTILITIES PHONE: (800) 286-2000 TELEPHONE COMPANY: UNKNOWN PHONE: (555) 555-5555	<u>APPLICANT:</u> VERIZON WIRELESS	PROJECT LOCATION DIRECTIONS 91 SOUTH TO CT-15 (WILBUR CROSS). EXIT 52 FOR RT 8 NORTH. EXIT 11 FOR HUNTINGTON RD. LEFT ON HUNTINGTON 3 MILES RIGHT ON LANE STREET. ACCESS RD DIRECTLY OFF LANE STREET AT ADDRESS 55	CONTRACTOR PMI REQUIREMENTS PMI ACCESSED AT: HTTPS://PMI.VZWSMART.COM SMART TOOL VENDOR PROJECT NUMBER: 10210599 VZW LOCATION CODE (PSLC): 5000062640 ***PMI AND REQUIREMENTS ALSO EMBEDDED IN MOUNT ANALYSIS REPORT MOUNT MODIFICATION REQUIRED: MOUNT REPLACEMENT VZW APPROVED SMART KIT VENDORS: REFER TO MOUNT MODIFICATION DRAWINGS PAGES FOR VZW SMART KIT APPROVED VENDORS				



ATC JOB NO: 14505939_GO
 CUSTOMER ID: HUNTINGTON CT
 CUSTOMER #: 5000062640

TITLE SHEET

SHEET NUMBER:
G-001
 REVISION:
0



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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 ANSIEIA/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. WHEN THE PROJECT SCOPE REQUIRES THE USE OF THE SAFETY CLIMB, THE GENERAL CONTRACTOR SHALL ENSURE THE SAFETY CLIMB IS FREE OF OBSTRUCTIONS, NOT RUBBING ON OR TRAPPED BY ANY INSTALLED CUSTOMER EQUIPMENT, IS VISUALLY TAUT, MEETS MANUFACTURER INSTALLATION SPECIFICATIONS, AND IS FIRMLY SECURED AT ALL CABLE GUIDE LOCATIONS UPON PROJECT COMPLETION.
29. COMPLETION OF PROJECT SHALL NOT OBSTRUCT, TRAP, LOOSEN, OR OTHERWISE CAUSE FAILURE TO MEET MANUFACTURER INSTALLATION REQUIREMENTS FOR THE SAFETY CLIMB.
30. 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 CONSTRUCTION DEVICES SUCH AS WELDING AND FIRE PREVENTION, TEMPORARY SHORING, SCAFFOLDING, TRENCH BOXES/SLOPING, BARRIERS, ETC.
31. 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.
32. 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.
33. 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.
34. 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.
35. 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 OF COORDINATION AND SITE ACCESS. ERECTION SUBCONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF PERSONNEL.
 - B. INSTALL ANTENNAS AS INDICATED 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 GREEN 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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REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	JMB	12/26/23

ATC SITE NUMBER:
 415438
 ATC SITE NAME:
BROWNSON COUNTRY CLUB CT
 VERIZON SITE NAME:
HUNTINGTON CT
 SITE ADDRESS:
 15 SOUNDVIEW AVENUE
 SHELTON, CT 06484

SEAL:



Digitally Signed: 2023-12-29



ATC JOB NO:	14505939_G0
CUSTOMER ID:	HUNTINGTON CT
CUSTOMER #:	5000062640

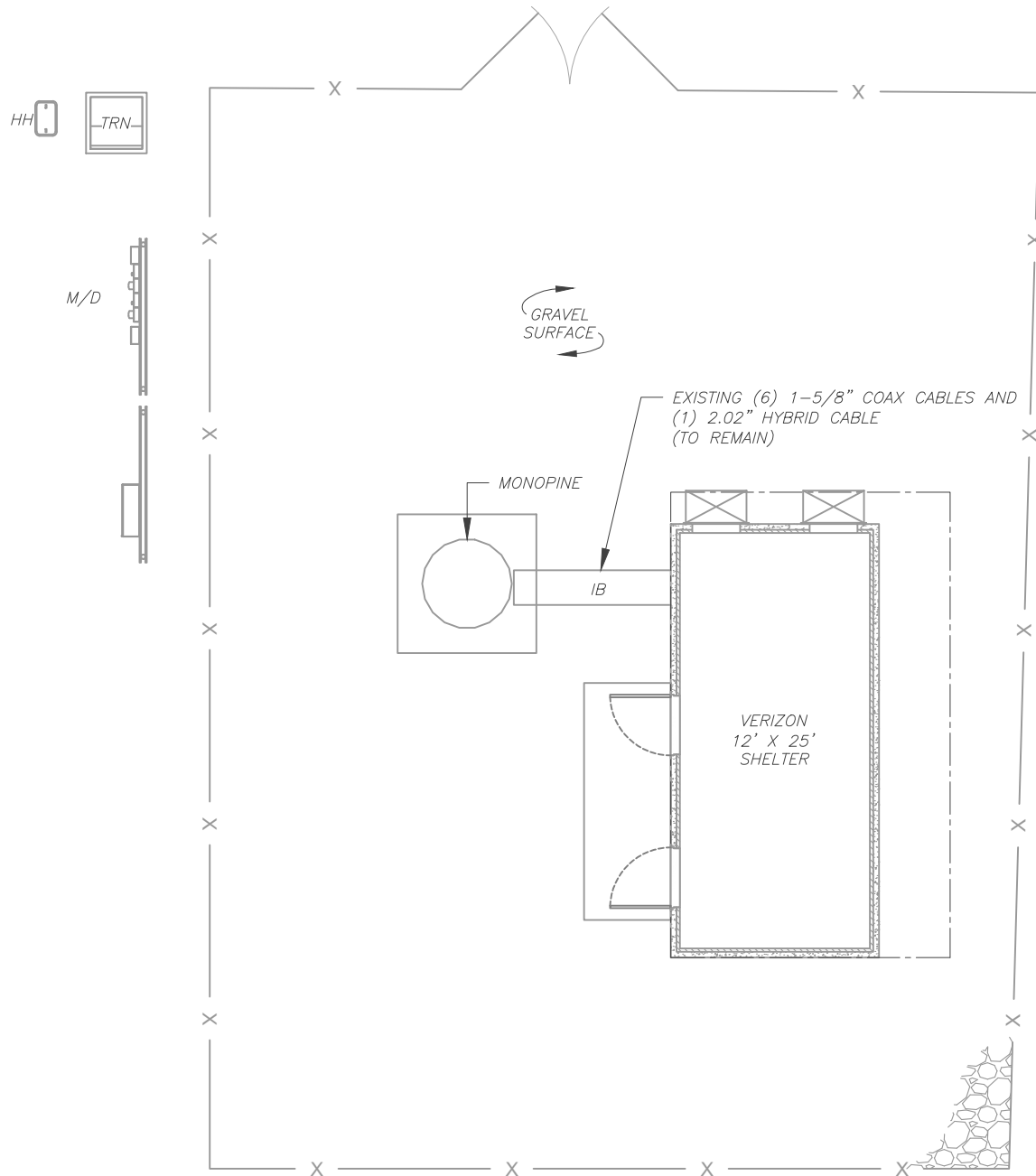
GENERAL NOTES

SHEET NUMBER: G-002	REVISION: 0
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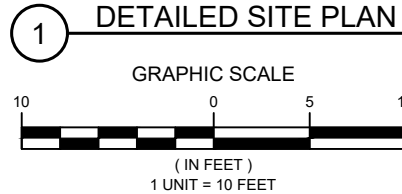
SITE PLAN NOTES:

1. THIS SITE PLAN REPRESENTS THE BEST PRESENT KNOWLEDGE AVAILABLE TO THE ENGINEER AT THE TIME OF THIS DESIGN. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO CONSTRUCTION AND VERIFY ALL EXISTING CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT.
2. ICE BRIDGE, CABLE LADDER, COAX PORT, AND COAX CABLE ARE SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL CONFIRM THE EXACT LOCATION OF ALL PROPOSED AND EXISTING EQUIPMENT AND STRUCTURES DEPICTED ON THIS PLAN. BEFORE UTILIZING EXISTING CABLE SUPPORTS, COAX PORTS, INSTALLING NEW PORTS OR ANY OTHER EQUIPMENT, CONTRACTOR SHALL VERIFY ALL ASPECTS OF THE COMPONENTS MEET THE ATC SPECIFICATIONS.
3. NO ELECTRICAL SCOPE IS INCLUDED IN THIS PROJECT.



LEGEND

⊗	GROUNDING TEST WELL
ATS	AUTOMATIC TRANSFER SWITCH
B	BOLLARD
CSC	CELL SITE CABINET
D	DISCONNECT
E	ELECTRICAL
F	FIBER
GEN	GENERATOR
G	GENERATOR RECEPTACLE
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
—	CHAINLINK FENCE



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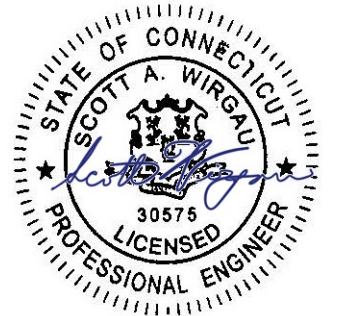
ATC SITE NUMBER:
415438

ATC SITE NAME:
BROWNSON COUNTRY CLUB CT

VERIZON SITE NAME:
HUNTINGTON CT

SITE ADDRESS:
 15 SOUNDVIEW AVENUE
 SHELTON, CT 06484

SEAL:



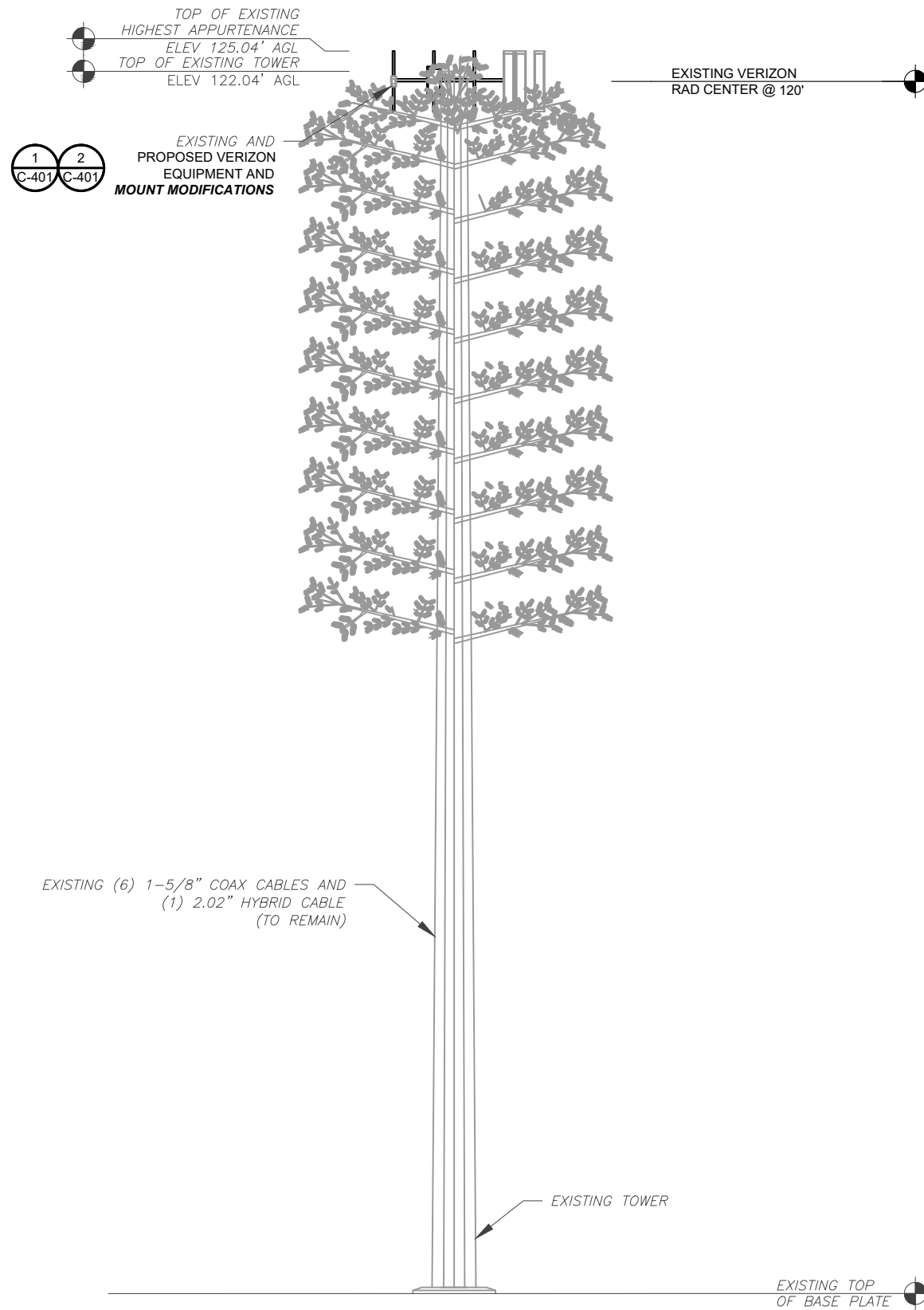
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ATC JOB NO:	14505939_G0
CUSTOMER ID:	HUNTINGTON CT
CUSTOMER #:	5000062640

DETAILED SITE PLAN

SHEET NUMBER:	REVISION:
C-101	0



PER MOUNT ANALYSIS COMPLETED BY COLLIERS ENGINEERING & DESIGN, DATED 10/10/2023, THE PROPOSED 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.



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415438
 ATC SITE NAME:
BROWNSON COUNTRY CLUB CT
 VERIZON SITE NAME:
HUNTINGTON CT
 SITE ADDRESS:
 15 SOUNDVIEW AVENUE
 SHELTON, CT 06484



Digitally Signed: 2023-12-29



ATC JOB NO: 14505939_GO
 CUSTOMER ID: HUNTINGTON CT
 CUSTOMER #: 5000062640

TOWER ELEVATION

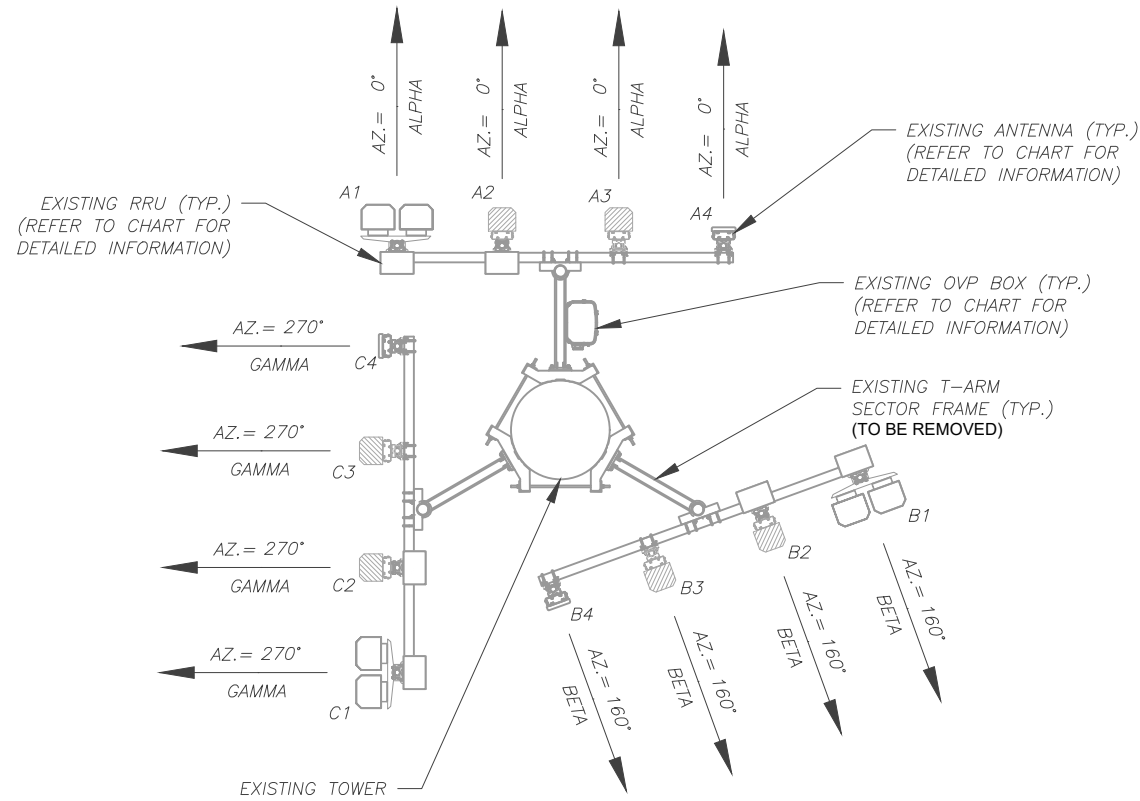
SHEET NUMBER: C-201	REVISION: 0
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- TOWER NOTE:**
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM WITH THE PROJECT MANAGER THAT THEY HAVE THE MOST RECENT VERSION OF THE STRUCTURAL ANALYSIS BEFORE COMMENCING WORK. EXISTING AND PROPOSED TOWER APPURTENANCES, MOUNTS, AND ANTENNAS ARE SHOWN BASED ON THE STRUCTURAL ANALYSIS. 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.
 - TOWER ELEVATIONS ARE MEASURED FROM TOP OF BASE PLATE TO MATCH STRUCTURAL ANALYSIS. ELEVATIONS DO NOT REFLECT TRUE ABOVE GROUND LEVEL (A.G.L.)
 - TOWER ELEVATION DEPICTION MAY NOT REFLECT ALL EQUIPMENT INCLUDED IN STRUCTURAL ANALYSIS. REFER TO STRUCTURAL ANALYSIS FOR FULL TOWER LOADING.

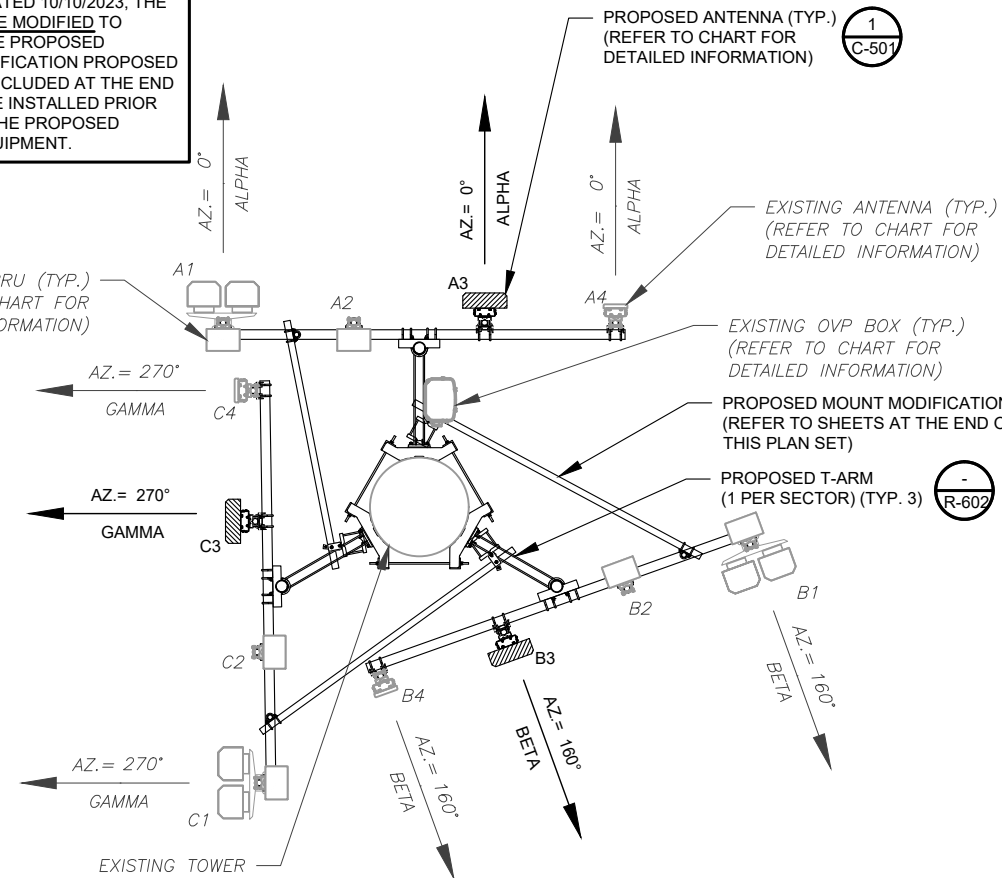
1 TOWER ELEVATION
 SCALE: N.T.S.

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PER MOUNT ANALYSIS COMPLETED BY COLLIERS ENGINEERING & DESIGN, DATED 10/10/2023, THE PROPOSED 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.



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



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

EXISTING ANTENNA SCHEDULE								
LOCATION			ANTENNA SUMMARY				NON ANTENNA SUMMARY	
SECTOR	RAD	AZ	POS	ANTENNA	BAND	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT	STATUS
ALPHA		0°	A1	(2) QS6656-5D	700,850,1900,AWS LTE/850 5G	REL	B5/B13 RRH-BR04C	REL
			A2	DB846F65ZAXY	850 CDMA	RMV	B2/B66A RRH-BR049	REL
			A3	DB846F65ZAXY	850 CDMA	RMV	-	-
			A4	RT4401-48A W/ CLIP ON ANTENNA	CBRS LTE	REL	-	-
BETA	120°	160°	B1	(2) QS6656-5D	700,850,1900,AWS LTE/850 5G	REL	B5/B13 RRH-BR04C	REL
			B2	DB846F65ZAXY	850 CDMA	RMV	B2/B66A RRH-BR049	REL
			B3	DB846F65ZAXY	850 CDMA	RMV	-	-
			B4	RT4401-48A W/ CLIP ON ANTENNA	CBRS LTE	REL	-	-
GAMMA		270°	C1	(2) QS6656-5D	700,850,1900,AWS LTE/850 5G	REL	B5/B13 RRH-BR04C	REL
			C2	DB846F65ZAXY	850 CDMA	RMV	B2/B66A RRH-BR049	REL
			C3	DB846F65ZAXY	850 CDMA	RMV	-	-
			C4	RT4401-48A W/ CLIP ON ANTENNA	CBRS LTE	REL	-	-

NOTES

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

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	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT	STATUS
ALPHA		0°	A1	(2) QS6656-5D	700,850,1900,AWS LTE/850 5G	REL	B5/B13 RRH-BR04C	REL
			A2	-	-	-	B2/B66A RRH-BR049	REL
			A3	MT6413-77A	L-SUB6 5G	ADD	-	-
			A4	RT4401-48A W/ CLIP ON ANTENNA	CBRS LTE	REL	-	-
BETA	120°	160°	B1	(2) QS6656-5D	700,850,1900,AWS LTE/850 5G	REL	B5/B13 RRH-BR04C	REL
			B2	-	-	-	B2/B66A RRH-BR049	REL
			B3	MT6413-77A	L-SUB6 5G	ADD	-	-
			B4	RT4401-48A W/ CLIP ON ANTENNA	CBRS LTE	REL	-	-
GAMMA		270°	C1	(2) QS6656-5D	700,850,1900,AWS LTE/850 5G	REL	B5/B13 RRH-BR04C	REL
			C2	-	-	-	B2/B66A RRH-BR049	REL
			C3	MT6413-77A	L-SUB6 5G	ADD	-	-
			C4	RT4401-48A W/ CLIP ON ANTENNA	CBRS LTE	REL	-	-

EXISTING FIBER DISTRIBUTION/OVP BOX		EXISTING CABLING SUMMARY	
MODEL NUMBER	STATUS	CABLE QTY, SIZE, TYPE	STATUS
DB-C1-12C-24AB-0Z	RMN	(6) 1-5/8" COAX (1) 2.02" HYBRID	RMN
-	-	-	-

3 EQUIPMENT SCHEDULES

FINAL FIBER DISTRIBUTION / OVP BOX		FINAL CABLING SUMMARY	
MODEL NUMBER	STATUS	CABLE QTY, SIZE, TYPE	STATUS
DB-C1-12C-24AB-0Z	RMN	(6) 1-5/8" COAX (1) 2.02" HYBRID	RMN
-	-	-	-

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REV.	DESCRIPTION	BY	DATE
0	FOR CONSTRUCTION	JMB	12/26/23

ATC SITE NUMBER:
415438

ATC SITE NAME:
BROWNSON COUNTRY CLUB CT

VERIZON SITE NAME:
HUNTINGTON CT

SITE ADDRESS:
15 SOUNDVIEW AVENUE
SHELTON, CT 06484



Digitally Signed: 2023-12-29

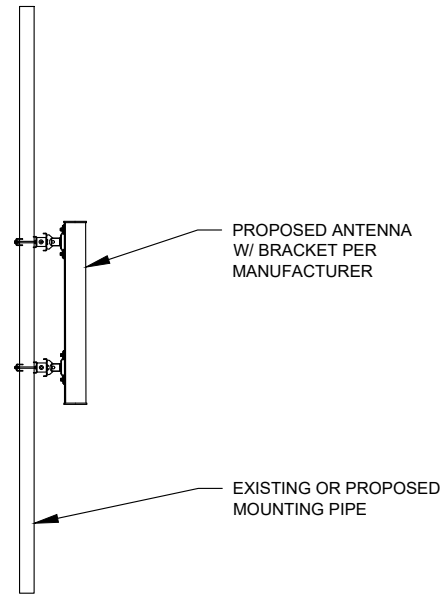


ATC JOB NO:	14505939_GO
CUSTOMER ID:	HUNTINGTON CT
CUSTOMER #:	5000062640

ANTENNA INFORMATION & SCHEDULE	
SHEET NUMBER:	REVISION:
C-401	0

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EXISTING/PROPOSED MOUNTS AND/OR MOUNT MODIFICATIONS NOT SHOWN FOR CLARITY. REFER TO ANTENNA PLANS, MOUNT ANALYSES AND/OR MOUNT MODIFICATION DOCUMENTS FOR ADDITIONAL DETAIL.



1 PROPOSED 5G ANTENNA MOUNTING DETAIL - TYPICAL
SCALE: N.T.S.



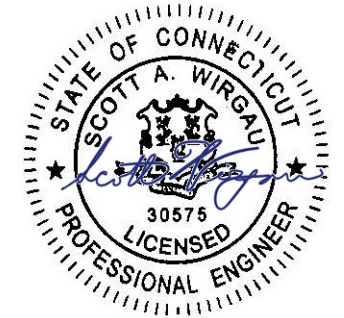
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ATC SITE NUMBER:
415438
 ATC SITE NAME:
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 VERIZON SITE NAME:
HUNTINGTON CT
 SITE ADDRESS:
 15 SOUNDVIEW AVENUE
 SHELTON, CT 06484

SEAL:



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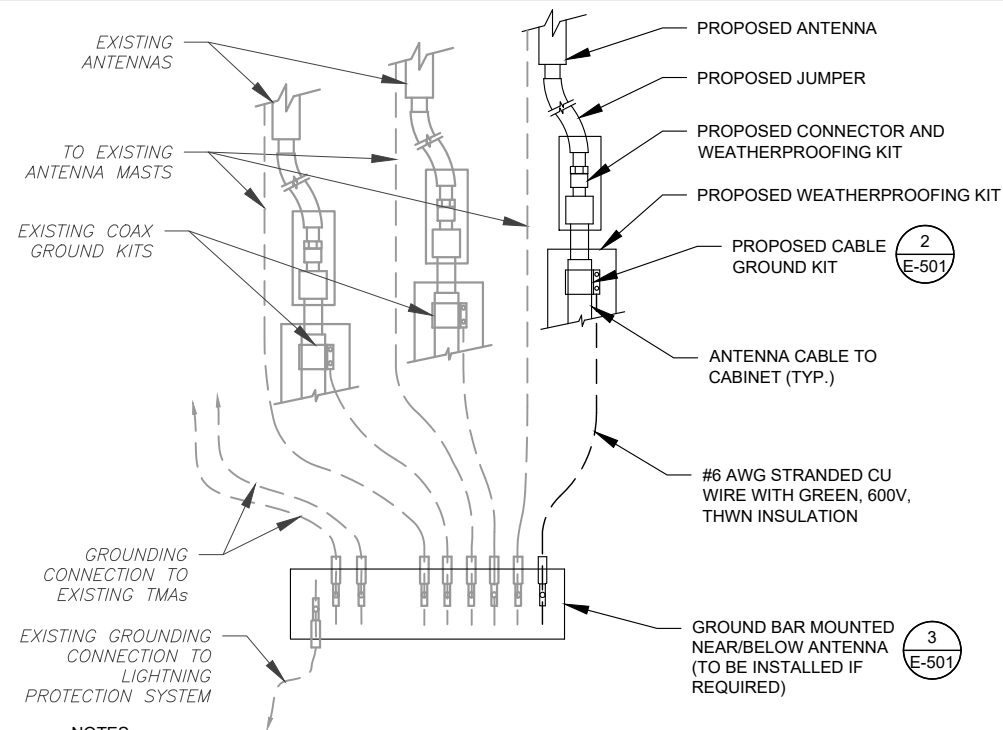


ATC JOB NO:	14505939_G0
CUSTOMER ID:	HUNTINGTON CT
CUSTOMER #:	5000062640

**CONSTRUCTION
 DETAILS**

SHEET NUMBER:	REVISION:
C-501	0

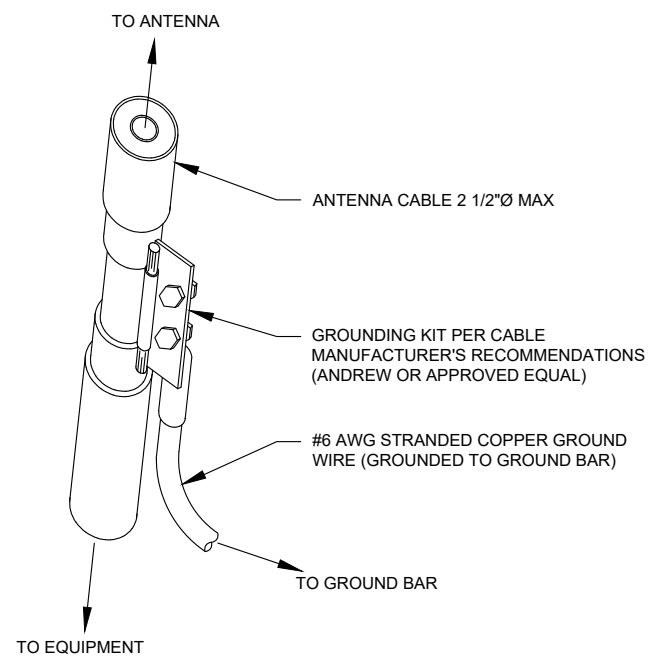
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NOTES:

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

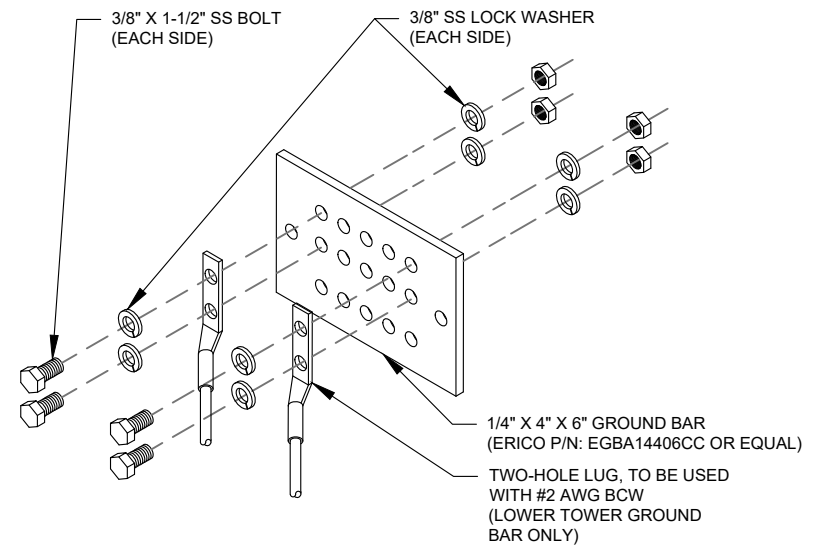
1 TYPICAL ANTENNA GROUNDING DIAGRAM
SCALE: N.T.S.



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.

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HUNTINGTON CT

SITE ADDRESS:
15 SOUNDVIEW AVENUE
SHELTON, CT 06484

SEAL:

Digitally Signed: 2023-12-29

ATC JOB NO: 14505939_G0
 CUSTOMER ID: HUNTINGTON CT
 CUSTOMER #: 5000062640

GROUNDING DETAILS

SHEET NUMBER: E-501	REVISION: 0
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Colliers Engineering & Design, Architecture, Landscape Architecture, Surveying, CT P.C.
1055 Washington Boulevard
Stamford, CT 06901
203.324.0800
peter.albano@collierseng.com



New/Replacement Antenna Mount Analysis Report and PMI Requirements

Mount ReAnalysis-R

SMART Tool Project #: 10210599
Colliers Engineering & Design Project #: 23777001 (REV 1)
October 10, 2023

Site Information
Site ID: 5000062640-VZW / HUNTINGTON CT
Site Name: HUNTINGTON CT
Carrier Name: Verizon Wireless
Address: Lane Street, Huntington, Connecticut 06484, Fairfield County
Latitude: 41.295141°
Longitude: -73.137401°

Structure Information
Tower Type: 125-Ft Monopole
Mount Type: 12.50-Ft T-Arm
FUZE ID # 16244172

Analysis Results

T-Arm: 81.7% Pass w/ Mount Replacement
(3) Site Pro 1 - RMV12-496

Antennas and equipment to be installed in compliance with PMI Requirements of this mount analysis.

Contractor PMI Requirements Included at the end of this MA report Available & Submitted via portal at <https://pml.vzwsmart.com> For additional questions and support, please reach out to: pmlsupport@colliersengineering.com

Report Prepared By: Andy Hanes



Mount Structural Analysis Report
(3) 12.50-Ft T-Arms
Site ID: 5000062640-VZW / HUNTINGTON CT
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Executive Summary:

The objective of this report is to determine the capacity of the proposed antenna support mount at the subject facility for the final wireless telecommunications configuration, per the applicable codes and standards. The proposed mount was assumed to be installed properly to the existing tower per the manufacturer's instructions. Colliers Engineering & Design cannot verify that the proposed mount will fit properly and is not liable for any fit-up issues during installation.

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 RFDS, Site ID: 688423, dated September 21, 2023
Previous Mount Analysis	Colliers Engineering & Design, Project #: 23777001, dated April 26, 2023
Mount Specification	Site Pro 1, PIN: RMV12-496
Mount Specification	VZWSMART-SFK1

Analysis Criteria:

Codes and Standards: ANSI/TIA-222-H
2022 Connecticut State Building Code (CSBC), Effective October 1, 2022

Wind Parameters: Basic Wind Speed (Ultimate 3-sec. Gust), V_{ULT}: 120 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_g: 0.989

Seismic Parameters: S_a: 0.203 g
S_i: 0.054 g

Maintenance Parameters: Wind Speed (3-sec. Gust): 30 mph
Maintenance Load, L_v: 250 lbs.
Maintenance Load, L_m: 250 lbs.*

*Reduced as allowed per ANSI/TIA-222-H 16.9

Analysis Software: RISA-3D (V17)

Mount Structural Analysis Report
(3) 12.50-Ft T-Arms
Site ID: 5000062640-VZW / HUNTINGTON CT
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Final Loading Configuration:

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

Mount Elevation (ft)	Equipment Elevation (ft)	Quantity	Manufacturer	Model	Status
119.50	120.00	6	Quintel	QS6656-5	Retained
		3	Samsung	XXDWM-12.5-65-8T-CBRS	
		3	Samsung	B2/B66A-RR-BRD49	
		3	Samsung	B5/B13-RRH-BRD4C	
		1	Raycap	OVP12	
		3	Samsung	MT6413-77A	Added

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

Model Number	Ports	AKA
DB-B1-6C-12AB-02	6	OVP-6
RVZDC-6627-PF-48	12	OVP-12

Standard Conditions:

- All engineering services are performed on the basis that the information provided to Colliers Engineering & Design 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 Colliers Engineering & Design to verify deviation will not adversely impact the analysis.
- 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.
- For mount analyses completed from other data sources (including new replacement mounts) and not specifically mapped in accordance with the NSTD-446 Standard, 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.
- 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.
- 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.
- All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. Colliers Engineering & Design is not responsible for the conclusion, opinions, and recommendations made by others based on the information supplied.

Mount Structural Analysis Report
(3) 12.50-Ft T-Arms
Site ID: 5000062640-VZW / HUNTINGTON CT
Page | 4

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

Discrepancies between in-field conditions and the assumptions listed above may render this analysis invalid unless explicitly approved by Colliers Engineering & Design.

Analysis Results:

Component	Utilization %	Pass/Fail
Connection Check	35.1 %	Pass
Face Horizontal	81.7 %	Pass
Mount Pipe	72.4 %	Pass
Standoff Horizontal	50.9 %	Pass
Tie Back	6.1 %	Pass
Structure Rating - (Controlling Utilization of all Components)	81.7%	

Mount Steel (EPA) per ANSI/TIA-222-H Section 2.6.11.2:

Ice Thickness (in)	Mount Pipes Excluded		Mount Pipes Included	
	Front (EPA) (Sq. Ft.)	Side (EPA) (Sq. Ft.)	Front (EPA) (Sq. Ft.)	Side (EPA) (Sq. Ft.)
0	11.8	11.8	30.1	30.1
0.5	15.9	15.9	41.9	41.9
1	19.6	19.6	53.2	53.2

Notes:
- (EPA) values listed above may be used in the absence of more precise information
- (EPA) values in the table above include 3 sector(s).
- K_a factors included in (EPA) calculations

Requirements:

The proposed antenna mounts are SUFFICIENT for the final loading configuration (attachment 2) upon completion of the mount replacement (attachment 3) and requirements below.

Refer to document at the end of this form for special instructions. Contact EOR if special instructions are not available.

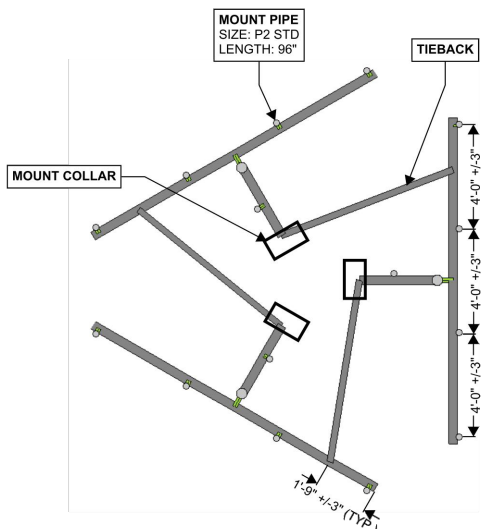
ANSI/ASSP rigging plan review services compliant with the requirements of ANSI/TIA 322 are available for a Construction Class IV site or other, if required. Separate review fees will apply.

Mount Structural Analysis Report
(3) 12.50-Ft T-Arms
October 10, 2023
Site ID: 5000062640-VZW / HUNTINGTON CT
Page | 5

Attachments:

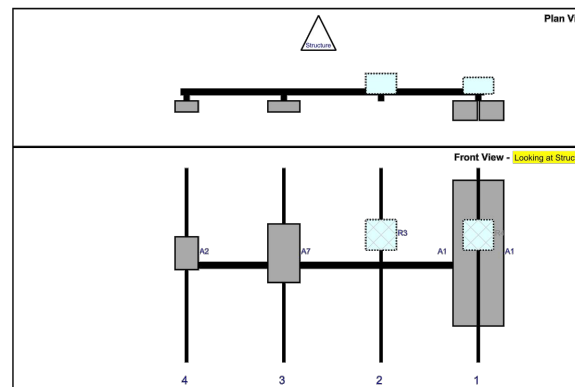
- Contractor Required Post Installation Inspection (PMI) Report Deliverables
- Antenna Placement Diagrams
- Mount Manufacturer Drawings
- Existing Mount Photos
- Analysis Calculations

Mount Replacement Sketch



MOUNT PLAN VIEW
N.T.S

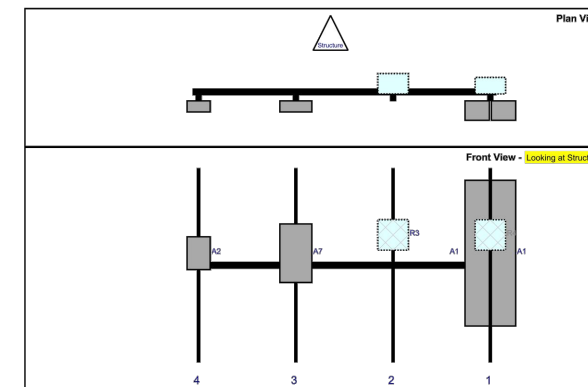
Sector: A
Structure: 6264 -VZW - HUNTINGTON CT
Structure Type: Monopole
Mount Elev: 119.50
10/5/2023
Page: 1



Ref#	Model	Height (in)	Width (in)	H Dist (in)	Pipe #	Pipe Pos	Ant Pos	C. Ant	Ant H Off	Status	Validation
A1	QS6656-5	72	12	147	1	a	Front	42	6.5	Retained	08/21/2020
A1	QS6656-5	72	12	147	1	b	Front	42	-6.5	Retained	08/21/2020
R4	B5/B13-RRH-BRD4C	15	15	147	1	a	Behind	33	0	Retained	08/21/2020
R3	B2/B66A-RR-BRD49	15	15	99	2	a	Behind	33	0	Retained	08/21/2020
A7	MT6413-77A	28.9	15.8	51	3	a	Front	42	0	Added	
A2	XXDWM-12.5-65-8T-CBRS	16.2	11.4	3	4	a	Front	42	0	Retained	08/21/2020
OVP	RVZDC-6627-PF-48	29.5	16.5				Member			Retained	08/21/2020

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Sector: B
Structure: 6264 -VZW - HUNTINGTON CT
Structure Type: Monopole
Mount Elev: 119.50
10/5/2023
Page: 2



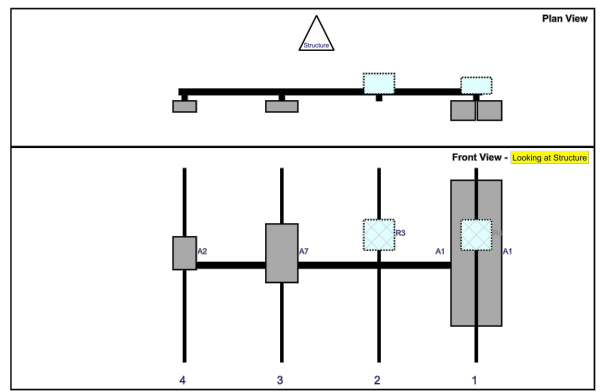
Ref#	Model	Height (in)	Width (in)	H Dist (in)	Pipe #	Pipe Pos	Ant Pos	C. Ant	Ant H Off	Status	Validation
A1	QS6656-5	72	12	147	1	a	Front	42	6.5	Retained	08/21/2020
A1	QS6656-5	72	12	147	1	b	Front	42	-6.5	Retained	08/21/2020
R4	B5/B13-RRH-BRD4C	15	15	147	1	a	Behind	33	0	Retained	08/21/2020
R3	B2/B66A-RR-BRD49	15	15	99	2	a	Behind	33	0	Retained	08/21/2020
A7	MT6413-77A	28.9	15.8	51	3	a	Front	42	0	Added	
A2	XXDWM-12.5-65-8T-CBRS	16.2	11.4	3	4	a	Front	42	0	Retained	08/21/2020

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

SUPPLEMENTAL

SHEET NUMBER: R-601
REVISION: 0



Ref#	Model	Height (ft)	Width (ft)	H Dist (ft)	Pipe #	Pipe Pos	Ant Pos	C. Ant H Off	Status	Validation	
A1	Q5656-5	72	12	147	1	a	Front	42	6.5	Retained	08/21/2020
A1	Q5656-5	72	12	147	1	b	Front	42	-6.5	Retained	08/21/2020
B4	B5B13 RRH-BRD4C	15	15	147	1	a	Behind	33	0	Retained	08/21/2020
B3	B2R6A RR-BRD4B	15	15	90	2	a	Behind	33	0	Retained	08/21/2020
A7	MT6413-77A	29.9	15.8	51	3	a	Front	42	0	Active	
A2	XXDWM-12 5-65-8T-CBR6	16.2	11.4	3	4	a	Front	42	0	Retained	08/21/2020

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ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	3	X4WRM	RING MOUNT WELDMENT		68.81	206.42
2	9	Q58R-24	5/8" X 24" THREADED ROD (HDG.)		0.43	3.89
2	9	Q58R-48	5/8" X 48" GALV THREADED ROD		4.39	39.52
3	3	X5V197-36	SUPPORT ARM WELDMENT - 36"		67.29	201.88
4	12	A38224	5/8" X 2-3/4" HDG A325 HEX BOLT	2.76	0.36	4.27
5	12	A58FW	5/8" HDG A325 FLATWASHER		0.03	0.41
6	42	Q58LW	5/8" HDG LOCKWASHER		0.03	1.10
7	24	A38NUT	5/8" HDG A325 HEX NUT		0.13	3.12
8	6	X48S458	5/8" X 48" X 7" L LABEL (HDG.)		0.26	1.54
9	18	Q58FW	5/8" HDG USS FLATWASHER		0.07	1.27
10	18	Q58NUT	5/8" HDG HEAVY 2H HEX NUT		0.13	2.34
11	36	X48T186	1/2" X 3-5/8" X 6" X 3" L LABEL (HDG.)		0.26	9.25
12	114	G12FW	1/2" HDG HEAVY 2H HEX NUT		0.07	8.17
13	114	G12FW	1/2" HDG USS FLATWASHER		0.03	3.89
14	114	G12LW	1/2" HDG LOCKWASHER		0.01	1.99
15	24	X48T12	1/2" X 3-1/2" X 4-1/2" X 2" L LABEL (HDG.)		0.26	6.17
16	3	P3150	3-1/2" X 150" SCH 40 GALVANIZED PIPE	150.000 in	84.80	284.40
17	12	A				
18	12	X48P219	SMALL SUPPORT CROSS PLATE	8.250 in	8.91	103.33
19	3	X48P216	LARGE SUPPORT CROSS PLATE	20.83 in	20.83	62.48

"ASSEMBLY NO."	PART NO. "A"	PART DESCRIPTION "B"	LENGTH "C"	UNIT WT. "D"	TOTAL WT.
RMV12-483	P260	2-3/8" O.D. SCH. 40 PIPE	60"	19.22	1,248.20
RMV12-472	P272	2-3/8" O.D. SCH. 40 PIPE	72"	23.07	1,566.40
RMV12-484	P384	2-3/8" O.D. SCH. 40 PIPE	84"	26.91	1,311.57
RMV12-486	P396	2-3/8" O.D. SCH. 40 PIPE	96"	30.76	1,387.77
RMV12-4126	P126	2-3/8" O.D. SCH. 40 PIPE	126"	40.76	1477.77

TOLERANCE NOTES
 TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:
 SAWS, SHEARS AND GAS CUT EDGES (# 0.007)
 DRILLED AND GAS CUT HOLES (# 0.007) - NO CONING OF HOLES
 LASER CUT EDGES AND HOLES (# 0.010) - NO CONING OF HOLES
 BENDS ARE ± 1/2 DEGREE
 ALL OTHER MACHINING (# 0.007)
 ALL OTHER ASSEMBLY (# 0.007)

DESCRIPTION
 MONOPOLE TRIPLE T-ARM FOR 12 ANTENNAS

DATE 4/15/2011
DESIGNED BY CEK
CHECKED BY BMC
DATE 7/2/2015

PART NO. SEE "ASSEMBLY NO."
DWG. NO. RMV12-4XX

TOLERANCE NOTES
 TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:
 SAWS, SHEARS AND GAS CUT EDGES (# 0.007)
 DRILLED AND GAS CUT HOLES (# 0.007) - NO CONING OF HOLES
 LASER CUT EDGES AND HOLES (# 0.010) - NO CONING OF HOLES
 BENDS ARE ± 1/2 DEGREE
 ALL OTHER MACHINING (# 0.007)
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DESCRIPTION
 MONOPOLE TRIPLE T-ARM FOR 12 ANTENNAS

DATE 4/15/2011
DESIGNED BY CEK
CHECKED BY BMC
DATE 7/2/2015

PART NO. SEE "ASSEMBLY NO."
DWG. NO. RMV12-4XX

VZWSMART-SFK1 (TIE BACK ASSEMBLY)

ITEM NO.	QTY.	PART NO.	DESCRIPTION	SHEET #	WT
1	1	PST2375-10	2" PST (2.375" O.D. X 0.154" THK) X 10'-0" A33 GR-B 35ksi	SFK1-F1	38
2	1	BP825-12	PL 3/8" X 8 1/4" X 1'-0" A36 BENT PLATE	SFK1-F2	11
3	1	BP11125-12	PL 3/8" X 11 1/8" X 1'-0" A36 BENT PLATE	SFK1-F3	14
4	1	BP6-8375	PL 3/8" X 6" X 9 3/8" A36 BENT PLATE	SFK1-F4	6
5	1	BP2-875	PL 1/4" X 2" X 8 3/4" A36 BENT PLATE	SFK1-F4	1
6	2	MS02-625-300-500	RO-BOLT 5/8" X 3" (L6 X 3" L.L. A36 (OR EQUIV.))	RBC-1	2
7	2		THREADED ROD 5/8" DIA. X 1'-0" F1554-36 HDG		0
8	2		BOLT 5/8" X 2" A325		0
9	1		BOLT 5/8" X 1/4" A325		0
10	15	FW-625	5/8" HDG USS FLAT WASHER		1
11	15	LW-625	5/8" HDG LOCK WASHER		0
12	15	NUT-625	5/8" HDG HEX NUT		2
13	1	PL375-6511	PL 3/8" X 4 1/2" X 1" A36	SFK1-F1	4
14	1	V-CAMP	PL 1/2" X 4 1/4" X 5/8" A36 BEND PLATE	SFK1-F5	5
15	4		BOLT 5/8" X 6" FULL THREAD SAE GR 5		0

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

VzW SMART Tool Vendor

verizon

FOR REFERENCE ONLY

VZWSMART-SFK1 TIE BACK ASSEMBLY

SHEET NUMBER: VZWSMART-SFK1
 REV # 1

1 MOUNT ANALYSIS

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SUPPLEMENTAL

SHEET NUMBER: R-602
 REVISION: 0