

August 2, 2023

Melanie A. Bachman, Esq.
Executive Director/Staff Attorney
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Re: **Notice of Exempt Modification – Facility Modification**
160 West Street, Cromwell, Connecticut

Dear Attorney Bachman:

Cellco Partnership d/b/a Verizon Wireless (“Cellco”) currently maintains a wireless telecommunications facility at the above-referenced address (the “Property”). Cellco’s facility consists of antennas and remote radio heads attached to a tower. Equipment associated with the facility is located on the ground adjacent to the tower. Cellco’s facility was approved by the Siting Council (“Council”) in November of 2007 (Docket No. 338). A copy of the Council’s Docket No. 338 Decision and Order approval is included in Attachment 1.

Cellco’s proposed modification involves the installation of two (2) interference mitigation filters (“filters”) on Cellco’s existing antenna platform and mounting assembly. The filter specification sheet is included in Attachment 2.

Please accept this letter as notification pursuant to R.C.S.A. § 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 Cromwell’s Chief Elected Official and Land Use Officer.

The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S.A. § 16-50j-72(b)(2).

1. The proposed modifications will not result in an increase in the height of the existing tower. The filters will be installed on Cellco’s existing antenna platform and mounting assembly.

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2. The proposed modifications will not involve any change to ground-mounted equipment and, therefore, 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 installation of Cellco's new filters will not result in a change to radio frequency (RF) emissions from the facility. Therefore, no new RF emissions information is included in this filing.

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

6. According to the attached Structural Analysis Report ("SA") and Antenna Mount Analysis Report ("MA"), the existing tower, foundation, antenna platform and mounting assembly can support Cellco's proposed modifications. A copy of the SA and MA are included in Attachment 3.

A copy of the parcel map and Property owner information is included in Attachment 4. A Certificate of Mailing verifying that this filing was sent to municipal officials and the property owner is included in Attachment 5.

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

Sincerely,



Kenneth C. Baldwin

Enclosures

Copy to:

Anthony Salvatore, Town Manager
Stuart Popper, Director of Planning and Development
160 West Street, LLC, Property Owner
Alex Tyurin, Verizon Wireless

ATTACHMENT 1

DOCKET NO. 338 – Sprint Nextel Corporation application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a telecommunications facility located at 160 West Street, Cromwell, Connecticut.

Connecticut
Siting
Council

November 29, 2007

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 Sprint Nextel Corporation, hereinafter referred to as the Certificate Holder, for the construction, maintenance and operation of a wireless telecommunications facility at 160 West Street in Cromwell, Connecticut.

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

1. The tower shall be designed and constructed as a simulated pine tree no taller than 80 feet above ground level, sufficient to accommodate the antennas of Sprint Nextel Corporation, Cellco Partnership d/b/a Verizon Wireless and other entities. Such design shall attempt to mimic the existing pine trees adjacent to the site to the greatest extent possible.
2. The tower shall be relocated 20 to 40 feet to the south.
3. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be served on the Town of Cromwell for comment, and all parties and intervenors, and interested parties, as listed in the service list, and submitted to and approved by the Council 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; and
 - 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) Photo-simulations of the selected tree tower design from the site property and adjacent residential neighborhood.

4. 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.
5. 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.
6. 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.
7. The Certificate Holder shall provide reasonable space on the tower for no compensation for any Town of Cromwell public safety services (police, fire and medical services), provided such use can be accommodated and is compatible with the structural integrity of the tower.
8. 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.
9. Any request for extension of the time period referred to in Condition 8 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 Town of Cromwell. Any proposed modifications to this Decision and Order shall likewise be so served.
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 Hartford Courant and The Middletown Press.

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

The parties and intervenors to this proceeding are:

Applicant

Sprint Nextel Corporation

Its Representative

Thomas J. Regan, Esq.
Brown Rudnick Berlack Israels LLP
CityPlace I, 185 Asylum Street
Hartford, CT 06103

Intervenor

Cellco Partnership d/b/a
Verizon Wireless

Its Representative

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

ATTACHMENT 2

BSF0020F3V1-1

TWIN BANDSTOP 900MHZ INTERFERENCE MITIGATION FILTER

The BSF0020 is ideal for co-located 700, 850 and 900 networks. Utilising a 2.6MHz guardband the BSF0020 provides rejection of the 900 UL band while passing 700/850 UL and DL bands. Capable of being used in an outdoor environment the BSF0020 contains two identical bandstop filters, suitable for 2x2 MIMO configuration, offering excellent insertion loss, group delay and rejection.

FEATURES

- Passes full 700 and 850 bands
- Low insertion loss
- Rejection of 900MHz uplink
- DC/AISG pass
- Twin unit
- Dual twin mounting available



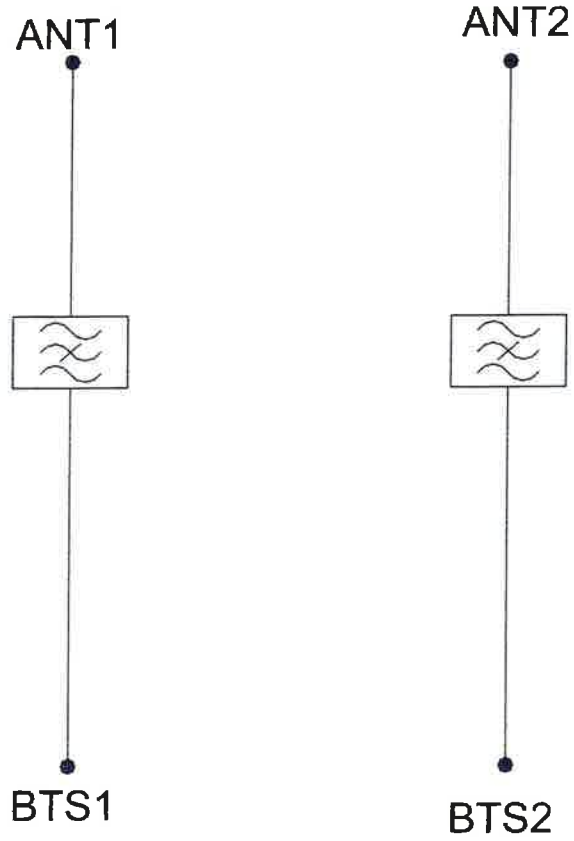
TECHNICAL SPECIFICATIONS

BAND NAME	700 PATH / 850 UPLINK PATH	850 DOWNLINK PATH
Passband	698 - 849MHz	869 - 891.5MHz
Insertion loss	0.1dB typical / 0.3dB maximum	0.5dB typical, 1.45dB maximum
Return loss	24dB typical, 18dB minimum	
Maximum input power (Per Port)	100W average	200W average and 66W per 5MHz
Rejection	53dB minimum @ 894.1 - 896.5MHz	
ELECTRICAL		
Impedance	50Ohms	
Intermodulation products	-160dBc maximum in UL Band (assuming 20MHz Signal), with 2 x 43dBm carriers -153dBc maximum with 2 x 43dBm	
DC / AISG		
Passband	0 - 13MHz	
Insertion loss	0.3dB maximum	
Return loss	15dB minimum	
Input voltage range	± 33V	
DC current rating	2A continuous, 4A peak	
Compliance	3GPP TS 25.461	
ENVIRONMENTAL		
For further details of environmental compliance, please contact Kaelus.		
Temperature range	-20°C to +60°C -4°F to +140°F	
Ingress protection	IP67	
Altitude	2600m 8530ft	
Lightning protection	RF port: ±5kA maximum (8/20us), IEC 61000-4-5 – Unit must be terminated with some lightning protection circuits.	
MTBF	>1,000,000 hours	
Compliance	ETSI EN 300 019 class 4.1H, RoHS, NEBS GR-487-CORE	
MECHANICAL		
Dimensions H x D x W	269 x 277 x 80mm 10.60 x 10.90 x 3.15in (Excluding brackets and connectors)	
Weight	8.0 kg 17.6 lbs (no bracket)	
Finish	Powder coated, light grey (RAL7035)	
Connectors	RF: 4.3-10 (F) x 4	
Mounting	Optional pole/wall bracket supplied with two metal clamps 45-178mm diameter poles or custom bracket. See ordering information.	

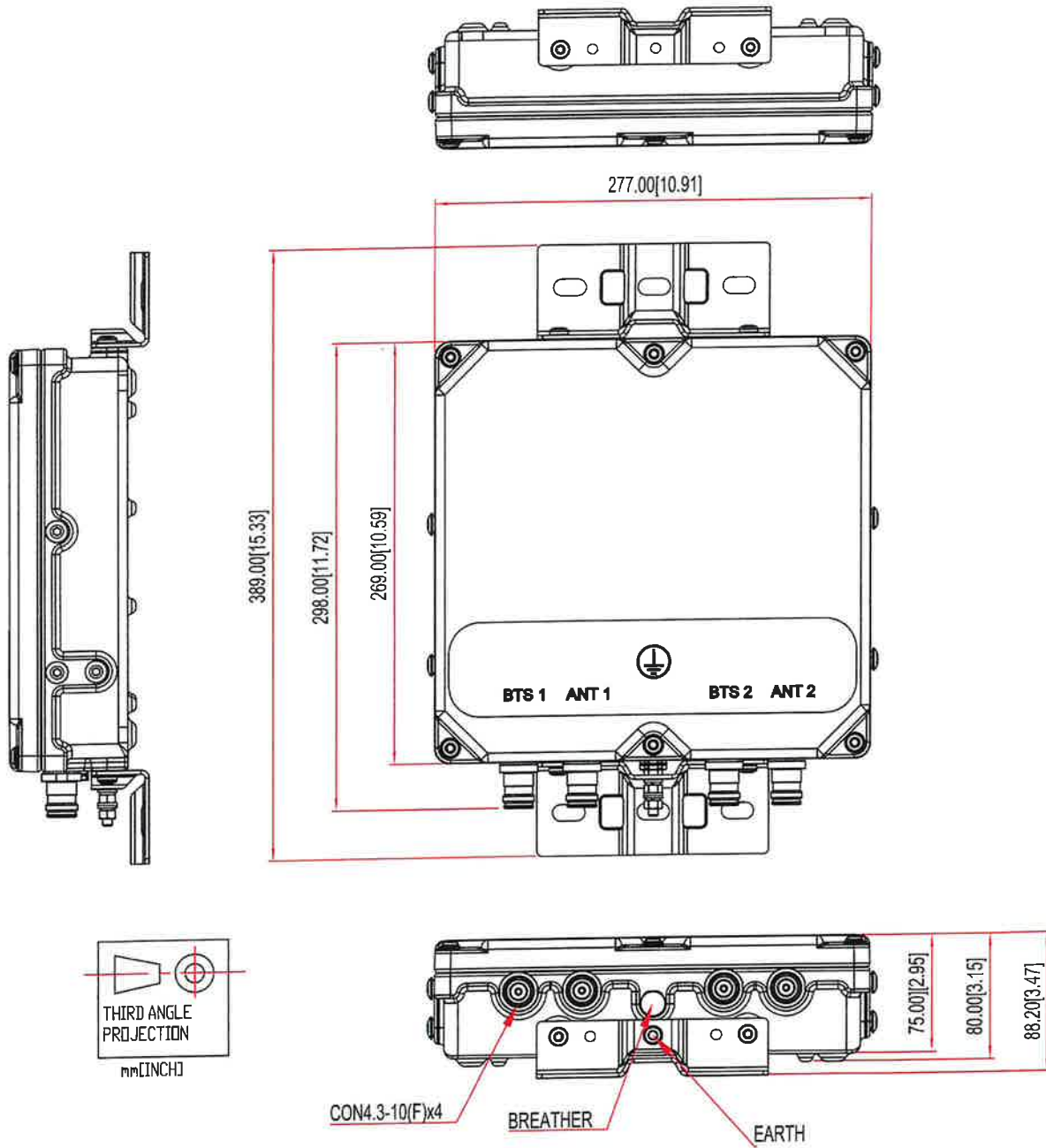
ORDERING INFORMATION

PART NUMBER	CONFIGURATION	OPTIONAL FEATURES	CONNECTORS
BSF0020F3V1	TWIN, 2 in / 2 out	DC/AISG PASS NO BRACKET	4.3-10 (F)
BSF0020F3V1-1	TWIN, 2 in / 2 out	DC/AISG PASS	4.3-10 (F)
BSF0020F3V1-2	QUAD, 4 in / 4 out	DC/AISG PASS	4.3-10 (F)

ELECTRICAL BLOCK DIAGRAM



MECHANICAL BLOCK DIAGRAM



ATTACHMENT 3



Tower Engineering Solutions

Phone (972) 483-0607, Fax (972) 975-9615
1320 Greenway Drive, Suite 600, Irving, Texas 75038

Structural Analysis Report

Existing 76 ft TransAmerican Monopole
Customer Name: SBA Communications Corp
Customer Site Number: CT46122-A
Customer Site Name: Middletown North
Carrier Name: Verizon (App#: 232674-3)
Carrier Site ID / Name: 5000245641 / CROMWELL CT
Site Location: 160 West Street
Cromwell, Connecticut
Middlesex County
Latitude: 41.606000
Longitude: -72.670388

Exp. 01/31/2024



Analysis Result:

Max Structural Usage: 66.1% [Pass]

Max Foundation Usage: 48.2% [Pass]

Additional Usage Caused by New Mount/Mount Modification: N/A

07/07/2023

Report Prepared By : Tawfeeq Alajaj



Tower Engineering Solutions

Phone (972) 483-0607, Fax (972) 975-9615
1320 Greenway Drive, Suite 600, Irving, Texas 75038

Structural Analysis Report

Existing 76 ft TransAmerican Monopole

Customer Name: SBA Communications Corp

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Cromwell, Connecticut

Middlesex County

Latitude: 41.606000

Longitude: -72.670388

Analysis Result:

Max Structural Usage: 66.1% [Pass]

Max Foundation Usage: 48.2% [Pass]

Additional Usage Caused by New Mount/Mount Modification: N/A

Report Prepared By : Tawfeeq Alajaj

Introduction

The purpose of this report is to summarize the analysis results on the 76 ft TransAmerican Monopole to support the proposed antennas and transmission lines in addition to those currently installed. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Tower Drawings	TransAmerican Power Products, Inc., Order #TP-8949 dated July 19, 2010
Foundation Drawing	Vertical Solutions, Project #100264.02 dated February 23, 2010
Geotechnical Report	Clarence Welte Association, Inc., Project Name: Transcend Wireless Tower dated February 1, 2010
Modification Drawings	N/A
Mount Analysis	N/A

Analysis Criteria

The feasibility analysis was performed in accordance with the requirements and stipulations of the TIA-222-H. In accordance with this standard, the structure was analyzed using **TESPoles**, a proprietary analysis software. The program considers the structure as an elastic 3-D model with second-order effects and temperature effects incorporated in the analysis. The analysis was performed using multiple wind directions.

Wind Speed Used in the Analysis:	119.0 mph (3-Sec. Gust) (Ultimate wind speed)
Wind Speed with Ice:	50 mph (3-Sec. Gust) with 1" radial ice concurrent
Service Load Wind Speed:	60 mph + 0" Radial ice
Standard/Codes:	TIA-222-H / 2021 IBC / 2022 Connecticut State Building Code
Exposure Category:	C
Risk Category:	II
Topographic Category:	1
Crest Height:	0 ft
Seismic Parameters:	$S_S = 0.205$, $S_1 = 0.055$

This structural analysis is based upon the tower being classified as a Risk Category II; however, if a different classification is required subsequent to the date hereof, the tower classification will be changed to meet such requirement and a new structural analysis will be run.

Existing Antennas, Mounts and Transmission Lines

The table below summarizes the antennas, mounts and transmission lines that were considered in the analysis as existing on the tower.

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	74.0	3	RFS APXVAALL24-43-U-NA20	(3) T-Arms w/ replaced new standoff, face horizontal and new support rail with end connection	(6) 7/8" (4) 1 5/8" Fiber (6) 3/8" RET	T-Mobile
2		3	Ericsson Air 32 KRD901146-1_B66A_B2A			
3		3	Ericsson AIR6449 B41			
4		3	Commscope SDX1926Q-43			
5		6	Andrew ATM200-A20			
6		3	Ericsson 4449 B71 + B85			
7		3	Ericsson 4415 B25			
8		3	Ericsson 4415 B66A			
9	64.0	6	Commscope JAHH-65B-R3B	(3) T-Arms (3) TBD VZWSMART-SFK4 (Mount Reinforcement) (3) Commscope BSAMNT-SBS-2-2 (side-by-side mounts)	(18) 1 5/8" Coax (2) 1 5/8" Hybrid	Verizon
10		3	Samsung Telecommunications VZS01			
11		4	Andrew DB846F65ZAXY			
12		2	Decibel DB846H80E-SX w/Mount Pipe			
13		3	Commscope CBC78T-DS-43-2X/E14F05P50			
14		3	Samsung B2/B66A RRH-BR049			
15		3	Samsung B5/B13 RRH-BR04C			
16	2	RFS DB-T1-6Z-8AB-0Z	Commscope MC-K6MHDX-9-96 T-Arms		Dish Wireless	
17	3	JMA Wireless MX08FRO665-21				
18	3	Fujitsu TA08025-B605				
19	3	Fujitsu TA08025-B604				
20	51.0	1	Raycap RDIDC-9181-PF-48			

Proposed Carrier's Final Configuration of Antennas, Mounts and Transmission Lines

Information pertaining to the proposed carrier's final configuration of antennas and transmission lines was provided by SBA Communications Corp. The proposed antennas and lines are listed below.

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
9	64.0	6	Commscope JAHH-65B-R3B	(3) T-Arms (3) TBD VZWSMART-SFK4 (Mount Reinforcement) (3) Commscope BSAMNT-SBS-2-2 (side-by-side mounts)	(18) 1 5/8" Coax (2) 1 5/8" Hybrid	Verizon
10		3	Samsung Telecommunications VZS01			
11		4	Andrew DB846F65ZAXY			
12		2	Decibel DB846H80E-SX w/Mount Pipe			
13		3	Commscope CBC78T-DS-43-2X/E14F05P50			
14		3	Samsung B2/B66A RRH-BR049			
15		3	Samsung B5/B13 RRH-BR04C			
16		2	RFS DB-T1-6Z-8AB-OZ			
17		2	Kaelus BSF0020F3V1-1 Filter			

See the attached coax layout for the line placement considered in the analysis.

Analysis Results

The results of the structural analysis, performed for the wind and ice loading and antenna equipment as defined above, are summarized as the following:

	Pole shafts	Anchor Bolts	Base Plate
Max. Usage:	66.1%	65.5%	45.6%
Pass/Fail	Pass	Pass	Pass

Foundations

	Moment (Kip-Ft)	Shear (Kips)
Original Design Reactions	2800.0	52.0
Analysis Reactions	1822.6	31.3
Factored Reactions*	3780.0	70.2
% of Design Reactions	48.2%	44.6%

* Per section 15.6.2 of the TIA-222-H standard, factored reactions were obtained by multiplying a 1.35 factor to the original design reactions.

No foundation drawing is available for the analysis of the existing foundation. Since the reactions calculated from the current analysis are less than those indicated on the original structural design drawing, the foundations are assumed to be adequate to resist the reactions from the current analysis.

Service Load Condition (Rigidity):

Operational characteristics of the tower are found to be within the limits prescribed by TIA-222 for the installed antennas. The maximum twist/sway at the elevation of the proposed equipment is 0.5540 degrees under the operational wind speed as specified in the Analysis Criteria.

Conclusions

Based on the analysis results, the existing structure was were found to be adequate to safely support the existing and proposed equipment and meet the minimum requirements per the TIA-222 Standard under the design basic wind speed as specified in the Analysis Criteria.

Standard Conditions

1. This analysis was performed based on the information supplied to **(TES) Tower Engineering Solutions, LLC**. Verification of the information provided was not included in the Scope of Work for **TES**. The accuracy of the analysis is dependent on the accuracy of the information provided.
2. The structural analysis was performance based upon the evidence available at the time of this report. All information provided by the client is considered to be accurate.
3. The analyses will be performed based on the codes as specified by the client or based on the best knowledge of the engineering staff of **TES**. In the absence of information to the contrary, all work will be performed in accordance with the latest relevant revision of ANSI/TIA-222. If wind speed and/or ice loads are different from the minimum values recommended by the ANSI/TIA-222 standard or other codes, **TES** should be notified in writing and the applicable minimum values provided by the client.
4. The configuration of the existing mounts, antennas, coax and other appurtenances were supplied by the customer for the current structural analysis. **TES** has not visited the tower site to verify the adequacy of the information provided. If there is any discrepancy found in the report regarding the existing conditions, **TES** should be notified immediately to evaluate the effect of the discrepancy on the analysis results.
5. The client will assume responsibility for rework associated with the differences in initially provided information, including tower and foundation information, existing and/or proposed equipment and transmission lines.
6. If a feasibility analysis was performed, final acceptance of changed conditions shall be based upon a rigorous structural analysis.

Usage Diagram - Max Ratio 66.11% at 28.3ft

Structure: CT46122-A-SBA
Site Name: Middletown North
Height: 76.00 (ft)
Base Elev: 0.000 (ft)

Code: EIA/TIA-222-H
Exposure: C
Gh: 1.1

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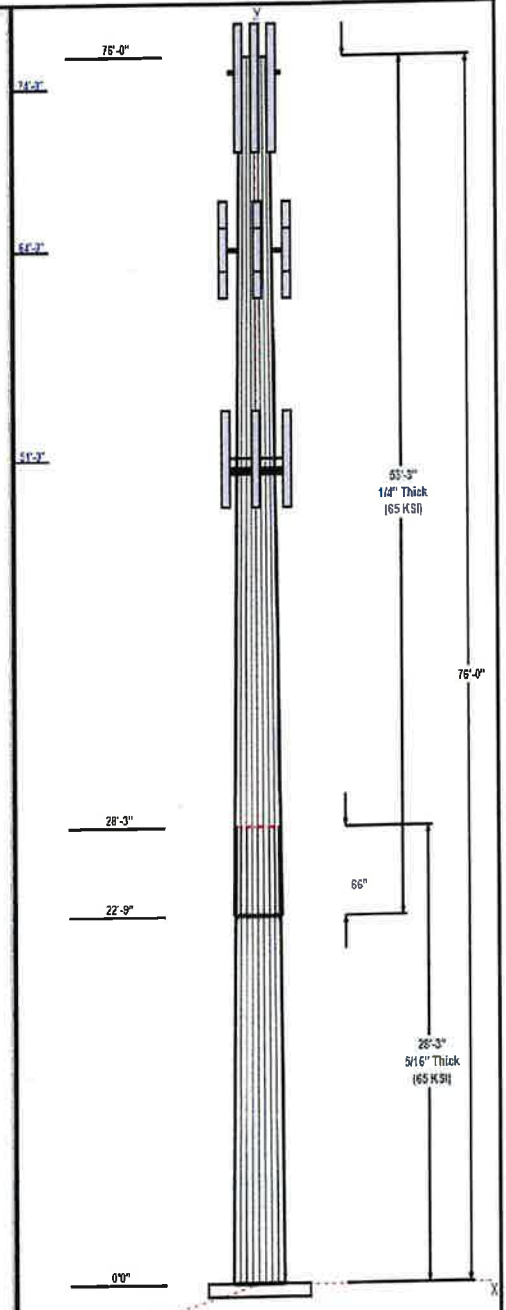
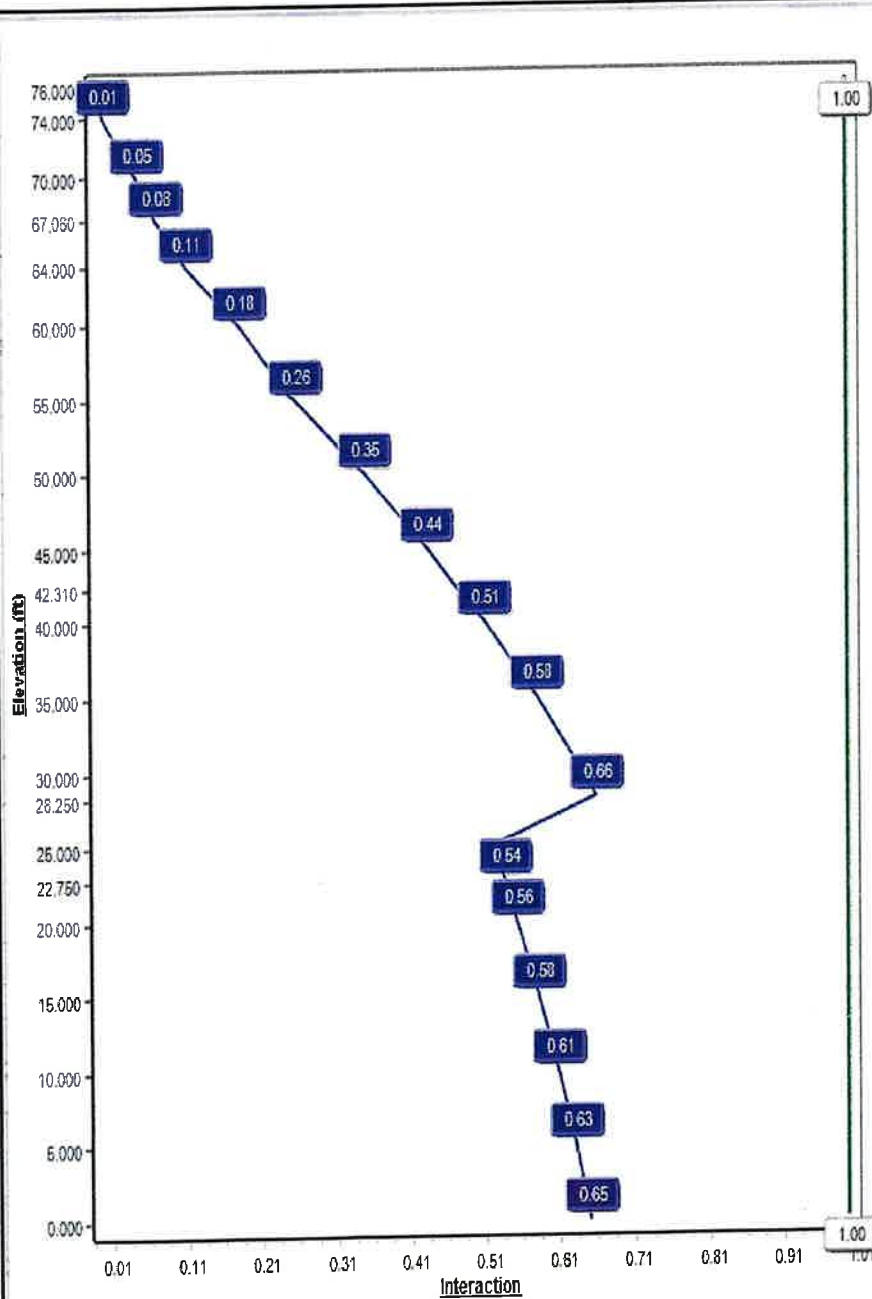
Dead Load Factor: 1.20
Wind Load Factor: 1.00

Load Case : 1.2D + 1.0W 119 mph Wind



Iterations: 17

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Structure: CT46122-A-SBA

Type: Tapered
Site Name: Middletown North
Height: 76.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.32787

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Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	28.25	37.24	46.50	0.313		0.32787	65
2	53.25	22.08	39.54	0.250	Slip	0.32787	65

Discrete Appurtenances

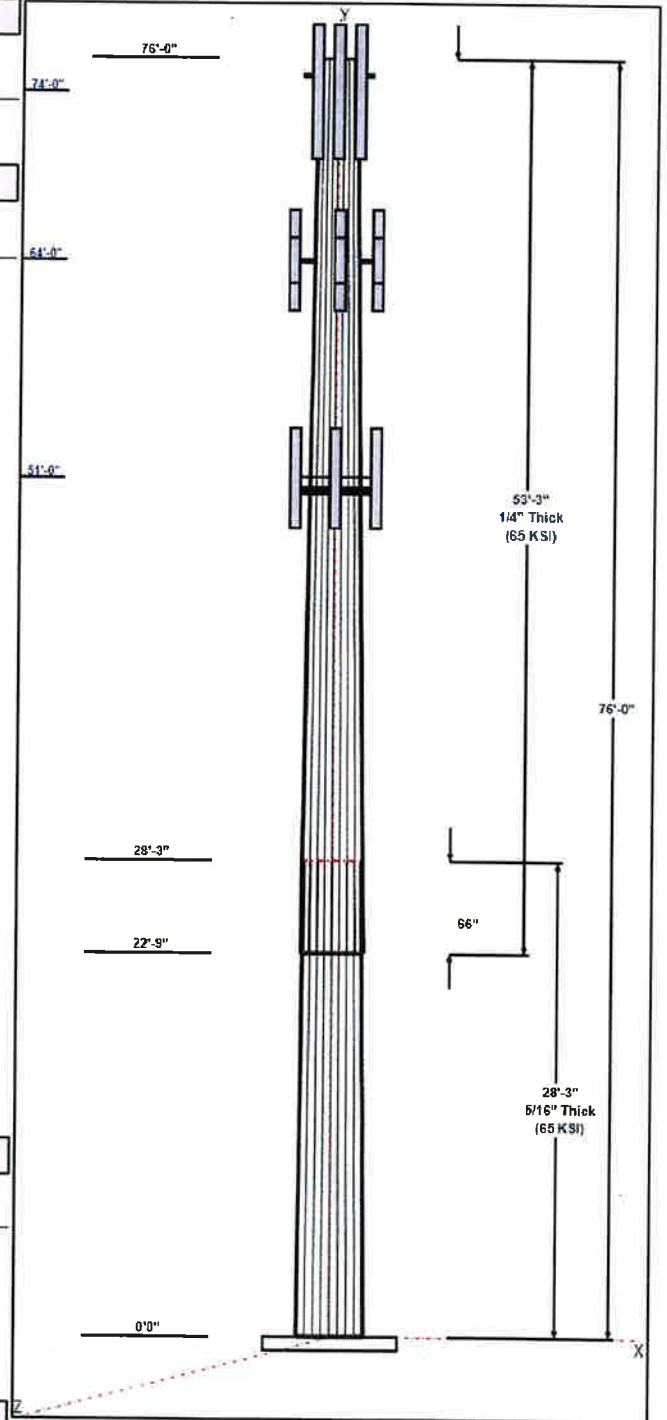
Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
75.45	75.45	1	4' Branches	---
75.00	75.00	3	T-Arms	T-Mobile
74.00	74.00	3	RFS	T-Mobile
74.00	74.00	3	Air 32	T-Mobile
74.00	74.00	6	ATM200-A20	T-Mobile
74.00	74.00	3	Radio 4449 B71+B85	T-Mobile
74.00	74.00	3	Commscope	T-Mobile
74.00	74.00	1	Antenna Branches	---
74.00	74.00	3	AIR6449 B41	T-Mobile
74.00	74.00	3	RRUS 4415 B25	T-Mobile
74.00	74.00	3	Ericsson 4415 B66A	T-Mobile
74.00	74.00	1	(Handrail Kit w/end	T-Mobile
67.06	67.06	1	6' Branches	---
64.00	64.00	3	T-Arm	Verizon
64.00	64.00	2	Kaelus BSF0020F3V1-1	Verizon
64.00	64.00	4	DB846F65ZAXY	Verizon
64.00	64.00	2	DB846H80E-SX	Verizon
64.00	64.00	2	DB-T1-6Z-8AB-0Z	Verizon
64.00	64.00	6	JAHH-65B-R3B	Verizon
64.00	64.00	3	VZS01	Verizon
64.00	64.00	1	(3) VZSMART-SFK4	Verizon
64.00	64.00	3	BSAMNT-SBS-1-2	Verizon
64.00	64.00	3	CBC78T-DS-43-2X/E14F0	Verizon
64.00	64.00	3	B2/B66A RRH-BR049	Verizon
64.00	64.00	3	B5/B13 RRH-BR04C	Verizon
55.44	55.44	1	8' Branches	---
51.00	51.00	1	MC-K6MHDX-9-96 (3	Dish Wireless
51.00	51.00	3	MX08FRO665-21	Dish Wireless
51.00	51.00	3	TA08025-B604	Dish Wireless
51.00	51.00	3	TA08025-B605	Dish Wireless
51.00	51.00	1	RDIDC-9181-OF-48	Dish Wireless
42.31	42.31	1	10' Branches	---

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	75.00	Inside	1 5/8" Fiber	T-Mobile
0.00	75.00	Inside	3/8" RET	T-Mobile
0.00	75.00	Inside	7/8" Coax	T-Mobile
0.00	64.00	Inside	1 5/8" Coax	Verizon
0.00	64.00	Inside	1 5/8" Hybrid	Verizon
0.00	51.00	Inside	1.6" Hybrid	Dish Wireless

Anchor Bolts

Qty	Specifications	Grade (ksi)	Arrangement
10	2.25" 18J	75.0	Radial



Structure: CT46122-A-SBA

Type: Tapered
Site Name: Middletown North
Height: 76.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.32787

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Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
2.0000	60.0	60.0	Round

Reactions

Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.0W 119 mph Wind	1822.6	31.3	24.2
0.9D + 1.0W 119 mph Wind	1816.6	31.3	18.2
1.2D + 1.0Di + 1.0Wi 50 mph Wind	453.6	7.9	36.4
1.2D + 1.0Ev + 1.0Eh	53.5	0.9	25.2
0.9D + 1.0Ev + 1.0Eh	53.5	0.9	19.1
1.0D + 1.0W 60 mph Wind	413.7	7.1	20.2

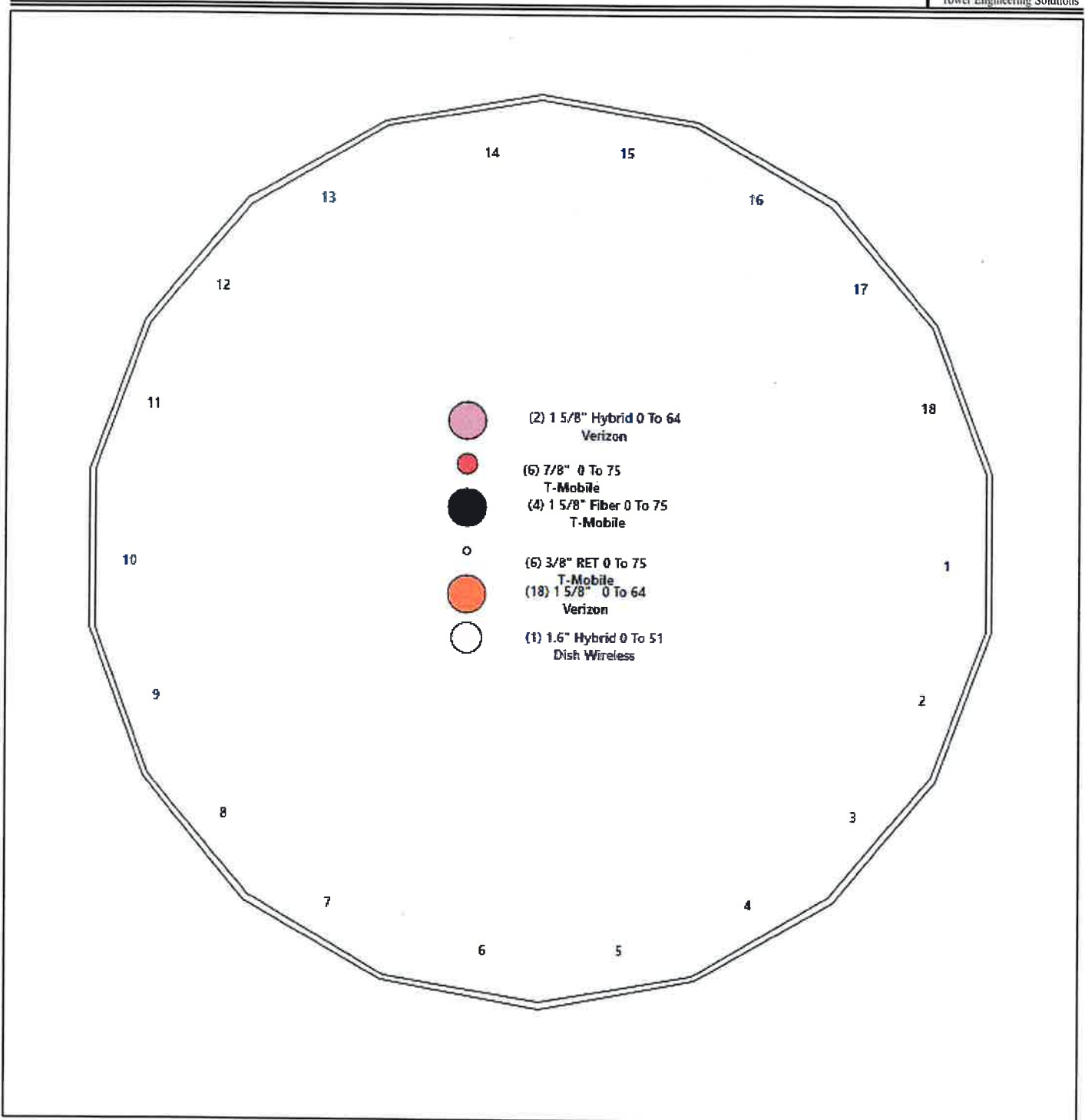
Structure: CT46122-A-SBA - Coax Line Placement

Type: Monopole
Site Name: Middletown North
Height: 76.00 (ft)

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Shaft Properties

Structure: CT46122-A-SBA	Code: TIA-222-H	7/7/2023
Site Name: Middletown North	Exposure: C	
Height: 76.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	18	28.250	0.3125	65		0.00	3,962
2	18	53.250	0.2500	65	Slip	66.00	4,394
Total Shaft Weight:							8,356

Sec. No.	Bottom						Top						Taper
	Dia (in)	Elev (ft)	Area (sqin)	Ix (in^4)	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (sqin)	Ix (in^4)	W/t Ratio	D/t Ratio	
1	46.50	0.00	45.81	12347.18	24.83	148.80	37.24	28.25	36.62	6309.09	19.60	119.1	0.327865
2	39.54	22.75	31.18	6080.87	26.48	158.16	22.08	76.00	17.32	1043.23	14.16	88.33	0.327865

Load Summary

Structure: CT46122-A-SBA	Code: TIA-222-H	7/7/2023
Site Name: Middletown North	Exposure: C	
Height: 76.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Discrete Appurtenances

No.	Elev (ft)	Description	Qty	No Ice			Ice			Hor. Ecc. (ft)	Vert Ecc (ft)
				Weight (lb)	CaAa (sf)	CaAa Factor	Weight (lb)	CaAa (sf)	CaAa Factor		
1	75.45	4' Branches	1	390.00	36.86	1.00	559.45	52.875	1.00	0.00	0.00
2	75.00	T-Arms	3	160.00	8.00	0.75	246.84	13.801	0.75	0.00	0.00
3	74.00	RFS APXVAALL24-43-U-NA20	3	128.00	20.24	0.70	375.22	21.404	0.70	0.00	0.00
4	74.00	Air 32 KRD901146-1_B66A_B2A	3	132.20	6.51	0.87	238.23	7.189	0.87	0.00	0.00
5	74.00	ATM200-A20	6	0.50	0.12	0.50	3.75	0.257	1.00	0.00	0.00
6	74.00	Radio 4449 B71+B85	3	71.00	1.97	0.67	104.16	2.310	0.67	0.00	0.00
7	74.00	Commscope SDX1926Q-43	3	7.00	0.72	0.67	15.91	1.113	0.67	0.00	0.00
8	74.00	Antenna Branches	1	96.00	22.43	1.00	137.63	32.157	1.00	0.00	0.00
9	74.00	AIR6449 B41	3	103.00	5.65	0.71	188.18	6.240	0.71	0.00	0.00
10	74.00	RRUS 4415 B25	3	46.00	1.64	0.67	71.53	1.960	0.67	0.00	0.00
11	74.00	Ericsson 4415 B66A	3	49.60	1.86	0.67	84.39	2.195	0.67	0.00	0.00
12	74.00	(Handrail Kit w/end connection)	1	261.72	6.75	1.00	454.66	10.848	1.00	0.00	0.00
13	67.06	6' Branches	1	400.00	83.63	1.00	571.76	19.540	1.00	0.00	0.00
14	64.00	T-Arm	3	320.00	8.00	0.75	456.77	12.274	0.75	0.00	0.00
15	64.00	Kaelus BSF0020F3V1-1 Filter	2	19.80	0.70	0.80	35.37	0.912	0.80	0.00	0.00
16	64.00	DB846F65ZAXY	4	21.00	7.05	0.93	132.84	7.776	0.93	0.00	0.00
17	64.00	DB846H80E-SX	2	16.00	5.01	1.12	105.02	5.721	1.12	0.00	0.00
18	64.00	DB-T1-6Z-8AB-0Z	2	44.00	3.30	0.67	126.03	5.321	0.67	0.00	0.00
19	64.00	JAHH-65B-R3B	6	63.30	9.11	0.83	195.06	9.916	0.83	0.00	0.00
20	64.00	VZS01	3	87.10	4.30	0.69	149.51	4.830	0.69	0.00	0.00
21	64.00	(3) VZWSMART-SFK4	1	500.00	16.50	0.75	863.28	26.373	0.75	0.00	0.00
22	64.00	BSAMNT-SBS-1-2	3	25.35	0.00	0.75	36.18	0.000	0.75	0.00	0.00
23	64.00	CBC78T-DS-43-2X/E14F05P50	3	21.80	0.37	0.67	32.27	0.528	0.67	0.00	0.00
24	64.00	B2/B66A RRH-BR049	3	84.40	1.64	0.67	118.34	1.956	0.67	0.00	0.00
25	64.00	B5/B13 RRH-BR04C	3	70.30	2.22	0.67	105.75	2.599	0.67	0.00	0.00
26	55.44	8' Branches	1	1638.00	150.70	1.00	2328.09	14.190	1.00	0.00	0.00
27	51.00	MC-K6MHDX-9-96 (3 Sectors)	1	899.00	20.95	0.75	1424.84	36.705	0.75	0.00	0.00
28	51.00	MX08FRO665-21	3	64.50	12.49	0.74	238.58	13.367	0.74	0.00	0.00
29	51.00	TA08025-B604	3	63.90	1.96	0.67	94.20	2.296	0.67	0.00	0.00
30	51.00	TA08025-B605	3	75.00	1.96	0.67	106.30	2.296	0.67	0.00	0.00
31	51.00	RDIDC-9181-OF-48	1	21.90	2.01	1.00	53.77	2.350	1.00	0.00	0.00
32	42.31	10' Branches	1	540.00	54.43	1.00	761.44	76.750	1.00	0.00	0.00
Totals:			82	9,900.47			17,399.22				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	75.00	(4) 1 5/8" Fiber	0.00	Inside
0.00	75.00	(6) 3/8" RET	0.00	Inside
0.00	75.00	(6) 7/8" Coax	0.00	Inside
0.00	64.00	(18) 1 5/8" Coax	0.00	Inside
0.00	64.00	(2) 1 5/8" Hybrid	0.00	Inside
0.00	51.00	(1) 1.6" Hybrid	0.00	Inside

Shaft Section Properties

Structure: CT46122-A-SBA	Code: TIA-222-H	7/7/2023
Site Name: Middletown North	Exposure: C	
Height: 76.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Page: 7
	Struct Class: II	



Increment Length: 5 (ft)

Elev (ft)	Description	Thick (in)	Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fpy (ksi)	S (in^3)	Weight (lb)
0.00		0.3125	46.500	45.811	12347.2	24.83	148.80	72.2	523.0	0.0
5.00		0.3125	44.861	44.185	11078.6	23.90	143.55	73.3	486.4	765.6
10.00		0.3125	43.221	42.559	9900.0	22.98	138.31	74.4	451.1	737.9
15.00		0.3125	41.582	40.933	8808.1	22.05	133.06	75.5	417.2	710.3
20.00		0.3125	39.943	39.307	7799.6	21.13	127.82	76.6	384.6	682.6
22.75	Bot - Section 2	0.3125	39.041	38.413	7279.3	20.62	124.93	77.2	367.2	527.7
25.00		0.3125	38.303	37.681	6871.2	20.20	122.57	77.6	353.3	527.7
28.25	Top - Section 1	0.2500	37.738	29.746	5281.5	25.21	150.95	0.0	0.0	744.5
30.00		0.2500	37.164	29.290	5042.7	24.80	148.66	72.2	267.2	175.8
35.00		0.2500	35.525	27.989	4400.2	23.65	142.10	73.6	244.0	487.3
40.00		0.2500	33.885	26.689	3814.8	22.49	135.54	74.9	221.7	465.1
42.31		0.2500	33.128	26.088	3562.9	21.95	132.51	75.6	211.8	207.4
45.00		0.2500	32.246	25.388	3283.8	21.33	128.98	76.3	200.6	235.6
50.00		0.2500	30.607	24.087	2804.5	20.18	122.43	77.7	180.5	420.9
51.00		0.2500	30.279	23.827	2714.6	19.95	121.12	77.9	176.6	81.5
55.00		0.2500	28.967	22.786	2374.2	19.02	115.87	79.0	161.4	317.2
55.44		0.2500	28.823	22.672	2338.6	18.92	115.29	79.1	159.8	34.0
60.00		0.2500	27.328	21.486	1990.4	17.86	109.31	80.4	143.5	342.6
64.00		0.2500	26.017	20.445	1715.0	16.94	104.07	81.5	129.8	285.4
65.00		0.2500	25.689	20.185	1650.3	16.71	102.76	81.7	126.5	69.1
67.06		0.2500	25.013	19.649	1522.3	16.23	100.05	82.3	119.9	139.6
70.00		0.2500	24.049	18.884	1351.4	15.55	96.20	82.5	110.7	192.7
74.00		0.2500	22.738	17.844	1140.1	14.63	90.95	82.5	98.8	250.0
75.00		0.2500	22.410	17.583	1090.9	14.40	89.64	82.5	95.9	60.3
75.45		0.2500	22.263	17.466	1069.3	14.29	89.05	82.5	94.6	26.8
76.00		0.2500	22.082	17.323	1043.2	14.16	88.33	82.5	93.1	32.6
8356.2										

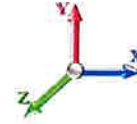
Wind Loading - Shaft

Structure: CT46122-A-SBA	Code: TIA-222-H	7/7/2023
Site Name: Middletown North	Exposure: C	
Height: 76.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Load Case: 1.2D + 1.0W 119 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 17

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	29.135	32.05	430.67	0.730	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	29.135	32.05	415.49	0.730	0.000	5.00	19.327	14.11	452.2	0.0	918.7
10.00		1.00	0.85	29.135	32.05	400.31	0.730	0.000	5.00	18.634	13.60	435.9	0.0	885.5
15.00		1.00	0.85	29.135	32.05	385.12	0.730	0.000	5.00	17.940	13.10	419.7	0.0	852.3
20.00		1.00	0.90	30.914	34.00	381.06	0.730	0.000	5.00	17.246	12.59	428.1	0.0	819.1
22.75	Bot - Section 2	1.00	0.93	31.764	34.94	377.55	0.730	0.000	2.75	9.190	6.71	234.4	0.0	436.4
25.00		1.00	0.95	32.400	35.64	374.11	0.730	0.000	2.25	7.458	5.44	194.0	0.0	633.3
28.25	Top - Section 1	1.00	0.97	33.245	36.57	368.41	0.730	0.000	3.25	10.525	7.68	281.0	0.0	893.4
30.00		1.00	0.98	33.668	37.04	370.01	0.730	0.000	1.75	5.546	4.05	149.9	0.0	210.9
35.00		1.00	1.01	34.779	38.26	359.48	0.730	0.000	5.00	15.377	11.23	429.4	0.0	584.7
40.00		1.00	1.04	35.770	39.35	347.74	0.730	0.000	5.00	14.684	10.72	421.8	0.0	558.2
42.31	Appurtenance(s)	1.00	1.06	36.196	39.82	341.99	0.730	0.000	2.31	6.550	4.78	190.4	0.0	248.9
45.00		1.00	1.07	36.669	40.34	335.05	0.730	0.000	2.69	7.440	5.43	219.1	0.0	282.7
50.00		1.00	1.09	37.491	41.24	321.56	0.730	0.000	5.00	13.296	9.71	400.3	0.0	505.1
51.00	Appurtenance(s)	1.00	1.10	37.648	41.41	318.78	0.730	0.000	1.00	2.576	1.88	77.9	0.0	97.8
55.00		1.00	1.12	38.251	42.08	307.41	0.730	0.000	4.00	10.027	7.32	308.0	0.0	380.7
55.44	Appurtenance(s)	1.00	1.12	38.315	42.15	306.13	0.730	0.000	0.44	1.076	0.79	33.1	0.0	40.8
60.00		1.00	1.14	38.958	42.85	292.68	0.730	0.000	4.56	10.833	7.91	338.9	0.0	411.1
64.00	Appurtenance(s)	1.00	1.15	39.491	43.44	280.53	0.730	0.000	4.00	9.028	6.59	286.3	0.0	342.4
65.00		1.00	1.16	39.620	43.58	277.45	0.730	0.000	1.00	2.188	1.60	69.6	0.0	83.0
67.06	Appurtenance(s)	1.00	1.16	39.881	43.87	271.04	0.730	0.000	2.06	4.419	3.23	141.5	0.0	167.5
70.00		1.00	1.17	40.243	44.27	261.78	0.730	0.000	2.94	6.103	4.46	197.2	0.0	231.3
74.00	Appurtenance(s)	1.00	1.19	40.717	44.79	248.96	0.730	0.000	4.00	7.918	5.78	258.9	0.0	299.9
75.00	Appurtenance(s)	1.00	1.19	40.832	44.91	245.71	0.730	0.000	1.00	1.910	1.39	62.6	0.0	72.3
75.45	Appurtenance(s)	1.00	1.19	40.883	44.97	244.25	0.730	0.000	0.45	0.851	0.62	27.9	0.0	32.2
76.00		1.00	1.19	40.946	45.04	242.46	0.730	0.000	0.55	1.032	0.75	33.9	0.0	39.1
Totals:									76.00			6,092.1		10,027.4

Discrete Appurtenance Forces

Structure: CT46122-A-SBA
Site Name: Middletown North
Height: 76.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1

Topography: 1

Code: TIA-222-H
Exposure: C
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

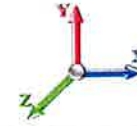
7/7/2023

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Load Case: 1.2D + 1.0W 119 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 17

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	75.45	4' Branches	1	40.883	44.972	1.00	1.00	36.86	468.00	0.000	0.000	1657.65	0.00	0.00
2	75.00	T-Arms	3	40.832	44.915	0.56	0.75	13.50	576.00	0.000	0.000	606.35	0.00	0.00
3	74.00	Antenna Branches	1	40.717	44.788	1.00	1.00	22.43	115.20	0.000	0.000	1004.60	0.00	0.00
4	74.00	AIR6449 B41	3	40.717	44.788	0.57	0.80	9.63	370.80	0.000	0.000	431.20	0.00	0.00
5	74.00	RRUS 4415 B25	3	40.717	44.788	0.54	0.80	2.64	165.60	0.000	0.000	118.11	0.00	0.00
6	74.00	Ericsson 4415 B66A	3	40.717	44.788	0.54	0.80	2.99	178.56	0.000	0.000	133.96	0.00	0.00
7	74.00	(Handrail Kit w/end	1	40.717	44.788	1.00	1.00	6.75	314.06	0.000	0.000	302.32	0.00	0.00
8	74.00	RFS	3	40.717	44.788	0.56	0.80	34.00	460.80	0.000	0.000	1522.94	0.00	0.00
9	74.00	Air 32	3	40.717	44.788	0.70	0.80	13.59	475.92	0.000	0.000	608.80	0.00	0.00
10	74.00	ATM200-A20	6	40.717	44.788	0.40	0.80	0.29	3.60	0.000	0.000	12.90	0.00	0.00
11	74.00	Radio 4449 B71+B85	3	40.717	44.788	0.54	0.80	3.17	255.60	0.000	0.000	141.88	0.00	0.00
12	74.00	Commscope	3	40.717	44.788	0.54	0.80	1.16	25.20	0.000	0.000	51.85	0.00	0.00
13	67.06	6' Branches	1	39.881	43.869	1.00	1.00	83.63	480.00	0.000	0.000	3668.78	0.00	0.00
14	64.00	B5/B13 RRH-BR04C	3	39.491	43.440	0.54	0.80	3.57	253.08	0.000	0.000	155.07	0.00	0.00
15	64.00	B2/B66A RRH-BR049	3	39.491	43.440	0.54	0.80	2.64	303.84	0.000	0.000	114.56	0.00	0.00
16	64.00	CBC78T-DS-43-2X/E14F0	3	39.491	43.440	0.54	0.80	0.59	78.48	0.000	0.000	25.85	0.00	0.00
17	64.00	BSAMNT-SBS-1-2	3	39.491	43.440	0.56	0.75	0.00	91.26	0.000	0.000	0.00	0.00	0.00
18	64.00	DB846H80E-SX	2	39.491	43.440	0.90	0.80	8.98	38.40	0.000	0.000	390.00	0.00	0.00
19	64.00	T-Arm	3	39.491	43.440	0.56	0.75	13.50	1152.00	0.000	0.000	586.44	0.00	0.00
20	64.00	Kaelus BSF0020F3V1-1	2	39.491	43.440	0.64	0.80	0.90	47.52	0.000	0.000	38.92	0.00	0.00
21	64.00	DB846F65ZAXY	4	39.491	43.440	0.74	0.80	20.98	100.80	0.000	0.000	911.41	0.00	0.00
22	64.00	(3) VZWSMART-SFK4	1	39.491	43.440	0.56	0.75	9.28	600.00	0.000	0.000	403.18	0.00	0.00
23	64.00	DB-T1-6Z-8AB-0Z	2	39.491	43.440	0.54	0.80	3.54	105.60	0.000	0.000	153.67	0.00	0.00
24	64.00	JAHH-65B-R3B	6	39.491	43.440	0.66	0.80	36.29	455.76	0.000	0.000	1576.62	0.00	0.00
25	64.00	VZS01	3	39.491	43.440	0.55	0.80	7.12	313.56	0.000	0.000	309.33	0.00	0.00
26	55.44	8' Branches	1	38.315	42.147	1.00	1.00	150.70	1965.60	0.000	0.000	6351.48	0.00	0.00
27	51.00	MX08FRO665-21	3	37.648	41.412	0.59	0.80	22.18	232.20	0.000	0.000	918.62	0.00	0.00
28	51.00	MC-K6MHDX-9-96 (3	1	37.648	41.412	0.56	0.75	11.78	1078.80	0.000	0.000	488.02	0.00	0.00
29	51.00	RDIDC-9181-OF-48	1	37.648	41.412	0.80	0.80	1.61	26.28	0.000	0.000	66.59	0.00	0.00
30	51.00	TA08025-B605	3	37.648	41.412	0.54	0.80	3.15	270.00	0.000	0.000	130.52	0.00	0.00
31	51.00	TA08025-B604	3	37.648	41.412	0.54	0.80	3.15	230.04	0.000	0.000	130.52	0.00	0.00
32	42.31	10' Branches	1	36.196	39.815	1.00	1.00	54.43	648.00	0.000	0.000	2167.15	0.00	0.00
Totals:								11,880.56			25,179.28			

Total Applied Force Summary

Structure: CT46122-A-SBA	Code: TIA-222-H	7/7/2023
Site Name: Middletown North	Exposure: C	
Height: 76.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0W 119 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 17

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		452.17	1097.50	0.00	0.00
10.00		435.94	1064.30	0.00	0.00
15.00		419.71	1031.11	0.00	0.00
20.00		428.12	997.91	0.00	0.00
22.75		234.40	534.70	0.00	0.00
25.00		194.04	713.76	0.00	0.00
28.25		280.97	1009.62	0.00	0.00
30.00		149.94	273.51	0.00	0.00
35.00		429.44	763.53	0.00	0.00
40.00		421.76	736.97	0.00	0.00
42.31	(1) attachments	2357.51	979.51	0.00	0.00
45.00		219.08	378.90	0.00	0.00
50.00		400.29	683.86	0.00	0.00
51.00	(11) attachments	1812.14	1970.90	0.00	0.00
55.00		307.97	518.92	0.00	0.00
55.44	(1) attachments	6384.58	2021.64	0.00	0.00
60.00		338.90	568.70	0.00	0.00
64.00	(35) attachments	4951.33	4020.97	0.00	0.00
65.00		69.60	92.41	0.00	0.00
67.06	(1) attachments	3810.30	667.01	0.00	0.00
70.00		197.22	259.10	0.00	0.00
74.00	(29) attachments	4587.45	2703.11	0.00	0.00
75.00	(3) attachments	668.98	657.79	0.00	0.00
75.45	(1) attachments	1685.57	500.20	0.00	0.00
76.00		33.93	39.07	0.00	0.00
	Totals:	31,271.35	24,285.02	0.00	0.00

Calculated Forces

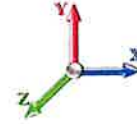
Structure: CT46122-A-SBA	Code: TIA-222-H	7/7/2023
Site Name: Middletown North	Exposure: C	
Height: 76.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0W 119 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 17

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 Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-24.23	-31.32	0.00	-1822.5	0.00	1822.58	2976.77	803.98	3080.93	2832.01	0.00	0.000	0.000	0.653
5.00	-23.02	-30.94	0.00	-1666.0	0.00	1666.01	2914.38	775.44	2866.11	2673.58	0.11	-0.201	0.000	0.633
10.00	-21.85	-30.58	0.00	-1511.3	0.00	1511.30	2848.80	746.90	2659.05	2516.58	0.43	-0.405	0.000	0.610
15.00	-20.71	-30.23	0.00	-1358.4	0.00	1358.40	2780.04	718.37	2459.75	2361.34	0.97	-0.611	0.000	0.584
20.00	-19.64	-29.84	0.00	-1207.2	0.00	1207.28	2708.10	689.83	2268.22	2208.17	1.72	-0.818	0.000	0.556
22.75	-19.05	-29.63	0.00	-1125.2	0.00	1125.22	2667.17	674.14	2166.19	2124.93	2.23	-0.935	0.000	0.539
25.00	-18.28	-29.46	0.00	-1058.5	0.00	1058.55	2632.97	661.30	2084.45	2057.41	2.69	-1.031	0.000	0.523
28.25	-17.22	-29.20	0.00	-962.79	0.00	962.79	1920.92	522.03	1623.69	1483.43	3.45	-1.167	0.000	0.661
30.00	-16.87	-29.09	0.00	-911.70	0.00	911.70	1904.07	514.04	1574.37	1447.76	3.89	-1.241	0.000	0.642
35.00	-16.00	-28.70	0.00	-766.27	0.00	766.27	1853.76	491.22	1437.64	1346.49	5.32	-1.478	0.000	0.581
40.00	-15.20	-28.30	0.00	-622.75	0.00	622.75	1800.28	468.39	1307.12	1246.45	6.99	-1.702	0.000	0.512
42.31	-14.25	-25.94	0.00	-557.37	0.00	557.37	1774.49	457.84	1248.92	1200.72	7.84	-1.804	0.000	0.475
45.00	-13.81	-25.75	0.00	-487.58	0.00	487.58	1743.61	445.56	1182.81	1147.94	8.89	-1.916	0.000	0.436
50.00	-13.09	-25.35	0.00	-358.84	0.00	358.84	1683.75	422.73	1064.71	1051.30	11.01	-2.100	0.000	0.353
51.00	-11.15	-23.48	0.00	-333.49	0.00	333.49	1671.40	418.16	1041.84	1032.22	11.45	-2.135	0.000	0.333
55.00	-10.62	-23.17	0.00	-239.57	0.00	239.57	1620.72	399.90	952.83	956.84	13.29	-2.255	0.000	0.260
55.44	-8.84	-16.72	0.00	-229.37	0.00	229.37	1615.02	397.89	943.28	948.65	13.50	-2.267	0.000	0.249
60.00	-8.26	-16.37	0.00	-153.15	0.00	153.15	1554.50	377.07	847.15	864.91	15.72	-2.373	0.000	0.184
64.00	-4.44	-11.25	0.00	-87.69	0.00	87.69	1499.23	358.81	767.08	793.39	17.75	-2.442	0.000	0.114
65.00	-4.35	-11.18	0.00	-76.43	0.00	76.43	1485.09	354.25	747.68	775.81	18.26	-2.456	0.000	0.102
67.06	-3.84	-7.35	0.00	-53.40	0.00	53.40	1455.57	344.84	708.50	740.00	19.32	-2.479	0.000	0.075
70.00	-3.59	-7.14	0.00	-31.80	0.00	31.80	1403.00	331.42	654.42	685.23	20.86	-2.502	0.000	0.049
74.00	-1.09	-2.44	0.00	-3.24	0.00	3.24	1325.69	313.15	584.28	611.42	22.96	-2.517	0.000	0.006
75.00	-0.46	-1.74	0.00	-0.80	0.00	0.80	1306.36	308.59	567.37	593.63	23.49	-2.518	0.000	0.002
75.45	-0.04	-0.04	0.00	-0.02	0.00	0.02	1297.66	306.53	559.84	585.71	23.73	-2.518	0.000	0.000
76.00	0.00	-0.03	0.00	0.00	0.00	0.00	1287.03	304.02	550.71	576.10	24.02	-2.518	0.000	0.000

Wind Loading - Shaft

Structure: CT46122-A-SBA	Code: TIA-222-H	7/7/2023
Site Name: Middletown North	Exposure: C	
Height: 76.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.0W 119 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.00



Iterations 17

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	29.135	32.05	430.67	0.730	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	29.135	32.05	415.49	0.730	0.000	5.00	19.327	14.11	452.2	0.0	689.0
10.00		1.00	0.85	29.135	32.05	400.31	0.730	0.000	5.00	18.634	13.60	435.9	0.0	664.1
15.00		1.00	0.85	29.135	32.05	385.12	0.730	0.000	5.00	17.940	13.10	419.7	0.0	639.2
20.00		1.00	0.90	30.914	34.00	381.06	0.730	0.000	5.00	17.246	12.59	428.1	0.0	614.3
22.75 Bot - Section 2		1.00	0.93	31.764	34.94	377.55	0.730	0.000	2.75	9.190	6.71	234.4	0.0	327.3
25.00		1.00	0.95	32.400	35.64	374.11	0.730	0.000	2.25	7.458	5.44	194.0	0.0	475.0
28.25 Top - Section 1		1.00	0.97	33.245	36.57	368.41	0.730	0.000	3.25	10.525	7.68	281.0	0.0	670.1
30.00		1.00	0.98	33.668	37.04	370.01	0.730	0.000	1.75	5.546	4.05	149.9	0.0	158.2
35.00		1.00	1.01	34.779	38.26	359.48	0.730	0.000	5.00	15.377	11.23	429.4	0.0	438.5
40.00		1.00	1.04	35.770	39.35	347.74	0.730	0.000	5.00	14.684	10.72	421.8	0.0	418.6
42.31 Appurtenance(s)		1.00	1.06	36.196	39.82	341.99	0.730	0.000	2.31	6.550	4.78	190.4	0.0	186.7
45.00		1.00	1.07	36.669	40.34	335.05	0.730	0.000	2.69	7.440	5.43	219.1	0.0	212.0
50.00		1.00	1.09	37.491	41.24	321.56	0.730	0.000	5.00	13.296	9.71	400.3	0.0	378.8
51.00 Appurtenance(s)		1.00	1.10	37.648	41.41	318.78	0.730	0.000	1.00	2.576	1.88	77.9	0.0	73.4
55.00		1.00	1.12	38.251	42.08	307.41	0.730	0.000	4.00	10.027	7.32	308.0	0.0	285.5
55.44 Appurtenance(s)		1.00	1.12	38.315	42.15	306.13	0.730	0.000	0.44	1.076	0.79	33.1	0.0	30.6
60.00		1.00	1.14	38.958	42.85	292.68	0.730	0.000	4.56	10.833	7.91	338.9	0.0	308.3
64.00 Appurtenance(s)		1.00	1.15	39.491	43.44	280.53	0.730	0.000	4.00	9.028	6.59	286.3	0.0	256.8
65.00		1.00	1.16	39.620	43.58	277.45	0.730	0.000	1.00	2.188	1.60	69.6	0.0	62.2
67.06 Appurtenance(s)		1.00	1.16	39.881	43.87	271.04	0.730	0.000	2.06	4.419	3.23	141.5	0.0	125.7
70.00		1.00	1.17	40.243	44.27	261.78	0.730	0.000	2.94	6.103	4.46	197.2	0.0	173.5
74.00 Appurtenance(s)		1.00	1.19	40.717	44.79	248.96	0.730	0.000	4.00	7.918	5.78	258.9	0.0	225.0
75.00 Appurtenance(s)		1.00	1.19	40.832	44.91	245.71	0.730	0.000	1.00	1.910	1.39	62.6	0.0	54.2
75.45 Appurtenance(s)		1.00	1.19	40.883	44.97	244.25	0.730	0.000	0.45	0.851	0.62	27.9	0.0	24.2
76.00		1.00	1.19	40.946	45.04	242.46	0.730	0.000	0.55	1.032	0.75	33.9	0.0	29.3
Totals:									76.00			6,092.1		7,520.5

Discrete Appurtenance Forces

Structure: CT46122-A-SBA
Site Name: Middletown North
Height: 76.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1

Topography: 1

Code: TIA-222-H
Exposure: C
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

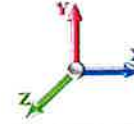
7/7/2023

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Load Case: 0.9D + 1.0W 119 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.00



Iterations 17

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	75.45	4' Branches	1	40.883	44.972	1.00	1.00	36.86	351.00	0.000	0.000	1657.65	0.00	0.00
2	75.00	T-Arms	3	40.832	44.915	0.56	0.75	13.50	432.00	0.000	0.000	606.35	0.00	0.00
3	74.00	Antenna Branches	1	40.717	44.788	1.00	1.00	22.43	86.40	0.000	0.000	1004.60	0.00	0.00
4	74.00	AIR6449 B41	3	40.717	44.788	0.57	0.80	9.63	278.10	0.000	0.000	431.20	0.00	0.00
5	74.00	RRUS 4415 B25	3	40.717	44.788	0.54	0.80	2.64	124.20	0.000	0.000	118.11	0.00	0.00
6	74.00	Ericsson 4415 B66A	3	40.717	44.788	0.54	0.80	2.99	133.92	0.000	0.000	133.96	0.00	0.00
7	74.00	(Handrail Kit w/end	1	40.717	44.788	1.00	1.00	6.75	235.55	0.000	0.000	302.32	0.00	0.00
8	74.00	RFS	3	40.717	44.788	0.56	0.80	34.00	345.60	0.000	0.000	1522.94	0.00	0.00
9	74.00	Air 32	3	40.717	44.788	0.70	0.80	13.59	356.94	0.000	0.000	608.80	0.00	0.00
10	74.00	ATM200-A20	6	40.717	44.788	0.40	0.80	0.29	2.70	0.000	0.000	12.90	0.00	0.00
11	74.00	Radio 4449 B71+B85	3	40.717	44.788	0.54	0.80	3.17	191.70	0.000	0.000	141.88	0.00	0.00
12	74.00	Commscope	3	40.717	44.788	0.54	0.80	1.16	18.90	0.000	0.000	51.85	0.00	0.00
13	67.06	6' Branches	1	39.881	43.869	1.00	1.00	83.63	360.00	0.000	0.000	3668.78	0.00	0.00
14	64.00	B5/B13 RRH-BR04C	3	39.491	43.440	0.54	0.80	3.57	189.81	0.000	0.000	155.07	0.00	0.00
15	64.00	B2/B66A RRH-BR049	3	39.491	43.440	0.54	0.80	2.64	227.88	0.000	0.000	114.56	0.00	0.00
16	64.00	CBC78T-DS-43-2X/E14F0	3	39.491	43.440	0.54	0.80	0.59	58.86	0.000	0.000	25.85	0.00	0.00
17	64.00	BSAMNT-SBS-1-2	3	39.491	43.440	0.56	0.75	0.00	68.45	0.000	0.000	0.00	0.00	0.00
18	64.00	DB846H80E-SX	2	39.491	43.440	0.90	0.80	8.98	28.80	0.000	0.000	390.00	0.00	0.00
19	64.00	T-Arm	3	39.491	43.440	0.56	0.75	13.50	864.00	0.000	0.000	586.44	0.00	0.00
20	64.00	Kaelus BSF0020F3V1-1	2	39.491	43.440	0.64	0.80	0.90	35.64	0.000	0.000	38.92	0.00	0.00
21	64.00	DB846F65ZAXY	4	39.491	43.440	0.74	0.80	20.98	75.60	0.000	0.000	911.41	0.00	0.00
22	64.00	(3) VZWSMART-SFK4	1	39.491	43.440	0.56	0.75	9.28	450.00	0.000	0.000	403.18	0.00	0.00
23	64.00	DB-T1-6Z-8AB-0Z	2	39.491	43.440	0.54	0.80	3.54	79.20	0.000	0.000	153.67	0.00	0.00
24	64.00	JAHH-65B-R3B	6	39.491	43.440	0.66	0.80	36.29	341.82	0.000	0.000	1576.62	0.00	0.00
25	64.00	VZS01	3	39.491	43.440	0.55	0.80	7.12	235.17	0.000	0.000	309.33	0.00	0.00
26	55.44	8' Branches	1	38.315	42.147	1.00	1.00	150.70	1474.20	0.000	0.000	6351.48	0.00	0.00
27	51.00	MX08FRO665-21	3	37.648	41.412	0.59	0.80	22.18	174.15	0.000	0.000	918.62	0.00	0.00
28	51.00	MC-K6MHDX-9-96 (3	1	37.648	41.412	0.56	0.75	11.78	809.10	0.000	0.000	488.02	0.00	0.00
29	51.00	RDIDC-9181-OF-48	1	37.648	41.412	0.80	0.80	1.61	19.71	0.000	0.000	66.59	0.00	0.00
30	51.00	TA08025-B605	3	37.648	41.412	0.54	0.80	3.15	202.50	0.000	0.000	130.52	0.00	0.00
31	51.00	TA08025-B604	3	37.648	41.412	0.54	0.80	3.15	172.53	0.000	0.000	130.52	0.00	0.00
32	42.31	10' Branches	1	36.196	39.815	1.00	1.00	54.43	486.00	0.000	0.000	2167.15	0.00	0.00
Totals:									8,910.42			25,179.28		

Total Applied Force Summary

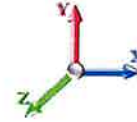
Structure: CT46122-A-SBA	Code: TIA-222-H	7/7/2023
Site Name: Middletown North	Exposure: C	
Height: 76.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.0W 119 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.00



Iterations 17

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		452.17	823.13	0.00	0.00
10.00		435.94	798.23	0.00	0.00
15.00		419.71	773.33	0.00	0.00
20.00		428.12	748.43	0.00	0.00
22.75		234.40	401.03	0.00	0.00
25.00		194.04	535.32	0.00	0.00
28.25		280.97	757.22	0.00	0.00
30.00		149.94	205.13	0.00	0.00
35.00		429.44	572.65	0.00	0.00
40.00		421.76	552.73	0.00	0.00
42.31	(1) attachments	2357.51	734.63	0.00	0.00
45.00		219.08	284.18	0.00	0.00
50.00		400.29	512.89	0.00	0.00
51.00	(11) attachments	1812.14	1478.18	0.00	0.00
55.00		307.97	389.19	0.00	0.00
55.44	(1) attachments	6384.58	1516.23	0.00	0.00
60.00		338.90	426.53	0.00	0.00
64.00	(35) attachments	4951.33	3015.73	0.00	0.00
65.00		69.60	69.31	0.00	0.00
67.06	(1) attachments	3810.30	500.26	0.00	0.00
70.00		197.22	194.32	0.00	0.00
74.00	(29) attachments	4587.45	2027.33	0.00	0.00
75.00	(3) attachments	668.98	493.34	0.00	0.00
75.45	(1) attachments	1685.57	375.15	0.00	0.00
76.00		33.93	29.30	0.00	0.00
	Totals:	31,271.35	18,213.76	0.00	0.00

Calculated Forces

Structure: CT46122-A-SBA	Code: TIA-222-H	7/7/2023
Site Name: Middletown North	Exposure: C	
Height: 76.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Load Case: 0.9D + 1.0W 119 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.00



Iterations 17

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 Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-18.16	-31.30	0.00	-1816.5	0.00	1816.56	2976.77	803.98	3080.93	2832.01	0.00	0.000	0.000	0.649
5.00	-17.23	-30.91	0.00	-1660.0	0.00	1660.04	2914.38	775.44	2866.11	2673.58	0.11	-0.200	0.000	0.628
10.00	-16.32	-30.53	0.00	-1505.4	0.00	1505.49	2848.80	746.90	2659.05	2516.58	0.43	-0.403	0.000	0.606
15.00	-15.44	-30.16	0.00	-1352.8	0.00	1352.84	2780.04	718.37	2459.75	2361.34	0.96	-0.609	0.000	0.580
20.00	-14.62	-29.76	0.00	-1202.0	0.00	1202.05	2708.10	689.83	2268.22	2208.17	1.72	-0.815	0.000	0.552
22.75	-14.16	-29.55	0.00	-1120.2	0.00	1120.20	2667.17	674.14	2166.19	2124.93	2.22	-0.932	0.000	0.534
25.00	-13.57	-29.37	0.00	-1053.7	0.00	1053.72	2632.97	661.30	2084.45	2057.41	2.68	-1.027	0.000	0.519
28.25	-12.77	-29.10	0.00	-958.26	0.00	958.26	1920.92	522.03	1623.69	1483.43	3.43	-1.163	0.000	0.656
30.00	-12.49	-28.98	0.00	-907.34	0.00	907.34	1904.07	514.04	1574.37	1447.76	3.87	-1.236	0.000	0.636
35.00	-11.81	-28.59	0.00	-762.44	0.00	762.44	1853.76	491.22	1437.64	1346.49	5.30	-1.472	0.000	0.576
40.00	-11.19	-28.18	0.00	-619.52	0.00	619.52	1800.28	468.39	1307.12	1246.45	6.96	-1.695	0.000	0.507
42.31	-10.48	-25.82	0.00	-554.42	0.00	554.42	1774.49	457.84	1248.92	1200.72	7.81	-1.796	0.000	0.471
45.00	-10.14	-25.62	0.00	-484.97	0.00	484.97	1743.61	445.56	1182.81	1147.94	8.86	-1.908	0.000	0.432
50.00	-9.59	-25.22	0.00	-356.88	0.00	356.88	1683.75	422.73	1064.71	1051.30	10.96	-2.090	0.000	0.349
51.00	-8.15	-23.36	0.00	-331.66	0.00	331.66	1671.40	418.16	1041.84	1032.22	11.40	-2.125	0.000	0.329
55.00	-7.75	-23.05	0.00	-238.20	0.00	238.20	1620.72	399.90	952.83	956.84	13.24	-2.245	0.000	0.257
55.44	-6.47	-16.62	0.00	-228.06	0.00	228.06	1615.02	397.89	943.28	948.65	13.45	-2.257	0.000	0.246
60.00	-6.03	-16.27	0.00	-152.29	0.00	152.29	1554.50	377.07	847.15	864.91	15.66	-2.362	0.000	0.182
64.00	-3.22	-11.20	0.00	-87.20	0.00	87.20	1499.23	358.81	767.08	793.39	17.67	-2.431	0.000	0.113
65.00	-3.15	-11.13	0.00	-76.00	0.00	76.00	1485.09	354.25	747.68	775.81	18.18	-2.444	0.000	0.101
67.06	-2.81	-7.30	0.00	-53.08	0.00	53.08	1455.57	344.84	708.50	740.00	19.24	-2.467	0.000	0.074
70.00	-2.62	-7.10	0.00	-31.61	0.00	31.61	1403.00	331.42	654.42	685.23	20.77	-2.491	0.000	0.048
74.00	-0.79	-2.43	0.00	-3.23	0.00	3.23	1325.69	313.15	584.28	611.42	22.86	-2.505	0.000	0.006
75.00	-0.33	-1.74	0.00	-0.80	0.00	0.80	1306.36	308.59	567.37	593.63	23.39	-2.506	0.000	0.002
75.45	-0.03	-0.04	0.00	-0.02	0.00	0.02	1297.66	306.53	559.84	585.71	23.62	-2.506	0.000	0.000
76.00	0.00	-0.03	0.00	0.00	0.00	0.00	1287.03	304.02	550.71	576.10	23.91	-2.506	0.000	0.000

Wind Loading - Shaft

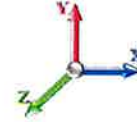
Structure: CT46122-A-SBA	Code: TIA-222-H	7/7/2023
Site Name: Middletown North	Exposure: C	
Height: 76.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 16

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	5.144	5.66	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	5.144	5.66	0.00	1.200	0.828	5.00	20.017	24.02	135.9	237.0	1155.7
10.00		1.00	0.85	5.144	5.66	0.00	1.200	0.887	5.00	19.373	23.25	131.5	245.2	1130.7
15.00		1.00	0.85	5.144	5.66	0.00	1.200	0.924	5.00	18.710	22.45	127.0	246.1	1098.4
20.00		1.00	0.90	5.458	6.00	0.00	1.200	0.951	5.00	18.039	21.65	130.0	243.7	1062.8
22.75 Bot - Section 2		1.00	0.93	5.608	6.17	0.00	1.200	0.963	2.75	9.631	11.56	71.3	132.8	569.2
25.00		1.00	0.95	5.720	6.29	0.00	1.200	0.973	2.25	7.823	9.39	59.1	109.1	742.4
28.25 Top - Section 1		1.00	0.97	5.869	6.46	0.00	1.200	0.985	3.25	11.058	13.27	85.7	155.2	1048.6
30.00		1.00	0.98	5.944	6.54	0.00	1.200	0.991	1.75	5.835	7.00	45.8	82.9	293.8
35.00		1.00	1.01	6.140	6.75	0.00	1.200	1.006	5.00	16.215	19.46	131.4	230.2	814.9
40.00		1.00	1.04	6.315	6.95	0.00	1.200	1.019	5.00	15.533	18.64	129.5	222.9	781.1
42.31 Appurtenance(s)		1.00	1.06	6.390	7.03	0.00	1.200	1.025	2.31	6.944	8.33	58.6	101.3	350.2
45.00		1.00	1.07	6.474	7.12	0.00	1.200	1.032	2.69	7.903	9.48	67.5	115.7	398.4
50.00		1.00	1.09	6.619	7.28	0.00	1.200	1.042	5.00	14.165	17.00	123.8	206.6	711.7
51.00 Appurtenance(s)		1.00	1.10	6.646	7.31	0.00	1.200	1.044	1.00	2.750	3.30	24.1	41.0	138.8
55.00		1.00	1.12	6.753	7.43	0.00	1.200	1.052	4.00	10.728	12.87	95.6	158.3	539.0
55.44 Appurtenance(s)		1.00	1.12	6.764	7.44	0.00	1.200	1.053	0.44	1.153	1.38	10.3	17.3	58.2
60.00		1.00	1.14	6.878	7.57	0.00	1.200	1.062	4.56	11.640	13.97	105.7	172.2	583.3
64.00 Appurtenance(s)		1.00	1.15	6.972	7.67	0.00	1.200	1.068	4.00	9.740	11.69	89.6	145.0	487.4
65.00		1.00	1.16	6.995	7.69	0.00	1.200	1.070	1.00	2.366	2.84	21.8	35.9	118.8
67.06 Appurtenance(s)		1.00	1.16	7.041	7.74	0.00	1.200	1.073	2.06	4.788	5.75	44.5	72.3	239.8
70.00		1.00	1.17	7.105	7.81	0.00	1.200	1.078	2.94	6.631	7.96	62.2	99.8	331.1
74.00 Appurtenance(s)		1.00	1.19	7.188	7.91	0.00	1.200	1.084	4.00	8.641	10.37	82.0	129.4	429.3
75.00 Appurtenance(s)		1.00	1.19	7.208	7.93	0.00	1.200	1.086	1.00	2.091	2.51	19.9	31.9	104.3
75.45 Appurtenance(s)		1.00	1.19	7.218	7.94	0.00	1.200	1.086	0.45	0.932	1.12	8.9	14.3	46.5
76.00		1.00	1.19	7.229	7.95	0.00	1.200	1.087	0.55	1.132	1.36	10.8	17.3	56.4
Totals:									76.00			1,872.4		13,290.7

Discrete Appurtenance Forces

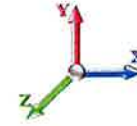
Structure: CT46122-A-SBA	Code: TIA-222-H	7/7/2023
Site Name: Middletown North	Exposure: C	
Height: 76.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 16

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	75.45	4' Branches	1	7.218	7.939	1.00	1.00	52.88	298.55	0.000	0.000	419.79	0.00	0.00
2	75.00	T-Arms	3	7.208	7.929	0.56	0.75	23.29	716.53	0.000	0.000	184.67	0.00	0.00
3	74.00	Antenna Branches	1	7.188	7.907	1.00	1.00	32.16	252.83	0.000	0.000	254.26	0.00	0.00
4	74.00	AIR6449 B41	3	7.188	7.907	0.57	0.80	10.63	531.23	0.000	0.000	84.08	0.00	0.00
5	74.00	RRUS 4415 B25	3	7.188	7.907	0.54	0.80	3.15	214.00	0.000	0.000	24.92	0.00	0.00
6	74.00	Ericsson 4415 B66A	3	7.188	7.907	0.54	0.80	3.53	282.94	0.000	0.000	27.91	0.00	0.00
7	74.00	(Handrail Kit w/end	1	7.188	7.907	1.00	1.00	10.85	768.72	0.000	0.000	85.77	0.00	0.00
8	74.00	RFS	3	7.188	7.907	0.56	0.80	35.96	1202.47	0.000	0.000	284.32	0.00	0.00
9	74.00	Air 32	3	7.188	7.907	0.70	0.80	15.01	794.02	0.000	0.000	118.69	0.00	0.00
10	74.00	ATM200-A20	6	7.188	7.907	0.80	0.80	1.23	14.13	0.000	0.000	9.76	0.00	0.00
11	74.00	Radio 4449 B71+B85	3	7.188	7.907	0.54	0.80	3.71	314.28	0.000	0.000	29.37	0.00	0.00
12	74.00	Commscope	3	7.188	7.907	0.54	0.80	1.79	39.64	0.000	0.000	14.14	0.00	0.00
13	67.06	6' Branches	1	7.041	7.745	1.00	1.00	119.54	1051.76	0.000	0.000	925.81	0.00	0.00
14	64.00	B5/B13 RRH-BR04C	3	6.972	7.669	0.54	0.80	4.18	307.84	0.000	0.000	32.06	0.00	0.00
15	64.00	B2/B66A RRH-BR049	3	6.972	7.669	0.54	0.80	3.15	414.97	0.000	0.000	24.12	0.00	0.00
16	64.00	CBC78T-DS-43-2X/E14F0	3	6.972	7.669	0.54	0.80	0.85	109.90	0.000	0.000	6.52	0.00	0.00
17	64.00	BSAMNT-SBS-1-2	3	6.972	7.669	0.56	0.75	0.00	120.31	0.000	0.000	0.00	0.00	0.00
18	64.00	DB846H80E-SX	2	6.972	7.669	0.90	0.80	10.25	216.44	0.000	0.000	78.62	0.00	0.00
19	64.00	T-Arm	3	6.972	7.669	0.56	0.75	20.71	1262.30	0.000	0.000	158.84	0.00	0.00
20	64.00	Kaelus BSF0020F3V1-1	2	6.972	7.669	0.64	0.80	1.17	78.66	0.000	0.000	8.95	0.00	0.00
21	64.00	DB846F65ZAXY	4	6.972	7.669	0.74	0.80	23.14	548.17	0.000	0.000	177.47	0.00	0.00
22	64.00	(3) VZWSMART-SFK4	1	6.972	7.669	0.56	0.75	14.83	813.28	0.000	0.000	113.77	0.00	0.00
23	64.00	DB-T1-6Z-8AB-OZ	2	6.972	7.669	0.54	0.80	5.70	269.66	0.000	0.000	43.74	0.00	0.00
24	64.00	JAHH-65B-R3B	6	6.972	7.669	0.66	0.80	39.50	1246.33	0.000	0.000	302.96	0.00	0.00
25	64.00	VZS01	3	6.972	7.669	0.55	0.80	8.00	500.80	0.000	0.000	61.34	0.00	0.00
26	55.44	8' Branches	1	6.764	7.441	1.00	1.00	214.19	4293.69	0.000	0.000	1593.70	0.00	0.00
27	51.00	MX08FRO665-21	3	6.646	7.311	0.59	0.80	23.74	552.85	0.000	0.000	173.56	0.00	0.00
28	51.00	MC-K6MHDX-9-96 (3	1	6.646	7.311	0.56	0.75	20.65	1503.64	0.000	0.000	150.95	0.00	0.00
29	51.00	RDIDC-9181-OF-48	1	6.646	7.311	0.80	0.80	1.88	45.45	0.000	0.000	13.75	0.00	0.00
30	51.00	TA08025-B605	3	6.646	7.311	0.54	0.80	3.69	326.11	0.000	0.000	26.99	0.00	0.00
31	51.00	TA08025-B604	3	6.646	7.311	0.54	0.80	3.69	284.64	0.000	0.000	26.99	0.00	0.00
32	42.31	10' Branches	1	6.390	7.029	1.00	1.00	76.75	1409.44	0.000	0.000	539.48	0.00	0.00
Totals:									20,785.59			5,997.29		

Total Applied Force Summary

Structure: CT46122-A-SBA	Code: TIA-222-H	7/7/2023
Site Name: Middletown North	Exposure: C	
Height: 76.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 16

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		135.91	1334.51	0.00	0.00
10.00		131.53	1309.54	0.00	0.00
15.00		127.03	1277.20	0.00	0.00
20.00		129.95	1241.58	0.00	0.00
22.75		71.29	667.50	0.00	0.00
25.00		59.07	822.81	0.00	0.00
28.25		85.67	1164.86	0.00	0.00
30.00		45.78	356.37	0.00	0.00
35.00		131.42	993.71	0.00	0.00
40.00		129.48	959.86	0.00	0.00
42.31	(1) attachments	598.05	1842.27	0.00	0.00
45.00		67.53	494.58	0.00	0.00
50.00		123.76	890.50	0.00	0.00
51.00	(11) attachments	416.35	2887.26	0.00	0.00
55.00		95.63	677.22	0.00	0.00
55.44	(1) attachments	1604.00	4367.08	0.00	0.00
60.00		105.68	740.85	0.00	0.00
64.00	(35) attachments	1098.02	6514.34	0.00	0.00
65.00		21.84	128.28	0.00	0.00
67.06	(1) attachments	970.30	1311.03	0.00	0.00
70.00		62.19	358.85	0.00	0.00
74.00	(29) attachments	1015.22	4881.41	0.00	0.00
75.00	(3) attachments	204.57	830.27	0.00	0.00
75.45	(1) attachments	428.67	345.05	0.00	0.00
76.00		10.80	56.41	0.00	0.00
	Totals:	7,869.73	36,453.33	0.00	0.00

Calculated Forces

Structure: CT46122-A-SBA
Site Name: Middletown North
Height: 76.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1

Topography: 1

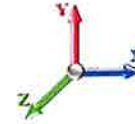
Code: TIA-222-H
Exposure: C
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

7/7/2023
 Page: 19



Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 16

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 Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-36.45	-7.89	0.00	-453.59	0.00	453.59	2976.77	803.98	3080.93	2832.01	0.00	0.000	0.000	0.173
5.00	-35.11	-7.78	0.00	-414.17	0.00	414.17	2914.38	775.44	2866.11	2673.58	0.03	-0.050	0.000	0.167
10.00	-33.79	-7.68	0.00	-375.27	0.00	375.27	2848.80	746.90	2659.05	2516.58	0.11	-0.101	0.000	0.161
15.00	-32.51	-7.58	0.00	-336.89	0.00	336.89	2780.04	718.37	2459.75	2361.34	0.24	-0.152	0.000	0.154
20.00	-31.26	-7.46	0.00	-299.01	0.00	299.01	2708.10	689.83	2268.22	2208.17	0.43	-0.203	0.000	0.147
22.75	-30.59	-7.40	0.00	-278.48	0.00	278.48	2667.17	674.14	2166.19	2124.93	0.55	-0.232	0.000	0.143
25.00	-29.77	-7.36	0.00	-261.83	0.00	261.83	2632.97	661.30	2084.45	2057.41	0.67	-0.256	0.000	0.139
28.25	-28.60	-7.28	0.00	-237.92	0.00	237.92	1920.92	522.03	1623.69	1483.43	0.86	-0.290	0.000	0.175
30.00	-28.24	-7.25	0.00	-225.18	0.00	225.18	1904.07	514.04	1574.37	1447.76	0.97	-0.308	0.000	0.171
35.00	-27.24	-7.14	0.00	-188.93	0.00	188.93	1853.76	491.22	1437.64	1346.49	1.32	-0.366	0.000	0.155
40.00	-26.27	-7.02	0.00	-153.24	0.00	153.24	1800.28	468.39	1307.12	1246.45	1.73	-0.422	0.000	0.138
42.31	-24.43	-6.42	0.00	-137.02	0.00	137.02	1774.49	457.84	1248.92	1200.72	1.95	-0.447	0.000	0.128
45.00	-23.93	-6.36	0.00	-119.75	0.00	119.75	1743.61	445.56	1182.81	1147.94	2.21	-0.474	0.000	0.118
50.00	-23.04	-6.24	0.00	-87.92	0.00	87.92	1683.75	422.73	1064.71	1051.30	2.73	-0.519	0.000	0.098
51.00	-20.16	-5.81	0.00	-81.68	0.00	81.68	1671.40	418.16	1041.84	1032.22	2.84	-0.528	0.000	0.091
55.00	-19.48	-5.71	0.00	-58.45	0.00	58.45	1620.72	399.90	952.83	956.84	3.29	-0.557	0.000	0.073
55.44	-15.13	-4.07	0.00	-55.93	0.00	55.93	1615.02	397.89	943.28	948.65	3.34	-0.560	0.000	0.068
60.00	-14.39	-3.96	0.00	-37.38	0.00	37.38	1554.50	377.07	847.15	864.91	3.89	-0.586	0.000	0.053
64.00	-7.88	-2.80	0.00	-21.54	0.00	21.54	1499.23	358.81	767.08	793.39	4.39	-0.603	0.000	0.032
65.00	-7.75	-2.77	0.00	-18.74	0.00	18.74	1485.09	354.25	747.68	775.81	4.52	-0.606	0.000	0.029
67.06	-6.45	-1.79	0.00	-13.03	0.00	13.03	1455.57	344.84	708.50	740.00	4.78	-0.612	0.000	0.022
70.00	-6.09	-1.73	0.00	-7.76	0.00	7.76	1403.00	331.42	654.42	685.23	5.16	-0.617	0.000	0.016
74.00	-1.22	-0.66	0.00	-0.86	0.00	0.86	1325.69	313.15	584.28	611.42	5.68	-0.621	0.000	0.002
75.00	-0.40	-0.44	0.00	-0.21	0.00	0.21	1306.36	308.59	567.37	593.63	5.81	-0.621	0.000	0.001
75.45	-0.06	-0.01	0.00	-0.01	0.00	0.01	1297.66	306.53	559.84	585.71	5.87	-0.621	0.000	0.000
76.00	0.00	-0.01	0.00	0.00	0.00	0.00	1287.03	304.02	550.71	576.10	5.94	-0.621	0.000	0.000

Seismic Segment Forces (Factored)

Structure: CT46122-A-SBA	Code: TIA-222-H	7/7/2023
Site Name: Middletown North	Exposure: C	
Height: 76.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0Ev + 1.0Eh

Gust Response Factor 1.10

Sds 0.22

Iterations 15

Dead Load Factor 1.20 **Seismic Load Factor** 1.00

Sd1 0.09

Ss 0.20

Wind Load Factor 0.00 **Structure Frequency (f1)** 0.81

SA 0.07

Seismic Importance Factor 1.00



Top Elev (ft)	Description	Wz (lb)	Hz (lb)	Vertical Ev (lb)	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	
5.00		944.38	2.50	41.30	0.59	
10.00		916.72	7.50	40.09	2.55	
15.00		889.06	12.50	38.88	4.92	
20.00		861.39	17.50	37.67	7.47	
22.75	Bot - Section 2	461.97	21.38	20.20	4.19	
25.00		608.21	23.88	26.60	7.09	
28.25	Top - Section 1	860.72	26.63	37.64	13.24	
30.00		238.35	29.13	10.42	2.59	
35.00		666.08	32.50	29.13	12.25	
40.00		643.94	37.50	28.16	14.22	
42.31	Appurtenance(s)	830.03	41.16	36.30	22.85	
45.00		331.79	43.66	14.51	7.07	
50.00		599.68	47.50	26.23	17.83	
51.00	Appurtenance(s)	1648.3	50.50	72.09	77.27	
55.00		455.47	53.00	19.92	14.21	
55.44	Appurtenance(s)	1687.2	55.22	73.79	90.14	
60.00		500.18	57.72	21.87	18.16	
64.00	Appurtenance(s)	3373.8	62.00	147.55	272.46	
65.00		78.58	64.50	3.44	1.68	
67.06	Appurtenance(s)	559.09	66.03	24.45	25.41	
70.00		220.55	68.53	9.65	7.49	
74.00	Appurtenance(s)	2258.9	72.00	98.79	193.12	
75.00	Appurtenance(s)	549.73	74.50	24.04	29.29	
75.45	Appurtenance(s)	416.83	75.22	18.23	20.33	
76.00		32.55	75.72	1.42	0.63	
Totals:		20,633.7		902.4	867.0	Total Wind: 31,271.3

Calculated Forces

Structure: CT46122-A-SBA
Site Name: Middletown North
Height: 76.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1

Topography: 1

Code: TIA-222-H
Exposure: C
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

7/7/2023

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Load Case: 1.2D + 1.0Ev + 1.0Eh							Iterations	15
Gust Response Factor		1.10		Sds	0.22	Ss	0.20	
Dead Load Factor		1.20		Seismic Load Factor	1.00	Sd1	0.09	
Wind Load Factor		0.00		Structure Frequency (f1)	0.81	SA	0.07	
						Seismic Importance 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 Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-25.19	-0.87	0.00	-53.52	0.00	53.52	2976.77	803.98	3080.93	2832.01	0.00	0.00	0.00	0.027
5.00	-24.05	-0.87	0.00	-49.18	0.00	49.18	2914.38	775.44	2866.11	2673.58	0.00	-0.01	-0.01	0.027
10.00	-22.94	-0.87	0.00	-44.83	0.00	44.83	2848.80	746.90	2659.05	2516.58	0.01	-0.01	-0.01	0.026
15.00	-21.87	-0.87	0.00	-40.48	0.00	40.48	2780.04	718.37	2459.75	2361.34	0.03	-0.02	-0.02	0.025
20.00	-20.84	-0.86	0.00	-36.15	0.00	36.15	2708.10	689.83	2268.22	2208.17	0.05	-0.02	-0.02	0.024
22.75	-20.28	-0.86	0.00	-33.78	0.00	33.78	2667.17	674.14	2166.19	2124.93	0.07	-0.03	-0.03	0.024
25.00	-19.54	-0.85	0.00	-31.85	0.00	31.85	2632.97	661.30	2084.45	2057.41	0.08	-0.03	-0.03	0.023
28.25	-18.50	-0.84	0.00	-29.09	0.00	29.09	1920.92	522.03	1623.69	1483.43	0.10	-0.03	-0.03	0.029
30.00	-18.21	-0.84	0.00	-27.62	0.00	27.62	1904.07	514.04	1574.37	1447.76	0.12	-0.04	-0.04	0.029
35.00	-17.42	-0.83	0.00	-23.44	0.00	23.44	1853.76	491.22	1437.64	1346.49	0.16	-0.04	-0.04	0.027
40.00	-16.65	-0.81	0.00	-19.30	0.00	19.30	1800.28	468.39	1307.12	1246.45	0.21	-0.05	-0.05	0.025
42.31	-15.64	-0.79	0.00	-17.43	0.00	17.43	1774.49	457.84	1248.92	1200.72	0.23	-0.05	-0.05	0.023
45.00	-15.24	-0.78	0.00	-15.30	0.00	15.30	1743.61	445.56	1182.81	1147.94	0.27	-0.06	-0.06	0.022
50.00	-14.53	-0.77	0.00	-11.38	0.00	11.38	1683.75	422.73	1064.71	1051.30	0.33	-0.06	-0.06	0.019
51.00	-12.49	-0.69	0.00	-10.62	0.00	10.62	1671.40	418.16	1041.84	1032.22	0.34	-0.06	-0.06	0.018
55.00	-11.95	-0.67	0.00	-7.87	0.00	7.87	1620.72	399.90	952.83	956.84	0.40	-0.07	-0.07	0.016
55.44	-9.86	-0.58	0.00	-7.57	0.00	7.57	1615.02	397.89	943.28	948.65	0.40	-0.07	-0.07	0.014
60.00	-9.27	-0.56	0.00	-4.92	0.00	4.92	1554.50	377.07	847.15	864.91	0.47	-0.07	-0.07	0.012
64.00	-5.10	-0.28	0.00	-2.68	0.00	2.68	1499.23	358.81	767.08	793.39	0.53	-0.07	-0.07	0.007
65.00	-5.00	-0.28	0.00	-2.39	0.00	2.39	1485.09	354.25	747.68	775.81	0.55	-0.08	-0.08	0.006
67.06	-4.31	-0.26	0.00	-1.81	0.00	1.81	1455.57	344.84	708.50	740.00	0.58	-0.08	-0.08	0.005
70.00	-4.04	-0.25	0.00	-1.06	0.00	1.06	1403.00	331.42	654.42	685.23	0.63	-0.08	-0.08	0.004
74.00	-1.24	-0.05	0.00	-0.06	0.00	0.06	1325.69	313.15	584.28	611.42	0.69	-0.08	-0.08	0.001
75.00	-0.56	-0.02	0.00	-0.01	0.00	0.01	1306.36	308.59	567.37	593.63	0.71	-0.08	-0.08	0.000
75.45	-0.04	0.00	0.00	0.00	0.00	0.00	1297.66	306.53	559.84	585.71	0.72	-0.08	-0.08	0.000
76.00	0.00	0.00	0.00	0.00	0.00	0.00	1287.03	304.02	550.71	576.10	0.73	-0.08	-0.08	0.000

Seismic Segment Forces (Factored)

Structure: CT46122-A-SBA	Code: TIA-222-H	7/7/2023
Site Name: Middletown North	Exposure: C	
Height: 76.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.0Ev + 1.0Eh

Gust Response Factor 1.10	Sds 0.22		Iterations 15
Dead Load Factor 0.90	Seismic Load Factor 1.00		Ss 0.20
Wind Load Factor 0.00	Structure Frequency (f1) 0.81	Sd1 0.09	S1 0.06
		SA 0.07	Seismic Importance Factor 1.00

Top Elev (ft)	Description	Wz (lb)	Hz (lb)	Vertical Ev (lb)	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	
5.00		899.68	2.50	39.35	0.57	
10.00		872.02	7.50	38.14	2.43	
15.00		844.36	12.50	36.93	4.68	
20.00		816.69	17.50	35.72	7.09	
22.75	Bot - Section 2	437.39	21.38	19.13	3.97	
25.00		588.09	23.88	25.72	6.92	
28.25	Top - Section 1	831.67	26.63	36.37	12.90	
30.00		222.71	29.13	9.74	2.41	
35.00		621.38	32.50	27.17	11.38	
40.00		599.24	37.50	26.21	13.17	
42.31	Appurtenance(s)	809.38	41.16	35.40	22.55	
45.00		307.74	43.66	13.46	6.51	
50.00		554.98	47.50	24.27	16.38	
51.00	Appurtenance(s)	1639.4	50.50	71.70	78.34	
55.00		420.91	53.00	18.41	13.03	
55.44	Appurtenance(s)	1683.4	55.22	73.62	91.79	
60.00		460.79	57.72	20.15	16.58	
64.00	Appurtenance(s)	3339.2	62.00	146.04	274.42	
65.00		76.22	64.50	3.33	1.65	
67.06	Appurtenance(s)	554.22	66.03	24.24	25.65	
70.00		213.60	68.53	9.34	7.33	
74.00	Appurtenance(s)	2249.4	72.00	98.38	196.14	
75.00	Appurtenance(s)	547.37	74.50	23.94	29.74	
75.45	Appurtenance(s)	416.83	75.22	18.23	20.76	
76.00		32.55	75.72	1.42	0.64	
Totals:		20,039.4		876.4	867.0	Total Wind: 31,271.3

Calculated Forces

Structure: CT46122-A-SBA
Site Name: Middletown North
Height: 76.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1

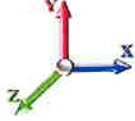
Topography: 1

Code: TIA-222-H
Exposure: C
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

7/7/2023

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Load Case: 0.9D + 1.0Ev + 1.0Eh							Iterations 15
Gust Response Factor 1.10				Sds 0.22			Ss 0.20
Dead Load Factor 0.90		Seismic Load Factor 1.00		Sd1 0.09			S1 0.06
Wind Load Factor 0.00		Structure Frequency (f1) 0.81		SA 0.07	Seismic Importance 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 Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-19.09	-0.87	0.00	-53.52	0.00	53.52	2976.77	803.98	3080.93	2832.01	0.00	0.00	0.00	0.025
5.00	-18.23	-0.87	0.00	-49.19	0.00	49.19	2914.38	775.44	2866.11	2673.58	0.00	0.01	-0.01	0.025
10.00	-17.39	-0.87	0.00	-44.84	0.00	44.84	2848.80	746.90	2659.05	2516.58	0.01	0.03	-0.02	0.024
15.00	-16.58	-0.87	0.00	-40.50	0.00	40.50	2780.04	718.37	2459.75	2361.34	0.03	0.05	-0.02	0.023
20.00	-15.80	-0.86	0.00	-36.18	0.00	36.18	2708.10	689.83	2268.22	2208.17	0.05	0.07	-0.03	0.022
22.75	-15.38	-0.86	0.00	-33.81	0.00	33.81	2667.17	674.14	2166.19	2124.93	0.07	0.08	-0.03	0.022
25.00	-14.82	-0.85	0.00	-31.89	0.00	31.89	2632.97	661.30	2084.45	2057.41	0.08	0.10	-0.03	0.021
28.25	-14.02	-0.84	0.00	-29.13	0.00	29.13	1920.92	522.03	1623.69	1483.43	0.10	0.12	-0.04	0.027
30.00	-13.81	-0.84	0.00	-27.66	0.00	27.66	1904.07	514.04	1574.37	1447.76	0.12	0.16	-0.04	0.026
35.00	-13.21	-0.83	0.00	-23.49	0.00	23.49	1853.76	491.22	1437.64	1346.49	0.16	0.21	-0.04	0.025
40.00	-12.63	-0.81	0.00	-19.36	0.00	19.36	1800.28	468.39	1307.12	1246.45	0.21	0.23	-0.05	0.023
42.31	-11.86	-0.79	0.00	-17.48	0.00	17.48	1774.49	457.84	1248.92	1200.72	0.23	0.27	-0.05	0.021
45.00	-11.56	-0.78	0.00	-15.36	0.00	15.36	1743.61	445.56	1182.81	1147.94	0.27	0.33	-0.06	0.020
50.00	-11.02	-0.77	0.00	-11.43	0.00	11.43	1683.75	422.73	1064.71	1051.30	0.33	0.34	-0.06	0.017
51.00	-9.47	-0.69	0.00	-10.67	0.00	10.67	1671.40	418.16	1041.84	1032.22	0.34	0.40	-0.07	0.016
55.00	-9.07	-0.68	0.00	-7.91	0.00	7.91	1620.72	399.90	952.83	956.84	0.40	0.41	-0.07	0.014
55.44	-7.48	-0.58	0.00	-7.62	0.00	7.62	1615.02	397.89	943.28	948.65	0.41	0.47	-0.07	0.013
60.00	-7.03	-0.57	0.00	-4.96	0.00	4.96	1554.50	377.07	847.15	864.91	0.47	0.54	-0.07	0.010
64.00	-3.87	-0.29	0.00	-2.70	0.00	2.70	1499.23	358.81	767.08	793.39	0.54	0.55	-0.08	0.006
65.00	-3.79	-0.29	0.00	-2.42	0.00	2.42	1485.09	354.25	747.68	775.81	0.55	0.58	-0.08	0.006
67.06	-3.27	-0.26	0.00	-1.83	0.00	1.83	1455.57	344.84	708.50	740.00	0.58	0.63	-0.08	0.005
70.00	-3.07	-0.25	0.00	-1.07	0.00	1.07	1403.00	331.42	654.42	685.23	0.63	0.70	-0.08	0.004
74.00	-0.94	-0.05	0.00	-0.06	0.00	0.06	1325.69	313.15	584.28	611.42	0.70	0.71	-0.08	0.001
75.00	-0.42	-0.02	0.00	-0.01	0.00	0.01	1306.36	308.59	567.37	593.63	0.71	0.72	-0.08	0.000
75.45	-0.03	0.00	0.00	0.00	0.00	0.00	1297.66	306.53	559.84	585.71	0.72	0.73	-0.08	0.000
76.00	0.00	0.00	0.00	0.00	0.00	0.00	1287.03	304.02	550.71	576.10	0.73		-0.08	0.000

Wind Loading - Shaft

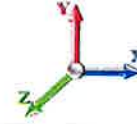
Structure: CT46122-A-SBA	Code: TIA-222-H	7/7/2023
Site Name: Middletown North	Exposure: C	
Height: 76.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 16

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	6.627	7.29	217.15	0.730	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	6.627	7.29	209.49	0.730	0.000	5.00	19.327	14.11	102.8	0.0	765.6
10.00		1.00	0.85	6.627	7.29	201.84	0.730	0.000	5.00	18.634	13.60	99.2	0.0	737.9
15.00		1.00	0.85	6.627	7.29	194.18	0.730	0.000	5.00	17.940	13.10	95.5	0.0	710.3
20.00		1.00	0.90	7.032	7.73	192.13	0.730	0.000	5.00	17.246	12.59	97.4	0.0	682.6
22.75 Bot - Section 2		1.00	0.93	7.225	7.95	190.36	0.730	0.000	2.75	9.190	6.71	53.3	0.0	363.6
25.00		1.00	0.95	7.370	8.11	188.63	0.730	0.000	2.25	7.458	5.44	44.1	0.0	527.7
28.25 Top - Section 1		1.00	0.97	7.562	8.32	185.75	0.730	0.000	3.25	10.525	7.68	63.9	0.0	744.5
30.00		1.00	0.98	7.658	8.42	186.56	0.730	0.000	1.75	5.546	4.05	34.1	0.0	175.8
35.00		1.00	1.01	7.911	8.70	181.25	0.730	0.000	5.00	15.377	11.23	97.7	0.0	487.3
40.00		1.00	1.04	8.136	8.95	175.33	0.730	0.000	5.00	14.684	10.72	95.9	0.0	465.1
42.31 Appurtenance(s)		1.00	1.06	8.233	9.06	172.43	0.730	0.000	2.31	6.550	4.78	43.3	0.0	207.4
45.00		1.00	1.07	8.341	9.17	168.93	0.730	0.000	2.69	7.440	5.43	49.8	0.0	235.6
50.00		1.00	1.09	8.528	9.38	162.13	0.730	0.000	5.00	13.296	9.71	91.0	0.0	420.9
51.00 Appurtenance(s)		1.00	1.10	8.563	9.42	160.73	0.730	0.000	1.00	2.576	1.88	17.7	0.0	81.5
55.00		1.00	1.12	8.701	9.57	155.00	0.730	0.000	4.00	10.027	7.32	70.1	0.0	317.2
55.44 Appurtenance(s)		1.00	1.12	8.715	9.59	154.35	0.730	0.000	0.44	1.076	0.79	7.5	0.0	34.0
60.00		1.00	1.14	8.861	9.75	147.57	0.730	0.000	4.56	10.833	7.91	77.1	0.0	342.6
64.00 Appurtenance(s)		1.00	1.15	8.983	9.88	141.45	0.730	0.000	4.00	9.028	6.59	65.1	0.0	285.4
65.00		1.00	1.16	9.012	9.91	139.89	0.730	0.000	1.00	2.188	1.60	15.8	0.0	69.1
67.06 Appurtenance(s)		1.00	1.16	9.071	9.98	136.66	0.730	0.000	2.06	4.419	3.23	32.2	0.0	139.6
70.00		1.00	1.17	9.154	10.07	131.99	0.730	0.000	2.94	6.103	4.46	44.9	0.0	192.7
74.00 Appurtenance(s)		1.00	1.19	9.261	10.19	125.52	0.730	0.000	4.00	7.918	5.78	58.9	0.0	250.0
75.00 Appurtenance(s)		1.00	1.19	9.288	10.22	123.89	0.730	0.000	1.00	1.910	1.39	14.2	0.0	60.3
75.45 Appurtenance(s)		1.00	1.19	9.299	10.23	123.15	0.730	0.000	0.45	0.851	0.62	6.4	0.0	26.8
76.00		1.00	1.19	9.314	10.24	122.25	0.730	0.000	0.55	1.032	0.75	7.7	0.0	32.6
Totals:									76.00			1,385.7		8,356.2

Discrete Appurtenance Forces

Structure: CT46122-A-SBA
Site Name: Middletown North
Height: 76.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1

Topography: 1

Code: TIA-222-H
Exposure: C
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

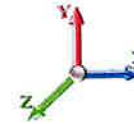
7/7/2023

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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 16

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	75.45	4' Branches	1	9.299	10.229	1.00	1.00	36.86	390.00	0.000	0.000	377.05	0.00	0.00
2	75.00	T-Arms	3	9.288	10.216	0.56	0.75	13.50	480.00	0.000	0.000	137.92	0.00	0.00
3	74.00	Antenna Branches	1	9.261	10.187	1.00	1.00	22.43	96.00	0.000	0.000	228.51	0.00	0.00
4	74.00	AIR6449 B41	3	9.261	10.187	0.57	0.80	9.63	309.00	0.000	0.000	98.08	0.00	0.00
5	74.00	RRUS 4415 B25	3	9.261	10.187	0.54	0.80	2.64	138.00	0.000	0.000	26.87	0.00	0.00
6	74.00	Ericsson 4415 B66A	3	9.261	10.187	0.54	0.80	2.99	148.80	0.000	0.000	30.47	0.00	0.00
7	74.00	(Handrail Kit w/end	1	9.261	10.187	1.00	1.00	6.75	261.72	0.000	0.000	68.77	0.00	0.00
8	74.00	RFS	3	9.261	10.187	0.56	0.80	34.00	384.00	0.000	0.000	346.41	0.00	0.00
9	74.00	Air 32	3	9.261	10.187	0.70	0.80	13.59	396.60	0.000	0.000	138.48	0.00	0.00
10	74.00	ATM200-A20	6	9.261	10.187	0.40	0.80	0.29	3.00	0.000	0.000	2.93	0.00	0.00
11	74.00	Radio 4449 B71+B85	3	9.261	10.187	0.54	0.80	3.17	213.00	0.000	0.000	32.27	0.00	0.00
12	74.00	Commscope	3	9.261	10.187	0.54	0.80	1.16	21.00	0.000	0.000	11.79	0.00	0.00
13	67.06	6' Branches	1	9.071	9.978	1.00	1.00	83.63	400.00	0.000	0.000	834.50	0.00	0.00
14	64.00	B5/B13 RRH-BR04C	3	8.983	9.881	0.54	0.80	3.57	210.90	0.000	0.000	35.27	0.00	0.00
15	64.00	B2/B66A RRH-BR049	3	8.983	9.881	0.54	0.80	2.64	253.20	0.000	0.000	26.06	0.00	0.00
16	64.00	CBC78T-DS-43-2X/E14F0	3	8.983	9.881	0.54	0.80	0.59	65.40	0.000	0.000	5.88	0.00	0.00
17	64.00	BSAMNT-SBS-1-2	3	8.983	9.881	0.56	0.75	0.00	76.05	0.000	0.000	0.00	0.00	0.00
18	64.00	DB846H80E-SX	2	8.983	9.881	0.90	0.80	8.98	32.00	0.000	0.000	88.71	0.00	0.00
19	64.00	T-Arm	3	8.983	9.881	0.56	0.75	13.50	960.00	0.000	0.000	133.39	0.00	0.00
20	64.00	Kaelus BSF0020F3V1-1	2	8.983	9.881	0.64	0.80	0.90	39.60	0.000	0.000	8.85	0.00	0.00
21	64.00	DB846F65ZAXY	4	8.983	9.881	0.74	0.80	20.98	84.00	0.000	0.000	207.31	0.00	0.00
22	64.00	(3) VZWSMART-SFK4	1	8.983	9.881	0.56	0.75	9.28	500.00	0.000	0.000	91.71	0.00	0.00
23	64.00	DB-T1-6Z-8AB-0Z	2	8.983	9.881	0.54	0.80	3.54	88.00	0.000	0.000	34.95	0.00	0.00
24	64.00	JAHH-65B-R3B	6	8.983	9.881	0.66	0.80	36.29	379.80	0.000	0.000	358.62	0.00	0.00
25	64.00	VZS01	3	8.983	9.881	0.55	0.80	7.12	261.30	0.000	0.000	70.36	0.00	0.00
26	55.44	8' Branches	1	8.715	9.587	1.00	1.00	150.70	1638.00	0.000	0.000	1444.70	0.00	0.00
27	51.00	MX08FRO665-21	3	8.563	9.420	0.59	0.80	22.18	193.50	0.000	0.000	208.95	0.00	0.00
28	51.00	MC-K6MHDX-9-96 (3	1	8.563	9.420	0.56	0.75	11.78	899.00	0.000	0.000	111.00	0.00	0.00
29	51.00	RDIDC-9181-OF-48	1	8.563	9.420	0.80	0.80	1.61	21.90	0.000	0.000	15.15	0.00	0.00
30	51.00	TA08025-B605	3	8.563	9.420	0.54	0.80	3.15	225.00	0.000	0.000	29.69	0.00	0.00
31	51.00	TA08025-B604	3	8.563	9.420	0.54	0.80	3.15	191.70	0.000	0.000	29.69	0.00	0.00
32	42.31	10' Branches	1	8.233	9.056	1.00	1.00	54.43	540.00	0.000	0.000	492.94	0.00	0.00
Totals:									9,900.47			5,727.26		

Total Applied Force Summary

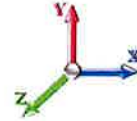
Structure: CT46122-A-SBA	Code: TIA-222-H	7/7/2023
Site Name: Middletown North	Exposure: C	
Height: 76.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 16

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		102.85	914.58	0.00	0.00
10.00		99.16	886.92	0.00	0.00
15.00		95.47	859.26	0.00	0.00
20.00		97.38	831.59	0.00	0.00
22.75		53.32	445.58	0.00	0.00
25.00		44.14	594.80	0.00	0.00
28.25		63.91	841.35	0.00	0.00
30.00		34.10	227.92	0.00	0.00
35.00		97.68	636.28	0.00	0.00
40.00		95.93	614.14	0.00	0.00
42.31	(1) attachments	536.24	816.26	0.00	0.00
45.00		49.83	315.75	0.00	0.00
50.00		91.05	569.88	0.00	0.00
51.00	(11) attachments	412.19	1642.42	0.00	0.00
55.00		70.05	432.43	0.00	0.00
55.44	(1) attachments	1452.23	1684.70	0.00	0.00
60.00		77.09	473.92	0.00	0.00
64.00	(35) attachments	1126.23	3350.81	0.00	0.00
65.00		15.83	77.01	0.00	0.00
67.06	(1) attachments	866.69	555.85	0.00	0.00
70.00		44.86	215.91	0.00	0.00
74.00	(29) attachments	1043.46	2252.59	0.00	0.00
75.00	(3) attachments	152.17	548.16	0.00	0.00
75.45	(1) attachments	383.40	416.83	0.00	0.00
76.00		7.72	32.55	0.00	0.00
	Totals:	7,112.96	20,237.52	0.00	0.00

Calculated Forces

Structure: CT46122-A-SBA
Site Name: Middletown North
Height: 76.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1

Topography: 1

Code: TIA-222-H
Exposure: C
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

7/7/2023

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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 16

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 Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-20.23	-7.12	0.00	-413.74	0.00	413.74	2976.77	803.98	3080.93	2832.01	0.00	0.000	0.000	0.153
5.00	-19.31	-7.03	0.00	-378.14	0.00	378.14	2914.38	775.44	2866.11	2673.58	0.02	-0.046	0.000	0.148
10.00	-18.42	-6.95	0.00	-342.98	0.00	342.98	2848.80	746.90	2659.05	2516.58	0.10	-0.092	0.000	0.143
15.00	-17.56	-6.86	0.00	-308.24	0.00	308.24	2780.04	718.37	2459.75	2361.34	0.22	-0.139	0.000	0.137
20.00	-16.72	-6.78	0.00	-273.92	0.00	273.92	2708.10	689.83	2268.22	2208.17	0.39	-0.186	0.000	0.130
22.75	-16.27	-6.73	0.00	-255.28	0.00	255.28	2667.17	674.14	2166.19	2124.93	0.51	-0.212	0.000	0.126
25.00	-15.68	-6.69	0.00	-240.15	0.00	240.15	2632.97	661.30	2084.45	2057.41	0.61	-0.234	0.000	0.123
28.25	-14.83	-6.63	0.00	-218.41	0.00	218.41	1920.92	522.03	1623.69	1483.43	0.78	-0.265	0.000	0.155
30.00	-14.60	-6.60	0.00	-206.81	0.00	206.81	1904.07	514.04	1574.37	1447.76	0.88	-0.282	0.000	0.151
35.00	-13.96	-6.51	0.00	-173.81	0.00	173.81	1853.76	491.22	1437.64	1346.49	1.21	-0.335	0.000	0.137
40.00	-13.34	-6.42	0.00	-141.24	0.00	141.24	1800.28	468.39	1307.12	1246.45	1.59	-0.386	0.000	0.121
42.31	-12.53	-5.88	0.00	-126.41	0.00	126.41	1774.49	457.84	1248.92	1200.72	1.78	-0.409	0.000	0.113
45.00	-12.21	-5.84	0.00	-110.58	0.00	110.58	1743.61	445.56	1182.81	1147.94	2.02	-0.435	0.000	0.104
50.00	-11.64	-5.75	0.00	-81.38	0.00	81.38	1683.75	422.73	1064.71	1051.30	2.50	-0.476	0.000	0.085
51.00	-9.99	-5.33	0.00	-75.63	0.00	75.63	1671.40	418.16	1041.84	1032.22	2.60	-0.484	0.000	0.079
55.00	-9.56	-5.26	0.00	-54.32	0.00	54.32	1620.72	399.90	952.83	956.84	3.02	-0.512	0.000	0.063
55.44	-7.89	-3.79	0.00	-52.01	0.00	52.01	1615.02	397.89	943.28	948.65	3.06	-0.514	0.000	0.060
60.00	-7.41	-3.71	0.00	-34.73	0.00	34.73	1554.50	377.07	847.15	864.91	3.57	-0.538	0.000	0.045
64.00	-4.07	-2.55	0.00	-19.89	0.00	19.89	1499.23	358.81	767.08	793.39	4.03	-0.554	0.000	0.028
65.00	-4.00	-2.54	0.00	-17.33	0.00	17.33	1485.09	354.25	747.68	775.81	4.14	-0.557	0.000	0.025
67.06	-3.45	-1.67	0.00	-12.11	0.00	12.11	1455.57	344.84	708.50	740.00	4.39	-0.562	0.000	0.019
70.00	-3.23	-1.62	0.00	-7.21	0.00	7.21	1403.00	331.42	654.42	685.23	4.73	-0.568	0.000	0.013
74.00	-0.99	-0.55	0.00	-0.74	0.00	0.74	1325.69	313.15	584.28	611.42	5.21	-0.571	0.000	0.002
75.00	-0.45	-0.40	0.00	-0.18	0.00	0.18	1306.36	308.59	567.37	593.63	5.33	-0.571	0.000	0.001
75.45	-0.03	-0.01	0.00	0.00	0.00	0.00	1297.66	306.53	559.84	585.71	5.38	-0.571	0.000	0.000
76.00	0.00	-0.01	0.00	0.00	0.00	0.00	1287.03	304.02	550.71	576.10	5.45	-0.571	0.000	0.000

Final Analysis Summary

Structure: CT46122-A-SBA	Code: TIA-222-H	7/7/2023
Site Name: Middletown North	Exposure: C	
Height: 76.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Reactions

Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)
1.2D + 1.0W 119 mph Wind	31.3	0.00	24.23	0.00	0.00	1822.58
0.9D + 1.0W 119 mph Wind	31.3	0.00	18.16	0.00	0.00	1816.56
1.2D + 1.0Di + 1.0Wi 50 mph Wind	7.9	0.00	36.45	0.00	0.00	453.59
1.2D + 1.0Ev + 1.0Eh	0.9	0.00	25.19	0.00	0.00	53.52
0.9D + 1.0Ev + 1.0Eh	0.9	0.00	19.09	0.00	0.00	53.52
1.0D + 1.0W 60 mph Wind	7.1	0.00	20.23	0.00	0.00	413.74

Max Stresses

Load Case	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)	Elev (ft)	Stress Ratio
1.2D + 1.0W 119 mph Wind	-17.22	-29.20	0.00	-962.79	0.00	-962.79	1920.92	522.03	1623.69	1483.43	28.25	0.661
0.9D + 1.0W 119 mph Wind	-12.77	-29.10	0.00	-958.26	0.00	-958.26	1920.92	522.03	1623.69	1483.43	28.25	0.656
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-28.60	-7.28	0.00	-237.92	0.00	-237.92	1920.92	522.03	1623.69	1483.43	28.25	0.175
1.2D + 1.0Ev + 1.0Eh	-18.50	-0.84	0.00	-29.09	0.00	-29.09	1920.92	522.03	1623.69	1483.43	28.25	0.029
0.9D + 1.0Ev + 1.0Eh	-14.02	-0.84	0.00	-29.13	0.00	-29.13	1920.92	522.03	1623.69	1483.43	28.25	0.027
1.0D + 1.0W 60 mph Wind	-14.83	-6.63	0.00	-218.41	0.00	-218.41	1920.92	522.03	1623.69	1483.43	28.25	0.155

Base Plate Summary

Structure: CT46122-A-SB	Code: TIA-222-H	7/7/2023
Site Name: Middletown North	Exposure: C	
Height: 76.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Struct Class: II	Page: 29



Reactions	Base Plate	Anchor Bolts
Original Design	Yield (ksi): 60.00	Bolt Circle: 54.00
Moment (kip-ft): 2800.00	Width (in): 60.00	Number Bolts: 10.00
Axial (kip): 27.00	Style: Round	Bolt Type: 2.25" 18J
Shear (kip): 52.00	Polygon Sides: 0.00	Bolt Diameter (in): 2.25
Analysis (1.2D + 1.0W)	Clip Length (in): 0.00	Yield (ksi): 75.00
Moment (kip-ft): 1822.58	Effective Len (in): 29.11	Ultimate (ksi): 100.00
Axial (kip): 24.23	Moment (kip-in): 616.61	Arrangement: Radial
Shear (kip): 31.32	Allow Stress (ksi): 81.00	Cluster Dist (in): 0.00
	Applied Stress (ksi): 31.59	Start Angle (deg): 0.00
	Stress Ratio: 0.39	Compression
		Force (kip): 164.43
		Allowable (kip): 268.39
		Ratio: 0.61
		Tension
		Force (kip): 159.58
		Allowable (kip): 243.75
		Ratio: 0.65



Colliers Engineering & Design CT, P.C.
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Antenna Mount Analysis Report and PMI Requirements

Mount ReAnalysis

SMART Tool Project #: 10207050
Colliers Engineering & Design CT, P.C. Project #: 23777134

July 21, 2023

Site Information

Site ID: 5000245641-VZW / Cromwell CT
Site Name: Cromwell CT
Carrier Name: Verizon Wireless
Address: 160 West
Cromwell, Connecticut 06416
Middlesex County
Latitude: 41.605992°
Longitude: -72.670381°

Structure Information

Tower Type: Monopole
Mount Type: 10.63-Ft T-Frame

FUZE ID # 17123796

Analysis Results

T-Frame: 60.6% Pass*

***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: Prasanna Dhakal



Executive Summary:

The objective of this report is to determine the capacity of the antenna support mount at the subject facility for the final wireless telecommunications configuration, per the applicable codes and standards. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

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: 602576, dated November 25, 2020
Mount Mapping Report	RKS Design & Engineering LLC, Site ID: SBA: CT46122, dated January 16, 2021
Previous Post-Mod Antenna Mount Analysis	Maser Consulting Connecticut, Project #: 20777624, dated February 25, 2021
Antenna Mount Post-Modification Inspection Report	Maser Consulting Connecticut, Project #: 20777624, dated March 28, 2022
Final Loading Configuration	Filter Add Scope Provided by Verizon Wireless

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 : 0.995
Seismic Parameters:	S_s : 0.207 g S_1 : 0.056 g
Maintenance Parameters:	Wind Speed (3-sec. Gust): 30 mph Maintenance Load, L_v : 250 lbs. Maintenance Load, L_m : 500 lbs.
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
65.88	67.00	2	KAelus	KA-6030	Added
		3	Samsung	MT6407-77a	Retained
		3	Commscope	CBC78T-DS-43-2X	
		3	Samsung	B2/B66A RRH-BR049	
		3	Samsung	B5/B13 RRH-BR04C	
		6	Andrew	JAHH-65B-R3B	
		4	Andrew	DB846F65ZAXY	
		2	Decibel	DB846H80E-SX	
		2	Raycap	RRFDC-3315-PF-48	

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

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

Standard Conditions:

1. All engineering services are performed on the basis that the information provided to Colliers Engineering & Design CT, P.C. 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 CT, P.C. to verify deviation will not adversely impact the analysis.
2. Mounts are assumed to have been properly fabricated, installed and maintained in good condition, twist free and plumb in accordance with its original design and manufacturer's specifications.

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

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

3. For mount analyses completed from other data sources (including new replacement mounts) and not specifically mapped 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 CT, P.C. is not responsible for the conclusion, opinions, and recommendations made by others based on the information supplied.
7. Structural Steel Grades have been assumed as follows, if applicable, unless otherwise noted in this analysis:
 - o Channel, Solid Round, Angle, Plate ASTM A36 (Gr. 36)
 - o HSS (Rectangular) ASTM 500 (Gr. B-46)
 - o Pipe ASTM A53 (Gr. B-35)
 - o Threaded Rod F1554 (Gr. 36)
 - o Bolts ASTM A325

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

Analysis Results:

Component	Utilization %	Pass/Fail
Face Horizontal	52.9%	Pass
Mount Pipe	55.8%	Pass
Standoff Horizontal	43.8%	Pass
Mod Face Horizontal	54.3%	Pass
Mod Standoff Horizontal	51.3%	Pass
Mount Connection (Bolt)	30.5%	Pass
Mount Connection (Plate)	60.6%	Pass

Structure Rating – (Controlling Utilization of all Components)	60.6%
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BASELINE mount weight per SBA agreement: 2273.90 lbs

Increase in mount weight due to Verizon loading change per SBA agreement: No Change

The weights listed above include 3 sectors.

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	11.5	3.4	20.1	12.0
0.5	15.1	4.7	27.3	17.0
1	18.5	5.7	34.3	21.6

Notes:

- (EPA)a values listed above may be used in the absence of more precise information
- (EPA)a values in the table above include 1 sector.
- Ka factors included in (EPA)a calculations

Requirements:

The existing mounts are **SUFFICIENT** for the final loading configuration shown in attachment 2 and do not require modifications. Additional requirements are noted below.



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

Attachments:

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

Mount Desktop – Post Modification Inspection (PMI) Report Requirements

Documents & Photos Required from Contractor – **Passing Mount Analysis**

Passing Mount Analysis requires a PMI due to a modification in loading.

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 #: 5000245641

SMART Project #: 10207050

Fuze Project ID: 17123796

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. 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.

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:

Response:

Special Instruction Confirmation:

- The contractor has read and acknowledges the above special instructions.
- All hardware listed in the Special Instructions above (if applicable) has been properly installed, and the existing hardware was inspected.
- The material utilized was as specified in the SMART Tool engineering vendor Special Instructions above (if applicable) and included in the material certification folder is a packing list or invoice for these materials.

OR

- The material utilized was approved by a SMART Tool engineering vendor as an “equivalent” and this approval is included as part of the contractor submission.

Comments:

--

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

Certifying Individual:

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

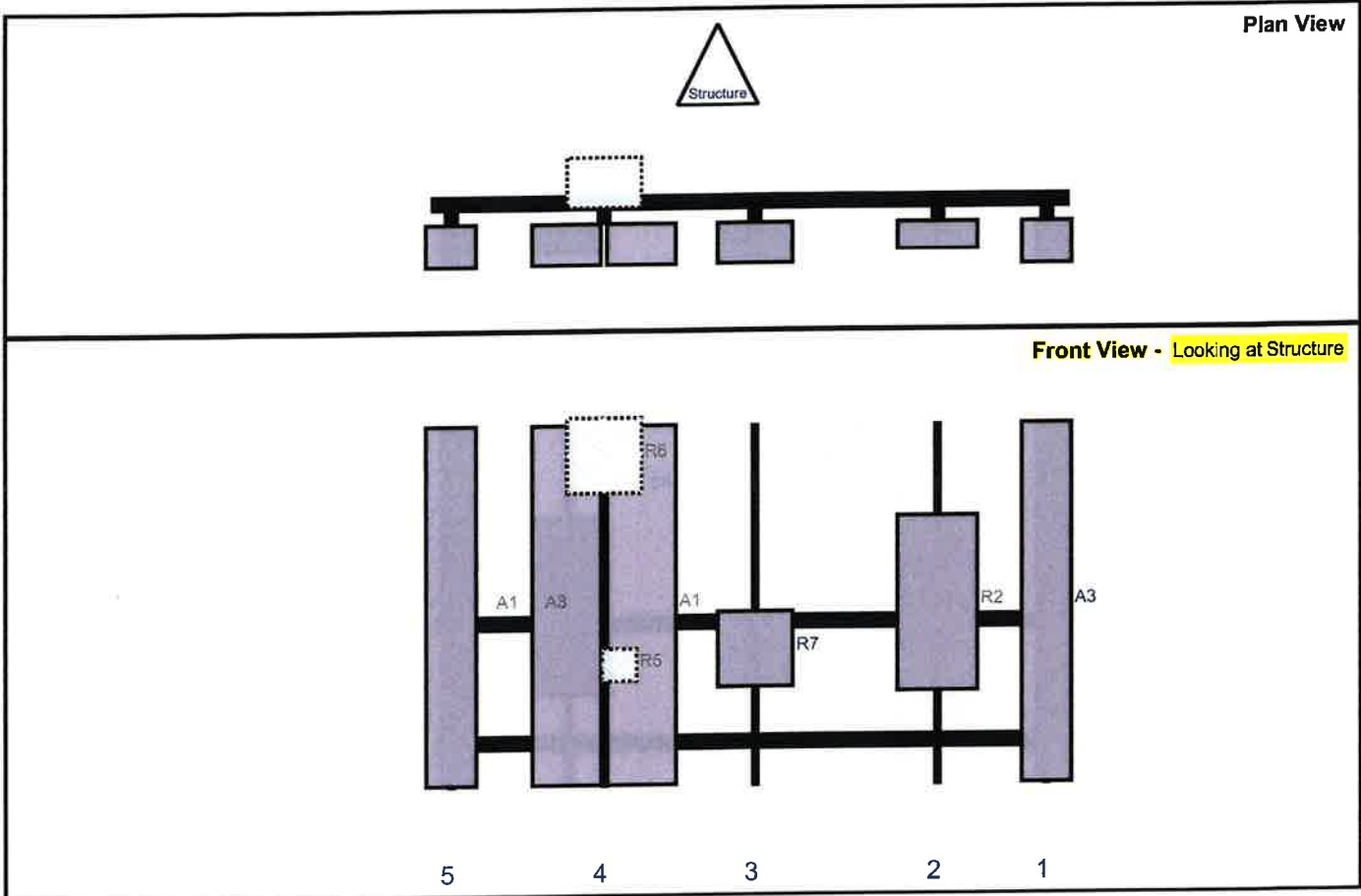
Sector: **A**
 Structure Type: Monopole
 Mount Elev: 65.88

10207050

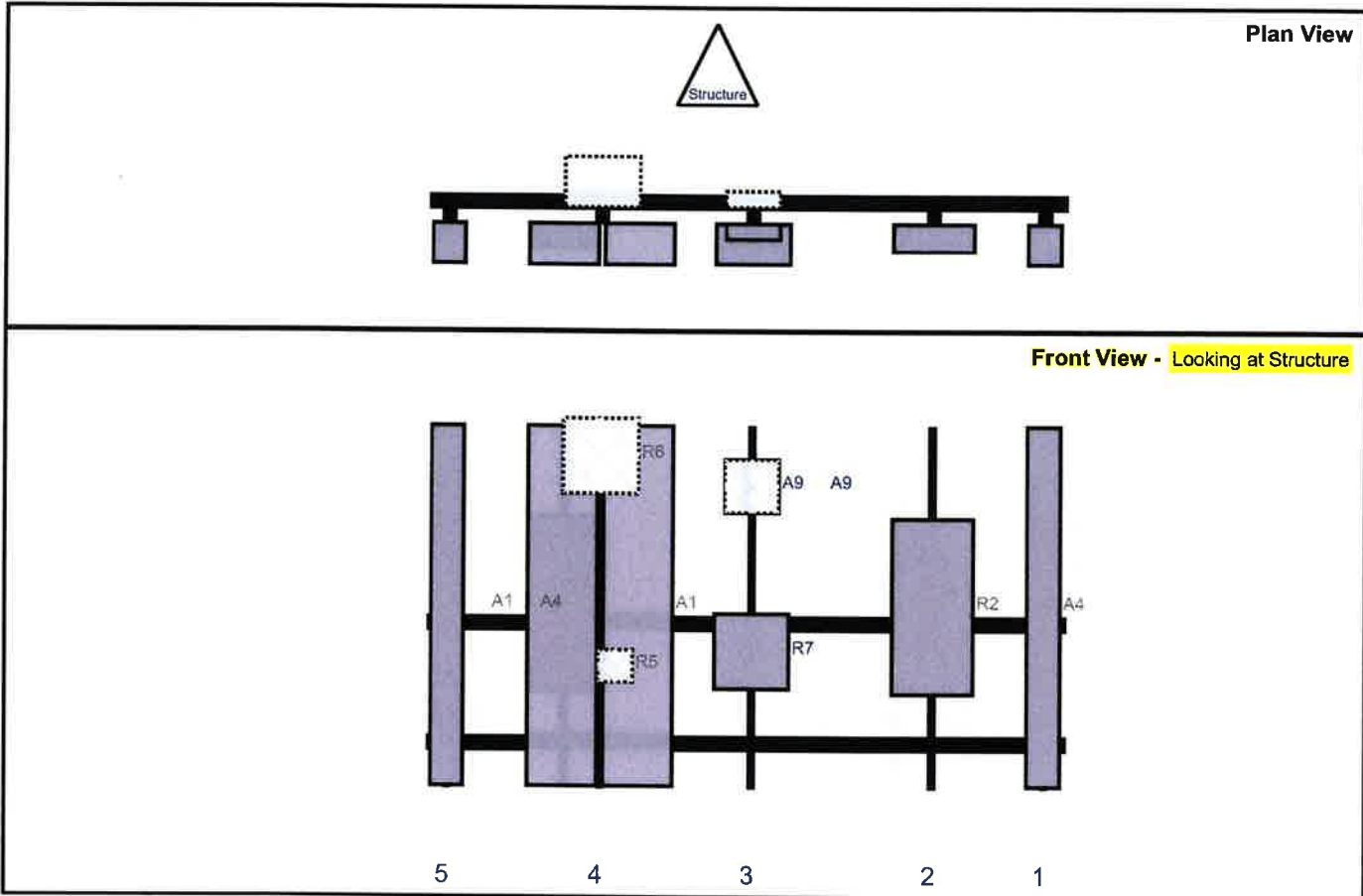
7/21/2023



Page: 1



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
A3	DB846F65ZAXY	72	10	123	1	a	Front	36	0	Retained	02/28/2022
R2	MT6407-77A	35.1	16.1	101	2	a	Front	36	0	Retained	02/28/2022
R7	B5/B13 RRH-BR04C	15	15	64.75	3	a	Front	45	0	Retained	02/28/2022
A1	JAHH-65B-R3B	72	13.8	34.5	4	a	Front	36	7.5	Retained	02/28/2022
A1	JAHH-65B-R3B	72	13.8	34.5	4	b	Front	36	-7.5	Retained	02/28/2022
R5	CBC78T-DS-43-2X	6.4	6.9	34.5	4	a	Behind	48	3	Retained	02/28/2022
R6	B2/B66A RRH-BR049	15	15	34.5	4	a	Behind	6	0	Retained	02/28/2022
A3	DB846F65ZAXY	72	10	4	5	a	Front	36	0	Retained	02/28/2022
OVP	RRFDC-3315-PF-48	29.5	16.5			Member				Retained	02/28/2022



Reff	Model	Height (in)	Width (in)	H Dist Fm L.	Pipe #	Pipe Pos V	Ant Pos	C. Ant Fm T.	Ant H Off	Status	Validation
A4	DB846H80E-SX	72	6.5	123	1	a	Front	36	0	Retained	02/28/2022
R2	MT6407-77A	35.1	16.1	101	2	a	Front	36	0	Retained	02/28/2022
R7	B5/B13 RRH-BR04C	15	15	64.75	3	a	Front	45	0	Retained	02/28/2022
A9	KA-6030	10.6	10.9	64.75	3	a	Front	12	0	Added	
A9	KA-6030	10.6	10.9	64.75	3	b	Behind	12	0	Added	
A1	JAHH-65B-R3B	72	13.8	34.5	4	a	Front	36	7.5	Retained	02/28/2022
A1	JAHH-65B-R3B	72	13.8	34.5	4	b	Front	36	-7.5	Retained	02/28/2022
R5	CBC78T-DS-43-2X	6.4	6.9	34.5	4	a	Behind	48	3	Retained	02/28/2022
R6	B2/B66A RRH-BR049	15	15	34.5	4	a	Behind	6	0	Retained	02/28/2022
A4	DB846H80E-SX	72	6.5	4	5	a	Front	36	0	Retained	02/28/2022

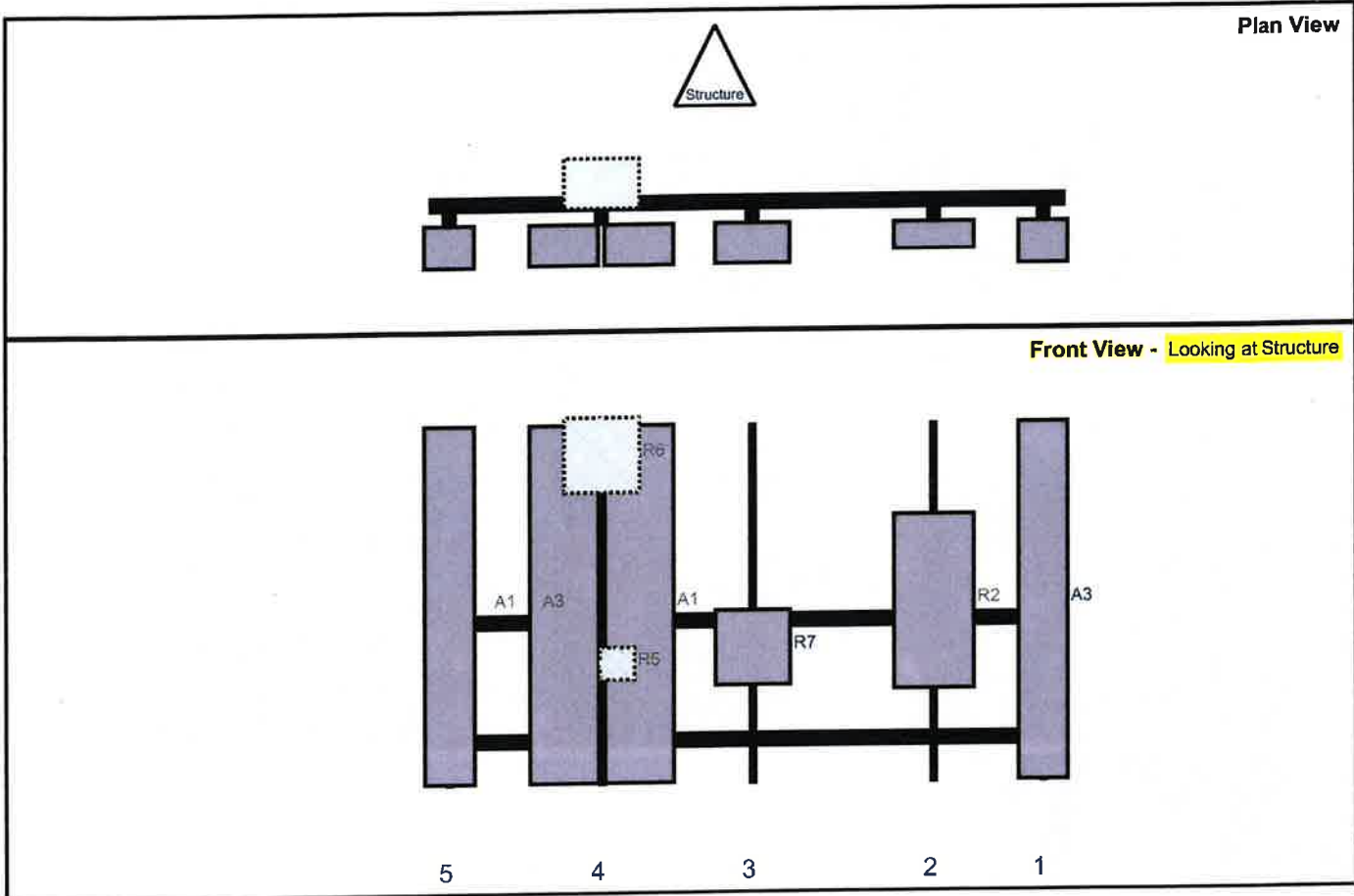
Sector: C
 Structure Type: Monopole
 Mount Elev: 65.88

10207050

7/21/2023



Page: 3



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
A3	DB846F65ZAXY	72	10	123	1	a	Front	36	0	Retained	02/28/2022
R2	MT6407-77A	35.1	16.1	101	2	a	Front	36	0	Retained	02/28/2022
R7	B5/B13 RRH-BR04C	15	15	64.75	3	a	Front	45	0	Retained	02/28/2022
A1	JAHH-65B-R3B	72	13.8	34.5	4	a	Front	36	7.5	Retained	02/28/2022
A1	JAHH-65B-R3B	72	13.8	34.5	4	b	Front	36	-7.5	Retained	02/28/2022
R5	CBC78T-DS-43-2X	6.4	6.9	34.5	4	a	Behind	48	3	Retained	02/28/2022
R6	B2/B66A RRH-BR049	15	15	34.5	4	a	Behind	6	0	Retained	02/28/2022
A3	DB846F65ZAXY	72	10	4	5	a	Front	36	0	Retained	02/28/2022



1	COAX: TOTAL (14): (6) FH 1-5/8, (2) 1.50"Ø, (6) FH 1-5/8 CUT COAX	
2		
3		
4		
5		
6		
7		
8		

Mapping Notes

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

Standard Conditions

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



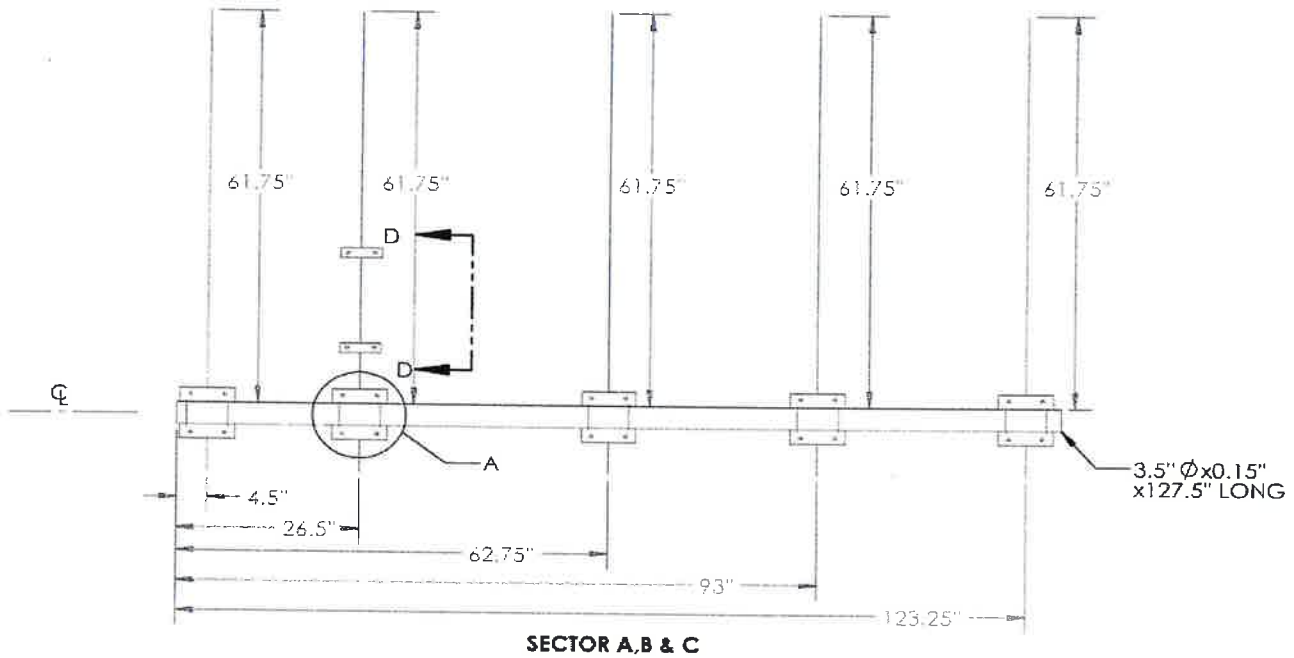
Antenna Mount Mapping Form (PATENT PENDING)

FCC #
1273764

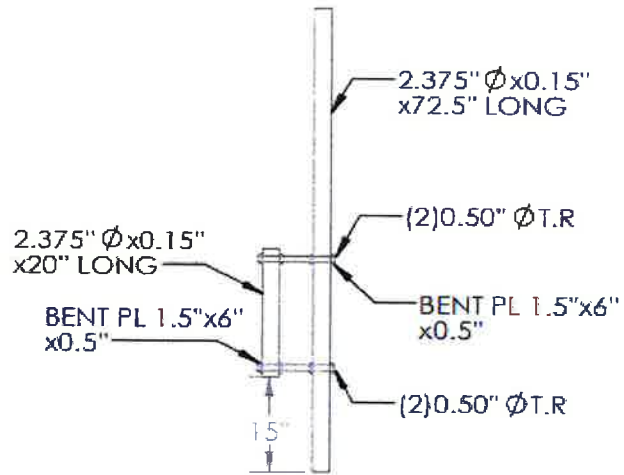
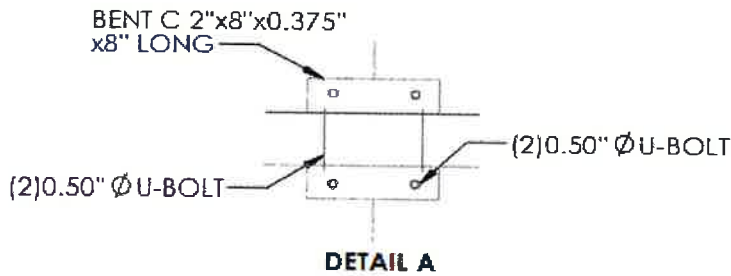
Tower Owner:	SBA	Mapping Date:	1/16/2021
Site Name:	VZW:CROMWELL CT	Tower Type:	Monopole
Site Number or ID:	SBA:CT46122	Tower Height (FL):	UNKNOWN
Mapping Contractor:	RKS DESIGN & ENGINEERING LLC	Mount Elevation (FL):	64.33

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

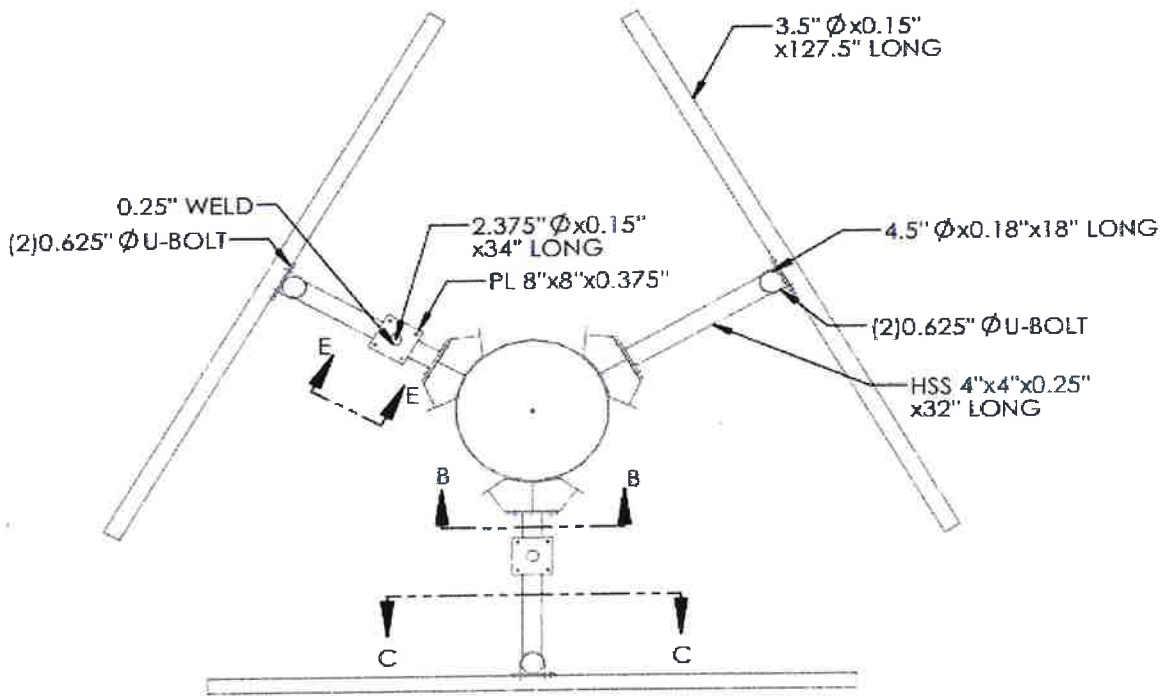
Please Insert Sketches of the Antenna Mount



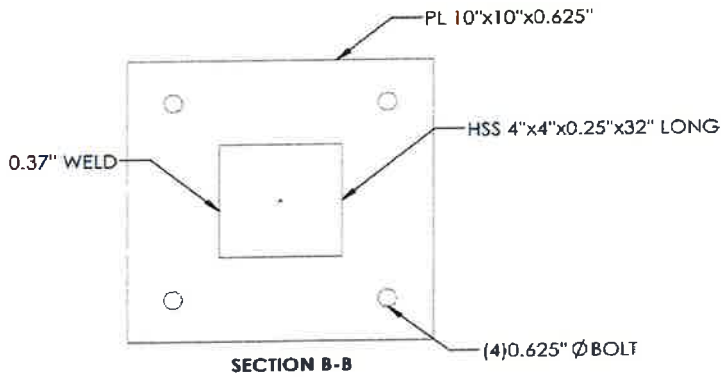
SECTOR A, B & C



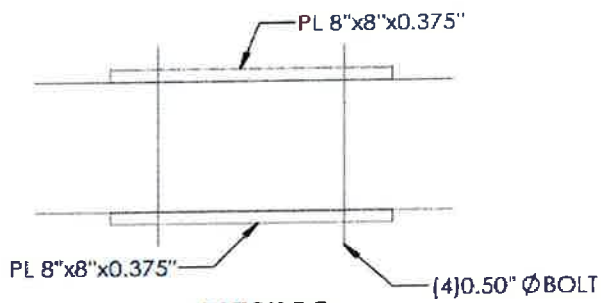
SECTION D-D



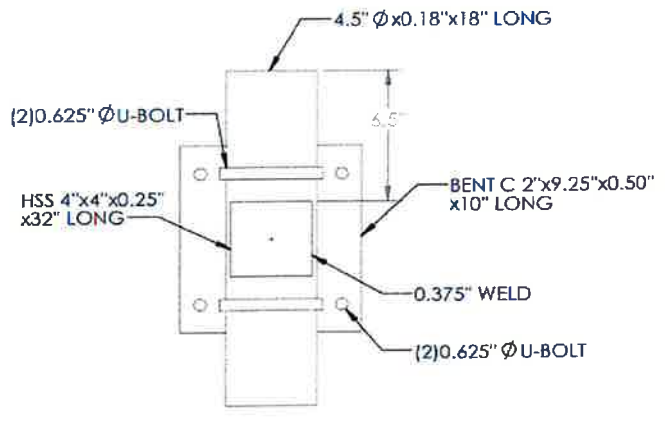
MOUNT PLAN VIEW



SECTION B-B

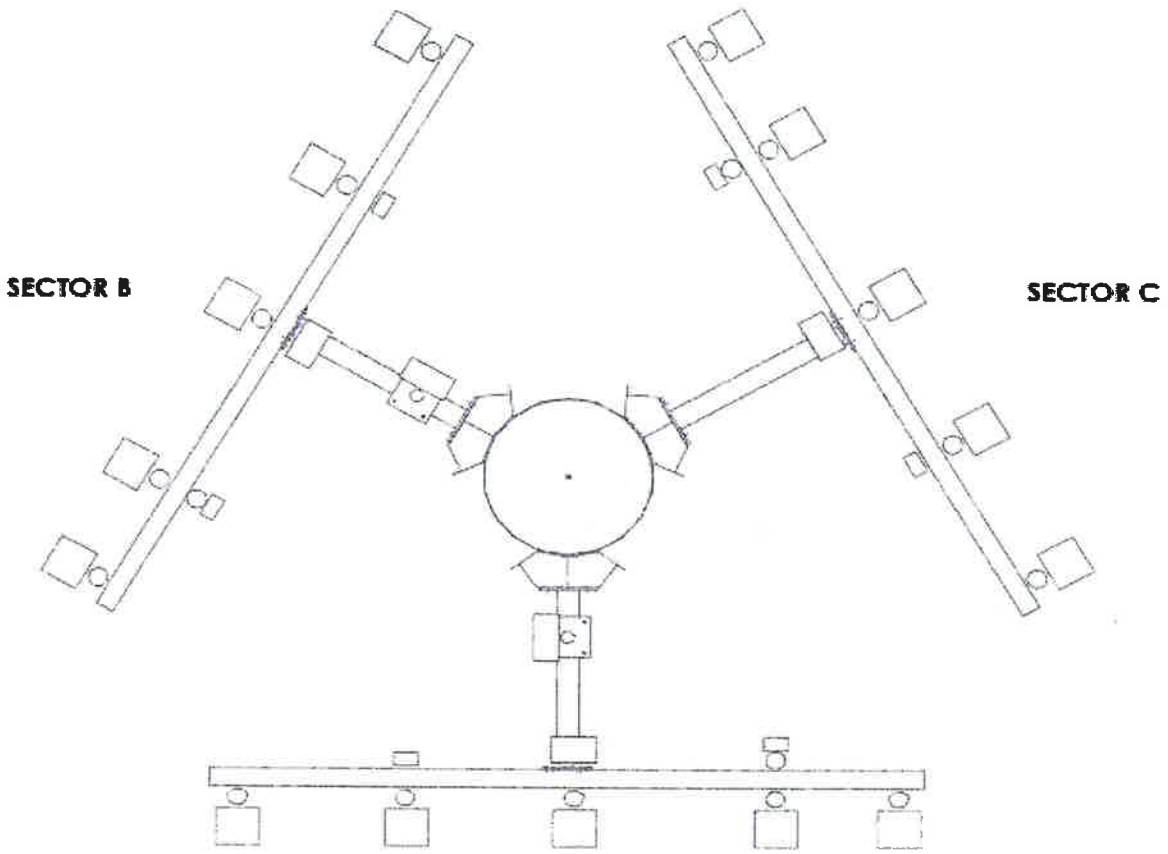


SECTION E-E



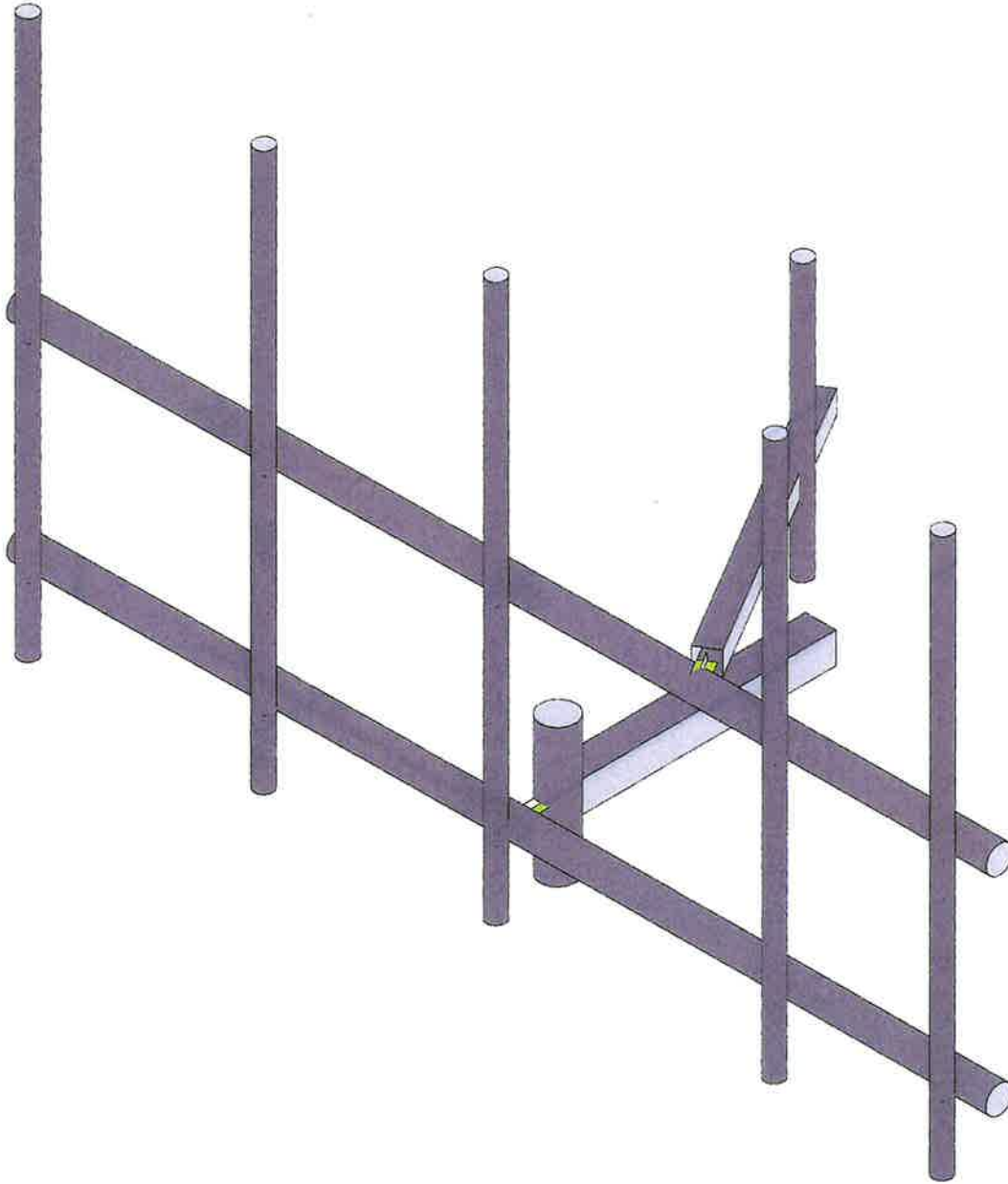
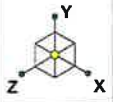
SECTION C-C

Please Insert Sketches of the Antenna Mount, cont'd



SECTOR A

ANTENNA PALN VIEW



Envelope Only Solution

Colliers Engineering & De...

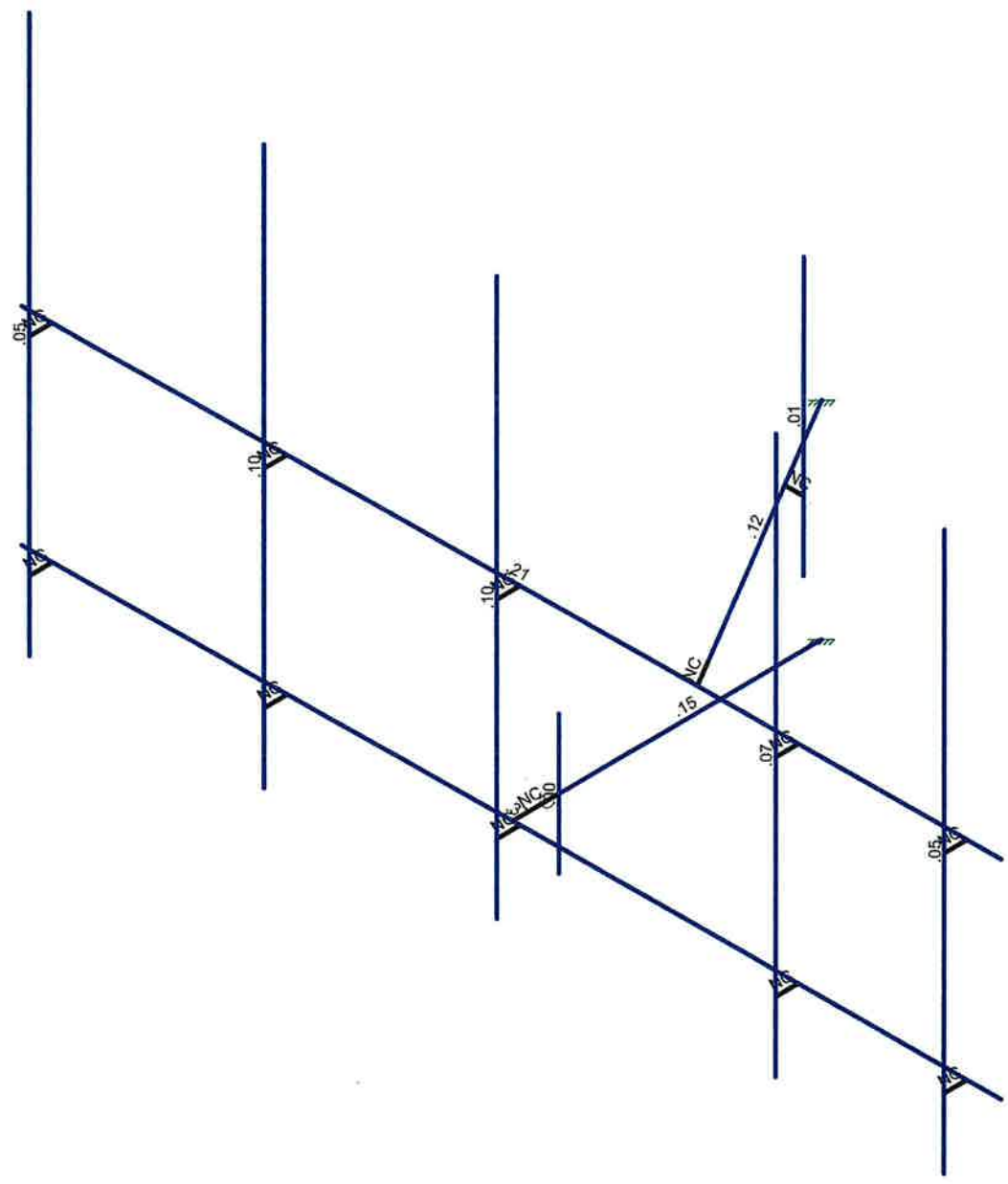
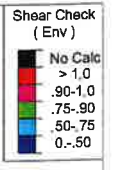
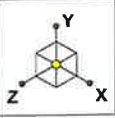
Project # 23777134

Antenna Mount Analysis

SK - 1

July 21, 2023 at 2:26 PM

5000245641-VZW_MT_LOT_B_H...



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

Colliers Engineering & De...	Antenna Mount Analysis	SK - 3
		July 21, 2023 at 2:27 PM
Project # 23777134		5000245641-VZW_MT_LOT_B_H....



Company : Colliers Engineering & Design
 Designer :
 Job Number : Project # 23777134
 Model Name : Antenna Mount Analysis

July 21, 2023
 2:27 PM
 Checked By: _____

Basic Load Cases

	BLC Description	Category	X Gr...	Y Gr...	Z Gr...	Joint	Point	Distributed	Area(Member)	Surfa...
1	Antenna D	None					48			
2	Antenna Di	None					48			
3	Antenna Wo (0 Deg)	None					48			
4	Antenna Wo (30 Deg)	None					48			
5	Antenna Wo (60 Deg)	None					48			
6	Antenna Wo (90 Deg)	None					48			
7	Antenna Wo (120 Deg)	None					48			
8	Antenna Wo (150 Deg)	None					48			
9	Antenna Wo (180 Deg)	None					48			
10	Antenna Wo (210 Deg)	None					48			
11	Antenna Wo (240 Deg)	None					48			
12	Antenna Wo (270 Deg)	None					48			
13	Antenna Wo (300 Deg)	None					48			
14	Antenna Wo (330 Deg)	None					48			
15	Antenna Wi (0 Deg)	None					48			
16	Antenna Wi (30 Deg)	None					48			
17	Antenna Wi (60 Deg)	None					48			
18	Antenna Wi (90 Deg)	None					48			
19	Antenna Wi (120 Deg)	None					48			
20	Antenna Wi (150 Deg)	None					48			
21	Antenna Wi (180 Deg)	None					48			
22	Antenna Wi (210 Deg)	None					48			
23	Antenna Wi (240 Deg)	None					48			
24	Antenna Wi (270 Deg)	None					48			
25	Antenna Wi (300 Deg)	None					48			
26	Antenna Wi (330 Deg)	None					48			
27	Antenna Wm (0 Deg)	None					48			
28	Antenna Wm (30 Deg)	None					48			
29	Antenna Wm (60 Deg)	None					48			
30	Antenna Wm (90 Deg)	None					48			
31	Antenna Wm (120 Deg)	None					48			
32	Antenna Wm (150 Deg)	None					48			
33	Antenna Wm (180 Deg)	None					48			
34	Antenna Wm (210 Deg)	None					48			
35	Antenna Wm (240 Deg)	None					48			
36	Antenna Wm (270 Deg)	None					48			
37	Antenna Wm (300 Deg)	None					48			
38	Antenna Wm (330 Deg)	None					48			
39	Structure D	None		-1						
40	Structure Di	None						11		
41	Structure Wo (0 Deg)	None						22		
42	Structure Wo (30 Deg)	None						22		
43	Structure Wo (60 Deg)	None						22		
44	Structure Wo (90 Deg)	None						22		
45	Structure Wo (120 Deg)	None						22		
46	Structure Wo (150 Deg)	None						22		
47	Structure Wo (180 Deg)	None						22		
48	Structure Wo (210 Deg)	None						22		
49	Structure Wo (240 Deg)	None						22		
50	Structure Wo (270 Deg)	None						22		
51	Structure Wo (300 Deg)	None						22		
52	Structure Wo (330 Deg)	None						22		
53	Structure Wi (0 Deg)	None						22		
54	Structure Wi (30 Deg)	None						22		
55	Structure Wi (60 Deg)	None						22		
56	Structure Wi (90 Deg)	None						22		



Company : Colliers Engineering & Design
 Designer :
 Job Number : Project # 23777134
 Model Name : Antenna Mount Analysis

July 21, 2023
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 Checked By: _____

Basic Load Cases (Continued)

BLC Description	Category	X Gr...	Y Gr...	Z Gr...	Joint	Point	Distributed	Area(Member)	Surfa...
57 Structure Wi (120 Deg)	None						22		
58 Structure Wi (150 Deg)	None						22		
59 Structure Wi (180 Deg)	None						22		
60 Structure Wi (210 Deg)	None						22		
61 Structure Wi (240 Deg)	None						22		
62 Structure Wi (270 Deg)	None						22		
63 Structure Wi (300 Deg)	None						22		
64 Structure Wi (330 Deg)	None						22		
65 Structure Wm (0 Deg)	None						22		
66 Structure Wm (30 Deg)	None						22		
67 Structure Wm (60 Deg)	None						22		
68 Structure Wm (90 Deg)	None						22		
69 Structure Wm (120 Deg)	None						22		
70 Structure Wm (150 Deg)	None						22		
71 Structure Wm (180 Deg)	None						22		
72 Structure Wm (210 Deg)	None						22		
73 Structure Wm (240 Deg)	None						22		
74 Structure Wm (270 Deg)	None						22		
75 Structure Wm (300 Deg)	None						22		
76 Structure Wm (330 Deg)	None						22		
77 Lm1	None					1			
78 Lm2	None					1			
79 Lv1	None					1			
80 Lv2	None					1			
81 Antenna Ev	None					48			
82 Antenna Eh (0 Deg)	None					32			
83 Antenna Eh (90 Deg)	None					32			
84 Structure Ev	ELY			-0.0442					
85 Structure Eh (0 Deg)	ELZ								
86 Structure Eh (90 Deg)	ELX	1104							

Load Combinations

Description	S...	PDel...	SR...	BLC	Fa...	BLC	Fa...	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
1 1.2D+1.0Wo (0 Deg)	Yes	Y		1	1.2	39	1.2	3	1	41	1												
2 1.2D+1.0Wo (30 Deg)	Yes	Y		1	1.2	39	1.2	4	1	42	1												
3 1.2D+1.0Wo (60 Deg)	Yes	Y		1	1.2	39	1.2	5	1	43	1												
4 1.2D+1.0Wo (90 Deg)	Yes	Y		1	1.2	39	1.2	6	1	44	1												
5 1.2D+1.0Wo (120 De...)	Yes	Y		1	1.2	39	1.2	7	1	45	1												
6 1.2D+1.0Wo (150 De...)	Yes	Y		1	1.2	39	1.2	8	1	46	1												
7 1.2D+1.0Wo (180 De...)	Yes	Y		1	1.2	39	1.2	9	1	47	1												
8 1.2D+1.0Wo (210 De...)	Yes	Y		1	1.2	39	1.2	10	1	48	1												
9 1.2D+1.0Wo (240 De...)	Yes	Y		1	1.2	39	1.2	11	1	49	1												
10 1.2D+1.0Wo (270 De...)	Yes	Y		1	1.2	39	1.2	12	1	50	1												
11 1.2D+1.0Wo (300 De...)	Yes	Y		1	1.2	39	1.2	13	1	51	1												
12 1.2D+1.0Wo (330 De...)	Yes	Y		1	1.2	39	1.2	14	1	52	1												
13 1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	15	1	53	1								
14 1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	16	1	54	1								
15 1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	17	1	55	1								
16 1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	18	1	56	1								
17 1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	19	1	57	1								
18 1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	20	1	58	1								
19 1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	21	1	59	1								
20 1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	22	1	60	1								
21 1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	23	1	61	1								
22 1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	24	1	62	1								



Company : Colliers Engineering & Design
 Designer :
 Job Number : Project # 23777134
 Model Name : Antenna Mount Analysis

July 21, 2023
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Load Combinations (Continued)

	Description	S...	PDel	SR...	BLC	Fa...	BLC	Fa...	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
23	1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	25	1	63	1								
24	1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	26	1	64	1								
25	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	27	1	65	1										
26	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	28	1	66	1										
27	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	29	1	67	1										
28	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	30	1	68	1										
29	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	31	1	69	1										
30	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	32	1	70	1										
31	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	33	1	71	1										
32	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	34	1	72	1										
33	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	35	1	73	1										
34	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	36	1	74	1										
35	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	37	1	75	1										
36	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	38	1	76	1										
37	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	27	1	65	1										
38	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	28	1	66	1										
39	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	29	1	67	1										
40	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	30	1	68	1										
41	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	31	1	69	1										
42	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	32	1	70	1										
43	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	33	1	71	1										
44	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	34	1	72	1										
45	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	35	1	73	1										
46	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	36	1	74	1										
47	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	37	1	75	1										
48	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	38	1	76	1										
49	1.2D + 1.5Lv1	Yes	Y		1	1.2	39	1.2	79	1.5														
50	1.2D + 1.5Lv2	Yes	Y		1	1.2	39	1.2	80	1.5														
51	1.4D	Yes	Y		1	1.4	39	1.4																
52	1.2D + 1.0Ev + 1.0E...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	1	83	ELZ	1	E...						
53	1.2D + 1.0Ev + 1.0E...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	.866	83	.5	ELZ	.866	E...	.5				
54	1.2D + 1.0Ev + 1.0E...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	.5	83	.866	ELZ	.5	E...	.866				
55	1.2D + 1.0Ev + 1.0E...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82		83	1	ELZ		E...	1				
56	1.2D + 1.0Ev + 1.0E...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	-.5	83	.866	ELZ	-.5	E...	.866				
57	1.2D + 1.0Ev + 1.0E...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	-1	83	.5	ELZ	-1	E...	.5				
58	1.2D + 1.0Ev + 1.0E...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	-1	83	.5	ELZ	-1	E...	.5				
59	1.2D + 1.0Ev + 1.0E...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	-8...	83	-.5	ELZ	-8...	E...	-.5				
60	1.2D + 1.0Ev + 1.0E...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	-.5	83	-8...	ELZ	-.5	E...	-8...				
61	1.2D + 1.0Ev + 1.0E...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82		83	-1	ELZ		E...	-1				
62	1.2D + 1.0Ev + 1.0E...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	.5	83	-8...	ELZ	.5	E...	-8...				
63	1.2D + 1.0Ev + 1.0E...	Yes	Y		1	1.2	39	1.2	81	1	E...	1	82	.866	83	-.5	ELZ	.866	E...	-.5				
64	0.9D - 1.0Ev + 1.0Eh...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	1	83	ELZ	1	E...						
65	0.9D - 1.0Ev + 1.0Eh...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	.866	83	.5	ELZ	.866	E...	.5				
66	0.9D - 1.0Ev + 1.0Eh...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	.5	83	.866	ELZ	.5	E...	.866				
67	0.9D - 1.0Ev + 1.0Eh...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82		83	1	ELZ		E...	1				
68	0.9D - 1.0Ev + 1.0Eh...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	-.5	83	.866	ELZ	-.5	E...	.866				
69	0.9D - 1.0Ev + 1.0Eh...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	-8...	83	.5	ELZ	-8...	E...	.5				
70	0.9D - 1.0Ev + 1.0Eh...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	-1	83	.5	ELZ	-1	E...	.5				
71	0.9D - 1.0Ev + 1.0Eh...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	-8...	83	-.5	ELZ	-8...	E...	-.5				
72	0.9D - 1.0Ev + 1.0Eh...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	-.5	83	-8...	ELZ	-.5	E...	-8...				
73	0.9D - 1.0Ev + 1.0Eh...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82		83	-1	ELZ		E...	-1				
74	0.9D - 1.0Ev + 1.0Eh...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	.5	83	-8...	ELZ	.5	E...	-8...				
75	0.9D - 1.0Ev + 1.0Eh...	Yes	Y		1	.9	39	.9	81	-1	E...	-1	82	.866	83	-.5	ELZ	.866	E...	-.5				



Company : Colliers Engineering & Design
 Designer :
 Job Number : Project # 23777134
 Model Name : Antenna Mount Analysis

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Joint Coordinates and Temperatures

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
1	N2	-6.479167	.76	.25	0	
2	N3	4.145833	.76	.25	0	
3	N46A	3.770833	.76	.25	0	
4	N50	3.770833	.76	.5	0	
5	N52	3.770833	6.051667	.5	0	
6	N53	3.770833	0.01	.5	0	
7	N53A	-1.166667	.76	.25	0	
8	N54A	-1.166667	.76	-0.25	0	
9	N33A	-1.166667	1.51	-0.25	0	
10	N34A	-1.166667	.01	-0.25	0	
11	N35B	-1.166667	.76	-3.104167	0	
12	N12	1.9375	.76	.25	0	
13	N13	1.9375	.76	.5	0	
14	N14	1.9375	6.051667	.5	0	
15	N15	1.9375	0.01	.5	0	
16	N16	-1.083333	.76	.25	0	
17	N17	-1.083333	.76	.5	0	
18	N18	-1.083333	6.051667	.5	0	
19	N19	-1.083333	0.01	.5	0	
20	N20	-3.604167	.76	.25	0	
21	N21	-3.604167	.76	.5	0	
22	N22	-3.604167	6.051667	.5	0	
23	N23	-3.604167	0.01	.5	0	
24	N24	-6.145833	.76	.25	0	
25	N25	-6.145833	.76	.5	0	
26	N26	-6.145833	6.051667	.5	0	
27	N27	-6.145833	0.01	.5	0	
28	N31	-6.479167	3.01	.25	0	
29	N32	4.145833	3.01	.25	0	
30	N33	3.770833	3.01	.25	0	
31	N34	3.770833	3.01	.5	0	
32	N35	1.9375	3.01	.25	0	
33	N36	1.9375	3.01	.5	0	
34	N37	-1.083333	3.01	.25	0	
35	N38	-1.083333	3.01	.5	0	
36	N39	-3.604167	3.01	.25	0	
37	N40	-3.604167	3.01	.5	0	
38	N41	-6.145833	3.01	.25	0	
39	N42	-6.145833	3.01	.5	0	
40	N44	-1.166667	3.01	-3.104167	0	
41	N47	0.833333	3.01	.25	0	
42	N48B	0.662791	3.01	-0.036014	0	
43	N49B	-0.570394	3.01	-2.104167	0	
44	N50A	-0.36206	3.01	-2.104167	0	
45	N51	-0.36206	2.26	-2.104167	0	
46	N52A	-0.36206	5.26	-2.104167	0	

Hot Rolled Steel Section Sets

Label	Shape	Type	Design List	Material	Desig... A [in2]	Iyy [i...]	Izz [i...]	J [in4]		
1	Mount Pipe	PIPE 2.0	Column	Pipe	A53 Gr. B	Typical	1.02	.627	.627	1.25
2	Face Horizontal	PIPE 3.0	Beam	Pipe	A53 Gr. B	Typical	2.07	2.85	2.85	5.69
3	Standoff Horizontal	HSS4X4X4	Beam	SquareTube	A500 Gr. B 46	Typical	3.37	7.8	7.8	12.8
4	Standoff Mount Pipe	PIPE 4.0	Column	Pipe	A53 Gr. B	Typical	2.96	6.82	6.82	13.6
5	Mod Face Horizontal	PIPE 3.0	Beam	Pipe	A53 Gr. B	Typical	2.07	2.85	2.85	5.69



Hot Rolled Steel Section Sets (Continued)

	Label	Shape	Type	Design List	Material	Desig... A [in2]	lvv [l...]	lzz [l...]	J [in4]	
6	Mod Standoff Horizontal	HSS3X3X4	Beam	SquareTube	A500 Gr. B 46	Typical	2.44	3.02	3.02	5.08

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (/...)	Density[k/ft^3]	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
2	A53 Gr. B	29000	11154	.3	.65	.49	35	1.5	60	1.2
3	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	65	1.1
4	A992	29000	11154	.3	.65	.49	50	1.1	65	1.1
5	A500 Gr. B 42	29000	11154	.3	.65	.49	42	1.4	58	1.3
6	A500 Gr. B 46	29000	11154	.3	.65	.49	46	1.4	58	1.3
7	A500 Gr C Round	29000	11154	.3	.65	.49	46	1.5	62	1.2
8	A529 gr50	29000	11154	.3	.65	.49	50	1.5	65	1.2

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(d...)	Section/Shape	Type	Design List	Material	Design Ru...
1	M1	N2	N3			Face Horizontal	Beam	Pipe	A53 Gr. B	Typical
2	M28	N46A	N50			RIGID	None	None	RIGID	Typical
3	MP1A	N52	N53			Mount Pipe	Column	Pipe	A53 Gr. B	Typical
4	M31A	N53A	N54A			RIGID	None	None	RIGID	Typical
5	M17A	N34A	N33A			Standoff Mount Pi...	Column	Pipe	A53 Gr. B	Typical
6	M18A	N54A	N35B			Standoff Horizontal	Beam	SquareTube	A500 Gr...	Typical
7	M7	N12	N13			RIGID	None	None	RIGID	Typical
8	MP2A	N14	N15			Mount Pipe	Column	Pipe	A53 Gr. B	Typical
9	M9	N16	N17			RIGID	None	None	RIGID	Typical
10	MP3A	N18	N19			Mount Pipe	Column	Pipe	A53 Gr. B	Typical
11	M11	N20	N21			RIGID	None	None	RIGID	Typical
12	MP4A	N22	N23			Mount Pipe	Column	Pipe	A53 Gr. B	Typical
13	M13	N24	N25			RIGID	None	None	RIGID	Typical
14	MP5A	N26	N27			Mount Pipe	Column	Pipe	A53 Gr. B	Typical
15	M17	N31	N32			Mod Face Horizon...	Beam	Pipe	A53 Gr. B	Typical
16	M18	N33	N34			RIGID	None	None	RIGID	Typical
17	M19	N35	N36			RIGID	None	None	RIGID	Typical
18	M20	N37	N38			RIGID	None	None	RIGID	Typical
19	M21	N39	N40			RIGID	None	None	RIGID	Typical
20	M22	N41	N42			RIGID	None	None	RIGID	Typical
21	M24	N47	N48B			RIGID	None	None	RIGID	Typical
22	M25A	N48B	N44			Mod Standoff Hori...	Beam	SquareTube	A500 Gr...	Typical
23	M26	N49B	N50A			RIGID	None	None	RIGID	Typical
24	OVP	N52A	N51			Mount Pipe	Column	Pipe	A53 Gr. B	Typical

Member Advanced Data

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical Defl Ratio Opti...	Analysis ...	Inactive	Seismi...
1	M1						Yes			None
2	M28						Yes	** NA **		None
3	MP1A						Yes	** NA **		None
4	M31A		000000				Yes	** NA **		None
5	M17A						Yes	** NA **		None
6	M18A						Yes	Default		None
7	M7						Yes	** NA **		None
8	MP2A						Yes	** NA **		None
9	M9						Yes	** NA **		None
10	MP3A						Yes	** NA **		None



Member Point Loads (BLC 1 : Antenna D) (Continued)

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
39	MP3A	Mz	0	3.75
40	OVP	Y	-32	1.25
41	OVP	Mv	0	1.25
42	OVP	Mz	0	1.25
43	MP3A	Y	-17.6	1
44	MP3A	My	-.0073	1
45	MP3A	Mz	0	1
46	MP3A	Y	-17.6	1
47	MP3A	Mv	.0073	1
48	MP3A	Mz	0	1

Member Point Loads (BLC 2 : Antenna Di)

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	Y	-64.777	1
2	MP4A	My	-.0324	1
3	MP4A	Mz	.0405	1
4	MP4A	Y	-64.777	5
5	MP4A	Mv	-.0324	5
6	MP4A	Mz	.0405	5
7	MP4A	Y	-64.777	1
8	MP4A	My	-.0324	1
9	MP4A	Mz	-.0405	1
10	MP4A	Y	-64.777	5
11	MP4A	My	-.0324	5
12	MP4A	Mz	-.0405	5
13	MP2A	Y	-32.9368	2
14	MP2A	My	-.0165	2
15	MP2A	Mz	0	2
16	MP2A	Y	-32.9368	4
17	MP2A	Mv	-.0165	4
18	MP2A	Mz	0	4
19	MP1A	Y	-43.3811	.5
20	MP1A	My	-.0217	.5
21	MP1A	Mz	0	.5
22	MP1A	Y	-43.3811	5.5
23	MP1A	My	-.0217	5.5
24	MP1A	Mz	0	5.5
25	MP5A	Y	-43.3811	.5
26	MP5A	My	-.0217	.5
27	MP5A	Mz	0	.5
28	MP5A	Y	-43.3811	5.5
29	MP5A	Mv	-.0217	5.5
30	MP5A	Mz	0	5.5
31	MP4A	Y	-9.874	4
32	MP4A	My	.0049	4
33	MP4A	Mz	.0025	4
34	MP4A	Y	-41.5132	.5
35	MP4A	My	.0208	.5
36	MP4A	Mz	0	.5
37	MP3A	Y	-37.1571	3.75
38	MP3A	My	-.0186	3.75
39	MP3A	Mz	0	3.75
40	OVP	Y	-81.0796	1.25
41	OVP	Mv	0	1.25
42	OVP	Mz	0	1.25
43	MP3A	Y	6.6	1



Company : Colliers Engineering & Design
 Designer :
 Job Number : Project # 23777134
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Member Point Loads (BLC 2 : Antenna Di) (Continued)

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
44	MP3A	My	.0027	1
45	MP3A	Mz	0	1
46	MP3A	Y	6.6	1
47	MP3A	My	-.0027	1
48	MP3A	Mz	0	1

Member Point Loads (BLC 3 : Antenna Wo (0 Deg))

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	0	1
2	MP4A	Z	-166.921	1
3	MP4A	Mx	-.1043	1
4	MP4A	X	0	5
5	MP4A	Z	-166.921	5
6	MP4A	Mx	-.1043	5
7	MP4A	X	0	1
8	MP4A	Z	-166.921	1
9	MP4A	Mx	.1043	1
10	MP4A	X	0	5
11	MP4A	Z	-166.921	5
12	MP4A	Mx	.1043	5
13	MP2A	X	0	2
14	MP2A	Z	-71.826	2
15	MP2A	Mx	0	2
16	MP2A	X	0	4
17	MP2A	Z	-71.826	4
18	MP2A	Mx	0	4
19	MP1A	X	0	.5
20	MP1A	Z	-91.798	.5
21	MP1A	Mx	0	.5
22	MP1A	X	0	5.5
23	MP1A	Z	-91.798	5.5
24	MP1A	Mx	0	5.5
25	MP5A	X	0	.5
26	MP5A	Z	-91.798	.5
27	MP5A	Mx	0	.5
28	MP5A	X	0	5.5
29	MP5A	Z	-91.798	5.5
30	MP5A	Mx	0	5.5
31	MP4A	X	0	4
32	MP4A	Z	-13.662	4
33	MP4A	Mx	-.0034	4
34	MP4A	X	0	.5
35	MP4A	Z	-56.888	.5
36	MP4A	Mx	0	.5
37	MP3A	X	0	3.75
38	MP3A	Z	-56.447	3.75
39	MP3A	Mx	0	3.75
40	OVP	X	0	1.25
41	OVP	Z	-94.535	1.25
42	OVP	Mx	0	1.25
43	MP3A	X	0	1
44	MP3A	Z	-34.905	1
45	MP3A	Mx	0	1
46	MP3A	X	0	1
47	MP3A	Z	-34.905	1
48	MP3A	Mx	0	1



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Member Point Loads (BLC 4 : Antenna Wo (30 Deg))

	Member Label	Direction	Magnitude[lb. k-ft]	Location[ft. %]
1	MP4A	X	76.299	1
2	MP4A	Z	-132.155	1
3	MP4A	Mx	-.1207	1
4	MP4A	X	76.299	5
5	MP4A	Z	-132.155	5
6	MP4A	Mx	-.1207	5
7	MP4A	X	76.299	1
8	MP4A	Z	-132.155	1
9	MP4A	Mx	.0444	1
10	MP4A	X	76.299	5
11	MP4A	Z	-132.155	5
12	MP4A	Mx	.0444	5
13	MP2A	X	30.027	2
14	MP2A	Z	-52.008	2
15	MP2A	Mx	-.015	2
16	MP2A	X	30.027	4
17	MP2A	Z	-52.008	4
18	MP2A	Mx	-.015	4
19	MP1A	X	47.861	.5
20	MP1A	Z	-82.897	.5
21	MP1A	Mx	-.0239	.5
22	MP1A	X	47.861	5.5
23	MP1A	Z	-82.897	5.5
24	MP1A	Mx	-.0239	5.5
25	MP5A	X	47.861	.5
26	MP5A	Z	-82.897	.5
27	MP5A	Mx	-.0239	.5
28	MP5A	X	47.861	5.5
29	MP5A	Z	-82.897	5.5
30	MP5A	Mx	-.0239	5.5
31	MP4A	X	6.305	4
32	MP4A	Z	-10.92	4
33	MP4A	Mx	.000422	4
34	MP4A	X	26.104	5
35	MP4A	Z	-45.214	5
36	MP4A	Mx	.0131	5
37	MP3A	X	25.037	3.75
38	MP3A	Z	-43.365	3.75
39	MP3A	Mx	-.0125	3.75
40	OVP	X	54.176	1.25
41	OVP	Z	-93.835	1.25
42	OVP	Mx	0	1.25
43	MP3A	X	14.413	1
44	MP3A	Z	-24.964	1
45	MP3A	Mx	-.006	1
46	MP3A	X	14.413	1
47	MP3A	Z	-24.964	1
48	MP3A	Mx	.006	1

Member Point Loads (BLC 5 : Antenna Wo (60 Deg))

	Member Label	Direction	Magnitude[lb. k-ft]	Location[ft. %]
1	MP4A	X	107.347	1
2	MP4A	Z	-61.977	1
3	MP4A	Mx	-.0924	1
4	MP4A	X	107.347	5
5	MP4A	Z	-61.977	5



Member Point Loads (BLC 5 : Antenna Wo (60 Deg)) (Continued)

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
6	MP4A	Mx	-.0924	5
7	MP4A	X	107.347	1
8	MP4A	Z	-61.977	1
9	MP4A	Mx	-.0149	1
10	MP4A	X	107.347	5
11	MP4A	Z	-61.977	5
12	MP4A	Mx	-.0149	5
13	MP2A	X	31.617	2
14	MP2A	Z	-18.254	2
15	MP2A	Mx	-.0158	2
16	MP2A	X	31.617	4
17	MP2A	Z	-18.254	4
18	MP2A	Mx	-.0158	4
19	MP1A	X	89.694	.5
20	MP1A	Z	-51.785	.5
21	MP1A	Mx	-.0448	.5
22	MP1A	X	89.694	5.5
23	MP1A	Z	-51.785	5.5
24	MP1A	Mx	-.0448	5.5
25	MP5A	X	89.694	.5
26	MP5A	Z	-51.785	.5
27	MP5A	Mx	-.0448	.5
28	MP5A	X	89.694	5.5
29	MP5A	Z	-51.785	5.5
30	MP5A	Mx	-.0448	5.5
31	MP4A	X	9.097	4
32	MP4A	Z	-5.252	4
33	MP4A	Mx	.0032	4
34	MP4A	X	37.109	.5
35	MP4A	Z	-21.425	.5
36	MP4A	Mx	.0186	.5
37	MP3A	X	32.327	3.75
38	MP3A	Z	-18.664	3.75
39	MP3A	Mx	-.0162	3.75
40	OVP	X	99.818	1.25
41	OVP	Z	-57.63	1.25
42	OVP	Mx	0	1.25
43	MP3A	X	14.434	1
44	MP3A	Z	-8.333	1
45	MP3A	Mx	-.006	1
46	MP3A	X	14.434	1
47	MP3A	Z	-8.333	1
48	MP3A	Mx	.006	1

Member Point Loads (BLC 6 : Antenna Wo (90 Deg))

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	109.632	1
2	MP4A	Z	0	1
3	MP4A	Mx	-.0548	1
4	MP4A	X	109.632	5
5	MP4A	Z	0	5
6	MP4A	Mx	-.0548	5
7	MP4A	X	109.632	1
8	MP4A	Z	0	1
9	MP4A	Mx	-.0548	1
10	MP4A	X	109.632	5



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Member Point Loads (BLC 6 : Antenna Wo (90 Deg)) (Continued)

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
11	MP4A	Z	0	5
12	MP4A	Mx	-.0548	5
13	MP2A	X	24.736	2
14	MP2A	Z	0	2
15	MP2A	Mx	-.0124	2
16	MP2A	X	24.736	4
17	MP2A	Z	0	4
18	MP2A	Mx	-.0124	4
19	MP1A	X	107.494	.5
20	MP1A	Z	0	.5
21	MP1A	Mx	-.0537	.5
22	MP1A	X	107.494	5.5
23	MP1A	Z	0	5.5
24	MP1A	Mx	-.0537	5.5
25	MP5A	X	107.494	.5
26	MP5A	Z	0	.5
27	MP5A	Mx	-.0537	.5
28	MP5A	X	107.494	5.5
29	MP5A	Z	0	5.5
30	MP5A	Mx	-.0537	5.5
31	MP4A	X	9.453	4
32	MP4A	Z	0	4
33	MP4A	Mx	.0047	4
34	MP4A	X	38.17	.5
35	MP4A	Z	0	.5
36	MP4A	Mx	.0191	.5
37	MP3A	X	30.955	3.75
38	MP3A	Z	0	3.75
39	MP3A	Mx	-.0155	3.75
40	OVP	X	108.351	1.25
41	OVP	Z	0	1.25
42	OVP	Mx	0	1.25
43	MP3A	X	10.587	1
44	MP3A	Z	0	1
45	MP3A	Mx	-.0044	1
46	MP3A	X	10.587	1
47	MP3A	Z	0	1
48	MP3A	Mx	.0044	1

Member Point Loads (BLC 7 : Antenna Wo (120 Deg))

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	107.347	1
2	MP4A	Z	61.977	1
3	MP4A	Mx	-.0149	1
4	MP4A	X	107.347	5
5	MP4A	Z	61.977	5
6	MP4A	Mx	-.0149	5
7	MP4A	X	107.347	1
8	MP4A	Z	61.977	1
9	MP4A	Mx	-.0924	1
10	MP4A	X	107.347	5
11	MP4A	Z	61.977	5
12	MP4A	Mx	-.0924	5
13	MP2A	X	31.617	2
14	MP2A	Z	18.254	2
15	MP2A	Mx	-.0158	2



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Member Point Loads (BLC 7 : Antenna Wo (120 Deg)) (Continued)

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
16	MP2A	X	31.617	4
17	MP2A	Z	18.254	4
18	MP2A	Mx	-.0158	4
19	MP1A	X	89.694	.5
20	MP1A	Z	51.785	.5
21	MP1A	Mx	-.0448	.5
22	MP1A	X	89.694	5.5
23	MP1A	Z	51.785	5.5
24	MP1A	Mx	-.0448	5.5
25	MP5A	X	89.694	.5
26	MP5A	Z	51.785	.5
27	MP5A	Mx	-.0448	.5
28	MP5A	X	89.694	5.5
29	MP5A	Z	51.785	5.5
30	MP5A	Mx	-.0448	5.5
31	MP4A	X	9.097	4
32	MP4A	Z	5.252	4
33	MP4A	Mx	.0059	4
34	MP4A	X	37.109	.5
35	MP4A	Z	21.425	.5
36	MP4A	Mx	.0186	.5
37	MP3A	X	32.327	3.75
38	MP3A	Z	18.664	3.75
39	MP3A	Mx	-.0162	3.75
40	OVP	X	81.869	1.25
41	OVP	Z	47.267	1.25
42	OVP	Mx	0	1.25
43	MP3A	X	14.434	1
44	MP3A	Z	8.333	1
45	MP3A	Mx	-.006	1
46	MP3A	X	14.434	1
47	MP3A	Z	8.333	1
48	MP3A	Mx	.006	1

Member Point Loads (BLC 8 : Antenna Wo (150 Deg))

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	76.299	1
2	MP4A	Z	132.155	1
3	MP4A	Mx	.0444	1
4	MP4A	X	76.299	5
5	MP4A	Z	132.155	5
6	MP4A	Mx	.0444	5
7	MP4A	X	76.299	1
8	MP4A	Z	132.155	1
9	MP4A	Mx	-.1207	1
10	MP4A	X	76.299	5
11	MP4A	Z	132.155	5
12	MP4A	Mx	-.1207	5
13	MP2A	X	30.027	2
14	MP2A	Z	52.008	2
15	MP2A	Mx	-.015	2
16	MP2A	X	30.027	4
17	MP2A	Z	52.008	4
18	MP2A	Mx	-.015	4
19	MP1A	X	47.861	.5
20	MP1A	Z	82.897	.5



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Member Point Loads (BLC 8 : Antenna Wo (150 Deg)) (Continued)

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
21	MP1A	Mx	-.0239	.5
22	MP1A	X	47.861	5.5
23	MP1A	Z	82.897	5.5
24	MP1A	Mx	-.0239	5.5
25	MP5A	X	47.861	.5
26	MP5A	Z	82.897	.5
27	MP5A	Mx	-.0239	.5
28	MP5A	X	47.861	5.5
29	MP5A	Z	82.897	5.5
30	MP5A	Mx	-.0239	5.5
31	MP4A	X	6.305	4
32	MP4A	Z	10.92	4
33	MP4A	Mx	.0059	4
34	MP4A	X	26.104	.5
35	MP4A	Z	45.214	.5
36	MP4A	Mx	.0131	.5
37	MP3A	X	25.037	3.75
38	MP3A	Z	43.365	3.75
39	MP3A	Mx	-.0125	3.75
40	OVP	X	43.813	1.25
41	OVP	Z	75.887	1.25
42	OVP	Mx	0	1.25
43	MP3A	X	14.413	1
44	MP3A	Z	24.964	1
45	MP3A	Mx	-.006	1
46	MP3A	X	14.413	1
47	MP3A	Z	24.964	1
48	MP3A	Mx	.006	1

Member Point Loads (BLC 9 : Antenna Wo (180 Deg))

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	0	1
2	MP4A	Z	166.921	1
3	MP4A	Mx	.1043	1
4	MP4A	X	0	5
5	MP4A	Z	166.921	5
6	MP4A	Mx	.1043	5
7	MP4A	X	0	1
8	MP4A	Z	166.921	1
9	MP4A	Mx	-.1043	1
10	MP4A	X	0	5
11	MP4A	Z	166.921	5
12	MP4A	Mx	-.1043	5
13	MP2A	X	0	2
14	MP2A	Z	71.826	2
15	MP2A	Mx	0	2
16	MP2A	X	0	4
17	MP2A	Z	71.826	4
18	MP2A	Mx	0	4
19	MP1A	X	0	.5
20	MP1A	Z	91.798	.5
21	MP1A	Mx	0	.5
22	MP1A	X	0	5.5
23	MP1A	Z	91.798	5.5
24	MP1A	Mx	0	5.5
25	MP5A	X	0	.5



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Member Point Loads (BLC 10 : Antenna Wo (210 Deg)) (Continued)

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
31	MP4A	X	-6.305	4
32	MP4A	Z	10.92	4
33	MP4A	Mx	-.000422	4
34	MP4A	X	-26.104	.5
35	MP4A	Z	45.214	.5
36	MP4A	Mx	-.0131	.5
37	MP3A	X	-25.037	3.75
38	MP3A	Z	43.365	3.75
39	MP3A	Mx	.0125	3.75
40	OVP	X	-54.176	1.25
41	OVP	Z	93.835	1.25
42	OVP	Mx	0	1.25
43	MP3A	X	-14.413	1
44	MP3A	Z	24.964	1
45	MP3A	Mx	.006	1
46	MP3A	X	-14.413	1
47	MP3A	Z	24.964	1
48	MP3A	Mx	-.006	1

Member Point Loads (BLC 11 : Antenna Wo (240 Deg))

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	-107.347	1
2	MP4A	Z	61.977	1
3	MP4A	Mx	.0924	1
4	MP4A	X	-107.347	5
5	MP4A	Z	61.977	5
6	MP4A	Mx	.0924	5
7	MP4A	X	-107.347	1
8	MP4A	Z	61.977	1
9	MP4A	Mx	.0149	1
10	MP4A	X	-107.347	5
11	MP4A	Z	61.977	5
12	MP4A	Mx	.0149	5
13	MP2A	X	-31.617	2
14	MP2A	Z	18.254	2
15	MP2A	Mx	.0158	2
16	MP2A	X	-31.617	4
17	MP2A	Z	18.254	4
18	MP2A	Mx	.0158	4
19	MP1A	X	-89.694	.5
20	MP1A	Z	51.785	.5
21	MP1A	Mx	.0448	.5
22	MP1A	X	-89.694	5.5
23	MP1A	Z	51.785	5.5
24	MP1A	Mx	.0448	5.5
25	MP5A	X	-89.694	.5
26	MP5A	Z	51.785	.5
27	MP5A	Mx	.0448	.5
28	MP5A	X	-89.694	5.5
29	MP5A	Z	51.785	5.5
30	MP5A	Mx	.0448	5.5
31	MP4A	X	-9.097	4
32	MP4A	Z	5.252	4
33	MP4A	Mx	-.0032	4
34	MP4A	X	-37.109	.5
35	MP4A	Z	21.425	.5



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Member Point Loads (BLC 12 : Antenna Wo (270 Deg)) (Continued)

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
41	OVP	Z	0	1.25
42	OVP	Mx	0	1.25
43	MP3A	X	-10.587	1
44	MP3A	Z	0	1
45	MP3A	Mx	.0044	1
46	MP3A	X	-10.587	1
47	MP3A	Z	0	1
48	MP3A	Mx	-.0044	1

Member Point Loads (BLC 13 : Antenna Wo (300 Deg))

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	-107.347	1
2	MP4A	Z	-61.977	1
3	MP4A	Mx	.0149	1
4	MP4A	X	-107.347	5
5	MP4A	Z	-61.977	5
6	MP4A	Mx	.0149	5
7	MP4A	X	-107.347	1
8	MP4A	Z	-61.977	1
9	MP4A	Mx	.0924	1
10	MP4A	X	-107.347	5
11	MP4A	Z	-61.977	5
12	MP4A	Mx	.0924	5
13	MP2A	X	-31.617	2
14	MP2A	Z	-18.254	2
15	MP2A	Mx	.0158	2
16	MP2A	X	-31.617	4
17	MP2A	Z	-18.254	4
18	MP2A	Mx	.0158	4
19	MP1A	X	-89.694	.5
20	MP1A	Z	-51.785	.5
21	MP1A	Mx	.0448	.5
22	MP1A	X	-89.694	5.5
23	MP1A	Z	-51.785	5.5
24	MP1A	Mx	.0448	5.5
25	MP5A	X	-89.694	.5
26	MP5A	Z	-51.785	.5
27	MP5A	Mx	.0448	.5
28	MP5A	X	-89.694	5.5
29	MP5A	Z	-51.785	5.5
30	MP5A	Mx	.0448	5.5
31	MP4A	X	-9.097	4
32	MP4A	Z	-5.252	4
33	MP4A	Mx	-.0059	4
34	MP4A	X	-37.109	.5
35	MP4A	Z	-21.425	.5
36	MP4A	Mx	-.0186	.5
37	MP3A	X	-32.327	3.75
38	MP3A	Z	-18.664	3.75
39	MP3A	Mx	.0162	3.75
40	OVP	X	-81.869	1.25
41	OVP	Z	-47.267	1.25
42	OVP	Mx	0	1.25
43	MP3A	X	-14.434	1
44	MP3A	Z	-8.333	1
45	MP3A	Mx	.006	1



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Member Point Loads (BLC 13 : Antenna Wo (300 Deg)) (Continued)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
46	MP3A	X	-14.434	1
47	MP3A	Z	-8.333	1
48	MP3A	Mx	-.006	1

Member Point Loads (BLC 14 : Antenna Wo (330 Deg))

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP4A	X	-76.299	1
2	MP4A	Z	-132.155	1
3	MP4A	Mx	-.0444	1
4	MP4A	X	-76.299	5
5	MP4A	Z	-132.155	5
6	MP4A	Mx	-.0444	5
7	MP4A	X	-76.299	1
8	MP4A	Z	-132.155	1
9	MP4A	Mx	.1207	1
10	MP4A	X	-76.299	5
11	MP4A	Z	-132.155	5
12	MP4A	Mx	.1207	5
13	MP2A	X	-30.027	2
14	MP2A	Z	-52.008	2
15	MP2A	Mx	.015	2
16	MP2A	X	-30.027	4
17	MP2A	Z	-52.008	4
18	MP2A	Mx	.015	4
19	MP1A	X	-47.861	.5
20	MP1A	Z	-82.897	.5
21	MP1A	Mx	.0239	.5
22	MP1A	X	-47.861	5.5
23	MP1A	Z	-82.897	5.5
24	MP1A	Mx	.0239	5.5
25	MP5A	X	-47.861	.5
26	MP5A	Z	-82.897	.5
27	MP5A	Mx	.0239	.5
28	MP5A	X	-47.861	5.5
29	MP5A	Z	-82.897	5.5
30	MP5A	Mx	.0239	5.5
31	MP4A	X	-6.305	4
32	MP4A	Z	-10.92	4
33	MP4A	Mx	-.0059	4
34	MP4A	X	-26.104	.5
35	MP4A	Z	-45.214	.5
36	MP4A	Mx	-.0131	.5
37	MP3A	X	-25.037	3.75
38	MP3A	Z	-43.365	3.75
39	MP3A	Mx	.0125	3.75
40	OVP	X	-43.813	1.25
41	OVP	Z	-75.887	1.25
42	OVP	Mx	0	1.25
43	MP3A	X	-14.413	1
44	MP3A	Z	-24.964	1
45	MP3A	Mx	.006	1
46	MP3A	X	-14.413	1
47	MP3A	Z	-24.964	1
48	MP3A	Mx	-.006	1



Member Point Loads (BLC 15 : Antenna Wi (0 Deg))

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	0	1
2	MP4A	Z	-31.56	1
3	MP4A	Mx	-0.197	1
4	MP4A	X	0	5
5	MP4A	Z	-31.56	5
6	MP4A	Mx	-0.197	5
7	MP4A	X	0	1
8	MP4A	Z	-31.56	1
9	MP4A	Mx	.0197	1
10	MP4A	X	0	5
11	MP4A	Z	-31.56	5
12	MP4A	Mx	.0197	5
13	MP2A	X	0	2
14	MP2A	Z	-16.755	2
15	MP2A	Mx	0	2
16	MP2A	X	0	4
17	MP2A	Z	-16.755	4
18	MP2A	Mx	0	4
19	MP1A	X	0	.5
20	MP1A	Z	-18.215	.5
21	MP1A	Mx	0	.5
22	MP1A	X	0	5.5
23	MP1A	Z	-18.215	5.5
24	MP1A	Mx	0	5.5
25	MP5A	X	0	.5
26	MP5A	Z	-18.215	.5
27	MP5A	Mx	0	.5
28	MP5A	X	0	5.5
29	MP5A	Z	-18.215	5.5
30	MP5A	Mx	0	5.5
31	MP4A	X	0	4
32	MP4A	Z	-3.399	4
33	MP4A	Mx	-.00085	4
34	MP4A	X	0	.5
35	MP4A	Z	-14.091	.5
36	MP4A	Mx	0	.5
37	MP3A	X	0	3.75
38	MP3A	Z	-13.974	3.75
39	MP3A	Mx	0	3.75
40	OVP	X	0	1.25
41	OVP	Z	-24.039	1.25
42	OVP	Mx	0	1.25
43	MP3A	X	0	1
44	MP3A	Z	-7.633	1
45	MP3A	Mx	0	1
46	MP3A	X	0	1
47	MP3A	Z	-7.633	1
48	MP3A	Mx	0	1

Member Point Loads (BLC 16 : Antenna Wi (30 Deg))

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	14.52	1
2	MP4A	Z	-25.149	1
3	MP4A	Mx	-.023	1
4	MP4A	X	14.52	5
5	MP4A	Z	-25.149	5



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Member Point Loads (BLC 16 : Antenna Wi (30 Deg)) (Continued)

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
6	MP4A	Mx	-.023	5
7	MP4A	X	14.52	1
8	MP4A	Z	-25.149	1
9	MP4A	Mx	.0085	1
10	MP4A	X	14.52	5
11	MP4A	Z	-25.149	5
12	MP4A	Mx	.0085	5
13	MP2A	X	7.17	2
14	MP2A	Z	-12.419	2
15	MP2A	Mx	-.0036	2
16	MP2A	X	7.17	4
17	MP2A	Z	-12.419	4
18	MP2A	Mx	-.0036	4
19	MP1A	X	9.467	.5
20	MP1A	Z	-16.398	.5
21	MP1A	Mx	-.0047	.5
22	MP1A	X	9.467	5.5
23	MP1A	Z	-16.398	5.5
24	MP1A	Mx	-.0047	5.5
25	MP5A	X	9.467	.5
26	MP5A	Z	-16.398	.5
27	MP5A	Mx	-.0047	.5
28	MP5A	X	9.467	5.5
29	MP5A	Z	-16.398	5.5
30	MP5A	Mx	-.0047	5.5
31	MP4A	X	1.592	4
32	MP4A	Z	-2.758	4
33	MP4A	Mx	.000106	4
34	MP4A	X	6.506	.5
35	MP4A	Z	-11.269	.5
36	MP4A	Mx	.0033	.5
37	MP3A	X	6.248	3.75
38	MP3A	Z	-10.822	3.75
39	MP3A	Mx	-.0031	3.75
40	OVP	X	13.597	1.25
41	OVP	Z	-23.55	1.25
42	OVP	Mx	0	1.25
43	MP3A	X	3.216	1
44	MP3A	Z	-5.571	1
45	MP3A	Mx	-.0013	1
46	MP3A	X	3.216	1
47	MP3A	Z	-5.571	1
48	MP3A	Mx	.0013	1

Member Point Loads (BLC 17 : Antenna Wi (60 Deg))

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
1	MP4A	X	20.782	1
2	MP4A	Z	-11.998	1
3	MP4A	Mx	-.0179	1
4	MP4A	X	20.782	5
5	MP4A	Z	-11.998	5
6	MP4A	Mx	-.0179	5
7	MP4A	X	20.782	1
8	MP4A	Z	-11.998	1
9	MP4A	Mx	-.0029	1
10	MP4A	X	20.782	5



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Member Point Loads (BLC 17 : Antenna Wi (60 Deg)) (Continued)

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
11	MP4A	Z	-11.998	5
12	MP4A	Mx	-.0029	5
13	MP2A	X	8.236	2
14	MP2A	Z	-4.755	2
15	MP2A	Mx	-.0041	2
16	MP2A	X	8.236	4
17	MP2A	Z	-4.755	4
18	MP2A	Mx	-.0041	4
19	MP1A	X	17.644	.5
20	MP1A	Z	-10.187	.5
21	MP1A	Mx	-.0088	.5
22	MP1A	X	17.644	5.5
23	MP1A	Z	-10.187	5.5
24	MP1A	Mx	-.0088	5.5
25	MP5A	X	17.644	.5
26	MP5A	Z	-10.187	.5
27	MP5A	Mx	-.0088	.5
28	MP5A	X	17.644	5.5
29	MP5A	Z	-10.187	5.5
30	MP5A	Mx	-.0088	5.5
31	MP4A	X	2.386	4
32	MP4A	Z	-1.377	4
33	MP4A	Mx	.000849	4
34	MP4A	X	9.4	.5
35	MP4A	Z	-5.427	.5
36	MP4A	Mx	.0047	.5
37	MP3A	X	8.264	3.75
38	MP3A	Z	-4.771	3.75
39	MP3A	Mx	-.0041	3.75
40	OVP	X	24.916	1.25
41	OVP	Z	-14.385	1.25
42	OVP	Mx	0	1.25
43	MP3A	X	3.492	1
44	MP3A	Z	-2.016	1
45	MP3A	Mx	-.0015	1
46	MP3A	X	3.492	1
47	MP3A	Z	-2.016	1
48	MP3A	Mx	.0015	1

Member Point Loads (BLC 18 : Antenna Wi (90 Deg))

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	21.475	1
2	MP4A	Z	0	1
3	MP4A	Mx	-.0107	1
4	MP4A	X	21.475	5
5	MP4A	Z	0	5
6	MP4A	Mx	-.0107	5
7	MP4A	X	21.475	1
8	MP4A	Z	0	1
9	MP4A	Mx	-.0107	1
10	MP4A	X	21.475	5
11	MP4A	Z	0	5
12	MP4A	Mx	-.0107	5
13	MP2A	X	7.095	2
14	MP2A	Z	0	2
15	MP2A	Mx	-.0035	2



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Member Point Loads (BLC 18 : Antenna Wi (90 Deg)) (Continued)

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
16	MP2A	X	7.095	4
17	MP2A	Z	0	4
18	MP2A	Mx	-.0035	4
19	MP1A	X	21.093	.5
20	MP1A	Z	0	.5
21	MP1A	Mx	-.0105	.5
22	MP1A	X	21.093	5.5
23	MP1A	Z	0	5.5
24	MP1A	Mx	-.0105	5.5
25	MP5A	X	21.093	.5
26	MP5A	Z	0	.5
27	MP5A	Mx	-.0105	.5
28	MP5A	X	21.093	5.5
29	MP5A	Z	0	5.5
30	MP5A	Mx	-.0105	5.5
31	MP4A	X	2.54	4
32	MP4A	Z	0	4
33	MP4A	Mx	.0013	4
34	MP4A	X	9.775	.5
35	MP4A	Z	0	.5
36	MP4A	Mx	.0049	.5
37	MP3A	X	8.066	3.75
38	MP3A	Z	0	3.75
39	MP3A	Mx	-.004	3.75
40	OVP	X	27.194	1.25
41	OVP	Z	0	1.25
42	OVP	Mx	0	1.25
43	MP3A	X	2.833	1
44	MP3A	Z	0	1
45	MP3A	Mx	-.0012	1
46	MP3A	X	2.833	1
47	MP3A	Z	0	1
48	MP3A	Mx	.0012	1

Member Point Loads (BLC 19 : Antenna Wi (120 Deg))

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	20.782	1
2	MP4A	Z	11.998	1
3	MP4A	Mx	-.0029	1
4	MP4A	X	20.782	5
5	MP4A	Z	11.998	5
6	MP4A	Mx	-.0029	5
7	MP4A	X	20.782	1
8	MP4A	Z	11.998	1
9	MP4A	Mx	-.0179	1
10	MP4A	X	20.782	5
11	MP4A	Z	11.998	5
12	MP4A	Mx	-.0179	5
13	MP2A	X	8.236	2
14	MP2A	Z	4.755	2
15	MP2A	Mx	-.0041	2
16	MP2A	X	8.236	4
17	MP2A	Z	4.755	4
18	MP2A	Mx	-.0041	4
19	MP1A	X	17.644	.5
20	MP1A	Z	10.187	.5



Member Point Loads (BLC 19 : Antenna Wi (120 Deg)) (Continued)

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
21	MP1A	Mx	-.0088	.5
22	MP1A	X	17.644	5.5
23	MP1A	Z	10.187	5.5
24	MP1A	Mx	-.0088	5.5
25	MP5A	X	17.644	.5
26	MP5A	Z	10.187	.5
27	MP5A	Mx	-.0088	.5
28	MP5A	X	17.644	5.5
29	MP5A	Z	10.187	5.5
30	MP5A	Mx	-.0088	5.5
31	MP4A	X	2.386	4
32	MP4A	Z	1.377	4
33	MP4A	Mx	.0015	4
34	MP4A	X	9.4	.5
35	MP4A	Z	5.427	.5
36	MP4A	Mx	.0047	.5
37	MP3A	X	8.264	3.75
38	MP3A	Z	4.771	3.75
39	MP3A	Mx	-.0041	3.75
40	OVP	X	20.819	1.25
41	OVP	Z	12.02	1.25
42	OVP	Mx	0	1.25
43	MP3A	X	3.492	1
44	MP3A	Z	2.016	1
45	MP3A	Mx	-.0015	1
46	MP3A	X	3.492	1
47	MP3A	Z	2.016	1
48	MP3A	Mx	.0015	1

Member Point Loads (BLC 20 : Antenna Wi (150 Deg))

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	14.52	1
2	MP4A	Z	25.149	1
3	MP4A	Mx	.0085	1
4	MP4A	X	14.52	5
5	MP4A	Z	25.149	5
6	MP4A	Mx	.0085	5
7	MP4A	X	14.52	1
8	MP4A	Z	25.149	1
9	MP4A	Mx	-.023	1
10	MP4A	X	14.52	5
11	MP4A	Z	25.149	5
12	MP4A	Mx	-.023	5
13	MP2A	X	7.17	2
14	MP2A	Z	12.419	2
15	MP2A	Mx	-.0036	2
16	MP2A	X	7.17	4
17	MP2A	Z	12.419	4
18	MP2A	Mx	-.0036	4
19	MP1A	X	9.467	.5
20	MP1A	Z	16.398	.5
21	MP1A	Mx	-.0047	.5
22	MP1A	X	9.467	5.5
23	MP1A	Z	16.398	5.5
24	MP1A	Mx	-.0047	5.5
25	MP5A	X	9.467	.5



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Member Point Loads (BLC 20 : Antenna Wi (150 Deg)) (Continued)

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
26	MP5A	Z	16.398	.5
27	MP5A	Mx	-.0047	.5
28	MP5A	X	9.467	5.5
29	MP5A	Z	16.398	5.5
30	MP5A	Mx	-.0047	5.5
31	MP4A	X	1.592	4
32	MP4A	Z	2.758	4
33	MP4A	Mx	.0015	4
34	MP4A	X	6.506	.5
35	MP4A	Z	11.269	.5
36	MP4A	Mx	.0033	.5
37	MP3A	X	6.248	3.75
38	MP3A	Z	10.822	3.75
39	MP3A	Mx	-.0031	3.75
40	OVP	X	11.231	1.25
41	OVP	Z	19.453	1.25
42	OVP	Mx	0	1.25
43	MP3A	X	3.216	1
44	MP3A	Z	5.571	1
45	MP3A	Mx	-.0013	1
46	MP3A	X	3.216	1
47	MP3A	Z	5.571	1
48	MP3A	Mx	.0013	1

Member Point Loads (BLC 21 : Antenna Wi (180 Deg))

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	0	1
2	MP4A	Z	31.56	1
3	MP4A	Mx	.0197	1
4	MP4A	X	0	5
5	MP4A	Z	31.56	5
6	MP4A	Mx	.0197	5
7	MP4A	X	0	1
8	MP4A	Z	31.56	1
9	MP4A	Mx	-.0197	1
10	MP4A	X	0	5
11	MP4A	Z	31.56	5
12	MP4A	Mx	-.0197	5
13	MP2A	X	0	2
14	MP2A	Z	16.755	2
15	MP2A	Mx	0	2
16	MP2A	X	0	4
17	MP2A	Z	16.755	4
18	MP2A	Mx	0	4
19	MP1A	X	0	.5
20	MP1A	Z	18.215	.5
21	MP1A	Mx	0	.5
22	MP1A	X	0	5.5
23	MP1A	Z	18.215	5.5
24	MP1A	Mx	0	5.5
25	MP5A	X	0	.5
26	MP5A	Z	18.215	.5
27	MP5A	Mx	0	.5
28	MP5A	X	0	5.5
29	MP5A	Z	18.215	5.5
30	MP5A	Mx	0	5.5



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Member Point Loads (BLC 21 : Antenna Wi (180 Deg)) (Continued)

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
31	MP4A	X	0	4
32	MP4A	Z	3.399	4
33	MP4A	Mx	.00085	4
34	MP4A	X	0	.5
35	MP4A	Z	14.091	5
36	MP4A	Mx	0	5
37	MP3A	X	0	3.75
38	MP3A	Z	13.974	3.75
39	MP3A	Mx	0	3.75
40	OVP	X	0	1.25
41	OVP	Z	24.039	1.25
42	OVP	Mx	0	1.25
43	MP3A	X	0	1
44	MP3A	Z	7.633	1
45	MP3A	Mx	0	1
46	MP3A	X	0	1
47	MP3A	Z	7.633	1
48	MP3A	Mx	0	1

Member Point Loads (BLC 22 : Antenna Wi (210 Deg))

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	-14.52	1
2	MP4A	Z	25.149	1
3	MP4A	Mx	.023	1
4	MP4A	X	-14.52	5
5	MP4A	Z	25.149	5
6	MP4A	Mx	.023	5
7	MP4A	X	-14.52	1
8	MP4A	Z	25.149	1
9	MP4A	Mx	-.0085	1
10	MP4A	X	-14.52	5
11	MP4A	Z	25.149	5
12	MP4A	Mx	-.0085	5
13	MP2A	X	-7.17	2
14	MP2A	Z	12.419	2
15	MP2A	Mx	.0036	2
16	MP2A	X	-7.17	4
17	MP2A	Z	12.419	4
18	MP2A	Mx	.0036	4
19	MP1A	X	-9.467	.5
20	MP1A	Z	16.398	.5
21	MP1A	Mx	.0047	.5
22	MP1A	X	-9.467	5.5
23	MP1A	Z	16.398	5.5
24	MP1A	Mx	.0047	5.5
25	MP5A	X	-9.467	.5
26	MP5A	Z	16.398	.5
27	MP5A	Mx	.0047	.5
28	MP5A	X	-9.467	5.5
29	MP5A	Z	16.398	5.5
30	MP5A	Mx	.0047	5.5
31	MP4A	X	-1.592	4
32	MP4A	Z	2.758	4
33	MP4A	Mx	-.000106	4
34	MP4A	X	-6.506	.5
35	MP4A	Z	11.269	.5



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Member Point Loads (BLC 22 : Antenna Wi (210 Deg)) (Continued)

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
36	MP4A	Mx	-.0033	.5
37	MP3A	X	-6.248	3.75
38	MP3A	Z	10.822	3.75
39	MP3A	Mx	.0031	3.75
40	OVP	X	-13.597	1.25
41	OVP	Z	23.55	1.25
42	OVP	Mx	0	1.25
43	MP3A	X	-3.216	1
44	MP3A	Z	5.571	1
45	MP3A	Mx	.0013	1
46	MP3A	X	-3.216	1
47	MP3A	Z	5.571	1
48	MP3A	Mx	-.0013	1

Member Point Loads (BLC 23 : Antenna Wi (240 Deg))

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	-20.782	1
2	MP4A	Z	11.998	1
3	MP4A	Mx	.0179	1
4	MP4A	X	-20.782	5
5	MP4A	Z	11.998	5
6	MP4A	Mx	.0179	5
7	MP4A	X	-20.782	1
8	MP4A	Z	11.998	1
9	MP4A	Mx	.0029	1
10	MP4A	X	-20.782	5
11	MP4A	Z	11.998	5
12	MP4A	Mx	.0029	5
13	MP2A	X	-8.236	2
14	MP2A	Z	4.755	2
15	MP2A	Mx	.0041	2
16	MP2A	X	-8.236	4
17	MP2A	Z	4.755	4
18	MP2A	Mx	.0041	4
19	MP1A	X	-17.644	.5
20	MP1A	Z	10.187	.5
21	MP1A	Mx	.0088	.5
22	MP1A	X	-17.644	5.5
23	MP1A	Z	10.187	5.5
24	MP1A	Mx	.0088	5.5
25	MP5A	X	-17.644	.5
26	MP5A	Z	10.187	.5
27	MP5A	Mx	.0088	.5
28	MP5A	X	-17.644	5.5
29	MP5A	Z	10.187	5.5
30	MP5A	Mx	.0088	5.5
31	MP4A	X	-2.386	4
32	MP4A	Z	1.377	4
33	MP4A	Mx	-.000849	4
34	MP4A	X	-9.4	.5
35	MP4A	Z	5.427	.5
36	MP4A	Mx	-.0047	.5
37	MP3A	X	-8.264	3.75
38	MP3A	Z	4.771	3.75
39	MP3A	Mx	.0041	3.75
40	OVP	X	-24.916	1.25



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Member Point Loads (BLC 23 : Antenna Wi (240 Deg)) (Continued)

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
41	OVP	Z	14.385	1.25
42	OVP	Mx	0	1.25
43	MP3A	X	-3.492	1
44	MP3A	Z	2.016	1
45	MP3A	Mx	.0015	1
46	MP3A	X	-3.492	1
47	MP3A	Z	2.016	1
48	MP3A	Mx	-.0015	1

Member Point Loads (BLC 24 : Antenna Wi (270 Deg))

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	-21.475	1
2	MP4A	Z	0	1
3	MP4A	Mx	.0107	1
4	MP4A	X	-21.475	5
5	MP4A	Z	0	5
6	MP4A	Mx	.0107	5
7	MP4A	X	-21.475	1
8	MP4A	Z	0	1
9	MP4A	Mx	.0107	1
10	MP4A	X	-21.475	5
11	MP4A	Z	0	5
12	MP4A	Mx	.0107	5
13	MP2A	X	-7.095	2
14	MP2A	Z	0	2
15	MP2A	Mx	.0035	2
16	MP2A	X	-7.095	4
17	MP2A	Z	0	4
18	MP2A	Mx	.0035	4
19	MP1A	X	-21.093	.5
20	MP1A	Z	0	.5
21	MP1A	Mx	.0105	.5
22	MP1A	X	-21.093	5.5
23	MP1A	Z	0	5.5
24	MP1A	Mx	.0105	5.5
25	MP5A	X	-21.093	.5
26	MP5A	Z	0	.5
27	MP5A	Mx	.0105	.5
28	MP5A	X	-21.093	5.5
29	MP5A	Z	0	5.5
30	MP5A	Mx	.0105	5.5
31	MP4A	X	-2.54	4
32	MP4A	Z	0	4
33	MP4A	Mx	-.0013	4
34	MP4A	X	-9.775	.5
35	MP4A	Z	0	.5
36	MP4A	Mx	-.0049	.5
37	MP3A	X	-8.066	3.75
38	MP3A	Z	0	3.75
39	MP3A	Mx	.004	3.75
40	OVP	X	-27.194	1.25
41	OVP	Z	0	1.25
42	OVP	Mx	0	1.25
43	MP3A	X	-2.833	1
44	MP3A	Z	0	1
45	MP3A	Mx	.0012	1



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Member Point Loads (BLC 24 : Antenna Wi (270 Deg)) (Continued)

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
46	MP3A	X	-2.833	1
47	MP3A	Z	0	1
48	MP3A	Mx	-.0012	1

Member Point Loads (BLC 25 : Antenna Wi (300 Deg))

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	-20.782	1
2	MP4A	Z	-11.998	1
3	MP4A	Mx	.0029	1
4	MP4A	X	-20.782	5
5	MP4A	Z	-11.998	5
6	MP4A	Mx	.0029	5
7	MP4A	X	-20.782	1
8	MP4A	Z	-11.998	1
9	MP4A	Mx	.0179	1
10	MP4A	X	-20.782	5
11	MP4A	Z	-11.998	5
12	MP4A	Mx	.0179	5
13	MP2A	X	-8.236	2
14	MP2A	Z	-4.755	2
15	MP2A	Mx	.0041	2
16	MP2A	X	-8.236	4
17	MP2A	Z	-4.755	4
18	MP2A	Mx	.0041	4
19	MP1A	X	-17.644	.5
20	MP1A	Z	-10.187	.5
21	MP1A	Mx	.0088	.5
22	MP1A	X	-17.644	5.5
23	MP1A	Z	-10.187	5.5
24	MP1A	Mx	.0088	5.5
25	MP5A	X	-17.644	.5
26	MP5A	Z	-10.187	.5
27	MP5A	Mx	.0088	.5
28	MP5A	X	-17.644	5.5
29	MP5A	Z	-10.187	5.5
30	MP5A	Mx	.0088	5.5
31	MP4A	X	-2.386	4
32	MP4A	Z	-1.377	4
33	MP4A	Mx	-.0015	4
34	MP4A	X	-9.4	.5
35	MP4A	Z	-5.427	.5
36	MP4A	Mx	-.0047	.5
37	MP3A	X	-8.264	3.75
38	MP3A	Z	-4.771	3.75
39	MP3A	Mx	.0041	3.75
40	OVP	X	-20.819	1.25
41	OVP	Z	-12.02	1.25
42	OVP	Mx	0	1.25
43	MP3A	X	-3.492	1
44	MP3A	Z	-2.016	1
45	MP3A	Mx	.0015	1
46	MP3A	X	-3.492	1
47	MP3A	Z	-2.016	1
48	MP3A	Mx	-.0015	1



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Member Point Loads (BLC 26 : Antenna Wi (330 Deg))

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	-14.52	1
2	MP4A	Z	-25.149	1
3	MP4A	Mx	-0.085	1
4	MP4A	X	-14.52	5
5	MP4A	Z	-25.149	5
6	MP4A	Mx	-0.085	5
7	MP4A	X	-14.52	1
8	MP4A	Z	-25.149	1
9	MP4A	Mx	.023	1
10	MP4A	X	-14.52	5
11	MP4A	Z	-25.149	5
12	MP4A	Mx	.023	5
13	MP2A	X	-7.17	2
14	MP2A	Z	-12.419	2
15	MP2A	Mx	.0036	2
16	MP2A	X	-7.17	4
17	MP2A	Z	-12.419	4
18	MP2A	Mx	.0036	4
19	MP1A	X	-9.467	.5
20	MP1A	Z	-16.398	.5
21	MP1A	Mx	.0047	.5
22	MP1A	X	-9.467	5.5
23	MP1A	Z	-16.398	5.5
24	MP1A	Mx	.0047	5.5
25	MP5A	X	-9.467	.5
26	MP5A	Z	-16.398	.5
27	MP5A	Mx	.0047	.5
28	MP5A	X	-9.467	5.5
29	MP5A	Z	-16.398	5.5
30	MP5A	Mx	.0047	5.5
31	MP4A	X	-1.592	4
32	MP4A	Z	-2.758	4
33	MP4A	Mx	-0.015	4
34	MP4A	X	-6.506	.5
35	MP4A	Z	-11.269	.5
36	MP4A	Mx	-0.033	.5
37	MP3A	X	-6.248	3.75
38	MP3A	Z	-10.822	3.75
39	MP3A	Mx	.0031	3.75
40	OVP	X	-11.231	1.25
41	OVP	Z	-19.453	1.25
42	OVP	Mx	0	1.25
43	MP3A	X	-3.216	1
44	MP3A	Z	-5.571	1
45	MP3A	Mx	.0013	1
46	MP3A	X	-3.216	1
47	MP3A	Z	-5.571	1
48	MP3A	Mx	-0.013	1

Member Point Loads (BLC 27 : Antenna Wm (0 Deg))

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	0	1
2	MP4A	Z	-10.433	1
3	MP4A	Mx	-0.065	1
4	MP4A	X	0	5
5	MP4A	Z	-10.433	5



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Member Point Loads (BLC 27 : Antenna Wm (0 Deg)) (Continued)

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
6	MP4A	Mx	-0.065	5
7	MP4A	X	0	1
8	MP4A	Z	-10.433	1
9	MP4A	Mx	.0065	1
10	MP4A	X	0	5
11	MP4A	Z	-10.433	5
12	MP4A	Mx	.0065	5
13	MP2A	X	0	2
14	MP2A	Z	-4.489	2
15	MP2A	Mx	0	2
16	MP2A	X	0	4
17	MP2A	Z	-4.489	4
18	MP2A	Mx	0	4
19	MP1A	X	0	.5
20	MP1A	Z	-5.737	.5
21	MP1A	Mx	0	.5
22	MP1A	X	0	5.5
23	MP1A	Z	-5.737	5.5
24	MP1A	Mx	0	5.5
25	MP5A	X	0	.5
26	MP5A	Z	-5.737	.5
27	MP5A	Mx	0	.5
28	MP5A	X	0	5.5
29	MP5A	Z	-5.737	5.5
30	MP5A	Mx	0	5.5
31	MP4A	X	0	4
32	MP4A	Z	-.854	4
33	MP4A	Mx	-.000213	4
34	MP4A	X	0	.5
35	MP4A	Z	-3.556	.5
36	MP4A	Mx	0	.5
37	MP3A	X	0	3.75
38	MP3A	Z	-3.528	3.75
39	MP3A	Mx	0	3.75
40	OVP	X	0	1.25
41	OVP	Z	-5.908	1.25
42	OVP	Mx	0	1.25
43	MP3A	X	0	1
44	MP3A	Z	-2.182	1
45	MP3A	Mx	0	1
46	MP3A	X	0	1
47	MP3A	Z	-2.182	1
48	MP3A	Mx	0	1

Member Point Loads (BLC 28 : Antenna Wm (30 Deg))

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	4.769	1
2	MP4A	Z	-8.26	1
3	MP4A	Mx	-.0075	1
4	MP4A	X	4.769	5
5	MP4A	Z	-8.26	5
6	MP4A	Mx	-.0075	5
7	MP4A	X	4.769	1
8	MP4A	Z	-8.26	1
9	MP4A	Mx	.0028	1
10	MP4A	X	4.769	5



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Member Point Loads (BLC 28 : Antenna Wm (30 Deg)) (Continued)

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
11	MP4A	Z	-8.26	5
12	MP4A	Mx	.0028	5
13	MP2A	X	1.877	2
14	MP2A	Z	-3.25	2
15	MP2A	Mx	-0.00938	2
16	MP2A	X	1.877	4
17	MP2A	Z	-3.25	4
18	MP2A	Mx	-0.00938	4
19	MP1A	X	2.991	.5
20	MP1A	Z	-5.181	.5
21	MP1A	Mx	-0.0015	.5
22	MP1A	X	2.991	5.5
23	MP1A	Z	-5.181	5.5
24	MP1A	Mx	-0.0015	5.5
25	MP5A	X	2.991	.5
26	MP5A	Z	-5.181	.5
27	MP5A	Mx	-0.0015	.5
28	MP5A	X	2.991	5.5
29	MP5A	Z	-5.181	5.5
30	MP5A	Mx	-0.0015	5.5
31	MP4A	X	.394	4
32	MP4A	Z	-.683	4
33	MP4A	Mx	2.6e-5	4
34	MP4A	X	1.632	.5
35	MP4A	Z	-2.826	.5
36	MP4A	Mx	.000816	.5
37	MP3A	X	1.565	3.75
38	MP3A	Z	-2.71	3.75
39	MP3A	Mx	-0.00783	3.75
40	OVP	X	3.386	1.25
41	OVP	Z	-5.865	1.25
42	OVP	Mx	0	1.25
43	MP3A	X	.901	1
44	MP3A	Z	-1.56	1
45	MP3A	Mx	-0.000375	1
46	MP3A	X	.901	1
47	MP3A	Z	-1.56	1
48	MP3A	Mx	.000375	1

Member Point Loads (BLC 29 : Antenna Wm (60 Deg))

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	6.709	1
2	MP4A	Z	-3.874	1
3	MP4A	Mx	-0.0058	1
4	MP4A	X	6.709	5
5	MP4A	Z	-3.874	5
6	MP4A	Mx	-0.0058	5
7	MP4A	X	6.709	1
8	MP4A	Z	-3.874	1
9	MP4A	Mx	-0.00933	1
10	MP4A	X	6.709	5
11	MP4A	Z	-3.874	5
12	MP4A	Mx	-0.00933	5
13	MP2A	X	1.976	2
14	MP2A	Z	-1.141	2
15	MP2A	Mx	-0.00988	2



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Member Point Loads (BLC 29 : Antenna Wm (60 Deg)) (Continued)

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
16	MP2A	X	1.976	4
17	MP2A	Z	-1.141	4
18	MP2A	Mx	-.000988	4
19	MP1A	X	5.606	.5
20	MP1A	Z	-3.237	.5
21	MP1A	Mx	-.0028	.5
22	MP1A	X	5.606	5.5
23	MP1A	Z	-3.237	5.5
24	MP1A	Mx	-.0028	5.5
25	MP5A	X	5.606	.5
26	MP5A	Z	-3.237	.5
27	MP5A	Mx	-.0028	.5
28	MP5A	X	5.606	5.5
29	MP5A	Z	-3.237	5.5
30	MP5A	Mx	-.0028	5.5
31	MP4A	X	.569	4
32	MP4A	Z	-.328	4
33	MP4A	Mx	.000202	4
34	MP4A	X	2.319	.5
35	MP4A	Z	-1.339	.5
36	MP4A	Mx	.0012	.5
37	MP3A	X	2.02	3.75
38	MP3A	Z	-1.166	3.75
39	MP3A	Mx	-.001	3.75
40	OVP	X	6.239	1.25
41	OVP	Z	-3.602	1.25
42	OVP	Mx	0	1.25
43	MP3A	X	.902	1
44	MP3A	Z	-.521	1
45	MP3A	Mx	-.000376	1
46	MP3A	X	.902	1
47	MP3A	Z	-.521	1
48	MP3A	Mx	.000376	1

Member Point Loads (BLC 30 : Antenna Wm (90 Deg))

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	6.852	1
2	MP4A	Z	0	1
3	MP4A	Mx	-.0034	1
4	MP4A	X	6.852	5
5	MP4A	Z	0	5
6	MP4A	Mx	-.0034	5
7	MP4A	X	6.852	1
8	MP4A	Z	0	1
9	MP4A	Mx	-.0034	1
10	MP4A	X	6.852	5
11	MP4A	Z	0	5
12	MP4A	Mx	-.0034	5
13	MP2A	X	1.546	2
14	MP2A	Z	0	2
15	MP2A	Mx	-.000773	2
16	MP2A	X	1.546	4
17	MP2A	Z	0	4
18	MP2A	Mx	-.000773	4
19	MP1A	X	6.718	.5
20	MP1A	Z	0	.5



Member Point Loads (BLC 30 : Antenna Wm (90 Deg)) (Continued)

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
21	MP1A	Mx	-.0034	.5
22	MP1A	X	6.718	5.5
23	MP1A	Z	0	5.5
24	MP1A	Mx	-.0034	5.5
25	MP5A	X	6.718	.5
26	MP5A	Z	0	.5
27	MP5A	Mx	-.0034	.5
28	MP5A	X	6.718	5.5
29	MP5A	Z	0	5.5
30	MP5A	Mx	-.0034	5.5
31	MP4A	X	.591	4
32	MP4A	Z	0	4
33	MP4A	Mx	.000296	4
34	MP4A	X	2.386	.5
35	MP4A	Z	0	.5
36	MP4A	Mx	.0012	.5
37	MP3A	X	1.935	3.75
38	MP3A	Z	0	3.75
39	MP3A	Mx	-.000967	3.75
40	OVP	X	6.772	1.25
41	OVP	Z	0	1.25
42	OVP	Mx	0	1.25
43	MP3A	X	.662	1
44	MP3A	Z	0	1
45	MP3A	Mx	-.000276	1
46	MP3A	X	.662	1
47	MP3A	Z	0	1
48	MP3A	Mx	.000276	1

Member Point Loads (BLC 31 : Antenna Wm (120 Deg))

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft. %]
1	MP4A	X	6.709	1
2	MP4A	Z	3.874	1
3	MP4A	Mx	-.000933	1
4	MP4A	X	6.709	5
5	MP4A	Z	3.874	5
6	MP4A	Mx	-.000933	5
7	MP4A	X	6.709	1
8	MP4A	Z	3.874	1
9	MP4A	Mx	-.0058	1
10	MP4A	X	6.709	5
11	MP4A	Z	3.874	5
12	MP4A	Mx	-.0058	5
13	MP2A	X	1.976	2
14	MP2A	Z	1.141	2
15	MP2A	Mx	-.000988	2
16	MP2A	X	1.976	4
17	MP2A	Z	1.141	4
18	MP2A	Mx	-.000988	4
19	MP1A	X	5.606	.5
20	MP1A	Z	3.237	.5
21	MP1A	Mx	-.0028	.5
22	MP1A	X	5.606	5.5
23	MP1A	Z	3.237	5.5
24	MP1A	Mx	-.0028	5.5
25	MP5A	X	5.606	.5



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Member Point Loads (BLC 31 : Antenna Wm (120 Deg)) (Continued)

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
26	MP5A	Z	3.237	.5
27	MP5A	Mx	-.0028	.5
28	MP5A	X	5.606	5.5
29	MP5A	Z	3.237	5.5
30	MP5A	Mx	-.0028	5.5
31	MP4A	X	.569	4
32	MP4A	Z	.328	4
33	MP4A	Mx	.000366	4
34	MP4A	X	2.319	.5
35	MP4A	Z	1.339	.5
36	MP4A	Mx	.0012	.5
37	MP3A	X	2.02	3.75
38	MP3A	Z	1.166	3.75
39	MP3A	Mx	-.001	3.75
40	OVP	X	5.117	1.25
41	OVP	Z	2.954	1.25
42	OVP	Mx	0	1.25
43	MP3A	X	.902	1
44	MP3A	Z	.521	1
45	MP3A	Mx	-.000376	1
46	MP3A	X	.902	1
47	MP3A	Z	.521	1
48	MP3A	Mx	.000376	1

Member Point Loads (BLC 32 : Antenna Wm (150 Deg))

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	4.769	1
2	MP4A	Z	8.26	1
3	MP4A	Mx	.0028	1
4	MP4A	X	4.769	5
5	MP4A	Z	8.26	5
6	MP4A	Mx	.0028	5
7	MP4A	X	4.769	1
8	MP4A	Z	8.26	1
9	MP4A	Mx	-.0075	1
10	MP4A	X	4.769	5
11	MP4A	Z	8.26	5
12	MP4A	Mx	-.0075	5
13	MP2A	X	1.877	2
14	MP2A	Z	3.25	2
15	MP2A	Mx	-.000938	2
16	MP2A	X	1.877	4
17	MP2A	Z	3.25	4
18	MP2A	Mx	-.000938	4
19	MP1A	X	2.991	.5
20	MP1A	Z	5.181	.5
21	MP1A	Mx	-.0015	.5
22	MP1A	X	2.991	5.5
23	MP1A	Z	5.181	5.5
24	MP1A	Mx	-.0015	5.5
25	MP5A	X	2.991	.5
26	MP5A	Z	5.181	.5
27	MP5A	Mx	-.0015	.5
28	MP5A	X	2.991	5.5
29	MP5A	Z	5.181	5.5
30	MP5A	Mx	-.0015	5.5



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Member Point Loads (BLC 32 : Antenna Wm (150 Deg)) (Continued)

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
31	MP4A	X	.394	4
32	MP4A	Z	.683	4
33	MP4A	Mx	.000368	4
34	MP4A	X	1.632	.5
35	MP4A	Z	2.826	.5
36	MP4A	Mx	.000816	.5
37	MP3A	X	1.565	3.75
38	MP3A	Z	2.71	3.75
39	MP3A	Mx	-.000783	3.75
40	OVP	X	2.738	1.25
41	OVP	Z	4.743	1.25
42	OVP	Mx	0	1.25
43	MP3A	X	.901	1
44	MP3A	Z	1.56	1
45	MP3A	Mx	-.000375	1
46	MP3A	X	.901	1
47	MP3A	Z	1.56	1
48	MP3A	Mx	.000375	1

Member Point Loads (BLC 33 : Antenna Wm (180 Deg))

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	0	1
2	MP4A	Z	10.433	1
3	MP4A	Mx	.0065	1
4	MP4A	X	0	5
5	MP4A	Z	10.433	5
6	MP4A	Mx	.0065	5
7	MP4A	X	0	1
8	MP4A	Z	10.433	1
9	MP4A	Mx	-.0065	1
10	MP4A	X	0	5
11	MP4A	Z	10.433	5
12	MP4A	Mx	-.0065	5
13	MP2A	X	0	2
14	MP2A	Z	4.489	2
15	MP2A	Mx	0	2
16	MP2A	X	0	4
17	MP2A	Z	4.489	4
18	MP2A	Mx	0	4
19	MP1A	X	0	.5
20	MP1A	Z	5.737	.5
21	MP1A	Mx	0	.5
22	MP1A	X	0	5.5
23	MP1A	Z	5.737	5.5
24	MP1A	Mx	0	5.5
25	MP5A	X	0	.5
26	MP5A	Z	5.737	.5
27	MP5A	Mx	0	.5
28	MP5A	X	0	5.5
29	MP5A	Z	5.737	5.5
30	MP5A	Mx	0	5.5
31	MP4A	X	0	4
32	MP4A	Z	.854	4
33	MP4A	Mx	.000213	4
34	MP4A	X	0	.5
35	MP4A	Z	3.556	.5



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Member Point Loads (BLC 33 : Antenna Wm (180 Deg)) (Continued)

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
36	MP4A	Mx	0	.5
37	MP3A	X	0	3.75
38	MP3A	Z	3.528	3.75
39	MP3A	Mx	0	3.75
40	OVP	X	0	1.25
41	OVP	Z	5.908	1.25
42	OVP	Mx	0	1.25
43	MP3A	X	0	1
44	MP3A	Z	2.182	1
45	MP3A	Mx	0	1
46	MP3A	X	0	1
47	MP3A	Z	2.182	1
48	MP3A	Mx	0	1

Member Point Loads (BLC 34 : Antenna Wm (210 Deg))

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	-4.769	1
2	MP4A	Z	8.26	1
3	MP4A	Mx	.0075	1
4	MP4A	X	-4.769	5
5	MP4A	Z	8.26	5
6	MP4A	Mx	.0075	5
7	MP4A	X	-4.769	1
8	MP4A	Z	8.26	1
9	MP4A	Mx	-.0028	1
10	MP4A	X	-4.769	5
11	MP4A	Z	8.26	5
12	MP4A	Mx	-.0028	5
13	MP2A	X	-1.877	2
14	MP2A	Z	3.25	2
15	MP2A	Mx	.000938	2
16	MP2A	X	-1.877	4
17	MP2A	Z	3.25	4
18	MP2A	Mx	.000938	4
19	MP1A	X	-2.991	.5
20	MP1A	Z	5.181	.5
21	MP1A	Mx	.0015	.5
22	MP1A	X	-2.991	5.5
23	MP1A	Z	5.181	5.5
24	MP1A	Mx	.0015	5.5
25	MP5A	X	-2.991	.5
26	MP5A	Z	5.181	.5
27	MP5A	Mx	.0015	.5
28	MP5A	X	-2.991	5.5
29	MP5A	Z	5.181	5.5
30	MP5A	Mx	.0015	5.5
31	MP4A	X	-.394	4
32	MP4A	Z	.683	4
33	MP4A	Mx	-2.6e-5	4
34	MP4A	X	-1.632	.5
35	MP4A	Z	2.826	.5
36	MP4A	Mx	-.000816	.5
37	MP3A	X	-1.565	3.75
38	MP3A	Z	2.71	3.75
39	MP3A	Mx	.000783	3.75
40	OVP	X	-3.386	1.25



Member Point Loads (BLC 34 : Antenna Wm (210 Deg)) (Continued)

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
41	OVP	Z	5.865	1.25
42	OVP	Mx	0	1.25
43	MP3A	X	-901	1
44	MP3A	Z	1.56	1
45	MP3A	Mx	.000375	1
46	MP3A	X	-901	1
47	MP3A	Z	1.56	1
48	MP3A	Mx	-.000375	1

Member Point Loads (BLC 35 : Antenna Wm (240 Deg))

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	-6.709	1
2	MP4A	Z	3.874	1
3	MP4A	Mx	.0058	1
4	MP4A	X	-6.709	5
5	MP4A	Z	3.874	5
6	MP4A	Mx	.0058	5
7	MP4A	X	-6.709	1
8	MP4A	Z	3.874	1
9	MP4A	Mx	.000933	1
10	MP4A	X	-6.709	5
11	MP4A	Z	3.874	5
12	MP4A	Mx	.000933	5
13	MP2A	X	-1.976	2
14	MP2A	Z	1.141	2
15	MP2A	Mx	.000988	2
16	MP2A	X	-1.976	4
17	MP2A	Z	1.141	4
18	MP2A	Mx	.000988	4
19	MP1A	X	-5.606	.5
20	MP1A	Z	3.237	.5
21	MP1A	Mx	.0028	.5
22	MP1A	X	-5.606	5.5
23	MP1A	Z	3.237	5.5
24	MP1A	Mx	.0028	5.5
25	MP5A	X	-5.606	.5
26	MP5A	Z	3.237	.5
27	MP5A	Mx	.0028	.5
28	MP5A	X	-5.606	5.5
29	MP5A	Z	3.237	5.5
30	MP5A	Mx	.0028	5.5
31	MP4A	X	-.569	4
32	MP4A	Z	.328	4
33	MP4A	Mx	-.000202	4
34	MP4A	X	-2.319	.5
35	MP4A	Z	1.339	.5
36	MP4A	Mx	-.0012	.5
37	MP3A	X	-2.02	3.75
38	MP3A	Z	1.166	3.75
39	MP3A	Mx	.001	3.75
40	OVP	X	-6.239	1.25
41	OVP	Z	3.602	1.25
42	OVP	Mx	0	1.25
43	MP3A	X	-.902	1
44	MP3A	Z	.521	1
45	MP3A	Mx	.000376	1



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Member Point Loads (BLC 35 : Antenna Wm (240 Deg)) (Continued)

	Member Label	Direction	Magnitude[lb, k-ft]	Location[ft, %]
46	MP3A	X	-.902	1
47	MP3A	Z	.521	1
48	MP3A	Mx	-.000376	1

Member Point Loads (BLC 36 : Antenna Wm (270 Deg))

	Member Label	Direction	Magnitude[lb, k-ft]	Location[ft, %]
1	MP4A	X	-6.852	1
2	MP4A	Z	0	1
3	MP4A	Mx	.0034	1
4	MP4A	X	-6.852	5
5	MP4A	Z	0	5
6	MP4A	Mx	.0034	5
7	MP4A	X	-6.852	1
8	MP4A	Z	0	1
9	MP4A	Mx	.0034	1
10	MP4A	X	-6.852	5
11	MP4A	Z	0	5
12	MP4A	Mx	.0034	5
13	MP2A	X	-1.546	2
14	MP2A	Z	0	2
15	MP2A	Mx	.000773	2
16	MP2A	X	-1.546	4
17	MP2A	Z	0	4
18	MP2A	Mx	.000773	4
19	MP1A	X	-6.718	.5
20	MP1A	Z	0	.5
21	MP1A	Mx	.0034	.5
22	MP1A	X	-6.718	5.5
23	MP1A	Z	0	5.5
24	MP1A	Mx	.0034	5.5
25	MP5A	X	-6.718	.5
26	MP5A	Z	0	.5
27	MP5A	Mx	.0034	.5
28	MP5A	X	-6.718	5.5
29	MP5A	Z	0	5.5
30	MP5A	Mx	.0034	5.5
31	MP4A	X	-.591	4
32	MP4A	Z	0	4
33	MP4A	Mx	-.000296	4
34	MP4A	X	-2.386	.5
35	MP4A	Z	0	.5
36	MP4A	Mx	-.0012	.5
37	MP3A	X	-1.935	3.75
38	MP3A	Z	0	3.75
39	MP3A	Mx	.000967	3.75
40	OVP	X	-6.772	1.25
41	OVP	Z	0	1.25
42	OVP	Mx	0	1.25
43	MP3A	X	-.662	1
44	MP3A	Z	0	1
45	MP3A	Mx	.000276	1
46	MP3A	X	-.662	1
47	MP3A	Z	0	1
48	MP3A	Mx	-.000276	1



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Member Point Loads (BLC 37 : Antenna Wm (300 Deg))

	Member Label	Direction	Magnitude[lb. k-ft]	Location[ft. %]
1	MP4A	X	-6.709	1
2	MP4A	Z	-3.874	1
3	MP4A	Mx	.000933	1
4	MP4A	X	-6.709	5
5	MP4A	Z	-3.874	5
6	MP4A	Mx	.000933	5
7	MP4A	X	-6.709	1
8	MP4A	Z	-3.874	1
9	MP4A	Mx	.0058	1
10	MP4A	X	-6.709	5
11	MP4A	Z	-3.874	5
12	MP4A	Mx	.0058	5
13	MP2A	X	-1.976	2
14	MP2A	Z	-1.141	2
15	MP2A	Mx	.000988	2
16	MP2A	X	-1.976	4
17	MP2A	Z	-1.141	4
18	MP2A	Mx	.000988	4
19	MP1A	X	-5.606	.5
20	MP1A	Z	-3.237	.5
21	MP1A	Mx	.0028	.5
22	MP1A	X	-5.606	5.5
23	MP1A	Z	-3.237	5.5
24	MP1A	Mx	.0028	5.5
25	MP5A	X	-5.606	.5
26	MP5A	Z	-3.237	.5
27	MP5A	Mx	.0028	.5
28	MP5A	X	-5.606	5.5
29	MP5A	Z	-3.237	5.5
30	MP5A	Mx	.0028	5.5
31	MP4A	X	-569	4
32	MP4A	Z	-328	4
33	MP4A	Mx	-.000366	4
34	MP4A	X	-2.319	.5
35	MP4A	Z	-1.339	.5
36	MP4A	Mx	-.0012	.5
37	MP3A	X	-2.02	3.75
38	MP3A	Z	-1.166	3.75
39	MP3A	Mx	.001	3.75
40	OVP	X	-5.117	1.25
41	OVP	Z	-2.954	1.25
42	OVP	Mx	0	1.25
43	MP3A	X	-902	1
44	MP3A	Z	-521	1
45	MP3A	Mx	.000376	1
46	MP3A	X	-902	1
47	MP3A	Z	-521	1
48	MP3A	Mx	-.000376	1

Member Point Loads (BLC 38 : Antenna Wm (330 Deg))

	Member Label	Direction	Magnitude[lb. k-ft]	Location[ft. %]
1	MP4A	X	-4.769	1
2	MP4A	Z	-8.26	1
3	MP4A	Mx	-.0028	1
4	MP4A	X	-4.769	5
5	MP4A	Z	-8.26	5



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Member Point Loads (BLC 38 : Antenna Wm (330 Deg)) (Continued)

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
6	MP4A	Mx	-.0028	5
7	MP4A	X	-4.769	1
8	MP4A	Z	-8.26	1
9	MP4A	Mx	.0075	1
10	MP4A	X	-4.769	5
11	MP4A	Z	-8.26	5
12	MP4A	Mx	.0075	5
13	MP2A	X	-1.877	2
14	MP2A	Z	-3.25	2
15	MP2A	Mx	.000938	2
16	MP2A	X	-1.877	4
17	MP2A	Z	-3.25	4
18	MP2A	Mx	.000938	4
19	MP1A	X	-2.991	.5
20	MP1A	Z	-5.181	.5
21	MP1A	Mx	.0015	.5
22	MP1A	X	-2.991	5.5
23	MP1A	Z	-5.181	5.5
24	MP1A	Mx	.0015	5.5
25	MP5A	X	-2.991	.5
26	MP5A	Z	-5.181	.5
27	MP5A	Mx	.0015	.5
28	MP5A	X	-2.991	5.5
29	MP5A	Z	-5.181	5.5
30	MP5A	Mx	.0015	5.5
31	MP4A	X	-.394	4
32	MP4A	Z	-.683	4
33	MP4A	Mx	-.000368	4
34	MP4A	X	-1.632	.5
35	MP4A	Z	-2.826	.5
36	MP4A	Mx	-.000816	.5
37	MP3A	X	-1.565	3.75
38	MP3A	Z	-2.71	3.75
39	MP3A	Mx	.000783	3.75
40	OVP	X	-2.738	1.25
41	OVP	Z	-4.743	1.25
42	OVP	Mx	0	1.25
43	MP3A	X	-.901	1
44	MP3A	Z	-1.56	1
45	MP3A	Mx	.000375	1
46	MP3A	X	-.901	1
47	MP3A	Z	-1.56	1
48	MP3A	Mx	-.000375	1

Member Point Loads (BLC 77 : Lm1)

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	M11	Y	-500	0

Member Point Loads (BLC 78 : Lm2)

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	M7	Y	-500	0

Member Point Loads (BLC 79 : Lv1)

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	M1	Y	-250	%50



Member Point Loads (BLC 80 : Lv2)

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	M1	Y	-250	%100

Member Point Loads (BLC 81 : Antenna Ev)

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	Y	-1.3977	1
2	MP4A	My	-.000699	1
3	MP4A	Mz	.000874	1
4	MP4A	Y	-1.3977	5
5	MP4A	My	-.000699	5
6	MP4A	Mz	.000874	5
7	MP4A	Y	-1.3977	1
8	MP4A	My	-.000699	1
9	MP4A	Mz	-.000874	1
10	MP4A	Y	-1.3977	5
11	MP4A	My	-.000699	5
12	MP4A	Mz	-.000874	5
13	MP2A	Y	-1.9232	2
14	MP2A	My	-.000962	2
15	MP2A	Mz	0	2
16	MP2A	Y	-1.9232	4
17	MP2A	My	-.000962	4
18	MP2A	Mz	0	4
19	MP1A	Y	-.3533	.5
20	MP1A	My	-.000177	.5
21	MP1A	Mz	0	.5
22	MP1A	Y	-.3533	5.5
23	MP1A	My	-.000177	5.5
24	MP1A	Mz	0	5.5
25	MP5A	Y	-.3533	.5
26	MP5A	My	-.000177	.5
27	MP5A	Mz	0	.5
28	MP5A	Y	-.3533	5.5
29	MP5A	My	-.000177	5.5
30	MP5A	Mz	0	5.5
31	MP4A	Y	-.4593	4
32	MP4A	My	.00023	4
33	MP4A	Mz	.000115	4
34	MP4A	Y	-3.7271	.5
35	MP4A	My	.0019	.5
36	MP4A	Mz	0	.5
37	MP3A	Y	-3.1044	3.75
38	MP3A	My	-.0016	3.75
39	MP3A	Mz	0	3.75
40	OVP	Y	-1.4131	1.25
41	OVP	My	0	1.25
42	OVP	Mz	0	1.25
43	MP3A	Y	-.7772	1
44	MP3A	My	-.000324	1
45	MP3A	Mz	0	1
46	MP3A	Y	-.7772	1
47	MP3A	My	.000324	1
48	MP3A	Mz	0	1

Member Point Loads (BLC 82 : Antenna Eh (0 Deg))

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	Z	-3.4942	1



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Member Point Loads (BLC 82 : Antenna Eh (0 Deg)) (Continued)

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
2	MP4A	Mx	-0.022	1
3	MP4A	Z	-3.4942	5
4	MP4A	Mx	-0.022	5
5	MP4A	Z	-3.4942	1
6	MP4A	Mx	.0022	1
7	MP4A	Z	-3.4942	5
8	MP4A	Mx	.0022	5
9	MP2A	Z	-4.8079	2
10	MP2A	Mx	0	2
11	MP2A	Z	-4.8079	4
12	MP2A	Mx	0	4
13	MP1A	Z	-8832	.5
14	MP1A	Mx	0	.5
15	MP1A	Z	-8832	5.5
16	MP1A	Mx	0	5.5
17	MP5A	Z	-8832	.5
18	MP5A	Mx	0	.5
19	MP5A	Z	-8832	5.5
20	MP5A	Mx	0	5.5
21	MP4A	Z	-1.1482	4
22	MP4A	Mx	-0.00287	4
23	MP4A	Z	-9.3178	.5
24	MP4A	Mx	0	.5
25	MP3A	Z	-7.7611	3.75
26	MP3A	Mx	0	3.75
27	OVP	Z	-3.5328	1.25
28	OVP	Mx	0	1.25
29	MP3A	Z	-1.943	1
30	MP3A	Mx	0	1
31	MP3A	Z	-1.943	1
32	MP3A	Mx	0	1

Member Point Loads (BLC 83 : Antenna Eh (90 Deg))

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
1	MP4A	X	3.4942	1
2	MP4A	Mx	-0.0017	1
3	MP4A	X	3.4942	5
4	MP4A	Mx	-0.0017	5
5	MP4A	X	3.4942	1
6	MP4A	Mx	-0.0017	1
7	MP4A	X	3.4942	5
8	MP4A	Mx	-0.0017	5
9	MP2A	X	4.8079	2
10	MP2A	Mx	-0.0024	2
11	MP2A	X	4.8079	4
12	MP2A	Mx	-0.0024	4
13	MP1A	X	8832	.5
14	MP1A	Mx	-0.000442	.5
15	MP1A	X	8832	5.5
16	MP1A	Mx	-0.000442	5.5
17	MP5A	X	8832	.5
18	MP5A	Mx	-0.000442	.5
19	MP5A	X	8832	5.5
20	MP5A	Mx	-0.000442	5.5
21	MP4A	X	1.1482	4
22	MP4A	Mx	.000574	4



Member Point Loads (BLC 83 : Antenna Eh (90 Deg)) (Continued)

	Member Label	Direction	Magnitude[lb.k-ft]	Location[ft.%]
23	MP4A	X	9.3178	.5
24	MP4A	Mx	.0047	.5
25	MP3A	X	7.7611	3.75
26	MP3A	Mx	-.0039	3.75
27	OVP	X	3.5328	1.25
28	OVP	Mx	0	1.25
29	MP3A	X	1.943	1
30	MP3A	Mx	-.00081	1
31	MP3A	X	1.943	1
32	MP3A	Mx	.00081	1

Member Distributed Loads (BLC 40 : Structure Di)

	Member Label	Direction	Start Magnitude	End Magnitude[lb.k-ft]	Start Location[ft.]	End Location[ft.]
1	M1	Y	-5.985	-5.985	0	%100
2	MP1A	Y	-4.5121	-4.5121	0	%100
3	M17A	Y	-7.2941	-7.2941	0	%100
4	M18A	Y	-8.8087	-8.8087	0	%100
5	MP2A	Y	-4.5121	-4.5121	0	%100
6	MP3A	Y	-4.5121	-4.5121	0	%100
7	MP4A	Y	-4.5121	-4.5121	0	%100
8	MP5A	Y	-4.5121	-4.5121	0	%100
9	M17	Y	-5.985	-5.985	0	%100
10	M25A	Y	-6.9572	-6.9572	0	%100
11	OVP	Y	-4.5121	-4.5121	0	%100

Member Distributed Loads (BLC 41 : Structure Wo (0 Deg))

	Member Label	Direction	Start Magnitude	End Magnitude[lb.k-ft]	Start Location[ft.]	End Location[ft.]
1	M1	X	0	0	0	%100
2	M1	Z	-12.7258	-12.7258	0	%100
3	MP1A	X	0	0	0	%100
4	MP1A	Z	-8.6354	-8.6354	0	%100
5	M17A	X	0	0	0	%100
6	M17A	Z	-9.0642	-9.0642	0	%100
7	M18A	X	0	0	0	%100
8	M18A	Z	0	0	0	%100
9	MP2A	X	0	0	0	%100
10	MP2A	Z	-8.6354	-8.6354	0	%100
11	MP3A	X	0	0	0	%100
12	MP3A	Z	-8.6354	-8.6354	0	%100
13	MP4A	X	0	0	0	%100
14	MP4A	Z	-8.6354	-8.6354	0	%100
15	MP5A	X	0	0	0	%100
16	MP5A	Z	-8.6354	-8.6354	0	%100
17	M17	X	0	0	0	%100
18	M17	Z	-12.7258	-12.7258	0	%100
19	M25A	X	0	0	0	%100
20	M25A	Z	-2.4836	-2.4836	0	%100
21	OVP	X	0	0	0	%100
22	OVP	Z	-7.0615	-7.0615	0	%100

Member Distributed Loads (BLC 42 : Structure Wo (30 Deg))

	Member Label	Direction	Start Magnitude	End Magnitude[lb.k-ft]	Start Location[ft.]	End Location[ft.]
1	M1	X	4.7722	4.7722	0	%100
2	M1	Z	-8.2657	-8.2657	0	%100



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Member Distributed Loads (BLC 42 : Structure Wo (30 Deg)) (Continued)

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location(ft)	End Location(ft)	
3	MP1A	X	4.3177	4.3177	0		%100
4	MP1A	Z	-7.4785	-7.4785	0		%100
5	M17A	X	4.5321	4.5321	0		%100
6	M17A	Z	-7.8498	-7.8498	0		%100
7	M18A	X	1.4095	1.4095	0		%100
8	M18A	Z	-2.4413	-2.4413	0		%100
9	MP2A	X	4.3177	4.3177	0		%100
10	MP2A	Z	-7.4785	-7.4785	0		%100
11	MP3A	X	4.3177	4.3177	0		%100
12	MP3A	Z	-7.4785	-7.4785	0		%100
13	MP4A	X	4.3177	4.3177	0		%100
14	MP4A	Z	-7.4785	-7.4785	0		%100
15	MP5A	X	4.3177	4.3177	0		%100
16	MP5A	Z	-7.4785	-7.4785	0		%100
17	M17	X	4.7722	4.7722	0		%100
18	M17	Z	-8.2657	-8.2657	0		%100
19	M25A	X	3.6082	3.6082	0		%100
20	M25A	Z	-6.2495	-6.2495	0		%100
21	OVP	X	3.5307	3.5307	0		%100
22	OVP	Z	-6.1154	-6.1154	0		%100

Member Distributed Loads (BLC 43 : Structure Wo (60 Deg))

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location(ft)	End Location(ft)	
1	M1	X	2.7552	2.7552	0		%100
2	M1	Z	-1.5907	-1.5907	0		%100
3	MP1A	X	7.4785	7.4785	0		%100
4	MP1A	Z	-4.3177	-4.3177	0		%100
5	M17A	X	7.8498	7.8498	0		%100
6	M17A	Z	-4.5321	-4.5321	0		%100
7	M18A	X	7.324	7.324	0		%100
8	M18A	Z	-4.2285	-4.2285	0		%100
9	MP2A	X	7.4785	7.4785	0		%100
10	MP2A	Z	-4.3177	-4.3177	0		%100
11	MP3A	X	7.4785	7.4785	0		%100
12	MP3A	Z	-4.3177	-4.3177	0		%100
13	MP4A	X	7.4785	7.4785	0		%100
14	MP4A	Z	-4.3177	-4.3177	0		%100
15	MP5A	X	7.4785	7.4785	0		%100
16	MP5A	Z	-4.3177	-4.3177	0		%100
17	M17	X	2.7552	2.7552	0		%100
18	M17	Z	-1.5907	-1.5907	0		%100
19	M25A	X	8.1989	8.1989	0		%100
20	M25A	Z	-4.7336	-4.7336	0		%100
21	OVP	X	6.1154	6.1154	0		%100
22	OVP	Z	-3.5307	-3.5307	0		%100

Member Distributed Loads (BLC 44 : Structure Wo (90 Deg))

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location(ft)	End Location(ft)	
1	M1	X	0	0	0		%100
2	M1	Z	0	0	0		%100
3	MP1A	X	8.6354	8.6354	0		%100
4	MP1A	Z	0	0	0		%100
5	M17A	X	9.0642	9.0642	0		%100
6	M17A	Z	0	0	0		%100
7	M18A	X	11.2761	11.2761	0		%100
8	M18A	Z	0	0	0		%100



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Member Distributed Loads (BLC 44 : Structure Wo (90 Deg)) (Continued)

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location[ft]	End Location[ft]
9	MP2A	X	8.6354	8.6354	0	%100
10	MP2A	Z	0	0	0	%100
11	MP3A	X	8.6354	8.6354	0	%100
12	MP3A	Z	0	0	0	%100
13	MP4A	X	8.6354	8.6354	0	%100
14	MP4A	Z	0	0	0	%100
15	MP5A	X	8.6354	8.6354	0	%100
16	MP5A	Z	0	0	0	%100
17	M17	X	0	0	0	%100
18	M17	Z	0	0	0	%100
19	M25A	X	6.9855	6.9855	0	%100
20	M25A	Z	0	0	0	%100
21	OVP	X	7.0615	7.0615	0	%100
22	OVP	Z	0	0	0	%100

Member Distributed Loads (BLC 45 : Structure Wo (120 Deg))

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location[ft]	End Location[ft]
1	M1	X	2.7552	2.7552	0	%100
2	M1	Z	1.5907	1.5907	0	%100
3	MP1A	X	7.4785	7.4785	0	%100
4	MP1A	Z	4.3177	4.3177	0	%100
5	M17A	X	7.8498	7.8498	0	%100
6	M17A	Z	4.5321	4.5321	0	%100
7	M18A	X	7.324	7.324	0	%100
8	M18A	Z	4.2285	4.2285	0	%100
9	MP2A	X	7.4785	7.4785	0	%100
10	MP2A	Z	4.3177	4.3177	0	%100
11	MP3A	X	7.4785	7.4785	0	%100
12	MP3A	Z	4.3177	4.3177	0	%100
13	MP4A	X	7.4785	7.4785	0	%100
14	MP4A	Z	4.3177	4.3177	0	%100
15	MP5A	X	7.4785	7.4785	0	%100
16	MP5A	Z	4.3177	4.3177	0	%100
17	M17	X	2.7552	2.7552	0	%100
18	M17	Z	1.5907	1.5907	0	%100
19	M25A	X	1.951	1.951	0	%100
20	M25A	Z	1.1264	1.1264	0	%100
21	OVP	X	6.1154	6.1154	0	%100
22	OVP	Z	3.5307	3.5307	0	%100

Member Distributed Loads (BLC 46 : Structure Wo (150 Deg))

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location[ft]	End Location[ft]
1	M1	X	4.7722	4.7722	0	%100
2	M1	Z	8.2657	8.2657	0	%100
3	MP1A	X	4.3177	4.3177	0	%100
4	MP1A	Z	7.4785	7.4785	0	%100
5	M17A	X	4.5321	4.5321	0	%100
6	M17A	Z	7.8498	7.8498	0	%100
7	M18A	X	1.4095	1.4095	0	%100
8	M18A	Z	2.4413	2.4413	0	%100
9	MP2A	X	4.3177	4.3177	0	%100
10	MP2A	Z	7.4785	7.4785	0	%100
11	MP3A	X	4.3177	4.3177	0	%100
12	MP3A	Z	7.4785	7.4785	0	%100
13	MP4A	X	4.3177	4.3177	0	%100
14	MP4A	Z	7.4785	7.4785	0	%100



Member Distributed Loads (BLC 46 : Structure Wo (150 Deg)) (Continued)

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location	End Location
15	MP5A	X	4.3177	4.3177	0	%100
16	MP5A	Z	7.4785	7.4785	0	%100
17	M17	X	4.7722	4.7722	0	%100
18	M17	Z	8.2657	8.2657	0	%100
19	M25A	X	.000938	.000938	0	%100
20	M25A	Z	.0016	.0016	0	%100
21	OVP	X	3.5307	3.5307	0	%100
22	OVP	Z	6.1154	6.1154	0	%100

Member Distributed Loads (BLC 47 : Structure Wo (180 Deg))

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location	End Location
1	M1	X	0	0	0	%100
2	M1	Z	12.7258	12.7258	0	%100
3	MP1A	X	0	0	0	%100
4	MP1A	Z	8.6354	8.6354	0	%100
5	M17A	X	0	0	0	%100
6	M17A	Z	9.0642	9.0642	0	%100
7	M18A	X	0	0	0	%100
8	M18A	Z	0	0	0	%100
9	MP2A	X	0	0	0	%100
10	MP2A	Z	8.6354	8.6354	0	%100
11	MP3A	X	0	0	0	%100
12	MP3A	Z	8.6354	8.6354	0	%100
13	MP4A	X	0	0	0	%100
14	MP4A	Z	8.6354	8.6354	0	%100
15	MP5A	X	0	0	0	%100
16	MP5A	Z	8.6354	8.6354	0	%100
17	M17	X	0	0	0	%100
18	M17	Z	12.7258	12.7258	0	%100
19	M25A	X	0	0	0	%100
20	M25A	Z	2.4836	2.4836	0	%100
21	OVP	X	0	0	0	%100
22	OVP	Z	7.0615	7.0615	0	%100

Member Distributed Loads (BLC 48 : Structure Wo (210 Deg))

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location	End Location
1	M1	X	-4.7722	-4.7722	0	%100
2	M1	Z	8.2657	8.2657	0	%100
3	MP1A	X	-4.3177	-4.3177	0	%100
4	MP1A	Z	7.4785	7.4785	0	%100
5	M17A	X	-4.5321	-4.5321	0	%100
6	M17A	Z	7.8498	7.8498	0	%100
7	M18A	X	-1.4095	-1.4095	0	%100
8	M18A	Z	2.4413	2.4413	0	%100
9	MP2A	X	-4.3177	-4.3177	0	%100
10	MP2A	Z	7.4785	7.4785	0	%100
11	MP3A	X	-4.3177	-4.3177	0	%100
12	MP3A	Z	7.4785	7.4785	0	%100
13	MP4A	X	-4.3177	-4.3177	0	%100
14	MP4A	Z	7.4785	7.4785	0	%100
15	MP5A	X	-4.3177	-4.3177	0	%100
16	MP5A	Z	7.4785	7.4785	0	%100
17	M17	X	-4.7722	-4.7722	0	%100
18	M17	Z	8.2657	8.2657	0	%100
19	M25A	X	-3.6082	-3.6082	0	%100
20	M25A	Z	6.2495	6.2495	0	%100



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Member Distributed Loads (BLC 48 : Structure Wo (210 Deg)) (Continued)

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location[ft]	End Location[ft]
21	OVP	X	-3.5307	-3.5307	0	%100
22	OVP	Z	6.1154	6.1154	0	%100

Member Distributed Loads (BLC 49 : Structure Wo (240 Deg))

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location[ft]	End Location[ft]
1	M1	X	-2.7552	-2.7552	0	%100
2	M1	Z	1.5907	1.5907	0	%100
3	MP1A	X	-7.4785	-7.4785	0	%100
4	MP1A	Z	4.3177	4.3177	0	%100
5	M17A	X	-7.8498	-7.8498	0	%100
6	M17A	Z	4.5321	4.5321	0	%100
7	M18A	X	-7.324	-7.324	0	%100
8	M18A	Z	4.2285	4.2285	0	%100
9	MP2A	X	-7.4785	-7.4785	0	%100
10	MP2A	Z	4.3177	4.3177	0	%100
11	MP3A	X	-7.4785	-7.4785	0	%100
12	MP3A	Z	4.3177	4.3177	0	%100
13	MP4A	X	-7.4785	-7.4785	0	%100
14	MP4A	Z	4.3177	4.3177	0	%100
15	MP5A	X	-7.4785	-7.4785	0	%100
16	MP5A	Z	4.3177	4.3177	0	%100
17	M17	X	-2.7552	-2.7552	0	%100
18	M17	Z	1.5907	1.5907	0	%100
19	M25A	X	-8.1989	-8.1989	0	%100
20	M25A	Z	4.7336	4.7336	0	%100
21	OVP	X	-6.1154	-6.1154	0	%100
22	OVP	Z	3.5307	3.5307	0	%100

Member Distributed Loads (BLC 50 : Structure Wo (270 Deg))

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location[ft]	End Location[ft]
1	M1	X	0	0	0	%100
2	M1	Z	0	0	0	%100
3	MP1A	X	-8.6354	-8.6354	0	%100
4	MP1A	Z	0	0	0	%100
5	M17A	X	-9.0642	-9.0642	0	%100
6	M17A	Z	0	0	0	%100
7	M18A	X	-11.2761	-11.2761	0	%100
8	M18A	Z	0	0	0	%100
9	MP2A	X	-8.6354	-8.6354	0	%100
10	MP2A	Z	0	0	0	%100
11	MP3A	X	-8.6354	-8.6354	0	%100
12	MP3A	Z	0	0	0	%100
13	MP4A	X	-8.6354	-8.6354	0	%100
14	MP4A	Z	0	0	0	%100
15	MP5A	X	-8.6354	-8.6354	0	%100
16	MP5A	Z	0	0	0	%100
17	M17	X	0	0	0	%100
18	M17	Z	0	0	0	%100
19	M25A	X	-6.9855	-6.9855	0	%100
20	M25A	Z	0	0	0	%100
21	OVP	X	-7.0615	-7.0615	0	%100
22	OVP	Z	0	0	0	%100

Member Distributed Loads (BLC 51 : Structure Wo (300 Deg))

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location[ft]	End Location[ft]
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Member Distributed Loads (BLC 51 : Structure Wo (300 Deg)) (Continued)

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location	End Location
1	M1	X	-2.7552	-2.7552	0	%100
2	M1	Z	-1.5907	-1.5907	0	%100
3	MP1A	X	-7.4785	-7.4785	0	%100
4	MP1A	Z	-4.3177	-4.3177	0	%100
5	M17A	X	-7.8498	-7.8498	0	%100
6	M17A	Z	-4.5321	-4.5321	0	%100
7	M18A	X	-7.324	-7.324	0	%100
8	M18A	Z	-4.2285	-4.2285	0	%100
9	MP2A	X	-7.4785	-7.4785	0	%100
10	MP2A	Z	-4.3177	-4.3177	0	%100
11	MP3A	X	-7.4785	-7.4785	0	%100
12	MP3A	Z	-4.3177	-4.3177	0	%100
13	MP4A	X	-7.4785	-7.4785	0	%100
14	MP4A	Z	-4.3177	-4.3177	0	%100
15	MP5A	X	-7.4785	-7.4785	0	%100
16	MP5A	Z	-4.3177	-4.3177	0	%100
17	M17	X	-2.7552	-2.7552	0	%100
18	M17	Z	-1.5907	-1.5907	0	%100
19	M25A	X	-1.951	-1.951	0	%100
20	M25A	Z	-1.1264	-1.1264	0	%100
21	OVP	X	-6.1154	-6.1154	0	%100
22	OVP	Z	-3.5307	-3.5307	0	%100

Member Distributed Loads (BLC 52 : Structure Wo (330 Deg))

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location	End Location
1	M1	X	-4.7722	-4.7722	0	%100
2	M1	Z	-8.2657	-8.2657	0	%100
3	MP1A	X	-4.3177	-4.3177	0	%100
4	MP1A	Z	-7.4785	-7.4785	0	%100
5	M17A	X	-4.5321	-4.5321	0	%100
6	M17A	Z	-7.8498	-7.8498	0	%100
7	M18A	X	-1.4095	-1.4095	0	%100
8	M18A	Z	-2.4413	-2.4413	0	%100
9	MP2A	X	-4.3177	-4.3177	0	%100
10	MP2A	Z	-7.4785	-7.4785	0	%100
11	MP3A	X	-4.3177	-4.3177	0	%100
12	MP3A	Z	-7.4785	-7.4785	0	%100
13	MP4A	X	-4.3177	-4.3177	0	%100
14	MP4A	Z	-7.4785	-7.4785	0	%100
15	MP5A	X	-4.3177	-4.3177	0	%100
16	MP5A	Z	-7.4785	-7.4785	0	%100
17	M17	X	-4.7722	-4.7722	0	%100
18	M17	Z	-8.2657	-8.2657	0	%100
19	M25A	X	-0.00938	-0.00938	0	%100
20	M25A	Z	-0.0016	-0.0016	0	%100
21	OVP	X	-3.5307	-3.5307	0	%100
22	OVP	Z	-6.1154	-6.1154	0	%100

Member Distributed Loads (BLC 53 : Structure Wi (0 Deg))

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location	End Location
1	M1	X	0	0	0	%100
2	M1	Z	-3.5622	-3.5622	0	%100
3	MP1A	X	0	0	0	%100
4	MP1A	Z	-2.852	-2.852	0	%100
5	M17A	X	0	0	0	%100
6	M17A	Z	-2.6729	-2.6729	0	%100



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Member Distributed Loads (BLC 53 : Structure Wi (0 Deg)) (Continued)

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location[ft]	End Location[ft]
7	M18A	X	0	0	0	%100
8	M18A	Z	0	0	0	%100
9	MP2A	X	0	0	0	%100
10	MP2A	Z	-2.852	-2.852	0	%100
11	MP3A	X	0	0	0	%100
12	MP3A	Z	-2.852	-2.852	0	%100
13	MP4A	X	0	0	0	%100
14	MP4A	Z	-2.852	-2.852	0	%100
15	MP5A	X	0	0	0	%100
16	MP5A	Z	-2.852	-2.852	0	%100
17	M17	X	0	0	0	%100
18	M17	Z	-3.5622	-3.5622	0	%100
19	M25A	X	0	0	0	%100
20	M25A	Z	-7.532	-7.532	0	%100
21	OVP	X	0	0	0	%100
22	OVP	Z	-2.3733	-2.3733	0	%100

Member Distributed Loads (BLC 54 : Structure Wi (30 Deg))

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location[ft]	End Location[ft]
1	M1	X	1.3358	1.3358	0	%100
2	M1	Z	-2.3137	-2.3137	0	%100
3	MP1A	X	1.426	1.426	0	%100
4	MP1A	Z	-2.4699	-2.4699	0	%100
5	M17A	X	1.3364	1.3364	0	%100
6	M17A	Z	-2.3148	-2.3148	0	%100
7	M18A	X	.3856	.3856	0	%100
8	M18A	Z	-6.678	-6.678	0	%100
9	MP2A	X	1.426	1.426	0	%100
10	MP2A	Z	-2.4699	-2.4699	0	%100
11	MP3A	X	1.426	1.426	0	%100
12	MP3A	Z	-2.4699	-2.4699	0	%100
13	MP4A	X	1.426	1.426	0	%100
14	MP4A	Z	-2.4699	-2.4699	0	%100
15	MP5A	X	1.426	1.426	0	%100
16	MP5A	Z	-2.4699	-2.4699	0	%100
17	M17	X	1.3358	1.3358	0	%100
18	M17	Z	-2.3137	-2.3137	0	%100
19	M25A	X	1.0942	1.0942	0	%100
20	M25A	Z	-1.8952	-1.8952	0	%100
21	OVP	X	1.1867	1.1867	0	%100
22	OVP	Z	-2.0553	-2.0553	0	%100

Member Distributed Loads (BLC 55 : Structure Wi (60 Deg))

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location[ft]	End Location[ft]
1	M1	X	.7712	.7712	0	%100
2	M1	Z	-4.453	-4.453	0	%100
3	MP1A	X	2.4699	2.4699	0	%100
4	MP1A	Z	-1.426	-1.426	0	%100
5	M17A	X	2.3148	2.3148	0	%100
6	M17A	Z	-1.3364	-1.3364	0	%100
7	M18A	X	2.0035	2.0035	0	%100
8	M18A	Z	-1.1567	-1.1567	0	%100
9	MP2A	X	2.4699	2.4699	0	%100
10	MP2A	Z	-1.426	-1.426	0	%100
11	MP3A	X	2.4699	2.4699	0	%100
12	MP3A	Z	-1.426	-1.426	0	%100



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Member Distributed Loads (BLC 55 : Structure Wi (60 Deg)) (Continued)

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location	End Location
13	MP4A	X	2.4699	2.4699	0	%100
14	MP4A	Z	-1.426	-1.426	0	%100
15	MP5A	X	2.4699	2.4699	0	%100
16	MP5A	Z	-1.426	-1.426	0	%100
17	M17	X	.7712	.7712	0	%100
18	M17	Z	-.4453	-.4453	0	%100
19	M25A	X	2.4864	2.4864	0	%100
20	M25A	Z	-1.4355	-1.4355	0	%100
21	OVP	X	2.0553	2.0553	0	%100
22	OVP	Z	-1.1867	-1.1867	0	%100

Member Distributed Loads (BLC 56 : Structure Wi (90 Deg))

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location	End Location
1	M1	X	0	0	0	%100
2	M1	Z	0	0	0	%100
3	MP1A	X	2.852	2.852	0	%100
4	MP1A	Z	0	0	0	%100
5	M17A	X	2.6729	2.6729	0	%100
6	M17A	Z	0	0	0	%100
7	M18A	X	3.0845	3.0845	0	%100
8	M18A	Z	0	0	0	%100
9	MP2A	X	2.852	2.852	0	%100
10	MP2A	Z	0	0	0	%100
11	MP3A	X	2.852	2.852	0	%100
12	MP3A	Z	0	0	0	%100
13	MP4A	X	2.852	2.852	0	%100
14	MP4A	Z	0	0	0	%100
15	MP5A	X	2.852	2.852	0	%100
16	MP5A	Z	0	0	0	%100
17	M17	X	0	0	0	%100
18	M17	Z	0	0	0	%100
19	M25A	X	2.1184	2.1184	0	%100
20	M25A	Z	0	0	0	%100
21	OVP	X	2.3733	2.3733	0	%100
22	OVP	Z	0	0	0	%100

Member Distributed Loads (BLC 57 : Structure Wi (120 Deg))

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location	End Location
1	M1	X	.7712	.7712	0	%100
2	M1	Z	.4453	.4453	0	%100
3	MP1A	X	2.4699	2.4699	0	%100
4	MP1A	Z	1.426	1.426	0	%100
5	M17A	X	2.3148	2.3148	0	%100
6	M17A	Z	1.3364	1.3364	0	%100
7	M18A	X	2.0035	2.0035	0	%100
8	M18A	Z	1.1567	1.1567	0	%100
9	MP2A	X	2.4699	2.4699	0	%100
10	MP2A	Z	1.426	1.426	0	%100
11	MP3A	X	2.4699	2.4699	0	%100
12	MP3A	Z	1.426	1.426	0	%100
13	MP4A	X	2.4699	2.4699	0	%100
14	MP4A	Z	1.426	1.426	0	%100
15	MP5A	X	2.4699	2.4699	0	%100
16	MP5A	Z	1.426	1.426	0	%100
17	M17	X	.7712	.7712	0	%100
18	M17	Z	.4453	.4453	0	%100



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Member Distributed Loads (BLC 57 : Structure Wi (120 Deg)) (Continued)

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location[ft]	End Location[ft]
19	M25A	X	.5916	.5916	0	%100
20	M25A	Z	.3416	.3416	0	%100
21	OVP	X	2.0553	2.0553	0	%100
22	OVP	Z	1.1867	1.1867	0	%100

Member Distributed Loads (BLC 58 : Structure Wi (150 Deg))

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location[ft]	End Location[ft]
1	M1	X	1.3358	1.3358	0	%100
2	M1	Z	2.3137	2.3137	0	%100
3	MP1A	X	1.426	1.426	0	%100
4	MP1A	Z	2.4699	2.4699	0	%100
5	M17A	X	1.3364	1.3364	0	%100
6	M17A	Z	2.3148	2.3148	0	%100
7	M18A	X	.3856	.3856	0	%100
8	M18A	Z	.6678	.6678	0	%100
9	MP2A	X	1.426	1.426	0	%100
10	MP2A	Z	2.4699	2.4699	0	%100
11	MP3A	X	1.426	1.426	0	%100
12	MP3A	Z	2.4699	2.4699	0	%100
13	MP4A	X	1.426	1.426	0	%100
14	MP4A	Z	2.4699	2.4699	0	%100
15	MP5A	X	1.426	1.426	0	%100
16	MP5A	Z	2.4699	2.4699	0	%100
17	M17	X	1.3358	1.3358	0	%100
18	M17	Z	2.3137	2.3137	0	%100
19	M25A	X	.000284	.000284	0	%100
20	M25A	Z	.000493	.000493	0	%100
21	OVP	X	1.1867	1.1867	0	%100
22	OVP	Z	2.0553	2.0553	0	%100

Member Distributed Loads (BLC 59 : Structure Wi (180 Deg))

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location[ft]	End Location[ft]
1	M1	X	0	0	0	%100
2	M1	Z	3.5622	3.5622	0	%100
3	MP1A	X	0	0	0	%100
4	MP1A	Z	2.852	2.852	0	%100
5	M17A	X	0	0	0	%100
6	M17A	Z	2.6729	2.6729	0	%100
7	M18A	X	0	0	0	%100
8	M18A	Z	0	0	0	%100
9	MP2A	X	0	0	0	%100
10	MP2A	Z	2.852	2.852	0	%100
11	MP3A	X	0	0	0	%100
12	MP3A	Z	2.852	2.852	0	%100
13	MP4A	X	0	0	0	%100
14	MP4A	Z	2.852	2.852	0	%100
15	MP5A	X	0	0	0	%100
16	MP5A	Z	2.852	2.852	0	%100
17	M17	X	0	0	0	%100
18	M17	Z	3.5622	3.5622	0	%100
19	M25A	X	0	0	0	%100
20	M25A	Z	.7532	.7532	0	%100
21	OVP	X	0	0	0	%100
22	OVP	Z	2.3733	2.3733	0	%100



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Member Distributed Loads (BLC 60 : Structure Wi (210 Deg))

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location(ft)	End Location(ft)
1	M1	X	-1.3358	-1.3358	0	%100
2	M1	Z	2.3137	2.3137	0	%100
3	MP1A	X	-1.426	-1.426	0	%100
4	MP1A	Z	2.4699	2.4699	0	%100
5	M17A	X	-1.3364	-1.3364	0	%100
6	M17A	Z	2.3148	2.3148	0	%100
7	M18A	X	-3856	-3856	0	%100
8	M18A	Z	.6678	.6678	0	%100
9	MP2A	X	-1.426	-1.426	0	%100
10	MP2A	Z	2.4699	2.4699	0	%100
11	MP3A	X	-1.426	-1.426	0	%100
12	MP3A	Z	2.4699	2.4699	0	%100
13	MP4A	X	-1.426	-1.426	0	%100
14	MP4A	Z	2.4699	2.4699	0	%100
15	MP5A	X	-1.426	-1.426	0	%100
16	MP5A	Z	2.4699	2.4699	0	%100
17	M17	X	-1.3358	-1.3358	0	%100
18	M17	Z	2.3137	2.3137	0	%100
19	M25A	X	-1.0942	-1.0942	0	%100
20	M25A	Z	1.8952	1.8952	0	%100
21	OVP	X	-1.1867	-1.1867	0	%100
22	OVP	Z	2.0553	2.0553	0	%100

Member Distributed Loads (BLC 61 : Structure Wi (240 Deg))

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location(ft)	End Location(ft)
1	M1	X	-7712	-7712	0	%100
2	M1	Z	.4453	.4453	0	%100
3	MP1A	X	-2.4699	-2.4699	0	%100
4	MP1A	Z	1.426	1.426	0	%100
5	M17A	X	-2.3148	-2.3148	0	%100
6	M17A	Z	1.3364	1.3364	0	%100
7	M18A	X	-2.0035	-2.0035	0	%100
8	M18A	Z	1.1567	1.1567	0	%100
9	MP2A	X	-2.4699	-2.4699	0	%100
10	MP2A	Z	1.426	1.426	0	%100
11	MP3A	X	-2.4699	-2.4699	0	%100
12	MP3A	Z	1.426	1.426	0	%100
13	MP4A	X	-2.4699	-2.4699	0	%100
14	MP4A	Z	1.426	1.426	0	%100
15	MP5A	X	-2.4699	-2.4699	0	%100
16	MP5A	Z	1.426	1.426	0	%100
17	M17	X	-7712	-7712	0	%100
18	M17	Z	.4453	.4453	0	%100
19	M25A	X	-2.4864	-2.4864	0	%100
20	M25A	Z	1.4355	1.4355	0	%100
21	OVP	X	-2.0553	-2.0553	0	%100
22	OVP	Z	1.1867	1.1867	0	%100

Member Distributed Loads (BLC 62 : Structure Wi (270 Deg))

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location(ft)	End Location(ft)
1	M1	X	0	0	0	%100
2	M1	Z	0	0	0	%100
3	MP1A	X	-2.852	-2.852	0	%100
4	MP1A	Z	0	0	0	%100
5	M17A	X	-2.6729	-2.6729	0	%100
6	M17A	Z	0	0	0	%100



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Member Distributed Loads (BLC 62 : Structure Wi (270 Deg)) (Continued)

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location[ft]	End Location[ft]
7	M18A	X	-3.0845	-3.0845	0	%100
8	M18A	Z	0	0	0	%100
9	MP2A	X	-2.852	-2.852	0	%100
10	MP2A	Z	0	0	0	%100
11	MP3A	X	-2.852	-2.852	0	%100
12	MP3A	Z	0	0	0	%100
13	MP4A	X	-2.852	-2.852	0	%100
14	MP4A	Z	0	0	0	%100
15	MP5A	X	-2.852	-2.852	0	%100
16	MP5A	Z	0	0	0	%100
17	M17	X	0	0	0	%100
18	M17	Z	0	0	0	%100
19	M25A	X	-2.1184	-2.1184	0	%100
20	M25A	Z	0	0	0	%100
21	OVP	X	-2.3733	-2.3733	0	%100
22	OVP	Z	0	0	0	%100

Member Distributed Loads (BLC 63 : Structure Wi (300 Deg))

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location[ft]	End Location[ft]
1	M1	X	-7712	-7712	0	%100
2	M1	Z	-4453	-4453	0	%100
3	MP1A	X	-2.4699	-2.4699	0	%100
4	MP1A	Z	-1.426	-1.426	0	%100
5	M17A	X	-2.3148	-2.3148	0	%100
6	M17A	Z	-1.3364	-1.3364	0	%100
7	M18A	X	-2.0035	-2.0035	0	%100
8	M18A	Z	-1.1567	-1.1567	0	%100
9	MP2A	X	-2.4699	-2.4699	0	%100
10	MP2A	Z	-1.426	-1.426	0	%100
11	MP3A	X	-2.4699	-2.4699	0	%100
12	MP3A	Z	-1.426	-1.426	0	%100
13	MP4A	X	-2.4699	-2.4699	0	%100
14	MP4A	Z	-1.426	-1.426	0	%100
15	MP5A	X	-2.4699	-2.4699	0	%100
16	MP5A	Z	-1.426	-1.426	0	%100
17	M17	X	-7712	-7712	0	%100
18	M17	Z	-4453	-4453	0	%100
19	M25A	X	-5916	-5916	0	%100
20	M25A	Z	-3416	-3416	0	%100
21	OVP	X	-2.0553	-2.0553	0	%100
22	OVP	Z	-1.1867	-1.1867	0	%100

Member Distributed Loads (BLC 64 : Structure Wi (330 Deg))

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location[ft]	End Location[ft]
1	M1	X	-1.3358	-1.3358	0	%100
2	M1	Z	-2.3137	-2.3137	0	%100
3	MP1A	X	-1.426	-1.426	0	%100
4	MP1A	Z	-2.4699	-2.4699	0	%100
5	M17A	X	-1.3364	-1.3364	0	%100
6	M17A	Z	-2.3148	-2.3148	0	%100
7	M18A	X	-3856	-3856	0	%100
8	M18A	Z	-6678	-6678	0	%100
9	MP2A	X	-1.426	-1.426	0	%100
10	MP2A	Z	-2.4699	-2.4699	0	%100
11	MP3A	X	-1.426	-1.426	0	%100
12	MP3A	Z	-2.4699	-2.4699	0	%100



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Member Distributed Loads (BLC 64 : Structure Wi (330 Deg)) (Continued)

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location	End Location
13	MP4A	X	-1.426	-1.426	0	%100
14	MP4A	Z	-2.4699	-2.4699	0	%100
15	MP5A	X	-1.426	-1.426	0	%100
16	MP5A	Z	-2.4699	-2.4699	0	%100
17	M17	X	-1.3358	-1.3358	0	%100
18	M17	Z	-2.3137	-2.3137	0	%100
19	M25A	X	-0.00284	-0.00284	0	%100
20	M25A	Z	-0.00493	-0.00493	0	%100
21	OVP	X	-1.1867	-1.1867	0	%100
22	OVP	Z	-2.0553	-2.0553	0	%100

Member Distributed Loads (BLC 65 : Structure Wm (0 Deg))

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location	End Location
1	M1	X	0	0	0	%100
2	M1	Z	-7954	-7954	0	%100
3	MP1A	X	0	0	0	%100
4	MP1A	Z	-5397	-5397	0	%100
5	M17A	X	0	0	0	%100
6	M17A	Z	-5665	-5665	0	%100
7	M18A	X	0	0	0	%100
8	M18A	Z	0	0	0	%100
9	MP2A	X	0	0	0	%100
10	MP2A	Z	-5397	-5397	0	%100
11	MP3A	X	0	0	0	%100
12	MP3A	Z	-5397	-5397	0	%100
13	MP4A	X	0	0	0	%100
14	MP4A	Z	-5397	-5397	0	%100
15	MP5A	X	0	0	0	%100
16	MP5A	Z	-5397	-5397	0	%100
17	M17	X	0	0	0	%100
18	M17	Z	-7954	-7954	0	%100
19	M25A	X	0	0	0	%100
20	M25A	Z	-1552	-1552	0	%100
21	OVP	X	0	0	0	%100
22	OVP	Z	-4413	-4413	0	%100

Member Distributed Loads (BLC 66 : Structure Wm (30 Deg))

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location	End Location
1	M1	X	2983	2983	0	%100
2	M1	Z	-5166	-5166	0	%100
3	MP1A	X	2699	2699	0	%100
4	MP1A	Z	-4674	-4674	0	%100
5	M17A	X	2833	2833	0	%100
6	M17A	Z	-4906	-4906	0	%100
7	M18A	X	0881	0881	0	%100
8	M18A	Z	-1526	-1526	0	%100
9	MP2A	X	2699	2699	0	%100
10	MP2A	Z	-4674	-4674	0	%100
11	MP3A	X	2699	2699	0	%100
12	MP3A	Z	-4674	-4674	0	%100
13	MP4A	X	2699	2699	0	%100
14	MP4A	Z	-4674	-4674	0	%100
15	MP5A	X	2699	2699	0	%100
16	MP5A	Z	-4674	-4674	0	%100
17	M17	X	2983	2983	0	%100
18	M17	Z	-5166	-5166	0	%100



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Member Distributed Loads (BLC 66 : Structure Wm (30 Deg)) (Continued)

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location	End Location
19	M25A	X	.2255	.2255	0	%100
20	M25A	Z	-.3906	-.3906	0	%100
21	OVP	X	.2207	.2207	0	%100
22	OVP	Z	-.3822	-.3822	0	%100

Member Distributed Loads (BLC 67 : Structure Wm (60 Deg))

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location	End Location
1	M1	X	.1722	.1722	0	%100
2	M1	Z	-.0994	-.0994	0	%100
3	MP1A	X	.4674	.4674	0	%100
4	MP1A	Z	-.2699	-.2699	0	%100
5	M17A	X	.4906	.4906	0	%100
6	M17A	Z	-.2833	-.2833	0	%100
7	M18A	X	.4578	.4578	0	%100
8	M18A	Z	-.2643	-.2643	0	%100
9	MP2A	X	.4674	.4674	0	%100
10	MP2A	Z	-.2699	-.2699	0	%100
11	MP3A	X	.4674	.4674	0	%100
12	MP3A	Z	-.2699	-.2699	0	%100
13	MP4A	X	.4674	.4674	0	%100
14	MP4A	Z	-.2699	-.2699	0	%100
15	MP5A	X	.4674	.4674	0	%100
16	MP5A	Z	-.2699	-.2699	0	%100
17	M17	X	.1722	.1722	0	%100
18	M17	Z	-.0994	-.0994	0	%100
19	M25A	X	.5124	.5124	0	%100
20	M25A	Z	-.2959	-.2959	0	%100
21	OVP	X	.3822	.3822	0	%100
22	OVP	Z	-.2207	-.2207	0	%100

Member Distributed Loads (BLC 68 : Structure Wm (90 Deg))

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location	End Location
1	M1	X	0	0	0	%100
2	M1	Z	0	0	0	%100
3	MP1A	X	.5397	.5397	0	%100
4	MP1A	Z	0	0	0	%100
5	M17A	X	.5665	.5665	0	%100
6	M17A	Z	0	0	0	%100
7	M18A	X	.7048	.7048	0	%100
8	M18A	Z	0	0	0	%100
9	MP2A	X	.5397	.5397	0	%100
10	MP2A	Z	0	0	0	%100
11	MP3A	X	.5397	.5397	0	%100
12	MP3A	Z	0	0	0	%100
13	MP4A	X	.5397	.5397	0	%100
14	MP4A	Z	0	0	0	%100
15	MP5A	X	.5397	.5397	0	%100
16	MP5A	Z	0	0	0	%100
17	M17	X	0	0	0	%100
18	M17	Z	0	0	0	%100
19	M25A	X	.4366	.4366	0	%100
20	M25A	Z	0	0	0	%100
21	OVP	X	.4413	.4413	0	%100
22	OVP	Z	0	0	0	%100



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Member Distributed Loads (BLC 69 : Structure Wm (120 Deg))

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location	End Location
1	M1	X	.1722	.1722	0	%100
2	M1	Z	.0994	.0994	0	%100
3	MP1A	X	.4674	.4674	0	%100
4	MP1A	Z	.2699	.2699	0	%100
5	M17A	X	.4906	.4906	0	%100
6	M17A	Z	.2833	.2833	0	%100
7	M18A	X	.4578	.4578	0	%100
8	M18A	Z	.2643	.2643	0	%100
9	MP2A	X	.4674	.4674	0	%100
10	MP2A	Z	.2699	.2699	0	%100
11	MP3A	X	.4674	.4674	0	%100
12	MP3A	Z	.2699	.2699	0	%100
13	MP4A	X	.4674	.4674	0	%100
14	MP4A	Z	.2699	.2699	0	%100
15	MP5A	X	.4674	.4674	0	%100
16	MP5A	Z	.2699	.2699	0	%100
17	M17	X	.1722	.1722	0	%100
18	M17	Z	.0994	.0994	0	%100
19	M25A	X	.1219	.1219	0	%100
20	M25A	Z	.0704	.0704	0	%100
21	OVP	X	.3822	.3822	0	%100
22	OVP	Z	.2207	.2207	0	%100

Member Distributed Loads (BLC 70 : Structure Wm (150 Deg))

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location	End Location
1	M1	X	.2983	.2983	0	%100
2	M1	Z	.5166	.5166	0	%100
3	MP1A	X	.2699	.2699	0	%100
4	MP1A	Z	.4674	.4674	0	%100
5	M17A	X	.2833	.2833	0	%100
6	M17A	Z	.4906	.4906	0	%100
7	M18A	X	.0881	.0881	0	%100
8	M18A	Z	.1526	.1526	0	%100
9	MP2A	X	.2699	.2699	0	%100
10	MP2A	Z	.4674	.4674	0	%100
11	MP3A	X	.2699	.2699	0	%100
12	MP3A	Z	.4674	.4674	0	%100
13	MP4A	X	.2699	.2699	0	%100
14	MP4A	Z	.4674	.4674	0	%100
15	MP5A	X	.2699	.2699	0	%100
16	MP5A	Z	.4674	.4674	0	%100
17	M17	X	.2983	.2983	0	%100
18	M17	Z	.5166	.5166	0	%100
19	M25A	X	5.9e-5	5.9e-5	0	%100
20	M25A	Z	.000102	.000102	0	%100
21	OVP	X	.2207	.2207	0	%100
22	OVP	Z	.3822	.3822	0	%100

Member Distributed Loads (BLC 71 : Structure Wm (180 Deg))

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location	End Location
1	M1	X	0	0	0	%100
2	M1	Z	.7954	.7954	0	%100
3	MP1A	X	0	0	0	%100
4	MP1A	Z	.5397	.5397	0	%100
5	M17A	X	0	0	0	%100
6	M17A	Z	.5665	.5665	0	%100



Company : Colliers Engineering & Design
 Designer :
 Job Number : Project # 23777134
 Model Name : Antenna Mount Analysis

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Member Distributed Loads (BLC 71 : Structure Wm (180 Deg)) (Continued)

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location	End Location
7	M18A	X	0	0	0	%100
8	M18A	Z	0	0	0	%100
9	MP2A	X	0	0	0	%100
10	MP2A	Z	.5397	.5397	0	%100
11	MP3A	X	0	0	0	%100
12	MP3A	Z	.5397	.5397	0	%100
13	MP4A	X	0	0	0	%100
14	MP4A	Z	.5397	.5397	0	%100
15	MP5A	X	0	0	0	%100
16	MP5A	Z	.5397	.5397	0	%100
17	M17	X	0	0	0	%100
18	M17	Z	.7954	.7954	0	%100
19	M25A	X	0	0	0	%100
20	M25A	Z	.1552	.1552	0	%100
21	OVP	X	0	0	0	%100
22	OVP	Z	.4413	.4413	0	%100

Member Distributed Loads (BLC 72 : Structure Wm (210 Deg))

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location	End Location
1	M1	X	-.2983	-.2983	0	%100
2	M1	Z	.5166	.5166	0	%100
3	MP1A	X	-.2699	-.2699	0	%100
4	MP1A	Z	.4674	.4674	0	%100
5	M17A	X	-.2833	-.2833	0	%100
6	M17A	Z	.4906	.4906	0	%100
7	M18A	X	-.0881	-.0881	0	%100
8	M18A	Z	.1526	.1526	0	%100
9	MP2A	X	-.2699	-.2699	0	%100
10	MP2A	Z	.4674	.4674	0	%100
11	MP3A	X	-.2699	-.2699	0	%100
12	MP3A	Z	.4674	.4674	0	%100
13	MP4A	X	-.2699	-.2699	0	%100
14	MP4A	Z	.4674	.4674	0	%100
15	MP5A	X	-.2699	-.2699	0	%100
16	MP5A	Z	.4674	.4674	0	%100
17	M17	X	-.2983	-.2983	0	%100
18	M17	Z	.5166	.5166	0	%100
19	M25A	X	-.2255	-.2255	0	%100
20	M25A	Z	.3906	.3906	0	%100
21	OVP	X	-.2207	-.2207	0	%100
22	OVP	Z	.3822	.3822	0	%100

Member Distributed Loads (BLC 73 : Structure Wm (240 Deg))

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location	End Location
1	M1	X	-.1722	-.1722	0	%100
2	M1	Z	.0994	.0994	0	%100
3	MP1A	X	-.4674	-.4674	0	%100
4	MP1A	Z	.2699	.2699	0	%100
5	M17A	X	-.4906	-.4906	0	%100
6	M17A	Z	.2833	.2833	0	%100
7	M18A	X	-.4578	-.4578	0	%100
8	M18A	Z	.2643	.2643	0	%100
9	MP2A	X	-.4674	-.4674	0	%100
10	MP2A	Z	.2699	.2699	0	%100
11	MP3A	X	-.4674	-.4674	0	%100
12	MP3A	Z	.2699	.2699	0	%100



Company : Colliers Engineering & Design
 Designer :
 Job Number : Project # 23777134
 Model Name : Antenna Mount Analysis

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Member Distributed Loads (BLC 73 : Structure Wm (240 Deg)) (Continued)

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location(ft)	End Location(ft)
13	MP4A	X	-.4674	-.4674	0	%100
14	MP4A	Z	.2699	.2699	0	%100
15	MP5A	X	-.4674	-.4674	0	%100
16	MP5A	Z	.2699	.2699	0	%100
17	M17	X	-.1722	-.1722	0	%100
18	M17	Z	.0994	.0994	0	%100
19	M25A	X	-.5124	-.5124	0	%100
20	M25A	Z	.2959	.2959	0	%100
21	OVP	X	-.3822	-.3822	0	%100
22	OVP	Z	.2207	.2207	0	%100

Member Distributed Loads (BLC 74 : Structure Wm (270 Deg))

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location(ft)	End Location(ft)
1	M1	X	0	0	0	%100
2	M1	Z	0	0	0	%100
3	MP1A	X	-.5397	-.5397	0	%100
4	MP1A	Z	0	0	0	%100
5	M17A	X	-.5665	-.5665	0	%100
6	M17A	Z	0	0	0	%100
7	M18A	X	-.7048	-.7048	0	%100
8	M18A	Z	0	0	0	%100
9	MP2A	X	-.5397	-.5397	0	%100
10	MP2A	Z	0	0	0	%100
11	MP3A	X	-.5397	-.5397	0	%100
12	MP3A	Z	0	0	0	%100
13	MP4A	X	-.5397	-.5397	0	%100
14	MP4A	Z	0	0	0	%100
15	MP5A	X	-.5397	-.5397	0	%100
16	MP5A	Z	0	0	0	%100
17	M17	X	0	0	0	%100
18	M17	Z	0	0	0	%100
19	M25A	X	-.4366	-.4366	0	%100
20	M25A	Z	0	0	0	%100
21	OVP	X	-.4413	-.4413	0	%100
22	OVP	Z	0	0	0	%100

Member Distributed Loads (BLC 75 : Structure Wm (300 Deg))

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location(ft)	End Location(ft)
1	M1	X	-.1722	-.1722	0	%100
2	M1	Z	-.0994	-.0994	0	%100
3	MP1A	X	-.4674	-.4674	0	%100
4	MP1A	Z	-.2699	-.2699	0	%100
5	M17A	X	-.4906	-.4906	0	%100
6	M17A	Z	-.2833	-.2833	0	%100
7	M18A	X	-.4578	-.4578	0	%100
8	M18A	Z	-.2643	-.2643	0	%100
9	MP2A	X	-.4674	-.4674	0	%100
10	MP2A	Z	-.2699	-.2699	0	%100
11	MP3A	X	-.4674	-.4674	0	%100
12	MP3A	Z	-.2699	-.2699	0	%100
13	MP4A	X	-.4674	-.4674	0	%100
14	MP4A	Z	-.2699	-.2699	0	%100
15	MP5A	X	-.4674	-.4674	0	%100
16	MP5A	Z	-.2699	-.2699	0	%100
17	M17	X	-.1722	-.1722	0	%100
18	M17	Z	-.0994	-.0994	0	%100



Company : Colliers Engineering & Design
 Designer :
 Job Number : Project # 23777134
 Model Name : Antenna Mount Analysis

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Member Distributed Loads (BLC 75 : Structure Wm (300 Deg)) (Continued)

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location	End Location
19	M25A	X	-1219	-1219	0	%100
20	M25A	Z	-0704	-0704	0	%100
21	OVP	X	-3822	-3822	0	%100
22	OVP	Z	-2207	-2207	0	%100

Member Distributed Loads (BLC 76 : Structure Wm (330 Deg))

	Member Label	Direction	Start Magnitude	End Magnitude	Start Location	End Location
1	M1	X	-2983	-2983	0	%100
2	M1	Z	-5166	-5166	0	%100
3	MP1A	X	-2699	-2699	0	%100
4	MP1A	Z	-4674	-4674	0	%100
5	M17A	X	-2833	-2833	0	%100
6	M17A	Z	-4906	-4906	0	%100
7	M18A	X	-0881	-0881	0	%100
8	M18A	Z	-1526	-1526	0	%100
9	MP2A	X	-2699	-2699	0	%100
10	MP2A	Z	-4674	-4674	0	%100
11	MP3A	X	-2699	-2699	0	%100
12	MP3A	Z	-4674	-4674	0	%100
13	MP4A	X	-2699	-2699	0	%100
14	MP4A	Z	-4674	-4674	0	%100
15	MP5A	X	-2699	-2699	0	%100
16	MP5A	Z	-4674	-4674	0	%100
17	M17	X	-2983	-2983	0	%100
18	M17	Z	-5166	-5166	0	%100
19	M25A	X	-5.9e-5	-5.9e-5	0	%100
20	M25A	Z	-0.00102	-0.00102	0	%100
21	OVP	X	-2207	-2207	0	%100
22	OVP	Z	-3822	-3822	0	%100

Member Area Loads

Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[ksf]
No Data to Print ...						

Envelope Joint Reactions

Joint	X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC	
1	N35B ...	832.562	11	1505.488	20	1696.089	12	.497	1	2.353	11	1.303	5
2	...	-1027.675	5	446.155	2	-1185.981	6	-4.908	19	-2.899	5	-1.736	11
3	N44 ...	770.887	9	597.138	14	579.233	2	.285	12	3.168	11	1.056	40
4	...	-581.292	3	-13.892	8	-1108.765	8	-1.519	42	-2.67	5	-519	10
5	Totals: ...	1478.851	10	1977.435	22	2045.161	1						
6	...	-1478.846	4	702.168	67	-2045.229	7						

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

Member	Shape	Code Check	Lo...	LC	Shear Check	Lo.....	LC	phi*Pnc...	phi*Pnt [...	phi*Mn y...	phi*Mn...	Cb	Eqn
1	M1 PIPE 3.0	.529	5....	12	.366	5....	12	35631.1...	65205	5.749	5.749	1.727	H3-6
2	MP1A PIPE 2.0	.167	3....	10	.046	3....	10	20741.5...	32130	1.872	1.872	1.557	H1-...
3	M17A PIPE 4.0	.000	.75	6	.000	.75	6	92571.3...	93240	10.631	10.631	1.56	H1-...
4	M18A HSS4X4X4	.438	2....	6	.149	2....	z 11	134841...	139518	16.181	16.181	1.279	H1-...
5	MP2A PIPE 2.0	.273	5....	12	.066	5....	21	20741.5...	32130	1.872	1.872	2.967	H1-...
6	MP3A PIPE 2.0	.558	5....	12	.096	3....	9	20741.5...	32130	1.872	1.872	2.538	H1-...
7	MP4A PIPE 2.0	.473	3....	1	.100	5....	6	20741.5...	32130	1.872	1.872	3.31	H1-...



Company : Colliers Engineering & Design
 Designer :
 Job Number : Project # 23777134
 Model Name : Antenna Mount Analysis

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

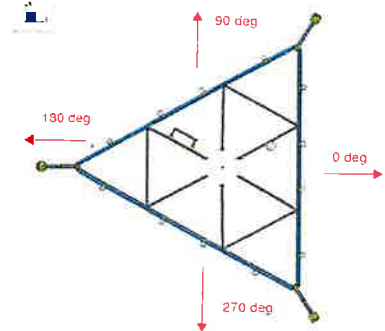
Member	Shape	Code Check	Lo...	LC	Shear Check	Lo.....	LC	phi*Pnc...	phi*Pnt [..	phi*Mn y...	phi*Mn...	Cb	Eqn
8	MP5A	PIPE 2.0	.167	3....	10	.046	3....	10	20741.5..	32130	1.872	1.872	1.553 H1-...
9	M17	PIPE 3.0	.543	7....	7	.206	7....	1	35631.1..	65205	5.749	5.749	1.846 H1-...
10	M25A	HSS3X3X4	.513	3....	5	.120	3....	z	91415.2..	101016	8.556	8.556	1.249 H1-...
11	OVP	PIPE 2.0	.072	2.25	9	.014	2.25	9	28843.4..	32130	1.872	1.872	1.879 H1-...

I. Mount-to-Tower Connection Check (Mount Standoff)

Custom Orientation Required

Yes

Nodes (labeled per Risa)	Orientation (per graphic of typical platform)
N358	0



Tower Connection Bolt Checks

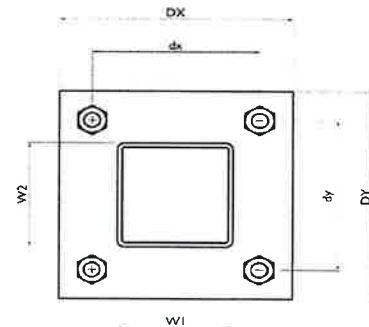
Yes

Bolt Orientation

Parallel

Bolt Quantity per Reaction:
 d_x (in) (Delta X of typ. bolt config. sketch):
 d_y (in) (Delta Y of typ. bolt config. sketch):
 Bolt Type:
 Bolt Diameter (in):
 Required Tensile Strength / bolt (kips):
 Required Shear Strength / bolt (kips):
 Tensile Capacity / bolt (kips):
 Shear Capacity / bolt (kips):
 Bolt Overall Utilization:

4
7
7
A325N
0.625
6.3
1.0
20.7
12.4
30.5%

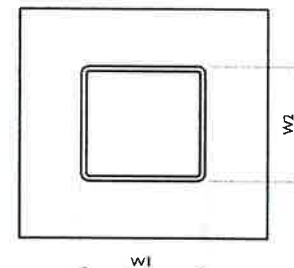


Tower Connection Baseplate Checks

Yes

Connecting Standoff Member Shape:
 Weld Stiffener Configuration:
 Plate Width, D_x (in):
 Plate Height, D_y (in):
 W_1 (in):
 W_2 (in):
 Member Thickness (in):
 Stiffener location a_1 (in):
 Stiffener location b_1 (in):
 Stiffener location a_2 (in):
 Stiffener location b_2 (in):
 F_y (ksi, plate):
 Plate Thickness (in):
 Length of Yield Line, L_y (in):
 Bolt Eccentricity, e (in):
 M_u (kip-in):
 $\Phi * M_n$ (kip-in):
 Plate Bending Utilization:

Rect Tube
No Stiffeners
10
10
4
4
0.25
36
0.625
7.75
2.35
14.86
24.52
60.6%



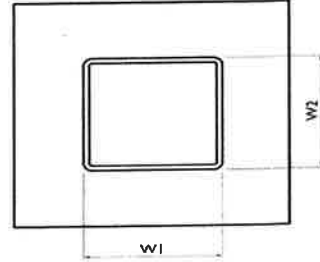
**VzW
SMART Tool®
Vendor**

Client:	Verizon Wireless	Date:	7/21/2023
Site Name:	CROMWELL CT		
MDG #:	5000245641	Page:	2
Fuze ID #:	17123796		Version 1.01

Tower Connection Weld Checks

Weld Shape:
 Weld Stiffener Configuration:
 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
None
6
4
4
16.00
21.33
21.33
85.33
2.25
2.25
2.72
8.35
32.6%

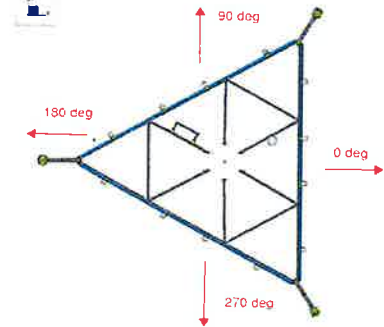


I. Mount-to-Tower Connection Check (New Standoff)

Custom Orientation Required

Yes

Nodes (labeled per Risa)	Orientation (per graphic of typical platform)
N44	30



Tower Connection Bolt Checks

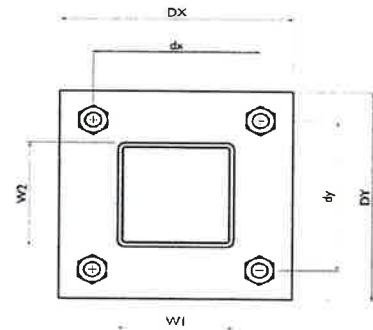
Yes

Bolt Orientation

Parallel

- Bolt Quantity per Reaction:
- d_x (in) (Delta X of typ. bolt config. sketch):
- d_y (in) (Delta Y of typ. bolt config. sketch):
- Bolt Type:
- Bolt Diameter (in):
- Required Tensile Strength / bolt (kips):
- Required Shear Strength / bolt (kips):
- Tensile Capacity / bolt (kips):
- Shear Capacity / bolt (kips):
- Bolt Overall Utilization:

4
6
6
A325N
0.625
4.4
0.1
20.7
12.4
21.4%

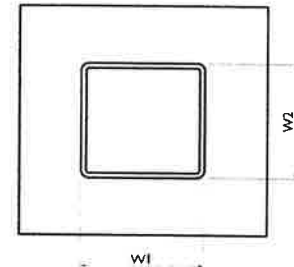


Tower Connection Baseplate Checks

Yes

- Connecting Standoff Member Shape:
- Weld Stiffener Configuration:
- Plate Width, D_x (in):
- Plate Height, D_y (in):
- $W1$ (in):
- $W2$ (in):
- Member Thickness (in):
- Stiffener location a_1 (in):
- Stiffener location b_1 (in):
- Stiffener location a_2 (in):
- Stiffener location b_2 (in):
- F_y (ksi, plate):
- Plate Thickness (in):
- Length of Yield Line, L_y (in):
- Bolt Eccentricity, e (in):
- M_u (kip-in):
- $\Phi * M_n$ (kip-in):
- Plate Bending Utilization:

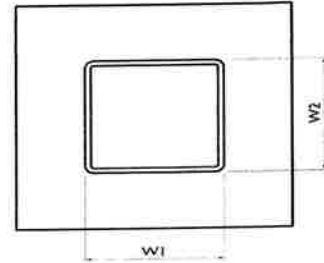
Rect Tube
No Stiffeners
8.25
8.25
3
3
0.25
50
0.75
6.69
2.35
10.44
42.31
24.7%



Tower Connection Weld Checks

Weld Shape:
Weld Stiffener Configuration:
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
None
5
3
3
12.00
12.00
12.00
36.00
1.75
1.75
2.93
6.96
42.2%





Tower Engineering Solutions

Phone (972) 483-0607, Fax (972) 975-9615
1320 Greenway Drive, Suite 600, Irving, Texas 75038

Structural Analysis Report

Existing 76 ft TransAmerican Monopole
Customer Name: SBA Communications Corp
Customer Site Number: CT46122-A
Customer Site Name: Middletown North
Carrier Name: Verizon (App#: 232674-3)
Carrier Site ID / Name: 5000245641 / CROMWELL CT
Site Location: 160 West Street
Cromwell, Connecticut
Middlesex County
Latitude: 41.606000
Longitude: -72.670388

Exp. 01/31/2024



07/07/2023

Analysis Result:

Max Structural Usage: 66.1% [Pass]
Max Foundation Usage: 48.2% [Pass]
Additional Usage Caused by New Mount/Mount Modification: N/A

Report Prepared By : Tawfeeq Alajaj



Tower Engineering Solutions

Phone (972) 483-0607, Fax (972) 975-9615
1320 Greenway Drive, Suite 600, Irving, Texas 75038

Structural Analysis Report

Existing 76 ft TransAmerican Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT46122-A

Customer Site Name: Middletown North

Carrier Name: Verizon (App#: 232674-3)

Carrier Site ID / Name: 5000245641 / CROMWELL CT

Site Location: 160 West Street

Cromwell, Connecticut

Middlesex County

Latitude: 41.606000

Longitude: -72.670388

Analysis Result:

Max Structural Usage: 66.1% [Pass]

Max Foundation Usage: 48.2% [Pass]

Additional Usage Caused by New Mount/Mount Modification: N/A

Report Prepared By : Tawfeeq Alajaj

Introduction

The purpose of this report is to summarize the analysis results on the 76 ft TransAmerican Monopole to support the proposed antennas and transmission lines in addition to those currently installed. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Tower Drawings	TransAmerican Power Products, Inc., Order #TP-8949 dated July 19, 2010
Foundation Drawing	Vertical Solutions, Project #100264.02 dated February 23, 2010
Geotechnical Report	Clarence Welti Association, Inc., Project Name: Transcend Wireless Tower dated February 1, 2010
Modification Drawings	N/A
Mount Analysis	N/A

Analysis Criteria

The feasibility analysis was performed in accordance with the requirements and stipulations of the TIA-222-H. In accordance with this standard, the structure was analyzed using **TESPoles**, a proprietary analysis software. The program considers the structure as an elastic 3-D model with second-order effects and temperature effects incorporated in the analysis. The analysis was performed using multiple wind directions.

Wind Speed Used in the Analysis:	119.0 mph (3-Sec. Gust) (Ultimate wind speed)
Wind Speed with Ice:	50 mph (3-Sec. Gust) with 1" radial ice concurrent
Service Load Wind Speed:	60 mph + 0" Radial ice
Standard/Codes:	TIA-222-H / 2021 IBC / 2022 Connecticut State Building Code
Exposure Category:	C
Risk Category:	II
Topographic Category:	1
Crest Height:	0 ft
Seismic Parameters:	$S_5 = 0.205$, $S_1 = 0.055$

This structural analysis is based upon the tower being classified as a Risk Category II; however, if a different classification is required subsequent to the date hereof, the tower classification will be changed to meet such requirement and a new structural analysis will be run.

Existing Antennas, Mounts and Transmission Lines

The table below summarizes the antennas, mounts and transmission lines that were considered in the analysis as existing on the tower.

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	74.0	3	RFS APXVAALL24-43-U-NA20	(3) T-Arms w/ replaced new standoff, face horizontal and new support rail with end connection	(6) 7/8" (4) 1 5/8" Fiber (6) 3/8" RET	T-Mobile
2		3	Ericsson Air 32 KRD901146-1_B66A_B2A			
3		3	Ericsson AIR6449 B41			
4		3	Commscope SDX1926Q-43			
5		6	Andrew ATM200-A20			
6		3	Ericsson 4449 B71 + B85			
7		3	Ericsson 4415 B25			
8		3	Ericsson 4415 B66A			
9	64.0	6	Commscope JAHH-65B-R3B	(3) T-Arms (3) TBD VZWSMART-SFK4 (Mount Reinforcement) (3) Commscope BSAMNT-SBS-2-2 (side-by-side mounts)	(18) 1 5/8" Coax (2) 1 5/8" Hybrid	Verizon
10		3	Samsung Telecommunications VZS01			
11		4	Andrew DB846F65ZAXY			
12		2	Decibel DB846H80E-SX w/Mount Pipe			
13		3	Commscope CBC78T-DS-43-2X/E14F05P50			
14		3	Samsung B2/B66A RRH-BR049			
15		3	Samsung B5/B13 RRH-BR04C			
16	2	RFS DB-T1-6Z-8AB-0Z	Commscope MC-K6MHDX-9-96 T-Arms		Dish Wireless	
17	3	JMA Wireless MX08FRO665-21				
18	3	Fujitsu TA08025-B605				
19	3	Fujitsu TA08025-B604				
20	51.0	1	Raycap RDIDC-9181-PF-48			

Proposed Carrier's Final Configuration of Antennas, Mounts and Transmission Lines

Information pertaining to the proposed carrier's final configuration of antennas and transmission lines was provided by SBA Communications Corp. The proposed antennas and lines are listed below.

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
9	64.0	6	Commscope JAHH-65B-R3B	(3) T-Arms (3) TBD VZWSMART-SFK4 (Mount Reinforcement) (3) Commscope BSAMNT-SBS-2-2 (side-by-side mounts)	(18) 1 5/8" Coax (2) 1 5/8" Hybrid	Verizon
10		3	Samsung Telecommunications VZS01			
11		4	Andrew DB846F65ZAXY			
12		2	Decibel DB846H80E-SX w/Mount Pipe			
13		3	Commscope CBC78T-DS-43-2X/E14F05P50			
14		3	Samsung B2/B66A RRH-BR049			
15		3	Samsung B5/B13 RRH-BR04C			
16		2	RFS DB-T1-6Z-8AB-OZ			
17		2	Kaelus BSF0020F3V1-1 Filter			

See the attached coax layout for the line placement considered in the analysis.

Analysis Results

The results of the structural analysis, performed for the wind and ice loading and antenna equipment as defined above, are summarized as the following:

	Pole shafts	Anchor Bolts	Base Plate
Max. Usage:	66.1%	65.5%	45.6%
Pass/Fail	Pass	Pass	Pass

Foundations

	Moment (Kip-Ft)	Shear (Kips)
Original Design Reactions	2800.0	52.0
Analysis Reactions	1822.6	31.3
Factored Reactions*	3780.0	70.2
% of Design Reactions	48.2%	44.6%

* Per section 15.6.2 of the TIA-222-H standard, factored reactions were obtained by multiplying a 1.35 factor to the original design reactions.

No foundation drawing is available for the analysis of the existing foundation. Since the reactions calculated from the current analysis are less than those indicated on the original structural design drawing, the foundations are assumed to be adequate to resist the reactions from the current analysis.

Service Load Condition (Rigidity):

Operational characteristics of the tower are found to be within the limits prescribed by TIA-222 for the installed antennas. The maximum twist/sway at the elevation of the proposed equipment is 0.5540 degrees under the operational wind speed as specified in the Analysis Criteria.

Conclusions

Based on the analysis results, the existing structure was were found to be adequate to safely support the existing and proposed equipment and meet the minimum requirements per the TIA-222 Standard under the design basic wind speed as specified in the Analysis Criteria.

Standard Conditions

1. This analysis was performed based on the information supplied to **(TES) Tower Engineering Solutions, LLC**. Verification of the information provided was not included in the Scope of Work for **TES**. The accuracy of the analysis is dependent on the accuracy of the information provided.
2. The structural analysis was performance based upon the evidence available at the time of this report. All information provided by the client is considered to be accurate.
3. The analyses will be performed based on the codes as specified by the client or based on the best knowledge of the engineering staff of **TES**. In the absence of information to the contrary, all work will be performed in accordance with the latest relevant revision of ANSI/TIA-222. If wind speed and/or ice loads are different from the minimum values recommended by the ANSI/TIA-222 standard or other codes, **TES** should be notified in writing and the applicable minimum values provided by the client.
4. The configuration of the existing mounts, antennas, coax and other appurtenances were supplied by the customer for the current structural analysis. **TES** has not visited the tower site to verify the adequacy of the information provided. If there is any discrepancy found in the report regarding the existing conditions, **TES** should be notified immediately to evaluate the effect of the discrepancy on the analysis results.
5. The client will assume responsibility for rework associated with the differences in initially provided information, including tower and foundation information, existing and/or proposed equipment and transmission lines.
6. If a feasibility analysis was performed, final acceptance of changed conditions shall be based upon a rigorous structural analysis.

Usage Diagram - Max Ratio 66.11% at 28.3ft

Structure: CT46122-A-SBA
Site Name: Middletown North
Height: 76.00 (ft)
Base Elev: 0.000 (ft)

Code: EIA/TIA-222-H
Exposure: C
Gh: 1.1

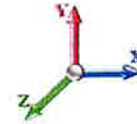
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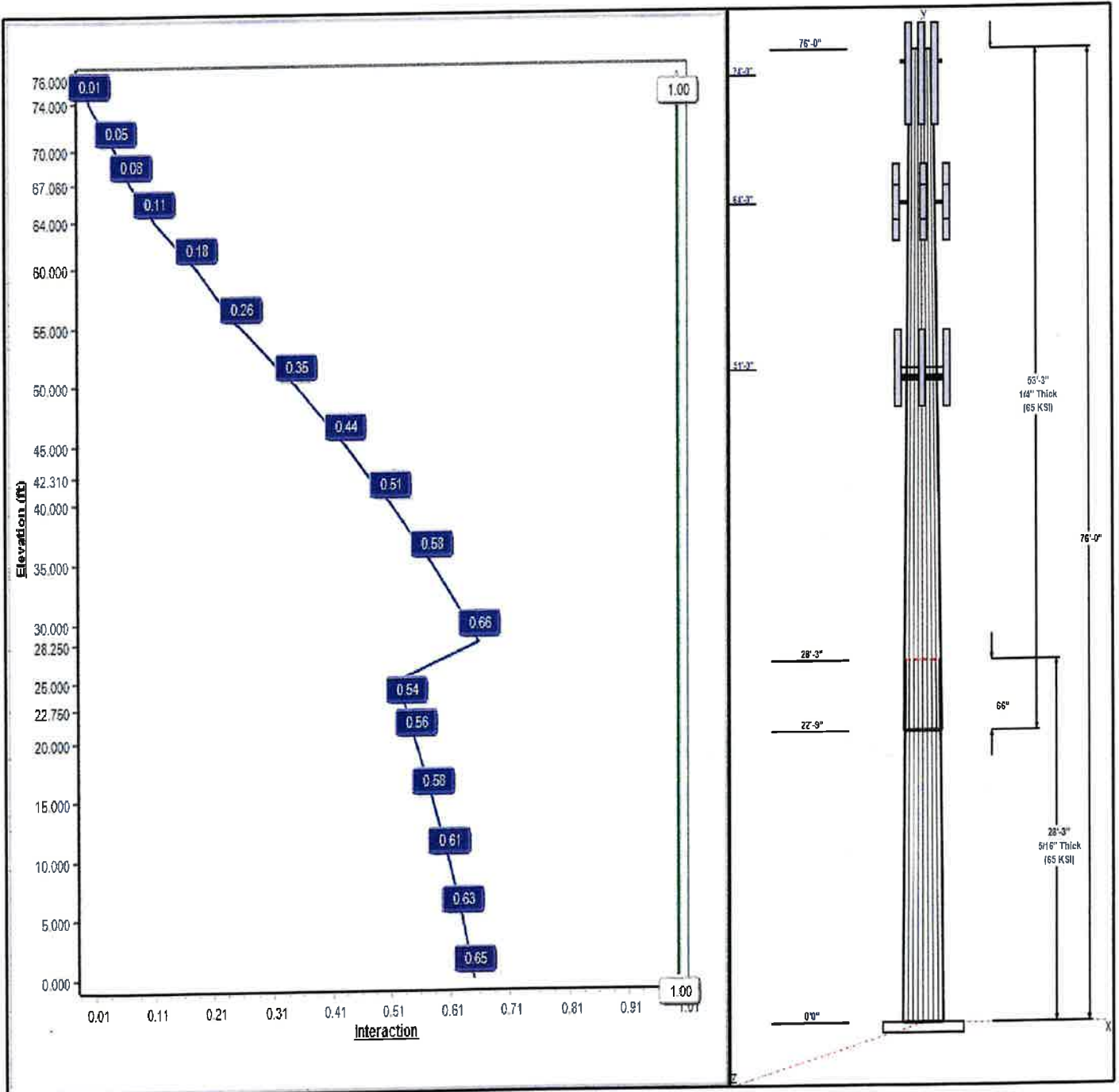
Dead Load Factor: 1.20
Wind Load Factor: 1.00

Load Case : 1.2D + 1.0W 119 mph Wind



Iterations: 17

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Structure: CT46122-A-SBA

Type: Tapered
Site Name: Middletown North
Height: 76.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.32787

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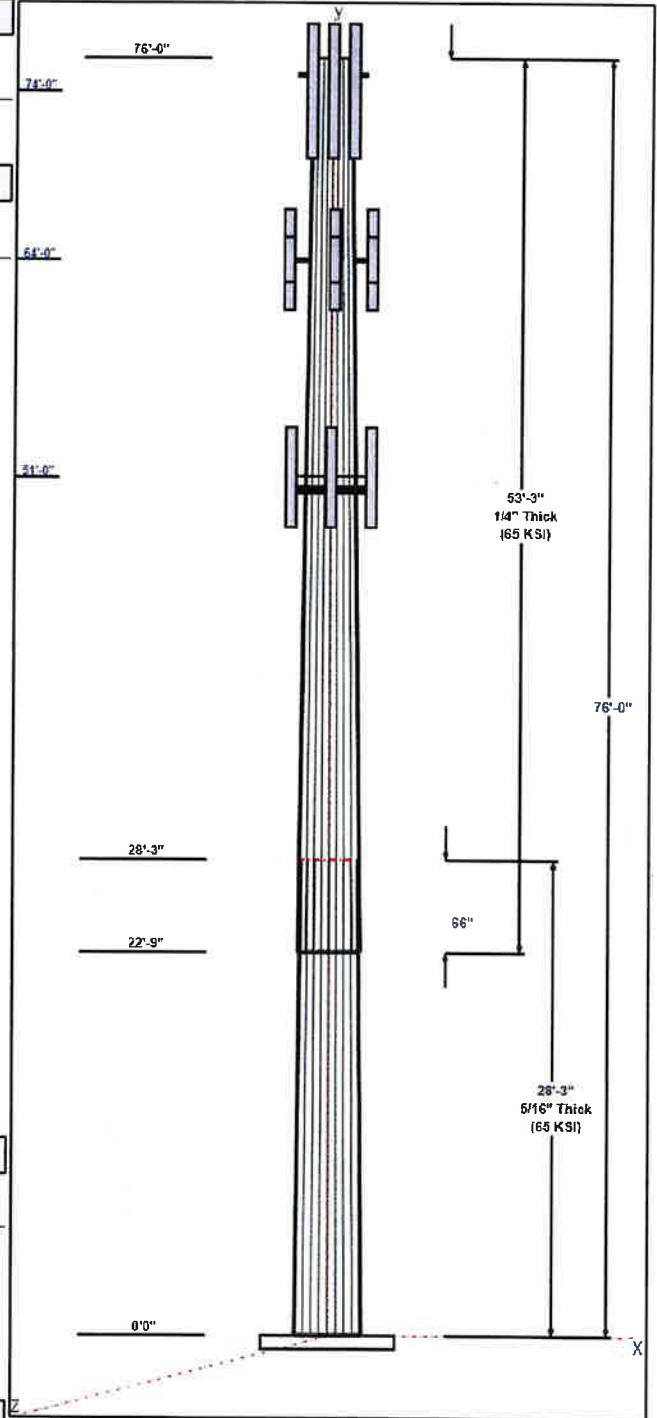


Shaft Properties							
Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	28.25	37.24	46.50	0.313		0.32787	65
2	53.25	22.08	39.54	0.250	Slip	0.32787	65

Discrete Appurtenances				
Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
75.45	75.45	1	4' Branches	---
75.00	75.00	3	T-Arms	T-Mobile
74.00	74.00	3	RFS	T-Mobile
74.00	74.00	3	Air 32	T-Mobile
74.00	74.00	6	ATM200-A20	T-Mobile
74.00	74.00	3	Radio 4449 B71+B85	T-Mobile
74.00	74.00	3	Commscope	T-Mobile
74.00	74.00	1	Antenna Branches	---
74.00	74.00	3	AIR6449 B41	T-Mobile
74.00	74.00	3	RRUS 4415 B25	T-Mobile
74.00	74.00	3	Ericsson 4415 B66A	T-Mobile
74.00	74.00	1	(Handrail Kit w/end	T-Mobile
67.06	67.06	1	6' Branches	---
64.00	64.00	3	T-Arm	Verizon
64.00	64.00	2	Kaelus BSF0020F3V1-1	Verizon
64.00	64.00	4	DB846F65ZAXY	Verizon
64.00	64.00	2	DB846H80E-SX	Verizon
64.00	64.00	2	DB-T1-6Z-8AB-0Z	Verizon
64.00	64.00	6	JAHH-65B-R3B	Verizon
64.00	64.00	3	VZS01	Verizon
64.00	64.00	1	(3) VZSMART-SFK4	Verizon
64.00	64.00	3	BSAMNT-SBS-1-2	Verizon
64.00	64.00	3	CBC78T-DS-43-2X/E14F0	Verizon
64.00	64.00	3	B2/B66A RRH-BR049	Verizon
64.00	64.00	3	B5/B13 RRH-BR04C	Verizon
55.44	55.44	1	8' Branches	---
51.00	51.00	1	MC-K6MHDX-9-96 (3	Dish Wireless
51.00	51.00	3	MX08FRO665-21	Dish Wireless
51.00	51.00	3	TA08025-B604	Dish Wireless
51.00	51.00	3	TA08025-B605	Dish Wireless
51.00	51.00	1	RDIDC-9181-OF-48	Dish Wireless
42.31	42.31	1	10' Branches	---

Linear Appurtenances				
Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	75.00	Inside	1 5/8" Fiber	T-Mobile
0.00	75.00	Inside	3/8" RET	T-Mobile
0.00	75.00	Inside	7/8" Coax	T-Mobile
0.00	64.00	Inside	1 5/8" Coax	Verizon
0.00	64.00	Inside	1 5/8" Hybrid	Verizon
0.00	51.00	Inside	1.6" Hybrid	Dish Wireless

Anchor Bolts			
Qty	Specifications	Grade (ksi)	Arrangement
10	2.25" 18J	75.0	Radial



Type: Tapered
Site Name: Middletown North
Height: 76.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.32787

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Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
2.0000	60.0	60.0	Round

Reactions

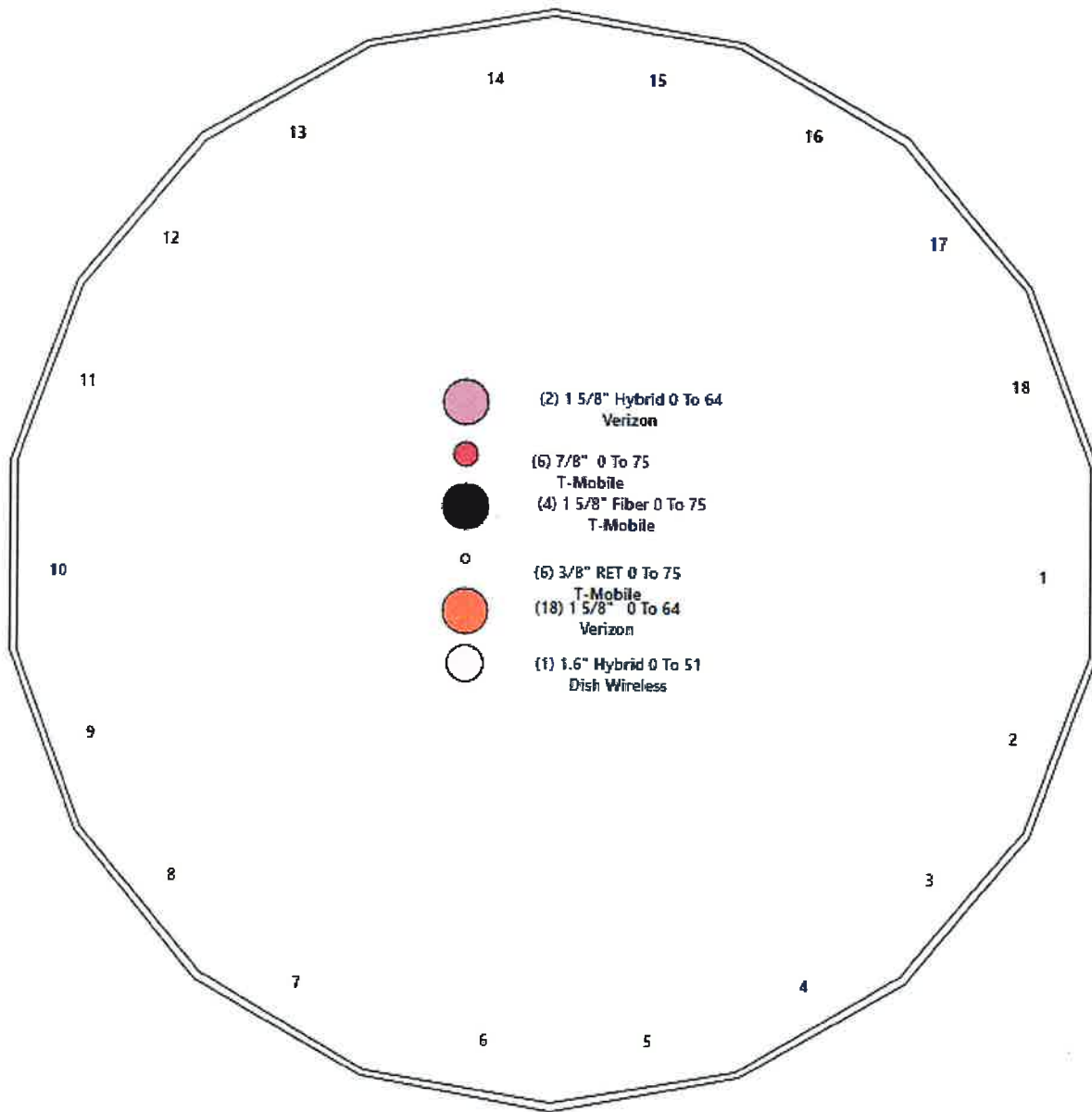
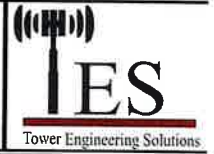
Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.0W 119 mph Wind	1822.6	31.3	24.2
0.9D + 1.0W 119 mph Wind	1816.6	31.3	18.2
1.2D + 1.0Di + 1.0Wi 50 mph Wind	453.6	7.9	36.4
1.2D + 1.0Ev + 1.0Eh	53.5	0.9	25.2
0.9D + 1.0Ev + 1.0Eh	53.5	0.9	19.1
1.0D + 1.0W 60 mph Wind	413.7	7.1	20.2

Structure: CT46122-A-SBA - Coax Line Placement

Type: Monopole
Site Name: Middletown North
Height: 76.00 (ft)

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Shaft Properties

Structure: CT46122-A-SBA	Code: TIA-222-H	7/7/2023
Site Name: Middletown North	Exposure: C	
Height: 76.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	18	28.250	0.3125	65		0.00	3,962
2	18	53.250	0.2500	65	Slip	66.00	4,394
Total Shaft Weight:							8,356

Bottom

Top

Sec. No.	Dia (in)	Elev (ft)	Area (sqin)	Ix (in^4)	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (sqin)	Ix (in^4)	W/t Ratio	D/t Ratio	Taper
1	46.50	0.00	45.81	12347.18	24.83	148.80	37.24	28.25	36.62	6309.09	19.60	119.1	0.327865
2	39.54	22.75	31.18	6080.87	26.48	158.16	22.08	76.00	17.32	1043.23	14.16	88.33	0.327865

Load Summary

Structure: CT46122-A-SBA	Code: TIA-222-H	7/7/2023
Site Name: Middletown North	Exposure: C	
Height: 76.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Discrete Appurtenances

No.	Elev (ft)	Description	Qty	No Ice			Ice			Hor. Ecc. (ft)	Vert Ecc (ft)
				Weight (lb)	CaAa (sf)	CaAa Factor	Weight (lb)	CaAa (sf)	CaAa Factor		
1	75.45	4' Branches	1	390.00	36.86	1.00	559.45	52.875	1.00	0.00	0.00
2	75.00	T-Arms	3	160.00	8.00	0.75	246.84	13.801	0.75	0.00	0.00
3	74.00	RFS APXVAALL24-43-U-NA20	3	128.00	20.24	0.70	375.22	21.404	0.70	0.00	0.00
4	74.00	Air 32 KRD901146-1_B66A_B2A	3	132.20	6.51	0.87	238.23	7.189	0.87	0.00	0.00
5	74.00	ATM200-A20	6	0.50	0.12	0.50	3.75	0.257	1.00	0.00	0.00
6	74.00	Radio 4449 B71+B85	3	71.00	1.97	0.67	104.16	2.310	0.67	0.00	0.00
7	74.00	Commscope SDX1926Q-43	3	7.00	0.72	0.67	15.91	1.113	0.67	0.00	0.00
8	74.00	Antenna Branches	1	96.00	22.43	1.00	137.63	32.157	1.00	0.00	0.00
9	74.00	AIR6449 B41	3	103.00	5.65	0.71	188.18	6.240	0.71	0.00	0.00
10	74.00	RRUS 4415 B25	3	46.00	1.64	0.67	71.53	1.960	0.67	0.00	0.00
11	74.00	Ericsson 4415 B66A	3	49.60	1.86	0.67	84.39	2.195	0.67	0.00	0.00
12	74.00	(Handrail Kit w/end connection)	1	261.72	6.75	1.00	454.66	10.848	1.00	0.00	0.00
13	67.06	6' Branches	1	400.00	83.63	1.00	571.76	19.540	1.00	0.00	0.00
14	64.00	T-Arm	3	320.00	8.00	0.75	456.77	12.274	0.75	0.00	0.00
15	64.00	Kaelus BSF0020F3V1-1 Filter	2	19.80	0.70	0.80	35.37	0.912	0.80	0.00	0.00
16	64.00	DB846F65ZAXY	4	21.00	7.05	0.93	132.84	7.776	0.93	0.00	0.00
17	64.00	DB846H80E-SX	2	16.00	5.01	1.12	105.02	5.721	1.12	0.00	0.00
18	64.00	DB-T1-6Z-8AB-0Z	2	44.00	3.30	0.67	126.03	5.321	0.67	0.00	0.00
19	64.00	JAHH-65B-R3B	6	63.30	9.11	0.83	195.06	9.916	0.83	0.00	0.00
20	64.00	VZS01	3	87.10	4.30	0.69	149.51	4.830	0.69	0.00	0.00
21	64.00	(3) VZWSMART-SFK4	1	500.00	16.50	0.75	863.28	26.373	0.75	0.00	0.00
22	64.00	BSAMNT-SBS-1-2	3	25.35	0.00	0.75	36.18	0.000	0.75	0.00	0.00
23	64.00	CBC78T-DS-43-2X/E14F05P50	3	21.80	0.37	0.67	32.27	0.528	0.67	0.00	0.00
24	64.00	B2/B66A RRH-BR049	3	84.40	1.64	0.67	118.34	1.956	0.67	0.00	0.00
25	64.00	B5/B13 RRH-BR04C	3	70.30	2.22	0.67	105.75	2.599	0.67	0.00	0.00
26	55.44	8' Branches	1	1638.00	150.70	1.00	2328.09	14.190	1.00	0.00	0.00
27	51.00	MC-K6MHDX-9-96 (3 Sectors)	1	899.00	20.95	0.75	1424.84	36.705	0.75	0.00	0.00
28	51.00	MX08FRO665-21	3	64.50	12.49	0.74	238.58	13.367	0.74	0.00	0.00
29	51.00	TA08025-B604	3	63.90	1.96	0.67	94.20	2.296	0.67	0.00	0.00
30	51.00	TA08025-B605	3	75.00	1.96	0.67	106.30	2.296	0.67	0.00	0.00
31	51.00	RDIDC-9181-OF-48	1	21.90	2.01	1.00	53.77	2.350	1.00	0.00	0.00
32	42.31	10' Branches	1	540.00	54.43	1.00	761.44	76.750	1.00	0.00	0.00
Totals:			82	9,900.47			17,399.22				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	75.00	(4) 1 5/8" Fiber	0.00	Inside
0.00	75.00	(6) 3/8" RET	0.00	Inside
0.00	75.00	(6) 7/8" Coax	0.00	Inside
0.00	64.00	(18) 1 5/8" Coax	0.00	Inside
0.00	64.00	(2) 1 5/8" Hybrid	0.00	Inside
0.00	51.00	(1) 1.6" Hybrid	0.00	Inside

Shaft Section Properties

Structure: CT46122-A-SBA	Code: TIA-222-H	7/7/2023
Site Name: Middletown North	Exposure: C	
Height: 76.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



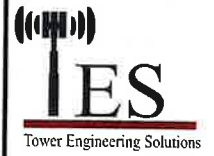
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Increment Length: 5 (ft)

Elev (ft)	Description	Thick (in)	Dia (in)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Fpy (ksi)	S (in ³)	Weight (lb)
0.00		0.3125	46.500	45.811	12347.2	24.83	148.80	72.2	523.0	0.0
5.00		0.3125	44.861	44.185	11078.6	23.90	143.55	73.3	486.4	765.6
10.00		0.3125	43.221	42.559	9900.0	22.98	138.31	74.4	451.1	737.9
15.00		0.3125	41.582	40.933	8808.1	22.05	133.06	75.5	417.2	710.3
20.00		0.3125	39.943	39.307	7799.6	21.13	127.82	76.6	384.6	682.6
22.75	Bot - Section 2	0.3125	39.041	38.413	7279.3	20.62	124.93	77.2	367.2	363.6
25.00		0.3125	38.303	37.681	6871.2	20.20	122.57	77.6	353.3	527.7
28.25	Top - Section 1	0.2500	37.738	29.746	5281.5	25.21	150.95	0.0	0.0	744.5
30.00		0.2500	37.164	29.290	5042.7	24.80	148.66	72.2	267.2	175.8
35.00		0.2500	35.525	27.989	4400.2	23.65	142.10	73.6	244.0	487.3
40.00		0.2500	33.885	26.689	3814.8	22.49	135.54	74.9	221.7	465.1
42.31		0.2500	33.128	26.088	3562.9	21.95	132.51	75.6	211.8	207.4
45.00		0.2500	32.246	25.388	3283.8	21.33	128.98	76.3	200.6	235.6
50.00		0.2500	30.607	24.087	2804.5	20.18	122.43	77.7	180.5	420.9
51.00		0.2500	30.279	23.827	2714.6	19.95	121.12	77.9	176.6	81.5
55.00		0.2500	28.967	22.786	2374.2	19.02	115.87	79.0	161.4	317.2
55.44		0.2500	28.823	22.672	2338.6	18.92	115.29	79.1	159.8	34.0
60.00		0.2500	27.328	21.486	1990.4	17.86	109.31	80.4	143.5	342.6
64.00		0.2500	26.017	20.445	1715.0	16.94	104.07	81.5	129.8	285.4
65.00		0.2500	25.689	20.185	1650.3	16.71	102.76	81.7	126.5	69.1
67.06		0.2500	25.013	19.649	1522.3	16.23	100.05	82.3	119.9	139.6
70.00		0.2500	24.049	18.884	1351.4	15.55	96.20	82.5	110.7	192.7
74.00		0.2500	22.738	17.844	1140.1	14.63	90.95	82.5	98.8	250.0
75.00		0.2500	22.410	17.583	1090.9	14.40	89.64	82.5	95.9	60.3
75.45		0.2500	22.263	17.466	1069.3	14.29	89.05	82.5	94.6	26.8
76.00		0.2500	22.082	17.323	1043.2	14.16	88.33	82.5	93.1	32.6
										8356.2

Wind Loading - Shaft

Structure: CT46122-A-SBA	Code: TIA-222-H	7/7/2023
Site Name: Middletown North	Exposure: C	
Height: 76.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0W 119 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 17

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	29.135	32.05	430.67	0.730	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	29.135	32.05	415.49	0.730	0.000	5.00	19.327	14.11	452.2	0.0	918.7
10.00		1.00	0.85	29.135	32.05	400.31	0.730	0.000	5.00	18.634	13.60	435.9	0.0	885.5
15.00		1.00	0.85	29.135	32.05	385.12	0.730	0.000	5.00	17.940	13.10	419.7	0.0	852.3
20.00		1.00	0.90	30.914	34.00	381.06	0.730	0.000	5.00	17.246	12.59	428.1	0.0	819.1
22.75 Bot - Section 2		1.00	0.93	31.764	34.94	377.55	0.730	0.000	2.75	9.190	6.71	234.4	0.0	436.4
25.00		1.00	0.95	32.400	35.64	374.11	0.730	0.000	2.25	7.458	5.44	194.0	0.0	633.3
28.25 Top - Section 1		1.00	0.97	33.245	36.57	368.41	0.730	0.000	3.25	10.525	7.68	281.0	0.0	893.4
30.00		1.00	0.98	33.668	37.04	370.01	0.730	0.000	1.75	5.546	4.05	149.9	0.0	210.9
35.00		1.00	1.01	34.779	38.26	359.48	0.730	0.000	5.00	15.377	11.23	429.4	0.0	584.7
40.00		1.00	1.04	35.770	39.35	347.74	0.730	0.000	5.00	14.684	10.72	421.8	0.0	558.2
42.31 Appurtenance(s)		1.00	1.06	36.196	39.82	341.99	0.730	0.000	2.31	6.550	4.78	190.4	0.0	248.9
45.00		1.00	1.07	36.669	40.34	335.05	0.730	0.000	2.69	7.440	5.43	219.1	0.0	282.7
50.00		1.00	1.09	37.491	41.24	321.56	0.730	0.000	5.00	13.296	9.71	400.3	0.0	505.1
51.00 Appurtenance(s)		1.00	1.10	37.648	41.41	318.78	0.730	0.000	1.00	2.576	1.88	77.9	0.0	97.8
55.00		1.00	1.12	38.251	42.08	307.41	0.730	0.000	4.00	10.027	7.32	308.0	0.0	380.7
55.44 Appurtenance(s)		1.00	1.12	38.315	42.15	306.13	0.730	0.000	0.44	1.076	0.79	33.1	0.0	40.8
60.00		1.00	1.14	38.958	42.85	292.68	0.730	0.000	4.56	10.833	7.91	338.9	0.0	411.1
64.00 Appurtenance(s)		1.00	1.15	39.491	43.44	280.53	0.730	0.000	4.00	9.028	6.59	286.3	0.0	342.4
65.00		1.00	1.16	39.620	43.58	277.45	0.730	0.000	1.00	2.188	1.60	69.6	0.0	83.0
67.06 Appurtenance(s)		1.00	1.16	39.881	43.87	271.04	0.730	0.000	2.06	4.419	3.23	141.5	0.0	167.5
70.00		1.00	1.17	40.243	44.27	261.78	0.730	0.000	2.94	6.103	4.46	197.2	0.0	231.3
74.00 Appurtenance(s)		1.00	1.19	40.717	44.79	248.96	0.730	0.000	4.00	7.918	5.78	258.9	0.0	299.9
75.00 Appurtenance(s)		1.00	1.19	40.832	44.91	245.71	0.730	0.000	1.00	1.910	1.39	62.6	0.0	72.3
75.45 Appurtenance(s)		1.00	1.19	40.883	44.97	244.25	0.730	0.000	0.45	0.851	0.62	27.9	0.0	32.2
76.00		1.00	1.19	40.946	45.04	242.46	0.730	0.000	0.55	1.032	0.75	33.9	0.0	39.1
Totals:									76.00			6,092.1		10,027.4

Discrete Appurtenance Forces

Structure: CT46122-A-SBA
Site Name: Middletown North
Height: 76.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1

Topography: 1

Code: TIA-222-H
Exposure: C
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

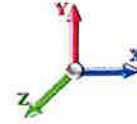
7/7/2023

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Load Case: 1.2D + 1.0W 119 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 17

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor	x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	75.45	4' Branches	1	40.883	44.972	1.00	1.00	1.00	36.86	468.00	0.000	0.000	1657.65	0.00	0.00
2	75.00	T-Arms	3	40.832	44.915	0.56	0.75	13.50	13.50	576.00	0.000	0.000	606.35	0.00	0.00
3	74.00	Antenna Branches	1	40.717	44.788	1.00	1.00	22.43	22.43	115.20	0.000	0.000	1004.60	0.00	0.00
4	74.00	AIR6449 B41	3	40.717	44.788	0.57	0.80	9.63	9.63	370.80	0.000	0.000	431.20	0.00	0.00
5	74.00	RRUS 4415 B25	3	40.717	44.788	0.54	0.80	2.64	2.64	165.60	0.000	0.000	118.11	0.00	0.00
6	74.00	Ericsson 4415 B66A	3	40.717	44.788	0.54	0.80	2.99	2.99	178.56	0.000	0.000	133.96	0.00	0.00
7	74.00	(Handrail Kit w/end	1	40.717	44.788	1.00	1.00	6.75	6.75	314.06	0.000	0.000	302.32	0.00	0.00
8	74.00	RFS	3	40.717	44.788	0.56	0.80	34.00	34.00	460.80	0.000	0.000	1522.94	0.00	0.00
9	74.00	Air 32	3	40.717	44.788	0.70	0.80	13.59	13.59	475.92	0.000	0.000	608.80	0.00	0.00
10	74.00	ATM200-A20	6	40.717	44.788	0.40	0.80	0.29	0.29	3.60	0.000	0.000	12.90	0.00	0.00
11	74.00	Radio 4449 B71+B85	3	40.717	44.788	0.54	0.80	3.17	3.17	255.60	0.000	0.000	141.88	0.00	0.00
12	74.00	Commscope	3	40.717	44.788	0.54	0.80	1.16	1.16	25.20	0.000	0.000	51.85	0.00	0.00
13	67.06	6' Branches	1	39.881	43.869	1.00	1.00	83.63	83.63	480.00	0.000	0.000	3668.78	0.00	0.00
14	64.00	B5/B13 RRH-BR04C	3	39.491	43.440	0.54	0.80	3.57	3.57	253.08	0.000	0.000	155.07	0.00	0.00
15	64.00	B2/B66A RRH-BR049	3	39.491	43.440	0.54	0.80	2.64	2.64	303.84	0.000	0.000	114.56	0.00	0.00
16	64.00	CBC78T-DS-43-2X/E14F0	3	39.491	43.440	0.54	0.80	0.59	0.59	78.48	0.000	0.000	25.85	0.00	0.00
17	64.00	BSAMNT-SBS-1-2	3	39.491	43.440	0.56	0.75	0.00	0.00	91.26	0.000	0.000	0.00	0.00	0.00
18	64.00	DB846H80E-SX	2	39.491	43.440	0.90	0.80	8.98	8.98	38.40	0.000	0.000	390.00	0.00	0.00
19	64.00	T-Arm	3	39.491	43.440	0.56	0.75	13.50	13.50	1152.00	0.000	0.000	586.44	0.00	0.00
20	64.00	Kaelus BSF0020F3V1-1	2	39.491	43.440	0.64	0.80	0.90	0.90	47.52	0.000	0.000	38.92	0.00	0.00
21	64.00	DB846F65ZAXY	4	39.491	43.440	0.74	0.80	20.98	20.98	100.80	0.000	0.000	911.41	0.00	0.00
22	64.00	(3) VZWSMART-SFK4	1	39.491	43.440	0.56	0.75	9.28	9.28	600.00	0.000	0.000	403.18	0.00	0.00
23	64.00	DB-T1-6Z-8AB-OZ	2	39.491	43.440	0.54	0.80	3.54	3.54	105.60	0.000	0.000	153.67	0.00	0.00
24	64.00	JAHH-65B-R3B	6	39.491	43.440	0.66	0.80	36.29	36.29	455.76	0.000	0.000	1576.62	0.00	0.00
25	64.00	VZS01	3	39.491	43.440	0.55	0.80	7.12	7.12	313.56	0.000	0.000	309.33	0.00	0.00
26	55.44	8' Branches	1	38.315	42.147	1.00	1.00	150.70	150.70	1965.60	0.000	0.000	6351.48	0.00	0.00
27	51.00	MX08FRO665-21	3	37.648	41.412	0.59	0.80	22.18	22.18	232.20	0.000	0.000	918.62	0.00	0.00
28	51.00	MC-K6MHDX-9-96 (3	1	37.648	41.412	0.56	0.75	11.78	11.78	1078.80	0.000	0.000	488.02	0.00	0.00
29	51.00	RDIDC-9181-OF-48	1	37.648	41.412	0.80	0.80	1.61	1.61	26.28	0.000	0.000	66.59	0.00	0.00
30	51.00	TA08025-B605	3	37.648	41.412	0.54	0.80	3.15	3.15	270.00	0.000	0.000	130.52	0.00	0.00
31	51.00	TA08025-B604	3	37.648	41.412	0.54	0.80	3.15	3.15	230.04	0.000	0.000	130.52	0.00	0.00
32	42.31	10' Branches	1	36.196	39.815	1.00	1.00	54.43	54.43	648.00	0.000	0.000	2167.15	0.00	0.00
Totals:									11,880.56			25,179.28			

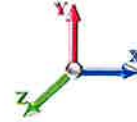
Total Applied Force Summary

Structure: CT46122-A-SBA	Code: TIA-222-H	7/7/2023
Site Name: Middletown North	Exposure: C	
Height: 76.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 10



Load Case: 1.2D + 1.0W 119 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 17

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		452.17	1097.50	0.00	0.00
10.00		435.94	1064.30	0.00	0.00
15.00		419.71	1031.11	0.00	0.00
20.00		428.12	997.91	0.00	0.00
22.75		234.40	534.70	0.00	0.00
25.00		194.04	713.76	0.00	0.00
28.25		280.97	1009.62	0.00	0.00
30.00		149.94	273.51	0.00	0.00
35.00		429.44	763.53	0.00	0.00
40.00		421.76	736.97	0.00	0.00
42.31	(1) attachments	2357.51	979.51	0.00	0.00
45.00		219.08	378.90	0.00	0.00
50.00		400.29	683.86	0.00	0.00
51.00	(11) attachments	1812.14	1970.90	0.00	0.00
55.00		307.97	518.92	0.00	0.00
55.44	(1) attachments	6384.58	2021.64	0.00	0.00
60.00		338.90	568.70	0.00	0.00
64.00	(35) attachments	4951.33	4020.97	0.00	0.00
65.00		69.60	92.41	0.00	0.00
67.06	(1) attachments	3810.30	667.01	0.00	0.00
70.00		197.22	259.10	0.00	0.00
74.00	(29) attachments	4587.45	2703.11	0.00	0.00
75.00	(3) attachments	668.98	657.79	0.00	0.00
75.45	(1) attachments	1685.57	500.20	0.00	0.00
76.00		33.93	39.07	0.00	0.00
	Totals:	31,271.35	24,285.02	0.00	0.00

Calculated Forces

Structure: CT46122-A-SBA
Site Name: Middletown North
Height: 76.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1

Topography: 1

Code: TIA-222-H
Exposure: C
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

7/7/2023

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Load Case: 1.2D + 1.0W 119 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 17

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 Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-24.23	-31.32	0.00	-1822.5	0.00	1822.58	2976.77	803.98	3080.93	2832.01	0.00	0.000	0.000	0.653
5.00	-23.02	-30.94	0.00	-1666.0	0.00	1666.01	2914.38	775.44	2866.11	2673.58	0.11	-0.201	0.000	0.633
10.00	-21.85	-30.58	0.00	-1511.3	0.00	1511.30	2848.80	746.90	2659.05	2516.58	0.43	-0.405	0.000	0.610
15.00	-20.71	-30.23	0.00	-1358.4	0.00	1358.40	2780.04	718.37	2459.75	2361.34	0.97	-0.611	0.000	0.584
20.00	-19.64	-29.84	0.00	-1207.2	0.00	1207.28	2708.10	689.83	2268.22	2208.17	1.72	-0.818	0.000	0.556
22.75	-19.05	-29.63	0.00	-1125.2	0.00	1125.22	2667.17	674.14	2166.19	2124.93	2.23	-0.935	0.000	0.539
25.00	-18.28	-29.46	0.00	-1058.5	0.00	1058.55	2632.97	661.30	2084.45	2057.41	2.69	-1.031	0.000	0.523
28.25	-17.22	-29.20	0.00	-962.79	0.00	962.79	1920.92	522.03	1623.69	1483.43	3.45	-1.167	0.000	0.661
30.00	-16.87	-29.09	0.00	-911.70	0.00	911.70	1904.07	514.04	1574.37	1447.76	3.89	-1.241	0.000	0.642
35.00	-16.00	-28.70	0.00	-766.27	0.00	766.27	1853.76	491.22	1437.64	1346.49	5.32	-1.478	0.000	0.581
40.00	-15.20	-28.30	0.00	-622.75	0.00	622.75	1800.28	468.39	1307.12	1246.45	6.99	-1.702	0.000	0.512
42.31	-14.25	-25.94	0.00	-557.37	0.00	557.37	1774.49	457.84	1248.92	1200.72	7.84	-1.804	0.000	0.475
45.00	-13.81	-25.75	0.00	-487.58	0.00	487.58	1743.61	445.56	1182.81	1147.94	8.89	-1.916	0.000	0.436
50.00	-13.09	-25.35	0.00	-358.84	0.00	358.84	1683.75	422.73	1064.71	1051.30	11.01	-2.100	0.000	0.353
51.00	-11.15	-23.48	0.00	-333.49	0.00	333.49	1671.40	418.16	1041.84	1032.22	11.45	-2.135	0.000	0.333
55.00	-10.62	-23.17	0.00	-239.57	0.00	239.57	1620.72	399.90	952.83	956.84	13.29	-2.255	0.000	0.260
55.44	-8.84	-16.72	0.00	-229.37	0.00	229.37	1615.02	397.89	943.28	948.65	13.50	-2.267	0.000	0.249
60.00	-8.26	-16.37	0.00	-153.15	0.00	153.15	1554.50	377.07	847.15	864.91	15.72	-2.373	0.000	0.184
64.00	-4.44	-11.25	0.00	-87.69	0.00	87.69	1499.23	358.81	767.08	793.39	17.75	-2.442	0.000	0.114
65.00	-4.35	-11.18	0.00	-76.43	0.00	76.43	1485.09	354.25	747.68	775.81	18.26	-2.456	0.000	0.102
67.06	-3.84	-7.35	0.00	-53.40	0.00	53.40	1455.57	344.84	708.50	740.00	19.32	-2.479	0.000	0.075
70.00	-3.59	-7.14	0.00	-31.80	0.00	31.80	1403.00	331.42	654.42	685.23	20.86	-2.502	0.000	0.049
74.00	-1.09	-2.44	0.00	-3.24	0.00	3.24	1325.69	313.15	584.28	611.42	22.96	-2.517	0.000	0.006
75.00	-0.46	-1.74	0.00	-0.80	0.00	0.80	1306.36	308.59	567.37	593.63	23.49	-2.518	0.000	0.002
75.45	-0.04	-0.04	0.00	-0.02	0.00	0.02	1297.66	306.53	559.84	585.71	23.73	-2.518	0.000	0.000
76.00	0.00	-0.03	0.00	0.00	0.00	0.00	1287.03	304.02	550.71	576.10	24.02	-2.518	0.000	0.000

Wind Loading - Shaft

Structure: CT46122-A-SBA	Code: TIA-222-H	7/7/2023
Site Name: Middletown North	Exposure: C	
Height: 76.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.0W 119 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.00



Iterations 17

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	29.135	32.05	430.67	0.730	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	29.135	32.05	415.49	0.730	0.000	5.00	19.327	14.11	452.2	0.0	689.0
10.00		1.00	0.85	29.135	32.05	400.31	0.730	0.000	5.00	18.634	13.60	435.9	0.0	664.1
15.00		1.00	0.85	29.135	32.05	385.12	0.730	0.000	5.00	17.940	13.10	419.7	0.0	639.2
20.00		1.00	0.90	30.914	34.00	381.06	0.730	0.000	5.00	17.246	12.59	428.1	0.0	614.3
22.75 Bot - Section 2		1.00	0.93	31.764	34.94	377.55	0.730	0.000	2.75	9.190	6.71	234.4	0.0	327.3
25.00		1.00	0.95	32.400	35.64	374.11	0.730	0.000	2.25	7.458	5.44	194.0	0.0	475.0
28.25 Top - Section 1		1.00	0.97	33.245	36.57	368.41	0.730	0.000	3.25	10.525	7.68	281.0	0.0	670.1
30.00		1.00	0.98	33.668	37.04	370.01	0.730	0.000	1.75	5.546	4.05	149.9	0.0	158.2
35.00		1.00	1.01	34.779	38.26	359.48	0.730	0.000	5.00	15.377	11.23	429.4	0.0	438.5
40.00		1.00	1.04	35.770	39.35	347.74	0.730	0.000	5.00	14.684	10.72	421.8	0.0	418.6
42.31 Appurtenance(s)		1.00	1.06	36.196	39.82	341.99	0.730	0.000	2.31	6.550	4.78	190.4	0.0	186.7
45.00		1.00	1.07	36.669	40.34	335.05	0.730	0.000	2.69	7.440	5.43	219.1	0.0	212.0
50.00		1.00	1.09	37.491	41.24	321.56	0.730	0.000	5.00	13.296	9.71	400.3	0.0	378.8
51.00 Appurtenance(s)		1.00	1.10	37.648	41.41	318.78	0.730	0.000	1.00	2.576	1.88	77.9	0.0	73.4
55.00		1.00	1.12	38.251	42.08	307.41	0.730	0.000	4.00	10.027	7.32	308.0	0.0	285.5
55.44 Appurtenance(s)		1.00	1.12	38.315	42.15	306.13	0.730	0.000	0.44	1.076	0.79	33.1	0.0	30.6
60.00		1.00	1.14	38.958	42.85	292.68	0.730	0.000	4.56	10.833	7.91	338.9	0.0	308.3
64.00 Appurtenance(s)		1.00	1.15	39.491	43.44	280.53	0.730	0.000	4.00	9.028	6.59	286.3	0.0	256.8
65.00		1.00	1.16	39.620	43.58	277.45	0.730	0.000	1.00	2.188	1.60	69.6	0.0	62.2
67.06 Appurtenance(s)		1.00	1.16	39.881	43.87	271.04	0.730	0.000	2.06	4.419	3.23	141.5	0.0	125.7
70.00		1.00	1.17	40.243	44.27	261.78	0.730	0.000	2.94	6.103	4.46	197.2	0.0	173.5
74.00 Appurtenance(s)		1.00	1.19	40.717	44.79	248.96	0.730	0.000	4.00	7.918	5.78	258.9	0.0	225.0
75.00 Appurtenance(s)		1.00	1.19	40.832	44.91	245.71	0.730	0.000	1.00	1.910	1.39	62.6	0.0	54.2
75.45 Appurtenance(s)		1.00	1.19	40.883	44.97	244.25	0.730	0.000	0.45	0.851	0.62	27.9	0.0	24.2
76.00		1.00	1.19	40.946	45.04	242.46	0.730	0.000	0.55	1.032	0.75	33.9	0.0	29.3
Totals:									76.00			6,092.1		7,520.5

Discrete Appurtenance Forces

Structure: CT46122-A-SBA
Site Name: Middletown North
Height: 76.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1

Topography: 1

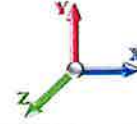
Code: TIA-222-H
Exposure: C
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

7/7/2023
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Load Case: 0.9D + 1.0W 119 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.00



Iterations 17

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	75.45	4' Branches	1	40.883	44.972	1.00	1.00	36.86	351.00	0.000	0.000	1657.65	0.00	0.00
2	75.00	T-Arms	3	40.832	44.915	0.56	0.75	13.50	432.00	0.000	0.000	606.35	0.00	0.00
3	74.00	Antenna Branches	1	40.717	44.788	1.00	1.00	22.43	86.40	0.000	0.000	1004.60	0.00	0.00
4	74.00	AIR6449 B41	3	40.717	44.788	0.57	0.80	9.63	278.10	0.000	0.000	431.20	0.00	0.00
5	74.00	RRUS 4415 B25	3	40.717	44.788	0.54	0.80	2.64	124.20	0.000	0.000	118.11	0.00	0.00
6	74.00	Ericsson 4415 B66A	3	40.717	44.788	0.54	0.80	2.99	133.92	0.000	0.000	133.96	0.00	0.00
7	74.00	(Handrail Kit w/end	1	40.717	44.788	1.00	1.00	6.75	235.55	0.000	0.000	302.32	0.00	0.00
8	74.00	RFS	3	40.717	44.788	0.56	0.80	34.00	345.60	0.000	0.000	1522.94	0.00	0.00
9	74.00	Air 32	3	40.717	44.788	0.70	0.80	13.59	356.94	0.000	0.000	608.80	0.00	0.00
10	74.00	ATM200-A20	6	40.717	44.788	0.40	0.80	0.29	2.70	0.000	0.000	12.90	0.00	0.00
11	74.00	Radio 4449 B71+B85	3	40.717	44.788	0.54	0.80	3.17	191.70	0.000	0.000	141.88	0.00	0.00
12	74.00	Commscope	3	40.717	44.788	0.54	0.80	1.16	18.90	0.000	0.000	51.85	0.00	0.00
13	67.06	6' Branches	1	39.881	43.869	1.00	1.00	83.63	360.00	0.000	0.000	3668.78	0.00	0.00
14	64.00	B5/B13 RRH-BR04C	3	39.491	43.440	0.54	0.80	3.57	189.81	0.000	0.000	155.07	0.00	0.00
15	64.00	B2/B66A RRH-BR049	3	39.491	43.440	0.54	0.80	2.64	227.88	0.000	0.000	114.56	0.00	0.00
16	64.00	CBC78T-DS-43-2X/E14F0	3	39.491	43.440	0.54	0.80	0.59	58.86	0.000	0.000	25.85	0.00	0.00
17	64.00	BSAMNT-SBS-1-2	3	39.491	43.440	0.56	0.75	0.00	68.45	0.000	0.000	0.00	0.00	0.00
18	64.00	DB846H80E-SX	2	39.491	43.440	0.90	0.80	8.98	28.80	0.000	0.000	390.00	0.00	0.00
19	64.00	T-Arm	3	39.491	43.440	0.56	0.75	13.50	864.00	0.000	0.000	586.44	0.00	0.00
20	64.00	Kaelus BSF0020F3V1-1	2	39.491	43.440	0.64	0.80	0.90	35.64	0.000	0.000	38.92	0.00	0.00
21	64.00	DB846F65ZAXY	4	39.491	43.440	0.74	0.80	20.98	75.60	0.000	0.000	911.41	0.00	0.00
22	64.00	(3) VZWSMART-SFK4	1	39.491	43.440	0.56	0.75	9.28	450.00	0.000	0.000	403.18	0.00	0.00
23	64.00	DB-T1-6Z-8AB-0Z	2	39.491	43.440	0.54	0.80	3.54	79.20	0.000	0.000	153.67	0.00	0.00
24	64.00	JAHH-65B-R3B	6	39.491	43.440	0.66	0.80	36.29	341.82	0.000	0.000	1576.62	0.00	0.00
25	64.00	VZS01	3	39.491	43.440	0.55	0.80	7.12	235.17	0.000	0.000	309.33	0.00	0.00
26	55.44	8' Branches	1	38.315	42.147	1.00	1.00	150.70	1474.20	0.000	0.000	6351.48	0.00	0.00
27	51.00	MX08FRO665-21	3	37.648	41.412	0.59	0.80	22.18	174.15	0.000	0.000	918.62	0.00	0.00
28	51.00	MC-K6MHDX-9-96 (3	1	37.648	41.412	0.56	0.75	11.78	809.10	0.000	0.000	488.02	0.00	0.00
29	51.00	RDIDC-9181-OF-48	1	37.648	41.412	0.80	0.80	1.61	19.71	0.000	0.000	66.59	0.00	0.00
30	51.00	TA08025-B605	3	37.648	41.412	0.54	0.80	3.15	202.50	0.000	0.000	130.52	0.00	0.00
31	51.00	TA08025-B604	3	37.648	41.412	0.54	0.80	3.15	172.53	0.000	0.000	130.52	0.00	0.00
32	42.31	10' Branches	1	36.196	39.815	1.00	1.00	54.43	486.00	0.000	0.000	2167.15	0.00	0.00
Totals:									8,910.42			25,179.28		

Total Applied Force Summary

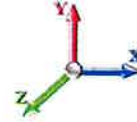
Structure: CT46122-A-SBA	Code: TIA-222-H	7/7/2023
Site Name: Middletown North	Exposure: C	
Height: 76.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.0W 119 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.00



Iterations 17

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		452.17	823.13	0.00	0.00
10.00		435.94	798.23	0.00	0.00
15.00		419.71	773.33	0.00	0.00
20.00		428.12	748.43	0.00	0.00
22.75		234.40	401.03	0.00	0.00
25.00		194.04	535.32	0.00	0.00
28.25		280.97	757.22	0.00	0.00
30.00		149.94	205.13	0.00	0.00
35.00		429.44	572.65	0.00	0.00
40.00		421.76	552.73	0.00	0.00
42.31	(1) attachments	2357.51	734.63	0.00	0.00
45.00		219.08	284.18	0.00	0.00
50.00		400.29	512.89	0.00	0.00
51.00	(11) attachments	1812.14	1478.18	0.00	0.00
55.00		307.97	389.19	0.00	0.00
55.44	(1) attachments	6384.58	1516.23	0.00	0.00
60.00		338.90	426.53	0.00	0.00
64.00	(35) attachments	4951.33	3015.73	0.00	0.00
65.00		69.60	69.31	0.00	0.00
67.06	(1) attachments	3810.30	500.26	0.00	0.00
70.00		197.22	194.32	0.00	0.00
74.00	(29) attachments	4587.45	2027.33	0.00	0.00
75.00	(3) attachments	668.98	493.34	0.00	0.00
75.45	(1) attachments	1685.57	375.15	0.00	0.00
76.00		33.93	29.30	0.00	0.00
	Totals:	31,271.35	18,213.76	0.00	0.00

Calculated Forces

Structure: CT46122-A-SBA
Site Name: Middletown North
Height: 76.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1

Topography: 1

Code: TIA-222-H
Exposure: C
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

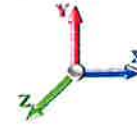
7/7/2023

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Load Case: 0.9D + 1.0W 119 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.00



Iterations 17

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 Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-18.16	-31.30	0.00	-1816.5	0.00	1816.56	2976.77	803.98	3080.93	2832.01	0.00	0.000	0.000	0.649
5.00	-17.23	-30.91	0.00	-1660.0	0.00	1660.04	2914.38	775.44	2866.11	2673.58	0.11	-0.200	0.000	0.628
10.00	-16.32	-30.53	0.00	-1505.4	0.00	1505.49	2848.80	746.90	2659.05	2516.58	0.43	-0.403	0.000	0.606
15.00	-15.44	-30.16	0.00	-1352.8	0.00	1352.84	2780.04	718.37	2459.75	2361.34	0.96	-0.609	0.000	0.580
20.00	-14.62	-29.76	0.00	-1202.0	0.00	1202.05	2708.10	689.83	2268.22	2208.17	1.72	-0.815	0.000	0.552
22.75	-14.16	-29.55	0.00	-1120.2	0.00	1120.20	2667.17	674.14	2166.19	2124.93	2.22	-0.932	0.000	0.534
25.00	-13.57	-29.37	0.00	-1053.7	0.00	1053.72	2632.97	661.30	2084.45	2057.41	2.68	-1.027	0.000	0.519
28.25	-12.77	-29.10	0.00	-958.26	0.00	958.26	1920.92	522.03	1623.69	1483.43	3.43	-1.163	0.000	0.656
30.00	-12.49	-28.98	0.00	-907.34	0.00	907.34	1904.07	514.04	1574.37	1447.76	3.87	-1.236	0.000	0.636
35.00	-11.81	-28.59	0.00	-762.44	0.00	762.44	1853.76	491.22	1437.64	1346.49	5.30	-1.472	0.000	0.576
40.00	-11.19	-28.18	0.00	-619.52	0.00	619.52	1800.28	468.39	1307.12	1246.45	6.96	-1.695	0.000	0.507
42.31	-10.48	-25.82	0.00	-554.42	0.00	554.42	1774.49	457.84	1248.92	1200.72	7.81	-1.796	0.000	0.471
45.00	-10.14	-25.62	0.00	-484.97	0.00	484.97	1743.61	445.56	1182.81	1147.94	8.86	-1.908	0.000	0.432
50.00	-9.59	-25.22	0.00	-356.88	0.00	356.88	1683.75	422.73	1064.71	1051.30	10.96	-2.090	0.000	0.349
51.00	-8.15	-23.36	0.00	-331.66	0.00	331.66	1671.40	418.16	1041.84	1032.22	11.40	-2.125	0.000	0.329
55.00	-7.75	-23.05	0.00	-238.20	0.00	238.20	1620.72	399.90	952.83	956.84	13.24	-2.245	0.000	0.257
55.44	-6.47	-16.62	0.00	-228.06	0.00	228.06	1615.02	397.89	943.28	948.65	13.45	-2.257	0.000	0.246
60.00	-6.03	-16.27	0.00	-152.29	0.00	152.29	1554.50	377.07	847.15	864.91	15.66	-2.362	0.000	0.182
64.00	-3.22	-11.20	0.00	-87.20	0.00	87.20	1499.23	358.81	767.08	793.39	17.67	-2.431	0.000	0.113
65.00	-3.15	-11.13	0.00	-76.00	0.00	76.00	1485.09	354.25	747.68	775.81	18.18	-2.444	0.000	0.101
67.06	-2.81	-7.30	0.00	-53.08	0.00	53.08	1455.57	344.84	708.50	740.00	19.24	-2.467	0.000	0.074
70.00	-2.62	-7.10	0.00	-31.61	0.00	31.61	1403.00	331.42	654.42	685.23	20.77	-2.491	0.000	0.048
74.00	-0.79	-2.43	0.00	-3.23	0.00	3.23	1325.69	313.15	584.28	611.42	22.86	-2.505	0.000	0.006
75.00	-0.33	-1.74	0.00	-0.80	0.00	0.80	1306.36	308.59	567.37	593.63	23.39	-2.506	0.000	0.002
75.45	-0.03	-0.04	0.00	-0.02	0.00	0.02	1297.66	306.53	559.84	585.71	23.62	-2.506	0.000	0.000
76.00	0.00	-0.03	0.00	0.00	0.00	0.00	1287.03	304.02	550.71	576.10	23.91	-2.506	0.000	0.000

Wind Loading - Shaft

Structure: CT46122-A-SBA

Code: TIA-222-H

7/7/2023

Site Name: Middletown North

Exposure: C



Height: 76.00 (ft)

Crest Height: 0.00

Base Elev: 0.000 (ft)

Site Class: D - Stiff Soil

Gh: 1.1

Topography: 1

Struct Class: II

Page: 16

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 16

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	5.144	5.66	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	5.144	5.66	0.00	1.200	0.828	5.00	20.017	24.02	135.9	237.0	1155.7
10.00		1.00	0.85	5.144	5.66	0.00	1.200	0.887	5.00	19.373	23.25	131.5	245.2	1130.7
15.00		1.00	0.85	5.144	5.66	0.00	1.200	0.924	5.00	18.710	22.45	127.0	246.1	1098.4
20.00		1.00	0.90	5.458	6.00	0.00	1.200	0.951	5.00	18.039	21.65	130.0	243.7	1062.8
22.75 Bot - Section 2		1.00	0.93	5.608	6.17	0.00	1.200	0.963	2.75	9.631	11.56	71.3	132.8	569.2
25.00		1.00	0.95	5.720	6.29	0.00	1.200	0.973	2.25	7.823	9.39	59.1	109.1	742.4
28.25 Top - Section 1		1.00	0.97	5.869	6.46	0.00	1.200	0.985	3.25	11.058	13.27	85.7	155.2	1048.6
30.00		1.00	0.98	5.944	6.54	0.00	1.200	0.991	1.75	5.835	7.00	45.8	82.9	293.8
35.00		1.00	1.01	6.140	6.75	0.00	1.200	1.006	5.00	16.215	19.46	131.4	230.2	814.9
40.00		1.00	1.04	6.315	6.95	0.00	1.200	1.019	5.00	15.533	18.64	129.5	222.9	781.1
42.31 Appurtenance(s)		1.00	1.06	6.390	7.03	0.00	1.200	1.025	2.31	6.944	8.33	58.6	101.3	350.2
45.00		1.00	1.07	6.474	7.12	0.00	1.200	1.032	2.69	7.903	9.48	67.5	115.7	398.4
50.00		1.00	1.09	6.619	7.28	0.00	1.200	1.042	5.00	14.165	17.00	123.8	206.6	711.7
51.00 Appurtenance(s)		1.00	1.10	6.646	7.31	0.00	1.200	1.044	1.00	2.750	3.30	24.1	41.0	138.8
55.00		1.00	1.12	6.753	7.43	0.00	1.200	1.052	4.00	10.728	12.87	95.6	158.3	539.0
55.44 Appurtenance(s)		1.00	1.12	6.764	7.44	0.00	1.200	1.053	0.44	1.153	1.38	10.3	17.3	58.2
60.00		1.00	1.14	6.878	7.57	0.00	1.200	1.062	4.56	11.640	13.97	105.7	172.2	583.3
64.00 Appurtenance(s)		1.00	1.15	6.972	7.67	0.00	1.200	1.068	4.00	9.740	11.69	89.6	145.0	487.4
65.00		1.00	1.16	6.995	7.69	0.00	1.200	1.070	1.00	2.366	2.84	21.8	35.9	118.8
67.06 Appurtenance(s)		1.00	1.16	7.041	7.74	0.00	1.200	1.073	2.06	4.788	5.75	44.5	72.3	239.8
70.00		1.00	1.17	7.105	7.81	0.00	1.200	1.078	2.94	6.631	7.96	62.2	99.8	331.1
74.00 Appurtenance(s)		1.00	1.19	7.188	7.91	0.00	1.200	1.084	4.00	8.641	10.37	82.0	129.4	429.3
75.00 Appurtenance(s)		1.00	1.19	7.208	7.93	0.00	1.200	1.086	1.00	2.091	2.51	19.9	31.9	104.3
75.45 Appurtenance(s)		1.00	1.19	7.218	7.94	0.00	1.200	1.086	0.45	0.932	1.12	8.9	14.3	46.5
76.00		1.00	1.19	7.229	7.95	0.00	1.200	1.087	0.55	1.132	1.36	10.8	17.3	56.4
Totals:									76.00			1,872.4		13,290.7

Discrete Appurtenance Forces

Structure: CT46122-A-SBA
Site Name: Middletown North
Height: 76.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1

Topography: 1

Code: TIA-222-H
Exposure: C
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

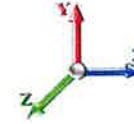
7/7/2023

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Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 16

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	75.45	4' Branches	1	7.218	7.939	1.00	1.00	52.88	298.55	0.000	0.000	419.79	0.00	0.00
2	75.00	T-Arms	3	7.208	7.929	0.56	0.75	23.29	716.53	0.000	0.000	184.67	0.00	0.00
3	74.00	Antenna Branches	1	7.188	7.907	1.00	1.00	32.16	252.83	0.000	0.000	254.26	0.00	0.00
4	74.00	AIR6449 B41	3	7.188	7.907	0.57	0.80	10.63	531.23	0.000	0.000	84.08	0.00	0.00
5	74.00	RRUS 4415 B25	3	7.188	7.907	0.54	0.80	3.15	214.00	0.000	0.000	24.92	0.00	0.00
6	74.00	Ericsson 4415 B66A	3	7.188	7.907	0.54	0.80	3.53	282.94	0.000	0.000	27.91	0.00	0.00
7	74.00	(Handrail Kit w/end	1	7.188	7.907	1.00	1.00	10.85	768.72	0.000	0.000	85.77	0.00	0.00
8	74.00	RFS	3	7.188	7.907	0.56	0.80	35.96	1202.47	0.000	0.000	284.32	0.00	0.00
9	74.00	Air 32	3	7.188	7.907	0.70	0.80	15.01	794.02	0.000	0.000	118.69	0.00	0.00
10	74.00	ATM200-A20	6	7.188	7.907	0.80	0.80	1.23	14.13	0.000	0.000	9.76	0.00	0.00
11	74.00	Radio 4449 B71+B85	3	7.188	7.907	0.54	0.80	3.71	314.28	0.000	0.000	29.37	0.00	0.00
12	74.00	Commscope	3	7.188	7.907	0.54	0.80	1.79	39.64	0.000	0.000	14.14	0.00	0.00
13	67.06	6' Branches	1	7.041	7.745	1.00	1.00	119.54	1051.76	0.000	0.000	925.81	0.00	0.00
14	64.00	B5/B13 RRH-BR04C	3	6.972	7.669	0.54	0.80	4.18	307.84	0.000	0.000	32.06	0.00	0.00
15	64.00	B2/B66A RRH-BR049	3	6.972	7.669	0.54	0.80	3.15	414.97	0.000	0.000	24.12	0.00	0.00
16	64.00	CBC78T-DS-43-2X/E14F0	3	6.972	7.669	0.54	0.80	0.85	109.90	0.000	0.000	6.52	0.00	0.00
17	64.00	BSAMNT-SBS-1-2	3	6.972	7.669	0.56	0.75	0.00	120.31	0.000	0.000	0.00	0.00	0.00
18	64.00	DB846H80E-SX	2	6.972	7.669	0.90	0.80	10.25	216.44	0.000	0.000	78.62	0.00	0.00
19	64.00	T-Arm	3	6.972	7.669	0.56	0.75	20.71	1262.30	0.000	0.000	158.84	0.00	0.00
20	64.00	Kaelus BSF0020F3V1-1	2	6.972	7.669	0.64	0.80	1.17	78.66	0.000	0.000	8.95	0.00	0.00
21	64.00	DB846F65ZAXY	4	6.972	7.669	0.74	0.80	23.14	548.17	0.000	0.000	177.47	0.00	0.00
22	64.00	(3) VZWSMART-SFK4	1	6.972	7.669	0.56	0.75	14.83	813.28	0.000	0.000	113.77	0.00	0.00
23	64.00	DB-T1-6Z-8AB-0Z	2	6.972	7.669	0.54	0.80	5.70	269.66	0.000	0.000	43.74	0.00	0.00
24	64.00	JAHH-65B-R3B	2	6.972	7.669	0.66	0.80	39.50	1246.33	0.000	0.000	302.96	0.00	0.00
25	64.00	VZS01	3	6.972	7.669	0.55	0.80	8.00	500.80	0.000	0.000	61.34	0.00	0.00
26	55.44	8' Branches	1	6.764	7.441	1.00	1.00	214.19	4293.69	0.000	0.000	1593.70	0.00	0.00
27	51.00	MX08FRO665-21	3	6.646	7.311	0.59	0.80	23.74	552.85	0.000	0.000	173.56	0.00	0.00
28	51.00	MC-K6MHDX-9-96 (3	1	6.646	7.311	0.56	0.75	20.65	1503.64	0.000	0.000	150.95	0.00	0.00
29	51.00	RDIDC-9181-OF-48	1	6.646	7.311	0.80	0.80	1.88	45.45	0.000	0.000	13.75	0.00	0.00
30	51.00	TA08025-B605	3	6.646	7.311	0.54	0.80	3.69	326.11	0.000	0.000	26.99	0.00	0.00
31	51.00	TA08025-B604	3	6.646	7.311	0.54	0.80	3.69	284.64	0.000	0.000	26.99	0.00	0.00
32	42.31	10' Branches	1	6.390	7.029	1.00	1.00	76.75	1409.44	0.000	0.000	539.48	0.00	0.00
Totals:									20,785.59			5,997.29		

Total Applied Force Summary

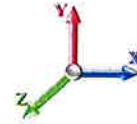
Structure: CT46122-A-SBA	Code: TIA-222-H	7/7/2023
Site Name: Middletown North	Exposure: C	
Height: 76.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 16

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		135.91	1334.51	0.00	0.00
10.00		131.53	1309.54	0.00	0.00
15.00		127.03	1277.20	0.00	0.00
20.00		129.95	1241.58	0.00	0.00
22.75		71.29	667.50	0.00	0.00
25.00		59.07	822.81	0.00	0.00
28.25		85.67	1164.86	0.00	0.00
30.00		45.78	356.37	0.00	0.00
35.00		131.42	993.71	0.00	0.00
40.00		129.48	959.86	0.00	0.00
42.31	(1) attachments	598.05	1842.27	0.00	0.00
45.00		67.53	494.58	0.00	0.00
50.00		123.76	890.50	0.00	0.00
51.00	(11) attachments	416.35	2887.26	0.00	0.00
55.00		95.63	677.22	0.00	0.00
55.44	(1) attachments	1604.00	4367.08	0.00	0.00
60.00		105.68	740.85	0.00	0.00
64.00	(35) attachments	1098.02	6514.34	0.00	0.00
65.00		21.84	128.28	0.00	0.00
67.06	(1) attachments	970.30	1311.03	0.00	0.00
70.00		62.19	358.85	0.00	0.00
74.00	(29) attachments	1015.22	4881.41	0.00	0.00
75.00	(3) attachments	204.57	830.27	0.00	0.00
75.45	(1) attachments	428.67	345.05	0.00	0.00
76.00		10.80	56.41	0.00	0.00
	Totals:	7,869.73	36,453.33	0.00	0.00

Calculated Forces

Structure: CT46122-A-SBA
Site Name: Middletown North
Height: 76.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1

Topography: 1

Code: TIA-222-H
Exposure: C
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

7/7/2023

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Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 16

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 Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-36.45	-7.89	0.00	-453.59	0.00	453.59	2976.77	803.98	3080.93	2832.01	0.00	0.000	0.000	0.173
5.00	-35.11	-7.78	0.00	-414.17	0.00	414.17	2914.38	775.44	2866.11	2673.58	0.03	-0.050	0.000	0.167
10.00	-33.79	-7.68	0.00	-375.27	0.00	375.27	2848.80	746.90	2659.05	2516.58	0.11	-0.101	0.000	0.161
15.00	-32.51	-7.58	0.00	-336.89	0.00	336.89	2780.04	718.37	2459.75	2361.34	0.24	-0.152	0.000	0.154
20.00	-31.26	-7.46	0.00	-299.01	0.00	299.01	2708.10	689.83	2268.22	2208.17	0.43	-0.203	0.000	0.147
22.75	-30.59	-7.40	0.00	-278.48	0.00	278.48	2667.17	674.14	2166.19	2124.93	0.55	-0.232	0.000	0.143
25.00	-29.77	-7.36	0.00	-261.83	0.00	261.83	2632.97	661.30	2084.45	2057.41	0.67	-0.256	0.000	0.139
28.25	-28.60	-7.28	0.00	-237.92	0.00	237.92	1920.92	522.03	1623.69	1483.43	0.86	-0.290	0.000	0.175
30.00	-28.24	-7.25	0.00	-225.18	0.00	225.18	1904.07	514.04	1574.37	1447.76	0.97	-0.308	0.000	0.171
35.00	-27.24	-7.14	0.00	-188.93	0.00	188.93	1853.76	491.22	1437.64	1346.49	1.32	-0.366	0.000	0.155
40.00	-26.27	-7.02	0.00	-153.24	0.00	153.24	1800.28	468.39	1307.12	1246.45	1.73	-0.422	0.000	0.138
42.31	-24.43	-6.42	0.00	-137.02	0.00	137.02	1774.49	457.84	1248.92	1200.72	1.95	-0.447	0.000	0.128
45.00	-23.93	-6.36	0.00	-119.75	0.00	119.75	1743.61	445.56	1182.81	1147.94	2.21	-0.474	0.000	0.118
50.00	-23.04	-6.24	0.00	-87.92	0.00	87.92	1683.75	422.73	1064.71	1051.30	2.73	-0.519	0.000	0.098
51.00	-20.16	-5.81	0.00	-81.68	0.00	81.68	1671.40	418.16	1041.84	1032.22	2.84	-0.528	0.000	0.091
55.00	-19.48	-5.71	0.00	-58.45	0.00	58.45	1620.72	399.90	952.83	956.84	3.29	-0.557	0.000	0.073
55.44	-15.13	-4.07	0.00	-55.93	0.00	55.93	1615.02	397.89	943.28	948.65	3.34	-0.560	0.000	0.068
60.00	-14.39	-3.96	0.00	-37.38	0.00	37.38	1554.50	377.07	847.15	864.91	3.89	-0.586	0.000	0.053
64.00	-7.88	-2.80	0.00	-21.54	0.00	21.54	1499.23	358.81	767.08	793.39	4.39	-0.603	0.000	0.032
65.00	-7.75	-2.77	0.00	-18.74	0.00	18.74	1485.09	354.25	747.68	775.81	4.52	-0.606	0.000	0.029
67.06	-6.45	-1.79	0.00	-13.03	0.00	13.03	1455.57	344.84	708.50	740.00	4.78	-0.612	0.000	0.022
70.00	-6.09	-1.73	0.00	-7.76	0.00	7.76	1403.00	331.42	654.42	685.23	5.16	-0.617	0.000	0.016
74.00	-1.22	-0.66	0.00	-0.86	0.00	0.86	1325.69	313.15	584.28	611.42	5.68	-0.621	0.000	0.002
75.00	-0.40	-0.44	0.00	-0.21	0.00	0.21	1306.36	308.59	567.37	593.63	5.81	-0.621	0.000	0.001
75.45	-0.06	-0.01	0.00	-0.01	0.00	0.01	1297.66	306.53	559.84	585.71	5.87	-0.621	0.000	0.000
76.00	0.00	-0.01	0.00	0.00	0.00	0.00	1287.03	304.02	550.71	576.10	5.94	-0.621	0.000	0.000

Seismic Segment Forces (Factored)

Structure: CT46122-A-SBA	Code: TIA-222-H	7/7/2023
Site Name: Middletown North	Exposure: C	
Height: 76.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0Ev + 1.0Eh

Gust Response Factor	1.10	Sds	0.22		Iterations	15
Dead Load Factor	1.20	Seismic Load Factor	1.00	Sd1	Ss	0.20
Wind Load Factor	0.00	Structure Frequency (f1)	0.81	SA	S1	0.06
				Seismic Importance Factor		1.00

Top Elev (ft)	Description	Wz (lb)	Hz (lb)	Vertical Ev (lb)	Lateral Fs (lb)	
0.00		0.00	0.00	0.00	0.00	
5.00		944.38	2.50	41.30	0.59	
10.00		916.72	7.50	40.09	2.55	
15.00		889.06	12.50	38.88	4.92	
20.00		861.39	17.50	37.67	7.47	
22.75	Bot - Section 2	461.97	21.38	20.20	4.19	
25.00		608.21	23.88	26.60	7.09	
28.25	Top - Section 1	860.72	26.63	37.64	13.24	
30.00		238.35	29.13	10.42	2.59	
35.00		666.08	32.50	29.13	12.25	
40.00		643.94	37.50	28.16	14.22	
42.31	Appurtenance(s)	830.03	41.16	36.30	22.85	
45.00		331.79	43.66	14.51	7.07	
50.00		599.68	47.50	26.23	17.83	
51.00	Appurtenance(s)	1648.3	50.50	72.09	77.27	
55.00		455.47	53.00	19.92	14.21	
55.44	Appurtenance(s)	1687.2	55.22	73.79	90.14	
60.00		500.18	57.72	21.87	18.16	
64.00	Appurtenance(s)	3373.8	62.00	147.55	272.46	
65.00		78.58	64.50	3.44	1.68	
67.06	Appurtenance(s)	559.09	66.03	24.45	25.41	
70.00		220.55	68.53	9.65	7.49	
74.00	Appurtenance(s)	2258.9	72.00	98.79	193.12	
75.00	Appurtenance(s)	549.73	74.50	24.04	29.29	
75.45	Appurtenance(s)	416.83	75.22	18.23	20.33	
76.00		32.55	75.72	1.42	0.63	
	Totals:	20,633.7		902.4	867.0	
						Total Wind: 31,271.3

Calculated Forces

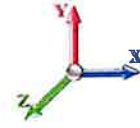
Structure: CT46122-A-SBA
Site Name: Middletown North
Height: 76.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1

Topography: 1

Code: TIA-222-H
Exposure: C
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

7/7/2023

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Load Case: 1.2D + 1.0Ev + 1.0Eh		Iterations 15
Gust Response Factor 1.10	Sds 0.22	Ss 0.20
Dead Load Factor 1.20	Seismic Load Factor 1.00	Sd1 0.09
Wind Load Factor 0.00	Structure Frequency (f1) 0.81	SA 0.07
	Seismic Importance Factor 1.00	

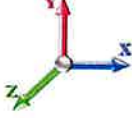
Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-25.19	-0.87	0.00	-53.52	0.00	53.52	2976.77	803.98	3080.93	2832.01	0.00	0.00	0.00	0.027
5.00	-24.05	-0.87	0.00	-49.18	0.00	49.18	2914.38	775.44	2866.11	2673.58	0.00	-0.01	-0.01	0.027
10.00	-22.94	-0.87	0.00	-44.83	0.00	44.83	2848.80	746.90	2659.05	2516.58	0.01	-0.01	-0.01	0.026
15.00	-21.87	-0.87	0.00	-40.48	0.00	40.48	2780.04	718.37	2459.75	2361.34	0.03	-0.02	-0.02	0.025
20.00	-20.84	-0.86	0.00	-36.15	0.00	36.15	2708.10	689.83	2268.22	2208.17	0.05	-0.02	-0.02	0.024
22.75	-20.28	-0.86	0.00	-33.78	0.00	33.78	2667.17	674.14	2166.19	2124.93	0.07	-0.03	-0.03	0.024
25.00	-19.54	-0.85	0.00	-31.85	0.00	31.85	2632.97	661.30	2084.45	2057.41	0.08	-0.03	-0.03	0.023
28.25	-18.50	-0.84	0.00	-29.09	0.00	29.09	1920.92	522.03	1623.69	1483.43	0.10	-0.03	-0.03	0.029
30.00	-18.21	-0.84	0.00	-27.62	0.00	27.62	1904.07	514.04	1574.37	1447.76	0.12	-0.04	-0.04	0.029
35.00	-17.42	-0.83	0.00	-23.44	0.00	23.44	1853.76	491.22	1437.64	1346.49	0.16	-0.04	-0.04	0.027
40.00	-16.65	-0.81	0.00	-19.30	0.00	19.30	1800.28	468.39	1307.12	1246.45	0.21	-0.05	-0.05	0.025
42.31	-15.64	-0.79	0.00	-17.43	0.00	17.43	1774.49	457.84	1248.92	1200.72	0.23	-0.05	-0.05	0.023
45.00	-15.24	-0.78	0.00	-15.30	0.00	15.30	1743.61	445.56	1182.81	1147.94	0.27	-0.06	-0.06	0.022
50.00	-14.53	-0.77	0.00	-11.38	0.00	11.38	1683.75	422.73	1064.71	1051.30	0.33	-0.06	-0.06	0.019
51.00	-12.49	-0.69	0.00	-10.62	0.00	10.62	1671.40	418.16	1041.84	1032.22	0.34	-0.06	-0.06	0.018
55.00	-11.95	-0.67	0.00	-7.87	0.00	7.87	1620.72	399.90	952.83	956.84	0.40	-0.07	-0.07	0.016
55.44	-9.86	-0.58	0.00	-7.57	0.00	7.57	1615.02	397.89	943.28	948.65	0.40	-0.07	-0.07	0.014
60.00	-9.27	-0.56	0.00	-4.92	0.00	4.92	1554.50	377.07	847.15	864.91	0.47	-0.07	-0.07	0.012
64.00	-5.10	-0.28	0.00	-2.68	0.00	2.68	1499.23	358.81	767.08	793.39	0.53	-0.07	-0.07	0.007
65.00	-5.00	-0.28	0.00	-2.39	0.00	2.39	1485.09	354.25	747.68	775.81	0.55	-0.08	-0.08	0.006
67.06	-4.31	-0.26	0.00	-1.81	0.00	1.81	1455.57	344.84	708.50	740.00	0.58	-0.08	-0.08	0.005
70.00	-4.04	-0.25	0.00	-1.06	0.00	1.06	1403.00	331.42	654.42	685.23	0.63	-0.08	-0.08	0.004
74.00	-1.24	-0.05	0.00	-0.06	0.00	0.06	1325.69	313.15	584.28	611.42	0.69	-0.08	-0.08	0.001
75.00	-0.56	-0.02	0.00	-0.01	0.00	0.01	1306.36	308.59	567.37	593.63	0.71	-0.08	-0.08	0.000
75.45	-0.04	0.00	0.00	0.00	0.00	0.00	1297.66	306.53	559.84	585.71	0.72	-0.08	-0.08	0.000
76.00	0.00	0.00	0.00	0.00	0.00	0.00	1287.03	304.02	550.71	576.10	0.73	-0.08	-0.08	0.000

Seismic Segment Forces (Factored)

Structure: CT46122-A-SBA	Code: TIA-222-H	7/7/2023
Site Name: Middletown North	Exposure: C	
Height: 76.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Page: 22
	Struct Class: II	



Load Case: 0.9D + 1.0Ev + 1.0Eh

Gust Response Factor	1.10	Sds	0.22		Iterations	15
Dead Load Factor	0.90	Seismic Load Factor	1.00		Ss	0.20
Wind Load Factor	0.00	Structure Frequency (f1)	0.81		S1	0.06
		SA	0.07		Seismic Importance Factor	1.00

Top Elev (ft)	Description	Wz (lb)	Hz (lb)	Vertical Ev (lb)	Lateral Fs (lb)		R: 1.50
0.00		0.00	0.00	0.00	0.00		
5.00		899.68	2.50	39.35	0.57		
10.00		872.02	7.50	38.14	2.43		
15.00		844.36	12.50	36.93	4.68		
20.00		816.69	17.50	35.72	7.09		
22.75	Bot - Section 2	437.39	21.38	19.13	3.97		
25.00		588.09	23.88	25.72	6.92		
28.25	Top - Section 1	831.67	26.63	36.37	12.90		
30.00		222.71	29.13	9.74	2.41		
35.00		621.38	32.50	27.17	11.38		
40.00		599.24	37.50	26.21	13.17		
42.31	Appurtenance(s)	809.38	41.16	35.40	22.55		
45.00		307.74	43.66	13.46	6.51		
50.00		554.98	47.50	24.27	16.38		
51.00	Appurtenance(s)	1639.4	50.50	71.70	78.34		
55.00		420.91	53.00	18.41	13.03		
55.44	Appurtenance(s)	1683.4	55.22	73.62	91.79		
60.00		460.79	57.72	20.15	16.58		
64.00	Appurtenance(s)	3339.2	62.00	146.04	274.42		
65.00		76.22	64.50	3.33	1.65		
67.06	Appurtenance(s)	554.22	66.03	24.24	25.65		
70.00		213.60	68.53	9.34	7.33		
74.00	Appurtenance(s)	2249.4	72.00	98.38	196.14		
75.00	Appurtenance(s)	547.37	74.50	23.94	29.74		
75.45	Appurtenance(s)	416.83	75.22	18.23	20.76		
76.00		32.55	75.72	1.42	0.64		
Totals:		20,039.4		876.4	867.0		Total Wind: 31,271.3

Calculated Forces

Structure: CT46122-A-SBA
Site Name: Middletown North
Height: 76.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1

Topography: 1

Code: TIA-222-H
Exposure: C
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

7/7/2023

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Load Case: 0.9D + 1.0Ev + 1.0Eh							Iterations	15
Gust Response Factor		1.10		Sds	0.22	Ss	0.20	
Dead Load Factor		0.90		Seismic Load Factor	1.00	Sd1	0.09	
Wind Load Factor		0.00		Structure Frequency (f1)	0.81	SA	0.07	
						Seismic Importance 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 Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-19.09	-0.87	0.00	-53.52	0.00	53.52	2976.77	803.98	3080.93	2832.01	0.00	0.00	0.00	0.025
5.00	-18.23	-0.87	0.00	-49.19	0.00	49.19	2914.38	775.44	2866.11	2673.58	0.00	-0.01	-0.01	0.025
10.00	-17.39	-0.87	0.00	-44.84	0.00	44.84	2848.80	746.90	2659.05	2516.58	0.01	-0.01	-0.01	0.024
15.00	-16.58	-0.87	0.00	-40.50	0.00	40.50	2780.04	718.37	2459.75	2361.34	0.03	-0.02	-0.02	0.023
20.00	-15.80	-0.86	0.00	-36.18	0.00	36.18	2708.10	689.83	2268.22	2208.17	0.05	-0.02	-0.02	0.022
22.75	-15.38	-0.86	0.00	-33.81	0.00	33.81	2667.17	674.14	2166.19	2124.93	0.07	-0.03	-0.03	0.022
25.00	-14.82	-0.85	0.00	-31.89	0.00	31.89	2632.97	661.30	2084.45	2057.41	0.08	-0.03	-0.03	0.021
28.25	-14.02	-0.84	0.00	-29.13	0.00	29.13	1920.92	522.03	1623.69	1483.43	0.10	-0.03	-0.03	0.027
30.00	-13.81	-0.84	0.00	-27.66	0.00	27.66	1904.07	514.04	1574.37	1447.76	0.12	-0.04	-0.04	0.026
35.00	-13.21	-0.83	0.00	-23.49	0.00	23.49	1853.76	491.22	1437.64	1346.49	0.16	-0.04	-0.04	0.025
40.00	-12.63	-0.81	0.00	-19.36	0.00	19.36	1800.28	468.39	1307.12	1246.45	0.21	-0.05	-0.05	0.023
42.31	-11.86	-0.79	0.00	-17.48	0.00	17.48	1774.49	457.84	1248.92	1200.72	0.23	-0.05	-0.05	0.021
45.00	-11.56	-0.78	0.00	-15.36	0.00	15.36	1743.61	445.56	1182.81	1147.94	0.27	-0.06	-0.06	0.020
50.00	-11.02	-0.77	0.00	-11.43	0.00	11.43	1683.75	422.73	1064.71	1051.30	0.33	-0.06	-0.06	0.017
51.00	-9.47	-0.69	0.00	-10.67	0.00	10.67	1671.40	418.16	1041.84	1032.22	0.34	-0.06	-0.06	0.016
55.00	-9.07	-0.68	0.00	-7.91	0.00	7.91	1620.72	399.90	952.83	956.84	0.40	-0.07	-0.07	0.014
55.44	-7.48	-0.58	0.00	-7.62	0.00	7.62	1615.02	397.89	943.28	948.65	0.41	-0.07	-0.07	0.013
60.00	-7.03	-0.57	0.00	-4.96	0.00	4.96	1554.50	377.07	847.15	864.91	0.47	-0.07	-0.07	0.010
64.00	-3.87	-0.29	0.00	-2.70	0.00	2.70	1499.23	358.81	767.08	793.39	0.54	-0.07	-0.07	0.006
65.00	-3.79	-0.29	0.00	-2.42	0.00	2.42	1485.09	354.25	747.68	775.81	0.55	-0.08	-0.08	0.006
67.06	-3.27	-0.26	0.00	-1.83	0.00	1.83	1455.57	344.84	708.50	740.00	0.58	-0.08	-0.08	0.005
70.00	-3.07	-0.25	0.00	-1.07	0.00	1.07	1403.00	331.42	654.42	685.23	0.63	-0.08	-0.08	0.004
74.00	-0.94	-0.05	0.00	-0.06	0.00	0.06	1325.69	313.15	584.28	611.42	0.70	-0.08	-0.08	0.001
75.00	-0.42	-0.02	0.00	-0.01	0.00	0.01	1306.36	308.59	567.37	593.63	0.71	-0.08	-0.08	0.000
75.45	-0.03	0.00	0.00	0.00	0.00	0.00	1297.66	306.53	559.84	585.71	0.72	-0.08	-0.08	0.000
76.00	0.00	0.00	0.00	0.00	0.00	0.00	1287.03	304.02	550.71	576.10	0.73	-0.08	-0.08	0.000

Wind Loading - Shaft

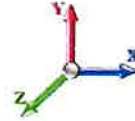
Structure: CT46122-A-SBA	Code: TIA-222-H	7/7/2023
Site Name: Middletown North	Exposure: C	
Height: 76.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 16

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	6.627	7.29	217.15	0.730	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	6.627	7.29	209.49	0.730	0.000	5.00	19.327	14.11	102.8	0.0	765.6
10.00		1.00	0.85	6.627	7.29	201.84	0.730	0.000	5.00	18.634	13.60	99.2	0.0	737.9
15.00		1.00	0.85	6.627	7.29	194.18	0.730	0.000	5.00	17.940	13.10	95.5	0.0	710.3
20.00		1.00	0.90	7.032	7.73	192.13	0.730	0.000	5.00	17.246	12.59	97.4	0.0	682.6
22.75 Bot - Section 2		1.00	0.93	7.225	7.95	190.36	0.730	0.000	2.75	9.190	6.71	53.3	0.0	363.6
25.00		1.00	0.95	7.370	8.11	188.63	0.730	0.000	2.25	7.458	5.44	44.1	0.0	527.7
28.25 Top - Section 1		1.00	0.97	7.562	8.32	185.75	0.730	0.000	3.25	10.525	7.68	63.9	0.0	744.5
30.00		1.00	0.98	7.658	8.42	186.56	0.730	0.000	1.75	5.546	4.05	34.1	0.0	175.8
35.00		1.00	1.01	7.911	8.70	181.25	0.730	0.000	5.00	15.377	11.23	97.7	0.0	487.3
40.00		1.00	1.04	8.136	8.95	175.33	0.730	0.000	5.00	14.684	10.72	95.9	0.0	465.1
42.31 Appurtenance(s)		1.00	1.06	8.233	9.06	172.43	0.730	0.000	2.31	6.550	4.78	43.3	0.0	207.4
45.00		1.00	1.07	8.341	9.17	168.93	0.730	0.000	2.69	7.440	5.43	49.8	0.0	235.6
50.00		1.00	1.09	8.528	9.38	162.13	0.730	0.000	5.00	13.296	9.71	91.0	0.0	420.9
51.00 Appurtenance(s)		1.00	1.10	8.563	9.42	160.73	0.730	0.000	1.00	2.576	1.88	17.7	0.0	81.5
55.00		1.00	1.12	8.701	9.57	155.00	0.730	0.000	4.00	10.027	7.32	70.1	0.0	317.2
55.44 Appurtenance(s)		1.00	1.12	8.715	9.59	154.35	0.730	0.000	0.44	1.076	0.79	7.5	0.0	34.0
60.00		1.00	1.14	8.861	9.75	147.57	0.730	0.000	4.56	10.833	7.91	77.1	0.0	342.6
64.00 Appurtenance(s)		1.00	1.15	8.983	9.88	141.45	0.730	0.000	4.00	9.028	6.59	65.1	0.0	285.4
65.00		1.00	1.16	9.012	9.91	139.89	0.730	0.000	1.00	2.188	1.60	15.8	0.0	69.1
67.06 Appurtenance(s)		1.00	1.16	9.071	9.98	136.66	0.730	0.000	2.06	4.419	3.23	32.2	0.0	139.6
70.00		1.00	1.17	9.154	10.07	131.99	0.730	0.000	2.94	6.103	4.46	44.9	0.0	192.7
74.00 Appurtenance(s)		1.00	1.19	9.261	10.19	125.52	0.730	0.000	4.00	7.918	5.78	58.9	0.0	250.0
75.00 Appurtenance(s)		1.00	1.19	9.288	10.22	123.89	0.730	0.000	1.00	1.910	1.39	14.2	0.0	60.3
75.45 Appurtenance(s)		1.00	1.19	9.299	10.23	123.15	0.730	0.000	0.45	0.851	0.62	6.4	0.0	26.8
76.00		1.00	1.19	9.314	10.24	122.25	0.730	0.000	0.55	1.032	0.75	7.7	0.0	32.6
Totals:									76.00			1,385.7		8,356.2

Discrete Appurtenance Forces

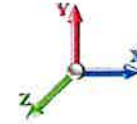
Structure: CT46122-A-SBA	Code: TIA-222-H	7/7/2023
Site Name: Middletown North	Exposure: C	
Height: 76.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 16

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	75.45	4' Branches	1	9.299	10.229	1.00	1.00	36.86	390.00	0.000	0.000	377.05	0.00	0.00
2	75.00	T-Arms	3	9.288	10.216	0.56	0.75	13.50	480.00	0.000	0.000	137.92	0.00	0.00
3	74.00	Antenna Branches	1	9.261	10.187	1.00	1.00	22.43	96.00	0.000	0.000	228.51	0.00	0.00
4	74.00	AIR6449 B41	3	9.261	10.187	0.57	0.80	9.63	309.00	0.000	0.000	98.08	0.00	0.00
5	74.00	RRUS 4415 B25	3	9.261	10.187	0.54	0.80	2.64	138.00	0.000	0.000	26.87	0.00	0.00
6	74.00	Ericsson 4415 B66A	3	9.261	10.187	0.54	0.80	2.99	148.80	0.000	0.000	30.47	0.00	0.00
7	74.00	(Handrail Kit w/end	1	9.261	10.187	1.00	1.00	6.75	261.72	0.000	0.000	68.77	0.00	0.00
8	74.00	RFS	3	9.261	10.187	0.56	0.80	34.00	384.00	0.000	0.000	346.41	0.00	0.00
9	74.00	Air 32	3	9.261	10.187	0.70	0.80	13.59	396.60	0.000	0.000	138.48	0.00	0.00
10	74.00	ATM200-A20	6	9.261	10.187	0.40	0.80	0.29	3.00	0.000	0.000	2.93	0.00	0.00
11	74.00	Radio 4449 B71+B85	3	9.261	10.187	0.54	0.80	3.17	213.00	0.000	0.000	32.27	0.00	0.00
12	74.00	Commscope	3	9.261	10.187	0.54	0.80	1.16	21.00	0.000	0.000	11.79	0.00	0.00
13	67.06	6' Branches	1	9.071	9.978	1.00	1.00	83.63	400.00	0.000	0.000	834.50	0.00	0.00
14	64.00	B5/B13 RRH-BR04C	3	8.983	9.881	0.54	0.80	3.57	210.90	0.000	0.000	35.27	0.00	0.00
15	64.00	B2/B66A RRH-BR049	3	8.983	9.881	0.54	0.80	2.64	253.20	0.000	0.000	26.06	0.00	0.00
16	64.00	CBC78T-DS-43-2X/E14F0	3	8.983	9.881	0.54	0.80	0.59	65.40	0.000	0.000	5.88	0.00	0.00
17	64.00	BSAMNT-SBS-1-2	3	8.983	9.881	0.56	0.75	0.00	76.05	0.000	0.000	0.00	0.00	0.00
18	64.00	DB846H80E-SX	2	8.983	9.881	0.90	0.80	8.98	32.00	0.000	0.000	88.71	0.00	0.00
19	64.00	T-Arm	3	8.983	9.881	0.56	0.75	13.50	960.00	0.000	0.000	133.39	0.00	0.00
20	64.00	Kaelus BSF0020F3V1-1	2	8.983	9.881	0.64	0.80	0.90	39.60	0.000	0.000	8.85	0.00	0.00
21	64.00	DB846F65ZAXY	4	8.983	9.881	0.74	0.80	20.98	84.00	0.000	0.000	207.31	0.00	0.00
22	64.00	(3) VZWSMART-SFK4	1	8.983	9.881	0.56	0.75	9.28	500.00	0.000	0.000	91.71	0.00	0.00
23	64.00	DB-T1-6Z-8AB-0Z	2	8.983	9.881	0.54	0.80	3.54	88.00	0.000	0.000	34.95	0.00	0.00
24	64.00	JAHH-65B-R3B	6	8.983	9.881	0.66	0.80	36.29	379.80	0.000	0.000	358.62	0.00	0.00
25	64.00	VZS01	3	8.983	9.881	0.55	0.80	7.12	261.30	0.000	0.000	70.36	0.00	0.00
26	55.44	8' Branches	1	8.715	9.587	1.00	1.00	150.70	1638.00	0.000	0.000	1444.70	0.00	0.00
27	51.00	MX08FRO665-21	3	8.563	9.420	0.59	0.80	22.18	193.50	0.000	0.000	208.95	0.00	0.00
28	51.00	MC-K6MHDX-9-96 (3	1	8.563	9.420	0.56	0.75	11.78	899.00	0.000	0.000	111.00	0.00	0.00
29	51.00	RDIDC-9181-OF-48	1	8.563	9.420	0.80	0.80	1.61	21.90	0.000	0.000	15.15	0.00	0.00
30	51.00	TA08025-B605	3	8.563	9.420	0.54	0.80	3.15	225.00	0.000	0.000	29.69	0.00	0.00
31	51.00	TA08025-B604	3	8.563	9.420	0.54	0.80	3.15	191.70	0.000	0.000	29.69	0.00	0.00
32	42.31	10' Branches	1	8.233	9.056	1.00	1.00	54.43	540.00	0.000	0.000	492.94	0.00	0.00
Totals:									9,900.47			5,727.26		

Total Applied Force Summary

Structure: CT46122-A-SBA	Code: TIA-222-H	7/7/2023
Site Name: Middletown North	Exposure: C	
Height: 76.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 26

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 16

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		102.85	914.58	0.00	0.00
10.00		99.16	886.92	0.00	0.00
15.00		95.47	859.26	0.00	0.00
20.00		97.38	831.59	0.00	0.00
22.75		53.32	445.58	0.00	0.00
25.00		44.14	594.80	0.00	0.00
28.25		63.91	841.35	0.00	0.00
30.00		34.10	227.92	0.00	0.00
35.00		97.68	636.28	0.00	0.00
40.00		95.93	614.14	0.00	0.00
42.31	(1) attachments	536.24	816.26	0.00	0.00
45.00		49.83	315.75	0.00	0.00
50.00		91.05	569.88	0.00	0.00
51.00	(11) attachments	412.19	1642.42	0.00	0.00
55.00		70.05	432.43	0.00	0.00
55.44	(1) attachments	1452.23	1684.70	0.00	0.00
60.00		77.09	473.92	0.00	0.00
64.00	(35) attachments	1126.23	3350.81	0.00	0.00
65.00		15.83	77.01	0.00	0.00
67.06	(1) attachments	866.69	555.85	0.00	0.00
70.00		44.86	215.91	0.00	0.00
74.00	(29) attachments	1043.46	2252.59	0.00	0.00
75.00	(3) attachments	152.17	548.16	0.00	0.00
75.45	(1) attachments	383.40	416.83	0.00	0.00
76.00		7.72	32.55	0.00	0.00
	Totals:	7,112.96	20,237.52	0.00	0.00

Calculated Forces

Structure: CT46122-A-SBA
Site Name: Middletown North
Height: 76.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1

Topography: 1

Code: TIA-222-H
Exposure: C
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

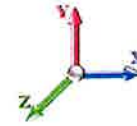
7/7/2023

Page: 27



Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 16

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 Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-20.23	-7.12	0.00	-413.74	0.00	413.74	2976.77	803.98	3080.93	2832.01	0.00	0.000	0.000	0.153
5.00	-19.31	-7.03	0.00	-378.14	0.00	378.14	2914.38	775.44	2866.11	2673.58	0.02	-0.046	0.000	0.148
10.00	-18.42	-6.95	0.00	-342.98	0.00	342.98	2848.80	746.90	2659.05	2516.58	0.10	-0.092	0.000	0.143
15.00	-17.56	-6.86	0.00	-308.24	0.00	308.24	2780.04	718.37	2459.75	2361.34	0.22	-0.139	0.000	0.137
20.00	-16.72	-6.78	0.00	-273.92	0.00	273.92	2708.10	689.83	2268.22	2208.17	0.39	-0.186	0.000	0.130
22.75	-16.27	-6.73	0.00	-255.28	0.00	255.28	2667.17	674.14	2166.19	2124.93	0.51	-0.212	0.000	0.126
25.00	-15.68	-6.69	0.00	-240.15	0.00	240.15	2632.97	661.30	2084.45	2057.41	0.61	-0.234	0.000	0.123
28.25	-14.83	-6.63	0.00	-218.41	0.00	218.41	1920.92	522.03	1623.69	1483.43	0.78	-0.265	0.000	0.155
30.00	-14.60	-6.60	0.00	-206.81	0.00	206.81	1904.07	514.04	1574.37	1447.76	0.88	-0.282	0.000	0.151
35.00	-13.96	-6.51	0.00	-173.81	0.00	173.81	1853.76	491.22	1437.64	1346.49	1.21	-0.335	0.000	0.137
40.00	-13.34	-6.42	0.00	-141.24	0.00	141.24	1800.28	468.39	1307.12	1246.45	1.59	-0.386	0.000	0.121
42.31	-12.53	-5.88	0.00	-126.41	0.00	126.41	1774.49	457.84	1248.92	1200.72	1.78	-0.409	0.000	0.113
45.00	-12.21	-5.84	0.00	-110.58	0.00	110.58	1743.61	445.56	1182.81	1147.94	2.02	-0.435	0.000	0.104
50.00	-11.64	-5.75	0.00	-81.38	0.00	81.38	1683.75	422.73	1064.71	1051.30	2.50	-0.476	0.000	0.085
51.00	-9.99	-5.33	0.00	-75.63	0.00	75.63	1671.40	418.16	1041.84	1032.22	2.60	-0.484	0.000	0.079
55.00	-9.56	-5.26	0.00	-54.32	0.00	54.32	1620.72	399.90	952.83	956.84	3.02	-0.512	0.000	0.063
55.44	-7.89	-3.79	0.00	-52.01	0.00	52.01	1615.02	397.89	943.28	948.65	3.06	-0.514	0.000	0.060
60.00	-7.41	-3.71	0.00	-34.73	0.00	34.73	1554.50	377.07	847.15	864.91	3.57	-0.538	0.000	0.045
64.00	-4.07	-2.55	0.00	-19.89	0.00	19.89	1499.23	358.81	767.08	793.39	4.03	-0.554	0.000	0.028
65.00	-4.00	-2.54	0.00	-17.33	0.00	17.33	1485.09	354.25	747.68	775.81	4.14	-0.557	0.000	0.025
67.06	-3.45	-1.67	0.00	-12.11	0.00	12.11	1455.57	344.84	708.50	740.00	4.39	-0.562	0.000	0.019
70.00	-3.23	-1.62	0.00	-7.21	0.00	7.21	1403.00	331.42	654.42	685.23	4.73	-0.568	0.000	0.013
74.00	-0.99	-0.55	0.00	-0.74	0.00	0.74	1325.69	313.15	584.28	611.42	5.21	-0.571	0.000	0.002
75.00	-0.45	-0.40	0.00	-0.18	0.00	0.18	1306.36	308.59	567.37	593.63	5.33	-0.571	0.000	0.001
75.45	-0.03	-0.01	0.00	0.00	0.00	0.00	1297.66	306.53	559.84	585.71	5.38	-0.571	0.000	0.000
76.00	0.00	-0.01	0.00	0.00	0.00	0.00	1287.03	304.02	550.71	576.10	5.45	-0.571	0.000	0.000

Final Analysis Summary

Structure: CT46122-A-SBA	Code: TIA-222-H	7/7/2023
Site Name: Middletown North	Exposure: C	
Height: 76.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Reactions

Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)
1.2D + 1.0W 119 mph Wind	31.3	0.00	24.23	0.00	0.00	1822.58
0.9D + 1.0W 119 mph Wind	31.3	0.00	18.16	0.00	0.00	1816.56
1.2D + 1.0Di + 1.0Wi 50 mph Wind	7.9	0.00	36.45	0.00	0.00	453.59
1.2D + 1.0Ev + 1.0Eh	0.9	0.00	25.19	0.00	0.00	53.52
0.9D + 1.0Ev + 1.0Eh	0.9	0.00	19.09	0.00	0.00	53.52
1.0D + 1.0W 60 mph Wind	7.1	0.00	20.23	0.00	0.00	413.74

Max Stresses

Load Case	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)	Elev (ft)	Stress Ratio
1.2D + 1.0W 119 mph Wind	-17.22	-29.20	0.00	-962.79	0.00	-962.79	1920.92	522.03	1623.69	1483.43	28.25	0.661
0.9D + 1.0W 119 mph Wind	-12.77	-29.10	0.00	-958.26	0.00	-958.26	1920.92	522.03	1623.69	1483.43	28.25	0.656
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-28.60	-7.28	0.00	-237.92	0.00	-237.92	1920.92	522.03	1623.69	1483.43	28.25	0.175
1.2D + 1.0Ev + 1.0Eh	-18.50	-0.84	0.00	-29.09	0.00	-29.09	1920.92	522.03	1623.69	1483.43	28.25	0.029
0.9D + 1.0Ev + 1.0Eh	-14.02	-0.84	0.00	-29.13	0.00	-29.13	1920.92	522.03	1623.69	1483.43	28.25	0.027
1.0D + 1.0W 60 mph Wind	-14.83	-6.63	0.00	-218.41	0.00	-218.41	1920.92	522.03	1623.69	1483.43	28.25	0.155

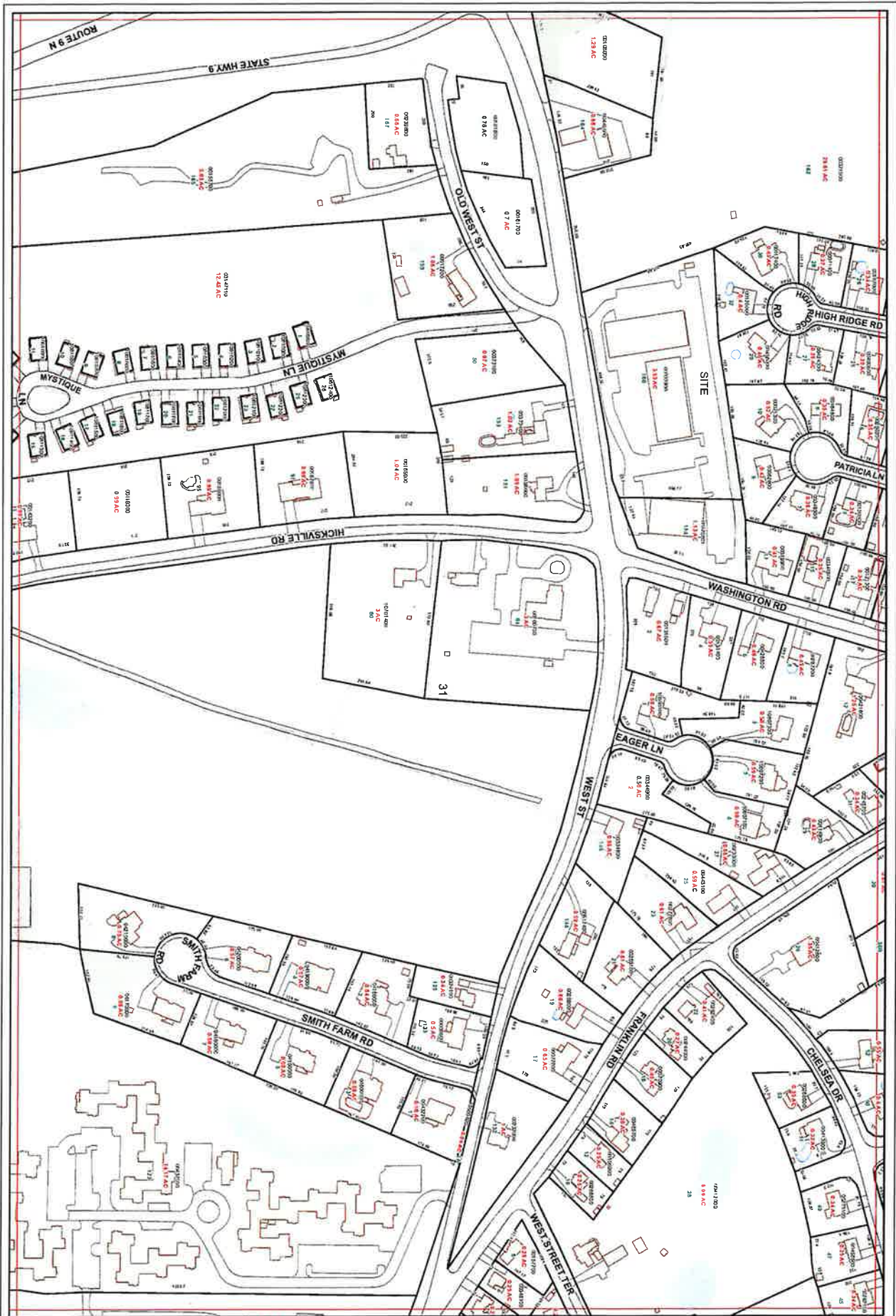
Base Plate Summary

Structure: CT46122-A-SB	Code: TIA-222-H	7/7/2023
Site Name: Middletown North	Exposure: C	
Height: 76.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Struct Class: II	Page: 29



Reactions	Base Plate	Anchor Bolts
Original Design	Yield (ksi): 60.00	Bolt Circle: 54.00
Moment (kip-ft): 2800.00	Width (in): 60.00	Number Bolts: 10.00
Axial (kip): 27.00	Style: Round	Bolt Type: 2.25" 18J
Shear (kip): 52.00	Polygon Sides: 0.00	Bolt Diameter (in): 2.25
Analysis (1.2D + 1.0W)	Clip Length (in): 0.00	Yield (ksi): 75.00
Moment (kip-ft): 1822.58	Effective Len (in): 29.11	Ultimate (ksi): 100.00
Axial (kip): 24.23	Moment (kip-in): 616.61	Arrangement: Radial
Shear (kip): 31.32	Allow Stress (ksi): 81.00	Cluster Dist (in): 0.00
	Applied Stress (ksi): 31.59	Start Angle (deg): 0.00
	Stress Ratio: 0.39	Compression
		Force (kip): 164.43
		Allowable (kip): 268.39
		Ratio: 0.61
		Tension
		Force (kip): 159.58
		Allowable (kip): 243.75
		Ratio: 0.65

ATTACHMENT 4

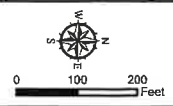


This tax map is for assessment purpose only. It is not valid to use this map as a survey or for property conveyance.

22	32	44
31	33	43
20	30	42



Town of Cromwell Connecticut



- Parcel Center Line
- Parcel Line
- Easement
- Easement Line
- Partial Easement
- 8.02 AC In Water
- 1.00 AC In Water
- 1.00 AC In Water
- 1.00 AC In Water

Map 31
June 2020



Patriot Properties Inc.

Parcel ID: 00033900

Location: 160 WEST STREET

Map-Lot 31-14A

Last Revaluation - October 1, 2017

Current Owner
160 WEST STREET LLC
Percent 100
213 COURT STREET
MIDDLETOWN CT 06457

Current Value Information

Use Code	Land Value	PA 490 Value	Building Value	Outbuildings	Total Value	Total Assessed
201	241,800	0	2,122,400	110,000	2,474,200	1,731,940
TOTAL	241,800	0	2,122,400	110,000	2,474,200	1,731,940

Previous Owner(s)
160 WEST STREET LIMITED PARTNE
RSHIP

Previous Value Information

Tax Yr	Land Value	Bldg Value	Outbuildings	Total Value	Total Assesmen
2018	241,800	2,122,400	110,000	2,474,200	1,731,940
2017	241,800	2,122,400	110,000	2,474,200	1,731,940
2016	356,290	1,635,220	43,320	2,034,830	1,424,390
2015	356,290	1,635,220	43,320	2,034,830	1,424,390
2014	356,290	1,635,220	43,320	2,034,830	1,424,390
2013	356,290	1,635,220	43,320	2,034,830	1,424,390

General Notes

MEDICAL OFFICE;

Bldg #1 Middlesex Home Care + Supplies INC, Family Eye Care,
Feet First

Bldg # 2 Wildwood Property management, Great Blue Research,
Beacon Services of CT

Sales Information

Grantee	Vol-Page	Type	SaleDate	SalePrice	Sale Verif	GeneralNotes
160 WEST STREET LLC	896-268		01/27/2003	0	Other	
160 WEST STREET LIMITED F	546-322		12/29/1993	0	Other	

Property Factors

Census 5702
Floor:
Topo:
Street: Paved
Dev. Map
Dev. Map

Zoning Data

Desc. %
LB 100.00

Utilities
2 Public Water
3 Public Sewer

BAA

17K

Activity Information

Date	Results	Visited By
12/27/2017	Informal Review No Change	John Valente
09/11/2017	Change - Value Change Company	John Valente
05/18/2017	No Change - Field Review	Dave Stannard
09/11/2014	Permit- Miscellaneous	AO
09/11/2014	Permit- Drive By	MM
09/09/2014	Permit- Miscellaneous	AO
09/11/2012	Permit - Int & Ext Inspect	
09/11/2012	Permit- Miscellaneous	AO
09/11/2012	Permit- Miscellaneous	AO
09/11/2012	Permit- Miscellaneous	AO

Building Permit Information

Date	Permit #	Description	Amount	% Comp	Visit Date	CO Date	GeneralNotes
08/15/2014	22787	Electric	900	100	09/11/2014		Reception area
08/13/2014	22776	Other	4,800	100	09/09/2014	09/09/2014	Emrgncy repair to drywall
12/12/2011	20377	Other	3,000	100	09/11/2012	09/11/2012	Run gas line to new gener
11/16/2011	20315	Other	10,000	100	09/11/2012	09/11/2012	New cell site for Metro P
09/28/2011	20183	Propane Tank	2,850	100	09/11/2012	09/11/2012	Underground gas line
09/19/2011	20156		35,000	100	09/11/2012	01/12/2012	Inst of cell site antenna
03/21/2006	15920	Remodel	33,000	100	03/28/2006		off & bth reno
03/21/2006	15921	Electric	0	100	03/28/2006		wire new area,rfd exstg m

Land Data

Use	Description	Units	Unit Type	Neigh	Land Adjustments	Special Land Calc	Appraised Value	PA 490 Asmt	Neigh Order	Notes
201	Commercial	43,560	SF	CJ			178,500	0	1200	
201	Commercial	2,530	AC	CJ			63,300	0	1200	
Total Area: 3.53		PA 490 Use Asmt: 0		Total Appraised: 241,800		Assessed Value: 169,260				

ParcelID: 00033900

Location: 160 WEST STREET

Printed By: Shawna 04/06/2018 3:41:00PM

Bldg Seq 1 Of 2

Exterior Information

Building Type: Office Bldg
Story Ht: 1 Story
Living Units: 0
Foundation:
Prim. Ext. Wall: Brick/Masonr
Sec. Ext. Wall:
Roof Type: Flat
Roof Cover: Asphalt Shln
Avg. Wall Ht: 18.00
Color:

Condo Information

Name:
Style:
Location:
Tot Units:

General Information

Year Blt: 1985
Grade: C
Remodeled Yr:
Rem. Kitchen Yr:
Rem. Bath Yr:

Interior Information

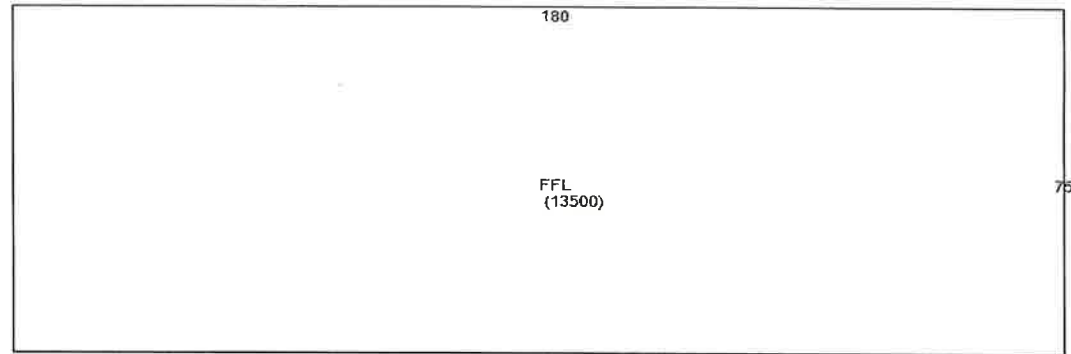
Prime Wall: Drywall
Sec. Wall:
Floor Type: Carpet 50%
Sec. Floor: Vinyl 50 %
Heat Fuel: Gas
Heat Type: Forced Air
Sec. Ht Type:
% A/C: 100
% Sprinkled: 0
Bsmt. Gar: 0
Kitchens: 0 Add. Kit: 0
Fireplaces: 0 Gas: 0
Int. Condition: Typical

Depreciation %

Phys Cond Average 24.00
Func 0.00
Econ 5.00
Spec 0.00
OV 0.00
Total %Dep: 27.80

Calculation

Basic \$/SQ 120.00
Replacement Cost 1,342,305
Depreciation 373,161
Depreciated Value 969,144
Final Total (Rounded) 969,100



Room Count

Total Rooms:
Bedrooms:

Bath Features

Full Baths: 0
Addl. Full Baths: 0
Half Baths: 0
Addl. Half Baths: 0
Full Bths Below: 0
Half Bths Below: 0
Other Fixtures: 0
Total Baths: 00



Extra Features / Yard Items (1st 10 Lines Displayed)

Code	Description	Qty	Size	Cond.	Year	Unit Price	Dep%	UndepValue	Appraised Value	Assessment
LT1	Light 1	1	6	AV	2002	1,000.00	13	7,200	6,300	4,410
PAV1	Paving Asph.	1	38,400	AV	1985	3.00	25	138,240	103,700	72,580
Total Sp. Features:			Total Yard Items			110,000	Total Appraised:	110,000	Total Assessed Value	77,000

Sub Area Detail

Code	Desc.	Living	Gross Area
FFL	First Floor	13,500	13,500
Total		13,500	13,500

ParcelID: 00033900

Location: 160 WEST STREET

Printed By: Shawna 04/06/2018 3:41:00PM

Bldg Seq 2 Of 2

Exterior Information

Building Type: Office Bldg
Story Ht: 1 Story
Living Units: 0
Foundation:
Prim. Ext. Wall: Brick/Masonr
Sec. Ext. Wall:
Roof Type: Flat
Roof Cover: Asphalt Shin
Avg. Wall Ht: 18.00
Color:

Condo Information

Name:
Style:
Location:
Tot Units:

General Information

Year Blt: 1985
Grade: C
Remodeled Yr:
Rem. Kitchen Yr:
Rem. Bath Yr:

Interior Information

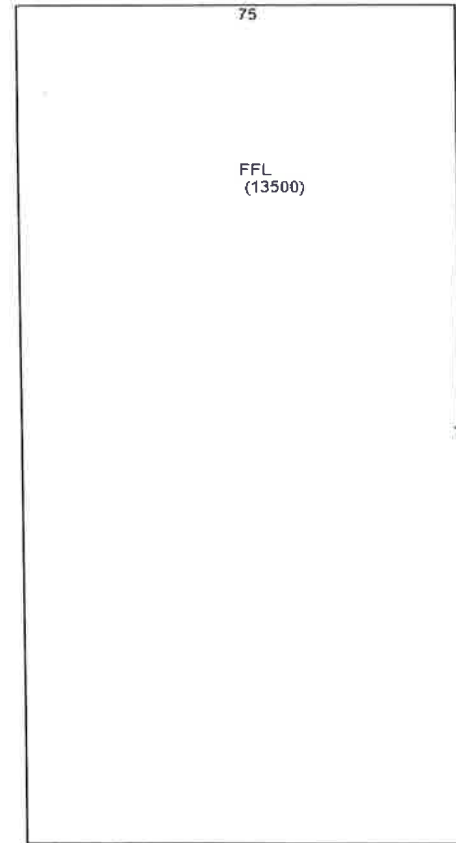
Prime Wall: Drywall
Sec. Wall:
Floor Type: Carpet 50%
Sec. Floor: Vinyl 50 %
Heat Fuel: Gas
Heat Type: Forced Air
Sec. Ht Type:
% A/C: 100
% Sprinkled: 0
Bsmt. Gar: 0
Kitchens: 0 Add. Kit: 0
Fireplaces: 0 Gas: 0
Int. Condition: Typical

Depreciation %

Phys Cond Average 24.00
Func 0.00
Econ 5.00
Spec 0.00
OV 0.00
Total %Dep: 27.80

Calculation

Basic \$/SQ 120.00
Replacement Cost 1,342,305
Depreciation 373,161
Depreciated Value 969,144
Final Total (Rounded) 969,100



Room Count

Total Rooms:
Bedrooms:

Bath Features

Full Baths: 0
Addl. Full Baths: 0
Half Baths: 0
Addl. Half Baths: 0
Full Bths Below: 0
Half Bths Below: 0
Other Fixtures: 0
Total Baths: 0 0



Extra Features / Yard Items (1st 10 Lines Displayed)

Code	Description	Qty	Size	Cond.	Year	Unit Price	Dep%	UndepValue	Appraised Value	Assessment
------	-------------	-----	------	-------	------	------------	------	------------	-----------------	------------

Total Sp. Features:

Total Yard Items

Total Appraised:

Total Assessed Value

Sub Area Detail

Code	Desc.	Living	Gross Area
FFL	First Floor	13,500	13,500
Total		13,500	13,500

ATTACHMENT 5

Certificate of Mailing — Firm



Name and Address of Sender Kenneth C. Baldwin, Esq. Robinson & Cole LLP 280 Trumbull Street Hartford, CT 06103	TOTAL NO. of Pieces Listed by Sender <p style="text-align: center; font-size: 2em;">3</p>	TOTAL NO. of Pieces Received at Post Office™ <p style="text-align: center; font-size: 2em;">3</p>	Affix Stamp Here <i>Postmark with Date of Receipt.</i> <div style="text-align: right;"> neopost[®] 08/02/2023 US POSTAGE \$003.19⁰ ZIP 06103 041L12203937 </div>			
	Postmaster, per (name of receiving employee) 					
USPS® Tracking Number Firm-specific Identifier	Address (Name, Street, City, State, and ZIP Code™)		Postage	Fee	Special Handling	Parcel Airlift
1.	Anthony Salvatore, Town Manager Town of Cromwell 41 West Street Cromwell, CT 06416					
2.	Stuart Popper, Director of Planning and Development Town of Cromwell 41 West Street Cromwell, CT 06416					
3.	160 West Street, LLC 162 West Street Cromwell, CT 06416					
4.						
5.						
6.						

