



May 1, 2023

Melanie Bachman
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

RE: Tower Share Application

215 Coatney Hill Road, Woodstock, CT 06281

Latitude: 41.962030

Longitude: -72.018055

Site#: CT08748-A_BOBOS00049A_SBA_DISH

Dear Ms. Bachman:

This letter and attachments are submitted on behalf of Dish Wireless LLC. Dish Wireless LLC plans to install antennas and related equipment to the tower site located at 215 Coatney Hill Road, Woodstock, Connecticut.

Dish Wireless LLC proposes to install three (3) 600/1900 MHz 5G antennas at the 145-foot level of the existing 192-foot monopole tower, one (1) Fiber cable will also be installed. Dish Wireless LLC equipment cabinets will be placed within a 7' x 5' lease area within the fenced compound. Included are plans by B+T, dated March 6, 2023, Exhibit 8. Also included is a structural analysis prepared by TES, dated December 20, 2022 confirming that the existing tower is structurally capable of supporting the proposed equipment. Attached as Exhibit 6. The facility was approved by the Town of Woodstock Planning & Zoning Commission on January 18, 2001. Please see attached.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies 16-50aa, of Dish Wireless LLC intent to share a telecommunications facility pursuant to R.C.S.A. 16-50j-88. In accordance with R.C.S.A., a copy of this letter is being sent to Jay Swan, First Selectman of Woodstock and ground landlord, and Ashley Stevens, Zoning Enforcement Officer for the Town of Woodstock. No notice is required for SBA, as SBA is the tower owner making this submission.

The planned modifications of the facility fall squarely within those activities explicitly provided for in R.C.S.A. 16-50j-89.

1. The proposed modification will not result in an increase in the height of the existing structure. The top of the existing tower is 192-feet and the Dish Wireless LLC antennas will be located at a center line height of 145-feet.
2. The proposed modifications will not result in the increase of the site boundary as depicted on the attached site plan.
3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed local and state criteria. The incremental effect of the proposed changes will be negligible.
4. The operation of the proposed antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard. As indicated in the attached power density calculations, the combined site operations will result in a total power density of 10.73% as evidenced by Exhibit 9.



Connecticut General Statutes 16-50aa indicates that the Council must approve the shared use of a telecommunications facility provided it finds the shared use is technically, legally, environmentally, and economically feasible and meets public safety concerns. As demonstrated in this letter, Dish Wireless LLC respectfully indicates that the shared use of this facility satisfies these criteria.

- A. Technical Feasibility. The existing monopole has been deemed structurally capable of supporting Dish Wireless LLC proposed loading. The structural analysis is included as Exhibit 7.
- B. Legal Feasibility. As referenced above, C.G.S. 16-50aa has been authorized to issue orders approving the shared use of an existing tower such as this support tower in Woodstock. Under the authority granted to the Council, an order of the Council approving the requested shared use would permit Dish Wireless LLC to obtain a building permit for the proposed installation..
- C. Environmental Feasibility. The proposed shared use of this facility would have a minimal environmental impact. The installation of Dish Wireless LLC equipment at the 145-foot level of the existing 192-foot tower would have an insignificant visual impact on the area around the tower. Dish Wireless LLC ground equipment would be installed within the existing facility compound. Dish Wireless LLC shared use would therefore not cause any significant alteration in the physical or environmental characteristics of the existing site. Additionally, as evidenced by Exhibit96, the proposed antennas would not increase radio frequency emissions to a level at or above the Federal Communications Commission safety standard.
- D. Economic Feasibility. Dish Wireless LLC will be entering into an agreement with the owner of this facility to mutually agreeable terms. As previously mentioned, the Letter of Authorization has been provided by the owner to assist Dish Wireless LLC with this tower sharing application.
- E. Public Safety Concerns. As discussed above, the tower is structurally capable of supporting Dish Wireless LLC proposed loading.

Dish Wireless LLC is not aware of any public safety concerns relative to the proposed sharing of the existing guyed tower. Dish Wireless LLC intentions of providing new and improved wireless service through the shared use of this facility is expected to enhance the safety and welfare of local residents and individuals traveling through Woodstock.

Sincerely,

Elizabeth Jamieson

Site Development Specialist II

SBA Communications Corporation

134 Flanders Road

Suite 125

Westborough, MA 01581

860.605.7808 + T

EJamieson@sbsite.com



Attachments:

cc:

Jay Swan, First Selectman & Property Owner Town of Woodstock CT
415 Route 169
Woodstock, CT 06281-3039

Ashley Stevens, Zoning Enforcement Officer Town of Woodstock CT
415 Route 169
Woodstock, CT 06281-3039

EXHIBIT LIST

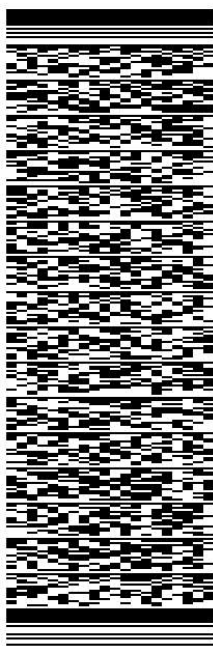
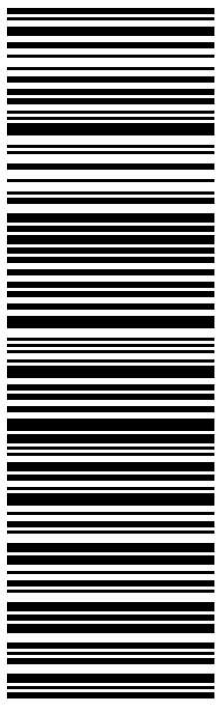
Exhibit 1	Copy of Check	X
Exhibit 2	Notification Receipts	X
Exhibit 3	Property Card	X
Exhibit 4	Property Map	X
Exhibit 5	Original Zoning Approval	Woodstock PZC- January 18, 2001
Exhibit 6	Mount Analysis	Mount Analysis – January 25, 2023
Exhibit 7	Structural Analysis	TES – February 24, 2023
Exhibit 8	Construction Drawings	B+T Group - March 6, 2023
Exhibit 9	EME Report	Fox Hill Telecom – 4/26/2023

EXHIBIT 1

Copy of Check for filing fee.

EXHIBIT 2

FedEx Labels

ORIGIN ID: BCTA (561) 995-7670 ELIZABETH JAMIESON 8051 CONGRESS AVE BOCA RATON, FL 33487 UNITED STATES US		SHIP DATE: 28MAR23 ACTWGT: 1.00 LB CAD: 255382542/NET4580
TO JAY SWAN, FIRST SELECTMAN TOWN OF WOODSTOCK 415 ROUTE 169		
WOODSTOCK CT 06281 (860) 928-0208 X 310 INV/ REF: 10-56-92009-6089 PO/ DEPT:		
  		
TRK# 7716 8349 2647 0201	FRI - 31 MAR 4:30P EXPRESS SAVER	
SE FICA 06281 CT-US BOS 		

581J2105E/FE2D

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3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.

Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on [fedex.com](https://www.fedex.com). FedEx will not be responsible for any claim in excess of \$100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of \$100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of extraordinary value is \$1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our Service Guide. Written claims must be filed within strict time limits, see current FedEx Service Guide.



May 03, 2023

Dear Customer,

The following is the proof-of-delivery for tracking number: 771683492647

Delivery Information:

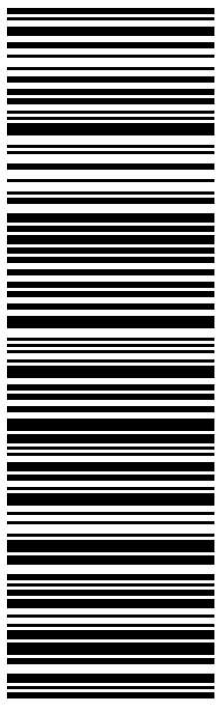
Status:	Delivered	Delivered To:	Receptionist/Front Desk
Signed for by:	C.FRENCH	Delivery Location:	
Service type:	FedEx Express Saver		
Special Handling:	Deliver Weekday		
		Delivery date:	May 3, 2023 13:06

Shipping Information:

Tracking number:	771683492647	Ship Date:	May 2, 2023
		Weight:	
Recipient:		Shipper:	

Signature image is available. In order to view image and detailed information, the shipper or payor account number of the shipment must be provided.

Thank you for choosing FedEx

ORIGIN ID: BCTA (561) 995-7670 ELIZABETH JAMIESON 8051 CONGRESS AVE BOCA RATON, FL 33487 UNITED STATES US		SHIP DATE: 28MAR23 ACTWGT: 1.00 LB CAD: 255382542/NET4580
TO ASHLEY STEVENS, ZEO TOWN OF WOODSTOCK 415 ROUTE 169 WOODSTOCK CT 06281		BILL SENDER
(860) 963-2128 X 332 INV/ PO: DEPT: REF: 10-56-92009-6089		
 		
TRK# 0201 7716 8394 5921		
FRI - 31 MAR 4:30P EXPRESS SAVER		
SE FICA CT-US 06281 BOS		
		

581J2105E/FE2D

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May 04, 2023

Dear Customer,

The following is the proof-of-delivery for tracking number: 771683945921

Delivery Information:

Status:	Delivered	Delivered To:	Receptionist/Front Desk
Signed for by:	C.FRENCH	Delivery Location:	
Service type:	FedEx Express Saver		
Special Handling:	Deliver Weekday		
		Delivery date:	May 3, 2023 13:06

Shipping Information:

Tracking number:	771683945921	Ship Date:	May 2, 2023
		Weight:	
Recipient:		Shipper:	

Signature image is available. In order to view image and detailed information, the shipper or payor account number of the shipment must be provided.

Thank you for choosing FedEx

EXHIBIT 3

Property Card

215 COATNEY HILL RD

Location 215 COATNEY HILL RD

Mblu 7276/ 32/ 19A/ /

Acct# W0438400

Owner WOODSTOCK TOWN OF

Assessment \$825,500

Appraisal \$1,179,000

PID 4525

Building Count 2

Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2016	\$919,500	\$259,500	\$1,179,000
Assessment			
Valuation Year	Improvements	Land	Total
2016	\$643,800	\$181,700	\$825,500

Owner of Record

Owner	WOODSTOCK TOWN OF	Sale Price	\$0
Co-Owner	TOWN GARAGE	Certificate	1
Address	415 RT 169	Book & Page	62/ 315
	WOODSTOCK , CT 06281-3039	Sale Date	09/14/1967

Ownership History

Ownership History				
Owner	Sale Price	Certificate	Book & Page	Sale Date
WOODSTOCK TOWN OF	\$0	1	62/ 315	09/14/1967

Building Information

Building 1 : Section 1

Year Built:	1970
Living Area:	4,600
Replacement Cost:	\$208,028
Building Percent Good:	56
Replacement Cost	
Less Depreciation:	\$116,500

Building Attributes

Field	Description
STYLE	Pre-Eng Garage
MODEL	Commercial
Grade	Average
Stories:	1.00
Occupancy	1
Exterior Wall 1	Pre-finsh Metl
Exterior Wall 2	
Roof Structure	Gable
Roof Cover	Enam Mtl Shing
Interior Wall 1	Minimum
Interior Wall 2	
Interior Floor 1	Vinyl/Asphalt
Interior Floor 2	
Heating Fuel	Gas
Heating Type	Hot Air-No Duc
AC Type	None
Bldg Use	Commercial
Sprinkler Type	
Sprinkler %	
Mezzanine Fin.	
Mezanine Unf.	1120
1st Floor Use:	200
Heat/AC	None
Frame Type	Steel
Baths/Plumbing	Average
Ceiling/Walls	Susp Ceil Only
Rooms/Prtns	Average
Wall Height	14
% Comn Wall	

Building 1 : Section 2

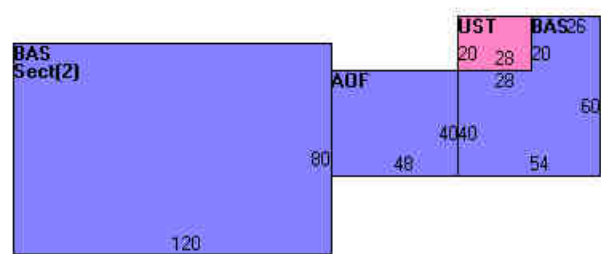
Year Built:	2011
Living Area:	9,600
Replacement Cost:	\$403,200
Building Percent Good:	90
Replacement Cost	
Less Depreciation:	\$362,900
Building Attributes : Section 2 of 2	
Field	Description
STYLE	Pre-Eng Garage
MODEL	Commercial

Building Photo



(<http://images.vgsi.com/photos/WoodstockCTPhotos/\00\00\46\96.jpg>)

Building Layout



(http://images.vgsi.com/photos/WoodstockCTPhotos//Sketches/4525_4525)

Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	2,680	2,680
AOF	Office Area	1,920	1,920
UST	Utility Storage	560	0
		5,160	4,600

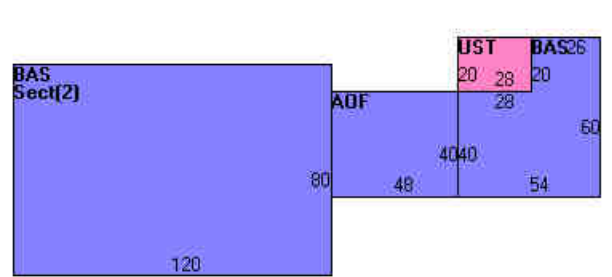
Grade	Average
Stories:	1.00
Occupancy	1
Exterior Wall 1	Pre-finish Metl
Exterior Wall 2	
Roof Structure	Gable
Roof Cover	Metal/Tin
Interior Wall 1	Minimum
Interior Wall 2	Drywall
Interior Floor 1	Concrete
Interior Floor 2	Carpet
Heating Fuel	Oil
Heating Type	Radiant
AC Type	None
Bldg Use	Commercial
Sprinkler Type	
Sprinkler %	
Mezzanine Fin.	
Mezanine Unf.	800
1st Floor Use:	200
Heat/AC	None
Frame Type	Steel
Baths/Plumbing	Average
Ceiling/Walls	Susp Ceil Only
Rooms/Prtns	Average
Wall Height	14
% Comn Wall	

Building Photo



(<http://images.vgsi.com/photos/WoodstockCTPhotos/default.jpg>)

Building Layout



(http://images.vgsi.com/photos/WoodstockCTPhotos/Sketches/4525_4525)

Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	9,600	9,600
		9,600	9,600

Building 2 : Section 1

Year Built: 2011
Living Area: 11,282
Replacement Cost: \$315,827
Building Percent Good: 70
Replacement Cost
Less Depreciation: \$221,100

Building Attributes : Bldg 2 of 2	
Field	Description
STYLE	Warehouse
MODEL	Commercial
Grade	Below Average
Stories:	1

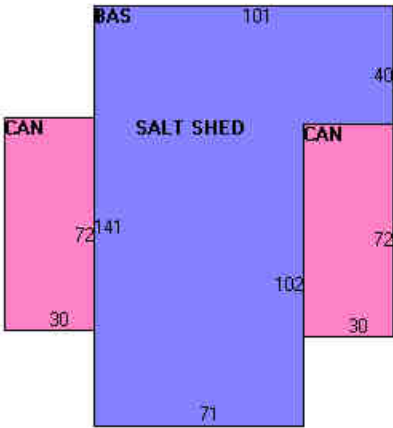
Occupancy	1
Exterior Wall 1	Board & Batten
Exterior Wall 2	
Roof Structure	Gable
Roof Cover	Enam Mtl Shing
Interior Wall 1	Minimum
Interior Wall 2	
Interior Floor 1	Vinyl/Asphalt
Interior Floor 2	
Heating Fuel	Oil
Heating Type	None
AC Type	None
Bldg Use	Mun Bldg Com
Sprinkler Type	
Sprinkler %	
Mezzanine Fin.	
Mezanine Unf.	
1st Floor Use:	
Heat/AC	None
Frame Type	Masonry
Baths/Plumbing	Light
Ceiling/Walls	None
Rooms/Prtns	Light
Wall Height	18
% Comn Wall	

Building Photo



(http://images.vgsi.com/photos/WoodstockCTPhotos/default.jpg)

Building Layout



(http://images.vgsi.com/photos/WoodstockCTPhotos/Sketches/4525_1002

Building Sub-Areas (sq ft)			<u>Legend</u>
Code	Description	Gross Area	Living Area
BAS	First Floor	11,282	11,282
CAN	Canopy	4,320	0
		15,602	11,282

Extra Features

Extra Features				<u>Legend</u>
Code	Description	Size	Value	Bldg #
	LUMP SUM -	1800	\$0	1
XKIT	Addnl. Kitchen	1 UNITS	\$1,400	1

Land

Land Use

Use Code 922

Land Line Valuation

Size (Acres) 8.3

Description Mun Bldg Com
Zone
Neighborhood
Alt Land Appr No
Category

Frontage
Depth
Assessed Value \$181,700
Appraised Value \$259,500

Outbuildings

Outbuildings						<u>Legend</u>
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
SHD1	Shed	FR	Frame	360 S.F.	\$4,100	2
SHD1	Shed	FR	Frame	200 S.F.	\$2,300	2
FN3	Fence 6'			316 L.F.	\$5,200	2
PAV1	Paving Asph.			68566 S.F.	\$119,300	1
CNP	Canopy			576 S.F.	\$2,800	1
FN3	Fence 6'			320 L.F.	\$2,900	1
SHD2	Pre Cast Cell			360 S.F.	\$40,500	1
SHD2	Pre Cast Cell			360 S.F.	\$40,500	1

Valuation History

Appraisal			
Valuation Year	Improvements	Land	Total
2019	\$919,500	\$259,500	\$1,179,000
2018	\$919,500	\$259,500	\$1,179,000
2017	\$919,500	\$259,500	\$1,179,000

Assessment			
Valuation Year	Improvements	Land	Total
2019	\$643,800	\$181,700	\$825,500
2018	\$643,800	\$181,700	\$825,500
2017	\$643,800	\$181,700	\$825,500

EXHIBIT 4

Property Map



Necog GIS Site

7276-33-07B
3.96 ac

7276-33-07A
2.97 ac

7276-33-08
89.13 ac

COATNEY HILL RD

829 ft

7276-32-18
65 ac

7276-32-19A
8.3 ac

1: 2,257



- Legend
- Town
 - Buildings 2012
 - Parcels

Notes

Enter Map Description

0.1 0 0.04 0.1 Miles

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

WGS_1984_Web_Mercator_Auxiliary_Sphere
© Latitude Geographics Group Ltd.

THIS MAP IS NOT TO BE USED FOR NAVIGATION

EXHIBIT 5

Zoning Documents

000077

NOTICE OF SPECIAL PERMIT

Pursuant to Section 8-3c of the Connecticut General Statutes, notice is hereby given that on January 18, 2001 the Woodstock Planning and Zoning Commission:

1. Description of Premises:
Woodstock, Assessor Map 7276
Block 32 Lot 19A

2. Permit Granted:

Special Permit granted on condition maintenance agreement is executed as soon as lease is in effect.

(application No. SP438-00-11)

3. Name and address
Owner of record:

TOWN OF WOODSTOCK
Town Hall
415 Route 169
Woodstock, CT 06281

4. Name and address
of applicant:

MCF Communications, Inc.
668 Main Street
Suite 114
Wilmington, CT 01887

Dated at Woodstock, Connecticut, this 19th day of January, 2001.

This information certified by:

RECEIVED
TOWN CLERK, WOODSTOCK, CT

01 JAN 19 PM 1:40

Judith M. Roberts

Terry Beriman
Terry Beriman
Zoning Enforcement Officer

Permit No

8508

Dept. of Building Inspections
Town of Woodstock

BUILDING PERMIT

ADDRESS

215 Coatney Hill

OWNER

Town of Woodstock

DATE

June 15, 2001

WORK AUTHORIZED

Construction of Tower Site

Attach this Permit in Clear View

CALL 928-1388 FOR INSPECTIONS



BUILDING OFFICIAL

CERTIFICATE OF USE AND OCCUPANCY
DEPARTMENT OF BUILDING INSPECTIONS
WOODSTOCK, CONNECTICUT

Certificate No. 1286

This is to certify that.....TOWN OF WOODSTOCK.....Map No. 7276
Owner

Located at Street:215 COATNEY HILL ROAD.....Block 32

Building Permit No.8508.....Lot No 19A

conforms substantially to the requirements of the Connecticut State Building Code, Sanitation Code, all the Zoning Ordinance of the Town of Woodstock and is hereby approved for occupancy as indicated below:

Type of Construction Use Group:

Conditions:

Occupancy Load

Live Loads

Fire Grading

Type of Structure CELLULAR TOWER

Date 8-26-01


BUILDING OFFICIAL

Any change or extension of the use herein approved requires a new certificate

WHITE: APPLICANT YELLOW: ASSESSOR PINK: BUILDING OFFICE GOLD: FILE

EXHIBIT 6

Mount Analysis



January 25, 2023

Sherri Knapik
SBA Network Services, LLC.
134 Flanders Road, Suite 125
Westborough, MA 01581
(508) 251-0720 x 3805

MTS Engineering, P.L.L.C.
1717 S. Boulder, Suite 300
Tulsa, OK 74119
(918) 587-4630
btwo@btgrp.com

Subject: Appurtenance Mount Analysis Report

Carrier Designation: *Dish Wireless Co-Locate*
Site Number: BOBOS00049A
Site Name: N/A

SBA Network Services Designation: **Site Number:** CT08748-A
Site Name: Woodstock 4, CT
Application Number: 169647, v1

Engineering Firm Designation: **B+T Group Project Number:** 149450.003.01

Site Data: 215 Coatney Hill Road, Woodstock, CT, 06281, Windham County
Latitude **41.96205°**, Longitude **-72.01804°**
Monopole
8 ft. Platform Mount

Dear Ms. Knapik,

We are pleased to submit this “**Appurtenance Mount Analysis Report**” to determine the structural integrity of the antenna mount on the above-mentioned structure.

The purpose of the analysis is to determine acceptability of the mount's stress level. Based on our analysis we have determined the stress level for the mount under the following load case to be:

Proposed Equipment

Note: See Table 1 for the final loading configuration

Sufficient Capacity
(Passing at 55.7%)

This analysis utilizes an ultimate 3-second gust wind speed of 119 mph as required by the 2022 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

All the equipment proposed in this report shall be installed in accordance with the drawings for the determined available structural capacity to be effective.

We appreciate the opportunity of providing our continuing professional services to you and *SBA Network Services, LLC*. If you have any questions or need further assistance on this or any other projects, please give us a call.

Mount structural analysis prepared by: Gertha Wesh

Respectfully submitted by: MTS Engineering, P.L.L.C.
COA: BER:2386985 Expires: 3/31/2023

Chad E. Tuttle, P.E.

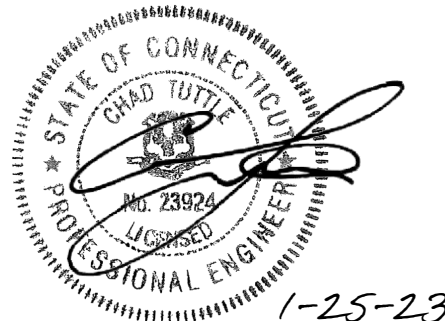


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RISA-3D Output

7) APPENDIX B

Additional Calculations

8) APPENDIX C

Supplemental Drawings

1) INTRODUCTION

The appurtenance mount consists of Commscope platform mount (Part #MC-PK8-DSH) at 125 ft., attached to monopole at 215 Coatney Hill Road, Woodstock, CT, 06281, Windham County. The proposed antenna loading information was obtained from SBA Network Services, LLC. All information provided to us was assumed accurate and complete.

2) ANALYSIS CRITERIA

The structural analysis was performed for this mount in accordance with the ANSI/TIA-222-H-2017 Structural Standard for Antenna Supporting Structures and Antennas and Small Wind Turbine Support Structures using a 3-second gust wind speed of 119 mph with no ice and 50 mph with 1.5 inch escalated ice thickness Exposure category C & Topographic Category 1 and Risk Category II were used in the analysis. In addition, the platform mount has been analyzed for various live loading conditions consisting of a 250-lb man live load applied individually at the midpoint and cantilevered ends of horizontal members as well as a 500-pound man live load applied individually at mount pipe locations using a 3-second gust of 30mph. The mount was analyzed under 30° increments in the wind direction. The analyzed loading is detailed in Table 1.

Table 1 – Proposed Equipment Information

Loading	RAD Center Elev. (ft.)	Position	Qty.	Description	Note
Proposed	125	1	3	JMA Wireless MX08FRO665-21	1
			3	Fujitsu TA08025-B605	2
			3	Fujitsu TA08025-B604	
		-	1	Raycap RDIDC-9181-PF-48	3

Note:

- 1) Proposed Antenna to be installed on the Proposed Mount Pipe.
- 2) Proposed Equipment to be installed directly behind the Antenna
- 3) Proposed Equipment to be installed on Mount.

Table 2 - Documents Provided

Documents	Remarks	Reference	Source
SBA Application	Proposed Loading	Date: 08/15/2021	SBA Network Services, LLC.
RFDS		Date: 07/22/2021	

3) ANALYSIS PROCEDURE

3.1) Analysis Method

RISA-3D (Version 19.0.4), a commercially available analysis software package, was used to create a three-dimensional model of the mount and calculate member stresses and deflections for various loading cases. Selected output from the analysis is included in Appendix A.

Manufacturer's drawings were used to create the model.

3.2) Assumptions

1. The mount was built in accordance with the manufacturer's specifications.
2. The mount has been maintained in accordance with the manufacturer's specifications and is free of damage.
3. The configuration of antennas and other appurtenances are as specified in Table 1.
4. All mount components have been assumed to be in sufficient condition to carry their full design capacity for the analysis.
5. Mount areas and weights are determined from field measurements, standard material properties, and/or manufacturer product data.

6. Serviceability with respect to antenna twist, tilt, roll or lateral translation is not checked and is left to the carrier or tower owner to ensure conformance.
7. All prior structural modifications, if any are assumed to be correctly installed and fully effective.
8. 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.
9. The following material grades were assumed (Unless Noted Otherwise):
 - a) Connection Bolts : ASTM A325
 - b) Steel Pipe : ASTM A53 (GR. 35)
 - c) HSS (Round) : ASTM 500 (GR. B-42)
 - d) HSS (Rectangular) : ASTM 500 (GR. B-46)
 - e) Channel : ASTM A36 (GR. 36)
 - f) Steel Solid Rod : ASTM A36 (GR. 36)
 - g) Steel Plate : ASTM A36 (GR. 36)
 - h) Steel Angle : ASTM A36 (GR. 36)
 - i) UNISTRUT : ASTM A570 (GR. 33)

This analysis may be affected if any assumptions are not valid or have been made in error. We should be notified to determine the effect on the structural integrity of the antenna mounting system.

4) ANALYSIS RESULTS

Table 3 – Mount Component Stresses vs. Capacity

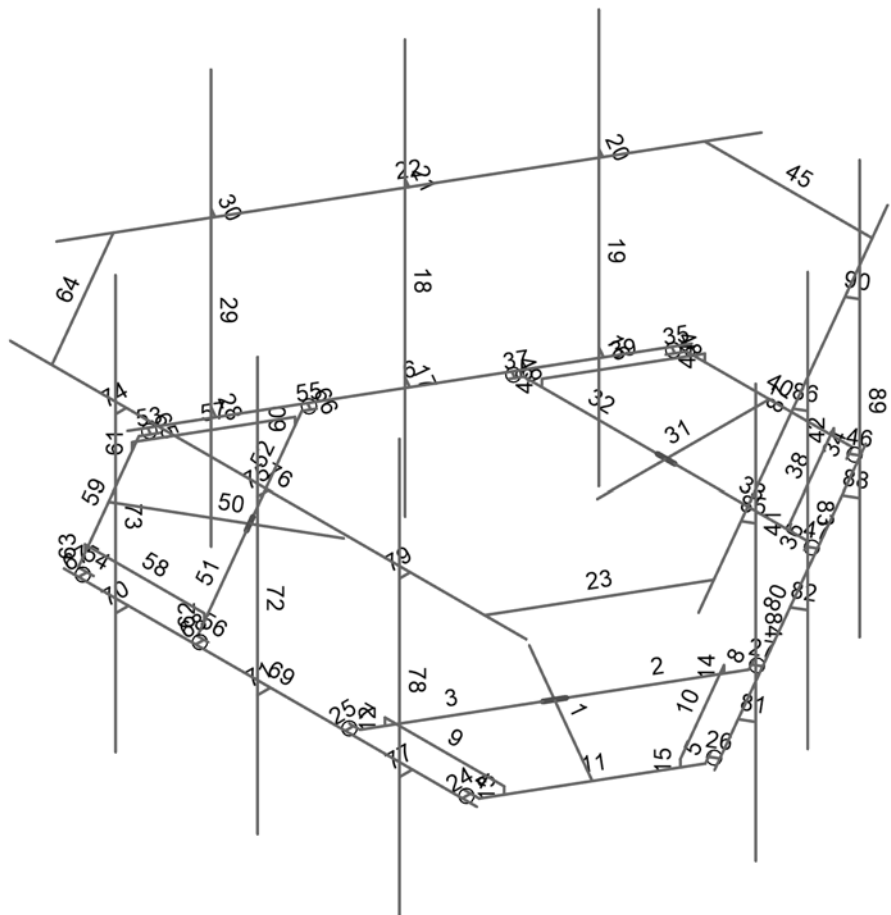
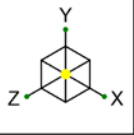
Notes	Component	Elevation (ft.)	% Capacity	Pass / Fail
-	Main Horizontals	125	7.7	Pass
-	Support Rails	125	14.5	Pass
-	Support Tubes	125	55.7	Pass
-	Support Channels	125	43.4	Pass
-	Support Angles	125	29.5	Pass
-	Mount Pipes	125	15.8	Pass
-	Connection Plates	125	24.2	Pass
-	Connection Angles	125	24.4	Pass
-	Bolt Connection	125	31.7	Pass

5) RECOMMENDATIONS

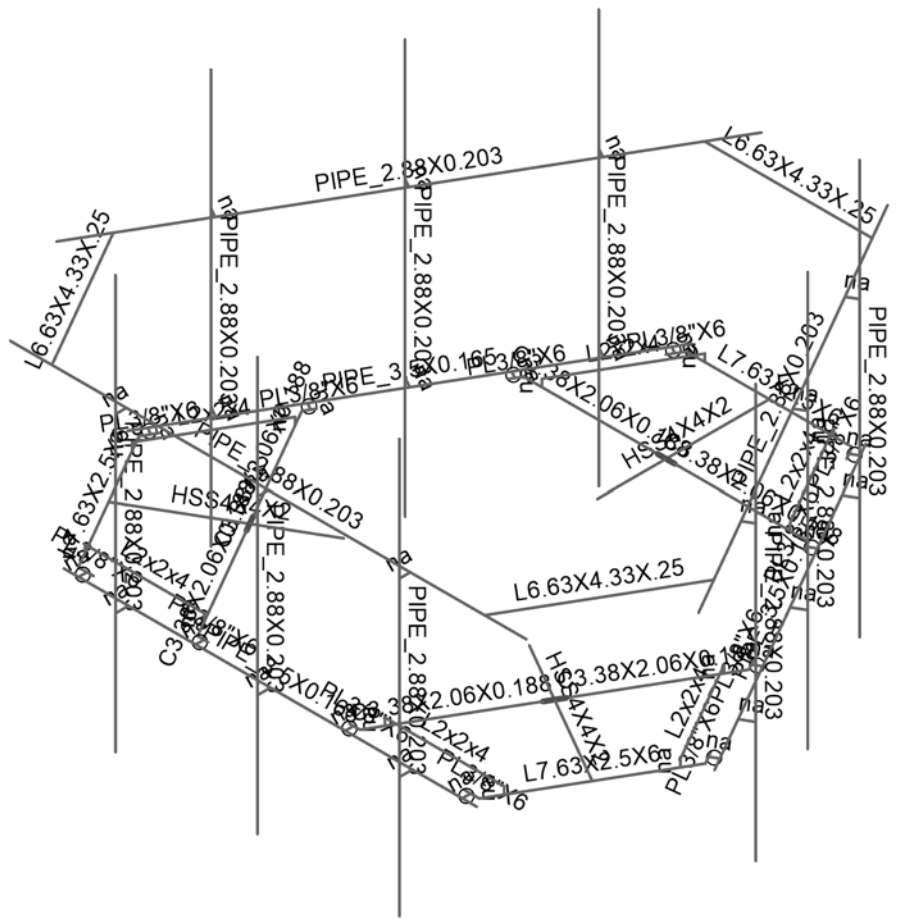
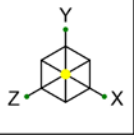
The Commscope platform mount, Part #MC-PK8-DSH has sufficient capacity to carry the proposed loads and is in compliance with the ANSI/TIA-222-H standard for the proposed loading. (Refer to the RISA output for the specific members).

APPENDIX A

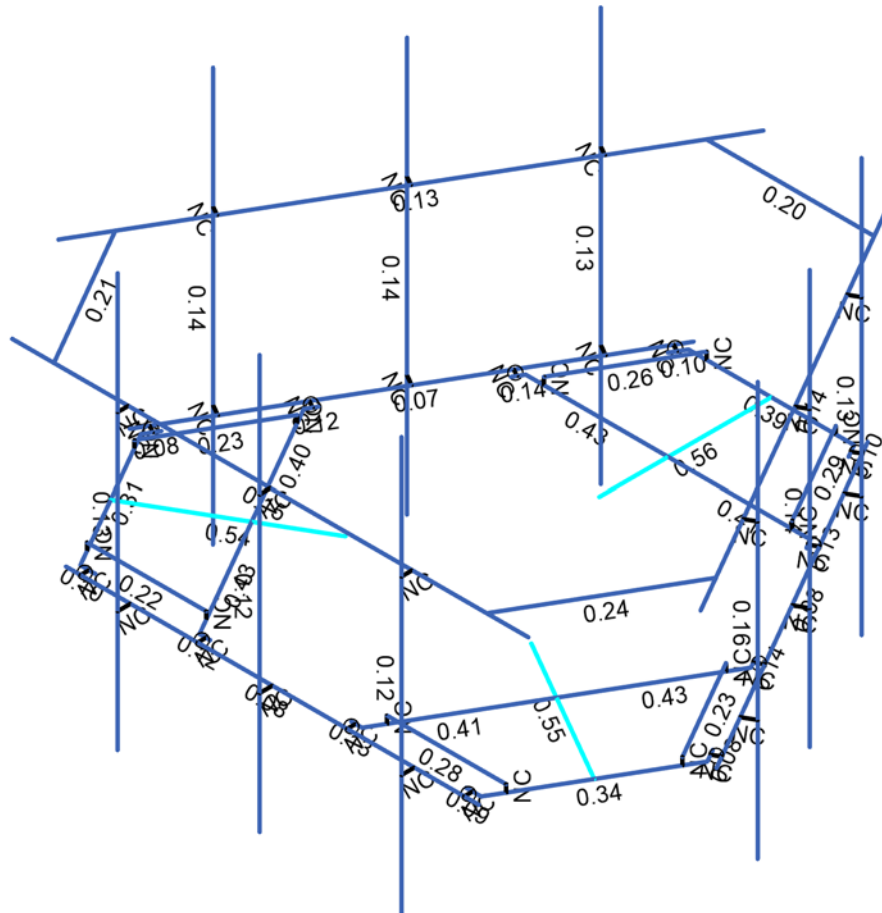
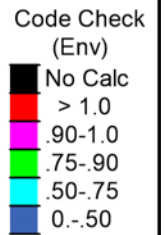
(RISA-3D Output)



B+T Group	CT08748-A - Woodstock 4, CT	SK-2
AS		Jan 25, 2023
149450.004.01		149450_004_01_Woodstock 4, C...

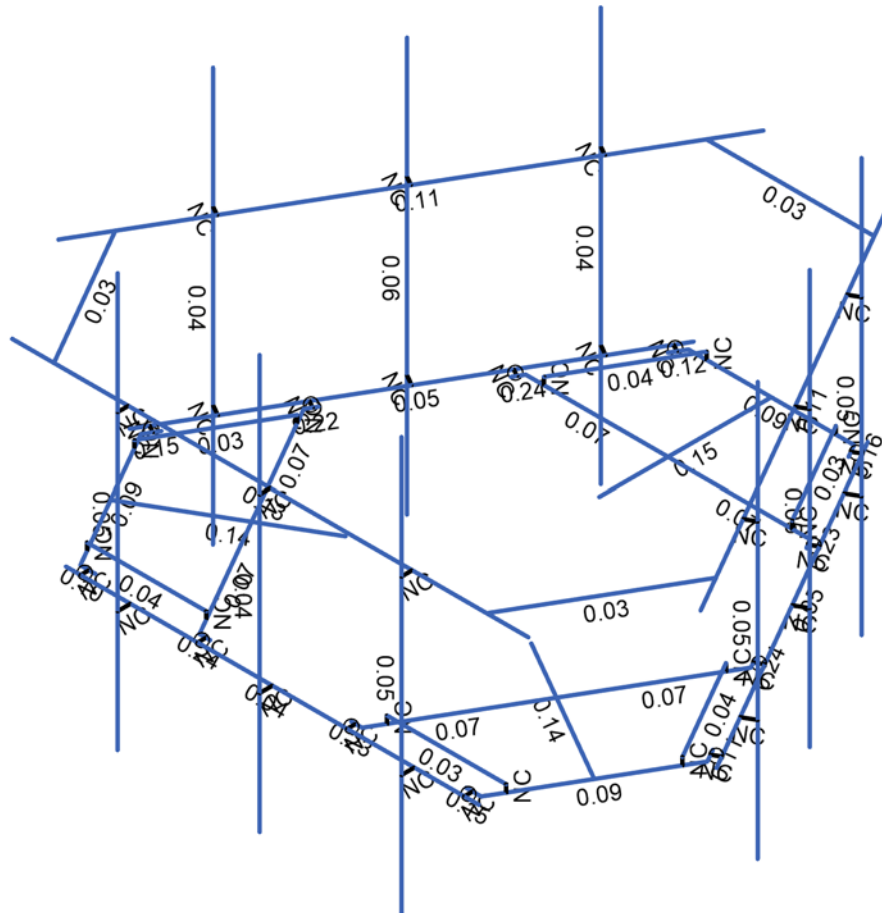
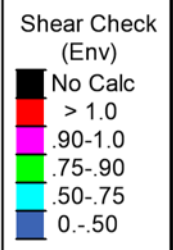


B+T Group	CT08748-A - Woodstock 4, CT	SK-3
AS		Jan 25, 2023
149450.004.01		149450_004_01_Woodstock 4, C...



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

B+T Group	CT08748-A - Woodstock 4, CT	SK-4
AS		Jan 25, 2023
149450.004.01		149450_004_01_Woodstock 4, C...



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

B+T Group	CT08748-A - Woodstock 4, CT	SK-5
AS		
149450.004.01		
		Jan 25, 2023
		149450_004_01_Woodstock 4, C...

Node Coordinates

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
1	1	1.798445	0	1.038332	
2	2	4.685196	0	2.704999	
3	3	2.953145	0	1.704999	
4	4	1.573978	0	4.093786	
5	5	4.332312	0	-0.683788	
6	6	5.487012	0	1.316212	
7	7	3.88338	0	4.093786	
8	8	3.591713	0	4.093786	
9	9	5.341179	0	1.063622	
10	10	3.716713	0	4.093786	
11	11	3.716713	0	4.255243	
12	12	5.403679	0	1.171875	
13	13	5.543505	0	1.091146	
14	14	-1.685149	0	-5.591721	
15	15	-5.685147	0	1.336479	
16	16	1.365645	0	4.093786	
17	17	1.44898	0	4.093786	
18	18	1.44898	0	4.255243	
19	19	4.228145	0	-0.86421	
20	20	4.269812	0	-0.79204	
21	21	4.409638	0	-0.872768	
22	22	5.310196	0.140833	1.622467	
23	23	4.155495	0.140833	-0.377533	
24	24	1.750795	0.140833	3.787531	
25	25	4.060196	0.140833	3.787531	
26	26	5.310196	0	1.622467	
27	27	4.155495	0	-0.377533	
28	28	1.750795	0	3.787531	
29	29	4.060196	0	3.787531	
30	30	-2.310149	0	-4.50919	
31	31	-3.685149	0	-2.12762	
32	32	-2.526656	0	-4.63419	
33	33	-3.901656	0	-2.25262	
34	34	-2.526656	5.666663	-4.63419	
35	35	-3.901656	5.666663	-2.25262	
36	36	-2.526656	-2.333337	-4.63419	
37	37	-3.901656	-2.333337	-2.25262	
38	38	-2.526656	3.33333	-4.63419	
39	39	-3.901656	3.33333	-2.25262	
40	40	-2.346234	3.33333	-4.530023	
41	41	-3.721234	3.33333	-2.148453	
42	42	-1.221233	3.33333	-6.478582	
43	43	-6.221233	3.33333	2.181672	
44	44	4.192466	3.33333	4.296909	
45	45	5.817466	3.33333	1.482327	
46	46	-5.060147	0	0.253947	
47	47	-5.276654	0	0.128947	
48	48	-5.276654	5.666663	0.128947	
49	49	-5.276654	-2.333337	0.128947	
50	50	-5.276654	3.33333	0.128947	
51	51	-5.096232	3.33333	0.233113	
52	52	0	0	0	
53	53	0	0	-2.076665	
54	54	0	0	-5.409998	
55	55	0	0	-3.409998	

Node Coordinates (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
56	56	2.758333	0	-3.409998	
57	57	-2.758333	0	-3.409998	
58	58	-1.603633	0	-5.409998	
59	59	1.603633	0	-5.409998	
60	60	1.749466	0	-5.157408	
61	61	-1.749466	0	-5.157408	
62	62	1.686966	0	-5.265661	
63	63	1.826792	0	-5.346389	
64	64	-1.686966	0	-5.265661	
65	65	-1.826792	0	-5.346389	
66	66	2.8625	0	-3.229576	
67	67	2.820833	0	-3.301746	
68	68	2.960659	0	-3.382474	
69	69	-2.8625	0	-3.229576	
70	70	-2.820833	0	-3.301746	
71	71	-2.960659	0	-3.382474	
72	72	-1.25	0.140833	-5.409998	
73	73	-2.404701	0.140833	-3.409998	
74	74	2.404701	0.140833	-3.409998	
75	75	1.25	0.140833	-5.409998	
76	76	-1.25	0	-5.409998	
77	77	-2.404701	0	-3.409998	
78	78	2.404701	0	-3.409998	
79	79	1.25	0	-5.409998	
80	80	1.625	3.333333	-5.779237	
81	81	-1.625	3.333333	-5.779237	
82	82	-1.798445	0	1.038332	
83	83	-4.685196	0	2.704999	
84	84	-2.953145	0	1.704999	
85	85	-4.332312	0	-0.683788	
86	86	-1.573978	0	4.093786	
87	87	-3.88338	0	4.093786	
88	88	-5.487012	0	1.316212	
89	89	-5.341179	0	1.063622	
90	90	-3.591713	0	4.093786	
91	91	-5.403679	0	1.171875	
92	92	-5.543505	0	1.091146	
93	93	-3.716713	0	4.093786	
94	94	-3.716713	0	4.255243	
95	95	-4.228145	0	-0.86421	
96	96	-4.269812	0	-0.79204	
97	97	-4.409638	0	-0.872768	
98	98	-1.365645	0	4.093786	
99	99	-1.44898	0	4.093786	
100	100	-1.44898	0	4.255243	
101	101	-4.060196	0.140833	3.787531	
102	102	-1.750795	0.140833	3.787531	
103	103	-4.155495	0.140833	-0.377533	
104	104	-5.310196	0.140833	1.622467	
105	105	-4.060196	0	3.787531	
106	106	-1.750795	0	3.787531	
107	107	-4.155495	0	-0.377533	
108	108	-5.310196	0	1.622467	
109	109	-5.817466	3.333333	1.482327	
110	110	-4.192466	3.333333	4.296909	

Node Coordinates (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
111	111	-3.999998	0	4.255243	
112	112	3.999998	0	4.255243	
113	113	-2.749998	0	4.255243	
114	114	0.000002	0	4.255243	
115	115	-2.749998	0	4.505243	
116	116	0.000002	0	4.505243	
117	117	-2.749998	5.666663	4.505243	
118	118	0.000002	5.666663	4.505243	
119	119	-2.749998	-2.333337	4.505243	
120	120	0.000002	-2.333337	4.505243	
121	121	-2.749998	3.333333	4.505243	
122	122	0.000002	3.333333	4.505243	
123	123	-2.749998	3.333333	4.296909	
124	124	0.000002	3.333333	4.296909	
125	125	-5	3.333333	4.296909	
126	126	5	3.333333	4.296909	
127	127	2.749998	0	4.255243	
128	128	2.749998	0	4.505243	
129	129	2.749998	5.666663	4.505243	
130	130	2.749998	-2.333337	4.505243	
131	131	2.749998	3.333333	4.505243	
132	132	2.749998	3.333333	4.296909	
133	133	5.685147	0	1.336479	
134	134	1.685149	0	-5.591721	
135	135	5.060147	0	0.253947	
136	136	3.685147	0	-2.127623	
137	137	5.276654	0	0.128947	
138	138	3.901654	0	-2.252623	
139	139	5.276654	5.666663	0.128947	
140	140	3.901654	5.666663	-2.252623	
141	141	5.276654	-2.333337	0.128947	
142	142	3.901654	-2.333337	-2.252623	
143	143	5.276654	3.333333	0.128947	
144	144	3.901654	3.333333	-2.252623	
145	145	5.096232	3.333333	0.233113	
146	146	3.721232	3.333333	-2.148456	
147	147	6.221233	3.333333	2.181672	
148	148	1.221233	3.333333	-6.478582	
149	149	2.310149	0	-4.50919	
150	150	2.526656	0	-4.63419	
151	151	2.526656	5.666663	-4.63419	
152	152	2.526656	-2.333337	-4.63419	
153	153	2.526656	3.333333	-4.63419	
154	154	2.346234	3.333333	-4.530023	

Node Boundary Conditions

	Node Label	X [k/in] Reaction	Y [k/in] Reaction	Z [k/in] Reaction	X Rot [k-ft/rad] Reaction	Y Rot [k-ft/rad] Reaction	Z Rot [k-ft/rad] Reaction
1	1						
2	2						
3	3						
4	4						
5	5						
6	16						
7	17						
8	19						

Node Boundary Conditions (Continued)

	Node Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot [k-ft/rad]	Y Rot [k-ft/rad]	Z Rot [k-ft/rad]
9	20						
10	22						
11	25						
12	26						
13	29						
14	53	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
15	54						
16	55						
17	56						
18	57						
19	66						
20	67						
21	69						
22	70						
23	72						
24	75						
25	76						
26	79						
27	82	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
28	83						
29	84						
30	85						
31	86						
32	95						
33	96						
34	98						
35	99						
36	101						
37	104						
38	105						
39	108						

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [$10^{-6}/^{\circ}\text{F}$]	Density [k/ft ³]	Yield [ksi]	Ry	Fu [ksi]	Rt
1	A992	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	0.3	0.65	0.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	0.3	0.65	0.527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	0.3	0.65	0.527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	0.3	0.65	0.49	35	1.6	60	1.2
7	A1085	29000	11154	0.3	0.65	0.49	50	1.4	65	1.3
8	A500 Gr.C	29000	11154	0.3	0.65	0.49	46	1.4	62	1.3

Member Primary Data

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	1	1	2		SF-H1	Beam	Tube	A500 Gr.B Rect	Typical
2	2	5	3	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
3	3	3	4	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
4	4	7	8		MF-CP1	Beam	RECT	A36 Gr.36	Typical
5	5	6	9		MF-CP1	Beam	RECT	A36 Gr.36	Typical
6	6	14	15		MF-H1	Beam	Pipe	A500 Gr.C	Typical
7	7	16	4		MF-CP1	Beam	RECT	A36 Gr.36	Typical
8	8	5	19		MF-CP1	Beam	RECT	A36 Gr.36	Typical

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
9	9	25	24		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
10	10	23	22		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
11	11	6	7		SF-H4	Beam	Single Angle	A36 Gr.36	Typical
12	12	28	24		RIGID	None	None	RIGID	Typical
13	13	29	25		RIGID	None	None	RIGID	Typical
14	14	27	23		RIGID	None	None	RIGID	Typical
15	15	26	22		RIGID	None	None	RIGID	Typical
16	16	32	30		RIGID	None	None	RIGID	Typical
17	17	33	31		RIGID	None	None	RIGID	Typical
18	18	35	37		MF-P1	Column	Pipe	A500 Gr.C	Typical
19	19	34	36		MF-P1	Column	Pipe	A500 Gr.C	Typical
20	20	38	40		RIGID	None	None	RIGID	Typical
21	21	39	41		RIGID	None	None	RIGID	Typical
22	22	42	43		MF-H2	Beam	Pipe	A500 Gr.C	Typical
23	23	44	45	180	MF-H3	Beam	Single Angle	A36 Gr.36	Typical
24	24	11	10		RIGID	None	None	RIGID	Typical
25	25	18	17		RIGID	None	None	RIGID	Typical
26	26	13	12		RIGID	None	None	RIGID	Typical
27	27	21	20		RIGID	None	None	RIGID	Typical
28	28	47	46		RIGID	None	None	RIGID	Typical
29	29	48	49		MF-P1	Column	Pipe	A500 Gr.C	Typical
30	30	50	51		RIGID	None	None	RIGID	Typical
31	31	53	54		SF-H1	Beam	Tube	A500 Gr.B Rect	Typical
32	32	57	55	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
33	33	55	56	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
34	34	59	60		MF-CP1	Beam	RECT	A36 Gr.36	Typical
35	35	58	61		MF-CP1	Beam	RECT	A36 Gr.36	Typical
36	36	66	56		MF-CP1	Beam	RECT	A36 Gr.36	Typical
37	37	57	69		MF-CP1	Beam	RECT	A36 Gr.36	Typical
38	38	75	74		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
39	39	73	72		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
40	40	58	59		SF-H4	Beam	Single Angle	A36 Gr.36	Typical
41	41	78	74		RIGID	None	None	RIGID	Typical
42	42	79	75		RIGID	None	None	RIGID	Typical
43	43	77	73		RIGID	None	None	RIGID	Typical
44	44	76	72		RIGID	None	None	RIGID	Typical
45	45	80	81	180	MF-H3	Beam	Single Angle	A36 Gr.36	Typical
46	46	63	62		RIGID	None	None	RIGID	Typical
47	47	68	67		RIGID	None	None	RIGID	Typical
48	48	65	64		RIGID	None	None	RIGID	Typical
49	49	71	70		RIGID	None	None	RIGID	Typical
50	50	82	83		SF-H1	Beam	Tube	A500 Gr.B Rect	Typical
51	51	86	84	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
52	52	84	85	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
53	53	88	89		MF-CP1	Beam	RECT	A36 Gr.36	Typical
54	54	87	90		MF-CP1	Beam	RECT	A36 Gr.36	Typical
55	55	95	85		MF-CP1	Beam	RECT	A36 Gr.36	Typical
56	56	86	98		MF-CP1	Beam	RECT	A36 Gr.36	Typical
57	57	104	103		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
58	58	102	101		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
59	59	87	88		SF-H4	Beam	Single Angle	A36 Gr.36	Typical
60	60	107	103		RIGID	None	None	RIGID	Typical
61	61	108	104		RIGID	None	None	RIGID	Typical
62	62	106	102		RIGID	None	None	RIGID	Typical
63	63	105	101		RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
64	64	109	110	180	MF-H3	Beam	Single Angle	A36 Gr.36	Typical
65	65	92	91		RIGID	None	None	RIGID	Typical
66	66	97	96		RIGID	None	None	RIGID	Typical
67	67	94	93		RIGID	None	None	RIGID	Typical
68	68	100	99		RIGID	None	None	RIGID	Typical
69	69	111	112		MF-H1	Beam	Pipe	A500 Gr.C	Typical
70	70	115	113		RIGID	None	None	RIGID	Typical
71	71	116	114		RIGID	None	None	RIGID	Typical
72	72	118	120		MF-P1	Column	Pipe	A500 Gr.C	Typical
73	73	117	119		MF-P1	Column	Pipe	A500 Gr.C	Typical
74	74	121	123		RIGID	None	None	RIGID	Typical
75	75	122	124		RIGID	None	None	RIGID	Typical
76	76	125	126		MF-H2	Beam	Pipe	A500 Gr.C	Typical
77	77	128	127		RIGID	None	None	RIGID	Typical
78	78	129	130		MF-P1	Column	Pipe	A500 Gr.C	Typical
79	79	131	132		RIGID	None	None	RIGID	Typical
80	80	133	134		MF-H1	Beam	Pipe	A500 Gr.C	Typical
81	81	137	135		RIGID	None	None	RIGID	Typical
82	82	138	136		RIGID	None	None	RIGID	Typical
83	83	140	142		MF-P1	Column	Pipe	A500 Gr.C	Typical
84	84	139	141		MF-P1	Column	Pipe	A500 Gr.C	Typical
85	85	143	145		RIGID	None	None	RIGID	Typical
86	86	144	146		RIGID	None	None	RIGID	Typical
87	87	147	148		MF-H2	Beam	Pipe	A500 Gr.C	Typical
88	88	150	149		RIGID	None	None	RIGID	Typical
89	89	151	152		MF-P1	Column	Pipe	A500 Gr.C	Typical
90	90	153	154		RIGID	None	None	RIGID	Typical

Member Advanced Data

	Label	I Release	I Offset [in]	J Offset [in]	Physical	Deflection Ratio Options	Seismic DR
1	1				Yes	N/A	None
2	2			2	Yes	N/A	None
3	3		2		Yes	N/A	None
4	4				Yes	Default	None
5	5				Yes	Default	None
6	6				Yes	N/A	None
7	7				Yes	Default	None
8	8				Yes	Default	None
9	9				Yes	N/A	None
10	10				Yes	N/A	None
11	11				Yes	N/A	None
12	12				Yes	** NA **	None
13	13				Yes	** NA **	None
14	14				Yes	** NA **	None
15	15				Yes	** NA **	None
16	16				Yes	** NA **	None
17	17				Yes	** NA **	None
18	18				Yes	** NA **	None
19	19				Yes	** NA **	None
20	20				Yes	** NA **	None
21	21				Yes	** NA **	None
22	22				Yes	N/A	None
23	23				Yes	Default	None
24	24	OOOOOX			Yes	** NA **	None
25	25	OOOOOX			Yes	** NA **	None

Member Advanced Data (Continued)

	Label	I Release	I Offset [in]	J Offset [in]	Physical	Deflection Ratio Options	Seismic DR
26	26	OOOOOX			Yes	** NA **	None
27	27	OOOOOX			Yes	** NA **	None
28	28				Yes	** NA **	None
29	29				Yes	** NA **	None
30	30				Yes	** NA **	None
31	31				Yes	N/A	None
32	32			2	Yes	N/A	None
33	33		2		Yes	N/A	None
34	34				Yes	Default	None
35	35				Yes	Default	None
36	36				Yes	Default	None
37	37				Yes	Default	None
38	38				Yes	N/A	None
39	39				Yes	N/A	None
40	40				Yes	N/A	None
41	41				Yes	** NA **	None
42	42				Yes	** NA **	None
43	43				Yes	** NA **	None
44	44				Yes	** NA **	None
45	45				Yes	Default	None
46	46	OOOOOX			Yes	** NA **	None
47	47	OOOOOX			Yes	** NA **	None
48	48	OOOOOX			Yes	** NA **	None
49	49	OOOOOX			Yes	** NA **	None
50	50				Yes	N/A	None
51	51			2	Yes	N/A	None
52	52		2		Yes	N/A	None
53	53				Yes	Default	None
54	54				Yes	Default	None
55	55				Yes	Default	None
56	56				Yes	Default	None
57	57				Yes	N/A	None
58	58				Yes	N/A	None
59	59				Yes	N/A	None
60	60				Yes	** NA **	None
61	61				Yes	** NA **	None
62	62				Yes	** NA **	None
63	63				Yes	** NA **	None
64	64				Yes	Default	None
65	65	OOOOOX			Yes	** NA **	None
66	66	OOOOOX			Yes	** NA **	None
67	67	OOOOOX			Yes	** NA **	None
68	68	OOOOOX			Yes	** NA **	None
69	69				Yes	N/A	None
70	70				Yes	** NA **	None
71	71				Yes	** NA **	None
72	72				Yes	** NA **	None
73	73				Yes	** NA **	None
74	74				Yes	** NA **	None
75	75				Yes	** NA **	None
76	76				Yes	N/A	None
77	77				Yes	** NA **	None
78	78				Yes	** NA **	None
79	79				Yes	** NA **	None
80	80				Yes	N/A	None

Member Advanced Data (Continued)

	Label	I Release	I Offset [in]	J Offset [in]	Physical	Deflection Ratio Options	Seismic DR
81	81				Yes	** NA **	None
82	82				Yes	** NA **	None
83	83				Yes	** NA **	None
84	84				Yes	** NA **	None
85	85				Yes	** NA **	None
86	86				Yes	** NA **	None
87	87				Yes	N/A	None
88	88				Yes	** NA **	None
89	89				Yes	** NA **	None
90	90				Yes	** NA **	None

Hot Rolled Steel Design Parameters

	Label	Shape	Length [ft]	Lcomp top [ft]	Function
1	1	SF-H1	3.333	Lbyy	Lateral
2	2	SF-H2	2.758	Lbyy	Lateral
3	3	SF-H2	2.758	Lbyy	Lateral
4	4	MF-CP1	0.292	Lbyy	Lateral
5	5	MF-CP1	0.292	Lbyy	Lateral
6	6	MF-H1	8	Lbyy	Lateral
7	7	MF-CP1	0.208	Lbyy	Lateral
8	8	MF-CP1	0.208	Lbyy	Lateral
9	9	SF-H3	2.309	Lbyy	Lateral
10	10	SF-H3	2.309	Lbyy	Lateral
11	11	SF-H4	3.207	Lbyy	Lateral
12	18	MF-P1	8	Lbyy	Lateral
13	19	MF-P1	8	Lbyy	Lateral
14	22	MF-H2	10	Lbyy	Lateral
15	23	MF-H3	3.25	Lbyy	Lateral
16	29	MF-P1	8	Lbyy	Lateral
17	31	SF-H1	3.333	Lbyy	Lateral
18	32	SF-H2	2.758	Lbyy	Lateral
19	33	SF-H2	2.758	Lbyy	Lateral
20	34	MF-CP1	0.292	Lbyy	Lateral
21	35	MF-CP1	0.292	Lbyy	Lateral
22	36	MF-CP1	0.208	Lbyy	Lateral
23	37	MF-CP1	0.208	Lbyy	Lateral
24	38	SF-H3	2.309	Lbyy	Lateral
25	39	SF-H3	2.309	Lbyy	Lateral
26	40	SF-H4	3.207	Lbyy	Lateral
27	45	MF-H3	3.25	Lbyy	Lateral
28	50	SF-H1	3.333	Lbyy	Lateral
29	51	SF-H2	2.758	Lbyy	Lateral
30	52	SF-H2	2.758	Lbyy	Lateral
31	53	MF-CP1	0.292	Lbyy	Lateral
32	54	MF-CP1	0.292	Lbyy	Lateral
33	55	MF-CP1	0.208	Lbyy	Lateral
34	56	MF-CP1	0.208	Lbyy	Lateral
35	57	SF-H3	2.309	Lbyy	Lateral
36	58	SF-H3	2.309	Lbyy	Lateral
37	59	SF-H4	3.207	Lbyy	Lateral
38	64	MF-H3	3.25	Lbyy	Lateral
39	69	MF-H1	8	Lbyy	Lateral
40	72	MF-P1	8	Lbyy	Lateral
41	73	MF-P1	8	Lbyy	Lateral
42	76	MF-H2	10	Lbyy	Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length [ft]	Lcomp top [ft]	Function
43	78	MF-P1	8	Lbyy	Lateral
44	80	MF-H1	8	Lbyy	Lateral
45	83	MF-P1	8	Lbyy	Lateral
46	84	MF-P1	8	Lbyy	Lateral
47	87	MF-H2	10	Lbyy	Lateral
48	89	MF-P1	8	Lbyy	Lateral

Member Point Loads (BLC 1 : Dead)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	29	Y	-0.032	%15
2	29	Y	-0.032	%85
3	29	Y	-0.075	%20
4	29	Y	-0.064	%50
5	29	Y	0	0
6	89	Y	-0.032	%15
7	89	Y	-0.032	%85
8	89	Y	-0.075	%20
9	89	Y	-0.064	%50
10	89	Y	0	0
11	78	Y	-0.032	%15
12	78	Y	-0.032	%85
13	78	Y	-0.075	%20
14	78	Y	-0.064	%50
15	78	Y	0	0
16	31	Y	-0.022	%20
17	31	Y	0	0
18	31	Y	0	0
19	31	Y	0	0
20	31	Y	0	0

Member Point Loads (BLC 2 : 0 Wind - No Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	29	Z	-0.178	%15
2	29	Z	-0.178	%85
3	29	Z	-0.078	%20
4	29	Z	-0.078	%50
5	29	Z	0	0
6	89	Z	-0.178	%15
7	89	Z	-0.178	%85
8	89	Z	-0.078	%20
9	89	Z	-0.078	%50
10	89	Z	0	0
11	78	Z	-0.178	%15
12	78	Z	-0.178	%85
13	78	Z	-0.078	%20
14	78	Z	-0.078	%50
15	78	Z	0	0
16	31	Z	-0.08	%20
17	31	Z	0	0
18	31	Z	0	0
19	31	Z	0	0
20	31	Z	0	0

Member Point Loads (BLC 3 : 90 Wind - No Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	29	X	-0.071	%15
2	29	X	-0.071	%85
3	29	X	-0.047	%20
4	29	X	-0.041	%50
5	29	X	0	0
6	89	X	-0.071	%15
7	89	X	-0.071	%85
8	89	X	-0.047	%20
9	89	X	-0.041	%50
10	89	X	0	0
11	78	X	-0.071	%15
12	78	X	-0.071	%85
13	78	X	-0.047	%20
14	78	X	-0.041	%50
15	78	X	0	0
16	31	X	-0.045	%20
17	31	X	0	0
18	31	X	0	0
19	31	X	0	0
20	31	X	0	0

Member Point Loads (BLC 4 : 0 Wind - Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	29	Z	-0.038	%15
2	29	Z	-0.038	%85
3	29	Z	-0.014	%20
4	29	Z	-0.014	%50
5	29	Z	0	0
6	89	Z	-0.038	%15
7	89	Z	-0.038	%85
8	89	Z	-0.014	%20
9	89	Z	-0.014	%50
10	89	Z	0	0
11	78	Z	-0.038	%15
12	78	Z	-0.038	%85
13	78	Z	-0.014	%20
14	78	Z	-0.014	%50
15	78	Z	0	0
16	31	Z	-0.014	%20
17	31	Z	0	0
18	31	Z	0	0
19	31	Z	0	0
20	31	Z	0	0

Member Point Loads (BLC 5 : 90 Wind - Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	29	X	-0.018	%15
2	29	X	-0.018	%85
3	29	X	-0.008	%20
4	29	X	-0.007	%50
5	29	X	0	0
6	89	X	-0.018	%15

Member Point Loads (BLC 5 : 90 Wind - Ice) (Continued)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
7	89	X	-0.018	%85
8	89	X	-0.008	%20
9	89	X	-0.007	%50
10	89	X	0	0
11	78	X	-0.018	%15
12	78	X	-0.018	%85
13	78	X	-0.008	%20
14	78	X	-0.007	%50
15	78	X	0	0
16	31	X	-0.008	%20
17	31	X	0	0
18	31	X	0	0
19	31	X	0	0
20	31	X	0	0

Member Point Loads (BLC 6 : 0 Wind - Service)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	29	Z	-0.011	%15
2	29	Z	-0.011	%85
3	29	Z	-0.005	%20
4	29	Z	-0.005	%50
5	29	Z	0	0
6	89	Z	-0.011	%15
7	89	Z	-0.011	%85
8	89	Z	-0.005	%20
9	89	Z	-0.005	%50
10	89	Z	0	0
11	78	Z	-0.011	%15
12	78	Z	-0.011	%85
13	78	Z	-0.005	%20
14	78	Z	-0.005	%50
15	78	Z	0	0
16	31	Z	-0.005	%20
17	31	Z	0	0
18	31	Z	0	0
19	31	Z	0	0
20	31	Z	0	0

Member Point Loads (BLC 7 : 90 Wind - Service)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	29	X	-0.005	%15
2	29	X	-0.005	%85
3	29	X	-0.003	%20
4	29	X	-0.003	%50
5	29	X	0	0
6	89	X	-0.005	%15
7	89	X	-0.005	%85
8	89	X	-0.003	%20
9	89	X	-0.003	%50
10	89	X	0	0
11	78	X	-0.005	%15
12	78	X	-0.005	%85
13	78	X	-0.003	%20

Member Point Loads (BLC 7 : 90 Wind - Service) (Continued)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
14	78	X	-0.003	%50
15	78	X	0	0
16	31	X	-0.003	%20
17	31	X	0	0
18	31	X	0	0
19	31	X	0	0
20	31	X	0	0

Member Point Loads (BLC 8 : Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	29	Y	-0.164	%15
2	29	Y	-0.164	%85
3	29	Y	-0.053	%20
4	29	Y	-0.051	%50
5	29	Y	0	0
6	89	Y	-0.164	%15
7	89	Y	-0.164	%85
8	89	Y	-0.053	%20
9	89	Y	-0.051	%50
10	89	Y	0	0
11	78	Y	-0.164	%15
12	78	Y	-0.164	%85
13	78	Y	-0.053	%20
14	78	Y	-0.051	%50
15	78	Y	0	0
16	31	Y	-0.053	%20
17	31	Y	0	0
18	31	Y	0	0
19	31	Y	0	0
20	31	Y	0	0

Member Point Loads (BLC 13 : Maint LL 1)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	22	Y	-0.25	%5

Member Point Loads (BLC 14 : Maint LL 2)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	6	Y	-0.25	%5

Member Point Loads (BLC 15 : Maint LL 3)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	76	Y	-0.25	%5

Member Point Loads (BLC 16 : Maint LL 4)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	69	Y	-0.25	%5

Member Point Loads (BLC 17 : Maint LL 5)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	87	Y	-0.25	%5

Member Point Loads (BLC 18 : Maint LL 6)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	80	Y	-0.25	%5

Member Point Loads (BLC 19 : Maint LL 7)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	22	Y	-0.25	%95

Member Point Loads (BLC 20 : Maint LL 8)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	6	Y	-0.25	%95

Member Point Loads (BLC 21 : Maint LL 9)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	76	Y	-0.25	%95

Member Point Loads (BLC 22 : Maint LL 10)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	69	Y	-0.25	%95

Member Point Loads (BLC 23 : Maint LL 11)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	87	Y	-0.25	%95

Member Point Loads (BLC 24 : Maint LL 12)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	80	Y	-0.25	%95

Member Point Loads (BLC 25 : Maint LL 13)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	31	Y	-0.25	%95

Member Point Loads (BLC 26 : Maint LL 14)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	50	Y	-0.25	%95

Member Point Loads (BLC 27 : Maint LL 15)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	1	Y	-0.25	%95

Member Distributed Loads (BLC 2 : 0 Wind - No Ice)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.02	-0.02	0	%100
2	2	Z	-0.016	-0.016	0	%100
3	3	Z	-0.016	-0.016	0	%100
4	4	Z	-0.024	-0.024	0	%100
5	5	Z	-0.024	-0.024	0	%100
6	6	Z	-0.014	-0.014	0	%100
7	7	Z	-0.024	-0.024	0	%100
8	8	Z	-0.024	-0.024	0	%100
9	9	Z	-0.011	-0.011	0	%100
10	10	Z	-0.011	-0.011	0	%100
11	11	Z	-0.033	-0.033	0	%100
12	18	Z	-0.012	-0.012	0	%100
13	19	Z	-0.012	-0.012	0	%100
14	22	Z	-0.012	-0.012	0	%100
15	23	Z	-0.029	-0.029	0	%100
16	29	Z	-0.012	-0.012	0	%100
17	31	Z	-0.02	-0.02	0	%100
18	32	Z	-0.016	-0.016	0	%100
19	33	Z	-0.016	-0.016	0	%100
20	34	Z	-0.024	-0.024	0	%100
21	35	Z	-0.024	-0.024	0	%100
22	36	Z	-0.024	-0.024	0	%100
23	37	Z	-0.024	-0.024	0	%100
24	38	Z	-0.011	-0.011	0	%100
25	39	Z	-0.011	-0.011	0	%100
26	40	Z	-0.033	-0.033	0	%100
27	45	Z	-0.029	-0.029	0	%100
28	50	Z	-0.02	-0.02	0	%100
29	51	Z	-0.016	-0.016	0	%100
30	52	Z	-0.016	-0.016	0	%100
31	53	Z	-0.024	-0.024	0	%100
32	54	Z	-0.024	-0.024	0	%100
33	55	Z	-0.024	-0.024	0	%100
34	56	Z	-0.024	-0.024	0	%100
35	57	Z	-0.011	-0.011	0	%100
36	58	Z	-0.011	-0.011	0	%100
37	59	Z	-0.033	-0.033	0	%100
38	64	Z	-0.029	-0.029	0	%100
39	69	Z	-0.014	-0.014	0	%100
40	72	Z	-0.012	-0.012	0	%100
41	73	Z	-0.012	-0.012	0	%100
42	76	Z	-0.012	-0.012	0	%100
43	78	Z	-0.012	-0.012	0	%100
44	80	Z	-0.014	-0.014	0	%100
45	83	Z	-0.012	-0.012	0	%100
46	84	Z	-0.012	-0.012	0	%100
47	87	Z	-0.012	-0.012	0	%100
48	89	Z	-0.012	-0.012	0	%100

Member Distributed Loads (BLC 3 : 90 Wind - No Ice)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.02	-0.02	0	%100
2	2	X	-0.016	-0.016	0	%100
3	3	X	-0.016	-0.016	0	%100
4	4	X	-0.024	-0.024	0	%100
5	5	X	-0.024	-0.024	0	%100
6	6	X	-0.014	-0.014	0	%100
7	7	X	-0.024	-0.024	0	%100
8	8	X	-0.024	-0.024	0	%100
9	9	X	-0.011	-0.011	0	%100
10	10	X	-0.011	-0.011	0	%100
11	11	X	-0.033	-0.033	0	%100
12	18	X	-0.012	-0.012	0	%100
13	19	X	-0.012	-0.012	0	%100
14	22	X	-0.012	-0.012	0	%100
15	23	X	-0.029	-0.029	0	%100
16	29	X	-0.012	-0.012	0	%100
17	31	X	-0.02	-0.02	0	%100
18	32	X	-0.016	-0.016	0	%100
19	33	X	-0.016	-0.016	0	%100
20	34	X	-0.024	-0.024	0	%100
21	35	X	-0.024	-0.024	0	%100
22	36	X	-0.024	-0.024	0	%100
23	37	X	-0.024	-0.024	0	%100
24	38	X	-0.011	-0.011	0	%100
25	39	X	-0.011	-0.011	0	%100
26	40	X	-0.033	-0.033	0	%100
27	45	X	-0.029	-0.029	0	%100
28	50	X	-0.02	-0.02	0	%100
29	51	X	-0.016	-0.016	0	%100
30	52	X	-0.016	-0.016	0	%100
31	53	X	-0.024	-0.024	0	%100
32	54	X	-0.024	-0.024	0	%100
33	55	X	-0.024	-0.024	0	%100
34	56	X	-0.024	-0.024	0	%100
35	57	X	-0.011	-0.011	0	%100
36	58	X	-0.011	-0.011	0	%100
37	59	X	-0.033	-0.033	0	%100
38	64	X	-0.029	-0.029	0	%100
39	69	X	-0.014	-0.014	0	%100
40	72	X	-0.012	-0.012	0	%100
41	73	X	-0.012	-0.012	0	%100
42	76	X	-0.012	-0.012	0	%100
43	78	X	-0.012	-0.012	0	%100
44	80	X	-0.014	-0.014	0	%100
45	83	X	-0.012	-0.012	0	%100
46	84	X	-0.012	-0.012	0	%100
47	87	X	-0.012	-0.012	0	%100
48	89	X	-0.012	-0.012	0	%100

Member Distributed Loads (BLC 4 : 0 Wind - Ice)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.007	-0.007	0	%100
2	2	Z	-0.006	-0.006	0	%100
3	3	Z	-0.006	-0.006	0	%100

Member Distributed Loads (BLC 4 : 0 Wind - Ice) (Continued)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
4	4	Z	-0.013	-0.013	0	%100
5	5	Z	-0.013	-0.013	0	%100
6	6	Z	-0.003	-0.003	0	%100
7	7	Z	-0.016	-0.016	0	%100
8	8	Z	-0.016	-0.016	0	%100
9	9	Z	-0.006	-0.006	0	%100
10	10	Z	-0.006	-0.006	0	%100
11	11	Z	-0.009	-0.009	0	%100
12	18	Z	-0.002	-0.002	0	%100
13	19	Z	-0.002	-0.002	0	%100
14	22	Z	-0.002	-0.002	0	%100
15	23	Z	-0.009	-0.009	0	%100
16	29	Z	-0.002	-0.002	0	%100
17	31	Z	-0.007	-0.007	0	%100
18	32	Z	-0.006	-0.006	0	%100
19	33	Z	-0.006	-0.006	0	%100
20	34	Z	-0.013	-0.013	0	%100
21	35	Z	-0.013	-0.013	0	%100
22	36	Z	-0.016	-0.016	0	%100
23	37	Z	-0.016	-0.016	0	%100
24	38	Z	-0.006	-0.006	0	%100
25	39	Z	-0.006	-0.006	0	%100
26	40	Z	-0.009	-0.009	0	%100
27	45	Z	-0.009	-0.009	0	%100
28	50	Z	-0.007	-0.007	0	%100
29	51	Z	-0.006	-0.006	0	%100
30	52	Z	-0.006	-0.006	0	%100
31	53	Z	-0.013	-0.013	0	%100
32	54	Z	-0.013	-0.013	0	%100
33	55	Z	-0.016	-0.016	0	%100
34	56	Z	-0.016	-0.016	0	%100
35	57	Z	-0.006	-0.006	0	%100
36	58	Z	-0.006	-0.006	0	%100
37	59	Z	-0.009	-0.009	0	%100
38	64	Z	-0.009	-0.009	0	%100
39	69	Z	-0.003	-0.003	0	%100
40	72	Z	-0.002	-0.002	0	%100
41	73	Z	-0.002	-0.002	0	%100
42	76	Z	-0.002	-0.002	0	%100
43	78	Z	-0.002	-0.002	0	%100
44	80	Z	-0.003	-0.003	0	%100
45	83	Z	-0.002	-0.002	0	%100
46	84	Z	-0.002	-0.002	0	%100
47	87	Z	-0.002	-0.002	0	%100
48	89	Z	-0.002	-0.002	0	%100

Member Distributed Loads (BLC 5 : 90 Wind - Ice)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.007	-0.007	0	%100
2	2	X	-0.006	-0.006	0	%100
3	3	X	-0.006	-0.006	0	%100
4	4	X	-0.013	-0.013	0	%100
5	5	X	-0.013	-0.013	0	%100
6	6	X	-0.003	-0.003	0	%100
7	7	X	-0.016	-0.016	0	%100

Member Distributed Loads (BLC 5 : 90 Wind - Ice) (Continued)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
8	8	X	-0.016	-0.016	0	%100
9	9	X	-0.006	-0.006	0	%100
10	10	X	-0.006	-0.006	0	%100
11	11	X	-0.009	-0.009	0	%100
12	18	X	-0.002	-0.002	0	%100
13	19	X	-0.002	-0.002	0	%100
14	22	X	-0.002	-0.002	0	%100
15	23	X	-0.009	-0.009	0	%100
16	29	X	-0.002	-0.002	0	%100
17	31	X	-0.007	-0.007	0	%100
18	32	X	-0.006	-0.006	0	%100
19	33	X	-0.006	-0.006	0	%100
20	34	X	-0.013	-0.013	0	%100
21	35	X	-0.013	-0.013	0	%100
22	36	X	-0.016	-0.016	0	%100
23	37	X	-0.016	-0.016	0	%100
24	38	X	-0.006	-0.006	0	%100
25	39	X	-0.006	-0.006	0	%100
26	40	X	-0.009	-0.009	0	%100
27	45	X	-0.009	-0.009	0	%100
28	50	X	-0.007	-0.007	0	%100
29	51	X	-0.006	-0.006	0	%100
30	52	X	-0.006	-0.006	0	%100
31	53	X	-0.013	-0.013	0	%100
32	54	X	-0.013	-0.013	0	%100
33	55	X	-0.016	-0.016	0	%100
34	56	X	-0.016	-0.016	0	%100
35	57	X	-0.006	-0.006	0	%100
36	58	X	-0.006	-0.006	0	%100
37	59	X	-0.009	-0.009	0	%100
38	64	X	-0.009	-0.009	0	%100
39	69	X	-0.003	-0.003	0	%100
40	72	X	-0.002	-0.002	0	%100
41	73	X	-0.002	-0.002	0	%100
42	76	X	-0.002	-0.002	0	%100
43	78	X	-0.002	-0.002	0	%100
44	80	X	-0.003	-0.003	0	%100
45	83	X	-0.002	-0.002	0	%100
46	84	X	-0.002	-0.002	0	%100
47	87	X	-0.002	-0.002	0	%100
48	89	X	-0.002	-0.002	0	%100

Member Distributed Loads (BLC 6 : 0 Wind - Service)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.001	-0.001	0	%100
2	2	Z	-0.001	-0.001	0	%100
3	3	Z	-0.001	-0.001	0	%100
4	4	Z	-0.002	-0.002	0	%100
5	5	Z	-0.002	-0.002	0	%100
6	6	Z	-0.0004	-0.0004	0	%100
7	7	Z	-0.002	-0.002	0	%100
8	8	Z	-0.002	-0.002	0	%100
9	9	Z	-0.0007	-0.0007	0	%100
10	10	Z	-0.0007	-0.0007	0	%100
11	11	Z	-0.002	-0.002	0	%100

Member Distributed Loads (BLC 6 : 0 Wind - Service) (Continued)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
12	18	Z	-0.0004	-0.0004	0	%100
13	19	Z	-0.0004	-0.0004	0	%100
14	22	Z	-0.0004	-0.0004	0	%100
15	23	Z	-0.002	-0.002	0	%100
16	29	Z	-0.0004	-0.0004	0	%100
17	31	Z	-0.001	-0.001	0	%100
18	32	Z	-0.001	-0.001	0	%100
19	33	Z	-0.001	-0.001	0	%100
20	34	Z	-0.002	-0.002	0	%100
21	35	Z	-0.002	-0.002	0	%100
22	36	Z	-0.002	-0.002	0	%100
23	37	Z	-0.002	-0.002	0	%100
24	38	Z	-0.0007	-0.0007	0	%100
25	39	Z	-0.0007	-0.0007	0	%100
26	40	Z	-0.002	-0.002	0	%100
27	45	Z	-0.002	-0.002	0	%100
28	50	Z	-0.001	-0.001	0	%100
29	51	Z	-0.001	-0.001	0	%100
30	52	Z	-0.001	-0.001	0	%100
31	53	Z	-0.002	-0.002	0	%100
32	54	Z	-0.002	-0.002	0	%100
33	55	Z	-0.002	-0.002	0	%100
34	56	Z	-0.002	-0.002	0	%100
35	57	Z	-0.0007	-0.0007	0	%100
36	58	Z	-0.0007	-0.0007	0	%100
37	59	Z	-0.002	-0.002	0	%100
38	64	Z	-0.002	-0.002	0	%100
39	69	Z	-0.0004	-0.0004	0	%100
40	72	Z	-0.0004	-0.0004	0	%100
41	73	Z	-0.0004	-0.0004	0	%100
42	76	Z	-0.0004	-0.0004	0	%100
43	78	Z	-0.0004	-0.0004	0	%100
44	80	Z	-0.0004	-0.0004	0	%100
45	83	Z	-0.0004	-0.0004	0	%100
46	84	Z	-0.0004	-0.0004	0	%100
47	87	Z	-0.0004	-0.0004	0	%100
48	89	Z	-0.0004	-0.0004	0	%100

Member Distributed Loads (BLC 7 : 90 Wind - Service)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.001	-0.001	0	%100
2	2	X	-0.001	-0.001	0	%100
3	3	X	-0.001	-0.001	0	%100
4	4	X	-0.002	-0.002	0	%100
5	5	X	-0.002	-0.002	0	%100
6	6	X	-0.0004	-0.0004	0	%100
7	7	X	-0.002	-0.002	0	%100
8	8	X	-0.002	-0.002	0	%100
9	9	X	-0.0007	-0.0007	0	%100
10	10	X	-0.0007	-0.0007	0	%100
11	11	X	-0.002	-0.002	0	%100
12	18	X	-0.0004	-0.0004	0	%100
13	19	X	-0.0004	-0.0004	0	%100
14	22	X	-0.0004	-0.0004	0	%100
15	23	X	-0.002	-0.002	0	%100

Member Distributed Loads (BLC 7 : 90 Wind - Service) (Continued)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
16	29	X	-0.0004	-0.0004	0	%100
17	31	X	-0.001	-0.001	0	%100
18	32	X	-0.001	-0.001	0	%100
19	33	X	-0.001	-0.001	0	%100
20	34	X	-0.002	-0.002	0	%100
21	35	X	-0.002	-0.002	0	%100
22	36	X	-0.002	-0.002	0	%100
23	37	X	-0.002	-0.002	0	%100
24	38	X	-0.0007	-0.0007	0	%100
25	39	X	-0.0007	-0.0007	0	%100
26	40	X	-0.002	-0.002	0	%100
27	45	X	-0.002	-0.002	0	%100
28	50	X	-0.001	-0.001	0	%100
29	51	X	-0.001	-0.001	0	%100
30	52	X	-0.001	-0.001	0	%100
31	53	X	-0.002	-0.002	0	%100
32	54	X	-0.002	-0.002	0	%100
33	55	X	-0.002	-0.002	0	%100
34	56	X	-0.002	-0.002	0	%100
35	57	X	-0.0007	-0.0007	0	%100
36	58	X	-0.0007	-0.0007	0	%100
37	59	X	-0.002	-0.002	0	%100
38	64	X	-0.002	-0.002	0	%100
39	69	X	-0.0004	-0.0004	0	%100
40	72	X	-0.0004	-0.0004	0	%100
41	73	X	-0.0004	-0.0004	0	%100
42	76	X	-0.0004	-0.0004	0	%100
43	78	X	-0.0004	-0.0004	0	%100
44	80	X	-0.0004	-0.0004	0	%100
45	83	X	-0.0004	-0.0004	0	%100
46	84	X	-0.0004	-0.0004	0	%100
47	87	X	-0.0004	-0.0004	0	%100
48	89	X	-0.0004	-0.0004	0	%100

Member Distributed Loads (BLC 8 : Ice)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Y	-0.015	-0.015	0	%100
2	2	Y	-0.012	-0.012	0	%100
3	3	Y	-0.012	-0.012	0	%100
4	4	Y	-0.016	-0.016	0	%100
5	5	Y	-0.016	-0.016	0	%100
6	6	Y	-0.011	-0.011	0	%100
7	7	Y	-0.016	-0.016	0	%100
8	8	Y	-0.016	-0.016	0	%100
9	9	Y	-0.01	-0.01	0	%100
10	10	Y	-0.01	-0.01	0	%100
11	11	Y	-0.02	-0.02	0	%100
12	18	Y	-0.01	-0.01	0	%100
13	19	Y	-0.01	-0.01	0	%100
14	22	Y	-0.01	-0.01	0	%100
15	23	Y	-0.02	-0.02	0	%100
16	29	Y	-0.01	-0.01	0	%100
17	31	Y	-0.015	-0.015	0	%100
18	32	Y	-0.012	-0.012	0	%100
19	33	Y	-0.012	-0.012	0	%100

Member Distributed Loads (BLC 8 : Ice) (Continued)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
20	34	Y	-0.016	-0.016	0	%100
21	35	Y	-0.016	-0.016	0	%100
22	36	Y	-0.016	-0.016	0	%100
23	37	Y	-0.016	-0.016	0	%100
24	38	Y	-0.01	-0.01	0	%100
25	39	Y	-0.01	-0.01	0	%100
26	40	Y	-0.02	-0.02	0	%100
27	45	Y	-0.02	-0.02	0	%100
28	50	Y	-0.015	-0.015	0	%100
29	51	Y	-0.012	-0.012	0	%100
30	52	Y	-0.012	-0.012	0	%100
31	53	Y	-0.016	-0.016	0	%100
32	54	Y	-0.016	-0.016	0	%100
33	55	Y	-0.016	-0.016	0	%100
34	56	Y	-0.016	-0.016	0	%100
35	57	Y	-0.01	-0.01	0	%100
36	58	Y	-0.01	-0.01	0	%100
37	59	Y	-0.02	-0.02	0	%100
38	64	Y	-0.02	-0.02	0	%100
39	69	Y	-0.011	-0.011	0	%100
40	72	Y	-0.01	-0.01	0	%100
41	73	Y	-0.01	-0.01	0	%100
42	76	Y	-0.01	-0.01	0	%100
43	78	Y	-0.01	-0.01	0	%100
44	80	Y	-0.011	-0.011	0	%100
45	83	Y	-0.01	-0.01	0	%100
46	84	Y	-0.01	-0.01	0	%100
47	87	Y	-0.01	-0.01	0	%100
48	89	Y	-0.01	-0.01	0	%100

Member Distributed Loads (BLC 30 : BLC 1 Transient Area Loads)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	39	Y	-0.01	-0.02	0.231	2.309
2	57	Y	-0.014	-0.02	0	2.078
3	58	Y	0.0006163	-0.016	0	1.155
4	58	Y	-0.016	-0.035	1.155	2.309
5	9	Y	-0.017	-0.017	0	2.078
6	10	Y	0.0006163	-0.016	0	1.155
7	10	Y	-0.016	-0.035	1.155	2.309
8	38	Y	-0.026	-0.02	0	1.039
9	38	Y	-0.02	-0.014	1.039	2.078

Member Distributed Loads (BLC 31 : BLC 8 Transient Area Loads)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	9	Y	-0.018	-0.018	0	2.078
2	10	Y	0.0006698	-0.017	0	1.155
3	10	Y	-0.017	-0.038	1.155	2.309
4	38	Y	-0.028	-0.022	0	1.039
5	38	Y	-0.022	-0.016	1.039	2.078
6	39	Y	-0.011	-0.022	0.231	2.309
7	57	Y	-0.015	-0.022	0	2.078
8	58	Y	0.000678	-0.017	0	1.155
9	58	Y	-0.017	-0.038	1.155	2.309

Node Loads and Enforced Displacements (BLC 9 : Live Load a)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s ² /ft, k*s ² *ft)]
1	30	L	Y	-0.5
2	113	L	Y	-0.5
3	135	L	Y	-0.5

Node Loads and Enforced Displacements (BLC 10 : Live Load b)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s ² /ft, k*s ² *ft)]
1	31	L	Y	-0.5
2	114	L	Y	-0.5
3	136	L	Y	-0.5

Node Loads and Enforced Displacements (BLC 11 : Live Load c)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s ² /ft, k*s ² *ft)]
1	46	L	Y	-0.5
2	127	L	Y	-0.5
3	149	L	Y	-0.5

Basic Load Cases

	BLC Description	Category	Y Gravity	Nodal	Point	Distributed	Area(Member)
1	Dead	DL	-1		20		3
2	0 Wind - No Ice	WLZ			20	48	
3	90 Wind - No Ice	WLX			20	48	
4	0 Wind - Ice	WLZ			20	48	
5	90 Wind - Ice	WLX			20	48	
6	0 Wind - Service	WLZ			20	48	
7	90 Wind - Service	WLX			20	48	
8	Ice	OL1			20	48	3
9	Live Load a	LL		3			
10	Live Load b	LL		3			
11	Live Load c	LL		3			
12	Live Load d	LL					
13	Maint LL 1	LL			1		
14	Maint LL 2	LL			1		
15	Maint LL 3	LL			1		
16	Maint LL 4	LL			1		
17	Maint LL 5	LL			1		
18	Maint LL 6	LL			1		
19	Maint LL 7	LL			1		
20	Maint LL 8	LL			1		
21	Maint LL 9	LL			1		
22	Maint LL 10	LL			1		
23	Maint LL 11	LL			1		
24	Maint LL 12	LL			1		
25	Maint LL 13	LL			1		
26	Maint LL 14	LL			1		
27	Maint LL 15	LL			1		
30	BLC 1 Transient Area Loads	None				9	
31	BLC 8 Transient Area Loads	None				9	

Load Combinations

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	1.4 Dead	Yes	Y	1	1.4						
2	1.2 D + 1.0 - 0 W	Yes	Y	1	1.2	2	1				
3	1.2 D + 1.0 - 30 W	Yes	Y	1	1.2	2	0.866	3	0.5		
4	1.2 D + 1.0 - 60 W	Yes	Y	1	1.2	3	0.866	2	0.5		
5	1.2 D + 1.0 - 90 W	Yes	Y	1	1.2	3	1				
6	1.2 D + 1.0 - 120 W	Yes	Y	1	1.2	3	0.866	2	-0.5		
7	1.2 D + 1.0 - 150 W	Yes	Y	1	1.2	2	-0.866	3	0.5		
8	1.2 D + 1.0 - 180 W	Yes	Y	1	1.2	2	-1				
9	1.2 D + 1.0 - 210 W	Yes	Y	1	1.2	2	-0.866	3	-0.5		
10	1.2 D + 1.0 - 240 W	Yes	Y	1	1.2	3	-0.866	2	-0.5		
11	1.2 D + 1.0 - 270 W	Yes	Y	1	1.2	3	-1				
12	1.2 D + 1.0 - 300 W	Yes	Y	1	1.2	3	-0.866	2	0.5		
13	1.2 D + 1.0 - 330 W	Yes	Y	1	1.2	2	0.866	3	-0.5		
14	1.2 D + 1.0 - 0 W/Ice	Yes	Y	1	1.2	4	1			8	1
15	1.2 D + 1.0 - 30 W/Ice	Yes	Y	1	1.2	4	0.866	5	0.5	8	1
16	1.2 D + 1.0 - 60 W/Ice	Yes	Y	1	1.2	5	0.866	4	0.5	8	1
17	1.2 D + 1.0 - 90 W/Ice	Yes	Y	1	1.2	5	1			8	1
18	1.2 D + 1.0 - 120 W/Ice	Yes	Y	1	1.2	5	0.866	4	-0.5	8	1
19	1.2 D + 1.0 - 150 W/Ice	Yes	Y	1	1.2	4	-0.866	5	0.5	8	1
20	1.2 D + 1.0 - 180 W/Ice	Yes	Y	1	1.2	4	-1			8	1
21	1.2 D + 1.0 - 210 W/Ice	Yes	Y	1	1.2	4	-0.866	5	-0.5	8	1
22	1.2 D + 1.0 - 240 W/Ice	Yes	Y	1	1.2	5	-0.866	4	-0.5	8	1
23	1.2 D + 1.0 - 270 W/Ice	Yes	Y	1	1.2	5	-1			8	1
24	1.2 D + 1.0 - 300 W/Ice	Yes	Y	1	1.2	5	-0.866	4	0.5	8	1
25	1.2 D + 1.0 - 330 W/Ice	Yes	Y	1	1.2	4	0.866	5	-0.5	8	1
26	1.2 D + 1.0 E - 0	Yes	Y	1	1.2	9	1				
27	1.2 D + 1.0 E - 30	Yes	Y	1	1.2	9	0.866	10	0.5		
28	1.2 D + 1.0 E - 60	Yes	Y	1	1.2	10	0.866	9	0.5		
29	1.2 D + 1.0 E - 90	Yes	Y	1	1.2	10	1				
30	1.2 D + 1.0 E - 120	Yes	Y	1	1.2	10	0.866	9	-0.5		
31	1.2 D + 1.0 E - 150	Yes	Y	1	1.2	9	-0.866	10	0.5		
32	1.2 D + 1.0 E - 180	Yes	Y	1	1.2	9	-1				
33	1.2 D + 1.0 E - 210	Yes	Y	1	1.2	9	-0.866	10	-0.5		
34	1.2 D + 1.0 E - 240	Yes	Y	1	1.2	10	-0.866	9	-0.5		
35	1.2 D + 1.0 E - 270	Yes	Y	1	1.2	10	-1				
36	1.2 D + 1.0 E - 300	Yes	Y	1	1.2	10	-0.866	9	0.5		
37	1.2 D + 1.0 E - 330	Yes	Y	1	1.2	9	0.866	10	-0.5		
38	1.2 D + 1.5 LL a + Service - 0 W	Yes	Y	1	1.2	6	1			11	1.5
39	1.2 D + 1.5 LL a + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	11	1.5
40	1.2 D + 1.5 LL a + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	11	1.5
41	1.2 D + 1.5 LL a + Service - 90 W	Yes	Y	1	1.2	7	1			11	1.5
42	1.2 D + 1.5 LL a + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	11	1.5
43	1.2 D + 1.5 LL a + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	11	1.5
44	1.2 D + 1.5 LL a + Service - 180 W	Yes	Y	1	1.2	6	-1			11	1.5
45	1.2 D + 1.5 LL a + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	11	1.5
46	1.2 D + 1.5 LL a + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	11	1.5
47	1.2 D + 1.5 LL a + Service - 270 W	Yes	Y	1	1.2	7	-1			11	1.5
48	1.2 D + 1.5 LL a + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	11	1.5
49	1.2 D + 1.5 LL a + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	11	1.5
50	1.2 D + 1.5 LL b + Service - 0 W	Yes	Y	1	1.2	6	1			12	1.5
51	1.2 D + 1.5 LL b + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	12	1.5
52	1.2 D + 1.5 LL b + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	12	1.5
53	1.2 D + 1.5 LL b + Service - 90 W	Yes	Y	1	1.2	7	1			12	1.5
54	1.2 D + 1.5 LL b + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	12	1.5
55	1.2 D + 1.5 LL b + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	12	1.5

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
56	1.2 D + 1.5 LL b + Service - 180 W	Yes	Y	1	1.2	6	-1			12	1.5
57	1.2 D + 1.5 LL b + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	12	1.5
58	1.2 D + 1.5 LL b + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	12	1.5
59	1.2 D + 1.5 LL b + Service - 270 W	Yes	Y	1	1.2	7	-1			12	1.5
60	1.2 D + 1.5 LL b + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	12	1.5
61	1.2 D + 1.5 LL b + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	12	1.5
62	1.2 D + 1.5 LL c + Service - 0 W	Yes	Y	1	1.2	6	1			13	1.5
63	1.2 D + 1.5 LL c + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	13	1.5
64	1.2 D + 1.5 LL c + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	13	1.5
65	1.2 D + 1.5 LL c + Service - 90 W	Yes	Y	1	1.2	7	1			13	1.5
66	1.2 D + 1.5 LL c + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	13	1.5
67	1.2 D + 1.5 LL c + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	13	1.5
68	1.2 D + 1.5 LL c + Service - 180 W	Yes	Y	1	1.2	6	-1			13	1.5
69	1.2 D + 1.5 LL c + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	13	1.5
70	1.2 D + 1.5 LL c + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	13	1.5
71	1.2 D + 1.5 LL c + Service - 270 W	Yes	Y	1	1.2	7	-1			13	1.5
72	1.2 D + 1.5 LL c + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	13	1.5
73	1.2 D + 1.5 LL c + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	13	1.5
74	1.2 D + 1.5 LL d + Service - 0 W	Yes	Y	1	1.2	6	1			14	1.5
75	1.2 D + 1.5 LL d + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	14	1.5
76	1.2 D + 1.5 LL d + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	14	1.5
77	1.2 D + 1.5 LL d + Service - 90 W	Yes	Y	1	1.2	7	1			14	1.5
78	1.2 D + 1.5 LL d + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	14	1.5
79	1.2 D + 1.5 LL d + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	14	1.5
80	1.2 D + 1.5 LL d + Service - 180 W	Yes	Y	1	1.2	6	-1			14	1.5
81	1.2 D + 1.5 LL d + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	14	1.5
82	1.2 D + 1.5 LL d + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	14	1.5
83	1.2 D + 1.5 LL d + Service - 270 W	Yes	Y	1	1.2	7	-1			14	1.5
84	1.2 D + 1.5 LL d + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	14	1.5
85	1.2 D + 1.5 LL d + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	14	1.5
86	1.2 D + 1.5 LL Maint (1)	Yes	Y	1	1.2					15	1.5
87	1.2 D + 1.5 LL Maint (2)	Yes	Y	1	1.2					16	1.5
88	1.2 D + 1.5 LL Maint (3)	Yes	Y	1	1.2					17	1.5
89	1.2 D + 1.5 LL Maint (4)	Yes	Y	1	1.2					18	1.5
90	1.2 D + 1.5 LL Maint (5)	Yes	Y	1	1.2					19	1.5
91	1.2 D + 1.5 LL Maint (6)	Yes	Y	1	1.2					20	1.5
92	1.2 D + 1.5 LL Maint (7)	Yes	Y	1	1.2					21	1.5
93	1.2 D + 1.5 LL Maint (8)	Yes	Y	1	1.2					22	1.5
94	1.2 D + 1.5 LL Maint (9)	Yes	Y	1	1.2					23	1.5
95	1.2 D + 1.5 LL Maint (10)	Yes	Y	1	1.2					24	1.5
96	1.2 D + 1.5 LL Maint (11)	Yes	Y	1	1.2					25	1.5
97	1.2 D + 1.5 LL Maint (12)	Yes	Y	1	1.2					26	1.5
98	1.2 D + 1.5 LL Maint (13)	Yes	Y	1	1.2					27	1.5
99	1.2 D + 1.5 LL Maint (14)	Yes	Y	1	1.2					28	1.5
100	1.2 D + 1.5 LL Maint (15)	Yes	Y	1	1.2					29	1.5

Envelope Node Reactions

Node Label		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC	
1	1	max	1.181	5	2.199	22	1.549	2	0.202	3	1.367	7	3.656	22
2		min	-1.074	11	0.051	4	-1.487	8	-2.393	21	-1.366	13	-0.307	4
3	53	max	1.157	5	2.305	14	1.498	2	4.478	14	1.153	11	0.385	95
4		min	-1.157	11	-0.09	8	-1.623	8	-0.74	8	-1.152	5	-0.211	78
5	82	max	1.167	5	2.192	18	1.337	2	0.251	13	1.32	3	0.249	12
6		min	-1.274	11	0.05	12	-1.274	8	-1.975	19	-1.318	9	-3.88	18
7	Totals:	max	3.506	5	6.179	23	4.384	2						

Envelope Node Reactions (Continued)

Node Label	X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
8	min	-3.506	11	0.348	34	-4.384	8					

Envelope AISC 13TH (360-05): LRFD Member Steel Code Checks

Member	Shape	Code Check	Loc [ft]	LC	Shear Check	Loc [ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn	
1	1	HSS4X4X2	0.551	0	21	0.14	0	y	21	70.173	73.278	8.24	8.24	2.195	H1-1b
2	2	C3.38X2.06X0.188	0.428	2.592	23	0.072	0.351	y	14	38.433	43.394	1.694	4.483	1.63	H1-1b
3	3	C3.38X2.06X0.188	0.406	0	21	0.067	2.241	y	15	38.433	43.394	1.694	4.483	1.634	H1-1b
4	4	PL3/8"X6	0.085	0	9	0.149	0	y	46	68.856	72.9	0.57	9.113	2.121	H1-1b
5	5	PL3/8"X6	0.081	0	11	0.107	0	y	9	68.856	72.9	0.57	9.113	1.794	H1-1b
6	6	PIPE 3.5X0.165	0.071	6.75	2	0.048	2.583		13	45.872	71.57	6.336	6.336	1.518	H1-1b
7	7	PL3/8"X6	0.129	0.085	3	0.228	0.208	y	21	70.733	72.9	0.57	9.113	1.524	H1-1b
8	8	PL3/8"X6	0.142	0	9	0.24	0	y	23	70.733	72.9	0.57	9.113	2.868	H1-1b
9	9	L2x2x4	0.279	0	3	0.031	2.309	y	19	23.349	30.586	0.691	1.577	1.5	H2-1
10	10	L2x2x4	0.225	2.309	4	0.043	2.309	y	24	23.349	30.586	0.691	1.577	1.5	H2-1
11	11	L7.63X2.5X6	0.342	1.604	3	0.086	0.334	y	22	73.845	118.523	1.798	14.224	1.359	H2-1
12	18	PIPE 2.88X0.203	0.142	5.667	13	0.055	5.667		13	35.519	70.68	5.029	5.029	3	H1-1b
13	19	PIPE 2.88X0.203	0.131	2.333	6	0.036	5.667		5	35.519	70.68	5.029	5.029	3	H1-1b
14	22	PIPE 2.88X0.203	0.135	7.813	9	0.113	9.167		9	24.131	70.68	5.029	5.029	2.521	H1-1b
15	23	L6.63X4.33X.25	0.244	3.25	2	0.033	3.25	z	8	49.975	86.751	2.311	6.976	1.5	H2-1
16	29	PIPE 2.88X0.203	0.144	5.667	2	0.037	5.667		6	35.519	70.68	5.029	5.029	3	H1-1b
17	31	HSS4X4X2	0.557	0	25	0.147	0	y	25	70.173	73.278	8.24	8.24	2.208	H1-1b
18	32	C3.38X2.06X0.188	0.434	2.592	15	0.071	0.351	y	18	38.433	43.394	1.694	4.483	1.63	H1-1b
19	33	C3.38X2.06X0.188	0.406	0	25	0.07	2.241	z	8	38.433	43.394	1.694	4.483	1.634	H1-1b
20	34	PL3/8"X6	0.098	0	2	0.158	0	y	2	68.856	72.9	0.57	9.113	2.281	H1-1b
21	35	PL3/8"X6	0.099	0	3	0.124	0	y	2	68.856	72.9	0.57	9.113	1.856	H1-1b
22	36	PL3/8"X6	0.133	0.208	2	0.229	0.208	y	14	70.733	72.9	0.57	9.113	2.487	H1-1b
23	37	PL3/8"X6	0.14	0	13	0.242	0	y	15	70.733	72.9	0.57	9.113	2.856	H1-1b
24	38	L2x2x4	0.295	0	8	0.031	2.309	y	24	23.349	30.586	0.691	1.577	1.5	H2-1
25	39	L2x2x4	0.259	2.309	8	0.042	0	y	16	23.349	30.586	0.691	1.577	1.5	H2-1
26	40	L7.63X2.5X6	0.386	1.604	8	0.089	0.334	y	14	73.845	118.523	1.798	13.779	1.255	H2-1
27	45	L6.63X4.33X.25	0.202	3.25	6	0.026	3.25	z	12	49.975	86.751	2.311	6.976	1.5	H2-1
28	50	HSS4X4X2	0.545	0	19	0.138	0	y	17	70.173	73.278	8.24	8.24	2.197	H1-1b
29	51	C3.38X2.06X0.188	0.431	2.592	19	0.071	0.351	y	21	38.433	43.394	1.694	4.483	1.63	H1-1b
30	52	C3.38X2.06X0.188	0.401	0	21	0.066	2.241	y	24	38.433	43.394	1.703	4.483	1.644	H1-1b
31	53	PL3/8"X6	0.084	0	6	0.149	0	y	43	68.856	72.9	0.57	9.113	2.254	H1-1b
32	54	PL3/8"X6	0.096	0	7	0.102	0	y	6	68.856	72.9	0.57	9.113	1.803	H1-1b
33	55	PL3/8"X6	0.121	0.208	13	0.225	0.208	y	18	70.733	72.9	0.57	9.113	1.905	H1-1b
34	56	PL3/8"X6	0.116	0	5	0.241	0	y	19	70.733	72.9	0.57	9.113	2.922	H1-1b
35	57	L2x2x4	0.233	0	12	0.031	2.309	y	15	23.349	30.586	0.691	1.577	1.5	H2-1
36	58	L2x2x4	0.222	2.309	12	0.043	2.309	y	20	23.349	30.586	0.691	1.577	1.5	H2-1
37	59	L7.63X2.5X6	0.307	1.604	12	0.086	0.334	y	19	73.845	118.523	1.798	13.795	1.258	H2-1
38	64	L6.63X4.33X.25	0.212	0	2	0.03	3.25	y	9	49.975	86.751	2.311	6.976	1.5	H2-1
39	69	PIPE 3.5X0.165	0.076	6.75	7	0.039	4		5	45.872	71.57	6.336	6.336	1.977	H1-1b
40	72	PIPE 2.88X0.203	0.117	5.667	5	0.044	5.667		6	35.519	70.68	5.029	5.029	3	H1-1b
41	73	PIPE 2.88X0.203	0.133	2.333	10	0.047	5.667		8	35.519	70.68	5.029	5.029	3	H1-1b
42	76	PIPE 2.88X0.203	0.145	7.812	13	0.126	9.167		2	24.131	70.68	5.029	5.029	2.441	H1-1b
43	78	PIPE 2.88X0.203	0.117	2.333	7	0.048	2.333		8	35.519	70.68	5.029	5.029	3	H1-1b
44	80	PIPE 3.5X0.165	0.077	1.25	2	0.05	4		9	45.872	71.57	6.336	6.336	1.779	H1-1b
45	83	PIPE 2.88X0.203	0.143	5.667	9	0.05	5.667		9	35.519	70.68	5.029	5.029	3	H1-1b
46	84	PIPE 2.88X0.203	0.158	2.333	2	0.046	5.667		13	35.519	70.68	5.029	5.029	3	H1-1b
47	87	PIPE 2.88X0.203	0.144	2.188	13	0.106	2.188		13	24.131	70.68	5.029	5.029	2.331	H1-1b
48	89	PIPE 2.88X0.203	0.128	5.667	9	0.05	2.333		13	35.519	70.68	5.029	5.029	3	H1-1b

APPENDIX B

(Additional Calculations)

PROJECT	149450.004.01.0001 - Woodstock 4, (KSC	
SUBJECT	Platform Mount Analysis	
DATE	01/25/23	



B+T Group
1717 S. Boulder, Suite 300
Tulsa, OK 74119
(918) 587-4630

Tower Type	:	Monopole	
Ground Elevation	z_s :	825 ft	[ASCE7 Hazard Tool]
Tower Height	:	192.00 ft	
Mount Elevation	:	125.00 ft	
Antenna Elevation	:	125.00 ft	
Crest Height	:	0 ft	
Risk Category	:	II	[Table 2-1]
Exposure Category	:	C	[Sec. 2.6.5.1.2]
Topography Category	:	1.00	[Sec. 2.6.6.2]
Wind Velocity	V :	119 mph	[ASCE7 Hazard Tool]
Ice wind Velocity	V_i :	50 mph	[ASCE7 Hazard Tool]
Service Velocity	V_s :	30 mph	[ASCE7 Hazard Tool]
Base Ice thickness	t_i :	1.50 in	[ASCE7 Hazard Tool]
Seismic Design Cat.	:	B	[ASCE7 Hazard Tool]
	S_s :	0.18	
	S_1 :	0.06	
	S_{DS} :	0.19	
	S_{D1} :	0.09	
Gust Factor	G_h :	1.00	[Sec. 16.6]
Pressure Coefficient	K_z :	1.33	[Sec. 2.6.5.2]
Topography Factor	K_{zt} :	1.00	[Sec. 2.6.6]
Elevation Factor	K_e :	0.97	[Sec. 2.6.8]
Directionality Factor	K_d :	0.95	[Sec. 16.6]
Shielding Factor	K_a :	0.90	[Sec. 16.6]
Design Ice Thickness	t_{iz} :	1.71 in	[Sec. 2.6.10]
Importance Factor	I_e :	1	[Table 2-3]
Response Coefficient	C_s :	0.097	[Sec. 2.7.7.1]
Amplification	A_s :	1.604167	[Sec. 16.7]
	q_z :	44.34 psf	

PROJECT	149450.004.01.0001 - Woodstock 4, (KSC	
SUBJECT	Platform Mount Analysis	
DATE	01/25/23	



B+T Group
1717 S. Boulder, Suite 300
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(918) 587-4630

B+T GRP

Manufacturer	Model	Qty	Height	Width	Depth	Weight	C _a A _a (N)	C _a A _a (T)	C _a A _a (N) Ice	C _a A _a (T) Ice	F _A (N)	F _A (T)	F _A (N) Ice	F _A (T) Ice
			(in ²)	(in ²)	(in ²)	(lbs)	(ft ²)	(ft ²)	(ft ²)	(ft ²)	(k)	(k)	(k)	(k)
JMA WIRELESS	MX08FRO665-21	0.5	72.0	20.0	8.0	64.5	4.01	1.61	4.80	2.30	0.18	0.07	0.04	0.02
JMA WIRELESS	MX08FRO665-21	0.5					4.01	1.61	4.80	2.30	0.18	0.07	0.04	0.02
Fujitsu	TA08025-B605	1	15.8	15.0	9.1	75.0	1.96	1.19	2.94	1.99	0.08	0.05	0.01	0.01
Fujitsu	TA08025-B604	1	15.8	15.0	7.9	63.9	1.96	1.03	2.94	1.81	0.08	0.04	0.01	0.01
JMA WIRELESS	MX08FRO665-21	0.5	72.0	20.0	8.0	64.5	4.01	1.61	4.80	2.30	0.18	0.07	0.04	0.02
JMA WIRELESS	MX08FRO665-21	0.5					4.01	1.61	4.80	2.30	0.18	0.07	0.04	0.02
Fujitsu	TA08025-B605	1	15.8	15.0	9.1	75.0	1.96	1.19	2.94	1.99	0.08	0.05	0.01	0.01
Fujitsu	TA08025-B604	1	15.8	15.0	7.9	63.9	1.96	1.03	2.94	1.81	0.08	0.04	0.01	0.01
JMA WIRELESS	MX08FRO665-21	0.5	72.0	20.0	8.0	64.5	4.01	1.61	4.80	2.30	0.18	0.07	0.04	0.02
JMA WIRELESS	MX08FRO665-21	0.5					4.01	1.61	4.80	2.30	0.18	0.07	0.04	0.02
Fujitsu	TA08025-B605	1	15.8	15.0	9.1	75.0	1.96	1.19	2.94	1.99	0.08	0.05	0.01	0.01
Fujitsu	TA08025-B604	1	15.8	15.0	7.9	63.9	1.96	1.03	2.94	1.81	0.08	0.04	0.01	0.01
RAYCAP	RDIDC-9181-PF-48	1	16.6	14.6	8.2	21.9	2.01	1.13	3.00	1.93	0.08	0.04	0.01	0.01

ASCE 7 Hazards Report

Address:

215 Coatney Hill Rd
Woodstock, Connecticut
06281

Standard:

ASCE/SEI 7-16

Risk Category: II**Soil Class:**

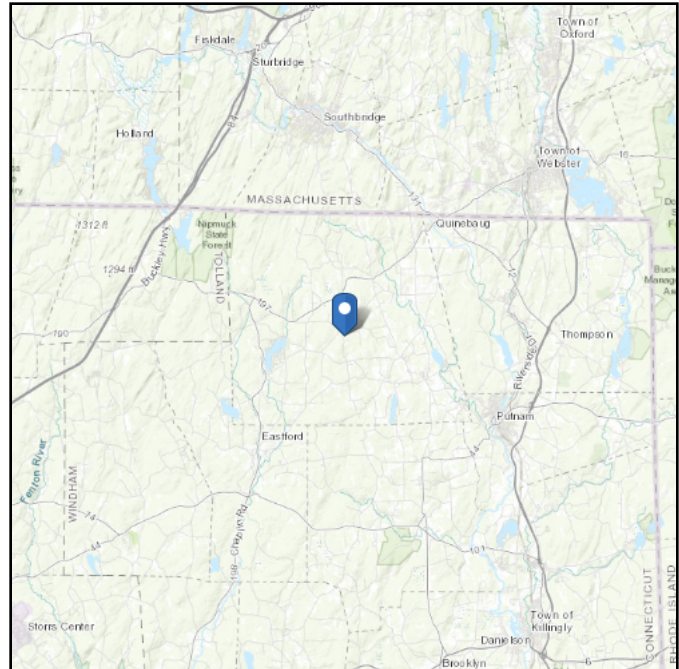
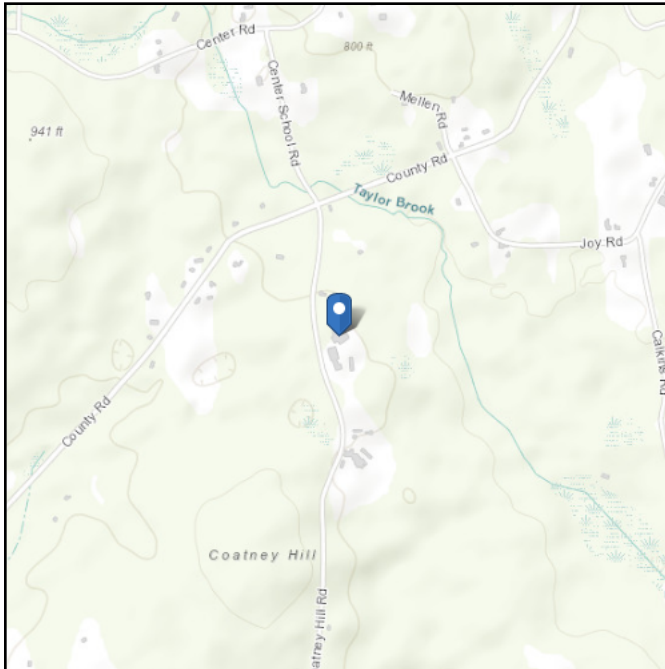
D - Default (see
Section 11.4.3)

Latitude:

41.961618

Longitude: -72.018112**Elevation:**

824.65 ft (NAVD 88)



Wind

Results:

Wind Speed	119 Vmph
10-year MRI	75 Vmph
25-year MRI	84 Vmph
50-year MRI	91 Vmph
100-year MRI	98 Vmph

Data Source:

ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2

Date Accessed:

Tue Jan 24 2023

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

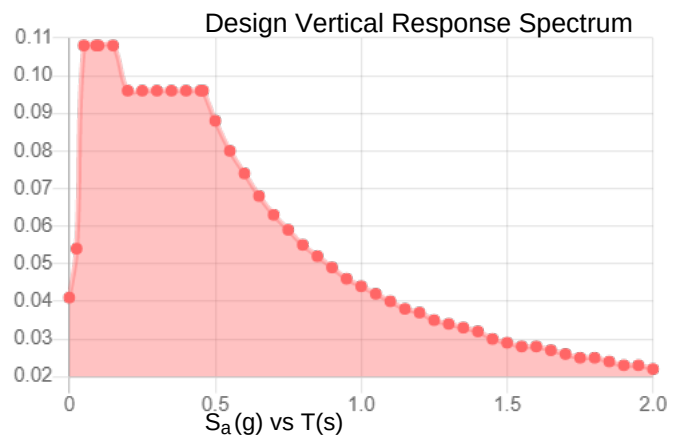
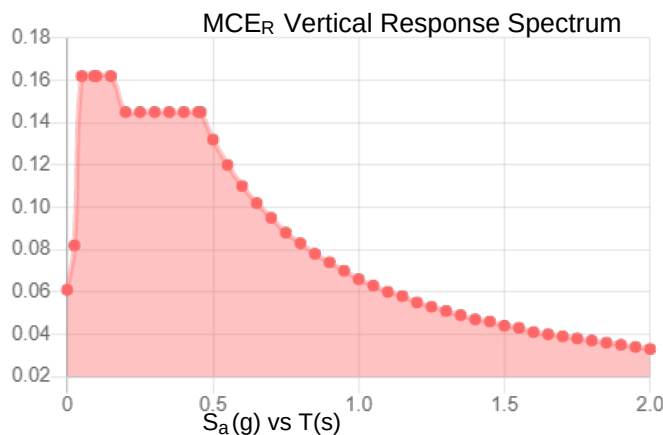
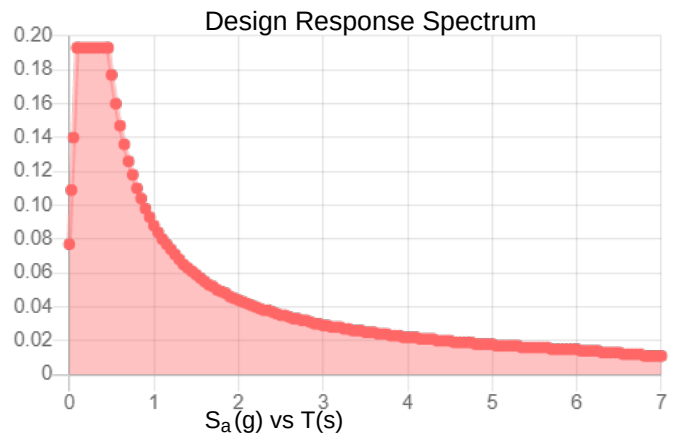
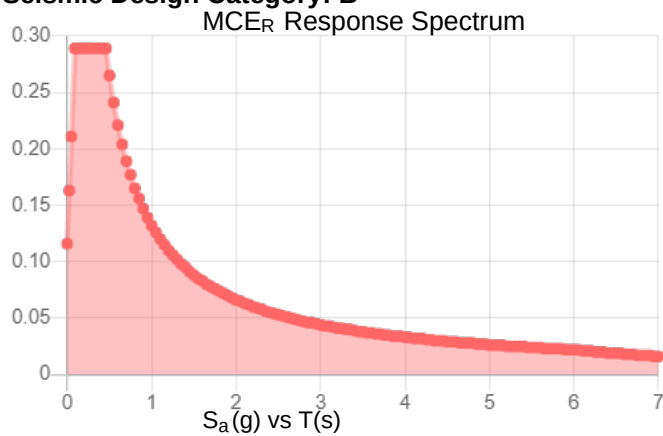
Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

Site Soil Class:

Results:

S_S :	0.181	S_{D1} :	0.088
S_1 :	0.055	T_L :	6
F_a :	1.6	PGA :	0.097
F_v :	2.4	PGA _M :	0.155
S_{MS} :	0.289	F_{PGA} :	1.6
S_{M1} :	0.132	I_e :	1
S_{DS} :	0.193	C_v :	0.7

Seismic Design Category: B



Data Accessed:

Tue Jan 24 2023

Date Source:

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

Ice

Results:

Ice Thickness: 1.50 in.
Concurrent Temperature: 15 F
Gust Speed 50 mph

Data Source: Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8

Date Accessed: Tue Jan 24 2023

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

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

The ASCE 7 Hazard Tool is provided for your convenience, for informational purposes only, and is provided "as is" and without warranties of any kind. The location data included herein has been obtained from information developed, produced, and maintained by third party providers; or has been extrapolated from maps incorporated in the ASCE 7 standard. While ASCE has made every effort to use data obtained from reliable sources or methodologies, ASCE does not make any representations or warranties as to the accuracy, completeness, reliability, currency, or quality of any data provided herein. Any third-party links provided by this Tool should not be construed as an endorsement, affiliation, relationship, or sponsorship of such third-party content by or from ASCE.

ASCE does not intend, nor should anyone interpret, the results provided by this Tool to replace the sound judgment of a competent professional, having knowledge and experience in the appropriate field(s) of practice, nor to substitute for the standard of care required of such professionals in interpreting and applying the contents of this Tool or the ASCE 7 standard.

In using this Tool, you expressly assume all risks associated with your use. Under no circumstances shall ASCE or its officers, directors, employees, members, affiliates, or agents be liable to you or any other person for any direct, indirect, special, incidental, or consequential damages arising from or related to your use of, or reliance on, the Tool or any information obtained therein. To the fullest extent permitted by law, you agree to release and hold harmless ASCE from any and all liability of any nature arising out of or resulting from any use of data provided by the ASCE 7 Hazard Tool.

PROJECT	149450.004.01.0001 - Woodstock 4, (KSC			
SUBJECT	Platform Mount Analysis			
DATE	01/25/23	PAGE	1	OF 1



B+T Group
 1717 S. Boulder, Suite 300
 Tulsa, OK 74119
 (918) 587-4630

[REF: AISC 360-05]

Reactions at Bolted Connection

Tension	:	1.623	k
Vertical Shear	:	2.305	k
Horizontal Shear	:	1.157	k
Torsion	:	0.385	k.ft
Moment from Horizontal Forces	:	1.153	k.ft
Moment from Vertical Forces	:	4.478	k.ft

Bolt Parameters

Bolt Grade	:	A325	
Bolt Diameter	:	0.625	in
Nominal Bolt Area	:	0.307	in ²
Bolt spacing, Horizontal	:	6	in
Bolt spacing, Vertical	:	6	in
Bolt edge distance, plate height	:	1.5	in
Bolt edge distance, plate width	:	1.5	in
Total Number of Bolts	:	4	bolts

Summary of Forces

Shear Resultant Force	:	2.58	k
Force from Horz. Moment	:	2.09	k
Force from Vert. Moment	:	8.11	k
Shear Load / Bolt	:	0.64	k
Tension Load / Bolt	:	0.41	k
Resultant from Moments / Bolt	:	4.19	k

Bolt Checks

Nominal Tensile Stress, F_{nt}	:	90.00	ksi	[AISC Table J3.2]
Available Tensile Stress, ΦR_{nt}	:	20.72	k/bolt	[Eq. J3-1]
Unity Check, Bolt Tension	:	22.17%		OKAY
Nominal Shear Stress, F_{nv}	:	48.00	ksi	[AISC Table J3.2]
Available Shear Stress, ΦR_{nv}	:	11.05	k/bolt	[Eq. J3-1]
Unity Check, Bolt Shear	:	9.51%		OKAY
Unity Check, Combined	:	31.67%		OKAY
Available Bearing Strength, ΦR_n	:	34.66	k/bolt	
Unity Check, Bolt Bearing	:	1.86%		OKAY

APPENDIX C

(Supplemental Drawings)

4

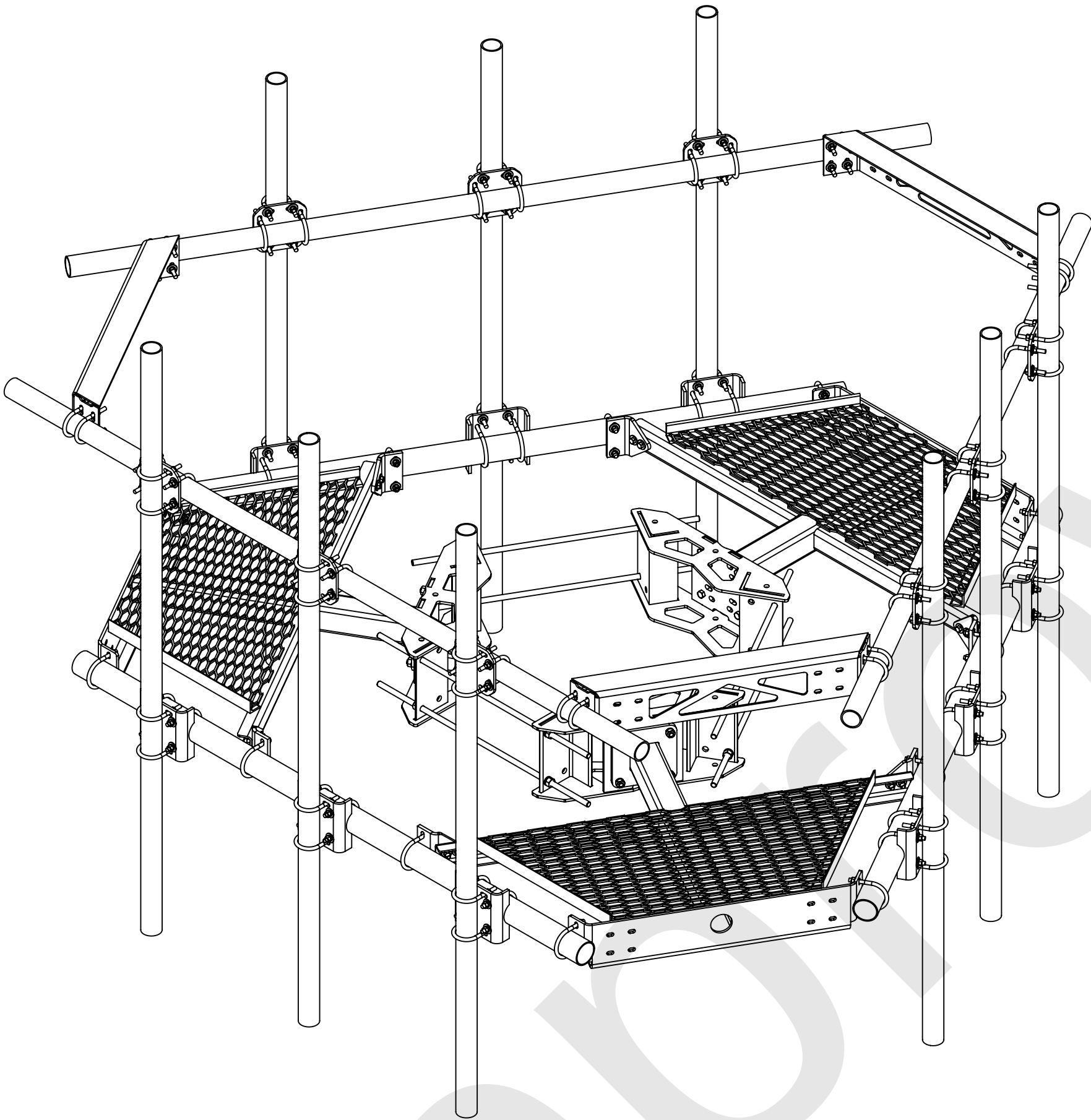
3

2

1

- NOTES:
- 1.0 GENERAL
 - 1.1 ALL METRIC DIMENSIONS ARE IN BRACKETS
 - 1.2 FOR PATENTS, SEE WWW.CS-PAT.COM
 - 2.0 DESIGN NOTES
 - 2.1 TORQUE U-BOLTS TO 44 FT-LBS
 - 3.0 MANUFACTURING/SPECIAL REQUIREMENTS
 - 4.0 TEST
 - 5.0 PACKAGING

REVISIONS				
REV.	ECN	DESCRIPTION	BY	DATE
A	10272PC	INITIAL RELEASE	HDAI	03/08/2021



PATENT PENDING

COMMSCOPE, INC. OF NORTH CAROLINA

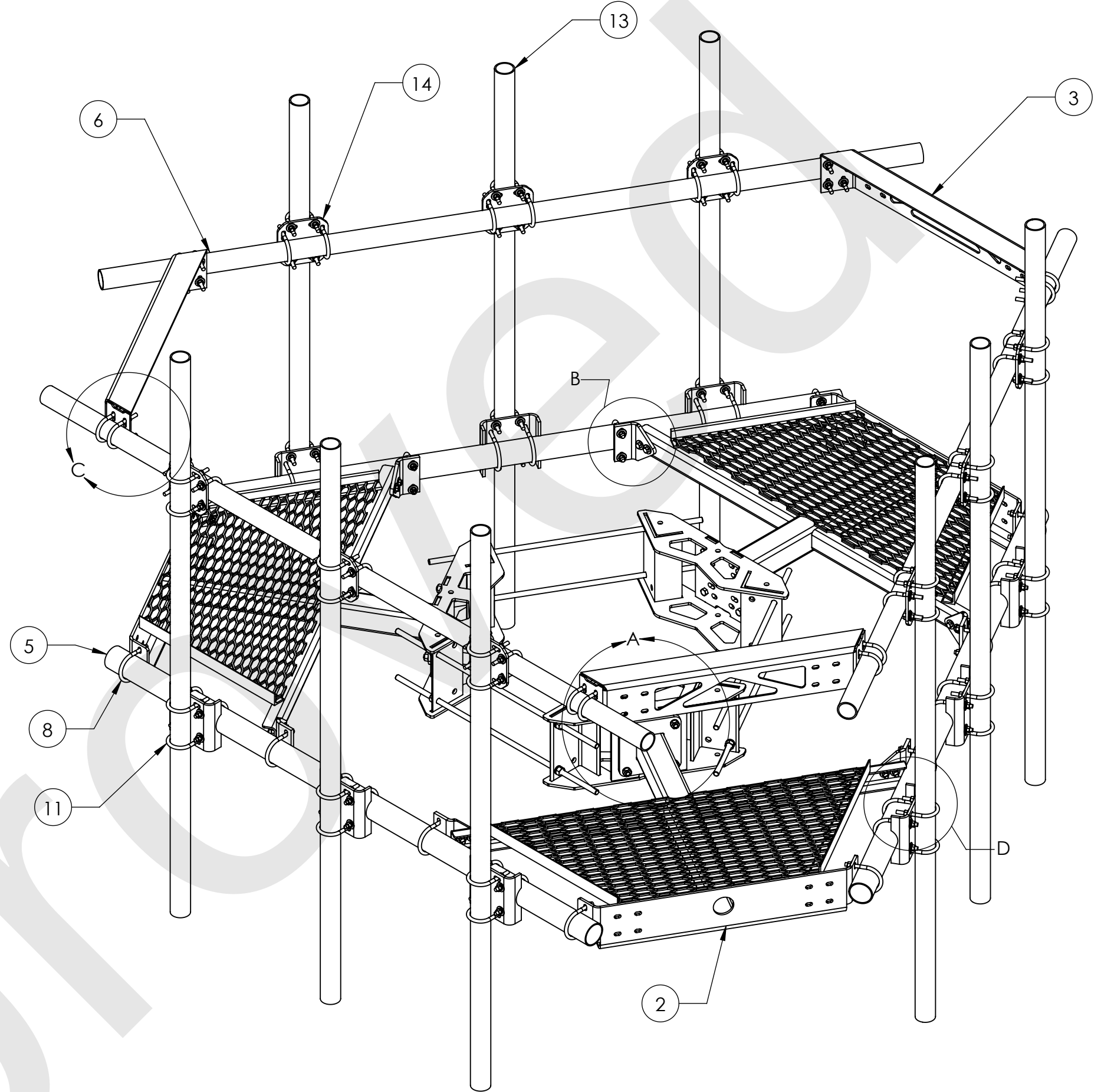
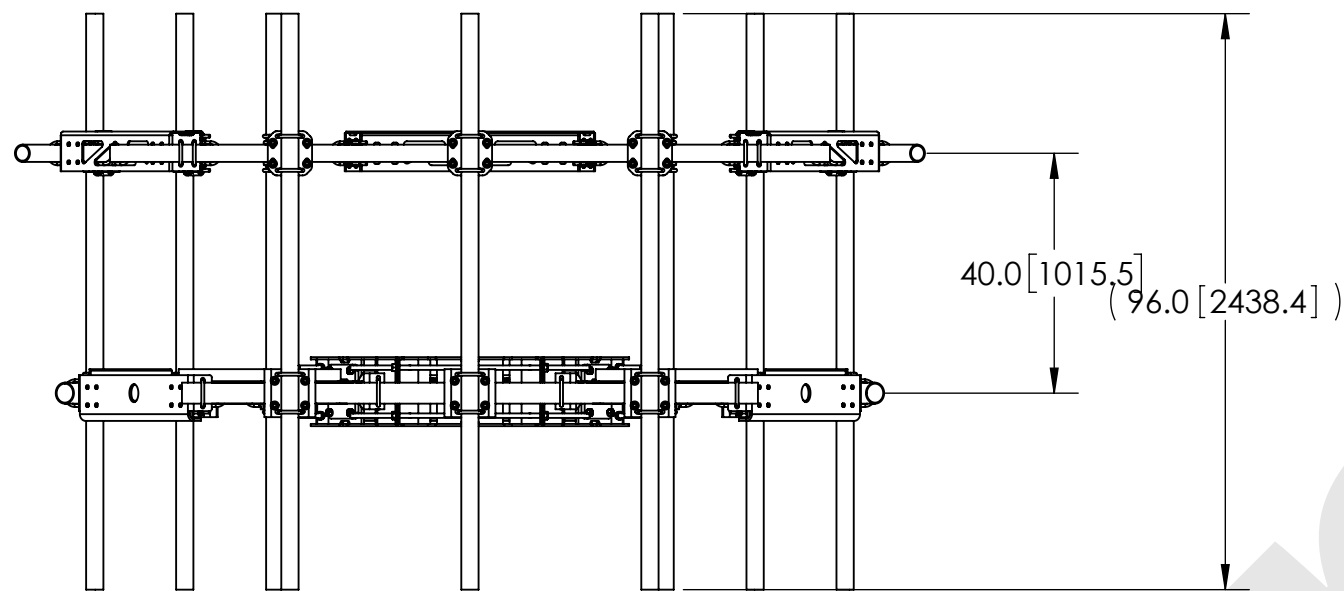
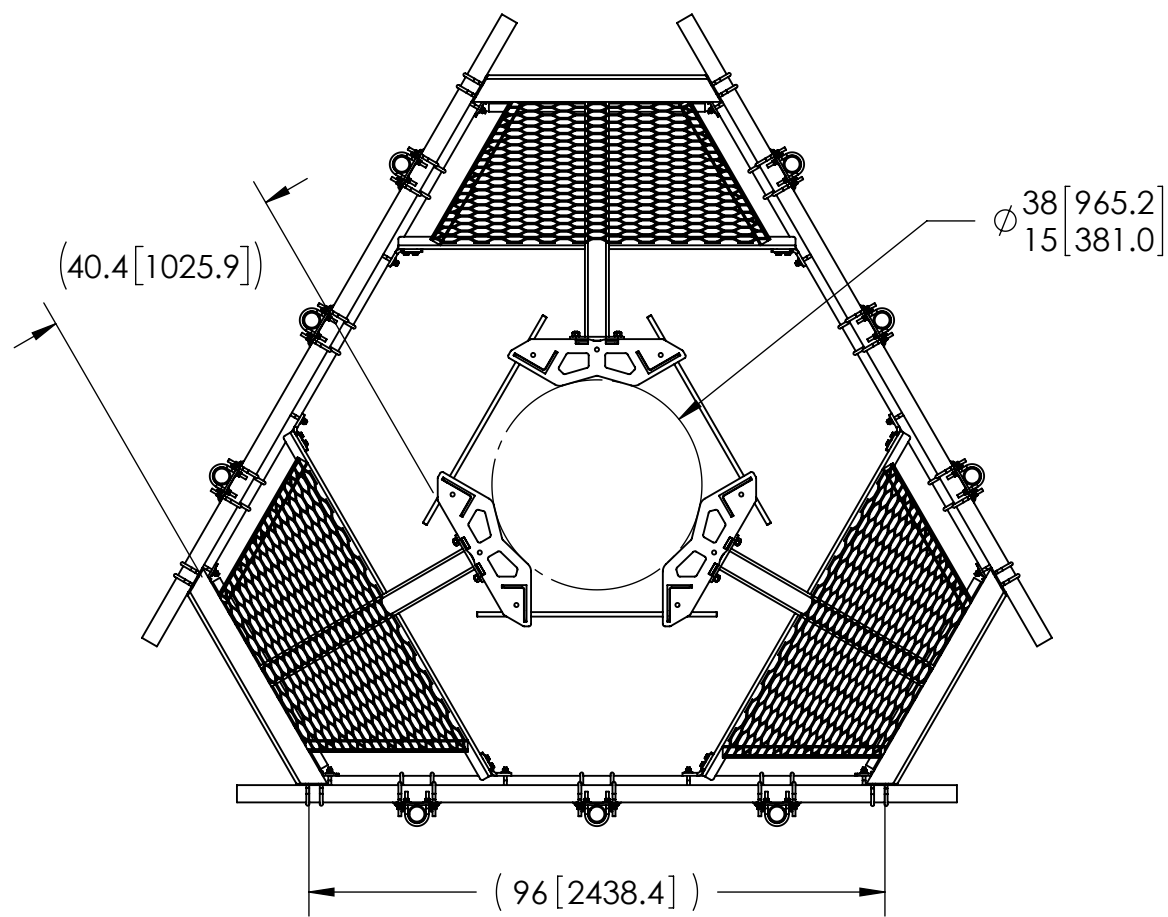
TOLERANCES		SAP MATERIAL MASTER
1 PLACE .X ± .25	3 PLACE .XXX ± 0.06	MC-PK8-DSH
2 PLACE .XX ± 0.12	ANGLES ± 2°	
FINISH GALV A123		MATERIAL A500, A1011/A1018

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
INTERPRET PER ANSI Y 14.5M-1994

		NAME	DATE	TITLE LOW PROFILE PLATFORM FACE						
CE		MRC	02/17/20							
RW		ROGHANSON	03/16/2021							
AD		BCROSS	03/17/2021							
RE		FA1024	02/27/2020							
ECN 10272PC										
				SCALE 1:32	DOCUMENT NO. MC-PK8-DSH					
SIZE	Auth Group		INSL	MODEL			DRAWING			SHEET 1 OF 3
C			VERSION	STATUS	REVISION	VERSION	STATUS	REVISION		
			01	AD		00	AD	A		

DENSITY	lbs/in³
MASS	lbs
VOLUME	in³
SURFACE AREA	in²
HEIGHT	96"
LENGTH	46"
WIDTH	29'

NOTES:

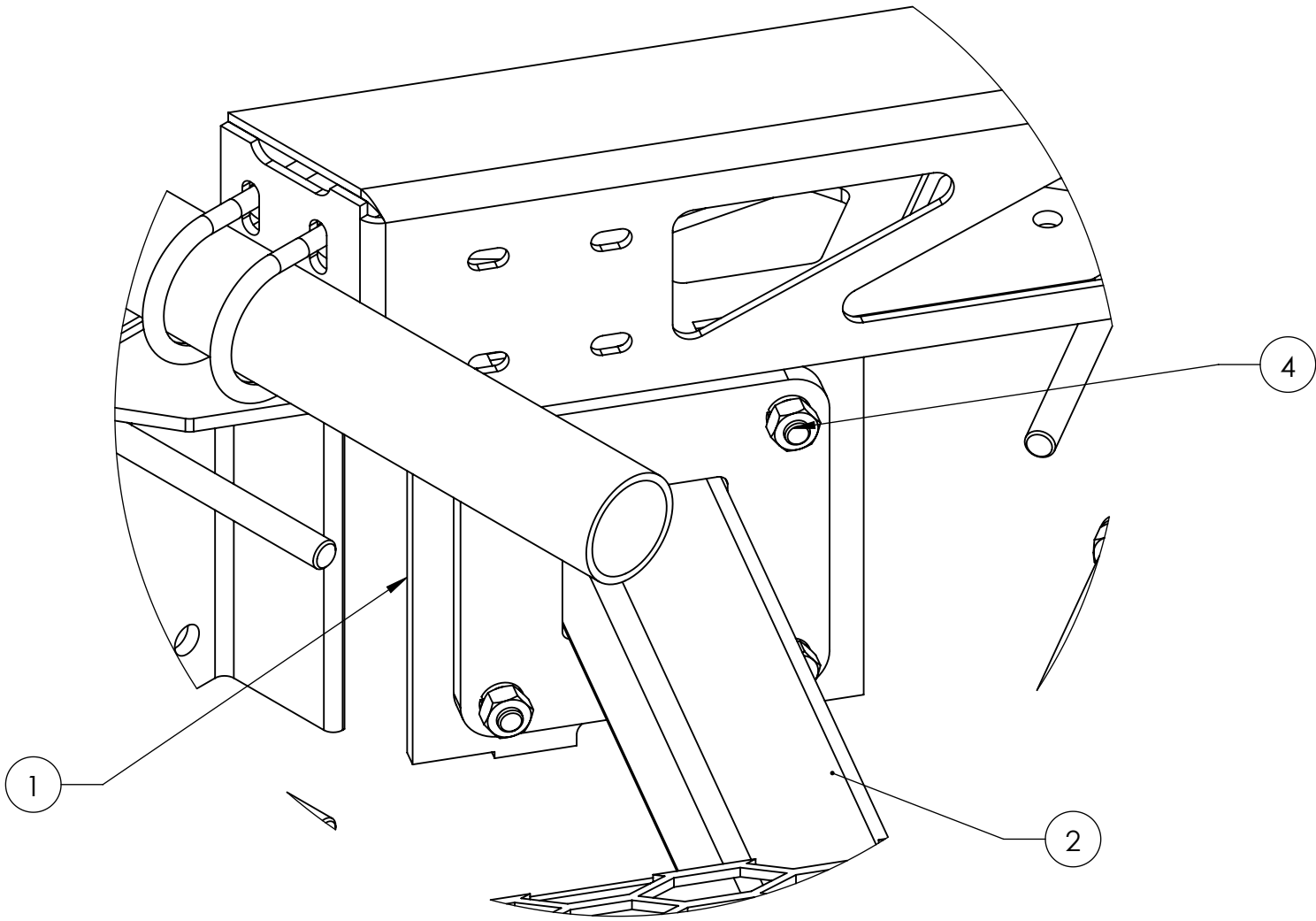


ITEM	PART NO.	DESCRIPTION	QTY.
1	MC-RM1550-3	12" - 50" OD RINGMOUNT	1
2	MTC300602	SECTOR WELDMENT FOR SNUB NOSE PLATFORM	3
3	MT195801	Corner Weldment Snub Nose Handrail	3
4	GB-0520A	5/8" X 2" GALV BOLT KIT (A325)	12
5	MT54796	3.50" OD X 96" GALV PIPE	3
6	MT546120	2.875" O.D. X 120" PIPE	3
7	GWF-04	1/2" GALV FLAT WASHER	12
8	GUB-4355	1/2" X 3-5/8" X 5" GALV U-BOLT	12
9	MTC300618	MOUNTING PLATE FOR MT-196	6
10	GB-04205	1/2" X 2" GALV BOLT KIT	12
11	MT-219M-H	3.5" OD X 2-7/8" OD Clamp Bracket Assembly	9
12	GUB-4352	1/2" X 3" X 5-1/4" GALV U-BOLT	12
13	MT54696	Ø 2.875" O.D. X 96 PIPE	9
14	XP-2525	CROSSOVER PLATE KIT, 2-7/8 OD X 2-7/8 OD	9

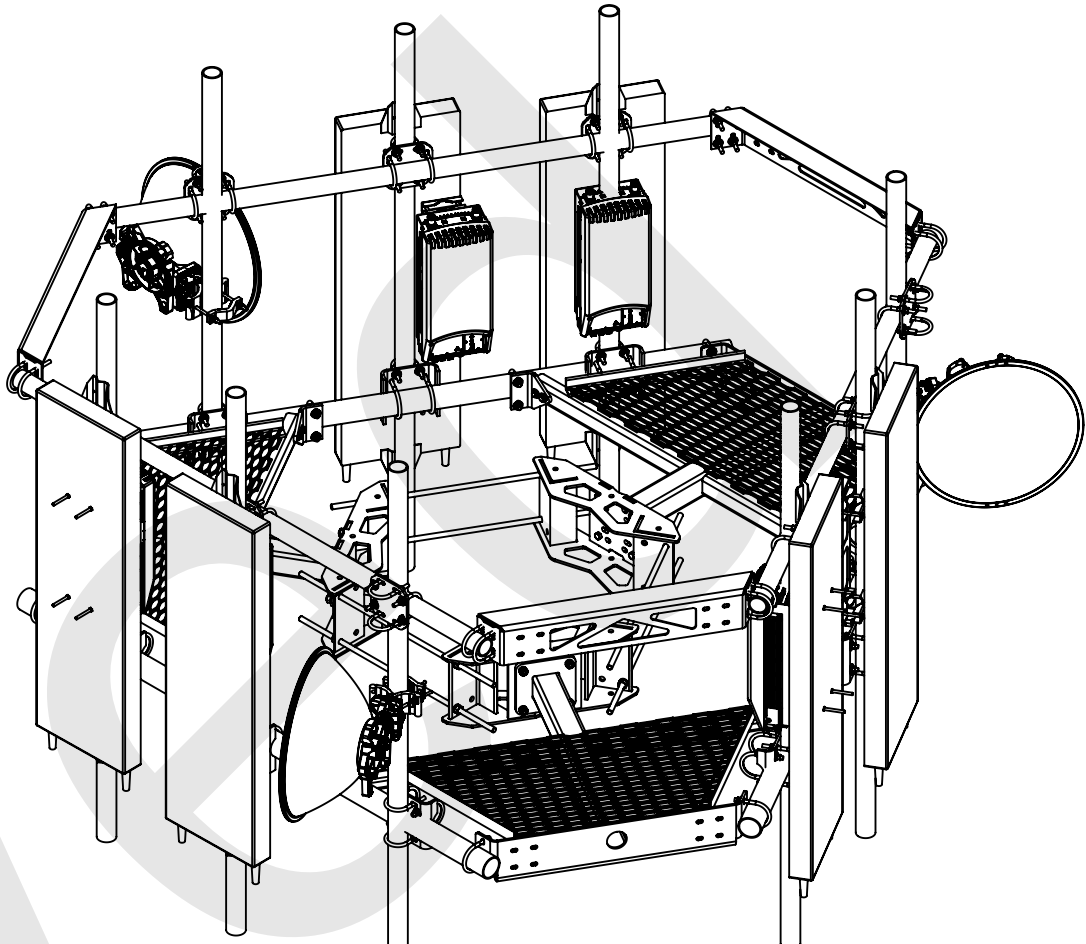
COMMScope, INC. OF NORTH CAROLINA				
TITLE				
LOW PROFILE PLATFORM FACE				
SIZE	SCALE	DOCUMENT NO.		
C	1:32	MC-PK8-DSH		
		DRAWING		
		VERSION	STATUS	REVISION
		00	AD	A
		SHEET		

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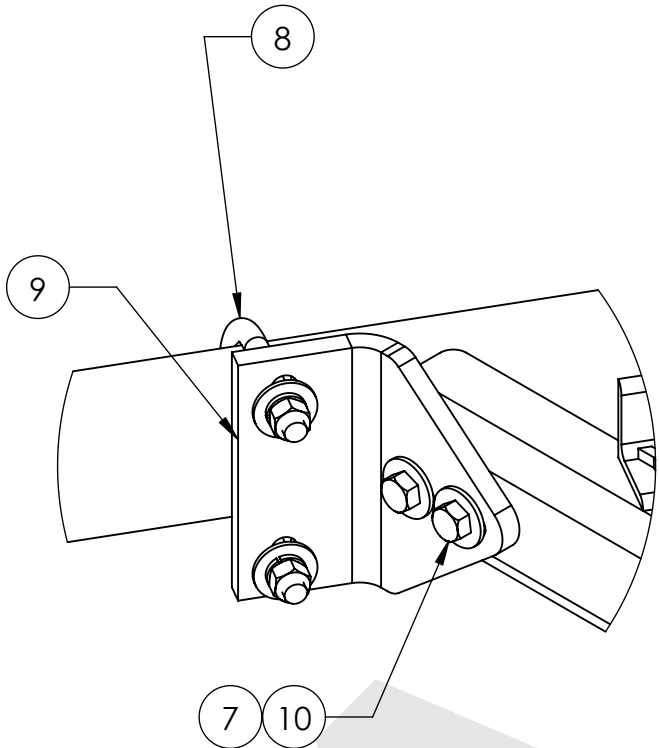
NOTES:



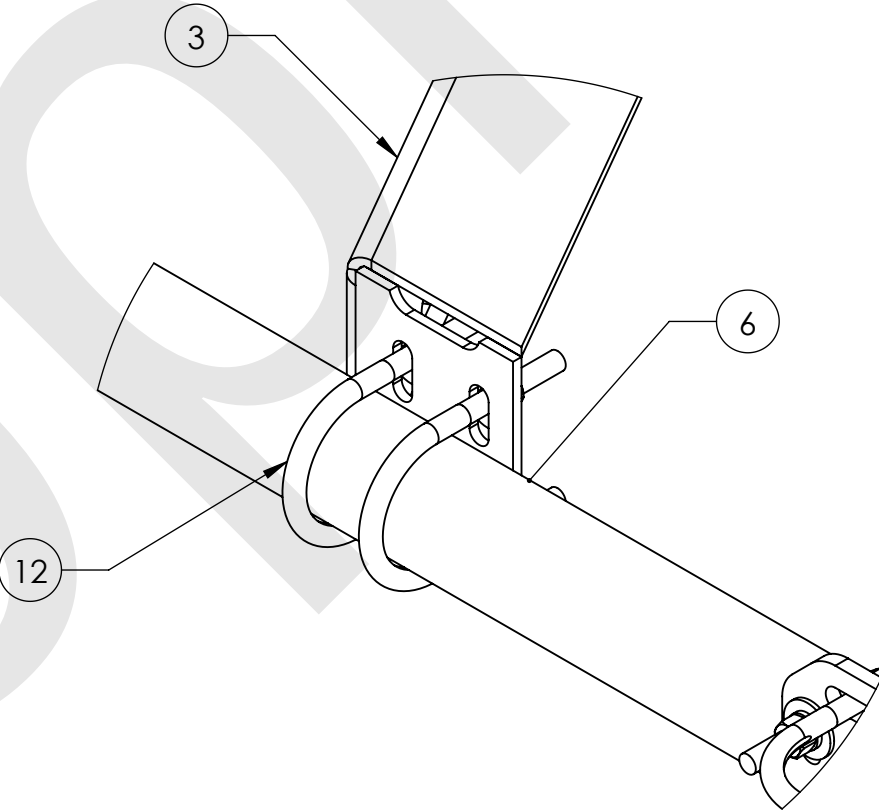
DETAIL A
SCALE 1 : 4



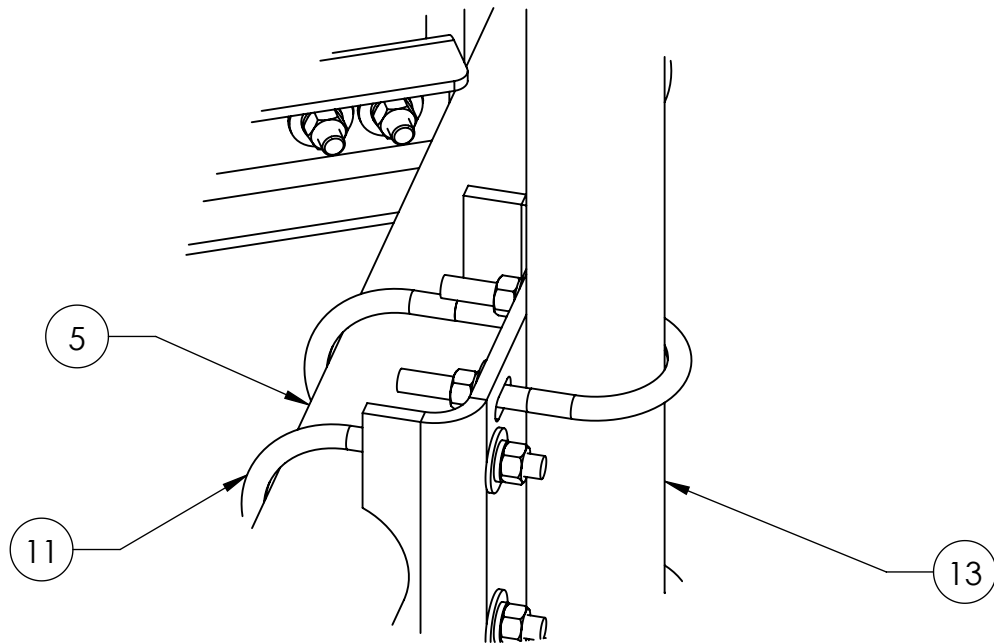
WITH ANTENNAS



DETAIL B
SCALE 1 : 4



DETAIL C
SCALE 1 : 4



DETAIL D
SCALE 1 : 4

COMMScope, INC. OF NORTH CAROLINA

TITLE
LOW PROFILE PLATFORM FACE

SIZE C SCALE 1:24 DOCUMENT NO. MC-PK8-DSH

DRAWING			SHEET 3 OF 3
VERSION	STATUS	REVISION	
00	AD	A	

EXHIBIT 7

Structural Analysis



Tower Engineering Solutions

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

Structural Analysis Report

Existing 190 ft Nudd Corporation Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT08748-A

Customer Site Name: Woodstock 4, CT

Carrier Name: Dish Wireless (App#: 169647, V2)

Carrier Site ID / Name: BOBOS00049A / 0

Site Location: 215 Coatney Hill Road

Woodstock, Connecticut

Windham County

Latitude: 41.962264

Longitude: -72.018655



Analysis Result:

Max Structural Usage: 88.1% [Pass]

Max Foundation Usage: 68.0% [Pass]

Additional Usage Caused by New Mount: N/A

Report Prepared By: Praveen Shrestha



Tower Engineering Solutions

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

Structural Analysis Report

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Latitude: 41.962264

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Analysis Result:

Max Structural Usage: 88.1% [Pass]

Max Foundation Usage: 68.0% [Pass]

Additional Usage Caused by New Mount: N/A

Report Prepared By: Praveen Shrestha

Introduction

The purpose of this report is to summarize the analysis results on the 190 ft Nudd Corporation 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	Fred A. Nudd Corporation, Project No. 01-8280, dated June 10,2001
Foundation Drawing	Fred A. Nudd Corporation, Project No. 01-8280, dated June 10,2001
Geotechnical Report	N/A
Modification Drawings	N/A
Mount Analysis	N/A

Analysis Criteria

The comprehensive 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:	120.0 mph (3-Sec. Gust) (Ultimate wind speed)
Wind Speed with Ice:	50 mph (3-Sec. Gust) with 1"1/2 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:	$S_S = 0.182$, $S_1 = 0.055$

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	185.0	9	Powerwave 7770.00 - Panel	Low Profile Platform	(12) 1 5/8"	AT&T
2		6	Powerwave LGP21401 TMA			
3		6	Powerwave LGP21903 TMA			
4		6	ADC CG-1900W800-FULL-DIN TMA			
5	177.0	3	Ericsson AIR6419 B41 Panel	Platform w/ Hand Rails	(13) 1 5/8" (3) 1 5/8" Fiber (1) 1.9" Fiber	T-Mobile
6		3	Commscope VV-65A-R1 Panel			
7		3	RFS APXVAARR24_43-U-NA20 Panel			
8		3	Ericsson KRY 112 489/2 TMA			
9		3	Ericsson 4449 B71 + B85 RRU			
10		3	Ericsson 4460 B25 + B66 RRU			
11		3	Kathrein 782 11056 TMA			
12	167.0	6	Andrew JAHH-65B-R3B Panel	(1) Low Profile Platform	(12) 1 5/8" Coax (2) 1 5/8" Fiber	Verizon
13		3	Samsung VZS01 Panel			
14		3	Commscope LNX-6514DS-A1M Panel			
15		3	Commscope CBC78T-DS-43-2X RRU			
16		3	Samsung B2/B66A RRH-BR049 RRU			
17		3	Samsung B5/B13 RRH-BR04C RRU			
18		2	RFS DB-T1-6Z-8AB-0Z TMA			
19	157.0	1	Commscope USX6-6W Dish	(2) Commscope PM-SC4-96 (Pole Mount)	(6) 1/2" Coax (6) 1/4" CAT6 (6) 1/4" Copper Power	DRW Canada Co.
20		1	Commscope VHLPX3-6W Dish			
21		4	SAF TMA			
22	150.0	1	ANT450F6 - Whip	(1) Side arm (CommScope DB5004)	(1) 1 1/4"	Connecticut Light & Power
23		1	RFS PAD6-59A - Dish		(1) 1 5/8"	
24	135.0	1	ANT450F6 - Whip	(1) Side arm (CommScope DB5004)	(1) 1 5/8"	
25	110.0	2	Antenex Y1505 Yagi	Flush Mount	(6) 7/8"	Town of Woodstock *
26		2	Decibel DB212-1 Whip			
27		2	Telewave ANT450D6-9 Whip			

*Leased but not installed.

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
28	145.0	3	Commscope FFVV-65B-R2 - Panel	Low-Profile platform w/HRK MC-PK8-DSH	(1) 1.6" Hybrid	Dish Wireless
29		3	Fujitsu TA08025-B605 RRU			
30		3	Fujitsu TA08025-B604 RRU			
31		1	Raycap RDIDC-9181-PF-48 OVP			

All transmission lines are considered running inside of the pole shafts.

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:	88.1%	72.8%	72.7%
Pass/Fail	Pass	Pass	Pass

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Analysis Reactions	6051.1	45.7	64.6

The foundation has been analyzed using the supplied documents and was found adequate. Therefore, no modification to the foundation will be required. Geotechnical soil parameters were obtained from the original foundation calculations included with the referenced tower and foundation design drawings.

Service Load Condition (Rigidity):

The maximum twist and sway of the microwave dishes under the operational wind speed as specified in the Analysis Criteria are listed in the table below:

Elevation (ft)	Antenna / Dish	Carrier	Twist (deg)	Sway (deg)
157.0	SUX6-65B - Dish	DRW Canada Co.	0.000	1.633
157.0	VHLPX3-6W - Dish	DRW Canada Co.	0.000	1.633
150.0	PAD6-59A - Dish	Connecticut Light &	0.000	1.575

It is recommended that the carriers review the twist and sway values of the microwave dishes.

Conclusions

Based on the analysis results, the existing structure and its foundation 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 88.15% at 91.0ft

Structure: CT08748-A-SBA
Site Name: Woodstock 4, CT
Height: 190.00 (ft)
Base Elev: 0.000 (ft)

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

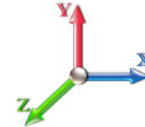
2/24/2023

Page: 1



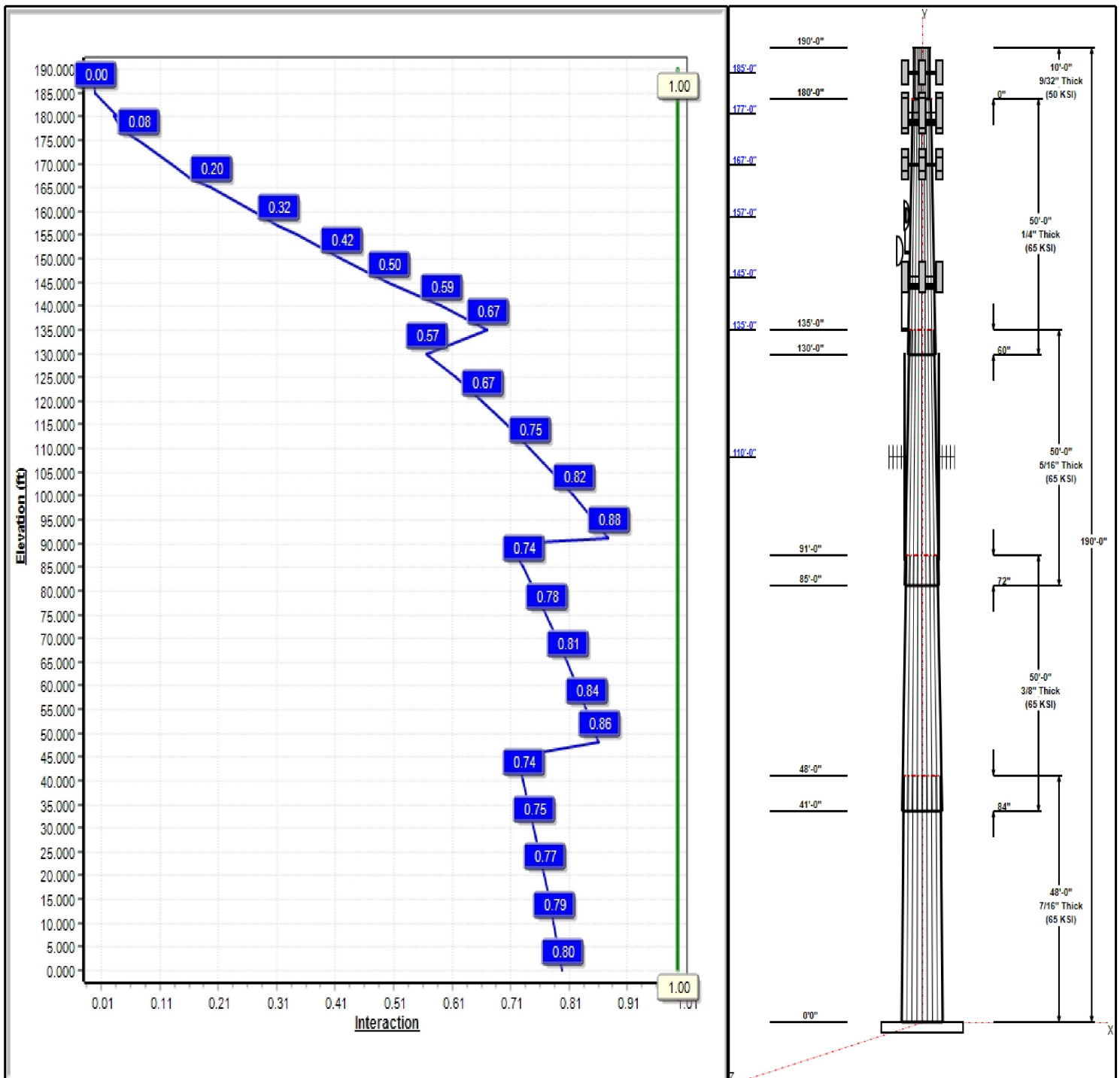
Dead Load Factor: 1.20
Wind Load Factor: 1.00

Load Case : 1.2D + 1.0W 120 mph Wind



Iterations: 26

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Structure: CT08748-A-SBA

Type: Custom
Site Name: Woodstock 4, CT
Height: 190.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.23542

2/24/2023

Page: 2



Shaft Properties

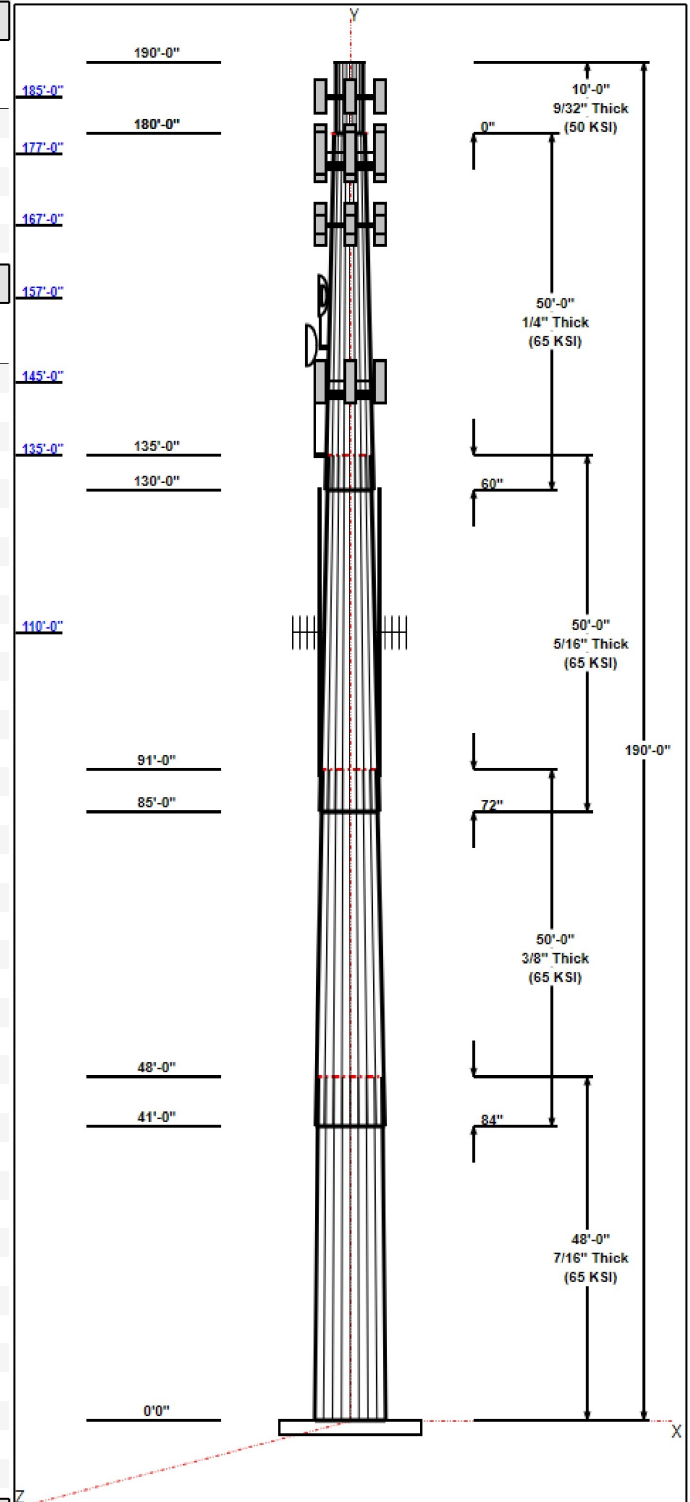
Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	48.00	53.20	64.50	0.438		0.23542	65
2	50.00	43.83	55.60	0.375	Slip	0.23542	65
3	50.00	34.09	45.86	0.313	Slip	0.23542	65
4	50.00	24.00	35.77	0.250	Slip	0.23542	65
5	10.00	24.00	24.00	0.281	Butt	0.00000	50

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
185.00	185.00	9	Powerwave 7770.00	AT&T
185.00	185.00	6	Powerwave LGP21401	AT&T
185.00	185.00	6	Powerwave LGP21903	AT&T
185.00	185.00	6	ADC	AT&T
185.00	185.00	1	Low Profile Platform	AT&T
177.00	177.00	3	Ericsson KRY 112 489/2	T-Mobile
177.00	177.00	1	Platform w/ Hand Rails	T-Mobile
177.00	177.00	3	APXVAARR24_43-U-NA20	T-Mobile
177.00	177.00	3	782 11056	T-Mobile
177.00	177.00	3	AIR6419 B41	T-Mobile
177.00	177.00	3	VV-65A-R1	T-Mobile
177.00	177.00	3	4449 B71 + B85	T-Mobile
177.00	177.00	3	8843 B25/B66A	T-Mobile
167.00	167.00	3	VZS01	Verizon
167.00	167.00	3	B2/B66A RRH-BR049	Verizon
167.00	167.00	3	B5/B13 RRH-BR04C	Verizon
167.00	167.00	3	CBC78T-DS-43-2X	Verizon
167.00	167.00	6	JAHH-65B-R3B	Verizon
167.00	167.00	3	LNx-6514DS-A1M	Verizon
167.00	167.00	1	Platform w/ Hand Rail	Verizon
167.00	167.00	2	Rfs Celwave	Verizon
157.00	157.00	2	Flush Mount	DRW Canada Co.
157.00	157.00	1	SUX6-65B	DRW Canada Co.
157.00	157.00	1	VHLPX3-6W	DRW Canada Co.
157.00	157.00	4	SAF	DRW Canada Co.
150.00	150.00	1	PAD6-59A	Connecticut Light &
150.00	150.00	1	Side Arm	Connecticut Light &
150.00	153.92	1	ANT450F6	Connecticut Light &
145.00	145.00	3	TA08025-B605	Dish Wireless
145.00	145.00	3	TA08025-B604	Dish Wireless
145.00	145.00	1	RDIDC-9181-PF-48	Dish Wireless
145.00	145.00	1	MC-PK8-DSH	Dish Wireless
145.00	145.00	3	FFVV-65B-R2	Dish Wireless
135.00	138.92	1	ANT450F6	Connecticut Light &
135.00	135.00	1	Side Arm	Connecticut Light &
110.00	110.00	2	Decibel DB212-1	Town of Woodstock
110.00	110.00	2	Telewave ANT450D6-9	Town of Woodstock
110.00	110.00	1	Flush Mount	Town of Woodstock
110.00	110.00	2	Antenex Y1505	Town of Woodstock

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	185.00	Inside	1 5/8" Coax	AT&T
0.00	177.00	Inside	1 5/8" Coax	T-Mobile



Structure: CT08748-A-SBA

Type: Custom	Base Shape: 18 Sided	2/24/2023
Site Name: Woodstock 4, CT	Taper: 0.00000	
Height: 190.00 (ft)		
Base Elev: 0.00 (ft)		Page: 3



0.00	177.00	Inside	1 5/8" Fiber	T-Mobile
0.00	177.00	Inside	1.9" Fiber	T-Mobile
0.00	167.00	Inside	1 5/8" Coax	Verizon
0.00	167.00	Inside	1 5/8" Fiber	Verizon
0.00	157.00	Inside	1/2" Coax	DRW Canada Co.
0.00	157.00	Inside	1/4" CAT6	DRW Canada Co.
0.00	157.00	Inside	1/4" Copper Power	DRW Canada Co.
0.00	150.00	Inside	1 1/4" Coax	Connecticut Light &
0.00	150.00	Inside	1 5/8" Coax	Connecticut Light &
0.00	145.00	Inside	1.6" Hybrid	Dish Wireless
0.00	135.00	Inside	1 5/8" Coax	Connecticut Light &
0.00	110.00	Inside	7/8" Coax	Town of Woodstock
0.00	110.00	Inside	7/8" Coax	Town of Woodstock
0.00	110.00	Inside	7/8" Coax	Town of Woodstock

Anchor Bolts

Qty	Specifications	Grade (ksi)	Arrangement
29	2.00" F1554 105	105.0	Radial

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
2.2500	76.1	50.0	Round

Reactions

Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.0W 120 mph Wind	6051.1	45.7	64.6
0.9D + 1.0W 120 mph Wind	5971.4	45.7	48.4
1.2D + 1.0Di + 1.0Wi 50 mph Wind	1791.6	13.4	96.7
1.2D + 1.0Ev + 1.0Eh	131.8	0.8	66.8
0.9D + 1.0Ev + 1.0Eh	130.8	0.8	50.6
1.0D + 1.0W 60 mph Wind	1344.6	10.2	53.9

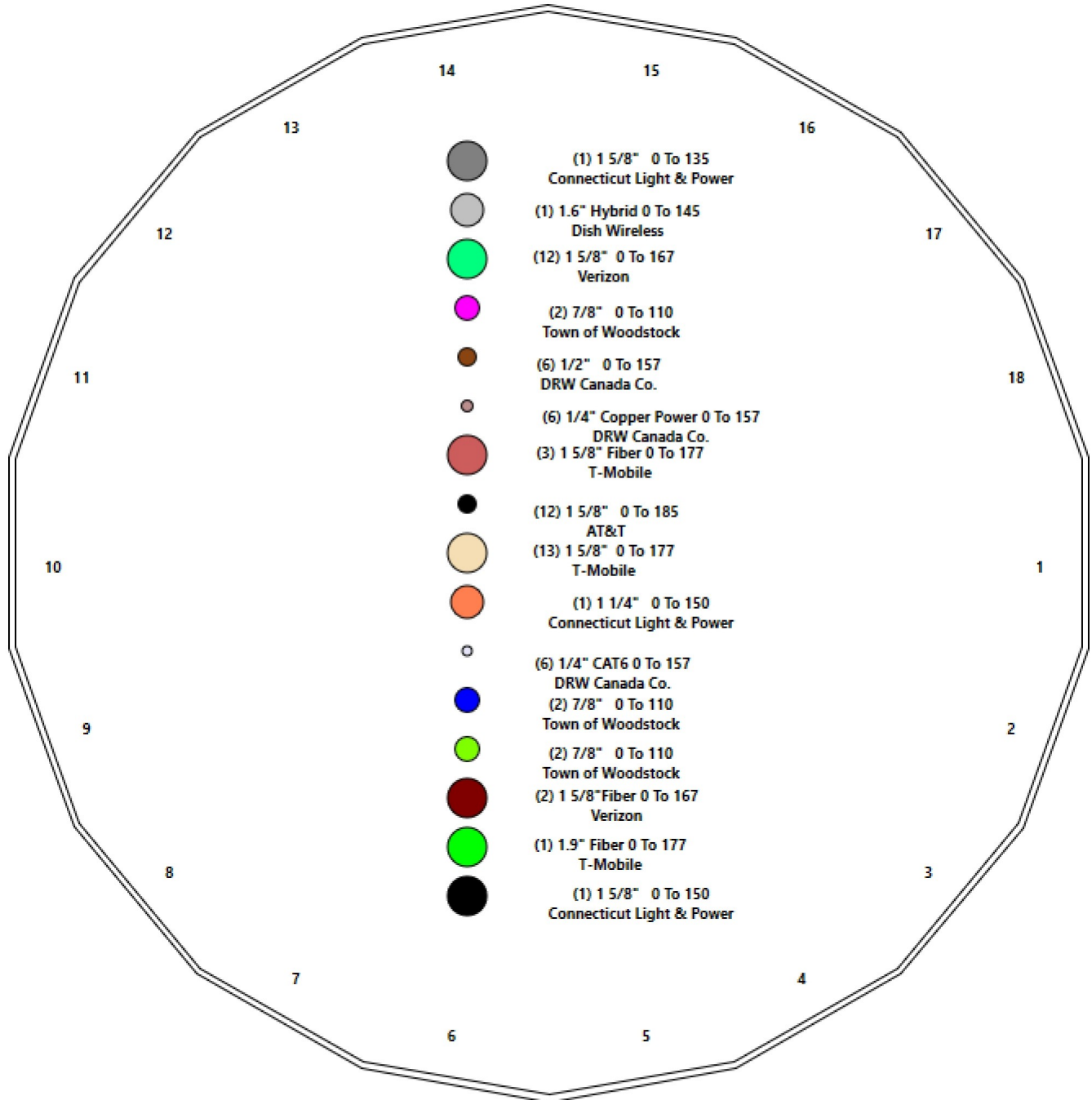
Structure: CT08748-A-SBA - Coax Line Placement

Type: Monopole
Site Name: Woodstock 4, CT
Height: 190.00 (ft)

2/24/2023



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Shaft Properties

Structure: CT08748-A-SBA	Code: TIA-222-H	2/24/2023
Site Name: Woodstock 4, CT	Exposure: C	
Height: 190.00 (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	48.000	0.4375	65		0.00	13,248
2	18	50.000	0.3750	65	Slip	84.00	9,991
3	18	50.000	0.3125	65	Slip	72.00	6,694
4	18	50.000	0.2500	65	Slip	60.00	4,001
5	18	10.000	0.2813	50	Flange	0.00	720
Total Shaft Weight:							34,654

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	64.50	0.00	88.96	46124.76	24.59	147.43	53.20	48.00	73.26	25769.0	20.03	121.6	0.235417
2	55.60	41.00	65.73	25324.08	24.73	148.26	43.83	91.00	51.72	12336.9	19.20	116.8	0.235417
3	45.86	85.00	45.18	11844.57	24.47	146.77	34.09	135.00	33.51	4830.83	17.83	109.1	0.235417
4	35.77	130.0	28.18	4492.97	23.82	143.08	24.00	180.00	18.84	1343.00	15.52	96.00	0.235417
5	24.00	180.0	21.17	1504.92	13.64	85.33	24.00	190.00	21.17	1504.92	13.64	85.33	0.000000

Load Summary

Structure: CT08748-A-SBA	Code: TIA-222-H	2/24/2023
Site Name: Woodstock 4, CT	Exposure: C	
Height: 190.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 6



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	185.00	Powerwave 7770.00	9	53.28	5.50	0.73	191.99	6.589	0.73	0.00	0.00
2	185.00	Powerwave LGP21401	6	14.10	1.29	0.50	39.63	2.143	0.50	0.00	0.00
3	185.00	Powerwave LGP21903	6	5.50	0.27	0.50	14.11	0.676	0.50	0.00	0.00
4	185.00	ADC CG-1900W800-FULL-DIN	6	16.00	0.10	0.50	16.11	0.101	0.50	0.00	0.00
5	185.00	Low Profile Platform	1	1250.00	20.00	1.00	2363.88	36.396	1.00	0.00	0.00
6	177.00	Ericsson KRY 112 489/2	3	15.40	0.65	0.50	33.31	1.272	0.50	0.00	0.00
7	177.00	Platform w/ Hand Rails	1	1588.50	30.00	1.00	3708.04	56.615	1.00	0.00	0.00
8	177.00	APXVAARR24_43-U-NA20	3	128.00	20.24	0.70	553.81	22.173	0.70	0.00	0.00
9	177.00	782 11056	3	1.30	0.22	0.50	11.60	0.411	0.50	0.00	0.00
10	177.00	AIR6419 B41	3	103.00	5.65	0.71	242.41	6.616	0.71	0.00	0.00
11	177.00	VV-65A-R1	3	29.50	7.90	0.74	206.97	9.202	0.74	0.00	0.00
12	177.00	4449 B71 + B85	3	73.20	1.97	0.50	131.91	2.549	0.50	0.00	0.00
13	177.00	8843 B25/B66A	3	72.00	1.64	0.50	119.63	2.145	0.50	0.00	0.00
14	167.00	VZS01	3	87.10	4.30	0.69	199.59	5.194	0.69	0.00	0.00
15	167.00	B2/B66A RRH-BR049	3	84.40	1.87	0.50	161.99	2.450	0.50	0.00	0.00
16	167.00	B5/B13 RRH-BR04C (RFV01U-D2A)	3	70.30	1.87	0.50	140.60	2.450	0.50	0.00	0.00
17	167.00	CBC78T-DS-43-2X	3	10.40	0.37	0.50	31.47	0.657	0.50	0.00	0.00
18	167.00	JAHH-65B-R3B	6	68.56	9.11	0.83	301.95	10.472	0.83	0.00	0.00
19	167.00	LNK-6514DS-A1M	3	38.80	8.17	0.83	218.84	11.024	0.83	0.00	0.00
20	167.00	Platform w/ Hand Rail	1	1600.00	30.00	1.00	3722.51	56.461	1.00	0.00	0.00
21	167.00	Rfs Celwave DB-T1-6Z-8AB-0Z	2	44.00	2.52	0.50	105.38	3.756	0.50	0.00	0.00
22	157.00	Flush Mount	2	350.00	5.00	1.00	644.54	8.506	1.00	0.00	0.00
23	157.00	SUX6-65B	1	209.00	35.67	1.00	922.34	39.172	1.00	0.00	0.00
24	157.00	VHLPX3-6W	1	53.00	10.68	1.00	271.51	12.605	1.00	0.00	0.00
25	157.00	SAF	4	7.70	1.22	0.50	32.86	2.018	0.50	0.00	0.00
26	150.00	PAD6-59A	1	185.00	47.05	1.00	658.45	51.648	1.00	0.00	0.00
27	150.00	Side Arm	1	120.00	4.50	1.00	224.71	9.746	1.00	0.00	0.00
28	150.00	ANT450F6	1	21.00	1.86	1.00	70.04	4.692	1.00	0.00	3.92
29	145.00	TA08025-B605	3	75.00	1.96	0.50	127.13	2.519	0.50	0.00	0.00
30	145.00	TA08025-B604	3	63.90	1.96	0.50	114.36	2.519	0.50	0.00	0.00
31	145.00	RDIDC-9181-PF-48	1	21.90	2.01	1.00	74.97	2.576	1.00	0.00	0.00
32	145.00	MC-PK8-DSH	1	1727.00	37.59	1.00	3409.12	84.664	1.00	0.00	0.00
33	145.00	FFVV-65B-R2	3	70.80	12.27	0.74	355.01	13.721	0.74	0.00	0.00
34	135.00	ANT450F6	1	21.00	1.86	1.00	69.52	4.662	1.00	0.00	3.92
35	135.00	Side Arm	1	120.00	4.50	1.00	223.62	9.691	1.00	0.00	0.00
36	110.00	Decibel DB212-1	2	31.00	6.50	1.00	269.96	40.579	1.00	0.00	0.00
37	110.00	Telewave ANT450D6-9	2	18.00	2.77	1.00	98.01	5.708	1.00	0.00	0.00
38	110.00	Flush Mount	1	350.00	5.00	1.00	634.24	8.384	1.00	0.00	0.00
39	110.00	Antenex Y1505	2	5.00	3.60	1.00	56.73	8.307	1.00	0.00	0.00
Totals:			105	12,066.98			30,738.13				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	185.00	(12) 1 5/8" Coax	0.00	Inside
0.00	177.00	(13) 1 5/8" Coax	0.00	Inside

Discrete Appurtenances

No.	Elev (ft)	Description	Qty	No Ice		Ice			Hor. Ecc. (ft)	Vert Ecc (ft)
				Weight (lb)	CaAa (sf)	Weight (lb)	CaAa (sf)	CaAa Factor		
0.00	177.00	(3) 1 5/8" Fiber		0.00	Inside					
0.00	177.00	(1) 1.9" Fiber		0.00	Inside					
0.00	167.00	(12) 1 5/8" Coax		0.00	Inside					
0.00	167.00	(2) 1 5/8"Fiber		0.00	Inside					
0.00	157.00	(6) 1/2" Coax		0.00	Inside					
0.00	157.00	(6) 1/4" CAT6		0.00	Inside					
0.00	157.00	(6) 1/4" Copper Power		0.00	Inside					
0.00	150.00	(1) 1 1/4" Coax		0.00	Inside					
0.00	150.00	(1) 1 5/8" Coax		0.00	Inside					
0.00	145.00	(1) 1.6" Hybrid		0.00	Inside					
0.00	135.00	(1) 1 5/8" Coax		0.00	Inside					
0.00	110.00	(2) 7/8" Coax		0.00	Inside					
0.00	110.00	(2) 7/8" Coax		0.00	Inside					
0.00	110.00	(2) 7/8" Coax		0.00	Inside					

Shaft Section Properties

Structure: CT08748-A-SBA	Code: TIA-222-H	2/24/2023
Site Name: Woodstock 4, CT	Exposure: C	
Height: 190.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 8



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		0.4375	64.500	88.956	46124.8	24.59	147.43	72.5	1408.	0.0
5.00		0.4375	63.323	87.321	43628.7	24.11	144.74	73.0	1357.	1499.6
10.00		0.4375	62.146	85.687	41224.4	23.64	142.05	73.6	1306.	1471.8
15.00		0.4375	60.969	84.052	38910.0	23.16	139.36	74.2	1257.	1444.0
20.00		0.4375	59.792	82.418	36683.9	22.69	136.67	74.7	1208.	1416.2
25.00		0.4375	58.615	80.783	34544.4	22.21	133.98	75.3	1160.	1388.3
30.00		0.4375	57.437	79.149	32489.8	21.74	131.29	75.8	1114.	1360.5
35.00		0.4375	56.260	77.514	30518.3	21.26	128.60	76.4	1068.	1332.7
40.00		0.4375	55.083	75.880	28628.2	20.79	125.90	76.9	1023.	1304.9
41.00	Bot - Section 2	0.4375	54.848	75.553	28259.8	20.69	125.37	77.1	1014.	257.6
45.00		0.4375	53.906	74.245	26817.8	20.32	123.21	77.5	979.9	1906.4
48.00	Top - Section 1	0.3750	53.950	63.765	23124.0	23.96	143.87	0.0	0.0	1408.1
50.00		0.3750	53.479	63.205	22519.6	23.74	142.61	73.5	829.4	432.1
55.00		0.3750	52.302	61.804	21055.1	23.18	139.47	74.1	792.9	1063.4
60.00		0.3750	51.125	60.403	19655.5	22.63	136.33	74.8	757.2	1039.6
65.00		0.3750	49.948	59.002	18319.3	22.08	133.19	75.4	722.4	1015.8
70.00		0.3750	48.771	57.601	17045.1	21.52	130.06	76.1	688.4	991.9
75.00		0.3750	47.594	56.200	15831.4	20.97	126.92	76.7	655.2	968.1
80.00		0.3750	46.417	54.799	14676.7	20.41	123.78	77.4	622.8	944.3
85.00	Bot - Section 3	0.3750	45.240	53.398	13579.6	19.86	120.64	78.0	591.2	920.4
90.00		0.3750	44.062	51.997	12538.5	19.31	117.50	78.7	560.5	1655.4
91.00	Top - Section 2	0.3125	44.452	43.779	10776.5	23.67	142.25	0.0	0.0	325.8
95.00		0.3125	43.510	42.845	10101.4	23.14	139.23	74.2	457.3	589.5
100.00		0.3125	42.333	41.678	9298.0	22.48	135.47	75.0	432.6	719.0
105.00		0.3125	41.156	40.510	8538.3	21.81	131.70	75.7	408.6	699.2
110.00		0.3125	39.979	39.343	7821.2	21.15	127.93	76.5	385.3	679.3
115.00		0.3125	38.802	38.175	7145.4	20.48	124.17	77.3	362.7	659.4
120.00		0.3125	37.625	37.008	6509.6	19.82	120.40	78.1	340.8	639.6
125.00		0.3125	36.448	35.841	5912.8	19.15	116.63	78.9	319.5	619.7
130.00	Bot - Section 4	0.3125	35.271	34.673	5353.6	18.49	112.87	79.7	299.0	599.9
135.00	Top - Section 3	0.2500	34.594	27.251	4060.9	22.99	138.37	0.0	0.0	1051.6
140.00		0.2500	33.417	26.317	3657.5	22.16	133.67	75.3	215.6	455.7
145.00		0.2500	32.240	25.383	3281.8	21.33	128.96	76.3	200.5	439.8
150.00		0.2500	31.062	24.449	2932.7	20.50	124.25	77.3	186.0	423.9
155.00		0.2500	29.885	23.515	2609.3	19.67	119.54	78.3	172.0	408.0
157.00		0.2500	29.415	23.141	2486.9	19.34	117.66	78.7	166.5	158.8
160.00		0.2500	28.708	22.581	2310.5	18.84	114.83	79.2	158.5	233.4
165.00		0.2500	27.531	21.647	2035.5	18.01	110.12	80.2	145.6	376.2
167.00		0.2500	27.060	21.273	1931.9	17.68	108.24	80.6	140.6	146.0
170.00		0.2500	26.354	20.713	1783.3	17.18	105.42	81.2	133.3	214.3
175.00		0.2500	25.177	19.779	1552.7	16.35	100.71	82.2	121.5	344.5
177.00		0.2500	24.706	19.405	1466.4	16.01	98.82	82.5	116.9	133.3
180.00	Top - Section 4	0.2500	24.000	18.845	1343.0	15.52	96.00	82.5	110.2	195.2
180.00	Bot - Section 5	0.2813	24.000	21.173	1504.9	13.79	85.33	63.5	123.5	
185.00		0.2813	24.000	21.173	1504.9	13.64	85.33	63.5	123.5	360.2
190.00		0.2813	24.000	21.173	1504.9	13.64	85.33	63.5	123.5	360.2
										34653.9

Wind Loading - Shaft

Structure: CT08748-A-SBA

Code: TIA-222-H

2/24/2023

Site Name: Woodstock 4, CT

Exposure: C

Height: 190.00 (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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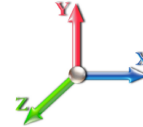


Load Case: 1.2D + 1.0W 120 mph Wind

Iterations 26

Dead Load Factor 1.20

Wind Load Factor 1.00



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	28.908	31.80	595.05	0.730	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	28.908	31.80	584.19	0.730	0.000	5.00	27.041	19.74	627.7	0.0	1799.5
10.00		1.00	0.85	28.908	31.80	573.33	0.730	0.000	5.00	26.543	19.38	616.1	0.0	1766.1
15.00		1.00	0.85	28.908	31.80	562.47	0.730	0.000	5.00	26.045	19.01	604.6	0.0	1732.8
20.00		1.00	0.90	30.672	33.74	568.20	0.730	0.000	5.00	25.547	18.65	629.2	0.0	1699.4
25.00		1.00	0.95	32.147	35.36	570.25	0.730	0.000	5.00	25.049	18.29	646.6	0.0	1666.0
30.00		1.00	0.98	33.405	36.75	569.63	0.730	0.000	5.00	24.550	17.92	658.6	0.0	1632.6
35.00		1.00	1.01	34.507	37.96	567.08	0.730	0.000	5.00	24.052	17.56	666.5	0.0	1599.3
40.00		1.00	1.04	35.491	39.04	563.07	0.730	0.000	5.00	23.554	17.19	671.3	0.0	1565.9
41.00	Bot - Section 2	1.00	1.05	35.676	39.24	562.13	0.730	0.000	1.00	4.651	3.40	133.2	0.0	309.2
45.00		1.00	1.07	36.382	40.02	557.92	0.730	0.000	4.00	18.659	13.62	545.1	0.0	2287.7
48.00	Top - Section 1	1.00	1.08	36.880	40.57	554.36	0.730	0.000	3.00	13.785	10.06	408.2	0.0	1689.8
50.00		1.00	1.09	37.198	40.92	559.67	0.730	0.000	2.00	9.091	6.64	271.5	0.0	518.5
55.00		1.00	1.12	37.952	41.75	552.87	0.730	0.000	5.00	22.378	16.34	682.0	0.0	1276.1
60.00		1.00	1.14	38.654	42.52	545.40	0.730	0.000	5.00	21.880	15.97	679.1	0.0	1247.5
65.00		1.00	1.16	39.311	43.24	537.35	0.730	0.000	5.00	21.382	15.61	674.9	0.0	1218.9
70.00		1.00	1.17	39.929	43.92	528.80	0.730	0.000	5.00	20.884	15.25	669.6	0.0	1190.3
75.00		1.00	1.19	40.513	44.56	519.79	0.730	0.000	5.00	20.386	14.88	663.2	0.0	1161.7
80.00		1.00	1.21	41.067	45.17	510.39	0.730	0.000	5.00	19.888	14.52	655.8	0.0	1133.1
85.00	Bot - Section 3	1.00	1.22	41.595	45.75	500.64	0.730	0.000	5.00	19.390	14.15	647.6	0.0	1104.5
90.00		1.00	1.24	42.098	46.31	490.55	0.730	0.000	5.00	19.156	13.98	647.6	0.0	1986.4
91.00	Top - Section 2	1.00	1.24	42.196	46.42	488.50	0.730	0.000	1.00	3.771	2.75	127.8	0.0	391.0
95.00		1.00	1.25	42.580	46.84	487.17	0.730	0.000	4.00	14.887	10.87	509.0	0.0	707.4
100.00		1.00	1.27	43.042	47.35	476.56	0.730	0.000	5.00	18.160	13.26	627.7	0.0	862.8
105.00		1.00	1.28	43.487	47.84	465.69	0.730	0.000	5.00	17.662	12.89	616.8	0.0	839.0
110.00	Appurtenance(s)	1.00	1.29	43.915	48.31	454.59	0.730	0.000	5.00	17.164	12.53	605.3	0.0	815.2
115.00		1.00	1.30	44.328	48.76	443.28	0.730	0.000	5.00	16.666	12.17	593.2	0.0	791.3
120.00		1.00	1.32	44.727	49.20	431.76	0.730	0.000	5.00	16.168	11.80	580.7	0.0	767.5
125.00		1.00	1.33	45.113	49.62	420.06	0.730	0.000	5.00	15.670	11.44	567.6	0.0	743.7
130.00	Bot - Section 4	1.00	1.34	45.487	50.04	408.17	0.730	0.000	5.00	15.172	11.08	554.2	0.0	719.8
135.00	Top - Section 3	1.00	1.35	45.849	50.43	396.12	0.730	0.000	5.00	14.885	10.87	548.0	0.0	1261.9
140.00		1.00	1.36	46.202	50.82	389.74	0.730	0.000	5.00	14.387	10.50	533.8	0.0	546.8
145.00	Appurtenance(s)	1.00	1.37	46.544	51.20	377.41	0.730	0.000	5.00	13.889	10.14	519.1	0.0	527.8
150.00	Appurtenance(s)	1.00	1.38	46.878	51.57	364.93	0.730	0.000	5.00	13.391	9.78	504.1	0.0	508.7
155.00		1.00	1.39	47.203	51.92	352.31	0.730	0.000	5.00	12.893	9.41	488.7	0.0	489.6
157.00	Appurtenance(s)	1.00	1.39	47.330	52.06	347.23	0.730	0.000	2.00	5.018	3.66	190.7	0.0	190.5
160.00		1.00	1.40	47.519	52.27	339.57	0.730	0.000	3.00	7.377	5.39	281.5	0.0	280.0
165.00		1.00	1.41	47.828	52.61	326.70	0.730	0.000	5.00	11.897	8.69	456.9	0.0	451.5
167.00	Appurtenance(s)	1.00	1.41	47.949	52.74	321.52	0.730	0.000	2.00	4.619	3.37	177.9	0.0	175.3
170.00		1.00	1.42	48.130	52.94	313.72	0.730	0.000	3.00	6.780	4.95	262.0	0.0	257.2
175.00		1.00	1.42	48.424	53.27	300.62	0.730	0.000	5.00	10.901	7.96	423.9	0.0	413.4
177.00	Appurtenance(s)	1.00	1.43	48.540	53.39	295.35	0.730	0.000	2.00	4.221	3.08	164.5	0.0	160.0
180.00	Top - Section 4	1.00	1.43	48.712	53.58	287.42	0.730	0.000	3.00	6.182	4.51	241.8	0.0	234.3
185.00	Appurtenance(s)	1.00	1.44	48.994	53.89	288.25	0.730	0.000	5.00	10.154	7.41	399.5	0.0	432.3
190.00		1.00	1.45	49.270	54.20	289.06	0.730	0.000	5.00	10.154	7.41	401.7	0.0	432.3
Totals:									190.00			22,174.9		41,584.7

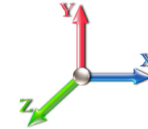
Discrete Appurtenance Forces

Structure: CT08748-A-SBA	Code: TIA-222-H	2/24/2023
Site Name: Woodstock 4, CT	Exposure: C	
Height: 190.00 (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 120 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 26

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	185.00	Low Profile Platform	1	48.994	53.893	1.00	1.00	20.00	1500.00	0.000	0.000	1077.87	0.00	0.00
2	185.00	ADC	6	48.994	53.893	0.40	0.80	0.24	115.20	0.000	0.000	12.93	0.00	0.00
3	185.00	Powerwave LGP21903	6	48.994	53.893	0.40	0.80	0.65	39.60	0.000	0.000	34.92	0.00	0.00
4	185.00	Powerwave LGP21401	6	48.994	53.893	0.40	0.80	3.10	101.52	0.000	0.000	166.85	0.00	0.00
5	185.00	Powerwave 7770.00	9	48.994	53.893	0.58	0.80	28.91	575.42	0.000	0.000	1557.95	0.00	0.00
6	177.00	Ericsson KRY 112 489/2	3	48.540	53.394	0.38	0.75	0.73	55.44	0.000	0.000	39.04	0.00	0.00
7	177.00	Platform w/ Hand Rails	1	48.540	53.394	1.00	1.00	30.00	1906.20	0.000	0.000	1601.82	0.00	0.00
8	177.00	APXVAARR24_43-U-NA2	3	48.540	53.394	0.52	0.75	31.88	460.80	0.000	0.000	1702.10	0.00	0.00
9	177.00	782 11056	3	48.540	53.394	0.38	0.75	0.25	4.68	0.000	0.000	13.22	0.00	0.00
10	177.00	AIR6419 B41	3	48.540	53.394	0.53	0.75	9.03	370.80	0.000	0.000	481.93	0.00	0.00
11	177.00	VV-65A-R1	3	48.540	53.394	0.55	0.75	13.15	106.20	0.000	0.000	702.32	0.00	0.00
12	177.00	4449 B71 + B85	3	48.540	53.394	0.38	0.75	2.22	263.52	0.000	0.000	118.33	0.00	0.00
13	177.00	8843 B25/B66A	3	48.540	53.394	0.38	0.75	1.84	259.20	0.000	0.000	98.51	0.00	0.00
14	167.00	Rfs Celwave	2	47.949	52.744	0.38	0.75	1.89	105.60	0.000	0.000	99.69	0.00	0.00
15	167.00	Platform w/ Hand Rail	1	47.949	52.744	1.00	1.00	30.00	1920.00	0.000	0.000	1582.33	0.00	0.00
16	167.00	LNx-6514DS-A1M	3	47.949	52.744	0.62	0.75	15.26	139.68	0.000	0.000	804.75	0.00	0.00
17	167.00	JAHH-65B-R3B	6	47.949	52.744	0.62	0.75	34.03	493.63	0.000	0.000	1794.67	0.00	0.00
18	167.00	CBC78T-DS-43-2X	3	47.949	52.744	0.38	0.75	0.42	37.44	0.000	0.000	21.95	0.00	0.00
19	167.00	B5/B13 RRH-BR04C	3	47.949	52.744	0.38	0.75	2.10	253.08	0.000	0.000	110.96	0.00	0.00
20	167.00	B2/B66A RRH-BR049	3	47.949	52.744	0.38	0.75	2.10	303.84	0.000	0.000	110.96	0.00	0.00
21	167.00	VZS01	3	47.949	52.744	0.52	0.75	6.68	313.56	0.000	0.000	352.11	0.00	0.00
22	157.00	SAF	4	47.330	52.063	0.50	1.00	2.44	36.96	0.000	0.000	127.03	0.00	0.00
23	157.00	VHLPX3-6W	1	47.330	52.063	1.00	1.00	10.68	63.60	0.000	0.000	556.03	0.00	0.00
24	157.00	SUX6-65B	1	47.330	52.063	1.00	1.00	35.67	250.80	0.000	0.000	1857.09	0.00	0.00
25	157.00	Flush Mount	2	47.330	52.063	1.00	1.00	10.00	840.00	0.000	0.000	520.63	0.00	0.00
26	150.00	PAD6-59A	1	46.878	51.566	1.00	1.00	47.05	222.00	0.000	0.000	2426.16	0.00	0.00
27	150.00	ANT450F6	1	47.133	51.846	1.00	1.00	1.86	25.20	0.000	3.917	96.43	0.00	377.70
28	150.00	Side Arm	1	46.878	51.566	1.00	1.00	4.50	144.00	0.000	0.000	232.05	0.00	0.00
29	145.00	TA08025-B604	3	46.544	51.199	0.38	0.75	2.21	230.04	0.000	0.000	112.89	0.00	0.00
30	145.00	TA08025-B605	3	46.544	51.199	0.38	0.75	2.21	270.00	0.000	0.000	112.89	0.00	0.00
31	145.00	MC-PK8-DSH	1	46.544	51.199	1.00	1.00	37.59	2072.40	0.000	0.000	1924.57	0.00	0.00
32	145.00	RDIDC-9181-PF-48	1	46.544	51.199	1.00	1.00	2.01	26.28	0.000	0.000	102.91	0.00	0.00
33	145.00	FFVV-65B-R2	3	46.544	51.199	0.55	0.75	20.43	254.88	0.000	0.000	1045.97	0.00	0.00
34	135.00	Side Arm	1	45.849	50.434	1.00	1.00	4.50	144.00	0.000	0.000	226.96	0.00	0.00
35	135.00	ANT450F6	1	46.126	50.739	1.00	1.00	1.86	25.20	0.000	3.917	94.37	0.00	369.63
36	110.00	Antenex Y1505	2	43.915	48.306	1.00	1.00	7.20	12.00	0.000	0.000	347.80	0.00	0.00
37	110.00	Flush Mount	1	43.915	48.306	1.00	1.00	5.00	420.00	0.000	0.000	241.53	0.00	0.00
38	110.00	Telewave ANT450D6-9	2	43.915	48.306	1.00	1.00	5.54	43.20	0.000	0.000	267.62	0.00	0.00
39	110.00	Decibel DB212-1	2	43.915	48.306	1.00	1.00	13.00	74.40	0.000	0.000	627.98	0.00	0.00

Totals: 14,480.38

23,406.16

Total Applied Force Summary

Structure: CT08748-A-SBA	Code: TIA-222-H	2/24/2023
Site Name: Woodstock 4, CT	Exposure: C	
Height: 190.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

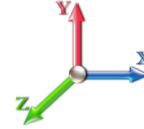


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Load Case: 1.2D + 1.0W 120 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 26

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		627.69	2060.43	0.00	0.00
10.00		616.13	2027.06	0.00	0.00
15.00		604.57	1993.69	0.00	0.00
20.00		629.20	1960.32	0.00	0.00
25.00		646.61	1926.95	0.00	0.00
30.00		658.55	1893.58	0.00	0.00
35.00		666.48	1860.21	0.00	0.00
40.00		671.29	1826.84	0.00	0.00
41.00		133.24	361.36	0.00	0.00
45.00		545.12	2496.49	0.00	0.00
48.00		408.24	1846.34	0.00	0.00
50.00		271.54	622.84	0.00	0.00
55.00		681.97	1537.07	0.00	0.00
60.00		679.12	1508.47	0.00	0.00
65.00		674.94	1479.87	0.00	0.00
70.00		669.59	1451.26	0.00	0.00
75.00		663.18	1422.66	0.00	0.00
80.00		655.83	1394.06	0.00	0.00
85.00		647.62	1365.45	0.00	0.00
90.00		647.57	2247.36	0.00	0.00
91.00		127.79	443.18	0.00	0.00
95.00		509.00	916.19	0.00	0.00
100.00		627.66	1123.78	0.00	0.00
105.00		616.75	1099.95	0.00	0.00
110.00	(7) attachments	2090.19	1625.71	0.00	0.00
115.00		593.23	1033.55	0.00	0.00
120.00		580.68	1009.72	0.00	0.00
125.00		567.65	985.88	0.00	0.00
130.00		554.17	962.05	0.00	0.00
135.00	(2) attachments	869.37	1673.31	0.00	369.63
140.00		533.77	782.82	0.00	0.00
145.00	(11) attachments	3818.35	3617.35	0.00	0.00
150.00	(3) attachments	3258.73	1124.96	0.00	377.70
155.00		488.71	704.49	0.00	0.00
157.00	(8) attachments	3251.50	1467.82	0.00	0.00
160.00		281.51	404.10	0.00	0.00
165.00		456.93	658.25	0.00	0.00
167.00	(24) attachments	5055.29	3824.79	0.00	0.00
170.00		262.03	328.37	0.00	0.00
175.00		423.89	532.03	0.00	0.00
177.00	(22) attachments	4921.80	3634.31	0.00	0.00
180.00		241.82	241.19	0.00	0.00
185.00	(28) attachments	3250.02	2775.54	0.00	0.00
190.00		401.74	432.28	0.00	0.00
Totals:		45,581.08	64,683.94	0.00	747.33

Calculated Forces

Structure: CT08748-A-SBA

Code: TIA-222-H

2/24/2023

Site Name: Woodstock 4, CT

Exposure: C

Height: 190.00 (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 120 mph Wind

Iterations 26

Dead Load Factor 1.20

Wind Load Factor 1.00



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-64.61	-45.69	0.00	-6051.1	0.00	6051.12	5803.10	1561.17	8297.91	7657.05	0.00	0.000	0.000	0.802
5.00	-62.40	-45.26	0.00	-5822.6	0.00	5822.69	5740.33	1532.49	7995.78	7434.11	0.10	-0.183	0.000	0.795
10.00	-60.23	-44.83	0.00	-5596.4	0.00	5596.41	5675.91	1503.80	7699.25	7212.14	0.39	-0.369	0.000	0.787
15.00	-58.10	-44.40	0.00	-5372.2	0.00	5372.28	5609.85	1475.12	7408.33	6991.28	0.88	-0.559	0.000	0.780
20.00	-56.00	-43.94	0.00	-5150.2	0.00	5150.27	5542.15	1446.43	7123.01	6771.63	1.57	-0.751	0.000	0.772
25.00	-53.93	-43.45	0.00	-4930.5	0.00	4930.58	5472.81	1417.75	6843.29	6553.32	2.46	-0.946	0.000	0.763
30.00	-51.90	-42.94	0.00	-4713.3	0.00	4713.34	5401.82	1389.06	6569.17	6336.48	3.56	-1.145	0.000	0.754
35.00	-49.90	-42.41	0.00	-4498.6	0.00	4498.65	5329.20	1360.38	6300.66	6121.21	4.86	-1.347	0.000	0.745
40.00	-48.00	-41.79	0.00	-4286.6	0.00	4286.61	5254.93	1331.69	6037.75	5907.64	6.38	-1.551	0.000	0.736
41.00	-47.57	-41.74	0.00	-4244.8	0.00	4244.81	5239.88	1325.95	5985.84	5865.14	6.71	-1.594	0.000	0.734
45.00	-44.98	-41.24	0.00	-4077.8	0.00	4077.86	5179.02	1303.01	5780.44	5695.90	8.12	-1.761	0.000	0.726
48.00	-43.08	-40.85	0.00	-3954.1	0.00	3954.15	4202.19	1119.08	4974.38	4636.19	9.27	-1.889	0.000	0.864
50.00	-42.35	-40.68	0.00	-3872.4	0.00	3872.45	4180.07	1109.25	4887.33	4570.98	10.08	-1.975	0.000	0.859
55.00	-40.67	-40.11	0.00	-3669.0	0.00	3669.06	4123.62	1084.66	4673.07	4408.60	12.28	-2.214	0.000	0.843
60.00	-39.02	-39.54	0.00	-3468.5	0.00	3468.50	4065.54	1060.07	4463.61	4247.27	14.72	-2.455	0.000	0.828
65.00	-37.41	-38.96	0.00	-3270.8	0.00	3270.82	4005.81	1035.49	4258.96	4087.10	17.43	-2.699	0.000	0.811
70.00	-35.83	-38.37	0.00	-3076.0	0.00	3076.04	3944.44	1010.90	4059.10	3928.21	20.38	-2.945	0.000	0.794
75.00	-34.28	-37.78	0.00	-2884.1	0.00	2884.18	3881.43	986.31	3864.05	3770.72	23.60	-3.194	0.000	0.775
80.00	-32.76	-37.19	0.00	-2695.2	0.00	2695.27	3816.78	961.72	3673.81	3614.75	27.08	-3.444	0.000	0.756
85.00	-31.28	-36.60	0.00	-2509.3	0.00	2509.31	3750.48	937.14	3488.36	3460.42	30.82	-3.697	0.000	0.735
90.00	-28.98	-35.88	0.00	-2326.3	0.00	2326.32	3682.55	912.55	3307.72	3307.86	34.82	-3.950	0.000	0.713
91.00	-28.47	-35.79	0.00	-2290.4	0.00	2290.44	2898.33	768.33	2813.78	2634.30	35.66	-4.002	0.000	0.881
95.00	-27.44	-35.33	0.00	-2147.3	0.00	2147.30	2860.60	751.94	2695.00	2544.15	39.10	-4.207	0.000	0.856
100.00	-26.19	-34.75	0.00	-1970.6	0.00	1970.65	2811.95	731.45	2550.13	2432.25	43.65	-4.497	0.000	0.822
105.00	-24.97	-34.17	0.00	-1796.8	0.00	1796.88	2761.66	710.96	2409.26	2321.34	48.52	-4.785	0.000	0.785
110.00	-23.37	-32.07	0.00	-1626.0	0.00	1626.01	2709.73	690.47	2272.40	2211.55	53.67	-5.070	0.000	0.746
115.00	-22.25	-31.49	0.00	-1465.6	0.00	1465.67	2656.16	669.98	2139.54	2103.00	59.13	-5.351	0.000	0.708
120.00	-21.15	-30.92	0.00	-1308.2	0.00	1308.21	2600.95	649.49	2010.67	1995.80	64.88	-5.628	0.000	0.666
125.00	-20.09	-30.35	0.00	-1153.6	0.00	1153.62	2544.10	629.00	1885.82	1890.08	70.91	-5.897	0.000	0.621
130.00	-19.06	-29.78	0.00	-1001.8	0.00	1001.89	2485.60	608.51	1764.96	1785.96	77.21	-6.156	0.000	0.571
135.00	-17.37	-28.81	0.00	-852.62	0.00	852.62	1823.78	478.25	1362.76	1289.51	83.78	-6.402	0.000	0.674
140.00	-16.53	-28.26	0.00	-708.59	0.00	708.59	1784.40	461.86	1270.94	1218.11	90.60	-6.632	0.000	0.595
145.00	-13.29	-24.09	0.00	-567.32	0.00	567.32	1743.38	445.47	1182.33	1147.55	97.67	-6.880	0.000	0.505
150.00	-12.50	-20.77	0.00	-446.48	0.00	446.48	1700.71	429.08	1096.92	1077.96	104.98	-7.100	0.000	0.424
155.00	-11.82	-20.22	0.00	-342.65	0.00	342.65	1656.41	412.69	1014.72	1009.45	112.50	-7.291	0.000	0.349
157.00	-10.75	-16.82	0.00	-302.21	0.00	302.21	1638.23	406.13	982.73	982.37	115.56	-7.362	0.000	0.316
160.00	-10.35	-16.51	0.00	-251.75	0.00	251.75	1610.46	396.29	935.71	942.14	120.21	-7.457	0.000	0.275
165.00	-9.74	-15.99	0.00	-169.19	0.00	169.19	1562.88	379.90	859.91	876.15	128.07	-7.586	0.000	0.201
167.00	-6.61	-10.48	0.00	-137.22	0.00	137.22	1543.38	373.35	830.48	850.16	131.25	-7.629	0.000	0.166
170.00	-6.31	-10.18	0.00	-105.79	0.00	105.79	1513.65	363.51	787.30	811.61	136.04	-7.683	0.000	0.135
175.00	-5.83	-9.69	0.00	-54.90	0.00	54.90	1462.77	347.12	717.90	748.63	144.10	-7.747	0.000	0.078
177.00	-2.89	-4.32	0.00	-35.52	0.00	35.52	1441.72	340.56	691.04	723.78	147.34	-7.764	0.000	0.051
180.00	-2.68	-4.05	0.00	-22.55	0.00	22.55	1400.09	330.73	651.70	682.38	152.21	-7.780	0.000	0.035
180.00	-2.68	-4.05	0.00	-22.55	0.00	22.55	1210.02	285.83	562.49	588.19	152.21	-7.780	0.000	0.041
185.00	-0.37	-0.46	0.00	-2.28	0.00	2.28	1210.02	285.83	562.49	588.19	160.35	-7.794	0.000	0.004
190.00	0.00	-0.40	0.00	0.00	0.00	0.00	1210.02	285.83	562.49	588.19	168.48	-7.795	0.000	0.000

Wind Loading - Shaft

Structure: CT08748-A-SBA

Code: TIA-222-H

2/24/2023

Site Name: Woodstock 4, CT

Exposure: C

Height: 190.00 (ft)

Crest Height: 0.00

Base Elev: 0.000 (ft)

Site Class: D - Stiff Soil

Gh: 1.1

Topography: 1

Struct Class: II

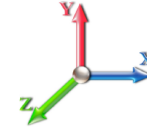
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Load Case: 0.9D + 1.0W 120 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.00



Iterations 26

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	28.908	31.80	595.05	0.730	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	28.908	31.80	584.19	0.730	0.000	5.00	27.041	19.74	627.7	0.0	1349.6
10.00		1.00	0.85	28.908	31.80	573.33	0.730	0.000	5.00	26.543	19.38	616.1	0.0	1324.6
15.00		1.00	0.85	28.908	31.80	562.47	0.730	0.000	5.00	26.045	19.01	604.6	0.0	1299.6
20.00		1.00	0.90	30.672	33.74	568.20	0.730	0.000	5.00	25.547	18.65	629.2	0.0	1274.5
25.00		1.00	0.95	32.147	35.36	570.25	0.730	0.000	5.00	25.049	18.29	646.6	0.0	1249.5
30.00		1.00	0.98	33.405	36.75	569.63	0.730	0.000	5.00	24.550	17.92	658.6	0.0	1224.5
35.00		1.00	1.01	34.507	37.96	567.08	0.730	0.000	5.00	24.052	17.56	666.5	0.0	1199.5
40.00		1.00	1.04	35.491	39.04	563.07	0.730	0.000	5.00	23.554	17.19	671.3	0.0	1174.4
41.00	Bot - Section 2	1.00	1.05	35.676	39.24	562.13	0.730	0.000	1.00	4.651	3.40	133.2	0.0	231.9
45.00		1.00	1.07	36.382	40.02	557.92	0.730	0.000	4.00	18.659	13.62	545.1	0.0	1715.8
48.00	Top - Section 1	1.00	1.08	36.880	40.57	554.36	0.730	0.000	3.00	13.785	10.06	408.2	0.0	1267.3
50.00		1.00	1.09	37.198	40.92	559.67	0.730	0.000	2.00	9.091	6.64	271.5	0.0	388.8
55.00		1.00	1.12	37.952	41.75	552.87	0.730	0.000	5.00	22.378	16.34	682.0	0.0	957.1
60.00		1.00	1.14	38.654	42.52	545.40	0.730	0.000	5.00	21.880	15.97	679.1	0.0	935.6
65.00		1.00	1.16	39.311	43.24	537.35	0.730	0.000	5.00	21.382	15.61	674.9	0.0	914.2
70.00		1.00	1.17	39.929	43.92	528.80	0.730	0.000	5.00	20.884	15.25	669.6	0.0	892.7
75.00		1.00	1.19	40.513	44.56	519.79	0.730	0.000	5.00	20.386	14.88	663.2	0.0	871.3
80.00		1.00	1.21	41.067	45.17	510.39	0.730	0.000	5.00	19.888	14.52	655.8	0.0	849.8
85.00	Bot - Section 3	1.00	1.22	41.595	45.75	500.64	0.730	0.000	5.00	19.390	14.15	647.6	0.0	828.4
90.00		1.00	1.24	42.098	46.31	490.55	0.730	0.000	5.00	19.156	13.98	647.6	0.0	1489.8
91.00	Top - Section 2	1.00	1.24	42.196	46.42	488.50	0.730	0.000	1.00	3.771	2.75	127.8	0.0	293.2
95.00		1.00	1.25	42.580	46.84	487.17	0.730	0.000	4.00	14.887	10.87	509.0	0.0	530.6
100.00		1.00	1.27	43.042	47.35	476.56	0.730	0.000	5.00	18.160	13.26	627.7	0.0	647.1
105.00		1.00	1.28	43.487	47.84	465.69	0.730	0.000	5.00	17.662	12.89	616.8	0.0	629.3
110.00	Appurtenance(s)	1.00	1.29	43.915	48.31	454.59	0.730	0.000	5.00	17.164	12.53	605.3	0.0	611.4
115.00		1.00	1.30	44.328	48.76	443.28	0.730	0.000	5.00	16.666	12.17	593.2	0.0	593.5
120.00		1.00	1.32	44.727	49.20	431.76	0.730	0.000	5.00	16.168	11.80	580.7	0.0	575.6
125.00		1.00	1.33	45.113	49.62	420.06	0.730	0.000	5.00	15.670	11.44	567.6	0.0	557.7
130.00	Bot - Section 4	1.00	1.34	45.487	50.04	408.17	0.730	0.000	5.00	15.172	11.08	554.2	0.0	539.9
135.00	Top - Section 3	1.00	1.35	45.849	50.43	396.12	0.730	0.000	5.00	14.885	10.87	548.0	0.0	946.4
140.00		1.00	1.36	46.202	50.82	389.74	0.730	0.000	5.00	14.387	10.50	533.8	0.0	410.1
145.00	Appurtenance(s)	1.00	1.37	46.544	51.20	377.41	0.730	0.000	5.00	13.889	10.14	519.1	0.0	395.8
150.00	Appurtenance(s)	1.00	1.38	46.878	51.57	364.93	0.730	0.000	5.00	13.391	9.78	504.1	0.0	381.5
155.00		1.00	1.39	47.203	51.92	352.31	0.730	0.000	5.00	12.893	9.41	488.7	0.0	367.2
157.00	Appurtenance(s)	1.00	1.39	47.330	52.06	347.23	0.730	0.000	2.00	5.018	3.66	190.7	0.0	142.9
160.00		1.00	1.40	47.519	52.27	339.57	0.730	0.000	3.00	7.377	5.39	281.5	0.0	210.0
165.00		1.00	1.41	47.828	52.61	326.70	0.730	0.000	5.00	11.897	8.69	456.9	0.0	338.6
167.00	Appurtenance(s)	1.00	1.41	47.949	52.74	321.52	0.730	0.000	2.00	4.619	3.37	177.9	0.0	131.4
170.00		1.00	1.42	48.130	52.94	313.72	0.730	0.000	3.00	6.780	4.95	262.0	0.0	192.9
175.00		1.00	1.42	48.424	53.27	300.62	0.730	0.000	5.00	10.901	7.96	423.9	0.0	310.0
177.00	Appurtenance(s)	1.00	1.43	48.540	53.39	295.35	0.730	0.000	2.00	4.221	3.08	164.5	0.0	120.0
180.00	Top - Section 4	1.00	1.43	48.712	53.58	287.42	0.730	0.000	3.00	6.182	4.51	241.8	0.0	175.7
185.00	Appurtenance(s)	1.00	1.44	48.994	53.89	288.25	0.730	0.000	5.00	10.154	7.41	399.5	0.0	324.2
190.00		1.00	1.45	49.270	54.20	289.06	0.730	0.000	5.00	10.154	7.41	401.7	0.0	324.2
Totals:									190.00			22,174.9		31,188.5

Discrete Appurtenance Forces

Structure: CT08748-A-SBA

Code: TIA-222-H

2/24/2023

Site Name: Woodstock 4, CT

Exposure: C

Height: 190.00 (ft)

Crest Height: 0.00

Base Elev: 0.000 (ft)

Site Class: D - Stiff Soil

Gh: 1.1

Topography: 1

Struct Class: II

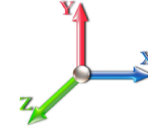
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Load Case: 0.9D + 1.0W 120 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.00



Iterations 26

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	185.00	Low Profile Platform	1	48.994	53.893	1.00	1.00	20.00	1125.00	0.000	0.000	1077.87	0.00	0.00
2	185.00	ADC	6	48.994	53.893	0.40	0.80	0.24	86.40	0.000	0.000	12.93	0.00	0.00
3	185.00	Powerwave LGP21903	6	48.994	53.893	0.40	0.80	0.65	29.70	0.000	0.000	34.92	0.00	0.00
4	185.00	Powerwave LGP21401	6	48.994	53.893	0.40	0.80	3.10	76.14	0.000	0.000	166.85	0.00	0.00
5	185.00	Powerwave 7770.00	9	48.994	53.893	0.58	0.80	28.91	431.57	0.000	0.000	1557.95	0.00	0.00
6	177.00	Ericsson KRY 112 489/2	3	48.540	53.394	0.38	0.75	0.73	41.58	0.000	0.000	39.04	0.00	0.00
7	177.00	Platform w/ Hand Rails	1	48.540	53.394	1.00	1.00	30.00	1429.65	0.000	0.000	1601.82	0.00	0.00
8	177.00	APXVAARR24_43-U-NA2	3	48.540	53.394	0.52	0.75	31.88	345.60	0.000	0.000	1702.10	0.00	0.00
9	177.00	782 11056	3	48.540	53.394	0.38	0.75	0.25	3.51	0.000	0.000	13.22	0.00	0.00
10	177.00	AIR6419 B41	3	48.540	53.394	0.53	0.75	9.03	278.10	0.000	0.000	481.93	0.00	0.00
11	177.00	VV-65A-R1	3	48.540	53.394	0.55	0.75	13.15	79.65	0.000	0.000	702.32	0.00	0.00
12	177.00	4449 B71 + B85	3	48.540	53.394	0.38	0.75	2.22	197.64	0.000	0.000	118.33	0.00	0.00
13	177.00	8843 B25/B66A	3	48.540	53.394	0.38	0.75	1.84	194.40	0.000	0.000	98.51	0.00	0.00
14	167.00	Rfs Celwave	2	47.949	52.744	0.38	0.75	1.89	79.20	0.000	0.000	99.69	0.00	0.00
15	167.00	Platform w/ Hand Rail	1	47.949	52.744	1.00	1.00	30.00	1440.00	0.000	0.000	1582.33	0.00	0.00
16	167.00	LNx-6514DS-A1M	3	47.949	52.744	0.62	0.75	15.26	104.76	0.000	0.000	804.75	0.00	0.00
17	167.00	JAHH-65B-R3B	6	47.949	52.744	0.62	0.75	34.03	370.22	0.000	0.000	1794.67	0.00	0.00
18	167.00	CBC78T-DS-43-2X	3	47.949	52.744	0.38	0.75	0.42	28.08	0.000	0.000	21.95	0.00	0.00
19	167.00	B5/B13 RRH-BR04C	3	47.949	52.744	0.38	0.75	2.10	189.81	0.000	0.000	110.96	0.00	0.00
20	167.00	B2/B66A RRH-BR049	3	47.949	52.744	0.38	0.75	2.10	227.88	0.000	0.000	110.96	0.00	0.00
21	167.00	VZS01	3	47.949	52.744	0.52	0.75	6.68	235.17	0.000	0.000	352.11	0.00	0.00
22	157.00	SAF	4	47.330	52.063	0.50	1.00	2.44	27.72	0.000	0.000	127.03	0.00	0.00
23	157.00	VHLPX3-6W	1	47.330	52.063	1.00	1.00	10.68	47.70	0.000	0.000	556.03	0.00	0.00
24	157.00	SUX6-65B	1	47.330	52.063	1.00	1.00	35.67	188.10	0.000	0.000	1857.09	0.00	0.00
25	157.00	Flush Mount	2	47.330	52.063	1.00	1.00	10.00	630.00	0.000	0.000	520.63	0.00	0.00
26	150.00	PAD6-59A	1	46.878	51.566	1.00	1.00	47.05	166.50	0.000	0.000	2426.16	0.00	0.00
27	150.00	ANT450F6	1	47.133	51.846	1.00	1.00	1.86	18.90	0.000	3.917	96.43	0.00	377.70
28	150.00	Side Arm	1	46.878	51.566	1.00	1.00	4.50	108.00	0.000	0.000	232.05	0.00	0.00
29	145.00	TA08025-B604	3	46.544	51.199	0.38	0.75	2.21	172.53	0.000	0.000	112.89	0.00	0.00
30	145.00	TA08025-B605	3	46.544	51.199	0.38	0.75	2.21	202.50	0.000	0.000	112.89	0.00	0.00
31	145.00	MC-PK8-DSH	1	46.544	51.199	1.00	1.00	37.59	1554.30	0.000	0.000	1924.57	0.00	0.00
32	145.00	RDIDC-9181-PF-48	1	46.544	51.199	1.00	1.00	2.01	19.71	0.000	0.000	102.91	0.00	0.00
33	145.00	FFVV-65B-R2	3	46.544	51.199	0.55	0.75	20.43	191.16	0.000	0.000	1045.97	0.00	0.00
34	135.00	Side Arm	1	45.849	50.434	1.00	1.00	4.50	108.00	0.000	0.000	226.96	0.00	0.00
35	135.00	ANT450F6	1	46.126	50.739	1.00	1.00	1.86	18.90	0.000	3.917	94.37	0.00	369.63
36	110.00	Antenex Y1505	2	43.915	48.306	1.00	1.00	7.20	9.00	0.000	0.000	347.80	0.00	0.00
37	110.00	Flush Mount	1	43.915	48.306	1.00	1.00	5.00	315.00	0.000	0.000	241.53	0.00	0.00
38	110.00	Telewave ANT450D6-9	2	43.915	48.306	1.00	1.00	5.54	32.40	0.000	0.000	267.62	0.00	0.00
39	110.00	Decibel DB212-1	2	43.915	48.306	1.00	1.00	13.00	55.80	0.000	0.000	627.98	0.00	0.00

Totals: 10,860.28

23,406.16

Total Applied Force Summary

Structure: CT08748-A-SBA	Code: TIA-222-H	2/24/2023
Site Name: Woodstock 4, CT	Exposure: C	
Height: 190.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



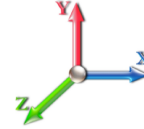
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Load Case: 0.9D + 1.0W 120 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.00

Iterations 26



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		627.69	1545.32	0.00	0.00
10.00		616.13	1520.30	0.00	0.00
15.00		604.57	1495.27	0.00	0.00
20.00		629.20	1470.24	0.00	0.00
25.00		646.61	1445.21	0.00	0.00
30.00		658.55	1420.18	0.00	0.00
35.00		666.48	1395.16	0.00	0.00
40.00		671.29	1370.13	0.00	0.00
41.00		133.24	271.02	0.00	0.00
45.00		545.12	1872.37	0.00	0.00
48.00		408.24	1384.75	0.00	0.00
50.00		271.54	467.13	0.00	0.00
55.00		681.97	1152.80	0.00	0.00
60.00		679.12	1131.35	0.00	0.00
65.00		674.94	1109.90	0.00	0.00
70.00		669.59	1088.45	0.00	0.00
75.00		663.18	1067.00	0.00	0.00
80.00		655.83	1045.54	0.00	0.00
85.00		647.62	1024.09	0.00	0.00
90.00		647.57	1685.52	0.00	0.00
91.00		127.79	332.39	0.00	0.00
95.00		509.00	687.14	0.00	0.00
100.00		627.66	842.84	0.00	0.00
105.00		616.75	824.96	0.00	0.00
110.00	(7) attachments	2090.19	1219.28	0.00	0.00
115.00		593.23	775.17	0.00	0.00
120.00		580.68	757.29	0.00	0.00
125.00		567.65	739.41	0.00	0.00
130.00		554.17	721.53	0.00	0.00
135.00	(2) attachments	869.37	1254.99	0.00	369.63
140.00		533.77	587.11	0.00	0.00
145.00	(11) attachments	3818.35	2713.01	0.00	0.00
150.00	(3) attachments	3258.73	843.72	0.00	377.70
155.00		488.71	528.37	0.00	0.00
157.00	(8) attachments	3251.50	1100.86	0.00	0.00
160.00		281.51	303.08	0.00	0.00
165.00		456.93	493.69	0.00	0.00
167.00	(24) attachments	5055.29	2868.60	0.00	0.00
170.00		262.03	246.28	0.00	0.00
175.00		423.89	399.03	0.00	0.00
177.00	(22) attachments	4921.80	2725.74	0.00	0.00
180.00		241.82	180.90	0.00	0.00
185.00	(28) attachments	3250.02	2081.65	0.00	0.00
190.00		401.74	324.21	0.00	0.00
Totals:		45,581.08	48,512.96	0.00	747.33

Calculated Forces

Structure: CT08748-A-SBA

Code: TIA-222-H

2/24/2023

Site Name: Woodstock 4, CT

Exposure: C

Height: 190.00 (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: 0.9D + 1.0W 120 mph Wind

Iterations 26

Dead Load Factor 0.90

Wind Load Factor 1.00



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-48.44	-45.66	0.00	-5971.3	0.00	5971.35	5803.10	1561.17	8297.91	7657.05	0.00	0.000	0.000	0.789
5.00	-46.75	-45.18	0.00	-5743.0	0.00	5743.06	5740.33	1532.49	7995.78	7434.11	0.10	-0.181	0.000	0.782
10.00	-45.09	-44.70	0.00	-5517.1	0.00	5517.18	5675.91	1503.80	7699.25	7212.14	0.39	-0.364	0.000	0.774
15.00	-43.45	-44.23	0.00	-5293.6	0.00	5293.68	5609.85	1475.12	7408.33	6991.28	0.87	-0.551	0.000	0.766
20.00	-41.85	-43.72	0.00	-5072.5	0.00	5072.55	5542.15	1446.43	7123.01	6771.63	1.55	-0.740	0.000	0.758
25.00	-40.26	-43.19	0.00	-4853.9	0.00	4853.96	5472.81	1417.75	6843.29	6553.32	2.42	-0.933	0.000	0.749
30.00	-38.71	-42.64	0.00	-4638.0	0.00	4638.01	5401.82	1389.06	6569.17	6336.48	3.51	-1.128	0.000	0.740
35.00	-37.18	-42.07	0.00	-4424.8	0.00	4424.82	5329.20	1360.38	6300.66	6121.21	4.80	-1.327	0.000	0.731
40.00	-35.74	-41.44	0.00	-4214.4	0.00	4214.47	5254.93	1331.69	6037.75	5907.64	6.29	-1.528	0.000	0.721
41.00	-35.40	-41.37	0.00	-4173.0	0.00	4173.02	5239.88	1325.95	5985.84	5865.14	6.62	-1.570	0.000	0.719
45.00	-33.44	-40.85	0.00	-4007.5	0.00	4007.56	5179.02	1303.01	5780.44	5695.90	8.00	-1.734	0.000	0.711
48.00	-32.00	-40.46	0.00	-3885.0	0.00	3885.01	4202.19	1119.08	4974.38	4636.19	9.13	-1.860	0.000	0.847
50.00	-31.43	-40.26	0.00	-3804.0	0.00	3804.09	4180.07	1109.25	4887.33	4570.98	9.93	-1.945	0.000	0.841
55.00	-30.14	-39.66	0.00	-3602.7	0.00	3602.79	4123.62	1084.66	4673.07	4408.60	12.09	-2.179	0.000	0.826
60.00	-28.87	-39.06	0.00	-3404.4	0.00	3404.49	4065.54	1060.07	4463.61	4247.27	14.50	-2.415	0.000	0.810
65.00	-27.63	-38.45	0.00	-3209.2	0.00	3209.20	4005.81	1035.49	4258.96	4087.10	17.16	-2.655	0.000	0.793
70.00	-26.41	-37.84	0.00	-3016.9	0.00	3016.95	3944.44	1010.90	4059.10	3928.21	20.07	-2.896	0.000	0.776
75.00	-25.23	-37.23	0.00	-2827.7	0.00	2827.75	3881.43	986.31	3864.05	3770.72	23.23	-3.140	0.000	0.758
80.00	-24.06	-36.62	0.00	-2641.5	0.00	2641.59	3816.78	961.72	3673.81	3614.75	26.65	-3.386	0.000	0.739
85.00	-22.92	-36.01	0.00	-2458.4	0.00	2458.49	3750.48	937.14	3488.36	3460.42	30.33	-3.633	0.000	0.718
90.00	-21.19	-35.31	0.00	-2278.4	0.00	2278.44	3682.55	912.55	3307.72	3307.86	34.27	-3.881	0.000	0.696
91.00	-20.79	-35.21	0.00	-2243.1	0.00	2243.13	2898.33	768.33	2813.78	2634.30	35.08	-3.933	0.000	0.861
95.00	-20.00	-34.73	0.00	-2102.3	0.00	2102.31	2860.60	751.94	2695.00	2544.15	38.46	-4.133	0.000	0.835
100.00	-19.03	-34.14	0.00	-1928.6	0.00	1928.64	2811.95	731.45	2550.13	2432.25	42.94	-4.417	0.000	0.802
105.00	-18.10	-33.55	0.00	-1757.9	0.00	1757.95	2761.66	710.96	2409.26	2321.34	47.71	-4.699	0.000	0.766
110.00	-16.91	-31.45	0.00	-1590.2	0.00	1590.20	2709.73	690.47	2272.40	2211.55	52.78	-4.978	0.000	0.727
115.00	-16.04	-30.86	0.00	-1432.9	0.00	1432.98	2656.16	669.98	2139.54	2103.00	58.14	-5.253	0.000	0.690
120.00	-15.20	-30.28	0.00	-1278.6	0.00	1278.68	2600.95	649.49	2010.67	1995.80	63.78	-5.523	0.000	0.649
125.00	-14.39	-29.71	0.00	-1127.2	0.00	1127.26	2544.10	629.00	1885.82	1890.08	69.69	-5.786	0.000	0.604
130.00	-13.60	-29.14	0.00	-978.71	0.00	978.71	2485.60	608.51	1764.96	1785.96	75.88	-6.039	0.000	0.556
135.00	-12.33	-28.20	0.00	-832.62	0.00	832.62	1823.78	478.25	1362.76	1289.51	82.32	-6.280	0.000	0.656
140.00	-11.69	-27.65	0.00	-691.64	0.00	691.64	1784.40	461.86	1270.94	1218.11	89.01	-6.504	0.000	0.578
145.00	-9.35	-23.58	0.00	-553.41	0.00	553.41	1743.38	445.47	1182.33	1147.55	95.94	-6.746	0.000	0.490
150.00	-8.83	-20.27	0.00	-435.13	0.00	435.13	1700.71	429.08	1096.92	1077.96	103.11	-6.960	0.000	0.411
155.00	-8.32	-19.74	0.00	-333.77	0.00	333.77	1656.41	412.69	1014.72	1009.45	110.48	-7.147	0.000	0.338
157.00	-7.61	-16.39	0.00	-294.28	0.00	294.28	1638.23	406.13	982.73	982.37	113.49	-7.215	0.000	0.306
160.00	-7.32	-16.09	0.00	-245.12	0.00	245.12	1610.46	396.29	935.71	942.14	118.04	-7.308	0.000	0.266
165.00	-6.86	-15.58	0.00	-164.69	0.00	164.69	1562.88	379.90	859.91	876.15	125.74	-7.434	0.000	0.194
167.00	-4.67	-10.20	0.00	-133.53	0.00	133.53	1543.38	373.35	830.48	850.16	128.86	-7.476	0.000	0.161
170.00	-4.45	-9.91	0.00	-102.94	0.00	102.94	1513.65	363.51	787.30	811.61	133.56	-7.528	0.000	0.131
175.00	-4.10	-9.44	0.00	-53.39	0.00	53.39	1462.77	347.12	717.90	748.63	141.46	-7.590	0.000	0.075
177.00	-2.05	-4.20	0.00	-34.51	0.00	34.51	1441.72	340.56	691.04	723.78	144.63	-7.606	0.000	0.049
180.00	-1.90	-3.94	0.00	-21.90	0.00	21.90	1400.09	330.73	651.70	682.38	149.41	-7.623	0.000	0.034
180.00	-1.90	-3.94	0.00	-21.90	0.00	21.90	1210.02	285.83	562.49	588.19	149.41	-7.623	0.000	0.039
185.00	-0.27	-0.44	0.00	-2.21	0.00	2.21	1210.02	285.83	562.49	588.19	157.37	-7.636	0.000	0.004
190.00	0.00	-0.40	0.00	0.00	0.00	0.00	1210.02	285.83	562.49	588.19	165.35	-7.637	0.000	0.000

Wind Loading - Shaft

Structure: CT08748-A-SBA

Code: TIA-222-H

2/24/2023

Site Name: Woodstock 4, CT

Exposure: C

Height: 190.00 (ft)

Crest Height: 0.00

Base Elev: 0.000 (ft)

Site Class: D - Stiff Soil

Gh: 1.1

Topography: 1

Struct Class: II

Page: 17

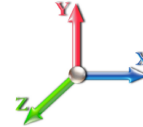


Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Iterations 26

Dead Load Factor 1.20

Wind Load Factor 1.00



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	5.019	5.52	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	5.019	5.52	0.00	1.200	1.242	5.00	28.076	33.69	186.0	502.4	2301.9
10.00		1.00	0.85	5.019	5.52	0.00	1.200	1.331	5.00	27.652	33.18	183.2	529.4	2295.5
15.00		1.00	0.85	5.019	5.52	0.00	1.200	1.386	5.00	27.200	32.64	180.2	541.5	2274.3
20.00		1.00	0.90	5.325	5.86	0.00	1.200	1.427	5.00	26.735	32.08	187.9	547.1	2246.5
25.00		1.00	0.95	5.581	6.14	0.00	1.200	1.459	5.00	26.264	31.52	193.5	549.0	2215.0
30.00		1.00	0.98	5.800	6.38	0.00	1.200	1.486	5.00	25.789	30.95	197.4	548.4	2181.1
35.00		1.00	1.01	5.991	6.59	0.00	1.200	1.509	5.00	25.310	30.37	200.1	546.0	2145.3
40.00		1.00	1.04	6.162	6.78	0.00	1.200	1.529	5.00	24.829	29.79	201.9	542.3	2108.2
41.00	Bot - Section 2	1.00	1.05	6.194	6.81	0.00	1.200	1.533	1.00	4.907	5.89	40.1	108.3	417.5
45.00		1.00	1.07	6.316	6.95	0.00	1.200	1.547	4.00	19.691	23.63	164.2	435.8	2723.5
48.00	Top - Section 1	1.00	1.08	6.403	7.04	0.00	1.200	1.557	3.00	14.564	17.48	123.1	324.9	2014.6
50.00		1.00	1.09	6.458	7.10	0.00	1.200	1.564	2.00	9.612	11.53	81.9	215.6	734.1
55.00		1.00	1.12	6.589	7.25	0.00	1.200	1.579	5.00	23.693	28.43	206.1	532.8	1808.9
60.00		1.00	1.14	6.711	7.38	0.00	1.200	1.592	5.00	23.207	27.85	205.6	525.8	1773.4
65.00		1.00	1.16	6.825	7.51	0.00	1.200	1.605	5.00	22.719	27.26	204.7	518.3	1737.3
70.00		1.00	1.17	6.932	7.63	0.00	1.200	1.617	5.00	22.231	26.68	203.4	510.4	1700.7
75.00		1.00	1.19	7.033	7.74	0.00	1.200	1.628	5.00	21.743	26.09	201.9	502.0	1663.7
80.00		1.00	1.21	7.130	7.84	0.00	1.200	1.639	5.00	21.253	25.50	200.0	493.3	1626.4
85.00	Bot - Section 3	1.00	1.22	7.221	7.94	0.00	1.200	1.649	5.00	20.764	24.92	197.9	484.2	1588.7
90.00		1.00	1.24	7.309	8.04	0.00	1.200	1.658	5.00	20.538	24.65	198.1	481.4	2467.8
91.00	Top - Section 2	1.00	1.24	7.326	8.06	0.00	1.200	1.660	1.00	4.048	4.86	39.1	95.9	486.9
95.00		1.00	1.25	7.392	8.13	0.00	1.200	1.667	4.00	15.998	19.20	156.1	377.4	1084.8
100.00		1.00	1.27	7.473	8.22	0.00	1.200	1.676	5.00	19.557	23.47	192.9	461.9	1324.8
105.00		1.00	1.28	7.550	8.30	0.00	1.200	1.684	5.00	19.065	22.88	190.0	451.8	1290.8
110.00	Appurtenance(s)	1.00	1.29	7.624	8.39	0.00	1.200	1.692	5.00	18.574	22.29	186.9	441.6	1256.7
115.00		1.00	1.30	7.696	8.47	0.00	1.200	1.699	5.00	18.082	21.70	183.7	431.1	1222.4
120.00		1.00	1.32	7.765	8.54	0.00	1.200	1.707	5.00	17.590	21.11	180.3	420.4	1187.9
125.00		1.00	1.33	7.832	8.62	0.00	1.200	1.714	5.00	17.098	20.52	176.8	409.5	1153.2
130.00	Bot - Section 4	1.00	1.34	7.897	8.69	0.00	1.200	1.720	5.00	16.606	19.93	173.1	398.5	1118.4
135.00	Top - Section 3	1.00	1.35	7.960	8.76	0.00	1.200	1.727	5.00	16.325	19.59	171.5	392.8	1654.7
140.00		1.00	1.36	8.021	8.82	0.00	1.200	1.733	5.00	15.832	19.00	167.6	381.5	928.3
145.00	Appurtenance(s)	1.00	1.37	8.081	8.89	0.00	1.200	1.739	5.00	15.339	18.41	163.6	370.1	897.8
150.00	Appurtenance(s)	1.00	1.38	8.139	8.95	0.00	1.200	1.745	5.00	14.846	17.81	159.5	358.5	867.2
155.00		1.00	1.39	8.195	9.01	0.00	1.200	1.751	5.00	14.352	17.22	155.3	346.8	836.5
157.00	Appurtenance(s)	1.00	1.39	8.217	9.04	0.00	1.200	1.753	2.00	5.602	6.72	60.8	136.9	327.4
160.00		1.00	1.40	8.250	9.07	0.00	1.200	1.757	3.00	8.256	9.91	89.9	201.0	481.1
165.00		1.00	1.41	8.303	9.13	0.00	1.200	1.762	5.00	13.366	16.04	146.5	323.1	774.6
167.00	Appurtenance(s)	1.00	1.41	8.325	9.16	0.00	1.200	1.764	2.00	5.208	6.25	57.2	127.3	302.6
170.00		1.00	1.42	8.356	9.19	0.00	1.200	1.767	3.00	7.663	9.20	84.5	186.7	443.8
175.00		1.00	1.42	8.407	9.25	0.00	1.200	1.772	5.00	12.378	14.85	137.4	299.0	712.4
177.00	Appurtenance(s)	1.00	1.43	8.427	9.27	0.00	1.200	1.774	2.00	4.813	5.78	53.5	117.7	277.7
180.00	Top - Section 4	1.00	1.43	8.457	9.30	0.00	1.200	1.777	3.00	7.071	8.49	78.9	172.1	406.4
185.00	Appurtenance(s)	1.00	1.44	8.506	9.36	0.00	1.200	1.782	5.00	11.639	13.97	130.7	287.6	719.9
190.00		1.00	1.45	8.554	9.41	0.00	1.200	1.787	5.00	11.643	13.97	131.5	288.5	720.7
Totals:									190.00			6,824.6		58,501.4

Discrete Appurtenance Forces

Structure: CT08748-A-SBA

Code: TIA-222-H

2/24/2023

Site Name: Woodstock 4, CT

Exposure: C

Height: 190.00 (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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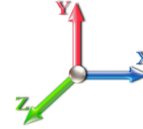


Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Iterations 26

Dead Load Factor 1.20

Wind Load Factor 1.00



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	185.00	Low Profile Platform	1	8.506	9.356	1.00	1.00	36.40	2382.55	0.000	0.000	340.54	0.00	0.00
2	185.00	ADC	6	8.506	9.356	0.40	0.80	0.24	79.04	0.000	0.000	2.26	0.00	0.00
3	185.00	Powerwave LGP21903	6	8.506	9.356	0.40	0.80	1.62	82.60	0.000	0.000	15.18	0.00	0.00
4	185.00	Powerwave LGP21401	6	8.506	9.356	0.40	0.80	5.14	219.49	0.000	0.000	48.13	0.00	0.00
5	185.00	Powerwave 7770.00	9	8.506	9.356	0.58	0.80	34.63	1823.77	0.000	0.000	324.04	0.00	0.00
6	177.00	Ericsson KRY 112 489/2	3	8.427	9.270	0.38	0.75	1.43	97.60	0.000	0.000	13.27	0.00	0.00
7	177.00	Platform w/ Hand Rails	1	8.427	9.270	1.00	1.00	56.62	3585.06	0.000	0.000	524.81	0.00	0.00
8	177.00	APXVAARR24_43-U-NA2	3	8.427	9.270	0.52	0.75	34.92	1738.23	0.000	0.000	323.73	0.00	0.00
9	177.00	782 11056	3	8.427	9.270	0.38	0.75	0.46	35.57	0.000	0.000	4.29	0.00	0.00
10	177.00	AIR6419 B41	3	8.427	9.270	0.53	0.75	10.57	693.92	0.000	0.000	97.98	0.00	0.00
11	177.00	VV-65A-R1	3	8.427	9.270	0.55	0.75	15.32	638.60	0.000	0.000	142.03	0.00	0.00
12	177.00	4449 B71 + B85	3	8.427	9.270	0.38	0.75	2.87	264.44	0.000	0.000	26.58	0.00	0.00
13	177.00	8843 B25/B66A	3	8.427	9.270	0.38	0.75	2.41	366.08	0.000	0.000	22.37	0.00	0.00
14	167.00	Rfs Celwave	2	8.325	9.157	0.38	0.75	2.82	193.56	0.000	0.000	25.79	0.00	0.00
15	167.00	Platform w/ Hand Rail	1	8.325	9.157	1.00	1.00	56.46	3442.51	0.000	0.000	517.01	0.00	0.00
16	167.00	LNx-6514DS-A1M	3	8.325	9.157	0.62	0.75	20.59	529.50	0.000	0.000	188.51	0.00	0.00
17	167.00	JAHH-65B-R3B	6	8.325	9.157	0.62	0.75	39.11	1893.97	0.000	0.000	358.17	0.00	0.00
18	167.00	CBC78T-DS-43-2X	3	8.325	9.157	0.38	0.75	0.74	100.66	0.000	0.000	6.76	0.00	0.00
19	167.00	B5/B13 RRH-BR04C	3	8.325	9.157	0.38	0.75	2.76	463.99	0.000	0.000	25.24	0.00	0.00
20	167.00	B2/B66A RRH-BR049	3	8.325	9.157	0.38	0.75	2.76	536.60	0.000	0.000	25.24	0.00	0.00
21	167.00	VZS01	3	8.325	9.157	0.52	0.75	8.06	651.02	0.000	0.000	73.84	0.00	0.00
22	157.00	SAF	4	8.217	9.039	0.50	1.00	4.04	109.19	0.000	0.000	36.48	0.00	0.00
23	157.00	VHLPX3-6W	1	8.217	9.039	1.00	1.00	12.60	219.81	0.000	0.000	113.93	0.00	0.00
24	157.00	SUX6-65B	1	8.217	9.039	1.00	1.00	39.17	760.74	0.000	0.000	354.07	0.00	0.00
25	157.00	Flush Mount	2	8.217	9.039	1.00	1.00	17.01	1229.07	0.000	0.000	153.77	0.00	0.00
26	150.00	PAD6-59A	1	8.139	8.952	1.00	1.00	51.65	559.85	0.000	0.000	462.37	0.00	0.00
27	150.00	ANT450F6	1	8.183	9.001	1.00	1.00	4.69	60.24	0.000	3.917	42.23	0.00	165.41
28	150.00	Side Arm	1	8.139	8.952	1.00	1.00	9.75	218.71	0.000	0.000	87.25	0.00	0.00
29	145.00	TA08025-B604	3	8.081	8.889	0.38	0.75	2.83	345.12	0.000	0.000	25.19	0.00	0.00
30	145.00	TA08025-B605	3	8.081	8.889	0.38	0.75	2.83	388.58	0.000	0.000	25.19	0.00	0.00
31	145.00	MC-PK8-DSH	1	8.081	8.889	1.00	1.00	84.66	3381.52	0.000	0.000	752.55	0.00	0.00
32	145.00	RDIDC-9181-PF-48	1	8.081	8.889	1.00	1.00	2.58	66.65	0.000	0.000	22.90	0.00	0.00
33	145.00	FFVV-65B-R2	3	8.081	8.889	0.55	0.75	22.85	910.12	0.000	0.000	203.07	0.00	0.00
34	135.00	Side Arm	1	7.960	8.756	1.00	1.00	9.69	217.62	0.000	0.000	84.86	0.00	0.00
35	135.00	ANT450F6	1	8.008	8.809	1.00	1.00	4.66	59.72	0.000	3.917	41.07	0.00	160.85
36	110.00	Antenex Y1505	2	7.624	8.386	1.00	1.00	16.61	54.05	0.000	0.000	139.33	0.00	0.00
37	110.00	Flush Mount	1	7.624	8.386	1.00	1.00	8.38	604.24	0.000	0.000	70.31	0.00	0.00
38	110.00	Telewave ANT450D6-9	2	7.624	8.386	1.00	1.00	11.42	156.02	0.000	0.000	95.73	0.00	0.00
39	110.00	Decibel DB212-1	2	7.624	8.386	1.00	1.00	81.16	411.12	0.000	0.000	680.63	0.00	0.00

Totals: 29,571.13

6,496.74

Total Applied Force Summary

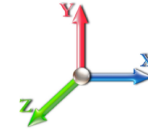
Structure: CT08748-A-SBA	Code: TIA-222-H	2/24/2023
Site Name: Woodstock 4, CT	Exposure: C	
Height: 190.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Page: 19
	Struct Class: II	



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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 26

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		185.99	2562.82	0.00	0.00
10.00		183.18	2556.42	0.00	0.00
15.00		180.19	2535.20	0.00	0.00
20.00		187.92	2507.47	0.00	0.00
25.00		193.49	2475.97	0.00	0.00
30.00		197.42	2441.99	0.00	0.00
35.00		200.15	2406.23	0.00	0.00
40.00		201.94	2369.11	0.00	0.00
41.00		40.12	469.64	0.00	0.00
45.00		164.17	2932.27	0.00	0.00
48.00		123.09	2171.21	0.00	0.00
50.00		81.94	838.49	0.00	0.00
55.00		206.07	2069.86	0.00	0.00
60.00		205.57	2034.30	0.00	0.00
65.00		204.67	1998.21	0.00	0.00
70.00		203.42	1961.65	0.00	0.00
75.00		201.86	1924.68	0.00	0.00
80.00		200.02	1887.35	0.00	0.00
85.00		197.92	1849.68	0.00	0.00
90.00		198.14	2728.73	0.00	0.00
91.00		39.15	539.07	0.00	0.00
95.00		156.11	1293.60	0.00	0.00
100.00		192.90	1585.70	0.00	0.00
105.00		190.00	1551.79	0.00	0.00
110.00	(7) attachments	1172.93	2743.09	0.00	0.00
115.00		183.69	1464.62	0.00	0.00
120.00		180.30	1430.11	0.00	0.00
125.00		176.76	1395.42	0.00	0.00
130.00		173.10	1360.58	0.00	0.00
135.00	(2) attachments	297.45	2174.23	0.00	160.85
140.00		167.63	1164.31	0.00	0.00
145.00	(11) attachments	1192.51	6225.80	0.00	0.00
150.00	(3) attachments	751.34	1931.07	0.00	165.41
155.00		155.25	1051.33	0.00	0.00
157.00	(8) attachments	719.02	2732.13	0.00	0.00
160.00		89.90	605.13	0.00	0.00
165.00		146.49	981.39	0.00	0.00
167.00	(24) attachments	1277.79	8197.10	0.00	0.00
170.00		84.53	515.05	0.00	0.00
175.00		137.36	831.05	0.00	0.00
177.00	(22) attachments	1208.59	7744.65	0.00	0.00
180.00		78.93	413.28	0.00	0.00
185.00	(28) attachments	860.85	5318.89	0.00	0.00
190.00		131.47	720.74	0.00	0.00
Totals:		13,321.34	96,691.42	0.00	326.26

Calculated Forces

Structure: CT08748-A-SBA

Code: TIA-222-H

2/24/2023

Site Name: Woodstock 4, CT

Exposure: C

Height: 190.00 (ft)

Crest Height: 0.00

Base Elev: 0.000 (ft)

Site Class: D - Stiff Soil

Gh: 1.1

Topography: 1

Struct Class: II

Page: 20



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

Iterations 26

Dead Load Factor 1.20

Wind Load Factor 1.00



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-96.68	-13.37	0.00	-1791.6	0.00	1791.60	5803.10	1561.17	8297.91	7657.05	0.00	0.000	0.000	0.251
5.00	-94.11	-13.27	0.00	-1724.7	0.00	1724.76	5740.33	1532.49	7995.78	7434.11	0.03	-0.054	0.000	0.248
10.00	-91.54	-13.17	0.00	-1658.4	0.00	1658.41	5675.91	1503.80	7699.25	7212.14	0.12	-0.109	0.000	0.246
15.00	-88.99	-13.07	0.00	-1592.5	0.00	1592.55	5609.85	1475.12	7408.33	6991.28	0.26	-0.165	0.000	0.244
20.00	-86.47	-12.96	0.00	-1527.1	0.00	1527.18	5542.15	1446.43	7123.01	6771.63	0.46	-0.222	0.000	0.241
25.00	-83.99	-12.85	0.00	-1462.3	0.00	1462.36	5472.81	1417.75	6843.29	6553.32	0.73	-0.280	0.000	0.239
30.00	-81.53	-12.72	0.00	-1398.1	0.00	1398.13	5401.82	1389.06	6569.17	6336.48	1.05	-0.339	0.000	0.236
35.00	-79.11	-12.59	0.00	-1334.5	0.00	1334.54	5329.20	1360.38	6300.66	6121.21	1.44	-0.399	0.000	0.233
40.00	-76.74	-12.42	0.00	-1271.6	0.00	1271.60	5254.93	1331.69	6037.75	5907.64	1.89	-0.460	0.000	0.230
41.00	-76.26	-12.41	0.00	-1259.1	0.00	1259.19	5239.88	1325.95	5985.84	5865.14	1.99	-0.472	0.000	0.229
45.00	-73.32	-12.28	0.00	-1209.5	0.00	1209.53	5179.02	1303.01	5780.44	5695.90	2.41	-0.522	0.000	0.227
48.00	-71.14	-12.18	0.00	-1172.6	0.00	1172.69	4202.19	1119.08	4974.38	4636.19	2.75	-0.560	0.000	0.270
50.00	-70.30	-12.15	0.00	-1148.3	0.00	1148.34	4180.07	1109.25	4887.33	4570.98	2.99	-0.586	0.000	0.268
55.00	-68.21	-12.00	0.00	-1087.6	0.00	1087.61	4123.62	1084.66	4673.07	4408.60	3.64	-0.656	0.000	0.263
60.00	-66.17	-11.85	0.00	-1027.6	0.00	1027.61	4065.54	1060.07	4463.61	4247.27	4.37	-0.728	0.000	0.258
65.00	-64.16	-11.70	0.00	-968.34	0.00	968.34	4005.81	1035.49	4258.96	4087.10	5.17	-0.800	0.000	0.253
70.00	-62.18	-11.55	0.00	-909.82	0.00	909.82	3944.44	1010.90	4059.10	3928.21	6.04	-0.873	0.000	0.248
75.00	-60.25	-11.40	0.00	-852.06	0.00	852.06	3881.43	986.31	3864.05	3770.72	7.00	-0.946	0.000	0.242
80.00	-58.35	-11.24	0.00	-795.08	0.00	795.08	3816.78	961.72	3673.81	3614.75	8.03	-1.020	0.000	0.235
85.00	-56.49	-11.08	0.00	-738.88	0.00	738.88	3750.48	937.14	3488.36	3460.42	9.14	-1.095	0.000	0.229
90.00	-53.76	-10.87	0.00	-683.48	0.00	683.48	3682.55	912.55	3307.72	3307.86	10.32	-1.169	0.000	0.221
91.00	-53.21	-10.86	0.00	-672.61	0.00	672.61	2898.33	768.33	2813.78	2634.30	10.57	-1.185	0.000	0.274
95.00	-51.91	-10.74	0.00	-629.18	0.00	629.18	2860.60	751.94	2695.00	2544.15	11.59	-1.245	0.000	0.266
100.00	-50.31	-10.58	0.00	-575.49	0.00	575.49	2811.95	731.45	2550.13	2432.25	12.94	-1.330	0.000	0.255
105.00	-48.75	-10.43	0.00	-522.57	0.00	522.57	2761.66	710.96	2409.26	2321.34	14.38	-1.414	0.000	0.243
110.00	-46.03	-9.25	0.00	-470.43	0.00	470.43	2709.73	690.47	2272.40	2211.55	15.90	-1.496	0.000	0.230
115.00	-44.55	-9.09	0.00	-424.17	0.00	424.17	2656.16	669.98	2139.54	2103.00	17.51	-1.578	0.000	0.219
120.00	-43.12	-8.93	0.00	-378.72	0.00	378.72	2600.95	649.49	2010.67	1995.80	19.21	-1.658	0.000	0.207
125.00	-41.72	-8.77	0.00	-334.07	0.00	334.07	2544.10	629.00	1885.82	1890.08	20.99	-1.735	0.000	0.193
130.00	-40.35	-8.60	0.00	-290.23	0.00	290.23	2485.60	608.51	1764.96	1785.96	22.84	-1.811	0.000	0.179
135.00	-38.18	-8.28	0.00	-247.04	0.00	247.04	1823.78	478.25	1362.76	1289.51	24.78	-1.882	0.000	0.213
140.00	-37.01	-8.12	0.00	-205.63	0.00	205.63	1784.40	461.86	1270.94	1218.11	26.79	-1.949	0.000	0.190
145.00	-30.82	-6.75	0.00	-165.02	0.00	165.02	1743.38	445.47	1182.33	1147.55	28.87	-2.021	0.000	0.162
150.00	-28.91	-5.96	0.00	-131.10	0.00	131.10	1700.71	429.08	1096.92	1077.96	31.02	-2.085	0.000	0.139
155.00	-27.86	-5.79	0.00	-101.30	0.00	101.30	1656.41	412.69	1014.72	1009.45	33.23	-2.141	0.000	0.117
157.00	-25.16	-4.98	0.00	-89.73	0.00	89.73	1638.23	406.13	982.73	982.37	34.13	-2.162	0.000	0.107
160.00	-24.55	-4.88	0.00	-74.80	0.00	74.80	1610.46	396.29	935.71	942.14	35.50	-2.190	0.000	0.095
165.00	-23.58	-4.70	0.00	-50.42	0.00	50.42	1562.88	379.90	859.91	876.15	37.82	-2.229	0.000	0.073
167.00	-15.43	-3.11	0.00	-41.01	0.00	41.01	1543.38	373.35	830.48	850.16	38.75	-2.242	0.000	0.058
170.00	-14.92	-3.01	0.00	-31.68	0.00	31.68	1513.65	363.51	787.30	811.61	40.17	-2.258	0.000	0.049
175.00	-14.10	-2.84	0.00	-16.63	0.00	16.63	1462.77	347.12	717.90	748.63	42.54	-2.277	0.000	0.032
177.00	-6.41	-1.33	0.00	-10.95	0.00	10.95	1441.72	340.56	691.04	723.78	43.50	-2.282	0.000	0.020
180.00	-6.00	-1.23	0.00	-6.96	0.00	6.96	1400.09	330.73	651.70	682.38	44.93	-2.287	0.000	0.015
180.00	-6.00	-1.23	0.00	-6.96	0.00	6.96	1210.02	285.83	562.49	588.19	44.93	-2.287	0.000	0.017
185.00	-0.71	-0.16	0.00	-0.80	0.00	0.80	1210.02	285.83	562.49	588.19	47.33	-2.291	0.000	0.002
190.00	0.00	-0.13	0.00	0.00	0.00	0.00	1210.02	285.83	562.49	588.19	49.73	-2.292	0.000	0.000

Seismic Segment Forces (Factored)

Structure: CT08748-A-SBA	Code: TIA-222-H	2/24/2023
Site Name: Woodstock 4, CT	Exposure: C	
Height: 190.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 21



Load Case: 1.2D + 1.0Ev + 1.0Eh

Iterations 22

Gust Response Factor 1.10

Sds 0.19

Ss 0.18

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

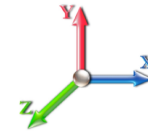
Sd1 0.09

S1 0.06

Wind Load Factor 0.00 **Structure Frequency (f1)** 0.29

SA 0.03

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		1760.5	2.50	68.35	0.01	
10.00		1732.7	7.50	67.28	0.11	
15.00		1704.9	12.50	66.20	0.29	
20.00		1677.0	17.50	65.12	0.54	
25.00		1649.2	22.50	64.04	0.87	
30.00		1621.4	27.50	62.96	1.26	
35.00		1593.6	32.50	61.88	1.70	
40.00		1565.8	37.50	60.80	2.18	
41.00	Bot - Section 2	309.83	40.50	12.03	0.10	
45.00		2115.2	43.00	82.13	5.23	
48.00	Top - Section 1	1564.7	46.50	60.75	3.35	
50.00		536.43	49.00	20.83	0.44	
55.00		1324.3	52.50	51.42	3.06	
60.00		1300.5	57.50	50.50	3.54	
65.00		1276.7	62.50	49.57	4.03	
70.00		1252.8	67.50	48.65	4.52	
75.00		1229.0	72.50	47.72	5.02	
80.00		1205.2	77.50	46.79	5.52	
85.00	Bot - Section 3	1181.3	82.50	45.87	6.01	
90.00		1916.2	87.50	74.40	17.78	
91.00	Top - Section 2	378.01	90.50	14.68	0.74	
95.00		798.28	93.00	30.99	3.49	
100.00		979.98	97.50	38.05	5.78	
105.00		960.11	102.50	37.28	6.13	
110.00	Appurtenance(s)	1398.2	107.50	54.29	14.29	
115.00		901.67	112.50	35.01	6.51	
120.00		881.80	117.50	34.24	6.79	
125.00		861.94	122.50	33.47	7.05	
130.00	Bot - Section 4	842.08	127.50	32.69	7.29	
135.00	Top - Section 3	1434.8	132.50	55.71	22.86	
140.00		691.68	137.50	26.86	5.72	
145.00	Appurtenance(s)	3053.7	142.50	118.57	119.79	
150.00	Appurtenance(s)	974.98	147.50	37.86	13.08	
155.00		622.88	152.50	24.18	5.71	
157.00	Appurtenance(s)	1237.5	156.00	48.05	23.58	
160.00		357.43	158.50	13.88	2.03	
165.00		583.00	162.50	22.64	5.68	
167.00	Appurtenance(s)	3201.1	166.00	124.29	178.62	
170.00		285.51	168.50	11.09	1.46	
175.00		463.14	172.50	17.98	4.04	
177.00	Appurtenance(s)	3036.5	176.00	117.90	180.67	
180.00	Top - Section 4	202.15	178.50	7.85	0.82	
185.00	Appurtenance(s)	2314.8	182.50	89.88	112.90	
190.00		360.23	187.50	13.99	2.89	
Totals:		55,339.8		2,148.7	803.5	
				Total Wind:	45,581.1	

Seismic Segment Forces (Factored)

Structure: CT08748-A-SBA	Code: TIA-222-H	2/24/2023
Site Name: Woodstock 4, CT	Exposure: C	
Height: 190.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 22



Calculated Forces

Structure: CT08748-A-SBA **Code:** TIA-222-H 2/24/2023
Site Name: Woodstock 4, CT **Exposure:** C
Height: 190.00 (ft) **Crest Height:** 0.00
Base Elev: 0.000 (ft) **Site Class:** D - Stiff Soil
Gh: 1.1 **Topography:** 1 **Struct Class:** II Page: 23



Load Case: 1.2D + 1.0Ev + 1.0Eh

Iterations 22

Gust Response Factor 1.10

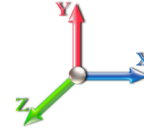
Sds 0.19

Ss 0.18

Dead Load Factor 1.20 **Seismic Load Factor** 1.00 **Sd1** 0.09

S1 0.06

Wind Load Factor 0.00 **Structure Frequency (f1)** 0.29 **SA** 0.03 **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	-66.83	-0.80	0.00	-131.81	0.00	131.81	5803.10	1561.17	8297.91	7657.05	0.00	0.00	0.00	0.029
5.00	-64.70	-0.81	0.00	-127.79	0.00	127.79	5740.33	1532.49	7995.78	7434.11	0.00	0.00	0.00	0.028
10.00	-62.61	-0.81	0.00	-123.74	0.00	123.74	5675.91	1503.80	7699.25	7212.14	0.01	-0.01	0.00	0.028
15.00	-60.55	-0.82	0.00	-119.68	0.00	119.68	5609.85	1475.12	7408.33	6991.28	0.02	-0.01	0.00	0.028
20.00	-58.52	-0.82	0.00	-115.59	0.00	115.59	5542.15	1446.43	7123.01	6771.63	0.03	-0.02	0.00	0.028
25.00	-56.53	-0.82	0.00	-111.49	0.00	111.49	5472.81	1417.75	6843.29	6553.32	0.05	-0.02	0.00	0.027
30.00	-54.58	-0.83	0.00	-107.37	0.00	107.37	5401.82	1389.06	6569.17	6336.48	0.08	-0.03	0.00	0.027
35.00	-52.65	-0.83	0.00	-103.25	0.00	103.25	5329.20	1360.38	6300.66	6121.21	0.11	-0.03	0.00	0.027
40.00	-50.77	-0.83	0.00	-99.11	0.00	99.11	5254.93	1331.69	6037.75	5907.64	0.14	-0.03	0.00	0.026
41.00	-50.39	-0.83	0.00	-98.28	0.00	98.28	5239.88	1325.95	5985.84	5865.14	0.15	-0.04	0.00	0.026
45.00	-47.81	-0.82	0.00	-94.97	0.00	94.97	5179.02	1303.01	5780.44	5695.90	0.18	-0.04	0.00	0.026
48.00	-45.91	-0.82	0.00	-92.50	0.00	92.50	4202.19	1119.08	4974.38	4636.19	0.21	-0.04	0.00	0.031
50.00	-45.26	-0.82	0.00	-90.86	0.00	90.86	4180.07	1109.25	4887.33	4570.98	0.23	-0.04	0.00	0.031
55.00	-43.67	-0.82	0.00	-86.74	0.00	86.74	4123.62	1084.66	4673.07	4408.60	0.28	-0.05	0.00	0.030
60.00	-42.12	-0.82	0.00	-82.62	0.00	82.62	4065.54	1060.07	4463.61	4247.27	0.33	-0.06	0.00	0.030
65.00	-40.59	-0.82	0.00	-78.51	0.00	78.51	4005.81	1035.49	4258.96	4087.10	0.39	-0.06	0.00	0.029
70.00	-39.09	-0.82	0.00	-74.40	0.00	74.40	3944.44	1010.90	4059.10	3928.21	0.46	-0.07	0.00	0.029
75.00	-37.62	-0.82	0.00	-70.30	0.00	70.30	3881.43	986.31	3864.05	3770.72	0.53	-0.07	0.00	0.028
80.00	-36.17	-0.81	0.00	-66.22	0.00	66.22	3816.78	961.72	3673.81	3614.75	0.62	-0.08	0.00	0.028
85.00	-34.76	-0.81	0.00	-62.16	0.00	62.16	3750.48	937.14	3488.36	3460.42	0.70	-0.09	0.00	0.027
90.00	-32.44	-0.79	0.00	-58.12	0.00	58.12	3682.55	912.55	3307.72	3307.86	0.80	-0.09	0.00	0.026
91.00	-31.98	-0.79	0.00	-57.33	0.00	57.33	2898.33	768.33	2813.78	2634.30	0.82	-0.09	0.00	0.033
95.00	-31.04	-0.79	0.00	-54.17	0.00	54.17	2860.60	751.94	2695.00	2544.15	0.90	-0.10	0.00	0.032
100.00	-29.87	-0.78	0.00	-50.23	0.00	50.23	2811.95	731.45	2550.13	2432.25	1.00	-0.11	0.00	0.031
105.00	-28.74	-0.78	0.00	-46.31	0.00	46.31	2761.66	710.96	2409.26	2321.34	1.12	-0.11	0.00	0.030
110.00	-27.06	-0.77	0.00	-42.41	0.00	42.41	2709.73	690.47	2272.40	2211.55	1.24	-0.12	0.00	0.029
115.00	-25.99	-0.76	0.00	-38.58	0.00	38.58	2656.16	669.98	2139.54	2103.00	1.37	-0.13	0.00	0.028
120.00	-24.94	-0.75	0.00	-34.78	0.00	34.78	2600.95	649.49	2010.67	1995.80	1.51	-0.14	0.00	0.027
125.00	-23.93	-0.75	0.00	-31.02	0.00	31.02	2544.10	629.00	1885.82	1890.08	1.66	-0.14	0.00	0.026
130.00	-22.93	-0.74	0.00	-27.28	0.00	27.28	2485.60	608.51	1764.96	1785.96	1.81	-0.15	0.00	0.025
135.00	-21.20	-0.72	0.00	-23.58	0.00	23.58	1823.78	478.25	1362.76	1289.51	1.97	-0.16	0.00	0.030
140.00	-20.39	-0.71	0.00	-20.00	0.00	20.00	1784.40	461.86	1270.94	1218.11	2.14	-0.16	0.00	0.028
145.00	-16.66	-0.58	0.00	-16.45	0.00	16.45	1743.38	445.47	1182.33	1147.55	2.31	-0.17	0.00	0.024
150.00	-15.49	-0.57	0.00	-13.55	0.00	13.55	1700.71	429.08	1096.92	1077.96	2.50	-0.18	0.00	0.022
155.00	-14.76	-0.56	0.00	-10.72	0.00	10.72	1656.41	412.69	1014.72	1009.45	2.68	-0.18	0.00	0.020
157.00	-13.25	-0.53	0.00	-9.60	0.00	9.60	1638.23	406.13	982.73	982.37	2.76	-0.18	0.00	0.018
160.00	-12.83	-0.53	0.00	-8.00	0.00	8.00	1610.46	396.29	935.71	942.14	2.88	-0.19	0.00	0.016
165.00	-12.15	-0.52	0.00	-5.36	0.00	5.36	1562.88	379.90	859.91	876.15	3.08	-0.19	0.00	0.014
167.00	-8.20	-0.33	0.00	-4.32	0.00	4.32	1543.38	373.35	830.48	850.16	3.16	-0.19	0.00	0.010
170.00	-7.86	-0.33	0.00	-3.33	0.00	3.33	1513.65	363.51	787.30	811.61	3.28	-0.19	0.00	0.009
175.00	-7.31	-0.32	0.00	-1.69	0.00	1.69	1462.77	347.12	717.90	748.63	3.49	-0.20	0.00	0.007
177.00	-3.56	-0.13	0.00	-1.04	0.00	1.04	1441.72	340.56	691.04	723.78	3.57	-0.20	0.00	0.004
180.00	-3.31	-0.13	0.00	-0.66	0.00	0.66	1400.09	330.73	651.70	682.38	3.69	-0.20	0.00	0.003
180.00	-3.31	-0.13	0.00	-0.66	0.00	0.66	1210.02	285.83	562.49	588.19	3.69	-0.20	0.00	0.004
185.00	-0.45	0.00	0.00	-0.02	0.00	0.02	1210.02	285.83	562.49	588.19	3.90	-0.20	0.00	0.000
190.00	0.00	0.00	0.00	0.00	0.00	0.00	1210.02	285.83	562.49	588.19	4.11	-0.20	0.00	0.000

Calculated Forces

Structure: CT08748-A-SBA	Code: TIA-222-H	2/24/2023
Site Name: Woodstock 4, CT	Exposure: C	
Height: 190.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 24



Seismic Segment Forces (Factored)

Structure: CT08748-A-SBA	Code: TIA-222-H	2/24/2023
Site Name: Woodstock 4, CT	Exposure: C	
Height: 190.00 (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

Iterations 22

Gust Response Factor 1.10

Sds 0.19

Ss 0.18

Dead Load Factor 0.90 **Seismic Load Factor** 1.00

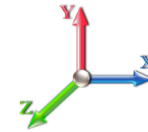
Sd1 0.09

S1 0.06

Wind Load Factor 0.00 **Structure Frequency (f1)** 0.29

SA 0.03

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		1695.2	2.50	65.82	0.01	
10.00		1667.4	7.50	64.74	0.10	
15.00		1639.6	12.50	63.66	0.28	
20.00		1611.8	17.50	62.58	0.52	
25.00		1584.0	22.50	61.50	0.83	
30.00		1556.2	27.50	60.42	1.20	
35.00		1528.4	32.50	59.34	1.62	
40.00		1500.6	37.50	58.26	2.08	
41.00	Bot - Section 2	296.79	40.50	11.52	0.09	
45.00		2063.0	43.00	80.10	5.17	
48.00	Top - Section 1	1525.5	46.50	59.23	3.30	
50.00		510.33	49.00	19.81	0.41	
55.00		1259.1	52.50	48.89	2.87	
60.00		1235.3	57.50	47.96	3.31	
65.00		1211.4	62.50	47.04	3.76	
70.00		1187.6	67.50	46.11	4.22	
75.00		1163.8	72.50	45.19	4.67	
80.00		1139.9	77.50	44.26	5.12	
85.00	Bot - Section 3	1116.1	82.50	43.34	5.57	
90.00		1851.0	87.50	71.87	17.22	
91.00	Top - Section 2	364.97	90.50	14.17	0.72	
95.00		746.09	93.00	28.97	3.16	
100.00		914.74	97.50	35.52	5.22	
105.00		894.88	102.50	34.75	5.52	
110.00	Appurtenance(s)	1333.0	107.50	51.76	13.48	
115.00		841.11	112.50	32.66	5.88	
120.00		821.25	117.50	31.89	6.11	
125.00		801.38	122.50	31.12	6.33	
130.00	Bot - Section 4	781.52	127.50	30.34	6.52	
135.00	Top - Section 3	1374.2	132.50	53.36	21.76	
140.00		632.68	137.50	24.56	4.97	
145.00	Appurtenance(s)	2994.7	142.50	116.28	119.54	
150.00	Appurtenance(s)	918.71	147.50	35.67	12.05	
155.00		569.17	152.50	22.10	4.95	
157.00	Appurtenance(s)	1216.0	156.00	47.21	23.62	
160.00		326.42	158.50	12.67	1.76	
165.00		531.31	162.50	20.63	4.89	
167.00	Appurtenance(s)	3180.4	166.00	123.49	182.95	
170.00		267.71	168.50	10.39	1.34	
175.00		433.47	172.50	16.83	3.67	
177.00	Appurtenance(s)	3024.6	176.00	117.44	186.00	
180.00	Top - Section 4	200.42	178.50	7.78	0.84	
185.00	Appurtenance(s)	2311.9	182.50	89.77	116.85	
190.00		360.23	187.50	13.99	2.99	
Totals:		53,185.0		2,065.0	803.5	
					Total Wind:	45,581.1

Seismic Segment Forces (Factored)

Structure:	CT08748-A-SBA	Code:	TIA-222-H	2/24/2023
Site Name:	Woodstock 4, CT	Exposure:	C	
Height:	190.00 (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



Calculated Forces

Structure: CT08748-A-SBA **Code:** TIA-222-H 2/24/2023
Site Name: Woodstock 4, CT **Exposure:** C
Height: 190.00 (ft) **Crest Height:** 0.00
Base Elev: 0.000 (ft) **Site Class:** D - Stiff Soil
Gh: 1.1 **Topography:** 1 **Struct Class:** II Page: 27



Load Case: 0.9D + 1.0Ev + 1.0Eh

Iterations 22

Gust Response Factor 1.10

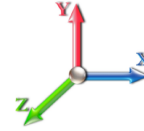
Sds 0.19

Ss 0.18

Dead Load Factor 0.90 **Seismic Load Factor** 1.00 **Sd1** 0.09

S1 0.06

Wind Load Factor 0.00 **Structure Frequency (f1)** 0.29 **SA** 0.03 **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	-50.58	-0.80	0.00	-130.75	0.00	130.75	5803.10	1561.17	8297.91	7657.05	0.00	0.00	0.00	0.026
5.00	-48.97	-0.81	0.00	-126.73	0.00	126.73	5740.33	1532.49	7995.78	7434.11	0.00	0.00	0.00	0.026
10.00	-47.38	-0.81	0.00	-122.70	0.00	122.70	5675.91	1503.80	7699.25	7212.14	0.01	-0.01	0.00	0.025
15.00	-45.82	-0.81	0.00	-118.65	0.00	118.65	5609.85	1475.12	7408.33	6991.28	0.02	-0.01	0.00	0.025
20.00	-44.29	-0.82	0.00	-114.58	0.00	114.58	5542.15	1446.43	7123.01	6771.63	0.03	-0.02	0.00	0.025
25.00	-42.78	-0.82	0.00	-110.50	0.00	110.50	5472.81	1417.75	6843.29	6553.32	0.05	-0.02	0.00	0.025
30.00	-41.30	-0.82	0.00	-106.41	0.00	106.41	5401.82	1389.06	6569.17	6336.48	0.08	-0.03	0.00	0.024
35.00	-39.85	-0.82	0.00	-102.32	0.00	102.32	5329.20	1360.38	6300.66	6121.21	0.11	-0.03	0.00	0.024
40.00	-38.42	-0.82	0.00	-98.22	0.00	98.22	5254.93	1331.69	6037.75	5907.64	0.14	-0.03	0.00	0.024
41.00	-38.14	-0.82	0.00	-97.40	0.00	97.40	5239.88	1325.95	5985.84	5865.14	0.15	-0.04	0.00	0.024
45.00	-36.18	-0.82	0.00	-94.12	0.00	94.12	5179.02	1303.01	5780.44	5695.90	0.18	-0.04	0.00	0.024
48.00	-34.74	-0.81	0.00	-91.67	0.00	91.67	4202.19	1119.08	4974.38	4636.19	0.21	-0.04	0.00	0.028
50.00	-34.25	-0.81	0.00	-90.04	0.00	90.04	4180.07	1109.25	4887.33	4570.98	0.22	-0.04	0.00	0.028
55.00	-33.05	-0.81	0.00	-85.97	0.00	85.97	4123.62	1084.66	4673.07	4408.60	0.27	-0.05	0.00	0.028
60.00	-31.87	-0.81	0.00	-81.90	0.00	81.90	4065.54	1060.07	4463.61	4247.27	0.33	-0.06	0.00	0.027
65.00	-30.72	-0.81	0.00	-77.83	0.00	77.83	4005.81	1035.49	4258.96	4087.10	0.39	-0.06	0.00	0.027
70.00	-29.58	-0.81	0.00	-73.78	0.00	73.78	3944.44	1010.90	4059.10	3928.21	0.46	-0.07	0.00	0.026
75.00	-28.47	-0.81	0.00	-69.74	0.00	69.74	3881.43	986.31	3864.05	3770.72	0.53	-0.07	0.00	0.026
80.00	-27.38	-0.80	0.00	-65.71	0.00	65.71	3816.78	961.72	3673.81	3614.75	0.61	-0.08	0.00	0.025
85.00	-26.31	-0.80	0.00	-61.70	0.00	61.70	3750.48	937.14	3488.36	3460.42	0.70	-0.09	0.00	0.025
90.00	-24.55	-0.78	0.00	-57.71	0.00	57.71	3682.55	912.55	3307.72	3307.86	0.79	-0.09	0.00	0.024
91.00	-24.21	-0.78	0.00	-56.93	0.00	56.93	2898.33	768.33	2813.78	2634.30	0.81	-0.09	0.00	0.030
95.00	-23.49	-0.78	0.00	-53.81	0.00	53.81	2860.60	751.94	2695.00	2544.15	0.89	-0.10	0.00	0.029
100.00	-22.61	-0.77	0.00	-49.92	0.00	49.92	2811.95	731.45	2550.13	2432.25	1.00	-0.11	0.00	0.029
105.00	-21.75	-0.77	0.00	-46.05	0.00	46.05	2761.66	710.96	2409.26	2321.34	1.11	-0.11	0.00	0.028
110.00	-20.48	-0.76	0.00	-42.20	0.00	42.20	2709.73	690.47	2272.40	2211.55	1.23	-0.12	0.00	0.027
115.00	-19.67	-0.75	0.00	-38.42	0.00	38.42	2656.16	669.98	2139.54	2103.00	1.36	-0.13	0.00	0.026
120.00	-18.88	-0.75	0.00	-34.67	0.00	34.67	2600.95	649.49	2010.67	1995.80	1.50	-0.13	0.00	0.025
125.00	-18.11	-0.74	0.00	-30.94	0.00	30.94	2544.10	629.00	1885.82	1890.08	1.64	-0.14	0.00	0.023
130.00	-17.36	-0.73	0.00	-27.24	0.00	27.24	2485.60	608.51	1764.96	1785.96	1.80	-0.15	0.00	0.022
135.00	-16.05	-0.71	0.00	-23.57	0.00	23.57	1823.78	478.25	1362.76	1289.51	1.96	-0.16	0.00	0.027
140.00	-15.44	-0.71	0.00	-20.02	0.00	20.02	1784.40	461.86	1270.94	1218.11	2.12	-0.16	0.00	0.025
145.00	-12.61	-0.58	0.00	-16.50	0.00	16.50	1743.38	445.47	1182.33	1147.55	2.30	-0.17	0.00	0.022
150.00	-11.73	-0.57	0.00	-13.60	0.00	13.60	1700.71	429.08	1096.92	1077.96	2.48	-0.18	0.00	0.020
155.00	-11.18	-0.56	0.00	-10.77	0.00	10.77	1656.41	412.69	1014.72	1009.45	2.66	-0.18	0.00	0.017
157.00	-10.03	-0.53	0.00	-9.65	0.00	9.65	1638.23	406.13	982.73	982.37	2.74	-0.18	0.00	0.016
160.00	-9.72	-0.53	0.00	-8.05	0.00	8.05	1610.46	396.29	935.71	942.14	2.86	-0.19	0.00	0.015
165.00	-9.20	-0.52	0.00	-5.40	0.00	5.40	1562.88	379.90	859.91	876.15	3.06	-0.19	0.00	0.012
167.00	-6.21	-0.33	0.00	-4.35	0.00	4.35	1543.38	373.35	830.48	850.16	3.14	-0.19	0.00	0.009
170.00	-5.96	-0.33	0.00	-3.35	0.00	3.35	1513.65	363.51	787.30	811.61	3.26	-0.19	0.00	0.008
175.00	-5.54	-0.33	0.00	-1.70	0.00	1.70	1462.77	347.12	717.90	748.63	3.46	-0.20	0.00	0.006
177.00	-2.70	-0.13	0.00	-1.05	0.00	1.05	1441.72	340.56	691.04	723.78	3.54	-0.20	0.00	0.003
180.00	-2.51	-0.13	0.00	-0.66	0.00	0.66	1400.09	330.73	651.70	682.38	3.67	-0.20	0.00	0.003
180.00	-2.51	-0.13	0.00	-0.66	0.00	0.66	1210.02	285.83	562.49	588.19	3.67	-0.20	0.00	0.003
185.00	-0.34	0.00	0.00	-0.02	0.00	0.02	1210.02	285.83	562.49	588.19	3.87	-0.20	0.00	0.000
190.00	0.00	0.00	0.00	0.00	0.00	0.00	1210.02	285.83	562.49	588.19	4.08	-0.20	0.00	0.000

Calculated Forces

Structure: CT08748-A-SBA	Code: TIA-222-H	2/24/2023
Site Name: Woodstock 4, CT	Exposure: C	
Height: 190.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 28



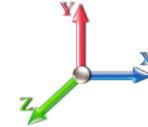
Wind Loading - Shaft

Structure: CT08748-A-SBA	Code: TIA-222-H	2/24/2023	
Site Name: Woodstock 4, CT	Exposure: C		
Height: 190.00 (ft)	Crest Height: 0.00		
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil		
Gh: 1.1	Topography: 1	Struct Class: II	Page: 29



Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 24

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	6.466	7.11	297.52	0.730	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	6.466	7.11	292.09	0.730	0.000	5.00	27.041	19.74	140.4	0.0	1499.6
10.00		1.00	0.85	6.466	7.11	286.66	0.730	0.000	5.00	26.543	19.38	137.8	0.0	1471.8
15.00		1.00	0.85	6.466	7.11	281.23	0.730	0.000	5.00	26.045	19.01	135.2	0.0	1444.0
20.00		1.00	0.90	6.861	7.55	284.10	0.730	0.000	5.00	25.547	18.65	140.7	0.0	1416.2
25.00		1.00	0.95	7.191	7.91	285.12	0.730	0.000	5.00	25.049	18.29	144.6	0.0	1388.3
30.00		1.00	0.98	7.472	8.22	284.81	0.730	0.000	5.00	24.550	17.92	147.3	0.0	1360.5
35.00		1.00	1.01	7.719	8.49	283.54	0.730	0.000	5.00	24.052	17.56	149.1	0.0	1332.7
40.00		1.00	1.04	7.939	8.73	281.54	0.730	0.000	5.00	23.554	17.19	150.2	0.0	1304.9
41.00	Bot - Section 2	1.00	1.05	7.980	8.78	281.06	0.730	0.000	1.00	4.651	3.40	29.8	0.0	257.6
45.00		1.00	1.07	8.138	8.95	278.96	0.730	0.000	4.00	18.659	13.62	121.9	0.0	1906.4
48.00	Top - Section 1	1.00	1.08	8.249	9.07	277.18	0.730	0.000	3.00	13.785	10.06	91.3	0.0	1408.1
50.00		1.00	1.09	8.321	9.15	279.83	0.730	0.000	2.00	9.091	6.64	60.7	0.0	432.1
55.00		1.00	1.12	8.489	9.34	276.43	0.730	0.000	5.00	22.378	16.34	152.5	0.0	1063.4
60.00		1.00	1.14	8.646	9.51	272.70	0.730	0.000	5.00	21.880	15.97	151.9	0.0	1039.6
65.00		1.00	1.16	8.793	9.67	268.68	0.730	0.000	5.00	21.382	15.61	151.0	0.0	1015.8
70.00		1.00	1.17	8.931	9.82	264.40	0.730	0.000	5.00	20.884	15.25	149.8	0.0	991.9
75.00		1.00	1.19	9.062	9.97	259.90	0.730	0.000	5.00	20.386	14.88	148.3	0.0	968.1
80.00		1.00	1.21	9.186	10.10	255.20	0.730	0.000	5.00	19.888	14.52	146.7	0.0	944.3
85.00	Bot - Section 3	1.00	1.22	9.304	10.23	250.32	0.730	0.000	5.00	19.390	14.15	144.9	0.0	920.4
90.00		1.00	1.24	9.417	10.36	245.28	0.730	0.000	5.00	19.156	13.98	144.9	0.0	1655.4
91.00	Top - Section 2	1.00	1.24	9.439	10.38	244.25	0.730	0.000	1.00	3.771	2.75	28.6	0.0	325.8
95.00		1.00	1.25	9.524	10.48	243.59	0.730	0.000	4.00	14.887	10.87	113.9	0.0	589.5
100.00		1.00	1.27	9.628	10.59	238.28	0.730	0.000	5.00	18.160	13.26	140.4	0.0	719.0
105.00		1.00	1.28	9.727	10.70	232.85	0.730	0.000	5.00	17.662	12.89	138.0	0.0	699.2
110.00	Appurtenance(s)	1.00	1.29	9.823	10.81	227.30	0.730	0.000	5.00	17.164	12.53	135.4	0.0	679.3
115.00		1.00	1.30	9.915	10.91	221.64	0.730	0.000	5.00	16.666	12.17	132.7	0.0	659.4
120.00		1.00	1.32	10.005	11.01	215.88	0.730	0.000	5.00	16.168	11.80	129.9	0.0	639.6
125.00		1.00	1.33	10.091	11.10	210.03	0.730	0.000	5.00	15.670	11.44	127.0	0.0	619.7
130.00	Bot - Section 4	1.00	1.34	10.175	11.19	204.09	0.730	0.000	5.00	15.172	11.08	124.0	0.0	599.9
135.00	Top - Section 3	1.00	1.35	10.256	11.28	198.06	0.730	0.000	5.00	14.885	10.87	122.6	0.0	1051.6
140.00		1.00	1.36	10.335	11.37	194.87	0.730	0.000	5.00	14.387	10.50	119.4	0.0	455.7
145.00	Appurtenance(s)	1.00	1.37	10.411	11.45	188.70	0.730	0.000	5.00	13.889	10.14	116.1	0.0	439.8
150.00	Appurtenance(s)	1.00	1.38	10.486	11.53	182.46	0.730	0.000	5.00	13.391	9.78	112.8	0.0	423.9
155.00		1.00	1.39	10.558	11.61	176.16	0.730	0.000	5.00	12.893	9.41	109.3	0.0	408.0
157.00	Appurtenance(s)	1.00	1.39	10.587	11.65	173.61	0.730	0.000	2.00	5.018	3.66	42.7	0.0	158.8
160.00		1.00	1.40	10.629	11.69	169.78	0.730	0.000	3.00	7.377	5.39	63.0	0.0	233.4
165.00		1.00	1.41	10.698	11.77	163.35	0.730	0.000	5.00	11.897	8.69	102.2	0.0	376.2
167.00	Appurtenance(s)	1.00	1.41	10.726	11.80	160.76	0.730	0.000	2.00	4.619	3.37	39.8	0.0	146.0
170.00		1.00	1.42	10.766	11.84	156.86	0.730	0.000	3.00	6.780	4.95	58.6	0.0	214.3
175.00		1.00	1.42	10.832	11.91	150.31	0.730	0.000	5.00	10.901	7.96	94.8	0.0	344.5
177.00	Appurtenance(s)	1.00	1.43	10.858	11.94	147.68	0.730	0.000	2.00	4.221	3.08	36.8	0.0	133.3
180.00	Top - Section 4	1.00	1.43	10.896	11.99	143.71	0.730	0.000	3.00	6.182	4.51	54.1	0.0	195.2
185.00	Appurtenance(s)	1.00	1.44	10.959	12.06	144.12	0.730	0.000	5.00	10.154	7.41	89.4	0.0	360.2
190.00		1.00	1.45	11.021	12.12	144.53	0.730	0.000	5.00	10.154	7.41	89.9	0.0	360.2
Totals:									190.00			4,960.2		34,653.9

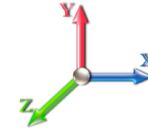
Discrete Appurtenance Forces

Structure: CT08748-A-SBA **Code:** TIA-222-H 2/24/2023
Site Name: Woodstock 4, CT **Exposure:** C
Height: 190.00 (ft) **Crest Height:** 0.00
Base Elev: 0.000 (ft) **Site Class:** D - Stiff Soil
Gh: 1.1 **Topography:** 1 **Struct Class:** II Page: 30



Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 24

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	185.00	Low Profile Platform	1	10.959	12.055	1.00	1.00	20.00	1250.00	0.000	0.000	241.10	0.00	0.00
2	185.00	ADC	6	10.959	12.055	0.40	0.80	0.24	96.00	0.000	0.000	2.89	0.00	0.00
3	185.00	Powerwave LGP21903	6	10.959	12.055	0.40	0.80	0.65	33.00	0.000	0.000	7.81	0.00	0.00
4	185.00	Powerwave LGP21401	6	10.959	12.055	0.40	0.80	3.10	84.60	0.000	0.000	37.32	0.00	0.00
5	185.00	Powerwave 7770.00	9	10.959	12.055	0.58	0.80	28.91	479.52	0.000	0.000	348.49	0.00	0.00
6	177.00	Ericsson KRY 112 489/2	3	10.858	11.943	0.38	0.75	0.73	46.20	0.000	0.000	8.73	0.00	0.00
7	177.00	Platform w/ Hand Rails	1	10.858	11.943	1.00	1.00	30.00	1588.50	0.000	0.000	358.30	0.00	0.00
8	177.00	APXVAARR24_43-U-NA2	3	10.858	11.943	0.52	0.75	31.88	384.00	0.000	0.000	380.73	0.00	0.00
9	177.00	782 11056	3	10.858	11.943	0.38	0.75	0.25	3.90	0.000	0.000	2.96	0.00	0.00
10	177.00	AIR6419 B41	3	10.858	11.943	0.53	0.75	9.03	309.00	0.000	0.000	107.80	0.00	0.00
11	177.00	VV-65A-R1	3	10.858	11.943	0.55	0.75	13.15	88.50	0.000	0.000	157.10	0.00	0.00
12	177.00	4449 B71 + B85	3	10.858	11.943	0.38	0.75	2.22	219.60	0.000	0.000	26.47	0.00	0.00
13	177.00	8843 B25/B66A	3	10.858	11.943	0.38	0.75	1.84	216.00	0.000	0.000	22.04	0.00	0.00
14	167.00	Rfs Celwave	2	10.726	11.798	0.38	0.75	1.89	88.00	0.000	0.000	22.30	0.00	0.00
15	167.00	Platform w/ Hand Rail	1	10.726	11.798	1.00	1.00	30.00	1600.00	0.000	0.000	353.94	0.00	0.00
16	167.00	LNx-6514DS-A1M	3	10.726	11.798	0.62	0.75	15.26	116.40	0.000	0.000	180.01	0.00	0.00
17	167.00	JAHH-65B-R3B	6	10.726	11.798	0.62	0.75	34.03	411.36	0.000	0.000	401.44	0.00	0.00
18	167.00	CBC78T-DS-43-2X	3	10.726	11.798	0.38	0.75	0.42	31.20	0.000	0.000	4.91	0.00	0.00
19	167.00	B5/B13 RRH-BR04C	3	10.726	11.798	0.38	0.75	2.10	210.90	0.000	0.000	24.82	0.00	0.00
20	167.00	B2/B66A RRH-BR049	3	10.726	11.798	0.38	0.75	2.10	253.20	0.000	0.000	24.82	0.00	0.00
21	167.00	VZS01	3	10.726	11.798	0.52	0.75	6.68	261.30	0.000	0.000	78.76	0.00	0.00
22	157.00	SAF	4	10.587	11.646	0.50	1.00	2.44	30.80	0.000	0.000	28.42	0.00	0.00
23	157.00	VHLPX3-6W	1	10.587	11.646	1.00	1.00	10.68	53.00	0.000	0.000	124.38	0.00	0.00
24	157.00	SUX6-65B	1	10.587	11.646	1.00	1.00	35.67	209.00	0.000	0.000	415.40	0.00	0.00
25	157.00	Flush Mount	2	10.587	11.646	1.00	1.00	10.00	700.00	0.000	0.000	116.46	0.00	0.00
26	150.00	PAD6-59A	1	10.486	11.534	1.00	1.00	47.05	185.00	0.000	0.000	542.69	0.00	0.00
27	150.00	ANT450F6	1	10.543	11.597	1.00	1.00	1.86	21.00	0.000	3.917	21.57	0.00	84.49
28	150.00	Side Arm	1	10.486	11.534	1.00	1.00	4.50	120.00	0.000	0.000	51.90	0.00	0.00
29	145.00	TA08025-B604	3	10.411	11.452	0.38	0.75	2.21	191.70	0.000	0.000	25.25	0.00	0.00
30	145.00	TA08025-B605	3	10.411	11.452	0.38	0.75	2.21	225.00	0.000	0.000	25.25	0.00	0.00
31	145.00	MC-PK8-DSH	1	10.411	11.452	1.00	1.00	37.59	1727.00	0.000	0.000	430.50	0.00	0.00
32	145.00	RDIDC-9181-PF-48	1	10.411	11.452	1.00	1.00	2.01	21.90	0.000	0.000	23.02	0.00	0.00
33	145.00	FFVV-65B-R2	3	10.411	11.452	0.55	0.75	20.43	212.40	0.000	0.000	233.97	0.00	0.00
34	135.00	Side Arm	1	10.256	11.281	1.00	1.00	4.50	120.00	0.000	0.000	50.77	0.00	0.00
35	135.00	ANT450F6	1	10.318	11.350	1.00	1.00	1.86	21.00	0.000	3.917	21.11	0.00	82.68
36	110.00	Antenex Y1505	2	9.823	10.805	1.00	1.00	7.20	10.00	0.000	0.000	77.80	0.00	0.00
37	110.00	Flush Mount	1	9.823	10.805	1.00	1.00	5.00	350.00	0.000	0.000	54.03	0.00	0.00
38	110.00	Telewave ANT450D6-9	2	9.823	10.805	1.00	1.00	5.54	36.00	0.000	0.000	59.86	0.00	0.00
39	110.00	Decibel DB212-1	2	9.823	10.805	1.00	1.00	13.00	62.00	0.000	0.000	140.47	0.00	0.00

Totals: 12,066.98

5,235.59

Total Applied Force Summary

Structure: CT08748-A-SBA	Code: TIA-222-H	2/24/2023
Site Name: Woodstock 4, CT	Exposure: C	
Height: 190.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



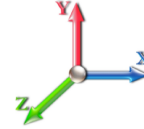
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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00

Iterations 24



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		140.40	1717.03	0.00	0.00
10.00		137.82	1689.22	0.00	0.00
15.00		135.23	1661.41	0.00	0.00
20.00		140.74	1633.60	0.00	0.00
25.00		144.64	1605.79	0.00	0.00
30.00		147.31	1577.98	0.00	0.00
35.00		149.08	1550.17	0.00	0.00
40.00		150.16	1522.37	0.00	0.00
41.00		29.80	301.14	0.00	0.00
45.00		121.94	2080.41	0.00	0.00
48.00		91.32	1538.61	0.00	0.00
50.00		60.74	519.03	0.00	0.00
55.00		152.55	1280.89	0.00	0.00
60.00		151.91	1257.06	0.00	0.00
65.00		150.97	1233.22	0.00	0.00
70.00		149.78	1209.39	0.00	0.00
75.00		148.34	1185.55	0.00	0.00
80.00		146.70	1161.71	0.00	0.00
85.00		144.86	1137.88	0.00	0.00
90.00		144.85	1872.80	0.00	0.00
91.00		28.58	369.32	0.00	0.00
95.00		113.85	763.49	0.00	0.00
100.00		140.40	936.49	0.00	0.00
105.00		137.96	916.62	0.00	0.00
110.00	(7) attachments	467.54	1354.76	0.00	0.00
115.00		132.70	861.30	0.00	0.00
120.00		129.89	841.43	0.00	0.00
125.00		126.97	821.57	0.00	0.00
130.00		123.96	801.71	0.00	0.00
135.00	(2) attachments	194.46	1394.43	0.00	82.68
140.00		119.40	652.35	0.00	0.00
145.00	(11) attachments	854.11	3014.46	0.00	0.00
150.00	(3) attachments	728.93	937.47	0.00	84.49
155.00		109.32	587.07	0.00	0.00
157.00	(8) attachments	727.31	1223.18	0.00	0.00
160.00		62.97	336.75	0.00	0.00
165.00		102.21	548.54	0.00	0.00
167.00	(24) attachments	1130.79	3187.33	0.00	0.00
170.00		58.61	273.64	0.00	0.00
175.00		94.82	443.36	0.00	0.00
177.00	(22) attachments	1100.93	3028.60	0.00	0.00
180.00		54.09	201.00	0.00	0.00
185.00	(28) attachments	726.98	2312.95	0.00	0.00
190.00		89.86	360.23	0.00	0.00
Totals:		10,195.77	53,903.29	0.00	167.17

Calculated Forces

Structure: CT08748-A-SBA

Code: TIA-222-H

2/24/2023

Site Name: Woodstock 4, CT

Exposure: C

Height: 190.00 (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

Iterations 24

Dead Load Factor 1.00

Wind Load Factor 1.00



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-53.90	-10.21	0.00	-1344.5	0.00	1344.57	5803.10	1561.17	8297.91	7657.05	0.00	0.000	0.000	0.185
5.00	-52.18	-10.11	0.00	-1293.5	0.00	1293.50	5740.33	1532.49	7995.78	7434.11	0.02	-0.041	0.000	0.183
10.00	-50.48	-10.01	0.00	-1242.9	0.00	1242.95	5675.91	1503.80	7699.25	7212.14	0.09	-0.082	0.000	0.181
15.00	-48.81	-9.91	0.00	-1192.9	0.00	1192.92	5609.85	1475.12	7408.33	6991.28	0.20	-0.124	0.000	0.179
20.00	-47.17	-9.80	0.00	-1143.3	0.00	1143.39	5542.15	1446.43	7123.01	6771.63	0.35	-0.167	0.000	0.177
25.00	-45.56	-9.68	0.00	-1094.4	0.00	1094.41	5472.81	1417.75	6843.29	6553.32	0.55	-0.210	0.000	0.175
30.00	-43.97	-9.56	0.00	-1046.0	0.00	1046.01	5401.82	1389.06	6569.17	6336.48	0.79	-0.254	0.000	0.173
35.00	-42.42	-9.44	0.00	-998.21	0.00	998.21	5329.20	1360.38	6300.66	6121.21	1.08	-0.299	0.000	0.171
40.00	-40.89	-9.30	0.00	-951.02	0.00	951.02	5254.93	1331.69	6037.75	5907.64	1.42	-0.344	0.000	0.169
41.00	-40.58	-9.28	0.00	-941.72	0.00	941.72	5239.88	1325.95	5985.84	5865.14	1.49	-0.354	0.000	0.168
45.00	-38.50	-9.17	0.00	-904.59	0.00	904.59	5179.02	1303.01	5780.44	5695.90	1.80	-0.391	0.000	0.166
48.00	-36.96	-9.08	0.00	-877.08	0.00	877.08	4202.19	1119.08	4974.38	4636.19	2.06	-0.419	0.000	0.198
50.00	-36.43	-9.04	0.00	-858.91	0.00	858.91	4180.07	1109.25	4887.33	4570.98	2.24	-0.439	0.000	0.197
55.00	-35.15	-8.91	0.00	-813.71	0.00	813.71	4123.62	1084.66	4673.07	4408.60	2.73	-0.491	0.000	0.193
60.00	-33.88	-8.78	0.00	-769.15	0.00	769.15	4065.54	1060.07	4463.61	4247.27	3.27	-0.545	0.000	0.189
65.00	-32.64	-8.65	0.00	-725.25	0.00	725.25	4005.81	1035.49	4258.96	4087.10	3.87	-0.599	0.000	0.186
70.00	-31.43	-8.51	0.00	-682.02	0.00	682.02	3944.44	1010.90	4059.10	3928.21	4.53	-0.654	0.000	0.182
75.00	-30.24	-8.38	0.00	-639.44	0.00	639.44	3881.43	986.31	3864.05	3770.72	5.24	-0.709	0.000	0.177
80.00	-29.07	-8.25	0.00	-597.54	0.00	597.54	3816.78	961.72	3673.81	3614.75	6.01	-0.764	0.000	0.173
85.00	-27.92	-8.11	0.00	-556.30	0.00	556.30	3750.48	937.14	3488.36	3460.42	6.84	-0.820	0.000	0.168
90.00	-26.05	-7.96	0.00	-515.72	0.00	515.72	3682.55	912.55	3307.72	3307.86	7.73	-0.876	0.000	0.163
91.00	-25.68	-7.94	0.00	-507.77	0.00	507.77	2898.33	768.33	2813.78	2634.30	7.92	-0.888	0.000	0.202
95.00	-24.91	-7.83	0.00	-476.02	0.00	476.02	2860.60	751.94	2695.00	2544.15	8.68	-0.933	0.000	0.196
100.00	-23.96	-7.70	0.00	-436.85	0.00	436.85	2811.95	731.45	2550.13	2432.25	9.69	-0.998	0.000	0.188
105.00	-23.04	-7.58	0.00	-398.33	0.00	398.33	2761.66	710.96	2409.26	2321.34	10.77	-1.061	0.000	0.180
110.00	-21.69	-7.11	0.00	-360.45	0.00	360.45	2709.73	690.47	2272.40	2211.55	11.92	-1.125	0.000	0.171
115.00	-20.82	-6.98	0.00	-324.92	0.00	324.92	2656.16	669.98	2139.54	2103.00	13.13	-1.187	0.000	0.162
120.00	-19.98	-6.85	0.00	-290.03	0.00	290.03	2600.95	649.49	2010.67	1995.80	14.41	-1.248	0.000	0.153
125.00	-19.15	-6.73	0.00	-255.77	0.00	255.77	2544.10	629.00	1885.82	1890.08	15.74	-1.308	0.000	0.143
130.00	-18.35	-6.60	0.00	-222.13	0.00	222.13	2485.60	608.51	1764.96	1785.96	17.15	-1.365	0.000	0.132
135.00	-16.95	-6.39	0.00	-189.04	0.00	189.04	1823.78	478.25	1362.76	1289.51	18.61	-1.420	0.000	0.156
140.00	-16.30	-6.27	0.00	-157.09	0.00	157.09	1784.40	461.86	1270.94	1218.11	20.12	-1.471	0.000	0.138
145.00	-13.30	-5.35	0.00	-125.75	0.00	125.75	1743.38	445.47	1182.33	1147.55	21.69	-1.526	0.000	0.117
150.00	-12.38	-4.60	0.00	-98.93	0.00	98.93	1700.71	429.08	1096.92	1077.96	23.32	-1.575	0.000	0.099
155.00	-11.79	-4.48	0.00	-75.91	0.00	75.91	1656.41	412.69	1014.72	1009.45	24.99	-1.617	0.000	0.082
157.00	-10.59	-3.73	0.00	-66.94	0.00	66.94	1638.23	406.13	982.73	982.37	25.67	-1.633	0.000	0.075
160.00	-10.25	-3.66	0.00	-55.76	0.00	55.76	1610.46	396.29	935.71	942.14	26.70	-1.654	0.000	0.066
165.00	-9.71	-3.54	0.00	-37.47	0.00	37.47	1562.88	379.90	859.91	876.15	28.45	-1.682	0.000	0.049
167.00	-6.55	-2.32	0.00	-30.39	0.00	30.39	1543.38	373.35	830.48	850.16	29.16	-1.692	0.000	0.040
170.00	-6.28	-2.25	0.00	-23.43	0.00	23.43	1513.65	363.51	787.30	811.61	30.23	-1.704	0.000	0.033
175.00	-5.84	-2.15	0.00	-12.15	0.00	12.15	1462.77	347.12	717.90	748.63	32.02	-1.718	0.000	0.020
177.00	-2.85	-0.96	0.00	-7.86	0.00	7.86	1441.72	340.56	691.04	723.78	32.74	-1.722	0.000	0.013
180.00	-2.65	-0.90	0.00	-4.99	0.00	4.99	1400.09	330.73	651.70	682.38	33.82	-1.725	0.000	0.009
180.00	-2.65	-0.90	0.00	-4.99	0.00	4.99	1210.02	285.83	562.49	588.19	33.82	-1.725	0.000	0.011
185.00	-0.36	-0.10	0.00	-0.50	0.00	0.50	1210.02	285.83	562.49	588.19	35.63	-1.728	0.000	0.001
190.00	0.00	-0.09	0.00	0.00	0.00	0.00	1210.02	285.83	562.49	588.19	37.44	-1.728	0.000	0.000

Final Analysis Summary

Structure: CT08748-A-SBA	Code: TIA-222-H	2/24/2023
Site Name: Woodstock 4, CT	Exposure: C	
Height: 190.00 (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 120 mph Wind	45.7	0.00	64.61	0.00	0.00	6051.12
0.9D + 1.0W 120 mph Wind	45.7	0.00	48.44	0.00	0.00	5971.35
1.2D + 1.0Di + 1.0Wi 50 mph Wind	13.4	0.00	96.68	0.00	0.00	1791.60
1.2D + 1.0Ev + 1.0Eh	0.8	0.00	66.83	0.00	0.00	131.81
0.9D + 1.0Ev + 1.0Eh	0.8	0.00	50.58	0.00	0.00	130.75
1.0D + 1.0W 60 mph Wind	10.2	0.00	53.90	0.00	0.00	1344.57

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 120 mph Wind	-28.47	-35.79	0.00	-2290.4	0.00	-2290.4	2898.33	768.33	2813.78	2634.30	91.00	0.881
0.9D + 1.0W 120 mph Wind	-20.79	-35.21	0.00	-2243.1	0.00	-2243.1	2898.33	768.33	2813.78	2634.30	91.00	0.861
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-53.21	-10.86	0.00	-672.61	0.00	-672.61	2898.33	768.33	2813.78	2634.30	91.00	0.274
1.2D + 1.0Ev + 1.0Eh	-31.98	-0.79	0.00	-57.33	0.00	-57.33	2898.33	768.33	2813.78	2634.30	91.00	0.033
0.9D + 1.0Ev + 1.0Eh	-24.21	-0.78	0.00	-56.93	0.00	-56.93	2898.33	768.33	2813.78	2634.30	91.00	0.030
1.0D + 1.0W 60 mph Wind	-25.68	-7.94	0.00	-507.77	0.00	-507.77	2898.33	768.33	2813.78	2634.30	91.00	0.202

	Monopole Mat Foundation Design			Date
				2/24/2023
	Customer Name:	Dish Wireless	TIA Standard:	TIA-222-H
	Site Name:		Structure Height (Ft.):	190
	Site Number:	CT08748-A-SBA	Engineer Name:	S. Hesselbeir
Engr. Number:	138870	Engineer Login ID:		

Foundation Info Obtained from:

Structure Type:

Analysis or Design?

Base Reactions (Factored):

Axial Load (Kips):	64.6	Shear Force (Kips):	45.7
Uplift Force (Kips):	0.0	Moment (Kips-ft):	6051.1

Allowable overstress %: 5.0%

Foundation Geometries:

		Mods required -Yes/No ?:	No
Diameter of Pier (ft.):	7.0	Depth of Base BG (ft.):	8.0
Pier Height A. G. (ft.):	0.25	Thickness of Pad (ft):	4.00
Length of Pad (ft.):	33	Width of Pad (ft.):	33

Final Length of pad (ft)	33.0	Final width of pad (ft):	33.0
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Material Properties and Rebar Info:

Concrete Strength (psi):	4000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield (ksi):	60	
Vertical Rebar Size #:	11	Tie / Stirrup Size #:	6	
Qty. of Vertical Rebars:	62	Tie Spacing (in):	8.0	
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	9	
Concrete Cover (in.):	4	Unit Weight of Concrete:	150.0	pcf

Rebar at the bottom of the concrete pad:

Qty. of Rebar in Pad (L):	40	Qty. of Rebar in Pad (W):	40
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Rebar at the top of the concrete pad:

Qty. of Rebar in Pad (L):	40	Qty. of Rebar in Pad (W):	40
---------------------------	----	---------------------------	----

Apply 1.35 factor for e/w Per G: 1.35

Soil Design Parameters:

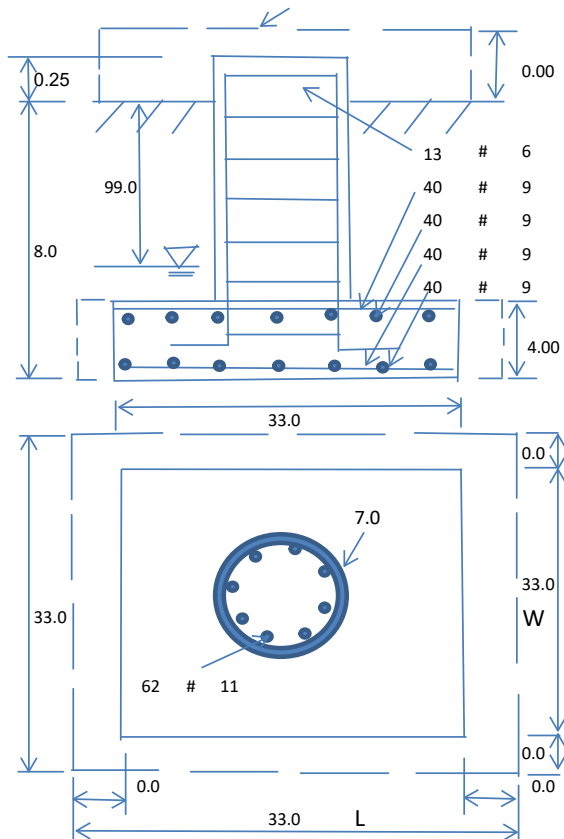
Soil Unit Weight (pcf):	100.0	Soil Buoyant Weight:	50.0	Pcf
Water Table B.G.S. (ft):	99.0	Unit Weight of Water:	62.4	pcf
Ultimate Bearing Pressure (psf):	4000	Ultimate Skin Friction:	0	Psf
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	Yes	
Consider soil hor. resist. for OTM.:	Yes	Reduction factor on the maximum soil bearing pressure:	1.00	
		Angle from Top of Pad:	30	
		Angle from Bottm of Pad:	25	
		Angle from Bottm of Pad:	25	

Foundation Analysis and Design:

Uplift Strength Reduction Factor:	0.75	Compression Strength Reduction Factor:	0.75
Total Dry Soil Volume (cu. Ft.):	4202.06	Total Dry Soil Weight (Kips):	420.21
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	420.21	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	4519.56	Total Dry Concrete Weight (Kips):	677.93
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00
Total Effective Concrete Weight (Kips):	677.93	Total Vertical Load on Base (Kips):	1162.74

Check Soil Capacities:

Calculated Maxium Net Soil Pressure under the base (psf):	2029	< Allowable Factored Soil Bearing (psf):	3000	0.68	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	17373.3	> Design Factored Momont (kips-ft):	6058	0.35	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	2.87				OK!



Check the capacities of Reinforcing Concrete:

Strength reduction factor (Flexure and axial tension):

0.90

Strength reduction factor (Shear):

0.75

Strength reduction factor (Axial compression):

0.65

Wind Load Factor on Concrete Design:

1.00

Load/
Capacity
Ratio**(1) Concrete Pier:**

Vertical Steel Rebar Area (sq. in./each):

1.56

Tie / Stirrup Area (sq. in./each):

0.44

Calculated Moment Capacity (Mn,Kips-Ft):

14906.9

>

Design Factored Moment (Mu, Kips-F

6245.3

0.42

OK!

Calculated Shear Capacity (Kips):

969.3

>

Design Factored Shear (Kips):

45.7

0.05

OK!

Calculated Tension Capacity (Tn, Kips):

5222.9

>

Design Factored Tension (Tu Kips):

0.0

0.00

OK!

Calculated Compression Capacity (Pn, Kips):

9626.8

>

Design Factored Axial Load (Pu Kips):

64.6

0.01

OK!

Moment & Axial Strength Combination:

0.42

OK!

Check Tie Spacing (Design/Required):

0.6667

OK!

Pier Reinforcement Ratio:

0.017

Reinforcement Ratio is satisfied per ACI

(2).Concrete Pad:

One-Way Design Shear Capacity (L-Direction, Kips):

1631.9

>

One-Way Factored Shear (L-D. Kips):

384.2

0.24

OK!

One-Way Design Shear Capacity (W-Direction, Kips):

1631.9

>

One-Way Factored Shear (W-D., Kips)

384.2

0.24

OK!

One-Way Design Shear Capacity (Corner-Corner, Kips):

1603.6

>

One-Way Factored Shear (C-C, Kips):

361.1

0.23

OK!

Lower Steel Pad Reinforcement Ratio (L-Direct.):

0.0023

OK!

Lower Steel Pad Reinf. Ratio (W-Direc

0.0023

Lower Steel Pad Moment Capacity (L-Direction, Kips-ft):

7658.3

>

Moment at Bottom (L-Dir. K-Ft):

3035.7

0.40

OK!

Lower Steel Pad Moment Capacity (W-Direction, Kips-ft):

7658.3

>

Moment at Bottom (W-Dir. K-Ft):

3035.7

0.40

OK!

Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):

10790.5

>

Moment at Bottom (C-C Dir. K-Ft):

4293.1

0.40

OK!

Upper Steel Pad Reinforcement Ratio (L-Direct.):

0.0023

OK!

Upper Steel Reinf. Ratio (W-Dir.):

0.0023

Upper Steel Pad Moment Capacity (L-Direc. Kips-ft):

7658.3

>

Moment at the top (L-Dir K-Ft):

1166.9

0.15

OK!

Upper Steel Pad Moment Capacity (W-Direc. Kips-ft):

7658.3

>

Moment at the top (W-Dir K-Ft):

1166.9

0.15

OK!

Upper Steel Pad Moment Capacity (Corner-Corner, K-ft):

10790.5

>

Moment at the top (C-C Dir. K-Ft):

1088.4

0.10

OK!

(3).Check Punching Shear Capacity due to Moment in the Pier:

Moment transferred by punching shear:

2420.4

k-ft.

Max. factored shear stress $v_{u,CD}$:

6.1

Psi

Max. factored shear stress $v_{u,AB}$:

11.6

Psi

Factored shear Strength ϕv_n :

189.7

Psi

Max. factored shear stress v_u :

11.6

Psi

Check Usage of Punching Shear Capacity:

0.06

OK!

(4).Check Bending Capacity of the Pad Within the Effective Slab Width:

Overturning moment to be transferred by flexure:

1815.3

k-ft.

Effective Width for resisting OT moment:

19.0 ft.

Calculated number of Rebar in Effective width:

24

Actual number of Rebar in Effective width:

24

Steel Pad Moment Capacity (L-Direc. Kips-ft):

4590.9

k-ft.

Check Usage of the Flexure Capacity:

0.40

OK!

EXHIBIT 8
Construction
Drawings



DISH Wireless L.L.C. SITE ID:

BOBOS00049A

DISH Wireless L.L.C. SITE ADDRESS:

215 COATNEY HILL RD
WOODSTOCK, CT 06281

CONNECTICUT CODE OF COMPLIANCE

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

CODE TYPE	CODE
BUILDING	2022 CT STATE BUILDING CODE/2021 IBC W/ CT AMENDMENTS
MECHANICAL	2022 CT STATE BUILDING CODE/2021 IMC W/ CT AMENDMENTS
ELECTRICAL	2022 CT STATE BUILDING CODE/2020 NEC W/ CT AMENDMENTS

SHEET INDEX

SHEET NO.	SHEET TITLE
T-1	TITLE SHEET
LS-1	SITE SURVEY
A-1	OVERALL AND ENLARGED SITE PLAN
A-2	ELEVATION, ANTENNA LAYOUT AND SCHEDULE
A-3	EQUIPMENT PLATFORM AND H-FRAME DETAILS
A-4	EQUIPMENT DETAILS
A-5	EQUIPMENT DETAILS
A-6	EQUIPMENT DETAILS
E-1	ELECTRICAL/FIBER ROUTE PLAN AND NOTES
E-2	ELECTRICAL DETAILS
E-3	ELECTRICAL ONE-LINE, FAULT CALCS & PANEL SCHEDULE
G-1	GROUNDING PLANS AND NOTES
G-2	GROUNDING DETAILS
G-3	GROUNDING DETAILS
RF-1	RF CABLE COLOR CODE
GN-1	LEGEND AND ABBREVIATIONS
GN-2	GENERAL NOTES
GN-3	GENERAL NOTES
GN-4	GENERAL NOTES

SCOPE OF WORK

THIS IS NOT AN ALL INCLUSIVE LIST. CONTRACTOR SHALL UTILIZE SPECIFIED EQUIPMENT PART OR ENGINEER APPROVED EQUIVALENT. CONTRACTOR SHALL VERIFY ALL NEEDED EQUIPMENT TO PROVIDE A FUNCTIONAL SITE. THE PROJECT GENERALLY CONSISTS OF THE FOLLOWING:

- TOWER SCOPE OF WORK:
- INSTALL (3) PROPOSED PANEL ANTENNAS (1 PER SECTOR)
 - INSTALL (1) PROPOSED ANTENNA PLATFORM MOUNT
 - INSTALL PROPOSED JUMPERS
 - INSTALL (6) PROPOSED RRUs (2 PER SECTOR)
 - INSTALL (1) PROPOSED OVER VOLTAGE PROTECTION DEVICE (OVP)
 - INSTALL (1) PROPOSED HYBRID CABLE

- GROUND SCOPE OF WORK:
- INSTALL (1) PROPOSED METAL PLATFORM
 - INSTALL (1) PROPOSED ICE BRIDGE
 - INSTALL (1) PROPOSED PPC CABINET
 - INSTALL (1) PROPOSED EQUIPMENT CABINET
 - INSTALL (1) PROPOSED POWER CONDUIT
 - INSTALL (1) PROPOSED TELCO CONDUIT
 - INSTALL (1) PROPOSED TELCO-FIBER BOX
 - INSTALL (1) PROPOSED GPS UNIT
 - INSTALL (1) PROPOSED FIBER NID (IF REQUIRED)

SITE PHOTO



UNDERGROUND SERVICE ALERT CBYD 811
UTILITY NOTIFICATION CENTER OF CONNECTICUT
(800) 922-4455
WWW.CBYD.COM

CALL 2 WORKING DAYS UTILITY NOTIFICATION PRIOR TO CONSTRUCTION



GENERAL NOTES

THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. A TECHNICIAN WILL VISIT THE SITE AS REQUIRED FOR ROUTINE MAINTENANCE. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT DISTURBANCE OR EFFECT ON DRAINAGE. NO SANITARY SEWER SERVICE, POTABLE WATER, OR TRASH DISPOSAL IS REQUIRED AND NO COMMERCIAL SIGNAGE IS PROPOSED.

11"x17" PLOT WILL BE HALF SCALE UNLESS OTHERWISE NOTED

CONTRACTOR SHALL VERIFY ALL PLANS, EXISTING DIMENSIONS, AND CONDITIONS ON THE JOB SITE, AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK.

SITE INFORMATION

PROPERTY OWNER: WOODSTOCK TOWN OF
ADDRESS: 215 COATNEY HILL ROAD
WOODSTOCK, CT 06281

TOWER TYPE: MONOPOLE

TOWER CO SITE ID: CT08748-A

TOWER APP NUMBER: 169647

COUNTY: WINDHAM

LATITUDE (NAD 83): 41° 57' 43.4124" N
41.9620590° N

LONGITUDE (NAD 83): 72° 1' 4.9728" W
72.018048° W

ZONING JURISDICTION: WINDHAM COUNTY

ZONING DISTRICT: COMMERCIAL

PARCEL NUMBER: 6169-4525

OCCUPANCY GROUP: U

CONSTRUCTION TYPE: II-B

POWER COMPANY: EVERSOURCE

TELEPHONE COMPANY: AT&T

PROJECT DIRECTORY

APPLICANT: DISH Wireless L.L.C.
5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

TOWER OWNER: SBA COMMUNICATIONS CORP.
8051 CONGRESS AVENUE
BOCA RATON, FL 33487
(800) 487-7483

SITE DESIGNER: B+T GROUP
1717 S. BOULDER AVE. SUITE 300
TULSA, OK 74119
(918) 587-4630

SITE ACQUISITION: JEAN COTTRELL
jean.cottrell@dish.com

CONST. MANAGER: AARON CHANDLER
aaron.chandler@dish.com

RF ENGINEER: ARVIN SEBASTIAN
arvin.sebastian@dish.com

DIRECTIONS

DIRECTIONS FROM SOUTHBRIDGE MUNICIPAL AIRPORT:

HEAD SOUTH ON CLEMENCE HILL RD TOWARD AIRPORT ACCESS RD, CONTINUE ONTO PAIGE HILL RD, SLIGHT LEFT ONTO TWINE HURST PL, TAKE MA-169 AND CT-169 S TO COUNTY RD IN WOODSTOCK, TURN RIGHT ONTO CENTRAL ST, CONTINUE STRAIGHT ONTO FOSTER ST, TURN LEFT ONTO NORTH ST, TURN RIGHT ONTO CRYSTAL ST, AT THE ROUNDABOUT, TAKE THE 2ND EXIT ONTO MA-131/E MAIN ST, TURN RIGHT ONTO MA-169, ENTERING CONNECTICUT, CONTINUE ONTO CT-169 S, CONTINUE ON COUNTY RD. DRIVE TO COATNEY HILL RD, TURN RIGHT ONTO COUNTY RD, TURN LEFT ONTO COATNEY HILL RD, ARRIVE AT BOBOS00049A.

VICINITY MAP



NO SCALE

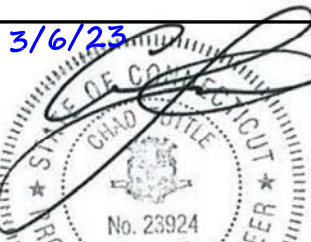


5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



B+T GRP

1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
www.btgrp.com



MTS ENGINEERING, INC.
BER:2386985
Expires 3/31/24

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DRAWN BY: CHECKED BY: APPROVED BY:

MEH RMC RMC

RFDS REV #: 0

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	9/27/21	ISSUED FOR REVIEW
0	2/3/23	ISSUED FOR CONSTRUCTION
1	3/6/23	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

149450.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

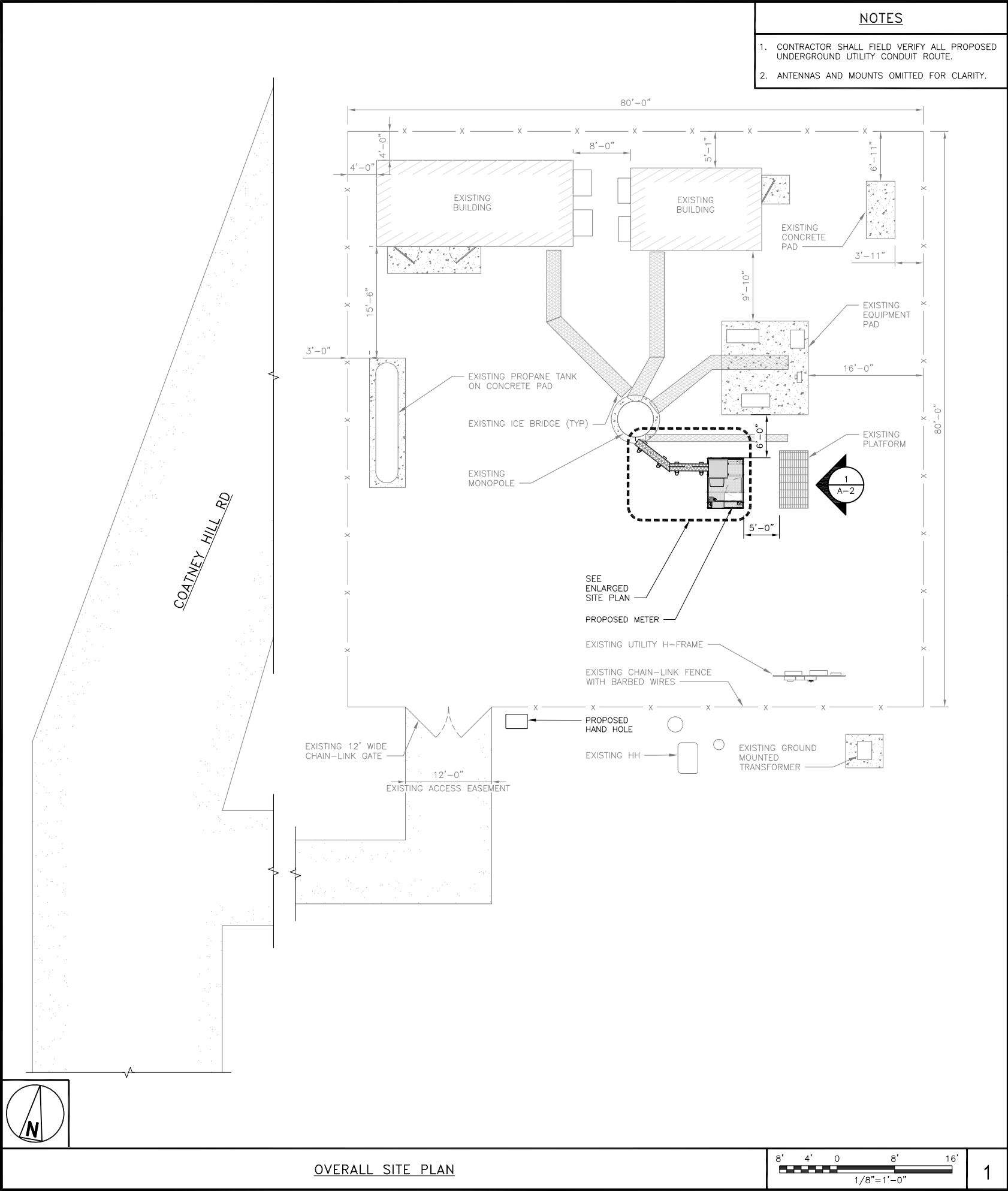
BOBOS00049A
215 COATNEY HILL RD
WOODSTOCK, CT 06281

SHEET TITLE

TITLE SHEET

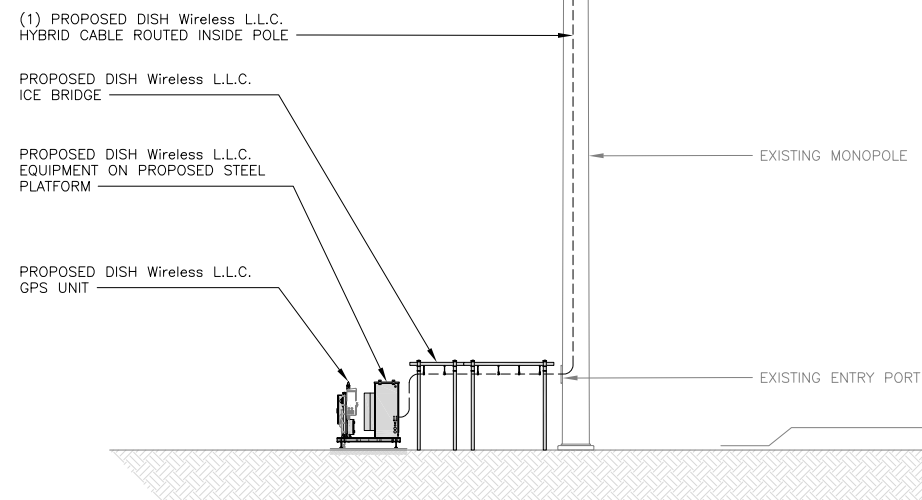
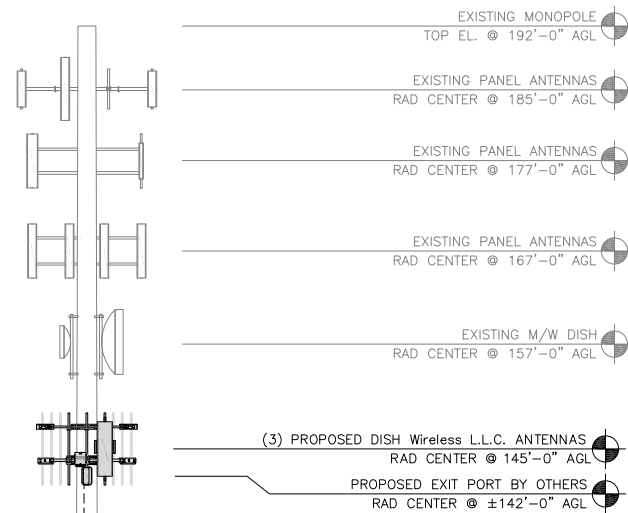
SHEET NUMBER

T-1

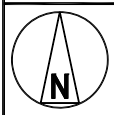
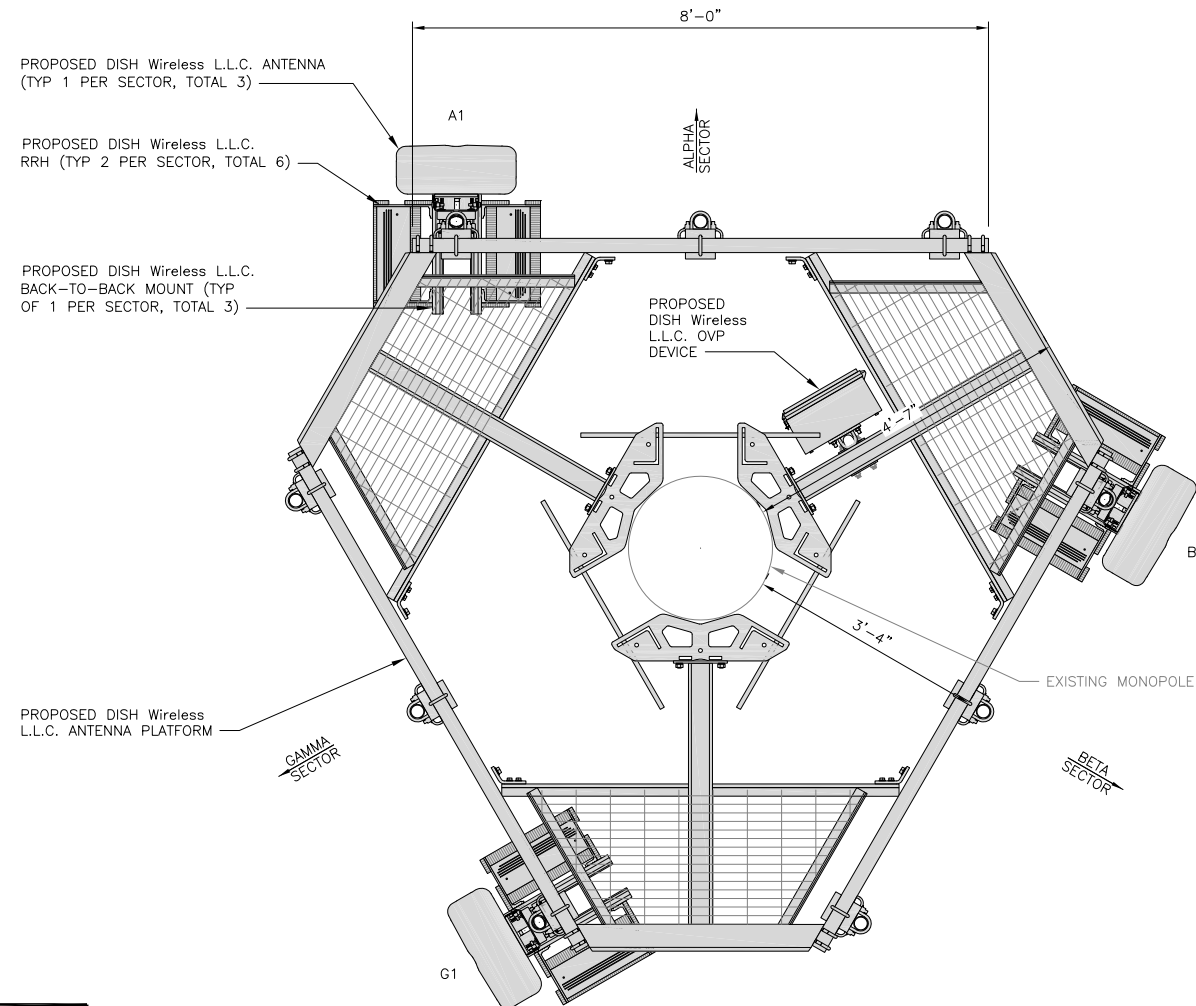


NOTES	
1.	CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2.	ANTENNA AND MW DISH SPECIFICATIONS REFER TO ANTENNA SCHEDULE, AND TO FINAL CONSTRUCTION RFD'S FOR ALL RF DETAILS
3.	EXISTING EQUIPMENT AND FENCE OMITTED FOR CLARITY.

1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNA AND MW DISH SPECIFICATIONS REFER TO ANTENNA SCHEDULE AND TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS
3. EXISTING EQUIPMENT AND FENCE OMITTED FOR CLARITY.



1



12" 6" 0 1' 2' 3'

$\frac{3}{4}$ inch = 1 foot - 0 inches

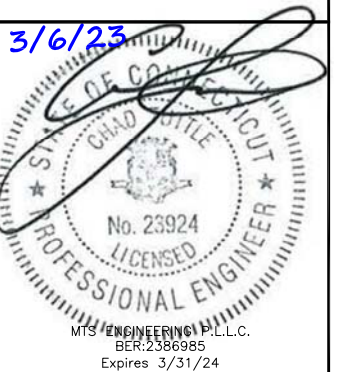
2

SECTOR	POSITION	ANTENNA						TRANSMISSION CABLE
		EXISTING OR PROPOSED	MANUFACTURER — MODEL NUMBER	TECHNOLOGY	SIZE (HxW)	AZIMUTH	RAD CENTER	FEED LINE TYPE AND LENGTH
ALPHA	A1	PROPOSED	COMMSCOPE—FFVV—65B—R2	5G	72" x 19.6"	0°	145'—0"	(1) HIGH-CAPACITY HYBRID CABLE (185'—0" LONG)
BETA	B1	PROPOSED	COMMSCOPE—FFVV—65B—R2	5G	72" x 19.6"	120°	145'—0"	
GAMMA	G1	PROPOSED	COMMSCOPE—FFVV—65B—R2	5G	72" x 19.6"	240°	145'—0"	

SECTOR	POSITION	RRH		NOTES
		MANUFACTURER – MODEL NUMBER	TECHNOLOGY	
ALPHA	A1	FUJITSU – TA08025–B604	5G	1. CONTRACTOR TO REFER TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS. 2. ANTENNA AND RRH MODELS MAY CHANGE DUE TO EQUIPMENT AVAILABILITY. ALL EQUIPMENT CHANGES MUST BE APPROVED AND REMAIN IN COMPLIANCE WITH THE PROPOSED DESIGN AND STRUCTURAL ANALYSES.
	A1	FUJITSU – TA08025–B605	5G	
BETA	B1	FUJITSU – TA08025–B604	5G	
	B1	FUJITSU – TA08025–B605	5G	
GAMMA	G1	FUJITSU – TA08025–B604	5G	
	G1	FUJITSU – TA08025–B605	5G	

NO SCALE

3



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MEH	RMC	RMC
-----	-----	-----

RFDS REV #: 0

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DOCUMENTS

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A&E PROJECT NUMBER

149450.001.01

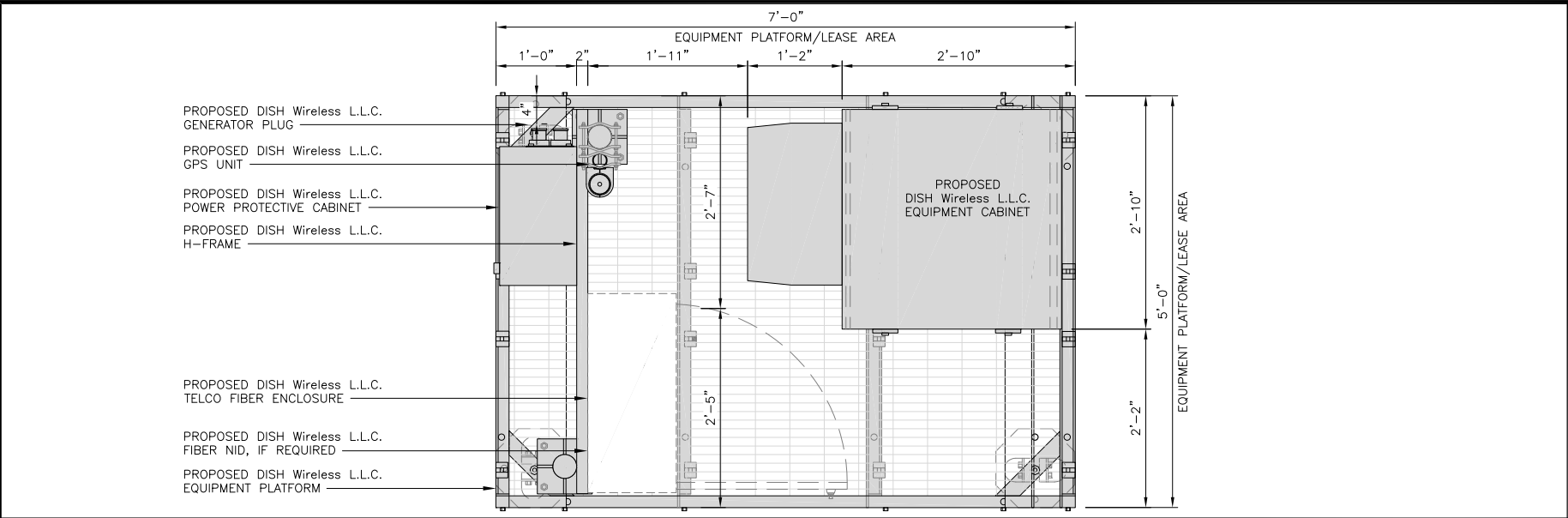
DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS00049A
215 COATNEY HILL RD
WOODSTOCK, CT 06281

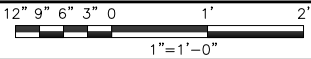
SHEET TITLE
ELEVATION, ANTENNA
LAYOUT AND SCHEDULE

SHEET NUMBER

A-2



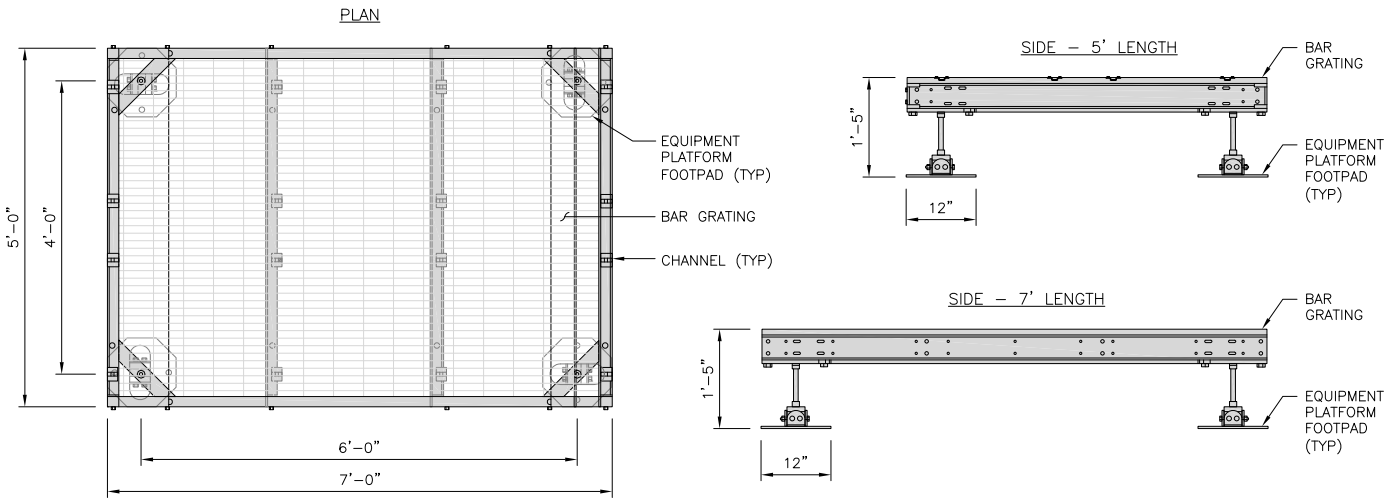
PLATFORM EQUIPMENT PLAN



1

COMMSCOPE MTC4045LP 5X7 PLATFORM	
DIMENSIONS (HxWxD)	16"x84"x60"
TOTAL WEIGHT	423 LBS

NOTE:
GC TO PROVIDE EXTENDED
THREAD FOR PLATFORM IF
REQUIRED HEIGHT EXCEEDS 17"

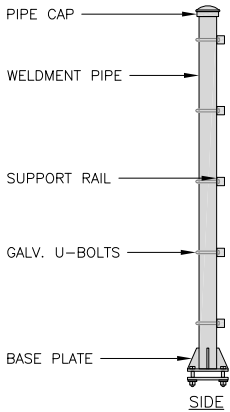


PLATFORM DETAIL

NO SCALE

2

COMMSCOPE MTC4045HFLD H-FRAME	
UNISTRUT/SUPPORT RAILS QTY	5
WEIGHT	59.74 lbs



H-FRAME DETAIL

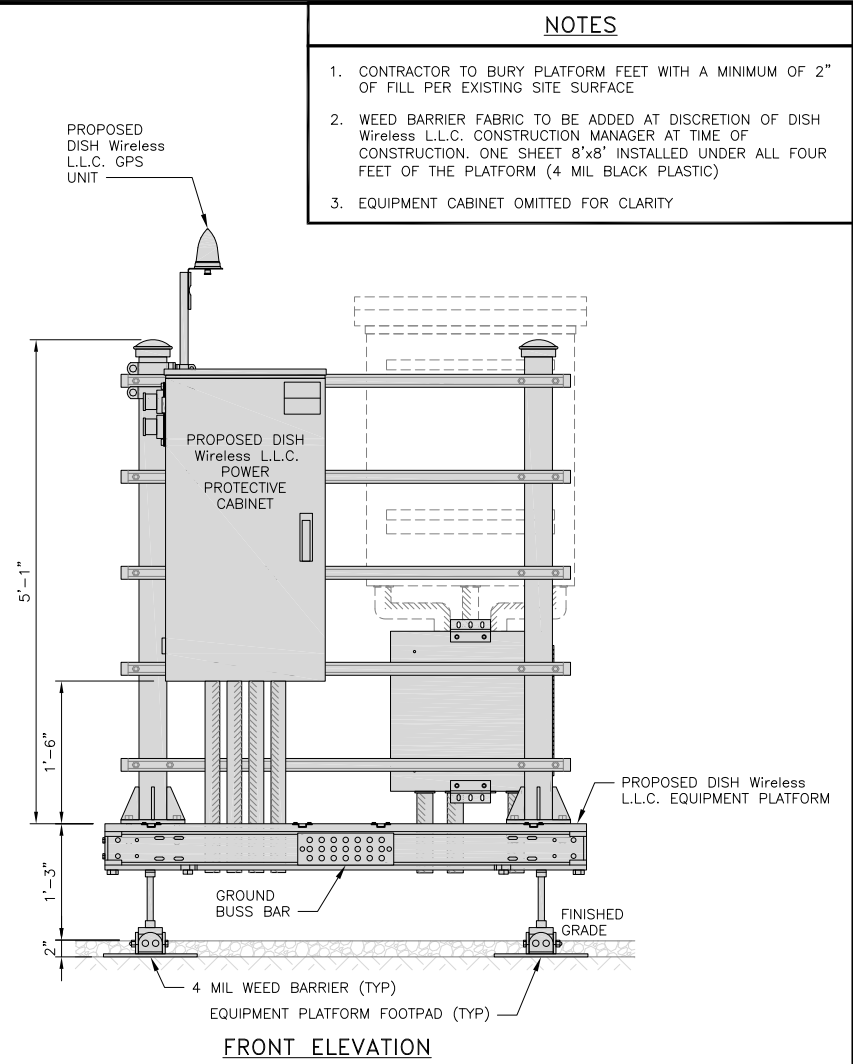
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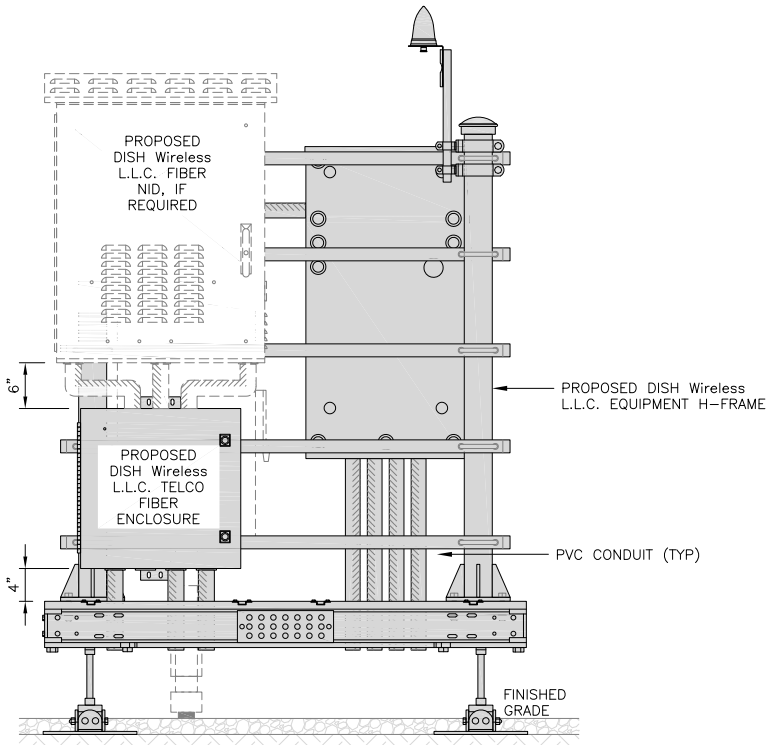
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NO SCALE

4

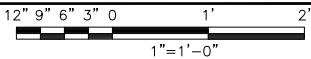


FRONT ELEVATION



BACK ELEVATION

H-FRAME EQUIPMENT ELEVATION



5

NOTES

1. CONTRACTOR TO BURY PLATFORM FEET WITH A MINIMUM OF 2" OF FILL PER EXISTING SITE SURFACE
2. WEED BARRIER FABRIC TO BE ADDED AT DISCRETION OF DISH Wireless L.L.C. CONSTRUCTION MANAGER AT TIME OF CONSTRUCTION. ONE SHEET 8'x8' INSTALLED UNDER ALL FOUR FEET OF THE PLATFORM (4 MIL BLACK PLASTIC)
3. EQUIPMENT CABINET OMITTED FOR CLARITY

dish
wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

B+T GRP
1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
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DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS00049A
215 COATNEY HILL RD
WOODSTOCK, CT 06281

SHEET TITLE
EQUIPMENT PLATFORM AND
H-FRAME DETAILS

SHEET NUMBER

A-3

CHARLES INDUSTRY HEX
CUBE-PM639155N4

DIMENSIONS (HxWxD):	74"x32"x32"
POWER PLANT:	-48VDC ABB/600W
TOTAL WEIGHT (EMPTY)	408 LBS

PLAN

SIDE

BACK

SIDE

FRONT

CABINET DETAIL

NO SCALE

1

RAYCAP PPC
RDIAC-2465-P-240-MTS

ENCLOSURE DIMENSIONS (HxWxD):	39"x22.855"x12.593
WEIGHT:	80 lbs
OPERATING AC VOLTAGE	240/120 1 PHASE 3W+G

TOP

BACK

SIDE

FRONT

SIDE

POWER PROTECTION CABINET (PPC) DETAIL

NO SCALE

2

NOT USED

NO SCALE

3

ZAYO 5RU (LEFT SWING DOOR)
FIBER NID ENCLOSURE

DIMENSIONS (HxWxD)	36.1"x29"x12.9"
WEIGHT	85 lbs

BOTTOM

BACK

SIDE

FRONT

FIBER NID ENCLOSURE DETAIL

NO SCALE

5

CHARLES CFIT-PF2020DSH1
FIBER TELCO ENCLOSURE

ENCLOSURE DIMS (HxWxD)	20"x20"x9"
ENCLOSURE WEIGHT	20 lbs
MOUNTING	WALL
COMPLIANCE	TYPE 4

FRONT

SIDE

BACK

FRONT

FIBER TELCO ENCLOSURE DETAIL

NO SCALE

6

COMMSCOPE WB-K110-B
WAVEGUIDE BRIDGE KIT

DIMENSIONS (HxL)	160"x10'
WEIGHT/ VOLUME	325.0 LBS
CABLE RUN (QTY)	12

PLAN

FRONT

SIDE

ICE BRIDGE DETAIL

NO SCALE

7

FINISH SLOPE
TO DRAIN

A-A

A-A

PROPOSED 3.5" DIA.
SCH 40 PIPE
GALVANIZED

PROPOSED 1'-6"
DIA. CONCRETE
PIER (TYP)

CONCRETE PIER

3" DIA SCH 40 PIPE

18" DIA DRILLED
PIER FOUNDATION

A-A SECTION

1'-6"

3"

3'-6"

3"

TYPICAL ICE BRIDGE CONCRETE PIER DETAIL

NO SCALE

8

PROPOSED
ICE BRIDGE

PROPOSED 1.6" DIA
HYBRID CABLE

PROPOSED
CABLE CLAMP
@ 3'-0" O.C.

EXISTING ENTRY PORT

EXISTING
MONOPOLE

HYBRID CABLE RUN

NO SCALE

9

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

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MEH	RMC	RMC

RFDS REV #: 0

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DOCUMENTS

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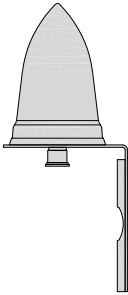
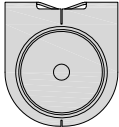
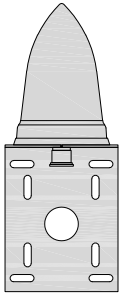
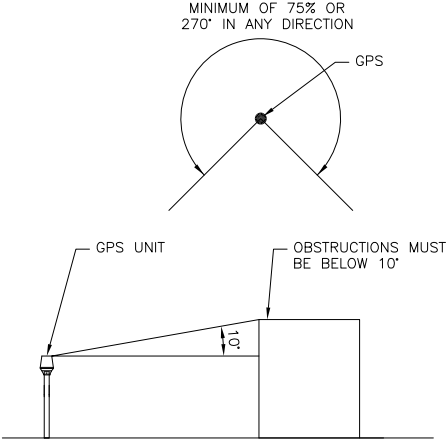
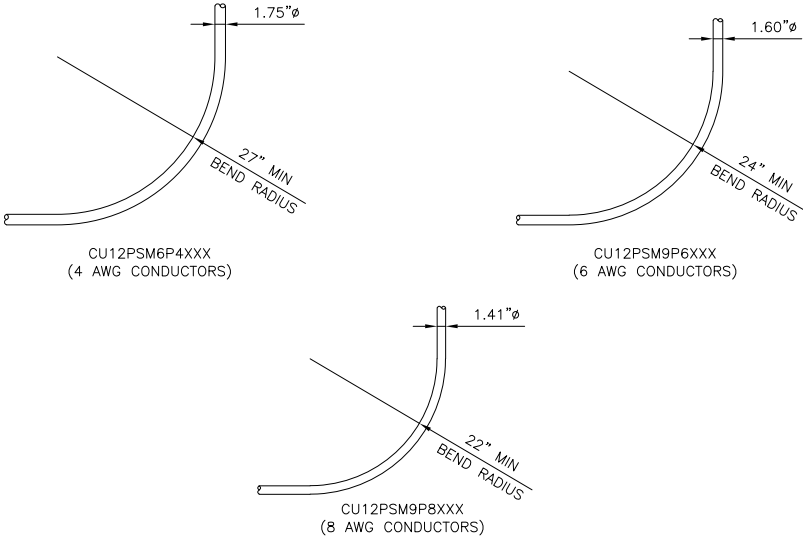
A&E PROJECT NUMBER
149450.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBOS00049A
215 COATNEY HILL RD
WOODSTOCK, CT 06281

SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-4

DISH Wireless L.L.C. TEMPLATE VERSION 41 - 09/03/2021 149450.001.01_2308748-A BOBOS00049A.dwg - Sheet A-4 - User: cormier - Mar 06, 2023 - 1:23pm

<table><tr><td colspan="2">PCTEL GPSGL-TMG-SPI-40NCB</td></tr><tr><td>DIMENSIONS (DIAxH) MM/INCH</td><td>81x184mm 3.2"x7.25"</td></tr><tr><td>WEIGHT W/ACCESSORIES</td><td>075 lbs</td></tr><tr><td>CONNECTOR</td><td>N-FEMALE</td></tr><tr><td>FREQUENCY RANGE</td><td>1590 ± 30MHz</td></tr></table>  BACK  TOP  SIDE			PCTEL GPSGL-TMG-SPI-40NCB		DIMENSIONS (DIAxH) MM/INCH	81x184mm 3.2"x7.25"	WEIGHT W/ACCESSORIES	075 lbs	CONNECTOR	N-FEMALE	FREQUENCY RANGE	1590 ± 30MHz						
PCTEL GPSGL-TMG-SPI-40NCB																		
DIMENSIONS (DIAxH) MM/INCH	81x184mm 3.2"x7.25"																	
WEIGHT W/ACCESSORIES	075 lbs																	
CONNECTOR	N-FEMALE																	
FREQUENCY RANGE	1590 ± 30MHz																	
GPS DETAIL		NO SCALE	1	GPS MINIMUM SKY VIEW REQUIREMENTS		NO SCALE	2	CABLES UNLIMITED HYBRID CABLE MINIMUM BEND RADIUSES		NO SCALE	3							
NOT USED		NO SCALE	4	NOT USED		NO SCALE	5	NOT USED		NO SCALE	6							
NOT USED		NO SCALE	7	NOT USED		NO SCALE	8	NOT USED		NO SCALE	9							

FUJITSU TRIPLE BAND
TA08025-B605

DIMENSIONS (HxWxD)	14.9"x15.7"x9"
WEIGHT	74.95 lbs
CONNECTOR TYPE	4.3-10 RF CONNECTOR
POWER SUPPLY	DC -58~-36V

PLAN

BACK

SIDE

FRONT

FUJITSU DUAL BAND
TA08025-B604

DIMENSIONS (HxWxD)	14.9"x15.7"x7.8"
WEIGHT	63.9 lbs
CONNECTOR TYPE	4.3-10 RF CONNECTOR
POWER SUPPLY	DC -58~-36V

PLAN

BACK

SIDE

FRONT

COMMSCOPE
RR-FA2 LARGE STABILIZER

DIMENSIONS (HxWxD)	16.4"x8.5"x18"
WEIGHT	39.2 lbs

PLAN

SIDE

DESIGN NOTES:
MOUNT WILL FIT LEGS UP TO:
- 5.6" ROUND
- 6.0" 60° ANGLE
- 4.5" 90° ANGLE

NOTE:
OR DISH Wireless L.L.C.
APPROVED EQUIVALENT

RRH DETAILNO SCALE1

COMMSCOPE
FFVV-65B-R2

DIMENSIONS (HxWxD)(MM/IN)	1826x498x197 72"x19.6"x7.8"
RF CONNECTOR INTERFACE	4.3-10 FEMALE
WEIGHT	70.8 lbs
WEIGHT WITH BRACKETS	98.1 lbs

PLAN

BACK

SIDE

FRONT

COMMSCOPE ANTENNA BRACKET
BSAMNT-F

DIAMETER COMPATIBILITY	2.402" - 4.5"
NET WEIGHT	7.937 lbs

PLAN

SIDE

NOTE:
OR DISH Wireless L.L.C.
APPROVED EQUIVALENT

ANTENNA DETAILNO SCALE4

RAYCAP RDIDC-9181-PF-48
DC SURGE PROTECTION (OVP)

DIMENSIONS (HxWxD)	18.98"x14.39"x8.15"
WEIGHT	21.82 LBS

PLAN

SIDE

BACK

FRONT

COMMSCOPE XP-2040
CROSSOVER PLATE

DIMENSIONS (HxW)	10"x12"
WEIGHT	11 lbs

PLAN U-BOLT

SIDE U-BOLT

PLAN PLATE

SIDE PLATE

NOTE:
OR DISH Wireless L.L.C.
APPROVED EQUIVALENT

NOT USEDNO SCALE5

COMMSCOPE
MC-PK8-DSH

FACE WIDTH	96"
WEIGHT	1373.08 lbs

PLAN

SIDE

NOTE: 15" TO 38" O.D.

NOTE:
OR DISH Wireless L.L.C.
APPROVED EQUIVALENT

SURGE SUPPRESSION DETAIL (OVP)NO SCALE7

RRH/OVP MOUNT DETAIL

NO SCALE8

ANTENNA PLATFORM DETAIL

NO SCALE9

dish
wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

3/6/23

STATE OF CONNECTICUT
CHAUDVILLE
No. 23924
LICENSED
PROFESSIONAL ENGINEER

MTS ENGINEERING, L.L.C.
BER:2386985
Expires 3/31/24

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DRAWN BY:MEH

CHECKED BY:RMC

APPROVED BY:RMC

RFDS REV #:0

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149450.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBOS00049A
215 COATNEY HILL RD
WOODSTOCK, CT 06281

SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-6

DISH Wireless L.L.C. TEMPLATE VERSION 41 - 09/03/2021

149450.001.01_2308748-A_BOBOS00049A.dwg - Sheet A-6 - User: cormier - Mar 06, 2023 - 1:51pm

CARLON EXPANSION FITTINGS

COUPLING END PART#	MALE TERMINAL ADAPTER END PART#	SIZE	STD CTN QTY.	TRAVEL LENGTH
E945D	E945DX	1/2"	20	4"
E945E	E945EX	3/4"	15	4"
E945F	E945FX	1"	10	4"
E945G	E945GX	1 1/4"	5	4"
E945H	E945HX	1 1/2"	5	4"
E945J	E945JX	2"	15	8"
E945K	E945KX	2 1/2"	10	8"
E945L	E945LX	3"	10	8"
E945M	E945MX	3 1/2"	5	8"
E945N	E945NX	4"	5	8"
E945P	E945PX	5"	1	8"
E945R	E945RX	6"	1	8"

VARIES PER PART NUMBER

2'-0"

SLIP JOINT (SEE CHART FOR PART NUMBER)

NOTE:
CONTRACTOR TO INSTALL EXPANSION FITTING SLIP JOINT AT METER CENTER CONDUIT TERMINATION, AS PER LOCAL UTILITY POLICY, ORDINANCE AND/OR SPECIFIED REQUIREMENT.

TRENCHING NOTES

1. CONTRACTOR SHALL RESTORE THE TRENCH TO ITS ORIGINAL CONDITIONS BY EITHER SEEDING OR SODDING GRASS AREAS, OR REPLACING ASPHALT OR CONCRETE AREAS TO ITS ORIGINAL CROSS SECTION.

2. TRENCHING SAFETY; INCLUDING, BUT NOT LIMITED TO SOIL CLASSIFICATION, SLOPING, AND SHORING, SHALL BE GOVERNED BY THE CURRENT OSHA TRENCHING AND EXCAVATION SAFETY STANDARDS.

3. ALL CONDUITS SHALL BE INSTALLED IN COMPLIANCE WITH THE CURRENT NATIONAL ELECTRIC CODE (NEC) OR AS REQUIRED BY THE LOCAL JURISDICTION, WHICHEVER IS THE MOST STRINGENT.

SEE TRENCHING NOTE 1

BACKFILL PER SITE WORK SPECIFICATIONS (SEE GENERAL NOTES)

SLOPE TO SUIT SOIL CONDITION IN ACCORDANCE WITH LOCAL REGULATIONS SEE TRENCHING NOTE 2

1'-0"

30" OR 6" BELOW FROST LINE, WHICHEVER IS GREATER

UTILITY WARNING TAPE

SAND BEDDING PER SITE WORK SPECIFICATIONS

VERTICAL DEPTH SEE TRENCHING NOTE 2

1'-0"

DISH Wireless L.L.C. PROVIDES 12AWG WIRE (6' TAIL)

PROPOSED DISH Wireless L.L.C. UNISTRUT

PROPOSED DISH Wireless L.L.C. 10 AMP DISTRIBUTION BREAKER

PROPOSED DISH Wireless L.L.C. 12 AWG WIRE

PROPOSED DISH Wireless L.L.C. 1-1/2" POWER FROM CABINET

DISH Wireless L.L.C. INSTALLS 1-1/2" CONDUITS FOR POWER AND FIBER TO CABINET

DISH Wireless L.L.C. FIBER DISTRIBUTION PANEL

PROPOSED DISH Wireless L.L.C. TELCO FIBER ENCLOSURE

DISH Wireless L.L.C. FIBER JUMPER TO CABINET WILL NEED TO BE TERMINATED BY FIBER PROVIDER ON OTHER SIDE OF BULKHEAD/LC TO LC CONNECTOR WHERE CIRCUIT IS TERMINATED.

PROPOSED FIBER PROVIDER FIBER LATERAL FROM RIGHT OF WAY TO STREET, TERMINATED TO FDP

PROPOSED DISH Wireless L.L.C. 1-1/2" FIBER TO CABINET

PROPOSED DISH Wireless L.L.C. 2" CONDUIT FROM COMMERCIAL FIBER VAULT

EXPANSION JOINT DETAIL

NO SCALE

1

PROPOSED DISH Wireless L.L.C. UNISTRUT

PROPOSED FIBER PROVIDER 1-1/4" FLEX CONDUITS

FIBER PROVIDER TO TERMINATE POWER TO FIBER PROVIDER NID

PROPOSED DISH Wireless L.L.C. 12 AWG WIRE (6' TAIL)

PROPOSED DISH Wireless L.L.C. 10 AMP DISTRIBUTION BREAKER

PROPOSED DISH Wireless L.L.C. 12 AWG WIRE

PROPOSED DISH Wireless L.L.C. 1-1/2" POWER FROM CABINET

NOTE: FIBER PROVIDER WILL NEED TO PROVIDE AN ADDITIONAL 5FT UNISTRUT, 2 U-BOLTS WITH 4 NUTS, IN THE EVENT THE BRACKET SPACING DOESN'T LINE UP WITH CURRENT SPACING BELOW

IN IN OUT

FIBER PROVIDER TO PUNCH TOP OF TELCO BOX OF NID ENCLOSURE AND INSTALL 1-1/4" LIQUID TIGHT CONNECTORS, UL LISTED, NYLON MATERIAL, WITH O-RING GASKET

FIBER PROVIDER TO INSTALL 1-1/4" FLEX CONDUITS BETWEEN FDP TELCO BOX & NID

PROPOSED DISH Wireless L.L.C. TELCO FIBER ENCLOSURE

PROPOSED DISH Wireless L.L.C. 1-1/2" FIBER TO CABINET

PROPOSED DISH Wireless L.L.C. 2" CONDUIT FROM COMMERCIAL FIBER VAULT

TYPICAL UNDERGROUND TRENCH DETAIL

NO SCALE

2

DARK TELCO BOX – INTERIOR WIRING LAYOUT

NO SCALE

3

LIT TELCO BOX – INTERIOR WIRING LAYOUT (OPTIONAL)

NO SCALE

4

NOT USED

NO SCALE

5

NOT USED

NO SCALE

6

NOT USED

NO SCALE

7

NOT USED

NO SCALE

8

NOT USED

NO SCALE

9

dish

wireless.

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TULSA, OK 74119
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3/6/23

STATE OF CONNECTICUT

CHAUD HILL

No. 23924

PROFESSIONAL ENGINEER

MTS ENGINEERING, P.L.L.C.
BER:2386985
Expires 3/31/24

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CHECKED BY: RMC

APPROVED BY: RMC

RFDS REV #: 0

CONSTRUCTION DOCUMENTS

REV	DATE	DESCRIPTION
A	9/27/21	ISSUED FOR REVIEW
0	2/3/23	ISSUED FOR CONSTRUCTION
1	3/6/23	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
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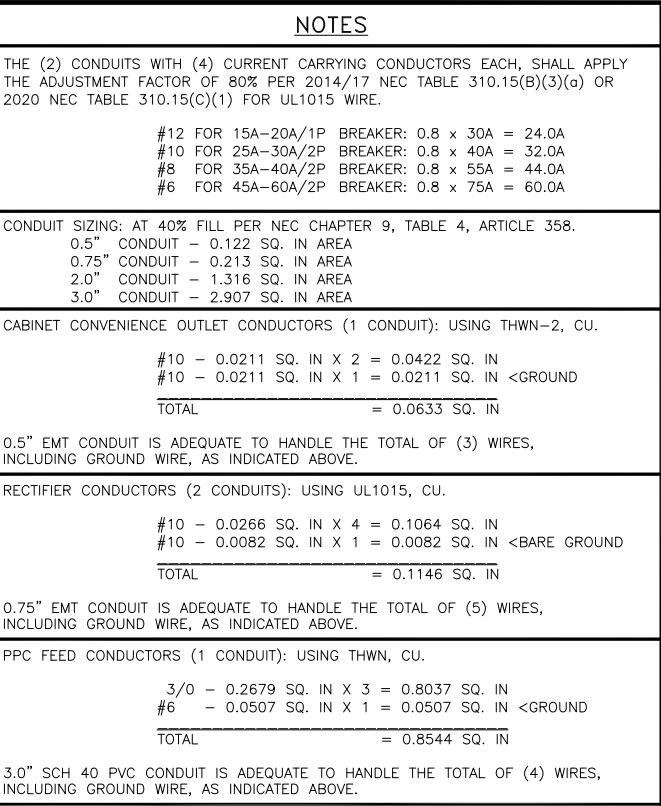
DISH Wireless L.L.C.
PROJECT INFORMATION
BOBOS00049A
215 COATNEY HILL RD
WOODSTOCK, CT 06281

SHEET TITLE
ELECTRICAL DETAILS

SHEET NUMBER
E-2

DISH Wireless L.L.C. TEMPLATE VERSION 41 – 09/03/2021

149450.001.01_2308748-A-B0BOS00049A.dwg – Sheet 1 – User: carlon – Mar 06, 2023 – 1:21pm



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3/6/23



STATE OF CONNECTICUT
CHAD LITTLE
No. 23924
LICENSED
PROFESSIONAL ENGINEER

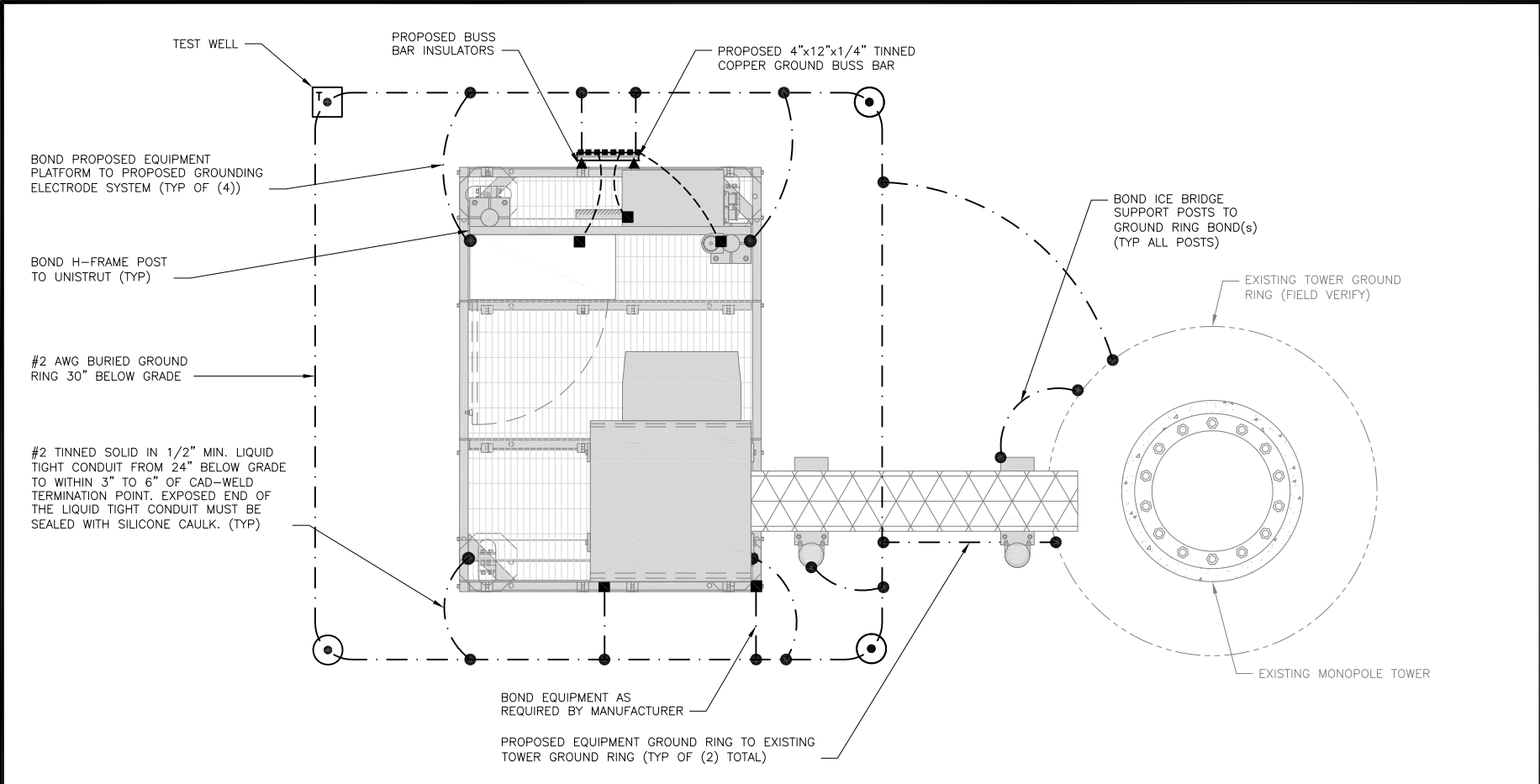
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Expires 3/31/24

E-3

1

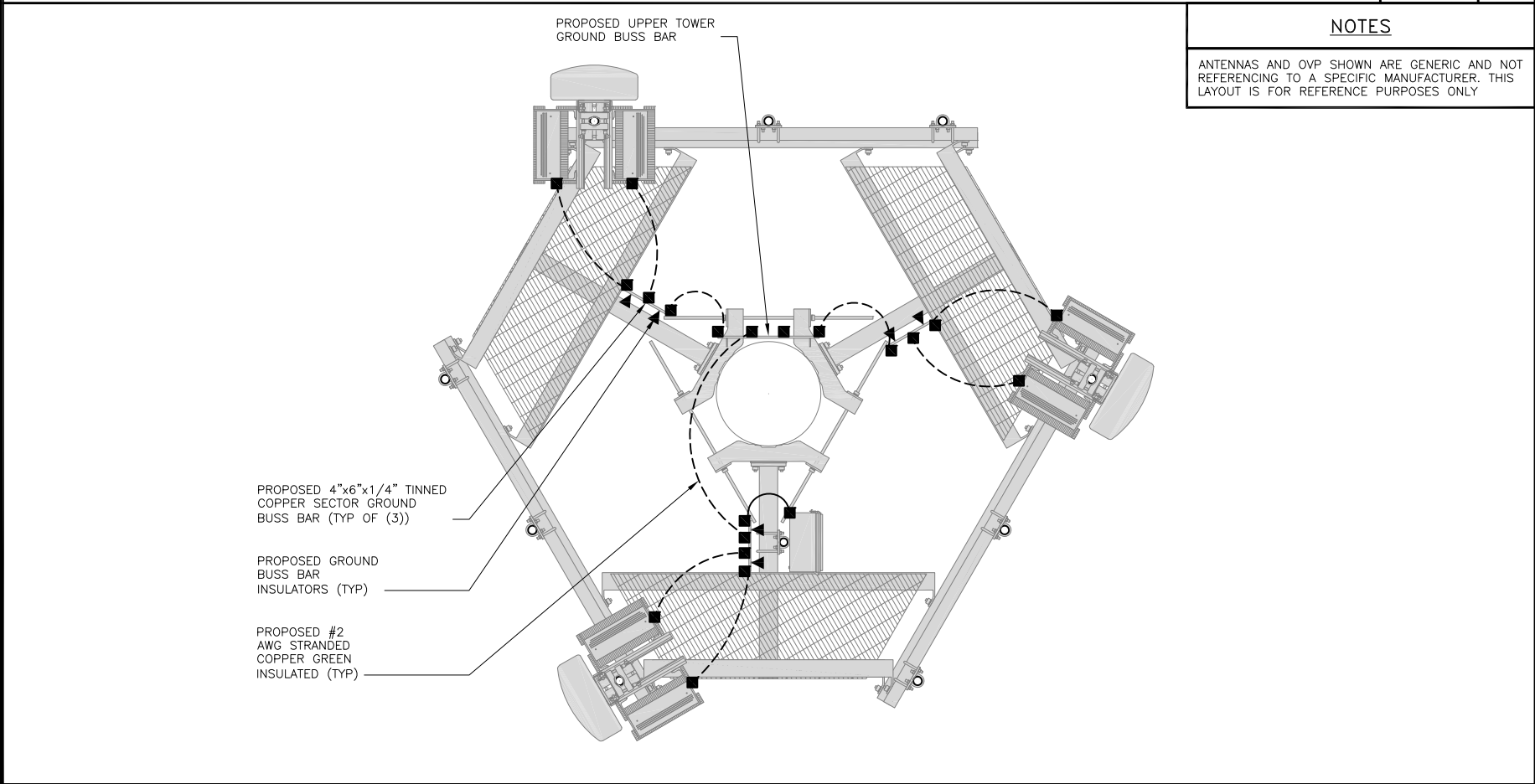
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3



TYPICAL EQUIPMENT GROUNDING PLAN

NO SCALE 1



TYPICAL ANTENNA GROUNDING PLAN

NO SCALE 2

- EXOTHERMIC CONNECTION
- MECHANICAL CONNECTION
- ▬ GROUND BUS BAR
- GROUND ROD
- TEST GROUND ROD WITH INSPECTION SLEEVE
- #6 AWG STRANDED & INSULATED
- - - #2 AWG SOLID COPPER TINNED
- ▲ BUSS BAR INSULATOR

GROUNDING LEGEND

- GROUNDING IS SHOWN DIAGRAMMATICALLY ONLY.
- CONTRACTOR SHALL GROUND ALL EQUIPMENT AS A COMPLETE SYSTEM. GROUNDING SHALL BE IN COMPLIANCE WITH NEC SECTION 250 AND DISH Wireless L.L.C. GROUNDING AND BONDING REQUIREMENTS AND MANUFACTURER'S SPECIFICATIONS.
- ALL GROUND CONDUCTORS SHALL BE COPPER; NO ALUMINUM CONDUCTORS SHALL BE USED.

GROUNDING KEY NOTES

- (A) **EXTERIOR GROUND RING:** #2 AWG SOLID COPPER, BURIED AT A DEPTH OF AT LEAST 30 INCHES BELOW GRADE, OR 6 INCHES BELOW THE FROST LINE AND APPROXIMATELY 24 INCHES FROM THE EXTERIOR WALL OR FOOTING.
- (B) **TOWER GROUND RING:** THE GROUND RING SYSTEM SHALL BE INSTALLED AROUND AN ANTENNA TOWER'S LEGS, AND/OR GUY ANCHORS. WHERE SEPARATE SYSTEMS HAVE BEEN PROVIDED FOR THE TOWER AND THE BUILDING, AT LEAST TWO BONDS SHALL BE MADE BETWEEN THE TOWER RING GROUND SYSTEM AND THE BUILDING RING GROUND SYSTEM USING MINIMUM #2 AWG SOLID COPPER CONDUCTORS.
- (C) **INTERIOR GROUND RING:** #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTOR EXTENDED AROUND THE PERIMETER OF THE EQUIPMENT AREA. ALL NON-TELECOMMUNICATIONS RELATED METALLIC OBJECTS FOUND WITHIN A SITE SHALL BE GROUNDED TO THE INTERIOR GROUND RING WITH #6 AWG STRANDED GREEN INSULATED CONDUCTOR.
- (D) **BOND TO INTERIOR GROUND RING:** #2 AWG SOLID TINNED COPPER WIRE PRIMARY BONDS SHALL BE PROVIDED AT LEAST AT FOUR POINTS ON THE INTERIOR GROUND RING, LOCATED AT THE CORNERS OF THE BUILDING.
- (E) **GROUND ROD:** UL LISTED COPPER CLAD STEEL. MINIMUM 1/2" DIAMETER BY EIGHT FEET LONG. GROUND RODS SHALL BE INSTALLED WITH INSPECTION SLEEVES. GROUND RODS SHALL BE DRIVEN TO THE DEPTH OF GROUND RING CONDUCTOR.
- (F) **CELL REFERENCE GROUND BAR:** POINT OF GROUND REFERENCE FOR ALL COMMUNICATIONS EQUIPMENT FRAMES. ALL BONDS ARE MADE WITH #2 AWG UNLESS NOTED OTHERWISE STRANDED GREEN INSULATED COPPER CONDUCTORS. BOND TO GROUND RING WITH (2) #2 SOLID TINNED COPPER CONDUCTORS.
- (G) **HATCH PLATE GROUND BAR:** BOND TO THE INTERIOR GROUND RING WITH TWO #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS. WHEN A HATCH-PLATE AND A CELL REFERENCE GROUND BAR ARE BOTH PRESENT, THE CRGB MUST BE CONNECTED TO THE HATCH-PLATE AND TO THE INTERIOR GROUND RING USING (2) TWO #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS EACH.
- (H) **EXTERIOR CABLE ENTRY PORT GROUND BARS:** LOCATED AT THE ENTRANCE TO THE CELL SITE BUILDING. BOND TO GROUND RING WITH A #2 AWG SOLID TINNED COPPER CONDUCTORS WITH AN EXOTHERMIC WELD AND INSPECTION SLEEVE.
- (I) **TELCO GROUND BAR:** BOND TO BOTH CELL REFERENCE GROUND BAR OR EXTERIOR GROUND RING.
- (J) **FRAME BONDING:** THE BONDING POINT FOR TELECOM EQUIPMENT FRAMES SHALL BE THE GROUND BUS THAT IS NOT ISOLATED FROM THE EQUIPMENTS METAL FRAMEWORK.
- (K) **INTERIOR UNIT BONDS:** METAL FRAMES, CABINETS AND INDIVIDUAL METALLIC UNITS LOCATED WITH THE AREA OF THE INTERIOR GROUND RING REQUIRE A #6 AWG STRANDED GREEN INSULATED COPPER BOND TO THE INTERIOR GROUND RING.
- (L) **FENCE AND GATE GROUNDING:** METAL FENCES WITHIN 7 FEET OF THE EXTERIOR GROUND RING OR OBJECTS BONDED TO THE EXTERIOR GROUND RING SHALL BE BONDED TO THE GROUND RING WITH A #2 AWG SOLID TINNED COPPER CONDUCTOR AT AN INTERVAL NOT EXCEEDING 25 FEET. BONDS SHALL BE MADE AT EACH GATE POST AND ACROSS GATE OPENINGS.
- (M) **EXTERIOR UNIT BONDS:** METALLIC OBJECTS, EXTERNAL TO OR MOUNTED TO THE BUILDING, SHALL BE BONDED TO THE EXTERIOR GROUND RING. USING #2 TINNED SOLID COPPER WIRE
- (N) **ICE BRIDGE SUPPORTS:** EACH ICE BRIDGE LEG SHALL BE BONDED TO THE GROUND RING WITH #2 AWG BARE TINNED COPPER CONDUCTOR. PROVIDE EXOTHERMIC WELDS AT BOTH THE ICE BRIDGE LEG AND BURIED GROUND RING.
- (O) **DURING ALL DC POWER SYSTEM CHANGES** INCLUDING DC SYSTEM CHANGE OUTS, RECTIFIER REPLACEMENTS OR ADDITIONS, BREAKER DISTRIBUTION CHANGES, BATTERY ADDITIONS, BATTERY REPLACEMENTS AND INSTALLATIONS OR CHANGES TO DC CONVERTER SYSTEMS IT SHALL BE REQUIRED THAT SERVICE CONTRACTORS VERIFY ALL DC POWER SYSTEMS ARE EQUIPPED WITH A MASTER DC SYSTEM RETURN GROUND CONDUCTOR FROM THE DC POWER SYSTEM COMMON RETURN BUS DIRECTLY CONNECTED TO THE CELL SITE REFERENCE GROUND BAR
- (P) **TOWER TOP COLLECTOR BUSS BAR** IS TO BE MECHANICALLY BONDED TO PROPOSED ANTENNA MOUNT COLLAR.
- REFER TO DISH Wireless L.L.C. GROUNDING NOTES.

GROUNDING KEY NOTES

NO SCALE 3



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MEH	RMC	RMC

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CONSTRUCTION DOCUMENTS

SUBMITTALS		
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0	2/3/23	ISSUED FOR CONSTRUCTION
1	3/6/23	ISSUED FOR CONSTRUCTION

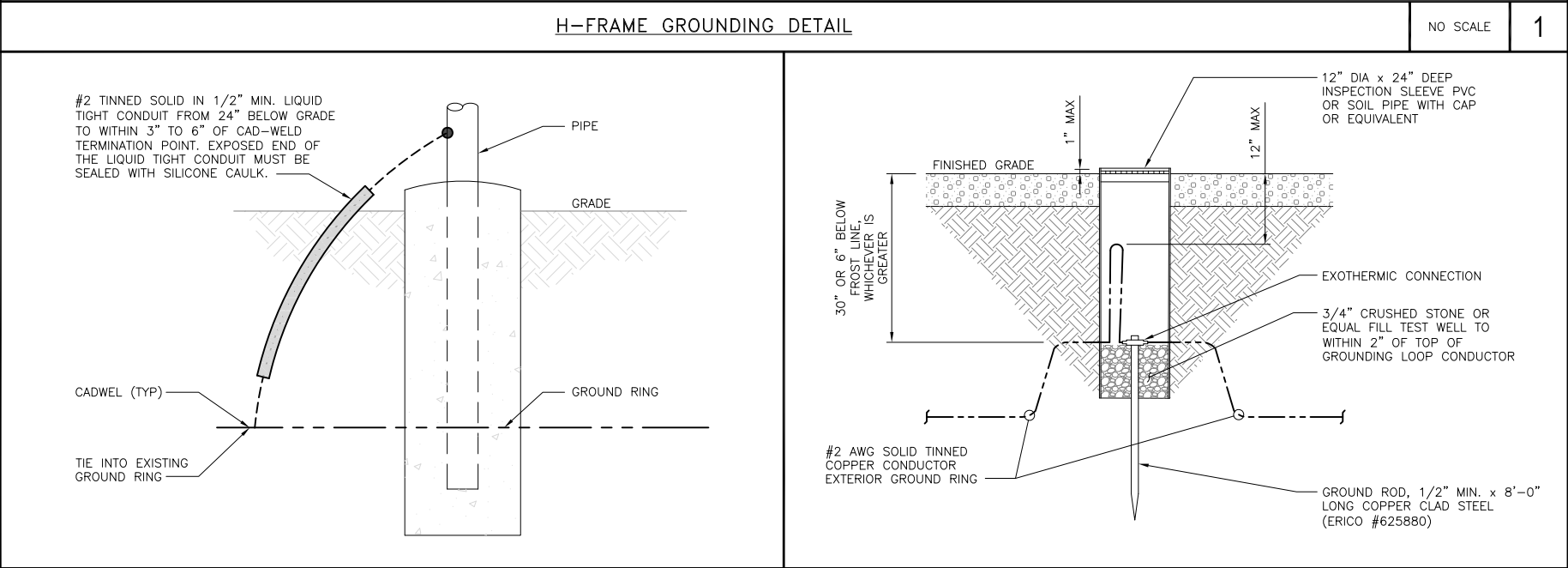
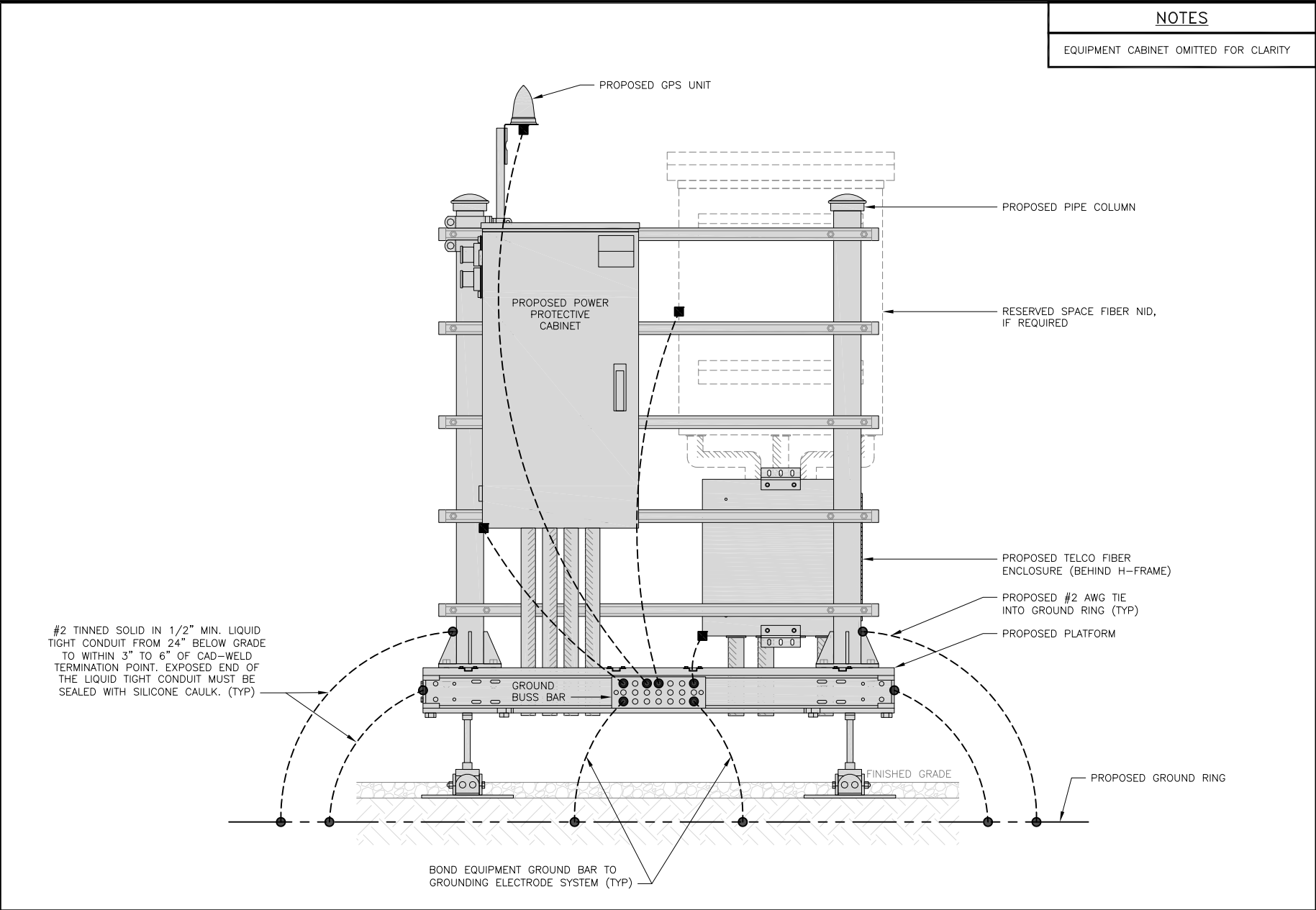
A&E PROJECT NUMBER
149450.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBOS00049A
215 COATNEY HILL RD
WOODSTOCK, CT 06281

SHEET TITLE
GROUNDING PLANS
AND NOTES

SHEET NUMBER

G-1



TRANSITIONING GROUND DETAIL

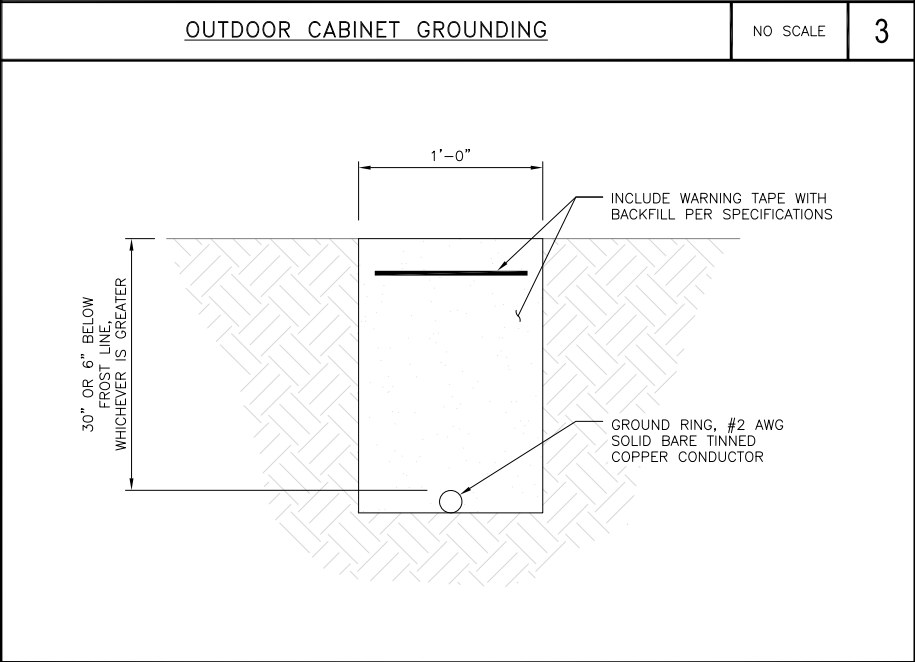
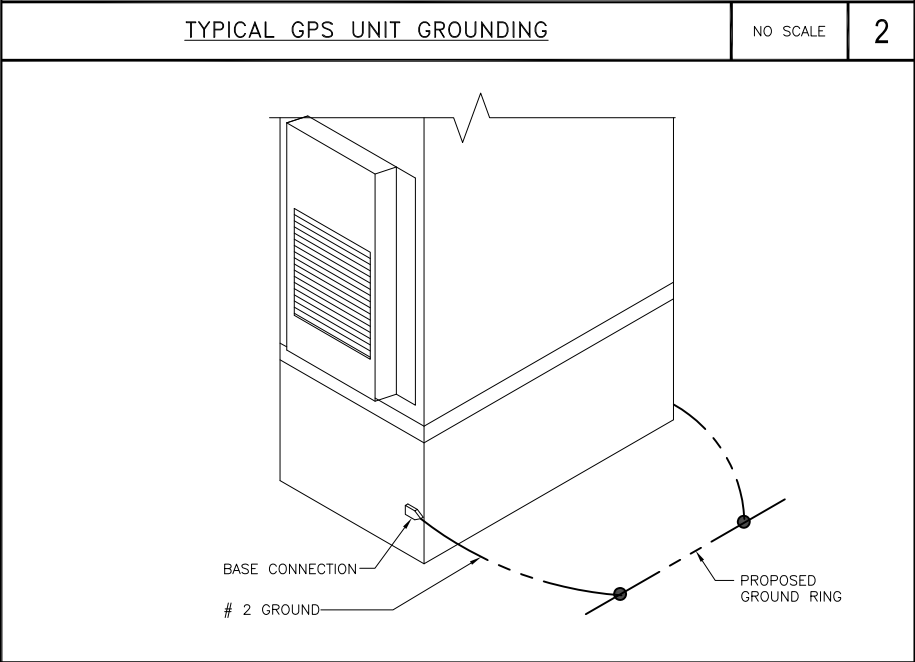
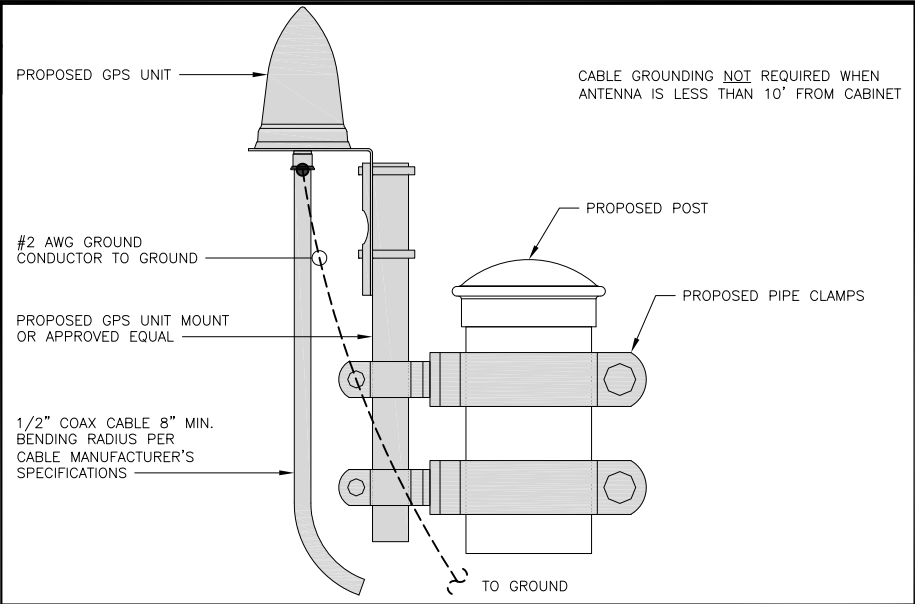
NO SCALE

4

TYPICAL TEST GROUND ROD WITH INSPECTION SLEEVE

NO SCALE

5



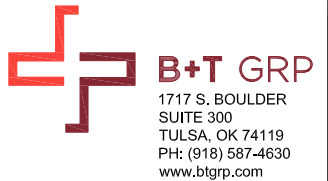
TYPICAL GROUND RING TRENCH

NO SCALE

6



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CONSTRUCTION DOCUMENTS

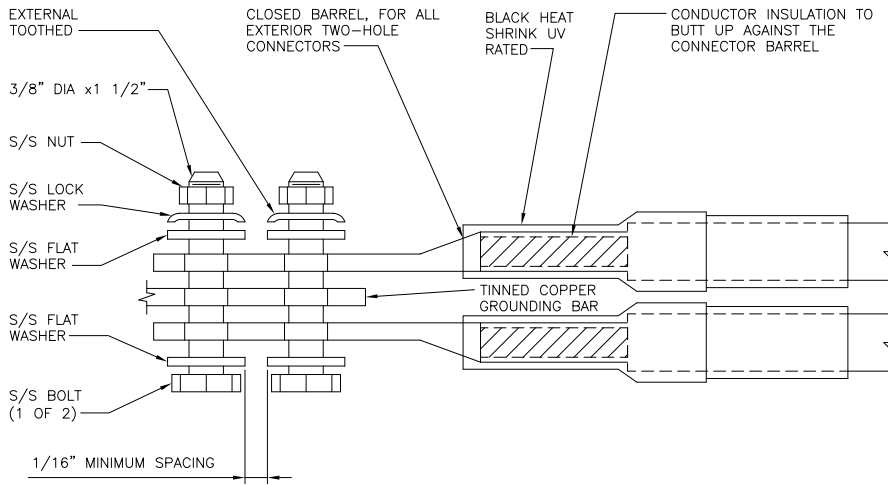
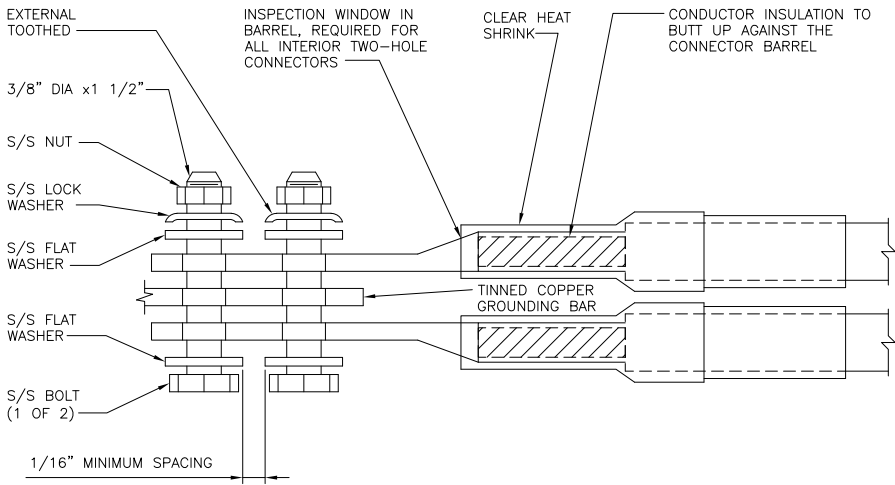
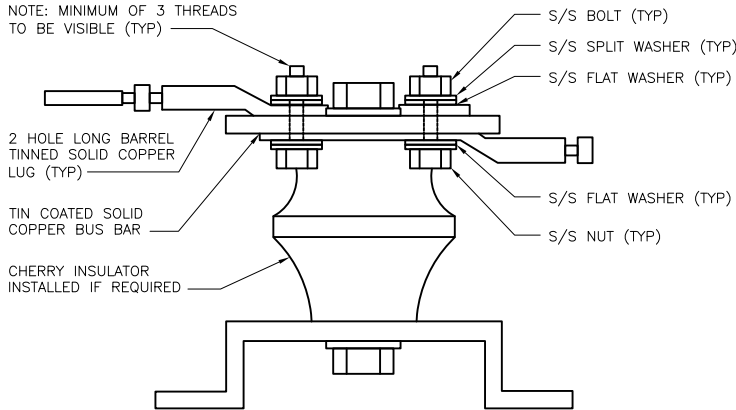
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WOODSTOCK, CT 06281

SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER
G-2

1. EXOTHERMIC WELD (2) TWO, #2 AWG BARE TINNED SOLID COPPER CONDUCTORS TO GROUND BAR. ROUTE CONDUCTORS TO BURIED GROUND RING AND PROVIDE PARALLEL EXOTHERMIC WELD. 2. ALL EXTERIOR GROUNDING HARDWARE SHALL BE STAINLESS STEEL 3/8" DIAMETER OR LARGER. ALL HARDWARE 18-8 STAINLESS STEEL INCLUDING LOCK WASHERS, COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING. 3. FOR GROUND BOND TO STEEL ONLY: COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING. 4. DO NOT INSTALL CABLE GROUNDING KIT AT A BEND AND ALWAYS DIRECT GROUND CONDUCTOR DOWN TO GROUNDING BUS. 5. NUT & WASHER SHALL BE PLACED ON THE FRONT SIDE OF THE GROUND BAR AND BOLTED ON THE BACK SIDE. 6. ALL GROUNDING PARTS AND EQUIPMENT TO BE SUPPLIED AND INSTALLED BY CONTRACTOR. 7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING ADDITIONAL GROUND BAR AS REQUIRED. 8. ENSURE THE WIRE INSULATION TERMINATION IS WITHIN 1/8" OF THE BARREL (NO SHINERS).														
TYPICAL GROUNDING NOTES			NO SCALE	1	TYPICAL EXTERIOR TWO HOLE LUG			NO SCALE	2	TYPICAL INTERIOR TWO HOLE LUG			NO SCALE	3
														
LUG DETAIL			NO SCALE	4	NOT USED			NO SCALE	5	NOT USED			NO SCALE	6
NOT USED			NO SCALE	7	NOT USED			NO SCALE	8	NOT USED			NO SCALE	9

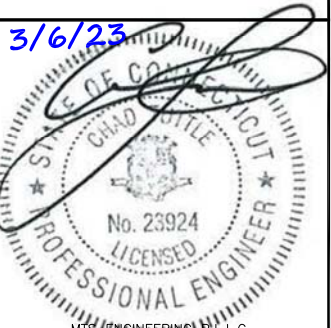


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3/6/23



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BER:2386985
Expires 3/31/24

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WOODSTOCK, CT 06281

SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER
G-3

DISH Wireless L.L.C. TEMPLATE VERSION 41 - 09/03/2021 149450.001.01_CT08748-A B080500049A.dwg - Sheet:GN-1 - User: rcarson - Mar 06, 2021

$0.21 = 1.92 \mu\text{m}$

SITE ACTIVITY REQUIREMENTS:

1. NOTICE TO PROCEED – NO WORK SHALL COMMENCE PRIOR TO CONTRACTOR RECEIVING A WRITTEN NOTICE TO PROCEED (NTP) AND THE ISSUANCE OF A PURCHASE ORDER. PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE DISH Wireless L.L.C. AND TOWER OWNER NOC & THE DISH Wireless L.L.C. AND TOWER OWNER CONSTRUCTION MANAGER.
2. "LOOK UP" – DISH Wireless L.L.C. AND TOWER OWNER SAFETY CLIMB REQUIREMENT:

THE INTEGRITY OF THE SAFETY CLIMB AND ALL COMPONENTS OF THE CLIMBING FACILITY SHALL BE CONSIDERED DURING ALL STAGES OF DESIGN, INSTALLATION, AND INSPECTION. TOWER MODIFICATION, MOUNT REINFORCEMENTS, AND/OR EQUIPMENT INSTALLATIONS SHALL NOT COMPROMISE THE INTEGRITY OR FUNCTIONAL USE OF THE SAFETY CLIMB OR ANY COMPONENTS OF THE CLIMBING FACILITY ON THE STRUCTURE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO: PINCHING OF THE WIRE ROPE, BENDING OF THE WIRE ROPE FROM ITS SUPPORTS, DIRECT CONTACT OR CLOSE PROXIMITY TO THE WIRE ROPE WHICH MAY CAUSE FRICTIONAL WEAR, IMPACT TO THE ANCHORAGE POINTS IN ANY WAY, OR TO IMPEDE/BLOCK ITS INTENDED USE. ANY COMPROMISED SAFETY CLIMB, INCLUDING EXISTING CONDITIONS MUST BE TAGGED OUT AND REPORTED TO YOUR DISH Wireless L.L.C. AND DISH Wireless L.L.C. AND TOWER OWNER POC OR CALL THE NOC TO GENERATE A SAFETY CLIMB MAINTENANCE AND CONTRACTOR NOTICE TICKET.
3. PRIOR TO THE START OF CONSTRUCTION, ALL REQUIRED JURISDICTIONAL PERMITS SHALL BE OBTAINED. THIS INCLUDES, BUT IS NOT LIMITED TO, BUILDING, ELECTRICAL, MECHANICAL, FIRE, FLOOD ZONE, ENVIRONMENTAL, AND ZONING. AFTER ONSITE ACTIVITIES AND CONSTRUCTION ARE COMPLETED, ALL REQUIRED PERMITS SHALL BE SATISFIED AND CLOSED OUT ACCORDING TO LOCAL JURISDICTIONAL REQUIREMENTS.
4. ALL CONSTRUCTION MEANS AND METHODS; INCLUDING BUT NOT LIMITED TO, ERECTION PLANS, RIGGING PLANS, CLIMBING PLANS, AND RESCUE PLANS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR RESPONSIBLE FOR THE EXECUTION OF THE WORK CONTAINED HEREIN, AND SHALL MEET ANSI/ASSE A10.48 (LATEST EDITION); FEDERAL, STATE, AND LOCAL REGULATIONS; AND ANY APPLICABLE INDUSTRY CONSENSUS STANDARDS RELATED TO THE CONSTRUCTION ACTIVITIES BEING PERFORMED. ALL RIGGING PLANS SHALL ADHERE TO ANSI/ASSE A10.48 (LATEST EDITION) AND DISH Wireless L.L.C. AND TOWER OWNER STANDARDS, INCLUDING THE REQUIRED INVOLVEMENT OF A QUALIFIED ENGINEER FOR CLASS IV CONSTRUCTION, TO CERTIFY THE SUPPORTING STRUCTURE(S) IN ACCORDANCE WITH ANSI/TIA–322 (LATEST EDITION).
5. ALL SITE WORK TO COMPLY WITH DISH Wireless L.L.C. AND TOWER OWNER INSTALLATION STANDARDS FOR CONSTRUCTION ACTIVITIES ON DISH Wireless L.L.C. AND TOWER OWNER TOWER SITE AND LATEST VERSION OF ANSI/TIA–1019–A–2012 "STANDARD FOR INSTALLATION, ALTERATION, AND MAINTENANCE OF ANTENNA SUPPORTING STRUCTURES AND ANTENNAS."
6. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY DISH Wireless L.L.C. AND TOWER OWNER PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
7. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
8. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER’S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
9. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES INCLUDING PRIVATE LOCATES SERVICES PRIOR TO THE START OF CONSTRUCTION.
10. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING AND EXCAVATION E) CONSTRUCTION SAFETY PROCEDURES.
11. ALL SITE WORK SHALL BE AS INDICATED ON THE STAMPED CONSTRUCTION DRAWINGS AND DISH PROJECT SPECIFICATIONS, LATEST APPROVED REVISION.
12. CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH AT THE COMPLETION OF THE WORK. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
13. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF DISH Wireless L.L.C. AND TOWER OWNER, AND/OR LOCAL UTILITIES.
14. THE CONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE REQUIRED BY LOCAL JURISDICTION AND SIGNAGE REQUIRED ON INDIVIDUAL PIECES OF EQUIPMENT, ROOMS, AND SHELTERS.
15. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE CARRIER’S EQUIPMENT AND TOWER AREAS.
16. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
17. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION AS SPECIFIED ON THE CONSTRUCTION DRAWINGS AND/OR PROJECT SPECIFICATIONS.
18. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
19. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR’S EXPENSE TO THE SATISFACTION OF OWNER.
20. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS AND RADIOS REMOVED SHALL BE RETURNED TO THE OWNER’S DESIGNATED LOCATION.
21. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.
22. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.

GENERAL NOTES:

- 1.FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:

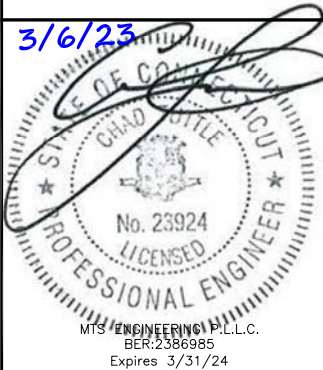
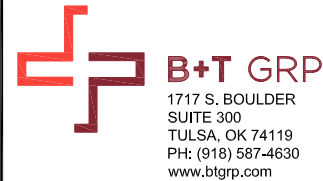
CONTRACTOR:GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION

CARRIER:DISH Wireless L.L.C.

TOWER OWNER:TOWER OWNER
2. THESE DRAWINGS HAVE BEEN PREPARED USING STANDARDS OF PROFESSIONAL CARE AND COMPLETENESS NORMALLY EXERCISED UNDER SIMILAR CIRCUMSTANCES BY REPUTABLE ENGINEERS IN THIS OR SIMILAR LOCALITIES. IT IS ASSUMED THAT THE WORK DEPICTED WILL BE PERFORMED BY AN EXPERIENCED CONTRACTOR AND/OR WORKPEOPLE WHO HAVE A WORKING KNOWLEDGE OF THE APPLICABLE CODE STANDARDS AND REQUIREMENTS AND OF INDUSTRY ACCEPTED STANDARD GOOD PRACTICE. AS NOT EVERY CONDITION OR ELEMENT IS (OR CAN BE) EXPLICITLY SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL USE INDUSTRY ACCEPTED STANDARD GOOD PRACTICE FOR MISCELLANEOUS WORK NOT EXPLICITLY SHOWN.
3. THESE DRAWINGS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE MEANS OR METHODS OF CONSTRUCTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY FOR PROTECTION OF LIFE AND PROPERTY DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, FORMWORK, SHORING, ETC. SITE VISITS BY THE ENGINEER OR HIS REPRESENTATIVE WILL NOT INCLUDE INSPECTION OF THESE ITEMS AND IS FOR STRUCTURAL OBSERVATION OF THE FINISHED STRUCTURE ONLY.
4. NOTES AND DETAILS IN THE CONSTRUCTION DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT, AND/OR AS PROVIDED FOR IN THE CONTRACT DOCUMENTS. WHERE DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS, GENERAL NOTES, AND SPECIFICATIONS, THE GREATER, MORE STRICT REQUIREMENTS, SHALL GOVERN. IF FURTHER CLARIFICATION IS REQUIRED CONTACT THE ENGINEER OF RECORD.
5. SUBSTANTIAL EFFORT HAS BEEN MADE TO PROVIDE ACCURATE DIMENSIONS AND MEASUREMENTS ON THE DRAWINGS TO ASSIST IN THE FABRICATION AND/OR PLACEMENT OF CONSTRUCTION ELEMENTS BUT IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY THE DIMENSIONS, MEASUREMENTS, AND/OR CLEARANCES SHOWN IN THE CONSTRUCTION DRAWINGS PRIOR TO FABRICATION OR CUTTING OF ANY NEW OR EXISTING CONSTRUCTION ELEMENTS. IF IT IS DETERMINED THAT THERE ARE DISCREPANCIES AND/OR CONFLICTS WITH THE CONSTRUCTION DRAWINGS THE ENGINEER OF RECORD IS TO BE NOTIFIED AS SOON AS POSSIBLE.
6. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING CONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CARRIER POC AND TOWER OWNER.
7. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
8. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
9. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER’S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
10. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CARRIER AND TOWER OWNER PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
11. CONTRACTOR IS TO PERFORM A SITE INVESTIGATION, BEFORE SUBMITTING BIDS, TO DETERMINE THE BEST ROUTING OF ALL CONDUITS FOR POWER, AND TELCO AND FOR GROUNDING CABLES AS SHOWN IN THE POWER, TELCO, AND GROUNDING PLAN DRAWINGS.
12. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR’S EXPENSE TO THE SATISFACTION OF DISH Wireless L.L.C. AND TOWER OWNER
13. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER’S DESIGNATED LOCATION.
14. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.



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LITTLETON, CO 80120



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MEH	RMC	RMC

RFDS REV #: 0

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
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0	2/3/23	ISSUED FOR CONSTRUCTION
1	3/6/23	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
149450.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS00049A
215 COATNEY HILL RD
WOODSTOCK, CT 06281

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-2

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST-IN-PLACE CONCRETE.
2. UNLESS NOTED OTHERWISE, SOIL BEARING PRESSURE USED FOR DESIGN OF SLABS AND FOUNDATIONS IS ASSUMED TO BE 1000 psf.
3. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 3000 psi AT 28 DAYS, UNLESS NOTED OTHERWISE. NO MORE THAN 90 MINUTES SHALL ELAPSE FROM BATCH TIME TO TIME OF PLACEMENT UNLESS APPROVED BY THE ENGINEER OF RECORD. TEMPERATURE OF CONCRETE SHALL NOT EXCEED 90°F AT TIME OF PLACEMENT.
4. CONCRETE EXPOSED TO FREEZE-THAW CYCLES SHALL CONTAIN AIR ENTRAINING ADMIXTURES. AMOUNT OF AIR ENTRAINMENT TO BE BASED ON SIZE OF AGGREGATE AND F3 CLASS EXPOSURE (VERY SEVERE). CEMENT USED TO BE TYPE II PORTLAND CEMENT WITH A MAXIMUM WATER-TO-CEMENT RATIO (W/C) OF 0.45.
5. ALL STEEL REINFORCING SHALL CONFORM TO ASTM A615. ALL WELDED WIRE FABRIC (WWF) SHALL CONFORM TO ASTM A185. ALL SPLICES SHALL BE CLASS "B" TENSION SPLICES, UNLESS NOTED OTHERWISE. ALL HOOKS SHALL BE STANDARD 90 DEGREE HOOKS, UNLESS NOTED OTHERWISE. YIELD STRENGTH (Fy) OF STANDARD DEFORMED BARS ARE AS FOLLOWS:

#4 BARS AND SMALLER 40 ksi
#5 BARS AND LARGER 60 ksi
6. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:
 - CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH 3"
 - CONCRETE EXPOSED TO EARTH OR WEATHER:
 - #6 BARS AND LARGER 2"
 - #5 BARS AND SMALLER 1-1/2"
 - CONCRETE NOT EXPOSED TO EARTH OR WEATHER:
 - SLAB AND WALLS 3/4"
 - BEAMS AND COLUMNS 1-1/2"
7. A TOOLED EDGE OR A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNLESS NOTED OTHERWISE, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

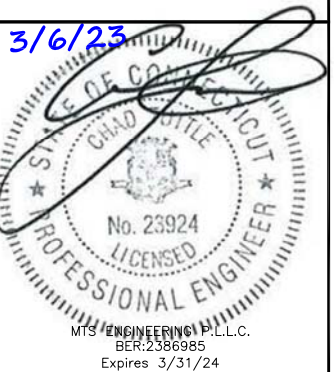
ELECTRICAL INSTALLATION NOTES:

- ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES/ORDINANCES.
- CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED AND TRIP HAZARDS ARE ELIMINATED.
- WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC.
- ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC.
- ALL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OF APPROVAL, AND SHALL CONFORM TO REQUIREMENT OF THE NATIONAL ELECTRICAL CODE.
- ALL OVERCURRENT DEVICES SHALL HAVE AN INTERRUPTING CURRENT RATING THAT SHALL BE GREATER THAN THE SHORT CIRCUIT CURRENT TO WHICH THEY ARE SUBJECTED, 22,000 AIC MINIMUM. VERIFY AVAILABLE SHORT CIRCUIT CURRENT DOES NOT EXCEED THE RATING OF ELECTRICAL EQUIPMENT IN ACCORDANCE WITH ARTICLE 110.24 NEC OR THE MOST CURRENT ADOPTED CODE PRE THE GOVERNING JURISDICTION.
- EACH END OF EVERY POWER PHASE CONDUCTOR, GROUNDING CONDUCTOR, AND TELCO CONDUCTOR OR CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2" PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC AND OSHA.
- ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH LAMICOID TAGS SHOWING THEIR RATED VOLTAGE, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING AND BRANCH CIRCUIT ID NUMBERS (i.e. PANEL BOARD AND CIRCUIT ID'S).
- PANEL BOARDS (ID NUMBERS) SHALL BE CLEARLY LABELED WITH PLASTIC LABELS.
- TIE WRAPS ARE NOT ALLOWED.
- ALL POWER AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE COPPER CONDUCTOR (#14 OR LARGER) WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.
- SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE COPPER CONDUCTOR (#6 OR LARGER) WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.
- POWER AND CONTROL WIRING IN FLEXIBLE CORD SHALL BE MULTI-CONDUCTOR, TYPE SOOW CORD (#14 OR LARGER) UNLESS OTHERWISE SPECIFIED.
- POWER AND CONTROL WIRING FOR USE IN CABLE TRAY SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (#14 OR LARGER), WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.
- ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE, COMPRESSION WIRE LUGS AND WIRE NUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRE NUTS SHALL BE RATED FOR OPERATION NOT LESS THAN 75° C (90° C IF AVAILABLE).
- RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.
- ELECTRICAL METALLIC TUBING (EMT), INTERMEDIATE METAL CONDUIT (IMC), OR RIGID METAL CONDUIT (RMC) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.

16. ELECTRICAL METALLIC TUBING (EMT) OR METAL-CLAD CABLE (MC) SHALL BE USED FOR CONCEALED INTERIOR LOCATIONS.
17. SCHEDULE 40 PVC UNDERGROUND ON STRAIGHTS AND SCHEDULE 80 PVC FOR ALL ELBOWS/90s AND ALL APPROVED ABOVE GRADE PVC CONDUIT.
18. LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
19. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.
20. CABINETS, BOXES AND WIRE WAYS SHALL BE LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND THE NEC.
21. WIREWAYS SHALL BE METAL WITH AN ENAMEL FINISH AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARDS (WIREMOLD SPECMATE WIREWAY).
22. SLOTTED WIRING DUCT SHALL BE PVC AND INCLUDE COVER (PANDUIT TYPE E OR EQUAL).
23. CONDUITS SHALL BE FASTENED SECURELY IN PLACE WITH APPROVED NON-PERFORATED STRAPS AND HANGERS. EXPLOSIVE DEVICES (i.e. POWDER-ACTUATED) FOR ATTACHING HANGERS TO STRUCTURE WILL NOT BE PERMITTED. CLOSELY FOLLOW THE LINES OF THE STRUCTURE, MAINTAIN CLOSE PROXIMITY TO THE STRUCTURE AND KEEP CONDUITS IN TIGHT ENVELOPES. CHANGES IN DIRECTION TO ROUTE AROUND OBSTACLES SHALL BE MADE WITH CONDUIT OUTLET BODIES. CONDUIT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER. PARALLEL AND PERPENDICULAR TO STRUCTURE WALL AND CEILING LINES. ALL CONDUIT SHALL BE FISHED TO CLEAR OBSTRUCTIONS. ENDS OF CONDUITS SHALL BE TEMPORARILY CAPPED FLUSH TO FINISH GRADE TO PREVENT CONCRETE, PLASTER OR DIRT FROM ENTERING. CONDUITS SHALL BE RIGIDLY CLAMPED TO BOXES BY GALVANIZED MALLEABLE IRON BUSHING ON INSIDE AND GALVANIZED MALLEABLE IRON LOCKNUT ON OUTSIDE AND INSIDE.
24. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL. SHALL MEET OR EXCEED UL 50 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND NEMA 3 (OR BETTER) FOR EXTERIOR LOCATIONS.
25. METAL RECEPTACLE, SWITCH AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY-COATED OR NON-CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.
26. NONMETALLIC RECEPTACLE, SWITCH AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2 (NEWEST REVISION) AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.
27. THE CONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CARRIER AND/OR DISH Wireless L.L.C. AND TOWER OWNER BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
28. THE CONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD LIFE AND PROPERTY.
29. INSTALL LAMICOID LABEL ON THE METER CENTER TO SHOW "DISH Wireless L.L.C.".
30. ALL EMPTY/SPARE CONDUITS THAT ARE INSTALLED ARE TO HAVE A METERED MULE TAPE PULL CORD INSTALLED.



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MEH	RMC	RMC
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A&E PROJECT NUMBER

149450.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS00049A
215 COATNEY HILL RD
WOODSTOCK, CT 06281

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-3

GROUNDING NOTES:

1. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION AND AC POWER GES’S) SHALL BE BONDED TOGETHER AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
2. THE CONTRACTOR SHALL PERFORM IEEE FALL–OF–POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS, THE CONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
3. THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT AND PROVIDE TESTING RESULTS.
4. METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
5. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.
6. EACH CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, #6 STRANDED COPPER OR LARGER FOR INDOOR BTS; #2 BARE SOLID TINNED COPPER FOR OUTDOOR BTS.
7. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED BACK TO BACK CONNECTIONS ON OPPOSITE SIDE OF THE GROUND BUS ARE PERMITTED.
8. ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING SHALL BE #2 SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.
11. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
12. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR AND EXTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS.
13. COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC WELD CONNECTIONS.
14. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.
15. APPROVED ANTIOXIDANT COATINGS (i.e. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
16. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
17. MISCELLANEOUS ELECTRICAL AND NON–ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
18. BOND ALL METALLIC OBJECTS WITHIN 6 ft OF MAIN GROUND RING WITH (1) #2 BARE SOLID TINNED COPPER GROUND CONDUCTOR.
19. GROUND CONDUCTORS USED FOR THE FACILITY GROUNDING AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON–METALLIC MATERIAL SUCH AS PVC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (i.e., NONMETALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.
20. ALL GROUNDS THAT TRANSITION FROM BELOW GRADE TO ABOVE GRADE MUST BE #2 BARE SOLID TINNED COPPER IN 3/4” NON–METALLIC, FLEXIBLE CONDUIT FROM 24” BELOW GRADE TO WITHIN 3” TO 6” OF CAD–WELD TERMINATION POINT. THE EXPOSED END OF THE CONDUIT MUST BE SEALED WITH SILICONE CAULK. (ADD TRANSITIONING GROUND STANDARD DETAIL AS WELL).
21. BUILDINGS WHERE THE MAIN GROUNDING CONDUCTORS ARE REQUIRED TO BE ROUTED TO GRADE, THE CONTRACTOR SHALL ROUTE TWO GROUNDING CONDUCTORS FROM THE ROOFTOP, TOWERS, AND WATER TOWERS GROUNDING RING, TO THE EXISTING GROUNDING SYSTEM, THE GROUNDING CONDUCTORS SHALL NOT BE SMALLER THAN 2/0 COPPER. ROOFTOP GROUNDING RING SHALL BE BONDED TO THE EXISTING GROUNDING SYSTEM, THE BUILDING STEEL COLUMNS, LIGHTNING PROTECTION SYSTEM, AND BUILDING MAIN WATER LINE (FERROUS OR NONFERROUS METAL PIPING ONLY). DO NOT ATTACH GROUNDING TO FIRE SPRINKLER SYSTEM PIPES.



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DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS00049A
215 COATNEY HILL RD
WOODSTOCK, CT 06281

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-4

EXHIBIT 9

EME Report



Radio Frequency Emissions Analysis Report



Site ID: BOBOS00049A

SBA - Coatney Hill Road
215 Coatney Hill Road
Woodstock, CT 06281

April 26, 2023

Fox Hill Telecom Project Number: 230388

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	10.73 %



April 26, 2023

Dish Wireless
5701 South Santa Fe Drive
Littleton, CO 80120

Emissions Analysis for Site: **BOBOS00049A – SBA - Coatney Hill Road**

Fox Hill Telecom, Inc (“Fox Hill”) was directed to analyze the proposed radio installation for Dish Wireless, LLC (Dish) facility located at **215 Coatney Hill Road, Woodstock, CT**, for the purpose of determining whether the emissions from the Proposed Dish radio and antenna installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01 and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The number of $\mu\text{W}/\text{cm}^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

All results were compared to the FCC (Federal Communications Commission) radio frequency exposure rules, 47 CFR 1.1307(b)(1) – (b)(3), to determine compliance with the Maximum Permissible Exposure (MPE) limits for General Population/Uncontrolled environments as defined below.

General population/uncontrolled exposure limits apply to situations in which the general population may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general population would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

Population exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The general population exposure limit for the 600 MHz band is approximately $400 \mu\text{W}/\text{cm}^2$. The general population exposure limit for the 1900 MHz (PCS) and 2100 MHz (AWS / AWS-4) bands is $1000 \mu\text{W}/\text{cm}^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.



Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Additional details can be found in FCC OET 65.



CALCULATIONS

Calculations were performed for the proposed upgrades to the Dish Wireless antenna facility located at **215 Coatney Hill Road, Woodstock, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65 for far field modeling calculations.

In OET-65, plane wave power densities in the Far Field of an antenna are calculated by considering antenna gain and reflective waves that would contribute to exposure.

Since the radiation pattern of an antenna has developed in the **Far Field** region the power gain in specific directions needs to be considered in exposure predictions to yield an Effective Radiated Power (ERP) in each specific direction from the antenna. Also, since the vertical radiation pattern of the antenna is considered, the exposure calculations would most likely be reduced significantly at ground level, resulting in a more realistic estimate of the actual exposure levels. To determine a worst-case scenario at each point along the calculation radials, each point was calculated using the antenna gain value at each angle of incident and compared against the result using an isotropic radiator at the antenna height with the greater of the two used to yield the more pessimistic far field value for each point along the calculation radial.

Additionally, to model a truly "worst case" prediction of exposure levels at or near a surface, such as at ground-level or on a rooftop, reflection off the surface of antenna radiation power can be assumed, resulting in a potential 1.6 times increase in power density in calculating far field power density values.

With these factors Considered, the worst case **Far Field prediction model** utilized in this analysis is determined by the following equation:

Equation 9 per FCC OET65 for Far Field Modeling

$$S = \frac{33.4 \text{ ERP}}{R^2}$$

S = Power Density (in $\mu\text{W}/\text{cm}^2$)

ERP = Effective Radiated Power from antenna (watts)

R = Distance from the antenna (meters)

Predicted far field power density values for all carriers identified in this report were calculated 6 feet above the ground level and are displayed as a percentage of the applicable FCC standards. All emissions values for other carriers were calculated using the same Far Field model outlined above, using industry standard radio configurations and frequency band selection based upon available licenses in this geographic area for emissions contribution estimates.



For each Dish sector the following channel counts, frequency bands and power levels were utilized as shown in *Table 1*:

Technology	Frequency Band	Channel Count	Transmit Power per Channel (W)
5G	n71 (600 MHz)	4	61.5
5G	n70 (AWS-4 / 1995-2020)	4	40
5G	n66 (AWS-4 / 2180-2200)	4	40

Table 1: Channel Data Table



The following **Dish** antennas listed in *Table 2* were used in the modeling for transmission in the 600 MHz (n71) frequency band and the 2100 MHz (AWS 4) frequency bands at 1995-2020 MHz (n70) and 2180-2200 MHz (n66). This is based on feedback from Dish regarding anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below.

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	Commscope FFVV-65B-R2	145
B	1	Commscope FFVV-65B-R2	145
C	1	Commscope FFVV-65B-R2	145

Table 2: Antenna Data

All calculations were done with respect to uncontrolled / general population threshold limits.



RESULTS

Per the calculations completed for the proposed **Dish** configurations *Table 3* shows resulting emissions power levels and percentages of the FCC's allowable general population limit.

Antenna ID	Antenna Make / Model	Frequency Bands	Antenna Gain (dBd)	Channel Count	Total TX Power (W)	ERP (W)	MPE %
Antenna A1	Commscope FFVV-65B-R2	n71 (600 MHz) / n70 (AWS-4 / 1995-2020) / n66 (AWS-4 / 2180-2200)	12.15 / 15.95 / 16.25	12	566	17,079.80	1.76
Sector A Composite MPE%							1.76
Antenna B1	Commscope FFVV-65B-R2	n71 (600 MHz) / n70 (AWS-4 / 1995-2020) / n66 (AWS-4 / 2180-2200)	12.15 / 15.95 / 16.25	12	566	17,079.80	1.76
Sector B Composite MPE%							1.76
Antenna C1	Commscope FFVV-65B-R2	n71 (600 MHz) / n70 (AWS-4 / 1995-2020) / n66 (AWS-4 / 2180-2200)	12.15 / 15.95 / 16.25	12	566	17,079.80	1.76
Sector C Composite MPE%							1.76

Table 3: Dish Emissions Levels



The Following table (*Table 4*) shows all additional carriers on site and their emissions contribution estimates, along with the newly calculated **Dish** far field emissions contributions per this report. FCC OET 65 specifies that for carriers utilizing directional antennas the highest recorded sector value be used for composite site emissions values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. For this site, all three sectors have the same configuration yielding the same results on all three sectors. *Table 5* below shows a summary for each **Dish** Sector as well as the composite emissions value for the site.

Site Composite MPE%	
Carrier	MPE%
Dish – Max Per Sector Value	1.76 %
AT&T	1.75 %
T-Mobile	1.54 %
Verizon Wireless	2.41 %
CL&P	0.21 %
Town	2.21 %
DRW Canada	0.85 %
Site Total MPE %:	10.73 %

Table 4: All Carrier MPE Contributions

Dish Sector A Total:	1.76 %
Dish Sector B Total:	1.76 %
Dish Sector C Total:	1.76 %
Site Total:	10.73 %

Table 5: Site MPE Summary



Table 6 below details a breakdown by frequency band and technology for the MPE power values for the maximum calculated **Dish** sector(s). For this site, all three sectors have the same configuration yielding the same results for all three sectors.

Dish _ Frequency Band / Technology Max Power Values (Per Sector)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu\text{W}/\text{cm}^2$)	Frequency (MHz)	Allowable MPE ($\mu\text{W}/\text{cm}^2$)	Calculated % MPE
Dish n71 (600 MHz) 5G	4	1,008.96	145	4.64	n71 (600 MHz)	400	1.16%
Dish n70 (AWS-4 / 1995-2020) 5G	4	1,574.20	145	3.00	n70 (AWS-4 / 1995-2020)	1000	0.30%
Dish n66 (AWS-4 / 2180-2200) 5G	4	1,686.79	145	3.00	n66 (AWS-4 / 2180-2200)	1000	0.30%
						Total:	1.76 %

Table 6: Dish Maximum Sector MPE Power Values



Summary

All calculations performed for this analysis yielded results that were **within** the allowable limits for general population exposure to RF Emissions.

The anticipated maximum composite contributions from the Dish facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general population exposure to RF Emissions are shown here:

Dish Sector	Power Density Value (%)
Sector A:	1.76 %
Sector B:	1.76 %
Sector C:	1.76 %
Dish Maximum Total (per sector):	1.76 %
Site Total:	10.73 %
Site Compliance Status:	COMPLIANT

The anticipated composite emissions value for this site, assuming all carriers present, is **10.73 %** of the allowable FCC established general population limit sampled at the ground level. This is based upon the far field calculations performed for all carriers identified in this report.

FCC guidelines state that if a site is found to be out of compliance (over allowable thresholds), that carriers over a 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite values calculated were well within the allowable 100% threshold standard per the federal government.

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