STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL
Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@ct.gov
Web Site: portal.ct.gov/csc

VIA ELECTRONIC MAIL

February 4, 2022

Denise Sabo
Northeast Site Solutions
54 Main Street, Unit 3
Sturbridge, MA 01506
denise@northeastsitesolutions.com

RE: **TS-DISH-106-211022** – Dish Wireless LLC request for an order to approve tower sharing at an existing telecommunications facility located at 1363 Boston Post Road, Old Saybrook, Connecticut.

Dear Ms. Sabo:

The Connecticut Siting Council (Council) is in receipt of your correspondence of February 3, 2022 submitted in response to the Council's November 24, 2021 notification of an incomplete request for tower sharing with regard to the above-referenced matter.

The submission renders the request for tower sharing complete and the Council will process the request in accordance with the Federal Communications Commission 60-day timeframe.

Thank you for your attention and cooperation.

Sincerely,

Melanie A. Bachman
Executive Director

MAB/IN/emr

From: Deborah Chase <deborah@northeastsitesolutions.com>
Sent: Thursday, February 3, 2022 11:53 AM
To: CSC-DL Siting Council <Siting.Council@ct.gov>; Bachman, Melanie <Melanie.Bachman@ct.gov>; Mathews, Lisa A <Lisa.A.Mathews@ct.gov>; Fontaine, Lisa <Lisa.Fontaine@ct.gov>
Cc: Denise <denise@northeastsitesolutions.com>; Chuck Regulbuto <chuck@northeastsitesolutions.com>; victoria@northeastsitesolutions.com; Jason Berry <jberry@northeastsitesolutions.com>
Subject: 1363 BOSTON POST ROAD OLD SAYBROOK CT 06475 DISH WIRELESS TOWER SHARE APPLICATION (BOBDL0001213A_DISH)

Siting Council
Please see attached updated DISH Tower Share Application for the above referenced site.
Per the incomplete letter dated November 24,2021, I have added in the newly updated Construction Drawings, Structural Analysis and Mount Analysis.
I have also added the extension letter as well as the postal slip for the hard copy that has been sent.
Please let us know if this is sufficient enough to be accepted as a completed application.
Thank you very much

Deborah Chase
Senior Project Coordinator & Analyst
Mobile: 860-490-8839

Save a tree. Refuse.Reduce. Reuse. Recycle.

Northeast Site Solutions
Denise Sabo
4 Angela's Way, Burlington CT 06013
denise@northeastsitesolutions.com

October 20, 2021

Members of the Siting Council
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

RE: Tower Share Application
1363 Boston Post Rd, Old Saybrook, CT 06475
Latitude: 41.2898 N
Longitude: -72.4059 W
Site# BOBDL00113A_Dish_Old Saybrook_TS_Zoning

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 1363 Boston Post Rd, Old Saybrook, Connecticut.

Dish Wireless LLC proposes to install three (3) 600/19005G MHz antenna and six (6) RRUs, at the 75-foot level of the existing 99-foot monopole tower, one (1) Fiber cables will also be installed. Dish Wireless LLC equipment cabinets will be placed within 7x5 lease area. Included are plans by Infinigy, dated September 23, 2021, Exhibit C. Also included is a structural analysis prepared by GPD Engineering and Architecture Professional Corporation, dated September 21, 2021, confirming that the existing tower is structurally capable of supporting the proposed equipment. Attached as Exhibit D. This facility was approved by the Connecticut Siting Council, Docket No. 411 on April 28, 2018. Please see attached Exhibit A.

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 Carl P. Fortuna, Jr., First Selectman for the Town of Old Saybrook, Christine M. Coste, Town Planner and Zoning Enforcement Officer, Land Use for the Town of Old Saybrook, as well as the property owner Octagon Towers, LLC and Blue Sky Tower Management, tower owner.

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 modifications will not result in an increase in the height of the existing structure. The top of the tower is 99-feet; Dish Wireless LLC proposed antennas will be located at a center line height of 75-feet.

2.The proposed modification will not result in the increase of the site boundary as depicted on the attached site plan.

3.The proposed modification will not increase the 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 negligent.

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 density of 25.61% as evidenced by Exhibit F.

Connecticut General Statutes 16-50-aa 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 in Exhibit D.

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 Monople tower in Old Saybrook. 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. Further, a letter of Authorization is included as Exhibit G, authorizing Dish Wireless LLC to file this application for shared use.

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 75-foot level of the existing 99-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 Exhibit F, 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 share 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 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 Old Saybrook.

Sincerely,

Denise Sabo

Denise Sabo
Mobile: 203-435-3640
Fax: 413-521-0558
Office: Angela's Way, Burlington CT 06013
Email: denise@northeastsitesolutions.com

Attachments
Cc: Carl P. Fortuna, Jr., First Selectman
Town of Old Saybrook
Town Hall
302 Main Street
Old Saybrook, CT 06475

Christina M. Costa
Town Planner and Zoning
Enforcement Officer, Land Use
Town of Old Saybrook
Town Hall
302 Main Street
Old Saybrook, CT 06475

Octagon Towers, LLC
57 E. Washington Street
Chagrin Falls, Ohio 44022

Blue Sky Tower Management, Tower Owner

Exhibit A

Original Facility Approval

DOCKET NO. 411 - New Cingular Wireless PCS, LLC application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a telecommunications facility located at 1363 Boston Post Road, Old Saybrook, Connecticut.	}	Connecticut
	}	Siting
	}	Council

April 28, 2011

Decision and Order

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, maintenance, and operation of a telecommunications facility, including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate, either alone or cumulatively with other effects, when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application, and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes § 16-50k, be issued to New Cingular Wireless PCS, LLC, hereinafter referred to as the Certificate Holder, for a telecommunications facility at 1363 Boston Post Road, Old Saybrook, Connecticut.

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

1. The tower shall be constructed as a monopole, no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of New Cingular Wireless PCS, LLC and other entities, both public and private, but such tower shall not exceed a height of 100 feet above ground level.

2. The location of the telecommunications facility's compound shall be moved from the location shown on the site plans included in the Certificate application to the south and west by a distance sufficient to eliminate the need to clear trees for the development of the approved facility.

3. Antennas shall be installed on the tower using T-arm or flush mounts.

4. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be served on the Town of Old Saybrook for comment, and all parties and intervenors as listed in the service list, and submitted to and approved by the Council prior to the commencement of facility construction and shall include:

    a) a final site plan(s) of site development to include specifications for the tower, tower foundation, antennas, equipment compound, radio equipment, access road, utility line, and landscaping; and
    b) construction plans for site clearing, grading, landscaping, water drainage, and erosion and sedimentation controls consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended.

5. Prior to the commencement of operation, the Certificate Holder shall provide the Council worst-case modeling of the electromagnetic radio frequency power density of all proposed entities' antennas at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin No. 65, August 1997. The Certificate Holder shall ensure a recalculated report of the electromagnetic radio frequency power density be submitted to the Council if and when circumstances in operation cause a change in power density above the levels calculated and provided pursuant to this Decision and Order.

6. Upon the establishment of any new State or federal radio frequency standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards.

7. The Certificate Holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.

8. The Certificate Holder shall provide reasonable space on the tower for no compensation for any Town of Old Saybrook public safety services (police, fire and medical services), provided such use can be accommodated and is compatible with the structural integrity of the tower.

9. Unless otherwise approved by the Council, if the facility authorized herein is not fully constructed with at least one fully operational wireless telecommunications carrier providing wireless service within eighteen months from the date of the mailing of the Council's Findings of Fact, Opinion, and Decision and Order (collectively called "Final Decision"), this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made. The time between the filing and resolution of any appeals of the Council's Final Decision shall not be counted in calculating this deadline. Authority to monitor and modify this schedule, as necessary, is delegated to the Executive Director. The Certificate Holder shall provide written notice to the Executive Director of any schedule changes as soon as is practicable.

10. Any request for extension of the time period referred to in Condition 9 shall be filed with the Council not later than 60 days prior to the expiration date of this Certificate and shall be served on all parties and intervenors, as listed in the service list, and the Town of Old Saybrook. Any proposed modifications to this Decision and Order shall likewise be so served.

11. If the facility ceases to provide wireless services for a period of one year, this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made.

12. Any nonfunctioning antenna, and associated antenna mounting equipment, on this facility shall be removed within 60 days of the date the antenna ceased to function.

13. In accordance with Section 16-50j-77 of the Regulations of Connecticut State Agencies, the Certificate Holder shall provide the Council with written notice two weeks prior to the commencement of site construction activities. In addition, the Certificate Holder shall provide the Council with written notice of the completion of site construction, and the commencement of site operation.

14. The Certificate Holder shall remit timely payments associated with annual assessments and invoices submitted by the Council for expenses attributable to the facility under Conn. Gen. Stat. §16-50v.

15. This Certificate may be transferred in accordance with Conn. Gen. Stat. §16-50k(b), provided both the Certificate Holder/transferor and the transferee are current with payments to the Council for their respective annual assessments and invoices under Conn. Gen. Stat. §16-50v. In addition, both the Certificate Holder/transferor and the transferee shall provide the Council a written agreement as to the entity responsible for any quarterly assessment charges under Conn. Gen. Stat. §16-50v(b)(2) that may be associated with this facility.

16. The Certificate Holder shall maintain the facility and associated equipment, including but not limited to, the tower, tower foundation, antennas, equipment compound, radio equipment, access road, utility line and landscaping in a reasonable physical and operational condition that is consistent with this Decision and Order and a Development and Management Plan to be approved by the Council.

17. If the Certificate Holder is a wholly-owned subsidiary of a corporation or other entity and is sold/transferred to another corporation or other entity, the Council shall be notified of such sale and/or transfer and of any change in contact information for the individual or representative responsible for management and operations of the Certificate Holder within 30 days of the sale and/or transfer.

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

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

The parties and intervenors to this proceeding are:

Applicant	**Its Representative**
New Cingular Wireless PCS, LLC	Christopher B Fisher, Esq. Daniel M. Laub, Esq. Cuddy & Feder LLP 445 Hamilton Avenue, 14th Floor White Plains, NY 10601 Michele Briggs AT&T 500 Enterprise Drive Rocky Hill, CT 06067-3900

Exhibit B

Property Card

1363 BOSTON POST RD

Location	1363 BOSTON POST RD	**MBLU**	027/ 023/ / /
Acct#	00366000	**Owner**	WILCOX FAMILY LLC
Assessment	$1,455,700	**Appraisal**	$2,079,600
PID	809	**Building Count**	4

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2018	$1,412,300	$667,300	$2,079,600
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2018	$988,700	$467,000	$1,455,700

Owner of Record

Owner	WILCOX FAMILY LLC	**Sale Price**	$0
Co-Owner		**Certificate**	
Address	26 QUARRY ST OLD SAYBROOK, CT 06475	**Book & Page**	0487/0320
		Sale Date	08/16/2005

Ownership History

Ownership History				
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Sale Date**
WILCOX FAMILY LTD PARTNERSHIPS	$450,000		0340/0791	12/31/1996

Building Information

Building 1 : Section 1

Year Built: 1994
Living Area: 3,500

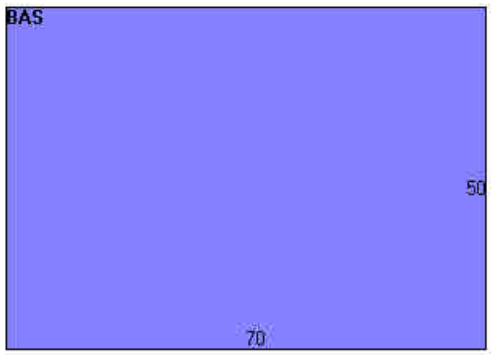
Building Attributes	
Field	**Description**
STYLE	Commercial
MODEL	Commercial

Grade	Below Avg
Stories:	1
Occupancy	1.00
Exterior Wall 1	Pre-finsh Metl
Exterior Wall 2	
Roof Structure	Gable/Hip
Roof Cover	Metal/Tin
Interior Wall 1	Drywall/Sheet
Interior Wall 2	
Interior Floor 1	Vinyl/Asphalt
Interior Floor 2	
Heating Fuel	Gas
Heating Type	Hot Water
AC Type	Central
Struct Class	
Bldg Use	STORE/SHOP
Total Rooms	
Total Bedrms	00
Total Baths	0
Usrfld 218	
Usrfld 219	
1st Floor Use:	032I
Heat/AC	HEAT/AC PKGS
Frame Type	STEEL
Baths/Plumbing	AVERAGE
Ceiling/Wall	CEILING ONLY
Rooms/Prtns	AVERAGE
Wall Height	14.00
% Comn Wall	0.00

Building Photo

(http://images.vgsi.com/photos/OldSaybrookCTPhotos//\00\01\04\84.jpg)

Building Layout



(http://images.vgsi.com/photos/OldSaybrookCTPhotos//Sketches/809_809

Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	3,500	3,500
		3,500	3,500

Building 2 : Section 1

Year Built: 1950
Living Area: 3,330

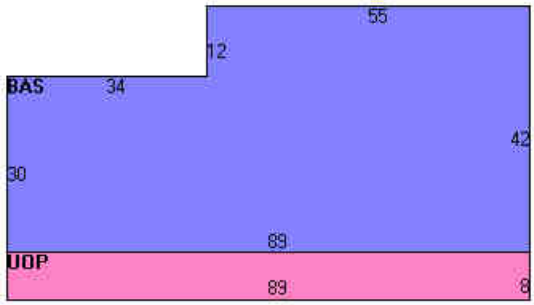
Building Attributes : Bldg 2 of 4	
Field	Description
STYLE	Store
MODEL	Commercial
Grade	Below Avg
Stories:	1
Occupancy	2.00
Exterior Wall 1	Vinyl Siding

Exterior Wall 2	
Roof Structure	Flat
Roof Cover	Tar & Gravel
Interior Wall 1	Drywall/Sheet
Interior Wall 2	
Interior Floor 1	Carpet
Interior Floor 2	Concr-Finished
Heating Fuel	Gas
Heating Type	Forced Air-Duc
AC Type	Central
Struct Class	
Bldg Use	STORE/SHOP
Total Rooms	
Total Bedrms	00
Total Baths	0
Usrfld 218	
Usrfld 219	
1st Floor Use:	032I
Heat/AC	HEAT/AC PKGS
Frame Type	MASONRY
Baths/Plumbing	AVERAGE
Ceiling/Wall	CEIL & WALLS
Rooms/Prtns	AVERAGE
Wall Height	10.00
% Comn Wall	0.00

Building Photo

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

Building Layout



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Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	3,330	3,330
UOP	Porch, Open, Unfinished	712	0
		4,042	3,330

Building 3 : Section 1

Year Built: 1945
Living Area: 1,446

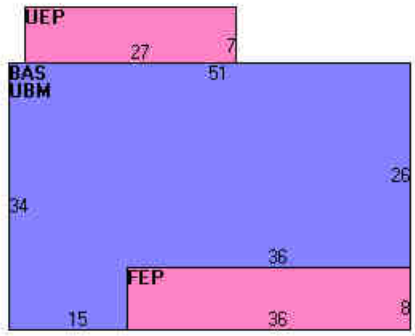
Building Attributes : Bldg 3 of 4	
Field	Description
Style	Ranch
Model	Residential
Grade:	Average +10
Stories:	1 Story
Occupancy	1

Exterior Wall 1	Brick Veneer
Exterior Wall 2	
Roof Structure:	Gable/Hip
Roof Cover	Asph/F Gls/Cmp
Interior Wall 1	Plastered
Interior Wall 2	
Interior Flr 1	Hardwood
Interior Flr 2	
Heat Fuel	Oil
Heat Type:	Forced Air-Duc
AC Type:	None
Total Bedrooms:	2 Bedrooms
Total Bthrms:	1
Total Half Baths:	0
Total Xtra Fixtrs:	
Total Rooms:	5 Rooms
Bath Style:	Average
Kitchen Style:	Modern
Num Kitchens	01
Cndtn	
Usrfld 103	
Usrfld 104	
Usrfld 105	
Usrfld 106	
Usrfld 107	
Num Park	
Fireplaces	
Usrfld 108	
Usrfld 101	
Usrfld 102	
Usrfld 100	
Usrfld 300	
Usrfld 301	

Building Photo

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

Building Layout



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Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	1,446	1,446
FEP	Porch, Enclosed,Framed	288	0
UBM	Basement, Unfinished	1,446	0
UEP	Porch, Enclosed, Unfinished	189	0
		3,369	1,446

Building 4 : Section 1

Year Built: 1999
Living Area: 17,000

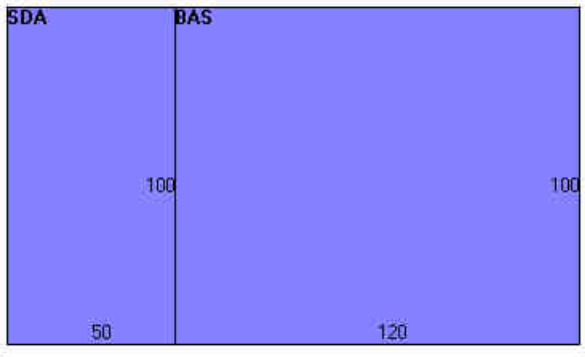
Building Attributes : Bldg 4 of 4	
Field	Description
STYLE	Pre-Eng Warehs
MODEL	Ind/Lg Com

Grade	Average
Stories:	1
Occupancy	4.00
Exterior Wall 1	Pre-finsh Metl
Exterior Wall 2	
Roof Structure	Gable/Hip
Roof Cover	Metal/Tin
Interior Wall 1	Drywall/Sheet
Interior Wall 2	
Interior Floor 1	Concr-Finished
Interior Floor 2	Carpet
Heating Fuel	Gas
Heating Type	Forced Air-Duc
AC Type	Central
Struct Class	
Bldg Use	STORE/SHOP MDL-95/96
Total Rooms	6
Total Bedrms	00
Total Baths	0
Usrfld 218	
Usrfld 219	
1st Floor Use:	032I
Heat/AC	HEAT/AC SPLIT
Frame Type	STEEL
Baths/Plumbing	ABOVE AVERAGE
Ceiling/Wall	NONE
Rooms/Prtns	ABOVE AVERAGE
Wall Height	12.00
% Comn Wall	

Building Photo

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

Building Layout



(http://images.vgsi.com/photos/OldSaybrookCTPhotos//Sketches/809_101

Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	12,000	12,000
SDA	Store Display Area	5,000	5,000
		17,000	17,000

Extra Features

Extra Features				Legend
Code	Description	Size	Value	Bldg #
FPL1	FIREPLACE 1 ST	1.00 UNITS	$2,400	3
OHD1	Over Head Dr 1	100.00 S.F.	$1,700	4
OHD1	Over Head Dr 1	100.00 S.F.	$1,700	4
OHD1	Over Head Dr 1	100.00 S.F.	$1,700	4
OHD1	Over Head Dr 1	100.00 S.F.	$1,700	4
A/C	AIR CONDITION	5000.00 UNITS	$14,100	4

OHD2	Over Head Dr 2	108.00 S.F.	$2,100	1

Land

Land Use

Use Code	0322
Description	STORE/SHOP
Zone	B-4

Land Line Valuation

Size (Acres)	7.28
Depth	0
Assessed Value	$467,000
Appraised Value	$667,300

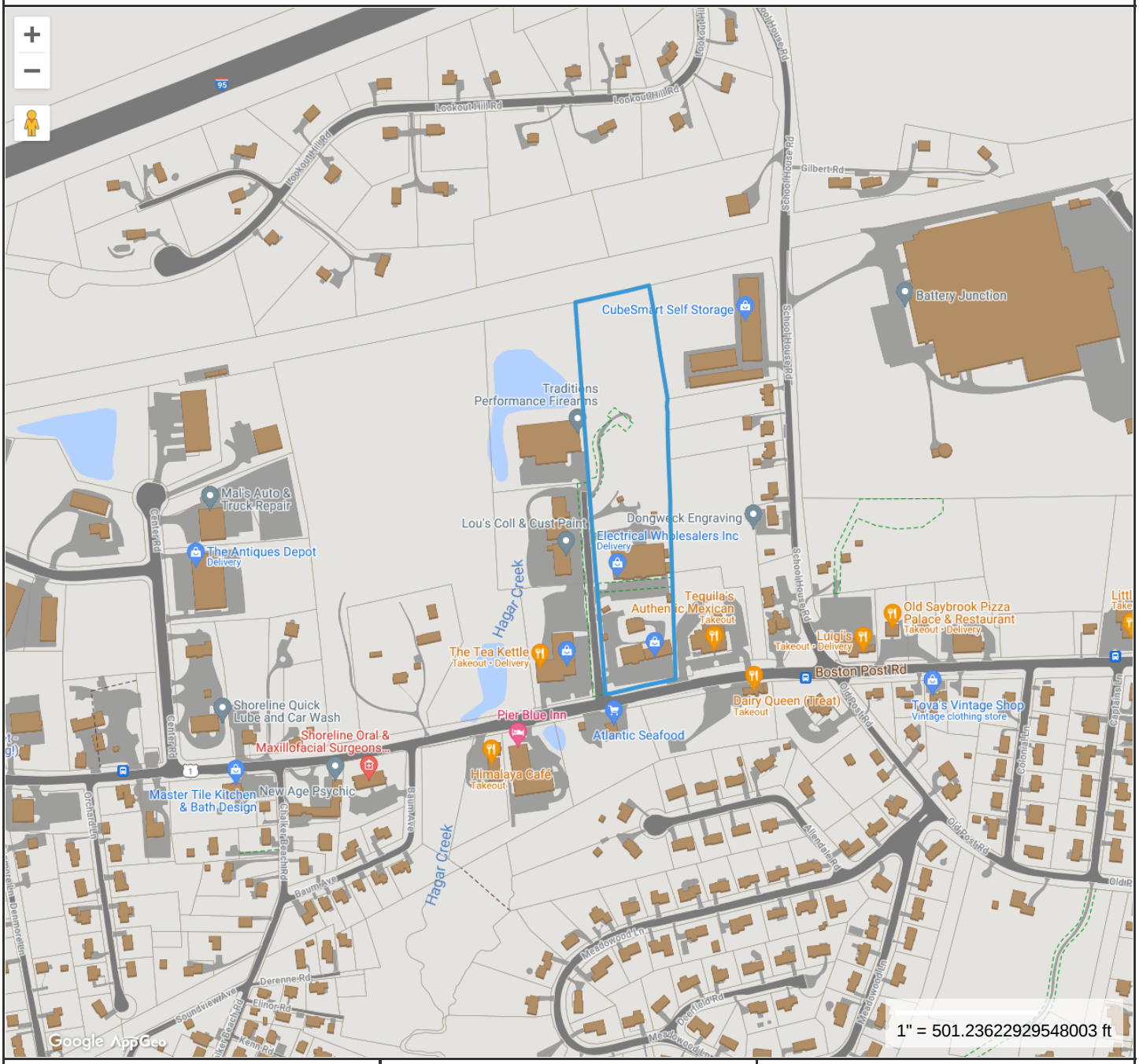
Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
PAV1	PAVING-ASPHALT			7500.00 S.F.	$16,900	1
SHD1	SHED FRAME			100.00 S.F.	$1,500	2
SHD4	COMM,METAL			560.00 S.F.	$9,200	1
SHD4	COMM,METAL			168.00 S.F.	$2,800	1
SHD1	SHED FRAME			140.00 S.F.	$2,100	1
SHD1	SHED FRAME			80.00 S.F.	$1,200	1
FGR1	GARAGE-AVE			288.00 S.F.	$8,600	1

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$1,412,300	$667,300	$2,079,600
2018	$1,412,300	$667,300	$2,079,600
2016	$845,400	$1,105,300	$1,950,700

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$988,700	$467,000	$1,455,700
2018	$988,700	$467,200	$1,455,900
2016	$592,000	$773,700	$1,365,700



Property Information

Property ID	027/023-0000
Location	1363 BOSTON POST RD
Owner	WILCOX FAMILY LLC

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

Town of Old Saybrook, CT makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated 8/30/2021
Data updated 2021

Print map scale is approximate. Critical layout or measurement activities should not be done using this resource.

Exhibit C

Construction Drawings

DISH Wireless L.L.C. SITE ID:

BOBDL00113A

DISH Wireless L.L.C. SITE ADDRESS:

1363 BOSTON POST RD
OLD SAYBROOK, CT 06475

CONNECTICUT CODE 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	2018 CT STATE BUILDING CODE/2015 IBC W/ CT AMENDMENTS
MECHANICAL	2018 CT STATE BUILDING CODE/2015 IMC W/ CT AMENDMENTS
ELECTRICAL	2018 CT STATE BUILDING CODE/2017 NEC W/ CT AMENDMENTS

SHEET INDEX

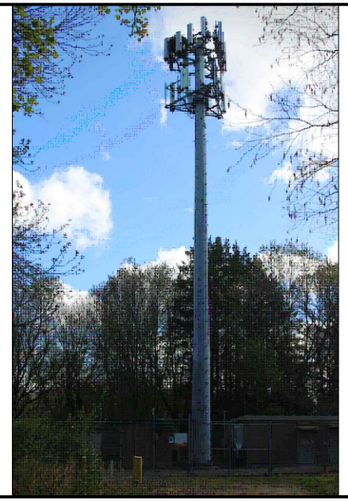
SCOPE OF WORK

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 (3) PROPOSED T-ARMS
- 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 SAFETY SWITCH (IF REQUIRED)
- INSTALL (1) PROPOSED CIENA BOX (IF REQUIRED)
- INSTALL (1) PROPOSED METER SOCKET

SITE PHOTO



UNDERGROUND SERVICE ALERT CBYD 811
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(800) 922-4455
WWW.CBYD.COM

CALL 2 WORKING DAYS UTILITY NOTIFICATION PRIOR TO CONSTRUCTION

811

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:	WILCOX FAMILY LLC
ADDRESS:	1363 BOSTON POST RD OLD SAYBROOK, CT 06475
TOWER TYPE:	MONOPOLE
TOWER CO SITE ID:	CT-1263
TOWER APP NUMBER:	N/A
COUNTY:	OLD SAYBROOK
LATITUDE (NAD 83):	41° 17' 22.91" N 41.289697 N
LONGITUDE (NAD 83):	-72° 24' 21.77" W -72.406047 W
ZONING JURISDICTION:	CONNECTICUT SITING COUNCIL
ZONING DISTRICT:	OLD SAYBROOK
PARCEL NUMBER:	027-023
OCCUPANCY GROUP:	U
CONSTRUCTION TYPE:	V-B
POWER COMPANY:	EVERSOURCE
TELEPHONE COMPANY:	AT&T

PROJECT DIRECTORY

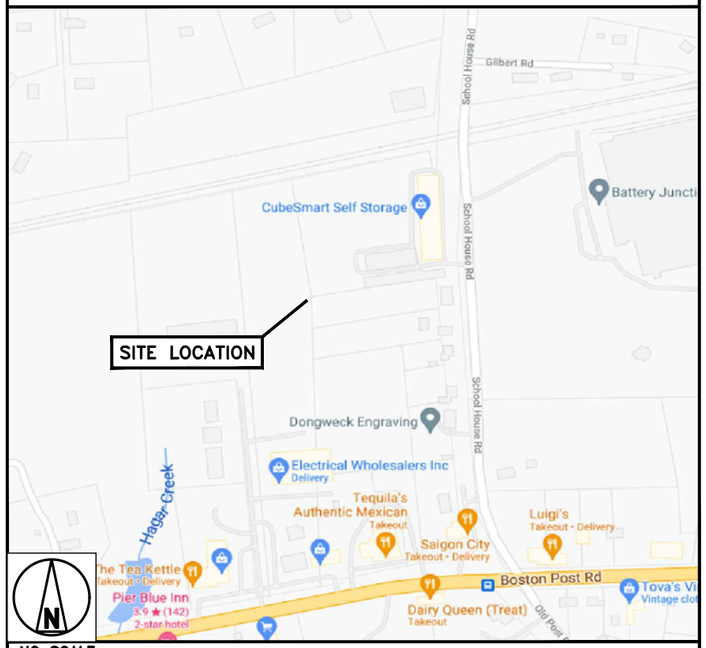
APPLICANT:	DISH Wireless L.L.C. 5701 SOUTH SANTA FE DRIVE LITTLETON, CO 80120
TOWER OWNER:	OCTAGON TOWERS LLC 57 E Washington Street Chagrin Falls, OH 44022
SITE DESIGNER:	INFINIGY 1033 WATERVLIET SHAKER RD ALBANY, NY 12205 (518) 690-0790
SITE ACQUISITION:	JEANNE CONTTRELL (203) 927-4317
CONSTRUCTION MANAGER:	JAVIER SOTO (617) 839-6514
RF ENGINEER:	BOSSENER CHARLES (978) 855-5870

DIRECTIONS

DIRECTIONS FROM CHESTER CHARTER, INC. AIRPORT:

HEAD NORTHWEST ON CHESTER AIRPORT TOWARD CT-145 / WINTHROP RD, TURN LEFT ONTO CT-145 / WINTHROP RD, TURN RIGHT ONTO CT-80 / CT-145 / WINTHROP RD, TURN LEFT ONTO CT-145 / STEVENSTOWN RD, TAKE THE RAMP ON THE LEFT FOR I-95 NORTH AND HEAD TOWARD NEW LONDON AT EXIT 66, HEAD RIGHT ON THE RAMP FOR CT-166 TOWARD LYNDE POINT / OLD SAYBROOK / SHORE POINTS, TURN RIGHT ONTO CT-166 / SPENCER PLAIN RD TOWARD LYNDE POINT / OLD SAYBROOK / SHORE POINTS, TURN LEFT ONTO US-1 N / BOSTON POST RD, TURN LEFT ONTO TOMPKINS RD
ARRIVE AT, 1363 BOSTON POST RD, OLD SAYBROOK, CT 06475.

VICINITY MAP



NO SCALE

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RCD	SS	CJW

RFDS REV #: 2

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
0	09/23/21	ISSUED FOR PERMIT
1	10/18/21	REVISED PER COMMENTS
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A&E PROJECT NUMBER
1197-F0001-C

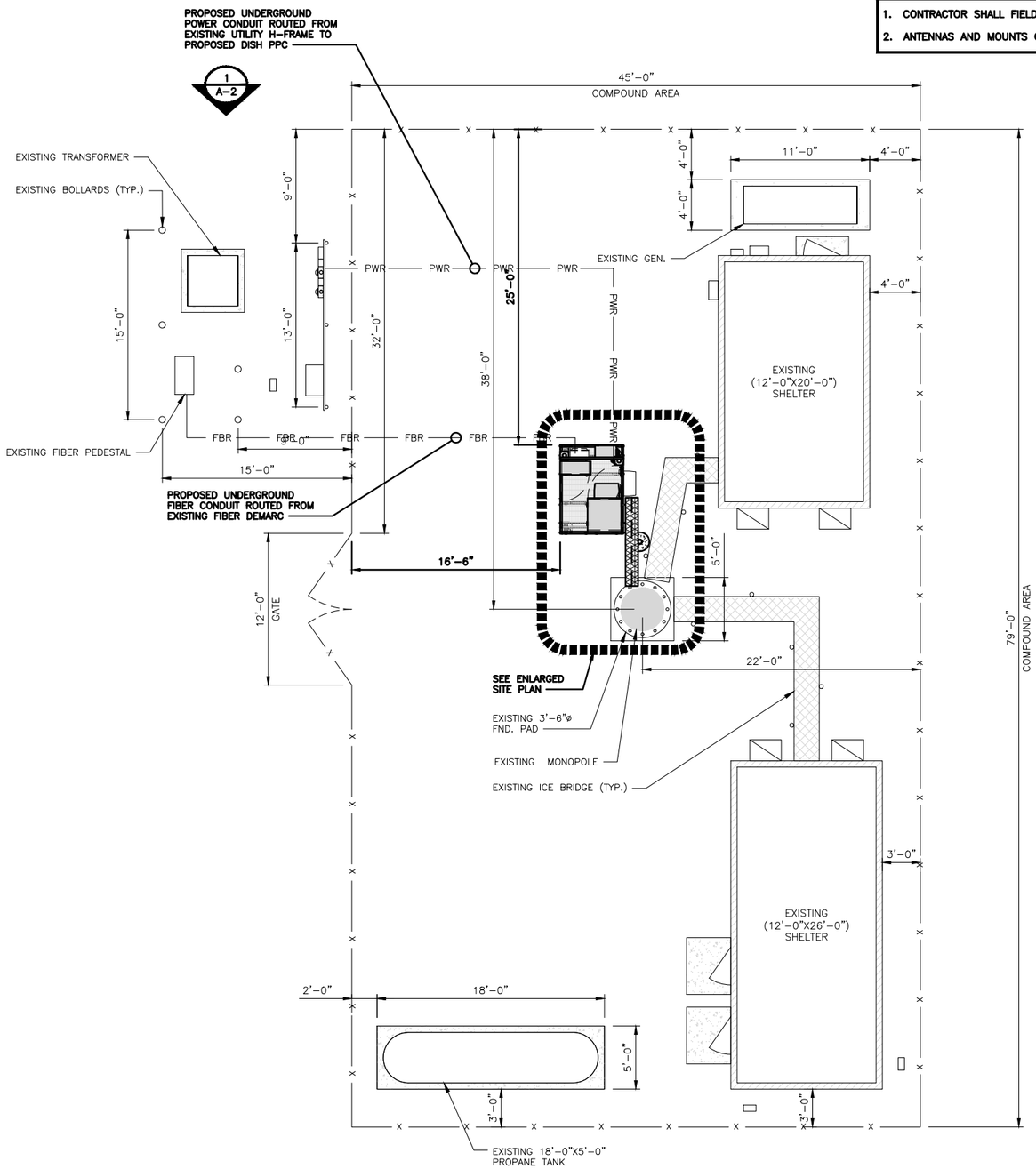
DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00113A
1363 BOSTON POST RD
OLD SAYBROOK, CT 06475

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

NOTES

1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.



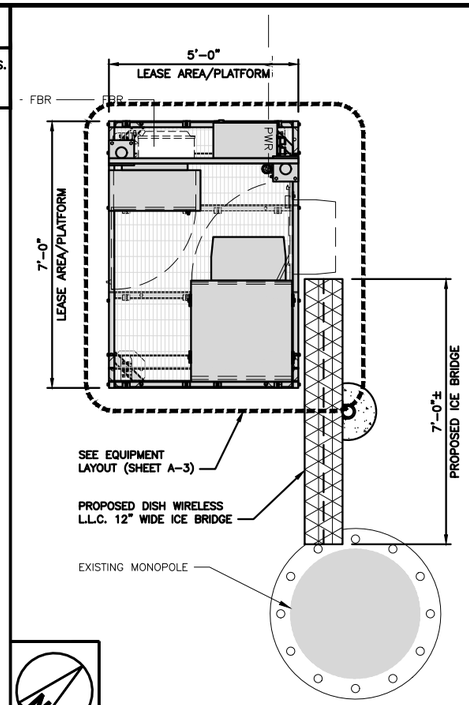
COMPOUND PLAN

6' 4' 2' 0 5' 10'
3/16"=1'-0"

1

NOTES

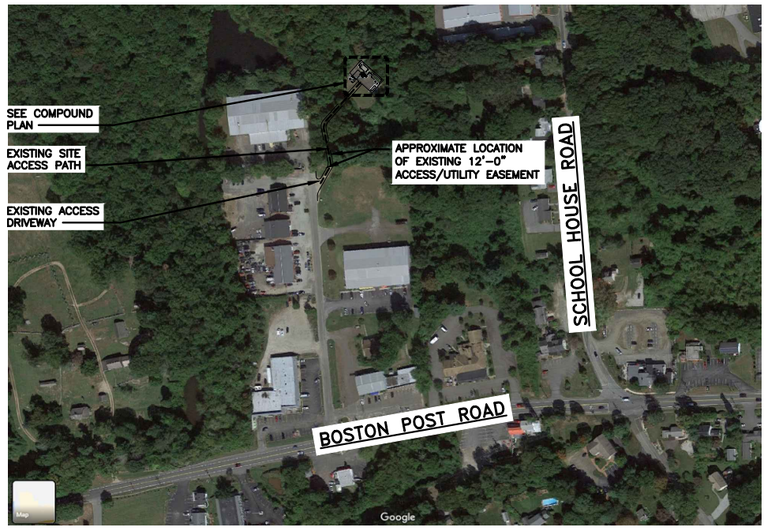
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. CONTRACTOR SHALL MAINTAIN A 10'-0" MINIMUM SEPARATION BETWEEN THE PROPOSED GPS UNIT, TRANSMITTING ANTENNAS AND EXISTING GPS UNITS.
3. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.



ENLARGED SITE PLAN

12" 6" 0 1' 2' 3' 4' 5'
1/2"=1'-0"

2



SITE PLAN

200' 100' 0 200' 400'
1"=200'

3

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A&E PROJECT NUMBER

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DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00113A
1363 BOSTON POST RD
OLD SAYBROOK, CT 06475

SHEET TITLE

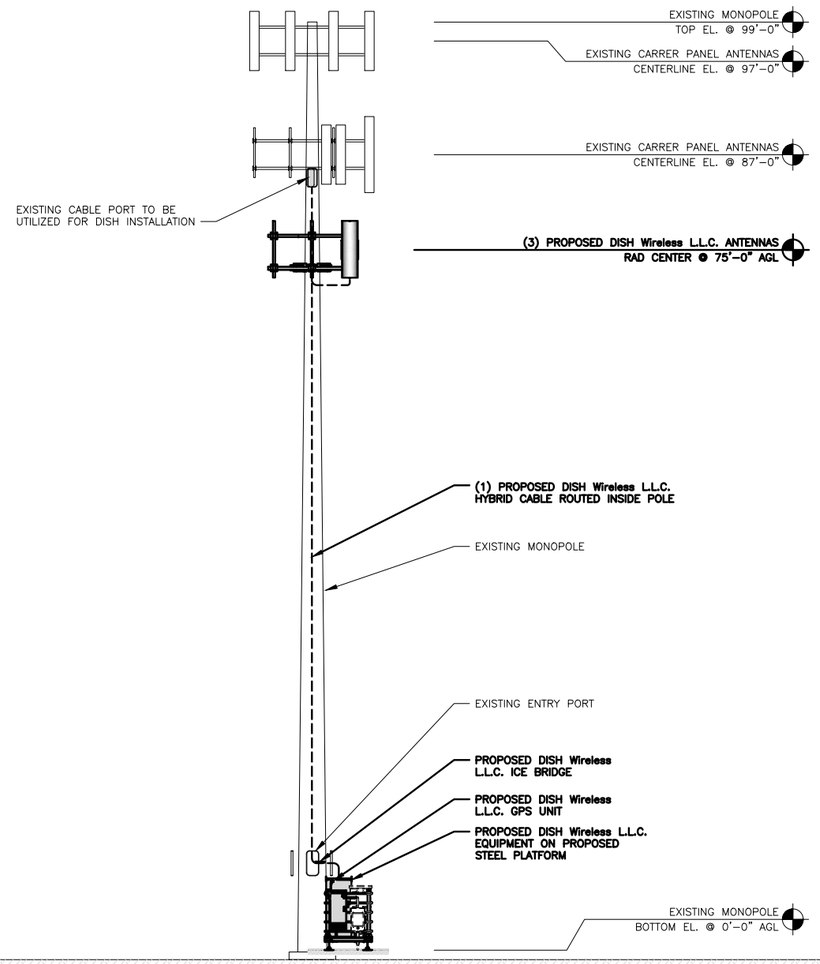
OVERALL AND ENLARGED SITE PLAN

SHEET NUMBER

A-1

NOTES

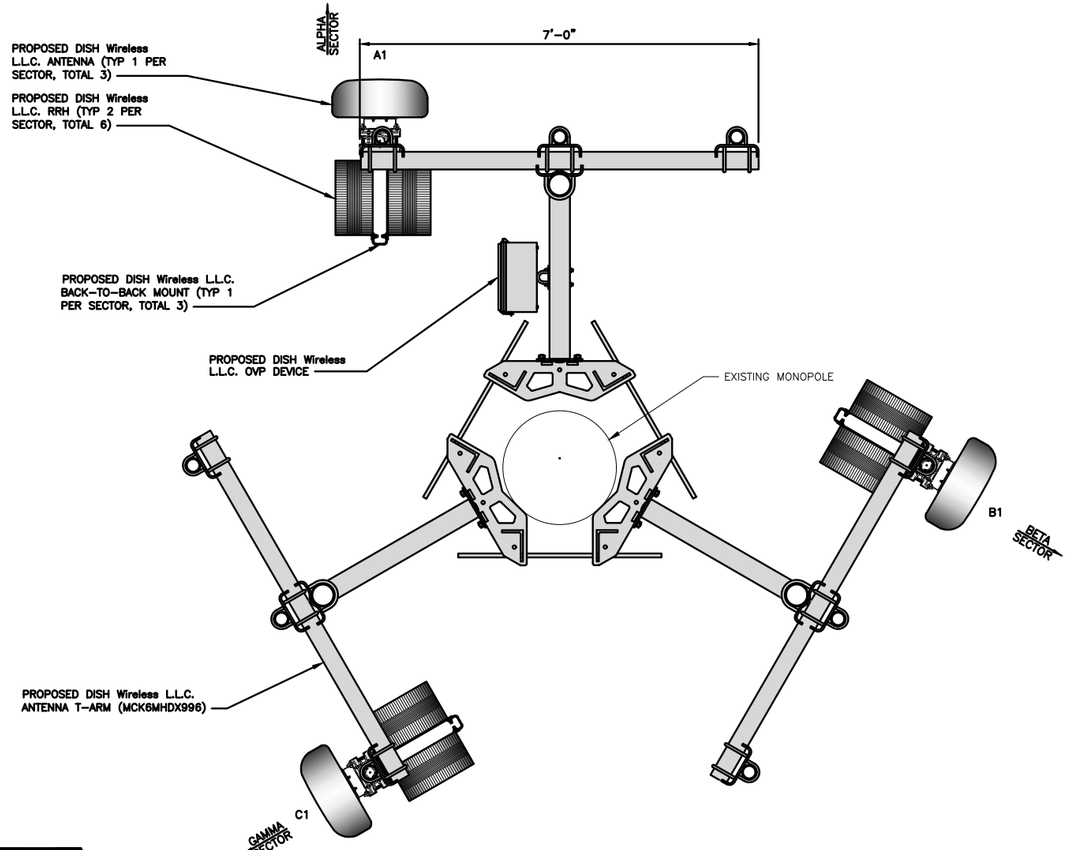
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNA AND MW DISH SPECIFICATIONS REFER TO ANTENNA SCHEDULE AND TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS
3. EXISTING EQUIPMENT AND FENCE OMITTED FOR CLARITY.
4. BASED ON THE MOUNT ANALYSIS COMPLETED BY INFINIGY DATED 12/6/2021. THE ANTENNA MOUNTS ARE CAPABLE OF SUPPORTING THE PROPOSED EQUIPMENT CONFIGURATION
5. FOR ADDITIONAL TOWER STRUCTURAL INFORMATION SEE STRUCTURAL ANALYSIS COMPLETED BY CENTEK DATED: 06/18/21



PROPOSED NORTHWEST ELEVATION

8' 4' 0 8' 16'
1/8"=1'-0"

1



ANTENNA LAYOUT

12" 6" 0 1' 2' 3'
3/4"=1'-0"

2

SECTOR	POSITION	ANTENNA						TRANSMISSION CABLE
		EXISTING OR PROPOSED	MANUFACTURER – MODEL NUMBER	TECHNOLOGY	SIZE (HxW)	AZMUITH	RAD CENTER	FEED LINE TYPE AND LENGTH
ALPHA	A1	PROPOSED	JMA WIRELESS – MX08FRO665-21	5G	72.0" x 20.0"	0°	75'-0"	(1) HIGH-CAPACITY HYBRID CABLE (120' LONG)
BETA	B1	PROPOSED	JMA WIRELESS – MX08FRO665-21	5G	72.0" x 20.0"	120°	75'-0"	
GAMMA	C1	PROPOSED	JMA WIRELESS – MX08FRO665-21	5G	72.0" x 20.0"	240°	75'-0"	

NOTES

1. CONTRACTOR TO REFER TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS.
2. ANTENNA OR 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.

SECTOR	POSITION	RRH	
		MANUFACTURER – MODEL NUMBER	TECHNOLOGY
ALPHA	A1	FUJITSU – TA08025-B604	5G
	A1	FUJITSU – TA08025-B605	5G
BETA	B1	FUJITSU – TA08025-B604	5G
	B1	FUJITSU – TA08025-B605	5G
GAMMA	C1	FUJITSU – TA08025-B604	5G
	C1	FUJITSU – TA08025-B605	5G

NOTES

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.

ANTENNA SCHEDULE

NO SCALE

3

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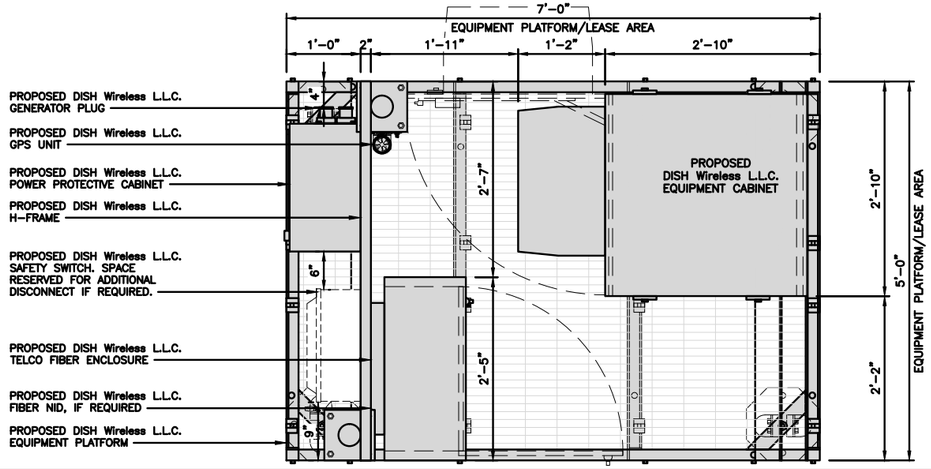
DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00113A
1363 BOSTON POST RD
OLD SAYBROOK, CT 06475

SHEET TITLE
ELEVATION, ANTENNA LAYOUT AND SCHEDULE

SHEET NUMBER
A-2



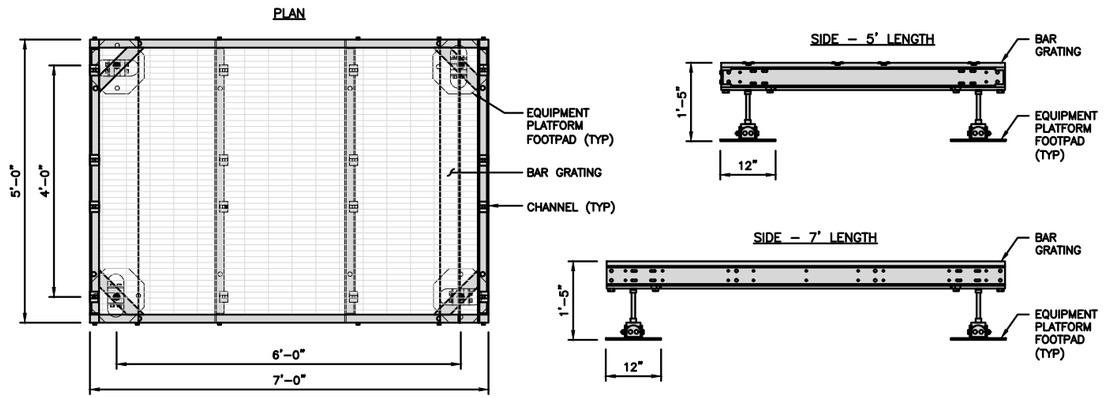
PLATFORM EQUIPMENT PLAN

12" 9" 6" 3" 0 1' 2'
1"=1'-0"

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"

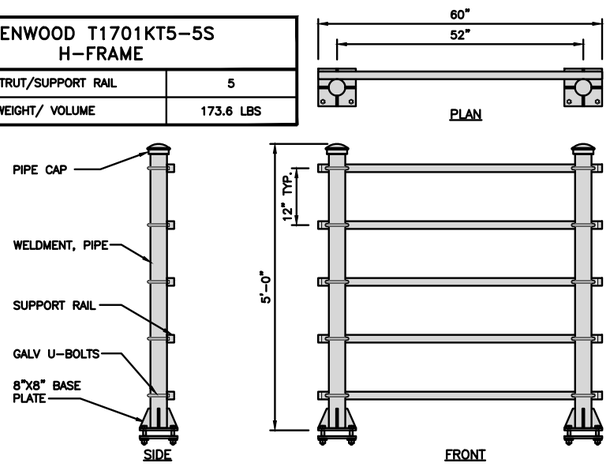


PLATFORM DETAIL

NO SCALE

2

KENWOOD T1701KT5-5S H-FRAME	
UNISTRUT/SUPPORT RAIL	5
WEIGHT/ VOLUME	173.6 LBS



H-FRAME DETAIL

NO SCALE

3

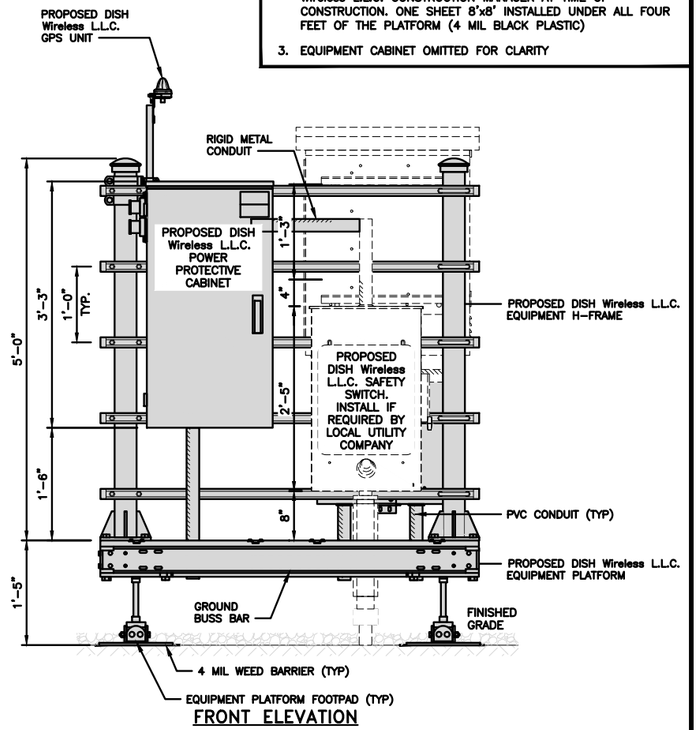
NOT USED

NO SCALE

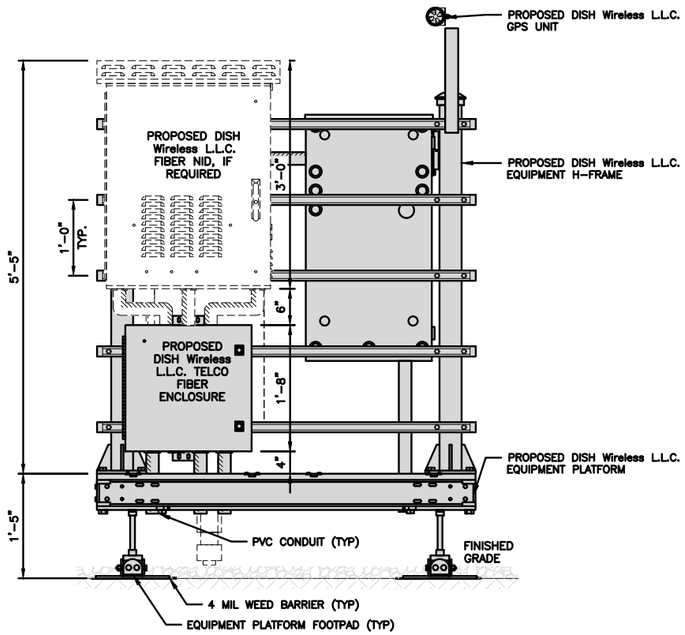
4

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



FRONT ELEVATION



BACK ELEVATION

H-FRAME EQUIPMENT ELEVATION

12" 9" 6" 3" 0 1' 2'
1"=1'-0"

5

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PROJECT INFORMATION
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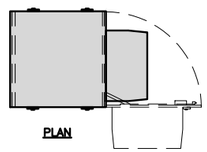
1363 BOSTON POST RD
OLD SAYBROOK, CT 06475

SHEET TITLE
EQUIPMENT PLATFORM AND H-FRAME DETAILS

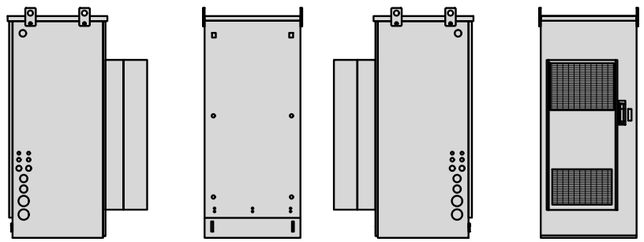
SHEET NUMBER
A-3

CHARLES INDUSTRY HEX CUBE–PM639155N4

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



PLAN



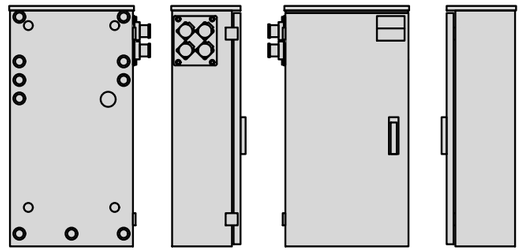
SIDE BACK SIDE FRONT

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



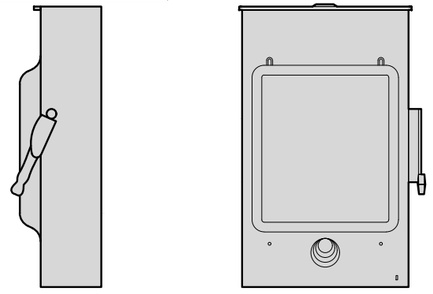
BACK SIDE FRONT SIDE

POWER PROTECTION CABINET (PPC) DETAIL | NO SCALE | 2

SQUARE D SAFETY SWITCHES D224NRB

ENCLOSURE DIM (HxWxD)	29.25"x19.00"x8.50"
ENCLOSURE TYPE	NEMA 3R RAINPROOF
UL LISTED	FILE E–2875

TOP

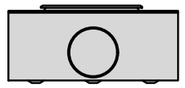


SIDE FRONT

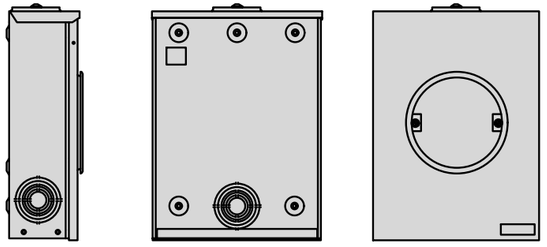
SAFETY SWITCH DETAIL | NO SCALE | 3

EATON METER SOCKET UNRRS213BEUSE

METER SOCKET TYPE	RING
ENCLOSURE DIM (HxWxD)	16"x12"x6"
MAIN AMPERE RATING	200A
WEIGHT	18 LBS



PLAN



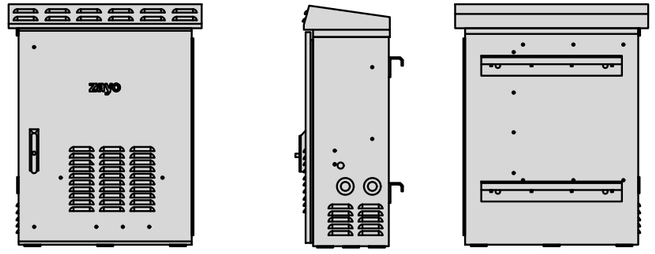
SIDE BACK FRONT

METER SOCKET DETAIL | NO SCALE | 4

ZAYO 5RU CABINET ("LIT" SITES)

DIMENSIONS (HxWxD)	36.115"x29"x12.9"
WEIGHT	85 LBS
POWER INPUT	20A, –48VDC

PLAN

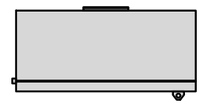


FRONT SIDE BACK

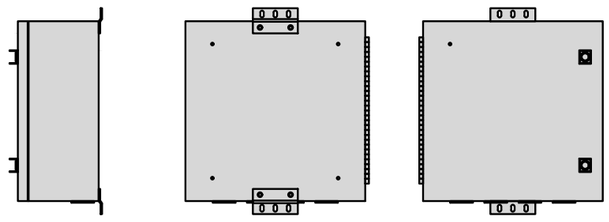
NETWORK INTERFACE UNIT DETAIL | NO SCALE | 5

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

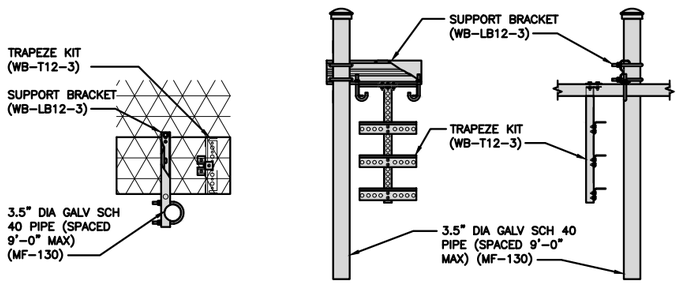
FIBER TELCO ENCLOSURE DETAIL | NO SCALE | 6

COMMSCOPE WB–K110–B WAVEGUIDE BRIDGE KIT

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

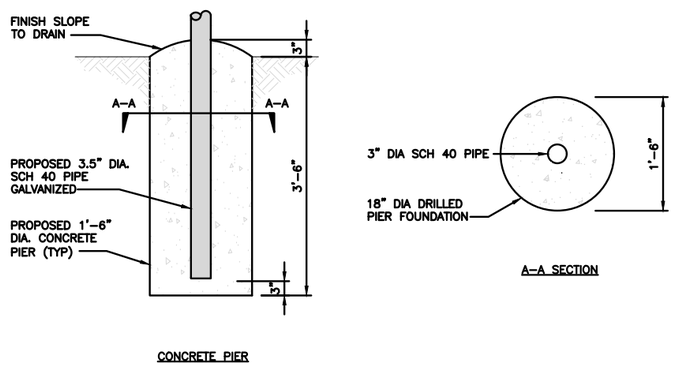
INCLUDED PRODUCTS:

- WB–T12–3 TRAPEZE KIT, 3 RUNGS
- WB–LB12–3 SUPPORT BRACKET
- MF–130 DIRECT BURIAL PIPE COLUMN, 13'–4"



PLAN FRONT SIDE

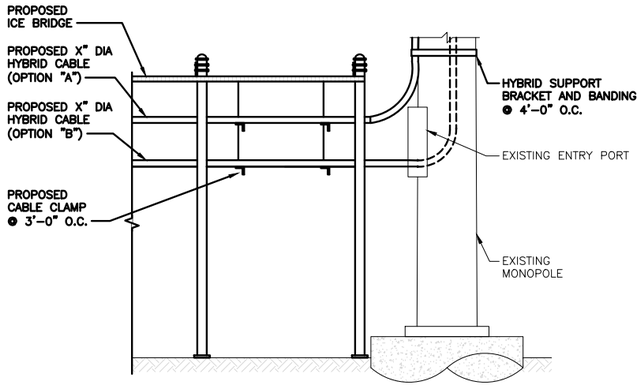
ICE BRIDGE DETAIL | NO SCALE | 7



CONCRETE PIER

A–A SECTION

TYPICAL ICE BRIDGE CONCRETE PIER DETAIL | NO SCALE | 8



HYBRID CABLE RUN | NO SCALE | 9

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1363 BOSTON POST RD
OLD SAYBROOK, CT 06475

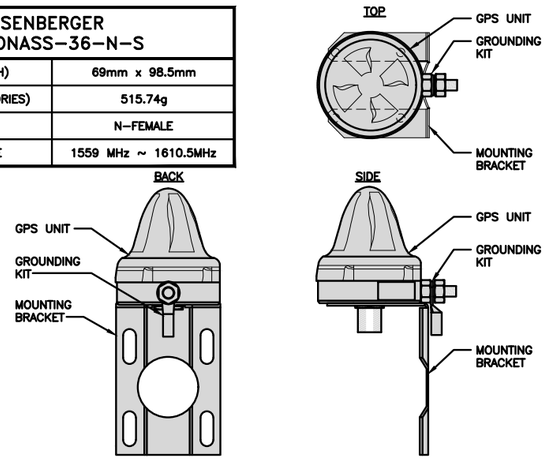
SHEET TITLE

EQUIPMENT DETAILS

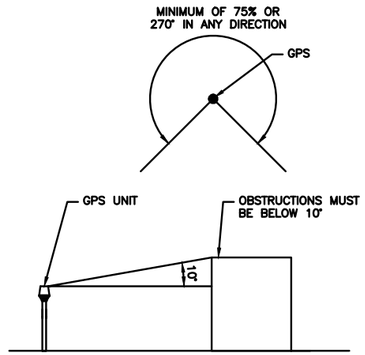
SHEET NUMBER

A-4

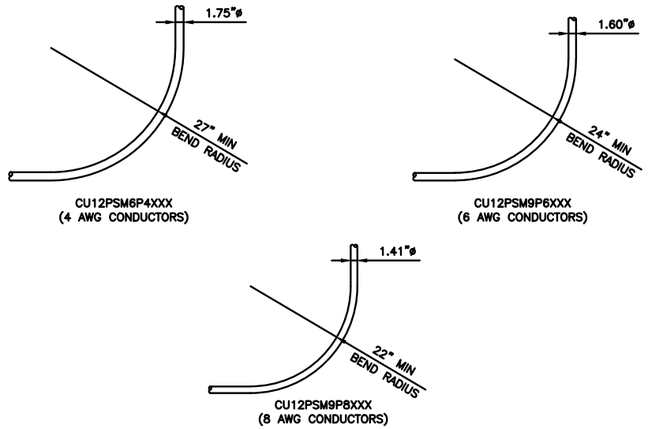
ROSENBERGER GPSGLONASS-36-N-S	
DIMENSION (DIA x H)	69mm x 98.5mm
WEIGHT (WITH ACCESSORIES)	515.74g
CONNECTOR	N-FEMALE
FREQUENCY RANGE	1559 MHz ~ 1610.5MHz



GPS ANTENNA 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

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RFDS REV #: 2

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2	01/28/22	REVISED PER COMMENTS

A&E PROJECT NUMBER

1197-F0001-C

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00113A
1363 BOSTON POST RD
OLD SAYBROOK, CT 06475

SHEET TITLE

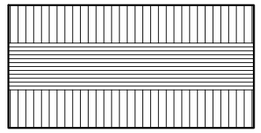
EQUIPMENT DETAILS

SHEET NUMBER

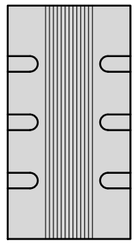
A-5

FUJITSU TA08025-B604 RRH

DIMENSIONS (HxWxD) (KG/IN)	380x400x200/14.9"x15.7"x7.8"
WEIGHT(KG,LB)/ VOLUME	29kg,63.9lb/ 30L
POWER SUPPLY	DC-58~-36V



PLAN



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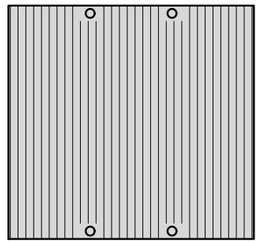


FRONT

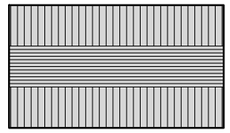
NOTES

FINAL RRH SPECIFICATIONS TO BE CONFIRMED BY GC

REMOTE RADIO HEAD DETAIL | NO SCALE | 1

FUJITSU TA08025-B605 RRH

DIMENSIONS (HxWxD) (KG/IN)	380x400x230/14.9"x15.7"x9.0"
WEIGHT(KG,LB)/ VOLUME	34kg,74.9lb/ 35L
POWER SUPPLY	DC-58~-36V



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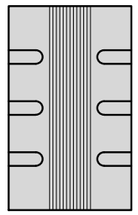

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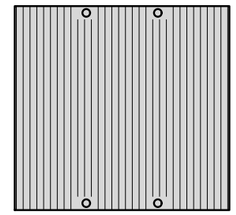


FRONT

NOTES

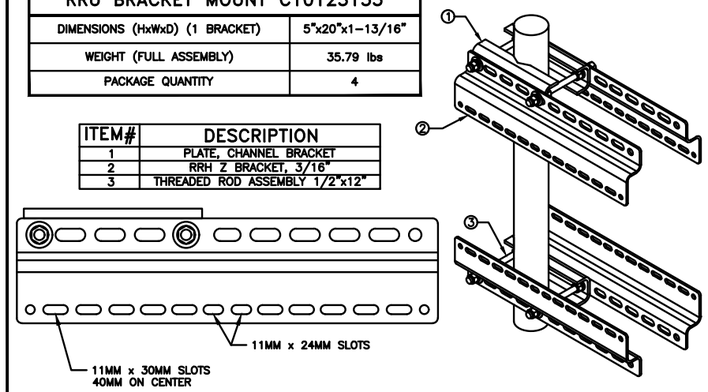
FINAL RRH SPECIFICATIONS TO BE CONFIRMED BY GC

REMOTE RADIO HEAD DETAIL | NO SCALE | 2

SABRE INDUSTRIES RRU BRACKET MOUNT C10123155

DIMENSIONS (HxWxD) (1 BRACKET)	5"x20"x1-13/16"
WEIGHT (FULL ASSEMBLY)	35.79 lbs
PACKAGE QUANTITY	4

ITEM#	DESCRIPTION
1	PLATE, CHANNEL BRACKET
2	RRH Z BRACKET, 3/16"
3	THREADED ROD ASSEMBLY 1/2"x12"

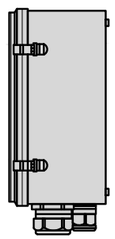


REMOTE RADIO MOUNT DETAIL | NO SCALE | 3

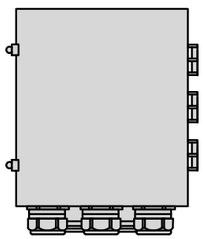
RAYCAP RDIDC-9181-PF-48 DC SURGE PROTECTION

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

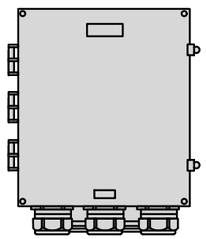
PLAN



SIDE



BACK



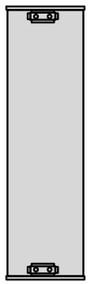
FRONT

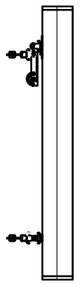
SURGE SUPPRESSION DETAIL | NO SCALE | 4

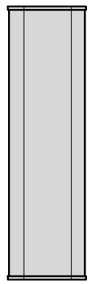
JMA WIRELESS MX08FRO665-20 ANTENNA

DIMENSIONS (HxWxD)	72.0"x20.0"x8.0"
TOTAL WEIGHT	54 LB
RF PORTS, CONNECTOR TYPE	8 x 4.3-10 FEMALE

PLAN







NOTES

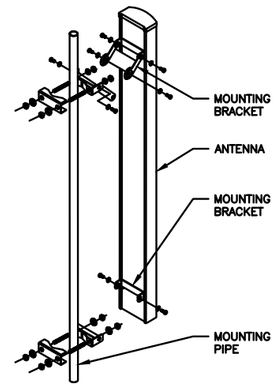
FINAL ANTENNA SPECIFICATIONS TO BE CONFIRMED BY GC

ANTENNA DETAIL | NO SCALE | 5

JMA MOUNTING BRACKET

WIDTH	5"
DEPTH	2"
HEIGHT	8"
TOTAL WEIGHT	1.5 lbs
HOUSING MATERIAL	ASA/ABS/ALUMINUM
RADOME COLOR	LIGHT GRAY
CONNECTOR	1x8-PIN DAISY CHAIN

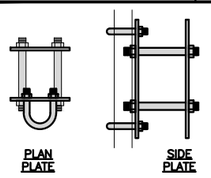
NOTE:
OR DISH Wireless L.L.C.
APPROVED EQUIVALENT



ANTENNA MOUNTING DETAIL | NO SCALE | 6

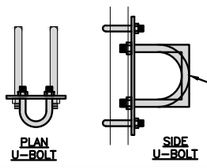
COMMSCOPE XP-2040 CROSSOVER PLATE

DIMENSIONS (HxW)	10"x12"
WEIGHT	11.023 LBS



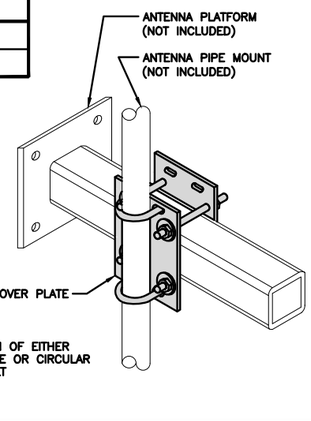
PLAN PLATE

SIDE PLATE



PLAN U-BOLT

SIDE U-BOLT

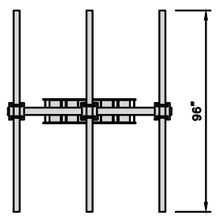


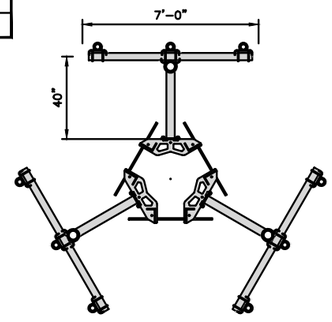
RRH/OVP MOUNT DETAIL | NO SCALE | 7

COMMSCOPE MC-K6MHDX-9-96

FACE WIDTH	7'-0"
WEIGHT	1203.31 lbs
NOTE: 15" TO 50" O.D.	

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





NOT USED | NO SCALE | 9

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A&E PROJECT NUMBER

1197-F0001-C

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00113A
1363 BOSTON POST RD
OLD SAYBROOK, CT 06475

SHEET TITLE

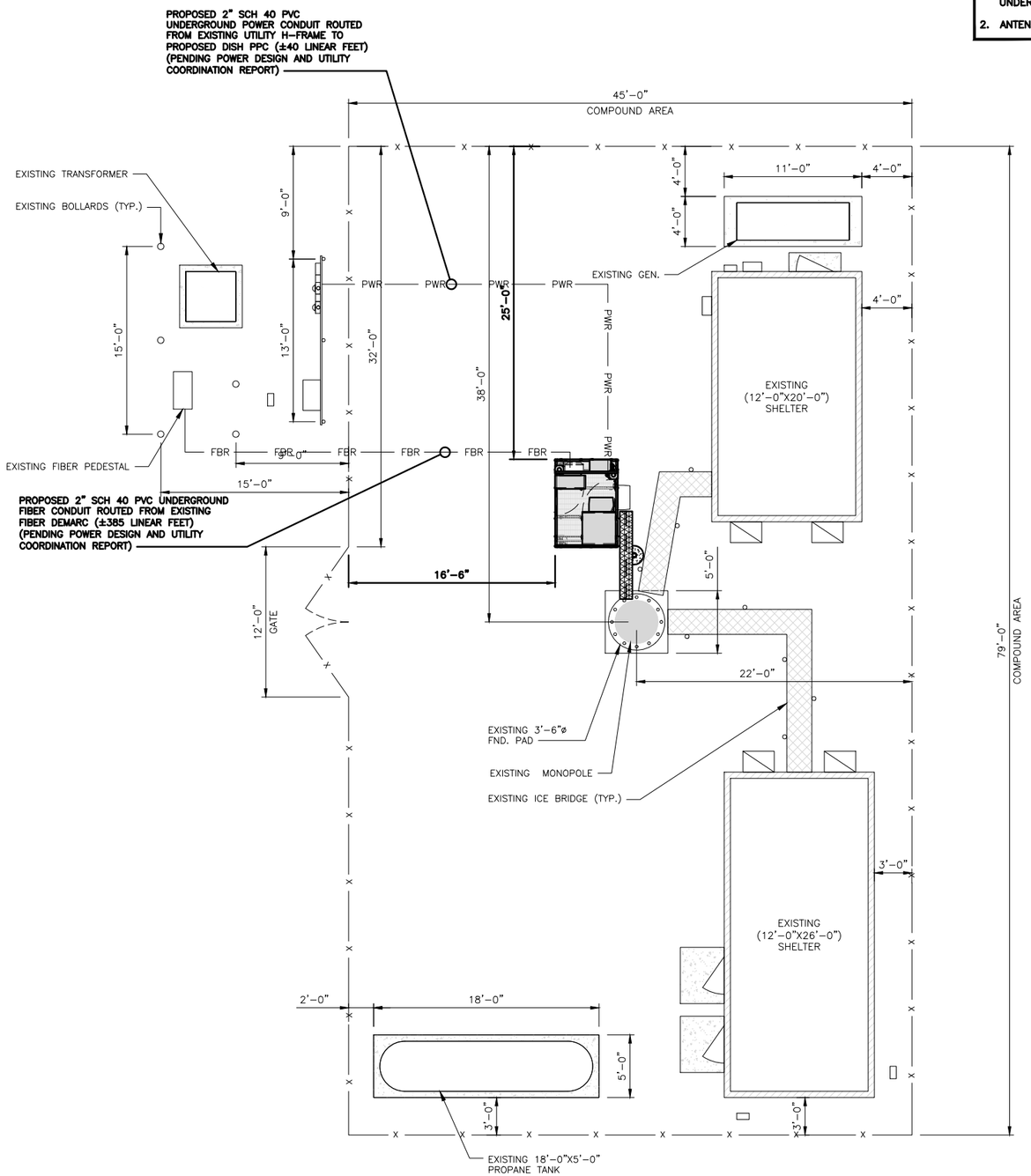
EQUIPMENT DETAILS

SHEET NUMBER

A-6

NOTES

1. CONTRACTOR SHALL FIELD VERIFY ALL PROPOSED UNDERGROUND UTILITY CONDUIT ROUTE.
2. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.



UTILITY ROUTE PLAN

6' 4' 2' 0 5' 10'
3/16"=1'-0"

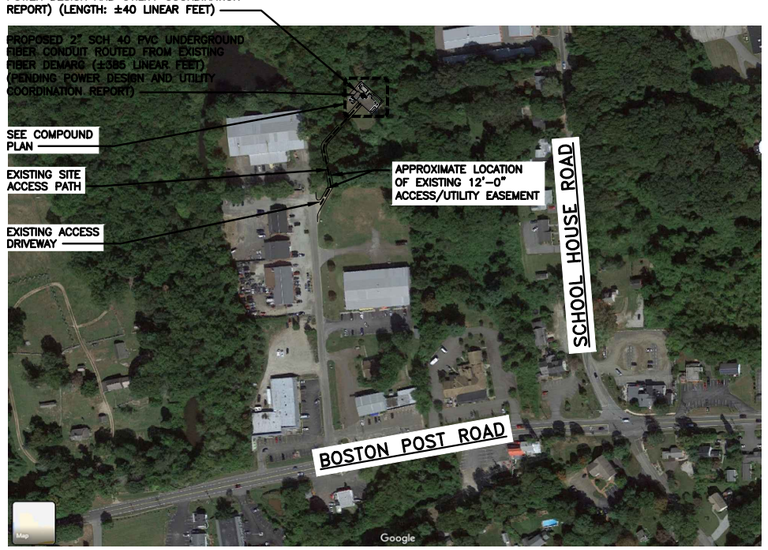
1

DC POWER WIRING SHALL BE COLOR CODED AT EACH END FOR IDENTIFYING +24V AND -48V CONDUCTORS. RED MARKINGS SHALL IDENTIFY +24V AND BLUE MARKINGS SHALL IDENTIFY -48V.

1. CONTRACTOR SHALL INSPECT THE EXISTING CONDITIONS PRIOR TO SUBMITTING A BID. ANY QUESTIONS ARISING DURING THE BID PERIOD IN REGARDS TO THE CONTRACTOR'S FUNCTIONS, THE SCOPE OF WORK, OR ANY OTHER ISSUE RELATED TO THIS PROJECT SHALL BE BROUGHT UP DURING THE BID PERIOD WITH THE PROJECT MANAGER FOR CLARIFICATION, NOT AFTER THE CONTRACT HAS BEEN AWARDED.
2. ALL ELECTRICAL WORK SHALL BE DONE IN ACCORDANCE WITH CURRENT NATIONAL ELECTRICAL CODES AND ALL STATE AND LOCAL CODES, LAWS, AND ORDINANCES. PROVIDE ALL COMPONENTS AND WIRING SIZES AS REQUIRED TO MEET NEC STANDARDS.
3. LOCATION OF EQUIPMENT, CONDUIT AND DEVICES SHOWN ON THE DRAWINGS ARE APPROXIMATE AND SHALL BE COORDINATED WITH FIELD CONDITIONS PRIOR TO CONSTRUCTION.
4. CONDUIT ROUGH-IN SHALL BE COORDINATED WITH THE MECHANICAL EQUIPMENT TO AVOID LOCATION CONFLICTS. VERIFY WITH THE MECHANICAL EQUIPMENT CONTRACTOR AND COMPLY AS REQUIRED.
5. CONTRACTOR SHALL PROVIDE ALL BREAKERS, CONDUITS AND CIRCUITS AS REQUIRED FOR A COMPLETE SYSTEM.
6. CONTRACTOR SHALL PROVIDE PULL BOXES AND JUNCTION BOXES AS REQUIRED BY THE NEC ARTICLE 314.
7. CONTRACTOR SHALL PROVIDE ALL STRAIN RELIEF AND CABLE SUPPORTS FOR ALL CABLE ASSEMBLIES. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
8. ALL DISCONNECTS AND CONTROLLING DEVICES SHALL BE PROVIDED WITH ENGRAVED PHENOLIC NAMEPLATES INDICATING EQUIPMENT CONTROLLED, BRANCH CIRCUITS INSTALLED ON, AND PANEL FIELD LOCATIONS FED FROM.
9. INSTALL AN EQUIPMENT GROUNDING CONDUCTOR IN ALL CONDUITS PER THE SPECIFICATIONS AND NEC 250. THE EQUIPMENT GROUNDING CONDUCTORS SHALL BE BONDED AT ALL JUNCTION BOXES, PULL BOXES, AND ALL DISCONNECT SWITCHES, AND EQUIPMENT CABINETS.
10. ALL NEW MATERIAL SHALL HAVE A U.L. LABEL.
11. PANEL SCHEDULE LOADING AND CIRCUIT ARRANGEMENTS REFLECT POST-CONSTRUCTION EQUIPMENT.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR AS-BUILT PANEL SCHEDULE AND SITE DRAWINGS.
13. FIBER ROUTE IS PRELIMINARY, FINAL FIBER ROUTE TO BE DETERMINED ONCE UCR (UTILITY COORDINATION REPORT) HAS BEEN FINALIZED.

ELECTRICAL NOTES

2



OVERALL UTILITY ROUTE PLAN

30' 20' 10' 0 30' 60'
1"=30'

3

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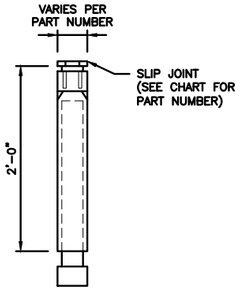
DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00113A
1363 BOSTON POST RD
OLD SAYBROOK, CT 06475

SHEET TITLE
ELECTRICAL/FIBER ROUTE PLAN AND NOTES

SHEET NUMBER
E-1

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"

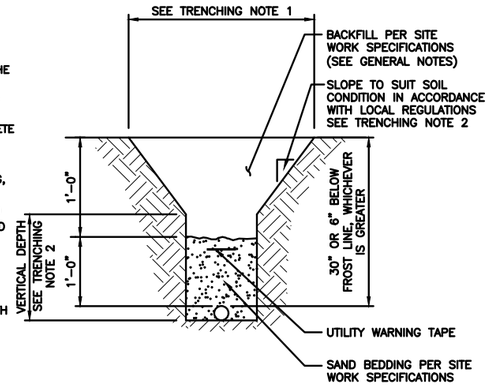


NOTE:
CONTRACTOR TO INSTALL EXPANSION FITTING SLIP JOINT AT METER CENTER CONDUIT TERMINATION, AS PER LOCAL UTILITY POLICY, ORDINANCE AND/OR SPECIFIED REQUIREMENT.

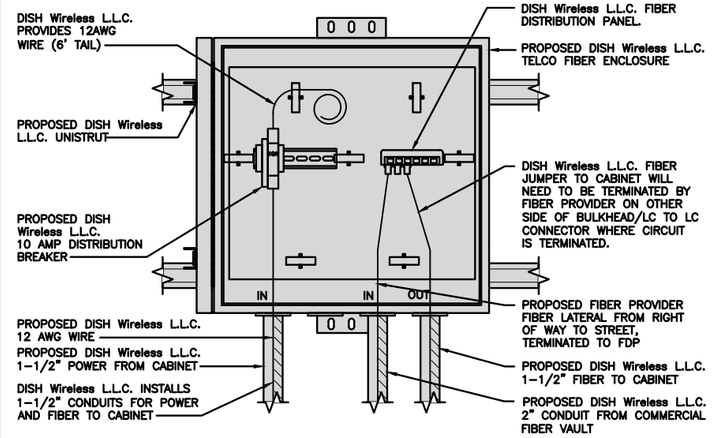
EXPANSION JOINT DETAIL | NO SCALE | 1

TRENCHING NOTES

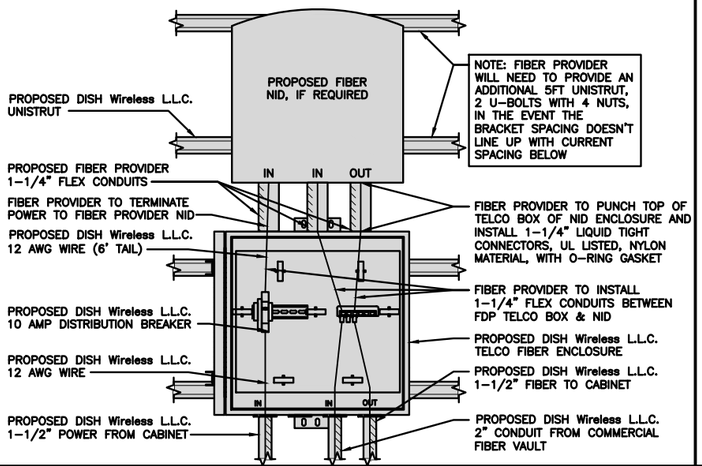
1. CONTRACTOR SHALL RESTORE THE TRENCH TO ITS ORIGINAL CONDITIONS BY EITHER SEEDING OR SODDING GRASS AREAS, OR REPLACING ASPHALT OR CONCRETE AREAS TO ITS ORIGINAL CROSS SECTION.
2. TRENCHING SAFETY; INCLUDING, BUT NOT LIMITED TO SOIL CLASSIFICATION, SLOPING, AND SHORING, SHALL BE GOVERNED BY THE CURRENT 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.



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

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DISH Wireless L.L.C.
PROJECT INFORMATION
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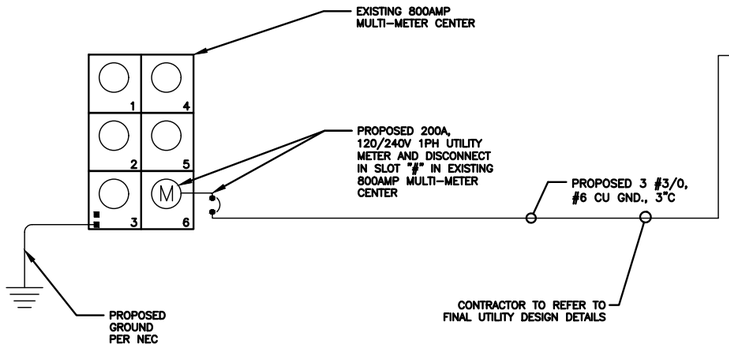
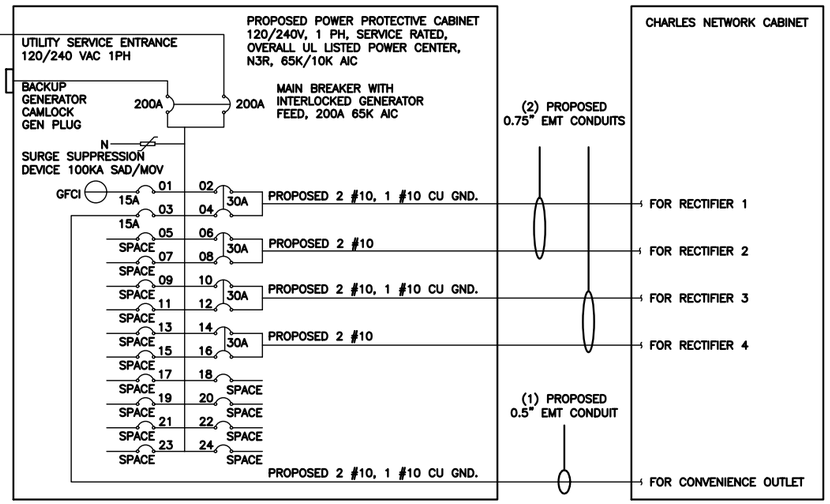
1363 BOSTON POST RD
OLD SAYBROOK, CT 06475

SHEET TITLE
ELECTRICAL DETAILS

SHEET NUMBER
E-2





NOTE:
BRANCH CIRCUIT WIRING SUPPLYING RECTIFIERS ARE TO BE RATED UL1015, 105°C, 600V, AND PVC INSULATED, IN THE SIZES SHOWN IN THE ONE-LINE DIAGRAM. CONTRACTOR MAY SUBSTITUTE UL1015 WIRE FOR THWN-2 FOR CONVENIENCE OUTLET BRANCH CIRCUIT.

BREAKERS REQUIRED:
(4) 30A, 2P BREAKER - SQUARE D P/N:QO230
(1) 15A, 1P BREAKER - SQUARE D P/N:QO115

NOTES

THE (2) CONDUITS WITH (4) CURRENT CARRYING CONDUCTORS EACH, SHALL APPLY THE ADJUSTMENT FACTOR OF 80% PER 2014/17 NEC TABLE 310.15(B)(3)(a) OR 2020 NEC TABLE 310.15(C)(1) FOR UL1015 WIRE.

#12 FOR 15A-20A/1P BREAKER: 0.8 x 30A = 24.0A
#10 FOR 25A-30A/2P BREAKER: 0.8 x 40A = 32.0A
#8 FOR 35A-40A/2P BREAKER: 0.8 x 55A = 44.0A
#6 FOR 45A-60A/2P BREAKER: 0.8 x 75A = 60.0A

CONDUIT SIZING: AT 40% FILL PER NEC CHAPTER 9, TABLE 4, ARTICLE 358.
0.5" CONDUIT - 0.122 SQ. IN AREA
0.75" CONDUIT - 0.213 SQ. IN AREA
2.0" CONDUIT - 1.316 SQ. IN AREA
3.0" CONDUIT - 2.907 SQ. IN AREA

CABINET CONVENIENCE OUTLET CONDUCTORS (1 CONDUIT): USING THWN-2, CU.

#10 - 0.0211 SQ. IN X 2 = 0.0422 SQ. IN
#10 - 0.0211 SQ. IN X 1 = 0.0211 SQ. IN <GROUND
TOTAL = 0.0633 SQ. IN

0.5" EMT CONDUIT IS ADEQUATE TO HANDLE THE TOTAL OF (3) WIRES, INCLUDING GROUND WIRE, AS INDICATED ABOVE.

RECTIFIER CONDUCTORS (2 CONDUITS): USING UL1015, CU.

#10 - 0.0266 SQ. IN X 4 = 0.1064 SQ. IN
#10 - 0.0082 SQ. IN X 1 = 0.0082 SQ. IN <BARE GROUND
TOTAL = 0.1146 SQ. IN

0.75" EMT CONDUIT IS ADEQUATE TO HANDLE THE TOTAL OF (5) WIRES, INCLUDING GROUND WIRE, AS INDICATED ABOVE.

PPC FEED CONDUCTORS (1 CONDUIT): USING THWN, CU.

3/0 - 0.2679 SQ. IN X 3 = 0.8037 SQ. IN
#6 - 0.0507 SQ. IN X 1 = 0.0507 SQ. IN <GROUND
TOTAL = 0.8544 SQ. IN

3.0" SCH 40 PVC CONDUIT IS ADEQUATE TO HANDLE THE TOTAL OF (4) WIRES, INCLUDING GROUND WIRE, AS INDICATED ABOVE.

PPC ONE-LINE DIAGRAM — NO SCALE — 1

PROPOSED CHARLES PANEL SCHEDULE

LOAD SERVED	VOLT AMPS (WATTS) L1	VOLT AMPS (WATTS) L2	TRIP	CKT #	PHASE	CKT #	TRIP	VOLT AMPS (WATTS) L1	VOLT AMPS (WATTS) L2	LOAD SERVED
PPC GFCI OUTLET	180		15A	1	A	2	30A	2880		ABB/GE INFINITY RECTIFIER 1
CHARLES GFCI OUTLET		180	15A	3	B	4			2880	
-SPACE-				5	A	6	30A	2880		ABB/GE INFINITY RECTIFIER 2
-SPACE-				7	B	8			2880	
-SPACE-				9	A	10	30A	2880		ABB/GE INFINITY RECTIFIER 3
-SPACE-				11	B	12			2880	
-SPACE-				13	A	14	30A	2880		ABB/GE INFINITY RECTIFIER 4
-SPACE-				15	B	16			2880	
-SPACE-				17	A	18				-SPACE-
-SPACE-				19	B	20				-SPACE-
-SPACE-				21	A	22				-SPACE-
-SPACE-				23	B	24				-SPACE-
VOLTAGE AMPS	180	180						11520	11520	
200A MCB, 1Φ, 24 SPACE, 120/240V			L1		L2					
MB RATING: 65,000 AIC			11700		11700		VOLTAGE AMPS			
			98		98		AMPS			
			98				MAX AMPS			
			123				MAX 125%			

PANEL SCHEDULE — NO SCALE — 2

NOT USED — NO SCALE — 3

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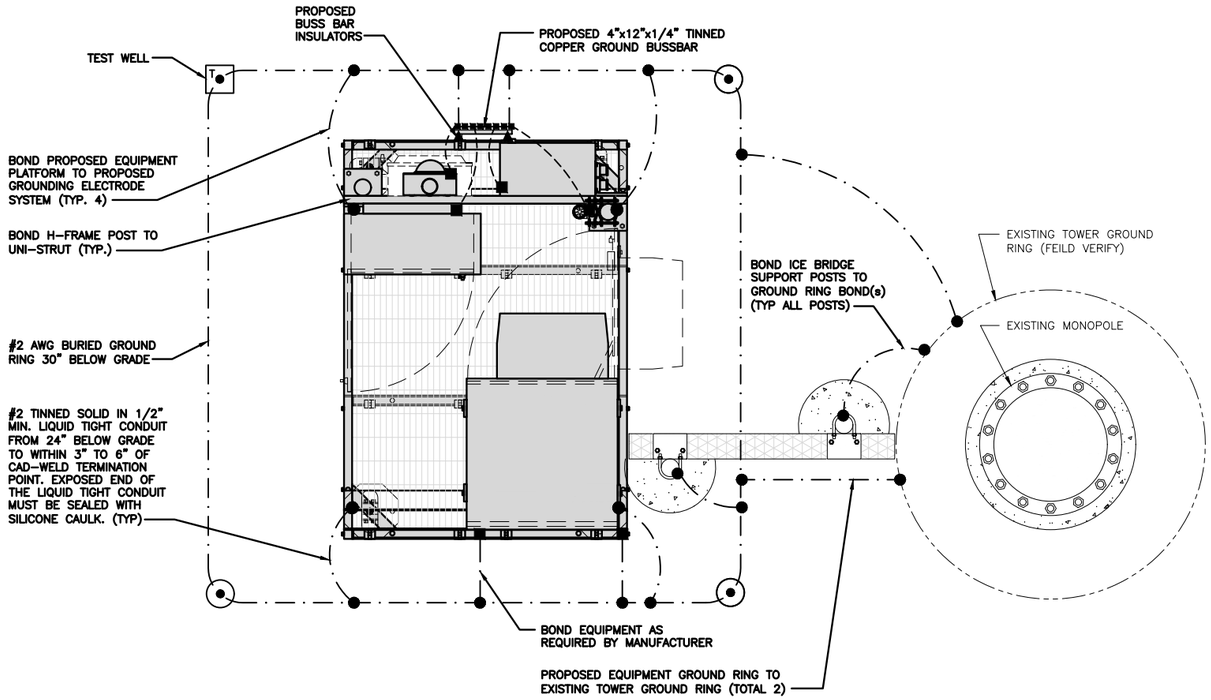
1197-F0001-C

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00113A
1363 BOSTON POST RD
OLD SAYBROOK, CT 06475

SHEET TITLE
ELECTRICAL ONE-LINE, FAULT CALCS & PANEL SCHEDULE

SHEET NUMBER
E-3

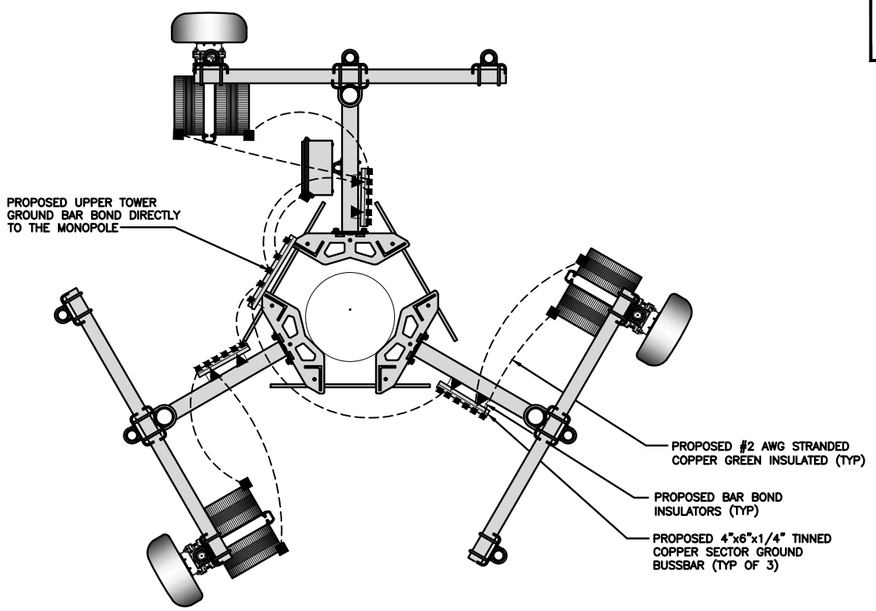


TYPICAL EQUIPMENT GROUNDING PLAN

NO SCALE | 1

NOTES

1. ANTENNAS AND OVP SHOWN ARE GENERIC AND NOT REFERENCING TO A SPECIFIC MANUFACTURER. THIS LAYOUT IS FOR REFERENCE ONLY



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

1. GROUNDING IS SHOWN DIAGRAMMATICALLY ONLY.
2. 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.
3. 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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A&E PROJECT NUMBER
1197-F0001-C

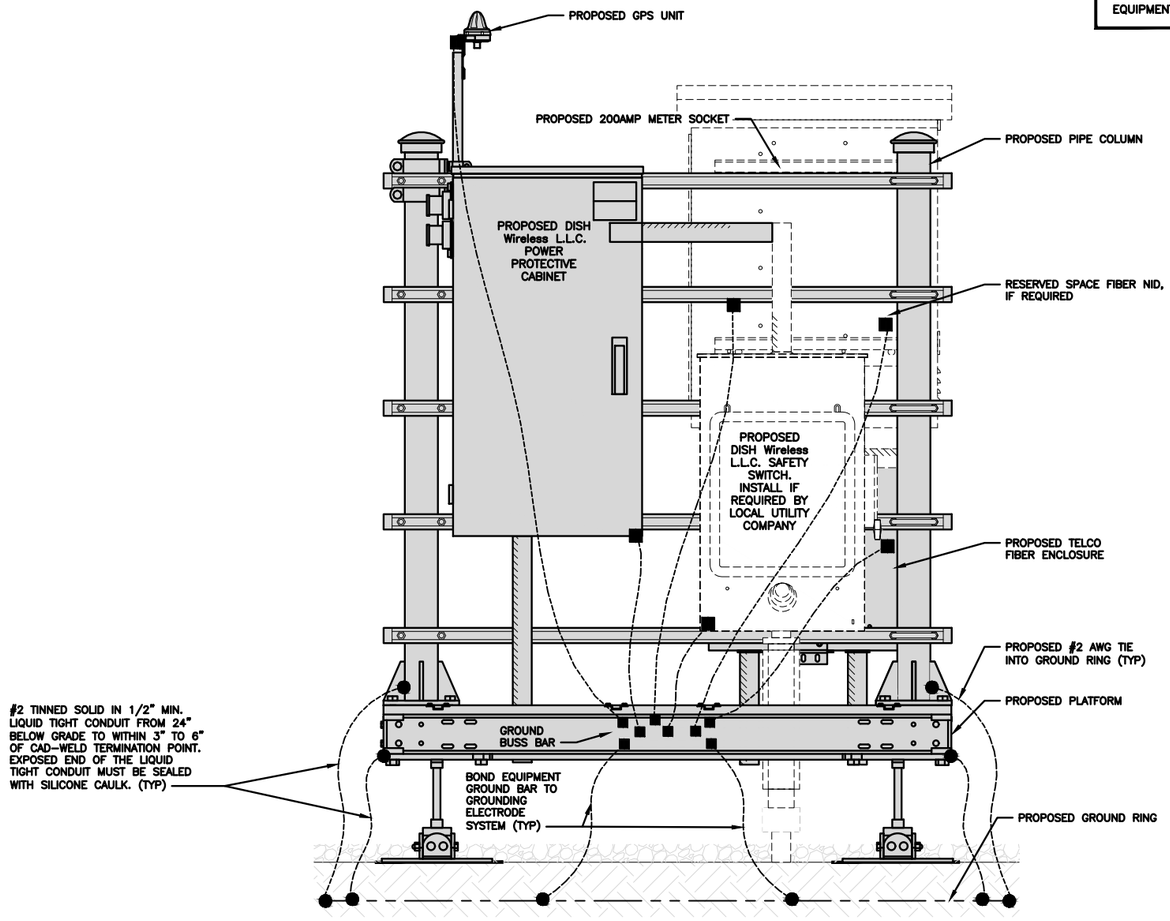
DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00113A
1363 BOSTON POST RD
OLD SAYBROOK, CT 06475

SHEET TITLE
GROUNDING PLANS AND NOTES

SHEET NUMBER
G-1

NOTES

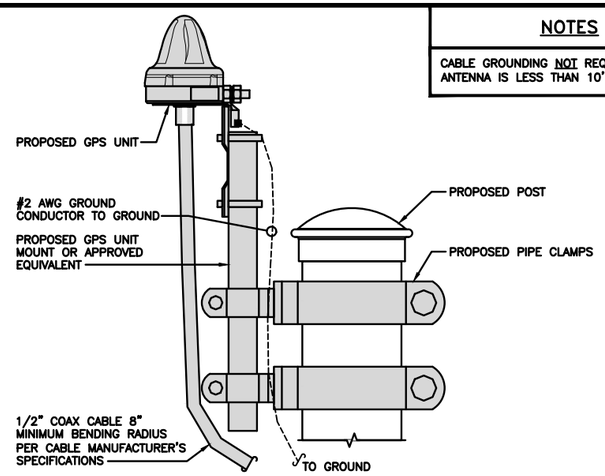
EQUIPMENT CABINET OMITTED FOR CLARITY



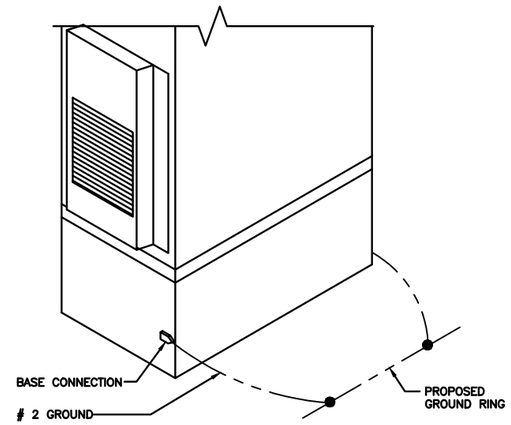
H-FRAME GROUNDING DETAIL | NO SCALE | 1

NOTES

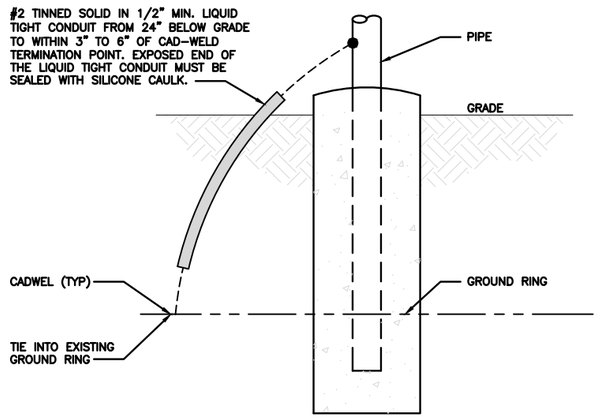
CABLE GROUNDING NOT REQUIRED WHEN ANTENNA IS LESS THAN 10' FROM CABINET



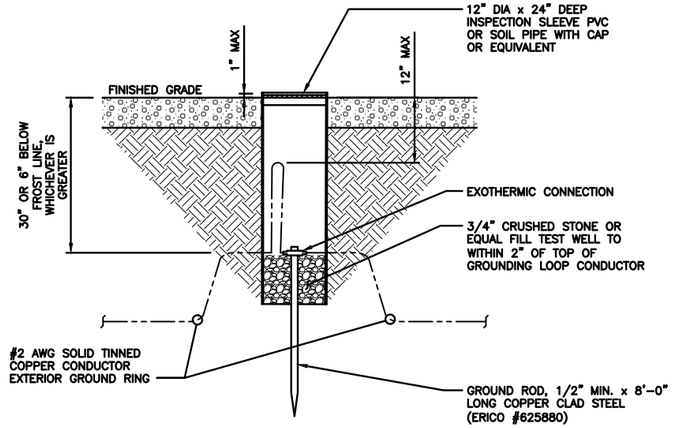
TYPICAL GPS UNIT GROUNDING | NO SCALE | 2



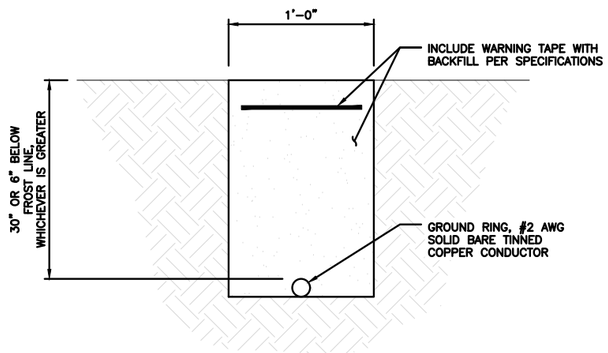
OUTDOOR CABINET GROUNDING | NO SCALE | 3



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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DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00113A
1363 BOSTON POST RD
OLD SAYBROOK, CT 06475

SHEET TITLE

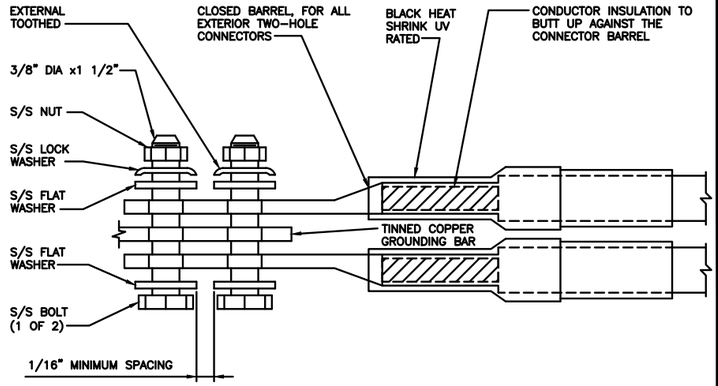
GROUNDING DETAILS

SHEET NUMBER

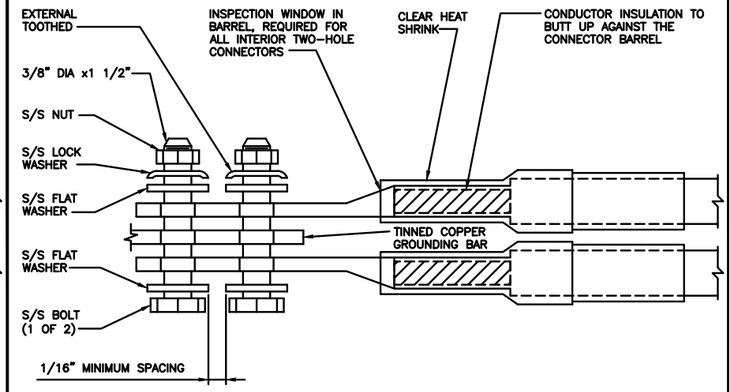
G-2

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.
9. ENSURE THE WIRE INSULATION TERMINATION IS WITHIN 1/8" OF THE BARREL (NO SHINERS).

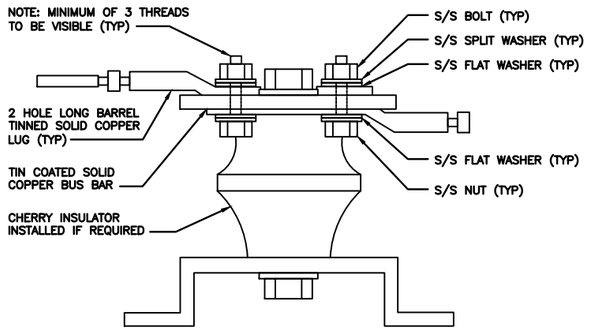
TYPICAL GROUNDING NOTES | NO SCALE | 1



TYPICAL EXTERIOR TWO HOLE LUG | NO SCALE | 2



TYPICAL INTERIOR TWO HOLE LUG | NO SCALE | 3



LUG DETAIL | NO SCALE | 4

| 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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OLD SAYBROOK, CT 06475

SHEET TITLE
GROUNDING DETAILS

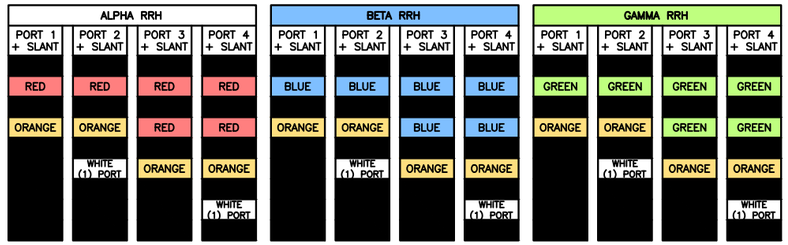
SHEET NUMBER
G-3

RF JUMPER COLOR CODING

3/4" TAPE WIDTHS WITH 3/4" SPACING

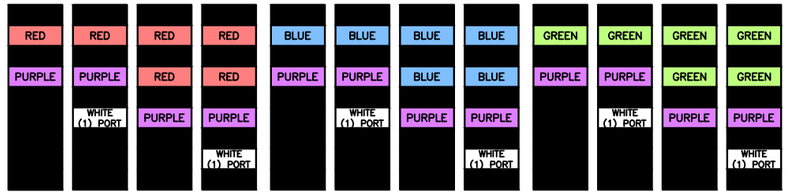
LOW-BAND RRH –
(600MHz N71 BASEBAND) +
(850MHz N26 BAND) +
(700MHz N29 BAND) – OPTIONAL PER MARKET

ADD FREQUENCY COLOR TO SECTOR BAND
(CBRS WILL USE YELLOW BANDS)



MID-BAND RRH –
(AWS BANDS N66+N70)

ADD FREQUENCY COLOR TO SECTOR BAND
(CBRS WILL USE YELLOW BANDS)

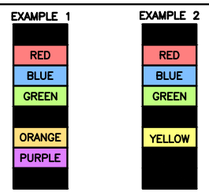


HYBRID/DISCREET CABLES

INCLUDE SECTOR BANDS BEING SUPPORTED AM LONG WITH FREQUENCY BANDS

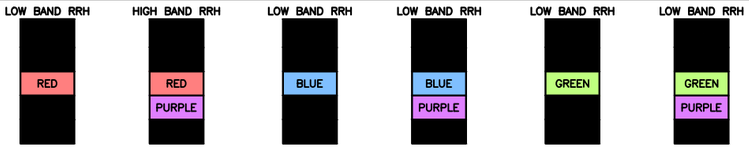
EXAMPLE 1 – HYBRID, OR DISCREET, SUPPORTS ALL SECTORS, BOTH LOW-BANDS AND MID-BANDS

EXAMPLE 2 – HYBRID, OR DISCREET, SUPPORTS CBRS ONLY, ALL SECTORS



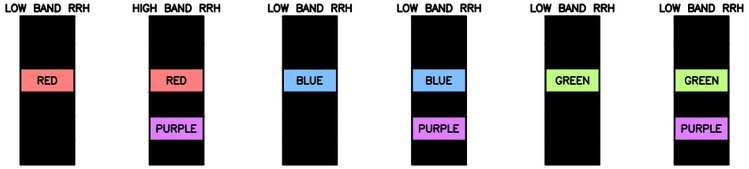
HYBRID/DISCREET CABLES

LOW-BAND RRH FIBER CABLES HAVE SECTOR STRIPE ONLY

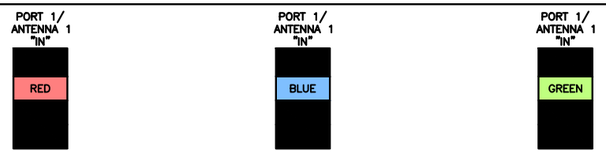


POWER CABLES TO RRHs

LOW-BAND RRH POWER CABLES HAVE SECTOR STRIPE ONLY



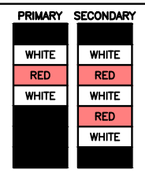
RET MOTORS AT ANTENNAS



MICROWAVE RADIO LINKS

LINKS WILL HAVE A 1.5–2 INCH WHITE WRAP WITH THE AZIMUTH COLOR OVERLAPPING IN THE MIDDLE. ADD ADDITIONAL SECTOR COLOR BANDS FOR EACH ADDITIONAL MW RADIO.

MICROWAVE CABINETS WILL REQUIRE P-TOUCH LABELS INSIDE THE CABINET TO IDENTIFY THE LOCAL AND REMOTE SITE ID'S.



RF CABLE COLOR CODES | NO SCALE | 1

LOW BANDS (N71–N28)
OPTIONAL – (N29)
ORANGE

AWS
(N65+N70+H-BLOCK)
PURPLE

CBRS TECH
(3 GHz)
YELLOW

NEGATIVE SLANT PORT
ON ANTRRH
WHITE

ALPHA SECTOR
RED

BETA SECTOR
BLUE

GAMMA SECTOR
GREEN

COLOR IDENTIFIER | NO SCALE | 2

NOT USED | NO SCALE | 3

NOT USED | NO SCALE | 4

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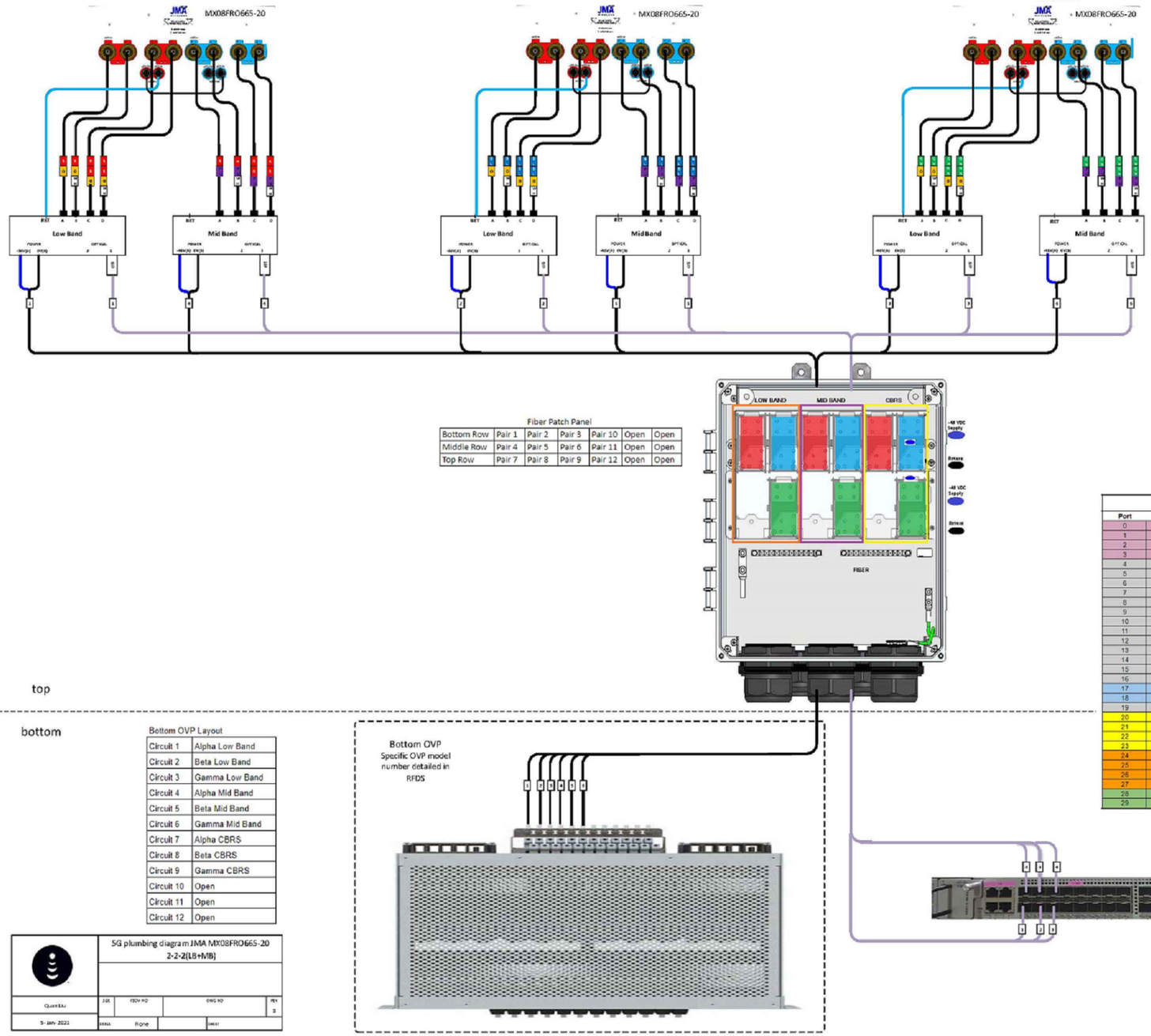
OLD SAYBROOK, CT 06475

SHEET TITLE
RF
CABLE COLOR CODES

SHEET NUMBER
RF-1



Fiber Patch Panel

Bottom Row	Pair 1	Pair 2	Pair 3	Pair 10	Open	Open
Middle Row	Pair 4	Pair 5	Pair 6	Pair 11	Open	Open
Top Row	Pair 7	Pair 8	Pair 9	Pair 12	Open	Open

Bottom OVP Layout

Circuit 1	Alpha Low Band
Circuit 2	Beta Low Band
Circuit 3	Gamma Low Band
Circuit 4	Alpha Mid Band
Circuit 5	Beta Mid Band
Circuit 6	Gamma Mid Band
Circuit 7	Alpha CBRS
Circuit 8	Beta CBRS
Circuit 9	Gamma CBRS
Circuit 10	Open
Circuit 11	Open
Circuit 12	Open

Quantity	5G plumbing diagram JMA MX08FRO665-20 2-2-2(LB+MB)
5-Jan-2021	

CSR NCS540

Port	Interface	Description
0	Gi0/0/0/0	SiteBoss
1	Gi0/0/0/1	CBRS - Alpha
2	Gi0/0/0/2	CBRS - Beta
3	Gi0/0/0/3	CBRS - Gamma
4	Te0/0/0/4	Fujitsu Low-Band RU - Alpha
5	Te0/0/0/5	Fujitsu Mid-Band RU - Alpha
6	Te0/0/0/6	Fujitsu Low-Band RU - Beta
7	Te0/0/0/7	Fujitsu Mid-Band RU - Beta
8	Te0/0/0/8	Fujitsu Low-Band RU - Gamma
9	Te0/0/0/9	Fujitsu Mid-Band RU - Gamma
10	Te0/0/0/10	Fixed WHI
11	Te0/0/0/11	Fixed WHI
12	Te0/0/0/12	Fixed WHI
13	Te0/0/0/13	Fixed WHI
14	Te0/0/0/14	CBRS1
15	Te0/0/0/15	CBRS2
16	Te0/0/0/16	CBRS3
17	Gi0/0/0/17	SM1 - BMC
18	Gi0/0/0/18	SM2 - BMC
19	Te0/0/019	SM1 - Data 1
20	Te0/0/020	SM1 - Data 2
21	Te0/0/021	SM2 - Data 1
22	Te0/0/022	SM2 - Data 2
23	Te0/0/023	Reserved Uplink (EDC, LDC)
24	Te0/0/024	Blank/Future
25	Te0/0/025	Blank/Future
26	Te0/0/026	Fiber NIU
27	Te0/0/027	Fiber NIU
28	Te0/0/028	Blank/Future
29	Te0/0/029	Blank/Future

PLUMBING DIAGRAM | NO SCALE | 1

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1197-F0001-C

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00113A
1363 BOSTON POST RD
OLD SAYBROOK, CT 06475

SHEET TITLE

RF
PLUMBING DIAGRAM

SHEET NUMBER

RF-2

EXOTHERMIC CONNECTION

MECHANICAL CONNECTION

BUSS BAR INSULATOR

CHEMICAL ELECTROLYTIC GROUNDING SYSTEM

TEST CHEMICAL ELECTROLYTIC GROUNDING SYSTEM

EXOTHERMIC WITH INSPECTION SLEEVE

GROUNDING BAR

GROUND ROD

TEST GROUND ROD WITH INSPECTION SLEEVE

SINGLE POLE SWITCH

DUPLEX RECEPTACLE

DUPLEX GFCI RECEPTACLE

FLUORESCENT LIGHTING FIXTURE
(2) TWO LAMPS 48–T8

SMOKE DETECTION (DC)

EMERGENCY LIGHTING (DC)

SECURITY LIGHT W/PHOTOCELL LITHONIA ALXW
LED–1–25A400/51K–SR4–120–PE–DDBTXD

CHAIN LINK FENCE

WOOD/WROUGHT IRON FENCE

WALL STRUCTURE

LEASE AREA

PROPERTY LINE (PL)

SETBACKS

ICE BRIDGE

CABLE TRAY

WATER LINE

UNDERGROUND POWER

UNDERGROUND TELCO

OVERHEAD POWER

OVERHEAD TELCO

UNDERGROUND TELCO/POWER

ABOVE GROUND POWER

ABOVE GROUND TELCO

ABOVE GROUND TELCO/POWER

WORKPOINT

SECTION REFERENCE

DETAIL REFERENCE

LEGEND

AB	ANCHOR BOLT
ABV	ABOVE
AC	ALTERNATING CURRENT
ADDL	ADDITIONAL
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AGL	ABOVE GROUND LEVEL
AIC	AMPERAGE INTERRUPTION CAPACITY
ALUM	ALUMINUM
ALT	ALTERNATE
ANT	ANTENNA
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
BATT	BATTERY
BLDG	BUILDING
BLK	BLOCK
BLKG	BLOCKING
BM	BEAM
BTC	BARE TINNED COPPER CONDUCTOR
BOF	BOTTOM OF FOOTING
CAB	CABINET
CANT	CANTILEVERED
CHG	CHARGING
CLG	CEILING
CLR	CLEAR
COL	COLUMN
COMM	COMMON
CONC	CONCRETE
CONSTR	CONSTRUCTION
DBL	DOUBLE
DC	DIRECT CURRENT
DEPT	DEPARTMENT
DF	DOUGLAS FIR
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DWG	DRAWING
DWL	DOWEL
EA	EACH
EC	ELECTRICAL CONDUCTOR
EL.	ELEVATION
ELEC	ELECTRICAL
EMT	ELECTRICAL METALLIC TUBING
ENG	ENGINEER
EQ	EQUAL
EXP	EXPANSION
EXT	EXTERIOR
EW	EACH WAY
FAB	FABRICATION
FF	FINISH FLOOR
FG	FINISH GRADE
FIF	FACILITY INTERFACE FRAME
FIN	FINISH(ED)
FLR	FLOOR
FDN	FOUNDATION
FOC	FACE OF CONCRETE
FOM	FACE OF MASONRY
FOS	FACE OF STUD
FOW	FACE OF WALL
FS	FINISH SURFACE
FT	FOOT
FTG	FOOTING
GA	GAUGE
GEN	GENERATOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GLB	GLUE LAMINATED BEAM
GLV	GALVANIZED
GPS	GLOBAL POSITIONING SYSTEM
GND	GROUND
GSM	GLOBAL SYSTEM FOR MOBILE
HDG	HOT DIPPED GALVANIZED
HDR	HEADER
HGR	HANGER
HVAC	HEAT/VENTILATION/AIR CONDITIONING
HT	HEIGHT
IGR	INTERIOR GROUND RING
IN	INCH
INT	INTERIOR
LB(S)	POUND(S)
LF	LINEAR FEET
LTE	LONG TERM EVOLUTION
MAS	MASONRY
MAX	MAXIMUM
MB	MACHINE BOLT
MECH	MECHANICAL
MFR	MANUFACTURER
MGB	MASTER GROUND BAR
MIN	MINIMUM
MISC	MISCELLANEOUS
MTL	METAL
MTS	MANUAL TRANSFER SWITCH
MW	MICROWAVE
NEC	NATIONAL ELECTRIC CODE
NM	NEWTON METERS
NO.	NUMBER
#	NUMBER
NTS	NOT TO SCALE
OC	ON–CENTER
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
OPNG	OPENING
P/C	PRECAST CONCRETE
PCS	PERSONAL COMMUNICATION SERVICES
PCU	PRIMARY CONTROL UNIT
PRC	PRIMARY RADIO CABINET
PP	POLARIZING PRESERVING
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	PRESSURE TREATED
PWR	POWER CABINET
QTY	QUANTITY
RAD	RADIUS
RECT	RECTIFIER
REF	REFERENCE
REINF	REINFORCEMENT
REQ'D	REQUIRED
RET	REMOTE ELECTRIC TILT
RF	RADIO FREQUENCY
RMC	RIGID METALLIC CONDUIT
RRH	REMOTE RADIO HEAD
RRU	REMOTE RADIO UNIT
RWY	RACEWAY
SCH	SCHEDULE
SHT	SHEET
SIAD	SMART INTEGRATED ACCESS DEVICE
SIM	SIMILAR
SPEC	SPECIFICATION
SQ	SQUARE
SS	STAINLESS STEEL
STD	STANDARD
STL	STEEL
TEMP	TEMPORARY
THK	THICKNESS
TMA	TOWER MOUNTED AMPLIFIER
TN	TOE NAIL
TOA	TOP OF ANTENNA
TOC	TOP OF CURB
TOF	TOP OF FOUNDATION
TOP	TOP OF PLATE (PARAPET)
TOS	TOP OF STEEL
TOW	TOP OF WALL
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION
TYP	TYPICAL
UG	UNDERGROUND
UL	UNDERWRITERS LABORATORY
UNO	UNLESS NOTED OTHERWISE
UMTS	UNIVERSAL MOBILE TELECOMMUNICATIONS SYSTEM
UPS	UNITERRUPTIBLE POWER SYSTEM (DC POWER PLANT)
VIF	VERIFIED IN FIELD
W	WIDE
W/	WITH
WD	WOOD
WP	WEATHERPROOF
WT	WEIGHT

ABBREVIATIONS

dish wireless.

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1197–F0001–C

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00113A
1363 BOSTON POST RD
OLD SAYBROOK, CT 06475

SHEET TITLE

LEGEND AND ABBREVIATIONS

SHEET NUMBER

GN-1

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.

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A&E PROJECT NUMBER

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DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00113A
1363 BOSTON POST RD
OLD SAYBROOK, CT 06475

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:

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES/ORDINANCES.

2. CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED AND TRIP HAZARDS ARE ELIMINATED.

3. WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC.

4. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC.

4.1. ALL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OF APPROVAL, AND SHALL CONFORM TO REQUIREMENT OF THE NATIONAL ELECTRICAL CODE.

4.2. 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.

5. 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.

6. 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).

7. PANEL BOARDS (ID NUMBERS) SHALL BE CLEARLY LABELED WITH PLASTIC LABELS.

8. TIE WRAPS ARE NOT ALLOWED.

9. 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.

10. 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.

11. POWER AND CONTROL WIRING IN FLEXIBLE CORD SHALL BE MULTI-CONDUCTOR, TYPE SOOW CORD (#14 OR LARGER) UNLESS OTHERWISE SPECIFIED.

12. 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.

13. 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).

14. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.

15. 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 INDOOR 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.

dish wireless.

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WWW.INFINIGY.COM

DRAWN BY:	CHECKED BY:	APPROVED BY:
RCD	SS	CJW

RFDS REV #: 2

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
0	09/23/21	ISSUED FOR PERMIT
1	10/18/21	REVISED PER COMMENTS
2	01/28/22	REVISED PER COMMENTS

A&E PROJECT NUMBER

1197-F0001-C

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00113A
1363 BOSTON POST RD
OLD SAYBROOK, CT 06475

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

BOBDL00113A
1363 BOSTON POST RD
OLD SAYBROOK, CT 06475

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-4

Exhibit D

Structural Analysis Report

BST Management, LLC
325 Park Street, Suite 106
North Reading, MA 01864

GPD Engineering and Architecture
Professional Corporation
Dan Palkovic
520 South Main Street, Suite 2531
Akron, OH 44311
(216) 927-8663
dpalkovic@gpdgroup.com

GPD# 2022701.78
February 1, 2022

COMPREHENSIVE STRUCTURAL ANALYSIS REPORT

SITE DESIGNATION:	**Dish Site #:**	**BOBDL00114A**
	Client #:	**CT-1263**
	Site Name:	**Old Saybrook, Boston Post Road**
ANALYSIS CRITERIA:	**Codes:**	**TIA-222-H** **125 mph (3-second gust) w/ 0" ice** **50 mph (3-second gust) w/ 1" ice**
SITE DATA:		**1363 Boston Post Road, Old Saybrook, CT 06475, Middlesex County** **Latitude 41° 17' 23.27" N, Longitude 72° 24' 21.398" W** **99' Sabre Monopole**

To whom it may concern,

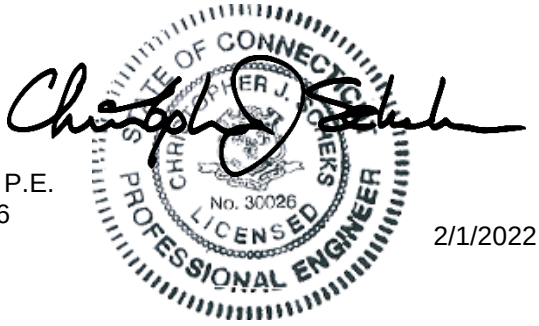
GPD is pleased to submit this Comprehensive Structural Analysis Report to determine the structural integrity of the aforementioned tower. The purpose of the analysis is to determine the suitability of the tower with the existing and proposed loading configuration detailed in the analysis report.

Analysis Results

Tower Stress Level with Proposed Equipment:	53.0%	Pass
Foundation Ratio with Proposed Equipment:	74.1%	Pass

We at GPD appreciate the opportunity of providing our continuing professional services to you and BST Management. If you have any questions or need further assistance on this or any other projects please do not hesitate to call.

Respectfully submitted,



Christopher J. Scheks, P.E.
Connecticut #: 0030026

2/1/2022

SUMMARY & RESULTS

The purpose of this analysis was to verify whether the existing structure is capable of carrying the proposed loading configuration as specified by DISH Wireless and commissioned by BST Management.

This analysis has been performed in accordance with the TIA-222-H Standard based upon a 3-second gust wind speed of 125 mph. Applicable Standard references and design criteria are listed in Appendices A & B.

The proposed feedlines shall be installed as shown in Appendices A & B for the analysis results to be valid.

TOWER SUMMARY AND RESULTS

Member	Capacity	Results
Monopole	53.0%	Pass
Anchor Rods	41.3%	Pass
Base Plate	47.3%	Pass
Foundation	74.1%	Pass

RECOMMENDATIONS

The tower and its foundation have sufficient capacity to carry the proposed loading configuration. No modifications are required at this time.

ANALYSIS METHOD

tnxTower (Version 8.1.1.0), a commercially available software program, was used to create a three-dimensional model of the tower and calculate primary member stresses for various load cases. Selected output from the analysis is included the report appendices. The following table details the information provided to complete this structural analysis. This analysis is solely based on this information.

DOCUMENTS PROVIDED

Document	Remarks	Source
Collocation Application	Site #: CT-1263	BST Management
Tower Design	Sabre Job #: 49722, dated 9/22/2011	GPD
Foundation Design	Sabre Job #: 49722, dated 9/22/2011	GPD
Geotechnical Report	Dr. Clarence Welti, P.E., P.C., dated 6/1/2011	GPD
Previous Tower Analysis	GPD Job #: 2021723.34, dated 9/21/2021	GPD
Previous Tower Analysis	FDH Project #: 17QBDY1400, 4/25/2017	GPD

ASSUMPTIONS

This structural analysis is based on the theoretical capacity of the members and is not a condition assessment of the tower. This analysis is from information supplied, and therefore, its results are based on and are as accurate as that supplied data. GPD has made no independent determination, nor is it required to, of its accuracy. The following assumptions were made for this structural analysis.

1. The tower member sizes and shapes are considered accurate as supplied. The material grade is as per data supplied and/or as assumed and as stated in the materials section.
2. The appurtenance configuration is as supplied, determined from available photos, and/or as modeled in the analysis. It is assumed to be complete and accurate. All antennas, mounts, coax and waveguides are assumed to be properly installed and supported as per manufacturer requirements.
3. All mounts, if applicable, are considered adequate to support the loading. No actual analysis of the mount(s) is performed. This analysis is limited to analyzing the tower only.
4. The soil parameters are as per data supplied or as assumed and stated in the calculations.
5. Foundations are properly designed and constructed to resist the original design loads indicated in the documents provided.
6. The tower and structures have been properly maintained in accordance with TIA Standards and/or with manufacturer's specifications.
7. All welds and connections are assumed to develop at least the member capacity unless determined otherwise and explicitly stated in this report.
8. All prior structural modifications, if applicable, are assumed to be as per data supplied/available and to have been properly installed.
9. Loading interpreted from photos is accurate to ±5' AGL, antenna size accurate to ±3.3 sf, and coax equal to the number of existing antennas without reserve.
10. All existing and proposed loading has been taken from the available site photos as well as documents supplied to GPD at the time of generating this report. All such documents are listed in the Documents Provided Table and are assumed to be accurate. GPD is not responsible for loading scenarios outside those conveyed in the supplied documentation.

If any of these assumptions are not valid or have been made in error, this analysis may be affected, and GPD should be allowed to review any new information to determine its effect on the structural integrity of the tower.

DISCLAIMER OF WARRANTIES

GPD has not performed a site visit to the tower to verify the member sizes or antenna/coax loading. If the existing conditions are not as represented on the tower elevation contained in this report, we should be contacted immediately to evaluate the significance of the discrepancy. This is not a condition assessment of the tower or foundation. This report does not replace a full tower inspection. The tower and foundations are assumed to have been properly fabricated, erected, maintained, in good condition, twist free, and plumb.

The engineering services rendered by GPD in connection with this Comprehensive Structural Analysis are limited to a computer analysis of the tower structure and theoretical capacity of its main structural members. No allowance was made for any damaged, bent, missing, loose, or rusted members (above and below ground). No allowance was made for loose bolts or cracked welds.

This analysis is limited to the designated maximum wind and seismic conditions per the governing tower standards and code. Wind forces resulting in tower vibrations near the structure's resonant frequencies were not considered in this analysis and are outside the scope of this analysis. Lateral loading from any dynamic response was not evaluated under a time-domain based fatigue analysis.

GPD does not analyze the fabrication of the structure (including welding). It is not possible to have all the very detailed information needed to perform a thorough analysis of every structural sub-component and connection of an existing tower. GPD provides a limited scope of service in that we cannot verify the adequacy of every weld, plate connection detail, etc. The purpose of this report is to assess the capability of adding appurtenances usually accompanied by transmission lines to the structure.

It is the owner's responsibility to determine the amount of ice accumulation in excess of the code specified amount, if any, that should be considered in the structural analysis.

The attached sketches are a schematic representation of the analyzed tower. If any material is fabricated from these sketches, the contractor shall be responsible for field verifying the existing conditions, proper fit, and clearance in the field. Any mentions of structural modifications are reasonable estimates and should not be used as a precise construction document. Precise modification drawings are obtainable from GPD, but are beyond the scope of this report.

Miscellaneous items such as antenna mounts, etc., have not been designed or detailed as a part of our work. We recommend that material of adequate size and strength be purchased from a reputable tower manufacturer.

Towers are designed to carry gravity, wind, and ice loads. All members, legs, diagonals, struts, and redundant members provide structural stability to the tower with little redundancy. Absence or removal of a member can trigger catastrophic failure unless a substitute is provided before any removal. Legs carry axial loads and derive their strength from shorter unbraced lengths by the presence of redundant members and their connection to the diagonals with bolts or welds. If the bolts or welds are removed without providing any substitute to the frame, the leg is subjected to a higher unbraced length that immediately reduces its load carrying capacity. If a diagonal is also removed in addition to the connection, the unbraced length of the leg is greatly increased, jeopardizing its load carrying capacity. Failure of one leg can result in a tower collapse because there is no redundancy. Redundant members and diagonals are critical to the stability of the tower.

GPD makes no warranties, expressed and/or implied, in connection with this report and disclaims any liability arising from material, fabrication, and erection of this tower. GPD will not be responsible whatsoever for, or on account of, consequential or incidental damages sustained by any person, firm, or organization as a result of any data or conclusions contained in this report. The maximum liability of GPD pursuant to this report will be limited to the total fee received for preparation of this report.

APPENDIX A

Tower Analysis Summary Form

Tower Analysis Summary Form

General Info

Site Name	Old Saybrook, Boston Post Road (CT-1263)
Site Number	BOBDL00114A
FA Number	10133875
Date of Analysis	2/1/2022
Company Performing Analysis	GPD

The information contained in this summary report is not to be used independently from the PE stamped tower analysis.

Tower Info	Description	Date
Tower Type (G, SST, MP)	MP	
Tower Height (top of steel AGL)	99'	
Tower Manufacturer	Sabre	
Tower Model	n/a	
Tower Design	Sabre Job #: 49722	9/22/2011
Foundation Design	Sabre Job #: 49722	9/22/2011
Geotechnical Report	Dr. Clarence Welti, P.E., P.C.	6/1/2011
Previous Tower Analysis	GPD Job #: 2021723.34	9/2182021

Design Parameters	
Design Code Used	TIA-222-H
Location of Tower (County, State)	Middlesex, CT
Wind Speed (mph)	125 (3-second gust)
Ice Thickness (in)	1
Risk Category (I, II, III)	II
Exposure Category (B, C, D)	B
Topographic Category (1 to 5)	1

Analysis Results (% Maximum Usage)

Existing/Reserved + Future + Proposed Condition	
Tower (%)	53.0%
Tower Base (%)	47.3%
Foundation (%)	74.1%
Foundation Adequate?	Yes

Existing / Reserved Loading

Antenna								Mount			Transmission Line			
Antenna Owner	Mount Height (ft)	Antenna CL (ft)	Quantity	Type	Manufacturer	Model	Azimuth	Quantity	Manufacturer	Type	Quantity	Model	Size	Attachment Int/Ext
AT&T Mobility	97	97	3	Panel	KMW	AM-X-CD-16-65-00T-RET	40/150/270	6	Site Pro	12.5' T-Arms	6	Unknown	1-5/8"	Internal
AT&T Mobility	97	97	9	Panel	CCI Antennas	HPA-65R-BUU-H6	40/150/270			on the same mount	6	DC Cable	15.4 mm	Internal
AT&T Mobility	97	97	3	TMA	CCI	DTMABP7819VG12A				on the same mount	1	Fiber Cable	10 mm	Internal
AT&T Mobility	97	97	6	RRH	Ericsson	RRUS 11				on the same mount				
AT&T Mobility	97	97	6	RRH	Ericsson	RRUS 12				on the same mount				
AT&T Mobility	97	97	3	RRH	Ericsson	RRUS E2				on the same mount				
AT&T Mobility	97	97	3	RRH	Ericsson	RRUS 32				on the same mount				
AT&T Mobility	97	97	6	RRH	Ericsson	KRC 161 286-1 (A2 Module)				on the same mount				
AT&T Mobility	97	97	3	Surge	Raycap	DC6-48-60-18-8F				on the same mount				
Verizon	85	85	3	Panel	Commscope	LNX-6515DS-VTM	30/150/270	1	EEI	K10994A Platform	2	Unknown	1-5/8"	Internal
Verizon	85	85	6	Panel	Commscope	SBNHH-1D65B	30/150/270			on the same mount				
Verizon	85	85	3	RRH	ALU	RRH4x30-4R				on the same mount				
Verizon	85	85	3	RRH	ALU	RH_60W-PCS				on the same mount				
Verizon	85	85	3	RRH	ALU	B66A RRH4x45				on the same mount				
Verizon	85	85	2	Fiber Box	RFS	DB-T1-6Z-8AB-0Z				on the same mount				

Proposed Loading

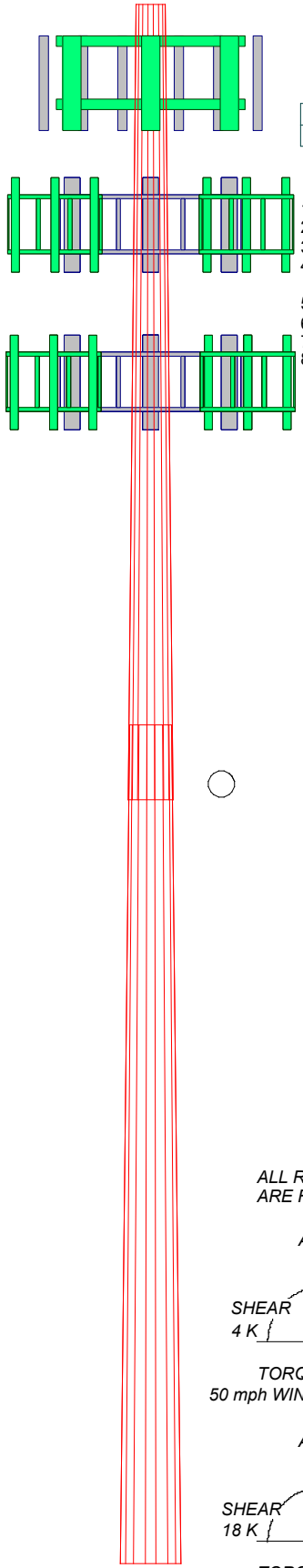
Antenna								Mount			Transmission Line			
Antenna Owner	Mount Height (ft)	Antenna CL (ft)	Quantity	Type	Manufacturer	Model	Azimuth	Quantity	Manufacturer	Type	Quantity	Model	Size	Attachment Int/Ext
Dish Wireless	75	75	3	Panel	JMA	MX08FRO665-20_V0F	0/120/240	3	Commscope	MC-K6M-9-96	1	Hybrid	1.60"	Internal
Dish Wireless	75	75	6	RRH	Fujitsu	TA08025-B605				on the same mounts				
Dish Wireless	75	75	1	Surge	Raycap	RDIDC-9181-PF-48				on the same mounts				

Note: The proposed coax shall be installed inside the monopole in order for this analysis to be valid.

APPENDIX B

Tower Analysis Output File

Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	50.50	18	0.2500	4.75	22.1400	34.1500	A572-65	3.8
2	53.25	18	0.3125		32.5203	45.2000		6.9
								10.7



MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi			

TOWER DESIGN NOTES

1. Tower is located in Middlesex County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-H Standard.
3. Tower designed for a 125 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 53%

ALL REACTIONS ARE FACTORED

AXIAL 38 K

SHEAR 4 K — *MOMENT 326 kip-ft*

TORQUE 0 kip-ft
50 mph WIND - 1.0000 in ICE

AXIAL 24 K

SHEAR 18 K — *MOMENT 1397 kip-ft*

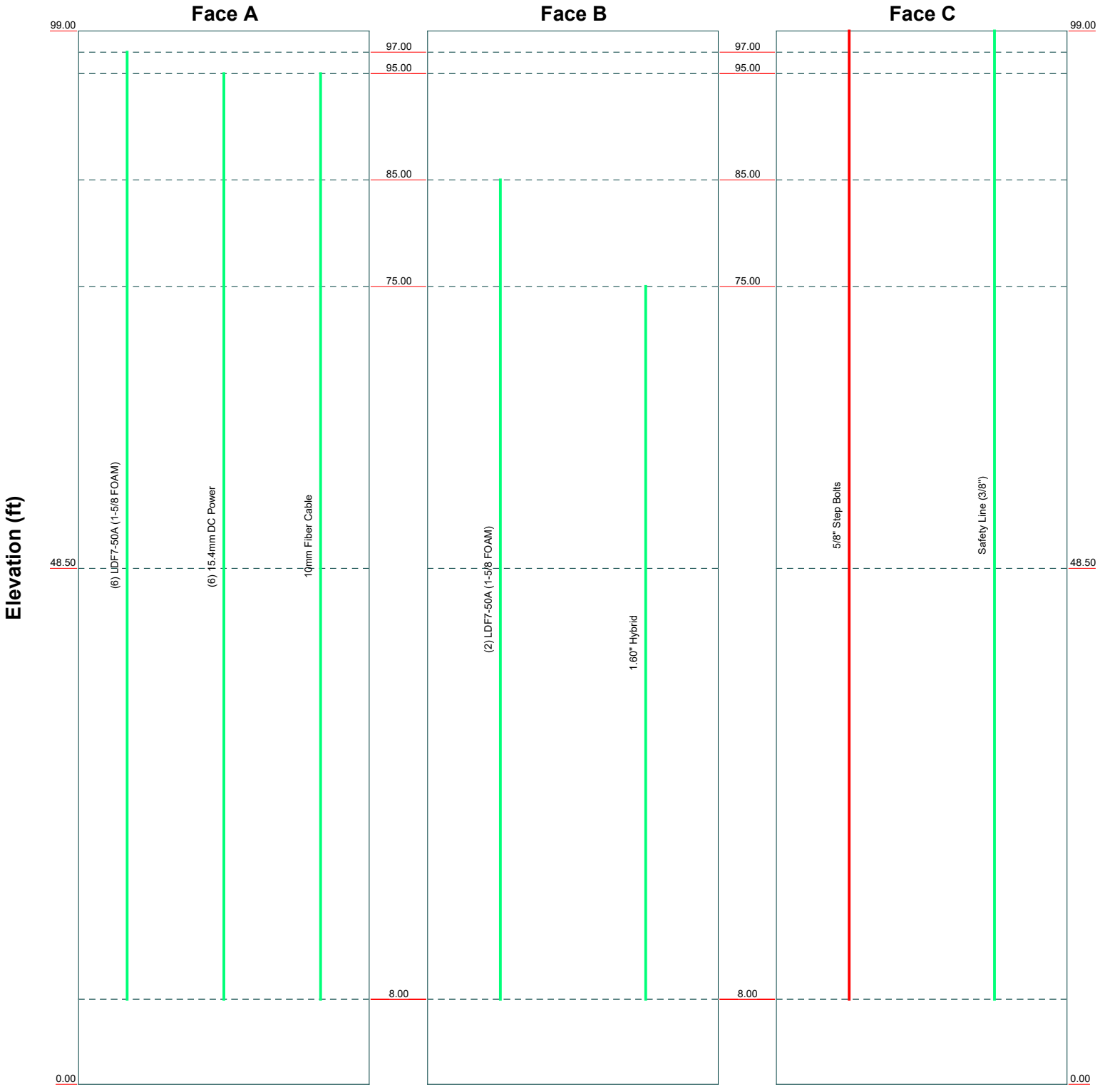
TORQUE 0 kip-ft
REACTIONS - 125 mph WIND

GPD
520 South Main Street Suite 2531
Akron, Ohio 44311
Phone: (330) 572-2100
FAX: (330) 572-2101

Job:	***CT1284 / OLD SAYBROOK BOSTON POST RD***		
Project:	***2022701.78***		
Client: Blue Sky Tower Management		Drawn by: msteward	App'd:
Code: TIA-222-H		Date: 02/01/22	Scale: NTS
Path: T:\ATandT\105130\05.2022701.78.Blue.Sky.SA.Rerun\5_Structural\00_Structure\00_Rev.0\03_Modeling\105130.eri			Dwg No. E-1

Feed Line Distribution Chart
0' - 99'

Round | Flat | App In Face | App Out Face | Truss Leg



GPD
520 South Main Street Suite 2531
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Job:	CT1284 / OLD SAYBROOK BOSTON POST RD		
Project:	2022701.78		
Client:	Blue Sky Tower Management	Drawn by: msteward	App'd:
Code:	TIA-222-H	Date: 02/01/22	Scale: NTS
Path:	T:\ATandT\105130\05.2022701.78.Blue.Sky.SA.Rerun\5_Structural\00_Structure\00_Rev.0\03_Modeling\105130.eri		Dwg No. E-7

Tower Input Data

The tower is a monopole.
This tower is designed using the TIA-222-H standard.
The following design criteria apply:

Tower is located in Middlesex County, Connecticut.
Tower base elevation above sea level: 8.00 ft.
Basic wind speed of 125 mph.
Risk Category II.
Exposure Category B.
Simplified Topographic Factor Procedure for wind speed-up calculations is used.
Topographic Category: 1.
Crest Height: 0.00 ft.
Nominal ice thickness of 1.0000 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

	Consider Moments - Legs		Distribute Leg Loads As Uniform		Use ASCE 10 X-Brace Ly Rules
	Consider Moments - Horizontals		Assume Legs Pinned		Calculate Redundant Bracing Forces
	Consider Moments - Diagonals	√	Assume Rigid Index Plate		Ignore Redundant Members in FEA
	Use Moment Magnification	√	Use Clear Spans For Wind Area		SR Leg Bolts Resist Compression
√	Use Code Stress Ratios		Use Clear Spans For KL/r		All Leg Panels Have Same Allowable
√	Use Code Safety Factors - Guys		Retension Guys To Initial Tension		Offset Girt At Foundation
	Escalate Ice	√	Bypass Mast Stability Checks	√	Consider Feed Line Torque
	Always Use Max Kz	√	Use Azimuth Dish Coefficients		Include Angle Block Shear Check
	Use Special Wind Profile	√	Project Wind Area of Appurt.		Use TIA-222-H Bracing Resist. Exemption
	Include Bolts In Member Capacity		Autocalc Torque Arm Areas		Use TIA-222-H Tension Splice Exemption
	Leg Bolts Are At Top Of Section		Add IBC .6D+W Combination		Poles
	Secondary Horizontal Braces Leg		Sort Capacity Reports By Component	√	Include Shear-Torsion Interaction
	Use Diamond Inner Bracing (4 Sided)		Triangulate Diamond Inner Bracing		Always Use Sub-Critical Flow
	SR Members Have Cut Ends		Treat Feed Line Bundles As Cylinder		Use Top Mounted Sockets
	SR Members Are Concentric		Ignore KL/ry For 60 Deg. Angle Legs	√	Pole Without Linear Attachments
					Pole With Shroud Or No Appurtenances
					Outside and Inside Corner Radii Are Known

Tapered Pole Section Geometry

Section	*Elevation* *ft*	*Section Length* *ft*	*Splice Length* *ft*	*Number of Sides*	*Top Diameter* *in*	*Bottom Diameter* *in*	*Wall Thickness* *in*	*Bend Radius* *in*	*Pole Grade*
L1	99.00-48.50	50.50	4.75	18	22.1400	34.1500	0.2500	1.0000	A572-65 (65 ksi)
L2	48.50-0.00	53.25		18	32.5203	45.2000	0.3125	1.2500	A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L1	22.4430	17.3697	1051.5300	7.7710	11.2471	93.4933	2104.4436	8.6865	3.4566	13.827
	34.6383	26.8996	3905.5615	12.0345	17.3482	225.1278	7816.2619	13.4524	5.5704	22.282
L2	34.1223	31.9462	4186.7736	11.4338	16.5203	253.4315	8379.0563	15.9761	5.1736	16.555
	45.8491	44.5228	11333.6722	15.9351	22.9616	493.5924	22682.2576	22.2656	7.4052	23.697

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L1 99.00-48.50				1	1	1			
L2 48.50-0.00				1	1	1			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
5/8" Step Bolts	C	No	Surface Ar (CaAa)	99.00 - 8.00	1	1	0.000 0.000	0.4167		1.00

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
Safety Line (3/8")	C	No	No	CaAa (Out Of Face)	99.00 - 8.00	1	No Ice 1/2" Ice 1" Ice	0.04 0.14 0.24	0.22 0.75 1.28
****									
LDF7-50A (1-5/8 FOAM)	A	No	No	Inside Pole	97.00 - 8.00	6	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.82 0.82 0.82
15.4mm DC Power	A	No	No	Inside Pole	95.00 - 8.00	6	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.50 0.50 0.50
10mm Fiber Cable	A	No	No	Inside Pole	95.00 - 8.00	1	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.10 0.10 0.10
****									
LDF7-50A (1-5/8 FOAM)	B	No	No	Inside Pole	85.00 - 8.00	2	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.82 0.82 0.82
****									
1.60" Hybrid	B	No	No	Inside Pole	75.00 - 8.00	1	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.85 0.85 0.85

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
T-Arm Mount [TA 602-3]	A	None		0.0000	97.00	No Ice	13.40	13.40	0.77
						1/2" Ice	16.44	16.44	1.00
						1" Ice	19.70	19.70	1.29
T-Arm Mount [TA 602-3]	A	None		0.0000	93.00	No Ice	13.40	13.40	0.77
						1/2" Ice	16.44	16.44	1.00
						1" Ice	19.70	19.70	1.29
AM-X-CD-16-65-00T-RET w/ Mount Pipe	A	From Face	4.00 0.00 -3.00	0.0000	97.00	No Ice 1/2" Ice 1" Ice	8.31 8.85 9.37	6.65 7.68 8.56	0.09 0.16 0.23
AM-X-CD-16-65-00T-RET w/ Mount Pipe	B	From Face	4.00 0.00 -3.00	0.0000	97.00	No Ice 1/2" Ice 1" Ice	8.31 8.85 9.37	6.65 7.68 8.56	0.09 0.16 0.23
AM-X-CD-16-65-00T-RET w/ Mount Pipe	C	From Face	4.00 0.00 -3.00	0.0000	97.00	No Ice 1/2" Ice 1" Ice	8.31 8.85 9.37	6.65 7.68 8.56	0.09 0.16 0.23
(3) HPA-65R-BUU-H6 w/ Mount Pipe	A	From Face	4.00 0.00 -3.00	0.0000	97.00	No Ice 1/2" Ice 1" Ice	9.90 10.47 11.01	8.11 9.30 10.21	0.08 0.16 0.25
(3) HPA-65R-BUU-H6 w/ Mount Pipe	B	From Face	4.00 0.00 -3.00	0.0000	97.00	No Ice 1/2" Ice 1" Ice	9.90 10.47 11.01	8.11 9.30 10.21	0.08 0.16 0.25
(3) HPA-65R-BUU-H6 w/ Mount Pipe	C	From Face	4.00 0.00 -3.00	0.0000	97.00	No Ice 1/2" Ice 1" Ice	9.90 10.47 11.01	8.11 9.30 10.21	0.08 0.16 0.25
DTMABP7819VG12A	A	From Face	4.00 0.00 -3.00	0.0000	97.00	No Ice 1/2" Ice 1" Ice	1.00 1.13 1.27	0.41 0.51 0.61	0.02 0.03 0.04
DTMABP7819VG12A	B	From Face	4.00 0.00 -3.00	0.0000	97.00	No Ice 1/2" Ice 1" Ice	1.00 1.13 1.27	0.41 0.51 0.61	0.02 0.03 0.04
DTMABP7819VG12A	C	From Face	4.00 0.00 -3.00	0.0000	97.00	No Ice 1/2" Ice 1" Ice	1.00 1.13 1.27	0.41 0.51 0.61	0.02 0.03 0.04
(2) RRUS 11	A	From Face	4.00 0.00 -3.00	0.0000	97.00	No Ice 1/2" Ice 1" Ice	2.78 2.99 3.21	1.19 1.33 1.49	0.05 0.07 0.10
(2) RRUS 11	B	From Face	4.00 0.00 -3.00	0.0000	97.00	No Ice 1/2" Ice 1" Ice	2.78 2.99 3.21	1.19 1.33 1.49	0.05 0.07 0.10
(2) RRUS 11	C	From Face	4.00 0.00 -3.00	0.0000	97.00	No Ice 1/2" Ice 1" Ice	2.78 2.99 3.21	1.19 1.33 1.49	0.05 0.07 0.10
(2) RRUS 12	A	From Face	4.00 0.00 -3.00	0.0000	97.00	No Ice 1/2" Ice 1" Ice	3.15 3.36 3.59	1.29 1.44 1.60	0.06 0.08 0.11
(2) RRUS 12	B	From Face	4.00 0.00 -3.00	0.0000	97.00	No Ice 1/2" Ice 1" Ice	3.15 3.36 3.59	1.29 1.44 1.60	0.06 0.08 0.11
(2) RRUS 12	C	From Face	4.00 0.00 -3.00	0.0000	97.00	No Ice 1/2" Ice 1" Ice	3.15 3.36 3.59	1.29 1.44 1.60	0.06 0.08 0.11
RRUS E2	A	From Face	4.00 0.00 -3.00	0.0000	97.00	No Ice 1/2" Ice 1" Ice	3.15 3.36 3.59	1.29 1.44 1.60	0.06 0.08 0.11

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
RRUS E2	B	From Face	4.00 0.00 -3.00	0.0000	97.00	No Ice 1/2" Ice 1" Ice	3.15 3.36 3.59	1.29 1.44 1.60	0.06 0.08 0.11
RRUS E2	C	From Face	4.00 0.00 -3.00	0.0000	97.00	No Ice 1/2" Ice 1" Ice	3.15 3.36 3.59	1.29 1.44 1.60	0.06 0.08 0.11
RRUS 32	A	From Face	4.00 0.00 -3.00	0.0000	97.00	No Ice 1/2" Ice 1" Ice	3.31 3.56 3.81	2.42 2.64 2.86	0.08 0.10 0.14
RRUS 32	B	From Face	4.00 0.00 -3.00	0.0000	97.00	No Ice 1/2" Ice 1" Ice	3.31 3.56 3.81	2.42 2.64 2.86	0.08 0.10 0.14
RRUS 32	C	From Face	4.00 0.00 -3.00	0.0000	97.00	No Ice 1/2" Ice 1" Ice	3.31 3.56 3.81	2.42 2.64 2.86	0.08 0.10 0.14
(2) KRC 161 286-1 (A2 Module)	A	From Face	4.00 0.00 -3.00	0.0000	97.00	No Ice 1/2" Ice 1" Ice	1.87 2.05 2.24	0.43 0.54 0.66	0.02 0.03 0.04
(2) KRC 161 286-1 (A2 Module)	B	From Face	4.00 0.00 -3.00	0.0000	97.00	No Ice 1/2" Ice 1" Ice	1.87 2.05 2.24	0.43 0.54 0.66	0.02 0.03 0.04
(2) KRC 161 286-1 (A2 Module)	C	From Face	4.00 0.00 -3.00	0.0000	97.00	No Ice 1/2" Ice 1" Ice	1.87 2.05 2.24	0.43 0.54 0.66	0.02 0.03 0.04
DC6-48-60-18-8F Surge Suppression Unit	A	From Face	1.00 0.00 0.00	0.0000	95.00	No Ice 1/2" Ice 1" Ice	0.92 1.46 1.64	0.92 1.46 1.64	0.02 0.04 0.06
DC6-48-60-18-8F Surge Suppression Unit	B	From Face	1.00 0.00 0.00	0.0000	95.00	No Ice 1/2" Ice 1" Ice	0.92 1.46 1.64	0.92 1.46 1.64	0.02 0.04 0.06
DC6-48-60-18-8F Surge Suppression Unit	C	From Face	1.00 0.00 0.00	0.0000	95.00	No Ice 1/2" Ice 1" Ice	0.92 1.46 1.64	0.92 1.46 1.64	0.02 0.04 0.06
****									
EEI K10994A [LP 302-1]	A	None		0.0000	85.00	No Ice 1/2" Ice 1" Ice	26.56 33.67 40.39	26.56 33.67 40.39	1.71 2.26 2.95
LNX-6515DS-VTM	A	From Centroid-Face	4.00 0.00 0.00	0.0000	85.00	No Ice 1/2" Ice 1" Ice	11.45 12.06 12.69	7.70 8.29 8.89	0.05 0.12 0.19
LNX-6515DS-VTM	B	From Centroid-Face	4.00 0.00 0.00	0.0000	85.00	No Ice 1/2" Ice 1" Ice	11.45 12.06 12.69	7.70 8.29 8.89	0.05 0.12 0.19
LNX-6515DS-VTM	C	From Centroid-Face	4.00 0.00 0.00	0.0000	85.00	No Ice 1/2" Ice 1" Ice	11.45 12.06 12.69	7.70 8.29 8.89	0.05 0.12 0.19
(2) SBNHH-1D65B	A	From Centroid-Face	4.00 0.00 0.00	0.0000	85.00	No Ice 1/2" Ice 1" Ice	8.16 8.62 9.09	5.40 5.85 6.32	0.04 0.09 0.15
(2) SBNHH-1D65B	B	From Centroid-Face	4.00 0.00 0.00	0.0000	85.00	No Ice 1/2" Ice 1" Ice	8.16 8.62 9.09	5.40 5.85 6.32	0.04 0.09 0.15
(2) SBNHH-1D65B	C	From Centroid-Face	4.00 0.00 0.00	0.0000	85.00	No Ice 1/2" Ice 1" Ice	8.16 8.62 9.09	5.40 5.85 6.32	0.04 0.09 0.15
RRH4x30-4R	A	From Centroid-Fa	4.00 0.00	0.0000	85.00	No Ice 1/2" Ice	2.14 2.33	1.31 1.46	0.05 0.07

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
		ce	0.00			1" Ice	2.53	1.63	0.09
RRH4x30-4R	B	From	4.00	0.0000	85.00	No Ice	2.14	1.31	0.05
		Centroid-Fa	0.00			1/2" Ice	2.33	1.46	0.07
		ce	0.00			1" Ice	2.53	1.63	0.09
RRH4x30-4R	C	From	4.00	0.0000	85.00	No Ice	2.14	1.31	0.05
		Centroid-Fa	0.00			1/2" Ice	2.33	1.46	0.07
		ce	0.00			1" Ice	2.53	1.63	0.09
RH_60W-PCS	A	From	4.00	0.0000	85.00	No Ice	2.20	1.36	0.06
		Centroid-Fa	0.00			1/2" Ice	2.39	1.52	0.07
		ce	0.00			1" Ice	2.59	1.68	0.09
RH_60W-PCS	B	From	4.00	0.0000	85.00	No Ice	2.20	1.36	0.06
		Centroid-Fa	0.00			1/2" Ice	2.39	1.52	0.07
		ce	0.00			1" Ice	2.59	1.68	0.09
RH_60W-PCS	C	From	4.00	0.0000	85.00	No Ice	2.20	1.36	0.06
		Centroid-Fa	0.00			1/2" Ice	2.39	1.52	0.07
		ce	0.00			1" Ice	2.59	1.68	0.09
B66A RRH4X45	A	From	4.00	0.0000	85.00	No Ice	2.54	1.61	0.06
		Centroid-Fa	0.00			1/2" Ice	2.75	1.79	0.08
		ce	0.00			1" Ice	2.97	1.98	0.10
B66A RRH4X45	B	From	4.00	0.0000	85.00	No Ice	2.54	1.61	0.06
		Centroid-Fa	0.00			1/2" Ice	2.75	1.79	0.08
		ce	0.00			1" Ice	2.97	1.98	0.10
B66A RRH4X45	C	From	4.00	0.0000	85.00	No Ice	2.54	1.61	0.06
		Centroid-Fa	0.00			1/2" Ice	2.75	1.79	0.08
		ce	0.00			1" Ice	2.97	1.98	0.10
DB-T1-6Z-8AB-0Z	A	From	4.00	0.0000	85.00	No Ice	4.80	2.00	0.04
		Centroid-Fa	0.00			1/2" Ice	5.07	2.19	0.08
		ce	0.00			1" Ice	5.35	2.39	0.12
DB-T1-6Z-8AB-0Z	B	From	4.00	0.0000	85.00	No Ice	4.80	2.00	0.04
		Centroid-Fa	0.00			1/2" Ice	5.07	2.19	0.08
		ce	0.00			1" Ice	5.35	2.39	0.12
****									
MC-K6M-9-96	A	None		0.0000	75.00	No Ice	12.56	12.56	0.73
						1/2" Ice	15.36	15.36	0.94
						1" Ice	18.04	18.04	1.21
(2) 8' x 2.375" Mount Pipe	A	From	3.00	0.0000	75.00	No Ice	1.90	1.90	0.04
		Centroid-Fa	0.00			1/2" Ice	2.73	2.73	0.05
		ce	0.00			1" Ice	3.40	3.40	0.07
(2) 8' x 2.375" Mount Pipe	B	From	3.00	0.0000	75.00	No Ice	1.90	1.90	0.04
		Centroid-Fa	0.00			1/2" Ice	2.73	2.73	0.05
		ce	0.00			1" Ice	3.40	3.40	0.07
(2) 8' x 2.375" Mount Pipe	C	From	3.00	0.0000	75.00	No Ice	1.90	1.90	0.04
		Centroid-Fa	0.00			1/2" Ice	2.73	2.73	0.05
		ce	0.00			1" Ice	3.40	3.40	0.07
MX08FRO665-20_V0F w/ Mount Pipe	A	From	3.00	0.0000	75.00	No Ice	12.96	7.77	0.08
		Centroid-Fa	0.00			1/2" Ice	13.67	9.05	0.18
		ce	0.00			1" Ice	14.34	10.19	0.28
MX08FRO665-20_V0F w/ Mount Pipe	B	From	3.00	0.0000	75.00	No Ice	12.96	7.77	0.08
		Centroid-Fa	0.00			1/2" Ice	13.67	9.05	0.18
		ce	0.00			1" Ice	14.34	10.19	0.28
MX08FRO665-20_V0F w/ Mount Pipe	C	From	3.00	0.0000	75.00	No Ice	12.96	7.77	0.08
		Centroid-Fa	0.00			1/2" Ice	13.67	9.05	0.18
		ce	0.00			1" Ice	14.34	10.19	0.28
(2) TA08025-B605	A	From	3.00	0.0000	75.00	No Ice	1.96	1.13	0.08
		Centroid-Fa	0.00			1/2" Ice	2.14	1.27	0.09
		ce	0.00			1" Ice	2.32	1.41	0.11
(2) TA08025-B605	B	From	3.00	0.0000	75.00	No Ice	1.96	1.13	0.08

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
		Centroid-Face	0.00 0.00			1/2" Ice 1" Ice	2.14 2.32	1.27 1.41	0.09 0.11
(2) TA08025-B605	C	From Centroid-Face	3.00 0.00 0.00	0.0000	75.00	No Ice 1/2" Ice 1" Ice	1.96 2.14 2.32	1.13 1.27 1.41	0.08 0.09 0.11
RDIDC-9181-PF-48	A	From Centroid-Face	3.00 0.00 0.00	0.0000	75.00	No Ice 1/2" Ice 1" Ice	2.56 2.76 2.97	1.34 1.49 1.66	0.02 0.04 0.07

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	99 - 48.5	7.157	48	0.5805	0.0005
L2	53.25 - 0	2.200	48	0.3798	0.0002

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
97.00	T-Arm Mount [TA 602-3]	48	6.910	0.5730	0.0005	54062
95.00	DC6-48-60-18-8F Surge Suppression Unit	48	6.662	0.5655	0.0004	54062
93.00	T-Arm Mount [TA 602-3]	48	6.416	0.5580	0.0004	45052
85.00	EEI K10994A [LP 302-1]	48	5.444	0.5271	0.0004	19308
75.00	MC-K6M-9-96	48	4.287	0.4862	0.0003	11263

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	99 - 48.5	34.822	20	2.8257	0.0023
L2	53.25 - 0	10.704	20	1.8481	0.0009

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
97.00	T-Arm Mount [TA 602-3]	20	33.617	2.7891	0.0022	11151

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
95.00	DC6-48-60-18-8F Surge Suppression Unit	20	32.414	2.7524	0.0022	11151
93.00	T-Arm Mount [TA 602-3]	20	31.214	2.7156	0.0021	9292
85.00	EEI K10994A [LP 302-1]	20	26.485	2.5656	0.0018	3982
75.00	MC-K6M-9-96	20	20.859	2.3664	0.0015	2322

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L1	99 - 48.5 (1)	TP34.15x22.14x0.25	50.50	0.00	0.0	26.0033	-14.04	1521.19	0.009
L2	48.5 - 0 (2)	TP45.2x32.5203x0.3125	53.25	0.00	0.0	44.5228	-23.98	2604.58	0.009

Pole Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L1	99 - 48.5 (1)	TP34.15x22.14x0.25	500.69	1184.53	0.423	0.00	1184.53	0.000
L2	48.5 - 0 (2)	TP45.2x32.5203x0.3125	1397.24	2683.70	0.521	0.00	2683.70	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	99 - 48.5 (1)	TP34.15x22.14x0.25	15.36	456.36	0.034	0.28	1309.68	0.000
L2	48.5 - 0 (2)	TP45.2x32.5203x0.3125	18.31	781.38	0.023	0.24	3071.60	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	99 - 48.5 (1)	0.009	0.423	0.000	0.034	0.000	0.433	1.000	4.8.2
L2	48.5 - 0 (2)	0.009	0.521	0.000	0.023	0.000	0.530	1.000	4.8.2

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	99 - 48.5	Pole	TP34.15x22.14x0.25	1	-14.04	1521.19	43.3	Pass
L2	48.5 - 0	Pole	TP45.2x32.5203x0.3125	2	-23.98	2604.58	53.0	Pass
						Summary	ELC:	Existing + Proposed
						Pole (L2)	53.0	Pass
						Rating =	53.0	Pass

APPENDIX C

Additional Calculations

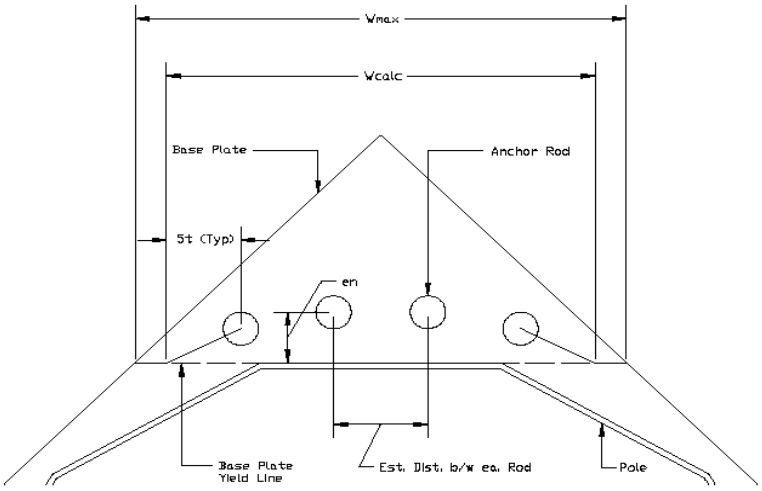
Anchor Rod and Base Plate Stresses, TIA-222-H-1
Old Saybrook, Boston Post Road (CT-1263)
2022701.78

Overturning Moment =	1397.00	k*ft
Axial Force =	24.00	k
Shear Force =	18.00	k

Maximum Capacity	100%
Apply TIA-222-H Section 15.5?	No

Anchor Rods		
Pole Diameter =	45.2	in
Number of Rods =	12	
Rod Yield Strength, F_y =	75	ksi
Rod Ultimate Strength, F_u =	100	ksi
Rod Circle =	51.25	in
Rod Diameter =	2.25	in
Rod Projection, l_{ar} =	2.25	in
Is grout present?	No	
Max Tension on Rod, P_{ut} =	106.93	k
Max Compression on Rod, P_{uc} =	110.93	k
Shear on Rod, V_u =	1.50	k
Moment on Rod, M_u =	0.00	k-in
Tension Interaction =	**19.3%**	**OK**
Compression Interaction =	**41.3%**	**OK**

Base Plate		
Plate Yield Strength, F_y =	50	ksi
ϕ =	0.9	
Plate Thickness =	2.5	in
Plate Width =	49.75	in
Est. Dist. b/w ea. Rod =	6	in
w_{calc} =	36.92	in
w_{max} =	25.16	in
w =	25.16	in
Z =	39.31	in^3
M_u =	836.97	k-in
φM_n =	1768.86	k-in
Base Plate Capacity =	**47.3%**	**OK**



Pier and Pad Foundation

Site # :	CT1284
Site Name:	OLD SAYBROOK E

TIA-222 Revision:	H
Tower Type:	Monopole

Top & Bot. Pad Rein. Different?:	☐
Block Foundation?:	☐
Rectangular Pad?:	☐

Superstructure Analysis Reactions		
Compression, P_{comp}:	24	kips
Base Shear, Vu_comp:	18	kips
Moment, M_u:	1397	ft-kips
Tower Height, **H**:	99	ft
BP Dist. Above Fdn, bp_{dist}:	3	in

Pier Properties		
Pier Shape:	Square	
Pier Diameter, **dpier**:	6	ft
Ext. Above Grade, **E**:	0.5	ft
Pier Rebar Size, **Sc**:	8	
Pier Rebar Quantity, **mc**:	26	
Pier Tie/Spiral Size, **St**:	4	
Pier Tie/Spiral Quantity, **mt**:		
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier}:	3	in

Pad Properties		
Depth, **D**:	6	ft
Pad Width, W_1:	20.5	ft
Pad Thickness, **T**:	1.5	ft
Pad Rebar Size (Bottom dir. 2), Sp_2:	8	
Pad Rebar Quantity (Bottom dir. 2), mp_2:	26	
Pad Clear Cover, cc_{pad}:	3	in

Material Properties		
Rebar Grade, **Fy**:	60	ksi
Concrete Compressive Strength, **F'c**:	4.5	ksi
Dry Concrete Density, δ**c**:	150	pcf

Soil Properties		
Total Soil Unit Weight, γ:	125	pcf
Ultimate Gross Bearing, Qult:	8.000	ksf
Cohesion, **Cu**:		ksf
Friction Angle, φ:	34	degrees
SPT Blow Count, N_{blows}:		
Base Friction, μ:		
Neglected Depth, **N**:	3.50	ft
Foundation Bearing on Rock?		
Groundwater Depth, **gw**:	5	ft

<--Toggle between Gross and Net

Foundation Analysis Checks	Capacity	Demand	Rating	Check
Lateral (Sliding) (kips)	153.24	18.00	**11.7%**	**Pass**
Bearing Pressure (ksf)	6.00	2.16	**36.0%**	**Pass**
*Overturning (kip*ft)*	2916.14	1518.50	**52.1%**	**Pass**
*Pier Flexure (Comp.) (kip*ft)*	2913.60	1487.00	**51.0%**	**Pass**
Pier Compression (kip)	25777.44	56.40	**0.2%**	**Pass**
*Pad Flexure (kip*ft)*	1187.28	503.25	**42.4%**	**Pass**
Pad Shear - 1-way (kips)	334.17	107.43	**32.1%**	**Pass**
Pad Shear - 2-way (Comp) (ksi)	0.201	0.063	**31.3%**	**Pass**
*Flexural 2-way (Comp) (kip*ft)*	1204.34	892.20	**74.1%**	**Pass**

Structural Rating:	**74.1%**
Soil Rating:	**52.1%**

Exhibit E

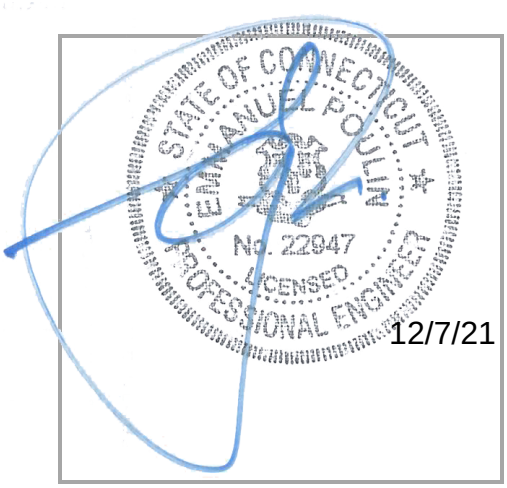
Mount Analysis

MOUNT ANALYSIS REPORT

December 6, 2021

Dish Wireless Site Name	Oct – Boston Post Rd
Dish Wireless Site Number	BOBDL00113A
Infinigy Job Number	1197-F0001-B
Client	NSS
Carrier	Dish Wireless
Site Location	1363 Boston Post Rd Old Saybrook, CT 06475 Middlesex County 41° 17' 23.2" N NAD83 72° 24' 21.2" W NAD83
Mount Type	6.5 ft T-Arms
Mount Elevation	75.0 ft AGL
Structural Usage Ratio	**59.4**
Overall Result	**Pass**

The enclosed mount structural analysis has been performed in accordance with the 2018 Connecticut State Building Code (2015 IBC) based on an ultimate 3-second gust wind speed of 125 mph. The evaluation criteria and applicable codes are presented in the next section of this report.



CONTENTS

1. INTRODUCTION

Infinigy performed a structural analysis on the Dish Wireless proposed telecommunication equipment supporting T-Arms mounted to the existing structure located at the aforementioned address. All referenced supporting documents have been obtained from the client and are assumed to be accurate and applicable to this site. The mount was analyzed using Risa-3D version 17.0.4 analysis software.

2. DESIGN/ANALYSIS PARAMETERS

Wind Speed	125 mph (3-Second Gust)
Wind Speed w/ ice	50 mph (3-Second Gust) w/ 1.0" ice
Code / Standard	TIA-222-H
Adopted Code	2018 Connecticut State Building Code (2015 IBC)
Risk Category	II
Exposure Category	C
Topographic Category	1
Calculated Crest Height	0 ft.
Seismic Spectral Response	S_s = 0.202 g / S_1 = 0.053 g
Live Load Wind Speed	60 mph
Man Live Load at Mid/End Points	250 lbs
Man Live Load at Mount Pipes	500 lbs

3. PROPOSED LOADING CONFIGURATION - 75.0 ft. AGL T-Arms

Antenna Centerline (ft)	Qty.	Appurtenance Manufacturers	Appurtenance Models
75.0	3	JMA WIRELESS	MX08FRO665-21
	3	FUJITSU	TA08025-B605
	3	FUJITSU	TA08025-B604
	1	RAYCAP	RDIDC-3045-PF-48

4. SUPPORTING DOCUMENTATION

Proposed Loading	Dish Wireless Asset ID CT-OCT-T-CT1263 Rev 2, Site #BOHVN00148A, dated September 23, 2021
Mount Manufacturer Drawings	Commscope T-Arm MC-K6M-9-96
Construction Drawings	Infinigy Engineering, PLLC Project #1197-F0001-C, Site ID: BOBDL00113A dated September 23, 2021

5. RESULTS

Components	Capacity	Pass/Fail
Mount Pipes	59.4%	Pass
Horizontals	46.4%	Pass
Standoffs	24.3%	Pass
Connections	19.4%	Pass
MOUNT RATING =	**59.4 %**	**Pass**

Notes:
1. See additional documentation in Appendix for calculations supporting the capacity consumed and detailed mount connection calculations.

6. RECOMMENDATIONS

Infinigy recommends installing Dish Wireless's proposed equipment loading configuration on the mount at 75.0 ft. The installation shall be performed in accordance with the construction documents issued for this site.

Pradin Suinyal Magar
Project Engineer II | **INFINIGY**

7. ASSUMPTIONS

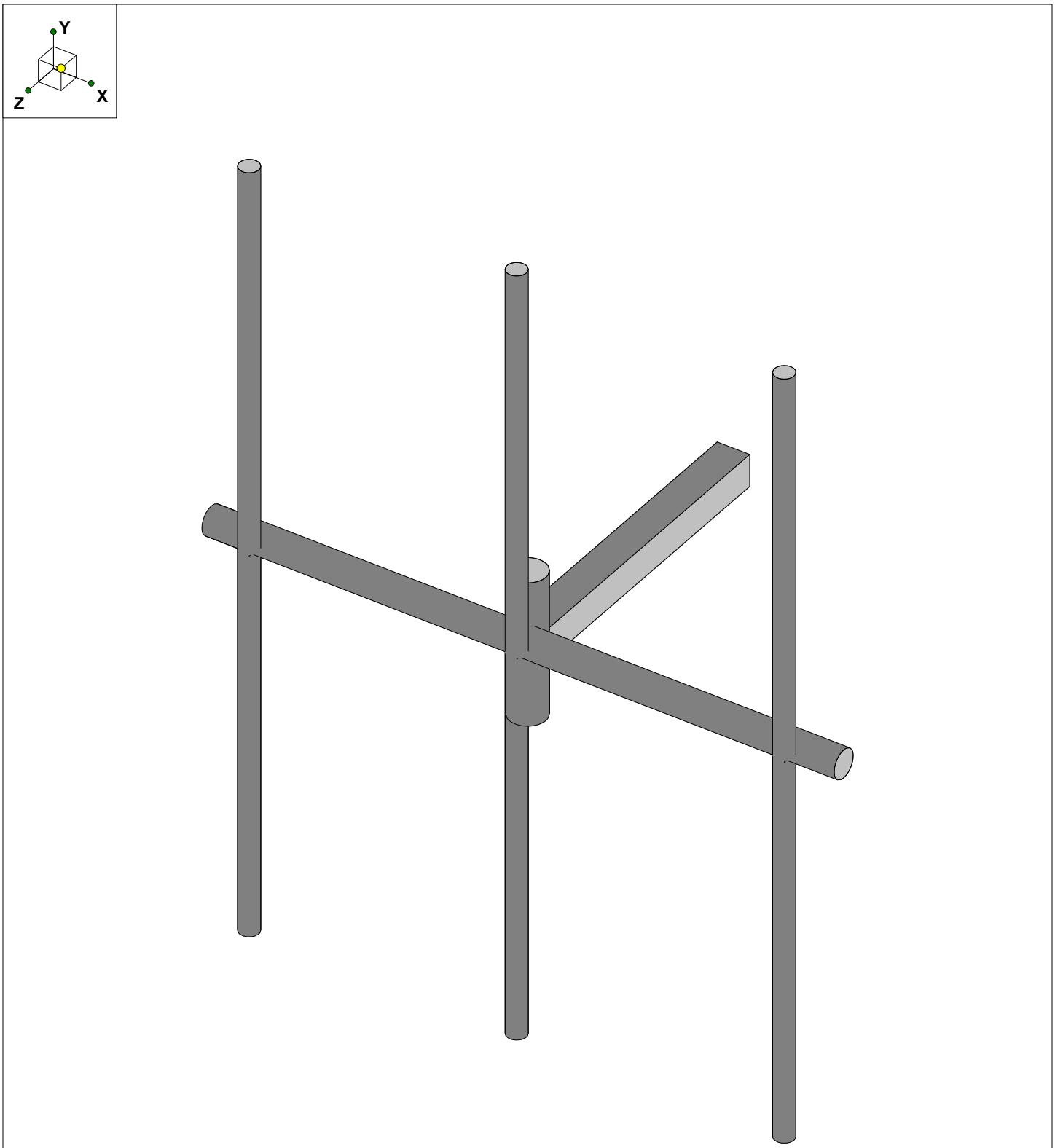
The antenna mounting system was properly fabricated, installed and maintained in accordance with its original design and manufacturer's specifications.
The configuration of antennas, mounts, and other appurtenances are as specified in the proposed loading configuration table.
All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report.
The analysis will require revisions if the existing conditions in the field differ from those shown in the above-referenced documents or assumed in this analysis. No allowance was made for any damaged, missing, or rusted members.
Steel grades have been assumed as follows, unless noted otherwise: Channel, Solid Round, Plate, Built-up Angle — ASTM A36 KSI Structural Angle — ASTM A529 Gr. 50 HSS (Rectangular) — ASTM A500 Gr C HSS (Circular) — ASTM A500-B GR 42 Pipe — ASTM A500 Gr C Connection Bolts — ASTM A325 U-Bolts — ASTM A307
All bolted connections are pretensioned in accordance with Table 8.2 of the RCSC 2014 Standard

8. LIABILITY WAIVER AND LIMITATIONS

Our structural calculations are completed assuming all information provided to Infinigy is accurate and applicable to this site. For the purposes of calculations, we assume an overall structure condition as erected and all members and connections to be free of corrosion and/or structural defects. The structure owner and/or contractor shall verify the structure's condition prior to installation of any proposed equipment. If actual conditions differ from those described in this report, Infinigy should be notified immediately to assess the impact on the results of this report.

Our evaluation is completed using industry standard methods and procedures. The structural results, conclusions and recommendations contained in this report are proprietary and should not be used by others as their own. Infinigy is not responsible for decisions made by others that are or are not based on the stated assumptions and conclusions in this report.

This report is an evaluation of the mount structure only and does not determine the adequacy of the supporting structure, other carrier mounts or cable mounting attachments. The analysis of these elements is outside the scope of this analysis, are assumed to be adequate for the purpose of this report and to have been installed per their manufacturer requirements. This document is not for construction purposes.



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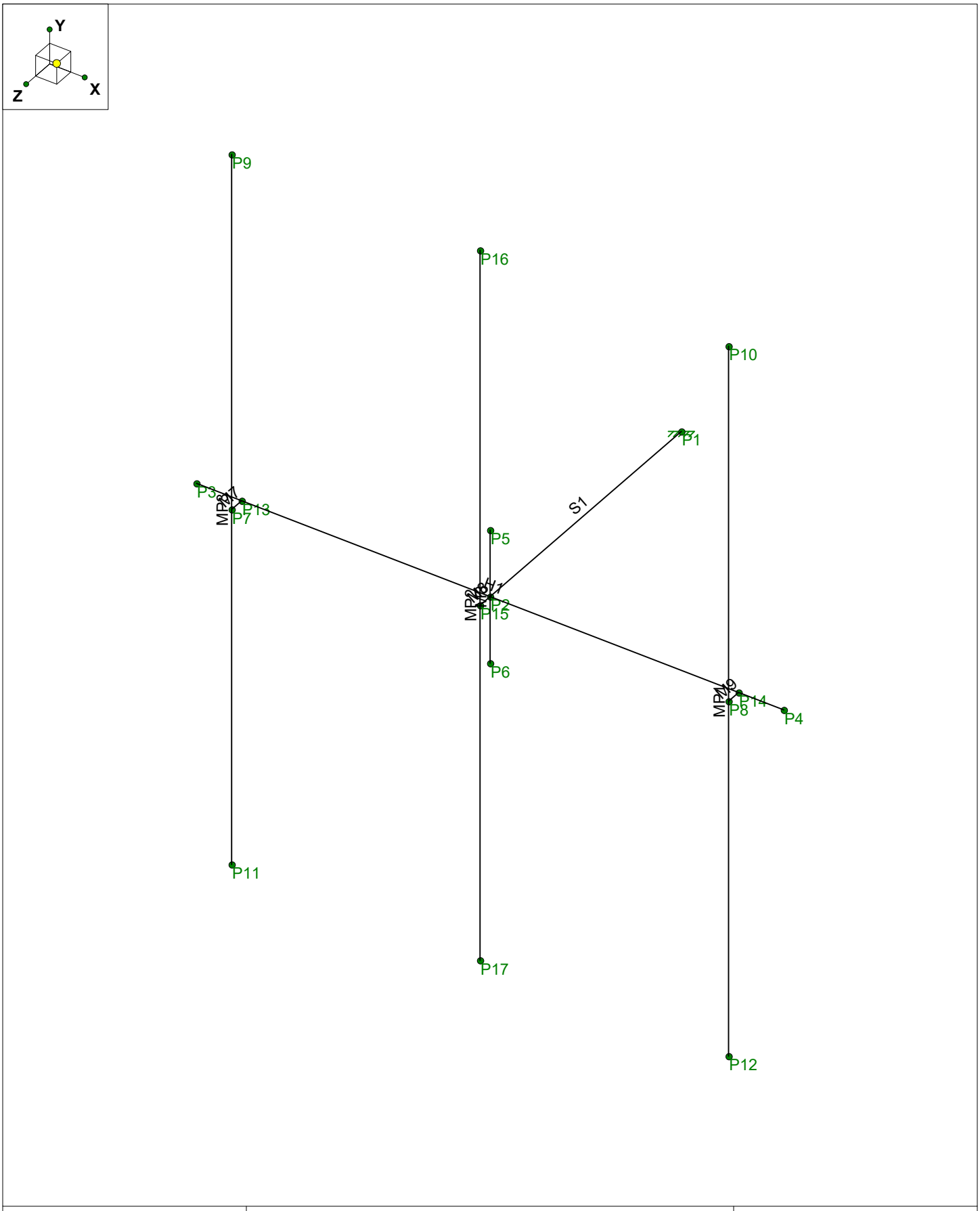

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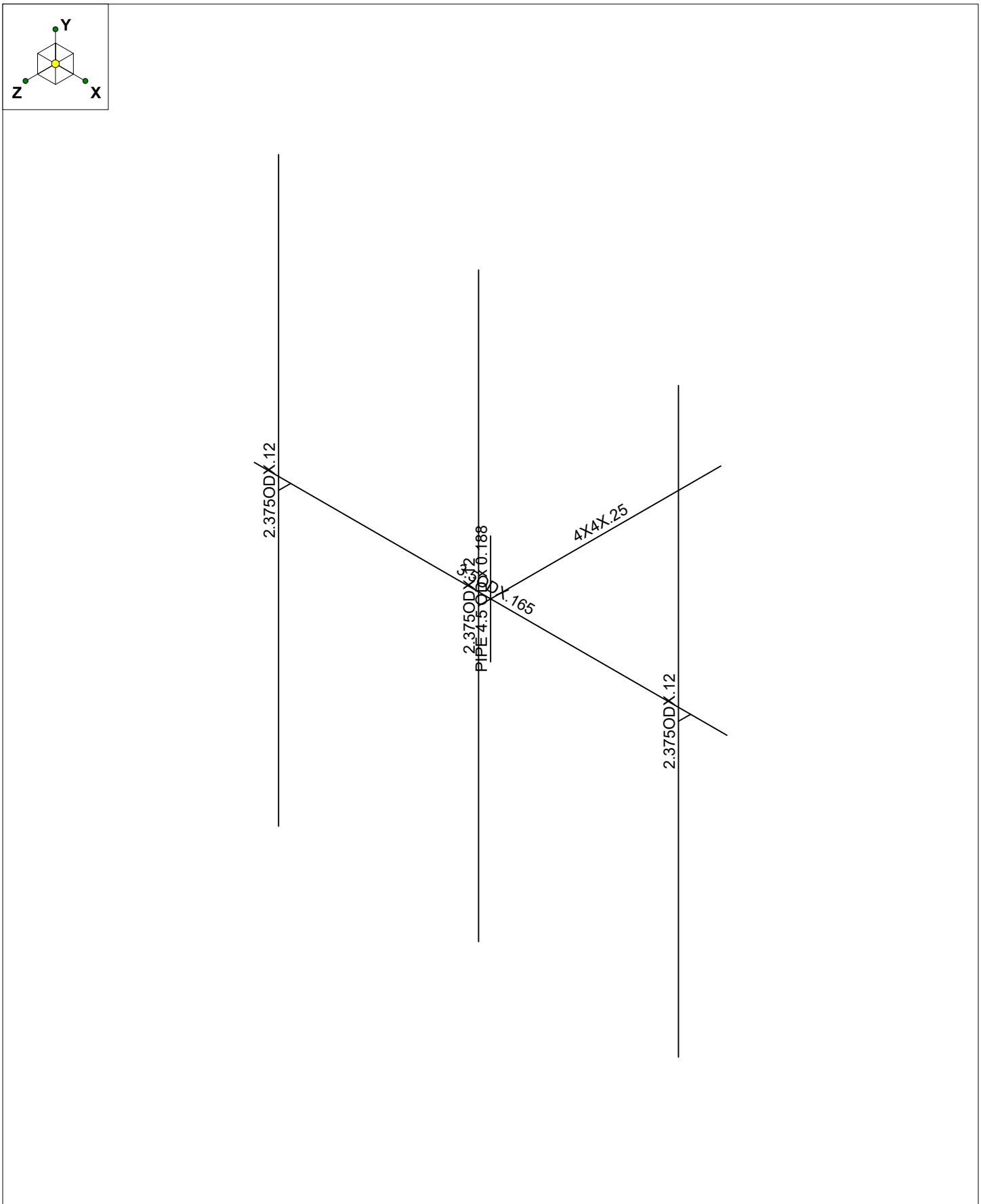

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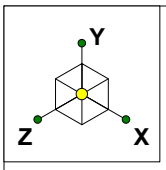

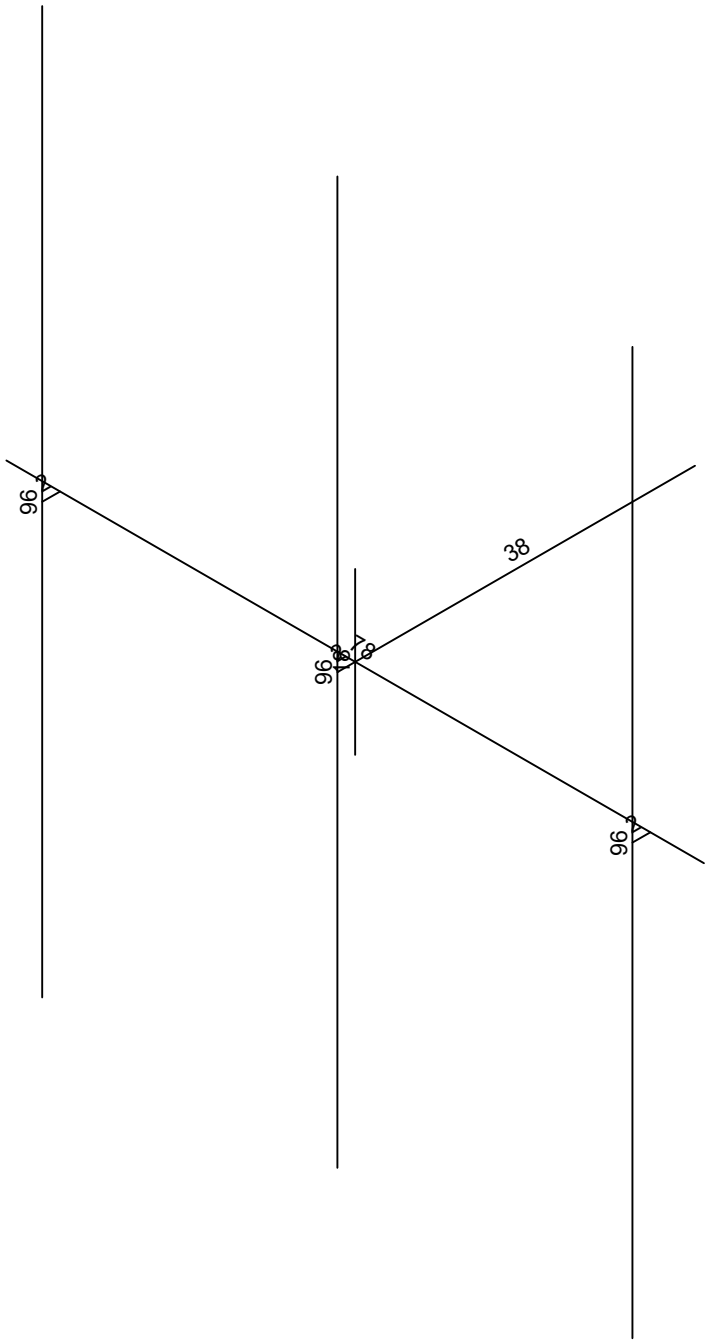

Member Length (in) Displayed

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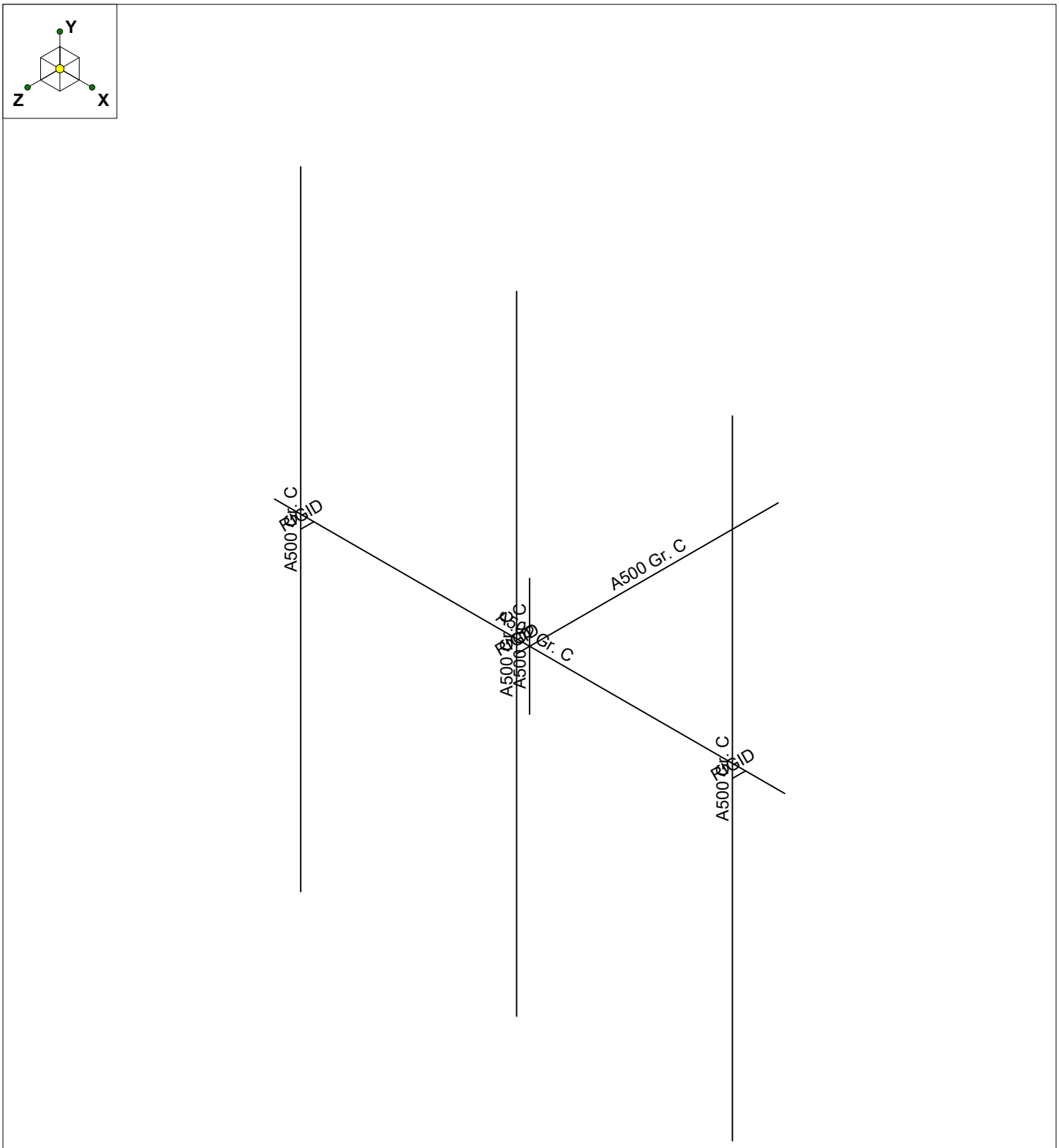

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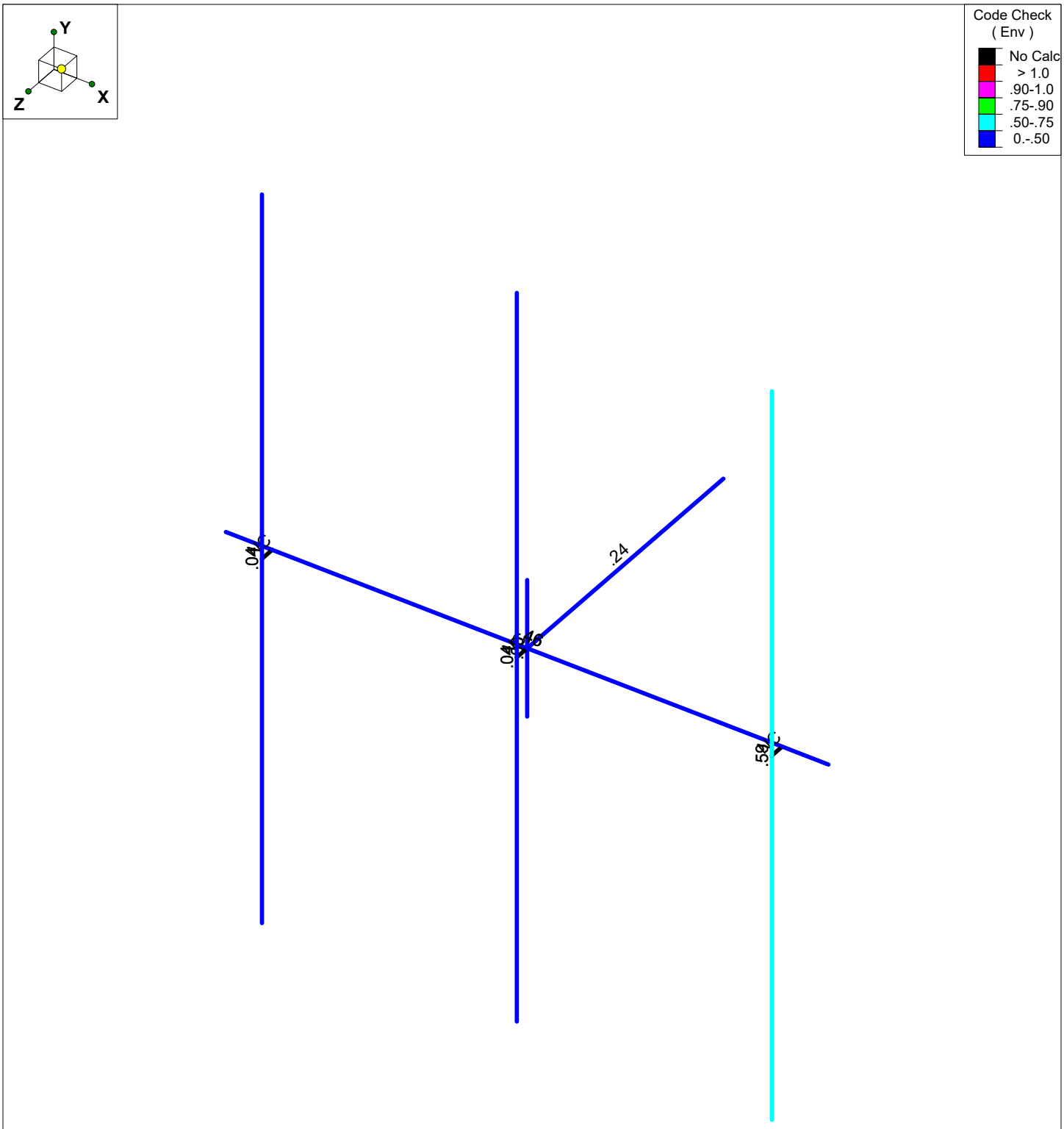

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Envelope Only Solution

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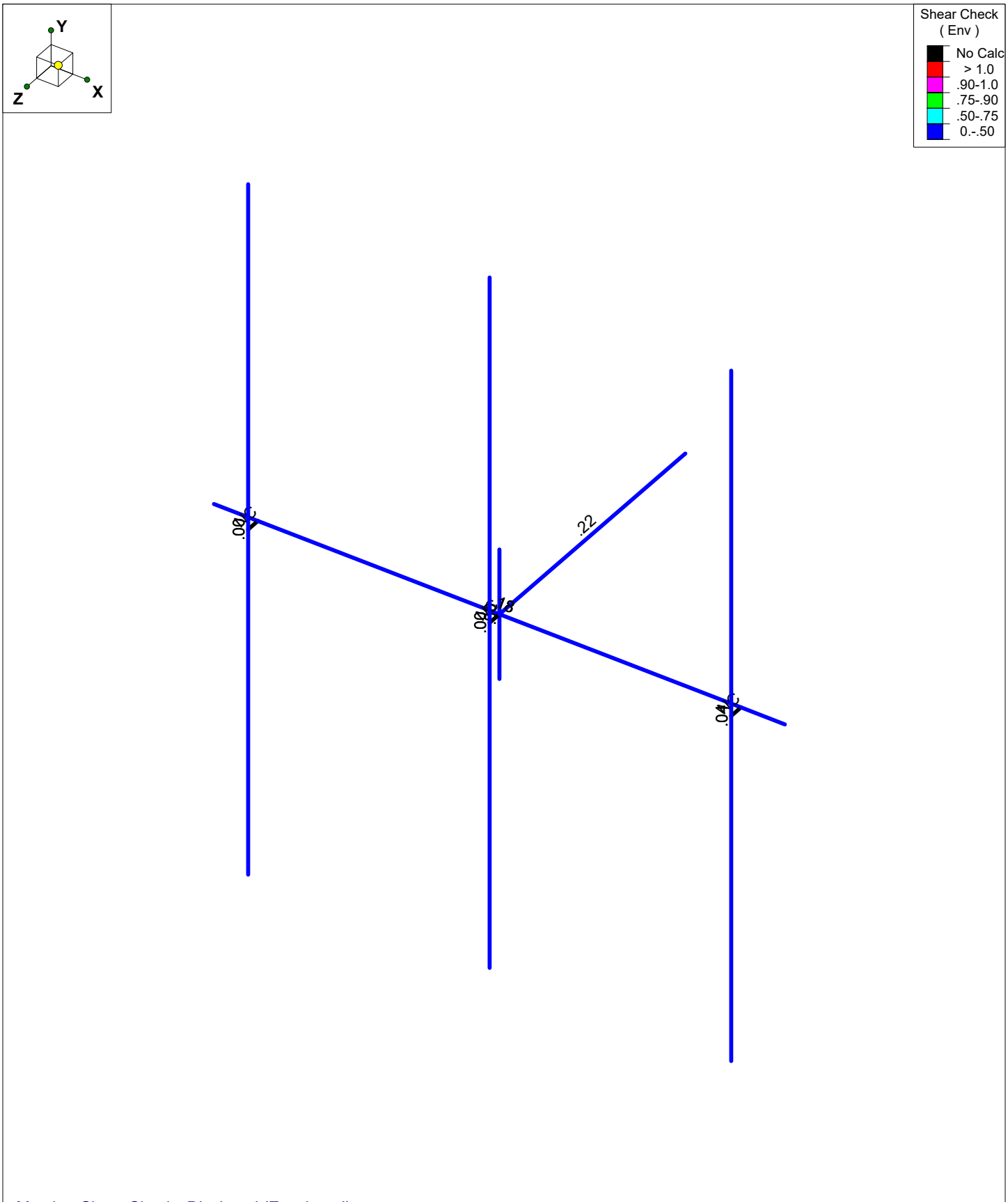

Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

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Program Inputs

PROJECT INFORMATION	
Client:	NSS Solutions
Carrier:	Dish Wireless
Engineer:	Pradin Suyinal Magar, M.S

SITE INFORMATION		
Risk Category:	II	
Exposure Category:	C	
Topo Factor Procedure:	Method 1, Category 1	
Site Class:	D - Stiff Soil (Assumed)	
Ground Elevation:	8.16	ft *Rev H

MOUNT INFORMATION		
Mount Type:	T-Arm	
Num Sectors:	3	
Centerline AGL:	75.00	ft
Tower Height AGL:	99.00	ft

TOPOGRAPHIC DATA		
Topo Feature:	N/A	
Slope Distance:	N/A	ft
Crest Distance:	N/A	ft
Crest Height:	N/A	ft

FACTORS		
Directionality Fact. (K_d):	0.950	
Ground Ele. Factor (K_e):	1.000	*Rev H Only
Rooftop Speed-Up (K_s):	1.000	*Rev H Only
Topographic Factor (K_{zt}):	1.000	
Gust Effect Factor (G_h):	1.000	

CODE STANDARDS		
Building Code:	2015 IBC	
TIA Standard:	TIA-222-H	
ASCE Standard:	ASCE 7-16	

WIND AND ICE DATA		
Ultimate Wind (V_{ult}):	125	mph
Design Wind (V):	N/A	mph
Ice Wind (V_{ice}):	50	mph
Base Ice Thickness (t_i):	1	in
Flat Pressure:	90.508	psf
Round Pressure:	54.305	psf
Ice Wind Pressure:	8.689	psf

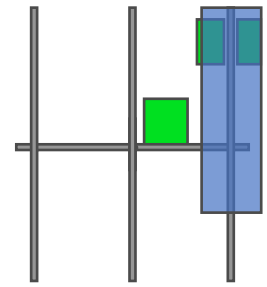
SEISMIC DATA		
Short-Period Accel. (S_s):	0.202	g
1-Second Accel. (S_1):	0.053	g
Short-Period Design (S_{DS}):	0.215	
1-Second Design (S_{D1}):	0.085	
Short-Period Coeff. (F_a):	1.600	
1-Second Coeff. (F_v):	2.400	
Amplification Factor (A_s):	3.000	
Response Mod. Coeff. (R):	2.000	

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless

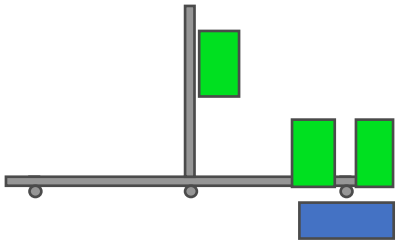
Infinigy Load Calculator V2.1.7

Program Inputs

ELEVATION VIEW



PLAN VIEW



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the solutions are endless

Infinigy Load Calculator V2.1.7

APPURTENANCE INFORMATION

Appurtenance Name	Elevation	Qty.	K_a	q_z (psf)	EPA_N (ft^2)	EPA_T (ft^2)	Wind F_z (lbs)	Wind F_x (lbs)	Weight (lbs)	Seismic F (lbs)	Member (α sector)
JMA WIRELESS MX08FRO665-21	75.0	3	0.90	45.25	8.01	3.21	326.23	130.74	82.50	26.66	MP1
FUJITSU TA08025-B605	75.0	3	0.90	45.25	1.96	1.19	79.97	48.43	74.95	24.22	MP1
FUJITSU TA08025-B604	75.0	3	0.90	45.25	1.96	1.03	79.97	42.07	63.93	20.66	MP1
RAYCAP RDIDC-3045-PF-48	75.0	3	0.90	45.25	2.01	1.17	47.61	82.05	21.85	7.06	S1

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(...	Section/Shape	Type	Design List	Material	Design Rules
1	S1	P1	P2			4X4X.25	Beam	None	A500 Gr. C	Typical
2	H1	P3	P4			3.5ODX.165	Beam	None	A500 Gr. C	Typical
3	M3	P6	P5			4.5" Pipe	Beam	None	A500 Gr. C	Typical
4	MP1	P10	P12			2.375ODX.12	Beam	None	A500 Gr. C	Typical
5	MP3	P9	P11			2.375ODX.12	Beam	None	A500 Gr. C	Typical
6	MP2	P17	P16			2.375ODX.12	Beam	None	A500 Gr. C	Typical
7	M7	P7	P13			RIGID	None	None	RIGID	Typical
8	M8	P15	P2			RIGID	None	None	RIGID	Typical
9	M9	P8	P14			RIGID	None	None	RIGID	Typical

Hot Rolled Steel Design Parameters

	Label	Shape	Lengt...	Lbyy[in]	Lbzz[in]	Lcomp t...	Lcomp b...	L-tor...	Kyy	Kzz	Cb	Func...
1	S1	4X4X.25	38			Lbyy						Late...
2	H1	3.5ODX.165	78			Lbyy						Late...
3	M3	4.5" Pipe	18			Lbyy						Late...
4	MP1	2.375ODX.12	96			Lbyy						Late...
5	MP3	2.375ODX.12	96			Lbyy						Late...
6	MP2	2.375ODX.12	96			Lbyy						Late...

Member Advanced Data

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Ra..	Analysis ...	Inactive	Seismi...
1	S1						Yes				None
2	H1						Yes				None
3	M3						Yes				None
4	MP1						Yes				None
5	MP3						Yes				None
6	MP2						Yes				None
7	M7						Yes	** NA **			None
8	M8						Yes	** NA **			None
9	M9						Yes	** NA **			None

Material Takeoff

	Material	Size	Pieces	Length[in]	Weight[LB]
1	General				
2	RIGID		3	6	0
3	Total General		3	6	0
4					

Material Takeoff (Continued)

	Material	Size	Pieces	Length[in]	Weight[LB]
5	Hot Rolled Steel				
6	A500 Gr. C	2.375ODX.12	3	288	69.426
7	A500 Gr. C	3.5ODX.165	1	78	38.236
8	A500 Gr. C	4X4X.25	1	38	40.408
9	A500 Gr. C	PIPE 4.5 OD x 0.188	1	18	12.999
10	Total HR Steel		6	422	161.069

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design...	A [in2]	Iyy [in...	Izz [in...	J [in4]
1	4.5" Pipe	PIPE 4.5 OD x 0.188	Beam	None	A500 G...	Typical	2.547	5.93	5.93	11.861
2	3.5ODX.165	3.5ODX.165	Beam	None	A500 G...	Typical	1.729	2.409	2.409	4.819
3	2.375ODX.12	2.375ODX.12	Beam	None	A500 G...	Typical	.85	.542	.542	1.084
4	4X4X.25	4X4X.25	Beam	None	A500 G...	Typical	3.75	8.828	8.828	13.184

Basic Load Cases

	BLC Description	Category	X Gr...	Y Gr...	Z Gr...	Joint	Point	Distributed	Area(Memb...	Surface(Plate/Wall)
1	Self Weight	DL		-1			5			
2	Wind Load AZI 0	WLZ					10			
3	Wind Load AZI 30	None					10			
4	Wind Load AZI 60	None					10			
5	Wind Load AZI 90	WLX					10			
6	Wind Load AZI 1...	None					10			
7	Wind Load AZI 1...	None					10			
8	Wind Load AZI 1...	None					10			
9	Wind Load AZI 2...	None					10			
10	Wind Load AZI 2...	None					10			
11	Wind Load AZI 2...	None					10			
12	Wind Load AZI 3...	None					10			
13	Wind Load AZI 3...	None					10			
14	Distr. Wind Load Z	WLZ						9		
15	Distr. Wind Load X	WLX						9		
16	Ice Weight	OL1					5	9		
17	Ice Wind Load A...	OL2					10			
18	Ice Wind Load A...	None					10			
19	Ice Wind Load A...	None					10			
20	Ice Wind Load A...	OL3					10			
21	Ice Wind Load A...	None					10			
22	Ice Wind Load A...	None					10			
23	Ice Wind Load A...	None					10			

Basic Load Cases (Continued)

	BLC Description	Category	X Gr...	Y Gr...	Z Gr...	Joint	Point	Distributed	Area(Memb...	Surface(Plate/Wall)
24	Ice Wind Load A...	None					10			
25	Ice Wind Load A...	None					10			
26	Ice Wind Load A...	None					10			
27	Ice Wind Load A...	None					10			
28	Ice Wind Load A...	None					10			
29	Distr. Ice Wind L...	OL2						9		
30	Distr. Ice Wind L...	OL3						9		
31	Seismic Load Z	ELZ			-.323		5			
32	Seismic Load X	ELX	-.323				5			
33	Service Live Loa...	LL				1				
34	Maintenance Loa...	LL				1				
35	Maintenance Loa...	LL				1				
36	Maintenance Loa...	LL				1				

Load Combinations

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
1	1.4DL	Y...	Y		1	1.4																				
2	1.2DL + 1WL AZI 0	Y...	Y		1	1.2	2	1	14	1	15															
3	1.2DL + 1WL AZI 30	Y...	Y		1	1.2	3	1	14	.866	15	.5														
4	1.2DL + 1WL AZI 60	Y...	Y		1	1.2	4	1	14	.5	15	.866														
5	1.2DL + 1WL AZI 90	Y...	Y		1	1.2	5	1	14		15	1														
6	1.2DL + 1WL AZI 120	Y...	Y		1	1.2	6	1	14	-.5	15	.866														
7	1.2DL + 1WL AZI 150	Y...	Y		1	1.2	7	1	14	-.8...	15	.5														
8	1.2DL + 1WL AZI 180	Y...	Y		1	1.2	8	1	14	-1	15															
9	1.2DL + 1WL AZI 210	Y...	Y		1	1.2	9	1	14	-.8...	15	-.5														
10	1.2DL + 1WL AZI 240	Y...	Y		1	1.2	10	1	14	-.5	15	-.8...														
11	1.2DL + 1WL AZI 270	Y...	Y		1	1.2	11	1	14		15	-1														
12	1.2DL + 1WL AZI 300	Y...	Y		1	1.2	12	1	14	.5	15	-.8...														
13	1.2DL + 1WL AZI 330	Y...	Y		1	1.2	13	1	14	.866	15	-.5														
14	0.9DL + 1WL AZI 0	Y...	Y		1	.9	2	1	14	1	15															
15	0.9DL + 1WL AZI 30	Y...	Y		1	.9	3	1	14	.866	15	.5														
16	0.9DL + 1WL AZI 60	Y...	Y		1	.9	4	1	14	.5	15	.866														
17	0.9DL + 1WL AZI 90	Y...	Y		1	.9	5	1	14		15	1														
18	0.9DL + 1WL AZI 120	Y...	Y		1	.9	6	1	14	-.5	15	.866														
19	0.9DL + 1WL AZI 150	Y...	Y		1	.9	7	1	14	-.8...	15	.5														
20	0.9DL + 1WL AZI 180	Y...	Y		1	.9	8	1	14	-1	15															
21	0.9DL + 1WL AZI 210	Y...	Y		1	.9	9	1	14	-.8...	15	-.5														
22	0.9DL + 1WL AZI 240	Y...	Y		1	.9	10	1	14	-.5	15	-.8...														
23	0.9DL + 1WL AZI 270	Y...	Y		1	.9	11	1	14		15	-1														
24	0.9DL + 1WL AZI 300	Y...	Y		1	.9	12	1	14	.5	15	-.8...														
25	0.9DL + 1WL AZI 330	Y...	Y		1	.9	13	1	14	.866	15	-.5														

Load Combinations (Continued)

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
26	1.2D + 1.0Di	Y...	Y		1	1.2	16	1																		
27	1.2D + 1.0Di +1.0Wi AZI 0	Y...	Y		1	1.2	16	1	17	1	29	1	30													
28	1.2D + 1.0Di +1.0Wi AZI 30	Y...	Y		1	1.2	16	1	18	1	29	.866	30	.5												
29	1.2D + 1.0Di +1.0Wi AZI 60	Y...	Y		1	1.2	16	1	19	1	29	.5	30	.866												
30	1.2D + 1.0Di +1.0Wi AZI 90	Y...	Y		1	1.2	16	1	20	1	29		30	1												
31	1.2D + 1.0Di +1.0Wi AZI 120	Y...	Y		1	1.2	16	1	21	1	29	-.5	30	.866												
32	1.2D + 1.0Di +1.0Wi AZI 150	Y...	Y		1	1.2	16	1	22	1	29	-.8...	30	.5												
33	1.2D + 1.0Di +1.0Wi AZI 180	Y...	Y		1	1.2	16	1	23	1	29	-1	30													
34	1.2D + 1.0Di +1.0Wi AZI 210	Y...	Y		1	1.2	16	1	24	1	29	-.8...	30	-.5												
35	1.2D + 1.0Di +1.0Wi AZI 240	Y...	Y		1	1.2	16	1	25	1	29	-.5	30	-.8...												
36	1.2D + 1.0Di +1.0Wi AZI 270	Y...	Y		1	1.2	16	1	26	1	29		30	-1												
37	1.2D + 1.0Di +1.0Wi AZI 300	Y...	Y		1	1.2	16	1	27	1	29	.5	30	-.8...												
38	1.2D + 1.0Di +1.0Wi AZI 330	Y...	Y		1	1.2	16	1	28	1	29	.866	30	-.5												
39	(1.2 + 0.2Sds)DL + 1.0E AZI 0	Y...	Y		1	1.2...	31	1	32																	
40	(1.2 + 0.2Sds)DL + 1.0E AZI 30	Y...	Y		1	1.2...	31	.866	32	.5																
41	(1.2 + 0.2Sds)DL + 1.0E AZI 60	Y...	Y		1	1.2...	31	.5	32	.866																
42	(1.2 + 0.2Sds)DL + 1.0E AZI 90	Y...	Y		1	1.2...	31		32	1																
43	(1.2 + 0.2Sds)DL + 1.0E AZI 1...	Y...	Y		1	1.2...	31	-.5	32	.866																
44	(1.2 + 0.2Sds)DL + 1.0E AZI 1...	Y...	Y		1	1.2...	31	-.8...	32	.5																
45	(1.2 + 0.2Sds)DL + 1.0E AZI 1...	Y...	Y		1	1.2...	31	-1	32																	
46	(1.2 + 0.2Sds)DL + 1.0E AZI 2...	Y...	Y		1	1.2...	31	-.8...	32	-.5																
47	(1.2 + 0.2Sds)DL + 1.0E AZI 2...	Y...	Y		1	1.2...	31	-.5	32	-.8...																
48	(1.2 + 0.2Sds)DL + 1.0E AZI 2...	Y...	Y		1	1.2...	31		32	-1																
49	(1.2 + 0.2Sds)DL + 1.0E AZI 3...	Y...	Y		1	1.2...	31	.5	32	-.8...																
50	(1.2 + 0.2Sds)DL + 1.0E AZI 3...	Y...	Y		1	1.2...	31	.866	32	-.5																
51	(0.9 - 0.2Sds)DL + 1.0E AZI 0	Y...	Y		1	.857	31	1	32																	
52	(0.9 - 0.2Sds)DL + 1.0E AZI 30	Y...	Y		1	.857	31	.866	32	.5																
53	(0.9 - 0.2Sds)DL + 1.0E AZI 60	Y...	Y		1	.857	31	.5	32	.866																
54	(0.9 - 0.2Sds)DL + 1.0E AZI 90	Y...	Y		1	.857	31		32	1																
55	(0.9 - 0.2Sds)DL + 1.0E AZI 1...	Y...	Y		1	.857	31	-.5	32	.866																
56	(0.9 - 0.2Sds)DL + 1.0E AZI 1...	Y...	Y		1	.857	31	-.8...	32	.5																
57	(0.9 - 0.2Sds)DL + 1.0E AZI 1...	Y...	Y		1	.857	31	-1	32																	
58	(0.9 - 0.2Sds)DL + 1.0E AZI 2...	Y...	Y		1	.857	31	-.8...	32	-.5																
59	(0.9 - 0.2Sds)DL + 1.0E AZI 2...	Y...	Y		1	.857	31	-.5	32	-.8...																
60	(0.9 - 0.2Sds)DL + 1.0E AZI 2...	Y...	Y		1	.857	31		32	-1																
61	(0.9 - 0.2Sds)DL + 1.0E AZI 3...	Y...	Y		1	.857	31	.5	32	-.8...																
62	(0.9 - 0.2Sds)DL + 1.0E AZI 3...	Y...	Y		1	.857	31	.866	32	-.5																
63	1.0DL + 1.5LL + 1.0SWL (60 ...	Y...	Y		1	1	2	.23	14	.23	15		33	1.5												
64	1.0DL + 1.5LL + 1.0SWL (60 ...	Y...	Y		1	1	3	.23	14	.2	15	.115	33	1.5												
65	1.0DL + 1.5LL + 1.0SWL (60 ...	Y...	Y		1	1	4	.23	14	.115	15	.2	33	1.5												
66	1.0DL + 1.5LL + 1.0SWL (60 ...	Y...	Y		1	1	5	.23	14		15	.23	33	1.5												
67	1.0DL + 1.5LL + 1.0SWL (60 ...	Y...	Y		1	1	6	.23	14	-.1...	15	.2	33	1.5												

Load Combinations (Continued)

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
68	1.0DL + 1.5LL + 1.0SWL (60 ...	Y...	Y		1	1	7	.23	14	-.2	15	.115	33	1.5												
69	1.0DL + 1.5LL + 1.0SWL (60 ...	Y...	Y		1	1	8	.23	14	-.23	15		33	1.5												
70	1.0DL + 1.5LL + 1.0SWL (60 ...	Y...	Y		1	1	9	.23	14	-.2	15	-.1...	33	1.5												
71	1.0DL + 1.5LL + 1.0SWL (60 ...	Y...	Y		1	1	10	.23	14	-.1...	15	-.2	33	1.5												
72	1.0DL + 1.5LL + 1.0SWL (60 ...	Y...	Y		1	1	11	.23	14		15	-.23	33	1.5												
73	1.0DL + 1.5LL + 1.0SWL (60 ...	Y...	Y		1	1	12	.23	14	.115	15	-.2	33	1.5												
74	1.0DL + 1.5LL + 1.0SWL (60 ...	Y...	Y		1	1	13	.23	14	.2	15	-.1...	33	1.5												
75	1.2DL + 1.5LL	Y...	Y		1	1.2	33	1.5																		
76	1.2DL + 1.5LM-MP1 + 1SWL (...	Y...	Y		1	1.2	34	1.5	2	.058	14	.058	15													
77	1.2DL + 1.5LM-MP1 + 1SWL (...	Y...	Y		1	1.2	34	1.5	3	.058	14	.05	15	.029												
78	1.2DL + 1.5LM-MP1 + 1SWL (...	Y...	Y		1	1.2	34	1.5	4	.058	14	.029	15	.05												
79	1.2DL + 1.5LM-MP1 + 1SWL (...	Y...	Y		1	1.2	34	1.5	5	.058	14		15	.058												
80	1.2DL + 1.5LM-MP1 + 1SWL (...	Y...	Y		1	1.2	34	1.5	6	.058	14	-.0...	15	.05												
81	1.2DL + 1.5LM-MP1 + 1SWL (...	Y...	Y		1	1.2	34	1.5	7	.058	14	-.05	15	.029												
82	1.2DL + 1.5LM-MP1 + 1SWL (...	Y...	Y		1	1.2	34	1.5	8	.058	14	-.0...	15													
83	1.2DL + 1.5LM-MP1 + 1SWL (...	Y...	Y		1	1.2	34	1.5	9	.058	14	-.05	15	-.0...												
84	1.2DL + 1.5LM-MP1 + 1SWL (...	Y...	Y		1	1.2	34	1.5	10	.058	14	-.0...	15	-.05												
85	1.2DL + 1.5LM-MP1 + 1SWL (...	Y...	Y		1	1.2	34	1.5	11	.058	14		15	-.0...												
86	1.2DL + 1.5LM-MP1 + 1SWL (...	Y...	Y		1	1.2	34	1.5	12	.058	14	.029	15	-.05												
87	1.2DL + 1.5LM-MP1 + 1SWL (...	Y...	Y		1	1.2	34	1.5	13	.058	14	.05	15	-.0...												
88	1.2DL + 1.5LM-MP2 + 1SWL (...	Y...	Y		1	1.2	35	1.5	2	.058	14	.058	15													
89	1.2DL + 1.5LM-MP2 + 1SWL (...	Y...	Y		1	1.2	35	1.5	3	.058	14	.05	15	.029												
90	1.2DL + 1.5LM-MP2 + 1SWL (...	Y...	Y		1	1.2	35	1.5	4	.058	14	.029	15	.05												
91	1.2DL + 1.5LM-MP2 + 1SWL (...	Y...	Y		1	1.2	35	1.5	5	.058	14		15	.058												
92	1.2DL + 1.5LM-MP2 + 1SWL (...	Y...	Y		1	1.2	35	1.5	6	.058	14	-.0...	15	.05												
93	1.2DL + 1.5LM-MP2 + 1SWL (...	Y...	Y		1	1.2	35	1.5	7	.058	14	-.05	15	.029												
94	1.2DL + 1.5LM-MP2 + 1SWL (...	Y...	Y		1	1.2	35	1.5	8	.058	14	-.0...	15													
95	1.2DL + 1.5LM-MP2 + 1SWL (...	Y...	Y		1	1.2	35	1.5	9	.058	14	-.05	15	-.0...												
96	1.2DL + 1.5LM-MP2 + 1SWL (...	Y...	Y		1	1.2	35	1.5	10	.058	14	-.0...	15	-.05												
97	1.2DL + 1.5LM-MP2 + 1SWL (...	Y...	Y		1	1.2	35	1.5	11	.058	14		15	-.0...												
98	1.2DL + 1.5LM-MP2 + 1SWL (...	Y...	Y		1	1.2	35	1.5	12	.058	14	.029	15	-.05												
99	1.2DL + 1.5LM-MP2 + 1SWL (...	Y...	Y		1	1.2	35	1.5	13	.058	14	.05	15	-.0...												
100	1.2DL + 1.5LM-MP3 + 1SWL (...	Y...	Y		1	1.2	36	1.5	2	.058	14	.058	15													
101	1.2DL + 1.5LM-MP3 + 1SWL (...	Y...	Y		1	1.2	36	1.5	3	.058	14	.05	15	.029												
102	1.2DL + 1.5LM-MP3 + 1SWL (...	Y...	Y		1	1.2	36	1.5	4	.058	14	.029	15	.05												
103	1.2DL + 1.5LM-MP3 + 1SWL (...	Y...	Y		1	1.2	36	1.5	5	.058	14		15	.058												
104	1.2DL + 1.5LM-MP3 + 1SWL (...	Y...	Y		1	1.2	36	1.5	6	.058	14	-.0...	15	.05												
105	1.2DL + 1.5LM-MP3 + 1SWL (...	Y...	Y		1	1.2	36	1.5	7	.058	14	-.05	15	.029												
106	1.2DL + 1.5LM-MP3 + 1SWL (...	Y...	Y		1	1.2	36	1.5	8	.058	14	-.0...	15													
107	1.2DL + 1.5LM-MP3 + 1SWL (...	Y...	Y		1	1.2	36	1.5	9	.058	14	-.05	15	-.0...												
108	1.2DL + 1.5LM-MP3 + 1SWL (...	Y...	Y		1	1.2	36	1.5	10	.058	14	-.0...	15	-.05												
109	1.2DL + 1.5LM-MP3 + 1SWL (...	Y...	Y		1	1.2	36	1.5	11	.058	14		15	-.0...												

Load Combinations (Continued)

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
110	1.2DL + 1.5LM-MP3 + 1SWL (..	Y...	Y		1	1.2	36	1.5	12	.058	14	.029	15	-.05												

Joint Boundary Conditions

	Joint 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]
1	P1	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	P1	...	687.324	17	1235.1...	83	925.238	14	-290.474	14	2297.382	7	2826.232	84
2		...	-687.324	11	346.448	53	-925.238	8	-4025.47	82	-2299.582	13	-1358.022	90
3	Totals:	...	687.324	17	1235.1...	83	925.238	14						
4		...	-687.324	11	346.448	53	-925.238	8						

Member Point Loads (BLC 1 : Self Weight)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Y	-41.25	0
2	MP1	Y	-41.25	72
3	MP1	Y	-74.95	12
4	MP1	Y	-63.93	12
5	S1	Y	-21.85	19

Member Point Loads (BLC 2 : Wind Load AZI 0)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	0	0
2	MP1	Z	-163.12	0
3	MP1	X	0	72
4	MP1	Z	-163.12	72
5	MP1	X	0	12
6	MP1	Z	-79.97	12
7	MP1	X	0	12
8	MP1	Z	-79.97	12
9	S1	X	0	19
10	S1	Z	-47.61	19

Member Point Loads (BLC 3 : Wind Load AZI 30)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-69.34	0

Member Point Loads (BLC 3 : Wind Load AZI 30) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
2	MP1	Z	-120.1	0
3	MP1	X	-69.34	72
4	MP1	Z	-120.1	72
5	MP1	X	-36.04	12
6	MP1	Z	-62.43	12
7	MP1	X	-35.25	12
8	MP1	Z	-61.05	12
9	S1	X	-28.11	19
10	S1	Z	-48.69	19

Member Point Loads (BLC 4 : Wind Load AZI 60)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-77.77	0
2	MP1	Z	-44.9	0
3	MP1	X	-77.77	72
4	MP1	Z	-44.9	72
5	MP1	X	-48.77	12
6	MP1	Z	-28.16	12
7	MP1	X	-44.64	12
8	MP1	Z	-25.77	12
9	S1	X	-63.6	19
10	S1	Z	-36.72	19

Member Point Loads (BLC 5 : Wind Load AZI 90)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-65.37	0
2	MP1	Z	0	0
3	MP1	X	-65.37	72
4	MP1	Z	0	72
5	MP1	X	-48.43	12
6	MP1	Z	0	12
7	MP1	X	-42.07	12
8	MP1	Z	0	12
9	S1	X	-82.05	19
10	S1	Z	0	19

Member Point Loads (BLC 6 : Wind Load AZI 120)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-77.77	0
2	MP1	Z	44.9	0
3	MP1	X	-77.77	72

Member Point Loads (BLC 6 : Wind Load AZI 120) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
4	MP1	Z	44.9	72
5	MP1	X	-48.77	12
6	MP1	Z	28.16	12
7	MP1	X	-44.64	12
8	MP1	Z	25.77	12
9	S1	X	-63.6	19
10	S1	Z	36.72	19

Member Point Loads (BLC 7 : Wind Load AZI 150)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-69.34	0
2	MP1	Z	120.1	0
3	MP1	X	-69.34	72
4	MP1	Z	120.1	72
5	MP1	X	-36.04	12
6	MP1	Z	62.43	12
7	MP1	X	-35.25	12
8	MP1	Z	61.05	12
9	S1	X	-28.11	19
10	S1	Z	48.69	19

Member Point Loads (BLC 8 : Wind Load AZI 180)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	0	0
2	MP1	Z	163.12	0
3	MP1	X	0	72
4	MP1	Z	163.12	72
5	MP1	X	0	12
6	MP1	Z	79.97	12
7	MP1	X	0	12
8	MP1	Z	79.97	12
9	S1	X	0	19
10	S1	Z	47.61	19

Member Point Loads (BLC 9 : Wind Load AZI 210)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	69.34	0
2	MP1	Z	120.1	0
3	MP1	X	69.34	72
4	MP1	Z	120.1	72
5	MP1	X	36.04	12

Member Point Loads (BLC 9 : Wind Load AZI 210) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
6	MP1	Z	62.43	12
7	MP1	X	35.25	12
8	MP1	Z	61.05	12
9	S1	X	28.11	19
10	S1	Z	48.69	19

Member Point Loads (BLC 10 : Wind Load AZI 240)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	77.77	0
2	MP1	Z	44.9	0
3	MP1	X	77.77	72
4	MP1	Z	44.9	72
5	MP1	X	48.77	12
6	MP1	Z	28.16	12
7	MP1	X	44.64	12
8	MP1	Z	25.77	12
9	S1	X	63.6	19
10	S1	Z	36.72	19

Member Point Loads (BLC 11 : Wind Load AZI 270)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	65.37	0
2	MP1	Z	0	0
3	MP1	X	65.37	72
4	MP1	Z	0	72
5	MP1	X	48.43	12
6	MP1	Z	0	12
7	MP1	X	42.07	12
8	MP1	Z	0	12
9	S1	X	82.05	19
10	S1	Z	0	19

Member Point Loads (BLC 12 : Wind Load AZI 300)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	77.77	0
2	MP1	Z	-44.9	0
3	MP1	X	77.77	72
4	MP1	Z	-44.9	72
5	MP1	X	48.77	12
6	MP1	Z	-28.16	12
7	MP1	X	44.64	12

Member Point Loads (BLC 12 : Wind Load AZI 300) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
8	MP1	Z	-25.77	12
9	S1	X	63.6	19
10	S1	Z	-36.72	19

Member Point Loads (BLC 13 : Wind Load AZI 330)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	69.34	0
2	MP1	Z	-120.1	0
3	MP1	X	69.34	72
4	MP1	Z	-120.1	72
5	MP1	X	36.04	12
6	MP1	Z	-62.43	12
7	MP1	X	35.25	12
8	MP1	Z	-61.05	12
9	S1	X	28.11	19
10	S1	Z	-48.69	19

Member Point Loads (BLC 16 : Ice Weight)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Y	-84.356	0
2	MP1	Y	-84.356	72
3	MP1	Y	-42.562	12
4	MP1	Y	-39.809	12
5	S1	Y	-41.941	19

Member Point Loads (BLC 17 : Ice Wind Load AZI 0)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	0	0
2	MP1	Z	-19.3	0
3	MP1	X	0	72
4	MP1	Z	-19.3	72
5	MP1	X	0	12
6	MP1	Z	-6.96	12
7	MP1	X	0	12
8	MP1	Z	-6.96	12
9	S1	X	0	19
10	S1	Z	-5.69	19

Member Point Loads (BLC 18 : Ice Wind Load AZI 30)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-8.84	0

Member Point Loads (BLC 18 : Ice Wind Load AZI 30) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
2	MP1	Z	-15.31	0
3	MP1	X	-8.84	72
4	MP1	Z	-15.31	72
5	MP1	X	-3.31	12
6	MP1	Z	-5.73	12
7	MP1	X	-3.27	12
8	MP1	Z	-5.66	12
9	S1	X	-3.03	19
10	S1	Z	-5.26	19

Member Point Loads (BLC 19 : Ice Wind Load AZI 60)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-12.49	0
2	MP1	Z	-7.21	0
3	MP1	X	-12.49	72
4	MP1	Z	-7.21	72
5	MP1	X	-5.14	12
6	MP1	Z	-2.97	12
7	MP1	X	-4.94	12
8	MP1	Z	-2.85	12
9	S1	X	-5.91	19
10	S1	Z	-3.41	19

Member Point Loads (BLC 20 : Ice Wind Load AZI 90)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-12.8	0
2	MP1	Z	0	0
3	MP1	X	-12.8	72
4	MP1	Z	0	72
5	MP1	X	-5.6	12
6	MP1	Z	0	12
7	MP1	X	-5.28	12
8	MP1	Z	0	12
9	S1	X	-7.2	19
10	S1	Z	0	19

Member Point Loads (BLC 21 : Ice Wind Load AZI 120)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-12.49	0
2	MP1	Z	7.21	0
3	MP1	X	-12.49	72

Member Point Loads (BLC 21 : Ice Wind Load AZI 120) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
4	MP1	Z	7.21	72
5	MP1	X	-5.14	12
6	MP1	Z	2.97	12
7	MP1	X	-4.94	12
8	MP1	Z	2.85	12
9	S1	X	-5.91	19
10	S1	Z	3.41	19

Member Point Loads (BLC 22 : Ice Wind Load AZI 150)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-8.84	0
2	MP1	Z	15.31	0
3	MP1	X	-8.84	72
4	MP1	Z	15.31	72
5	MP1	X	-3.31	12
6	MP1	Z	5.73	12
7	MP1	X	-3.27	12
8	MP1	Z	5.66	12
9	S1	X	-3.03	19
10	S1	Z	5.26	19

Member Point Loads (BLC 23 : Ice Wind Load AZI 180)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	0	0
2	MP1	Z	19.3	0
3	MP1	X	0	72
4	MP1	Z	19.3	72
5	MP1	X	0	12
6	MP1	Z	6.96	12
7	MP1	X	0	12
8	MP1	Z	6.96	12
9	S1	X	0	19
10	S1	Z	5.69	19

Member Point Loads (BLC 24 : Ice Wind Load AZI 210)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	8.84	0
2	MP1	Z	15.31	0
3	MP1	X	8.84	72
4	MP1	Z	15.31	72
5	MP1	X	3.31	12

Member Point Loads (BLC 24 : Ice Wind Load AZI 210) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
6	MP1	Z	5.73	12
7	MP1	X	3.27	12
8	MP1	Z	5.66	12
9	S1	X	3.03	19
10	S1	Z	5.26	19

Member Point Loads (BLC 25 : Ice Wind Load AZI 240)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	12.49	0
2	MP1	Z	7.21	0
3	MP1	X	12.49	72
4	MP1	Z	7.21	72
5	MP1	X	5.14	12
6	MP1	Z	2.97	12
7	MP1	X	4.94	12
8	MP1	Z	2.85	12
9	S1	X	5.91	19
10	S1	Z	3.41	19

Member Point Loads (BLC 26 : Ice Wind Load AZI 270)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	12.8	0
2	MP1	Z	0	0
3	MP1	X	12.8	72
4	MP1	Z	0	72
5	MP1	X	5.6	12
6	MP1	Z	0	12
7	MP1	X	5.28	12
8	MP1	Z	0	12
9	S1	X	7.2	19
10	S1	Z	0	19

Member Point Loads (BLC 27 : Ice Wind Load AZI 300)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	12.49	0
2	MP1	Z	-7.21	0
3	MP1	X	12.49	72
4	MP1	Z	-7.21	72
5	MP1	X	5.14	12
6	MP1	Z	-2.97	12
7	MP1	X	4.94	12

Member Point Loads (BLC 27 : Ice Wind Load AZI 300) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
8	MP1	Z	-2.85	12
9	S1	X	5.91	19
10	S1	Z	-3.41	19

Member Point Loads (BLC 28 : Ice Wind Load AZI 330)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	8.84	0
2	MP1	Z	-15.31	0
3	MP1	X	8.84	72
4	MP1	Z	-15.31	72
5	MP1	X	3.31	12
6	MP1	Z	-5.73	12
7	MP1	X	3.27	12
8	MP1	Z	-5.66	12
9	S1	X	3.03	19
10	S1	Z	-5.26	19

Member Point Loads (BLC 31 : Seismic Load Z)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Z	-13.332	0
2	MP1	Z	-13.332	72
3	MP1	Z	-24.224	12
4	MP1	Z	-20.662	12
5	S1	Z	-7.062	19

Member Point Loads (BLC 32 : Seismic Load X)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-13.332	0
2	MP1	X	-13.332	72
3	MP1	X	-24.224	12
4	MP1	X	-20.662	12
5	S1	X	-7.062	19

Joint Loads and Enforced Displacements (BLC 33 : Service Live Loads)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	P3	L	Y	-250

Joint Loads and Enforced Displacements (BLC 34 : Maintenance Load 1)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]

Joint Loads and Enforced Displacements (BLC 34 : Maintenance Load 1) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	P8	L	Y	-500

Joint Loads and Enforced Displacements (BLC 35 : Maintenance Load 2)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	P7	L	Y	-500

Joint Loads and Enforced Displacements (BLC 36 : Maintenance Load 3)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	P15	L	Y	-500

Member Distributed Loads (BLC 14 : Distr. Wind Load Z)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magn...	Start Location...	End Location[in,%]
1	S1	SZ	-90.508	-90.508	0	%100
2	H1	SZ	-54.305	-54.305	0	%100
3	M3	SZ	-54.305	-54.305	0	%100
4	MP1	SZ	-54.305	-54.305	0	%100
5	MP3	SZ	-54.305	-54.305	0	%100
6	MP2	SZ	-54.305	-54.305	0	%100
7	M7	SZ	0	0	0	%100
8	M8	SZ	0	0	0	%100
9	M9	SZ	0	0	0	%100

Member Distributed Loads (BLC 15 : Distr. Wind Load X)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magn...	Start Location...	End Location[in,%]
1	S1	SX	-90.508	-90.508	0	%100
2	H1	SX	-54.305	-54.305	0	%100
3	M3	SX	-54.305	-54.305	0	%100
4	MP1	SX	-54.305	-54.305	0	%100
5	MP3	SX	-54.305	-54.305	0	%100
6	MP2	SX	-54.305	-54.305	0	%100
7	M7	SX	0	0	0	%100
8	M8	SX	0	0	0	%100
9	M9	SX	0	0	0	%100

Member Distributed Loads (BLC 16 : Ice Weight)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magn...	Start Location...	End Location[in,%]
1	S1	Y	-8.942	-8.942	0	%100
2	H1	Y	-6.082	-6.082	0	%100
3	M3	Y	-7.408	-7.408	0	%100

Member Distributed Loads (BLC 16 : Ice Weight) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magn...	Start Location...	End Location[in,%]
4	MP1	Y	-4.59	-4.59	0	%100
5	MP3	Y	-4.59	-4.59	0	%100
6	MP2	Y	-4.59	-4.59	0	%100
7	M7	Y	-1.44	-1.44	0	%100
8	M8	Y	-1.44	-1.44	0	%100
9	M9	Y	-1.44	-1.44	0	%100

Member Distributed Loads (BLC 29 : Distr. Ice Wind Load Z)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magn...	Start Location...	End Location[in,%]
1	S1	SZ	-12.024	-12.024	0	%100
2	H1	SZ	-14.079	-14.079	0	%100
3	M3	SZ	-12.881	-12.881	0	%100
4	MP1	SZ	-16.632	-16.632	0	%100
5	MP3	SZ	-16.632	-16.632	0	%100
6	MP2	SZ	-16.632	-16.632	0	%100
7	M7	SZ	0	0	0	%100
8	M8	SZ	0	0	0	%100
9	M9	SZ	0	0	0	%100

Member Distributed Loads (BLC 30 : Distr. Ice Wind Load X)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magn...	Start Location...	End Location[in,%]
1	S1	SX	-12.024	-12.024	0	%100
2	H1	SX	-14.079	-14.079	0	%100
3	M3	SX	-12.881	-12.881	0	%100
4	MP1	SX	-16.632	-16.632	0	%100
5	MP3	SX	-16.632	-16.632	0	%100
6	MP2	SX	-16.632	-16.632	0	%100
7	M7	SX	0	0	0	%100
8	M8	SX	0	0	0	%100
9	M9	SX	0	0	0	%100

Member Area Loads

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

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

	Member	Shape	Code Check	Loc[in]	LC	She...	Loc[in]	Dir	LC	phi*P...	phi*P...	phi*M...	phi*Mn z-z [lb...	Cb	Eqn
1	MP1	2.375ODX.12	.594	48	8	.035	48		8	1328...	3519...	2107....	2107.188	1....	H1-1b
2	H1	3.5ODX.165	.464	39	86	.185	39		8	5335...	7156...	6336....	6336.491	1....	H1-1b
3	S1	4X4X.25	.243	0	7	.225	0	y	86	1489...	1552...	1822...	18220.313	1....	H1-1b
4	MP3	2.375ODX.12	.041	48	9	.004	48		9	1328...	3519...	2107....	2107.188	1....	H1-1b
5	MP2	2.375ODX.12	.041	48	9	.004	48		9	1328...	3519...	2107....	2107.188	1....	H1-1b
6	M3	PIPE 4.5 O...	.001	9	9	.000	9		10	1044...	1054...	1206...	12067.284	1....	H1-1b

INFINIGY

FROM ZERO TO INFINIGY

the solutions are endless

Bolt Calculation Tool, V1.5.1

PROJECT DATA	
Site Name:	Oct - Boston Post Rd
Site Number:	BOBDL00113A
Connection Description:	T-Arm to Collar

MAXIMUM BOLT LOADS		
Bolt Tension:	3951.34	lbs
Bolt Shear:	1949.42	lbs

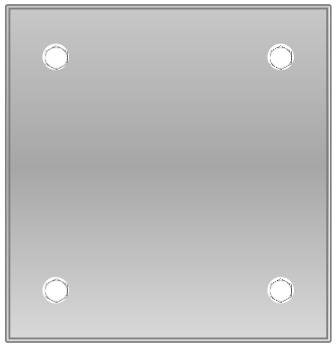
WORST CASE BOLT LOADS[1]		
Bolt Tension:	3951.34	lbs
Bolt Shear:	286.93	lbs

BOLT PROPERTIES		
Bolt Type:	Bolt	-
Bolt Diameter:	0.625	in
Bolt Grade:	A325	-
# of Bolts:	4	-
Threads Excluded?	No	-

[1] *Worst case bolt loads correspond to Load combination #7 on member S1 in RISA-3D, which causes the maximum demand on the bolts.*

Member Information
I nodes of S1

BOLT CHECK		
Tensile Strength	20340.15	
Shear Strength	13805.83	
Max Tensile Usage	19.4%	
Max Shear Usage	14.1%	
Interaction Check (Worst Case)	0.04	***≤1.05***
Result	Pass	

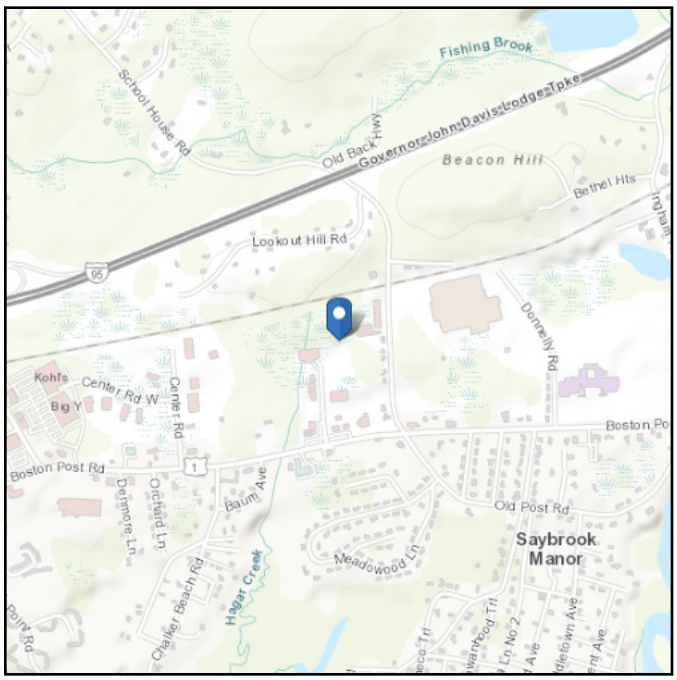


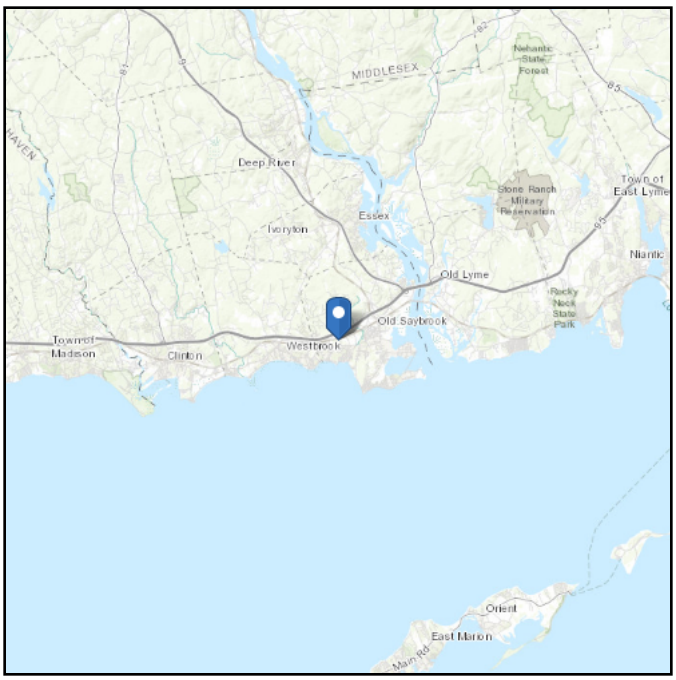
ASCE 7 Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-16
Risk Category: II
Soil Class: D - Default (see Section 11.4.3)

Elevation: 8.16 ft (NAVD 88)
Latitude: 41.289778
Longitude: -72.405944





Wind

Results:

Wind Speed	125 Vmph
10-year MRI	76 Vmph
25-year MRI	85 Vmph
50-year MRI	96 Vmph
100-year MRI	102 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: Mon Dec 06 2021

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.

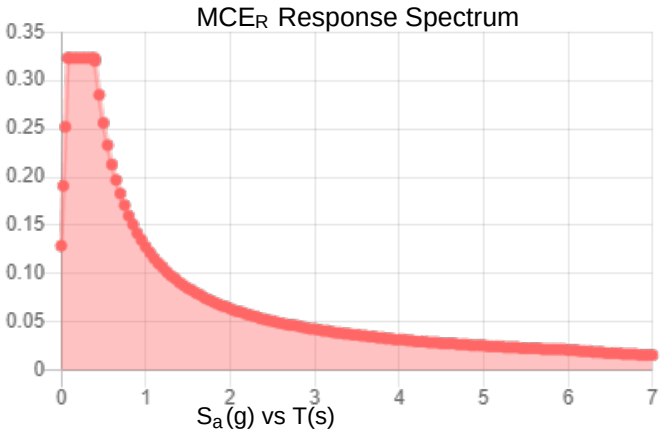
Seismic

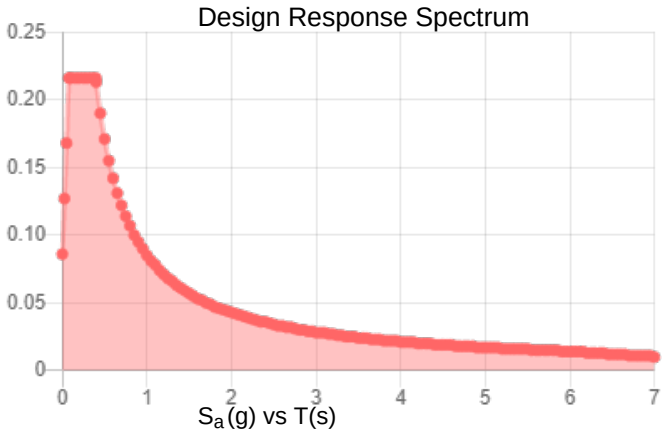
Site Soil Class: D - Default (see Section 11.4.3)

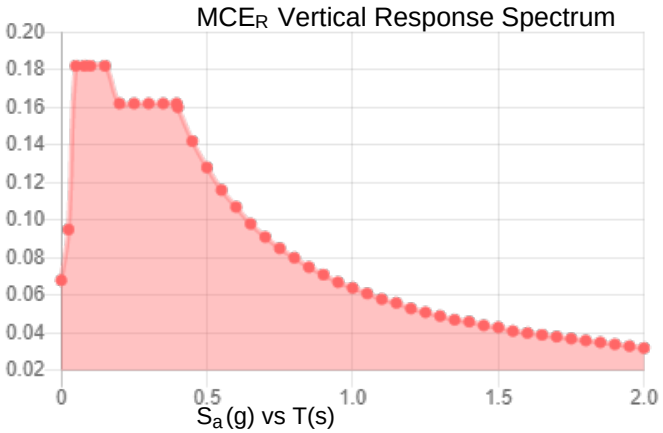
Results:

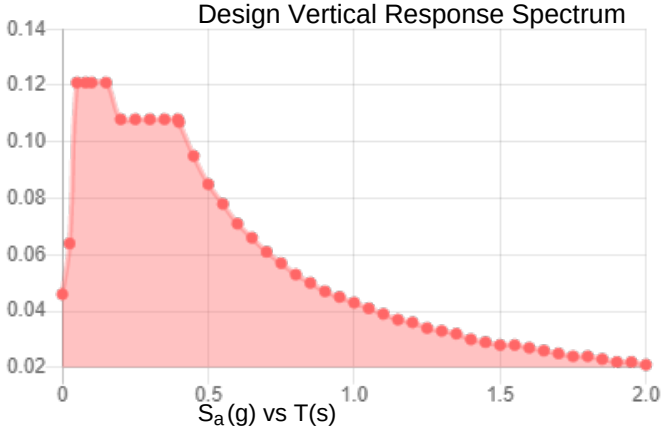
S_S :	0.202	S_{D1} :	0.085
S_1 :	0.053	T_L :	6
F_a :	1.6	PGA :	0.113
F_v :	2.4	PGA_M :	0.177
S_{MS} :	0.323	F_{PGA} :	1.575
S_{M1} :	0.128	I_e :	1
S_{DS} :	0.216	C_v :	0.704

Seismic Design Category B









Data Accessed: **Mon Dec 06 2021**

Date Source:

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

Ice

Results:

Ice Thickness:	1.00 in.
Concurrent Temperature:	15 F
Gust Speed	50 mph
Data Source:	Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8
Date Accessed:	Mon Dec 06 2021

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.

Exhibit F

Power Density/RF Emissions Report

Fox Hill Telecom

Radio Frequency Emissions Analysis Report

Site ID: BOBDL00113A

OCT - BOSTON POST RD
1363 Boston Post Road
Old Saybrook, CT 06475

October 11, 2021

Fox Hill Telecom Project Number: 210617

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**25.61 %**

Fox Hill Telecom

October 11, 2021

Dish Wireless
5701 South Santa Fe Drive
Littleton, CO 80120

Emissions Analysis for Site: **BOBDL00113A – OCT - BOSTON POST RD**

Fox Hill Telecom, Inc ("Fox Hill") was directed to analyze the proposed radio installation for Dish Wireless, LLC (Dish) facility located at **1363 Boston Post Road, Old Saybrook, 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 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (μW/cm2). The number of $\mu W/cm^2$ 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 ($\mu W/cm^2$). The general population exposure limits for the 600 MHz & 700 MHz bands are approximately 400 $\mu W/cm^2$ and 467 $\mu W/cm^2$ respectively. The general population exposure limit for the 1900 MHz (PCS) and 2100 MHz (AWS) bands is 1000 $\mu W/cm^2$. 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 radio system installation for **Dish** on the subject site located at **1363 Boston Post Road, Old Saybrook, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since **Dish** is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. All power values expressed and analyzed are maximum power levels expected to be used on all radios.

All emissions values for additional carriers were taken from the Connecticut Siting Council (CSC) active MPE database. Values in this database are provided by the individual carriers themselves

For each 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	600 MHz	4	61.5
5G	1900 MHz (PCS)	4	40
5G	2100 MHz (AWS)	4	40

Table 1: Channel Data Table

The following antennas listed in *Table 2* were used in the modeling for transmission in the 600 MHz, 1900 MHz (PCS) and 2100 MHz (AWS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	JMA MX08FRO665-21	75
B	1	JMA MX08FRO665-21	75
C	1	JMA MX08FRO665-21	75

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	JMA MX08FRO665-21	600 MHz / 1900 MHz (PCS) / 2100 MHz (AWS)	11.45 / 16.15 / 16.65	12	566	17,426.72	17.05
						Sector A Composite MPE%	**17.05**
Antenna B1	JMA MX08FRO665-21	600 MHz / 1900 MHz (PCS) / 2100 MHz (AWS)	11.45 / 16.15 / 16.65	12	566	17,426.72	17.05
						Sector B Composite MPE%	**17.05**
Antenna C1	JMA MX08FRO665-21	600 MHz / 1900 MHz (PCS) / 2100 MHz (AWS)	11.45 / 16.15 / 16.65	12	566	17,426.72	17.05
						Sector C Composite MPE%	**17.05**

Table 3: Dish Emissions Levels

The Following table (*table 4*) shows all additional carriers on site and their MPE% as recorded in the CSC active MPE database for this facility along with the newly calculated maximum **Dish** MPE contributions per this report. FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. *Table 5* below shows a summary for each **Dish** Sector as well as the composite MPE value for the site.

Site Composite MPE%	
Carrier	**MPE%**
Dish – Max Per Sector Value	**17.05 %**
AT&T	6.70 %
Verizon Wireless	1.86 %
Site Total MPE %:	**25.61 %**

Table 4: All Carrier MPE Contributions

Dish Sector A Total:	17.05 %
Dish Sector B Total:	17.05 %
Dish Sector C Total:	17.05 %
Site Total:	25.61 %

Table 5: Site MPE Summary

FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. *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 on all three sectors.

Dish _ Frequency Band / Technology Max Power Values (Per Sector)	**# Channels**	**Watts ERP (Per Channel)**	**Height (feet)**	**Total Power Density ($\mu W/cm^2$)**	**Frequency (MHz)**	**Allowable MPE ($\mu W/cm^2$)**	**Calculated % MPE**
Dish 600 MHz 5G	4	858.77	75	25.94	600 MHz	400	6.48%
Dish 1900 MHz (PCS) 5G	4	1,648.39	75	49.79	1900 MHz (PCS)	1000	4.98%
Dish 2100 MHz (AWS) 5G	4	1,849.52	75	55.86	2100 MHz (AWS)	1000	5.59%
						Total:	**17.05%**

Table 6: Dish Maximum Sector MPE Power Values

Fox Hill Telecom

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:	17.05 %
Sector B:	17.05 %
Sector C:	17.05 %
Dish Maximum Total (per sector):	17.05 %
Site Total:	25.61 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **25.61 %** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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.

Scott Heffernan
Principal RF Engineer
Fox Hill Telecom, Inc
Holden, MA 01520
(978)660-3998

Exhibit G

Letter of Authorization

SRR Towers, LLC - Letter of Authorization

CT - CONNECTICUT SITING COUNCIL
Melanie A. Bachman
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Re: Tower Share Application
SRR Towers, LLC - telecommunications site at:
1363 BOSTON POST RD, OLD SAYBROOK, CT 06475

SRR Towers, LLC, a Delaware Limited Liability Company ("SRR") hereby authorizes DISH Wireless LLC, including their Agent, to act as our Agent in the processing of all zoning applications, building permits and approvals through the CT - CONNECTICUT SITING COUNCIL for the existing wireless communications site described below:

SRR ID/Name: CT-1263 Old Saybrook, Boston Post Road
Customer Site ID: BOBDL00113A/OCT - BOSTON POST RD
Site Address: 1363 BOSTON POST RD, OLD SAYBROOK, CT 06475

SRR Towers, LLC

By: _____ Date: 9/23/2021
Name: JAMES M. BURGESS
Title: VICE PRESIDENT - REAL ESTATE

Exhibit H

Recipient Mailings

Exhibit H

Recipient Mailings

BOB DL 00134

UNITED STATES POSTAL SERVICE.

UNIONVILLE
24 MILL ST
UNIONVILLE, CT 06085-9998
(800)275-8777

10/21/2021 04:09 PM

Product	Qty	Unit Price	Price
Prepaid Mail North Reading, MA 01864 Weight: 0 lb 2.00 oz Acceptance Date: Thu 10/21/2021 Tracking #: 9405 5036 9930 0039 7091 40	1		$0.00
Prepaid Mail Chagrin Falls, OH 44022 Weight: 0 lb 9.70 oz Acceptance Date: Thu 10/21/2021 Tracking #: 9405 5036 9930 0039 7091 26	1		$0.00
Prepaid Mail Old Saybrook, CT 06475 Weight: 0 lb 9.80 oz Acceptance Date: Thu 10/21/2021 Tracking #: 9405 5036 9930 0039 7090 89	1		$0.00
Prepaid Mail Old Saybrook, CT 06475 Weight: 0 lb 9.80 oz Acceptance Date: Thu 10/21/2021 Tracking #: 9405 5036 9930 0039 7091 02	1		$0.00
Grand Total:			$0.00

Cut on dotted line.

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2. Place your label so it does not wrap around the edge of the package.
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4. To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.
5. Mail your package on the "Ship Date" you selected when creating this label.

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USPS TRACKING # :
9405 5036 9930 0039 7091 26

Trans. #:	546529351
Print Date:	10/21/2021
Ship Date:	10/21/2021
Expected Delivery Date:	10/25/2021

Priority Mail® Postage:	$8.70
Total:	$8.70

From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
420 MAIN ST
STE 1
STURBRIDGE MA 01566-1359

To: OCTAGON TOWERS, LLC
57 E WASHINGTON ST
CHAGRIN FALLS OH 44022-3044

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5. Mail your package on the "Ship Date" you selected when creating this label.

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0039 7091 40

Trans. #:	546529351
Print Date:	10/21/2021
Ship Date:	10/21/2021
Expected Delivery Date:	10/22/2021

Priority Mail® Postage:	$8.70
Total:	$8.70

From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
420 MAIN ST
STE 1
STURBRIDGE MA 01566-1359

To: BLUE SKY TOWER MANAGEMENT
352 PARK ST
STE 106
NORTH READING MA 01864-2157

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BOBDL0043A

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9405 5036 9930 0039 7090 89

Trans. #:	546529351
Print Date:	10/21/2021
Ship Date:	10/21/2021
Expected Delivery Date:	10/25/2021

Priority Mail® Postage:	**$8.70**
Total:	**$8.70**

From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
420 MAIN ST
STE 1
STURBRIDGE MA 01566-1359

To: CARL P FORTUNA, JR.
TOWN OF OLD SAYBROOK
302 MAIN ST
OLD SAYBROOK CT 06475-2384

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3. **Adhere your label to the package. A self-adhesive label is recommended. If tape or glue is used, DO NOT TAPE OVER BARCODE. Be sure all edges are secure.**
4. **To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.**
5. **Mail your package on the "Ship Date" you selected when creating this label.**

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0039 7091 02

Trans. #:	546529351
Print Date:	10/21/2021
Ship Date:	10/21/2021
Expected Delivery Date:	10/25/2021

Priority Mail® Postage:	**$8.70**
Total:	**$8.70**

From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
420 MAIN ST
STE 1
STURBRIDGE MA 01566-1359

To: CHRISTINA M COSTA
TOWN OF OLD SAYBROOK, TOWN PLANNER AND ZONING
302 MAIN ST
OLD SAYBROOK CT 06475-2384

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B0BDL00113A
DISH

UNITED STATES POSTAL SERVICE.

GREENDALE
290 W BOYLSTON ST
WORCESTER, MA 01606-2378
(800)275-8777

02/03/2022 11:18 AM

Product	Qty	Unit Price	Price
Prepaid Mail New Britain, CT 06051 Weight: 1 lb 4.70 oz Acceptance Date: Thu 02/03/2022 Tracking #: 9405 5036 9930 0155 8351 81	1		$0.00

Grand Total: $0.00

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Clerk: 11