



Northeast Site Solutions
Victoria Masse
420 Main St Unit 1 Box 2
Sturbridge, MA 01566
victoria@northeastsitesolutions.com

January 31, 2023

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

RE: Tower Share Application
72 Boggy Hole Road, Old Lyme CT 06371
Latitude: 41.322150 N
Longitude: -72.30747 W
Site#: BOBOS00005B

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 72 Boggy Hole Road, Old Lyme, Connecticut.

Dish Wireless LLC proposes to install three (3) 600/2100 5G MHz antenna and six (6) RRUs, at the 155-foot level of the existing 175-foot monopole tower, one (1) Fiber cable will also be installed. Dish Wireless LLC equipment cabinets will be placed within 7x5 lease area. Included are plans by Infinigy, dated January 31, 2023, Exhibit C. Also included is a structural analysis prepared by Infinigy, dated December 28, 2022 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. 209 on June 25, 2002. 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 Michele E. Hayes, Office Manager, Eric Knapp, Land Use Coordinator, as well as the property owner and 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 175-feet; Dish Wireless LLC proposed antennas will be located at a center line height of 155-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.

420 Main Street, Unit 1 Box 2, Sturbridge, MA 01566



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 7.51% 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 monopole in Old Lyme. 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 155-foot level of the existing 175-foot tower would have an insignificant visual impact on the area around the monopole. 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 Lyme.

Sincerely,

Victoria Masse
Mobile: 860-306-2326
Fax: 413-521-0558
Office: 420 Main Street, Unit 1 Box 2, Sturbridge, MA 01566
Email: victoria@northeastsitesolutions.com



Attachments

Cc:

Michele E. Hayes, Office Manager
Town of Old Lyme
52 Lyme Street
Old Lyme, CT 06371

Eric Knapp, Land Use Coordinator
Town of Old Lyme
52 Lyme Street
Old Lyme, CT 06371

Michael Sanders- Property Owner
72 Boggy Hole Road
Old Lyme, CT 06371

Wireless Solutions, LLC- Tower Owners
PO Box 284
Old Lyme, CT 06371
Attn: Ken Thomas

Exhibit A

Original Facility Approval

DOCKET NO. 209 - Wireless Solutions, LLC Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of a wireless telecommunication facility at one of two locations at 72 Boggy Hole Road, or at 62-1 Boggy Hole Road, Old Lyme, Connecticut.	} } } }	Connecticut Siting Council June 25, 2002
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Revised Decision and Order

Pursuant to the foregoing Revised Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, operation, and maintenance of a telecommunications facility at the proposed Alternate #1 site in Old Lyme, Connecticut, including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate either alone or cumulatively with other effects when compared to need, are not in conflict with the policies of the State concerning such effects, and therefore directs that a Certificate of Environmental Compatibility and Public Need (Certificate), be issued to Wireless Solutions, LLC for the construction, maintenance, and operation of a telecommunication facility at the proposed Alternate #1 site at 62-1 Boggy Hole Road, Old Lyme, Connecticut. We revoke the Decision and Order and Certificate issued to Wireless Solutions, LLC on December 11, 2001 for the construction, maintenance, and operation of a telecommunication facility at proposed alternate site at 72 Boggy Hole Road. The Council denies certification of the proposed prime and alternate sites at 72 Boggy Hole Road, Old Lyme.

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 for SNET Mobility, LLC, AT&T Wireless, Inc., Nextel Communications of the Mid-Atlantic, VoiceStream Wireless Corporation, and other telecommunications entities both public and private, but such tower shall not exceed a height of 175 feet above ground level (AGL), including antennas.
2. The Certificate Holder shall construct a single equipment building with suitable architectural treatment to accommodate the telecommunications equipment for the carriers who have executed a lease at the time of construction, and allow future carriers to add onto the equipment building in increments, with the same external design and finish.
3. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be submitted to and approved by the Council prior to the commencement of facility construction and shall include: a final site plan(s) for development of the proposed Alternate #1 site, including the location and specifications for the tower foundation, antennas, equipment building, security fence, access road consistent with the Town of Old Lyme regulations, and utility line; construction plans for site grading, tree trimming, water drainage, and erosion and sedimentation controls consistent with the Connecticut Guidelines for Soil Erosion and Sediment Control, as amended; landscaping; a tower finish that may include painting; and provisions for the prevention and containment of spills and/or other discharge into surface water and groundwater bodies.

4. The Certificate Holder shall provide the Council with a determination from the Federal Aviation Administration regarding obstruction marking and lighting; and a determination from the Connecticut Department of Environmental Protection regarding Federal or State Endangered, Threatened or Special Concern Species at the Alternate #1 site, during the submission of the D&M Plan.
5. Upon the establishment of any new State or federal radio frequency standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards.
6. The Certificate Holder shall provide the Council with a recalculated report of electromagnetic radio frequency power density if and when circumstances in operation cause a change in power density above the levels originally calculated and provided in the application.
7. The Certificate Holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.
8. If the facility does not initially provide, or permanently ceases to provide wireless services following completion of construction, 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.
9. Any antenna that becomes obsolete and ceases to function shall be removed within 60 days after such antennas become obsolete and cease to function.
10. Unless otherwise approved by the Council, this Decision and Order shall be void if all construction authorized herein is not completed within one year of the effective date of this Decision and Order or within one year after all appeals to this Decision and Order have been resolved.

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

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:

Certificate Holder

Wireless Solutions, LLC

Peter J. Tyrell, Esq.
Levy & Droney, P.C.
74 Batterson Park Road
Farmington, CT 06032

Intervenor

SNET Mobility, LLC

Charles R. Andres
Tyler Cooper & Alcorn, LLP
205 Church Street, P.O. Box 1936
New Haven, CT 06509-1910

Party

Town of Old Lyme Zoning Commission

Eric Knapp, Esq.
Branse & Willis, LLC
41-C New London Turnpike
Glen Lochen East
Glastonbury, CT 06033-2038

Intervenor

Nextel Communications of the
Mid-Atlantic, Inc. d/b/a Nextel
Communications

Christopher B. Fisher, Esq.
Cuddy & Feder & Worby
90 Maple Avenue
White Plains, NY 10601

Intervenor

VoiceStream Wireless Corporation

Stephen J. Humes
Diane W. Whitney
LeBoeuf, Lamb, Greene & MacRae, LLP
Goodwin Square
225 Asylum Street
Hartford, CT 06103

Intervenor

Cellco Partnership d/b/a
Verizon Wireless

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

Exhibit B

72 BOGGY HOLE RD

Location 72 BOGGY HOLE RD

Mblu 22 / / 75 / /

Acct# 00113900

Owner SANDERS MICHAEL

Assessment \$256,250

Appraisal \$414,600

PID 1294

Building Count 1

Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2014	\$250,500	\$164,100	\$414,600

Assessment			
Valuation Year	Improvements	Land	Total
2014	\$175,400	\$80,850	\$256,250

Owner of Record

Owner SANDERS MICHAEL
Co-Owner
Address 72 BOGGY HOLE RD
OLD LYME, CT 06371

Sale Price \$26,000
Certificate
Book & Page 239/ 546
Sale Date 07/01/1997

Ownership History

Ownership History				
Owner	Sale Price	Certificate	Book & Page	Sale Date
SANDERS MICHAEL	\$26,000		239/ 546	07/01/1997

Building Information

Building 1 : Section 1

Year Built: 2000
Living Area: 940
Replacement Cost: \$198,150
Building Percent 95
Good:
Replacement Cost
Less Depreciation: \$188,200

Building Attributes	
Field	Description

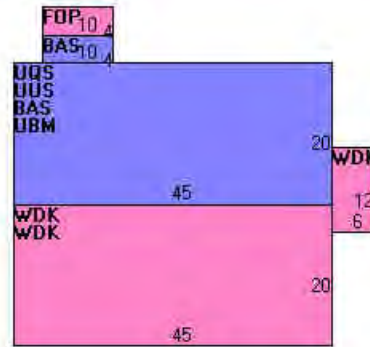
Style	Cape Cod
Model	Residential
Grade:	Average +10
Stories:	2 3/4 Stories
Occupancy	1
Exterior Wall 1	Vinyl Siding
Exterior Wall 2	
Roof Structure:	Gable/Hip
Roof Cover	Asph/F Gls/Cmp
Interior Wall 1	Drywall/Sheet
Interior Wall 2	
Interior Flr 1	Hardwood
Interior Flr 2	Carpet
Heat Fuel	Oil
Heat Type:	Forced Air-Duc
AC Type:	None
Total Bedrooms:	2 Bedrooms
Total Bthrms:	1
Total Half Baths:	0
Total Xtra Fixtrs:	
Total Rooms:	4 Rooms
Bath Style:	Average
Kitchen Style:	Average

Building Photo



(<http://images.vgsi.com/photos/OldLymeCTPhotos//\00\00\84\7/>)

Building Layout



(<http://images.vgsi.com/photos/OldLymeCTPhotos//Sketches/12/>)

Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	940	940
FOP	Porch, Open, Finished	40	0
UBM	Basement, Unfinished	900	0
UQS	Three Quater Story, unf	900	0
UUS	Upper Story, Unfinished	900	0
WDK	Deck, Wood	1,872	0
		5,552	940

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code 1010
Description Single Fam MDL-01
Zone RU80
Neighborhood 0050
Alt Land Appr Category No

Land Line Valuation

Size (Acres) 29.50
Frontage 0
Depth 0
Assessed Value \$80,850
Appraised Value \$164,100

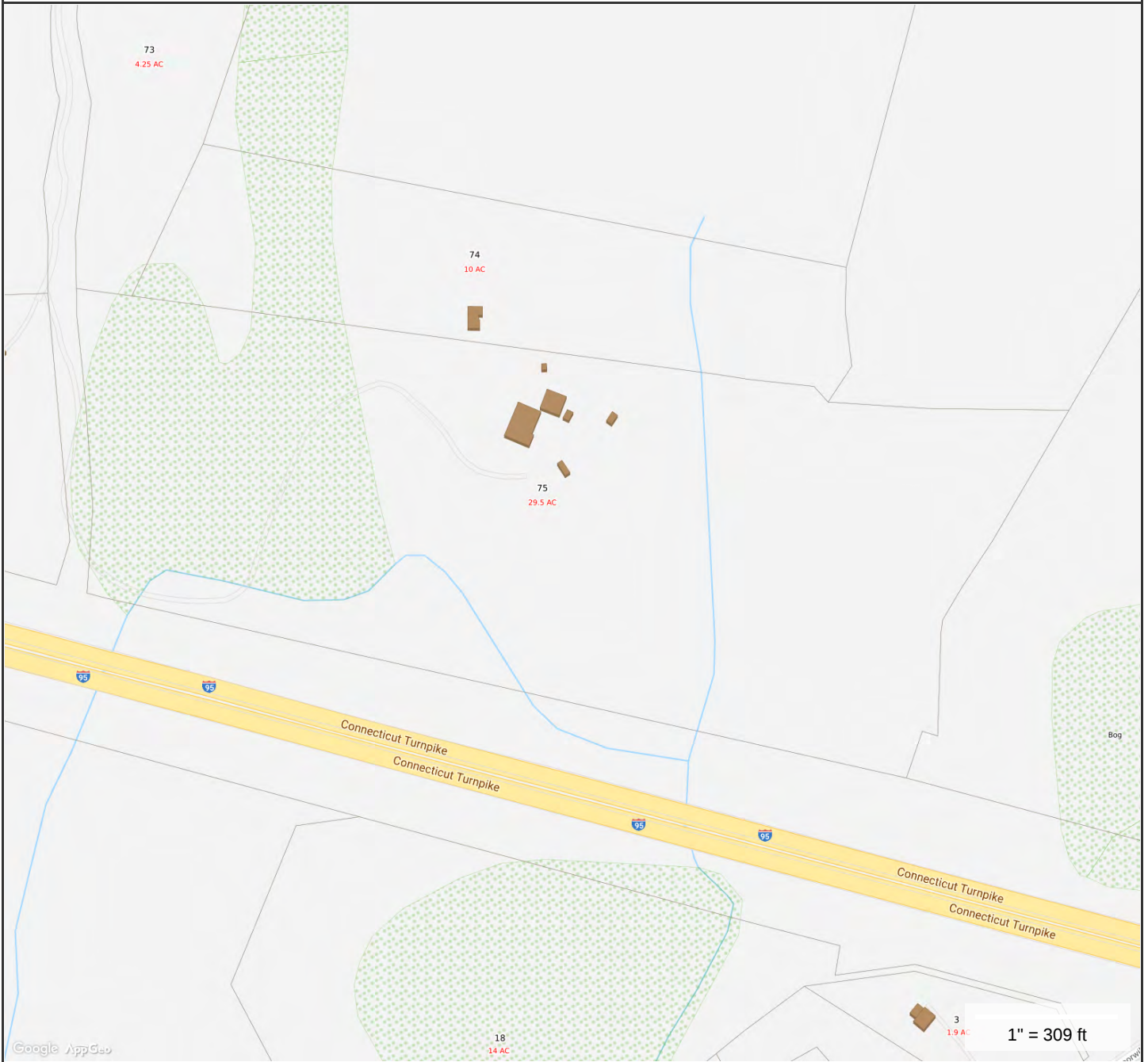
Outbuildings

Outbuildings						<u>Legend</u>
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
FGR5	W/LOFT GOOD			875 S.F.	\$18,400	1
SHD1	SHED FRAME			300 S.F.	\$2,100	1
PLT1	PLTRY HSE 1 ST			128 S.F.	\$400	1
	TOWER			1 UNIT	\$41,400	1

Valuation History

Appraisal			
Valuation Year	Improvements	Land	Total
2018	\$250,500	\$164,100	\$414,600
2017	\$250,500	\$164,100	\$414,600
2011	\$204,900	\$164,100	\$369,000

Assessment			
Valuation Year	Improvements	Land	Total
2018	\$175,400	\$80,850	\$256,250
2017	\$175,400	\$80,850	\$256,250
2011	\$143,400	\$78,720	\$222,120



**MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT**

Town of Old Lyme, 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 05/01/2018
Data updated 11/19/2018

Exhibit C

Construction Drawings



DISH WIRELESS, LLC. SITE ID:

BOBOS00005B

DISH WIRELESS, LLC. SITE ADDRESS:

**72 BOGGY HOLE ROAD
OLD LYME, CT 06371**

SCOPE OF WORK	
THIS IS NOT AN ALL INCLUSIVE LIST. CONTRACTOR SHALL UTILIZE SPECIFIED EQUIPMENT PARTS 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:	
<ul style="list-style-type: none"> • INSTALL (3) PROPOSED PANEL ANTENNAS (1 PER SECTOR) • INSTALL (1) PROPOSED PLATFORM • 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:	
<ul style="list-style-type: none"> • INSTALL (1) PROPOSED METAL PLATFORM • 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) • EXISTING ICE BRIDGE TO BE UTILIZED • EXISTING SPARE METER SOCKET TO BE UTILIZED 	

SITE INFORMATION		PROJECT DIRECTORY	
PROPERTY OWNER:	SANDERS MICHAEL	APPLICANT:	DISH WIRELESS, LLC.
ADDRESS:	72 BOGGY HOLE ROAD OLD LYME, CT 06371		5701 SOUTH SANTA FE DRIVE LITTLETON, CO 80120
TOWER TYPE:	MONOPOLE	TOWER OWNER:	WIRELESS SOLUTIONS, LLC
TOWER APP NUMBER:	TBD		PO BOX 284 OLD LYME, CT 06371
COUNTY:	MIDDLESEX	SITE DESIGNER:	INFINIGY
LATITUDE (NAD 83):	41° 19' 19.4" N		2500 W. HIGGINS RD. STE. 500 HOFFMAN ESTATES, IL 60169 (847) 648-4068
LONGITUDE (NAD 83):	41.322056 N -72° 18' 26.8" W -72.307444 W	SITE ACQUISITION:	JEANNE COTTRELL (203) 927-4317
ZONING JURISDICTION:	CONNECTICUT SITING COUNCIL	CONSTRUCTION MANAGER:	CHAD WILCOX CHAD.WILCOX@DISH.COM
ZONING DISTRICT:	RUB0	RF ENGINEER:	BOSSENER CHARLES BOSSENER.CHARLES@DISH.COM
PARCEL NUMBER:	22-75		
OCCUPANCY GROUP:	U		
CONSTRUCTION TYPE:	V-B		
POWER COMPANY:	EVERSOURCE CT ELECTRIC		
TELEPHONE COMPANY:	AT&T		

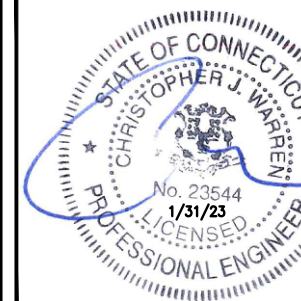


5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



INFINIGY
FROM ZERO TO INFINIGY

the solutions are endless
2500 W. HIGGINS RD. SUITE 500 |
HOFFMAN ESTATES, IL 60169
PHONE: 847-648-4068 | FAX: 518-690-0793
WWW.INFINIGY.COM



IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

DRAWN BY: CHECKED BY: APPROVED BY:
HL AL SS

RFDS REV #: N/A

PRELIMINARY DOCUMENTS

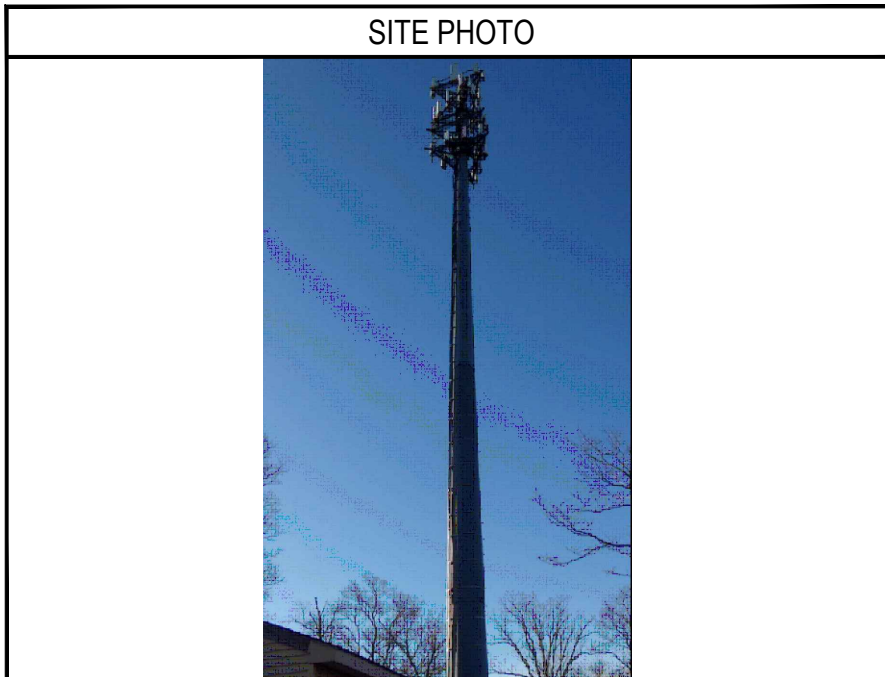
SUBMITTALS		
REV	DATE	DESCRIPTION
A	02/23/2022	ISSUED FOR REVIEW
B	12/09/2022	ISSUED FOR REVIEW
D	01/31/2023	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
2039-Z5555C

DISH WIRELESS, LLC.
PROJECT INFORMATION
BOBOS00005B
72 BOGGY HOLE ROAD
OLD LYME, CT 06371

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1



UNDERGROUND SERVICE ALERT CBYD 811
UTILITY NOTIFICATION CENTER OF CONNECTICUT
(800) 922-4455
WWW.CBYD.COM
CALL 2 WORKING DAYS UTILITY NOTIFICATION PRIOR TO CONSTRUCTION

GENERAL NOTES

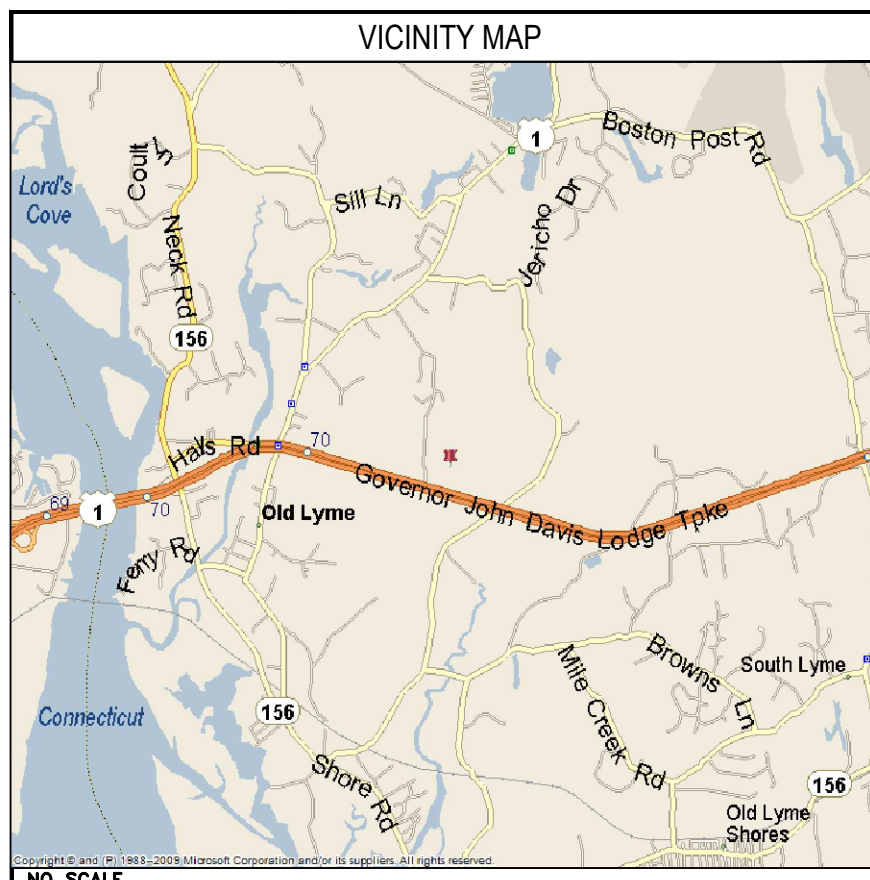
THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. A TECHNICIAN WILL VISIT THE SITE AS REQUIRED FOR ROUTINE MAINTENANCE. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT DISTURBANCE OR EFFECT ON DRAINAGE. NO SANITARY SEWER SERVICE, POTABLE WATER, OR TRASH DISPOSAL IS REQUIRED AND NO COMMERCIAL SIGNAGE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

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

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

DIRECTIONS

DIRECTIONS FROM CHESTER CHARTER, INC. AIRPORT:
HEAD NORTHWEST ON CHESTER AIRPORT TOWARD CT-145 / WINTHROP RD, TURN RIGHT ONTO CT-145 / WINTHROP RD, TURN RIGHT ONTO CT-148 / W MAIN ST, TAKE THE RAMP ON THE RIGHT FOR CT-9 SOUTH AND HEAD TOWARD OLD SAYBROOK, TAKE THE RAMP ON THE LEFT FOR I-95 NORTH / US-1 NORTH AND HEAD TOWARD NEW LONDON / PROVIDENCE, AT EXIT 70, HEAD RIGHT ON THE RAMP FOR US-1 NORTH / CT-156 WEST TOWARD FLORENCE GRISWOLD MUSEUM / LYME ACADEMY OF FINE ARTS, TURN LEFT ONTO CT-156 / NECK RD TOWARD FLORENCE GRISWOLD MUSEUM / LYME ACADEMY OF FINE ARTS / US-1 NORTH / CT-156 WEST, TURN LEFT TO STAY ON US-1 N / LYME ST, TURN RIGHT ONTO BOGGY HOLE RD, ARRIVE AT, 72 BOGGY HOLE ROAD, OLD LYME, CT 06371

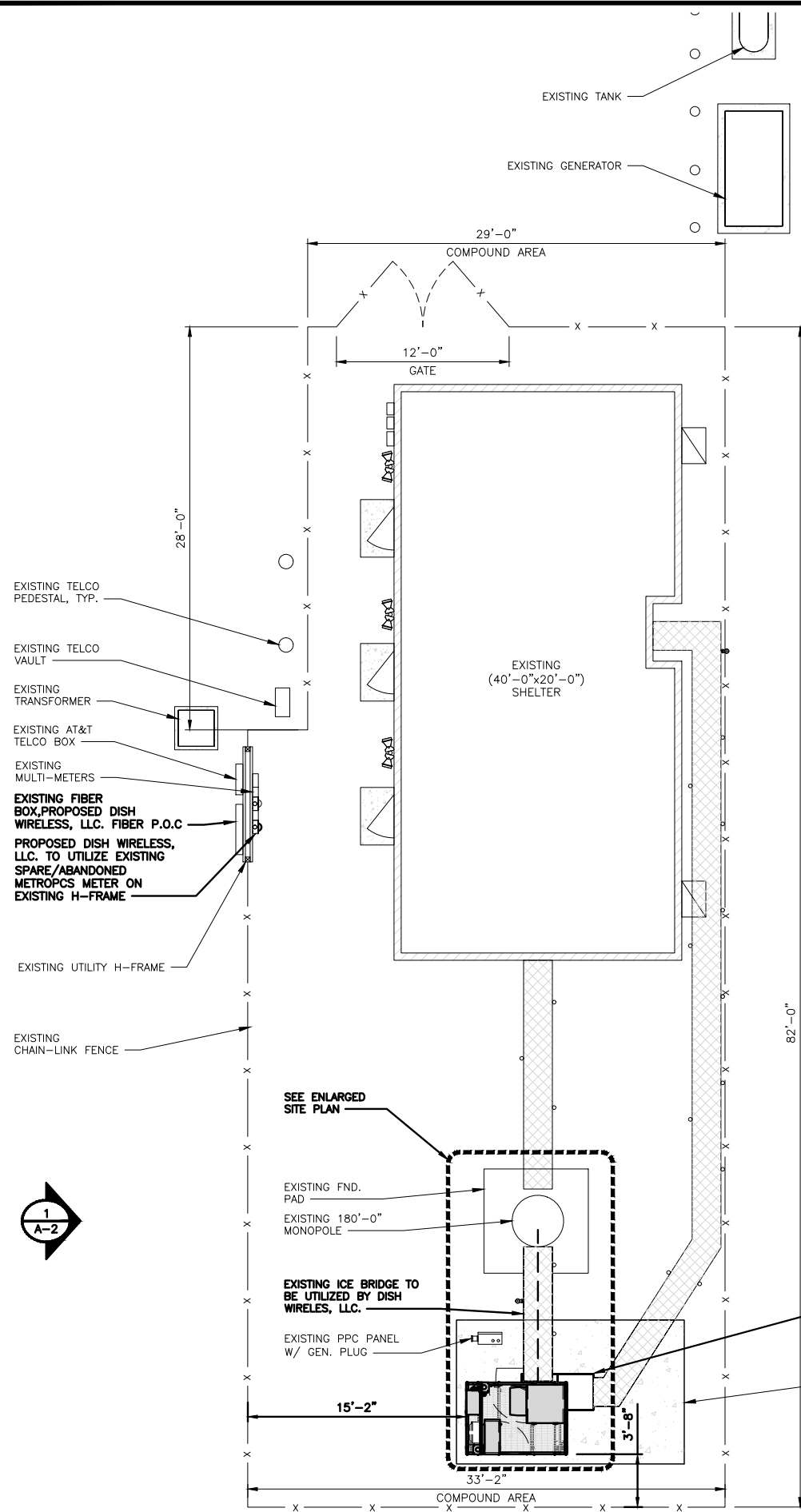


CONNECTICUT CODE OF COMPLIANCE

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

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

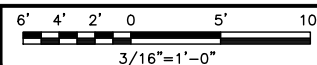
SHEET INDEX	
SHEET NO.	SHEET TITLE
T-1	TITLE SHEET
A-1	OVERALL AND ENLARGED SITE PLAN
A-2	ELEVATION, ANTENNA LAYOUT AND SCHEDULE
A-3	EQUIPMENT PLATFORM AND H-FRAME DETAILS
A-4	EQUIPMENT DETAILS
A-5	EQUIPMENT DETAILS
A-6	EQUIPMENT DETAILS
E-1	ELECTRICAL/FIBER ROUTE PLAN AND NOTES
E-2	ELECTRICAL/FIBER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



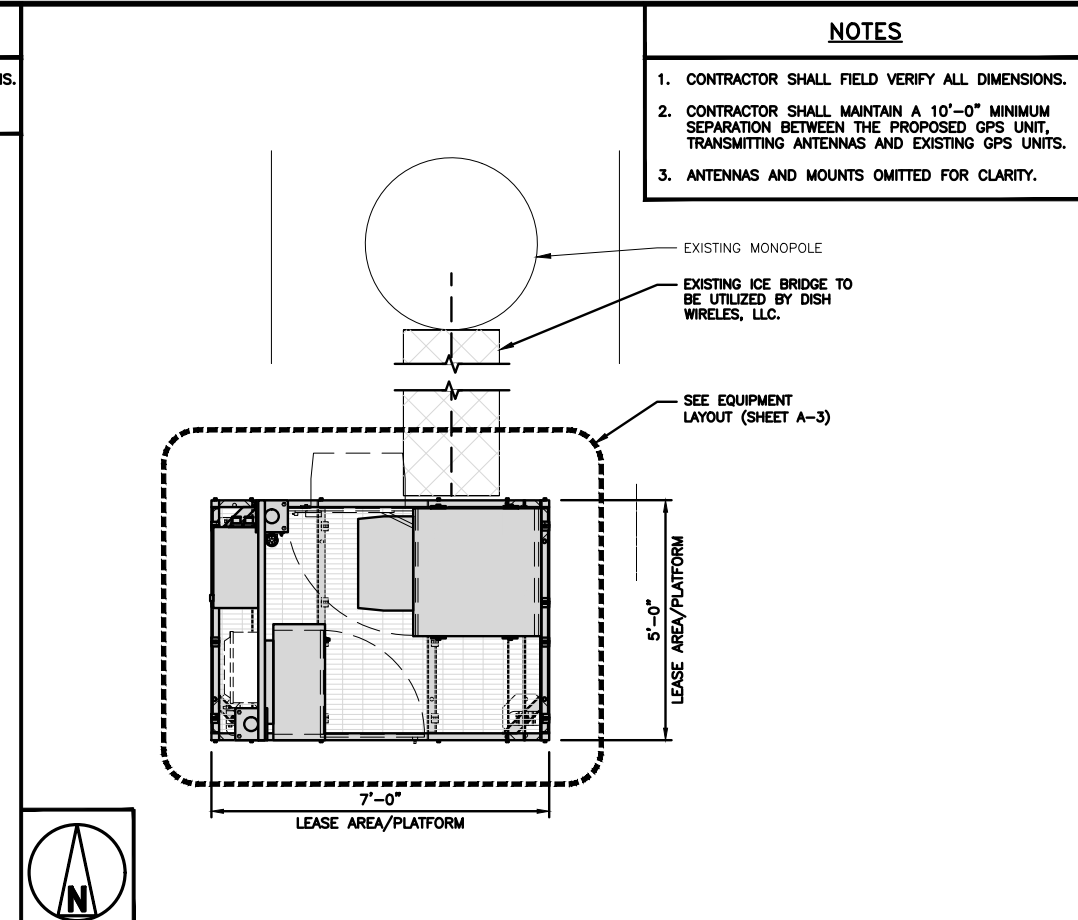
NOTES

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

COMPOUND PLAN



1

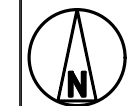
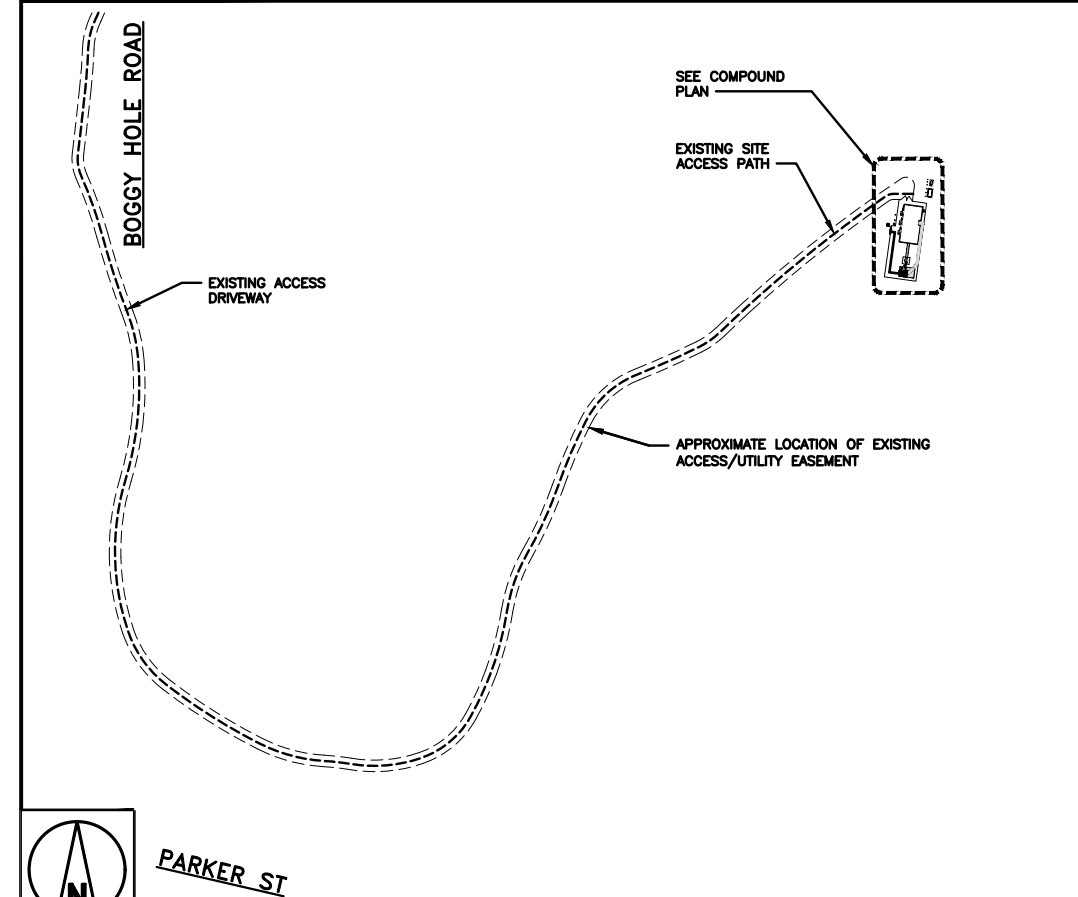


ENLARGED SITE PLAN

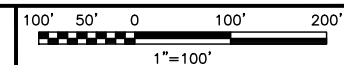
12" 6" 0 1' 2' 3' 4' 5'

1/2"=1'-0"

2



SITE PLAN



3

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.

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development
certified **WBENC**
MEMBER SINCE 2012

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless
2500 W. HIGGINS RD., SUITE 500 |
HOFFMAN ESTATES, IL 60169
PHONE: 847-648-4088 | FAX: 518-690-0793
WWW.INFINIGY.COM

STATE OF CONNECTICUT
CHRISTOPHER J. WARREN
No. 23544
1/31/23
LICENSED PROFESSIONAL ENGINEER

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

DRAWN BY:	CHECKED BY:	APPROVED BY:
HL	AL	SS
RFDS REV #:	N/A	

PRELIMINARY DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	02/23/2022	ISSUED FOR REVIEW
B	12/09/2022	ISSUED FOR REVIEW
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DISH WIRELESS, LLC.
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OLD LYME, CT 06371

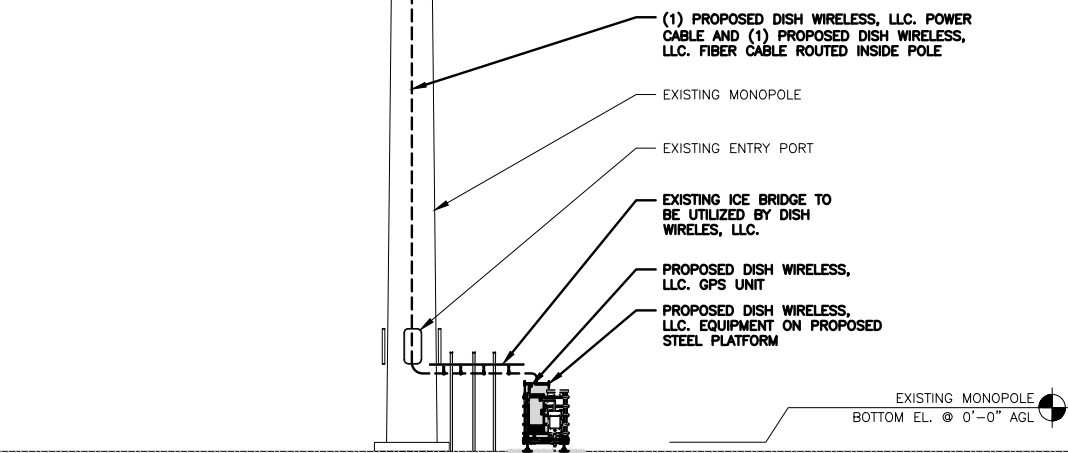
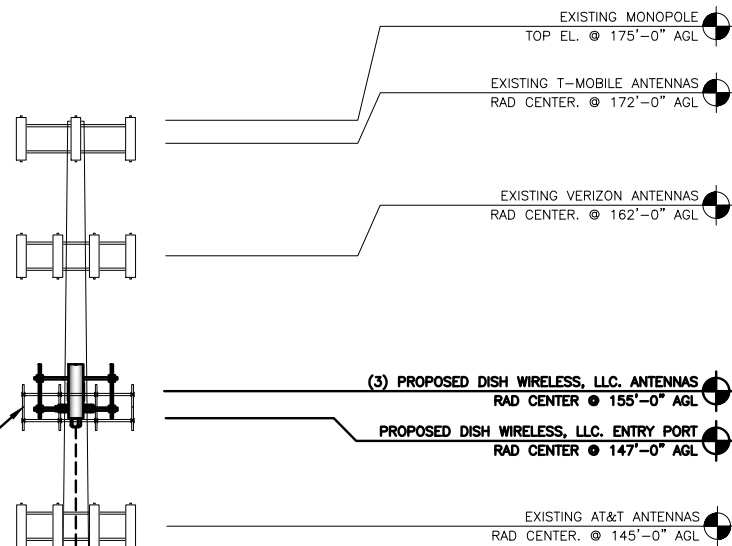
SHEET TITLE
OVERALL AND ENLARGED
SITE PLAN

SHEET NUMBER
A-1

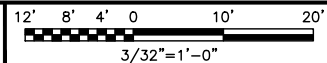
NOTES

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. CONTRACTOR TO COORDINATE LOADING WITH RF ENGINEER, AND REFER TO MOUNT EVALUATION AND STRUCTURAL ANALYSIS PERFORMED BY INFINIGY ENGINEERING DATED 12/09/22 AND 12/28/22 RESPECTIVELY.

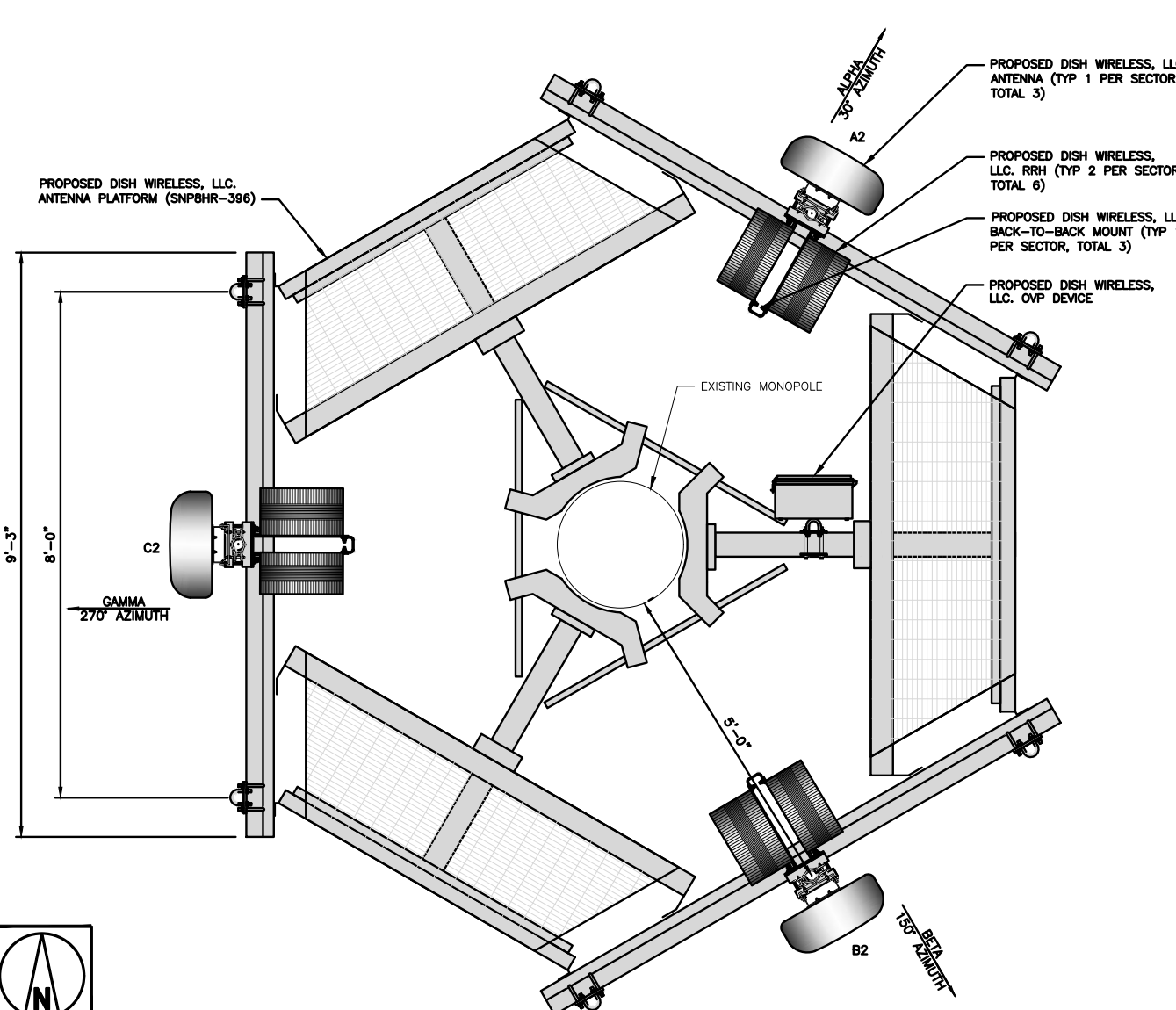
EXISTING METRO PCS RAD CENTER TO BE REMOVED AND REPLACED BY DISH WIRELESS, LLC.



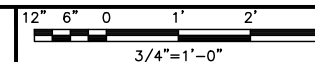
PROPOSED WEST ELEVATION



1



ANTENNA LAYOUT



2

SECTOR	POSITION	ANTENNA						TRANSMISSION CABLE
		EXISTING OR PROPOSED	MANUFACTURER - MODEL NUMBER	TECHNOLOGY	SIZE (HxW)	AZMUTH	RAD CENTER	FEED LINE TYPE AND LENGTH
ALPHA	A2	PROPOSED	JMA WIRELESS - MX08FRO665-21	5G	72.0" x 20.0"	30°	155'-0"	(1) POWER CABLE (1) FIBER CABLE (185' LONG)
BETA	B2	PROPOSED	JMA WIRELESS - MX08FRO665-21	5G	72.0" x 20.0"	150°	155'-0"	
GAMMA	C2	PROPOSED	JMA WIRELESS - MX08FRO665-21	5G	72.0" x 20.0"	270°	155'-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		NOTES
		MANUFACTURER - MODEL NUMBER	TECHNOLOGY	
ALPHA	A2	FUJITSU - TA08025-B604	5G	1. CONTRACTOR TO REFER TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS. 2. ANTENNA AND RRH MODELS MAY CHANGE DUE TO EQUIPMENT AVAILABILITY. ALL EQUIPMENT CHANGES MUST BE APPROVED AND REMAIN IN COMPLIANCE WITH THE PROPOSED DESIGN AND STRUCTURAL ANALYSES.
	A2	FUJITSU - TA08025-B605	5G	
BETA	B2	FUJITSU - TA08025-B604	5G	
	B2	FUJITSU - TA08025-B605	5G	
GAMMA	C2	FUJITSU - TA08025-B604	5G	
	C2	FUJITSU - TA08025-B605	5G	

ANTENNA SCHEDULE

NO SCALE

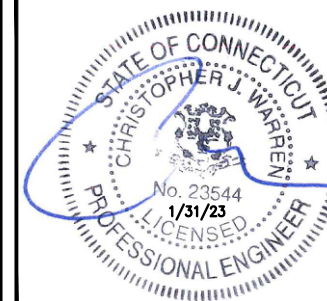
3



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DRAWN BY: CHECKED BY: APPROVED BY:

HL AL SS

RFDS REV #: N/A

PRELIMINARY DOCUMENTS

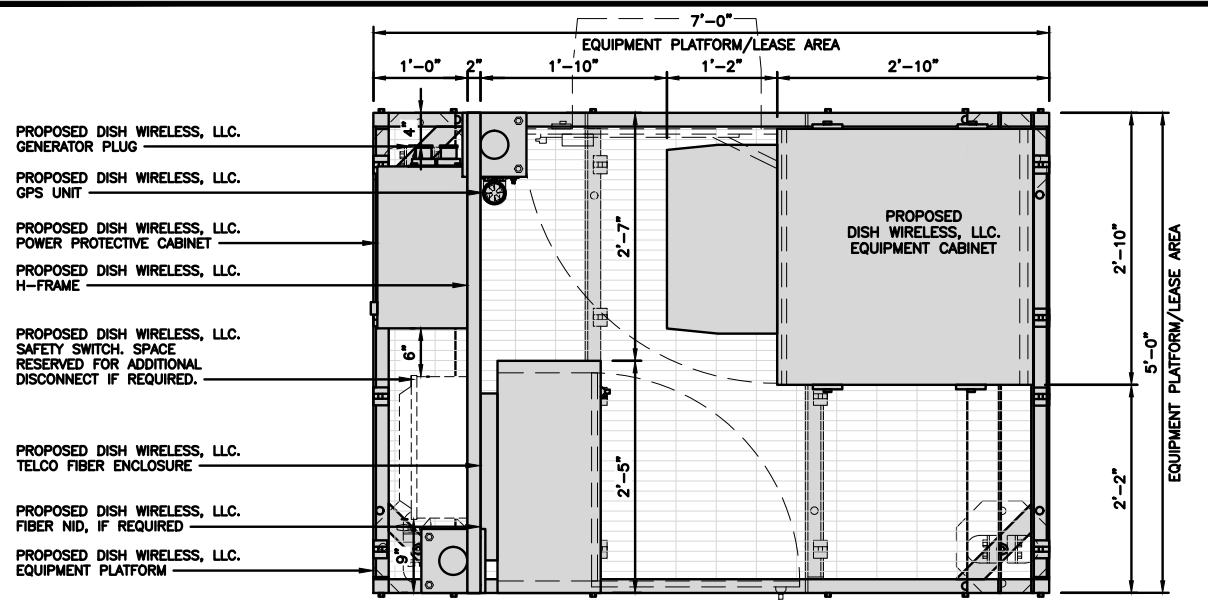
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REV	DATE	DESCRIPTION
A	02/23/2022	ISSUED FOR REVIEW
B	12/09/2022	ISSUED FOR REVIEW
0	01/31/2023	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
2039-Z5555C

DISH WIRELESS, LLC.
PROJECT INFORMATION
BOBOS00005B
72 BOGGY HOLE ROAD
OLD LYME, CT 06371

SHEET TITLE
ELEVATION, ANTENNA
LAYOUT AND SCHEDULE

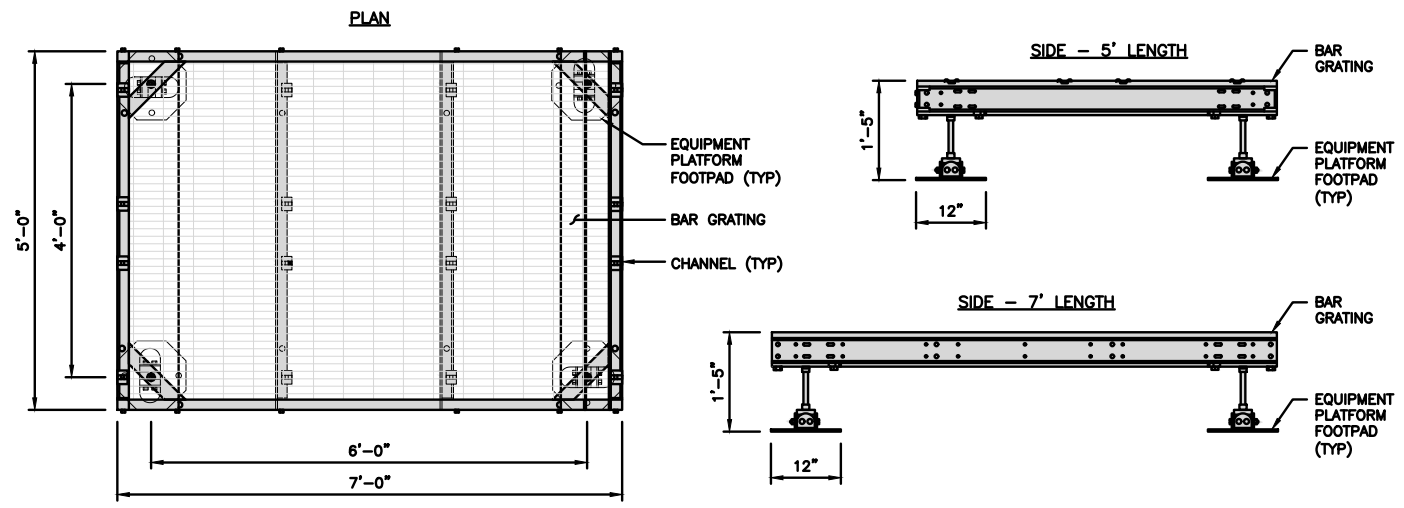
SHEET NUMBER
A-2



PLATFORM EQUIPMENT PLAN

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

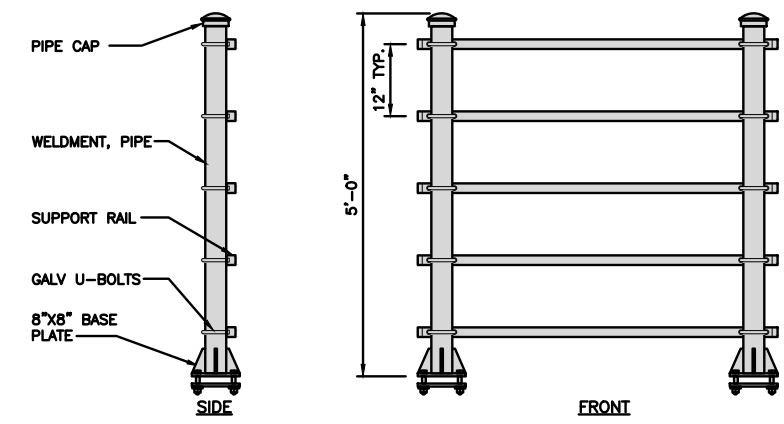
COMMSCOPE MTC4045LP 5X7 PLATFORM	
DIMENSIONS (HxWxD)	16"x84"x60"
TOTAL WEIGHT	423 LBS



PLATFORM DETAIL

NO SCALE 2

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



H-FRAME DETAIL

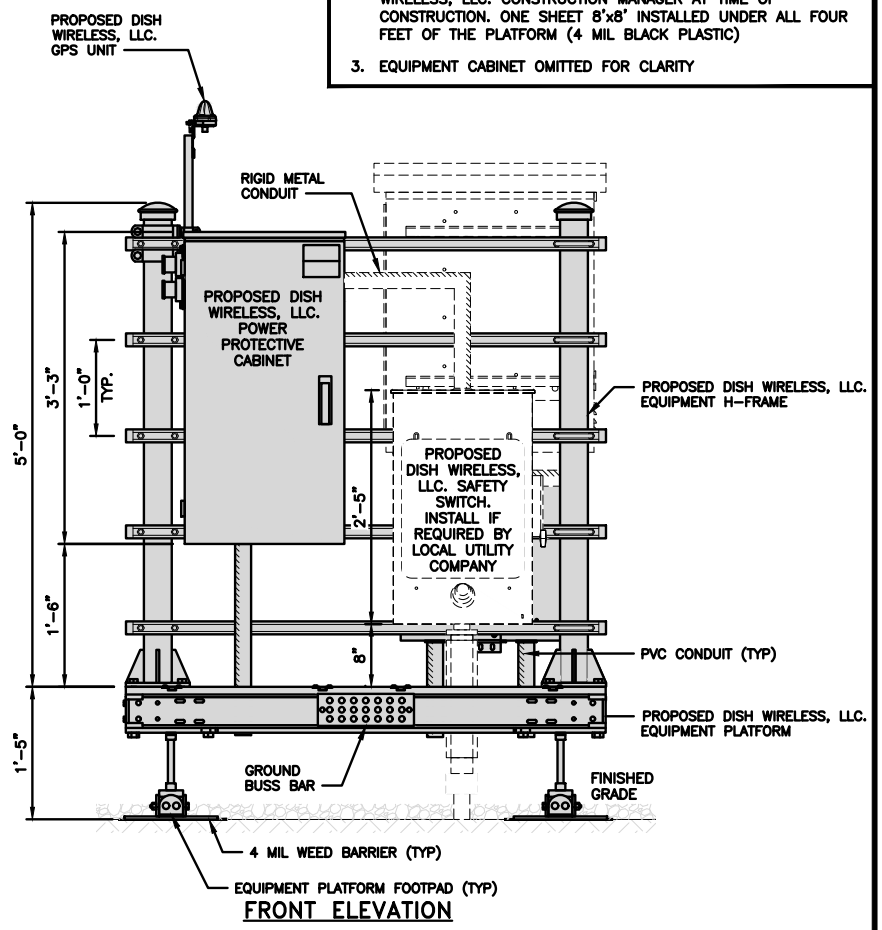
NO SCALE 3

NOT USED

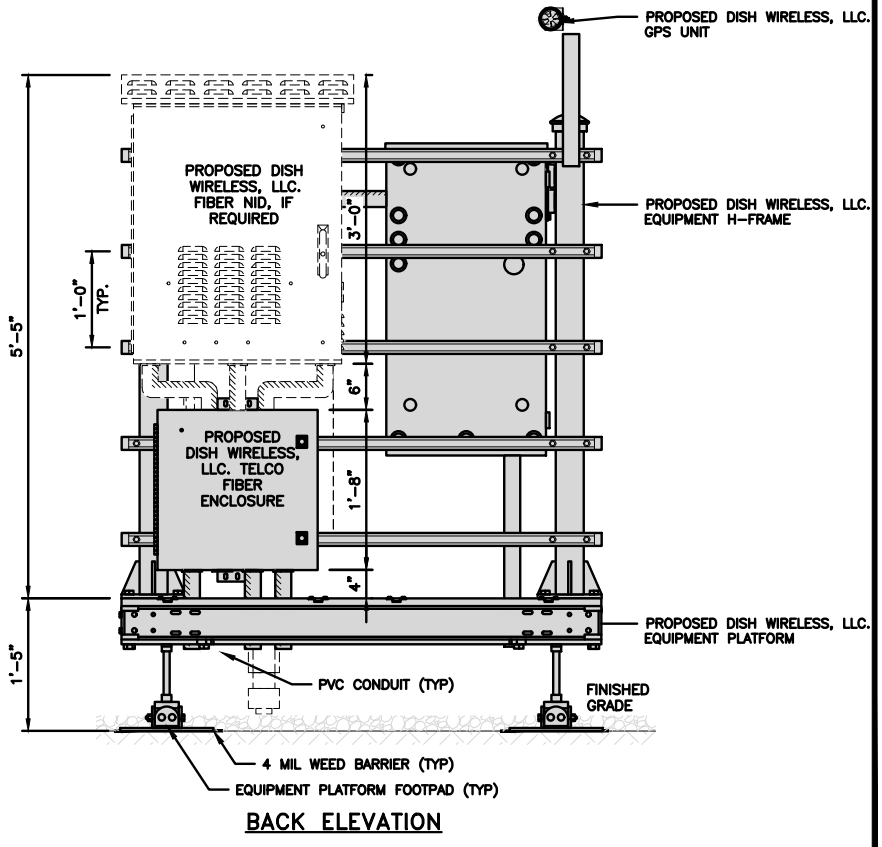
NO SCALE 4

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, LLC. 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

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

H-FRAME EQUIPMENT ELEVATION

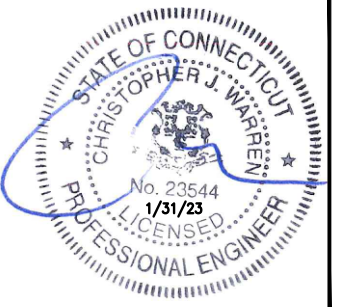
NO SCALE 5



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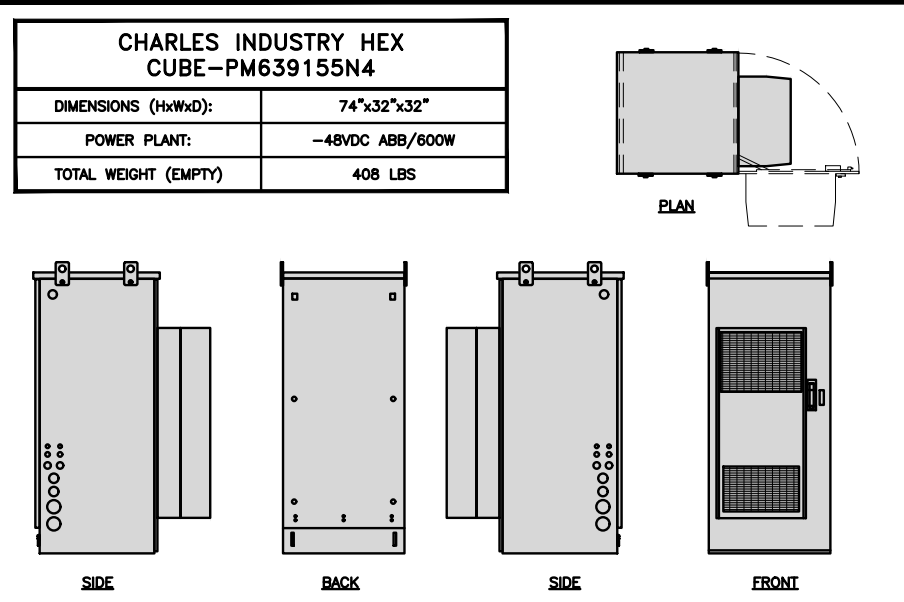
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DISH WIRELESS, LLC.
PROJECT INFORMATION
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72 BOGGY HOLE ROAD
OLD LYME, CT 06371

SHEET TITLE
EQUIPMENT PLATFORM AND
H-FRAME DETAILS

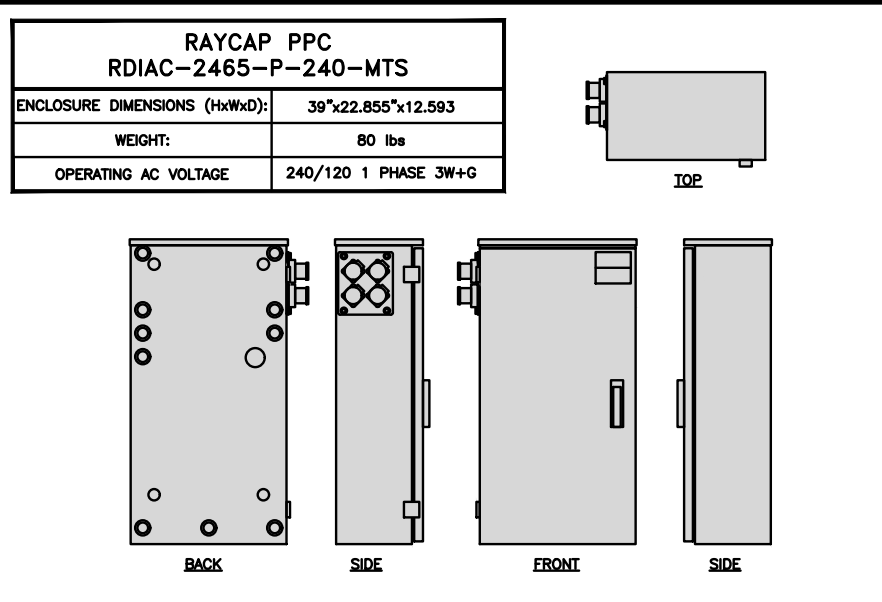
SHEET NUMBER
A-3



CABINET DETAIL

NO SCALE

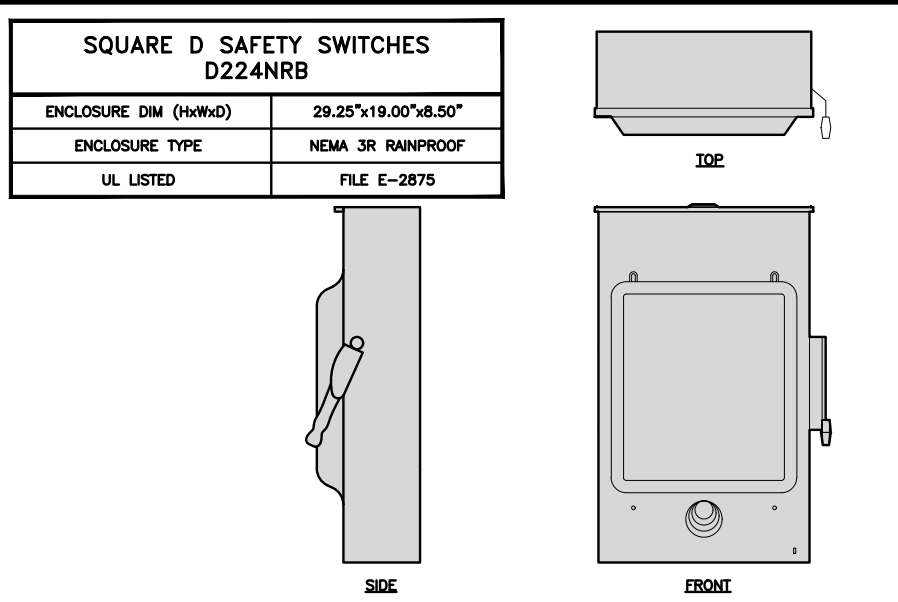
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POWER PROTECTION CABINET (PPC) DETAIL

NO SCALE

2



SAFETY SWITCH DETAIL

NO SCALE

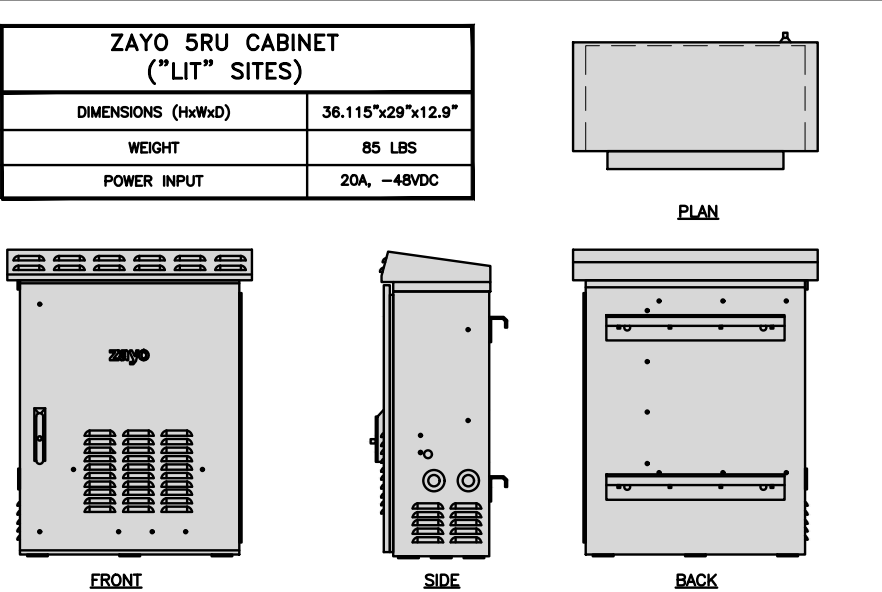
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NOT USED

NO SCALE

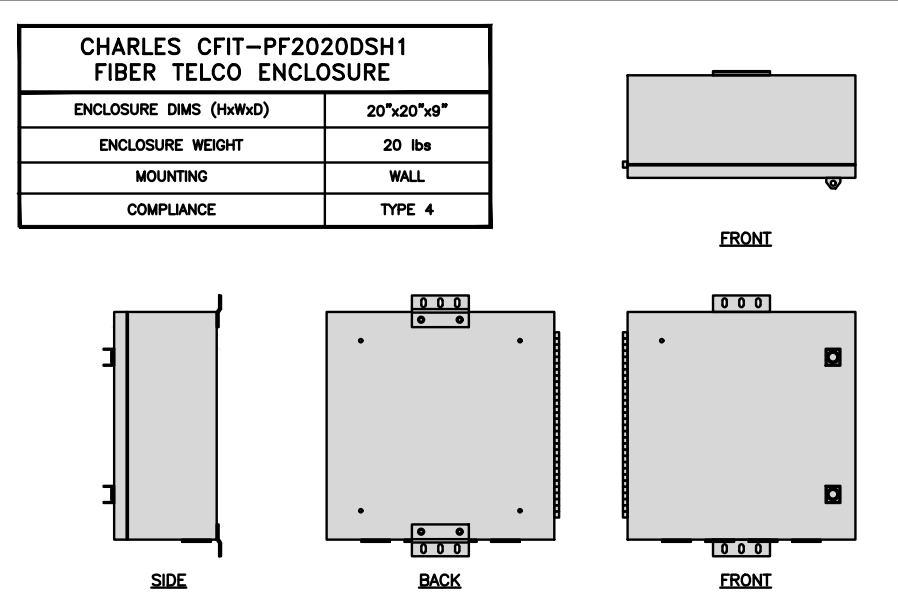
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NETWORK INTERFACE UNIT DETAIL

NO SCALE

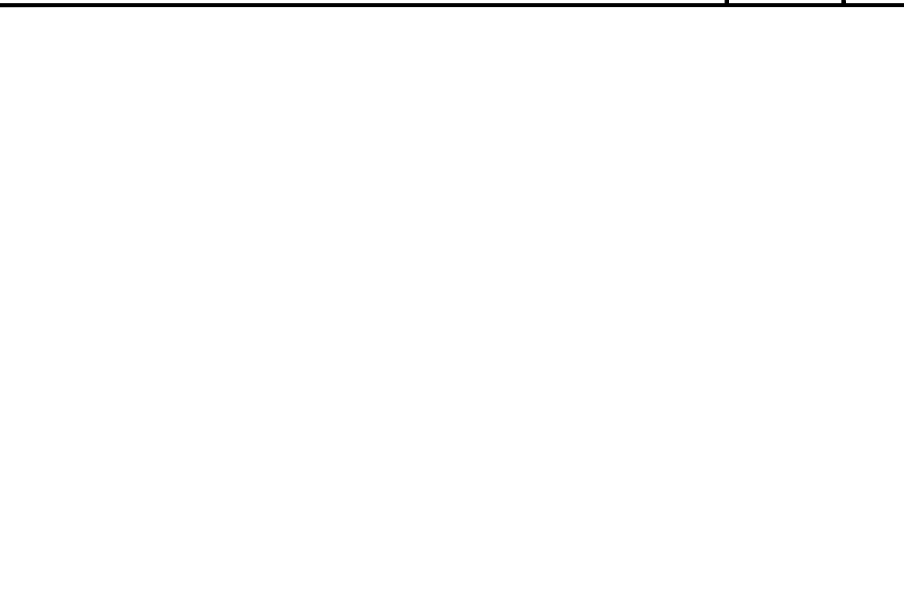
5



FIBER TELCO ENCLOSURE DETAIL

NO SCALE

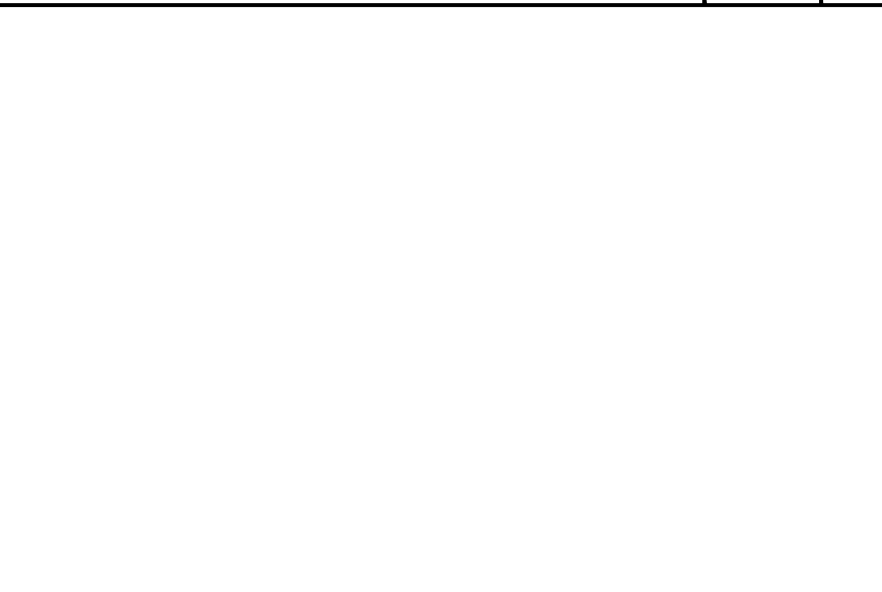
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NO SCALE

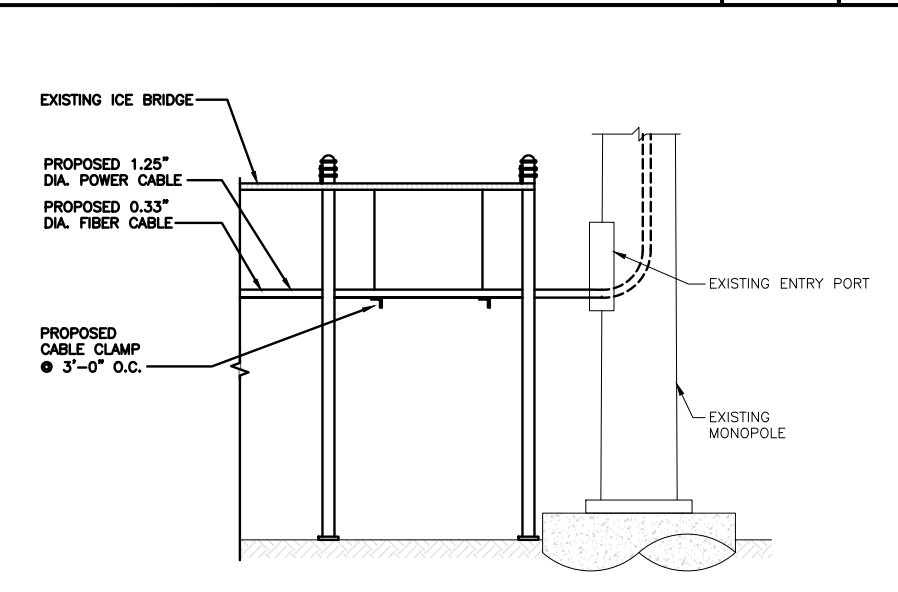
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NOT USED

NO SCALE

8



HYBRID CABLE RUN

NO SCALE

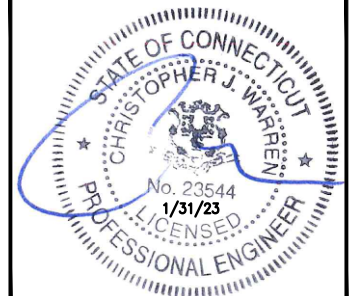
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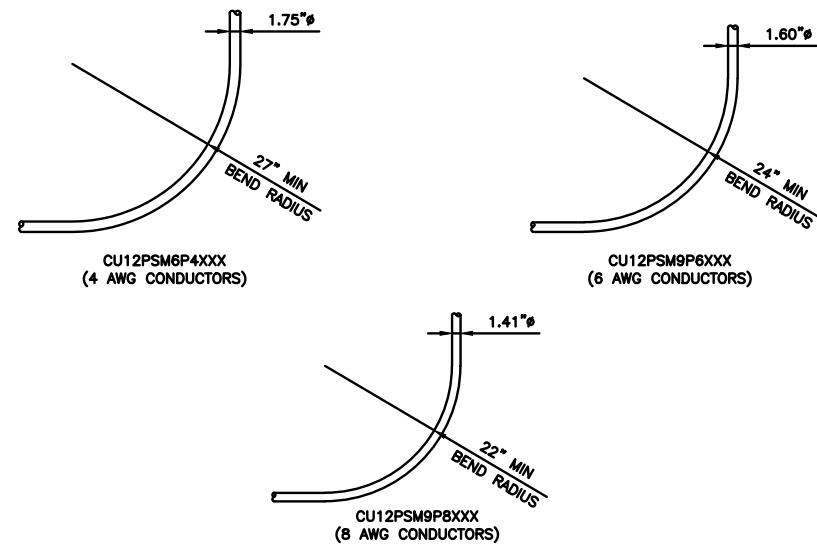
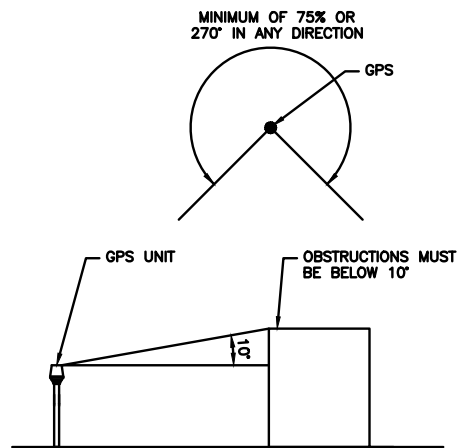
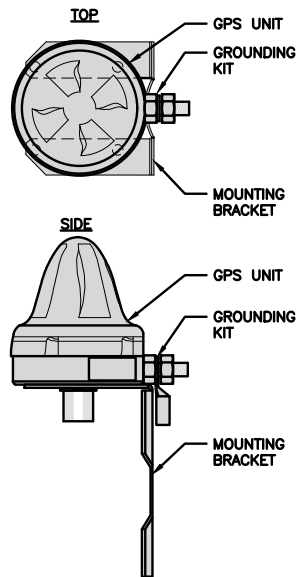
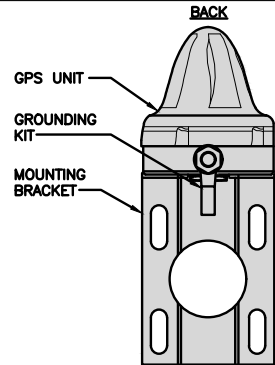
A&E PROJECT NUMBER
2039-Z5555C

DISH WIRELESS, LLC.
PROJECT INFORMATION
BOBOS00005B
72 BOGGY HOLE ROAD
OLD LYME, CT 06371

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

NOT USED

NOT USED

NOT USED NO SCALE 4

NOT USED NO SCALE 5

NOT USED NO SCALE 6

NOT USED

NOT USED

NOT USED

NOT USED NO SCALE 7

NOT USED NO SCALE 8

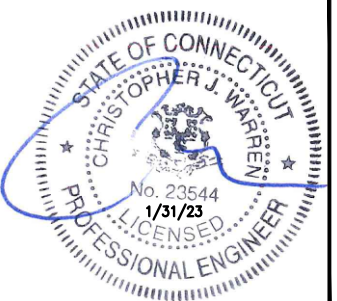
NOT USED NO SCALE 9

dish
wireless.

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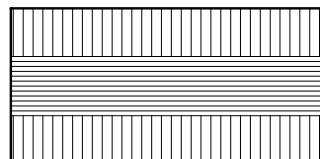
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DISH WIRELESS, LLC.
PROJECT INFORMATION
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72 BOGGY HOLE ROAD
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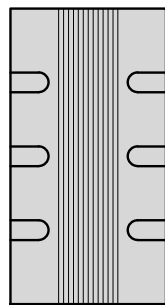
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EQUIPMENT DETAILS

SHEET NUMBER
A-5

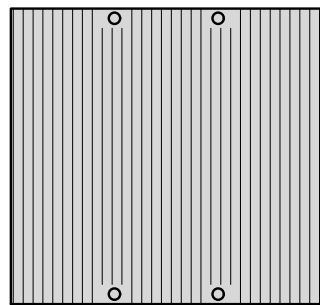
FUJITSU TA08025-B604 RRH	
DIMENSIONS (HxWxD) (KG/IN)	380x400x200/14.9"x15.7"x7.8"
WEIGHT(KG,LB)/ VOLUME	29kg,63.9lb/ 30L
POWER SUPPLY	DC-58~36V



PLAN



SIDE

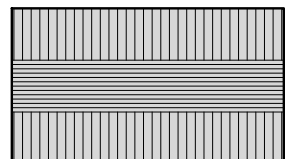


FRONT

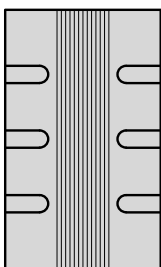
NOTES

FINAL RRH SPECIFICATIONS TO BE CONFIRMED BY GC

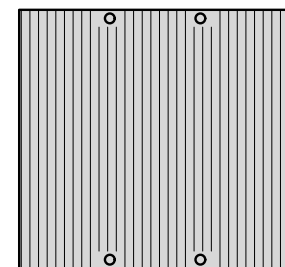
FUJITSU TA08025-B605 RRH	
DIMENSIONS (HxWxD) (KG/IN)	380x400x230/14.9"x15.7"x9.0"
WEIGHT(KG,LB)/ VOLUME	34kg,74.9lb/ 35L
POWER SUPPLY	DC-58~36V



PLAN



SIDE



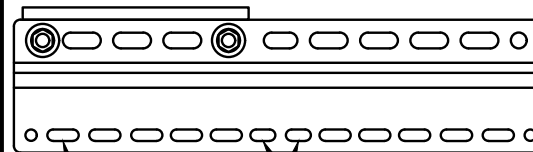
FRONT

NOTES

FINAL RRH SPECIFICATIONS TO BE CONFIRMED BY GC

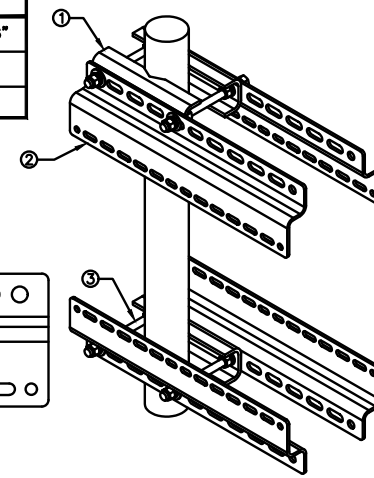
SABRE INDUSTRIES RRU BRACKET MOUNT C10123155	
DIMENSIONS (HxWxD) (1 BRACKET)	5"x20"x1-13/16"
WEIGHT (FULL ASSEMBLY)	35.79 lbs
PACKAGE QUANTITY	4

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



11MM x 30MM SLOTS
40MM ON CENTER

11MM x 24MM SLOTS



REMOTE RADIO HEAD DETAIL

NO SCALE

1

REMOTE RADIO HEAD DETAIL

NO SCALE

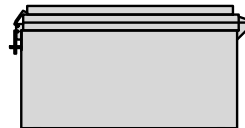
2

REMOTE RADIO MOUNT DETAIL

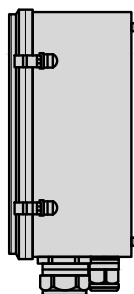
NO SCALE

3

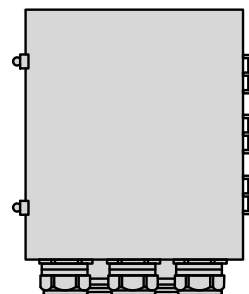
RAYCAP RDIDC-9181-PF-48 DC SURGE PROTECTION	
DIMENSIONS (HxWxD)	18.98"x14.39"x8.15"
WEIGHT	21.82 LBS



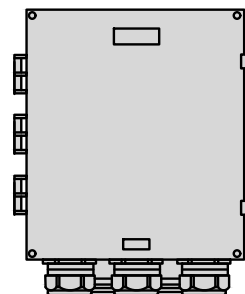
PLAN



SIDE



BACK



FRONT

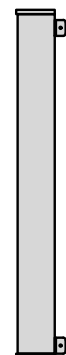
JMA WIRELESS MX08FRO665-21 ANTENNA	
DIMENSIONS (HxWxD)	72.0"x20.0"x8.0"
TOTAL WEIGHT	64.5 LB
RF PORTS, CONNECTOR TYPE	8 x 4.3-10 FEMALE



PLAN



BACK



SIDE

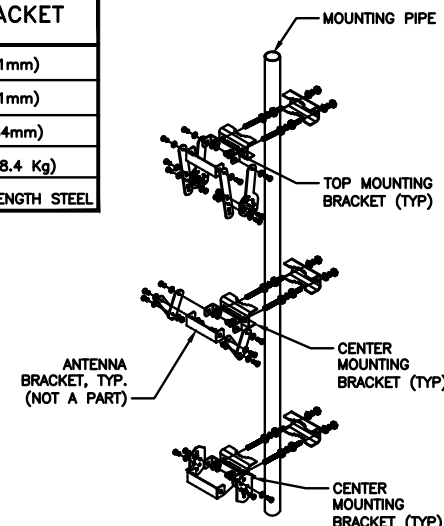


FRONT

NOTES

FINAL ANTENNA SPECIFICATIONS TO BE CONFIRMED BY GC

JMA 91900318 MOUNTING BRACKET	
WIDTH	8.3" (211mm)
DEPTH	7.5" (191mm)
HEIGHT	11.2" (284mm)
TOTAL WEIGHT (WITH BRACKETS)	18.5 LBS (8.4 Kg)
HOUSING MATERIAL	GALV. HIGH STRENGTH STEEL



SURGE SUPPRESSION DETAIL

NO SCALE

4

ANTENNA DETAIL

NO SCALE

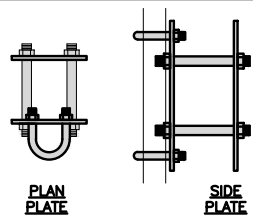
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ANTENNA MOUNTING DETAIL

NO SCALE

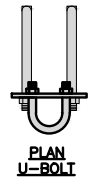
6

COMMSCOPE XP-2040 CROSSOVER PLATE	
DIMENSIONS (HxW)	10"x12"
WEIGHT	11.023 LBS

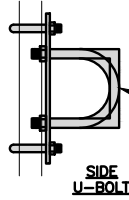


PLAN PLATE

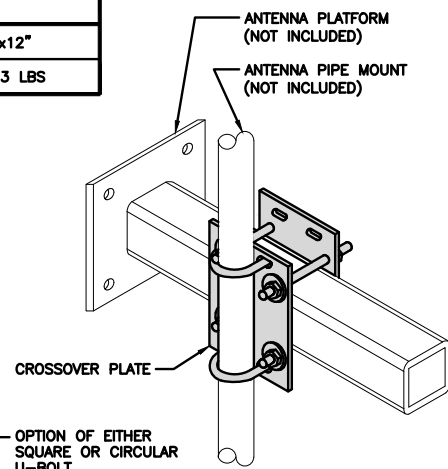
SIDE PLATE



PLAN U-BOLT



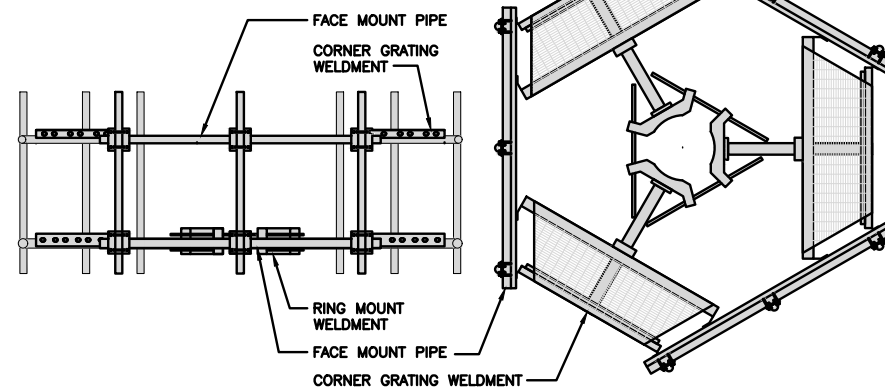
SIDE U-BOLT



CROSSOVER PLATE

OPTION OF EITHER SQUARE OR CIRCULAR U-BOLT

SITEPRO1 SNP8HR-396 SNUB-NOSE PLATFORM	
FACE SIZE	8'-0"
WEIGHT	1786.28 LB
ANTENNA PIPE MOUNTS	(6) 2-3/8" O.D.



ANTENNA PLATFORM DETAIL

NO SCALE

8

NOT USED

NO SCALE

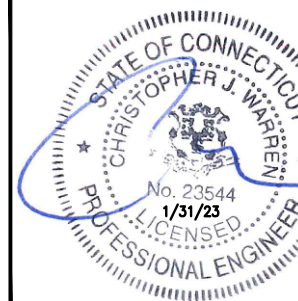
9



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RFDS REV #: N/A

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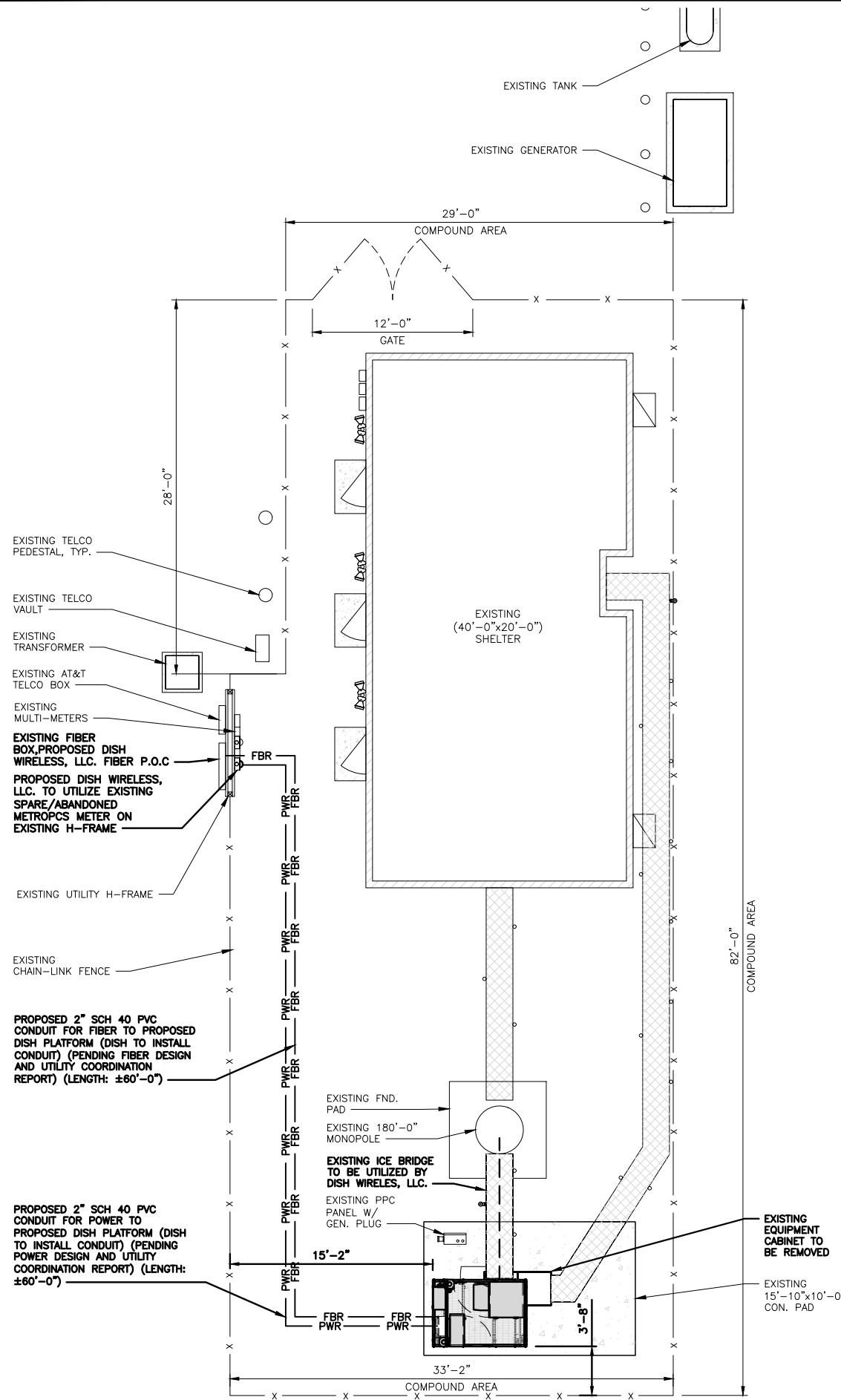
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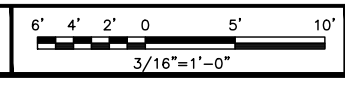
DISH WIRELESS, LLC.
PROJECT INFORMATION
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OLD LYME, CT 06371

SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-6



UTILITY ROUTE PLAN



NOTES

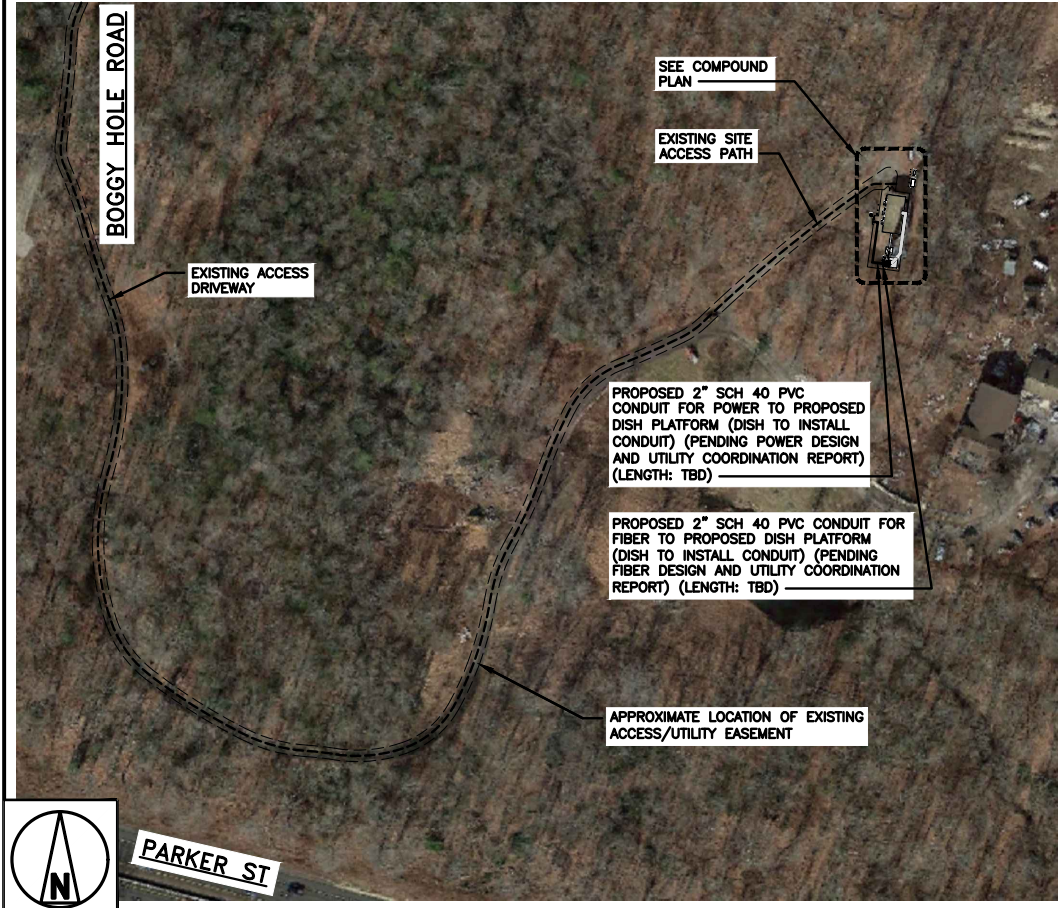
1. CONTRACTOR SHALL FIELD VERIFY ALL PROPOSED UNDERGROUND UTILITY CONDUIT ROUTE.
2. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.

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.

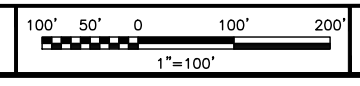
1. CONTRACTOR SHALL INSPECT THE EXISTING CONDITIONS PRIOR TO SUBMITTING A BID. ANY QUESTIONS ARISING DURING THE BID PERIOD IN REGARDS TO THE CONTRACTOR'S FUNCTIONS, THE SCOPE OF WORK, OR ANY OTHER ISSUE RELATED TO THIS PROJECT SHALL BE BROUGHT UP DURING THE BID PERIOD WITH THE PROJECT MANAGER FOR CLARIFICATION, 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

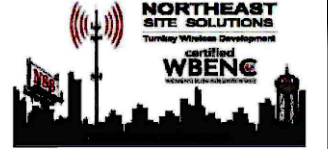
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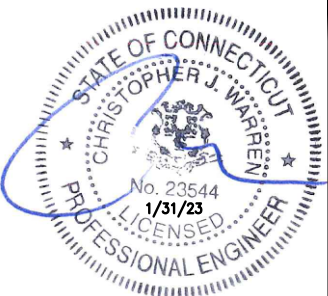
OVERALL UTILITY ROUTE PLAN



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SUBMITTALS		
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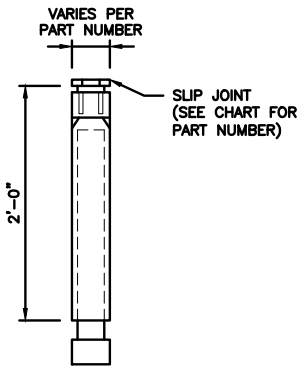
A&E PROJECT NUMBER
2039-Z5555C

DISH WIRELESS, LLC.
PROJECT INFORMATION
BOBOS00005B
72 BOGGY HOLE ROAD
OLD LYME, CT 06371

SHEET TITLE
ELECTRICAL/FIBER ROUTE
PLAN AND NOTES

SHEET NUMBER
E-1

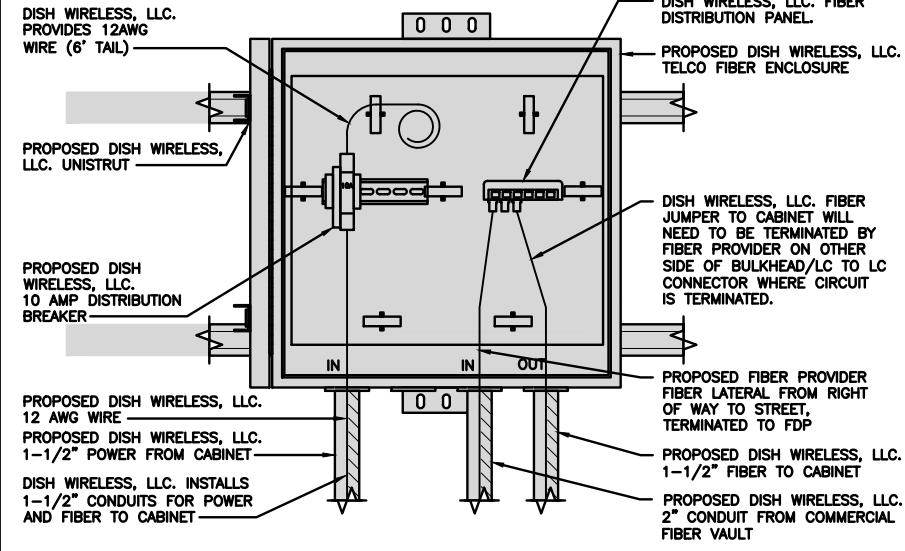
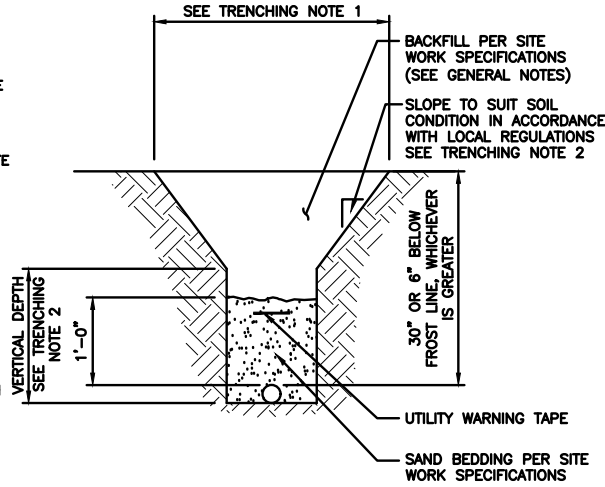
CARLON EXPANSION FITTINGS				
COUPLING END PART#	MALE TERMINAL ADAPTER END PART#	SIZE	STD CTN QTY.	TRAVEL LENGTH
E945D	E945DX	1/2"	20	4"
E945E	E945EX	3/4"	15	4"
E945F	E945FX	1"	10	4"
E945G	E945GX	1 1/4"	5	4"
E945H	E945HX	1 1/2"	5	4"
E945J	E945JX	2"	15	8"
E945K	E945KX	2 1/2"	10	8"
E945L	E945LX	3"	10	8"
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.

TRENCHING NOTES

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



EXPANSION JOINT DETAIL

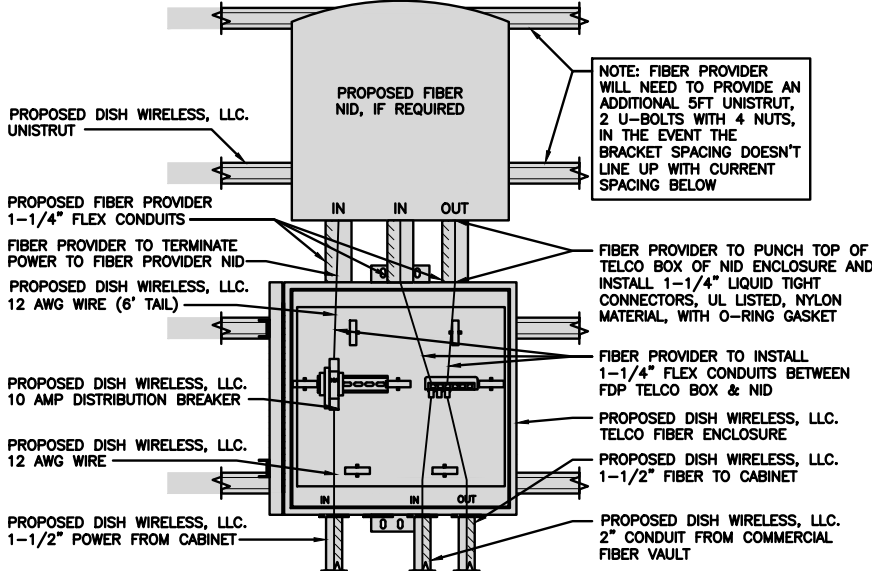
NO SCALE 1

TYPICAL UNDERGROUND TRENCH DETAIL

NO SCALE 2

DARK TELCO BOX – INTERIOR WIRING LAYOUT

NO SCALE 3



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

LIT TELCO BOX – INTERIOR WIRING LAYOUT (OPTIONAL)

NO SCALE 4

NOT USED

NO SCALE 5

NOT USED

NO SCALE 6

NOT USED

NO SCALE 8

NOT USED

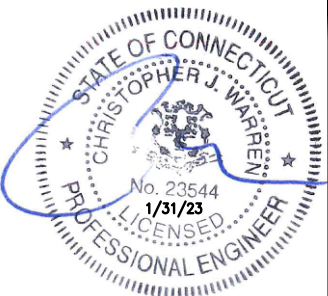
NO SCALE 9



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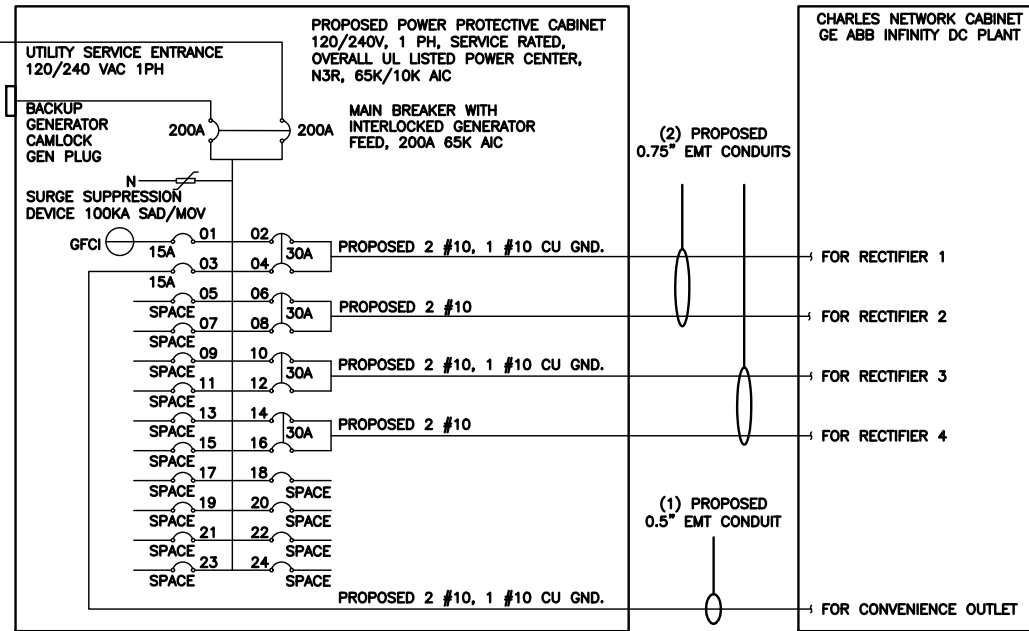
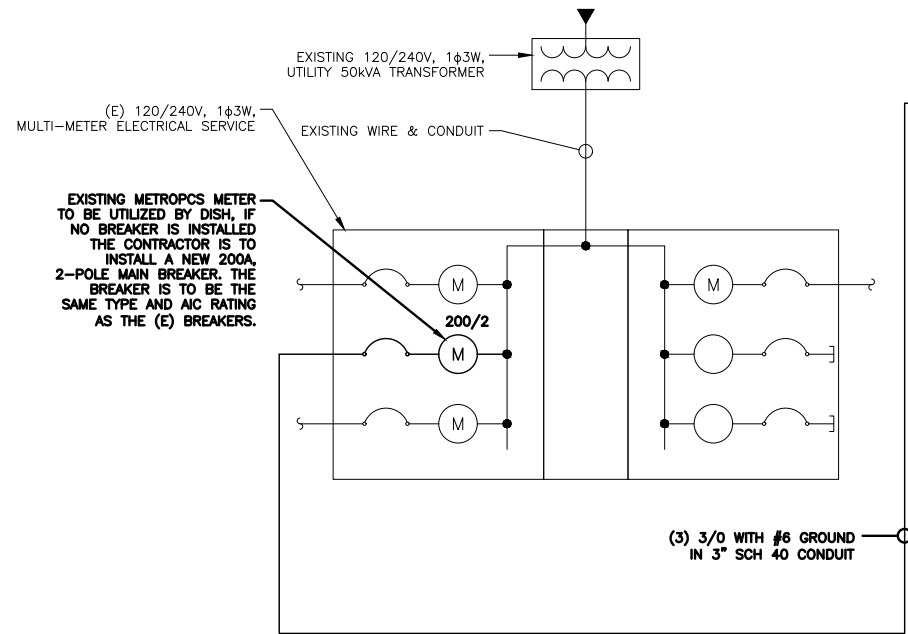
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DISH WIRELESS, LLC.
PROJECT INFORMATION
BOBOS00005B
72 BOGGY HOLE ROAD
OLD LYME, CT 06371

SHEET TITLE
ELECTRICAL/FIBER
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: (OR EQUIVALENT MANUFACTURER)
 (4) 30A, 2P BREAKER - SQUARE D P/N:Q0230
 (1) 15A, 1P BREAKER - SQUARE D P/N:Q0115
 (1) 20A, 1P BREAKER - SQUARE D P/N:Q0120

NOTES

THE ENGINEER OF RECORD HAS PERFORMED ALL REQUIRED SHORT CIRCUIT CALCULATIONS AND THE AIC RATINGS FOR EACH DEVICE IS ADEQUATE TO PROTECT THE EQUIPMENT AND THE ELECTRICAL SYSTEM.

THE ENGINEER OF RECORD HAS PERFORMED ALL REQUIRED VOLTAGE DROP CALCULATIONS AND ALL BRANCH CIRCUIT AND FEEDERS COMPLY WITH THE NEC (LISTED ON T-1) ARTICLE 210.19(A)(1) FPN NO. 4.

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.

1 OPTIONAL ALUMINUM SERVICE CONDUCTOR:
 • 4/0 AL + #2 GRD MAY BE USED INSTEAD OF 3/0 CU + #6 GRD IF THE TOTAL LENGTH OF THE CONDUCTOR IS LESS THAN 300 FT FROM THE TRANSFORMER.
 • ALUMINUM CONDUCTORS MUST BE 90°C TO CARRY THE FULL 200A LOAD REQUIRED
 • ALUMINUM TO COPPER BUSS CONNECTIONS MUST MEET AND CONFORM TO ANSI AND BE UL LISTED. USE ANTI CORROSION CONDUCTIVE LUBRICANT ON CONNECTIONS

PPC ONE-LINE DIAGRAM

NO SCALE 1

**PROPOSED CHARLES PANEL SCHEDULE
GE ABB INFINITY DC PLANT**

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

PANEL SCHEDULE

NO SCALE 2

SHORT CIRCUIT CALCULATIONS

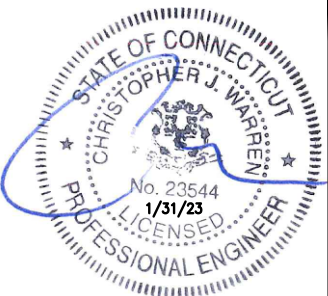
NO SCALE 3



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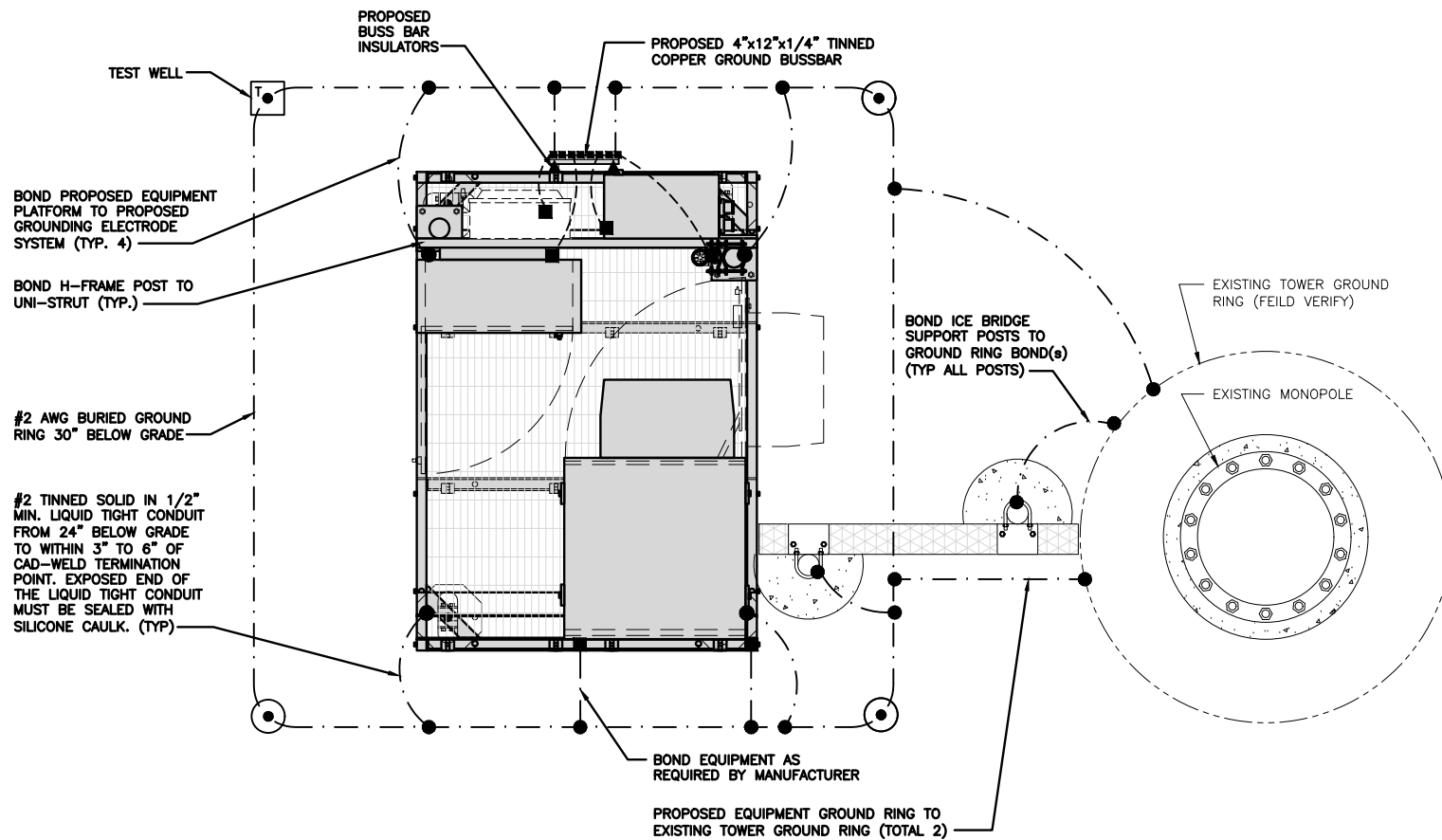
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2039-Z5555C

DISH WIRELESS, LLC.
PROJECT INFORMATION
BOBOS00005B
72 BOGGY HOLE ROAD
OLD LYME, CT 06371

SHEET TITLE
ELECTRICAL ONE-LINE
& PANEL SCHEDULE

SHEET NUMBER
E-3

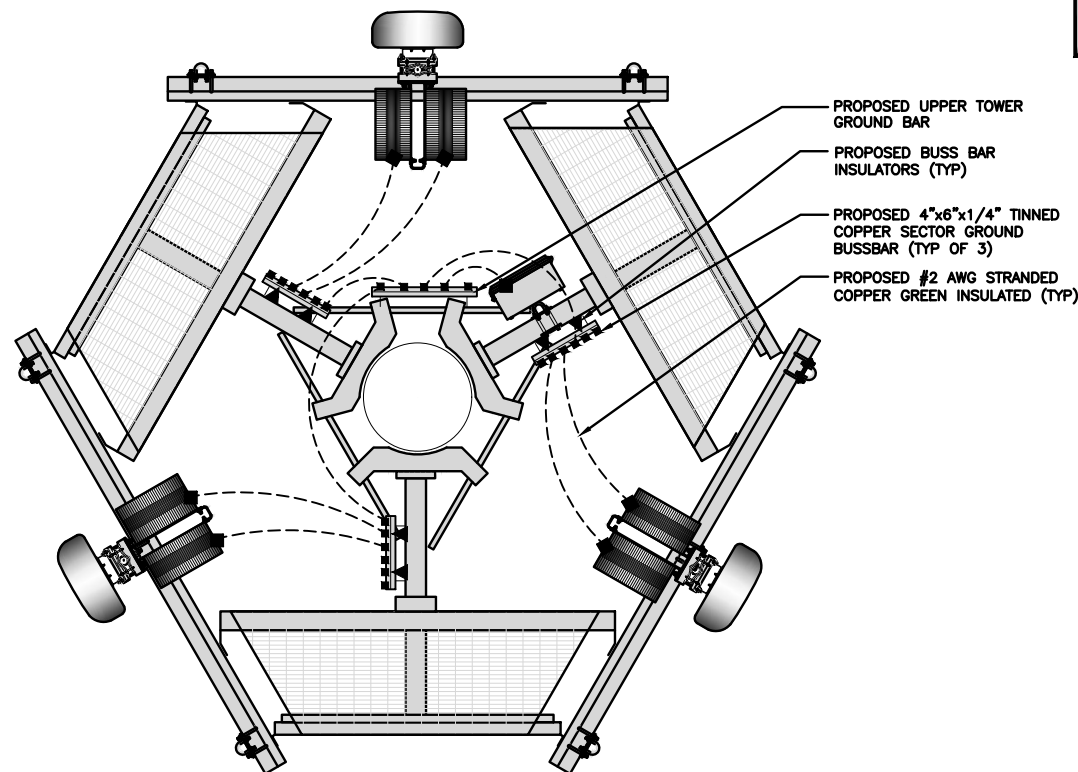


TYPICAL EQUIPMENT GROUNDING PLAN

NO SCALE 1

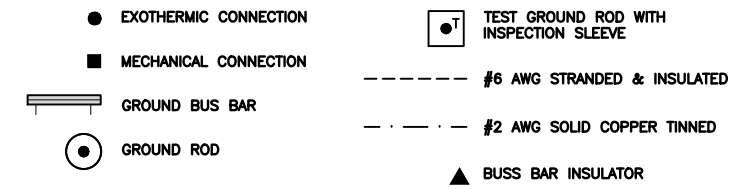
NOTES

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



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, LLC. GROUNDING AND BONDING REQUIREMENTS AND MANUFACTURER'S SPECIFICATIONS.
3. ALL GROUND CONDUCTORS SHALL BE COPPER; NO ALUMINUM CONDUCTORS SHALL BE USED.

GROUNDING KEY NOTES

- 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.
- 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.
- 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.
- 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.
- GROUND ROD:** UL LISTED COPPER CLAD STEEL MINIMUM 5/8" DIAMETER BY 10' LONG. GROUND RODS SHALL BE INSTALLED WITH INSPECTION SLEEVES. GROUND RODS SHALL BE DRIVEN TO THE DEPTH OF GROUND RING CONDUCTOR.
- 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.
- 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.
- 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.
- TELCO GROUND BAR:** BOND TO BOTH CELL REFERENCE GROUND BAR OR EXTERIOR GROUND RING.
- FRAME BONDING:** THE BONDING POINT FOR TELECOM EQUIPMENT FRAMES SHALL BE THE GROUND BUS THAT IS NOT ISOLATED FROM THE EQUIPMENTS METAL FRAMEWORK.
- 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.
- 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.
- 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
- 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.
- 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**
- TOWER TOP COLLECTOR BUSS BAR IS TO BE MECHANICALLY BONDED TO PROPOSED ANTENNA MOUNT COLLAR. REFER TO DISH WIRELESS, LLC. GROUNDING NOTES.**

GROUNDING KEY NOTES

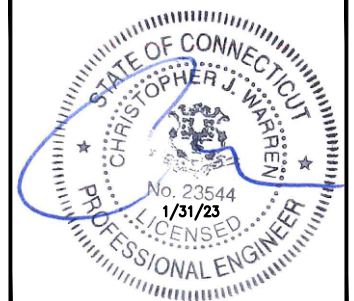
NO SCALE 3



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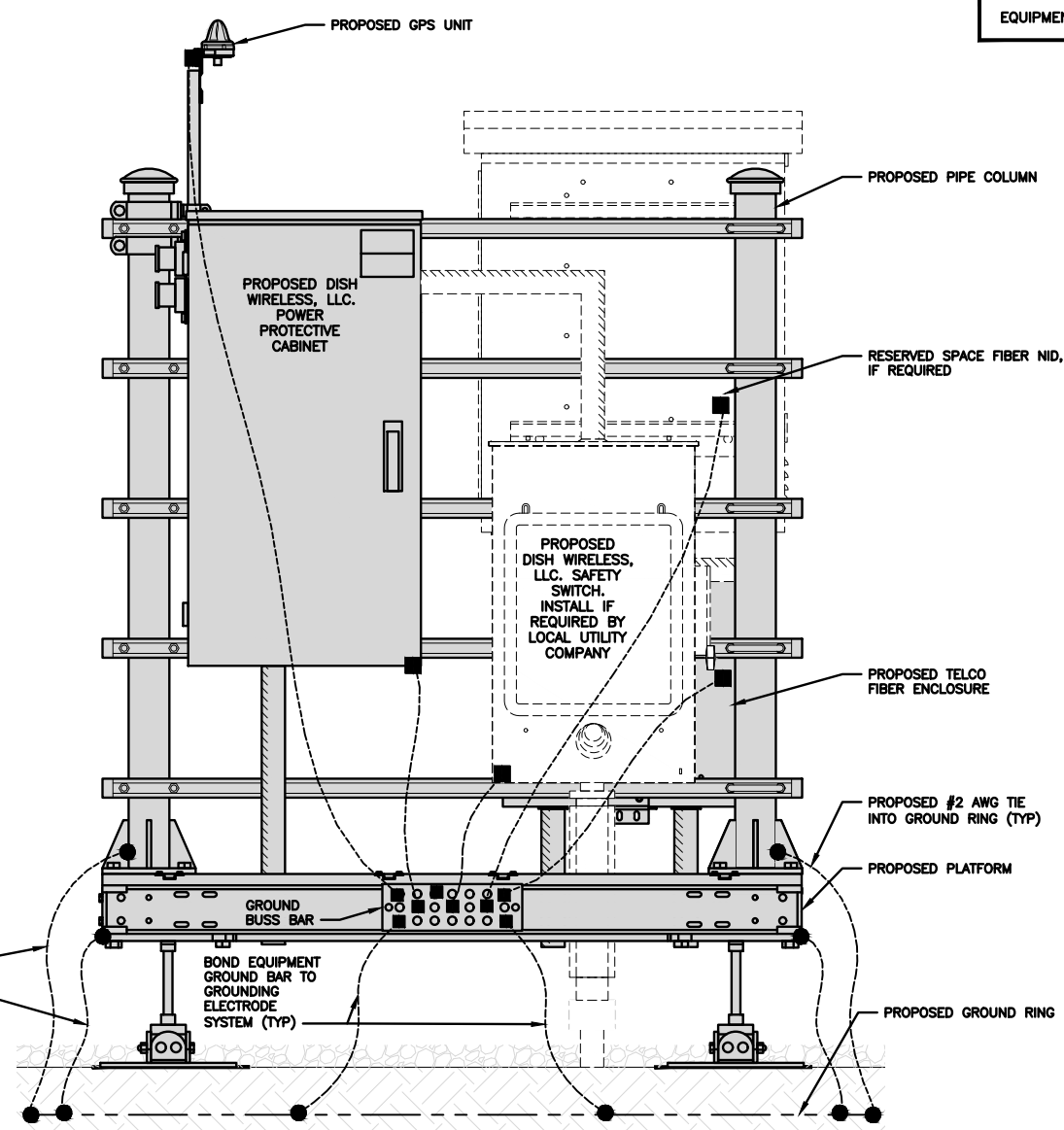
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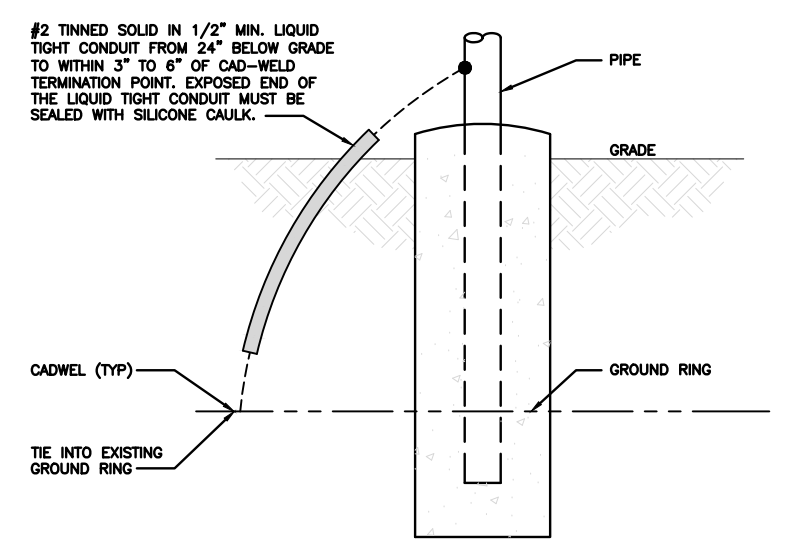
NOTES
EQUIPMENT CABINET OMITTED FOR CLARITY



#2 TINNED SOLID IN 1/2" MIN. LIQUID TIGHT CONDUIT FROM 24" BELOW GRADE TO WITHIN 3" TO 6" OF CAD-WELD TERMINATION POINT. EXPOSED END OF THE LIQUID TIGHT CONDUIT MUST BE SEALED WITH SILICONE CAULK. (TYP)

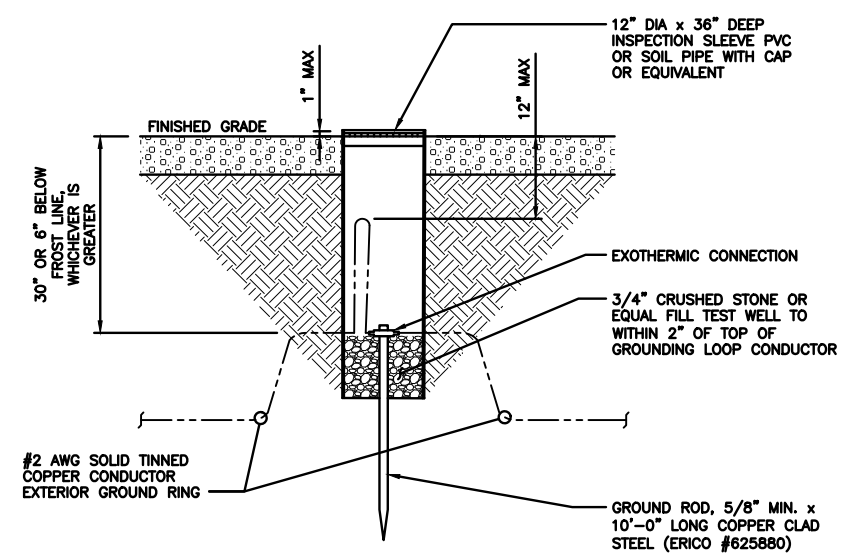
H-FRAME GROUNDING DETAIL

NO SCALE 1



TRANSITIONING GROUND DETAIL

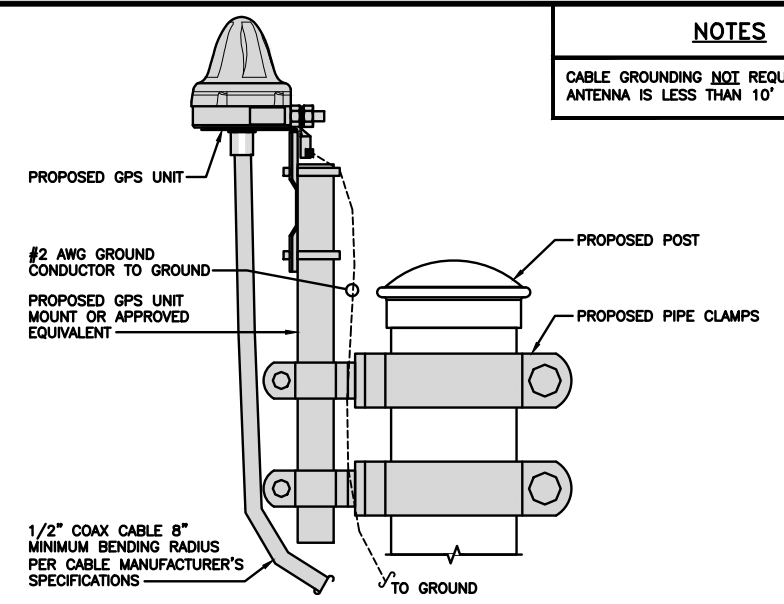
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TYPICAL TEST GROUND ROD WITH INSPECTION SLEEVE

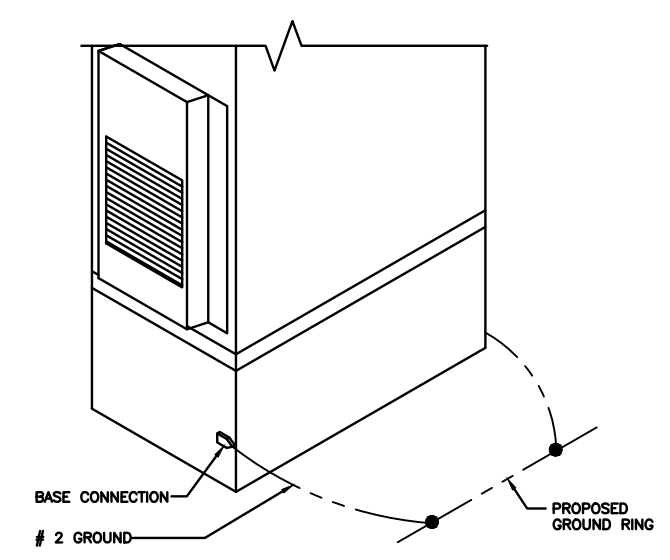
NO SCALE 5

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



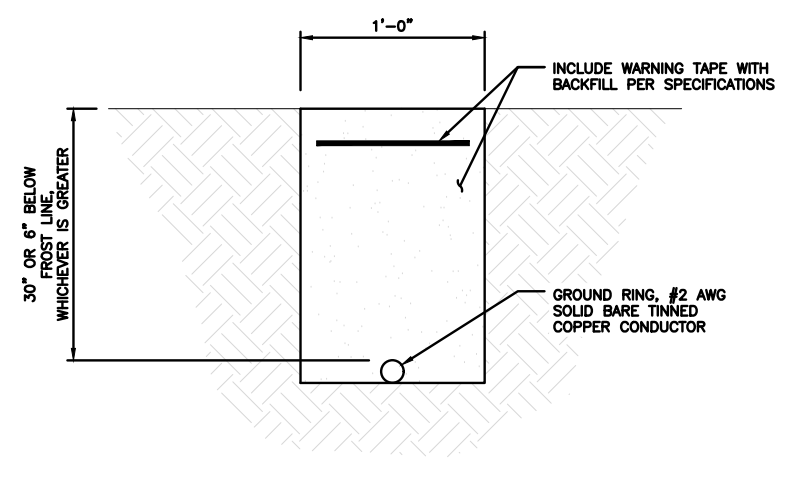
TYPICAL GPS UNIT GROUNDING

NO SCALE 2



OUTDOOR CABINET GROUNDING

NO SCALE 3



TYPICAL GROUND RING TRENCH

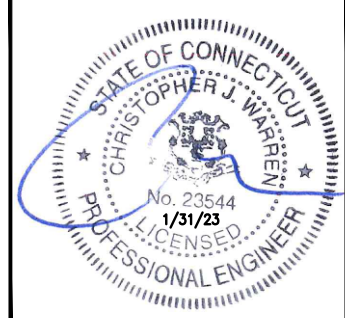
NO SCALE 6



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DRAWN BY: CHECKED BY: APPROVED BY:
HL AL SS

RFDS REV #: N/A

PRELIMINARY DOCUMENTS

SUBMITTALS		
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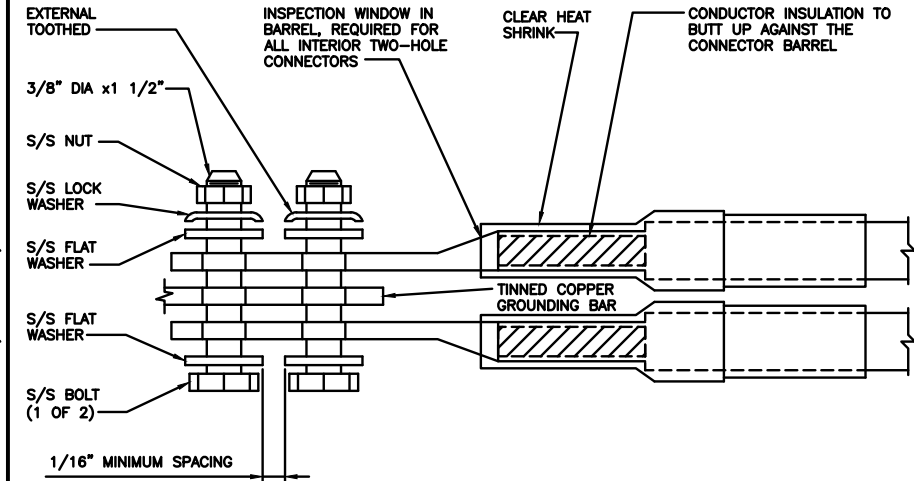
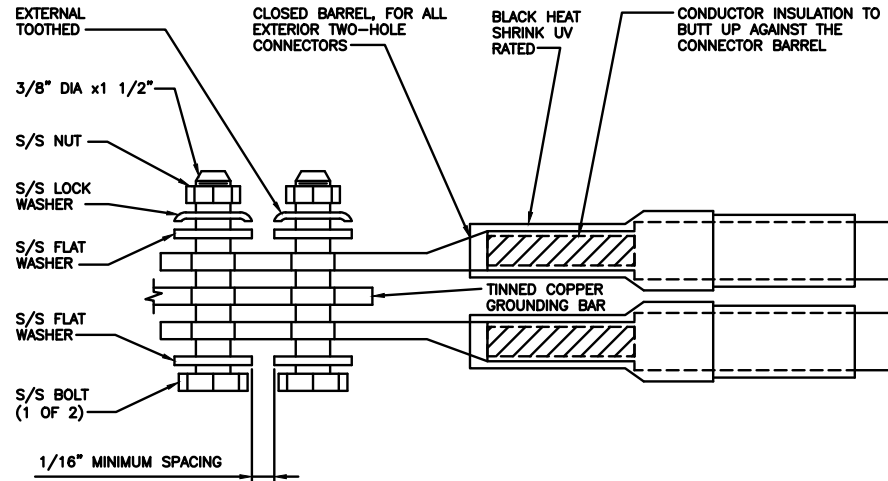
A&E PROJECT NUMBER
2039-Z5555C

DISH WIRELESS, LLC.
PROJECT INFORMATION
BOBOS00005B
72 BOGGY HOLE ROAD
OLD LYME, CT 06371

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

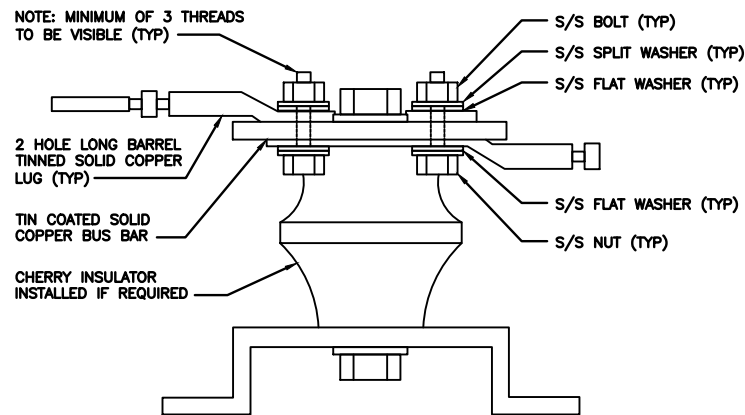
NO SCALE 1

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

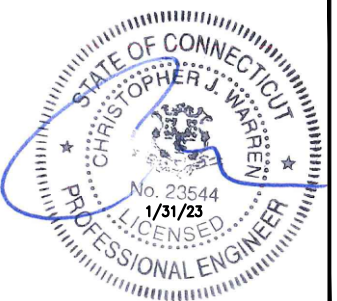
NO SCALE 9

dish
wireless.

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DISH WIRELESS, LLC.
PROJECT INFORMATION
BOBOS00005B
72 BOGGY HOLE ROAD
OLD LYME, CT 06371

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)

ALPHA RRH				BETA RRH				GAMMA RRH			
PORT 1 + SLANT	PORT 2 + SLANT	PORT 3 + SLANT	PORT 4 + SLANT	PORT 1 + SLANT	PORT 2 + SLANT	PORT 3 + SLANT	PORT 4 + SLANT	PORT 1 + SLANT	PORT 2 + SLANT	PORT 3 + SLANT	PORT 4 + SLANT
RED	RED	RED	RED	BLUE	BLUE	BLUE	BLUE	GREEN	GREEN	GREEN	GREEN
ORANGE	ORANGE	RED	RED	ORANGE	ORANGE	BLUE	BLUE	ORANGE	ORANGE	GREEN	GREEN
	WHITE (1) PORT	ORANGE	ORANGE		WHITE (1) PORT	ORANGE	ORANGE		WHITE (1) PORT	ORANGE	ORANGE
			WHITE (1) PORT				WHITE (1) PORT				WHITE (1) PORT

MID-BAND RRH -
(AWS BANDS N66+N70)

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

RED	RED	RED	RED	BLUE	BLUE	BLUE	BLUE	GREEN	GREEN	GREEN	GREEN
PURPLE	PURPLE	RED	RED	PURPLE	PURPLE	BLUE	BLUE	PURPLE	PURPLE	GREEN	GREEN
	WHITE (1) PORT	PURPLE	PURPLE		WHITE (1) PORT	PURPLE	PURPLE		WHITE (1) PORT	PURPLE	PURPLE
			WHITE (1) PORT				WHITE (1) PORT				WHITE (1) PORT

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

EXAMPLE 1	EXAMPLE 2
RED	RED
BLUE	BLUE
GREEN	GREEN
ORANGE	YELLOW
PURPLE	

HYBRID/DISCREET CABLES

LOW-BAND RRH FIBER CABLES HAVE SECTOR
STRIPE ONLY

LOW BAND RRH	HIGH BAND RRH	LOW BAND RRH	LOW BAND RRH	LOW BAND RRH	LOW BAND RRH
RED	RED	BLUE	BLUE	GREEN	GREEN
	PURPLE		PURPLE		PURPLE

POWER CABLES TO RRHs

LOW-BAND RRH POWER CABLES HAVE SECTOR
STRIPE ONLY

LOW BAND RRH	HIGH BAND RRH	LOW BAND RRH	LOW BAND RRH	LOW BAND RRH	LOW BAND RRH
RED	RED	BLUE	BLUE	GREEN	GREEN
	PURPLE		PURPLE		PURPLE

RET MOTORS AT ANTENNAS

PORT 1/ ANTENNA 1 "IN"	PORT 1/ ANTENNA 1 "IN"	PORT 1/ ANTENNA 1 "IN"
RED	BLUE	GREEN

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.

PRIMARY	SECONDARY
WHITE	WHITE
RED	RED
WHITE	WHITE
	RED
	WHITE

RF CABLE COLOR CODES

NO SCALE

1

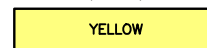
LOW BANDS (N71-N28)
OPTIONAL - (N29)



AWS
(N65+N70+H-BLOCK)



CBRS TECH
(3 GHz)



NEGATIVE SLANT PORT
ON ANTRRH



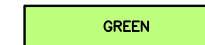
ALPHA SECTOR



BETA SECTOR



GAMMA SECTOR



COLOR IDENTIFIER

NO SCALE

2

NOT USED

NO SCALE

3

NOT USED

NO SCALE

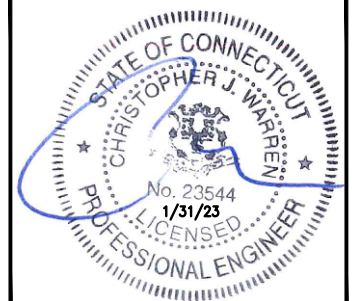
4



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DRAWN BY: HL
CHECKED BY: AL
APPROVED BY: SS

RFDS REV #: N/A

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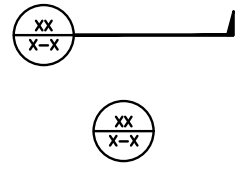
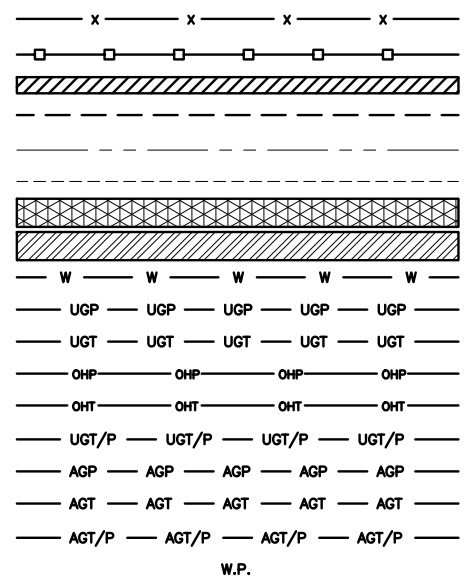
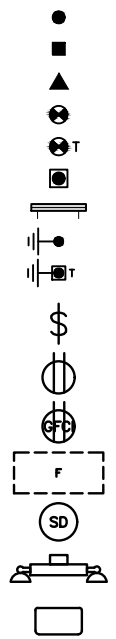
A&E PROJECT NUMBER
2039-Z5555C

DISH WIRELESS, LLC.
PROJECT INFORMATION
BOBOS00005B
72 BOGGY HOLE ROAD
OLD LYME, CT 06371

SHEET TITLE
RF
CABLE COLOR CODES

SHEET NUMBER
RF-1

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-DBBTXD
 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



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 UNINTERRUPTIBLE POWER SYSTEM (DC POWER PLANT)
 VIF VERIFIED IN FIELD
 W WIDE
 W/ WITH
 WD WOOD
 WP WEATHERPROOF
 WT WEIGHT

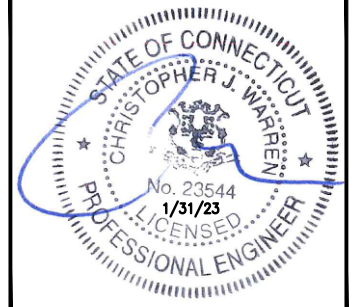
ABBREVIATIONS



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A&E PROJECT NUMBER
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DISH WIRELESS, LLC.
 PROJECT INFORMATION
 BOBOS00005B
 72 BOGGY HOLE ROAD
 OLD LYME, CT 06371

SHEET TITLE
 LEGEND AND ABBREVIATIONS

SHEET NUMBER
GN-1

SIGN TYPES		
TYPE	COLOR	COLOR CODE PURPOSE
INFORMATION	GREEN	"INFORMATIONAL SIGN" TO NOTIFY OTHERS OF SITE OWNERSHIP & CONTACT NUMBER AND POTENTIAL RF EXPOSURE.
NOTICE	BLUE	"NOTICE BEYOND THIS POINT" RF FIELDS BEYOND THIS POINT MAY EXCEED THE FCC GENERAL PUBLIC EXPOSURE LIMIT. OBEY ALL POSTED SIGNS AND SITE GUIDELINES FOR WORKING IN RF ENVIRONMENTS. IN ACCORDANCE WITH FEDERAL COMMUNICATIONS COMMISSION RULES ON RADIO FREQUENCY EMISSIONS 47 CFR-1.1307(b)
CAUTION	YELLOW	"CAUTION BEYOND THIS POINT" RF FIELDS BEYOND THIS POINT MAY EXCEED THE FCC GENERAL PUBLIC EXPOSURE LIMIT. OBEY ALL POSTED SIGNS AND SITE GUIDELINES FOR WORKING IN RF ENVIRONMENTS. IN ACCORDANCE WITH FEDERAL COMMUNICATIONS COMMISSION RULES ON RADIO FREQUENCY EMISSIONS 47 CFR-1.1307(b)
WARNING	ORANGE/RED	"WARNING BEYOND THIS POINT" RF FIELDS AT THIS SITE EXCEED FCC RULES FOR HUMAN EXPOSURE. FAILURE TO OBEY ALL POSTED SIGNS AND SITE GUIDELINES FOR WORKING IN RF ENVIRONMENTS COULD RESULT IN SERIOUS INJURY. IN ACCORDANCE WITH FEDERAL COMMUNICATIONS COMMISSION RULES ON RADIO FREQUENCY EMISSIONS 47 CFR-1.1307(b)

SIGN PLACEMENT:

- RF SIGNAGE PLACEMENT SHALL FOLLOW THE RECOMMENDATIONS OF AN EXISTING EME REPORT, CREATED BY A THIRD PARTY PREVIOUSLY AUTHORIZED BY DISH Wireless L.L.C.
- INFORMATION SIGN (GREEN) SHALL BE LOCATED ON EXISTING DISH Wireless L.L.C. EQUIPMENT.
 - A) IF THE INFORMATION SIGN IS A STICKER, IT SHALL BE PLACED ON EXISTING DISH Wireless L.L.C. EQUIPMENT CABINET.
 - B) IF THE INFORMATION SIGN IS A METAL SIGN IT SHALL BE PLACED ON EXISTING DISH Wireless L.L.C. H-FRAME WITH A SECURE ATTACH METHOD.
- IF EME REPORT IS NOT AVAILABLE AT THE TIME OF CREATION OF CONSTRUCTION DOCUMENTS; PLEASE CONTACT DISH Wireless L.L.C. CONSTRUCTION MANAGER FOR FURTHER INSTRUCTION ON HOW TO PROCEED.

NOTES:

1. FOR DISH Wireless L.L.C. LOGO, SEE DISH Wireless L.L.C. DESIGN SPECIFICATIONS (PROVIDED BY DISH Wireless L.L.C.)
2. SITE ID SHALL BE APPLIED TO SIGNS USING "LASER ENGRAVING" OR ANY OTHER WEATHER RESISTANT METHOD (DISH Wireless L.L.C. APPROVAL REQUIRED)
3. TEXT FOR SIGNAGE SHALL INDICATE CORRECT SITE NAME AND NUMBER AS PER DISH Wireless L.L.C. CONSTRUCTION MANAGER RECOMMENDATIONS.
4. CABINET/SHELTER MOUNTING APPLICATION REQUIRES ANOTHER PLATE APPLIED TO THE FACE OF THE CABINET WITH WATER PROOF POLYURETHANE ADHESIVE
5. ALL SIGNS WILL BE SECURED WITH EITHER STAINLESS STEEL ZIP TIES OR STAINLESS STEEL TECH SCREWS
6. ALL SIGNS TO BE 8.5"x11" AND MADE WITH 0.04" OF ALUMINUM MATERIAL

INFORMATION

This is an access point to an area with transmitting antennas.

Obey all signs and barriers beyond this point.
Call the DISH Wireless L.L.C. NOC at 1-866-624-6874

Site ID: _____



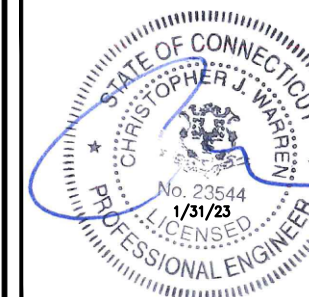
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DISH WIRELESS, LLC.
PROJECT INFORMATION
BOBOS00005B
72 BOGGY HOLE ROAD
OLD LYME, CT 06371

SHEET TITLE
RF
SIGNAGE

SHEET NUMBER
GN-2

NOTICE



Transmitting Antenna(s)

Radio frequency fields beyond this point **MAY EXCEED** the FCC Occupational exposure limit.

Obey all posted signs and site guidelines for working in radio frequency environments.

Call the DISH Wireless L.L.C. NOC at 1-866-624-6874 prior to working beyond this point.

Site ID: _____



THIS SIGN IS FOR REFERENCE PURPOSES ONLY

CAUTION



Transmitting Antenna(s)

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Site ID: _____



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WARNING



Transmitting Antenna(s)

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Call the DISH Wireless L.L.C. NOC at 1-866-624-6874 prior to working beyond this point.

Site ID: _____



THIS SIGN IS FOR REFERENCE PURPOSES ONLY

SITE ACTIVITY REQUIREMENTS:

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

GENERAL NOTES:

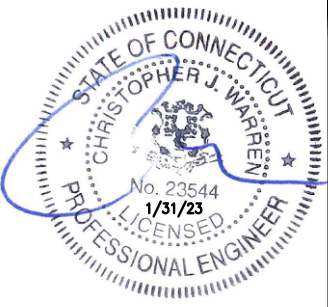
- 1.FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
CONTRACTOR:GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION
CARRIER:DISH Wireless L.L.C.
TOWER OWNER:TOWER OWNER
2. THESE DRAWINGS HAVE BEEN PREPARED USING STANDARDS OF PROFESSIONAL CARE AND COMPLETENESS NORMALLY EXERCISED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



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DRAWN BY:	CHECKED BY:	APPROVED BY:
HL	AL	SS

RFDS REV #: N/A

PRELIMINARY DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	02/23/2022	ISSUED FOR REVIEW
B	12/09/2022	ISSUED FOR REVIEW
D	01/31/2023	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
2039-Z5555C

DISH WIRELESS, LLC.
PROJECT INFORMATION
BOBOS00005B
72 BOGGY HOLE ROAD
OLD LYME, CT 06371

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-3

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

- 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.
- UNLESS NOTED OTHERWISE, SOIL BEARING PRESSURE USED FOR DESIGN OF SLABS AND FOUNDATIONS IS ASSUMED TO BE 1000 psf.
- 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.
- 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.
- 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 60 ksi
 #5 BARS AND LARGER 60 ksi
- 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"
- A TOOLED EDGE OR A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNLESS NOTED OTHERWISE, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

ELECTRICAL INSTALLATION NOTES:

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

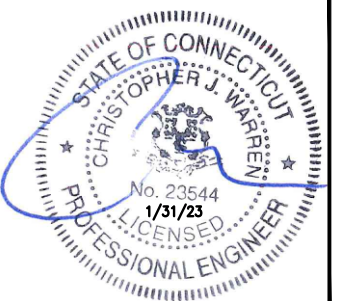
- ELECTRICAL METALLIC TUBING (EMT) OR METAL-CLAD CABLE (MC) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
- SCHEDULE 40 PVC UNDERGROUND ON STRAIGHTS AND SCHEDULE 80 PVC FOR ALL ELBOWS/90s AND ALL APPROVED ABOVE GRADE PVC CONDUIT.
- LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
- CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.
- CABINETS, BOXES AND WIRE WAYS SHALL BE LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND THE NEC.
- WIREWAYS SHALL BE METAL WITH AN ENAMEL FINISH AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARDS (WIREMOLD SPECMATE WIREWAY).
- SLOTTED WIRING DUCT SHALL BE PVC AND INCLUDE COVER (PANDUIT TYPE E OR EQUAL).
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- INSTALL LAMICOID LABEL ON THE METER CENTER TO SHOW "DISH Wireless L.L.C."
- ALL EMPTY/SPARE CONDUITS THAT ARE INSTALLED ARE TO HAVE A METERED MULE TAPE PULL CORD INSTALLED.



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DRAWN BY:	CHECKED BY:	APPROVED BY:
HL	AL	SS

RFDS REV #: N/A

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SUBMITTALS		
REV	DATE	DESCRIPTION
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A&E PROJECT NUMBER
2039-Z5555C

DISH WIRELESS, LLC.
PROJECT INFORMATION
BOBOS00005B
72 BOGGY HOLE ROAD
OLD LYME, CT 06371

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-4

GROUNDING NOTES:

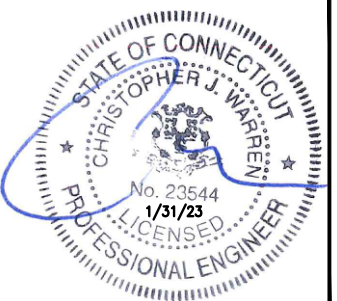
1. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION AND AC POWER GES'S) SHALL BE BONDED TOGETHER AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
2. THE CONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (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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IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

DRAWN BY:	CHECKED BY:	APPROVED BY:
HL	AL	SS

RFDS REV #: N/A

PRELIMINARY DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	02/23/2022	ISSUED FOR REVIEW
B	12/09/2022	ISSUED FOR REVIEW
0	01/31/2023	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
2039-Z5555C

DISH WIRELESS, LLC.
PROJECT INFORMATION
BOBOS00005B
72 BOGGY HOLE ROAD
OLD LYME, CT 06371

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-5

Exhibit D

Structural Analysis Report

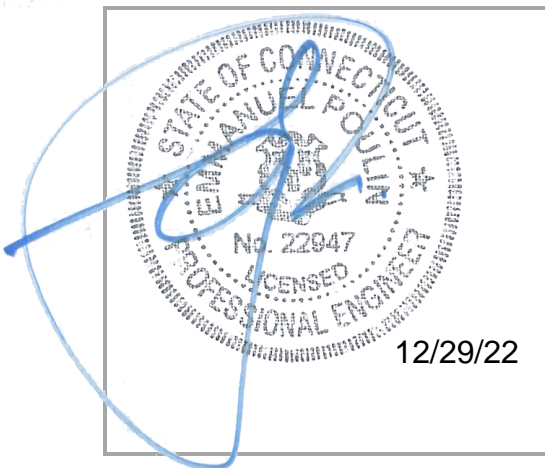
INFINIGY

TOWER STRUCTURAL ANALYSIS REPORT

December 28, 2022

DISH Wireless Site Name	Wireless Solutions Old Lyme Tower
DISH Wireless Site Number	BOBOS00005B
NSS Site Name	Wireless Solutions Old Lyme Tower
Infinigy Job Number	1197-F0001-B
Client	NSS
Carrier	DISH Wireless
Site Location	72 Boggy Hole Road Old Lyme, CT 06371 New London County 41.322150° N NAD83 72.30747° W NAD83
Structure Type	Engineered Endeavors Monopole
Structure Height	175.0 ft
Structural Usage Ratio	70.0%
Overall Result	Pass

The enclosed mount structural analysis has been performed in accordance with the 2022 Connecticut State Building Code (2021 IBC) based on an ultimate 3-second gust wind speed of 126 mph. The evaluation criteria and applicable codes are presented in the next section of this report.



Emmanuel Poulin, P.E.
structural@infinigy.com

CONTENTS

1. Introduction
2. Design / Analysis Parameters
3. Proposed Loading Configuration
4. Other Considered Loading
5. Supporting Documentation
6. Results
7. Recommendations
8. Assumptions
9. Liability Waiver and Limitations
10. Calculations

December 28, 2022

1. INTRODUCTION

Infinigy performed a structural analysis on the existing Engineered Endeavors Monopole. All referenced supporting documents have been obtained from the client and are assumed to be accurate and applicable to this site. The structure was analyzed using tnxTower version 8.1.1.0 analysis software.

2. DESIGN/ANALYSIS PARAMETERS

Wind Speed	126 mph (3-Second Gust, V_{ult})
Wind Speed w/ ice	50 mph (3-Second Gust) w/ 1.0" Ice
Adopted Code	2022 Connecticut State Building Code (2021 IBC)
Standard(s)	TIA-222-H
Risk Category	II
Exposure Category	C
Topographic Factor	1
Seismic Site Class	D – Stiff Soil (Assumed)
Seismic Spectral Response	$S_s = 0.200 \text{ g} / S_1 = 0.053 \text{ g}$
Service Load Wind Speed	60 mph
Ground Elevation (HMSL)	79.06 ft

3. FINAL LOADING CONFIGURATION (Proposed Equipment at 155.0 ft)

Mount Center (ft)	RAD Center (ft)	Qty.	Appurtenance	Mount Type	Coax & Lines	Carrier
172.0	172.0	3	RFS APXVAARR24_43-U-NA20	Platform w/ Handrails	(1) 6x24 Hybri-flex (3) 6X12 Hybri-flex	T-Mobile
		3	ERICSSON AIR6449 B41			
		3	COMMSCOPE VV-65A-R1			
		3	ERICSSON RADIO 4449 B71+B85			
		3	ERICSSON RADIO 4460 B25+B66			
165.0	165.0	1	RAYCAP RHSDC-3315-PF-48			
162.0	162.0	3	AMPHENOL BXA-70063-8CF-EDIN-0	Platform w/ Handrails	*(6) 1-5/8" (6) 1-5/8" (1) 1.5" Hybri- flex	Verizon
		6	COMMSCOPE HBXX-6517DS-VTM			
		3	COMMSCOPE LNX-6514DS-VTM			
		3	ALCATEL LUCENT RRH2X40-07-U			
		3	ALCATEL LUCENT RRH2X40-AWS			
155.0	155.0	3	JMA WIRELESS MX08FRO665-21	SP1: SNP8HR- 396 Platform	(1) Power Cable (1) 0.33" dia. Fiber Cable	DISH Wireless
		3	FUJITSU TA08025-B605			
		3	FUJITSU TA08025-B604			
		1	RAYCAP RDIDC-9181-PF-48			
146.0	146.0	3	ERICSSON RRUS 11 B12			
		3	ERICSSON RRUS 4415 B25			
145.0	145.0	3	POWERWAVE 7770.00	Platform w/ Handrails	(12) 1-5/8" (1) 0.4" Cable (1) 0.32" Cable (2) DC Cable	AT&T
		3	KMW AM-X-CD-16-65-00T-RET			
		6	CCI HPA-65R-BUU-H6			
		6	CCI DTMABP7819VG12A			
		3	ERICSSON RRUS 11 B12			
		3	ERICSSON RRUS 4415 B25			
		1	RAYCAP DC6-48-60-18-8F			

**Not inside shaft*

December 28, 2022

4. SUPPORTING DOCUMENTATION

Construction Drawings	Infinigy, BOBOS00005B, dated December 09, 2022
DISH Wireless Proposed Loading	DISH Wireless RFDS, dated December 09, 2022
Structural Analysis Report	Infinigy, dated March 21, 2022
Structural Analysis Report	EFI Global, dated February 04, 2022

5. RESULTS

Structural Components	Capacity	Pass/Fail
Pole	44.8%	Pass
Anchor Bolts	46.4%	Pass
Base Plate	70.0%	Pass
Foundation Structural Rating	53.1%	Pass
Foundation Soil Rating	55.7%	Pass
STRUCTURE RATING =	70.0%	Pass

5.1 DEFLECTION, TWIST, AND SWAY

Antenna Elevation (ft)	Deflection (in)	Sway (°)	Twist (°)
172.0	14.883	0.775	0.001
155.0	12.158	0.743	0.000

*Per ANSI/TIA-222-H Section 2.8.2 maximum serviceability structural deflection limit is 3% of structure height.

*Per ANSI/TIA-222-H Section 2.8.2 maximum serviceability structural twist and sway limit is 4 degrees.

*Per ANSI/TIA-222-H Section 2.8.3 deflection, Twist, and sway values were calculated using a basic 3-second gust wind speed of 60 mph.

*It is the responsibility of the client to ensure their proposed and/or existing equipment will meet ANSI/TIA-222-H Annex D or other appropriate microwave signal degradation limits based on the provided values above.

6. RECOMMENDATIONS

Infinigy recommends installing DISH Wireless's proposed equipment loading configuration on the proposed mount at 155.0 ft, located on this structure. The installation shall be performed in accordance with the construction documents issued by Infinigy for this site.

If you have any questions, require additional information, or believe the actual conditions differ from those detailed in this report, please contact us immediately.

Robert Faber, EIT
Project Engineer I | **INFINIGY**

7. ASSUMPTIONS

The structure, its foundation system and related structures were built and maintained in accordance with the manufacturer's specifications and instructions.	
The structure condition is essentially as erected and does not have corrosion, damages or defects that would affect its structural integrity. The structure is plumb and all members and their connections are sound and can fully develop their structural capacities.	
The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in the loading configuration tables.	
Some of the antennas and mounts used in the structure model are similar in size and weight to the actual appurtenances mounted on the structure.	
Steel grades have been assumed as follows, unless noted otherwise:	
Channel, Solid Round, Angle, Plate	ASTM A36
HSS (Rectangular)	ASTM A500-B GR 46
HSS (Circular)	ASTM A500-B GR 42
Pipe	ASTM A53-B GR 35
Connection Bolts	ASTM A325
U-Bolts	ASTM A307
All bolted connections are pretensioned in accordance with Table 8.2 of the RCSC 2014 Standard.	

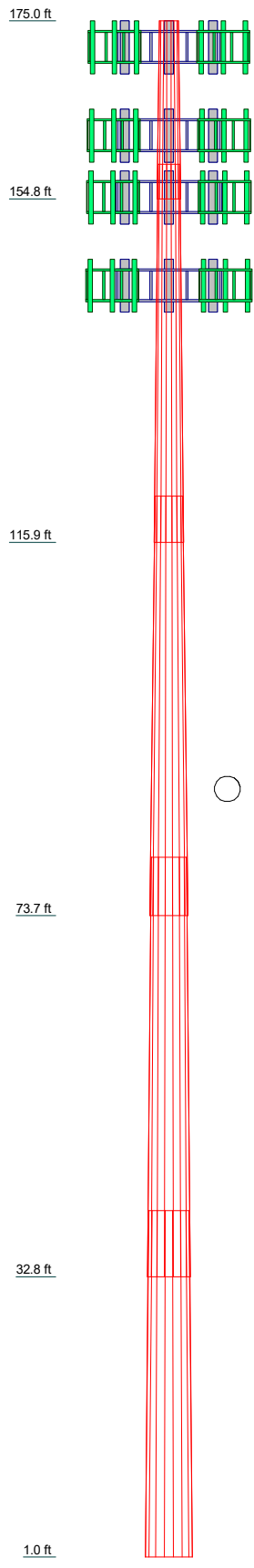
8. LIABILITY WAIVER AND LIMITATIONS

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 Engineering 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 tower structure only and does not reflect adequacy of any existing antenna mounts, mount connections, or cable mounting attachments. The analysis of these elements is outside the scope of this analysis and are assumed to be adequate for the purposes of this report and are assumed to have been installed per their manufacturer requirements. This document is not for construction purposes.

Section	1	2	3	4	5
Length (ft)	20.17	42.81	47.51	47.48	39.22
Number of Sides	18	18	18	18	18
Thickness (in)	0.1875	0.4375	0.5000	0.6250	0.6875
Socket Length (ft)	3.90	5.26	6.57	7.46	
Top Dia (in)	25.9145	30.1845	38.1921	48.9431	54.9795
Bot Dia (in)	31.8732	40.3114	51.8289	57.5877	63.3465
Grade			A572-65		
Weight (lb)	1168.3	7041.7	11419.8	16871.4	17030.7

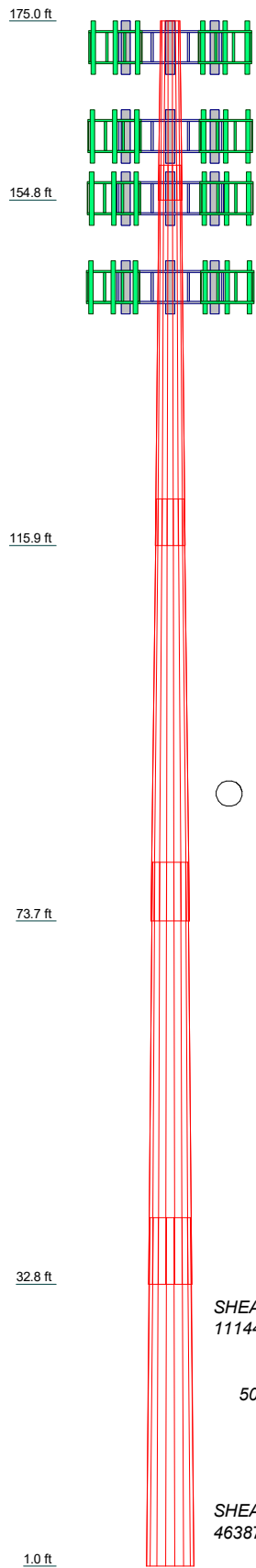


DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
APXVAA24 43-U-A20_TIA w/ Mount Pipe (T-Mobile)	172	RRH2X40-07-U (Verizon)	162
APXVAA24 43-U-A20_TIA w/ Mount Pipe (T-Mobile)	172	RRH2X40-AWS (Verizon)	162
APXVAA24 43-U-A20_TIA w/ Mount Pipe (T-Mobile)	172	RRH2X40-AWS (Verizon)	162
APXVAA24 43-U-A20_TIA w/ Mount Pipe (T-Mobile)	172	RRH2X40-AWS (Verizon)	162
APXVAA24 43-U-A20_TIA w/ Mount Pipe (T-Mobile)	172	Platform Mount [LP 404-1] (Verizon)	162
AIR 6449 B41 (MASSIVE MIMO) w/ MP (T-Mobile)	172	MX08FRO665-21 w/ 7' MP 2.0 (DISH Wireless)	155
AIR 6449 B41 (MASSIVE MIMO) w/ MP (T-Mobile)	172	MX08FRO665-21 w/ 7' MP 2.0 (DISH Wireless)	155
AIR 6449 B41 (MASSIVE MIMO) w/ MP (T-Mobile)	172	MX08FRO665-21 w/ 7' MP 2.0 (DISH Wireless)	155
VV-65A-R1 w/ MP 2.0 (T-Mobile)	172	TA08025-B605 (DISH Wireless)	155
VV-65A-R1 w/ MP 2.0 (T-Mobile)	172	TA08025-B605 (DISH Wireless)	155
VV-65A-R1 w/ MP 2.0 (T-Mobile)	172	TA08025-B605 (DISH Wireless)	155
Radio 4449 B71+B85 (T-Mobile)	172	TA08025-B604 (DISH Wireless)	155
Radio 4449 B71+B85 (T-Mobile)	172	TA08025-B604 (DISH Wireless)	155
Radio 4449 B71+B85 (T-Mobile)	172	TA08025-B604 (DISH Wireless)	155
Radio 4460 B25 B66 (T-Mobile)	172	TA08025-B604 (DISH Wireless)	155
Radio 4460 B25 B66 (T-Mobile)	172	RDIDC-9181-PF-48 (DISH Wireless)	155
Radio 4460 B25 B66 (T-Mobile)	172	RDIDC-9181-PF-48 (DISH Wireless)	155
Radio 4460 B25 B66 (T-Mobile)	172	RDIDC-9181-PF-48 (DISH Wireless)	155
8' x 2" Mount Pipe (T-Mobile)	172	Valmont SNP8-HRA8 (DISH Wireless)	155
Platform Mount [LP 602-1] (T-Mobile)	172	RRUS 11 B12 (ATTI)	146
RHSDC-3315-PF-48 (Verizon)	165	RRUS 11 B12 (ATTI)	146
4' x 2" Pipe Mount (Verizon)	165	RRUS 11 B12 (ATTI)	146
Collar Mount (Verizon)	165	RRUS 4415 B25 (ATTI)	146
HBXX-6517DS-VTM_TIA w/ Mount Pipe (Verizon)	162	RRUS 4415 B25 (ATTI)	146
HBXX-6517DS-VTM_TIA w/ Mount Pipe (Verizon)	162	DC6-48-60-18-8F (ATTI)	145
HBXX-6517DS-VTM_TIA w/ Mount Pipe (Verizon)	162	4' x 2" Pipe Mount (ATTI)	145
HBXX-6517DS-VTM_TIA w/ Mount Pipe (Verizon)	162	4' x 2" Pipe Mount (ATTI)	145
HBXX-6517DS-VTM_TIA w/ Mount Pipe (Verizon)	162	4' x 2" Pipe Mount (ATTI)	145
HBXX-6517DS-VTM_TIA w/ Mount Pipe (Verizon)	162	Collar Mount (ATTI)	145
HBXX-6517DS-VTM_TIA w/ Mount Pipe (Verizon)	162	7770.00 w/ Mount Pipe (ATTI)	145
HBXX-6517DS-VTM_TIA w/ Mount Pipe (Verizon)	162	7770.00 w/ Mount Pipe (ATTI)	145
HBXX-6517DS-VTM_TIA w/ Mount Pipe (Verizon)	162	7770.00 w/ Mount Pipe (ATTI)	145
HBXX-6517DS-VTM_TIA w/ Mount Pipe (Verizon)	162	HPA-65R-BUU-H6 w/ Mount Pipe (ATTI)	145
BXA-70063-8CF-EDIN-X w/ Mount Pipe (Verizon)	162	HPA-65R-BUU-H6 w/ Mount Pipe (ATTI)	145
BXA-70063-8CF-EDIN-X w/ Mount Pipe (Verizon)	162	HPA-65R-BUU-H6 w/ Mount Pipe (ATTI)	145
BXA-70063-8CF-EDIN-X w/ Mount Pipe (Verizon)	162	HPA-65R-BUU-H6 w/ Mount Pipe (ATTI)	145
LNX-6514DS-VTM_TIA w/ Mount Pipe (Verizon)	162	AM-X-CD-16-65-00T-RET_TIA w/ Mount Pipe (ATTI)	145
LNX-6514DS-VTM_TIA w/ Mount Pipe (Verizon)	162	AM-X-CD-16-65-00T-RET_TIA w/ Mount Pipe (ATTI)	145
LNX-6514DS-VTM_TIA w/ Mount Pipe (Verizon)	162	AM-X-CD-16-65-00T-RET_TIA w/ Mount Pipe (ATTI)	145
LNX-6514DS-VTM_TIA w/ Mount Pipe (Verizon)	162	(2) DTMABP7819VG12A (ATTI)	145
RRH2X40-07-U (Verizon)	162	(2) DTMABP7819VG12A (ATTI)	145
RRH2X40-07-U (Verizon)	162	(2) DTMABP7819VG12A (ATTI)	145
		Platform Mount [LP 404-1] (ATTI)	145

Infinigy 26455 Rancho Pkwy S Lake Forest, CA 92630 Phone: FAX:	Job: BOBOS00005B Project: 1197-F0001-B		
	Client: DISH Wireless	Drawn by: RF	App'd:
	Code: TIA-222-H	Date: 12/28/22	Scale: NTS
	Path:	Dwg No. E-1	
	<small>\\128bar1\Telecom\DISH\ASSET_Private\site\BOBOS00005B\Structure\2022_12_09_SA_Rc-RunAnalysis\BOBOS00005B.dwg</small>		

Section	1	2	3	4	5
Length (ft)	20.17	42.81	47.51	47.48	39.22
Number of Sides	18	18	18	18	18
Thickness (in)	0.1875	0.4375	0.5000	0.6250	0.6875
Socket Length (ft)	3.90	5.26	6.57	7.46	
Top Dia (in)	25.9145	30.1845	38.1921	48.9431	54.9795
Bot Dia (in)	31.8732	40.3114	51.8289	57.5877	63.3465
Grade			A572-65		
Weight (lb)	1168.3	7041.7	11419.8	16871.4	17030.7



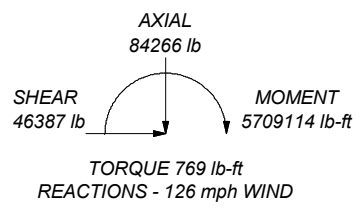
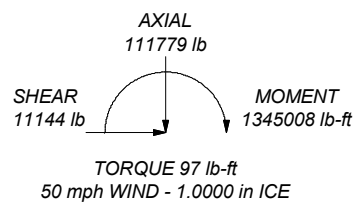
MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower is located in New London County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-H Standard.
3. Tower designed for a 126 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: 44.8%

ALL REACTIONS ARE FACTORED



Infinigy 26455 Rancho Pkwy S Lake Forest, CA 92630 Phone: FAX:	Job: BOBOS00005B		
	Project: 1197-F0001-B		
	Client: DISH Wireless	Drawn by: RF	App'd:
	Code: TIA-222-H	Date: 12/28/22	Scale: NTS
	Path:	Dwg No. E-1	

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tnxTower Infinigy 26455 Rancho Pkwy S Lake Forest, CA 92630 Phone: FAX:	Job BOBOS00005B	Page 1 of 24
	Project 1197-F0001-B	Date 04:02:42 12/28/22
	Client DISH Wireless	Designed by RF

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 New London County, Connecticut.

Tower base elevation above sea level: 80.06 ft.

Basic wind speed of 126 mph.

Risk Category II.

Exposure Category C.

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

<ul style="list-style-type: none"> Consider Moments - Legs Consider Moments - Horizontals Consider Moments - Diagonals Use Moment Magnification √ Use Code Stress Ratios √ Use Code Safety Factors - Guys Escalate Ice Always Use Max Kz Use Special Wind Profile Include Bolts In Member Capacity Leg Bolts Are At Top Of Section Secondary Horizontal Braces Leg Use Diamond Inner Bracing (4 Sided) SR Members Have Cut Ends SR Members Are Concentric 	<ul style="list-style-type: none"> Distribute Leg Loads As Uniform Assume Legs Pinned √ Assume Rigid Index Plate √ Use Clear Spans For Wind Area Use Clear Spans For KL/r Retension Guys To Initial Tension √ Bypass Mast Stability Checks √ Use Azimuth Dish Coefficients √ Project Wind Area of Appurt. Autocalc Torque Arm Areas Add IBC .6D+W Combination Sort Capacity Reports By Component Triangulate Diamond Inner Bracing Treat Feed Line Bundles As Cylinder Ignore KL/ry For 60 Deg. Angle Legs 	<ul style="list-style-type: none"> Use ASCE 10 X-Brace Ly Rules Calculate Redundant Bracing Forces Ignore Redundant Members in FEA SR Leg Bolts Resist Compression All Leg Panels Have Same Allowable Offset Girt At Foundation √ Consider Feed Line Torque Include Angle Block Shear Check Use TIA-222-H Bracing Resist. Exemption Use TIA-222-H Tension Splice Exemption <li style="text-align: center;">Poles √ Include Shear-Torsion Interaction Always Use Sub-Critical Flow Use Top Mounted Sockets Pole Without Linear Attachments Pole With Shroud Or No Appurtenances Outside and Inside Corner Radii Are Known
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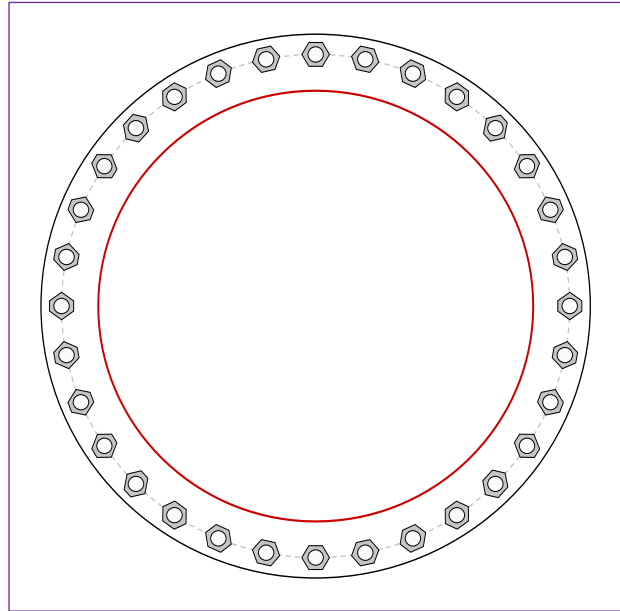
Tapered Pole Section Geometry

Monopole Base Plate Connection

Site Info	
Site #	BOBOS0005B
Site Name	Old Lyme, CT
Job #	1197-F0001-B

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	No
l_{ar} (in)	3

Applied Loads	
Moment (kip-ft)	5709.11
Axial Force (kips)	84.27
Shear Force (kips)	46.39



Connection Properties	Analysis Results
-----------------------	------------------

Anchor Rod Data	
(32) 2-1/4" ϕ bolts (A615-75 N; $F_y=75$ ksi, $F_u=100$ ksi) on 74" BC	
Base Plate Data	
80" OD x 2.5" Plate (A572-60; $F_y=60$ ksi, $F_u=75$ ksi)	
Stiffener Data	
N/A	
Pole Data	
63.3465" x 0.6875" 18-sided pole (A572-65; $F_y=65$ ksi, $F_u=80$ ksi)	

Anchor Rod Summary		<i>(units of kips, kip-in)</i>	
$Pu_t = 113.05$	$\phi Pn_t = 243.75$	Stress Rating	
$Vu = 1.45$	$\phi Vn = 149.1$	46.4%	
$Mu = 2.83$	$\phi Mn = 128.14$	Pass	
Base Plate Summary			
Max Stress (ksi):	37.8	(Flexural)	
Allowable Stress (ksi):	54		
Stress Rating:	70.0%	Pass	

Pier and Pad Foundation

Site #	BOBOS00005B
Site Name:	Old Lyme, CT
Job Number:	1197-F0001-B

TIA-222 Revision:	H
Tower Type:	Monopole

Top & Bot. Pad Rein. Different?:	<input checked="" type="checkbox"/>
Block Foundation?:	<input type="checkbox"/>
Rectangular Pad?:	<input type="checkbox"/>

Superstructure Analysis Reactions		
Compression, P_{comp} :	84.27	kips
Base Shear, V_{u_comp} :	46.39	kips
Moment, M_u :	5709.11	ft-kips
Tower Height, H :	175	ft
BP Dist. Above Fdn, bp_{dist} :	3	in

Foundation Analysis Checks				
	Capacity	Demand	Rating	Check
<i>Lateral (Sliding) (kips)</i>	271.43	46.39	17.1%	Pass
<i>Bearing Pressure (ksf)</i>	6.00	1.49	24.9%	Pass
<i>Overturning (kip*ft)</i>	10723.82	5975.85	55.7%	Pass
<i>Pier Flexure (Comp.) (kip*ft)</i>	10960.21	5825.09	53.1%	Pass
<i>Pier Compression (kip)</i>	40734.72	113.07	0.3%	Pass
<i>Pad Flexure (kip*ft)</i>	9130.25	2313.22	25.3%	Pass
<i>Pad Shear - 1-way (kips)</i>	1211.82	265.01	21.9%	Pass
<i>Pad Shear - 2-way (Comp) (ksi)</i>	0.190	0.047	24.5%	Pass
<i>Flexural 2-way (Comp) (kip*ft)</i>	7024.93	3495.05	49.8%	Pass

Pier Properties		
Pier Shape:	Square	
Pier Diameter, $dpier$:	8	ft
Ext. Above Grade, E :	1	ft
Pier Rebar Size, Sc :	9	
Pier Rebar Quantity, mc :	60	
Pier Tie/Spiral Size, St :	4	
Pier Tie/Spiral Quantity, mt :	3	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier} :	3	in

Structural Rating:	53.1%
Soil Rating:	55.7%

Pad Properties		
Depth, D :	4.5	ft
Pad Width, W_1 :	34	ft
Pad Thickness, T :	3	ft
Pad Rebar Size (Top dir. 2), Sp_{top2} :	9	
Pad Rebar Quantity (Top dir. 2), mp_{top2} :	36	
Pad Rebar Size (Bottom dir. 2), Sp_2 :	9	
Pad Rebar Quantity (Bottom dir. 2), mp_2 :	68	
Pad Clear Cover, cc_{pad} :	3	in

Material Properties		
Rebar Grade, F_y :	60	ksi
Concrete Compressive Strength, F'_c :	4	ksi
Dry Concrete Density, δ_c :	150	pcf

Soil Properties		
Total Soil Unit Weight, γ :	100	pcf
Ultimate Gross Bearing, Q_{ult} :	8.000	ksf
Cohesion, C_u :	0.000	ksf
Friction Angle, ϕ :	30	degrees
SPT Blow Count, N_{blows} :		
Base Friction, μ :	0.45	
Neglected Depth, N :	3.33	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, gw :	N/A	ft

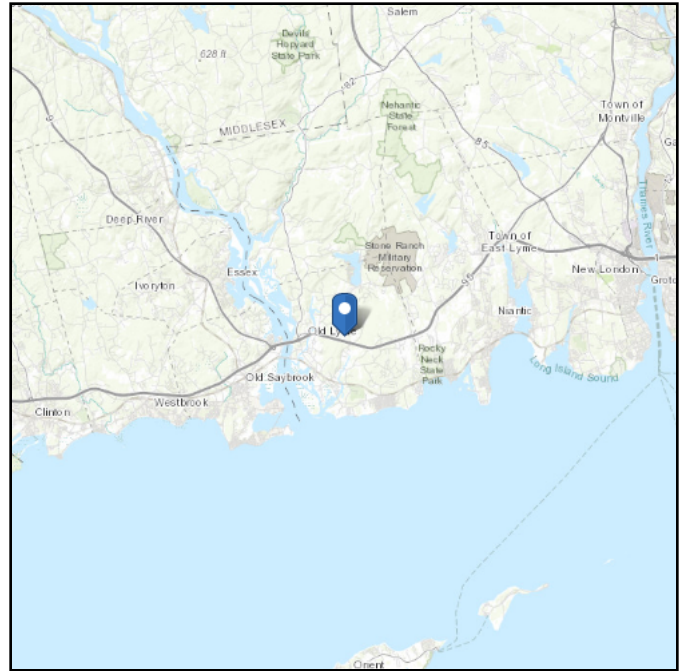
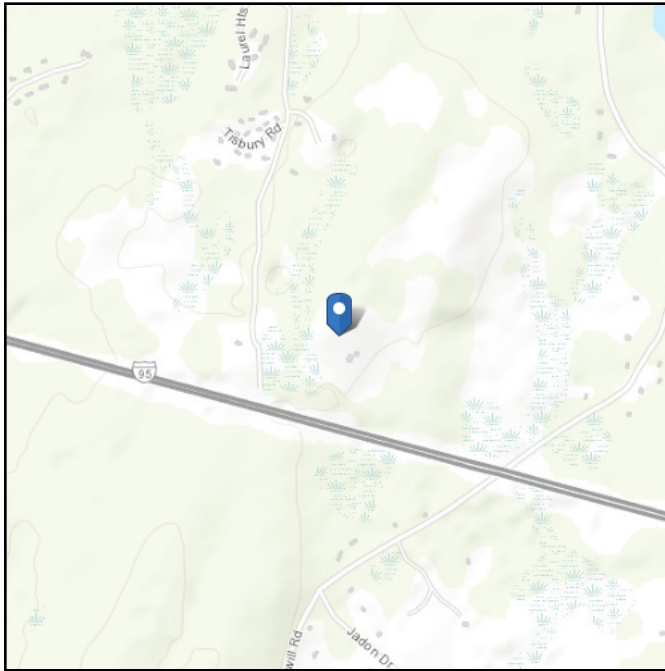
<--Toggle between Gross and Net

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: 79.06 ft (NAVD 88)
Latitude: 41.32215
Longitude: -72.30747



Wind

Results:

Wind Speed	126 Vmph
10-year MRI	76 Vmph
25-year MRI	86 Vmph
50-year MRI	97 Vmph
100-year MRI	103 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: Thu Mar 17 2022

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

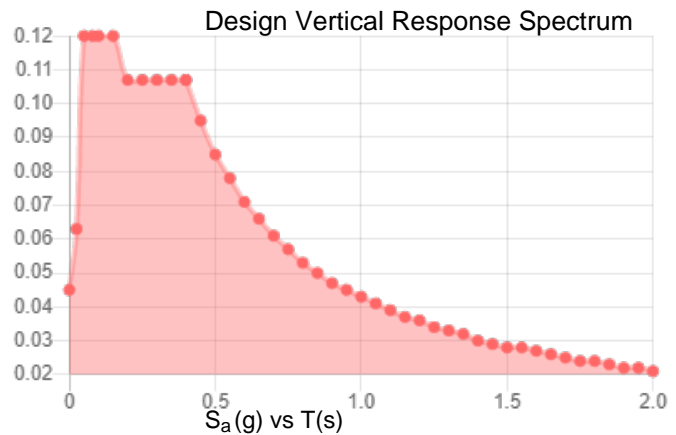
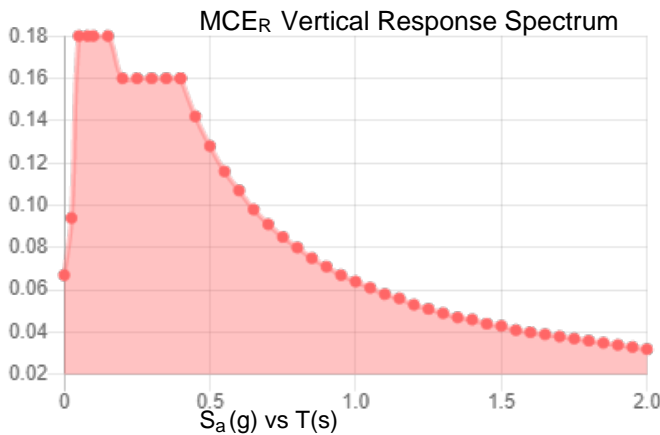
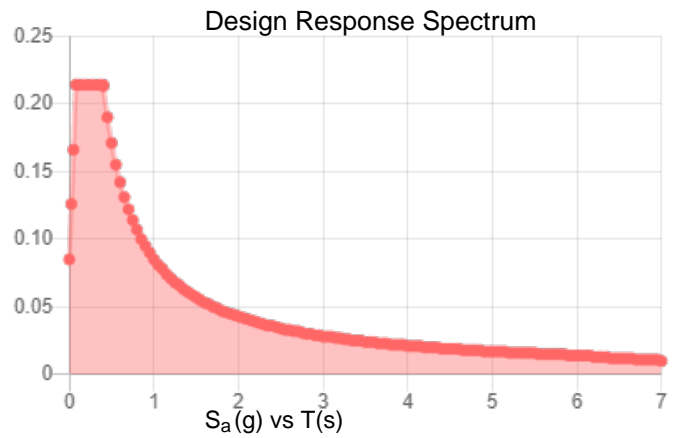
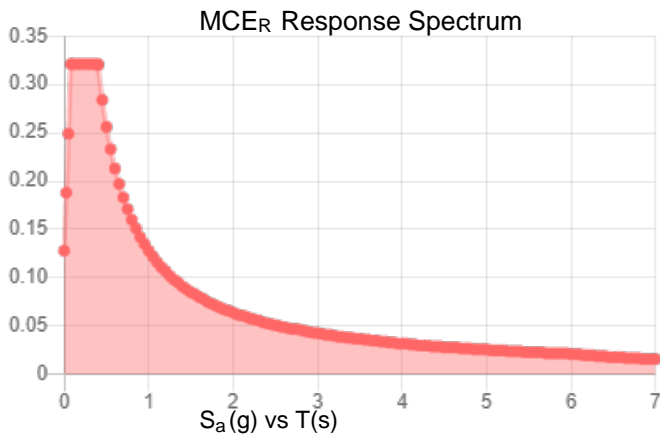
Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

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

Results:

S_s :	0.2	S_{D1} :	0.085
S_1 :	0.053	T_L :	6
F_a :	1.6	PGA :	0.111
F_v :	2.4	PGA _M :	0.176
S_{MS} :	0.321	F_{PGA} :	1.577
S_{M1} :	0.128	I_e :	1
S_{DS} :	0.214	C_v :	0.701

Seismic Design Category B



Data Accessed: Thu Mar 17 2022

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: Thu Mar 17 2022

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.

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

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

Exhibit E

Mount Analysis

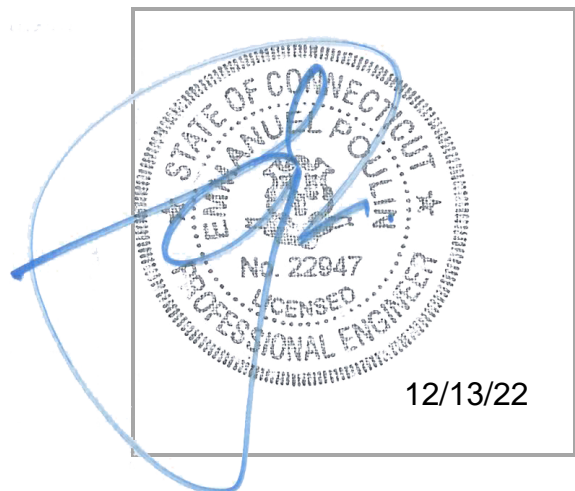
INFINIGY

MOUNT ANALYSIS REPORT

December 9, 2022

Dish Wireless Site Name	Wireless Solutions Old Lyme Tower
Dish Wireless Site Number	BOBOS00005B
Infinigy Job Number	1197-F0001-B
Client	NSS
Carrier	Dish Wireless
Site Location	72 Boggy Hole Road Old Lyme, CT 06371 New London County 41.322150 N NAD83 72.30747 W NAD83
Mount Type	8.0 ft Platform
Mount Elevation	155.0 ft AGL
Structure Type	Monopole
Structure Height	175.0 ft
Structural Usage Ratio	61.2%
Overall Result	Pass

The enclosed mount structural analysis has been performed in accordance with the 2022 Connecticut State Building Code (2021 IBC) based on an ultimate 3-second gust wind speed of 126 mph. The evaluation criteria and applicable codes are presented in the next section of this report.



CONTENTS

1. Introduction
2. Design/Analysis Parameters
3. Proposed Loading Configuration
4. Supporting Documentation
5. Results
6. Recommendations
7. Assumptions
8. Liability Waiver and Limitations
9. Calculations

1. INTRODUCTION

Infinigy performed a structural analysis on the Dish Wireless proposed telecommunication equipment supporting Platform mounted to an 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 20.0.4 analysis software.

2. DESIGN/ANALYSIS PARAMETERS

Wind Speed	126 mph (3-Second Gust)
Wind Speed w/ ice	50 mph (3-Second Gust) w/ 1.0" ice
Code / Standard	TIA-222-H
Adopted Code	2022 Connecticut State Building Code (2021 IBC)
Risk Category	II
Exposure Category	C
Topographic Category	1
Calculated Crest Height	0 ft.
Seismic Spectral Response	$S_s = 0.200 \text{ g} / S_1 = 0.053 \text{ g}$
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 - 155.0 ft. AGL Platform

Antenna Centerline (ft)	Qty.	Appurtenance Manufacturers	Appurtenance Models
155.0	3	JMA	MX08FRO665-21
	3	FUJITSU	TA08025-B605
	3	FUJITSU	TA08025-B604
	1	RAYCAP	RDIDC-9181-PF-48

4. SUPPORTING DOCUMENTATION

Construction Drawings	Infinigy, dated December 09, 2022
Mount Manufacturer Drawings	Site Pro 1: SNP8HR-396

5. RESULTS

Components	Capacity	Pass/Fail
Mount Pipe	61.2%	Pass
Horizontal	19.4%	Pass
Standoff	54.9%	Pass
Handrail	26.9%	Pass
Handrail Corner Angle	12.0%	Pass
Corner Angle	51.1%	Pass
Connections	34.5%	Pass
MOUNT RATING =	61.2%	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 155.0 ft. The installation shall be performed in accordance with the construction documents issued by Infinigy for this site.

Robert Faber
Project Engineer I | **INFINIGY**

7. ASSUMPTIONS

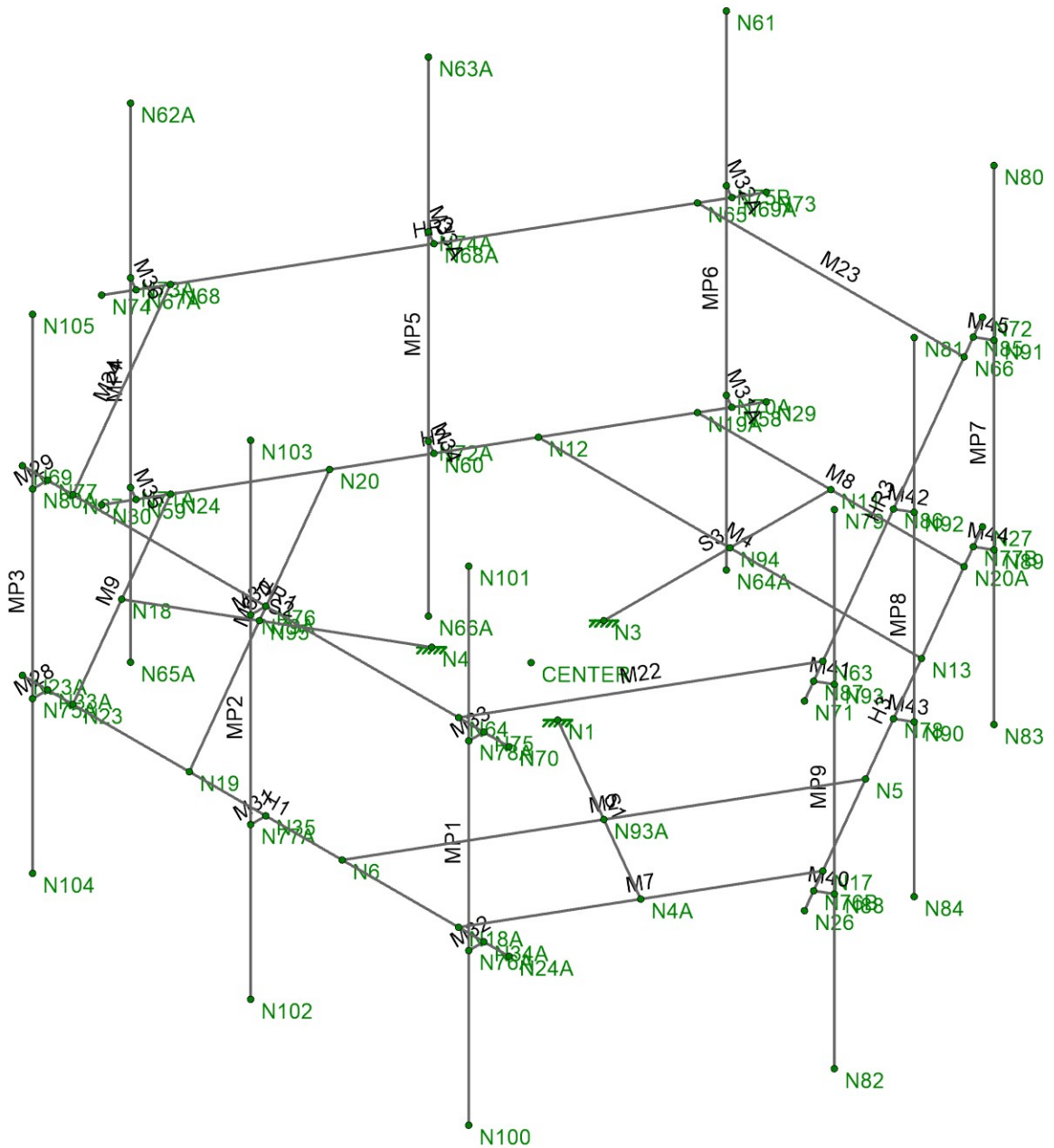
The antenna mounting system was properly fabricated, installed and maintained in accordance with its original design and manufacturer's specifications.	
The configuration of antennas, mounts, and other appurtenances are as specified in the proposed loading configuration table.	
All member connections 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, Angle	Q345 GR 36
HSS (Round / Rectangular)	Q235-GB GR 35
Pipe	Q235-GB GR 35
Connection Bolts	SAE J429 Grade 5 / ASTM A325
U-Bolts / Threaded Rods	SAE J429 Grade 2
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.



Infinigy Engineering

RF

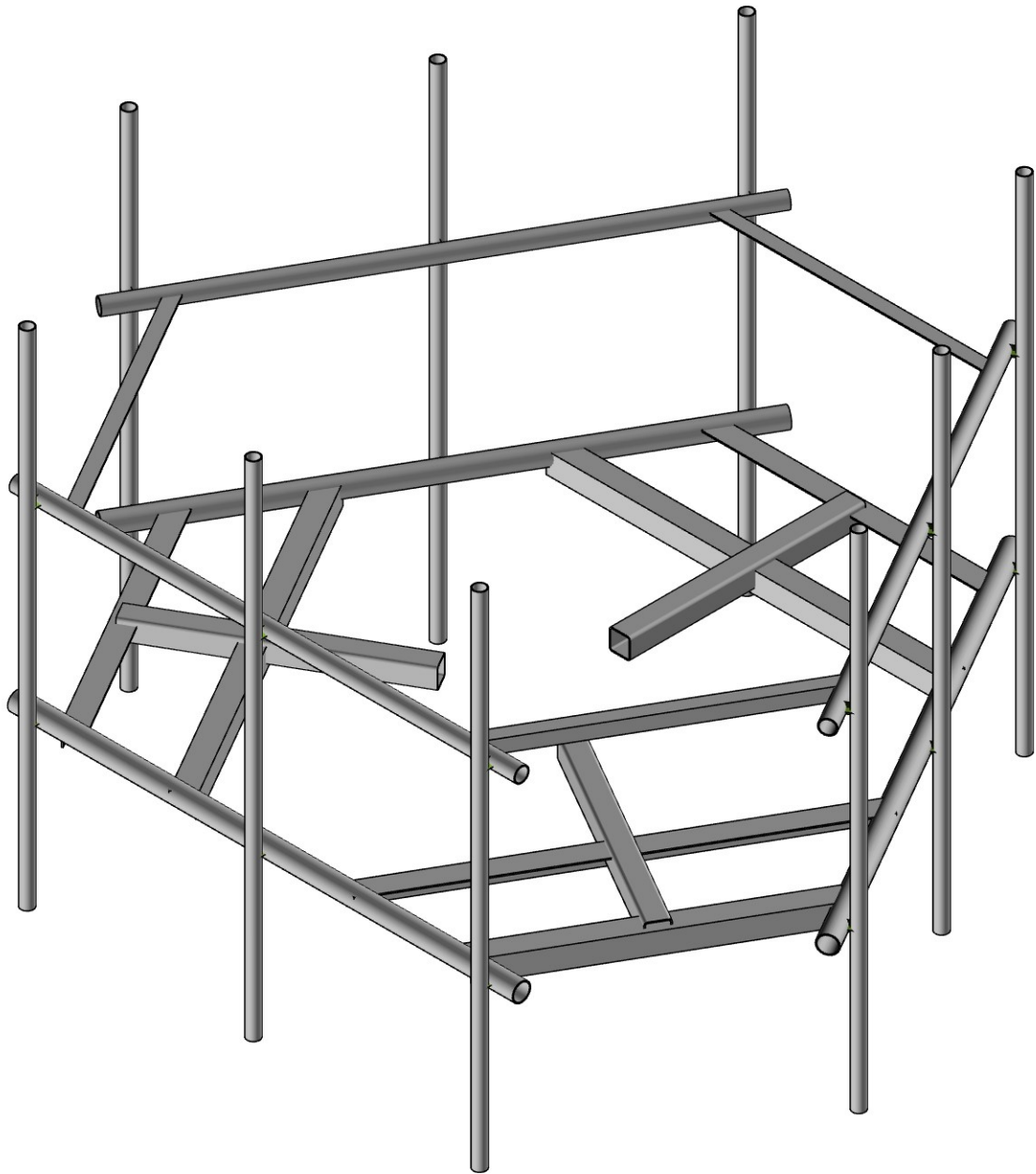
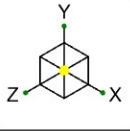
1197-F0001-B

BOBOS00005B

Wireframe1

Dec 13, 2022

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Infinigy Engineering

RF

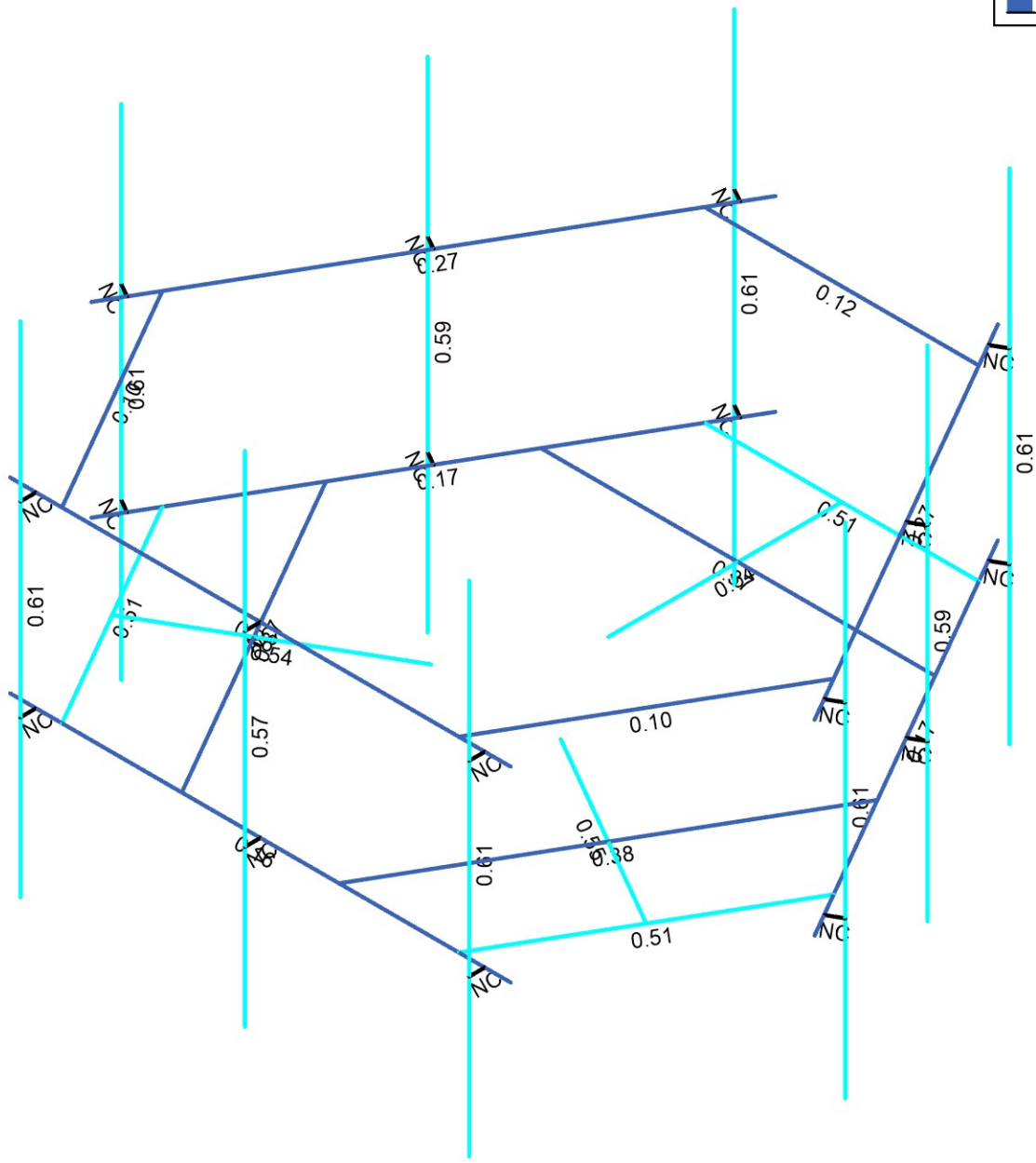
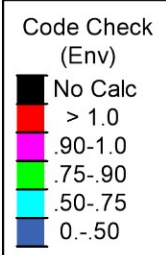
1197-F0001-B

BOBOS00005B

Render2

Dec 13, 2022

SNP8HR-396_loaded.r3d



Member Code Checks Displayed (Enveloped)		
Infinigy Engineering	BOBOS00005B	3
RF		Dec 13, 2022
1197-F0001-B		SNP8HR-396_loaded.r3d

Program Inputs

PROJECT INFORMATION		
Site Name:	less Solutions Old Lyme To	
Carrier:	DISH Wireless	
Engineer:	Robert Faber	

SITE INFORMATION		
Risk Category:	II	
Exposure Category:	C	
Topo Factor Procedure:	Method 1, Category 1	
Site Class:	D - Stiff Soil (Assumed)	
Ground Elevation:	79.06	ft *Rev H

MOUNT INFORMATION		
Mount Type:	Platform	
Num Sectors:	3	
Centerline AGL:	155.00	ft
Tower Height AGL:	175.00	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):	0.997	*Rev H Only
Rooftop Speed-Up (K_s):	1.000	*Rev H Only
Topographic Factor (K_{zt}):	1.000	
Height Esc. Fact. (K_{iz}):	1.167	
Gust Effect Factor (G_h):	1.000	
Shielding Factor (K_a):	0.900	
Velocity Pressure Co. (K_z):	1.388	(Mount Elev)

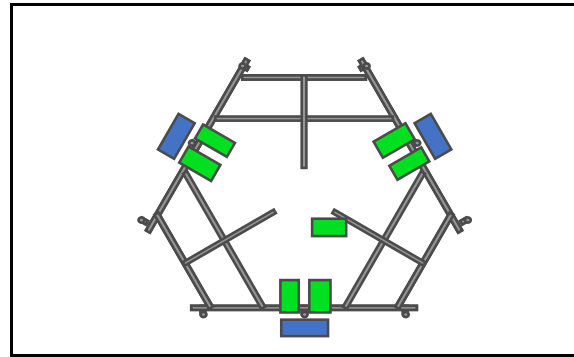
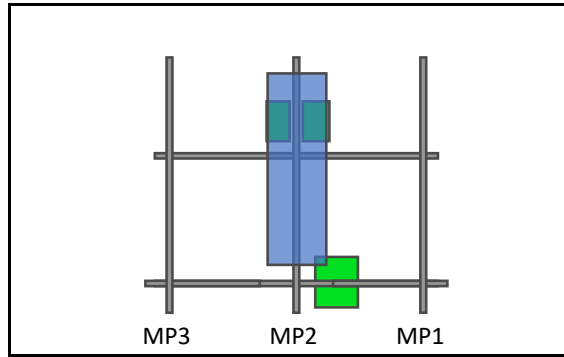
CODE STANDARDS		
Building Code:	2021 IBC	
TIA Standard:	TIA-222-H	
ASCE Standard:	ASCE 7-16	

WIND AND ICE DATA		
Ultimate Wind (V_{ult}):	126	mph
Design Wind (V):	N/A	mph
Ice Wind (V_{ice}):	50	mph
Base Ice Thickness (t_i):	1	in
Radial Ice Thickness (t_{iz}):	1.167	in
Flat Pressure:	106.872	psf
Round Pressure:	64.123	psf
Ice Wind Pressure:	10.098	psf

SEISMIC DATA		
Short-Period Accel. (S_s):	0.200	g
1-Second Accel. (S_1):	0.053	g
Short-Period Design (S_{DS}):	0.213	
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	
Seismic Importance (I_e):	1.000	
Seismic Response Co. (C_s):	0.107	
Total App. Weight:	232.710	lb
Total Shear Force (V_s):	24.822	lb
Hor. Seismic Load (E_h):	24.822	lb
Vert. Seismic Load (E_v):	9.929	lb *

*For reference only. Per TIA rev H section 16.7, E_v is not applicable to mounts

Program Inputs



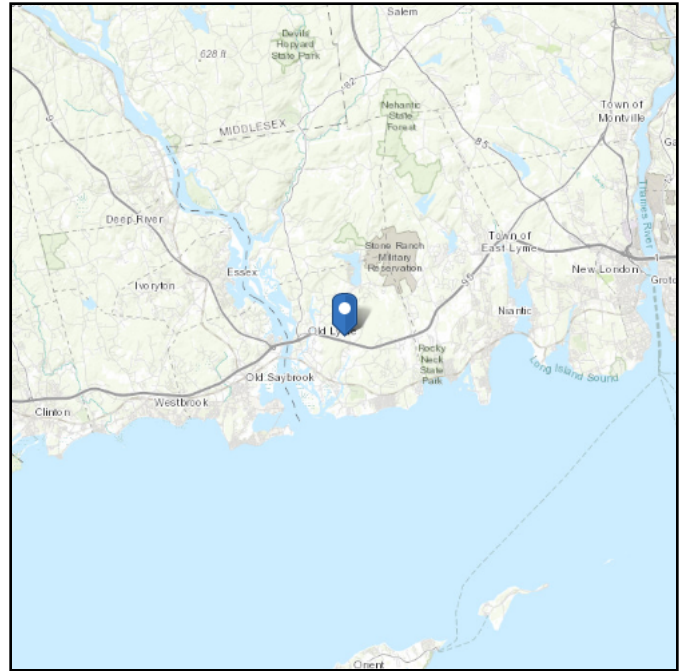
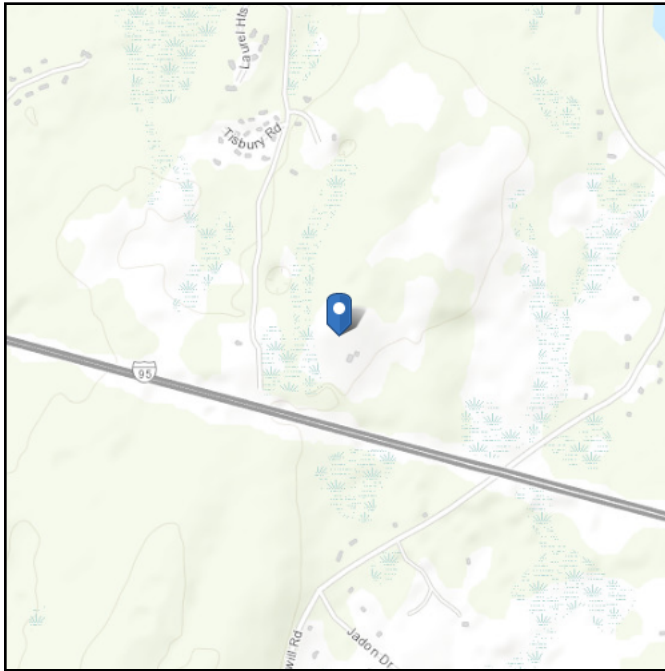
APPURTENANCE INFORMATION									
Appurtenance Name	Elevation	Qty./sector	Height (in)	Width (in)	Depth (in)	Weight (lbs)	EPA _N (ft ²)	EPA _T (ft ²)	Member (α sector)
JMA WIRELESS MX08FRO665-21	155.0	3	72.00	20.00	8.00	72.00	12.49	5.87	MP2
FUJITSU TA08025-B604	155.0	3	14.96	15.75	7.87	63.90	1.96	0.98	MP2
FUJITSU TA08025-B605	155.0	3	14.96	15.75	9.06	74.96	1.96	1.13	MP2
RAYCAP RDIDC-9181-PF-48	155.0	1	18.98	14.57	8.46	21.85	2.30	1.34	S1

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: 79.06 ft (NAVD 88)
Latitude: 41.32215
Longitude: -72.30747



Wind

Results:

Wind Speed	126 Vmph
10-year MRI	76 Vmph
25-year MRI	86 Vmph
50-year MRI	97 Vmph
100-year MRI	103 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: Fri Mar 18 2022

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

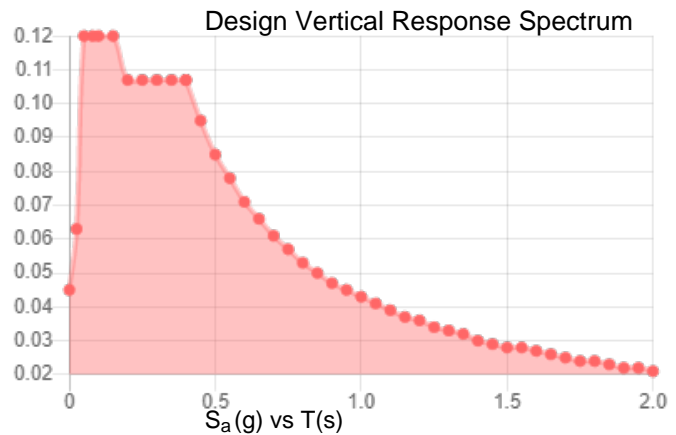
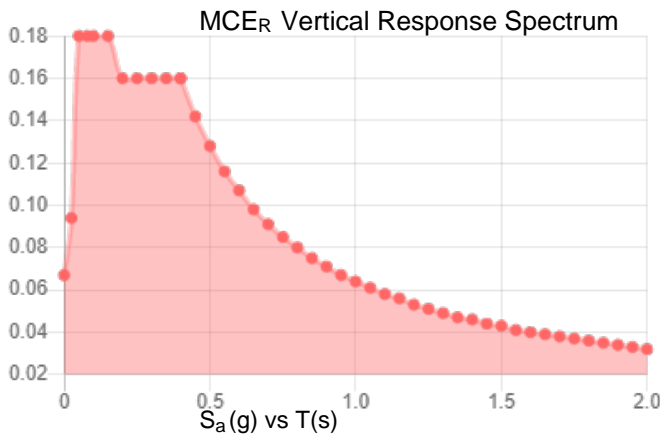
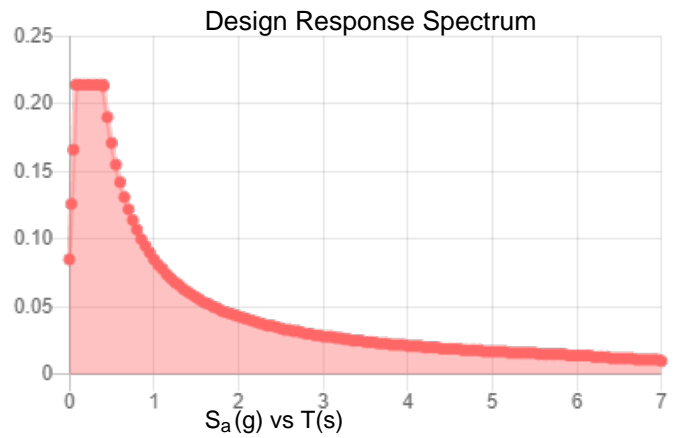
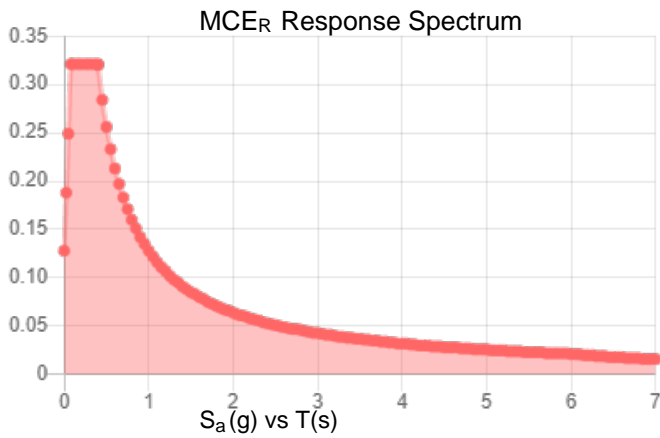
Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

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

Results:

S_s :	0.2	S_{D1} :	0.085
S_1 :	0.053	T_L :	6
F_a :	1.6	PGA :	0.111
F_v :	2.4	PGA _M :	0.176
S_{MS} :	0.321	F_{PGA} :	1.577
S_{M1} :	0.128	I_e :	1
S_{DS} :	0.214	C_v :	0.701

Seismic Design Category B



Data Accessed: Fri Mar 18 2022

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: Fri Mar 18 2022

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.

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

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INFINIGY⁸

Bolt Calculation Tool, V1.6.4

PROJECT DATA	
Site Name:	Wireless Solutions Old Lyme Tow
Site Number:	BOBOS00005B
Connection Description:	Platform to Collar

ENVELOPE BOLT LOADS		
(LC9 S1) Bolt Tension:	7010.21	lbs
(LC7 S1) Bolt Shear:	1648.01	lbs

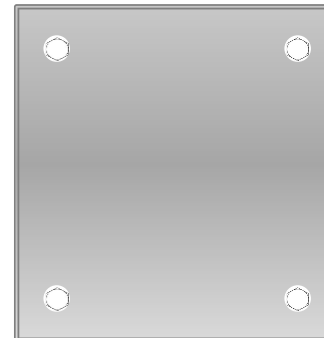
MAX BOLT USAGE LOADS ¹		
Bolt Tension:	7010.21	lbs
Bolt Shear:	804.84	lbs

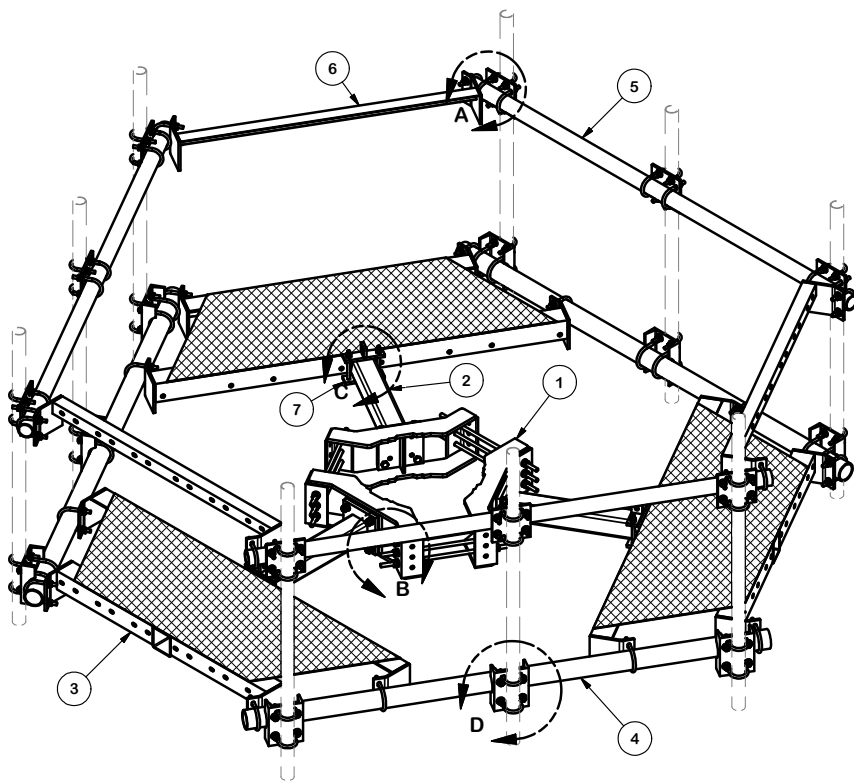
BOLT PROPERTIES		
Bolt Type:	Bolt	-
Bolt Diameter:	0.625	in
Bolt Grade:	A325	-
# of Bolts:	4	-
Threads Excluded?	No	-

¹ Max bolt usage loads correspond to Load combination #9 on member S1 in RISA-3D, which causes the maximum demand on the bolts.

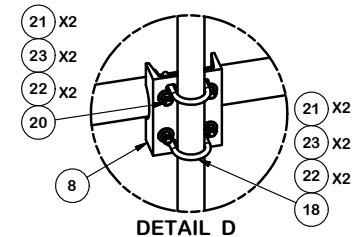
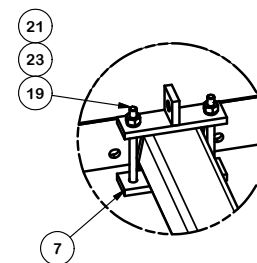
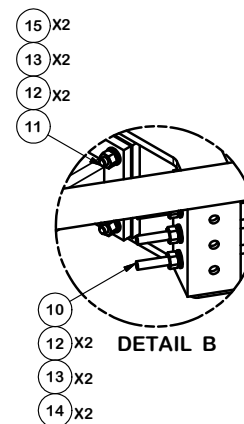
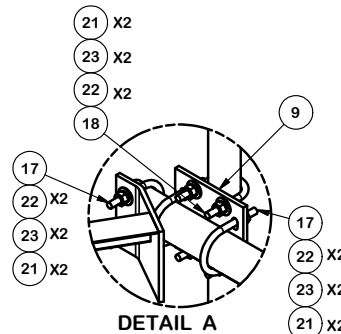
Member Information
I nodes of S1, S3, S2,

BOLT CHECK		
Tensile Strength	20340.15	
Shear Strength	13805.83	
Max Tensile Usage	34.5%	
Max Shear Usage	11.9%	
Interaction Check (Max Usage)	0.12	≤1.05
Result	Pass	





PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	3	X-LWRM	RING MOUNT WELDMENT		68.81	206.42
2	3	X-SNP-ST8	SNB8 TELESCOPING ARM FOR GRATING		60.39	181.16
3	3	X-SNPC	CORNER GRATING WELDMENT		194.33	582.99
4	3	P396	3" SCH. 40 PIPE (3.5" O.D. x 0.216" WALL) A500	96.000 in	60.75	182.25
5	3	P3096	2-7/8" OD X 96" Sch 40 Galvanized Pipe		46.45	139.36
6	3	X-SNP-HRA	CORNER BRACKET FOR SNPX PLATFORMS		25.95	77.86
7	3	X-SNPP1G	CLAMP PLATE	7.250 in	2.03	6.10
8	9	X-SP219	SMALL SUPPORT CROSS PLATE	8.250 in	8.61	77.50
9	9	SCX2	CROSSOVER PLATE	7.000 in	4.80	43.17
10	9	G58R-48	5/8" x 48" THREADED ROD (HDG.)		0.55	4.94
10	9	G58R-24	5/8" x 24" THREADED ROD (HDG.)		0.55	4.94
11	12	A58234	5/8" x 2-3/4" HDG A325 HEX BOLT	2.75	0.36	4.27
12	30	A58FW	5/8" HDG A325 FLATWASHER		0.03	1.02
13	30	G58LW	5/8" HDG LOCKWASHER		0.03	0.78
14	18	A58NUT	5/8" HDG A325 HEX NUT		0.13	2.34
15	12	G58NUT	5/8" HDG HEAVY 2H HEX NUT		0.13	1.56
16	12	X-UB1358	1/2" X 3-5/8" X 5-1/2" X 3" U-BOLT (HDG.)		0.73	8.78
17	24	X-UB1300	1/2" X 3" X 5" X 2" U-BOLT (HDG.)		0.73	17.56
18	36	X-UB1212	1/2" X 2-1/2" X 4-1/2" X 2" U-BOLT (HDG.)		0.73	26.34
19	6	G12065	1/2" x 6-1/2" HDG HEX BOLT GR5 FULL THREAD	7-1/2	0.41	2.46
20	18	X-UB1306	1/2" X 3-5/8" X 6" X 3" U-BOLT (HDG.)		0.73	13.17
21	186	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	13.32
22	180	G12FW	1/2" HDG USS FLATWASHER		0.03	6.13
23	186	G12LW	1/2" HDG LOCKWASHER		0.01	2.59
24	9	A	2" SCH. 40 PIPE (2.375" O.D. x 0.154" WALL) A500	B	C	D



2-3/8" O.D. VERTICAL MOUNTING PIPES					
ASSEMBLY NO.	PART NO. "A"	LENGTH "B"	UNIT WEIGHT "C"	NET WEIGHT "D"	TOTAL WEIGHT
SNP8HR-372	P272	6'-0"	23.07	207.63	1717.07
SNP8HR-384	P284	7'-0"	26.91	242.19	1751.63
SNP8HR-396	P296	8'-0"	30.76	276.84	1786.28
SNP8HR-3126	P2126	10'-6"	40.75	366.75	1876.19

TOLERANCE NOTES

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

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

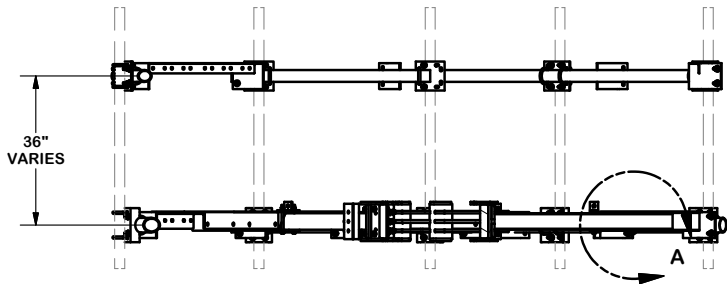
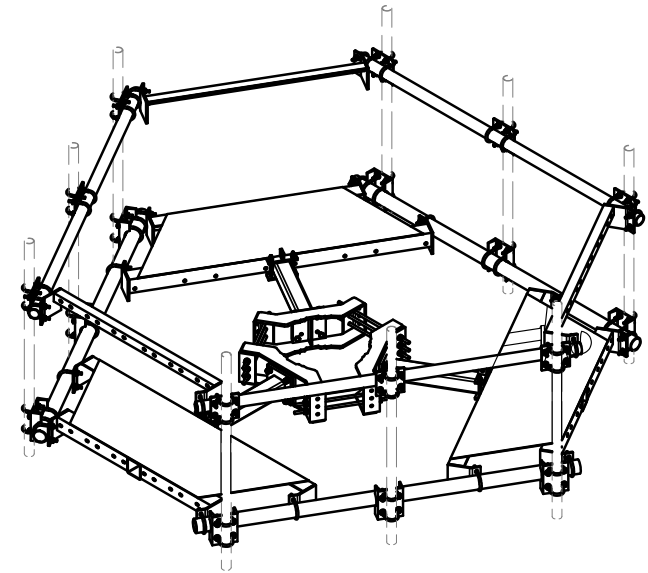
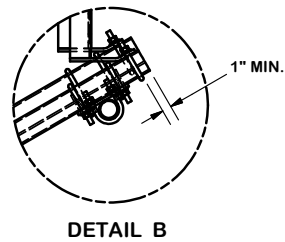
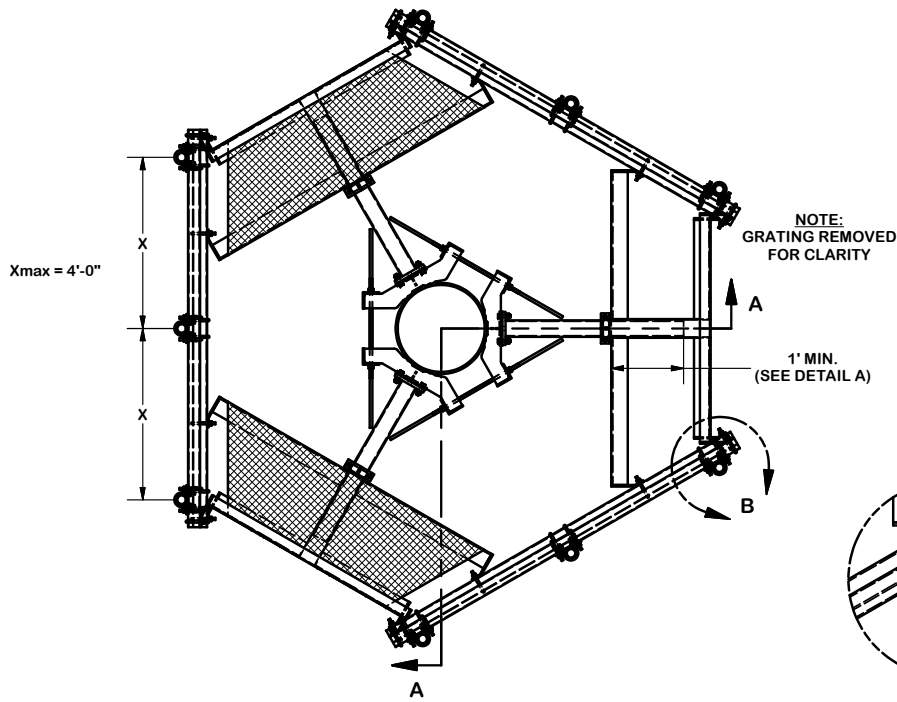
DESCRIPTION
**8' SNUB NOSE
 PLATFORM WITH
 HANDRAIL**

SITE PRO 1
 Engineering Support Team:
 1-888-753-7446

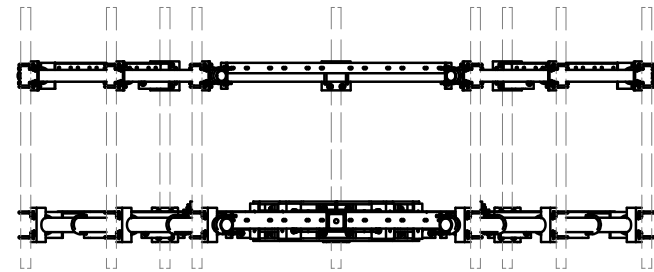
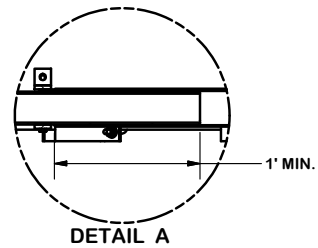
Locations:
 New York, NY
 Atlanta, GA
 Los Angeles, CA
 Plymouth, IN
 Salem, OR
 Dallas, TX

CPD NO.	DRAWN BY CEK 11/19/2014	ENG. APPROVAL
CLASS 81	SUB 02	DRAWING USAGE CUSTOMER
	CHECKED BY BMC 11/21/2014	

PART NO.	SEE ASSEMBLY NO.	PAGE 1 OF 2
DWG. NO.	SNP8HR-3XX	



SECTION A-A



TOLERANCE NOTES

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

PROPRIETARY NOTE:
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DESCRIPTION

8" SNUB NOSE
 PLATFORM WITH
 HANDRAIL

CPD NO.	DRAWN BY CEK 11/19/2014	ENG. APPROVAL
CLASS 81	SUB 02	DRAWING USAGE CUSTOMER
	CHECKED BY BMC 11/21/2014	



Engineering
 Support Team:
 1-888-753-7446

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

PART NO.	SEE ASSEMBLY NO.
DWG. NO.	SNP8HR-3XX

Exhibit F

Power Density/RF Emissions Report



Radio Frequency Emissions Analysis Report



Site ID: BOBOS00005B

Wireless Solutions Old Lyme Tower
62-1 Boggy Hole Road
Old Lyme, CT 06371

January 19, 2023

Fox Hill Telecom Project Number: 230080

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	7.51 %

January 19, 2023

Dish Wireless
5701 South Santa Fe Drive
Littleton, CO 80120

Emissions Analysis for Site: **BOBOS00005B – Wireless Solutions Old Lyme Tower**

Fox Hill Telecom, Inc (“Fox Hill”) was directed to analyze the proposed radio installation for Dish Wireless, LLC (Dish) facility located at **62-1 Boggy Hole Road, Old Lyme, CT**, for the purpose of determining whether the emissions from the Proposed Dish radio and antenna installation located on this property are within specified federal limits.

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

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

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

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



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

Additional details can be found in FCC OET 65.



CALCULATIONS

Calculations were performed for the proposed upgrades to the Dish Wireless antenna facility located at **62-1 Boggy Hole Road, Old Lyme, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65 for far field modeling calculations.

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

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

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

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

Equation 9 per FCC OET65 for Far Field Modeling

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

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

ERP = Effective Radiated Power from antenna (watts)

R = Distance from the antenna (meters)

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



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

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

Table 1: Channel Data Table



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

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	JMA MX08FRO665-21	155
B	1	JMA MX08FRO665-21	155
C	1	JMA MX08FRO665-21	155

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	n71 (600 MHz) / n70 (AWS-4 / 1995-2020) / n66 (AWS-4 / 2180-2200)	11.45 / 16.15 / 16.65	12	566	17,426.72	1.53
Sector A Composite MPE%							1.53
Antenna B1	JMA MX08FRO665-21	n71 (600 MHz) / n70 (AWS-4 / 1995-2020) / n66 (AWS-4 / 2180-2200)	11.45 / 16.15 / 16.65	12	566	17,426.72	1.53
Sector B Composite MPE%							1.53
Antenna C1	JMA MX08FRO665-21	n71 (600 MHz) / n70 (AWS-4 / 1995-2020) / n66 (AWS-4 / 2180-2200)	11.45 / 16.15 / 16.65	12	566	17,426.72	1.53
Sector C Composite MPE%							1.53

Table 3: Dish Emissions Levels

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

Site Composite MPE%	
Carrier	MPE%
Dish – Max Per Sector Value	1.53 %
T-Mobile	0.97 %
Verizon Wireless	1.71 %
AT&T	3.30 %
Site Total MPE %:	7.51 %

Table 4: All Carrier MPE Contributions

Dish Sector A Total:	1.53 %
Dish Sector B Total:	1.53 %
Dish Sector C Total:	1.53 %
Site Total:	7.51 %

Table 5: Site MPE Summary



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

Dish _ Frequency Band / Technology Max Power Values (Per Sector)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu\text{W}/\text{cm}^2$)	Frequency (MHz)	Allowabl e MPE ($\mu\text{W}/\text{cm}^2$)	Calculated % MPE
Dish n71 (600 MHz) 5G	4	858.77	155	4.04	n71 (600 MHz)	400	1.01%
Dish n70 (AWS-4 / 1995-2020) 5G	4	1,648.39	155	2.60	n70 (AWS-4 / 1995-2020)	1000	0.26%
Dish n66 (AWS-4 / 2180-2200) 5G	4	1,849.52	155	2.60	n66 (AWS-4 / 2180-2200)	1000	0.26%
						Total:	1.53 %

Table 6: Dish Maximum Sector MPE Power Values



Summary

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

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

Dish Sector	Power Density Value (%)
Sector A:	1.53 %
Sector B:	1.53 %
Sector C:	1.53 %
Dish Maximum Total (per sector):	1.53 %
Site Total:	7.51 %
Site Compliance Status:	COMPLIANT

The anticipated composite emissions value for this site, assuming all carriers present, is **7.51 %** of the allowable FCC established general population limit sampled at the ground level. This is based upon the far field calculations performed for all carriers identified in this report.

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

Scott Heffernan
Principal RF Engineer
Fox Hill Telecom, Inc
Worcester, MA 01609
(978)660-3998

Exhibit G

Letter of Authorization

DISH SITE ID: _____
TOWER OWNER SITE #: _____

OWNER
<u>WiVeless SOLUTIONS, LLC</u>
OWNER NAME
<u>P.O. BOX 374</u>
STREET ADDRESS
<u>UNCASVILLE, CT 06382</u>
CITY, STATE, ZIP CODE

TOWER
<u>72 BOBBY HOLI RD.</u>
STREET ADDRESS
<u>010 LYNN, CT 06321</u>
CITY, STATE, ZIP CODE
LATITUDE & LONGITUDE

National Environmental Policy Act/National Historic Preservation Act

1. Tower construction or redevelopment was completed:
_____ on or before March 16, 2001 or after March 16, 2001
2. Owner states to the best of his knowledge the above-referenced Tower has not been determined by the FCC to have an effect on one or more historic properties, or such effect has been found to be not adverse through a no adverse effect finding, or if found to be adverse or potentially adverse, has been resolved, such as through a conditional no adverse effect determination, a memorandum of agreement, a programmatic agreement, or is otherwise in compliance with Section 106 of the National Historic Preservation Act ("Section 106") and Subpart B of 36 CFR Part 800;
3. Owner states to the best of his knowledge the above-referenced Tower is not the subject of a pending environmental review or related proceeding before the FCC involving compliance with Section 106 of the National Historic Preservation Act;
4. Owner has not received any written or electronic notification that the FCC is in receipt of a complaint from a member of the public, a State Historic Preservation Officer or the Council, that the proposed collocation has an adverse affect on one or more historic properties; and
5. If the Tower was constructed after March 16, 2001, the Section 106 review process for the Tower set forth in 36 CFR Part 800 and any associated environmental reviews required by the FCC have been completed.

The undersigned represents and warrants to DISH Wireless L.L.C. via signature below that the information contained herein is true and correct as of the date first set forth below, and DISH Wireless L.L.C. shall be entitled to rely upon the foregoing representation.

CERTIFIED BY TOWER OWNER:

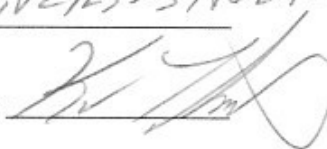

Company: WiVeless SOLUTIONS, LLC Name: KEN THOMAS
Title: ITS OWNER Phone: (860) 608-0202
Email Address: WiVelessSTRUCTURES (AS) @MAIL.COM
Authorized Signature:  Date: 3.15.2002

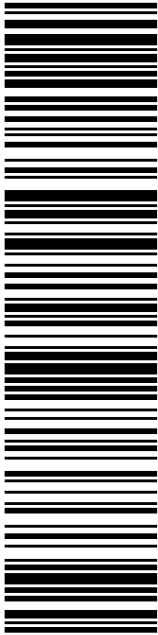
Exhibit H

Recipient Mailings



KEN THOMAS
WIRELESS SOLUTIONS, LLC
PO BOX 284
OLD LYME CT 06371-0284

USPS TRACKING #



9405 5036 9930 0469 3970 61

P

usps.com 9405 5036 9930 0469 3970 61 0096 5000 0010 6371
US POSTAGE
 Flat Rate Env
U.S. POSTAGE PAID
 Click-N-Ship®

01/31/2023 Mailed from 01566 986767270852643


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

Expected Delivery Date: 02/02/23
Ref#: DS-0005B
0000

PRIORITY MAIL®

B004

Electronic Rate Approved #038555749





Cut on dotted line.

Instructions

- Each Click-N-Ship® label is unique. Labels are to be used as printed and used only once. DO NOT PHOTO COPY OR ALTER LABEL.
- Place your label so it does not wrap around the edge of the package.
- 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.
- 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.
- Mail your package on the "Ship Date" you selected when creating this label.

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0469 3970 61

Trans. #: 581686480	Priority Mail® Postage: \$9.65
Print Date: 01/31/2023	Total: \$9.65
Ship Date: 01/31/2023	
Expected Delivery Date: 02/02/2023	

From: DEBORAH CHASE Ref#: DS-0005B
 NORTHEAST SITE SOLUTIONS
 STE 1
 420 MAIN ST
 STURBRIDGE MA 01566-1359


To: KEN THOMAS
 WIRELESS SOLUTIONS, LLC
 PO BOX 284
 OLD LYME CT 06371-0284

* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.



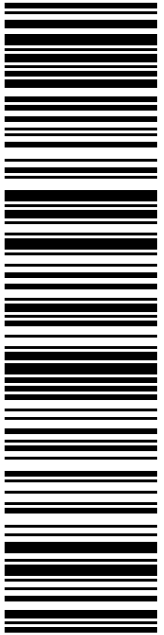
Thank you for shipping with the United States Postal Service!

Check the status of your shipment on the USPS Tracking® page at usps.com



ERIC KNAPP
LAND USE COORDINATOR
52 LYME ST
OLD LYME CT 06371-2331

USPS TRACKING #



9405 5036 9930 0469 3970 85

P

usps.com 9405 5036 9930 0469 3970 85 0096 5000 0010 6371
US POSTAGE \$9.65
 Flat Rate Env
 U.S. POSTAGE PAID
 Click-N-Ship®

01/31/2023 Mailed from 01566 986767270851097


PRIORITY MAIL®

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

Expected Delivery Date: 02/02/23
Ref#: DS-0005B
0000

R005

Electronic Rate Approved #038555749





Cut on dotted line.

Instructions

1. Each Click-N-Ship® label is unique. Labels are to be used as printed and used only once. DO NOT PHOTO COPY OR ALTER LABEL.
2. Place your label so it does not wrap around the edge of the package.
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 0469 3970 85

Trans. #: 581686480	Priority Mail® Postage: \$9.65
Print Date: 01/31/2023	Total: \$9.65
Ship Date: 01/31/2023	
Expected Delivery Date: 02/02/2023	

From: DEBORAH CHASE Ref#: DS-0005B
 NORTHEAST SITE SOLUTIONS
 STE 1
 420 MAIN ST
 STURBRIDGE MA 01566-1359


To: ERIC KNAPP
 LAND USE COORDINATOR
 52 LYME ST
 OLD LYME CT 06371-2331

* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.



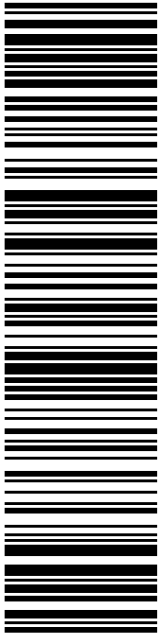
Thank you for shipping with the United States Postal Service!

Check the status of your shipment on the USPS Tracking® page at usps.com



MICHAEL SANDERS
72 BOGGY HOLE RD
OLD LYME CT 06371-1404

USPS TRACKING #



9405 5036 9930 0469 3970 92

P

usps.com 9405 5036 9930 0469 3970 92 0096 5000 0010 6371
US POSTAGE
 Flat Rate Env
U.S. POSTAGE PAID
 Click-N-Ship®

01/31/2023 Mailed from 01566 986767270849907


PRIORITY MAIL®

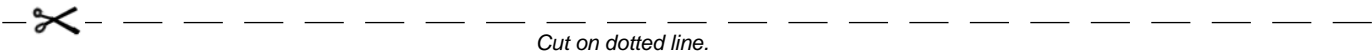
DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
STE 1
420 MAIN ST
STURBRIDGE MA 01566-1359

Expected Delivery Date: 02/02/23
Ref#: DS-0005B
0000

R006

Electronic Rate Approved #038555749





Cut on dotted line.

Instructions

1. Each Click-N-Ship® label is unique. Labels are to be used as printed and used only once. DO NOT PHOTO COPY OR ALTER LABEL.
2. Place your label so it does not wrap around the edge of the package.
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 0469 3970 92

Trans. #: 581686480	Priority Mail® Postage: \$9.65
Print Date: 01/31/2023	Total: \$9.65
Ship Date: 01/31/2023	
Expected Delivery Date: 02/02/2023	

From: DEBORAH CHASE Ref#: DS-0005B
 NORTHEAST SITE SOLUTIONS
 STE 1
 420 MAIN ST
 STURBRIDGE MA 01566-1359

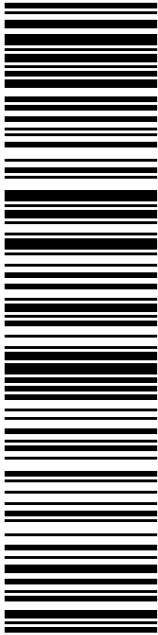
To: MICHAEL SANDERS
 72 BOGGY HOLE RD
 OLD LYME CT 06371-1404

* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.



MICHELE E HAYES
OFFICE MANAGER- TOWN OF OLD LYME
52 LYME ST
OLD LYME CT 06371-2331

USPS TRACKING #



9405 5036 9930 0469 3971 08

P

usps.com 9405 5036 9930 0469 3971 08 0096 5000 0010 6371
US POSTAGE
 Flat Rate Env
U.S. POSTAGE PAID
 Click-N-Ship®

01/31/2023 Mailed from 01566 986767270848926


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

PRIORITY MAIL®

Expected Delivery Date: 02/02/23
Ref#: DS-0005B
0000

R005

Electronic Rate Approved #038555749





Cut on dotted line.

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Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0469 3971 08

Trans. #: 581686480	Priority Mail® Postage: \$9.65
Print Date: 01/31/2023	Total: \$9.65
Ship Date: 01/31/2023	
Expected Delivery Date: 02/02/2023	

From: DEBORAH CHASE Ref#: DS-0005B
 NORTHEAST SITE SOLUTIONS
 STE 1
 420 MAIN ST
 STURBRIDGE MA 01566-1359

To: MICHELE E HAYES
 OFFICE MANAGER- TOWN OF OLD LYME
 52 LYME ST
 OLD LYME CT 06371-2331

* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.



Thank you for shipping with the United States Postal Service!

Check the status of your shipment on the USPS Tracking® page at usps.com

DISH - BOBOS 00005B



LINCOLN MALL
560 LINCOLN ST STE 8
WORCESTER, MA 01605-1925
(800)275-8777

02/01/2023

11:35 AM

Product	Qty	Unit Price	Price
Prepaid Mail	1		\$0.00
Old Lyme, CT 06371			
Weight: 0 lb 14.60 oz			
Acceptance Date:			
Wed 02/01/2023			
Tracking #:			
9405 5036 9930 0469 3970 61			
Prepaid Mail	1		\$0.00
Old Lyme, CT 06371			
Weight: 0 lb 14.70 oz			
Acceptance Date:			
Wed 02/01/2023			
Tracking #:			
9405 5036 9930 0469 3971 08			
Prepaid Mail	1		\$0.00
Old Lyme, CT 06371			
Weight: 0 lb 11.90 oz			
Acceptance Date:			
Wed 02/01/2023			
Tracking #:			
9405 5036 9930 0469 3970 85			
Prepaid Mail	1		\$0.00
Old Lyme, CT 06371			
Weight: 0 lb 15.10 oz			
Acceptance Date:			
Wed 02/01/2023			
Tracking #:			
9405 5036 9930 0469 3970 92			

Grand Total:

\$0.00