STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

IN RE:	:	
	:	
A PETITION FOR A DECLARATORY RULING ON THE NEED TO OBTAIN A SITING COUNCIL CERTIFICATE FOR THE PROPOSED MODIFICATION OF AN EXISTING WIRELESS TELECOMMUNICATIONS FACILITY AT 50 CLINTON AVE, NORWICH, CONNECTICUT	:	PETITION NO. ____
	:	April 26, 2023

PETITION FOR A DECLARATORY RULING:
INSTALLATION HAVING NO
SUBSTANTIAL ADVERSE ENVIRONMENTAL EFFECT

I. Introduction

Pursuant to Sections 16-50j-38 and 16-50j-39 of the Regulations of Connecticut State Agencies ("R.C.S.A."), Dish Wireless LLC ("Dish") hereby petitions the Connecticut Siting Council (the "Council") for a declaratory ruling ("Petition") that no Certificate of Environmental Compatibility and Public Need ("Certificate") is required under Section 16-50k(a) of the Connecticut General Statutes ("C.G.S.") for the modification of an existing wireless telecommunications facility at 50 Clinton Ave, Norwich, Connecticut (the "Existing Facility").

II. Existing Facility

The Existing Facility is located on an approximately 5.36-acre parcel owned by The City of Norwich, the tower is owned by Crown Castle USA Inc. The Facility consists of a 150-foot monopole tower. **Attachment 1** contains the owner's authorization permitting Dish to file this Petition. The Facility was originally approved for use by the City of Norwich, City Plan Commission on August 17, 2000, Special Permit #SP-00-9 as documented in **Attachment 2**.

III. Dish Facility

Dish's proposed modification to its facility is illustrated on the plans submitted as **Attachment 3**. Dish proposes to expand the existing 180sqft compound by an additional 15.6-feet x12.10-feet (180sqft) to accommodate their 5'x7' steel platform that will house their proposed ground equipment. The proposed new fence will match the existing compound fence. No Generator or backup power is proposed at this time. Installation of Dish's facility will take approximately two (2) weeks to complete. Construction will occur during normal business hours, or as allowed by the tower and/or property owner.

Dish Planned Installation:

Install New Tower Equipment:

(3) JMA-MX08FR0665-21 (600/1900 MHz 5G capable) antenna @ 106ft RAD
(3) Fujitsu TA08025-B604
(3) Fujitsu TA08025-B605
(1) Raycap
(1) Hybrid line
(1) Commscope MC-PK8-DSH Mount

Installation of Dish's facility will cost approximately $48,000

Dish has confirmed that the Modified Facility is capable of supporting the additional antennas and other changes to the tower mounted equipment as documented in the Structural Analysis Report annexed hereto as **Attachment 4.**

IV. The Proposed Modification Will Not Have A Substantial Adverse Environmental Effect

1. Physical Environmental Effects

The modification of Dish's Facility will not involve a significant alteration to the physical and environmental characteristics of the Property. No native trees will need to be removed and no on-site or off-site wetlands or watercourses will be impacted by the proposed facility expansion.

2. Visual Effects

There will be no visual impact made to the existing tower. Dish's equipment will be installed at the 106-foot level of the 150-foot monopole which will have a minimal visual impact when viewed from the public right-of-way or adjacent private properties.

3. FCC Compliance

Radio frequency ("RF") emissions resulting from Dish's proposed modification of the Existing Facility will be well below the standards adopted by the Federal Communications Commission ("FCC"). Included in **Attachment 6** is a Radio Frequency Emissions Analysis Report prepared by EBI Consulting. This report confirms that the modified facility will operate well within the RF emission standards established by the FCC.

V. Notice to the Municipality, Property Owner and Abutting Landowners

On April 26, 2023, a copy of this Petition was sent to Norwich Mayor Peter Albert Nystrom and Dan Daniska, City Planner / Wetlands Agent. A notice of Dish's intent to file this Petition was also sent to the owners of land that may be considered to abut the Property. Included in **Attachment 7** is a sample abutter's letter and the list of those abutting landowners who were sent notice.

VI. Conclusion

Based on the information provided above, the Petitioners respectfully requests that the Council issue a determination in the form of a declaratory ruling that the new facility compound at the Property will not have a substantial adverse environmental effect and does not require the issuance of a Certificate of Environmental Compatibility and Public Need pursuant to § 16-50k of the General Statutes.

Respectfully submitted,

Denise Sabo
Northeast Site Solutions- Agent for Crown Castle USA Inc. o/b/o Dish Wireless
(860) 209-4690
denise@northeastsitesolutions.com

Attachments

Cc: Mayor Peter Albert Nystrom
Norwich City Hall
100 Broadway
Norwich, CT 06360

Dan Daniska, City Planner / Wetlands Agent
City of Norwich
23 Union St.
Norwich, CT 06360

ATTACHMENT 1

4545 E River Rd, Suite 320
West Henrietta, NY 14586

Phone: (585) 445-5896
Fax: (724) 416-4461
www.crowncastle.com

Crown Castle Letter of Authorization

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

Re: Tower Share Application
Crown Castle telecommunications site at:
50 CLINTON AVENUE, NORWICH, CT 06360

T-MOBILE USA TOWER LLC ("Crown Castle") hereby authorizes DISH Wireless LLC, including their Agent, to act as our Agent in the processing of all zoning applications, building permits and approvals through the CT - CONNECTICUT SITING COUNCIL for the existing wireless communications site described below:

Crown Site ID/Name: **826313/NORWICH**
Customer Site ID: **BOBOS00883A/**
Site Address: **50 Clinton Avenue, Norwich, CT 06360**

Crown Castle

By: _____ Date: 2/15/2023

Richard Zajac
Site Acquisition Specialist

ATTACHMENT 2

CTI-331

VOL 517 PAGE 050

ORIGINAL

Special Permit #SP-00-9

COMMISSION ON THE CITY PLAN
CITY OF NORWICH, CONNECTICUT

NOTICE OF SPECIAL PERMIT RECORDED
PURSUANT TO PUBLIC ACT NO. 75-317 - CONNECTICUT STATUTES

Record owner of property City of Norwich

Property recorded in Norwich Land Records Vol. 707 Page 248

Location of property 50 Clinton Avenue

DESCRIPTION: Special permit pursuant to Section 7.5 of the Zoning Regulations to construct a 150-foot monopole multi-carrier telecommunications facility and associated equipment.

Effective date of decision: Aug. 17, 2000

Peter W. Davis WS
Peter W. Davis
Planning Director

NOT TO BE FILED WITH
CITY CLERK BEFORE 9/2/00

RECEIVED FOR RECORD AT NORWICH, CONN.
ON 9-5-2000 AT 10:40 A.M.
Attest: Beverly C. Muldoon, Town Clerk

50 CLINTON AVE CELL

Location	50 CLINTON AVE CELL	**Mblu**	58/ 2/ 39/ CELL/
Acct#	0580020039	**Owner**	T-MOBILE USA TOWER LLC
Assessment	$660,500	**Appraisal**	$943,600
PID	112076	**Building Count**	1

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2021	$793,600	$150,000	$943,600
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2021	$555,500	$105,000	$660,500

Parcel Addreses

Additional Addresses
No Additional Addresses available for this parcel

Owner of Record

Owner T-MOBILE USA TOWER LLC
Address 12920 S.E. 38TH STREET
BELLEVUE, WA 98006

Sale Price $0
Certificate
Book & Page 2842/0299
Sale Date 07/29/2013
Instrument 06

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**
T-MOBILE USA TOWER LLC	$0		2842/0299	06	07/29/2013

Building Information

Building 1 : Section 1

Year Built:
Living Area: 0
Replacement Cost: $0
Building Percent Good:
Replacement Cost Less Depreciation: $0

Building Attributes	
Field	**Description**
Style	Vacant
Model	
Grade:	
Stories:	
Occupancy	
Exterior Wall 1	
Exterior Wall 2	
Roof Structure:	
Roof Cover	
Interior Wall 1	
Interior Wall 2	
Interior Flr 1	
Interior Flr 2	
Heat Fuel	
Heat Type:	
AC Type:	
Total Bedrooms:	
Total Bthrms:	
Total Half Baths:	
Total Xtra Fixtrs:	
Total Rooms:	
Bath Style:	
Kitchen Style:	
Num Kitchens	
Fireplace (s)	
Whirlpool	
FPLG Gas	
FPLW Wood	
FPO	
Usrfld 107	
park	
Fireplaces	

Building Photo

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

Building Layout

(ParcelSketch.ashx?pid=112076&bid=110629)

Building Sub-Areas (sq ft)	Legend
No Data for Building Sub-Areas	

Usrfld 108	
Usrfld 101	
Usrfld 102	
Usrfld 100	
Usrfld 300	
Usrfld 301	

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code	431V
Description	TEL REL TW M-00
Zone	GC
Neighborhood	
Alt Land Appr	No
Category	

Land Line Valuation

Size (Acres)	1
Frontage	
Depth	
Assessed Value	$105,000
Appraised Value	$150,000

Outbuildings

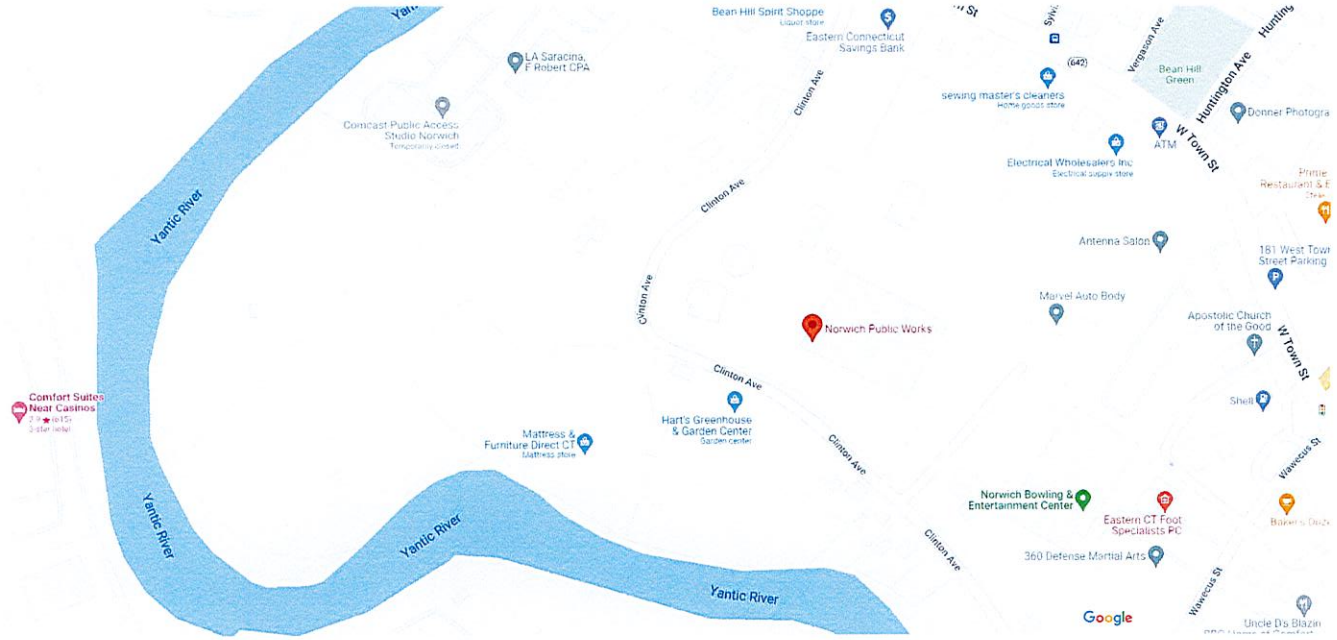
Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
TWR	CELL TOWER			150.00 UNITS	$90,000	1
MSC5	ARRAYS			3.00 UNIT	$702,000	1
SHD4	Shed Comm. Wd.			80.00 S.F.	$1,600	1

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2021	$793,600	$150,000	$943,600
2020	$793,600	$150,000	$943,600
2019	$793,600	$150,000	$943,600

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2021	$555,500	$105,000	$660,500
2020	$555,500	$105,000	$660,500
2019	$555,500	$105,000	$660,500

Google Maps Norwich Public Works



Norwich Public Works

4.0 ★★★★ 13 reviews

Public works department

Directions Save Nearby Send to your phone Share

50 Clinton Ave, Norwich, CT 06360

Open · Closes 12PM · Reopens 1PM

norwichct.org

(860) 823-3789

HV4Q+4P Norwich, Connecticut

Claim this business

Suggest an edit

Photos

ATTACHMENT 3

DISH Wireless L.L.C. SITE ID:

BOBOS00883A

DISH Wireless L.L.C. SITE ADDRESS:

50 CLINTON AVE
NORWICH, CT 06360

CONNECTICUT CODE OF COMPLIANCE

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

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

SHEET INDEX

SCOPE OF WORK

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

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

GROUND SCOPE OF WORK:
- INSTALL (1) PROPOSED METAL PLATFORM
- INSTALL (1) PROPOSED UNDERGROUND COAX CONDUIT
- INSTALL (1) PROPOSED WALL-MOUNTED COAX CONDUIT
- INSTALL (1) PROPOSED PPC CABINET
- INSTALL (1) PROPOSED EQUIPMENT CABINET
- INSTALL (1) PROPOSED POWER CONDUIT
- INSTALL (1) PROPOSED TELCO CONDUIT
- INSTALL (1) PROPOSED TELCO-FIBER BOX
- INSTALL (1) PROPOSED GPS UNIT
- INSTALL (1) PROPOSED FIBER NID (IF REQUIRED)
- INSTALL (1) PROPOSED SAFETY SWITCH (IF REQUIRED)
- INSTALL (1) PROPOSED METER SOCKET

SITE PHOTO

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

CALL 2 WORKING DAYS UTILITY NOTIFICATION PRIOR TO CONSTRUCTION

GENERAL NOTES

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

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

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

SITE INFORMATION

PROPERTY OWNER:	CITY OF NORWICH CT
ADDRESS:	50 CLINTON AVE NORWICH, CT 06360
TOWER TYPE:	MONOPOLE
TOWER CO SITE ID:	826313
TOWER APP NUMBER:	572907
COUNTY:	NEW LONDON
LATITUDE (NAD 83):	41° 33' 19.80" N 41.555500 N
LONGITUDE (NAD 83):	-72° 6' 37.08" W -72.110300 W
ZONING JURISDICTION:	NEW LONDON COUNTY
ZONING DISTRICT:	INDUSTRIAL
PARCEL NUMBER:	104-058-002-039.000-0000
OCCUPANCY GROUP:	U
CONSTRUCTION TYPE:	II-B
POWER COMPANY:	NORWICH PUBLICH UTILITIES
TELEPHONE COMPANY:	AT&T

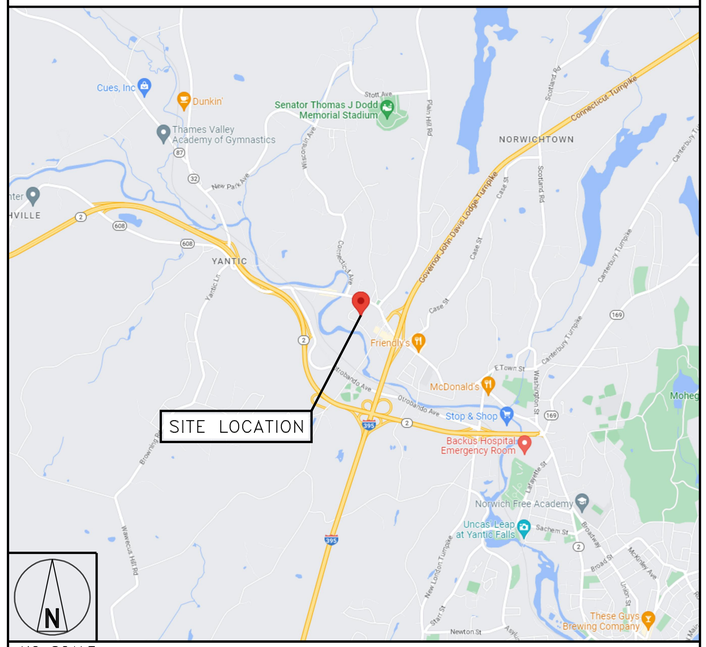
PROJECT DIRECTORY

APPLICANT:	DISH Wireless L.L.C. 5701 SOUTH SANTA FE DRIVE LITTLETON, CO 80120
TOWER OWNER:	CROWN CASTLE USA INC. 2000 CORPORATE DR. CANONSBURG, PA 15317 (877) 486-9377
SITE DESIGNER:	NB+C ENGINEERING SERVICES, LLC 6095 MARSHALEE DRIVE, SUITE 300 ELKRIDGE, MD 21075 (410) 712-7092
SITE ACQUISITION:	VICTOR NUNEZ VICTOR.NUNEZ@CROWNCASTLE.COM
CONSTRUCTION MANAGER:	SAJID SALEEM SAJID.SALEEM@DISH.COM
RF ENGINEER:	DIPESH PARIKH DIPESH.PARIKH@DISH.COM

DIRECTIONS

DIRECTIONS FROM BRADLEY INTERNATIONAL AIRPORT: HEAD TOWARD LIGHT LN ON SCHOEPHOESTER RD. TURN RIGHT ONTO TURNPIKE RD (CT-75 S) TOWARD I-91. CONTINUE ON POQUONOCK AVE (CT-75) TOWARD CT-20 E/I-91. TURN RIGHT AND TAKE RAMP ONTO CT-20 E TOWARD HARTFORD/I-91/SPRINGFIELD. TAKE THE EXIT TOWARD HARTFORD ONTO I-91 S (RICHARD P HORAN MEMORIAL HWY). KEEP RIGHT ONTO I-91 (RICHARD P HORAN MEMORIAL HWY). TAKE LEFT EXIT 30 TOWARD E. HARTFORD/CT-2/NEW LONDON ONTO I-84 E (BULKELEY BRG). TAKE EXIT 55 TOWARD NORWICH/NEW LONDON ONTO CT-2 E (VETERANS OF FOREIGN WARS MEM'L HWY). TAKE EXIT 27 TOWARD YANTIC. TURN LEFT ONTO YANTIC RD. CONTINUE ON W TOWN ST. TURN RIGHT ONTO CLINTON AVE. 50 CLINTON AVE IS ON YOUR RIGHT

VICINITY MAP



NO SCALE

dish wireless™

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

NB+C™ TOTALLY COMMITTED.
NB+C ENGINEERING SERVICES, LLC.
6095 MARSHALEE DRIVE, SUITE 300
ELKRIDGE, MD 21075
(410) 712-7092

STATE OF CONNECTICUT · KRUPAKARAN KOLANDAIVELU · LICENSED PROFESSIONAL ENGINEER · PEN.0028997

04/13/2023

KRUPAKARAN KOLANDAIVELU, P.E.
STATE OF CONNECTICUT
PROFESSIONAL ENGINEER
LICENSE #PEN.0028997

DRAWN BY:	CHECKED BY:	APPROVED BY:
AI	BRN	TA

RFDS REV #: ---

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
0	01/25/2023	ISSUED FOR CONSTRUCTION
1	02/21/2023	ISSUED FOR CONSTRUCTION
2	02/22/2023	ISSUED FOR CONSTRUCTION
3	03/09/2023	ISSUED FOR CONSTRUCTION
4	04/13/2023	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

826313

DISH Wireless L.L.C.
PROJECT INFORMATION

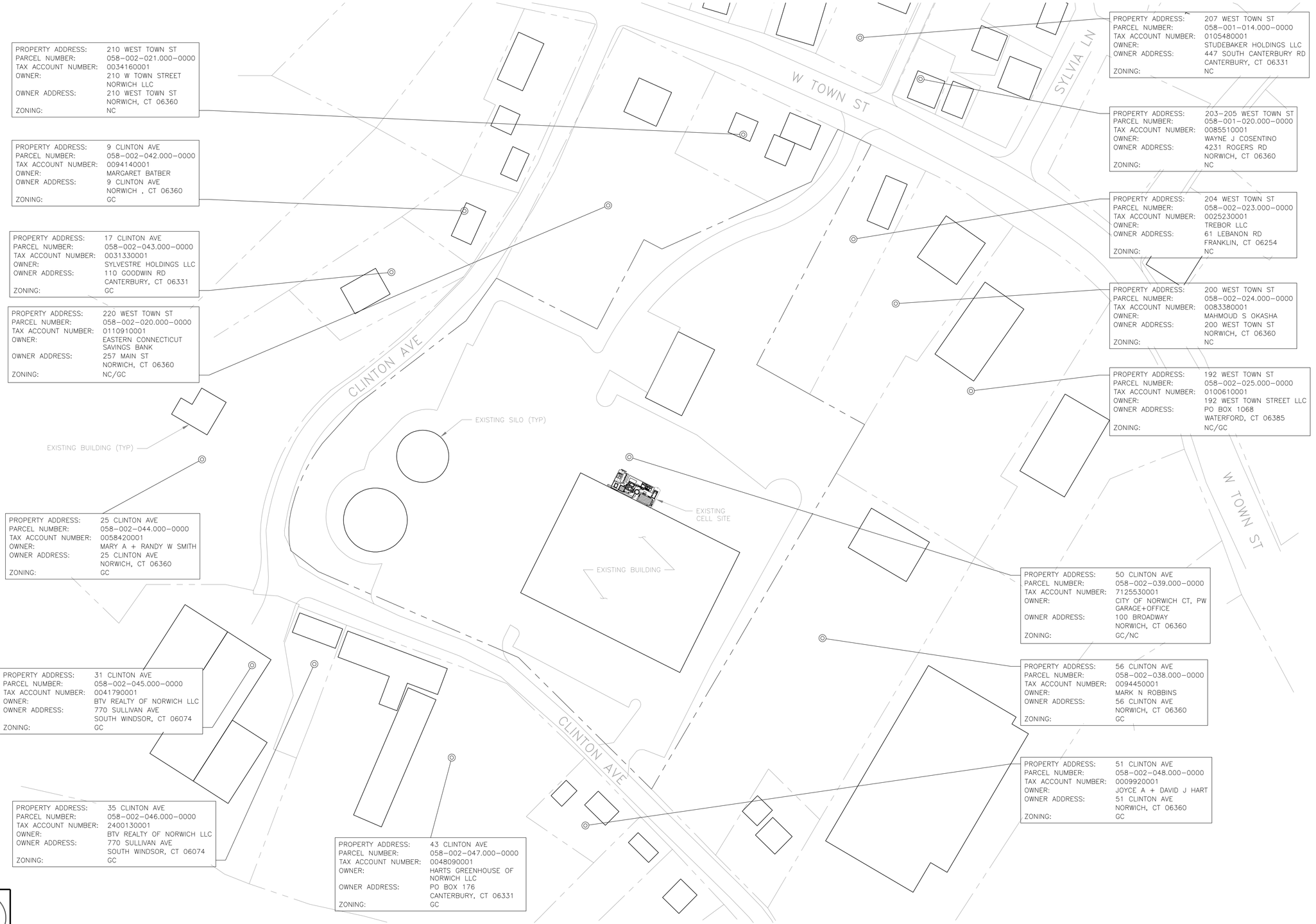
BOBOS00883A
50 CLINTON AVE
NORWICH, CT 06360

SHEET TITLE

TITLE SHEET

SHEET NUMBER

T-1



PROPERTY ADDRESS: 210 WEST TOWN ST
PARCEL NUMBER: 058-002-021.000-0000
TAX ACCOUNT NUMBER: 0034160001
OWNER: 210 W TOWN STREET NORWICH LLC
OWNER ADDRESS: 210 WEST TOWN ST NORWICH, CT 06360
ZONING: NC

PROPERTY ADDRESS: 9 CLINTON AVE
PARCEL NUMBER: 058-002-042.000-0000
TAX ACCOUNT NUMBER: 0094140001
OWNER: MARGARET BATBER
OWNER ADDRESS: 9 CLINTON AVE NORWICH , CT 06360
ZONING: GC

PROPERTY ADDRESS: 17 CLINTON AVE
PARCEL NUMBER: 058-002-043.000-0000
TAX ACCOUNT NUMBER: 0031330001
OWNER: SYLVESTRE HOLDINGS LLC
OWNER ADDRESS: 110 GOODWIN RD CANTERBURY, CT 06331
ZONING: GC

PROPERTY ADDRESS: 220 WEST TOWN ST
PARCEL NUMBER: 058-002-020.000-0000
TAX ACCOUNT NUMBER: 0110910001
OWNER: EASTERN CONNECTICUT SAVINGS BANK
OWNER ADDRESS: 257 MAIN ST NORWICH, CT 06360
ZONING: NC/GC

PROPERTY ADDRESS: 25 CLINTON AVE
PARCEL NUMBER: 058-002-044.000-0000
TAX ACCOUNT NUMBER: 0058420001
OWNER: MARY A + RANDY W SMITH
OWNER ADDRESS: 25 CLINTON AVE NORWICH, CT 06360
ZONING: GC

PROPERTY ADDRESS: 31 CLINTON AVE
PARCEL NUMBER: 058-002-045.000-0000
TAX ACCOUNT NUMBER: 0041790001
OWNER: BTV REALTY OF NORWICH LLC
OWNER ADDRESS: 770 SULLIVAN AVE SOUTH WINDSOR, CT 06074
ZONING: GC

PROPERTY ADDRESS: 35 CLINTON AVE
PARCEL NUMBER: 058-002-046.000-0000
TAX ACCOUNT NUMBER: 2400130001
OWNER: BTV REALTY OF NORWICH LLC
OWNER ADDRESS: 770 SULLIVAN AVE SOUTH WINDSOR, CT 06074
ZONING: GC

PROPERTY ADDRESS: 43 CLINTON AVE
PARCEL NUMBER: 058-002-047.000-0000
TAX ACCOUNT NUMBER: 0048090001
OWNER: HARTS GREENHOUSE OF NORWICH LLC
OWNER ADDRESS: PO BOX 176 CANTERBURY, CT 06331
ZONING: GC

PROPERTY ADDRESS: 207 WEST TOWN ST
PARCEL NUMBER: 058-001-014.000-0000
TAX ACCOUNT NUMBER: 0105480001
OWNER: STUDEBAKER HOLDINGS LLC
OWNER ADDRESS: 447 SOUTH CANTERBURY RD CANTERBURY, CT 06331
ZONING: NC

PROPERTY ADDRESS: 203-205 WEST TOWN ST
PARCEL NUMBER: 058-001-020.000-0000
TAX ACCOUNT NUMBER: 0085510001
OWNER: WAYNE J COSENTINO
OWNER ADDRESS: 4231 ROGERS RD NORWICH, CT 06360
ZONING: NC

PROPERTY ADDRESS: 204 WEST TOWN ST
PARCEL NUMBER: 058-002-023.000-0000
TAX ACCOUNT NUMBER: 0025230001
OWNER: TREBOR LLC
OWNER ADDRESS: 61 LEBANON RD FRANKLIN, CT 06254
ZONING: NC

PROPERTY ADDRESS: 200 WEST TOWN ST
PARCEL NUMBER: 058-002-024.000-0000
TAX ACCOUNT NUMBER: 0083380001
OWNER: MAHMOUD S OKASHA
OWNER ADDRESS: 200 WEST TOWN ST NORWICH, CT 06360
ZONING: NC

PROPERTY ADDRESS: 192 WEST TOWN ST
PARCEL NUMBER: 058-002-025.000-0000
TAX ACCOUNT NUMBER: 0100610001
OWNER: 192 WEST TOWN STREET LLC
OWNER ADDRESS: PO BOX 1068 WATERFORD, CT 06385
ZONING: NC/GC

PROPERTY ADDRESS: 50 CLINTON AVE
PARCEL NUMBER: 058-002-039.000-0000
TAX ACCOUNT NUMBER: 7125530001
OWNER: CITY OF NORWICH CT, PW GARAGE+OFFICE
OWNER ADDRESS: 100 BROADWAY NORWICH, CT 06360
ZONING: GC/NC

PROPERTY ADDRESS: 56 CLINTON AVE
PARCEL NUMBER: 058-002-038.000-0000
TAX ACCOUNT NUMBER: 0094450001
OWNER: MARK N ROBBINS
OWNER ADDRESS: 56 CLINTON AVE NORWICH, CT 06360
ZONING: GC

PROPERTY ADDRESS: 51 CLINTON AVE
PARCEL NUMBER: 058-002-048.000-0000
TAX ACCOUNT NUMBER: 0009920001
OWNER: JOYCE A + DAVID J HART
OWNER ADDRESS: 51 CLINTON AVE NORWICH, CT 06360
ZONING: GC

ABUTTER MAP

60' 30' 0 60' 120'
1"=60'

2

dish wireless.
5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

NB+C TOTALLY COMMITTED.
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RFDS REV #: ---

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A&E PROJECT NUMBER

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DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS00883A
50 CLINTON AVE
NORWICH, CT 06360

SHEET TITLE

ABUTTER MAP

SHEET NUMBER

Z-1

WETLANDS MAP

60' 30' 0 60' 120'
1"=60'

dish wireless.
5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

NB+C TOTALLY COMMITTED.
NB+C ENGINEERING SERVICES, LLC.
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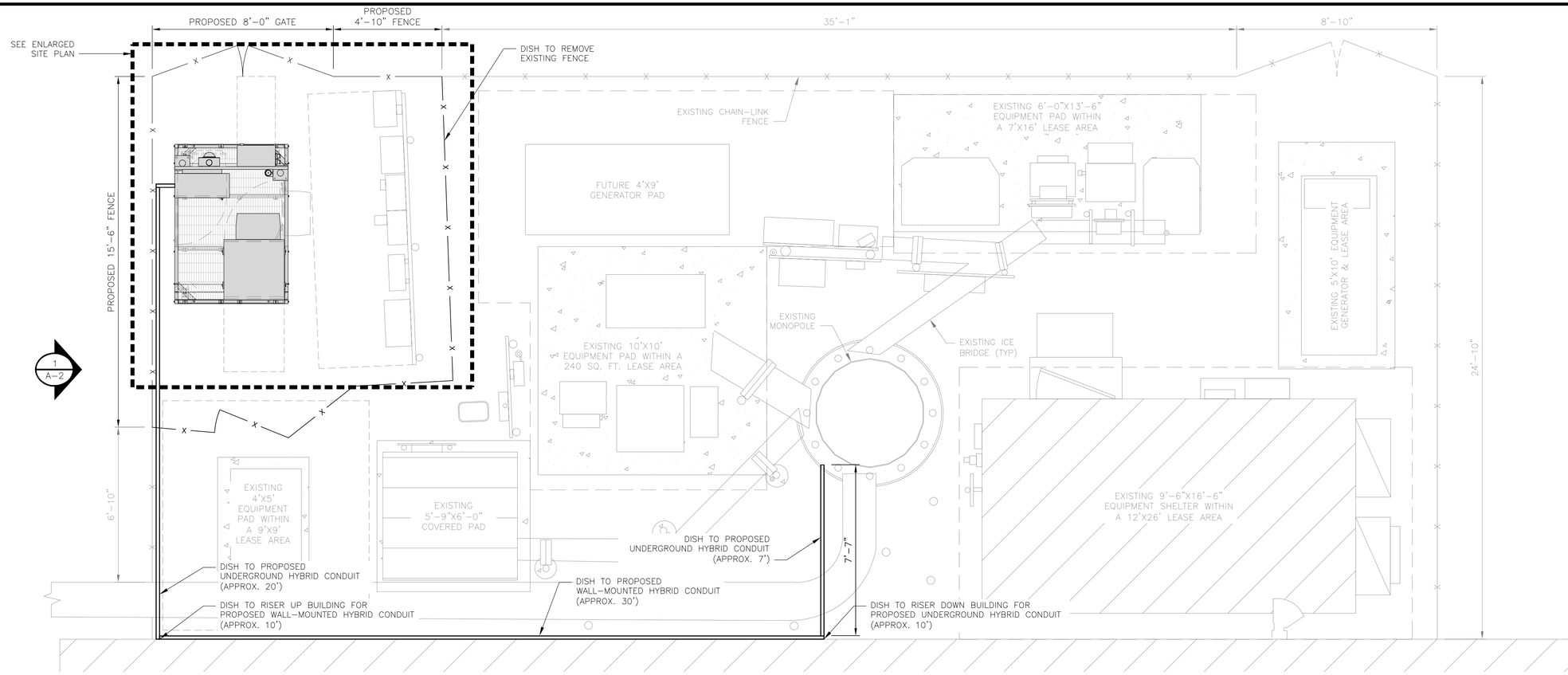
NORWICH, CT 06360

SHEET TITLE

WETLANDS MAP

SHEET NUMBER

Z-2



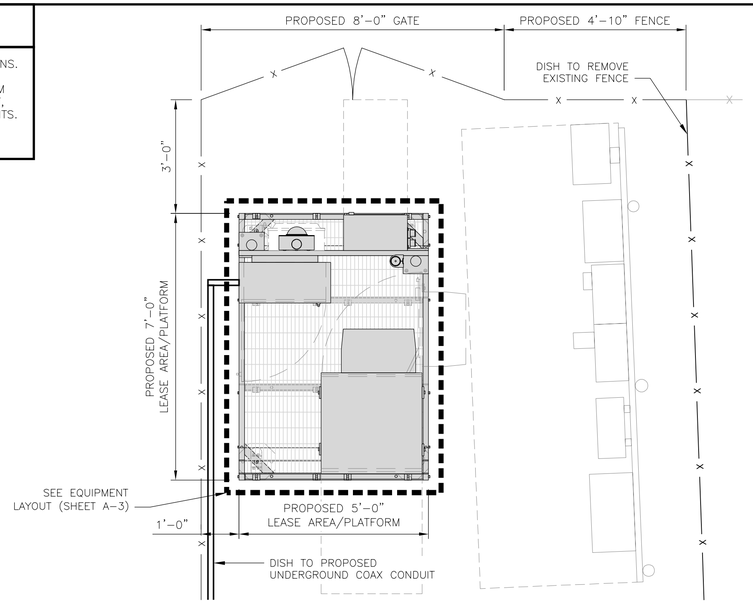
OVERALL SITE PLAN

12" 6" 0 1' 2' 3' 4' 5' 6' 7'
3/8"=1'-0"

1

NOTES

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



ENLARGED SITE PLAN

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

2

AERIAL VIEW

3

dish wireless.
5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

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6095 MARSHALEE DRIVE, SUITE 300
ELKRIDGE, MD 21075
(410) 712-7092

STATE OF CONNECTICUT · KRISHNAVELU KOLANDAIVELU · PEN.0028997 · LICENSED PROFESSIONAL ENGINEER

04/13/2023

KRUPAKARAN KOLANDAIVELU, P.E.
STATE OF CONNECTICUT
PROFESSIONAL ENGINEER
LICENSE #PEN.0028997

DRAWN BY:	CHECKED BY:	APPROVED BY:
AI	BRN	TA

RFDS REV #: ---

CONSTRUCTION DOCUMENTS

SUBMITTALS

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4	04/13/2023	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

826313

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS00883A
50 CLINTON AVE
NORWICH, CT 06360

SHEET TITLE

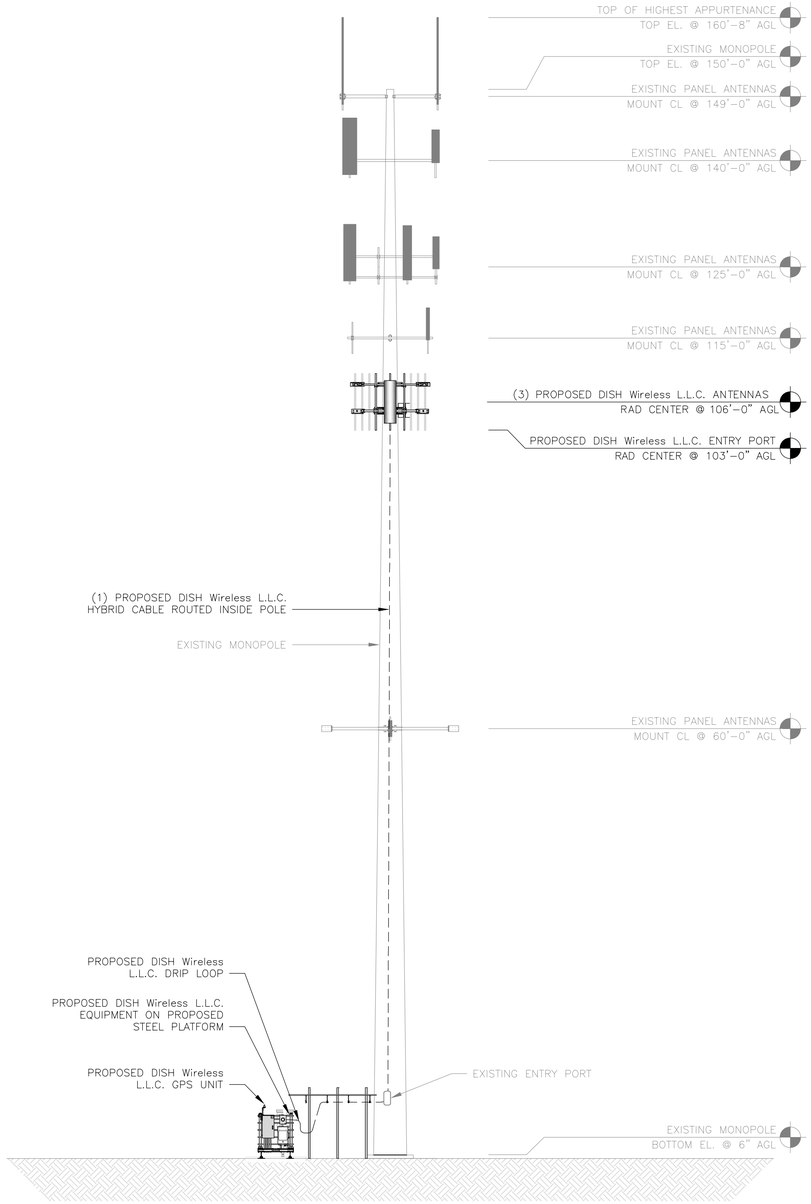
OVERALL AND ENLARGED SITE PLAN

SHEET NUMBER

A-1

NOTES

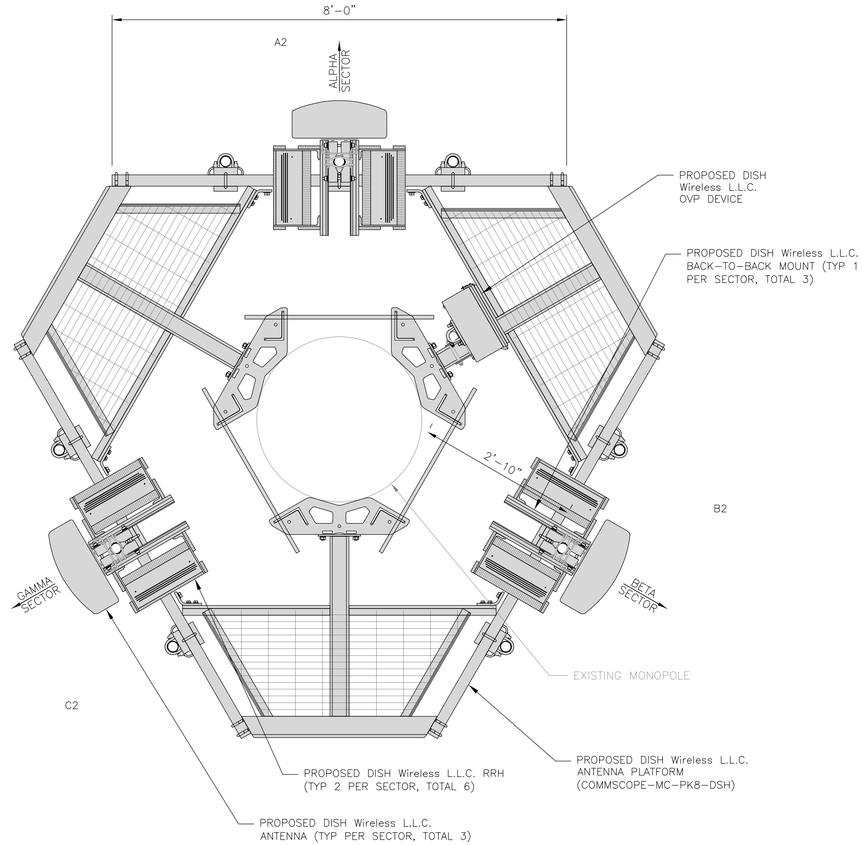
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNA AND MW DISH SPECIFICATIONS REFER TO ANTENNA SCHEDULE AND TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS
3. EXISTING EQUIPMENT AND FENCE OMITTED FOR CLARITY.



PROPOSED NORTH ELEVATION

12' 8' 4' 0 10' 20'
3/32"=1'-0"

1



ANTENNA LAYOUT

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

2

SECTOR POS.	ANTENNA					TRANSMISSION CABLE	RRH			OVP
	EXISTING OR PROPOSED	MANUFACTURER – MODEL NUMBER	TECH	AZIMUTH	RAD CENTER	FEED LINE TYPE AND LENGTH	MANUFACTURER – MODEL NUMBER	TECH	POS.	MANUFACTURER MODEL
A1	--	--	--	--	--	(1) HIGH-CAPACITY 1.60" DIA. HYBRID CABLE (200' LONG)	FUJITSU – TA08025-B604	5G	A2	RAYCAP – RDIDC-9181 -PF-48
A2	PROPOSED	JMA – MX08FR0665-21	5G	0°	106'-0"		FUJITSU – TA08025-B605	5G	A2	
A3	--	--	--	--	--		--	--	--	
B1	--	--	--	--	--	SHARED W/ALPHA	FUJITSU – TA08025-B604	5G	B2	SHARED W/ALPHA
B2	PROPOSED	JMA – MX08FR0665-21	5G	120°	106'-0"		FUJITSU – TA08025-B605	5G	B2	
B3	--	--	--	--	--		--	--	--	
C1	--	--	--	--	--	SHARED W/ALPHA	FUJITSU – TA08025-B604	5G	C2	SHARED W/ALPHA
C2	PROPOSED	JMA – MX08FR0665-21	5G	240°	106'-0"		FUJITSU – TA08025-B605	5G	C2	
C3	--	--	--	--	--		--	--	--	

NOTES

1. CONTRACTOR TO REFER TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS.
2. ANTENNA AND RRH MODELS MAY CHANGE DUE TO EQUIPMENT AVAILABILITY. ALL EQUIPMENT CHANGES MUST BE APPROVED AND REMAIN IN COMPLIANCE WITH THE PROPOSED DESIGN AND STRUCTURAL ANALYSES.

ANTENNA SCHEDULE

NO SCALE

3

dish wireless.

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(410) 712-7092

STATE OF CONNECTICUT
KRUPAKARAN KOLANDAIVELU
PEN.0028997
LICENSED PROFESSIONAL ENGINEER

04/13/2023

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LICENSE #PEN.0028997

DRAWN BY:	CHECKED BY:	APPROVED BY:
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RFDS REV #: ---

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A&E PROJECT NUMBER

826313

DISH Wireless L.L.C.
PROJECT INFORMATION

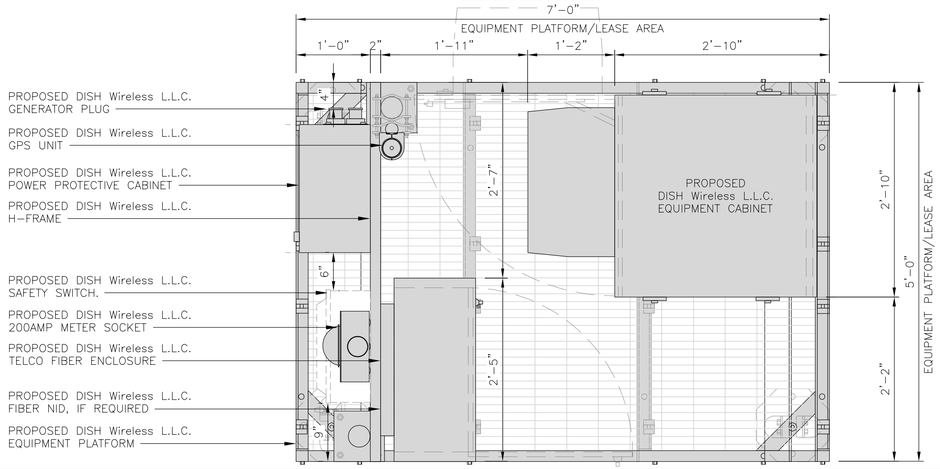
BOBOS00883A
50 CLINTON AVE
NORWICH, CT 06360

SHEET TITLE

ELEVATION, ANTENNA LAYOUT AND SCHEDULE

SHEET NUMBER

A-2



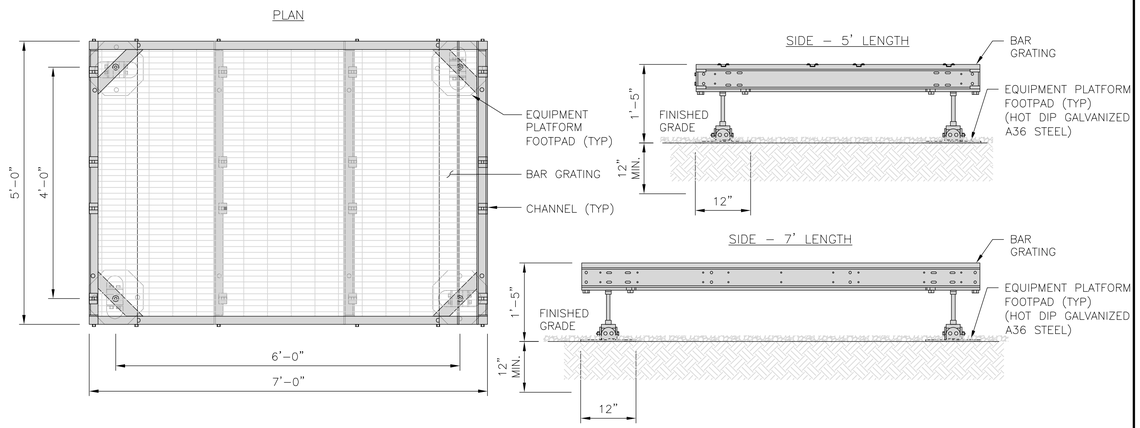
PLATFORM EQUIPMENT PLAN

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

1

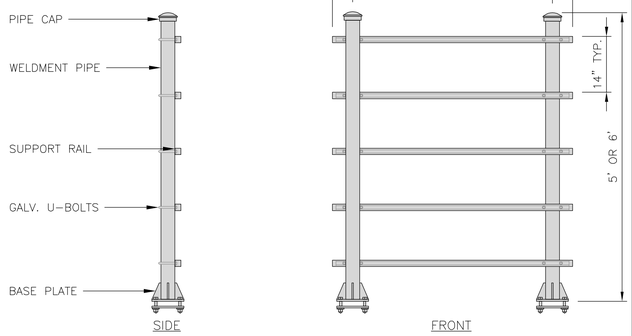
COMMSCOPE MTC4045LP 5X7 PLATFORM	
DIMENSIONS (HxWxD)	16"x84"x60"
TOTAL WEIGHT	423 LBS

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



PLATFORM DETAIL | NO SCALE | 2

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

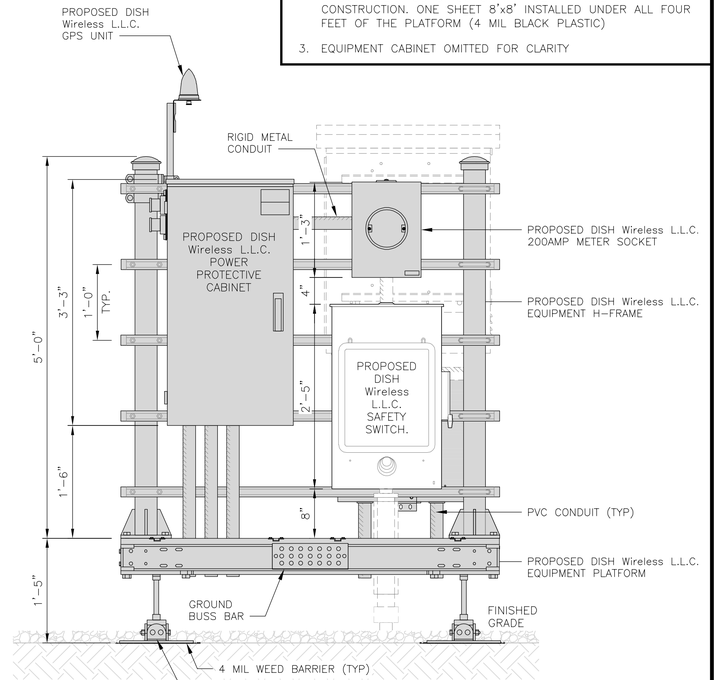


H-FRAME DETAIL | NO SCALE | 3

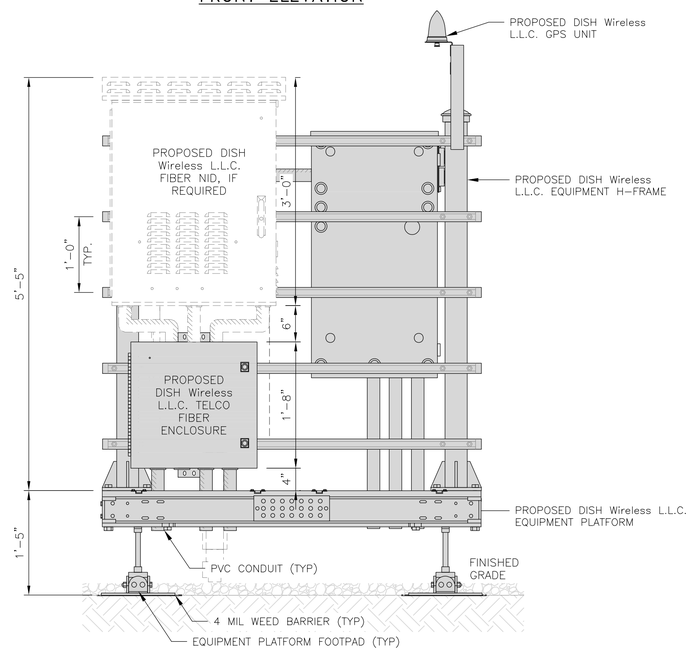
NOT USED | NO SCALE | 4

NOTES

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



FRONT ELEVATION



BACK ELEVATION

H-FRAME EQUIPMENT ELEVATION | 12" 9" 6" 3" 0 1' 2" 1"=1'-0" | 5

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STATE OF CONNECTICUT KRUPAKARAN KOLANDAIVELU REGISTERED PROFESSIONAL ENGINEER PEN.0028997 LICENSED

04/13/2023

KRUPAKARAN KOLANDAIVELU, P.E.
STATE OF CONNECTICUT
PROFESSIONAL ENGINEER
LICENSE #PEN.0028997

DRAWN BY:	CHECKED BY:	APPROVED BY:
AI	BRN	TA

RFDS REV #: ---

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A&E PROJECT NUMBER
826313

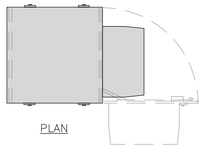
DISH Wireless L.L.C.
PROJECT INFORMATION
BOBOS00883A
50 CLINTON AVE
NORWICH, CT 06360

SHEET TITLE
EQUIPMENT PLATFORM AND H-FRAME DETAILS

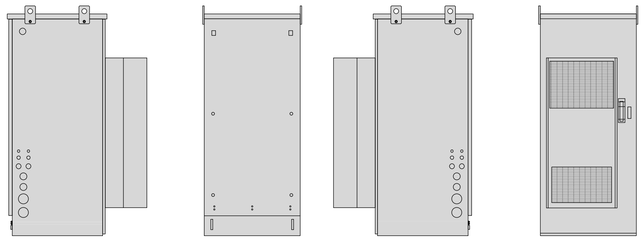
SHEET NUMBER
A-3

CHARLES INDUSTRY HEX CUBE–PM639155N4

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



PLAN



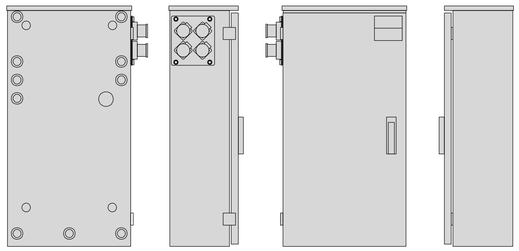
SIDE BACK SIDE FRONT

CABINET DETAIL | NO SCALE | 1

RAYCAP PPC RDIAC–2465–P–240–MTS

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

TOP

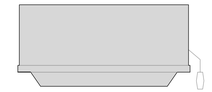


BACK SIDE FRONT SIDE

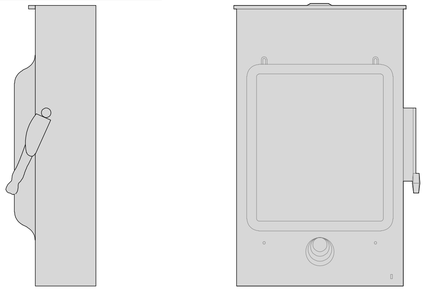
POWER PROTECTION CABINET (PPC) DETAIL | NO SCALE | 2

SQUARE D SAFETY SWITCHES D224NRB

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



TOP

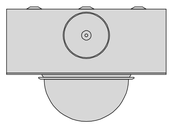


SIDE FRONT

SAFETY SWITCH DETAIL | NO SCALE | 3

EATON METER SOCKET UNRRS213BEUSE

DIMENSIONS (HxWxD)	16"x12"x6"
TYPE	RING
AMPERAGE RATING	200 CONT. AMP
WEIGHT	18 lbs



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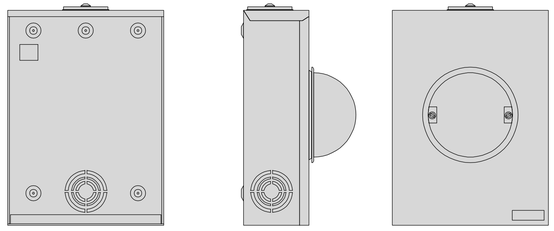
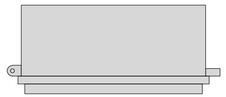


BACK SIDE FRONT

METER SOCKET DETAIL | NO SCALE | 4

CIENA 3931 FIBER NID ENCLOSURE

DIMENSIONS (HxWxD)	17"x16.8"x7"
WEIGHT	28.6 lbs



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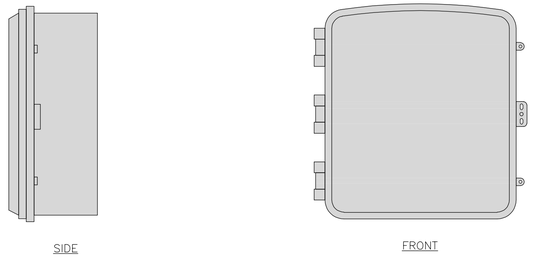
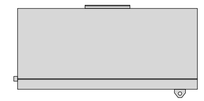


SIDE FRONT

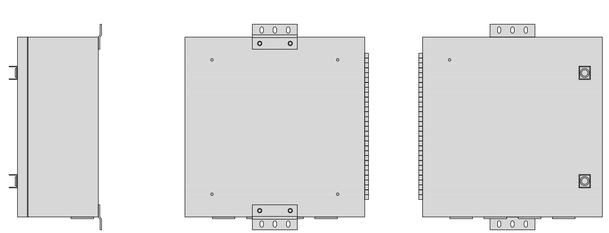
FIBER NID ENCLOSURE DETAIL | NO SCALE | 5

CHARLES CFIT–PF2020DSH1 FIBER TELCO ENCLOSURE

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

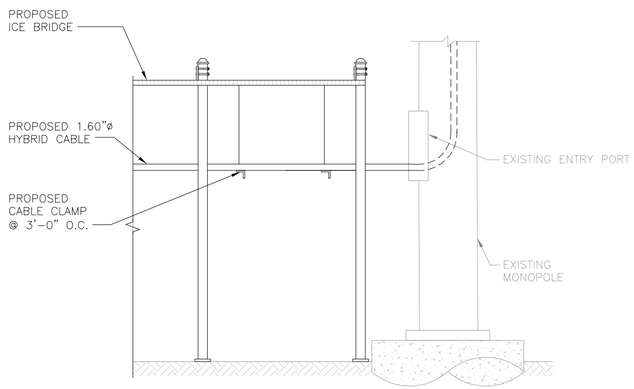


FRONT



SIDE BACK FRONT

FIBER TELCO ENCLOSURE DETAIL | NO SCALE | 6



HYBRID CABLE RUN | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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04/13/2023

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826313

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS00883A
50 CLINTON AVE
NORWICH, CT 06360

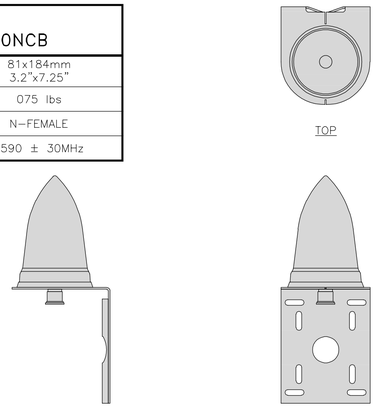
SHEET TITLE

EQUIPMENT DETAILS

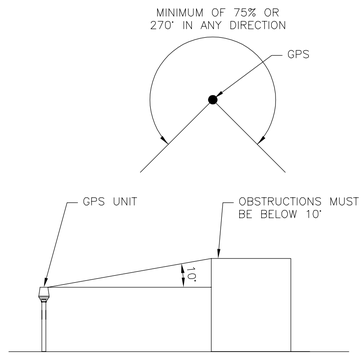
SHEET NUMBER

A-4

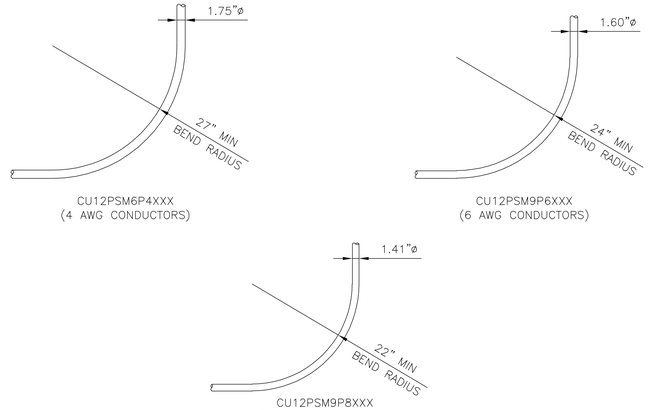
PCTEL GPSGL-TMG-SPI-40NCB	
DIMENSIONS (DIAxH) MM/INCH	81x184mm 3.2"x7.25"
WEIGHT W/ACCESSORIES	075 lbs
CONNECTOR	N-FEMALE
FREQUENCY RANGE	1590 ± 30MHz



GPS DETAIL | NO SCALE | 1



GPS MINIMUM SKY VIEW REQUIREMENTS | NO SCALE | 2



CABLES UNLIMITED HYBRID CABLE MINIMUM BEND RADIUSES | NO SCALE | 3

DESC	QTY	
SITE ID #:	BOBOS00883A	
TWR TYPE:	MONOPOLE	
HYBRID BEND RADIUS	30"	The preparer must determine the lengths below.
RAD CENTER (ft)	106.0	This is the RAD center for the antennas on towers. For a rooftop, this is the total length of all vertical sections of the hybrid.
ICE BRIDGE HEIGHT (ft)	0.0	This is the height of the bridge coverings.
ICE BRIDGE LENGTH (ft)	68.0	This is the length of the total ice bridge coverings, if more than one ice bridge is used or total horizontal lengths of hybrid if this is inside a building.
LENGTH ACROSS PLATFORM (ft)	1.0	This is the length from the cabinet to the first bend up the ice bridge or inside a radio room.
LENGTH FROM TOWER TOP TO OVP (ft)	1.0	This is the horizontal length from the tower to the OVP at the antenna level or the total horizontal lengths of hybrid on a building or large self supporting tower.
VERTICAL LENGTH OF HYBRID INTO TOWER TOP OVP (ft)	1.0	This is the vertical length of hybrid that comes out to the tower top OVP to the beginning of the first bend that is going into the monopole port.
	LENGTH (ft)	
Additional Excess Hybrid to be added (To be determined by preparer)	0	
Total Hybrid Length to Order (Rounded up to nearest whole number)	193	

HYBRID CABLE CALCULATOR | NO SCALE | 4

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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A&E PROJECT NUMBER

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DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS00883A
50 CLINTON AVE
NORWICH, CT 06360

SHEET TITLE

EQUIPMENT DETAILS

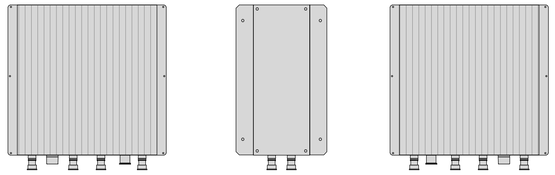
SHEET NUMBER

A-5

FUJITSU TRIPLE BAND TA08025-B605

DIMENSIONS (HxWxD)	15"x15"X8.9"
WEIGHT	61.3 lbs
CONNECTOR TYPE	4.3-10 RF CONNECTOR
POWER SUPPLY	DC -58~-36V

PLAN

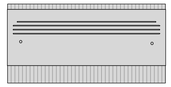


BACK SIDE FRONT

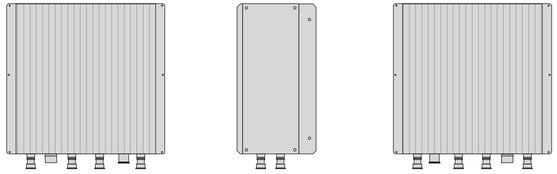
RRH DETAIL | NO SCALE | 1

FUJITSU DUAL BAND TA08025-B604

DIMENSIONS (HxWxD)	15"x16.5"x11"
WEIGHT	94.6 lbs
CONNECTOR TYPE	4.3-10 RF CONNECTOR
POWER SUPPLY	DC -58~-36V



PLAN



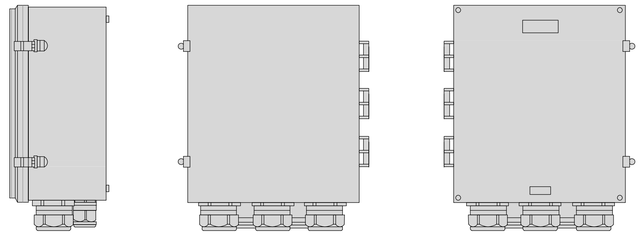
BACK SIDE FRONT

RRH DETAIL | NO SCALE | 2

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

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

PLAN

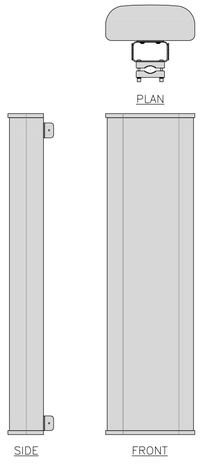


SIDE BACK FRONT

SURGE SUPPRESSION DETAIL (OVP) | NO SCALE | 3

JMA MX08FRO665-21

DIMENSIONS (HxWxD)	72"x20.0"x8.0"
RF PORTS, CONNECTOR TYPE	8 x 4.3-10 FEMALE
WEIGHT	64.5 lbs
WEIGHT WITH BRACKETS	82.5 lbs



PLAN

SIDE FRONT

ANTENNA DETAIL | NO SCALE | 4

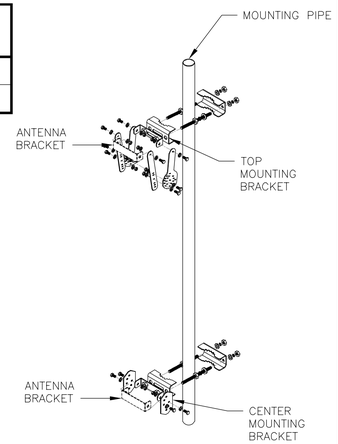
JMA ANTENNA MOUNT BRACKET #91900318

TOTAL WEIGHT (WITH BRACKETS)	18 lbs (8.18 Kg)
POLE DIAMETER RANGE	2.5" TO 4.5"

NOTE:
KIT #91900318: TOP AND BOTTOM BRACKETS FOR 4-,6-, AND 8-FOOT ANTENNAS

ANTENNA BRACKET NOT PART OF KIT

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

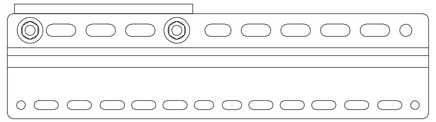


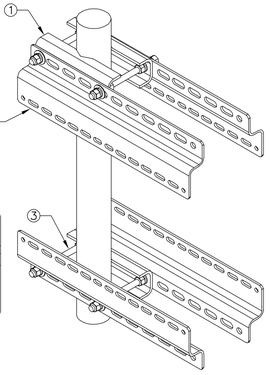
ANTENNA BRACKET DETAIL | NO SCALE | 5

SABRE DOUBLE Z-BRACKET C10123155

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

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



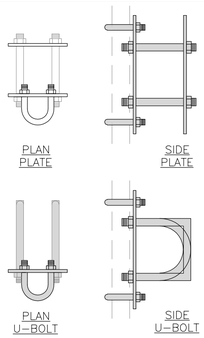


NOTE:
OR DISH Wireless L.L.C. APPROVED EQUIVALENT

RRH MOUNT DETAIL | NO SCALE | 6

COMMSCOPE XP-2040 CROSSOVER PLATE

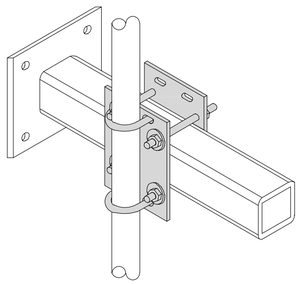
DIMENSIONS (HxW)	10"x12"
WEIGHT	11 lbs



PLAN PLATE SIDE PLATE

PLAN U-BOLT SIDE U-BOLT

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

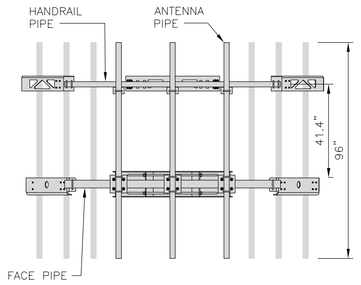


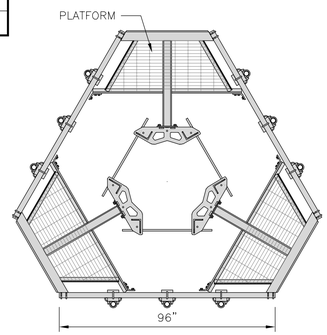
RRH/OVP MOUNT DETAIL | NO SCALE | 7

COMMSCOPE MC-PK8-DSH

FACE WIDTH	96"
WEIGHT	1373.08 lbs
NOTE: 15" TO 38" O.D.	

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





ANTENNA PLATFORM DETAIL | NO SCALE | 8

NOT USED | NO SCALE | 9

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STATE OF CONNECTICUT · KRUPAKARAN KOLANDAIVELU · PEN.0028997 · LICENSED PROFESSIONAL ENGINEER

04/13/2023

KRUPAKARAN KOLANDAIVELU, P.E.
STATE OF CONNECTICUT
PROFESSIONAL ENGINEER
LICENSE #PEN.0028997

DRAWN BY:	CHECKED BY:	APPROVED BY:
AI	BRN	TA

RFDS REV #: ---

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A&E PROJECT NUMBER

826313

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS00883A
50 CLINTON AVE
NORWICH, CT 06360

SHEET TITLE

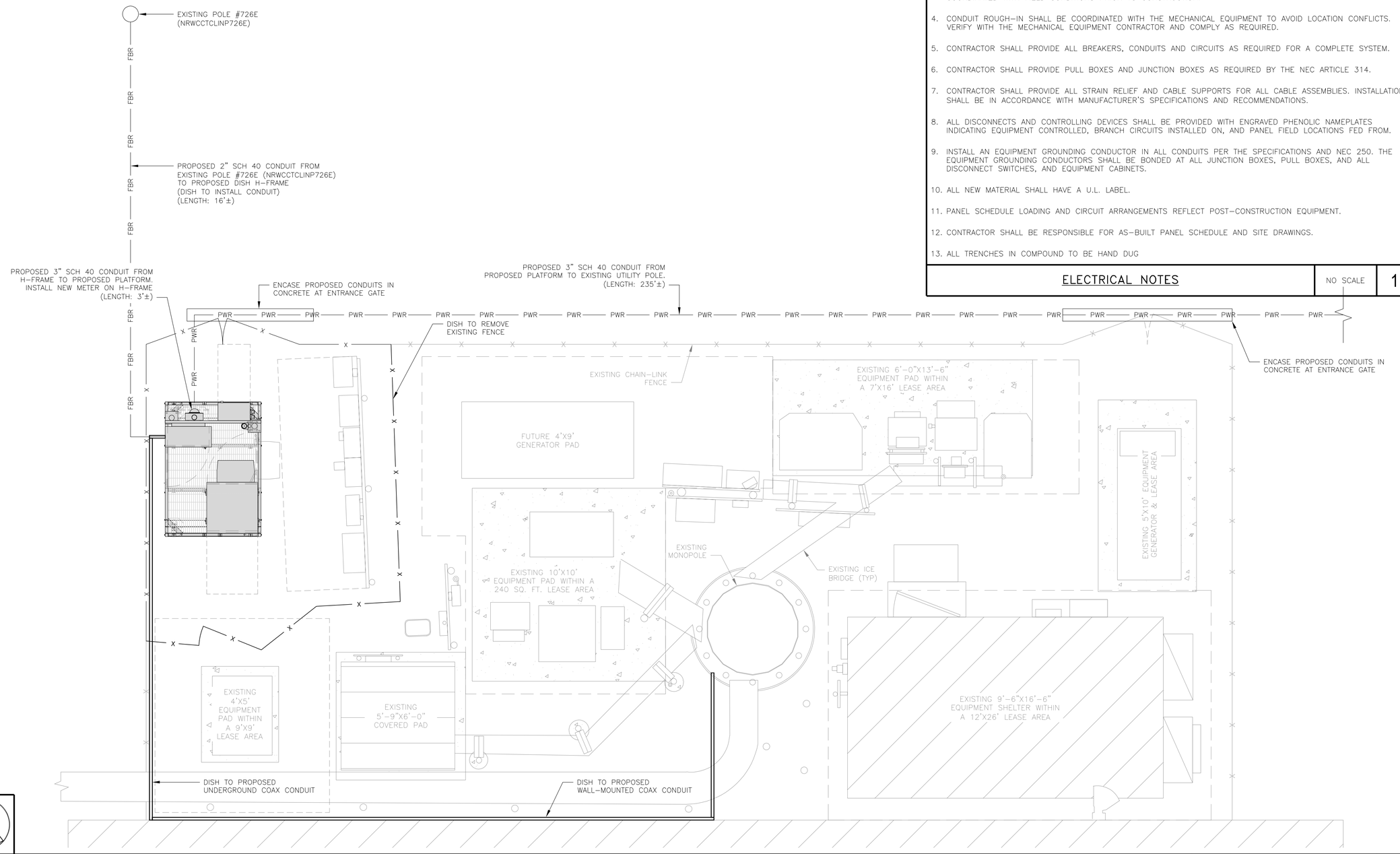
EQUIPMENT DETAILS

SHEET NUMBER

A-6

EASEMENT RIGHTS

1. CONTRACTOR SHALL FIELD VERIFY ALL PROPOSED UNDERGROUND UTILITY CONDUIT ROUTE.
2. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.
3. THE GROUND LEASE PROVIDES BROAD/BLANKET UTILITY RIGHTS. "PWR" AND "FBR" PATH DEPICTED ON A-1 AND E-1 ARE BASED ON BEST AVAILABLE INFORMATION INCLUDING BUT NOT LIMITED TO FIELD VERIFICATION, PRIOR PROJECT DOCUMENTATION AND OTHER REAL PROPERTY RIGHTS DOCUMENTS. WHEN INSTALLING THE UTILITIES PLEASE LOCATE AND FOLLOW EXISTING PATH. IF EXISTING PATH IS NOT AN OPTION, PLEASE NOTIFY CROWN CASTLE REAL ESTATE AS FURTHER COORDINATION MAY BE NEEDED.



UTILITY ROUTE PLAN

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

2

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. ALL TRENCHES IN COMPOUND TO BE HAND DUG

ELECTRICAL NOTES

NO SCALE

1

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A&E PROJECT NUMBER

826313

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS00883A
50 CLINTON AVE
NORWICH, CT 06360

SHEET TITLE

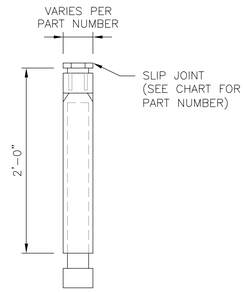
ELECTRICAL/FIBER ROUTE PLAN AND NOTES

SHEET NUMBER

E-1

CARLON EXPANSION FITTINGS

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

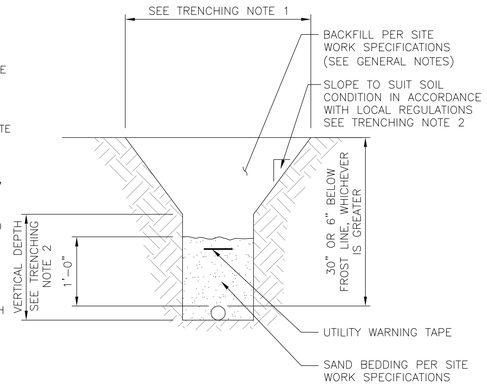


NOTE:
CONTRACTOR TO INSTALL EXPANSION FITTING SLIP JOINT AT METER CENTER CONDUIT TERMINATION, AS PER LOCAL UTILITY POLICY, ORDINANCE AND/OR SPECIFIED REQUIREMENT.

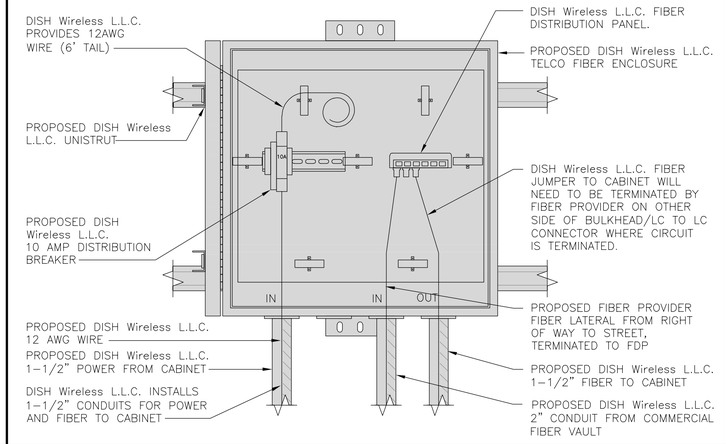
EXPANSION JOINT DETAIL | NO SCALE | 1

TRENCHING NOTES

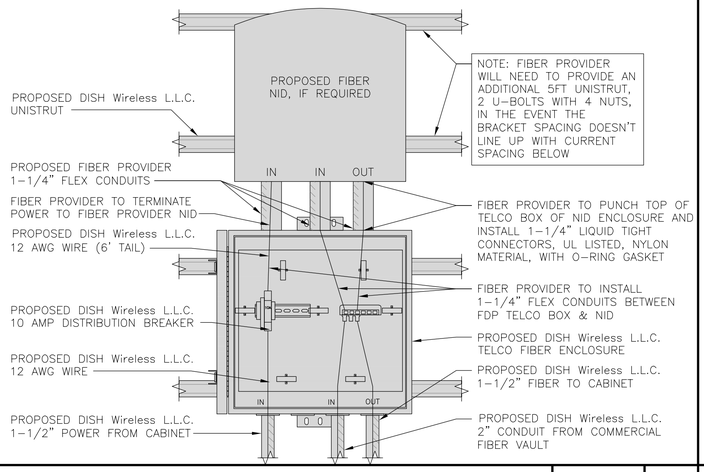
1. CONTRACTOR SHALL RESTORE THE TRENCH TO ITS ORIGINAL CONDITIONS BY EITHER SEEDING OR SODDING GRASS AREAS, OR REPLACING ASPHALT OR CONCRETE AREAS TO ITS ORIGINAL CROSS SECTION.
2. TRENCHING SAFETY; INCLUDING, BUT NOT LIMITED TO SOIL CLASSIFICATION, SLOPING, AND SHORING, SHALL BE GOVERNED BY THE CURRENT OSHA TRENCHING AND EXCAVATION SAFETY STANDARDS.
3. ALL CONDUITS SHALL BE INSTALLED IN COMPLIANCE WITH THE CURRENT NATIONAL ELECTRIC CODE (NEC) OR AS REQUIRED BY THE LOCAL JURISDICTION, WHICHEVER IS THE MOST STRINGENT.



TYPICAL UNDERGROUND TRENCH DETAIL | NO SCALE | 2



DARK TELCO BOX – INTERIOR WIRING LAYOUT | NO SCALE | 3



LIT TELCO BOX – INTERIOR WIRING LAYOUT (OPTIONAL) | NO SCALE | 4

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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04/13/2023

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A&E PROJECT NUMBER

826313

DISH Wireless L.L.C.
PROJECT INFORMATION

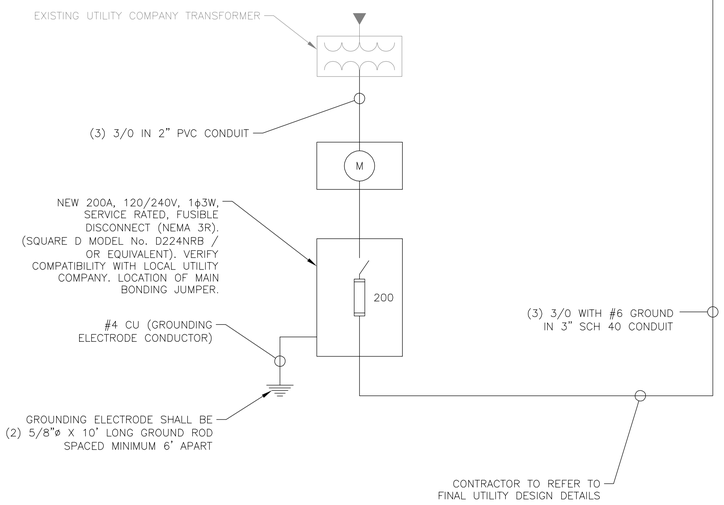
BOBOS00883A
50 CLINTON AVE
NORWICH, CT 06360

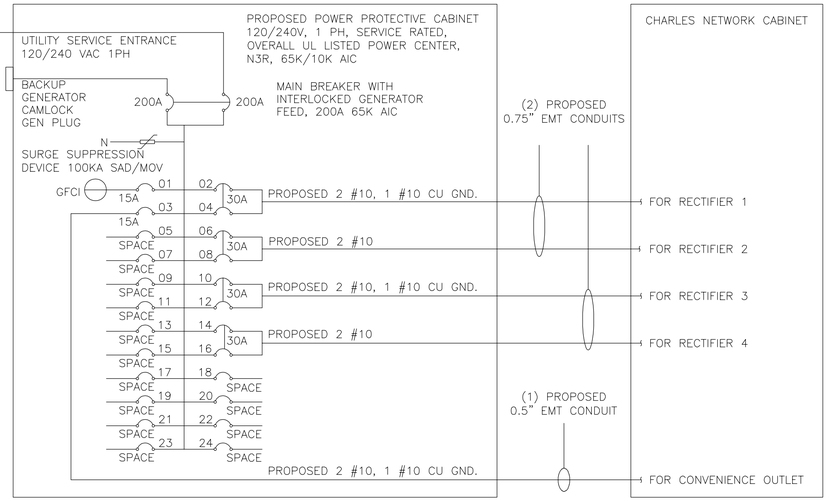
SHEET TITLE

ELECTRICAL DETAILS

SHEET NUMBER

E-2





NOTE:
BRANCH CIRCUIT WIRING SUPPLYING RECTIFIERS ARE TO BE RATED THWN–2, 90°C, 600V, AND PVC INSULATED, IN THE SIZES SHOWN IN THE ONE–LINE DIAGRAM.

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

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 THWN–2 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 THWN–2, CU.

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

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

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

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

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

PPC ONE–LINE DIAGRAM

NO SCALE | 1

PROPOSED CHARLES PANEL SCHEDULE

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

PANEL SCHEDULE

NO SCALE | 2

NOT USED

NO SCALE | 3

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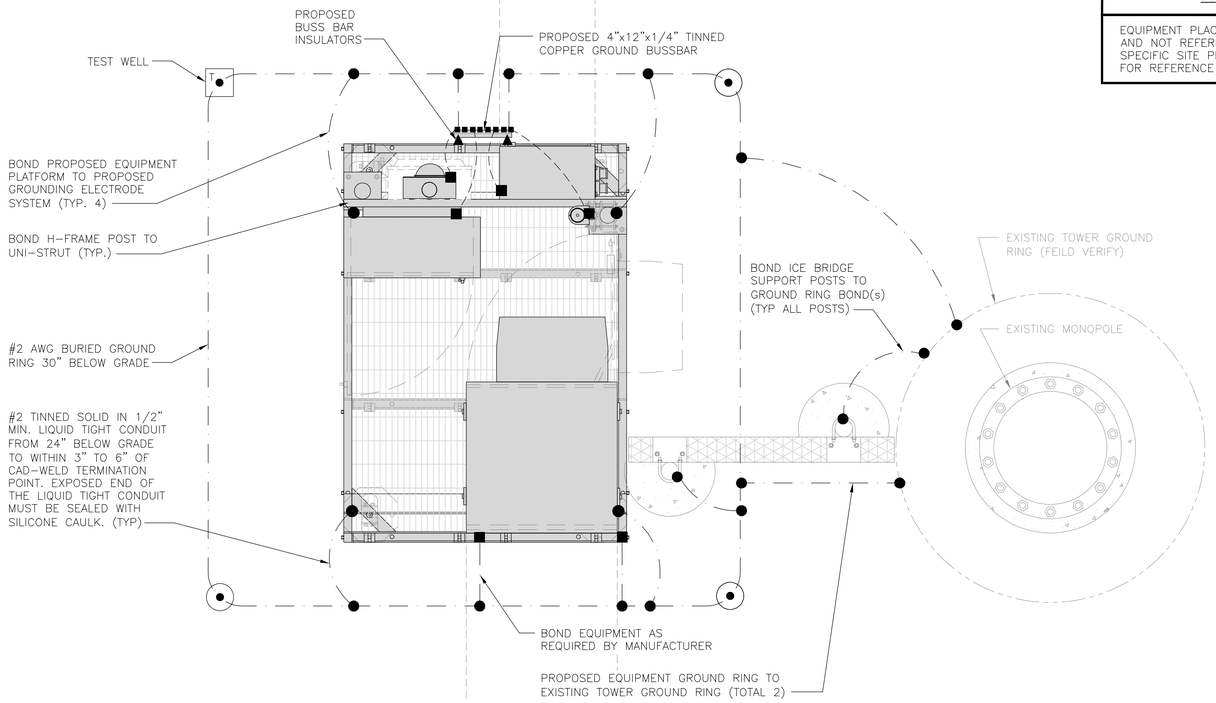
A&E PROJECT NUMBER
826313

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBOS00883A
50 CLINTON AVE
NORWICH, CT 06360

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

SHEET NUMBER
E-3



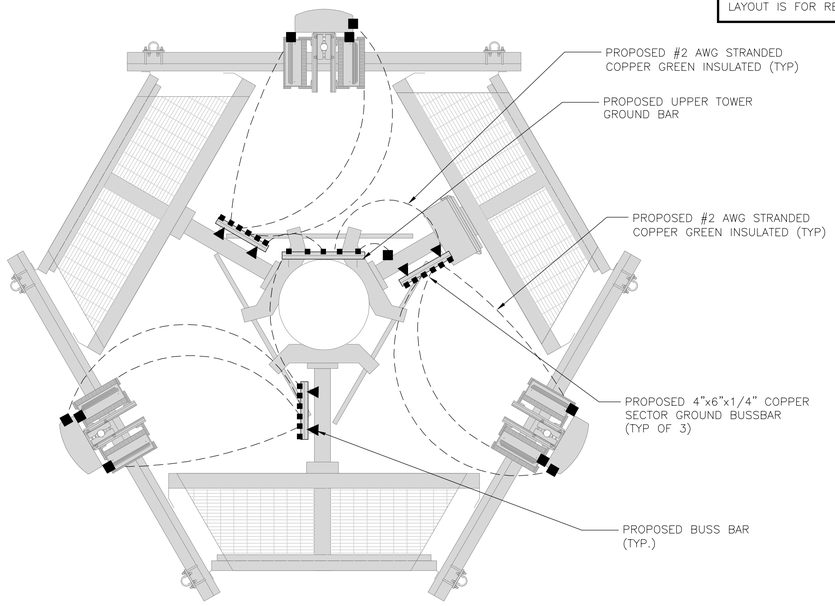
NOTES

EQUIPMENT PLACEMENT IS GENERIC AND NOT REFERENCING TO A SPECIFIC SITE PLAN. THIS LAYOUT IS FOR REFERENCE PURPOSES ONLY.

TYPICAL EQUIPMENT GROUNDING PLAN | NO SCALE | 1

NOTES

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



TYPICAL ANTENNA GROUNDING PLAN | NO SCALE | 2

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

GROUNDING LEGEND

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

GROUNDING KEY NOTES

(A) EXTERIOR GROUND RING: #2 AWG SOLID COPPER, BURIED AT A DEPTH OF AT LEAST 30 INCHES BELOW GRADE, OR 6 INCHES BELOW THE FROST LINE AND APPROXIMATELY 24 INCHES FROM THE EXTERIOR WALL OR FOOTING.

(B) TOWER GROUND RING: THE GROUND RING SYSTEM SHALL BE INSTALLED AROUND AN ANTENNA TOWER'S LEGS, AND/OR GUY ANCHORS. WHERE SEPARATE SYSTEMS HAVE BEEN PROVIDED FOR THE TOWER AND THE BUILDING, AT LEAST TWO BONDS SHALL BE MADE BETWEEN THE TOWER RING GROUND SYSTEM AND THE BUILDING RING GROUND SYSTEM USING MINIMUM #2 AWG SOLID COPPER CONDUCTORS.

(C) INTERIOR GROUND RING: #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTOR EXTENDED AROUND THE PERIMETER OF THE EQUIPMENT AREA. ALL NON-TELECOMMUNICATIONS RELATED METALLIC OBJECTS FOUND WITHIN A SITE SHALL BE GROUNDED TO THE INTERIOR GROUND RING WITH #6 AWG STRANDED GREEN INSULATED CONDUCTOR.

(D) BOND TO INTERIOR GROUND RING: #2 AWG SOLID TINNED COPPER WIRE PRIMARY BONDS SHALL BE PROVIDED AT LEAST AT FOUR POINTS ON THE INTERIOR GROUND RING, LOCATED AT THE CORNERS OF THE BUILDING.

(E) GROUND ROD: UL LISTED COPPER CLAD STEEL. MINIMUM 1/2" DIAMETER BY EIGHT FEET LONG. GROUND RODS SHALL BE INSTALLED WITH INSPECTION SLEEVES. GROUND RODS SHALL BE DRIVEN TO THE DEPTH OF GROUND RING CONDUCTOR.

(F) CELL REFERENCE GROUND BAR: POINT OF GROUND REFERENCE FOR ALL COMMUNICATIONS EQUIPMENT FRAMES. ALL BONDS ARE MADE WITH #2 AWG UNLESS NOTED OTHERWISE STRANDED GREEN INSULATED COPPER CONDUCTORS. BOND TO GROUND RING WITH (2) #2 SOLID TINNED COPPER CONDUCTORS.

(G) HATCH PLATE GROUND BAR: BOND TO THE INTERIOR GROUND RING WITH TWO #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS. WHEN A HATCH-PLATE AND A CELL REFERENCE GROUND BAR ARE BOTH PRESENT, THE CRGB MUST BE CONNECTED TO THE HATCH-PLATE AND TO THE INTERIOR GROUND RING USING (2) TWO #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS EACH.

(H) EXTERIOR CABLE ENTRY PORT GROUND BARS: LOCATED AT THE ENTRANCE TO THE CELL SITE BUILDING. BOND TO GROUND RING WITH A #2 AWG SOLID TINNED COPPER CONDUCTORS WITH AN EXOTHERMIC WELD AND INSPECTION SLEEVE.

(I) TELCO GROUND BAR: BOND TO BOTH CELL REFERENCE GROUND BAR OR EXTERIOR GROUND RING.

(J) FRAME BONDING: THE BONDING POINT FOR TELECOM EQUIPMENT FRAMES SHALL BE THE GROUND BUS THAT IS NOT ISOLATED FROM THE EQUIPMENTS METAL FRAMEWORK.

(K) INTERIOR UNIT BONDS: METAL FRAMES, CABINETS AND INDIVIDUAL METALLIC UNITS LOCATED WITH THE AREA OF THE INTERIOR GROUND RING REQUIRE A #6 AWG STRANDED GREEN INSULATED COPPER BOND TO THE INTERIOR GROUND RING.

(L) FENCE AND GATE GROUNDING: METAL FENCES WITHIN 7 FEET OF THE EXTERIOR GROUND RING OR OBJECTS BONDED TO THE EXTERIOR GROUND RING SHALL BE BONDED TO THE GROUND RING WITH A #2 AWG SOLID TINNED COPPER CONDUCTOR AT AN INTERVAL NOT EXCEEDING 25 FEET. BONDS SHALL BE MADE AT EACH GATE POST AND ACROSS GATE OPENINGS.

(M) EXTERIOR UNIT BONDS: METALLIC OBJECTS, EXTERNAL TO OR MOUNTED TO THE BUILDING, SHALL BE BONDED TO THE EXTERIOR GROUND RING. USING #2 TINNED SOLID COPPER WIRE

(N) ICE BRIDGE SUPPORTS: EACH ICE BRIDGE LEG SHALL BE BONDED TO THE GROUND RING WITH #2 AWG BARE TINNED COPPER CONDUCTOR. PROVIDE EXOTHERMIC WELDS AT BOTH THE ICE BRIDGE LEG AND BURIED GROUND RING.

(O) DURING ALL DC POWER SYSTEM CHANGES INCLUDING DC SYSTEM CHANGE OUTS, RECTIFIER REPLACEMENTS OR ADDITIONS, BREAKER DISTRIBUTION CHANGES, BATTERY ADDITIONS, BATTERY REPLACEMENTS AND INSTALLATIONS OR CHANGES TO DC CONVERTER SYSTEMS IT SHALL BE REQUIRED THAT SERVICE CONTRACTORS VERIFY ALL DC POWER SYSTEMS ARE EQUIPPED WITH A MASTER DC SYSTEM RETURN GROUND CONDUCTOR FROM THE DC POWER SYSTEM COMMON RETURN BUS DIRECTLY CONNECTED TO THE CELL SITE REFERENCE GROUND BAR

(P) TOWER TOP COLLECTOR BUSS BAR IS TO BE MECHANICALLY BONDED TO PROPOSED ANTENNA MOUNT COLLAR.

REFER TO DISH Wireless L.L.C. GROUNDING NOTES.

GROUNDING KEY NOTES | NO SCALE | 3

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(410) 712-7092

04/13/2023

KRUPAKARAN KOLANDAIVELU, P.E.
STATE OF CONNECTICUT
PROFESSIONAL ENGINEER
LICENSE #PEN.0028997

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AI	BRN	TA

RFDS REV #: ---

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A&E PROJECT NUMBER

826313

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS00883A
50 CLINTON AVE
NORWICH, CT 06360

SHEET TITLE

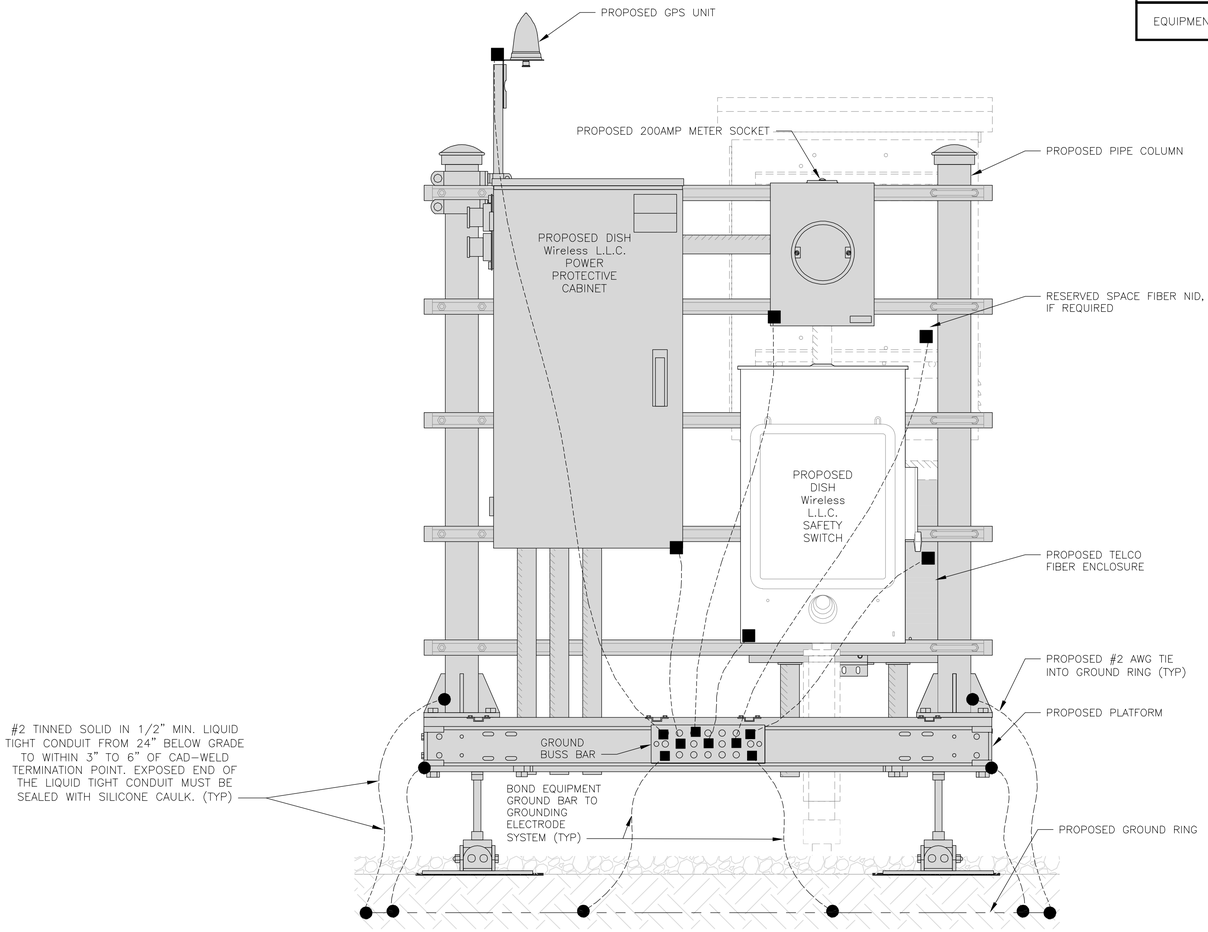
GROUNDING PLANS AND NOTES

SHEET NUMBER

G-1

NOTES

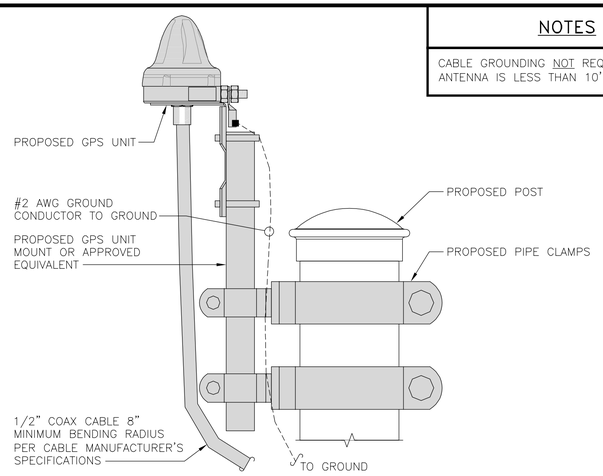
EQUIPMENT CABINET OMITTED FOR CLARITY



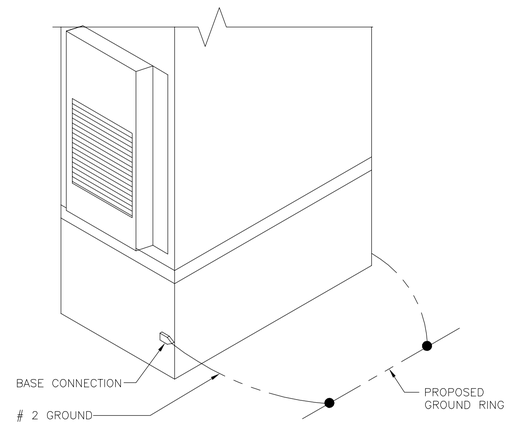
H-FRAME GROUNDING DETAIL | NO SCALE | 1

NOTES

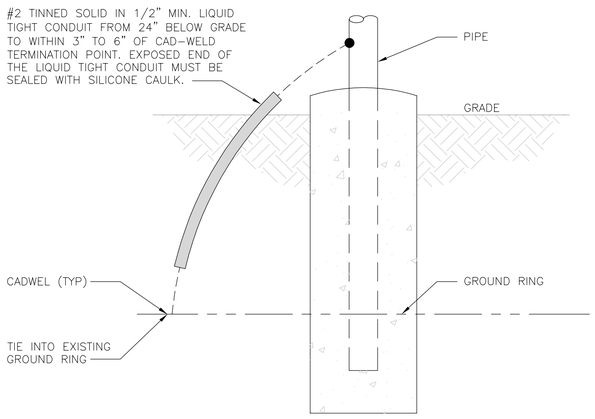
CABLE GROUNDING NOT REQUIRED WHEN ANTENNA IS LESS THAN 10' FROM CABINET



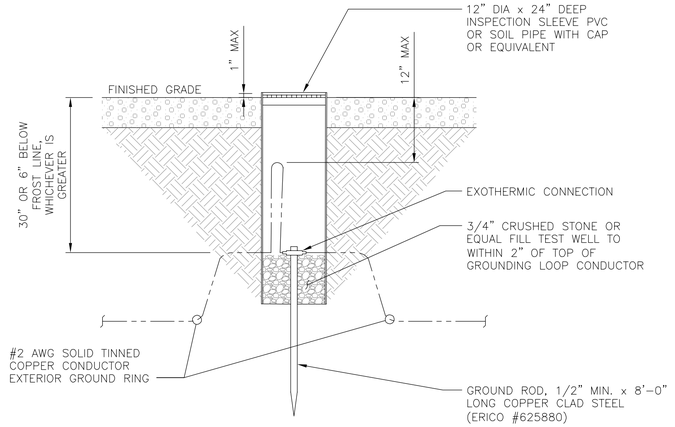
TYPICAL GPS UNIT GROUNDING | NO SCALE | 2



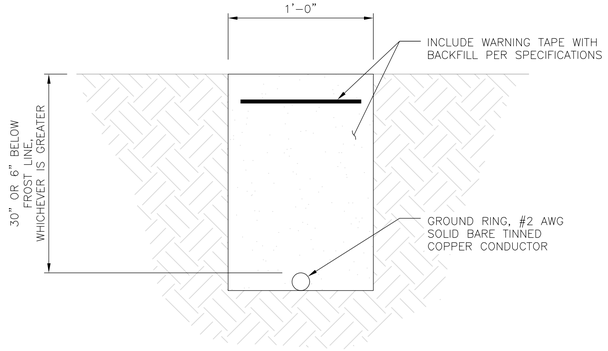
OUTDOOR CABINET GROUNDING | NO SCALE | 3



TRANSITIONING GROUND DETAIL | NO SCALE | 4



TYPICAL TEST GROUND ROD WITH INSPECTION SLEEVE | NO SCALE | 5



TYPICAL GROUND RING TRENCH | NO SCALE | 6

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50 CLINTON AVE
NORWICH, CT 06360

SHEET TITLE

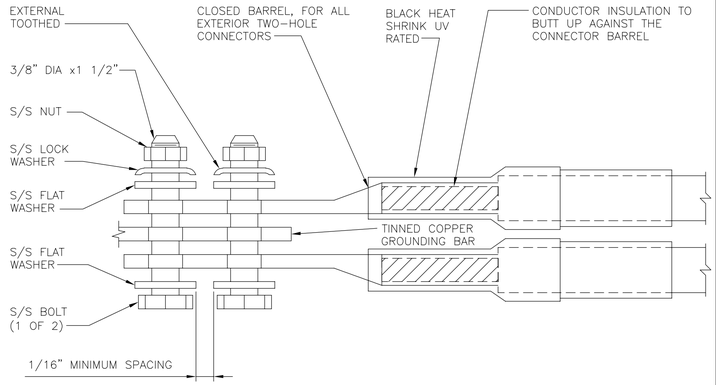
GROUNDING DETAILS

SHEET NUMBER

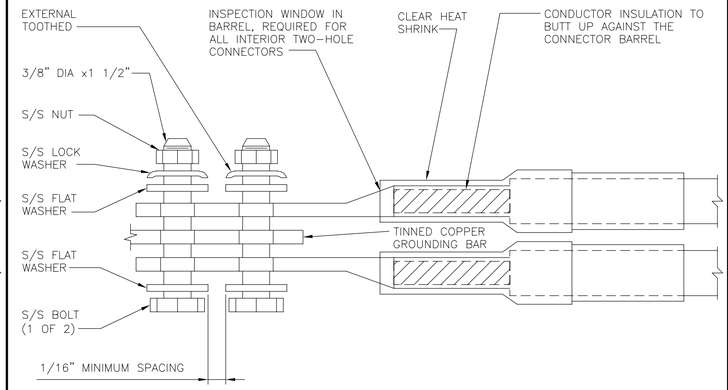
G-2

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

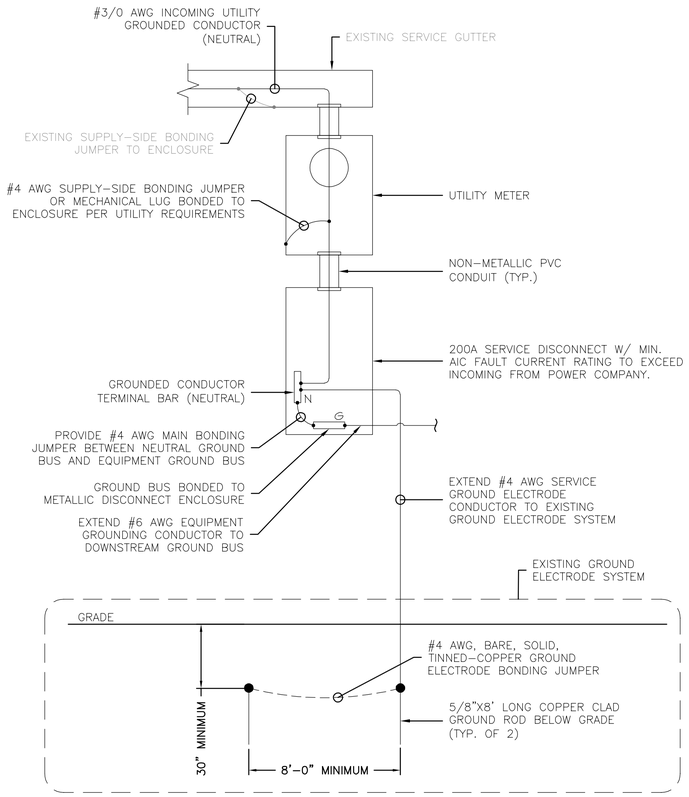
TYPICAL GROUNDING NOTES | NO SCALE | 1



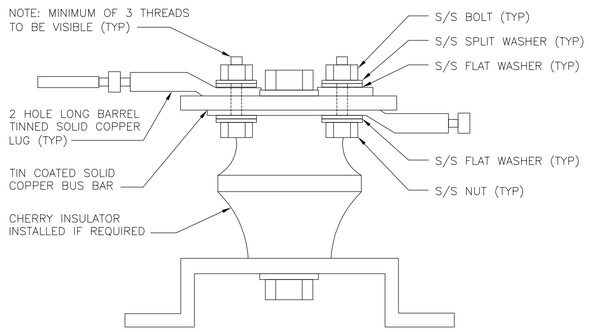
TYPICAL EXTERIOR TWO HOLE LUG | NO SCALE | 2



TYPICAL INTERIOR TWO HOLE LUG | NO SCALE | 3



ELECTRICAL SERVICE GROUNDING | NO SCALE | 4



LUG DETAIL | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

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NORWICH, CT 06360

SHEET TITLE

GROUNDING DETAILS

SHEET NUMBER

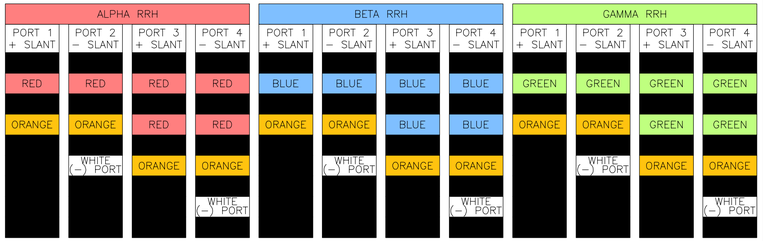
G-3

HYBRID/DISCREET CABLES

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

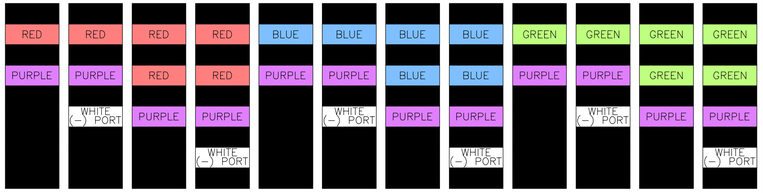
LOW-BAND RRH
(600 MHz N71 BASEBAND) +
(850 MHz N26 BAND) +
(700 MHz N29 BAND) - OPTIONAL PER MARKET

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



MID-BAND RRH
(AWS BANDS N66+N70)

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



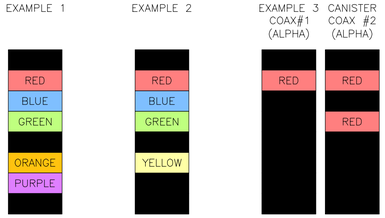
HYBRID/DISCREET CABLES

INCLUDE SECTOR BANDS BEING SUPPORTED ALONG WITH FREQUENCY BANDS.

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

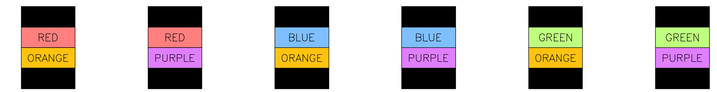
EXAMPLE 2 - HYBRID, OR DISCREET, SUPPORTS CBRS ONLY, ALL SECTORS.

EXAMPLE 3 - MAIN COAX WITH GROUND MOUNTED RRHs.



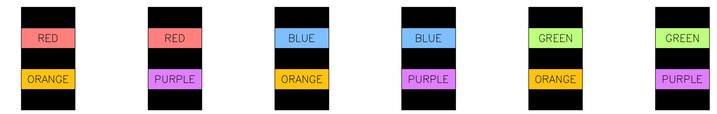
FIBER JUMPERS TO RRHs

LOW-BAND HHR FIBER CABLES HAVE SECTOR STRIPE ONLY.



POWER CABLES TO RRHs

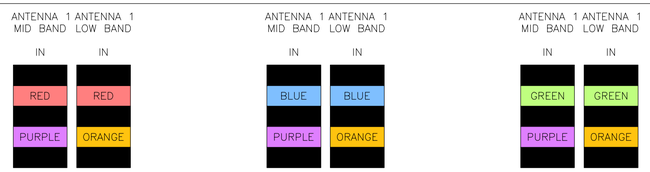
LOW-BAND RRH POWER CABLES HAVE SECTOR STRIPE ONLY



RET MOTORS AT ANTENNAS

RET CONTROL IS HANDLED BY THE MID-BAND RRH WHEN ONE SET OF RET PORTS EXIST ON ANTENNA.

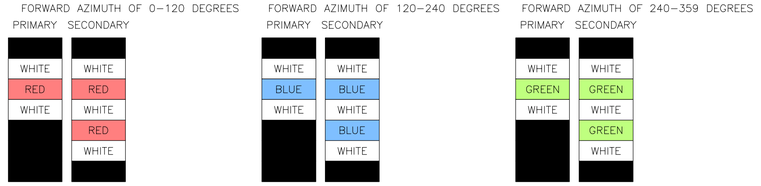
SEPARATE RET CABLES ARE USED WHEN ANTENNA PORTS PROVIDE INPUTS FOR BOTH LOW AND MID BANDS.

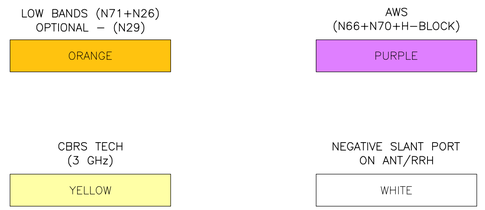


MICROWAVE RADIO LINKS

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 CABLES WILL REQUIRE P-TOUCH LABELS INSIDE THE CABINET TO IDENTIFY THE LOCAL AND REMOTE SITE ID's.





COLOR IDENTIFIER		2
NOT USED		3
RF CABLE COLOR CODES		1
NOT USED		4

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DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS00883A
50 CLINTON AVE
NORWICH, CT 06360

SHEET TITLE

RF
CABLE COLOR CODES

SHEET NUMBER

RF-1

LEGEND

EXOTHERMIC CONNECTION

MECHANICAL CONNECTION

BUSS BAR INSULATOR

CHEMICAL ELECTROLYTIC GROUNDING SYSTEM

TEST CHEMICAL ELECTROLYTIC GROUNDING SYSTEM — T

EXOTHERMIC WITH INSPECTION SLEEVE

GROUNDING BAR

GROUND ROD

TEST GROUND ROD WITH INSPECTION SLEEVE — T

SINGLE POLE SWITCH

DUPLEX RECEPTACLE

DUPLEX GFCI RECEPTACLE — GFCI

FLUORESCENT LIGHTING FIXTURE
(2) TWO LAMPS 48–T8 — F

SMOKE DETECTION (DC) — SD

EMERGENCY LIGHTING (DC)

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

CHAIN LINK FENCE — X — X — X — X

WOOD/WROUGHT IRON FENCE

WALL STRUCTURE

LEASE AREA

PROPERTY LINE (PL)

SETBACKS

ICE BRIDGE

CABLE TRAY

WATER LINE — W — W — W — W — W

UNDERGROUND POWER — UGP — UGP — UGP — UGP — UGP

UNDERGROUND TELCO — UGT — UGT — UGT — UGT — UGT

OVERHEAD POWER — OHP — OHP — OHP — OHP

OVERHEAD TELCO — OHT — OHT — OHT — OHT

UNDERGROUND TELCO/POWER — UGT/P — UGT/P — UGT/P — UGT/P

ABOVE GROUND POWER — AGP — AGP — AGP — AGP — AGP

ABOVE GROUND TELCO — AGT — AGT — AGT — AGT — AGT

ABOVE GROUND TELCO/POWER — AGT/P — AGT/P — AGT/P — AGT/P

WORKPOINT — W.P.

SECTION REFERENCE — XX / X–X

DETAIL REFERENCE — XX / X–X

ABBREVIATIONS

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

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

NB+C TOTALLY COMMITTED.
NB+C ENGINEERING SERVICES, LLC.
6095 MARSHALEE DRIVE, SUITE 300
ELKRIDGE, MD 21075
(410) 712-7092

STATE OF CONNECTICUT — KRUPAKARAN KOLANDAIVELU — PEN.0028997 — LICENSED PROFESSIONAL ENGINEER

04/13/2023

KRUPAKARAN KOLANDAIVELU, P.E.
STATE OF CONNECTICUT
PROFESSIONAL ENGINEER
LICENSE #PEN.0028997

DRAWN BY:	CHECKED BY:	APPROVED BY:
AI	BRN	TA

RFDS REV #: ---

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
0	01/25/2023	ISSUED FOR CONSTRUCTION
1	02/21/2023	ISSUED FOR CONSTRUCTION
2	02/22/2023	ISSUED FOR CONSTRUCTION
3	03/09/2023	ISSUED FOR CONSTRUCTION
4	04/13/2023	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

826313

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS00883A
50 CLINTON AVE
NORWICH, CT 06360

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 SIGH 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: _____

THIS SIGN IS FOR REFERENCE PURPOSES ONLY

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: _____

dish

THIS SIGN IS FOR REFERENCE PURPOSES ONLY

⚠ CAUTION

Transmitting Antenna(s)

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

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Site ID: _____

dish

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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: _____

dish

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RF SIGNAGE

dish wireless.

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A&E PROJECT NUMBER

826313

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS00883A
50 CLINTON AVE
NORWICH, CT 06360

SHEET TITLE

RF SIGNAGE

SHEET NUMBER

GN-2

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.

dish wireless.

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A&E PROJECT NUMBER

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DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS00883A
50 CLINTON AVE
NORWICH, CT 06360

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-3

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST-IN-PLACE CONCRETE.

2. UNLESS NOTED OTHERWISE, SOIL BEARING PRESSURE USED FOR DESIGN OF SLABS AND FOUNDATIONS IS ASSUMED TO BE 1000 psf.

3. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 3000 psi AT 28 DAYS, UNLESS NOTED OTHERWISE. NO MORE THAN 90 MINUTES SHALL ELAPSE FROM BATCH TIME TO TIME OF PLACEMENT UNLESS APPROVED BY THE ENGINEER OF RECORD. TEMPERATURE OF CONCRETE SHALL NOT EXCEED 90°f AT TIME OF PLACEMENT.

4. CONCRETE EXPOSED TO FREEZE-THAW CYCLES SHALL CONTAIN AIR ENTRAINING ADMIXTURES. AMOUNT OF AIR ENTRAINMENT TO BE BASED ON SIZE OF AGGREGATE AND F3 CLASS EXPOSURE (VERY SEVERE). CEMENT USED TO BE TYPE II PORTLAND CEMENT WITH A MAXIMUM WATER-TO-CEMENT RATIO (W/C) OF 0.45.

5. ALL STEEL REINFORCING SHALL CONFORM TO ASTM A615. ALL WELDED WIRE FABRIC (WWF) SHALL CONFORM TO ASTM A185. ALL SPLICES SHALL BE CLASS "B" TENSION SPLICES, UNLESS NOTED OTHERWISE. ALL HOOKS SHALL BE STANDARD 90 DEGREE HOOKS, UNLESS NOTED OTHERWISE. YIELD STRENGTH (Fy) OF STANDARD DEFORMED BARS ARE AS FOLLOWS:

#4 BARS AND SMALLER 40 ksi

#5 BARS AND LARGER 60 ksi

6. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:

- CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH 3"
- CONCRETE EXPOSED TO EARTH OR WEATHER:
- #6 BARS AND LARGER 2"
- #5 BARS AND SMALLER 1-1/2"
- CONCRETE NOT EXPOSED TO EARTH OR WEATHER:
- SLAB AND WALLS 3/4"
- BEAMS AND COLUMNS 1-1/2"

7. A TOOLED EDGE OR A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNLESS NOTED OTHERWISE, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

ELECTRICAL INSTALLATION NOTES:

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

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

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

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

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

4.2. ALL OVERCURRENT DEVICES SHALL HAVE AN INTERRUPTING CURRENT RATING THAT SHALL BE GREATER THAN THE SHORT CIRCUIT CURRENT TO WHICH THEY ARE SUBJECTED, 22,000 AIC MINIMUM. VERIFY AVAILABLE SHORT CIRCUIT CURRENT DOES NOT EXCEED THE RATING OF ELECTRICAL EQUIPMENT IN ACCORDANCE WITH ARTICLE 110.24 NEC OR THE MOST CURRENT ADOPTED CODE PRE THE GOVERNING JURISDICTION.

5. EACH END OF EVERY POWER PHASE CONDUCTOR, GROUNDING CONDUCTOR, AND TELCO CONDUCTOR OR CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2" PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC AND OSHA.

6. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH LAMICOID TAGS SHOWING THEIR RATED VOLTAGE, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING AND BRANCH CIRCUIT ID NUMBERS (i.e. PANEL BOARD AND CIRCUIT ID'S).

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

8. TIE WRAPS ARE NOT ALLOWED.

9. ALL POWER AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE COPPER CONDUCTOR (#14 OR LARGER) WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.

10. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE COPPER CONDUCTOR (#6 OR LARGER) WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.

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

12. POWER AND CONTROL WIRING FOR USE IN CABLE TRAY SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (#14 OR LARGER), WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.

13. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE, COMPRESSION WIRE LUGS AND WIRE NUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRE NUTS SHALL BE RATED FOR OPERATION NOT LESS THAN 75° C (90° C IF AVAILABLE).

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

15. ELECTRICAL METALLIC TUBING (EMT), INTERMEDIATE METAL CONDUIT (IMC), OR RIGID METAL CONDUIT (RMC) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.

16. ELECTRICAL METALLIC TUBING (EMT) OR METAL-CLAD CABLE (MC) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.

17. SCHEDULE 40 PVC UNDERGROUND ON STRAIGHTS AND SCHEDULE 80 PVC FOR ALL ELBOWS/90s AND ALL APPROVED ABOVE GRADE PVC CONDUIT.

18. LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.

19. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.

20. CABINETS, BOXES AND WIRE WAYS SHALL BE LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND THE NEC.

21. WIREWAYS SHALL BE METAL WITH AN ENAMEL FINISH AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARDS (WIREMOLD SPECMATE WIREWAY).

22. SLOTTED WIRING DUCT SHALL BE PVC AND INCLUDE COVER (PANDUIT TYPE E OR EQUAL).

23. CONDUITS SHALL BE FASTENED SECURELY IN PLACE WITH APPROVED NON-PERFORATED STRAPS AND HANGERS. EXPLOSIVE DEVICES (i.e. POWDER-ACTUATED) FOR ATTACHING HANGERS TO STRUCTURE WILL NOT BE PERMITTED. CLOSELY FOLLOW THE LINES OF THE STRUCTURE, MAINTAIN CLOSE PROXIMITY TO THE STRUCTURE AND KEEP CONDUITS IN TIGHT ENVELOPES. CHANGES IN DIRECTION TO ROUTE AROUND OBSTACLES SHALL BE MADE WITH CONDUIT OUTLET BODIES. CONDUIT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER. PARALLEL AND PERPENDICULAR TO STRUCTURE WALL AND CEILING LINES. ALL CONDUIT SHALL BE FISHED TO CLEAR OBSTRUCTIONS. ENDS OF CONDUITS SHALL BE TEMPORARILY CAPPED FLUSH TO FINISH GRADE TO PREVENT CONCRETE, PLASTER OR DIRT FROM ENTERING. CONDUITS SHALL BE RIGIDLY CLAMPED TO BOXES BY GALVANIZED MALLEABLE IRON BUSHING ON INSIDE AND GALVANIZED MALLEABLE IRON LOCKNUT ON OUTSIDE AND INSIDE.

24. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL. SHALL MEET OR EXCEED UL 50 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND NEMA 3 (OR BETTER) FOR EXTERIOR LOCATIONS.

25. METAL RECEPTACLE, SWITCH AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY-COATED OR NON-CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.

26. NONMETALLIC RECEPTACLE, SWITCH AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2 (NEWEST REVISION) AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.

27. THE CONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CARRIER AND/OR DISH Wireless L.L.C. AND TOWER OWNER BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.

28. THE CONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD LIFE AND PROPERTY.

29. INSTALL LAMICOID LABEL ON THE METER CENTER TO SHOW "DISH Wireless L.L.C.".

30. ALL EMPTY/SPARE CONDUITS THAT ARE INSTALLED ARE TO HAVE A METERED MULE TAPE PULL CORD INSTALLED.

dish wireless.

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LITTLETON, CO 80120

NB+C TOTALLY COMMITTED.
NB+C ENGINEERING SERVICES, LLC.
6095 MARSHALEE DRIVE, SUITE 300
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STATE OF CONNECTICUT
KRUPAKARAN KOLANDAIVELU
PEN.0028997
LICENSED PROFESSIONAL ENGINEER

04/13/2023

KRUPAKARAN KOLANDAIVELU, P.E.
STATE OF CONNECTICUT
PROFESSIONAL ENGINEER
LICENSE #PEN.0028997

DRAWN BY:	CHECKED BY:	APPROVED BY:
AI	BRN	TA

RFDS REV #: ---

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
0	01/25/2023	ISSUED FOR CONSTRUCTION
1	02/21/2023	ISSUED FOR CONSTRUCTION
2	02/22/2023	ISSUED FOR CONSTRUCTION
3	03/09/2023	ISSUED FOR CONSTRUCTION
4	04/13/2023	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

826313

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS00883A
50 CLINTON AVE
NORWICH, CT 06360

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.

dish wireless.

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STATE OF CONNECTICUT
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DRAWN BY:	CHECKED BY:	APPROVED BY:
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RFDS REV #: ---

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A&E PROJECT NUMBER

826313

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS00883A
50 CLINTON AVE
NORWICH, CT 06360

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-5

ATTACHMENT 4

Date: **March 06, 2023**

Crown Castle
2000 Corporate Drive
Canonsburg, PA
(724) 416-2000

Subject:	**Structural Analysis Report**	
Carrier Designation:	***DISH Network* Co-Locate**	
	Site Number:	BOBOS00883A
Crown Castle Designation:	**BU Number:**	826313
	Site Name:	NORWICH
	JDE Job Number:	742793
	Work Order Number:	2209081
	Order Number:	646624 Rev. 0
Engineering Firm Designation:	**Crown Castle Project Number:**	2209081
Site Data:	**50 Clinton Avenue, Norwich, New London County, CT** **Latitude *41° 33' 19.804"*, Longitude *-72° 6' 37.08"*** **149.083 Foot - Monopole Tower**	

Crown Castle is pleased to submit this **"Structural Analysis Report"** to determine the structural integrity of the above-mentioned tower.

The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC7: Proposed Equipment Configuration **Sufficient Capacity – 63.3%**

This analysis utilizes an ultimate 3-second gust wind speed of 124 mph as required by the 2022 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Structural analysis prepared by: Nicholas Palladino

Respectfully submitted by:

STATE OF CONNECTICUT
TERRY P. STYRAN
31522
LICENSED
PROFESSIONAL ENGINEER

Terry P. Styran, P.E.
Senior Project Engineer

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 149.083 ft Monopole tower designed by PIROD MANUFACTURES INC.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	124 mph
Exposure Category:	B
Topographic Factor:	1
Ice Thickness:	1 in
Wind Speed with Ice:	50 mph
Service Wind Speed:	60 mph

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
106.0	106.0	3	fujitsu	TA08025-B604	1	1-1/2
		3	fujitsu	TA08025-B605		
		3	jma wireless	MX08FRO665-21 w/ Mount Pipe		
		1	raycap	RDIDC-9181-PF-48		
		1	tower mounts	Commscope MC-PK8-DSH		

Table 2 - Other Considered Equipment

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
149.0	154.0	2	decibel	DB809T6E-XC	2	7/8
	149.0	2	tower mounts	Side Arm Mount [SO 702-1]		
140.0	142.0	3	ericsson	AIR6449 B41_T-MOBILE w/ Mount Pipe	3 1	1-5/8 1-3/8
		3	ericsson	RADIO 4449 B71 B85A_T-MOBILE		
		3	ericsson	RADIO 4460 B2/B25 B66_TMO		
		3	rfs celwave	APXVAARR24_43-U-NA20 w/ Mount Pipe		
	140.0	1	tower mounts	Platform Mount [LP 401-1]		
		1	tower mounts	Support Rail Kit [#HRK14]		
125.0	127.0	3	ericsson	AIR 6419 B77G_CCIV3	6 4 3 2 1	1-1/4 13/16 3/8 7/8 Conduit
		3	ericsson	RRUS 32 B2		
		3	ericsson	RRUS 4449 B5/B12		
		3	raycap	DC6-48-60-18-8F		
	125.0	3	cci antennas	DMP65R-BU8D		
		3	cci antennas	TPA65R-BU8D_CCIV2		
		3	ericsson	RRUS 4426 B66		
		3	ericsson	RRUS 4478 B14_CCIV2		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
		1	tower mounts	14ft Low Pro-Platform with Handrail System [#RMQLP-4120-H10]		
	123.0	3	ericsson	AIR 6449 B77D		
115.0	117.0	3	kathrein	800 10504 w/ Mount Pipe	6	1-5/8
		3	kathrein	860 10025		
	115.0	1	tower mounts	T-Arm Mount [TA 602-3]		
60.0	60.0	4	jma wireless	MX06FRO660-03 w/ Mount Pipe	1	1-5/8
		1	raycap	RRFDC-3315-PF-48		
		2	samsung telecommunications	MT6407-77A w/ Mount Pipe		
		2	samsung telecommunications	RF4439D-25A		
		2	samsung telecommunications	RF4440D-13A		
		1	tower mounts	Platform Mount [LP 405-1]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Reference	Source
4-GEOTECHNICAL REPORTS	3503439	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	3876096	CCISITES
4-TOWER MANUFACTURER DRAWINGS	3503440	CCISITES
4-POST-MODIFICATION INSPECTION	5612299	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	5431194	CCISITES

3.1) Analysis Method

tnxTower (version 8.1.1.0), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A. When applicable, Crown Castle has calculated and provided the effective area for panel antennas using approved methods following the intent of the TIA-222 standard.

3.2) Assumptions

1) Tower and structures were maintained in accordance with the TIA-222 Standard.
2) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.

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

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	149.083 - 133.083	Pole	TP26x12.75x0.25	1	-4.81	1137.34	4.5	Pass
L2	133.083 - 98.5	Pole	TP34.0625x23.0844x0.3125	2	-20.22	1987.88	24.0	Pass
L3	98.5 - 64.833	Pole	TP41.75x32.3154x0.375	3	-27.91	2939.13	33.4	Pass
L4	64.833 - 32	Pole	TP49.0625x39.8258x0.375	4	-40.37	3460.55	43.6	Pass
L5	32 - 0	Pole	TP56.125x46.9578x0.375	5	-52.96	4075.94	52.2	Pass
							Summary	
						Pole (L5)	52.2	Pass
						Rating =	52.2	Pass

Table 5 - Tower Component Stresses vs. Capacity - LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	53.9	Pass
1	Base Plate	0	53.9	Pass
1	Base Foundation (Structure)	0	63.3	Pass
1	Base Foundation (Soil Interaction)	0	24.2	Pass

Structure Rating (max from all components) =	63.3%

Notes:
1) See additional documentation in “Appendix C – Additional Calculations” for calculations supporting the % capacity consumed.

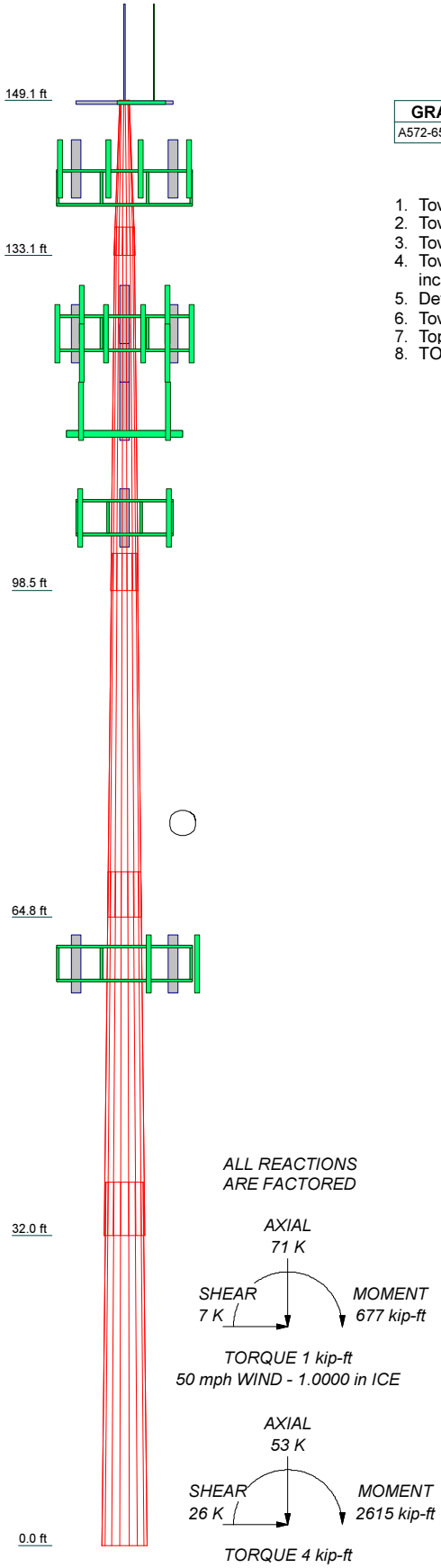
4.1) Recommendations

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

APPENDIX A

TNXTOWER OUTPUT

Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	16.00	18	0.2500	2.92	12.7500	26.0000	A572-65	0.8
2	37.50	18	0.3125	3.83	23.0844	34.0625		3.6
3	37.50	18	0.3750	4.67	32.3154	41.7500		5.6
4	37.50	18	0.3750	5.50	39.8258	49.0625		6.7
5	37.50	18	0.3750		46.9578	56.1250		7.8
								24.4



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 B to the TIA-222-H Standard.
3. Tower designed for a 124 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: 52.2%

Crown Castle
2000 Corporate Drive
Canonsburg, PA
Phone: (724) 416-2000
FAX:

Job: **826313**			
Project:			
Client: Crown Castle	Drawn by: NPalladino		App'd:
Code: TIA-222-H	Date: 03/06/23		Scale: NTS
Path: C:\Users\npalladino\SAPI Work Area\826313\WO 2209081 - SA\Prod\826313_LC7.er			Dwg No. E-1

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: 96.00 ft.
- Basic wind speed of 124 mph.
- Risk Category II.
- Exposure Category B.
- Simplified Topographic Factor Procedure for wind speed-up calculations is used.
- Topographic Category: 1.
- Crest Height: 0.00 ft.
- Nominal ice thickness of 1.0000 in.
- Ice thickness is considered to increase with height.
- Ice density of 56 pcf.
- A wind speed of 50 mph is used in combination with ice.
- Temperature drop of 50 °F.
- Deflections calculated using a wind speed of 60 mph.
- A non-linear (P-delta) analysis was used.
- Pressures are calculated at each section.
- Stress ratio used in pole design is 1.
- Tower analysis based on target reliabilities in accordance with Annex S.
- Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
- Maximum demand-capacity ratio is: 1.05.
- Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

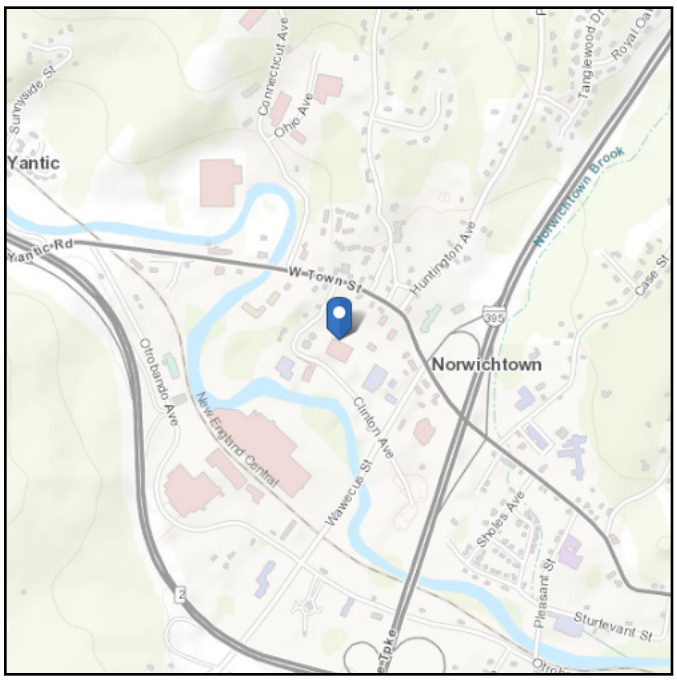
	Consider Moments - Legs		Distribute Leg Loads As Uniform		Use ASCE 10 X-Brace Ly Rules
	Consider Moments - Horizontals		Assume Legs Pinned		Calculate Redundant Bracing Forces
	Consider Moments - Diagonals	√	Assume Rigid Index Plate		Ignore Redundant Members in FEA
	Use Moment Magnification	√	Use Clear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

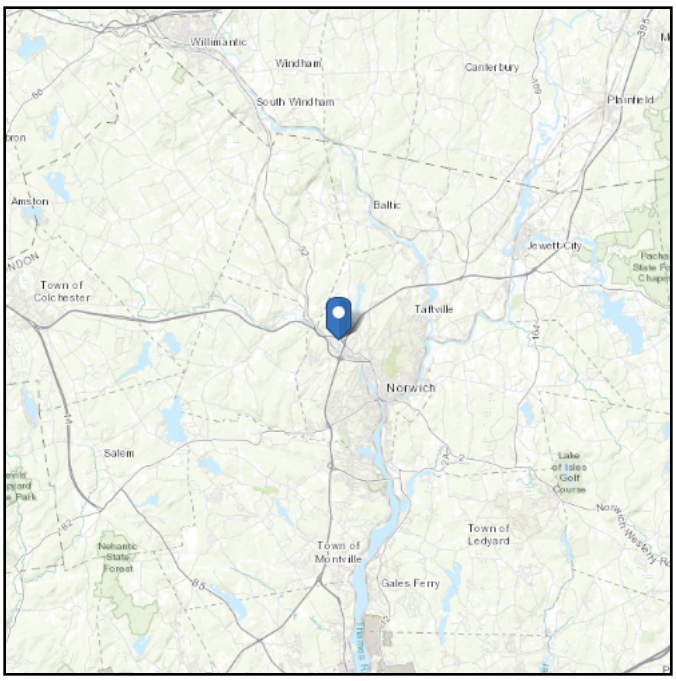
Tapered Pole Section Geometry

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard:	ASCE/SEI 7-16	**Latitude:**	41.555501
Risk Category:	II	**Longitude:**	-72.1103
Soil Class:	D - Stiff Soil	**Elevation:**	3424.26 ft (NAVD 88)





Wind

Results:

Wind Speed	124 Vmph
10-year MRI	75 Vmph
25-year MRI	85 Vmph
50-year MRI	96 Vmph
100-year MRI	101 Vmph

Data Source:	ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed:	Tue Feb 28 2023

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

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

Seismic

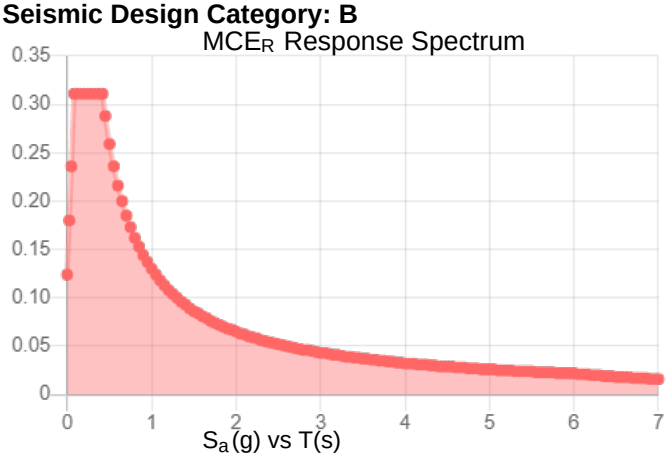
D - Stiff Soil

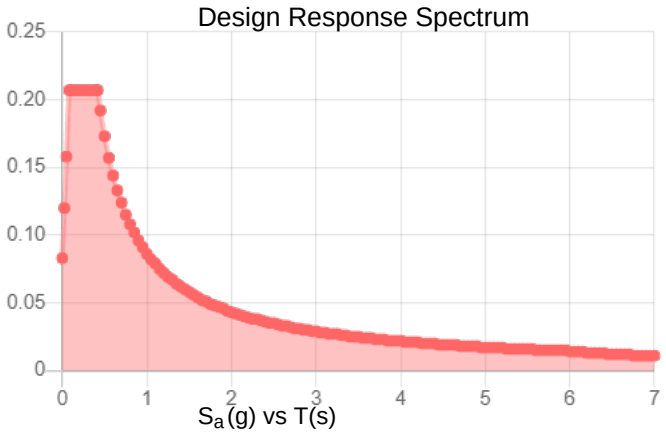
Site Soil Class:

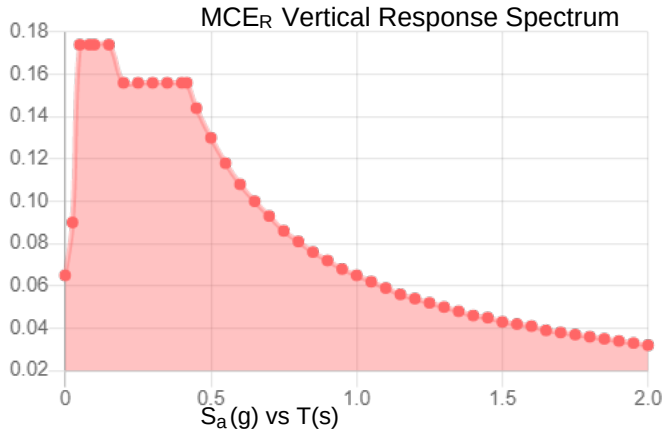
Results:

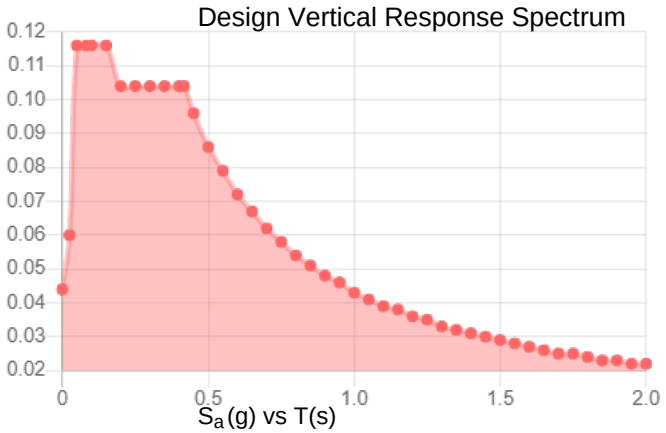
S_S :	0.194	S_{D1} :	0.086
S_1 :	0.054	T_L :	6
F_a :	1.6	PGA :	0.107
F_v :	2.4	PGA_M :	0.17
S_{MS} :	0.311	F_{PGA} :	1.586
S_{M1} :	0.13	I_e :	1
S_{DS} :	0.207	C_v :	0.7

Seismic Design Category: B









Data Accessed: **Tue Feb 28 2023**

Date Source:

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

Ice

Results:

Ice Thickness:	1.00 in.
Concurrent Temperature:	15 F
Gust Speed	50 mph
Data Source:	Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8
Date Accessed:	Tue Feb 28 2023

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

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

ATTACHMENT 5

Date: **March 16, 2023**

Rob Kulbacki
Crown Castle
2000 Corporate Drive,
Canonsburg, PA 15317
724-416-2116

POD Group
1033 E Turkeyfoot Lake Rd. Suite 206
Akron, OH 44312
(330) 961.7432
mhoudeshell@podgrp.com

Subject:	**Mount Analysis Report**	
Carrier Designation:	**DISH Network**	
	Carrier Site Number:	**BOBOS00883A**
Crown Castle Designation:	**Crown Castle BU Number:**	**826313**
	Crown Castle Site Name:	**NORWICH**
	Crown Castle JDE Job Number:	**671450**
	Crown Castle Order Number:	**572907 Rev. 1**
Engineering Firm Designation:	**POD Report Designation:**	**21-113849**
Site Data:	**50 Clinton Avenue, Norwich, New Loundon County, CT 06360** **Latitude 41°33'19.80" Longitude -72°6'37.08"**	
Structure Information:	**Tower Height & Type:**	**150 ft Monopole**
	Mount Elevation:	**106 ft**
	Mount Type:	**8' Platform with Support Rail**

Dear Rob Kulbacki,

POD Group is pleased to submit this "Mount Analysis Report" to determine the structural integrity of DISH Network's antenna mounting system with the proposed appurtenance and equipment addition on the abovementioned supporting tower structure. Analysis of the existing supporting tower structure is to be completed by others and therefore is not part of this analysis. Analysis of the antenna mounting system as a tie-off point for fall protection or rigging is not part of this document.

The purpose of the analysis is to determine acceptability of the mount stress level. Based on our analysis we have determined the mount stress level to be:

8' Platform with Support Rail (Multiple Sector) **Sufficient**

This analysis utilizes an ultimate 3-second gust wind speed of 124 mph as required by the 2021 International Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Mount structural analysis prepared by: Bradley Linerode

Respectfully submitted by:

Jason Cheronis, PE
Connecticut PE#: 0032793

TABLE OF CONTENTS

1) INTRODUCTION

This mount is a proposed 8' Platform with Support Rail designed by Commscope (P/N: MC-PK8). This mount is to be installed at the 106 ft elevation on the 150 ft Monopole.

2) ANALYSIS CRITERIA

Building Code: 2021 IBC
TIA-222 Revision: TIA-222-H
Risk Category: II
Ultimate Wind Speed: 124 mph
Exposure Category: B
Topographic Factor at Base: 1.000
Topographic Factor at Mount: 1.000
Ice Thickness: 1 in
Wind Speed with Ice: 50 mph
Seismic S_s: 0.194
Seismic S_1: 0.054
Live Loading Wind Speed: 30 mph
Man Live Load at Mid/End-Points: 250 lb
Man Live Load at Mount Pipes: 500 lb

Table 1 - Proposed Equipment Configuration

Mount Centerline (ft)	Antenna Centerline (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Mount / Modification Details	Note
106	106	3	JMA WIRELESS	MX08FRO665-21	8' Platform with Support Rail	-
		3	FUJITSU	TA08025-B604		
		3	FUJITSU	TA08025-B605		
		1	RAYCAP	RDIDC-9181-PF-48		

3) ANALYSIS PROCEDURE

Table 2 - Documents Provided

Document	Remarks	Reference	Source
Crown Application	-	Crown Castle App #: 572907 Rev. 1 Dated: 8/18/2021	Crown Castle
Structural Analysis	-	Paul J. Ford Report #: 37521-1087.001.7805 Dated: 9/13/2021	Crown Castle
Proposed Base Levels Drawings	-	Crown Castle Sheet #: A1-106 Dated: 10/10/2021	Crown Castle
Mount Specification Sheets	-	Commscope Part #: MC-PK8-DSH Dated: 3/17/2021	Commscope

3.1) Analysis Method

RISA-3D (Version 17.0.2), a commercially available analysis software package, was used to create a three-dimensional model of the antenna mounting system and calculate member stresses for various loading cases. Selected output from the analysis are included in the Appendices.

A tool internally developed, using Microsoft Excel, by POD Group, was used to calculate wind loading on all appurtenances, dishes, and mount members for various load cases. Selected output from the calculations is included in Appendix B.

This analysis was performed in accordance with Crown Castle's ENG-SOW-10208 Tower Mount Analysis (Revision B).

3.2) Assumptions

1) The antenna mounting system was properly fabricated, installed, and maintained in good condition in accordance with its original design, TIA Standards, and/or manufacturer's specifications. This is not a condition assessment of the mount, structure, or foundation.
2) The configuration of antennas, mounts, and other appurtenances are as specified in Table 1 and the referenced drawings.
3) 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.
4) The weight of the mount was increased 10% in the analysis to account for connections, coax, and jumpers.
5) The purpose of this report is to assess the feasibility of adding appurtenances usually accompanied by transmission lines to the structure. POD Group does not analyze the fabrication of the mount or structure (including welding).
6) The analysis will be required to be revised 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.
7) Steel grades have been assumed as follows, unless noted otherwise:
    a. Channel — ASTM A1011 (GR 36)
    b. Angle, Plate — ASTM A36 (GR 36)
    c. HSS (Rectangular) — ASTM 500 (GR B-46)
    d. Pipe — ASTM A500 (GR C-60)
    e. Connection Bolts — ASTM A325

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

4) ANALYSIS RESULTS

Table 3 - Mount Component Stresses vs. Capacity (8' Platform with Support Rail)

Notes	Component	Critical Member	Centerline (ft)	% Capacity	Pass / Fail
1	Face	FACE	106	4.8	Pass
	Rail	RAIL		6.2	Pass
	Standoff	SO		24.3	Pass
	Corner	CR		21.6	Pass
	Plate	PLATE		29.3	Pass
	Mount Pipe	MP		6.5	Pass
	Rail Connection	RAIL CON		7.4	Pass
	Grating Support	GRAT SUP		19.8	Pass
	Standoff Flange Plate Bolts	-	-	2.6	Pass
	Standoff Flange Plate	-	-	24.5	Pass

Structure Rating (max from all components) =	**29.3%**

Notes:
1) See additional documentation in "Appendix C – Software Analysis Output" and "Appendix D – Additional Calculations" for calculations supporting the % capacity

4.1) Recommendations

The proposed mount Commscope MC-PK8-DSH installed at 106' elevation per manufacturer specifications has sufficient capacity to carry the proposed loading configuration.

APPENDIX E

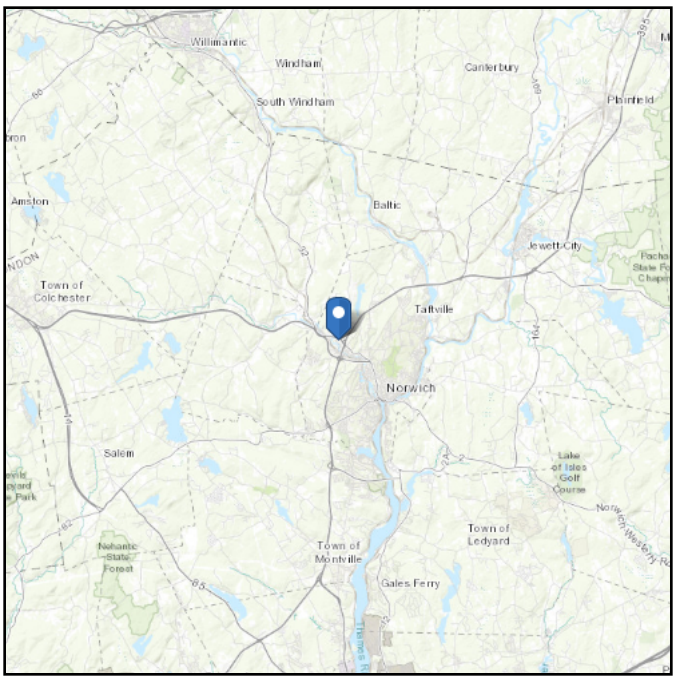
Design Criteria

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: 95.92 ft (NAVD 88)
Latitude: 41.5555
Longitude: -72.1103



Wind

Results:

Wind Speed:	124 Vmph
10-year MRI	75 Vmph
25-year MRI	85 Vmph
50-year MRI	96 Vmph
100-year MRI	101 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:	Wed Nov 03 2021

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

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

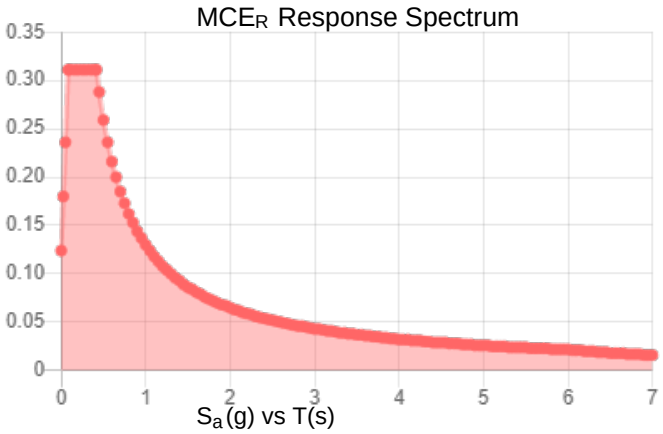
Seismic

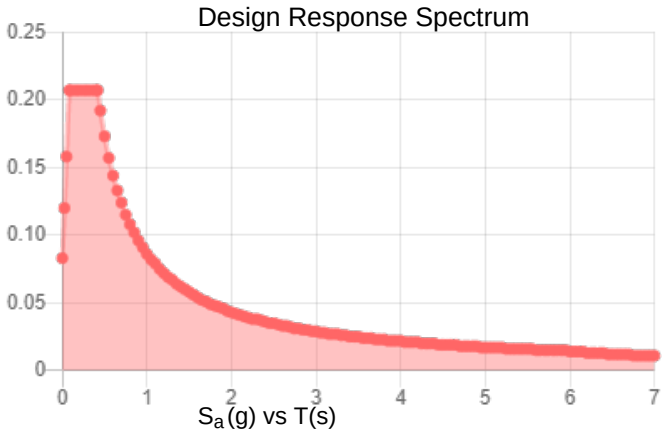
Site Soil Class: D - Default (see Section 11.4.3)

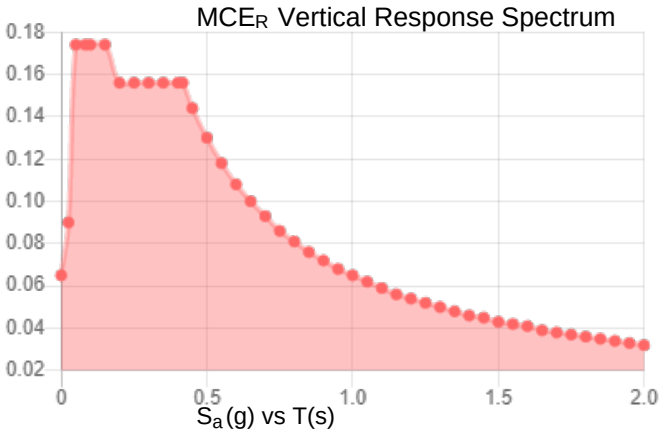
Results:

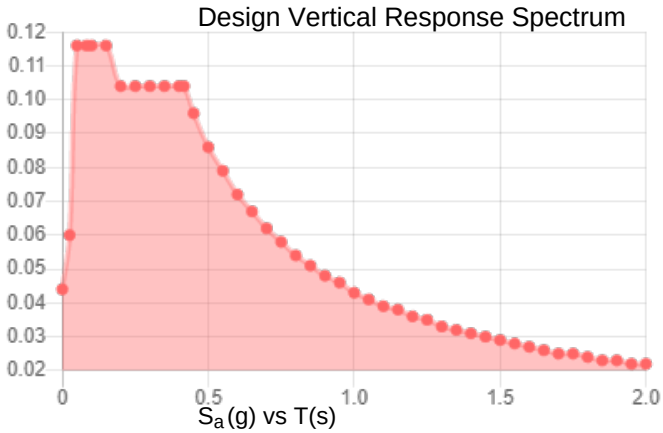
S_S :	0.194	S_{D1} :	0.086
S_1 :	0.054	T_L :	6
F_a :	1.6	PGA :	0.107
F_v :	2.4	PGA_M :	0.17
S_{MS} :	0.311	F_{PGA} :	1.586
S_{M1} :	0.13	I_e :	1
S_{DS} :	0.207	C_v :	0.7

Seismic Design Category B









Data Accessed: Wed Nov 03 2021

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

Ice

Results:

Ice Thickness:	1.00 in.
Concurrent Temperature:	15 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8
Date Accessed:	Wed Nov 03 2021

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

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

APPENDIX F

Mount Specification Sheets

NOTES:

1.0 GENERAL
- 1.1 ALL METRIC DIMENSIONS ARE IN BRACKETS
- 1.2 FOR PATENTS, SEE WWW.CS-PAT.COM

2.0 DESIGN NOTES
- 2.1 TORQUE U-BOLTS TO 44 FT-LBS

3.0 MANUFACTURING/SPECIAL REQUIREMENTS

4.0 TEST

5.0 PACKAGING

REVISIONS				
REV.	ECN	DESCRIPTION	BY	DATE
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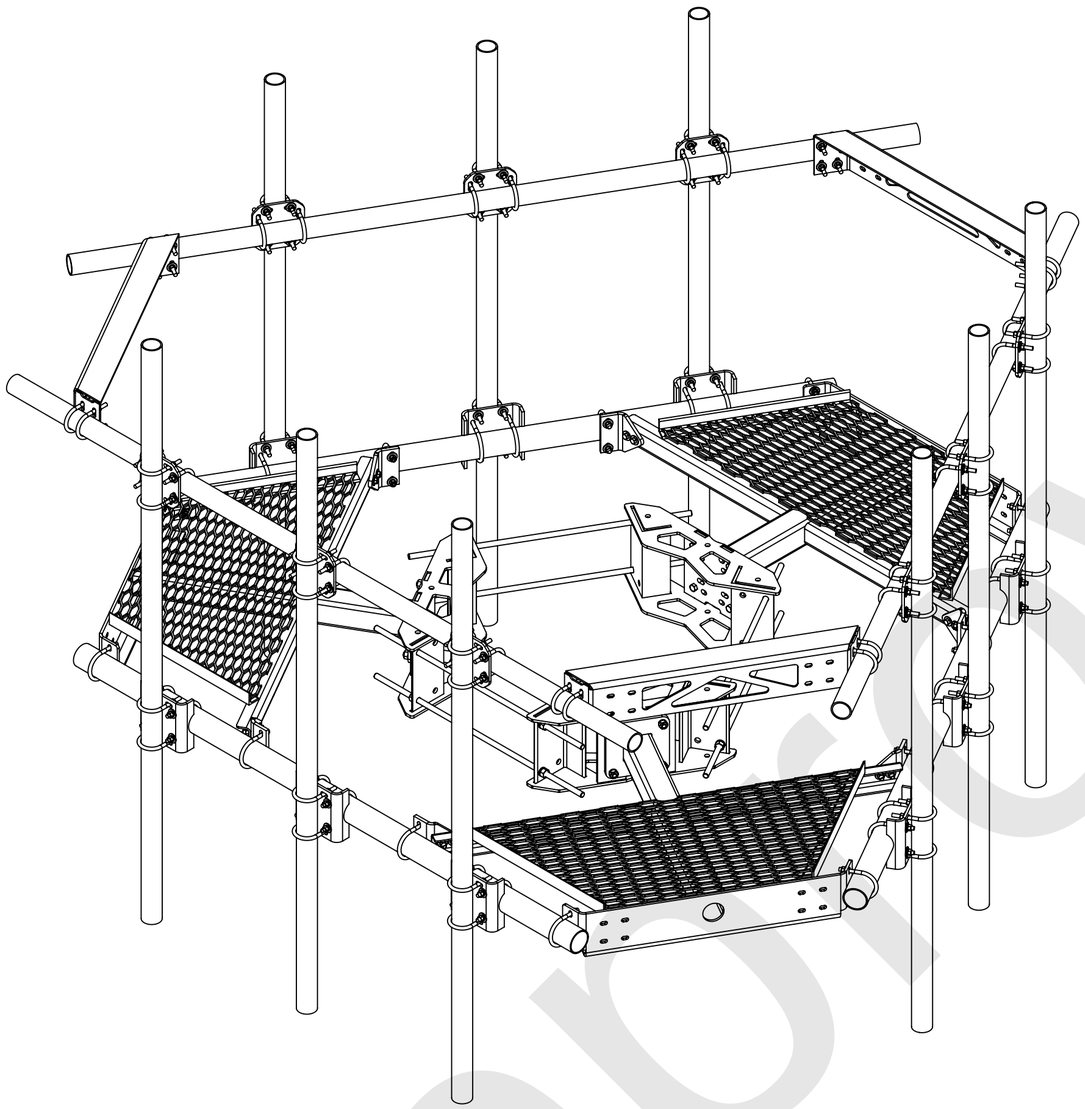

PATENT PENDING

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

COMMSCOPE, INC. OF NORTH CAROLINA

TOLERANCES
1 PLACE .X ± .25
2 PLACE .XX ± 0.12
3 PLACE .XXX ± 0.06
ANGLES ± 2°

SAP MATERIAL MASTER: MC-PK8-DSH

FINISH: GALV A123

MATERIAL: A500, A1011/A1018

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

	NAME	DATE
CE	MRC	02/17/20
RW	ROGHANSON	03/16/2021
AD	BCROSS	03/17/2021
RE	FA1024	02/27/2020

ECN 10272PC

TITLE: **LOW PROFILE PLATFORM FACE**

SCALE: 1:32

DOCUMENT NO.: MC-PK8-DSH

SIZE: C

Auth Group: INSL

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VERSION	STATUS	REVISION	VERSION	STATUS	REVISION	
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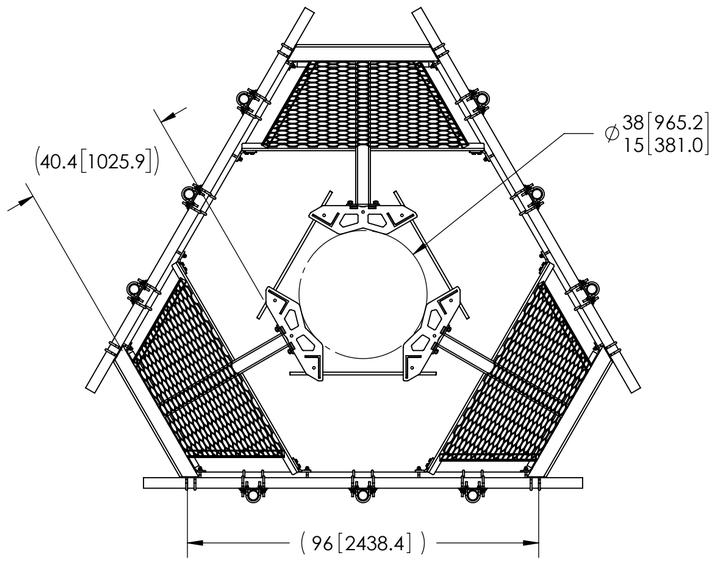

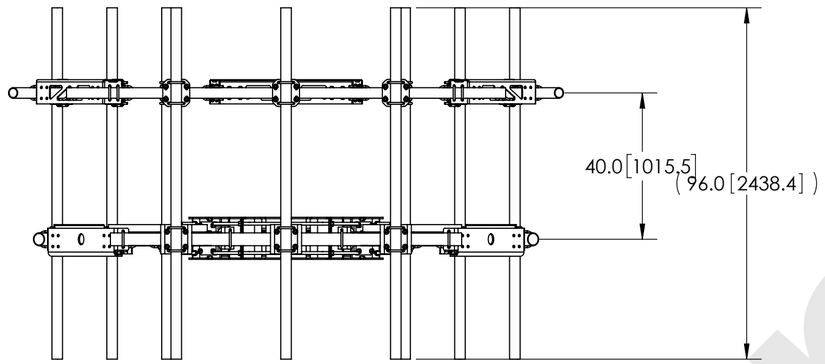

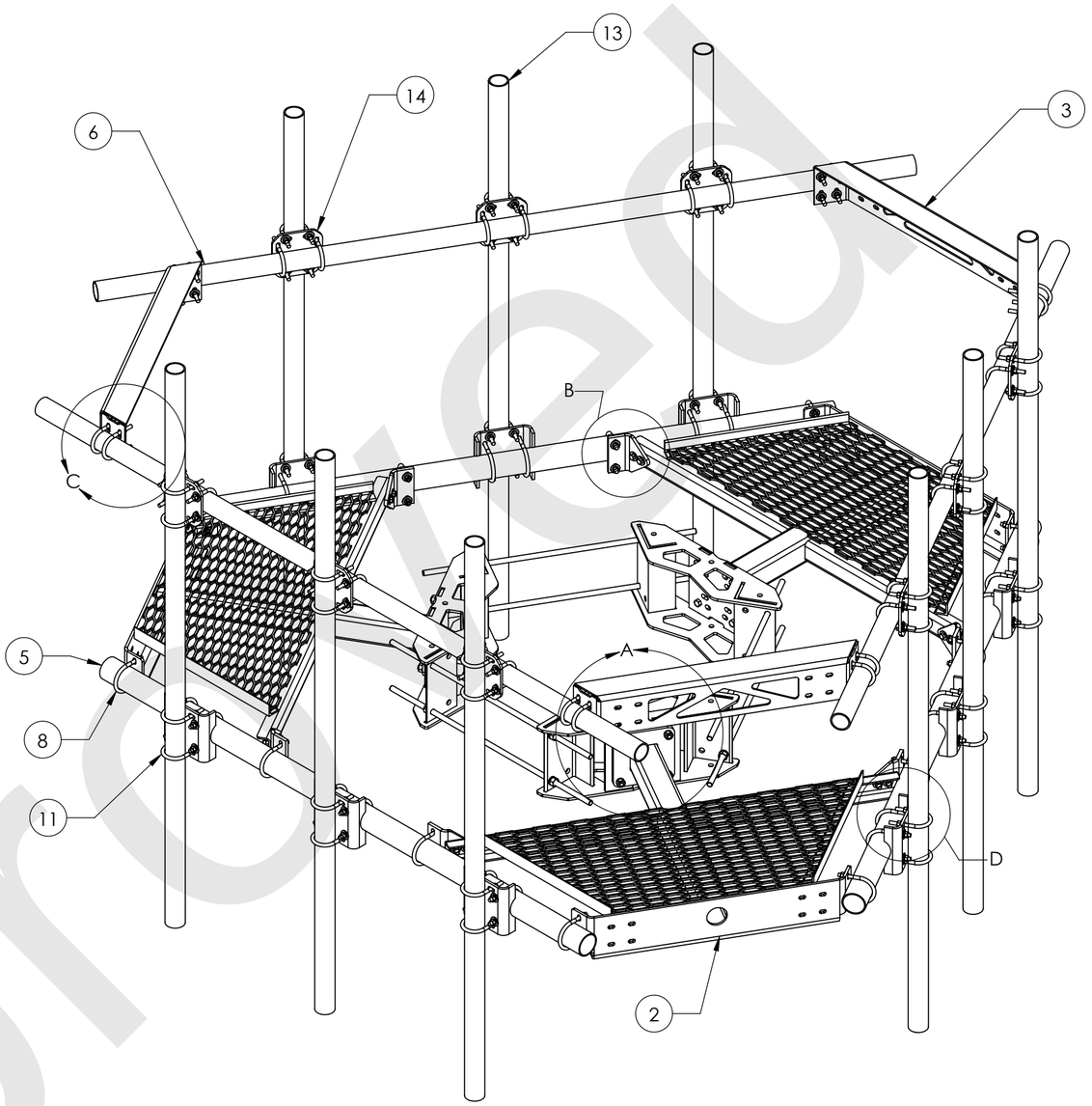

ITEM	PART NO.	DESCRIPTION	QTY.
1	MC-RM1550-3	12" - 50" OD RINGMOUNT	1
2	MTC300602	SECTOR WELDMENT FOR SNUB NOSE PLATFORM	3
3	MT195801	Corner Weldment Snub Nose Handrail	3
4	GB-0520A	5/8" X 2" GALV BOLT KIT (A325)	12
5	MT54796	3.50" OD X 96" GALV PIPE	3
6	MT546120	2.875" O.D. X 120" PIPE	3
7	GWF-04	1/2"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

COMMSCOPE, INC. OF NORTH CAROLINA

TITLE

LOW PROFILE PLATFORM FACE

SIZE	SCALE	DOCUMENT NO.		
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		DRAWING		SHEET
		VERSION	STATUS	REVISION
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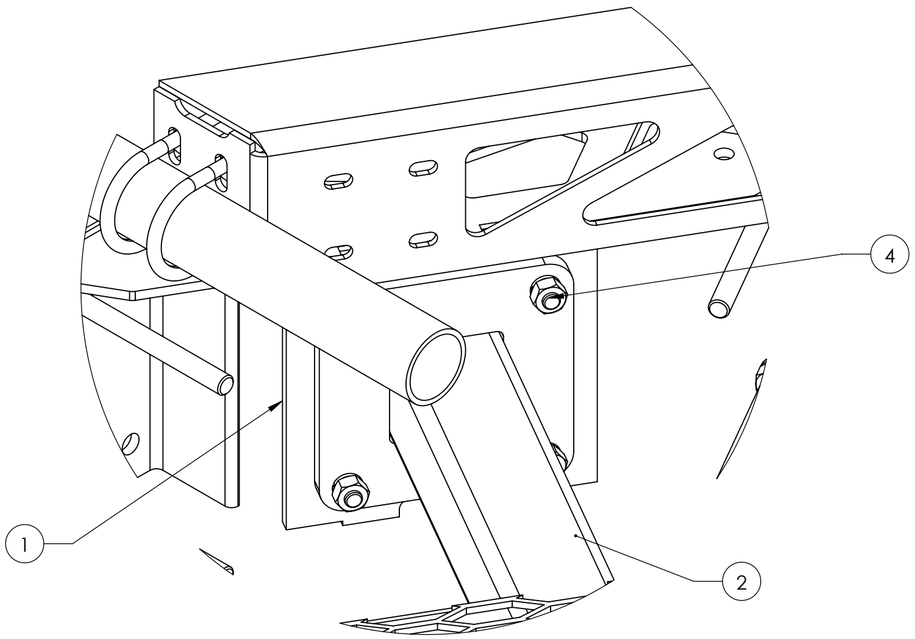

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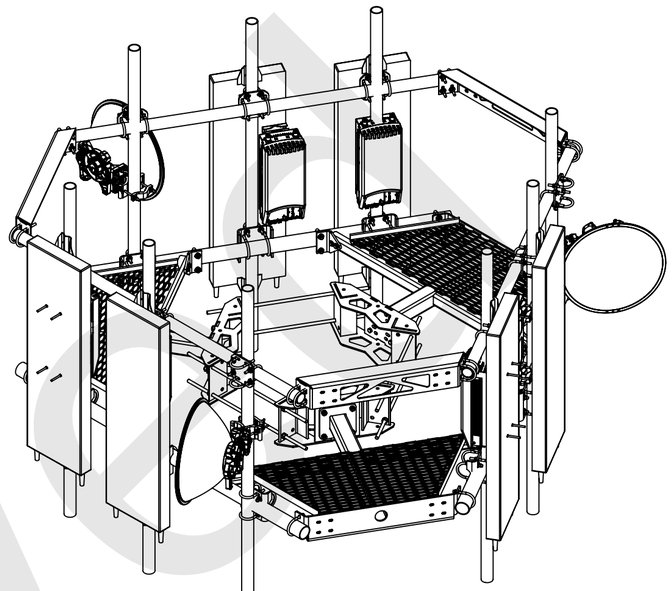
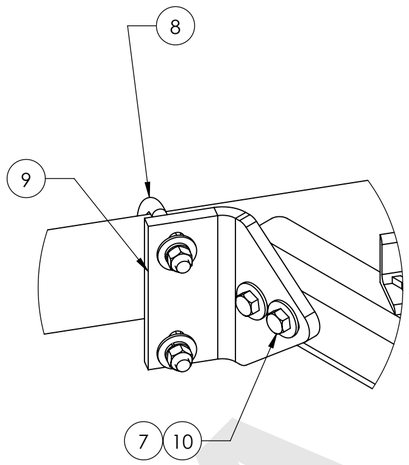


WITH ANTENNAS



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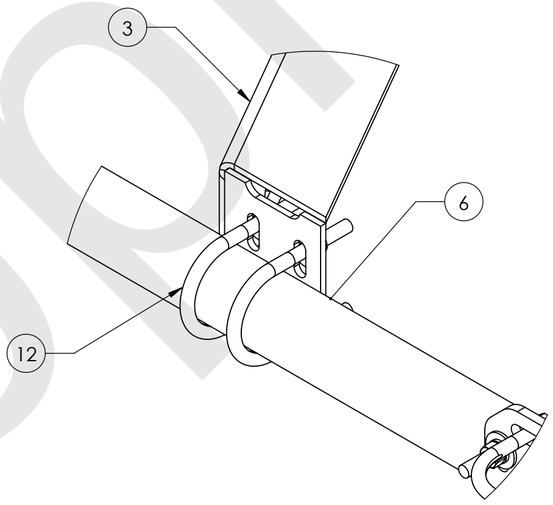

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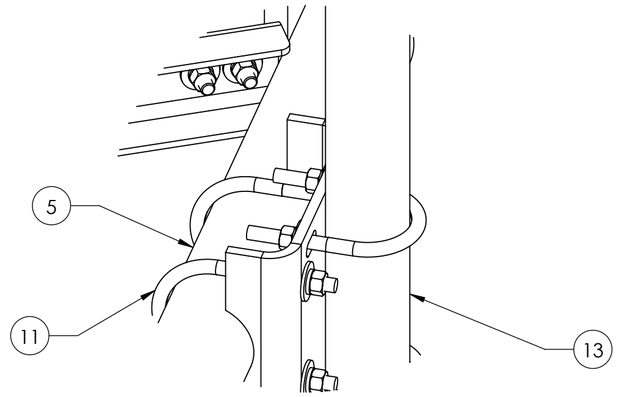

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		DRAWING: VERSION 00 / STATUS AD / REVISION A	SHEET: 3 OF 3

ATTACHMENT 6

EBI Consulting

environmental | engineering | due diligence

RADIO FREQUENCY EMISSIONS ANALYSIS REPORT
EVALUATION OF HUMAN EXPOSURE POTENTIAL TO NON-IONIZING EMISSIONS

Dish Existing Facility

Site ID: BOBOS00883A

BOBOS00883A
50 Clinton Avenue
Norwich, Connecticut 06360

March 20, 2023

EBI Project Number: 6223000994

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**16.38%**

March 20, 2023

Dish

Emissions Analysis for Site: BOBOS00883A - BOBOS00883A

EBI Consulting was directed to analyze the proposed Dish facility located at **50 Clinton Avenue** in **Norwich, Connecticut** for the purpose of determining whether the emissions from the Proposed Dish Antenna Installation located on this property are within specified federal limits.

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

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

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

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limits for the 600 MHz and 700 MHz frequency bands are approximately 400 $\mu W/cm^2$ and 467 $\mu W/cm^2$, respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 11 GHz frequency bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure.

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed Dish Wireless antenna facility located at 50 Clinton Avenue in Norwich, Connecticut using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since Dish is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report, the sample point is the top of a 6-foot person standing at the base of the tower.

For all calculations, all equipment was calculated using the following assumptions:

1) 4 n71 channels (600 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

2) 4 n70 channels (2007 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

3) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.

4) For the following calculations, the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

5) The antennas used in this modeling are the JMA MX08FRO665-21 02DT 600 for the 600 MHz / 600 MHz channel(s) in Sector A, the JMA MX08FRO665-21 02DT 600 for the 600 MHz / 2007 MHz channel(s) in Sector B, the JMA MX08FRO665-21 02DT 600 for the 600 MHz / 2007 MHz channel(s) in Sector C. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

6) The antenna mounting height centerline of the proposed antennas is 106 feet above ground level (AGL).

7) Emissions values for additional carriers were calculated in Far Field utilizing the antenna models provided in the structural analysis.

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

Dish Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	JMA MX08FRO665-21 02DT 600	Make / Model:	JMA MX08FRO665-21 02DT 600	Make / Model:	JMA MX08FRO665-21 02DT 600
Frequency Bands:	600 MHz / 600 MHz	Frequency Bands:	600 MHz / 2007 MHz	Frequency Bands:	600 MHz / 2007 MHz
Gain:	11.35 dBd / 15.75 dBd	Gain:	11.35 dBd / 15.75 dBd	Gain:	11.35 dBd / 15.75 dBd
Height (AGL):	106 feet	Height (AGL):	106 feet	Height (AGL):	106 feet
Channel Count:	8	Channel Count:	8	Channel Count:	8
Total TX Power (W):	280.00 Watts	Total TX Power (W):	280.00 Watts	Total TX Power (W):	280.00 Watts
ERP (W):	6,818.87	ERP (W):	6,818.87	ERP (W):	6,818.87
Antenna A1 MPE %:	**3.24%**	Antenna B1 MPE %:	**3.24%**	Antenna C1 MPE %:	**3.24%**

Site Composite MPE %	
Carrier	**MPE %**
Dish (Max at Sector C):	0.23%
Norwich Police & PWD	0.24%
T-Mobile	0.91%
AT&T	1.28%
MetroPCS	0.02%
Verizon	13.7%
Site Total MPE % :	16.38%

Dish MPE % Per Sector	
Dish Sector A Total:	0.05%
Dish Sector B Total:	0.18%
Dish Sector C Total:	0.23%
Site Total MPE % :	16.38%

Dish Maximum MPE Power Values (Sector C)

Dish Frequency Band / Technology (Sector C)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density (μW/cm²)	Frequency (MHz)	Allowable MPE (μW/cm²)	Calculated % MPE
Dish 600 MHz n71	4	364.8558002	106	5.246839598	600 MHz n71	400.0	1.31%
Dish 2007 MHz n70	4	1339.861757	106	19.26799496	2007 MHz n70	1000.0	1.93%
						Total:	**0.23%**

• NOTE: Totals may vary by approximately 0.01% due to summation of remainders in calculations.

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:	0.05%
Sector B:	0.18%
Sector C:	0.23%
Dish Maximum MPE % (Sector C):	0.23%
Site Total:	16.38%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **16.38%** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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

ATTACHMENT 7

April 26, 2023

VIA USPS CERTIFIED MAIL/
RETURN RECEIPT REQUESTED

RE: Proposed Modification to Existing Wireless Telecommunications Facility at 50 Clinton Ave, Norwich, Connecticut

To Whom It May Concern:

I am writing to you on behalf of Dish Wireless LLC ("Dish"). Dish intends to file with the Connecticut Siting Council ("Council") a petition for declaratory ruling ("Petition") that a Certificate of Environmental Compatibility and Public Need is not required.

The Petition will provide details of the Existing Facility modification and explain why it will have no significant adverse environmental effect. Dish proposes to expand the existing 180sqft compound by an additional 15.6-feet x12.10-feet (180sqft) to accommodate their 5'x7' steel platform that will house their proposed ground equipment. The proposed new fence will match the existing compound fence.

This letter serves as notice to you as an abutting property owner pursuant to § 16-50j-40 of the Regulations of Connecticut State Agencies. Dish will file the Petition on or about April 26, 2023 and will request that the Council place the Petition on some future agenda.

You may review the Petition at the office of the Council, which is located at Ten Franklin Square, New Britain, Connecticut, 06051, or at the Office of the City Clerk at Norwich City Hall. All inquiries should be addressed to Council or to the undersigned.

Sincerely,

Denise Sabo
Northeast Site Solutions- Agent for Crown Castle USA Inc. o/b/o Dish Wireless
(860) 209-4690
denise@northeastsitesolutions.com

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Postage $	$0.63
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Total			$8.13

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Return Receipt $3.35
Tracking #:
9590 9402 7596 2098 9756 03
Total $8.13

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Weight: 0 lb 0.50 oz
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Total $8.13

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Weight: 0 lb 0.50 oz
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Return Receipt $3.35
Tracking #:
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Total $8.13

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Letter
Norwich, CT 06360
Weight: 0 lb 0.50 oz
Estimated Delivery Date
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Return Receipt $3.35
Tracking #:
9590 9402 7596 2098 9756 34
Total $8.13

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Weight: 0 lb 0.50 oz
Estimated Delivery Date
Sat 04/29/2023
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Tracking #:
70200640000176613573
Return Receipt $3.35
Tracking #:
9590 9402 7596 2098 9755 97
Total $8.13

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Letter
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Weight: 0 lb 0.50 oz
Estimated Delivery Date
Sat 04/29/2023
Certified Mail® $4.15
Tracking #:
70200640000176613511
Return Receipt $3.35
Tracking #:
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Letter
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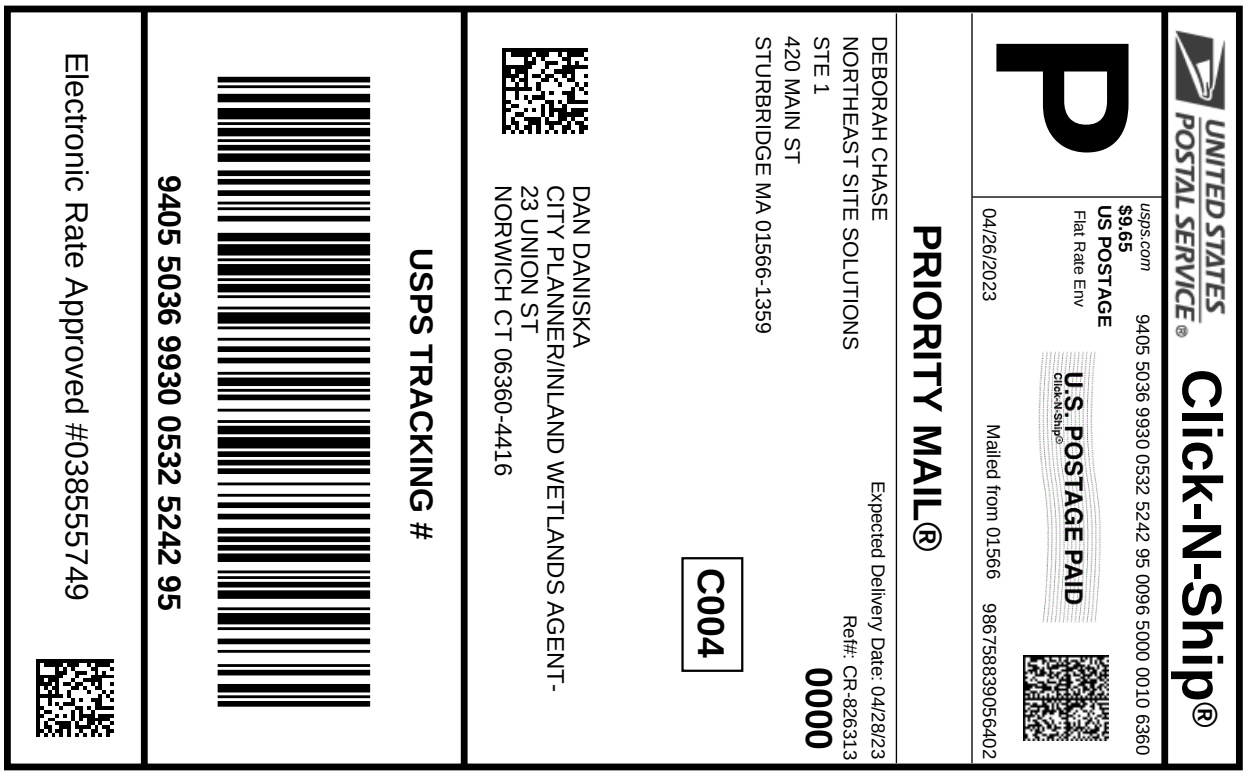

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STURBRIDGE MA 01566-1359

Ref#: CR-826313

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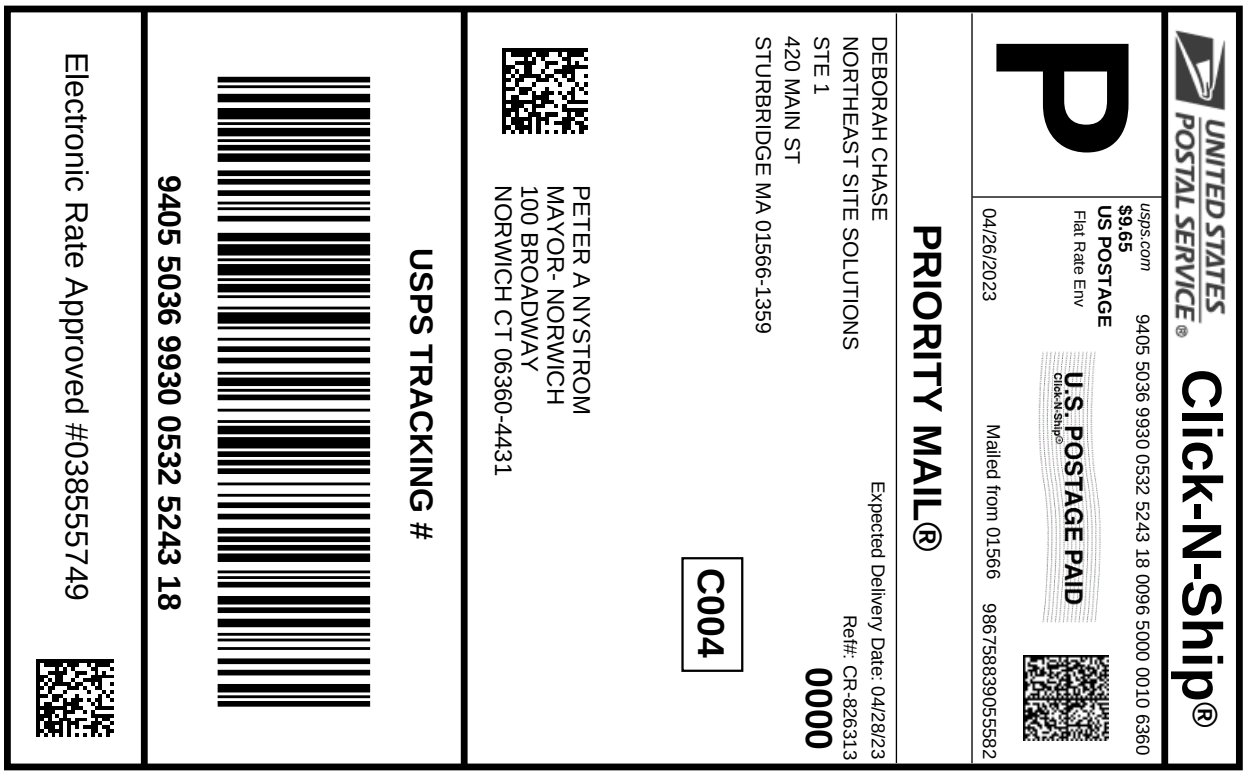

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Instructions

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 0532 5243 18

Trans. #:	587356505
Print Date:	04/26/2023
Ship Date:	04/26/2023
Expected Delivery Date:	04/28/2023

Priority Mail® Postage:	**$9.65**
Total:	**$9.65**

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

Ref#: CR-826313

To: PETER A NYSTROM
MAYOR- NORWICH
100 BROADWAY
NORWICH CT 06360-4431

* 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

826313 - CROWN DISH

UNITED STATES POSTAL SERVICE.

FISKDALE
458 MAIN ST
FISKDALE, MA 01518-9998
(800)275-8777

04/27/2023 03:09 PM

Product	Qty	Unit Price	Price
Prepaid Mail Norwich, CT 06360 Weight: 0 lb 12.90 oz Acceptance Date: Thu 04/27/2023 Tracking #: 9405 5036 9930 0532 5242 95	1		$0.00
Prepaid Mail Norwich, CT 06360 Weight: 0 lb 12.90 oz Acceptance Date: Thu 04/27/2023 Tracking #: 9405 5036 9930 0532 5243 18	1		$0.00
Grand Total:			$0.00

Text your tracking number to 28777 (2USPS) to get the latest status. Standard Message and Data rates may apply. You may also visit www.usps.com USPS Tracking or call 1-800-222-1811.

Preview your Mail
Track your Packages
Sign up for FREE @
https://informeddelivery.usps.com

All sales final on stamps and postage.
Refunds for guaranteed services only.
Thank you for your business.

Tell us about your experience.
Go to: https://postalexperience.com/Pos
or scan this code with your mobile device,

or call 1-800-410-7420.

UFN: 242703-0518
Receipt #: 840-50180227-2-3140169-1
Clerk: 5