



Northeast Site Solutions
Denise Sabo
4 Angela's Way, Burlington CT 06013
203-435-3640
denise@northeastsitesolutions.com

June 2, 2022

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

RE: Tower Share Application
1875 Noble Avenue, Bridgeport, CT 06610
Latitude: 41.210308
Longitude: -73.181116
Site #: 822779_Crown_Dish

Dear Ms. Bachman:

This letter and attachments are submitted on behalf of Dish Wireless LLC. Dish Wireless LLC plans to install antennas and related equipment to the tower site located at 1875 Noble Avenue (a/k/a 1 Beardsley Park), Bridgeport, Connecticut.

Dish Wireless LLC proposes to install three (3) 600/1900 MHz 5G antennas at the 86-foot level of the existing 120-foot flagpole tower, one (1) Fiber cable will also be installed. Dish Wireless LLC equipment cabinets will be placed within a 7' x 5' lease area within the base of the stealth structure. Included are plans by French & Parrello, dated April 29, 2022, Exhibit C. Also included is a structural analysis prepared by Crown Castle, dated February 2, 2022, confirming that the existing tower is structurally capable of supporting the proposed equipment. Attached as Exhibit D. The facility was approved by the City of Bridgeport Planning & Zoning Commission on March 27, 2000. Please see attached Exhibit A.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies 16-50aa, of Dish Wireless LLC intent to share a telecommunications facility pursuant to R.C.S.A. 16-50j-88. In accordance with R.C.S.A., a copy of this letter is being sent to Mayor Joseph Ganim and Dennis Buckley, Zoning Administrator for the City of Bridgeport, as well as the tower owner (Crown Castle) and property owner (Connecticut Zoological Society).

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

1. The proposed modification will not result in an increase in the height of the existing structure. The top of the existing tower is 120-feet and the Dish Wireless LLC antennas will be located at a centerline height of 86-feet.
2. The proposed modifications will not result in an increase of the site boundary as depicted on the attached site plan.



3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed local and state criteria. The incremental effect of the proposed changes will be negligible.

4. The operation of the proposed antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard. The combined site operations will result in a total power density of 16.90% as evidenced by Exhibit F.

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

A. Technical Feasibility. The existing tower has been deemed structurally capable of supporting Dish Wireless LLC proposed loading. The structural analysis is included as Exhibit D.

B. Legal Feasibility. As referenced above, C.G.S. 16-50aa has been authorized to issue orders approving the shared use of an existing tower such as this tower in Bridgeport. Under the authority granted to the Council, an order of the Council approving the requested shared use would permit Dish Wireless LLC to obtain a building permit for the proposed installation. Further, a Letter of Authorization is included as Exhibit G, authorizing Dish Wireless LLC to file this application for shared use.

C. Environmental Feasibility. The proposed shared use of this facility would have a minimal environmental impact. The installation of Dish Wireless LLC equipment at the 86-foot level of the existing 120-foot tower would have an insignificant visual impact on the area around the tower. Dish Wireless LLC ground equipment would be installed within the existing facility compound. Dish Wireless LLC shared use would therefore not cause any significant alteration in the physical or environmental characteristics of the existing site. Additionally, as evidenced by Exhibit F, the proposed antennas would not increase radio frequency emissions to a level at or above the Federal Communications Commission safety standard.

D. Economic Feasibility. Dish Wireless LLC will be entering into an agreement with the owner of this facility to mutually agreeable terms. As previously mentioned, the Letter of Authorization has been provided by the owner to assist Dish Wireless LLC with this tower sharing application.

E. Public Safety Concerns. As discussed above, the tower is structurally capable of supporting Dish Wireless LLC proposed loading. Dish Wireless LLC is not aware of any public safety concerns relative to the proposed sharing of the existing tower. Dish Wireless LLC intentions of providing new and improved wireless service through the shared use of this facility is expected to enhance the safety and welfare of local residents and individuals traveling through Bridgeport.

Sincerely,

Denise Sabo

Denise Sabo
Mobile: 203-435-3640
Fax: 413-521-0558
Office: 4 Angela's Way, Burlington CT 06013
Email: denise@northeastsitesolutions.com



Attachments

Cc: Mayor Joseph Ganim
City of Bridgeport
Margaret E. Morton Government Center
999 Broad Street
Bridgeport, CT 06604

Dennis Buckley, Zoning Administrator
Bridgeport City Hall
Zoning Department
45 Lyon Terrace, Room 210
Bridgeport, CT 06604

Connecticut Zoological Society, Property Owner
1875 Noble Avenue
Bridgeport, CT 06610

Crown Castle, Tower Owner

Exhibit A

Original Facility Approval

ZONING DEPARTMENT
DEVELOPMENT ADMINISTRATION
City of Bridgeport



DATE: March 31, 2000

OUR FILE: # 2K-07

Attorney J. Brendan Sharkey
100 Filley Street
Bloomfield, CT 06002

RE: Site Plan Review
1875 Noble Avenue
Bridgeport, CT

Dear Attorney Sharkey:

At its meeting held on Monday, March 27, 2000, the Planning & Zoning Commission voted to approve conditionally the application submitted by you which sought a Site Plan Review under Sec. 14-2 of the Bridgeport Zoning Regulations to permit the installation of a 120' high flagpole which will house telecommunications antennas & associated equipment within the Beardsley Zoo pavilion in a ZOOLOGICAL PARK ZONE.

The Commission stipulated the following conditions for its approval:

1. Stockade fencing not less than 6' high shall be installed to encompass & enclose the proposed equipment area.
2. No equipment shall exceed the height of the fencing required in condition No. 1 above.
3. Arborvitae trees no less than 6' high shall be planted at 6' intervals around the perimeter of the equipment enclosure area.
4. All required fencing & landscape trees are to be maintained at all times.
5. A "Removal Bond" as determined by the City Attorney's Office shall be filed with the Bridgeport Zoning Department prior to the Certification Of An Application For Zoning Compliance.

The Commission assigned the following reason for its action:

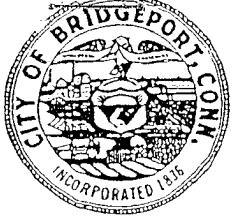
1. As to the Site Plan Review, the project, as approved, complies with the standards of Sec. 14-2-5 of the Bridgeport Zoning Regulations.

Very truly yours,



William A. Shaw, Clerk
Planning & Zoning Commission

WAS:map



NO.

APPLICATION FOR CERTIFICATE OF ZONING COMPLIANCE

ZONING COMMISSION
CITY OF BRIDGEPORT, CONN.CT11-240A
CITY HALL
45 Lyon Terrace
Room No. 206
Bridgeport, Conn.

Applicant Omnipoint Communications, Inc. Date 5/17/00 19.....
1875 *Owner or Tenant Only*
Address of Work 45 Lyons Terrace *East main St Street*
on the Corner *of Noble &* side of the above street about feet
North. South. East. West *Beardsley Zoo.* Street
Block No. 3000 as shown on Tax Assessor's Maps. C.A.M. Area NC Wetlands NO
Yes - No
Dimension of Lot: East 1/2 city block.
Size of Proposed Building or Addition No. Stories
Wood Frame Brick Veneer Masonry
Other Work (Describe in Detail) Installation of telecommunication antennas and associated equipment. (flagpole)

Proposed Use of Above (Describe in Detail) Telecommunication antenna for
Cell Phones, as approved by Z.B.P. 1/14/00 P.Z. approval 3/27/00

Presently Existing Use 200 Zone ZP

Previous use and date discontinued (if applicable)
..... Is pre-existing right claimed Yes *Yes* No

Signature J. Brendan Sharkey Print Same J. Brendan Sharkey, Esq.
If signed by agent state capacity (attorney, builder, etc.) Attorney for Omnipoint Communications
(The Applicant)
Mailing Address 100 Filley Street, Bloomfield, CT 06002 Phone No. 860/692-7100

INSTRUCTIONS

Fill Out This Application In Ink or Type

A detailed plot plan must be submitted with this application showing the proposed or existing lot and building dimensions and the location of all buildings in relation to the street line, side lot lines and rear lot line. NOTE: The occupancy and use of land, buildings and structures prior to the issuance of a Certificate of Zoning Compliance is prohibited. This is not the said certificate. Fees, payable at the time of making application, are not returnable and, are in an amount established by the Zoning Commission.

Fee received 100 Date 5/17/00 19..... By pmr

PLAN AND APPLICATION

C.A.M. APPROVAL

FINAL INSPECTION

APPROVED FOR ZONING COMPLIANCE ONLY
ZONING DEPARTMENT
CITY OF BRIDGEPORT, CONN.
RECEIVED DATE: <u>10/6/00</u>

Certificate Issued Date 19.....

Exhibit B

Property Card

1 BEARDSLEY PARK NA

Location 1 BEARDSLEY PARK NA

Mblu 76/ 3000/ 9/A /

Acct# EI-0000231

Owner STATE OF CONNECTICUT &

Assessment \$18,125,650

Appraisal \$25,893,770

PID 34492

Building Count 14

Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2021	\$3,393,770	\$22,500,000	\$25,893,770
Assessment			
Valuation Year	Improvements	Land	Total
2021	\$2,375,650	\$15,750,000	\$18,125,650

Owner of Record

Owner STATE OF CONNECTICUT &

Sale Price \$0

Co-Owner CT ZOOLOGICAL SOCIETY

Certificate

Address EXEMPT PARCEL N/A

Book & Page 3716/0210

BRIDGEPORT, CT 00000

Sale Date 05/27/1997

BRIDGEPORT, CT 00000

Instrument

Ownership History

Ownership History					
Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
STATE OF CONNECTICUT &	\$0		3716/0210		05/27/1997
STATE OF CONNECTICUT	\$0		3716/0203		05/27/1997
STATE OF CONNECTICUT &	\$0		3716/0198		05/27/1997

Building Information

Building 1 : Section 1

Year Built: 1922

Living Area: 4,041

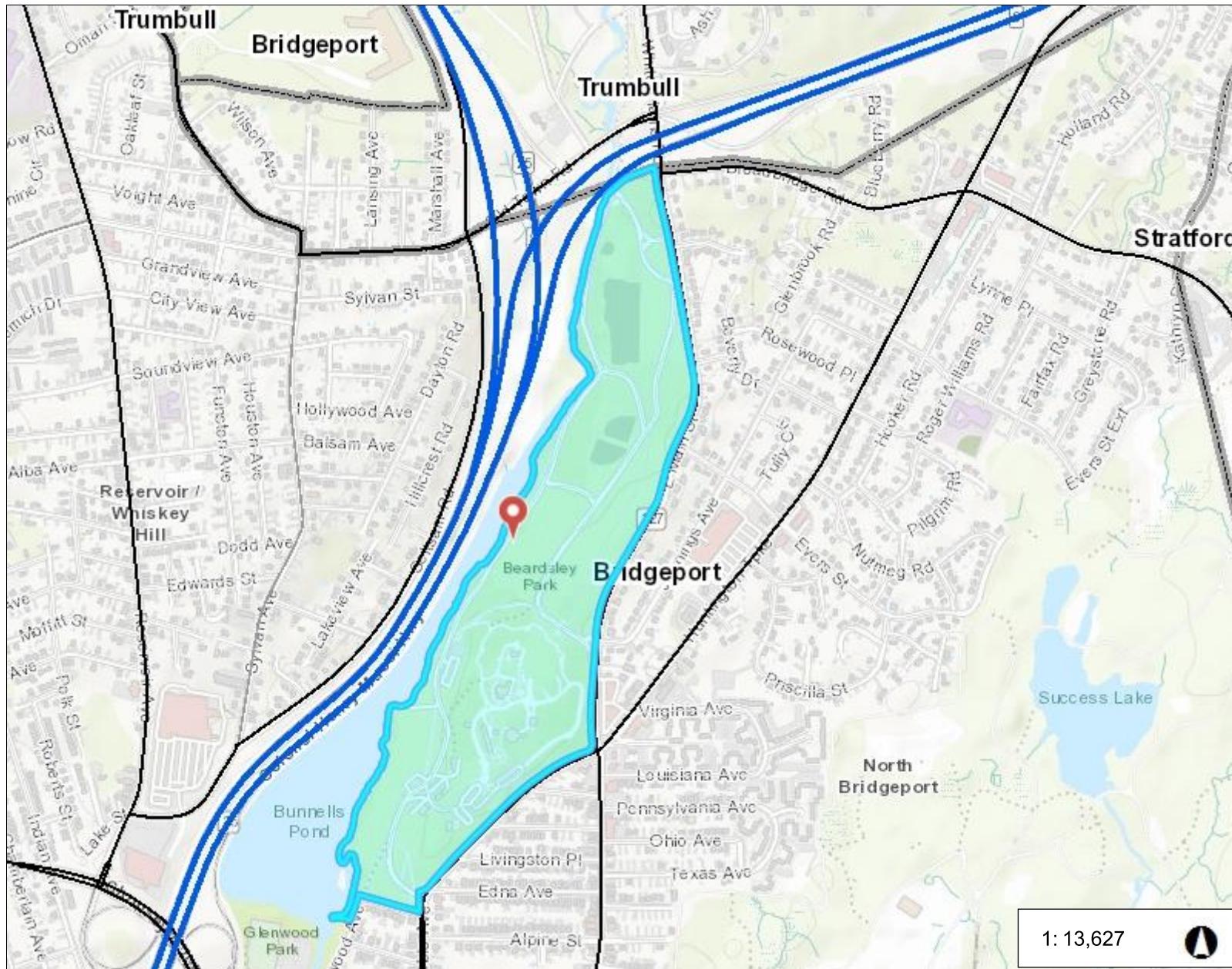
Replacement Cost: \$435,259

Building Percent Good: 60



City of Bridgeport

1875 NOBLE AVENUE



Legend

- Streetname
- Roadways
 - Local
 - Collector
 - Minor Collector
 - Minor Arterial
 - Major Collector
 - PA Other
 - PA Other Expwy
 - PA Interstate
- Town Boundary

2,271.2 0 1,135.58 2,271.2 Feet

WGS_1984_Web_Mercator_Auxiliary_Sphere
Created by Connecticut Metropolitan Council of Governments

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.
THIS MAP IS NOT TO BE USED FOR NAVIGATION

Exhibit C

Construction Drawings



DISH Wireless L.L.C. SITE ID:

NJJER01106A

DISH Wireless L.L.C. SITE ADDRESS:

**1875 NOBLE AVE,
BRIDGEPORT, CT 06610**

CONNECTICUT CODE COMPLIANCE

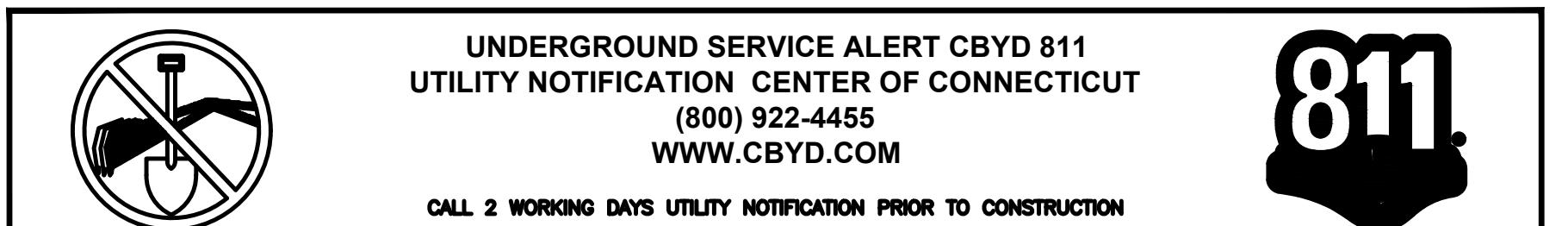
ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES:

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

SHEET INDEX

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

SCOPE OF WORK	
THIS IS NOT AN ALL INCLUSIVE LIST. CONTRACTOR SHALL UTILIZE SPECIFIED EQUIPMENT PART OR ENGINEER APPROVED EQUIVALENT. CONTRACTOR SHALL VERIFY ALL NEEDED EQUIPMENT TO PROVIDE A FUNCTIONAL SITE. THE PROJECT GENERALLY CONSISTS OF THE FOLLOWING:	
TOWER SCOPE OF WORK:	
<ul style="list-style-type: none"> • INSTALL (3) PROPOSED PANEL ANTENNAS (1 PER SECTOR) • INSTALL (3) PROPOSED ANTENNA MOUNTS (1 PER SECTOR) • INSTALL PROPOSED JUMPERS • INSTALL (6) PROPOSED RRUs (2 PER SECTOR) • INSTALL (1) PROPOSED OVER VOLTAGE PROTECTION DEVICE (OVP) • INSTALL (1) PROPOSED HYBRID CABLE • INSTALL (1) PROPOSED CABLE CLAMP • INSTALL (6) PROPOSED DIPLEXERS • INSTALL (1) PROPOSED BIAS-T 	
GROUND SCOPE OF WORK:	
<ul style="list-style-type: none"> • INSTALL (1) PROPOSED METAL PLATFORM • INSTALL (1) PROPOSED ICE BRIDGE • INSTALL (1) PROPOSED PPC CABINET • INSTALL (1) PROPOSED EQUIPMENT CABINET • INSTALL (1) PROPOSED POWER CONDUIT • INSTALL (1) PROPOSED TELCO CONDUIT • INSTALL (1) PROPOSED GPS UNIT • INSTALL (1) PROPOSED SAFETY SWITCH (IF REQUIRED) • INSTALL (1) PROPOSED FIBER NID (IF REQUIRED) • INSTALL (1) PROPOSED METER SOCKET 	
STRUCTURAL NOTE: STRUCTURAL ANALYSIS COMPLETED BY TOWER ENGINEERING PROFESSIONALS DATED (2/2/22).	

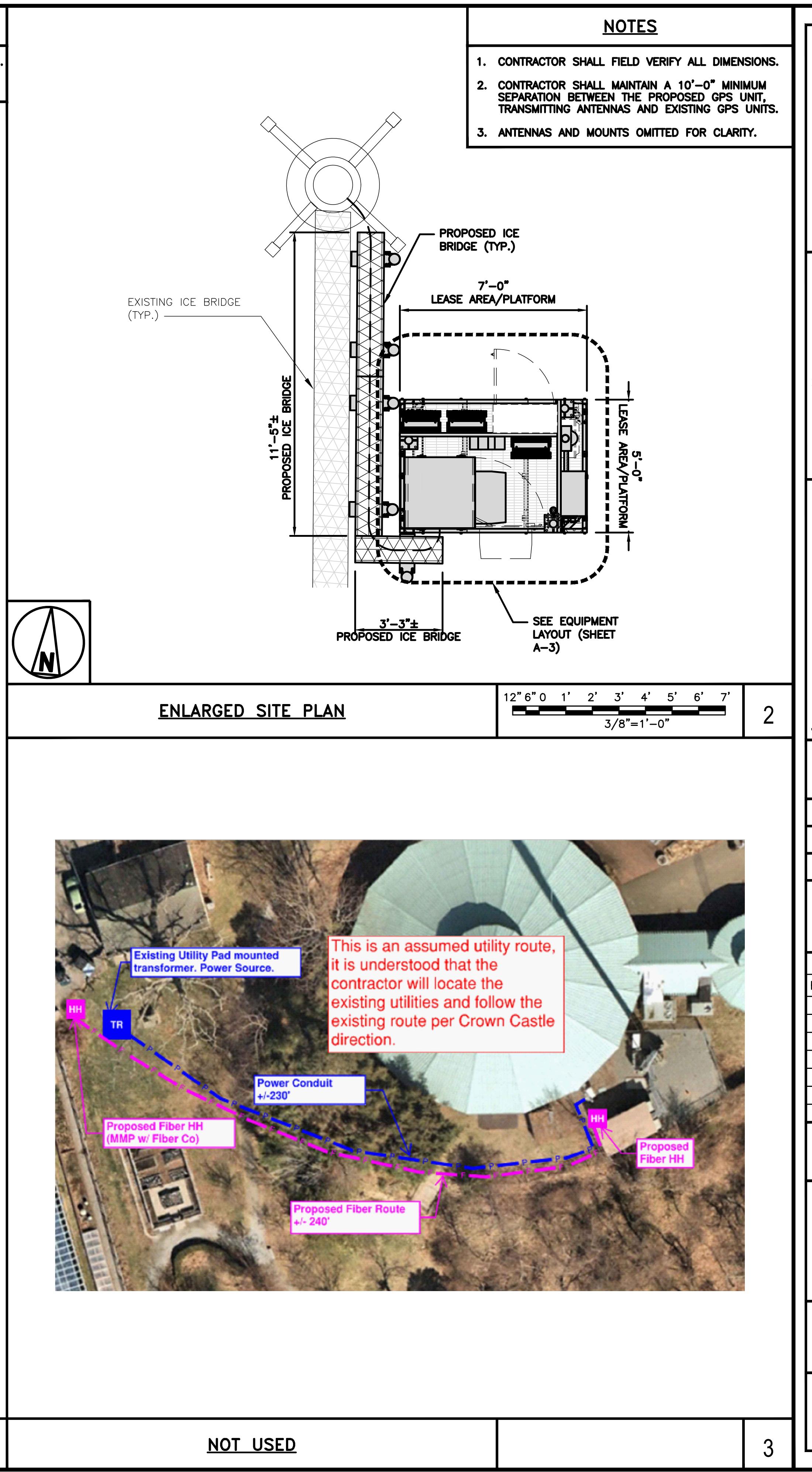
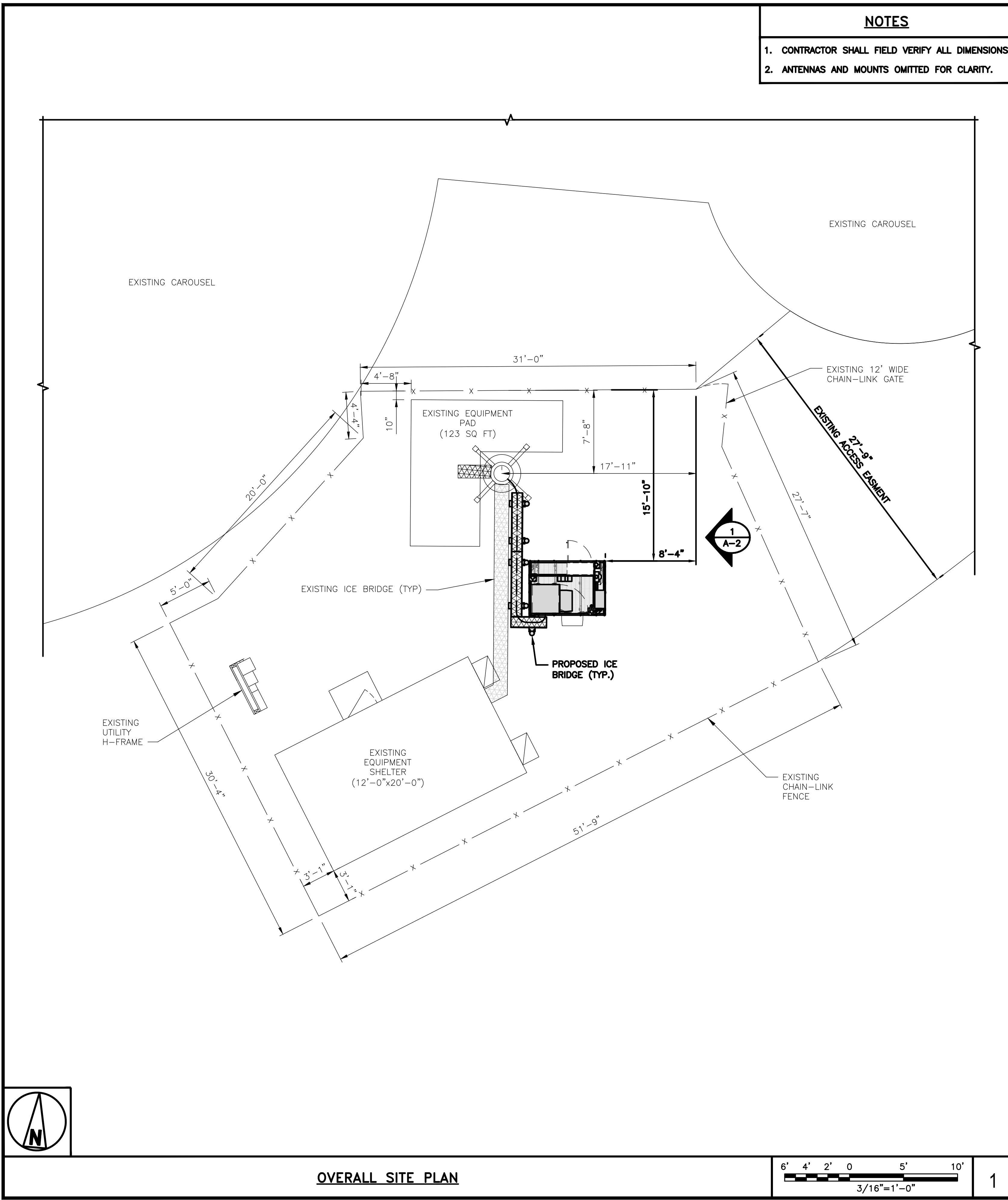


GENERAL NOTES	
THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. A TECHNICIAN WILL VISIT THE SITE AS REQUIRED FOR ROUTINE MAINTENANCE. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT DISTURBANCE OR EFFECT ON DRAINAGE, NO SANITARY SEWER SERVICE, POTABLE WATER, OR TRASH DISPOSAL IS REQUIRED AND NO COMMERCIAL SIGNAGE IS PROPOSED.	
11" x 17" 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		PROJECT DIRECTORY	
PROPERTY OWNER:	CT ZOOLOGICAL SOCIETY	APPLICANT:	DISH Wireless L.L.C.
ADDRESS:	1875 NOBLE AVE		5701 SOUTH SANTA FE DRIVE
	BRIDGEPORT, CT 06610		LITTLETON, CO 80120
TOWER TYPE:	MONPOLE	TOWER OWNER:	CROWN CASTLE
TOWER CO SITE ID:	822779		2000 CORPORATE DRIVE, CANONSBURG, PA 15317
TOWER APP NUMBER:	548693		(877) 486-9377
COUNTY:	FAIRFIELD	SITE DESIGNER:	FRENCH & PARRELLO ASSOCIATES
LATITUDE (NAD 83):	41° 12' 37.27" N	1800 ROUTE 34, SUITE 101	WALL, NJ 07719
	41.210353 N		732-312-9800
LONGITUDE (NAD 83):	-73° 10' 52.26" W		
	-73.181183 W		
ZONING JURISDICTION:	CONNECTICUT SITING COUNCIL	SITE ACQUISITION:	NICHOLAS CURRY
ZONING DISTRICT:	CITY		(908) 430-8582
PARCEL NUMBER:	3000-9A	CONSTRUCTION MANAGER:	JOSEPH DIPAZZA
OCCUPANCY GROUP:	U		TBD
CONSTRUCTION TYPE:	II-B	RF ENGINEER:	MURUGABIRAN JAYAPAL
POWER COMPANY:	TBD		TBD
TELEPHONE COMPANY:	TBD		

<p>1800 Route 34, Suite 101 • Wall, New Jersey 07719 o: 732.312.9800 f: 732.312.9801</p>										
<p>JOHN BOSCO, CT P.E. LICENSE NO. 25605 IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.</p>										
<p>DRAWN BY: <input type="checkbox"/> CHECKED BY: <input type="checkbox"/> APPROVED BY: <input type="checkbox"/> T.J.A. J.B. ---</p> <p>RFDS REV #: ---</p> <p>CONSTRUCTION DOCUMENTS</p> <p>SUBMITTALS</p> <table border="1"> <tr> <th>REV</th> <th>DATE</th> <th>DESCRIPTION</th> </tr> <tr> <td>A</td> <td>07/21/21</td> <td>ISSUED FOR REVIEW</td> </tr> <tr> <td>B</td> <td>04/29/22</td> <td>ISSUED FOR CONSTRUCTION</td> </tr> </table> <p>A&E PROJECT NUMBER 2438H.001.031</p> <p>DISH Wireless L.L.C. PROJECT INFORMATION NJJER01106A 1875 NOBLE AVENUE BRIDGEPORT, CT 06610</p> <p>SHEET TITLE TITLE SHEET</p> <p>SHEET NUMBER T-1</p>		REV	DATE	DESCRIPTION	A	07/21/21	ISSUED FOR REVIEW	B	04/29/22	ISSUED FOR CONSTRUCTION
REV	DATE	DESCRIPTION								
A	07/21/21	ISSUED FOR REVIEW								
B	04/29/22	ISSUED FOR CONSTRUCTION								



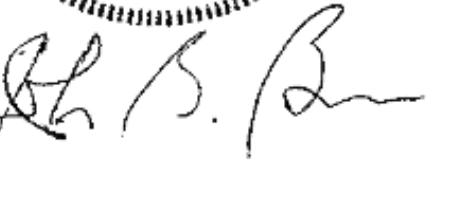
dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

FPA
FRENCH & PARRELLO
ASSOCIATES

1800 Route 34, Suite 101 • Wall, New Jersey 07719
o: 732.312.9800 f: 732.312.9801





JOHN BOSCO, CT P.E. LICENSE NO. 25605

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

DRAWN BY: CHECKED BY: APPROVED BY:
T.J.A. J.B. ---

RFDS REV #: ---

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	07/21/21	ISSUED FOR REVIEW
B	04/29/22	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
2438H.001.031

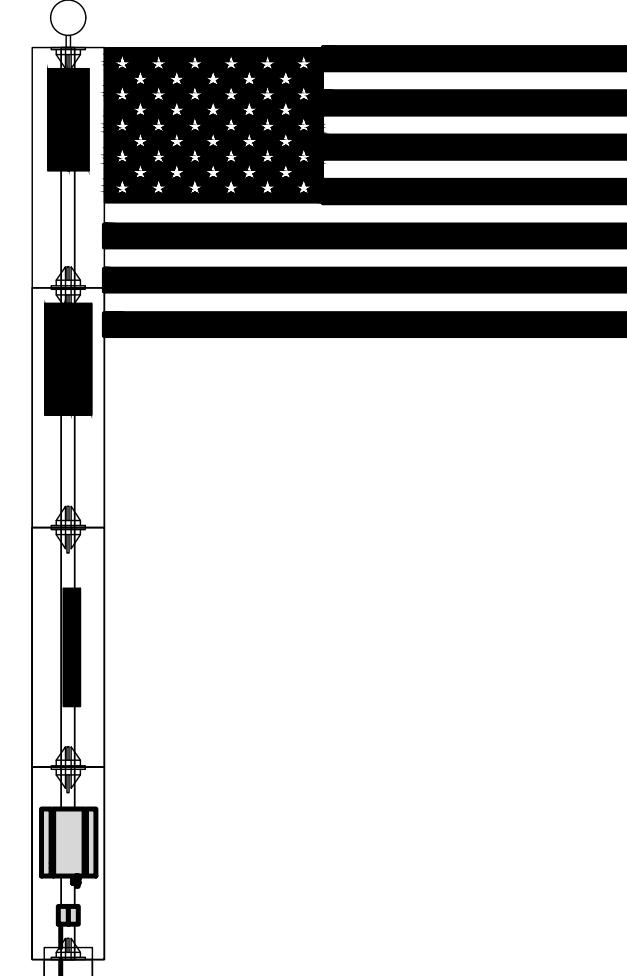
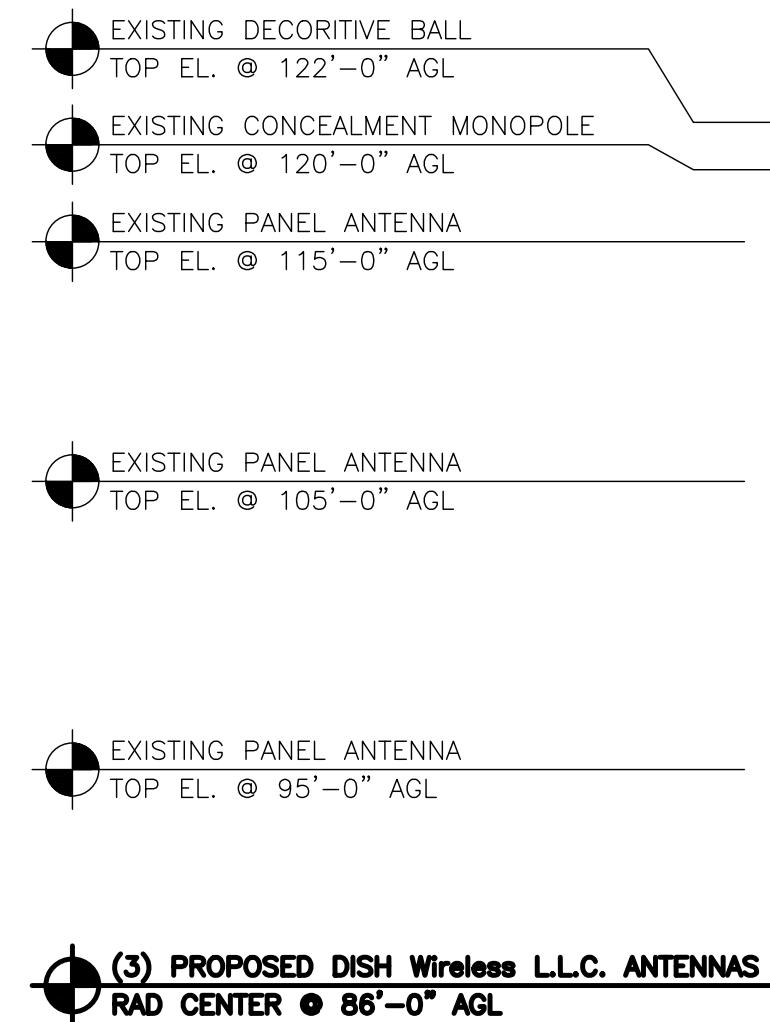
DISH Wireless LLC, PROJECT INFORMATION
NJJER01106A
1875 NOBLE AVENUE
BRIDGEPORT, CT 06610

SHEET TITLE
OVERALL AND ENLARGED SITE PLAN

SHEET NUMBER
A-1

NOTES

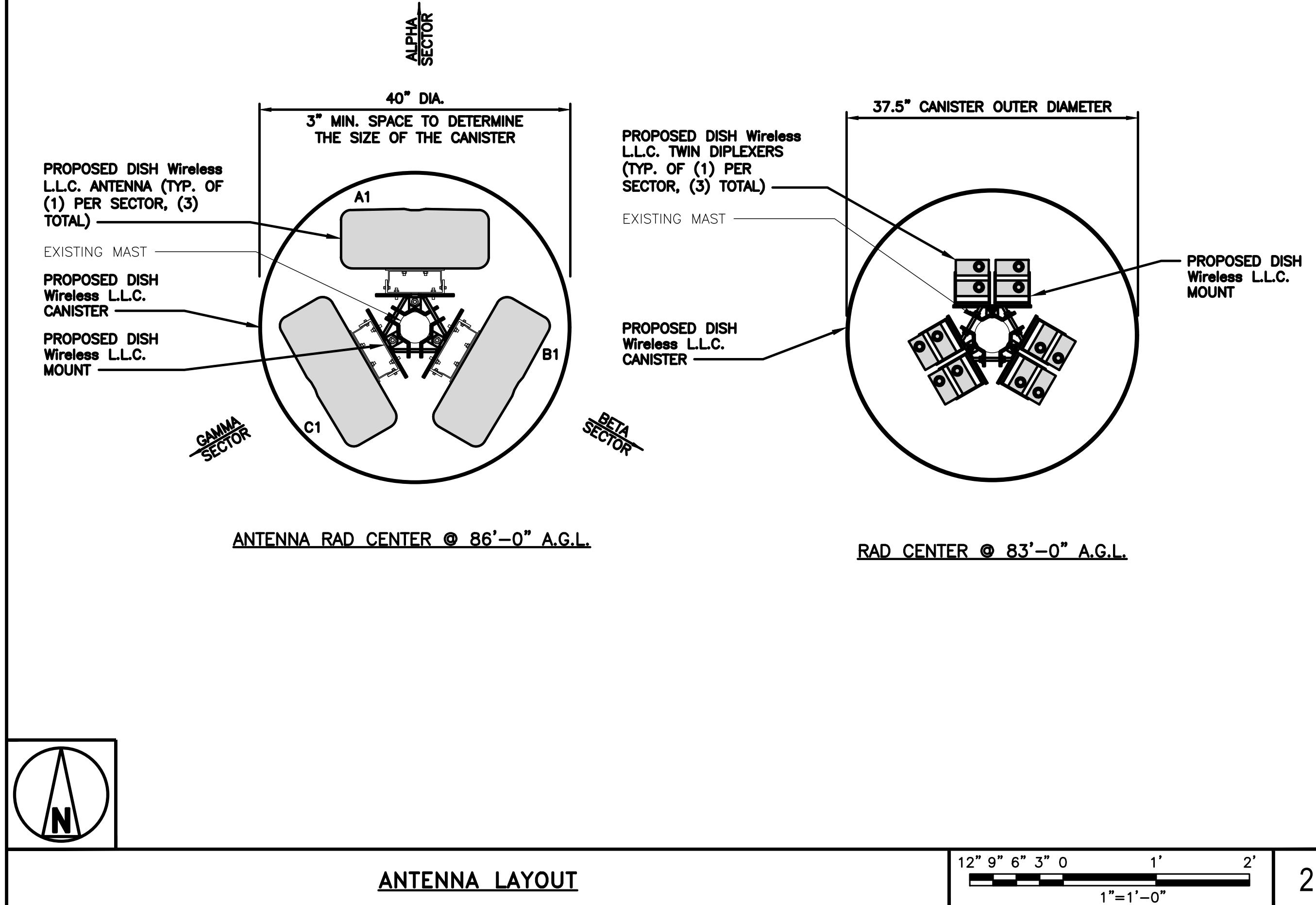
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNA AND MW DISH SPECIFICATIONS REFER TO ANTENNA SCHEDULE AND TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS
3. EXISTING EQUIPMENT AND FENCE OMITTED FOR CLARITY.



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

1

PROPOSED NORTH ELEVATION



SECTOR	POSITION	ANTENNA					TRANSMISSION CABLE
		EXISTING OR PROPOSED	MANUFACTURER - MODEL NUMBER	TECHNOLOGY	SIZE (HxW)	AZIMUTH	
ALPHA	A1	PROPOSED	JMA WIRELESS/MX08FR0665-21	5G	72.0" x 20.0"	0°	86'-0"
	B1	PROPOSED	JMA WIRELESS/MX08FR0665-21	5G	72.0" x 20.0"	120°	86'-0"
	C1	PROPOSED	JMA WIRELESS/MX08FR0665-21	5G	72.0" x 20.0"	240°	86'-0"
		PROPOSED	COMMSCOPE CDX623T-DS-T (6)		8.86" x 4.96"		83'-0"
		PROPOSED	KAELOS BIAS-T		5.41" x 3.27"		86'-0"
(1) HIGH-CAPACITY HYBRID CABLE (119' LONG)							

SECTOR	POSITION	RRH		NOTES	
		MANUFACTURER - MODEL NUMBER	TECHNOLOGY		
ALPHA	A1	FUJITSU - TA08025-B605	n71		
	A1	FUJITSU - TA08025-B604	n70/n66		
BETA	B1	FUJITSU - TA08025-B605	n71		
	B1	FUJITSU - TA08025-B604	n70/n66		
GAMMA	C1	FUJITSU - TA08025-B605	n71		
	C1	FUJITSU - TA08025-B604	n70/n66		

ANTENNA SCHEDULE

NO SCALE

3

dish
wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

FPA
FRENCH & PARRELLO
ASSOCIATES
1800 Route 34, Suite 101 • Wall, New Jersey 07719
o: 732.312.9800 f: 732.312.9801



JOHN BOSCO, CT P.E. LICENSE NO. 25605
IT IS A VIOLATION OF LAW FOR ANY PERSON,
UNLESS THEY ARE ACTING UNDER THE DIRECTION
OF A LICENSED PROFESSIONAL ENGINEER,
TO ALTER THIS DOCUMENT.

DRAWN BY: CHECKED BY: APPROVED BY:
T.J.A. J.B. ---

RFDS REV #: ---

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	07/21/21	ISSUED FOR REVIEW
B	04/29/22	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
2438H.001.031

DISH Wireless LLC,
PROJECT INFORMATION
NJJER01106A
1875 NOBLE AVENUE
BRIDGEPORT, CT 06610

SHEET TITLE
ELEVATION, ANTENNA
LAYOUT AND SCHEDULE

SHEET NUMBER

A-2



JOHN BOSCO, CT P.E. LICENSE NO. 25605
IT IS A VIOLATION OF LAW FOR ANY PERSON,
UNLESS THEY ARE ACTING UNDER THE DIRECTION
OF A LICENSED PROFESSIONAL ENGINEER,
TO ALTER THIS DOCUMENT.

DRAWN BY: CHECKED BY: APPROVED BY:
T.J.A. J.B. ---

RFDS REV #: ---

CONSTRUCTION DOCUMENTS

SUBMITTALS

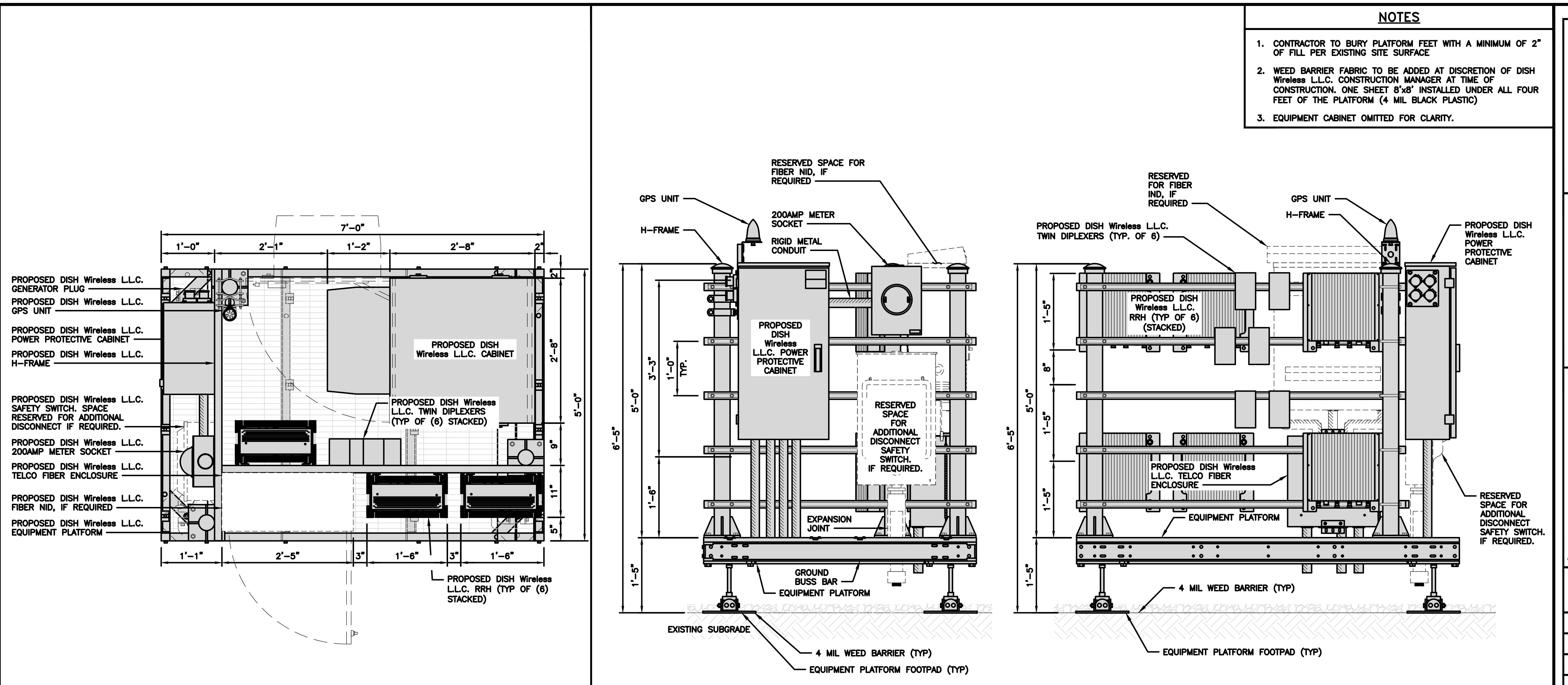
REV	DATE	DESCRIPTION
A	07/21/21	ISSUED FOR REVIEW
B	04/29/22	ISSUED FOR CONSTRUCTION

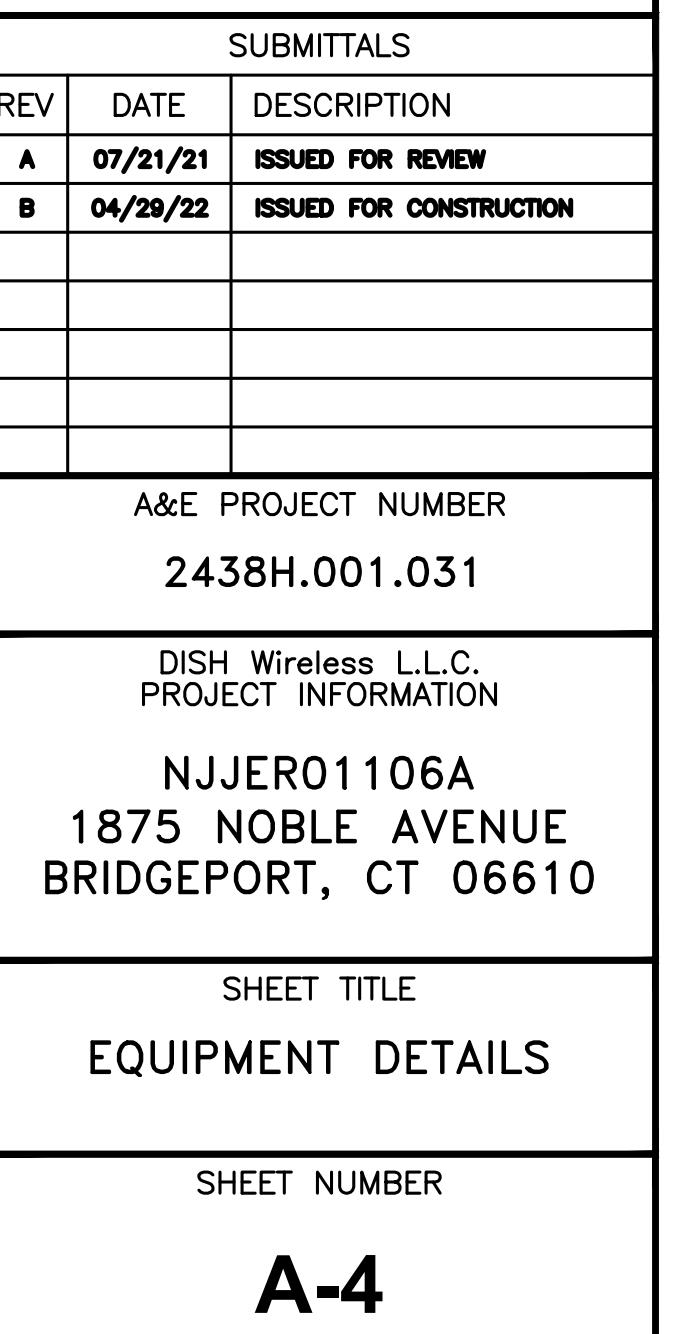
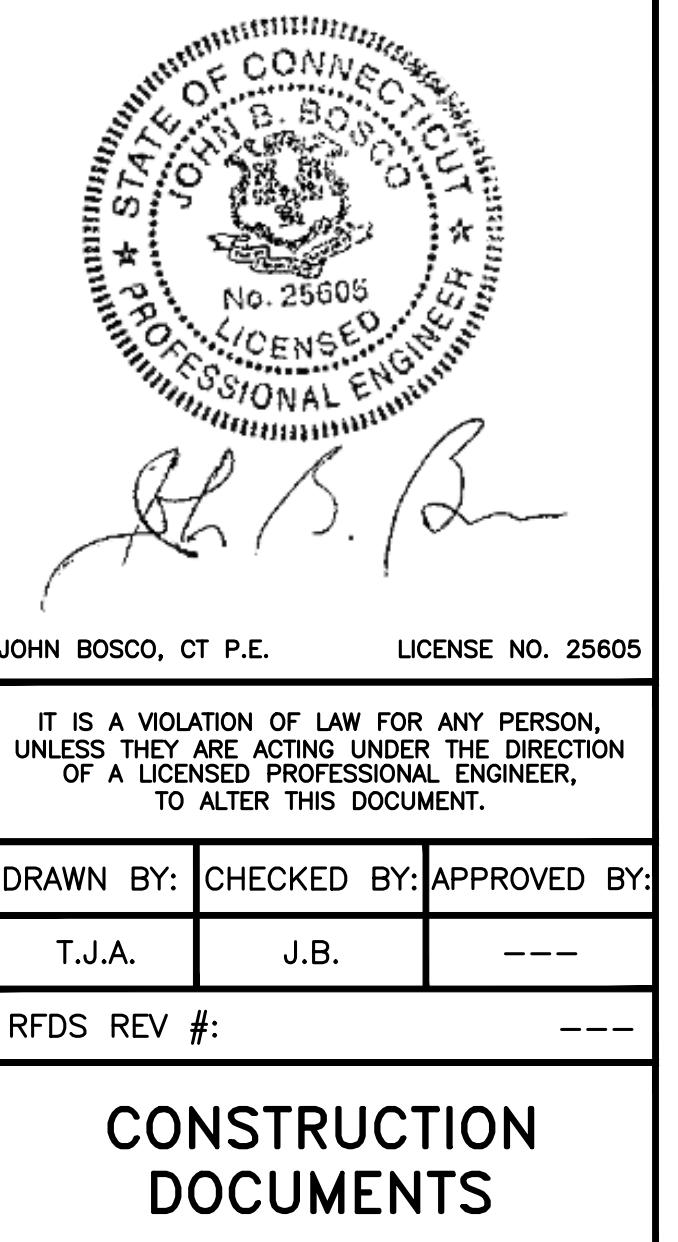
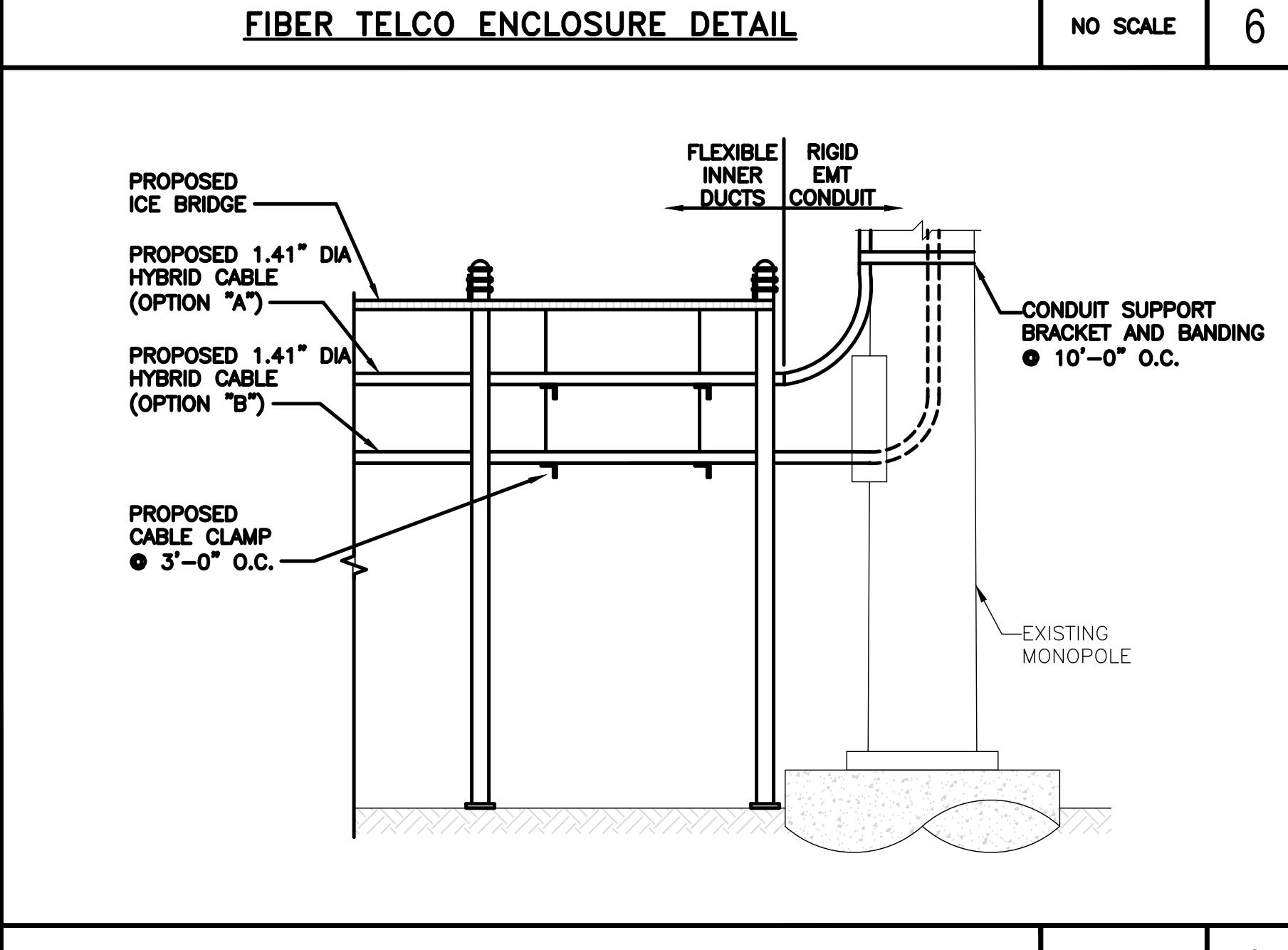
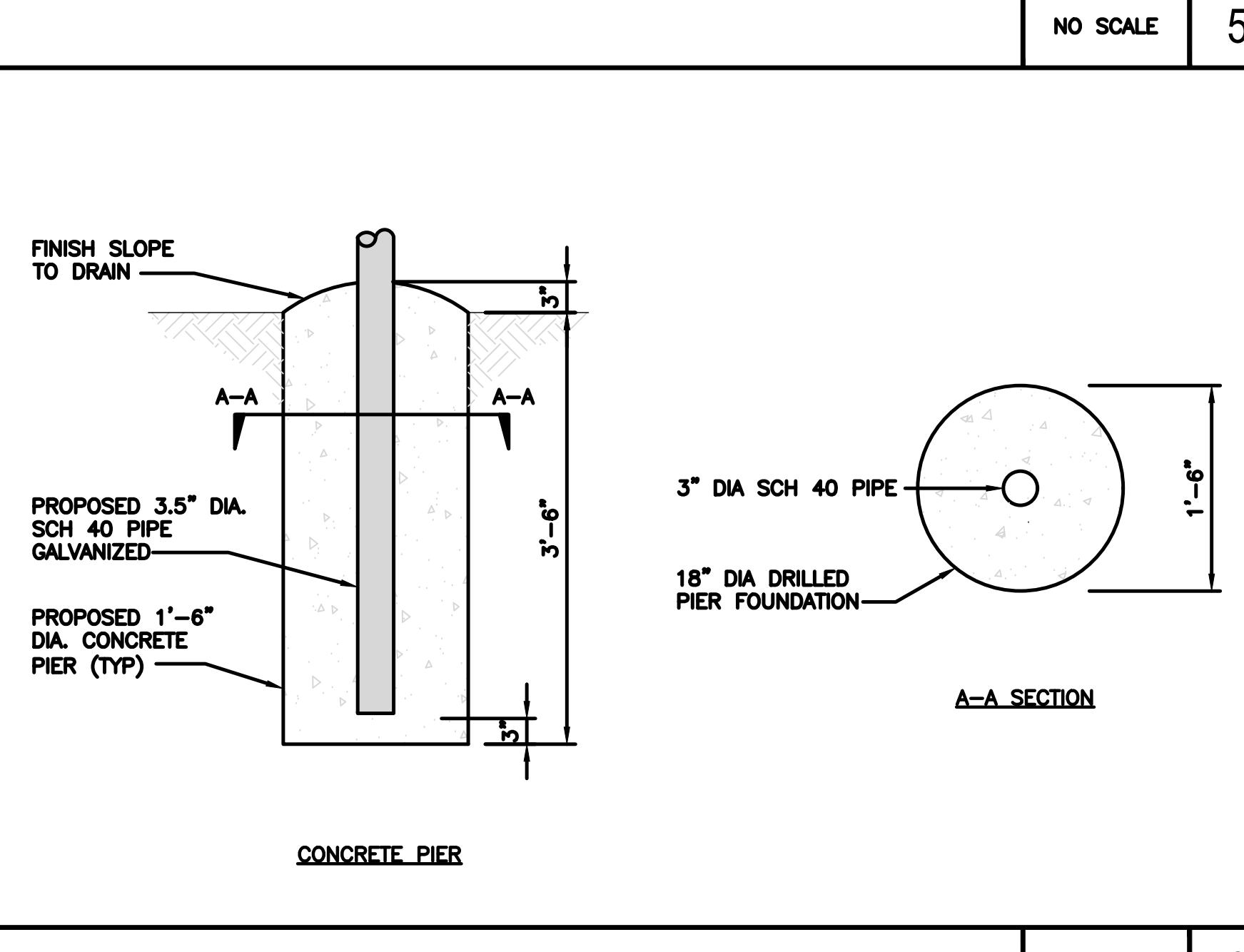
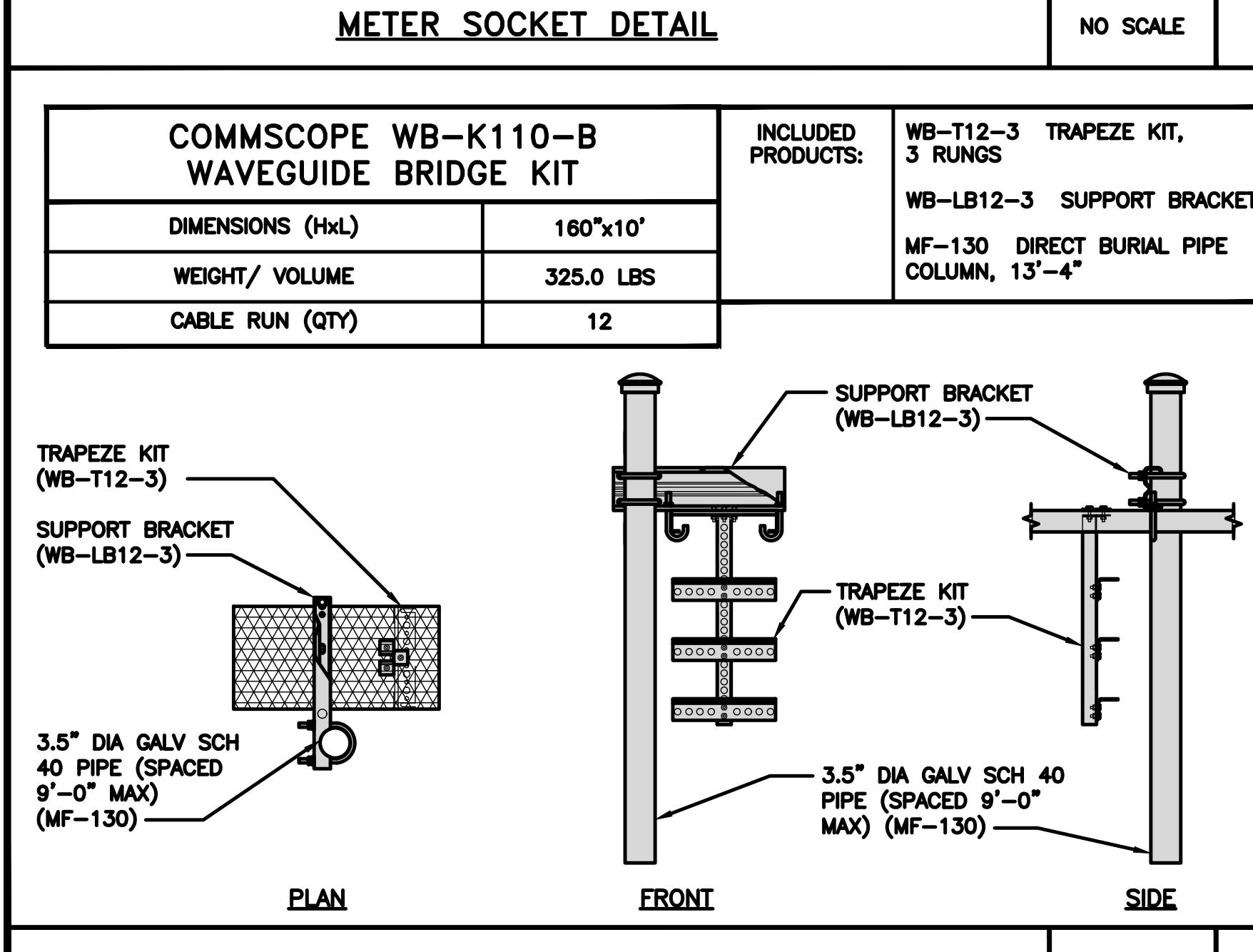
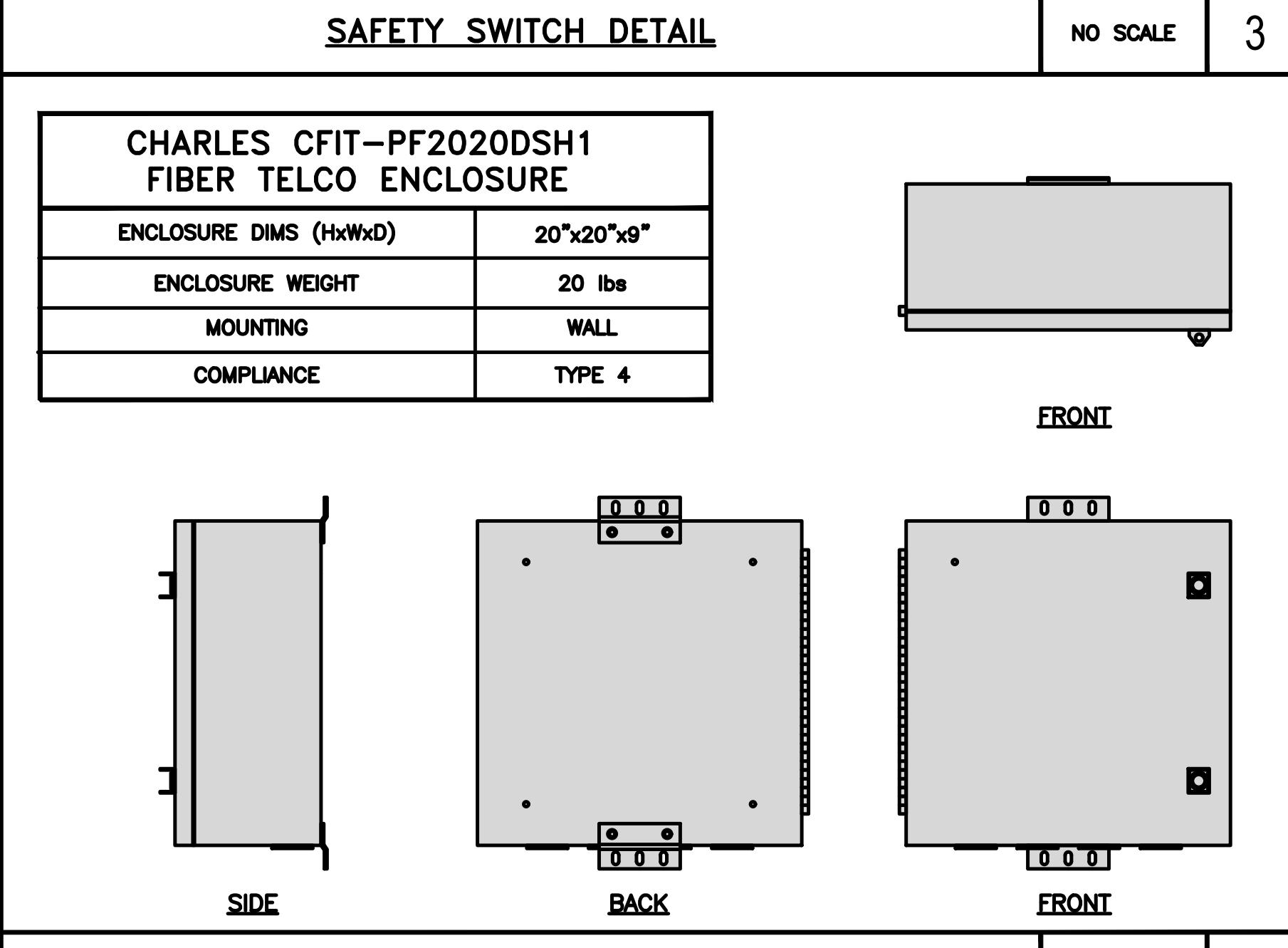
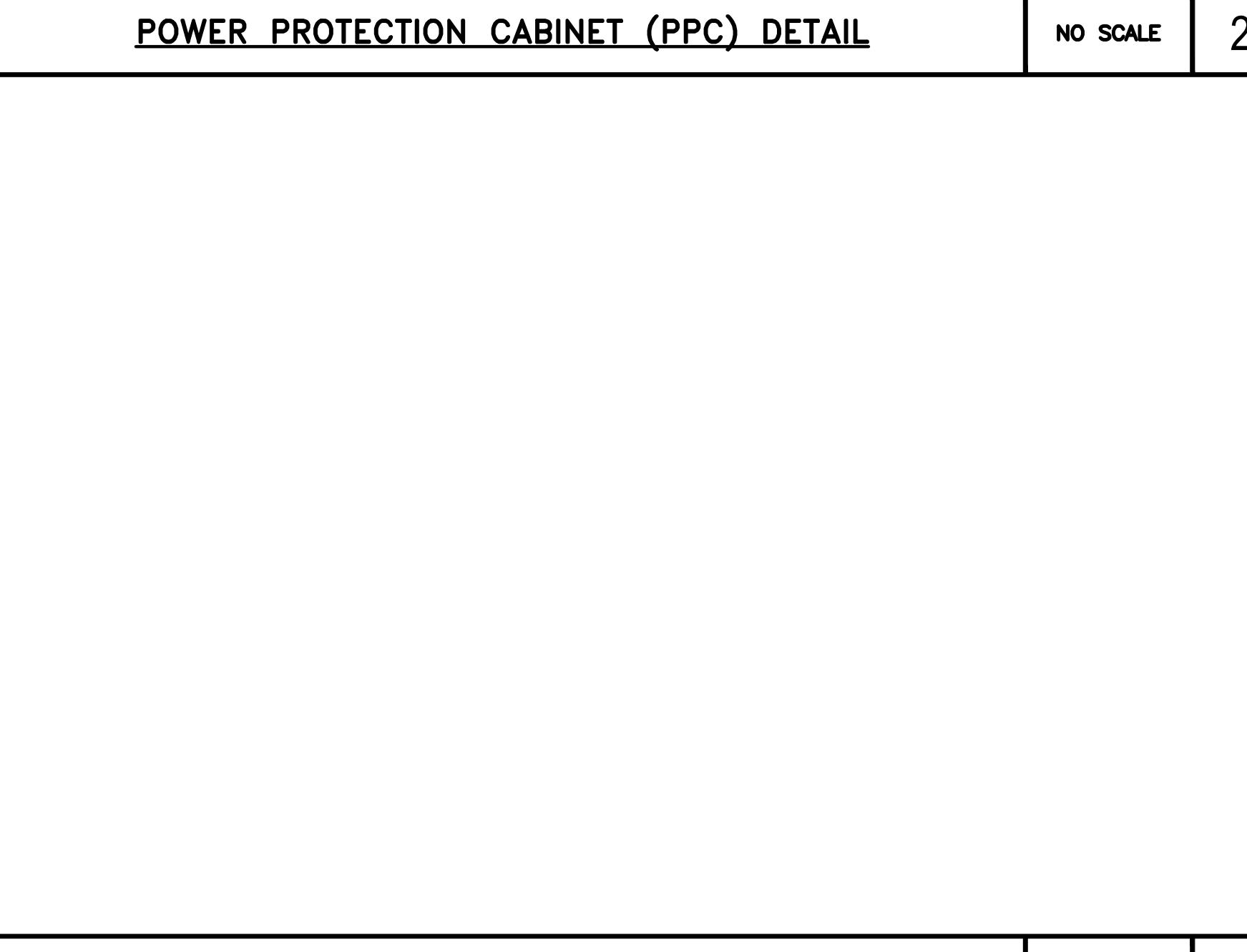
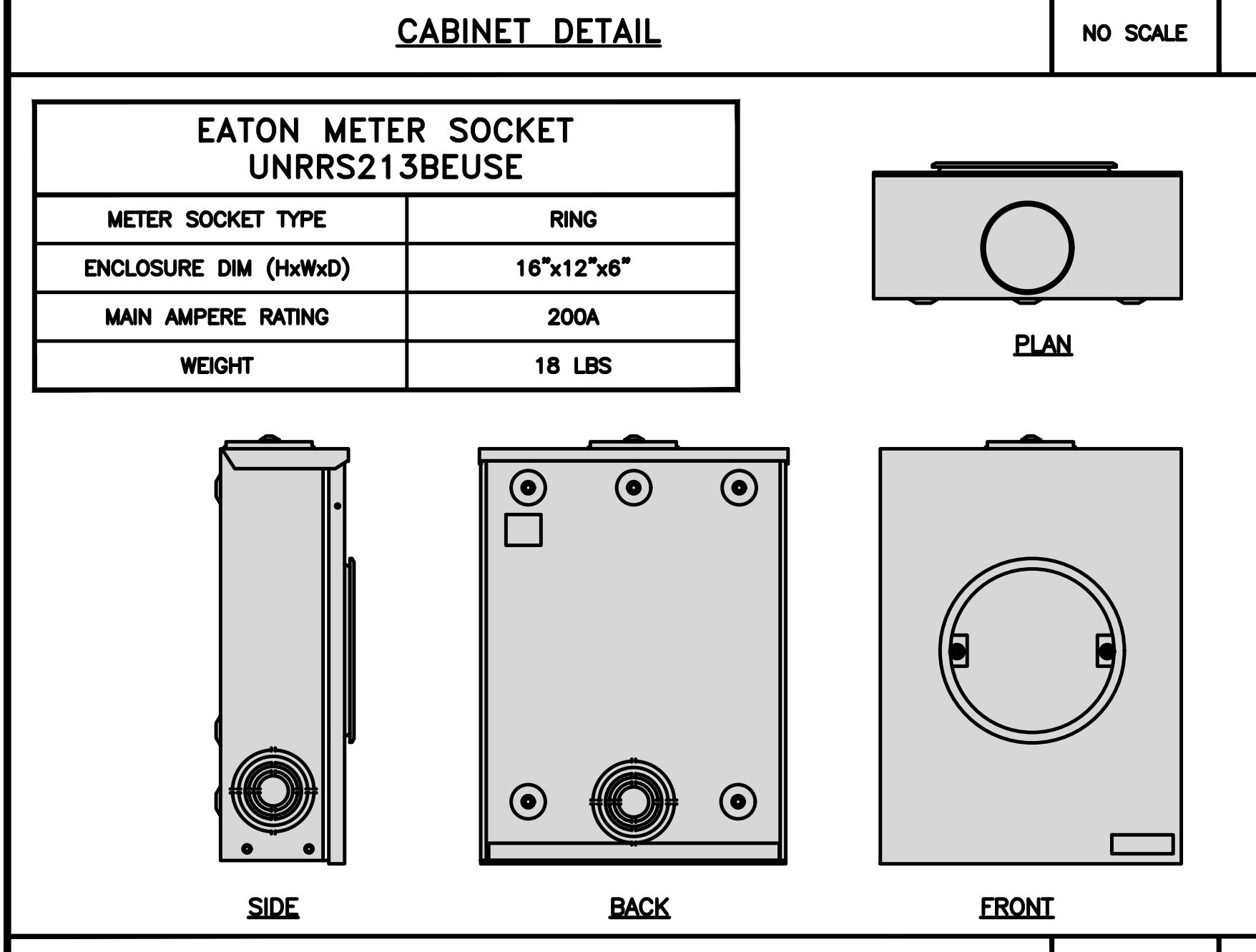
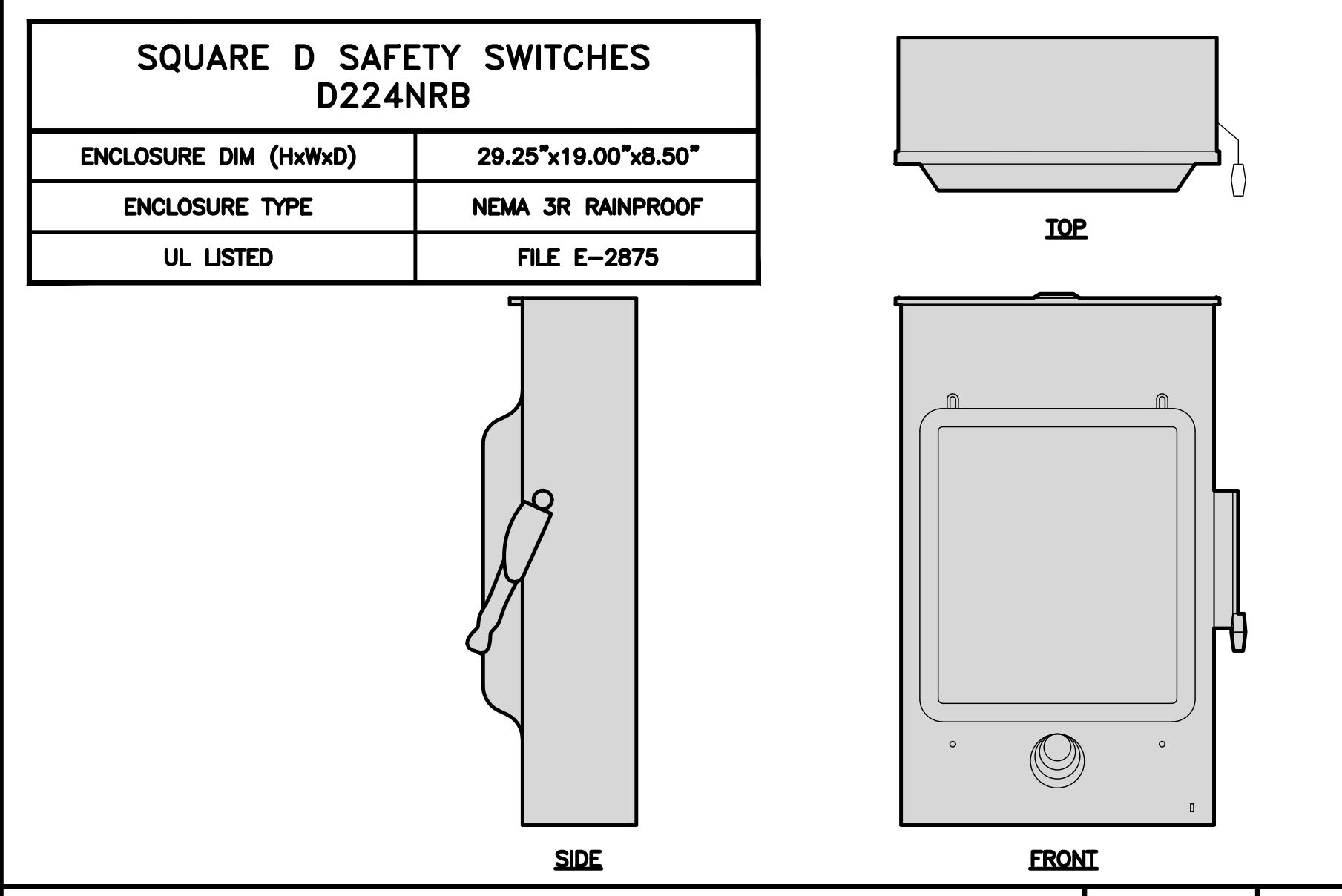
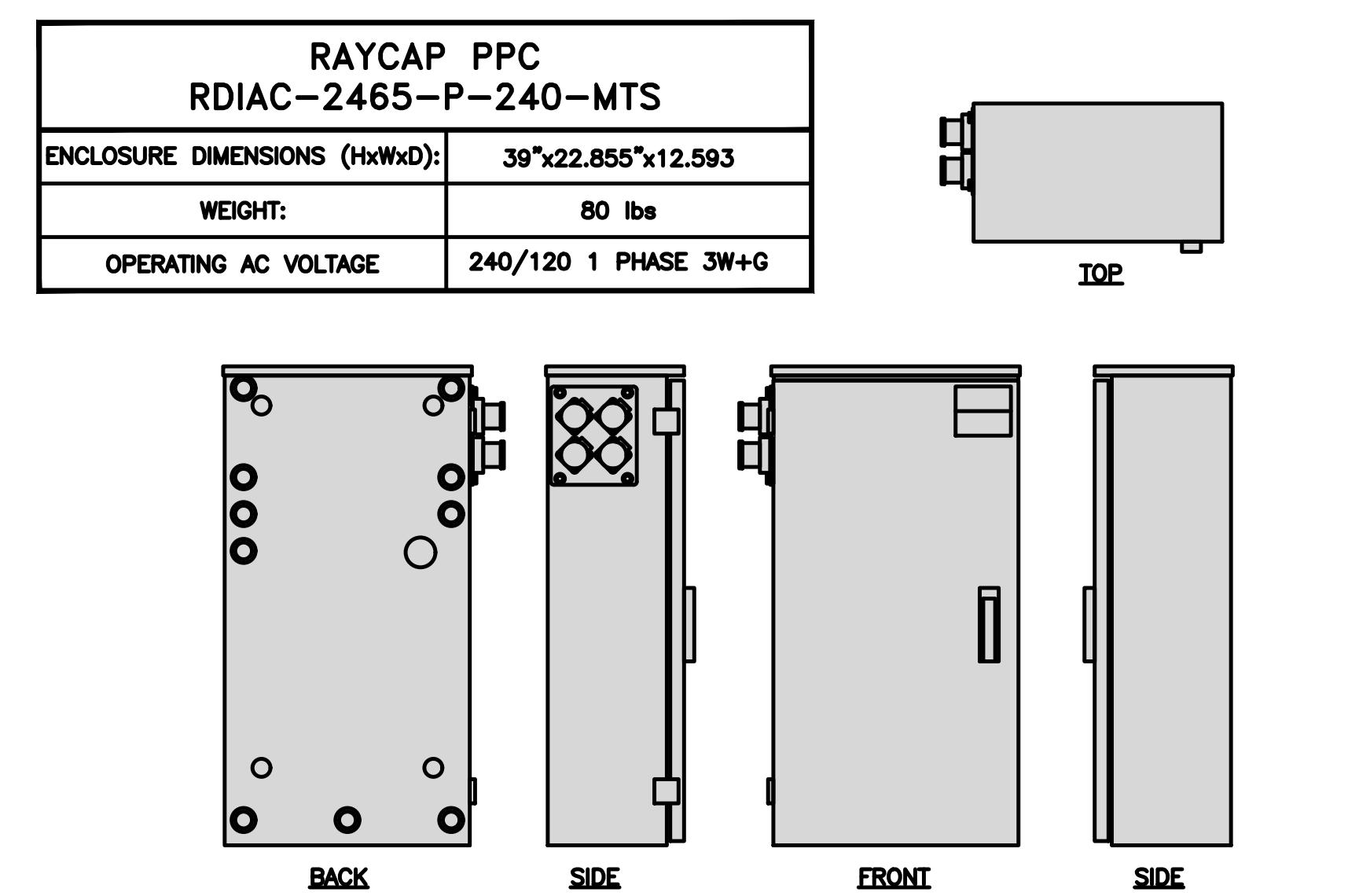
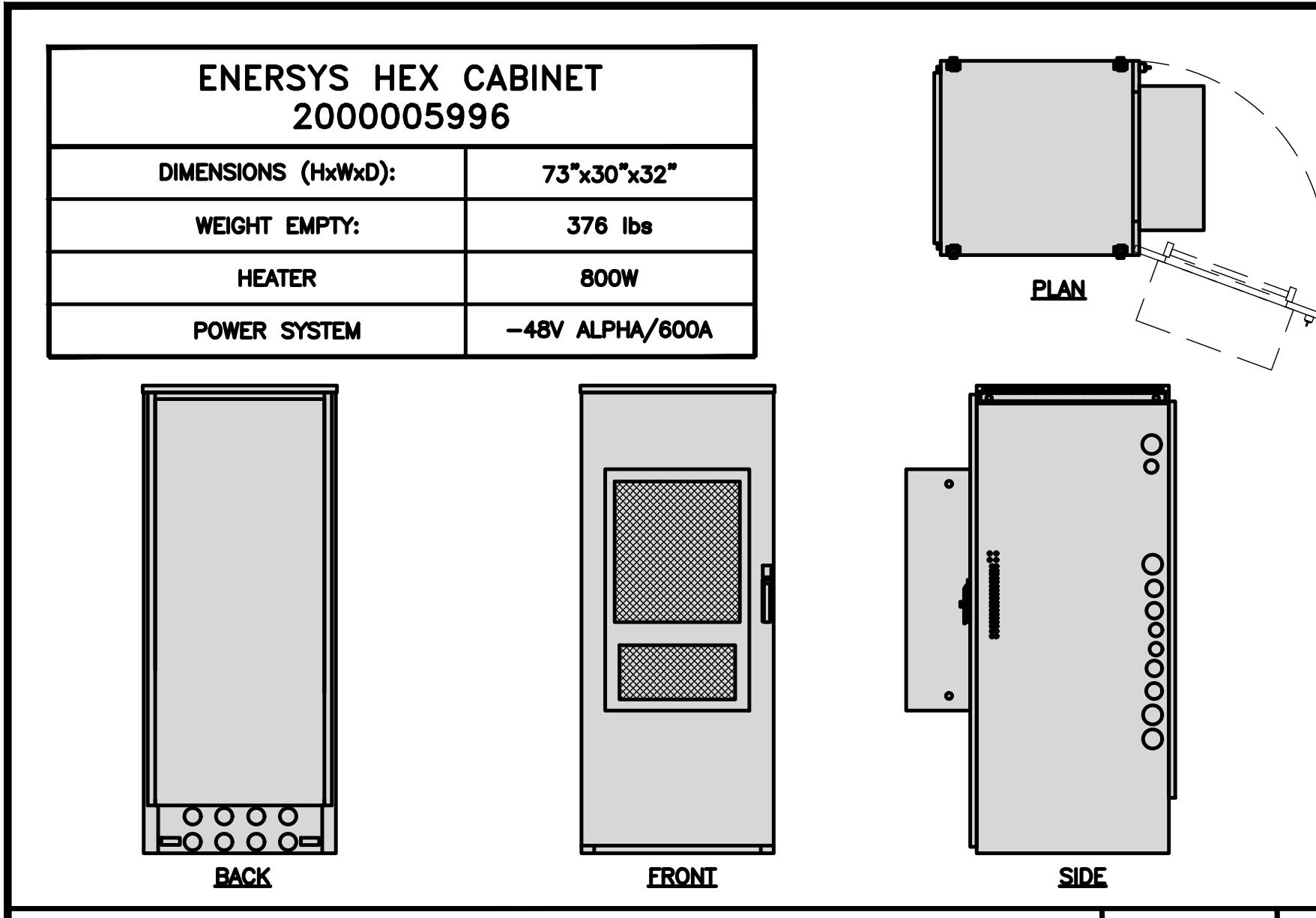
A&E PROJECT NUMBER
2438H.001.031

DISH Wireless LLC,
PROJECT INFORMATION
NJJER01106A
1875 NOBLE AVENUE
BRIDGEPORT, CT 06610

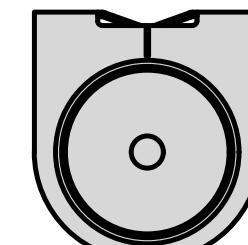
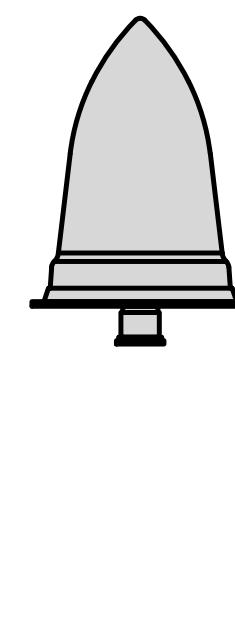
SHEET TITLE
EQUIPMENT PLATFORM AND
H-FRAME DETAILS
SHEET NUMBER

A-3

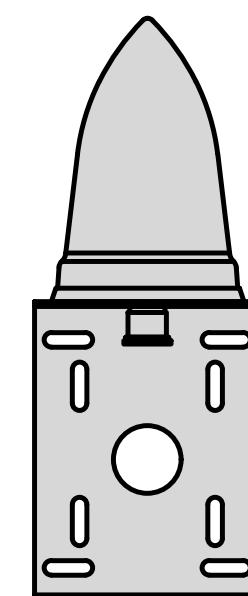




PCTEL GPSGL-TMG-SPI-40NCB	
DIMENSIONS (DIAXH) MM/INCH	81x184mm 3.2"x7.25"
WEIGHT W/ACCESSORIES	075 lbs
CONNECTOR	N-FEMALE
FREQUENCY RANGE	1590 ± 30MHz

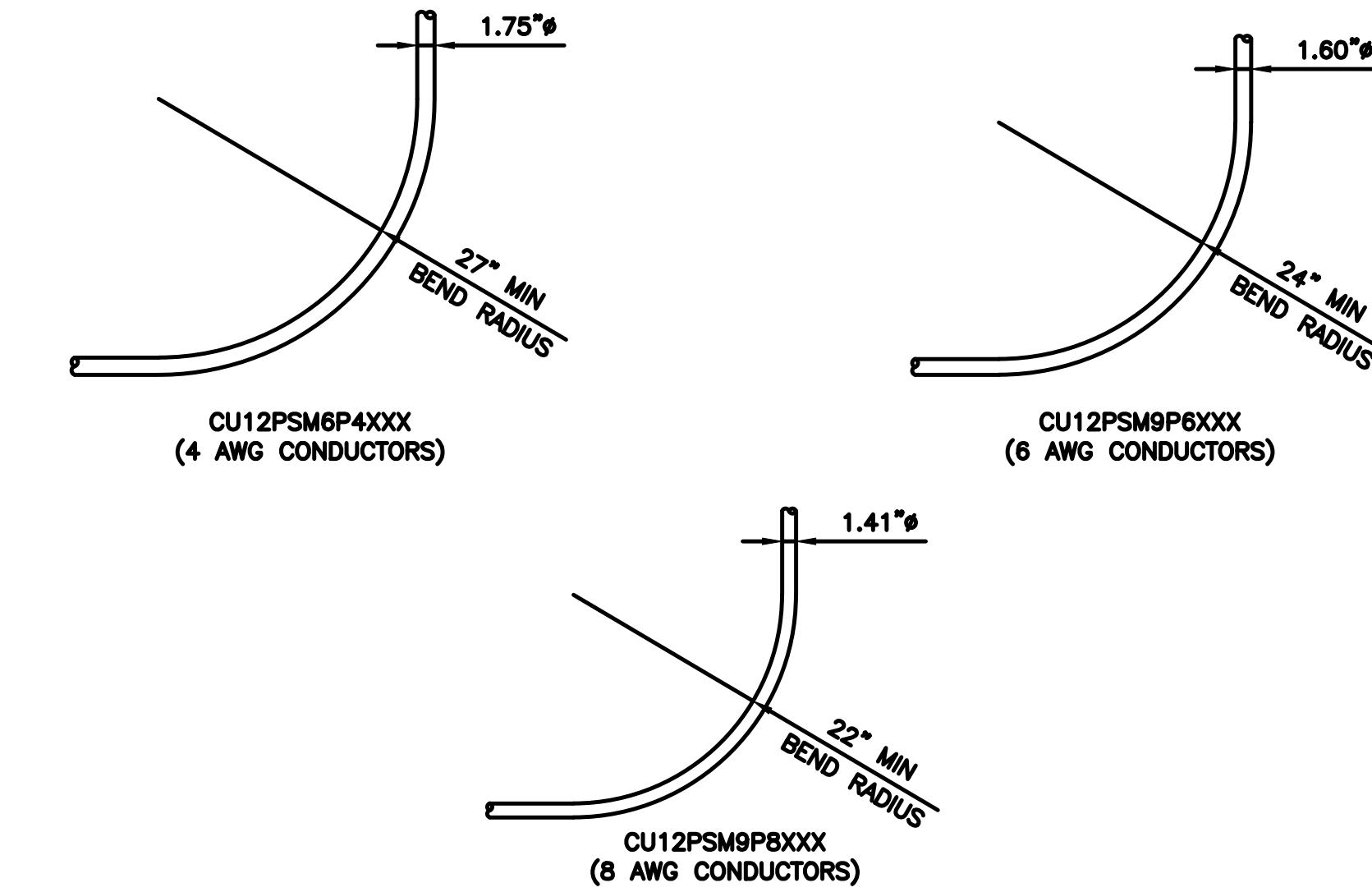
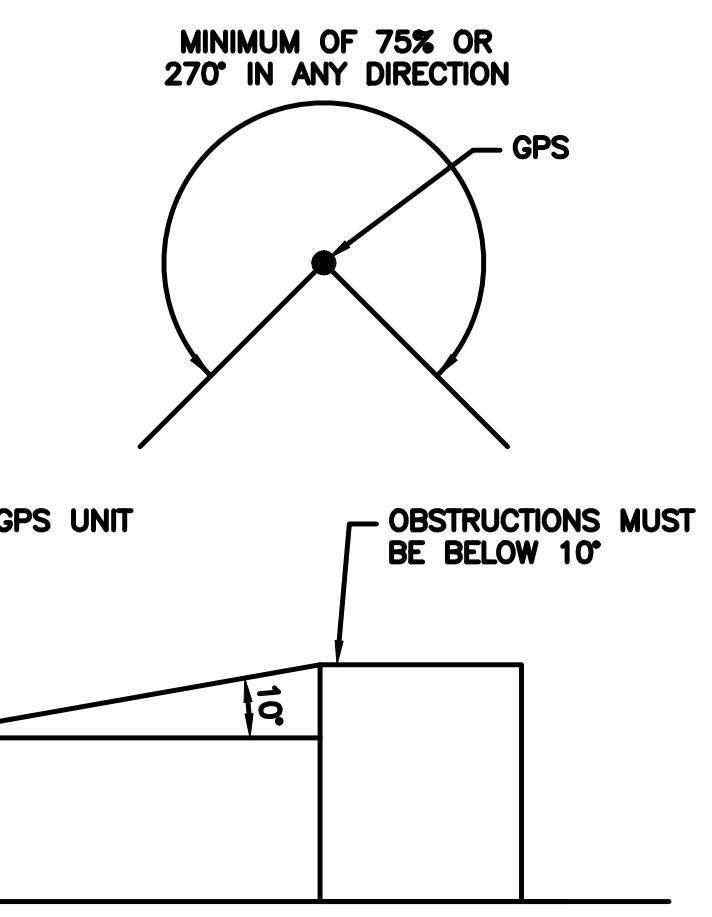


TOP



BACK

SIDE



dish
wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

FPA
FRENCH & PARRELO
ASSOCIATES

1800 Route 34, Suite 101 • Wall, New Jersey 07719
o: 732.312.9800 f: 732.312.9801



JOHN BOSCO, CT P.E. LICENSE NO. 25605

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

DRAWN BY: CHECKED BY: APPROVED BY:
T.J.A. J.B. ---

RFDS REV #: ---

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	07/21/21	ISSUED FOR REVIEW
B	04/29/22	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
2438H.001.031

DISH Wireless LLC,
PROJECT INFORMATION

NJJER01106A
1875 NOBLE AVENUE
BRIDGEPORT, CT 06610

SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER

A-5

GPS MINIMUM SKY VIEW REQUIREMENTS

NO SCALE 2

CABLES UNLIMITED HYBRID CABLE MINIMUM BEND RADIUSES

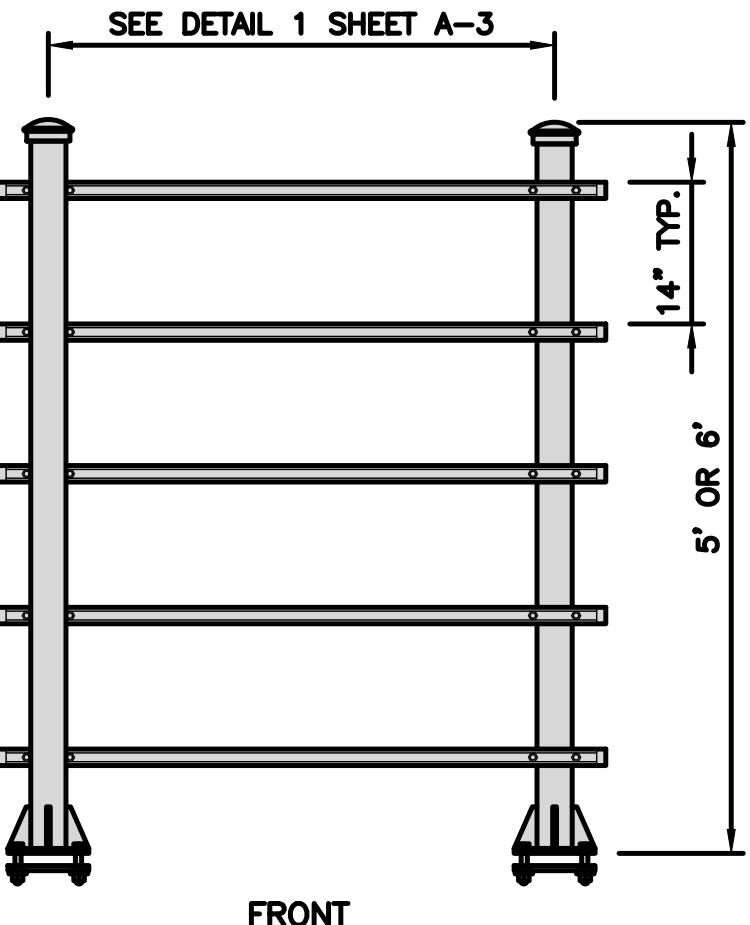
NO SCALE 3

COMMSCOPE MTC4045HFLD H-FRAME

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

UNISTRUT/SUPPORT RAILS QTY 5
WEIGHT ±59.74 lbs

PIPE CAP
WELDMENT PIPE
SUPPORT RAIL
GALV. U-BOLTS
BASE PLATE



H-FRAME DETAIL

NO SCALE 5

NO SCALE 6

GPS DETAIL

NO SCALE

1

NOT USED

NO SCALE

7

NOT USED

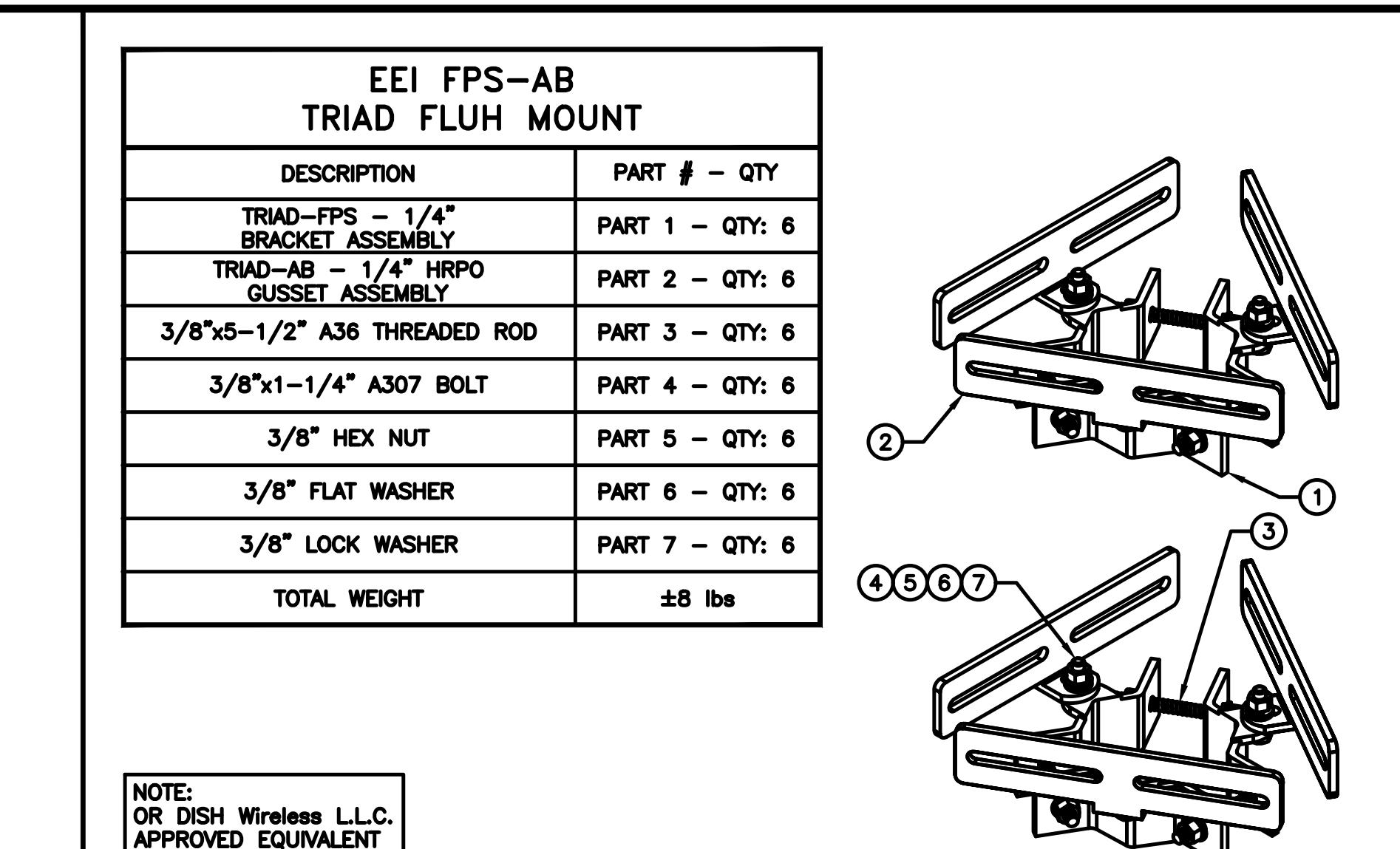
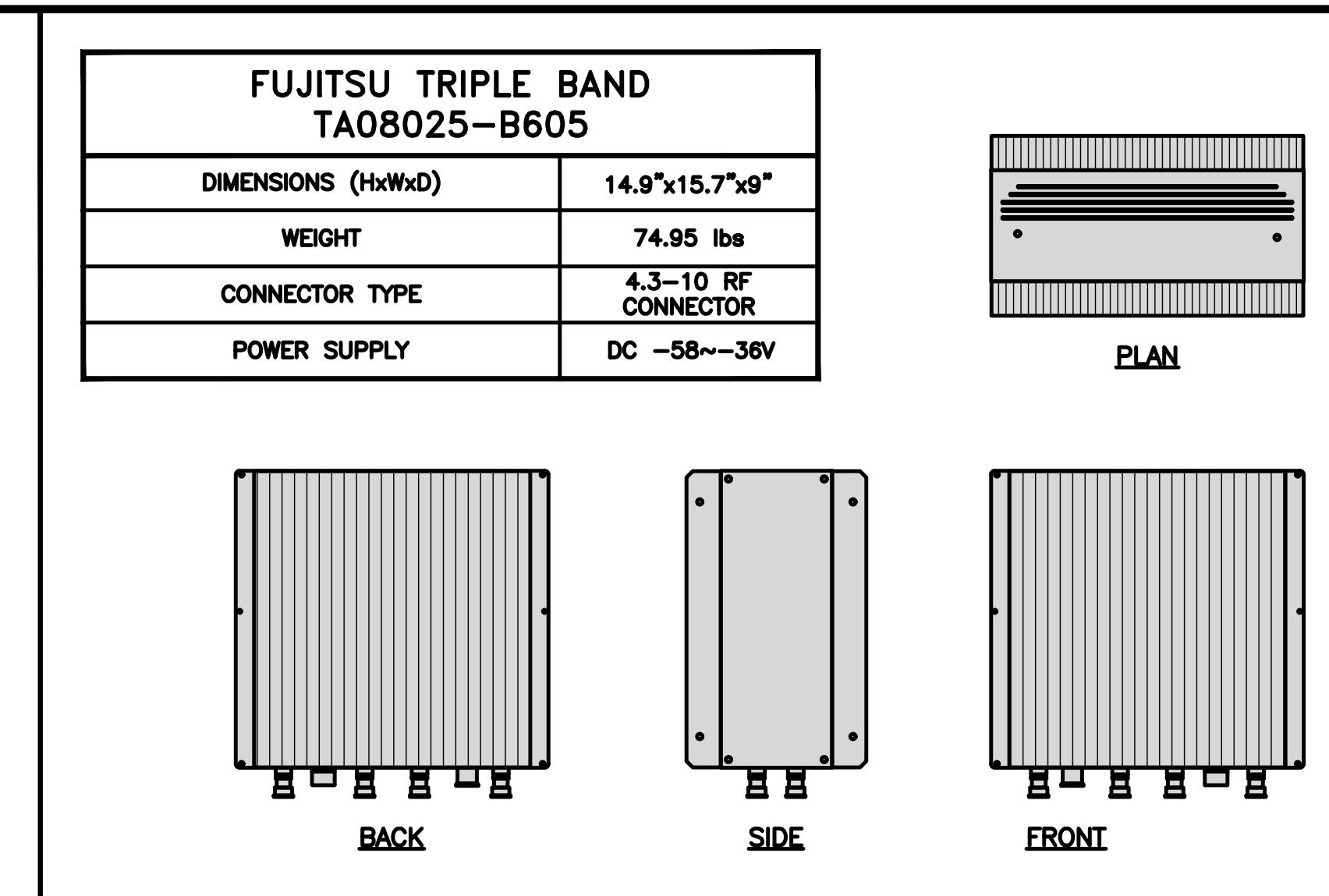
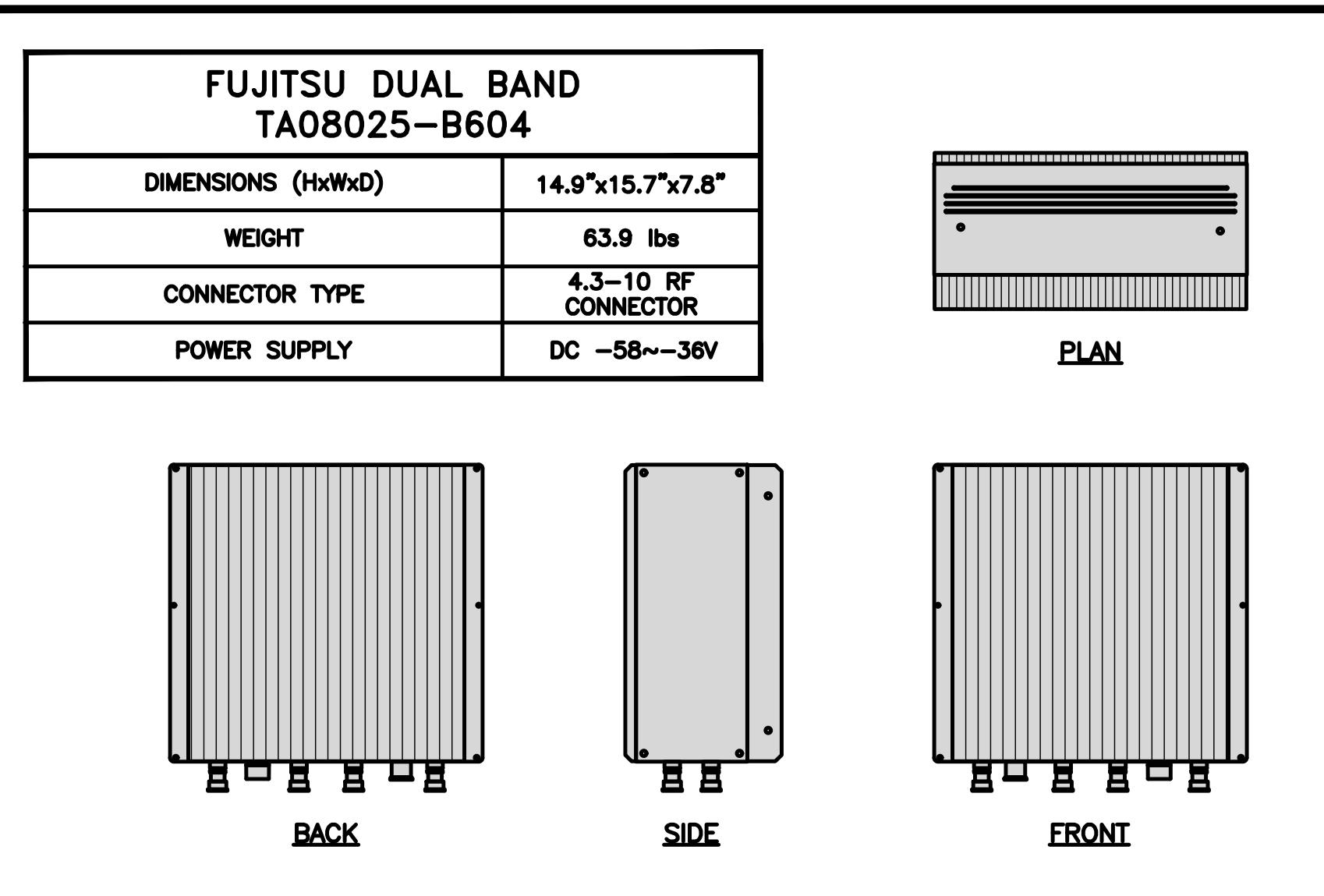
NO SCALE

8

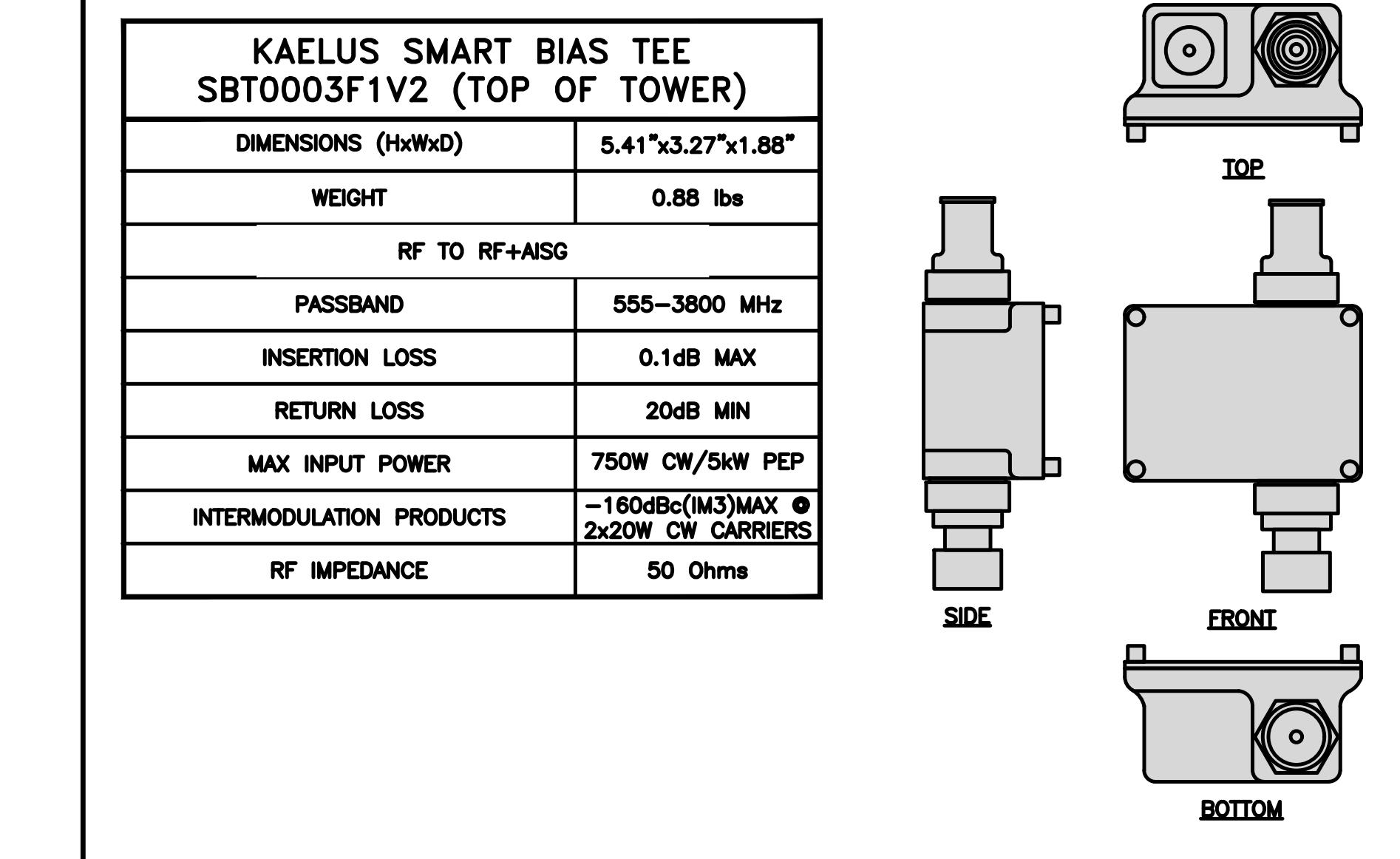
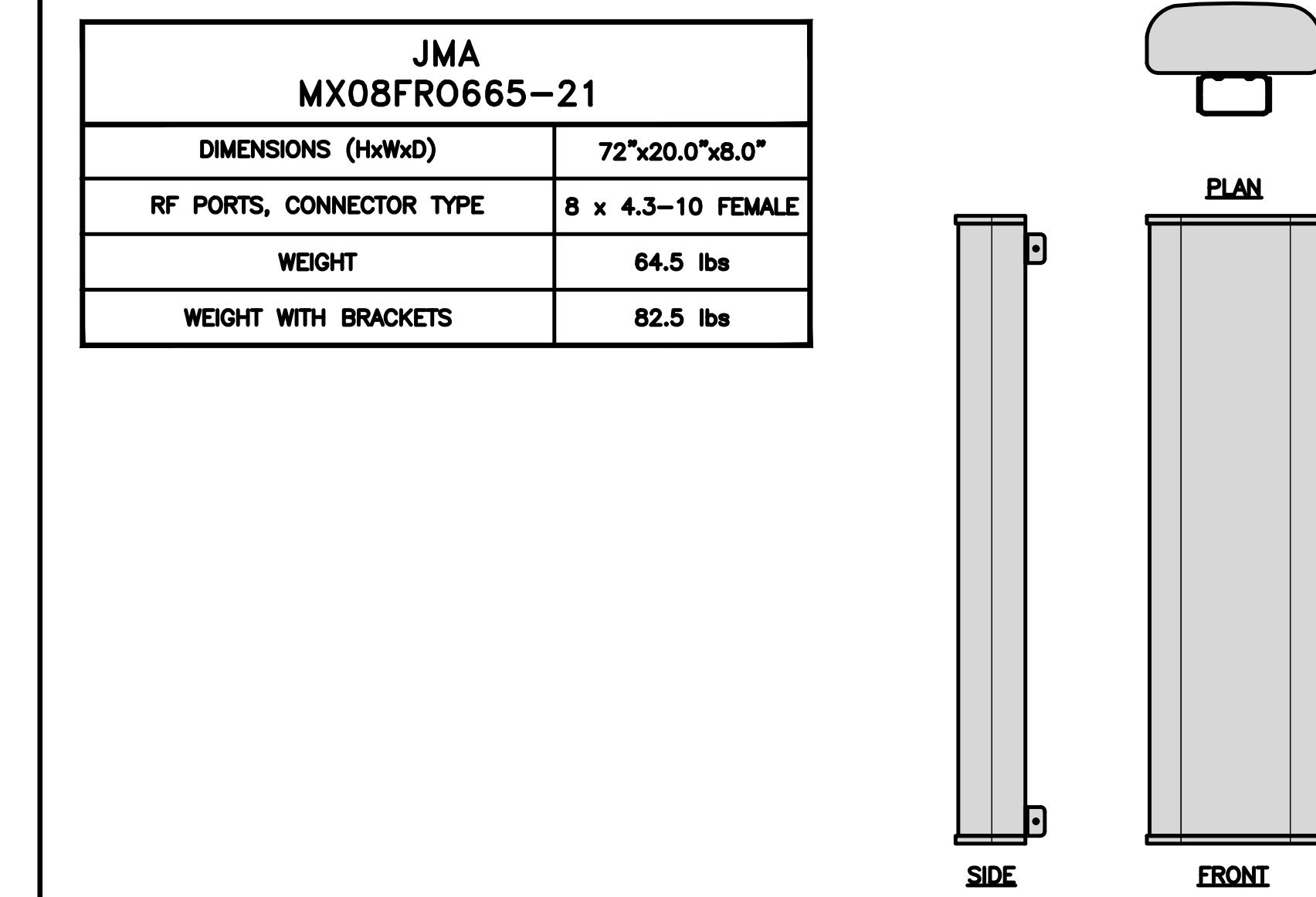
NOT USED

NO SCALE

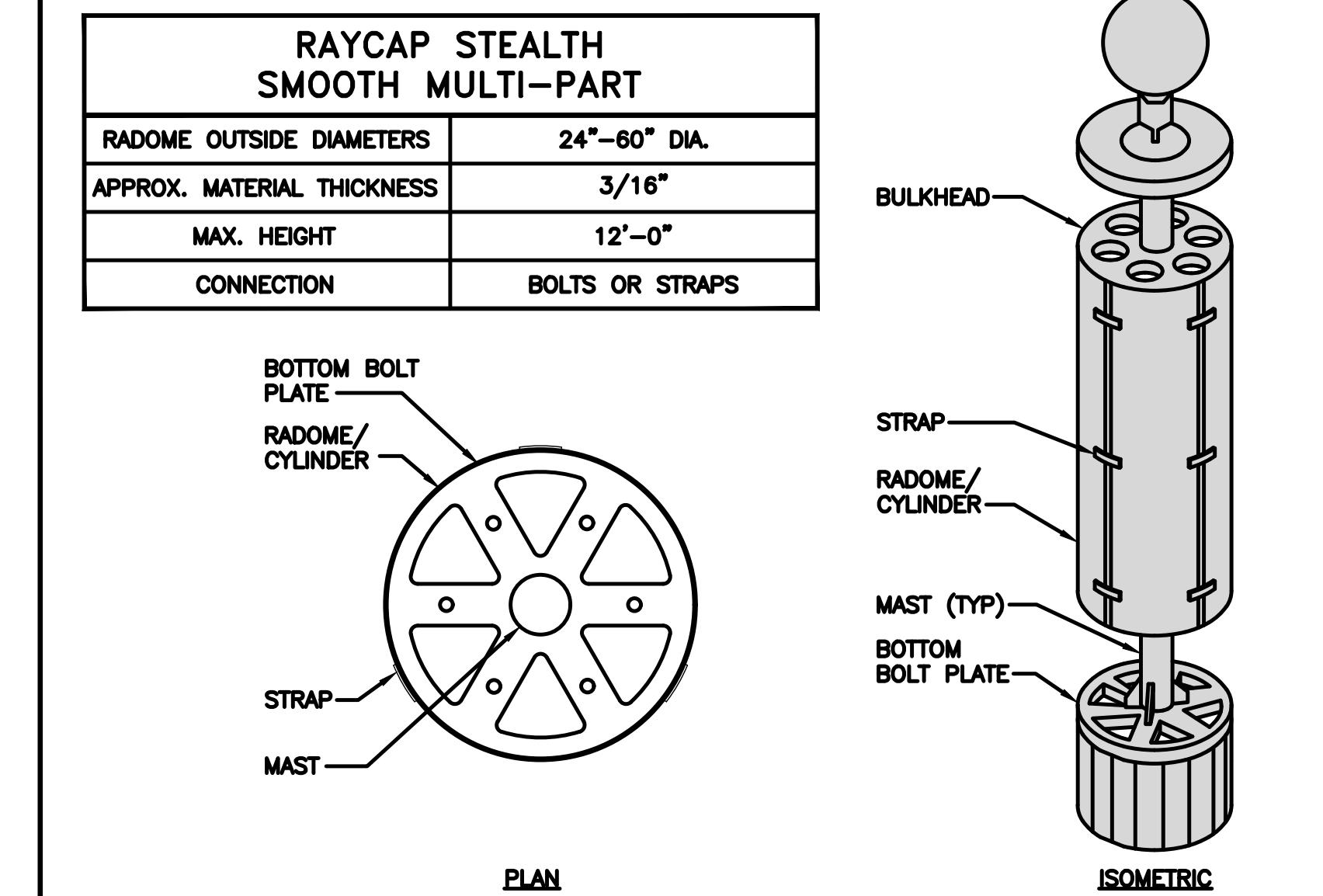
9



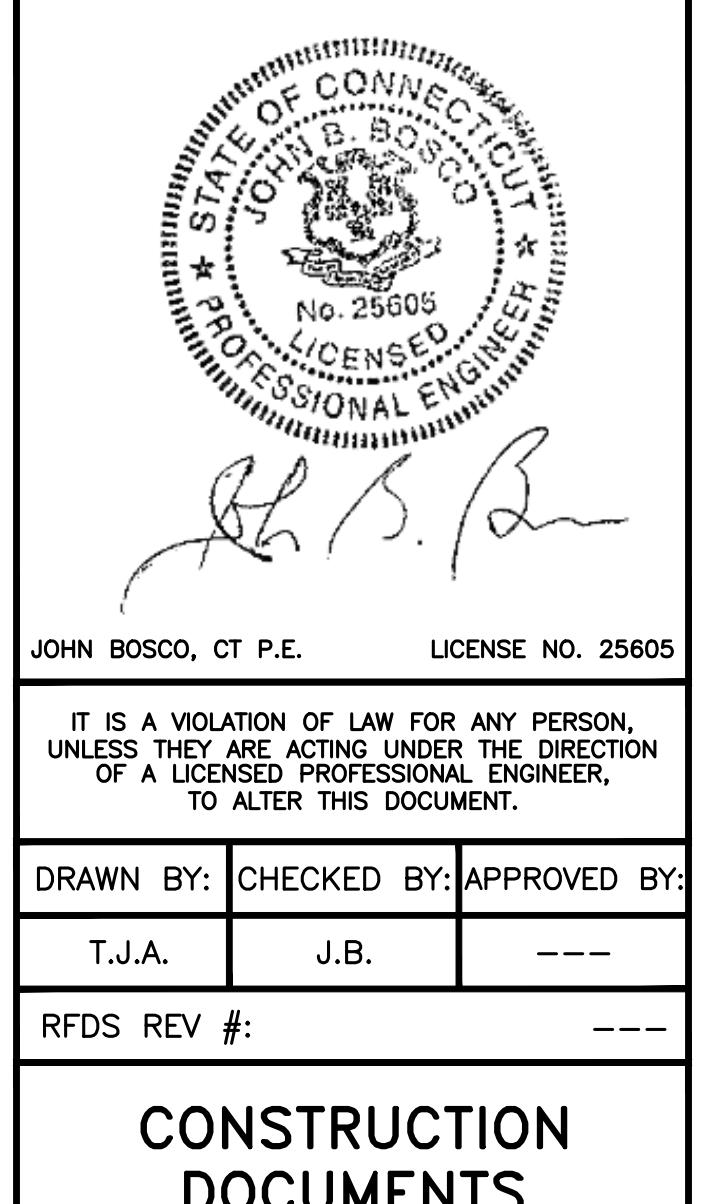
RRH DETAIL	NO SCALE	1	RRH DETAIL	NO SCALE	2	MAST MOUNT DETAIL	NO SCALE	3
------------	----------	---	------------	----------	---	-------------------	----------	---



	NO SCALE	4	ANTENNA DETAIL	NO SCALE	5	SMART BIAS TEE DETAIL	NO SCALE	6
--	----------	---	----------------	----------	---	-----------------------	----------	---



SURGE SUPPRESSION DETAIL (OVP)	NO SCALE	7	RADOME CANISTER DETAIL	NO SCALE	8		NO SCALE	9
--------------------------------	----------	---	------------------------	----------	---	--	----------	---

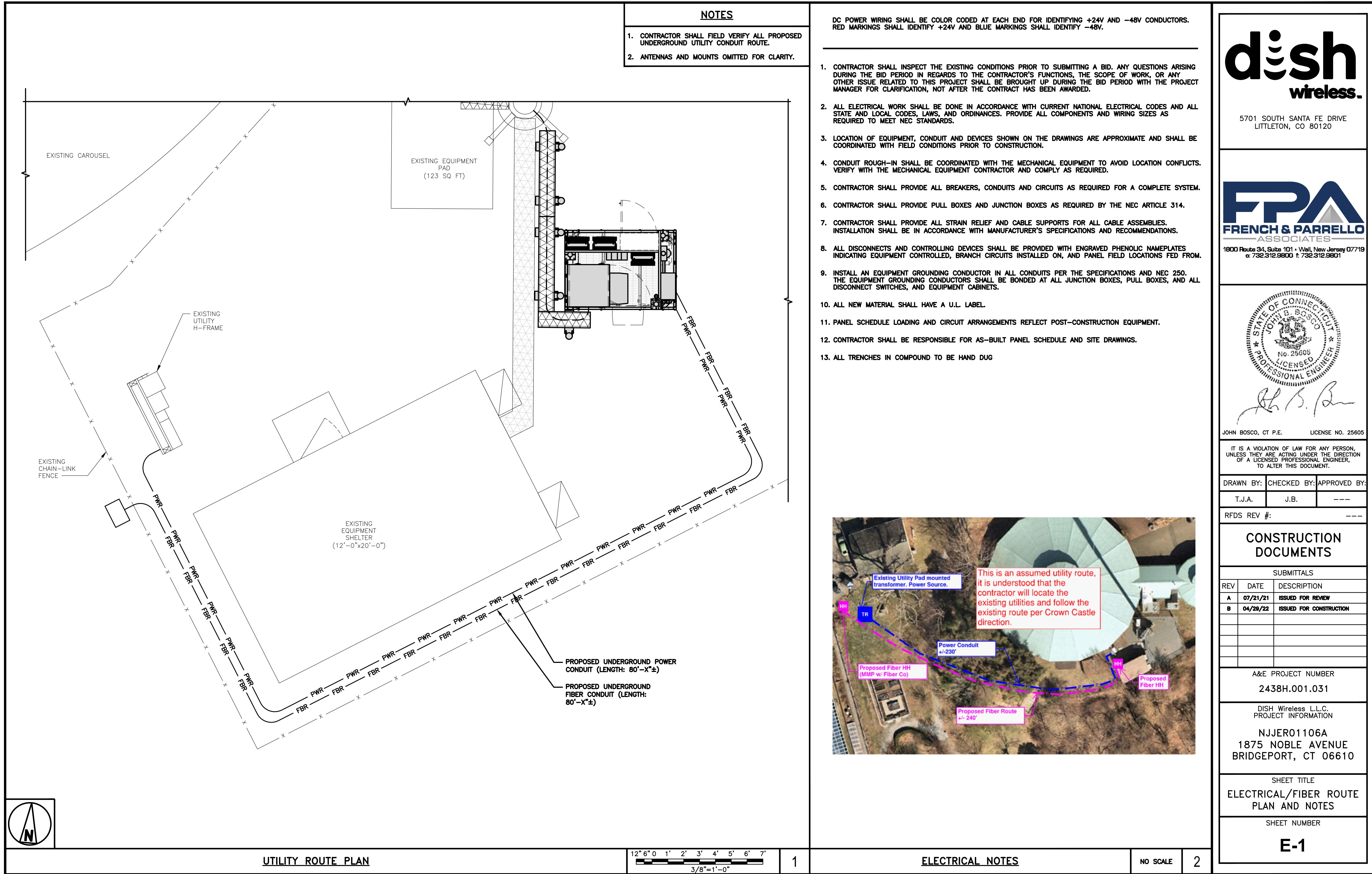


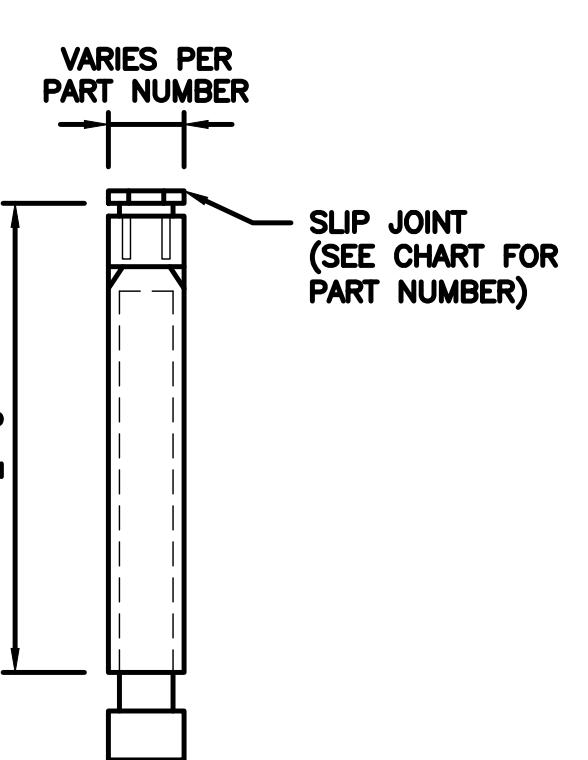
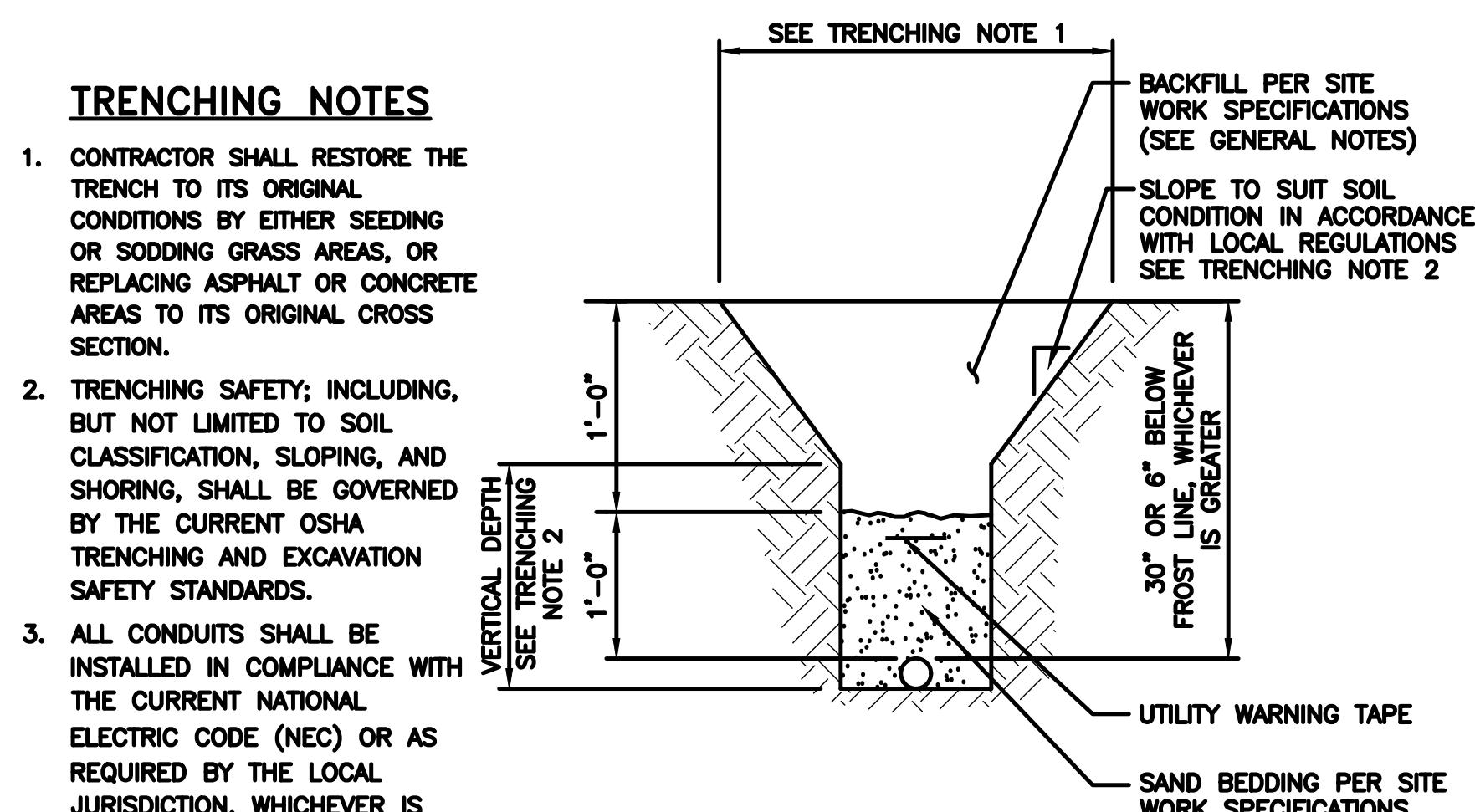
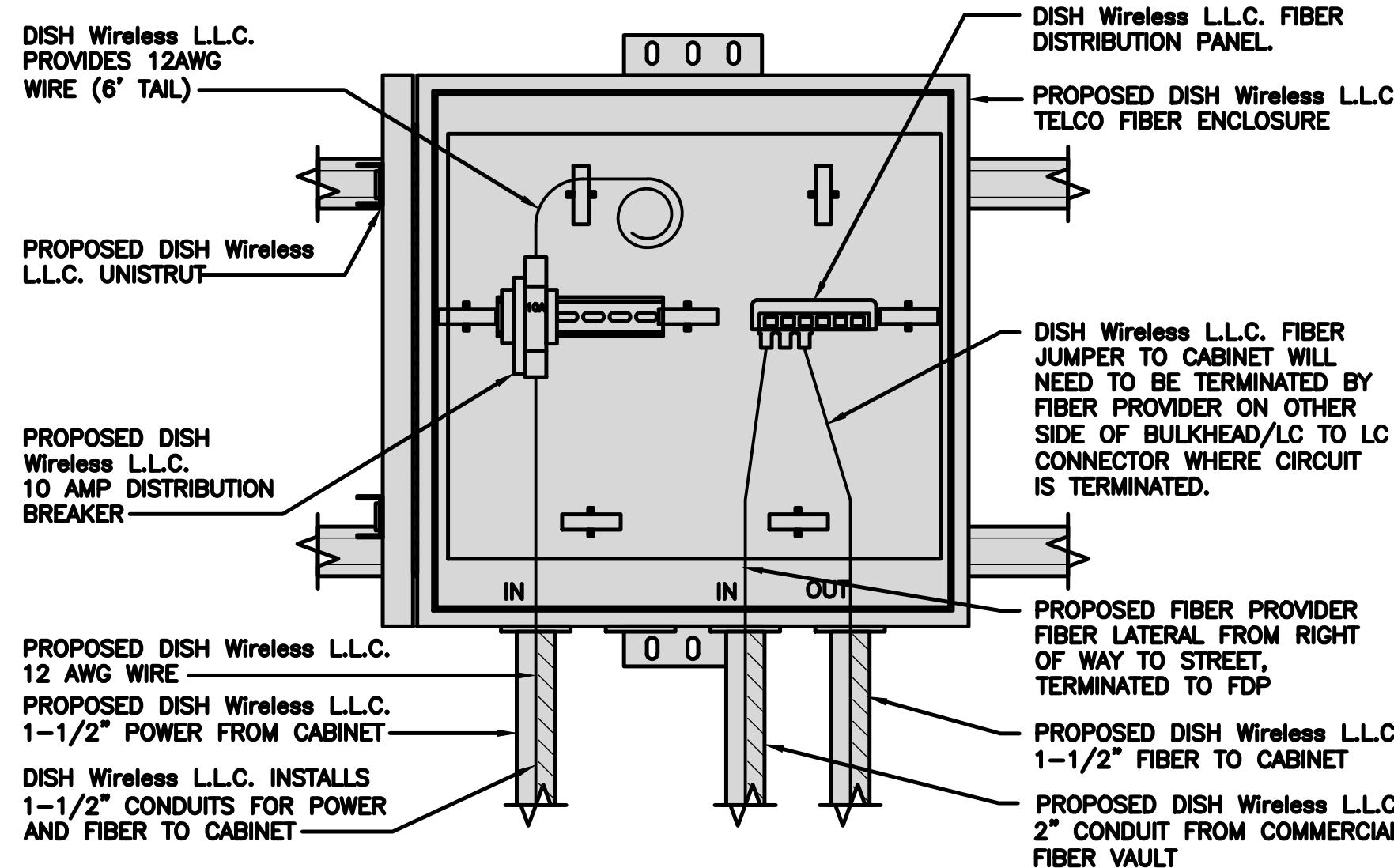
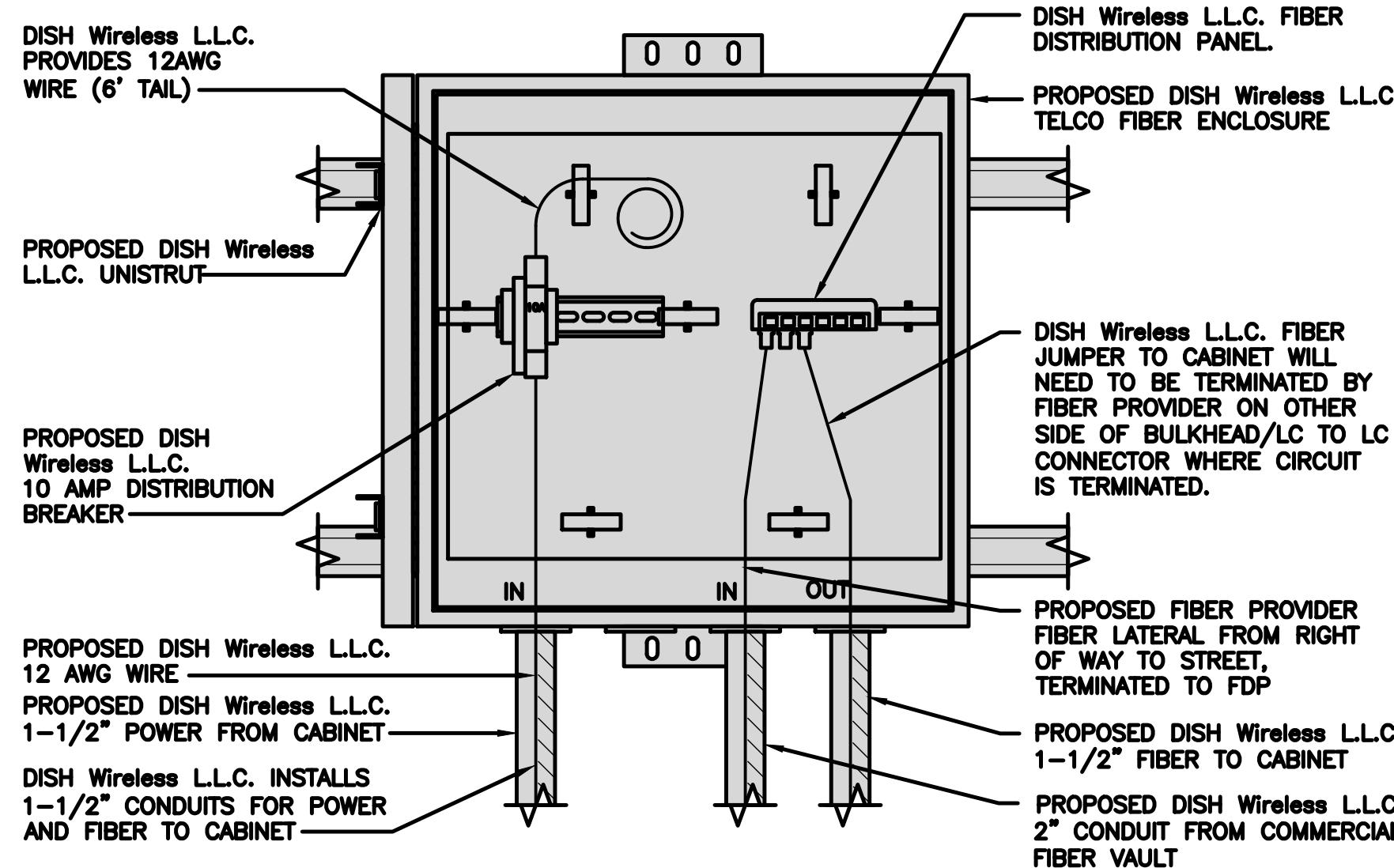
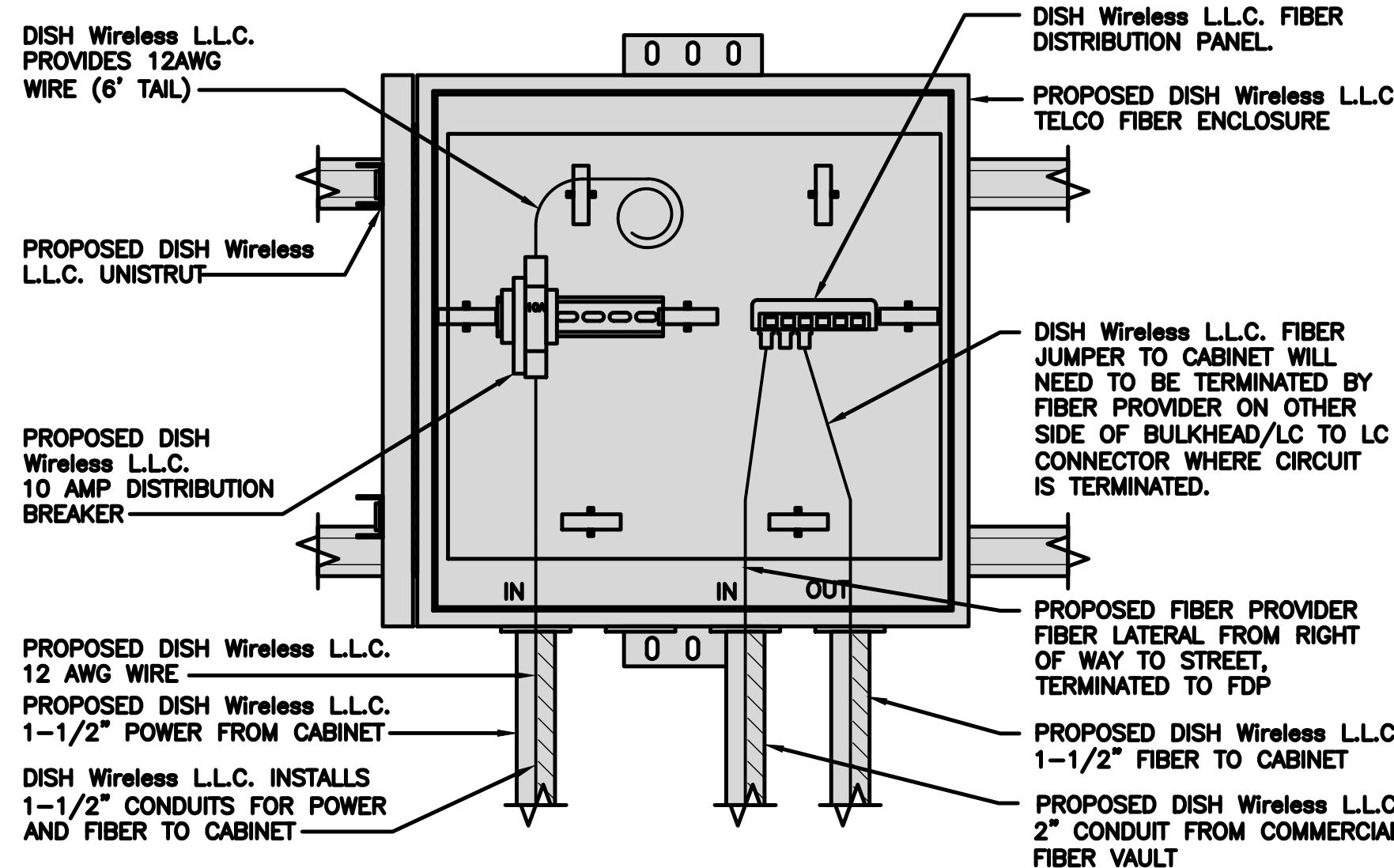
CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	07/21/21	ISSUED FOR REVIEW
B	04/29/22	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER	2438H.001.031
DISH Wireless L.L.C. PROJECT INFORMATION	NJJER01106A 1875 NOBLE AVENUE BRIDGEPORT, CT 06610
SHEET TITLE	EQUIPMENT DETAILS

SHEET NUMBER	A-6
--------------	-----



CARLON EXPANSION FITTINGS					 <p>VARIES PER PART NUMBER</p> <p>SLIP JOINT (SEE CHART FOR PART NUMBER)</p> <p>2'-0"</p> <p>NOTE: CONTRACTOR TO INSTALL EXPANSION FITTING SLIP JOINT AT METER CENTER CONDUIT TERMINATION, AS PER LOCAL UTILITY POLICY, ORDINANCE AND/OR SPECIFIED REQUIREMENT.</p>					<p>TRENCHING NOTES</p> <ol style="list-style-type: none"> CONTRACTOR SHALL RESTORE THE TRENCH TO ITS ORIGINAL CONDITIONS BY EITHER SEEDING OR SODDING GRASS AREAS, OR REPLACING ASPHALT OR CONCRETE AREAS TO ITS ORIGINAL CROSS SECTION. TRENCHING SAFETY; INCLUDING, BUT NOT LIMITED TO SOIL CLASSIFICATION, SLOPING, AND SHORING, SHALL BE GOVERNED BY THE CURRENT OSHA TRENCHING AND EXCAVATION SAFETY STANDARDS. ALL CONDUITS SHALL BE INSTALLED IN COMPLIANCE WITH THE CURRENT NATIONAL ELECTRIC CODE (NEC) OR AS REQUIRED BY THE LOCAL JURISDICTION, WHICHEVER IS THE MOST STRINGENT.  <p>SEE TRENCHING NOTE 1</p> <p>BACKFILL PER SITE WORK SPECIFICATIONS (SEE GENERAL NOTES)</p> <p>SLOPE TO SUIT SOIL CONDITION IN ACCORDANCE WITH LOCAL REGULATIONS SEE TRENCHING NOTE 2</p> <p>1'-0"</p> <p>30° OR 6° BELOW FROST LINE, WHICHEVER IS GREATER</p> <p>VERTICAL DEPTH SEE TRENCHING NOTE 2</p> <p>1'-0"</p> <p>UTILITY WARNING TAPE</p> <p>SAND BEDDING PER SITE WORK SPECIFICATIONS</p>					
EXPANSION JOINT DETAIL					NO SCALE 1					TYPICAL UNDERGROUND TRENCH DETAIL					NO SCALE 2
 <p>DISH Wireless LLC. PROVIDES 12AWG WIRE (6' TAIL)</p> <p>PROPOSED DISH Wireless LLC. FIBER DISTRIBUTION PANEL</p> <p>PROPOSED DISH Wireless LLC. TELCO FIBER ENCLOSURE</p> <p>0 0 0</p> <p>PROPOSED DISH Wireless LLC. UNISTRUT</p> <p>PROPOSED DISH Wireless LLC. 10 AMP DISTRIBUTION BREAKER</p> <p>PROPOSED FIBER PROVIDER FIBER LATERAL FROM RIGHT OF WAY TO STREET, TERMINATED TO FDP</p> <p>PROPOSED DISH Wireless LLC. 12 AWG WIRE</p> <p>PROPOSED DISH Wireless LLC. 1-1/2" POWER FROM CABINET</p> <p>DISH Wireless LLC. INSTALLS 1-1/2" CONDUITS FOR POWER</p> <p>PROPOSED DISH Wireless LLC. 2" CONDUIT FROM COMMERCIAL FIBER VAULT</p>					 <p>DISH Wireless LLC. PROVIDES 12AWG WIRE (6' TAIL)</p> <p>PROPOSED DISH Wireless LLC. FIBER DISTRIBUTION PANEL</p> <p>PROPOSED DISH Wireless LLC. TELCO FIBER ENCLOSURE</p> <p>0 0 0</p> <p>PROPOSED DISH Wireless LLC. UNISTRUT</p> <p>PROPOSED DISH Wireless LLC. 10 AMP DISTRIBUTION BREAKER</p> <p>PROPOSED FIBER PROVIDER FIBER LATERAL FROM RIGHT OF WAY TO STREET, TERMINATED TO FDP</p> <p>PROPOSED DISH Wireless LLC. 12 AWG WIRE</p> <p>PROPOSED DISH Wireless LLC. 1-1/2" POWER FROM CABINET</p> <p>DISH Wireless LLC. INSTALLS 1-1/2" CONDUITS FOR POWER</p> <p>PROPOSED DISH Wireless LLC. 2" CONDUIT FROM COMMERCIAL FIBER VAULT</p>					 <p>DISH Wireless LLC. PROVIDES 12AWG WIRE (6' TAIL)</p> <p>PROPOSED DISH Wireless LLC. FIBER DISTRIBUTION PANEL</p> <p>PROPOSED DISH Wireless LLC. TELCO FIBER ENCLOSURE</p> <p>0 0 0</p> <p>PROPOSED DISH Wireless LLC. UNISTRUT</p> <p>PROPOSED DISH Wireless LLC. 10 AMP DISTRIBUTION BREAKER</p> <p>PROPOSED FIBER PROVIDER FIBER LATERAL FROM RIGHT OF WAY TO STREET, TERMINATED TO FDP</p> <p>PROPOSED DISH Wireless LLC. 12 AWG WIRE</p> <p>PROPOSED DISH Wireless LLC. 1-1/2" POWER FROM CABINET</p> <p>DISH Wireless LLC. INSTALLS 1-1/2" CONDUITS FOR POWER</p> <p>PROPOSED DISH Wireless LLC. 2" CONDUIT FROM COMMERCIAL FIBER VAULT</p>					NO SCALE 3
<p>NOTE: FIBER PROVIDER WILL NEED TO PROVIDE AN ADDITIONAL 5FT UNISTRUT, 2 U-BOLTS WITH 4 NUTS, IN THE EVENT THE BRACKET SPACING DOESN'T LINE UP WITH CURRENT SPACING BELOW</p> <p>PROPOSED DISH Wireless LLC. UNISTRUT</p> <p>PROPOSED FIBER PROVIDER 1-1/4" FLEX CONDUITS</p> <p>FIBER PROVIDER TO TERMINATE POWER TO FIBER PROVIDER NID</p> <p>PROPOSED DISH Wireless LLC. 12 AWG WIRE (6' TAIL)</p> <p>PROPOSED DISH Wireless LLC. 10 AMP DISTRIBUTION BREAKER</p> <p>PROPOSED DISH Wireless LLC. 12 AWG WIRE</p> <p>PROPOSED DISH Wireless LLC. 1-1/2" POWER FROM CABINET</p> <p>PROPOSED DISH Wireless LLC. 2" CONDUIT FROM COMMERCIAL FIBER VAULT</p>					NO SCALE 4					NOT USED					NO SCALE 5
<p>NOTE: FIBER PROVIDER WILL NEED TO PROVIDE AN ADDITIONAL 5FT UNISTRUT, 2 U-BOLTS WITH 4 NUTS, IN THE EVENT THE BRACKET SPACING DOESN'T LINE UP WITH CURRENT SPACING BELOW</p> <p>PROPOSED DISH Wireless LLC. UNISTRUT</p> <p>PROPOSED FIBER PROVIDER 1-1/4" FLEX CONDUITS</p> <p>FIBER PROVIDER TO TERMINATE POWER TO FIBER PROVIDER NID</p> <p>PROPOSED DISH Wireless LLC. 12 AWG WIRE (6' TAIL)</p> <p>PROPOSED DISH Wireless LLC. 10 AMP DISTRIBUTION BREAKER</p> <p>PROPOSED DISH Wireless LLC. 12 AWG WIRE</p> <p>PROPOSED DISH Wireless LLC. 1-1/2" POWER FROM CABINET</p> <p>PROPOSED DISH Wireless LLC. 2" CONDUIT FROM COMMERCIAL FIBER VAULT</p>					NOT USED					NOT USED					NO SCALE 6
NOT USED					NO SCALE 7					NOT USED					NO SCALE 8
NOT USED					NO SCALE 9					NOT USED					NO SCALE 9



JOHN BOSCO, CT P.E. LICENSE NO. 25605
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

DRAWN BY: CHECKED BY: APPROVED BY:
T.J.A. J.B. ---

RFDS REV #: ---

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	07/21/21	ISSUED FOR REVIEW
B	04/29/22	ISSUED FOR CONSTRUCTION

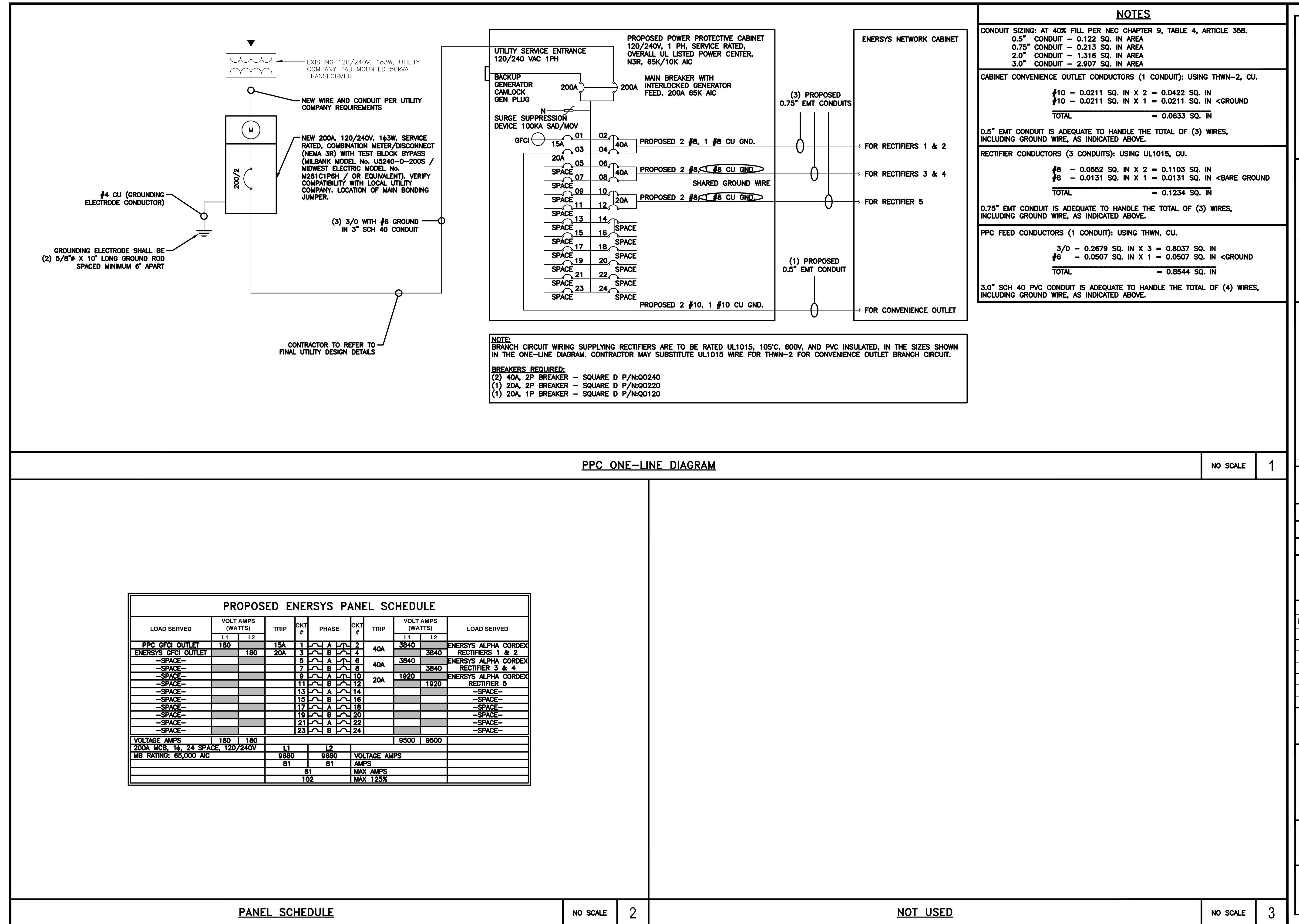
A&E PROJECT NUMBER
2438H.001.031

DISH Wireless LLC.
PROJECT INFORMATION
NJJER01106A
1875 NOBLE AVENUE
BRIDGEPORT, CT 06610

SHEET TITLE
ELECTRICAL
DETAILS

SHEET NUMBER

E-2



dish
wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

FPA
FRENCH & PARRELLO
ASSOCIATES
1800 Route 34, Suite 101 • Wall, New Jersey 07719
o: 732.312.9800 f: 732.312.9801

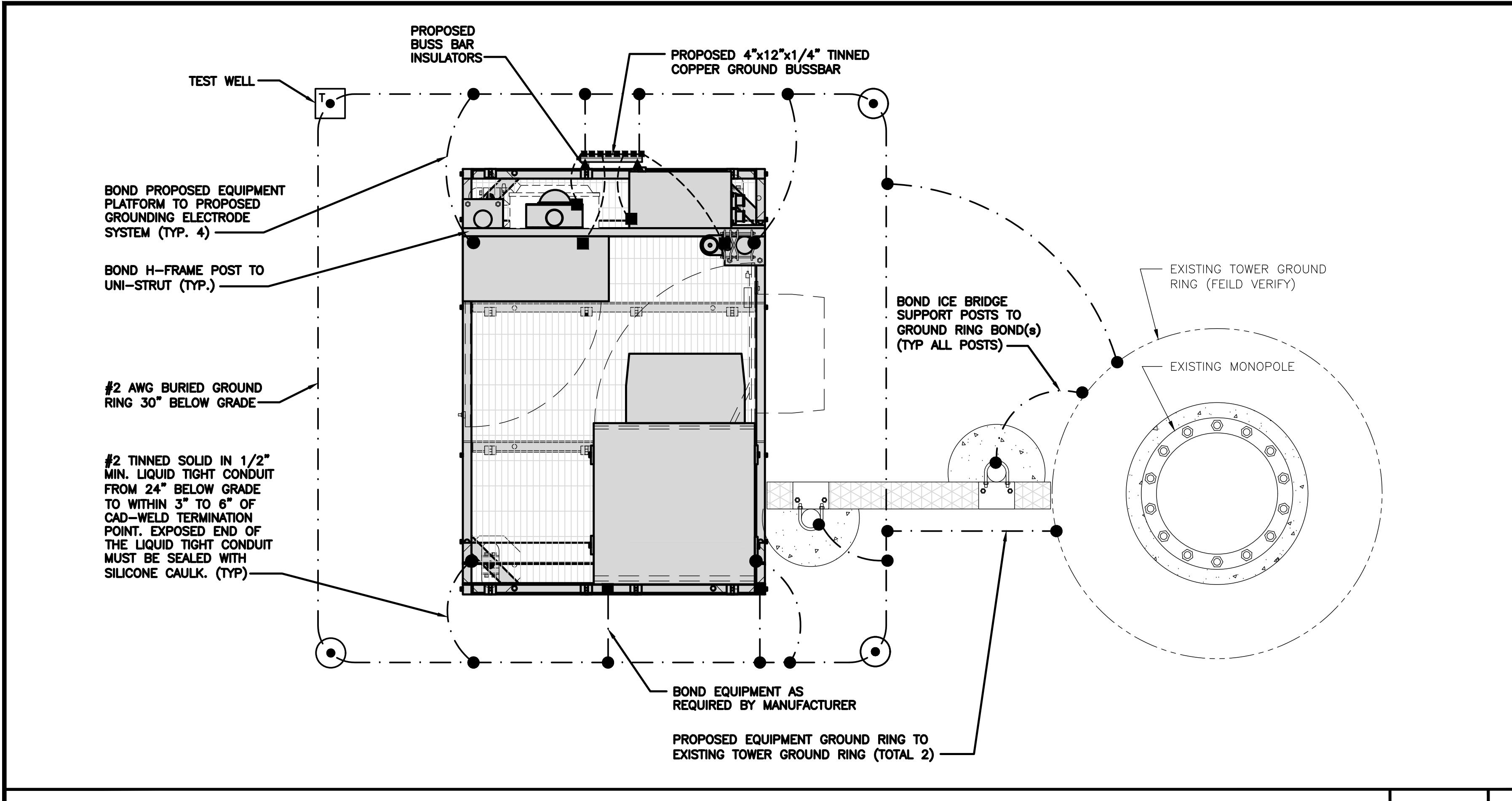


JOHN BOSCO, CT P.E. LICENSE NO. 25605
IT IS A VIOLATION OF LAW FOR ANY PERSON,
UNLESS THEY ARE ACTING UNDER THE DIRECTION
OF A LICENSED PROFESSIONAL ENGINEER,
TO ALTER THIS DOCUMENT.

DRAWN BY: CHECKED BY: APPROVED BY:
T.J.A. J.B. ---

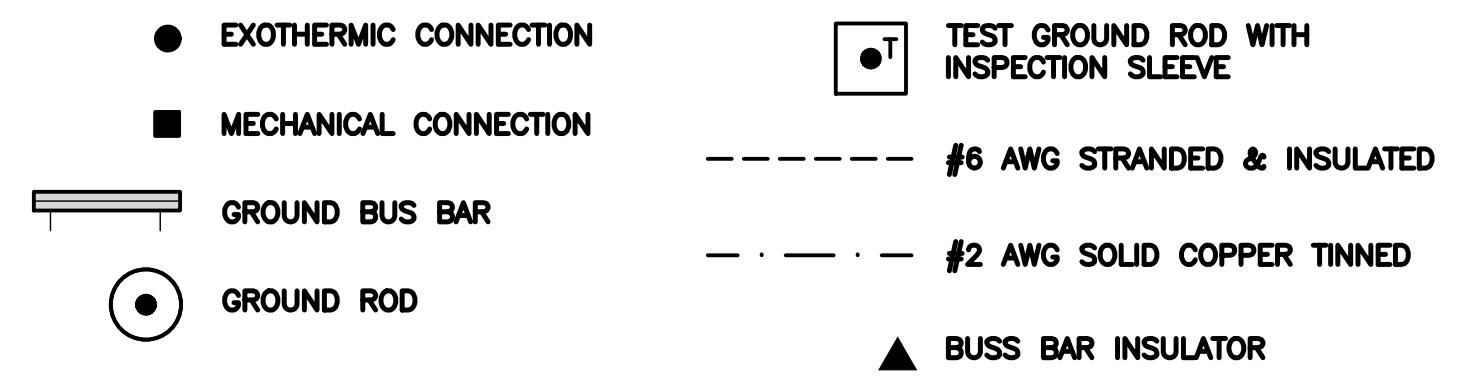
RFDS REV #: ---

PROPOSED ENERSYS PANEL SCHEDULE									
LOAD SERVED	VOLT AMPS (WATTS)		TRIP	CKT #	PHASE	CKT #	TRIP	VOLT AMPS (WATTS)	LOAD SERVED
	L1	L2							
PPC GFCI OUTLET	180	180	15A	1	A	2	40A	3840	ENERSYS ALPHA CORDEX RECTIFIERS 1 & 2
ENERSYS GFCI OUTLET	180	20A	3	3	B	4	40A	3840	ENERSYS ALPHA CORDEX RECTIFIER 3 & 4
-SPACE-			5	5	A	6	40A	3840	ENERSYS ALPHA CORDEX RECTIFIER 5
-SPACE-			7	7	B	8	20A	1920	-SPACE-
-SPACE-			9	9	A	10	20A	1920	-SPACE-
-SPACE-			11	11	B	12			-SPACE-
-SPACE-			13	13	A	14			-SPACE-
-SPACE-			15	15	B	16			-SPACE-
-SPACE-			17	17	A	18			-SPACE-
-SPACE-			19	19	B	20			-SPACE-
-SPACE-			21	21	A	22			-SPACE-
-SPACE-			23	23	B	24			-SPACE-
VOLTAGE AMPS	180	180						9500	9500
200A MCB, 1φ, 24 SPACE, 120/240V	L1	L2							
MB RATING: 65,000 AIC	9680	9680	VOLTAGE AMPS						
	81	81	AMPS						
	81	102	MAX AMPS						
			MAX 125%						



TYPICAL EQUIPMENT GROUNDRING PLAN

NO SCALE 1



GROUNDING LEGEND

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

GROUNDING KEY NOTES

- (A) EXTERIOR GROUNDRING: #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 GROUNDRING: THE GROUNDRING 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 GROUNDRING SYSTEM AND THE BUILDING RING GROUNDRING SYSTEM USING MINIMUM #2 AWG SOLID COPPER CONDUCTORS.
- (C) INTERIOR GROUNDRING: #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 GROUNDRING WITH #6 AWG STRANDED GREEN INSULATED CONDUCTOR.
- (D) BOND TO INTERIOR GROUNDRING: #2 AWG SOLID TINNED COPPER WIRE PRIMARY BONDS SHALL BE PROVIDED AT LEAST AT FOUR POINTS ON THE INTERIOR GROUNDRING, LOCATED AT THE CORNERS OF THE BUILDING.
- (E) GROUNDROD: UL LISTED COPPER CLAD STEEL, MINIMUM 1/2" DIAMETER BY EIGHT FEET LONG. GROUNDRODS SHALL BE INSTALLED WITH INSPECTION SLEEVES. GROUNDRODS SHALL BE DRIVEN TO THE DEPTH OF GROUNDRING CONDUCTOR.
- (F) CELL REFERENCE GROUNDRING: POINT OF GROUNDRING REFERENCE FOR ALL COMMUNICATIONS EQUIPMENT FRAMES. ALL BONDS ARE MADE WITH #2 AWG UNLESS NOTED OTHERWISE STRANDED GREEN INSULATED COPPER CONDUCTORS. BOND TO GROUNDRING WITH (2) #2 SOLID TINNED COPPER CONDUCTORS.
- (G) HATCH PLATE GROUNDRING: BOND TO THE INTERIOR GROUNDRING WITH TWO #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS. WHEN A HATCH-PLATE AND A CELL REFERENCE GROUNDRING ARE BOTH PRESENT, THE CRGB MUST BE CONNECTED TO THE HATCH-PLATE AND TO THE INTERIOR GROUNDRING USING (2) TWO #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS EACH.
- (H) EXTERIOR CABLE ENTRY PORT GROUNDRING: LOCATED AT THE ENTRANCE TO THE CELL SITE BUILDING. BOND TO GROUNDRING WITH A #2 AWG SOLID TINNED COPPER CONDUCTORS WITH AN EXOTHERMIC WELD AND INSPECTION SLEEVE.
- (I) TELCO GROUNDRING: BOND TO BOTH CELL REFERENCE GROUNDRING AND EXTERIOR GROUNDRING.
- (J) FRAME BONDING: THE BONDING POINT FOR TELECOM EQUIPMENT FRAMES SHALL BE THE GROUNDRING BUS THAT IS NOT ISOLATED FROM THE EQUIPMENT'S METAL FRAMEWORK.
- (K) INTERIOR UNIT BONDS: METAL FRAMES, CABINETS AND INDIVIDUAL METALLIC UNITS LOCATED WITHIN THE AREA OF THE INTERIOR GROUNDRING REQUIRE A #6 AWG STRANDED GREEN INSULATED COPPER BOND TO THE INTERIOR GROUNDRING.
- (L) FENCE AND GATE GROUNDRING: METAL FENCES WITHIN 7 FEET OF THE EXTERIOR GROUNDRING OR OBJECTS BONDED TO THE EXTERIOR GROUNDRING SHALL BE BONDED TO THE GROUNDRING 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 GROUNDRING. USING #2 TINNED SOLID COPPER WIRE.
- (N) ICE BRIDGE SUPPORTS: EACH ICE BRIDGE LEG SHALL BE BONDED TO THE GROUNDRING WITH #2 AWG BARE TINNED COPPER CONDUCTOR. PROVIDE EXOTHERMIC WELDS AT BOTH THE ICE BRIDGE LEG AND BURIED GROUNDRING.
- (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 GROUNDRING CONDUCTOR FROM THE DC POWER SYSTEM COMMON RETURN BUS DIRECTLY CONNECTED TO THE CELL SITE REFERENCE GROUNDRING.
- (P) TOWER TOP COLLECTOR BUSS BAR IS TO BE MECHANICALLY BONDED TO PROPOSED ANTENNA MOUNT. REFER TO DISH Wireless LLC. GROUNDRING NOTES.

dish
wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

FPA
FRENCH & PARRELLO
ASSOCIATES
1800 Route 34, Suite 101 • Wall, New Jersey 07719
o: 732.312.9800 f: 732.312.9801



JOHN BOSCO, CT P.E. LICENSE NO. 25605
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

DRAWN BY: CHECKED BY: APPROVED BY:
T.J.A. J.B. ---

RFDS REV #:

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	07/21/21	ISSUED FOR REVIEW
B	04/29/22	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
2438H.001.031

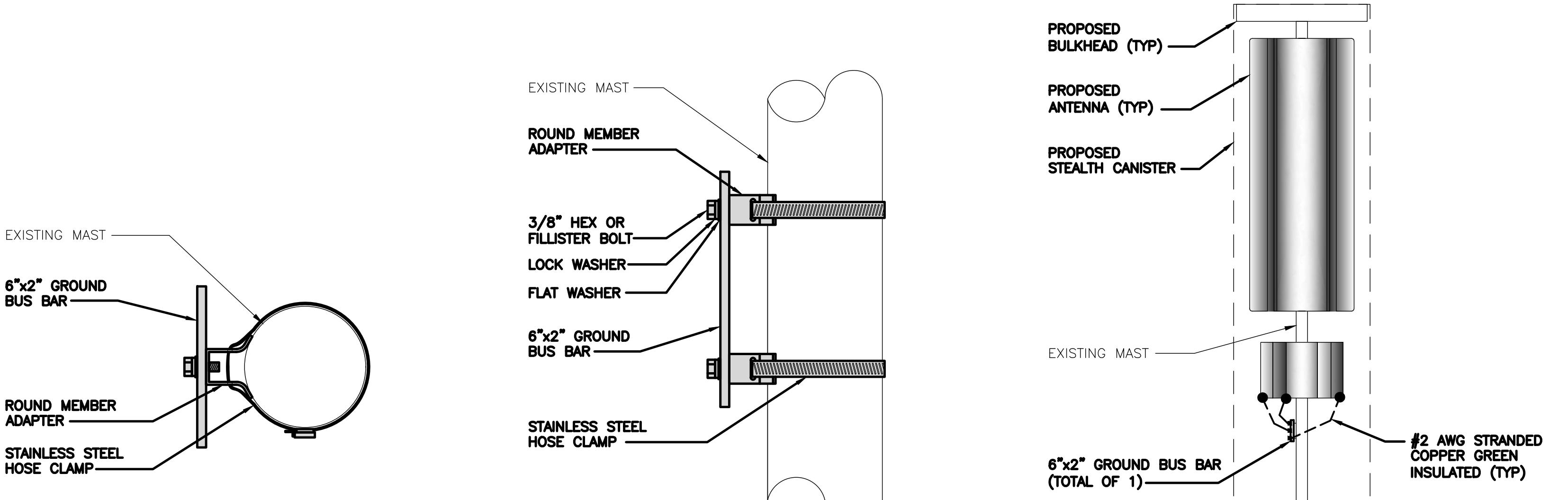
DISH Wireless LLC.
PROJECT INFORMATION

NJJer01106A
1875 NOBLE AVENUE
BRIDGEPORT, CT 06610

SHEET TITLE
GROUNDING PLANS
AND NOTES

SHEET NUMBER

G-1



BUSS BAR PLAN

BUSS BAR ELEVATION

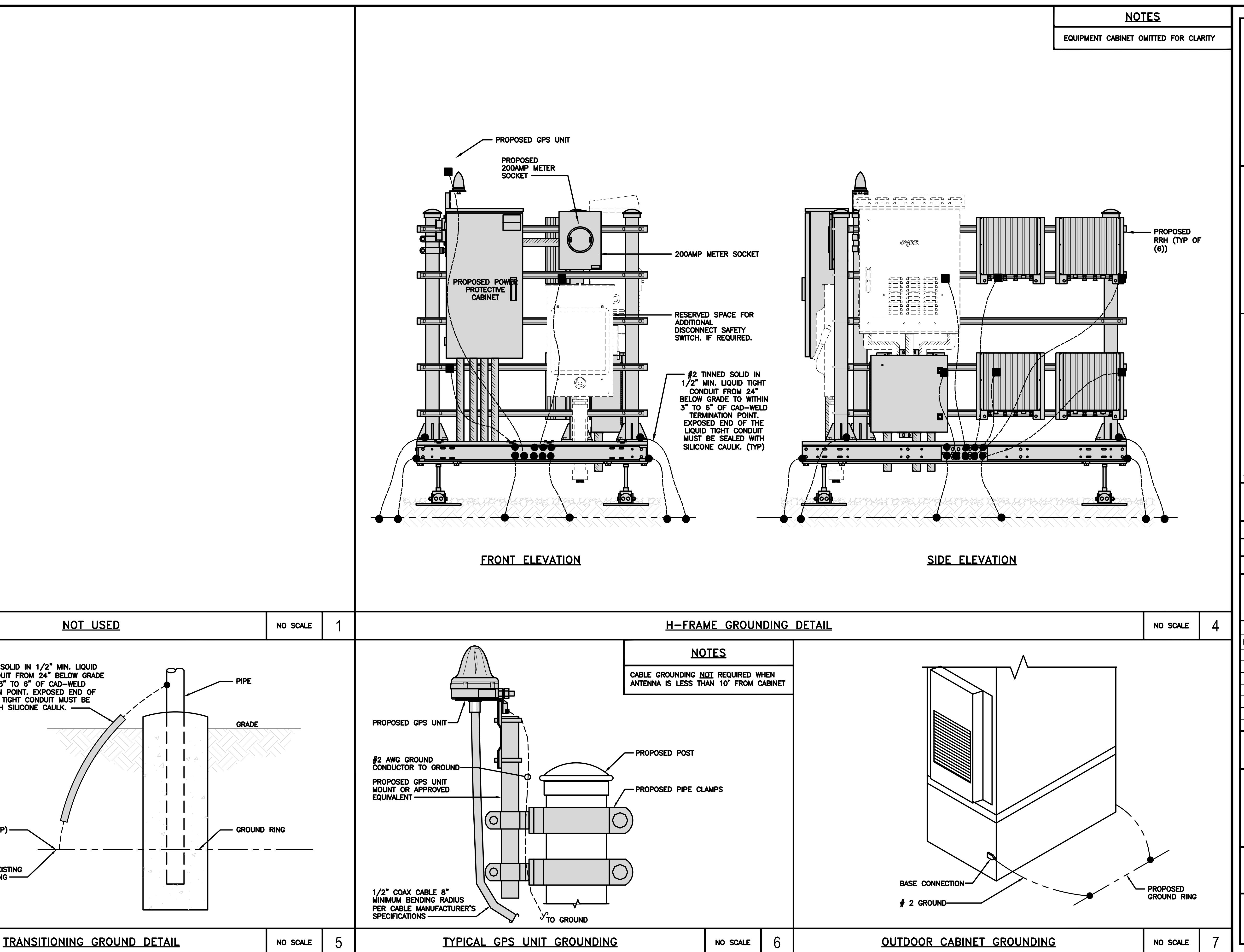
ANTENNA GROUNDRING ELEVATION

TYPICAL ANTENNA GROUNDRING DETAIL

NO SCALE 2

GROUNDING KEY NOTES

NO SCALE 3



dish
wireless.

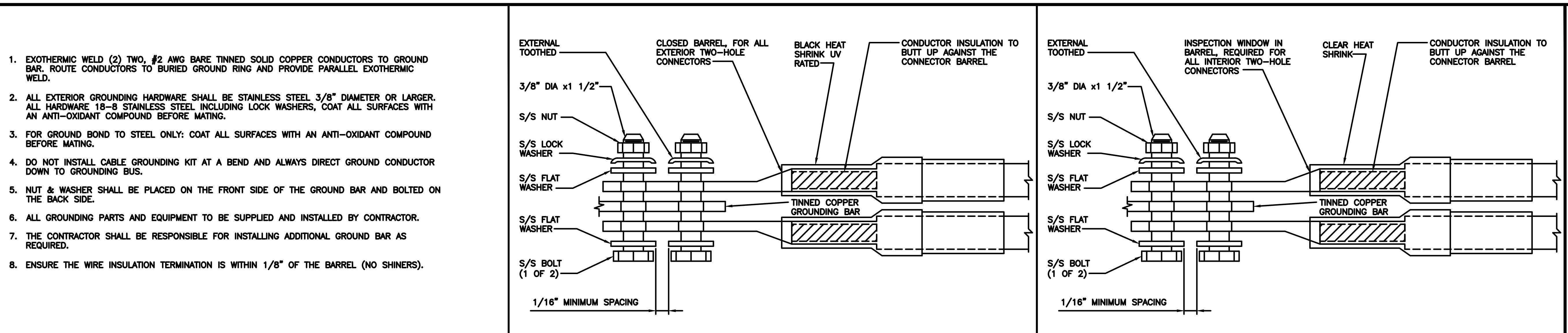
5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

FPA
FRENCH & PARRELLO
ASSOCIATES

1800 Route 34, Suite 101 • Wall, New Jersey 07719
o: 732.312.9800 f: 732.312.9801


 JOHN BOSCO, CT P.E. LICENSE NO. 25605
 IT IS A VIOLATION OF LAW FOR ANY PERSON,
 UNLESS THEY ARE ACTING UNDER THE DIRECTION
 OF A LICENSED PROFESSIONAL ENGINEER,
 TO ALTER THIS DOCUMENT.

DRAWN BY: CHECKED BY: APPROVED BY:
 T.J.A. J.B. ---
 RFDS REV #: ---
CONSTRUCTION DOCUMENTS
 SUBMITTALS
 REV DATE DESCRIPTION
 A 07/21/21 ISSUED FOR REVIEW
 B 04/29/22 ISSUED FOR CONSTRUCTION
 A&E PROJECT NUMBER
 2438H.001.031
 DISH Wireless LLC, PROJECT INFORMATION
 NJJER01106A
 1875 NOBLE AVENUE
 BRIDGEPORT, CT 06610
 SHEET TITLE
 GROUNDING DETAILS
 SHEET NUMBER
G-2



dish
wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

FPA
FRENCH & PARRELLO
ASSOCIATES

1800 Route 34, Suite 101 • Wall, New Jersey 07719
o: 732.312.9800 f: 732.312.9801



JOHN BOSCO, CT P.E. LICENSE NO. 25606

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

DRAWN BY: CHECKED BY: APPROVED BY:
T.J.A. J.B. ---

RFDS REV #: ---

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	07/21/21	ISSUED FOR REVIEW
B	04/29/22	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
2438H.001.031

DISH Wireless LLC,
PROJECT INFORMATION
NJJER01106A
1875 NOBLE AVENUE
BRIDGEPORT, CT 06610

SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER

G-3

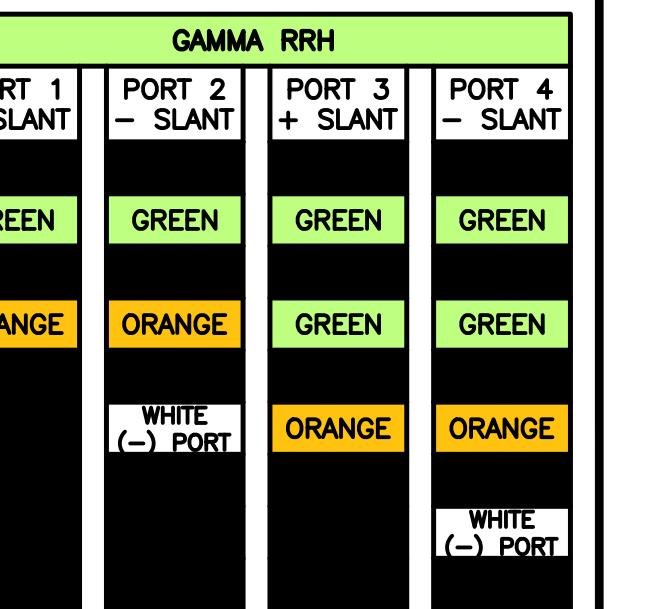
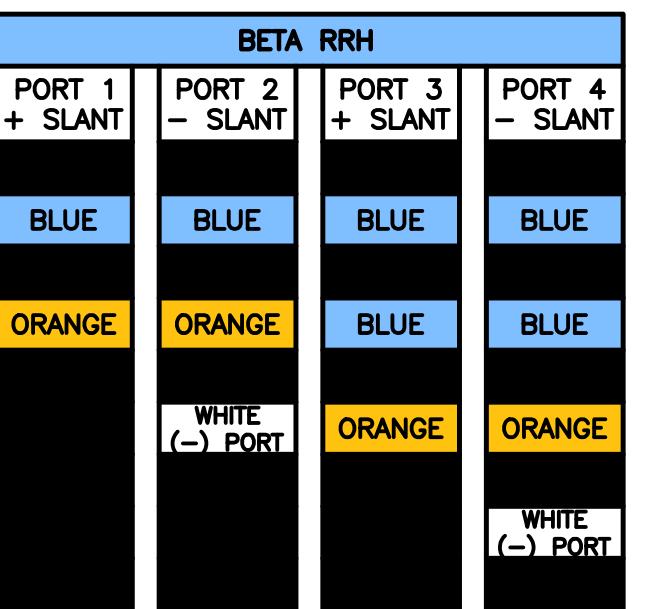
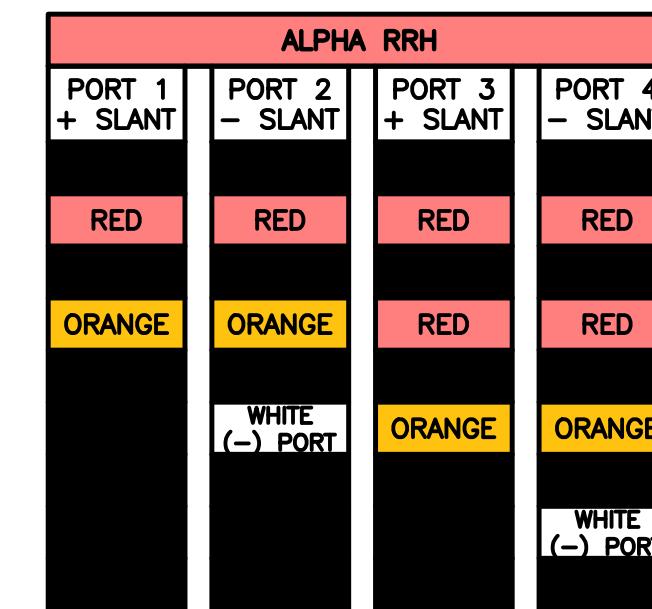
<u>TYPICAL GROUNDING NOTES</u>	NO SCALE	1	<u>TYPICAL EXTERIOR TWO HOLE LUG</u>	NO SCALE	2	<u>TYPICAL INTERIOR TWO HOLE LUG</u>	NO SCALE	3
<u>LUG DETAIL</u>	NO SCALE	4	<u>NOT USED</u>	NO SCALE	5	<u>TYPICAL TEST GROUND ROD WITH INSPECTION SLEEVE</u>	NO SCALE	6

RF JUMPER COLOR CODING

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

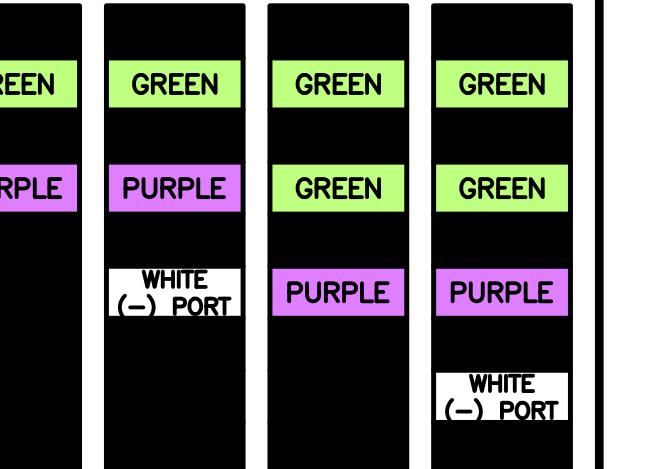
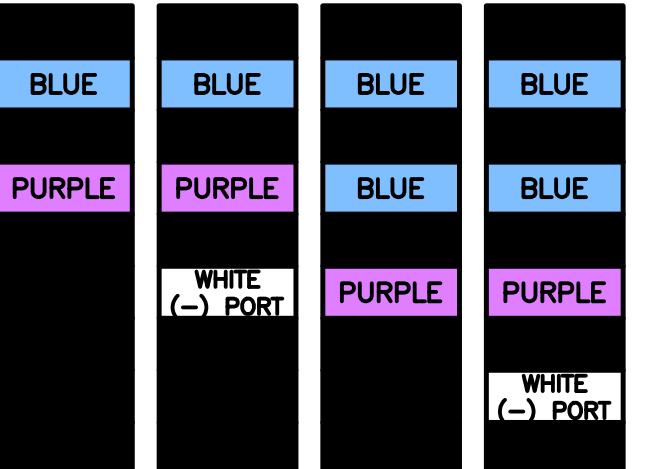
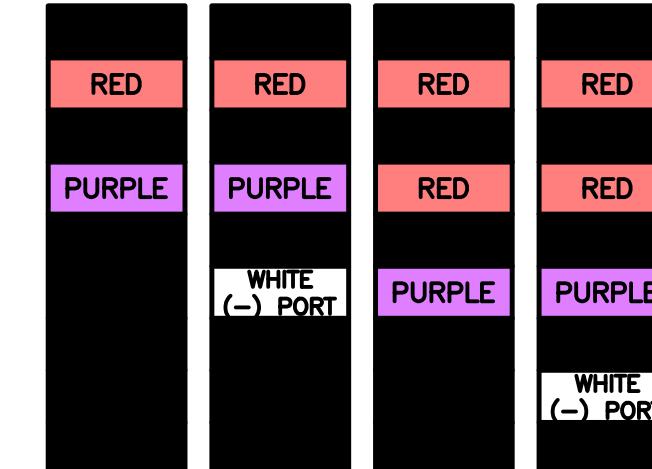
LOW-BAND RRH –
(600MHz N71 BASEBAND) +
(850MHz N26 BAND) +
(700MHz N29 BAND) – OPTIONAL PER MARKET

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



MID-BAND RRH –
(AWS BANDS N66+N70)

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



HYBRID/DISCREET CABLES

INCLUDE SECTOR BANDS BEING SUPPORTED
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 1



EXAMPLE 2



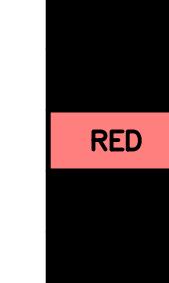
EXAMPLE 3



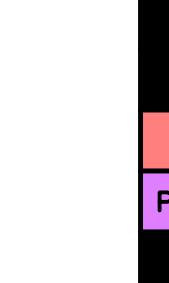
FIBER JUMPERS TO RRHs

LOW-BAND RRH FIBER CABLES HAVE SECTOR
STRIPE ONLY

LOW BAND RRH



HIGH BAND RRH



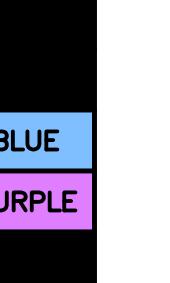
LOW BAND RRH



HIGH BAND RRH



LOW BAND RRH



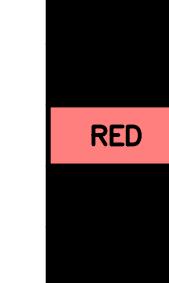
HIGH BAND RRH



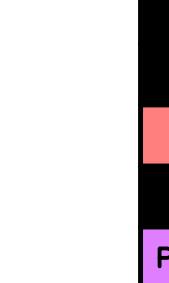
POWER CABLES TO RRHs

LOW-BAND RRH POWER CABLES HAVE SECTOR
STRIPE ONLY

LOW BAND RRH



HIGH BAND RRH



LOW BAND RRH



HIGH BAND RRH



LOW BAND RRH



HIGH BAND RRH

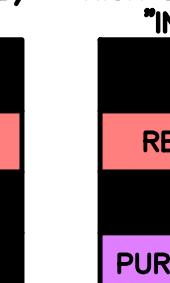


RET MOTORS AT ANTENNAS

ANTENNA 1 LOW BAND/ "IN"



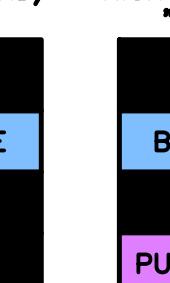
ANTENNA 1 HIGH BAND/ "IN"



ANTENNA 1 LOW BAND/ "IN"



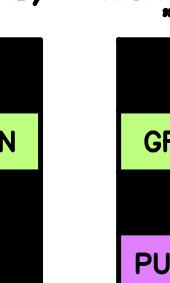
ANTENNA 1 HIGH BAND/ "IN"



ANTENNA 1 LOW BAND/ "IN"



ANTENNA 1 HIGH BAND/ "IN"



MICROWAVE RADIO LINKS

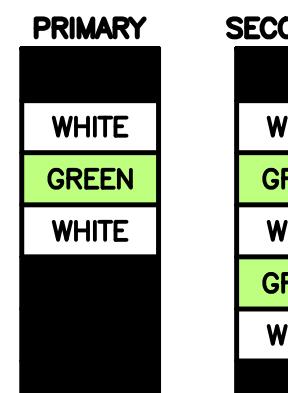
FORWARD AZIMUTH OF 0-120 DEGREES



FORWARD AZIMUTH OF 120-240 DEGREES



FORWARD AZIMUTH OF 240-360 DEGREES



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

LOW BANDS (N71+N26)
OPTIONAL – (N29)

ORANGE

AWS
(N66+N70+H-BLOCK)

PURPLE

CBRS TECH
(3 GHz)

YELLOW

NEGATIVE SLANT PORT
ON ANT/RRH

WHITE

ALPHA SECTOR

RED

BETA SECTOR

BLUE

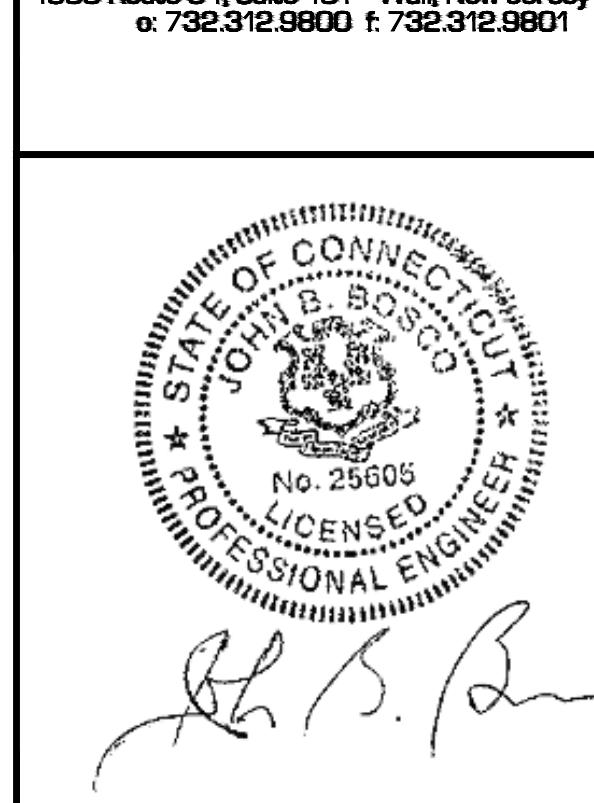
GAMMA SECTOR

GREEN

COLOR IDENTIFIER

NO SCALE

RF-1



JOHN BOSCO, CT P.E. LICENSE NO. 25605

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

DRAWN BY: CHECKED BY: APPROVED BY:
T.J.A. J.B. ---

RFDS REV #: ---

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	07/21/21	ISSUED FOR REVIEW
B	04/29/22	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
2438H.001.031

DISH Wireless L.L.C.
PROJECT INFORMATION
NJJER01106A
1875 NOBLE AVENUE
BRIDGEPORT, CT 06610

SHEET TITLE
RF
CABLE COLOR CODE

SHEET NUMBER

NOT USED

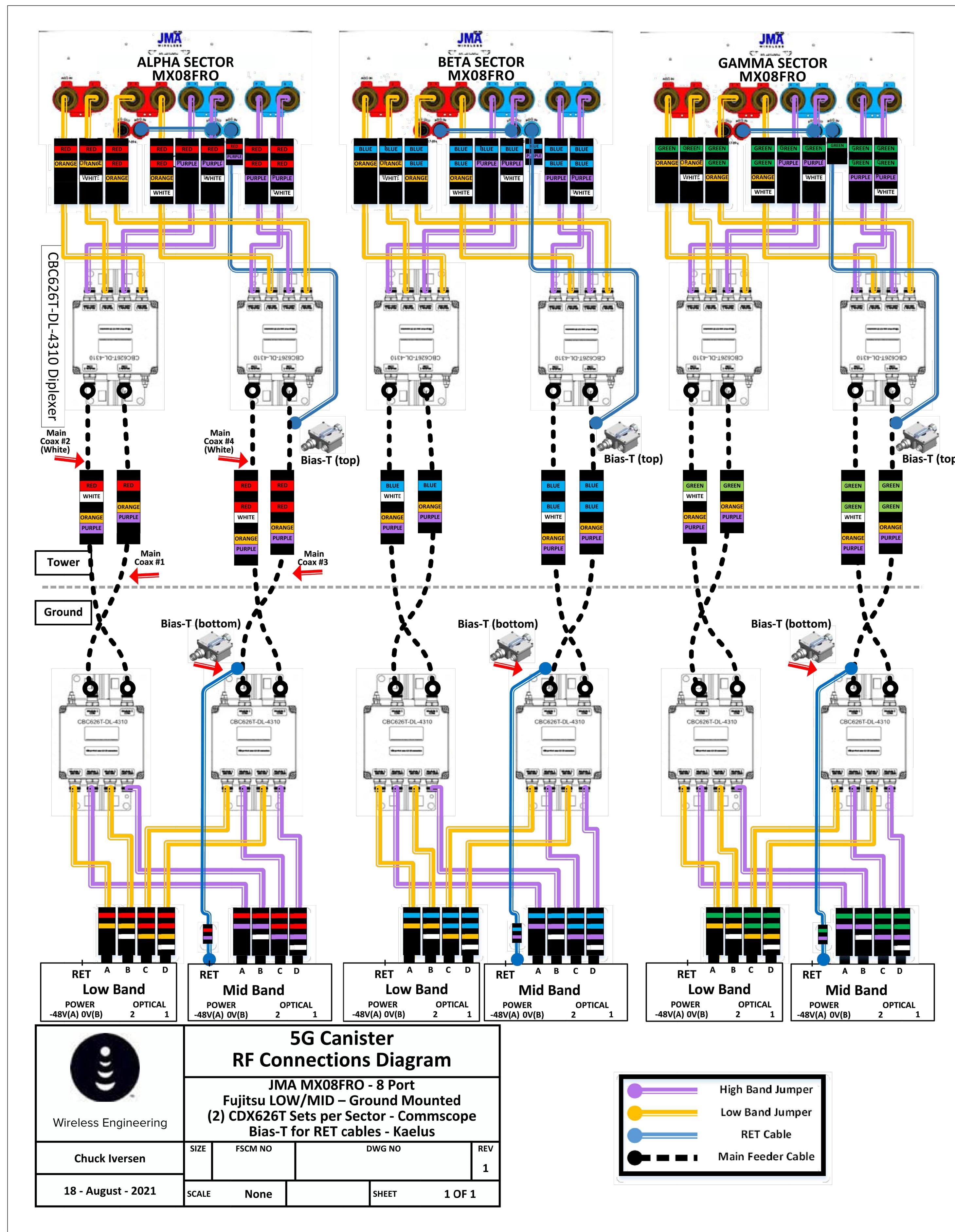
NO SCALE

4

RF CABLE COLOR CODES

NO SCALE

1



dish
wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

The logo for FPA French & Parrello Associates. It features the letters 'FPA' in a large, bold, dark blue sans-serif font. A thick white horizontal bar runs through the middle of the letters. To the right of the 'A', there is a large, light gray triangle pointing downwards. Below 'FPA', the words 'FRENCH & PARRELLO' are written in a bold, dark blue sans-serif font. A thin horizontal line extends from the left end of the 'F' and another from the right end of the 'L' to meet in the center, creating a double underline effect. Below this, the word 'ASSOCIATES' is written in a smaller, dark blue sans-serif font, also underlined by a thin horizontal line.

1800 Route 34, Suite 101 • Wall, New Jersey 07719
o: 732.312.9800 f: 732.312.9801



JOHN BOSCO, CT P.E. LICENSE NO. 25605

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

DRAWN BY:	CHECKED BY:	APPROVED BY:
T.J.A.	J.B.	---

RFDS REV #: ---

CONSTRUCTION DOCUMENTS

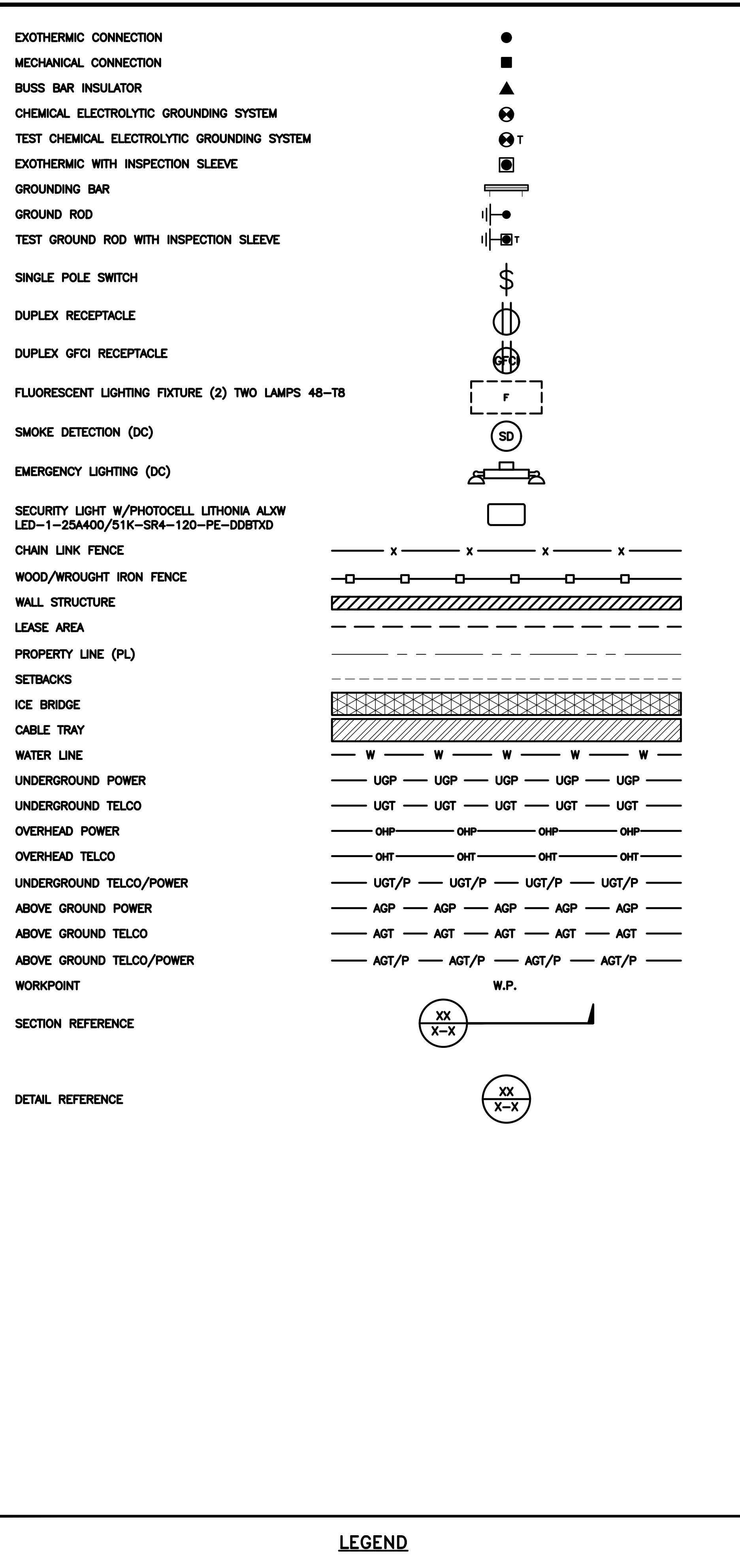
SUBMITTALS		
REV	DATE	DESCRIPTION
A	07/21/21	ISSUED FOR REVIEW
B	04/29/22	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
2438H.001.031

**DISH Wireless L.L.C.
PROJECT INFORMATION**

SHEET TITLE
RF
PLUMBING DIAGRAM

RF-2



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

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.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

FPA
FRENCH & PARRELLO
ASSOCIATES
1800 Route 34, Suite 101 • Wall, New Jersey 07719
o: 732.312.9800 f: 732.312.9801



JOHN BOSCO, CT P.E. LICENSE NO. 25605
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

DRAWN BY: CHECKED BY: APPROVED BY:
T.J.A. J.B. ---

RFDS REV #: ---

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	07/21/21	ISSUED FOR REVIEW
B	04/29/22	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
2438H.001.031

DISH Wireless L.L.C.
PROJECT INFORMATION

NJJER01106A
1875 NOBLE AVENUE
BRIDGEPORT, CT 06610

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-2

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

- ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST-IN-PLACE CONCRETE.
- UNLESS NOTED OTHERWISE, SOIL BEARING PRESSURE USED FOR DESIGN OF SLABS AND FOUNDATIONS IS ASSUMED TO BE 1000 psf.
- ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'_c) OF 3000 psi AT 28 DAYS, UNLESS NOTED OTHERWISE. NO MORE THAN 90 MINUTES SHALL ELAPSE FROM BATCH TIME TO TIME OF PLACEMENT UNLESS APPROVED BY THE ENGINEER OF RECORD. TEMPERATURE OF CONCRETE SHALL NOT EXCEED 90°F AT TIME OF PLACEMENT.
- CONCRETE EXPOSED TO FREEZE-THAW CYCLES SHALL CONTAIN AIR ENTRAINING ADMIXTURES. AMOUNT OF AIR ENTRAINMENT TO BE BASED ON SIZE OF AGGREGATE AND F3 CLASS EXPOSURE (VERY SEVERE). CEMENT USED TO BE TYPE II PORTLAND CEMENT WITH A MAXIMUM WATER-TO-CEMENT RATIO (W/C) OF 0.45.
- ALL STEEL REINFORCING SHALL CONFORM TO ASTM A615. ALL WELDED WIRE FABRIC (WWF) SHALL CONFORM TO ASTM A185. ALL SPLICES SHALL BE CLASS "B" TENSION SPLICES, UNLESS NOTED OTHERWISE. ALL HOOKS SHALL BE STANDARD 90 DEGREE HOOKS, UNLESS NOTED OTHERWISE. YIELD STRENGTH (F_y) OF STANDARD DEFORMED BARS ARE AS FOLLOWS:
 #4 BARS AND SMALLER 40 ksi
 #5 BARS AND LARGER 60 ksi
- THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:
 - CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH 3"
 - CONCRETE EXPOSED TO EARTH OR WEATHER:
 - #6 BARS AND LARGER 2"
 - #5 BARS AND SMALLER 1-1/2"
 - CONCRETE NOT EXPOSED TO EARTH OR WEATHER:
 - SLAB AND WALLS 3/4"
 - BEAMS AND COLUMNS 1-1/2"
- A TOOLED EDGE OR A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNLESS NOTED OTHERWISE, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

ELECTRICAL INSTALLATION NOTES:

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

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

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

FPA
FRENCH & PARRELLO
ASSOCIATES
1800 Route 34, Suite 101 • Wall, New Jersey 07719
o: 732.312.9800 f: 732.312.9801



JOHN BOSCO, CT P.E. LICENSE NO. 25605
IT IS A VIOLATION OF LAW FOR ANY PERSON,
UNLESS THEY ARE ACTING UNDER THE DIRECTION
OF A LICENSED PROFESSIONAL ENGINEER,
TO ALTER THIS DOCUMENT.

DRAWN BY: CHECKED BY: APPROVED BY:
T.J.A. J.B. ---

RFDS REV #: ---

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	07/21/21	ISSUED FOR REVIEW
B	04/29/22	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
2438H.001.031

DISH Wireless L.L.C.
PROJECT INFORMATION

NJJER01106A
1875 NOBLE AVENUE
BRIDGEPORT, CT 06610

SHEET TITLE
GENERAL NOTES

SHEET NUMBER

GN-3

GROUNDING NOTES:

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

dish
wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

FPA
FRENCH & PARRELLO
ASSOCIATES

1800 Route 34, Suite 101 • Wall, New Jersey 07719
o: 732.312.9800 f: 732.312.9801



JOHN BOSCO, CT P.E. LICENSE NO. 25605

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

DRAWN BY: CHECKED BY: APPROVED BY:
T.J.A. J.B. ---

RFDS REV #: ---

**CONSTRUCTION
DOCUMENTS**

SUBMITTALS

REV	DATE	DESCRIPTION
A	07/21/21	ISSUED FOR REVIEW
B	04/29/22	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
2438H.001.031

**DISH Wireless LLC,
PROJECT INFORMATION**
NJJER01106A
1875 NOBLE AVENUE
BRIDGEPORT, CT 06610

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-4

Exhibit D

Structural Analysis Report

Date: **February 2, 2022**



Tower Engineering Professionals
326 Tryon Road
Raleigh, NC 27603
(919) 661-6351

Subject: Structural Analysis Report

Carrier Designation: *DISH Network Co-Locate*

Site Number: NJJER01106A
Site Name: CT-CCI-T-822779

Crown Castle Designation:

BU Number: 822779
Site Name: Bridgeport/ Rt 8
JDE Job Number: 640179
Work Order Number: 2069836
Order Number: 548693 Rev. 4

Engineering Firm Designation:

TEP Project Number: 61158.650523

Site Data:

1875 Noble Avenue, Bridgeport, Fairfield County, CT 06610
Latitude 41° 12' 37.27", Longitude -73° 10' 52.26"
120 Foot - Concealment Tower

Tower Engineering Professionals 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:

LC8.7: Feasibility SA

Sufficient Capacity – 88.1%

This analysis utilizes an ultimate 3-second gust wind speed of 119 mph as required by the 2018 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Structural analysis prepared by: Sarah E. Sarp / RAL

Respectfully submitted by:

Aaron T. Rucker, P.E.



Electronic Copy

02/02/2022

TABLE OF CONTENTS

1) INTRODUCTION

2) ANALYSIS CRITERIA

- Table 1 - Proposed Equipment Configuration
- Table 2 - Other Considered Equipment

3) ANALYSIS PROCEDURE

- Table 3 - Documents Provided
- 3.1) Analysis Method
- 3.2) Assumptions

4) ANALYSIS RESULTS

- Table 4 - Section Capacity (Summary)
- Table 5 - Tower Component Stresses vs. Capacity
- 4.1) Recommendations

5) APPENDIX A

- tnxTower Output

6) APPENDIX B

- Base Level Drawing

7) APPENDIX C

- Additional Calculations

1) INTRODUCTION

This is a 120-ft concealment tower designed by Pirod, Inc. and mapped by Tower Engineering Professionals in November of 2015. The base tower is 82-ft and the concealment spine extends from 82-ft to 120-ft. The tower has been modified per reinforcement drawings prepared by Paul J. Ford and Company in October of 2015. A proposed canister expansion and extension were considered in this analysis, enlarging the canister sections diameters from 36-in to 52-in at 84-ft, 46-in at 95-ft, and 40-in at 105-ft and extending the canister sections from 82-ft to 78-ft.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	119 mph
Exposure Category:	C
Topographic Factor:	1.0
Ice Thickness:	1.5 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)
105.0	105.0	1	Generic	40" Dia. x 10' Long Concealment Canister	-	-
95.0	95.0	1	Generic	46" Dia. x 10' Long Concealment Canister	-	-
84.0	86.0	3	JMA Wireless	MX08FRO665-21	12	7/8
		6	Commscope	CDX623T-DS-T		
		3	Kaelus	SBT0001F1V1		
	84.0	1	Generic	52" Dia. x 12' Long Concealment Canister		
	80.0	1	Raycap	RDIDC-9181-PF-48		

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)
115.0	115.0	3	Commscope	FVV-65C-R3	12	7/8
		1	Generic	36" Dia. x 10' Long Concealment Canister	-	-
105.0	107.0	3	RFS/Celwave	APX16DWV-16DWV-S-E-A20	12	7/8
95.0	96.0	3	Commscope	DHHTT65B-3XR	6	1-1/4
		3	RFS/Celwave	FD9R6004/1C-3L	2	3/8
		3	Nokia	FWHR	4	17/16
		1	Enclosures and Assembly	BEN-92P	1	1/8
					1	7/8

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Reference	Source
Geotechnical Report	3584592	CCISites
Tower Foundation Drawings	3914232	CCISites
Tower Manufacturer Drawings	3584593	CCISites
Tower Mapping Report		
Tower Reinforcement Drawings	6175820	CCISites
Post-Modification Inspection	6261360	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.

SolidWorks, a commercially available analysis software package, was used to create a finite element model of the canister spine flange connection at the 82.0-ft level. Selected output from the analysis is included in Appendix C - Additional Calculations.

3.2) Assumptions

- 1) The 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.
- 3) Base and flange plate design methodology of the manufacturer has been reviewed and found to be an acceptable means of designing to resist the full capacity of the bolts and shaft.

This analysis may be affected if any assumptions are not valid or have been made in error. Tower Engineering Professionals 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 (lb)	ϕP_{allow} (lb)	% Capacity	Pass / Fail	
L1	120 - 110	Pole	P10.75x0.375	1	-3049	485121	8.5	Pass	
L2	110 - 100	Pole	P10.75x0.375	2	-4237	485121	23.5	Pass	
L3	100 - 90	Pole	P10.75x0.375	3	-5663	485121	45.0	Pass	
L4	90 - 85	Pole	P10.75x0.375	4	-6582	485121	59.4	Pass	
L5	85 - 82	Pole	P10.75x0.375	5	-7207	485121	68.0	Pass	
L6	82 - 78	Pole	P24x0.375	6	-7743	1104673	16.6	Pass	
L7	78 - 60	Pole	P24x0.375	7	-10647	1104673	29.9	Pass	
L8	60 - 30	Pole	P24x0.375	8	-14678	1104673	56.3	Pass	
L9	30 - 0	Pole	P24x0.375	9	-18849	1104673	85.8	Pass	
							Summary		
							Pole (L9)	85.8	Pass
							RATING =	85.8	Pass

Table 5 - Tower Component Stresses vs. Capacity – LC8.7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1,2	Flange Connection	110.0	6.8	Pass
1,2	Flange Connection	100.0	20.5	Pass
1,2	Flange Connection	90.0	40.2	Pass
1	Flange Connection (Stiffeners)	82.0	Sufficient	Pass
1,2	Flange Bolts	82.0	42.7	Pass
1,2	Bottom Flange	82.0	40.4	Pass
1,2,3	Flange Connection	60.0	46.1	Pass
1,2,3	Flange Connection	30.0	88.1	Pass
1,2	Anchor Rods	-	52.6	Pass
1,2,3	Base Plate	-	85.8	Pass
1,2	Base Foundation Structural	-	14.9	Pass
1,2	Base Foundation Soil Interaction	-	15.0	Pass

Structure Rating (max from all components) =

88.1%

Notes:

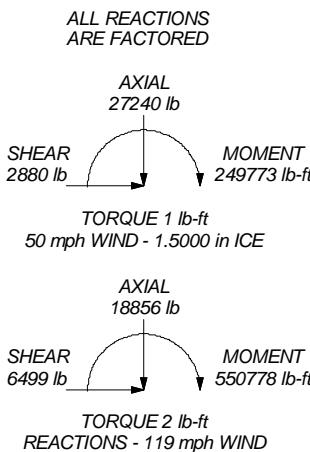
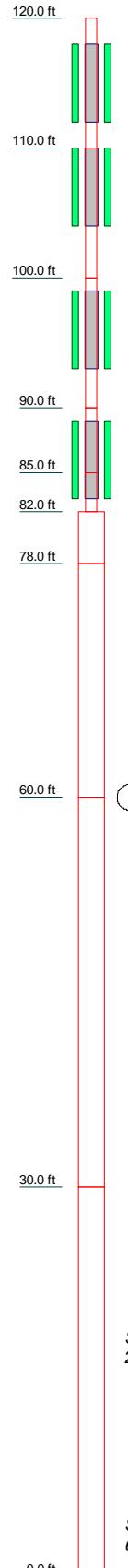
- 1) See additional documentation in "Appendix C - Additional Calculations" for calculations supporting the % capacity listed.
- 2) Rating per TIA-222-H Section 15.5
- 3) Base/Flange plates are assumed to have the same capacity as their respective splice bolts or shaft.

4.1) Recommendations

- 1) The tower and its foundation have sufficient capacity to carry the proposed load configuration. In order for the results of this analysis to be considered valid, the following modification(s) must be completed
 - a) The existing concealment system is sufficient with proposed canister enlargement. New concealment sections and connections shall be designed by a competent, experienced, licensed professional engineer.

APPENDIX A
TNXTOWER OUTPUT

Section	9	8	7	6	5	4	3	2	1
Size	P24x0.375	P24x0.375	P24x0.375	P24x0.375	P24x0.375	P24x0.375	P10.75x0.375	P10.75x0.375	P10.75x0.375
Length (ft)	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000
Grade									
Weight (lb)	9346.6	2841.3	2841.3	1704.8	378.8	124.8	208.0	415.9	415.9



GRADE	Fy	Fu	GRADE	Fy	Fu
A500-42	42 ksi	58 ksi	A53-B-42	42 ksi	63 ksi

MATERIAL STRENGTH

TOWER DESIGN NOTES

1. Tower is located in Fairfield County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-H Standard.
3. Tower designed for a 119 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.50 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 0.0000 ft
8. TOWER RATING: 85.8%

tnxTower Tower Engineering Professionals 326 Tryon Rd Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job Bridgeport/ Rt B (BU 822779)	Page 1 of 12
	Project TEP No. 61158.650523	Date 12:01:07 02/02/22
	Client Crown Castle	Designed by Sarah E. Sarp

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 Fairfield County, Connecticut.

Tower base elevation above sea level: 123.0000 ft.

Basic wind speed of 119 mph.

Risk Category II.

Exposure Category C.

Simplified Topographic Factor Procedure for wind speed-up calculations is used.

Topographic Category: 1.

Crest Height: 0.0000 ft.

Nominal ice thickness of 1.5000 in.

Ice thickness is considered to increase with height.

Ice density of 56.00 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	Retention 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

tnxTower Tower Engineering Professionals 326 Tryon Rd Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job Bridgeport/ Rt B (BU 822779)	Page 2 of 12
	Project TEP No. 61158.650523	Date 12:01:07 02/02/22
	Client Crown Castle	Designed by Sarah E. Sarp

Pole Section Geometry

Section	Elevation ft	Section Length ft	Pole Size	Pole Grade	Socket Length ft
L1	120.0000-110.000 0	10.0000	P10.75x0.375	A500-42 (42 ksi)	
L2	110.0000-100.000 0	10.0000	P10.75x0.375	A500-42 (42 ksi)	
L3	100.0000-90.0000	10.0000	P10.75x0.375	A500-42 (42 ksi)	
L4	90.0000-85.0000	5.0000	P10.75x0.375	A500-42 (42 ksi)	
L5	85.0000-82.0000	3.0000	P10.75x0.375	A500-42 (42 ksi)	
L6	82.0000-78.0000	4.0000	P24x0.375	A53-B-42 (42 ksi)	
L7	78.0000-60.0000	18.0000	P24x0.375	A53-B-42 (42 ksi)	
L8	60.0000-30.0000	30.0000	P24x0.375	A53-B-42 (42 ksi)	
L9	30.0000-0.0000	30.0000	P24x0.375	A53-B-42 (42 ksi)	

Tower Elevation ft	Gusset Area (per face) ft ²	Gusset Thickness in	Gusset Grade	Adjust. Factor A _f	Adjust. Factor A _r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L1 120.0000-110. 0000				1	0	1			
L2 110.0000-100. 0000				1	0	1			
L3 100.0000-90.0 000				1	0	1			
L4 90.0000-85.00 00				1	0	1			
L5 85.0000-82.00 00				1	0	1			
L6 82.0000-78.00 00				1	0	1			
L7 78.0000-60.00 00				1	1	1			
L8 60.0000-30.00 00				1	1	1			
L9 30.0000-0.0000 0				1	1	1			

tnxTower Tower Engineering Professionals 326 Tryon Rd Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job	Bridgeport/ Rt B (BU 822779)	Page
	Project	TEP No. 61158.650523	Date 12:01:07 02/02/22
	Client	Crown Castle	Designed by Sarah E. Sarp

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	$C_A A_A$	Weight
							ft^2/ft	plf
AVA5-50(7/8)	B	No	No	Inside Pole	115.0000 - 0.0000	12	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000
***								0.30 0.30 0.30 0.30
AVA5-50(7/8)	B	No	No	Inside Pole	105.0000 - 0.0000	12	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000
***								0.30 0.30 0.30 0.30
LDF6-50A(1-1/4)	A	No	No	Inside Pole	95.0000 - 0.0000	6	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000
9833(3/8)	A	No	No	Inside Pole	95.0000 - 0.0000	2	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000
7919A(17/64)	A	No	No	Inside Pole	95.0000 - 0.0000	4	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000
004U8X-32125E2G(1/8)	A	No	No	Inside Pole	95.0000 - 0.0000	1	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000
TYPE SOOW 12/9(7/8)	A	No	No	Inside Pole	95.0000 - 0.0000	1	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000
***								0.01 0.01 0.01 0.01
LDF5-50A(7/8)	B	No	No	Inside Pole	84.0000 - 0.0000	12	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000
***								0.33 0.33 0.33 0.33

Feed Line/Linear Appurtenances Section Areas

tnxTower Tower Engineering Professionals 326 Tryon Rd Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job	Bridgeport/ Rt B (BU 822779)	Page
	Project	TEP No. 61158.650523	Date 12:01:07 02/02/22
	Client	Crown Castle	Designed by Sarah E. Sarp

Tower Section	Tower Elevation	Face	A_R ft ²	A_F ft ²	C_{AA} In Face ft ²	C_{AA} Out Face ft ²	Weight lb
L1	120.0000-110.000	A	0.000	0.000	0.000	0.000	0
		B	0.000	0.000	0.000	0.000	18
		C	0.000	0.000	0.000	0.000	0
L2	110.0000-100.000	A	0.000	0.000	0.000	0.000	0
		B	0.000	0.000	0.000	0.000	54
		C	0.000	0.000	0.000	0.000	0
L3	100.0000-90.0000	A	0.000	0.000	0.000	0.000	22
		B	0.000	0.000	0.000	0.000	72
		C	0.000	0.000	0.000	0.000	0
L4	90.0000-85.0000	A	0.000	0.000	0.000	0.000	22
		B	0.000	0.000	0.000	0.000	36
		C	0.000	0.000	0.000	0.000	0
L5	85.0000-82.0000	A	0.000	0.000	0.000	0.000	13
		B	0.000	0.000	0.000	0.000	30
		C	0.000	0.000	0.000	0.000	0
L6	82.0000-78.0000	A	0.000	0.000	0.000	0.000	18
		B	0.000	0.000	0.000	0.000	45
		C	0.000	0.000	0.000	0.000	0
L7	78.0000-60.0000	A	0.000	0.000	0.000	0.000	79
		B	0.000	0.000	0.000	0.000	201
		C	0.000	0.000	0.000	0.000	0
L8	60.0000-30.0000	A	0.000	0.000	0.000	0.000	131
		B	0.000	0.000	0.000	0.000	335
		C	0.000	0.000	0.000	0.000	0
L9	30.0000-0.0000	A	0.000	0.000	0.000	0.000	131
		B	0.000	0.000	0.000	0.000	335
		C	0.000	0.000	0.000	0.000	0

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation	Face or Leg	Ice Thickness in	A_R ft ²	A_F ft ²	C_{AA} In Face ft ²	C_{AA} Out Face ft ²	Weight lb
L1	120.0000-110.000	A	1.445	0.000	0.000	0.000	0.000	0
		B		0.000	0.000	0.000	0.000	18
		C		0.000	0.000	0.000	0.000	0
L2	110.0000-100.000	A	1.431	0.000	0.000	0.000	0.000	0
		B		0.000	0.000	0.000	0.000	54
		C		0.000	0.000	0.000	0.000	0
L3	100.0000-90.0000	A	1.417	0.000	0.000	0.000	0.000	22
		B		0.000	0.000	0.000	0.000	72
		C		0.000	0.000	0.000	0.000	0
L4	90.0000-85.0000	A	1.406	0.000	0.000	0.000	0.000	22
		B		0.000	0.000	0.000	0.000	36
		C		0.000	0.000	0.000	0.000	0
L5	85.0000-82.0000	A	1.399	0.000	0.000	0.000	0.000	13
		B		0.000	0.000	0.000	0.000	30
		C		0.000	0.000	0.000	0.000	0
L6	82.0000-78.0000	A	1.393	0.000	0.000	0.000	0.000	18
		B		0.000	0.000	0.000	0.000	45
		C		0.000	0.000	0.000	0.000	0
L7	78.0000-60.0000	A	1.373	0.000	0.000	0.000	0.000	79
		B		0.000	0.000	0.000	0.000	201
		C		0.000	0.000	0.000	0.000	0
L8	60.0000-30.0000	A	1.315	0.000	0.000	0.000	0.000	131
		B		0.000	0.000	0.000	0.000	335
		C		0.000	0.000	0.000	0.000	0
L9	30.0000-0.0000	A	1.178	0.000	0.000	0.000	0.000	131

tnxTower Tower Engineering Professionals 326 Tryon Rd Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job Bridgeport/ Rt B (BU 822779)							Page 5 of 12
	Project TEP No. 61158.650523							Date 12:01:07 02/02/22
	Client Crown Castle							Designed by Sarah E. Sarp

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_{AA_A} In Face ft^2	C_{AA_A} Out Face ft^2	Weight lb
		B		0.000	0.000	0.000	0.000	335
		C		0.000	0.000	0.000	0.000	0

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	120.0000-110.0000	0.0000	0.0000	0.0000	0.0000
L2	110.0000-100.0000	0.0000	0.0000	0.0000	0.0000
L3	100.0000-90.0000	0.0000	0.0000	0.0000	0.0000
L4	90.0000-85.0000	0.0000	0.0000	0.0000	0.0000
L5	85.0000-82.0000	0.0000	0.0000	0.0000	0.0000
L6	82.0000-78.0000	0.0000	0.0000	0.0000	0.0000
L7	78.0000-60.0000	0.0000	0.0000	0.0000	0.0000
L8	60.0000-30.0000	0.0000	0.0000	0.0000	0.0000
L9	30.0000-0.0000	0.0000	0.0000	0.0000	0.0000

Note: For pole sections, center of pressure calculations do not consider feed line shielding.

User Defined Loads

Description	Elevation ft	Offset From Centroid ft	Azimuth Angle °	Weight lb	F_x lb	F_z lb	Wind Force lb	C_{AA_C} ft^2
Flag	120.0000	0.00	0.00	No Ice	25	0	0	508
				Ice	790	0	0	84
				Service	25	0	0	117

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C_{AA_A} Front	C_{AA_A} Side	Weight lb

FVV-65C-R3	A	From Leg	1.0000 0.00 0.00	0.00	115.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000	675 675 675 364

tnxTower Tower Engineering Professionals 326 Tryon Rd Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job Bridgeport/ Rt B (BU 822779)							Page 6 of 12
	Project TEP No. 61158.650523							Date 12:01:07 02/02/22
	Client Crown Castle							Designed by Sarah E. Sarp

Description	Face or Leg	Offset Type	Offsets: Horz ft	Offsets: Lateral ft	Azimuth Adjustment °	Placement ft	CAA Front ft ²	CAA Side ft ²	Weight lb
FVV-65C-R3	B	From Leg	1.0000 0.00 0.00	0.00	115.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000	0.0000 0.0000 0.0000 0.0000	675 675 675 364
FVV-65C-R3	C	From Leg	1.0000 0.00 0.00	0.00	115.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000	0.0000 0.0000 0.0000 0.0000	675 675 675 364

APX16DWV-16DWV-S-E-A 20	A	From Leg	1.0000 0.00 2.00	0.00	105.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000	0.0000 0.0000 0.0000 0.0000	41 41 41 205
APX16DWV-16DWV-S-E-A 20	B	From Leg	1.0000 0.00 2.00	0.00	105.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000	0.0000 0.0000 0.0000 0.0000	41 41 41 205
APX16DWV-16DWV-S-E-A 20	C	From Leg	1.0000 0.00 2.00	0.00	105.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000	0.0000 0.0000 0.0000 0.0000	41 41 41 205

DHHTT65B-3XR	A	From Leg	1.0000 0.00 1.00	0.00	95.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000	0.0000 0.0000 0.0000 0.0000	45 45 45 283
DHHTT65B-3XR	B	From Leg	1.0000 0.00 1.00	0.00	95.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000	0.0000 0.0000 0.0000 0.0000	45 45 45 283
DHHTT65B-3XR	C	From Leg	1.0000 0.00 1.00	0.00	95.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000	0.0000 0.0000 0.0000 0.0000	45 45 45 283
FD9R6004/1C-3L	A	From Leg	1.0000 0.00 1.00	0.00	95.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000	0.0000 0.0000 0.0000 0.0000	3 3 3 19
FD9R6004/1C-3L	B	From Leg	1.0000 0.00 1.00	0.00	95.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000	0.0000 0.0000 0.0000 0.0000	3 3 3 19
FD9R6004/1C-3L	C	From Leg	1.0000 0.00 1.00	0.00	95.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000	0.0000 0.0000 0.0000 0.0000	3 3 3 19
FWHR	A	From Leg	1.0000 0.00 1.00	0.00	95.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000	0.0000 0.0000 0.0000 0.0000	30 30 30 78
FWHR	B	From Leg	1.0000 0.00 1.00	0.00	95.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000	0.0000 0.0000 0.0000 0.0000	30 30 30 78
FWHR	C	From Leg	1.0000 0.00 1.00	0.00	95.0000	No Ice 1/2" Ice 1" Ice	0.0000 0.0000 0.0000	0.0000 0.0000 0.0000	30 30 30

tnxTower Tower Engineering Professionals 326 Tryon Rd Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job Bridgeport/ Rt B (BU 822779)							Page 7 of 12
	Project TEP No. 61158.650523							Date 12:01:07 02/02/22
	Client Crown Castle							Designed by Sarah E. Sarp

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	CAA Front	CAA Side	Weight lb
BEN-92P	C	From Leg	1.0000 0.00 1.00	0.00	95.0000	2" Ice No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000 0.0000	0.0000 0.0000 0.0000 0.0000 38

MX08FRO665-21	A	From Leg	1.0000 0.00 2.00	0.00	84.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000	83 83 83 83
MX08FRO665-21	B	From Leg	1.0000 0.00 2.00	0.00	84.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000	83 83 83 83
MX08FRO665-21	C	From Leg	1.0000 0.00 2.00	0.00	84.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000	83 83 85 83
(2) CDX623T-DS-T	A	From Leg	1.0000 0.00 2.00	0.00	84.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000	10 10 10 10
(2) CDX623T-DS-T	B	From Leg	1.0000 0.00 2.00	0.00	84.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000	10 10 10 10
(2) CDX623T-DS-T	C	From Leg	1.0000 0.00 2.00	0.00	84.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000	10 10 10 10
SBT0001F1V1	A	From Leg	1.0000 0.00 2.00	0.00	84.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000	1 1 1 1
SBT0001F1V1	B	From Leg	1.0000 0.00 2.00	0.00	84.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000	1 1 1 1
SBT0001F1V1	C	From Leg	1.0000 0.00 2.00	0.00	84.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000	1 1 1 1
RDIDC-9181-PF-48	A	From Leg	1.0000 0.00 -4.00	0.00	84.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000	20 20 20 20

52" Dia. x 12' Long Concealment Canister	C	None		0.00	84.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000	0 0 0 0
46" Dia. x 10' Long Concealment Canister	C	None		0.00	95.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000	0 0 0 0
40" Dia. x 10' Long	C	None		0.00	105.0000	No Ice	0.0000 0.0000	0 0

tnxTower Tower Engineering Professionals 326 Tryon Rd Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job Bridgeport/ Rt B (BU 822779)							Page 8 of 12
	Project TEP No. 61158.650523							Date 12:01:07 02/02/22
	Client Crown Castle							Designed by Sarah E. Sarp

Description	Face or Leg	Offset Type	Offsets: Horz ft	Offsets: Lateral ft	Azimuth Adjustment °	Placement ft	CAA _{Front} ft ²	CAA _{Side} ft ²	Weight lb
Concealment Canister							1/2" Ice 0.0000	0.0000	0
							1" Ice 0.0000	0.0000	0
							2" Ice 0.0000	0.0000	0
36" Dia. x 10' Long Concealment Canister	C	None		0.00		115.0000	No Ice 0.0000	0.0000	0
							1/2" Ice 0.0000	0.0000	0
							1" Ice 0.0000	0.0000	0
							2" Ice 0.0000	0.0000	0

Canister Load1	C	None		0.00		120.0000	No Ice 6.7500	6.7500	94
							1/2" Ice 16.9583	16.9583	206
							1" Ice 17.4167	17.4167	320
							2" Ice 18.3333	18.3333	559
Canister Load2	C	None		0.00		110.0000	No Ice 14.2500	14.2500	452
							1/2" Ice 35.7500	35.7500	687
							1" Ice 36.6667	36.6667	928
							2" Ice 38.5000	38.5000	1429
Canister Load3	C	None		0.00		100.0000	No Ice 16.1250	16.1250	478
							1/2" Ice 40.3333	40.3333	743
							1" Ice 41.2500	41.2500	1015
							2" Ice 43.0833	43.0833	1577
Canister Load4	C	None		0.00		90.0000	No Ice 20.3250	20.3250	536
							1/2" Ice 50.6917	50.6917	871
							1" Ice 51.7000	51.7000	1212
							2" Ice 53.7167	53.7167	1915
Canister Load5	C	None		0.00		78.0000	No Ice 11.7000	11.7000	477
							1/2" Ice 29.1500	29.1500	669
							1" Ice 29.7000	29.7000	865
							2" Ice 30.8000	30.8000	1268
Truck Ball	C	None		0.00		120.7500	No Ice 0.8836	0.8836	50
							1/2" Ice 1.3783	1.3783	67
							1" Ice 1.5272	1.5272	87
							2" Ice 1.8479	1.8479	132

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice
3	0.9 Dead+1.0 Wind 0 deg - No Ice
4	1.2 Dead+1.0 Wind 30 deg - No Ice
5	0.9 Dead+1.0 Wind 30 deg - No Ice
6	1.2 Dead+1.0 Wind 60 deg - No Ice
7	0.9 Dead+1.0 Wind 60 deg - No Ice
8	1.2 Dead+1.0 Wind 90 deg - No Ice
9	0.9 Dead+1.0 Wind 90 deg - No Ice
10	1.2 Dead+1.0 Wind 120 deg - No Ice
11	0.9 Dead+1.0 Wind 120 deg - No Ice
12	1.2 Dead+1.0 Wind 150 deg - No Ice
13	0.9 Dead+1.0 Wind 150 deg - No Ice
14	1.2 Dead+1.0 Wind 180 deg - No Ice

tnxTower Tower Engineering Professionals 326 Tryon Rd Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job Bridgeport/ Rt B (BU 822779)	Page 9 of 12
	Project TEP No. 61158.650523	Date 12:01:07 02/02/22
	Client Crown Castle	Designed by Sarah E. Sarp

<i>Comb. No.</i>	<i>Description</i>
15	0.9 Dead+1.0 Wind 180 deg - No Ice
16	1.2 Dead+1.0 Wind 210 deg - No Ice
17	0.9 Dead+1.0 Wind 210 deg - No Ice
18	1.2 Dead+1.0 Wind 240 deg - No Ice
19	0.9 Dead+1.0 Wind 240 deg - No Ice
20	1.2 Dead+1.0 Wind 270 deg - No Ice
21	0.9 Dead+1.0 Wind 270 deg - No Ice
22	1.2 Dead+1.0 Wind 300 deg - No Ice
23	0.9 Dead+1.0 Wind 300 deg - No Ice
24	1.2 Dead+1.0 Wind 330 deg - No Ice
25	0.9 Dead+1.0 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Tower Deflections - Service Wind

<i>Section No.</i>	<i>Elevation</i>	<i>Horz. Deflection</i>	<i>Gov. Load Comb.</i>	<i>Tilt</i>	<i>Twist</i>
	<i>ft</i>	<i>in</i>		$^{\circ}$	$^{\circ}$
L1	120 - 110	18.03	39	1.30	0.00
L2	110 - 100	15.31	39	1.28	0.00
L3	100 - 90	12.69	39	1.21	0.00
L4	90 - 85	10.33	39	1.04	0.00
L5	85 - 82	9.31	39	0.91	0.00
L6	82 - 78	8.77	39	0.81	0.00
L7	78 - 60	8.09	39	0.80	0.00
L8	60 - 30	5.23	39	0.71	0.00
L9	30 - 0	1.50	39	0.45	0.00

Critical Deflections and Radius of Curvature - Service Wind

tnxTower Tower Engineering Professionals 326 Tryon Rd Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job Bridgeport/ Rt B (BU 822779)	Page 10 of 12
	Project TEP No. 61158.650523	Date 12:01:07 02/02/22
	Client Crown Castle	Designed by Sarah E. Sarp

<i>Elevation</i> ft	<i>Appurtenance</i>	<i>Gov. Load Comb.</i>	<i>Deflection</i> in	<i>Tilt</i> °	<i>Twist</i> °	<i>Radius of Curvature</i> ft
120.7500	Truck Ball	39	18.03	1.30	0.00	29193
120.0000	Canister Load1	39	18.03	1.30	0.00	29193
115.0000	FVV-65C-R3	39	16.67	1.30	0.00	29193
110.0000	Canister Load2	39	15.31	1.28	0.00	13480
105.0000	APX16DWV-16DWV-S-E-A20	39	13.98	1.26	0.00	7309
100.0000	Canister Load3	39	12.69	1.21	0.00	4804
95.0000	DHHTT65B-3XR	39	11.47	1.13	0.00	3428
90.0000	Canister Load4	39	10.33	1.04	0.00	2514
84.0000	MX08FRO665-21	39	9.12	0.87	0.00	2347
78.0000	Canister Load5	39	8.09	0.80	0.00	10290

Maximum Tower Deflections - Design Wind

<i>Section No.</i>	<i>Elevation</i> ft	<i>Horz. Deflection</i> in	<i>Gov. Load Comb.</i>	<i>Tilt</i> °	<i>Twist</i> °
L1	120 - 110	80.75	2	5.85	0.00
L2	110 - 100	68.57	2	5.77	0.00
L3	100 - 90	56.82	2	5.42	0.00
L4	90 - 85	46.21	2	4.65	0.00
L5	85 - 82	41.64	24	4.06	0.00
L6	82 - 78	39.23	24	3.63	0.00
L7	78 - 60	36.21	24	3.58	0.00
L8	60 - 30	23.39	24	3.19	0.00
L9	30 - 0	6.71	24	2.00	0.00

Critical Deflections and Radius of Curvature - Design Wind

<i>Elevation</i> ft	<i>Appurtenance</i>	<i>Gov. Load Comb.</i>	<i>Deflection</i> in	<i>Tilt</i> °	<i>Twist</i> °	<i>Radius of Curvature</i> ft
120.7500	Truck Ball	2	80.75	5.85	0.00	6676
120.0000	Canister Load1	2	80.75	5.85	0.00	6676
115.0000	FVV-65C-R3	2	74.63	5.83	0.00	6676
110.0000	Canister Load2	2	68.57	5.77	0.00	3072
105.0000	APX16DWV-16DWV-S-E-A20	2	62.60	5.64	0.00	1654
100.0000	Canister Load3	2	56.82	5.42	0.00	1083
95.0000	DHHTT65B-3XR	2	51.32	5.08	0.00	771
90.0000	Canister Load4	2	46.21	4.65	0.00	564
84.0000	MX08FRO665-21	24	40.81	3.90	0.00	526
78.0000	Canister Load5	24	36.21	3.58	0.00	2306

Compression Checks

Pole Design Data

tnxTower Tower Engineering Professionals 326 Tryon Rd Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job	Bridgeport/ Rt B (BU 822779)	Page
	Project	TEP No. 61158.650523	Date
	Client	Crown Castle	Designed by Sarah E. Sarp

Section No.	Elevation	Size	L	L _u	Kl/r	A	P _u	ϕP _n	Ratio
			ft	ft		in ²	lb	lb	$\frac{P_u}{\phi P_n}$
L1	120 - 110 (1)	P10.75x0.375	10.0000	0.0000	0.0	12.2228	-3049	462020	0.007
L2	110 - 100 (2)	P10.75x0.375	10.0000	0.0000	0.0	12.2228	-4237	462020	0.009
L3	100 - 90 (3)	P10.75x0.375	10.0000	0.0000	0.0	12.2228	-5663	462020	0.012
L4	90 - 85 (4)	P10.75x0.375	5.0000	0.0000	0.0	12.2228	-6582	462020	0.014
L5	85 - 82 (5)	P10.75x0.375	3.0000	0.0000	0.0	12.2228	-7207	462020	0.016
L6	82 - 78 (6)	P24x0.375	4.0000	0.0000	0.0	27.8325	-7743	1052070	0.007
L7	78 - 60 (7)	P24x0.375	18.0000	0.0000	0.0	27.8325	-10647	1052070	0.010
L8	60 - 30 (8)	P24x0.375	30.0000	0.0000	0.0	27.8325	-14678	1052070	0.014
L9	30 - 0 (9)	P24x0.375	30.0000	0.0000	0.0	27.8325	-18849	1052070	0.018

Pole Bending Design Data

Section No.	Elevation	Size	M _{ux}	ϕM _{nx}	Ratio	M _{uy}	ϕM _{ny}	Ratio
			lb-ft	lb-ft	$\frac{M_{ux}}{\phi M_{nx}}$	lb-ft	lb-ft	$\frac{M_{uy}}{\phi M_{ny}}$
L1	120 - 110 (1)	P10.75x0.375	10555	127206	0.083	0	127206	0.000
L2	110 - 100 (2)	P10.75x0.375	30248	127206	0.238	0	127206	0.000
L3	100 - 90 (3)	P10.75x0.375	58449	127206	0.459	0	127206	0.000
L4	90 - 85 (4)	P10.75x0.375	77439	127206	0.609	0	127206	0.000
L5	85 - 82 (5)	P10.75x0.375	88793	127206	0.698	0	127206	0.000
L6	82 - 78 (6)	P24x0.375	103903	623717	0.167	0	623717	0.000
L7	78 - 60 (7)	P24x0.375	189499	623717	0.304	0	623717	0.000
L8	60 - 30 (8)	P24x0.375	359735	623717	0.577	0	623717	0.000
L9	30 - 0 (9)	P24x0.375	550778	623717	0.883	0	623717	0.000

Pole Shear Design Data

Section No.	Elevation	Size	Actual V _u	ϕV _n	Ratio	Actual T _u	ϕT _n	Ratio
			lb	lb	$\frac{V_u}{\phi V_n}$	lb-ft	lb-ft	$\frac{T_u}{\phi T_n}$
L1	120 - 110 (1)	P10.75x0.375	1203	138606	0.009	0	126430	0.000
L2	110 - 100 (2)	P10.75x0.375	1994	138606	0.014	0	126430	0.000
L3	100 - 90 (3)	P10.75x0.375	2825	138606	0.020	0	126430	0.000
L4	90 - 85 (4)	P10.75x0.375	3784	138606	0.027	0	126430	0.000
L5	85 - 82 (5)	P10.75x0.375	3774	138606	0.027	1	126430	0.000
L6	82 - 78 (6)	P24x0.375	3799	315621	0.012	1	655568	0.000
L7	78 - 60 (7)	P24x0.375	5154	315621	0.016	1	655568	0.000
L8	60 - 30 (8)	P24x0.375	6160	315621	0.020	1	655568	0.000
L9	30 - 0 (9)	P24x0.375	6519	315621	0.021	1	655568	0.000

Pole Interaction Design Data

Section No.	Elevation	Ratio P _u	Ratio M _{ux}	Ratio M _{uy}	Ratio V _u	Ratio T _u	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
		$\frac{P_u}{\phi P_n}$	$\frac{M_{ux}}{\phi M_{nx}}$	$\frac{M_{uy}}{\phi M_{ny}}$	$\frac{V_u}{\phi V_n}$	$\frac{T_u}{\phi T_n}$			
L1	120 - 110 (1)	0.007	0.083	0.000	0.009	0.000	0.090	1.050	4.8.2
L2	110 - 100 (2)	0.009	0.238	0.000	0.014	0.000	0.247	1.050	4.8.2

tnxTower Tower Engineering Professionals 326 Tryon Rd Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job	Bridgeport/ Rt B (BU 822779)	Page
	Project	TEP No. 61158.650523	Date
	Client	Crown Castle	Designed by Sarah E. Sarp

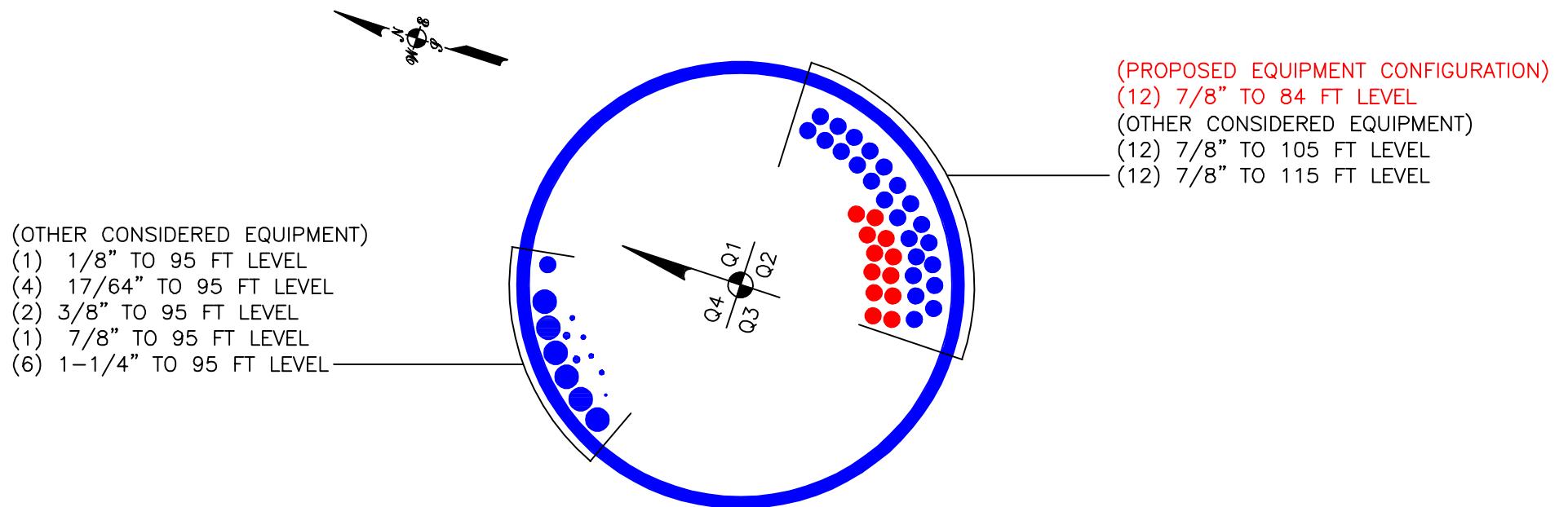
Section No.	Elevation	Ratio P_u	Ratio M_{ux}	Ratio M_{uy}	Ratio V_u	Ratio T_u	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
	ft	ϕP_n	ϕM_{nx}	ϕM_{ny}	ϕV_n	ϕT_n			
L3	100 - 90 (3)	0.012	0.459	0.000	0.020	0.000	0.472	1.050	4.8.2
L4	90 - 85 (4)	0.014	0.609	0.000	0.027	0.000	0.624	1.050	4.8.2
L5	85 - 82 (5)	0.016	0.698	0.000	0.027	0.000	0.714	1.050	4.8.2
L6	82 - 78 (6)	0.007	0.167	0.000	0.012	0.000	0.174	1.050	4.8.2
L7	78 - 60 (7)	0.010	0.304	0.000	0.016	0.000	0.314	1.050	4.8.2
L8	60 - 30 (8)	0.014	0.577	0.000	0.020	0.000	0.591	1.050	4.8.2
L9	30 - 0 (9)	0.018	0.883	0.000	0.021	0.000	0.901	1.050	4.8.2

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
L1	120 - 110	Pole	P10.75x0.375	1	-3049	485121	8.5	Pass
L2	110 - 100	Pole	P10.75x0.375	2	-4237	485121	23.5	Pass
L3	100 - 90	Pole	P10.75x0.375	3	-5663	485121	45.0	Pass
L4	90 - 85	Pole	P10.75x0.375	4	-6582	485121	59.4	Pass
L5	85 - 82	Pole	P10.75x0.375	5	-7207	485121	68.0	Pass
L6	82 - 78	Pole	P24x0.375	6	-7743	1104673	16.6	Pass
L7	78 - 60	Pole	P24x0.375	7	-10647	1104673	29.9	Pass
L8	60 - 30	Pole	P24x0.375	8	-14678	1104673	56.3	Pass
L9	30 - 0	Pole	P24x0.375	9	-18849	1104673	85.8	Pass
Summary								
Pole (L9) 85.8 Pass								
RATING = 85.8 Pass								

APPENDIX B

BASE LEVEL DRAWING



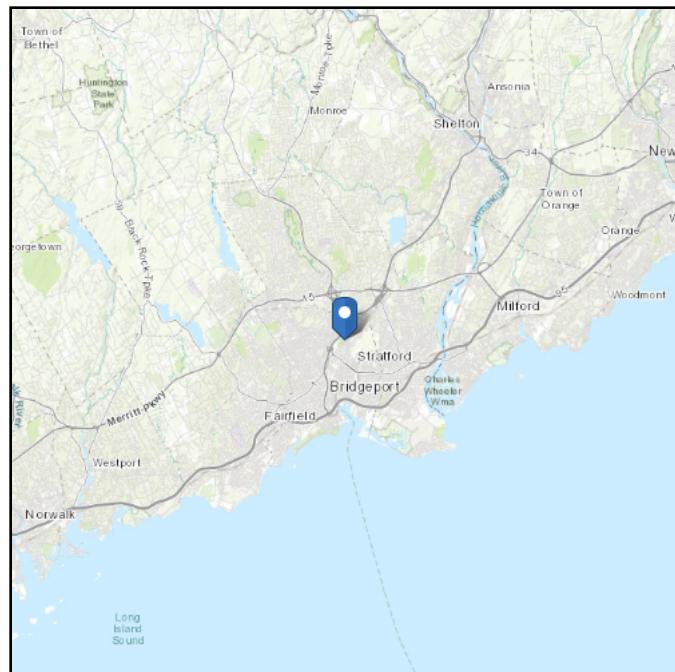
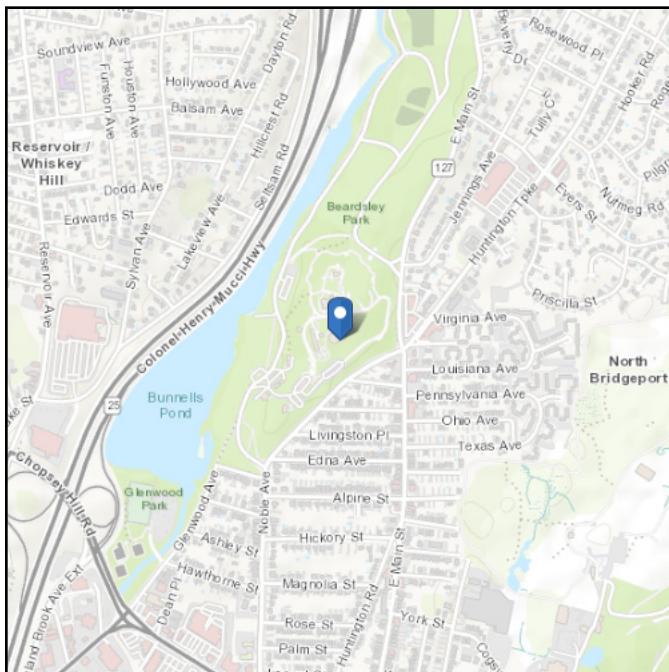
APPENDIX C
ADDITIONAL CALCULATIONS

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-10
Risk Category: II
Soil Class: D - Stiff Soil

Elevation: 123.27 ft (NAVD 88)
Latitude: 41.210353
Longitude: -73.181183



Wind

Results:

Wind Speed	123 Vmph
10-year MRI	76 Vmph
25-year MRI	86 Vmph
50-year MRI	93 Vmph
100-year MRI	99 Vmph

Wind speed updated per local jurisdiction requirements

Data Source:

ASCE/SEI 7-10-2021 Fig. 26.5-1A and Figs. CC-1–CC-4, and Section 26.5.2, incorporating errata of March 12, 2014

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 7-10 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 7-10 Section 26.2. Glazed openings need not be protected against wind-borne debris.

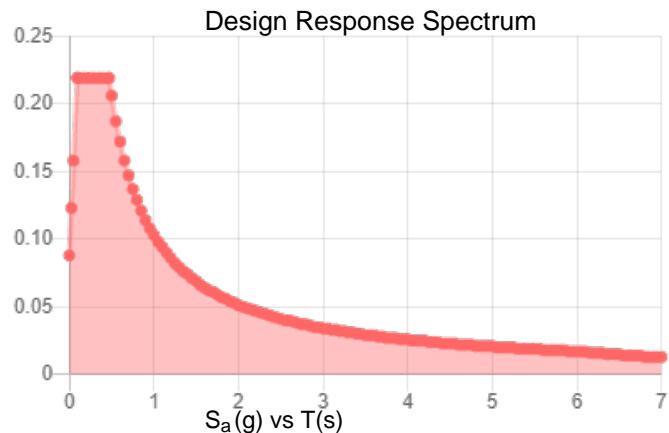
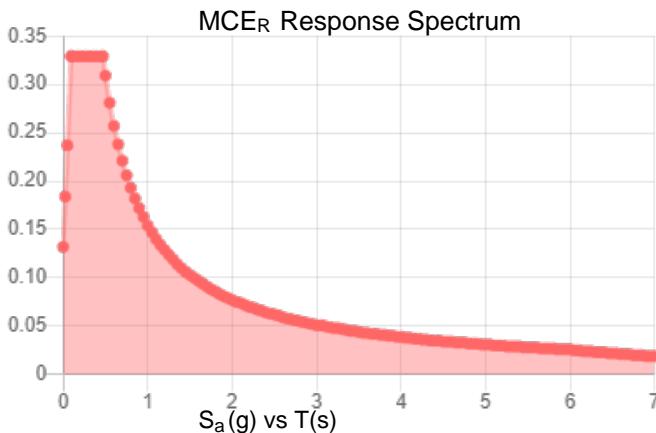
Seismic

Site Soil Class: D - Stiff Soil

Results:

S_s :	0.206	S_{DS} :	0.219
S_1 :	0.064	S_{D1} :	0.103
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.111
S_{MS} :	0.329	PGA _M :	0.175
S_{M1} :	0.154	F_{PGA} :	1.578
		I_e :	1

Seismic Design Category B



Data Accessed: Wed Dec 29 2021

Date Source:

USGS Seismic Design Maps based on ASCE/SEI 7-10, incorporating Supplement 1 and errata of March 31, 2013, and ASCE/SEI 7-10 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-10 Ch. 21 are available from USGS.

Ice

Results:

Ice Thickness: 1.50 in.

Concurrent Temperature: 15 F

Gust Speed 50 mph

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

Date Accessed: Wed Dec 29 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 50-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

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

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

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

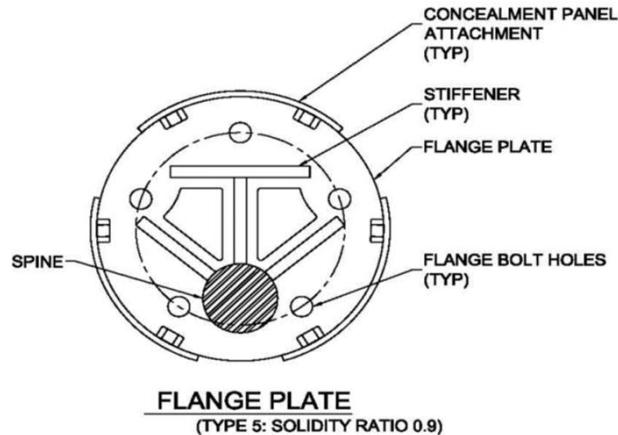
CCI Flagpole Tool



Site Data	
BU#:	822779
Site Name:	Bridgeport/ Rt 8
Order #:	548693 Rev. 4

Code	
Code:	TIA-222-H
Ice Thickness:	1.5 in
Windspeed (V):	119 mph
Ice Wind Speed (V):	50 mph
Exposure Category:	C
Topographic Feature:	N/A
Risk Category:	II

Tower Information	
Total Tower Height:	120 ft
Base Tower Height:	78 ft
Total Canister Length:	42 ft
Number of Canister Assembly Sections:	4



Canister Section Number *:	Canister Assembly Length (ft):	Canister Assembly Diameter (in):	Number of Sides	<u>Plate Type:</u>	Mating Flange Plate Thickness (in)**:	Mating Flange Plate Diameter (in):	Solidity Ratio	Plate Weight (Kip):	Canister Weight (Kip)	Vent Length (ft):
1	10	36	Round	5	2.00	17.75	0.9	0.253	0.188	0-0
2	10	40	Round	5	2.00	17.75	0.9	0.253	0.209	0-0
3	10	46	Round	5	2.00	17.75	0.9	0.253	0.241	0-0
4	12	52	Round	1	2.50	25	0.45	0.313	0.327	0-0

* Sections are numbered from the top of the tower down

** Mating Flange Plate Thickness at the bottom of canister section

Flag on Tower:	Yes
Flag Width:	20 ft
Flag Height:	12 ft
Flag Elevation(z):	120 ft

Truck Ball on Tower:	Yes
Diameter of Ball:	18 in

Geometry : Base Tower + Spine				822779_2069836_LC8.7.eri (last saved 01/25 10:33 am)					
Pole Height Above Base (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Bend Radius (in)	Pole Material	Delete
120	10		0	10.75	10.75	0.375	n/a	A500-42	[x]
110	10		0	10.75	10.75	0.375	n/a	A500-42	[x]
100	10		0	10.75	10.75	0.375	n/a	A500-42	[x]
90	5		0	10.75	10.75	0.375	n/a	A500-42	[x]

85	3		0	10.75	10.75	0.375	n/a	A500-42	[x]
82	4		0	24	24	0.375	n/a	A53-B-42	[x]
78	18		0	24	24	0.375	n/a	A53-B-42	[x]
60	30		0	24	24	0.375	n/a	A53-B-42	[x]
30	30		0	24	24	0.375	n/a	A53-B-42	[x]

Discrete Loads: Truck Ball	Apply $C_a A_A$ at Elevation(z) (ft)	$C_a A_A$ No Ice (ft^2)	$C_a A_A$ 1/2" Ice (ft^2)	$C_a A_A$ 1" Ice (ft^2)	$C_a A_A$ 2" Ice (ft^2)	$C_a A_A$ 4" Ice (ft^2)	Weight No Ice (Kip)	Weight 1/2" Ice (Kip)
	120.75	0.884	1.378	1.527	1.848	2.581	0.05	0.067

Discrete Loads : $C_F A_F$ for Canister Assembly								
Canister Loading	Apply $C_F A_F$ at Elevation(z) (ft)	$C_F A_F$ No Ice (ft^2)	$C_F A_F$ 1/2" Ice (ft^2)	$C_F A_F$ 1" Ice (ft^2)	$C_F A_F$ 2" Ice (ft^2)	$C_F A_F$ 4" Ice (ft^2)	Canister Assembly Weight No Ice (Kip)	Canister Assembly Weight 1/2" Ice (Kip)
Canister Load 1	120	6.750	16.958	17.417	18.333	20.167	0.094	0.206
Canister Load 2	110	14.250	35.750	36.667	38.500	42.167	0.452	0.687
Canister Load 3	100	16.125	40.333	41.250	43.083	46.750	0.478	0.743
Canister Load 4	90	20.325	50.692	51.700	53.717	57.750	0.536	0.871
Canister Load 5	78	11.700	29.150	29.700	30.800	33.000	0.477	0.669

User Forces: Flag Force Calculation Per ANSI/NAAMM FP 1001-07		←Flag force should be included at the top of the flag attachment elevation. If the attachment of the flag to the halyard distributes forces equally to the pole, apply flag forces accordingly in tnx file.
Wind _{FORCE} =	0.460 Kip	
Weight=	0.025 Kip	
Wind _{FORCE, ICE} =	0.084 Kip	
Weight _{ICE} =	0.790 Kip	
W _{FORCE, SERVICE WIND} =	0.117 Kip	
Weight=	0.025 Kip	

Deflection Check Required:	Yes	Import Deflection Results
3% Spine Deflection Check		
Allowable (3%) Horizontal Spine Deflection (inches)	Actual Deflection *** (inches)	Sufficient/ Insufficient
15.120	9.943	Sufficient

*** Relative deflection under service level wind speed

Monopole Flange Plate Connection

Elevation = 110 ft.

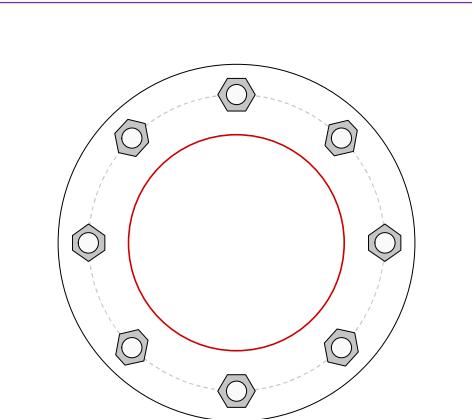


BU #	822779
Site Name	Bridgeport/ Rt 8
Order #	548693 Rev. 4
TIA-222 Revision	H

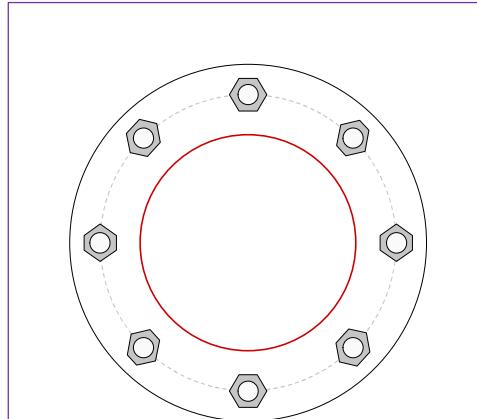
Applied Loads	
Moment (kip-ft)	10.55
Axial Force (kips)	3.05
Shear Force (kips)	1.20

*TIA-222-H Section 15.5 Applied

Top Plate - External



Bottom Plate - External



Connection Properties

Bolt Data

(8) 1" ø bolts (A325 N; Fy=92 ksi, Fu=120 ksi) on 14.75" BC

Top Plate Data

17.75" OD x 2" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Top Stiffener Data

N/A

Top Pole Data

10.75" x 0.375" round pole (A500-42; Fy=42 ksi, Fu=58 ksi)

Bottom Plate Data

17.75" OD x 2" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Bottom Stiffener Data

N/A

Bottom Pole Data

10.75" x 0.375" round pole (A500-42; Fy=42 ksi, Fu=58 ksi)

Analysis Results

Bolt Capacity

Max Load (kips)	3.90
Allowable (kips)	54.54
Stress Rating:	6.8% Pass

Top Plate Capacity

Max Stress (ksi):	1.24	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	3.6%	Pass
Tension Side Stress Rating:	1.4%	Pass

Bottom Plate Capacity

Max Stress (ksi):	1.24	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	3.6%	Pass
Tension Side Stress Rating:	1.4%	Pass

Monopole Flange Plate Connection

Elevation = 100 ft.

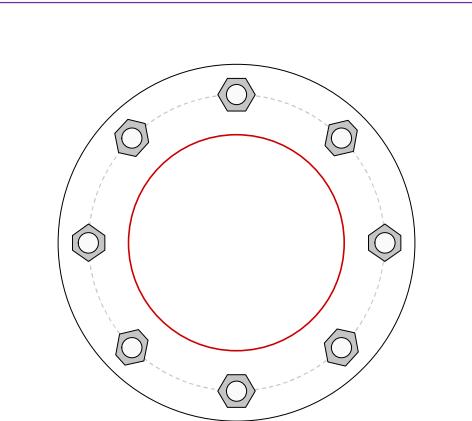


BU #	822779
Site Name	Bridgeport/ Rt 8
Order #	548693 Rev. 4
TIA-222 Revision	H

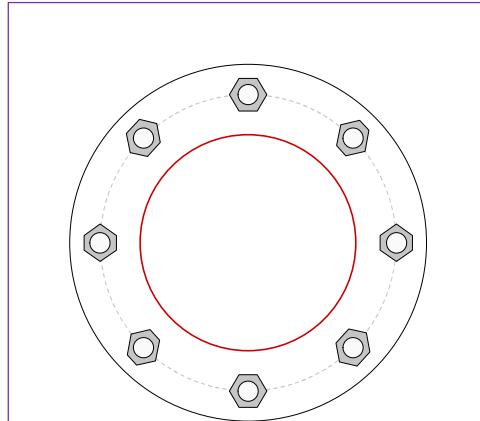
Applied Loads	
Moment (kip-ft)	30.25
Axial Force (kips)	4.24
Shear Force (kips)	1.99

*TIA-222-H Section 15.5 Applied

Top Plate - External



Bottom Plate - External



Connection Properties

Bolt Data

(8) 1" ø bolts (A325 N; Fy=92 ksi, Fu=120 ksi) on 14.75" BC

Top Plate Data

17.75" OD x 2" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Top Stiffener Data

N/A

Top Pole Data

10.75" x 0.375" round pole (A500-42; Fy=42 ksi, Fu=58 ksi)

Bottom Plate Data

17.75" OD x 2" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Bottom Stiffener Data

N/A

Bottom Pole Data

10.75" x 0.375" round pole (A500-42; Fy=42 ksi, Fu=58 ksi)

Analysis Results

Bolt Capacity

Max Load (kips)	11.75
Allowable (kips)	54.54
Stress Rating:	20.5% Pass

Top Plate Capacity

Max Stress (ksi):	3.38	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	9.9%	Pass
Tension Side Stress Rating:	4.4%	Pass

Bottom Plate Capacity

Max Stress (ksi):	3.38	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	9.9%	Pass
Tension Side Stress Rating:	4.4%	Pass

Monopole Flange Plate Connection

Elevation = 90 ft.

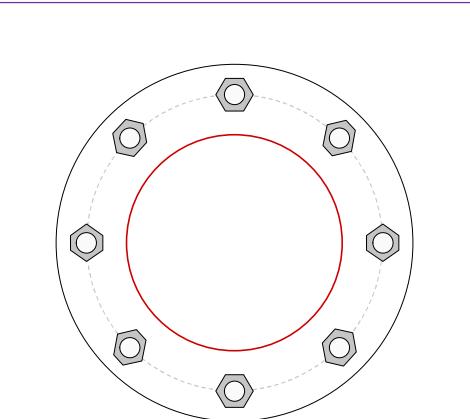


BU #	822779
Site Name	Bridgeport/ Rt 8
Order #	548693 Rev. 4
TIA-222 Revision	H

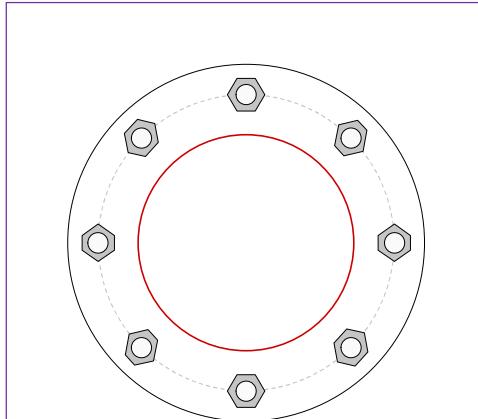
Applied Loads	
Moment (kip-ft)	58.45
Axial Force (kips)	5.66
Shear Force (kips)	2.83

*TIA-222-H Section 15.5 Applied

Top Plate - External



Bottom Plate - External



Connection Properties

Bolt Data

(8) 1" ø bolts (A325 N; Fy=92 ksi, Fu=120 ksi) on 14.75" BC

Top Plate Data

17.75" OD x 2" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Top Stiffener Data

N/A

Top Pole Data

10.75" x 0.375" round pole (A500-42; Fy=42 ksi, Fu=58 ksi)

Bottom Plate Data

17.75" OD x 2" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Bottom Stiffener Data

N/A

Bottom Pole Data

10.75" x 0.375" round pole (A500-42; Fy=42 ksi, Fu=58 ksi)

Analysis Results

Bolt Capacity

Max Load (kips)	23.03
Allowable (kips)	54.54
Stress Rating:	40.2% Pass

Top Plate Capacity

Max Stress (ksi):	6.45	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	19.0%	Pass
Tension Side Stress Rating:	8.5%	Pass

Bottom Plate Capacity

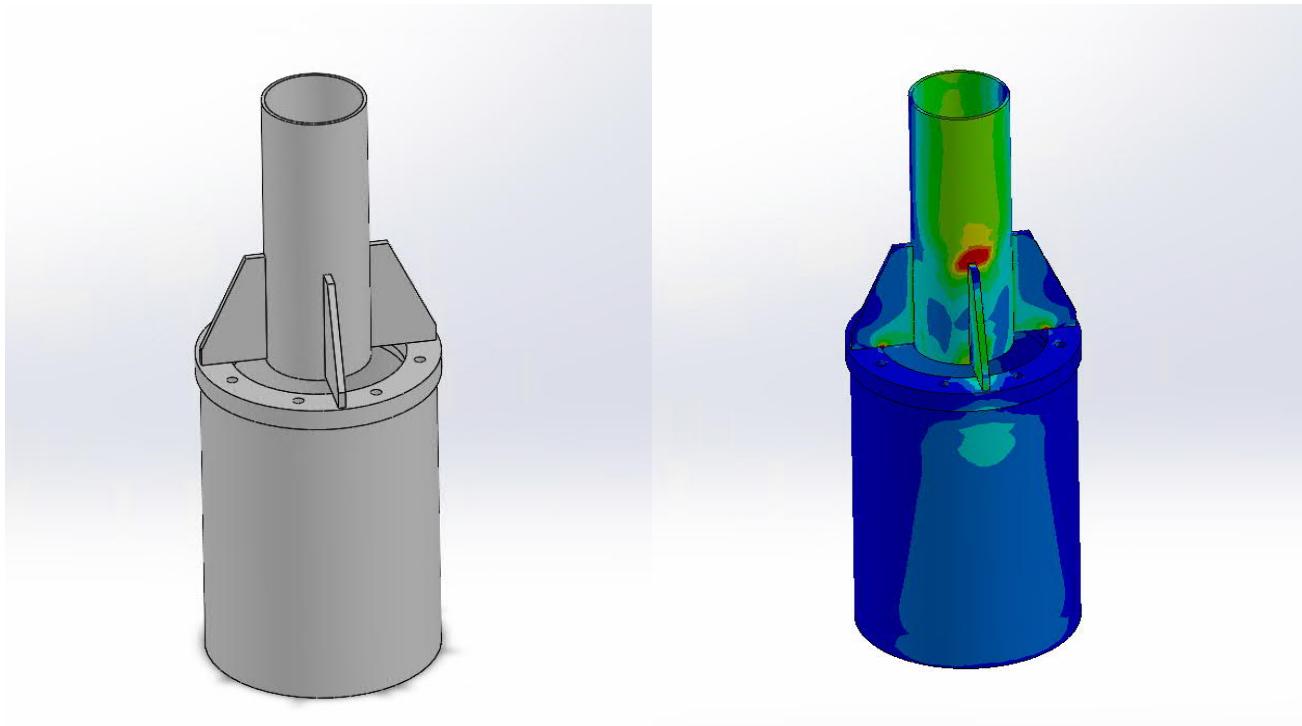
Max Stress (ksi):	6.45	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	19.0%	Pass
Tension Side Stress Rating:	8.5%	Pass

Client Site Name: Bridgeport/ Rt B
Client Site Number: BU 822779
Client Order Number: 548693 Rev. 4
TEP Project Number: 61158.650523



Engineer: SES
Check: RAL
Date: 2/2/2022
Page: 1

Simulation of Concealment Flange - 82-ft Elevation



Model Loads

Axial	7,210	lb
Shear	3,770	lb
Moment	88,790	lb-ft
Self-Weight Factor	1.2	

Overall Results

Sufficient

Model Part Information

Part	Part Grade
Spine Stub Section	A500-42
Stiffeners	A36
Top Flange	A36
Bottom Flange	A36
Tower Stub Section	A53-B-42

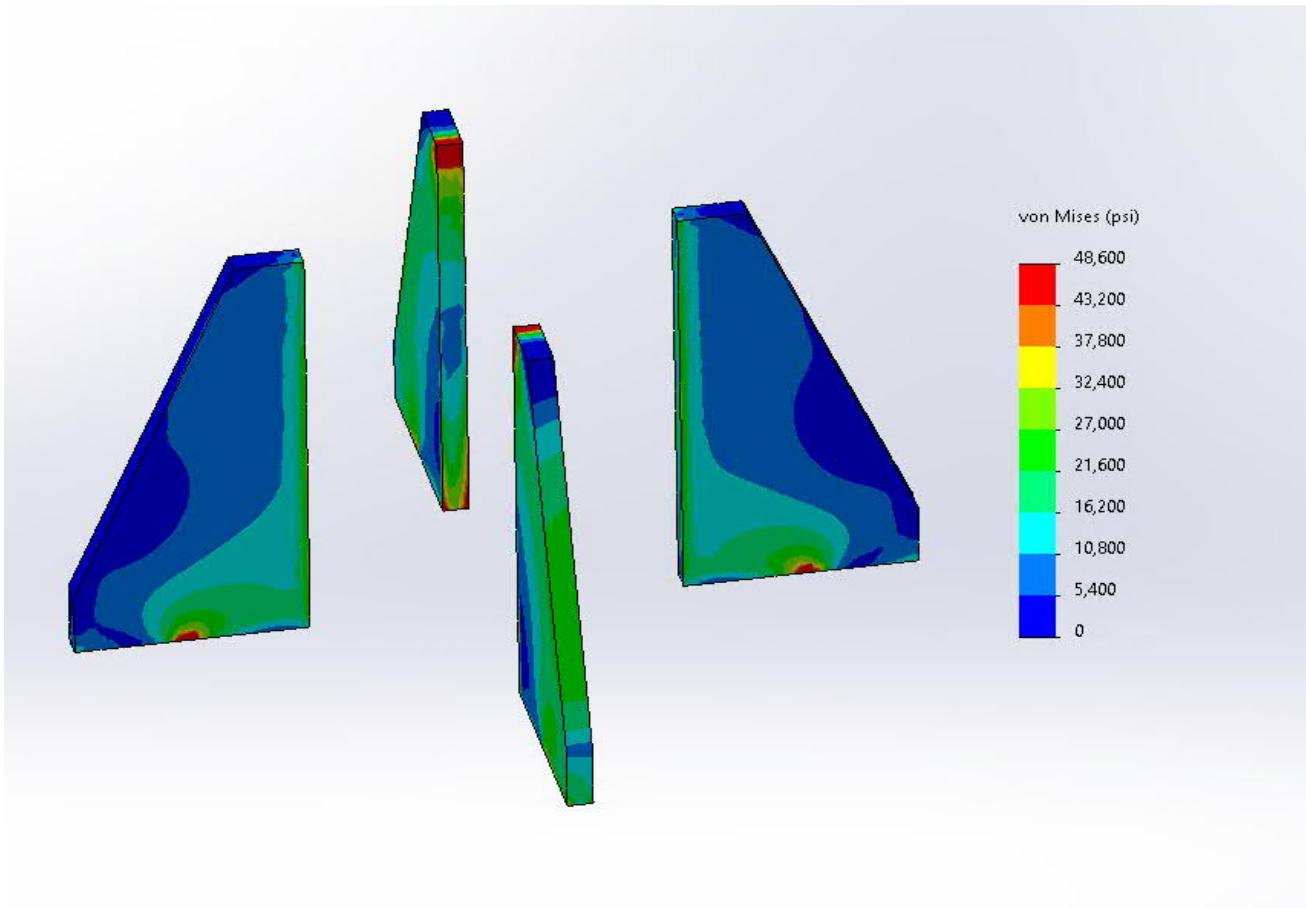
Client Site Name: Bridgeport/ Rt B
Client Site Number: BU 822779
Client Order Number: 548693 Rev. 4
TEP Project Number: 61158.650523



Engineer: SES
Check: RAL
Date: 2/2/2022
Page: 2

Study: 0 Degree

Stiffeners



Assumptions
N/A

Results
Sufficient

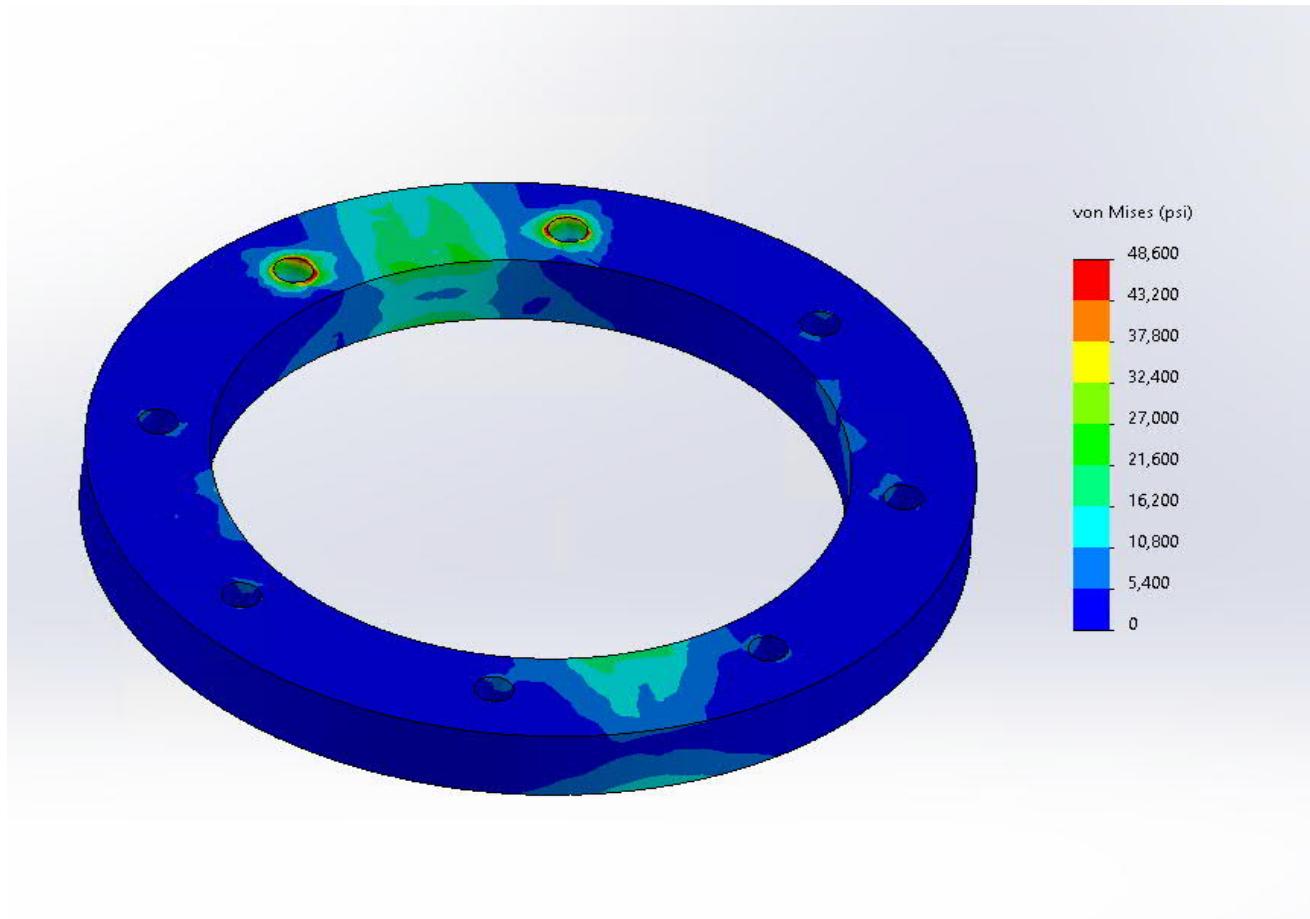
Client Site Name: Bridgeport/ Rt B
Client Site Number: BU 822779
Client Order Number: 548693 Rev. 4
TEP Project Number: 61158.650523



Engineer: SES
Check: RAL
Date: 2/2/2022
Page: 3

Study: 0 Degree

Top Flange



Assumptions

N/A

Results

Sufficient

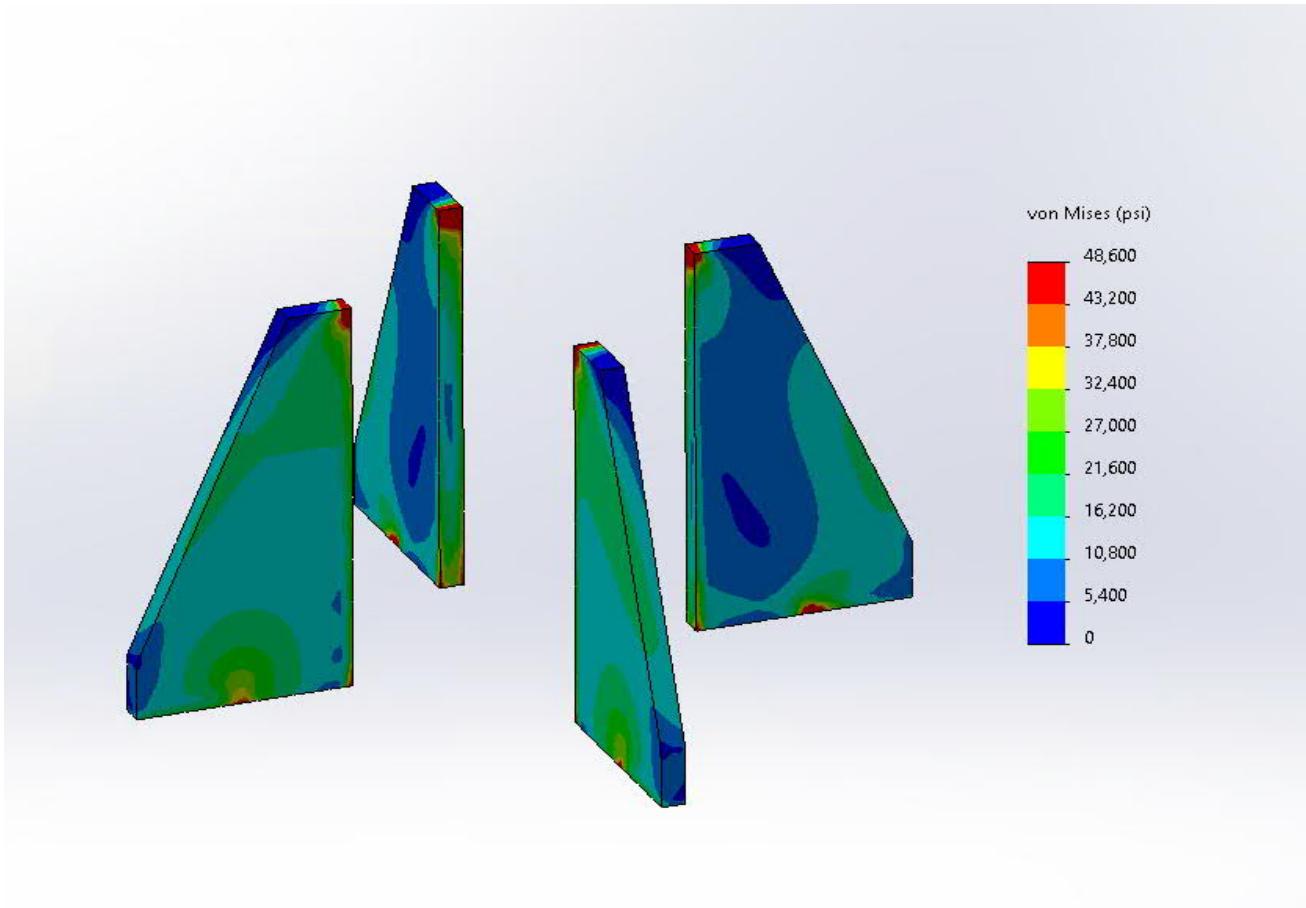
Client Site Name: Bridgeport/ Rt B
Client Site Number: BU 822779
Client Order Number: 548693 Rev. 4
TEP Project Number: 61158.650523



Engineer: SES
Check: RAL
Date: 2/2/2022
Page: 4

Study: 45 Degree

Stiffeners



Assumptions

N/A

Results

Sufficient

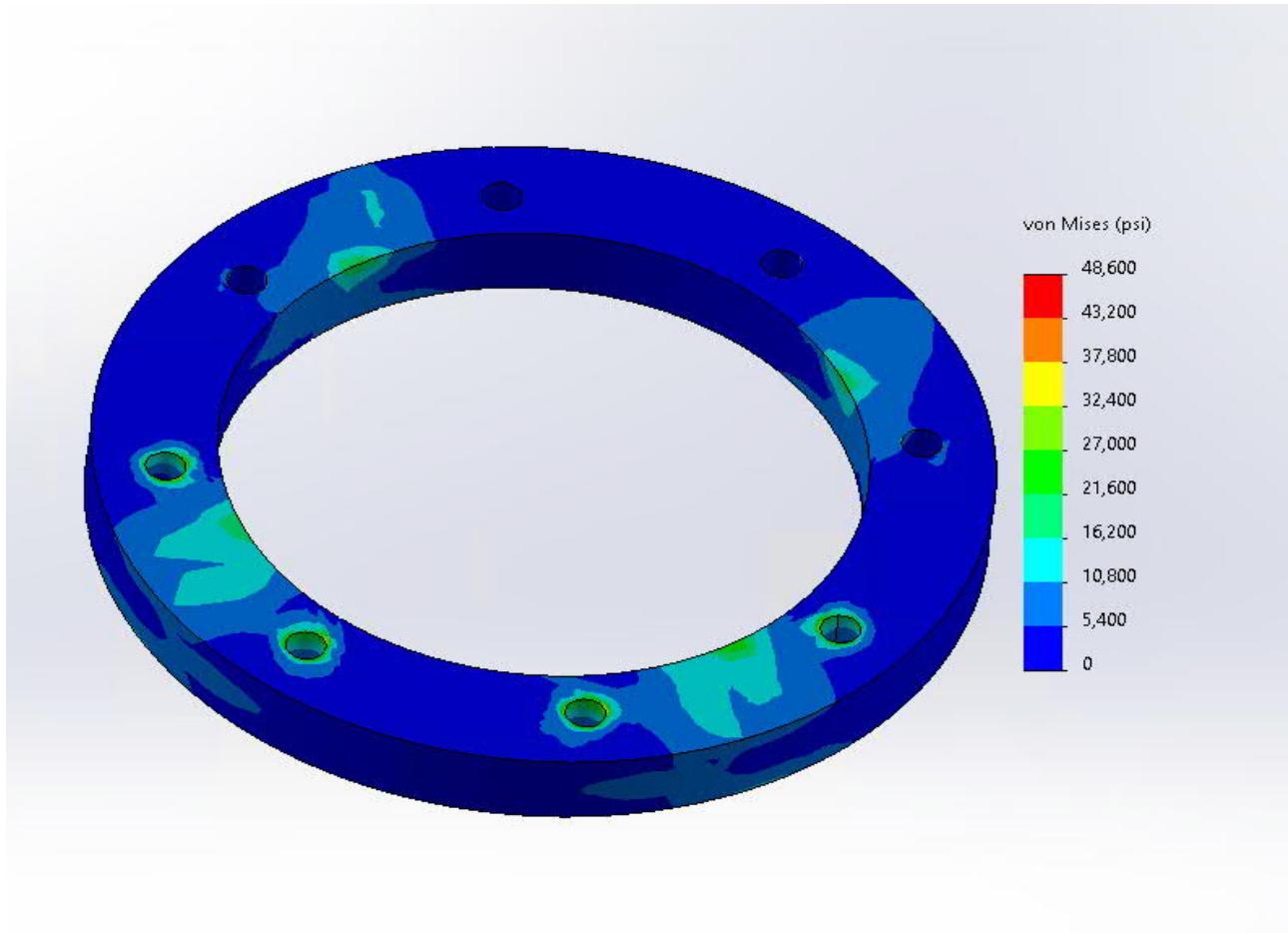
Client Site Name: Bridgeport/ Rt B
Client Site Number: BU 822779
Client Order Number: 548693 Rev. 4
TEP Project Number: 61158.650523



Engineer: SES
Check: RAL
Date: 2/2/2022
Page: 5

Study: 45 Degree

Top Flange



Assumptions

N/A

Results

Sufficient

Monopole Flange Plate Connection

Elevation = 82 ft.

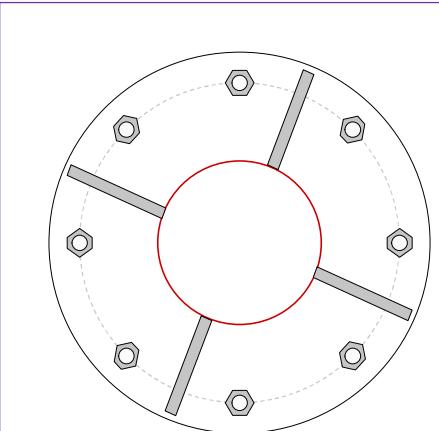


BU #	822779
Site Name	Bridgeport/ Rt 8
Order #	548693 Rev. 4
TIA-222 Revision	H

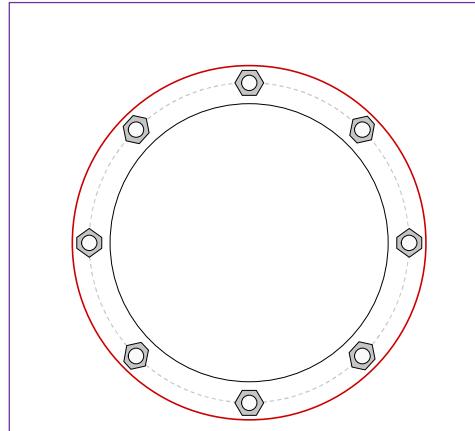
Applied Loads	
Moment (kip-ft)	88.79
Axial Force (kips)	7.21
Shear Force (kips)	3.77

*TIA-222-H Section 15.5 Applied

Top Plate - External



Bottom Plate - Internal



Connection Properties

Bolt Data

(8) 1" ø bolts (A325 N; Fy=92 ksi, Fu=120 ksi) on 21" BC

Top Plate Data

25" OD x 2.5" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Bottom Plate Data

18.25" ID x 1.25" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Top Stiffener Data

(4) 13.5"H x 6.75"W x 0.75"T, Notch: 0"
plate: Fy= 36 ksi ; weld: Fy= 80 ksi
horiz. weld: 0.375" fillet
vert. weld: 0.375" fillet

Bottom Stiffener Data

N/A

Top Pole Data

10.75" x 0.375" round pole (A500-42; Fy=42 ksi, Fu=58 ksi)

Bottom Pole Data

24" x 0.375" round pole (A53-B-42; Fy=42 ksi, Fu=63 ksi)

Analysis Results

Bolt Capacity

Max Load (kips)	24.45
Allowable (kips)	54.54
Stress Rating:	42.7% Pass

Bottom Plate Capacity

Max Stress (ksi):	13.74	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	40.4%	Pass
Tension Side Stress Rating:	N/A	

Bottom Stiffener Capacity

Horizontal Weld:	N/A
Vertical Weld:	N/A
Plate Flexure+Shear:	N/A
Plate Tension+Shear:	N/A
Plate Compression:	N/A

Bottom Pole Capacity

Punching Shear:	N/A
-----------------	-----

Monopole Flange Plate Connection

Elevation = 60 ft.

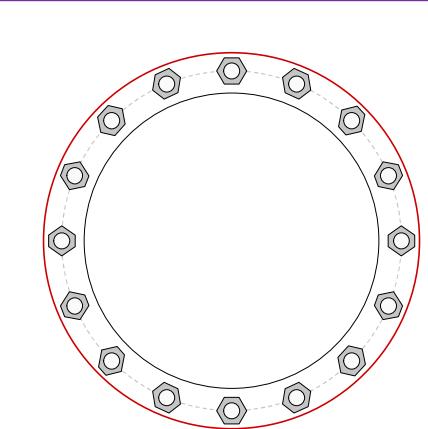


BU #	822779
Site Name	Bridgeport/ Rt 8
Order #	548693 Rev. 4
TIA-222 Revision	H

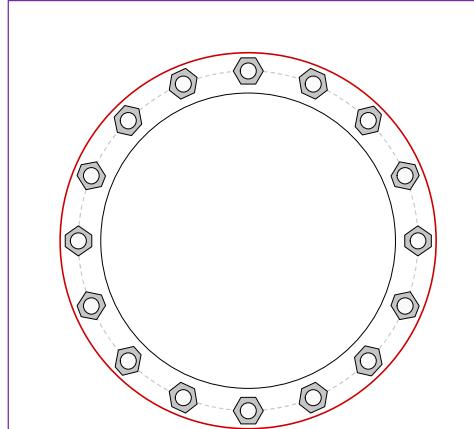
Applied Loads	
Moment (kip-ft)	189.50
Axial Force (kips)	10.65
Shear Force (kips)	5.15

*TIA-222-H Section 15.5 Applied

Top Plate - Internal



Bottom Plate - Internal



Connection Properties

Bolt Data

(16) 1" ø bolts (A325 N; Fy=92 ksi, Fu=120 ksi) on 21" BC

Top Plate Data

18.25" ID x 1.25" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Bottom Plate Data

18.25" ID x 1.25" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Top Stiffener Data

N/A

Bottom Stiffener Data

N/A

Top Pole Data

24" x 0.375" round pole (A53-B-42; Fy=42 ksi, Fu=63 ksi)

Bottom Pole Data

24" x 0.375" round pole (A53-B-42; Fy=42 ksi, Fu=63 ksi)

Analysis Results

Bolt Capacity

Max Load (kips)	26.38
Allowable (kips)	54.54
Stress Rating:	46.1% Pass

Top Plate Capacity

Max Stress (ksi):

-

Allowable Stress (ksi):

-

Stress Rating:

Pirod OK

Tension Side Stress Rating:

Pirod OK

Bottom Plate Capacity

Max Stress (ksi):

-

Allowable Stress (ksi):

-

Stress Rating:

Pirod OK

Tension Side Stress Rating:

Pirod OK

Monopole Flange Plate Connection

Elevation = 30 ft.

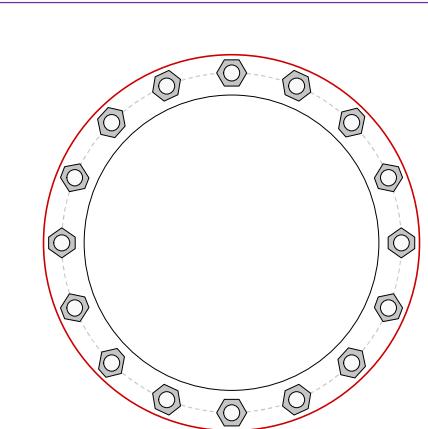


BU #	822779
Site Name	Bridgeport/ Rt 8
Order #	548693 Rev. 4
TIA-222 Revision	H

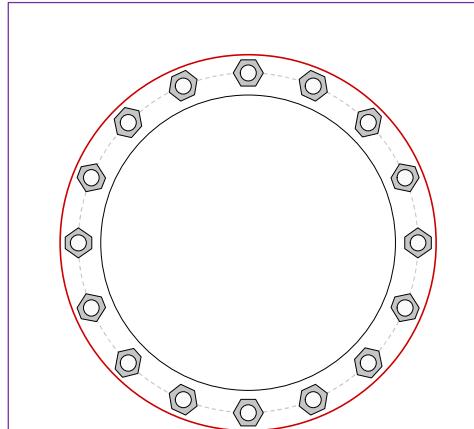
Applied Loads	
Moment (kip-ft)	359.74
Axial Force (kips)	14.68
Shear Force (kips)	6.16

*TIA-222-H Section 15.5 Applied

Top Plate - Internal



Bottom Plate - Internal



Connection Properties

Bolt Data

(16) 1" ø bolts (A325 N; Fy=92 ksi, Fu=120 ksi) on 21" BC

Top Plate Data

18.25" ID x 1.25" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Bottom Plate Data

18.25" ID x 1.25" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Top Stiffener Data

N/A

Bottom Stiffener Data

N/A

Top Pole Data

24" x 0.375" round pole (A53-B-42; Fy=42 ksi, Fu=63 ksi)

Bottom Pole Data

24" x 0.375" round pole (A53-B-42; Fy=42 ksi, Fu=63 ksi)

Analysis Results

Bolt Capacity

Max Load (kips)	50.43
Allowable (kips)	54.54
Stress Rating:	88.1% Pass

Top Plate Capacity

Max Stress (ksi):

-

Allowable Stress (ksi):

-

Stress Rating:

Pirod OK

Tension Side Stress Rating:

Pirod OK

Bottom Plate Capacity

Max Stress (ksi):

-

Allowable Stress (ksi):

-

Stress Rating:

Pirod OK

Tension Side Stress Rating:

Pirod OK

Monopole Base Plate Connection

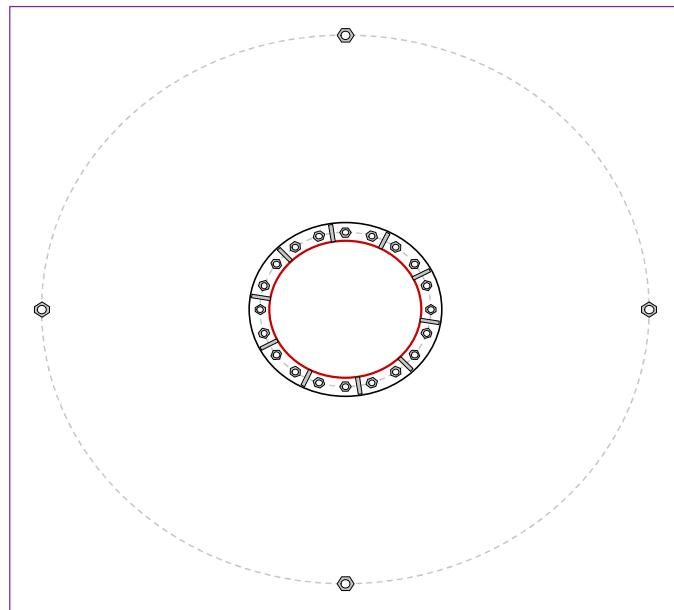


Site Info	
BU #	822779
Site Name	Bridgeport/ Rt 8
Order #	548693 Rev. 4

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	See Custom Sheet
l_{ar} (in)	See Custom Sheet

Applied Loads	
Moment (kip-ft)	550.78
Axial Force (kips)	18.85
Shear Force (kips)	6.52

*TIA-222-H Section 15.5 Applied



Connection Properties

Anchor Rod Data

GROUP 1: (20) 1" ø bolts (A687 N; Fy=105 ksi, Fu=125 ksi) on 27" BC
 GROUP 2: (4) 1-1/2" ø bolts (Contech 40/16 N; Fy=84.4 ksi, Fu=106 ksi) on 96" BC

Base Plate Data

30.375" OD x 1.25" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Stiffener Data

(10) 5"H x 3"W x 0.625" T, Notch: 0.5"
 plate: Fy= 36 ksi ; weld: Fy= 70 ksi
 horiz. weld: 0.3125" fillet
 vert. weld: 0.3125" fillet

Pole Data

24" x 0.375" round pole (A53-B-42; Fy=42 ksi, Fu=63 ksi)

Analysis Results

Anchor Rod Summary

(units of kips, kip-in)

GROUP 1:	$P_{u,c} = 8.1$	$\phi P_{n,c} = 74.22$	Stress Rating
	$V_u = 0.33$	$\phi V_n = 33.4$	12.0%
	$M_u = 0.26$	$\phi M_n = 15.75$	Pass

GROUP 2:

$P_{u,c} = 58.77$	$\phi P_{n,c} = 106.34$	Stress Rating
$V_u = 0$	$\phi V_n = 47.85$	52.6%
$M_u = n/a$	$\phi M_n = n/a$	Pass

Base Plate Summary

Max Stress (ksi):	-
Allowable Stress (ksi):	-
Stress Rating:	Pirod OK

Stiffener Summary

Horizontal Weld:	Pirod OK
Vertical Weld:	Pirod OK
Plate Flexure+Shear:	Pirod OK
Plate Tension+Shear:	Pirod OK
Plate Compression:	Pirod OK
Pole Summary	
Punching Shear:	Pirod OK

Elevation (ft)	0	(Base)
----------------	---	--------

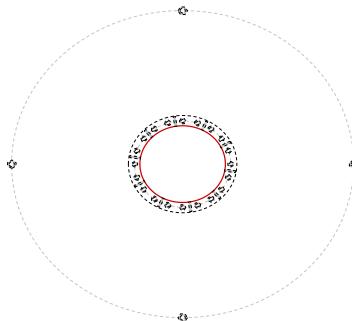
note: Bending interaction not considered when Grout Considered = "Yes"

Bolt Group	Resist Axial	Resist Shear	Induce Plate Bending	Grout Considered	Apply at BARB Elevation	BARB CL Elevation (ft)
1	Yes	Yes	Yes	No	No	
2	No	No	No	No	No	

Custom Bolt Connection

Bolt	Bolt Group ID	Location (deg.)	Diameter (in)	Material	Bolt Circle (in)	Eta Factor, η :	l_{sr} (in):	Thread Type	Area Override, in ²	Tension Only
1	1	0	1	A687	27	0.5	1.25	N-Included		No
2	1	18	1	A687	27	0.5	1.25	N-Included		No
3	1	36	1	A687	27	0.5	1.25	N-Included		No
4	1	54	1	A687	27	0.5	1.25	N-Included		No
5	1	72	1	A687	27	0.5	1.25	N-Included		No
6	1	90	1	A687	27	0.5	1.25	N-Included		No
7	1	108	1	A687	27	0.5	1.25	N-Included		No
8	1	126	1	A687	27	0.5	1.25	N-Included		No
9	1	144	1	A687	27	0.5	1.25	N-Included		No
10	1	162	1	A687	27	0.5	1.25	N-Included		No
11	1	180	1	A687	27	0.5	1.25	N-Included		No
12	1	198	1	A687	27	0.5	1.25	N-Included		No
13	1	216	1	A687	27	0.5	1.25	N-Included		No
14	1	234	1	A687	27	0.5	1.25	N-Included		No
15	1	252	1	A687	27	0.5	1.25	N-Included		No
16	1	270	1	A687	27	0.5	1.25	N-Included		No
17	1	288	1	A687	27	0.5	1.25	N-Included		No
18	1	306	1	A687	27	0.5	1.25	N-Included		No
19	1	324	1	A687	27	0.5	1.25	N-Included		No
20	1	342	1	A687	27	0.5	1.25	N-Included		No
21	2	0	1.5	Contech 40/16	96	0.5	0	N-Included	1.4	No
22	2	90	1.5	Contech 40/16	96	0.5	0	N-Included	1.4	No
23	2	180	1.5	Contech 40/16	96	0.5	0	N-Included	1.4	No
24	2	270	1.5	Contech 40/16	96	0.5	0	N-Included	1.4	No

Plot Graphic



Pier and Pad Foundation



BU # :	822779
Site Name:	Bridgeport/ Rt 8
App. Number:	548693 Rev. 4

TIA-222 Revision:	H
Tower Type:	Monopole

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

Superstructure Analysis Reactions		
Compression, P_{comp} :	18.856	kips
Base Shear, V_u comp:	6.499	kips
Moment, M_u :	80.523	ft-kips
Tower Height, H :	120	ft
BP Dist. Above Fdn, bp_{dist} :	2.25	in

Foundation Analysis Checks				
	Capacity	Demand	Rating*	Check
Lateral (Sliding) (kips)	62.10	6.50	10.0%	Pass
Bearing Pressure (ksf)	22.50	1.18	5.0%	Pass
Overspinning (kip*ft)	781.98	117.49	15.0%	Pass
Pier Flexure (Comp.) (kip*ft)	668.59	104.89	14.9%	Pass
Pier Compression (kip)	6123.66	25.35	0.4%	Pass
Pad Flexure (kip*ft)	374.32	51.45	13.1%	Pass
Pad Shear - 1-way (kips)	242.80	15.55	6.1%	Pass
Pad Shear - 2-way (Comp) (ksi)	0.190	0.014	6.8%	Pass
Flexural 2-way (Comp) (kip*ft)	514.17	62.94	11.7%	Pass

*Rating per TIA-222-H Section 15.5

Structural Rating*:	14.9%
Soil Rating*:	15.0%

Pier Properties		
Pier Shape:	Circular	
Pier Diameter, $dpier$:	3.5	ft
Ext. Above Grade, E :	0.5	ft
Pier Rebar Size, Sc :	7	
Pier Rebar Quantity, mc :	14	
Pier Tie/Spiral Size, St :	4	
Pier Tie/Spiral Quantity, mt :	9	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier} :	3	in

Pad Properties		
Depth, D :	5	ft
Pad Width, W_1 :	12.5	ft
Pad Thickness, T :	1.75	ft
Pad Rebar Size (Bottom dir. 2), Sp_2 :	5	
Pad Rebar Quantity (Bottom dir. 2), mp_2 :	16	
Pad Clear Cover, cc_{pad} :	3	in

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

Soil Properties		
Total Soil Unit Weight, γ :	125	pcf
Ultimate Gross Bearing, Q_{ult} :	30.000	ksf
Cohesion, C_u :	0.000	ksf
Friction Angle, φ :	34	degrees
SPT Blow Count, N_{blows} :	21	
Base Friction, μ :	0.4	
Neglected Depth, N :	3.30	ft
Foundation Bearing on Rock?:	No	
Groundwater Depth, gw :	N/A	ft

--Toggle between Gross and Net

Exhibit E

Power Density/RF Emissions Report



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

Dish Wireless Existing Facility

Site ID: 822779

NJJER01106A
1875 Noble Avenue
Bridgeport, Connecticut 06610

May 26, 2022

EBI Project Number: 6222003434

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	16.90%



May 26, 2022

Attn: Dish Wireless

Emissions Analysis for Site: 822779 - NJJER01106A

EBI Consulting was directed to analyze the proposed Dish Wireless facility located at **1875 Noble Avenue in Bridgeport, Connecticut** for the purpose of determining whether the emissions from the Proposed Dish Wireless Antenna Installation located on this property are within specified federal limits.

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

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

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

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

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



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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed Dish Wireless Wireless antenna facility located at 1875 Noble Avenue in Bridgeport, Connecticut using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since Dish Wireless 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 20 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 n66 channels (AWS Band - 2190 MHz) 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 20 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 for the 600 MHz / 2190 MHz channel(s) in Sector A, the JMA MX08FRO665-21 for the 600 MHz / 2190 MHz channel(s) in Sector B, the JMA MX08FRO665-21 for the 600 MHz / 2190 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 20 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 86 feet above ground level (AGL).
- 7) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.
- 8) All calculations were done with respect to uncontrolled / general population threshold limits.



Dish Wireless Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	I	Antenna #:	I	Antenna #:	I
Make / Model:	JMA MX08FRO665-2I	Make / Model:	JMA MX08FRO665-2I	Make / Model:	JMA MX08FRO665-2I
Frequency Bands:	600 MHz / 2190 MHz	Frequency Bands:	600 MHz / 2190 MHz	Frequency Bands:	600 MHz / 2190 MHz
Gain:	11.35 dBd / 16.75 dBd	Gain:	11.35 dBd / 16.75 dBd	Gain:	11.35 dBd / 16.75 dBd
Height (AGL):	86 feet	Height (AGL):	86 feet	Height (AGL):	86 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):	1,543.86	ERP (W):	1,543.86	ERP (W):	1,543.86
Antenna A1 MPE %:	I.24%	Antenna B1 MPE %:	I.24%	Antenna C1 MPE %:	I.24%



Site Composite MPE %	
Carrier	MPE %
Dish Wireless (Max at Sector A):	1.24%
T-Mobile	7.65%
Clearwire	0.24%
Nextel	1.23%
Sprint	6.54%
Site Total MPE % :	16.90%

Dish Wireless MPE % Per Sector	
Dish Wireless Sector A Total:	1.24%
Dish Wireless Sector B Total:	1.24%
Dish Wireless Sector C Total:	1.24%
Site Total MPE % :	16.90%

Dish Wireless Maximum MPE Power Values (Sector A)							
Dish Wireless Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu\text{W}/\text{cm}^2$)	Frequency (MHz)	Allowable MPE ($\mu\text{W}/\text{cm}^2$)	Calculated % MPE
Dish Wireless 600 MHz n71	4	110.82	86.0	2.49	600 MHz n71	400	0.62%
Dish Wireless 2190 MHz n66	4	275.14	86.0	6.18	2190 MHz n66	1000	0.62%
							Total: 1.24%

- 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 Wireless 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 Wireless Sector	Power Density Value (%)
Sector A:	1.24%
Sector B:	1.24%
Sector C:	1.24%
Dish Wireless Maximum MPE % (Sector A):	1.24%
Site Total:	16.90%
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **16.90%** 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.

Exhibit F

Letter of Authorization



1200 MacArthur Blvd, Suite 200
Mahwah, NJ 07430

Phone: (862) 226-6914
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:
1875 NOBLE AVENUE, BRIDGEPORT, CT 06610

T-MOBILE USA TOWER LLC ("Crown Castle") hereby authorizes DISH NETWORK, 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:

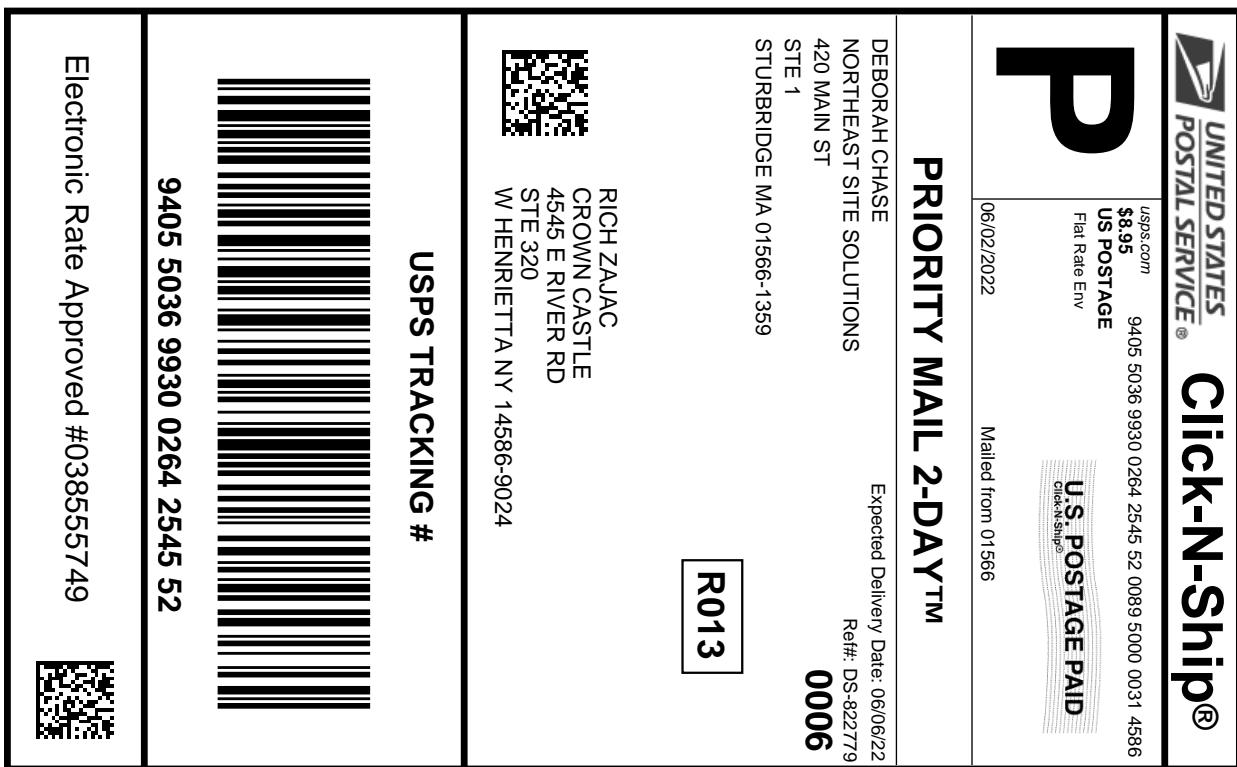
Crown Site ID/Name: **822779/Bridgeport/ Rt 8**
Customer Site ID: **NJJER01106A/CT-CCI-T-822779**
Site Address: **1875 Noble Avenue, Bridgeport, CT 06610**

Crown Castle

By:  Date: **04/22/2022**
Robin Cannizzaro
Real Estate Specialist

Exhibit G

Recipient Mailings



Cut on dotted line.

Instructions

1. Each Click-N-Ship® label is unique. Labels are to be used as printed and used only once. DO NOT PHOTO COPY OR ALTER LABEL.
2. Place your label so it does not wrap around the edge of the package.
3. Adhere your label to the package. A self-adhesive label is recommended. If tape or glue is used, DO NOT TAPE OVER BARCODE. Be sure all edges are secure.
4. To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.
5. Mail your package on the "Ship Date" you selected when creating this label.

Click-N-Ship® Label Record

USPS TRACKING #:
9405 5036 9930 0264 2545 52

Trans. #: 564817593
Print Date: 06/02/2022
Ship Date: 06/02/2022
Expected Delivery Date: 06/06/2022

Priority Mail® Postage: **\$8.95**
Total: **\$8.95**

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

To: RICH ZAJAC
CROWN CASTLE
4545 E RIVER RD
STE 320
W HENRIETTA NY 14586-9024

Ref#: DS-822779

* 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.

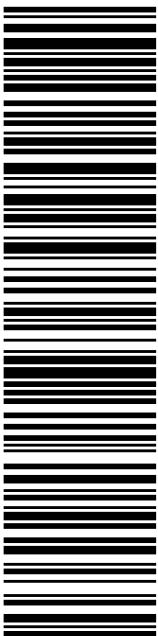


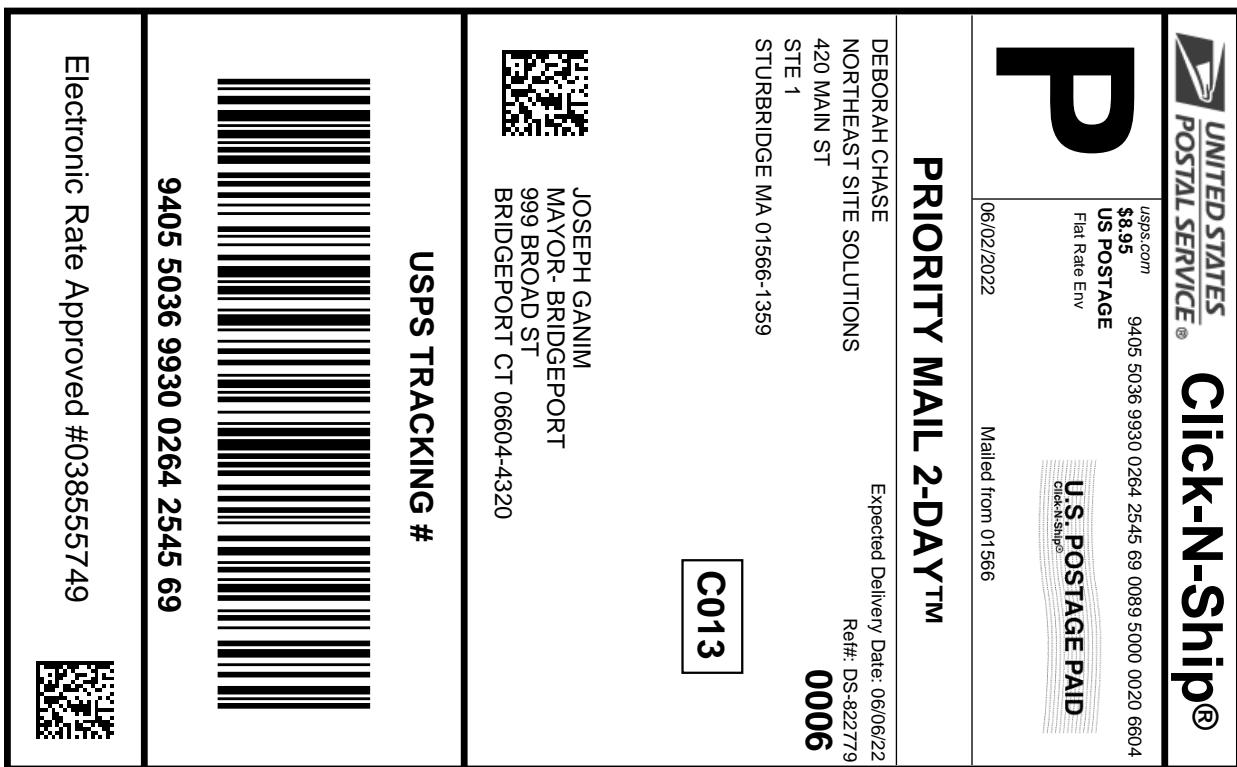
Thank you for shipping with the United States Postal Service!

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

Electronic Rate Approved #038555749

9405 5036 9930 0264 2545 52





Cut on dotted line.

Instructions

1. Each Click-N-Ship® label is unique. Labels are to be used as printed and used only once. DO NOT PHOTO COPY OR ALTER LABEL.
2. Place your label so it does not wrap around the edge of the package.
3. Adhere your label to the package. A self-adhesive label is recommended. If tape or glue is used, DO NOT TAPE OVER BARCODE. Be sure all edges are secure.
4. To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.
5. Mail your package on the "Ship Date" you selected when creating this label.

Click-N-Ship® Label Record

USPS TRACKING #:
9405 5036 9930 0264 2545 69

Trans. #:	564817593	Priority Mail® Postage:	\$8.95
Print Date:	06/02/2022	Total:	\$8.95
Ship Date:	06/02/2022		
Expected			
Delivery Date:	06/06/2022		

From:	DEBORAH CHASE NORTHEAST SITE SOLUTIONS 420 MAIN ST STE 1 STURBRIDGE MA 01566-1359	Ref#: DS-822779
To:	JOSEPH GANIM MAYOR- BRIDGEPORT 999 BROAD ST BRIDGEPORT CT 06604-4320	

* 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.

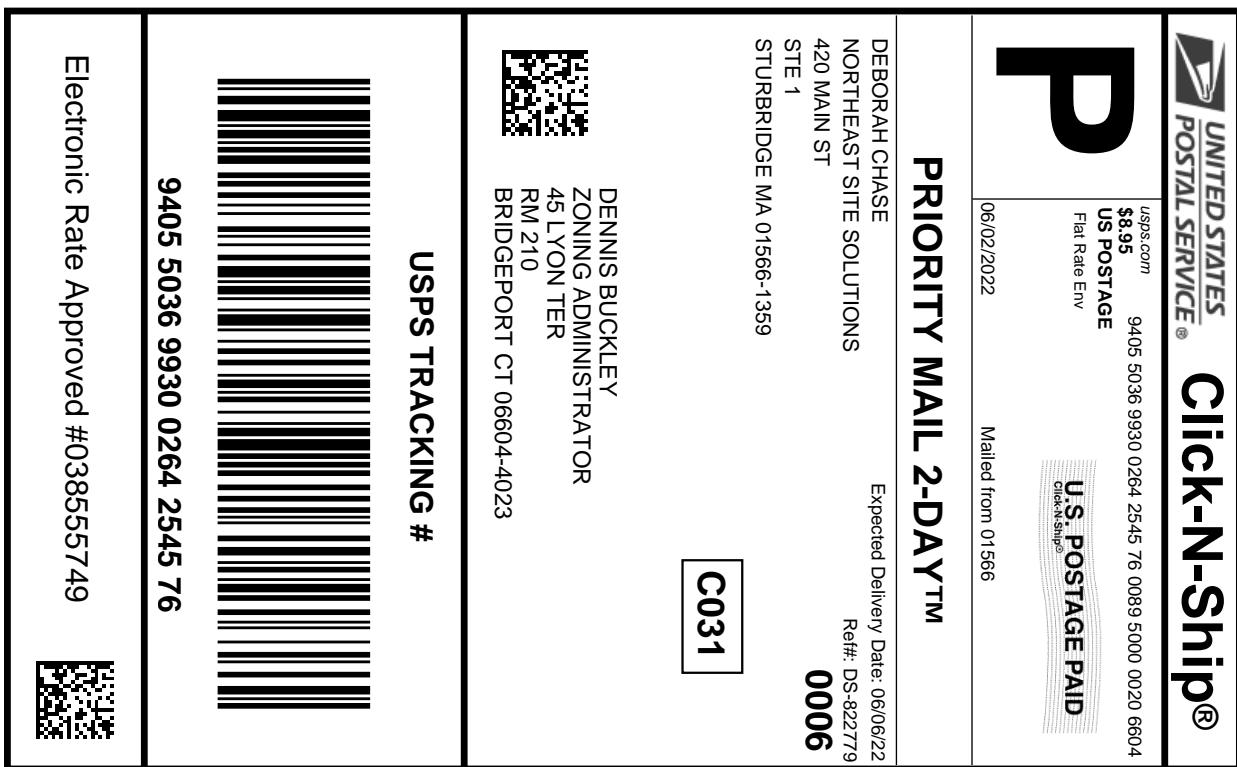


Thank you for shipping with the United States Postal Service!

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

Electronic Rate Approved #038555749

9405 5036 9930 0264 2545 69



Cut on dotted line.

Instructions

1. Each Click-N-Ship® label is unique. Labels are to be used as printed and used only once. DO NOT PHOTO COPY OR ALTER LABEL.
2. Place your label so it does not wrap around the edge of the package.
3. Adhere your label to the package. A self-adhesive label is recommended. If tape or glue is used, DO NOT TAPE OVER BARCODE. Be sure all edges are secure.
4. To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.
5. Mail your package on the "Ship Date" you selected when creating this label.

Click-N-Ship® Label Record

USPS TRACKING #:
9405 5036 9930 0264 2545 76

Trans. #:	564817593	Priority Mail® Postage:	\$8.95
Print Date:	06/02/2022	Total:	\$8.95
Ship Date:	06/02/2022		
Expected			
Delivery Date:	06/06/2022		

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

To: DENNIS BUCKLEY
ZONING ADMINISTRATOR
45 LYON TER
RM 210
BRIDGEPORT CT 06604-4023

* 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.

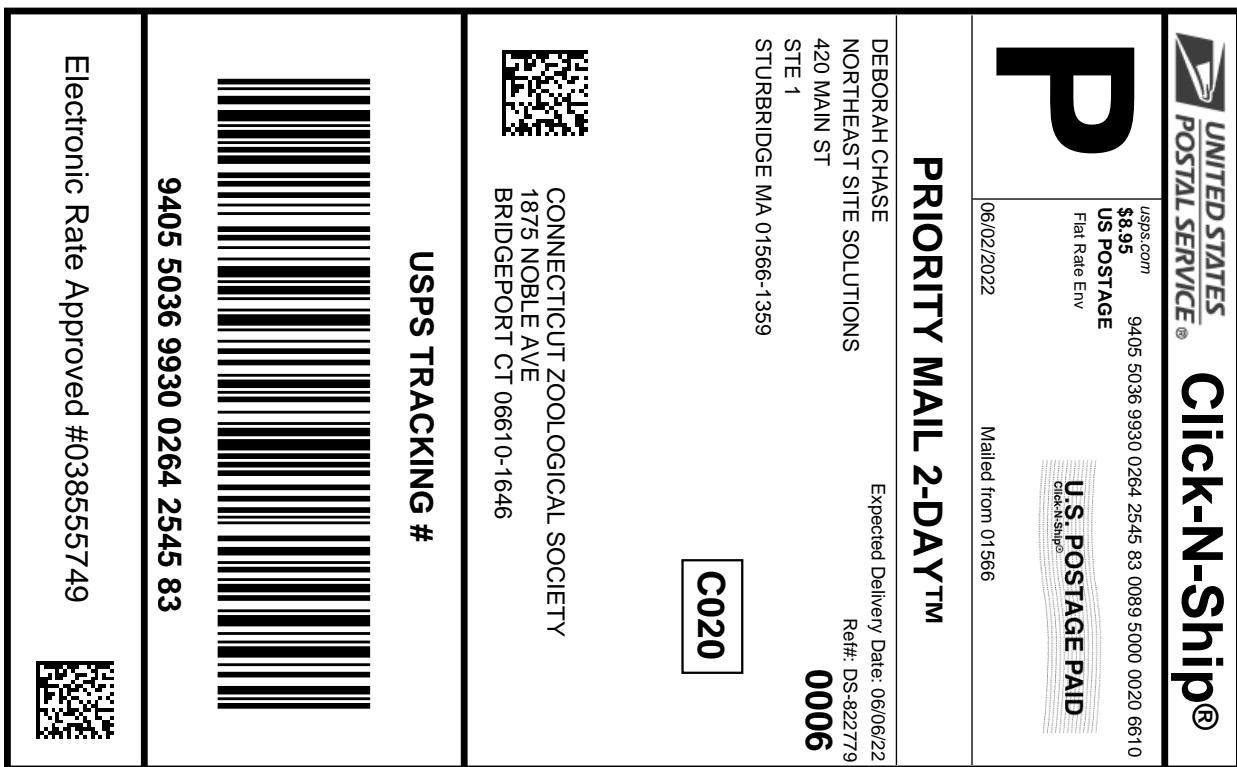


Thank you for shipping with the United States Postal Service!

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

Electronic Rate Approved #038555749

9405 5036 9930 0264 2545 76



Cut on dotted line.

Instructions

1. Each Click-N-Ship® label is unique. Labels are to be used as printed and used only once. DO NOT PHOTO COPY OR ALTER LABEL.
2. Place your label so it does not wrap around the edge of the package.
3. Adhere your label to the package. A self-adhesive label is recommended. If tape or glue is used, DO NOT TAPE OVER BARCODE. Be sure all edges are secure.
4. To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.
5. Mail your package on the "Ship Date" you selected when creating this label.

Click-N-Ship® Label Record

USPS TRACKING #:
9405 5036 9930 0264 2545 83

Trans. #:	564817593	Priority Mail® Postage:	\$8.95
Print Date:	06/02/2022	Total:	\$8.95
Ship Date:	06/02/2022		
Expected			
Delivery Date:	06/06/2022		

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

Ref#: DS-822779

To: CONNECTICUT ZOOLOGICAL SOCIETY
1875 NOBLE AVE
BRIDGEPORT CT 06610-1646

* 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

Electronic Rate Approved #038555749

9405 5036 9930 0264 2545 83

822779
Crown DLS



FARMINGTON
210 MAIN ST
FARMINGTON, CT 06032-9998
(800)275-8777

06/07/2022

08:51 AM

Product	Qty	Unit Price
---------	-----	------------

Prepaid Mail	1	\$0.00
Bridgeport, CT 06610		
Weight: 0 lb 8.70 oz		
Acceptance Date:		
Tue 06/07/2022		
Tracking #:		
9405 5036 9930 0264 2545 83		

Prepaid Mail	1	\$0.00
West Henrietta, NY 14586		
Weight: 0 lb 2.00 oz		
Acceptance Date:		
Tue 06/07/2022		
Tracking #:		
9405 5036 9930 0264 2545 52		

Prepaid Mail	1	\$0.00
Bridgeport, CT 06604		
Weight: 0 lb 8.70 oz		
Acceptance Date:		
Tue 06/07/2022		
Tracking #:		
9405 5036 9930 0264 2545 69		

Prepaid Mail	1	\$0.00
Bridgeport, CT 06604		
Weight: 0 lb 8.60 oz		
Acceptance Date:		
Tue 06/07/2022		
Tracking #:		
9405 5036 9930 0264 2545 76		

Grand Total:	\$0.00
--------------	--------

Every household in the U.S. is now
eligible to receive a third set
of 8 free test kits.
Go to www.covidtests.gov

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.

