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

August 23, 2022

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

RE: Tower Share Application
79 Putnam Pike, Dayville (Killingly), CT 06241
Latitude: 41.847398 N
Longitude: -72.878969 W
Site#: BOBOS00071A

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 79 Putnam Pike, Dayville (Killingly), Connecticut.

Dish Wireless LLC proposes to install three (3) 600/1900/2190 5G MHz antenna and six (6) RRUs, at the 140-foot level of the existing 150-foot monopole tower, one (1) Fiber cable will also be installed. Dish Wireless LLC equipment cabinets will be placed within 7x5 lease area. Included are plans by Infinigy, dated July 21, 2022, Exhibit C. Also included is a structural analysis prepared by Infinigy, dated March 3, 2022 confirming that the existing tower is structurally capable of supporting the proposed equipment. Attached as Exhibit D. This facility was approved by the Town of Killingly on June 18, 1998. 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 Mary Calorio, Town Manager, Ann-Marie L. Aubrey, Director of Planning & Development, as well as the property owner and tower owner.

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

1. The proposed modifications will not result in an increase in the height of the existing structure. The top of the tower is 150-feet; Dish Wireless LLC proposed antennas will be located at a center line height of 140-feet.

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

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

NORTHEAST
SITE SOLUTIONS
Turnkey Wireless Development

www.northeastsitesolutions.com

4.The operation of the proposed antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard. As indicated in the attached power density calculations, the combined site operations will result in a total density of 16.11% as evidenced by Exhibit F.

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

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

B. Legal Feasibility. As referenced above, C.G.S. 16-50aa has been authorized to issue orders approving the shared use of an existing tower such as this monopole in Dayville (Killingly). 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 140-foot level of the existing 150-foot tower would have an insignificant visual impact on the area around the monopole. Dish Wireless LLC ground equipment would be installed within the existing facility compound. Dish Wireless LLC shared use would therefore not cause any significant alteration in the physical or environmental characteristics of the existing site. Additionally, as evidenced by Exhibit F, the proposed antennas would not increase radio frequency emissions to a level at or above the Federal Communications Commission safety standard.

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

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

Sincerely,

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

Attachments
Cc:
Mary Calorio, Town Manager -as tower and property owner
Killingly Town Hall
172 Main Street
Killingly, CT 06239

Ann-Marie L. Aubrey, Director of Planning & Development
Killingly Town Hall
172 Main Street
Killingly, CT 06239

Exhibit A

Original Facility Approval

DATE: 6/18/98

TOWN OF KILLINGLY, CONNECTICUT
ZONING PERMIT

№ 006352

Complete Items #1-9 and the plot plan on the reverse side of the top sheet.

1. Location of Property 79 Putnam Pike
   House # & Street
   Tax Map Number 4683 Block 329 Lot 1 Zoning District LD Volume 34 Page 1 List 6991
2. Property Owner's Name Town of Killingly Phone
3. Property Owner's Address if different from property location 172 Main St.
4. Applicant's Name and Address if different from Property Owner's Name and Address Omnipoint
   25 Van Zant St Norwalk CT Phone 203-855-5427

5. Lot Size 30,000 sq ft Lot Frontage 100'
6. This permit is applied for in accordance with the requirements of the Town of Killingly and/or Borough of Danielson Zoning Regulations for:
   - ☒ new construction
   - ☐ addition
   - ☐ accessory structure (sheds, satellite dishes, etc.)
   - ☐ swimming pool
   - ☐ excavating/filling/earth removal
   - ☐ sign
   - ☐ change of use
   - ☐ other
7. Proposed structure or project —
   Provide description and dimensions:
   Construction of a 150' monopole with related telecommunication facilities

8. Property Use:
   - ☐ single family residential
   - ☐ two-family residential
   - ☐ mobile home — residential
   - ☐ multi-family — residential
   - ☐ Industrial specify
   - ☒ Commercial specify telecommunication facility
   - ☐ Professional and Business specify

9. PERMIT VOID IF ...
work or activity is not commenced within one year from the date of issue and diligently prosecuted to completion.
This permit, if issued, is based upon the plot plan submitted. Falsification, by misrepresentation or omission, or failure to comply with the conditions of approval of this permit shall constitute a violation of the Town of Killingly and/or Borough of Danielson Zoning Regulations.
Agents of the Town of Killingly are authorized to enter upon the property for the purpose of inspection and verification of compliance with the terms of this permit.

(Signature of Owner or authorized agent)

203-855-5427
(Agent's phone #)

FOR OFFICE USE ONLY:

Inland Wetlands NA - no impact to wetlands 6-18-98
Historic District? Yes (No)
Slope greater than 15%? Yes (No)
Flood Hazard Zone? NO
Aquifer Protection Zone? (Yes) No
Public Sewer (On-Site Septic)
Site Plan Review Necessary? (Yes) No
Applicant's Name
Application No.
P&Z Commission Approval Date

Driveway Permit
Special Permit necessary? (Yes) No
Applicant's Name Omni Point
Application No. 98-706
P&Z Commission Approval Date 5-13-98
Subdivision necessary? Yes (No)
Applicant's Name
Application No.
P&Z Commission Approval Date
Variance Necessary? Yes (No)
Applicant's Name
Application No.
ZBA Approval Date

Approved ✓ Disapproved Date 6-18-98
Reason for Disapproval:
Comments: Able to condition approval of SP #98-706 Condition 1-5

George C Dion
Zoning Enforcement Officer

Orig./White: Z.E.O. / Blue: P &Z / Green: Bldg. Official / Yellow: Applicant

Exhibit B

Property Card

The Assessor's office is responsible for the maintenance of records on the ownership of properties. Assessments are computed at 70% of the estimated market value of real property at the time of the last revaluation which was 2018.

Information on the Property Records for the Municipality of Killingly was last updated on 8/24/2022.

Parcel Information

Location:	79 PUTNAM PIKE	Property Use:	Public Use	Primary Use:	Town Hall
Unique ID:	6994	Map Block Lot:	106-42	Acres:	5.8300
490 Acres:	0.00	Zone:	GC	Volume / Page:	1375/ 618
Developers Map / Lot:		Census:	9041-1032		

Value Information

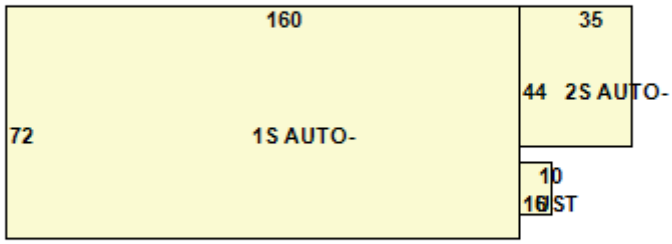
	Appraised Value	Assessed Value
Land	605,600	423,920
Buildings	502,410	351,690
Detached Outbuildings	51,190	35,830

	Appraised Value	Assessed Value
Total	1,159,200	811,440

Owner's Information

Owner's Data
KILLINGY TOWN OF 172 MAIN ST KILLINGLY, CT 06239

Building 1



Category:	Automotive	Use:	Auto Repair	GLA:	15,800
Stories:	2.00	Construction:	Steel	Year Built:	1960
Heating:	Hot Water	Fuel:		Cooling Percent:	0
Siding:	ENCLOSURE	Roof Material:		Beds/Units:	0

Special Features

Attached Components

Type:	Year Built:	Area:
Lump Sum	1960	1
Utility Storage	1960	160

Detached Outbuildings

Type:	Year Built:	Length:	Width:	Area:
Det Brick Stone Garage	1960	60.00	22.00	1,320
Paving	1960	0.00	0.00	20,000

Type:	Year Built:	Length:	Width:	Area:
Cblk/Fr Shed	2014	12.00	30.00	360

Owner History - Sales

Owner Name	Volume	Page	Sale Date	Deed Type	Sale Price
KILLINGY TOWN OF	1375	0618	11/03/2020	Quit Claim	$0

Building Permits

Permit Number	Permit Type	Date Opened	Reason
22-68	T:BUSINESS PERSONAL PROPERTY	04/28/2022	VERIZON TO SWAP ANTENNAS & RADIOS PER PLAN PROVIDED
22-73	T:BUSINESS PERSONAL PROPERTY	02/09/2022	AT&T WIRELESS TO SWAP 3 ANTENNAS WITH NEW MODELS,ADD 3 ANTENNAS,SWAP 6 REMOTE RADIO UNITS WITH NEW M
21-1143	T:BUSINESS PERSONAL PROPERTY	11/18/2021	INSTALL 3 ADDTL ANTENNAS, 3 ADDTL RRU'S, 2 ADDTL HYBRID CABLES, POWER ENCLOSURE & BATTERY CABINET, 4
21-000547	Commercial	04/26/2021	INSTALL NEW CONCRETE PAD FOR NEW 25KW DIESEL GENERATOR & APPROP CONDUITS & ATS
21-476	T:BUSINESS PERSONAL PROPERTY	04/26/2021	UPGRADE & REPL EQUIP AT EXISTING TELECOMM FACILITY
27799	Solar	09/21/2020	INSTALL ROOF MOUNTED SOLAR PV SYSTEM - 168 MODULES-66,360 KW
26169	T:BUSINESS PERSONAL PROPERTY	07/12/2018	REPLACE 6 EXISTING ANTENNAS W/ 6 NEW ON EXISTING RAD HEIGHT ON EXISTING TELECOMMUNICATIONS TOWERS
25354	T:BUSINESS PERSONAL PROPERTY	06/15/2017	REMOVE & REPL 3 PANEL ANTENNAS, ADD 6 DIPLEXERS TO TOP & GROUND BASE & ADD 3 RR HEADS & 6 RET CABLES
23978	Boiler	10/20/2015	NVC REPL BOILER & BURNER
23714	T:BUSINESS PERSONAL PROPERTY	07/01/2015	REMOVE/REPL 6 ANTENNAES & ADD 9 RRU'S
23485	Comm Renovations	04/09/2015	MODIFICATION OF EXISTING TELECOM FACILITY PER PLANS
23332	Gas Line	12/02/2014	RUN UNDERGROUND GAS LINES FOR 1000 GAL AG PROPANE TANK FOR AT&T CELL TOWER

Permit Number	Permit Type	Date Opened	Reason
23297	Mechanical	11/13/2014	HOOK UP PREFAB COMMUNICATION SHELTER TO EXISTING UTILITIES
23235	Commercial New	10/10/2014	WIRELESS TELECOMM FACILITY - 12X30 EQUIP SHELTER, 12 ANTENNAS & ASSOC APPURTENANCES ON ANTENNA PLATF
23177	Fuel Tank	09/17/2014	INSTALL 2 AG 10000 GAL FUEL TANKS & REMV 2 UG FUEL TANKS PERSONAL PROPERTY
22544	Roof	08/29/2013	NVC ROOF REPL
22389	Roof	06/12/2013	NVC ROOF REPL
22121	T:BUSINESS PERSONAL PROPERTY	11/30/2012	ADD 12 NEW ANTENNAS (NEXLINK GLOBAL)
19971	Commercial New	05/06/2009	18X50 ANIMAL CONTROL KENNELS
19865	Commercial	01/29/2009	REPL WIRELESS COMM TOWER - EXISTING
19790	Generator	11/19/2008	NVC CELL PHONE TOWER GENERATOR
19723	Electrical	10/22/2008	ELEC FOR NEW EQUIP SHELTER
19649	T:BUSINESS PERSONAL PROPERTY	09/18/2008	ADD ANTENNAS TO EXISTING TELECOMM TOWER
19431	T:BUSINESS PERSONAL PROPERTY	06/12/2008	REPL EXISTING CINGULAR ANTENNAS W/NEW
17357	Commercial	07/29/2005	MODIF TEL TOWER
16879	Electrical	11/10/2004	ELEC UPGRADE NVC
16011	T:BUSINESS PERSONAL PROPERTY	07/23/2003	ADD ANTENNAS NV
15235	Windows	05/03/2002	WINDOW REPLACE
13926	T:BUILDING	11/10/1999	INSTALL PROPANE
13763	Tank	07/30/1999	DOG POUND TANK OUT
13718	Outbuilding/Yard Item	07/02/1999	DOG POUND ENC WIN
13659	Electrical	06/07/1999	ELEC TO COMM TO
13580	Commercial	04/29/1999	SEE NOTES
12830	Addition	10/01/1997	ADDN 35X42

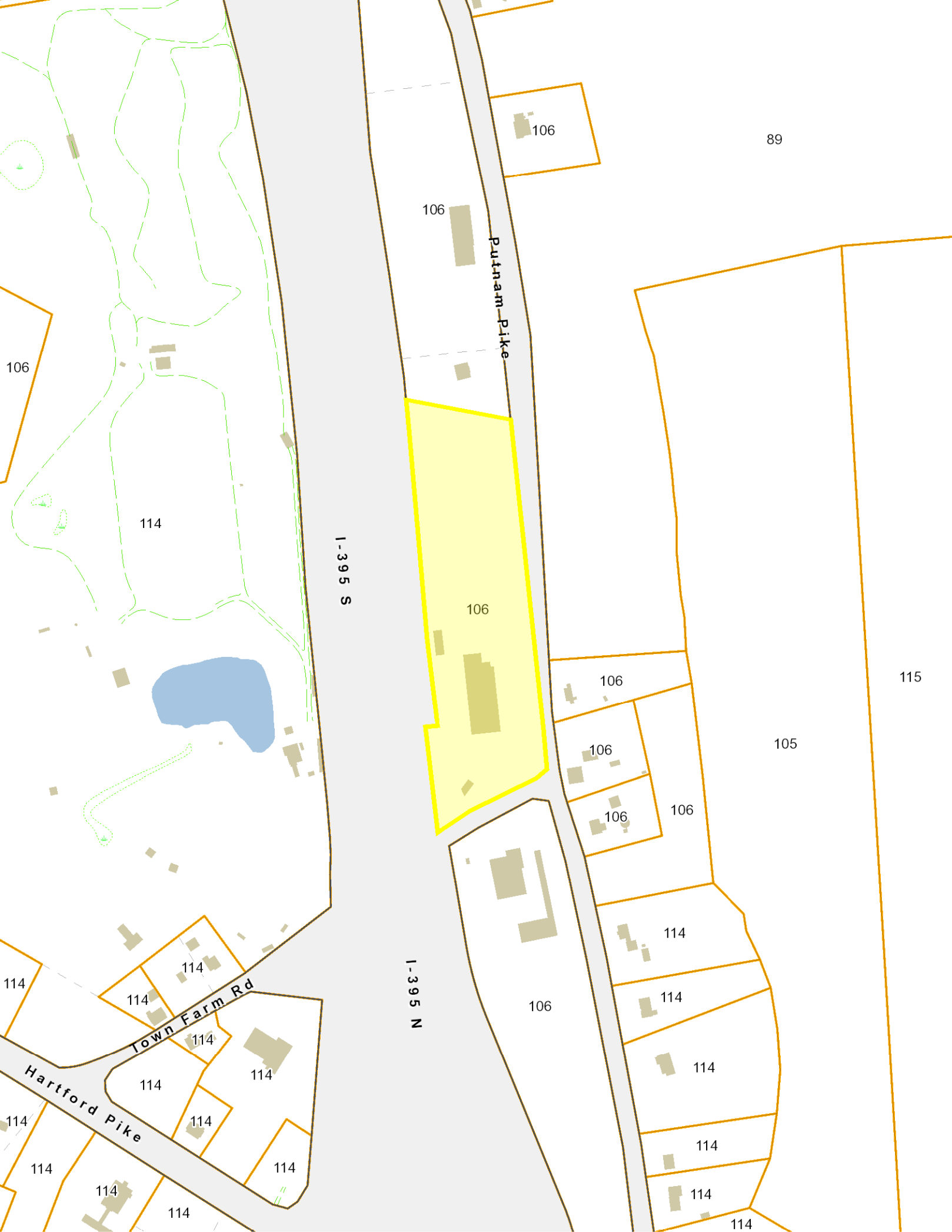

106
89
106
Putnam Pike
106
114
I-395 S
106
106
115
106
106
106
105
106
114
114
I-395 N
106
114
114
114
Town Farm Rd
114
114
114
Hartford Pike
114
114
114
114
114
114
114
114
114

Exhibit C

Construction Drawings

DISH WIRELESS, LLC. SITE ID:

BOBOS00071A

DISH WIRELESS, LLC. SITE ADDRESS:

79 PUTNAM PIKE
DAYVILLE, CT 06241

CONNECTICUT CODE COMPLIANCE

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

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

SHEET INDEX

SCOPE OF WORK

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

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

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

SITE PHOTO

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

CALL 2 WORKING DAYS UTILITY NOTIFICATION PRIOR TO CONSTRUCTION

811

GENERAL NOTES

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

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

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

SITE INFORMATION

PROPERTY OWNER:	TOWN OF KILLINGLY
ADDRESS:	172 MAIN STREET KILLINGLY, CT 06239
TOWER TYPE:	MONOPOLE
TOWER CO SITE ID:	N/A
TOWER APP NUMBER:	N/A
COUNTY:	WINDHAM
LATITUDE (NAD 83):	41°50'50.6" N 41.847398 N
LONGITUDE (NAD 83):	71°52'44.3" W 71.878969 W
ZONING JURISDICTION:	CT SITING COUNCIL
ZONING DISTRICT:	GC
PARCEL NUMBER:	106-042-000-000 6994
OCCUPANCY GROUP:	U
CONSTRUCTION TYPE:	V-B
POWER COMPANY:	EVERSOURCE
TELEPHONE COMPANY:	AT&T

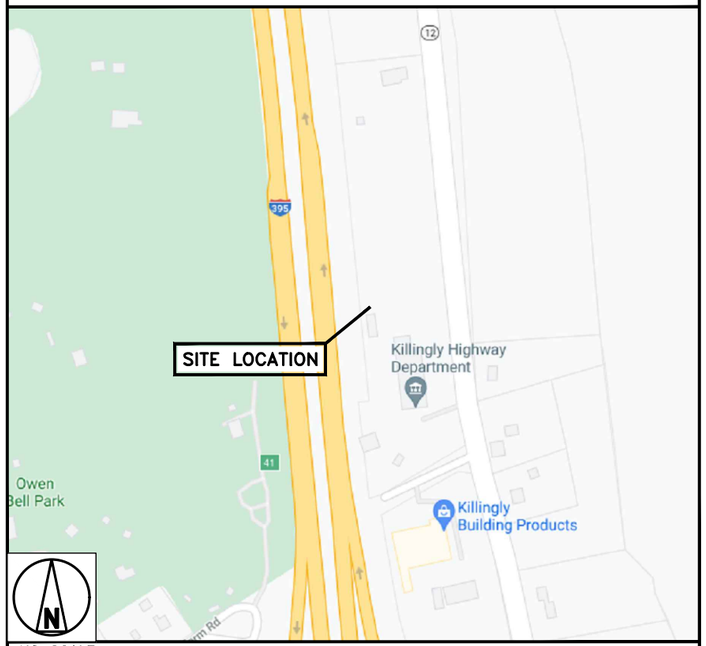
PROJECT DIRECTORY

APPLICANT:	DISH WIRELESS, LLC. 5701 SOUTH SANTA FE DRIVE LITTLETON, CO 80120
TOWER OWNER:	TOWN OF KILLINGLY 172 MAIN STREET KILLINGLY, CT 06239
SITE DESIGNER:	INFINIGY 1033 WATERVLIET SHAKER RD ALBANY, NY 12205 (518) 690-0790
SITE ACQUISITION:	TIMOTHY SLOAN (303) 706-4606
CONSTRUCTION MANAGER:	DAVID HANSON (303) 706-4617
RF ENGINEER:	DIPESH PARIKH DIPESH.PARIKH@DISH.COM

DIRECTIONS

DIRECTIONS FROM GREEN AIRPORT:
HEAD NORTHEAST ON AIRPORT CONNECTOR RD TOWARD AIRPORT RD, PRIVATE ROAD, TURN LEFT ONTO AIRPORT RD, KFC ON THE CORNER, TURN RIGHT ONTO US-1 N / POST RD, TAKE THE RAMP ON THE RIGHT FOR RI-37 AND HEAD TOWARD NEW YORK / PROVIDENCE, AT EXIT 1B, HEAD RIGHT ON THE RAMP FOR I-295 NORTH TOWARD SMITHFIELD, AT EXIT 9, HEAD RIGHT ON THE RAMP FOR US-6 TOWARD FOSTER, TURN RIGHT ONTO US-6 W / RI-6A / RI-101 / HARTFORD AVE TOWARD FOSTER, PASS CUMBERLAND FARMS IN MINOR CONGESTION, ROAD NAME CHANGES TO RI-101 / HARTFORD PIKE, ROAD NAME CHANGES TO CT-101 / HARTFORD PIKE, ENTERING CONNECTICUT, CONTINUE ON CT-12 / PUTNAM PIKE, ARRIVE AT 79 PUTNAM PIKE DAYVILLE, CT 06241

VICINITY MAP



N

NO SCALE

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

NSS NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

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

STATE OF CONNECTICUT
SHUHEI SAKANOUE
24916
LICENSED PROFESSIONAL ENGINEER
07/21/22

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

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

SUBMITTALS

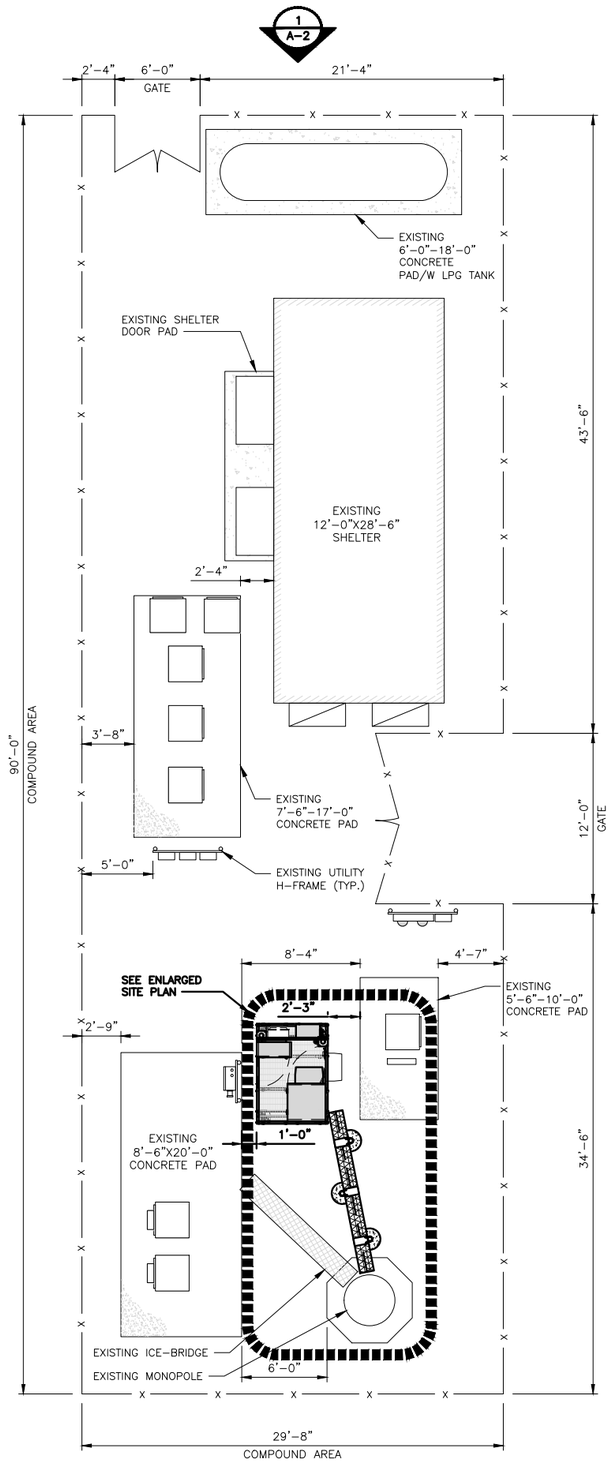
REV	DATE	DESCRIPTION
A	09/24/2021	ISSUED FOR REVIEW
B	01/06/2022	ISSUED FOR REVIEW
C	03/01/2022	ISSUED FOR REVIEW
0	03/29/2022	ISSUED FOR CONSTRUCTION
1	05/03/2022	ISSUED FOR CONSTRUCTION
2	07/21/2022	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
1097-F0001-C

DISH WIRELESS, LLC.
PROJECT INFORMATION
BOBOS00071A
79 PUTNAM PIKE
DAYVILLE, CT 06241

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1



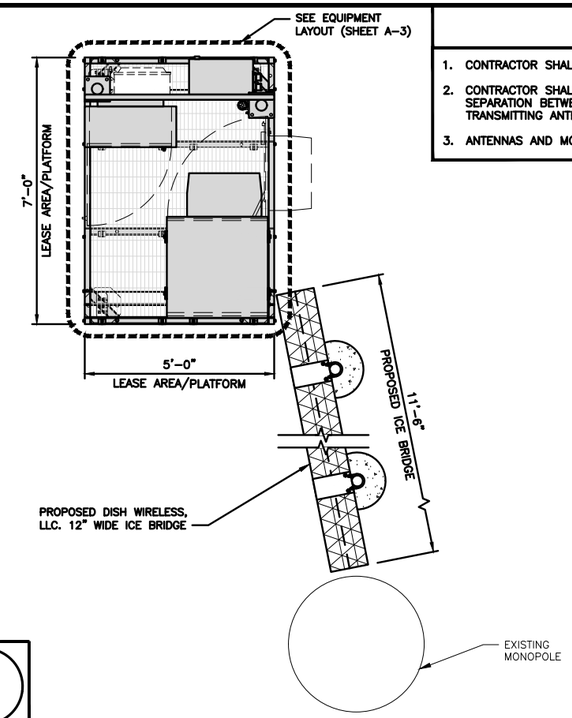
NOTES

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

COMPOUND PLAN

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

1



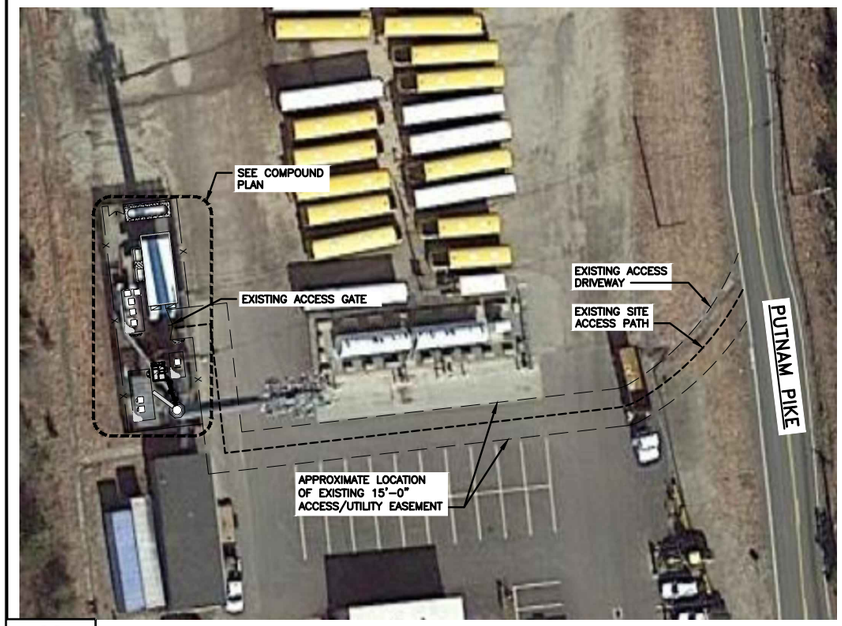
NOTES

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

ENLARGED SITE PLAN

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

2



SITE PLAN

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

3

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

NSS NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

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

STATE OF CONNECTICUT
SHUHEI SAKANOUE
34916
LICENSED PROFESSIONAL ENGINEER
07/21/22

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

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	09/24/2021	ISSUED FOR REVIEW
B	01/06/2022	ISSUED FOR REVIEW
C	03/01/2022	ISSUED FOR REVIEW
0	03/29/2022	ISSUED FOR CONSTRUCTION
1	05/03/2022	ISSUED FOR CONSTRUCTION
2	07/21/2022	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
1097-F0001-C

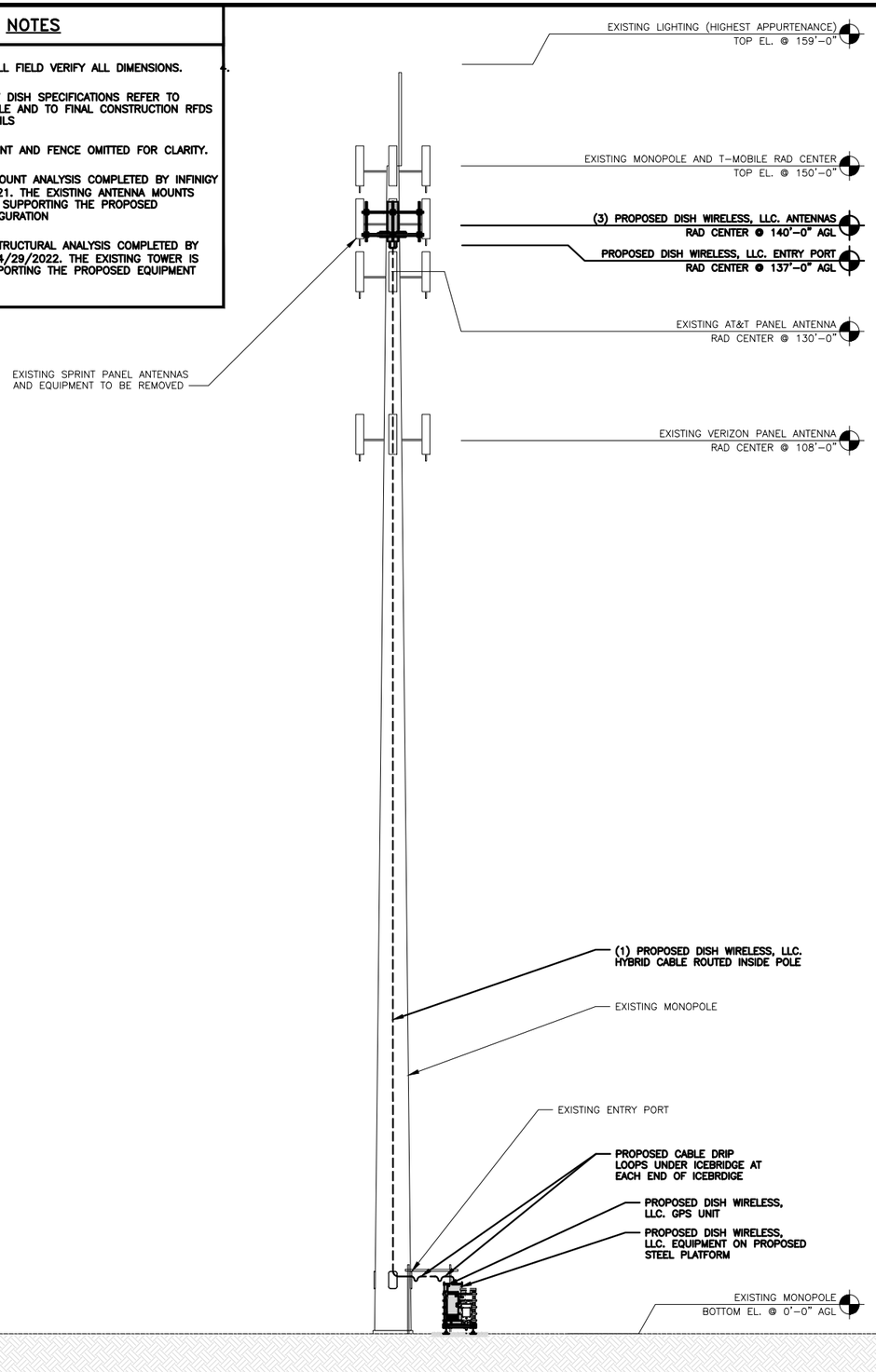
DISH WIRELESS, LLC.
PROJECT INFORMATION
BOBOS00071A
79 PUTNAM PIKE
DAYVILLE, CT 06241

SHEET TITLE
OVERALL AND ENLARGED SITE PLAN

SHEET NUMBER
A-1

NOTES

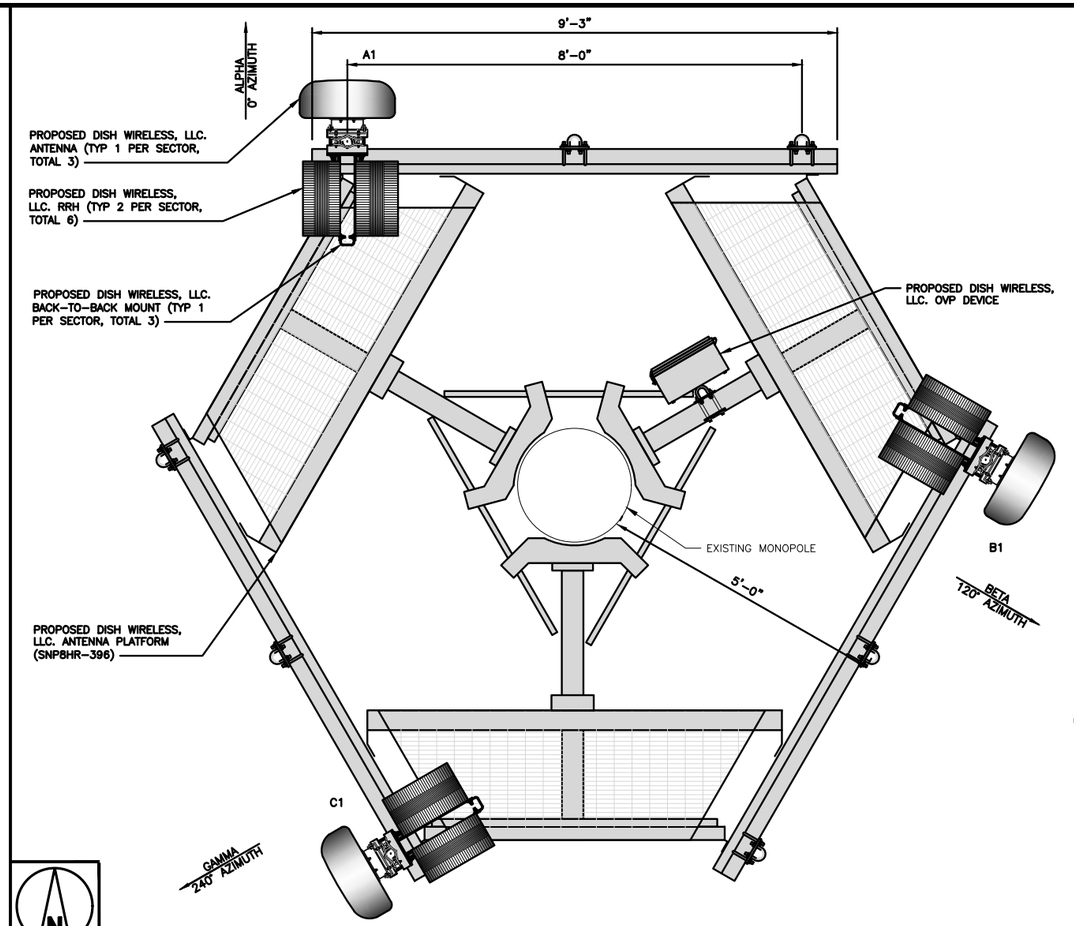
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNA AND MW DISH SPECIFICATIONS REFER TO ANTENNA SCHEDULE AND TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS
3. EXISTING EQUIPMENT AND FENCE OMITTED FOR CLARITY.
4. BASED ON THE MOUNT ANALYSIS COMPLETED BY INFINIGY DATED 09/20/2021. THE EXISTING ANTENNA MOUNTS ARE CAPABLE OF SUPPORTING THE PROPOSED EQUIPMENT CONFIGURATION
5. BASED ON THE STRUCTURAL ANALYSIS COMPLETED BY INFINIGY DATED 04/29/2022. THE EXISTING TOWER IS CAPABLE OF SUPPORTING THE PROPOSED EQUIPMENT CONFIGURATION



PROPOSED NORTH ELEVATION

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

1



ANTENNA LAYOUT

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

2

SECTOR	POSITION	ANTENNA						TRANSMISSION CABLE
		EXISTING OR PROPOSED	MANUFACTURER – MODEL NUMBER	TECHNOLOGY	SIZE (HxW)	AZMUITH	RAD CENTER	FEED LINE TYPE AND LENGTH
ALPHA	A1	PROPOSED	JMA WIRELESS – MX08FRO665-21	5G	72.0" x 20.0"	0°	140'-0"	(1) HIGH-CAPACITY HYBRID CABLE (190' LONG)
BETA	B1	PROPOSED	JMA WIRELESS – MX08FRO665-21	5G	72.0" x 20.0"	120°	140'-0"	
GAMMA	C1	PROPOSED	JMA WIRELESS – MX08FRO665-21	5G	72.0" x 20.0"	240°	140'-0"	

NOTES

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

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

NOTES

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

ANTENNA SCHEDULE

NO SCALE

3

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

NSS NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

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

STATE OF CONNECTICUT
SHUHEI SAKANOUE
24916
LICENSED PROFESSIONAL ENGINEER
07/21/22

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

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

SUBMITTALS

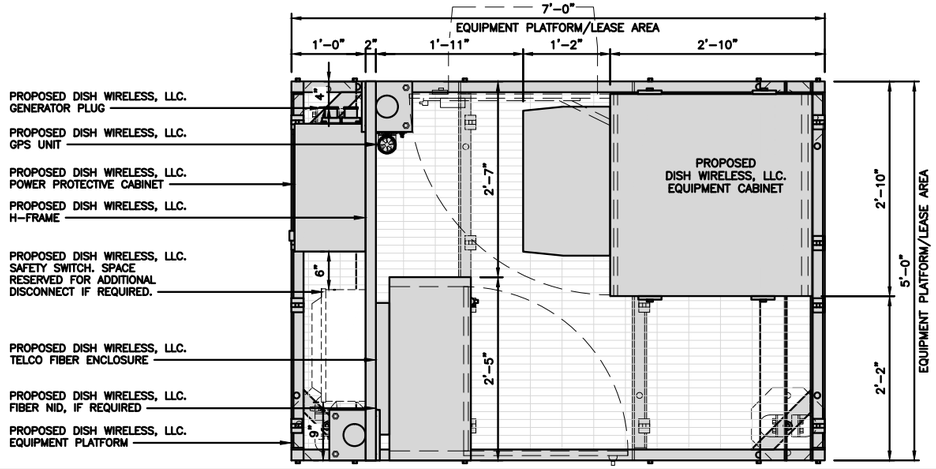
REV	DATE	DESCRIPTION
A	09/24/2021	ISSUED FOR REVIEW
B	01/08/2022	ISSUED FOR REVIEW
C	03/01/2022	ISSUED FOR REVIEW
0	03/29/2022	ISSUED FOR CONSTRUCTION
1	05/03/2022	ISSUED FOR CONSTRUCTION
2	07/21/2022	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
1097-F0001-C

DISH WIRELESS, LLC.
PROJECT INFORMATION
BOBOS00071A
79 PUTNAM PIKE
DAYVILLE, CT 06241

SHEET TITLE
ELEVATION, ANTENNA LAYOUT AND SCHEDULE

SHEET NUMBER
A-2

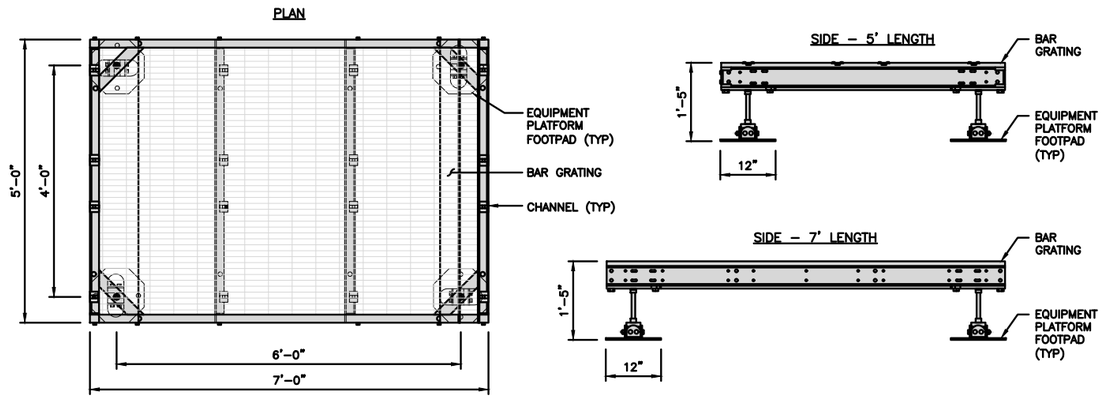


PLATFORM EQUIPMENT PLAN

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

1

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

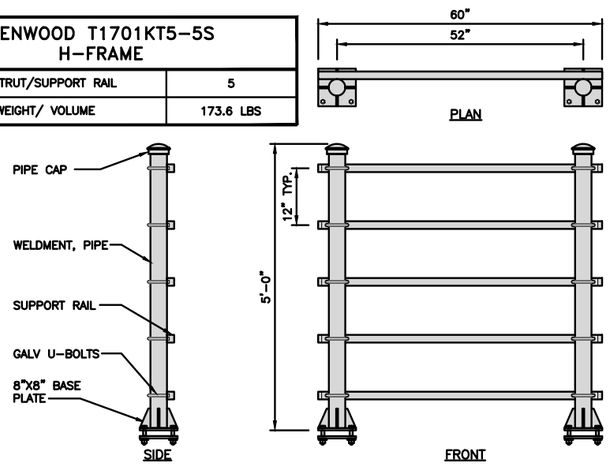


PLATFORM DETAIL

NO SCALE

2

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



H-FRAME DETAIL

NO SCALE

3

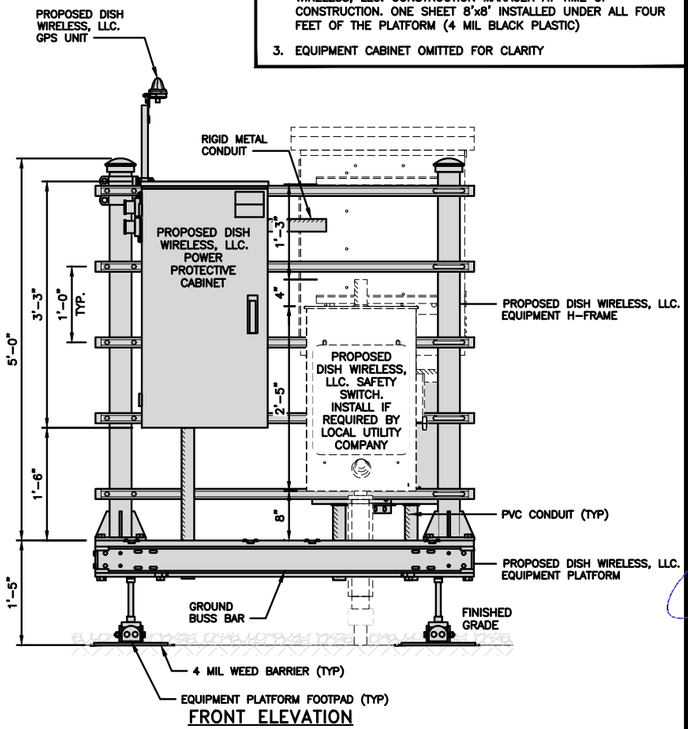
NOT USED

NO SCALE

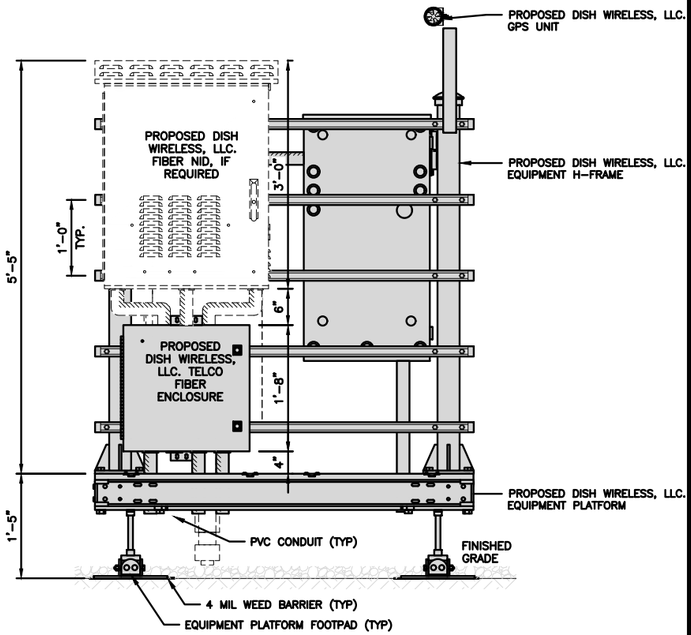
4

NOTES

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



FRONT ELEVATION



BACK ELEVATION

H-FRAME EQUIPMENT ELEVATION

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

5

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

NSS NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

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

STATE OF CONNECTICUT
SHUHEI SAKANOUE
24916
LICENSED PROFESSIONAL ENGINEER
07/21/22

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

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	09/24/2021	ISSUED FOR REVIEW
B	01/08/2022	ISSUED FOR REVIEW
C	03/01/2022	ISSUED FOR REVIEW
0	03/29/2022	ISSUED FOR CONSTRUCTION
1	05/03/2022	ISSUED FOR CONSTRUCTION
2	07/21/2022	ISSUED FOR CONSTRUCTION

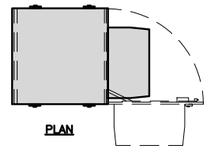
A&E PROJECT NUMBER
1097-F0001-C

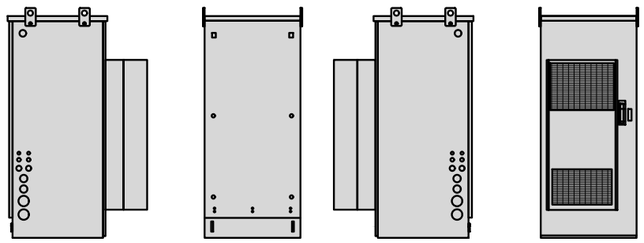
DISH WIRELESS, LLC.
PROJECT INFORMATION
BOBOS00071A
79 PUTNAM PIKE
DAYVILLE, CT 06241

SHEET TITLE
EQUIPMENT PLATFORM AND H-FRAME DETAILS

SHEET NUMBER
A-3

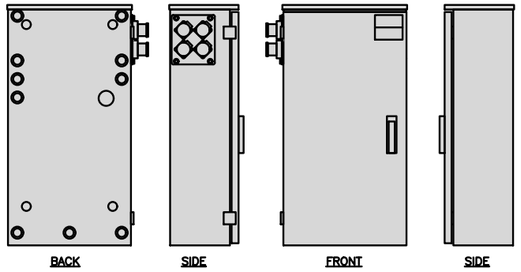
CHARLES INDUSTRY HEX CUBE–PM639155N4	
DIMENSIONS (HxWxD):	74"x32"x32"
POWER PLANT:	–48VDC ABB/600W
TOTAL WEIGHT (EMPTY)	408 LBS





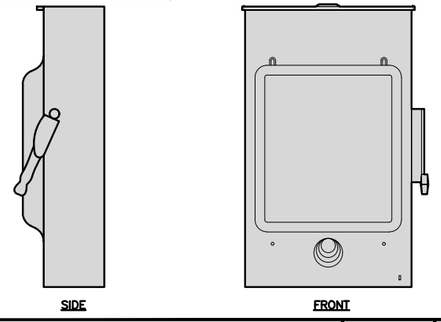
CABINET DETAIL | NO SCALE | 1

RAYCAP PPC RDIAC–2465–P–240–MTS	
ENCLOSURE DIMENSIONS (HxWxD):	39"x22.855"x12.593
WEIGHT:	80 lbs
OPERATING AC VOLTAGE	240/120 1 PHASE 3W+G



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

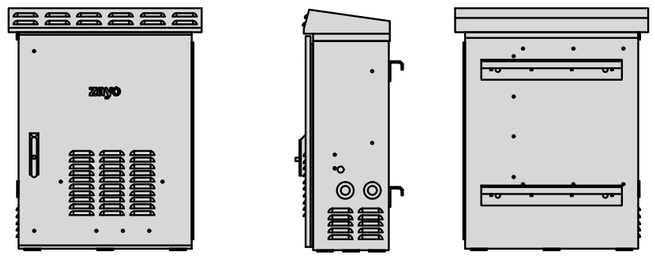
SQUARE D SAFETY SWITCHES D224NRB	
ENCLOSURE DIM (HxWxD)	29.25"x19.00"x8.50"
ENCLOSURE TYPE	NEMA 3R RAINPROOF
UL LISTED	FILE E–2875



SAFETY SWITCH DETAIL | NO SCALE | 3

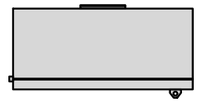
NOT USED | NO SCALE | 4

ZAYO 5RU CABINET ("LIT" SITES)	
DIMENSIONS (HxWxD)	36.115"x29"x12.9"
WEIGHT	85 LBS
POWER INPUT	20A, –48VDC



NETWORK INTERFACE UNIT DETAIL | NO SCALE | 5

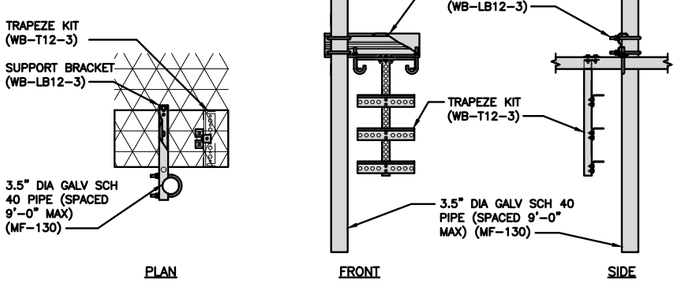
CHARLES CFIT–PF2020DSH1 FIBER TELCO ENCLOSURE	
ENCLOSURE DIMS (HxWxD)	20"x20"x9"
ENCLOSURE WEIGHT	20 lbs
MOUNTING	WALL
COMPLIANCE	TYPE 4



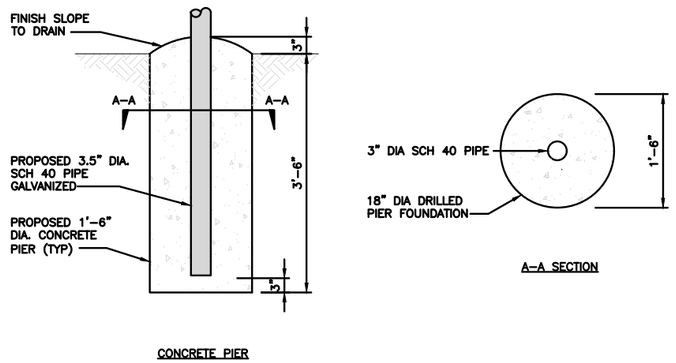
FIBER TELCO ENCLOSURE DETAIL | NO SCALE | 6

COMMSCOPE WB–K110–B WAVEGUIDE BRIDGE KIT	
DIMENSIONS (HxL)	160"x10'
WEIGHT/ VOLUME	325.0 LBS
CABLE RUN (QTY)	12

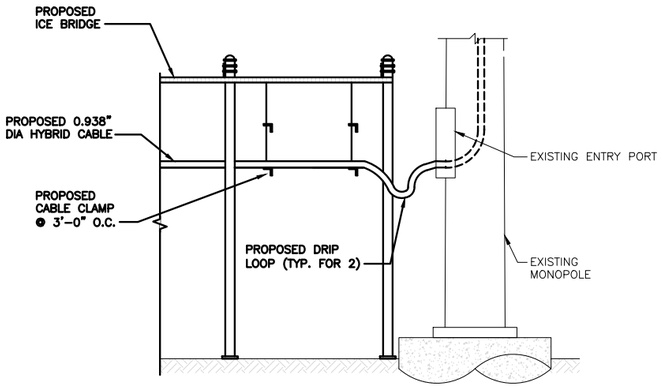
INCLUDED PRODUCTS:	WB–T12–3 TRAPEZE KIT, 3 RUNGS
	WB–LB12–3 SUPPORT BRACKET
	MF–130 DIRECT BURIAL PIPE COLUMN, 13'–4"



ICE BRIDGE DETAIL | NO SCALE | 7



TYPICAL ICE BRIDGE CONCRETE PIER DETAIL | NO SCALE | 8



HYBRID CABLE RUN | NO SCALE | 9

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

NSS NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

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

STATE OF CONNECTICUT
SHUHEI SAKANOUE
24916
LICENSED PROFESSIONAL ENGINEER
07/21/22

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

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	09/24/2021	ISSUED FOR REVIEW
B	01/08/2022	ISSUED FOR REVIEW
C	03/01/2022	ISSUED FOR REVIEW
0	03/29/2022	ISSUED FOR CONSTRUCTION
1	05/03/2022	ISSUED FOR CONSTRUCTION
2	07/21/2022	ISSUED FOR CONSTRUCTION

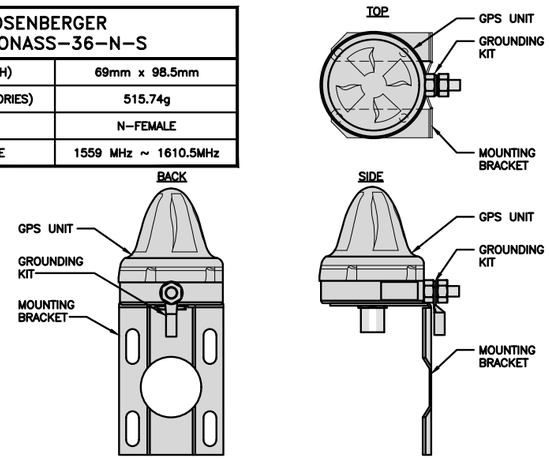
A&E PROJECT NUMBER
1097–F0001–C

DISH WIRELESS, LLC.
PROJECT INFORMATION
BOBOS00071A
79 PUTNAM PIKE
DAYVILLE, CT 06241

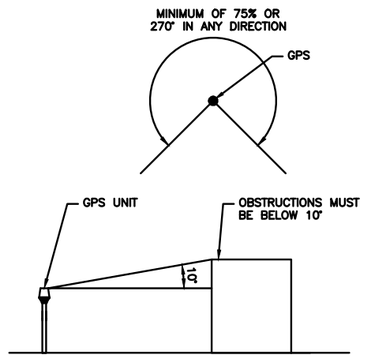
SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-4

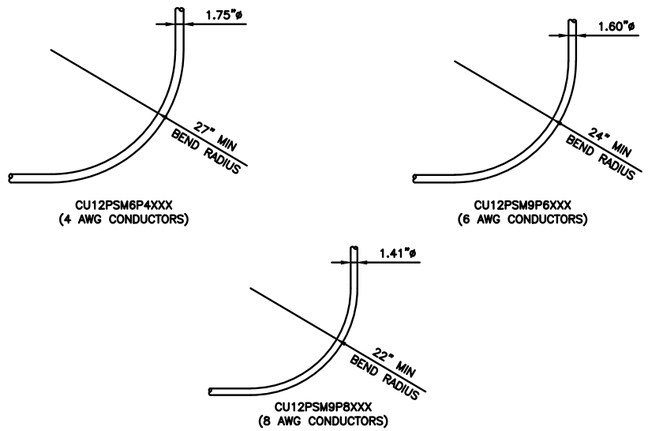
ROSENBERGER GPSGLONASS-36-N-S	
DIMENSION (DIA x H)	69mm x 98.5mm
WEIGHT (WITH ACCESSORIES)	515.74g
CONNECTOR	N-FEMALE
FREQUENCY RANGE	1559 MHz ~ 1610.5MHz



GPS ANTENNA DETAIL | NO SCALE | 1



GPS MINIMUM SKY VIEW REQUIREMENTS | NO SCALE | 2



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

NOT USED | NO SCALE | 4

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

NSS NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

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

STATE OF CONNECTICUT
SHUHEI SAKANOUE
14916
LICENSED PROFESSIONAL ENGINEER
07/21/22

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

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	09/24/2021	ISSUED FOR REVIEW
B	01/06/2022	ISSUED FOR REVIEW
C	03/01/2022	ISSUED FOR REVIEW
0	03/29/2022	ISSUED FOR CONSTRUCTION
1	05/03/2022	ISSUED FOR CONSTRUCTION
2	07/21/2022	ISSUED FOR CONSTRUCTION

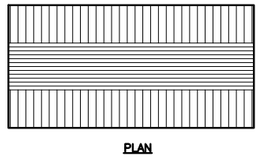
A&E PROJECT NUMBER
1097-F0001-C

DISH WIRELESS, LLC.
PROJECT INFORMATION
BOBOS00071A
79 PUTNAM PIKE
DAYVILLE, CT 06241

SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-5

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

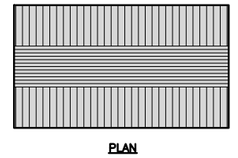


NOTES

FINAL RRH SPECIFICATIONS TO BE CONFIRMED BY GC

REMOTE RADIO HEAD DETAIL | NO SCALE | 1

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



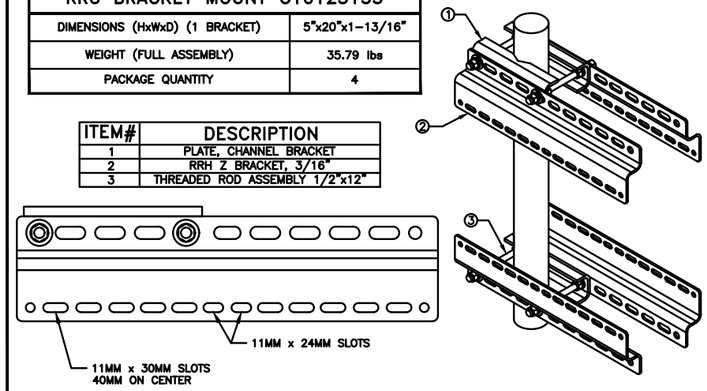
NOTES

FINAL RRH SPECIFICATIONS TO BE CONFIRMED BY GC

REMOTE RADIO HEAD DETAIL | NO SCALE | 2

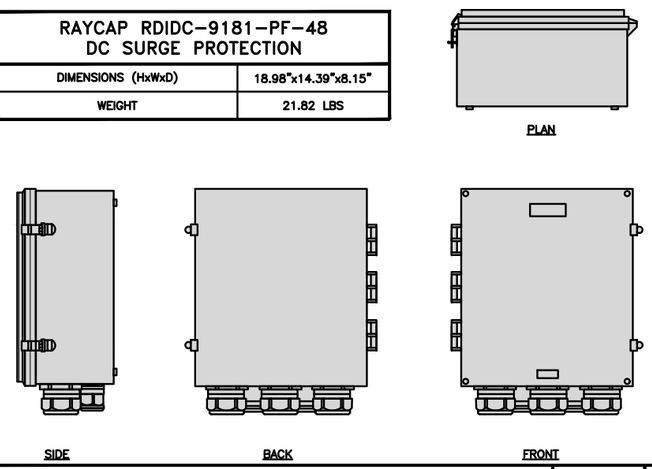
SABRE INDUSTRIES RRU BRACKET MOUNT C10123155	
DIMENSIONS (HxWxD) (1 BRACKET)	5"x20"x1-13/16"
WEIGHT (FULL ASSEMBLY)	35.79 lbs
PACKAGE QUANTITY	4

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



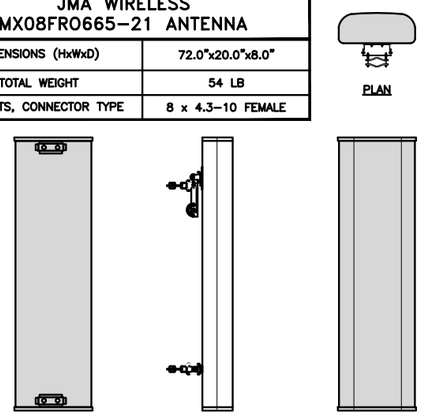
REMOTE RADIO MOUNT DETAIL | NO SCALE | 3

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



SURGE SUPPRESSION DETAIL | NO SCALE | 4

JMA WIRELESS MX08FRO665-21 ANTENNA	
DIMENSIONS (HxWxD)	72.0"x20.0"x8.0"
TOTAL WEIGHT	54 LB
RF PORTS, CONNECTOR TYPE	8 x 4.3-10 FEMALE



NOTES

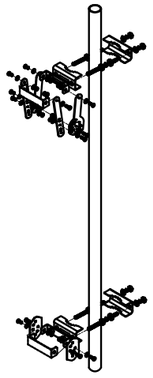
FINAL ANTENNA SPECIFICATIONS TO BE CONFIRMED BY GC

ANTENNA DETAIL | NO SCALE | 5

JMA ANTENNA MOUNT BRACKET #91900318	
TOTAL WEIGHT (WITH BRACKETS)	18 lbs (8.18 Kg)
POLE DIAMETER RANGE	2.5" TO 4.5"

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

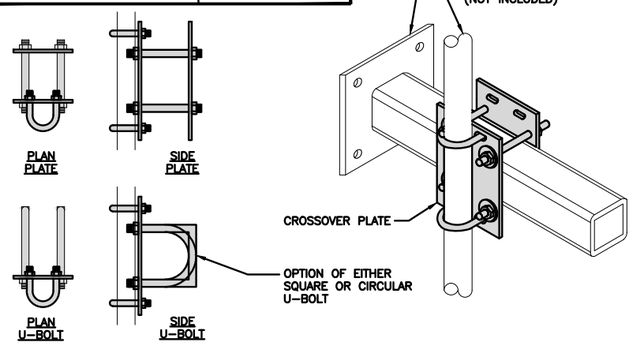
ANTENNA BRACKET NOT PART OF KIT



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

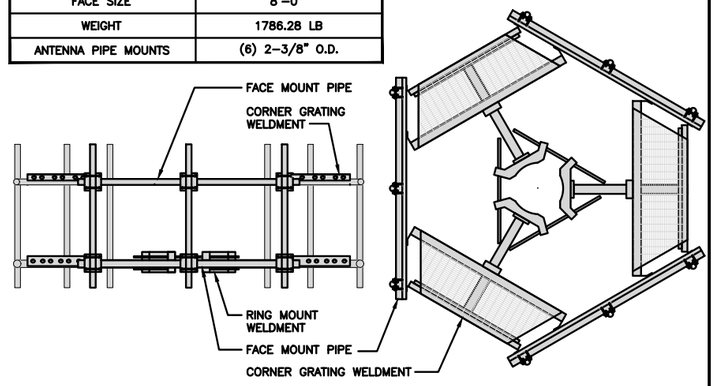
ANTENNA BRACKET DETAIL | NO SCALE | 6

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



RRH/OVP MOUNT DETAIL | NO SCALE | 7

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



ANTENNA PLATFORM DETAIL | NO SCALE | 8

NOT USED | NO SCALE | 9

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

NSS NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

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

STATE OF CONNECTICUT
SHUHEI SAKANOUE
24916
LICENSED PROFESSIONAL ENGINEER
07/21/22

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

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	09/24/2021	ISSUED FOR REVIEW
B	01/08/2022	ISSUED FOR REVIEW
C	03/01/2022	ISSUED FOR REVIEW
0	03/29/2022	ISSUED FOR CONSTRUCTION
1	05/03/2022	ISSUED FOR CONSTRUCTION
2	07/21/2022	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
1097-F0001-C

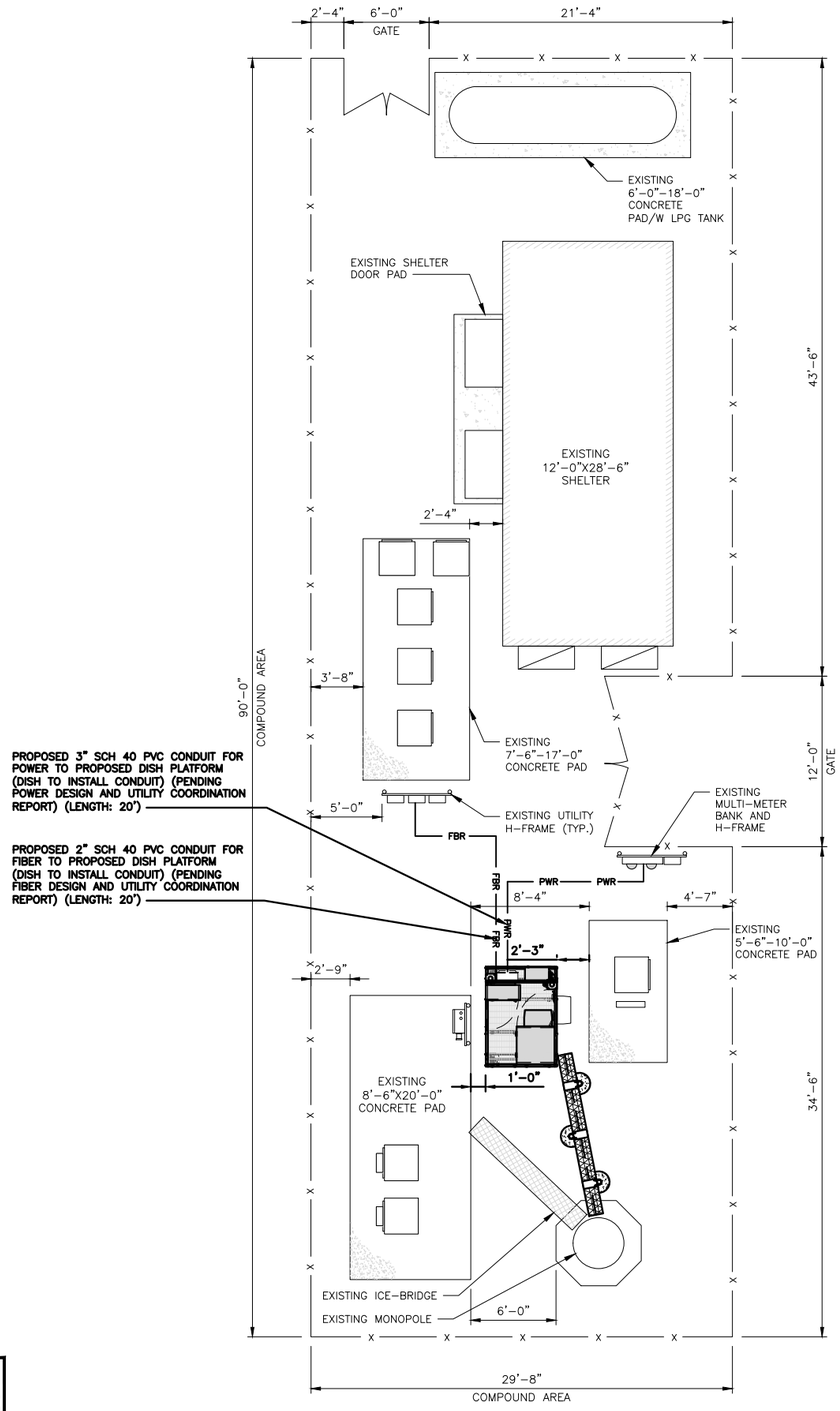
DISH WIRELESS, LLC.
PROJECT INFORMATION
BOBOS00071A
79 PUTNAM PIKE
DAYVILLE, CT 06241

SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-6

NOTES

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



UTILITY ROUTE PLAN

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

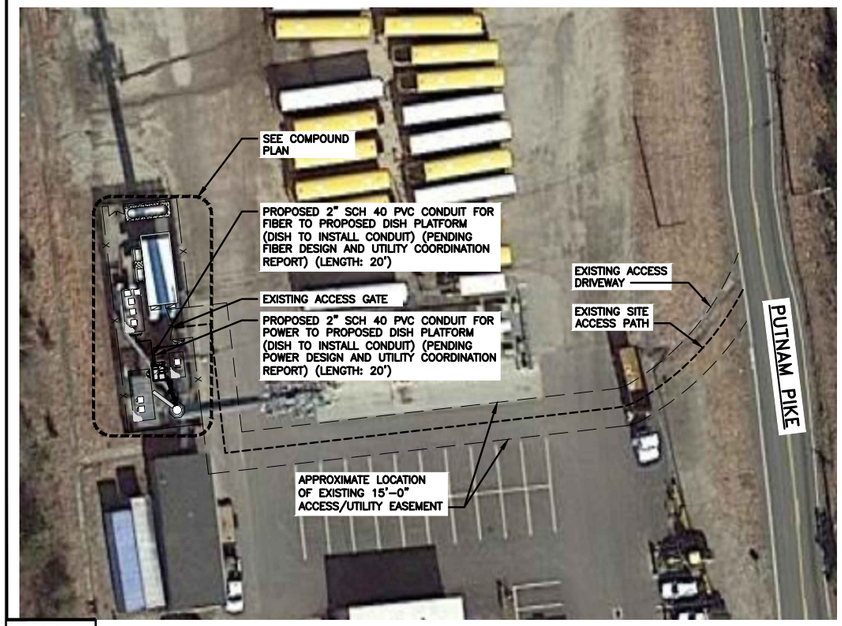
1

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

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

ELECTRICAL NOTES

2



OVERALL UTILITY ROUTE PLAN

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

3

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

NSS NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

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

STATE OF CONNECTICUT
SHUHEI SAKANOUE
14916
LICENSED PROFESSIONAL ENGINEER
07/21/22

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

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	09/24/2021	ISSUED FOR REVIEW
B	01/08/2022	ISSUED FOR REVIEW
C	03/01/2022	ISSUED FOR REVIEW
0	03/29/2022	ISSUED FOR CONSTRUCTION
1	05/03/2022	ISSUED FOR CONSTRUCTION
2	07/21/2022	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
1097-F0001-C

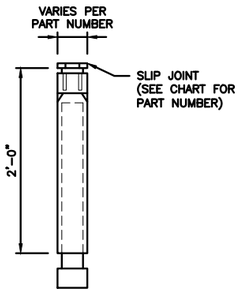
DISH WIRELESS, LLC.
PROJECT INFORMATION
BOBOS00071A
79 PUTNAM PIKE
DAYVILLE, CT 06241

SHEET TITLE
ELECTRICAL/FIBER ROUTE PLAN AND NOTES

SHEET NUMBER
E-1

CARLON EXPANSION FITTINGS

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

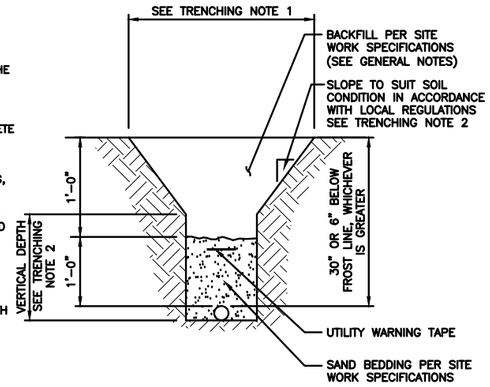


NOTE:
CONTRACTOR TO INSTALL EXPANSION FITTING SLIP JOINT AT METER CENTER CONDUIT TERMINATION, AS PER LOCAL UTILITY POLICY, ORDINANCE AND/OR SPECIFIED REQUIREMENT.

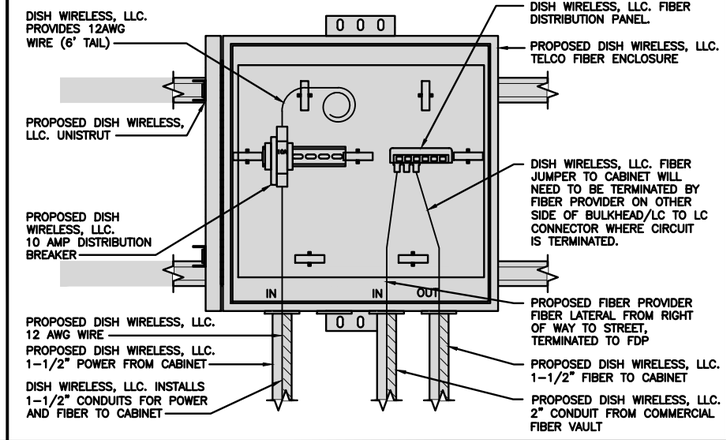
EXPANSION JOINT DETAIL | NO SCALE | 1

TRENCHING NOTES

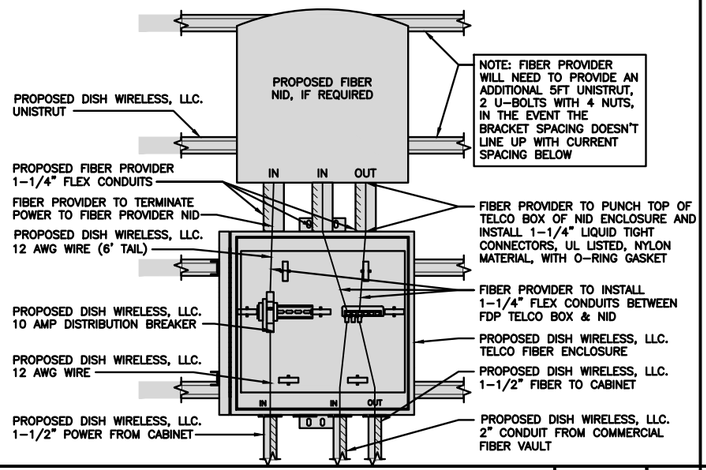
1. CONTRACTOR SHALL RESTORE THE TRENCH TO ITS ORIGINAL CONDITIONS BY EITHER SEEDING OR SODDING GRASS AREAS, OR REPLACING ASPHALT OR CONCRETE AREAS TO ITS ORIGINAL CROSS SECTION.
2. TRENCHING SAFETY; INCLUDING, BUT NOT LIMITED TO SOIL CLASSIFICATION, SLOPING, AND SHORING, SHALL BE GOVERNED BY THE CURRENT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



TYPICAL UNDERGROUND TRENCH DETAIL | NO SCALE | 2



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



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

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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

NSS NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

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

STATE OF CONNECTICUT
SHUHEI SAKANOUE
34916
LICENSED PROFESSIONAL ENGINEER
07/21/22

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

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

SUBMITTALS

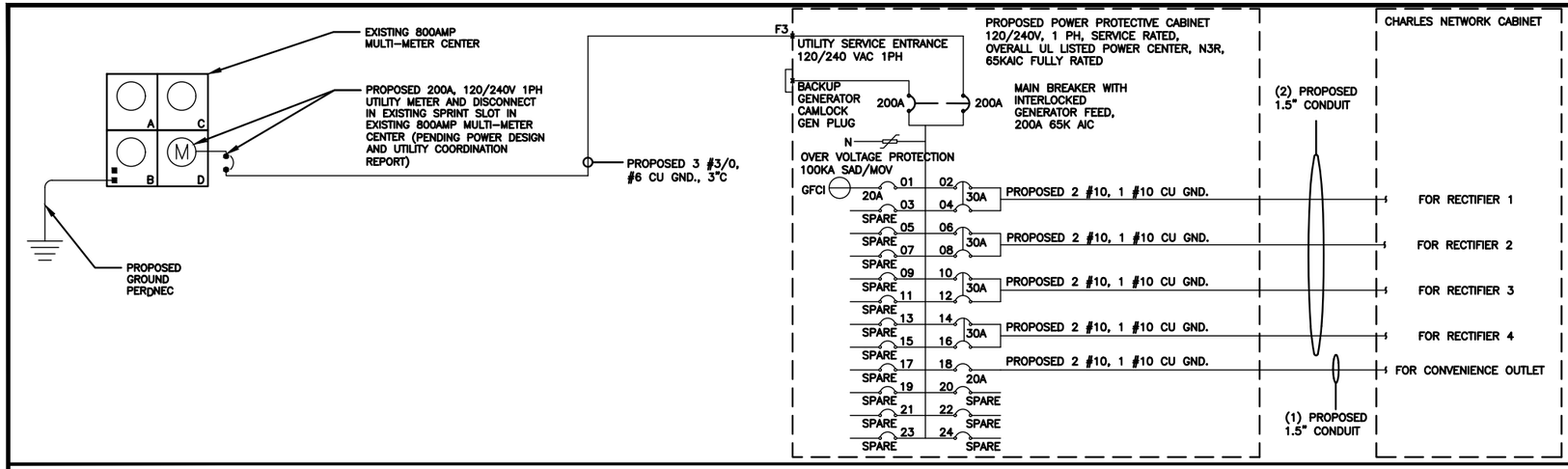
REV	DATE	DESCRIPTION
A	09/24/2021	ISSUED FOR REVIEW
B	01/06/2022	ISSUED FOR REVIEW
C	03/01/2022	ISSUED FOR REVIEW
0	03/29/2022	ISSUED FOR CONSTRUCTION
1	05/03/2022	ISSUED FOR CONSTRUCTION
2	07/21/2022	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
1097-F0001-C

DISH WIRELESS, LLC.
PROJECT INFORMATION
BOBOS00071A
79 PUTNAM PIKE
DAYVILLE, CT 06241

SHEET TITLE
ELECTRICAL DETAILS

SHEET NUMBER
E-2



NOTES

THERE ARE A TOTAL OF (10) CURRENT CARRYING CONDUCTORS IN A SINGLE CONDUIT. ADJUSTABLE FACTOR OF 50% PER NEC TABLE 310.15(B)(3)(a) SHALL APPLY.

#10 FOR 15A/1P BREAKER: 0.5 x 40A = 15.0A
#8 FOR 20A-25A/2P BREAKER: 0.5 x 55A = 27.5A

CONDUIT SIZING: ASSUME 1.5" EMT
AT 40% FILL PER NEC 358, TABLE 4 – 0.814A SQ. IN AREA

WIRES: USING THWN-2, CU. (INCLUDING 3 GROUND WIRES)

#6	– 0.0507 SQ. IN X 8 = 0.4056 SQ. IN
#8	– 0.0366 SQ. IN X 2 = 0.0732 SQ. IN
#10	– 0.0211 SQ. IN X 4 = 0.0844 SQ. IN <GROUND
#12	– 0.0133 SQ. IN X 1 = 0.0133 SQ. IN <GROUND
TOTAL	= 0.5765 SQ. IN

1.5" EMT CONDUIT IS ADEQUATE TO HANDLE THE TOTAL OR (15) WIRES, INCLUDING GROUND WIRE, AS INDICATED ABOVE.

CONDUIT SIZING: ASSUME 3.0" SCH 40 PVC
AT 40% FILL PER NEC 352,TABLE 4 – 1.216A SQ. IN AREA

WIRES: USING THHN, CU. (INCLUDING 2 GROUND WIRES)

#3/0	– 0.1318 SQ. IN X 3 = 0.3954 SQ. IN
#2	– 0.0521 SQ. IN X 1 = 0.0521 SQ. IN
TOTAL	= 0.4475 SQ. IN

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

(CHARLES ABB GE INFINITY DC PLANT) WITH MULTI-METER CENTER 120V240V 1PH SOURCE

NO SCALE | 1

PROPOSED PANEL SCHEDULE

LOAD SERVED	VOLT AMPS (WATTS) L1	VOLT AMPS (WATTS) L2	TRIP	CKT #	PHASE	CKT #	TRIP	VOLT AMPS (WATTS) L1	VOLT AMPS (WATTS) L2	LOAD SERVED
–SPARE–				1	A	2		2880		ABB/GE INFINITY RECTIFIER 1
–SPARE–				3	B	4	30A		2880	
–SPARE–				5	A	6		2880		ABB/GE INFINITY RECTIFIER 2
–SPARE–				7	B	8	30A		2880	
–SPARE–				9	A	10		2880		ABB/GE INFINITY RECTIFIER 3
–SPARE–				11	B	12	30A		2880	
–SPARE–				13	A	14		2880		ABB/GE INFINITY RECTIFIER 4
–SPARE–				15	B	16	30A		2880	
–SPARE–				17	A	18	20A	1920		CHARLES GFCI OUTLET
–SPARE–				19	B	20				–SPARE–
–SPARE–				21	A	22				–SPARE–
–SPARE–				23	B	24				–SPARE–
VOLT AMPS								13440	11520	

200A MCB, 1ϕ, 3W, 120/240V	L1	L2	
MB RATING: 65,000 AIC	13440	11520	VOLT AMPS
	140	96	AMPS
	140		MAX AMPS
	175		MAX 125%

PANEL SCHEDULE
(CHARLES ABB GE INFINITY DC PLANT) WITH MULTI-METER CENTER 120V240V 1PH SOURCE

NO SCALE | 2

NOT USED

NO SCALE | 3

FAULT CALCULATIONS

NO SCALE | 4

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

NSS NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

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

STATE OF CONNECTICUT
SHUHEI SAKANOUE
24916
LICENSED PROFESSIONAL ENGINEER
07/21/22

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

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

SUBMITTALS

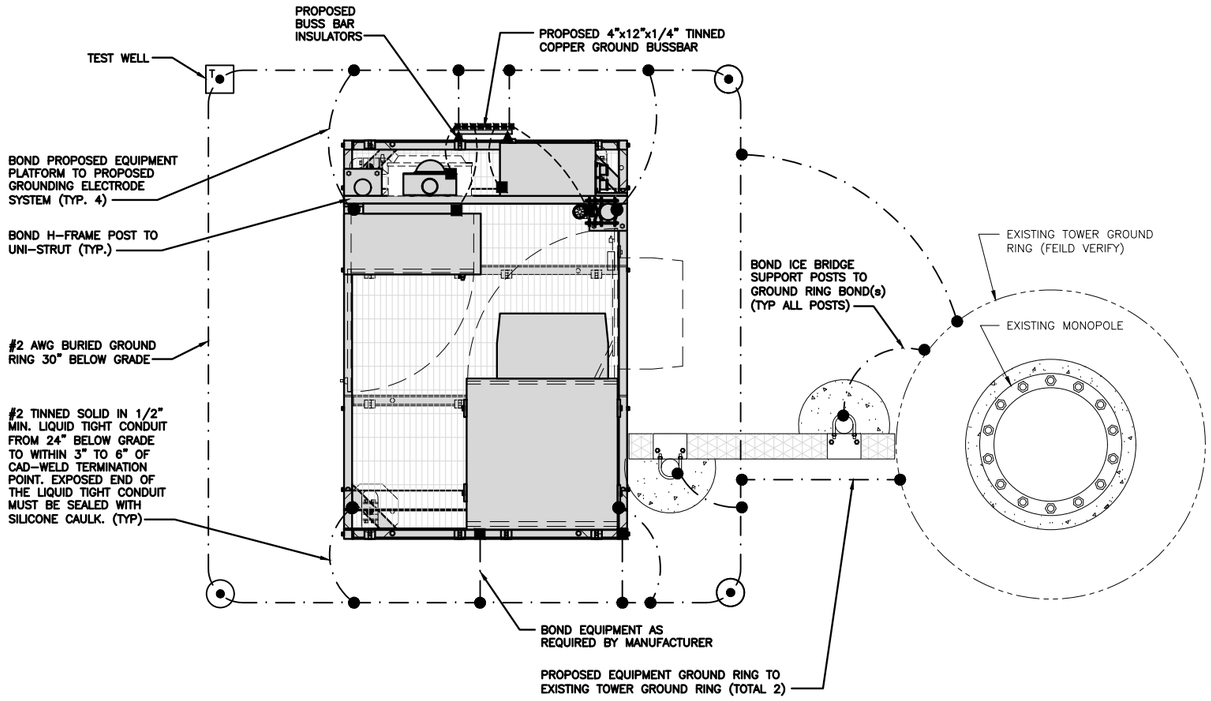
REV	DATE	DESCRIPTION
A	09/24/2021	ISSUED FOR REVIEW
B	01/06/2022	ISSUED FOR REVIEW
C	03/01/2022	ISSUED FOR REVIEW
0	03/29/2022	ISSUED FOR CONSTRUCTION
1	05/03/2022	ISSUED FOR CONSTRUCTION
2	07/21/2022	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
1097-F0001-C

DISH WIRELESS, LLC.
PROJECT INFORMATION
BOBOS00071A
79 PUTNAM PIKE
DAYVILLE, CT 06241

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

SHEET NUMBER
E-3

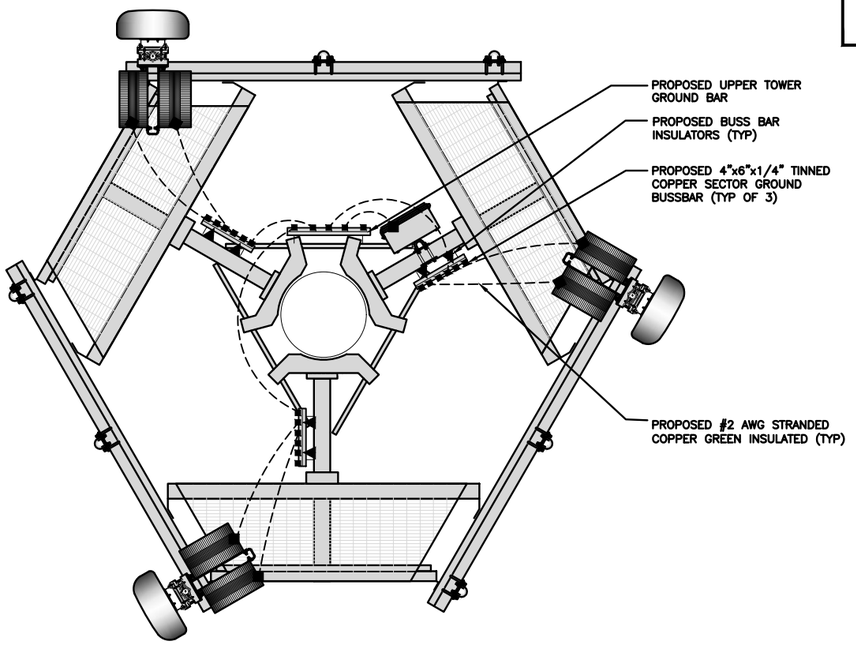


TYPICAL EQUIPMENT GROUNDING PLAN

NO SCALE | 1

NOTES

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



TYPICAL ANTENNA GROUNDING PLAN

NO SCALE | 2

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

GROUNDING LEGEND

1. GROUNDING IS SHOWN DIAGRAMMATICALLY ONLY.
2. CONTRACTOR SHALL GROUND ALL EQUIPMENT AS A COMPLETE SYSTEM. GROUNDING SHALL BE IN COMPLIANCE WITH NEC SECTION 250 AND DISH WIRELESS, 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 GROUND RING: #2 AWG SOLID COPPER, BURIED AT A DEPTH OF AT LEAST 30 INCHES BELOW GRADE, OR 6 INCHES BELOW THE FROST LINE AND APPROXIMATELY 24 INCHES FROM THE EXTERIOR WALL OR FOOTING.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

REFER TO DISH WIRELESS, LLC. GROUNDING NOTES.

GROUNDING KEY NOTES

NO SCALE | 3

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

NSS NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

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

STATE OF CONNECTICUT
SHUHEI SAKANOUE
14916
LICENSED PROFESSIONAL ENGINEER
07/21/22

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

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	09/24/2021	ISSUED FOR REVIEW
B	01/06/2022	ISSUED FOR REVIEW
C	03/01/2022	ISSUED FOR REVIEW
0	03/29/2022	ISSUED FOR CONSTRUCTION
1	05/03/2022	ISSUED FOR CONSTRUCTION
2	07/21/2022	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
1097-F0001-C

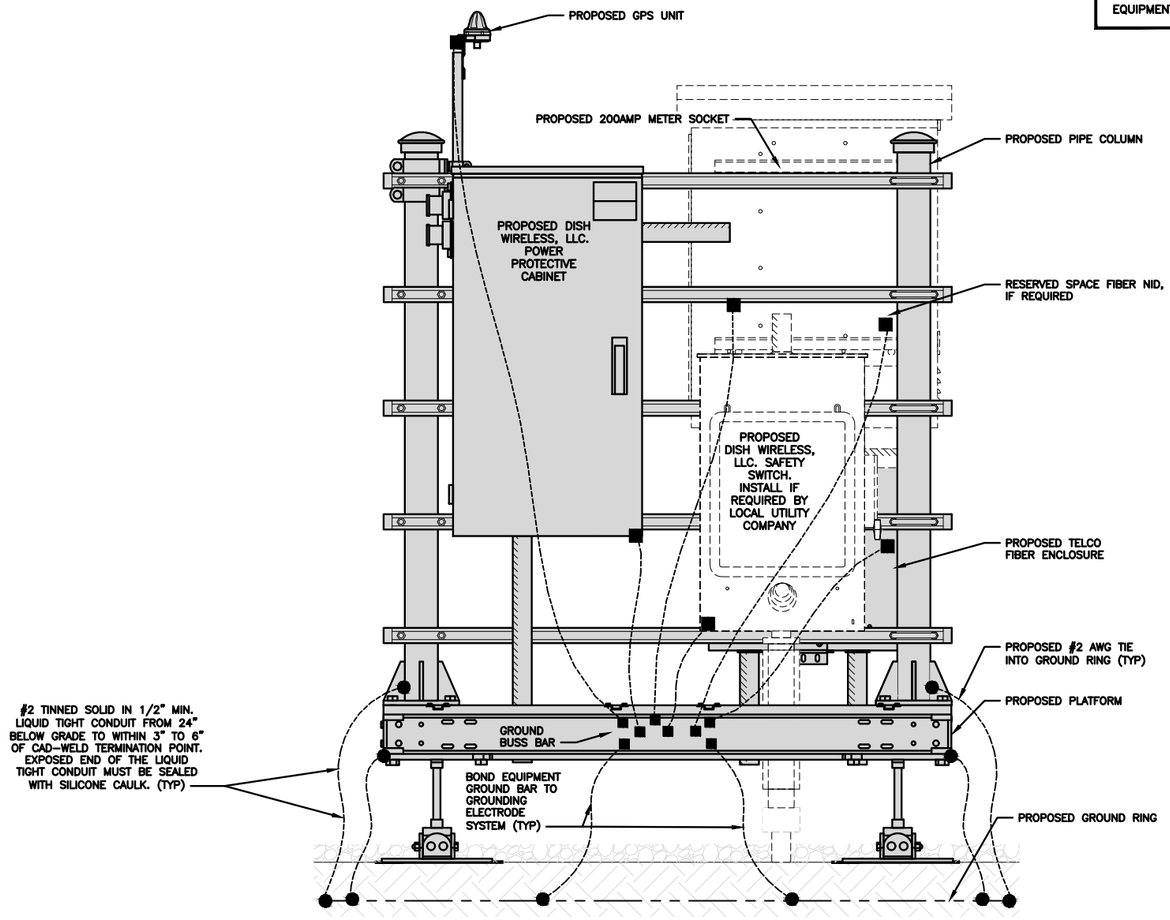
DISH WIRELESS, LLC.
PROJECT INFORMATION
BOBOS00071A
79 PUTNAM PIKE
DAYVILLE, CT 06241

SHEET TITLE
GROUNDING PLANS AND NOTES

SHEET NUMBER
G-1

NOTES

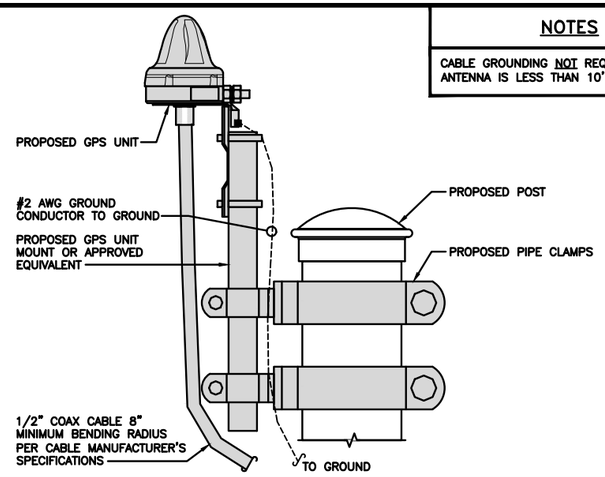
EQUIPMENT CABINET OMITTED FOR CLARITY



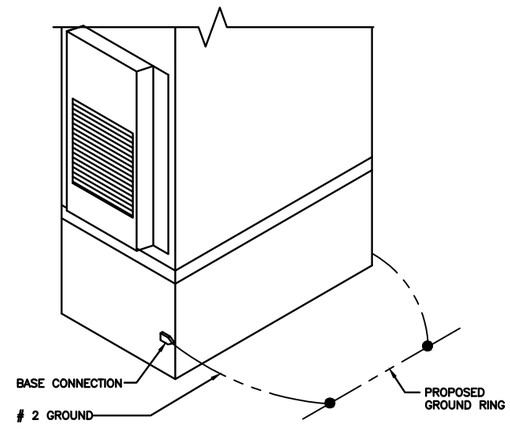
H-FRAME GROUNDING DETAIL | NO SCALE | 1

NOTES

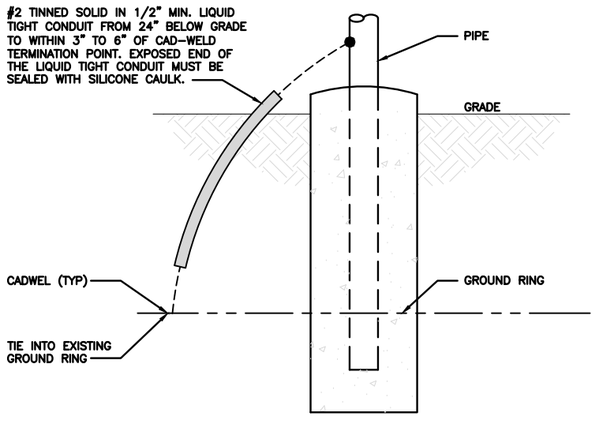
CABLE GROUNDING NOT REQUIRED WHEN ANTENNA IS LESS THAN 10' FROM CABINET



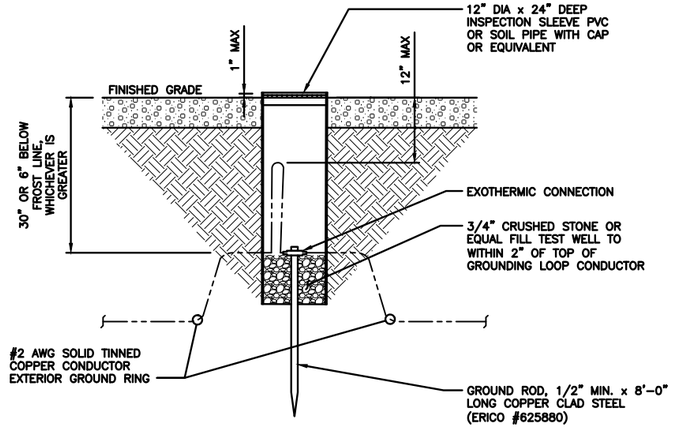
TYPICAL GPS UNIT GROUNDING | NO SCALE | 2



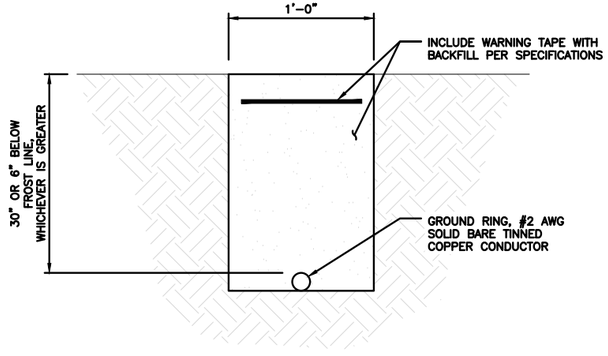
OUTDOOR CABINET GROUNDING | NO SCALE | 3



TRANSITIONING GROUND DETAIL | NO SCALE | 4



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



TYPICAL GROUND RING TRENCH | NO SCALE | 6

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

NSS NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

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

STATE OF CONNECTICUT
SHUHEI SAKANOUE
24916
LICENSED PROFESSIONAL ENGINEER
07/21/22

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

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	09/24/2021	ISSUED FOR REVIEW
B	01/08/2022	ISSUED FOR REVIEW
C	03/01/2022	ISSUED FOR REVIEW
0	03/29/2022	ISSUED FOR CONSTRUCTION
1	05/03/2022	ISSUED FOR CONSTRUCTION
2	07/21/2022	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
1097-F0001-C

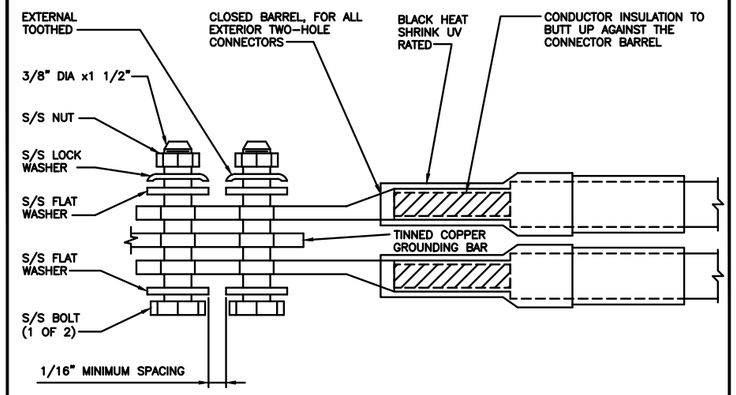
DISH WIRELESS, LLC.
PROJECT INFORMATION
BOBOS00071A
79 PUTNAM PIKE
DAYVILLE, CT 06241

SHEET TITLE
GROUNDING DETAILS

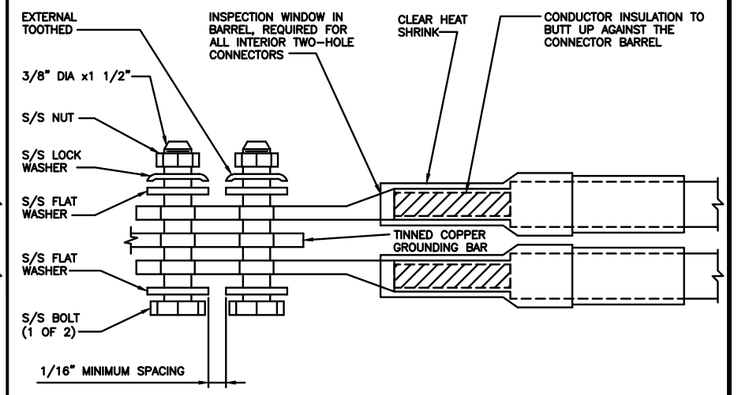
SHEET NUMBER
G-2

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

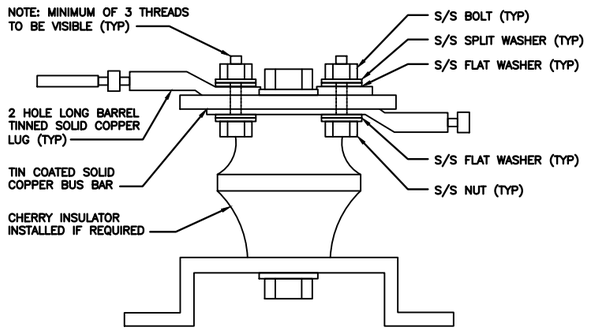
TYPICAL GROUNDING NOTES | NO SCALE | 1



TYPICAL EXTERIOR TWO HOLE LUG | NO SCALE | 2



TYPICAL INTERIOR TWO HOLE LUG | NO SCALE | 3



LUG DETAIL | NO SCALE | 4

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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

NSS NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

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

STATE OF CONNECTICUT
SHUHEI SAKANOUE
24916
LICENSED PROFESSIONAL ENGINEER
07/21/22

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

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	09/24/2021	ISSUED FOR REVIEW
B	01/06/2022	ISSUED FOR REVIEW
C	03/01/2022	ISSUED FOR REVIEW
0	03/29/2022	ISSUED FOR CONSTRUCTION
1	05/03/2022	ISSUED FOR CONSTRUCTION
2	07/21/2022	ISSUED FOR CONSTRUCTION

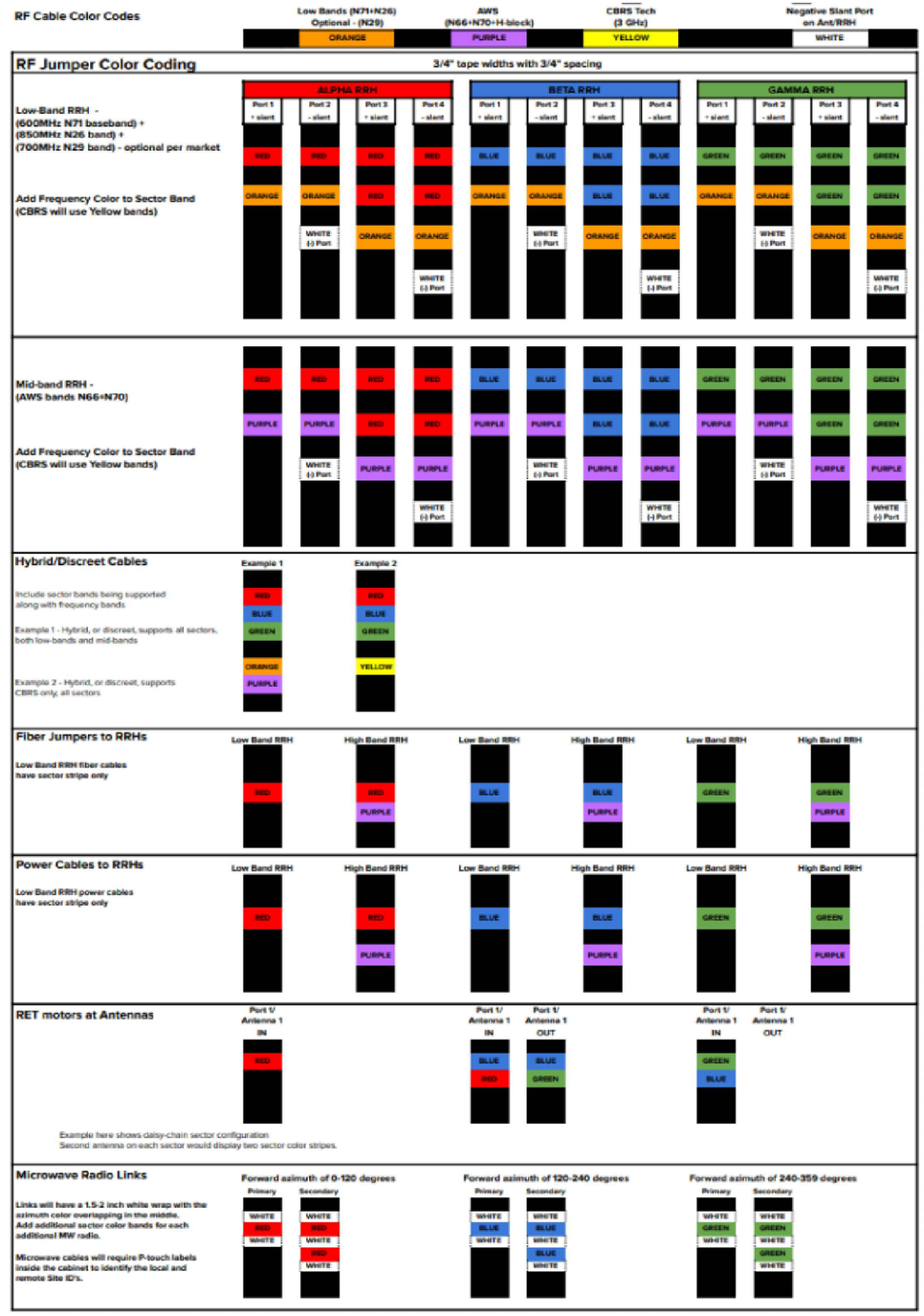
A&E PROJECT NUMBER
1097-F0001-C

DISH WIRELESS, LLC.
PROJECT INFORMATION
BOBOS00071A
79 PUTNAM PIKE
DAYVILLE, CT 06241

SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER
G-3

RF COLOR CODING



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

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

NSS NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

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

STATE OF CONNECTICUT
SHUHEI SAKANOUE
24916
LICENSED PROFESSIONAL ENGINEER
07/21/22

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

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	09/24/2021	ISSUED FOR REVIEW
B	01/08/2022	ISSUED FOR REVIEW
C	03/01/2022	ISSUED FOR REVIEW
0	03/29/2022	ISSUED FOR CONSTRUCTION
1	05/03/2022	ISSUED FOR CONSTRUCTION
2	07/21/2022	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

1097–F0001–C

DISH WIRELESS, LLC.
PROJECT INFORMATION

BOBOS00071A
79 PUTNAM PIKE
DAYVILLE, CT 06241

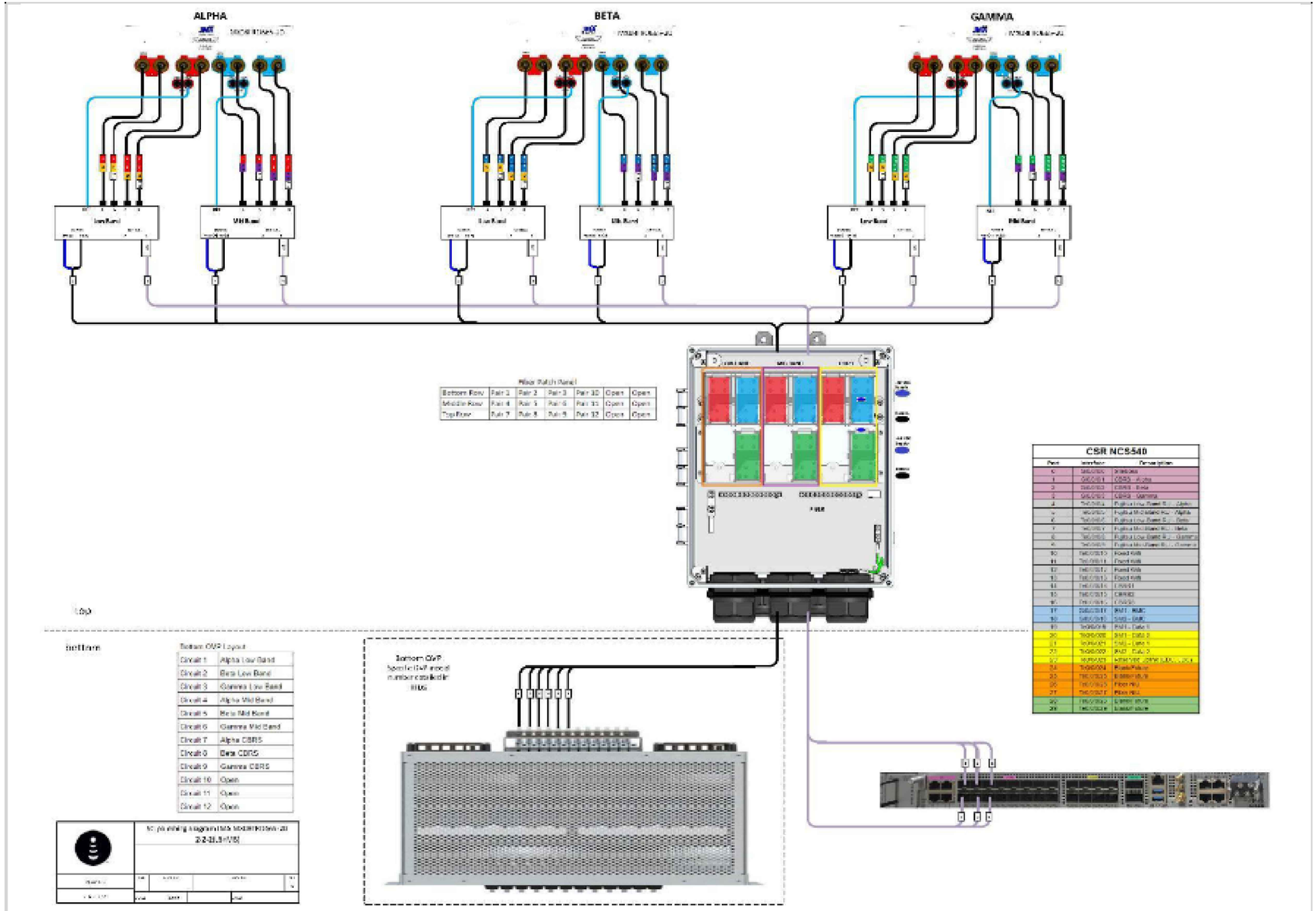
SHEET TITLE

RF
CABLE COLOR CODES

SHEET NUMBER

RF-1

PLUMBING DIAGRAM



dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

NSS NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

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

STATE OF CONNECTICUT
SHUHEI SAKANOUE
24916
LICENSED PROFESSIONAL ENGINEER
07/21/22

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

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	09/24/2021	ISSUED FOR REVIEW
B	01/06/2022	ISSUED FOR REVIEW
C	03/01/2022	ISSUED FOR REVIEW
0	03/29/2022	ISSUED FOR CONSTRUCTION
1	05/03/2022	ISSUED FOR CONSTRUCTION
2	07/21/2022	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
1097-F0001-C

DISH WIRELESS, LLC.
PROJECT INFORMATION
BOBOS00071A
79 PUTNAM PIKE
DAYVILLE, CT 06241

SHEET TITLE
RF
PLUMBING DIAGRAM

SHEET NUMBER
RF-2

EXOTHERMIC CONNECTION

MECHANICAL CONNECTION

BUSS BAR INSULATOR

CHEMICAL ELECTROLYTIC GROUNDING SYSTEM

TEST CHEMICAL ELECTROLYTIC GROUNDING SYSTEM

EXOTHERMIC WITH INSPECTION SLEEVE

GROUNDING BAR

GROUND ROD

TEST GROUND ROD WITH INSPECTION SLEEVE

SINGLE POLE SWITCH

DUPLEX RECEPTACLE

DUPLEX GFCI RECEPTACLE

FLUORESCENT LIGHTING FIXTURE
(2) TWO LAMPS 48–T8

SMOKE DETECTION (DC)

EMERGENCY LIGHTING (DC)

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

CHAIN LINK FENCE

WOOD/WROUGHT IRON FENCE

WALL STRUCTURE

LEASE AREA

PROPERTY LINE (PL)

SETBACKS

ICE BRIDGE

CABLE TRAY

WATER LINE

UNDERGROUND POWER

UNDERGROUND TELCO

OVERHEAD POWER

OVERHEAD TELCO

UNDERGROUND TELCO/POWER

ABOVE GROUND POWER

ABOVE GROUND TELCO

ABOVE GROUND TELCO/POWER

WORKPOINT

SECTION REFERENCE

DETAIL REFERENCE

LEGEND

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

ABBREVIATIONS

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

NSS NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

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

STATE OF CONNECTICUT
SHUHEI SAKANOUE
34916
LICENSED PROFESSIONAL ENGINEER
07/21/22

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

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	09/24/2021	ISSUED FOR REVIEW
B	01/08/2022	ISSUED FOR REVIEW
C	03/01/2022	ISSUED FOR REVIEW
0	03/29/2022	ISSUED FOR CONSTRUCTION
1	05/03/2022	ISSUED FOR CONSTRUCTION
2	07/21/2022	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

1097–F0001–C

DISH WIRELESS, LLC.
PROJECT INFORMATION

BOBOS00071A
79 PUTNAM PIKE
DAYVILLE, CT 06241

SHEET TITLE

LEGEND AND ABBREVIATIONS

SHEET NUMBER

GN-1

SITE ACTIVITY REQUIREMENTS:

1. NOTICE TO PROCEED – NO WORK SHALL COMMENCE PRIOR TO CONTRACTOR RECEIVING A WRITTEN NOTICE TO PROCEED (NTP) AND THE ISSUANCE OF A PURCHASE ORDER. PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE DISH WIRELESS, LLC. AND TOWER OWNER NOC & THE DISH WIRELESS, LLC. AND TOWER OWNER CONSTRUCTION MANAGER.

2. "LOOK UP" – DISH WIRELESS, LLC. 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, LLC. AND DISH WIRELESS, LLC. 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, LLC. 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, LLC. AND TOWER OWNER INSTALLATION STANDARDS FOR CONSTRUCTION ACTIVITIES ON DISH WIRELESS, LLC. 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, LLC. 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, LLC. 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, LLC.

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, LLC. 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

NSS NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

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

STATE OF CONNECTICUT
SHUHEI SAKANOUE
24916
LICENSED PROFESSIONAL ENGINEER
07/21/22

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

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	09/24/2021	ISSUED FOR REVIEW
B	01/06/2022	ISSUED FOR REVIEW
C	03/01/2022	ISSUED FOR REVIEW
0	03/29/2022	ISSUED FOR CONSTRUCTION
1	05/03/2022	ISSUED FOR CONSTRUCTION
2	07/21/2022	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

1097–F0001–C

DISH WIRELESS, LLC.
PROJECT INFORMATION

BOBOS00071A
79 PUTNAM PIKE
DAYVILLE, CT 06241

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-2

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

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

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

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

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

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

#4 BARS AND SMALLER 40 ksi

#5 BARS AND LARGER 60 ksi

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

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

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

ELECTRICAL INSTALLATION NOTES:

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

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

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

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

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

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

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

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

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

8. TIE WRAPS ARE NOT ALLOWED.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

29. INSTALL LAMICOID LABEL ON THE METER CENTER TO SHOW "DISH WIRELESS, LLC.".

30. 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

NSS NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

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

STATE OF CONNECTICUT
SHUHEI SAKANOUE
14916
LICENSED PROFESSIONAL ENGINEER
07/21/22

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

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	09/24/2021	ISSUED FOR REVIEW
B	01/06/2022	ISSUED FOR REVIEW
C	03/01/2022	ISSUED FOR REVIEW
0	03/29/2022	ISSUED FOR CONSTRUCTION
1	05/03/2022	ISSUED FOR CONSTRUCTION
2	07/21/2022	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
1097-F0001-C

DISH WIRELESS, LLC.
PROJECT INFORMATION
BOBOS00071A
79 PUTNAM PIKE
DAYVILLE, CT 06241

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

NSS NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

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

STATE OF CONNECTICUT
SHUHEI SAKANOUE
34916
LICENSED PROFESSIONAL ENGINEER
07/21/22

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

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	09/24/2021	ISSUED FOR REVIEW
B	01/06/2022	ISSUED FOR REVIEW
C	03/01/2022	ISSUED FOR REVIEW
0	03/29/2022	ISSUED FOR CONSTRUCTION
1	05/03/2022	ISSUED FOR CONSTRUCTION
2	07/21/2022	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

1097-F0001-C

DISH WIRELESS, LLC.
PROJECT INFORMATION

BOBOS00071A
79 PUTNAM PIKE
DAYVILLE, CT 06241

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-4

Exhibit D

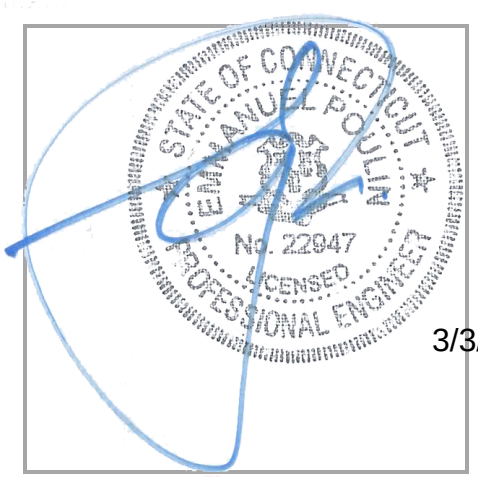
Structural Analysis Report

TOWER STRUCTURAL ANALYSIS REPORT

March 3, 2022

Dish Site Name	BOBOS00071A
Infinigy Job Number	1197-F0001-B
Client	NSS
Carrier	Dish
Site Location	79 Putnam Pike Dayville, CT 06241 Windham County 41° 50' 50.6" N NAD83 71° 52' 44.3" W NAD83
Structure Type	Monopole
Structure Height	150.0 ft
Structural Usage Ratio	**73.8%**
Overall Result	**Pass**

The enclosed tower analysis has been performed in accordance with the 2018 Connecticut State Building Code based on an ultimate 3-second gust wind speed of 121 mph. The evaluation criteria and applicable codes are presented in the next section of this report.



3/3/22

Emmanuel Poulin, P.E. | VP of Structural Engineering
structural@infinigy.com
Connecticut P.E. License Number: 22947
AJM

CONTENTS

1. INTRODUCTION

Infinigy Engineering has been requested to perform a structural analysis on the existing monopole tower. All referenced supporting documents have been obtained from the client and are assumed to be accurate and applicable to this site. The structure was analyzed using TNX version 8.1.1.0 analysis software.

2. DESIGN/ANALYSIS PARAMETERS

Wind Speed	121 mph (3-Second Gust)
Wind Speed w/ ice	50 mph (3-Second Gust) w/ 1.0" ice
Code / Standard	TIA-222-H
Adopted Code	2018 Connecticut State Building Code / 2015 IBC
Risk Category	II
Exposure Category	C
Topographic Category	1
Calculated Crest Height	0 ft.
Seismic Spectral Response	S_s = 0.184 g / S_1 = 0.055 g
Live Load Wind Speed	60 mph
Seismic Soil Class	D-Stiff Soil (Assumed)

3. PROPOSED LOADING CONFIGURATION

Mount Center (ft)	RAD Center (ft)	Qty.	Appurtenance	Mount Type	Coax & Lines	Carrier
140.0	140.0	3	JMA WIRELESS MX08FRO665-21	8 ft Platform	(1) Hybrid	Dish
		3	FUJITSU TA08025-B605			
		3	FUJITSU TA08025-B604			
		1	RAYCAP RDIDC-9181-PF-48			

4. OTHER CONSIDERED LOADING

Mount Center (ft)	RAD Center (ft)	Qty.	Appurtenance	Mount Type	Coax & Lines	Carrier
150.0	153.0	2	4' x 3" DIA Omni	(3) 12 ft Sector Mount	(3) 1-5/8 (2) 7/8	T-Mobile
	150.0	3	APX16DWV-16DWVS-E-A20			
		3	APXVAALL24-43			
		3	AIR6449			
		3	4449 B5/B12			
		3	4460 B25+B66			
130.0	130.0	3	7770.00	13 ft Platform	(12) 1-5/8 (1) Fiber (2) DC	AT&T
		6	OPA-65R-LCUU-H8			
		6	LPG21401 TMA			
		6	LGP21901 Diplexer			
		3	RRUS-11			
		3	RRUS-12			
		6	RRUS-32			
		3	A2			
		3	DC6-48-60-18-8F Surge			
120.0	124.0	2	4' x 3" DIA Omni	(2) 2 ft Side Arm Mount (2) 6 ft Side Arm Mount	(2) 1/2	--
130.0	130.0	6	X7C-FRO-660	13 ft Platform	(2) 1-5/8	Verizon
		6	HBXX-6517DS			
		3	RRH2x40-07-U			
		3	RRH2x40-AWS			
		3	RRH2x60-PCS			
		2	DB-T1-6Z-8AB-0Z			

5. SUPPORTING DOCUMENTATION

Construction Drawings	Infinigy Engineering, Site ID: BOBOS00071A, dated September 24, 2021
Dish Proposed Loading	RFDS, Site ID: BOBOS00071A Revision 1, dated February 25, 2022
Tower Manufacturer Drawings	Malouf Engineering International, MEI Project ID: CT01125M-08V2, dated October 8, 2005
Structural Analysis Report	Transcend Wireless, T-Mobile Site#: CT11396B – Anchor, dated August 19, 2021

6. RESULTS

Structural Components	Capacity	Pass/Fail
Pole	70.9%	Pass
Anchor Bolts	50.8%	Pass
Base Plate	61.3%	Pass
Soil Interaction	59.8%	Pass
Structural Foundation	73.8%	Pass
STRUCTURE RATING =	**73.8%**	**Pass**

6.1 DEFLECTION, TWIST, AND SWAY

Antenna Elevation (ft)	Deflection (in)	Sway (°)	Twist (°)
140.0	8.199	0.5504	0.0008

***Per ANSI/TIA-222-H Section 2.8.2 maximum serviceability structural deflection limit is 3% of structure height.**
***Per ANSI/TIA-222-H Section 2.8.2 maximum serviceability structural twist and sway limit is 4 degrees.**
***Per ANSI/TIA-222-H Section 2.8.3 deflection, Twist, and sway values were calculated using a basic 3-second gust wind speed of 60 mph.**
***It is the responsibility of the client to ensure their proposed and/or existing equipment will meet ANSI/TIA-222-H Annex D or other appropriate microwave signal degradation limits based on the provided values above.**

7. RECOMMENDATIONS

Infinigy recommends installing Dish's proposed equipment loading configuration on the mount at 140.0 ft on this structure. The installation shall be performed in accordance with the construction documents issued for this site.

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

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

8. ASSUMPTIONS

The structure, its foundation system and related structures were built and maintained in accordance with the manufacturer's specifications and instructions.
The structure condition is essentially as erected and does not have corrosion, damages or defects that would affect its structural integrity. The structure is plumb and all members and their connections are sound and can fully develop their structural capacities.
The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in the loading configuration tables.
Some of the antennas and mounts used in the structure model are similar in size and weight to the actual appurtenances mounted on the structure.
Steel grades have been assumed as follows, unless noted otherwise: Channel, Solid Round, Angle, Plate — ASTM A36 HSS (Rectangular) — ASTM A500-B GR 46 HSS (Circular) — ASTM A500-B GR 42 Pipe — ASTM A53-B GR 35 Connection Bolts — ASTM A325 U-Bolts — ASTM A307 Pole — A36M-45 Anchor Bolts — A687 N Base Plate — A36M-42
All bolted connections are pretensioned in accordance with Table 8.2 of the RCSC 2014 Standard.
Geotechnical soil parameters have been assumed as follows, unless noted otherwise: Ultimate Gross Bearing Capacity is 1 ksf STP Blow Count is 10

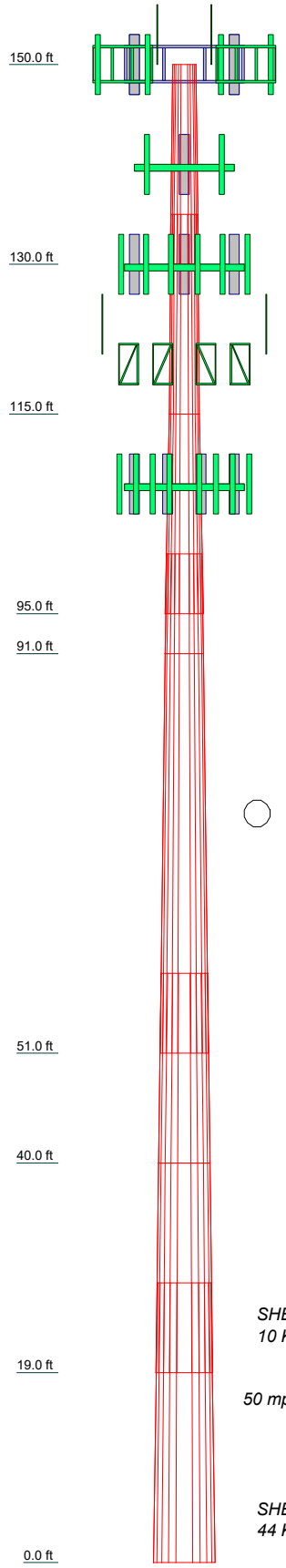
9. LIABILITY WAIVER AND LIMITATIONS

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

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

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

Section	1	2	3	4	5	6	7	8
Length (ft)	20.00	20.00	20.00	10.00	40.00	19.00	21.00	28.00
Number of Sides	12	12	12	12	12	12	12	12
Thickness (in)	0.2500	0.2500	0.3130	0.3130	0.3750	0.3750	0.4380	0.4380
Socket Length (ft)	5.00		6.00		8.00		9.00	
Top Dia (in)	27.8130	32.1880	36.6880	42.0120	45.8130	55.5126	61.6880	64.7046
Bot Dia (in)	34.3130	36.6880	45.1880	45.8130	58.8750	61.6880	68.5000	73.8130
Grade					A36M-45			
Weight (K)	1.7	1.9	2.8	1.5	8.5	4.5	6.5	9.2



ALL REACTIONS ARE FACTORED

AXIAL 80 K

SHEAR 10 K

MOMENT 942 kip-ft

TORQUE 1 kip-ft

50 mph WIND - 1.0000 in ICE

AXIAL 61 K

SHEAR 44 K

MOMENT 4259 kip-ft

TORQUE 1 kip-ft

REACTIONS - 121 mph WIND

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Lightning Rod 5/8" x 10'	150	(2) LGP21901 Diplexer	130
(3) 12 ft Sector Mount	150	(2) LGP21901 Diplexer	130
4' x 3" DIA Omni	150	RRUS-11	130
4' x 3" DIA Omni	150	RRUS-11	130
APX16DWV-16DWVS-E-A20	150	RRUS-11	130
APX16DWV-16DWVS-E-A20	150	RRUS-12	130
APX16DWV-16DWVS-E-A20	150	RRUS-12	130
APXVAALL24-43	150	RRUS-12	130
APXVAALL24-43	150	(2) RRUS-32	130
APXVAALL24-43	150	(2) RRUS-32	130
AIR6449	150	(2) RRUS-32	130
AIR6449	150	A2	130
AIR6449	150	A2	130
4449 B5/B12	150	A2	130
4449 B5/B12	150	DC6-48-60-18-8F Surge	130
4449 B5/B12	150	DC6-48-60-18-8F Surge	130
4460 B25+B66	150	DC6-48-60-18-8F Surge	130
4460 B25+B66	150	2 ft Side Arm Mount	120
4460 B25+B66	150	2 ft Side Arm Mount	120
8 ft Platform Mount	140	6 ft Side Arm Mount	120
MX08FRO665-21 w/ Mount Pipe	140	6 ft Side Arm Mount	120
MX08FRO665-21 w/ Mount Pipe	140	4' x 3" DIA Omni	120
MX08FRO665-21 w/ Mount Pipe	140	4' x 3" DIA Omni	120
TA08025-B605	140	13 ft Platform Mount	108
TA08025-B605	140	(2) X7C-FRO-660	108
TA08025-B605	140	(2) X7C-FRO-660	108
TA08025-B604	140	(2) X7C-FRO-660	108
TA08025-B604	140	(2) HBXX-6517DS	108
TA08025-B604	140	(2) HBXX-6517DS	108
RDIDC-9181-PF-48	140	(2) HBXX-6517DS	108
13 ft Platform Mount	130	RRH2x40-07-U	108
7770.00	130	RRH2x40-07-U	108
7770.00	130	RRH2x40-07-U	108
7770.00	130	RRH2x40-AWS	108
(2) OPA-65R-LCUU-H8	130	RRH2x40-AWS	108
(2) OPA-65R-LCUU-H8	130	RRH2x40-AWS	108
(2) OPA-65R-LCUU-H8	130	RRH2x60-PCS	108
(2) LPG21401 TMA	130	RRH2x60-PCS	108
(2) LPG21401 TMA	130	RRH2x60-PCS	108
(2) LPG21401 TMA	130	DB-T1-6Z-8AB-0Z	108
(2) LGP21901 Diplexer	130	DB-T1-6Z-8AB-0Z	108

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A36M-45	45 ksi	60 ksi			

TOWER DESIGN NOTES

1. Tower is located in Windham County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-H Standard.
3. Tower designed for a 121 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 70.9%

Infinigy Engineering, PLLC
1517 Old Apex Rd, Suite 100
Cary, NC 27513
Phone: (518) 690-0790
FAX:

Job: **BOBOS00071A**			
Project: ***1197-F0001-B***			
Client: NSS	Drawn by: Pradin Suinyal Magar	App'd:	
Code: TIA-222-H	Date: 03/03/22	Scale: NTS	
Path: C:\Users\pmagar\Desktop\Pradin\Projects\Active\BOBOS00071A\03.03.2022\SA\BOBOS00071A.eri		Dwg No. E-1	

Tower Input Data

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

Tower is located in Windham County, Connecticut.
Tower base elevation above sea level: 268.77 ft.
Basic wind speed of 121 mph.
Risk Category II.
Exposure Category C.
Simplified Topographic Factor Procedure for wind speed-up calculations is used.
Topographic Category: 1.
Crest Height: 0.00 ft.
Nominal ice thickness of 1.0000 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.
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.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

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

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	150.00-130.00	20.00	5.00	12	27.8130	34.3130	0.2500	1.0000	A36M-45 (45 ksi)
L2	130.00-115.00	20.00	0.00	12	32.1880	36.6880	0.2500	1.0000	A36M-45 (45 ksi)
L3	115.00-95.00	20.00	6.00	12	36.6880	45.1880	0.3130	1.2520	A36M-45 (45 ksi)
L4	95.00-91.00	10.00	0.00	12	42.0120	45.8130	0.3130	1.2520	A36M-45 (45 ksi)
L5	91.00-51.00	40.00	8.00	12	45.8130	58.8750	0.3750	1.5000	A36M-45 (45 ksi)
L6	51.00-40.00	19.00	0.00	12	55.5126	61.6880	0.3750	1.5000	A36M-45 (45 ksi)
L7	40.00-19.00	21.00	9.00	12	61.6880	68.5000	0.4380	1.7520	A36M-45 (45 ksi)
L8	19.00-0.00	28.00		12	64.7046	73.8130	0.4380	1.7520	A36M-45 (45 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L1	28.7059	22.1882	2151.5988	9.8676	14.4071	149.3426	4359.7224	10.9204	6.7839	27.136
	35.4352	27.4207	4060.9769	12.1946	17.7741	228.4768	8228.6401	13.4956	8.5259	34.104
L2	34.4000	25.7101	3347.3797	11.4338	16.6734	200.7619	6782.6988	12.6537	7.9564	31.826
	37.8940	29.3326	4971.0190	13.0448	19.0044	261.5722	10072.6323	14.4366	9.1624	36.65
L3	37.8718	36.6609	6191.4899	13.0223	19.0044	325.7927	12545.6370	18.0434	8.9935	28.733
	46.6716	45.2277	11625.1762	16.0652	23.4074	496.6457	23555.7587	22.2597	11.2715	36.011
L4	45.7447	42.0268	9327.4532	14.9282	21.7622	428.6077	18899.9490	20.6843	10.4204	33.292
	47.3187	45.8576	12117.7043	16.2890	23.7311	510.6247	24553.7541	22.5697	11.4390	36.546
L5	47.2968	54.8664	14458.7488	16.2668	23.7311	609.2734	29297.3449	27.0036	11.2729	30.061
	60.8196	70.6388	30856.0755	20.9430	30.4973	1011.7658	62522.7744	34.7662	14.7735	39.396
L6	60.0305	66.5787	25835.4877	19.7393	28.7555	898.4529	52349.7025	32.7680	13.8724	36.993
	63.7318	74.0354	35524.7302	21.9501	31.9544	1111.7326	71982.7347	36.4380	15.5274	41.406
L7	63.7096	86.3846	41365.1127	21.9275	31.9544	1294.5051	83816.9329	42.5158	15.3585	35.065
	70.7619	95.9919	56758.3880	24.3662	35.4830	1599.5938	115007.8820	47.2443	17.1842	39.233
L8	69.8636	90.6390	47782.7704	23.0074	33.5170	1425.6293	96820.8474	44.6098	16.1670	36.911
	76.2623	103.4852	71114.8462	26.2682	38.2351	1859.9345	144097.9586	50.9323	18.6080	42.484

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 150.00-130.00				1	1	1			
L2 130.00-115.00				1	1	1			
L3 115.00-95.00				1	1	1			
L4 95.00-91.00				1	1	1			
L5 91.00-51.00				1	1	1			
L6 51.00-40.00				1	1	1			
L7 40.00-19.00				1	1	1			

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
L8 19.00-0.00				1	1	1			

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
AL5-50(7/8)	A	No	No	Inside Pole	150.00 - 7.00	2	No Ice	0.00	0.26
							1/2" Ice	0.00	0.26
							1" Ice	0.00	0.26
1 1/4" Hybriflex	C	No	No	Inside Pole	138.00 - 7.00	1	No Ice	0.00	1.40
							1/2" Ice	0.00	1.40
							1" Ice	0.00	1.40
561(1-5/8")	A	No	No	Inside Pole	130.00 - 7.00	12	No Ice	0.00	1.35
							1/2" Ice	0.00	1.35
							1" Ice	0.00	1.35
LCF114-50J (1-1/4 FOAM)	A	No	No	Inside Pole	130.00 - 7.00	1	No Ice	0.00	0.70
							1/2" Ice	0.00	0.70
							1" Ice	0.00	0.70
LCF114-50J (1-1/4 FOAM)	A	No	No	Inside Pole	130.00 - 7.00	2	No Ice	0.00	0.70
							1/2" Ice	0.00	0.70
							1" Ice	0.00	0.70
FXL-540(1/2)	A	No	No	Inside Pole	120.00 - 7.00	2	No Ice	0.00	0.12
							1/2" Ice	0.00	0.12
							1" Ice	0.00	0.12
1 5/8" Hybriflex	A	No	No	Inside Pole	149.00 - 7.00	3	No Ice	0.00	1.90
							1/2" Ice	0.00	1.90
							1" Ice	0.00	1.90
1 5/8" Hybriflex	A	No	No	Inside Pole	108.00 - 7.00	2	No Ice	0.00	1.90
							1/2" Ice	0.00	1.90
							1" Ice	0.00	1.90
6AWG	A	No	No	Inside Pole	140.00 - 7.00	1	No Ice	0.00	2.35
							1/2" Ice	0.00	2.35
							1" Ice	0.00	2.35

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	150.00-130.00	A	0.000	0.000	0.000	0.000	0.14
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.01
L2	130.00-115.00	A	0.000	0.000	0.000	0.000	0.40
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.02
L3	115.00-95.00	A	0.000	0.000	0.000	0.000	0.59
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.03
L4	95.00-91.00	A	0.000	0.000	0.000	0.000	0.12
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.01
L5	91.00-51.00	A	0.000	0.000	0.000	0.000	1.24
		B	0.000	0.000	0.000	0.000	0.00

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		C	0.000	0.000	0.000	0.000	0.06
L6	51.00-40.00	A	0.000	0.000	0.000	0.000	0.34
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.02
L7	40.00-19.00	A	0.000	0.000	0.000	0.000	0.65
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.03
L8	19.00-0.00	A	0.000	0.000	0.000	0.000	0.37
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.02

Feed Line/Linear Appurtenances Section Areas - With Ice

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 K
L1	150.00-130.00	A	0.982	0.000	0.000	0.000	0.000	0.14
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.01
L2	130.00-115.00	A	0.969	0.000	0.000	0.000	0.000	0.40
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.02
L3	115.00-95.00	A	0.954	0.000	0.000	0.000	0.000	0.59
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.03
L4	95.00-91.00	A	0.943	0.000	0.000	0.000	0.000	0.12
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.01
L5	91.00-51.00	A	0.917	0.000	0.000	0.000	0.000	1.24
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.06
L6	51.00-40.00	A	0.878	0.000	0.000	0.000	0.000	0.34
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.02
L7	40.00-19.00	A	0.840	0.000	0.000	0.000	0.000	0.65
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.03
L8	19.00-0.00	A	0.749	0.000	0.000	0.000	0.000	0.37
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.02

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	150.00-130.00	0.0000	0.0000	0.0000	0.0000
L2	130.00-115.00	0.0000	0.0000	0.0000	0.0000
L3	115.00-95.00	0.0000	0.0000	0.0000	0.0000
L4	95.00-91.00	0.0000	0.0000	0.0000	0.0000
L5	91.00-51.00	0.0000	0.0000	0.0000	0.0000
L6	51.00-40.00	0.0000	0.0000	0.0000	0.0000
L7	40.00-19.00	0.0000	0.0000	0.0000	0.0000
L8	19.00-0.00	0.0000	0.0000	0.0000	0.0000

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

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
*									
Lightning Rod 5/8" x 10'	C	None		0.0000	150.00	No Ice	0.63	0.63	0.04
						1/2" Ice	1.64	1.64	0.05
						1" Ice	2.67	2.67	0.06
150									
(3) 12 ft Sector Mount	C	None		0.0000	150.00	No Ice	19.76	19.76	0.92
						1/2" Ice	29.24	29.24	1.31
						1" Ice	38.80	38.80	1.84
4' x 3" DIA Omni	C	From Leg	2.00	0.0000	150.00	No Ice	1.00	1.00	0.01
			0.00			1/2" Ice	1.25	1.25	0.02
			3.00			1" Ice	1.50	1.50	0.04
4' x 3" DIA Omni	B	From Leg	2.00	0.0000	150.00	No Ice	1.00	1.00	0.01
			0.00			1/2" Ice	1.25	1.25	0.02
			3.00			1" Ice	1.50	1.50	0.04
APX16DWV-16DWVS-E-A20	A	From Leg	3.00	0.0000	150.00	No Ice	6.46	2.15	0.04
			0.00			1/2" Ice	6.83	2.49	0.07
			0.00			1" Ice	7.21	2.84	0.11
APX16DWV-16DWVS-E-A20	B	From Leg	3.00	0.0000	150.00	No Ice	6.46	2.15	0.04
			0.00			1/2" Ice	6.83	2.49	0.07
			0.00			1" Ice	7.21	2.84	0.11
APX16DWV-16DWVS-E-A20	C	From Leg	3.00	0.0000	150.00	No Ice	6.46	2.15	0.04
			0.00			1/2" Ice	6.83	2.49	0.07
			0.00			1" Ice	7.21	2.84	0.11
APXVAALL24-43	A	From Leg	3.00	0.0000	150.00	No Ice	20.24	8.89	0.15
			0.00			1/2" Ice	20.89	9.49	0.27
			0.00			1" Ice	21.54	10.09	0.39
APXVAALL24-43	B	From Leg	3.00	0.0000	150.00	No Ice	20.24	8.89	0.15
			0.00			1/2" Ice	20.89	9.49	0.27
			0.00			1" Ice	21.54	10.09	0.39
APXVAALL24-43	C	From Leg	3.00	0.0000	150.00	No Ice	20.24	8.89	0.15
			0.00			1/2" Ice	20.89	9.49	0.27
			0.00			1" Ice	21.54	10.09	0.39
AIR6449	A	From Leg	3.00	0.0000	150.00	No Ice	5.66	2.42	0.10
			0.00			1/2" Ice	5.96	2.64	0.14
			0.00			1" Ice	6.26	2.87	0.18
AIR6449	B	From Leg	3.00	0.0000	150.00	No Ice	5.66	2.42	0.10
			0.00			1/2" Ice	5.96	2.64	0.14
			0.00			1" Ice	6.26	2.87	0.18
AIR6449	C	From Leg	3.00	0.0000	150.00	No Ice	5.66	2.42	0.10
			0.00			1/2" Ice	5.96	2.64	0.14
			0.00			1" Ice	6.26	2.87	0.18
4449 B5/B12	A	From Leg	3.00	0.0000	150.00	No Ice	1.97	1.41	0.07
			0.00			1/2" Ice	2.14	1.56	0.09
			0.00			1" Ice	2.33	1.73	0.11
4449 B5/B12	B	From Leg	3.00	0.0000	150.00	No Ice	1.97	1.41	0.07
			0.00			1/2" Ice	2.14	1.56	0.09
			0.00			1" Ice	2.33	1.73	0.11
4449 B5/B12	C	From Leg	3.00	0.0000	150.00	No Ice	1.97	1.41	0.07
			0.00			1/2" Ice	2.14	1.56	0.09
			0.00			1" Ice	2.33	1.73	0.11
4460 B25+B66	A	From Leg	3.00	0.0000	150.00	No Ice	2.56	1.98	0.11
			0.00			1/2" Ice	2.76	2.16	0.13
			0.00			1" Ice	2.97	2.34	0.16
4460 B25+B66	B	From Leg	3.00	0.0000	150.00	No Ice	2.56	1.98	0.11

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00			1/2" Ice	2.76	2.16	0.13
			0.00			1" Ice	2.97	2.34	0.16
4460 B25+B66	C	From Leg	3.00	0.0000	150.00	No Ice	2.56	1.98	0.11
			0.00			1/2" Ice	2.76	2.16	0.13
			0.00			1" Ice	2.97	2.34	0.16
140									
8 ft Platform Mount	C	None		0.0000	140.00	No Ice	26.80	26.80	1.51
						1/2" Ice	32.20	32.20	1.81
						1" Ice	37.60	37.60	2.11
MX08FRO665-21 w/ Mount Pipe	A	From Leg	3.00	0.0000	140.00	No Ice	12.96	7.77	0.09
			0.00			1/2" Ice	13.67	9.05	0.19
			0.00			1" Ice	14.34	10.19	0.29
MX08FRO665-21 w/ Mount Pipe	B	From Leg	3.00	0.0000	140.00	No Ice	12.96	7.77	0.09
			0.00			1/2" Ice	13.67	9.05	0.19
			0.00			1" Ice	14.34	10.19	0.29
MX08FRO665-21 w/ Mount Pipe	C	From Leg	3.00	0.0000	140.00	No Ice	12.96	7.77	0.09
			0.00			1/2" Ice	13.67	9.05	0.19
			0.00			1" Ice	14.34	10.19	0.29
TA08025-B605	A	From Leg	3.00	0.0000	140.00	No Ice	1.96	1.19	0.07
			0.00			1/2" Ice	2.14	1.33	0.09
			0.00			1" Ice	2.32	1.48	0.11
TA08025-B605	B	From Leg	3.00	0.0000	140.00	No Ice	1.96	1.19	0.07
			0.00			1/2" Ice	2.14	1.33	0.09
			0.00			1" Ice	2.32	1.48	0.11
TA08025-B605	C	From Leg	3.00	0.0000	140.00	No Ice	1.96	1.19	0.07
			0.00			1/2" Ice	2.14	1.33	0.09
			0.00			1" Ice	2.32	1.48	0.11
TA08025-B604	A	From Leg	3.00	0.0000	140.00	No Ice	1.96	1.03	0.06
			0.00			1/2" Ice	2.14	1.17	0.08
			0.00			1" Ice	2.32	1.31	0.10
TA08025-B604	B	From Leg	3.00	0.0000	140.00	No Ice	1.96	1.03	0.06
			0.00			1/2" Ice	2.14	1.17	0.08
			0.00			1" Ice	2.32	1.31	0.10
TA08025-B604	C	From Leg	3.00	0.0000	140.00	No Ice	1.96	1.03	0.06
			0.00			1/2" Ice	2.14	1.17	0.08
			0.00			1" Ice	2.32	1.31	0.10
RDIDC-9181-PF-48	A	From Leg	1.00	0.0000	140.00	No Ice	1.87	1.07	0.02
			0.00			1/2" Ice	2.04	1.20	0.04
			0.00			1" Ice	2.21	1.35	0.06
130									
13 ft Platform Mount	C	None		0.0000	130.00	No Ice	14.69	14.69	1.25
						1/2" Ice	18.01	18.01	1.57
						1" Ice	21.34	21.34	1.94
7770.00	A	From Leg	3.00	0.0000	130.00	No Ice	5.51	2.93	0.04
			0.00			1/2" Ice	5.87	3.27	0.07
			0.00			1" Ice	6.23	3.63	0.11
7770.00	B	From Leg	3.00	0.0000	130.00	No Ice	5.51	2.93	0.04
			0.00			1/2" Ice	5.87	3.27	0.07
			0.00			1" Ice	6.23	3.63	0.11
7770.00	C	From Leg	3.00	0.0000	130.00	No Ice	5.51	2.93	0.04
			0.00			1/2" Ice	5.87	3.27	0.07
			0.00			1" Ice	6.23	3.63	0.11
(2) OPA-65R-LCUU-H8	A	From Leg	3.00	0.0000	130.00	No Ice	12.98	7.52	0.09
			0.00			1/2" Ice	13.59	8.09	0.16
			0.00			1" Ice	14.15	8.67	0.24
(2) OPA-65R-LCUU-H8	B	From Leg	3.00	0.0000	130.00	No Ice	12.98	7.52	0.09
			0.00			1/2" Ice	13.59	8.09	0.16

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Offsets: Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00				1" Ice	14.15	8.67	0.24
(2) OPA-65R-LCUU-H8	C	From Leg	3.00		0.0000	130.00	No Ice	12.98	7.52	0.09
			0.00				1/2" Ice	13.59	8.09	0.16
			0.00				1" Ice	14.15	8.67	0.24
(2) LPG21401 TMA	A	From Leg	3.00		0.0000	130.00	No Ice	0.82	0.35	0.02
			0.00				1/2" Ice	0.94	0.44	0.02
			0.00				1" Ice	1.06	0.54	0.03
(2) LPG21401 TMA	B	From Leg	3.00		0.0000	130.00	No Ice	0.82	0.35	0.02
			0.00				1/2" Ice	0.94	0.44	0.02
			0.00				1" Ice	1.06	0.54	0.03
(2) LPG21401 TMA	C	From Leg	3.00		0.0000	130.00	No Ice	0.82	0.35	0.02
			0.00				1/2" Ice	0.94	0.44	0.02
			0.00				1" Ice	1.06	0.54	0.03
(2) LGP21901 Diplexer	A	From Leg	3.00		0.0000	130.00	No Ice	0.20	0.10	0.01
			0.00				1/2" Ice	0.26	0.14	0.01
			0.00				1" Ice	0.33	0.19	0.01
(2) LGP21901 Diplexer	B	From Leg	3.00		0.0000	130.00	No Ice	0.20	0.10	0.01
			0.00				1/2" Ice	0.26	0.14	0.01
			0.00				1" Ice	0.33	0.19	0.01
(2) LGP21901 Diplexer	C	From Leg	3.00		0.0000	130.00	No Ice	0.20	0.10	0.01
			0.00				1/2" Ice	0.26	0.14	0.01
			0.00				1" Ice	0.33	0.19	0.01
RRUS-11	A	From Leg	3.00		0.0000	130.00	No Ice	2.57	1.07	0.05
			0.00				1/2" Ice	2.77	1.21	0.07
			0.00				1" Ice	2.97	1.36	0.09
RRUS-11	B	From Leg	3.00		0.0000	130.00	No Ice	2.57	1.07	0.05
			0.00				1/2" Ice	2.77	1.21	0.07
			0.00				1" Ice	2.97	1.36	0.09
RRUS-11	C	From Leg	3.00		0.0000	130.00	No Ice	2.57	1.07	0.05
			0.00				1/2" Ice	2.77	1.21	0.07
			0.00				1" Ice	2.97	1.36	0.09
RRUS-12	A	From Leg	3.00		0.0000	130.00	No Ice	3.15	1.28	0.06
			0.00				1/2" Ice	3.37	1.44	0.08
			0.00				1" Ice	3.59	1.60	0.11
RRUS-12	B	From Leg	3.00		0.0000	130.00	No Ice	3.15	1.28	0.06
			0.00				1/2" Ice	3.37	1.44	0.08
			0.00				1" Ice	3.59	1.60	0.11
RRUS-12	C	From Leg	3.00		0.0000	130.00	No Ice	3.15	1.28	0.06
			0.00				1/2" Ice	3.37	1.44	0.08
			0.00				1" Ice	3.59	1.60	0.11
(2) RRUS-32	A	From Leg	3.00		0.0000	130.00	No Ice	3.31	2.42	0.08
			0.00				1/2" Ice	3.56	2.64	0.11
			0.00				1" Ice	3.81	2.86	0.14
(2) RRUS-32	B	From Leg	3.00		0.0000	130.00	No Ice	3.31	2.42	0.08
			0.00				1/2" Ice	3.56	2.64	0.11
			0.00				1" Ice	3.81	2.86	0.14
(2) RRUS-32	C	From Leg	3.00		0.0000	130.00	No Ice	3.31	2.42	0.08
			0.00				1/2" Ice	3.56	2.64	0.11
			0.00				1" Ice	3.81	2.86	0.14
A2	A	From Leg	3.00		0.0000	130.00	No Ice	2.08	0.51	0.02
			0.00				1/2" Ice	2.26	0.61	0.04
			0.00				1" Ice	2.44	0.73	0.05
A2	B	From Leg	3.00		0.0000	130.00	No Ice	2.08	0.51	0.02
			0.00				1/2" Ice	2.26	0.61	0.04
			0.00				1" Ice	2.44	0.73	0.05
A2	C	From Leg	3.00		0.0000	130.00	No Ice	2.08	0.51	0.02
			0.00				1/2" Ice	2.26	0.61	0.04

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00			1" Ice	2.44	0.73	0.05
DC6-48-60-18-8F Surge	A	From Leg	3.00	0.0000	130.00	No Ice	1.91	1.91	0.02
			0.00			1/2" Ice	2.10	2.10	0.04
			0.00			1" Ice	2.29	2.29	0.06
DC6-48-60-18-8F Surge	B	From Leg	3.00	0.0000	130.00	No Ice	1.91	1.91	0.02
			0.00			1/2" Ice	2.10	2.10	0.04
			0.00			1" Ice	2.29	2.29	0.06
DC6-48-60-18-8F Surge	C	From Leg	3.00	0.0000	130.00	No Ice	1.91	1.91	0.02
			0.00			1/2" Ice	2.10	2.10	0.04
			0.00			1" Ice	2.29	2.29	0.06
120									
2 ft Side Arm Mount	B	From Leg	1.00	0.0000	120.00	No Ice	0.46	0.91	0.02
			0.00			1/2" Ice	0.65	1.30	0.03
			0.00			1" Ice	0.87	1.71	0.05
2 ft Side Arm Mount	C	From Leg	1.00	0.0000	120.00	No Ice	0.46	0.91	0.02
			0.00			1/2" Ice	0.65	1.30	0.03
			0.00			1" Ice	0.87	1.71	0.05
6 ft Side Arm Mount	B	From Leg	5.00	0.0000	120.00	No Ice	0.41	3.06	0.05
			0.00			1/2" Ice	0.81	5.10	0.08
			0.00			1" Ice	1.23	7.20	0.12
6 ft Side Arm Mount	C	From Leg	5.00	0.0000	120.00	No Ice	0.41	3.06	0.05
			0.00			1/2" Ice	0.81	5.10	0.08
			0.00			1" Ice	1.23	7.20	0.12
4' x 3" DIA Omni	B	From Leg	8.00	0.0000	120.00	No Ice	1.00	1.00	0.01
			0.00			1/2" Ice	1.25	1.25	0.02
			4.00			1" Ice	1.50	1.50	0.04
4' x 3" DIA Omni	C	From Leg	8.00	0.0000	120.00	No Ice	1.00	1.00	0.01
			0.00			1/2" Ice	1.25	1.25	0.02
			4.00			1" Ice	1.50	1.50	0.04
108									
13 ft Platform Mount	C	None		0.0000	108.00	No Ice	14.69	14.69	1.25
						1/2" Ice	18.01	18.01	1.57
						1" Ice	21.34	21.34	1.94
(2) X7C-FRO-660	A	From Leg	3.00	0.0000	108.00	No Ice	9.55	5.87	0.04
			0.00			1/2" Ice	10.02	6.33	0.10
			0.00			1" Ice	10.49	6.79	0.17
(2) X7C-FRO-660	B	From Leg	3.00	0.0000	108.00	No Ice	9.55	5.87	0.04
			0.00			1/2" Ice	10.02	6.33	0.10
			0.00			1" Ice	10.49	6.79	0.17
(2) X7C-FRO-660	C	From Leg	3.00	0.0000	108.00	No Ice	9.55	5.87	0.04
			0.00			1/2" Ice	10.02	6.33	0.10
			0.00			1" Ice	10.49	6.79	0.17
(2) HBXX-6517DS	A	From Leg	3.00	0.0000	108.00	No Ice	8.53	5.24	0.05
			0.00			1/2" Ice	9.00	5.71	0.10
			0.00			1" Ice	9.48	6.18	0.16
(2) HBXX-6517DS	B	From Leg	3.00	0.0000	108.00	No Ice	8.53	5.24	0.05
			0.00			1/2" Ice	9.00	5.71	0.10
			0.00			1" Ice	9.48	6.18	0.16
(2) HBXX-6517DS	C	From Leg	3.00	0.0000	108.00	No Ice	8.53	5.24	0.05
			0.00			1/2" Ice	9.00	5.71	0.10
			0.00			1" Ice	9.48	6.18	0.16
RRH2x40-07-U	A	From Leg	3.00	0.0000	108.00	No Ice	1.93	1.05	0.05
			0.00			1/2" Ice	2.10	1.19	0.07
			0.00			1" Ice	2.28	1.33	0.09
RRH2x40-07-U	B	From Leg	3.00	0.0000	108.00	No Ice	1.93	1.05	0.05
			0.00			1/2" Ice	2.10	1.19	0.07
			0.00			1" Ice	2.28	1.33	0.09

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
RRH2x40-07-U	C	From Leg	3.00	0.0000	108.00	No Ice	1.93	1.05	0.05
			0.00			1/2" Ice	2.10	1.19	0.07
			0.00			1" Ice	2.28	1.33	0.09
RRH2x40-AWS	A	From Leg	3.00	0.0000	108.00	No Ice	2.16	1.42	0.04
			0.00			1/2" Ice	2.36	1.59	0.06
			0.00			1" Ice	2.56	1.77	0.08
RRH2x40-AWS	B	From Leg	3.00	0.0000	108.00	No Ice	2.16	1.42	0.04
			0.00			1/2" Ice	2.36	1.59	0.06
			0.00			1" Ice	2.56	1.77	0.08
RRH2x40-AWS	C	From Leg	3.00	0.0000	108.00	No Ice	2.16	1.42	0.04
			0.00			1/2" Ice	2.36	1.59	0.06
			0.00			1" Ice	2.56	1.77	0.08
RRH2x60-PCS	A	From Leg	3.00	0.0000	108.00	No Ice	2.15	1.35	0.06
			0.00			1/2" Ice	2.34	1.50	0.07
			0.00			1" Ice	2.54	1.67	0.09
RRH2x60-PCS	B	From Leg	3.00	0.0000	108.00	No Ice	2.15	1.35	0.06
			0.00			1/2" Ice	2.34	1.50	0.07
			0.00			1" Ice	2.54	1.67	0.09
RRH2x60-PCS	C	From Leg	3.00	0.0000	108.00	No Ice	2.15	1.35	0.06
			0.00			1/2" Ice	2.34	1.50	0.07
			0.00			1" Ice	2.54	1.67	0.09
DB-T1-6Z-8AB-0Z	A	From Leg	3.00	0.0000	108.00	No Ice	4.80	2.00	0.04
			0.00			1/2" Ice	5.07	2.19	0.08
			0.00			1" Ice	5.35	2.39	0.12
DB-T1-6Z-8AB-0Z	B	From Leg	3.00	0.0000	108.00	No Ice	4.80	2.00	0.04
			0.00			1/2" Ice	5.07	2.19	0.08
			0.00			1" Ice	5.35	2.39	0.12
*									

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
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

Comb. No.	Description
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 Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	150 - 130	Pole	Max Tension	26	0.00	0.00	0.00
			Max. Compression	26	-11.61	0.00	0.02
			Max. Mx	8	-6.75	-103.97	-0.01
			Max. My	14	-6.75	-0.00	-104.19
			Max. Vy	8	9.97	-103.97	-0.01
			Max. Vx	14	10.01	-0.00	-104.19
			Max. Torque	20			0.16
L2	130 - 115	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-22.70	0.00	-1.31
			Max. Mx	8	-13.59	-415.83	-0.63
			Max. My	14	-13.58	-0.01	-418.32
			Max. Vy	8	18.57	-415.83	-0.63
			Max. Vx	14	18.76	-0.01	-418.32
			Max. Torque	20			1.60
L3	115 - 95	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-31.44	-0.51	-1.02
			Max. Mx	8	-19.05	-725.04	-0.86
			Max. My	14	-19.03	-0.55	-730.29
			Max. Vy	8	25.63	-725.04	-0.86
			Max. Vx	14	25.87	-0.55	-730.29
			Max. Torque	20			1.60
L4	95 - 91	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-35.53	-0.51	-1.02
			Max. Mx	8	-22.32	-990.01	-1.33
			Max. My	14	-22.31	-1.02	-997.73
			Max. Vy	8	27.36	-990.01	-1.33

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	14	27.60	-1.02	-997.73
			Max. Torque	20			1.41
L5	91 - 51	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-46.72	-0.51	-1.02
			Max. Mx	8	-31.76	-1955.20	-2.84
			Max. My	14	-31.75	-2.52	-1970.85
			Max. Vy	8	33.08	-1955.20	-2.84
			Max. Vx	14	33.33	-2.52	-1970.85
			Max. Torque	20			1.41
L6	51 - 40	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-56.93	-0.51	-1.02
			Max. Mx	8	-40.35	-2618.48	-3.73
			Max. My	14	-40.35	-3.40	-2638.83
			Max. Vy	8	36.69	-2618.48	-3.73
			Max. Vx	14	36.94	-3.40	-2638.83
			Max. Torque	20			1.41
L7	40 - 19	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-62.59	-0.51	-1.02
			Max. Mx	8	-45.31	-3071.42	-4.29
			Max. My	14	-45.30	-3.96	-3094.72
			Max. Vy	8	38.83	-3071.42	-4.29
			Max. Vx	14	39.07	-3.96	-3094.72
			Max. Torque	20			1.41
L8	19 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-80.46	-0.51	-1.02
			Max. Mx	8	-60.95	-4229.07	-5.58
			Max. My	14	-60.95	-5.26	-4259.23
			Max. Vy	8	43.72	-4229.07	-5.58
			Max. Vx	14	43.97	-5.26	-4259.23
			Max. Torque	20			1.41

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	26	80.46	0.00	0.00
	Max. H_x	20	60.95	43.71	0.05
	Max. H_z	2	60.95	0.05	43.96
	Max. M_x	2	4258.13	0.05	43.96
	Max. M_z	8	4229.07	-43.71	-0.05
	Max. Torsion	20	1.41	43.71	0.05
	Min. Vert	19	45.71	37.83	-21.94
	Min. H_x	8	60.95	-43.71	-0.05
	Min. H_z	14	60.95	-0.05	-43.96
	Min. M_x	14	-4259.23	-0.05	-43.96
	Min. M_z	20	-4228.63	43.71	0.05
	Min. Torsion	8	-1.41	-43.71	-0.05

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	50.79	0.00	0.00	0.44	-0.18	0.00

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
1.2 Dead+1.0 Wind 0 deg - No Ice	60.95	-0.05	-43.96	-4258.13	4.82	0.31
0.9 Dead+1.0 Wind 0 deg - No Ice	45.71	-0.05	-43.96	-4241.49	4.86	0.31
1.2 Dead+1.0 Wind 30 deg - No Ice	60.95	21.82	-38.05	-3685.07	-2110.28	0.98
0.9 Dead+1.0 Wind 30 deg - No Ice	45.71	21.82	-38.05	-3670.68	-2101.90	0.97
1.2 Dead+1.0 Wind 60 deg - No Ice	60.95	37.83	-21.94	-2124.44	-3659.99	1.38
0.9 Dead+1.0 Wind 60 deg - No Ice	45.71	37.83	-21.94	-2116.20	-3645.51	1.37
1.2 Dead+1.0 Wind 90 deg - No Ice	60.95	43.71	0.05	5.58	-4229.07	1.41
0.9 Dead+1.0 Wind 90 deg - No Ice	45.71	43.71	0.05	5.42	-4212.35	1.41
1.2 Dead+1.0 Wind 120 deg - No Ice	60.95	37.88	22.02	2134.25	-3665.02	1.07
0.9 Dead+1.0 Wind 120 deg - No Ice	45.71	37.88	22.02	2125.70	-3650.53	1.06
1.2 Dead+1.0 Wind 150 deg - No Ice	60.95	21.90	38.09	3691.19	-2119.00	0.44
0.9 Dead+1.0 Wind 150 deg - No Ice	45.71	21.90	38.09	3676.51	-2110.60	0.44
1.2 Dead+1.0 Wind 180 deg - No Ice	60.95	0.05	43.96	4259.23	-5.26	-0.31
0.9 Dead+1.0 Wind 180 deg - No Ice	45.71	0.05	43.96	4242.30	-5.18	-0.31
1.2 Dead+1.0 Wind 210 deg - No Ice	60.95	-21.82	38.05	3686.16	2109.84	-0.98
0.9 Dead+1.0 Wind 210 deg - No Ice	45.71	-21.82	38.05	3671.49	2101.58	-0.97
1.2 Dead+1.0 Wind 240 deg - No Ice	60.95	-37.83	21.94	2125.53	3659.55	-1.38
0.9 Dead+1.0 Wind 240 deg - No Ice	45.71	-37.83	21.94	2117.01	3645.19	-1.37
1.2 Dead+1.0 Wind 270 deg - No Ice	60.95	-43.71	-0.05	-4.49	4228.63	-1.41
0.9 Dead+1.0 Wind 270 deg - No Ice	45.71	-43.71	-0.05	-4.61	4212.02	-1.41
1.2 Dead+1.0 Wind 300 deg - No Ice	60.95	-37.88	-22.02	-2133.16	3664.59	-1.07
0.9 Dead+1.0 Wind 300 deg - No Ice	45.71	-37.88	-22.02	-2124.89	3650.20	-1.06
1.2 Dead+1.0 Wind 330 deg - No Ice	60.95	-21.90	-38.09	-3690.10	2118.56	-0.44
0.9 Dead+1.0 Wind 330 deg - No Ice	45.71	-21.90	-38.09	-3675.69	2110.27	-0.44
1.2 Dead+1.0 Ice+1.0 Temp	80.46	0.00	0.00	1.02	-0.51	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	80.46	-0.01	-9.65	-940.29	0.38	0.07
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	80.46	4.78	-8.35	-813.72	-465.96	0.32
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	80.46	8.29	-4.82	-468.82	-807.59	0.48
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	80.46	9.58	0.01	1.99	-932.97	0.52
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	80.46	8.30	4.83	472.55	-808.50	0.42
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	80.46	4.80	8.36	816.78	-467.54	0.20

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	80.46	0.01	9.65	942.44	-1.44	-0.07
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	80.46	-4.78	8.35	815.86	464.90	-0.32
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	80.46	-8.29	4.82	470.97	806.53	-0.48
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	80.46	-9.58	-0.01	0.16	931.91	-0.52
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	80.46	-8.30	-4.83	-470.40	807.45	-0.42
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	80.46	-4.80	-8.36	-814.63	466.48	-0.20
Dead+Wind 0 deg - Service	50.79	-0.01	-10.18	-983.39	0.98	0.07
Dead+Wind 30 deg - Service	50.79	5.05	-8.81	-851.00	-487.65	0.23
Dead+Wind 60 deg - Service	50.79	8.76	-5.08	-490.46	-845.66	0.32
Dead+Wind 90 deg - Service	50.79	10.12	0.01	1.62	-977.13	0.33
Dead+Wind 120 deg - Service	50.79	8.77	5.10	493.38	-846.83	0.25
Dead+Wind 150 deg - Service	50.79	5.07	8.82	853.07	-489.66	0.10
Dead+Wind 180 deg - Service	50.79	0.01	10.18	984.30	-1.35	-0.07
Dead+Wind 210 deg - Service	50.79	-5.05	8.81	851.90	487.28	-0.23
Dead+Wind 240 deg - Service	50.79	-8.76	5.08	491.37	845.30	-0.32
Dead+Wind 270 deg - Service	50.79	-10.12	-0.01	-0.71	976.77	-0.33
Dead+Wind 300 deg - Service	50.79	-8.77	-5.10	-492.48	846.46	-0.25
Dead+Wind 330 deg - Service	50.79	-5.07	-8.82	-852.16	489.30	-0.10

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX	PY	PZ	PX	PY	PZ	% Error
	K	K	K	K	K	K	
1	0.00	-50.79	0.00	0.00	50.79	0.00	0.000%
2	-0.05	-60.95	-43.96	0.05	60.95	43.96	0.000%
3	-0.05	-45.71	-43.96	0.05	45.71	43.96	0.000%
4	21.82	-60.95	-38.05	-21.82	60.95	38.05	0.000%
5	21.82	-45.71	-38.05	-21.82	45.71	38.05	0.000%
6	37.83	-60.95	-21.94	-37.83	60.95	21.94	0.000%
7	37.83	-45.71	-21.94	-37.83	45.71	21.94	0.000%
8	43.71	-60.95	0.05	-43.71	60.95	-0.05	0.000%
9	43.71	-45.71	0.05	-43.71	45.71	-0.05	0.000%
10	37.88	-60.95	22.02	-37.88	60.95	-22.02	0.000%
11	37.88	-45.71	22.02	-37.88	45.71	-22.02	0.000%
12	21.90	-60.95	38.09	-21.90	60.95	-38.09	0.000%
13	21.90	-45.71	38.09	-21.90	45.71	-38.09	0.000%
14	0.05	-60.95	43.96	-0.05	60.95	-43.96	0.000%
15	0.05	-45.71	43.96	-0.05	45.71	-43.96	0.000%
16	-21.82	-60.95	38.05	21.82	60.95	-38.05	0.000%
17	-21.82	-45.71	38.05	21.82	45.71	-38.05	0.000%
18	-37.83	-60.95	21.94	37.83	60.95	-21.94	0.000%
19	-37.83	-45.71	21.94	37.83	45.71	-21.94	0.000%
20	-43.71	-60.95	-0.05	43.71	60.95	0.05	0.000%
21	-43.71	-45.71	-0.05	43.71	45.71	0.05	0.000%
22	-37.88	-60.95	-22.02	37.88	60.95	22.02	0.000%
23	-37.88	-45.71	-22.02	37.88	45.71	22.02	0.000%
24	-21.90	-60.95	-38.09	21.90	60.95	38.09	0.000%
25	-21.90	-45.71	-38.09	21.90	45.71	38.09	0.000%
26	0.00	-80.46	0.00	0.00	80.46	0.00	0.000%
27	-0.01	-80.46	-9.65	0.01	80.46	9.65	0.000%
28	4.78	-80.46	-8.35	-4.78	80.46	8.35	0.000%
29	8.29	-80.46	-4.82	-8.29	80.46	4.82	0.000%

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
30	9.58	-80.46	0.01	-9.58	80.46	-0.01	0.000%
31	8.30	-80.46	4.83	-8.30	80.46	-4.83	0.000%
32	4.80	-80.46	8.36	-4.80	80.46	-8.36	0.000%
33	0.01	-80.46	9.65	-0.01	80.46	-9.65	0.000%
34	-4.78	-80.46	8.35	4.78	80.46	-8.35	0.000%
35	-8.29	-80.46	4.82	8.29	80.46	-4.82	0.000%
36	-9.58	-80.46	-0.01	9.58	80.46	0.01	0.000%
37	-8.30	-80.46	-4.83	8.30	80.46	4.83	0.000%
38	-4.80	-80.46	-8.36	4.80	80.46	8.36	0.000%
39	-0.01	-50.79	-10.18	0.01	50.79	10.18	0.000%
40	5.05	-50.79	-8.81	-5.05	50.79	8.81	0.000%
41	8.76	-50.79	-5.08	-8.76	50.79	5.08	0.000%
42	10.12	-50.79	0.01	-10.12	50.79	-0.01	0.000%
43	8.77	-50.79	5.10	-8.77	50.79	-5.10	0.000%
44	5.07	-50.79	8.82	-5.07	50.79	-8.82	0.000%
45	0.01	-50.79	10.18	-0.01	50.79	-10.18	0.000%
46	-5.05	-50.79	8.81	5.05	50.79	-8.81	0.000%
47	-8.76	-50.79	5.08	8.76	50.79	-5.08	0.000%
48	-10.12	-50.79	-0.01	10.12	50.79	0.01	0.000%
49	-8.77	-50.79	-5.10	8.77	50.79	5.10	0.000%
50	-5.07	-50.79	-8.82	5.07	50.79	8.82	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	4	0.00000001	0.00008610
3	Yes	4	0.00000001	0.00004235
4	Yes	5	0.00000001	0.00003826
5	Yes	5	0.00000001	0.00001762
6	Yes	5	0.00000001	0.00003570
7	Yes	5	0.00000001	0.00001639
8	Yes	4	0.00000001	0.00017608
9	Yes	4	0.00000001	0.00010695
10	Yes	5	0.00000001	0.00003865
11	Yes	5	0.00000001	0.00001780
12	Yes	5	0.00000001	0.00003685
13	Yes	5	0.00000001	0.00001692
14	Yes	4	0.00000001	0.00008904
15	Yes	4	0.00000001	0.00004471
16	Yes	5	0.00000001	0.00003619
17	Yes	5	0.00000001	0.00001661
18	Yes	5	0.00000001	0.00003876
19	Yes	5	0.00000001	0.00001787
20	Yes	4	0.00000001	0.00016789
21	Yes	4	0.00000001	0.00010147
22	Yes	5	0.00000001	0.00003611
23	Yes	5	0.00000001	0.00001658
24	Yes	5	0.00000001	0.00003791
25	Yes	5	0.00000001	0.00001744
26	Yes	4	0.00000001	0.00000001
27	Yes	4	0.00000001	0.00092482
28	Yes	4	0.00000001	0.00095224
29	Yes	4	0.00000001	0.00094828
30	Yes	4	0.00000001	0.00092008
31	Yes	4	0.00000001	0.00095412
32	Yes	4	0.00000001	0.00095789
33	Yes	4	0.00000001	0.00093010

34	Yes	4	0.00000001	0.00095502
35	Yes	4	0.00000001	0.00095078
36	Yes	4	0.00000001	0.00091794
37	Yes	4	0.00000001	0.00094786
38	Yes	4	0.00000001	0.00095228
39	Yes	4	0.00000001	0.00001842
40	Yes	4	0.00000001	0.00004032
41	Yes	4	0.00000001	0.00003603
42	Yes	4	0.00000001	0.00002041
43	Yes	4	0.00000001	0.00004107
44	Yes	4	0.00000001	0.00003739
45	Yes	4	0.00000001	0.00001847
46	Yes	4	0.00000001	0.00003654
47	Yes	4	0.00000001	0.00004160
48	Yes	4	0.00000001	0.00002034
49	Yes	4	0.00000001	0.00003636
50	Yes	4	0.00000001	0.00003927

Maximum Tower Deflections - Service Wind

Section No.	*Elevation*	*Horz. Deflection*	*Gov. Load Comb.*	*Tilt*	*Twist*
	ft	*in*		°	°
L1	150 - 130	9.361	45	0.5575	0.0008
L2	135 - 115	7.625	45	0.5429	0.0008
L3	115 - 95	5.462	45	0.4733	0.0006
L4	101 - 91	4.168	45	0.4078	0.0004
L5	91 - 51	3.345	45	0.3710	0.0003
L6	59 - 40	1.364	45	0.2189	0.0001
L7	40 - 19	0.616	45	0.1451	0.0001
L8	28 - 0	0.314	45	0.0954	0.0000

Critical Deflections and Radius of Curvature - Service Wind

Elevation	*Appurtenance*	*Gov. Load Comb.*	*Deflection*	*Tilt*	*Twist*	*Radius of Curvature*
ft			*in*	°	°	*ft*
150.00	Lightning Rod 5/8" x 10'	45	9.361	0.5575	0.0008	113496
140.00	8 ft Platform Mount	45	8.199	0.5504	0.0008	56748
130.00	13 ft Platform Mount	45	7.059	0.5310	0.0008	22824
120.00	2 ft Side Arm Mount	45	5.972	0.4956	0.0007	12686
108.00	13 ft Platform Mount	45	4.792	0.4394	0.0005	12904

Maximum Tower Deflections - Design Wind

Section No.	*Elevation*	*Horz. Deflection*	*Gov. Load Comb.*	*Tilt*	*Twist*
	ft	*in*		°	°
L1	150 - 130	40.516	14	2.4132	0.0037
L2	135 - 115	33.004	14	2.3499	0.0034
L3	115 - 95	23.641	14	2.0489	0.0027
L4	101 - 91	18.043	14	1.7655	0.0017
L5	91 - 51	14.480	14	1.6061	0.0014
L6	59 - 40	5.903	14	0.9476	0.0006
L7	40 - 19	2.668	14	0.6282	0.0003
L8	28 - 0	1.361	14	0.4131	0.0002

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
150.00	Lightning Rod 5/8" x 10'	14	40.516	2.4132	0.0037	26318
140.00	8 ft Platform Mount	14	35.489	2.3824	0.0035	13159
130.00	13 ft Platform Mount	14	30.555	2.2985	0.0033	5286
120.00	2 ft Side Arm Mount	14	25.851	2.1452	0.0030	2942
108.00	13 ft Platform Mount	14	20.743	1.9023	0.0022	2991

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L1	150 - 130 (1)	TP34.313x27.813x0.25	20.00	0.00	0.0	26.1126	-6.75	1057.56	0.006
L2	130 - 115 (2)	TP36.688x32.188x0.25	20.00	0.00	0.0	29.3326	-13.58	1187.97	0.011
L3	115 - 95 (3)	TP45.188x36.688x0.313	20.00	0.00	0.0	42.6577	-19.03	1727.64	0.011
L4	95 - 91 (4)	TP45.813x42.012x0.313	10.00	0.00	0.0	45.8576	-22.31	1857.23	0.012
L5	91 - 51 (5)	TP58.875x45.813x0.375	40.00	0.00	0.0	67.4843	-31.75	2733.11	0.012
L6	51 - 40 (6)	TP61.688x55.5126x0.375	19.00	0.00	0.0	74.0354	-40.35	2998.44	0.013
L7	40 - 19 (7)	TP68.5x61.688x0.438	21.00	0.00	0.0	91.8745	-45.30	3720.92	0.012
L8	19 - 0 (8)	TP73.813x64.7046x0.438	28.00	0.00	0.0	103.485 0	-60.95	4187.62	0.015

Pole Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L1	150 - 130 (1)	TP34.313x27.813x0.25	104.19	797.24	0.131	0.00	797.24	0.000
L2	130 - 115 (2)	TP36.688x32.188x0.25	418.32	953.98	0.438	0.00	953.98	0.000
L3	115 - 95 (3)	TP45.188x36.688x0.313	730.29	1669.34	0.437	0.00	1669.34	0.000
L4	95 - 91 (4)	TP45.813x42.012x0.313	997.73	1864.77	0.535	0.00	1864.77	0.000
L5	91 - 51 (5)	TP58.875x45.813x0.375	1970.85	3328.53	0.592	0.00	3328.53	0.000
L6	51 - 40 (6)	TP61.688x55.5126x0.375	2638.83	3805.40	0.693	0.00	3805.40	0.000
L7	40 - 19 (7)	TP68.5x61.688x0.438	3094.72	5287.54	0.585	0.00	5287.54	0.000
L8	19 - 0 (8)	TP73.813x64.7046x0.438	4259.23	6272.00	0.679	0.00	6272.00	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	150 - 130 (1)	TP34.313x27.813x0.25	10.01	317.27	0.032	0.00	905.27	0.000
L2	130 - 115 (2)	TP36.688x32.188x0.25	18.76	356.39	0.053	0.00	1142.30	0.000
L3	115 - 95 (3)	TP45.188x36.688x0.313	25.87	518.29	0.050	0.31	1929.62	0.000
L4	95 - 91 (4)	TP45.813x42.012x0.313	27.60	557.17	0.050	0.31	2229.97	0.000
L5	91 - 51 (5)	TP58.875x45.813x0.375	33.33	819.93	0.041	0.31	4030.82	0.000
L6	51 - 40 (6)	TP61.688x55.5126x0.375	36.94	899.53	0.041	0.31	4851.42	0.000

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L7	40 - 19 (7)	TP68.5x61.688x0.438	39.07	1116.27	0.035	0.31	6396.40	0.000
L8	19 - 0 (8)	TP73.813x64.7046x0.438	43.97	1257.34	0.035	0.31	8115.26	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	150 - 130 (1)	0.006	0.131	0.000	0.032	0.000	0.138	1.000	4.8.2
L2	130 - 115 (2)	0.011	0.438	0.000	0.053	0.000	0.453	1.000	4.8.2
L3	115 - 95 (3)	0.011	0.437	0.000	0.050	0.000	0.451	1.000	4.8.2
L4	95 - 91 (4)	0.012	0.535	0.000	0.050	0.000	0.550	1.000	4.8.2
L5	91 - 51 (5)	0.012	0.592	0.000	0.041	0.000	0.605	1.000	4.8.2
L6	51 - 40 (6)	0.013	0.693	0.000	0.041	0.000	0.709	1.000	4.8.2
L7	40 - 19 (7)	0.012	0.585	0.000	0.035	0.000	0.599	1.000	4.8.2
L8	19 - 0 (8)	0.015	0.679	0.000	0.035	0.000	0.695	1.000	4.8.2

Section Capacity Table

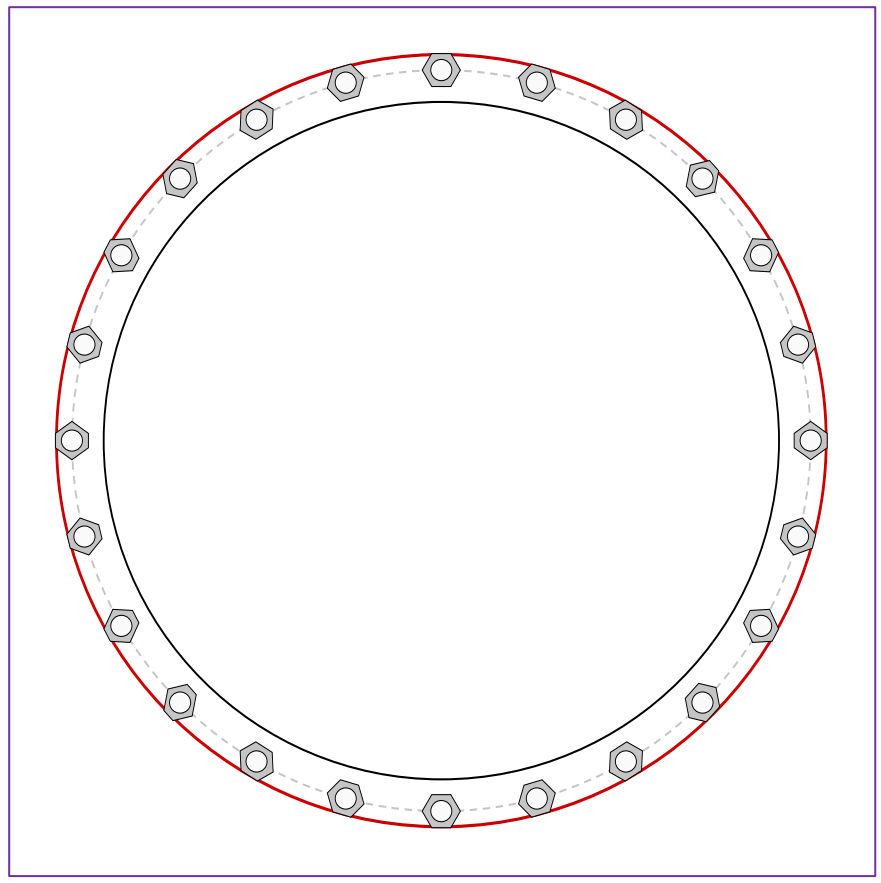
Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	150 - 130	Pole	TP34.313x27.813x0.25	1	-6.75	1057.56	13.8	Pass
L2	130 - 115	Pole	TP36.688x32.188x0.25	2	-13.58	1187.97	45.3	Pass
L3	115 - 95	Pole	TP45.188x36.688x0.313	3	-19.03	1727.64	45.1	Pass
L4	95 - 91	Pole	TP45.813x42.012x0.313	4	-22.31	1857.23	55.0	Pass
L5	91 - 51	Pole	TP58.875x45.813x0.375	5	-31.75	2733.11	60.5	Pass
L6	51 - 40	Pole	TP61.688x55.5126x0.375	6	-40.35	2998.44	70.9	Pass
L7	40 - 19	Pole	TP68.5x61.688x0.438	7	-45.30	3720.92	59.9	Pass
L8	19 - 0	Pole	TP73.813x64.7046x0.438	8	-60.95	4187.62	69.5	Pass
							Summary	
						Pole (L6)	70.9	Pass
						RATING =	**70.9**	**Pass**

Monopole Base Plate Connection

Site Info	
Site ID:	BOBOS00071A

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	No
l_{ar} (in)	2

Applied Loads	
Moment (kip-ft)	4259.23
Axial Force (kips)	60.95
Shear Force (kips)	43.97



Connection Properties

Anchor Rod Data

(24) 2" ø bolts (A687 N; Fy=105 ksi, Fu=125 ksi) on 70" BC

Base Plate Data

64" ID x 2" Plate (A36M-42; Fy=42 ksi, Fu=60 ksi)

Stiffener Data

N/A

Pole Data

73.813" x 0.438" 12-sided pole (A36M-45; Fy=45 ksi, Fu=60 ksi)

Analysis Results

Anchor Rod Summary *(units of kips, kip-in)*

Pu_t = 119.11	ϕPn_t = 234.38	**Stress Rating**
Vu = 1.83	ϕVn = 147.26	**50.8%**
Mu = n/a	ϕMn = n/a	**Pass**

Base Plate Summary

Max Stress (ksi):	23.16	(Flexural)
Allowable Stress (ksi):	37.8	
Stress Rating:	**61.3%**	**Pass**

Analysis Date: 3/3/2022

Drilled Pier Foundation

Site Name:	BOBOS00071A
TIA-222 Revison:	H
Tower Type:	Monopole

Applied Loads	Comp.	Uplift
Moment (kip-ft)	4259.23	
Axial Force (kips)	60.95	
Shear Force (kips)	43.96	

Material Properties		
Concrete Strength, f'c:	4	ksi
Rebar Strength, Fy:	60	ksi
Tie Yield Strength, Fyt:	40	ksi

Pier Design Data		
Depth	27.5	ft
Ext. Above Grade	0.25	ft
Pier Section 1		
From 0.25' above grade to 27.5' below grade		
Pier Diameter	7.5	ft
Rebar Quantity	66	
Rebar Size	7	
Clear Cover to Ties	3	in
Tie Size	3	
Tie Spacing		in

Rebar & Pier Options

Embedded Pole Inputs

Belled Pier Inputs

Analysis Results		
Soil Lateral Check	*Compression*	*Uplift*
$D_{v=0}$ (ft from TOC)	6.87	-
Soil Safety Factor	2.29	-
Max Moment (kip-ft)	4529.11	-
Rating	*58.1%*	-
Soil Vertical Check	*Compression*	*Uplift*
Skin Friction (kips)	368.77	-
End Bearing (kips)	33.13	-
Weight of Concrete (kips)	179.32	-
Total Capacity (kips)	401.90	-
Axial (kips)	240.27	-
Rating	*59.8%*	-
Reinforced Concrete Flexure	*Compression*	*Uplift*
Critical Depth (ft from TOC)	6.77	-
Critical Moment (kip-ft)	4529.01	-
Critical Moment Capacity	7033.00	-
Rating	*64.4%*	-
Reinforced Concrete Shear	*Compression*	*Uplift*
Critical Depth (ft from TOC)	19.37	-
Critical Shear (kip)	468.93	-
Critical Shear Capacity	635.11	-
Rating	*73.8%*	-

Structural Foundation Rating	**73.8%**
Soil Interaction Rating	**59.8%**

Check Limitation	
Apply TIA-222-H Section 15.5:	☐
N/A	☐
Additional Longitudinal Rebar	
Input Effective Depths (else Actual):	☐
Shear Design Options	
Check Shear along Depth of Pier:	☑
Utilize Shear-Friction Methodology:	☐
Override Critical Depth:	☐

Go to Soil Calculations

Soil Profile

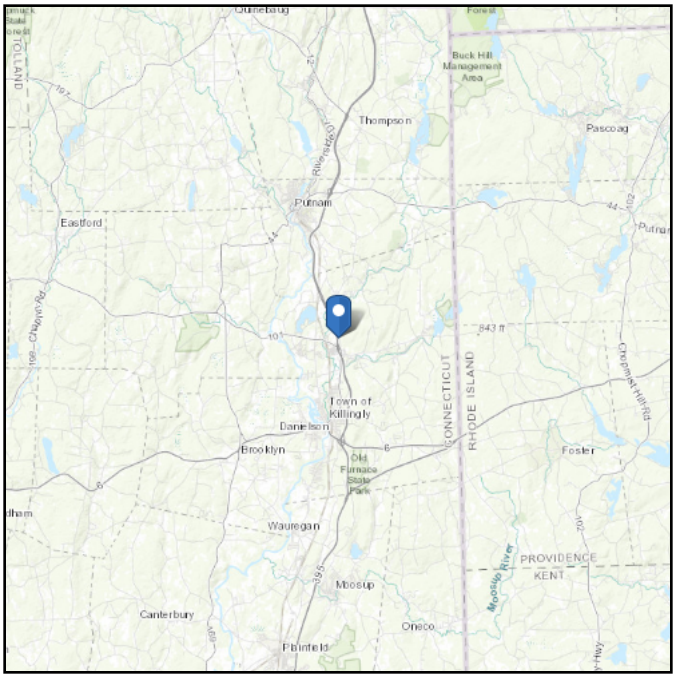
Groundwater Depth	15	# of Layers	4

Layer	Top (ft)	Bottom (ft)	Thickness (ft)	γ_{soil} (pcf)	$\gamma_{concrete}$ (pcf)	Cohesion (ksf)	Angle of Friction (degrees)	Calculated Ultimate Skin Friction Comp (ksf)	Calculated Ultimate Skin Friction Uplift (ksf)	Ultimate Skin Friction Comp Override (ksf)	Ultimate Skin Friction Uplift Override (ksf)	Ult. Gross Bearing Capacity (ksf)	SPT Blow Count	Soil Type
1	0	3.75	3.75	100	150	0	0	0.000	0.000					Cohesionless
2	3.75	7.5	3.75	100	150	0	30	0.442	0.442				10	Cohesionless
3	7.5	15	7.5	105	150	0	30	0.798	0.798				10	Cohesionless
4	15	27.5	12.5	43.2	87.6	0	30	1.058	1.058			1	10	Cohesionless

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard:	ASCE/SEI 7-16	**Elevation:**	268.77 ft (NAVD 88)
Risk Category:	II	**Latitude:**	41.847398
Soil Class:	D - Default (see Section 11.4.3)	**Longitude:**	-71.878969



Wind

Results:

Wind Speed:	121 Vmph
10-year MRI	75 Vmph
25-year MRI	85 Vmph
50-year MRI	94 Vmph
100-year MRI	100 Vmph

Data Source:	ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed:	Mon Sep 20 2021

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

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

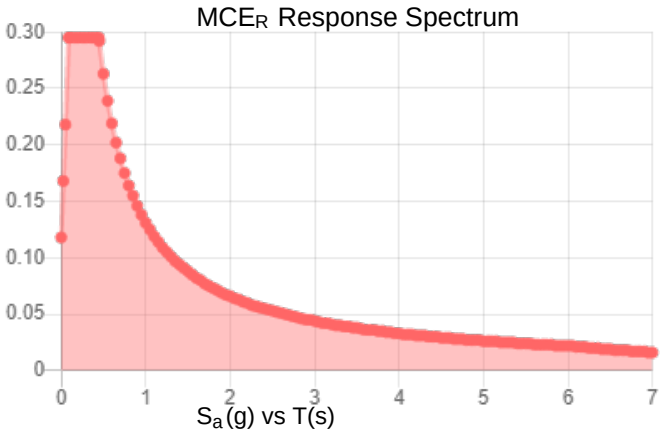
Seismic

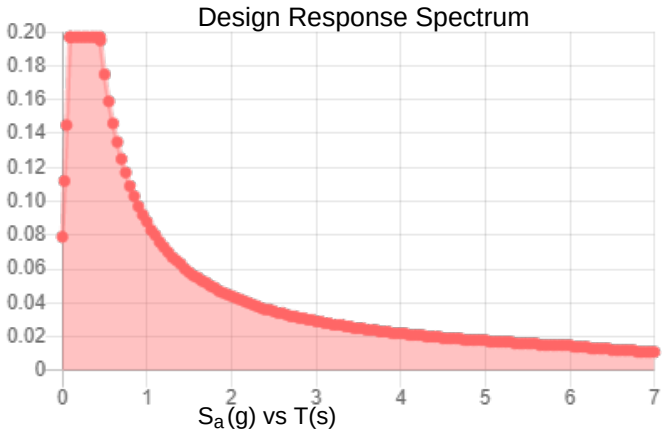
Site Soil Class: D - Default (see Section 11.4.3)

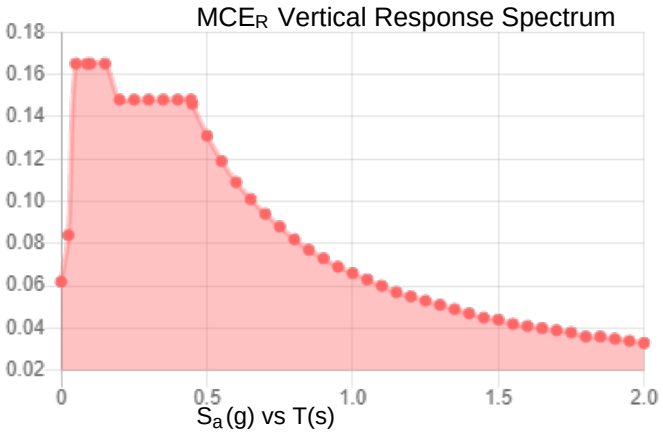
Results:

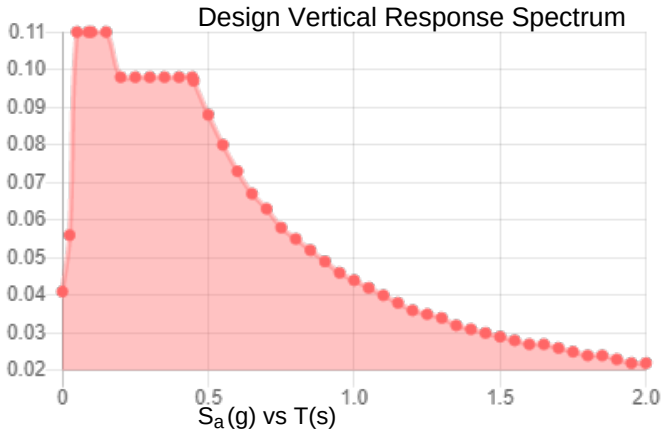
S_S :	0.184	S_{D1} :	0.088
S_1 :	0.055	T_L :	6
F_a :	1.6	PGA :	0.099
F_v :	2.4	PGA_M :	0.159
S_{MS} :	0.295	F_{PGA} :	1.6
S_{M1} :	0.131	I_e :	1
S_{DS} :	0.197	C_v :	0.7

Seismic Design Category B









Data Accessed: Mon Sep 20 2021

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

Ice

Results:

Ice Thickness:	1.00 in.
Concurrent Temperature:	15 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8
Date Accessed:	Mon Sep 20 2021

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

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

Exhibit E

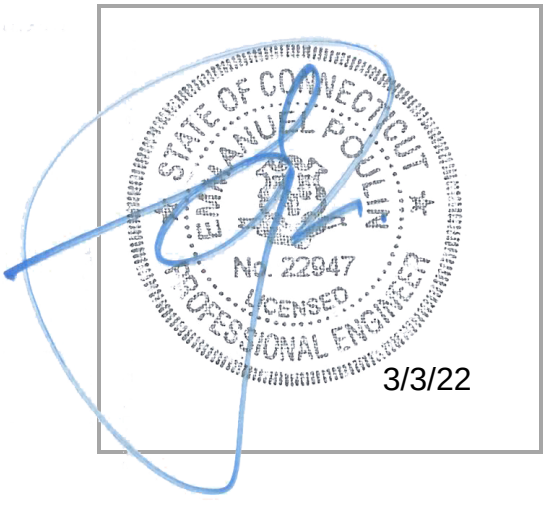
Mount Analysis

MOUNT ANALYSIS REPORT

March 3, 2022

Dish Wireless Site Name	BOBOS00071A
Dish Wireless Site Number	BOBOS00071A
Infinigy Job Number	1197-F0001-B
Client	NSS/DISH
Carrier	Dish Wireless
Site Location	79 Putnam Pike Dayville, CT 06241 Windham County 41.847398 N NAD83 71.878969 W NAD83
Mount Type	8.0 ft Platform
Mount Elevation	140.0 ft AGL
Structural Usage Ratio	**34.1**
Overall Result	**Pass**

The enclosed mount structural analysis has been performed in accordance with the 2018 Connecticut State Building Code (2015 IBC) based on an ultimate 3-second gust wind speed of 121 mph. The evaluation criteria and applicable codes are presented in the next section of this report.



CONTENTS

1. INTRODUCTION

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

2. DESIGN/ANALYSIS PARAMETERS

Wind Speed	121 mph (3-Second Gust)
Wind Speed w/ ice	50 mph (3-Second Gust) w/ 1.0" ice
Code / Standard	TIA-222-H
Adopted Code	2018 Connecticut State Building Code (2015 IBC)
Risk Category	II
Exposure Category	C
Topographic Category	1
Calculated Crest Height	0 ft.
Seismic Spectral Response	S_s = 0.184 g / S_1 = 0.055 g
Live Load Wind Speed	60 mph
Man Live Load at Mid/End Points	250 lbs
Man Live Load at Mount Pipes	500 lbs

3. PROPOSED LOADING CONFIGURATION - 140.0 ft. AGL Platform

Antenna Centerline (ft)	Qty.	Appurtenance Manufacturers	Appurtenance Models
140.0	3	JMA WIRELESS	MX08FRO665-21
	3	FUJITSU	TA08025-B605
	3	FUJITSU	TA08025-B604
	1	RAYCAP	RDIDC-9181-PF-48

4. SUPPORTING DOCUMENTATION

Proposed Loading	Dish Wireless, Site #BOBOS00071A, dated February 25, 2022
Mount Manufacturer Drawings	Commscope Document # MC-PK8-DSH, dated March 08, 2021
Preliminary Construction Drawings	Infinigy. A&E Project #1097-F0001-C Rev A, dated September 24, 2021

5. RESULTS

Components	Capacity	Pass/Fail
Mount Pipes	22.6%	Pass
Horizontals	12.9%	Pass
Standoffs	25.7%	Pass
Corner Plates	33.3%	Pass
Corner Angles	30.0%	Pass
Channel Arms	32.2%	Pass
Handrails	27.0%	Pass
Connections	34.1%	Pass
MOUNT RATING =	**34.1 %**	**Pass**

Notes:

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

6. RECOMMENDATIONS

Infinigy recommends installing Dish Wireless's proposed equipment loading configuration on the mount at 140.0 ft. The installation shall be performed in accordance with the construction documents issued for this site.

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

7. ASSUMPTIONS

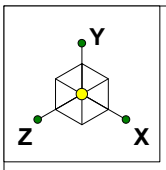
The antenna mounting system was properly fabricated, installed and maintained in accordance with its original design and manufacturer's specifications.
The configuration of antennas, mounts, and other appurtenances are as specified in the proposed loading configuration table.
All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report.
The analysis will require revisions if the existing conditions in the field differ from those shown in the above-referenced documents or assumed in this analysis. No allowance was made for any damaged, missing, or rusted members.
Steel grades have been assumed as follows, unless noted otherwise: Channel, Solid Round, Plate, Built-up Angle — ASTM A1011 36 KSI Structural Angle — ASTM A529 Gr. 50 HSS (Rectangular) — ASTM A500-B GR 46 HSS (Circular) — ASTM A500-B GR 42 Pipe — ASTM A500 Gr C Connection Bolts — ASTM A325 U-Bolts — ASTM A307
All bolted connections are pretensioned in accordance with Table 8.2 of the RCSC 2014 Standard

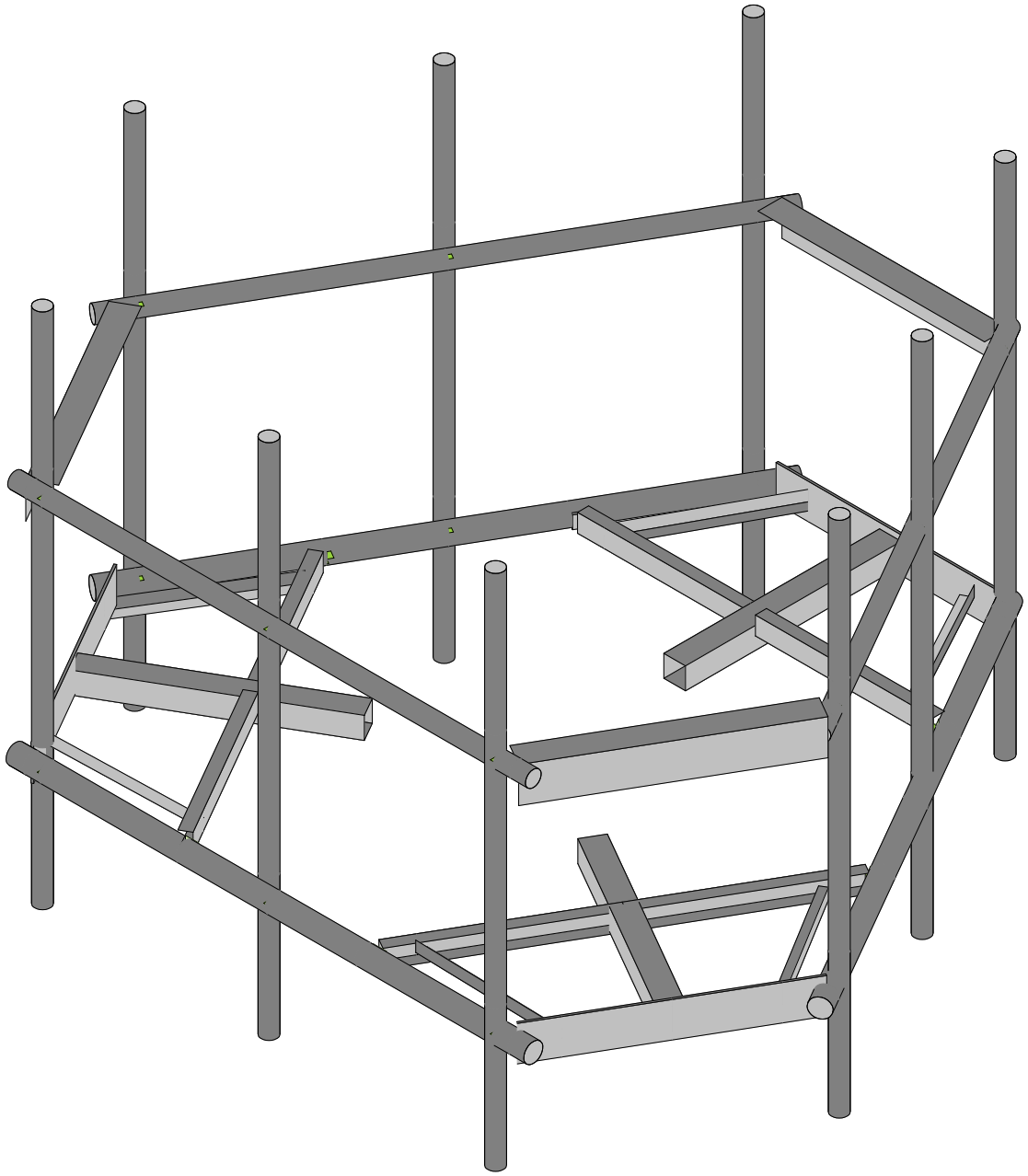
8. LIABILITY WAIVER AND LIMITATIONS

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

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

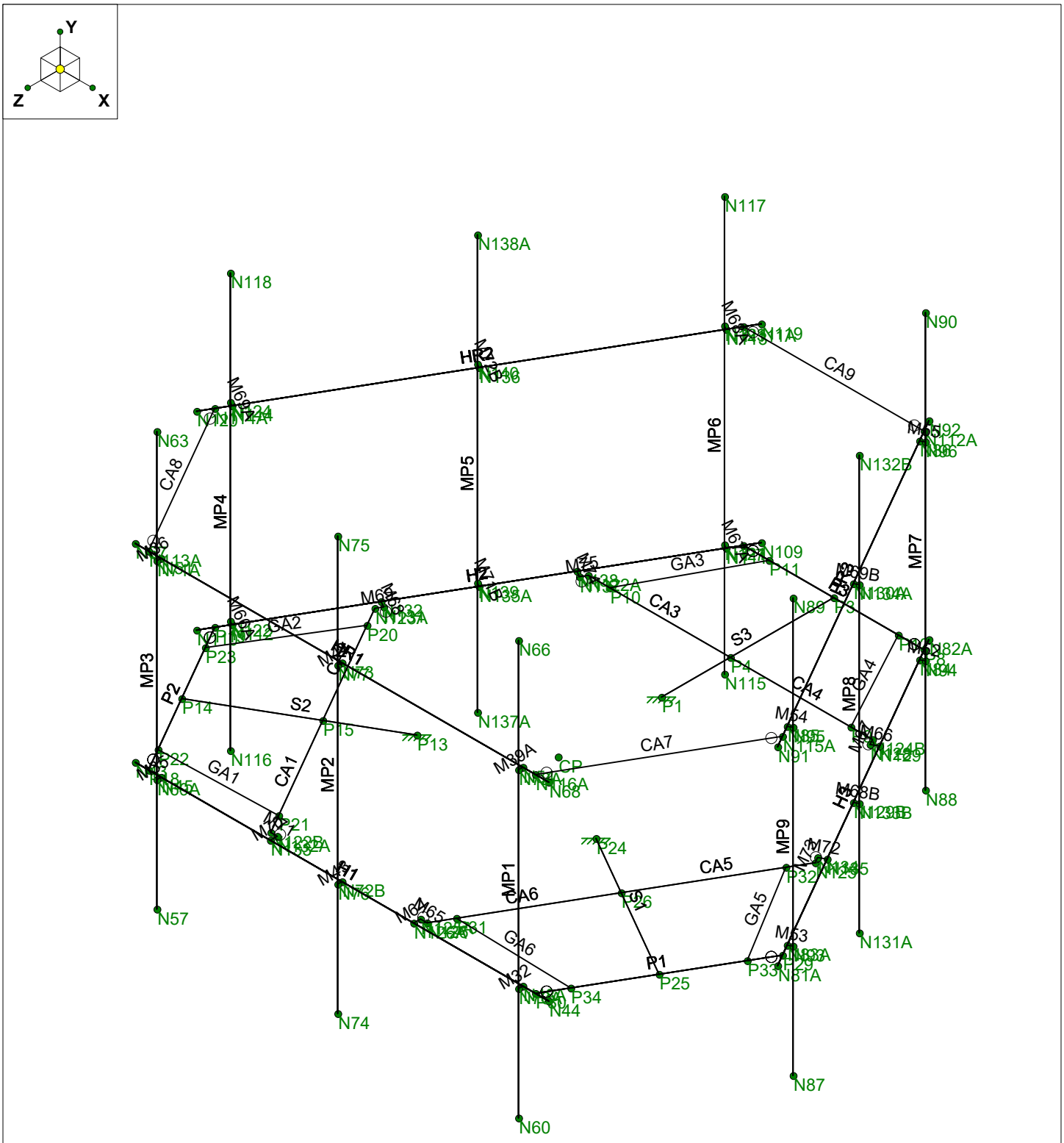
This report is an evaluation of the mount structure only and does not determine the adequacy of the supporting structure, other carrier mounts or cable mounting attachments. The analysis of these elements is outside the scope of this analysis, are assumed to be adequate for the purpose of this report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





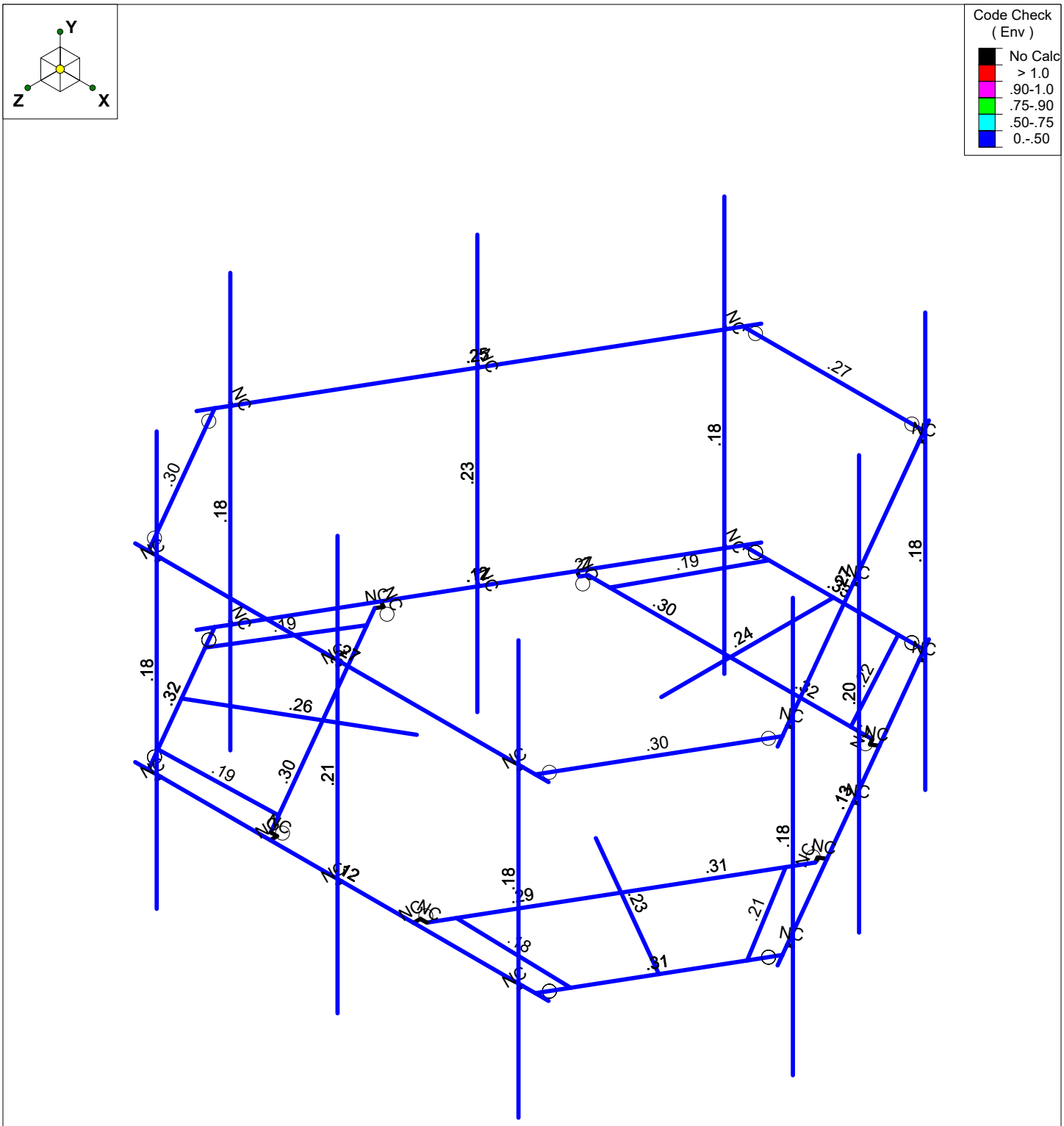
Envelope Only Solution

Infinigy Engineering, PLLC	BOBOS00071A	Rendered
PSM		Mar 3, 2022 at 1:51 PM
1197-F0001-B		BOBOS00071A_loaded.r3d



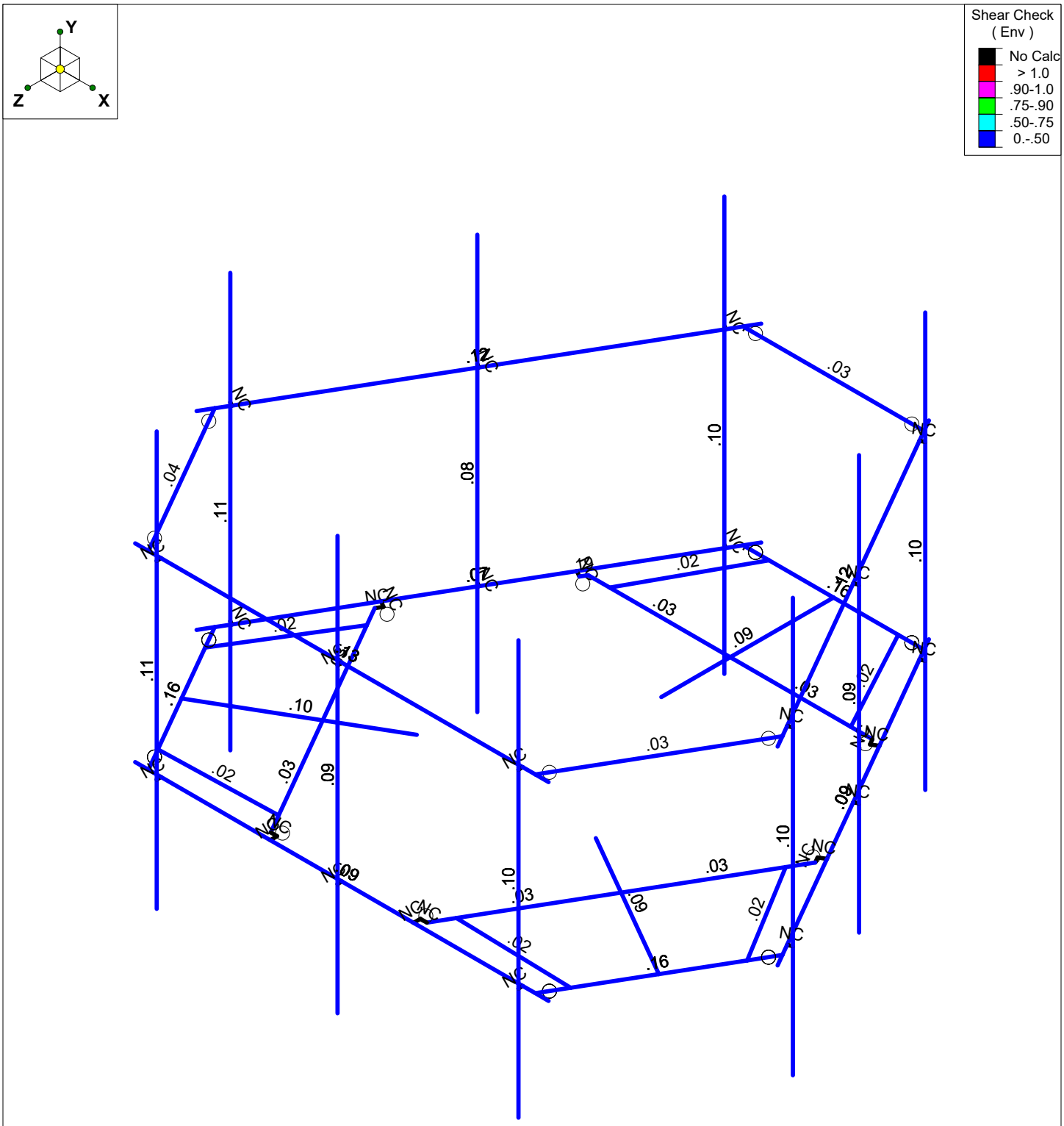
Envelope Only Solution

Infinigy Engineering, PLLC	BOBOS00071A	WireFrame
PSM		Mar 3, 2022 at 1:51 PM
1197-F0001-B		BOBOS00071A_loaded.r3d



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

Infinigy Engineering, PLLC	BOBOS00071A	Bending Check
PSM		Mar 3, 2022 at 1:52 PM
1197-F0001-B		BOBOS00071A_loaded.r3d



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

Infinigy Engineering, PLLC	BOBOS00071A	Shear Check
PSM		Mar 3, 2022 at 1:52 PM
1197-F0001-B		BOBOS00071A_loaded.r3d

Program Inputs

PROJECT INFORMATION	
Client:	ATC
Carrier:	Dish Wireless
Engineer:	Pradin Suinyal Magar, M.S

SITE INFORMATION		
Risk Category:	II	
Exposure Category:	C	
Topo Factor Procedure:	Method 1, Category 1	
Site Class:	D - Stiff Soil (Assumed)	
Ground Elevation:	268.77	ft *Rev H

MOUNT INFORMATION		
Mount Type:	Platform	
Num Sectors:	3	
Centerline AGL:	140.00	ft
Tower Height AGL:	150.00	ft

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

FACTORS		
Directionality Fact. (K_d):	0.950	
Ground Ele. Factor (K_e):	0.990	*Rev H Only
Rooftop Speed-Up (K_s):	1.000	*Rev H Only
Topographic Factor (K_{zt}):	1.000	
Gust Effect Factor (G_h):	1.000	

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

WIND AND ICE DATA		
Ultimate Wind (V_{ult}):	121	mph
Design Wind (V):	N/A	mph
Ice Wind (V_{ice}):	50	mph
Base Ice Thickness (t_i):	1	in
Flat Pressure:	95.809	psf
Round Pressure:	57.485	psf
Ice Wind Pressure:	9.816	psf

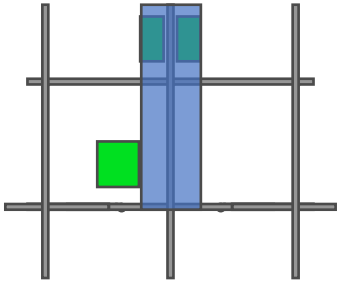
SEISMIC DATA		
Short-Period Accel. (S_s):	0.184	g
1-Second Accel. (S_1):	0.055	g
Short-Period Design (S_{DS}):	0.196	
1-Second Design (S_{D1}):	0.088	
Short-Period Coeff. (F_a):	1.600	
1-Second Coeff. (F_v):	2.400	
Amplification Factor (A_s):	3.000	
Response Mod. Coeff. (R):	2.000	

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless

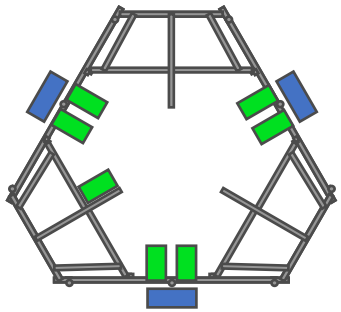
Infinigy Load Calculator V2.1.7

Program Inputs

ELEVATION VIEW



PLAN VIEW



INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless

Infinigy Load Calculator V2.1.7

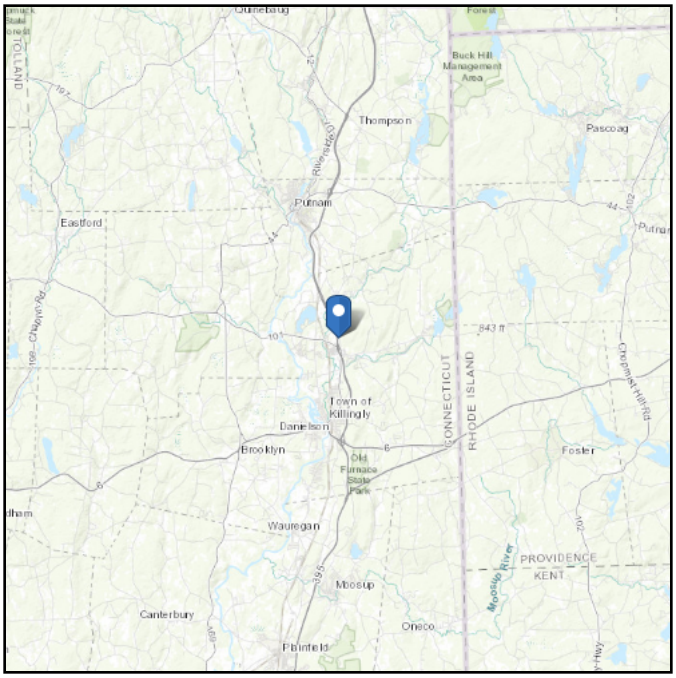
APPURTENANCE INFORMATION

Appurtenance Name	Elevation	Qty.	K_a	q_z (psf)	EPA_N (ft^2)	EPA_T (ft^2)	Wind F_z (lbs)	Wind F_x (lbs)	Weight (lbs)	Seismic F (lbs)	Member (α sector)
JMA WIRELESS MX08FRO665-21	140.0	3	0.90	47.90	8.01	3.21	345.34	138.40	64.50	18.99	MP2
FUJITSU TA08025-B605	140.0	3	0.90	47.90	1.96	1.03	84.65	44.53	74.95	22.07	MP2
FUJITSU TA08025-B604	140.0	3	0.90	47.90	1.96	1.03	84.65	44.53	63.93	18.82	MP2
RAYCAP RDIDC-9181-PF-48	140.0	1	0.90	47.90	1.87	1.07	71.86	54.61	21.85	6.43	S2

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard:	ASCE/SEI 7-16	**Elevation:**	268.77 ft (NAVD 88)
Risk Category:	II	**Latitude:**	41.847398
Soil Class:	D - Default (see Section 11.4.3)	**Longitude:**	-71.878969



Wind

Results:

Wind Speed:	121 Vmph
10-year MRI	75 Vmph
25-year MRI	85 Vmph
50-year MRI	94 Vmph
100-year MRI	100 Vmph

Data Source:	ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed:	Mon Sep 20 2021

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

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

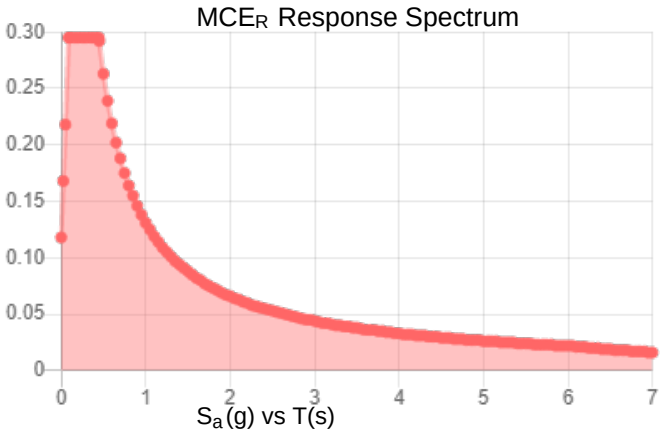
Seismic

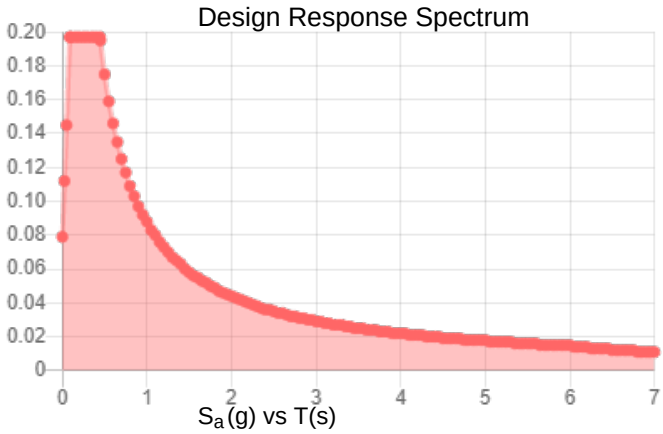
Site Soil Class: D - Default (see Section 11.4.3)

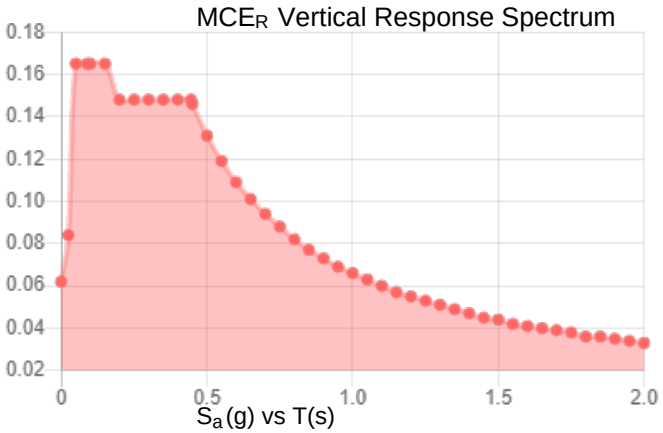
Results:

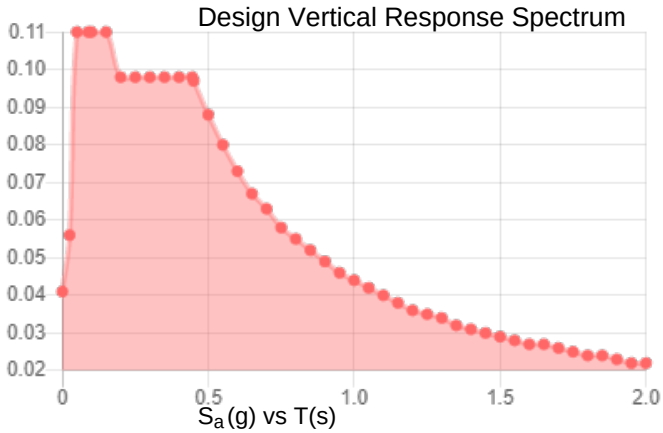
S_S :	0.184	S_{D1} :	0.088
S_1 :	0.055	T_L :	6
F_a :	1.6	PGA :	0.099
F_v :	2.4	PGA_M :	0.159
S_{MS} :	0.295	F_{PGA} :	1.6
S_{M1} :	0.131	I_e :	1
S_{DS} :	0.197	C_v :	0.7

Seismic Design Category B









Data Accessed: Mon Sep 20 2021

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

Ice

Results:

Ice Thickness:	1.00 in.
Concurrent Temperature:	15 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8
Date Accessed:	Mon Sep 20 2021

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

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

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(...	Section/Shape	Type	Design List	Material	Design Rules
1	S3	P1	P3			Square Tubing	Beam	None	A500 GR.C	Typical
2	GA4	P9	P12		270	Grating Angle	Beam	None	A529 Gr. 50	Typical
3	GA3	P10	P11			Grating Angle	Beam	None	A529 Gr. 50	Typical
4	P3	P7	P8			Corner Plates	Beam	None	A1011 36 Ksi	Typical
5	S2	P13	P14			Square Tubing	Beam	None	A500 GR.C	Typical
6	GA2	P20	P23		270	Grating Angle	Beam	None	A529 Gr. 50	Typical
7	GA1	P21	P22			Grating Angle	Beam	None	A529 Gr. 50	Typical
8	P2	P18	P19			Corner Plates	Beam	None	A1011 36 Ksi	Typical
9	S1	P24	P25			Square Tubing	Beam	None	A500 GR.C	Typical
10	GA6	P31	P34		270	Grating Angle	Beam	None	A529 Gr. 50	Typical
11	GA5	P32	P33			Grating Angle	Beam	None	A529 Gr. 50	Typical
12	P1	P29	P30			Corner Plates	Beam	None	A1011 36 Ksi	Typical
13	H1	N43	N44			Face Pipes(3.5x.16)	Beam	None	A500 GR.C	Typical
14	MP1	N66	N60			Antenna Pipes	Beam	None	A500 GR.C	Typical
15	MP3	N63	N57			Antenna Pipes	Beam	None	A500 GR.C	Typical
16	HR1	N67	N68			Handrail	Beam	None	A500 GR.C	Typical
17	CA8	N114A	N113A		180	Handrail Connector	Beam	None	A1011 36 Ksi	Typical
18	CA9	N112A	N111A		180	Handrail Connector	Beam	None	A1011 36 Ksi	Typical
19	CA7	N116A	N115A		180	Handrail Connector	Beam	None	A1011 36 Ksi	Typical
20	M32	N48A	N70A			RIGID	None	None	RIGID	Typical
21	M35	N45	N69A			RIGID	None	None	RIGID	Typical
22	M36	N51	N71A			RIGID	None	None	RIGID	Typical
23	M39A	N54	N72A			RIGID	None	None	RIGID	Typical
24	CA3	P4	N122A			Channel(3.38x2.06)	Beam	None	A1011 36 Ksi	Typical
25	CA4	N124B	P4			Channel(3.38x2.06)	Beam	None	A1011 36 Ksi	Typical
26	CA1	P15	N122B			Channel(3.38x2.06)	Beam	None	A1011 36 Ksi	Typical
27	CA2	N123A	P15			Channel(3.38x2.06)	Beam	None	A1011 36 Ksi	Typical
28	CA5	P26	N125			Channel(3.38x2.06)	Beam	None	A1011 36 Ksi	Typical
29	CA6	N126	P26			Channel(3.38x2.06)	Beam	None	A1011 36 Ksi	Typical
30	M64	N126A	N125A			RIGID	None	None	RIGID	Typical
31	M65	N126	N125A			RIGID	None	None	RIGID	Typical
32	M66	N129	N128			RIGID	None	None	RIGID	Typical
33	M67	N124B	N128			RIGID	None	None	RIGID	Typical
34	M68	N132	N131			RIGID	None	None	RIGID	Typical
35	M69	N123A	N131			RIGID	None	None	RIGID	Typical
36	M70	N133	N132A			RIGID	None	None	RIGID	Typical
37	M71	N122B	N132A			RIGID	None	None	RIGID	Typical
38	M72	N135	N134			RIGID	None	None	RIGID	Typical
39	M73	N125	N134			RIGID	None	None	RIGID	Typical
40	M74	N138	N137			RIGID	None	None	RIGID	Typical
41	M75	N122A	N137			PL 2.375x0.5	None	None	A36 Gr.36	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(...	Section/Shape	Type	Design List	Material	Design Rules
42	MP2	N75	N74			Antenna Pipes	Beam	None	A500 GR.C	Typical
43	M43	N72B	N76			RIGID	None	None	RIGID	Typical
44	M44	N73	N77			RIGID	None	None	RIGID	Typical
45	H3	N81A	N82A			Face Pipes(3.5x.16)	Beam	None	A500 GR.C	Typical
46	MP7	N90	N88			Antenna Pipes	Beam	None	A500 GR.C	Typical
47	MP9	N89	N87			Antenna Pipes	Beam	None	A500 GR.C	Typical
48	HR3	N91	N92			Handrail	Beam	None	A500 GR.C	Typical
49	M52	N84	N94			RIGID	None	None	RIGID	Typical
50	M53	N83A	N93			RIGID	None	None	RIGID	Typical
51	M54	N85	N95			RIGID	None	None	RIGID	Typical
52	M55	N86	N96			RIGID	None	None	RIGID	Typical
53	H2	N109	N110			Face Pipes(3.5x.16)	Beam	None	A500 GR.C	Typical
54	MP4	N118	N116			Antenna Pipes	Beam	None	A500 GR.C	Typical
55	MP6	N117	N115			Antenna Pipes	Beam	None	A500 GR.C	Typical
56	HR2	N119	N120			Handrail	Beam	None	A500 GR.C	Typical
57	M66A	N112	N122			RIGID	None	None	RIGID	Typical
58	M67A	N111	N121			RIGID	None	None	RIGID	Typical
59	M68A	N113	N123			RIGID	None	None	RIGID	Typical
60	M69A	N114	N124			RIGID	None	None	RIGID	Typical
61	MP8	N132B	N131A			Antenna Pipes	Beam	None	A500 GR.C	Typical
62	M68B	N129B	N133B			RIGID	None	None	RIGID	Typical
63	M69B	N130A	N134A			RIGID	None	None	RIGID	Typical
64	MP5	N138A	N137A			Antenna Pipes	Beam	None	A500 GR.C	Typical
65	M71B	N135A	N139			RIGID	None	None	RIGID	Typical
66	M72B	N136	N140			RIGID	None	None	RIGID	Typical

Material Takeoff

	Material	Size	Pieces	Length[in]	Weight[LB]
1	General				
2	RIGID		29	35.1	0
3	Total General		29	35.1	0
4					
5	Hot Rolled Steel				
6	A1011 36 Ksi	C3.38x2.06x0.25	6	198	98.255
7	A1011 36 Ksi	PL6.5x0.375	3	126	87.09
8	A1011 36 Ksi	L6.6x4.46x0.25	3	126	96.558
9	A36 Gr.36	PL 2.375x0.5	1	1.5	.505
10	A500 GR.C	2.88x0.120	3	288	84.974
11	A500 GR.C	HSS4X4X6	3	120	162.653
12	A500 GR.C	Pipe3.5x0.165	3	288	141.202
13	A500 GR.C	PIPE_2.5	9	864	394.45

Material Takeoff (Continued)

	Material	Size	Pieces	Length[in]	Weight[LB]
14	A529 Gr. 50	L2x2x4	6	163.8	43.838
15	Total HR Steel		37	2175.3	1109.525

Basic Load Cases

	BLC Description	Category	X Gr...	Y Gr...	Z Gr...	Joint	Point	Distributed	Area(Memb...	Surface(Plate/Wall)
1	Self Weight	DL		-1			13		3	
2	Wind Load AZI 0	WLZ					26			
3	Wind Load AZI 30	None					26			
4	Wind Load AZI 60	None					26			
5	Wind Load AZI 90	WLX					26			
6	Wind Load AZI 1...	None					26			
7	Wind Load AZI 1...	None					26			
8	Wind Load AZI 1...	None					26			
9	Wind Load AZI 2...	None					26			
10	Wind Load AZI 2...	None					26			
11	Wind Load AZI 2...	None					26			
12	Wind Load AZI 3...	None					26			
13	Wind Load AZI 3...	None					26			
14	Distr. Wind Load Z	WLZ						66		
15	Distr. Wind Load X	WLX						66		
16	Ice Weight	OL1					13	66	3	
17	Ice Wind Load A...	OL2					26			
18	Ice Wind Load A...	None					26			
19	Ice Wind Load A...	None					26			
20	Ice Wind Load A...	OL3					26			
21	Ice Wind Load A...	None					26			
22	Ice Wind Load A...	None					26			
23	Ice Wind Load A...	None					26			
24	Ice Wind Load A...	None					26			
25	Ice Wind Load A...	None					26			
26	Ice Wind Load A...	None					26			
27	Ice Wind Load A...	None					26			
28	Ice Wind Load A...	None					26			
29	Distr. Ice Wind L...	OL2						66		
30	Distr. Ice Wind L...	OL3						66		
31	Seismic Load Z	ELZ			-.294		13			
32	Seismic Load X	ELX	-.294				13			
33	Service Live Loa...	LL				3				
34	Maintenance Loa...	LL				1				
35	Maintenance Loa...	LL				1				
36	Maintenance Loa...	LL				1				

Basic Load Cases (Continued)

	BLC Description	Category	X Gr...	Y Gr...	Z Gr...	Joint	Point	Distributed	Area(Memb...	Surface(Plate/Wall)
37	Maintenance Loa...	LL				1				
38	Maintenance Loa...	LL				1				
39	Maintenance Loa...	LL				1				
40	Maintenance Loa...	LL				1				
41	Maintenance Loa...	LL				1				
42	Maintenance Loa...	LL				1				
43	BLC 1 Transient ...	None						9		
44	BLC 16 Transien...	None						9		

Load Combinations

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
1	1.4DL	Y...	Y		1	1.4																				
2	1.2DL + 1WL AZI 0	Y...	Y		1	1.2	2	1	14	1	15															
3	1.2DL + 1WL AZI 30	Y...	Y		1	1.2	3	1	14	.866	15	.5														
4	1.2DL + 1WL AZI 60	Y...	Y		1	1.2	4	1	14	.5	15	.866														
5	1.2DL + 1WL AZI 90	Y...	Y		1	1.2	5	1	14		15	1														
6	1.2DL + 1WL AZI 120	Y...	Y		1	1.2	6	1	14	-.5	15	.866														
7	1.2DL + 1WL AZI 150	Y...	Y		1	1.2	7	1	14	-.8...	15	.5														
8	1.2DL + 1WL AZI 180	Y...	Y		1	1.2	8	1	14	-1	15															
9	1.2DL + 1WL AZI 210	Y...	Y		1	1.2	9	1	14	-.8...	15	-.5														
10	1.2DL + 1WL AZI 240	Y...	Y		1	1.2	10	1	14	-.5	15	-.8...														
11	1.2DL + 1WL AZI 270	Y...	Y		1	1.2	11	1	14		15	-1														
12	1.2DL + 1WL AZI 300	Y...	Y		1	1.2	12	1	14	.5	15	-.8...														
13	1.2DL + 1WL AZI 330	Y...	Y		1	1.2	13	1	14	.866	15	-.5														
14	0.9DL + 1WL AZI 0	Y...	Y		1	.9	2	1	14	1	15															
15	0.9DL + 1WL AZI 30	Y...	Y		1	.9	3	1	14	.866	15	.5														
16	0.9DL + 1WL AZI 60	Y...	Y		1	.9	4	1	14	.5	15	.866														
17	0.9DL + 1WL AZI 90	Y...	Y		1	.9	5	1	14		15	1														
18	0.9DL + 1WL AZI 120	Y...	Y		1	.9	6	1	14	-.5	15	.866														
19	0.9DL + 1WL AZI 150	Y...	Y		1	.9	7	1	14	-.8...	15	.5														
20	0.9DL + 1WL AZI 180	Y...	Y		1	.9	8	1	14	-1	15															
21	0.9DL + 1WL AZI 210	Y...	Y		1	.9	9	1	14	-.8...	15	-.5														
22	0.9DL + 1WL AZI 240	Y...	Y		1	.9	10	1	14	-.5	15	-.8...														
23	0.9DL + 1WL AZI 270	Y...	Y		1	.9	11	1	14		15	-1														
24	0.9DL + 1WL AZI 300	Y...	Y		1	.9	12	1	14	.5	15	-.8...														
25	0.9DL + 1WL AZI 330	Y...	Y		1	.9	13	1	14	.866	15	-.5														
26	1.2D + 1.0Di	Y...	Y		1	1.2	16	1																		
27	1.2D + 1.0Di +1.0Wi AZI 0	Y...	Y		1	1.2	16	1	17	1	29	1	30													
28	1.2D + 1.0Di +1.0Wi AZI 30	Y...	Y		1	1.2	16	1	18	1	29	.866	30	.5												
29	1.2D + 1.0Di +1.0Wi AZI 60	Y...	Y		1	1.2	16	1	19	1	29	.5	30	.866												
30	1.2D + 1.0Di +1.0Wi AZI 90	Y...	Y		1	1.2	16	1	20	1	29		30	1												

Load Combinations (Continued)

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
31	1.2D + 1.0Di +1.0Wi AZI 120	Y...	Y		1	1.2	16	1	21	1	29	-.5	30	.866												
32	1.2D + 1.0Di +1.0Wi AZI 150	Y...	Y		1	1.2	16	1	22	1	29	-.8...	30	.5												
33	1.2D + 1.0Di +1.0Wi AZI 180	Y...	Y		1	1.2	16	1	23	1	29	-1	30													
34	1.2D + 1.0Di +1.0Wi AZI 210	Y...	Y		1	1.2	16	1	24	1	29	-.8...	30	-.5												
35	1.2D + 1.0Di +1.0Wi AZI 240	Y...	Y		1	1.2	16	1	25	1	29	-.5	30	-.8...												
36	1.2D + 1.0Di +1.0Wi AZI 270	Y...	Y		1	1.2	16	1	26	1	29		30	-1												
37	1.2D + 1.0Di +1.0Wi AZI 300	Y...	Y		1	1.2	16	1	27	1	29	.5	30	-.8...												
38	1.2D + 1.0Di +1.0Wi AZI 330	Y...	Y		1	1.2	16	1	28	1	29	.866	30	-.5												
39	(1.2 + 0.2Sds)DL + 1.0E AZI 0	Y...	Y		1	1.2...	31	1	32																	
40	(1.2 + 0.2Sds)DL + 1.0E AZI 30	Y...	Y		1	1.2...	31	.866	32	.5																
41	(1.2 + 0.2Sds)DL + 1.0E AZI 60	Y...	Y		1	1.2...	31	.5	32	.866																
42	(1.2 + 0.2Sds)DL + 1.0E AZI 90	Y...	Y		1	1.2...	31		32	1																
43	(1.2 + 0.2Sds)DL + 1.0E AZI 1...	Y...	Y		1	1.2...	31	-.5	32	.866																
44	(1.2 + 0.2Sds)DL + 1.0E AZI 1...	Y...	Y		1	1.2...	31	-.8...	32	.5																
45	(1.2 + 0.2Sds)DL + 1.0E AZI 1...	Y...	Y		1	1.2...	31	-1	32																	
46	(1.2 + 0.2Sds)DL + 1.0E AZI 2...	Y...	Y		1	1.2...	31	-.8...	32	-.5																
47	(1.2 + 0.2Sds)DL + 1.0E AZI 2...	Y...	Y		1	1.2...	31	-.5	32	-.8...																
48	(1.2 + 0.2Sds)DL + 1.0E AZI 2...	Y...	Y		1	1.2...	31		32	-1																
49	(1.2 + 0.2Sds)DL + 1.0E AZI 3...	Y...	Y		1	1.2...	31	.5	32	-.8...																
50	(1.2 + 0.2Sds)DL + 1.0E AZI 3...	Y...	Y		1	1.2...	31	.866	32	-.5																
51	(0.9 - 0.2Sds)DL + 1.0E AZI 0	Y...	Y		1	.861	31	1	32																	
52	(0.9 - 0.2Sds)DL + 1.0E AZI 30	Y...	Y		1	.861	31	.866	32	.5																
53	(0.9 - 0.2Sds)DL + 1.0E AZI 60	Y...	Y		1	.861	31	.5	32	.866																
54	(0.9 - 0.2Sds)DL + 1.0E AZI 90	Y...	Y		1	.861	31		32	1																
55	(0.9 - 0.2Sds)DL + 1.0E AZI 1...	Y...	Y		1	.861	31	-.5	32	.866																
56	(0.9 - 0.2Sds)DL + 1.0E AZI 1...	Y...	Y		1	.861	31	-.8...	32	.5																
57	(0.9 - 0.2Sds)DL + 1.0E AZI 1...	Y...	Y		1	.861	31	-1	32																	
58	(0.9 - 0.2Sds)DL + 1.0E AZI 2...	Y...	Y		1	.861	31	-.8...	32	-.5																
59	(0.9 - 0.2Sds)DL + 1.0E AZI 2...	Y...	Y		1	.861	31	-.5	32	-.8...																
60	(0.9 - 0.2Sds)DL + 1.0E AZI 2...	Y...	Y		1	.861	31		32	-1																
61	(0.9 - 0.2Sds)DL + 1.0E AZI 3...	Y...	Y		1	.861	31	.5	32	-.8...																
62	(0.9 - 0.2Sds)DL + 1.0E AZI 3...	Y...	Y		1	.861	31	.866	32	-.5																
63	1.0DL + 1.5LL + 1.0SWL (60 ...	Y...	Y		1	1	2	.246	14	.246	15		33	1.5												
64	1.0DL + 1.5LL + 1.0SWL (60 ...	Y...	Y		1	1	3	.246	14	.213	15	.123	33	1.5												
65	1.0DL + 1.5LL + 1.0SWL (60 ...	Y...	Y		1	1	4	.246	14	.123	15	.213	33	1.5												
66	1.0DL + 1.5LL + 1.0SWL (60 ...	Y...	Y		1	1	5	.246	14		15	.246	33	1.5												
67	1.0DL + 1.5LL + 1.0SWL (60 ...	Y...	Y		1	1	6	.246	14	-.1...	15	.213	33	1.5												
68	1.0DL + 1.5LL + 1.0SWL (60 ...	Y...	Y		1	1	7	.246	14	-.2...	15	.123	33	1.5												
69	1.0DL + 1.5LL + 1.0SWL (60 ...	Y...	Y		1	1	8	.246	14	-.2...	15		33	1.5												
70	1.0DL + 1.5LL + 1.0SWL (60 ...	Y...	Y		1	1	9	.246	14	-.2...	15	-.1...	33	1.5												
71	1.0DL + 1.5LL + 1.0SWL (60 ...	Y...	Y		1	1	10	.246	14	-.1...	15	-.2...	33	1.5												
72	1.0DL + 1.5LL + 1.0SWL (60 ...	Y...	Y		1	1	11	.246	14		15	-.2...	33	1.5												

Load Combinations (Continued)

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
73	1.0DL + 1.5LL + 1.0SWL (60 ...	Y...	Y		1	1	12	.246	14	.123	15	-.2...	33	1.5												
74	1.0DL + 1.5LL + 1.0SWL (60 ...	Y...	Y		1	1	13	.246	14	.213	15	-.1...	33	1.5												
75	1.2DL + 1.5LL	Y...	Y		1	1.2	33	1.5																		
76	1.2DL + 1.5LM-MP1 + 1SWL (...	Y...	Y		1	1.2	34	1.5	2	.061	14	.061	15													
77	1.2DL + 1.5LM-MP1 + 1SWL (...	Y...	Y		1	1.2	34	1.5	3	.061	14	.053	15	.031												
78	1.2DL + 1.5LM-MP1 + 1SWL (...	Y...	Y		1	1.2	34	1.5	4	.061	14	.031	15	.053												
79	1.2DL + 1.5LM-MP1 + 1SWL (...	Y...	Y		1	1.2	34	1.5	5	.061	14		15	.061												
80	1.2DL + 1.5LM-MP1 + 1SWL (...	Y...	Y		1	1.2	34	1.5	6	.061	14	-.0...	15	.053												
81	1.2DL + 1.5LM-MP1 + 1SWL (...	Y...	Y		1	1.2	34	1.5	7	.061	14	-.0...	15	.031												
82	1.2DL + 1.5LM-MP1 + 1SWL (...	Y...	Y		1	1.2	34	1.5	8	.061	14	-.0...	15													
83	1.2DL + 1.5LM-MP1 + 1SWL (...	Y...	Y		1	1.2	34	1.5	9	.061	14	-.0...	15	-.0...												
84	1.2DL + 1.5LM-MP1 + 1SWL (...	Y...	Y		1	1.2	34	1.5	10	.061	14	-.0...	15	-.0...												
85	1.2DL + 1.5LM-MP1 + 1SWL (...	Y...	Y		1	1.2	34	1.5	11	.061	14		15	-.0...												
86	1.2DL + 1.5LM-MP1 + 1SWL (...	Y...	Y		1	1.2	34	1.5	12	.061	14	.031	15	-.0...												
87	1.2DL + 1.5LM-MP1 + 1SWL (...	Y...	Y		1	1.2	34	1.5	13	.061	14	.053	15	-.0...												
88	1.2DL + 1.5LM-MP2 + 1SWL (...	Y...	Y		1	1.2	35	1.5	2	.061	14	.061	15													
89	1.2DL + 1.5LM-MP2 + 1SWL (...	Y...	Y		1	1.2	35	1.5	3	.061	14	.053	15	.031												
90	1.2DL + 1.5LM-MP2 + 1SWL (...	Y...	Y		1	1.2	35	1.5	4	.061	14	.031	15	.053												
91	1.2DL + 1.5LM-MP2 + 1SWL (...	Y...	Y		1	1.2	35	1.5	5	.061	14		15	.061												
92	1.2DL + 1.5LM-MP2 + 1SWL (...	Y...	Y		1	1.2	35	1.5	6	.061	14	-.0...	15	.053												
93	1.2DL + 1.5LM-MP2 + 1SWL (...	Y...	Y		1	1.2	35	1.5	7	.061	14	-.0...	15	.031												
94	1.2DL + 1.5LM-MP2 + 1SWL (...	Y...	Y		1	1.2	35	1.5	8	.061	14	-.0...	15													
95	1.2DL + 1.5LM-MP2 + 1SWL (...	Y...	Y		1	1.2	35	1.5	9	.061	14	-.0...	15	-.0...												
96	1.2DL + 1.5LM-MP2 + 1SWL (...	Y...	Y		1	1.2	35	1.5	10	.061	14	-.0...	15	-.0...												
97	1.2DL + 1.5LM-MP2 + 1SWL (...	Y...	Y		1	1.2	35	1.5	11	.061	14		15	-.0...												
98	1.2DL + 1.5LM-MP2 + 1SWL (...	Y...	Y		1	1.2	35	1.5	12	.061	14	.031	15	-.0...												
99	1.2DL + 1.5LM-MP2 + 1SWL (...	Y...	Y		1	1.2	35	1.5	13	.061	14	.053	15	-.0...												
100	1.2DL + 1.5LM-MP3 + 1SWL (...	Y...	Y		1	1.2	36	1.5	2	.061	14	.061	15													
101	1.2DL + 1.5LM-MP3 + 1SWL (...	Y...	Y		1	1.2	36	1.5	3	.061	14	.053	15	.031												
102	1.2DL + 1.5LM-MP3 + 1SWL (...	Y...	Y		1	1.2	36	1.5	4	.061	14	.031	15	.053												
103	1.2DL + 1.5LM-MP3 + 1SWL (...	Y...	Y		1	1.2	36	1.5	5	.061	14		15	.061												
104	1.2DL + 1.5LM-MP3 + 1SWL (...	Y...	Y		1	1.2	36	1.5	6	.061	14	-.0...	15	.053												
105	1.2DL + 1.5LM-MP3 + 1SWL (...	Y...	Y		1	1.2	36	1.5	7	.061	14	-.0...	15	.031												
106	1.2DL + 1.5LM-MP3 + 1SWL (...	Y...	Y		1	1.2	36	1.5	8	.061	14	-.0...	15													
107	1.2DL + 1.5LM-MP3 + 1SWL (...	Y...	Y		1	1.2	36	1.5	9	.061	14	-.0...	15	-.0...												
108	1.2DL + 1.5LM-MP3 + 1SWL (...	Y...	Y		1	1.2	36	1.5	10	.061	14	-.0...	15	-.0...												
109	1.2DL + 1.5LM-MP3 + 1SWL (...	Y...	Y		1	1.2	36	1.5	11	.061	14		15	-.0...												
110	1.2DL + 1.5LM-MP3 + 1SWL (...	Y...	Y		1	1.2	36	1.5	12	.061	14	.031	15	-.0...												
111	1.2DL + 1.5LM-MP3 + 1SWL (...	Y...	Y		1	1.2	36	1.5	13	.061	14	.053	15	-.0...												
112	1.2DL + 1.5LM-MP4 + 1SWL (...	Y...	Y		1	1.2	37	1.5	2	.061	14	.061	15													
113	1.2DL + 1.5LM-MP4 + 1SWL (...	Y...	Y		1	1.2	37	1.5	3	.061	14	.053	15	.031												
114	1.2DL + 1.5LM-MP4 + 1SWL (...	Y...	Y		1	1.2	37	1.5	4	.061	14	.031	15	.053												

Load Combinations (Continued)

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
115	1.2DL + 1.5LM-MP4 + 1SWL (...	Y...	Y		1	1.2	37	1.5	5	.061	14		15	.061											
116	1.2DL + 1.5LM-MP4 + 1SWL (...	Y...	Y		1	1.2	37	1.5	6	.061	14	-.0...	15	.053											
117	1.2DL + 1.5LM-MP4 + 1SWL (...	Y...	Y		1	1.2	37	1.5	7	.061	14	-.0...	15	.031											
118	1.2DL + 1.5LM-MP4 + 1SWL (...	Y...	Y		1	1.2	37	1.5	8	.061	14	-.0...	15												
119	1.2DL + 1.5LM-MP4 + 1SWL (...	Y...	Y		1	1.2	37	1.5	9	.061	14	-.0...	15	-.0...											
120	1.2DL + 1.5LM-MP4 + 1SWL (...	Y...	Y		1	1.2	37	1.5	10	.061	14	-.0...	15	-.0...											
121	1.2DL + 1.5LM-MP4 + 1SWL (...	Y...	Y		1	1.2	37	1.5	11	.061	14		15	-.0...											
122	1.2DL + 1.5LM-MP4 + 1SWL (...	Y...	Y		1	1.2	37	1.5	12	.061	14	.031	15	-.0...											
123	1.2DL + 1.5LM-MP4 + 1SWL (...	Y...	Y		1	1.2	37	1.5	13	.061	14	.053	15	-.0...											
124	1.2DL + 1.5LM-MP5 + 1SWL (...	Y...	Y		1	1.2	38	1.5	2	.061	14	.061	15												
125	1.2DL + 1.5LM-MP5 + 1SWL (...	Y...	Y		1	1.2	38	1.5	3	.061	14	.053	15	.031											
126	1.2DL + 1.5LM-MP5 + 1SWL (...	Y...	Y		1	1.2	38	1.5	4	.061	14	.031	15	.053											
127	1.2DL + 1.5LM-MP5 + 1SWL (...	Y...	Y		1	1.2	38	1.5	5	.061	14		15	.061											
128	1.2DL + 1.5LM-MP5 + 1SWL (...	Y...	Y		1	1.2	38	1.5	6	.061	14	-.0...	15	.053											
129	1.2DL + 1.5LM-MP5 + 1SWL (...	Y...	Y		1	1.2	38	1.5	7	.061	14	-.0...	15	.031											
130	1.2DL + 1.5LM-MP5 + 1SWL (...	Y...	Y		1	1.2	38	1.5	8	.061	14	-.0...	15												
131	1.2DL + 1.5LM-MP5 + 1SWL (...	Y...	Y		1	1.2	38	1.5	9	.061	14	-.0...	15	-.0...											
132	1.2DL + 1.5LM-MP5 + 1SWL (...	Y...	Y		1	1.2	38	1.5	10	.061	14	-.0...	15	-.0...											
133	1.2DL + 1.5LM-MP5 + 1SWL (...	Y...	Y		1	1.2	38	1.5	11	.061	14		15	-.0...											
134	1.2DL + 1.5LM-MP5 + 1SWL (...	Y...	Y		1	1.2	38	1.5	12	.061	14	.031	15	-.0...											
135	1.2DL + 1.5LM-MP5 + 1SWL (...	Y...	Y		1	1.2	38	1.5	13	.061	14	.053	15	-.0...											
136	1.2DL + 1.5LM-MP6 + 1SWL (...	Y...	Y		1	1.2	39	1.5	2	.061	14	.061	15												
137	1.2DL + 1.5LM-MP6 + 1SWL (...	Y...	Y		1	1.2	39	1.5	3	.061	14	.053	15	.031											
138	1.2DL + 1.5LM-MP6 + 1SWL (...	Y...	Y		1	1.2	39	1.5	4	.061	14	.031	15	.053											
139	1.2DL + 1.5LM-MP6 + 1SWL (...	Y...	Y		1	1.2	39	1.5	5	.061	14		15	.061											
140	1.2DL + 1.5LM-MP6 + 1SWL (...	Y...	Y		1	1.2	39	1.5	6	.061	14	-.0...	15	.053											
141	1.2DL + 1.5LM-MP6 + 1SWL (...	Y...	Y		1	1.2	39	1.5	7	.061	14	-.0...	15	.031											
142	1.2DL + 1.5LM-MP6 + 1SWL (...	Y...	Y		1	1.2	39	1.5	8	.061	14	-.0...	15												
143	1.2DL + 1.5LM-MP6 + 1SWL (...	Y...	Y		1	1.2	39	1.5	9	.061	14	-.0...	15	-.0...											
144	1.2DL + 1.5LM-MP6 + 1SWL (...	Y...	Y		1	1.2	39	1.5	10	.061	14	-.0...	15	-.0...											
145	1.2DL + 1.5LM-MP6 + 1SWL (...	Y...	Y		1	1.2	39	1.5	11	.061	14		15	-.0...											
146	1.2DL + 1.5LM-MP6 + 1SWL (...	Y...	Y		1	1.2	39	1.5	12	.061	14	.031	15	-.0...											
147	1.2DL + 1.5LM-MP6 + 1SWL (...	Y...	Y		1	1.2	39	1.5	13	.061	14	.053	15	-.0...											
148	1.2DL + 1.5LM-MP7 + 1SWL (...	Y...	Y		1	1.2	40	1.5	2	.061	14	.061	15												
149	1.2DL + 1.5LM-MP7 + 1SWL (...	Y...	Y		1	1.2	40	1.5	3	.061	14	.053	15	.031											
150	1.2DL + 1.5LM-MP7 + 1SWL (...	Y...	Y		1	1.2	40	1.5	4	.061	14	.031	15	.053											
151	1.2DL + 1.5LM-MP7 + 1SWL (...	Y...	Y		1	1.2	40	1.5	5	.061	14		15	.061											
152	1.2DL + 1.5LM-MP7 + 1SWL (...	Y...	Y		1	1.2	40	1.5	6	.061	14	-.0...	15	.053											
153	1.2DL + 1.5LM-MP7 + 1SWL (...	Y...	Y		1	1.2	40	1.5	7	.061	14	-.0...	15	.031											
154	1.2DL + 1.5LM-MP7 + 1SWL (...	Y...	Y		1	1.2	40	1.5	8	.061	14	-.0...	15												
155	1.2DL + 1.5LM-MP7 + 1SWL (...	Y...	Y		1	1.2	40	1.5	9	.061	14	-.0...	15	-.0...											
156	1.2DL + 1.5LM-MP7 + 1SWL (...	Y...	Y		1	1.2	40	1.5	10	.061	14	-.0...	15	-.0...											

Load Combinations (Continued)

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
157	1.2DL + 1.5LM-MP7 + 1SWL (...	Y...	Y		1	1.2	40	1.5	11	.061	14		15	-.0...										
158	1.2DL + 1.5LM-MP7 + 1SWL (...	Y...	Y		1	1.2	40	1.5	12	.061	14	.031	15	-.0...										
159	1.2DL + 1.5LM-MP7 + 1SWL (...	Y...	Y		1	1.2	40	1.5	13	.061	14	.053	15	-.0...										
160	1.2DL + 1.5LM-MP8 + 1SWL (...	Y...	Y		1	1.2	41	1.5	2	.061	14	.061	15											
161	1.2DL + 1.5LM-MP8 + 1SWL (...	Y...	Y		1	1.2	41	1.5	3	.061	14	.053	15	.031										
162	1.2DL + 1.5LM-MP8 + 1SWL (...	Y...	Y		1	1.2	41	1.5	4	.061	14	.031	15	.053										
163	1.2DL + 1.5LM-MP8 + 1SWL (...	Y...	Y		1	1.2	41	1.5	5	.061	14		15	.061										
164	1.2DL + 1.5LM-MP8 + 1SWL (...	Y...	Y		1	1.2	41	1.5	6	.061	14	-.0...	15	.053										
165	1.2DL + 1.5LM-MP8 + 1SWL (...	Y...	Y		1	1.2	41	1.5	7	.061	14	-.0...	15	.031										
166	1.2DL + 1.5LM-MP8 + 1SWL (...	Y...	Y		1	1.2	41	1.5	8	.061	14	-.0...	15											
167	1.2DL + 1.5LM-MP8 + 1SWL (...	Y...	Y		1	1.2	41	1.5	9	.061	14	-.0...	15	-.0...										
168	1.2DL + 1.5LM-MP8 + 1SWL (...	Y...	Y		1	1.2	41	1.5	10	.061	14	-.0...	15	-.0...										
169	1.2DL + 1.5LM-MP8 + 1SWL (...	Y...	Y		1	1.2	41	1.5	11	.061	14		15	-.0...										
170	1.2DL + 1.5LM-MP8 + 1SWL (...	Y...	Y		1	1.2	41	1.5	12	.061	14	.031	15	-.0...										
171	1.2DL + 1.5LM-MP8 + 1SWL (...	Y...	Y		1	1.2	41	1.5	13	.061	14	.053	15	-.0...										
172	1.2DL + 1.5LM-MP9 + 1SWL (...	Y...	Y		1	1.2	42	1.5	2	.061	14	.061	15											
173	1.2DL + 1.5LM-MP9 + 1SWL (...	Y...	Y		1	1.2	42	1.5	3	.061	14	.053	15	.031										
174	1.2DL + 1.5LM-MP9 + 1SWL (...	Y...	Y		1	1.2	42	1.5	4	.061	14	.031	15	.053										
175	1.2DL + 1.5LM-MP9 + 1SWL (...	Y...	Y		1	1.2	42	1.5	5	.061	14		15	.061										
176	1.2DL + 1.5LM-MP9 + 1SWL (...	Y...	Y		1	1.2	42	1.5	6	.061	14	-.0...	15	.053										
177	1.2DL + 1.5LM-MP9 + 1SWL (...	Y...	Y		1	1.2	42	1.5	7	.061	14	-.0...	15	.031										
178	1.2DL + 1.5LM-MP9 + 1SWL (...	Y...	Y		1	1.2	42	1.5	8	.061	14	-.0...	15											
179	1.2DL + 1.5LM-MP9 + 1SWL (...	Y...	Y		1	1.2	42	1.5	9	.061	14	-.0...	15	-.0...										
180	1.2DL + 1.5LM-MP9 + 1SWL (...	Y...	Y		1	1.2	42	1.5	10	.061	14	-.0...	15	-.0...										
181	1.2DL + 1.5LM-MP9 + 1SWL (...	Y...	Y		1	1.2	42	1.5	11	.061	14		15	-.0...										
182	1.2DL + 1.5LM-MP9 + 1SWL (...	Y...	Y		1	1.2	42	1.5	12	.061	14	.031	15	-.0...										

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	P24	...	1126.917	6	1757.2...	10	1592.6...	13	1225.7...	16	1906.464	19	4080.954	10
2		...	-1114.271	24	-627.0...	16	-1579.0...	19	-2854.3...	84	-1931.168	13	-2047.833	16
3	P13	...	1225.46	4	1910.1...	6	1766.07	15	1062.1...	24	2109.656	15	1899.053	24
4		...	-1223.623	22	-531.04	24	-1776.8...	9	-3069.4...	92	-2137.095	9	-4458.294	6
5	P1	...	1684.332	17	1848.3...	2	833.086	2	5017.8...	2	1729.396	11	1269.355	115
6		...	-1698.504	11	-619.02	20	-843.314	8	-2380.4...	20	-1676.544	17	-1187.717	157
7	Totals:	...	3816.826	5	4458.1...	34	4025.4...	2						
8		...	-3816.82	23	1531.3...	52	-4025.4...	20						

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

	Member	Shape	Code Check	Loc[in]	LC	She...	Loc[in]	Dir	LC	phi*P...	phi*P...	phi*M...	phi*Mn z-z [lb...	Cb	Eqn
1	P3	PL6.5x0.375	.333	21	3	.156	36.312	y	5	3658....	78975	616.9...	7678.317	1....	H1-1b
2	CA4	C3.38x2.06...	.322	33	2	.033	4.813	y	34	4776...	56700	2202....	5751.945	1....	H1-1b
3	P2	PL6.5x0.375	.317	21	7	.160	5.687	y	3	3658....	78975	616.9...	7658.118	1....	H1-1b
4	CA5	C3.38x2.06...	.311	0	10	.033	28.187	z	4	4776...	56700	2202....	5751.945	1....	H1-1b
5	P1	PL6.5x0.375	.308	21	9	.159	5.687	y	7	3658....	78975	616.9...	7728.633	1....	H1-1b
6	CA2	C3.38x2.06...	.305	33	6	.034	4.813	y	38	4776...	56700	2202....	5751.945	1....	H1-1b
7	CA1	C3.38x2.06...	.301	0	6	.033	28.188	y	36	4776...	56700	2202....	5751.945	1....	H1-1b
8	CA8	L6.6x4.46x0...	.300	41.562	22	.036	42	z	3	5117...	87561	2464....	7125.374	1....	H2-1
9	CA7	L6.6x4.46x0...	.299	.437	6	.032	0	z	7	5117...	87561	2464....	7125.374	1....	H2-1
10	CA3	C3.38x2.06...	.299	0	2	.034	28.188	y	32	4776...	56700	2202....	5751.945	1....	H1-1b
11	CA6	C3.38x2.06...	.287	33	10	.032	4.813	y	30	4776...	56700	2202....	5751.945	1....	H1-1b
12	M75	PL 2.375x0.5	.275	1.5	6	.194	0	y	173	3825...	38475	400.7...	1903.711	1....	H1-1b
13	CA9	L6.6x4.46x0...	.272	.437	22	.032	0	z	4	5117...	87561	2464....	7125.374	1....	H2-1
14	HR1	2.88x0.120	.270	6	4	.128	6		8	2249...	4307...	3155....	3155.674	1....	H1-1b
15	HR3	2.88x0.120	.269	6	8	.117	90		6	2249...	4307...	3155....	3155.674	1....	H1-1b
16	S2	HSS4X4X6	.257	0	7	.095	0	y	90	1882...	1978...	2204...	22045.5	1.82	H1-1b
17	HR2	2.88x0.120	.251	90	8	.124	90		5	2249...	4307...	3155....	3155.674	1....	H1-1b
18	S3	HSS4X4X6	.244	0	13	.095	0	y	114	1882...	1978...	2204...	22045.5	1....	H1-1b
19	S1	HSS4X4X6	.233	0	11	.093	0	y	130	1882...	1978...	2204...	22045.5	1....	H1-1b
20	MP5	PIPE_2.5	.226	70	7	.083	70		7	3348...	66654	4726.5	4726.5	3....	H1-1b
21	GA4	L2x2x4	.217	0	3	.018	27.295	y	10	2952...	42480	959.63	2190.068	2....	H2-1
22	MP2	PIPE_2.5	.213	70	5	.089	70		5	3348...	66654	4726.5	4726.5	3....	H1-1b
23	GA5	L2x2x4	.210	0	9	.018	0	z	3	2952...	42480	959.63	2190.068	2....	H2-1
24	MP8	PIPE_2.5	.199	70	3	.090	70		3	3348...	66654	4726.5	4726.5	3....	H1-1b
25	GA2	L2x2x4	.192	0	7	.017	0	y	12	2952...	42480	959.63	2190.068	2....	H2-1
26	GA3	L2x2x4	.188	0	7	.018	27.295	z	6	2952...	42480	959.63	2190.068	2....	H2-1
27	GA1	L2x2x4	.187	0	5	.016	0	z	12	2952...	42480	959.63	2190.068	2....	H2-1
28	MP7	PIPE_2.5	.179	70	3	.097	70		5	3348...	66654	4726.5	4726.5	4....	H1-1b
29	MP9	PIPE_2.5	.179	70	9	.100	26		6	3348...	66654	4726.5	4726.5	2....	H1-1b
30	GA6	L2x2x4	.178	0	5	.017	27.295	y	6	2952...	42480	959.63	2190.068	2....	H2-1
31	MP6	PIPE_2.5	.178	70	13	.101	70		5	3348...	66654	4726.5	4726.5	3.85	H1-1b
32	MP1	PIPE_2.5	.178	70	11	.100	26		8	3348...	66654	4726.5	4726.5	4....	H1-1b
33	MP3	PIPE_2.5	.177	70	5	.106	70		3	3348...	66654	4726.5	4726.5	4....	H1-1b
34	MP4	PIPE_2.5	.177	70	7	.106	70		3	3348...	66654	4726.5	4726.5	3....	H1-1b
35	H3	Pipe3.5x0.1...	.129	31	2	.089	48		4	4587...	7158...	6337....	6337.65	1....	H1-1b
36	H2	Pipe3.5x0.1...	.121	48	8	.073	48		8	4587...	7158...	6337....	6337.65	1.63	H1-1b
37	H1	Pipe3.5x0.1...	.121	48	5	.085	48		4	4587...	7158...	6337....	6337.65	1....	H1-1b

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design..	A [in2]	Iyy [in..]	Izz [in...]	J [in4]
1	Corner Plates	PL6.5x0.375	Beam	None	A1011 36 Ksi	Typical	2.438	.029	8.582	.11
2	6"x0.37" Plate	Plate 6x.37	Beam	None	A1011 36 Ksi	Typical	2.22	.025	6.66	.097
3	Grating Angle	L2x2x4	Beam	None	A529 Gr. 50	Typical	.944	.346	.346	.021
4	Face Pipes(3.5x....	Pipe3.5x0.165	Beam	None	A500 GR.C	Typical	1.729	2.409	2.409	4.819
5	Antenna Pipes	PIPE_2.5	Beam	None	A500 GR.C	Typical	1.61	1.45	1.45	2.89
6	Channel(3.38x2....	C3.38x2.06x0.25	Beam	None	A1011 36 Ksi	Typical	1.75	.715	3.026	.034
7	Square Tubing	HSS4X4X6	Beam	None	A500 GR.C	Typical	4.78	10.3	10.3	17.5
8	Handrail Connect...	L6.6x4.46x0.25	Beam	None	A1011 36 Ksi	Typical	2.703	4.759	12.473	.055
9	Handrail	2.88x0.120	Beam	None	A500 GR.C	Typical	1.04	.993	.993	1.985

Joint Boundary Conditions

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
1	P24	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	P13	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	P1	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

Member Advanced Data

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Ra..	Analysis ...	Inactive	Seismi...
1	S3						Yes				None
2	GA4						Yes				None
3	GA3						Yes				None
4	P3	BenPIN	BenPIN				Yes	Default			None
5	S2						Yes				None
6	GA2						Yes				None
7	GA1						Yes				None
8	P2	BenPIN	BenPIN				Yes	Default			None
9	S1						Yes	Default			None
10	GA6						Yes				None
11	GA5						Yes				None
12	P1	BenPIN	BenPIN				Yes	Default			None
13	H1						Yes				None
14	MP1						Yes		+y+3		None
15	MP3						Yes		+y+3		None
16	HR1						Yes				None
17	CA8	OOOOOX	OOOOOX				Yes				None
18	CA9	OOOOOX	OOOOOX				Yes				None
19	CA7	OOOOOX	OOOOOX				Yes	Default			None
20	M32						Yes	** NA **			None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Ra..	Analysis ...	Inactive	Seismi...
21	M35						Yes	** NA **			None
22	M36						Yes	** NA **			None
23	M39A						Yes	** NA **			None
24	CA3						Yes	Default			None
25	CA4						Yes	Default			None
26	CA1						Yes	Default			None
27	CA2						Yes	Default			None
28	CA5						Yes	Default			None
29	CA6						Yes	Default			None
30	M64	BenPIN					Yes	** NA **			None
31	M65						Yes	** NA **			None
32	M66	BenPIN					Yes	** NA **			None
33	M67						Yes	** NA **			None
34	M68	BenPIN					Yes	** NA **			None
35	M69						Yes	** NA **			None
36	M70	BenPIN					Yes	** NA **			None
37	M71						Yes	** NA **			None
38	M72	BenPIN					Yes	** NA **			None
39	M73						Yes	** NA **			None
40	M74	BenPIN					Yes	** NA **			None
41	M75						Yes	** NA **			None
42	MP2						Yes		+y+3		None
43	M43						Yes	** NA **			None
44	M44						Yes	** NA **			None
45	H3						Yes				None
46	MP7						Yes		+y+3		None
47	MP9						Yes		+y+3		None
48	HR3						Yes				None
49	M52						Yes	** NA **			None
50	M53						Yes	** NA **			None
51	M54						Yes	** NA **			None
52	M55						Yes	** NA **			None
53	H2						Yes				None
54	MP4						Yes		+y+3		None
55	MP6						Yes		+y+3		None
56	HR2						Yes				None
57	M66A						Yes	** NA **			None
58	M67A						Yes	** NA **			None
59	M68A						Yes	** NA **			None
60	M69A						Yes	** NA **			None
61	MP8						Yes		+y+3		None
62	M68B						Yes	** NA **			None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Ra..	Analysis ...	Inactive	Seismi...
63	M69B						Yes	** NA **			None
64	MP5						Yes		+y+3		None
65	M71B						Yes	** NA **			None
66	M72B						Yes	** NA **			None

Hot Rolled Steel Design Parameters

	Label	Shape	Lengt...	Lbyy[in]	Lbzz[in]	Lcomp t...	Lcomp b...	L-tor...	Kyy	Kzz	Cb	Func...
1	S3	Square Tubing	40			Lbyy						Late...
2	GA4	Grating Angle	27.295			Lbyy						Late...
3	GA3	Grating Angle	27.295			Lbyy						Late...
4	P3	Corner Plates	42			Lbyy						Late...
5	S2	Square Tubing	40			Lbyy						Late...
6	GA2	Grating Angle	27.295			Lbyy						Late...
7	GA1	Grating Angle	27.295			Lbyy						Late...
8	P2	Corner Plates	42			Lbyy						Late...
9	S1	Square Tubing	40			Lbyy						Late...
10	GA6	Grating Angle	27.295			Lbyy						Late...
11	GA5	Grating Angle	27.295			Lbyy						Late...
12	P1	Corner Plates	42			Lbyy						Late...
13	H1	Face Pipes(3.5x.16)	96			Lbyy						Late...
14	MP1	Antenna Pipes	96			Lbyy						Late...
15	MP3	Antenna Pipes	96			Lbyy						Late...
16	HR1	Handrail	96			Lbyy						Late...
17	CA8	Handrail Connector	42			Lbyy						Late...
18	CA9	Handrail Connector	42			Lbyy						Late...
19	CA7	Handrail Connector	42			Lbyy						Late...
20	CA3	Channel(3.38x2.06)	33			Lbyy						Late...
21	CA4	Channel(3.38x2.06)	33			Lbyy						Late...
22	CA1	Channel(3.38x2.06)	33			Lbyy						Late...
23	CA2	Channel(3.38x2.06)	33			Lbyy						Late...
24	CA5	Channel(3.38x2.06)	33			Lbyy						Late...
25	CA6	Channel(3.38x2.06)	33			Lbyy						Late...
26	M75	PL 2.375x0.5	1.5			Lbyy						Late...
27	MP2	Antenna Pipes	96			Lbyy						Late...
28	H3	Face Pipes(3.5x.16)	96			Lbyy						Late...
29	MP7	Antenna Pipes	96			Lbyy						Late...
30	MP9	Antenna Pipes	96			Lbyy						Late...
31	HR3	Handrail	96			Lbyy						Late...
32	H2	Face Pipes(3.5x.16)	96			Lbyy						Late...
33	MP4	Antenna Pipes	96			Lbyy						Late...
34	MP6	Antenna Pipes	96			Lbyy						Late...

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Lengt...	Lbyy[in]	Lbzz[in]	Lcomp t...	Lcomp b...	L-tor...	Kyy	Kzz	Cb	Func...
35	HR2	Handrail	96			Lbyy						Late...
36	MP8	Antenna Pipes	96			Lbyy						Late...
37	MP5	Antenna Pipes	96			Lbyy						Late...

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

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N72B	L	Y	-250
2	N135A	L	Y	-250
3	N129B	L	Y	-250

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

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N70A	L	Y	-500

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

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N69A	L	Y	-500

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

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N76	L	Y	-500

Joint Loads and Enforced Displacements (BLC 37 : Maintenance Load 4)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N94	L	Y	-500

Joint Loads and Enforced Displacements (BLC 38 : Maintenance Load 5)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N93	L	Y	-500

Joint Loads and Enforced Displacements (BLC 39 : Maintenance Load 6)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N122	L	Y	-500

Joint Loads and Enforced Displacements (BLC 40 : Maintenance Load 7)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N121	L	Y	-500

Joint Loads and Enforced Displacements (BLC 41 : Maintenance Load 8)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N133B	L	Y	-500

Joint Loads and Enforced Displacements (BLC 42 : Maintenance Load 9)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N139	L	Y	-500

Member Point Loads (BLC 1 : Self Weight)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	Y	-32.25	0
2	MP2	Y	-32.25	72
3	MP2	Y	-74.95	12
4	MP2	Y	-63.93	12
5	S2	Y	-21.85	8
6	MP5	Y	-32.25	0
7	MP5	Y	-32.25	72
8	MP5	Y	-74.95	12
9	MP5	Y	-63.93	12
10	MP8	Y	-32.25	0
11	MP8	Y	-32.25	72
12	MP8	Y	-74.95	12
13	MP8	Y	-63.93	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	0	0
2	MP2	Z	-172.67	0
3	MP2	X	0	72
4	MP2	Z	-172.67	72
5	MP2	X	0	12
6	MP2	Z	-84.65	12
7	MP2	X	0	12
8	MP2	Z	-84.65	12
9	S2	X	0	8
10	S2	Z	-71.86	8
11	MP5	X	0	0
12	MP5	Z	-95.07	0
13	MP5	X	0	72
14	MP5	Z	-95.07	72
15	MP5	X	0	12
16	MP5	Z	-54.56	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
17	MP5	X	0	12
18	MP5	Z	-54.56	12
19	MP8	X	0	0
20	MP8	Z	-95.07	0
21	MP8	X	0	72
22	MP8	Z	-95.07	72
23	MP8	X	0	12
24	MP8	Z	-54.56	12
25	MP8	X	0	12
26	MP8	Z	-54.56	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	-73.4	0
2	MP2	Z	-127.14	0
3	MP2	X	-73.4	72
4	MP2	Z	-127.14	72
5	MP2	X	-37.31	12
6	MP2	Z	-64.63	12
7	MP2	X	-37.31	12
8	MP2	Z	-64.63	12
9	S2	X	-40.24	8
10	S2	Z	-69.7	8
11	MP5	X	-73.4	0
12	MP5	Z	-127.14	0
13	MP5	X	-73.4	72
14	MP5	Z	-127.14	72
15	MP5	X	-37.31	12
16	MP5	Z	-64.63	12
17	MP5	X	-37.31	12
18	MP5	Z	-64.63	12
19	MP8	X	-34.6	0
20	MP8	Z	-59.93	0
21	MP8	X	-34.6	72
22	MP8	Z	-59.93	72
23	MP8	X	-22.27	12
24	MP8	Z	-38.57	12
25	MP8	X	-22.27	12
26	MP8	Z	-38.57	12

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

Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	-82.33	0
2	MP2	Z	-47.53	0
3	MP2	X	-82.33	72
4	MP2	Z	-47.53	72
5	MP2	X	-47.25	12
6	MP2	Z	-27.28	12
7	MP2	X	-47.25	12
8	MP2	Z	-27.28	12
9	S2	X	-62.23	8
10	S2	Z	-35.93	8
11	MP5	X	-149.54	0
12	MP5	Z	-86.34	0
13	MP5	X	-149.54	72
14	MP5	Z	-86.34	72
15	MP5	X	-73.31	12
16	MP5	Z	-42.33	12
17	MP5	X	-73.31	12
18	MP5	Z	-42.33	12
19	MP8	X	-82.33	0
20	MP8	Z	-47.53	0
21	MP8	X	-82.33	72
22	MP8	Z	-47.53	72
23	MP8	X	-47.25	12
24	MP8	Z	-27.28	12
25	MP8	X	-47.25	12
26	MP8	Z	-27.28	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	-69.2	0
2	MP2	Z	0	0
3	MP2	X	-69.2	72
4	MP2	Z	0	72
5	MP2	X	-44.53	12
6	MP2	Z	0	12
7	MP2	X	-44.53	12
8	MP2	Z	0	12
9	S2	X	-54.61	8
10	S2	Z	0	8
11	MP5	X	-146.8	0
12	MP5	Z	0	0
13	MP5	X	-146.8	72

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
14	MP5	Z	0	72
15	MP5	X	-74.62	12
16	MP5	Z	0	12
17	MP5	X	-74.62	12
18	MP5	Z	0	12
19	MP8	X	-146.8	0
20	MP8	Z	0	0
21	MP8	X	-146.8	72
22	MP8	Z	0	72
23	MP8	X	-74.62	12
24	MP8	Z	0	12
25	MP8	X	-74.62	12
26	MP8	Z	0	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	-82.33	0
2	MP2	Z	47.53	0
3	MP2	X	-82.33	72
4	MP2	Z	47.53	72
5	MP2	X	-47.25	12
6	MP2	Z	27.28	12
7	MP2	X	-47.25	12
8	MP2	Z	27.28	12
9	S2	X	-39.83	8
10	S2	Z	22.99	8
11	MP5	X	-82.33	0
12	MP5	Z	47.53	0
13	MP5	X	-82.33	72
14	MP5	Z	47.53	72
15	MP5	X	-47.25	12
16	MP5	Z	27.28	12
17	MP5	X	-47.25	12
18	MP5	Z	27.28	12
19	MP8	X	-149.54	0
20	MP8	Z	86.34	0
21	MP8	X	-149.54	72
22	MP8	Z	86.34	72
23	MP8	X	-73.31	12
24	MP8	Z	42.33	12
25	MP8	X	-73.31	12
26	MP8	Z	42.33	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	-73.4	0
2	MP2	Z	127.14	0
3	MP2	X	-73.4	72
4	MP2	Z	127.14	72
5	MP2	X	-37.31	12
6	MP2	Z	64.63	12
7	MP2	X	-37.31	12
8	MP2	Z	64.63	12
9	S2	X	-27.31	8
10	S2	Z	47.29	8
11	MP5	X	-34.6	0
12	MP5	Z	59.93	0
13	MP5	X	-34.6	72
14	MP5	Z	59.93	72
15	MP5	X	-22.27	12
16	MP5	Z	38.57	12
17	MP5	X	-22.27	12
18	MP5	Z	38.57	12
19	MP8	X	-73.4	0
20	MP8	Z	127.14	0
21	MP8	X	-73.4	72
22	MP8	Z	127.14	72
23	MP8	X	-37.31	12
24	MP8	Z	64.63	12
25	MP8	X	-37.31	12
26	MP8	Z	64.63	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	0	0
2	MP2	Z	172.67	0
3	MP2	X	0	72
4	MP2	Z	172.67	72
5	MP2	X	0	12
6	MP2	Z	84.65	12
7	MP2	X	0	12
8	MP2	Z	84.65	12
9	S2	X	0	8
10	S2	Z	71.86	8
11	MP5	X	0	0
12	MP5	Z	95.07	0
13	MP5	X	0	72

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
14	MP5	Z	95.07	72
15	MP5	X	0	12
16	MP5	Z	54.56	12
17	MP5	X	0	12
18	MP5	Z	54.56	12
19	MP8	X	0	0
20	MP8	Z	95.07	0
21	MP8	X	0	72
22	MP8	Z	95.07	72
23	MP8	X	0	12
24	MP8	Z	54.56	12
25	MP8	X	0	12
26	MP8	Z	54.56	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	73.4	0
2	MP2	Z	127.14	0
3	MP2	X	73.4	72
4	MP2	Z	127.14	72
5	MP2	X	37.31	12
6	MP2	Z	64.63	12
7	MP2	X	37.31	12
8	MP2	Z	64.63	12
9	S2	X	40.24	8
10	S2	Z	69.7	8
11	MP5	X	73.4	0
12	MP5	Z	127.14	0
13	MP5	X	73.4	72
14	MP5	Z	127.14	72
15	MP5	X	37.31	12
16	MP5	Z	64.63	12
17	MP5	X	37.31	12
18	MP5	Z	64.63	12
19	MP8	X	34.6	0
20	MP8	Z	59.93	0
21	MP8	X	34.6	72
22	MP8	Z	59.93	72
23	MP8	X	22.27	12
24	MP8	Z	38.57	12
25	MP8	X	22.27	12
26	MP8	Z	38.57	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	82.33	0
2	MP2	Z	47.53	0
3	MP2	X	82.33	72
4	MP2	Z	47.53	72
5	MP2	X	47.25	12
6	MP2	Z	27.28	12
7	MP2	X	47.25	12
8	MP2	Z	27.28	12
9	S2	X	62.23	8
10	S2	Z	35.93	8
11	MP5	X	149.54	0
12	MP5	Z	86.34	0
13	MP5	X	149.54	72
14	MP5	Z	86.34	72
15	MP5	X	73.31	12
16	MP5	Z	42.33	12
17	MP5	X	73.31	12
18	MP5	Z	42.33	12
19	MP8	X	82.33	0
20	MP8	Z	47.53	0
21	MP8	X	82.33	72
22	MP8	Z	47.53	72
23	MP8	X	47.25	12
24	MP8	Z	27.28	12
25	MP8	X	47.25	12
26	MP8	Z	27.28	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	69.2	0
2	MP2	Z	0	0
3	MP2	X	69.2	72
4	MP2	Z	0	72
5	MP2	X	44.53	12
6	MP2	Z	0	12
7	MP2	X	44.53	12
8	MP2	Z	0	12
9	S2	X	54.61	8
10	S2	Z	0	8
11	MP5	X	146.8	0
12	MP5	Z	0	0
13	MP5	X	146.8	72

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
14	MP5	Z	0	72
15	MP5	X	74.62	12
16	MP5	Z	0	12
17	MP5	X	74.62	12
18	MP5	Z	0	12
19	MP8	X	146.8	0
20	MP8	Z	0	0
21	MP8	X	146.8	72
22	MP8	Z	0	72
23	MP8	X	74.62	12
24	MP8	Z	0	12
25	MP8	X	74.62	12
26	MP8	Z	0	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	82.33	0
2	MP2	Z	-47.53	0
3	MP2	X	82.33	72
4	MP2	Z	-47.53	72
5	MP2	X	47.25	12
6	MP2	Z	-27.28	12
7	MP2	X	47.25	12
8	MP2	Z	-27.28	12
9	S2	X	39.83	8
10	S2	Z	-22.99	8
11	MP5	X	82.33	0
12	MP5	Z	-47.53	0
13	MP5	X	82.33	72
14	MP5	Z	-47.53	72
15	MP5	X	47.25	12
16	MP5	Z	-27.28	12
17	MP5	X	47.25	12
18	MP5	Z	-27.28	12
19	MP8	X	149.54	0
20	MP8	Z	-86.34	0
21	MP8	X	149.54	72
22	MP8	Z	-86.34	72
23	MP8	X	73.31	12
24	MP8	Z	-42.33	12
25	MP8	X	73.31	12
26	MP8	Z	-42.33	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	73.4	0
2	MP2	Z	-127.14	0
3	MP2	X	73.4	72
4	MP2	Z	-127.14	72
5	MP2	X	37.31	12
6	MP2	Z	-64.63	12
7	MP2	X	37.31	12
8	MP2	Z	-64.63	12
9	S2	X	27.31	8
10	S2	Z	-47.29	8
11	MP5	X	34.6	0
12	MP5	Z	-59.93	0
13	MP5	X	34.6	72
14	MP5	Z	-59.93	72
15	MP5	X	22.27	12
16	MP5	Z	-38.57	12
17	MP5	X	22.27	12
18	MP5	Z	-38.57	12
19	MP8	X	73.4	0
20	MP8	Z	-127.14	0
21	MP8	X	73.4	72
22	MP8	Z	-127.14	72
23	MP8	X	37.31	12
24	MP8	Z	-64.63	12
25	MP8	X	37.31	12
26	MP8	Z	-64.63	12

Member Point Loads (BLC 16 : Ice Weight)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	Y	-90.336	0
2	MP2	Y	-90.336	72
3	MP2	Y	-42.824	12
4	MP2	Y	-42.824	12
5	S2	Y	-41.727	8
6	MP5	Y	-90.336	0
7	MP5	Y	-90.336	72
8	MP5	Y	-42.824	12
9	MP5	Y	-42.824	12
10	MP8	Y	-90.336	0
11	MP8	Y	-90.336	72
12	MP8	Y	-42.824	12
13	MP8	Y	-42.824	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	0	0
2	MP2	Z	-21.97	0
3	MP2	X	0	72
4	MP2	Z	-21.97	72
5	MP2	X	0	12
6	MP2	Z	-7.97	12
7	MP2	X	0	12
8	MP2	Z	-7.97	12
9	S2	X	0	8
10	S2	Z	-7.23	8
11	MP5	X	0	0
12	MP5	Z	-16.15	0
13	MP5	X	0	72
14	MP5	Z	-16.15	72
15	MP5	X	0	12
16	MP5	Z	-6.4	12
17	MP5	X	0	12
18	MP5	Z	-6.4	12
19	MP8	X	0	0
20	MP8	Z	-16.15	0
21	MP8	X	0	72
22	MP8	Z	-16.15	72
23	MP8	X	0	12
24	MP8	Z	-6.4	12
25	MP8	X	0	12
26	MP8	Z	-6.4	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	-10.02	0
2	MP2	Z	-17.35	0
3	MP2	X	-10.02	72
4	MP2	Z	-17.35	72
5	MP2	X	-3.73	12
6	MP2	Z	-6.45	12
7	MP2	X	-3.73	12
8	MP2	Z	-6.45	12
9	S2	X	-3.82	8
10	S2	Z	-6.61	8
11	MP5	X	-10.02	0
12	MP5	Z	-17.35	0
13	MP5	X	-10.02	72

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
14	MP5	Z	-17.35	72
15	MP5	X	-3.73	12
16	MP5	Z	-6.45	12
17	MP5	X	-3.73	12
18	MP5	Z	-6.45	12
19	MP8	X	-7.1	0
20	MP8	Z	-12.3	0
21	MP8	X	-7.1	72
22	MP8	Z	-12.3	72
23	MP8	X	-2.94	12
24	MP8	Z	-5.09	12
25	MP8	X	-2.94	12
26	MP8	Z	-5.09	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	-13.98	0
2	MP2	Z	-8.07	0
3	MP2	X	-13.98	72
4	MP2	Z	-8.07	72
5	MP2	X	-5.55	12
6	MP2	Z	-3.2	12
7	MP2	X	-5.55	12
8	MP2	Z	-3.2	12
9	S2	X	-6.26	8
10	S2	Z	-3.61	8
11	MP5	X	-19.03	0
12	MP5	Z	-10.99	0
13	MP5	X	-19.03	72
14	MP5	Z	-10.99	72
15	MP5	X	-6.91	12
16	MP5	Z	-3.99	12
17	MP5	X	-6.91	12
18	MP5	Z	-3.99	12
19	MP8	X	-13.98	0
20	MP8	Z	-8.07	0
21	MP8	X	-13.98	72
22	MP8	Z	-8.07	72
23	MP8	X	-5.55	12
24	MP8	Z	-3.2	12
25	MP8	X	-5.55	12
26	MP8	Z	-3.2	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	-14.21	0
2	MP2	Z	0	0
3	MP2	X	-14.21	72
4	MP2	Z	0	72
5	MP2	X	-5.88	12
6	MP2	Z	0	12
7	MP2	X	-5.88	12
8	MP2	Z	0	12
9	S2	X	-6.41	8
10	S2	Z	0	8
11	MP5	X	-20.03	0
12	MP5	Z	0	0
13	MP5	X	-20.03	72
14	MP5	Z	0	72
15	MP5	X	-7.45	12
16	MP5	Z	0	12
17	MP5	X	-7.45	12
18	MP5	Z	0	12
19	MP8	X	-20.03	0
20	MP8	Z	0	0
21	MP8	X	-20.03	72
22	MP8	Z	0	72
23	MP8	X	-7.45	12
24	MP8	Z	0	12
25	MP8	X	-7.45	12
26	MP8	Z	0	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	-13.98	0
2	MP2	Z	8.07	0
3	MP2	X	-13.98	72
4	MP2	Z	8.07	72
5	MP2	X	-5.55	12
6	MP2	Z	3.2	12
7	MP2	X	-5.55	12
8	MP2	Z	3.2	12
9	S2	X	-5.2	8
10	S2	Z	3	8
11	MP5	X	-13.98	0
12	MP5	Z	8.07	0
13	MP5	X	-13.98	72

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
14	MP5	Z	8.07	72
15	MP5	X	-5.55	12
16	MP5	Z	3.2	12
17	MP5	X	-5.55	12
18	MP5	Z	3.2	12
19	MP8	X	-19.03	0
20	MP8	Z	10.99	0
21	MP8	X	-19.03	72
22	MP8	Z	10.99	72
23	MP8	X	-6.91	12
24	MP8	Z	3.99	12
25	MP8	X	-6.91	12
26	MP8	Z	3.99	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	-10.02	0
2	MP2	Z	17.35	0
3	MP2	X	-10.02	72
4	MP2	Z	17.35	72
5	MP2	X	-3.73	12
6	MP2	Z	6.45	12
7	MP2	X	-3.73	12
8	MP2	Z	6.45	12
9	S2	X	-3.21	8
10	S2	Z	5.55	8
11	MP5	X	-7.1	0
12	MP5	Z	12.3	0
13	MP5	X	-7.1	72
14	MP5	Z	12.3	72
15	MP5	X	-2.94	12
16	MP5	Z	5.09	12
17	MP5	X	-2.94	12
18	MP5	Z	5.09	12
19	MP8	X	-10.02	0
20	MP8	Z	17.35	0
21	MP8	X	-10.02	72
22	MP8	Z	17.35	72
23	MP8	X	-3.73	12
24	MP8	Z	6.45	12
25	MP8	X	-3.73	12
26	MP8	Z	6.45	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	0	0
2	MP2	Z	21.97	0
3	MP2	X	0	72
4	MP2	Z	21.97	72
5	MP2	X	0	12
6	MP2	Z	7.97	12
7	MP2	X	0	12
8	MP2	Z	7.97	12
9	S2	X	0	8
10	S2	Z	7.23	8
11	MP5	X	0	0
12	MP5	Z	16.15	0
13	MP5	X	0	72
14	MP5	Z	16.15	72
15	MP5	X	0	12
16	MP5	Z	6.4	12
17	MP5	X	0	12
18	MP5	Z	6.4	12
19	MP8	X	0	0
20	MP8	Z	16.15	0
21	MP8	X	0	72
22	MP8	Z	16.15	72
23	MP8	X	0	12
24	MP8	Z	6.4	12
25	MP8	X	0	12
26	MP8	Z	6.4	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	10.02	0
2	MP2	Z	17.35	0
3	MP2	X	10.02	72
4	MP2	Z	17.35	72
5	MP2	X	3.73	12
6	MP2	Z	6.45	12
7	MP2	X	3.73	12
8	MP2	Z	6.45	12
9	S2	X	3.82	8
10	S2	Z	6.61	8
11	MP5	X	10.02	0
12	MP5	Z	17.35	0
13	MP5	X	10.02	72

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
14	MP5	Z	17.35	72
15	MP5	X	3.73	12
16	MP5	Z	6.45	12
17	MP5	X	3.73	12
18	MP5	Z	6.45	12
19	MP8	X	7.1	0
20	MP8	Z	12.3	0
21	MP8	X	7.1	72
22	MP8	Z	12.3	72
23	MP8	X	2.94	12
24	MP8	Z	5.09	12
25	MP8	X	2.94	12
26	MP8	Z	5.09	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	13.98	0
2	MP2	Z	8.07	0
3	MP2	X	13.98	72
4	MP2	Z	8.07	72
5	MP2	X	5.55	12
6	MP2	Z	3.2	12
7	MP2	X	5.55	12
8	MP2	Z	3.2	12
9	S2	X	6.26	8
10	S2	Z	3.61	8
11	MP5	X	19.03	0
12	MP5	Z	10.99	0
13	MP5	X	19.03	72
14	MP5	Z	10.99	72
15	MP5	X	6.91	12
16	MP5	Z	3.99	12
17	MP5	X	6.91	12
18	MP5	Z	3.99	12
19	MP8	X	13.98	0
20	MP8	Z	8.07	0
21	MP8	X	13.98	72
22	MP8	Z	8.07	72
23	MP8	X	5.55	12
24	MP8	Z	3.2	12
25	MP8	X	5.55	12
26	MP8	Z	3.2	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	14.21	0
2	MP2	Z	0	0
3	MP2	X	14.21	72
4	MP2	Z	0	72
5	MP2	X	5.88	12
6	MP2	Z	0	12
7	MP2	X	5.88	12
8	MP2	Z	0	12
9	S2	X	6.41	8
10	S2	Z	0	8
11	MP5	X	20.03	0
12	MP5	Z	0	0
13	MP5	X	20.03	72
14	MP5	Z	0	72
15	MP5	X	7.45	12
16	MP5	Z	0	12
17	MP5	X	7.45	12
18	MP5	Z	0	12
19	MP8	X	20.03	0
20	MP8	Z	0	0
21	MP8	X	20.03	72
22	MP8	Z	0	72
23	MP8	X	7.45	12
24	MP8	Z	0	12
25	MP8	X	7.45	12
26	MP8	Z	0	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	13.98	0
2	MP2	Z	-8.07	0
3	MP2	X	13.98	72
4	MP2	Z	-8.07	72
5	MP2	X	5.55	12
6	MP2	Z	-3.2	12
7	MP2	X	5.55	12
8	MP2	Z	-3.2	12
9	S2	X	5.2	8
10	S2	Z	-3	8
11	MP5	X	13.98	0
12	MP5	Z	-8.07	0
13	MP5	X	13.98	72

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
14	MP5	Z	-8.07	72
15	MP5	X	5.55	12
16	MP5	Z	-3.2	12
17	MP5	X	5.55	12
18	MP5	Z	-3.2	12
19	MP8	X	19.03	0
20	MP8	Z	-10.99	0
21	MP8	X	19.03	72
22	MP8	Z	-10.99	72
23	MP8	X	6.91	12
24	MP8	Z	-3.99	12
25	MP8	X	6.91	12
26	MP8	Z	-3.99	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	10.02	0
2	MP2	Z	-17.35	0
3	MP2	X	10.02	72
4	MP2	Z	-17.35	72
5	MP2	X	3.73	12
6	MP2	Z	-6.45	12
7	MP2	X	3.73	12
8	MP2	Z	-6.45	12
9	S2	X	3.21	8
10	S2	Z	-5.55	8
11	MP5	X	7.1	0
12	MP5	Z	-12.3	0
13	MP5	X	7.1	72
14	MP5	Z	-12.3	72
15	MP5	X	2.94	12
16	MP5	Z	-5.09	12
17	MP5	X	2.94	12
18	MP5	Z	-5.09	12
19	MP8	X	10.02	0
20	MP8	Z	-17.35	0
21	MP8	X	10.02	72
22	MP8	Z	-17.35	72
23	MP8	X	3.73	12
24	MP8	Z	-6.45	12
25	MP8	X	3.73	12
26	MP8	Z	-6.45	12

Member Point Loads (BLC 31 : Seismic Load Z)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	Z	-9.494	0
2	MP2	Z	-9.494	72
3	MP2	Z	-22.065	12
4	MP2	Z	-18.821	12
5	S2	Z	-6.433	8
6	MP5	Z	-9.494	0
7	MP5	Z	-9.494	72
8	MP5	Z	-22.065	12
9	MP5	Z	-18.821	12
10	MP8	Z	-9.494	0
11	MP8	Z	-9.494	72
12	MP8	Z	-22.065	12
13	MP8	Z	-18.821	12

Member Point Loads (BLC 32 : Seismic Load X)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	-9.494	0
2	MP2	X	-9.494	72
3	MP2	X	-22.065	12
4	MP2	X	-18.821	12
5	S2	X	-6.433	8
6	MP5	X	-9.494	0
7	MP5	X	-9.494	72
8	MP5	X	-22.065	12
9	MP5	X	-18.821	12
10	MP8	X	-9.494	0
11	MP8	X	-9.494	72
12	MP8	X	-22.065	12
13	MP8	X	-18.821	12

Member Area Loads (BLC 1 : Self Weight)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[psf]
1	P22	P21	P20	P23	Y	Two Way	-1.75
2	P10	P11	P12	P9	Y	Two Way	-1.75
3	P31	P34	P33	P32	Y	Two Way	-1.75

Member Area Loads (BLC 16 : Ice Weight)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[psf]
1	P22	P21	P20	P23	Y	Two Way	-10.8
2	P10	P11	P12	P9	Y	Two Way	-10.8

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

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[psf]
3	P31	P34	P33	P32	Y	Two Way	-10.8

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless

Bolt Calculation Tool, V1.5.1

PROJECT DATA	
Site Name:	BOBOS00071A
Site Number:	BOBOS00071A
Connection Description:	Platform to Monopole

MAXIMUM BOLT LOADS		
Bolt Tension:	6934.06	lbs
Bolt Shear:	1376.68	lbs

WORST CASE BOLT LOADS[1]		
Bolt Tension:	6934.06	lbs
Bolt Shear:	555.77	lbs

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

[1] *Worst case bolt loads correspond to Load combination #7 on member S2 in RISA-3D, which causes the maximum demand on the bolts.*

Member Information
I nodes of S3, S2, S1

BOLT CHECK		
Tensile Strength	20340.15	
Shear Strength	13805.83	
Max Tensile Usage	34.1%	
Max Shear Usage	10.0%	
Interaction Check (Worst Case)	0.12	***≤1.05***
Result	Pass	

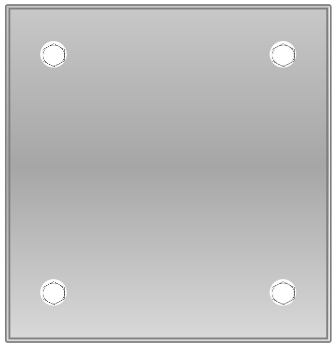


Exhibit F

Power Density/RF Emissions Report

EBI Consulting

environmental | engineering | due diligence

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

Dish Wireless Existing Facility

Site ID: BOBOS00071A

BOBOS00071A
79 Putnam Pike
Dayville, Connecticut 06241

March 9, 2022

EBI Project Number: 6222001483

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**16.11%**

March 9, 2022

Attn: Dish Wireless

Emissions Analysis for Site: BOBOS00071A - BOBOS00071A

EBI Consulting was directed to analyze the proposed Dish Wireless facility located at **79 Putnam Pike** in **Dayville, 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 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu W/cm^2$). The number of $\mu W/cm^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits; therefore, it is necessary to report results and limits in terms of percent MPE rather than power density.

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

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

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

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

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed Dish Wireless Wireless antenna facility located at 79 Putnam Pike in Dayville, 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 n70 channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

3) 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.

4) 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.

5) 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.

6) The antennas used in this modeling are the JMA MX08FRO665-20 for the 600 MHz / 1900 MHz / 2190 MHz channel(s) in Sector A, the JMA MX08FRO665-20 for the 600 MHz / 1900 MHz / 2190 MHz channel(s) in Sector B, the JMA MX08FRO665-20 for the 600 MHz / 1900 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.

7) The antenna mounting height centerline of the proposed antennas is 140 feet above ground level (AGL).

8) 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.

9) 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 #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	JMA MX08FRO665-20	Make / Model:	JMA MX08FRO665-20	Make / Model:	JMA MX08FRO665-20
Frequency Bands:	600 MHz / 1900 MHz / 2190 MHz	Frequency Bands:	600 MHz / 1900 MHz / 2190 MHz	Frequency Bands:	600 MHz / 1900 MHz / 2190 MHz
Gain:	17.45 dBd / 22.65 dBd / 22.65 dBd	Gain:	17.45 dBd / 22.65 dBd / 22.65 dBd	Gain:	17.45 dBd / 22.65 dBd / 22.65 dBd
Height (AGL):	140 feet	Height (AGL):	140 feet	Height (AGL):	140 feet
Channel Count:	12	Channel Count:	12	Channel Count:	12
Total TX Power (W):	440.00 Watts	Total TX Power (W):	440.00 Watts	Total TX Power (W):	440.00 Watts
ERP (W):	5,236.31	ERP (W):	5,236.31	ERP (W):	5,236.31
Antenna A1 MPE %:	**1.32%**	Antenna B1 MPE %:	**1.32%**	Antenna C1 MPE %:	**1.32%**

Site Composite MPE %	
Carrier	**MPE %**
Dish Wireless (Max at Sector A):	1.32%
AT&T	0.8%
Verizon	5.31%
T-Mobile	3.27%
Sprint	3.71%
Town	1.7%
Site Total MPE % :	16.11%

Dish Wireless MPE % Per Sector	
Dish Wireless Sector A Total:	1.32%
Dish Wireless Sector B Total:	1.32%
Dish Wireless Sector C Total:	1.32%
Site Total MPE % :	16.11%

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 (μW/cm²)	Frequency (MHz)	Allowable MPE (μW/cm²)	Calculated % MPE
Dish Wireless 600 MHz n71	4	223.68	140.0	1.79	600 MHz n71	400	0.45%
Dish Wireless 1900 MHz n70	4	542.70	140.0	4.35	1900 MHz n70	1000	0.43%
Dish Wireless 2190 MHz n66	4	542.70	140.0	4.35	2190 MHz n66	1000	0.43%
						Total:	**1.32%**

• 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:	1.32%
Sector B:	1.32%
Sector C:	1.32%
Dish Wireless Maximum MPE % (Sector A):	1.32%
Site Total:	16.11%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **16.11%** 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 G

Letter of Authorization

TOWN OF KILLINGLY

Office of the Town Manager
172 Main Street, Killingly, CT 06239
Tel: 860 779-5300 ext. 7 Fax: 860 779-5394

August 24, 2022

LETTER OF AUTHORIZATION

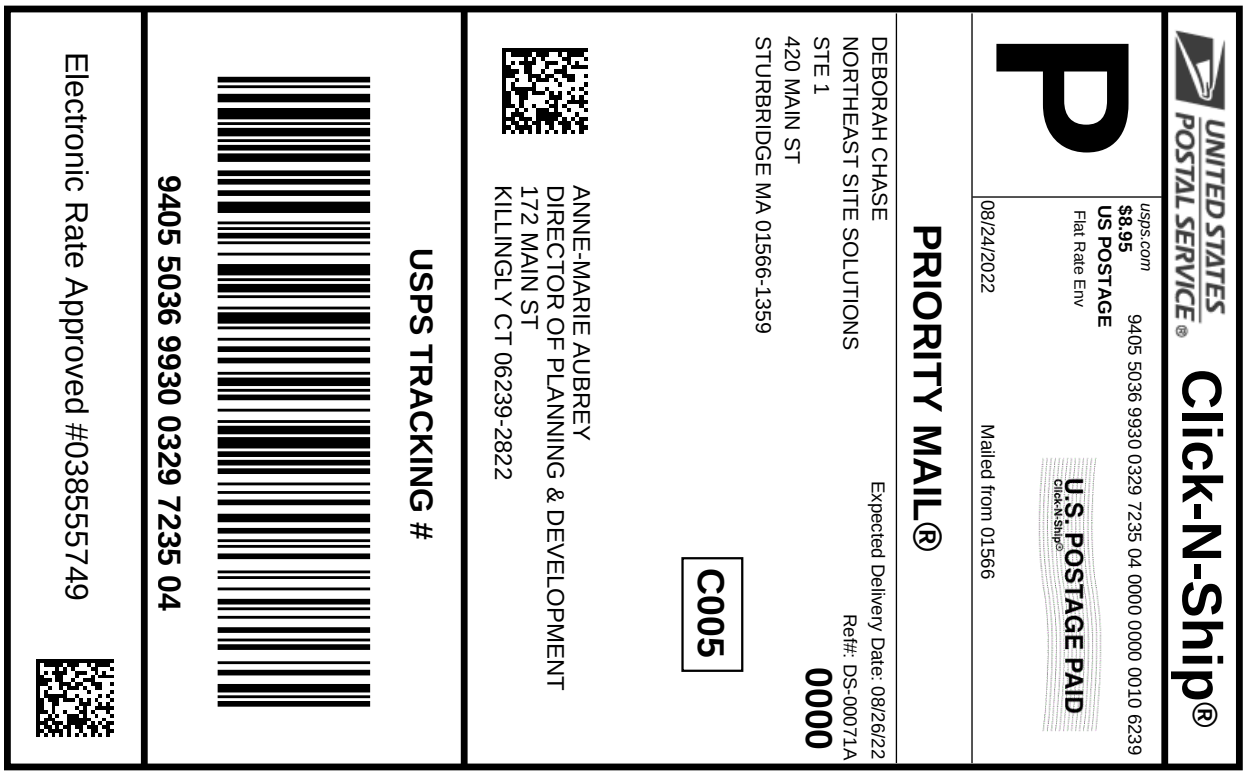
I, Mary T. Calorio, Town Manager, the owner representative for the telecommunications tower located at 79 Putnam Pike, Dayville CT (the "Property"), hereby authorize DISH Wireless L.L.C., through its designated agent, Northeast Site Solutions, LLC to apply for all necessary municipal, state, federal and other permits necessary to accommodate the installation of Dish antennas and ancillary equipment on the subject tower and base station equipment at the Property.

Sincerely,

Mary T. Calorio
Town Manager

Exhibit H

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 0329 7235 04

Trans. #:	570398044
Print Date:	08/24/2022
Ship Date:	08/24/2022
Expected Delivery Date:	08/26/2022

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

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

Ref#: DS-00071A

To: ANNE-MARIE AUBREY
DIRECTOR OF PLANNING & DEVELOPMENT
172 MAIN ST
KILLINGLY CT 06239-2822

* 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

UNITED STATES POSTAL SERVICE®

Click-N-Ship®

9405 5036 9930 0329 7235 42 0000 0000 0010 6239

usps.com
$8.95
US POSTAGE
Flat Rate Env

08/24/2022 Mailed from 01566

U.S. POSTAGE PAID
Click-N-Ship®

PRIORITY MAIL®

Expected Delivery Date: 08/26/22

Ref#: DS-00071A

0000

C005

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

MARY CALORIO
TOWN MANAGER
172 MAIN ST
KILLINGLY CT 06239-2822

USPS TRACKING #

9405 5036 9930 0329 7235 42

Electronic Rate Approved #038555749

Cut on dotted line.

Instructions

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

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0329 7235 42

Trans. #:	570398044
Print Date:	08/24/2022
Ship Date:	08/24/2022
Expected Delivery Date:	08/26/2022

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

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

Ref#: DS-00071A

To: MARY CALORIO
TOWN MANAGER
172 MAIN ST
KILLINGLY CT 06239-2822

* 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.

UNITED STATES POSTAL SERVICE®

Thank you for shipping with the United States Postal Service!
Check the status of your shipment on the USPS Tracking® page at usps.com

BOB3500071A

Dish

UNITED STATES POSTAL SERVICE.

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

08/25/2022 03:01 PM

Product	Qty	Unit Price	Price
Prepaid Mail Danielson, CT 06239 Weight: 0 lb 7.70 oz Acceptance Date: Thu 08/25/2022 Tracking #: 9405 5036 9930 0329 7235 42	1		$0.00
Prepaid Mail Danielson, CT 06239 Weight: 0 lb 7.60 oz Acceptance Date: Thu 08/25/2022 Tracking #: 9405 5036 9930 0329 7235 04	1		$0.00
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,

or call 1-800-410-7420.

UFN: 082618-0132
Receipt #: 840-50600020-1-4889365-1
Clerk: 9