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

November 24, 2021

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

RE: Tower Share Application
50 Plantation Road, East Windsor, CT 06088
Latitude: 41.876640 N
Longitude: -72.56483 W
Site# BOBDL00148B_Dish_East_Windsor_TS_Zoning

Dear Ms. Bachman:

This letter and attachments are submitted on behalf of Dish Wireless LLC. Dish Wireless LLC plans to install antennas and related equipment to the tower site located at 50 Plantation Road, East Windsor, Connecticut BOHVN00184A.

Dish Wireless LLC proposes to install three (3) 600/19005G MHz antenna and six (6) RRUs, at the 85-foot level of the existing 133-foot water tank, one (1) Fiber cables will also be installed. Dish Wireless LLC equipment cabinets will be placed within 7x5 lease area. Included are plans by Infinigy, dated November 23, 2021, Exhibit C. Also included is a structural analysis prepared by Albul Engineering LLC, dated November 22, 2021, 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 East Windsor, Planning & Zoning Commission on October 8, 1996. 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 The Honorable Jason Bowsza, First Selectman for the Town of East Windsor, Ruthanne Calabrese, Zoning & Wetlands Compliance Official, Planning & Development for the Town of Town of East Windsor, as well as the property owner Plantation Properties, LLC and Plantation Properties, LLC water tank 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 133-feet; Dish Wireless LLC proposed antennas will be located at a center line height of 85-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.

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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 29.45% 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 water tank 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 support tower in East Windsor. 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 85-foot level of the existing 133-foot tower would have an insignificant visual impact on the area around the tower. Dish Wireless LLC ground equipment would be installed within the existing facility compound. Dish Wireless LLC shared use would therefore not cause any significant alteration in the physical or environmental characteristics of the existing site. Additionally, as evidenced by Exhibit F, the proposed antennas would not increase radio frequency emissions to a level at or above the Federal Communications Commission safety standard.

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

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

Sincerely,

Denise Sabo

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

Attachments
Cc: The Honorable Jason Bowsza
First Selectman
Town of East Windsor
East Windsor Town Hall
11 Rye Street
Broad Brook, CT 06016

Ruthanne Calabrese
Zoning & Westland Compliance Official
Planning & Development
Town of East Windsor
East Windsor Town Hall
11 Rye Street
Broad Brook, CT 06016

Plantation Properties, LLC
P.O. Box 542
Broad Brook, CT 06016

Plantation Properties, LLC, Tower Owner

Exhibit A

Original Facility Approval

TOWN OF EAST WINDSOR - PLANNING & ZONING COMMISSION
OCTOBER 8, 1996 - PUBLIC HEARING #1273

CONDITIONS OF APPROVAL

SBA, INC. - APPLICANT
DEAN A. & CAREN E. RASMUSSEN - OWNERS
SITE PLAN APPROVAL
S/S PLANTATION ROAD
BROAD BROOK, CONNECTICUT

Motion by: Sonia Morell

Seconded by: Brian Chisholm

TO APPROVE the application of SBA, Inc. for Site Plan Approval to place communication antennae on an existing water tower and to locate support equipment adjacent to tower, on property located on the south side of Plantation Road. This property, which is owned by Dean A. and Caren E. Rasmussen, is presently zoned A-1 and is shown on Assessor's Map 40, Block 50, Lot 1C. This approval is subject to conformance with the referenced plans and the following conditions:

Referenced Plans:

- "Property Survey Prepared for Dean & Caren Rasmussen 47 Plantation Road, East Windsor Connecticut Proposed Sprint Spectrum LP Improvements added to survey by SEA Consultants, Inc. Rocky Hill, CT" Dated Received by East Windsor Planning and Zoning Commission September 10, 1996.
- "Lucent Technologies/Bechtel Alliance SSLP Project, Rasmussen Water Tower Site Plan" by SEA Consultants Inc. Dated 9/9/96 and stamped "received" by the East Windsor Planning and Zoning Commission on September 10, 1996.

Conditions to be met prior to signing mylars:

1. A copy of this approval Motion shall be recorded on the land records.

Conditions to be met prior to the issuance of a Zoning Permit:

2. A mylar copy of the referenced plans shall be submitted for the East Windsor Planning and Zoning Commission signature prior to the issuance of zoning permits.

Conditions to be met Prior to Certificate of Compliance:

3. All conditions of this approval motion shall be complied with.

SBA, INC. - APPLICANT
DEAN A. & CAREN E. RASMUSSEN - OWNERS
SITE PLAN APPROVAL
S/S PLANTATION ROAD
BROAD BROOK, CONNECTICUT

General Conditions:

4. No work may begin until a Zoning and Building Permit have been issued.

5. Construction of improvements as approved by this special use/site plan approval must commence by October 8, 1997 and all improvements must be completed within 1 year from the start of construction, otherwise approval shall become null and void unless an extension is granted by the Commission.

6. This Site Plan Approval is for the specific use identified in the application. Any changes in use or tenancy require a new zoning permit and may require additional Commission approvals.

7. No structures or buildings other than what are shown on the approved plans shall be erected without further Site Plan Review by the Commission.

8. This project shall be constructed and maintained in accordance with the referenced plans. Minor modifications to the approved plans which result in lesser impacts may be allowed subject to staff review and approval.

9. By acceptance of this permit and conditions, the applicant and owner acknowledge the right of Town staff to periodically enter upon the subject property for the purpose of determining compliance with the terms of this approval.

VOTE: In Favor: Unanimous

PERMIT # 176-96

ZONING PERMIT

EAST WINDSOR, CONNECTICUT

PLEASE NOTE THAT THIS IS NOT A BUILDING PERMIT

This Permit is hereby applied for in accordance with the requirements of the East Windsor Zoning Regulations for:

____ Principal Building – new
__X__ Principal Building – add.
____ Other:

____ Accessory Structure
____ Change of Use: _____

Lot located at or near 47 Plantation Road (House No.) (Street) on south side of street

Tax Map No. 40 Block No. 50 Lot No. 1C EWLR Map No. _____

Zoning District: A-1 Lot Area: 0.80 Ac Frontage: 175 feet

Lot Owner: Dean & Caren Rasmussen
Address: 47 Plantation Road East Windsor, CT Telephone: (860) 627-9368

Applicant: SBA, Inc agent for SPRINT PCS
Address: 9 Barnes Industrial Road Telephone: (203) 237-1747
Wallingford, CT

Proposed Use: Erection of telecommunication antennae and ground support equipment.

Proposed Structures: 3-antenna panel arrays Existing Structures: Water tank/pump house

1. Dimensions 10' X 2.5" X (hgt) 5' Number: 1 each
2. Dimensions 8.5' X 30" X (hgt) 5' Present Uses: _____
3. Dimensions ____ X ____ X (hgt) ____
4. Parking Spaces: Required ____ Provided 1
5. Signage: Allowed N/A Proposed N/A
6. Coverage: Allowed _____ Bldg N/A Total Impervious N/A
   Proposed 18.6 sf Bldg N/A Total Impervious 18.6 sf

Prior Approval Status:

1. ZBA Variance #____ for N/A
2. Health Approval Date _____
3. Sewer Approval Date _____
4. Legal Nonconforming _____
5. Conn. D.O.T. Permit _____
6. PZC Approval Date 10/08/96
7. Subdivision Appr. Date _____
8. Town Engineer Appr. _____
9. I.W.W. Approval Date N.J.
10. S&E Plan Approval _____
11. DEP Permit _____
12. Army Corps of Engr. Permit _____
13. Floodproof Certif. Date _____
14. Flood Elevation _____
15. Other Approvals _____
16. Building Plans (Titled) ON FILE IN BUILDING DEPT.
    (By) _____ (Dated) _____ (Revised) _____

Permit hereby __X__ ISSUED or ____ DENIED subject to conformance with/to the East Windsor Zoning Regulations and attached Site or Plot Plan:
Titled: ON FILE IN PLANNING OFFICE
Prepared By: _____, Dated _____, Revised _____
and the following conditions (reasons): (1) See attached conditions
(2) Final inspection required.

As-Builts Required: N/A Foundation (including elevation)
N/A Final As-Built

Permit void if (a) Work/activity not commenced within 1 year of date of issuance; or
(b) Construction authorized not completed within 2 years of date of

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 2017.

Information on the Property Records for the Municipality of East Windsor was last updated on 7/2/2021.

Parcel Information

Location:	50 PLANTATION RD	Property Use:	Vacant Land	Primary Use:	Commercial Vacant Land
Unique ID:	01162500	Map Block Lot:	016 50 001C	Acres:	0.78
490 Acres:	0.00	Zone:	A-1	Volume / Page:	0231/0053
Developers Map / Lot:		Census:	4842000		

Value Information

	Appraised Value	Assessed Value
Land	245,276	171,690
Buildings	0	0
Detached Outbuildings	21,368	14,960

	Appraised Value	Assessed Value
Total	266,644	186,650

Owner's Information

Owner's Data
PLANTATION PROPERTIES LLC P O BOX 542 BROAD BROOK CT 06016-0542

Detached Outbuildings

Type:	Year Built:	Length:	Width:	Area:
Pump House Utility	1960			154

Owner History - Sales

Owner Name	Volume	Page	Sale Date	Deed Type	Sale Price
PLANTATION PROPERTIES LLC	0231	0053	09/27/2001		$1

CTHA535A

Property Information

Property ID 01162500
Location P O BOX 542
Owner

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

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

Geometry updated 5/21/2021
Data updated 5/15/2020

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

Exhibit C

Construction Drawings

DISH Wireless L.L.C. SITE ID:

BOBDL00148B

DISH Wireless L.L.C. SITE ADDRESS:

50 PLANTATION ROAD
EAST WINDSOR, CT 06088

CONNECTICUT CODE COMPLIANCE

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

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

SHEET INDEX

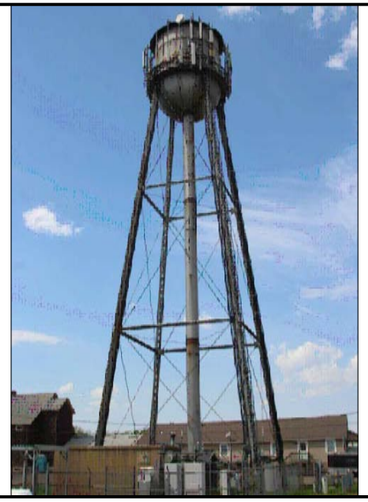
SCOPE OF WORK

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

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

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:	TBD
ADDRESS:	50 PLANTATION ROAD EAST WINDSOR, CT 06088
TOWER TYPE:	WATER TANK
TOWER CO SITE ID:	TBD
TOWER APP NUMBER:	TBD
COUNTY:	HARTFORD
LATITUDE (NAD 83):	41° 52' 32.3" N 41.875640 N
LONGITUDE (NAD 83):	-72° 33' 53.4" W -72.56483 W
ZONING JURISDICTION:	CONNECTICUT SITING COUNCIL
ZONING DISTRICT:	TBD
PARCEL NUMBER:	TBD
OCCUPANCY GROUP:	U
CONSTRUCTION TYPE:	V-B
POWER COMPANY:	EVERSOURCE
TELEPHONE COMPANY:	AT&T

PROJECT DIRECTORY

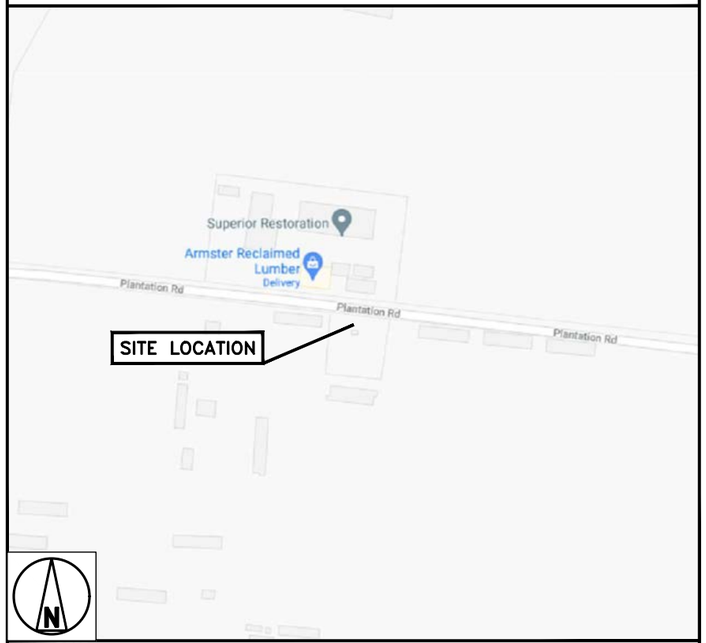
APPLICANT:	DISH Wireless L.L.C. 5701 SOUTH SANTA FE DRIVE LITTLETON, CO 80120
TOWER OWNER:	TBD
SITE DESIGNER:	INFINIGY 1033 WATERVLIET SHAKER RD ALBANY, NY 12205 (518) 690-0790
SITE ACQUISITION:	APRIL PARROTT (203) 927-4317
CONSTRUCTION MANAGER:	JAVIER SOTO (617) 839-6514
RF ENGINEER:	BOSSENER CHARLES (917) 567-9837

DIRECTIONS

DIRECTIONS FROM TOURS OF DISTINCTION AIRPORT:

DEPART AND HEAD TOWARD MASSACO ST, TURN RIGHT ONTO MASSACO ST, TURN LEFT ONTO US-202 E / CT-10 / HOPMEADOW ST, TURN RIGHT ONTO CT-315 / TARIFFVILLE RD, KEEP RIGHT TO STAY ON CT-315 / ELM ST, TURN RIGHT ONTO CT-189 / STATE HIGHWAY 189, TAKE THE RAMP ON THE LEFT FOR CT-187 NORTH AND HEAD TOWARD E GRANBY / SUFFIELD, BEAR RIGHT ONTO SEYMOUR RD, BEAR RIGHT ONTO INTERNATIONAL DR, AT THE ROUNDABOUT, TAKE THE 1ST EXIT, TURN RIGHT ONTO CT-20 / RAINBOW RD, TAKE THE RAMP ON THE RIGHT AND FOLLOW SIGNS FOR CT-20 EAST, TAKE THE RAMP ON THE LEFT FOR I-91 NORTH AND HEAD TOWARD SPRINGFIELD, AT EXIT 44, HEAD RIGHT ON THE RAMP FOR US-5 SOUTH TOWARD E WINDSOR, TURN RIGHT ONTO US-5 S / PROSPECT HILL RD, THEN IMMEDIATELY TURN LEFT ONTO CT-191 / PHELPS RD, BEAR RIGHT ONTO TROMLEY RD, ROAD NAME CHANGES TO CEMETERY RD, TURN LEFT ONTO OMELIA RD, THEN IMMEDIATELY TURN RIGHT ONTO ELLSWORTH RD, KEEP STRAIGHT TO GET ONTO RYE ST, TURN LEFT ONTO PLANTATION RD, ARRIVE AT, 50 PLANTATION ROAD, EAST WINDSOR, CT 06088.

VICINITY MAP



NO SCALE

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

NSS NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

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PHONE: 847-648-4068 | FAX: 518-690-0793
WWW.INFINIGY.COM

STATE OF CONNECTICUT
SHUHEI SAKANOUE
34916
LICENSED PROFESSIONAL ENGINEER
11/23/2021

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

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
0	10/28/21	ISSUED FOR PERMIT
1	11/17/21	REVISED PER COMMENTS

A&E PROJECT NUMBER
1197-F0001-C

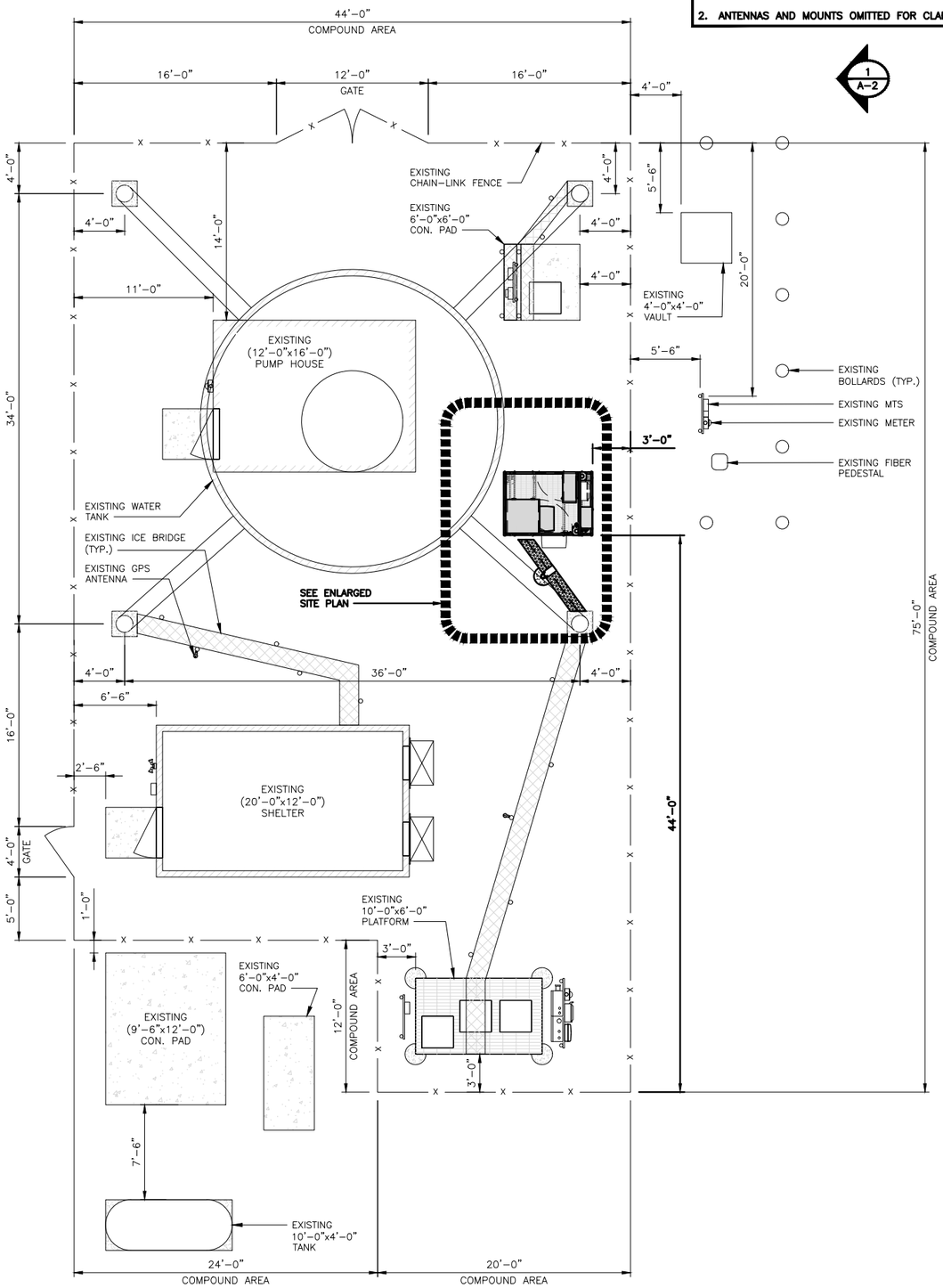
DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00148B
PLANTATION WATERTANK
50 PLANTATION ROAD
EAST WINDSOR, CT 06088

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

NOTES

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



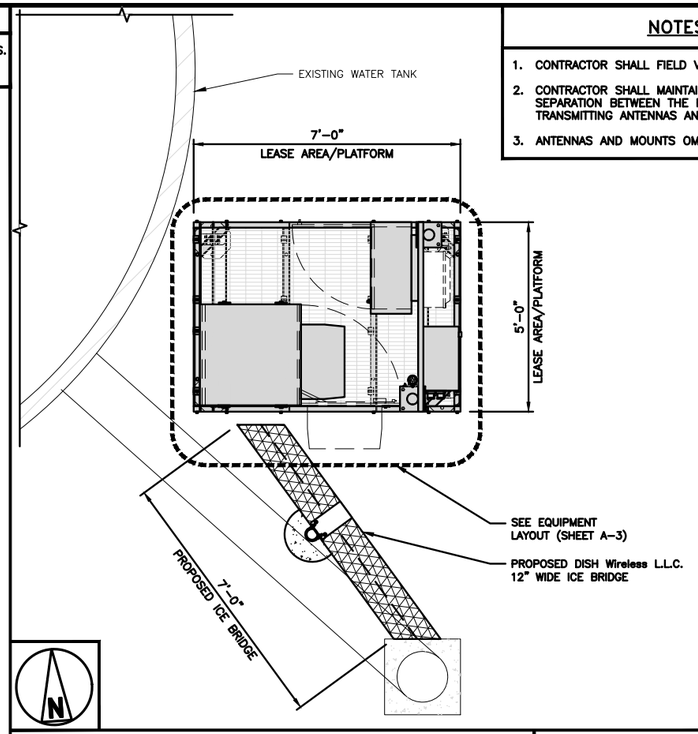
COMPOUND PLAN

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

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

3

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

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34916
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RCD	SS	CJW

RFDS REV #: N/A

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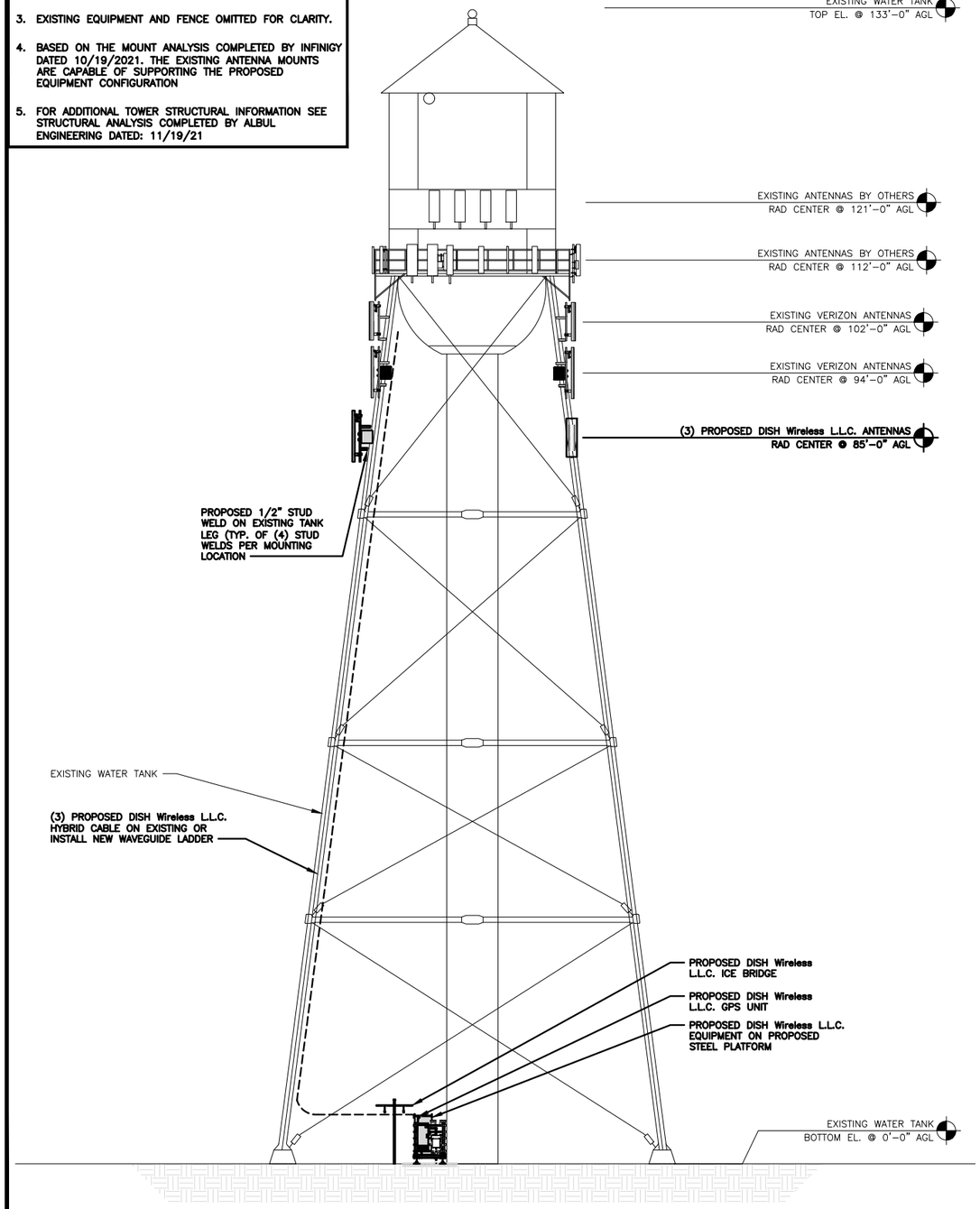
DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00148B
PLANTATION WATERTANK
50 PLANTATION ROAD
EAST WINDSOR, CT 06088

SHEET TITLE
OVERALL AND ENLARGED SITE PLAN

SHEET NUMBER
A-1

NOTES

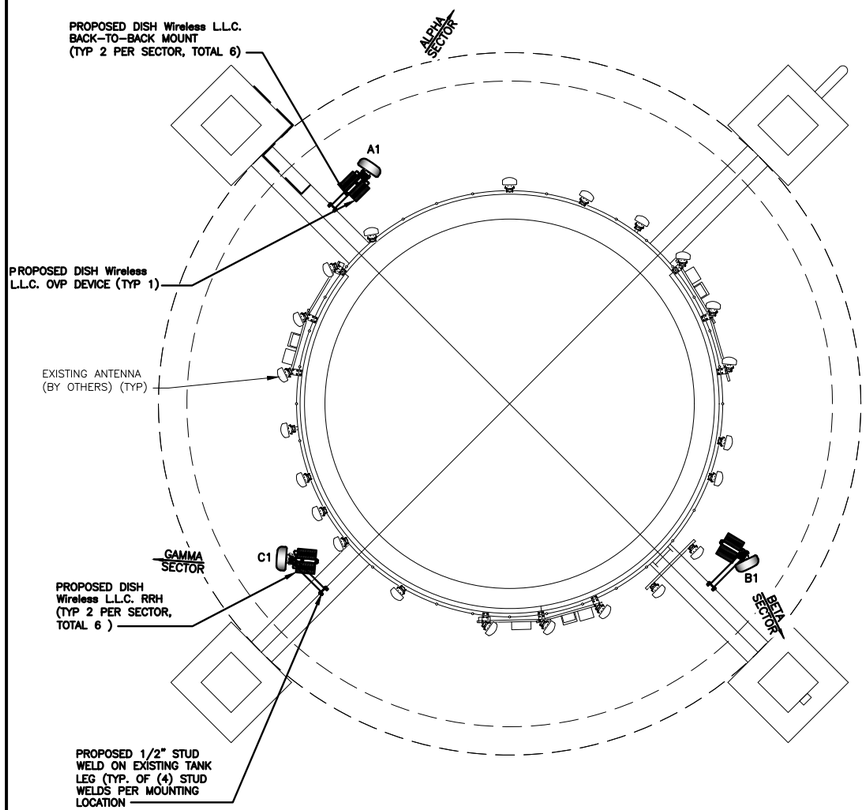
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNA AND MW DISH SPECIFICATIONS REFER TO ANTENNA SCHEDULE AND TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS
3. EXISTING EQUIPMENT AND FENCE OMITTED FOR CLARITY.
4. BASED ON THE MOUNT ANALYSIS COMPLETED BY INFINIGY DATED 10/19/2021. THE EXISTING ANTENNA MOUNTS ARE CAPABLE OF SUPPORTING THE PROPOSED EQUIPMENT CONFIGURATION
5. FOR ADDITIONAL TOWER STRUCTURAL INFORMATION SEE STRUCTURAL ANALYSIS COMPLETED BY ALBUL ENGINEERING DATED: 11/19/21



PROPOSED WEST ELEVATION

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

1



ANTENNA LAYOUT

6' 4' 2' 0 5' 10'
3/16"=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"	30°	85'-0"	(6) HIGH-CAPACITY HYBRID CABLE (160' LONG)
BETA	B1	PROPOSED	JMA WIRELESS – MX08FRO665-21	5G	72.0" x 20.0"	150°	85'-0"	
GAMMA	C1	PROPOSED	JMA WIRELESS – MX08FRO665-21	5G	72.0" x 20.0"	270°	85'-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

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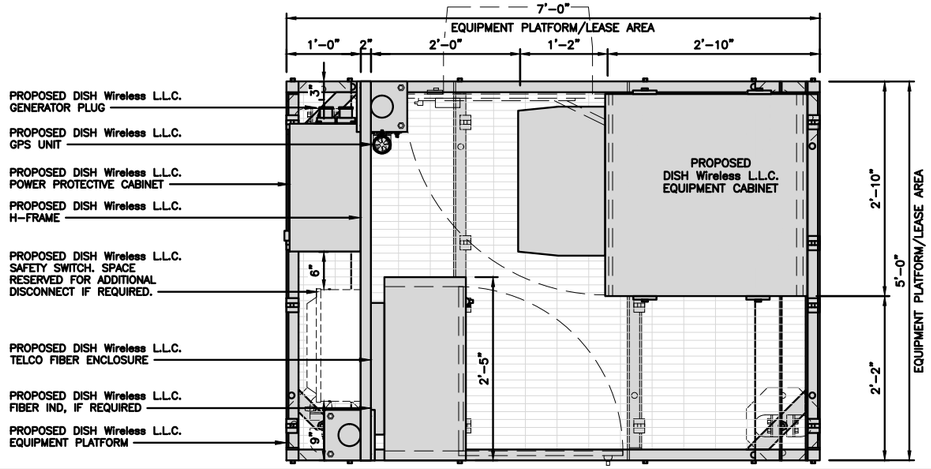
PLANTATION WATERTANK
50 PLANTATION ROAD
EAST WINDSOR, CT 06088

SHEET TITLE
ELEVATION, ANTENNA LAYOUT AND SCHEDULE

SHEET NUMBER
A-2



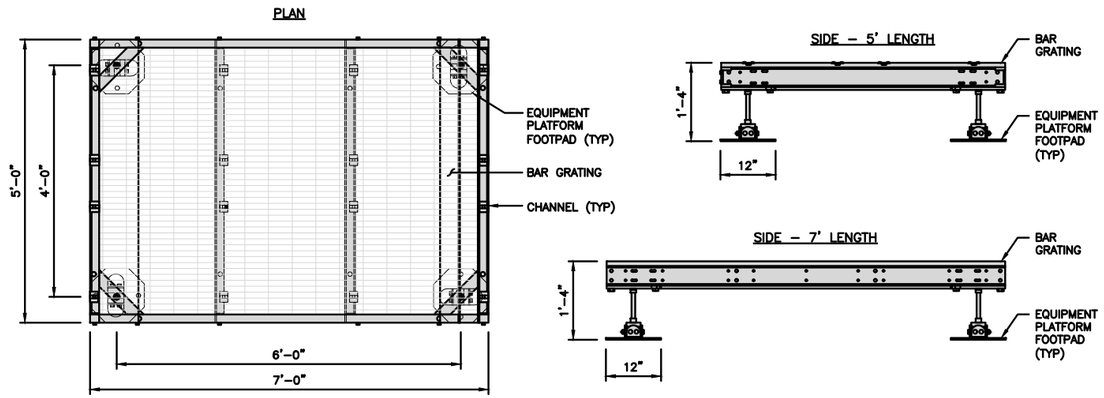
PLATFORM EQUIPMENT PLAN

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

1

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

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

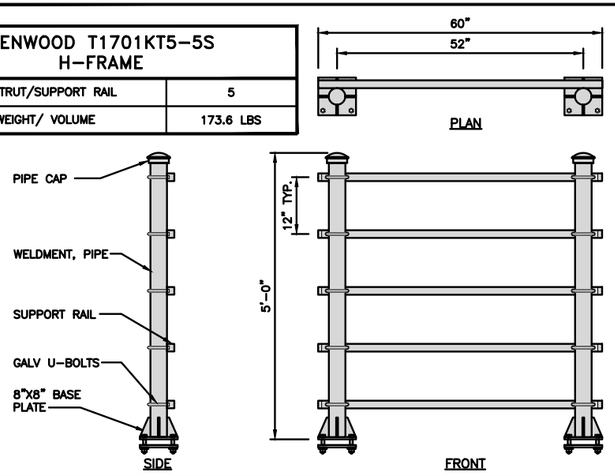


PLATFORM DETAIL

NO SCALE

2

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



H-FRAME DETAIL

NO SCALE

3

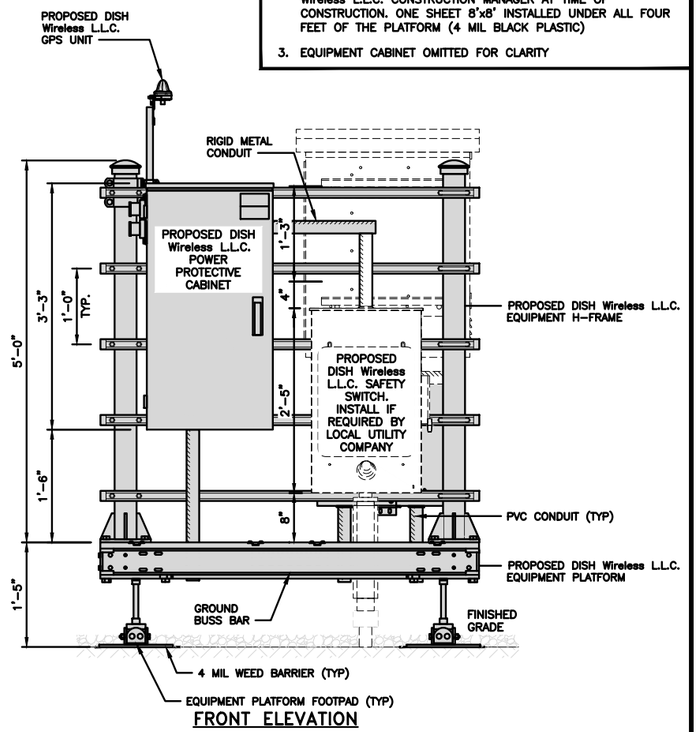
NOT USED

NO SCALE

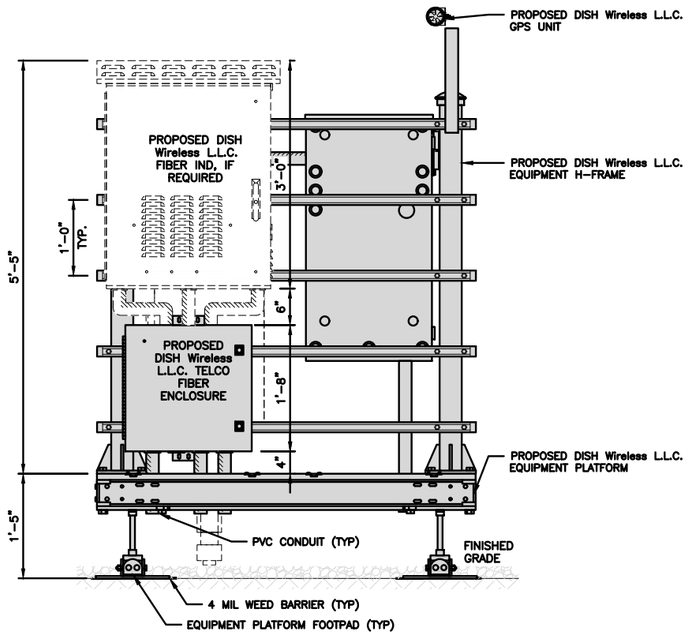
4

NOTES

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



FRONT ELEVATION



BACK ELEVATION

H-FRAME EQUIPMENT ELEVATION

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

5

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STATE OF CONNECTICUT
SHUHEI SAKANOUE
34916
LICENSED PROFESSIONAL ENGINEER
11/23/2021

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

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

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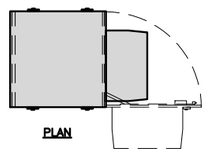
DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00148B
PLANTATION WATERTANK
50 PLANTATION ROAD
EAST WINDSOR, CT 06088

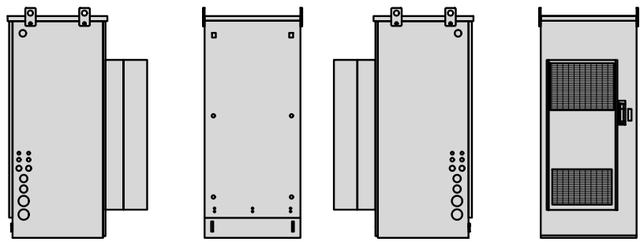
SHEET TITLE
EQUIPMENT PLATFORM AND H-FRAME DETAILS

SHEET NUMBER
A-3

CHARLES INDUSTRY HEX CUBE–PM639155N4

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

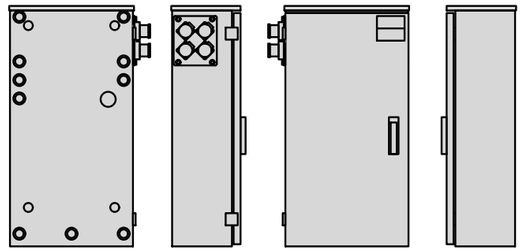




CABINET DETAIL | NO SCALE | 1

RAYCAP PPC RDIAC–2465–P–240–MTS

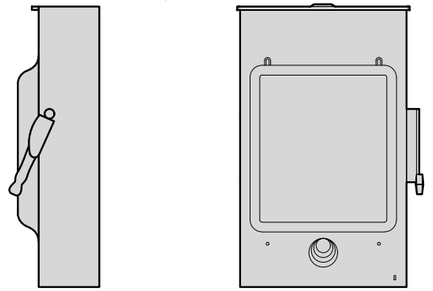
ENCLOSURE DIMENSIONS (HxWxD):	39"x22.855"x12.593
WEIGHT:	80 lbs
OPERATING AC VOLTAGE	240/120 1 PHASE 3W+G



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

SQUARE D SAFETY SWITCHES D224NRB

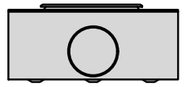
ENCLOSURE DIM (HxWxD)	29.25"x19.00"x8.50"
ENCLOSURE TYPE	NEMA 3R RAINPROOF
UL LISTED	FILE E–2875

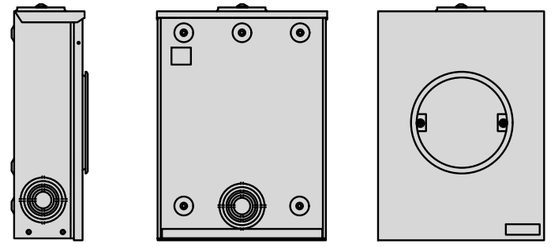


SAFETY SWITCH DETAIL | NO SCALE | 3

EATON METER SOCKET UNRRS213BEUSE

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

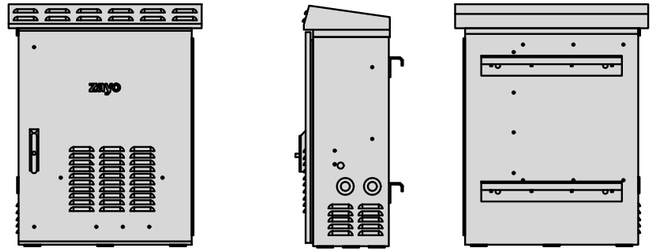




METER SOCKET DETAIL | NO SCALE | 4

ZAYO 5RU CABINET ("LIT" SITES)

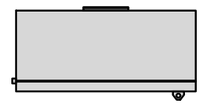
DIMENSIONS (HxWxD)	36.115"x29"x12.9"
WEIGHT	85 LBS
POWER INPUT	20A, –48VDC

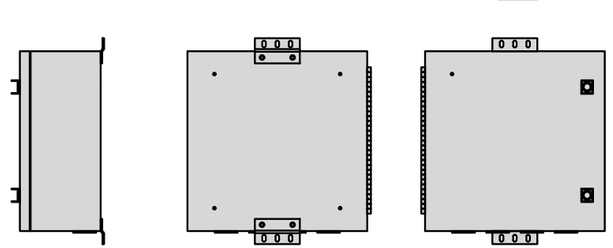


NETWORK INTERFACE UNIT DETAIL | NO SCALE | 5

CHARLES CFIT–PF2020DSH1 FIBER TELCO ENCLOSURE

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



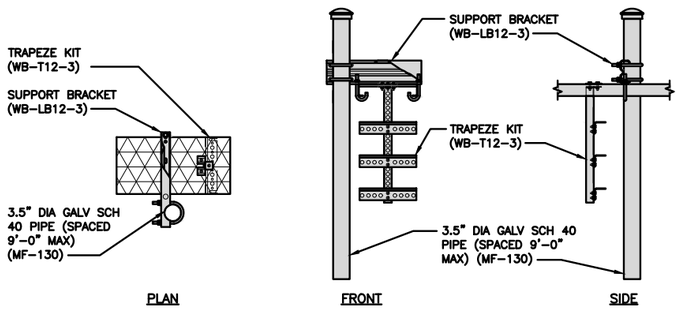


FIBER TELCO ENCLOSURE DETAIL | NO SCALE | 6

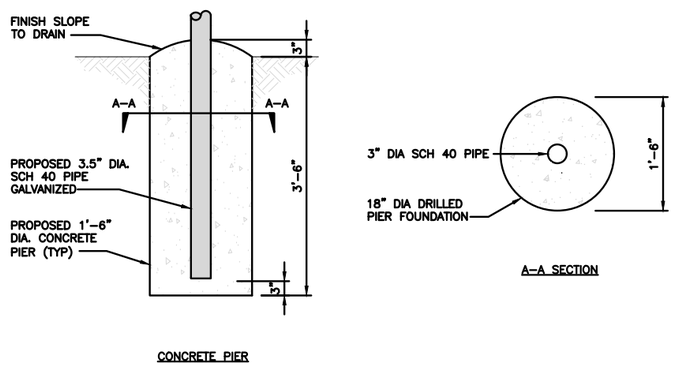
COMMSCOPE WB–K110–B WAVEGUIDE BRIDGE KIT

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

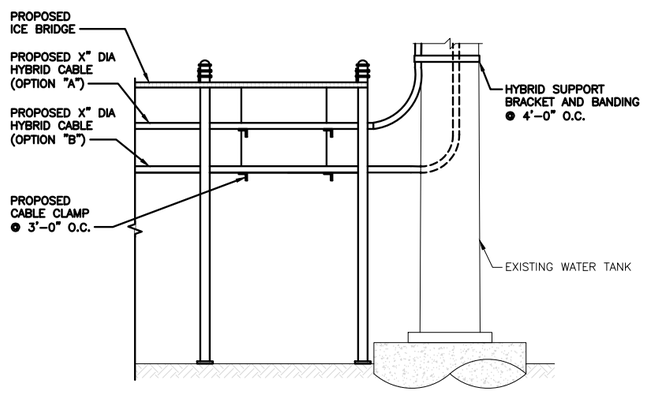
INCLUDED PRODUCTS:
- WB–T12–3 TRAPEZE KIT, 3 RUNGS
- WB–LB12–3 SUPPORT BRACKET
- MF–130 DIRECT BURIAL PIPE COLUMN, 13'–4"



ICE BRIDGE DETAIL | NO SCALE | 7



TYPICAL ICE BRIDGE CONCRETE PIER DETAIL | NO SCALE | 8



HYBRID CABLE RUN | NO SCALE | 9

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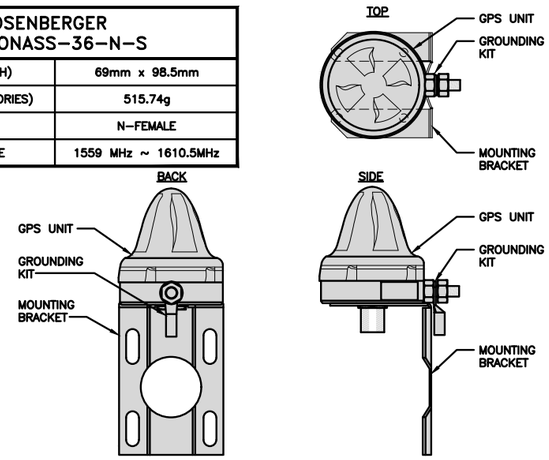
50 PLANTATION ROAD
EAST WINDSOR, CT 06088

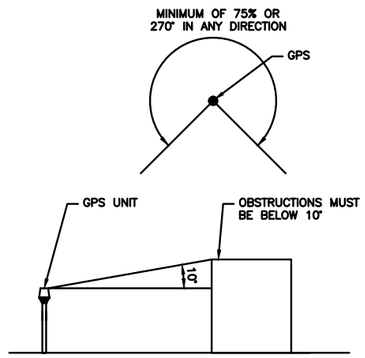
SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-4

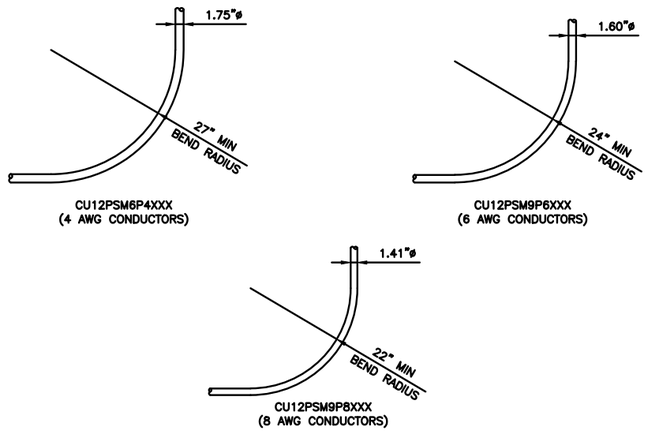
ROSENBERGER GPSGLONASS-36-N-S	
DIMENSION (DIA x H)	69mm x 98.5mm
WEIGHT (WITH ACCESSORIES)	515.74g
CONNECTOR	N-FEMALE
FREQUENCY RANGE	1559 MHz ~ 1610.5MHz



GPS ANTENNA DETAIL | NO SCALE | 1



GPS MINIMUM SKY VIEW REQUIREMENTS | NO SCALE | 2



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

NOT USED | NO SCALE | 4

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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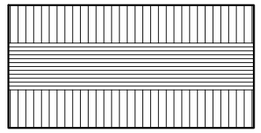
SHEET TITLE

EQUIPMENT DETAILS

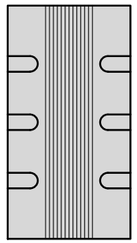
SHEET NUMBER

A-5

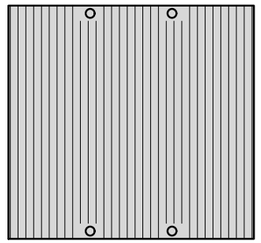
FUJITSU TA08025-B604 RRH	
DIMENSIONS (HxWxD) (KG/IN)	380x400x200/14.9"x15.7"x7.8"
WEIGHT(KG,LB)/ VOLUME	29kg,63.9lb/ 30L
POWER SUPPLY	DC-58~-36V



PLAN



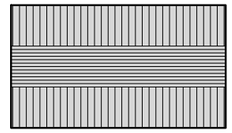
SIDE



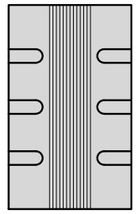
FRONT

REMOTE RADIO HEAD DETAIL | NO SCALE | 1

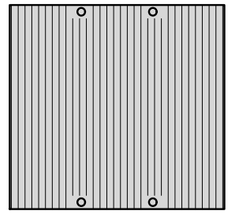
FUJITSU TA08025-B605 RRH	
DIMENSIONS (HxWxD) (KG/IN)	380x400x230/14.9"x15.7"x9.0"
WEIGHT(KG,LB)/ VOLUME	34kg,74.9lb/ 35L
POWER SUPPLY	DC-58~-36V



PLAN



SIDE

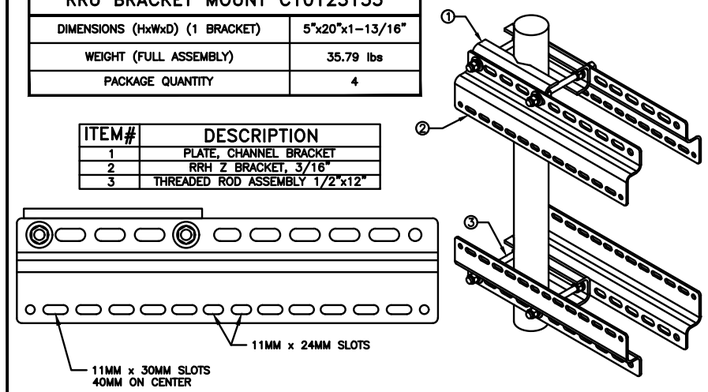


FRONT

REMOTE RADIO HEAD DETAIL | NO SCALE | 2

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

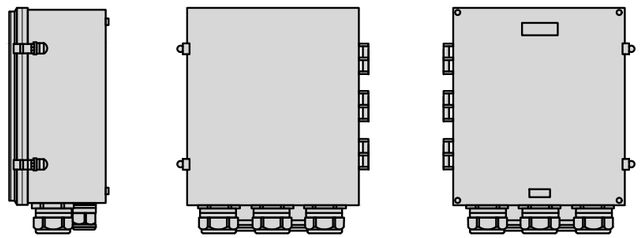
ITEM#	DESCRIPTION
1	PLATE, CHANNEL BRACKET
2	RRH Z BRACKET, 3/16"
3	THREADED ROD ASSEMBLY 1/2"x12"



REMOTE RADIO MOUNT DETAIL | NO SCALE | 3

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

PLAN

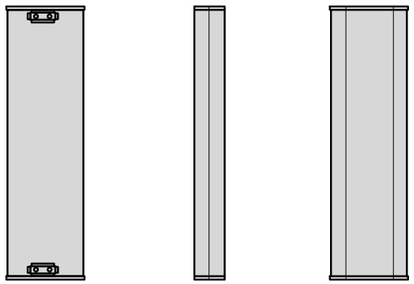


SIDE BACK FRONT

SURGE SUPPRESSION DETAIL | NO SCALE | 4

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

PLAN



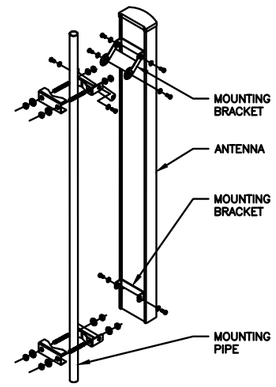
BACK SIDE FRONT

ANTENNA DETAIL | NO SCALE | 5

NOTES

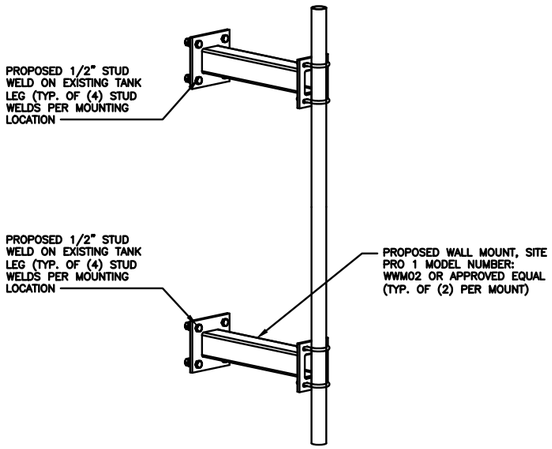
FINAL ANTENNA SPECIFICATIONS TO BE CONFIRMED BY GC

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



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

ANTENNA MOUNTING DETAIL | NO SCALE | 6



MOUNT ATTACHMENT DETAIL | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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SHEET TITLE

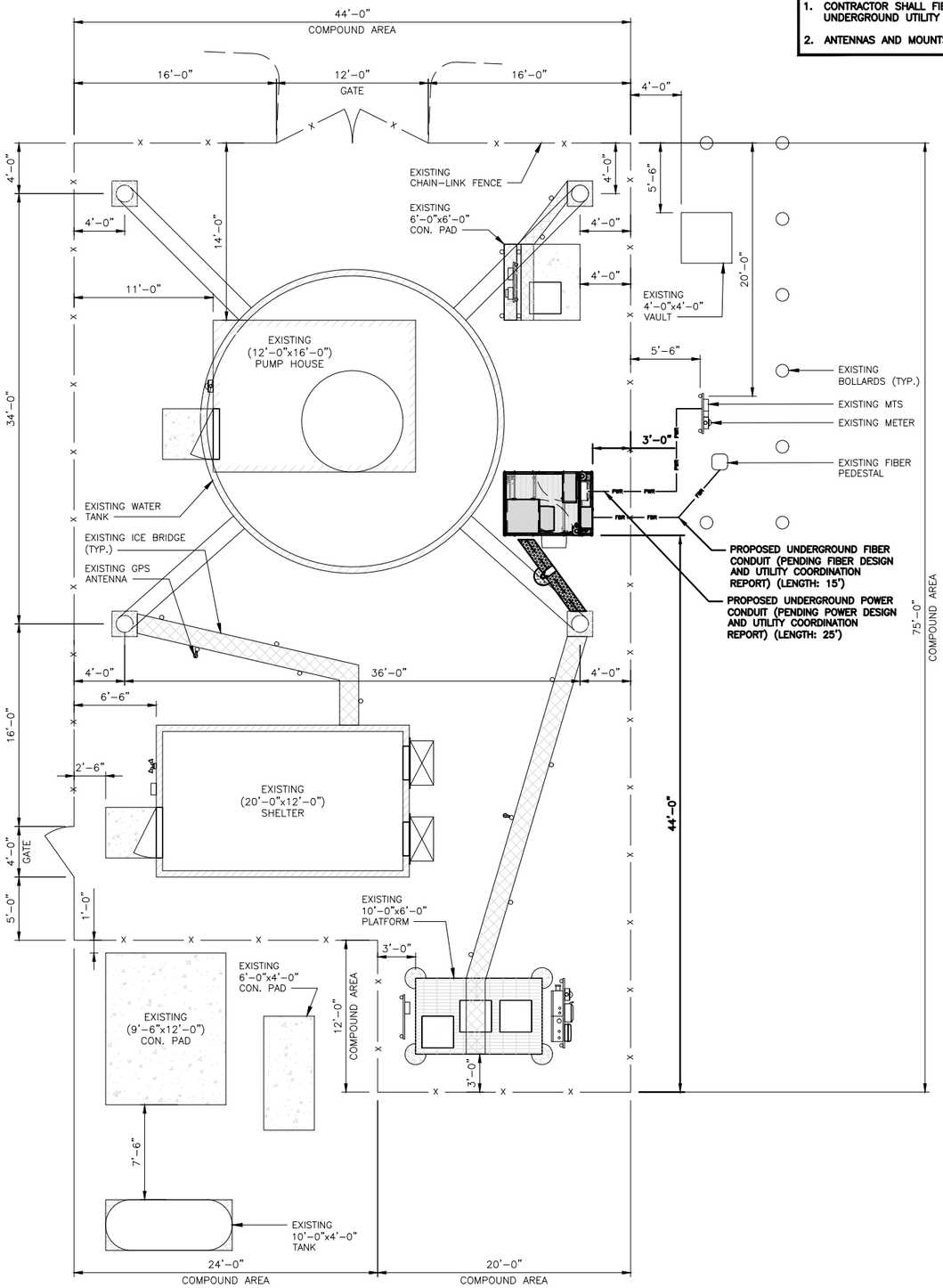
EQUIPMENT DETAILS

SHEET NUMBER

A-6

NOTES

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



UTILITY ROUTE PLAN

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

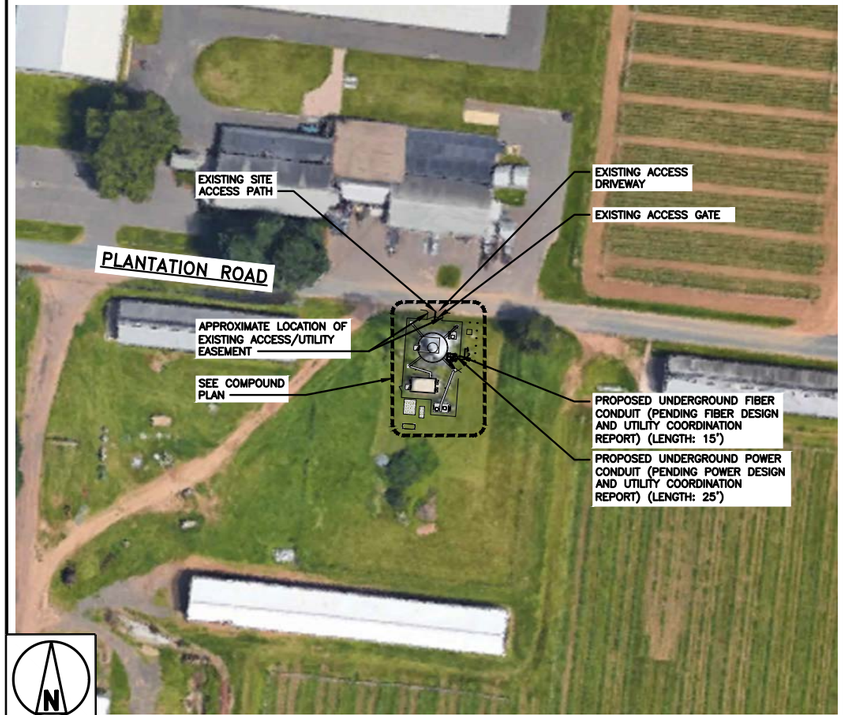
1

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

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

ELECTRICAL NOTES

2



OVERALL UTILITY ROUTE PLAN

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

3

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34916
LICENSED PROFESSIONAL ENGINEER
11/23/2021

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

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

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A&E PROJECT NUMBER
1197-F0001-C

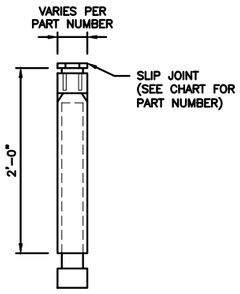
DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00148B
PLANTATION WATERTANK
50 PLANTATION ROAD
EAST WINDSOR, CT 06088

SHEET TITLE
ELECTRICAL/FIBER ROUTE PLAN AND NOTES

SHEET NUMBER
E-1

CARLON EXPANSION FITTINGS

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

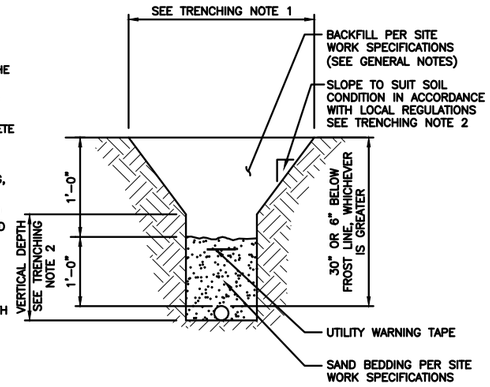


NOTE:
CONTRACTOR TO INSTALL EXPANSION FITTING SLIP JOINT AT METER CENTER CONDUIT TERMINATION, AS PER LOCAL UTILITY POLICY, ORDINANCE AND/OR SPECIFIED REQUIREMENT.

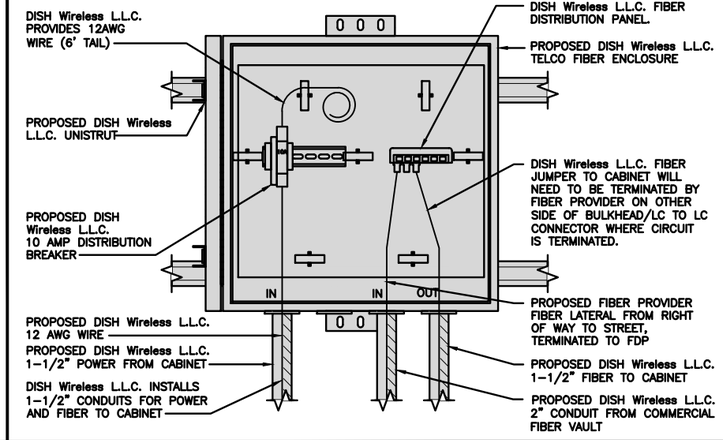
EXPANSION JOINT DETAIL | NO SCALE | 1

TRENCHING NOTES

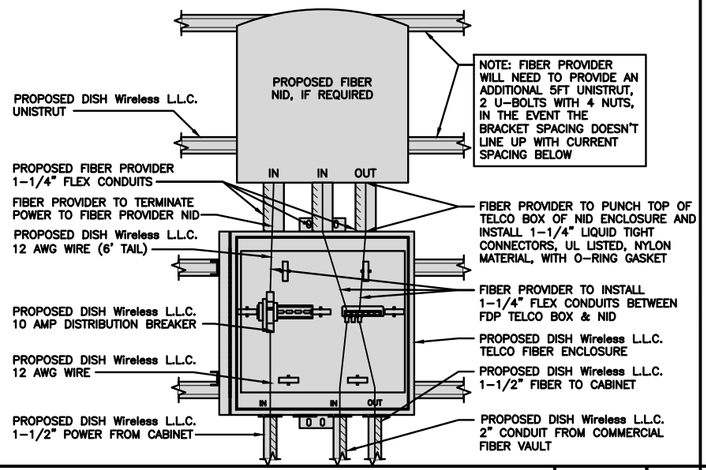
1. CONTRACTOR SHALL RESTORE THE TRENCH TO ITS ORIGINAL CONDITIONS BY EITHER SEEDING OR SODDING GRASS AREAS, OR REPLACING ASPHALT OR CONCRETE AREAS TO ITS ORIGINAL CROSS SECTION.
2. TRENCHING SAFETY; INCLUDING, BUT NOT LIMITED TO SOIL CLASSIFICATION, SLOPING, AND SHORING, SHALL BE GOVERNED BY THE CURRENT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



TYPICAL UNDERGROUND TRENCH DETAIL | NO SCALE | 2



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



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

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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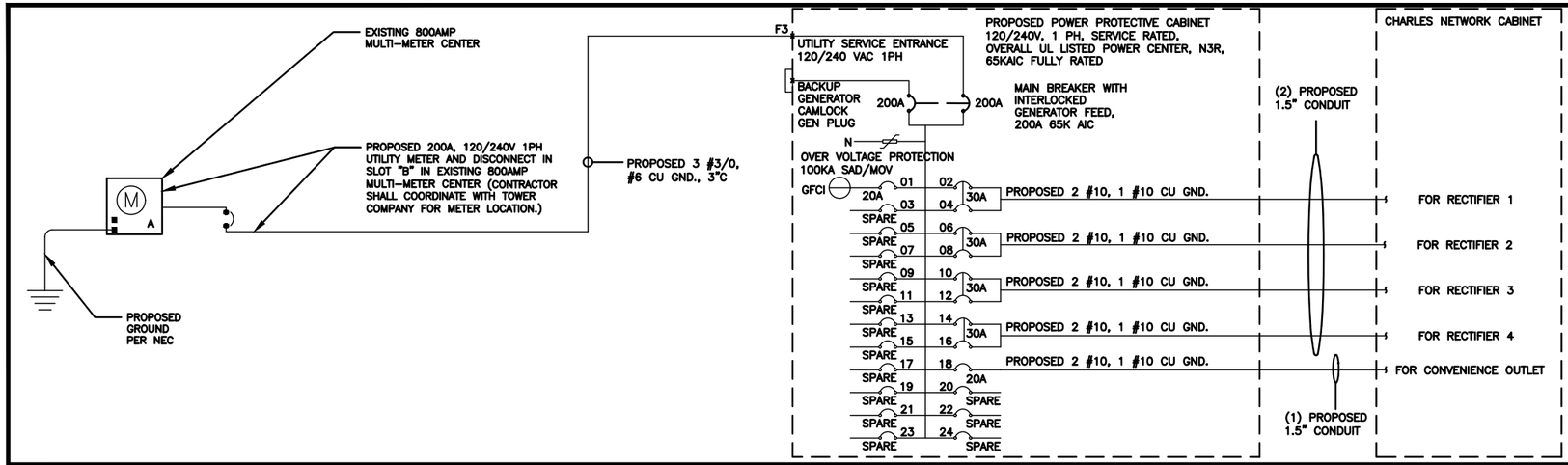
SHEET TITLE
ELECTRICAL DETAILS

SHEET NUMBER
E-2



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

NO SCALE | 1

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.

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

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DISH Wireless L.L.C.
PROJECT INFORMATION
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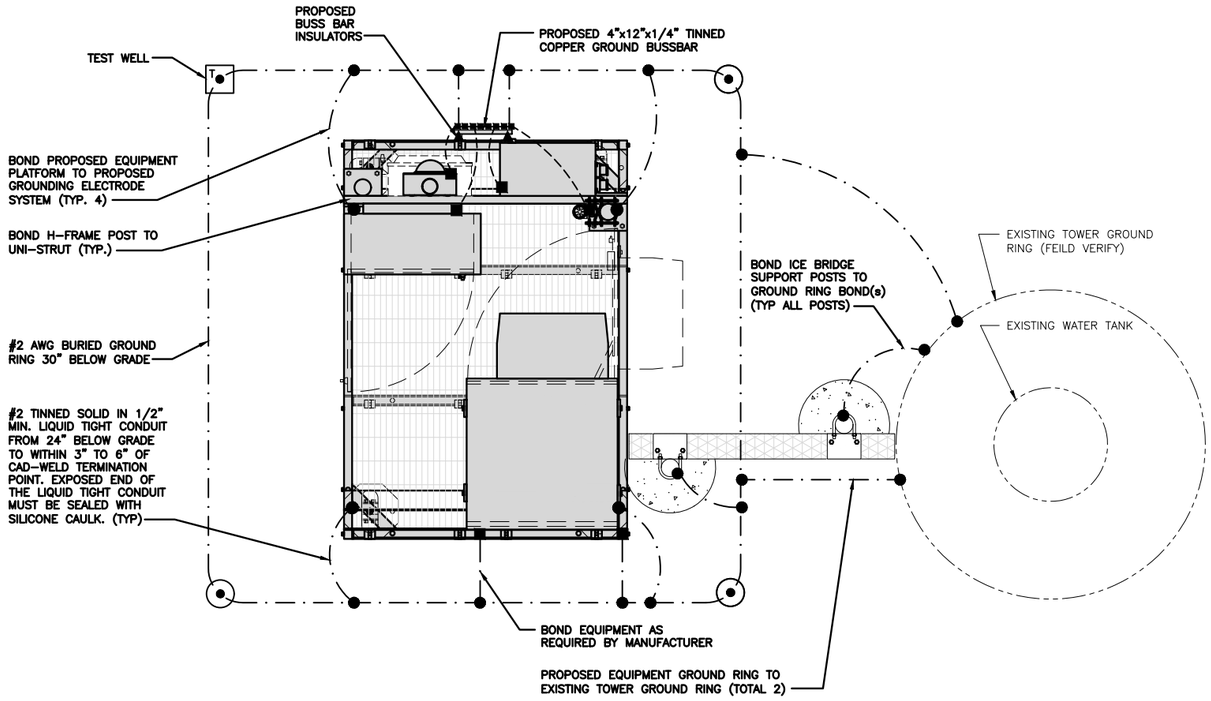
PLANTATION WATERTANK
50 PLANTATION ROAD
EAST WINDSOR, CT 06088

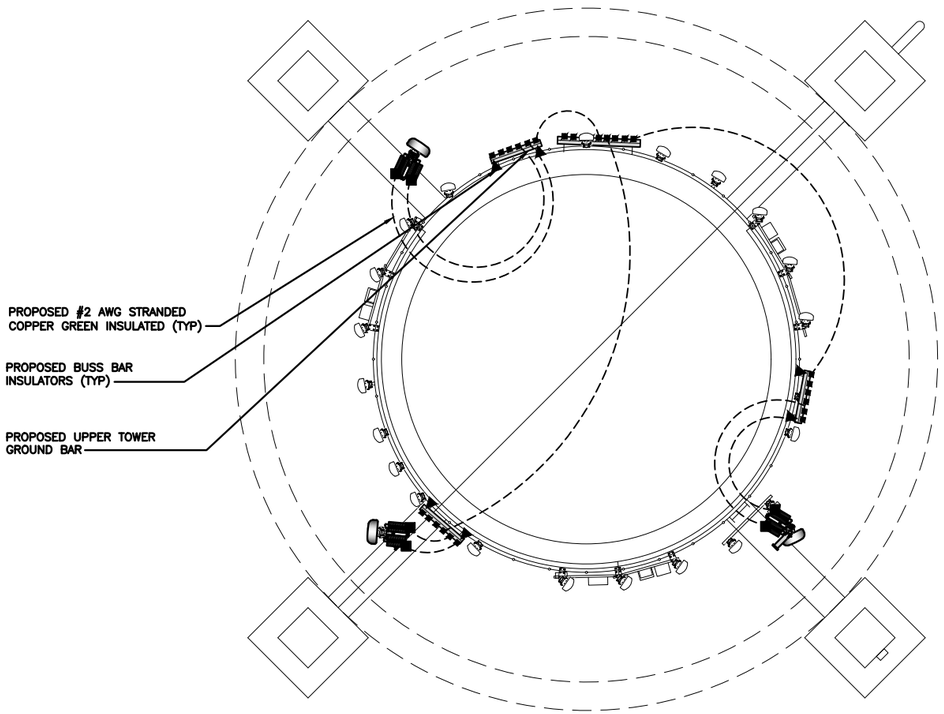
SHEET TITLE
ELECTRICAL ONE-LINE, FAULT CALCS & PANEL SCHEDULE

SHEET NUMBER
E-3



TYPICAL EQUIPMENT GROUNDING PLAN

NO SCALE | 1



NO SCALE | 2

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

GROUNDING LEGEND

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

GROUNDING KEY NOTES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(P) TOWER TOP COLLECTOR BUSS BAR IS TO BE MECHANICALLY BONDED TO TOWER STEEL.

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

GROUNDING KEY NOTES

NO SCALE | 3

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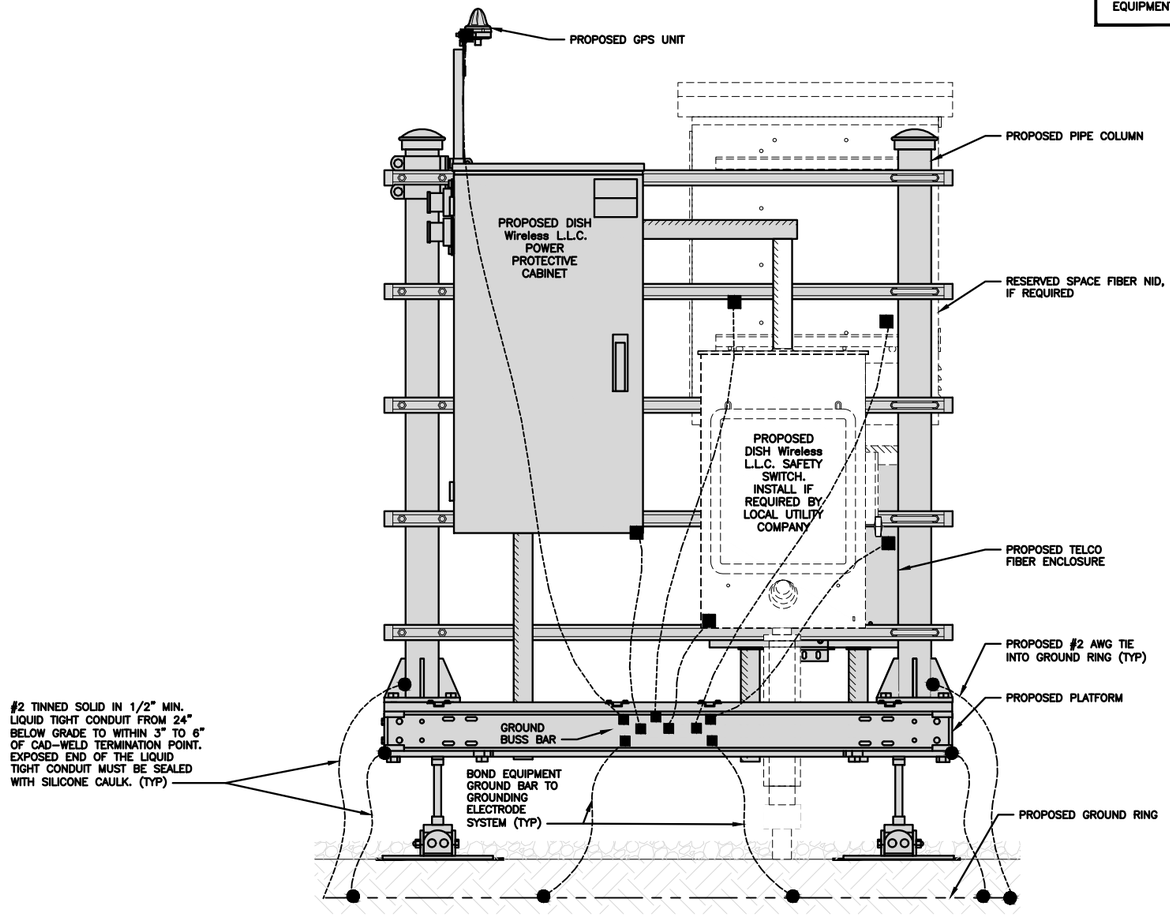
SHEET TITLE
GROUNDING PLANS AND NOTES

SHEET NUMBER
G-1

NOTES

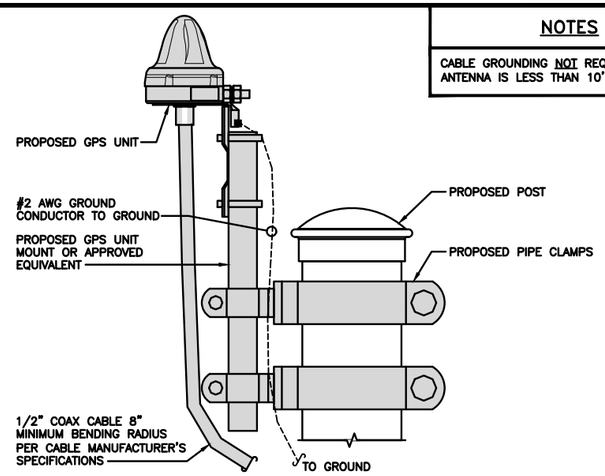
EQUIPMENT CABINET OMITTED FOR CLARITY



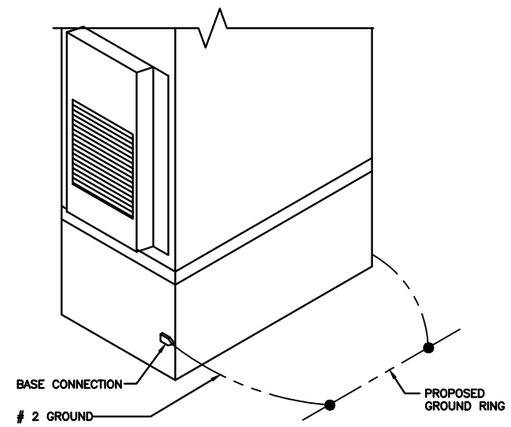
H-FRAME GROUNDING DETAIL | NO SCALE | 1

NOTES

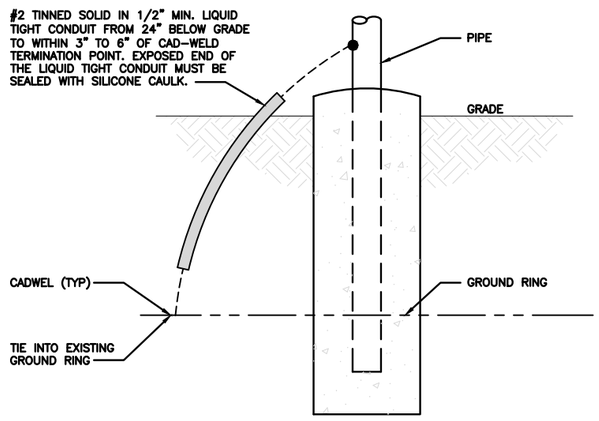
CABLE GROUNDING NOT REQUIRED WHEN ANTENNA IS LESS THAN 10' FROM CABINET



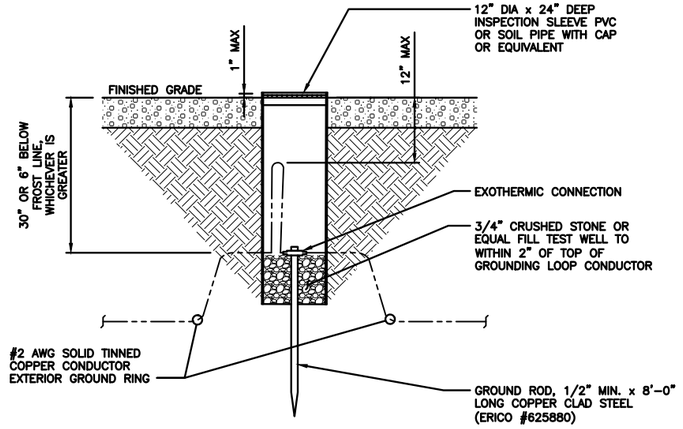
TYPICAL GPS UNIT GROUNDING | NO SCALE | 2



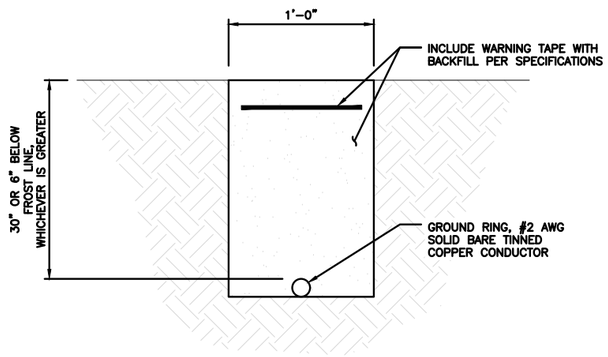
OUTDOOR CABINET GROUNDING | NO SCALE | 3



TRANSITIONING GROUND DETAIL | NO SCALE | 4



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



TYPICAL GROUND RING TRENCH | NO SCALE | 6

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SHEET TITLE

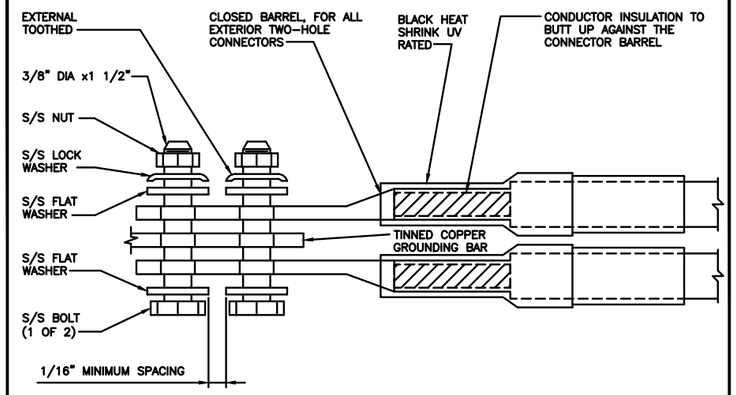
GROUNDING DETAILS

SHEET NUMBER

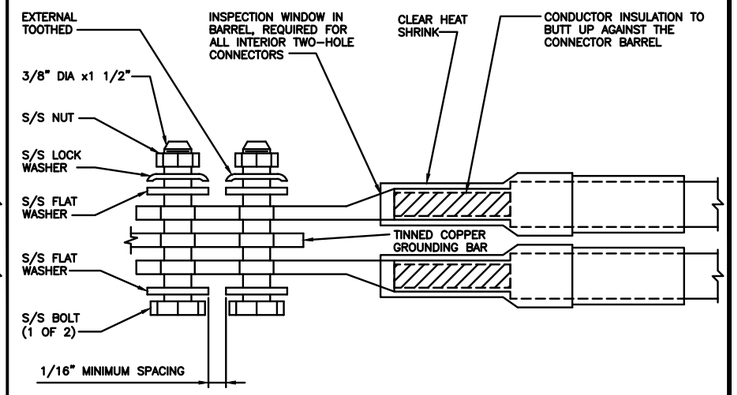
G-2

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

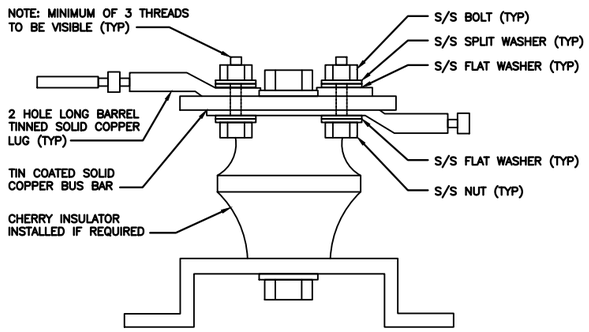
TYPICAL GROUNDING NOTES | NO SCALE | 1



TYPICAL EXTERIOR TWO HOLE LUG | NO SCALE | 2



TYPICAL INTERIOR TWO HOLE LUG | NO SCALE | 3



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

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STATE OF CONNECTICUT
SHUHEI SAKANOUE
34916
LICENSED PROFESSIONAL ENGINEER
11/23/2021

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

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
0	10/28/21	ISSUED FOR PERMIT
1	11/17/21	REVISED PER COMMENTS

A&E PROJECT NUMBER
1197-F0001-C

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00148B
PLANTATION WATERTANK
50 PLANTATION ROAD
EAST WINDSOR, CT 06088

SHEET TITLE
GROUNDING DETAILS

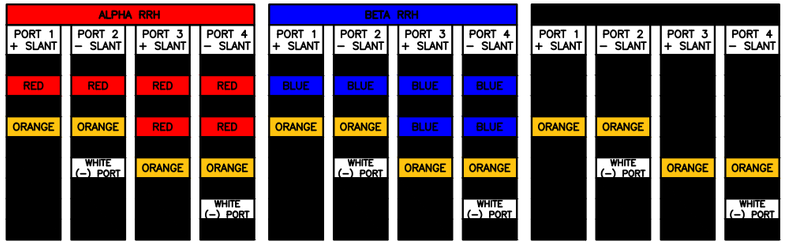
SHEET NUMBER
G-3

RF JUMPER COLOR CODING

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

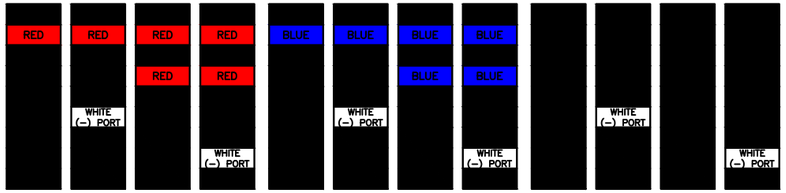
LOW-BAND RRH –
(600MHz N71 BASEBAND) +
(850MHz N26 BAND) +
(700MHz N29 BAND) – OPTIONAL PER MARKET

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



MID-BAND RRH –
(AWS BANDS N66+N70)

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

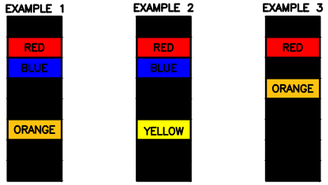


HYBRID/DISCREET CABLES

INCLUDE SECTOR BANDS BEING SUPPORTED
ALONG WITH FREQUENCY BANDS

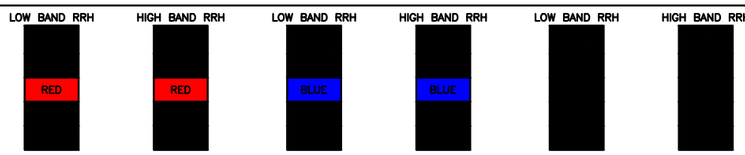
EXAMPLE 1 – HYBRID, OR DISCREET, SUPPORTS
ALL SECTORS, BOTH LOW-BANDS AND MID-BANDS

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



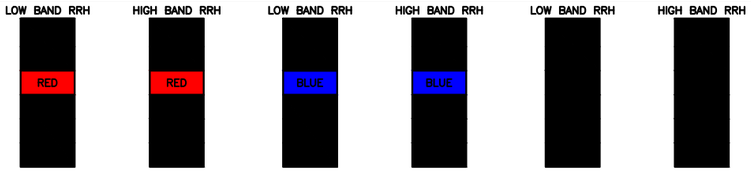
FIBER JUMPERS TO RRHs

LOW-BAND RRH FIBER CABLES HAVE SECTOR
STRIPE ONLY

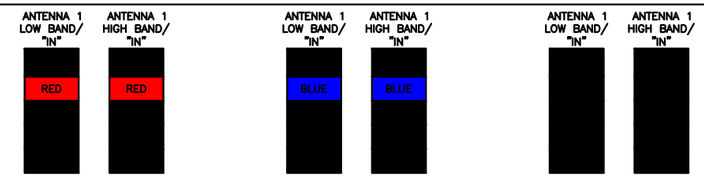


POWER CABLES TO RRHs

LOW-BAND RRH POWER CABLES HAVE SECTOR
STRIPE ONLY



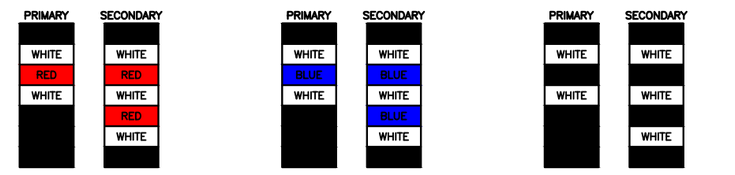
RET MOTORS AT ANTENNAS



MICROWAVE RADIO LINKS

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

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



RF CABLE COLOR CODES | NO SCALE | 1

COLOR IDENTIFIER | NO SCALE | 2

NOT USED | NO SCALE | 3

NOT USED | NO SCALE | 4

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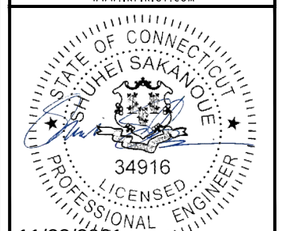

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SHEET TITLE
RF
CABLE COLOR CODE

SHEET NUMBER
RF-1

EXOTHERMIC CONNECTION

MECHANICAL CONNECTION

BUSS BAR INSULATOR

CHEMICAL ELECTROLYTIC GROUNDING SYSTEM

TEST CHEMICAL ELECTROLYTIC GROUNDING SYSTEM

EXOTHERMIC WITH INSPECTION SLEEVE

GROUNDING BAR

GROUND ROD

TEST GROUND ROD WITH INSPECTION SLEEVE

SINGLE POLE SWITCH

DUPLEX RECEPTACLE

DUPLEX GFCI RECEPTACLE

FLUORESCENT LIGHTING FIXTURE
(2) TWO LAMPS 48–T8

SMOKE DETECTION (DC)

EMERGENCY LIGHTING (DC)

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

CHAIN LINK FENCE

WOOD/WROUGHT IRON FENCE

WALL STRUCTURE

LEASE AREA

PROPERTY LINE (PL)

SETBACKS

ICE BRIDGE

CABLE TRAY

WATER LINE

UNDERGROUND POWER

UNDERGROUND TELCO

OVERHEAD POWER

OVERHEAD TELCO

UNDERGROUND TELCO/POWER

ABOVE GROUND POWER

ABOVE GROUND TELCO

ABOVE GROUND TELCO/POWER

WORKPOINT

SECTION REFERENCE

DETAIL REFERENCE

LEGEND

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

ABBREVIATIONS

dish wireless.

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DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00148B
PLANTATION WATERTANK
50 PLANTATION ROAD
EAST WINDSOR, CT 06088

SHEET TITLE

LEGEND AND ABBREVIATIONS

SHEET NUMBER

GN-1

SITE ACTIVITY REQUIREMENTS:

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

2. "LOOK UP" – DISH Wireless L.L.C. AND TOWER OWNER SAFETY CLIMB REQUIREMENT:

THE INTEGRITY OF THE SAFETY CLIMB AND ALL COMPONENTS OF THE CLIMBING FACILITY SHALL BE CONSIDERED DURING ALL STAGES OF DESIGN, INSTALLATION, AND INSPECTION. TOWER MODIFICATION, MOUNT REINFORCEMENTS, AND/OR EQUIPMENT INSTALLATIONS SHALL NOT COMPROMISE THE INTEGRITY OR FUNCTIONAL USE OF THE SAFETY CLIMB OR ANY COMPONENTS OF THE CLIMBING FACILITY ON THE STRUCTURE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO: PINCHING OF THE WIRE ROPE, BENDING OF THE WIRE ROPE FROM ITS SUPPORTS, DIRECT CONTACT OR CLOSE PROXIMITY TO THE WIRE ROPE WHICH MAY CAUSE FRICTIONAL WEAR, IMPACT TO THE ANCHORAGE POINTS IN ANY WAY, OR TO IMPEDE/BLOCK ITS INTENDED USE. ANY COMPROMISED SAFETY CLIMB, INCLUDING EXISTING CONDITIONS MUST BE TAGGED OUT AND REPORTED TO YOUR DISH Wireless L.L.C. AND DISH Wireless L.L.C. AND TOWER OWNER POC OR CALL THE NOC TO GENERATE A SAFETY CLIMB MAINTENANCE AND CONTRACTOR NOTICE TICKET.

3. PRIOR TO THE START OF CONSTRUCTION, ALL REQUIRED JURISDICTIONAL PERMITS SHALL BE OBTAINED. THIS INCLUDES, BUT IS NOT LIMITED TO, BUILDING, ELECTRICAL, MECHANICAL, FIRE, FLOOD ZONE, ENVIRONMENTAL, AND ZONING. AFTER ONSITE ACTIVITIES AND CONSTRUCTION ARE COMPLETED, ALL REQUIRED PERMITS SHALL BE SATISFIED AND CLOSED OUT ACCORDING TO LOCAL JURISDICTIONAL REQUIREMENTS.

4. ALL CONSTRUCTION MEANS AND METHODS; INCLUDING BUT NOT LIMITED TO, ERECTION PLANS, RIGGING PLANS, CLIMBING PLANS, AND RESCUE PLANS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR RESPONSIBLE FOR THE EXECUTION OF THE WORK CONTAINED HEREIN, AND SHALL MEET ANSI/ASSE A10.48 (LATEST EDITION); FEDERAL, STATE, AND LOCAL REGULATIONS; AND ANY APPLICABLE INDUSTRY CONSENSUS STANDARDS RELATED TO THE CONSTRUCTION ACTIVITIES BEING PERFORMED. ALL RIGGING PLANS SHALL ADHERE TO ANSI/ASSE A10.48 (LATEST EDITION) AND DISH Wireless L.L.C. AND TOWER OWNER STANDARDS, INCLUDING THE REQUIRED INVOLVEMENT OF A QUALIFIED ENGINEER FOR CLASS IV CONSTRUCTION, TO CERTIFY THE SUPPORTING STRUCTURE(S) IN ACCORDANCE WITH ANSI/TIA–322 (LATEST EDITION).

5. ALL SITE WORK TO COMPLY WITH DISH Wireless L.L.C. AND TOWER OWNER INSTALLATION STANDARDS FOR CONSTRUCTION ACTIVITIES ON DISH Wireless L.L.C. AND TOWER OWNER TOWER SITE AND LATEST VERSION OF ANSI/TIA–1019–A–2012 "STANDARD FOR INSTALLATION, ALTERATION, AND MAINTENANCE OF ANTENNA SUPPORTING STRUCTURES AND ANTENNAS."

6. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY DISH Wireless L.L.C. AND TOWER OWNER PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.

7. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.

8. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.

9. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES INCLUDING PRIVATE LOCATES SERVICES PRIOR TO THE START OF CONSTRUCTION.

10. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER AUTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING AND EXCAVATION E) CONSTRUCTION SAFETY PROCEDURES.

11. ALL SITE WORK SHALL BE AS INDICATED ON THE STAMPED CONSTRUCTION DRAWINGS AND DISH PROJECT SPECIFICATIONS, LATEST APPROVED REVISION.

12. CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH AT THE COMPLETION OF THE WORK. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.

13. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF DISH Wireless L.L.C. AND TOWER OWNER, AND/OR LOCAL UTILITIES.

14. THE CONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE REQUIRED BY LOCAL JURISDICTION AND SIGNAGE REQUIRED ON INDIVIDUAL PIECES OF EQUIPMENT, ROOMS, AND SHELTERS.

15. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE CARRIER'S EQUIPMENT AND TOWER AREAS.

16. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.

17. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION AS SPECIFIED ON THE CONSTRUCTION DRAWINGS AND/OR PROJECT SPECIFICATIONS.

18. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.

19. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.

20. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS AND RADIOS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.

21. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.

22. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.

GENERAL NOTES:

1.FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:

CONTRACTOR:GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION

CARRIER:DISH Wireless L.L.C.

TOWER OWNER:TOWER OWNER

2. THESE DRAWINGS HAVE BEEN PREPARED USING STANDARDS OF PROFESSIONAL CARE AND COMPLETENESS NORMALLY EXERCISED UNDER SIMILAR CIRCUMSTANCES BY REPUTABLE ENGINEERS IN THIS OR SIMILAR LOCALITIES. IT IS ASSUMED THAT THE WORK DEPICTED WILL BE PERFORMED BY AN EXPERIENCED CONTRACTOR AND/OR WORKPEOPLE WHO HAVE A WORKING KNOWLEDGE OF THE APPLICABLE CODE STANDARDS AND REQUIREMENTS AND OF INDUSTRY ACCEPTED STANDARD GOOD PRACTICE. AS NOT EVERY CONDITION OR ELEMENT IS (OR CAN BE) EXPLICITLY SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL USE INDUSTRY ACCEPTED STANDARD GOOD PRACTICE FOR MISCELLANEOUS WORK NOT EXPLICITLY SHOWN.

3. THESE DRAWINGS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE MEANS OR METHODS OF CONSTRUCTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY FOR PROTECTION OF LIFE AND PROPERTY DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, FORMWORK, SHORING, ETC. SITE VISITS BY THE ENGINEER OR HIS REPRESENTATIVE WILL NOT INCLUDE INSPECTION OF THESE ITEMS AND IS FOR STRUCTURAL OBSERVATION OF THE FINISHED STRUCTURE ONLY.

4. NOTES AND DETAILS IN THE CONSTRUCTION DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT, AND/OR AS PROVIDED FOR IN THE CONTRACT DOCUMENTS. WHERE DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS, GENERAL NOTES, AND SPECIFICATIONS, THE GREATER, MORE STRICT REQUIREMENTS, SHALL GOVERN. IF FURTHER CLARIFICATION IS REQUIRED CONTACT THE ENGINEER OF RECORD.

5. SUBSTANTIAL EFFORT HAS BEEN MADE TO PROVIDE ACCURATE DIMENSIONS AND MEASUREMENTS ON THE DRAWINGS TO ASSIST IN THE FABRICATION AND/OR PLACEMENT OF CONSTRUCTION ELEMENTS BUT IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY THE DIMENSIONS, MEASUREMENTS, AND/OR CLEARANCES SHOWN IN THE CONSTRUCTION DRAWINGS PRIOR TO FABRICATION OR CUTTING OF ANY NEW OR EXISTING CONSTRUCTION ELEMENTS. IF IT IS DETERMINED THAT THERE ARE DISCREPANCIES AND/OR CONFLICTS WITH THE CONSTRUCTION DRAWINGS THE ENGINEER OF RECORD IS TO BE NOTIFIED AS SOON AS POSSIBLE.

6. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING CONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CARRIER POC AND TOWER OWNER.

7. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.

8. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.

9. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.

10. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CARRIER AND TOWER OWNER PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.

11. CONTRACTOR IS TO PERFORM A SITE INVESTIGATION, BEFORE SUBMITTING BIDS, TO DETERMINE THE BEST ROUTING OF ALL CONDUITS FOR POWER, AND TELCO AND FOR GROUNDING CABLES AS SHOWN IN THE POWER, TELCO, AND GROUNDING PLAN DRAWINGS.

12. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF DISH Wireless L.L.C. AND TOWER OWNER

13. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.

14. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.

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STATE OF CONNECTICUT
SHUHEI SAKANOUE
34916
LICENSED PROFESSIONAL ENGINEER
11/23/2021

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

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
0	10/28/21	ISSUED FOR PERMIT
1	11/17/21	REVISED PER COMMENTS

A&E PROJECT NUMBER
1197–F0001–C

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00148B
PLANTATION WATERTANK
50 PLANTATION ROAD
EAST WINDSOR, CT 06088

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. VERYIFY AVAILABLE SHORT CIRCUIT CURRENT DOES NOT EXCEED THE RATING OF ELECTRICAL EQUIPMENT IN ACCORDANCE WITH ARTICLE 110.24 NEC OR THE MOST CURRENT ADOPTED CODE PRE THE GOVERNING JURISDICTION.

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

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

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

8. TIE WRAPS ARE NOT ALLOWED.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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SHUHEI SAKANOUE
34916
LICENSED PROFESSIONAL ENGINEER
11/23/2021

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

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
0	10/28/21	ISSUED FOR PERMIT
1	11/17/21	REVISED PER COMMENTS

A&E PROJECT NUMBER

1197-F0001-C

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00148B
PLANTATION WATERTANK
50 PLANTATION ROAD
EAST WINDSOR, CT 06088

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-POTENTAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS, THE CONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.

3. THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT AND PROVIDE TESTING RESULTS.

4. METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.

5. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.

6. EACH CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, #6 STRANDED COPPER OR LARGER FOR INDOOR BTS; #2 BARE SOLID TINNED COPPER FOR OUTDOOR BTS.

7. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED BACK TO BACK CONNECTIONS ON OPPOSITE SIDE OF THE GROUND BUS ARE PERMITTED.

8. ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING SHALL BE #2 SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.

9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.

10. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.

11. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.

12. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR AND EXTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS.

13. COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC WELD CONNECTIONS.

14. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.

15. APPROVED ANTIOXIDANT COATINGS (i.e. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.

16. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.

17. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.

18. BOND ALL METALLIC OBJECTS WITHIN 6 ft OF MAIN GROUND RING WITH (1) #2 BARE SOLID TINNED COPPER GROUND CONDUCTOR.

19. GROUND CONDUCTORS USED FOR THE FACILITY GROUNDING AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL SUCH AS PVC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (i.e., NONMETALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.

20. ALL GROUNDS THAT TRANSITION FROM BELOW GRADE TO ABOVE GRADE MUST BE #2 BARE SOLID TINNED COPPER IN 3/4" NON-METALLIC, FLEXIBLE CONDUIT FROM 24" BELOW GRADE TO WITHIN 3" TO 6" OF CAD-WELD TERMINATION POINT. THE EXPOSED END OF THE CONDUIT MUST BE SEALED WITH SILICONE CAULK. (ADD TRANSITIONING GROUND STANDARD DETAIL AS WELL).

21. BUILDINGS WHERE THE MAIN GROUNDING CONDUCTORS ARE REQUIRED TO BE ROUTED TO GRADE, THE CONTRACTOR SHALL ROUTE TWO GROUNDING CONDUCTORS FROM THE ROOFTOP, TOWERS, AND WATER TOWERS GROUNDING RING, TO THE EXISTING GROUNDING SYSTEM, THE GROUNDING CONDUCTORS SHALL NOT BE SMALLER THAN 2/0 COPPER. ROOFTOP GROUNDING RING SHALL BE BONDED TO THE EXISTING GROUNDING SYSTEM, THE BUILDING STEEL COLUMNS, LIGHTNING PROTECTION SYSTEM, AND BUILDING MAIN WATER LINE (FERROUS OR NONFERROUS METAL PIPING ONLY). DO NOT ATTACH GROUNDING TO FIRE SPRINKLER SYSTEM PIPES.

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DRAWN BY:	CHECKED BY:	APPROVED BY:
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RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

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DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00148B
PLANTATION WATERTANK
50 PLANTATION ROAD
EAST WINDSOR, CT 06088

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-4

Exhibit D

Structural Analysis Report

Date: **November 22, 2021**

Sean Benack
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Subject:	**Water Tank Structural Analysis Report**	
Dish Wireless	**Site Name:**	Plantation Watertank
	Site Number:	BOBDL00148B
Infinigy Engineering	**Site Number:**	2039-Z5555C
Albul Engineering	**Job Number:**	2021IE-005-SA
Site Data:	**50 Plantation Road, East Windsor, CT, Hartford County** **Latitude: 41° 52' 32.30", Longitude: -72° 33' 53.23"** **132.5 Foot Water Tank**	

Dear Mr. Benack,

Per your request, Albul Engineering has performed a structural analysis to evaluate the structural capacity of the water tank located at the above referenced address for the addition of wireless telecommunication appurtenance by Dish Wireless. The analysis has been performed in accordance with the TIA-222-G and ANSI/AWWA D100-11 standards, and local code requirements based upon an ultimate 3-second gust wind speed of 135 mph.

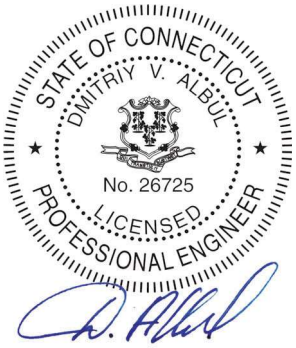
Upon reviewing the results of this analysis, it is our opinion that the structure meets the specified AISC, TIA and AWWA code requirements. The water tank is therefore deemed **adequate** to support the proposed loading as listed in this report.

Structural Usage Ratio: 93.3%

We at Albul Engineering appreciate the opportunity of providing our continuing professional services to Infinigy Engineering, PLLC and Dish Wireless. If you have any questions or need further assistance on this or any other projects, please give us a call.

Sincerely,

Dmitriy Albul, P.E.
Director of Engineering



11-22-21

CONTENTS

1.0 INTRODUCTION

The existing water tank is a 19' diameter by 132.5' tall elevated water tank supported by four double channel legs. The proposed antenna mount will be installed on the water tank legs. The proposed Wish Wireless appurtenance will be mounted approximately at 85' above ground level centerline. The water tank also supports equipment from other carriers that was considered in this analysis.

1.1 DOCUMENTS PROVIDED

The structural analysis of the site is based on the following documents provided:

- Site Visit Photos, dated May 18, 2021
- Mount Analysis Report by Infinigy Engineering, November 22, 2021
- Construction Drawings by Infinigy Engineering, November 17, 2021
- Radio Frequency Data Sheet by Dish Wireless, dated September 21, 2021
- Structural Modification Design Report by AllPoints Technology, dated July 9, 2020

2.0 EXISTING AND PROPOSED EQUIPMENT

The analysis is based on the following appurtenances:

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
120.0[2]	125.0[2]	2	Dragonwave	A-ANT-23-G-2.5	3	1-1/4" Hyrbriflex 1/2" Coax 2-1/4" Innerduct 1-5/8" Coax
	119.0[2]	3	Argus	LLPX310R-V4		
	116.0[2]	3	-	RRUs	2	
	121.0[2]	2	RFS	APVX9ERR18-C-A20		
		1	RFS	APVXSPP18-C-A20	2	
	117.0	15	-	Pipe Mounts		
	116.0[2]	3	Alcatel Lucent	800 MHz 2x50W	6	
		3	Alcatel Lucent	1900MHz 4x40W		
	119.0[2]	3	RFS	APXV18-206517S-C		
		3	-	Pipe Mounts	-	-
113.0[2]	113.0[2]	6	Powerwave	7770	12 2 1	1-5/8" Coax 5/8" Coax 3/8" Coax
		2	Powerwave	P65-17-XLH-RR		
		1	KMW	AM-X-CD-16-65-00T-RET		
		12	Powerwave	LGP 21401		
		3	Ericsson	RRUS-11		
		3	Ericsson	RRUS-12		
		3	Raycap	DC2		
109.0[2]	109.0[2]	1	-	Fiber Box	-	-
85.0[1]	85.0[1]	3	JMA	MX08FRO665-21	6	Hybrid
		3	Fujitsu	TA08025-B605		
		3	Fujitsu	TA08025-B604		
		1	Raycap	RDIDC-3045-PF-48		
10.0[2]	10.0[2]	1	-	Fiber Box	-	-

Notes:
1. Proposed Equipment by Dish Wireless
2. Existing Equipment by other carriers.

3.0 CODES AND LOADING

The analysis has been performed in accordance with the following codes and loading as adopted in Hartford County, Connecticut:

- 2018 Connecticut Building Code (2015 IBC)
- Structural Standard for Steel Antenna Supporting Structures, Antennas and Small Wind Turbine Support Structures - ANSI/TIA-222-G
- Factory-Coated Bolted Carbon Steel Tanks for Water Storage - ANSI/AWWA D103-09
- Ultimate Wind Speed: 135 MPH
- Structure Class: III
- Exposure Category: C
- Topographic Category: 1

4.0 STANDARD CONDITIONS FOR ENGINEERING SERVICES ON EXISTING STRUCTURES

The analysis is based on a site visit performed by Albul Engineering and the documents listed in Section 1.1. The condition of existing water tank has been verified and assumed to be correct. Unless otherwise noted, the structure and the foundation system are assumed to be in good condition, free of defects and can achieve theoretical strength.

It is assumed that the structure has been maintained and shall be maintained during its service. The superstructure and the foundation system are assumed to be designed with proper engineering practice and fabricated, constructed and erected in accordance with the design documents. Albul Engineering will accept no liability which may arise due to any existing deficiency in design, material, fabrication, erection, construction, etc. or lack of maintenance. Contractor should inspect the condition of the existing structure, mounts and connections and notify Albul Engineering for any discrepancies and deficiencies before proceeding with the construction.

The analysis results presented in this report are only applicable for the previously mentioned proposed loading. Any deviation of the proposed equipment and placement will require Albul Engineering to generate an additional structural analysis.

5.0 ANALYSIS AND ASSUMPTIONS

The existing water tank was evaluated by method of comparing lateral loads and reaction as allowed by 2015 International Existing Building Code and 2015 International Building Code based upon an ultimate 3-second gust wind speed of 135 mph.

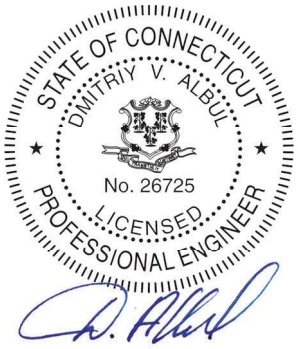
6.0 RESULTS AND CONCLUSION

Based on the results of the structural analysis, we have found that the subject water is **adequate** to support the proposed loading. The structures' elements would be loaded to the following capacities:

Water Tank Overturning Capacity:	**67.4%**
Water Tank Legs:	**93.3%**
Water Tank Leg Anchor Bolts:	**81.8%**

Should you have any questions or need any clarifications about this report, please contact Albul Engineering at (716) 800-1364.

Sincerely,
Albul Engineering, LLC



11-22-21

Dmitriy V. Albul, P.E.
Connecticut Professional Engineer
License No. 26725

APPENDIX A: PHOTOS AND CALCULATIONS

WATER TANK ELEVATION

EXISTING EQUIPMENT BY OTHERS

ALBUL ENGINEERING

COMPARISON OF OVERTURNING MOMENTS

Carrier Site Name: Plantation Watertank
Carrier Site Number: BOBDL00148B
Project Number: 2021IE-005-SA
Date: 11/22/21

WT Members	Quantity	Member Area (ft^2)	Centerline (ft)	Pw (psf)	Fa (lb)	Moment (lb-ft)
WT Bowl	1	563.2	116.7	25.3	14222.2	1659259.2
Legs	4	109.5	54.5	51.8	5673.4	1236808.5
*Diagonals 0-37 ft	8	5.8	18.5	18.0	104.6	15484.5
*Diagonals 37-74 ft	8	5.3	55.5	21.6	113.4	50340.8
*Diagonals 74-109 ft	8	4.2	91.5	24.0	101.7	74460.0
**Horizontals at 37 ft	4	17.9	37.0	47.8	853.2	126269.2
**Horizontals at 74 ft	4	13.9	74.0	55.3	765.9	226700.3
Spider Rods at 37 ft	4	1.6	37.0	19.8	31.9	4728.2
Spider Rods at 74 ft	4	1.3	74.0	22.9	29.8	8819.7
Catwalk	1	19.5	107.0	59.7	1164.5	124603.9
Standpipe	1	300.0	50.0	21.1	6338.1	316903.7
Ladder	1	19.3	59.0	52.7	1014.2	59836.8

* Total of 8 Diagonals 6 Projected into oone face
**Total of 4 Horizontals

WT Overturning Moment = 3,904,215

Appurtenance Model/Description	Quantity	Effective Area (ft^2)	Centerline (ft)	q_z (psf)	Fa (lb)	Moment (lb-ft)
Dragonwave A-ANT-23-G-2.5 (by others)	2	8.02	125.0	36.3	148.4	37105.3
Argus LLPX310R-V4 (by other)	3	4.30	119.0	35.9	78.8	28148.1
RRUs (by othere)	3	1.98	116.0	35.7	36.1	12577.5
RFS APVX9ERR18-C-A20 (by other)	2	8.02	121.0	36.1	147.5	35703.2
RFS APVXSPP18-C-A20 (by other)	1	8.02	121.0	36.1	147.5	17851.6
Alcatel Lucent 800 MHz 2x50W (by other)	3	1.70	116.0	35.7	31.0	10786.0
Alcatel Lucent 1900MHz 4x40W (by other)	3	2.31	116.0	35.7	42.1	14664.9
RFS APXV18-206517S-C (by other)	3	5.17	119.0	35.9	94.7	33793.4
Powerwave 7770 (by other)	6	5.51	113.0	35.5	99.8	67683.9
Powerwave P65-17-XLH-RR (by other)	2	11.47	113.0	35.5	207.8	46964.4
KMW AM-X-CD-16-65-00T-RET (by other)	1	8.02	113.0	35.5	145.4	16433.0
Powerwave LGP 21401 (by other)	12	1.10	113.0	35.5	20.0	27130.1
Ericsson RRUS-11 (by other)	3	2.79	113.0	35.5	50.6	17145.8
Ericsson RRUS-12 (by other)	3	3.15	113.0	35.5	57.0	19321.6
Raycap DC2 (by otherT)	3	0.55	113.0	35.5	9.9	3354.4
Fiber Box (by other)	1	1.63	109.0	35.3	29.4	3202.1
JMA MX08FRO665-21 (Dish Wireless)	3	12.49	85.0	33.5	266.5	67945.9
Fujitsu TA08025-B605 (Dish Wireless)	3	1.95	85.0	33.5	41.6	10605.8
Fujitsu TA08025-B604 (Dish Wireless)	3	1.95	85.0	33.5	41.6	10605.8
Raycap RDIDC-3045-PF-48 (Dish Wireless)	1	2.28	85.0	33.5	48.6	4127.6
Fiber Box (by othere)	1	1.63	10.0	21.3	22.2	222.1
Mounts (by othern)	6	5.25	94.0	34.2	114.4	64526.7
Mounts (by other)	3	1.46	117.0	35.8	26.7	9355.4
Mounts (by other)	3	0.96	117.0	35.8	17.5	6151.5
Mounts (by other)	3	1.65	117.0	35.8	30.1	10572.9
Mounts (by other)	3	2.09	117.0	35.8	38.2	13392.4
Mounts (by other)	3	2.63	117.0	35.8	48.0	16852.6
Mounts (Dish Wireless)	6	3.26	85.0	33.5	69.6	35472.1

Appurtenances Overturning Moment = 641,696

Feedline Model/Description	Quantity Exposed to Wind	Width (in)	Height (ft)	q_z (psf)	Fa (lb)	Moment (lb-ft)
(3) 1-1/4" RF Hyrbriflex (Clearwire/Sprint)	1	1.25	120.0	31.6	221.8	14417.1
(2) 1/2" Coax Cable (Clearwire/Sprint)	2	0.50	120.0	31.6	177.4	11533.7
(2) 2-1/4" Innerduct (Clearwire/Sprint)	2	2.25	120.0	31.6	798.5	51901.6
(6) 1-5/8" Coax Cables (T-Mobile)	3	1.63	120.0	31.6	865.0	56226.7
(12) 1-5/8" Coax Cables (AT&T)	6	1.63	112.0	31.2	1582.9	96558.3
(2) 5/8" Coax Cable (AT&T)	2	0.63	112.0	31.2	202.9	12379.3
(1) 3/8" fiber/DC cable (AT&T)	1	0.38	112.0	31.2	60.9	3713.8
(6) Hybrid Cables (Dish Wireless)	6	1.63	85.0	29.6	1104.2	52449.8

Feedlines Overturning Moment = 299,180

WT Overturning Moment = 3,904,215 lb-ft
Overturning Moment Due to Appurtenances & Feedlines = 940,876 lb-ft

Overturning Moment Percentage Increase = 24.1%

Overturning Moment Percentage Increase exceeds allowable 10% and therefore complete structural analysis require

WATER TANK OVERTURNING AND LEG CAPACITY CHECK

Carrier Site Name: Plantation Watertank
Carrier Site Number: BOBDL00148B
Job Number: 2021IE-005-SA
Date: 11/22/2021

TIA-222 Revision	G	
WT Overturning Moment =	3,904	kip-ft
Moment Due to Appurtenances & Feedlines =	941	kip-ft
WT Total Overturning Moment =	4,845	kip-ft
Water Weight =	340.5	kips
Empty WT Weight =	78.0	kips
WT Weight (Filled w/ Water) =	418.5	kips
Leg Q-ty =	4	
Moment of Inertia =	102.185	ft4
Radious fo Inertia =	17.500	ft
Leg Area =	0.084	ft2
Distance from COG to Outer Leg =	25.750	ft
WT Resistance Moment =	10,776	kip-ft
Overturning Safety Factor =	1.5	

Overturning Capacity **67.4%**

Leg Compressive Load =	224.51	kips
Leg Compressive Capacity =	240.7	kips

WT Leg Compressive Capacity **93.3%**

ANCHOR BOLT CALCULATIONS (EMPTY WATER TANK)

Carrier Site Name:	Plantation Watertank
Carrier Site Number:	BOBDL00148B
Job Number:	2021IE-005-SA
Date:	11/22/2021

Input Information:	**Existing Bolts**	
TIA-222 Revision	G	
# Bolts, **N**	2	
Bolt Diameter, **d**	1.5	in
Threads per Inch, **n**	6	
Bolt Ultimate Tensile Stress, $\mathbf{F_u}$	60	ksi
Steel Grade	A7-39	(Assumed)
Applied Vertical Load **P**	86.63	kips
Applied Shear **S**	16.60	kips
Net Bolt Cross-Sectional Area, $\mathbf{A_n}$	1.405	in^2 (each)
Gross Rod Cross-Sectional Area, **Ag**	1.767	in^2 (each)
Maximum Tensile Force (per bolt), $\mathbf{P_u}$	43.31	kips
Maximum Shear Force (per bolt), $\mathbf{V_u}$	8.300	kips
Detail Type Coefficient, **η**	0.70	
Nominal Tensile Strength (per bolt), $\mathbf{R_{nt}}$	84.31	kips
Nominal Shear Rupture Strength (per bolt), $\mathbf{R_{nv}}$	53.01	kips
Anchor Rod Interaction Equation	0.82	
% Capacity	**81.8%**	

The Bolt Group is Adequate for Loading

Exhibit E

Mount Analysis

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FROM ZERO TO INFINIGY
the solutions are endless

1033 WATERVLIET SHAKER RD ALBANY, NY 12205

Mount Analysis Report

October 19, 2021

Dish Wireless Site Number	BOBDL00148B
Job Number	2039-Z5555C
Client	Northeast Site Solutions
Carrier	Dish Wireless
Site Location	50 Plantation Road, East Windsor, CT 06088 41.875640 N NAD83 72.56483 W NAD83
Mount Centerline EL.	85 ft
Mount Classification	Stand-Off
Structural Usage Ratio	**66%**
Overall Result	**Pass**

Upon reviewing the results of this analysis, it is our opinion that the structure meets the specified TIA and ASCE code requirements. The proposed antenna mounts for the proposed carrier are therefore deemed **adequate** to support the final loading configuration as listed in this report.

10-19-21

Dmitriy Albul, P.E.
Engineering Consultant to Infinigy

Contents

Introduction

Infinigy Engineering has been requested to perform a mount analysis of proposed antenna mount from the Dish Wireless equipment. All 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 19.0 analysis software.

Supporting Documentation

Mount Drawings	Site Pro 1 Assembly Drawings No. WWM02
Mount Drawings	Site Pro 1 Assembly Drawings No. TAM-2U
Construction Drawings	Infinigy Engineering PLLC, Job No. 2039-Z5555C, dated July 22, 2021
RF Design Sheet	Dish Wireless Revision 2, dated September 21, 2021

Analysis Code Requirements

Wind Speed	135 mph (3-second Gust, $V_{ult.}$)
Wind Speed w/ ice	50 mph (3-Second Gust) w/ 1.0” ice
TIA Revision	ANSI/TIA-222-G
Adopted IBC	2018 Connecticut Building Code (2015 IBC)
Structure Class	III
Exposure Category	C
Topographic Method	Method 2
Topographic Category	1
Spectral Response	S_S=0.177, S_1=0.064
Site Class	D – Stiff Soil (Assumed)
HMSL	158.35 ft.

Conclusion

Upon reviewing the results of this analysis, it is our opinion that the structure meets the specified TIA code requirements. The proposed antenna mounts are therefore deemed adequate to support the final loading configuration as listed in this report.

If you have any questions, require additional information, or actual conditions differ from those as detailed in this report please contact me via the information below:

Dmitriy Albul, P.E.
Professional Engineer | Engineering Consultant to Infinigy
1033 Watervliet Shaker Road, Albany, NY 12205
(O) (518) 690-0790 | (M) (518) 699-4428
www.infinigy.com

Final Configuration Loading

Mount CL (ft)	Rad. HT (ft)	Vert. O/S (ft)	Horiz. O/S (ft)*	Qty	Appurtenance	Carrier
85.0	85.0	-	-	3	JMA MX08FRO665-21	Dish Wireless
			-	3	Fujitsu TA08025-B605	
			-	3	Fujitsu TA08025-B604	
			-	1	Raycap RDIDC-9181-PF-48	

Structure Usages

Mount Pipes	66%	Pass
Arms	10%	Pass
Connections*	19%	Pass
Rating	**66%**	Pass

*** Assumed (1) 1/2" UNC Welding stud bolt, of (4) per connection.**

Assumptions and Limitations

Our structural calculations are completed assuming all information provided to Infinigy Engineering is accurate and applicable to this site. For the purposes of calculations, we assume an overall structure condition of "like new" 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 complete a revised evaluation.

Our evaluation is completed using standard TIA, AISC, ACI, and ASCE methods and procedures. Our structural results are proprietary and should not be used by others as their own. Infinigy Engineering is not responsible for decisions made by others that are or are not based on our supplied assumptions and conclusions.

This report is an evaluation of the proposed carriers mount structure only and does not reflect adequacy of the existing tower, other mounts, or coax mounting attachments. These elements are assumed to be adequate for the purposes of this analysis and are assumed to have been installed per their manufacturer requirements.

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Date:	10/19/2021
Site Name:	BOBDL00148B
Project Engineer:	DVA
Project No:	2039-Z5555C
Customer:	Northeast Site Solutions
Carrier:	Dish Wireless

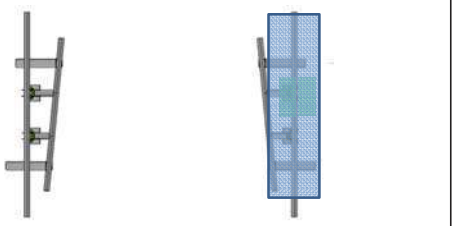
Building Code:	2015	
TIA Standard:	G	
Mount Type:	T-Arm (Multiple)	
Mount Centerline:	85	ft
Superstructure Height:	133	ft
Structure Type:	Other Chimney/Tank/Similar	

Factors	
Gh:	1.000
K_{zmin}:	0.850
K_z:	1.223
K_d:	0.950
K_{zt}:	1.000
Ka:	1.000
I wind:	1.150
I ice:	1.250

q_z:	37.40	psf
Surface Wind Pressure:	108.42	psf

Site Information		
Exposure Category:	C	
Risk Category:	III	
Ultimate Wind Speed:	135	mph
Design Wind Speed:	105	mph
Ice Thickness:	1.00	in
Ice Wind Speed:	50.0	mph
Escalated Ice Thickness:	2.75	in
Topographic Method:	2	
Topographic Category:	1	

ELEVATION VIEW



PLAN VIEW

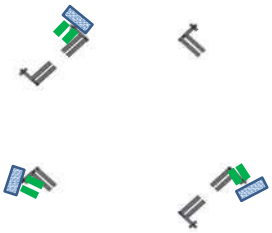


Table 1. Equipment Specifications and Wind Pressure

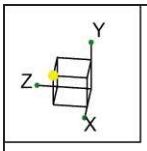
Manufacturer	Model	Elevation	Pipe Label	Weight (lb)	Height (in)	Width (in)	Depth (in)	EPA_N	EPA_T	$EPA_{N\ w/\ ice}$	$EPA_{T\ w/\ ice}$	q_z:	$q_{z\ ice}$:	$q_{z\ live}$:
JMA	MX08FRO665-21	85	20, 107, 24	64.50	72	20	8	12.49	5.87	16.79	9.76	1.22	37.40	7.44
Fujitsu	TA08025-B605	85	20, 107, 24	74.90	14.9	15.7	9	1.84	1.08	3.4	2.36	1.22	37.40	7.44
Fujitsu	TA08025-B604	85	20, 107, 24	63.90	14.9	15.7	7.8	1.84	0.95	3.4	2.18	1.22	37.40	7.44
Raycap	RDIDC-9181-PF-48	85	3	21.85	16	14	8	1.77	1.05	3.31	2.34	1.22	37.40	7.44

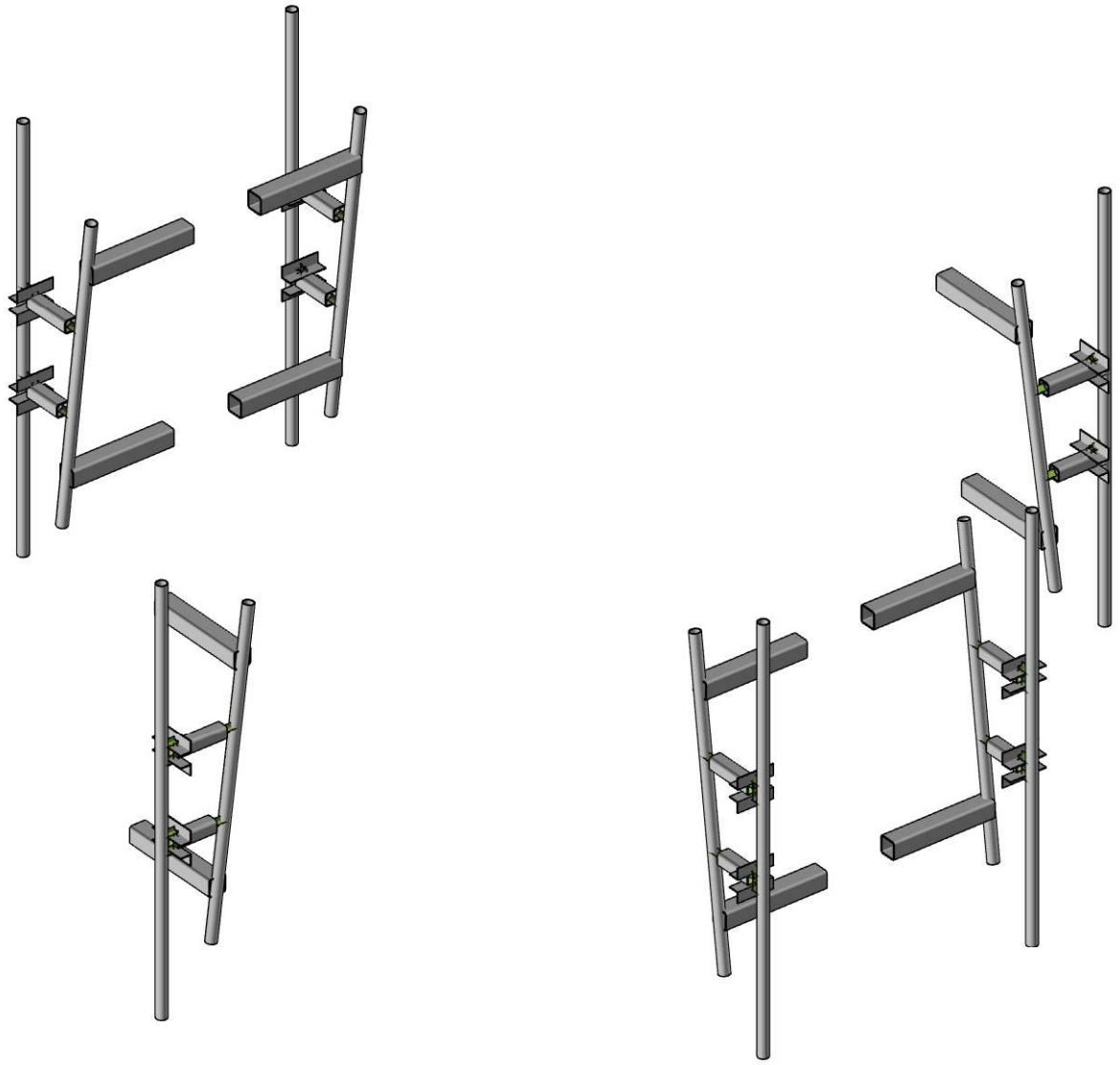
Table 2. Equipment Wind and Seismic Loads

Manufacturer	Model	Wind Load (F_A), lb		Wind Load Ice Case (F_A), lb			Wind Load Service Case	
JMA	MX08FRO665-21	467	219	125	73	500	38	18
Fujitsu	TA08025-B605	69	40	25	18	89	6	3
Fujitsu	TA08025-B604	69	35	25	16	86	6	3
Raycap	RDIDC-9181-PF-48	66	39	25	17	86	5	3

Table 3. Hot Rolled Member Capacities

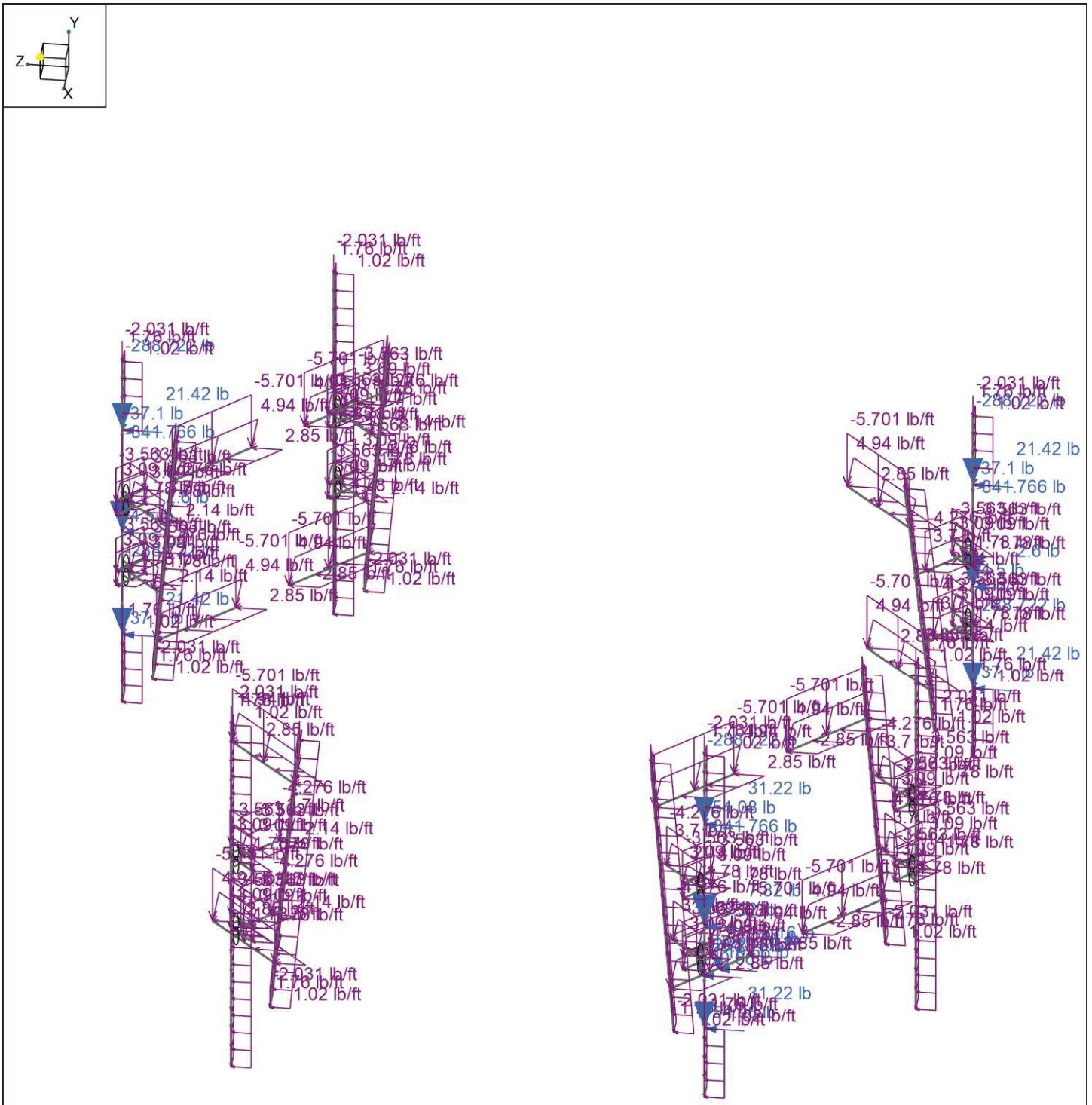
Member Name	Member Shape	Wind load (plf)	Wind Load Ice (plf)	Weight Ice (plf)	Bending Check	Shear Check	Total Capacity	Controlling Capacity
Arm 2	HSS3X3X5	18.70	4.28	2.43	9%	7%	9%	66%
Mount Pipe	PIPE_2.0	8.88	2.03	2.25	31%	13%	31%	
Pipe Mount	PIPE_2.0	8.88	2.03	2.25	66%	46%	66%	
Arm	HSS4X4X4	24.94	5.70	2.72	10%	2%	10%	





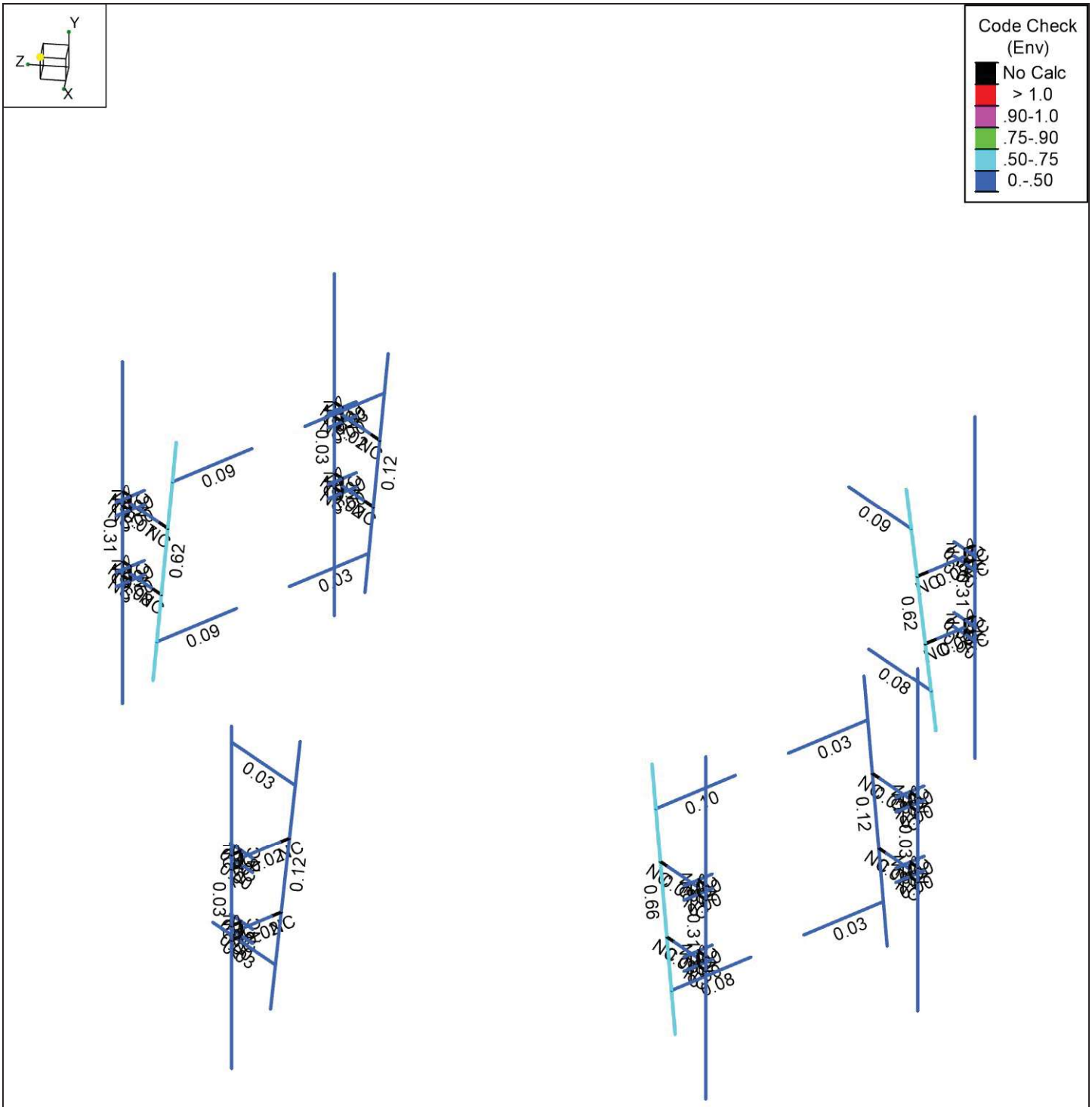
Envelope Only Solution

Infinigy Engineering, PLLC	BOBDL00148B	SK-1
DVA		Oct 19, 2021
2039-Z5555C	Proposed Configuration Model	BOBDL00148B.r3d



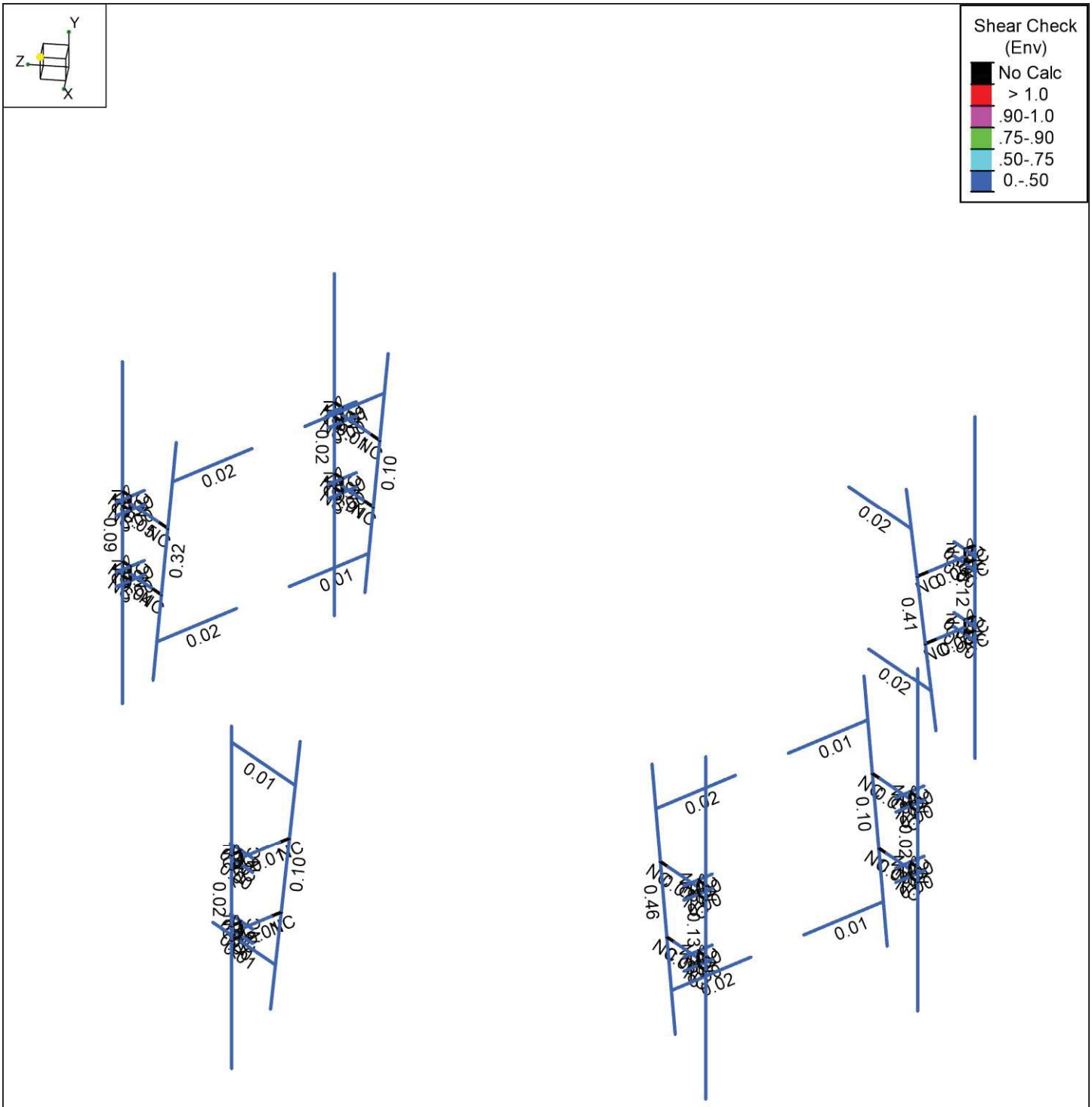
Loads: LC 34, 1.2D + 1.0Di +1.0Wi AZI 210
Envelope Only Solution

Infinigy Engineering, PLLC	BOBDL00148B	SK-2
DVA		Oct 19, 2021
2039-Z5555C	Controlling Load Case	BOBDL00148B.r3d



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

Infinigy Engineering, PLLC	BOBDL00148B	SK-3
DVA		Oct 19, 2021
2039-Z5555C	Member Bending Check	BOBDL00148B.r3d



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

Infinigy Engineering, PLLC	BOBDL00148B	SK-4
DVA		Oct 19, 2021
2039-Z5555C	Member Shear Check	BOBDL00148B.r3d

Model Settings

Solution

Members

Number of Reported Sections	5
Number of Internal Sections	100
Member Area Load Mesh Size (in^2)	9
Consider Shear Deformation	Yes
Consider Torsional Warping	Yes

Wall Panels

Approximate Mesh Size (in)	12
Transfer Forces Between Intersecting Wood Walls	Yes
Increase Wood Wall Nailing Capacity for Wind Loads	Yes
Include P-Delta for Walls	Yes
Optimize Masonry and Wood Walls	Yes
Maximum Number of Iterations	3

Processor Core Utilization

Single	No
Multiple (Optimum)	Yes
Maximum	No

Axis

Vertical Global Axis

Global Axis corresponding to vertical direction	Y
Convert Existing Data	Yes

Default Member Orientation

Default Global Plane for z-axis	XZ

Plate Axis

Plate Local Axis Orientation	Nodal

Codes

Hot Rolled Steel	AISC 13th (360-05): LRFD
Stiffness Adjustment	Yes (Iterative)
Notional Annex	None
Connections	AISC 13th (360-05): LRFD
Cold Formed Steel	AISI S100-07: LRFD
Stiffness Adjustment	Yes (Iterative)
Wood	AF&PA NDS-05/08: ASD
Temperature	< 100F
Concrete	ACI 318-05
Masonry	ACI 530-05: Strength
Aluminum	AA ADM1-05: ASD
Structure Type	Building
Stiffness Adjustment	Yes (Iterative)
Stainless	AISC 14th (360-10): LRFD
Stiffness Adjustment	Yes (Iterative)

Concrete

Column Design

Analysis Methodology	Exact Integration Method
Parme Beta Factor	0.65

Compression Stress Block	Rectangular Stress Block
Analyze using Cracked Sections	Yes
Leave room for horizontal rebar splices (2*d bar spacing)	No

Model Settings (Continued)

List forces which were ignored for design in the Detail Report	Yes

Rebar

Column Min Steel	1
Column Max Steel	8
Rebar Material Spec	ASTM A615
Warn if beam-column framing arrangement is not understood	No

Shear Reinforcement

Number of Shear Regions	4
Region 2 & 3 Spacing Increase Increment (in)	4

Seismic

RISA-3D Seismic Load Options

Code	ASCE 7-10
Risk Category	I or II
Drift Cat	Other
Base Elevation (ft)	
Include the weight of the structure in base shear calcs	Yes

Site Parameters

S_1 (g)	1
SD_1 (g)	1
SD_S (g)	1
T_L (sec)	5

Structure Characteristics

T Z (sec)	
T X (sec)	
C_tX	0.02
C_tExp. Z	0.75
C_tExp. X	0.75
R Z	3
R X	3
Ω_0Z	1
Ω_0X	1
C_dZ	4
C_dX	4
ρ Z	1
ρ X	1

Member Primary Data

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	M1	N6	N5		Pipe Mount	Column	Pipe	A53 Gr.B	Typical
2	M2	N3	N4		Arm	Beam	Tube	A500 Gr.B Rect	Typical
3	M3	N1	N2		Arm	Beam	Tube	A500 Gr.B Rect	Typical
4	M4	N7	N14		RIGID	None	None	RIGID	Typical
5	M5	N8	N15		RIGID	None	None	RIGID	Typical
6	M6	N15	N17		Arm 2	Beam	Tube	A500 Gr.B Rect	Typical
7	M7	N14	N16		Arm 2	Beam	Tube	A500 Gr.B Rect	Typical
8	M8	N18	N19	270	Angle	HBrace	Single Angle	A36 Gr.36	Typical
9	M9	N20	N17		RIGID	None	None	RIGID	Typical
10	M10	N23	N22	90	Angle	HBrace	Single Angle	A36 Gr.36	Typical
11	M11	N21	N17		RIGID	None	None	RIGID	Typical
12	M12	N25	N26	270	Angle	HBrace	Single Angle	A36 Gr.36	Typical
13	M13	N24	N16		RIGID	None	None	RIGID	Typical
14	M14	N27	N16		RIGID	None	None	RIGID	Typical
15	M15	N29	N28	90	Angle	HBrace	Single Angle	A36 Gr.36	Typical
16	M16	N20	N30		RIGID	None	None	RIGID	Typical
17	M17	N21	N31		RIGID	None	None	RIGID	Typical
18	M18	N24	N32		RIGID	None	None	RIGID	Typical
19	M19	N27	N33		RIGID	None	None	RIGID	Typical
20	M20	N34	N35		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
21	M21	N50	N41		RIGID	None	None	RIGID	Typical
22	M22	N48	N39		Pipe Mount	Column	Pipe	A53 Gr.B	Typical
23	M23	N41	N53		Arm 2	Beam	Tube	A500 Gr.B Rect	Typical
24	M24	N38	N65		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
25	M25	N45	N36		Arm	Beam	Tube	A500 Gr.B Rect	Typical
26	M26	N37	N53		RIGID	None	None	RIGID	Typical
27	M27	N37	N63		RIGID	None	None	RIGID	Typical
28	M28	N56	N40		RIGID	None	None	RIGID	Typical
29	M29	N42	N43	90	Angle	HBrace	Single Angle	A36 Gr.36	Typical
30	M30	N62	N44		RIGID	None	None	RIGID	Typical
31	M31	N47	N46		Arm	Beam	Tube	A500 Gr.B Rect	Typical
32	M32	N49	N51		RIGID	None	None	RIGID	Typical
33	M33	N51	N52		Arm 2	Beam	Tube	A500 Gr.B Rect	Typical
34	M34	N59	N52		RIGID	None	None	RIGID	Typical
35	M35	N62	N52		RIGID	None	None	RIGID	Typical
36	M36	N56	N53		RIGID	None	None	RIGID	Typical
37	M37	N54	N55	270	Angle	HBrace	Single Angle	A36 Gr.36	Typical
38	M38	N58	N57	90	Angle	HBrace	Single Angle	A36 Gr.36	Typical
39	M39	N59	N64		RIGID	None	None	RIGID	Typical
40	M40	N60	N61	270	Angle	HBrace	Single Angle	A36 Gr.36	Typical
41	M41	N73	N95		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
42	M42	N92	N77		RIGID	None	None	RIGID	Typical
43	M43	N81	N74		Pipe Mount	Column	Pipe	A53 Gr.B	Typical
44	M44	N82	N84		RIGID	None	None	RIGID	Typical
45	M45	N89	N85		RIGID	None	None	RIGID	Typical
46	M46	N88	N69		RIGID	None	None	RIGID	Typical
47	M47	N88	N67		RIGID	None	None	RIGID	Typical
48	M48	N76	N68	90	Angle	HBrace	Single Angle	A36 Gr.36	Typical
49	M49	N83	N75		RIGID	None	None	RIGID	Typical
50	M50	N92	N85		RIGID	None	None	RIGID	Typical
51	M51	N89	N94		RIGID	None	None	RIGID	Typical
52	M52	N90	N91	270	Angle	HBrace	Single Angle	A36 Gr.36	Typical
53	M53	N84	N85		Arm 2	Beam	Tube	A500 Gr.B Rect	Typical
54	M54	N66	N67		RIGID	None	None	RIGID	Typical
55	M55	N66	N93		RIGID	None	None	RIGID	Typical
56	M56	N75	N67		Arm 2	Beam	Tube	A500 Gr.B Rect	Typical
57	M57	N70	N71	90	Angle	HBrace	Single Angle	A36 Gr.36	Typical
58	M58	N78	N72		Arm	Beam	Tube	A500 Gr.B Rect	Typical

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
59	M59	N80	N79		Arm	Beam	Tube	A500 Gr.B Rect	Typical
60	M60	N86	N87	270	Angle	HBrace	Single Angle	A36 Gr.36	Typical
61	M61	N110	N101		RIGID	None	None	RIGID	Typical
62	M62	N108	N99		Pipe Mount	Column	Pipe	A53 Gr.B	Typical
63	M63	N101	N113		Arm 2	Beam	Tube	A500 Gr.B Rect	Typical
64	M64	N98	N125		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
65	M65	N105	N96		Arm	Beam	Tube	A500 Gr.B Rect	Typical
66	M66	N97	N113		RIGID	None	None	RIGID	Typical
67	M67	N97	N123		RIGID	None	None	RIGID	Typical
68	M68	N116	N100		RIGID	None	None	RIGID	Typical
69	M69	N102	N103	90	Angle	HBrace	Single Angle	A36 Gr.36	Typical
70	M70	N122	N104		RIGID	None	None	RIGID	Typical
71	M71	N107	N106		Arm	Beam	Tube	A500 Gr.B Rect	Typical
72	M72	N109	N111		RIGID	None	None	RIGID	Typical
73	M73	N111	N112		Arm 2	Beam	Tube	A500 Gr.B Rect	Typical
74	M74	N119	N112		RIGID	None	None	RIGID	Typical
75	M75	N122	N112		RIGID	None	None	RIGID	Typical
76	M76	N116	N113		RIGID	None	None	RIGID	Typical
77	M77	N114	N115	270	Angle	HBrace	Single Angle	A36 Gr.36	Typical
78	M78	N118	N117	90	Angle	HBrace	Single Angle	A36 Gr.36	Typical
79	M79	N119	N124		RIGID	None	None	RIGID	Typical
80	M80	N120	N121	270	Angle	HBrace	Single Angle	A36 Gr.36	Typical
81	M81	N152	N129	90	Angle	HBrace	Single Angle	A36 Gr.36	Typical
82	M82	N132	N155		RIGID	None	None	RIGID	Typical
83	M83	N149	N150	270	Angle	HBrace	Single Angle	A36 Gr.36	Typical
84	M84	N127	N139		RIGID	None	None	RIGID	Typical
85	M85	N143	N137		Pipe Mount	Column	Pipe	A53 Gr.B	Typical
86	M86	N139	N148		Arm 2	Beam	Tube	A500 Gr.B Rect	Typical
87	M87	N136	N134		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
88	M88	N142	N130		Arm	Beam	Tube	A500 Gr.B Rect	Typical
89	M89	N135	N148		RIGID	None	None	RIGID	Typical
90	M90	N135	N154		RIGID	None	None	RIGID	Typical
91	M91	N151	N138		RIGID	None	None	RIGID	Typical
92	M92	N140	N131	90	Angle	HBrace	Single Angle	A36 Gr.36	Typical
93	M93	N153	N141		RIGID	None	None	RIGID	Typical
94	M94	N126	N133		Arm	Beam	Tube	A500 Gr.B Rect	Typical
95	M95	N144	N146		RIGID	None	None	RIGID	Typical
96	M96	N146	N147		Arm 2	Beam	Tube	A500 Gr.B Rect	Typical
97	M97	N132	N147		RIGID	None	None	RIGID	Typical
98	M98	N153	N147		RIGID	None	None	RIGID	Typical
99	M99	N151	N148		RIGID	None	None	RIGID	Typical
100	M100	N145	N128	270	Angle	HBrace	Single Angle	A36 Gr.36	Typical
101	M101	N182	N158	90	Angle	HBrace	Single Angle	A36 Gr.36	Typical
102	M102	N161	N185		RIGID	None	None	RIGID	Typical
103	M103	N179	N180	270	Angle	HBrace	Single Angle	A36 Gr.36	Typical
104	M104	N157	N171		RIGID	None	None	RIGID	Typical
105	M105	N175	N169		Pipe Mount	Column	Pipe	A53 Gr.B	Typical
106	M106	N171	N178		Arm 2	Beam	Tube	A500 Gr.B Rect	Typical
107	M107	N168	N164		Mount Pipe	Column	Pipe	A53 Gr.B	Typical
108	M108	N174	N159		Arm	Beam	Tube	A500 Gr.B Rect	Typical
109	M109	N163	N178		RIGID	None	None	RIGID	Typical
110	M110	N163	N184		RIGID	None	None	RIGID	Typical
111	M111	N181	N170		RIGID	None	None	RIGID	Typical
112	M112	N172	N160	90	Angle	HBrace	Single Angle	A36 Gr.36	Typical
113	M113	N183	N173		RIGID	None	None	RIGID	Typical
114	M114	N156	N162		Arm	Beam	Tube	A500 Gr.B Rect	Typical
115	M115	N176	N165		RIGID	None	None	RIGID	Typical
116	M116	N165	N177		Arm 2	Beam	Tube	A500 Gr.B Rect	Typical

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
117	M117	N161	N177		RIGID	None	None	RIGID	Typical
118	M118	N183	N177		RIGID	None	None	RIGID	Typical
119	M119	N181	N178		RIGID	None	None	RIGID	Typical
120	M120	N166	N167	270	Angle	HBrace	Single Angle	A36 Gr.36	Typical

Node Boundary Conditions

	Node Label	X [k/in]	Y [k/in]	Z [k/in]	Y Rot [k-ft/rad]
1	N3	Reaction	Reaction	Reaction	Reaction
2	N1	Reaction	Reaction	Reaction	Reaction
3	N45	Reaction	Reaction	Reaction	Reaction
4	N47	Reaction	Reaction	Reaction	Reaction
5	N78	Reaction	Reaction	Reaction	Reaction
6	N80	Reaction	Reaction	Reaction	Reaction
7	N105	Reaction	Reaction	Reaction	Reaction
8	N107	Reaction	Reaction	Reaction	Reaction
9	N126	Reaction	Reaction	Reaction	Reaction
10	N142	Reaction	Reaction	Reaction	Reaction
11	N156	Reaction	Reaction	Reaction	Reaction
12	N174	Reaction	Reaction	Reaction	Reaction

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in²]	Iyy [in⁴]	Izz [in⁴]	J [in⁴]
1	Arm 2	HSS3X3X5	Beam	Tube	A500 Gr.B Rect	Typical	2.94	3.45	3.45	5.94
2	Mount Pipe	PIPE_2.0	Column	Pipe	A53 Gr.B	Typical	1.02	0.627	0.627	1.25
3	Angle	L2.5x2.5x3	HBrace	Single Angle	A36 Gr.36	Typical	0.901	0.535	0.535	0.011
4	Pipe Mount	PIPE_2.0	Column	Pipe	A53 Gr.B	Typical	1.02	0.627	0.627	1.25
5	Arm	HSS4X4X4	Beam	Tube	A500 Gr.B Rect	Typical	3.37	7.8	7.8	12.8

Basic Load Cases

	BLC Description	Category	Y Gravity	Point	Distributed
1	Self Weight	DL	-1	20	
2	Wind Load AZI 0	WLX		40	248
3	Wind Load AZI 30	None		40	248
4	Wind Load AZI 60	None		40	248
5	Wind Load AZI 90	WLZ		40	248
6	Wind Load AZI 120	None		40	248
7	Wind Load AZI 150	None		40	248
8	Wind Load AZI 180	None		40	248
9	Wind Load AZI 210	None		40	248
10	Wind Load AZI 240	None		40	248
11	Wind Load AZI 270	None		40	248
12	Wind Load AZI 300	None		40	248
13	Wind Load AZI 330	None		40	248
14	Ice Weight	OL1		20	120
15	Ice Wind Load AZI 0	OL2		40	248
16	Ice Wind Load AZI 30	None		40	248
17	Ice Wind Load AZI 60	None		40	248
18	Ice Wind Load AZI 90	OL3		40	248
19	Ice Wind Load AZI 120	None		40	248
20	Ice Wind Load AZI 150	None		40	248
21	Ice Wind Load AZI 180	None		40	248
22	Ice Wind Load AZI 210	None		40	248
23	Ice Wind Load AZI 240	None		40	248
24	Ice Wind Load AZI 270	None		40	248
25	Ice Wind Load AZI 300	None		40	248
26	Ice Wind Load AZI 330	None		40	248
29	Service Live Loads	LL			

Load Combinations

	Description	Solve	PDelta	BLC	Factor	BLC	Factor	BLC	Factor
1	1.4DL	Yes	Y	1	1.4				
2	1.2DL + 1.6WL AZI 0	Yes	Y	1	1.2	2	1.6		
3	1.2DL + 1.6WL AZI 30	Yes	Y	1	1.2	3	1.6		
4	1.2DL + 1.6WL AZI 60	Yes	Y	1	1.2	4	1.6		
5	1.2DL + 1.6WL AZI 90	Yes	Y	1	1.2	5	1.6		
6	1.2DL + 1.6WL AZI 120	Yes	Y	1	1.2	6	1.6		
7	1.2DL + 1.6WL AZI 150	Yes	Y	1	1.2	7	1.6		
8	1.2DL + 1.6WL AZI 180	Yes	Y	1	1.2	8	1.6		
9	1.2DL + 1.6WL AZI 210	Yes	Y	1	1.2	9	1.6		
10	1.2DL + 1.6WL AZI 240	Yes	Y	1	1.2	10	1.6		
11	1.2DL + 1.6WL AZI 270	Yes	Y	1	1.2	11	1.6		
12	1.2DL + 1.6WL AZI 300	Yes	Y	1	1.2	12	1.6		
13	1.2DL + 1.6WL AZI 330	Yes	Y	1	1.2	13	1.6		
14	0.9DL + 1.6WL AZI 0	Yes	Y	1	0.9	2	1.6		
15	0.9DL + 1.6WL AZI 30	Yes	Y	1	0.9	3	1.6		
16	0.9DL + 1.6WL AZI 60	Yes	Y	1	0.9	4	1.6		
17	0.9DL + 1.6WL AZI 90	Yes	Y	1	0.9	5	1.6		
18	0.9DL + 1.6WL AZI 120	Yes	Y	1	0.9	6	1.6		
19	0.9DL + 1.6WL AZI 150	Yes	Y	1	0.9	7	1.6		
20	0.9DL + 1.6WL AZI 180	Yes	Y	1	0.9	8	1.6		
21	0.9DL + 1.6WL AZI 210	Yes	Y	1	0.9	9	1.6		
22	0.9DL + 1.6WL AZI 240	Yes	Y	1	0.9	10	1.6		
23	0.9DL + 1.6WL AZI 270	Yes	Y	1	0.9	11	1.6		
24	0.9DL + 1.6WL AZI 300	Yes	Y	1	0.9	12	1.6		
25	0.9DL + 1.6WL AZI 330	Yes	Y	1	0.9	13	1.6		
26	1.2D + 1.0Di	Yes	Y	1	1.2	14	1		
27	1.2D + 1.0Di +1.0Wi AZI 0	Yes	Y	1	1.2	14	1	15	1
28	1.2D + 1.0Di +1.0Wi AZI 30	Yes	Y	1	1.2	14	1	16	1
29	1.2D + 1.0Di +1.0Wi AZI 60	Yes	Y	1	1.2	14	1	17	1
30	1.2D + 1.0Di +1.0Wi AZI 90	Yes	Y	1	1.2	14	1	18	1
31	1.2D + 1.0Di +1.0Wi AZI 120	Yes	Y	1	1.2	14	1	19	1
32	1.2D + 1.0Di +1.0Wi AZI 150	Yes	Y	1	1.2	14	1	20	1
33	1.2D + 1.0Di +1.0Wi AZI 180	Yes	Y	1	1.2	14	1	21	1
34	1.2D + 1.0Di +1.0Wi AZI 210	Yes	Y	1	1.2	14	1	22	1
35	1.2D + 1.0Di +1.0Wi AZI 240	Yes	Y	1	1.2	14	1	23	1
36	1.2D + 1.0Di +1.0Wi AZI 270	Yes	Y	1	1.2	14	1	24	1
37	1.2D + 1.0Di +1.0Wi AZI 300	Yes	Y	1	1.2	14	1	25	1
38	1.2D + 1.0Di +1.0Wi AZI 330	Yes	Y	1	1.2	14	1	26	1
39	(1.2 + 0.2Sds)DL + 1.0E AZI 0	Yes	Y	1	1.2	27	1	28	
40	(1.2 + 0.2Sds)DL + 1.0E AZI 30	Yes	Y	1	1.2	27	0.866	28	0.5
41	(1.2 + 0.2Sds)DL + 1.0E AZI 60	Yes	Y	1	1.2	27	0.5	28	0.866
42	(1.2 + 0.2Sds)DL + 1.0E AZI 90	Yes	Y	1	1.2	27		28	1
43	(1.2 + 0.2Sds)DL + 1.0E AZI 120	Yes	Y	1	1.2	27	-0.5	28	0.866
44	(1.2 + 0.2Sds)DL + 1.0E AZI 150	Yes	Y	1	1.2	27	-0.866	28	0.5
45	(1.2 + 0.2Sds)DL + 1.0E AZI 180	Yes	Y	1	1.2	27	-1	28	
46	(1.2 + 0.2Sds)DL + 1.0E AZI 210	Yes	Y	1	1.2	27	-0.866	28	-0.5
47	(1.2 + 0.2Sds)DL + 1.0E AZI 240	Yes	Y	1	1.2	27	-0.5	28	-0.866
48	(1.2 + 0.2Sds)DL + 1.0E AZI 270	Yes	Y	1	1.2	27		28	-1
49	(1.2 + 0.2Sds)DL + 1.0E AZI 300	Yes	Y	1	1.2	27	0.5	28	-0.866
50	(1.2 + 0.2Sds)DL + 1.0E AZI 330	Yes	Y	1	1.2	27	0.866	28	-0.5
51	(0.9 - 0.2Sds)DL + 1.0E AZI 0	Yes	Y	1	0.9	27	1	28	
52	(0.9 - 0.2Sds)DL + 1.0E AZI 30	Yes	Y	1	0.9	27	0.866	28	0.5
53	(0.9 - 0.2Sds)DL + 1.0E AZI 60	Yes	Y	1	0.9	27	0.5	28	0.866
54	(0.9 - 0.2Sds)DL + 1.0E AZI 90	Yes	Y	1	0.9	27		28	1
55	(0.9 - 0.2Sds)DL + 1.0E AZI 120	Yes	Y	1	0.9	27	-0.5	28	0.866
56	(0.9 - 0.2Sds)DL + 1.0E AZI 150	Yes	Y	1	0.9	27	-0.866	28	0.5
57	(0.9 - 0.2Sds)DL + 1.0E AZI 180	Yes	Y	1	0.9	27	-1	28	
58	(0.9 - 0.2Sds)DL + 1.0E AZI 210	Yes	Y	1	0.9	27	-0.866	28	-0.5

Load Combinations (Continued)

	Description	Solve	PDelta	BLC	Factor	BLC	Factor	BLC	Factor
59	(0.9 - 0.2Sds)DL + 1.0E AZI 240	Yes	Y	1	0.9	27	-0.5	28	-0.866
60	(0.9 - 0.2Sds)DL + 1.0E AZI 270	Yes	Y	1	0.9	27		28	-1
61	(0.9 - 0.2Sds)DL + 1.0E AZI 300	Yes	Y	1	0.9	27	0.5	28	-0.866
62	(0.9 - 0.2Sds)DL + 1.0E AZI 330	Yes	Y	1	0.9	27	0.866	28	-0.5
63	1.0DL + 1.5LL + 1.0SWL (30 mph) AZI 0	Yes	Y	1	1	2	0.082	29	1.5
64	1.0DL + 1.5LL + 1.0SWL (30 mph) AZI 30	Yes	Y	1	1	3	0.082	29	1.5
65	1.0DL + 1.5LL + 1.0SWL (30 mph) AZI 60	Yes	Y	1	1	4	0.082	29	1.5
66	1.0DL + 1.5LL + 1.0SWL (30 mph) AZI 90	Yes	Y	1	1	5	0.082	29	1.5
67	1.0DL + 1.5LL + 1.0SWL (30 mph) AZI 120	Yes	Y	1	1	6	0.082	29	1.5
68	1.0DL + 1.5LL + 1.0SWL (30 mph) AZI 150	Yes	Y	1	1	7	0.082	29	1.5
69	1.0DL + 1.5LL + 1.0SWL (30 mph) AZI 180	Yes	Y	1	1	8	0.082	29	1.5
70	1.0DL + 1.5LL + 1.0SWL (30 mph) AZI 210	Yes	Y	1	1	9	0.082	29	1.5
71	1.0DL + 1.5LL + 1.0SWL (30 mph) AZI 240	Yes	Y	1	1	10	0.082	29	1.5
72	1.0DL + 1.5LL + 1.0SWL (30 mph) AZI 270	Yes	Y	1	1	11	0.082	29	1.5
73	1.0DL + 1.5LL + 1.0SWL (30 mph) AZI 300	Yes	Y	1	1	12	0.082	29	1.5
74	1.0DL + 1.5LL + 1.0SWL (30 mph) AZI 330	Yes	Y	1	1	13	0.082	29	1.5

Envelope Node Reactions

	Node Label		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-in]	LC	MY [lb-in]	LC	MZ [lb-in]	LC
1	N3	max	422.157	14	619.73	34	413.689	16	0	74	8874.493	23	0	74
2		min	-780.629	8	44.633	15	-521.307	10	0	1	-11680.699	5	0	1
3	N1	max	845.05	2	667.806	28	605.399	4	0	74	13097.079	11	0	74
4		min	-486.315	20	54.486	21	-497.4	22	0	1	-8266.228	17	0	1
5	N45	max	445.223	13	582.96	37	459.917	17	0	74	13210.157	9	0	74
6		min	-344.16	19	48.807	18	-809.469	11	0	1	-8442.241	15	0	1
7	N47	max	337.631	15	589.658	31	825.537	5	0	74	9400.683	21	0	74
8		min	-438.744	9	48.693	24	-476.239	23	0	1	-12221.824	3	0	1
9	N78	max	195.027	14	114.869	34	218.967	17	0	74	5571.639	6	0	74
10		min	-291.576	8	17.449	15	-271.357	11	0	1	-4611.825	24	0	1
11	N80	max	299.006	2	114.842	28	268.764	5	0	74	4949.768	18	0	74
12		min	-202.501	20	17.375	21	-216.404	23	0	1	-5273.716	12	0	1
13	N105	max	291.575	2	114.866	38	218.968	17	0	74	4611.838	22	0	74
14		min	-195.029	20	17.446	19	-271.357	11	0	1	-5571.585	4	0	1
15	N107	max	202.506	14	114.839	32	268.766	5	0	74	5273.738	10	0	74
16		min	-299.006	8	17.372	25	-216.408	23	0	1	-4949.815	16	0	1
17	N126	max	268.765	2	114.841	29	299.008	5	0	74	5273.722	7	0	74
18		min	-216.406	20	17.373	22	-202.505	23	0	1	-4949.763	25	0	1
19	N142	max	218.963	14	114.868	35	195.028	17	0	74	4611.772	19	0	74
20		min	-271.354	8	17.447	16	-291.576	11	0	1	-5571.531	13	0	1
21	N156	max	510.112	14	585.24	34	337.446	18	0	74	17081.229	13	0	74
22		min	-610.859	8	74.353	15	-708.594	37	0	1	-14283.162	19	0	1
23	N174	max	621.942	2	578.542	28	707.365	31	0	74	13262.95	25	0	74
24		min	-520.974	20	74.467	21	-330.561	24	0	1	-18059.365	7	0	1
25	Totals:	max	4537.257	14	4181.874	34	4477.464	5						
26		min	-4537.261	8	1243.448	15	-4477.461	23						

Envelope AISC 13TH (360-05): LRFD Member Steel Code Checks

	Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-y [lb-in]	phi*Mn z-z [lb-in]	Cb	Eqn
1	M1	PIPE_2.0	0.655	60	34	0.458	60		9	20866.847	32130	22459.5	22459.5	2.536	H1-1b
2	M22	PIPE_2.0	0.623	60	31	0.413	60		6	20866.847	32130	22459.5	22459.5	2.542	H1-1b
3	M105	PIPE_2.0	0.616	60	34	0.316	60		8	20866.847	32130	22459.5	22459.5	2.656	H1-1b
4	M20	PIPE_2.0	0.308	36	3	0.131	40		3	14916.096	32130	22459.5	22459.5	2.322	H1-1b
5	M24	PIPE_2.0	0.308	36	11	0.116	40		12	14916.096	32130	22459.5	22459.5	3	H1-1b
6	M107	PIPE_2.0	0.308	36	13	0.087	40		3	14916.096	32130	22459.5	22459.5	2.565	H1-1b
7	M85	PIPE_2.0	0.118	60	4	0.102	60		4	20866.847	32130	22459.5	22459.5	2.867	H1-1b
8	M43	PIPE_2.0	0.118	60	3	0.102	60		3	20866.847	32130	22459.5	22459.5	2.867	H1-1b
9	M62	PIPE_2.0	0.118	60	7	0.102	60		7	20866.847	32130	22459.5	22459.5	2.867	H1-1b

Envelope AISC 13TH (360-05): LRFD Member Steel Code Checks (Continued)

	Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-y [lb-in]	phi*Mn z-z [lb-in]	Cb	Eqn
10	M2	HSS4X4X4	0.096	24	34	0.016	0	y	34	137201.855	139518	194166	194166	1.651	H1-1b
11	M108	HSS4X4X4	0.093	0	7	0.018	0	z	7	137201.855	139518	194166	194166	1.622	H1-1b
12	M33	HSS3X3X5	0.092	0	11	0.058	0	z	6	121152.154	121716	120060	120060	1.116	H1-1b
13	M31	HSS4X4X4	0.091	24	31	0.017	0	z	4	137201.855	139518	194166	194166	1.65	H1-1b
14	M114	HSS4X4X4	0.089	24	34	0.018	0	z	13	137201.855	139518	194166	194166	1.65	H1-1b
15	M23	HSS3X3X5	0.086	0	5	0.061	0	z	12	120799.83	121716	120060	120060	1.109	H1-1b
16	M7	HSS3X3X5	0.084	0	2	0.065	0	z	9	121152.154	121716	120060	120060	1.135	H1-1b
17	M3	HSS4X4X4	0.082	24	34	0.018	0	y	28	137201.855	139518	194166	194166	1.584	H1-1b
18	M116	HSS3X3X5	0.08	0	7	0.043	0	z	9	121152.154	121716	120060	120060	1.087	H1-1b
19	M6	HSS3X3X5	0.078	0	8	0.069	0	z	3	120799.83	121716	120060	120060	1.131	H1-1b
20	M25	HSS4X4X4	0.077	24	31	0.017	0	z	10	137201.855	139518	194166	194166	1.649	H1-1b
21	M106	HSS3X3X5	0.072	0	13	0.045	0	z	3	120799.83	121716	120060	120060	1.08	H1-1b
22	M87	PIPE_2.0	0.035	36	9	0.022	37		9	14916.096	32130	22459.5	22459.5	2.35	H1-1b
23	M64	PIPE_2.0	0.035	36	12	0.022	37		12	14916.096	32130	22459.5	22459.5	2.557	H1-1b
24	M41	PIPE_2.0	0.035	36	10	0.022	37		10	14916.096	32130	22459.5	22459.5	2.557	H1-1b
25	M58	HSS4X4X4	0.029	0	6	0.007	0	z	6	137201.855	139518	194166	194166	1.537	H1-1b
26	M65	HSS4X4X4	0.029	0	4	0.007	0	z	4	137201.855	139518	194166	194166	1.537	H1-1b
27	M88	HSS4X4X4	0.029	0	13	0.007	0	z	13	137201.855	139518	194166	194166	1.537	H1-1b
28	M71	HSS4X4X4	0.027	0	10	0.007	0	z	9	137201.855	139518	194166	194166	1.537	H1-1b
29	M94	HSS4X4X4	0.027	0	7	0.007	0	z	6	137201.855	139518	194166	194166	1.537	H1-1b
30	M59	HSS4X4X4	0.027	0	12	0.007	0	z	13	137201.855	139518	194166	194166	1.537	H1-1b
31	M96	HSS3X3X5	0.02	0	11	0.011	0	z	3	121152.154	121716	120060	120060	1.284	H1-1b
32	M53	HSS3X3X5	0.02	0	8	0.011	0	z	4	121152.154	121716	120060	120060	1.284	H1-1b
33	M73	HSS3X3X5	0.02	0	2	0.011	0	z	6	121152.154	121716	120060	120060	1.284	H1-1b
34	M86	HSS3X3X5	0.019	0	5	0.012	0	z	10	120799.83	121716	120060	120060	1.347	H1-1b
35	M63	HSS3X3X5	0.019	0	8	0.012	0	z	13	120799.83	121716	120060	120060	1.347	H1-1b
36	M56	HSS3X3X5	0.019	0	2	0.012	0	z	9	120799.83	121716	120060	120060	1.347	H1-1b
37	M101	L2.5x2.5x3	0.002	4.25	13	0	4.25	y	25	28263.998	29192.4	10470.885	23661.955	1.5	H2-1
38	M112	L2.5x2.5x3	0.002	4.25	12	0	4.25	y	25	28263.998	29192.4	10470.885	23661.955	1.5	H2-1
39	M40	L2.5x2.5x3	0.002	4.25	4	0	4.25	y	15	28263.998	29192.4	10470.885	23661.955	1.5	H2-1
40	M12	L2.5x2.5x3	0.002	4.25	7	0	4.25	y	18	28263.998	29192.4	10470.885	23661.955	1.5	H2-1
41	M69	L2.5x2.5x3	0.002	4.25	10	0	4.25	y	22	28263.998	29192.4	10470.885	23661.955	1.5	H2-1
42	M92	L2.5x2.5x3	0.002	4.25	7	0	4.25	y	19	28263.998	29192.4	10470.885	23661.955	1.5	H2-1
43	M78	L2.5x2.5x3	0.002	4.25	10	0	4.25	y	22	28263.998	29192.4	10470.885	23661.955	1.5	H2-1
44	M81	L2.5x2.5x3	0.002	4.25	7	0	4.25	y	19	28263.998	29192.4	10470.885	23661.955	1.5	H2-1
45	M60	L2.5x2.5x3	0.002	4.25	13	0	4.25	y	24	28263.998	29192.4	10470.885	23661.955	1.5	H2-1
46	M52	L2.5x2.5x3	0.002	4.25	13	0	4.25	y	24	28263.998	29192.4	10470.885	23661.955	1.5	H2-1
47	M83	L2.5x2.5x3	0.002	4.25	12	0	4.25	y	19	28263.998	29192.4	10470.885	23661.955	1.5	H2-1
48	M100	L2.5x2.5x3	0.002	4.25	12	0	4.25	y	19	28263.998	29192.4	10470.885	23661.955	1.5	H2-1
49	M10	L2.5x2.5x3	0.002	4.25	13	0	4.25	y	7	28263.998	29192.4	10470.885	23661.955	1.5	H2-1
50	M15	L2.5x2.5x3	0.002	4.25	13	0	4.25	y	18	28263.998	29192.4	10470.885	23661.955	1.5	H2-1
51	M48	L2.5x2.5x3	0.002	4.25	6	0	4.25	y	24	28263.998	29192.4	10470.885	23661.955	1.5	H2-1
52	M80	L2.5x2.5x3	0.002	4.25	4	0	4.25	y	22	28263.998	29192.4	10470.885	23661.955	1.5	H2-1
53	M57	L2.5x2.5x3	0.002	4.25	6	0	4.25	y	24	28263.998	29192.4	10470.885	23661.955	1.5	H2-1
54	M77	L2.5x2.5x3	0.002	4.25	4	0	4.25	y	22	28263.998	29192.4	10470.885	23661.955	1.5	H2-1
55	M38	L2.5x2.5x3	0.002	4.25	10	0	4.25	y	4	28263.998	29192.4	10470.885	23661.955	1.5	H2-1
56	M29	L2.5x2.5x3	0.002	4.25	9	0	4.25	y	15	28263.998	29192.4	10470.885	23661.955	1.5	H2-1
57	M37	L2.5x2.5x3	0.002	4.25	4	0	4.25	y	4	28263.998	29192.4	10470.885	23661.955	1.5	H2-1
58	M8	L2.5x2.5x3	0.002	4.25	7	0	4.25	y	7	28263.998	29192.4	10470.885	23661.955	1.5	H2-1
59	M103	L2.5x2.5x3	0.002	4.25	7	0	4.25	y	25	28263.998	29192.4	10470.885	23661.955	1.5	H2-1
60	M120	L2.5x2.5x3	0.002	4.25	6	0	4.25	y	25	28263.998	29192.4	10470.885	23661.955	1.5	H2-1

INFINIGY

FROM ZERO TO INFINIGY

the solutions are endless

BOLT CONNECTION CALCULATION

BOLT PROPERTIES

Date:	10/19/2021
Site:	*BOBDL00148B*
Engineer:	*DVA*
Job No:	*2039-Z5555C*
Connection Location:	*Arm to Tank Leg (Stud)*

Bolt Capacity Equation	TIA-222-G	
Connection Type	Welded Stud	
Bolt Size, **d**	1/2	in
Threads per Inch, **n**	13	
Bolt Ultimate Tensile Stress, F_u	60	ksi
Threads Exclusion	N	
Shear Plane	1	

Net Bolt Cross-Sectional Area, **An**	0.142	in^2
Gross Bolt Cross-Sectional Area, **Ag**	0.196	in^2
Tensile Steel Strength (per bolt), ϕR_{nt}	8656	lbs
Shear Steel Strength (per bolt), ϕR_{nv}	6492	lbs

INFINIGY

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BOLT CONNECTION CALCULATION

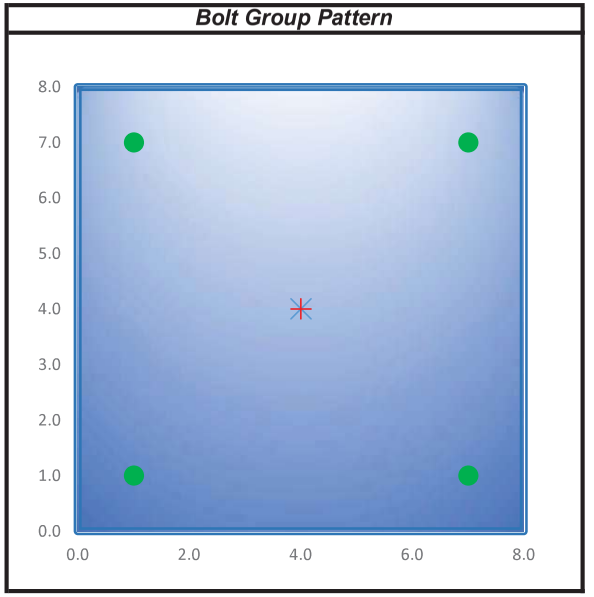
BOLT GROUP CHECK

Date:	*10/19/2021*
Site:	*BOBDL00148B*
Engineer:	*DVA*
Job No:	*2039-Z5555C*
Connection Location:	*Arm to Tank Leg (Stud)*

Loads Properties					
Controlling LC:	13				
Load Point Number:	N156				
X-Coordinate (in.)	4.00				
Y-Coordinate (in.)	4.00				
Z-Coordinate (in.)	0.00				
Shear Load, Px (lbs)	22.000	0	0	0	0
Shear Load, Py (lbs)	-167.000	0	0	0	0
Axial Load, Pz (lbs)	695.000	0	0	0	0
Moment, Mx (lb-in)	0.000	0	0	0	0
Moment, My (lb-in)	-17081.000	0	0	0	0
Moment, Mz (lb-in)	0.000	0	0	0	0

Member Properties	***X***	***Y***
Start Coordinates:	0.0	0.0
Dimentions:	8.0	8.0

Bolt Group Pattern



Number of Bolts: 4

		Bolt Coordinates		***Bolt Loads***		***Steel Bolt Usage***			
No.	***Bolt Type***	***Xo (in)***	***Yo (in)***	***Axial (lbs)***	***Shear (lbs)***	***Tension***	***Shear***	***Combined***	***Max. Capacity***
1	Main Type	1.0	1.0	-1249.67	42.11	0.0%	0.6%	0.6%	0.6%
2	Main Type	7.0	1.0	1597.17	42.11	18.5%	0.6%	18.5%	18.5%
3	Main Type	1.0	7.0	-1249.67	42.11	0.0%	0.6%	0.6%	0.6%
4	Main Type	7.0	7.0	1597.17	42.11	18.5%	0.6%	18.5%	18.5%

Bolt Group Properties:

Xc =	4.00	in.
Yc =	4.00	in.
Ic.y =	7.07	in.^2
Ic.x =	7.07	in.^2
Ic.xy =	14.14	in.^2

Loads at Center of Gravity of Bolt Group:

Pz =	695.00	lbs
Px =	22.00	lbs
Py =	-167.00	lbs
Mx =	0.00	lb-in
My =	-17081.00	lb-in
Mz =	0.00	lb-in

Total Capacity of Bolt Group: 18.5%

Exhibit F

Power Density/RF Emissions Report

Fox Hill Telecom

Radio Frequency Emissions Analysis Report

Site ID: BOBDL00148B

Plantation Watertank
50 Plantation Road
East Windsor, CT 06088

November 2, 2021

Fox Hill Telecom Project Number: 210657

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**29.45 %**

Fox Hill Telecom

November 2, 2021

Dish Wireless
5701 South Santa Fe Drive
Littleton, CO 80120

Emissions Analysis for Site: **BOBDL00148B – Plantation Watertank**

Fox Hill Telecom, Inc ("Fox Hill") was directed to analyze the proposed radio installation for Dish Wireless, LLC (Dish) facility located at **50 Plantation Road, East Windsor, CT**, for the purpose of determining whether the emissions from the Proposed Dish radio and antenna installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (μW/cm2). The number of $\mu W/cm^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

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

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

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

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were performed for the proposed radio system installation for **Dish** on the subject site located at **50 Plantation Road, East Windsor, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since **Dish** is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas, was focused at the base of the water tank. For this report the sample point is the top of a 6-foot person standing at the base of the water tank.

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

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

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

Technology	Frequency Band	Channel Count	Transmit Power per Channel (W)
5G	600 MHz	4	61.5
5G	1900 MHz (PCS)	4	40
5G	2100 MHz (AWS)	4	40

Table 1: Channel Data Table

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

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	JMA MX08FRO665-21	85
B	1	JMA MX08FRO665-21	85
C	1	JMA MX08FRO665-21	85

Table 2: Antenna Data

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

RESULTS

Per the calculations completed for the proposed **Dish** configurations *Table 3* shows resulting emissions power levels and percentages of the FCC's allowable general population limit.

Antenna ID	Antenna Make / Model	Frequency Bands	Antenna Gain (dBd)	Channel Count	Total TX Power (W)	ERP (W)	MPE %
Antenna A1	JMA MX08FRO665-21	600 MHz / 1900 MHz (PCS) / 2100 MHz (AWS)	11.45 / 16.15 / 16.65	12	566	17,426.72	13.01
						Sector A Composite MPE%	**13.01**
Antenna B1	JMA MX08FRO665-21	600 MHz / 1900 MHz (PCS) / 2100 MHz (AWS)	11.45 / 16.15 / 16.65	12	566	17,426.72	13.01
						Sector B Composite MPE%	**13.01**
Antenna C1	JMA MX08FRO665-21	600 MHz / 1900 MHz (PCS) / 2100 MHz (AWS)	11.45 / 16.15 / 16.65	12	566	17,426.72	13.01
						Sector C Composite MPE%	**13.01**

Table 3: Dish Emissions Levels

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

Site Composite MPE%	
Carrier	**MPE%**
Dish – Max Per Sector Value	**13.01 %**
AT&T	12.59 %
Sprint	3.69 %
Clearwire	0.13 %
T-Mobile	0.03 %
Site Total MPE %:	**29.45 %**

Table 4: All Carrier MPE Contributions

Dish Sector A Total:	13.01 %
Dish Sector B Total:	13.01 %
Dish Sector C Total:	13.01 %
Site Total:	29.45 %

Table 5: Site MPE Summary

FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. *Table 6* below details a breakdown by frequency band and technology for the MPE power values for the maximum calculated **Dish** sector(s). For this site, all three sectors have the same configuration yielding the same results on all three sectors.

Dish _ Frequency Band / Technology Max Power Values (Per Sector)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
Dish 600 MHz 5G	4	858.77	85	19.79	600 MHz	400	4.95%
Dish 1900 MHz (PCS) 5G	4	1,648.39	85	37.98	1900 MHz (PCS)	1000	3.80%
Dish 2100 MHz (AWS) 5G	4	1,849.52	85	42.62	2100 MHz (AWS)	1000	4.26%
						Total:	**13.01%**

Table 6: Dish Maximum Sector MPE Power Values

Fox Hill Telecom

Summary

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

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

Dish Sector	Power Density Value (%)
Sector A:	13.01 %
Sector B:	13.01 %
Sector C:	13.01 %
Dish Maximum Total (per sector):	13.01 %
Site Total:	29.45 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **29.45 %** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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

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

Exhibit G

Letter of Authorization

[Insert Letterhead]

Plantation Properties, LLC
P.O. Box 542
Broad Brook, CT 06016-0542

Plantation Properties, LLC - Letter of Authorization

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

Re: Tower Share Application
Plantation Properties, LLC - telecommunications site at:
50 Plantation Road, East Windsor, CT 06088

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

Plantation Properties ID/Name:
Customer Site ID: BOBDL00148B / Plantation Water tank
Site Address: 50 Plantation Road, East Windsor, CT 06088

Plantation Properties. LLC

By: Dean Rasmussen Date: 10-1-21 10/../2021
Name: DEAN RASMUSSEN
Title: MEMBER

[Insert Letterhead]

Plantation Properties, LLC
P.O. Box 542
Broad Brook, CT 06016-0542

Plantation Properties, LLC - Letter of Authorization

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

Re: Tower Share Application
Plantation Properties, LLC - telecommunications site at:
50 Plantation Road, East Windsor, CT 06088

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

Plantation Properties ID/Name:
Customer Site ID: BOBDL00148B / Plantation Water tank
Site Address: 50 Plantation Road, East Windsor, CT 06088

Plantation Properties. LLC

By: Dean Rasmussen Date: 10-1-21 10/../2021
Name: DEAN RASMUSSEN
Title: MEMBER

Exhibit H

Recipient Mailings

BOBDL 00148 KB

UNITED STATES POSTAL SERVICE.

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

11/23/2021 03:20 PM

Product	Qty	Unit Price	Price
Prepaid Mail Broad Brook, CT 06016 Weight: 0 lb 8.20 oz Acceptance Date: Tue 11/23/2021 Tracking #: 9405 5036 9930 0071 2102 08	1		$0.00
Prepaid Mail Broad Brook, CT 06016 Weight: 0 lb 8.20 oz Acceptance Date: Tue 11/23/2021 Tracking #: 9405 5036 9930 0071 2101 85	1		$0.00
Prepaid Mail Broad Brook, CT 06016 Weight: 0 lb 8.20 oz Acceptance Date: Tue 11/23/2021 Tracking #: 9405 5036 9930 0071 2101 78	1		$0.00
Grand Total:			$0.00

****
USPS is experiencing unprecedented volume increases and limited employee availability due to the impacts of COVID-19. We appreciate your patience.
****

NORTHEAST SITE SOLUTIONS, LLC
1053 FARMINGTON AVE STE G
FARMINGTON, CT 06032

WEBSTER BANK
51-7010/2111

4938

11/23/2021

PAY TO THE ORDER OF Connecticut Siting Council $ *625.00

EXACTLY SIX HUNDRED TWENTY-FIVE DOLLARS DOLLARS

Connecticut Siting Council
10 Franklin Square
New Britain CT 06051

MEMO

AUTHORIZED SIGNATURE

⑈004938⑈ ⑆211170101⑆10 00106088887⑈

NORTHEAST SITE SOLUTIONS, LLC 4938

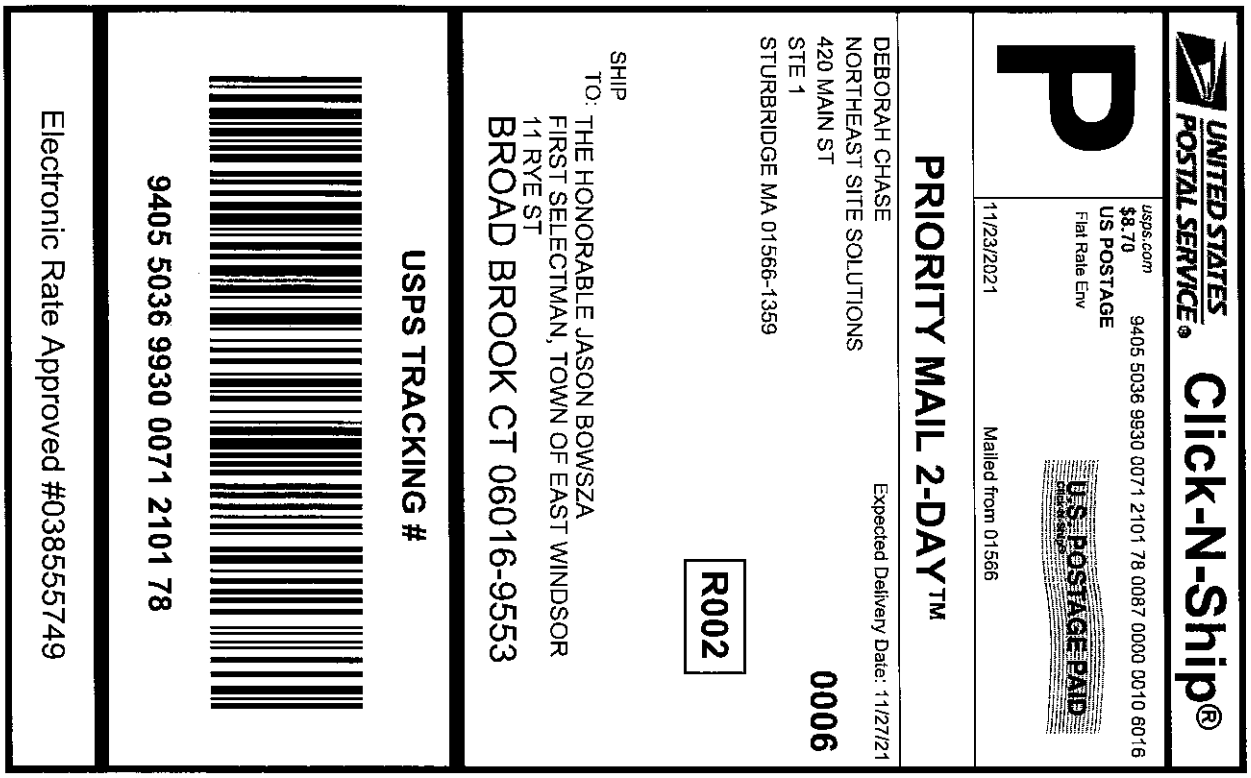
Check#: 4938 **Date: 11/23/2021** **Vendor#: 10023 Connecticut Siting Council** **Check Total: *625.00**

Invoice#	*Invoice Date*	*Job/Description*	*Balance*	*Retain*	*Discount*	*This Check*
BOBDL00148B CSC	11/23/2021	506 DISH 5G NSD BOS	625.00			625.00

NORTHEAST SITE SOLUTIONS, LLC 4938

Check#: 4938 **Date: 11/23/2021** **Vendor#: 10023 Connecticut Siting Council** **Check Total: *625.00**

Invoice#	*Invoice Date*	*Job/Description*	*Balance*	*Retain*	*Discount*	*This Check*
BOBDL00148B CSC	11/23/2021	506 DISH 5G NSD BOS	625.00			625.00



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 0071 2101 78

Trans. #:	549084980
Print Date:	11/23/2021
Ship Date:	11/23/2021
Expected Delivery Date:	11/27/2021

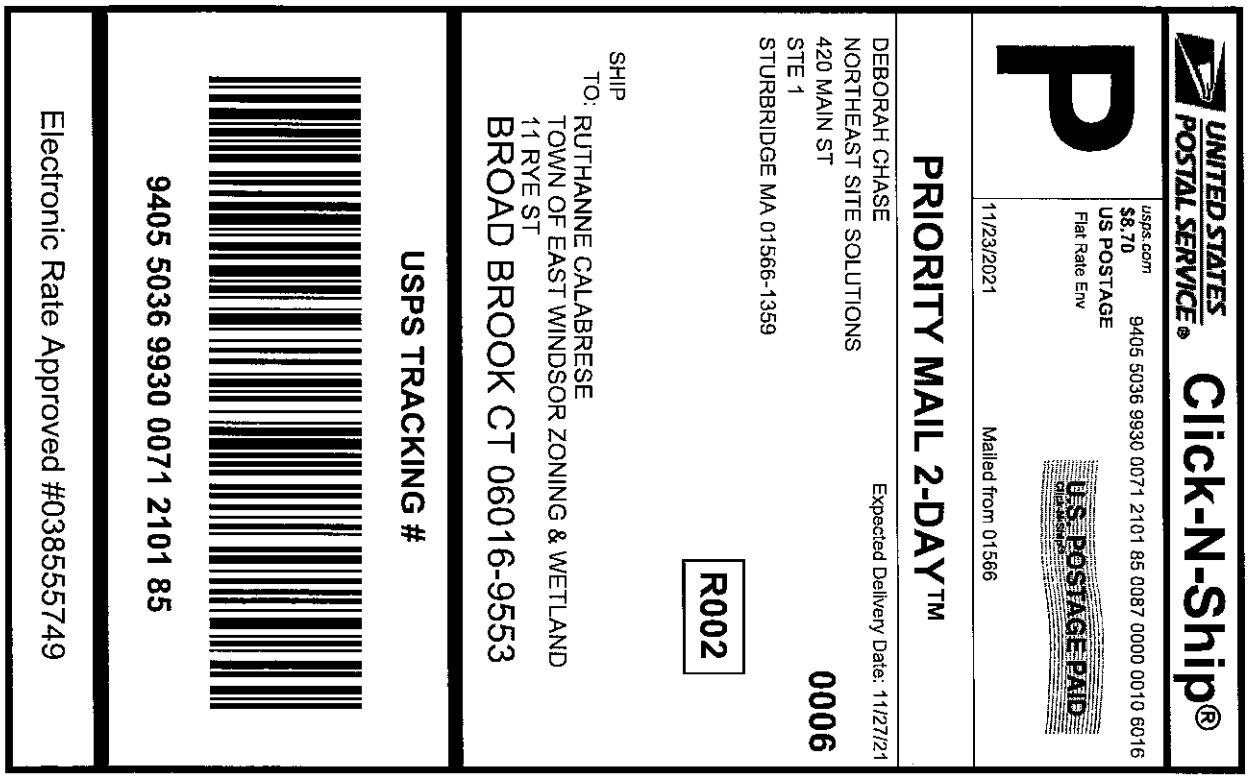
Priority Mail® Postage:	**$8.70**
Total:	**$8.70**

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

To: THE HONORABLE JASON BOWSZA
FIRST SELECTMAN, TOWN OF EAST WINDSOR
11 RYE ST
BROAD BROOK CT 06016-9553

* 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



Cut on dotted line.

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

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0071 2101 85

Trans. #:	549084980
Print Date:	11/23/2021
Ship Date:	11/23/2021
Expected Delivery Date:	11/27/2021

Priority Mail® Postage:	$8.70
Total:	$8.70

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

To: RUTHANNE CALABRESE
TOWN OF EAST WINDSOR ZONING & WETLAND OFFICIAL
11 RYE ST
BROAD BROOK CT 06016-9553

* 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!
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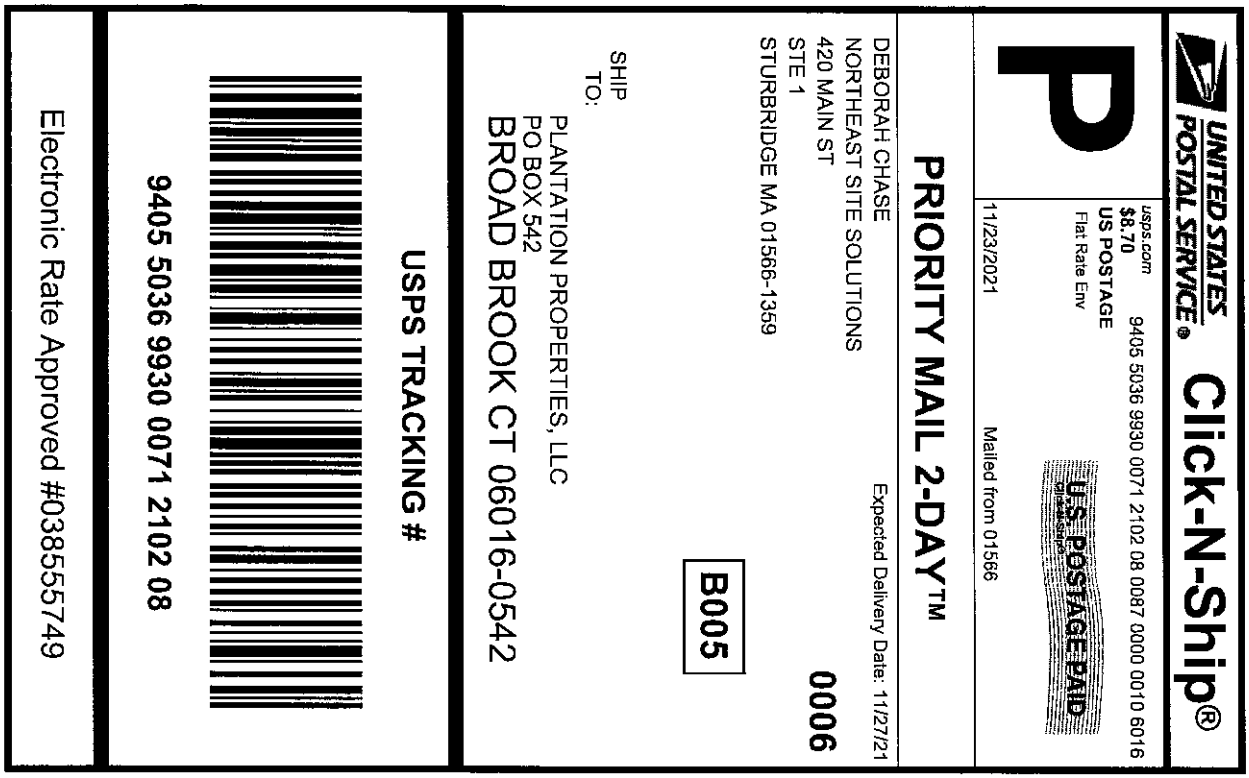

Cut on dotted line.

Instructions

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4. **To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.**
5. **Mail your package on the "Ship Date" you selected when creating this label.**

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0071 2102 08

Trans. #:	549084980
Print Date:	11/23/2021
Ship Date:	11/23/2021
Expected Delivery Date:	11/27/2021

Priority Mail® Postage:	$8.70
Total:	$8.70

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

To: PLANTATION PROPERTIES, LLC
PO BOX 542
BROAD BROOK CT 06016-0542

* 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®

Shipment Confirmation Acceptance Notice

A. Mailer Action

Note To Mailer: The labels and volume associated to this form online, **must** match the labeled packages being presented to the USPS® employee with this form.

Shipment Date: 11/23/21

Shipped From:

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

Type of Mail	Volume
Priority Mail®	3
Priority Mail Express™*	0
International Mail*	0
First-Class Package Service - Retail™	0
Parcel Select® Ground	0
Other	0
Total Volume	3

*Start time for products with service guarantees will begin when mail arrives at the local Post Office™ and items receive individual processing and acceptance scans.

B. USPS Action

- USPS EMPLOYEE: Please scan upon pickup or receipt of mail. Leave form with customer or in customer's mail receptacle. Employee verifies the package volume count on the Package Pickup Carrier Manifest.
  - If the volume on the manifest matches the volume being collected from the customer, the employee should make the **1:YES** selection by pressing the number 1 on the keypad of the handheld scanner, or on the keyboard of the POS ONE terminal.
  - If the volume on the manifest does not match the volume being collected from the customer, the employee should make the **2:NO** selection. The mail should still be collected and dispatched as normal.

USPS SCAN

9475 7036 9930 0394 0653 42