NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

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

October 13, 2021

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

RE: Exempt Modification Application
1919 Boston Post Road, Guilford CT 06437
Latitude: 41.300361
Longitude: -72.708083
Site#: 876343_ Crown_Dish

Dear Ms. Bachman:

Based on the 2020 merger between T-Mobile and Sprint, and as part of the agreement, the DOJ required T-Mobile to divest some sites to Dish in order to create an additional wireless provider. This site is part of the agreement.

Dish Wireless LLC is requesting to file an exempt modification for an existing tower located at 1919 Boston Post Road, Guilford CT 06437. Dish Wireless LLC proposes to install three (3) antennas at the 138-foot level of the existing 149-foot tower. The property is owned by DDR Guilford LLC and the tower is owned by Crown Castle. This modification includes hardware that is 5G capable.

Dish Wireless LLC Planned Modifications:
Remove:
(3) Antenna mount
(3) APX18

Remove and Replace: NONE

Install New:
(1) Commscope MC-PK8-DSH platform mount
(3) LMA MX08FRO665-20 Antenna
(3) TA08025-B604 RRU
(3) TA08025-B605 RRU
(1) Raycap
(1) 1-5/8" Hybrid (Inside Pole)

Existing to Remain:
NONE

NORTHEAST SITE SOLUTIONS
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Ground Work: (within existing compound)
New H-Frame
Equipment Cabinet
Power/Telco Cabinet
Ice Bridge
7'x5' Steel Platform

The facility was approved by the Connecticut Siting Council, Docket No. 349 on May 22, 2008. Please see attached.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies§ 16- SOj-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.SA. § 16-SOj-73, a copy of this letter is being sent to Matthew T. Hoey III, First Selectman, Elected Official and George Kral, Guilford Town Planner for the Town of Guilford, as well as the property owner and the tower owner.

The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S.A. § 16-50j-72(b)(2).

1. The proposed modifications will not result in an increase in the height of the existing structure.

2. The proposed modifications will not require the extension of the site boundary.

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

4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.

5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.

6. The existing structure and its foundation can support the proposed loading.

For the foregoing reasons, Dish Wireless LLC respectfully submits that the proposed modifications to the above referenced telecommunications facility constitute an exempt modification under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,

Denise Sabo

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

NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

Attachments cc:

Matthew T. Hoey III, First Selectman
Town of Guilford Selectman's Office
31 Park Street, Guilford CT 06437

George Kral, Guilford Town Planner
Town of Guilford Planning & Zoning
50 Boston Street, Guilford CT 06437

DDR Guilford LLC, Property Owner
3300 Enterprise Pkwy, Beachwood OH 44122

Crown Castle, Tower Owner

Exhibit A

Original Facility Approval

DOCKET NO. 349 – Global Signal Acquisitions II application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a telecommunications facility located at 1919 Boston Post Road, Guilford, Connecticut.	}	Connecticut
	}	Siting
	}	Council

May 22, 2008

Decision and Order

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, operation, and maintenance of a telecommunications facility, including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate, either alone or cumulatively with other effects, when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application, and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes § 16-50k, be issued to Global Signal Acquisitions II, hereinafter referred to as the Certificate Holder, for an existing telecommunications facility to be relocated to the site identified as the Alternate Site in the Findings of Fact, located at 1919 Boston Post Road, Guilford, Connecticut. The Council denies certification of the site identified as the Application Site in the Findings of Fact, located at 1919 Boston Post Road, Guilford, Connecticut.

The facility shall be constructed, operated, and maintained substantially as specified in the Council's record in this matter, and subject to the following conditions:

1. The tower shall be constructed as a monopole, no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of the wireless carriers that utilize the existing tower and other entities, both public and private, but such tower shall not exceed a height of 150 feet above ground level.

2. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be served on the Town of Guilford for comment, and all parties and intervenors as listed in the service list, and submitted to and approved by the Council prior to the commencement of facility construction and shall include:

    a) a final site plan(s) of site development to include specifications for the tower, tower foundation, antennas, equipment compound, radio equipment, access road, utility line, and landscaping; and
    b) construction plans for site clearing, grading, landscaping, water drainage, and erosion and sedimentation controls consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended.

3. The Certificate Holder shall, prior to the commencement of operation, provide the Council worst-case modeling of the electromagnetic radio frequency power density of all proposed entities' antennas at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin No. 65, August 1997. The Certificate Holder shall ensure a recalculated report of the electromagnetic radio frequency power density be submitted to the Council if and when circumstances in operation cause a change in power density above the levels calculated and provided pursuant to this Decision and Order.

4. Upon the establishment of any new State or federal radio frequency standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards.

5. The Certificate Holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.

6. The Certificate Holder shall provide reasonable space on the tower for no compensation for any Town of Guilford public safety services (police, fire and medical services), provided such use can be accommodated and is compatible with the structural integrity of the tower.

7. Unless otherwise approved by the Council, if the facility authorized herein is not fully constructed and providing wireless services within eighteen months from the date of the mailing of the Council's Findings of Fact, Opinion, and Decision and Order (collectively called "Final Decision"), this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made. The time between the filing and resolution of any appeals of the Council's Final Decision shall not be counted in calculating this deadline.

8. Any request for extension of the time period referred to in Condition 7 shall be filed with the Council not later than 60 days prior to the expiration date of this Certificate and shall be served on all parties and intervenors, as listed in the service list, and the Town of Guilford. Any proposed modifications to this Decision and Order shall likewise be so served.

9. If the facility ceases to provide wireless services for a period of one year, this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made.

10. The Certificate Holder shall remove any nonfunctioning antenna, and associated antenna mounting equipment, within 60 days of the date the antenna ceased to function.

11. In accordance with Section 16-50j-77 of the Regulations of Connecticut State Agencies, the Certificate Holder shall provide the Council with written notice two weeks prior to the commencement of site construction activities. In addition, the Certificate Holder shall provide the Council with written notice of the completion of site construction and the commencement of site operation.

Pursuant to General Statutes § 16-50p, the Council hereby directs that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed below, and notice of issuance shall be published in the New Haven Register and the Shoreline Times.

By this Decision and Order, the Council disposes of the legal rights, duties, and privileges of each party named or admitted to the proceeding in accordance with Section 16-50j-17 of the Regulations of Connecticut State Agencies.

The parties and intervenors to this proceeding are:

APPLICANT	**ITS REPRESENTATIVE**
Global Signal Acquisitions II	Julie Kohler, Esq. Carrie Larson, Esq. Cohen and Wolf, P.C.

PARTY	**ITS REPRESENTATIVE**
Anthony Poccia William and Myung Arabolos Margaret Rose Richard and Sandra Wilson	John S. Bennet, Esq. Gould, Larson, Bennet, Wells & McDonnell, P.C.

INTERVENORS	**THEIR REPRESENTATIVE**
Heather Fernandes Diane and Alan Sholomskas Brian Denning Daniel Capozziello Joel and Donna Zemke	John S. Bennet, Esq. Gould, Larson, Bennet, Wells & McDonnell, P.C.

Exhibit B

Property Card

Parcel Information

Location:	1919 BOSTON POST RD	Map and Parcel:	079035	Census Tract:	1903
Zoning:	SCW	Developer's Map:	5074	Developer's Lot:	
Total Acreage:	27.83	Farm, Forest, Open Space Acres:		Unique ID:	7001

Value Information

	Appraised Value	Assessed Value
Land	6,694,400	4,686,080
Buildings	22,716,123	15,901,280
Detached Outbuildings	695,997	487,200
Total	30,106,520	21,074,560

Owner's Information

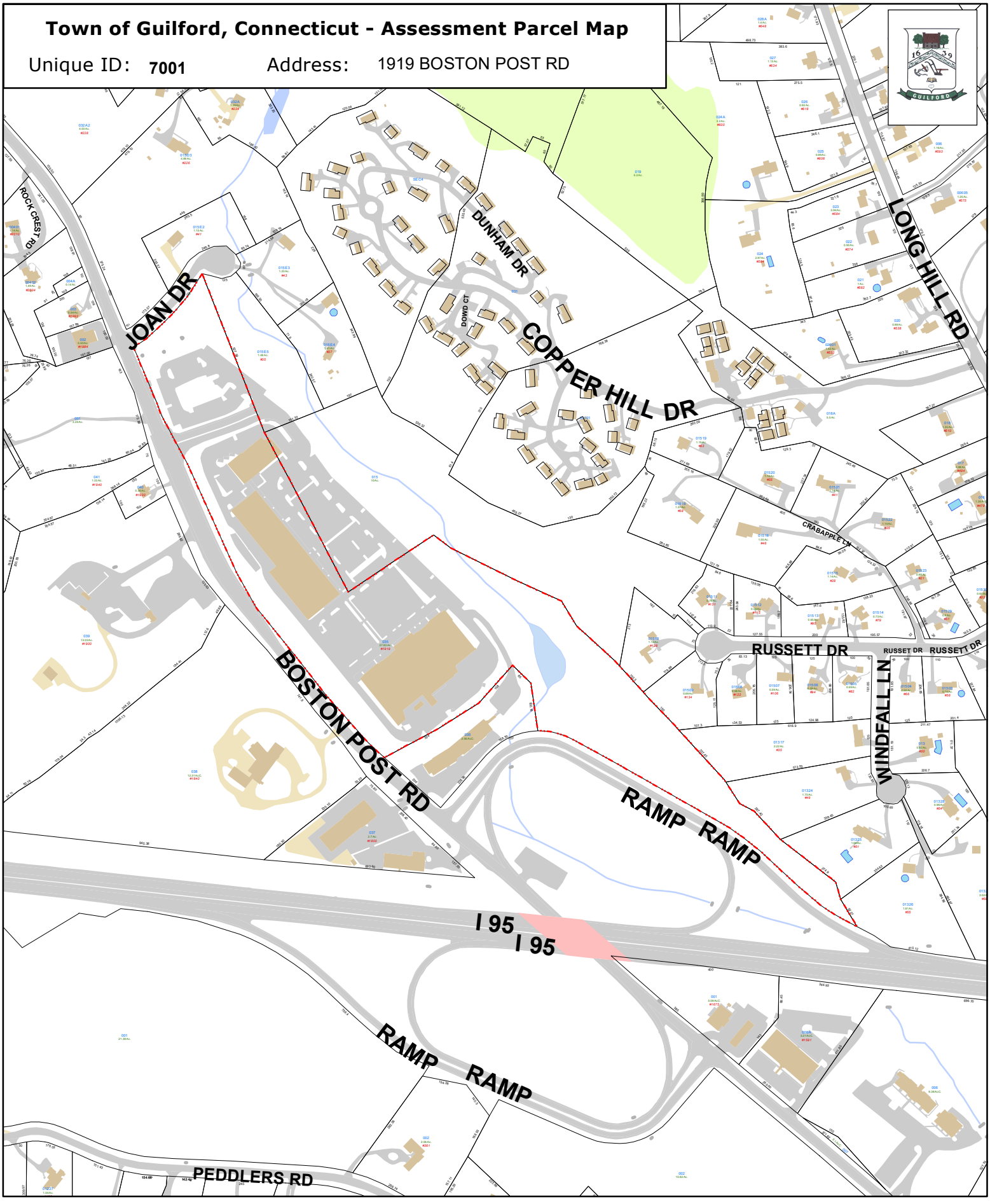
Owner's Data
DDR GUILFORD LLC 3300 ENTERPRISE PKWY BEACHWOOD OH 44122

Back To Search

Print View

Town of Guilford, Connecticut - Assessment Parcel Map

Unique ID: **7001** Address: 1919 BOSTON POST RD



Approximate Scale: **1 inch = 400 feet**

0 275 550 Feet

Map Produced:
September 2020

Disclaimer:
This map is for informational purposes only.
All information is subject to verification by any user.
The Town of Guilford and its mapping contractors assume no legal responsibility for the information contained herein.

Exhibit C

Construction Drawings

DISH Wireless L.L.C. SITE ID:

BOHVN00026A

DISH Wireless L.L.C. SITE ADDRESS:

1919 BOSTON POST RD.
GUILFORD, CT 06437

CONNECTICUT CODE COMPLIANCE

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

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

SHEET INDEX

SCOPE OF WORK

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

TOWER SCOPE OF WORK:
- INSTALL (3) PROPOSED PANEL ANTENNAS (1 PER SECTOR)
- INSTALL (1) PROPOSED PLATFORM MOUNT
- INSTALL PROPOSED JUMPERS
- INSTALL (6) PROPOSED RRUs (2 PER SECTOR)
- INSTALL (1) PROPOSED OVER VOLTAGE PROTECTION DEVICE (OVP)
- INSTALL (1) PROPOSED HYBRID CABLE
- REMOVE EXISTING ANTENNAS AT 140'-0" AGL

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 FIBER NID (IF REQUIRED)
- EXISTING METER SOCKET ON EXISTING H-FRAME TO BE UTILIZED

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:	GLOBAL SIGNAL ACQUISTION
ADDRESS:	PO BOX 277455 ATLANTA, GA 30384-7455
TOWER TYPE:	MONOPOLE
TOWER CO SITE ID:	876343
TOWER APP NUMBER:	553888
COUNTY:	NEW HAVEN
LATITUDE (NAD 83):	41° 18' 1.27" N 41.300361 N
LONGITUDE (NAD 83):	72° 42' 29.13" W 72.708083 W
ZONING JURISDICTION:	TOWN OF GUILFORD
ZONING DISTRICT:	SCW
PARCEL NUMBER:	079035
OCCUPANCY GROUP:	U
CONSTRUCTION TYPE:	II-B
POWER COMPANY:	CONNECTICUT LIGHT & POWER
TELEPHONE COMPANY:	AT&T

PROJECT DIRECTORY

APPLICANT:	DISH Wireless L.L.C. 5701 SOUTH SANTA FE DRIVE LITTLETON, CO 80120
TOWER OWNER:	CROWN CASTLE 2000 CORPORATE DRIVE CANONSBURG, PA 15317 (877) 486-9377
SITE DESIGNER:	INFINIGY 2500 W. HIGGINS RD. STE. 500 HOFFMAN ESTATES, IL 60169 (847) 648-4068
SITE ACQUISITION:	NICHOLAS CURRY nicholas.curry@crowncastle.com
CONSTRUCTION MANAGER:	JAVIER SOTO javier.soto@dish.com
RF ENGINEER:	SYED ZAIDI syed.zaidi@dish.com

DIRECTIONS

DIRECTIONS FROM TWEED NEW HAVEN AIRPORT:

DEPART AND HEAD (NORTHEAST), TURN LEFT, AVIS RENT A CAR ON THE CORNER, TURN RIGHT, TURN RIGHT TOWARD BURR ST, BUDGET CAR RENTAL ON THE CORNER, TURN RIGHT ONTO BURR ST, KEEP STRAIGHT TO GET ONTO DODGE AVE, TURN LEFT ONTO THOMPSON AVE, KEEP STRAIGHT TO GET ONTO CT-100 / HIGH ST, TAKE THE RAMP ON THE RIGHT FOR I-95 NORTH AND HEAD TOWARD NEW LONDON, AT EXIT 57, HEAD ON THE RAMP RIGHT AND FOLLOW SIGNS FOR US-1, TURN LEFT ONTO US-1 S / BOSTON POST RD, TURN RIGHT, ARRIVE AT 1919 BOSTON POST RD. GUILFORD, CT 06437

VICINITY MAP

NO SCALE

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

CROWN CASTLE
2000 CORPORATE DRIVE
CANONSBURG, PA 15317

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WWW.INFINIGY.COM

STATE OF CONNECTICUT
TSUHEI SAKAMOTO
34916
LICENSED PROFESSIONAL ENGINEER
10/12/2021

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

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
2	08/24/2021	ISSUED FOR CONSTUCTION
1	10/12/2021	ISSUED FOR CONSTUCTION

A&E PROJECT NUMBER
6039-Z0001-C

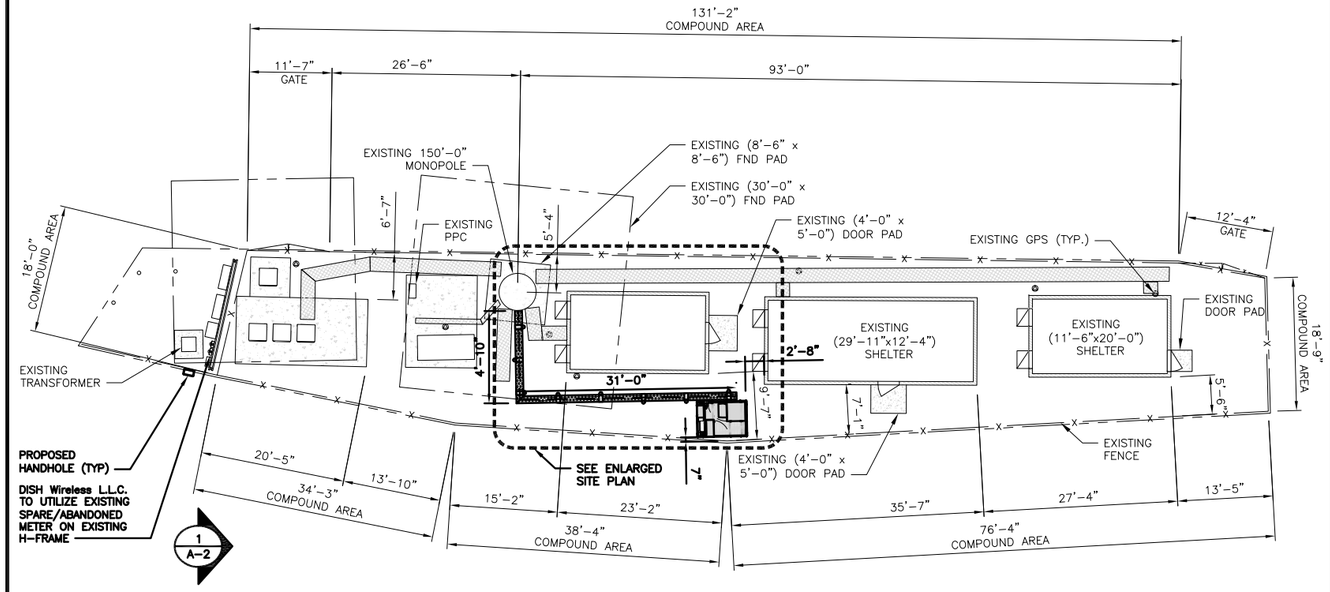
DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00026A
1919 BOSTON POST RD.
GUILFORD, CT 06437

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

NOTES

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



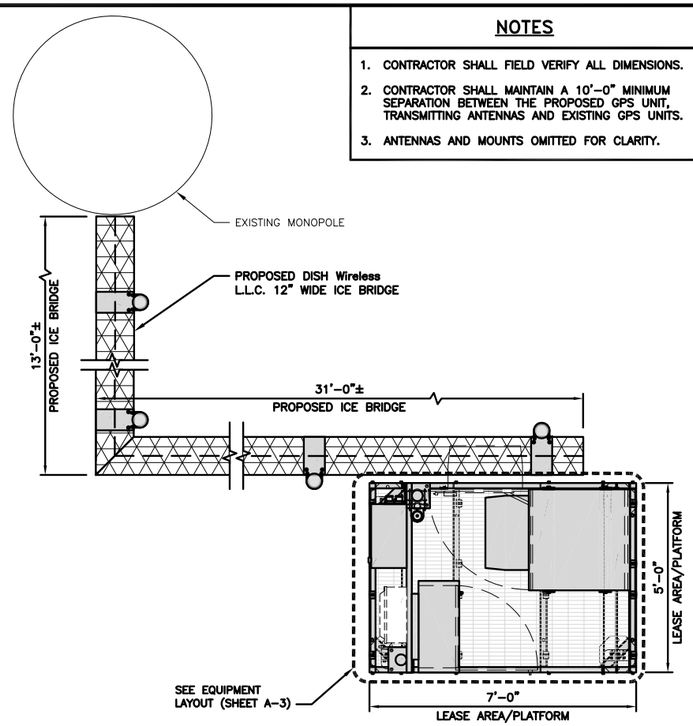
OVERALL SITE PLAN

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

1

NOTES

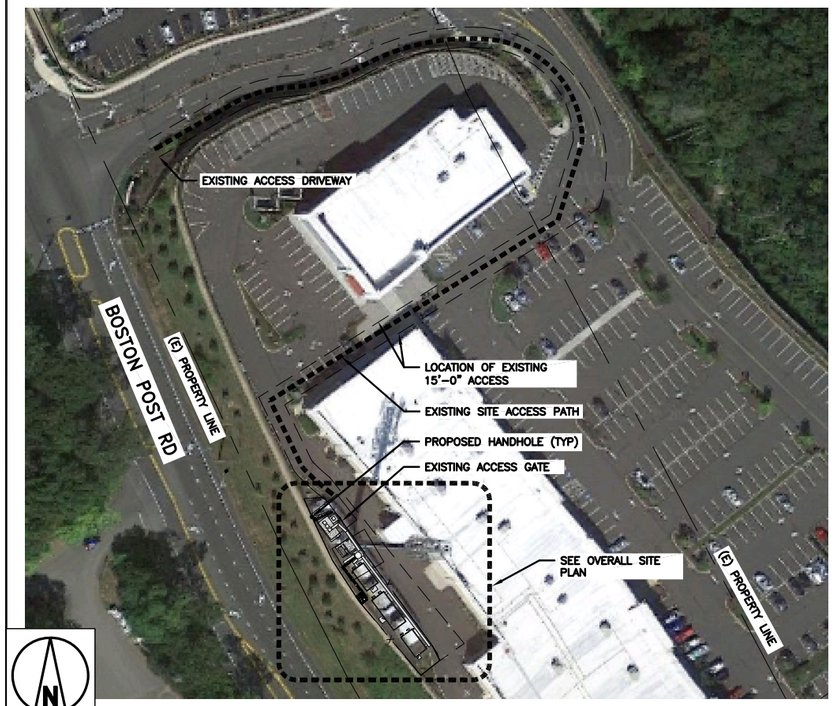
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. CONTRACTOR SHALL MAINTAIN A 10'-0" MINIMUM SEPARATION BETWEEN THE PROPOSED GPS UNIT, TRANSMITTING ANTENNAS AND EXISTING GPS UNITS.
3. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.



ENLARGED SITE PLAN

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

2



ACCESS PLAN

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

3

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WWW.INFINIGY.COM

STATE OF CONNECTICUT
TSUHEI SAKAMOTO
34916
LICENSED PROFESSIONAL ENGINEER
10/12/2021

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

RFDS REV #: N/A

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A&E PROJECT NUMBER
6039-Z0001-C

DISH Wireless L.L.C.
PROJECT INFORMATION

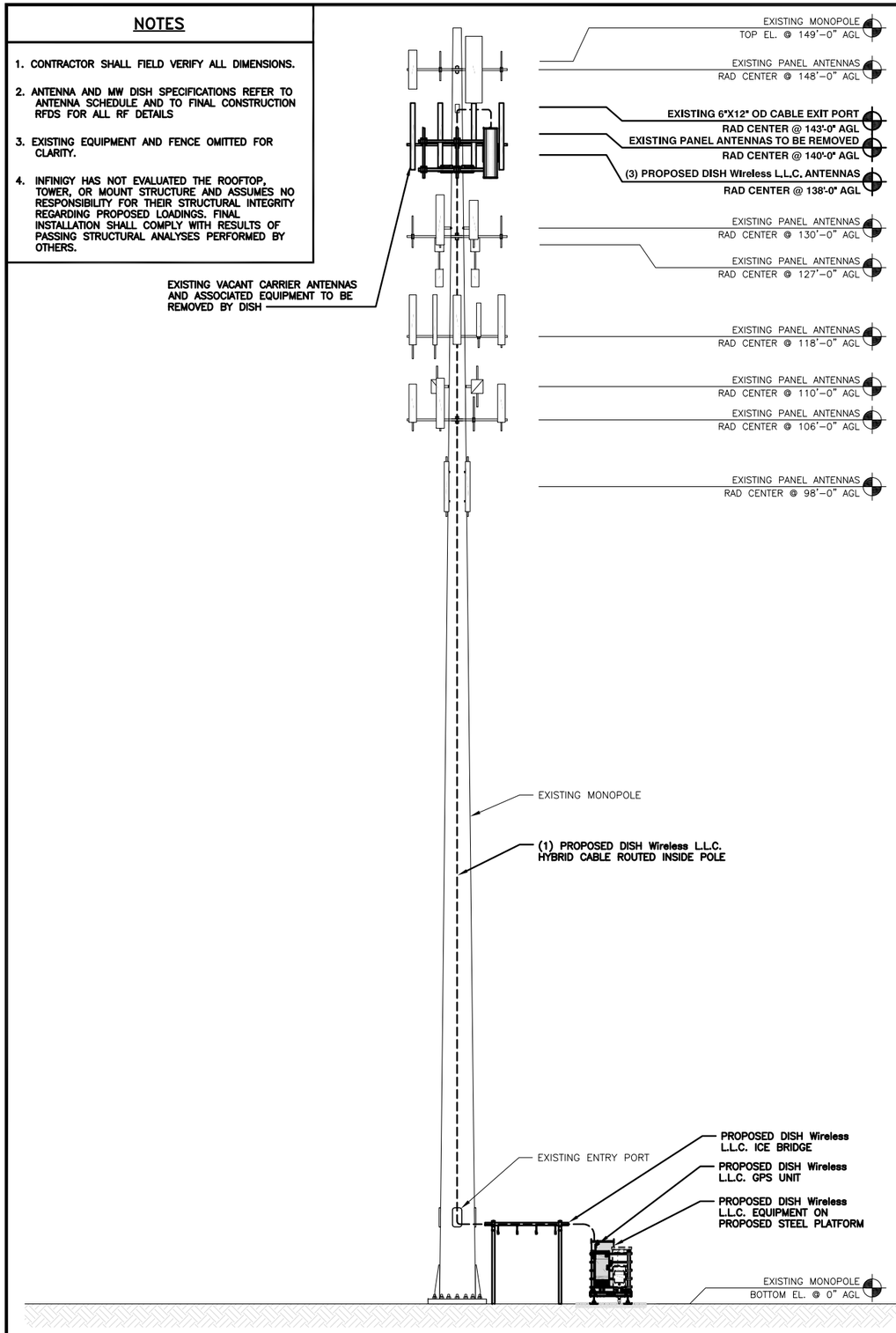
BOHVN00026A
1919 BOSTON POST RD.
GUILFORD, CT 06437

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. INFINIGY HAS NOT EVALUATED THE ROOFTOP, TOWER, OR MOUNT STRUCTURE AND ASSUMES NO RESPONSIBILITY FOR THEIR STRUCTURAL INTEGRITY REGARDING PROPOSED LOADINGS. FINAL INSTALLATION SHALL COMPLY WITH RESULTS OF PASSING STRUCTURAL ANALYSES PERFORMED BY OTHERS.



PROPOSED WEST ELEVATION

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

1

ANTENNA LAYOUT

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

2

SECTOR	POSITION	ANTENNA						TRANSMISSION CABLE
		EXISTING OR PROPOSED	MANUFACTURER – MODEL NUMBER	TECHNOLOGY	SIZE (HxW)	AZIMUTH	RAD CENTER	FEED LINE TYPE AND LENGTH
ALPHA	A1	PROPOSED	JMA WIRELESS – MX08FRO665-21	5G	72.0" x 20.0"	0°	138'-0"	(1) HIGH-CAPACITY HYBRID CABLE (178' LONG)
BETA	B1	PROPOSED	JMA WIRELESS – MX08FRO665-21	5G	72.0" x 20.0"	120°	138'-0"	
GAMMA	C1	PROPOSED	JMA WIRELESS – MX08FRO665-21	5G	72.0" x 20.0"	240°	138'-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.
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CROWN CASTLE
2000 CORPORATE DRIVE
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DRAWN BY:	CHECKED BY:	APPROVED BY:
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RFDS REV #: N/A

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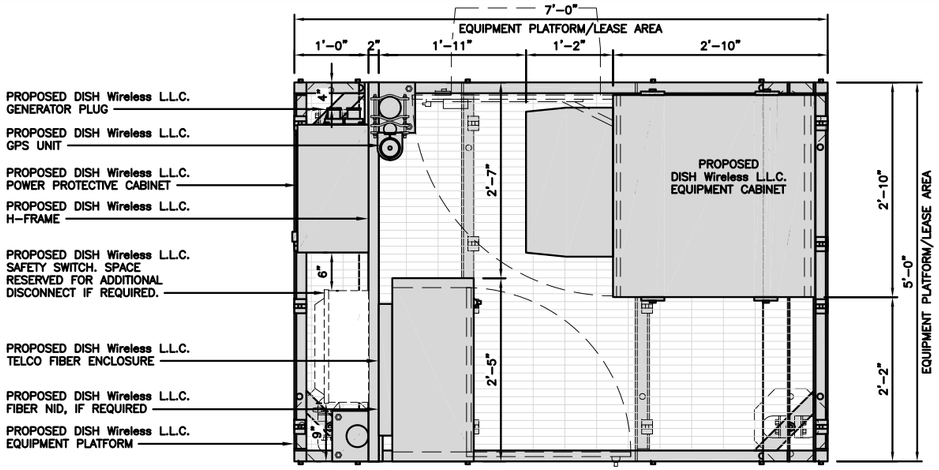
BOHVN00026A
1919 BOSTON POST RD.
GUILFORD, CT 06437

SHEET TITLE
ELEVATION, ANTENNA LAYOUT AND SCHEDULE

SHEET NUMBER
A-2



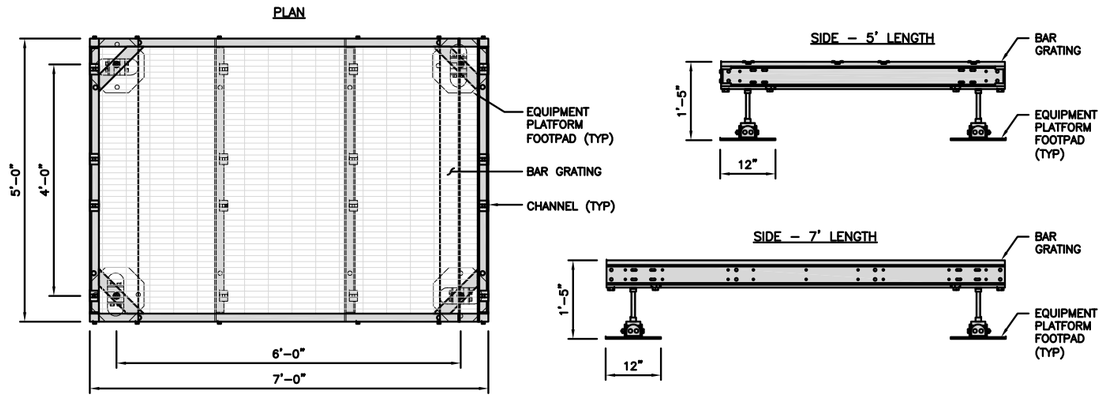
PLATFORM EQUIPMENT PLAN

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

1

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

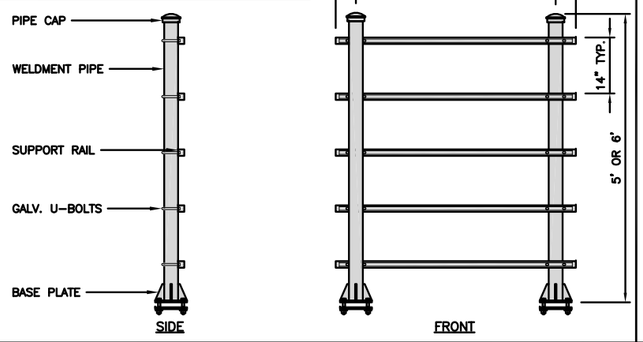
NOTE:
GC TO PROVIDE EXTENDED THREAD FOR PLATFORM IF REQUIRED HEIGHT EXCEEDS 17"



PLATFORM DETAIL — NO SCALE — 2

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

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

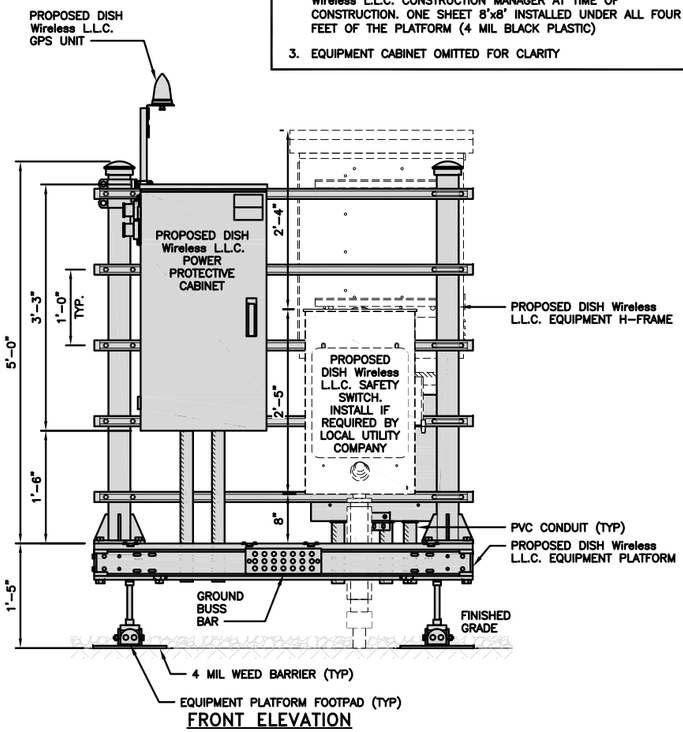


H-FRAME DETAIL — NO SCALE — 3

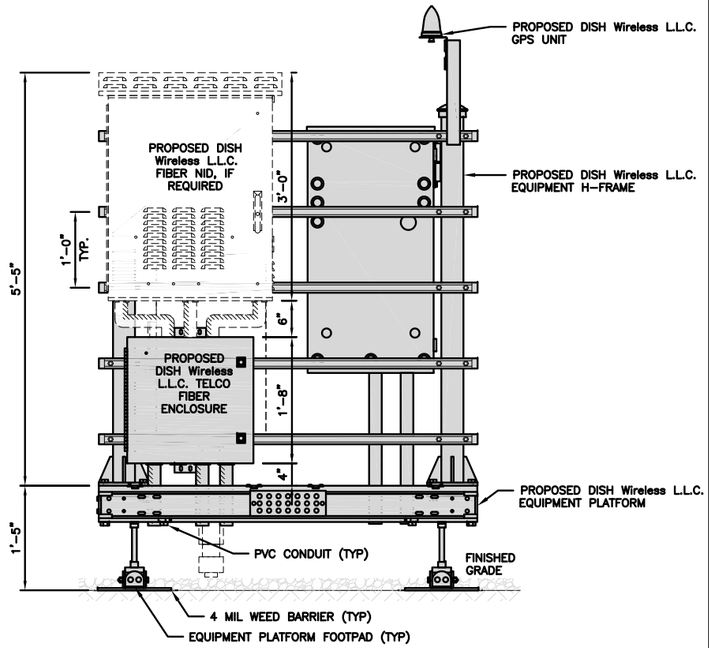
NOT USED — NO SCALE — 4

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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34916
LICENSED PROFESSIONAL ENGINEER
10/12/2021

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

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
0	08/24/2021	ISSUED FOR CONSTUCTION
1	10/12/2021	ISSUED FOR CONSTUCTION

A&E PROJECT NUMBER
6039-Z0001-C

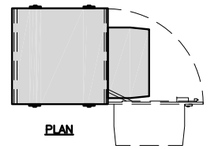
DISH Wireless L.L.C.
PROJECT INFORMATION

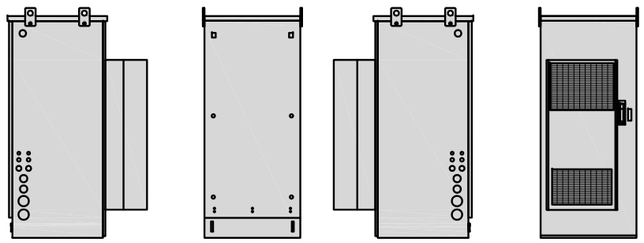
BOHVN00026A
1919 BOSTON POST RD.
GUILFORD, CT 06437

SHEET TITLE
EQUIPMENT PLATFORM AND H-FRAME DETAILS

SHEET NUMBER
A-3

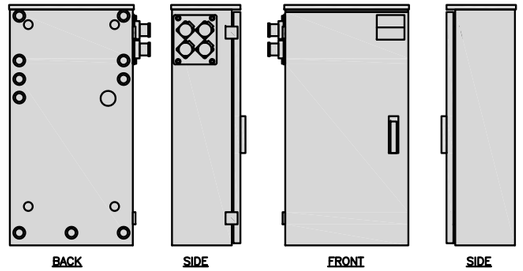
CHARLES INDUSTRY HEX CUBE–PM639155N4	
DIMENSIONS (HxWxD):	74"x32"x32"
POWER PLANT:	–48VDC ABB/600W
TOTAL WEIGHT (EMPTY)	408 LBS





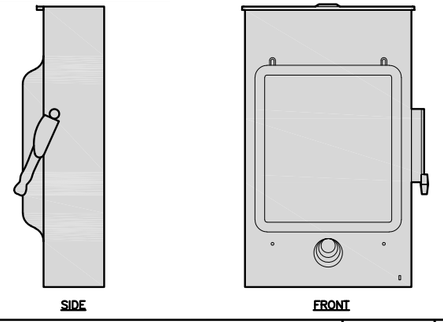
CABINET DETAIL | NO SCALE | 1

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



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

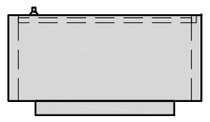
SQUARE D SAFETY SWITCHES D224NRB	
ENCLOSURE DIM (HxWxD)	29.25"x19.00"x8.50"
ENCLOSURE TYPE	NEMA 3R RAINPROOF
UL LISTED	FILE E–2875

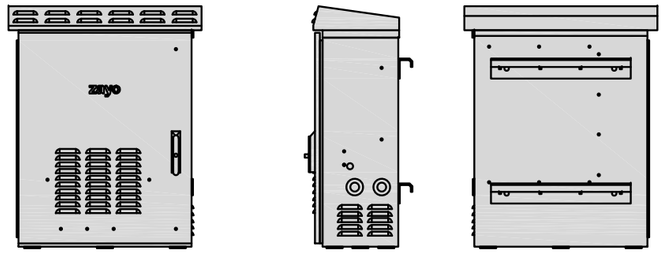


SAFETY SWITCH DETAIL | NO SCALE | 3

NOT USED | NO SCALE | 4

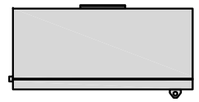
ZAYO 5RU CABINET LEFT SWING DOOR ("LIT" SITES)	
DIMENSIONS (HxWxD)	36.115"x29"x12.9"
WEIGHT	85 LBS
POWER INPUT	20A, –48VDC





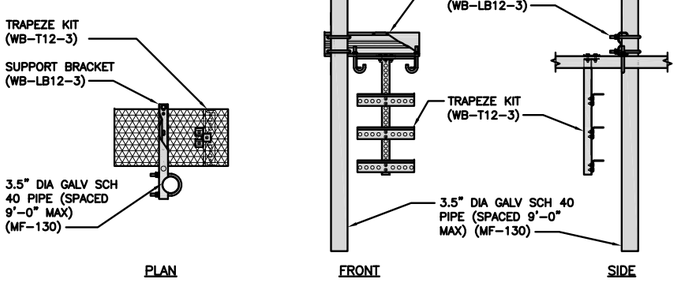
NETWORK INTERFACE UNIT DETAIL | NO SCALE | 5

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

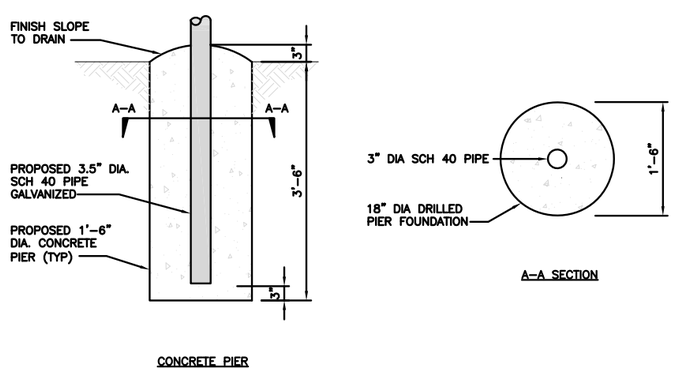


FIBER TELCO ENCLOSURE DETAIL | NO SCALE | 6

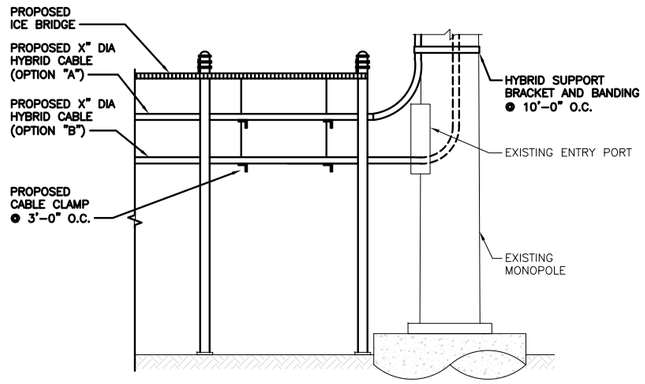
COMMSCOPE WB–K110–B WAVEGUIDE BRIDGE KIT		INCLUDED PRODUCTS:	WB–T12–3 TRAPEZE KIT, 3 RUNGS WB–LB12–3 SUPPORT BRACKET MF–130 DIRECT BURIAL PIPE COLUMN, 13'–4"
DIMENSIONS (HxL)	160"x10'		
WEIGHT/ VOLUME	325.0 LBS		
CABLE RUN (QTY)	12		



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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RFDS REV #: N/A

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PROJECT INFORMATION
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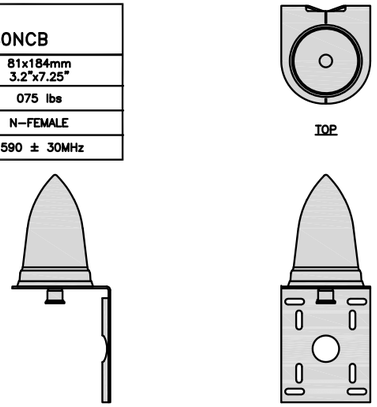
1919 BOSTON POST RD.
GUILFORD, CT 06437

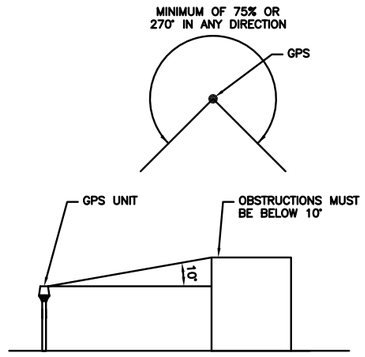
SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-4

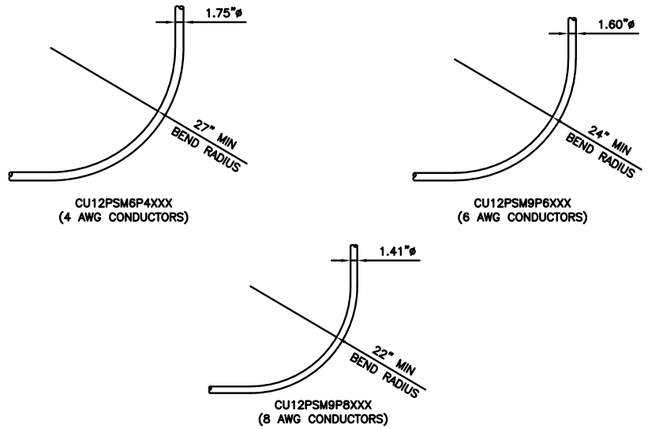
PCTEL GPSGL-TMG-SPI-40NCB	
DIMENSIONS (DIAxH) MM/INCH	81x184mm 3.2"x7.25"
WEIGHT W/ACCESSORIES	075 lbs
CONNECTOR	N-FEMALE
FREQUENCY RANGE	1590 ± 30MHz



GPS DETAIL | NO SCALE | 1



GPS MINIMUM SKY VIEW REQUIREMENTS | NO SCALE | 2



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

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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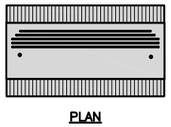
GUILFORD, CT 06437

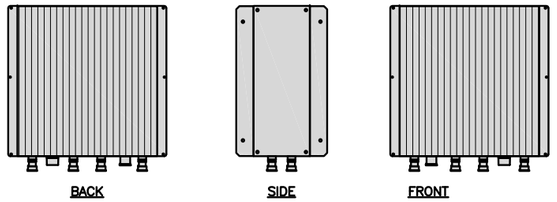
SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-5

FUJITSU TRIPLE BAND TA08025-B605	
DIMENSIONS (HxWxD)	14.9"x15.7"x9"
WEIGHT	74.95 lbs
CONNECTOR TYPE	4.3-10 RF CONNECTOR
POWER SUPPLY	DC -58~-36V



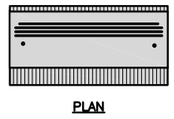
PLAN



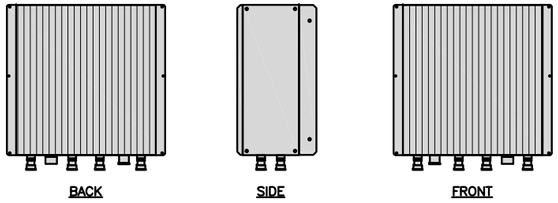
BACK SIDE FRONT

RRH DETAIL | NO SCALE | 1

FUJITSU DUAL BAND TA08025-B604	
DIMENSIONS (HxWxD)	14.9"x15.7"x7.8"
WEIGHT	63.9 lbs
CONNECTOR TYPE	4.3-10 RF CONNECTOR
POWER SUPPLY	DC -58~-36V



PLAN

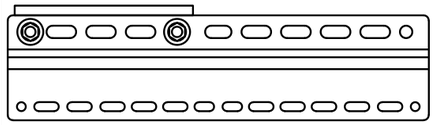


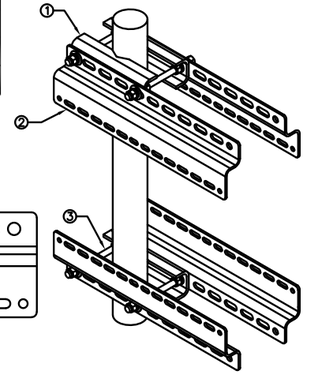
BACK SIDE FRONT

RRH DETAIL | NO SCALE | 2

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

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



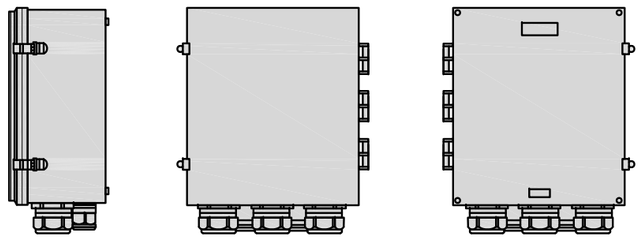


NOTE:
OR DISH Wireless L.L.C.
APPROVED EQUIVALENT

RRH MOUNT DETAIL | NO SCALE | 3

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

PLAN



SIDE BACK FRONT

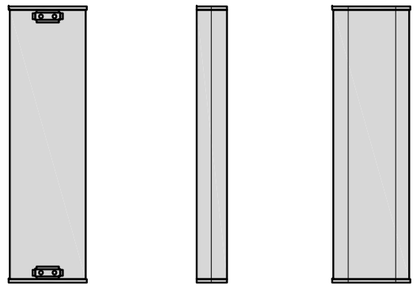
SURGE SUPPRESSION DETAIL (OVP) | NO SCALE | 4

JMA WIRELESS MX08FRO665-21 ANTENNA	
DIMENSIONS (HxWxD)	72.8"x20.0"x8.0"
TOTAL WEIGHT	64.5 LB
RF PORTS, CONNECTOR TYPE	8 x 4.3-10 FEMALE

NOTES

FINAL ANTENNA SPECIFICATIONS TO BE CONFIRMED BY GC

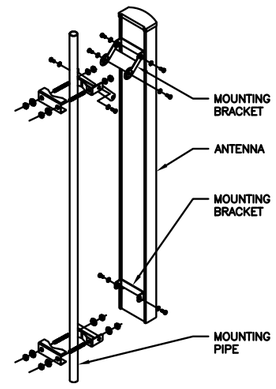
PLAN



BACK SIDE FRONT

ANTENNA DETAIL | NO SCALE | 5

M04 MOUNTING BRACKET HPA-33R-BUU-H4-K	
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

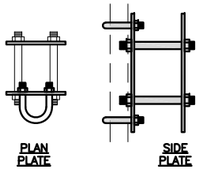


NOTE:
OR DISH Wireless L.L.C.
APPROVED EQUIVALENT

ANTENNA MOUNTING DETAIL | NO SCALE | 6

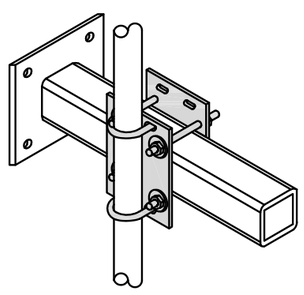
COMMSCOPE XP-2040 CROSSOVER PLATE	
DIMENSIONS (HxW)	10"x12"
WEIGHT	11 lbs

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



PLAN PLATE SIDE PLATE

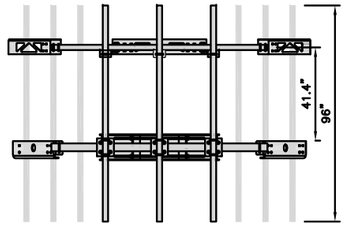
PLAN U-BOLT SIDE U-BOLT

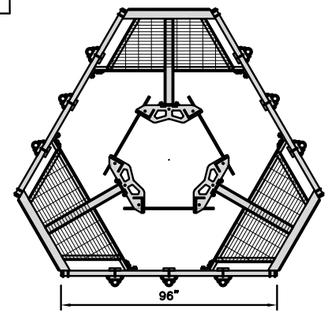


RRH/OVP MOUNT DETAIL | NO SCALE | 7

COMMSCOPE MC-PK8-DSH	
FACE WIDTH	96"
WEIGHT	1373.08 lbs
NOTE: 15" TO 38" O.D.	

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





ANTENNA PLATFORM DETAIL | NO SCALE | 8

NOT USED | NO SCALE | 9

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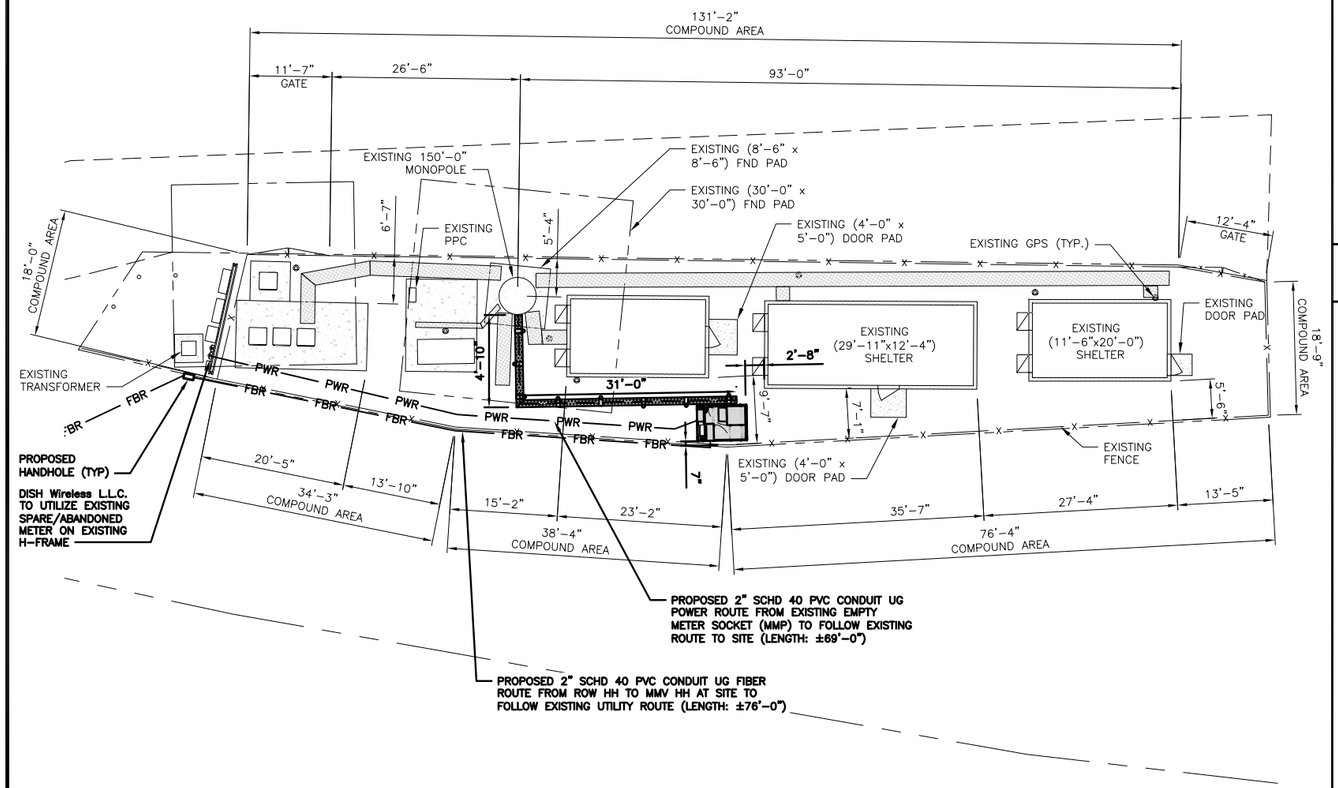
GUILFORD, CT 06437

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

4' 2' 0 4' 8'
1/4"=1'-0"

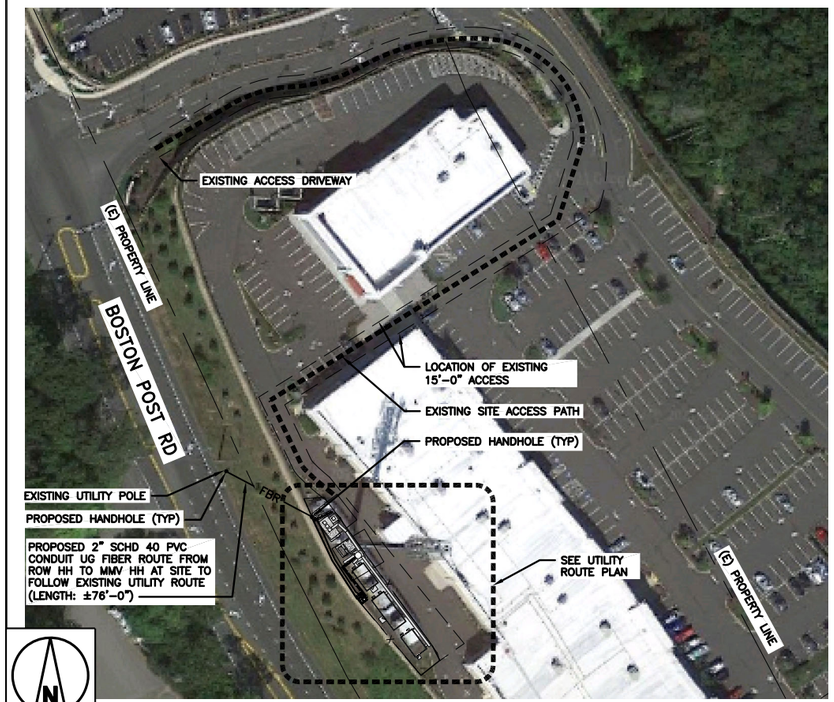
1

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. ALL TRENCHES IN COMPOUND TO BE HAND DUG

ELECTRICAL NOTES

2



OVERALL UTILITY ROUTE PLAN

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

3

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TSUHEI SAKAMOTO
34916
LICENSED PROFESSIONAL ENGINEER
10/12/2021

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

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
Δ	08/24/2021	ISSUED FOR CONSTUCTION
1	10/12/2021	ISSUED FOR CONSTUCTION

A&E PROJECT NUMBER
6039-Z0001-C

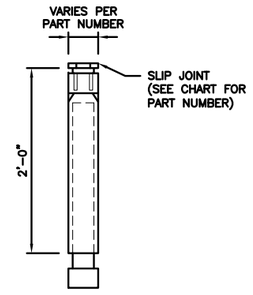
DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00026A
1919 BOSTON POST RD.
GUILFORD, CT 06437

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"

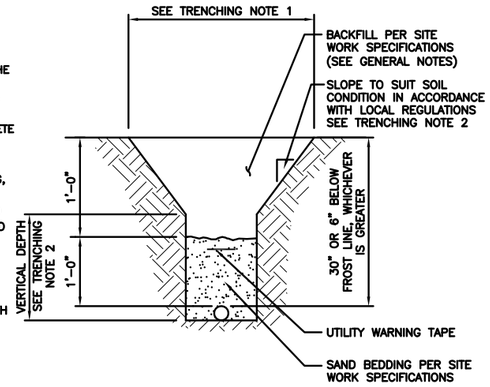


NOTE:
CONTRACTOR TO INSTALL EXPANSION FITTING SLIP JOINT AT METER CENTER CONDUIT TERMINATION, AS PER LOCAL UTILITY POLICY, ORDINANCE AND/OR SPECIFIED REQUIREMENT.

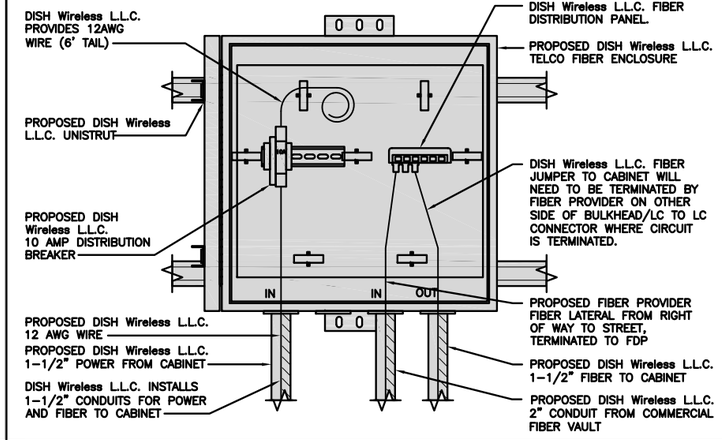
EXPANSION JOINT DETAIL | NO SCALE | 1

TRENCHING NOTES

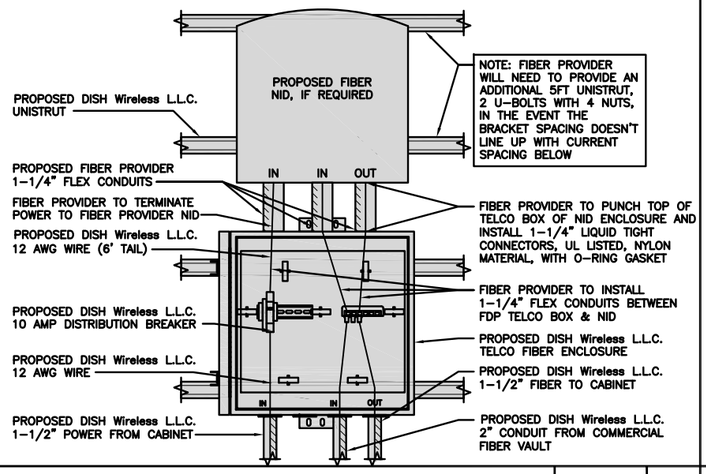
1. CONTRACTOR SHALL RESTORE THE TRENCH TO ITS ORIGINAL CONDITIONS BY EITHER SEEDING OR SODDING GRASS AREAS, OR REPLACING ASPHALT OR CONCRETE AREAS TO ITS ORIGINAL CROSS SECTION.
2. TRENCHING SAFETY; INCLUDING, BUT NOT LIMITED TO SOIL CLASSIFICATION, SLOPING, AND SHORING, SHALL BE GOVERNED BY THE CURRENT 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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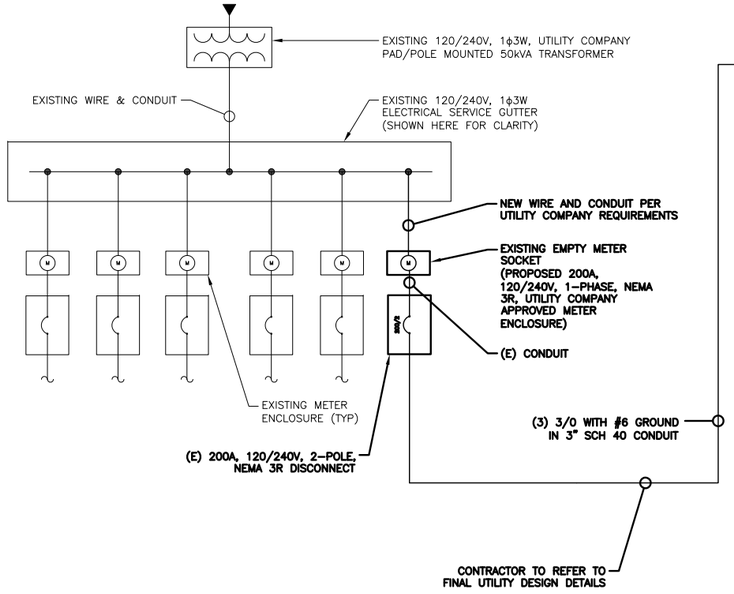
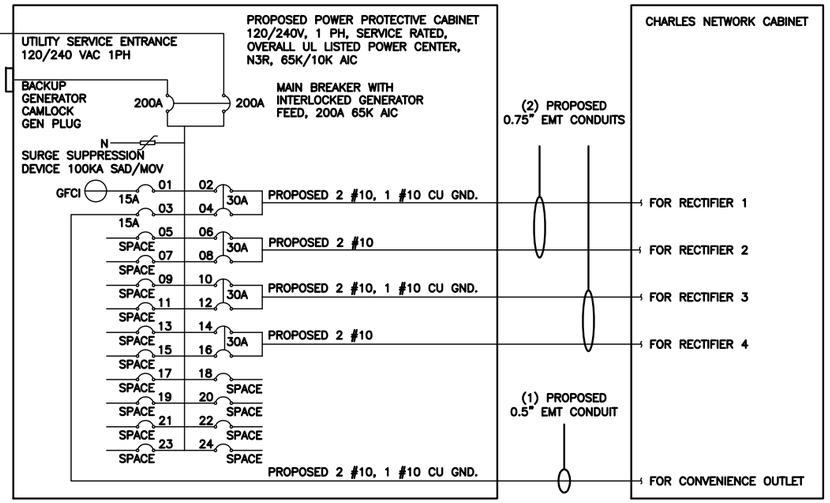
SHEET TITLE
ELECTRICAL DETAILS

SHEET NUMBER
E-2





NOTE:
BRANCH CIRCUIT WIRING SUPPLYING RECTIFIERS ARE TO BE RATED UL1015, 105°C, 600V, AND PVC INSULATED, IN THE SIZES SHOWN IN THE ONE-LINE DIAGRAM. CONTRACTOR MAY SUBSTITUTE UL1015 WIRE FOR THWN-2 FOR CONVENIENCE OUTLET BRANCH CIRCUIT.

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

NOTES

THE (2) CONDUITS WITH (4) CURRENT CARRYING CONDUCTORS EACH, SHALL APPLY THE ADJUSTMENT FACTOR OF 80% PER 2014/17 NEC TABLE 310.15(B)(3)(a) OR 2020 NEC TABLE 310.15(C)(1) FOR UL1015 WIRE.

#12 FOR 15A-20A/1P BREAKER: 0.8 x 30A = 24.0A
#10 FOR 25A-30A/2P BREAKER: 0.8 x 40A = 32.0A
#8 FOR 35A-40A/2P BREAKER: 0.8 x 55A = 44.0A
#6 FOR 45A-60A/2P BREAKER: 0.8 x 75A = 60.0A

CONDUIT SIZING: AT 40% FILL PER NEC CHAPTER 9, TABLE 4, ARTICLE 358.
0.5" CONDUIT - 0.122 SQ. IN AREA
0.75" CONDUIT - 0.213 SQ. IN AREA
2.0" CONDUIT - 1.316 SQ. IN AREA
3.0" CONDUIT - 2.907 SQ. IN AREA

CABINET CONVENIENCE OUTLET CONDUCTORS (1 CONDUIT): USING THWN-2, CU.

#10 - 0.0211 SQ. IN X 2 = 0.0422 SQ. IN
#10 - 0.0211 SQ. IN X 1 = 0.0211 SQ. IN <GROUND
TOTAL = 0.0633 SQ. IN

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

RECTIFIER CONDUCTORS (2 CONDUITS): USING UL1015, CU.

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

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

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

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

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

PPC ONE-LINE DIAGRAM

NO SCALE | 1

PROPOSED CHARLES PANEL SCHEDULE

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

PANEL SCHEDULE

NO SCALE | 2

NOT USED

NO SCALE | 3

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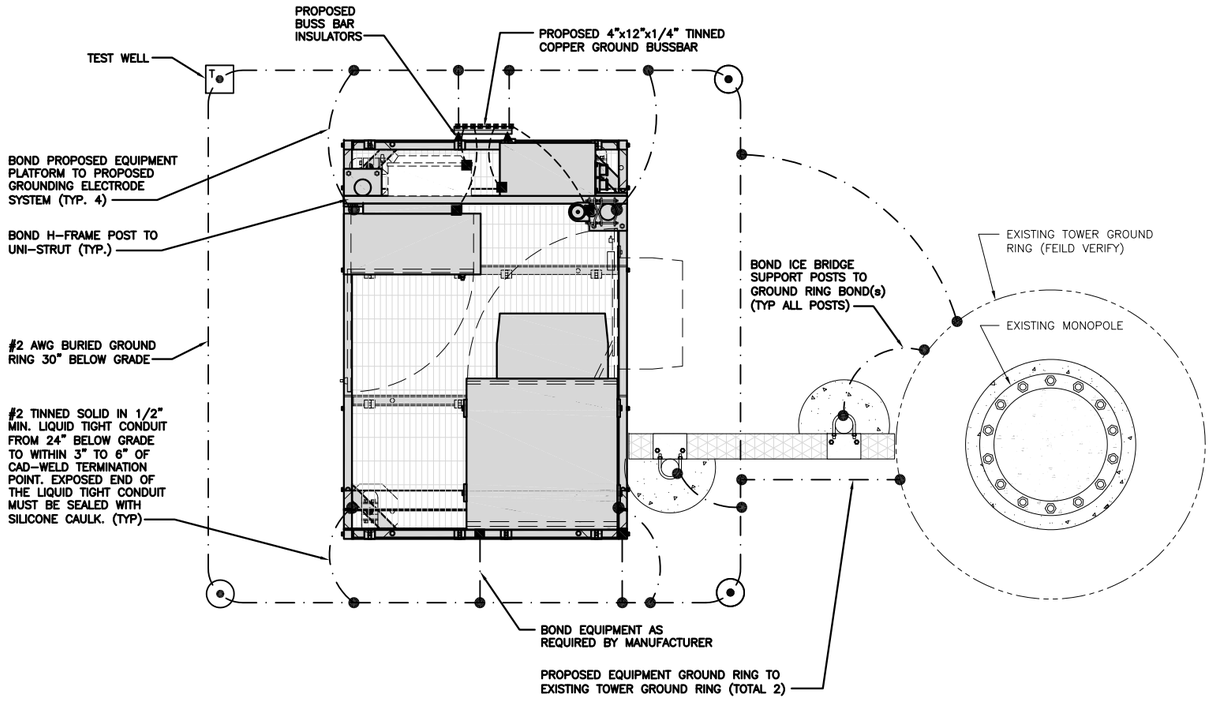
GUILFORD, CT 06437

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

SHEET NUMBER
E-3

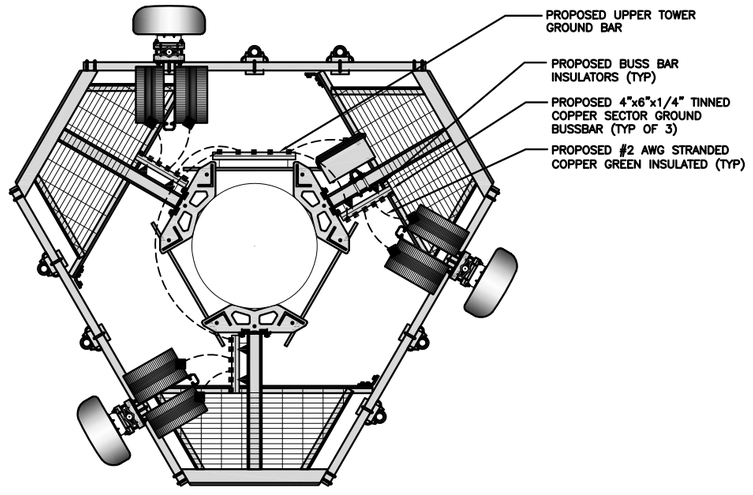


TYPICAL EQUIPMENT GROUNDING PLAN

NO SCALE | 1

NOTES

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



TYPICAL ANTENNA GROUNDING PLAN

NO SCALE | 2

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

GROUNDING LEGEND

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

GROUNDING KEY NOTES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

GROUNDING KEY NOTES

NO SCALE | 3

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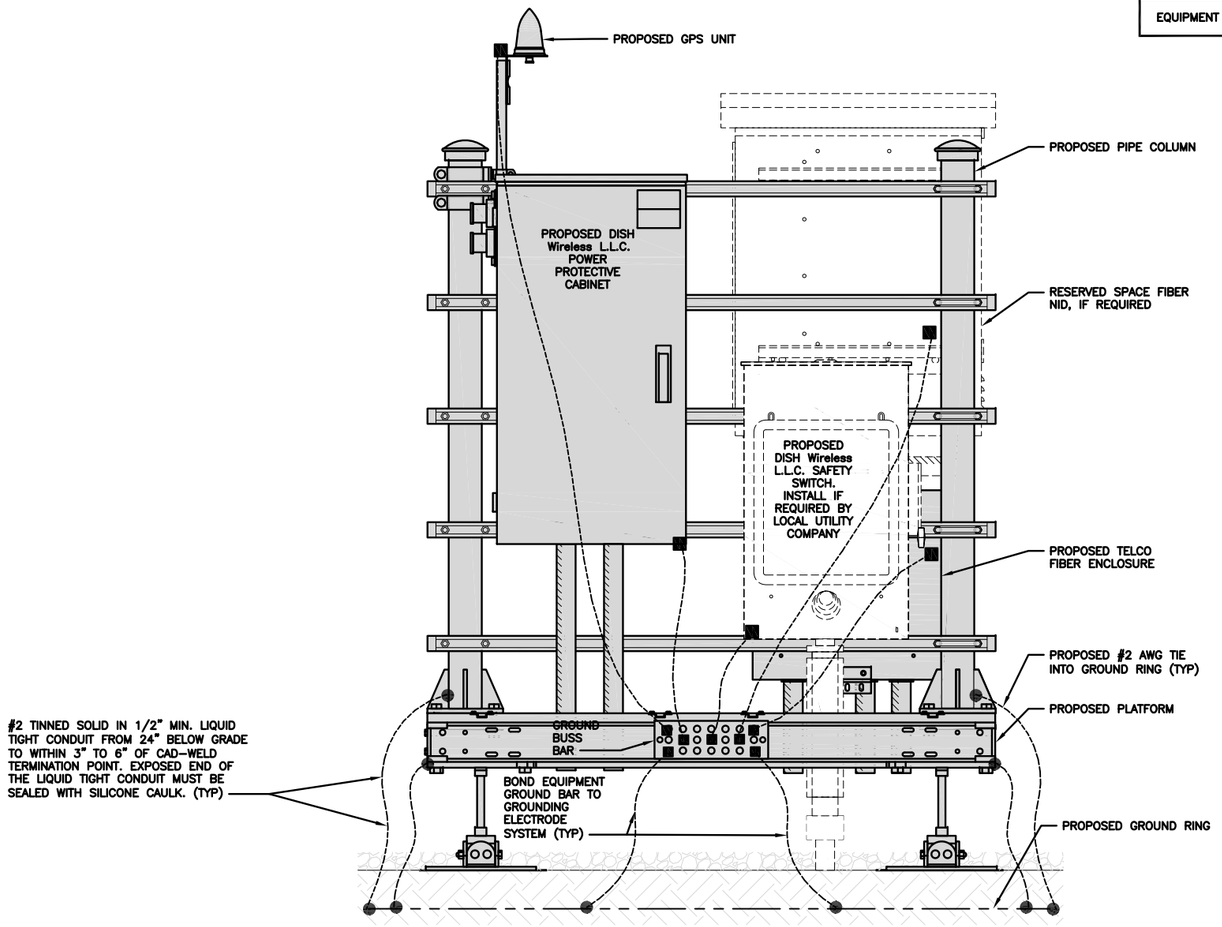
SHEET TITLE
GROUNDING PLANS AND NOTES

SHEET NUMBER
G-1

NOTES

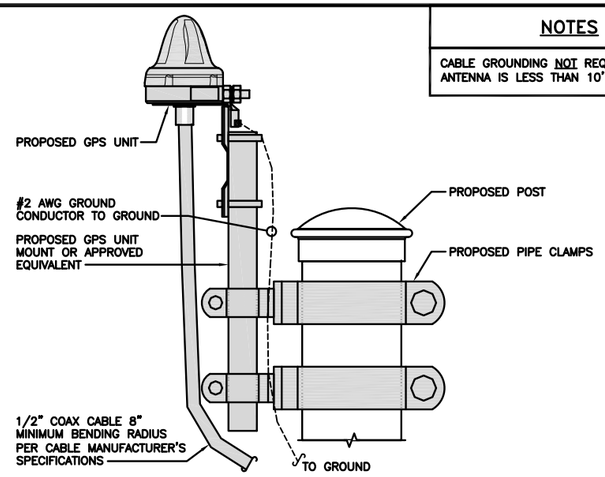
EQUIPMENT CABINET OMITTED FOR CLARITY



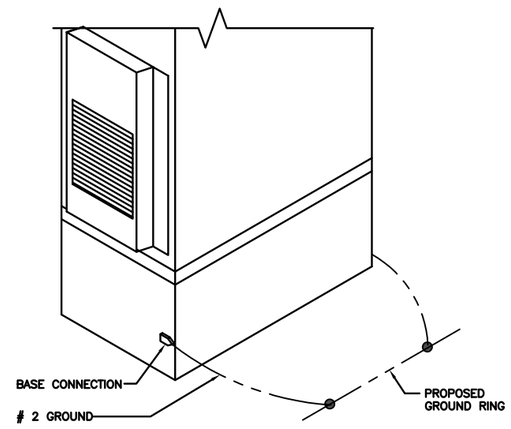
H-FRAME GROUNDING DETAIL | NO SCALE | 1

NOTES

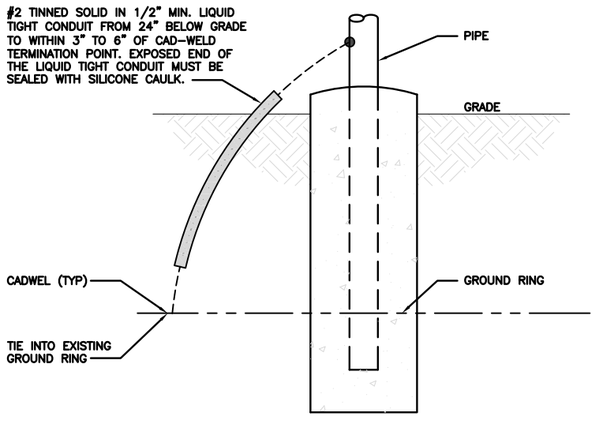
CABLE GROUNDING NOT REQUIRED WHEN ANTENNA IS LESS THAN 10' FROM CABINET



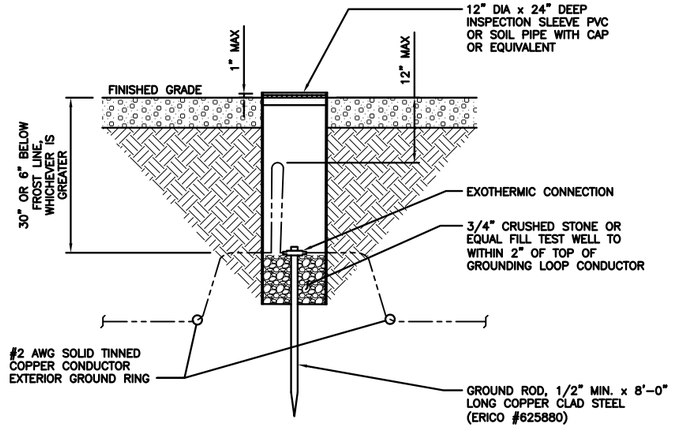
TYPICAL GPS UNIT GROUNDING | NO SCALE | 2



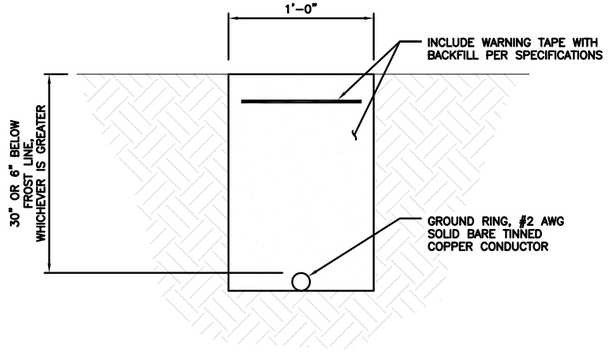
OUTDOOR CABINET GROUNDING | NO SCALE | 3



TRANSITIONING GROUND DETAIL | NO SCALE | 4



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



TYPICAL GROUND RING TRENCH | NO SCALE | 6

DISH Wireless L.L.C. TEMPLATE VERSION 34 – 06/11/2021

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SHEET TITLE

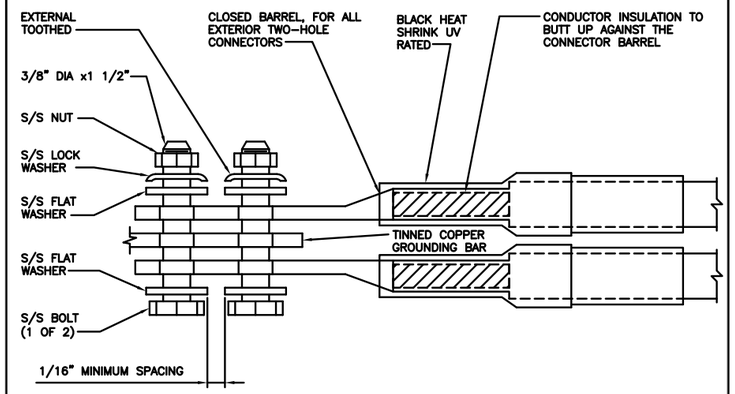
GROUNDING DETAILS

SHEET NUMBER

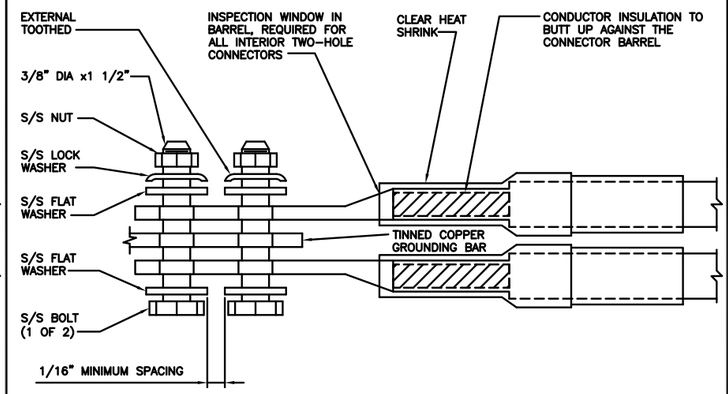
G-2

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).

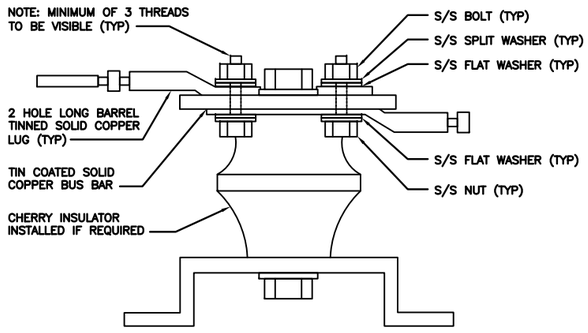
TYPICAL GROUNDING NOTES | NO SCALE | 1



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
TSUHEI SAKAMOTO
34916
LICENSED PROFESSIONAL ENGINEER
10/12/2021

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

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

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REV	DATE	DESCRIPTION
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A&E PROJECT NUMBER
6039-Z0001-C

DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00026A
1919 BOSTON POST RD.
GUILFORD, CT 06437

SHEET TITLE
GROUNDING DETAILS

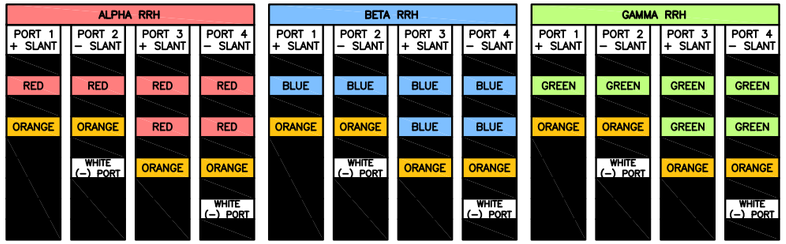
SHEET NUMBER
G-3

RF JUMPER COLOR CODING

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

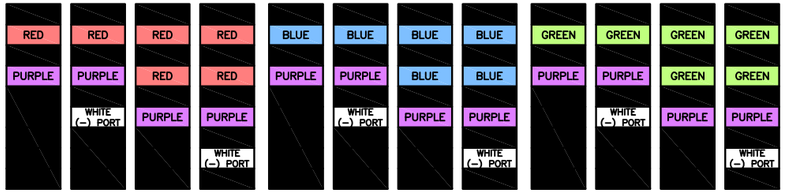
LOW-BAND RRH –
(600MHz N71 BASEBAND) +
(850MHz N26 BAND) +
(700MHz N29 BAND) – OPTIONAL PER MARKET

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)

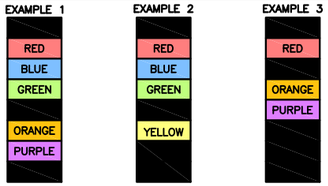


HYBRID/DISCREET CABLES

INCLUDE SECTOR BANDS BEING SUPPORTED
ALONG WITH FREQUENCY BANDS

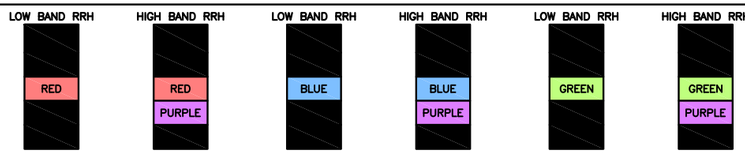
EXAMPLE 1 – HYBRID, OR DISCREET, SUPPORTS
ALL SECTORS, BOTH LOW-BANDS AND MID-BANDS

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



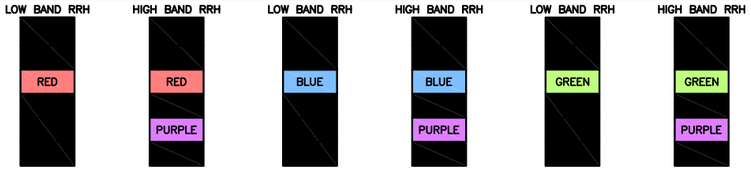
FIBER JUMPERS TO RRHs

LOW-BAND RRH FIBER CABLES HAVE SECTOR
STRIPE ONLY

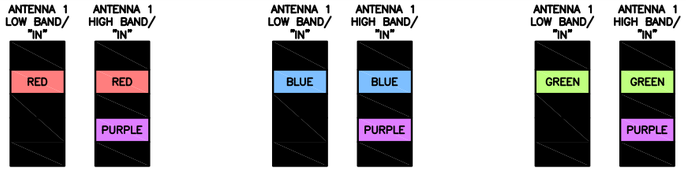


POWER CABLES TO RRHs

LOW-BAND RRH POWER CABLES HAVE SECTOR
STRIPE ONLY



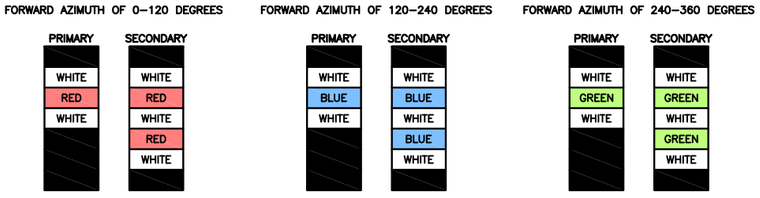
RET MOTORS AT ANTENNAS



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

LOW BANDS (N71+N26)
OPTIONAL – (N29)
ORANGE

AWS
(N66+N70+H-BLOCK)
PURPLE

CBRS TECH
(3 GHz)
YELLOW

NEGATIVE SLANT PORT
ON ANT/RRH
WHITE

ALPHA SECTOR
RED

BETA SECTOR
BLUE

GAMMA SECTOR
GREEN

COLOR IDENTIFIER	NO SCALE	2

NOT USED	NO SCALE	3

NOT USED	NO SCALE	4

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DISH Wireless L.L.C.
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GUILFORD, CT 06437

SHEET TITLE
RF
CABLE COLOR CODES

SHEET NUMBER
RF-1

LEGEND

EXOTHERMIC CONNECTION

MECHANICAL CONNECTION

BUSS BAR INSULATOR

CHEMICAL ELECTROLYTIC GROUNDING SYSTEM

TEST CHEMICAL ELECTROLYTIC GROUNDING SYSTEM — T

EXOTHERMIC WITH INSPECTION SLEEVE

GROUNDING BAR

GROUND ROD

TEST GROUND ROD WITH INSPECTION SLEEVE — T

SINGLE POLE SWITCH — $

DUPLEX RECEPTACLE

DUPLEX GFCI RECEPTACLE — GFCI

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

SMOKE DETECTION (DC) — SD

EMERGENCY LIGHTING (DC)

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

CHAIN LINK FENCE — X — X — X — X

WOOD/WROUGHT IRON FENCE

WALL STRUCTURE

LEASE AREA

PROPERTY LINE (PL)

SETBACKS

ICE BRIDGE

CABLE TRAY

WATER LINE — W — W — W — W — W

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

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

OVERHEAD POWER — OHP — OHP — OHP — OHP

OVERHEAD TELCO — OHT — OHT — OHT — OHT

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

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

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

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

WORKPOINT — W.P.

SECTION REFERENCE — XX / X–X

DETAIL REFERENCE — XX / X–X

ABBREVIATIONS

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

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RFDS REV #: N/A

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A&E PROJECT NUMBER

6039–Z0001–C

DISH Wireless L.L.C.
PROJECT INFORMATION

BOHVN00026A
1919 BOSTON POST RD.
GUILFORD, CT 06437

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

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

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

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

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

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

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

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

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

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

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

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

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

GENERAL NOTES:

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

CONTRACTOR:GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION

CARRIER:DISH Wireless L.L.C.

TOWER OWNER:TOWER OWNER

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

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

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

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

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

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

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

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

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

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

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

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

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

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STATE OF CONNECTICUT
TSUHEI SAKAMOTO
34916
LICENSED PROFESSIONAL ENGINEER
10/12/2021

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

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

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A&E PROJECT NUMBER

6039–Z0001–C

DISH Wireless L.L.C.
PROJECT INFORMATION

BOHVN00026A
1919 BOSTON POST RD.
GUILFORD, CT 06437

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-2

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

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

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

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

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

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

#4 BARS AND SMALLER 40 ksi

#5 BARS AND LARGER 60 ksi

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

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

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

ELECTRICAL INSTALLATION NOTES:

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

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

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

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

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

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

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

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

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

8. TIE WRAPS ARE NOT ALLOWED.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

27. THE CONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CARRIER AND/OR DISH Wireless 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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STATE OF CONNECTICUT
TSUHEI SAKAMOTO
34916
LICENSED PROFESSIONAL ENGINEER
10/12/2021

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

RFDS REV #: N/A

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A&E PROJECT NUMBER

6039-Z0001-C

DISH Wireless L.L.C.
PROJECT INFORMATION

BOHVN00026A
1919 BOSTON POST RD.
GUILFORD, CT 06437

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-3

GROUNDING NOTES:

1. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION AND AC POWER GES'S) SHALL BE BONDED TOGETHER AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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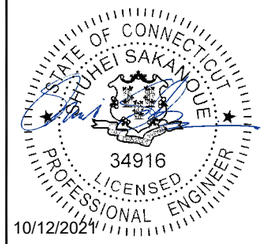

DRAWN BY:	CHECKED BY:	APPROVED BY:
RCD	SS	CJW

RFDS REV #: N/A

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DISH Wireless L.L.C.
PROJECT INFORMATION

BOHVN00026A
1919 BOSTON POST RD.
GUILFORD, CT 06437

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-4

Exhibit D

Structural Analysis Report

Date: **June 04, 2021**

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

Subject:	**Structural Analysis Report**	
Carrier Designation:	***DISH Network* Co-Locate**	
	Site Number:	BOHVN00026A
	Site Name:	CT-CCI-T-876343
Crown Castle Designation:	**BU Number:**	876343
	Site Name:	GUILFORD WEST STONE PROPERTY
	JDE Job Number:	645700
	Work Order Number:	1965499
	Order Number:	553888 Rev. 4
Engineering Firm Designation:	**Crown Castle Project Number:**	1965499
Site Data:	**1919 Boston Post Rd., GUILFORD, NEW HAVEN County, CT** **Latitude *41° 18' 1.27"*, Longitude *-72° 42' 29.13"*** **149 Foot - Monopole Tower**	

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

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

LC7: Proposed Equipment Configuration **Sufficient Capacity-61.5%**

***The structure has sufficient capacity once the loading changes, described in the Recommendations section of this report, are completed.**

This analysis utilizes an ultimate 3-second gust wind speed of 130 mph as required by the 2018 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Section 2 - "Analysis Criteria".

Structural analysis prepared by: Subhash Mandal

Respectfully submitted by:

Digitally signed by Maham Barimani
Date: 2021.06.06 12:18:48 0'00'

STATE OF CONNECTICUT
MAHAM BARIMANI
30501
LICENSED
PROFESSIONAL ENGINEER

Maham Barimani, P.E.
Senior Project Engineer

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 149 ft Monopole tower designed by ENGINEERED ENDEAVORS, INC.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	130 mph
Exposure Category:	C
Topographic Factor:	1
Ice Thickness:	1.5 in
Wind Speed with Ice:	50 mph
Service Wind Speed:	60 mph

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
138.0	138.0	3	fujitsu	TA08025-B604	1	1-1/2
		3	fujitsu	TA08025-B605		
		3	jma wireless	MX08FRO665-21 w/ Mount Pipe		
		1	raycap	RDIDC-9181-PF-48		
		1	tower mounts	Commscope MC-PK8-DSH		

Table 2 - Non-Carrier Equipment To Be Conditionally Removed

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
139.0	140.0	12	decibel	DB848H90E-XY w/ Mount Pipe	-	-
	139.0	1	tower mounts	Sector Mount [SM 901-3]		

Table 3 - Other Considered Equipment

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
148.0	148.0	3	ericsson	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	1 1 7	7/8 1-1/4 1-5/8
		3	ericsson	ERICSSON AIR 21 B4A B2P w/ Mount Pipe		
		3	ericsson	KRY 112 144/1		
		3	ericsson	RADIO 4449 B12/B71		
		3	rfs celwave	APXVAARR24_43-U-NA20 w/ Mount Pipe		
		1	tower mounts	Sector Mount [SM 901-3]		
139.0	139.0	-	-	-	12	1-5/8
129.0	129.0	1	tower mounts	Pipe Mount [PM 601-3]	-	-
	127.0	3	alcatel lucent	TME-800MHZ RRH		
	123.0	3	alcatel lucent	TME-1900MHz RRH (65MHz)		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
128.0	130.0	3	alcatel lucent	800 EXTERNAL NOTCH FILTER	4	1-1/4
		3	alcatel lucent	TD-RRH8X20-25		
		9	rfs celwave	ACU-A20-N		
		3	rfs celwave	APXVSPP18-C-A20 w/ Mount Pipe		
		3	rfs celwave	APXVTM14-C-120 w/ Mount Pipe		
	128.0	1	tower mounts	Sector Mount [SM 901-3]		
116.0	124.0	3	vzw	Sub6 Antenna - VZS01 w/ Mount Pipe	1 2 12	1/2 1-1/4 1-5/8
	122.0	4	andrew	DB846F65ZAXY w/ Mount Pipe		
		3	commscope	CBC78T-DS-43-2X		
		6	commscope	JAHH-65B-R3B w/ Mount Pipe		
		2	decibel	DB846H80E-SX w/ Mount Pipe		
		1	raycap	RVZDC-6627-PF-48		
		3	samsung telecommunications	RFV01U-D1A		
		3	samsung telecommunications	RFV01U-D2A		
	120.0	3	samsung telecommunications	CBRS w/ Mount Pipe		
	118.0	1	maxrad	GPS-TMG-26NMS		
	116.0	1	tower mounts	Sector Mount [SM 901-3]		
110.0	110.0	3	ericsson	TME-RRUS-11	-	-
		1	tower mounts	Pipe Mount [PM 601-3]		
106.0	108.0	2	cci antennas	DMP65R-BU4D w/ Mount Pipe	3 2 3 6 1	3/8 3/4 7/8 1-5/8 RC
		4	cci antennas	DMP65R-BU6D w/ Mount Pipe		
		3	ericsson	RRUS 4449 B5/B12		
		3	ericsson	RRUS 4478 B14_CCIV2		
		3	ericsson	RRUS 8843 B2/B66A		
		3	powerwave technologies	7770.00 w/ Mount Pipe		
		3	powerwave technologies	LGP21401		
		1	raycap	DC6-48-60-18-8F		
		1	raycap	DC9-48-60-24-8C-EV		
	106.0	1	tower mounts	Sector Mount [SM 901-3]		
98.0	98.0	3	rfs celwave	APXV18-206517S-C w/ Mount Pipe	6	1-5/8

3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

Document	Reference	Source
4-GEOTECHNICAL REPORTS	1531881	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	2262540	CCISITES
4-TOWER MANUFACTURER DRAWINGS	8702523	CCISITES

3.1) Analysis Method

tnxTower (version 8.0.9.0), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A. When applicable, Crown Castle has calculated and provided the effective area for panel antennas using approved methods following the intent of the TIA-222 standard.

3.2) Assumptions

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

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

4) ANALYSIS RESULTS

Table 5 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	149 - 135.04	Pole	TP26.77x22x0.19	1	-3.82	922.77	8.5	Pass
L2	135.04 - 92.17	Pole	TP40.91x25.06x0.25	2	-23.02	1888.15	51.0	Pass
L3	92.17 - 45.21	Pole	TP56.31x38.49x0.31	3	-35.28	3255.33	61.5	Pass
L4	45.21 - 0	Pole	TP71x53.12x0.38	4	-56.71	5023.87	59.3	Pass
							Summary	
						Pole (L3)	61.5	Pass
						Rating =	61.5	Pass

Table 6 - Tower Component Stresses vs. Capacity - LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	35.2	Pass
1	Base Plate	0	33	Pass
1	Base Foundation (Structure)	0	46.4	Pass
1	Base Foundation (Soil Interaction)	0	27.4	Pass

Structure Rating (max from all components) =	61.5%

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

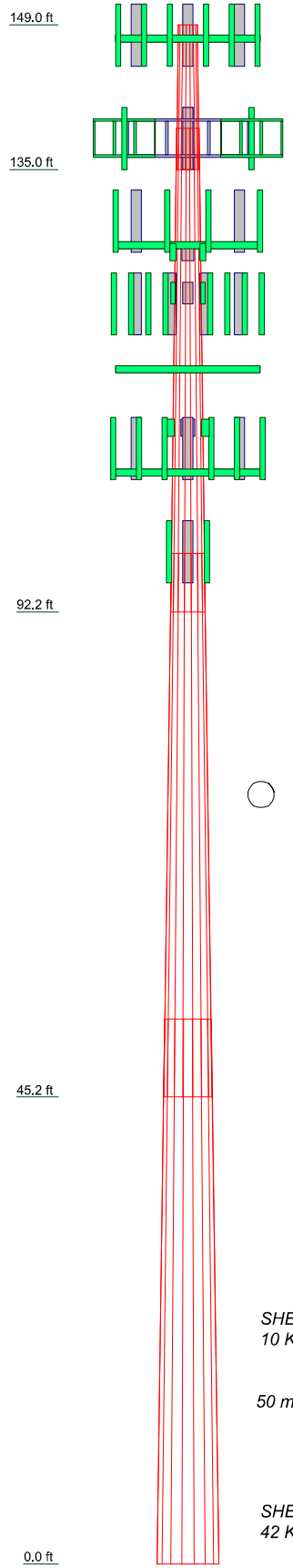
4.1) Recommendations

Once the equipment in Table 2 is removed, the tower and its foundation have sufficient capacity to carry the proposed load configuration. No modifications are required at this time.

APPENDIX A

TNXTOWER OUTPUT

Section	1	2	3	4	
Length (ft)	13.96	46.79	52.63	52.79	
Number of Sides	18	18	18	18	
Thickness (in)	0.19	0.25	0.31	0.38	
Socket Length (ft)	3.92	5.67	7.58		
Top Dia (in)	22.00	25.06	38.49	53.12	
Bot Dia (in)	26.77	40.91	56.31	71.00	
Grade	A572-65				
Weight (K)	0.7	4.1	8.4	13.2	26.4



MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower designed for Exposure C to the TIA-222-H Standard.
2. Tower designed for a 130 mph basic wind in accordance with the TIA-222-H Standard.
3. Tower is also designed for a 50 mph basic wind with 1.50 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 60 mph wind.
5. Tower Risk Category II.
6. Topographic Category 1 with Crest Height of 0.00 ft
7. TOWER RATING: 61.5%

ALL REACTIONS ARE FACTORED

AXIAL 92 K

SHEAR 10 K

MOMENT 1069 kip-ft

TORQUE 1 kip-ft
50 mph WIND - 1.50 in ICE

AXIAL 57 K

SHEAR 42 K

MOMENT 4249 kip-ft

TORQUE 4 kip-ft
REACTIONS - 130 mph WIND

CROWN CASTLE
The Pathway to Possible

Crown Castle
2000 Corporate Drive
Canonsburg, PA 15317
Phone: 724-416-2000
FAX: -

Job: *BU 876343*			
Project:			
Client: Crown Castle	Drawn by: SMandal		App'd:
Code: TIA-222-H	Date: 06/04/21		Scale: NTS
Path: C:\Users\smandal\Desktop\WIP\876343\WO 1965499 - SA\Prod\876343_RPA.er			Dwg No. E-1

Tower Input Data

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

- Tower base elevation above sea level: 70.00 ft.
- Basic wind speed of 130 mph.
- Risk Category II.
- Exposure Category C.
- Simplified Topographic Factor Procedure for wind speed-up calculations is used.
- Topographic Category: 1.
- Crest Height: 0.00 ft.
- Nominal ice thickness of 1.50 in.
- Ice thickness is considered to increase with height.
- Ice density of 56.00 pcf.
- A wind speed of 50 mph is used in combination with ice.
- Temperature drop of 50 °F.
- Deflections calculated using a wind speed of 60 mph.
- A non-linear (P-delta) analysis was used.
- Pressures are calculated at each section.
- Stress ratio used in pole design is 1.
- Tower analysis based on target reliabilities in accordance with Annex S.
- Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
- Maximum demand-capacity ratio is: 1.05.
- Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

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

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	149.00-135.04	13.96	3.92	18	22.00	26.77	0.19	0.75	A572-65 (65 ksi)
L2	135.04-92.17	46.79	5.67	18	25.06	40.91	0.25	1.00	A572-65 (65 ksi)
L3	92.17-45.21	52.63	7.58	18	38.49	56.31	0.31	1.25	A572-65 (65 ksi)
L4	45.21-0.00	52.79		18	53.12	71.00	0.38	1.50	A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L1	22.31	12.98	780.30	7.74	11.18	69.82	1561.63	6.49	3.54	18.891
	27.15	15.82	1412.32	9.44	13.60	103.85	2826.50	7.91	4.38	23.368
L2	26.75	19.68	1530.14	8.81	12.73	120.22	3062.30	9.84	3.97	15.879
	41.50	32.26	6738.86	14.43	20.78	324.26	13486.59	16.13	6.76	27.041
L3	40.98	37.87	6972.28	13.55	19.55	356.60	13953.73	18.94	6.22	19.917
	57.13	55.54	22003.93	19.88	28.61	769.22	44036.82	27.78	9.36	29.954
L4	56.49	62.78	22063.67	18.72	26.98	817.65	44156.37	31.39	8.69	23.17
	72.04	84.06	52972.57	25.07	36.07	1468.69	106014.84	42.04	11.84	31.563

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L1 149.00-135.04				1	1	1			
L2 135.04-92.17				1	1	1			
L3 92.17-45.21				1	1	1			
L4 45.21-0.00				1	1	1			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
PWRT-606-S(7/8)	C	No	Surface Ar (CaAa)	106.00 - 0.00	3	1	0.200 0.300	0.92		0.89
RFFT-48SM-001-XXX(3/8)	C	No	Surface Ar (CaAa)	106.00 - 0.00	1	1	0.300 0.300	0.40		0.06
***										
LCF158-50JL(1-5/8)	A	No	Surface Ar (CaAa)	98.00 - 0.00	6	6	-0.500 -0.350	1.98		0.52

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
***									
MLE HYBRID	C	No	No	Inside Pole	148.00 - 0.00	1	No Ice	0.00	0.46

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
3POWER/6FIBER RL 2 10AWG(1-1/4)							1/2" Ice	0.00	0.46
							1" Ice	0.00	0.46
							2" Ice	0.00	0.46
MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	C	No	No	Inside Pole	148.00 - 0.00	7	No Ice	0.00	1.07
							1/2" Ice	0.00	1.07
							1" Ice	0.00	1.07
							2" Ice	0.00	1.07
LDF5-50A(7/8)	C	No	No	Inside Pole	148.00 - 0.00	1	No Ice	0.00	0.33
							1/2" Ice	0.00	0.33
							1" Ice	0.00	0.33
							2" Ice	0.00	0.33
***									
LDF7-50A(1-5/8)	C	No	No	Inside Pole	139.00 - 0.00	12	No Ice	0.00	0.82
							1/2" Ice	0.00	0.82
							1" Ice	0.00	0.82
							2" Ice	0.00	0.82
***									
HB114-1-0813U4-M5J(1-1/4)	C	No	No	Inside Pole	128.00 - 0.00	4	No Ice	0.00	1.20
							1/2" Ice	0.00	1.20
							1" Ice	0.00	1.20
							2" Ice	0.00	1.20
***									
HB114-1-0813U4-M5J(1-1/4)	C	No	No	Inside Pole	116.00 - 0.00	2	No Ice	0.00	1.20
							1/2" Ice	0.00	1.20
							1" Ice	0.00	1.20
							2" Ice	0.00	1.20
LDF4-50A(1/2)	C	No	No	Inside Pole	116.00 - 0.00	1	No Ice	0.00	0.15
							1/2" Ice	0.00	0.15
							1" Ice	0.00	0.15
							2" Ice	0.00	0.15
LDF7-50A(1-5/8)	C	No	No	Inside Pole	116.00 - 0.00	12	No Ice	0.00	0.82
							1/2" Ice	0.00	0.82
							1" Ice	0.00	0.82
							2" Ice	0.00	0.82
***									
LDF7-50A(1-5/8)	C	No	No	Inside Pole	106.00 - 0.00	6	No Ice	0.00	0.82
							1/2" Ice	0.00	0.82
							1" Ice	0.00	0.82
							2" Ice	0.00	0.82
FB-L98B-002-75000(3/8)	C	No	No	Inside Pole	106.00 - 0.00	2	No Ice	0.00	0.06
							1/2" Ice	0.00	0.06
							1" Ice	0.00	0.06
							2" Ice	0.00	0.06
WR-VG86ST-BRD(3/4)	C	No	No	Inside Pole	106.00 - 0.00	2	No Ice	0.00	0.58
							1/2" Ice	0.00	0.58
							1" Ice	0.00	0.58
							2" Ice	0.00	0.58
2" Flexible Conduit	C	No	No	Inside Pole	106.00 - 0.00	1	No Ice	0.00	0.34
							1/2" Ice	0.00	0.34
							1" Ice	0.00	0.34
							2" Ice	0.00	0.34
***									
CU12PSM9P6XXX (1-1/2)	A	No	No	Inside Pole	138.00 - 0.00	1	No Ice	0.00	2.35
							1/2" Ice	0.00	2.35
							1" Ice	0.00	2.35
							2" Ice	0.00	2.35

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	149.00-135.04	A	0.000	0.000	0.000	0.000	0.01
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.15
L2	135.04-92.17	A	0.000	0.000	6.926	0.000	0.12
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	1.826	0.000	1.37
L3	92.17-45.21	A	0.000	0.000	55.788	0.000	0.26
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	6.199	0.000	2.09
L4	45.21-0.00	A	0.000	0.000	53.709	0.000	0.25
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	5.968	0.000	2.02

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	149.00-135.04	A	1.475	0.000	0.000	0.000	0.000	0.01
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.15
L2	135.04-92.17	A	1.441	0.000	0.000	10.808	0.000	0.23
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	9.986	0.000	1.60
L3	92.17-45.21	A	1.370	0.000	0.000	86.654	0.000	1.14
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	33.268	0.000	2.83
L4	45.21-0.00	A	1.228	0.000	0.000	82.624	0.000	1.05
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	30.747	0.000	2.67

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	149.00-135.04	0.00	0.00	0.00	0.00
L2	135.04-92.17	-1.59	0.85	-1.75	1.37
L3	92.17-45.21	-6.89	3.15	-6.34	3.78
L4	45.21-0.00	-7.36	3.36	-6.93	4.09

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

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L2	18	PWRT-606-S(7/8)	92.17 - 106.00	1.0000	1.0000
L2	19	RFFT-48SM-001-XXX(3/8)	92.17 - 106.00	1.0000	1.0000
L2	21	LCF158-50JL(1-5/8)	92.17 - 98.00	1.0000	1.0000
L3	18	PWRT-606-S(7/8)	45.21 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L3	19	RFFT-48SM-001-XXX(3/8)	92.17 45.21 -	1.0000	1.0000
L3	21	LCF158-50JL(1-5/8)	92.17 45.21 -	1.0000	1.0000
L4	18	PWRT-606-S(7/8)	92.17 0.00 - 45.21	1.0000	1.0000
L4	19	RFFT-48SM-001-XXX(3/8)	0.00 - 45.21	1.0000	1.0000
L4	21	LCF158-50JL(1-5/8)	0.00 - 45.21	1.0000	1.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft
APXVAARR24_43-U-NA20 w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	148.00
APXVAARR24_43-U-NA20 w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	148.00
APXVAARR24_43-U-NA20 w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	148.00
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	148.00
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	148.00
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	148.00
ERICSSON AIR 21 B4A B2P w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	148.00
ERICSSON AIR 21 B4A B2P w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	148.00
ERICSSON AIR 21 B4A B2P w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	148.00
KRY 112 144/1	A	From Leg	4.00 0.00 0.00	0.0000	148.00
KRY 112 144/1	A	From Leg	4.00 0.00 0.00	0.0000	148.00
KRY 112 144/1	B	From Leg	4.00 0.00 0.00	0.0000	148.00
RADIO 4449 B12/B71	A	From Leg	4.00 0.00 0.00	0.0000	148.00
RADIO 4449 B12/B71	B	From Leg	4.00 0.00 0.00	0.0000	148.00
RADIO 4449 B12/B71	C	From Leg	4.00 0.00	0.0000	148.00

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft
6' x 2" Mount Pipe	A	From Leg	0.00 4.00 0.00	0.0000	148.00
6' x 2" Mount Pipe	B	From Leg	0.00 4.00 0.00	0.0000	148.00
6' x 2" Mount Pipe	C	From Leg	0.00 4.00 0.00	0.0000	148.00
L2x2x3/16 (14' long)	A	From Leg	0.00 4.00 0.00	0.0000	148.00
L2x2x3/16 (14' long)	B	From Leg	0.00 4.00 0.00	0.0000	148.00
L2x2x3/16 (14' long)	C	From Leg	0.00 4.00 0.00	0.0000	148.00
Sector Mount [SM 901-3]	C	None	0.00	0.0000	148.00
***					
***					
TME-800MHZ RRH	A	From Leg	0.50 0.00 -2.00	0.0000	129.00
TME-800MHZ RRH	B	From Leg	0.50 0.00 -2.00	0.0000	129.00
TME-800MHZ RRH	C	From Leg	0.50 0.00 -2.00	0.0000	129.00
TME-1900MHz RRH (65MHz)	A	From Leg	0.50 0.00 -6.00	0.0000	129.00
TME-1900MHz RRH (65MHz)	B	From Leg	0.50 0.00 -6.00	0.0000	129.00
TME-1900MHz RRH (65MHz)	C	From Leg	0.50 0.00 -6.00	0.0000	129.00
Pipe Mount [PM 601-3]	C	None		0.0000	129.00
***					
APXVTM14-C-120 w/ Mount Pipe	A	From Leg	4.00 0.00 2.00	0.0000	128.00
APXVTM14-C-120 w/ Mount Pipe	B	From Leg	4.00 0.00 2.00	0.0000	128.00
APXVTM14-C-120 w/ Mount Pipe	C	From Leg	4.00 0.00 2.00	0.0000	128.00
APXVSPP18-C-A20 w/ Mount Pipe	A	From Leg	4.00 0.00 2.00	0.0000	128.00
APXVSPP18-C-A20 w/ Mount Pipe	B	From Leg	4.00 0.00 2.00	0.0000	128.00
APXVSPP18-C-A20 w/ Mount Pipe	C	From Leg	4.00 0.00 2.00	0.0000	128.00
800 EXTERNAL NOTCH FILTER	A	From Leg	4.00 0.00 2.00	0.0000	128.00
800 EXTERNAL NOTCH FILTER	B	From Leg	4.00 0.00	0.0000	128.00

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft
800 EXTERNAL NOTCH FILTER	C	From Leg	2.00 4.00 0.00	0.0000	128.00
TD-RRH8X20-25	A	From Leg	2.00 4.00 0.00	0.0000	128.00
TD-RRH8X20-25	B	From Leg	2.00 4.00 0.00	0.0000	128.00
TD-RRH8X20-25	C	From Leg	2.00 4.00 0.00	0.0000	128.00
(3) ACU-A20-N	A	From Leg	2.00 4.00 0.00	0.0000	128.00
(3) ACU-A20-N	B	From Leg	2.00 4.00 0.00	0.0000	128.00
(3) ACU-A20-N	C	From Leg	2.00 4.00 0.00	0.0000	128.00
(2) 6' x 2" Mount Pipe	A	From Leg	2.00 4.00 0.00	0.0000	128.00
(2) 6' x 2" Mount Pipe	B	From Leg	0.00 4.00 0.00	0.0000	128.00
(2) 6' x 2" Mount Pipe	C	From Leg	0.00 4.00 0.00	0.0000	128.00
Sector Mount [SM 901-3]	C	None	0.00	0.0000	128.00
***					
(2) JAHH-65B-R3B w/ Mount Pipe	A	From Leg	4.00 0.00	0.0000	116.00
(2) JAHH-65B-R3B w/ Mount Pipe	B	From Leg	6.00 4.00 0.00	0.0000	116.00
(2) JAHH-65B-R3B w/ Mount Pipe	C	From Leg	6.00 4.00 0.00	0.0000	116.00
(2) DB846F65ZAXY w/ Mount Pipe	A	From Leg	6.00 4.00 0.00	0.0000	116.00
(2) DB846H80E-SX w/ Mount Pipe	B	From Leg	6.00 4.00 0.00	0.0000	116.00
(2) DB846F65ZAXY w/ Mount Pipe	C	From Leg	6.00 4.00 0.00	0.0000	116.00
Sub6 Antenna - VZS01 w/ Mount Pipe	A	From Leg	6.00 4.00 0.00	0.0000	116.00
Sub6 Antenna - VZS01 w/ Mount Pipe	B	From Leg	8.00 4.00 0.00	0.0000	116.00
Sub6 Antenna - VZS01 w/ Mount Pipe	C	From Leg	8.00 4.00 0.00	0.0000	116.00
CBRS w/ Mount Pipe	A	From Leg	8.00 4.00 0.00	0.0000	116.00
CBRS w/ Mount Pipe	B	From Leg	4.00 4.00 0.00	0.0000	116.00

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft
CBRS w/ Mount Pipe	C	From Leg	4.00 4.00 0.00	0.0000	116.00
GPS-TMG-26NMS	B	From Leg	4.00 4.00 0.00	0.0000	116.00
RVZDC-6627-PF-48	A	From Leg	2.00 4.00 0.00	0.0000	116.00
CBC78T-DS-43-2X	A	From Leg	6.00 4.00 0.00	0.0000	116.00
CBC78T-DS-43-2X	B	From Leg	6.00 4.00 0.00	0.0000	116.00
CBC78T-DS-43-2X	C	From Leg	6.00 4.00 0.00	0.0000	116.00
RFV01U-D1A	A	From Leg	6.00 4.00 0.00	0.0000	116.00
RFV01U-D1A	B	From Leg	6.00 4.00 0.00	0.0000	116.00
RFV01U-D1A	C	From Leg	6.00 4.00 0.00	0.0000	116.00
RFV01U-D2A	A	From Leg	6.00 4.00 0.00	0.0000	116.00
RFV01U-D2A	B	From Leg	6.00 4.00 0.00	0.0000	116.00
RFV01U-D2A	C	From Leg	6.00 4.00 0.00	0.0000	116.00
Sector Mount [SM 901-3] ***	C	None	6.00	0.0000	116.00
TME-RRUS-11	A	From Leg	0.50 0.00 0.00	0.0000	110.00
TME-RRUS-11	B	From Leg	0.50 0.00 0.00	0.0000	110.00
TME-RRUS-11	C	From Leg	0.50 0.00 0.00	0.0000	110.00
Pipe Mount [PM 601-3] ***	C	None		0.0000	110.00
Sector Mount [SM 901-3]	C	None		0.0000	106.00
(2) DMP65R-BU4D w/ Mount Pipe	C	From Leg	4.00 0.00 2.00	0.0000	106.00
(2) DMP65R-BU6D w/ Mount Pipe	A	From Leg	4.00 0.00 2.00	0.0000	106.00
(2) DMP65R-BU6D w/ Mount Pipe	B	From Leg	4.00 0.00 2.00	0.0000	106.00
RRUS 4449 B5/B12	A	From Leg	4.00 0.00 2.00	0.0000	106.00
(2) RRUS 4449 B5/B12	B	From Leg	4.00 0.00	0.0000	106.00

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft
(2) RRUS 4478 B14_CCIV2	A	From Leg	2.00 4.00 0.00	0.0000	106.00
RRUS 4478 B14_CCIV2	B	From Leg	2.00 4.00 0.00	0.0000	106.00
(2) RRUS 8843 B2/B66A	A	From Leg	2.00 4.00 0.00	0.0000	106.00
RRUS 8843 B2/B66A	B	From Leg	2.00 4.00 0.00	0.0000	106.00
DC9-48-60-24-8C-EV	A	From Leg	2.00 4.00 0.00	0.0000	106.00
7770.00 w/ Mount Pipe	A	From Leg	2.00 4.00 0.00	0.0000	106.00
7770.00 w/ Mount Pipe	B	From Leg	2.00 4.00 0.00	0.0000	106.00
7770.00 w/ Mount Pipe	C	From Leg	2.00 4.00 0.00	0.0000	106.00
LGP21401	A	From Leg	2.00 4.00 0.00	0.0000	106.00
LGP21401	B	From Leg	2.00 4.00 0.00	0.0000	106.00
LGP21401	C	From Leg	2.00 4.00 0.00	0.0000	106.00
DC6-48-60-18-8F	A	From Leg	2.00 4.00 0.00	0.0000	106.00
***			2.00		
APXV18-206517S-C w/ Mount Pipe	A	From Leg	0.50 0.00	0.0000	98.00
APXV18-206517S-C w/ Mount Pipe	B	From Leg	0.00 0.50 0.00	0.0000	98.00
APXV18-206517S-C w/ Mount Pipe	C	From Leg	0.00 0.50 0.00	0.0000	98.00
***			0.00		
MX08FRO665-21 w/ Mount Pipe	A	From Leg	4.00 0.00	0.0000	138.00
MX08FRO665-21 w/ Mount Pipe	B	From Leg	0.00 4.00 0.00	0.0000	138.00
MX08FRO665-21 w/ Mount Pipe	C	From Leg	0.00 4.00 0.00	0.0000	138.00
TA08025-B604	A	From Leg	0.00 4.00 0.00	0.0000	138.00
TA08025-B604	B	From Leg	0.00 4.00 0.00	0.0000	138.00
TA08025-B604	C	From Leg	0.00 4.00 0.00	0.0000	138.00

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft
TA08025-B605	A	From Leg	0.00 4.00 0.00	0.0000	138.00
TA08025-B605	B	From Leg	0.00 4.00 0.00	0.0000	138.00
TA08025-B605	C	From Leg	0.00 4.00 0.00	0.0000	138.00
RDIDC-9181-PF-48	A	From Leg	0.00 4.00 0.00	0.0000	138.00
(2) 8' x 2" Mount Pipe	A	From Leg	0.00 4.00 0.00	0.0000	138.00
(2) 8' x 2" Mount Pipe	B	From Leg	0.00 4.00 0.00	0.0000	138.00
(2) 8' x 2" Mount Pipe	C	From Leg	0.00 4.00 0.00	0.0000	138.00
Commscope MC-PK8-DSH	C	None	0.00	0.0000	138.00

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice
3	0.9 Dead+1.0 Wind 0 deg - No Ice
4	1.2 Dead+1.0 Wind 30 deg - No Ice
5	0.9 Dead+1.0 Wind 30 deg - No Ice
6	1.2 Dead+1.0 Wind 60 deg - No Ice
7	0.9 Dead+1.0 Wind 60 deg - No Ice
8	1.2 Dead+1.0 Wind 90 deg - No Ice
9	0.9 Dead+1.0 Wind 90 deg - No Ice
10	1.2 Dead+1.0 Wind 120 deg - No Ice
11	0.9 Dead+1.0 Wind 120 deg - No Ice
12	1.2 Dead+1.0 Wind 150 deg - No Ice
13	0.9 Dead+1.0 Wind 150 deg - No Ice
14	1.2 Dead+1.0 Wind 180 deg - No Ice
15	0.9 Dead+1.0 Wind 180 deg - No Ice
16	1.2 Dead+1.0 Wind 210 deg - No Ice
17	0.9 Dead+1.0 Wind 210 deg - No Ice
18	1.2 Dead+1.0 Wind 240 deg - No Ice
19	0.9 Dead+1.0 Wind 240 deg - No Ice
20	1.2 Dead+1.0 Wind 270 deg - No Ice
21	0.9 Dead+1.0 Wind 270 deg - No Ice
22	1.2 Dead+1.0 Wind 300 deg - No Ice
23	0.9 Dead+1.0 Wind 300 deg - No Ice
24	1.2 Dead+1.0 Wind 330 deg - No Ice
25	0.9 Dead+1.0 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp

Comb. No.	Description
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	149 - 135.04	Pole	Max Tension	14	0.00	0.00	0.00
			Max. Compression	26	-8.51	-0.12	0.22
			Max. Mx	8	-3.82	-44.14	0.06
			Max. My	2	-3.82	-0.02	44.33
			Max. Vy	8	5.29	-44.14	0.06
			Max. Vx	2	-5.30	-0.02	44.33
			Max. Torque	20			-0.21
L2	135.04 - 92.17	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-46.58	-3.48	5.47
			Max. Mx	8	-23.06	-796.55	2.05
			Max. My	2	-23.02	-1.64	804.74
			Max. Vy	8	28.05	-796.55	2.05
			Max. Vx	2	-28.42	-1.64	804.74
			Max. Torque	22			-3.77
L3	92.17 - 45.21	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-63.82	-1.88	4.84
			Max. Mx	8	-35.30	-2196.47	-1.24
			Max. My	2	-35.28	1.82	2221.44
			Max. Vy	8	34.23	-2196.47	-1.24
			Max. Vx	2	-34.59	1.82	2221.44
			Max. Torque	22			-3.77
L4	45.21 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-92.02	0.73	3.85
			Max. Mx	8	-56.71	-4204.73	-5.20
			Max. My	2	-56.71	6.04	4249.15
			Max. Vy	8	41.68	-4204.73	-5.20
			Max. Vx	2	-42.04	6.04	4249.15
			Max. Torque	22			-3.76

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	27	92.02	0.01	10.32
	Max. H_x	20	56.73	41.65	0.07

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
	Max. H_z	2	56.73	0.07	42.01
	Max. M_x	2	4249.15	0.07	42.01
	Max. M_z	8	4204.73	-41.65	-0.07
	Max. Torsion	10	3.74	-36.11	-21.07
	Min. Vert	19	42.55	36.04	-20.94
	Min. H_x	8	56.73	-41.65	-0.07
	Min. H_z	14	56.73	-0.07	-42.01
	Min. M_x	14	-4245.32	-0.07	-42.01
	Min. M_z	20	-4202.59	41.65	0.07
	Min. Torsion	22	-3.76	36.11	21.07

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	47.28	0.00	0.00	-1.51	-0.83	0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	56.73	-0.07	-42.01	-4249.15	6.04	1.99
0.9 Dead+1.0 Wind 0 deg - No Ice	42.55	-0.07	-42.01	-4220.44	6.28	1.98
1.2 Dead+1.0 Wind 30 deg - No Ice	56.73	20.76	-36.35	-3676.59	-2096.73	0.14
0.9 Dead+1.0 Wind 30 deg - No Ice	42.55	20.76	-36.35	-3651.68	-2082.53	0.13
1.2 Dead+1.0 Wind 60 deg - No Ice	56.73	36.04	-20.94	-2119.39	-3637.99	-1.75
0.9 Dead+1.0 Wind 60 deg - No Ice	42.55	36.04	-20.94	-2104.83	-3613.56	-1.74
1.2 Dead+1.0 Wind 90 deg - No Ice	56.73	41.65	0.07	5.20	-4204.73	-3.17
0.9 Dead+1.0 Wind 90 deg - No Ice	42.55	41.65	0.07	5.66	-4176.54	-3.15
1.2 Dead+1.0 Wind 120 deg - No Ice	56.73	36.11	21.07	2127.88	-3645.09	-3.74
0.9 Dead+1.0 Wind 120 deg - No Ice	42.55	36.11	21.07	2114.24	-3620.62	-3.72
1.2 Dead+1.0 Wind 150 deg - No Ice	56.73	20.89	36.42	3679.86	-2109.03	-3.32
0.9 Dead+1.0 Wind 150 deg - No Ice	42.55	20.89	36.42	3655.91	-2094.76	-3.30
1.2 Dead+1.0 Wind 180 deg - No Ice	56.73	0.07	42.01	4245.32	-8.17	-2.01
0.9 Dead+1.0 Wind 180 deg - No Ice	42.55	0.07	42.01	4217.61	-7.85	-2.00
1.2 Dead+1.0 Wind 210 deg - No Ice	56.73	-20.76	36.35	3672.76	2094.59	-0.16
0.9 Dead+1.0 Wind 210 deg - No Ice	42.55	-20.76	36.35	3648.85	2080.95	-0.15
1.2 Dead+1.0 Wind 240 deg - No Ice	56.73	-36.04	20.94	2115.57	3635.85	1.75
0.9 Dead+1.0 Wind 240 deg - No Ice	42.55	-36.04	20.94	2102.00	3611.98	1.74
1.2 Dead+1.0 Wind 270 deg - No Ice	56.73	-41.65	-0.07	-9.01	4202.59	3.19
0.9 Dead+1.0 Wind 270 deg - No Ice	42.55	-41.65	-0.07	-8.48	4174.97	3.17
1.2 Dead+1.0 Wind 300 deg - No Ice	56.73	-36.11	-21.07	-2131.70	3642.96	3.76
0.9 Dead+1.0 Wind 300 deg - No Ice	42.55	-36.11	-21.07	-2117.06	3619.05	3.74
1.2 Dead+1.0 Wind 330 deg - No Ice	56.73	-20.89	-36.42	-3683.69	2106.90	3.32
0.9 Dead+1.0 Wind 330 deg - No Ice	42.55	-20.89	-36.42	-3658.74	2093.20	3.30

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
1.2 Dead+1.0 Ice+1.0 Temp	92.02	0.00	-0.00	-3.85	0.73	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	92.02	-0.01	-10.32	-1069.38	1.83	0.43
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	92.02	5.12	-8.93	-926.08	-527.45	0.02
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	92.02	8.88	-5.15	-535.71	-915.22	-0.39
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	92.02	10.26	0.01	-2.87	-1057.57	-0.70
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	92.02	8.89	5.17	529.66	-916.36	-0.82
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	92.02	5.14	8.94	919.19	-529.43	-0.72
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	92.02	0.01	10.32	1061.35	-0.45	-0.43
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	92.02	-5.12	8.93	918.05	528.83	-0.02
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	92.02	-8.88	5.15	527.68	916.60	0.39
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	92.02	-10.26	-0.01	-5.16	1058.95	0.70
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	92.02	-8.89	-5.17	-537.69	917.75	0.82
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	92.02	-5.14	-8.94	-927.22	530.81	0.72
Dead+Wind 0 deg - Service	47.28	-0.01	-8.43	-850.66	0.54	0.40
Dead+Wind 30 deg - Service	47.28	4.17	-7.29	-736.20	-419.83	0.02
Dead+Wind 60 deg - Service	47.28	7.23	-4.20	-424.89	-727.95	-0.36
Dead+Wind 90 deg - Service	47.28	8.36	0.01	-0.16	-841.24	-0.65
Dead+Wind 120 deg - Service	47.28	7.25	4.23	424.18	-729.37	-0.77
Dead+Wind 150 deg - Service	47.28	4.19	7.31	734.45	-422.29	-0.67
Dead+Wind 180 deg - Service	47.28	0.01	8.43	847.49	-2.30	-0.40
Dead+Wind 210 deg - Service	47.28	-4.17	7.29	733.03	418.07	-0.02
Dead+Wind 240 deg - Service	47.28	-7.23	4.20	421.72	726.18	0.36
Dead+Wind 270 deg - Service	47.28	-8.36	-0.01	-3.01	839.48	0.65
Dead+Wind 300 deg - Service	47.28	-7.25	-4.23	-427.35	727.60	0.77
Dead+Wind 330 deg - Service	47.28	-4.19	-7.31	-737.62	420.53	0.67

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX	PY	PZ	PX	PY	PZ	% Error
	K	K	K	K	K	K	
1	0.00	-47.28	0.00	0.00	47.28	0.00	0.000%
2	-0.07	-56.73	-42.01	0.07	56.73	42.01	0.000%
3	-0.07	-42.55	-42.01	0.07	42.55	42.01	0.000%
4	20.76	-56.73	-36.35	-20.76	56.73	36.35	0.000%
5	20.76	-42.55	-36.35	-20.76	42.55	36.35	0.000%
6	36.04	-56.73	-20.94	-36.04	56.73	20.94	0.000%
7	36.04	-42.55	-20.94	-36.04	42.55	20.94	0.000%
8	41.65	-56.73	0.07	-41.65	56.73	-0.07	0.000%
9	41.65	-42.55	0.07	-41.65	42.55	-0.07	0.000%
10	36.11	-56.73	21.07	-36.11	56.73	-21.07	0.000%
11	36.11	-42.55	21.07	-36.11	42.55	-21.07	0.000%
12	20.89	-56.73	36.42	-20.89	56.73	-36.42	0.000%
13	20.89	-42.55	36.42	-20.89	42.55	-36.42	0.000%
14	0.07	-56.73	42.01	-0.07	56.73	-42.01	0.000%
15	0.07	-42.55	42.01	-0.07	42.55	-42.01	0.000%

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
16	-20.76	-56.73	36.35	20.76	56.73	-36.35	0.000%
17	-20.76	-42.55	36.35	20.76	42.55	-36.35	0.000%
18	-36.04	-56.73	20.94	36.04	56.73	-20.94	0.000%
19	-36.04	-42.55	20.94	36.04	42.55	-20.94	0.000%
20	-41.65	-56.73	-0.07	41.65	56.73	0.07	0.000%
21	-41.65	-42.55	-0.07	41.65	42.55	0.07	0.000%
22	-36.11	-56.73	-21.07	36.11	56.73	21.07	0.000%
23	-36.11	-42.55	-21.07	36.11	42.55	21.07	0.000%
24	-20.89	-56.73	-36.42	20.89	56.73	36.42	0.000%
25	-20.89	-42.55	-36.42	20.89	42.55	36.42	0.000%
26	0.00	-92.02	0.00	-0.00	92.02	0.00	0.000%
27	-0.01	-92.02	-10.32	0.01	92.02	10.32	0.000%
28	5.12	-92.02	-8.93	-5.12	92.02	8.93	0.000%
29	8.88	-92.02	-5.15	-8.88	92.02	5.15	0.000%
30	10.26	-92.02	0.01	-10.26	92.02	-0.01	0.000%
31	8.89	-92.02	5.17	-8.89	92.02	-5.17	0.000%
32	5.14	-92.02	8.94	-5.14	92.02	-8.94	0.000%
33	0.01	-92.02	10.32	-0.01	92.02	-10.32	0.000%
34	-5.12	-92.02	8.93	5.12	92.02	-8.93	0.000%
35	-8.88	-92.02	5.15	8.88	92.02	-5.15	0.000%
36	-10.26	-92.02	-0.01	10.26	92.02	0.01	0.000%
37	-8.89	-92.02	-5.17	8.89	92.02	5.17	0.000%
38	-5.14	-92.02	-8.94	5.14	92.02	8.94	0.000%
39	-0.01	-47.28	-8.43	0.01	47.28	8.43	0.000%
40	4.17	-47.28	-7.29	-4.17	47.28	7.29	0.000%
41	7.23	-47.28	-4.20	-7.23	47.28	4.20	0.000%
42	8.36	-47.28	0.01	-8.36	47.28	-0.01	0.000%
43	7.25	-47.28	4.23	-7.25	47.28	-4.23	0.000%
44	4.19	-47.28	7.31	-4.19	47.28	-7.31	0.000%
45	0.01	-47.28	8.43	-0.01	47.28	-8.43	0.000%
46	-4.17	-47.28	7.29	4.17	47.28	-7.29	0.000%
47	-7.23	-47.28	4.20	7.23	47.28	-4.20	0.000%
48	-8.36	-47.28	-0.01	8.36	47.28	0.01	0.000%
49	-7.25	-47.28	-4.23	7.25	47.28	4.23	0.000%
50	-4.19	-47.28	-7.31	4.19	47.28	7.31	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	4	0.00000001	0.00025120
3	Yes	4	0.00000001	0.00015553
4	Yes	5	0.00000001	0.00015562
5	Yes	5	0.00000001	0.00006991
6	Yes	5	0.00000001	0.00016107
7	Yes	5	0.00000001	0.00007263
8	Yes	4	0.00000001	0.00045920
9	Yes	4	0.00000001	0.00028988
10	Yes	5	0.00000001	0.00014708
11	Yes	5	0.00000001	0.00006594
12	Yes	5	0.00000001	0.00016519
13	Yes	5	0.00000001	0.00007458
14	Yes	4	0.00000001	0.00028158
15	Yes	4	0.00000001	0.00017502
16	Yes	5	0.00000001	0.00015504
17	Yes	5	0.00000001	0.00006984
18	Yes	5	0.00000001	0.00014961
19	Yes	5	0.00000001	0.00006728
20	Yes	4	0.00000001	0.00048984
21	Yes	4	0.00000001	0.00030939
22	Yes	5	0.00000001	0.00016660
23	Yes	5	0.00000001	0.00007531
24	Yes	5	0.00000001	0.00014847
25	Yes	5	0.00000001	0.00006650

26	Yes	4	0.00000001	0.00001098
27	Yes	5	0.00000001	0.00007274
28	Yes	5	0.00000001	0.00008377
29	Yes	5	0.00000001	0.00008386
30	Yes	5	0.00000001	0.00007197
31	Yes	5	0.00000001	0.00008181
32	Yes	5	0.00000001	0.00008278
33	Yes	5	0.00000001	0.00007125
34	Yes	5	0.00000001	0.00008147
35	Yes	5	0.00000001	0.00008107
36	Yes	5	0.00000001	0.00007137
37	Yes	5	0.00000001	0.00008366
38	Yes	5	0.00000001	0.00008300
39	Yes	4	0.00000001	0.00001780
40	Yes	4	0.00000001	0.00005158
41	Yes	4	0.00000001	0.00005859
42	Yes	4	0.00000001	0.00002574
43	Yes	4	0.00000001	0.00004646
44	Yes	4	0.00000001	0.00006313
45	Yes	4	0.00000001	0.00001784
46	Yes	4	0.00000001	0.00005081
47	Yes	4	0.00000001	0.00004624
48	Yes	4	0.00000001	0.00002583
49	Yes	4	0.00000001	0.00006559
50	Yes	4	0.00000001	0.00004654

Compression Checks

Pole Design Data

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	K	K	
L1	149 - 135.04 (1)	TP26.77x22x0.19	13.96	0.00	0.0	15.02	-3.82	878.83	0.004
L2	135.04 - 92.17 (2)	TP40.91x25.06x0.25	46.79	0.00	0.0	30.74	-23.02	1798.24	0.013
L3	92.17 - 45.21 (3)	TP56.31x38.49x0.31	52.63	0.00	0.0	53.00	-35.28	3100.31	0.011
L4	45.21 - 0 (4)	TP71x53.12x0.38	52.79	0.00	0.0	84.06	-56.71	4784.64	0.012

Pole Bending Design Data

Section No.	Elevation	Size	M_{ux}	ϕM_{nx}	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy}	ϕM_{ny}	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
	ft		kip-ft	kip-ft		kip-ft	kip-ft	
L1	149 - 135.04 (1)	TP26.77x22x0.19	44.33	522.10	0.085	0.00	522.10	0.000
L2	135.04 - 92.17 (2)	TP40.91x25.06x0.25	804.74	1548.18	0.520	0.00	1548.18	0.000
L3	92.17 - 45.21 (3)	TP56.31x38.49x0.31	2221.43	3509.52	0.633	0.00	3509.52	0.000
L4	45.21 - 0 (4)	TP71x53.12x0.38	4249.15	6966.27	0.610	0.00	6966.27	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	149 - 135.04 (1)	TP26.77x22x0.19	5.30	260.07	0.020	0.04	582.84	0.000
L2	135.04 - 92.17 (2)	TP40.91x25.06x0.25	28.42	529.72	0.054	2.00	1830.19	0.001
L3	92.17 - 45.21 (3)	TP56.31x38.49x0.31	34.59	930.09	0.037	2.00	4352.08	0.000
L4	45.21 - 0 (4)	TP71x53.12x0.38	42.04	1475.28	0.028	1.99	9124.58	0.000

Pole Interaction Design Data

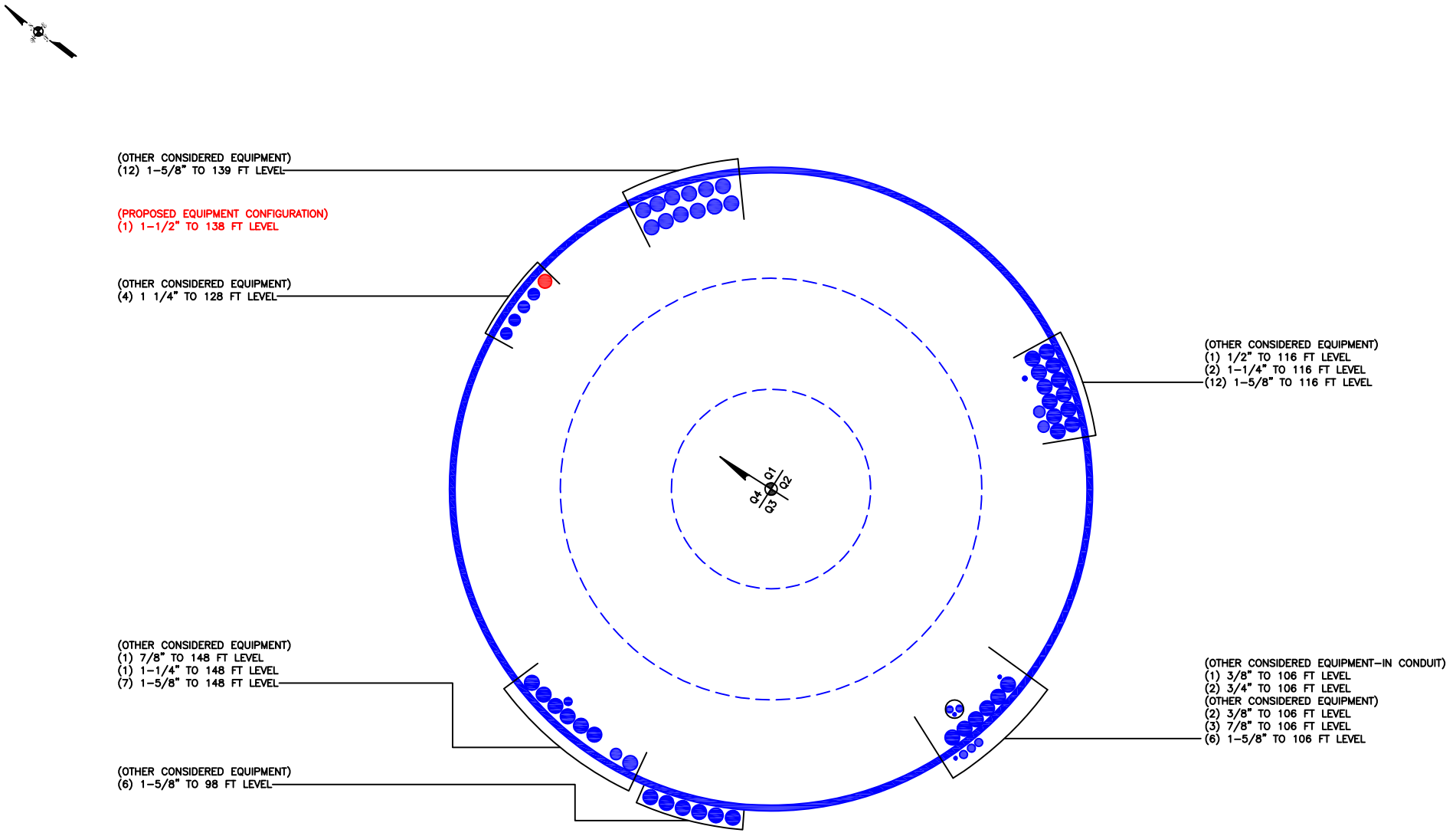
Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	149 - 135.04 (1)	0.004	0.085	0.000	0.020	0.000	0.090	1.050	4.8.2
L2	135.04 - 92.17 (2)	0.013	0.520	0.000	0.054	0.001	0.536	1.050	4.8.2
L3	92.17 - 45.21 (3)	0.011	0.633	0.000	0.037	0.000	0.646	1.050	4.8.2
L4	45.21 - 0 (4)	0.012	0.610	0.000	0.028	0.000	0.623	1.050	4.8.2

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	149 - 135.04	Pole	TP26.77x22x0.19	1	-3.82	922.77	8.5	Pass
L2	135.04 - 92.17	Pole	TP40.91x25.06x0.25	2	-23.02	1888.15	51.0	Pass
L3	92.17 - 45.21	Pole	TP56.31x38.49x0.31	3	-35.28	3255.33	61.5	Pass
L4	45.21 - 0	Pole	TP71x53.12x0.38	4	-56.71	5023.87	59.3	Pass
							Summary	
						Pole (L3)	61.5	Pass
						RATING =	**61.5**	**Pass**

APPENDIX B

BASE LEVEL DRAWING


(OTHER CONSIDERED EQUIPMENT)
(12) 1-5/8" TO 139 FT LEVEL
(PROPOSED EQUIPMENT CONFIGURATION)
(1) 1-1/2" TO 138 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(4) 1 1/4" TO 128 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(1) 1/2" TO 116 FT LEVEL
(2) 1-1/4" TO 116 FT LEVEL
(12) 1-5/8" TO 116 FT LEVEL
Q1
Q2
Q3
Q4
(OTHER CONSIDERED EQUIPMENT)
(1) 7/8" TO 148 FT LEVEL
(1) 1-1/4" TO 148 FT LEVEL
(7) 1-5/8" TO 148 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(6) 1-5/8" TO 98 FT LEVEL
(OTHER CONSIDERED EQUIPMENT-IN CONDUIT)
(1) 3/8" TO 106 FT LEVEL
(2) 3/4" TO 106 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(2) 3/8" TO 106 FT LEVEL
(3) 7/8" TO 106 FT LEVEL
(6) 1-5/8" TO 106 FT LEVEL

APPENDIX C

ADDITIONAL CALCULATIONS

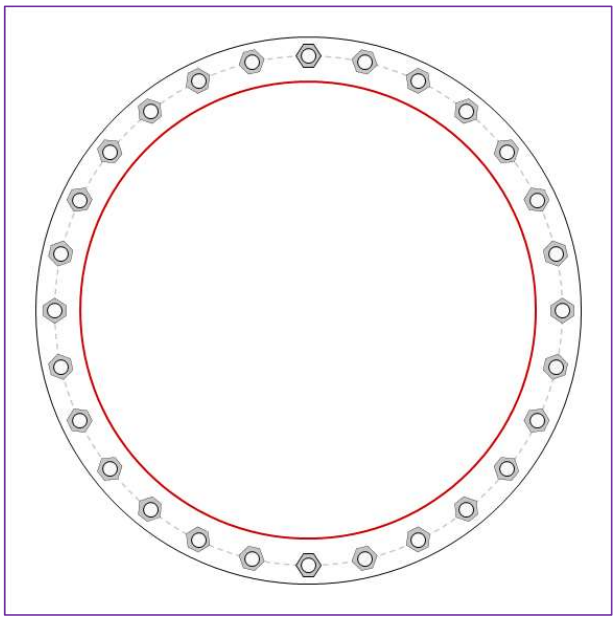
Monopole Base Plate Connection

Site Info	
BU #	876343
Site Name	ORD WEST STONE PRO
Order #	553888 Rev.4

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	No
l_{ar} (in)	0.5

Applied Loads	
Moment (kip-ft)	4249.15
Axial Force (kips)	56.71
Shear Force (kips)	42.04

**TIA-222-H Section 15.5 Applied*



Connection Properties

Anchor Rod Data

(28) 2-1/4" ø bolts (A615-75 N; Fy=75 ksi, Fu=100 ksi) on 79" BC

Base Plate Data

85" OD x 2.75" Plate (A572-50; Fy=50 ksi, Fu=65 ksi)

Stiffener Data

N/A

Pole Data

71" x 0.375" 18-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Analysis Results

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

Pu_t = 90.15	ϕPn_t = 243.75	**Stress Rating**
Vu = 1.5	ϕVn = 149.1	**35.2%**
Mu = n/a	ϕMn = n/a	**Pass**

Base Plate Summary

Max Stress (ksi):	15.57	(Flexural)
Allowable Stress (ksi):	45	
Stress Rating:	**33.0%**	**Pass**

Pier and Pad Foundation

BU # :	876343
Site Name:	GUILFORD WEST
App. Number:	553888 Rev.4

TIA-222 Revision:	H
Tower Type:	Monopole

Top & Bot. Pad Rein. Different?:	☑
Block Foundation?:	☐
Rectangular Pad?:	☐

Superstructure Analysis Reactions		
Compression, P_{comp}:	56.73	kips
Base Shear, Vu_comp:	42.01	kips
Moment, M_u:	4249.15	ft-kips
Tower Height, **H**:	149	ft
BP Dist. Above Fdn, bp_{dist}:	2.75	in

Pier Properties		
Pier Shape:	Square	
Pier Diameter, **dpier**:	8.5	ft
Ext. Above Grade, **E**:	1	ft
Pier Rebar Size, **Sc**:	9	
Pier Rebar Quantity, **mc**:	48	
Pier Tie/Spiral Size, **St**:	4	
Pier Tie/Spiral Quantity, **mt**:	20	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier}:	3	in

Pad Properties		
Depth, **D**:	12	ft
Pad Width, W_1:	30	ft
Pad Thickness, **T**:	3	ft
Pad Rebar Size (Top dir.2), Sp_{top2}:	8	
Pad Rebar Quantity (Top dir. 2), mp_{top2}:	34	
Pad Rebar Size (Bottom dir. 2), Sp_2:	8	
Pad Rebar Quantity (Bottom dir. 2), mp_2:	58	
Pad Clear Cover, cc_{pad}:	3	in

Material Properties		
Rebar Grade, **Fy**:	60	ksi
Concrete Compressive Strength, **F'c**:	4	ksi
Dry Concrete Density, δc:	150	pcf

Soil Properties		
Total Soil Unit Weight, γ:	120	pcf
Ultimate Net Bearing, Qnet:	21.330	ksf
Cohesion, **Cu**:		ksf
Friction Angle, φ:	30	degrees
SPT Blow Count, N_{blows}:	50	
Base Friction, μ:	0.5	
Neglected Depth, **N**:	4.25	ft
Foundation Bearing on Rock?	Yes	
Groundwater Depth, **gw**:	N/A	ft

<--Toggle between Gross and Net

Foundation Analysis Checks	Capacity	Demand	Rating*	Check
Lateral (Sliding) (kips)	818.31	42.01	**4.9%**	**Pass**
Bearing Pressure (ksf)	17.08	3.45	**19.2%**	**Pass**
*Overturning (kip*ft)*	17567.56	4804.91	**27.4%**	**Pass**
*Pier Flexure (Comp.) (kip*ft)*	9583.61	4669.25	**46.4%**	**Pass**
Pier Compression (kip)	45985.68	186.78	**0.4%**	**Pass**
*Pad Flexure (kip*ft)*	6263.43	1588.13	**24.1%**	**Pass**
Pad Shear - 1-way (kips)	1075.81	215.00	**19.0%**	**Pass**
Pad Shear - 2-way (Comp) (ksi)	0.190	0.040	**19.9%**	**Pass**
*Flexural 2-way (Comp) (kip*ft)*	5814.50	2801.55	**45.9%**	**Pass**

**Rating per TIA-222-H Section 15.5*

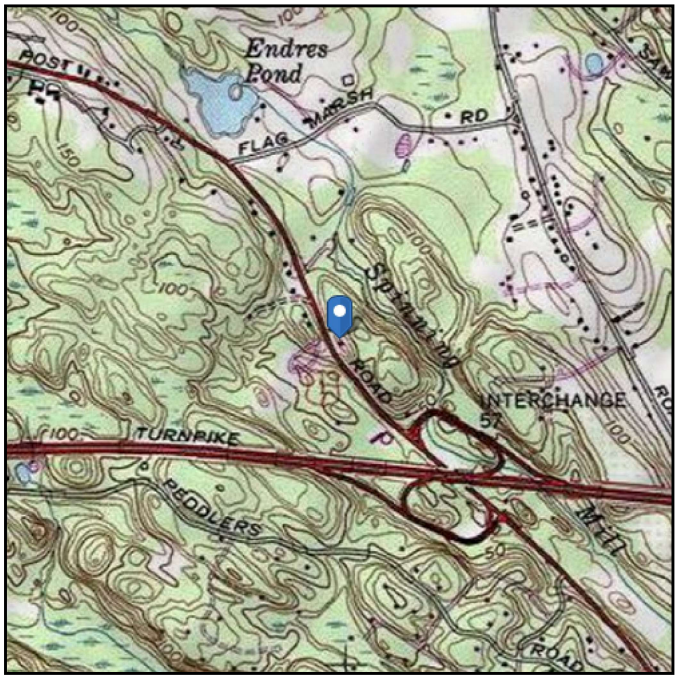
Structural Rating*:	**46.4%**
Soil Rating*:	**27.4%**

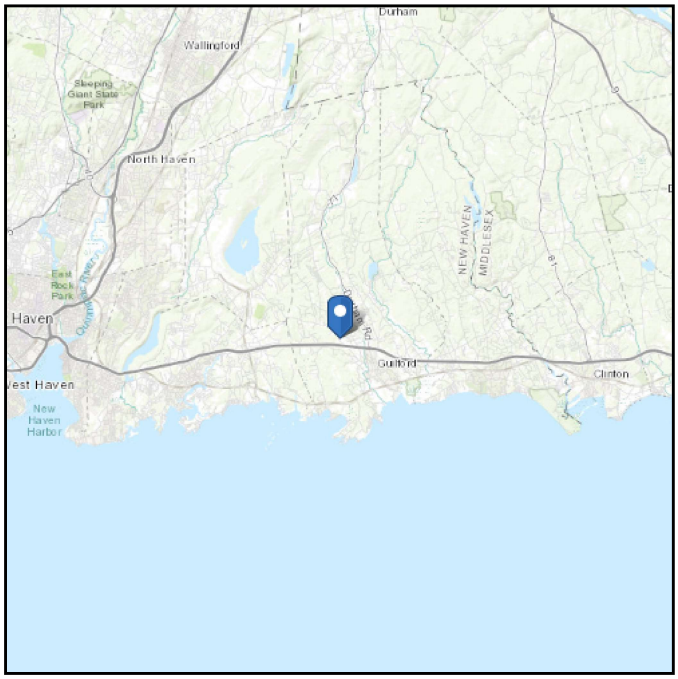
ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 70.13 ft (NAVD 88)
Latitude: 41.300353
Longitude: -72.708092





Wind

Results:

Wind Speed:	128 Vmph
10-year MRI	78 Vmph
25-year MRI	88 Vmph
50-year MRI	95 Vmph
100-year MRI	104 Vmph

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

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-10 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

Site is in a hurricane-prone region as defined in ASCE/SEI 7-10 Section 26.2. Glazed openings need not be protected against wind-borne debris.

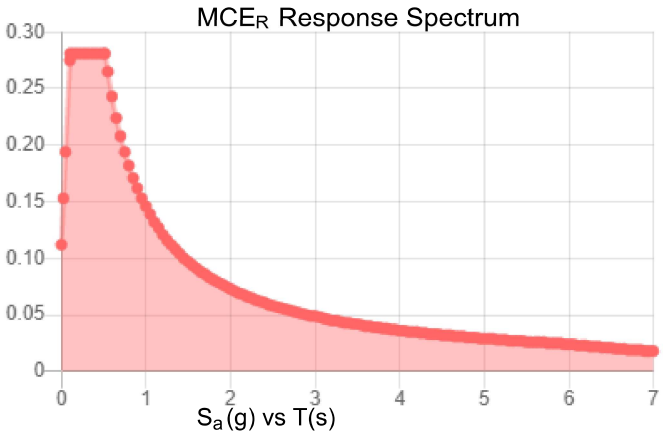
Seismic

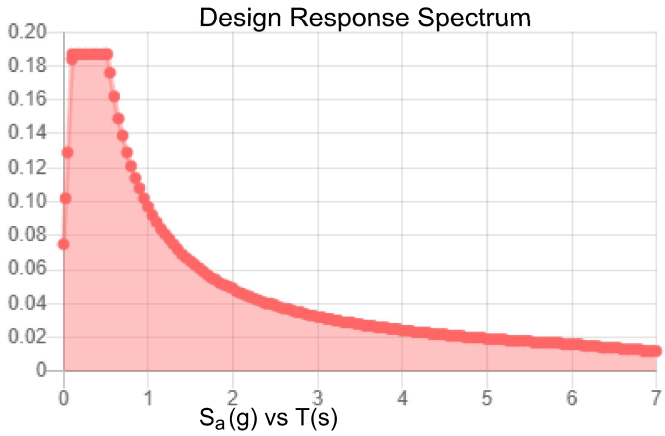
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.176	S_{DS} :	0.187
S_1 :	0.061	S_{D1} :	0.097
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.09
S_{MS} :	0.281	PGA_M :	0.144
S_{M1} :	0.146	F_{PGA} :	1.6
		I_e :	1

Seismic Design Category B





Data Accessed: Fri Jun 04 2021

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

Ice

Results:

Ice Thickness:	0.75 in.
Concurrent Temperature:	15 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Fri Jun 04 2021

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

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 50-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Exhibit E

Mount Analysis

Date: **August 2, 2021**

Darcy Tarr
Crown Castle
3530 Toringdon Way, Suite 300
Charlotte, NC 28277
(704) 405-6589

Trylon
1825 W. Walnut Hill Lane,
Suite 302
Irving, TX 75038
214-930-1730

Subject:	**Mount Replacement Analysis Report**	
Carrier Designation:	**DISH Network Equipment Change-Out**	
	Carrier Site Number:	BOHVN00026A
	Carrier Site Name:	CT-CCI-T-876343
Crown Castle Designation:	**Crown Castle BU Number:**	876343
	Crown Castle Site Name:	Guilford West Stone Property
	Crown Castle JDE Job Number:	645700
	Crown Castle Order Number:	553888 Rev. *4*
Engineering Firm Designation:	**Trylon Report Designation:**	189203
Site Data:	**1919 Boston Post Rd., Guilford, New Haven County, CT, 06437** **Latitude 41°18'1.27" Longitude -72°42'29.13"**	
Structure Information:	**Tower Height & Type:**	**149.0 ft Monopole**
	Mount Elevation:	**138.0 ft**
	Mount Type:	**8.0 ft Platform**

Dear Darcy Tarr,

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

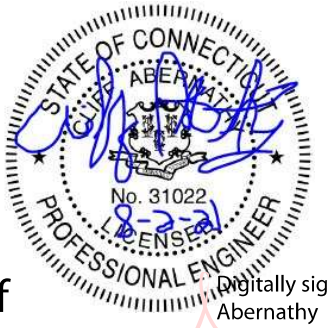
The purpose of the analysis is to determine acceptability of the mount stress level. Based on our analysis we have determined the mount stress level to be:

Platform **Sufficient**
***Sufficient upon completion of the changes listed in the 'Recommendations' section of this report.**

This analysis utilizes an ultimate 3-second gust wind speed of 130 mph as required by the 2018 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Mount analysis prepared by: Trevor Leahy, E.I.T.

Respectfully Submitted by:
Cliff Abernathy, P.E.



Cliff Abernathy

Digitally signed by Cliff Abernathy
Date: 2021.08.02 16:17:13 -04'00'

TABLE OF CONTENTS

1) INTRODUCTION

This is a proposed 3 sector 8.0 ft Platform Mount, designed by Commscope.

2) ANALYSIS CRITERIA

Building Code:	2015 IBC / 2018 CTSBC
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Ultimate Wind Speed:	130 mph
Exposure Category:	C
Topographic Factor at Base:	1.0
Topographic Factor at Mount:	1.0
Ice Thickness:	1.50 in
Wind Speed with Ice:	50 mph
Seismic S_s:	0.176
Seismic S_1:	0.061
Live Loading Wind Speed:	30 mph
Man Live Load at Mid/End-Points:	250 lb
Man Live Load at Mount Pipes:	500 lb

Table 1 - Proposed Equipment Configuration

Mount Centerline (ft)	Antenna Centerline (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Mount / Modification Details
138.0	138.0	3	JMA Wireless	MX08FRO665-21	8.0 ft Platform [Commscope MC-PK8-DSH]
		3	Fujitsu	TA08025-B604	
		3	Fujitsu	TA08025-B605	
		1	Raycap	RDIDC-9181-PF-48	

3) ANALYSIS PROCEDURE

Table 2 - Documents Provided

Document	Remarks	Reference	Source
Crown Application	DISH Network Application	553888 Rev. 4	CCI Sites
Mount Manufacturer Drawings	Commscope	MC-PK8-DSH	Trylon
Tower Analysis	Tower Engineering Professionals	9833383	CCI Sites

3.1) Analysis Method

RISA-3D (Version 17.0.4), a commercially available analysis software package, was used to create a three-dimensional model of the antenna mounting system and calculate member stresses for various loading cases.

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

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

3.2) Assumptions

1) The antenna mounting system was properly fabricated, installed and maintained in good condition in accordance with its original design and manufacturer's specifications.
2) The configuration of antennas, mounts, and other appurtenances are as specified in Table 1 and the referenced drawings.
3) All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report.
4) The analysis will be required to be revised if the existing conditions in the field differ from those shown in the above-referenced documents or assumed in this analysis. No allowance was made for any damaged, missing, or rusted members.
5) Prior structural modifications to the tower mounting system are assumed to be installed as shown per available data.
6) Steel grades have been assumed as follows, unless noted otherwise:

Channel, Solid Round, Angle, Plate	ASTM A36 (GR 36)
HSS (Rectangular)	ASTM A500 (GR B-46)
Pipe	ASTM A53 (GR 35)
Connection Bolts	ASTM A325

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

4) ANALYSIS RESULTS

Table 3 - Mount Component Stresses vs. Capacity (Platform, All Sectors)

Notes	Component	Critical Member	Centerline (ft)	% Capacity	Pass / Fail
1, 2	Mount Pipe(s)	MP3	138.0	49.7	Pass
	Horizontal(s)	H1		14.8	Pass
	Standoff(s)	M2		49.2	Pass
	Bracing(s)	M11		44.0	Pass
	Handrail(s)	M21		29.2	Pass
	Plate(s)	M15		35.0	Pass
	Mount Connection(s)	-		27.7	Pass

Structure Rating (max from all components) =	49.7%

Notes:
1) See additional documentation in "Appendix C - Software Analysis Output" for calculations supporting the % capacity consumed.
2) Rating per TIA-222-H, Section 15.5

4.1) Recommendations

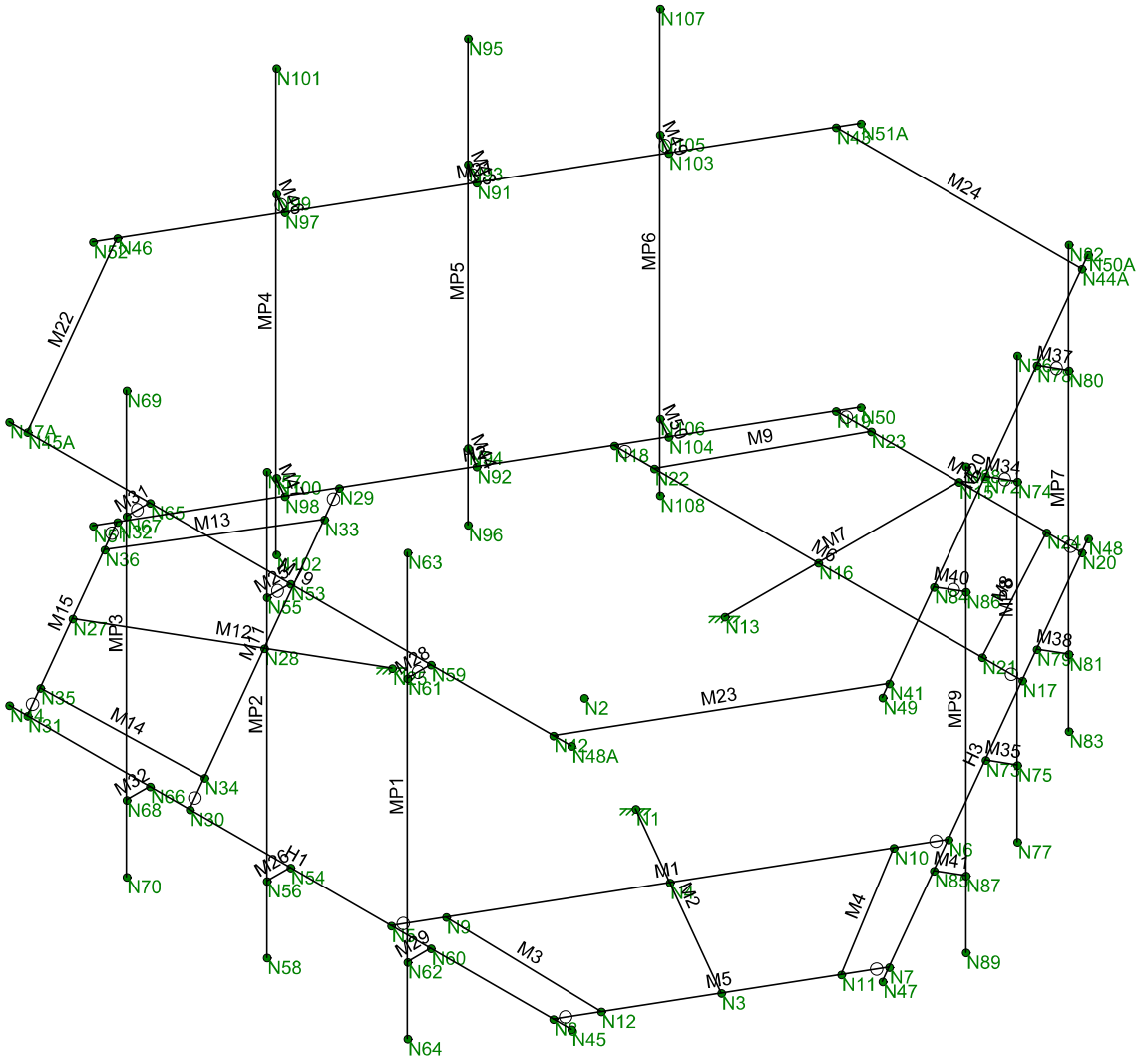
The mount has sufficient capacity to carry the proposed loading configuration. In order for the results of the analysis to be considered valid, the proposed mount listed below must be installed.

1. Commscope MC-PK8-DSH.

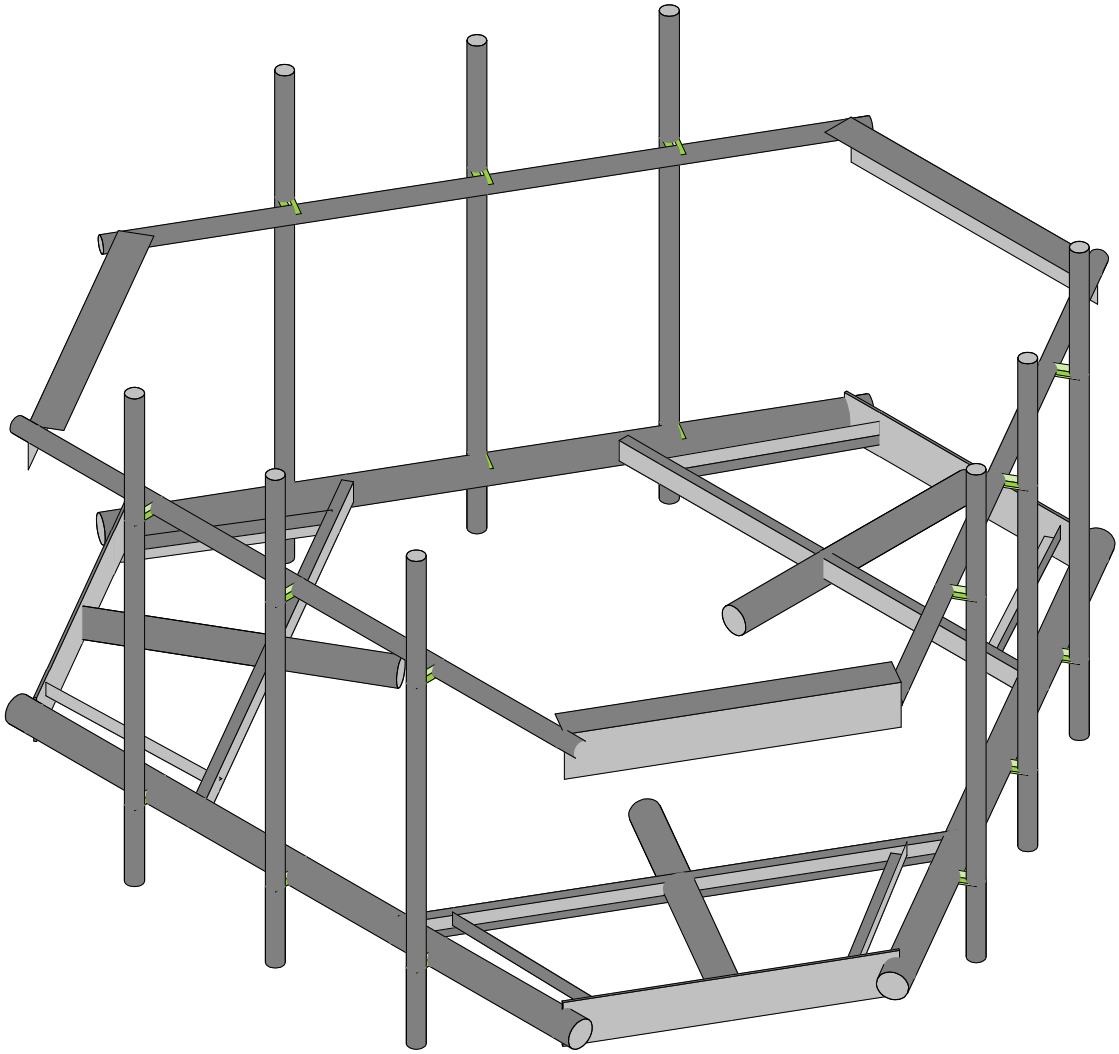
No structural modifications are required at this time, provided that the above-listed changes are implemented.

APPENDIX A

WIRE FRAME AND RENDERED MODELS



Trylon	Guilford West Stone Property (BU 876343 Order 5538 ...	SK - 1
TL		Aug 2, 2021 at 12:00 PM
189203		MC-PK8-C_loaded.r3d



Trylon	Guilford West Stone Property (BU 876343 Order 5538 ...	SK - 2
TL		Aug 2, 2021 at 12:01 PM
189203		MC-PK8-C_loaded.r3d

APPENDIX B

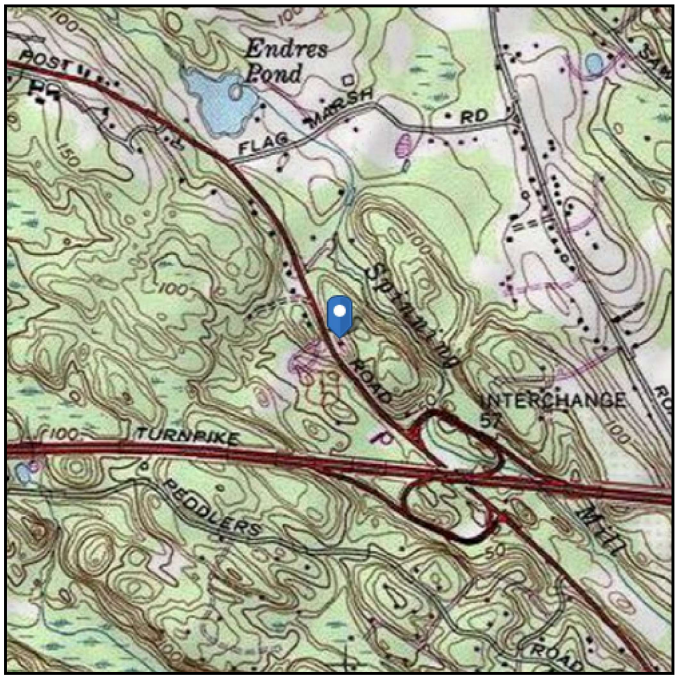
SOFTWARE INPUT CALCULATIONS

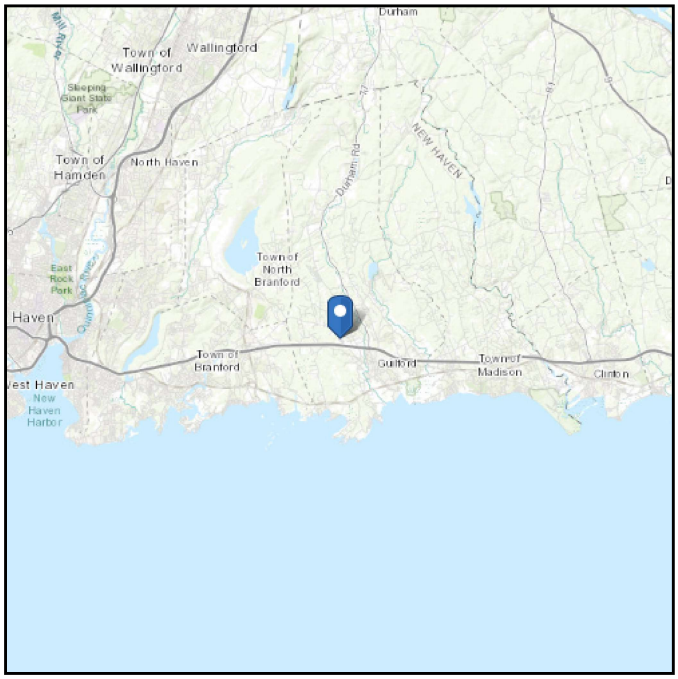
ASCE 7 Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-10
Risk Category: II
Soil Class: B - Rock

Elevation: 70.13 ft (NAVD 88)
Latitude: 41.300353
Longitude: -72.708092





Ice

Results:

Ice Thickness:	0.75 in.
Concurrent Temperature:	15 F
Gust Speed:	50 mph

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

Date Accessed: Mon Aug 02 2021

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

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 50-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Trylon
1825 W. Walnut Hill Lane Suite 120
Irving, TX 75038

TIA LOAD CALCULATOR 2.0

PROJECT DATA	
Job Code:	189203
Carrier Site ID:	BOHVN00026A
Carrier Site Name:	CT-CCI-T-876343

CODES AND STANDARDS	
Building Code:	2015 IBC
Local Building Code:	18 Connecticut Building Co
Design Standard:	TIA-222-H

STRUCTURE DETAILS		
Mount Type:	Platform	--
Mount Elevation:	138.0	ft.
Number of Sectors:	3	--
Structure Type:	Monopole	--
Structure Height:	149.0	ft.

ANALYSIS CRITERIA		
Structure Risk Category:	II	--
Exposure Category:	C	--
Site Class:	B - Rock	--
Ground Elevation:	70.13	ft.

TOPOGRAPHIC DATA		
Topographic Category:	1.00	--
Topographic Feature:	N/A	--
Crest Point Elevation:	0.00	ft.
Base Point Elevation:	0.00	ft.
Crest to Mid-Height (L/2):	0.00	ft.
Distance from Crest (x):	0.00	ft.
Base Topo Factor (K_{zt}):	1.00	--
Mount Topo Factor (K_{zt}):	1.00	--

WIND PARAMETERS		
Design Wind Speed:	130	mph
Wind Escalation Factor (K_s):	1.00	--
Velocity Coefficient (K_z):	1.35	--
Directionality Factor (K_d):	0.95	--
Gust Effect Factor (Gh):	1.00	--
Shielding Factor (K_a):	0.90	--
Velocity Pressure (q_z):	55.53	psf

ICE PARAMETERS		
Design Ice Wind Speed:	50	mph
Design Ice Thickness (t_i):	1.50	in
Importance Factor (I_i):	1.00	--
Ice Velocity Pressure (q_{zi}):	55.53	psf
Mount Ice Thickness (t_{iz}):	1.73	in

WIND STRUCTURE CALCULATIONS		
Flat Member Pressure:	99.95	psf
Round Member Pressure:	59.97	psf
Ice Wind Pressure:	7.56	psf

SEISMIC PARAMETERS		
Importance Factor (I_e):	1.00	--
Short Period Accel .(S_s):	0.18	g
1 Second Accel (S_1):	0.06	g
Short Period Des. (S_{DS}):	0.11	g
1 Second Des. (S_{D1}):	0.03	g
Short Period Coeff. (F_a):	0.90	--
1 Second Coeff. (F_v):	0.80	--
Response Coefficient (Cs):	0.05	--
Amplification Factor (A_S):	1.20	--

LOAD COMBINATIONS [LRFD]

#	Description
1	1.4DL
2	1.2DL + 1WL 0 AZI
3	1.2DL + 1WL 30 AZI
4	1.2DL + 1WL 45 AZI
5	1.2DL + 1WL 60 AZI
6	1.2DL + 1WL 90 AZI
7	1.2DL + 1WL 120 AZI
8	1.2DL + 1WL 135 AZI
9	1.2DL + 1WL 150 AZI
10	1.2DL + 1WL 180 AZI
11	1.2DL + 1WL 210 AZI
12	1.2DL + 1WL 225 AZI
13	1.2DL + 1WL 240 AZI
14	1.2DL + 1WL 270 AZI
15	1.2DL + 1WL 300 AZI
16	1.2DL + 1WL 315 AZI
17	1.2DL + 1WL 330 AZI
18	0.9DL + 1WL 0 AZI
19	0.9DL + 1WL 30 AZI
20	0.9DL + 1WL 45 AZI
21	0.9DL + 1WL 60 AZI
22	0.9DL + 1WL 90 AZI
23	0.9DL + 1WL 120 AZI
24	0.9DL + 1WL 135 AZI
25	0.9DL + 1WL 150 AZI
26	0.9DL + 1WL 180 AZI
27	0.9DL + 1WL 210 AZI
28	0.9DL + 1WL 225 AZI
29	0.9DL + 1WL 240 AZI
30	0.9DL + 1WL 270 AZI
31	0.9DL + 1WL 300 AZI
32	0.9DL + 1WL 315 AZI
33	0.9DL + 1WL 330 AZI
34	1.2DL + 1DLi + 1WLi 0 AZI
35	1.2DL + 1DLi + 1WLi 30 AZI
36	1.2DL + 1DLi + 1WLi 45 AZI
37	1.2DL + 1DLi + 1WLi 60 AZI
38	1.2DL + 1DLi + 1WLi 90 AZI
39	1.2DL + 1DLi + 1WLi 120 AZI
40	1.2DL + 1DLi + 1WLi 135 AZI
41	1.2DL + 1DLi + 1WLi 150 AZI

#	Description
42	1.2DL + 1DLi + 1WLi 180 AZI
43	1.2DL + 1DLi + 1WLi 210 AZI
44	1.2DL + 1DLi + 1WLi 225 AZI
45	1.2DL + 1DLi + 1WLi 240 AZI
46	1.2DL + 1DLi + 1WLi 270 AZI
47	1.2DL + 1DLi + 1WLi 300 AZI
48	1.2DL + 1DLi + 1WLi 315 AZI
49	1.2DL + 1DLi + 1WLi 330 AZI
50	(1.2+0.2Sds) + 1.0E 0 AZI
51	(1.2+0.2Sds) + 1.0E 30 AZI
52	(1.2+0.2Sds) + 1.0E 45 AZI
53	(1.2+0.2Sds) + 1.0E 60 AZI
54	(1.2+0.2Sds) + 1.0E 90 AZI
55	(1.2+0.2Sds) + 1.0E 120 AZI
56	(1.2+0.2Sds) + 1.0E 135 AZI
57	(1.2+0.2Sds) + 1.0E 150 AZI
58	(1.2+0.2Sds) + 1.0E 180 AZI
59	(1.2+0.2Sds) + 1.0E 210 AZI
60	(1.2+0.2Sds) + 1.0E 225 AZI
61	(1.2+0.2Sds) + 1.0E 240 AZI
62	(1.2+0.2Sds) + 1.0E 270 AZI
63	(1.2+0.2Sds) + 1.0E 300 AZI
64	(1.2+0.2Sds) + 1.0E 315 AZI
65	(1.2+0.2Sds) + 1.0E 330 AZI
66	(0.9-0.2Sds) + 1.0E 0 AZI
67	(0.9-0.2Sds) + 1.0E 30 AZI
68	(0.9-0.2Sds) + 1.0E 45 AZI
69	(0.9-0.2Sds) + 1.0E 60 AZI
70	(0.9-0.2Sds) + 1.0E 90 AZI
71	(0.9-0.2Sds) + 1.0E 120 AZI
72	(0.9-0.2Sds) + 1.0E 135 AZI
73	(0.9-0.2Sds) + 1.0E 150 AZI
74	(0.9-0.2Sds) + 1.0E 180 AZI
75	(0.9-0.2Sds) + 1.0E 210 AZI
76	(0.9-0.2Sds) + 1.0E 225 AZI
77	(0.9-0.2Sds) + 1.0E 240 AZI
78	(0.9-0.2Sds) + 1.0E 270 AZI
79	(0.9-0.2Sds) + 1.0E 300 AZI
80	(0.9-0.2Sds) + 1.0E 315 AZI
81	(0.9-0.2Sds) + 1.0E 330 AZI
82-88	1.2D + 1.5 Lv1

#	Description
89	1.2D + 1.5Lm + 1.0Wm 0 AZI - MP1
90	1.2D + 1.5Lm + 1.0Wm 30 AZI - MP1
91	1.2D + 1.5Lm + 1.0Wm 45 AZI - MP1
92	1.2D + 1.5Lm + 1.0Wm 60 AZI - MP1
93	1.2D + 1.5Lm + 1.0Wm 90 AZI - MP1
94	1.2D + 1.5Lm + 1.0Wm 120 AZI - MP1
95	1.2D + 1.5Lm + 1.0Wm 135 AZI - MP1
96	1.2D + 1.5Lm + 1.0Wm 150 AZI - MP1
97	1.2D + 1.5Lm + 1.0Wm 180 AZI - MP1
98	1.2D + 1.5Lm + 1.0Wm 210 AZI - MP1
99	1.2D + 1.5Lm + 1.0Wm 225 AZI - MP1
100	1.2D + 1.5Lm + 1.0Wm 240 AZI - MP1
101	1.2D + 1.5Lm + 1.0Wm 270 AZI - MP1
102	1.2D + 1.5Lm + 1.0Wm 300 AZI - MP1
103	1.2D + 1.5Lm + 1.0Wm 315 AZI - MP1
104	1.2D + 1.5Lm + 1.0Wm 330 AZI - MP1
105	1.2D + 1.5Lm + 1.0Wm 0 AZI - MP2
106	1.2D + 1.5Lm + 1.0Wm 30 AZI - MP2
107	1.2D + 1.5Lm + 1.0Wm 45 AZI - MP2
108	1.2D + 1.5Lm + 1.0Wm 60 AZI - MP2
109	1.2D + 1.5Lm + 1.0Wm 90 AZI - MP2
110	1.2D + 1.5Lm + 1.0Wm 120 AZI - MP2
111	1.2D + 1.5Lm + 1.0Wm 135 AZI - MP2
112	1.2D + 1.5Lm + 1.0Wm 150 AZI - MP2
113	1.2D + 1.5Lm + 1.0Wm 180 AZI - MP2
114	1.2D + 1.5Lm + 1.0Wm 210 AZI - MP2
115	1.2D + 1.5Lm + 1.0Wm 225 AZI - MP2
116	1.2D + 1.5Lm + 1.0Wm 240 AZI - MP2
117	1.2D + 1.5Lm + 1.0Wm 270 AZI - MP2
118	1.2D + 1.5Lm + 1.0Wm 300 AZI - MP2
119	1.2D + 1.5Lm + 1.0Wm 315 AZI - MP2
120	1.2D + 1.5Lm + 1.0Wm 330 AZI - MP2

#	Description
121	1.2D + 1.5Lm + 1.0Wm 0 AZI - MP3
122	1.2D + 1.5Lm + 1.0Wm 30 AZI - MP3
123	1.2D + 1.5Lm + 1.0Wm 45 AZI - MP3
124	1.2D + 1.5Lm + 1.0Wm 60 AZI - MP3
125	1.2D + 1.5Lm + 1.0Wm 90 AZI - MP3
126	1.2D + 1.5Lm + 1.0Wm 120 AZI - MP3
127	1.2D + 1.5Lm + 1.0Wm 135 AZI - MP3
128	1.2D + 1.5Lm + 1.0Wm 150 AZI - MP3
129	1.2D + 1.5Lm + 1.0Wm 180 AZI - MP3
130	1.2D + 1.5Lm + 1.0Wm 210 AZI - MP3
131	1.2D + 1.5Lm + 1.0Wm 225 AZI - MP3
132	1.2D + 1.5Lm + 1.0Wm 240 AZI - MP3
133	1.2D + 1.5Lm + 1.0Wm 270 AZI - MP3
134	1.2D + 1.5Lm + 1.0Wm 300 AZI - MP3
135	1.2D + 1.5Lm + 1.0Wm 315 AZI - MP3
136	1.2D + 1.5Lm + 1.0Wm 330 AZI - MP3
137	1.2D + 1.5Lm + 1.0Wm 0 AZI - MP4
138	1.2D + 1.5Lm + 1.0Wm 30 AZI - MP4
139	1.2D + 1.5Lm + 1.0Wm 45 AZI - MP4
140	1.2D + 1.5Lm + 1.0Wm 60 AZI - MP4
141	1.2D + 1.5Lm + 1.0Wm 90 AZI - MP4
142	1.2D + 1.5Lm + 1.0Wm 120 AZI - MP4
143	1.2D + 1.5Lm + 1.0Wm 135 AZI - MP4
144	1.2D + 1.5Lm + 1.0Wm 150 AZI - MP4
145	1.2D + 1.5Lm + 1.0Wm 180 AZI - MP4
146	1.2D + 1.5Lm + 1.0Wm 210 AZI - MP4
147	1.2D + 1.5Lm + 1.0Wm 225 AZI - MP4
148	1.2D + 1.5Lm + 1.0Wm 240 AZI - MP4
149	1.2D + 1.5Lm + 1.0Wm 270 AZI - MP4
150	1.2D + 1.5Lm + 1.0Wm 300 AZI - MP4
151	1.2D + 1.5Lm + 1.0Wm 315 AZI - MP4
152	1.2D + 1.5Lm + 1.0Wm 330 AZI - MP4

*This page shows an example of maintenance loads for (4) pipes, the number of mount pipe LCs may vary per site

EQUIPMENT LOADING

Appurtenance Name/Location	Qty.	Elevation [ft]	--	EPA $_N$ (ft2)	EPA $_T$ (ft2)	Weight (lbs)
MX08FRO665-21	3	138	No Ice	12.49	5.87	82.50
MP1/MP4/MP7, 0/120/240	--	--	w/ Ice	13.71	6.99	284.27
TA08025-B604	3	138	No Ice	1.96	0.98	63.90
MP1/MP4/MP7, 0/120/240	--	--	w/ Ice	2.39	1.31	69.87
TA08025-B605	3	138	No Ice	1.96	1.13	75.00
MP1/MP4/MP7, 0/120/240	--	--	w/ Ice	2.39	1.47	74.43
RDIDC-9181-PF-48	1	138	No Ice	2.01	1.17	21.85
MP1, 0	--	--	w/ Ice	2.44	1.53	73.35
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
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			No Ice			
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			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			

EQUIPMENT LOADING [CONT.]

Appurtenance Name/Location	Qty.	Elevation [ft]	--	EPA_N (ft2)	EPA_T (ft2)	Weight (lbs)
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			

EQUIPMENT WIND CALCULATIONS

Appurtenance Name	Qty.	Elevation [ft]	K_{zt}	K_z	K_d	t_d	q_z [psf]	q_{zi} [psf]
MX08FRO665-21	3	138	1.00	1.35	0.95	1.73	55.53	8.21
TA08025-B604	3	138	1.00	1.35	0.95	1.73	55.53	8.21
TA08025-B605	3	138	1.00	1.35	0.95	1.73	55.53	8.21
RDIDC-9181-PF-48	1	138	1.00	1.35	0.95	1.73	55.53	8.21

EQUIPMENT LATERAL WIND FORCE CALCULATIONS

Appurtenance Name	Qty.	--	0° 180°	30° 210°	60° 240°	90° 270°	120° 300°	150° 330°
MX08FRO665-21	3	No Ice	624.12	375.91	541.38	293.18	541.38	375.91
MP1/MP4/MP7, 0/120/240	--	w/ Ice	101.39	64.11	88.96	51.69	88.96	64.11
TA08025-B604	3	No Ice	98.12	61.30	85.85	49.03	85.85	61.30
MP1/MP4/MP7, 0/120/240	--	w/ Ice	17.65	11.68	15.66	9.69	15.66	11.68
TA08025-B605	3	No Ice	98.12	66.86	87.70	56.44	87.70	66.86
MP1/MP4/MP7, 0/120/240	--	w/ Ice	17.65	12.58	15.96	10.89	15.96	12.58
RDIDC-9181-PF-48	1	No Ice	100.54	68.92	90.00	58.38	90.00	68.92
MP1, 0	--	w/ Ice	18.06	12.97	16.36	11.28	16.36	12.97
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
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		No Ice						
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		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						

EQUIPMENT LATERAL WIND FORCE CALCULATIONS [CONT.]

Appurtenance Name	Qty.	--	0° 180°	30° 210°	60° 240°	90° 270°	120° 300°	150° 330°
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
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		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						

EQUIPMENT SEISMIC FORCE CALCULATIONS

Appurtenance Name	***Qty.***	***Elevation [ft]***	***Weight [lbs]***	F_p [lbs]
MX08FRO665-21	3	138	82.5	5.23
TA08025-B604	3	138	63.9	4.05
TA08025-B605	3	138	75	4.75
RDIDC-9181-PF-48	1	138	21.85	1.38

APPENDIX C

SOFTWARE ANALYSIS OUTPUT

(Global) Model Settings

Display Sections for Member Calcs	5
Max Internal Sections for Member Calcs	97
Include Shear Deformation?	Yes
Increase Nailing Capacity for Wind?	Yes
Include Warping?	Yes
Trans Load Btwn Intersecting Wood Wall?	Yes
Area Load Mesh (in^2)	144
Merge Tolerance (in)	.12
P-Delta Analysis Tolerance	0.50%
Include P-Delta for Walls?	Yes
Automatically Iterate Stiffness for Walls?	Yes
Max Iterations for Wall Stiffness	3
Gravity Acceleration (in/sec^2)	386.4
Wall Mesh Size (in)	24
Eigensolution Convergence Tol. (1.E-)	4
Vertical Axis	Y
Global Member Orientation Plane	XZ
Static Solver	Sparse Accelerated
Dynamic Solver	Accelerated Solver

Hot Rolled Steel Code	AISC 15th(360-16): LRFD
Adjust Stiffness?	Yes(Iterative)
RISAConnection Code	AISC 15th(360-16): LRFD
Cold Formed Steel Code	AISI S100-12: LRFD
Wood Code	AWC NDS-15: ASD
Wood Temperature	< 100F
Concrete Code	ACI 318-14
Masonry Code	ACI 530-13: Strength
Aluminum Code	AA ADM1-10: LRFD - Building
Stainless Steel Code	AISC 14th(360-10): LRFD
Adjust Stiffness?	Yes(Iterative)

Number of Shear Regions	4
Region Spacing Increment (in)	4
Biaxial Column Method	Exact Integration
Parme Beta Factor (PCA)	.65
Concrete Stress Block	Rectangular
Use Cracked Sections?	Yes
Use Cracked Sections Slab?	Yes
Bad Framing Warnings?	No
Unused Force Warnings?	Yes
Min 1 Bar Diam. Spacing?	No
Concrete Rebar Set	REBAR_SET_ASTMA615
Min % Steel for Column	1
Max % Steel for Column	8

(Global) Model Settings, Continued

Seismic Code	ASCE 7-10
Seismic Base Elevation (in)	Not Entered
Add Base Weight?	Yes
Ct X	.02
Ct Z	.02
T X (sec)	Not Entered
T Z (sec)	Not Entered
R X	3
R Z	3
Ct Exp. X	.75
Ct Exp. Z	.75
SD1	1
SDS	1
S1	1
TL (sec)	5
Risk Cat	I or II
Drift Cat	Other
Om Z	1
Om X	1
Cd Z	1
Cd X	1
Rho Z	1
Rho X	1

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (/1E...	Density[k/ft...	Yield[psi]	Ry	Fu[psi]	Rt
1	A992	29000	11154	.3	.65	.49	50000	1.1	65000	1.1
2	A36 Gr.36	29000	11154	.3	.65	.49	36000	1.5	58000	1.2
3	A572 Gr.50	29000	11154	.3	.65	.49	50000	1.1	65000	1.1
4	A500 Gr.B RND	29000	11154	.3	.65	.527	42000	1.4	58000	1.3
5	A500 Gr.B Rect	29000	11154	.3	.65	.527	46000	1.4	58000	1.3
6	A53 Gr.B	29000	11154	.3	.65	.49	35000	1.6	60000	1.2
7	A1085	29000	11154	.3	.65	.49	50000	1.4	65000	1.3

Cold Formed Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (/1E5 F)	Density[k/ft^3]	Yield[psi]	Fu[psi]
1	A653 SS Gr33	29500	11346	.3	.65	.49	33000	45000
2	A653 SS Gr50/1	29500	11346	.3	.65	.49	50000	65000

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design ...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Plates	6.5"x0.37" Plate	Beam	RECT	A53 Gr.B	Typical	2.405	.027	8.468	.106
2	Grating Bracing	L2x2x3	Beam	Single Angle	A36 Gr.36	Typical	.722	.271	.271	.009
3	Standoffs	PIPE_3.5	Beam	Pipe	A53 Gr.B	Typical	2.5	4.52	4.52	9.04
4	Standoff Bracing	C3X5	Beam	Channel	A36 Gr.36	Typical	1.47	.241	1.85	.043
5	Handrails	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
6	Handrail Corners	L6 5/8x4 7/16x...	Beam	Single Angle	A36 Gr.36	Typical	2.039	3.593	9.575	.023
7	Horizontals	PIPE_3.5	Beam	Pipe	A53 Gr.B	Typical	2.5	4.52	4.52	9.04
8	Mount Pipes	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25

Cold Formed Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rul...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	CF1A	8CU1.25X057	Beam	None	A653 SS Gr33	Typical	.581	.057	4.41	.00063

Joint Boundary Conditions

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
1	N25	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	N1	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	N13	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(...
1	Self Weight	DL		-1			15		3	
2	Structure Wind Z	WLZ						51		
3	Structure Wind X	WLX						51		
4	Wind Load 0 AZI	WLZ					30			
5	Wind Load 30 AZI	None					30			
6	Wind Load 45 AZI	None					30			
7	Wind Load 60 AZI	None					30			
8	Wind Load 90 AZI	WLX					30			
9	Wind Load 120 AZI	None					30			
10	Wind Load 135 AZI	None					30			
11	Wind Load 150 AZI	None					30			
12	Ice Weight	OL1					15	51	3	
13	Ice Structure Wind Z	OL2						51		
14	Ice Structure Wind X	OL3						51		
15	Ice Wind Load 0 AZI	OL2					30			
16	Ice Wind Load 30 AZI	None					30			
17	Ice Wind Load 45 AZI	None					30			
18	Ice Wind Load 60 AZI	None					30			
19	Ice Wind Load 90 AZI	OL3					30			
20	Ice Wind Load 120 AZI	None					30			
21	Ice Wind Load 135 AZI	None					30			
22	Ice Wind Load 150 AZI	None					30			
23	Seismic Load Z	ELZ			-.063		15			
24	Seismic Load X	ELX	-.063				15			
25	Live Load 1 (Lv)	None					1			
26	Live Load 2 (Lv)	None					1			
27	Live Load 3 (Lv)	None					1			
28	Live Load 4 (Lv)	None					1			
29	Live Load 5 (Lv)	None					1			
30	Live Load 6 (Lv)	None					1			
31	Live Load 7 (Lv)	None					1			
32	Live Load 8 (Lv)	None					1			
33	Live Load 9 (Lv)	None					1			
34	Maintenance Load 1 (Lm)	None					1			
35	Maintenance Load 2 (Lm)	None					1			
36	Maintenance Load 3 (Lm)	None					1			
37	Maintenance Load 4 (Lm)	None					1			
38	Maintenance Load 5 (Lm)	None					1			
39	Maintenance Load 6 (Lm)	None					1			
40	Maintenance Load 7 (Lm)	None					1			
41	Maintenance Load 8 (Lm)	None					1			
42	Maintenance Load 9 (Lm)	None					1			
43	BLC 1 Transient Area Loads	None						9		

Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(...
44	BLC 12 Transient Area Loads	None						9		

Load Combinations

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
1	1.4DL	Yes	Y		DL	1.4																		
2	1.2DL + 1WL 0 AZI	Yes	Y		DL	1.2	2	1	3		4	1												
3	1.2DL + 1WL 30 AZI	Yes	Y		DL	1.2	2	.866	3	.5	5	1												
4	1.2DL + 1WL 45 AZI	Yes	Y		DL	1.2	2	.707	3	.707	6	1												
5	1.2DL + 1WL 60 AZI	Yes	Y		DL	1.2	2	.5	3	.866	7	1												
6	1.2DL + 1WL 90 AZI	Yes	Y		DL	1.2	2		3	1	8	1												
7	1.2DL + 1WL 120 AZI	Yes	Y		DL	1.2	2	-.5	3	.866	9	1												
8	1.2DL + 1WL 135 AZI	Yes	Y		DL	1.2	2	-.7...	3	.707	10	1												
9	1.2DL + 1WL 150 AZI	Yes	Y		DL	1.2	2	-.8...	3	.5	11	1												
10	1.2DL + 1WL 180 AZI	Yes	Y		DL	1.2	2	-1	3		4	-1												
11	1.2DL + 1WL 210 AZI	Yes	Y		DL	1.2	2	-.8...	3	-.5	5	-1												
12	1.2DL + 1WL 225 AZI	Yes	Y		DL	1.2	2	-.7...	3	-.7...	6	-1												
13	1.2DL + 1WL 240 AZI	Yes	Y		DL	1.2	2	-.5	3	-.8...	7	-1												
14	1.2DL + 1WL 270 AZI	Yes	Y		DL	1.2	2		3	-1	8	-1												
15	1.2DL + 1WL 300 AZI	Yes	Y		DL	1.2	2	.5	3	-.8...	9	-1												
16	1.2DL + 1WL 315 AZI	Yes	Y		DL	1.2	2	.707	3	-.7...	10	-1												
17	1.2DL + 1WL 330 AZI	Yes	Y		DL	1.2	2	.866	3	-.5	11	-1												
18	0.9DL + 1WL 0 AZI	Yes	Y		DL	.9	2	1	3		4	1												
19	0.9DL + 1WL 30 AZI	Yes	Y		DL	.9	2	.866	3	.5	5	1												
20	0.9DL + 1WL 45 AZI	Yes	Y		DL	.9	2	.707	3	.707	6	1												
21	0.9DL + 1WL 60 AZI	Yes	Y		DL	.9	2	.5	3	.866	7	1												
22	0.9DL + 1WL 90 AZI	Yes	Y		DL	.9	2		3	1	8	1												
23	0.9DL + 1WL 120 AZI	Yes	Y		DL	.9	2	-.5	3	.866	9	1												
24	0.9DL + 1WL 135 AZI	Yes	Y		DL	.9	2	-.7...	3	.707	10	1												
25	0.9DL + 1WL 150 AZI	Yes	Y		DL	.9	2	-.8...	3	.5	11	1												
26	0.9DL + 1WL 180 AZI	Yes	Y		DL	.9	2	-1	3		4	-1												
27	0.9DL + 1WL 210 AZI	Yes	Y		DL	.9	2	-.8...	3	-.5	5	-1												
28	0.9DL + 1WL 225 AZI	Yes	Y		DL	.9	2	-.7...	3	-.7...	6	-1												
29	0.9DL + 1WL 240 AZI	Yes	Y		DL	.9	2	-.5	3	-.8...	7	-1												
30	0.9DL + 1WL 270 AZI	Yes	Y		DL	.9	2		3	-1	8	-1												
31	0.9DL + 1WL 300 AZI	Yes	Y		DL	.9	2	.5	3	-.8...	9	-1												
32	0.9DL + 1WL 315 AZI	Yes	Y		DL	.9	2	.707	3	-.7...	10	-1												
33	0.9DL + 1WL 330 AZI	Yes	Y		DL	.9	2	.866	3	-.5	11	-1												
34	1.2DL + 1DLi + 1WLi 0 AZI	Yes	Y		DL	1.2	O...	1	13	1	14		15	1										
35	1.2DL + 1DLi + 1WLi 30 AZI	Yes	Y		DL	1.2	O...	1	13	.866	14	.5	16	1										
36	1.2DL + 1DLi + 1WLi 45 AZI	Yes	Y		DL	1.2	O...	1	13	.707	14	.707	17	1										
37	1.2DL + 1DLi + 1WLi 60 AZI	Yes	Y		DL	1.2	O...	1	13	.5	14	.866	18	1										
38	1.2DL + 1DLi + 1WLi 90 AZI	Yes	Y		DL	1.2	O...	1	13		14	1	19	1										
39	1.2DL + 1DLi + 1WLi 120 AZI	Yes	Y		DL	1.2	O...	1	13	-.5	14	.866	20	1										
40	1.2DL + 1DLi + 1WLi 135 AZI	Yes	Y		DL	1.2	O...	1	13	-.7...	14	.707	21	1										
41	1.2DL + 1DLi + 1WLi 150 AZI	Yes	Y		DL	1.2	O...	1	13	-.8...	14	.5	22	1										
42	1.2DL + 1DLi + 1WLi 180 AZI	Yes	Y		DL	1.2	O...	1	13	-1	14		15	-1										
43	1.2DL + 1DLi + 1WLi 210 AZI	Yes	Y		DL	1.2	O...	1	13	-.8...	14	-.5	16	-1										
44	1.2DL + 1DLi + 1WLi 225 AZI	Yes	Y		DL	1.2	O...	1	13	-.7...	14	-.7...	17	-1										
45	1.2DL + 1DLi + 1WLi 240 AZI	Yes	Y		DL	1.2	O...	1	13	-.5	14	-.8...	18	-1										
46	1.2DL + 1DLi + 1WLi 270 AZI	Yes	Y		DL	1.2	O...	1	13		14	-1	19	-1										
47	1.2DL + 1DLi + 1WLi 300 AZI	Yes	Y		DL	1.2	O...	1	13	.5	14	-.8...	20	-1										
48	1.2DL + 1DLi + 1WLi 315 AZI	Yes	Y		DL	1.2	O...	1	13	.707	14	-.7...	21	-1										
49	1.2DL + 1DLi + 1WLi 330 AZI	Yes	Y		DL	1.2	O...	1	13	.866	14	-.5	22	-1										
50	(1.2+0.2Sds)DL + 1E 0 AZI	Yes	Y		DL	1.2...	23	1	24															
51	(1.2+0.2Sds)DL + 1E 30 AZI	Yes	Y		DL	1.2...	23	.866	24	.5														

Load Combinations (Continued)

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
52	(1.2+0.2Sds)DL + 1E 45 AZI	Yes	Y		DL	1.2...	23	.707	24	.707																
53	(1.2+0.2Sds)DL + 1E 60 AZI	Yes	Y		DL	1.2...	23	.5	24	.866																
54	(1.2+0.2Sds)DL + 1E 90 AZI	Yes	Y		DL	1.2...	23		24	1																
55	(1.2+0.2Sds)DL + 1E 120 AZI	Yes	Y		DL	1.2...	23	-.5	24	.866																
56	(1.2+0.2Sds)DL + 1E 135 AZI	Yes	Y		DL	1.2...	23	-.7...	24	.707																
57	(1.2+0.2Sds)DL + 1E 150 AZI	Yes	Y		DL	1.2...	23	-.8...	24	.5																
58	(1.2+0.2Sds)DL + 1E 180 AZI	Yes	Y		DL	1.2...	23	-1	24																	
59	(1.2+0.2Sds)DL + 1E 210 AZI	Yes	Y		DL	1.2...	23	-.8...	24	-.5																
60	(1.2+0.2Sds)DL + 1E 225 AZI	Yes	Y		DL	1.2...	23	-.7...	24	-.7...																
61	(1.2+0.2Sds)DL + 1E 240 AZI	Yes	Y		DL	1.2...	23	-.5	24	-.8...																
62	(1.2+0.2Sds)DL + 1E 270 AZI	Yes	Y		DL	1.2...	23		24	-1																
63	(1.2+0.2Sds)DL + 1E 300 AZI	Yes	Y		DL	1.2...	23	.5	24	-.8...																
64	(1.2+0.2Sds)DL + 1E 315 AZI	Yes	Y		DL	1.2...	23	.707	24	-.7...																
65	(1.2+0.2Sds)DL + 1E 330 AZI	Yes	Y		DL	1.2...	23	.866	24	-.5																
66	(0.9-0.2Sds)DL + 1E 0 AZI	Yes	Y		DL	.879	23	1	24																	
67	(0.9-0.2Sds)DL + 1E 30 AZI	Yes	Y		DL	.879	23	.866	24	.5																
68	(0.9-0.2Sds)DL + 1E 45 AZI	Yes	Y		DL	.879	23	.707	24	.707																
69	(0.9-0.2Sds)DL + 1E 60 AZI	Yes	Y		DL	.879	23	.5	24	.866																
70	(0.9-0.2Sds)DL + 1E 90 AZI	Yes	Y		DL	.879	23		24	1																
71	(0.9-0.2Sds)DL + 1E 120 AZI	Yes	Y		DL	.879	23	-.5	24	.866																
72	(0.9-0.2Sds)DL + 1E 135 AZI	Yes	Y		DL	.879	23	-.7...	24	.707																
73	(0.9-0.2Sds)DL + 1E 150 AZI	Yes	Y		DL	.879	23	-.8...	24	.5																
74	(0.9-0.2Sds)DL + 1E 180 AZI	Yes	Y		DL	.879	23	-1	24																	
75	(0.9-0.2Sds)DL + 1E 210 AZI	Yes	Y		DL	.879	23	-.8...	24	-.5																
76	(0.9-0.2Sds)DL + 1E 225 AZI	Yes	Y		DL	.879	23	-.7...	24	-.7...																
77	(0.9-0.2Sds)DL + 1E 240 AZI	Yes	Y		DL	.879	23	-.5	24	-.8...																
78	(0.9-0.2Sds)DL + 1E 270 AZI	Yes	Y		DL	.879	23		24	-1																
79	(0.9-0.2Sds)DL + 1E 300 AZI	Yes	Y		DL	.879	23	.5	24	-.8...																
80	(0.9-0.2Sds)DL + 1E 315 AZI	Yes	Y		DL	.879	23	.707	24	-.7...																
81	(0.9-0.2Sds)DL + 1E 330 AZI	Yes	Y		DL	.879	23	.866	24	-.5																
82	1.2DL + 1Lv1	Yes	Y		DL	1.2	25	1.5																		
83	1.2DL + 1Lv2	Yes	Y		DL	1.2	26	1.5																		
84	1.2DL + 1Lv3	Yes	Y		DL	1.2	27	1.5																		
85	1.2DL + 1Lv4	Yes	Y		DL	1.2	28	1.5																		
86	1.2DL + 1Lv5	Yes	Y		DL	1.2	29	1.5																		
87	1.2DL + 1Lv6	Yes	Y		DL	1.2	30	1.5																		
88	1.2DL + 1Lv7	Yes	Y		DL	1.2	31	1.5																		
89	1.2DL + 1Lv8	Yes	Y		DL	1.2	32	1.5																		
90	1.2DL + 1Lv9	Yes	Y		DL	1.2	33	1.5																		
91	1.2DL + 1.5Lm + 1Wm 0 AZI -...	Yes	Y		DL	1.2	34	1.5	2	.053	3		4	.053												
92	1.2DL + 1.5Lm + 1Wm 30 AZI...	Yes	Y		DL	1.2	34	1.5	2	.046	3	.027	5	.053												
93	1.2DL + 1.5Lm + 1Wm 45 AZI...	Yes	Y		DL	1.2	34	1.5	2	.038	3	.038	6	.053												
94	1.2DL + 1.5Lm + 1Wm 60 AZI...	Yes	Y		DL	1.2	34	1.5	2	.027	3	.046	7	.053												
95	1.2DL + 1.5Lm + 1Wm 90 AZI...	Yes	Y		DL	1.2	34	1.5	2		3	.053	8	.053												
96	1.2DL + 1.5Lm + 1Wm 120 A...	Yes	Y		DL	1.2	34	1.5	2	-.0...	3	.046	9	.053												
97	1.2DL + 1.5Lm + 1Wm 135 A...	Yes	Y		DL	1.2	34	1.5	2	-.0...	3	.038	10	.053												
98	1.2DL + 1.5Lm + 1Wm 150 A...	Yes	Y		DL	1.2	34	1.5	2	-.0...	3	.027	11	.053												
99	1.2DL + 1.5Lm + 1Wm 180 A...	Yes	Y		DL	1.2	34	1.5	2	-.0...	3		4	-.0...												
100	1.2DL + 1.5Lm + 1Wm 210 A...	Yes	Y		DL	1.2	34	1.5	2	-.0...	3	-.0...	5	-.0...												
101	1.2DL + 1.5Lm + 1Wm 225 A...	Yes	Y		DL	1.2	34	1.5	2	-.0...	3	-.0...	6	-.0...												
102	1.2DL + 1.5Lm + 1Wm 240 A...	Yes	Y		DL	1.2	34	1.5	2	-.0...	3	-.0...	7	-.0...												
103	1.2DL + 1.5Lm + 1Wm 270 A...	Yes	Y		DL	1.2	34	1.5	2		3	-.0...	8	-.0...												
104	1.2DL + 1.5Lm + 1Wm 300 A...	Yes	Y		DL	1.2	34	1.5	2	.027	3	-.0...	9	-.0...												
105	1.2DL + 1.5Lm + 1Wm 315 A...	Yes	Y		DL	1.2	34	1.5	2	.038	3	-.0...	10	-.0...												
106	1.2DL + 1.5Lm + 1Wm 330 A...	Yes	Y		DL	1.2	34	1.5	2	.046	3	-.0...	11	-.0...												
107	1.2DL + 1.5Lm + 1Wm 0 AZI -...	Yes	Y		DL	1.2	35	1.5	2	.053	3		4	.053												
108	1.2DL + 1.5Lm + 1Wm 30 AZI...	Yes	Y		DL	1.2	35	1.5	2	.046	3	.027	5	.053												

Load Combinations (Continued)

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
109	1.2DL + 1.5Lm + 1Wm 45 AZI...	Yes	Y		DL	1.2	35	1.5	2	.038	3	.038	6	.053												
110	1.2DL + 1.5Lm + 1Wm 60 AZI...	Yes	Y		DL	1.2	35	1.5	2	.027	3	.046	7	.053												
111	1.2DL + 1.5Lm + 1Wm 90 AZI...	Yes	Y		DL	1.2	35	1.5	2		3	.053	8	.053												
112	1.2DL + 1.5Lm + 1Wm 120 A...	Yes	Y		DL	1.2	35	1.5	2	-.0...	3	.046	9	.053												
113	1.2DL + 1.5Lm + 1Wm 135 A...	Yes	Y		DL	1.2	35	1.5	2	-.0...	3	.038	10	.053												
114	1.2DL + 1.5Lm + 1Wm 150 A...	Yes	Y		DL	1.2	35	1.5	2	-.0...	3	.027	11	.053												
115	1.2DL + 1.5Lm + 1Wm 180 A...	Yes	Y		DL	1.2	35	1.5	2	-.0...	3		4	-.0...												
116	1.2DL + 1.5Lm + 1Wm 210 A...	Yes	Y		DL	1.2	35	1.5	2	-.0...	3	-.0...	5	-.0...												
117	1.2DL + 1.5Lm + 1Wm 225 A...	Yes	Y		DL	1.2	35	1.5	2	-.0...	3	-.0...	6	-.0...												
118	1.2DL + 1.5Lm + 1Wm 240 A...	Yes	Y		DL	1.2	35	1.5	2	-.0...	3	-.0...	7	-.0...												
119	1.2DL + 1.5Lm + 1Wm 270 A...	Yes	Y		DL	1.2	35	1.5	2		3	-.0...	8	-.0...												
120	1.2DL + 1.5Lm + 1Wm 300 A...	Yes	Y		DL	1.2	35	1.5	2	.027	3	-.0...	9	-.0...												
121	1.2DL + 1.5Lm + 1Wm 315 A...	Yes	Y		DL	1.2	35	1.5	2	.038	3	-.0...	10	-.0...												
122	1.2DL + 1.5Lm + 1Wm 330 A...	Yes	Y		DL	1.2	35	1.5	2	.046	3	-.0...	11	-.0...												
123	1.2DL + 1.5Lm + 1Wm 0 AZI -...	Yes	Y		DL	1.2	36	1.5	2	.053	3		4	.053												
124	1.2DL + 1.5Lm + 1Wm 30 AZI...	Yes	Y		DL	1.2	36	1.5	2	.046	3	.027	5	.053												
125	1.2DL + 1.5Lm + 1Wm 45 AZI...	Yes	Y		DL	1.2	36	1.5	2	.038	3	.038	6	.053												
126	1.2DL + 1.5Lm + 1Wm 60 AZI...	Yes	Y		DL	1.2	36	1.5	2	.027	3	.046	7	.053												
127	1.2DL + 1.5Lm + 1Wm 90 AZI...	Yes	Y		DL	1.2	36	1.5	2		3	.053	8	.053												
128	1.2DL + 1.5Lm + 1Wm 120 A...	Yes	Y		DL	1.2	36	1.5	2	-.0...	3	.046	9	.053												
129	1.2DL + 1.5Lm + 1Wm 135 A...	Yes	Y		DL	1.2	36	1.5	2	-.0...	3	.038	10	.053												
130	1.2DL + 1.5Lm + 1Wm 150 A...	Yes	Y		DL	1.2	36	1.5	2	-.0...	3	.027	11	.053												
131	1.2DL + 1.5Lm + 1Wm 180 A...	Yes	Y		DL	1.2	36	1.5	2	-.0...	3		4	-.0...												
132	1.2DL + 1.5Lm + 1Wm 210 A...	Yes	Y		DL	1.2	36	1.5	2	-.0...	3	-.0...	5	-.0...												
133	1.2DL + 1.5Lm + 1Wm 225 A...	Yes	Y		DL	1.2	36	1.5	2	-.0...	3	-.0...	6	-.0...												
134	1.2DL + 1.5Lm + 1Wm 240 A...	Yes	Y		DL	1.2	36	1.5	2	-.0...	3	-.0...	7	-.0...												
135	1.2DL + 1.5Lm + 1Wm 270 A...	Yes	Y		DL	1.2	36	1.5	2		3	-.0...	8	-.0...												
136	1.2DL + 1.5Lm + 1Wm 300 A...	Yes	Y		DL	1.2	36	1.5	2	.027	3	-.0...	9	-.0...												
137	1.2DL + 1.5Lm + 1Wm 315 A...	Yes	Y		DL	1.2	36	1.5	2	.038	3	-.0...	10	-.0...												
138	1.2DL + 1.5Lm + 1Wm 330 A...	Yes	Y		DL	1.2	36	1.5	2	.046	3	-.0...	11	-.0...												
139	1.2DL + 1.5Lm + 1Wm 0 AZI -...	Yes	Y		DL	1.2	37	1.5	2	.053	3		4	.053												
140	1.2DL + 1.5Lm + 1Wm 30 AZI...	Yes	Y		DL	1.2	37	1.5	2	.046	3	.027	5	.053												
141	1.2DL + 1.5Lm + 1Wm 45 AZI...	Yes	Y		DL	1.2	37	1.5	2	.038	3	.038	6	.053												
142	1.2DL + 1.5Lm + 1Wm 60 AZI...	Yes	Y		DL	1.2	37	1.5	2	.027	3	.046	7	.053												
143	1.2DL + 1.5Lm + 1Wm 90 AZI...	Yes	Y		DL	1.2	37	1.5	2		3	.053	8	.053												
144	1.2DL + 1.5Lm + 1Wm 120 A...	Yes	Y		DL	1.2	37	1.5	2	-.0...	3	.046	9	.053												
145	1.2DL + 1.5Lm + 1Wm 135 A...	Yes	Y		DL	1.2	37	1.5	2	-.0...	3	.038	10	.053												
146	1.2DL + 1.5Lm + 1Wm 150 A...	Yes	Y		DL	1.2	37	1.5	2	-.0...	3	.027	11	.053												
147	1.2DL + 1.5Lm + 1Wm 180 A...	Yes	Y		DL	1.2	37	1.5	2	-.0...	3		4	-.0...												
148	1.2DL + 1.5Lm + 1Wm 210 A...	Yes	Y		DL	1.2	37	1.5	2	-.0...	3	-.0...	5	-.0...												
149	1.2DL + 1.5Lm + 1Wm 225 A...	Yes	Y		DL	1.2	37	1.5	2	-.0...	3	-.0...	6	-.0...												
150	1.2DL + 1.5Lm + 1Wm 240 A...	Yes	Y		DL	1.2	37	1.5	2	-.0...	3	-.0...	7	-.0...												
151	1.2DL + 1.5Lm + 1Wm 270 A...	Yes	Y		DL	1.2	37	1.5	2		3	-.0...	8	-.0...												
152	1.2DL + 1.5Lm + 1Wm 300 A...	Yes	Y		DL	1.2	37	1.5	2	.027	3	-.0...	9	-.0...												
153	1.2DL + 1.5Lm + 1Wm 315 A...	Yes	Y		DL	1.2	37	1.5	2	.038	3	-.0...	10	-.0...												
154	1.2DL + 1.5Lm + 1Wm 330 A...	Yes	Y		DL	1.2	37	1.5	2	.046	3	-.0...	11	-.0...												
155	1.2DL + 1.5Lm + 1Wm 0 AZI -...	Yes	Y		DL	1.2	38	1.5	2	.053	3		4	.053												
156	1.2DL + 1.5Lm + 1Wm 30 AZI...	Yes	Y		DL	1.2	38	1.5	2	.046	3	.027	5	.053												
157	1.2DL + 1.5Lm + 1Wm 45 AZI...	Yes	Y		DL	1.2	38	1.5	2	.038	3	.038	6	.053												
158	1.2DL + 1.5Lm + 1Wm 60 AZI...	Yes	Y		DL	1.2	38	1.5	2	.027	3	.046	7	.053												
159	1.2DL + 1.5Lm + 1Wm 90 AZI...	Yes	Y		DL	1.2	38	1.5	2		3	.053	8	.053												
160	1.2DL + 1.5Lm + 1Wm 120 A...	Yes	Y		DL	1.2	38	1.5	2	-.0...	3	.046	9	.053												
161	1.2DL + 1.5Lm + 1Wm 135 A...	Yes	Y		DL	1.2	38	1.5	2	-.0...	3	.038	10	.053												
162	1.2DL + 1.5Lm + 1Wm 150 A...	Yes	Y		DL	1.2	38	1.5	2	-.0...	3	.027	11	.053												
163	1.2DL + 1.5Lm + 1Wm 180 A...	Yes	Y		DL	1.2	38	1.5	2	-.0...	3		4	-.0...												
164	1.2DL + 1.5Lm + 1Wm 210 A...	Yes	Y		DL	1.2	38	1.5	2	-.0...	3	-.0...	5	-.0...												
165	1.2DL + 1.5Lm + 1Wm 225 A...	Yes	Y		DL	1.2	38	1.5	2	-.0...	3	-.0...	6	-.0...												

Load Combinations (Continued)

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
166	1.2DL + 1.5Lm + 1Wm 240 A...	Yes	Y		DL	1.2	38	1.5	2	-.0...	3	-.0...	7	-.0...										
167	1.2DL + 1.5Lm + 1Wm 270 A...	Yes	Y		DL	1.2	38	1.5	2		3	-.0...	8	-.0...										
168	1.2DL + 1.5Lm + 1Wm 300 A...	Yes	Y		DL	1.2	38	1.5	2	.027	3	-.0...	9	-.0...										
169	1.2DL + 1.5Lm + 1Wm 315 A...	Yes	Y		DL	1.2	38	1.5	2	.038	3	-.0...	10	-.0...										
170	1.2DL + 1.5Lm + 1Wm 330 A...	Yes	Y		DL	1.2	38	1.5	2	.046	3	-.0...	11	-.0...										
171	1.2DL + 1.5Lm + 1Wm 0 AZI -...	Yes	Y		DL	1.2	39	1.5	2	.053	3		4	.053										
172	1.2DL + 1.5Lm + 1Wm 30 AZI...	Yes	Y		DL	1.2	39	1.5	2	.046	3	.027	5	.053										
173	1.2DL + 1.5Lm + 1Wm 45 AZI...	Yes	Y		DL	1.2	39	1.5	2	.038	3	.038	6	.053										
174	1.2DL + 1.5Lm + 1Wm 60 AZI...	Yes	Y		DL	1.2	39	1.5	2	.027	3	.046	7	.053										
175	1.2DL + 1.5Lm + 1Wm 90 AZI...	Yes	Y		DL	1.2	39	1.5	2		3	.053	8	.053										
176	1.2DL + 1.5Lm + 1Wm 120 A...	Yes	Y		DL	1.2	39	1.5	2	-.0...	3	.046	9	.053										
177	1.2DL + 1.5Lm + 1Wm 135 A...	Yes	Y		DL	1.2	39	1.5	2	-.0...	3	.038	10	.053										
178	1.2DL + 1.5Lm + 1Wm 150 A...	Yes	Y		DL	1.2	39	1.5	2	-.0...	3	.027	11	.053										
179	1.2DL + 1.5Lm + 1Wm 180 A...	Yes	Y		DL	1.2	39	1.5	2	-.0...	3		4	-.0...										
180	1.2DL + 1.5Lm + 1Wm 210 A...	Yes	Y		DL	1.2	39	1.5	2	-.0...	3	-.0...	5	-.0...										
181	1.2DL + 1.5Lm + 1Wm 225 A...	Yes	Y		DL	1.2	39	1.5	2	-.0...	3	-.0...	6	-.0...										
182	1.2DL + 1.5Lm + 1Wm 240 A...	Yes	Y		DL	1.2	39	1.5	2	-.0...	3	-.0...	7	-.0...										
183	1.2DL + 1.5Lm + 1Wm 270 A...	Yes	Y		DL	1.2	39	1.5	2		3	-.0...	8	-.0...										
184	1.2DL + 1.5Lm + 1Wm 300 A...	Yes	Y		DL	1.2	39	1.5	2	.027	3	-.0...	9	-.0...										
185	1.2DL + 1.5Lm + 1Wm 315 A...	Yes	Y		DL	1.2	39	1.5	2	.038	3	-.0...	10	-.0...										
186	1.2DL + 1.5Lm + 1Wm 330 A...	Yes	Y		DL	1.2	39	1.5	2	.046	3	-.0...	11	-.0...										
187	1.2DL + 1.5Lm + 1Wm 0 AZI -...	Yes	Y		DL	1.2	40	1.5	2	.053	3		4	.053										
188	1.2DL + 1.5Lm + 1Wm 30 AZI...	Yes	Y		DL	1.2	40	1.5	2	.046	3	.027	5	.053										
189	1.2DL + 1.5Lm + 1Wm 45 AZI...	Yes	Y		DL	1.2	40	1.5	2	.038	3	.038	6	.053										
190	1.2DL + 1.5Lm + 1Wm 60 AZI...	Yes	Y		DL	1.2	40	1.5	2	.027	3	.046	7	.053										
191	1.2DL + 1.5Lm + 1Wm 90 AZI...	Yes	Y		DL	1.2	40	1.5	2		3	.053	8	.053										
192	1.2DL + 1.5Lm + 1Wm 120 A...	Yes	Y		DL	1.2	40	1.5	2	-.0...	3	.046	9	.053										
193	1.2DL + 1.5Lm + 1Wm 135 A...	Yes	Y		DL	1.2	40	1.5	2	-.0...	3	.038	10	.053										
194	1.2DL + 1.5Lm + 1Wm 150 A...	Yes	Y		DL	1.2	40	1.5	2	-.0...	3	.027	11	.053										
195	1.2DL + 1.5Lm + 1Wm 180 A...	Yes	Y		DL	1.2	40	1.5	2	-.0...	3		4	-.0...										
196	1.2DL + 1.5Lm + 1Wm 210 A...	Yes	Y		DL	1.2	40	1.5	2	-.0...	3	-.0...	5	-.0...										
197	1.2DL + 1.5Lm + 1Wm 225 A...	Yes	Y		DL	1.2	40	1.5	2	-.0...	3	-.0...	6	-.0...										
198	1.2DL + 1.5Lm + 1Wm 240 A...	Yes	Y		DL	1.2	40	1.5	2	-.0...	3	-.0...	7	-.0...										
199	1.2DL + 1.5Lm + 1Wm 270 A...	Yes	Y		DL	1.2	40	1.5	2		3	-.0...	8	-.0...										
200	1.2DL + 1.5Lm + 1Wm 300 A...	Yes	Y		DL	1.2	40	1.5	2	.027	3	-.0...	9	-.0...										
201	1.2DL + 1.5Lm + 1Wm 315 A...	Yes	Y		DL	1.2	40	1.5	2	.038	3	-.0...	10	-.0...										
202	1.2DL + 1.5Lm + 1Wm 330 A...	Yes	Y		DL	1.2	40	1.5	2	.046	3	-.0...	11	-.0...										
203	1.2DL + 1.5Lm + 1Wm 0 AZI -...	Yes	Y		DL	1.2	41	1.5	2	.053	3		4	.053										
204	1.2DL + 1.5Lm + 1Wm 30 AZI...	Yes	Y		DL	1.2	41	1.5	2	.046	3	.027	5	.053										
205	1.2DL + 1.5Lm + 1Wm 45 AZI...	Yes	Y		DL	1.2	41	1.5	2	.038	3	.038	6	.053										
206	1.2DL + 1.5Lm + 1Wm 60 AZI...	Yes	Y		DL	1.2	41	1.5	2	.027	3	.046	7	.053										
207	1.2DL + 1.5Lm + 1Wm 90 AZI...	Yes	Y		DL	1.2	41	1.5	2		3	.053	8	.053										
208	1.2DL + 1.5Lm + 1Wm 120 A...	Yes	Y		DL	1.2	41	1.5	2	-.0...	3	.046	9	.053										
209	1.2DL + 1.5Lm + 1Wm 135 A...	Yes	Y		DL	1.2	41	1.5	2	-.0...	3	.038	10	.053										
210	1.2DL + 1.5Lm + 1Wm 150 A...	Yes	Y		DL	1.2	41	1.5	2	-.0...	3	.027	11	.053										
211	1.2DL + 1.5Lm + 1Wm 180 A...	Yes	Y		DL	1.2	41	1.5	2	-.0...	3		4	-.0...										
212	1.2DL + 1.5Lm + 1Wm 210 A...	Yes	Y		DL	1.2	41	1.5	2	-.0...	3	-.0...	5	-.0...										
213	1.2DL + 1.5Lm + 1Wm 225 A...	Yes	Y		DL	1.2	41	1.5	2	-.0...	3	-.0...	6	-.0...										
214	1.2DL + 1.5Lm + 1Wm 240 A...	Yes	Y		DL	1.2	41	1.5	2	-.0...	3	-.0...	7	-.0...										
215	1.2DL + 1.5Lm + 1Wm 270 A...	Yes	Y		DL	1.2	41	1.5	2		3	-.0...	8	-.0...										
216	1.2DL + 1.5Lm + 1Wm 300 A...	Yes	Y		DL	1.2	41	1.5	2	.027	3	-.0...	9	-.0...										
217	1.2DL + 1.5Lm + 1Wm 315 A...	Yes	Y		DL	1.2	41	1.5	2	.038	3	-.0...	10	-.0...										
218	1.2DL + 1.5Lm + 1Wm 330 A...	Yes	Y		DL	1.2	41	1.5	2	.046	3	-.0...	11	-.0...										
219	1.2DL + 1.5Lm + 1Wm 0 AZI -...	Yes	Y		DL	1.2	42	1.5	2	.053	3		4	.053										
220	1.2DL + 1.5Lm + 1Wm 30 AZI...	Yes	Y		DL	1.2	42	1.5	2	.046	3	.027	5	.053										
221	1.2DL + 1.5Lm + 1Wm 45 AZI...	Yes	Y		DL	1.2	42	1.5	2	.038	3	.038	6	.053										
222	1.2DL + 1.5Lm + 1Wm 60 AZI...	Yes	Y		DL	1.2	42	1.5	2	.027	3	.046	7	.053										

Load Combinations (Continued)

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
223	1.2DL + 1.5Lm + 1Wm 90 AZI...	Yes	Y		DL	1.2	42	1.5	2		3	.053	8	.053										
224	1.2DL + 1.5Lm + 1Wm 120 A...	Yes	Y		DL	1.2	42	1.5	2	-.0...	3	.046	9	.053										
225	1.2DL + 1.5Lm + 1Wm 135 A...	Yes	Y		DL	1.2	42	1.5	2	-.0...	3	.038	10	.053										
226	1.2DL + 1.5Lm + 1Wm 150 A...	Yes	Y		DL	1.2	42	1.5	2	-.0...	3	.027	11	.053										
227	1.2DL + 1.5Lm + 1Wm 180 A...	Yes	Y		DL	1.2	42	1.5	2	-.0...	3		4	-.0...										
228	1.2DL + 1.5Lm + 1Wm 210 A...	Yes	Y		DL	1.2	42	1.5	2	-.0...	3	-.0...	5	-.0...										
229	1.2DL + 1.5Lm + 1Wm 225 A...	Yes	Y		DL	1.2	42	1.5	2	-.0...	3	-.0...	6	-.0...										
230	1.2DL + 1.5Lm + 1Wm 240 A...	Yes	Y		DL	1.2	42	1.5	2	-.0...	3	-.0...	7	-.0...										
231	1.2DL + 1.5Lm + 1Wm 270 A...	Yes	Y		DL	1.2	42	1.5	2		3	-.0...	8	-.0...										
232	1.2DL + 1.5Lm + 1Wm 300 A...	Yes	Y		DL	1.2	42	1.5	2	.027	3	-.0...	9	-.0...										
233	1.2DL + 1.5Lm + 1Wm 315 A...	Yes	Y		DL	1.2	42	1.5	2	.038	3	-.0...	10	-.0...										
234	1.2DL + 1.5Lm + 1Wm 330 A...	Yes	Y		DL	1.2	42	1.5	2	.046	3	-.0...	11	-.0...										

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	N25	max	1440.916	20	1889.097	39	2159.802	3	728.395	33	2558.237	19	995.052	30
2		min	-1446.48	12	-294.655	31	-2152.34	27	-1966.945	130	-2560.484	11	-3511.376	38
3	N1	max	1268.073	8	1940.384	45	2272.314	17	859.276	19	2618.09	25	3412.045	45
4		min	-1258.723	32	-283.192	21	-2270.393	25	-2359.128	43	-2621.845	17	-838.898	21
5	N13	max	2247.57	22	1843.209	34	551.829	18	3878.515	34	2205.463	30	1021.116	14
6		min	-2251.251	14	-324.796	26	-561.722	10	-1130.382	26	-2207.484	6	-904.094	22
7	Totals:	max	4149.845	22	5215.056	42	4402.216	18						
8		min	-4149.845	30	1373.8	66	-4402.217	10						

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

	Member	Shape	Code ...	Loc[in]	LC	Shear ...	Loc[in]	Dir	LC	phi*Pnc ...	phi*Pnt [...	phi*Mn ...	phi*Mn ...	Cb	Eqn
1	MP3	PIPE_2.0	.522	60	5	.049	60		10	20866.7...	32130	1871.625	1871.625	1.857	H1-1b
2	M2	PIPE_3.5	.517	40	45	.257	40		9	75262.68	78750	7953.75	7953.75	2.091	H1-1b
3	MP9	PIPE_2.0	.516	60	10	.051	60		15	20866.7...	32130	1871.625	1871.625	1.57	H1-1b
4	MP2	PIPE_2.0	.499	60	5	.073	60		8	20866.7...	32130	1871.625	1871.625	1.857	H1-1b
5	M12	PIPE_3.5	.499	40	39	.254	40		4	75262.68	78750	7953.75	7953.75	2.101	H1-1b
6	MP8	PIPE_2.0	.497	60	10	.067	60		14	20866.7...	32130	1871.625	1871.625	1.816	H1-1b
7	MP6	PIPE_2.0	.497	60	15	.054	60		5	20866.7...	32130	1871.625	1871.625	1.938	H1-1b
8	M7	PIPE_3.5	.488	40	34	.242	40		14	75262.68	78750	7953.75	7953.75	2.099	H1-1b
9	MP5	PIPE_2.0	.486	60	16	.074	60		3	20866.7...	32130	1871.625	1871.625	1.876	H1-1b
10	M11	C3X5	.462	34.8...	6	.135	63.1...	y	35	11202.9...	47628	981.263	4104	1.35	H1-1b
11	M1	C3X5	.461	34.8...	11	.138	63.1...	y	41	11202.9...	47628	981.263	4104	1.356	H1-1b
12	MP1	PIPE_2.0	.461	60	16	.060	60		16	20866.7...	32130	1871.625	1871.625	1.468	H1-1b
13	MP4	PIPE_2.0	.457	60	10	.060	60		11	20866.7...	32130	1871.625	1871.625	1.597	H1-1b
14	MP7	PIPE_2.0	.441	60	10	.052	60		6	20866.7...	32130	1871.625	1871.625	1.758	H1-1b
15	M6	C3X5	.410	34.8...	17	.131	63.1...	y	46	37027.8...	47628	981.263	4020.228	1	H1-1b
16	M15	6.5"x0.37" P...	.367	21	7	.097	21	y	37	3513.807	75757.5	583.963	6282.986	1.164	H1-1b
17	M10	6.5"x0.37" P...	.363	21	2	.095	21	y	47	3513.807	75757.5	583.963	6297.169	1.166	H1-1b
18	M5	6.5"x0.37" P...	.360	21	12	.101	21	y	42	3513.807	75757.5	583.963	6520.336	1.208	H1-1b
19	M21	PIPE_2.0	.307	72	13	.241	72		13	14916.0...	32130	1871.625	1871.625	1.664	H3-6
20	M20	PIPE_2.0	.297	72	7	.239	72		8	14916.0...	32130	1871.625	1871.625	1.638	H3-6
21	M19	PIPE_2.0	.297	72	2	.244	72		2	14916.0...	32130	1871.625	1871.625	1.644	H3-6
22	M23	L6 5/8x4 7/1...	.292	0	26	.053	42	y	17	15453.0...	66065.6...	1040.591	3031.076	1.631	H2-1
23	M22	L6 5/8x4 7/1...	.292	0	21	.054	42	y	12	15453.0...	66065.6...	1040.591	3031.076	1.652	H2-1
24	M24	L6 5/8x4 7/1...	.270	0	32	.052	42	y	6	15453.0...	66065.6...	1040.591	3031.076	1.504	H2-1
25	M3	L2x2x3	.268	0	3	.030	0	y	2	18051.7...	23392.8	557.717	1239.29	2.381	H2-1
26	M13	L2x2x3	.261	0	14	.028	0	y	13	18051.7...	23392.8	557.717	1239.29	2.364	H2-1
27	M8	L2x2x3	.231	0	9	.027	0	y	8	18051.7...	23392.8	557.717	1239.29	2.356	H2-1
28	M4	L2x2x3	.193	0	13	.029	0	y	41	18051.7...	23392.8	557.717	1239.29	2.189	H2-1

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

	Member	Shape	Code ...	Loc[in]	LC	Shear ...	Loc[in]	Dir	LC	phi*Pnc ...	phi*Pnt [...	phi*Mn ...	phi*Mn ...	Cb	Eqn
29	M9	L2x2x3	.176	0	2	.027	0	y	46	18051.7...	23392.8	557.717	1239.29	2.238	H2-1
30	M14	L2x2x3	.167	0	7	.028	0	y	36	18051.7...	23392.8	557.717	1239.29	2.173	H2-1
31	H1	PIPE_3.5	.155	31	5	.147	24		10	60666.0...	78750	7953.75	7953.75	1.109	H1-1b
32	H3	PIPE_3.5	.154	31	10	.153	24		16	60666.0...	78750	7953.75	7953.75	1.101	H1-1b
33	H2	PIPE_3.5	.147	31	15	.144	24		5	60666.0...	78750	7953.75	7953.75	1.101	H1-1b

Envelope AISI S100-12: LRFD Cold Formed Steel Code Checks

Member	Shape	Code Check	Loc[in]	LC	Shea...	Loc[i..	Dir	LC	phi*Pn[..	phi*Tn[...	phi*Mn...	phi*Mn...	Cb	Cmyy	Cmzz	Eqn
No Data to Print ...																

APPENDIX D

ADDITIONAL CALCULATIONS

Trylon

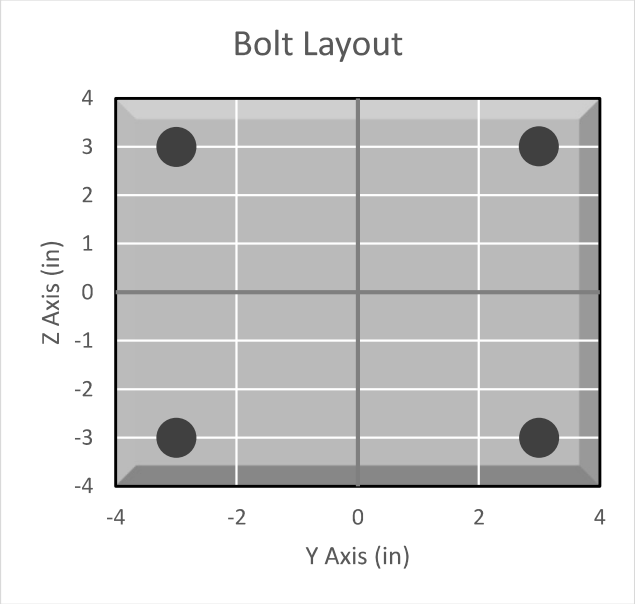
Analysis date: 8/2/2021

BOLT TOOL 1.5.2

Project Data	
Job Code:	189203
Carrier Site ID:	BOHVN00026A
Carrier Site Name:	CT-CCI-T-876343

Code	
Design Standard:	TIA-222-H
Slip Check:	No
Pretension Standard:	TIA-222-H

Bolt Properties		
Connection Type:	Bolt	
Diameter:	0.75	in
Grade:	A529	--
Yield Strength (Fy):	50	ksi
Ultimate Strength (Fu):	65	ksi
Number of Bolts:	4	--
Threads Included:	Yes	--
Double Shear:	No	--
Connection Pipe Size:	-	in



Connection Description
Mount Standoff to Collar

Bolt Check*		
Tensile Capacity (ϕT_n):	16304.9	lbs
Shear Capacity (ϕV_n):	10768.5	lbs
Tension Force (T_u):	4739.9	lbs
Shear Force (V_u):	1272.7	lbs
Tension Usage:	27.7%	--
Shear Usage:	11.3%	--
Interaction:	27.7%	Pass
Controlling Member:	M2	--
Controlling LC:	10	--

**Rating per TIA-222-H Section 15.5*

1825 W. Walnut Hill Lane, Suite 120
Irving, Texas 75038

APPENDIX E

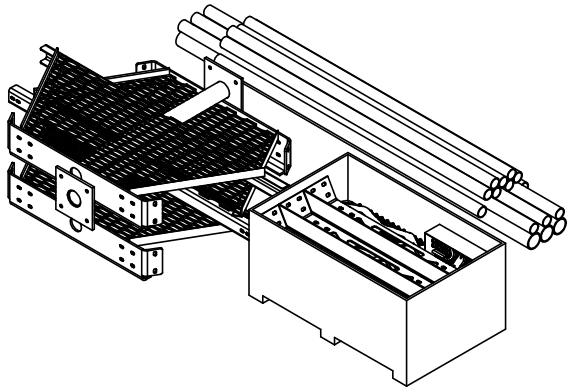
SUPPLEMENTAL DRAWINGS

ITEM	PART NO.	DESCRIPTION	QTY.	WEIGHT	NOTE NO.
1	MTC3006SB	STEEL BUNDLE FOR SNUB NOSE PLATFORM	1	402.64 LBS	
2	MCPK8CSB	PIPE STEEL BUNDLE FOR MC-PK8-C	1	464.27 LBS	
3	MCPK8CHWK	HARDWARE KIT FOR MC-PK8-C	1	543.22 LBS	

C

REVISIONS				
REV.	ECN	DESCRIPTION	BY	DATE
A		INITIAL RELEASE	DRR	12/27/11
B	8000005979	CHANGE NOSE CORNER BRKT, ADD GUB-4240	MSM	11/25/14
C	8000007579	NEW RINGMOUNT WELDMENT DESIGN	RJC	04/07/15

FOR BOM ENTRY ONLY

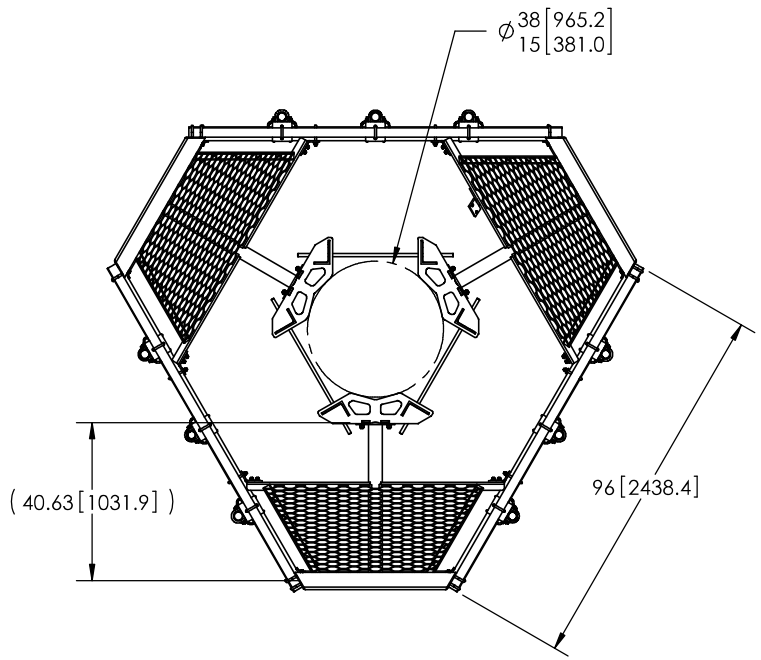


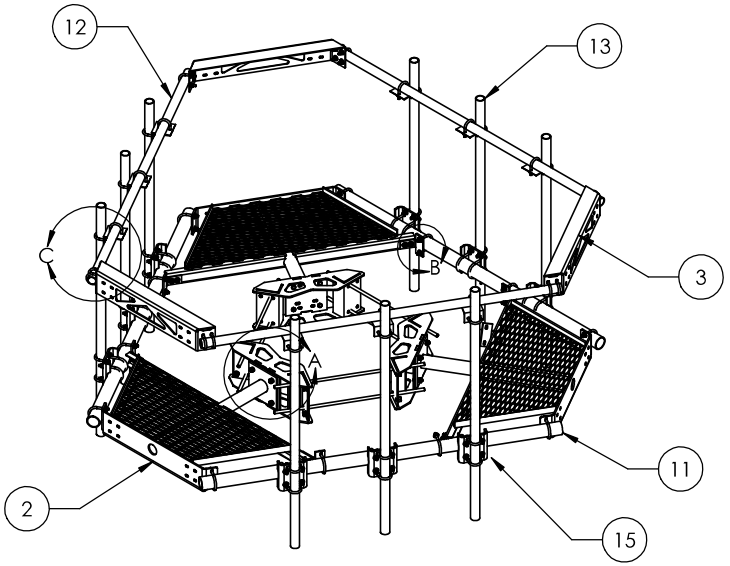
NOTES:
1. CUSTOMER ASSEMBLY SHEETS 2–3.

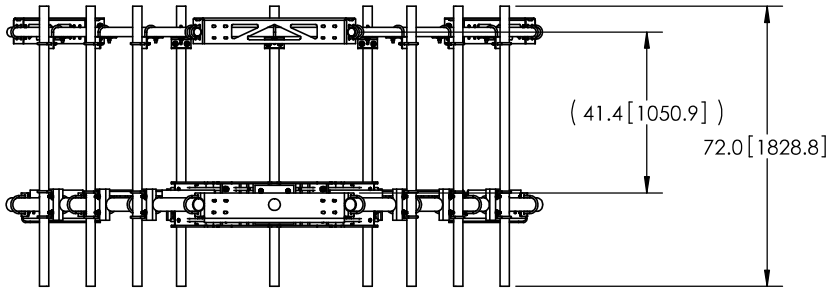
ALL DIMENSIONS ARE IN INCHES U.O.S.
TOLERANCES UNLESS OTHERWISE SPECIFIED:
.X = ± .12 ANGLES ±2°
.XX = ± .06 FRACTIONS ±1/32
.XXX= ± .03
REMOVE BURRS AND BREAK EDGES .005

DO NOT SCALE THIS PRINT

DRAWN BY: MSM	SHEET: 1 of 3	PART NUMBER: MC-PK8-C	
CHECKED BY: TP	SCALE: NTS	DESCRIPTION: LOW PROFILE PLATFORM KIT 8' FACE	
DATE: 10/18/11	MATERIAL: A36, A500	DRAWING TYPE: ASSEMBLY DRAWING	
REVISION: C	FINISH: GALV A123		
	WEIGHT: 1410.14 LBS	ANDREW® WESTCHESTER, IL. 60154 U.S.A.	





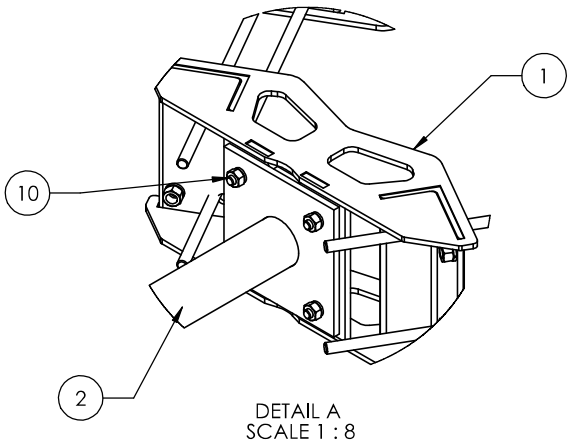


ITEM	PART NO.	DESCRIPTION	QTY.	WEIGHT
C				
1	MC-RM1550-3	12" - 50" OD RINGMOUNT	1	230.42 LBS
2	MTC300601	Low Profile Co-Location Platform Snub Nose	3	134.21 LBS
3	MT195801	Corner Weldment Snub Nose Handrail	3	27.10 LBS
4	XA2020.01	CROSS OVER ANGLE	9	2.65 LBS
5	GUB-4356	1/2" X 3-5/8" X 6" GALV U-BOLT	18	0.82 LBS
6	GUB-4355	1/2" X 3-5/8" X 5" GALV U-BOLT	12	0.71 LBS
7	GUB-4240	1/2" X 2-1/2" X 4" GALV U-BOLT	48	0.56 LBS
8	GB-04145	1/2" X 1-1/2" GALV BOLT KIT	12	0.13 LBS
9	GWF-04	1/2" GALV FLAT WASHER	24	0.03 LBS
10	GB-0520A	5/8" X 2" GALV BOLT KIT (A325)	12	0.27 LBS
11	MT54796	3.50" OD X 96" GALV PIPE	3	60.28 LBS
12	MT-651-96	Ø2.375" OD X 96" PIPE	3	29.07 LBS
13	MT-651	2.375" OD x 72" PIPE	9	21.80 LBS
14	MT19617	MT196 Pipe Mount Plate	6	2.49 LBS
15	MT21701	PIPE MOUNT PLATE	9	7.93 LBS

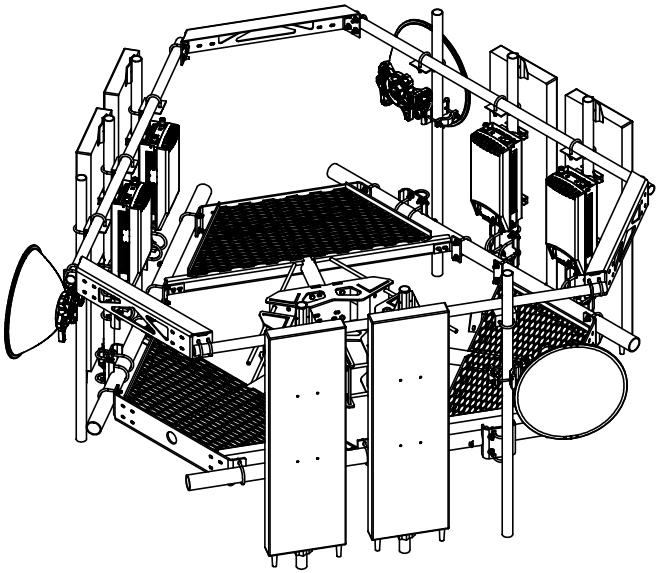
NOTES:
1. ALL METRIC DIMENSIONS ARE IN BRACKETS.
2. WILL FIT MONOPOLES 15"–38" OD.

ALL DIMENSIONS ARE IN INCHES U.O.S.
TOLERANCES UNLESS OTHERWISE SPECIFIED:
.X = ± .12 ANGLES ±2°
.XX = ± .06 FRACTIONS ±1/32
.XXX= ± .03
REMOVE BURRS AND BREAK EDGES .005
DO NOT SCALE THIS PRINT

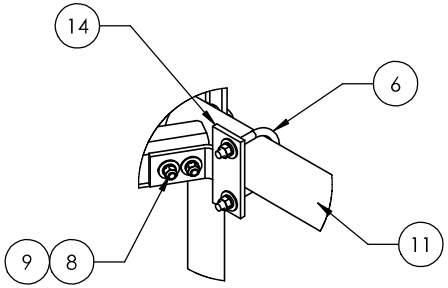
DRAWN BY: MSM	SHEET: 2 of 3	PART NUMBER: MC-PK8-C	
CHECKED BY: TP	SCALE: NTS	DESCRIPTION: 25" OD Snub Nose MT-196	
DATE: 10/18/11	MATERIAL: A36, A53	DRAWING TYPE: ASSEMBLY DRAWING	
REVISION: C	FINISH: GALV A123	WEIGHT: 1361.27 LBS	ANDREW® WESTCHESTER, IL. 60154 U.S.A.



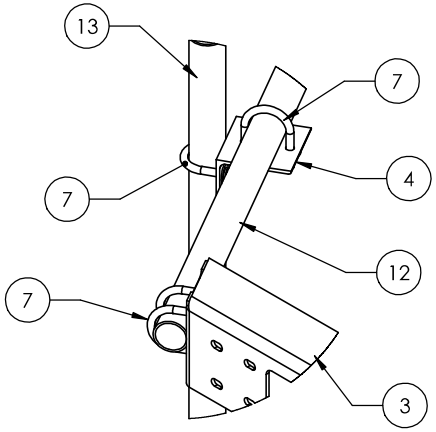
DETAIL A
SCALE 1 : 8



WITH ANTENNAS



DETAIL B
SCALE 1 : 8



DETAIL C
SCALE 1 : 8

NOTES:
1. ALL METRIC DIMENSIONS ARE IN BRACKETS.

ALL DIMENSIONS ARE IN INCHES U.O.S.
TOLERANCES UNLESS OTHERWISE SPECIFIED:
.X = ± .12 ANGLES ±2°
.XX = ± .06 FRACTIONS ±1/32
.XXX= ± .03
REMOVE BURRS AND BREAK EDGES .005
DO NOT SCALE THIS PRINT

DRAWN BY: MSM	SHEET: 3 of 3	PART NUMBER: MC-PK8-C
CHECKED BY: TP	SCALE: NTS	DESCRIPTION: 25" OD Snub Nose MT-196
DATE: 10/18/11	MATERIAL: A36, A53	DRAWING TYPE: ASSEMBLY DRAWING
REVISION: C	FINISH: GALV A123	
	WEIGHT: 1361.27 LBS	

ANDREW®
WESTCHESTER, IL. 60154
U.S.A.

Exhibit F

Power Density/RF Emissions Report

EBI Consulting

environmental | engineering | due diligence

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

Dish Wireless Existing Facility

Site ID: BOHVN00026A

876343
1919 Boston Post Road
Guilford, Connecticut 06437

October 6, 2021

EBI Project Number: 6221005715

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**13.32%**

21 B Street, Burlington, MA 01803 · Tel: (781) 273.2500 · Fax: (781) 273.3311

October 6, 2021

Dish Wireless

Emissions Analysis for Site: BOHVN00026A - 876343

EBI Consulting was directed to analyze the proposed Dish Wireless facility located at **1919 Boston Post Road** in **Guilford, Connecticut** for the purpose of determining whether the emissions from the Proposed Dish Wireless Antenna Installation located on this property are within specified federal limits.

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

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

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

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

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

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed Dish Wireless Wireless antenna facility located at 1919 Boston Post Road in Guilford, Connecticut using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since Dish Wireless is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 20 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report, the sample point is the top of a 6-foot person standing at the base of the tower.

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

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

2) 4 n70 channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

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

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

5) The antennas used in this modeling are the JMA MX08FRO665-20 for the 600 MHz / 1900 MHz channel(s) in Sector A, the JMA MX08FRO665-20 for the 600 MHz / 1900 MHz channel(s) in Sector B, the JMA MX08FRO665-20 for the 600 MHz / 1900 MHz channel(s) in Sector C. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 20 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

6) The antenna mounting height centerline of the proposed antennas is 138 feet above ground level (AGL).

7) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

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

Dish Wireless Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	JMA MX08FRO665-20	Make / Model:	JMA MX08FRO665-20	Make / Model:	JMA MX08FRO665-20
Frequency Bands:	600 MHz / 1900 MHz	Frequency Bands:	600 MHz / 1900 MHz	Frequency Bands:	600 MHz / 1900 MHz
Gain:	17.45 dBd / 22.65 dBd	Gain:	17.45 dBd / 22.65 dBd	Gain:	17.45 dBd / 22.65 dBd
Height (AGL):	138 feet	Height (AGL):	138 feet	Height (AGL):	138 feet
Channel Count:	8	Channel Count:	8	Channel Count:	8
Total TX Power (W):	280 Watts	Total TX Power (W):	280 Watts	Total TX Power (W):	280 Watts
ERP (W):	3,065.51	ERP (W):	3,065.51	ERP (W):	3,065.51
Antenna A1 MPE %:	**0.91%**	Antenna B1 MPE %:	**0.91%**	Antenna C1 MPE %:	**0.91%**

Site Composite MPE %	
Carrier	**MPE %**
Dish Wireless (Max at Sector A):	0.91%
Verizon	2.68%
AT&T	4.78%
Metro PCS	0.72%
T-Mobile	3.49%
Nextel	0.32%
Sprint	0.42%
Site Total MPE % :	13.32%

Dish Wireless MPE % Per Sector	
Dish Wireless Sector A Total:	0.91%
Dish Wireless Sector B Total:	0.91%
Dish Wireless Sector C Total:	0.91%
Site Total MPE % :	13.32%

Dish Wireless Maximum MPE Power Values (Sector A)

Dish Wireless Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density (μW/cm²)	Frequency (MHz)	Allowable MPE (μW/cm²)	Calculated % MPE
Dish Wireless 600 MHz n71	4	223.68	138.0	1.85	600 MHz n71	400	0.46%
Dish Wireless 1900 MHz n70	4	542.70	138.0	4.48	1900 MHz n70	1000	0.45%
						Total:	**0.91%**

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

Summary

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

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

Dish Wireless Sector	Power Density Value (%)
Sector A:	0.91%
Sector B:	0.91%
Sector C:	0.91%
Dish Wireless Maximum MPE % (Sector A):	0.91%
Site Total:	13.32%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **13.32%** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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

Exhibit G

Letter of Authorization

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

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

Crown Castle Letter of Authorization

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

Re: Tower Share Application
Crown Castle telecommunications site at:
1919 BOSTON POST RD., GUILFORD, CT 06437

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

Crown Site ID/Name: 876343/GUILFORD WEST STONE PROPERTY
Customer Site ID: BOHVN00026A/CT-CCI-T-876343
Site Address: 1919 Boston Post Rd., GUILFORD, CT 06437

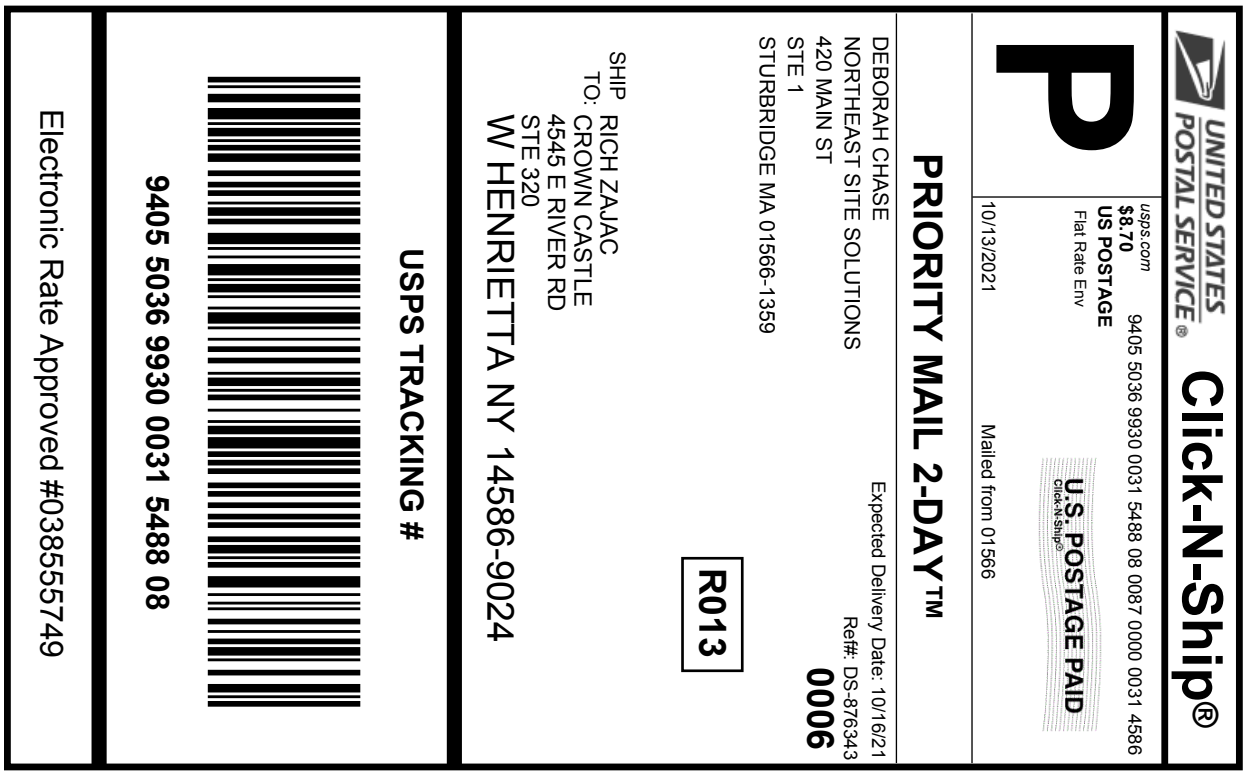
Crown Castle

By: _____ Date: 10/11/2021

Richard Zajac
Site Acquisition Specialist

Exhibit H

Recipient Mailings



Cut on dotted line.

Instructions

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

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0031 5488 08

Trans. #:	545865181
Print Date:	10/13/2021
Ship Date:	10/13/2021
Expected Delivery Date:	10/16/2021

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

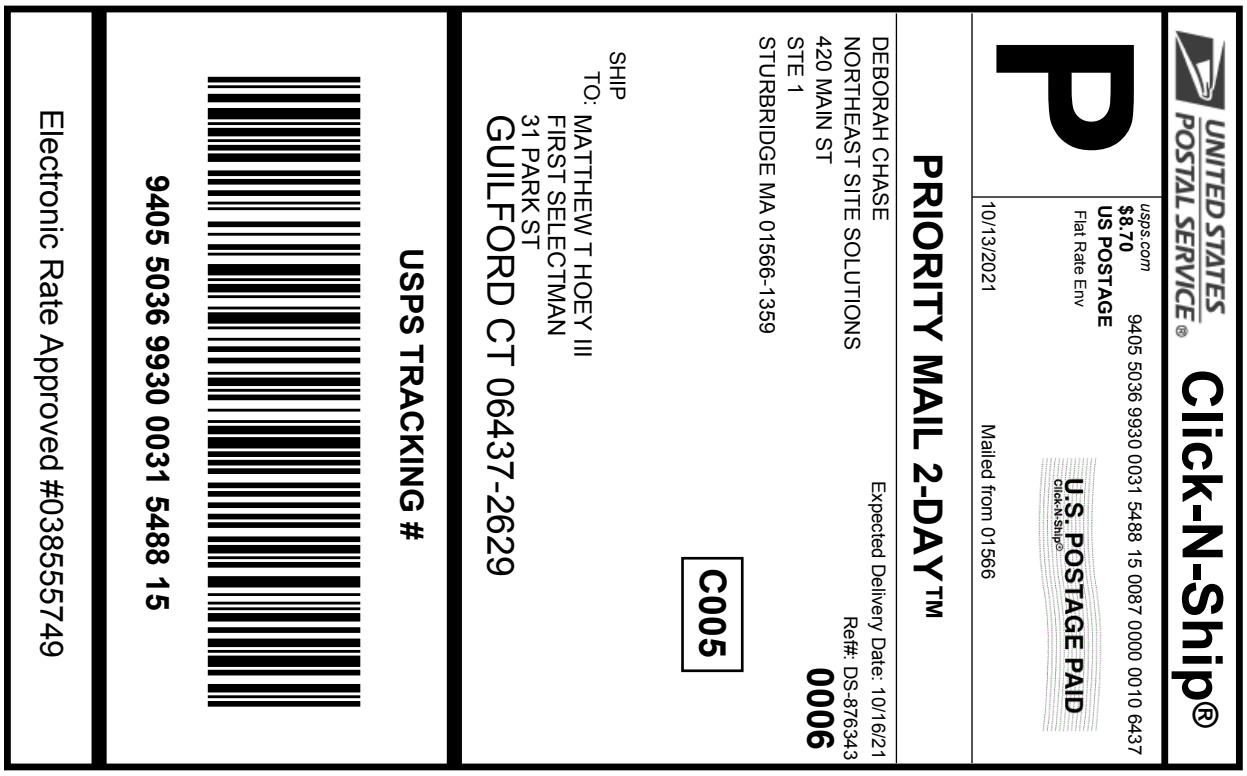
From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
420 MAIN ST
STE 1
STURBRIDGE MA 01566-1359

Ref#: DS-876343

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

* 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.

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.**
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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 0031 5488 15

Trans. #:	545865181
Print Date:	10/13/2021
Ship Date:	10/13/2021
Expected Delivery Date:	10/16/2021

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

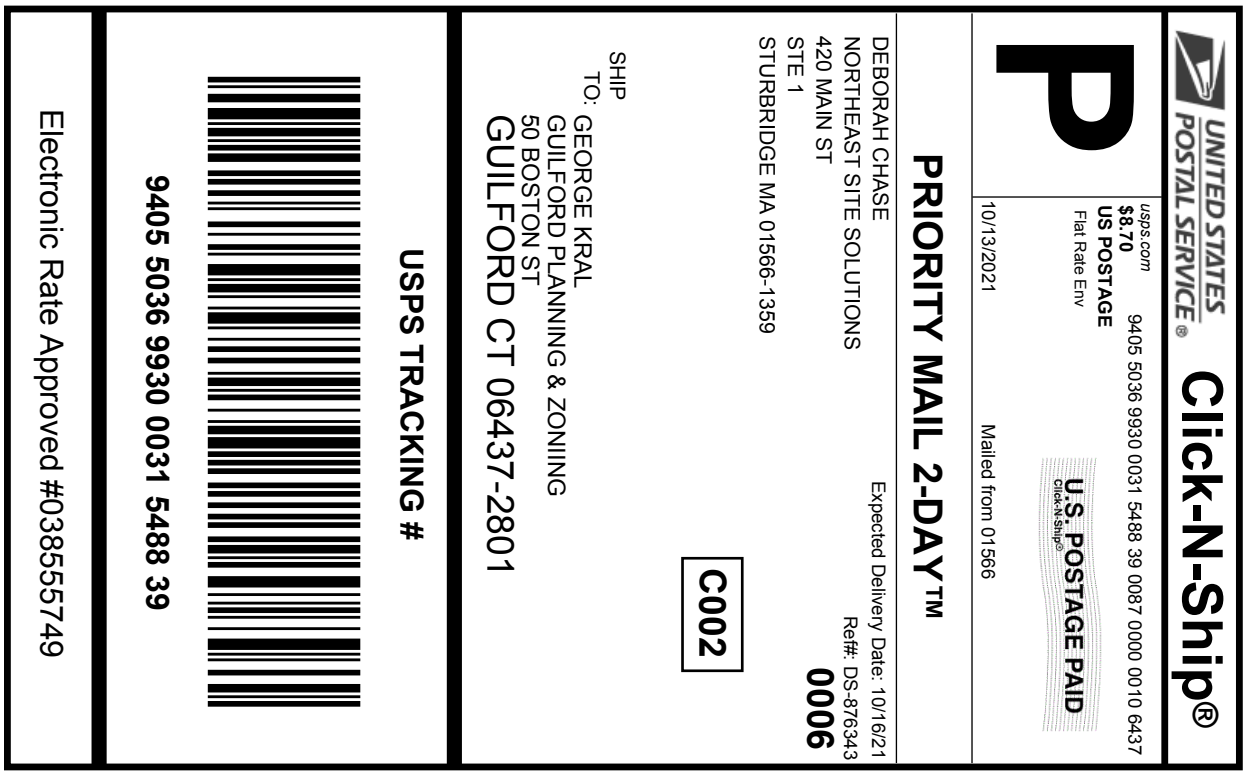
From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
420 MAIN ST
STE 1
STURBRIDGE MA 01566-1359

Ref#: DS-876343

To: MATTHEW T HOEY III
FIRST SELECTMAN
31 PARK ST
GUILFORD CT 06437-2629

* 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.

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 0031 5488 39

Trans. #:	545865181
Print Date:	10/13/2021
Ship Date:	10/13/2021
Expected Delivery Date:	10/16/2021

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

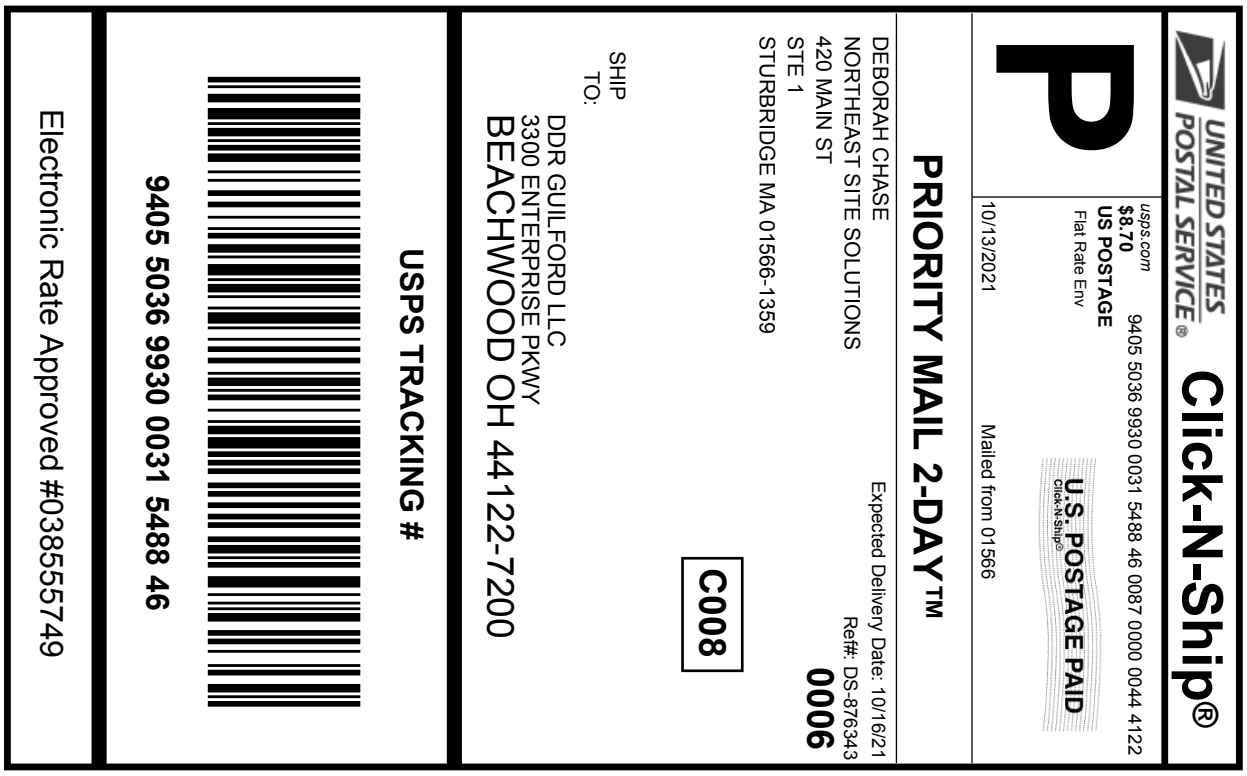
From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
420 MAIN ST
STE 1
STURBRIDGE MA 01566-1359

Ref#: DS-876343

To: GEORGE KRAL
GUILFORD PLANNING & ZONIING
50 BOSTON ST
GUILFORD CT 06437-2801

* 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.

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 0031 5488 46

Trans. #:	545865181
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From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
420 MAIN ST
STE 1
STURBRIDGE MA 01566-1359

Ref#: DS-876343

To: DDR GUILFORD LLC
3300 ENTERPRISE PKWY
BEACHWOOD OH 44122-7200

* 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.

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876343

UNITED STATES POSTAL SERVICE.

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

10/14/2021 03:51 PM

Product	Qty	Unit Price	Price
Prepaid Mail West Henrietta, NY 14586 Weight: 0 lb 2.00 oz Acceptance Date: Thu 10/14/2021 Tracking #: 9405 5036 9930 0031 5488 08	1		$0.00
Prepaid Mail Beachwood, OH 44122 Weight: 0 lb 10.70 oz Acceptance Date: Thu 10/14/2021 Tracking #: 9405 5036 9930 0031 5488 46	1		$0.00
Prepaid Mail Guilford, CT 06437 Weight: 0 lb 10.70 oz Acceptance Date: Thu 10/14/2021 Tracking #: 9405 5036 9930 0031 5488 15	1		$0.00
Prepaid Mail Guilford, CT 06437 Weight: 0 lb 10.70 oz Acceptance Date: Thu 10/14/2021 Tracking #: 9405 5036 9930 0031 5488 39	1		$0.00
Grand Total:			$0.00