



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

April 28, 2022

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

RE: Tower Share Application
281 Wood House Road, Fairfield, CT 06432
Latitude: 41.195944
Longitude: -73.281525
Site #: 806355_Crown_Dish

Dear Ms. Bachman:

This letter and attachments are submitted on behalf of Dish Wireless LLC. Dish Wireless LLC plans to install antennas and related equipment to the tower site located at 281 Wood House Road, Fairfield, Connecticut.

Dish Wireless LLC proposes to install three (3) 600/1900 MHz 5G antennas and six (6) RRUs, at the 166-foot level of the existing 170-foot monopole, one (1) Fiber cable will also be installed. Dish Wireless LLC equipment cabinets will be placed within a 7' x 5' lease area within the existing fenced compound. Included are plans by Kimley Horn, dated November 19, 2021, Exhibit C. Also included is a structural analysis prepared by Crown Castle, dated September 24, 2021, confirming that the existing tower is structurally capable of supporting the proposed equipment. Attached as Exhibit D. The facility was approved by the Connecticut Siting Council on August 4, 1992. Please see attached.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies 16-50aa, of Dish Wireless LLC intent to share a telecommunications facility pursuant to R.C.S.A. 16-50j-88. In accordance with R.C.S.A., a copy of this letter is being sent to Brenda L. Kupchick, First Selectwoman and Jim Wendt, Planning Director for the Town of Fairfield, as well as the tower owner (Crown Castle) and property owner (J Fernandes Properties LLC).

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

1. The proposed modification will not result in an increase in the height of the existing structure. The top of the existing tower is 170-feet and the Dish Wireless LLC antennas will be located at a centerline height of 166-feet.
2. The proposed modifications will not result in an increase of the site boundary as depicted on the attached site plan.



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

4. The operation of the proposed antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard. The combined site operations will result in a total power density of 23.37% as evidenced by Exhibit F.

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

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

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

C. Environmental Feasibility. The proposed shared use of this facility would have a minimal environmental impact. The installation of Dish Wireless LLC equipment at the 166-foot level of the existing 170-foot tower would have an insignificant visual impact on the area around the tower. Dish Wireless LLC ground equipment would be installed within the existing facility compound. Dish Wireless LLC shared use would therefore not cause any significant alteration in the physical or environmental characteristics of the existing site. Additionally, as evidenced by Exhibit F, the proposed antennas would not increase radio frequency emissions to a level at or above the Federal Communications Commission safety standard.

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

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

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



NSS

NORTHEAST
SITE SOLUTIONS

Turnkey Wireless Development

Attachments

Cc: Brenda L. Kupchick, First Selectwoman
Sullivan Independence Hall, Second Floor
725 Old Post Road
Fairfield, CT 06824

Jim Wendt, Planning Director
Sullivan Independence Hall
725 Old Post Road
Fairfield, CT 06824

J Fernandes Properties LLC – Property Owner
281 Wood House Road
Fairfield, CT 06432

Crown Castle – Tower Owner

Exhibit A

Original Facility Approval



STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

136 Main Street, Suite 401
New Britain, Connecticut 06051
Phone: 827-7682

BK

CERTIFICATE

OF

ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED

Pursuant to section 16-50k of the General Statutes of Connecticut, as amended, the Connecticut Siting Council hereby issues a Certificate of Environmental Compatibility and Public Need in Docket No. 86 to Metro Mobile CTS of Fairfield County Inc., for tower sites in Greenwich and Fairfield, Connecticut. This Certificate is issued in accordance with and subject to the terms and conditions set forth in the Decision and Order of the Council on February 17, 1988.

By order of the Council,


Gloria Dibble Pond, Chairperson

February 17, 1988

1009E



STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

136 Main Street, Suite 401
New Britain, Connecticut 06051-4225
Phone: 827-7682

August 6, 1992

David S. Malko
Manager, Engineering and
Regulatory Services
Bell Atlantic Metro Mobile
20 Alexander Drive
Wallingford, CT 06492

RE: Metro Mobile CTS of Fairfield County, Inc., notice of intent to allow Springwich Cellular Limited Partnership to install cellular telecommunications antennas and associated equipment on an existing facility site located off Wood House Road, Fairfield, Connecticut.

Dear Mr. Malko:

At a meeting held August 4, 1992, the Connecticut Siting Council acknowledged your notice of an exempt modification for an existing tower site on Wood House Road in Fairfield, Connecticut.

As proposed in your notice dated July 21, 1992, the modification is in compliance with the exception criteria specified in Regulations of State Agencies 16-50j-72 for changes to an existing facility site that would not increase the tower height, extend the boundary of the tower site, increase noise levels at the tower site boundary by 6 decibels, and add radio frequency transmitting capability which increases the total power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to Section 22a-162 of the Connecticut General Statutes.

The Council is pleased to acknowledge this first shared use of existing cellular towers by two cellular carriers which meets the Council's long-time goal and the public interest of sharing facilities to avoid the proliferation of additional tower structures.

Very truly yours,

A handwritten signature in cursive script, appearing to read "Mortimer A. Gelston".

Mortimer A. Gelston
Chairman

MAG/TEF/cp

cc: Peter Van Wilgan

5766E-3

Exhibit B

Property Card

281 WOOD HOUSE ROAD

Location 281 WOOD HOUSE ROAD

Mblu 118/ 57/ / /

Acct# 06700

Owner J FERNANDES PROPERTIES
LLC

Assessment \$563,850

Appraisal \$805,500

PID 8854

Building Count 1

Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2021	\$422,600	\$382,900	\$805,500

Assessment			
Valuation Year	Improvements	Land	Total
2021	\$295,820	\$268,030	\$563,850

Owner of Record

Owner J FERNANDES PROPERTIES LLC

Sale Price \$0

Co-Owner

Certificate

Address 281 WOOD HOUSE ROAD
FAIRFIELD, CT 06824-1823

Book & Page 5620/0132

Sale Date 12/08/2017

Instrument 02

Ownership History

Ownership History					
Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
J FERNANDES PROPERTIES LLC	\$0		5620/0132	02	12/08/2017
J FERNANDES HOME IMPROVEMENT	\$450,000		5592/0251	25	09/20/2017
GHOSH MOITRAYEE & RANJAN	\$172,000		0706/0293		06/13/1983

Building Information

Building 1 : Section 1

Year Built: 1968
Living Area: 2,426
Replacement Cost: \$423,187

Building Percent Good: 77

Replacement Cost

Less Depreciation: \$325,900

Building Attributes

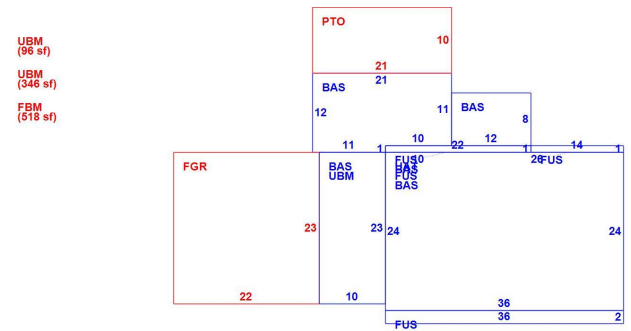
Field	Description
Style:	Colonial
Model	Residential
Grade:	05
Stories:	2 Stories
Occupancy	1
Exterior Wall 1	Vinyl Siding
Exterior Wall 2	
Roof Structure:	Gable/Hip
Roof Cover	Asphalt
Interior Wall 1	Drywall
Interior Wall 2	
Interior Flr 1	Hardwood
Interior Flr 2	Carpet
Heat Fuel	Oil
Heat Type:	Hot Water
AC Type:	None
Total Bedrooms:	4 Bedrooms
Total Bthrms:	2
Total Half Baths:	1
Total Xtra Fixtrs:	
Total Rooms:	8 Rooms
Bath Style:	Average
Kitchen Style:	Average
Num Kitchens	01
FCPZ	
Num Park	
Fireplaces	
Fndtn Cndtn	
Basement	

Building Photo



(http://images.vgsi.com/photos2/FairfieldCTPhotos/\0087\IMG_5839_8767)

Building Layout



(ParcelSketch.ashx?pid=8854&bid=8636)

Building Sub-Areas (sq ft)

Code	Description	Gross Area	Living Area
BAS	First Floor	1,454	1,454
FUS	Upper Story, Finished	972	972
FBM	Basement, Finished	518	0
FGR	Garage	506	0
PTO	Patio	210	0
UAT	Attic, Unfinished	864	0
UBM	Basement, Unfinished	672	0
		5,196	2,426

Extra Features

Extra Features				
Code	Description	Size	Value	Bldg #
FPL3	2.0 STORY FIREPLACE	1.00 UNITS	\$5,800	1
FPL1	1.0 STORY FIREPLACE	1.00 UNITS	\$3,900	1

Land**Land Use**

Use Code 1010
Description Single Fam MDL-01
Zone AAA
Neighborhood 0057
Alt Land Appr No
Category

Land Line Valuation

Size (Sqr Feet) 87188
Depth 0
Assessed Value \$268,030
Appraised Value \$382,900

Outbuildings

Outbuildings						<u>Legend</u>
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
MSC40	UTIL BLD			1.00 UNIT	\$31,000	1
MSC40	UTIL BLD			1.00 UNIT	\$31,000	1
MSC19	EQUIP SHED			1.00 UNIT	\$10,000	1
GEN1	GENERATOR			1.00 UNITS	\$15,000	1

Valuation History

Appraisal			
Valuation Year	Improvements	Land	Total
2020	\$422,600	\$382,900	\$805,500
2019	\$387,400	\$368,600	\$756,000
2018	\$387,400	\$368,600	\$756,000

Assessment			
Valuation Year	Improvements	Land	Total
2020	\$295,820	\$268,030	\$563,850
2019	\$271,180	\$258,020	\$529,200
2018	\$271,180	\$258,020	\$529,200

Exhibit C

Construction Drawings



DISH Wireless L.L.C. SITE ID:

NJJER01088A

DISH Wireless L.L.C. SITE ADDRESS:

**281 WOOD HOUSE ROAD
FAIRFIELD, CT 06824**

SCOPE OF WORK

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

- TOWER SCOPE OF WORK:**
- INSTALL (3) PROPOSED PANEL ANTENNAS (1 PER SECTOR)
 - INSTALL (1) PROPOSED ANTENNA PLATFORM MOUNT
 - INSTALL PROPOSED JUMPERS
 - INSTALL (6) PROPOSED RRUs (2 PER SECTOR)
 - INSTALL (1) PROPOSED OVER VOLTAGE PROTECTION DEVICE (OVP)
 - INSTALL (1) PROPOSED HYBRID CABLE
 - REMOVE EXISTING ANTENNAS AND MOUNT AT 166'-0" AGL.

- GROUND SCOPE OF WORK:**
- INSTALL (1) PROPOSED METAL PLATFORM
 - INSTALL (1) PROPOSED ICE BRIDGE
 - DISH Wireless L.L.C. TO UTILIZE EXISTING 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)
 - DISH Wireless L.L.C. TO UTILIZE EXISTING EMPTY METER SOCKET

SITE INFORMATION

PROPERTY OWNER: J FERNANDES PROPERTIES LLC
 ADDRESS: 281 WOOD HOUSE ROAD
 FAIRFIELD, CT 06824

TOWER TYPE: MONOPOLE

CROWN CASTLE SITE ID: 806355

CROWN CASTLE 548686

APP NUMBER: FAIRFIELD

COUNTY: FAIRFIELD

LATITUDE (NAD 83): 41° 11' 45.30" N
 41.195917° N

LONGITUDE (NAD 83): 73° 16' 52.90" W
 73.281361° W

ZONING JURISDICTION: CONNECTICUT SITING COUNCIL

ZONING DISTRICT: AAA

PARCEL NUMBER: 1180570000

OCCUPANCY GROUP: U

CONSTRUCTION TYPE: II-B

POWER COMPANY: UNITED ILLUMINATING CO

TELEPHONE COMPANY: LIGHTOWER

PROJECT DIRECTORY

APPLICANT: DISH WIRELESS, LLC.
 5701 SOUTH SANTA FE DRIVE
 LITTLETON, CO 80120

TOWER OWNER: CROWN CASTLE
 2000 CORPORATE DRIVE
 CANONSBURG, PA 15317
 (877) 486-9377

SITE DESIGNER: KIMLEY-HORN & ASSOCIATES
 3875 EMBASSY PKWY, SUITE 280
 AKRON, OH 44333
 (216) 505-7771
 COA #: PEC.0000738

SITE ACQUISITION: VICTOR NUNEZ
 (917) 563-3682
 VICTOR.NUNEZ@CROWNCastle.COM

CONSTRUCTION MANAGER: JOSEPH DIPIAZZA
 JOSEPH.DIPIAZZA@DISH.COM

RF ENGINEER: MURUGABIRAN JAYAPAL
 MURUGABIRAN.JAYAPAL@DISH.COM

11/19/21
 Exp. 01/31/22



5701 SOUTH SANTA FE DRIVE
 LITTLETON, CO 80120



COA #: PEC.0000738
 421 FAYETTEVILLE ST, SUITE 600
 RALEIGH, NC 27601



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

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

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	09/28/2021	ISSUED FOR REVIEW
0	11/18/2021	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
 KHCLC-16280

DISH Wireless L.L.C.
 PROJECT INFORMATION

NJJER01088A
 281 WOOD HOUSE ROAD
 FAIRFIELD, CT 06824

SHEET TITLE
 TITLE SHEET

SHEET NUMBER
T-1

CONNECTICUT CODE OF COMPLIANCE

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

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

SHEET INDEX

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

SITE PHOTO



UNDERGROUND SERVICE ALERT CBYD 811
 UTILITY NOTIFICATION CENTER OF CONNECTICUT
 (800) 922-4455
 WWW.CBYD.COM
 CALL 2 WORKING DAYS UTILITY NOTIFICATION PRIOR TO CONSTRUCTION



GENERAL NOTES

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

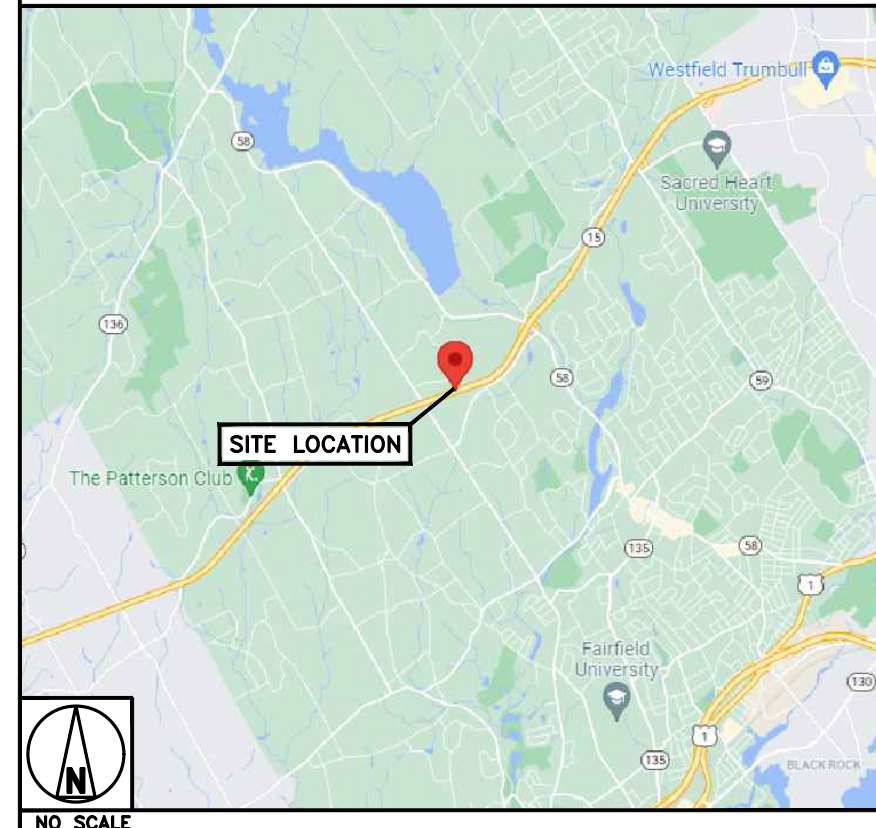
11"x17" PLOT WILL BE HALF SCALE UNLESS OTHERWISE NOTED

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

DIRECTIONS

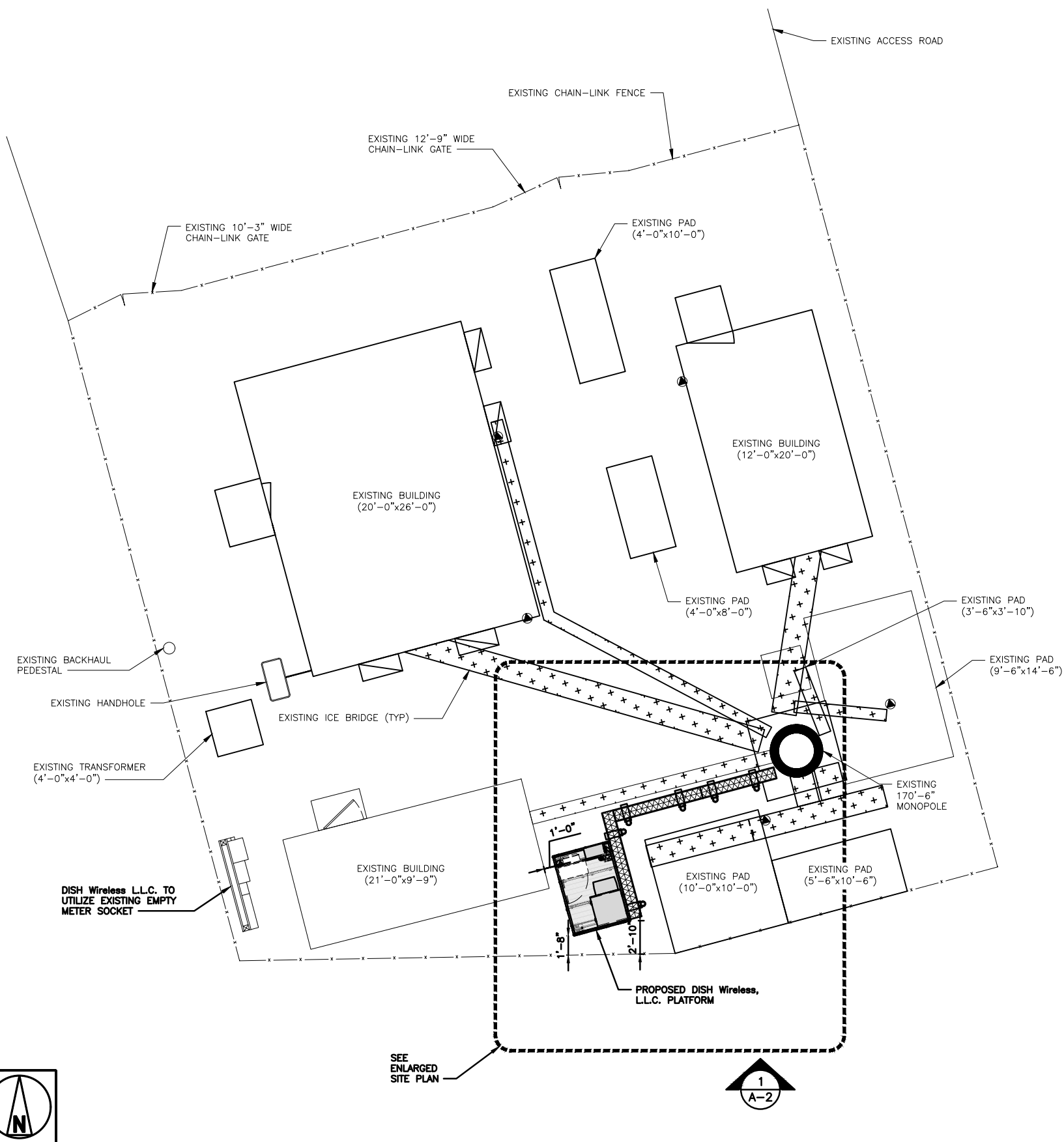
- DIRECTIONS FROM 3 ADP BLVD, ROSELAND, NJ:
- GET ON I-280 E FROM LIVINGSTON AVE
 - CONTINUE ON I-280 E. TAKE GARDEN STATE PKWY, I-287 E AND CT-15 N TO CONGRESS ST IN FAIRFIELD. TAKE EXIT 44 FROM CT-15 N
 - CONTINUE ON CONGRESS ST. DRIVE TO WOOD HOUSE RD

VICINITY MAP

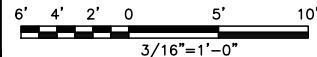


NOTES

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



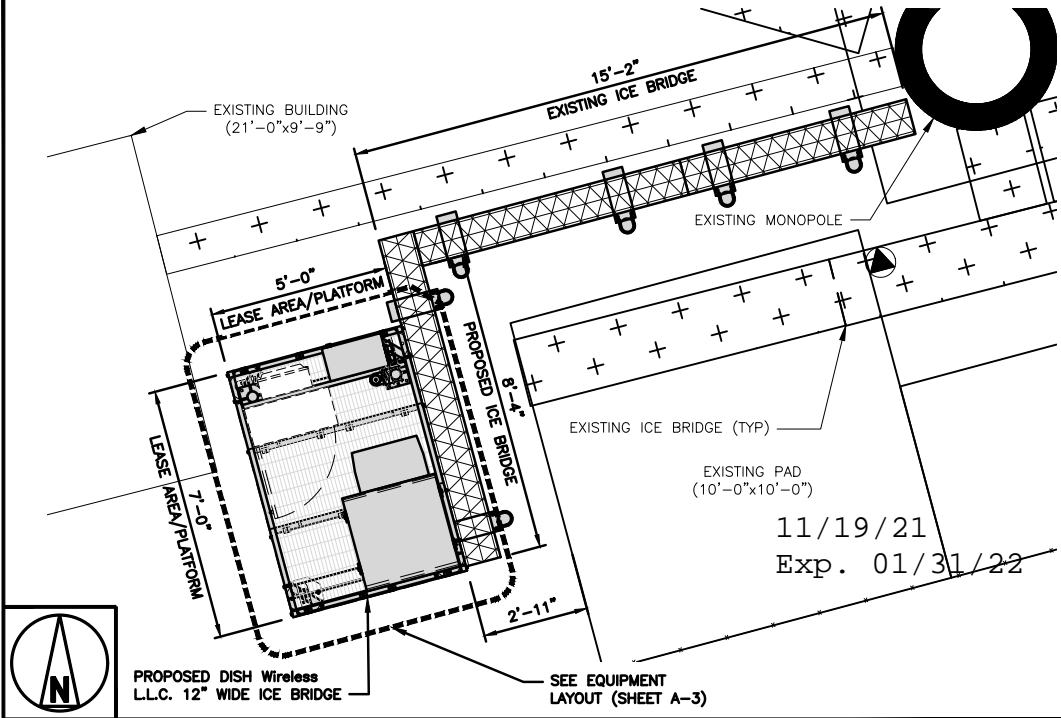
OVERALL SITE PLAN



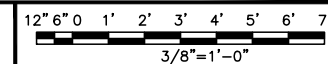
1

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



2



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



COA #: PEC.0000738
421 FAYETTEVILLE ST, SUITE 600
RALEIGH, NC 27601



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

DRAWN BY:	CHECKED BY:	APPROVED BY:
DRD	MCK	---

RFDS REV #: ---

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	09/28/2021	ISSUED FOR REVIEW
0	11/18/2021	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
KHCLC-16280

DISH Wireless L.L.C.
PROJECT INFORMATION
NJJER01088A
281 WOOD HOUSE ROAD
FAIRFIELD, CT 06824

SHEET TITLE
OVERALL AND ENLARGED
SITE PLAN

SHEET NUMBER

A-1

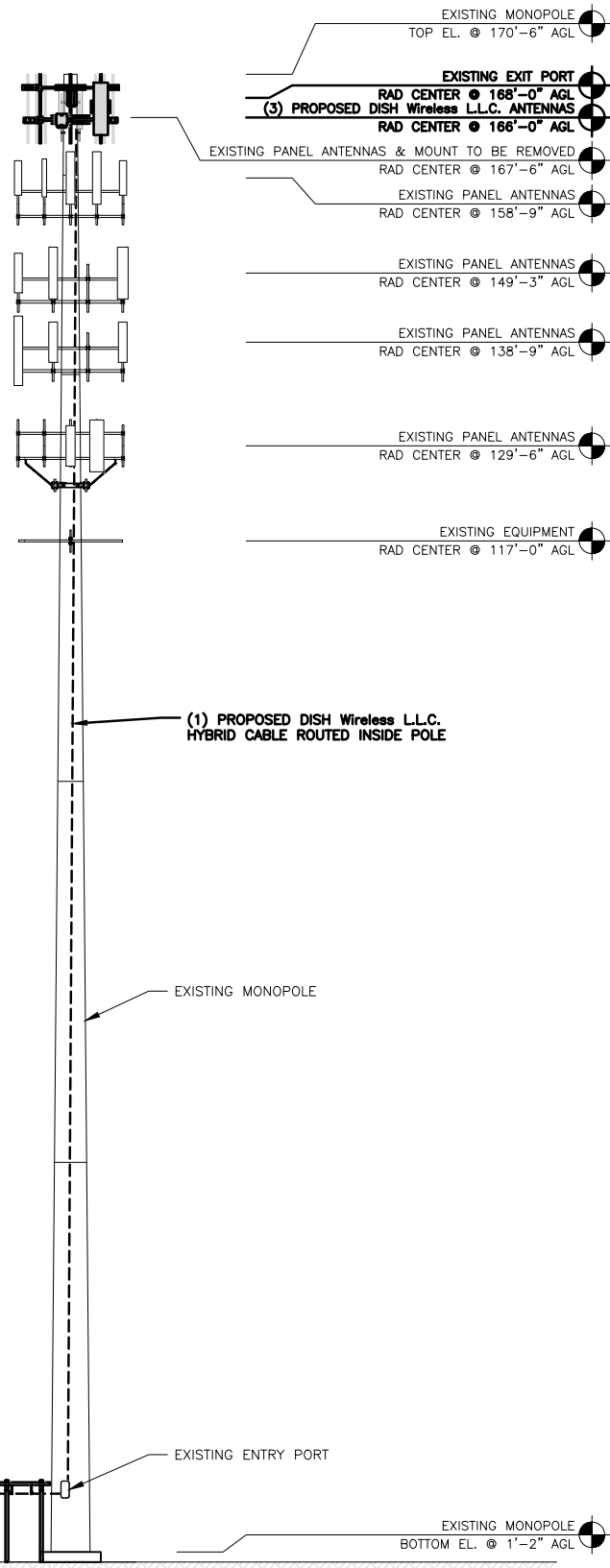
NOT USED

NO SCALE

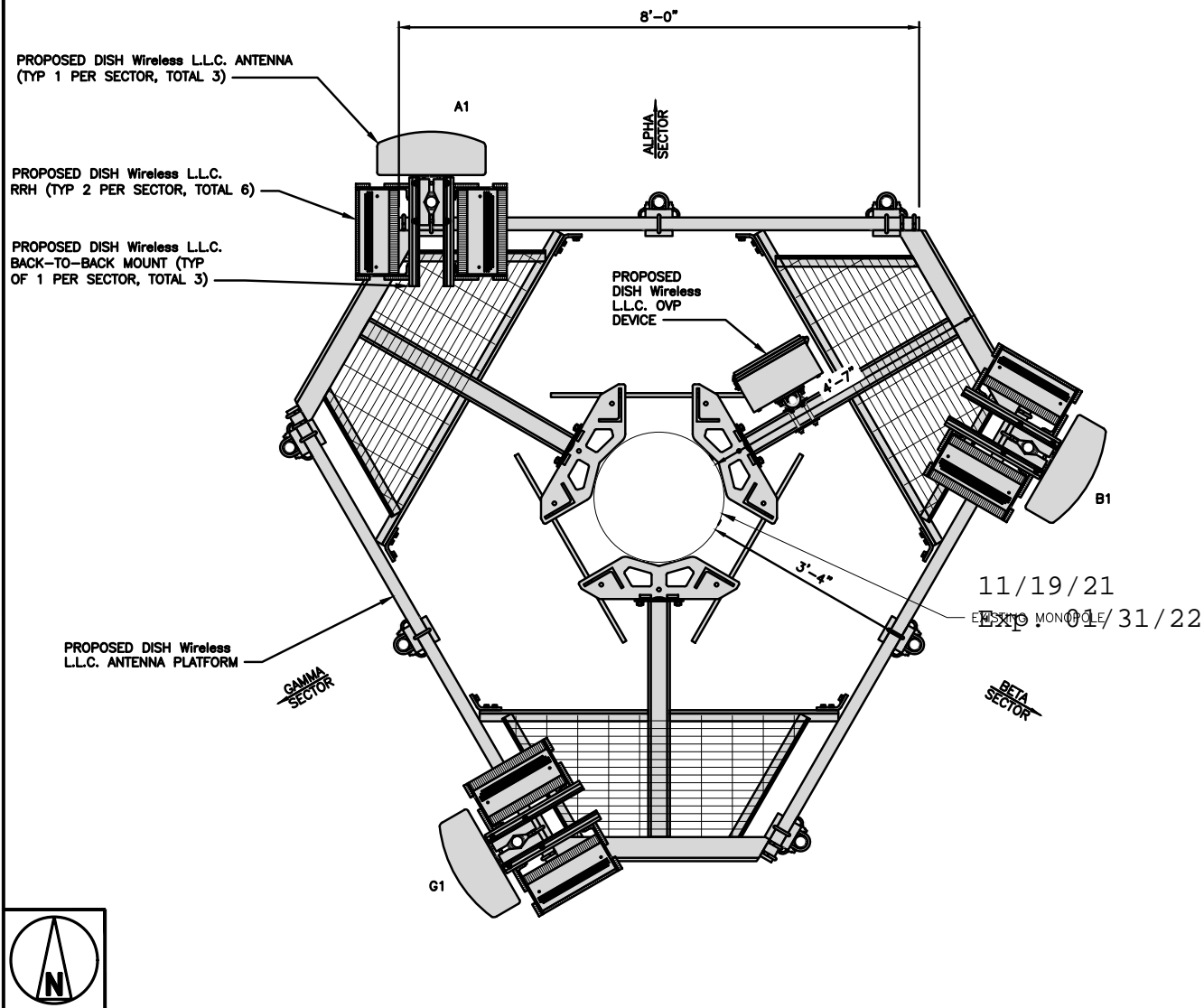
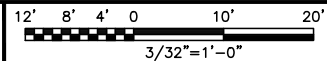
3

NOTES

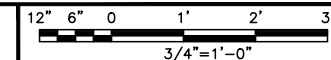
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNA AND MW DISH SPECIFICATIONS REFER TO ANTENNA SCHEDULE AND TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS
3. EXISTING EQUIPMENT AND FENCE OMITTED FOR CLARITY.
4. REMOVE EXISTING ANTENNAS AND MOUNT AT 166'-0" AGL.



PROPOSED SOUTH ELEVATION



ANTENNA LAYOUT



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 - MX08FRO665-21	5G	72.0" x 20.0"	0°	166'-0"	(1) HIGH-CAPACITY HYBRID CABLE (215'-0" LONG)
BETA	B1	PROPOSED	JMA - MX08FRO665-21	5G	72.0" x 20.0"	120°	166'-0"	
GAMMA	G1	PROPOSED	JMA - MX08FRO665-21	5G	72.0" x 20.0"	240°	166'-0"	

SECTOR	POSITION	RRH		NOTES
		MANUFACTURER - MODEL NUMBER	TECHNOLOGY	
ALPHA	A1	FUJITSU - TA08025-B604	5G	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.
	A1	FUJITSU - TA08025-B605	5G	
BETA	B1	FUJITSU - TA08025-B604	5G	
	B1	FUJITSU - TA08025-B605	5G	
GAMMA	G1	FUJITSU - TA08025-B604	5G	
	G1	FUJITSU - TA08025-B605	5G	

ANTENNA SCHEDULE

NO SCALE

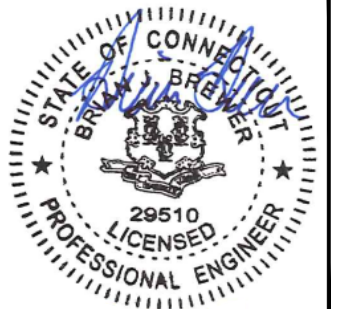
3



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



COA #: PEC.0000738
421 FAYETTEVILLE ST, SUITE 600
RALEIGH, NC 27601



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DRD MCK ---

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FAIRFIELD, CT 06824

SHEET TITLE
ELEVATION, ANTENNA
LAYOUT AND SCHEDULE

SHEET NUMBER

A-2



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



COA #: PEC.0000738
421 FAYETTEVILLE ST, SUITE 600
RALEIGH, NC 27601



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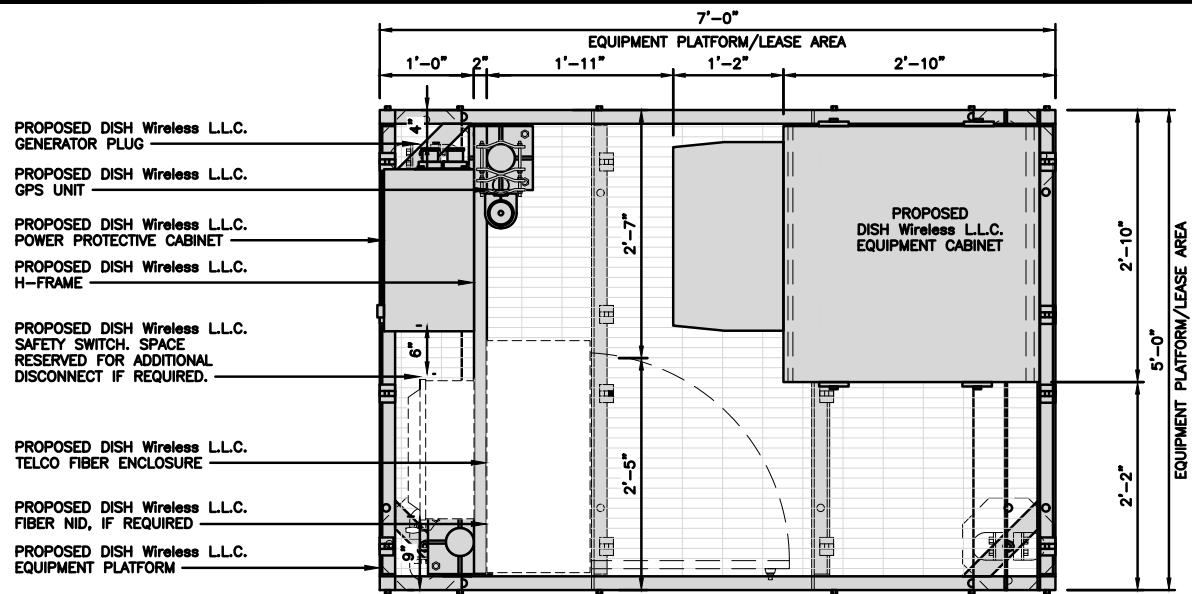
SHEET TITLE
EQUIPMENT PLATFORM AND
H-FRAME DETAILS

SHEET NUMBER

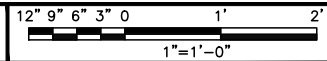
A-3

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



PLATFORM EQUIPMENT PLAN

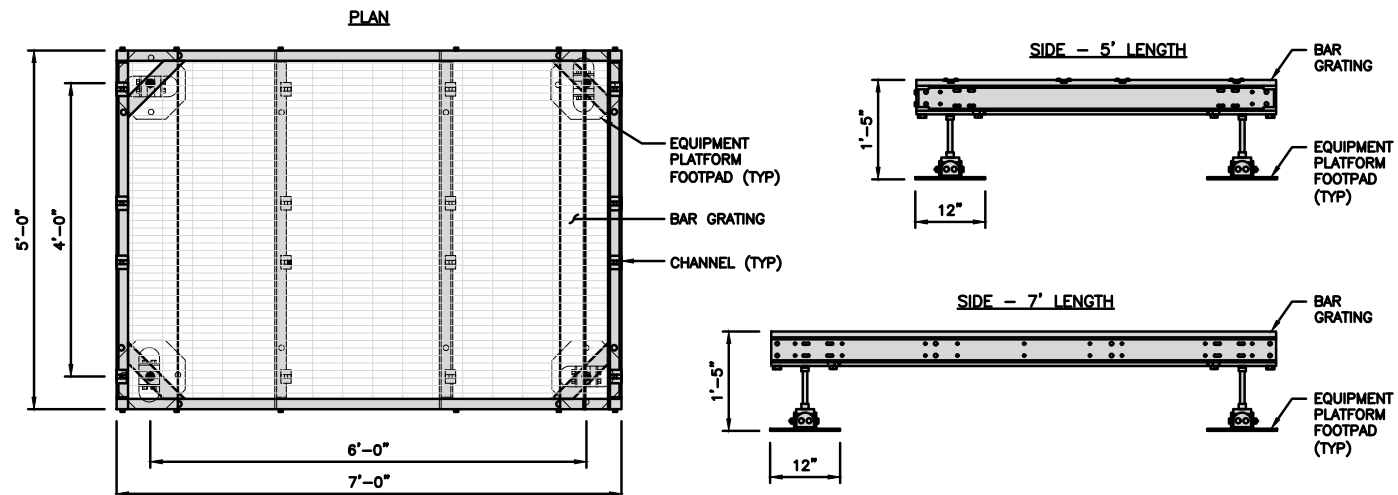


1

**COMMSCOPE MTC4045LP
5X7 PLATFORM**

DIMENSIONS (HxWxD)	16"x84"x60"
TOTAL WEIGHT	423 LBS

- NOTE:
1. GC TO PROVIDE EXTENDED THREAD FOR PLATFORM IF REQUIRED HEIGHT EXCEEDS 17"
2. PLATFORM TO BE LEVEL WITHIN 1"

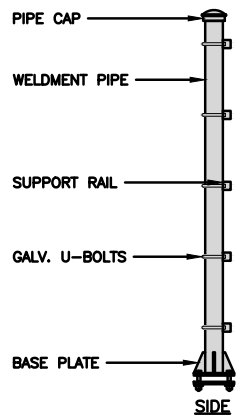


PLATFORM DETAIL

NO SCALE 2

**COMMSCOPE MTC4045HFLD
H-FRAME**

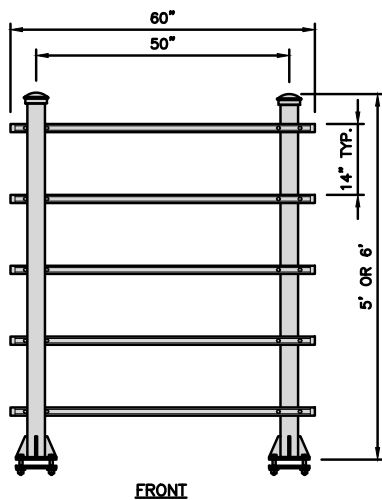
UNISTRUT/SUPPORT RAILS QTY	5
WEIGHT	59.74 lbs



H-FRAME DETAIL

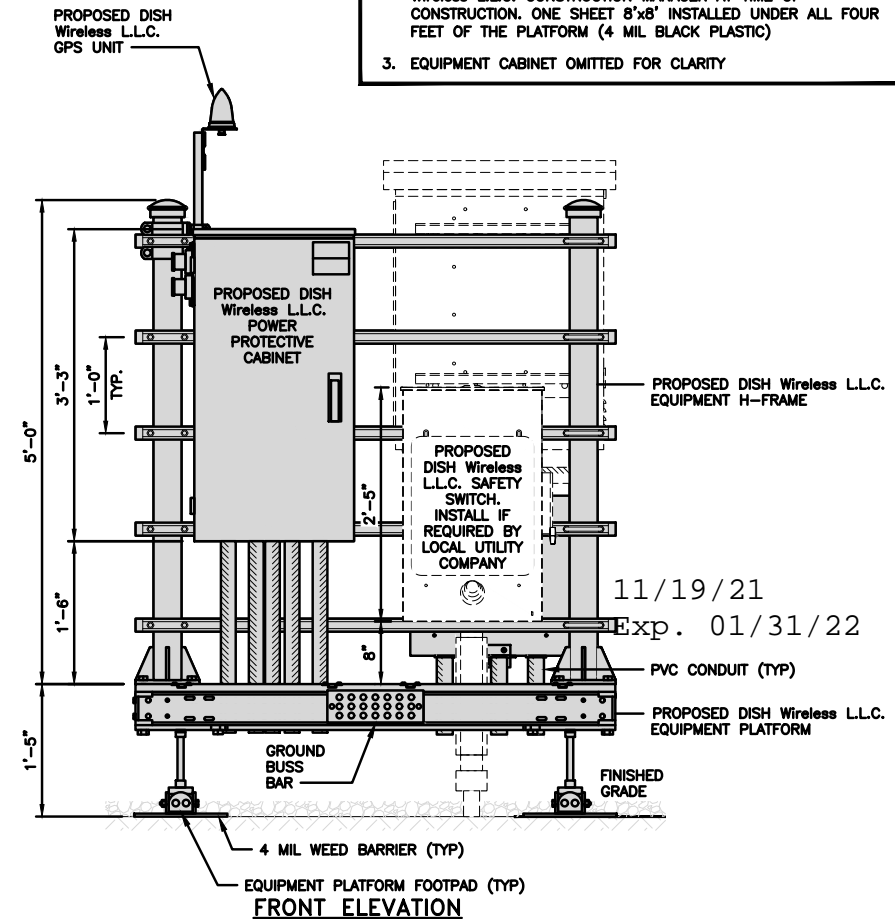
NO SCALE 3

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

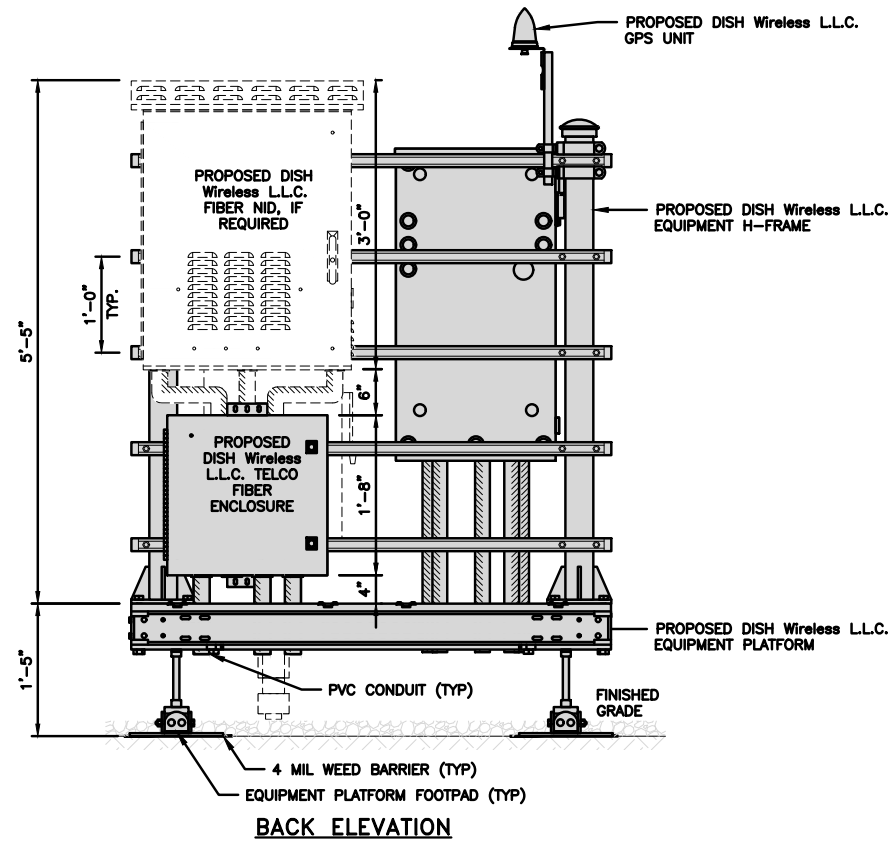


NOT USED

NO SCALE 4

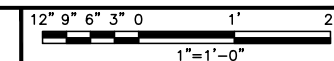


FRONT ELEVATION



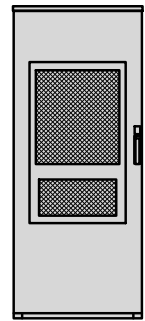
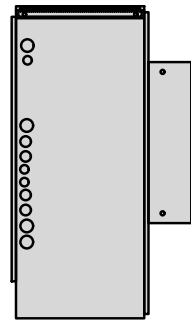
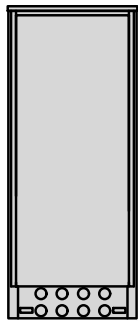
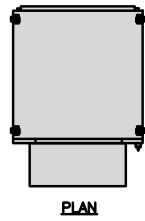
BACK ELEVATION

H-FRAME EQUIPMENT ELEVATION



5

ENERSYS HEX 2000059996	
DIMENSIONS (HxWxD)	73"x30"x32"
POWER SYSTEM	-48V ALPHA/600A
HEATER	800W
TOTAL WEIGHT (EMPTY)	376 lbs

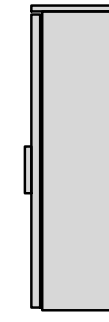
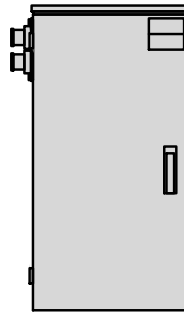
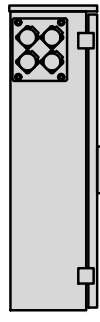
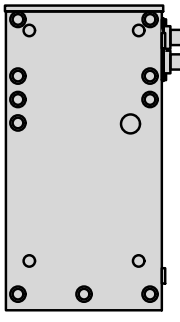
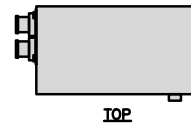


CABINET DETAIL

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

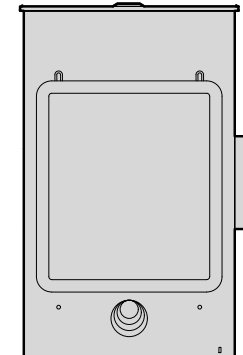
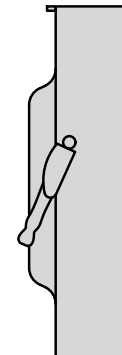
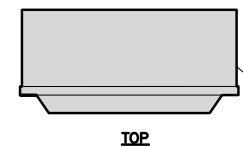


POWER PROTECTION CABINET (PPC) DETAIL

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

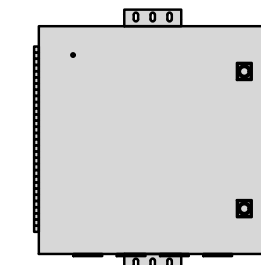
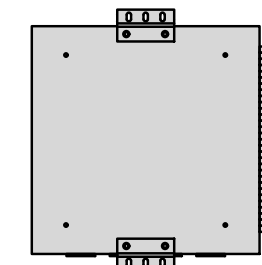
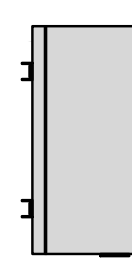
NOT USED

NO SCALE

5

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

11/19/21
Exp. 01/31/22



SIDE

BACK

FRONT

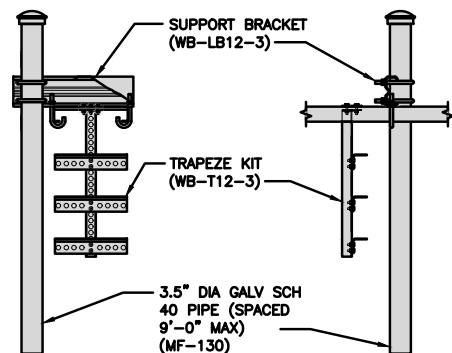
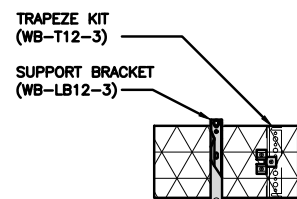
FIBER TELCO ENCLOSURE DETAIL

NO SCALE

6

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

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



PLAN

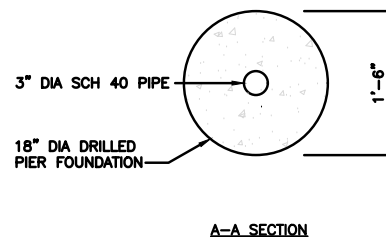
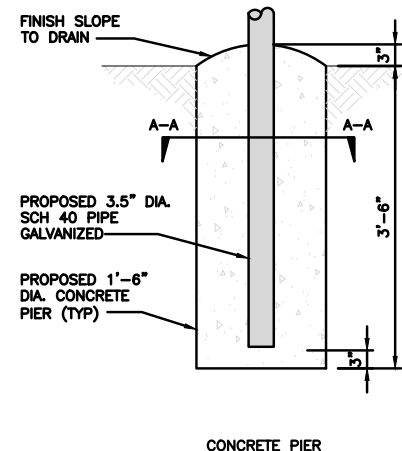
FRONT

SIDE

ICE BRIDGE DETAIL

NO SCALE

7

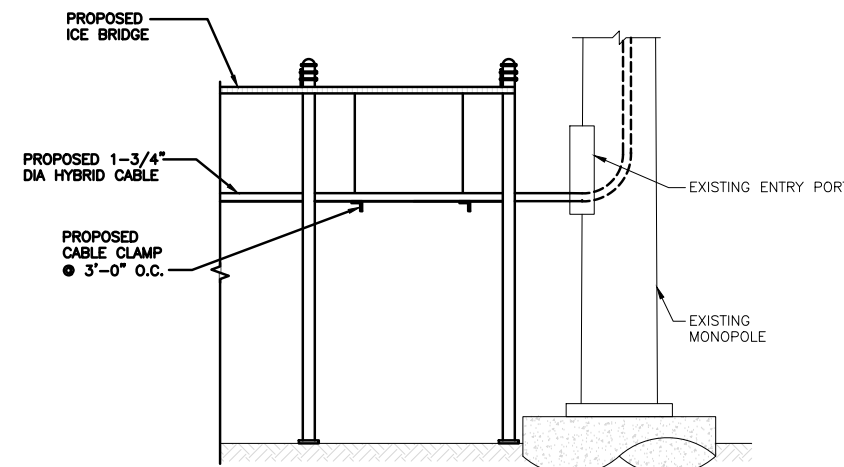


CONCRETE PIER

TYPICAL ICE BRIDGE CONCRETE PIER DETAIL

NO SCALE

8



HYBRID CABLE RUN

NO SCALE

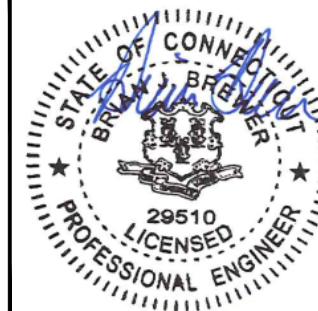
9



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



COA #: PEC.0000738
421 FAYETTEVILLE ST, SUITE 600
RALEIGH, NC 27601



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

DRAWN BY: CHECKED BY: APPROVED BY:
DRD MCK ---

RFDS REV #: ---

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	09/28/2021	ISSUED FOR REVIEW
0	11/18/2021	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
KHCLC-16280

DISH Wireless L.L.C.
PROJECT INFORMATION

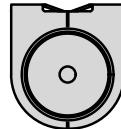
NJER01088A
281 WOOD HOUSE ROAD
FAIRFIELD, CT 06824

SHEET TITLE
EQUIPMENT DETAILS

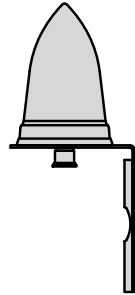
SHEET NUMBER

A-4

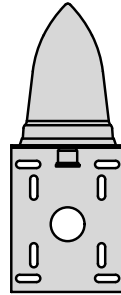
PCTEL GPSGL-TMG-SPI-40NCB	
DIMENSIONS (DIAxH) MM/INCH	81x184mm 3.2"x7.25"
WEIGHT W/ACCESSORIES	075 lbs
CONNECTOR	N-FEMALE
FREQUENCY RANGE	1590 ± 30MHz



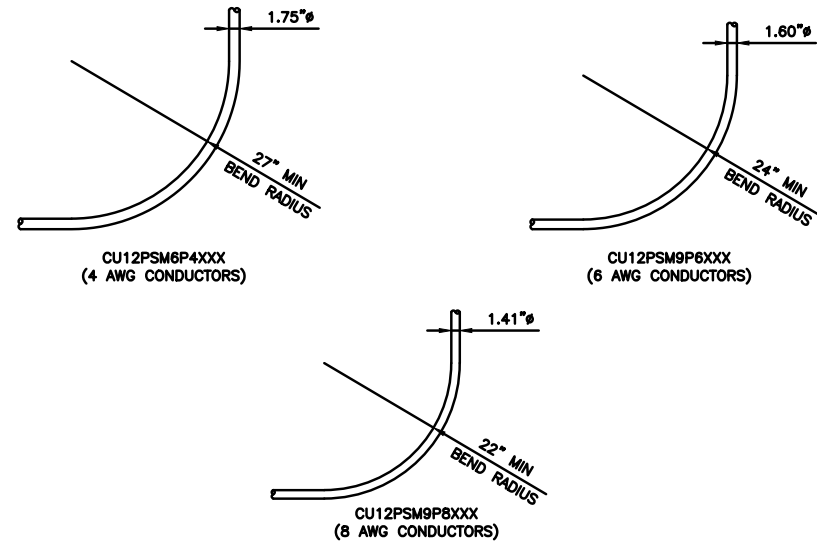
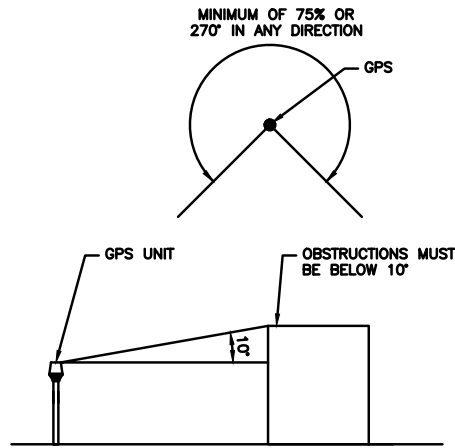
TOP



BACK



SIDE



GPS DETAIL

NO SCALE

1

GPS MINIMUM SKY VIEW REQUIREMENTS

NO SCALE

2

CABLES UNLIMITED HYBRID CABLE
MINIMUM BEND RADIUSES

NO SCALE

3

11/19/21
Exp. 01/31/22



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DRD MCK ---

RFDS REV #: ---

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KHCLC-16280

DISH Wireless L.L.C.
PROJECT INFORMATION
NJJER01088A
281 WOOD HOUSE ROAD
FAIRFIELD, CT 06824

SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER

A-5

NOT USED

NO SCALE

4

NOT USED

NO SCALE

5

NOT USED

NO SCALE

6

NOT USED

NO SCALE

7

NOT USED

NO SCALE

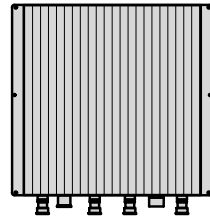
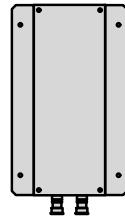
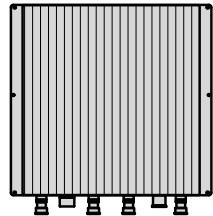
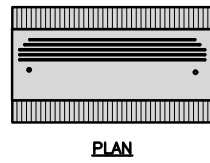
8

NOT USED

NO SCALE

9

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

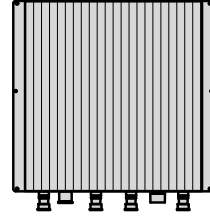
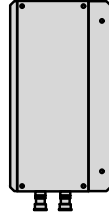
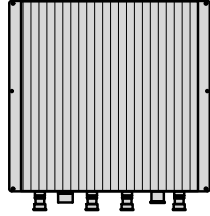
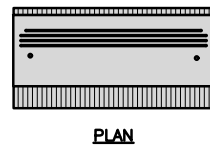


BACK

SIDE

FRONT

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



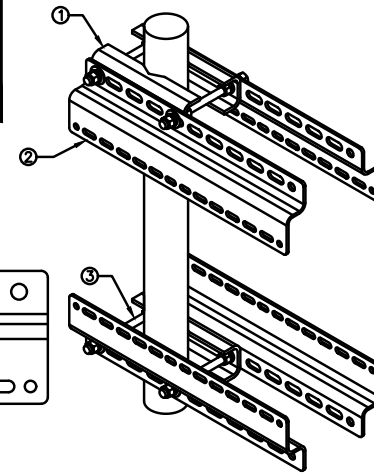
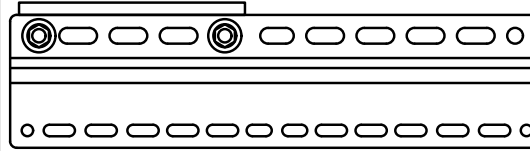
BACK

SIDE

FRONT

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 DETAIL

NO SCALE

1

RRH DETAIL

NO SCALE

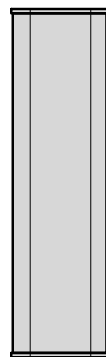
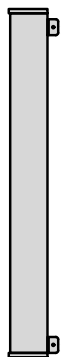
2

RRH MOUNT DETAIL

NO SCALE

3

JMA WIRELESS MX08FRO665-21 ANTENNA	
DIMENSIONS (HxWxD)	72.0"x20.0"x8.0"
TOTAL WEIGHT	82.5 LB
RF PORTS, CONNECTOR TYPE	8 x 4.3-10 FEMALE



BACK

SIDE

FRONT

ANTENNA DETAIL

NO SCALE

4

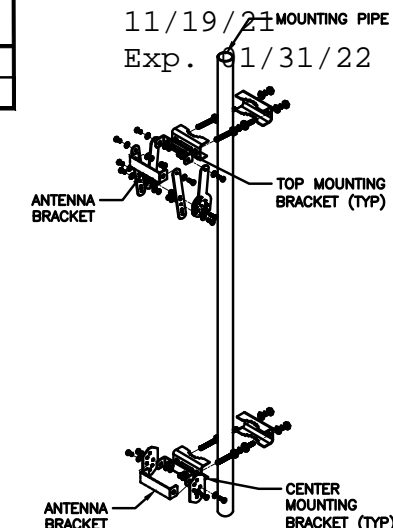
NOT USED

NO SCALE

5

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

NOTE:
KIT #91900318: TOP AND BOTTOM BRACKETS
FOR 4-, 6-, AND 8-FOOT ANTENNAS
ANTENNA BRACKET NOT PART OF KIT



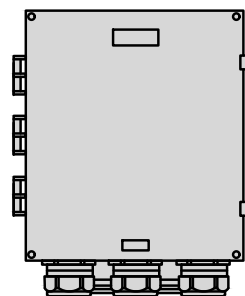
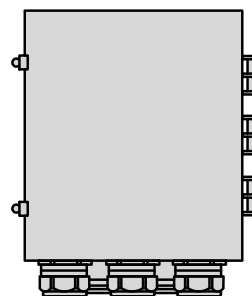
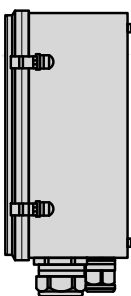
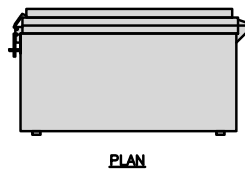
11/19/21 MOUNTING PIPE
Exp. 01/31/22

ANTENNA BRACKET DETAIL

NO SCALE

6

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



SIDE

BACK

FRONT

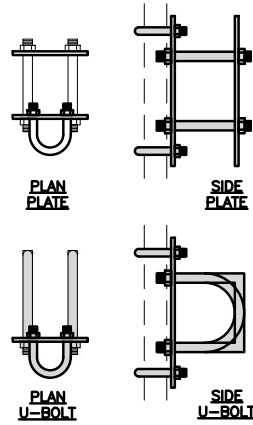
SURGE SUPPRESSION DETAIL (OVP)

NO SCALE

7

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

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

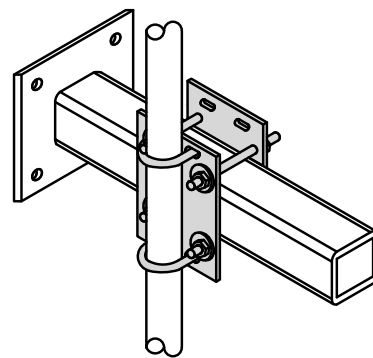


PLAN PLATE

SIDE PLATE

PLAN U-BOLT

SIDE U-BOLT



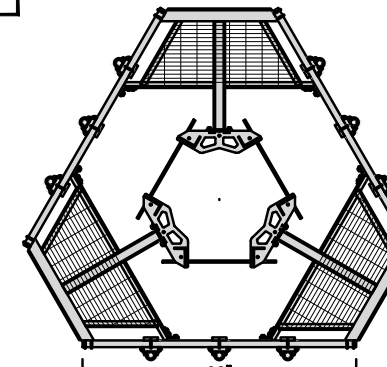
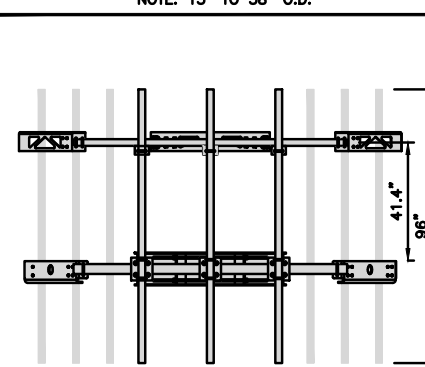
RRH/OVP MOUNT DETAIL

NO SCALE

8

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

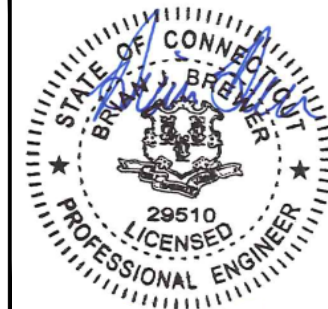
9



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



COA #: PEC.0000738
421 FAYETTEVILLE ST, SUITE 600
RALEIGH, NC 27601



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DRAWN BY: CHECKED BY: APPROVED BY:
DRD MCK ---

RFDS REV #: ---

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SUBMITTALS		
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0	11/18/2021	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
KHCLC-16280

DISH Wireless L.L.C.
PROJECT INFORMATION

NJER01088A
281 WOOD HOUSE ROAD
FAIRFIELD, CT 06824

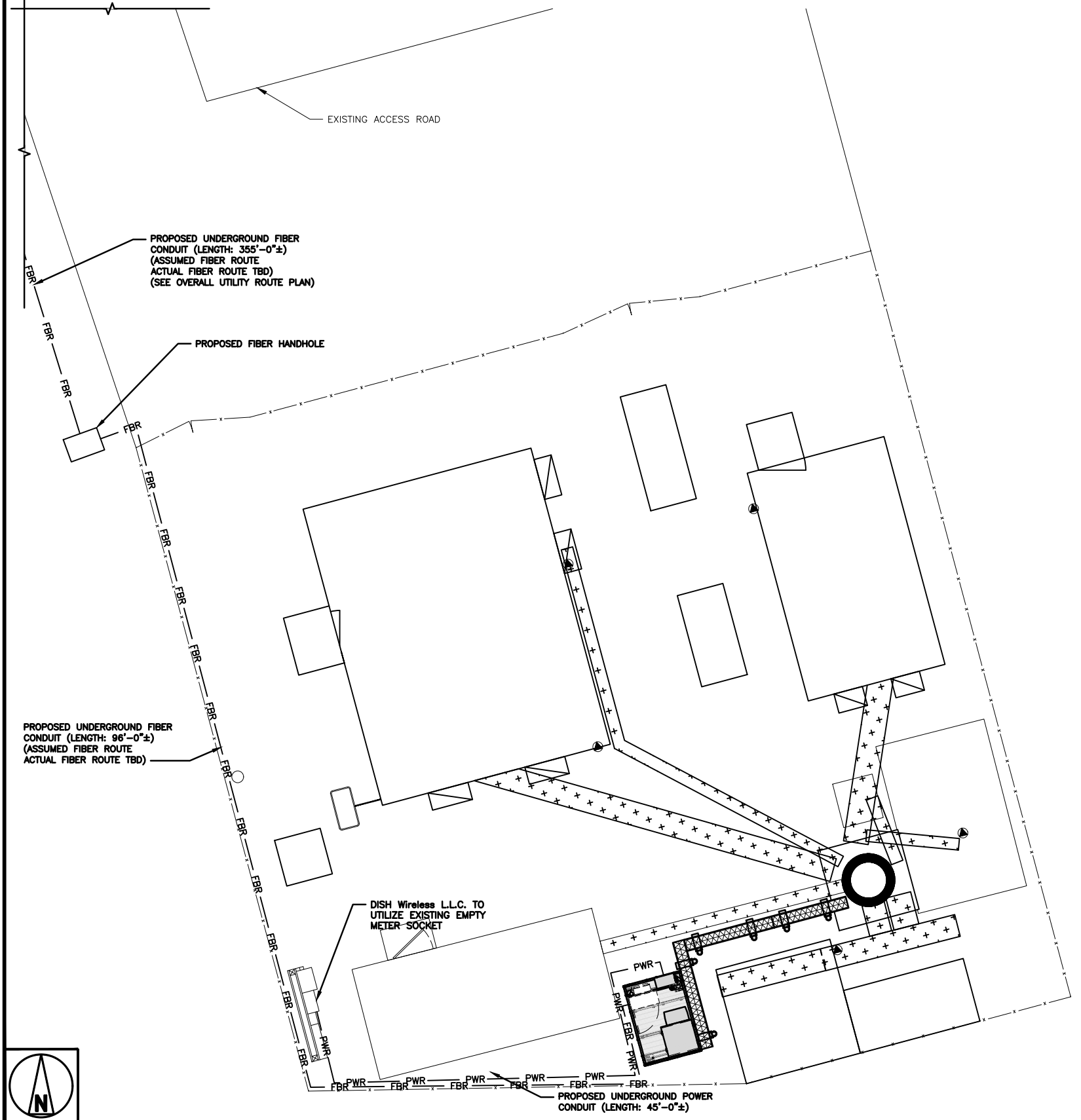
SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER

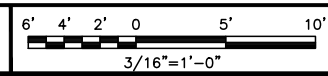
A-6

NOTES

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



UTILITY ROUTE PLAN



1

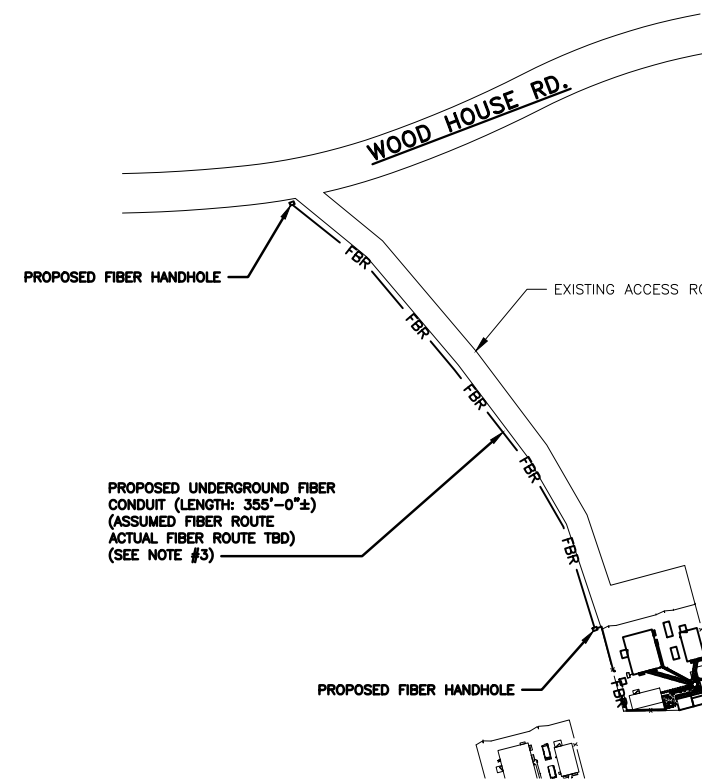
DC POWER WIRING SHALL BE COLOR CODED AT EACH END FOR IDENTIFYING +24V AND -48V CONDUCTORS. RED MARKINGS SHALL IDENTIFY +24V AND BLUE MARKINGS SHALL IDENTIFY -48V.

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 / 21
12. CONTRACTOR SHALL BE RESPONSIBLE FOR AS-BUILT PANEL SCHEDULE AND SITE DRAWINGS. Exp. 01/31/22
13. ALL TRENCHES IN COMPOUND TO BE HAND DUG

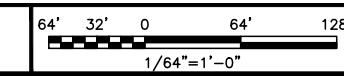
ELECTRICAL NOTES

NO SCALE

2



OVERALL UTILITY ROUTE PLAN



3



5701 SOUTH SANTA FE DRIVE
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A&E PROJECT NUMBER
KHCLC-16280

DISH Wireless L.L.C.
PROJECT INFORMATION

NJER01088A
281 WOOD HOUSE ROAD
FAIRFIELD, CT 06824

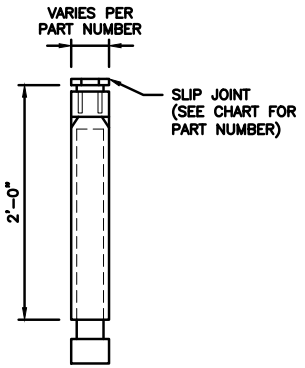
SHEET TITLE
ELECTRICAL/FIBER ROUTE
PLAN AND NOTES

SHEET NUMBER

E-1

CARLON EXPANSION FITTINGS

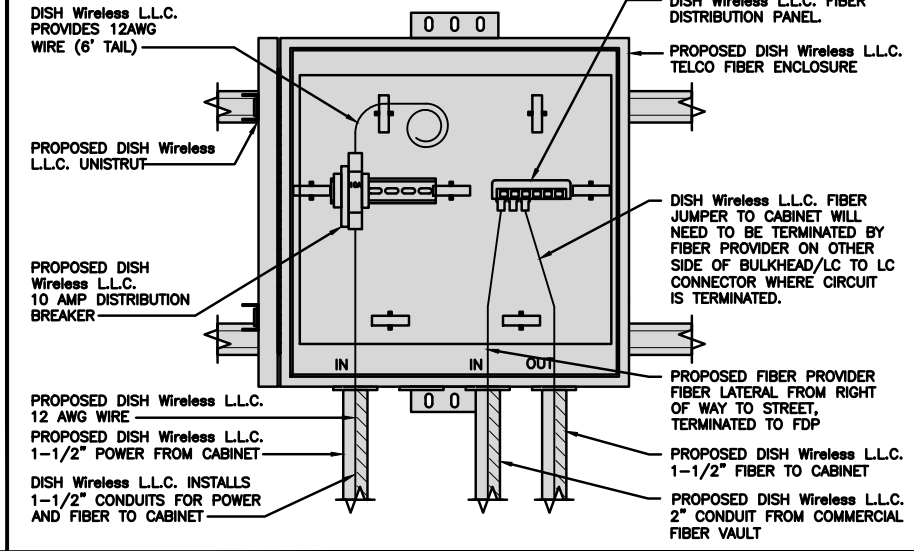
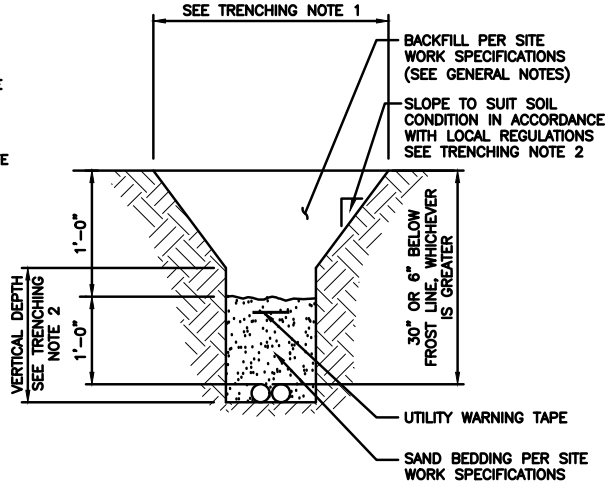
COUPLING END PART#	MALE TERMINAL ADAPTER END PART#	SIZE	STD CTN QTY.	TRAVEL LENGTH
E945D	E945DX	1/2"	20	4"
E945E	E945EX	3/4"	15	4"
E945F	E945FX	1"	10	4"
E945G	E945GX	1 1/4"	5	4"
E945H	E945HX	1 1/2"	5	4"
E945J	E945JX	2"	15	8"
E945K	E945KX	2 1/2"	10	8"
E945L	E945LX	3"	10	8"
E945M	E945MX	3 1/2"	5	8"
E945N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

TRENCHING NOTES

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



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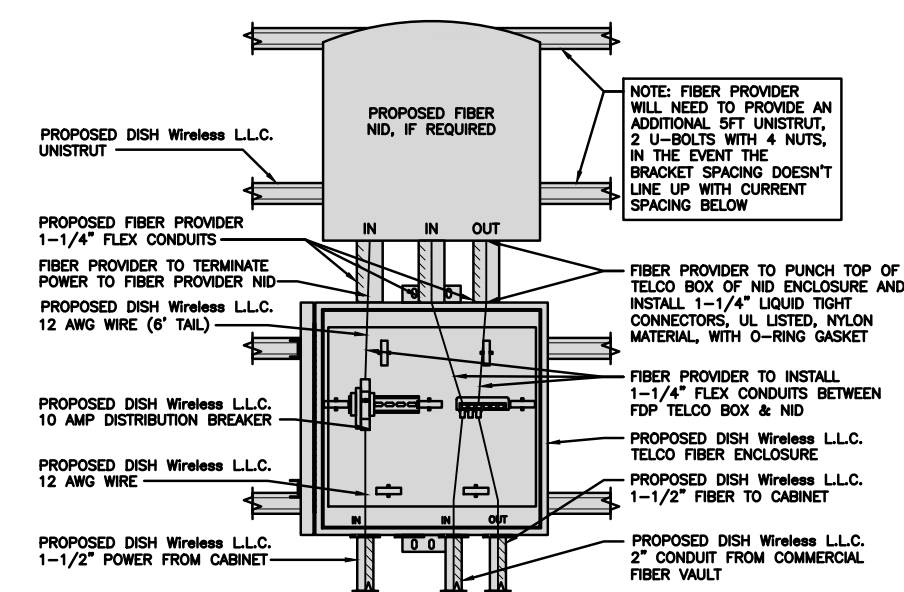
SHEET TITLE
ELECTRICAL
DETAILS

SHEET NUMBER
E-2

EXPANSION JOINT DETAIL NO SCALE 1

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

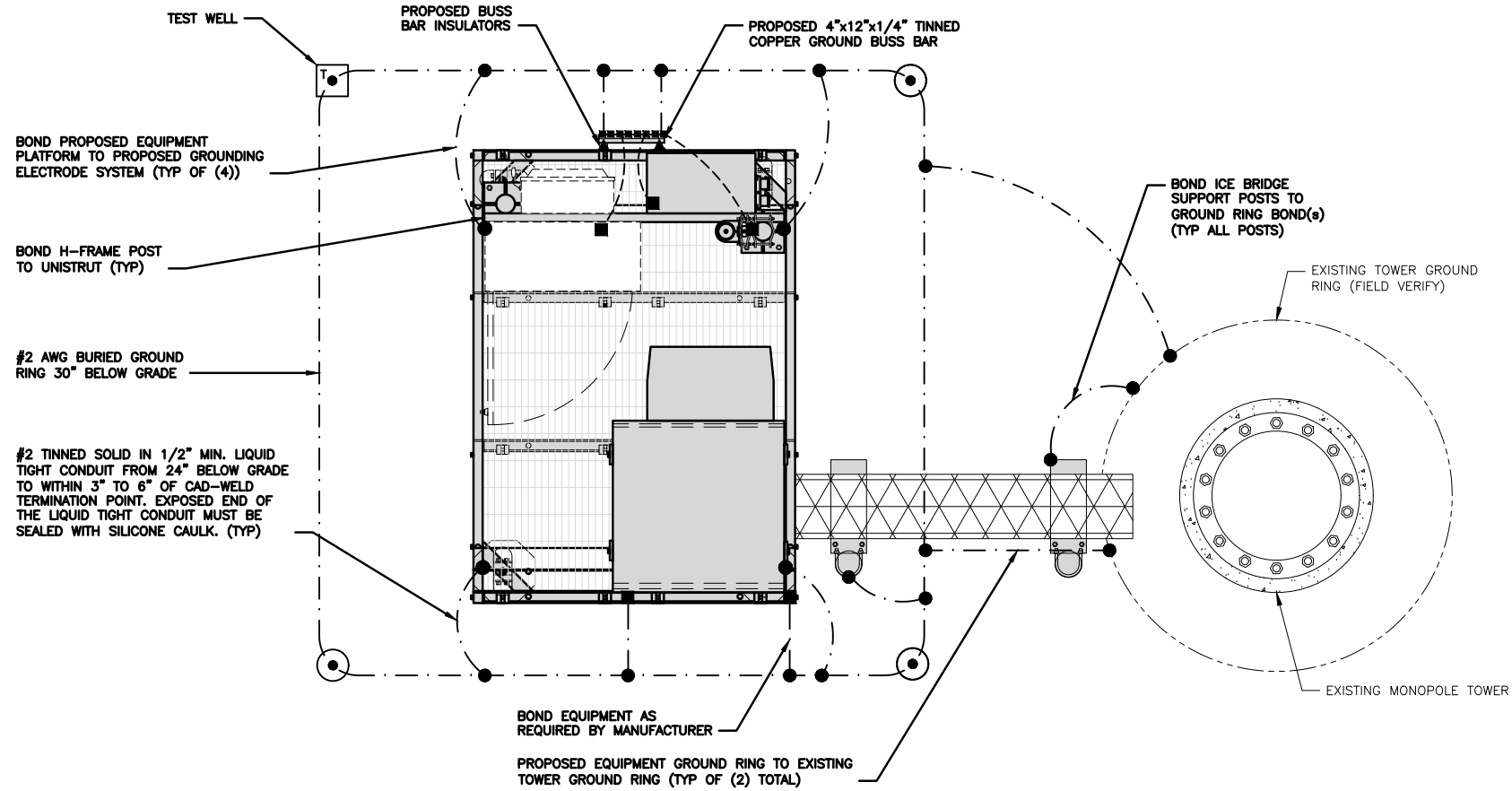
NOT USED NO SCALE 5

NOT USED NO SCALE 6

NOT USED NO SCALE 7

NOT USED NO SCALE 8

NOT USED NO SCALE 9

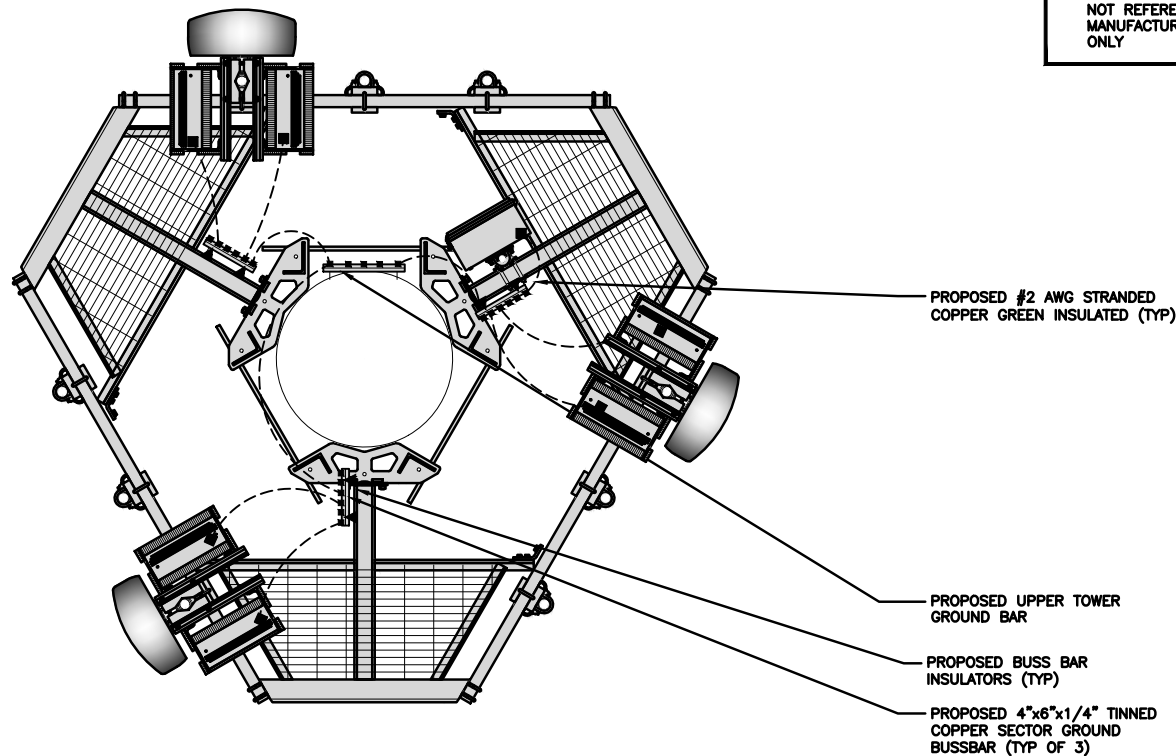


TYPICAL EQUIPMENT GROUNDING PLAN

NO SCALE 1

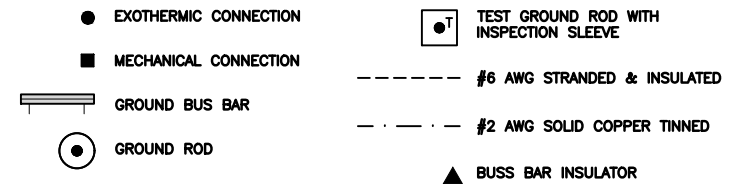
NOTES

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



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

- 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.
- 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. 7/21 Exp. 01/31/22
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- TELCO GROUND BAR:** BOND TO BOTH CELL REFERENCE GROUND BAR OR EXTERIOR GROUND RING.
- FRAME BONDING:** THE BONDING POINT FOR TELECOM EQUIPMENT FRAMES SHALL BE THE GROUND BUS THAT IS NOT ISOLATED FROM THE EQUIPMENTS METAL FRAMEWORK.
- 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.
- 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.
- 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
- 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.
- 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**
- 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

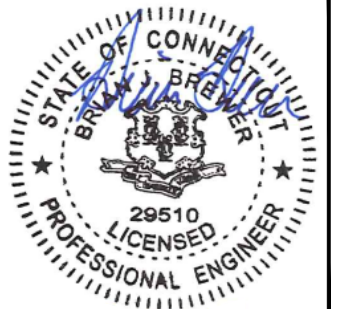
NO SCALE 3



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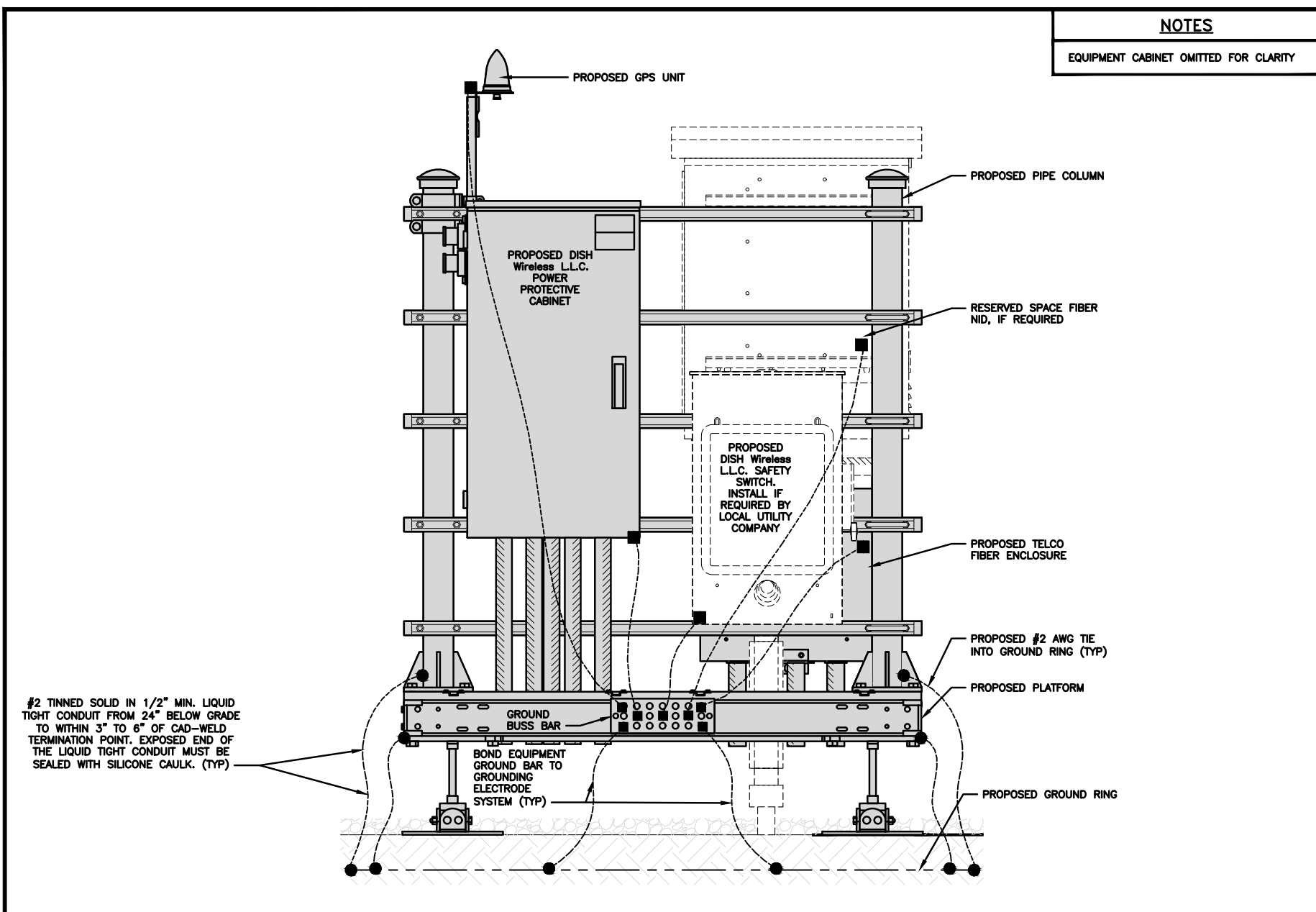
DISH Wireless L.L.C.
PROJECT INFORMATION

NJER01088A
281 WOOD HOUSE ROAD
FAIRFIELD, CT 06824

SHEET TITLE
GROUNDING PLANS
AND NOTES

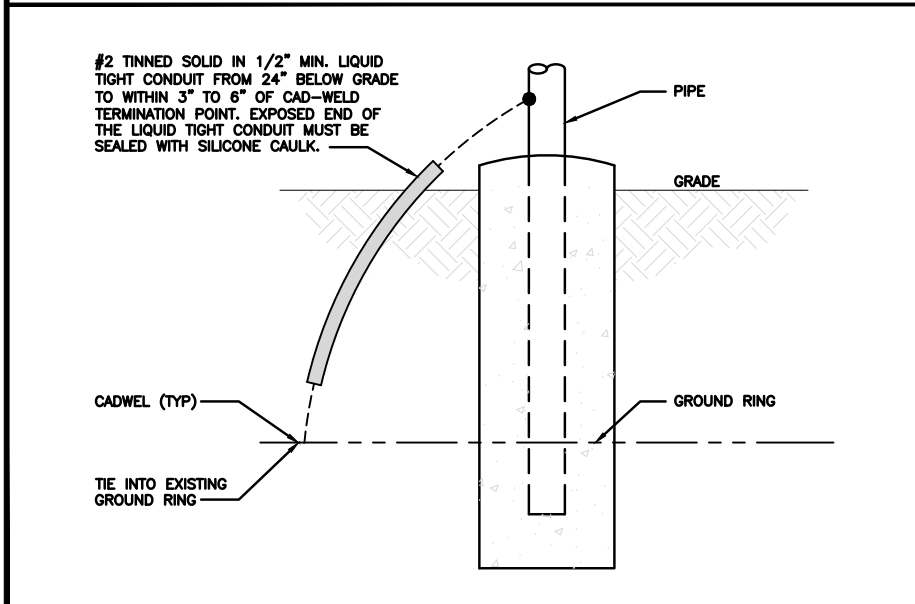
SHEET NUMBER

G-1



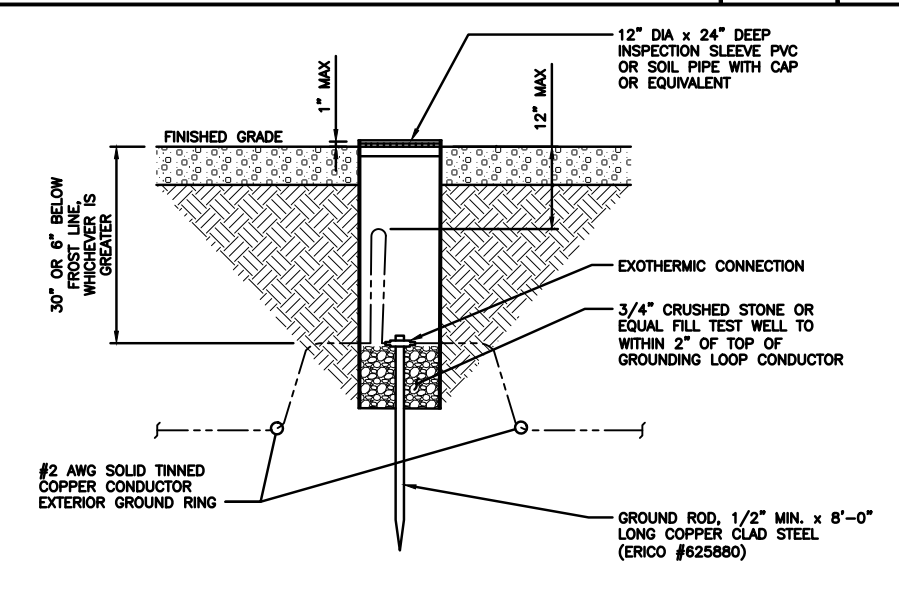
H-FRAME GROUNDING DETAIL

NO SCALE 1



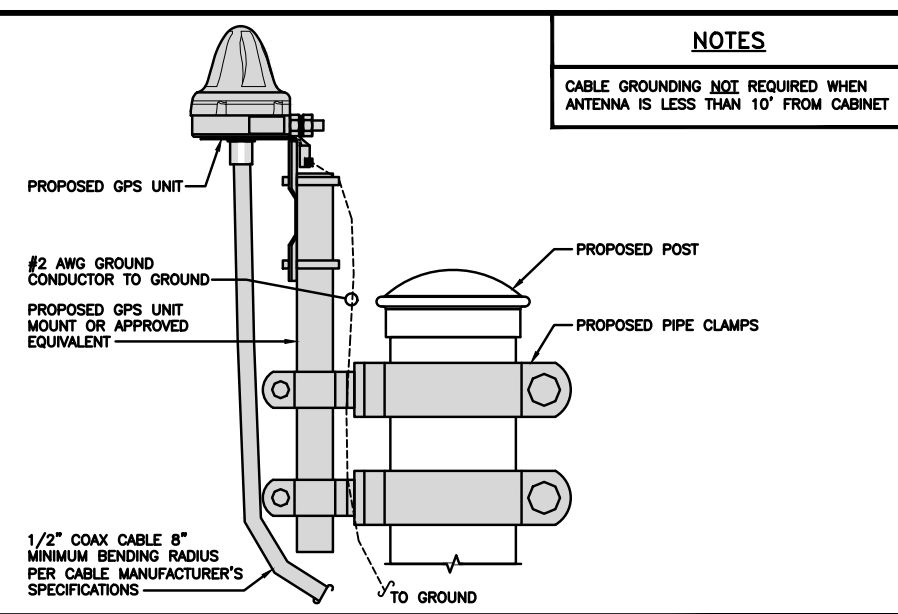
TRANSITIONING GROUND DETAIL

NO SCALE 4



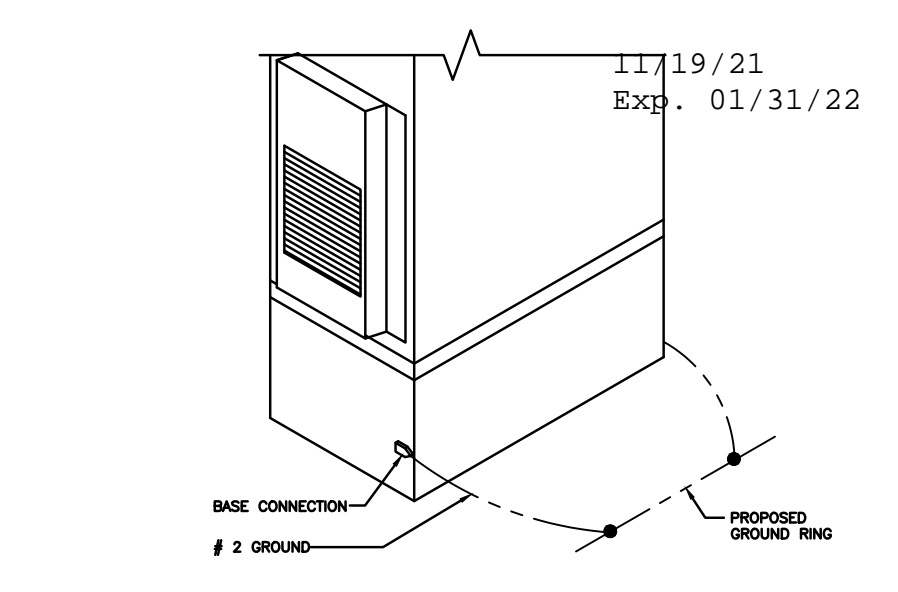
TYPICAL TEST GROUND ROD WITH INSPECTION SLEEVE

NO SCALE 5



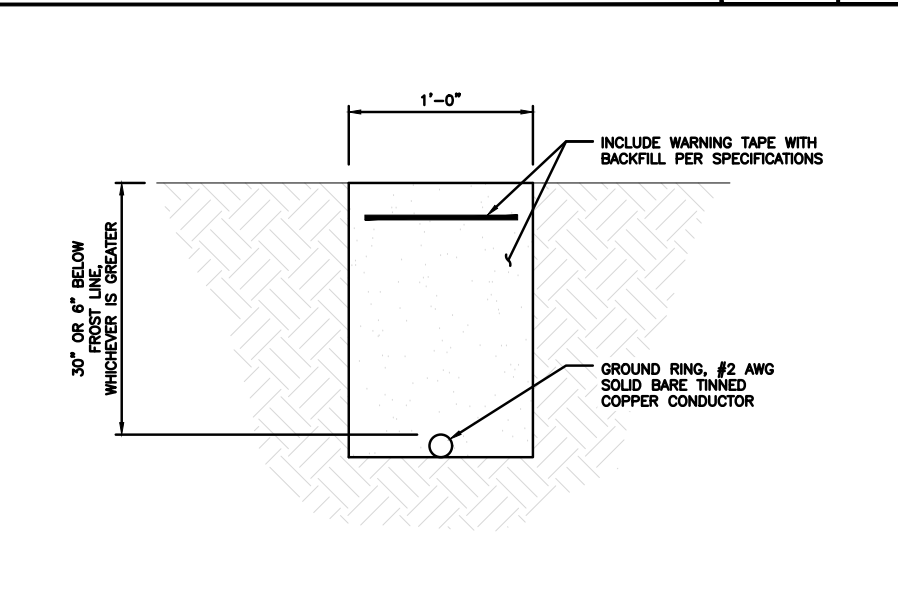
TYPICAL GPS UNIT GROUNDING

NO SCALE 2



OUTDOOR CABINET GROUNDING

NO SCALE 3



TYPICAL GROUND RING TRENCH

NO SCALE 6

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Kimley Horn
COA #: PEC.0000738
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STATE OF CONNECTICUT
BRUCE BREWER
29510
LICENSED PROFESSIONAL ENGINEER

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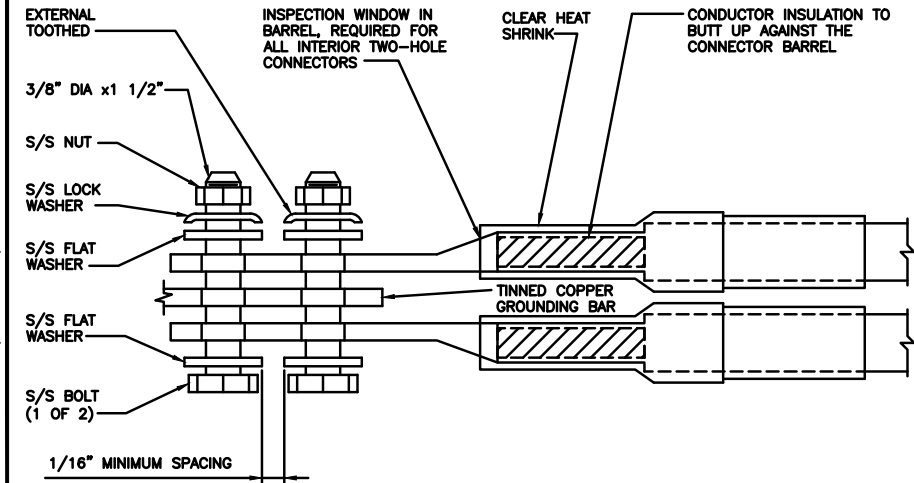
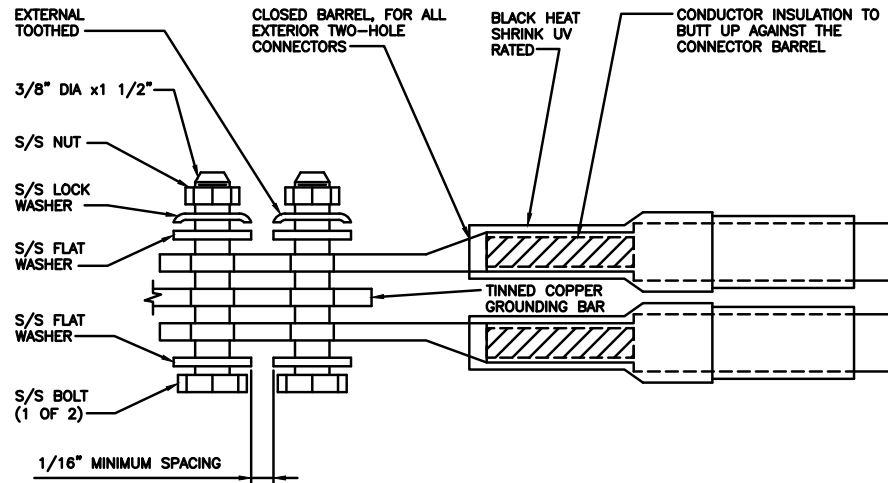
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DISH Wireless L.L.C.
PROJECT INFORMATION
NJJER01088A
281 WOOD HOUSE ROAD
FAIRFIELD, CT 06824

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).



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wireless.

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Kimley»Horn

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SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER
G-3

TYPICAL GROUNDING NOTES

NO SCALE

1

TYPICAL EXTERIOR TWO HOLE LUG

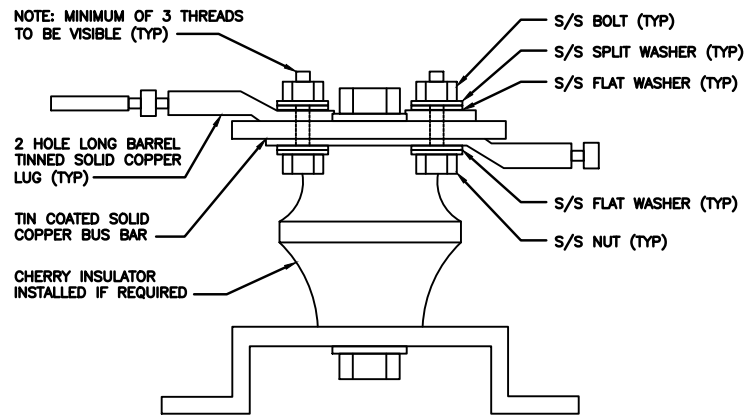
NO SCALE

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

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)

ALPHA RRH				BETA RRH				GAMMA RRH			
PORT 1 + SLANT	PORT 2 - SLANT	PORT 3 + SLANT	PORT 4 - SLANT	PORT 1 + SLANT	PORT 2 - SLANT	PORT 3 + SLANT	PORT 4 - SLANT	PORT 1 + SLANT	PORT 2 - SLANT	PORT 3 + SLANT	PORT 4 - SLANT
RED	RED	RED	RED	BLUE	BLUE	BLUE	BLUE	GREEN	GREEN	GREEN	GREEN
ORANGE	ORANGE	RED	RED	ORANGE	ORANGE	BLUE	BLUE	ORANGE	ORANGE	GREEN	GREEN
	WHITE (-) PORT	ORANGE	ORANGE		WHITE (-) PORT	ORANGE	ORANGE		WHITE (-) PORT	ORANGE	ORANGE
			WHITE (-) PORT				WHITE (-) PORT				WHITE (-) PORT

MID-BAND RRH -
(AWS BANDS N66+N70)

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

RED	RED	RED	RED	BLUE	BLUE	BLUE	BLUE	GREEN	GREEN	GREEN	GREEN
PURPLE	PURPLE	RED	RED	PURPLE	PURPLE	BLUE	BLUE	PURPLE	PURPLE	GREEN	GREEN
	WHITE (-) PORT	PURPLE	PURPLE		WHITE (-) PORT	PURPLE	PURPLE		WHITE (-) PORT	PURPLE	PURPLE
			WHITE (-) PORT				WHITE (-) PORT				WHITE (-) PORT

HYBRID/DISCREET CABLES

INCLUDE SECTOR BANDS BEING SUPPORTED
ALONG WITH FREQUENCY BANDS

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

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

EXAMPLE 1	EXAMPLE 2	EXAMPLE 3
RED	RED	RED
BLUE	BLUE	
GREEN	GREEN	ORANGE
ORANGE	YELLOW	PURPLE
PURPLE		

FIBER JUMPERS TO RRHs

LOW-BAND RRH FIBER CABLES HAVE SECTOR
STRIPE ONLY

LOW BAND RRH	HIGH BAND RRH	LOW BAND RRH	HIGH BAND RRH	LOW BAND RRH	HIGH BAND RRH
RED	RED	BLUE	BLUE	GREEN	GREEN
	PURPLE		PURPLE		PURPLE

POWER CABLES TO RRHs

LOW-BAND RRH POWER CABLES HAVE SECTOR
STRIPE ONLY

LOW BAND RRH	HIGH BAND RRH	LOW BAND RRH	HIGH BAND RRH	LOW BAND RRH	HIGH BAND RRH
RED	RED	BLUE	BLUE	GREEN	GREEN
	PURPLE		PURPLE		PURPLE

RET MOTORS AT ANTENNAS

ANTENNA 1 LOW BAND/ "IN"	ANTENNA 1 HIGH BAND/ "IN"	ANTENNA 1 LOW BAND/ "IN"	ANTENNA 1 HIGH BAND/ "IN"	ANTENNA 1 LOW BAND/ "IN"	ANTENNA 1 HIGH BAND/ "IN"
RED	RED	BLUE	BLUE	GREEN	GREEN
	PURPLE		PURPLE		PURPLE

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

FORWARD AZIMUTH OF 0-120 DEGREES		FORWARD AZIMUTH OF 120-240 DEGREES		FORWARD AZIMUTH OF 240-360 DEGREES	
PRIMARY	SECONDARY	PRIMARY	SECONDARY	PRIMARY	SECONDARY
WHITE	WHITE	WHITE	WHITE	WHITE	WHITE
RED	RED	BLUE	BLUE	GREEN	GREEN
WHITE	WHITE	WHITE	WHITE	WHITE	WHITE
	RED		BLUE		GREEN
	WHITE		WHITE		WHITE

RF CABLE COLOR CODES

NO SCALE

1

NOT USED

NO SCALE

4

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

dish
wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

Kimley»Horn

COA #: PEC.0000738
421 FAYETTEVILLE ST, SUITE 600
RALEIGH, NC 27601

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DRAWN BY: CHECKED BY: APPROVED BY:

DRD MCK ---

RFDS REV #: ---

**CONSTRUCTION
DOCUMENTS**

SUBMITTALS		
REV	DATE	DESCRIPTION
A	09/28/2021	ISSUED FOR REVIEW
0	11/18/2021	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

KHCLC-16280

DISH Wireless L.L.C.
PROJECT INFORMATION

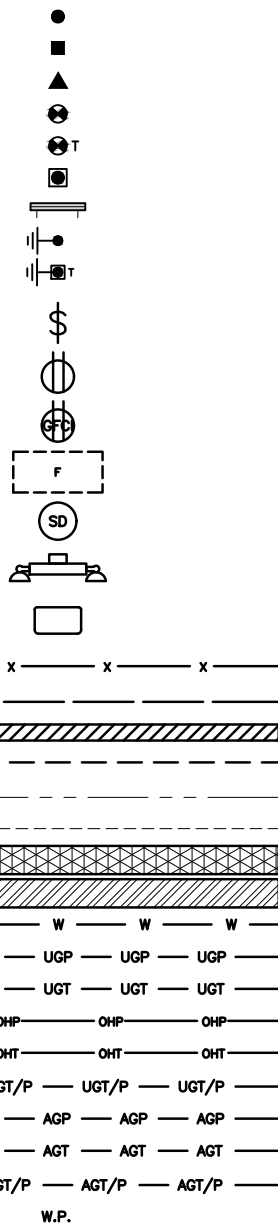
NJER01088A
281 WOOD HOUSE ROAD
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SHEET TITLE
RF
CABLE COLOR CODES

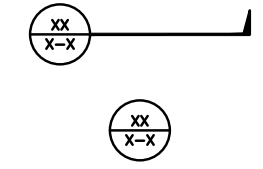
SHEET NUMBER

RF-1

EXOTHERMIC CONNECTION
 MECHANICAL CONNECTION
 BUSS BAR INSULATOR
 CHEMICAL ELECTROLYTIC GROUNDING SYSTEM
 TEST CHEMICAL ELECTROLYTIC GROUNDING SYSTEM
 EXOTHERMIC WITH INSPECTION SLEEVE
 GROUNDING BAR
 GROUND ROD
 TEST GROUND ROD WITH INSPECTION SLEEVE
 SINGLE POLE SWITCH
 DUPLEX RECEPTACLE
 DUPLEX GFCI RECEPTACLE
 FLUORESCENT LIGHTING FIXTURE (2) TWO LAMPS 48-T8
 SMOKE DETECTION (DC)
 EMERGENCY LIGHTING (DC)
 SECURITY LIGHT W/PHOTOCELL LITHONIA ALXW
 LED-1-25A400/51K-SR4-120-PE-DBBTXD
 CHAIN LINK FENCE
 WOOD/WROUGHT IRON FENCE
 WALL STRUCTURE
 LEASE AREA
 PROPERTY LINE (PL)
 SETBACKS
 ICE BRIDGE
 CABLE TRAY
 WATER LINE
 UNDERGROUND POWER
 UNDERGROUND TELCO
 OVERHEAD POWER
 OVERHEAD TELCO
 UNDERGROUND TELCO/POWER
 ABOVE GROUND POWER
 ABOVE GROUND TELCO
 ABOVE GROUND TELCO/POWER
 WORKPOINT



SECTION REFERENCE
 DETAIL REFERENCE



LEGEND

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

ABBREVIATIONS

11/19/21
 Exp. 01/31/22



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 PROJECT INFORMATION
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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:

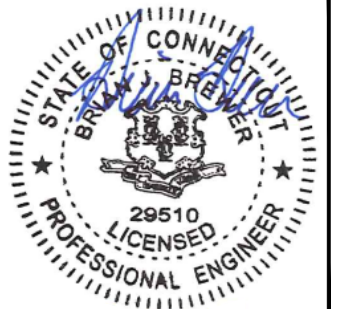
1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
CONTRACTOR: GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION
CARRIER: DISH Wireless L.L.C.
TOWER OWNER: TOWER OWNER
2. THESE DRAWINGS HAVE BEEN PREPARED USING STANDARDS OF PROFESSIONAL CARE AND COMPLETENESS NORMALLY EXERCISED 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. Exp. 01/31/22
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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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.

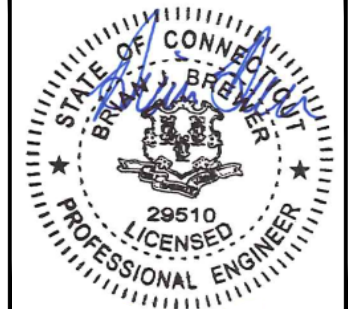
16. ELECTRICAL METALLIC TUBING (EMT) OR METAL-CLAD CABLE (MC) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
17. SCHEDULE 40 PVC UNDERGROUND ON STRAIGHTS AND SCHEDULE 80 PVC FOR ALL ELBOWS/90s AND ALL APPROVED ABOVE GRADE PVC CONDUIT.
18. LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL 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 EDITION) 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.



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



COA #: PEC.0000738
421 FAYETTEVILLE ST, SUITE 600
RALEIGH, NC 27601



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

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	09/28/2021	ISSUED FOR REVIEW
0	11/18/2021	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
KHCLC-16280

DISH Wireless L.L.C.
PROJECT INFORMATION

NJJER01088A
281 WOOD HOUSE ROAD
FAIRFIELD, CT 06824

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.

11/19/21
Exp. 01/31/22



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DRAWN BY: CHECKED BY: APPROVED BY:

DRD MCK ---

RFDS REV #: ---

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A&E PROJECT NUMBER
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DISH Wireless L.L.C.
PROJECT INFORMATION
NJJER01088A
281 WOOD HOUSE ROAD
FAIRFIELD, CT 06824

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-4

Exhibit D

Structural Analysis Report

Date: **September 24, 2021**



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

Subject: **Structural Analysis Report**

Carrier Designation: **DISH Network Co-Locate**
Site Number: NJJER01088A
Site Name: CT-CCI-T-806355

Crown Castle Designation: **BU Number:** 806355
Site Name: BRG 126 943086
JDE Job Number: 640165
Work Order Number: 1964750
Order Number: 548686 Rev. 1

Engineering Firm Designation: **Crown Castle Project Number:** 1964750

Site Data: **281 WOOD HOUSE ROAD, FAIRFIELD, Fairfield County, CT**
Latitude 41° 11' 45.3", Longitude -73° 16' 52.9"
170.5 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

This analysis utilizes an ultimate 3-second gust wind speed of 121 mph as required by the 2015 International Building Code. Applicable Standard references and design criteria are listed in Section 2 - "Analysis Criteria".

Structural analysis prepared by: Kayla Weimert

Respectfully submitted by:

Maribel Dentinger
Maribel Dentinger, P.E.
Senior Project Engineer

Maribel
Dentinger

Digitally signed by
Maribel Dentinger
Date: 2021.09.25
13:15:08 -04'00'

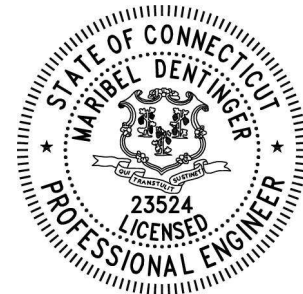


TABLE OF CONTENTS

1) INTRODUCTION

2) ANALYSIS CRITERIA

- Table 1 - Proposed Equipment Configuration
- Table 2 - Non-Carrier Equipment To Be Conditionally Removed
- Table 3 - Other Considered Equipment

3) ANALYSIS PROCEDURE

- Table 4 - Documents Provided
- 3.1) Analysis Method
- 3.2) Assumptions

4) ANALYSIS RESULTS

- Table 5 - Section Capacity (Summary)
- Table 6 - Tower Component Stresses vs. Capacity - LC7
- 4.1) Recommendations

5) APPENDIX A

- tnxTower Output

6) APPENDIX B

- Base Level Drawing

7) APPENDIX C

- Additional Calculations

1) INTRODUCTION

This tower is a 170.5 ft Monopole tower designed by ENGINEERED ENDEAVORS, INC.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	121 mph
Exposure Category:	B
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)
166.0	166.0	3	fujitsu	TA08025-B604	1	1-3/4
		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)
166.0	167.0	3	ems wireless	DR90-14-00DPL2 w/ Mount Pipe	-	-
	166.0	1	tower mounts	Side Arm Mount [SO 104-3]		

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)	
156.0	160.0	1	gps	GPS_A	12	1-5/8	
		6	commscope	SBNHH-1D85B w/ Mount Pipe			
	159.0	6	decibel	DB844G65ZAXY w/ Mount Pipe			
		3	rymsa wireless	MG D3-800TV w/ Mount Pipe			
	156.0	156.0	3	alcatel lucent			B13 RRH 4X30
			3	alcatel lucent			B66A RRH4X45
			1	raycap			RRFDC-3315-PF-48
			6	rfs celwave			FD9R6004/2C-3L
			1	tower mounts			Platform Mount [LP 713-1]
146.0	148.0	3	cci antennas	HPA-65R-BUU-H6 w/ Mount Pipe	12	1-5/8	
		3	powerwave technologies	7770.00 w/ Mount Pipe	4	3/4	
		3	quintel technology	QS66512-2 w/ Mount Pipe	2	3/8	
					1	conduit	

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
	146.0	3	ericsson	RRUS 32		
		3	ericsson	RRUS 32 B2		
		3	ericsson	RRUS 32 B66		
		3	ericsson	RRUS-11		
		3	kathrein	782 10253		
		12	powerwave technologies	7020.00		
		12	powerwave technologies	LGP2140X		
		2	raycap	DC6-48-60-18-8F		
		1	tower mounts	Platform Mount [LP 713-1]		
138.0	140.0	3	ericsson	AIR 32 B2A/B66AA w/ Mount Pipe	10	1-5/8
		3	ericsson	ERICSSON AIR 21 B2A B4P w/ Mount Pipe		
		3	ericsson	KRY 112 144/1		
	139.0	3	ericsson	RADIO 4449 B12/B71		
		3	rfs celwave	APXVAARR24_43-U-NA20 w/ Mount Pipe		
138.0	1	tower mounts	Platform Mount [LP 713-1_KCKR]			
128.0	128.0	1	andrew	VHLP800-11	3	1-5/8
		3	ericsson	AIR6449 B41_T-MOBILE w/ Mount Pipe		
		3	ericsson	RADIO 4460 B2/B25 B66_TMO		
		3	ericsson	Radio 4480_TMOV2		
		3	rfs celwave	APXVAALL24_43-U-NA20_TMO w/ Mount Pipe		
		1	tower mounts	Platform Mount [LP 303-1_HR-1]		
117.0	117.0	1	tower mounts	Side Arm Mount [SO 301-1]	-	-
		1	tower mounts	Side Arm Mount [SO 702-1]		
		1	tower mounts	T-Arm Mount [TA 602-1]		

3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

Document	Reference	Source
4-TOWER MANUFACTURER DRAWINGS	653293	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	1098364	CCISITES
4-GEOTECHNICAL REPORTS	1099974	CCISITES

3.1) Analysis Method

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

3.2) Assumptions

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

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

4) ANALYSIS RESULTS

Table 5 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P _{allow} (K)	% Capacity	Pass / Fail
L1	170.5 - 156.5	Pole	TP10.75x10.75x0.365	1	-3.52	393.87	32.3	Pass
L2	156.5 - 156	Pole	TP19.5x10.75x0.365	2	-3.52	393.87	32.2	Pass
L3	156 - 132.67	Pole	TP24.79x19.5x0.1875	3	-15.08	868.94	55.6	Pass
L4	132.67 - 87.09	Pole	TP34.63x23.5828x0.375	4	-28.11	2425.22	61.3	Pass
L5	87.09 - 43	Pole	TP43.75x32.7966x0.4375	5	-41.17	3579.81	61.9	Pass
L6	43 - 0	Pole	TP52.5x41.5316x0.5	6	-61.02	5069.03	57.2	Pass
							Summary	
						Pole (L5)	61.9	Pass
						Rating =	61.9	Pass

Table 6 - Tower Component Stresses vs. Capacity - LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Flange Bolts	156	7.9	Pass
1	Flange Plate		18.6	Pass
1	Anchor Rods	0	56.6	Pass
1	Base Plate		64.3	Pass
1	Base Foundation (Structure)	0	63.8	Pass
1	Base Foundation (Soil Interaction)		59.7	Pass

Structure Rating (max from all components) =	64.3%
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Notes:

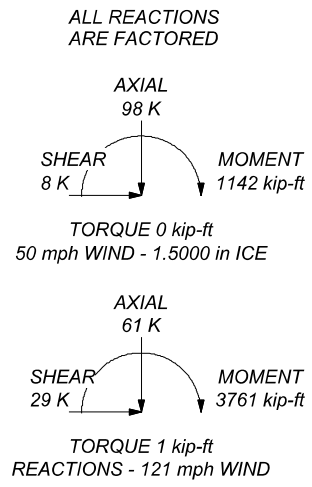
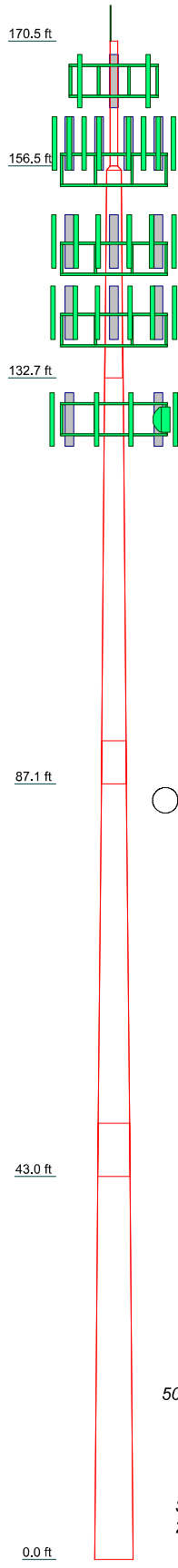
- 1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.

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 structural modifications are required at this time.

APPENDIX A
TNXTOWER OUTPUT

Section	1	2	3	4	5	6	
Length (ft)	14.00	0.90	23.33	49.25	48.92	49.00	
Number of Sides	1	1	18	18	18	18	
Thickness (in)	0.3650	0.3650	0.1875	0.3750	0.4375	0.5000	
Socket Length (ft)			3.67	4.83	6.00		
Top Dia (in)	10.7500	10.7500	19.5000	23.5828	32.7966	41.5316	
Bot Dia (in)	10.7500	19.5000	24.7900	34.6300	43.7500	52.5000	
Grade		A53-B-35		A572-65			
Weight (K)	0.6	0.0	1.0	5.7	8.7	12.3	28.4




MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A53-B-35	35 ksi	60 ksi	A572-65	65 ksi	80 ksi

TOWER DESIGN NOTES

1. Tower is located in Fairfield County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-H Standard.
3. Tower designed for a 121 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.50 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 61.9%

 Crown Castle 2000 Corporate Drive Canonsburg, PA 15317 The Pathway to Possible Phone: (724) 416-2000 FAX:	Job: BU 806355
	Project:
	Client: Crown Castle Drawn by: Kayla Weimert App'd:
	Code: TIA-222-H Date: 09/24/21 Scale: NTS
	Path: C:\Users\KWeimert\Desktop\SAPI WORK\006355\W0 1864750 - SAPIProd\806355.dwg Dwg No. E-1

Tower Input Data

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

- Tower is located in Fairfield County, Connecticut.
- Tower base elevation above sea level: 334.00 ft.
- Basic wind speed of 121 mph.
- Risk Category II.
- Exposure Category B.
- Simplified Topographic Factor Procedure for wind speed-up calculations is used.
- Topographic Category: 1.
- Crest Height: 0.00 ft.
- Nominal ice thickness of 1.5000 in.
- Ice thickness is considered to increase with height.
- Ice density of 56 pcf.
- A wind speed of 50 mph is used in combination with ice.
- Temperature drop of 50 °F.
- Deflections calculated using a wind speed of 60 mph.
- A non-linear (P-delta) analysis was used.
- Pressures are calculated at each section.
- Stress ratio used in pole design is 1.
- Tower analysis based on target reliabilities in accordance with Annex S.
- Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
- Maximum demand-capacity ratio is: 1.05.
- Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

Consider Moments - Legs Consider Moments - Horizontals Consider Moments - Diagonals Use Moment Magnification ✓ Use Code Stress Ratios ✓ Use Code Safety Factors - Guys Escalate Ice Always Use Max Kz Use Special Wind Profile Include Bolts In Member Capacity Leg Bolts Are At Top Of Section Secondary Horizontal Braces Leg Use Diamond Inner Bracing (4 Sided) SR Members Have Cut Ends SR Members Are Concentric	Distribute Leg Loads As Uniform Assume Legs Pinned ✓ Assume Rigid Index Plate ✓ Use Clear Spans For Wind Area Use Clear Spans For KL/r Retension Guys To Initial Tension ✓ Bypass Mast Stability Checks ✓ Use Azimuth Dish Coefficients ✓ Project Wind Area of Appurt. Autocalc Torque Arm Areas Add IBC .6D+W Combination ✓ Sort Capacity Reports By Component Triangulate Diamond Inner Bracing Treat Feed Line Bundles As Cylinder Ignore KL/ry For 60 Deg. Angle Legs	Use ASCE 10 X-Brace Ly Rules Calculate Redundant Bracing Forces Ignore Redundant Members in FEA SR Leg Bolts Resist Compression All Leg Panels Have Same Allowable Offset Girt At Foundation ✓ Consider Feed Line Torque Include Angle Block Shear Check Use TIA-222-H Bracing Resist. Exemption Use TIA-222-H Tension Splice Exemption <div style="text-align: center; background-color: #e0e0e0; padding: 2px;">Poles</div> ✓ Include Shear-Torsion Interaction Always Use Sub-Critical Flow Use Top Mounted Sockets Pole Without Linear Attachments Pole With Shroud Or No Appurtenances Outside and Inside Corner Radii Are Known
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Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	170.50-156.50	14.00	0.00	Round	10.7500	10.7500	0.3650		A53-B-35 (35 ksi)
L2	156.50-156.00	0.50	0.00	Round	10.7500	19.5000	0.3650		A53-B-35 (35 ksi)
L3	156.00-132.67	23.33	3.67	18	19.5000	24.7900	0.1875	0.7500	A572-65 (65 ksi)
L4	132.67-87.09	49.25	4.83	18	23.5828	34.6300	0.3750	1.5000	A572-65 (65 ksi)
L5	87.09-43.00	48.92	6.00	18	32.7966	43.7500	0.4375	1.7500	A572-65 (65 ksi)
L6	43.00-0.00	49.00		18	41.5316	52.5000	0.5000	2.0000	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	10.7500	11.9083	160.7342	3.6739	5.3750	29.9040	321.4685	5.9506	0.0000	0
	10.7500	11.9083	160.7342	3.6739	5.3750	29.9040	321.4685	5.9506	0.0000	0
L2	10.7500	11.9083	160.7342	3.6739	5.3750	29.9040	321.4685	5.9506	0.0000	0
	19.5000	21.9417	1004.6069	6.7665	9.7500	103.0366	2009.2137	10.9643	0.0000	0
L3	19.7719	11.4934	541.5782	6.8559	9.9060	54.6717	1083.8689	5.7478	3.1020	16.544
	25.1435	14.6416	1119.6528	8.7339	12.5933	88.9085	2240.7788	7.3222	4.0330	21.51
L4	24.7247	27.6231	1879.6621	8.2388	11.9801	156.8989	3761.7975	13.8142	3.4906	9.308
	35.1064	40.7720	6044.3215	12.1605	17.5920	343.5828	12096.596	20.3899	5.4349	14.493
L5	34.3332	44.9346	5944.4470	11.4875	16.6607	356.7952	11896.715	22.4716	5.0022	11.434
	44.3574	60.1448	14254.834	15.3759	22.2250	641.3874	28528.426	30.0781	6.9300	15.84
L6	43.4589	65.1171	13850.609	14.5662	21.0980	656.4880	27719.443	32.5647	6.4296	12.859
	53.2328	82.5240	28191.904	18.4600	26.6700	1057.0643	56420.903	41.2698	8.3600	16.72

Tower Elevation ft	Gusset Area (per face) ft ²	Gusset Thickness in	Gusset Grade	Adjust. Factor Ar	Adjust. Factor Ar	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L1 170.50-156.50				1	1	1			
L2 156.50-156.00				1	1	1			
L3 156.00-132.67				1	1	1			
L4 132.67-87.09				1	1	1			
L5 87.09-43.00				1	1	1			
L6 43.00-0.00				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 r in	Perimeter r in	Weight plf
*** HCS 6X12 4AWG(1-	C	No	Surface Ar	138.00 -	3	3	-0.300	1.6600		2.40

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
5/8)			(CaAa)	0.00			-0.200			

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		CAAA ft ² /ft	Weight plf

CU12PSM6P4XXX (1-3/4)	C	No	No	Inside Pole	166.00 - 0.00	1	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	2.72 2.72 2.72 2.72

LDF7-50A(1-5/8)	C	No	No	Inside Pole	156.00 - 0.00	12	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.82 0.82 0.82 0.82
MLE HYBRID 3POWER/6FIBER RL 2(1-1/4)	C	No	No	Inside Pole	156.00 - 0.00	1	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.68 0.68 0.68 0.68

LDF7-50A(1-5/8)	A	No	No	Inside Pole	146.00 - 0.00	12	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.82 0.82 0.82 0.82
FB-L98B-034-XXX(3/8)	A	No	No	Inside Pole	146.00 - 0.00	2	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.06 0.06 0.06 0.06
WR-VG86ST-BRD(3/4)	A	No	No	Inside Pole	146.00 - 0.00	4	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.58 0.58 0.58 0.58
2" Flex Conduit	A	No	No	Inside Pole	146.00 - 0.00	1	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.36 0.36 0.36 0.36

LCF158-50JA-A0(1-5/8)	C	No	No	Inside Pole	138.00 - 0.00	7	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.80 0.80 0.80 0.80

7983A(ELLIPTICAL)	B	No	No	Inside Pole	128.00 - 0.00	1	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.08 0.08 0.08 0.08
HB158-21U6S24-xxM_TMO(1-5/8)	B	No	No	Inside Pole	128.00 - 0.00	3	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	2.50 2.50 2.50 2.50

Feed Line/Linear Appurtenances Section Areas

Tower Section <i>n</i>	Tower Elevation <i>ft</i>	Face	A_R <i>ft²</i>	A_F <i>ft²</i>	C_{AA} <i>In Face ft²</i>	C_{AA} <i>Out Face ft²</i>	Weight <i>K</i>
L1	170.50-156.50	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.03
L2	156.50-156.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
L3	156.00-132.67	A	0.000	0.000	0.000	0.000	0.17
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	2.654	0.000	0.38
L4	132.67-87.09	A	0.000	0.000	0.000	0.000	0.58
		B	0.000	0.000	0.000	0.000	0.31
		C	0.000	0.000	22.699	0.000	1.19
L5	87.09-43.00	A	0.000	0.000	0.000	0.000	0.56
		B	0.000	0.000	0.000	0.000	0.33
		C	0.000	0.000	21.957	0.000	1.15
L6	43.00-0.00	A	0.000	0.000	0.000	0.000	0.54
		B	0.000	0.000	0.000	0.000	0.33
		C	0.000	0.000	21.414	0.000	1.12

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section <i>n</i>	Tower Elevation <i>ft</i>	Face or Leg	Ice Thickness <i>in</i>	A_R <i>ft²</i>	A_F <i>ft²</i>	C_{AA} <i>In Face ft²</i>	C_{AA} <i>Out Face ft²</i>	Weight <i>K</i>
L1	170.50-156.50	A	1.496	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.03
L2	156.50-156.00	A	1.489	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00
L3	156.00-132.67	A	1.477	0.000	0.000	0.000	0.000	0.17
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	5.286	0.000	0.43
L4	132.67-87.09	A	1.437	0.000	0.000	0.000	0.000	0.58
		B		0.000	0.000	0.000	0.000	0.31
		C		0.000	0.000	45.207	0.000	1.64
L5	87.09-43.00	A	1.364	0.000	0.000	0.000	0.000	0.56
		B		0.000	0.000	0.000	0.000	0.33
		C		0.000	0.000	43.282	0.000	1.57
L6	43.00-0.00	A	1.218	0.000	0.000	0.000	0.000	0.54
		B		0.000	0.000	0.000	0.000	0.33
		C		0.000	0.000	41.427	0.000	1.51

Feed Line Center of Pressure

Section	Elevation <i>ft</i>	CP_x <i>in</i>	CP_z <i>in</i>	CP_x <i>Ice in</i>	CP_z <i>Ice in</i>
L1	170.50-156.50	0.0000	0.0000	0.0000	0.0000
L2	156.50-156.00	0.0000	0.0000	0.0000	0.0000
L3	156.00-132.67	0.4967	0.8604	0.5049	0.8746
L4	132.67-87.09	1.6747	2.9006	1.5948	2.7622
L5	87.09-43.00	1.7427	3.0184	1.7258	2.9892
L6	43.00-0.00	1.7865	3.0943	1.8036	3.1239

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
L3	16	HCS 6X12 4AWG(1-5/8)	132.67 - 138.00	1.0000	1.0000
L4	16	HCS 6X12 4AWG(1-5/8)	87.09 - 132.67	1.0000	1.0000
L5	16	HCS 6X12 4AWG(1-5/8)	43.00 - 87.09	1.0000	1.0000
L6	16	HCS 6X12 4AWG(1-5/8)	0.00 - 43.00	1.0000	1.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft
*** *** Lighting Rod 3/4" x 4'	C	From Leg	0.00 0.00 2.00	0.0000	170.50
*** *** MX08FRO665-21 w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	166.00
MX08FRO665-21 w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	166.00
MX08FRO665-21 w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	166.00
TA08025-B604	A	From Leg	4.00 0.00 0.00	0.0000	166.00
TA08025-B604	B	From Leg	4.00 0.00 0.00	0.0000	166.00
TA08025-B604	C	From Leg	4.00 0.00 0.00	0.0000	166.00
TA08025-B605	A	From Leg	4.00 0.00 0.00	0.0000	166.00
TA08025-B605	B	From Leg	4.00 0.00 0.00	0.0000	166.00
TA08025-B605	C	From Leg	4.00 0.00 0.00	0.0000	166.00
RDIDC-9181-PF-48	A	From Leg	4.00 0.00 0.00	0.0000	166.00
(2) 8' x 2" Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	166.00

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement
			Horz Lateral ft	Vert ft		
(2) 8' x 2" Mount Pipe	B	From Leg	4.00	0.00	0.0000	166.00
(2) 8' x 2" Mount Pipe	C	From Leg	4.00	0.00	0.0000	166.00
Commscope MC-PK8-DSH *** ***	C	None			0.0000	166.00
(2) DB844G65ZAXY w/ Mount Pipe	A	From Leg	4.00	0.00	0.0000	156.00
(2) DB844G65ZAXY w/ Mount Pipe	B	From Leg	4.00	0.00	0.0000	156.00
(2) DB844G65ZAXY w/ Mount Pipe	C	From Leg	4.00	0.00	0.0000	156.00
(2) SBNHH-1D85B w/ Mount Pipe	A	From Leg	4.00	0.00	0.0000	156.00
(2) SBNHH-1D85B w/ Mount Pipe	B	From Leg	4.00	0.00	0.0000	156.00
(2) SBNHH-1D85B w/ Mount Pipe	C	From Leg	4.00	0.00	0.0000	156.00
MG D3-800TV w/ Mount Pipe	A	From Leg	4.00	0.00	0.0000	156.00
MG D3-800TV w/ Mount Pipe	B	From Leg	4.00	0.00	0.0000	156.00
MG D3-800TV w/ Mount Pipe	C	From Leg	4.00	0.00	0.0000	156.00
GPS_A	A	From Leg	4.00	0.00	0.0000	156.00
(2) FD9R6004/2C-3L	A	From Leg	4.00	0.00	0.0000	156.00
(2) FD9R6004/2C-3L	B	From Leg	4.00	0.00	0.0000	156.00
(2) FD9R6004/2C-3L	C	From Leg	4.00	0.00	0.0000	156.00
B13 RRH 4X30	A	From Leg	4.00	0.00	0.0000	156.00
B13 RRH 4X30	B	From Leg	4.00	0.00	0.0000	156.00
B13 RRH 4X30	C	From Leg	4.00	0.00	0.0000	156.00
B66A RRH4X45	A	From Leg	4.00	0.00	0.0000	156.00
B66A RRH4X45	B	From Leg	4.00	0.00	0.0000	156.00
B66A RRH4X45	C	From Leg	4.00	0.00	0.0000	156.00

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft
RRFDC-3315-PF-48	C	From Leg	0.00 4.00 0.00 0.00	0.0000	156.00
Platform Mount [LP 713-1] ***	C	None		0.0000	156.00
HPA-65R-BUU-H6 w/ Mount Pipe	A	From Leg	4.00 0.00 2.00	0.0000	146.00
HPA-65R-BUU-H6 w/ Mount Pipe	B	From Leg	4.00 0.00 2.00	0.0000	146.00
HPA-65R-BUU-H6 w/ Mount Pipe	C	From Leg	4.00 0.00 2.00	0.0000	146.00
QS66512-2 w/ Mount Pipe	A	From Leg	4.00 0.00 2.00	0.0000	146.00
QS66512-2 w/ Mount Pipe	B	From Leg	4.00 0.00 2.00	0.0000	146.00
QS66512-2 w/ Mount Pipe	C	From Leg	4.00 0.00 2.00	0.0000	146.00
7770.00 w/ Mount Pipe	A	From Leg	4.00 0.00 2.00	0.0000	146.00
7770.00 w/ Mount Pipe	B	From Leg	4.00 0.00 2.00	0.0000	146.00
7770.00 w/ Mount Pipe	C	From Leg	4.00 0.00 2.00	0.0000	146.00
RRUS-11	A	From Leg	4.00 0.00 0.00	0.0000	146.00
RRUS-11	B	From Leg	4.00 0.00 0.00	0.0000	146.00
RRUS-11	C	From Leg	4.00 0.00 0.00	0.0000	146.00
DC6-48-60-18-8F	A	From Leg	4.00 0.00 0.00	0.0000	146.00
DC6-48-60-18-8F	A	From Leg	4.00 0.00 0.00	0.0000	146.00
RRUS 32 B66	A	From Leg	4.00 0.00 0.00	0.0000	146.00
RRUS 32 B66	B	From Leg	4.00 0.00 0.00	0.0000	146.00
RRUS 32 B66	C	From Leg	4.00 0.00 0.00	0.0000	146.00
RRUS 32 B2	A	From Leg	4.00 0.00 0.00	0.0000	146.00
RRUS 32 B2	B	From Leg	4.00 0.00 0.00	0.0000	146.00
RRUS 32 B2	C	From Leg	4.00 0.00 0.00	0.0000	146.00

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft
RRUS 32	A	From Leg	0.00 4.00 0.00 0.00	0.0000	146.00
RRUS 32	B	From Leg	4.00 0.00 0.00	0.0000	146.00
RRUS 32	C	From Leg	4.00 0.00 0.00	0.0000	146.00
(4) 7020.00	A	From Leg	4.00 0.00 0.00	0.0000	146.00
(4) 7020.00	B	From Leg	4.00 0.00 0.00	0.0000	146.00
(4) 7020.00	C	From Leg	4.00 0.00 0.00	0.0000	146.00
782 10253	A	From Leg	4.00 0.00 0.00	0.0000	146.00
782 10253	B	From Leg	4.00 0.00 0.00	0.0000	146.00
782 10253	C	From Leg	4.00 0.00 0.00	0.0000	146.00
(4) LGP2140X	A	From Leg	4.00 0.00 0.00	0.0000	146.00
(4) LGP2140X	B	From Leg	4.00 0.00 0.00	0.0000	146.00
(4) LGP2140X	C	From Leg	4.00 0.00 0.00	0.0000	146.00
6' x 2" Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	146.00
6' x 2" Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	146.00
6' x 2" Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	146.00
Platform Mount [LP 713-1] ***	C	None		0.0000	146.00
AIR 32 B2A/B66AA w/ Mount Pipe	A	From Leg	4.00 0.00 2.00	0.0000	138.00
AIR 32 B2A/B66AA w/ Mount Pipe	B	From Leg	4.00 0.00 2.00	0.0000	138.00
AIR 32 B2A/B66AA w/ Mount Pipe	C	From Leg	4.00 0.00 2.00	0.0000	138.00
APXVAARR24_43-U-NA20 w/ Mount Pipe	A	From Leg	4.00 0.00 1.00	0.0000	138.00
APXVAARR24_43-U-NA20 w/ Mount Pipe	B	From Leg	4.00 0.00 1.00	0.0000	138.00
APXVAARR24_43-U-NA20 w/ Mount Pipe	C	From Leg	4.00 0.00	0.0000	138.00

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	A	From Leg	1.00 4.00 0.00	0.0000	138.00
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	B	From Leg	2.00 4.00 0.00	0.0000	138.00
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	C	From Leg	2.00 4.00 0.00	0.0000	138.00
RADIO 4449 B12/B71	A	From Leg	2.00 4.00 0.00	0.0000	138.00
RADIO 4449 B12/B71	B	From Leg	1.00 4.00 0.00	0.0000	138.00
RADIO 4449 B12/B71	C	From Leg	1.00 4.00 0.00	0.0000	138.00
KRY 112 144/1	A	From Leg	1.00 4.00 0.00	0.0000	138.00
KRY 112 144/1	B	From Leg	2.00 4.00 0.00	0.0000	138.00
KRY 112 144/1	C	From Leg	2.00 4.00 0.00	0.0000	138.00
6' x 2" Mount Pipe	A	From Leg	2.00 4.00 0.00	0.0000	138.00
6' x 2" Mount Pipe	B	From Leg	0.00 4.00 0.00	0.0000	138.00
6' x 2" Mount Pipe	C	From Leg	0.00 4.00 0.00	0.0000	138.00
Platform Mount [LP 713-1_KCKR] ***	C	None		0.0000	138.00
AIR6449 B41_T-MOBILE w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	128.00
AIR6449 B41_T-MOBILE w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	128.00
AIR6449 B41_T-MOBILE w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	128.00
APXVAALL24_43-U-NA20_TMO w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	128.00
APXVAALL24_43-U-NA20_TMO w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	128.00
APXVAALL24_43-U-NA20_TMO w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	128.00
RADIO 4460 B2/B25 B66_TMO	A	From Leg	4.00 0.00 0.00	0.0000	128.00
RADIO 4460 B2/B25 B66_TMO	B	From Leg	4.00 0.00 0.00	0.0000	128.00
RADIO 4460 B2/B25 B66_TMO	C	From Leg	4.00 0.00 0.00	0.0000	128.00

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement
			Horz Lateral	Vert		
			ft	ft	°	ft
Radio 4480_TMOV2	A	From Leg	0.00	4.00	0.0000	128.00
			0.00	0.00		
Radio 4480_TMOV2	B	From Leg	0.00	4.00	0.0000	128.00
			0.00	0.00		
Radio 4480_TMOV2	C	From Leg	0.00	4.00	0.0000	128.00
			0.00	0.00		
6' x 2" Mount Pipe	A	From Leg	0.00	4.00	0.0000	128.00
			0.00	0.00		
6' x 2" Mount Pipe	B	From Leg	0.00	4.00	0.0000	128.00
			0.00	0.00		
6' x 2" Mount Pipe	C	From Leg	0.00	4.00	0.0000	128.00
			0.00	0.00		
Platform Mount [LP 303-1_HR-1] ***	C	None			0.0000	128.00
(3) 6' x 2" Mount Pipe	A	From Leg	4.00	0.00	0.0000	117.00
			0.00	0.00		
6' x 2" Mount Pipe	C	From Leg	4.00	0.00	0.0000	117.00
			0.00	0.00		
T-Arm Mount [TA 602-1]	A	None			0.0000	117.00
Side Arm Mount [SO 301-1]	B	None			0.0000	117.00
Side Arm Mount [SO 702-1] *** ***	C	None			0.0000	117.00

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets:		Azimuth Adjustment	3 dB Beam Width	Elevation	Outside Diameter
				Horz Lateral	Vert				
			ft	ft	°	°	ft	ft	
*** ***									
VHLP800-11	B	Paraboloid w/Shroud (HP)	From Leg	4.00	0.00	0.0000		128.00	2.92
				0.00	0.00				
*** ***									

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

Comb. No.	Description
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
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	170.5 - 156.5	Pole	Max Tension	48	0.00	-0.00	-0.00			
			Max. Compression	26	-7.06	0.03	0.42			
			Max. Mx	20	-3.52	33.59	0.09			
			Max. My	2	-3.52	0.03	33.99			
			Max. Vy	20	-3.62	33.59	0.09			
			Max. Vx	2	-3.66	0.03	33.99			
			Max. Torque	9			0.18			
			Max Tension	1	0.00	0.00	0.00			
			L2	156.5 - 156	Pole	Max. Compression	26	-7.11	0.03	0.42
						Max. Mx	20	-3.56	35.41	0.09
Max. My	2	-3.55				0.04	35.83			
Max. Vy	20	-3.64				35.41	0.09			
Max. Vx	2	-3.67				0.04	35.83			
Max. Torque	9						0.18			

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L3	156 - 132.67	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-38.46	0.63	1.10
			Max. Mx	20	-15.08	264.11	-0.09
			Max. My	2	-15.08	-0.08	264.74
			Max. Vy	20	-17.90	264.11	-0.09
			Max. Vx	2	-17.91	-0.08	264.74
			Max. Torque	7			0.52
L4	132.67 - 87.09	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-58.58	0.72	0.88
			Max. Mx	20	-28.11	1256.71	2.98
			Max. My	2	-28.12	5.66	1254.03
			Max. Vy	20	-24.62	1256.71	2.98
			Max. Vx	2	-24.53	5.66	1254.03
			Max. Torque	21			-0.85
L5	87.09 - 43	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-74.38	0.72	-0.41
			Max. Mx	20	-41.17	2369.69	6.38
			Max. My	14	-41.17	-6.74	-2362.67
			Max. Vy	20	-27.14	2369.69	6.38
			Max. Vx	2	-27.06	12.47	2362.61
			Max. Torque	21			-0.85
L6	43 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-97.77	0.72	-2.15
			Max. Mx	20	-61.02	3759.83	9.96
			Max. My	14	-61.02	-11.11	-3748.76
			Max. Vy	20	-29.48	3759.83	9.96
			Max. Vx	2	-29.40	19.97	3747.70
			Max. Torque	21			-0.84

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	36	97.77	8.26	0.02
	Max. H _x	20	61.04	29.43	0.09
	Max. H _z	2	61.04	0.15	29.35
	Max. M _x	2	3747.70	0.15	29.35
	Max. M _z	8	3750.61	-29.37	-0.07
	Max. Torsion	9	0.84	-29.37	-0.07
	Min. Vert	5	45.78	-14.69	25.38
	Min. H _x	8	61.04	-29.37	-0.07
	Min. H _z	14	61.04	-0.09	-29.34
	Min. M _x	14	-3748.76	-0.09	-29.34
	Min. M _z	20	-3759.83	29.43	0.09
	Min. Torsion	21	-0.84	29.43	0.09

Tower Mast Reaction Summary

Load Combination	Vertical K	Shear _x K	Shear _z K	Overtuning Moment, M _x kip-ft	Overtuning Moment, M _z kip-ft	Torque kip-ft
Dead Only	50.87	0.00	0.00	1.22	0.14	0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	61.04	-0.15	-29.35	-3747.70	19.97	-0.08
0.9 Dead+1.0 Wind 0 deg - No Ice	45.78	-0.15	-29.35	-3678.49	19.58	-0.08
1.2 Dead+1.0 Wind 30 deg - No Ice	61.04	14.69	-25.38	-3239.79	-1875.86	-0.15
0.9 Dead+1.0 Wind 30 deg - No Ice	45.78	14.69	-25.38	-3179.98	-1841.07	-0.15

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
No Ice						
1.2 Dead+1.0 Wind 60 deg - No Ice	61.04	25.45	-14.59	-1862.30	-3250.99	-0.59
0.9 Dead+1.0 Wind 60 deg - No Ice	45.78	25.45	-14.59	-1828.06	-3190.68	-0.60
1.2 Dead+1.0 Wind 90 deg - No Ice	61.04	29.37	0.07	10.33	-3750.61	-0.83
0.9 Dead+1.0 Wind 90 deg - No Ice	45.78	29.37	0.07	9.79	-3681.05	-0.84
1.2 Dead+1.0 Wind 120 deg - No Ice	61.04	25.45	14.69	1877.71	-3249.74	-0.68
0.9 Dead+1.0 Wind 120 deg - No Ice	45.78	25.45	14.69	1842.49	-3189.47	-0.68
1.2 Dead+1.0 Wind 150 deg - No Ice	61.04	14.74	25.40	3245.13	-1882.82	-0.34
0.9 Dead+1.0 Wind 150 deg - No Ice	45.78	14.74	25.40	3184.51	-1847.94	-0.35
1.2 Dead+1.0 Wind 180 deg - No Ice	61.04	0.09	29.34	3748.76	-11.11	-0.08
0.9 Dead+1.0 Wind 180 deg - No Ice	45.78	0.09	29.34	3678.79	-10.98	-0.09
1.2 Dead+1.0 Wind 210 deg - No Ice	61.04	-14.64	25.40	3246.73	1869.49	0.15
0.9 Dead+1.0 Wind 210 deg - No Ice	45.78	-14.64	25.40	3186.07	1834.72	0.15
1.2 Dead+1.0 Wind 240 deg - No Ice	61.04	-25.50	14.55	1859.03	3257.32	0.76
0.9 Dead+1.0 Wind 240 deg - No Ice	45.78	-25.50	14.55	1824.11	3196.80	0.76
1.2 Dead+1.0 Wind 270 deg - No Ice	61.04	-29.43	-0.09	-9.96	3759.83	0.84
0.9 Dead+1.0 Wind 270 deg - No Ice	45.78	-29.43	-0.09	-10.17	3690.00	0.84
1.2 Dead+1.0 Wind 300 deg - No Ice	61.04	-25.50	-14.72	-1879.00	3257.69	0.68
0.9 Dead+1.0 Wind 300 deg - No Ice	45.78	-25.50	-14.72	-1844.49	3197.18	0.68
1.2 Dead+1.0 Wind 330 deg - No Ice	61.04	-14.79	-25.44	-3248.37	1889.99	0.34
0.9 Dead+1.0 Wind 330 deg - No Ice	45.78	-14.79	-25.44	-3188.42	1854.87	0.34
1.2 Dead+1.0 Ice+1.0 Temp	97.77	-0.00	-0.00	2.15	0.72	-0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	97.77	-0.03	-8.24	-1136.86	5.22	-0.08
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	97.77	4.12	-7.13	-983.06	-568.89	-0.14
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	97.77	7.15	-4.11	-565.01	-986.43	-0.25
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	97.77	8.25	0.01	4.10	-1138.45	-0.29
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	97.77	7.15	4.12	572.07	-986.21	-0.21
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	97.77	4.14	7.13	987.93	-570.46	-0.08
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	97.77	0.02	8.24	1140.77	-1.55	0.04
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	97.77	-4.11	7.14	988.23	569.27	0.14
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	97.77	-7.15	4.10	567.98	989.55	0.29
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	97.77	-8.26	-0.02	-0.34	1142.20	0.29
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	97.77	-7.16	-4.13	-568.67	989.68	0.21
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	97.77	-4.15	-7.14	-984.95	573.76	0.08
Dead+Wind 0 deg - Service	50.87	-0.03	-6.83	-863.23	4.69	-0.02
Dead+Wind 30 deg - Service	50.87	3.42	-5.90	-746.14	-432.43	-0.04
Dead+Wind 60 deg - Service	50.87	5.92	-3.39	-428.52	-749.51	-0.15

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
Dead+Wind 90 deg - Service	50.87	6.83	0.02	3.28	-864.70	-0.21
Dead+Wind 120 deg - Service	50.87	5.92	3.42	433.88	-749.23	-0.17
Dead+Wind 150 deg - Service	50.87	3.43	5.91	749.19	-434.03	-0.09
Dead+Wind 180 deg - Service	50.87	0.02	6.82	865.30	-2.44	-0.02
Dead+Wind 210 deg - Service	50.87	-3.40	5.91	749.55	431.19	0.04
Dead+Wind 240 deg - Service	50.87	-5.93	3.38	429.59	751.19	0.19
Dead+Wind 270 deg - Service	50.87	-6.85	-0.02	-1.38	867.05	0.21
Dead+Wind 300 deg - Service	50.87	-5.93	-3.42	-432.36	751.28	0.17
Dead+Wind 330 deg - Service	50.87	-3.44	-5.92	-748.12	435.90	0.09

Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
1	0.00	-50.87	0.00	0.00	50.87	0.00	0.000%
2	-0.15	-61.04	-29.35	0.15	61.04	29.35	0.000%
3	-0.15	-45.78	-29.35	0.15	45.78	29.35	0.000%
4	14.69	-61.04	-25.38	-14.69	61.04	25.38	0.000%
5	14.69	-45.78	-25.38	-14.69	45.78	25.38	0.000%
6	25.45	-61.04	-14.59	-25.45	61.04	14.59	0.000%
7	25.45	-45.78	-14.59	-25.45	45.78	14.59	0.000%
8	29.37	-61.04	0.07	-29.37	61.04	-0.07	0.000%
9	29.37	-45.78	0.07	-29.37	45.78	-0.07	0.000%
10	25.45	-61.04	14.69	-25.45	61.04	-14.69	0.000%
11	25.45	-45.78	14.69	-25.45	45.78	-14.69	0.000%
12	14.74	-61.04	25.40	-14.74	61.04	-25.40	0.000%
13	14.74	-45.78	25.40	-14.74	45.78	-25.40	0.000%
14	0.09	-61.04	29.34	-0.09	61.04	-29.34	0.000%
15	0.09	-45.78	29.34	-0.09	45.78	-29.34	0.000%
16	-14.64	-61.04	25.40	14.64	61.04	-25.40	0.000%
17	-14.64	-45.78	25.40	14.64	45.78	-25.40	0.000%
18	-25.50	-61.04	14.55	25.50	61.04	-14.55	0.000%
19	-25.50	-45.78	14.55	25.50	45.78	-14.55	0.000%
20	-29.43	-61.04	-0.09	29.43	61.04	0.09	0.000%
21	-29.43	-45.78	-0.09	29.43	45.78	0.09	0.000%
22	-25.50	-61.04	-14.72	25.50	61.04	14.72	0.000%
23	-25.50	-45.78	-14.72	25.50	45.78	14.72	0.000%
24	-14.79	-61.04	-25.44	14.79	61.04	25.44	0.000%
25	-14.79	-45.78	-25.44	14.79	45.78	25.44	0.000%
26	0.00	-97.77	0.00	0.00	97.77	0.00	0.000%
27	-0.03	-97.77	-8.24	0.03	97.77	8.24	0.000%
28	4.12	-97.77	-7.13	-4.12	97.77	7.13	0.000%
29	7.15	-97.77	-4.11	-7.15	97.77	4.11	0.000%
30	8.25	-97.77	0.01	-8.25	97.77	-0.01	0.000%
31	7.15	-97.77	4.12	-7.15	97.77	-4.12	0.000%
32	4.14	-97.77	7.13	-4.14	97.77	-7.13	0.000%
33	0.02	-97.77	8.24	-0.02	97.77	-8.24	0.000%
34	-4.11	-97.77	7.14	4.11	97.77	-7.14	0.000%
35	-7.15	-97.77	4.10	7.15	97.77	-4.10	0.000%
36	-8.26	-97.77	-0.02	8.26	97.77	0.02	0.000%
37	-7.16	-97.77	-4.13	7.16	97.77	4.13	0.000%
38	-4.15	-97.77	-7.14	4.15	97.77	7.14	0.000%
39	-0.03	-50.87	-6.83	0.03	50.87	6.83	0.000%
40	3.42	-50.87	-5.90	-3.42	50.87	5.90	0.000%
41	5.92	-50.87	-3.39	-5.92	50.87	3.39	0.000%
42	6.83	-50.87	0.02	-6.83	50.87	-0.02	0.000%
43	5.92	-50.87	3.42	-5.92	50.87	-3.42	0.000%

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
44	3.43	-50.87	5.91	-3.43	50.87	-5.91	0.000%
45	0.02	-50.87	6.82	-0.02	50.87	-6.82	0.000%
46	-3.40	-50.87	5.91	3.40	50.87	-5.91	0.000%
47	-5.93	-50.87	3.38	5.93	50.87	-3.38	0.000%
48	-6.85	-50.87	-0.02	6.85	50.87	0.02	0.000%
49	-5.93	-50.87	-3.42	5.93	50.87	3.42	0.000%
50	-3.44	-50.87	-5.92	3.44	50.87	5.92	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	5	0.00000001	0.00041877
3	Yes	5	0.00000001	0.00019620
4	Yes	7	0.00000001	0.00014503
5	Yes	6	0.00000001	0.00055817
6	Yes	7	0.00000001	0.00014695
7	Yes	6	0.00000001	0.00056646
8	Yes	5	0.00000001	0.00022636
9	Yes	5	0.00000001	0.00011675
10	Yes	7	0.00000001	0.00014500
11	Yes	6	0.00000001	0.00055768
12	Yes	7	0.00000001	0.00014640
13	Yes	6	0.00000001	0.00056378
14	Yes	5	0.00000001	0.00008673
15	Yes	5	0.00000001	0.00003816
16	Yes	7	0.00000001	0.00014674
17	Yes	6	0.00000001	0.00056524
18	Yes	7	0.00000001	0.00014382
19	Yes	6	0.00000001	0.00055297
20	Yes	5	0.00000001	0.00046850
21	Yes	5	0.00000001	0.00023058
22	Yes	7	0.00000001	0.00014745
23	Yes	6	0.00000001	0.00056790
24	Yes	7	0.00000001	0.00014662
25	Yes	6	0.00000001	0.00056402
26	Yes	4	0.00000001	0.00000829
27	Yes	6	0.00004341	0.00042496
28	Yes	7	0.00000001	0.00022846
29	Yes	7	0.00000001	0.00023265
30	Yes	6	0.00004340	0.00042394
31	Yes	7	0.00000001	0.00022787
32	Yes	7	0.00000001	0.00022920
33	Yes	6	0.00004340	0.00042323
34	Yes	7	0.00000001	0.00023267
35	Yes	7	0.00000001	0.00022753
36	Yes	6	0.00004340	0.00042666
37	Yes	7	0.00000001	0.00023476
38	Yes	7	0.00000001	0.00023397
39	Yes	4	0.00000001	0.00028887
40	Yes	5	0.00000001	0.00027716
41	Yes	5	0.00000001	0.00029091
42	Yes	4	0.00000001	0.00033785
43	Yes	5	0.00000001	0.00027685
44	Yes	5	0.00000001	0.00028481
45	Yes	4	0.00000001	0.00025460
46	Yes	5	0.00000001	0.00028863
47	Yes	5	0.00000001	0.00027229
48	Yes	4	0.00000001	0.00036668
49	Yes	5	0.00000001	0.00029175
50	Yes	5	0.00000001	0.00028472

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	170.5 - 156.5	33.530	48	1.8529	0.0027
L2	156.5 - 156	28.146	48	1.7855	0.0019
L3	156 - 132.67	27.960	48	1.7843	0.0019
L4	136.34 - 87.09	20.984	48	1.5654	0.0012
L5	91.92 - 43	8.895	48	0.9816	0.0005
L6	49 - 0	2.374	48	0.4545	0.0002

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
170.50	Lighting Rod 3/4" x 4'	48	33.530	1.8529	0.0027	14876
166.00	MX08FRO665-21 w/ Mount Pipe	48	31.779	1.8260	0.0024	14876
156.00	(2) DB844G65ZAXY w/ Mount Pipe	48	27.960	1.7843	0.0019	6719
146.00	HPA-65R-BUU-H6 w/ Mount Pipe	48	24.311	1.7031	0.0016	5737
138.00	AIR 32 B2A/B66AA w/ Mount Pipe	48	21.540	1.5901	0.0013	4680
128.00	VHLP800-11	48	18.306	1.4458	0.0010	4449
117.00	(3) 6' x 2" Mount Pipe	48	15.060	1.2983	0.0008	4411

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	170.5 - 156.5	145.296	20	8.0297	0.0123
L2	156.5 - 156	122.032	20	7.7426	0.0087
L3	156 - 132.67	121.224	20	7.7377	0.0087
L4	136.34 - 87.09	91.039	20	6.7978	0.0051
L5	91.92 - 43	38.610	20	4.2654	0.0021
L6	49 - 0	10.307	22	1.9740	0.0007

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
170.50	Lighting Rod 3/4" x 4'	20	145.296	8.0297	0.0123	3639
166.00	MX08FRO665-21 w/ Mount Pipe	20	137.730	7.9156	0.0108	3639
156.00	(2) DB844G65ZAXY w/ Mount Pipe	20	121.224	7.7377	0.0087	1631
146.00	HPA-65R-BUU-H6 w/ Mount Pipe	20	105.441	7.3895	0.0071	1374
138.00	AIR 32 B2A/B66AA w/ Mount Pipe	20	93.444	6.9043	0.0053	1115
128.00	VHLP800-11	20	79.434	6.2821	0.0042	1054
117.00	(3) 6' x 2" Mount Pipe	20	65.361	5.6432	0.0033	1038

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	KI/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L1	170.5 - 156.5 (1)	TP10.75x10.75x0.365	14.00	0.00	0.0	11.908 3	-3.52	375.11	0.009
L2	156.5 - 156 (2)	TP19.5x10.75x0.365	0.50	0.00	0.0	11.908 3	-3.52	375.11	0.009
L3	156 - 132.67 (3)	TP24.79x19.5x0.1875	23.33	0.00	0.0	14.146 3	-15.08	827.56	0.018
L4	132.67 - 87.09 (4)	TP34.63x23.5828x0.375	49.25	0.00	0.0	39.482 5	-28.11	2309.73	0.012
L5	87.09 - 43 (5)	TP43.75x32.7966x0.4375	48.92	0.00	0.0	58.279 3	-41.17	3409.34	0.012
L6	43 - 0 (6)	TP52.5x41.5316x0.5	49.00	0.00	0.0	82.524 0	-61.02	4827.65	0.013

Pole Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L1	170.5 - 156.5 (1)	TP10.75x10.75x0.365	33.99	103.38	0.329	0.00	103.38	0.000
L2	156.5 - 156 (2)	TP19.5x10.75x0.365	33.99	103.38	0.329	0.00	103.38	0.000
L3	156 - 132.67 (3)	TP24.79x19.5x0.1875	264.74	472.86	0.560	0.00	472.86	0.000
L4	132.67 - 87.09 (4)	TP34.63x23.5828x0.375	1257.02	1994.08	0.630	0.00	1994.08	0.000
L5	87.09 - 43 (5)	TP43.75x32.7966x0.4375	2370.32	3719.18	0.637	0.00	3719.18	0.000
L6	43 - 0 (6)	TP52.5x41.5316x0.5	3760.74	6397.87	0.588	0.00	6397.87	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	170.5 - 156.5 (1)	TP10.75x10.75x0.365	3.66	112.53	0.032	0.01	102.75	0.000
L2	156.5 - 156 (2)	TP19.5x10.75x0.365	3.67	207.35	0.018	0.01	102.75	0.000
L3	156 - 132.67 (3)	TP24.79x19.5x0.1875	17.91	245.82	0.073	0.32	516.82	0.001
L4	132.67 - 87.09 (4)	TP34.63x23.5828x0.375	24.63	692.92	0.036	0.68	2012.93	0.000
L5	87.09 - 43 (5)	TP43.75x32.7966x0.4375	27.16	1022.80	0.027	0.68	3759.25	0.000
L6	43 - 0 (6)	TP52.5x41.5316x0.5	29.49	1448.30	0.020	0.68	6595.39	0.000

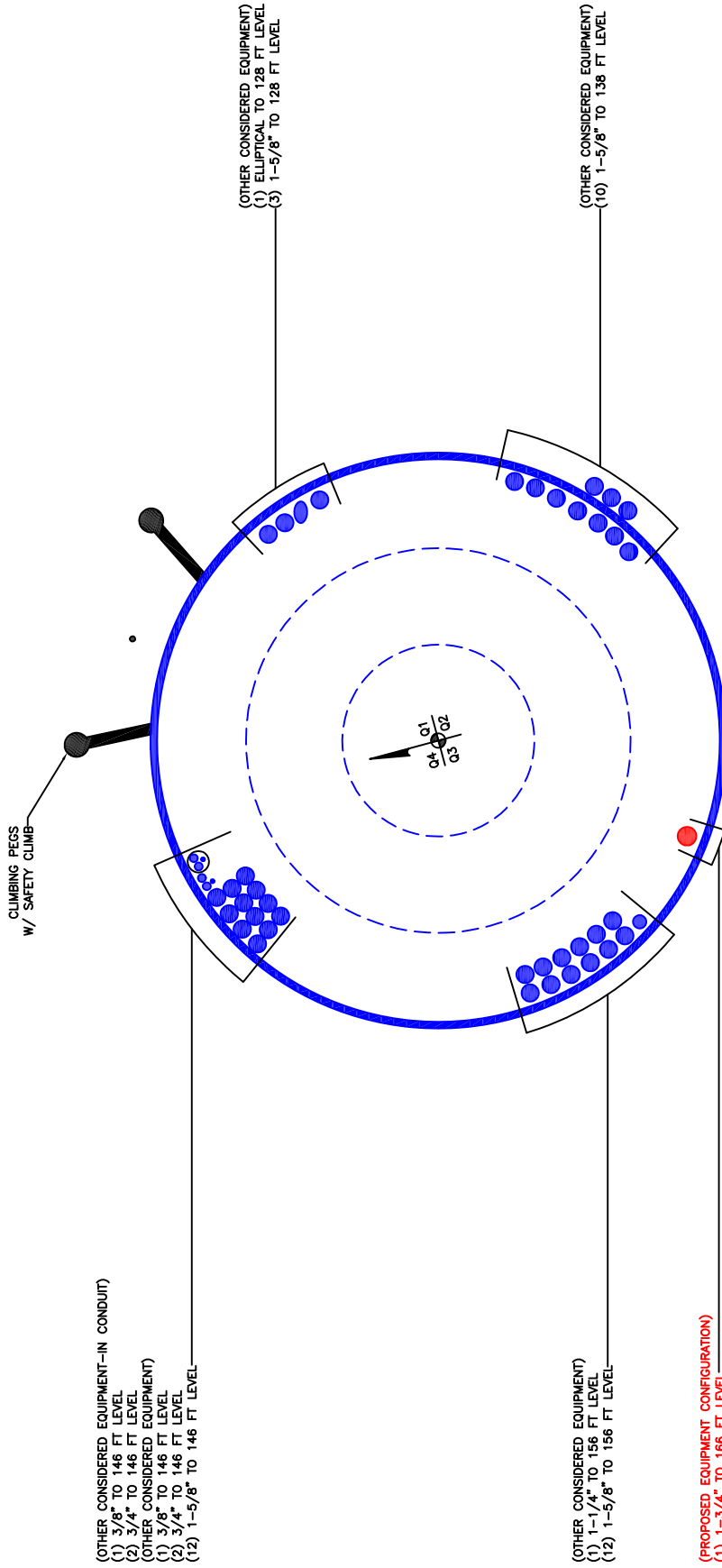
Pole Interaction Design Data

Section No.	Elevation ft	Ratio P_u	Ratio M_{ux}	Ratio M_{uy}	Ratio V_u	Ratio T_u	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	170.5 - 156.5 (1)	0.009	0.329	0.000	0.032	0.000	0.339	1.050	4.8.2
L2	156.5 - 156 (2)	0.009	0.329	0.000	0.018	0.000	0.339	1.050	4.8.2
L3	156 - 132.67 (3)	0.018	0.560	0.000	0.073	0.001	0.584	1.050	4.8.2
L4	132.67 - 87.09 (4)	0.012	0.630	0.000	0.036	0.000	0.644	1.050	4.8.2
L5	87.09 - 43 (5)	0.012	0.637	0.000	0.027	0.000	0.650	1.050	4.8.2
L6	43 - 0 (6)	0.013	0.588	0.000	0.020	0.000	0.601	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	170.5 - 156.5	Pole	TP10.75x10.75x0.365	1	-3.52	393.87	32.3	Pass	
L2	156.5 - 156	Pole	TP19.5x10.75x0.365	2	-3.52	393.87	32.2	Pass	
L3	156 - 132.67	Pole	TP24.79x19.5x0.1875	3	-15.08	868.94	55.6	Pass	
L4	132.67 - 87.09	Pole	TP34.63x23.5828x0.375	4	-28.11	2425.22	61.3	Pass	
L5	87.09 - 43	Pole	TP43.75x32.7966x0.4375	5	-41.17	3579.81	61.9	Pass	
L6	43 - 0	Pole	TP52.5x41.5316x0.5	6	-61.02	5069.03	57.2	Pass	
							Summary		
							Pole (L5)	61.9	Pass
							RATING =	61.9	Pass

APPENDIX B
BASE LEVEL DRAWING



APPENDIX C
ADDITIONAL CALCULATIONS

Monopole Flange Plate Connection

Elevation = 156 ft.

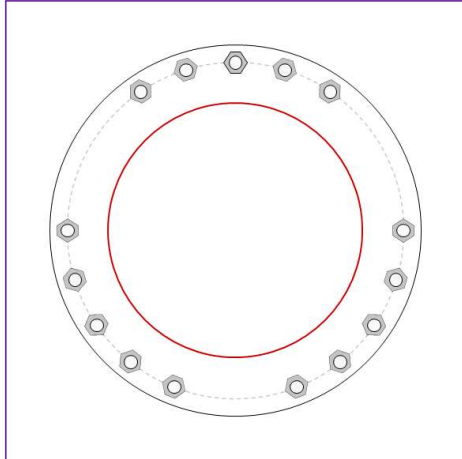


BU #	806355
Site Name	BRG 126 943086
Order #	548686 Rev. 1
TIA-222 Revision	H

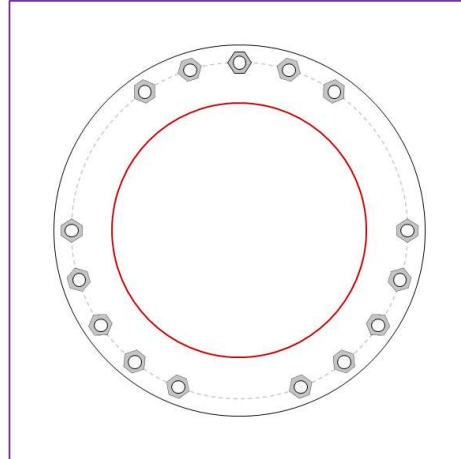
Applied Loads	
Moment (kip-ft)	35.83
Axial Force (kips)	3.55
Shear Force (kips)	3.67

*TIA-222-H Section 15.5 Applied

Top Plate - External



Bottom Plate - External



Connection Properties

Bolt Data

(15) 1" ϕ bolts (A325 N; Fy=92 ksi, Fu=120 ksi) on 25.75" BC
 pos. (deg): 0, 55.7, 72.9, 90, 107.1, 124.3, 180, 197.1, 214.3, 231.4, 248.6, 291.4, 308.6, 325.7, 342.9

Top Plate Data

28.5" OD x 1" Plate (A572-60; Fy=60 ksi, Fu=75 ksi)

Top Stiffener Data

N/A

Top Pole Data

19.5" x 0.365" round pole (A53-B-35; Fy=35 ksi, Fu=60 ksi)

Bottom Plate Data

28.5" OD x 1" Plate (A572-60; Fy=60 ksi, Fu=75 ksi)

Bottom Stiffener Data

N/A

Bottom Pole Data

19.5" x 0.1875" 18-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Analysis Results

Bolt Capacity

Max Load (kips)	4.50
Allowable (kips)	54.54
Stress Rating:	7.9% Pass

Top Plate Capacity

Max Stress (ksi):	10.57	(Flexural)
Allowable Stress (ksi):	54.00	
Stress Rating:	18.6%	Pass
Tension Side Stress Rating:	14.0%	Pass

Bottom Plate Capacity

Max Stress (ksi):	10.57	(Flexural)
Allowable Stress (ksi):	54.00	
Stress Rating:	18.6%	Pass
Tension Side Stress Rating:	14.0%	Pass

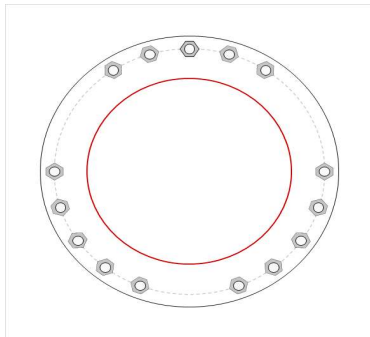
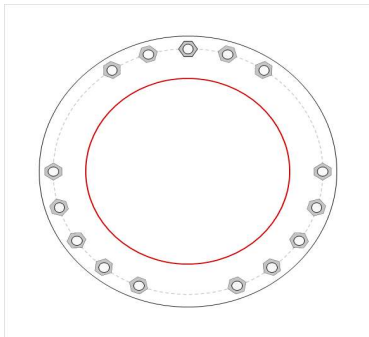
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Elevation (ft) 156 (Flange)

Bolt Group	Resist Axial	Resist Shear	Induce Plate Bending
1	Yes	Yes	Yes

Custom Bolt Connection										
Bolt	Bolt Group ID	Location (deg.)	Diameter (in)	Material	Bolt Circle (in)	Eta Factor, η :	I_{br} (in):	Thread Type	Area Override, in ²	Tension Only
1	1	0	1	A325	25.75	0.5	0	N-Included		No
2	1	55.714286	1	A325	25.75	0.5	0	N-Included		No
3	1	72.857143	1	A325	25.75	0.5	0	N-Included		No
4	1	90	1	A325	25.75	0.5	0	N-Included		No
5	1	107.14286	1	A325	25.75	0.5	0	N-Included		No
6	1	124.28571	1	A325	25.75	0.5	0	N-Included		No
7	1	180	1	A325	25.75	0.5	0	N-Included		No
8	1	197.14286	1	A325	25.75	0.5	0	N-Included		No
9	1	214.28571	1	A325	25.75	0.5	0	N-Included		No
10	1	231.42857	1	A325	25.75	0.5	0	N-Included		No
11	1	248.57143	1	A325	25.75	0.5	0	N-Included		No
12	1	291.42857	1	A325	25.75	0.5	0	N-Included		No
13	1	308.57143	1	A325	25.75	0.5	0	N-Included		No
14	1	325.71429	1	A325	25.75	0.5	0	N-Included		No
15	1	342.85714	1	A325	25.75	0.5	0	N-Included		No

Plot Graphic



Monopole Base Plate Connection

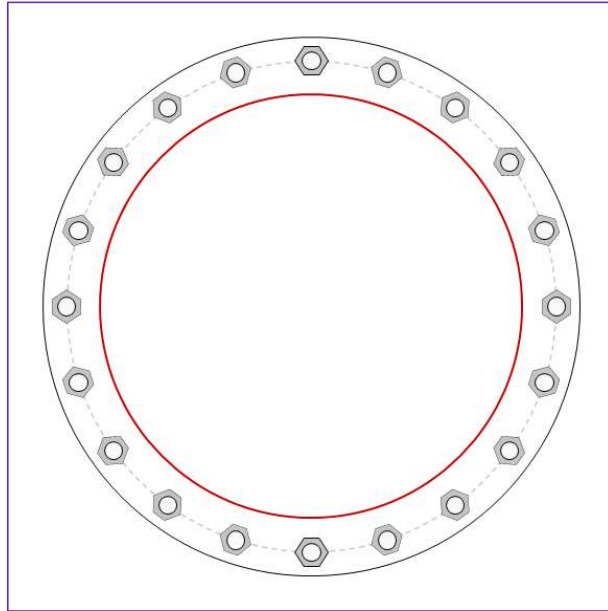


Site Info	
BU #	806355
Site Name	BRG 126 943086
Order #	548686 Rev. 1

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

Applied Loads	
Moment (kip-ft)	3760.74
Axial Force (kips)	61.02
Shear Force (kips)	29.49

*TIA-222-H Section 15.5 Applied



Connection Properties	Analysis Results
-----------------------	------------------

Anchor Rod Data
(20) 2-1/4" ϕ bolts (A615-75 N; $F_y=75$ ksi, $F_u=100$ ksi) on 61" BC
Base Plate Data
67" OD x 2.25" Plate (A572-60; $F_y=60$ ksi, $F_u=75$ ksi)
Stiffener Data
N/A
Pole Data
52.5" x 0.5" 18-sided pole (A572-65; $F_y=65$ ksi, $F_u=80$ ksi)

Anchor Rod Summary		<i>(units of kips, kip-in)</i>
$P_{u,t} = 144.83$	$\phi P_{n,t} = 243.75$	Stress Rating
$V_u = 1.47$	$\phi V_n = 149.1$	56.6%
$\mu = n/a$	$\phi M_n = n/a$	Pass
Base Plate Summary		
Max Stress (ksi):	36.47	(Flexural)
Allowable Stress (ksi):	54	
Stress Rating:	64.3%	Pass

Pier and Pad Foundation



BU # : 806355
Site Name: BRG 126 943086
App. Number: 548686 Rev. 1

TIA-222 Revision: H
Tower Type: Monopole

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

Superstructure Analysis Reactions		
Compression, P_{comp} :	61.04	kips
Base Shear, V_{u_comp} :	29.44	kips
Moment, M_u :	3760.74	ft-kips
Tower Height, H :	170.5	ft
BP Dist. Above Fdn, bp_{dist} :	4	in

Foundation Analysis Checks				
	Capacity	Demand	Rating*	Check
<i>Lateral (Sliding) (kips)</i>	443.28	29.44	6.3%	Pass
<i>Bearing Pressure (ksf)</i>	18.00	3.15	17.5%	Pass
<i>Overturing (kip*ft)</i>	6804.23	4064.95	59.7%	Pass
<i>Pier Flexure (Comp.) (kip*ft)</i>	5920.65	3966.82	63.8%	Pass
<i>Pier Compression (kip)</i>	31187.52	122.78	0.4%	Pass
<i>Pad Flexure (kip*ft)</i>	3909.72	1654.72	40.3%	Pass
<i>Pad Shear - 1-way (kips)</i>	788.93	290.20	35.0%	Pass
<i>Pad Shear - 2-way (Comp) (ksi)</i>	0.190	0.000	0.0%	Pass
<i>Flexural 2-way (Comp) (kip*ft)</i>	4403.40	2380.09	51.5%	Pass

Pier Properties		
Pier Shape:	Square	
Pier Diameter, $dpier$:	7	ft
Ext. Above Grade, E :	1	ft
Pier Rebar Size, Sc :	8	
Pier Rebar Quantity, mc :	46	
Pier Tie/Spiral Size, St :	4	
Pier Tie/Spiral Quantity, mt :	7	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier} :	3	in

*Rating per TIA-222-H Section 15.5

Structural Rating*:	63.8%
Soil Rating*:	59.7%

Pad Properties		
Depth, D :	9	ft
Pad Width, W_1 :	22	ft
Pad Thickness, T :	3	ft
Pad Rebar Size (Top dir.2), Sp_{top2} :	8	
Pad Rebar Quantity (Top dir. 2), mp_{top2} :	20	
Pad Rebar Size (Bottom dir. 2), Sp_2 :	8	
Pad Rebar Quantity (Bottom dir. 2), mp_2 :	36	
Pad Clear Cover, cc_{pad} :	3	in

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

Soil Properties		
Total Soil Unit Weight, γ :	135	pcf
Ultimate Gross Bearing, Q_{ult} :	24,000	ksf
Cohesion, C_u :	0.000	ksf
Friction Angle, ϕ :	36	degrees
SPT Blow Count, N_{blows} :	50	
Base Friction, μ :	0.6	
Neglected Depth, N :	3.50	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, gw :	6	ft

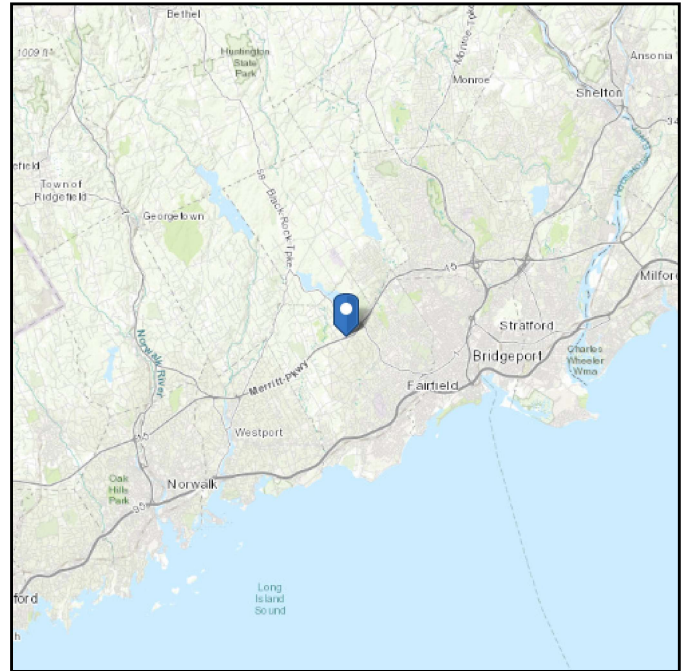
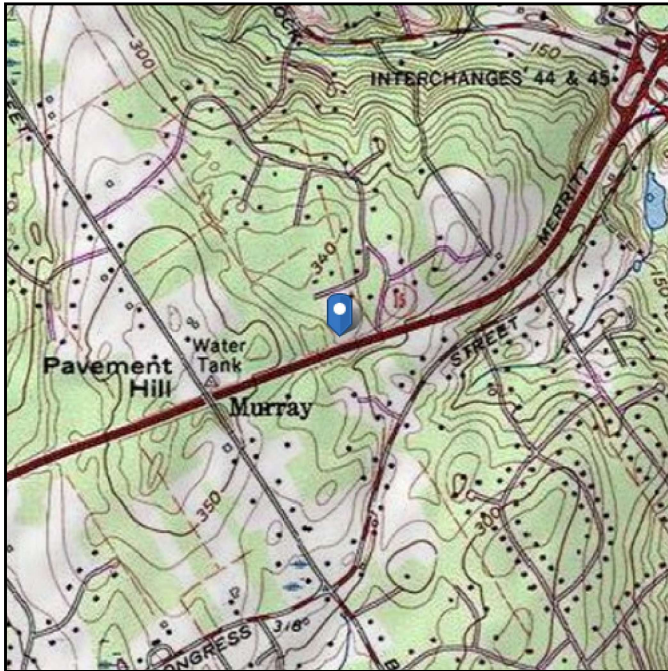
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ASCE 7 Hazards Report

Address:
No Address at This
Location

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

Elevation: 333.8 ft (NAVD 88)
Latitude: 41.195917
Longitude: -73.281361



Wind

Results:

Wind Speed:	121 Vmph
10-year MRI	76 Vmph
25-year MRI	86 Vmph
50-year MRI	92 Vmph
100-year MRI	99 Vmph

Data Source: ASCE/SEI 2010, 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).

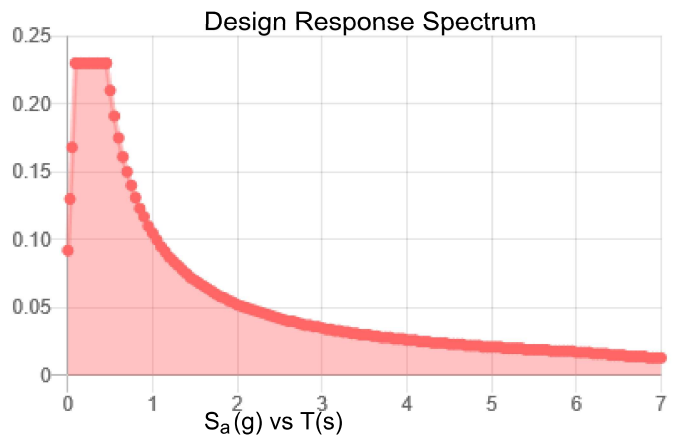
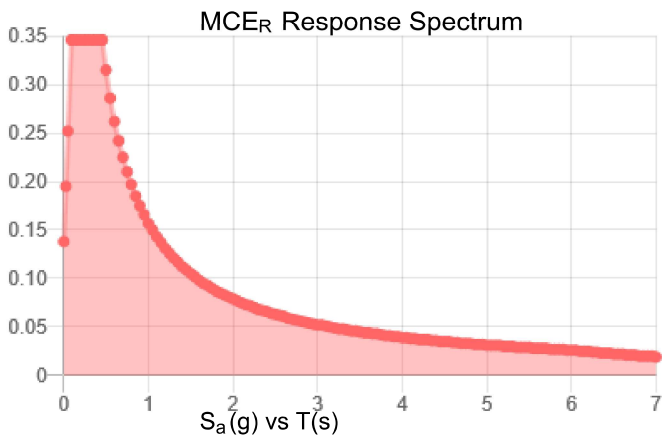
Site is in a hurricane-prone region as defined in ASCE/SEI 7-10 Section 26.2. Glazed openings need not be protected against wind-borne debris.

Site Soil Class: D - Stiff Soil

Results:

S_s :	0.216	S_{DS} :	0.23
S_1 :	0.066	S_{D1} :	0.105
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.119
S_{MS} :	0.346	PGA _M :	0.186
S_{M1} :	0.157	F_{PGA} :	1.563
		I_e :	1

Seismic Design Category B



Data Accessed:

Fri Sep 24 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 Sep 24 2021

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

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

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

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Exhibit E

Mount Analysis

Date: March 11, 2022



B+T Group
1717 S. Boulder, Suite 300
Tulsa, OK 74119
(918) 587-4630
towersupport@btgrp.com

Subject: Mount Analysis - Conditional Passing Report

Carrier Designation: Dish Network Co-Locate
Carrier Site Number: NJJER01088A
Carrier Site Name: CT-CCI-T-806355

Crown Castle Designation: BU Number: 806355
Site Name: BRG 126 943086
JDE Job Number: 640165
Order Number: 548686, Rev. 1

Engineering Firm Designation: Report Designation: 80964.012.01

Site Data: 281 Wood House Road, Fairfield, CT, Fairfield County, 06824
Latitude 41° 11' 45.30" Longitude -73° 16' 52.90"

Structure Information: Tower Height & Type: 171 ft. Monopole
Mount Elevation: 166 ft.
Mount Type: 8ft Platform Mount

B+T Group is pleased to submit this “**Mount Analysis - Conditional Passing 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’s stress level. Based on our analysis we have determined the stress level to be:

Platform Mount

Sufficient

*Sufficient upon completion of the recommendations listed in the Section 4.1 of this report.

"This analysis utilizes an ultimate 3-second gust wind speed of 118 mph as required by the 2018 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria."

Mount structural analysis prepared by: Andrew Fisher

Respectfully submitted by: B&T Engineering, Inc.
COA: PEC.0001564 Expires: 02/01/2023

Chad E. Tuttle, P.E.

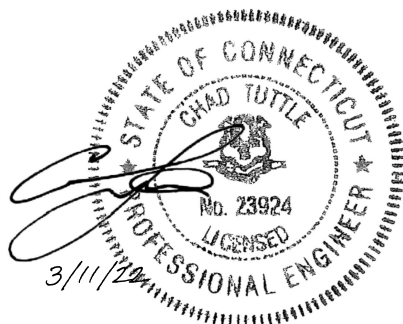


TABLE OF CONTENTS

1) INTRODUCTION

2) ANALYSIS CRITERIA

Table 1 - Proposed Equipment Configuration

Table 2 - Documents Provided

3) ANALYSIS PROCEDURE

3.1) Analysis Method

3.2) Assumptions

4) ANALYSIS RESULTS

Table 3 - Mount Component Stresses vs. Capacity

4.1) Recommendations

5) APPENDIX A

Wire Frame and Rendered Models

6) APPENDIX B

Software Input Calculations

7) APP/ENDIX C

Software Analysis Output

8) APPENDIX D

Additional Calculations

9) APPENDIX E

Supplemental Drawings

1) INTRODUCTION

This is a proposed 8' Platform mount, designed by Commscope Platform Mounts, (Part #MC-PK8-DSH)

2) ANALYSIS CRITERIA

Building Code:	2018 Connecticut State Building Code
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Ultimate Wind Speed:	118 mph
Exposure Category:	B
Topographic Factor at Base:	1
Topographic Factor at Mount:	1
Ice Thickness:	1 in
Wind Speed with Ice:	50 mph
Seismic S_s :	0.22
Seismic S_1 :	0.055
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	Manufacturer	Model / Type	Mount / Modification Details
166	166	3	JMA Wireless	MX08FRO665-21	8ft Platform Mount
		3	Fujitsu	TA08025-B604	
		3	Fujitsu	TA08025-B605	
		1	Raycap	RDIDC-9181-PF-48	

Table 2 - Documents Provided

Document	Remarks	Reference	Source
CCI Order	Proposed Loading	Date: 04/28/2021	Crown Castle
Manufacturer Drawing	Commscope (Part #MC-PK8-DSH)	Date: 02/17/2020	Commscope

3) ANALYSIS PROCEDURE

3.1) Analysis Method

RISA-3D (Version 19.0.4), 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 by us, was used to calculate wind loading on all appurtenances, dishes and mount members for various loading cases. Selected output from the analysis is included in Appendix B.

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

Manufacturer's drawings were used to create models.

3.2) Assumptions

1. The antenna mounting system was properly fabricated, installed and maintained in good condition in accordance with its original design, TIA Standards, and/or manufacturer's specifications.
2. The configuration of antennas, mounts, and other appurtenances are as specified in Table-1.
3. All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected members unless otherwise specified in this report.
4. Mount areas and weights are determined from field measurements, standard material properties, and/or manufacturer product data.
5. Serviceability with respect to antenna twist, tilt, roll or lateral translation is not checked and is left to the carrier or tower owner to ensure conformance.
6. Prior structural modifications to the tower mounting system are assumed to be installed as shown per available data.
7. 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.
8. The following material grades were assumed (Unless Noted Otherwise):
 - (a) Connection Bolts : ASTM A325
 - (b) Steel Pipe : ASTM A53 (GR. 35)
 - (c) HSS (Round) : ASTM 500 (GR. B-42)
 - (d) HSS (Rectangular) : ASTM 500 (GR. B-46)
 - (e) Channel : ASTM A36 (GR. 36)
 - (f) Steel Solid Rod : ASTM A36 (GR. 36)
 - (g) Steel Plate : ASTM A36 (GR. 36)
 - (h) Steel Angle : ASTM A36 (GR. 36)
 - (i) UNISTRUT : ASTM A570 (GR. 33)

This analysis may be affected if any assumptions are not valid or have been made in error. B+T Group 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 Mount)

Notes	Component	Centerline (ft.)	Critical Member	% Capacity	Pass / Fail
1	Main Horizontals	166	69	6.1	Pass
	Support Rails		85	8.9	Pass
	Support Tubes		31	49.6	Pass
	Support Channels		32	33.4	Pass
	Support Angles		58	18.3	Pass
	Connection Angles		59	21.4	Pass
	Mount Pipes		83A	11.6	Pass
	Connection Plates		36	19.2	Pass
2	Mount to Tower Connection		-	14.6	Pass

Structure Rating (max from all components) =	49.6%
---	--------------

Notes:

- 1) See additional documentation in "Appendix C - Software Analysis Output" for calculations supporting the % capacity consumed.
- 2) See additional documentation in "Appendix D - Additional Calculations" for calculations supporting the % capacity reported.

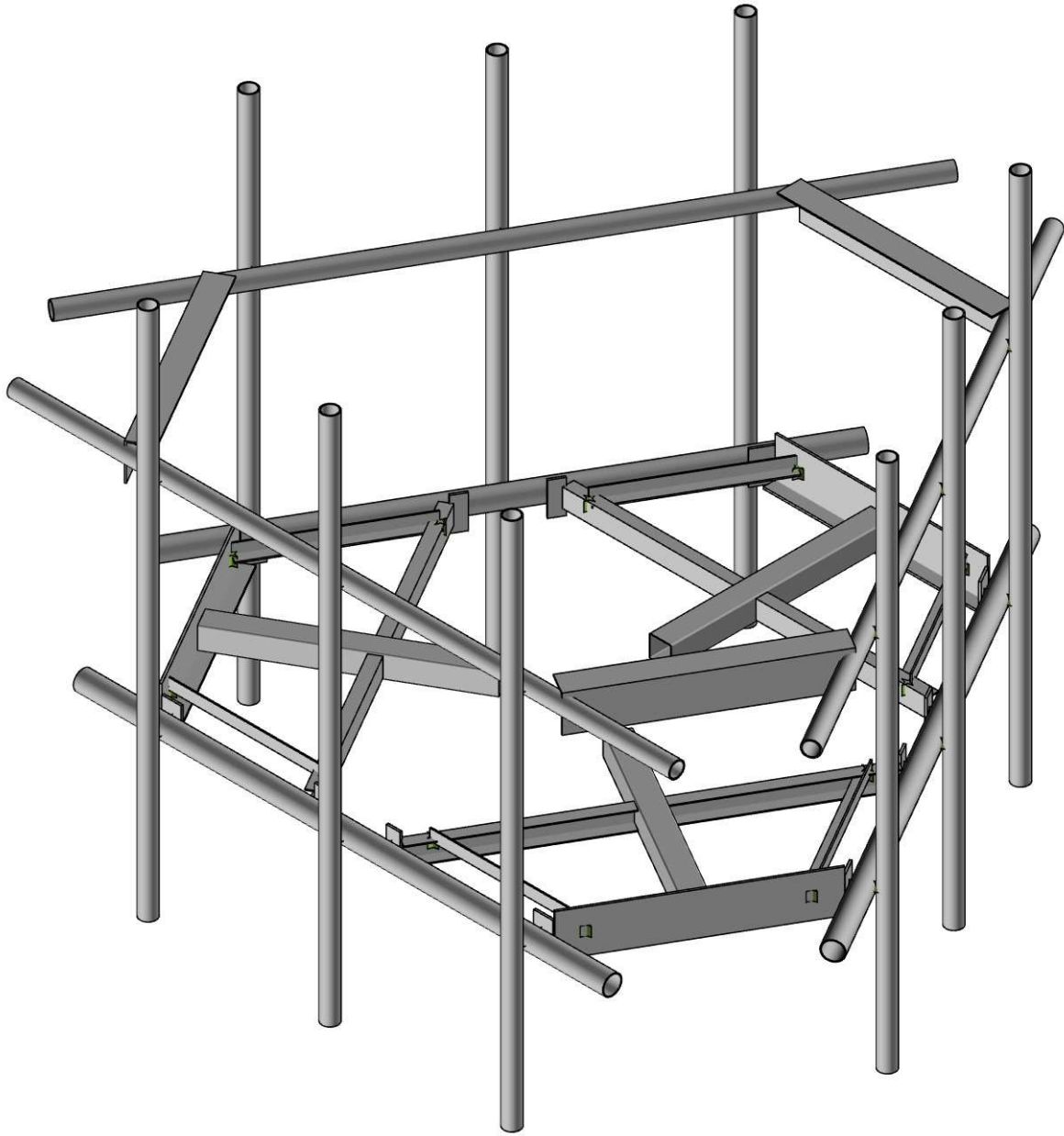
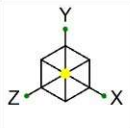
4.1) Recommendations

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

1. Commscope Part #MC-PK8-DSH.

No structural modifications are required at this time.

APPENDIX A
WIRE FRAME AND RENDERED MODELS



Envelope Only Solution

B+T Group

APK

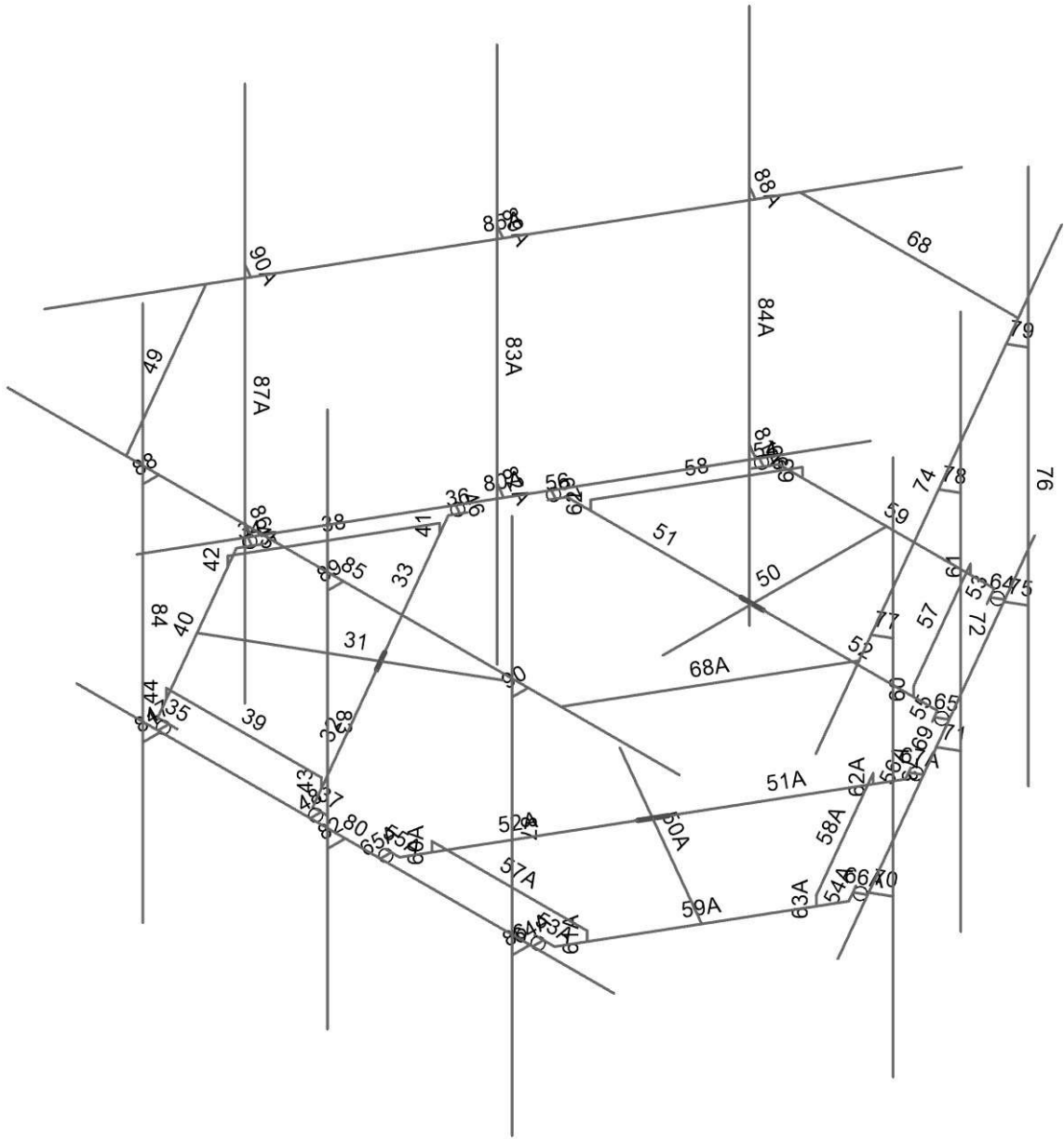
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SK-1

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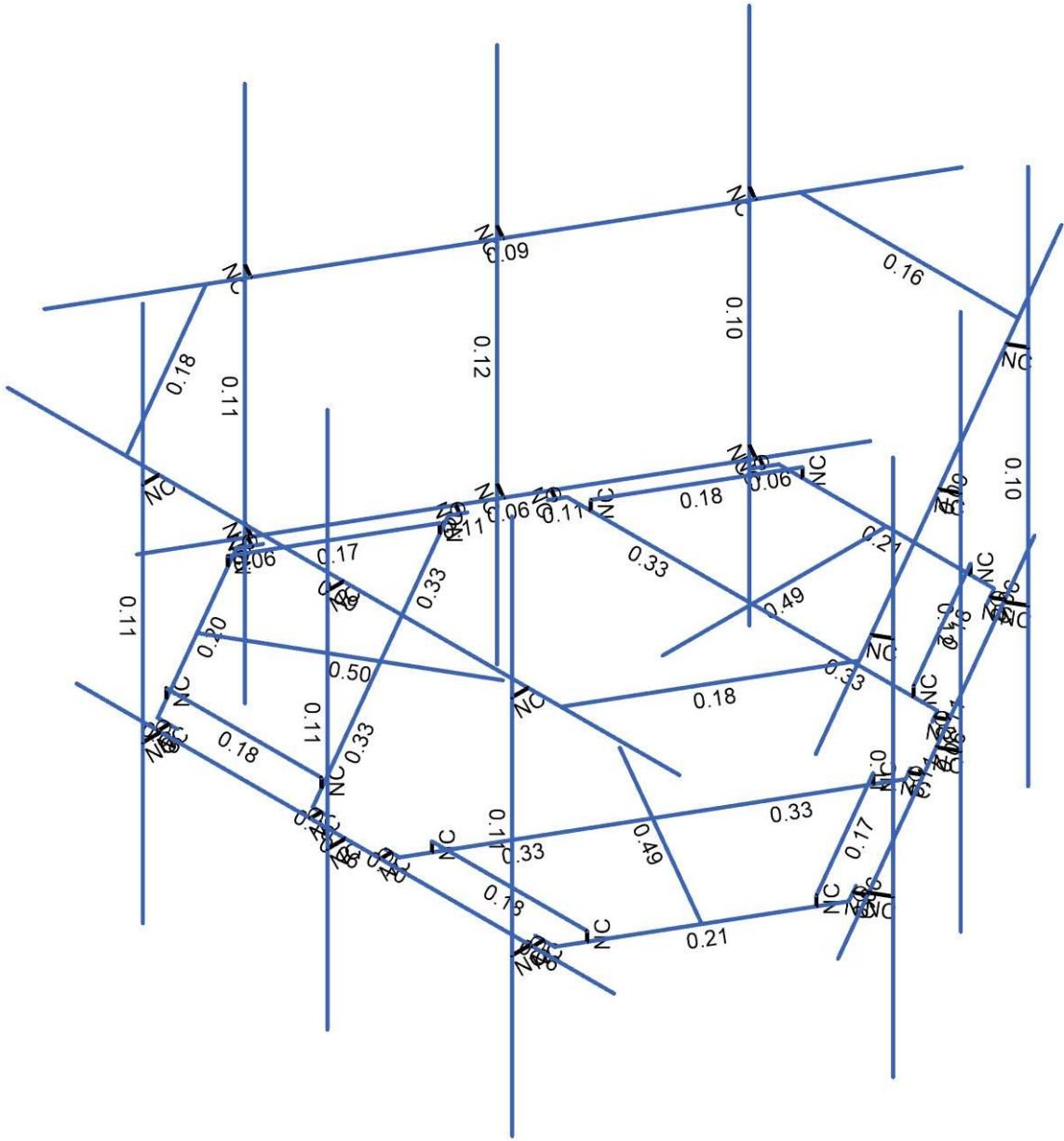
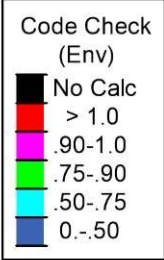
SK-2

APK

Mar 11, 2022

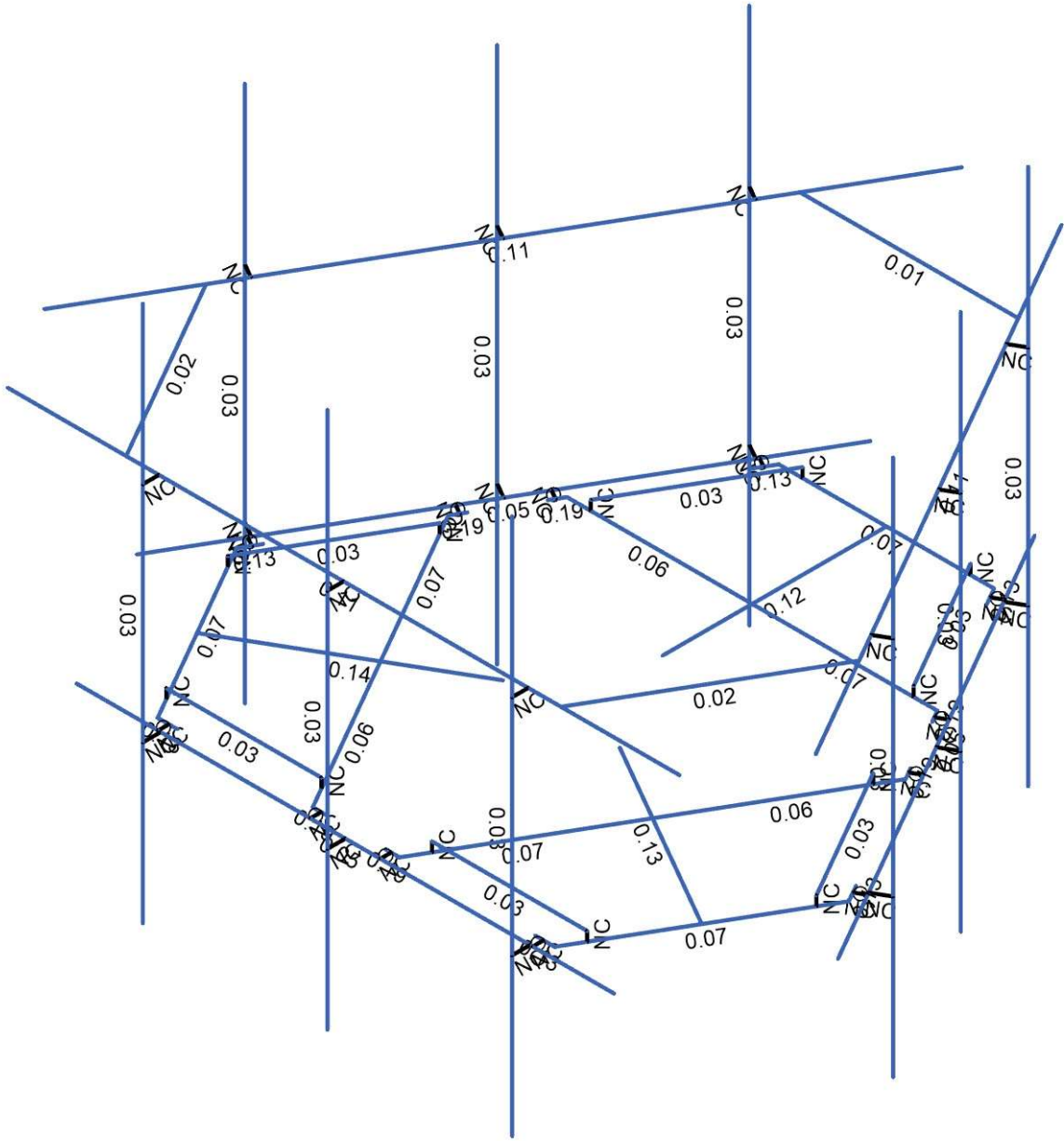
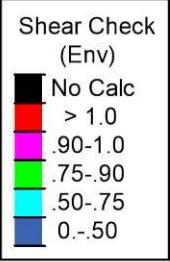
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Member Code Checks Displayed (Enveloped)
Envelope Only Solution

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Member Shear Checks Displayed (Enveloped)
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B+T Group

806355 - BRG 126 943086

SK-5

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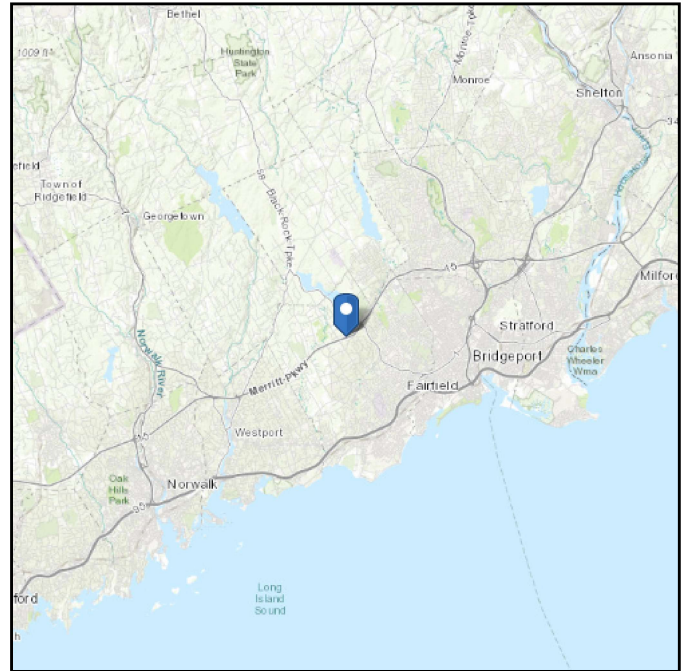
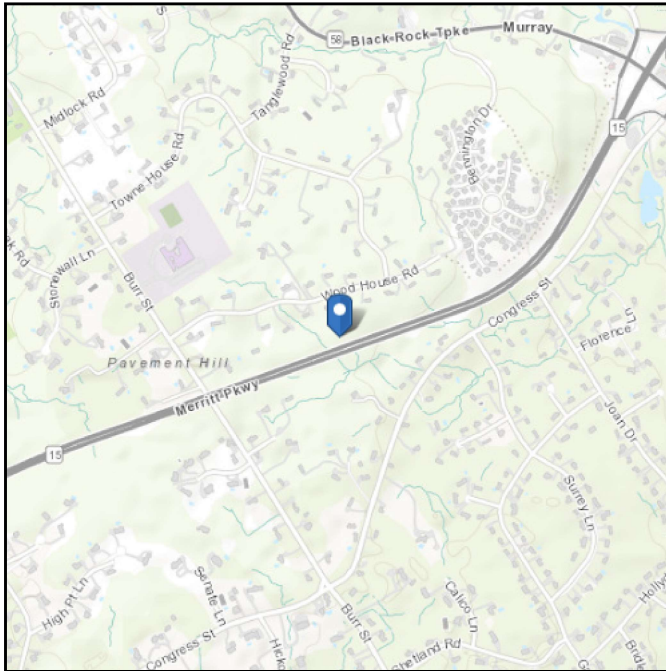
APPENDIX B
SOFTWARE INPUT CALCULATIONS

ASCE 7 Hazards Report

Address:
No Address at This
Location

Standard: ASCE/SEI 7-16
Risk Category: II
Soil Class: D - Default (see
Section 11.4.3)

Elevation: 333.8 ft (NAVD 88)
Latitude: 41.195917
Longitude: -73.281361



Wind

Results:

Wind Speed	118 Vmph
10-year MRI	75 Vmph
25-year MRI	85 Vmph
50-year MRI	90 Vmph
100-year MRI	98 Vmph

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed: Fri Mar 04 2022

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

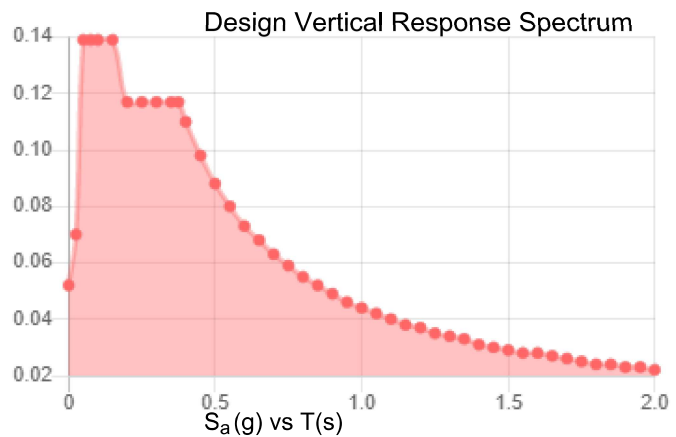
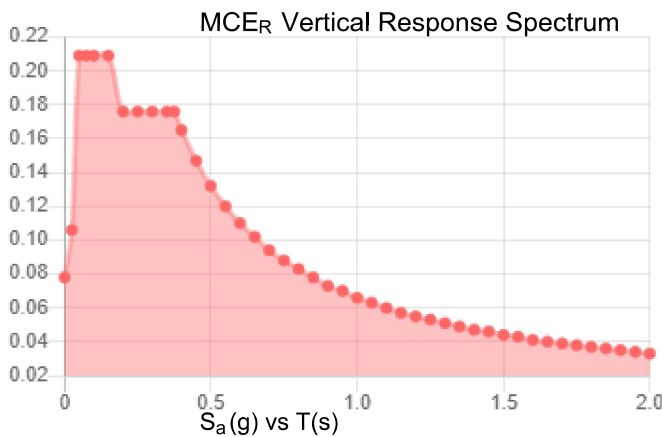
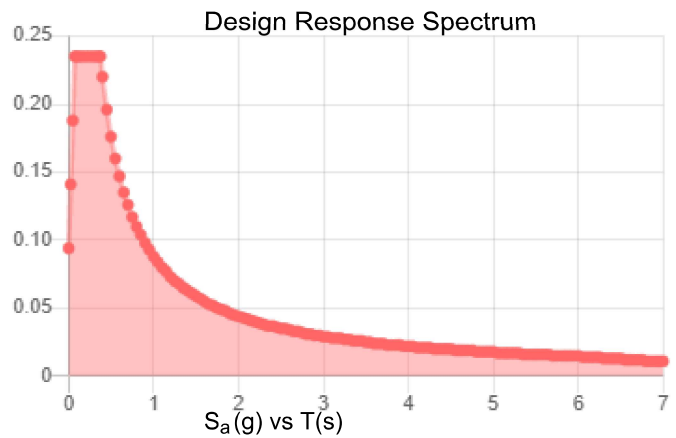
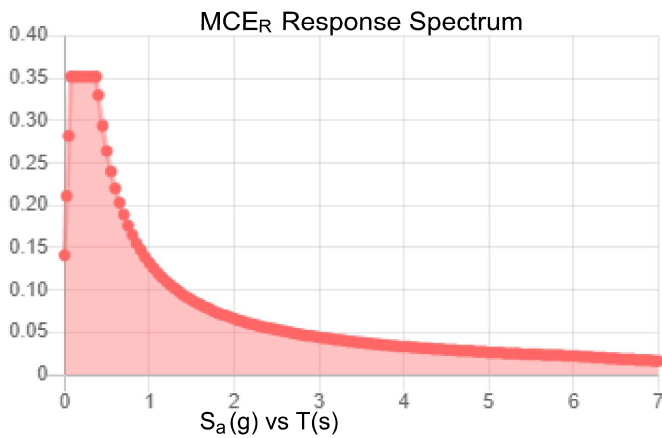
Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

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

Results:

S_s :	0.22	S_{D1} :	0.088
S_1 :	0.055	T_L :	6
F_a :	1.6	PGA :	0.127
F_v :	2.4	PGA _M :	0.196
S_{MS} :	0.352	F_{PGA} :	1.546
S_{M1} :	0.132	I_e :	1
S_{DS} :	0.235	C_v :	0.74

Seismic Design Category B



Data Accessed: Fri Mar 04 2022

Date Source:

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

Ice

Results:

Ice Thickness: 1.00 in.
Concurrent Temperature: 15 F
Gust Speed 50 mph

Data Source: Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8

Date Accessed: Fri Mar 04 2022

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

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

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

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

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PROJECT	80964.012.01 - BRG 126 943I	KSC
SUBJECT	Platform Mount Analysis	
DATE	03-11-22	OF
	PAGE	

Tower Type	: Monopole	
Ground Elevation	z _s : 334	ft [ASCE7 Hazard Tool]
Tower Height	: 171.00	ft
Mount Elevation	: 166.00	ft
Antenna Elevation	: 166.00	ft
Crest Height	: 0	ft
Risk Category	: II	[Table 2-1]
Exposure Category	: B	[Sec. 2.6.5.1.2]
Topography Category	: 1.00	[Sec. 2.6.6.2]
Wind Velocity	V : 118	mph [ASCE7 Hazard Tool]
Ice wind Velocity	V _i : 50	mph [ASCE7 Hazard Tool]
Service Velocity	V _s : 30	mph [ASCE7 Hazard Tool]
Base Ice thickness	t _i : 1.00	in [ASCE7 Hazard Tool]
Seismic Design Cat.	: B	[ASCE7 Hazard Tool]
	S _s : 0.22	
	S ₁ : 0.06	
	S _{0.5} : 0.24	
	S _{0.1} : 0.09	
Gust Factor	G _h : 1.00	[Sec. 16.6]
Pressure Coefficient	K _z : 1.14	[Sec. 2.6.5.2]
Topography Factor	K _{zt} : 1.00	[Sec. 2.6.6]
Elevation Factor	K _e : 0.99	[Sec. 2.6.8]
Directionality Factor	K _d : 0.95	[Sec. 16.6]
Shielding Factor	K _a : 0.90	[Sec. 16.6]
Design Ice Thickness	t _z : 1.18	in [Sec. 2.6.10]
Importance Factor	I _e : 1	[Table 2-3]
Response Coefficient	C _s : 0.118	[Sec. 2.7.7.1]
Amplification	A _s : 2.883041	[Sec. 16.7]
	q _z : 38.21	psf

PROJECT **80964.012.01 - BRG 126 943I** **KSC**

SUBJECT **Platform Mount Analysis**

DATE **03-11-22** PAGE OF

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EXEMPT FROM DISCLOSURE UNDER APPLICABLE LAW.

Disclaimer provided by AT&T. This statement does not constitute engineering analysis or design.



Manufacturer	Model	Qty	Aspect Ratio	C _a flat/round	EPA _{Ni} (ft ²)	EPA _T (ft ²)	EPA _{N-Ice} (ft ²)	EPA _{T-Ice} (ft ²)	F _{A No Ice (N)}	F _{A No Ice (T)}	F _{A Ice (N)}	F _{A Ice (T)}
JMA WIRELESS	MX08FRO665-21	0.5	3.60	1.25	4.01	1.61	4.53	2.06	0.15	0.06	0.03	0.01
JMA WIRELESS	MX08FRO665-21	0.5	3.60	1.25	4.01	1.61	4.53	2.06	0.15	0.06	0.03	0.01
FUJITSU	TA08025-B605	1	1.65	1.20	0.94	1.64	1.37	2.18	0.04	0.07	0.01	0.01
FUJITSU	TA08025-B604	1	1.90	1.20	0.82	1.64	1.23	2.18	0.03	0.07	0.01	0.01
RAYCAP	RDIDC-9181-PF-48	1	1.14	1.20	1.68	0.97	2.22	1.42	0.07	0.04	0.01	0.01
JMA WIRELESS	MX08FRO665-21	0.5	3.60	1.25	4.01	1.61	4.53	2.06	0.15	0.06	0.03	0.01
JMA WIRELESS	MX08FRO665-21	0.5	3.60	1.25	4.01	1.61	4.53	2.06	0.15	0.06	0.03	0.01
FUJITSU	TA08025-B605	1	1.65	1.20	0.94	1.64	1.37	2.18	0.04	0.07	0.01	0.01
FUJITSU	TA08025-B604	1	1.90	1.20	0.82	1.64	1.23	2.18	0.03	0.07	0.01	0.01
JMA WIRELESS	MX08FRO665-21	0.5	3.60	1.25	4.01	1.61	4.53	2.06	0.15	0.06	0.03	0.01
JMA WIRELESS	MX08FRO665-21	0.5	3.60	1.25	4.01	1.61	4.53	2.06	0.15	0.06	0.03	0.01
FUJITSU	TA08025-B605	1	1.65	1.20	0.94	1.64	1.37	2.18	0.04	0.07	0.01	0.01
FUJITSU	TA08025-B604	1	1.90	1.20	0.82	1.64	1.23	2.18	0.03	0.07	0.01	0.01

APPENDIX C
SOFTWARE ANALYSIS OUTPUT

Node Coordinates

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
1	44	0	0	0	
2	91	0	0	-1.006249	
3	92	0	0	-4.339582	
4	93	0	0	-2.339582	
5	94A	2.758333	0	-2.339582	
6	95	-2.758333	0	-2.339582	
7	96	-1.603633	0	-4.339582	
8	97	1.603633	0	-4.339582	
9	98	1.749466	0	-4.086991	
10	99	-1.749466	0	-4.086991	
11	100	1.686966	0	-4.195245	
12	101	1.826789	0	-4.275972	
13	102	-1.686966	0	-4.195245	
14	103A	-1.826789	0	-4.275972	
15	104	2.8625	0	-2.15916	
16	105A	2.820833	0	-2.23133	
17	106	2.960656	0	-2.312057	
18	107	-2.8625	0	-2.15916	
19	108	-2.820833	0	-2.23133	
20	109	-2.960656	0	-2.312057	
21	110A	-1.25	0.140833	-4.339582	
22	111	-2.404701	0.140833	-2.339582	
23	112	2.404701	0.140833	-2.339582	
24	113	1.25	0.140833	-4.339582	
25	114	-1.25	0	-4.339582	
26	115	-2.404701	0	-2.339582	
27	116	2.404701	0	-2.339582	
28	117	1.25	0	-4.339582	
29	118	-1.625	3.33333	-4.677148	
30	119	1.625	3.33333	-4.677148	
31	135	-3.999998	0	3.720032	
32	136	3.999998	0	3.720032	
33	137	-2.749998	0	3.720032	
34	138	0.000002	0	3.720032	
35	139	-2.749998	0	3.985865	
36	140	0.000002	0	3.985865	
37	141	-2.749998	5.666663	3.985865	
38	142	0.000002	5.666663	3.985865	
39	143	-2.749998	-2.333337	3.985865	
40	144	0.000002	-2.333337	3.985865	
41	145	-5	3.33333	3.745865	
42	146	5	3.33333	3.745865	
43	147	2.749998	0	3.720032	
44	148	2.749998	0	3.985865	
45	149	2.749998	5.666663	3.985865	
46	150	2.749998	-2.333337	3.985865	
47	151	-2.749998	3.3333	3.985865	
48	152	0.000002	3.3333	3.985865	
49	153	2.749998	3.3333	3.985865	
50	154	-2.749998	3.33333	3.745865	
51	155	0.000002	3.33333	3.745865	
52	156	2.749998	3.33333	3.745865	
53	59	-0.871437	0	0.503124	
54	60	-3.758188	0	2.169791	
55	61	-2.026138	0	1.169791	

Node Coordinates (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
56	62	-3.405304	0	-1.218996	
57	63	-0.646971	0	3.558578	
58	64	-2.956372	0	3.558578	
59	65	-4.560005	0	0.781004	
60	66	-4.414171	0	0.528414	
61	67	-2.664705	0	3.558578	
62	68	-4.476671	0	0.636667	
63	69	-4.616495	0	0.55594	
64	70	-2.789705	0	3.558578	
65	71	-2.789705	0	3.720032	
66	72A	-3.301138	0	-1.399418	
67	73	-3.342805	0	-1.327248	
68	74	-3.482628	0	-1.407975	
69	75	-0.438638	0	3.558578	
70	76	-0.521972	0	3.558578	
71	77A	-0.521972	0	3.720032	
72	78	-3.133188	0.140833	3.252323	
73	79	-0.823787	0.140833	3.252323	
74	80	-3.228488	0.140833	-0.912741	
75	81	-4.383188	0.140833	1.087259	
76	82	-3.133188	0	3.252323	
77	83	-0.823787	0	3.252323	
78	84	-3.228488	0	-0.912741	
79	85	-4.383188	0	1.087259	
80	86	-3.238029	3.333333	3.745865	
81	87	-4.863029	3.333333	0.931283	
82	88	0.871437	0	0.503124	
83	89	3.758188	0	2.169791	
84	90A	2.026138	0	1.169791	
85	91A	0.646971	0	3.558578	
86	92A	3.405304	0	-1.218996	
87	93A	4.560005	0	0.781004	
88	94	2.956372	0	3.558578	
89	95A	2.664705	0	3.558578	
90	96A	4.414171	0	0.528414	
91	97A	2.789705	0	3.558578	
92	98A	2.789705	0	3.720032	
93	99A	4.476671	0	0.636667	
94	100A	4.616495	0	0.55594	
95	101A	0.438638	0	3.558578	
96	102A	0.521972	0	3.558578	
97	103	0.521972	0	3.720032	
98	104A	3.301138	0	-1.399418	
99	105	3.342805	0	-1.327248	
100	106A	3.482628	0	-1.407975	
101	107A	4.383188	0.140833	1.087259	
102	108A	3.228488	0.140833	-0.912741	
103	109A	0.823787	0.140833	3.252323	
104	110	3.133188	0.140833	3.252323	
105	111A	4.383188	0	1.087259	
106	112A	3.228488	0	-0.912741	
107	113A	0.823787	0	3.252323	
108	114A	3.133188	0	3.252323	
109	115A	4.863029	3.333333	0.931283	
110	116A	3.238029	3.333333	3.745865	

Node Coordinates (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
111	111B	5.221641	0	1.604084	
112	112B	1.221643	0	-5.324116	
113	113B	4.596641	0	0.521552	
114	114B	3.221641	0	-1.860018	
115	115B	4.826859	0	0.388636	
116	116B	3.451859	0	-1.992934	
117	117A	4.826859	5.666663	0.388636	
118	118A	3.451859	5.666663	-1.992934	
119	119A	4.826859	-2.333337	0.388636	
120	120	3.451859	-2.333337	-1.992934	
121	121	5.744014	3.333333	2.457195	
122	122	0.744014	3.333333	-6.20306	
123	123	1.846643	0	-4.241584	
124	124	2.076861	0	-4.374501	
125	125	2.076861	5.666663	-4.374501	
126	126	2.076861	-2.333337	-4.374501	
127	127	4.826859	3.3333	0.388636	
128	128	3.451859	3.3333	-1.992934	
129	129	2.076861	3.3333	-4.374501	
130	130	4.619013	3.33333	0.508636	
131	131	3.244013	3.33333	-1.872934	
132	132	1.869015	3.33333	-4.254501	
133	133	-1.221643	0	-5.324116	
134	134	-5.221641	0	1.604084	
135	135A	-1.846643	0	-4.241584	
136	136A	-3.221643	0	-1.860014	
137	137A	-2.076861	0	-4.374501	
138	138A	-3.451861	0	-1.992931	
139	139A	-2.076861	5.666663	-4.374501	
140	140A	-3.451861	5.666663	-1.992931	
141	141A	-2.076861	-2.333337	-4.374501	
142	142A	-3.451861	-2.333337	-1.992931	
143	143A	-0.744014	3.33333	-6.20306	
144	144A	-5.744014	3.33333	2.457195	
145	145A	-4.596641	0	0.521552	
146	146A	-4.826859	0	0.388636	
147	147A	-4.826859	5.666663	0.388636	
148	148A	-4.826859	-2.333337	0.388636	
149	149A	-2.076861	3.3333	-4.374501	
150	150A	-3.451861	3.3333	-1.992931	
151	151A	-4.826859	3.3333	0.388636	
152	152A	-1.869015	3.33333	-4.254501	
153	153A	-3.244015	3.33333	-1.872931	
154	154A	-4.619013	3.33333	0.508636	

Node Boundary Conditions

	Node 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	91	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	92						
3	93						
4	94A						
5	95						
6	104						
7	105A						
8	107						

Node Boundary Conditions (Continued)

Node 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]
9	108					
10	110A					
11	113					
12	114					
13	117					
14	59	Reaction	Reaction	Reaction	Reaction	Reaction
15	60					
16	61					
17	62					
18	63					
19	72A					
20	73					
21	75					
22	76					
23	78					
24	81					
25	82					
26	85					
27	88	Reaction	Reaction	Reaction	Reaction	Reaction
28	89					
29	90A					
30	91A					
31	92A					
32	101A					
33	102A					
34	104A					
35	105					
36	107A					
37	110					
38	111A					
39	114A					

Hot Rolled Steel Properties

Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e°F ⁻¹]	Density [k/ft ³]	Yield [ksi]	Ry	Fu [ksi]	Rt	
1	A992	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	0.3	0.65	0.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	0.3	0.65	0.527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	0.3	0.65	0.527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	0.3	0.65	0.49	35	1.6	60	1.2
7	A1085	29000	11154	0.3	0.65	0.49	50	1.4	65	1.3
8	A500 Gr.C	29000	11154	0.3	0.65	0.49	46	1.4	62	1.3

Hot Rolled Steel Section Sets

Label	Shape	Type	Design List	Material	Design Rule	Area [in ²]	I _{yy} [in ⁴]	I _{zz} [in ⁴]	J [in ⁴]	
1	MF-H1	PIPE 3.5x0.165	Beam	Pipe	A500 Gr.C	Typical	1.729	2.409	2.409	4.819
2	MF-H2	PIPE 2.88x0.203	Beam	Pipe	A500 Gr.C	Typical	1.707	1.538	1.538	3.076
3	SF-H1	HSS4X4X2	Beam	Tube	A500 Gr.B Rect	Typical	1.77	4.4	4.4	6.91
4	SF-H2	C3.38X2.06X0.188	Beam	Channel	A36 Gr.36	Typical	1.339	0.562	2.4	0.015
5	SF-H3	L2x2x4	Beam	Single Angle	A36 Gr.36	Typical	0.944	0.346	0.346	0.021
6	SF-H4	L7.63x2.5x6	Beam	Single Angle	A36 Gr.36	Typical	3.658	1.307	22.092	0.163
7	MF-P1	PIPE 2.88x0.203	Column	Pipe	A500 Gr.C	Typical	1.707	1.538	1.538	3.076
8	MF-CP1	PL3/8X6_HRA	Beam	RECT	A36 Gr.36	Typical	2.28	0.027	6.84	0.105

Hot Rolled Steel Section Sets (Continued)

	Label	Shape	Type	Design List	Material	Design Rule	Area [in ²]	Iyy [in ⁴]	Izz [in ⁴]	J [in ⁴]
9	MF-H3	L6.63x4.33x.25	Beam	Single Angle	A36 Gr.36	Typical	2.678	4.383	12.502	0.054
10	MF-P2	PIPE 2.0	Column	Pipe	A53 Gr.B	Typical	1.02	0.627	0.627	1.25

Member Primary Data

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	50	91	92		SF-H1	Beam	Tube	A500 Gr.B Rect	Typical
2	51	95	93	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
3	52	93	94A	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
4	53	97	98		MF-CP1	Beam	RECT	A36 Gr.36	Typical
5	54	96	99		MF-CP1	Beam	RECT	A36 Gr.36	Typical
6	55	104	94A		MF-CP1	Beam	RECT	A36 Gr.36	Typical
7	56	95	107		MF-CP1	Beam	RECT	A36 Gr.36	Typical
8	57	113	112		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
9	58	111	110A		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
10	59	96	97		SF-H4	Beam	Single Angle	A36 Gr.36	Typical
11	60	116	112		RIGID	None	None	RIGID	Typical
12	61	117	113		RIGID	None	None	RIGID	Typical
13	62	115	111		RIGID	None	None	RIGID	Typical
14	63	114	110A		RIGID	None	None	RIGID	Typical
15	64	101	100		RIGID	None	None	RIGID	Typical
16	65	106	105A		RIGID	None	None	RIGID	Typical
17	66	103A	102		RIGID	None	None	RIGID	Typical
18	67	109	108		RIGID	None	None	RIGID	Typical
19	68	119	118	180	MF-H3	Beam	Single Angle	A36 Gr.36	Typical
20	80	135	136		MF-H1	Beam	Pipe	A500 Gr.C	Typical
21	81	139	137		RIGID	None	None	RIGID	Typical
22	82	140	138		RIGID	None	None	RIGID	Typical
23	83	142	144		MF-P1	Column	Pipe	A500 Gr.C	Typical
24	84	141	143		MF-P1	Column	Pipe	A500 Gr.C	Typical
25	85	145	146		MF-H2	Beam	Pipe	A500 Gr.C	Typical
26	86	148	147		RIGID	None	None	RIGID	Typical
27	87	149	150		MF-P1	Column	Pipe	A500 Gr.C	Typical
28	88	151	154		RIGID	None	None	RIGID	Typical
29	89	152	155		RIGID	None	None	RIGID	Typical
30	90	153	156		RIGID	None	None	RIGID	Typical
31	31	59	60		SF-H1	Beam	Tube	A500 Gr.B Rect	Typical
32	32	63	61	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
33	33	61	62	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
34	34	65	66		MF-CP1	Beam	RECT	A36 Gr.36	Typical
35	35	64	67		MF-CP1	Beam	RECT	A36 Gr.36	Typical
36	36	72A	62		MF-CP1	Beam	RECT	A36 Gr.36	Typical
37	37	63	75		MF-CP1	Beam	RECT	A36 Gr.36	Typical
38	38	81	80		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
39	39	79	78		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
40	40	64	65		SF-H4	Beam	Single Angle	A36 Gr.36	Typical
41	41	84	80		RIGID	None	None	RIGID	Typical
42	42	85	81		RIGID	None	None	RIGID	Typical
43	43	83	79		RIGID	None	None	RIGID	Typical
44	44	82	78		RIGID	None	None	RIGID	Typical
45	45	69	68		RIGID	None	None	RIGID	Typical
46	46	74	73		RIGID	None	None	RIGID	Typical
47	47	71	70		RIGID	None	None	RIGID	Typical
48	48	77A	76		RIGID	None	None	RIGID	Typical
49	49	87	86	180	MF-H3	Beam	Single Angle	A36 Gr.36	Typical
50	50A	88	89		SF-H1	Beam	Tube	A500 Gr.B Rect	Typical

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
51	51A	92A	90A	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
52	52A	90A	91A	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
53	53A	94	95A		MF-CP1	Beam	RECT	A36 Gr.36	Typical
54	54A	93A	96A		MF-CP1	Beam	RECT	A36 Gr.36	Typical
55	55A	101A	91A		MF-CP1	Beam	RECT	A36 Gr.36	Typical
56	56A	92A	104A		MF-CP1	Beam	RECT	A36 Gr.36	Typical
57	57A	110	109A		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
58	58A	108A	107A		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
59	59A	93A	94		SF-H4	Beam	Single Angle	A36 Gr.36	Typical
60	60A	113A	109A		RIGID	None	None	RIGID	Typical
61	61A	114A	110		RIGID	None	None	RIGID	Typical
62	62A	112A	108A		RIGID	None	None	RIGID	Typical
63	63A	111A	107A		RIGID	None	None	RIGID	Typical
64	64A	98A	97A		RIGID	None	None	RIGID	Typical
65	65A	103	102A		RIGID	None	None	RIGID	Typical
66	66A	100A	99A		RIGID	None	None	RIGID	Typical
67	67A	106A	105		RIGID	None	None	RIGID	Typical
68	68A	116A	115A	180	MF-H3	Beam	Single Angle	A36 Gr.36	Typical
69	69	111B	112B		MF-H1	Beam	Pipe	A500 Gr.C	Typical
70	70	115B	113B		RIGID	None	None	RIGID	Typical
71	71	116B	114B		RIGID	None	None	RIGID	Typical
72	72	118A	120		MF-P1	Column	Pipe	A500 Gr.C	Typical
73	73	117A	119A		MF-P1	Column	Pipe	A500 Gr.C	Typical
74	74	121	122		MF-H2	Beam	Pipe	A500 Gr.C	Typical
75	75	124	123		RIGID	None	None	RIGID	Typical
76	76	125	126		MF-P1	Column	Pipe	A500 Gr.C	Typical
77	77	127	130		RIGID	None	None	RIGID	Typical
78	78	128	131		RIGID	None	None	RIGID	Typical
79	79	129	132		RIGID	None	None	RIGID	Typical
80	80A	133	134		MF-H1	Beam	Pipe	A500 Gr.C	Typical
81	81A	137A	135A		RIGID	None	None	RIGID	Typical
82	82A	138A	136A		RIGID	None	None	RIGID	Typical
83	83A	140A	142A		MF-P1	Column	Pipe	A500 Gr.C	Typical
84	84A	139A	141A		MF-P1	Column	Pipe	A500 Gr.C	Typical
85	85A	143A	144A		MF-H2	Beam	Pipe	A500 Gr.C	Typical
86	86A	146A	145A		RIGID	None	None	RIGID	Typical
87	87A	147A	148A		MF-P1	Column	Pipe	A500 Gr.C	Typical
88	88A	149A	152A		RIGID	None	None	RIGID	Typical
89	89A	150A	153A		RIGID	None	None	RIGID	Typical
90	90A	151A	154A		RIGID	None	None	RIGID	Typical

Member Advanced Data

	Label	I Release	I Offset [in]	J Offset [in]	Physical	Deflection Ratio Options	Seismic DR
1	50				Yes	N/A	None
2	51			2	Yes	N/A	None
3	52		2		Yes	N/A	None
4	53				Yes	Default	None
5	54				Yes	Default	None
6	55				Yes	Default	None
7	56				Yes	Default	None
8	57				Yes	N/A	None
9	58				Yes	N/A	None
10	59				Yes	N/A	None
11	60				Yes	** NA **	None
12	61				Yes	** NA **	None

Member Advanced Data (Continued)

	Label	I Release	I Offset [in]	J Offset [in]	Physical	Deflection Ratio Options	Seismic DR
13	62				Yes	** NA **	None
14	63				Yes	** NA **	None
15	64	O O O O O X			Yes	** NA **	None
16	65	O O O O O X			Yes	** NA **	None
17	66	O O O O O X			Yes	** NA **	None
18	67	O O O O O X			Yes	** NA **	None
19	68				Yes	Default	None
20	80				Yes	N/A	None
21	81				Yes	** NA **	None
22	82				Yes	** NA **	None
23	83				Yes	** NA **	None
24	84				Yes	** NA **	None
25	85				Yes	N/A	None
26	86				Yes	** NA **	None
27	87				Yes	** NA **	None
28	88				Yes	** NA **	None
29	89				Yes	** NA **	None
30	90				Yes	** NA **	None
31	31				Yes	N/A	None
32	32			2	Yes	N/A	None
33	33		2		Yes	N/A	None
34	34				Yes	Default	None
35	35				Yes	Default	None
36	36				Yes	Default	None
37	37				Yes	Default	None
38	38				Yes	N/A	None
39	39				Yes	N/A	None
40	40				Yes	N/A	None
41	41				Yes	** NA **	None
42	42				Yes	** NA **	None
43	43				Yes	** NA **	None
44	44				Yes	** NA **	None
45	45	O O O O O X			Yes	** NA **	None
46	46	O O O O O X			Yes	** NA **	None
47	47	O O O O O X			Yes	** NA **	None
48	48	O O O O O X			Yes	** NA **	None
49	49				Yes	Default	None
50	50A				Yes	N/A	None
51	51A			2	Yes	N/A	None
52	52A		2		Yes	N/A	None
53	53A				Yes	Default	None
54	54A				Yes	Default	None
55	55A				Yes	Default	None
56	56A				Yes	Default	None
57	57A				Yes	N/A	None
58	58A				Yes	N/A	None
59	59A				Yes	N/A	None
60	60A				Yes	** NA **	None
61	61A				Yes	** NA **	None
62	62A				Yes	** NA **	None
63	63A				Yes	** NA **	None
64	64A	O O O O O X			Yes	** NA **	None
65	65A	O O O O O X			Yes	** NA **	None
66	66A	O O O O O X			Yes	** NA **	None
67	67A	O O O O O X			Yes	** NA **	None

Member Advanced Data (Continued)

	Label	I Release	I Offset [in]	J Offset [in]	Physical	Deflection Ratio Options	Seismic DR
68	68A				Yes	Default	None
69	69				Yes	N/A	None
70	70				Yes	** NA **	None
71	71				Yes	** NA **	None
72	72				Yes	** NA **	None
73	73				Yes	** NA **	None
74	74				Yes	N/A	None
75	75				Yes	** NA **	None
76	76				Yes	** NA **	None
77	77				Yes	** NA **	None
78	78				Yes	** NA **	None
79	79				Yes	** NA **	None
80	80A				Yes	N/A	None
81	81A				Yes	** NA **	None
82	82A				Yes	** NA **	None
83	83A				Yes	** NA **	None
84	84A				Yes	** NA **	None
85	85A				Yes	N/A	None
86	86A				Yes	** NA **	None
87	87A				Yes	** NA **	None
88	88A				Yes	** NA **	None
89	89A				Yes	** NA **	None
90	90A				Yes	** NA **	None

Hot Rolled Steel Design Parameters

	Label	Shape	Length [ft]	Lcomp top [ft]	Function
1	50	SF-H1	3.333	Lbyy	Lateral
2	51	SF-H2	2.758	Lbyy	Lateral
3	52	SF-H2	2.758	Lbyy	Lateral
4	53	MF-CP1	0.292	Lbyy	Lateral
5	54	MF-CP1	0.292	Lbyy	Lateral
6	55	MF-CP1	0.208	Lbyy	Lateral
7	56	MF-CP1	0.208	Lbyy	Lateral
8	57	SF-H3	2.309	Lbyy	Lateral
9	58	SF-H3	2.309	Lbyy	Lateral
10	59	SF-H4	3.207	Lbyy	Lateral
11	68	MF-H3	3.25	Lbyy	Lateral
12	80	MF-H1	8	Lbyy	Lateral
13	83	MF-P1	8	Lbyy	Lateral
14	84	MF-P1	8	Lbyy	Lateral
15	85	MF-H2	10	Lbyy	Lateral
16	87	MF-P1	8	Lbyy	Lateral
17	31	SF-H1	3.333	Lbyy	Lateral
18	32	SF-H2	2.758	Lbyy	Lateral
19	33	SF-H2	2.758	Lbyy	Lateral
20	34	MF-CP1	0.292	Lbyy	Lateral
21	35	MF-CP1	0.292	Lbyy	Lateral
22	36	MF-CP1	0.208	Lbyy	Lateral
23	37	MF-CP1	0.208	Lbyy	Lateral
24	38	SF-H3	2.309	Lbyy	Lateral
25	39	SF-H3	2.309	Lbyy	Lateral
26	40	SF-H4	3.207	Lbyy	Lateral
27	49	MF-H3	3.25	Lbyy	Lateral
28	50A	SF-H1	3.333	Lbyy	Lateral
29	51A	SF-H2	2.758	Lbyy	Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length [ft]	Lcomp top [ft]	Function
30	52A	SF-H2	2.758	Lbyy	Lateral
31	53A	MF-CP1	0.292	Lbyy	Lateral
32	54A	MF-CP1	0.292	Lbyy	Lateral
33	55A	MF-CP1	0.208	Lbyy	Lateral
34	56A	MF-CP1	0.208	Lbyy	Lateral
35	57A	SF-H3	2.309	Lbyy	Lateral
36	58A	SF-H3	2.309	Lbyy	Lateral
37	59A	SF-H4	3.207	Lbyy	Lateral
38	68A	MF-H3	3.25	Lbyy	Lateral
39	69	MF-H1	8	Lbyy	Lateral
40	72	MF-P1	8	Lbyy	Lateral
41	73	MF-P1	8	Lbyy	Lateral
42	74	MF-H2	10	Lbyy	Lateral
43	76	MF-P1	8	Lbyy	Lateral
44	80A	MF-H1	8	Lbyy	Lateral
45	83A	MF-P1	8	Lbyy	Lateral
46	84A	MF-P1	8	Lbyy	Lateral
47	85A	MF-H2	10	Lbyy	Lateral
48	87A	MF-P1	8	Lbyy	Lateral

Member Point Loads (BLC 1 : Dead)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	83	Y	-0.041	%15
2	83	Y	-0.041	%85
3	83	Y	-0.075	%50
4	83	Y	-0.064	%50
5	83	Y	0	0
6	31	Y	-0.022	%30
7	31	Y	0	0
8	31	Y	0	0
9	31	Y	0	0
10	31	Y	0	0
11	83A	Y	-0.041	%15
12	83A	Y	-0.041	%85
13	83A	Y	-0.075	%50
14	83A	Y	-0.064	%50
15	83A	Y	0	0
16	72	Y	-0.041	%15
17	72	Y	-0.041	%85
18	72	Y	-0.075	%50
19	72	Y	-0.064	%50
20	72	Y	0	0

Member Point Loads (BLC 2 : 0 Wind - No Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	83	Z	-0.153	%15
2	83	Z	-0.153	%85
3	83	Z	-0.039	%50
4	83	Z	-0.034	%50
5	83	Z	0	0
6	31	Z	-0.069	%30
7	31	Z	0	0
8	31	Z	0	0

Member Point Loads (BLC 2 : 0 Wind - No Ice) (Continued)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
9	31	Z	0	0
10	31	Z	0	0
11	83A	Z	-0.153	%15
12	83A	Z	-0.153	%85
13	83A	Z	-0.039	%50
14	83A	Z	-0.034	%50
15	83A	Z	0	0
16	72	Z	-0.153	%15
17	72	Z	-0.153	%85
18	72	Z	-0.039	%50
19	72	Z	-0.034	%50
20	72	Z	0	0

Member Point Loads (BLC 3 : 90 Wind - No Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	83	X	-0.061	%15
2	83	X	-0.061	%85
3	83	X	-0.068	%50
4	83	X	-0.068	%50
5	83	X	0	0
6	31	X	-0.04	%30
7	31	X	0	0
8	31	X	0	0
9	31	X	0	0
10	31	X	0	0
11	83A	X	-0.061	%15
12	83A	X	-0.061	%85
13	83A	X	-0.068	%50
14	83A	X	-0.068	%50
15	83A	X	0	0
16	72	X	-0.061	%15
17	72	X	-0.061	%85
18	72	X	-0.068	%50
19	72	X	-0.068	%50
20	72	X	0	0

Member Point Loads (BLC 4 : 0 Wind - Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	83	Z	-0.031	%15
2	83	Z	-0.031	%85
3	83	Z	-0.007	%50
4	83	Z	-0.006	%50
5	83	Z	0	0
6	31	Z	-0.012	%30
7	31	Z	0	0
8	31	Z	0	0
9	31	Z	0	0
10	31	Z	0	0
11	83A	Z	-0.031	%15
12	83A	Z	-0.031	%85
13	83A	Z	-0.007	%50
14	83A	Z	-0.006	%50
15	83A	Z	0	0

Member Point Loads (BLC 4 : 0 Wind - Ice) (Continued)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
16	72	Z	-0.031	%15
17	72	Z	-0.031	%85
18	72	Z	-0.007	%50
19	72	Z	-0.006	%50
20	72	Z	0	0

Member Point Loads (BLC 5 : 90 Wind - Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	83	X	-0.014	%15
2	83	X	-0.014	%85
3	83	X	-0.012	%50
4	83	X	-0.012	%50
5	83	X	0	0
6	31	X	-0.007	%30
7	31	X	0	0
8	31	X	0	0
9	31	X	0	0
10	31	X	0	0
11	83A	X	-0.014	%15
12	83A	X	-0.014	%85
13	83A	X	-0.012	%50
14	83A	X	-0.012	%50
15	83A	X	0	0
16	72	X	-0.014	%15
17	72	X	-0.014	%85
18	72	X	-0.012	%50
19	72	X	-0.012	%50
20	72	X	0	0

Member Point Loads (BLC 6 : 0 Wind - Service)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	83	Z	-0.01	%15
2	83	Z	-0.01	%85
3	83	Z	-0.003	%50
4	83	Z	-0.002	%50
5	83	Z	0	0
6	31	Z	-0.005	%30
7	31	Z	0	0
8	31	Z	0	0
9	31	Z	0	0
10	31	Z	0	0
11	83A	Z	-0.01	%15
12	83A	Z	-0.01	%85
13	83A	Z	-0.003	%50
14	83A	Z	-0.002	%50
15	83A	Z	0	0
16	72	Z	-0.01	%15
17	72	Z	-0.01	%85
18	72	Z	-0.003	%50
19	72	Z	-0.002	%50
20	72	Z	0	0

Member Point Loads (BLC 7 : 90 Wind - Service)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	83	X	-0.004	%15
2	83	X	-0.004	%85
3	83	X	-0.004	%50
4	83	X	-0.004	%50
5	83	X	0	0
6	31	X	-0.003	%30
7	31	X	0	0
8	31	X	0	0
9	31	X	0	0
10	31	X	0	0
11	83A	X	-0.004	%15
12	83A	X	-0.004	%85
13	83A	X	-0.004	%50
14	83A	X	-0.004	%50
15	83A	X	0	0
16	72	X	-0.004	%15
17	72	X	-0.004	%85
18	72	X	-0.004	%50
19	72	X	-0.004	%50
20	72	X	0	0

Member Point Loads (BLC 8 : Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	83	Y	-0.118	%15
2	83	Y	-0.118	%85
3	83	Y	-0.035	%50
4	83	Y	-0.034	%50
5	83	Y	0	0
6	31	Y	-0.036	%30
7	31	Y	0	0
8	31	Y	0	0
9	31	Y	0	0
10	31	Y	0	0
11	83A	Y	-0.118	%15
12	83A	Y	-0.118	%85
13	83A	Y	-0.035	%50
14	83A	Y	-0.034	%50
15	83A	Y	0	0
16	72	Y	-0.118	%15
17	72	Y	-0.118	%85
18	72	Y	-0.035	%50
19	72	Y	-0.034	%50
20	72	Y	0	0

Member Point Loads (BLC 9 : 0 Seismic)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	83	Z	-0.028	%15
2	83	Z	-0.028	%85
3	83	Z	-0.025	%50
4	83	Z	-0.022	%50
5	83	Z	0	0
6	31	Z	-0.007	%30

Member Point Loads (BLC 9 : 0 Seismic) (Continued)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
7	31	Z	0	0
8	31	Z	0	0
9	31	Z	0	0
10	31	Z	0	0
11	83A	Z	-0.028	%15
12	83A	Z	-0.028	%85
13	83A	Z	-0.025	%50
14	83A	Z	-0.022	%50
15	83A	Z	0	0
16	72	Z	-0.028	%15
17	72	Z	-0.028	%85
18	72	Z	-0.025	%50
19	72	Z	-0.022	%50
20	72	Z	0	0

Member Point Loads (BLC 10 : 90 Seismic)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	83	X	-0.028	%15
2	83	X	-0.028	%85
3	83	X	-0.025	%50
4	83	X	-0.022	%50
5	83	X	0	0
6	31	X	-0.007	%30
7	31	X	0	0
8	31	X	0	0
9	31	X	0	0
10	31	X	0	0
11	83A	X	-0.028	%15
12	83A	X	-0.028	%85
13	83A	X	-0.025	%50
14	83A	X	-0.022	%50
15	83A	X	0	0
16	72	X	-0.028	%15
17	72	X	-0.028	%85
18	72	X	-0.025	%50
19	72	X	-0.022	%50
20	72	X	0	0

Member Point Loads (BLC 15 : Maint LL 1)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	85	Y	-0.25	%5

Member Point Loads (BLC 16 : Maint LL 2)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	80	Y	-0.25	%5

Member Point Loads (BLC 17 : Maint LL 3)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	85A	Y	-0.25	%5

Member Point Loads (BLC 18 : Maint LL 4)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	80A	Y	-0.25	%5

Member Point Loads (BLC 19 : Maint LL 5)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	74	Y	-0.25	%5

Member Point Loads (BLC 20 : Maint LL 6)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	69	Y	-0.25	%5

Member Point Loads (BLC 21 : Maint LL 7)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	85	Y	-0.25	%95

Member Point Loads (BLC 22 : Maint LL 8)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	80	Y	-0.25	%95

Member Point Loads (BLC 23 : Maint LL 9)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	85A	Y	-0.25	%95

Member Point Loads (BLC 24 : Maint LL 10)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	80A	Y	-0.25	%95

Member Point Loads (BLC 25 : Maint LL 11)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	74	Y	-0.25	%95

Member Point Loads (BLC 26 : Maint LL 12)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	69	Y	-0.25	%95

Member Point Loads (BLC 27 : Maint LL 13)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	31	Y	-0.25	%95



Member Point Loads (BLC 28 : Maint LL 14)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	50	Y	-0.25	%95

Member Point Loads (BLC 29 : Maint LL 15)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	50A	Y	-0.25	%95

Member Distributed Loads (BLC 2 : 0 Wind - No Ice)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	50	Z	-0.017	-0.017	0	%100
2	51	Z	-0.014	-0.014	0	%100
3	52	Z	-0.014	-0.014	0	%100
4	53	Z	-0.021	-0.021	0	%100
5	54	Z	-0.021	-0.021	0	%100
6	55	Z	-0.021	-0.021	0	%100
7	56	Z	-0.021	-0.021	0	%100
8	57	Z	-0.009	-0.009	0	%100
9	58	Z	-0.009	-0.009	0	%100
10	59	Z	-0.028	-0.028	0	%100
11	68	Z	-0.025	-0.025	0	%100
12	80	Z	-0.012	-0.012	0	%100
13	83	Z	-0.01	-0.01	0	%100
14	84	Z	-0.01	-0.01	0	%100
15	85	Z	-0.01	-0.01	0	%100
16	87	Z	-0.01	-0.01	0	%100
17	31	Z	-0.017	-0.017	0	%100
18	32	Z	-0.014	-0.014	0	%100
19	33	Z	-0.014	-0.014	0	%100
20	34	Z	-0.021	-0.021	0	%100
21	35	Z	-0.021	-0.021	0	%100
22	36	Z	-0.021	-0.021	0	%100
23	37	Z	-0.021	-0.021	0	%100
24	38	Z	-0.009	-0.009	0	%100
25	39	Z	-0.009	-0.009	0	%100
26	40	Z	-0.028	-0.028	0	%100
27	49	Z	-0.025	-0.025	0	%100
28	50A	Z	-0.017	-0.017	0	%100
29	51A	Z	-0.014	-0.014	0	%100
30	52A	Z	-0.014	-0.014	0	%100
31	53A	Z	-0.021	-0.021	0	%100
32	54A	Z	-0.021	-0.021	0	%100
33	55A	Z	-0.021	-0.021	0	%100
34	56A	Z	-0.021	-0.021	0	%100
35	57A	Z	-0.009	-0.009	0	%100
36	58A	Z	-0.009	-0.009	0	%100
37	59A	Z	-0.028	-0.028	0	%100
38	68A	Z	-0.025	-0.025	0	%100
39	69	Z	-0.012	-0.012	0	%100
40	72	Z	-0.01	-0.01	0	%100
41	73	Z	-0.01	-0.01	0	%100
42	74	Z	-0.01	-0.01	0	%100
43	76	Z	-0.01	-0.01	0	%100
44	80A	Z	-0.012	-0.012	0	%100



Member Distributed Loads (BLC 2 : 0 Wind - No Ice) (Continued)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
45	83A	Z	-0.01	-0.01	0	%100
46	84A	Z	-0.01	-0.01	0	%100
47	85A	Z	-0.01	-0.01	0	%100
48	87A	Z	-0.01	-0.01	0	%100

Member Distributed Loads (BLC 3 : 90 Wind - No Ice)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	50	X	-0.017	-0.017	0	%100
2	51	X	-0.014	-0.014	0	%100
3	52	X	-0.014	-0.014	0	%100
4	53	X	-0.021	-0.021	0	%100
5	54	X	-0.021	-0.021	0	%100
6	55	X	-0.021	-0.021	0	%100
7	56	X	-0.021	-0.021	0	%100
8	57	X	-0.009	-0.009	0	%100
9	58	X	-0.009	-0.009	0	%100
10	59	X	-0.028	-0.028	0	%100
11	68	X	-0.025	-0.025	0	%100
12	80	X	-0.012	-0.012	0	%100
13	83	X	-0.01	-0.01	0	%100
14	84	X	-0.01	-0.01	0	%100
15	85	X	-0.01	-0.01	0	%100
16	87	X	-0.01	-0.01	0	%100
17	31	X	-0.017	-0.017	0	%100
18	32	X	-0.014	-0.014	0	%100
19	33	X	-0.014	-0.014	0	%100
20	34	X	-0.021	-0.021	0	%100
21	35	X	-0.021	-0.021	0	%100
22	36	X	-0.021	-0.021	0	%100
23	37	X	-0.021	-0.021	0	%100
24	38	X	-0.009	-0.009	0	%100
25	39	X	-0.009	-0.009	0	%100
26	40	X	-0.028	-0.028	0	%100
27	49	X	-0.025	-0.025	0	%100
28	50A	X	-0.017	-0.017	0	%100
29	51A	X	-0.014	-0.014	0	%100
30	52A	X	-0.014	-0.014	0	%100
31	53A	X	-0.021	-0.021	0	%100
32	54A	X	-0.021	-0.021	0	%100
33	55A	X	-0.021	-0.021	0	%100
34	56A	X	-0.021	-0.021	0	%100
35	57A	X	-0.009	-0.009	0	%100
36	58A	X	-0.009	-0.009	0	%100
37	59A	X	-0.028	-0.028	0	%100
38	68A	X	-0.025	-0.025	0	%100
39	69	X	-0.012	-0.012	0	%100
40	72	X	-0.01	-0.01	0	%100
41	73	X	-0.01	-0.01	0	%100
42	74	X	-0.01	-0.01	0	%100
43	76	X	-0.01	-0.01	0	%100
44	80A	X	-0.012	-0.012	0	%100
45	83A	X	-0.01	-0.01	0	%100
46	84A	X	-0.01	-0.01	0	%100
47	85A	X	-0.01	-0.01	0	%100
48	87A	X	-0.01	-0.01	0	%100

Member Distributed Loads (BLC 4 : 0 Wind - Ice)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	50	Z	-0.005	-0.005	0	%100
2	51	Z	-0.005	-0.005	0	%100
3	52	Z	-0.005	-0.005	0	%100
4	53	Z	-0.009	-0.009	0	%100
5	54	Z	-0.009	-0.009	0	%100
6	55	Z	-0.01	-0.01	0	%100
7	56	Z	-0.01	-0.01	0	%100
8	57	Z	-0.004	-0.004	0	%100
9	58	Z	-0.004	-0.004	0	%100
10	59	Z	-0.007	-0.007	0	%100
11	68	Z	-0.007	-0.007	0	%100
12	80	Z	-0.002	-0.002	0	%100
13	83	Z	-0.002	-0.002	0	%100
14	84	Z	-0.002	-0.002	0	%100
15	85	Z	-0.002	-0.002	0	%100
16	87	Z	-0.002	-0.002	0	%100
17	31	Z	-0.005	-0.005	0	%100
18	32	Z	-0.005	-0.005	0	%100
19	33	Z	-0.005	-0.005	0	%100
20	34	Z	-0.009	-0.009	0	%100
21	35	Z	-0.009	-0.009	0	%100
22	36	Z	-0.01	-0.01	0	%100
23	37	Z	-0.01	-0.01	0	%100
24	38	Z	-0.004	-0.004	0	%100
25	39	Z	-0.004	-0.004	0	%100
26	40	Z	-0.007	-0.007	0	%100
27	49	Z	-0.007	-0.007	0	%100
28	50A	Z	-0.005	-0.005	0	%100
29	51A	Z	-0.005	-0.005	0	%100
30	52A	Z	-0.005	-0.005	0	%100
31	53A	Z	-0.009	-0.009	0	%100
32	54A	Z	-0.009	-0.009	0	%100
33	55A	Z	-0.01	-0.01	0	%100
34	56A	Z	-0.01	-0.01	0	%100
35	57A	Z	-0.004	-0.004	0	%100
36	58A	Z	-0.004	-0.004	0	%100
37	59A	Z	-0.007	-0.007	0	%100
38	68A	Z	-0.007	-0.007	0	%100
39	69	Z	-0.002	-0.002	0	%100
40	72	Z	-0.002	-0.002	0	%100
41	73	Z	-0.002	-0.002	0	%100
42	74	Z	-0.002	-0.002	0	%100
43	76	Z	-0.002	-0.002	0	%100
44	80A	Z	-0.002	-0.002	0	%100
45	83A	Z	-0.002	-0.002	0	%100
46	84A	Z	-0.002	-0.002	0	%100
47	85A	Z	-0.002	-0.002	0	%100
48	87A	Z	-0.002	-0.002	0	%100

Member Distributed Loads (BLC 5 : 90 Wind - Ice)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	50	X	-0.005	-0.005	0	%100
2	51	X	-0.005	-0.005	0	%100
3	52	X	-0.005	-0.005	0	%100



Company : B+T Group
 Designer : APK
 Job Number : 80964.012.01
 Model Name : 806355 - BRG 126 943086

3/11/2022
 8:20:08 PM
 Checked By : _____

Member Distributed Loads (BLC 5 : 90 Wind - Ice) (Continued)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
4	53	X	-0.009	-0.009	0	%100
5	54	X	-0.009	-0.009	0	%100
6	55	X	-0.01	-0.01	0	%100
7	56	X	-0.01	-0.01	0	%100
8	57	X	-0.004	-0.004	0	%100
9	58	X	-0.004	-0.004	0	%100
10	59	X	-0.007	-0.007	0	%100
11	68	X	-0.007	-0.007	0	%100
12	80	X	-0.002	-0.002	0	%100
13	83	X	-0.002	-0.002	0	%100
14	84	X	-0.002	-0.002	0	%100
15	85	X	-0.002	-0.002	0	%100
16	87	X	-0.002	-0.002	0	%100
17	31	X	-0.005	-0.005	0	%100
18	32	X	-0.005	-0.005	0	%100
19	33	X	-0.005	-0.005	0	%100
20	34	X	-0.009	-0.009	0	%100
21	35	X	-0.009	-0.009	0	%100
22	36	X	-0.01	-0.01	0	%100
23	37	X	-0.01	-0.01	0	%100
24	38	X	-0.004	-0.004	0	%100
25	39	X	-0.004	-0.004	0	%100
26	40	X	-0.007	-0.007	0	%100
27	49	X	-0.007	-0.007	0	%100
28	50A	X	-0.005	-0.005	0	%100
29	51A	X	-0.005	-0.005	0	%100
30	52A	X	-0.005	-0.005	0	%100
31	53A	X	-0.009	-0.009	0	%100
32	54A	X	-0.009	-0.009	0	%100
33	55A	X	-0.01	-0.01	0	%100
34	56A	X	-0.01	-0.01	0	%100
35	57A	X	-0.004	-0.004	0	%100
36	58A	X	-0.004	-0.004	0	%100
37	59A	X	-0.007	-0.007	0	%100
38	68A	X	-0.007	-0.007	0	%100
39	69	X	-0.002	-0.002	0	%100
40	72	X	-0.002	-0.002	0	%100
41	73	X	-0.002	-0.002	0	%100
42	74	X	-0.002	-0.002	0	%100
43	76	X	-0.002	-0.002	0	%100
44	80A	X	-0.002	-0.002	0	%100
45	83A	X	-0.002	-0.002	0	%100
46	84A	X	-0.002	-0.002	0	%100
47	85A	X	-0.002	-0.002	0	%100
48	87A	X	-0.002	-0.002	0	%100

Member Distributed Loads (BLC 6 : 0 Wind - Service)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	50	Z	-0.001	-0.001	0	%100
2	51	Z	-0.0009	-0.0009	0	%100
3	52	Z	-0.0009	-0.0009	0	%100
4	53	Z	-0.001	-0.001	0	%100
5	54	Z	-0.001	-0.001	0	%100
6	55	Z	-0.001	-0.001	0	%100
7	56	Z	-0.001	-0.001	0	%100

Member Distributed Loads (BLC 6 : 0 Wind - Service) (Continued)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
8	57	Z	-0.0006	-0.0006	0	%100
9	58	Z	-0.0006	-0.0006	0	%100
10	59	Z	-0.002	-0.002	0	%100
11	68	Z	-0.002	-0.002	0	%100
12	80	Z	-0.0004	-0.0004	0	%100
13	83	Z	-0.0003	-0.0003	0	%100
14	84	Z	-0.0003	-0.0003	0	%100
15	85	Z	-0.0003	-0.0003	0	%100
16	87	Z	-0.0003	-0.0003	0	%100
17	31	Z	-0.001	-0.001	0	%100
18	32	Z	-0.0009	-0.0009	0	%100
19	33	Z	-0.0009	-0.0009	0	%100
20	34	Z	-0.001	-0.001	0	%100
21	35	Z	-0.001	-0.001	0	%100
22	36	Z	-0.001	-0.001	0	%100
23	37	Z	-0.001	-0.001	0	%100
24	38	Z	-0.0006	-0.0006	0	%100
25	39	Z	-0.0006	-0.0006	0	%100
26	40	Z	-0.002	-0.002	0	%100
27	49	Z	-0.002	-0.002	0	%100
28	50A	Z	-0.001	-0.001	0	%100
29	51A	Z	-0.0009	-0.0009	0	%100
30	52A	Z	-0.0009	-0.0009	0	%100
31	53A	Z	-0.001	-0.001	0	%100
32	54A	Z	-0.001	-0.001	0	%100
33	55A	Z	-0.001	-0.001	0	%100
34	56A	Z	-0.001	-0.001	0	%100
35	57A	Z	-0.0006	-0.0006	0	%100
36	58A	Z	-0.0006	-0.0006	0	%100
37	59A	Z	-0.002	-0.002	0	%100
38	68A	Z	-0.002	-0.002	0	%100
39	69	Z	-0.0004	-0.0004	0	%100
40	72	Z	-0.0003	-0.0003	0	%100
41	73	Z	-0.0003	-0.0003	0	%100
42	74	Z	-0.0003	-0.0003	0	%100
43	76	Z	-0.0003	-0.0003	0	%100
44	80A	Z	-0.0004	-0.0004	0	%100
45	83A	Z	-0.0003	-0.0003	0	%100
46	84A	Z	-0.0003	-0.0003	0	%100
47	85A	Z	-0.0003	-0.0003	0	%100
48	87A	Z	-0.0003	-0.0003	0	%100

Member Distributed Loads (BLC 7 : 90 Wind - Service)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	50	X	-0.001	-0.001	0	%100
2	51	X	-0.0009	-0.0009	0	%100
3	52	X	-0.0009	-0.0009	0	%100
4	53	X	-0.001	-0.001	0	%100
5	54	X	-0.001	-0.001	0	%100
6	55	X	-0.001	-0.001	0	%100
7	56	X	-0.001	-0.001	0	%100
8	57	X	-0.0006	-0.0006	0	%100
9	58	X	-0.0006	-0.0006	0	%100
10	59	X	-0.002	-0.002	0	%100
11	68	X	-0.002	-0.002	0	%100



Company : B+T Group
 Designer : APK
 Job Number : 80964.012.01
 Model Name : 806355 - BRG 126 943086

3/11/2022
 8:20:08 PM
 Checked By : _____

Member Distributed Loads (BLC 7 : 90 Wind - Service) (Continued)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
12	80	X	-0.0004	-0.0004	0	%100
13	83	X	-0.0003	-0.0003	0	%100
14	84	X	-0.0003	-0.0003	0	%100
15	85	X	-0.0003	-0.0003	0	%100
16	87	X	-0.0003	-0.0003	0	%100
17	31	X	-0.001	-0.001	0	%100
18	32	X	-0.0009	-0.0009	0	%100
19	33	X	-0.0009	-0.0009	0	%100
20	34	X	-0.001	-0.001	0	%100
21	35	X	-0.001	-0.001	0	%100
22	36	X	-0.001	-0.001	0	%100
23	37	X	-0.001	-0.001	0	%100
24	38	X	-0.0006	-0.0006	0	%100
25	39	X	-0.0006	-0.0006	0	%100
26	40	X	-0.002	-0.002	0	%100
27	49	X	-0.002	-0.002	0	%100
28	50A	X	-0.001	-0.001	0	%100
29	51A	X	-0.0009	-0.0009	0	%100
30	52A	X	-0.0009	-0.0009	0	%100
31	53A	X	-0.001	-0.001	0	%100
32	54A	X	-0.001	-0.001	0	%100
33	55A	X	-0.001	-0.001	0	%100
34	56A	X	-0.001	-0.001	0	%100
35	57A	X	-0.0006	-0.0006	0	%100
36	58A	X	-0.0006	-0.0006	0	%100
37	59A	X	-0.002	-0.002	0	%100
38	68A	X	-0.002	-0.002	0	%100
39	69	X	-0.0004	-0.0004	0	%100
40	72	X	-0.0003	-0.0003	0	%100
41	73	X	-0.0003	-0.0003	0	%100
42	74	X	-0.0003	-0.0003	0	%100
43	76	X	-0.0003	-0.0003	0	%100
44	80A	X	-0.0004	-0.0004	0	%100
45	83A	X	-0.0003	-0.0003	0	%100
46	84A	X	-0.0003	-0.0003	0	%100
47	85A	X	-0.0003	-0.0003	0	%100
48	87A	X	-0.0003	-0.0003	0	%100

Member Distributed Loads (BLC 8 : Ice)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	50	Y	-0.01	-0.01	0	%100
2	51	Y	-0.007	-0.007	0	%100
3	52	Y	-0.007	-0.007	0	%100
4	53	Y	-0.01	-0.01	0	%100
5	54	Y	-0.01	-0.01	0	%100
6	55	Y	-0.01	-0.01	0	%100
7	56	Y	-0.01	-0.01	0	%100
8	57	Y	-0.006	-0.006	0	%100
9	58	Y	-0.006	-0.006	0	%100
10	59	Y	-0.013	-0.013	0	%100
11	68	Y	-0.013	-0.013	0	%100
12	80	Y	-0.007	-0.007	0	%100
13	83	Y	-0.006	-0.006	0	%100
14	84	Y	-0.006	-0.006	0	%100
15	85	Y	-0.006	-0.006	0	%100

Member Distributed Loads (BLC 8 : Ice) (Continued)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
16	87	Y	-0.006	-0.006	0	%100
17	31	Y	-0.01	-0.01	0	%100
18	32	Y	-0.007	-0.007	0	%100
19	33	Y	-0.007	-0.007	0	%100
20	34	Y	-0.01	-0.01	0	%100
21	35	Y	-0.01	-0.01	0	%100
22	36	Y	-0.01	-0.01	0	%100
23	37	Y	-0.01	-0.01	0	%100
24	38	Y	-0.006	-0.006	0	%100
25	39	Y	-0.006	-0.006	0	%100
26	40	Y	-0.013	-0.013	0	%100
27	49	Y	-0.013	-0.013	0	%100
28	50A	Y	-0.01	-0.01	0	%100
29	51A	Y	-0.007	-0.007	0	%100
30	52A	Y	-0.007	-0.007	0	%100
31	53A	Y	-0.01	-0.01	0	%100
32	54A	Y	-0.01	-0.01	0	%100
33	55A	Y	-0.01	-0.01	0	%100
34	56A	Y	-0.01	-0.01	0	%100
35	57A	Y	-0.006	-0.006	0	%100
36	58A	Y	-0.006	-0.006	0	%100
37	59A	Y	-0.013	-0.013	0	%100
38	68A	Y	-0.013	-0.013	0	%100
39	69	Y	-0.007	-0.007	0	%100
40	72	Y	-0.006	-0.006	0	%100
41	73	Y	-0.006	-0.006	0	%100
42	74	Y	-0.006	-0.006	0	%100
43	76	Y	-0.006	-0.006	0	%100
44	80A	Y	-0.007	-0.007	0	%100
45	83A	Y	-0.006	-0.006	0	%100
46	84A	Y	-0.006	-0.006	0	%100
47	85A	Y	-0.006	-0.006	0	%100
48	87A	Y	-0.006	-0.006	0	%100

Member Distributed Loads (BLC 9 : 0 Seismic)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	50	Z	-0.002	-0.002	0	%100
2	51	Z	-0.002	-0.002	0	%100
3	52	Z	-0.002	-0.002	0	%100
4	53	Z	-0.002	-0.002	0	%100
5	54	Z	-0.002	-0.002	0	%100
6	55	Z	-0.002	-0.002	0	%100
7	56	Z	-0.002	-0.002	0	%100
8	57	Z	-0.001	-0.001	0	%100
9	58	Z	-0.001	-0.001	0	%100
10	59	Z	-0.004	-0.004	0	%100
11	68	Z	-0.003	-0.003	0	%100
12	80	Z	-0.002	-0.002	0	%100
13	83	Z	-0.002	-0.002	0	%100
14	84	Z	-0.002	-0.002	0	%100
15	85	Z	-0.002	-0.002	0	%100
16	87	Z	-0.002	-0.002	0	%100
17	31	Z	-0.002	-0.002	0	%100
18	32	Z	-0.002	-0.002	0	%100
19	33	Z	-0.002	-0.002	0	%100

Member Distributed Loads (BLC 9 : 0 Seismic) (Continued)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
20	34	Z	-0.002	-0.002	0	%100
21	35	Z	-0.002	-0.002	0	%100
22	36	Z	-0.002	-0.002	0	%100
23	37	Z	-0.002	-0.002	0	%100
24	38	Z	-0.001	-0.001	0	%100
25	39	Z	-0.001	-0.001	0	%100
26	40	Z	-0.004	-0.004	0	%100
27	49	Z	-0.003	-0.003	0	%100
28	50A	Z	-0.002	-0.002	0	%100
29	51A	Z	-0.002	-0.002	0	%100
30	52A	Z	-0.002	-0.002	0	%100
31	53A	Z	-0.002	-0.002	0	%100
32	54A	Z	-0.002	-0.002	0	%100
33	55A	Z	-0.002	-0.002	0	%100
34	56A	Z	-0.002	-0.002	0	%100
35	57A	Z	-0.001	-0.001	0	%100
36	58A	Z	-0.001	-0.001	0	%100
37	59A	Z	-0.004	-0.004	0	%100
38	68A	Z	-0.003	-0.003	0	%100
39	69	Z	-0.002	-0.002	0	%100
40	72	Z	-0.002	-0.002	0	%100
41	73	Z	-0.002	-0.002	0	%100
42	74	Z	-0.002	-0.002	0	%100
43	76	Z	-0.002	-0.002	0	%100
44	80A	Z	-0.002	-0.002	0	%100
45	83A	Z	-0.002	-0.002	0	%100
46	84A	Z	-0.002	-0.002	0	%100
47	85A	Z	-0.002	-0.002	0	%100
48	87A	Z	-0.002	-0.002	0	%100

Member Distributed Loads (BLC 10 : 90 Seismic)

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	50	X	-0.002	-0.002	0	%100
2	51	X	-0.002	-0.002	0	%100
3	52	X	-0.002	-0.002	0	%100
4	53	X	-0.002	-0.002	0	%100
5	54	X	-0.002	-0.002	0	%100
6	55	X	-0.002	-0.002	0	%100
7	56	X	-0.002	-0.002	0	%100
8	57	X	-0.001	-0.001	0	%100
9	58	X	-0.001	-0.001	0	%100
10	59	X	-0.004	-0.004	0	%100
11	68	X	-0.003	-0.003	0	%100
12	80	X	-0.002	-0.002	0	%100
13	83	X	-0.002	-0.002	0	%100
14	84	X	-0.002	-0.002	0	%100
15	85	X	-0.002	-0.002	0	%100
16	87	X	-0.002	-0.002	0	%100
17	31	X	-0.002	-0.002	0	%100
18	32	X	-0.002	-0.002	0	%100
19	33	X	-0.002	-0.002	0	%100
20	34	X	-0.002	-0.002	0	%100
21	35	X	-0.002	-0.002	0	%100
22	36	X	-0.002	-0.002	0	%100
23	37	X	-0.002	-0.002	0	%100

Member Distributed Loads (BLC 10 : 90 Seismic) (Continued)

Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
24	38	X	-0.001	-0.001	0 %100
25	39	X	-0.001	-0.001	0 %100
26	40	X	-0.004	-0.004	0 %100
27	49	X	-0.003	-0.003	0 %100
28	50A	X	-0.002	-0.002	0 %100
29	51A	X	-0.002	-0.002	0 %100
30	52A	X	-0.002	-0.002	0 %100
31	53A	X	-0.002	-0.002	0 %100
32	54A	X	-0.002	-0.002	0 %100
33	55A	X	-0.002	-0.002	0 %100
34	56A	X	-0.002	-0.002	0 %100
35	57A	X	-0.001	-0.001	0 %100
36	58A	X	-0.001	-0.001	0 %100
37	59A	X	-0.004	-0.004	0 %100
38	68A	X	-0.003	-0.003	0 %100
39	69	X	-0.002	-0.002	0 %100
40	72	X	-0.002	-0.002	0 %100
41	73	X	-0.002	-0.002	0 %100
42	74	X	-0.002	-0.002	0 %100
43	76	X	-0.002	-0.002	0 %100
44	80A	X	-0.002	-0.002	0 %100
45	83A	X	-0.002	-0.002	0 %100
46	84A	X	-0.002	-0.002	0 %100
47	85A	X	-0.002	-0.002	0 %100
48	87A	X	-0.002	-0.002	0 %100

Member Distributed Loads (BLC 30 : BLC 1 Transient Area Loads)

Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	58	Y	-0.02	-0.026	1.27 2.309
2	38	Y	-0.035	-0.016	0 1.155
3	38	Y	-0.016	0.0006163	1.155 2.309
4	39	Y	-0.018	-0.016	0.231 2.309
5	57A	Y	-0.018	-0.016	0 2.078
6	58A	Y	0.0006164	-0.016	0 1.155
7	58A	Y	-0.016	-0.035	1.155 2.309
8	57	Y	-0.015	-0.015	0 2.078
9	58	Y	-0.014	-0.02	0.231 1.27

Member Distributed Loads (BLC 31 : BLC 8 Transient Area Loads)

Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	57	Y	-0.008	-0.008	0 2.078
2	58	Y	-0.007	-0.01	0.231 1.27
3	58	Y	-0.01	-0.013	1.27 2.309
4	38	Y	-0.017	-0.008	0 1.155
5	38	Y	-0.008	0.0003082	1.155 2.309
6	39	Y	-0.009	-0.008	0.231 2.309
7	57A	Y	-0.009	-0.008	0 2.078
8	58A	Y	0.0003082	-0.008	0 1.155
9	58A	Y	-0.008	-0.017	1.155 2.309

Member Area Loads (BLC 1 : Dead)

	Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [ksf]
1	111	110A	113	112	Y	Two Way	-0.01
2	79	78	81	80	Y	Two Way	-0.01
3	108A	107A	110	109A	Y	Two Way	-0.01

Member Area Loads (BLC 8 : Ice)

	Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [ksf]
1	111	110A	113	112	Y	Two Way	-0.005
2	79	78	81	80	Y	Two Way	-0.005
3	108A	107A	110	109A	Y	Two Way	-0.005

Node Loads and Enforced Displacements (BLC 11 : Live Load a)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s ² /ft, k*s ² *ft)]
1	137	L	Y	-0.5
2	113B	L	Y	-0.5
3	135A	L	Y	-0.5

Node Loads and Enforced Displacements (BLC 12 : Live Load b)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s ² /ft, k*s ² *ft)]
1	138	L	Y	-0.5
2	114B	L	Y	-0.5
3	136A	L	Y	-0.5

Node Loads and Enforced Displacements (BLC 13 : Live Load c)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s ² /ft, k*s ² *ft)]
1	147	L	Y	-0.5
2	123	L	Y	-0.5
3	145A	L	Y	-0.5

Basic Load Cases

	BLC Description	Category	Y Gravity	Nodal	Point	Distributed	Area(Member)
1	Dead	DL	-1		20		3
2	0 Wind - No Ice	WLZ			20	48	
3	90 Wind - No Ice	WLX			20	48	
4	0 Wind - Ice	WLZ			20	48	
5	90 Wind - Ice	WLX			20	48	
6	0 Wind - Service	WLZ			20	48	
7	90 Wind - Service	WLX			20	48	
8	Ice	OL1			20	48	3
9	0 Seismic	ELZ			20	48	
10	90 Seismic	ELX			20	48	
11	Live Load a	LL		3			
12	Live Load b	LL		3			
13	Live Load c	LL		3			
14	Live Load d	LL					
15	Maint LL 1	LL			1		
16	Maint LL 2	LL			1		
17	Maint LL 3	LL			1		
18	Maint LL 4	LL			1		

Basic Load Cases (Continued)

	BLC Description	Category	Y Gravity	Nodal	Point	Distributed	Area(Member)
19	Maint LL 5	LL			1		
20	Maint LL 6	LL			1		
21	Maint LL 7	LL			1		
22	Maint LL 8	LL			1		
23	Maint LL 9	LL			1		
24	Maint LL 10	LL			1		
25	Maint LL 11	LL			1		
26	Maint LL 12	LL			1		
27	Maint LL 13	LL			1		
28	Maint LL 14	LL			1		
29	Maint LL 15	LL			1		
30	BLC 1 Transient Area Loads	None				9	
31	BLC 8 Transient Area Loads	None				9	

Load Combinations

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	1.4 Dead	Yes	Y	1	1.4						
2	1.2 D + 1.0 - 0 W	Yes	Y	1	1.2	2	1				
3	1.2 D + 1.0 - 30 W	Yes	Y	1	1.2	2	0.866	3	0.5		
4	1.2 D + 1.0 - 60 W	Yes	Y	1	1.2	3	0.866	2	0.5		
5	1.2 D + 1.0 - 90 W	Yes	Y	1	1.2	3	1				
6	1.2 D + 1.0 - 120 W	Yes	Y	1	1.2	3	0.866	2	-0.5		
7	1.2 D + 1.0 - 150 W	Yes	Y	1	1.2	2	-0.866	3	0.5		
8	1.2 D + 1.0 - 180 W	Yes	Y	1	1.2	2	-1				
9	1.2 D + 1.0 - 210 W	Yes	Y	1	1.2	2	-0.866	3	-0.5		
10	1.2 D + 1.0 - 240 W	Yes	Y	1	1.2	3	-0.866	2	-0.5		
11	1.2 D + 1.0 - 270 W	Yes	Y	1	1.2	3	-1				
12	1.2 D + 1.0 - 300 W	Yes	Y	1	1.2	3	-0.866	2	0.5		
13	1.2 D + 1.0 - 330 W	Yes	Y	1	1.2	2	0.866	3	-0.5		
14	1.2 D + 1.0 - 0 W/Ice	Yes	Y	1	1.2	4	1			8	1
15	1.2 D + 1.0 - 30 W/Ice	Yes	Y	1	1.2	4	0.866	5	0.5	8	1
16	1.2 D + 1.0 - 60 W/Ice	Yes	Y	1	1.2	5	0.866	4	0.5	8	1
17	1.2 D + 1.0 - 90 W/Ice	Yes	Y	1	1.2	5	1			8	1
18	1.2 D + 1.0 - 120 W/Ice	Yes	Y	1	1.2	5	0.866	4	-0.5	8	1
19	1.2 D + 1.0 - 150 W/Ice	Yes	Y	1	1.2	4	-0.866	5	0.5	8	1
20	1.2 D + 1.0 - 180 W/Ice	Yes	Y	1	1.2	4	-1			8	1
21	1.2 D + 1.0 - 210 W/Ice	Yes	Y	1	1.2	4	-0.866	5	-0.5	8	1
22	1.2 D + 1.0 - 240 W/Ice	Yes	Y	1	1.2	5	-0.866	4	-0.5	8	1
23	1.2 D + 1.0 - 270 W/Ice	Yes	Y	1	1.2	5	-1			8	1
24	1.2 D + 1.0 - 300 W/Ice	Yes	Y	1	1.2	5	-0.866	4	0.5	8	1
25	1.2 D + 1.0 - 330 W/Ice	Yes	Y	1	1.2	4	0.866	5	-0.5	8	1
26	1.2 D + 1.0 E - 0	Yes	Y	1	1.2	9	1				
27	1.2 D + 1.0 E - 30	Yes	Y	1	1.2	9	0.866	10	0.5		
28	1.2 D + 1.0 E - 60	Yes	Y	1	1.2	10	0.866	9	0.5		
29	1.2 D + 1.0 E - 90	Yes	Y	1	1.2	10	1				
30	1.2 D + 1.0 E - 120	Yes	Y	1	1.2	10	0.866	9	-0.5		
31	1.2 D + 1.0 E - 150	Yes	Y	1	1.2	9	-0.866	10	0.5		
32	1.2 D + 1.0 E - 180	Yes	Y	1	1.2	9	-1				
33	1.2 D + 1.0 E - 210	Yes	Y	1	1.2	9	-0.866	10	-0.5		
34	1.2 D + 1.0 E - 240	Yes	Y	1	1.2	10	-0.866	9	-0.5		
35	1.2 D + 1.0 E - 270	Yes	Y	1	1.2	10	-1				
36	1.2 D + 1.0 E - 300	Yes	Y	1	1.2	10	-0.866	9	0.5		
37	1.2 D + 1.0 E - 330	Yes	Y	1	1.2	9	0.866	10	-0.5		
38	1.2 D + 1.5 LL a + Service - 0 W	Yes	Y	1	1.2	6	1			11	1.5
39	1.2 D + 1.5 LL a + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	11	1.5

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
40	1.2 D + 1.5 LL a + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	11	1.5
41	1.2 D + 1.5 LL a + Service - 90 W	Yes	Y	1	1.2	7	1			11	1.5
42	1.2 D + 1.5 LL a + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	11	1.5
43	1.2 D + 1.5 LL a + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	11	1.5
44	1.2 D + 1.5 LL a + Service - 180 W	Yes	Y	1	1.2	6	-1			11	1.5
45	1.2 D + 1.5 LL a + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	11	1.5
46	1.2 D + 1.5 LL a + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	11	1.5
47	1.2 D + 1.5 LL a + Service - 270 W	Yes	Y	1	1.2	7	-1			11	1.5
48	1.2 D + 1.5 LL a + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	11	1.5
49	1.2 D + 1.5 LL a + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	11	1.5
50	1.2 D + 1.5 LL b + Service - 0 W	Yes	Y	1	1.2	6	1			12	1.5
51	1.2 D + 1.5 LL b + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	12	1.5
52	1.2 D + 1.5 LL b + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	12	1.5
53	1.2 D + 1.5 LL b + Service - 90 W	Yes	Y	1	1.2	7	1			12	1.5
54	1.2 D + 1.5 LL b + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	12	1.5
55	1.2 D + 1.5 LL b + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	12	1.5
56	1.2 D + 1.5 LL b + Service - 180 W	Yes	Y	1	1.2	6	-1			12	1.5
57	1.2 D + 1.5 LL b + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	12	1.5
58	1.2 D + 1.5 LL b + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	12	1.5
59	1.2 D + 1.5 LL b + Service - 270 W	Yes	Y	1	1.2	7	-1			12	1.5
60	1.2 D + 1.5 LL b + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	12	1.5
61	1.2 D + 1.5 LL b + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	12	1.5
62	1.2 D + 1.5 LL c + Service - 0 W	Yes	Y	1	1.2	6	1			13	1.5
63	1.2 D + 1.5 LL c + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	13	1.5
64	1.2 D + 1.5 LL c + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	13	1.5
65	1.2 D + 1.5 LL c + Service - 90 W	Yes	Y	1	1.2	7	1			13	1.5
66	1.2 D + 1.5 LL c + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	13	1.5
67	1.2 D + 1.5 LL c + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	13	1.5
68	1.2 D + 1.5 LL c + Service - 180 W	Yes	Y	1	1.2	6	-1			13	1.5
69	1.2 D + 1.5 LL c + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	13	1.5
70	1.2 D + 1.5 LL c + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	13	1.5
71	1.2 D + 1.5 LL c + Service - 270 W	Yes	Y	1	1.2	7	-1			13	1.5
72	1.2 D + 1.5 LL c + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	13	1.5
73	1.2 D + 1.5 LL c + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	13	1.5
74	1.2 D + 1.5 LL d + Service - 0 W	Yes	Y	1	1.2	6	1			14	1.5
75	1.2 D + 1.5 LL d + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	14	1.5
76	1.2 D + 1.5 LL d + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	14	1.5
77	1.2 D + 1.5 LL d + Service - 90 W	Yes	Y	1	1.2	7	1			14	1.5
78	1.2 D + 1.5 LL d + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	14	1.5
79	1.2 D + 1.5 LL d + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	14	1.5
80	1.2 D + 1.5 LL d + Service - 180 W	Yes	Y	1	1.2	6	-1			14	1.5
81	1.2 D + 1.5 LL d + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	14	1.5
82	1.2 D + 1.5 LL d + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	14	1.5
83	1.2 D + 1.5 LL d + Service - 270 W	Yes	Y	1	1.2	7	-1			14	1.5
84	1.2 D + 1.5 LL d + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	14	1.5
85	1.2 D + 1.5 LL d + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	14	1.5
86	1.2 D + 1.5 LL Maint (1)	Yes	Y	1	1.2					15	1.5
87	1.2 D + 1.5 LL Maint (2)	Yes	Y	1	1.2					16	1.5
88	1.2 D + 1.5 LL Maint (3)	Yes	Y	1	1.2					17	1.5
89	1.2 D + 1.5 LL Maint (4)	Yes	Y	1	1.2					18	1.5
90	1.2 D + 1.5 LL Maint (5)	Yes	Y	1	1.2					19	1.5
91	1.2 D + 1.5 LL Maint (6)	Yes	Y	1	1.2					20	1.5
92	1.2 D + 1.5 LL Maint (7)	Yes	Y	1	1.2					21	1.5
93	1.2 D + 1.5 LL Maint (8)	Yes	Y	1	1.2					22	1.5
94	1.2 D + 1.5 LL Maint (9)	Yes	Y	1	1.2					23	1.5

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
95	1.2 D + 1.5 LL Maint (10)	Yes	Y	1	1.2					24	1.5
96	1.2 D + 1.5 LL Maint (11)	Yes	Y	1	1.2					25	1.5
97	1.2 D + 1.5 LL Maint (12)	Yes	Y	1	1.2					26	1.5
98	1.2 D + 1.5 LL Maint (13)	Yes	Y	1	1.2					27	1.5
99	1.2 D + 1.5 LL Maint (14)	Yes	Y	1	1.2					28	1.5
100	1.2 D + 1.5 LL Maint (15)	Yes	Y	1	1.2					29	1.5

Envelope Node Reactions

Node Label	X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1 91 max	1.323	5	1.75	14	0.798	2	3.595	2	1.282	11	0.399	11
2 min	-1.323	11	0.06	8	-0.924	8	-0.471	8	-1.281	5	-0.412	5
3 59 max	0.913	4	1.804	18	1.432	2	0.255	13	1.448	3	0.205	12
4 min	-1.022	10	0.157	12	-1.369	8	-1.851	7	-1.448	9	-3.046	18
5 88 max	0.988	6	1.736	22	1.365	2	0.268	3	1.399	7	2.982	22
6 min	-0.879	12	0.126	4	-1.302	8	-1.839	9	-1.399	13	-0.235	4
7 Totals: max	3.203	5	4.876	14	3.595	2						
8 min	-3.203	11	2.462	8	-3.595	8						

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

Member	Shape	Code Check	Loc [ft]	LC	Shear Check	Loc [ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn
1 50	HSS4X4X2	0.486	0	13	0.12	0	z	5	70.173	73.278	8.24	8.24	1.993	H1-1b
2 51	C3.38X2.06X0.188	0.333	2.592	15	0.059	0.351	y	64	35.676	43.394	1.694	4.483	1.63	H1-1b
3 52	C3.38X2.06X0.188	0.332	0	25	0.067	2.241	y	47	35.676	43.394	1.694	4.483	1.629	H1-1b
4 53	PL3/8X6_HRA	0.062	0	13	0.131	0	y	2	70.017	73.872	0.585	9.234	2.498	H1-1b
5 54	PL3/8X6_HRA	0.061	0	3	0.129	0	y	2	70.017	73.872	0.585	9.234	2.526	H1-1b
6 55	PL3/8X6_HRA	0.106	0.208	3	0.191	0.208	y	61	71.879	73.872	0.585	9.234	3	H1-1b
7 56	PL3/8X6_HRA	0.107	0	13	0.191	0	y	51	71.879	73.872	0.585	9.234	3	H1-1b
8 57	L2x2x4	0.18	0	7	0.031	2.309	y	48	23.349	30.586	0.691	1.577	1.5	H2-1
9 58	L2x2x4	0.183	2.309	9	0.032	0	y	64	23.349	30.586	0.691	1.577	1.5	H2-1
10 59	L7.63x2.5x6	0.214	1.604	8	0.069	2.873	y	48	75.414	118.523	1.798	13.606	1.212	H2-1
11 68	L6.63x4.33x.25	0.158	0	11	0.014	0	y	11	51.794	86.751	2.311	6.976	1.5	H2-1
12 80	PIPE_3.5x0.165	0.056	6.75	6	0.046	3.5	y	5	45.872	71.57	6.336	6.336	1.671	H1-1b
13 83	PIPE_2.88x0.203	0.108	5.667	5	0.031	5.667	y	5	35.519	70.68	5.029	5.029	3	H1-1b
14 84	PIPE_2.88x0.203	0.106	2.333	9	0.034	5.667	y	9	35.519	70.68	5.029	5.029	3	H1-1b
15 85	PIPE_2.88x0.203	0.089	8.333	9	0.111	8.229	y	13	24.131	70.68	5.029	5.029	3	H1-1b
16 87	PIPE_2.88x0.203	0.106	2.333	7	0.033	5.667	y	7	35.519	70.68	5.029	5.029	3	H1-1b
17 31	HSS4X4X2	0.496	0	7	0.136	0	z	3	70.173	73.278	8.24	8.24	2.007	H1-1b
18 32	C3.38X2.06X0.188	0.334	2.592	19	0.059	0.351	y	68	35.676	43.394	1.694	4.483	1.63	H1-1b
19 33	C3.38X2.06X0.188	0.331	0	17	0.067	2.241	y	39	35.676	43.394	1.694	4.483	1.628	H1-1b
20 34	PL3/8X6_HRA	0.056	0	5	0.126	0	y	66	70.017	73.872	0.585	9.234	2.388	H1-1b
21 35	PL3/8X6_HRA	0.061	0	7	0.128	0	y	42	70.017	73.872	0.585	9.234	2.42	H1-1b
22 36	PL3/8X6_HRA	0.108	0.208	7	0.192	0.208	y	53	71.879	73.872	0.585	9.234	3	H1-1b
23 37	PL3/8X6_HRA	0.099	0	5	0.191	0	y	55	71.879	73.872	0.585	9.234	3	H1-1b
24 38	L2x2x4	0.169	0	11	0.031	0	y	40	23.349	30.586	0.691	1.577	1.5	H2-1
25 39	L2x2x4	0.18	2.309	13	0.032	0	y	68	23.349	30.586	0.691	1.577	1.5	H2-1
26 40	L7.63x2.5x6	0.205	1.604	13	0.069	0.334	y	68	75.414	118.523	1.798	13.511	1.192	H2-1
27 49	L6.63x4.33x.25	0.175	0	3	0.016	3.25	y	9	51.794	86.751	2.311	6.976	1.5	H2-1
28 50A	HSS4X4X2	0.487	0	9	0.133	0	z	7	70.173	73.278	8.24	8.24	1.997	H1-1b
29 51A	C3.38X2.06X0.188	0.329	2.592	23	0.059	0.351	y	72	35.676	43.394	1.694	4.483	1.628	H1-1b
30 52A	C3.38X2.06X0.188	0.333	0	21	0.067	2.241	y	43	35.676	43.394	1.694	4.483	1.63	H1-1b
31 53A	PL3/8X6_HRA	0.061	0	9	0.128	0	y	70	70.017	73.872	0.585	9.234	2.424	H1-1b
32 54A	PL3/8X6_HRA	0.056	0	11	0.126	0	y	46	70.017	73.872	0.585	9.234	2.391	H1-1b
33 55A	PL3/8X6_HRA	0.099	0.208	11	0.191	0.208	y	57	71.879	73.872	0.585	9.234	3	H1-1b



Company : B+T Group
 Designer : APK
 Job Number : 80964.012.01
 Model Name : 806355 - BRG 126 943086

3/11/2022
 8:20:08 PM
 Checked By : _____

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

Member	Shape	Code	Check	Loc[ft]	LC	Shear	Check	Loc[ft]	Dir	LC	phi*	Pnc [k]	phi*	Pnt [k]	phi*	Mn y-y [k-ft]	phi*	Mn z-z [k-ft]	Cb	Eqn
34	56A	PL3/8X6_HRA	0.107	0	9	0.192	0	y	59	71.879	73.872	0.585	9.234	3	H1-1b					
35	57A	L2x2x4	0.18	0	3	0.032	2.309	y	44	23.349	30.586	0.691	1.577	1.5	H2-1					
36	58A	L2x2x4	0.169	2.309	5	0.031	2.309	y	72	23.349	30.586	0.691	1.577	1.5	H2-1					
37	59A	L7.63x2.5x6	0.206	1.604	3	0.069	2.873	y	44	75.414	118.523	1.798	13.5	1.19	H2-1					
38	68A	L6.63x4.33x.25	0.176	3.25	13	0.016	0	y	7	51.794	86.751	2.311	6.976	1.5	H2-1					
39	69	PIPE_3.5x0.165	0.061	1.25	2	0.051	3.5		9	45.872	71.57	6.336	6.336	1.712	H1-1b					
40	72	PIPE_2.88x0.203	0.116	5.667	9	0.033	5.667		3	35.519	70.68	5.029	5.029	2.722	H1-1b					
41	73	PIPE_2.88x0.203	0.112	2.333	2	0.033	5.667		13	35.519	70.68	5.029	5.029	2.88	H1-1b					
42	74	PIPE_2.88x0.203	0.089	8.333	96	0.107	1.771		7	24.131	70.68	5.029	5.029	3	H1-1b					
43	76	PIPE_2.88x0.203	0.101	2.333	10	0.03	5.667		11	35.519	70.68	5.029	5.029	3	H1-1b					
44	80A	PIPE_3.5x0.165	0.061	6.75	2	0.052	4.5		7	45.872	71.57	6.336	6.336	1.715	H1-1b					
45	83A	PIPE_2.88x0.203	0.116	5.667	7	0.033	5.667		13	35.519	70.68	5.029	5.029	2.737	H1-1b					
46	84A	PIPE_2.88x0.203	0.101	2.333	6	0.03	5.667		5	35.519	70.68	5.029	5.029	3	H1-1b					
47	85A	PIPE_2.88x0.203	0.089	8.333	94	0.107	8.229		9	24.131	70.68	5.029	5.029	3	H1-1b					
48	87A	PIPE_2.88x0.203	0.112	2.333	2	0.033	5.667		3	35.519	70.68	5.029	5.029	2.879	H1-1b					

APPENDIX D
ADDITIONAL CALCUATIONS

PROJECT	80964.012.01 - BRG 126 943086, CT KSC		
SUBJECT	Platform Mount Analysis		
DATE	03/11/22	PAGE	1 OF 1



B+T Group
 1717 S. Boulder, Suite 300
 Tulsa, OK 74119
 (918) 587-4630

B+T GRP

[REF: AISC 360-05]

Reactions at Bolted Connection

Tension	:	0.988	k
Vertical Shear	:	1.816	k
Horizontal Shear	:	1.362	k
Torsion	:	0.404	k.ft
Moment from Horizontal Forces	:	1.312	k.ft
Moment from Vertical Forces	:	0.435	k.ft

Bolt Parameters

Bolt Grade	:	A325	
Bolt Diameter	:	0.625	in
Nominal Bolt Area	:	0.307	in ²
Bolt spacing, Horizontal	:	6	in
Bolt spacing, Vertical	:	6	in
Bolt edge distance, plate height	:	1.5	in
Bolt edge distance, plate width	:	1.5	in
Total Number of Bolts	:	4	bolts

Summary of Forces

Shear Resultant Force	:	2.27	k
Force from Horz. Moment	:	2.38	k
Force from Vert. Moment	:	0.79	k
Shear Load / Bolt	:	0.57	k
Tension Load / Bolt	:	0.25	k
Resultant from Moments / Bolt	:	1.25	k

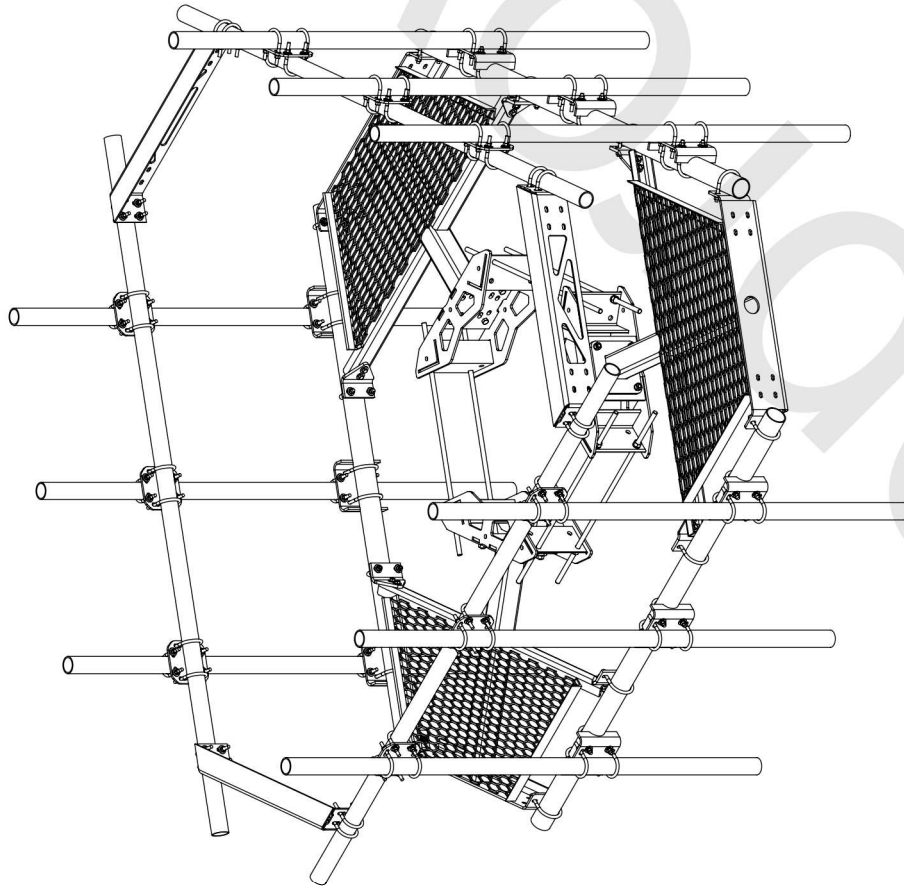
Bolt Checks

Nominal Tensile Stress, F_{nt}	:	90.00	ksi	[AISC Table J3.2]
Available Tensile Stress, ΦR_{nt}	:	20.72	k/bolt	[Eq. J3-1]
Unity Check, Bolt Tension	:	7.23%		OKAY
Nominal Shear Stress, F_{nv}	:	48.00	ksi	[AISC Table J3.2]
Available Shear Stress, ΦR_{nv}	:	11.05	k/bolt	[Eq. J3-1]
Unity Check, Bolt Shear	:	7.37%		OKAY
Unity Check, Combined	:	14.60%		OKAY
Available Bearing Strength, ΦR_n	:	34.66	k/bolt	
Unity Check, Bolt Bearing	:	1.64%		OKAY

APPENDIX E
SUPPLEMENTAL DRAWINGS

NOTES:

- 1.0 GENERAL
 - 1.1 ALL METRIC DIMENSIONS ARE IN BRACKETS
 - 1.2 FOR PATENTS, SEE WWW.CS-PAT.COM
- 2.0 DESIGN NOTES
 - 2.1 TORQUE L-BOLTS TO 44 FT-LBS
- 3.0 MANUFACTURING/SPECIAL REQUIREMENTS
- 4.0 TEST
- 5.0 PACKAGING



REV.	ECN	REVISIONS	BY	DATE
A	10272PC	DESCRIPTION INITIAL RELEASE	HDAI	03/09/2021

PATENT PENDING

COMMSCOPE, INC. OF NORTH CAROLINA

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

SAP MATERIAL MASTER
 MC-PK8-DSH

FINISH
 GALV A123

MATERIAL
 A500, A1011/A1018

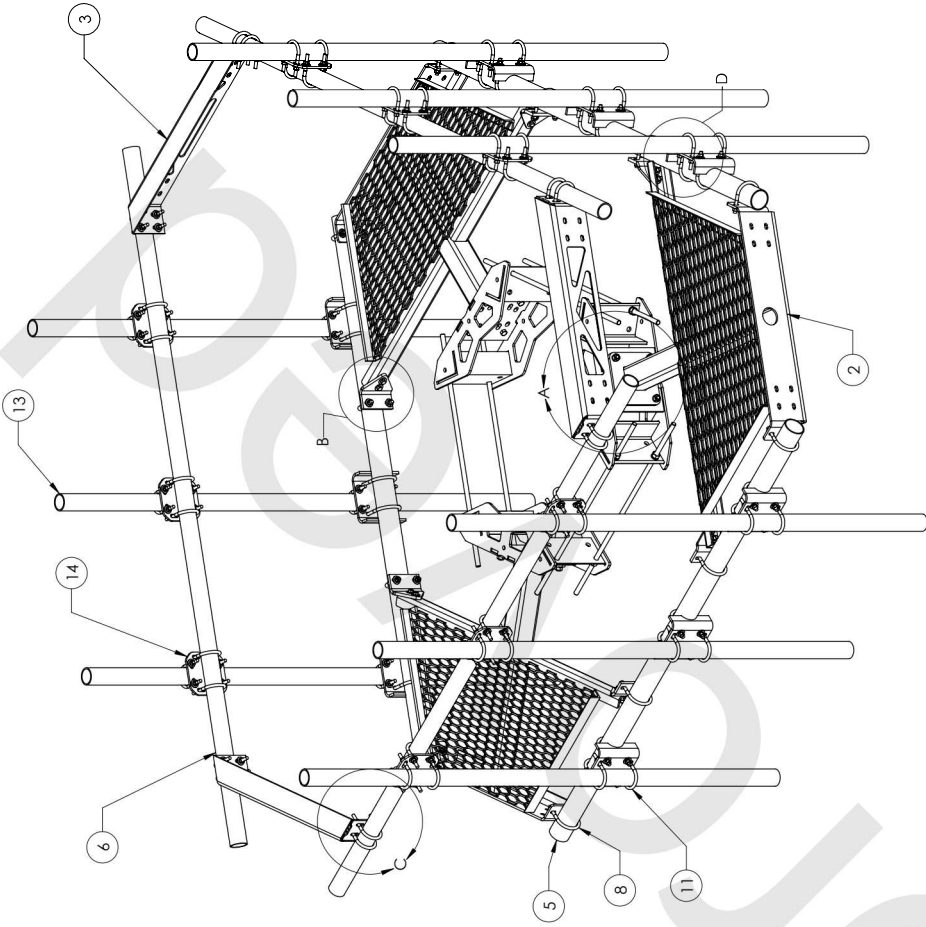
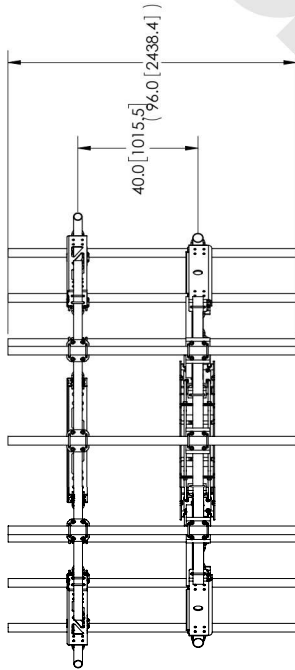
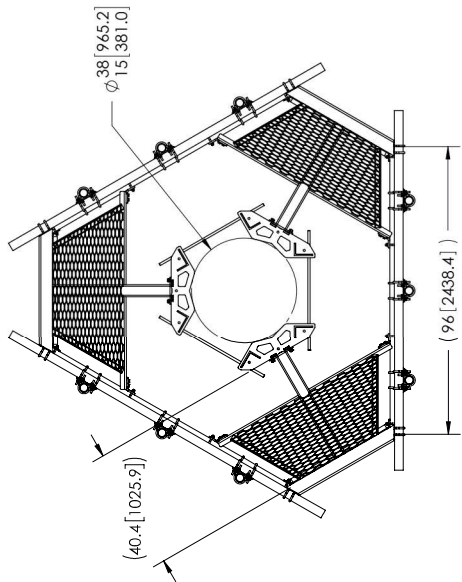
NAME	DATE	TITLE
MRC 02/17/20	02/17/20	
CE ROGHANSON	03/16/2021	
RW ROGHANSON	03/16/2021	
AD BROSS	03/17/2021	
RE FA1024	02/27/2020	
ECN 10272PC		

SCALE	DOCUMENT NO.
1:32	MC-PK8-DSH

SIZE	VERSION	MODEL	DRAWING	SHEET
C	01	AD	AD	1 OF 3

DENSITY	MASS	VOLUME	SURFACE AREA	HEIGHT	LENGTH	WIDTH
lbs/in ³	lbs	in ³	in ²	96"	46"	29"

NOTES:



ITEM	PART NO.	DESCRIPTION	QTY.
1	MC-RMT1550-3	12" - 50" OD RINGMOUNT	1
2	MITC300602	SECTOR WELDMENT FOR SNUB NOSE PLATFORM	3
3	MIT195801	Corner Weldment Snub Nose Handrail	3
4	GB-0520A	5/8" X 2" GALV BOLT KIT (A325)	12
5	MIT54796	3.50" OD X 96" GALV PIPE	3
6	MIT546120	2.875" O.D. X 120" PIPE	3
7	GWF-04	1/2" GALV FLAT WASHER	12
8	GUB-4355	1/2" X 3-5/8" X 5" GALV U-BOLT	12
9	MITC300618	MOUNTING PLATE FOR MT-196	6
10	GB-04205	1/2" X 2" GALV BOLT KIT	12
11	MIT-219MH	3.5" OD X 2-7/8" OD Clamp Bracket Assembly	9
12	GUB-4352	1/2" X 3" X 5-1/4" GALV U-BOLT	12
13	MIT54696	$\phi 2.875$ " O.D. X 96 PIPE	9
14	XP-2525	CROSSOVER PLATE KIT, 2-7/8 OD X 2-7/8 OD	9

COMMSCOPE, INC. OF NORTH CAROLINA

LOW PROFILE PLATFORM FACE

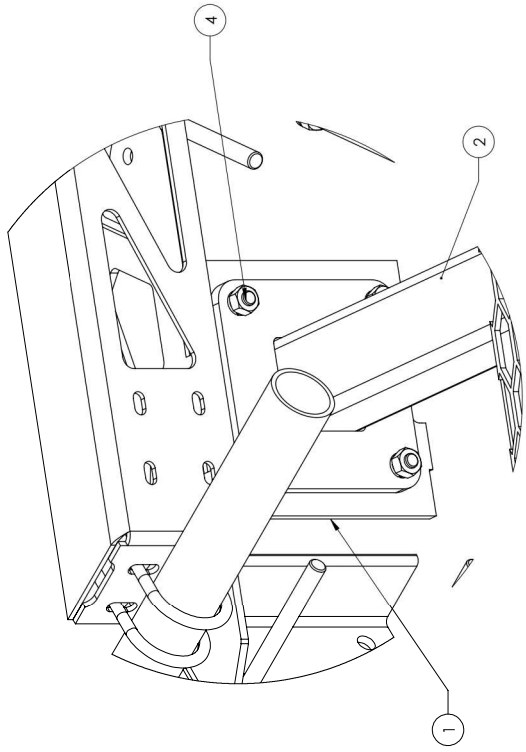
SCALE
1:32

DOCUMENT NO.
MC-PK8-DSH

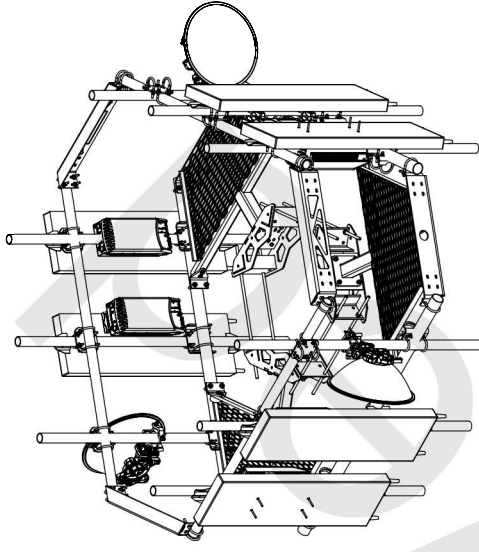
DRAWING	STATUS	REVISION	SHEET

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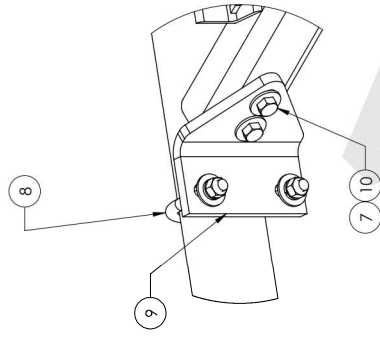
NOTES:



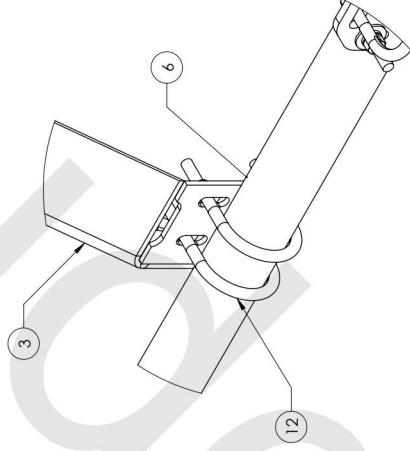
DETAIL A
SCALE 1 : 4



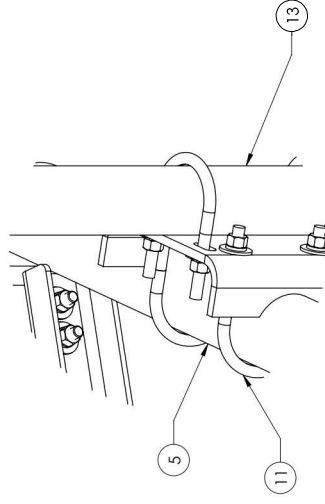
WITH ANTENNAS



DETAIL B
SCALE 1 : 4



DETAIL C
SCALE 1 : 4



DETAIL D
SCALE 1 : 4

COMMSCOPE, INC. OF NORTH CAROLINA

TITLE
LOW PROFILE PLATFORM FACE

SIZE C	SCALE 1:24	DOCUMENT NO. MC-PK8-DSH
DRAWING STATUS AD		REVISION A

DRAWING STATUS AD		REVISION A
VERSION 00		SHEET 3 OF 3

Exhibit F

Power Density/RF Emissions Report

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

Dish Wireless Existing Facility

Site ID: NJJER01088A

806355

**281 Wood House Road
Fairfield, Connecticut 06824**

April 27, 2022

EBI Project Number: 6222002990

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	23.37%

April 27, 2022

Attn: Dish Wireless

Emissions Analysis for Site: NJJER01088A - 806355

EBI Consulting was directed to analyze the proposed Dish Wireless facility located at **281 Wood House Road in Fairfield, Connecticut** for the purpose of determining whether the emissions from the Proposed Dish Wireless Antenna Installation located on this property are within specified federal limits.

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

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

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

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

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

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed Dish Wireless antenna facility located at 281 Wood House Road in Fairfield, 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) 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.
- 3) 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.
- 4) The antennas used in this modeling are the JMA MX08FRO665-21 for the 600 MHz channel(s) in Sector A, the JMA MX08FRO665-21 for the 600 MHz channel(s) in Sector B, the JMA MX08FRO665-21 for the 600 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.

- 5) The antenna mounting height centerline of the proposed antennas is 166 feet above ground level (AGL).
- 6) 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.
- 7) 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 MX08FRO665-21	Make / Model:	JMA MX08FRO665-21	Make / Model:	JMA MX08FRO665-21
Frequency Bands:	600 MHz	Frequency Bands:	600 MHz	Frequency Bands:	600 MHz
Gain:	11.45 dBd	Gain:	11.45 dBd	Gain:	11.45 dBd
Height (AGL):	166 feet	Height (AGL):	166 feet	Height (AGL):	166 feet
Channel Count:	4	Channel Count:	4	Channel Count:	4
Total TX Power (W):	120.00 Watts	Total TX Power (W):	120.00 Watts	Total TX Power (W):	120.00 Watts
ERP (W):	448.42	ERP (W):	448.42	ERP (W):	448.42
Antenna AI MPE %:	0.16%	Antenna BI MPE %:	0.16%	Antenna CI MPE %:	0.16%

Site Composite MPE %	
Carrier	MPE %
Dish Wireless (Max at Sector A):	0.16%
AT&T	2.77%
T-Mobile	16.72%
PageNet	0.19%
Verizon	1.5%
XM Radio	2.03%
Metricom	0%
Site Total MPE % :	23.37%

Dish Wireless MPE % Per Sector	
Dish Wireless Sector A Total:	0.16%
Dish Wireless Sector B Total:	0.16%
Dish Wireless Sector C Total:	0.16%
Site Total MPE % :	23.37%

Dish Wireless Maximum MPE Power Values (Sector A)							
Dish Wireless Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu\text{W}/\text{cm}^2$)	Frequency (MHz)	Allowable MPE ($\mu\text{W}/\text{cm}^2$)	Calculated % MPE
Dish Wireless 600 MHz n71	4	112.10	166.0	0.63	600 MHz n71	400	0.16%
						Total:	0.16%

• 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:	0.16%
Sector B:	0.16%
Sector C:	0.16%
Dish Wireless Maximum MPE % (Sector A):	0.16%
Site Total:	23.37%
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **23.37%** 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



1200 MacArthur Blvd, Suite 200
Mahwah, NJ 07430

Phone: (862) 226-6914
www.crowncastle.com

Crown Castle Letter of Authorization

CT - CONNECTICUT SITING COUNCIL

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

Re: Tower Share Application
Crown Castle telecommunications site at:
281 WOOD HOUSE ROAD, FAIRFIELD, CT 06824

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

Crown Site ID/Name: 806355/BRG 126 943086
Customer Site ID: NJJER01088A/CT-CCI-T-806355
Site Address: 281 WOOD HOUSE ROAD, FAIRFIELD, CT 06824

Crown Castle


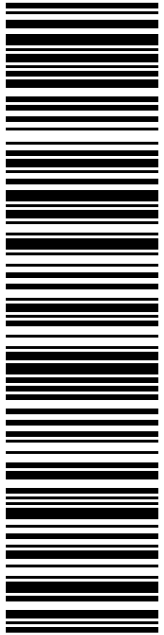
By:  _____ Date: 04/28/2022
Robin Cannizzaro
Real Estate Specialist

Exhibit H

Recipient Mailings



USPS TRACKING #

9405 5036 9930 0235 5983 19

Electronic Rate Approved #038555749

SHIP TO: BRENDA L KUPCHICK
 FIRST SELECTWOMAN- TOWN OF FAIRFIELD
 725 OLD POST RD
 FAIRFIELD CT 06824-6684

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

Expected Delivery Date: 05/02/22
 Re#: DS-806355
0006

C005

P

04/28/2022

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USPS TRACKING # :
9405 5036 9930 0235 5983 19

Trans. #: 562370503	Priority Mail® Postage: \$8.95
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Ship Date: 04/28/2022	
Expected Delivery Date: 05/02/2022	

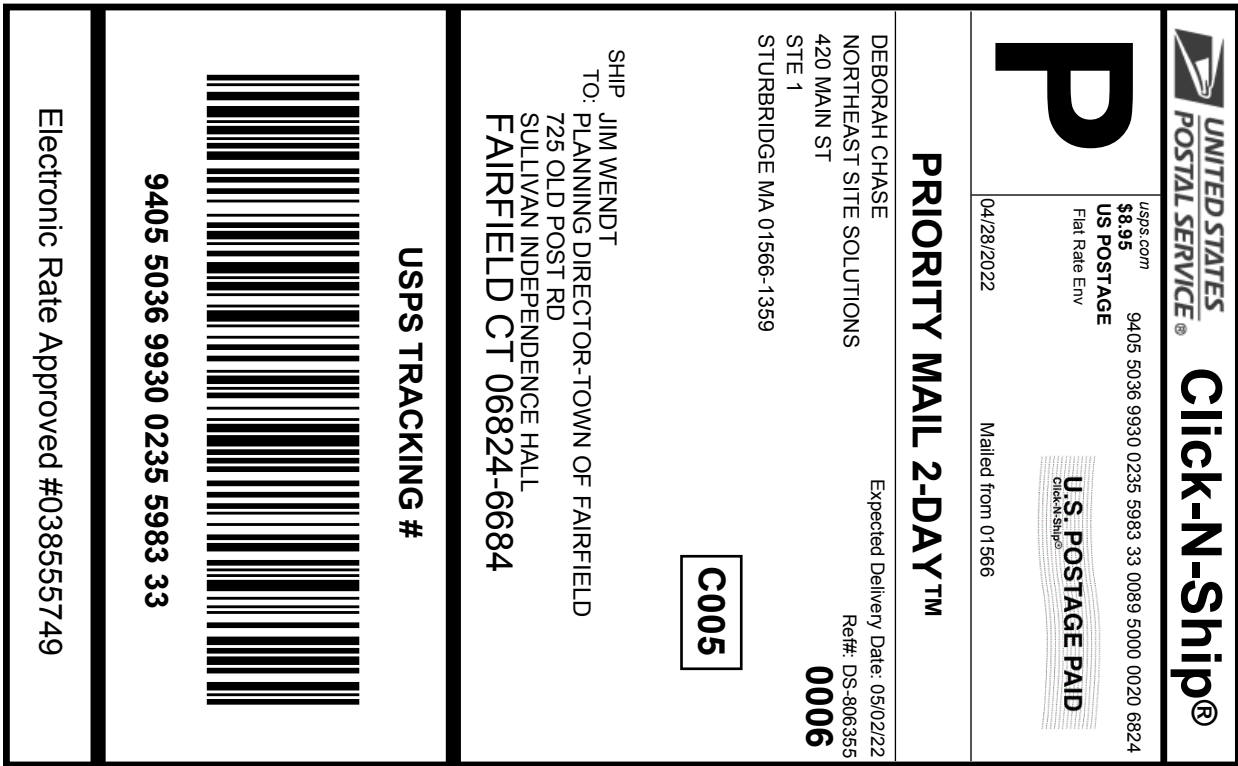
From: DEBORAH CHASE Re#: DS-806355
 NORTHEAST SITE SOLUTIONS
 420 MAIN ST
 STE 1
 STURBRIDGE MA 01566-1359

To: BRENDA L KUPCHICK
 FIRST SELECTWOMAN- TOWN OF FAIRFIELD
 725 OLD POST RD
 FAIRFIELD CT 06824-6684

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Print Date:	04/28/2022
Ship Date:	04/28/2022
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Priority Mail® Postage:	\$8.95
Total:	\$8.95
From:	DEBORAH CHASE NORTHEAST SITE SOLUTIONS 420 MAIN ST STE 1 STURBRIDGE MA 01566-1359
To:	JIM WENDT PLANNING DIRECTOR-TOWN OF FAIRFIELD 725 OLD POST RD SULLIVAN INDEPENDENCE HALL FAIRFIELD CT 06824-6684
	Ref#: DS-806355
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R013

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

USPS TRACKING #



9405 5036 9930 0235 5983 64

Electronic Rate Approved #038555749



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USPS TRACKING # :
9405 5036 9930 0235 5983 64

Trans. #: 562370503	Priority Mail® Postage: \$8.95
Print Date: 04/28/2022	Total: \$8.95
Ship Date: 04/28/2022	
Expected Delivery Date: 05/02/2022	

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


Re#: DS-806355

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

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\$8.95
US POSTAGE
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04/28/2022 Mailed from 01566

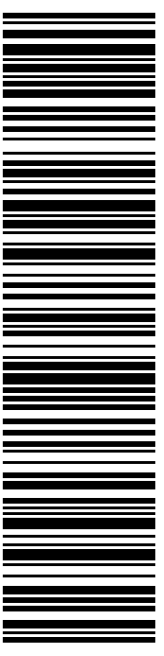
PRIORITY MAIL 2-DAY™

Expected Delivery Date: 05/02/22
 Re#: DS-806355
0006

R001

SHIP TO:
 J FERNANDES PROPERTIES LLC
 281 WOOD HOUSE RD
 FAIRFIELD CT 06824-1823

USPS TRACKING #



9405 5036 9930 0235 5983 95

Electronic Rate Approved #038555749



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Click-N-Ship® Label Record

USPS TRACKING # :
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Trans. #: 562370503	Priority Mail® Postage: \$8.95
Print Date: 04/28/2022	Total: \$8.95
Ship Date: 04/28/2022	
Expected Delivery Date: 05/02/2022	

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

Re#: DS-806355

To: J FERNANDES PROPERTIES LLC
 281 WOOD HOUSE RD
 FAIRFIELD CT 06824-1823

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906355 Crown
DUL



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

04/28/2022

04:51 PM

Product	Qty	Unit Price	Price
Prepaid Mail West Henrietta, NY 14586 Weight: 0 lb 1.90 oz Acceptance Date: Thu 04/28/2022 Tracking #: 9405 5036 9930 0235 5983 64	1		\$0.00
Prepaid Mail Fairfield, CT 06824 Weight: 0 lb 9.90 oz Acceptance Date: Thu 04/28/2022 Tracking #: 9405 5036 9930 0235 5983 33	1		\$0.00
Prepaid Mail Fairfield, CT 06824 Weight: 0 lb 9.90 oz Acceptance Date: Thu 04/28/2022 Tracking #: 9405 5036 9930 0235 5983 19	1		\$0.00
Prepaid Mail Fairfield, CT 06824 Weight: 0 lb 9.90 oz Acceptance Date: Thu 04/28/2022 Tracking #: 9405 5036 9930 0235 5983 95	1		\$0.00
Grand Total:			\$0.00

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eligible to receive a second set
of 4 free test kits.
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Track your Packages
Sign up for FREE @
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Refunds for guaranteed services only.
Thank you for your business.