NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

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

October 7, 2021

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

RE: Tower Share Application
15 Pent Road, Deep River, CT 06417
Latitude: 41.372825
Longitude: -72.434436
Site# 823666_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 15 Pent Road in Deep River, Connecticut.

Dish Wireless LLC proposes to install three (3) 600/1900 5G MHz antenna and six (6) RRUs, at the 148-foot level of the existing 178-foot monopole tower, one (1) Fiber cables will also be installed. Dish Wireless LLC equipment cabinets will be placed within 7x5 lease area. Included are plans by Infinigy, dated August 16, 2021 Exhibit C. Also included is a structural analysis prepared by Crown Castle, dated May 1, 2021, confirming that the existing tower is structurally capable of supporting the proposed equipment. Attached as Exhibit D. The facility was approved by the Town of Deep River. Building permit No. CT-11-237C is all the Town has on file. Permit is dated August 18, 2000. Please see attached Exhibit A.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies 16-50aa, of Dish Wireless LLC intent to share a telecommunications facility pursuant to R.C.S.A. 16-50j-88. In accordance with R.C.S.A., a copy of this letter is being sent to First Selectman Angus L. McDonald, Jr and Michael D'Amato, ZEO for the Town of Deep River, as well as the tower owner (Crown Castle) and property owner (Beks Holdings 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 tower is 178-feet; Dish Wireless LLC proposed antennas will be located at a center line height of 148-feet.

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

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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. As indicated in the attached power density calculations, the combined site operations will result in a total power density of .70078% 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 indicates that the shared use of this facility satisfies these criteria.

A. Technical Feasibility. The existing monopole has been deemed structurally capable of supporting Dish Wireless LLC proposed loading. The structural analysis is included 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 support tower in Deep River. 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 148-foot level of the existing 178-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 guyed 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 Deep River.

Sincerely,

Denise Sabo

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

NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

Attachments cc:

Angus L. McDonald, Jr., First Selectman
Town of Deep River Town Hall – Selectman's Office
174 Main Street Deep River, CT 06417

Michael D'Amato, Zoning Enforcement Officer
Planning & Zoning Office -Town of Deep River
174 Main Street Deep River, CT 06417

Beks Holdings LLC, Property Owner
14 Timberlane Drive Westbrook, CT 06498

Crown Castle, Tower Owner

Exhibit A

Original Facility Approval

CT-11-237C

BUILDING PERMIT

JOB WEATHER CARD

DATE AUGUST 18, 2000 PERMIT NO. 00-1-182

APPLICANT VOICE STREAM WIRELESS ADDRESS 109 FILLEY, WINDSOR, CT. 06095
(NO.) (STREET) (CONTR'S LICENSE)

PERMIT TO CONSTRUCT ANTENNA TOWER STORY NUMBER OF DWELLING UNITS 0
(TYPE OF IMPROVEMENT) NO. (PROPOSED USE)

AT (LOCATION) 19 PEET ROAD, DEEP RIVER ZONING DISTRICT
(NO.) (STREET)

BETWEEN (CROSS STREET) AND (CROSS STREET)

SUBDIVISION LOT BLOCK LOT SIZE

BUILDING IS TO BE FT. WIDE BY FT. LONG BY FT. IN HEIGHT AND SHALL CONFORM IN CONSTRUCTION

TO TYPE USE GROUP BASEMENT WALLS OR FOUNDATION
(TYPE)

REMARKS: PERMIT ISSUED FOR THE CONSTRUCTION OF TOWER PER SUBMITTED APPLICATION AND DRAWINGS. ALL APPLICABLE CODES MUST BE MET AND INSPECTIONS REQUESTED. FIRST INSPECTION REQUIRED PRIOR TO POURING ANY CONCRETE.
CONTRACTOR: COSTANTIA CONST. 2534 RUSDALE AVE., OCEANSIDE, NY 11572

AREA OR VOLUME (CUBIC/SQUARE FEET) ESTIMATED COST $ 15,000.00 PERMIT FEE $ 240.00

OWNER ROBERT STALSBURG

ADDRESS 19 PEET ROAD, DEEP RIVER BUILDING DEPT. BY

FORM NO. BOCA 1 BP 1994

THIS PERMIT CONVEYS NO RIGHT TO OCCUPY ANY STREET, ALLEY OR SIDEWALK OR ANY PART THEREOF, EITHER TEMPORARILY OR PERMANENTLY. ENCROACHMENTS ON PUBLIC PROPERTY, NOT SPECIFICALLY PERMITTED UNDER THE BUILDING CODE, MUST BE APPROVED BY THE JURISDICTION. STREET OR ALLEY GRADES AS WELL AS DEPTH AND LOCATION OF PUBLIC SEWERS MAY BE OBTAINED FROM THE DEPARTMENT OF PUBLIC WORKS. THE ISSUANCE OF THIS PERMIT DOES NOT RELEASE THE APPLICANT FROM THE CONDITIONS OF ANY APPLICABLE SUBDIVISION RESTRICTIONS.

MINIMUM OF THREE CALLED INSPECTIONS REQUIRED FOR ALL CONSTRUCTION WORK:
1. FOUNDATIONS OR FOOTINGS.
2. PRIOR TO COVERING STRUCTURAL MEMBERS (READY FOR LATH OR FINISH COVERING).
3. FINAL INSPECTION BEFORE OCCUPANCY.

APPROVED PLANS MUST BE RETAINED ON JOB AND THIS CARD KEPT POSTED UNTIL FINAL INSPECTION HAS BEEN MADE. WHERE A CERTIFICATE OF OCCUPANCY IS REQUIRED, SUCH BUILDING SHALL NOT BE OCCUPIED UNTIL FINAL INSPECTION HAS BEEN MADE.

WHERE APPLICABLE SEPARATE PERMITS ARE REQUIRED FOR ELECTRICAL, PLUMBING AND MECHANICAL INSTALLATIONS.

POST THIS CARD SO IT IS VISIBLE FROM STREET

BUILDING INSPECTION APPROVALS	PLUMBING INSPECTION APPROVALS	ELECTRICAL INSPECTION APPROVALS
1	1	1
2	2	2
3	HEATING INSPECTING APPROVALS	REFRIGERATION INSPECTION APPROVALS
	1	1
OTHER	2	2

WORK SHALL NOT PROCEED UNTIL THE INSPECTOR HAS APPROVED THE VARIOUS STAGES OF CONSTRUCTION.

PERMIT WILL BECOME NULL AND VOID IF CONSTRUCTION WORK IS NOT STARTED WITHIN SIX MONTHS OF DATE THE PERMIT IS ISSUED AS NOTED ABOVE.

INSPECTIONS INDICATED ON THIS CARD CAN BE ARRANGED FOR BY TELEPHONE OR WRITTEN NOTIFICATION.

From: Zoning
To: Zsamba, Anne Marie
Subject: RE: Seeking Original Telecom Tower Approval - 15 Pent Road - 823666
Date: Wednesday, July 15, 2020 11:08:00 AM
Attachments: image001.png
image002.png

Hi Anne Marie

I'll see what I can come up with, I'm not sure how far I'll get. If I'm able to find a copy of the original permit I will let you know.

Thanks,

Mike

John Guszkowski, AICP, ENV-SP, LEED
Mike D'Amato, CZEO, AICP
Co-Interim Zoning Officers
Town of Deep River, CT

From: Zsamba, Anne Marie [mailto:AnneMarie.Zsamba@crowncastle.com]
Sent: Wednesday, July 15, 2020 9:56 AM
To: Zoning
Subject: RE: Seeking Original Telecom Tower Approval - 15 Pent Road - 823666

Hi Mike,

I appreciate your response in light of you both getting up to speed – thank you!

I've searched through the land records and have spoken with Amy and came up short. Below are snips are my searches. The tower was put up by T-Mobile. T-Mobile was originally Omnipoint/VoiceStream back in the day. The fee owner and original lessor was Robert R. Stalsburg. Here is what I was able to find:

Search Results for Town of Deep River

Click the magnifying glass to preview the document (displayed at the bottom of the screen).

Result Matches: [1 - 3 of 3]

Preview	Name	File Date	Party	Number	Type Desc.	Inst. Date	# Pgs.	Vol/Page
	OMNIPOINT COMMUNICATIONS INC	03/11/2002 00:00:00	Direct	1670072	LEASE	01/01/1900	8	00167/72
	OMNIPOINT COMMUNICATIONS INC	12/01/2000 00:00:00	Indirect	1590450	LEASE	01/01/1900	3	00159/450
	OMNIPOINT COMMUNICATIONS INC	12/01/2000 00:00:00	Grantor	1590453	EASEMENT	01/01/1900	5	00159/453

"VoiceStream" returns "0" results. I also searched "Voice" "Stream" "VoiceS" "Omni".

Robert R. Stalsburg returns many hits. One of which reads as a special permit, though it was after the tower was built and was granted for the collocation of Verizon's antennas after T-Mobile was already on the tower. I've paid for and attached a copy of that Special Permit to this email for ease of reference. The permit notes the address as 366 Main Street, Map 58, Lot 32F. We now refer to the premises as 15 Pent Road, Map 58, Lot 34. Not sure if that will impact your search at all?

	STALSBURG ROBERT R	03/22/2002 00:00:00	Grantee	1670280	RELEASE	01/01/1900	1	00167/280
	STALSBURG ROBERT R	02/05/2002 00:00:00	Direct	1660540	SPECIAL PERMIT	01/01/1900	4	00166/540
	STALSBURG ROBERT R	12/01/2000 00:00:00	Grantor	1590453	EASEMENT	01/01/1900	5	00159/453

I don't believe the original tower approval, likely dated 2000 or 2001, was recorded. Any effort you can spare to look at the PZC files to ascertain if the original tower approval can be located is much appreciated.

Thank you.

Best,
Anne Marie

ANNE MARIE ZSAMBA
Site Acquisition Specialist
T: (201) 236-9224
M: (518) 350-3639
F: (724) 416-6112

CROWN CASTLE
3 Corporate Park Drive, Suite 101
Clifton Park, NY 12065
CrownCastle.com

From: Zoning <Zoning@deepriverct.us>
Sent: Wednesday, July 15, 2020 9:05 AM
To: Zsamba, Anne Marie <AnneMarie.Zsamba@crowncastle.com>
Subject: RE: Seeking Original Telecom Tower Approval - 15 Pent Road - 823666

Hi Anne Marie

Thanks for the email. John and I are just getting caught up to speed in Deep River, but my understanding is that if this project was approved by the Commission, those files are maintained by the Commission's secretary and they are not here in the zoning office. That being said, I did go through the building file but didn't have any luck. It is likely that once the project was approved by the Town, the certificate of approval was filed on the land records. You should be able to access the Town Clerk's records via her website online. If you don't have any luck there I can attempt to look through the PZC files, but I'll need to know the year the Tower was approved (or built) if possible.

Let me know.

Thanks,

Mike

John Guszkowski, AICP, ENV-SP, LEED
Mike D'Amato, CZEO, AICP
Co-Interim Zoning Officers
Town of Deep River, CT

From: Zsamba, Anne Marie [mailto:AnneMarie.Zsamba@crowncastle.com]
Sent: Tuesday, July 14, 2020 2:11 PM
To: Zoning
Subject: Seeking Original Telecom Tower Approval - 15 Pent Road - 823666

Good afternoon Mike & John,

Seeking your assistance if possible. This email follows my voicemail of earlier this morning. I am preparing an exempt modification application for submission to the Connecticut Siting Council on behalf of T-Mobile. Part of that submission should include the original tower approval as issued by the Town of Deep River so as to ensure the modification T-Mobile is proposing are not in violation of any conditions of approval written when the tower was first approved prior to it originally being built.

I have searched high and low through our files here at Crown as the tower owner and I unfortunately cannot locate it. Is this something the Town of Deep River would still have on file? If so, would it be possible to email me a copy?

Any assistance you can provide in this regard is appreciated. We want to make sure we are complying with any and all conditions as original set forth by the Town. Thank you kindly.

Best,
Anne Marie

ANNE MARIE ZSAMBA
Site Acquisition Specialist
T: (201) 236-9224
M: (518) 350-3639
F: (724) 416-6112

CROWN CASTLE
3 Corporate Park Drive, Suite 101
Clifton Park, NY 12065
CrownCastle.com

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VOL. 166 PAGE 540

SPECIAL PERMIT NOTICE

You are hereby notified that on January 17. 2002 the Planning and Zoning Commission of the Town of Deep River granted your application for amendment to an approved special permit, effective February 14, 2002, as follows:

1. **Owner of Record**: Robert R. Stalsburg and Grace Stalsburg
   Applicant: Cellco Partnership d/b/a Verizon Wireless
   99 East River Drive, East Hartford, CT 06108

2. **Description of Premises**: 366 Main Street
   Map 58, Lot 32F as identified by the Tax Assessor for the Town of Deep River

3. **Applicable Zoning Regulations**: Section 7.14 of the Deep River Zoning Regulations

4. **Nature of Special Permit**:
   Amendment to Special Permit of VoiceStream Wireless for purpose of attachment of 12 panel-type antennas on a triangular antenna platform at the 170 foot level of the existing 180 foot tower. Equipment associated with the Cellco antennas will be located in a new 12 ft. by 30 ft. equipment shelter located near the base of the tower within the existing fenced compound. The approval is in accordance with plans entitled: "Enlarged Site Plan and Grading Plan, Tower Elevation and Erosion Control Notes, and Detail Sheet, Cellco Partnership dba Verizon Wireless Deep River Telecommunication Facility 366 Main Street Deep River, Connecticut 06417 Scale1" = 10' Date: 12/4/2001" prepared by BL Companies, 355 Research Parkway, Meriden, Connecticut 06450.
   See Statement of Use attached hereto and made a part hereof.

5. **Conditions**: None

6. **Reasons**: Meets the conditions set forth in the Deep River Zoning Regulations.

TOWN OF DEEP RIVER
PLANNING AND ZONING COMMISSION

By _____
Jonathan Kastner, Its Secretary

CERTIFICATION

This is to certify that the foregoing is a true copy of a special permit issued by the Deep River Planning and Zoning Commission on January 17, 2002.

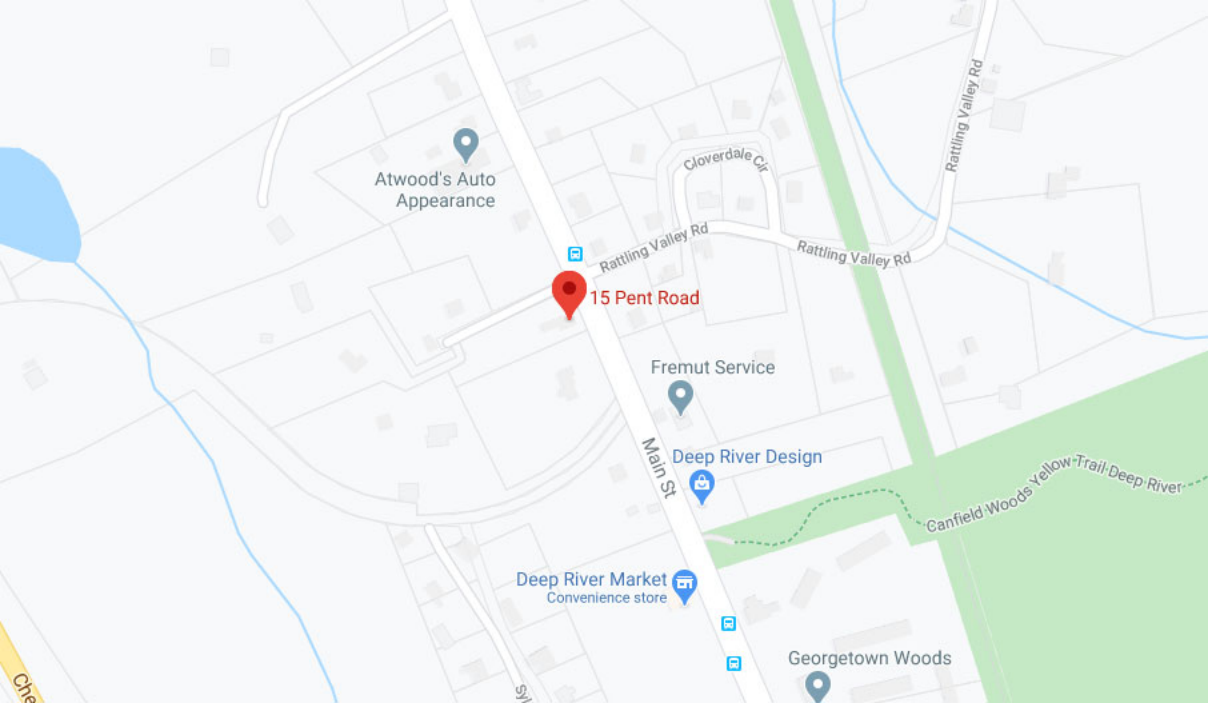
TOWN OF DEEP RIVER
PLANNING AND ZONING COMMISSION

By _____
Jonathan Kastner, Its Secretary

NOTICE: **FOR THIS SPECIAL PERMIT TO BE EFFECTIVE, YOU MUST RECORD THIS CERTIFIED COPY ON THE DEEP RIVER LAND RECORDS IN THE DEEP RIVER TOWN CLERK'S OFFICE, WITHIN SIXTY (60) DAYS OR PERMIT BECOMES NULL AND VOID.**

Exhibit B

Property Card


Atwood's Auto Appearance
Cloverdale Cir
Rattling Valley Rd
Rattling Valley Rd
Rattling Valley Rd
15 Pent Road
Fremut Service
Main St
Deep River Design
Canfield Woods Yellow Trail Deep River
Deep River Market
Convenience store
Georgetown Woods

15 PENT RD

Location	15 PENT RD	**Mblu**	58/ / 34/ /
Acct#	00155800	**Owner**	BEKS HOLDINGS LLC
Assessment	$296,520	**Appraisal**	$423,600
PID	1745	**Building Count**	2

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2015	$291,000	$132,600	$423,600

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2015	$203,700	$92,820	$296,520

Parcel Addreses

Additional Addresses
No Additional Addresses available for this parcel

Owner of Record

Owner	BEKS HOLDINGS LLC	**Sale Price**	$0
Co-Owner		**Certificate**	
Address	14 TIMBERLANE DR WESTBROOK, CT 06498	**Book & Page**	0245/0035
		Sale Date	09/30/2019
		Instrument	29

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**
BEKS HOLDINGS LLC	$0		0245/0035	29	09/30/2019
STALSBURG ROBERT R JR & SHERI L TRUSTEES	$0		0239/0150	29	09/29/2017
STALSBURG ROBERT R JR	$0		0187/0502	29	07/12/2004
STALSBURG ROBERT R JR & GRACE A	$0		0184/0720	29	03/01/2004

Building Information

Building 1 : Section 1

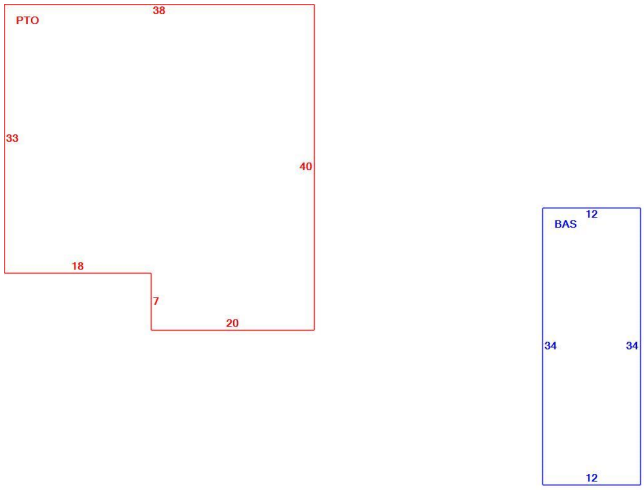
Year Built: 1948
Living Area: 408

Building Attributes	
Field	**Description**
STYLE	Warehouse
MODEL	Ind or Comm
Grade	Average
Stories:	1
Occupancy	1.00
Exterior Wall 1	Concr/Cinder
Exterior Wall 2	
Roof Structure	Gable/Hip
Roof Cover	Asph/F Gls/Cmp
Interior Wall 1	Minim/Masonry
Interior Wall 2	Cust Wd Panel
Interior Floor 1	Concr-Finished
Interior Floor 2	Carpet
Heating Fuel	None
Heating Type	None
AC Type	None
Struct Class	
Bldg Use	COMM WHSE
Total Rooms	
Total Bedrms	00
Total Baths	0
Usrfld 218	
Usrfld 219	
1st Floor Use:	3160
Heat/AC	NONE
Frame Type	MASONRY
Baths/Plumbing	AVERAGE
Ceiling/Wall	CEILING ONLY
Rooms/Prtns	AVERAGE
Wall Height	12.00
% Comn Wall	0.00

Building Photo

(http://images.vgsi.com/photos/DeepRiverCTPhotos//\00\00\63\63.jpg)

Building Layout



(ParcelSketch.ashx?pid=1745&bid=1745)

Building Sub-Areas (sq ft)			
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	408	408
PTO	Patio	1,394	0
		1,802	408

Building 2 : Section 1

Year Built: 1930

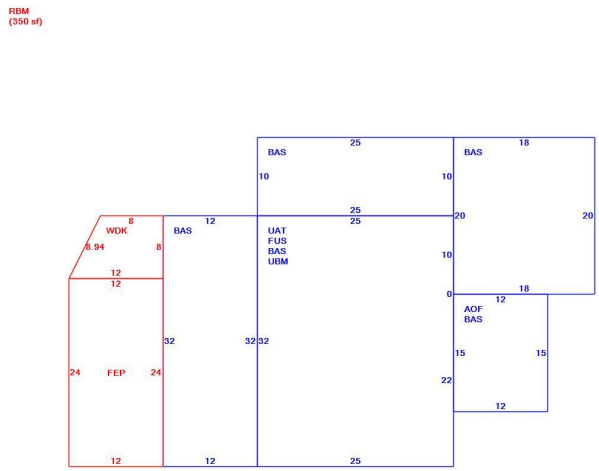
Building Photo

Living Area: 2,954

Building Attributes : Bldg 2 of 2	
Field	**Description**
Style	Colonial
Model	Residential
Grade:	Good
Stories:	2 Stories
Occupancy	1
Exterior Wall 1	Aluminum Sidng
Exterior Wall 2	
Roof Structure:	Gable/Hip
Roof Cover	Asph/F Gls/Cmp
Interior Wall 1	Plastered
Interior Wall 2	Cust Wd Panel
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:	1
Total Rooms:	12 Rooms
Bath Style:	Average
Kitchen Style:	Average
Num Kitchens	01
Cndtn	
Usrfld 103	
Usrfld 104	
Usrfld 105	
Usrfld 106	
Usrfld 107	
Num Park	
Fireplaces	
Usrfld 108	
Usrfld 101	
Usrfld 102	
Usrfld 100	
Usrfld 300	
Usrfld 301	

(http://images.vgsi.com/photos/DeepRiverCTPhotos//\00\00\63\64.jpg)

Building Layout



(ParcelSketch.ashx?pid=1745&bid=2279)

Building Sub-Areas (sq ft)			
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	1,974	1,974
FUS	Upper Story, Finished	800	800
AOF	Office, (Average)	180	180
FEP	Porch, Enclosed, Finished	288	0
RBM	Rec Room Bsmt	350	0
UAT	Attic, Unfinished	800	0
UBM	Basement, Unfinished	800	0
WDK	Deck, Wood	80	0
		5,272	2,954

Land

Land Use

Use Code	0316
Description	COMM WHSE
Zone	R60
Neighborhood	0002

Land Line Valuation

Size (Acres)	3.9
Assessed Value	$92,820
Appraised Value	$132,600

Outbuildings

Outbuildings		
Code	**Description**	**Size**
SHD1	SHED FRAME	30.00 S.F.
SPL3	GUNITE	800.00 S.F.
SHD2	W/LIGHTS ETC	80.00 S.F.

Exhibit C

Construction Drawings

DISH Wireless L.L.C. SITE ID:

BOBDL00055A

DISH Wireless L.L.C. SITE ADDRESS:

15 PENT RD.
DEEP RIVER, CT 06417

CONNECTICUT CODE COMPLIANCE

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

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

SHEET INDEX

SCOPE OF WORK

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

TOWER SCOPE OF WORK:
- REMOVE ABANDONED EQUIPMENT AT 150' AGL TBR
- INSTALL (3) PROPOSED PANEL ANTENNAS (1 PER SECTOR)
- INSTALL (1) PROPOSED PLATFORM
- INSTALL PROPOSED JUMPERS
- INSTALL (6) PROPOSED RRUS (2 PER SECTOR)
- INSTALL (1) PROPOSED OVER VOLTAGE PROTECTION DEVICE (OVP)
- INSTALL (1) PROPOSED HYBRID CABLE

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

SITE PHOTO

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

811

GENERAL NOTES

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

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

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

SITE INFORMATION

PROPERTY OWNER:	BEKS HOLDINGS LLC
ADDRESS:	14 TIMBERLANE DR WESTBROOK, CT 06498
TOWER TYPE:	MONOPOLE
TOWER CO SITE ID:	823666
TOWER APP NUMBER:	553286
COUNTY:	MIDDLESEX
LATITUDE (NAD 83):	41° 22' 22.17" N 41.372825 N
LONGITUDE (NAD 83):	72° 26' 3.97" W 72.434436 W
ZONING JURISDICTION:	CT-CONNECTICUT SITING COUNCIL
ZONING DISTRICT:	TBD
PARCEL NUMBER:	DEEP-155800-000000
OCCUPANCY GROUP:	U
CONSTRUCTION TYPE:	II-B
POWER COMPANY:	NORTHEAST UTILITIES
TELEPHONE COMPANY:	CROWN CASTLE

PROJECT DIRECTORY

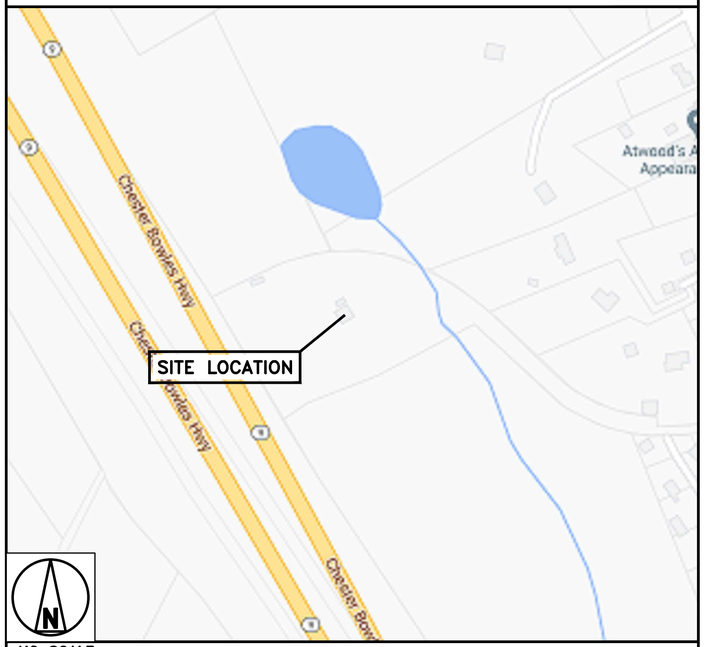
APPLICANT:	DISH Wireless L.L.C. 5701 SOUTH SANTA FE DRIVE LITTLETON, CO 80120
TOWER OWNER:	CROWN CASTLE 2000 CORPORATE DRIVE CANONSBURG, PA 15317 (877) 486-9377
SITE DESIGNER:	INFINIGY 2500 W. HIGGINS RD. STE. 500 HOFFMAN ESTATES, IL 60169 (847) 648-4068
SITE ACQUISITION:	NICHOLAS CURRY TBD
CONSTRUCTION MANAGER:	JAVIER SOTO TBD
RF ENGINEER:	BOSSENER CHARLES

DIRECTIONS

DIRECTIONS FROM ORLANDO SANFORD INTERNATIONAL AIRPORT:

HEAD NORTHWEST ON CHESTER AIRPORT TOWARD CROSS RD, TURN RIGHT ONTO CT-145 / WINTHROP RD, TURN RIGHT ONTO CT-148 / W MAIN ST, TAKE THE RAMP ON THE RIGHT FOR CT-9 SOUTH AND HEAD TOWARD OLD SAYBROOK, AT EXIT 5, HEAD RIGHT ON THE RAMP FOR CT-80 TOWARD DEEP RIVER, TURN LEFT ONTO CT-80 / W ELM ST TOWARD DEEP RIVER, CONSTRUCTION ON CONSTRUCTION ON CT-80 EB NEAR NY-5, EXPECT LONG DELAYS., TURN RIGHT ONTO UNION ST, BEAR RIGHT ONTO CT-154 / MAIN ST, TURN RIGHT ONTO PENT RD, ARRIVE AT 15 PENT RD., DEEP RIVER, CT 06417

VICINITY MAP



NO SCALE

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STATE OF CONNECTICUT
SHUHEI SAKAMOTO
34916
LICENSED PROFESSIONAL ENGINEER
8/16/2021

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

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
0	05/20/2021	ISSUED FOR PERMIT
1	05/27/2021	REVISED PER COMMENTS
2	08/09/2021	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
2039-Z5555C

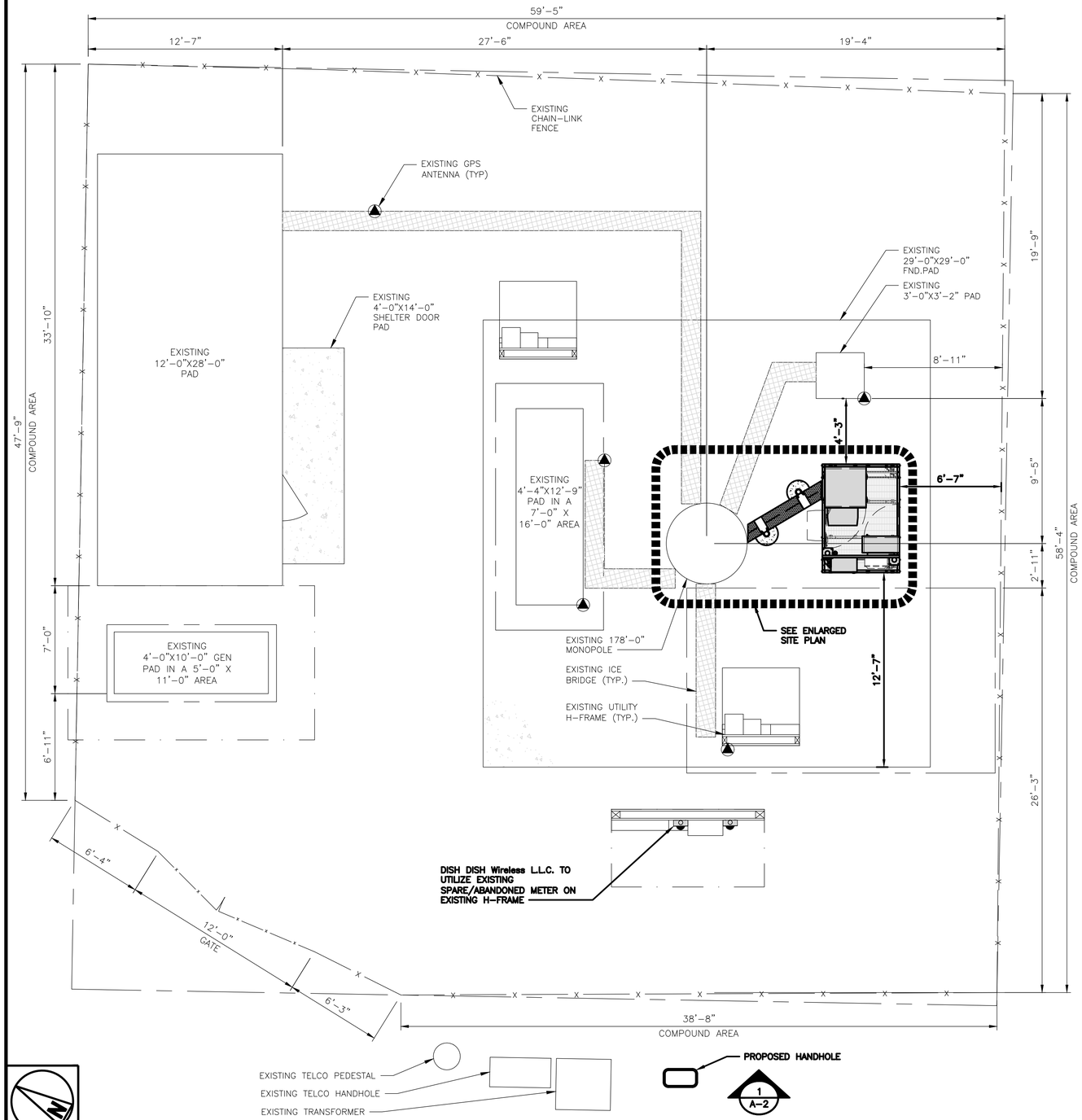
DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00055A
15 PENT RD.
DEEP RIVER, CT 06417

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

NOTES

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



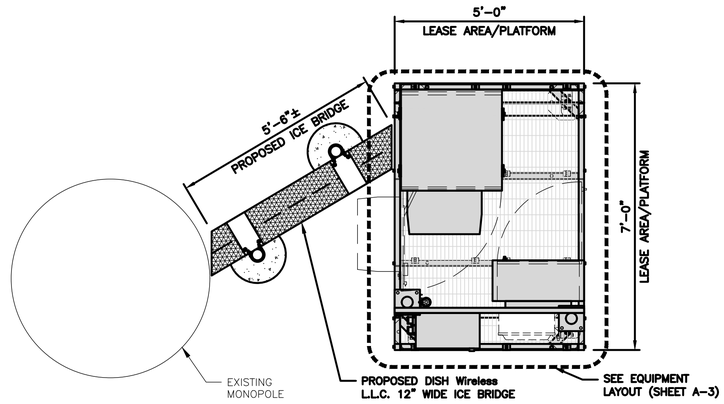
OVERALL SITE PLAN

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

1

NOTES

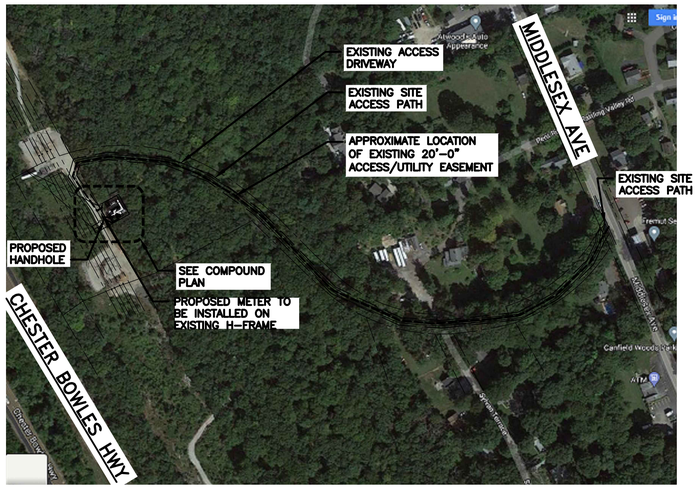
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. CONTRACTOR SHALL MAINTAIN A 10'-0" MINIMUM SEPARATION BETWEEN THE PROPOSED GPS UNIT, TRANSMITTING ANTENNAS AND EXISTING GPS UNITS.
3. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.



ENLARGED SITE PLAN

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

2



SITE PLAN

200' 100' 0 200' 400'
1"=200'

3

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RFDS REV #: N/A

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A&E PROJECT NUMBER
2039-Z5555C

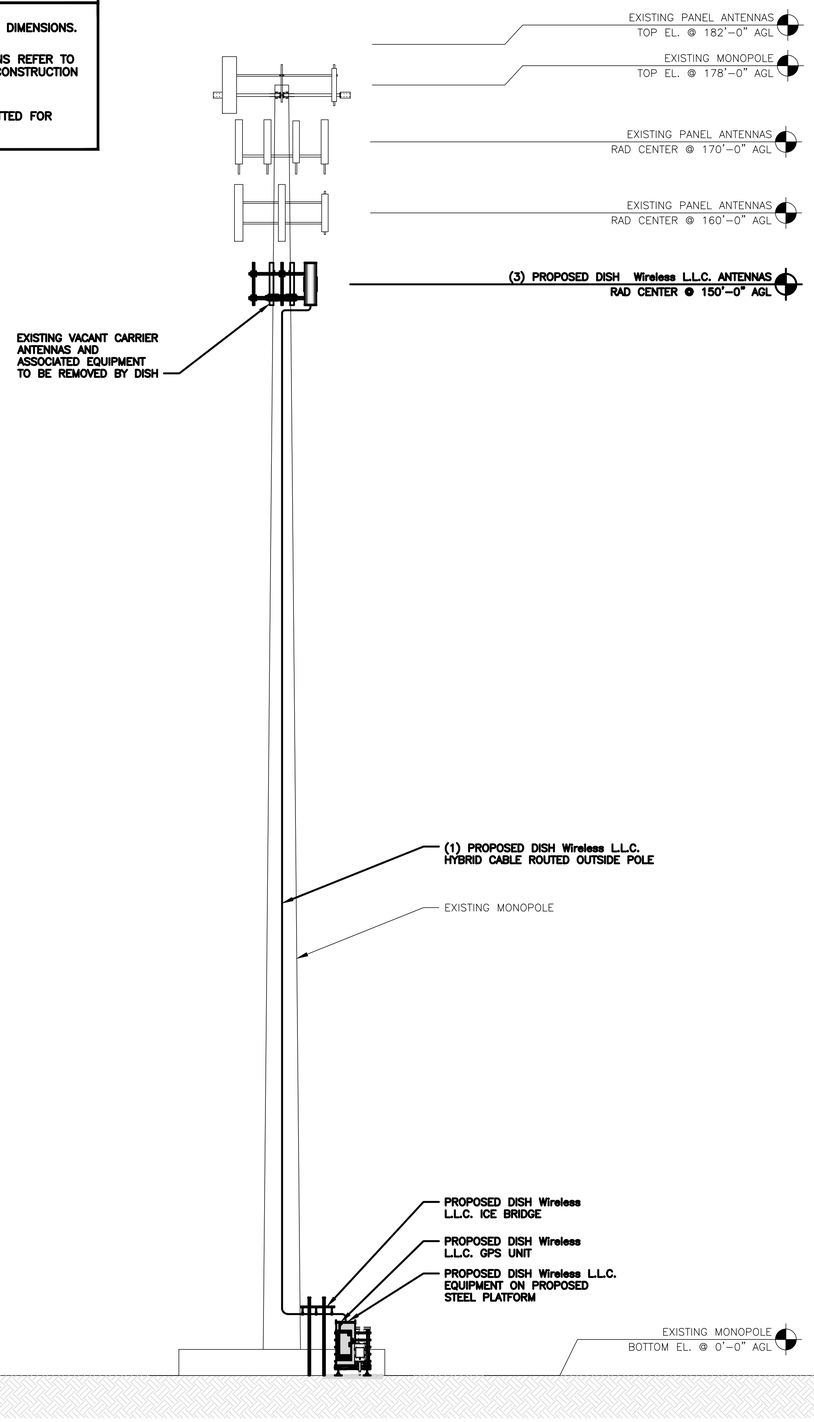
DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00055A
15 PENT RD.
DEEP RIVER, CT 06417

SHEET TITLE
OVERALL AND ENLARGED SITE PLAN

SHEET NUMBER
A-1

NOTES

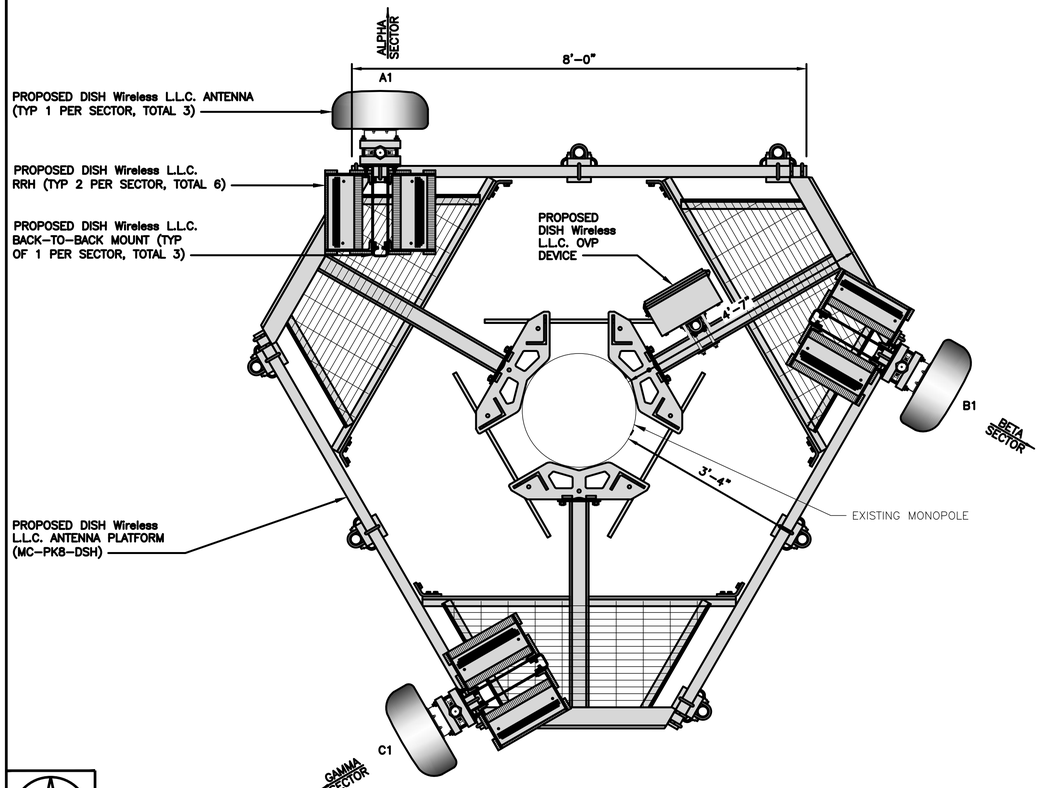
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNA AND MW DISH SPECIFICATIONS REFER TO ANTENNA SCHEDULE AND TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS
3. EXISTING EQUIPMENT AND FENCE OMITTED FOR CLARITY.



PROPOSED SOUTHWEST ELEVATION

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

1



ANTENNA LAYOUT

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

2

SECTOR	POSITION	ANTENNA						TRANSMISSION CABLE
		EXISTING OR PROPOSED	MANUFACTURER – MODEL NUMBER	TECHNOLOGY	SIZE (HxW)	AZMUITH	RAD CENTER	FEED LINE TYPE AND LENGTH
ALPHA	A1	PROPOSED	JMA WIRELESS – MX08FRO665-21	5G	72.0" x 20.0"	0°	150'-0"	(1) HIGH-CAPACITY HYBRID CABLE (198' LONG)
BETA	B1	PROPOSED	JMA WIRELESS – MX08FRO665-21	5G	72.0" x 20.0"	120°	150'-0"	
GAMMA	C1	PROPOSED	JMA WIRELESS – MX08FRO665-21	5G	72.0" x 20.0"	240°	150'-0"	

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

NOTES

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

ANTENNA SCHEDULE

NO SCALE

3

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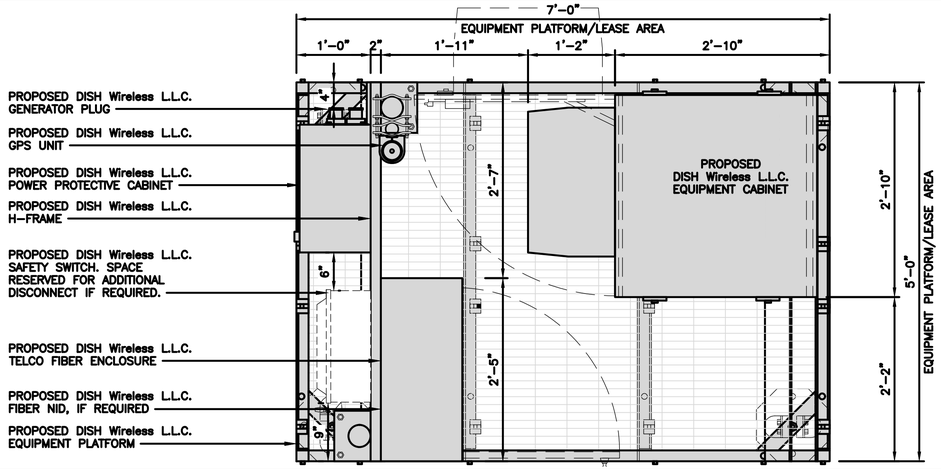
DEEP RIVER, CT 06417

SHEET TITLE
ELEVATION, ANTENNA LAYOUT AND SCHEDULE

SHEET NUMBER
A-2



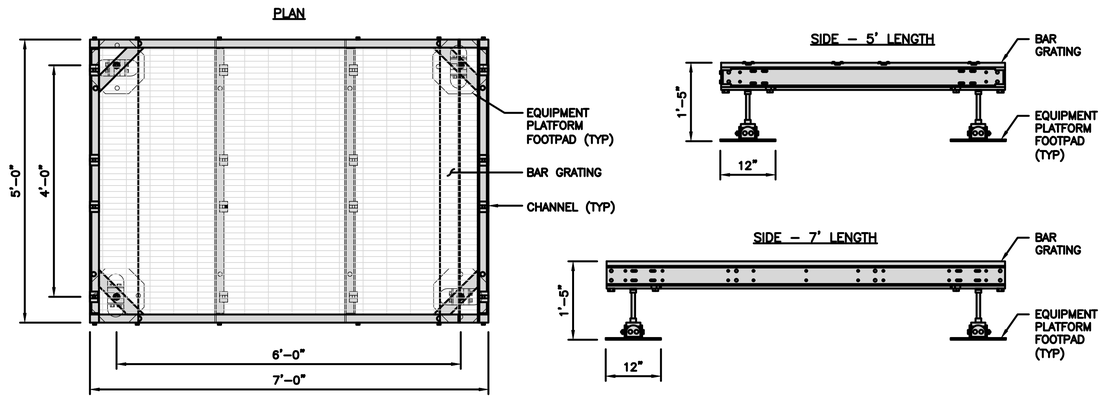
PLATFORM EQUIPMENT PLAN

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

1

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

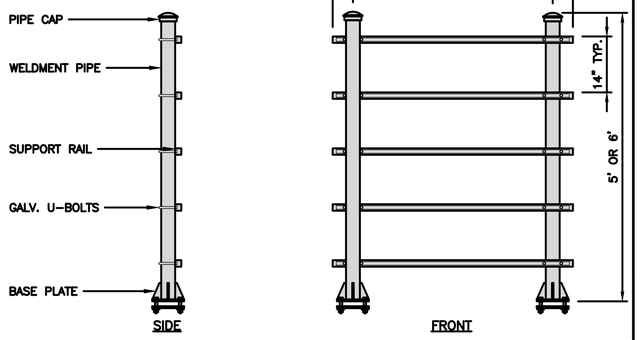
NOTE:
GC TO PROVIDE EXTENDED THREAD FOR PLATFORM IF REQUIRED HEIGHT EXCEEDS 17"



PLATFORM DETAIL — NO SCALE — 2

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

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

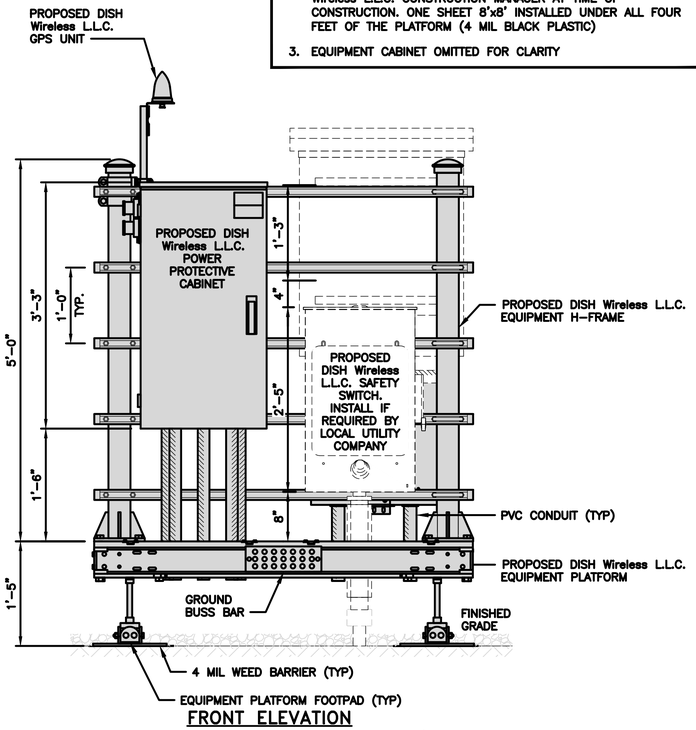


H-FRAME DETAIL — NO SCALE — 3

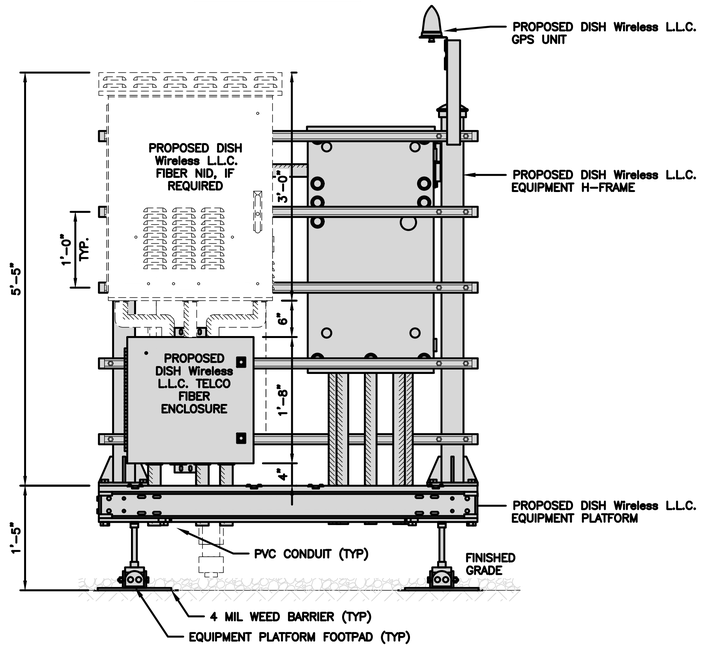
NOT USED — NO SCALE — 4

NOTES

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



FRONT ELEVATION



BACK ELEVATION

H-FRAME EQUIPMENT ELEVATION — 12" 9" 6" 3" 0 1' 2' — 1"=1'-0" — 5

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PROJECT INFORMATION
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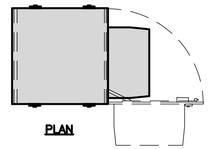
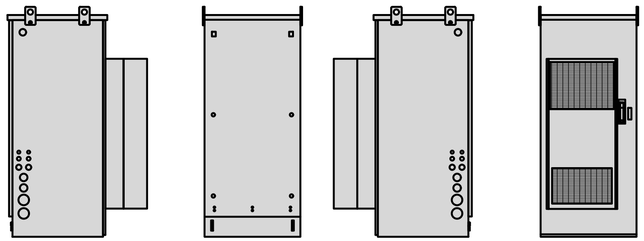
15 PENT RD.
DEEP RIVER, CT 06417

SHEET TITLE
EQUIPMENT PLATFORM AND H-FRAME DETAILS

SHEET NUMBER
A-3

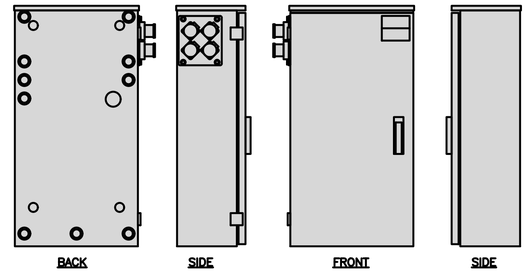
CHARLES INDUSTRY HEX CUBE–PM639155N4	
DIMENSIONS (HxWxD):	74"x32"x32"
POWER PLANT:	–48VDC ABB/600W
TOTAL WEIGHT (EMPTY)	408 LBS





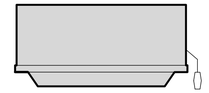
CABINET DETAIL | NO SCALE | 1

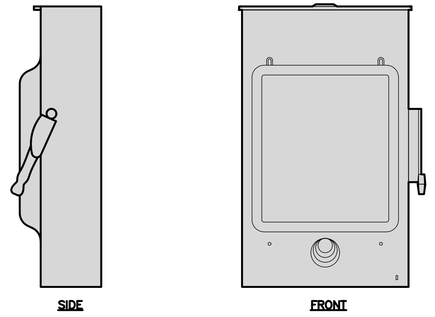
RAYCAP PPC RDIAC–2465–P–240–MTS	
ENCLOSURE DIMENSIONS (HxWxD):	39"x22.855"x12.593
WEIGHT:	80 lbs
OPERATING AC VOLTAGE	240/120 1 PHASE 3W+G



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

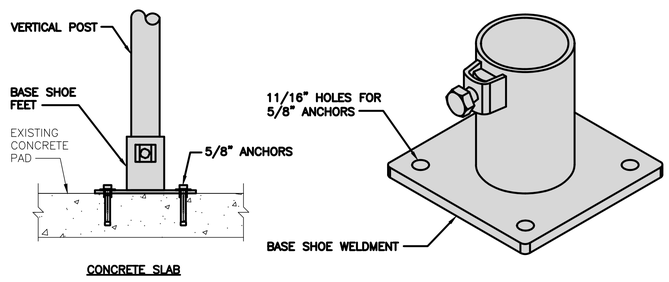
SQUARE D SAFETY SWITCHES D224NRB	
ENCLOSURE DIM (HxWxD)	29.25"x19.00"x8.50"
ENCLOSURE TYPE	NEMA 3R RAINPROOF
UL LISTED	FILE E–2875





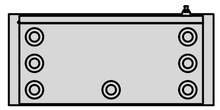
SAFETY SWITCH DETAIL | NO SCALE | 3

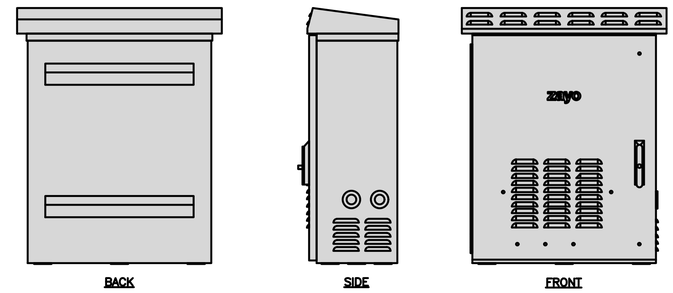
SITEPRO1 BSF35 BASE SHOE FEET	
DIMENSIONS (HxWxL)	8"x8"x1/2"
WEIGHT	15.0 LBS
POST SIZE:	2–7/8" OR 3–1/2"



ICE BRIDGE PIPE MOUNT DETAIL | NO SCALE | 4

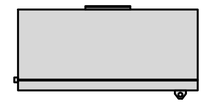
ZAYO 5RU (LEFT SWING DOOR) FIBER NID ENCLOSURE	
DIMENSIONS (HxWxD)	36.1"x29"x12.9"
WEIGHT	85 lbs





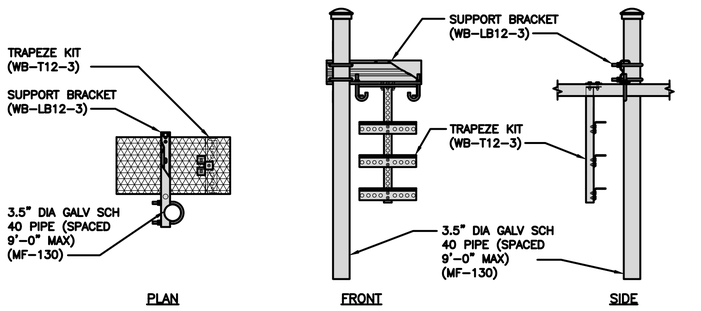
FIBER NID ENCLOSURE DETAIL | NO SCALE | 5

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

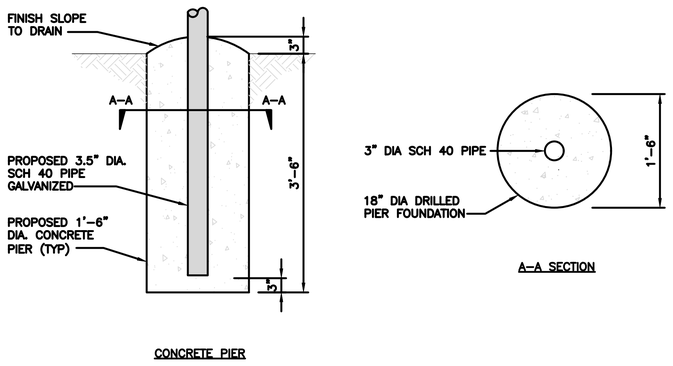


FIBER TELCO ENCLOSURE DETAIL | NO SCALE | 6

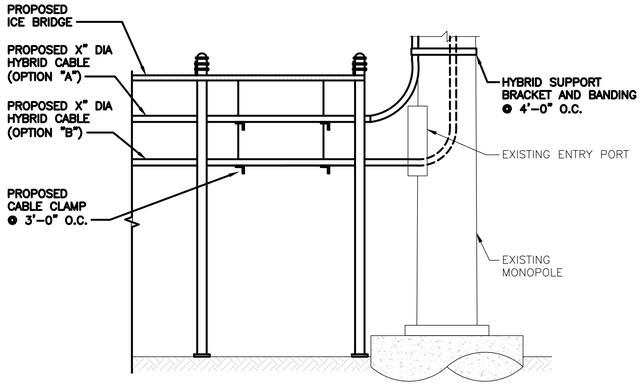
COMMSCOPE WB–K110–B WAVEGUIDE BRIDGE KIT		INCLUDED PRODUCTS:	WB–T12–3 TRAPEZE KIT, 3 RUNGS WB–LB12–3 SUPPORT BRACKET MF–130 DIRECT BURIAL PIPE COLUMN, 13'–4"
DIMENSIONS (HxL)	160"x10'		
WEIGHT/ VOLUME	325.0 LBS		
CABLE RUN (QTY)	12		



ICE BRIDGE DETAIL | NO SCALE | 7



TYPICAL ICE BRIDGE CONCRETE PIER DETAIL | NO SCALE | 8



HYBRID CABLE RUN | NO SCALE | 9

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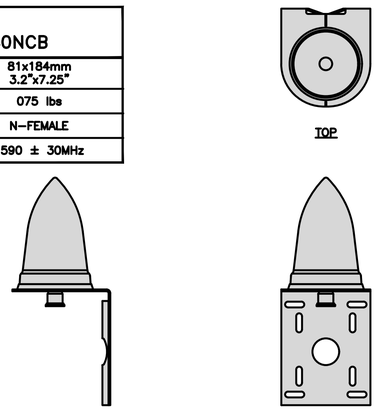
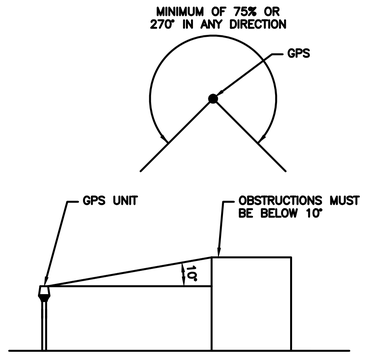
SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-4

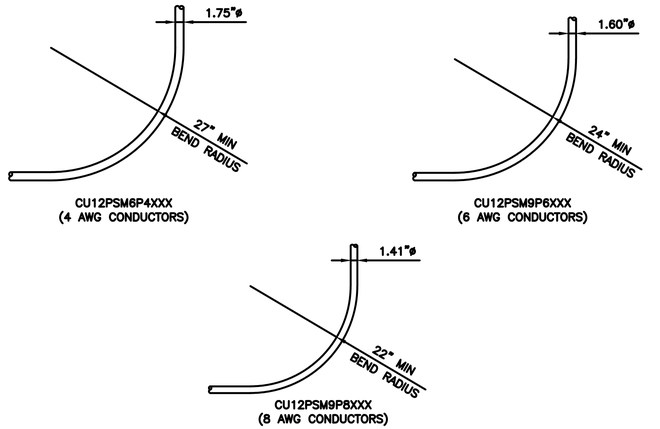
PCTEL GPSGL-TMG-SPI-40NCB	
DIMENSIONS (DIAxH) MM/INCH	81x184mm 3.2"x7.25"
WEIGHT W/ACCESSORIES	075 lbs
CONNECTOR	N-FEMALE
FREQUENCY RANGE	1590 ± 30MHz



GPS DETAIL | NO SCALE | 1



GPS MINIMUM SKY VIEW REQUIREMENTS | NO SCALE | 2



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

NOT USED | NO SCALE | 4

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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EQUIPMENT DETAILS

SHEET NUMBER
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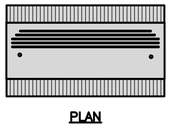
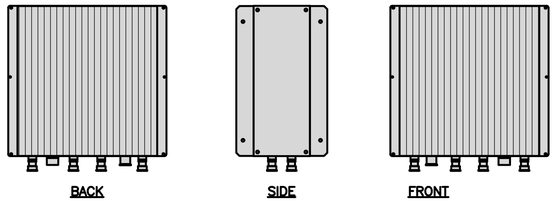
FUJITSU TRIPLE BAND TA08025-B605

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



PLAN

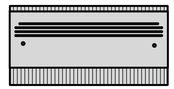


BACK SIDE FRONT

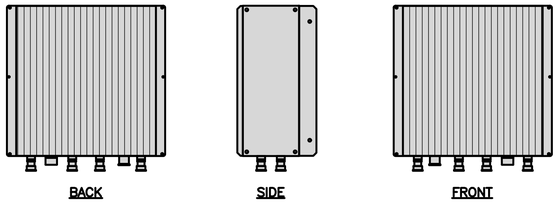
RRH DETAIL | NO SCALE | 1

FUJITSU DUAL BAND TA08025-B604

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



PLAN



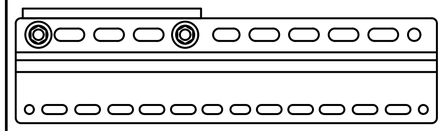
BACK SIDE FRONT

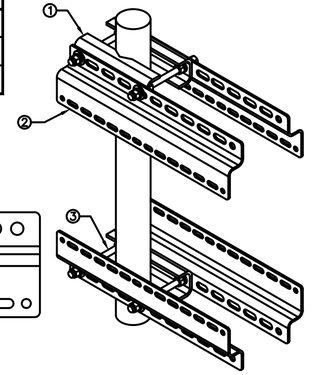
RRH DETAIL | NO SCALE | 2

SABRE DOUBLE Z-BRACKET C10123155

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

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





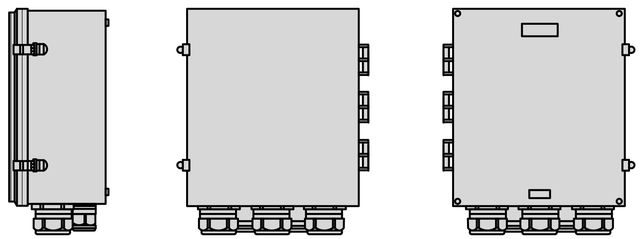
NOTE:
OR DISH Wireless L.L.C.
APPROVED EQUIVALENT

RRH MOUNT DETAIL | NO SCALE | 3

RAYCAP RDIDC-9181-PF-48 DC SURGE PROTECTION (OVP)

DIMENSIONS (HxWxD)	18.98"x14.39"x8.15"
WEIGHT	21.82 LBS

PLAN

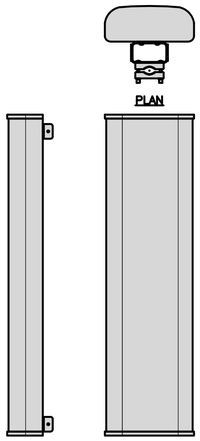


SIDE BACK FRONT

SURGE SUPPRESSION DETAIL (OVP) | NO SCALE | 4

JMA MX08FRO665-21

DIMENSIONS (HxWxD)	72"x20.0"x8.0"
RF PORTS, CONNECTOR TYPE	8 x 4.3-10 FEMALE
WEIGHT	64.5 lbs
WEIGHT WITH BRACKETS	82.5 lbs



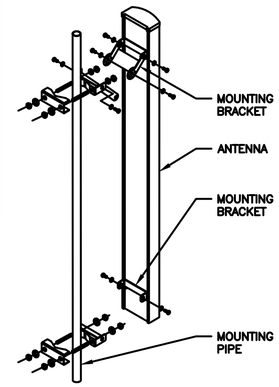
PLAN SIDE FRONT

ANTENNA DETAIL | NO SCALE | 5

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

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

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

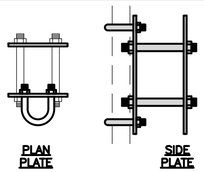


ANTENNA MOUNTING DETAIL | NO SCALE | 6

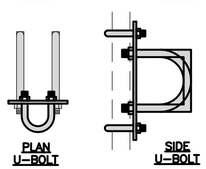
COMMSCOPE XP-2040 CROSSOVER PLATE

DIMENSIONS (HxW)	10"x12"
WEIGHT	11 lbs

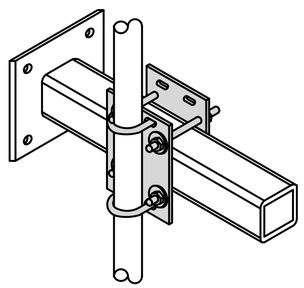
NOTE:
OR DISH Wireless L.L.C.
APPROVED EQUIVALENT



PLAN PLATE SIDE PLATE



PLAN U-BOLT SIDE U-BOLT

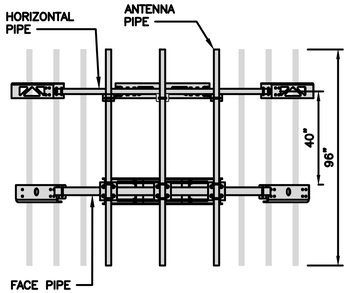


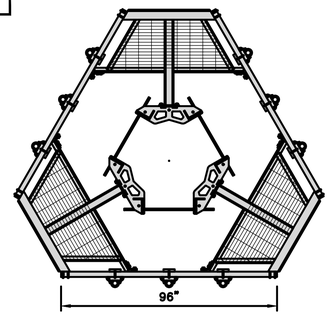
RRH/OVP MOUNT DETAIL | NO SCALE | 7

COMMSCOPE MC-PK8-DSH

FACE WIDTH	96"
WEIGHT	1373.08 lbs
NOTE: 15" TO 38" O.D.	

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





ANTENNA PLATFORM DETAIL | NO SCALE | 8

NOT USED | NO SCALE | 9

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SHUHEI SAKAMOTO
34916
LICENSED PROFESSIONAL ENGINEER
8/16/2021

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

RFDS REV #: N/A

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A&E PROJECT NUMBER
2039-Z5555C

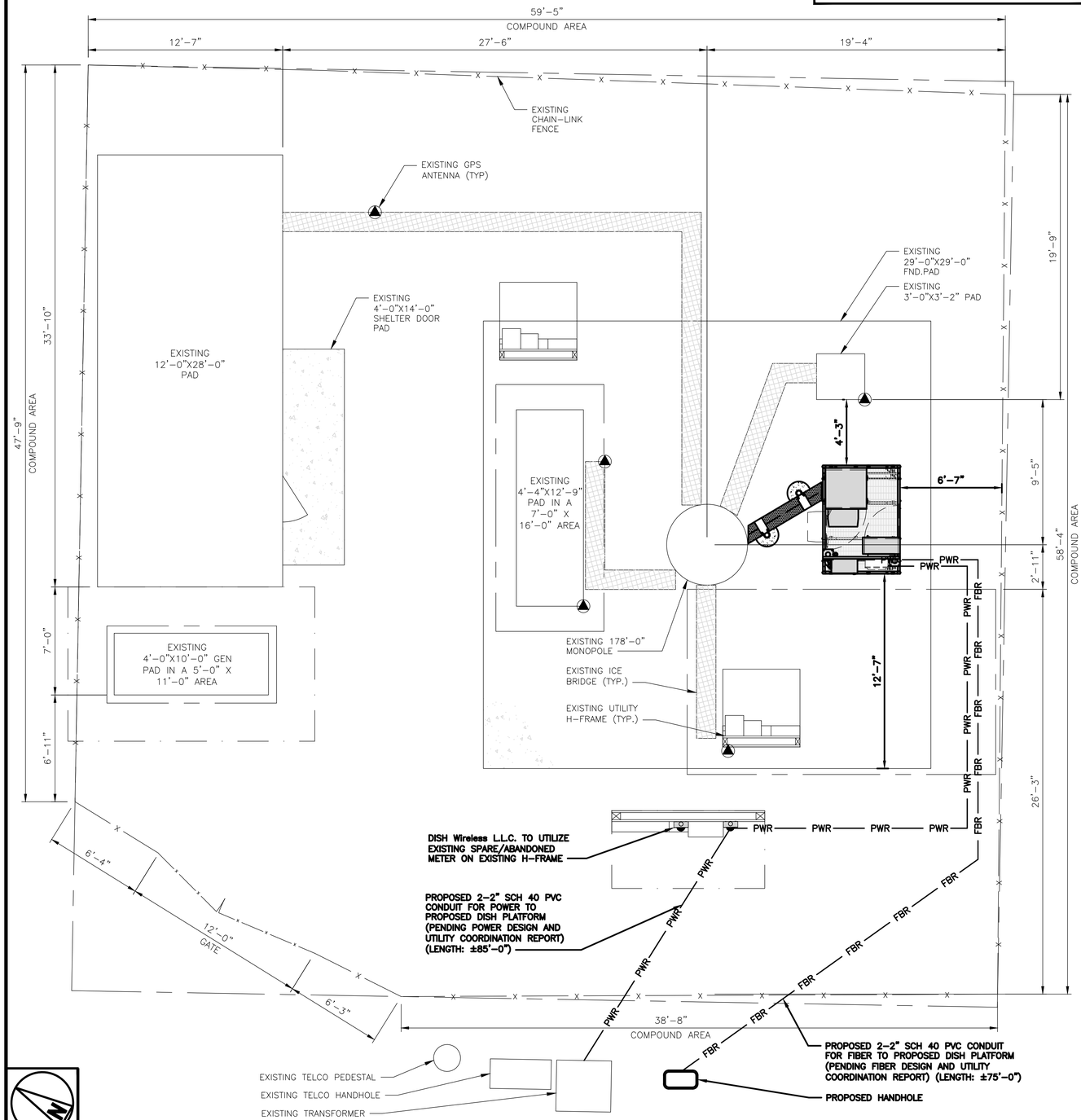
DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00055A
15 PENT RD.
DEEP RIVER, CT 06417

SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-6

NOTES

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



UTILITY ROUTE PLAN

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

1

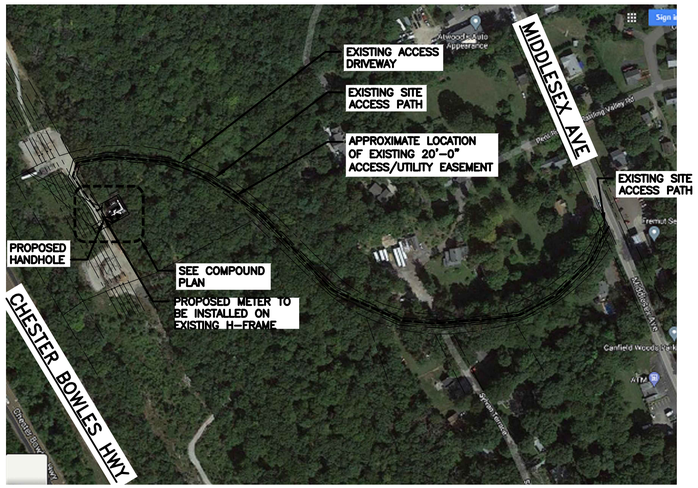
DC POWER WIRING SHALL BE COLOR CODED AT EACH END FOR IDENTIFYING +24V AND –48V CONDUCTORS. RED MARKINGS SHALL IDENTIFY +24V AND BLUE MARKINGS SHALL IDENTIFY –48V.

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

ELECTRICAL NOTES

NO SCALE

2



OVERALL UTILITY ROUTE PLAN

200' 100' 0 200' 400'
1"=200'

3

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RFDS REV #: N/A

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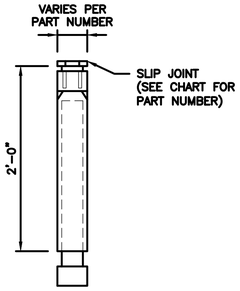
DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00055A
15 PENT RD.
DEEP RIVER, CT 06417

SHEET TITLE
ELECTRICAL/FIBER ROUTE PLAN AND NOTES

SHEET NUMBER
E-1

CARLON EXPANSION FITTINGS

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

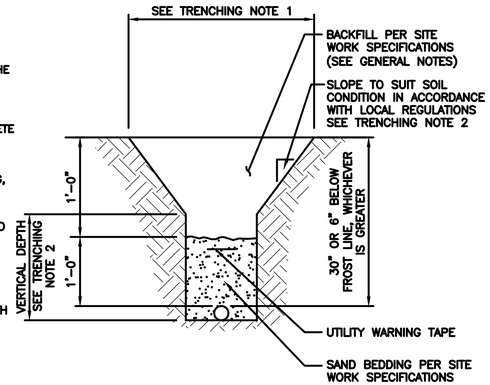


NOTE:
CONTRACTOR TO INSTALL EXPANSION FITTING SLIP JOINT AT METER CENTER CONDUIT TERMINATION, AS PER LOCAL UTILITY POLICY, ORDINANCE AND/OR SPECIFIED REQUIREMENT.

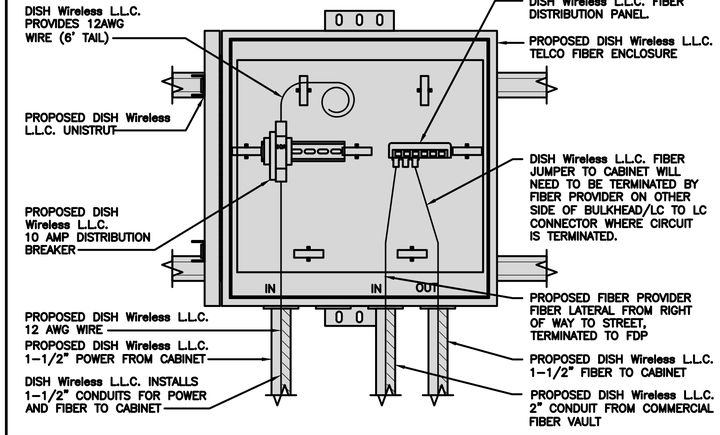
EXPANSION JOINT DETAIL | NO SCALE | 1

TRENCHING NOTES

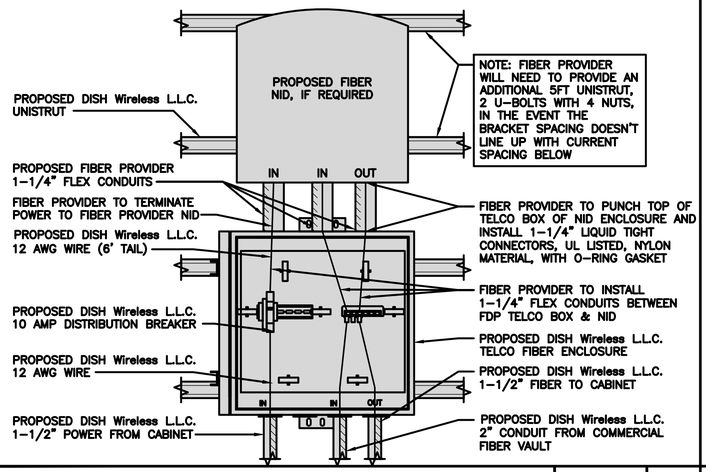
1. CONTRACTOR SHALL RESTORE THE TRENCH TO ITS ORIGINAL CONDITIONS BY EITHER SEEDING OR SODDING GRASS AREAS, OR REPLACING ASPHALT OR CONCRETE AREAS TO ITS ORIGINAL CROSS SECTION.
2. TRENCHING SAFETY; INCLUDING, BUT NOT LIMITED TO SOIL CLASSIFICATION, SLOPING, AND SHORING, SHALL BE GOVERNED BY THE CURRENT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



TYPICAL UNDERGROUND TRENCH DETAIL | NO SCALE | 2



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



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

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

DISH Wireless L.L.C. TEMPLATE VERSION 38 – 07/23/2021

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RFDS REV #: N/A

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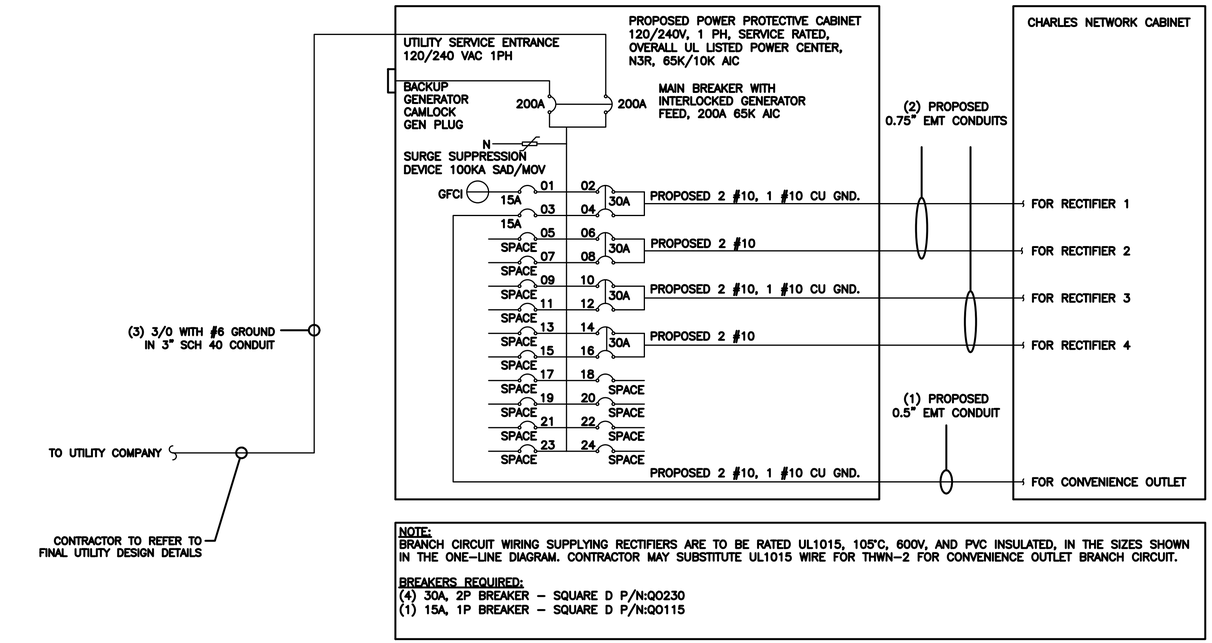
DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00055A
15 PENT RD.
DEEP RIVER, CT 06417

SHEET TITLE
ELECTRICAL DETAILS

SHEET NUMBER
E-2



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

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

NOTES

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

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

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

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

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

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

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

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

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

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

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

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

PPC ONE–LINE DIAGRAM

NO SCALE | 1

PROPOSED CHARLES PANEL SCHEDULE

LOAD SERVED	VOLT AMPS (WATTS) L1	VOLT AMPS (WATTS) L2	TRIP	CKT #	PHASE	CKT #	TRIP	VOLT AMPS (WATTS) L1	VOLT AMPS (WATTS) L2	LOAD SERVED
PPC GFCI OUTLET	180		15A	1	A	2	30A	2880		ABB/GE INFINITY RECTIFIER 1
CHARLES GFCI OUTLET		180	15A	3	B	4			2880	
–SPACE–				5	A	6	30A	2880		ABB/GE INFINITY RECTIFIER 2
–SPACE–				7	B	8			2880	
–SPACE–				9	A	10	30A	2880		ABB/GE INFINITY RECTIFIER 3
–SPACE–				11	B	12			2880	
–SPACE–				13	A	14	30A	2880		ABB/GE INFINITY RECTIFIER 4
–SPACE–				15	B	16			2880	
–SPACE–				17	A	18				–SPACE–
–SPACE–				19	B	20				–SPACE–
–SPACE–				21	A	22				–SPACE–
–SPACE–				23	B	24				–SPACE–
VOLTAGE AMPS	180	180						11520	11520	

200A MCB, 1Φ, 24 SPACE, 120/240V	L1	L2	
MB RATING: 65,000 AIC	11700	11700	VOLTAGE AMPS
	98	98	AMPS
	98		MAX AMPS
	123		MAX 125%

PANEL SCHEDULE

NO SCALE | 2

NOT USED

NO SCALE | 3

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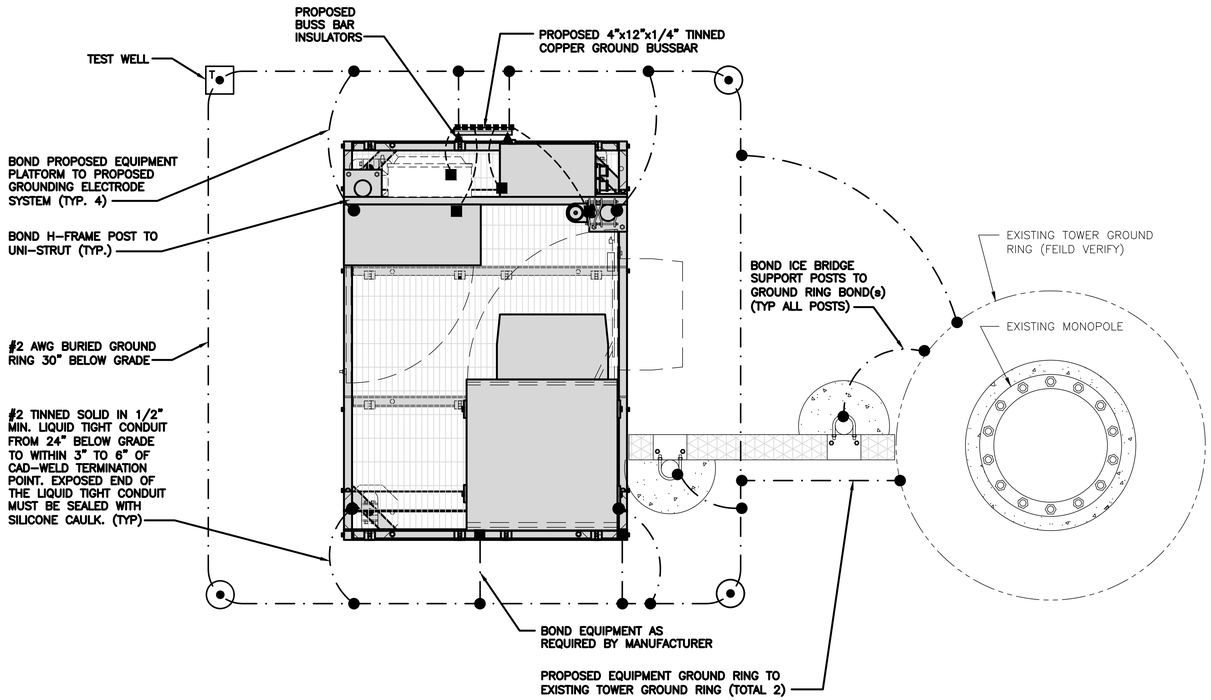
DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00055A
15 PENT RD.
DEEP RIVER, CT 06417

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

SHEET NUMBER
E-3

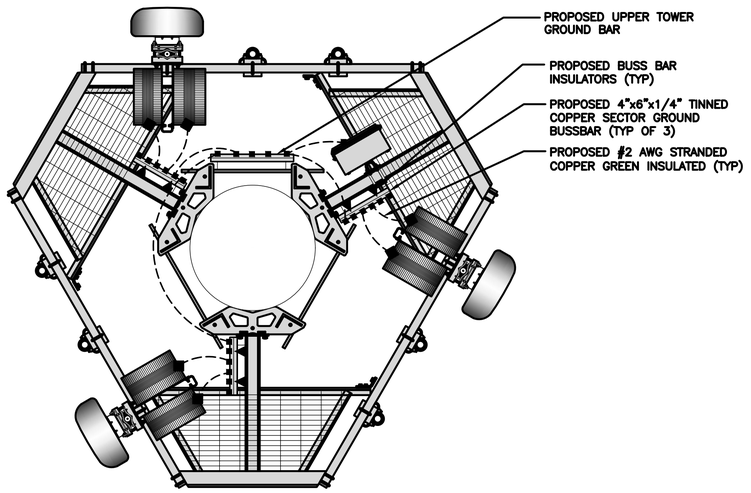


TYPICAL EQUIPMENT GROUNDING PLAN

NO SCALE | 1

NOTES

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



TYPICAL ANTENNA GROUNDING PLAN

NO SCALE | 2

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

GROUNDING LEGEND

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

GROUNDING KEY NOTES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

GROUNDING KEY NOTES

NO SCALE | 3

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SHUHEI SAKAMOTO
34916
LICENSED PROFESSIONAL ENGINEER
8/16/2021

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

RFDS REV #: N/A

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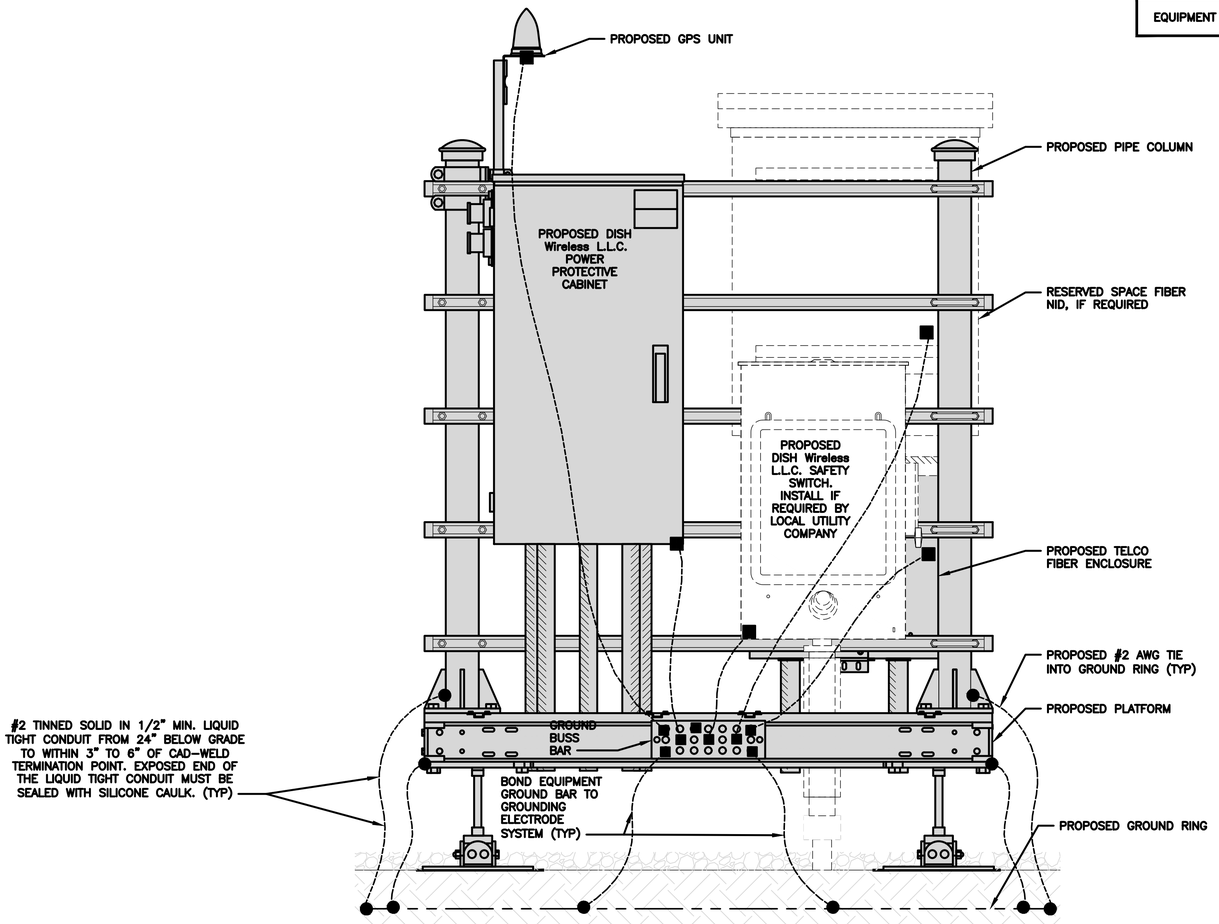
DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00055A
15 PENT RD.
DEEP RIVER, CT 06417

SHEET TITLE
GROUNDING PLANS AND NOTES

SHEET NUMBER
G-1

NOTES

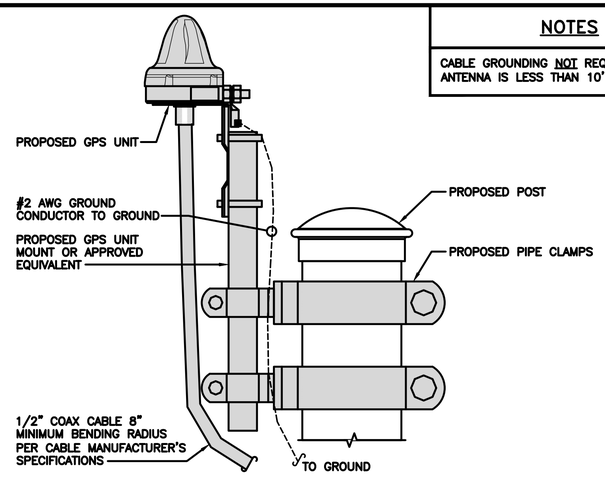
EQUIPMENT CABINET OMITTED FOR CLARITY



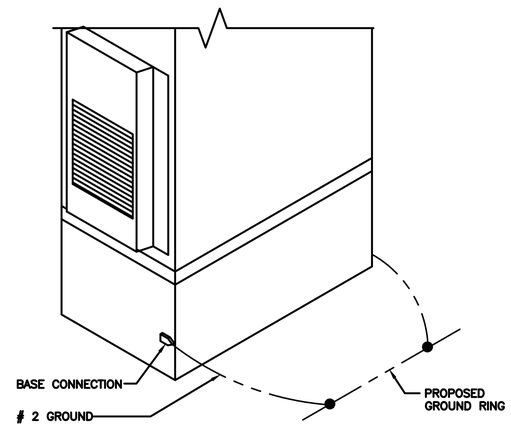
H-FRAME GROUNDING DETAIL | NO SCALE | 1

NOTES

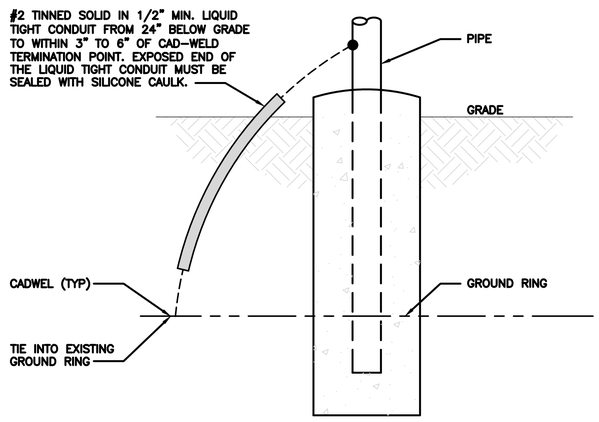
CABLE GROUNDING NOT REQUIRED WHEN ANTENNA IS LESS THAN 10' FROM CABINET



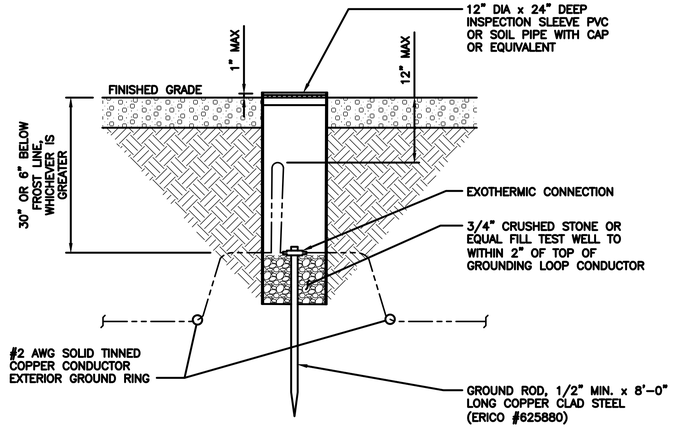
TYPICAL GPS UNIT GROUNDING | NO SCALE | 2



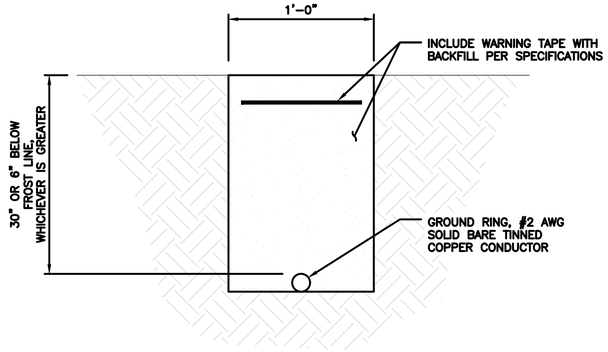
OUTDOOR CABINET GROUNDING | NO SCALE | 3



TRANSITIONING GROUND DETAIL | NO SCALE | 4



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



TYPICAL GROUND RING TRENCH | NO SCALE | 6

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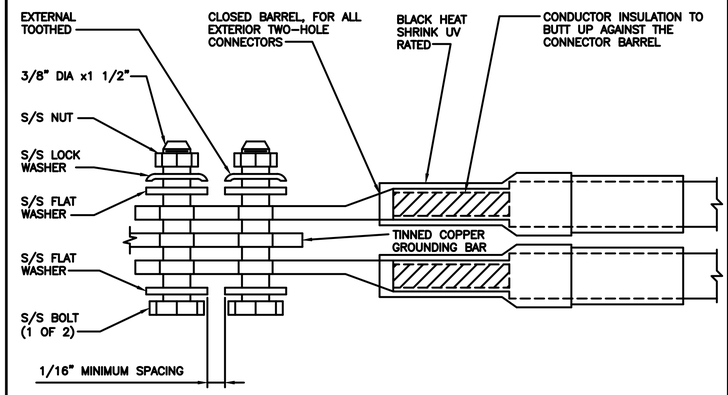
15 PENT RD.
DEEP RIVER, CT 06417

SHEET TITLE
GROUNDING DETAILS

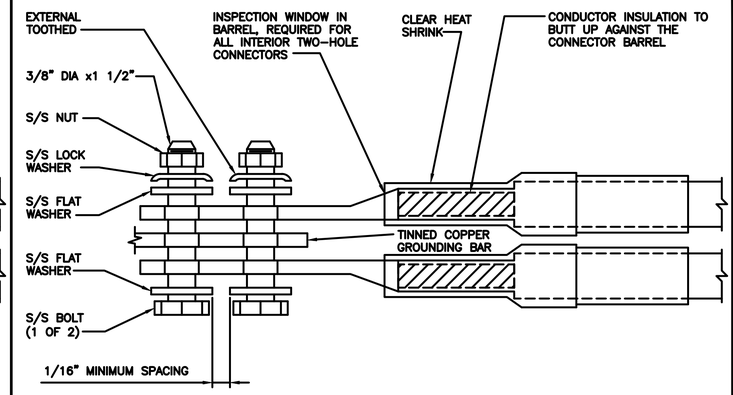
SHEET NUMBER
G-2

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

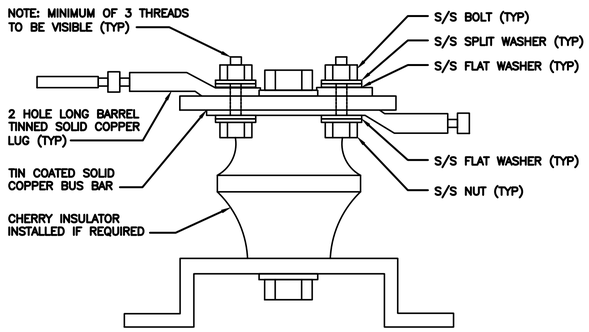
TYPICAL GROUNDING NOTES | NO SCALE | 1



TYPICAL EXTERIOR TWO HOLE LUG | NO SCALE | 2



TYPICAL INTERIOR TWO HOLE LUG | NO SCALE | 3



LUG DETAIL | NO SCALE | 4

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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SHEET TITLE
GROUNDING DETAILS

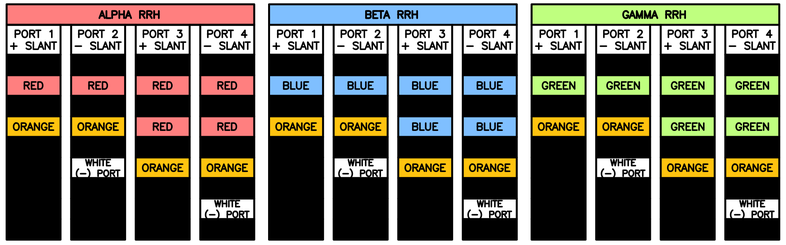
SHEET NUMBER
G-3

RF JUMPER COLOR CODING

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

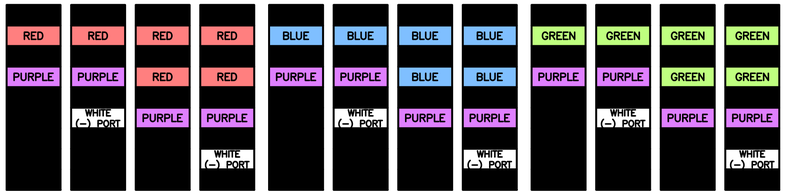
LOW-BAND RRH –
(600MHz N71 BASEBAND) +
(850MHz N26 BAND) +
(700MHz N29 BAND) – OPTIONAL PER MARKET

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



MID-BAND RRH –
(AWS BANDS N66+N70)

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

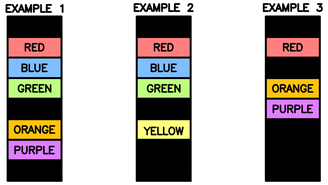


HYBRID/DISCREET CABLES

INCLUDE SECTOR BANDS BEING SUPPORTED
ALONG WITH FREQUENCY BANDS

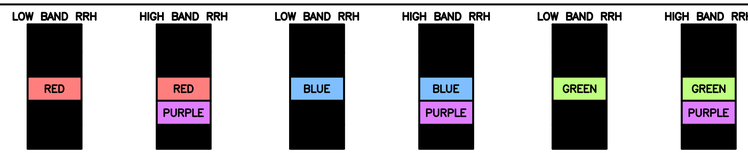
EXAMPLE 1 – HYBRID, OR DISCREET, SUPPORTS
ALL SECTORS, BOTH LOW-BANDS AND MID-BANDS

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



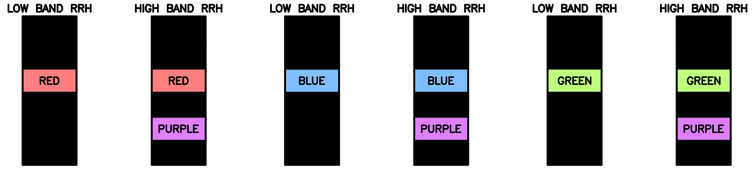
FIBER JUMPERS TO RRHs

LOW-BAND RRH FIBER CABLES HAVE SECTOR
STRIPE ONLY

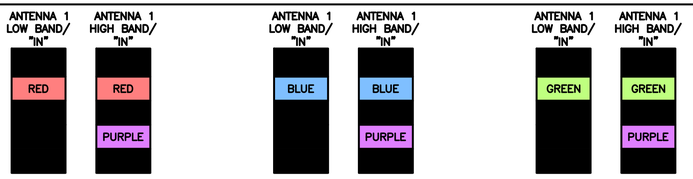


POWER CABLES TO RRHs

LOW-BAND RRH POWER CABLES HAVE SECTOR
STRIPE ONLY



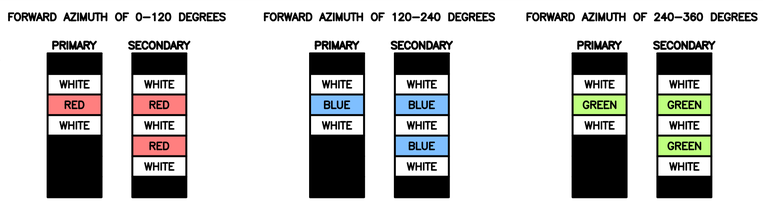
RET MOTORS AT ANTENNAS



MICROWAVE RADIO LINKS

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

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



RF CABLE COLOR CODES	NO SCALE	1

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

AWS
(N66+N70+H-BLOCK)
PURPLE

CBRS TECH
(3 GHz)
YELLOW

NEGATIVE SLANT PORT
ON ANT/RRH
WHITE

ALPHA SECTOR
RED

BETA SECTOR
BLUE

GAMMA SECTOR
GREEN

COLOR IDENTIFIER	NO SCALE	2

NOT USED	NO SCALE	3

NOT USED	NO SCALE	4

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DEEP RIVER, CT 06417

SHEET TITLE
RF
CABLE COLOR CODES

SHEET NUMBER
RF-1

LEGEND

EXOTHERMIC CONNECTION	●
MECHANICAL CONNECTION	■
BUSS BAR INSULATOR	▲
CHEMICAL ELECTROLYTIC GROUNDING SYSTEM	⊗
TEST CHEMICAL ELECTROLYTIC GROUNDING SYSTEM	⊗T
EXOTHERMIC WITH INSPECTION SLEEVE	◉
GROUNDING BAR	═══
GROUND ROD	⏚●
TEST GROUND ROD WITH INSPECTION SLEEVE	⏚◉T
SINGLE POLE SWITCH	$
DUPLEX RECEPTACLE	⊖
DUPLEX GFCI RECEPTACLE	GFCI
FLUORESCENT LIGHTING FIXTURE (2) TWO LAMPS 48–T8	F
SMOKE DETECTION (DC)	SD
EMERGENCY LIGHTING (DC)	▭
SECURITY LIGHT W/PHOTOCELL LITHONIA ALXW LED–1–25A400/51K–SR4–120–PE–DDBTXD	▭
CHAIN LINK FENCE	—X—X—X—X—
WOOD/WROUGHT IRON FENCE	—□—□—□—□—□—□—
WALL STRUCTURE	▨
LEASE AREA	— — — — — — — — — — — —
PROPERTY LINE (PL)	——— – – ——— – – ———
SETBACKS	– – – – – – – – – – – –
ICE BRIDGE	▦
CABLE TRAY	▨
WATER LINE	—W—W—W—W—W—
UNDERGROUND POWER	—UGP—UGP—UGP—UGP—UGP—
UNDERGROUND TELCO	—UGT—UGT—UGT—UGT—UGT—
OVERHEAD POWER	—OHP—OHP—OHP—OHP—
OVERHEAD TELCO	—OHT—OHT—OHT—OHT—
UNDERGROUND TELCO/POWER	—UGT/P—UGT/P—UGT/P—UGT/P—
ABOVE GROUND POWER	—AGP—AGP—AGP—AGP—AGP—
ABOVE GROUND TELCO	—AGT—AGT—AGT—AGT—AGT—
ABOVE GROUND TELCO/POWER	—AGT/P—AGT/P—AGT/P—AGT/P—
WORKPOINT	W.P.
SECTION REFERENCE	XX / X–X
DETAIL REFERENCE	XX / X–X

ABBREVIATIONS

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

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STATE OF CONNECTICUT
SHUHEI SAKAMOTO
34916
LICENSED PROFESSIONAL ENGINEER
8/16/2021

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

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
0	05/20/2021	ISSUED FOR PERMIT
1	05/27/2021	REVISED PER COMMENTS
2	08/09/2021	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
2039–Z5555C

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00055A
15 PENT RD.
DEEP RIVER, CT 06417

SHEET TITLE
LEGEND AND ABBREVIATIONS

SHEET NUMBER
GN-1

SITE ACTIVITY REQUIREMENTS:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

GENERAL NOTES:

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

CONTRACTOR:GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION

CARRIER:DISH Wireless L.L.C.

TOWER OWNER:TOWER OWNER

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

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

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

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

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

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

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

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

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

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

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

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

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

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STATE OF CONNECTICUT
SHUHEI SAKAMOTO
34916
LICENSED PROFESSIONAL ENGINEER
8/16/2021

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

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
0	05/20/2021	ISSUED FOR PERMIT
1	05/27/2021	REVISED PER COMMENTS
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A&E PROJECT NUMBER
2039–Z5555C

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00055A
15 PENT RD.
DEEP RIVER, CT 06417

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-2

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

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

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

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

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

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

#4 BARS AND SMALLER 40 ksi

#5 BARS AND LARGER 60 ksi

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

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

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

ELECTRICAL INSTALLATION NOTES:

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

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

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

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

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

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

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

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

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

8. TIE WRAPS ARE NOT ALLOWED.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

dish wireless.

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LITTLETON, CO 80120

CROWN CASTLE
2000 CORPORATE DRIVE
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STATE OF CONNECTICUT
SHUHEI SAKAMOTO
34916
LICENSED PROFESSIONAL ENGINEER
8/16/2021

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

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
0	05/20/2021	ISSUED FOR PERMIT
1	05/27/2021	REVISED PER COMMENTS
2	08/09/2021	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

2039-Z5555C

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00055A
15 PENT RD.
DEEP RIVER, CT 06417

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-3

GROUNDING NOTES:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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PROFESSIONAL ENGINEER
8/16/2021

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

RFDS REV #: N/A

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PROJECT INFORMATION

BOBDL00055A
15 PENT RD.
DEEP RIVER, CT 06417

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-4

Exhibit D

Structural Analysis Report

Date: **May 01, 2021**

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

Subject:	**Structural Analysis Report**	
Carrier Designation:	***DISH Network* Co-Locate**	
	Site Number:	BOBDL00055A
	Site Name:	CT-CCI-T-823666
Crown Castle Designation:	**BU Number:**	823666
	Site Name:	Deep River/Rt 9
	JDE Job Number:	645125
	Work Order Number:	1945880
	Order Number:	553286 Rev. 4
Engineering Firm Designation:	**Crown Castle Project Number:**	1945880
Site Data:	**15 Pent Rd., Deep River, Middlesex County, CT** **Latitude *41° 22' 22.17"*, Longitude *-72° 26' 3.97"*** **178 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:

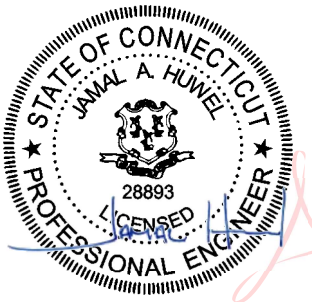
LC5: Proposed Equipment Configuration **Sufficient Capacity – 74.7%**

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

Structural analysis prepared by: Derek L. Tordella

Respectfully submitted by:

Jamal A. Huwel, P.E.
Director Engineering



Digitally signed by
Jamal A Huwel
Date: 2021.05.02
22:41:39 -04'00'

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 178 ft Monopole tower designed by PIROD MANUFACTURES INC.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	130 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)
148.0	148.0	3	fujitsu	TA08025-B604	1	1-1/2
		3	fujitsu	TA08025-B605		
		3	jma wireless	MX08FRO665-20 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)
150.0	150.0	3	rfs celwave	APXV18-206517LS w/ Mount Pipe	-	-
		1	tower mounts	Pipe Mount [PM 602-3]		

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)
178.0	178.0	3	ems wireless	RR90-17-02DP w/ Mount Pipe	13	1-5/8
		3	ericsson	KRY 112 144/1		
		3	ericsson	KRY 112 489/2		
		3	ericsson	RADIO 4449 B12/B71		
		3	rfs celwave	APXVAARR24_43-U-NA20 w/ Mount Pipe		
		1	tower mounts	Platform Mount [LP 405-1_HR-1]		
168.0	170.0	3	alcatel lucent	B4 RRH2X60-4R	13	1-5/8
		3	antel	BXA-70063/6CF w/ Mount Pipe		
		9	commscope	HBXX-6517DS-A2M w/ Mount Pipe		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
		1	raycap	RHSDC-3315-PF-48		
	168.0	1	tower mounts	Platform Mount [LP 303-1]		
160.0	160.0	3	cci antennas	TPA-65R-LCUUUU-H8 w/ Mount Pipe	2 4 12 1	3/8 7/16 1-5/8 Conduit
		1	commscope	SBNH-1D6565C w/ Mount Pipe		
		3	ericsson	RRUS 11 B12		
		1	ericsson	RRUS 32		
		2	ericsson	RRUS 32 B2		
		3	ericsson	RRUS 32 B30		
		3	kaelus	DBC0061F1V51-2		
		2	kmw communications	AM-X-CD-17-65-00T-RET w/ Mount Pipe		
		6	powerwave technologies	7020.00		
		6	powerwave technologies	LGP21401		
		3	powerwave technologies	RA21.7770.00 w/ Mount Pipe		
		1	raycap	DC6-48-60-18-8C-EV		
		1	raycap	DC6-48-60-18-8F		
		1	tower mounts	Platform Mount [LP 303-1_HR-1]		

3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

Document	Reference	Source
4-GEOTECHNICAL REPORTS	3585271	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	3845247	CCISITES
4-TOWER MANUFACTURER DRAWINGS	3585272	CCISITES

3.1) Analysis Method

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

3.2) Assumptions

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

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

4) ANALYSIS RESULTS

Table 5 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	178 - 164.25	Pole	TP26x12.75x0.25	1	-6.51	1118.08	11.0	Pass
L2	164.25 - 129.667	Pole	TP34.0625x22.6894x0.3125	2	-17.94	1985.41	40.9	Pass
L3	129.667 - 96	Pole	TP41.75x32.2749x0.375	3	-26.02	2938.76	49.1	Pass
L4	96 - 63.1667	Pole	TP49.0625x39.8209x0.375	4	-35.62	3460.50	59.6	Pass
L5	63.1667 - 31.1667	Pole	TP56.125x46.9571x0.375	5	-46.55	3964.23	67.3	Pass
L6	31.1667 - 0	Pole	TP62.9375x53.847x0.375	6	-61.25	4574.01	74.7	Pass
							Summary	
						Pole (L6)	74.7	Pass
						Rating =	74.7	Pass

Table 6 - Tower Component Stresses vs. Capacity - LC5

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	72.5	Pass
2	Base Plate	0	74.7	Pass
1	Base Foundation (Structure)	0	43.1	Pass
1	Base Foundation (Soil Interaction)	0	67.0	Pass

Structure Rating (max from all components) =	74.7%

Notes:
1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.
2) Base plates are assumed to have the same capacity as their respective shaft.

4.1) Recommendations

The tower and its foundation have sufficient capacity to carry the proposed load configuration. In order for the results of this analysis to be considered valid, the loading modification, as follows, must be completed.

Loading Changes:

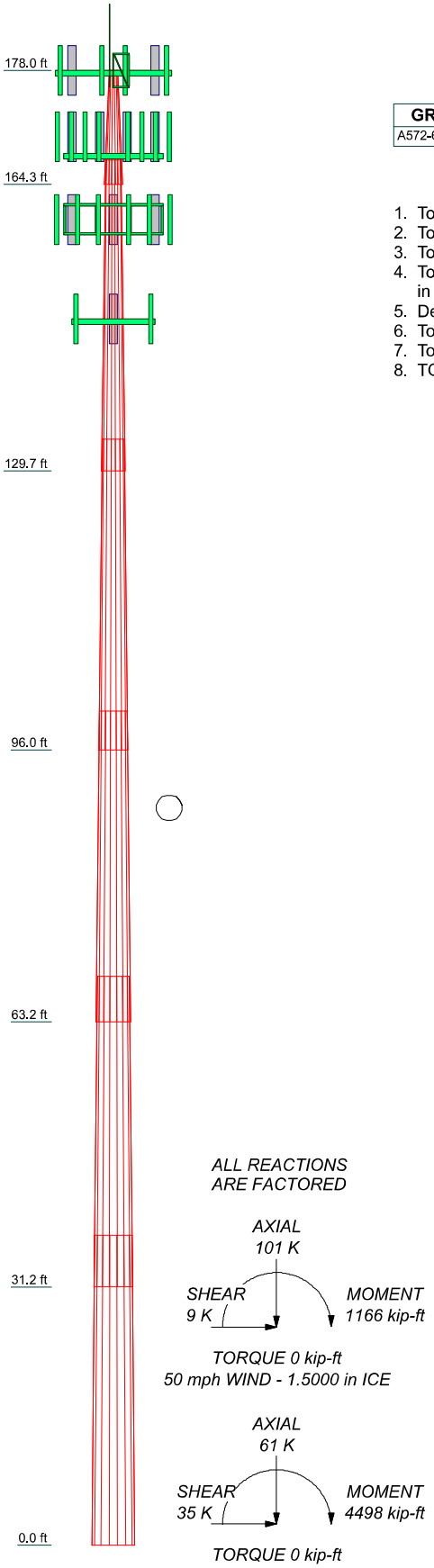
a) Removal of the antennas and mounts at the 150 ft level

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

APPENDIX A

TNXTOWER OUTPUT

Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	13.75	18	0.2500	2.92	12.7500	26.0000	A572-65	0.7
2	37.50	18	0.3125	3.83	22.6894	34.0625		3.6
3	37.50	18	0.3750	4.67	32.2749	41.7500		5.6
4	37.50	18	0.3750	5.50	39.8209	49.0625		6.7
5	37.50	18	0.3750	6.25	46.9571	56.1250		7.8
6	37.42	18	0.3750		53.8470	62.9375		8.8
								33.1



MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower is located in Middlesex County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-H Standard.
3. Tower designed for a 130 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: 74.7%

CROWN CASTLE
The Pathway to Possible

Crown Castle
2000 Corporate Dr.
Canonsburg, PA 15317
Phone: (724) 416-2000
FAX:

Job: ***BU# 823666***			
Project:			
Client: Crown Castle	Drawn by: DTordella		App'd:
Code: TIA-222-H	Date: 05/01/21		Scale: NTS
Path: C:\Users\dtordella\Desktop\SA SDD Processing\823666\WO 1945880 - SA\Prod\823666_RPA.er			Dwg No. E-1

Tower Input Data

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

- Tower is located in Middlesex County, Connecticut.
- Tower base elevation above sea level: 95.00 ft.
- Basic wind speed of 130 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		Distribute Leg Loads As Uniform		Use ASCE 10 X-Brace Ly Rules
	Consider Moments - Horizontals		Assume Legs Pinned		Calculate Redundant Bracing Forces
	Consider Moments - Diagonals	√	Assume Rigid Index Plate		Ignore Redundant Members in FEA
	Use Moment Magnification	√	Use Clear Spans For Wind Area		SR Leg Bolts Resist Compression
√	Use Code Stress Ratios		Use Clear Spans For KL/r		All Leg Panels Have Same Allowable
√	Use Code Safety Factors - Guys		Retension Guys To Initial Tension		Offset Girt At Foundation
	Escalate Ice	√	Bypass Mast Stability Checks	√	Consider Feed Line Torque
	Always Use Max Kz	√	Use Azimuth Dish Coefficients		Include Angle Block Shear Check
	Use Special Wind Profile	√	Project Wind Area of Appurt.		Use TIA-222-H Bracing Resist. Exemption
	Include Bolts In Member Capacity		Autocalc Torque Arm Areas		Use TIA-222-H Tension Splice Exemption
	Leg Bolts Are At Top Of Section		Add IBC .6D+W Combination		Poles
	Secondary Horizontal Braces Leg	√	Sort Capacity Reports By Component	√	Include Shear-Torsion Interaction
	Use Diamond Inner Bracing (4 Sided)		Triangulate Diamond Inner Bracing		Always Use Sub-Critical Flow
	SR Members Have Cut Ends		Treat Feed Line Bundles As Cylinder		Use Top Mounted Sockets
	SR Members Are Concentric		Ignore KL/ry For 60 Deg. Angle Legs		Pole Without Linear Attachments
					Pole With Shroud Or No Appurtenances
					Outside and Inside Corner Radii Are Known

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	178.00-164.25	13.75	2.92	18	12.7500	26.0000	0.2500	1.0000	A572-65 (65 ksi)
L2	164.25-129.67	37.50	3.83	18	22.6894	34.0625	0.3125	1.2500	A572-65 (65 ksi)
L3	129.67-96.00	37.50	4.67	18	32.2749	41.7500	0.3750	1.5000	A572-65 (65 ksi)
L4	96.00-63.17	37.50	5.50	18	39.8209	49.0625	0.3750	1.5000	A572-65 (65 ksi)
L5	63.17-31.17	37.50	6.25	18	46.9571	56.1250	0.3750	1.5000	A572-65 (65 ksi)
L6	31.17-0.00	37.42		18	53.8470	62.9375	0.3750	1.5000	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	12.9081	9.9187	195.8008	4.4375	6.4770	30.2302	391.8592	4.9603	1.8040	7.216
	26.3625	20.4326	1711.6544	9.1412	13.2080	129.5922	3425.5610	10.2183	4.1360	16.544
L2	23.8894	22.1951	1404.0862	7.9438	11.5262	121.8168	2810.0200	11.0996	3.4433	11.019
	34.5398	33.4758	4817.4335	11.9812	17.3038	278.4040	9641.2058	16.7411	5.4450	17.424
L3	33.6985	37.9689	4881.3984	11.3245	16.3957	297.7251	9769.2199	18.9880	5.0204	13.388
	42.3362	49.2466	10650.9822	14.6881	21.2090	502.1916	21315.9793	24.6280	6.6880	17.835
L4	41.5451	46.9505	9229.5501	14.0033	20.2290	456.2533	18471.2447	23.4797	6.3485	16.929
	49.7615	57.9503	17355.1378	17.2841	24.9238	696.3293	34733.1119	28.9807	7.9750	21.267
L5	48.9890	55.4443	15199.5865	16.5366	23.8542	637.1873	30419.1729	27.7274	7.6044	20.279
	56.9330	66.3564	26056.1506	19.7913	28.5115	913.8821	52146.5865	33.1845	9.2180	24.581
L6	56.1617	63.6451	22990.8579	18.9826	27.3543	840.4848	46011.9678	31.8286	8.8171	23.512
	63.8506	74.4650	36822.8946	22.2097	31.9722	1151.7142	73694.2417	37.2396	10.4170	27.779

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L1 178.00-164.25				1	1	1			
L2 164.25-129.67				1	1	1			
L3 129.67-96.00				1	1	1			
L4 96.00-63.17				1	1	1			
L5 63.17-31.17				1	1	1			
L6 31.17-0.00				1	1	1			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf

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
Misc										
PiROD Ladder	B	No	Surface Ar (CaAa)	178.00 - 0.00	1	1	0.000 0.000	1.2500		0.70
**										
**										
LDF7-50A(1-5/8)	C	No	Surface Ar (CaAa)	178.00 - 0.00	6	4	-0.100 0.100	1.9800		0.82
**										
LDF7-50A(1-5/8)	C	No	Surface Ar (CaAa)	160.00 - 0.00	6	6	0.200 0.400	1.9800		0.82
WR-VG122ST-BRDA(7/16)	C	No	Surface Ar (CaAa)	160.00 - 0.00	3	2	0.420 0.450	0.4600		0.14
**										
CU12PSM9P6XXX(1-1/2)	B	No	Surface Ar (CaAa)	148.00 - 0.00	1	1	0.500 0.500	1.6000		2.35
**										

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
**									
LDF7-50A(1-5/8)	C	No	No	Inside Pole	178.00 - 0.00	6	No Ice	0.00	0.82
							1/2" Ice	0.00	0.82
							1" Ice	0.00	0.82
							2" Ice	0.00	0.82
HCS 6X12 4AWG(1-5/8)	C	No	No	Inside Pole	178.00 - 0.00	1	No Ice	0.00	2.40
							1/2" Ice	0.00	2.40
							1" Ice	0.00	2.40
							2" Ice	0.00	2.40
**									
LDF7-50A(1-5/8)	A	No	No	Inside Pole	168.00 - 0.00	12	No Ice	0.00	0.82
							1/2" Ice	0.00	0.82
							1" Ice	0.00	0.82
							2" Ice	0.00	0.82
HB158-1-08U8-S8J18(1-5/8)	A	No	No	Inside Pole	168.00 - 0.00	1	No Ice	0.00	1.30
							1/2" Ice	0.00	1.30
							1" Ice	0.00	1.30
							2" Ice	0.00	1.30
LDF7-50A(1-5/8)	C	No	No	Inside Pole	160.00 - 0.00	6	No Ice	0.00	0.82
							1/2" Ice	0.00	0.82
							1" Ice	0.00	0.82
							2" Ice	0.00	0.82
FB-L98B-002-75000(3/8)	C	No	No	Inside Pole	160.00 - 0.00	1	No Ice	0.00	0.06
							1/2" Ice	0.00	0.06
							1" Ice	0.00	0.06
							2" Ice	0.00	0.06
WR-VG122ST-BRDA(7/16)	C	No	No	Inside Pole	160.00 - 0.00	2	No Ice	0.00	0.14
							1/2" Ice	0.00	0.14
							1" Ice	0.00	0.14
							2" Ice	0.00	0.14
2" Rigid Conduit	C	No	No	Inside Pole	160.00 - 0.00	1	No Ice	0.00	2.80
							1/2" Ice	0.00	2.80
							1" Ice	0.00	2.80
							2" Ice	0.00	2.80
**									

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	178.00-164.25	A	0.000	0.000	0.000	0.000	0.04
		B	0.000	0.000	1.719	0.000	0.01
		C	0.000	0.000	10.890	0.000	0.17
L2	164.25-129.67	A	0.000	0.000	0.000	0.000	0.39
		B	0.000	0.000	7.256	0.000	0.07
		C	0.000	0.000	66.217	0.000	0.83
L3	129.67-96.00	A	0.000	0.000	0.000	0.000	0.38
		B	0.000	0.000	9.595	0.000	0.10
		C	0.000	0.000	69.757	0.000	0.86
L4	96.00-63.17	A	0.000	0.000	0.000	0.000	0.37
		B	0.000	0.000	9.357	0.000	0.10
		C	0.000	0.000	68.031	0.000	0.84
L5	63.17-31.17	A	0.000	0.000	0.000	0.000	0.36
		B	0.000	0.000	9.120	0.000	0.10
		C	0.000	0.000	66.304	0.000	0.82
L6	31.17-0.00	A	0.000	0.000	0.000	0.000	0.35
		B	0.000	0.000	8.883	0.000	0.10
		C	0.000	0.000	64.577	0.000	0.80

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	178.00-164.25	A	1.502	0.000	0.000	0.000	0.000	0.04
		B		0.000	0.000	5.850	0.000	0.08
		C		0.000	0.000	18.777	0.000	0.40
L2	164.25-129.67	A	1.479	0.000	0.000	0.000	0.000	0.39
		B		0.000	0.000	23.157	0.000	0.35
		C		0.000	0.000	118.547	0.000	2.14
L3	129.67-96.00	A	1.441	0.000	0.000	0.000	0.000	0.38
		B		0.000	0.000	29.519	0.000	0.46
		C		0.000	0.000	124.554	0.000	2.22
L4	96.00-63.17	A	1.392	0.000	0.000	0.000	0.000	0.37
		B		0.000	0.000	28.285	0.000	0.43
		C		0.000	0.000	120.528	0.000	2.12
L5	63.17-31.17	A	1.321	0.000	0.000	0.000	0.000	0.36
		B		0.000	0.000	26.936	0.000	0.40
		C		0.000	0.000	116.285	0.000	2.02
L6	31.17-0.00	A	1.180	0.000	0.000	0.000	0.000	0.35
		B		0.000	0.000	25.355	0.000	0.37
		C		0.000	0.000	111.608	0.000	1.91

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	178.00-164.25	0.5287	4.0711	0.8123	2.9369
L2	164.25-129.67	-1.9895	6.8539	-1.2669	5.1840
L3	129.67-96.00	-2.2214	7.8857	-1.3651	6.1863
L4	96.00-63.17	-2.4043	8.5102	-1.5247	6.8379
L5	63.17-31.17	-2.5508	9.0104	-1.6642	7.3764
L6	31.17-0.00	-2.6715	9.4227	-1.7940	7.8292

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
L1	2	PiROD Ladder	164.25 - 178.00	1.0000	1.0000
L1	5	LDF7-50A(1-5/8)	164.25 - 178.00	1.0000	1.0000
L2	2	PiROD Ladder	129.67 - 164.25	1.0000	1.0000
L2	5	LDF7-50A(1-5/8)	129.67 - 164.25	1.0000	1.0000
L2	12	LDF7-50A(1-5/8)	129.67 - 160.00	1.0000	1.0000
L2	14	WR-VG122ST-BRDA(7/16)	129.67 - 160.00	1.0000	1.0000
L2	20	CU12PSM9P6XXX(1-1/2)	129.67 - 148.00	1.0000	1.0000
L3	2	PiROD Ladder	96.00 - 129.67	1.0000	1.0000
L3	5	LDF7-50A(1-5/8)	96.00 - 129.67	1.0000	1.0000
L3	12	LDF7-50A(1-5/8)	96.00 - 129.67	1.0000	1.0000
L3	14	WR-VG122ST-BRDA(7/16)	96.00 - 129.67	1.0000	1.0000
L3	20	CU12PSM9P6XXX(1-1/2)	96.00 - 129.67	1.0000	1.0000
L4	2	PiROD Ladder	63.17 - 96.00	1.0000	1.0000
L4	5	LDF7-50A(1-5/8)	63.17 - 96.00	1.0000	1.0000
L4	12	LDF7-50A(1-5/8)	63.17 - 96.00	1.0000	1.0000
L4	14	WR-VG122ST-BRDA(7/16)	63.17 - 96.00	1.0000	1.0000
L4	20	CU12PSM9P6XXX(1-1/2)	63.17 - 96.00	1.0000	1.0000
L5	2	PiROD Ladder	31.17 - 63.17	1.0000	1.0000
L5	5	LDF7-50A(1-5/8)	31.17 - 63.17	1.0000	1.0000
L5	12	LDF7-50A(1-5/8)	31.17 - 63.17	1.0000	1.0000
L5	14	WR-VG122ST-BRDA(7/16)	31.17 - 63.17	1.0000	1.0000
L5	20	CU12PSM9P6XXX(1-1/2)	31.17 - 63.17	1.0000	1.0000
L6	2	PiROD Ladder	0.00 - 31.17	1.0000	1.0000
L6	5	LDF7-50A(1-5/8)	0.00 - 31.17	1.0000	1.0000
L6	12	LDF7-50A(1-5/8)	0.00 - 31.17	1.0000	1.0000
L6	14	WR-VG122ST-BRDA(7/16)	0.00 - 31.17	1.0000	1.0000
L6	20	CU12PSM9P6XXX(1-1/2)	0.00 - 31.17	1.0000	1.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
Misc									
Lightning Rod 5/8" x 5' on 6' pole	C	From Leg	0.00 0.00 3.00	0.0000	178.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.04 2.91 3.78 5.19	2.04 2.91 3.78 5.19	0.05 0.08 0.10 0.18
178									
RR90-17-02DP w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	178.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.47 5.08 5.70 7.01	2.92 3.50 4.10 5.35	0.03 0.07 0.11 0.22
RR90-17-02DP w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	178.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.47 5.08 5.70 7.01	2.92 3.50 4.10 5.35	0.03 0.07 0.11 0.22
RR90-17-02DP w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	178.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.47 5.08 5.70 7.01	2.92 3.50 4.10 5.35	0.03 0.07 0.11 0.22
APXVAARR24_43-U-NA20 w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	178.00	No Ice 1/2" Ice 1" Ice 2" Ice	14.69 15.46 16.23 17.82	6.87 7.55 8.25 9.67	0.19 0.31 0.46 0.79
APXVAARR24_43-U-NA20 w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	178.00	No Ice 1/2" Ice 1" Ice 2" Ice	14.69 15.46 16.23 17.82	6.87 7.55 8.25 9.67	0.19 0.31 0.46 0.79
APXVAARR24_43-U-NA20 w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	178.00	No Ice 1/2" Ice 1" Ice 2" Ice	14.69 15.46 16.23 17.82	6.87 7.55 8.25 9.67	0.19 0.31 0.46 0.79
KRY 112 489/2	A	From Leg	4.00 0.00 0.00	0.0000	178.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.56 0.66 0.76 1.00	0.37 0.45 0.54 0.75	0.02 0.02 0.03 0.05
KRY 112 489/2	B	From Leg	4.00 0.00 0.00	0.0000	178.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.56 0.66 0.76 1.00	0.37 0.45 0.54 0.75	0.02 0.02 0.03 0.05
KRY 112 489/2	C	From Leg	4.00 0.00 0.00	0.0000	178.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.56 0.66 0.76 1.00	0.37 0.45 0.54 0.75	0.02 0.02 0.03 0.05
KRY 112 144/1	A	From Leg	4.00 0.00 0.00	0.0000	178.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.35 0.43 0.51 0.70	0.17 0.23 0.30 0.46	0.01 0.01 0.02 0.03
KRY 112 144/1	B	From Leg	4.00 0.00 0.00	0.0000	178.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.35 0.43 0.51 0.70	0.17 0.23 0.30 0.46	0.01 0.01 0.02 0.03
KRY 112 144/1	C	From Leg	4.00 0.00 0.00	0.0000	178.00	No Ice 1/2" Ice	0.35 0.43 0.51	0.17 0.23 0.30	0.01 0.01 0.02

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Offsets: Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
							1" Ice	0.70	0.46	0.03
							2" Ice			
RADIO 4449 B12/B71	A	From Leg	4.00	0.00	0.0000	178.00	No Ice	1.65	1.16	0.07
			0.00	0.00			1/2" Ice	1.81	1.30	0.09
							1" Ice	1.98	1.45	0.11
							2" Ice	2.34	1.76	0.16
RADIO 4449 B12/B71	B	From Leg	4.00	0.00	0.0000	178.00	No Ice	1.65	1.16	0.07
			0.00	0.00			1/2" Ice	1.81	1.30	0.09
							1" Ice	1.98	1.45	0.11
							2" Ice	2.34	1.76	0.16
RADIO 4449 B12/B71	C	From Leg	4.00	0.00	0.0000	178.00	No Ice	1.65	1.16	0.07
			0.00	0.00			1/2" Ice	1.81	1.30	0.09
							1" Ice	1.98	1.45	0.11
							2" Ice	2.34	1.76	0.16
(2) 6' x 2" Mount Pipe	A	From Leg	4.00	0.00	0.0000	178.00	No Ice	1.43	1.43	0.02
			0.00	0.00			1/2" Ice	1.92	1.92	0.03
							1" Ice	2.29	2.29	0.05
							2" Ice	3.06	3.06	0.09
(2) 6' x 2" Mount Pipe	B	From Leg	4.00	0.00	0.0000	178.00	No Ice	1.43	1.43	0.02
			0.00	0.00			1/2" Ice	1.92	1.92	0.03
							1" Ice	2.29	2.29	0.05
							2" Ice	3.06	3.06	0.09
6' x 2" Mount Pipe	C	From Leg	4.00	0.00	0.0000	178.00	No Ice	1.43	1.43	0.02
			0.00	0.00			1/2" Ice	1.92	1.92	0.03
							1" Ice	2.29	2.29	0.05
							2" Ice	3.06	3.06	0.09
3' x 2" Pipe Mount	A	From Leg	4.00	0.00	0.0000	178.00	No Ice	0.58	0.58	0.01
			0.00	0.00			1/2" Ice	0.77	0.77	0.02
							1" Ice	0.97	0.97	0.02
							2" Ice	1.39	1.39	0.05
3' x 2" Pipe Mount	B	From Leg	4.00	0.00	0.0000	178.00	No Ice	0.58	0.58	0.01
			0.00	0.00			1/2" Ice	0.77	0.77	0.02
							1" Ice	0.97	0.97	0.02
							2" Ice	1.39	1.39	0.05
3' x 2" Pipe Mount	C	From Leg	4.00	0.00	0.0000	178.00	No Ice	0.58	0.58	0.01
			0.00	0.00			1/2" Ice	0.77	0.77	0.02
							1" Ice	0.97	0.97	0.02
							2" Ice	1.39	1.39	0.05
Platform Mount [LP 405-1_HR-1]	C	None			0.0000	178.00	No Ice	25.33	25.33	2.06
							1/2" Ice	33.79	33.79	2.63
							1" Ice	42.16	42.16	3.36
							2" Ice	58.77	58.77	5.25
Side Arm Mount [SO 310-1]	A	From Leg	0.50	0.00	0.0000	178.00	No Ice	1.67	3.95	0.06
			0.00	0.00			1/2" Ice	2.43	5.69	0.09
							1" Ice	3.21	7.62	0.13
							2" Ice	4.84	12.32	0.25
Side Arm Mount [SO 310-1]	B	From Leg	0.50	0.00	0.0000	178.00	No Ice	1.67	3.95	0.06
			0.00	0.00			1/2" Ice	2.43	5.69	0.09
							1" Ice	3.21	7.62	0.13
							2" Ice	4.84	12.32	0.25
170										
(3) HBXX-6517DS-A2M w/ Mount Pipe	A	From Leg	4.00	0.00	0.0000	168.00	No Ice	7.97	5.99	0.08
			0.00				1/2" Ice	8.73	6.72	0.14

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			2.00			Ice	9.50	7.47	0.22
						1" Ice	11.11	9.02	0.40
						2" Ice			
(3) HBXX-6517DS-A2M w/ Mount Pipe	B	From Leg	4.00 0.00 2.00	0.0000	168.00	No Ice 1/2" Ice 1" Ice 2" Ice	7.97 8.73 9.50 11.11	5.99 6.72 7.47 9.02	0.08 0.14 0.22 0.40
(3) HBXX-6517DS-A2M w/ Mount Pipe	C	From Leg	4.00 0.00 2.00	0.0000	168.00	No Ice 1/2" Ice 1" Ice 2" Ice	7.97 8.73 9.50 11.11	5.99 6.72 7.47 9.02	0.08 0.14 0.22 0.40
BXA-70063/6CF w/ Mount Pipe	A	From Leg	4.00 0.00 2.00	0.0000	168.00	No Ice 1/2" Ice 1" Ice 2" Ice	7.34 8.08 8.83 10.38	5.51 6.22 6.94 8.44	0.06 0.11 0.18 0.35
BXA-70063/6CF w/ Mount Pipe	B	From Leg	4.00 0.00 2.00	0.0000	168.00	No Ice 1/2" Ice 1" Ice 2" Ice	7.34 8.08 8.83 10.38	5.51 6.22 6.94 8.44	0.06 0.11 0.18 0.35
BXA-70063/6CF w/ Mount Pipe	C	From Leg	4.00 0.00 2.00	0.0000	168.00	No Ice 1/2" Ice 1" Ice 2" Ice	7.34 8.08 8.83 10.38	5.51 6.22 6.94 8.44	0.06 0.11 0.18 0.35
B4 RRH2X60-4R	A	From Leg	4.00 0.00 2.00	0.0000	168.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.36 3.61 3.88 4.42	2.00 2.24 2.48 2.97	0.06 0.08 0.10 0.17
B4 RRH2X60-4R	B	From Leg	4.00 0.00 2.00	0.0000	168.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.36 3.61 3.88 4.42	2.00 2.24 2.48 2.97	0.06 0.08 0.10 0.17
B4 RRH2X60-4R	C	From Leg	4.00 0.00 2.00	0.0000	168.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.36 3.61 3.88 4.42	2.00 2.24 2.48 2.97	0.06 0.08 0.10 0.17
RHSDC-3315-PF-48	C	From Leg	4.00 0.00 2.00	0.0000	168.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.36 3.60 3.84 4.34	2.19 2.39 2.61 3.05	0.03 0.06 0.09 0.17
Platform Mount [LP 303-1]	C	None		0.0000	168.00	No Ice 1/2" Ice 1" Ice 2" Ice	14.69 18.01 21.34 28.08	14.69 18.01 21.34 28.08	1.25 1.57 1.94 2.85
160									
RA21.7770.00 w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	160.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.14 4.57 5.01 5.93	2.46 2.87 3.29 4.15	0.06 0.11 0.17 0.31
RA21.7770.00 w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	160.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.14 4.57 5.01 5.93	2.46 2.87 3.29 4.15	0.06 0.11 0.17 0.31
RA21.7770.00 w/ Mount	C	From Leg	4.00	0.0000	160.00	No Ice	4.14	2.46	0.06

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
Pipe			0.00 0.00			1/2" Ice Ice 1" Ice 2" Ice	4.57 5.01 5.93	2.87 3.29 4.15	0.11 0.17 0.31
AM-X-CD-17-65-00T-RET w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	160.00	No Ice 1/2" Ice Ice 1" Ice 2" Ice	6.09 6.66 7.24 8.43	4.31 4.86 5.42 6.57	0.09 0.17 0.26 0.48
AM-X-CD-17-65-00T-RET w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	160.00	No Ice 1/2" Ice Ice 1" Ice 2" Ice	6.09 6.66 7.24 8.43	4.31 4.86 5.42 6.57	0.09 0.17 0.26 0.48
TPA-65R-LCUUUU-H8 w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	160.00	No Ice 1/2" Ice Ice 1" Ice 2" Ice	11.85 12.77 13.71 15.64	8.99 9.88 10.79 12.66	0.11 0.21 0.32 0.58
TPA-65R-LCUUUU-H8 w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	160.00	No Ice 1/2" Ice Ice 1" Ice 2" Ice	11.85 12.77 13.71 15.64	8.99 9.88 10.79 12.66	0.11 0.21 0.32 0.58
TPA-65R-LCUUUU-H8 w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	160.00	No Ice 1/2" Ice Ice 1" Ice 2" Ice	11.85 12.77 13.71 15.64	8.99 9.88 10.79 12.66	0.11 0.21 0.32 0.58
SBNH-1D6565C w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	160.00	No Ice 1/2" Ice Ice 1" Ice 2" Ice	5.56 6.07 6.59 7.65	4.47 4.97 5.47 6.52	0.08 0.17 0.26 0.50
(2) LGP21401	A	From Leg	4.00 0.00 0.00	0.0000	160.00	No Ice 1/2" Ice Ice 1" Ice 2" Ice	1.10 1.24 1.38 1.69	0.21 0.27 0.35 0.52	0.01 0.02 0.03 0.05
(2) LGP21401	B	From Leg	4.00 0.00 0.00	0.0000	160.00	No Ice 1/2" Ice Ice 1" Ice 2" Ice	1.10 1.24 1.38 1.69	0.21 0.27 0.35 0.52	0.01 0.02 0.03 0.05
(2) LGP21401	C	From Leg	4.00 0.00 0.00	0.0000	160.00	No Ice 1/2" Ice Ice 1" Ice 2" Ice	1.10 1.24 1.38 1.69	0.21 0.27 0.35 0.52	0.01 0.02 0.03 0.05
(2) 7020.00	A	From Leg	4.00 0.00 0.00	0.0000	160.00	No Ice 1/2" Ice Ice 1" Ice 2" Ice	0.10 0.15 0.20 0.33	0.17 0.24 0.31 0.48	0.00 0.01 0.01 0.02
(2) 7020.00	B	From Leg	4.00 0.00 0.00	0.0000	160.00	No Ice 1/2" Ice Ice 1" Ice 2" Ice	0.10 0.15 0.20 0.33	0.17 0.24 0.31 0.48	0.00 0.01 0.01 0.02
(2) 7020.00	C	From Leg	4.00 0.00 0.00	0.0000	160.00	No Ice 1/2" Ice Ice 1" Ice 2" Ice	0.10 0.15 0.20 0.33	0.17 0.24 0.31 0.48	0.00 0.01 0.01 0.02
DC6-48-60-18-8F	A	From Leg	4.00	0.0000	160.00	No Ice	1.21	1.21	0.02

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Offsets: Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00				1/2"	1.89	1.89	0.04
			0.00				Ice	2.11	2.11	0.07
							1" Ice	2.57	2.57	0.13
							2" Ice			
RRUS 11 B12	A	From Leg	4.00		0.0000	160.00	No Ice	2.83	1.18	0.05
			0.00				1/2"	3.04	1.33	0.07
			0.00				Ice	3.26	1.48	0.10
							1" Ice	3.71	1.83	0.15
							2" Ice			
RRUS 11 B12	B	From Leg	4.00		0.0000	160.00	No Ice	2.83	1.18	0.05
			0.00				1/2"	3.04	1.33	0.07
			0.00				Ice	3.26	1.48	0.10
							1" Ice	3.71	1.83	0.15
							2" Ice			
RRUS 11 B12	C	From Leg	4.00		0.0000	160.00	No Ice	2.83	1.18	0.05
			0.00				1/2"	3.04	1.33	0.07
			0.00				Ice	3.26	1.48	0.10
							1" Ice	3.71	1.83	0.15
							2" Ice			
RRUS 32 B2	A	From Leg	4.00		0.0000	160.00	No Ice	2.73	1.67	0.05
			0.00				1/2"	2.95	1.86	0.07
			0.00				Ice	3.18	2.05	0.10
							1" Ice	3.66	2.46	0.16
							2" Ice			
RRUS 32 B2	B	From Leg	4.00		0.0000	160.00	No Ice	2.73	1.67	0.05
			0.00				1/2"	2.95	1.86	0.07
			0.00				Ice	3.18	2.05	0.10
							1" Ice	3.66	2.46	0.16
							2" Ice			
DBC0061F1V51-2	A	From Leg	4.00		0.0000	160.00	No Ice	0.41	0.43	0.03
			0.00				1/2"	0.50	0.52	0.03
			0.00				Ice	0.59	0.61	0.04
							1" Ice	0.79	0.81	0.06
							2" Ice			
DBC0061F1V51-2	B	From Leg	4.00		0.0000	160.00	No Ice	0.41	0.43	0.03
			0.00				1/2"	0.50	0.52	0.03
			0.00				Ice	0.59	0.61	0.04
							1" Ice	0.79	0.81	0.06
							2" Ice			
DBC0061F1V51-2	C	From Leg	4.00		0.0000	160.00	No Ice	0.41	0.43	0.03
			0.00				1/2"	0.50	0.52	0.03
			0.00				Ice	0.59	0.61	0.04
							1" Ice	0.79	0.81	0.06
							2" Ice			
RRUS 32 B30	A	From Leg	4.00		0.0000	160.00	No Ice	2.69	1.57	0.06
			0.00				1/2"	2.91	1.76	0.08
			0.00				Ice	3.14	1.95	0.10
							1" Ice	3.61	2.35	0.16
							2" Ice			
RRUS 32 B30	B	From Leg	4.00		0.0000	160.00	No Ice	2.69	1.57	0.06
			0.00				1/2"	2.91	1.76	0.08
			0.00				Ice	3.14	1.95	0.10
							1" Ice	3.61	2.35	0.16
							2" Ice			
RRUS 32 B30	C	From Leg	4.00		0.0000	160.00	No Ice	2.69	1.57	0.06
			0.00				1/2"	2.91	1.76	0.08
			0.00				Ice	3.14	1.95	0.10
							1" Ice	3.61	2.35	0.16
							2" Ice			
DC6-48-60-18-8C-EV	B	From Leg	4.00		0.0000	160.00	No Ice	1.14	1.14	0.03
			0.00				1/2"	1.79	1.79	0.05
			0.00				Ice	2.00	2.00	0.07
							1" Ice	2.45	2.45	0.13
							2" Ice			
RRUS 32	C	From Leg	4.00		0.0000	160.00	No Ice	2.86	1.78	0.06

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00 0.00			1/2" Ice 1" Ice 2" Ice	3.08 3.32 3.81	1.97 2.17 2.58	0.08 0.10 0.16
Platform Mount [LP 303-1_HR-1]	C	None		0.0000	160.00	No Ice 1/2" Ice 1" Ice 2" Ice	17.09 21.47 25.72 33.96	17.09 21.47 25.72 33.96	1.50 1.88 2.35 3.52
150 ****									
MX08FRO665-20 w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	148.00	No Ice 1/2" Ice 1" Ice 2" Ice	8.01 8.52 9.04 10.11	4.23 4.69 5.16 6.12	0.10 0.18 0.28 0.51
MX08FRO665-20 w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	148.00	No Ice 1/2" Ice 1" Ice 2" Ice	8.01 8.52 9.04 10.11	4.23 4.69 5.16 6.12	0.10 0.18 0.28 0.51
MX08FRO665-20 w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	148.00	No Ice 1/2" Ice 1" Ice 2" Ice	8.01 8.52 9.04 10.11	4.23 4.69 5.16 6.12	0.10 0.18 0.28 0.51
TA08025-B604	A	From Leg	4.00 0.00 0.00	0.0000	148.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.96 2.14 2.32 2.71	0.98 1.11 1.25 1.55	0.06 0.08 0.10 0.15
TA08025-B604	B	From Leg	4.00 0.00 0.00	0.0000	148.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.96 2.14 2.32 2.71	0.98 1.11 1.25 1.55	0.06 0.08 0.10 0.15
TA08025-B604	C	From Leg	4.00 0.00 0.00	0.0000	148.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.96 2.14 2.32 2.71	0.98 1.11 1.25 1.55	0.06 0.08 0.10 0.15
TA08025-B605	A	From Leg	4.00 0.00 0.00	0.0000	148.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.96 2.14 2.32 2.71	1.13 1.27 1.41 1.72	0.08 0.09 0.11 0.16
TA08025-B605	B	From Leg	4.00 0.00 0.00	0.0000	148.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.96 2.14 2.32 2.71	1.13 1.27 1.41 1.72	0.08 0.09 0.11 0.16
TA08025-B605	C	From Leg	4.00 0.00 0.00	0.0000	148.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.96 2.14 2.32 2.71	1.13 1.27 1.41 1.72	0.08 0.09 0.11 0.16
RDIDC-9181-PF-48	A	From Leg	4.00 0.00 0.00	0.0000	148.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.31 2.50 2.70 3.12	1.29 1.45 1.61 1.96	0.02 0.04 0.06 0.12
(2) 8' x 2" Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	148.00	No Ice 1/2" Ice 1" Ice	1.90 2.73 3.40 4.40	1.90 2.73 3.40 4.40	0.03 0.04 0.06 0.12

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						2" Ice			
(2) 8' x 2" Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	148.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.90 2.73 3.40 4.40	1.90 2.73 3.40 4.40	0.03 0.04 0.06 0.12
(2) 8' x 2" Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	148.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.90 2.73 3.40 4.40	1.90 2.73 3.40 4.40	0.03 0.04 0.06 0.12
Commscope MC-PK8-DSH	C	None		0.0000	148.00	No Ice 1/2" Ice 1" Ice 2" Ice	34.24 62.95 91.66 149.08	34.24 62.95 91.66 149.08	1.75 2.10 2.45 3.15
****									

Load Combinations

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

Comb. No.	Description
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	178 - 164.25	Pole	Max Tension	26	0.00	0.00	0.00
			Max. Compression	26	-17.38	0.12	-0.36
			Max. Mx	20	-6.51	68.85	-0.67
			Max. My	14	-6.65	0.63	-64.93
			Max. Vy	8	10.66	-68.81	0.55
			Max. Vx	14	9.92	0.63	-64.93
			Max. Torque	12			0.45
L2	164.25 - 129.667	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-40.69	-0.79	-1.87
			Max. Mx	8	-17.94	-655.98	3.03
			Max. My	14	-18.14	3.31	-615.89
			Max. Vy	8	22.03	-655.98	3.03
			Max. Vx	14	20.80	3.31	-615.89
			Max. Torque	22			-0.42
L3	129.667 - 96	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-52.65	-1.53	-4.71
			Max. Mx	8	-26.02	-1436.35	5.31
			Max. My	14	-26.18	6.02	-1354.25
			Max. Vy	8	25.46	-1436.35	5.31
			Max. Vx	14	24.15	6.02	-1354.25
			Max. Torque	22			-0.42
L4	96 - 63.1667	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-66.30	-2.36	-7.84
			Max. Mx	8	-35.62	-2305.30	7.41
			Max. My	14	-35.73	8.61	-2181.47
			Max. Vy	8	28.76	-2305.30	7.41
			Max. Vx	14	27.45	8.61	-2181.47
			Max. Torque	10			0.42
L5	63.1667 - 31.1667	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-81.39	-3.20	-11.09
			Max. Mx	8	-46.55	-3252.42	9.32
			Max. My	14	-46.61	11.07	-3088.43
			Max. Vy	8	31.71	-3252.42	9.32
			Max. Vx	14	30.42	11.07	-3088.43
			Max. Torque	10			0.42
L6	31.1667 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-100.91	-4.22	-15.06
			Max. Mx	8	-61.25	-4497.79	11.42
			Max. My	14	-61.25	13.88	-4287.18
			Max. Vy	8	34.77	-4497.79	11.42
			Max. Vx	14	33.53	13.88	-4287.18
			Max. Torque	10			0.42

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	30	100.91	-8.64	0.02
	Max. H_x	21	45.95	34.74	-0.08
	Max. H_z	3	45.95	-0.08	33.50
	Max. M_x	2	4280.19	-0.08	33.50
	Max. M_z	8	4497.79	-34.74	0.08
	Max. Torsion	10	0.42	-29.71	-17.09
	Min. Vert	5	45.95	-16.84	29.05
	Min. H_x	9	45.95	-34.74	0.08
	Min. H_z	15	45.95	0.08	-33.50
	Min. M_x	14	-4287.18	0.08	-33.50
	Min. M_z	20	-4495.71	34.74	-0.08
	Min. Torsion	22	-0.42	29.71	17.09

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	51.05	0.00	0.00	2.78	-0.83	0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	61.26	0.08	-33.50	-4280.19	-15.96	0.22
0.9 Dead+1.0 Wind 0 deg - No Ice	45.95	0.08	-33.50	-4223.13	-15.46	0.22
1.2 Dead+1.0 Wind 30 deg - No Ice	61.26	16.84	-29.05	-3713.70	-2159.13	0.01
0.9 Dead+1.0 Wind 30 deg - No Ice	45.95	16.84	-29.05	-3664.30	-2129.62	0.01
1.2 Dead+1.0 Wind 60 deg - No Ice	61.26	29.16	-16.87	-2159.66	-3738.63	-0.20
0.9 Dead+1.0 Wind 60 deg - No Ice	45.95	29.16	-16.87	-2131.26	-3687.72	-0.20
1.2 Dead+1.0 Wind 90 deg - No Ice	61.26	34.74	-0.08	-11.42	-4497.79	-0.10
0.9 Dead+1.0 Wind 90 deg - No Ice	45.95	34.74	-0.08	-12.09	-4436.38	-0.10
1.2 Dead+1.0 Wind 120 deg - No Ice	61.26	29.71	17.09	2191.34	-3811.19	-0.42
0.9 Dead+1.0 Wind 120 deg - No Ice	45.95	29.71	17.09	2160.88	-3759.41	-0.42
1.2 Dead+1.0 Wind 150 deg - No Ice	61.26	16.74	29.05	3717.36	-2139.97	-0.37
0.9 Dead+1.0 Wind 150 deg - No Ice	45.95	16.74	29.05	3666.22	-2110.77	-0.37
1.2 Dead+1.0 Wind 180 deg - No Ice	61.26	-0.08	33.50	4287.18	13.88	-0.22
0.9 Dead+1.0 Wind 180 deg - No Ice	45.95	-0.08	33.50	4228.30	13.92	-0.22
1.2 Dead+1.0 Wind 210 deg - No Ice	61.26	-16.84	29.05	3720.69	2157.04	-0.01
0.9 Dead+1.0 Wind 210 deg - No Ice	45.95	-16.84	29.05	3669.47	2128.07	-0.01
1.2 Dead+1.0 Wind 240 deg - No Ice	61.26	-29.16	16.87	2166.67	3736.54	0.20
0.9 Dead+1.0 Wind 240 deg - No Ice	45.95	-29.16	16.87	2136.45	3686.18	0.20
1.2 Dead+1.0 Wind 270 deg - No Ice	61.26	-34.74	0.08	18.42	4495.71	0.10
0.9 Dead+1.0 Wind 270 deg - No Ice	45.95	-34.74	0.08	17.28	4434.84	0.10
1.2 Dead+1.0 Wind 300 deg - No Ice	61.26	-29.71	-17.09	-2184.33	3809.13	0.42
0.9 Dead+1.0 Wind 300 deg	45.95	-29.71	-17.09	-2155.70	3757.89	0.42

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
- No Ice 1.2 Dead+1.0 Wind 330 deg	61.26	-16.74	-29.05	-3710.37	2137.90	0.37
- No Ice 0.9 Dead+1.0 Wind 330 deg	45.95	-16.74	-29.05	-3661.04	2109.24	0.37
- No Ice 1.2 Dead+1.0 Ice+1.0 Temp	100.91	0.00	0.00	15.06	-4.22	-0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	100.91	0.02	-8.55	-1129.66	-9.07	0.11
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	100.91	4.31	-7.42	-978.67	-582.77	0.04
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	100.91	7.43	-4.30	-561.35	-1001.46	-0.04
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	100.91	8.64	-0.02	10.47	-1166.12	-0.08
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	100.91	7.41	4.26	583.57	-996.66	-0.15
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	100.91	4.26	7.39	1004.39	-574.46	-0.15
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	100.91	-0.02	8.55	1160.18	0.52	-0.11
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	100.91	-4.31	7.42	1009.19	574.22	-0.04
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	100.91	-7.43	4.30	591.87	992.91	0.04
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	100.91	-8.64	0.02	20.06	1157.57	0.08
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	100.91	-7.41	-4.26	-553.05	988.12	0.15
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	100.91	-4.26	-7.39	-973.88	565.92	0.15
Dead+Wind 0 deg - Service	51.05	0.02	-6.72	-850.41	-3.83	0.05
Dead+Wind 30 deg - Service	51.05	3.38	-5.83	-737.58	-430.75	0.01
Dead+Wind 60 deg - Service	51.05	5.85	-3.39	-428.01	-745.40	-0.04
Dead+Wind 90 deg - Service	51.05	6.97	-0.02	-0.07	-896.71	-0.02
Dead+Wind 120 deg - Service	51.05	5.96	3.43	438.74	-759.89	-0.09
Dead+Wind 150 deg - Service	51.05	3.36	5.83	742.70	-426.94	-0.08
Dead+Wind 180 deg - Service	51.05	-0.02	6.72	856.21	2.11	-0.05
Dead+Wind 210 deg - Service	51.05	-3.38	5.83	743.37	429.03	-0.01
Dead+Wind 240 deg - Service	51.05	-5.85	3.39	433.81	743.68	0.04
Dead+Wind 270 deg - Service	51.05	-6.97	0.02	5.86	894.99	0.02
Dead+Wind 300 deg - Service	51.05	-5.96	-3.43	-432.95	758.17	0.09
Dead+Wind 330 deg - Service	51.05	-3.36	-5.83	-736.91	425.22	0.08

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX	PY	PZ	PX	PY	PZ	% Error
	K	K	K	K	K	K	
1	0.00	-51.05	0.00	0.00	51.05	0.00	0.000%
2	0.08	-61.26	-33.50	-0.08	61.26	33.50	0.000%
3	0.08	-45.95	-33.50	-0.08	45.95	33.50	0.000%
4	16.84	-61.26	-29.05	-16.84	61.26	29.05	0.000%
5	16.84	-45.95	-29.05	-16.84	45.95	29.05	0.000%
6	29.16	-61.26	-16.87	-29.16	61.26	16.87	0.000%
7	29.16	-45.95	-16.87	-29.16	45.95	16.87	0.000%
8	34.74	-61.26	-0.08	-34.74	61.26	0.08	0.000%
9	34.74	-45.95	-0.08	-34.74	45.95	0.08	0.000%
10	29.71	-61.26	17.09	-29.71	61.26	-17.09	0.000%

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
11	29.71	-45.95	17.09	-29.71	45.95	-17.09	0.000%
12	16.74	-61.26	29.05	-16.74	61.26	-29.05	0.000%
13	16.74	-45.95	29.05	-16.74	45.95	-29.05	0.000%
14	-0.08	-61.26	33.50	0.08	61.26	-33.50	0.000%
15	-0.08	-45.95	33.50	0.08	45.95	-33.50	0.000%
16	-16.84	-61.26	29.05	16.84	61.26	-29.05	0.000%
17	-16.84	-45.95	29.05	16.84	45.95	-29.05	0.000%
18	-29.16	-61.26	16.87	29.16	61.26	-16.87	0.000%
19	-29.16	-45.95	16.87	29.16	45.95	-16.87	0.000%
20	-34.74	-61.26	0.08	34.74	61.26	-0.08	0.000%
21	-34.74	-45.95	0.08	34.74	45.95	-0.08	0.000%
22	-29.71	-61.26	-17.09	29.71	61.26	17.09	0.000%
23	-29.71	-45.95	-17.09	29.71	45.95	17.09	0.000%
24	-16.74	-61.26	-29.05	16.74	61.26	29.05	0.000%
25	-16.74	-45.95	-29.05	16.74	45.95	29.05	0.000%
26	0.00	-100.91	0.00	-0.00	100.91	-0.00	0.000%
27	0.02	-100.91	-8.55	-0.02	100.91	8.55	0.000%
28	4.31	-100.91	-7.42	-4.31	100.91	7.42	0.000%
29	7.43	-100.91	-4.30	-7.43	100.91	4.30	0.000%
30	8.64	-100.91	-0.02	-8.64	100.91	0.02	0.000%
31	7.41	-100.91	4.26	-7.41	100.91	-4.26	0.000%
32	4.26	-100.91	7.39	-4.26	100.91	-7.39	0.000%
33	-0.02	-100.91	8.55	0.02	100.91	-8.55	0.000%
34	-4.31	-100.91	7.42	4.31	100.91	-7.42	0.000%
35	-7.43	-100.91	4.30	7.43	100.91	-4.30	0.000%
36	-8.64	-100.91	0.02	8.64	100.91	-0.02	0.000%
37	-7.41	-100.91	-4.26	7.41	100.91	4.26	0.000%
38	-4.26	-100.91	-7.39	4.26	100.91	7.39	0.000%
39	0.02	-51.05	-6.72	-0.02	51.05	6.72	0.000%
40	3.38	-51.05	-5.83	-3.38	51.05	5.83	0.000%
41	5.85	-51.05	-3.39	-5.85	51.05	3.39	0.000%
42	6.97	-51.05	-0.02	-6.97	51.05	0.02	0.000%
43	5.96	-51.05	3.43	-5.96	51.05	-3.43	0.000%
44	3.36	-51.05	5.83	-3.36	51.05	-5.83	0.000%
45	-0.02	-51.05	6.72	0.02	51.05	-6.72	0.000%
46	-3.38	-51.05	5.83	3.38	51.05	-5.83	0.000%
47	-5.85	-51.05	3.39	5.85	51.05	-3.39	0.000%
48	-6.97	-51.05	0.02	6.97	51.05	-0.02	0.000%
49	-5.96	-51.05	-3.43	5.96	51.05	3.43	0.000%
50	-3.36	-51.05	-5.83	3.36	51.05	5.83	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	0.00007193
3	Yes	4	0.00000001	0.00071440
4	Yes	6	0.00000001	0.00021749
5	Yes	6	0.00000001	0.00007269
6	Yes	6	0.00000001	0.00022010
7	Yes	6	0.00000001	0.00007347
8	Yes	5	0.00000001	0.00005965
9	Yes	4	0.00000001	0.00060331
10	Yes	6	0.00000001	0.00022455
11	Yes	6	0.00000001	0.00007448
12	Yes	6	0.00000001	0.00021650
13	Yes	6	0.00000001	0.00007248
14	Yes	5	0.00000001	0.00004889
15	Yes	4	0.00000001	0.00047387
16	Yes	6	0.00000001	0.00021767
17	Yes	6	0.00000001	0.00007272
18	Yes	6	0.00000001	0.00021952
19	Yes	6	0.00000001	0.00007318
20	Yes	5	0.00000001	0.00006063

21	Yes	4	0.00000001	0.00058697
22	Yes	6	0.00000001	0.00022614
23	Yes	6	0.00000001	0.00007518
24	Yes	6	0.00000001	0.00021363
25	Yes	6	0.00000001	0.00007152
26	Yes	4	0.00000001	0.00012449
27	Yes	6	0.00000001	0.00016765
28	Yes	6	0.00000001	0.00020997
29	Yes	6	0.00000001	0.00021018
30	Yes	6	0.00000001	0.00017347
31	Yes	6	0.00000001	0.00021254
32	Yes	6	0.00000001	0.00021279
33	Yes	6	0.00000001	0.00017198
34	Yes	6	0.00000001	0.00021358
35	Yes	6	0.00000001	0.00021406
36	Yes	6	0.00000001	0.00017218
37	Yes	6	0.00000001	0.00020576
38	Yes	6	0.00000001	0.00020488
39	Yes	4	0.00000001	0.00013937
40	Yes	4	0.00000001	0.00059391
41	Yes	4	0.00000001	0.00060391
42	Yes	4	0.00000001	0.00014637
43	Yes	4	0.00000001	0.00061784
44	Yes	4	0.00000001	0.00060084
45	Yes	4	0.00000001	0.00013924
46	Yes	4	0.00000001	0.00059573
47	Yes	4	0.00000001	0.00060190
48	Yes	4	0.00000001	0.00014609
49	Yes	4	0.00000001	0.00062886
50	Yes	4	0.00000001	0.00057184

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	178 - 164.25	24.256	42	1.2268	0.0013
L2	167.167 - 129.667	21.499	42	1.2001	0.0006
L3	133.5 - 96	13.645	42	0.9909	0.0003
L4	100.667 - 63.1667	7.652	42	0.7361	0.0002
L5	68.6667 - 31.1667	3.515	42	0.4840	0.0001
L6	37.4167 - 0	1.051	42	0.2538	0.0000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
178.00	Lightning Rod 5/8" x 5' on 6' pole	42	24.256	1.2268	0.0013	32761
168.00	(3) HBXX-6517DS-A2M w/ Mount Pipe	42	21.709	1.2029	0.0006	16903
160.00	RA21.7770.00 w/ Mount Pipe	42	19.718	1.1700	0.0003	12221
148.00	MX08FRO665-20 w/ Mount Pipe	42	16.853	1.0979	0.0002	9250

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	178 - 164.25	121.746	8	6.1628	0.0062
L2	167.167 - 129.667	107.918	8	6.0310	0.0029
L3	133.5 - 96	68.508	8	4.9797	0.0016
L4	100.667 - 63.1667	38.423	8	3.6988	0.0008
L5	68.6667 - 31.1667	17.644	8	2.4312	0.0004
L6	37.4167 - 0	5.273	8	1.2739	0.0002

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
178.00	Lightning Rod 5/8" x 5' on 6' pole	8	121.746	6.1628	0.0062	6687
168.00	(3) HBXX-6517DS-A2M w/ Mount Pipe	8	108.971	6.0445	0.0031	3448
160.00	RA21.7770.00 w/ Mount Pipe	8	98.982	5.8801	0.0017	2486
148.00	MX08FRO665-20 w/ Mount Pipe	8	84.608	5.5183	0.0012	1875

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L1	178 - 164.25 (1)	TP26x12.75x0.25	13.75	0.00	0.0	18.2024	-6.51	1064.84	0.006
L2	164.25 - 129.667 (2)	TP34.0625x22.6894x0.3125	37.50	0.00	0.0	32.3226	-17.94	1890.87	0.009
L3	129.667 - 96 (3)	TP41.75x32.2749x0.375	37.50	0.00	0.0	47.8431	-26.02	2798.82	0.009
L4	96 - 63.1667 (4)	TP49.0625x39.8209x0.375	37.50	0.00	0.0	56.3370	-35.62	3295.71	0.011
L5	63.1667 - 31.1667 (5)	TP56.125x46.9571x0.375	37.50	0.00	0.0	64.5378	-46.55	3775.46	0.012
L6	31.1667 - 0 (6)	TP62.9375x53.847x0.375	37.42	0.00	0.0	74.4650	-61.25	4356.20	0.014

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	178 - 164.25 (1)	TP26x12.75x0.25	68.85	636.00	0.108	0.00	636.00	0.000
L2	164.25 - 129.667 (2)	TP34.0625x22.6894x0.3125	655.99	1569.31	0.418	0.00	1569.31	0.000
L3	129.667 - 96 (3)	TP41.75x32.2749x0.375	1436.36	2844.52	0.505	0.00	2844.52	0.000
L4	96 - 63.1667 (4)	TP49.0625x39.8209x0.375	2305.31	3755.29	0.614	0.00	3755.29	0.000

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 $\frac{M_{uy}}{\phi M_{ny}}$
L5	63.1667 - 31.1667 (5)	TP56.125x46.9571x0.375	3252.43	4686.54	0.694	0.00	4686.54	0.000
L6	31.1667 - 0 (6)	TP62.9375x53.847x0.375	4497.81	5847.24	0.769	0.00	5847.24	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	178 - 164.25 (1)	TP26x12.75x0.25	10.66	319.45	0.033	0.18	641.75	0.000
L2	164.25 - 129.667 (2)	TP34.0625x22.6894x0.3125	22.03	567.26	0.039	0.10	1618.88	0.000
L3	129.667 - 96 (3)	TP41.75x32.2749x0.375	25.46	839.65	0.030	0.10	2955.68	0.000
L4	96 - 63.1667 (4)	TP49.0625x39.8209x0.375	28.76	988.71	0.029	0.10	4098.32	0.000
L5	63.1667 - 31.1667 (5)	TP56.125x46.9571x0.375	31.71	1132.64	0.028	0.10	5378.32	0.000
L6	31.1667 - 0 (6)	TP62.9375x53.847x0.375	34.77	1306.86	0.027	0.10	7160.17	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	178 - 164.25 (1)	0.006	0.108	0.000	0.033	0.000	0.116	1.050	4.8.2
L2	164.25 - 129.667 (2)	0.009	0.418	0.000	0.039	0.000	0.429	1.050	4.8.2
L3	129.667 - 96 (3)	0.009	0.505	0.000	0.030	0.000	0.515	1.050	4.8.2
L4	96 - 63.1667 (4)	0.011	0.614	0.000	0.029	0.000	0.626	1.050	4.8.2
L5	63.1667 - 31.1667 (5)	0.012	0.694	0.000	0.028	0.000	0.707	1.050	4.8.2
L6	31.1667 - 0 (6)	0.014	0.769	0.000	0.027	0.000	0.784	1.050	4.8.2

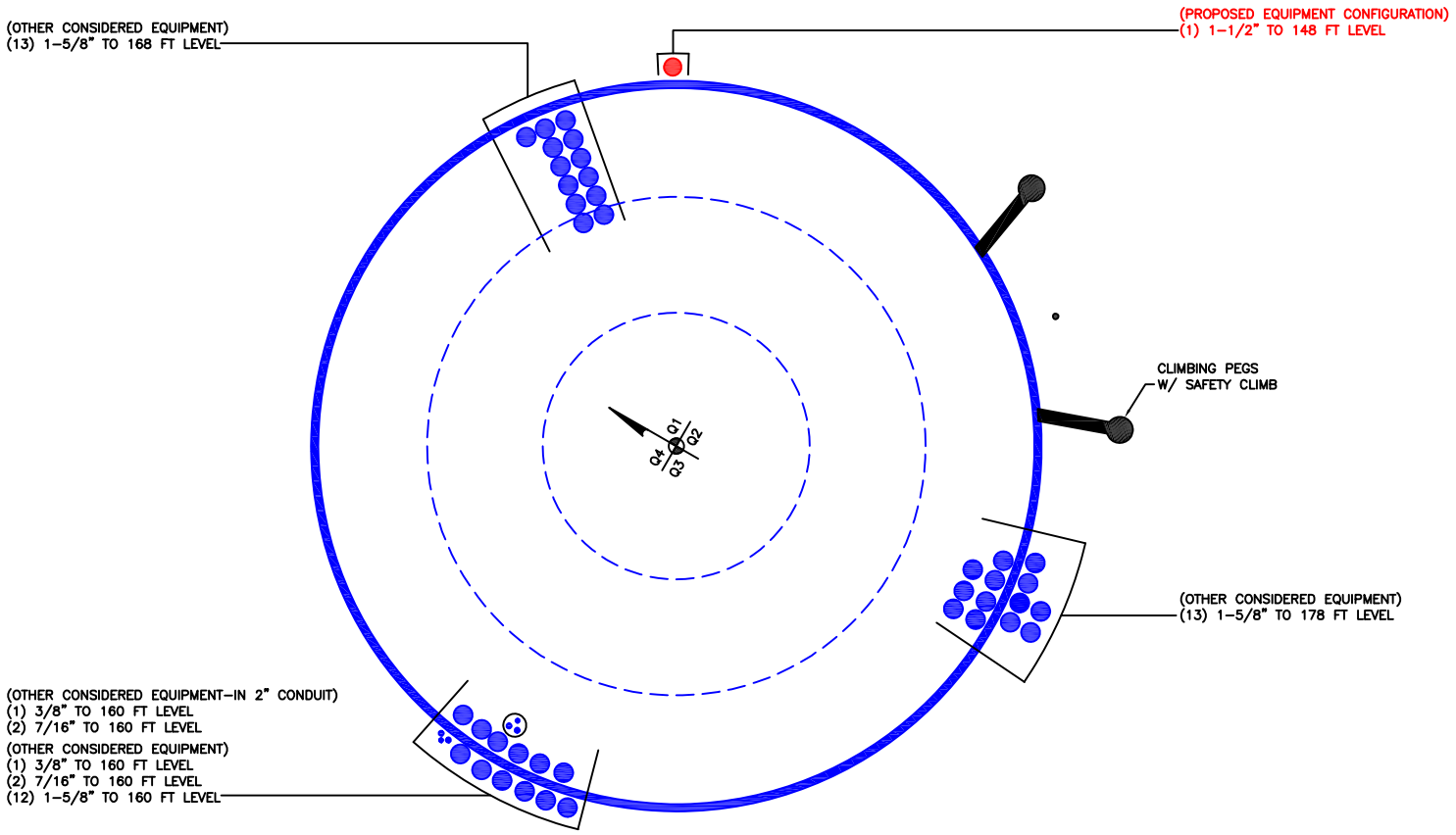
Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	178 - 164.25	Pole	TP26x12.75x0.25	1	-6.51	1118.08	11.0	Pass
L2	164.25 - 129.667	Pole	TP34.0625x22.6894x0.3125	2	-17.94	1985.41	40.9	Pass
L3	129.667 - 96	Pole	TP41.75x32.2749x0.375	3	-26.02	2938.76	49.1	Pass
L4	96 - 63.1667	Pole	TP49.0625x39.8209x0.375	4	-35.62	3460.50	59.6	Pass
L5	63.1667 - 31.1667	Pole	TP56.125x46.9571x0.375	5	-46.55	3964.23	67.3	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L6	31.1667 - 0	Pole	TP62.9375x53.847x0.375	6	-61.25	4574.01	74.7	Pass
							Summary	
						Pole (L6)	74.7	Pass
						RATING =	**74.7**	**Pass**

APPENDIX B

BASE LEVEL DRAWING


(OTHER CONSIDERED EQUIPMENT)
(13) 1-5/8" TO 168 FT LEVEL
(PROPOSED EQUIPMENT CONFIGURATION)
(1) 1-1/2" TO 148 FT LEVEL
CLIMBING PEGS
W/ SAFETY CLIMB
Q1
Q2
Q3
Q4
(OTHER CONSIDERED EQUIPMENT)
(13) 1-5/8" TO 178 FT LEVEL
(OTHER CONSIDERED EQUIPMENT-IN 2" CONDUIT)
(1) 3/8" TO 160 FT LEVEL
(2) 7/16" TO 160 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(1) 3/8" TO 160 FT LEVEL
(2) 7/16" TO 160 FT LEVEL
(12) 1-5/8" TO 160 FT LEVEL

APPENDIX C

ADDITIONAL CALCULATIONS

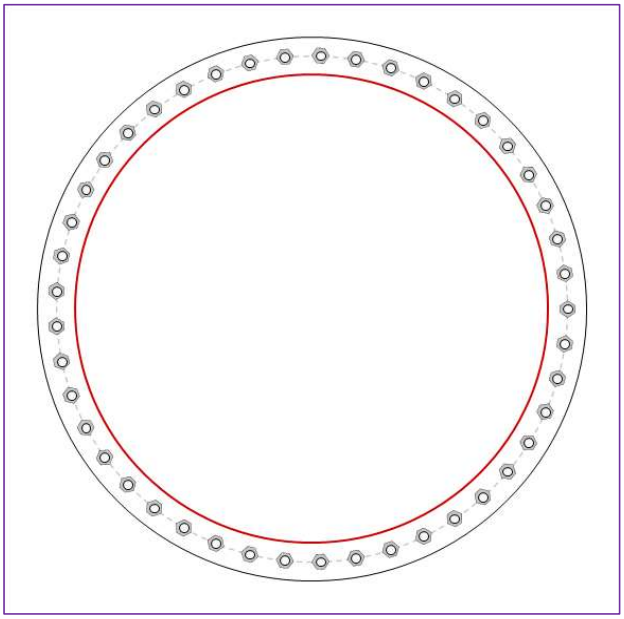
Monopole Base Plate Connection

Site Info	
BU #	823666
Site Name	Deep River/Rt 9
Order #	553286 Rev. 4

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	No
l_{ar} (in)	1.25

Applied Loads	
Moment (kip-ft)	4497.81
Axial Force (kips)	61.25
Shear Force (kips)	34.77

**TIA-222-H Section 15.5 Applied*



Connection Properties

Anchor Rod Data

(45) 1-1/4" ø bolts (A687 N; Fy=105 ksi, Fu=125 ksi) on 68" BC

Base Plate Data

73" OD x 1.5" Plate (A572-50; Fy=50 ksi, Fu=65 ksi)

Stiffener Data

N/A

Pole Data

62.9375" x 0.375" 18-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Analysis Results

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

Pu_t = 69.18	ϕPn_t = 90.84	**Stress Rating**
Vu = 0.77	ϕVn = 57.52	**72.5%**
Mu = n/a	ϕMn = n/a	**Pass**

Base Plate Summary

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

Pier and Pad Foundation

BU # :	823666
Site Name:	Deep River/Rt 9
App. Number:	553286 Rev. 4

TIA-222 Revision:	H
Tower Type:	Monopole

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

Superstructure Analysis Reactions		
Compression, P_{comp}:	61.26	kips
Base Shear, Vu_comp:	34.74	kips
Moment, M_u:	4497.8	ft-kips
Tower Height, **H**:	178	ft
BP Dist. Above Fdn, bp_{dist}:	2.5	in
Bolt Circle / Bearing Plate Width, **BC**:	68	in

Foundation Analysis Checks	Capacity	Demand	Rating*	Check
Lateral (Sliding) (kips)	188.36	34.74	**17.6%**	**Pass**
Bearing Pressure (ksf)	18.00	2.98	**16.5%**	**Pass**
*Overturning (kip*ft)*	6931.84	4644.00	**67.0%**	**Pass**
*Pad Flexure (kip*ft)*	4875.64	2204.11	**43.1%**	**Pass**
Pad Shear - 1-way (kips)	1436.12	256.11	**17.0%**	**Pass**
Pad Shear - 2-way (Comp) (ksi)	0.190	0.003	**1.7%**	**Pass**
*Flexural 2-way (Comp) (kip*ft)*	3989.84	0.00	**0.0%**	**Pass**

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

Soil Rating*:	**67.0%**
Structural Rating*:	**43.1%**

Pad Properties		
Depth, **D**:	3.5	ft
Pad Width, W_1:	29	ft
Pad Thickness, **T**:	4	ft
Pad Rebar Size (Bottom dir. 2), Sp_2:	8	
Pad Rebar Quantity (Bottom dir. 2), mp_2:	32	
Pad Clear Cover, cc_{pad}:	3	in

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

Soil Properties		
Total Soil Unit Weight, γ:	165	pcf
Ultimate Gross Bearing, Qult:	24.000	ksf
Cohesion, **Cu**:	0.000	ksf
Friction Angle, φ:	40	degrees
SPT Blow Count, N_{blows}:	50	
Base Friction, μ:		
Neglected Depth, **N**:	3.50	ft
Foundation Bearing on Rock?	Yes	
Groundwater Depth, **gw**:	N/A	ft

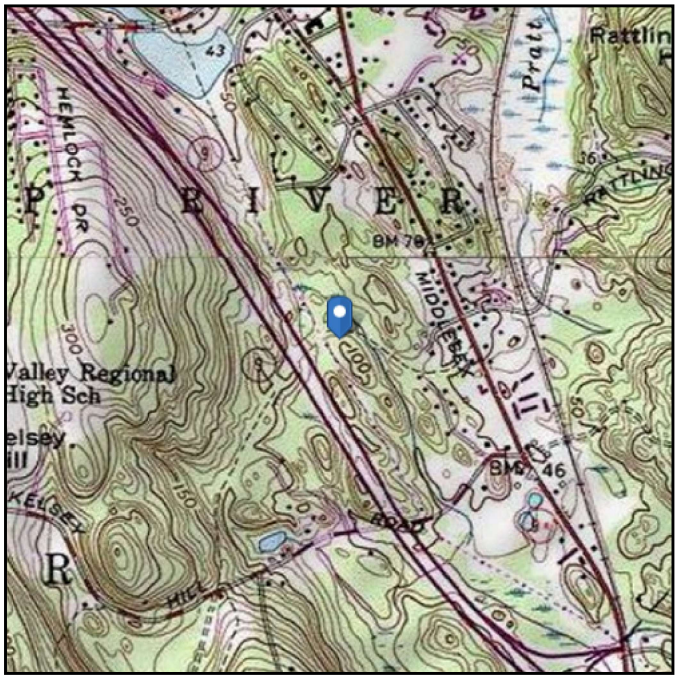
<--Toggle between Gross and Net

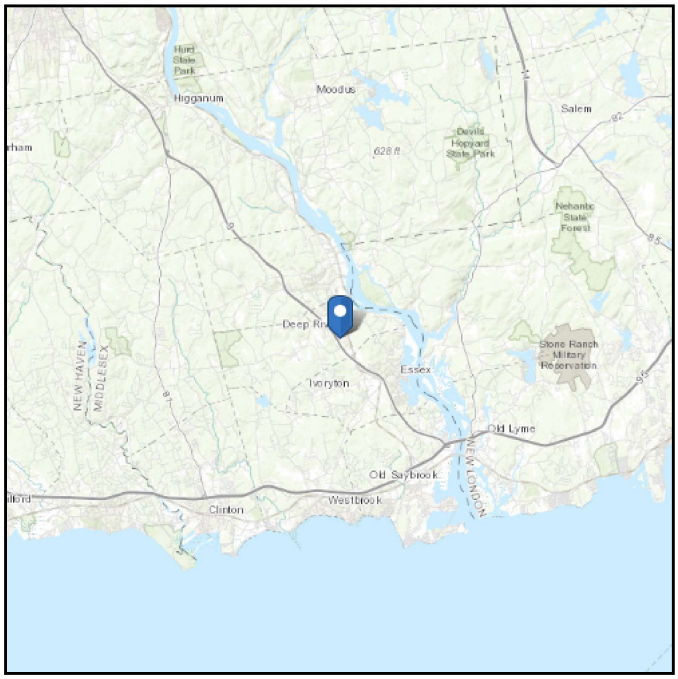
ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 94.97 ft (NAVD 88)
Latitude: 41.372825
Longitude: -72.434436





Wind

Results:

Wind Speed:	130 Vmph
10-year MRI	79 Vmph
25-year MRI	88 Vmph
50-year MRI	97 Vmph
100-year MRI	106 Vmph
Data Source:	ASCE/SEI 7-10, Fig. 26.5-1A and Figs. CC-1–CC-4, incorporating errata of March 12, 2014
Date Accessed:	Wed Nov 18 2020

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.

Mountainous terrain, gorges, ocean promontories, and special wind regions should be examined for unusual wind conditions.

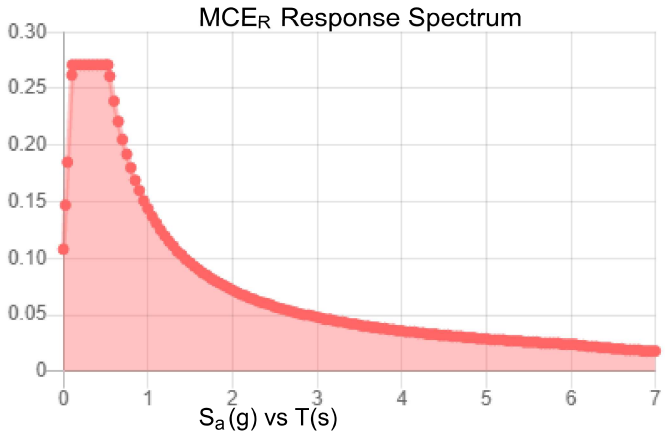
Seismic

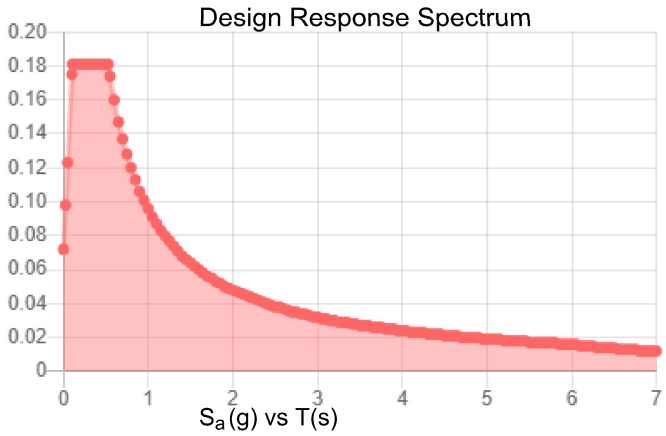
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.169	S_{DS} :	0.181
S_1 :	0.06	S_{D1} :	0.096
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.085
S_{MS} :	0.271	PGA_M :	0.137
S_{M1} :	0.144	F_{PGA} :	1.6
		I_e :	1

Seismic Design Category B





Data Accessed: Wed Nov 18 2020

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:	Wed Nov 18 2020

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

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

Exhibit E

Mount Analysis

Date: **July 23, 2021**

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

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

Subject:	**Mount Replacement Analysis Report**	
Carrier Designation:	**DISH Network Equipment Change Out**	
	Carrier Site Number:	BOBDL00055A
	Carrier Site Name:	CT-CCI-T-823666
Crown Castle Designation:	**Crown Castle BU Number:**	823666
	Crown Castle Site Name:	Deep River/Rt 9
	Crown Castle JDE Job Number:	645125
	Crown Castle Order Number:	553286 Rev. 4
Engineering Firm Designation:	**Trylon Report Designation:**	188207
Site Data:	**15 Pent Rd., Deep River, Middlesex County, CT, 06498**	
	Latitude 41°17'25.70" Longitude -72°28'7.90"	
Structure Information:	**Tower Height & Type:**	**178.0 ft Monopole**
	Mount Elevation:	**148.0 ft**
	Mount Type:	**8.0 ft Platform**

Dear Darcy Tarr,

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

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

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

This analysis utilizes an ultimate 3-second gust wind speed of 130 mph as required by the 2015 International Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Mount analysis prepared by: Jordan Everson, E.I.T.

Respectfully Submitted by:
Jinshan Wang, P.E.

STATE OF CONNECTICUT
JINSHAN WANG
LICENSED
PROFESSIONAL ENGINEER
Jul 23, 2021
PEN.0034086

Jinshan Wang
Digitally signed by Jinshan Wang
Date: 2021.07.23 17:15:37 -04'00'

TABLE OF CONTENTS

1) INTRODUCTION

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

2) ANALYSIS CRITERIA

Building Code:	2015 IBC
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Ultimate Wind Speed:	130 mph
Exposure Category:	B
Topographic Factor at Base:	1.0
Topographic Factor at Mount:	1.0
Ice Thickness:	1.5 in
Wind Speed with Ice:	50 mph
Seismic S_s:	0.170
Seismic S_1:	0.060
Live Loading Wind Speed:	30 mph
Man Live Load at Mid/End-Points:	250 lb
Man Live Load at Mount Pipes:	500 lb

Table 1 - Proposed Equipment Configuration

Mount Centerline (ft)	Antenna Centerline (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Mount / Modification Details
148.0	148.0	3	JMA WIRELESS	MX08FRO665-20	8.0 ft Platform [Commscope MC-PK8-DSH]
		3	FUJITSU	TA08025-B604	
		3	FUJITSU	TA08025-B605	
		1	RAYCAP	RDIDC-9181-PF-48	

3) ANALYSIS PROCEDURE

Table 2 - Documents Provided

Document	Remarks	Reference	Source
Crown Application	DISH Network Application	553286 Rev. 4	CCI Sites
Construction Drawings	Infinigy	BOBDL00055A	TSA
Mount Manufacturer Drawings	Commscope	MC-PK8-DSH	TSA

3.1) Analysis Method

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

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

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

3.2) Assumptions

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

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

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

4) ANALYSIS RESULTS

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

Notes	Component	Critical Member	Centerline (ft)	% Capacity	Pass / Fail
1, 2	Mount Pipe(s)	MP1	148.0	34.0	Pass
	Horizontal(s)	H1		10.4	Pass
	Standoff(s)	M96		50.8	Pass
	Bracing(s)	M93		38.7	Pass
	Plate(s)	M17		25.2	Pass
	Mount Connection(s)	--		20.9	Pass

Structure Rating (max from all components) =	50.8%

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

4.1) Recommendations

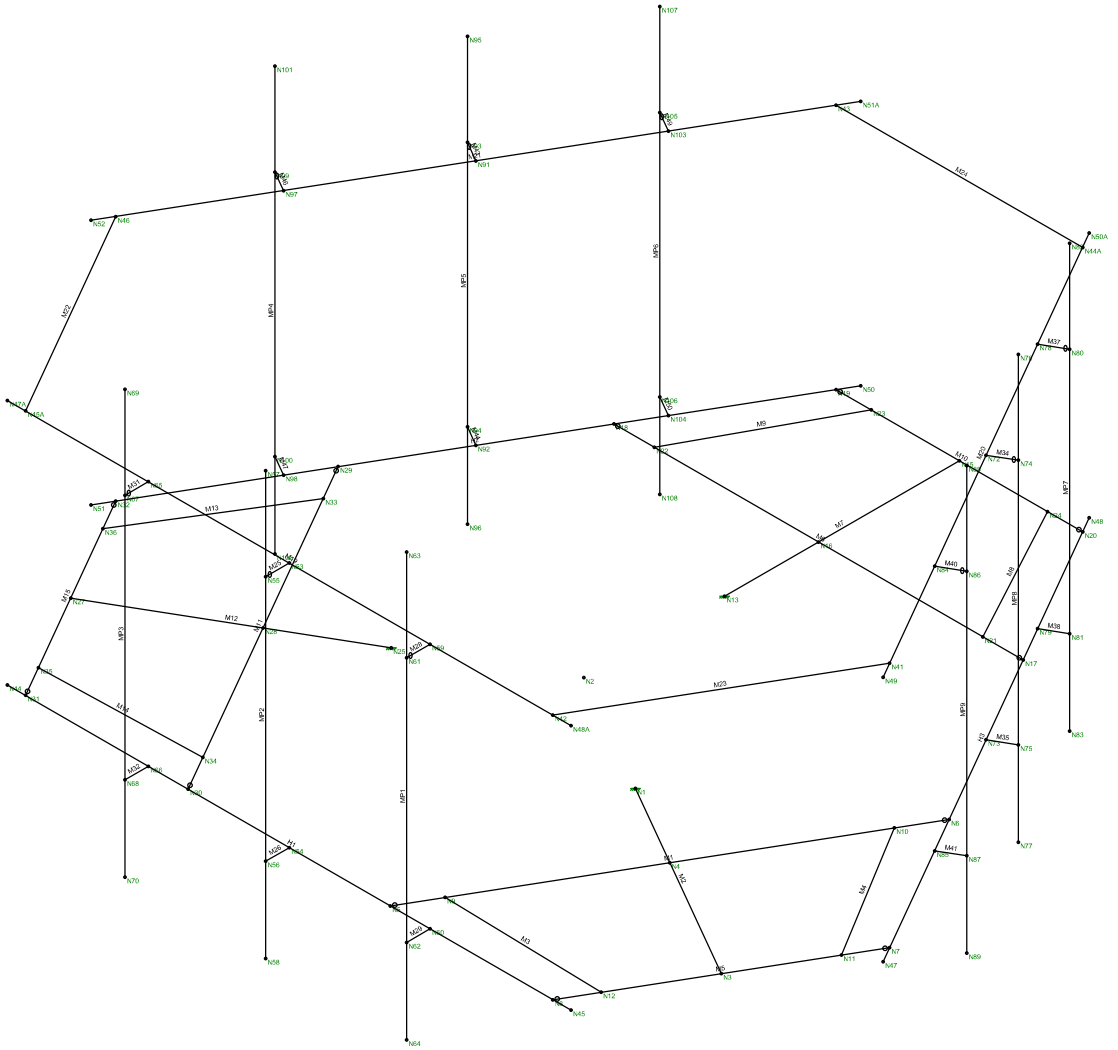
The mount has sufficient capacity to carry the proposed loading configuration. In order for the results of the analysis to be considered valid, the proposed mount listed below must be installed.

1. Commscope MC-PK8-DSH.

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

APPENDIX A

WIRE FRAME AND RENDERED MODELS



Envelope Only Solution

Trylon	823666	Wireframe
JE		July 23, 2021 at 1:09 PM
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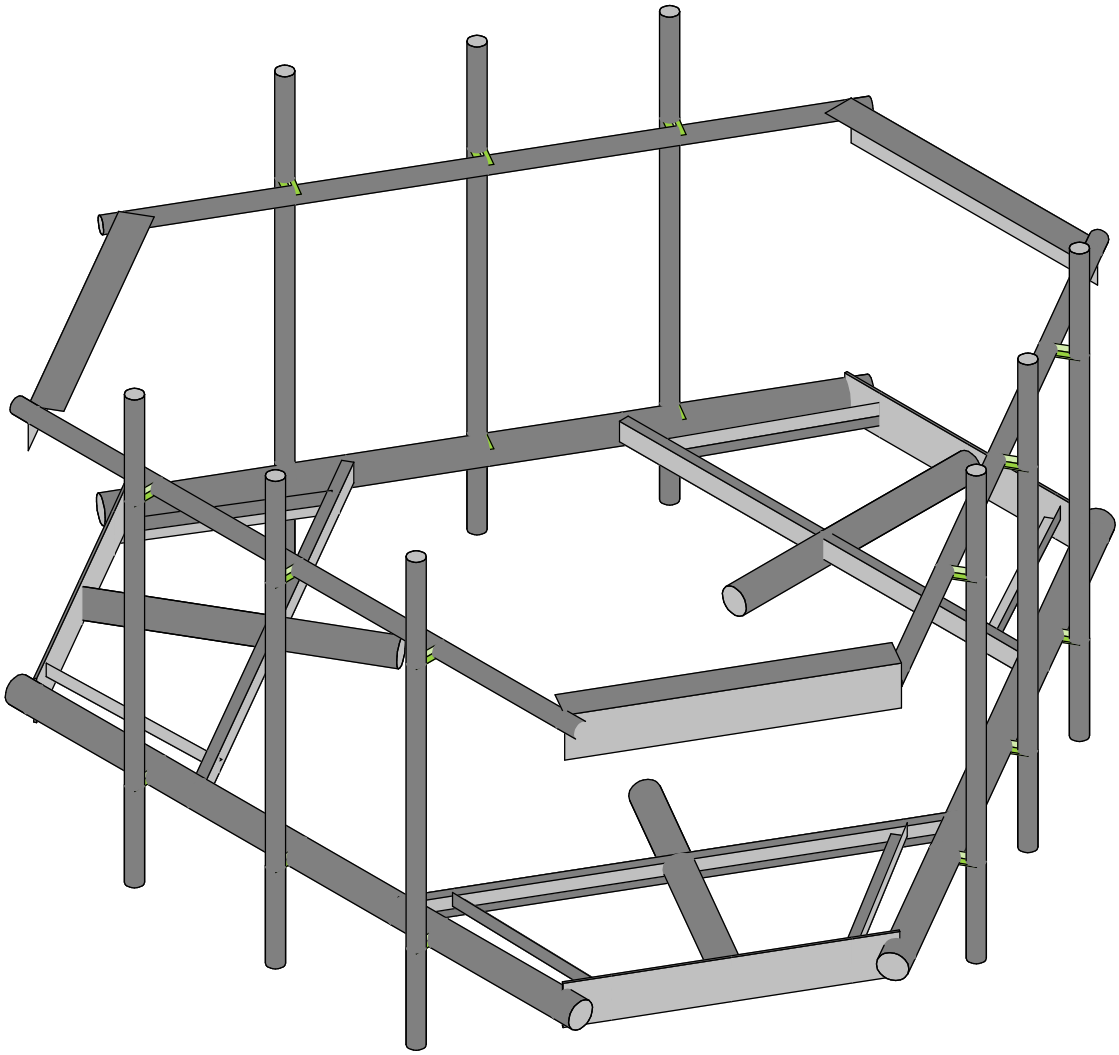


Envelope Only Solution

Trylon	823666	Render
JE		July 23, 2021 at 1:09 PM
		823666_loaded.r3d

APPENDIX B

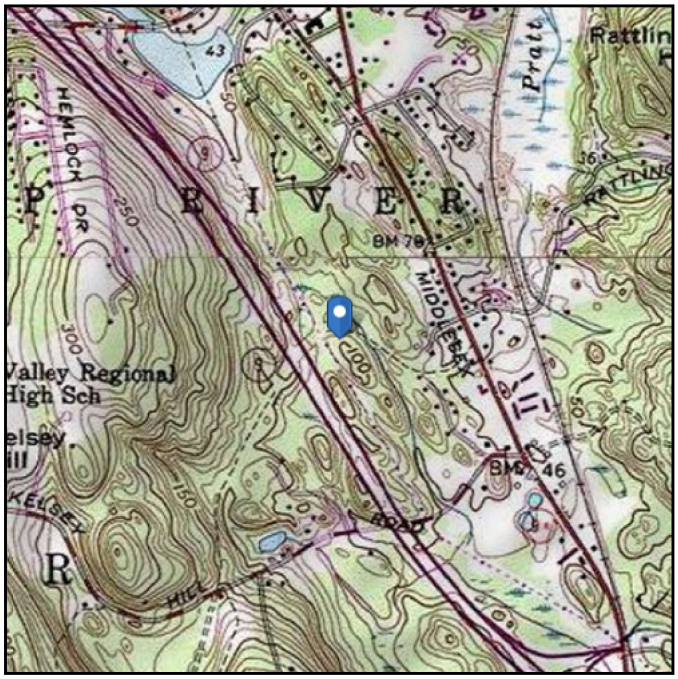
SOFTWARE INPUT CALCULATIONS

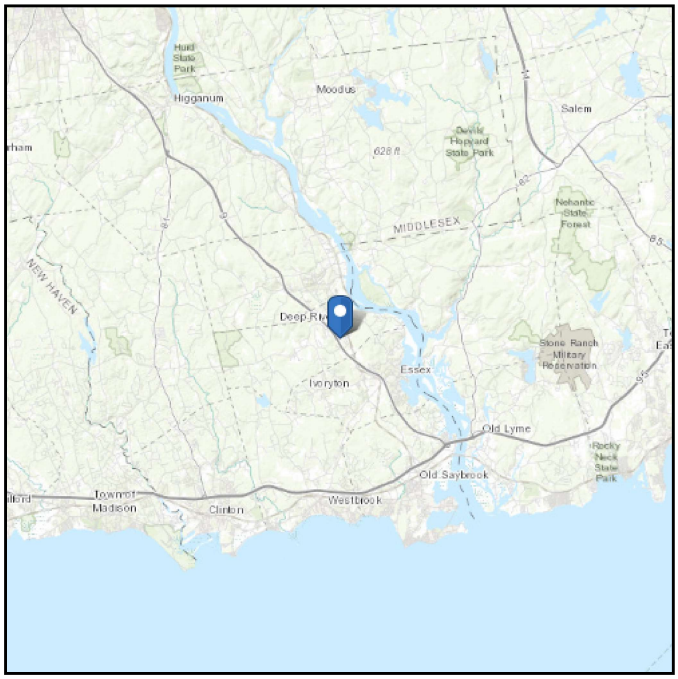
ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 94.97 ft (NAVD 88)
Latitude: 41.372825
Longitude: -72.434436





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: Wed Jul 21 2021

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

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

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

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

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

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

TIA LOAD CALCULATOR 2.0

PROJECT DATA	
Job Code:	188207
Carrier Site ID:	823666
Carrier Site Name:	Deep River/Rt 9

CODES AND STANDARDS	
Building Code:	2015 IBC
Local Building Code:	2018 CBC
Design Standard:	TIA-222-H

STRUCTURE DETAILS		
Mount Type:	Platform	--
Mount Elevation:	148.0	ft.
Number of Sectors:	3	--
Structure Type:	Monopole	--
Structure Height:	178.0	ft.

ANALYSIS CRITERIA		
Structure Risk Category:	II	--
Exposure Category:	B	--
Site Class:	D - Stiff Soil	--
Ground Elevation:	94	ft.

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

WIND PARAMETERS		
Design Wind Speed:	130	mph
Wind Escalation Factor (K_s):	1.00	--
Velocity Coefficient (K_z):	1.11	--
Directionality Factor (K_d):	0.95	--
Gust Effect Factor (Gh):	1.00	--
Shielding Factor (K_a):	0.90	--
Velocity Pressure (q_z):	45.28	psf

ICE PARAMETERS		
Design Ice Wind Speed:	50	mph
Design Ice Thickness (t_i):	1.50	in
Importance Factor (I_i):	1.00	--
Ice Velocity Pressure (q_{zi}):	45.28	psf
Mount Ice Thickness (t_{iz}):	1.74	in

WIND STRUCTURE CALCULATIONS		
Flat Member Pressure:	81.50	psf
Round Member Pressure:	48.90	psf
Ice Wind Pressure:	7.60	psf

SEISMIC PARAMETERS		
Importance Factor (I_e):	1.00	--
Short Period Accel .(S_s):	0.17	g
1 Second Accel (S_1):	0.06	g
Short Period Des. (S_{DS}):	0.18	g
1 Second Des. (S_{D1}):	0.10	g
Short Period Coeff. (F_a):	1.60	--
1 Second Coeff. (F_v):	2.40	--
Response Coefficient (Cs):	0.09	--
Amplification Factor (A_S):	1.20	--

LOAD COMBINATIONS [LRFD]

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

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

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

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

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

EQUIPMENT LOADING

Appurtenance Name/Location	Qty.	Elevation [ft]	--	EPA_N (ft2)	EPA_T (ft2)	Weight (lbs)
MX08FRO665-20	3	148	No Ice	8.01	3.21	82.50
MP1/MP4/MP7, 0/120/240	--	--	w/ Ice	9.63	4.63	289.40
TA08025-B604	3	148	No Ice	1.96	0.98	63.90
MP1/MP4/MP7, 0/120/240	--	--	w/ Ice	2.39	1.31	70.48
TA08025-B605	3	148	No Ice	1.96	1.13	75.00
MP1/MP4/MP7, 0/120/240	--	--	w/ Ice	2.39	1.48	75.08
RDIDC-9181-PF-48	1	148	No Ice	2.01	1.17	21.85
MP1, 0	--	--	w/ Ice	2.45	1.53	74.00
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
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			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			

EQUIPMENT WIND CALCULATIONS

Appurtenance Name	Qty.	Elevation [ft]	K_{zt}	K_z	K_d	t_d	q_z [psf]	q_{zi} [psf]
MX08FRO665-20	3	148	1.00	1.11	0.95	1.74	45.28	6.70
TA08025-B604	3	148	1.00	1.11	0.95	1.74	45.28	6.70
TA08025-B605	3	148	1.00	1.11	0.95	1.74	45.28	6.70
RDIDC-9181-PF-48	1	148	1.00	1.11	0.95	1.74	45.28	6.70

EQUIPMENT LATERAL WIND FORCE CALCULATIONS

Appurtenance Name	Qty.	--	0° 180°	30° 210°	60° 240°	90° 270°	120° 300°	150° 330°
MX08FRO665-20	3	No Ice	326.40	179.70	277.50	130.81	277.50	179.70
MP1/MP4/MP7, 0/120/240	--	w/ Ice	58.07	35.46	50.53	27.93	50.53	35.46
TA08025-B604	3	No Ice	80.01	49.99	70.00	39.98	70.00	49.99
MP1/MP4/MP7, 0/120/240	--	w/ Ice	14.41	9.54	12.79	7.92	12.79	9.54
TA08025-B605	3	No Ice	80.01	54.52	71.51	46.03	71.51	54.52
MP1/MP4/MP7, 0/120/240	--	w/ Ice	14.41	10.28	13.03	8.90	13.03	10.28
RDIDC-9181-PF-48	1	No Ice	81.98	56.20	73.39	47.60	73.39	56.20
MP1, 0	--	w/ Ice	14.74	10.60	13.36	9.21	13.36	10.60
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
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		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						

EQUIPMENT SEISMIC FORCE CALCULATIONS

Appurtenance Name	Qty.	Elevation [ft]	Weight [lbs]	F_p [lbs]
MX08FRO665-20	3	148	82.5	8.98
TA08025-B604	3	148	63.9	6.95
TA08025-B605	3	148	75	8.16
RDIDC-9181-PF-48	1	148	21.85	2.38

APPENDIX C

SOFTWARE ANALYSIS OUTPUT

(Global) Model Settings

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

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

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

(Global) Model Settings, Continued

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

Hot Rolled Steel Properties

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

Hot Rolled Steel Section Sets

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

Joint Boundary Conditions

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

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N5	N6			Standoff Bracing	Beam	Channel	A36 Gr.36	Typical
2	M2	N3	N1			Standoffs	Beam	Pipe	A53 Gr.B	Typical
3	M3	N9	N12		270	Grating Bracing	Beam	Single Angle	A36 Gr.36	Typical
4	M4	N10	N11			Grating Bracing	Beam	Single Angle	A36 Gr.36	Typical
5	M5	N8	N7			Plates	Beam	RECT	A53 Gr.B	Typical
6	M6	N17	N18			Standoff Bracing	Beam	Channel	A36 Gr.36	Typical
7	M7	N15	N13			Standoffs	Beam	Pipe	A53 Gr.B	Typical
8	M8	N21	N24		270	Grating Bracing	Beam	Single Angle	A36 Gr.36	Typical
9	M9	N22	N23			Grating Bracing	Beam	Single Angle	A36 Gr.36	Typical
10	M10	N20	N19			Plates	Beam	RECT	A53 Gr.B	Typical
11	M11	N29	N30			Standoff Bracing	Beam	Channel	A36 Gr.36	Typical
12	M12	N27	N25			Standoffs	Beam	Pipe	A53 Gr.B	Typical
13	M13	N33	N36		270	Grating Bracing	Beam	Single Angle	A36 Gr.36	Typical
14	M14	N34	N35			Grating Bracing	Beam	Single Angle	A36 Gr.36	Typical
15	M15	N32	N31			Plates	Beam	RECT	A53 Gr.B	Typical
16	H1	N44	N45			Horizontals	Beam	Pipe	A53 Gr.B	Typical
17	H3	N47	N48			Horizontals	Beam	Pipe	A53 Gr.B	Typical
18	H2	N50	N51			Horizontals	Beam	Pipe	A53 Gr.B	Typical
19	M19	N47A	N48A			Handrails	Beam	Pipe	A53 Gr.B	Typical
20	M20	N49	N50A			Handrails	Beam	Pipe	A53 Gr.B	Typical
21	M21	N51A	N52			Handrails	Beam	Pipe	A53 Gr.B	Typical
22	M22	N46	N45A		180	Handrail Corne...	Beam	Single Angle	A36 Gr.36	Typical
23	M23	N42	N41		180	Handrail Corne...	Beam	Single Angle	A36 Gr.36	Typical
24	M24	N44A	N43		180	Handrail Corne...	Beam	Single Angle	A36 Gr.36	Typical
25	M25	N55	N53			RIGID	None	None	RIGID	Typical
26	M26	N56	N54			RIGID	None	None	RIGID	Typical
27	MP2	N57	N58			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
28	M28	N61	N59			RIGID	None	None	RIGID	Typical
29	M29	N62	N60			RIGID	None	None	RIGID	Typical
30	MP1	N63	N64			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
31	M31	N67	N65			RIGID	None	None	RIGID	Typical
32	M32	N68	N66			RIGID	None	None	RIGID	Typical
33	MP3	N69	N70			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
34	M34	N74	N72			RIGID	None	None	RIGID	Typical
35	M35	N75	N73			RIGID	None	None	RIGID	Typical
36	MP8	N76	N77			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
37	M37	N80	N78			RIGID	None	None	RIGID	Typical
38	M38	N81	N79			RIGID	None	None	RIGID	Typical
39	MP7	N82	N83			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
40	M40	N86	N84			RIGID	None	None	RIGID	Typical
41	M41	N87	N85			RIGID	None	None	RIGID	Typical
42	MP9	N88	N89			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
43	M43	N93	N91			RIGID	None	None	RIGID	Typical
44	M44	N94	N92			RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
45	MP5	N95	N96			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
46	M46	N99	N97			RIGID	None	None	RIGID	Typical
47	M47	N100	N98			RIGID	None	None	RIGID	Typical
48	MP4	N101	N102			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
49	M49	N105	N103			RIGID	None	None	RIGID	Typical
50	M50	N106	N104			RIGID	None	None	RIGID	Typical
51	MP6	N107	N108			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical

Member Advanced Data

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic ...
1	M1	BenPIN	BenPIN				Yes				None
2	M2						Yes				None
3	M3						Yes				None
4	M4						Yes				None
5	M5	OOOOXO	OOOOXO				Yes	Default			None
6	M6	BenPIN	BenPIN				Yes				None
7	M7						Yes				None
8	M8						Yes				None
9	M9						Yes				None
10	M10	OOOOXO	OOOOXO				Yes	Default			None
11	M11	BenPIN	BenPIN				Yes				None
12	M12						Yes				None
13	M13						Yes				None
14	M14						Yes				None
15	M15	OOOOXO	OOOOXO				Yes	Default			None
16	H1						Yes	Default			None
17	H3						Yes				None
18	H2						Yes				None
19	M19						Yes				None
20	M20						Yes				None
21	M21						Yes				None
22	M22						Yes				None
23	M23						Yes				None
24	M24						Yes				None
25	M25	OOOXOO					Yes	** NA **			None
26	M26						Yes	** NA **			None
27	MP2						Yes				None
28	M28	OOOXOO					Yes	** NA **			None
29	M29						Yes	** NA **			None
30	MP1						Yes				None
31	M31	OOOXOO					Yes	** NA **			None
32	M32						Yes	** NA **			None
33	MP3						Yes				None
34	M34	OOOXOO					Yes	** NA **			None
35	M35						Yes	** NA **			None
36	MP8						Yes				None
37	M37	OOOXOO					Yes	** NA **			None
38	M38						Yes	** NA **			None
39	MP7						Yes				None
40	M40	OOOXOO					Yes	** NA **			None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic ...
41	M41						Yes	** NA **			None
42	MP9						Yes				None
43	M43	OOOXOO					Yes	** NA **			None
44	M44						Yes	** NA **			None
45	MP5						Yes				None
46	M46	OOOXOO					Yes	** NA **			None
47	M47						Yes	** NA **			None
48	MP4						Yes				None
49	M49	OOOXOO					Yes	** NA **			None
50	M50						Yes	** NA **			None
51	MP6						Yes				None

Hot Rolled Steel Design Parameters

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torqu...	Kyy	Kzz	Cb	Function
1	M1	Standoff Br...	69.713			Lbyy						Lateral
2	M2	Standoffs	40			Lbyy						Lateral
3	M3	Grating Bra...	27.295			Lbyy						Lateral
4	M4	Grating Bra...	27.295			Lbyy						Lateral
5	M5	Plates	42			Lbyy						Lateral
6	M6	Standoff Br...	69.713	28	28	28	28	28				Lateral
7	M7	Standoffs	40			Lbyy						Lateral
8	M8	Grating Bra...	27.295			Lbyy						Lateral
9	M9	Grating Bra...	27.295			Lbyy						Lateral
10	M10	Plates	42			Lbyy						Lateral
11	M11	Standoff Br...	69.713			Lbyy						Lateral
12	M12	Standoffs	40			Lbyy						Lateral
13	M13	Grating Bra...	27.295			Lbyy						Lateral
14	M14	Grating Bra...	27.295			Lbyy						Lateral
15	M15	Plates	42			Lbyy						Lateral
16	H1	Horizontals	96			Lbyy						Lateral
17	H3	Horizontals	96			Lbyy						Lateral
18	H2	Horizontals	96			Lbyy						Lateral
19	M19	Handrails	96			Lbyy						Lateral
20	M20	Handrails	96			Lbyy						Lateral
21	M21	Handrails	96			Lbyy						Lateral
22	M22	Handrail Co...	42			Lbyy						Lateral
23	M23	Handrail Co...	42			Lbyy						Lateral
24	M24	Handrail Co...	42			Lbyy						Lateral
25	MP2	Mount Pipes	72			Lbyy						Lateral
26	MP1	Mount Pipes	72			Lbyy						Lateral
27	MP3	Mount Pipes	72			Lbyy						Lateral
28	MP8	Mount Pipes	72			Lbyy						Lateral
29	MP7	Mount Pipes	72			Lbyy						Lateral
30	MP9	Mount Pipes	72			Lbyy						Lateral
31	MP5	Mount Pipes	72			Lbyy						Lateral
32	MP4	Mount Pipes	72			Lbyy						Lateral
33	MP6	Mount Pipes	72			Lbyy						Lateral

Joint Loads and Enforced Displacements

Joint Label	L,D,M	Direction	Magnitude [(lb,lb-ft), (in,rad), (lb*s^...
No Data to Print ...			

Member Point Loads (BLC 1 : Self Weight)

	Member Label	Direction	Magnitude [lb,lb-ft]	Location [in,%]
1	MP1	Y	-41.25	3
2	MP1	Y	-41.25	69
3	MP1	Y	-63.9	%50
4	MP1	Y	-75	%50
5	MP1	Y	-21.85	%33
6	MP4	Y	-41.25	3
7	MP4	Y	-41.25	69
8	MP4	Y	-63.9	%50
9	MP4	Y	-75	%50
10	MP7	Y	-41.25	3
11	MP7	Y	-41.25	69
12	MP7	Y	-63.9	%50
13	MP7	Y	-75	%50

Member Point Loads (BLC 4 : Wind Load 0 AZI)

	Member Label	Direction	Magnitude [lb,lb-ft]	Location [in,%]
1	MP1	Z	-163.201	3
2	MP1	Z	-163.201	69
3	MP1	Z	-80.011	%50
4	MP1	Z	-80.011	%50
5	MP1	Z	-81.982	%33
6	MP4	Z	-89.852	3
7	MP4	Z	-89.852	69
8	MP4	Z	-49.988	%50
9	MP4	Z	-54.522	%50
10	MP7	Z	-89.852	3
11	MP7	Z	-89.852	69
12	MP7	Z	-49.988	%50
13	MP7	Z	-54.522	%50
14	MP1	X	0	3
15	MP1	X	0	69
16	MP1	X	0	%50
17	MP1	X	0	%50
18	MP1	X	0	%33
19	MP4	X	0	3
20	MP4	X	0	69
21	MP4	X	0	%50
22	MP4	X	0	%50
23	MP7	X	0	3
24	MP7	X	0	69
25	MP7	X	0	%50
26	MP7	X	0	%50

Member Point Loads (BLC 5 : Wind Load 30 AZI)

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

Member Point Loads (BLC 5 : Wind Load 30 AZI) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Z	-120.162	3
2	MP1	Z	-120.162	69
3	MP1	Z	-60.625	%50
4	MP1	Z	-61.934	%50
5	MP1	Z	-63.555	%33
6	MP4	Z	-120.162	3
7	MP4	Z	-120.162	69
8	MP4	Z	-60.625	%50
9	MP4	Z	-61.934	%50
10	MP7	Z	-56.64	3
11	MP7	Z	-56.64	69
12	MP7	Z	-34.624	%50
13	MP7	Z	-39.859	%50
14	MP1	X	-69.376	3
15	MP1	X	-69.376	69
16	MP1	X	-35.002	%50
17	MP1	X	-35.757	%50
18	MP1	X	-36.694	%33
19	MP4	X	-69.376	3
20	MP4	X	-69.376	69
21	MP4	X	-35.002	%50
22	MP4	X	-35.757	%50
23	MP7	X	-32.701	3
24	MP7	X	-32.701	69
25	MP7	X	-19.99	%50
26	MP7	X	-23.013	%50

Member Point Loads (BLC 6 : Wind Load 45 AZI)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Z	-80.823	3
2	MP1	Z	-80.823	69
3	MP1	Z	-42.423	%50
4	MP1	Z	-44.561	%50
5	MP1	Z	-45.815	%33
6	MP4	Z	-110.768	3
7	MP4	Z	-110.768	69
8	MP4	Z	-54.68	%50
9	MP4	Z	-54.967	%50
10	MP7	Z	-50.879	3
11	MP7	Z	-50.879	69
12	MP7	Z	-30.166	%50
13	MP7	Z	-34.155	%50
14	MP1	X	-80.823	3
15	MP1	X	-80.823	69
16	MP1	X	-42.423	%50
17	MP1	X	-44.561	%50
18	MP1	X	-45.815	%33
19	MP4	X	-110.768	3
20	MP4	X	-110.768	69
21	MP4	X	-54.68	%50
22	MP4	X	-54.967	%50

Member Point Loads (BLC 6 : Wind Load 45 AZI) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
23	MP7	X	-50.879	3
24	MP7	X	-50.879	69
25	MP7	X	-30.166	%50
26	MP7	X	-34.155	%50

Member Point Loads (BLC 7 : Wind Load 60 AZI)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Z	-44.926	3
2	MP1	Z	-44.926	69
3	MP1	Z	-24.994	%50
4	MP1	Z	-27.261	%50
5	MP1	Z	-28.099	%33
6	MP4	Z	-81.6	3
7	MP4	Z	-81.6	69
8	MP4	Z	-40.006	%50
9	MP4	Z	-40.006	%50
10	MP7	Z	-44.926	3
11	MP7	Z	-44.926	69
12	MP7	Z	-24.994	%50
13	MP7	Z	-27.261	%50
14	MP1	X	-77.814	3
15	MP1	X	-77.814	69
16	MP1	X	-43.291	%50
17	MP1	X	-47.217	%50
18	MP1	X	-48.669	%33
19	MP4	X	-141.336	3
20	MP4	X	-141.336	69
21	MP4	X	-69.292	%50
22	MP4	X	-69.292	%50
23	MP7	X	-77.814	3
24	MP7	X	-77.814	69
25	MP7	X	-43.291	%50
26	MP7	X	-47.217	%50

Member Point Loads (BLC 8 : Wind Load 90 AZI)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Z	-4.005e-15	3
2	MP1	Z	-4.005e-15	69
3	MP1	Z	-2.448e-15	%50
4	MP1	Z	-2.818e-15	%50
5	MP1	Z	-2.915e-15	%33
6	MP4	Z	-8.496e-15	3
7	MP4	Z	-8.496e-15	69
8	MP4	Z	-4.286e-15	%50
9	MP4	Z	-4.379e-15	%50
10	MP7	Z	-8.496e-15	3
11	MP7	Z	-8.496e-15	69
12	MP7	Z	-4.286e-15	%50
13	MP7	Z	-4.379e-15	%50
14	MP1	X	-65.403	3
15	MP1	X	-65.403	69

Member Point Loads (BLC 8 : Wind Load 90 AZI) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
16	MP1	X	-39.98	%50
17	MP1	X	-46.025	%50
18	MP1	X	-47.603	%33
19	MP4	X	-138.751	3
20	MP4	X	-138.751	69
21	MP4	X	-70.003	%50
22	MP4	X	-71.515	%50
23	MP7	X	-138.751	3
24	MP7	X	-138.751	69
25	MP7	X	-70.003	%50
26	MP7	X	-71.515	%50

Member Point Loads (BLC 9 : Wind Load 120 AZI)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Z	44.926	3
2	MP1	Z	44.926	69
3	MP1	Z	24.994	%50
4	MP1	Z	27.261	%50
5	MP1	Z	28.099	%33
6	MP4	Z	44.926	3
7	MP4	Z	44.926	69
8	MP4	Z	24.994	%50
9	MP4	Z	27.261	%50
10	MP7	Z	81.6	3
11	MP7	Z	81.6	69
12	MP7	Z	40.006	%50
13	MP7	Z	40.006	%50
14	MP1	X	-77.814	3
15	MP1	X	-77.814	69
16	MP1	X	-43.291	%50
17	MP1	X	-47.217	%50
18	MP1	X	-48.669	%33
19	MP4	X	-77.814	3
20	MP4	X	-77.814	69
21	MP4	X	-43.291	%50
22	MP4	X	-47.217	%50
23	MP7	X	-141.336	3
24	MP7	X	-141.336	69
25	MP7	X	-69.292	%50
26	MP7	X	-69.292	%50

Member Point Loads (BLC 10 : Wind Load 135 AZI)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Z	80.823	3
2	MP1	Z	80.823	69
3	MP1	Z	42.423	%50
4	MP1	Z	44.561	%50
5	MP1	Z	45.815	%33
6	MP4	Z	50.879	3
7	MP4	Z	50.879	69
8	MP4	Z	30.166	%50

Member Point Loads (BLC 10 : Wind Load 135 AZI) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
9	MP4	Z	34.155	%50
10	MP7	Z	110.768	3
11	MP7	Z	110.768	69
12	MP7	Z	54.68	%50
13	MP7	Z	54.967	%50
14	MP1	X	-80.823	3
15	MP1	X	-80.823	69
16	MP1	X	-42.423	%50
17	MP1	X	-44.561	%50
18	MP1	X	-45.815	%33
19	MP4	X	-50.879	3
20	MP4	X	-50.879	69
21	MP4	X	-30.166	%50
22	MP4	X	-34.155	%50
23	MP7	X	-110.768	3
24	MP7	X	-110.768	69
25	MP7	X	-54.68	%50
26	MP7	X	-54.967	%50

Member Point Loads (BLC 11 : Wind Load 150 AZI)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Z	120.162	3
2	MP1	Z	120.162	69
3	MP1	Z	60.625	%50
4	MP1	Z	61.934	%50
5	MP1	Z	63.555	%33
6	MP4	Z	56.64	3
7	MP4	Z	56.64	69
8	MP4	Z	34.624	%50
9	MP4	Z	39.859	%50
10	MP7	Z	120.162	3
11	MP7	Z	120.162	69
12	MP7	Z	60.625	%50
13	MP7	Z	61.934	%50
14	MP1	X	-69.376	3
15	MP1	X	-69.376	69
16	MP1	X	-35.002	%50
17	MP1	X	-35.757	%50
18	MP1	X	-36.694	%33
19	MP4	X	-32.701	3
20	MP4	X	-32.701	69
21	MP4	X	-19.99	%50
22	MP4	X	-23.013	%50
23	MP7	X	-69.376	3
24	MP7	X	-69.376	69
25	MP7	X	-35.002	%50
26	MP7	X	-35.757	%50

Member Point Loads (BLC 12 : Ice Weight)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Y	-144.702	3

Member Point Loads (BLC 12 : Ice Weight) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
2	MP1	Y	-144.702	69
3	MP1	Y	-70.483	%50
4	MP1	Y	-75.079	%50
5	MP1	Y	-73.998	%33
6	MP4	Y	-144.702	3
7	MP4	Y	-144.702	69
8	MP4	Y	-70.483	%50
9	MP4	Y	-75.079	%50
10	MP7	Y	-144.702	3
11	MP7	Y	-144.702	69
12	MP7	Y	-70.483	%50
13	MP7	Y	-75.079	%50

Member Point Loads (BLC 15 : Ice Wind Load 0 AZI)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Z	-29.034	3
2	MP1	Z	-29.034	69
3	MP1	Z	-14.412	%50
4	MP1	Z	-14.412	%50
5	MP1	Z	-14.742	%33
6	MP4	Z	-17.731	3
7	MP4	Z	-17.731	69
8	MP4	Z	-9.541	%50
9	MP4	Z	-10.276	%50
10	MP7	Z	-17.731	3
11	MP7	Z	-17.731	69
12	MP7	Z	-9.541	%50
13	MP7	Z	-10.276	%50
14	MP1	X	0	3
15	MP1	X	0	69
16	MP1	X	0	%50
17	MP1	X	0	%50
18	MP1	X	0	%33
19	MP4	X	0	3
20	MP4	X	0	69
21	MP4	X	0	%50
22	MP4	X	0	%50
23	MP7	X	0	3
24	MP7	X	0	69
25	MP7	X	0	%50
26	MP7	X	0	%50

Member Point Loads (BLC 16 : Ice Wind Load 30 AZI)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Z	-21.881	3
2	MP1	Z	-21.881	69
3	MP1	Z	-11.075	%50
4	MP1	Z	-11.287	%50
5	MP1	Z	-11.57	%33
6	MP4	Z	-21.881	3
7	MP4	Z	-21.881	69

Member Point Loads (BLC 16 : Ice Wind Load 30 AZI) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
8	MP4	Z	-11.075	%50
9	MP4	Z	-11.287	%50
10	MP7	Z	-12.092	3
11	MP7	Z	-12.092	69
12	MP7	Z	-6.857	%50
13	MP7	Z	-7.705	%50
14	MP1	X	-12.633	3
15	MP1	X	-12.633	69
16	MP1	X	-6.394	%50
17	MP1	X	-6.517	%50
18	MP1	X	-6.68	%33
19	MP4	X	-12.633	3
20	MP4	X	-12.633	69
21	MP4	X	-6.394	%50
22	MP4	X	-6.517	%50
23	MP7	X	-6.981	3
24	MP7	X	-6.981	69
25	MP7	X	-3.959	%50
26	MP7	X	-4.449	%50

Member Point Loads (BLC 17 : Ice Wind Load 45 AZI)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Z	-15.202	3
2	MP1	Z	-15.202	69
3	MP1	Z	-7.895	%50
4	MP1	Z	-8.241	%50
5	MP1	Z	-8.47	%33
6	MP4	Z	-19.816	3
7	MP4	Z	-19.816	69
8	MP4	Z	-9.883	%50
9	MP4	Z	-9.93	%50
10	MP7	Z	-10.587	3
11	MP7	Z	-10.587	69
12	MP7	Z	-5.906	%50
13	MP7	Z	-6.552	%50
14	MP1	X	-15.202	3
15	MP1	X	-15.202	69
16	MP1	X	-7.895	%50
17	MP1	X	-8.241	%50
18	MP1	X	-8.47	%33
19	MP4	X	-19.816	3
20	MP4	X	-19.816	69
21	MP4	X	-9.883	%50
22	MP4	X	-9.93	%50
23	MP7	X	-10.587	3
24	MP7	X	-10.587	69
25	MP7	X	-5.906	%50
26	MP7	X	-6.552	%50

Member Point Loads (BLC 18 : Ice Wind Load 60 AZI)

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

Member Point Loads (BLC 18 : Ice Wind Load 60 AZI) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Z	-8.865	3
2	MP1	Z	-8.865	69
3	MP1	Z	-4.771	%50
4	MP1	Z	-5.138	%50
5	MP1	Z	-5.298	%33
6	MP4	Z	-14.517	3
7	MP4	Z	-14.517	69
8	MP4	Z	-7.206	%50
9	MP4	Z	-7.206	%50
10	MP7	Z	-8.865	3
11	MP7	Z	-8.865	69
12	MP7	Z	-4.771	%50
13	MP7	Z	-5.138	%50
14	MP1	X	-15.355	3
15	MP1	X	-15.355	69
16	MP1	X	-8.263	%50
17	MP1	X	-8.899	%50
18	MP1	X	-9.177	%33
19	MP4	X	-25.144	3
20	MP4	X	-25.144	69
21	MP4	X	-12.481	%50
22	MP4	X	-12.481	%50
23	MP7	X	-15.355	3
24	MP7	X	-15.355	69
25	MP7	X	-8.263	%50
26	MP7	X	-8.899	%50

Member Point Loads (BLC 19 : Ice Wind Load 90 AZI)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Z	-8.55e-16	3
2	MP1	Z	-8.55e-16	69
3	MP1	Z	-4.848e-16	%50
4	MP1	Z	-5.448e-16	%50
5	MP1	Z	-5.642e-16	%33
6	MP4	Z	-1.547e-15	3
7	MP4	Z	-1.547e-15	69
8	MP4	Z	-7.831e-16	%50
9	MP4	Z	-7.981e-16	%50
10	MP7	Z	-1.547e-15	3
11	MP7	Z	-1.547e-15	69
12	MP7	Z	-7.831e-16	%50
13	MP7	Z	-7.981e-16	%50
14	MP1	X	-13.963	3
15	MP1	X	-13.963	69
16	MP1	X	-7.917	%50
17	MP1	X	-8.897	%50
18	MP1	X	-9.214	%33
19	MP4	X	-25.266	3
20	MP4	X	-25.266	69
21	MP4	X	-12.789	%50
22	MP4	X	-13.034	%50

Member Point Loads (BLC 19 : Ice Wind Load 90 AZI) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
23	MP7	X	-25.266	3
24	MP7	X	-25.266	69
25	MP7	X	-12.789	%50
26	MP7	X	-13.034	%50

Member Point Loads (BLC 20 : Ice Wind Load 120 AZI)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Z	8.865	3
2	MP1	Z	8.865	69
3	MP1	Z	4.771	%50
4	MP1	Z	5.138	%50
5	MP1	Z	5.298	%33
6	MP4	Z	8.865	3
7	MP4	Z	8.865	69
8	MP4	Z	4.771	%50
9	MP4	Z	5.138	%50
10	MP7	Z	14.517	3
11	MP7	Z	14.517	69
12	MP7	Z	7.206	%50
13	MP7	Z	7.206	%50
14	MP1	X	-15.355	3
15	MP1	X	-15.355	69
16	MP1	X	-8.263	%50
17	MP1	X	-8.899	%50
18	MP1	X	-9.177	%33
19	MP4	X	-15.355	3
20	MP4	X	-15.355	69
21	MP4	X	-8.263	%50
22	MP4	X	-8.899	%50
23	MP7	X	-25.144	3
24	MP7	X	-25.144	69
25	MP7	X	-12.481	%50
26	MP7	X	-12.481	%50

Member Point Loads (BLC 21 : Ice Wind Load 135 AZI)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Z	15.202	3
2	MP1	Z	15.202	69
3	MP1	Z	7.895	%50
4	MP1	Z	8.241	%50
5	MP1	Z	8.47	%33
6	MP4	Z	10.587	3
7	MP4	Z	10.587	69
8	MP4	Z	5.906	%50
9	MP4	Z	6.552	%50
10	MP7	Z	19.816	3
11	MP7	Z	19.816	69
12	MP7	Z	9.883	%50
13	MP7	Z	9.93	%50
14	MP1	X	-15.202	3
15	MP1	X	-15.202	69

Member Point Loads (BLC 21 : Ice Wind Load 135 AZI) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
16	MP1	X	-7.895	%50
17	MP1	X	-8.241	%50
18	MP1	X	-8.47	%33
19	MP4	X	-10.587	3
20	MP4	X	-10.587	69
21	MP4	X	-5.906	%50
22	MP4	X	-6.552	%50
23	MP7	X	-19.816	3
24	MP7	X	-19.816	69
25	MP7	X	-9.883	%50
26	MP7	X	-9.93	%50

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Z	21.881	3
2	MP1	Z	21.881	69
3	MP1	Z	11.075	%50
4	MP1	Z	11.287	%50
5	MP1	Z	11.57	%33
6	MP4	Z	12.092	3
7	MP4	Z	12.092	69
8	MP4	Z	6.857	%50
9	MP4	Z	7.705	%50
10	MP7	Z	21.881	3
11	MP7	Z	21.881	69
12	MP7	Z	11.075	%50
13	MP7	Z	11.287	%50
14	MP1	X	-12.633	3
15	MP1	X	-12.633	69
16	MP1	X	-6.394	%50
17	MP1	X	-6.517	%50
18	MP1	X	-6.68	%33
19	MP4	X	-6.981	3
20	MP4	X	-6.981	69
21	MP4	X	-3.959	%50
22	MP4	X	-4.449	%50
23	MP7	X	-12.633	3
24	MP7	X	-12.633	69
25	MP7	X	-6.394	%50
26	MP7	X	-6.517	%50

Member Point Loads (BLC 23 : Seismic Load Z)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Z	-4.488	3
2	MP1	Z	-4.488	69
3	MP1	Z	-6.952	%50
4	MP1	Z	-8.16	%50
5	MP1	Z	-2.377	%33
6	MP4	Z	-4.488	3
7	MP4	Z	-4.488	69
8	MP4	Z	-6.952	%50

Member Point Loads (BLC 23 : Seismic Load Z) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
9	MP4	Z	-8.16	%50
10	MP7	Z	-4.488	3
11	MP7	Z	-4.488	69
12	MP7	Z	-6.952	%50
13	MP7	Z	-8.16	%50

Member Point Loads (BLC 24 : Seismic Load X)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-4.488	3
2	MP1	X	-4.488	69
3	MP1	X	-6.952	%50
4	MP1	X	-8.16	%50
5	MP1	X	-2.377	%33
6	MP4	X	-4.488	3
7	MP4	X	-4.488	69
8	MP4	X	-6.952	%50
9	MP4	X	-8.16	%50
10	MP7	X	-4.488	3
11	MP7	X	-4.488	69
12	MP7	X	-6.952	%50
13	MP7	X	-8.16	%50

Member Point Loads (BLC 25 : Live Load 1 (Lv))

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	H1	Y	-250	0

Member Point Loads (BLC 26 : Live Load 2 (Lv))

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	H1	Y	-250	%50

Member Point Loads (BLC 27 : Live Load 3 (Lv))

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	H1	Y	-250	%100

Member Point Loads (BLC 28 : Live Load 4 (Lv))

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	H3	Y	-250	0

Member Point Loads (BLC 29 : Live Load 5 (Lv))

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	H3	Y	-250	%50

Member Point Loads (BLC 30 : Live Load 6 (Lv))

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	H3	Y	-250	%100

Member Point Loads (BLC 31 : Live Load 7 (Lv))

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

Member Point Loads (BLC 31 : Live Load 7 (Lv)) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	H2	Y	-250	0

Member Point Loads (BLC 32 : Live Load 8 (Lv))

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	H2	Y	-250	%50

Member Point Loads (BLC 33 : Live Load 9 (Lv))

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	H2	Y	-250	%100

Member Point Loads (BLC 34 : Maintenance Load 1 (Lm))

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	Y	-500	%50

Member Point Loads (BLC 35 : Maintenance Load 2 (Lm))

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Y	-500	%50

Member Point Loads (BLC 36 : Maintenance Load 3 (Lm))

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP3	Y	-500	%50

Member Point Loads (BLC 37 : Maintenance Load 4 (Lm))

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP8	Y	-500	%50

Member Point Loads (BLC 38 : Maintenance Load 5 (Lm))

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP7	Y	-500	%50

Member Point Loads (BLC 39 : Maintenance Load 6 (Lm))

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP9	Y	-500	%50

Member Point Loads (BLC 40 : Maintenance Load 7 (Lm))

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP5	Y	-500	%50

Member Point Loads (BLC 41 : Maintenance Load 8 (Lm))

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP4	Y	-500	%50

Member Point Loads (BLC 42 : Maintenance Load 9 (Lm))

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP6	Y	-500	%50

Member Distributed Loads (BLC 2 : Structure Wind Z)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
1	M1	SZ	-81.499	-81.499	0	%100
2	M2	SZ	-48.899	-48.899	0	%100
3	M3	SZ	-81.499	-81.499	0	%100
4	M4	SZ	-81.499	-81.499	0	%100
5	M5	SZ	-81.499	-81.499	0	%100
6	M6	SZ	-81.499	-81.499	0	%100
7	M7	SZ	-48.899	-48.899	0	%100
8	M8	SZ	-81.499	-81.499	0	%100
9	M9	SZ	-81.499	-81.499	0	%100
10	M10	SZ	-81.499	-81.499	0	%100
11	M11	SZ	-81.499	-81.499	0	%100
12	M12	SZ	-48.899	-48.899	0	%100
13	M13	SZ	-81.499	-81.499	0	%100
14	M14	SZ	-81.499	-81.499	0	%100
15	M15	SZ	-81.499	-81.499	0	%100
16	H1	SZ	-48.899	-48.899	0	%100
17	H3	SZ	-48.899	-48.899	0	%100
18	H2	SZ	-48.899	-48.899	0	%100
19	M19	SZ	-48.899	-48.899	0	%100
20	M20	SZ	-48.899	-48.899	0	%100
21	M21	SZ	-48.899	-48.899	0	%100
22	M22	SZ	-81.499	-81.499	0	%100
23	M23	SZ	-81.499	-81.499	0	%100
24	M24	SZ	-81.499	-81.499	0	%100
25	M25	SZ	-81.499	-81.499	0	%100
26	M26	SZ	-81.499	-81.499	0	%100
27	MP2	SZ	-48.899	-48.899	0	%100
28	M28	SZ	-81.499	-81.499	0	%100
29	M29	SZ	-81.499	-81.499	0	%100
30	MP1	SZ	-48.899	-48.899	0	%100
31	M31	SZ	-81.499	-81.499	0	%100
32	M32	SZ	-81.499	-81.499	0	%100
33	MP3	SZ	-48.899	-48.899	0	%100
34	M34	SZ	-81.499	-81.499	0	%100
35	M35	SZ	-81.499	-81.499	0	%100
36	MP8	SZ	-48.899	-48.899	0	%100
37	M37	SZ	-81.499	-81.499	0	%100
38	M38	SZ	-81.499	-81.499	0	%100
39	MP7	SZ	-48.899	-48.899	0	%100
40	M40	SZ	-81.499	-81.499	0	%100
41	M41	SZ	-81.499	-81.499	0	%100
42	MP9	SZ	-48.899	-48.899	0	%100
43	M43	SZ	-81.499	-81.499	0	%100
44	M44	SZ	-81.499	-81.499	0	%100
45	MP5	SZ	-48.899	-48.899	0	%100
46	M46	SZ	-81.499	-81.499	0	%100
47	M47	SZ	-81.499	-81.499	0	%100
48	MP4	SZ	-48.899	-48.899	0	%100
49	M49	SZ	-81.499	-81.499	0	%100
50	M50	SZ	-81.499	-81.499	0	%100
51	MP6	SZ	-48.899	-48.899	0	%100

Member Distributed Loads (BLC 3 : Structure Wind X)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
1	M1	SX	-81.499	-81.499	0	%100
2	M2	SX	-48.899	-48.899	0	%100
3	M3	SX	-81.499	-81.499	0	%100
4	M4	SX	-81.499	-81.499	0	%100
5	M5	SX	-81.499	-81.499	0	%100
6	M6	SX	-81.499	-81.499	0	%100
7	M7	SX	-48.899	-48.899	0	%100
8	M8	SX	-81.499	-81.499	0	%100
9	M9	SX	-81.499	-81.499	0	%100
10	M10	SX	-81.499	-81.499	0	%100
11	M11	SX	-81.499	-81.499	0	%100
12	M12	SX	-48.899	-48.899	0	%100
13	M13	SX	-81.499	-81.499	0	%100
14	M14	SX	-81.499	-81.499	0	%100
15	M15	SX	-81.499	-81.499	0	%100
16	H1	SX	-48.899	-48.899	0	%100
17	H3	SX	-48.899	-48.899	0	%100
18	H2	SX	-48.899	-48.899	0	%100
19	M19	SX	-48.899	-48.899	0	%100
20	M20	SX	-48.899	-48.899	0	%100
21	M21	SX	-48.899	-48.899	0	%100
22	M22	SX	-81.499	-81.499	0	%100
23	M23	SX	-81.499	-81.499	0	%100
24	M24	SX	-81.499	-81.499	0	%100
25	M25	SX	-81.499	-81.499	0	%100
26	M26	SX	-81.499	-81.499	0	%100
27	MP2	SX	-48.899	-48.899	0	%100
28	M28	SX	-81.499	-81.499	0	%100
29	M29	SX	-81.499	-81.499	0	%100
30	MP1	SX	-48.899	-48.899	0	%100
31	M31	SX	-81.499	-81.499	0	%100
32	M32	SX	-81.499	-81.499	0	%100
33	MP3	SX	-48.899	-48.899	0	%100
34	M34	SX	-81.499	-81.499	0	%100
35	M35	SX	-81.499	-81.499	0	%100
36	MP8	SX	-48.899	-48.899	0	%100
37	M37	SX	-81.499	-81.499	0	%100
38	M38	SX	-81.499	-81.499	0	%100
39	MP7	SX	-48.899	-48.899	0	%100
40	M40	SX	-81.499	-81.499	0	%100
41	M41	SX	-81.499	-81.499	0	%100
42	MP9	SX	-48.899	-48.899	0	%100
43	M43	SX	-81.499	-81.499	0	%100
44	M44	SX	-81.499	-81.499	0	%100
45	MP5	SX	-48.899	-48.899	0	%100
46	M46	SX	-81.499	-81.499	0	%100
47	M47	SX	-81.499	-81.499	0	%100
48	MP4	SX	-48.899	-48.899	0	%100
49	M49	SX	-81.499	-81.499	0	%100
50	M50	SX	-81.499	-81.499	0	%100
51	MP6	SX	-48.899	-48.899	0	%100

Member Distributed Loads (BLC 12 : Ice Weight)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
1	M1	Y	-10.853	-10.853	0	%100
2	M2	Y	-12.228	-12.228	0	%100
3	M3	Y	-9.734	-9.734	0	%100
4	M4	Y	-9.734	-9.734	0	%100
5	M5	Y	-17.574	-17.574	0	%100
6	M6	Y	-10.853	-10.853	0	%100
7	M7	Y	-12.228	-12.228	0	%100
8	M8	Y	-9.734	-9.734	0	%100
9	M9	Y	-9.734	-9.734	0	%100
10	M10	Y	-17.574	-17.574	0	%100
11	M11	Y	-10.853	-10.853	0	%100
12	M12	Y	-12.228	-12.228	0	%100
13	M13	Y	-9.734	-9.734	0	%100
14	M14	Y	-9.734	-9.734	0	%100
15	M15	Y	-17.574	-17.574	0	%100
16	H1	Y	-12.228	-12.228	0	%100
17	H3	Y	-12.228	-12.228	0	%100
18	H2	Y	-12.228	-12.228	0	%100
19	M19	Y	-8.768	-8.768	0	%100
20	M20	Y	-8.768	-8.768	0	%100
21	M21	Y	-8.768	-8.768	0	%100
22	M22	Y	-20.69	-20.69	0	%100
23	M23	Y	-20.69	-20.69	0	%100
24	M24	Y	-20.69	-20.69	0	%100
25	M25	Y	0	0	0	%100
26	M26	Y	0	0	0	%100
27	MP2	Y	-8.768	-8.768	0	%100
28	M28	Y	0	0	0	%100
29	M29	Y	0	0	0	%100
30	MP1	Y	-8.768	-8.768	0	%100
31	M31	Y	0	0	0	%100
32	M32	Y	0	0	0	%100
33	MP3	Y	-8.768	-8.768	0	%100
34	M34	Y	0	0	0	%100
35	M35	Y	0	0	0	%100
36	MP8	Y	-8.768	-8.768	0	%100
37	M37	Y	0	0	0	%100
38	M38	Y	0	0	0	%100
39	MP7	Y	-8.768	-8.768	0	%100
40	M40	Y	0	0	0	%100
41	M41	Y	0	0	0	%100
42	MP9	Y	-8.768	-8.768	0	%100
43	M43	Y	0	0	0	%100
44	M44	Y	0	0	0	%100
45	MP5	Y	-8.768	-8.768	0	%100
46	M46	Y	0	0	0	%100
47	M47	Y	0	0	0	%100
48	MP4	Y	-8.768	-8.768	0	%100
49	M49	Y	0	0	0	%100
50	M50	Y	0	0	0	%100
51	MP6	Y	-8.768	-8.768	0	%100

Member Distributed Loads (BLC 13 : Ice Structure Wind Z)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
1	M1	SZ	-15.506	-15.506	0	%100
2	M2	SZ	-14.23	-14.23	0	%100
3	M3	SZ	-16.974	-16.974	0	%100
4	M4	SZ	-16.974	-16.974	0	%100
5	M5	SZ	-11.675	-11.675	0	%100
6	M6	SZ	-15.506	-15.506	0	%100
7	M7	SZ	-14.23	-14.23	0	%100
8	M8	SZ	-16.974	-16.974	0	%100
9	M9	SZ	-16.974	-16.974	0	%100
10	M10	SZ	-11.675	-11.675	0	%100
11	M11	SZ	-15.506	-15.506	0	%100
12	M12	SZ	-14.23	-14.23	0	%100
13	M13	SZ	-16.974	-16.974	0	%100
14	M14	SZ	-16.974	-16.974	0	%100
15	M15	SZ	-11.675	-11.675	0	%100
16	H1	SZ	-14.23	-14.23	0	%100
17	H3	SZ	-14.23	-14.23	0	%100
18	H2	SZ	-14.23	-14.23	0	%100
19	M19	SZ	-18.763	-18.763	0	%100
20	M20	SZ	-18.763	-18.763	0	%100
21	M21	SZ	-18.763	-18.763	0	%100
22	M22	SZ	-10.928	-10.928	0	%100
23	M23	SZ	-10.928	-10.928	0	%100
24	M24	SZ	-10.928	-10.928	0	%100
25	M25	SZ	0	0	0	%100
26	M26	SZ	0	0	0	%100
27	MP2	SZ	-18.763	-18.763	0	%100
28	M28	SZ	0	0	0	%100
29	M29	SZ	0	0	0	%100
30	MP1	SZ	-18.763	-18.763	0	%100
31	M31	SZ	0	0	0	%100
32	M32	SZ	0	0	0	%100
33	MP3	SZ	-18.763	-18.763	0	%100
34	M34	SZ	0	0	0	%100
35	M35	SZ	0	0	0	%100
36	MP8	SZ	-18.763	-18.763	0	%100
37	M37	SZ	0	0	0	%100
38	M38	SZ	0	0	0	%100
39	MP7	SZ	-18.763	-18.763	0	%100
40	M40	SZ	0	0	0	%100
41	M41	SZ	0	0	0	%100
42	MP9	SZ	-18.763	-18.763	0	%100
43	M43	SZ	0	0	0	%100
44	M44	SZ	0	0	0	%100
45	MP5	SZ	-18.763	-18.763	0	%100
46	M46	SZ	0	0	0	%100
47	M47	SZ	0	0	0	%100
48	MP4	SZ	-18.763	-18.763	0	%100
49	M49	SZ	0	0	0	%100
50	M50	SZ	0	0	0	%100
51	MP6	SZ	-18.763	-18.763	0	%100

Member Distributed Loads (BLC 14 : Ice Structure Wind X)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
1	M1	SX	-15.506	-15.506	0	%100
2	M2	SX	-14.23	-14.23	0	%100
3	M3	SX	-16.974	-16.974	0	%100
4	M4	SX	-16.974	-16.974	0	%100
5	M5	SX	-11.675	-11.675	0	%100
6	M6	SX	-15.506	-15.506	0	%100
7	M7	SX	-14.23	-14.23	0	%100
8	M8	SX	-16.974	-16.974	0	%100
9	M9	SX	-16.974	-16.974	0	%100
10	M10	SX	-11.675	-11.675	0	%100
11	M11	SX	-15.506	-15.506	0	%100
12	M12	SX	-14.23	-14.23	0	%100
13	M13	SX	-16.974	-16.974	0	%100
14	M14	SX	-16.974	-16.974	0	%100
15	M15	SX	-11.675	-11.675	0	%100
16	H1	SX	-14.23	-14.23	0	%100
17	H3	SX	-14.23	-14.23	0	%100
18	H2	SX	-14.23	-14.23	0	%100
19	M19	SX	-18.763	-18.763	0	%100
20	M20	SX	-18.763	-18.763	0	%100
21	M21	SX	-18.763	-18.763	0	%100
22	M22	SX	-10.928	-10.928	0	%100
23	M23	SX	-10.928	-10.928	0	%100
24	M24	SX	-10.928	-10.928	0	%100
25	M25	SX	0	0	0	%100
26	M26	SX	0	0	0	%100
27	MP2	SX	-18.763	-18.763	0	%100
28	M28	SX	0	0	0	%100
29	M29	SX	0	0	0	%100
30	MP1	SX	-18.763	-18.763	0	%100
31	M31	SX	0	0	0	%100
32	M32	SX	0	0	0	%100
33	MP3	SX	-18.763	-18.763	0	%100
34	M34	SX	0	0	0	%100
35	M35	SX	0	0	0	%100
36	MP8	SX	-18.763	-18.763	0	%100
37	M37	SX	0	0	0	%100
38	M38	SX	0	0	0	%100
39	MP7	SX	-18.763	-18.763	0	%100
40	M40	SX	0	0	0	%100
41	M41	SX	0	0	0	%100
42	MP9	SX	-18.763	-18.763	0	%100
43	M43	SX	0	0	0	%100
44	M44	SX	0	0	0	%100
45	MP5	SX	-18.763	-18.763	0	%100
46	M46	SX	0	0	0	%100
47	M47	SX	0	0	0	%100
48	MP4	SX	-18.763	-18.763	0	%100
49	M49	SX	0	0	0	%100
50	M50	SX	0	0	0	%100
51	MP6	SX	-18.763	-18.763	0	%100

Member Distributed Loads (BLC 43 : BLC 1 Transient Area Loads)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
1	M12	Y	-10.921	-10.921	0	23.596
2	M13	Y	-5.504	-5.504	3.828	27.295
3	M14	Y	-5.504	-5.504	3.828	27.295
4	M7	Y	-10.921	-10.921	0	23.596
5	M8	Y	-5.504	-5.504	3.828	27.295
6	M9	Y	-5.504	-5.504	3.828	27.295
7	M2	Y	-10.921	-10.921	0	23.596
8	M3	Y	-5.504	-5.504	3.828	27.295
9	M4	Y	-5.504	-5.504	3.828	27.295

Member Distributed Loads (BLC 44 : BLC 12 Transient Area Loads)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
1	M12	Y	-29.487	-29.487	0	23.596
2	M13	Y	-14.86	-14.86	3.828	27.295
3	M14	Y	-14.86	-14.86	3.828	27.295
4	M7	Y	-29.487	-29.487	0	23.596
5	M8	Y	-14.86	-14.86	3.828	27.295
6	M9	Y	-14.86	-14.86	3.828	27.295
7	M2	Y	-29.487	-29.487	0	23.596
8	M3	Y	-14.86	-14.86	3.828	27.295
9	M4	Y	-14.86	-14.86	3.828	27.295

Member Area Loads (BLC 1 : Self Weight)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[psf]
1	N35	N36	N33	N34	Y	Two Way	-6
2	N22	N23	N24	N21	Y	Two Way	-6
3	N9	N10	N11	N12	Y	Two Way	-6

Member Area Loads (BLC 12 : Ice Weight)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[psf]
1	N35	N36	N33	N34	Y	Two Way	-16.2
2	N22	N23	N24	N21	Y	Two Way	-16.2
3	N9	N10	N11	N12	Y	Two Way	-16.2

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(P...
1	Self Weight	DL		-1			13		3	
2	Structure Wind Z	WLZ						51		
3	Structure Wind X	WLX						51		
4	Wind Load 0 AZI	WLZ					26			
5	Wind Load 30 AZI	None					26			
6	Wind Load 45 AZI	None					26			
7	Wind Load 60 AZI	None					26			
8	Wind Load 90 AZI	WLX					26			
9	Wind Load 120 AZI	None					26			
10	Wind Load 135 AZI	None					26			
11	Wind Load 150 AZI	None					26			
12	Ice Weight	OL1					13	51	3	

Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(P...
13	Ice Structure Wind Z	OL2						51		
14	Ice Structure Wind X	OL3						51		
15	Ice Wind Load 0 AZI	OL2					26			
16	Ice Wind Load 30 AZI	None					26			
17	Ice Wind Load 45 AZI	None					26			
18	Ice Wind Load 60 AZI	None					26			
19	Ice Wind Load 90 AZI	OL3					26			
20	Ice Wind Load 120 AZI	None					26			
21	Ice Wind Load 135 AZI	None					26			
22	Ice Wind Load 150 AZI	None					26			
23	Seismic Load Z	ELZ			-.109		13			
24	Seismic Load X	ELX	-.109				13			
25	Live Load 1 (Lv)	None					1			
26	Live Load 2 (Lv)	None					1			
27	Live Load 3 (Lv)	None					1			
28	Live Load 4 (Lv)	None					1			
29	Live Load 5 (Lv)	None					1			
30	Live Load 6 (Lv)	None					1			
31	Live Load 7 (Lv)	None					1			
32	Live Load 8 (Lv)	None					1			
33	Live Load 9 (Lv)	None					1			
34	Maintenance Load 1 (...	None					1			
35	Maintenance Load 2 (...	None					1			
36	Maintenance Load 3 (...	None					1			
37	Maintenance Load 4 (...	None					1			
38	Maintenance Load 5 (...	None					1			
39	Maintenance Load 6 (...	None					1			
40	Maintenance Load 7 (...	None					1			
41	Maintenance Load 8 (...	None					1			
42	Maintenance Load 9 (...	None					1			
43	BLC 1 Transient Area...	None						9		
44	BLC 12 Transient Are...	None						9		

Load Combinations

	Description	So..	P...	S...	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac...
1	1.4DL	Yes	Y		DL	1.4																				
2	1.2DL + 1WL 0 AZI	Yes	Y		DL	1.2	2	1	3		4	1														
3	1.2DL + 1WL 30 AZI	Yes	Y		DL	1.2	2	.866	3	.5	5	1														
4	1.2DL + 1WL 45 AZI	Yes	Y		DL	1.2	2	.707	3	.707	6	1														
5	1.2DL + 1WL 60 AZI	Yes	Y		DL	1.2	2	.5	3	.866	7	1														
6	1.2DL + 1WL 90 AZI	Yes	Y		DL	1.2	2		3	1	8	1														
7	1.2DL + 1WL 120 AZI	Yes	Y		DL	1.2	2	-.5	3	.866	9	1														
8	1.2DL + 1WL 135 AZI	Yes	Y		DL	1.2	2	-.707	3	.707	10	1														
9	1.2DL + 1WL 150 AZI	Yes	Y		DL	1.2	2	-.866	3	.5	11	1														
10	1.2DL + 1WL 180 AZI	Yes	Y		DL	1.2	2	-1	3		4	-1														
11	1.2DL + 1WL 210 AZI	Yes	Y		DL	1.2	2	-.866	3	-.5	5	-1														
12	1.2DL + 1WL 225 AZI	Yes	Y		DL	1.2	2	-.707	3	-.707	6	-1														
13	1.2DL + 1WL 240 AZI	Yes	Y		DL	1.2	2	-.5	3	-.866	7	-1														
14	1.2DL + 1WL 270 AZI	Yes	Y		DL	1.2	2		3	-1	8	-1														
15	1.2DL + 1WL 300 AZI	Yes	Y		DL	1.2	2	.5	3	-.866	9	-1														

Load Combinations (Continued)

	Description	So..	P...	S...	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac...
16	1.2DL + 1WL 315 AZI	Yes	Y		DL	1.2	2	.707	3	-.707	10	-1														
17	1.2DL + 1WL 330 AZI	Yes	Y		DL	1.2	2	.866	3	-.5	11	-1														
18	0.9DL + 1WL 0 AZI	Yes	Y		DL	.9	2	1	3		4	1														
19	0.9DL + 1WL 30 AZI	Yes	Y		DL	.9	2	.866	3	.5	5	1														
20	0.9DL + 1WL 45 AZI	Yes	Y		DL	.9	2	.707	3	.707	6	1														
21	0.9DL + 1WL 60 AZI	Yes	Y		DL	.9	2	.5	3	.866	7	1														
22	0.9DL + 1WL 90 AZI	Yes	Y		DL	.9	2		3	1	8	1														
23	0.9DL + 1WL 120 AZI	Yes	Y		DL	.9	2	-.5	3	.866	9	1														
24	0.9DL + 1WL 135 AZI	Yes	Y		DL	.9	2	-.707	3	.707	10	1														
25	0.9DL + 1WL 150 AZI	Yes	Y		DL	.9	2	-.866	3	.5	11	1														
26	0.9DL + 1WL 180 AZI	Yes	Y		DL	.9	2	-1	3		4	-1														
27	0.9DL + 1WL 210 AZI	Yes	Y		DL	.9	2	-.866	3	-.5	5	-1														
28	0.9DL + 1WL 225 AZI	Yes	Y		DL	.9	2	-.707	3	-.707	6	-1														
29	0.9DL + 1WL 240 AZI	Yes	Y		DL	.9	2	-.5	3	-.866	7	-1														
30	0.9DL + 1WL 270 AZI	Yes	Y		DL	.9	2		3	-1	8	-1														
31	0.9DL + 1WL 300 AZI	Yes	Y		DL	.9	2	.5	3	-.866	9	-1														
32	0.9DL + 1WL 315 AZI	Yes	Y		DL	.9	2	.707	3	-.707	10	-1														
33	0.9DL + 1WL 330 AZI	Yes	Y		DL	.9	2	.866	3	-.5	11	-1														
34	1.2DL + 1DLi + 1WLi ...	Yes	Y		DL	1.2	OL1	1	13	1	14		15	1												
35	1.2DL + 1DLi + 1WLi ...	Yes	Y		DL	1.2	OL1	1	13	.866	14	.5	16	1												
36	1.2DL + 1DLi + 1WLi ...	Yes	Y		DL	1.2	OL1	1	13	.707	14	.707	17	1												
37	1.2DL + 1DLi + 1WLi ...	Yes	Y		DL	1.2	OL1	1	13	.5	14	.866	18	1												
38	1.2DL + 1DLi + 1WLi ...	Yes	Y		DL	1.2	OL1	1	13		14	1	19	1												
39	1.2DL + 1DLi + 1WLi ...	Yes	Y		DL	1.2	OL1	1	13	-.5	14	.866	20	1												
40	1.2DL + 1DLi + 1WLi ...	Yes	Y		DL	1.2	OL1	1	13	-.707	14	.707	21	1												
41	1.2DL + 1DLi + 1WLi ...	Yes	Y		DL	1.2	OL1	1	13	-.866	14	.5	22	1												
42	1.2DL + 1DLi + 1WLi ...	Yes	Y		DL	1.2	OL1	1	13	-1	14		15	-1												
43	1.2DL + 1DLi + 1WLi ...	Yes	Y		DL	1.2	OL1	1	13	-.866	14	-.5	16	-1												
44	1.2DL + 1DLi + 1WLi ...	Yes	Y		DL	1.2	OL1	1	13	-.707	14	-.707	17	-1												
45	1.2DL + 1DLi + 1WLi ...	Yes	Y		DL	1.2	OL1	1	13	-.5	14	-.866	18	-1												
46	1.2DL + 1DLi + 1WLi ...	Yes	Y		DL	1.2	OL1	1	13		14	-1	19	-1												
47	1.2DL + 1DLi + 1WLi ...	Yes	Y		DL	1.2	OL1	1	13	.5	14	-.866	20	-1												
48	1.2DL + 1DLi + 1WLi ...	Yes	Y		DL	1.2	OL1	1	13	.707	14	-.707	21	-1												
49	1.2DL + 1DLi + 1WLi ...	Yes	Y		DL	1.2	OL1	1	13	.866	14	-.5	22	-1												
50	(1.2+0.2Sds)DL + 1E ...	Yes	Y		DL	1.2...	23	1	24																	
51	(1.2+0.2Sds)DL + 1E ...	Yes	Y		DL	1.2...	23	.866	24	.5																
52	(1.2+0.2Sds)DL + 1E ...	Yes	Y		DL	1.2...	23	.707	24	.707																
53	(1.2+0.2Sds)DL + 1E ...	Yes	Y		DL	1.2...	23	.5	24	.866																
54	(1.2+0.2Sds)DL + 1E ...	Yes	Y		DL	1.2...	23		24	1																
55	(1.2+0.2Sds)DL + 1E ...	Yes	Y		DL	1.2...	23	-.5	24	.866																
56	(1.2+0.2Sds)DL + 1E ...	Yes	Y		DL	1.2...	23	-.707	24	.707																
57	(1.2+0.2Sds)DL + 1E ...	Yes	Y		DL	1.2...	23	-.866	24	.5																
58	(1.2+0.2Sds)DL + 1E ...	Yes	Y		DL	1.2...	23	-1	24																	
59	(1.2+0.2Sds)DL + 1E ...	Yes	Y		DL	1.2...	23	-.866	24	-.5																
60	(1.2+0.2Sds)DL + 1E ...	Yes	Y		DL	1.2...	23	-.707	24	-.707																
61	(1.2+0.2Sds)DL + 1E ...	Yes	Y		DL	1.2...	23	-.5	24	-.866																
62	(1.2+0.2Sds)DL + 1E ...	Yes	Y		DL	1.2...	23		24	-1																
63	(1.2+0.2Sds)DL + 1E ...	Yes	Y		DL	1.2...	23	.5	24	-.866																
64	(1.2+0.2Sds)DL + 1E ...	Yes	Y		DL	1.2...	23	.707	24	-.707																
65	(1.2+0.2Sds)DL + 1E ...	Yes	Y		DL	1.2...	23	.866	24	-.5																
66	(0.9-0.2Sds)DL + 1E 0...	Yes	Y		DL	.864	23	1	24																	
67	(0.9-0.2Sds)DL + 1E 3...	Yes	Y		DL	.864	23	.866	24	.5																

Load Combinations (Continued)

	Description	So..	P...	S...	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac...
68	(0.9-0.2Sds)DL + 1E 4..	Yes	Y		DL	.864	23	.707	24	.707																
69	(0.9-0.2Sds)DL + 1E 6..	Yes	Y		DL	.864	23	.5	24	.866																
70	(0.9-0.2Sds)DL + 1E 9..	Yes	Y		DL	.864	23		24	1																
71	(0.9-0.2Sds)DL + 1E 1..	Yes	Y		DL	.864	23	-.5	24	.866																
72	(0.9-0.2Sds)DL + 1E 1..	Yes	Y		DL	.864	23	-.707	24	.707																
73	(0.9-0.2Sds)DL + 1E 1..	Yes	Y		DL	.864	23	-.866	24	.5																
74	(0.9-0.2Sds)DL + 1E 1..	Yes	Y		DL	.864	23	-1	24																	
75	(0.9-0.2Sds)DL + 1E 2..	Yes	Y		DL	.864	23	-.866	24	-.5																
76	(0.9-0.2Sds)DL + 1E 2..	Yes	Y		DL	.864	23	-.707	24	-.707																
77	(0.9-0.2Sds)DL + 1E 2..	Yes	Y		DL	.864	23	-.5	24	-.866																
78	(0.9-0.2Sds)DL + 1E 2..	Yes	Y		DL	.864	23		24	-1																
79	(0.9-0.2Sds)DL + 1E 3..	Yes	Y		DL	.864	23	.5	24	-.866																
80	(0.9-0.2Sds)DL + 1E 3..	Yes	Y		DL	.864	23	.707	24	-.707																
81	(0.9-0.2Sds)DL + 1E 3..	Yes	Y		DL	.864	23	.866	24	-.5																
82	1.2DL + 1Lv1	Yes	Y		DL	1.2	25	1.5																		
83	1.2DL + 1Lv2	Yes	Y		DL	1.2	26	1.5																		
84	1.2DL + 1Lv3	Yes	Y		DL	1.2	27	1.5																		
85	1.2DL + 1Lv4	Yes	Y		DL	1.2	28	1.5																		
86	1.2DL + 1Lv5	Yes	Y		DL	1.2	29	1.5																		
87	1.2DL + 1Lv6	Yes	Y		DL	1.2	30	1.5																		
88	1.2DL + 1Lv7	Yes	Y		DL	1.2	31	1.5																		
89	1.2DL + 1Lv8	Yes	Y		DL	1.2	32	1.5																		
90	1.2DL + 1Lv9	Yes	Y		DL	1.2	33	1.5																		
91	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	34	1.5	2	.053	3		4	.053												
92	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	34	1.5	2	.046	3	.027	5	.053												
93	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	34	1.5	2	.038	3	.038	6	.053												
94	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	34	1.5	2	.027	3	.046	7	.053												
95	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	34	1.5	2		3	.053	8	.053												
96	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	34	1.5	2	-.027	3	.046	9	.053												
97	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	34	1.5	2	-.038	3	.038	10	.053												
98	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	34	1.5	2	-.046	3	.027	11	.053												
99	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	34	1.5	2	-.053	3		4	-.053												
100	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	34	1.5	2	-.046	3	-.027	5	-.053												
101	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	34	1.5	2	-.038	3	-.038	6	-.053												
102	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	34	1.5	2	-.027	3	-.046	7	-.053												
103	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	34	1.5	2		3	-.053	8	-.053												
104	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	34	1.5	2	.027	3	-.046	9	-.053												
105	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	34	1.5	2	.038	3	-.038	10	-.053												
106	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	34	1.5	2	.046	3	-.027	11	-.053												
107	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	35	1.5	2	.053	3		4	.053												
108	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	35	1.5	2	.046	3	.027	5	.053												
109	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	35	1.5	2	.038	3	.038	6	.053												
110	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	35	1.5	2	.027	3	.046	7	.053												
111	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	35	1.5	2		3	.053	8	.053												
112	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	35	1.5	2	-.027	3	.046	9	.053												
113	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	35	1.5	2	-.038	3	.038	10	.053												
114	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	35	1.5	2	-.046	3	.027	11	.053												
115	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	35	1.5	2	-.053	3		4	-.053												
116	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	35	1.5	2	-.046	3	-.027	5	-.053												
117	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	35	1.5	2	-.038	3	-.038	6	-.053												
118	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	35	1.5	2	-.027	3	-.046	7	-.053												
119	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	35	1.5	2		3	-.053	8	-.053												

Load Combinations (Continued)

	Description	So..	P...	S...	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac...
120	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	35	1.5	2	.027	3	-.046	9	-.053										
121	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	35	1.5	2	.038	3	-.038	10	-.053										
122	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	35	1.5	2	.046	3	-.027	11	-.053										
123	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	36	1.5	2	.053	3		4	.053										
124	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	36	1.5	2	.046	3	.027	5	.053										
125	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	36	1.5	2	.038	3	.038	6	.053										
126	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	36	1.5	2	.027	3	.046	7	.053										
127	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	36	1.5	2		3	.053	8	.053										
128	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	36	1.5	2	-.027	3	.046	9	.053										
129	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	36	1.5	2	-.038	3	.038	10	.053										
130	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	36	1.5	2	-.046	3	.027	11	.053										
131	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	36	1.5	2	-.053	3		4	-.053										
132	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	36	1.5	2	-.046	3	-.027	5	-.053										
133	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	36	1.5	2	-.038	3	-.038	6	-.053										
134	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	36	1.5	2	-.027	3	-.046	7	-.053										
135	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	36	1.5	2		3	-.053	8	-.053										
136	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	36	1.5	2	.027	3	-.046	9	-.053										
137	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	36	1.5	2	.038	3	-.038	10	-.053										
138	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	36	1.5	2	.046	3	-.027	11	-.053										
139	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	37	1.5	2	.053	3		4	.053										
140	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	37	1.5	2	.046	3	.027	5	.053										
141	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	37	1.5	2	.038	3	.038	6	.053										
142	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	37	1.5	2	.027	3	.046	7	.053										
143	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	37	1.5	2		3	.053	8	.053										
144	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	37	1.5	2	-.027	3	.046	9	.053										
145	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	37	1.5	2	-.038	3	.038	10	.053										
146	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	37	1.5	2	-.046	3	.027	11	.053										
147	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	37	1.5	2	-.053	3		4	-.053										
148	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	37	1.5	2	-.046	3	-.027	5	-.053										
149	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	37	1.5	2	-.038	3	-.038	6	-.053										
150	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	37	1.5	2	-.027	3	-.046	7	-.053										
151	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	37	1.5	2		3	-.053	8	-.053										
152	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	37	1.5	2	.027	3	-.046	9	-.053										
153	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	37	1.5	2	.038	3	-.038	10	-.053										
154	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	37	1.5	2	.046	3	-.027	11	-.053										
155	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	38	1.5	2	.053	3		4	.053										
156	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	38	1.5	2	.046	3	.027	5	.053										
157	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	38	1.5	2	.038	3	.038	6	.053										
158	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	38	1.5	2	.027	3	.046	7	.053										
159	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	38	1.5	2		3	.053	8	.053										
160	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	38	1.5	2	-.027	3	.046	9	.053										
161	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	38	1.5	2	-.038	3	.038	10	.053										
162	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	38	1.5	2	-.046	3	.027	11	.053										
163	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	38	1.5	2	-.053	3		4	-.053										
164	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	38	1.5	2	-.046	3	-.027	5	-.053										
165	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	38	1.5	2	-.038	3	-.038	6	-.053										
166	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	38	1.5	2	-.027	3	-.046	7	-.053										
167	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	38	1.5	2		3	-.053	8	-.053										
168	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	38	1.5	2	.027	3	-.046	9	-.053										
169	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	38	1.5	2	.038	3	-.038	10	-.053										
170	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	38	1.5	2	.046	3	-.027	11	-.053										
171	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	39	1.5	2	.053	3		4	.053										

Load Combinations (Continued)

	Description	So..	P...	S...	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac...
172	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	39	1.5	2	.046	3	.027	5	.053												
173	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	39	1.5	2	.038	3	.038	6	.053												
174	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	39	1.5	2	.027	3	.046	7	.053												
175	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	39	1.5	2		3	.053	8	.053												
176	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	39	1.5	2	-.027	3	.046	9	.053												
177	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	39	1.5	2	-.038	3	.038	10	.053												
178	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	39	1.5	2	-.046	3	.027	11	.053												
179	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	39	1.5	2	-.053	3		4	-.053												
180	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	39	1.5	2	-.046	3	-.027	5	-.053												
181	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	39	1.5	2	-.038	3	-.038	6	-.053												
182	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	39	1.5	2	-.027	3	-.046	7	-.053												
183	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	39	1.5	2		3	-.053	8	-.053												
184	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	39	1.5	2	.027	3	-.046	9	-.053												
185	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	39	1.5	2	.038	3	-.038	10	-.053												
186	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	39	1.5	2	.046	3	-.027	11	-.053												
187	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	40	1.5	2	.053	3		4	.053												
188	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	40	1.5	2	.046	3	.027	5	.053												
189	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	40	1.5	2	.038	3	.038	6	.053												
190	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	40	1.5	2	.027	3	.046	7	.053												
191	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	40	1.5	2		3	.053	8	.053												
192	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	40	1.5	2	-.027	3	.046	9	.053												
193	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	40	1.5	2	-.038	3	.038	10	.053												
194	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	40	1.5	2	-.046	3	.027	11	.053												
195	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	40	1.5	2	-.053	3		4	-.053												
196	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	40	1.5	2	-.046	3	-.027	5	-.053												
197	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	40	1.5	2	-.038	3	-.038	6	-.053												
198	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	40	1.5	2	-.027	3	-.046	7	-.053												
199	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	40	1.5	2		3	-.053	8	-.053												
200	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	40	1.5	2	.027	3	-.046	9	-.053												
201	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	40	1.5	2	.038	3	-.038	10	-.053												
202	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	40	1.5	2	.046	3	-.027	11	-.053												
203	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	41	1.5	2	.053	3		4	.053												
204	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	41	1.5	2	.046	3	.027	5	.053												
205	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	41	1.5	2	.038	3	.038	6	.053												
206	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	41	1.5	2	.027	3	.046	7	.053												
207	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	41	1.5	2		3	.053	8	.053												
208	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	41	1.5	2	-.027	3	.046	9	.053												
209	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	41	1.5	2	-.038	3	.038	10	.053												
210	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	41	1.5	2	-.046	3	.027	11	.053												
211	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	41	1.5	2	-.053	3		4	-.053												
212	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	41	1.5	2	-.046	3	-.027	5	-.053												
213	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	41	1.5	2	-.038	3	-.038	6	-.053												
214	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	41	1.5	2	-.027	3	-.046	7	-.053												
215	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	41	1.5	2		3	-.053	8	-.053												
216	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	41	1.5	2	.027	3	-.046	9	-.053												
217	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	41	1.5	2	.038	3	-.038	10	-.053												
218	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	41	1.5	2	.046	3	-.027	11	-.053												
219	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	42	1.5	2	.053	3		4	.053												
220	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	42	1.5	2	.046	3	.027	5	.053												
221	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	42	1.5	2	.038	3	.038	6	.053												
222	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	42	1.5	2	.027	3	.046	7	.053												
223	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	42	1.5	2		3	.053	8	.053												

Load Combinations (Continued)

	Description	So..	P ...	S ...	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac...
224	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	42	1.5	2	-.027	3	.046	9	.053										
225	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	42	1.5	2	-.038	3	.038	10	.053										
226	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	42	1.5	2	-.046	3	.027	11	.053										
227	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	42	1.5	2	-.053	3		4	-.053										
228	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	42	1.5	2	-.046	3	-.027	5	-.053										
229	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	42	1.5	2	-.038	3	-.038	6	-.053										
230	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	42	1.5	2	-.027	3	-.046	7	-.053										
231	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	42	1.5	2		3	-.053	8	-.053										
232	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	42	1.5	2	.027	3	-.046	9	-.053										
233	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	42	1.5	2	.038	3	-.038	10	-.053										
234	1.2DL + 1.5Lm + 1W...	Yes	Y		DL	1.2	42	1.5	2	.046	3	-.027	11	-.053										

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	N25	max	1013.65	20	1965.713	39	1530.936	3	369.064	33	1813.03	19	296.879	30
2		min	-1017.846	12	-15.455	31	-1525.232	27	-1993.702	41	-1816.109	11	-3615.466	38
3	N1	max	910.716	8	2017.817	45	1602.299	17	394.206	19	1849.559	25	3535.128	45
4		min	-903.407	32	-6.322	21	-1600.527	25	-2417.586	43	-1854.015	17	-261.831	21
5	N13	max	1558.491	22	1920.51	34	412.7	18	4014.373	34	1525.209	30	754.928	167
6		min	-1561.34	14	-48.68	26	-420.433	10	-416.48	26	-1528.103	6	-619.867	223
7	Totals:	max	2947.72	22	5536.081	41	3153.468	18						
8		min	-2947.72	30	1429.053	81	-3153.47	10						

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

	Member	Shape	Code Check	Loc[in]	LC	Shear ...	Loc[in]	Dir	LC	phi*Pnc ...	phi*Pnt [...	phi*Mn y...	phi*Mn z...	Cb	Eqn
1	M2	PIPE 3.5	.534	40	45	.186	40		9	75262.68	78750	7953.75	7953.75	2....	H1-1b
2	M12	PIPE 3.5	.516	40	39	.177	40		3	75262.68	78750	7953.75	7953.75	2....	H1-1b
3	M7	PIPE 3.5	.505	40	34	.165	40		14	75262.68	78750	7953.75	7953.75	2....	H1-1b
4	M1	C3X5	.406	34.856	44	.143	63.177	y	41	11202.9...	47628	981.263	4104	1....	H1-1b
5	M11	C3X5	.396	34.856	40	.142	63.177	y	35	11202.9...	47628	981.263	4104	1....	H1-1b
6	M6	C3X5	.387	34.856	34	.137	63.177	y	46	37027.8...	47628	981.263	4020.228	1	H1-1b
7	MP1	PIPE_2.0	.357	57	16	.046	57		16	20866.7...	32130	1871.625	1871.625	1....	H1-1b
8	MP3	PIPE_2.0	.344	57	5	.039	57		10	20866.7...	32130	1871.625	1871.625	1....	H1-1b
9	MP9	PIPE_2.0	.342	57	10	.028	57		3	20866.7...	32130	1871.625	1871.625	1....	H1-1b
10	MP4	PIPE_2.0	.332	57	11	.048	57		11	20866.7...	32130	1871.625	1871.625	1....	H1-1b
11	MP2	PIPE_2.0	.328	57	5	.050	57		9	20866.7...	32130	1871.625	1871.625	1....	H1-1b
12	MP8	PIPE_2.0	.328	57	10	.041	57		10	20866.7...	32130	1871.625	1871.625	1....	H1-1b
13	MP7	PIPE_2.0	.318	57	10	.039	57		9	20866.7...	32130	1871.625	1871.625	1....	H1-1b
14	MP5	PIPE_2.0	.304	57	16	.049	57		3	20866.7...	32130	1871.625	1871.625	1....	H1-1b
15	MP6	PIPE_2.0	.303	57	15	.034	57		5	20866.7...	32130	1871.625	1871.625	1....	H1-1b
16	M10	6.5"x0.37" P...	.265	21	2	.097	21	y	48	3513.807	75757.5	583.963	6350.662	1....	H1-1b
17	M15	6.5"x0.37" P...	.262	21	7	.099	21	y	37	3513.807	75757.5	583.963	6313.86	1....	H1-1b
18	M5	6.5"x0.37" P...	.258	21	12	.104	21	y	42	3513.807	75757.5	583.963	6599.95	1....	H1-1b
19	M13	L2x2x3	.183	0	14	.028	0	z	43	18051.7...	23392.8	557.717	1239.29	2....	H2-1
20	M3	L2x2x3	.175	0	3	.029	0	z	49	18051.7...	23392.8	557.717	1239.29	2....	H2-1
21	M22	L6 5/8x4 7/...	.164	0	21	.032	42	y	11	15453.0...	66065.6...	1040.591	3031.076	1....	H2-1
22	M19	PIPE_2.0	.160	72	10	.139	72		2	14916.0...	32130	1871.625	1871.625	1....	H1-1b
23	M8	L2x2x3	.157	0	9	.028	0	z	38	18051.7...	23392.8	557.717	1239.29	2....	H2-1
24	M23	L6 5/8x4 7/...	.155	0	26	.033	42	y	17	15453.0...	66065.6...	1040.591	3031.076	1....	H2-1

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

	Member	Shape	Code Check	Loc[in]	LC	Shear ...	Loc[in]	Dir	LC	phi*Pnc ...	phi*Pnt [...	phi*Mn y...	phi*Mn z...	Cb	Eqn
25	M21	PIPE 2.0	.145	72	5	.131	72		13	14916.0...	32130	1871.625	1871.625	1....	H1-1b
26	M4	L2x2x3	.145	0	13	.031	0	y	41	18051.7...	23392.8	557.717	1239.29	2....	H2-1
27	M20	PIPE 2.0	.141	24	16	.131	72		8	14916.0...	32130	1871.625	1871.625	1....	H1-1b
28	M24	L6 5/8x4 7/...	.131	0	32	.030	42	y	6	15453.0...	66065.6...	1040.591	3031.076	1....	H2-1
29	M9	L2x2x3	.129	0	2	.030	0	y	46	18051.7...	23392.8	557.717	1239.29	2....	H2-1
30	M14	L2x2x3	.119	0	7	.031	0	y	36	18051.7...	23392.8	557.717	1239.29	2....	H2-1
31	H3	PIPE 3.5	.109	31	10	.104	24		16	60666.0...	78750	7953.75	7953.75	1....	H1-1b
32	H1	PIPE 3.5	.108	72	121	.108	24		10	60666.0...	78750	7953.75	7953.75	1....	H1-1b
33	H2	PIPE_3.5	.105	72	212	.097	24		5	60666.0...	78750	7953.75	7953.75	1....	H1-1b

APPENDIX D

ADDITIONAL CALCUATIONS

Trylon

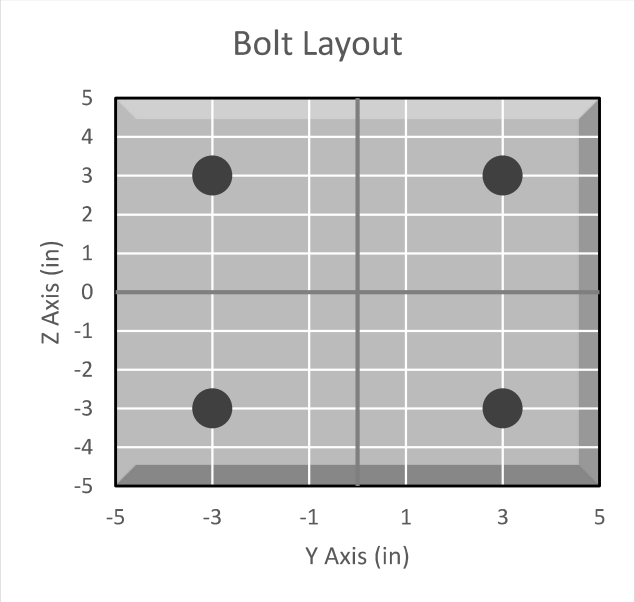
Analysis date: 7/23/2021

BOLT TOOL 1.5.2

Project Data	
Job Code:	188207
Carrier Site ID:	823666
Carrier Site Name:	Deep River/Rt 9

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

Bolt Properties		
Connection Type:	Bolt	
Diameter:	0.625	in
Grade:	A325	--
Yield Strength (Fy):	92	ksi
Ultimate Strength (Fu):	120	ksi
Number of Bolts:	4	--
Threads Included:	Yes	--
Double Shear:	No	--
Connection Pipe Size:	-	in



Connection Description
Standoff to Collar

Bolt Check*		
Tensile Capacity (ϕT_n):	20340.1	lbs
Shear Capacity (ϕV_n):	13805.8	lbs
Tension Force (T_u):	4462.4	lbs
Shear Force (V_u):	757.1	lbs
Tension Usage:	20.9%	--
Shear Usage:	5.2%	--
Interaction:	20.9%	Pass
Controlling Member:	M2	--
Controlling LC:	42	--

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

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

APPENDIX E

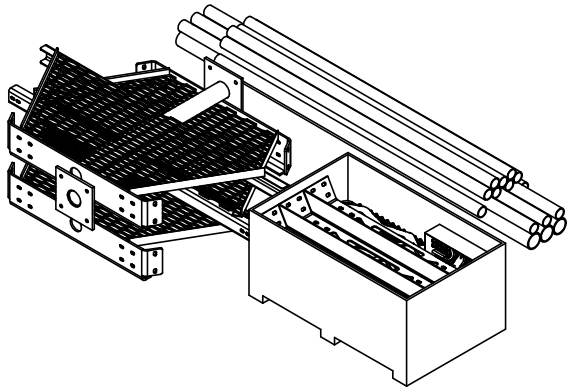
SUPPLEMENTAL DRAWINGS

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

C

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

FOR BOM ENTRY ONLY

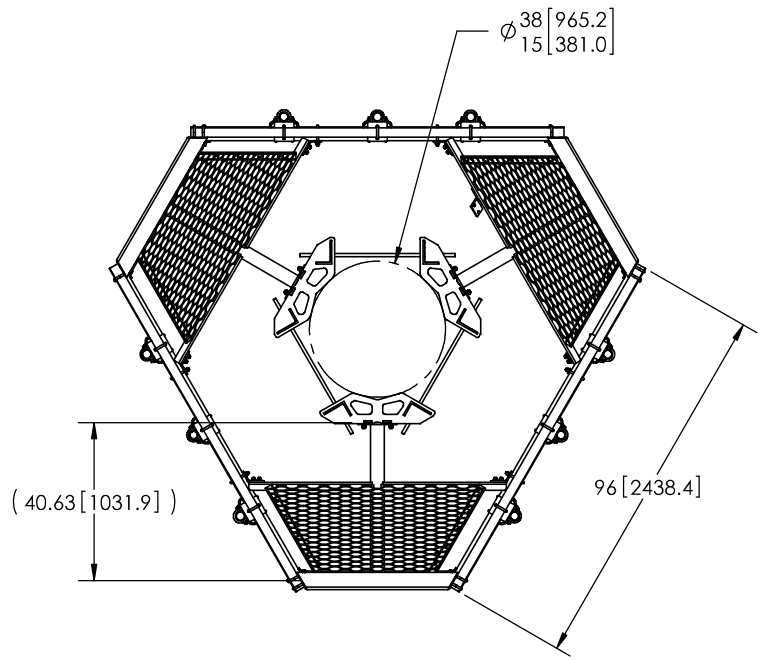


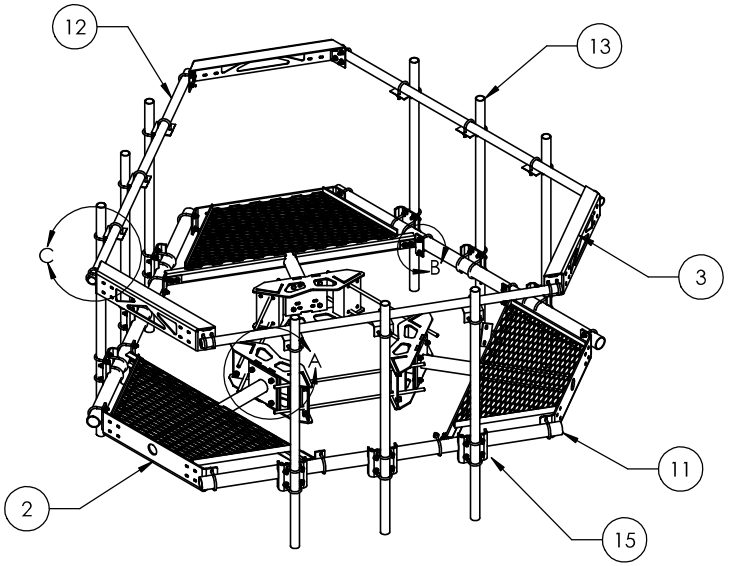
NOTES:
1. CUSTOMER ASSEMBLY SHEETS 2–3.

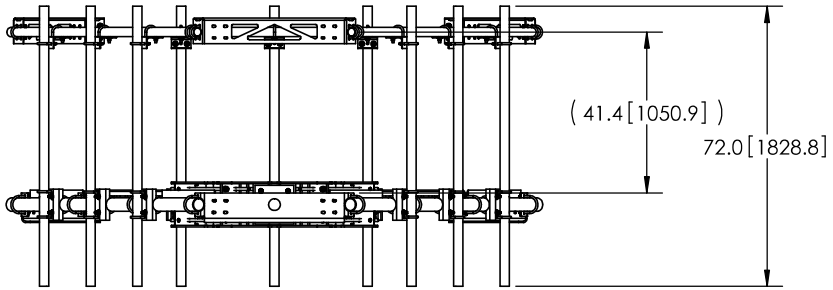
ALL DIMENSIONS ARE IN INCHES U.O.S.
TOLERANCES UNLESS OTHERWISE SPECIFIED:
.X = ± .12 ANGLES ±2°
.XX = ± .06 FRACTIONS ±1/32
.XXX= ± .03
REMOVE BURRS AND BREAK EDGES .005

DO NOT SCALE THIS PRINT

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





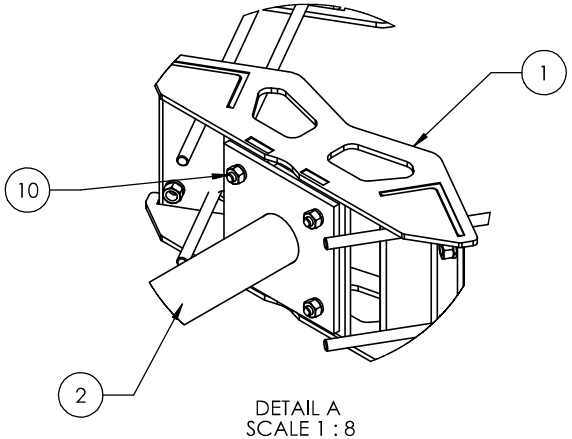


ITEM	PART NO.	DESCRIPTION	QTY.	WEIGHT
C				
1	MC-RM1550-3	12" - 50" OD RINGMOUNT	1	230.42 LBS
2	MTC300601	Low Profile Co-Location Platform Snub Nose	3	134.21 LBS
3	MT195801	Corner Weldment Snub Nose Handrail	3	27.10 LBS
4	XA2020.01	CROSS OVER ANGLE	9	2.65 LBS
5	GUB-4356	1/2" X 3-5/8" X 6" GALV U-BOLT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

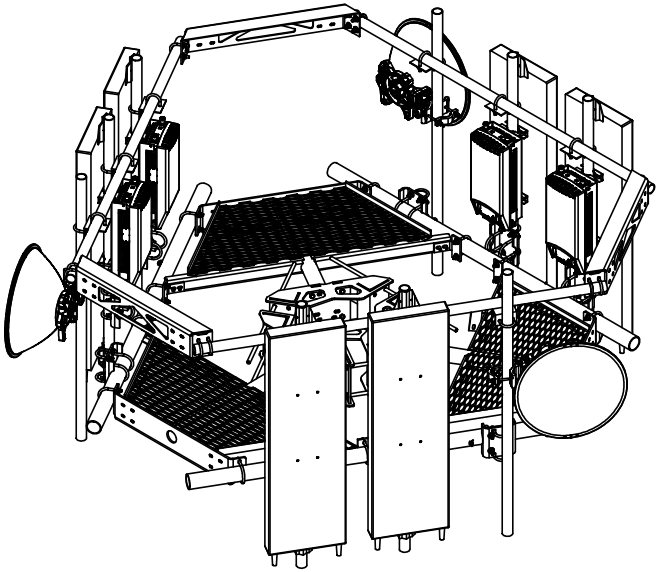
NOTES:
1. ALL METRIC DIMENSIONS ARE IN BRACKETS.
2. WILL FIT MONOPOLES 15"–38" OD.

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

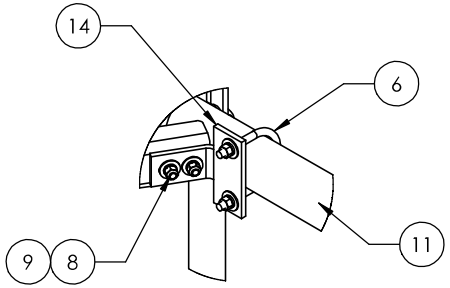
DRAWN BY: MSM	SHEET: 2 of 3	PART NUMBER: MC-PK8-C	
CHECKED BY: TP	SCALE: NTS	DESCRIPTION: 25" OD Snub Nose MT-196	
DATE: 10/18/11	MATERIAL: A36, A53	DRAWING TYPE: ASSEMBLY DRAWING	
REVISION: C	FINISH: GALV A123	WEIGHT: 1361.27 LBS	ANDREW® WESTCHESTER, IL. 60154 U.S.A.



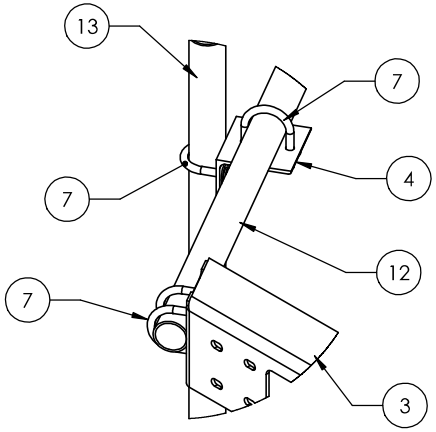
DETAIL A
SCALE 1 : 8



WITH ANTENNAS



DETAIL B
SCALE 1 : 8



DETAIL C
SCALE 1 : 8

NOTES:
1. ALL METRIC DIMENSIONS ARE IN BRACKETS.

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

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

Exhibit F

Power Density/RF Emissions Report

RF EMISSIONS COMPLIANCE REPORT

Crown Castle on behalf of Dish Wireless

Crown Castle Site Name: Deep River/Rt 9
Crown Castle Site BU Number: 823666
Dish Wireless Site Name: CT-CCI-T-823666
Dish Wireless Site ID: BOBDL00055A
Application ID: 553286
15 Pent Road
Deep River, CT
6/10/2021

Report Status:

Dish Wireless is Compliant

Signed 10 June 2021

Prepared By:

Site Safe, LLC

8618 Westwood Center Drive
Suite 315

Vienna, VA 22182

Voice: 703-276-1100
Fax: 703-276-1169

Engineering Statement in Re:
Electromagnetic Energy Analysis
Crown Castle
Deep River, CT

My signature on the cover of this document indicates:

That I am registered as a Professional Engineer in the jurisdiction indicated; and

That I have extensive professional experience in the wireless communications engineering industry; and

That I am an employee of Site Safe, LLC in Vienna, Virginia; and

That I am thoroughly familiar with the Rules and Regulations of the Federal Communications Commission ("the FCC" and "the FCC Rules") both in general and specifically as they apply to the FCC's Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields; and

That the technical information serving as the basis for this report was supplied by Crown Castle on behalf of Dish Wireless (see attached Site Summary and Carrier documents) and that Dish Wireless' installation involves communications equipment, antennas and associated technical equipment at a location referred to as "Deep River/Rt 9" ("the site"); and

That Dish Wireless proposes to operate at the site with transmit antennas listed in the carrier summary and with a maximum effective radiated power as specified by Dish Wireless and shown on the worksheet and that worst-case 100% duty cycle has been assumed; and

That this analysis has been performed with the assumption that the ground immediately surrounding the tower is primarily flat or falling; and

That at this time, the FCC requires that certain licensees address specific levels of radio frequency energy to which workers or members of the public might possibly be exposed (at §1.1307(b) of the FCC Rules); and

That such consideration of possible exposure of humans to radio frequency energy must utilize the standards set by the FCC, which is the federal agency having jurisdiction over communications facilities; and

That the FCC rules define two tiers of permissible exposure guidelines: 1) "uncontrolled environments," which defines situations in which persons may not be aware of (the "general public"), or may not be able to control their exposure to a transmission facility; and 2) "controlled environments," which defines situations in which persons are aware of their potential for exposure (industry personnel); and

That this statement specifically addresses the uncontrolled environment (which is more conservative than the controlled environment) and the limit set forth in the FCC rules for licensees of Dish Wireless' operating frequencies as shown on the attached antenna worksheet; and

That when applying the uncontrolled environment standards, the predicted Maximum Power Density at two meters above ground level from the proposed T-Mobile operation is no more than 1.480% of the maximum permissible exposure limits in any accessible area on the ground; and

That it is understood per FCC Guidelines and OET 65 Appendix A, that regardless of the existent radio frequency environment, only those licensees whose contributions exceed 5% of the exposure limit pertinent to their operation(s) bear any responsibility for bringing any non-compliant area(s) into compliance; and

That when applying the uncontrolled environment standards, the cumulative predicted energy density from the proposed operation is no more than 3.850% of the maximum in any accessible area up to two meters above the ground per OET 65; and

That the calculations provided in this report are based on data provided by the client and antenna pattern data supplied by the antenna manufacturer, in accordance with FCC guidelines listed in OET 65. Horizontal and vertical antenna patterns are combined for modeling purposes to accurately reflect the energy two meters above ground level where on-axis energy refers to maximum energy two meters above the ground along the azimuth of the antenna and where area energy refers to the maximum energy anywhere two meters above the ground regardless of the antenna azimuth, accounting for cumulative energy from multiple antennas for the carrier(s) and frequency range(s) indicated; and

That the Occupational Safety and Health Administration has policies in place which address worker safety in and around communications sites, thus individual companies will be responsible for their employees' training regarding radio frequency safety; and

In summary, it is stated here that the proposed operation at the site will not result in exposure of the public to excessive levels of radio frequency energy as defined in the FCC Rules and Regulations, specifically 47 CFR 1.1307(b), and that Dish Wireless' proposed operation is completely compliant.

Finally, it is stated that access to the tower should be restricted to communication industry professionals and approved contractor personnel trained in radio frequency safety and that this instant analysis addresses exposure levels at two meters above ground level and does not address exposure levels on the tower or in the immediate proximity of the antennas.

Crown Castle
Deep River/Rt 9
Site Summary

Carrier	Area Maximum Percentage MPE
AT&T Mobility, LLC	0.123 %
AT&T Mobility, LLC	0.222 %
AT&T Mobility, LLC	0.155 %
AT&T Mobility, LLC	0.107 %
Dish Wireless (Proposed)	0.701 %
Dish Wireless (Proposed)	0.600 %
Dish Wireless (Proposed)	0.179 %
T-Mobile	0.266 %
T-Mobile	0.309 %
T-Mobile	0.206 %
T-Mobile	0.272 %
Verizon Wireless	0.187 %
Verizon Wireless	0.309 %
Verizon Wireless	0.214 %

Composite Site MPE: 3.850 %

AT&T Mobility, LLC
Deep River/Rt 9
Carrier Summary

Frequency:	2300	MHz
Maximum Permissible Exposure (MPE):	1000	$\mu W/cm^2$
Maximum power density at ground level:	1.22533	$\mu W/cm^2$
Highest percentage of Maximum Permissible Exposure:	0.12253	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density ($\mu W/cm^2$)**	**Percent of MPE**	**Max Power Density ($\mu W/cm^2$)**	**Percent of MPE**
CCI	TPA-65R-LCUUUU-H8	160	30	2729	0.514521	0.051452	1.087721	0.108772
CCI	TPA-65R-LCUUUU-H8	160	140	2729	0.514521	0.051452	1.087721	0.108772
CCI	TPA-65R-LCUUUU-H8	160	300	2729	0.514521	0.051452	1.087721	0.108772

AT&T Mobility, LLC
Deep River/Rt 9
Carrier Summary

Frequency:	1900	MHz
Maximum Permissible Exposure (MPE):	1000	$\mu W/cm^2$
Maximum power density at ground level:	2.22468	$\mu W/cm^2$
Highest percentage of Maximum Permissible Exposure:	0.22247	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density ($\mu W/cm^2$)**	**Percent of MPE**	**Max Power Density ($\mu W/cm^2$)**	**Percent of MPE**
CCI	TPA-65R-LCUUUU-H8	160	30	3892	0.730938	0.073094	1.714898	0.171490
CCI	TPA-65R-LCUUUU-H8	160	140	3892	0.730938	0.073094	1.714898	0.171490
CCI	TPA-65R-LCUUUU-H8	160	300	3892	0.730938	0.073094	1.714898	0.171490

AT&T Mobility, LLC
Deep River/Rt 9
Carrier Summary

Frequency:	737	MHz
Maximum Permissible Exposure (MPE):	491.33	$\mu W/cm^2$
Maximum power density at ground level:	0.76379	$\mu W/cm^2$
Highest percentage of Maximum Permissible Exposure:	0.15545	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density ($\mu W/cm^2$)**	**Percent of MPE**	**Max Power Density ($\mu W/cm^2$)**	**Percent of MPE**
KMW	AM-X-CD-17-65-00T	160	30	1750	0.394756	0.080344	0.403973	0.082220
ANDREW	SBNH-1D6565C	160	140	916	0.209468	0.042632	0.384427	0.078242
KMW	AM-X-CD-17-65-00T	160	300	1750	0.394756	0.080344	0.403973	0.082220

AT&T Mobility, LLC
Deep River/Rt 9
Carrier Summary

Frequency:	850	MHz
Maximum Permissible Exposure (MPE):	566.67	$\mu W/cm^2$
Maximum power density at ground level:	0.60501	$\mu W/cm^2$
Highest percentage of Maximum Permissible Exposure:	0.10677	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density ($\mu W/cm^2$)**	**Percent of MPE**	**Max Power Density ($\mu W/cm^2$)**	**Percent of MPE**
Powerwave	7770	160	30	547	0.200644	0.035408	0.315206	0.055625
Powerwave	7770	160	140	547	0.200644	0.035408	0.315206	0.055625
Powerwave	7770	160	300	547	0.200644	0.035408	0.315206	0.055625

Dish Wireless (Proposed)
Deep River/Rt 9
Carrier Summary

Frequency:	2100	MHz
Maximum Permissible Exposure (MPE):	1000	$\mu W/cm^2$
Maximum power density at ground level:	7.00782	$\mu W/cm^2$
Highest percentage of Maximum Permissible Exposure:	0.70078	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density ($\mu W/cm^2$)**	**Percent of MPE**	**Max Power Density ($\mu W/cm^2$)**	**Percent of MPE**
JMA Wireless	MX08FRO665-20	148	0	11861	3.194525	0.319452	6.931306	0.693131
JMA Wireless	MX08FRO665-20	148	120	11861	3.194525	0.319452	6.931306	0.693131
JMA Wireless	MX08FRO665-20	148	240	11861	3.194525	0.319452	6.931306	0.693131

Dish Wireless (Proposed)
Deep River/Rt 9
Carrier Summary

Frequency:	1900	MHz
Maximum Permissible Exposure (MPE):	1000	$\mu W/cm^2$
Maximum power density at ground level:	5.99846	$\mu W/cm^2$
Highest percentage of Maximum Permissible Exposure:	0.59985	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density ($\mu W/cm^2$)**	**Percent of MPE**	**Max Power Density ($\mu W/cm^2$)**	**Percent of MPE**
JMA Wireless	MX08FRO665-20	148	0	9866	2.781619	0.278162	5.902174	0.590217
JMA Wireless	MX08FRO665-20	148	120	9866	2.781619	0.278162	5.902174	0.590217
JMA Wireless	MX08FRO665-20	148	240	9866	2.781619	0.278162	5.902174	0.590217

Dish Wireless (Proposed)
Deep River/Rt 9
Carrier Summary

Frequency:	600	MHz
Maximum Permissible Exposure (MPE):	400	$\mu W/cm^2$
Maximum power density at ground level:	0.71632	$\mu W/cm^2$
Highest percentage of Maximum Permissible Exposure:	0.17908	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density ($\mu W/cm^2$)**	**Percent of MPE**	**Max Power Density ($\mu W/cm^2$)**	**Percent of MPE**
JMA Wireless	MX08FRO665-20	148	0	1304	0.540631	0.135158	0.678176	0.169544
JMA Wireless	MX08FRO665-20	148	120	1304	0.540631	0.135158	0.678176	0.169544
JMA Wireless	MX08FRO665-20	148	240	1304	0.540631	0.135158	0.678176	0.169544

T-Mobile
Deep River/Rt 9
Carrier Summary

Frequency:	2100	MHz
Maximum Permissible Exposure (MPE):	1000	$\mu W/cm^2$
Maximum power density at ground level:	2.66114	$\mu W/cm^2$
Highest percentage of Maximum Permissible Exposure:	0.26611	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density ($\mu W/cm^2$)**	**Percent of MPE**	**Max Power Density ($\mu W/cm^2$)**	**Percent of MPE**
RFS	APXVAARR24_43-U-NA20	178	30	8632	1.087296	0.108730	2.094751	0.209475
RFS	APXVAARR24_43-U-NA20	178	130	8632	1.087296	0.108730	2.094751	0.209475
RFS	APXVAARR24_43-U-NA20	178	310	8632	1.087296	0.108730	2.094751	0.209475

T-Mobile
Deep River/Rt 9
Carrier Summary

Frequency:	700	MHz
Maximum Permissible Exposure (MPE):	466.67	$\mu W/cm^2$
Maximum power density at ground level:	1.44148	$\mu W/cm^2$
Highest percentage of Maximum Permissible Exposure:	0.30889	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density ($\mu W/cm^2$)**	**Percent of MPE**	**Max Power Density ($\mu W/cm^2$)**	**Percent of MPE**
RFS	APXVAARR24_43-U-NA20	178	30	3484	0.696975	0.149352	0.728643	0.156138
RFS	APXVAARR24_43-U-NA20	178	130	3484	0.696975	0.149352	0.728643	0.156138
RFS	APXVAARR24_43-U-NA20	178	310	3484	0.696975	0.149352	0.728643	0.156138

T-Mobile
Deep River/Rt 9
Carrier Summary

Frequency:	600	MHz
Maximum Permissible Exposure (MPE):	400	$\mu W/cm^2$
Maximum power density at ground level:	0.82440	$\mu W/cm^2$
Highest percentage of Maximum Permissible Exposure:	0.20610	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density ($\mu W/cm^2$)**	**Percent of MPE**	**Max Power Density ($\mu W/cm^2$)**	**Percent of MPE**
RFS	APXVAARR24_43-U-NA20	178	30	1251	0.269549	0.067387	0.275922	0.068981
RFS	APXVAARR24_43-U-NA20	178	30	1251	0.269549	0.067387	0.275922	0.068981
RFS	APXVAARR24_43-U-NA20	178	130	1251	0.269549	0.067387	0.275922	0.068981
RFS	APXVAARR24_43-U-NA20	178	130	1251	0.269549	0.067387	0.275922	0.068981
RFS	APXVAARR24_43-U-NA20	178	310	1251	0.269549	0.067387	0.275922	0.068981
RFS	APXVAARR24_43-U-NA20	178	310	1251	0.269549	0.067387	0.275922	0.068981

T-Mobile
Deep River/Rt 9
Carrier Summary

Frequency:	1900	MHz
Maximum Permissible Exposure (MPE):	1000	$\mu W/cm^2$
Maximum power density at ground level:	2.71726	$\mu W/cm^2$
Highest percentage of Maximum Permissible Exposure:	0.27173	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density ($\mu W/cm^2$)**	**Percent of MPE**	**Max Power Density ($\mu W/cm^2$)**	**Percent of MPE**
EMS	RR90-17-02DP	178	30	4407	0.972391	0.097239	1.446724	0.144672
EMS	RR90-17-02DP	178	130	4407	0.972391	0.097239	1.446724	0.144672
EMS	RR90-17-02DP	178	310	4407	0.972391	0.097239	1.446724	0.144672

Verizon Wireless
Deep River/Rt 9
Carrier Summary

Frequency:	2100	MHz
Maximum Permissible Exposure (MPE):	1000	$\mu W/cm^2$
Maximum power density at ground level:	1.86768	$\mu W/cm^2$
Highest percentage of Maximum Permissible Exposure:	0.18677	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density ($\mu W/cm^2$)**	**Percent of MPE**	**Max Power Density ($\mu W/cm^2$)**	**Percent of MPE**
ANDREW	HBXX-6517DS-VTM	170	30	5621	0.878167	0.087817	1.705246	0.170525
ANDREW	HBXX-6517DS-VTM	170	150	5621	0.878167	0.087817	1.705246	0.170525
ANDREW	HBXX-6517DS-VTM	170	270	5621	0.878167	0.087817	1.705246	0.170525

Verizon Wireless
Deep River/Rt 9
Carrier Summary

Frequency:	1900	MHz
Maximum Permissible Exposure (MPE):	1000	$\mu W/cm^2$
Maximum power density at ground level:	3.08601	$\mu W/cm^2$
Highest percentage of Maximum Permissible Exposure:	0.30860	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density ($\mu W/cm^2$)**	**Percent of MPE**	**Max Power Density ($\mu W/cm^2$)**	**Percent of MPE**
ANDREW	HBXX-6517DS-VTM	170	30	3420	0.593583	0.059358	1.145312	0.114531
ANDREW	HBXX-6517DS-VTM	170	30	5130	0.890376	0.089038	1.717970	0.171797
ANDREW	HBXX-6517DS-VTM	170	150	3420	0.593583	0.059358	1.145312	0.114531
ANDREW	HBXX-6517DS-VTM	170	150	5130	0.890376	0.089038	1.717970	0.171797
ANDREW	HBXX-6517DS-VTM	170	270	3420	0.593583	0.059358	1.145312	0.114531
ANDREW	HBXX-6517DS-VTM	170	270	5130	0.890376	0.089038	1.717970	0.171797

Verizon Wireless
Deep River/Rt 9
Carrier Summary

Frequency:	751	MHz
Maximum Permissible Exposure (MPE):	500.67	$\mu W/cm^2$
Maximum power density at ground level:	1.07109	$\mu W/cm^2$
Highest percentage of Maximum Permissible Exposure:	0.21393	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density ($\mu W/cm^2$)**	**Percent of MPE**	**Max Power Density ($\mu W/cm^2$)**	**Percent of MPE**
Antel	BXA-70063-6CF	170	30	3014	0.849360	0.169646	1.016450	0.203019
Antel	BXA-70063-6CF	170	150	3014	0.849360	0.169646	1.016450	0.203019
Antel	BXA-70063-6CF	170	270	3014	0.849360	0.169646	1.016450	0.203019

Exhibit G

Letter of Authorization

3 Corporate Dr, Suite 101
Clifton Park, NY 12065

Phone: (201) 236-9224
Fax: (724) 416-6112
www.crowncastle.com

Crown Castle Letter of Authorization

CT - CONNECTICUT SITING COUNCIL

Re: Tower Share Application
Crown Castle telecommunications site at: 15 Pent Rd., Deep River, CT 06417

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

Crown Site ID/Name: 823666/Deep River/Rt 9
Customer Site ID: BOBDL00055A/CT-CCI-T-823666
Site Address: 15 Pent Rd., Deep River, CT 06417

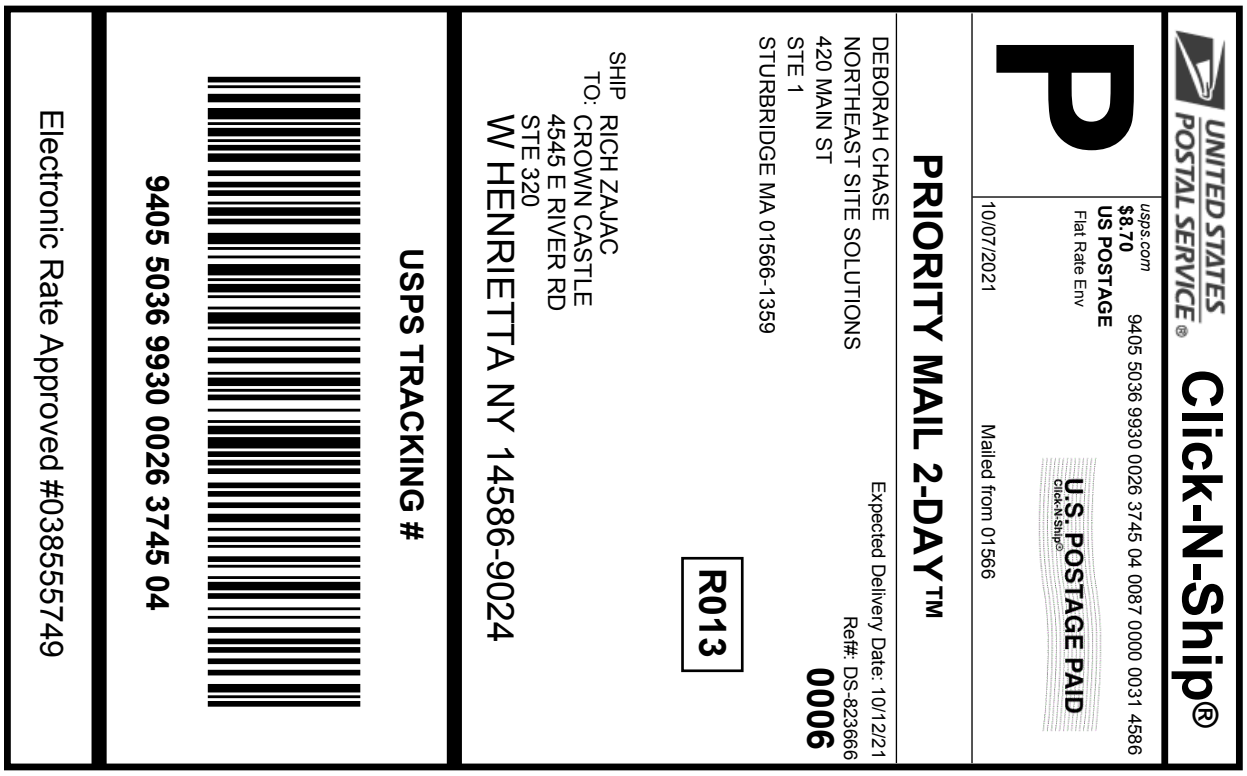
Crown Castle USA Inc.

By: _____ Date: 5/13/21

Anne Marie Zsamba
Project Manager – Site Acquisition

Exhibit H

Recipient Mailings



Cut on dotted line.

Instructions

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

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0026 3745 04

Trans. #:	545441805
Print Date:	10/07/2021
Ship Date:	10/07/2021
Expected Delivery Date:	10/12/2021

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

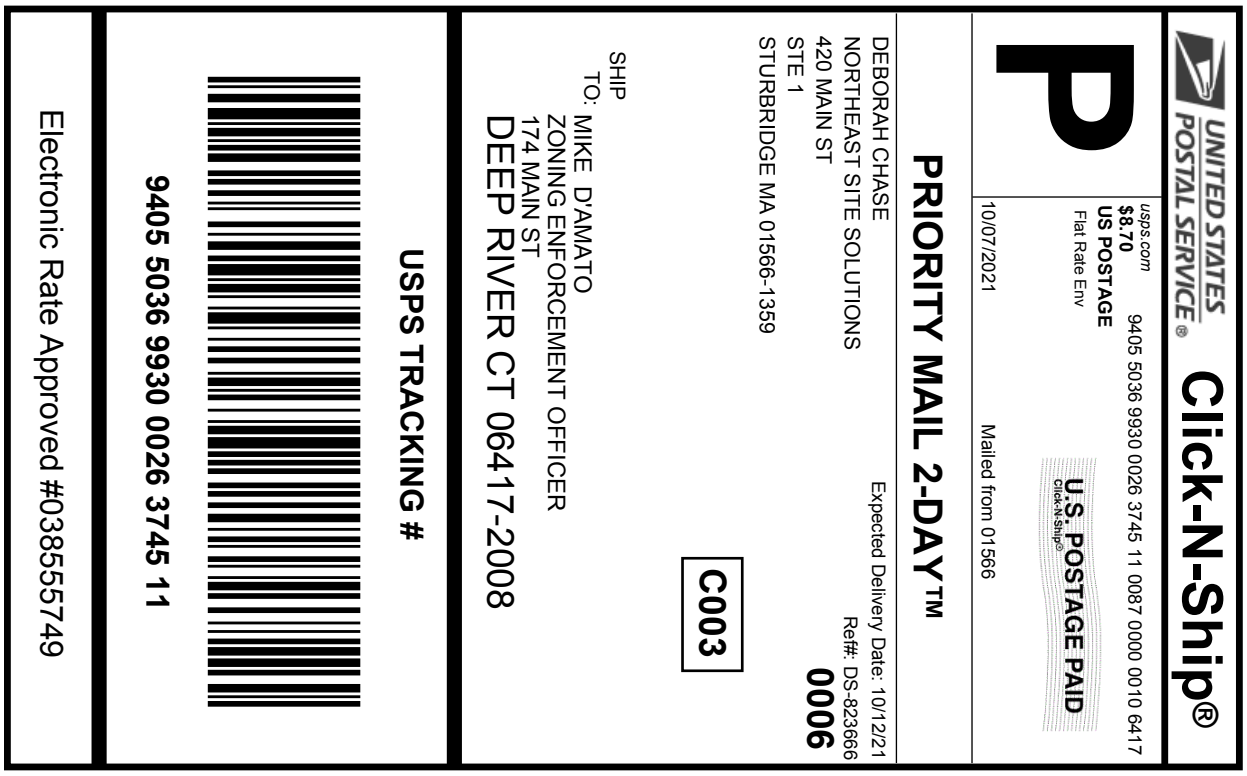
From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
420 MAIN ST
STE 1
STURBRIDGE MA 01566-1359

Ref#: DS-823666

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

* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.

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



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Instructions

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

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0026 3745 11

Trans. #:	545441805
Print Date:	10/07/2021
Ship Date:	10/07/2021
Expected Delivery Date:	10/12/2021

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

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

Ref#: DS-823666

To: MIKE D'AMATO
ZONING ENFORCEMENT OFFICER
174 MAIN ST
DEEP RIVER CT 06417-2008

* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.

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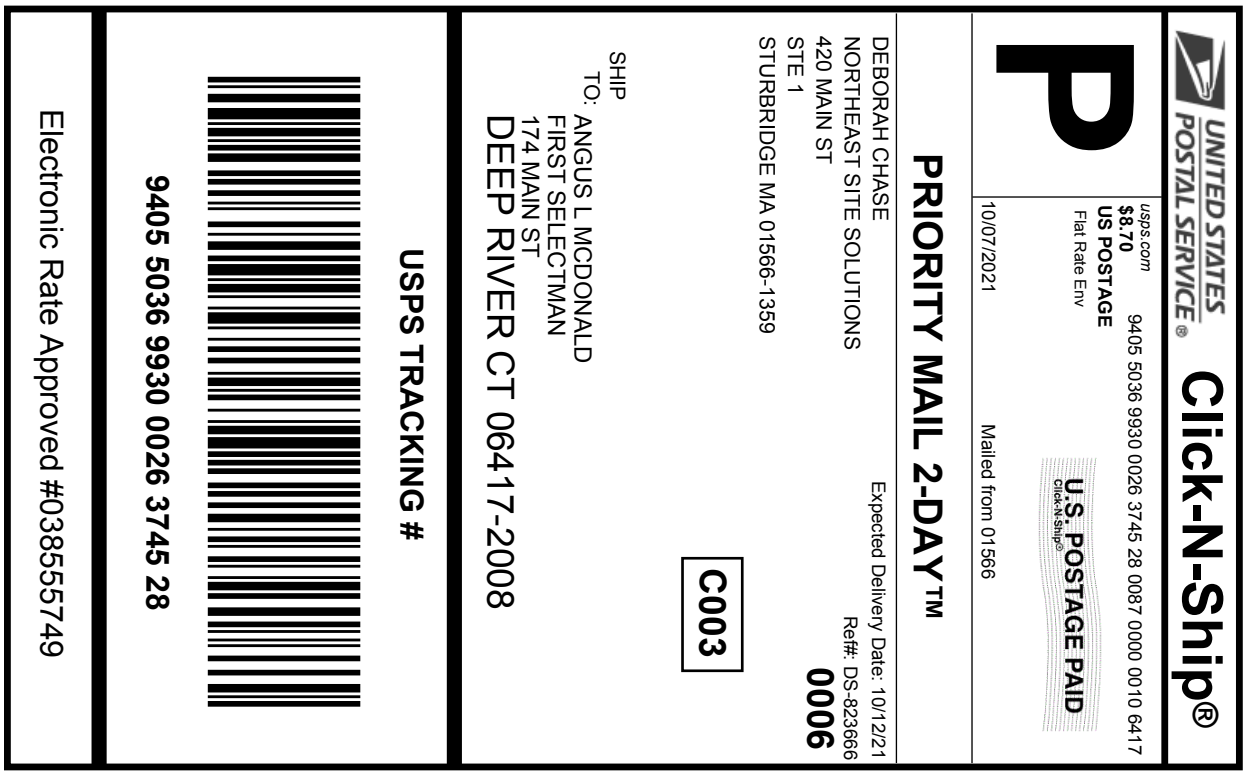
Check the status of your shipment on the USPS Tracking® page at usps.com



Cut on dotted line.

Instructions

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

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0026 3745 28

Trans. #:	545441805
Print Date:	10/07/2021
Ship Date:	10/07/2021
Expected Delivery Date:	10/12/2021

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

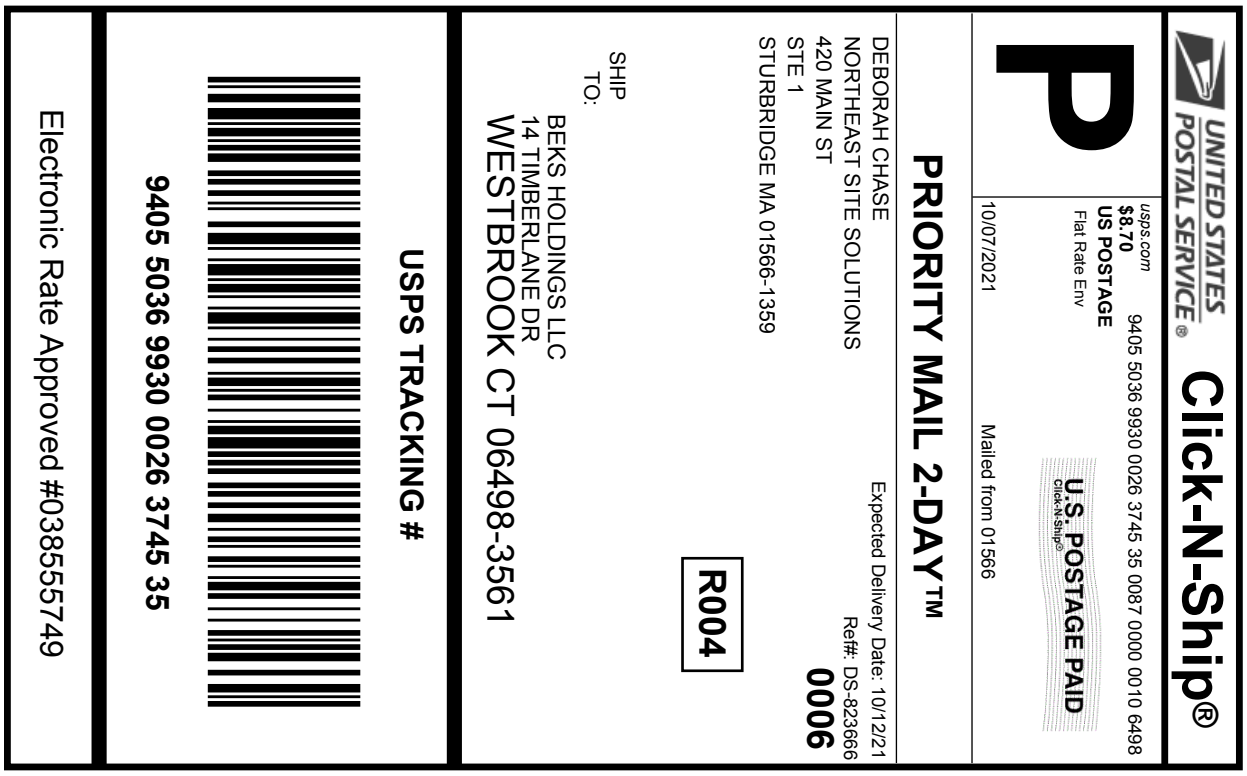
From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
420 MAIN ST
STE 1
STURBRIDGE MA 01566-1359

Ref#: DS-823666

To: ANGUS L MCDONALD
FIRST SELECTMAN
174 MAIN ST
DEEP RIVER CT 06417-2008

* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.

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



Cut on dotted line.

Instructions

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

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0026 3745 35

Trans. #:	545441805
Print Date:	10/07/2021
Ship Date:	10/07/2021
Expected Delivery Date:	10/12/2021

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

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

Ref#: DS-823666

To: BEKS HOLDINGS LLC
14 TIMBERLANE DR
WESTBROOK CT 06498-3561

* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.

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8236666

UNITED STATES POSTAL SERVICE.

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

10/08/2021 01:40 PM

Product	Qty	Unit Price	Price
Prepaid Mail West Henrietta, NY 14586 Weight: 0 lb 2.00 oz Acceptance Date: Fri 10/08/2021 Tracking #: 9405 5036 9930 0026 3745 04	1		$0.00
Prepaid Mail Westbrook, CT 06498 Weight: 0 lb 13.80 oz Acceptance Date: Fri 10/08/2021 Tracking #: 9405 5036 9930 0026 3745 35	1		$0.00
Prepaid Mail Deep River, CT 06417 Weight: 0 lb 13.80 oz Acceptance Date: Fri 10/08/2021 Tracking #: 9405 5036 9930 0026 3745 28	1		$0.00
Prepaid Mail Deep River, CT 06417 Weight: 0 lb 13.80 oz Acceptance Date: Fri 10/08/2021 Tracking #: 9405 5036 9930 0026 3745 11	1		$0.00
Grand Total:			$0.00

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