June 21, 2021

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

RE: **Request of DISH Wireless LLC for an Order to Approve the Shared Use of an Existing Tower**
201 Main Street, Cromwell, CT 06416
Latitude: 41° 35′ 0.11″ / Longitude: -72° 38′ 59.14″

Dear Ms. Bachman:

Pursuant to Connecticut General Statutes ("C.G.S.") §16-50aa, as amended, DISH Wireless LLC ("DISH") hereby requests an order from the Connecticut Siting Council ("Council") to approve the shared use by DISH of an existing telecommunication tower at 201 Main Street in Cromwell (the "Property"). The existing 125-foot monopole tower is owned by Crown Castle International Corp. ("Crown Castle"). The underlying property is owned by S&S Partners Inc. DISH requests that the Council find that the proposed shared use of the Crown Castle tower satisfies the criteria of C.G.S. §16-50aa and issue an order approving the proposed shared use. This modification/proposal includes hardware that is both 4G(LTE) and 5G capable through remote software configuration and either or both services may be turned on or off at various times. A copy of this filing is being sent to Stuart B. Popper, Director of Planning & Development for the Town of Cromwell, Enzo Faienza, Mayor for the Town of Cromwell, and S&S Partners Inc as the property owner.

Background

The existing Crown Castle facility consists of a 125-foot monopole tower within a 12,875 square foot leased area. Sprint/T-Mobile currently maintains antennas at the 127 and 96-foot levels, AT&T currently maintains antennas at the 117-foot level, and Verizon currently maintains antennas at the 105-foot level. Sprint/T-Mobile's equipment is located north of the tower, AT&T's equipment is located east of the tower, and Verizon's equipment is located northeast of the tower.

DISH is licensed by the Federal Communications Commission ("FCC") to provide wireless services throughout the State of Connecticut. DISH and Crown Castle have agreed to the proposed shared use of the 201 Main Street tower pursuant to mutually acceptable terms and conditions. Likewise, DISH and Crown Castle have agreed to the proposed installation of equipment cabinets on the ground on the southeast side of the tower within the existing compound. Crown Castle has authorized DISH to apply for all necessary permits and approvals that may be required to share the existing tower.

DISH proposes to install three (3) antennas, six (6) RRUs, three (3) antenna t-arm mounts, and one (1) hybrid cable. In addition, DISH will install a ground equipment cabinet on a 5'x7' equipment platform. Included in the Construction Drawings are DISH's project specifications for locations of all proposed site improvements. The Construction Drawings also contain specifications for DISH's proposed antennas and ground work.

C.G.S. § 16-50aa(c)(1) provides that, upon written request for approval of a proposed shared use, "if the Council finds that the proposed shared use of the facility is technically, legally, environmentally and economically feasible and meets public safety concerns, the council shall issue an order approving such a shared use." DISH respectfully submits that the shared use of the tower satisfies these criteria.

A. Technical Feasibility. The existing Crown Castle tower is structurally capable of supporting DISH's proposed improvements. The proposed shared use of this tower is, therefore, technically feasible. A Feasibility Structural Analysis Report ("Structural Report") prepared for this project confirms that this tower can support DISH's proposed loading. A copy of the Structural Report has been included in this application.

B. Legal Feasibility. Under C.G.S. § 16-50aa, the Council has been authorized to issue order approving the shared use of an existing tower such as the Crown Castle tower. This authority complements the Council's prior-existing authority under C.G.S. § 16-50p to issue orders approving the construction of new towers that are subject to the Council's jurisdiction. In addition, § 16-50x(a) directs the Council to "give such consideration to the other state laws and municipal regulations as it shall deem appropriate" in ruling on requests for the shared use of existing tower facilities. Under the statutory authority vested in the Council, an order by the Council approving the requested shared use would permit the Applicant to obtain a building permit for the proposed installations.

C. Environmental Feasibility. The proposed shared use of the Crown Castle tower would have a minimal environmental effect for the following reasons:

1. The proposed installation will have no visual impact on the area of the tower. DISH's equipment cabinet would be installed within the existing facility compound. DISH's shared use of this tower therefore will not cause any significant change or alteration in the physical or environmental characteristics of the existing site.

2. Operation of DISH's antennas at this site would not exceed the RF emissions standard adopted by the Federal Communications Commission ("FCC"). Included in the EME report of this filing are the approximation tables that demonstrate that DISH's proposed facility will operate well within the FCC RF emissions safety standards.

3. Under ordinary operating conditions, the proposed installation would not require the use of any water or sanitary facilities and would not generate air emissions or discharges to water bodies or sanitary facilities. After construction is complete the

proposed installations would not generate any increased traffic to the Crown Castle facility other than periodic maintenance. The proposed shared use of the Crown Castle tower, would, therefore, have a minimal environmental effect, and is environmentally feasible.

D. **Economic Feasibility.** As previously mentioned, DISH has entered into an agreement with Crown Castle for the shared use of the existing facility subject to mutually agreeable terms. The proposed tower sharing is, therefore, economically feasible.

E. **Public Safety Concerns.** As discussed above, the tower is structurally capable of supporting DISH's full array of three (3) antennas, six (6) RRUs, three (3) antenna t-arm mounts, one (1) hybrid cable and all related equipment. DISH is not aware of any public safety concerns relative to the proposed sharing of the existing Crown Castle tower

Conclusion

For the reasons discussed above, the proposed shared use of the existing Crown Castle tower at 201 Main Street satisfies the criteria stated in C.G.S. §16-50aa and advances the General Assembly's and the Council's goal of preventing the unnecessary proliferation of towers in Connecticut. The Applicant, therefore, respectfully requests that the Council issue an order approving the prosed shared use.

Sincerely,

Richard Zajac
Site Acquisition Specialist
4545 East River Road, Suite 320
West Henrietta, NY 14586
(585) 445-5896
richard.zajac@crowncastle.com

CC:

Mayor Enzo Faienza
Town of Cromwell
41 West Street
Town Hall, 1st Floor
Cromwell, CT 06416
860-632-3412

Stuart B. Popper, Director of Planning and Development
Town of Cromwell
41 West Street
Town Hall, 2nd Floor
Cromwell, CT 06416
860-632-3422

S&S Partners, Inc.
15 Riverbend Road
Old Lyme, CT 06371

ORIGIN ID:ONHA (585) 445-5896
RICHARD ZAJAC
CROWN CASTLE
629 KAYLEIGH DR

WEBSTER, NY 14580
UNITED STATES US

SHIP DATE: 21JUN21
ACTWGT: 1.00 LB
CAD: 112911364/INET4340

BILL SENDER

TO **ENZO FAIENZA - MAYOR**
TOWN OF CROMWELL
41 WEST STREET
TOWN HALL, 1ST FLOOR
CROMWELL CT 06416
(860) 632-3412 REF: 799001.7680
INV:
PO: DEPT:

56DJ3/B387/FE4A

FedEx Express

J211321033101uv

TRK# 0201 **7740 5540 5401**

TUE - 22 JUN 4:30P
STANDARD OVERNIGHT

XE BDLA

06416
CT-US **BDL**

After printing this label:
1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.
Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com.FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery,misdelivery,or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim.Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental,consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss.Maximum for items of extraordinary value is $1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

ORIGIN ID:ONHA (585) 445-5896
RICHARD ZAJAC
CROWN CASTLE
629 KAYLEIGH DR

WEBSTER, NY 14580
UNITED STATES US

SHIP DATE: 21JUN21
ACTWGT: 1.00 LB
CAD: 112911364/INET4340

BILL SENDER

TO **STUART POPPER - DIR. OF PLANNING**
TOWN OF CROMWELL
41 WEST STREET
TOWN HALL, 2ND FLOOR
CROMWELL CT 06416
(860) 632-3422 REF: 799001.7680
INV:
PO: DEPT:

56DJ3/B387/FE4A

FedEx Express

J211321033101uv

TUE - 22 JUN 4:30P
STANDARD OVERNIGHT

TRK# 0201 **7740 5543 3802**

XE BDLA

06416
CT-US **BDL**

After printing this label:
1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.
Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com.FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery,misdelivery,or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim.Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental,consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss.Maximum for items of extraordinary value is $1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

ORIGIN ID:ONHA (585) 445-5896
RICHARD ZAJAC
CROWN CASTLE
629 KAYLEIGH DR

WEBSTER, NY 14580
UNITED STATES US

SHIP DATE: 21JUN21
ACTWGT: 1.00 LB
CAD: 112911364/INET4340

BILL SENDER

TO **S&S PARTNERS, INC**
15 RIVERBEND ROAD
OLD LYME CT 06371
(585) 445-5896 REF: 799001.7680
INV:
PO: DEPT:

56DJ3/B387/FE4A

FedEx Express
E
J211321033101uv

TUE - 22 JUN 4:30P
STANDARD OVERNIGHT

TRK# 0201 **7740 5545 6365**

XE SKKA

06371
CT-US **BDL**

After printing this label:
1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.
Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com.FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery,misdelivery,or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim.Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental,consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss.Maximum for items of extraordinary value is $1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

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: 201 Main St., CROMWELL, CT 06416

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

Crown Site ID/Name: 876364/CROMWELL / FIRST LINE EMERGENC
Customer Site ID: BOBDL00094A/CT-CCI-T-876364
Site Address: 201 Main St., CROMWELL, CT 06416

Crown Castle USA Inc.

By: _____ Date: 5/13/21

Anne Marie Zsamba
Project Manager – Site Acquisition

Exhibit A

Original Facility Approval

TOWN OF CROMWELL PLANNING AND ZONING COMMISSION
ZONING PERMIT

Date of Application 2-21-00 Permit Number _____

Name of Permit Requester SPRINT SPECTRUM L.P. A DELAWARE LIMITED PARTNERSHIP

Address of Permit Requester ONE INTERNATIONAL BLVD. STE. 800, MAHWAH, NJ 07495

Phone Number: Day (860) 919-7204/(201) 684-4065 Evening (203) 748-6404, PG: (860) 588-2783

Property Owner if different S+S PARTNERS, INC.

Property Owner Address if different S+S PARTNERS, INC., ATTN: ARTHUR SIBLEY P.O. BOX 301, CROMWELL, CT 06416 (860) 434-0079

Type of Permit:

☐ Sign ☐ Filling ☒ New Construction

☐ Addition ☐ Other ☐ Swimming Pool

E & S Bond required ☒ Yes ☐ No Permit Number 00624

Zoning District F Assessor's Map# 51 Block# 47 Lot# 36

ZBA Approved ☐ Yes ☐ No Volume 412 Page 142

Wetlands/watercourses on property ☒ Yes ☐ No Permit# N/A

Description of proposed activity PROPOSED SPRINT PCS ANTENNA FACILITY WITH A 125-FOOT MONOPOLE, RELATED CABLES, EQUIPMENT CABINETS, AND POWER + TELCO HOOKUPS

NOTE: ALL CONSTRUCTION IS OUTSIDE THE REGULATED AREAS

Dimensions: H 125' W SEE PLANS L SEE PLANS

Livable Floor Area: First N/A (NONE) Second N/A (NONE)

Garage Area N/A (NONE) Special Permit needed ☒ Yes ☐ No

Volume 412 Page 142 ☒ Plot Plan attached

This permit, if issued, is based upon the plot plan submitted. Falsification, by misrepresentation or omission, or failure to comply with the conditions of approval of this permit shall constitute a violation of the Town of Cromwell Zoning Regulations.

Signature _____ Marc Goodman

Check one: ☐ Owner ☐ Applicant ☑ Agent

Conditions of approval _____

Approved by _____ Date 3/8/00

Rejected by _____ Date _____

Exhibit B

Property Card

TOWN OF CROMWELL

Printed By: Shawna 04/06/2018 3:25:00PM

Parcel ID: **00015800** ***Location:*** 201 MAIN STREET ***Map-Lot*** 51-36 ***Last Revaluation - October 1, 2017***

Patriot
Properties Inc.

Current Owner	***Percent***
S S PARTNERS INC	100

0 PO BOX 734
OLD LYME CT 06371

Previous Owner(s)

Current Value Information

Override

Use Code	Land Value	PA 490 Value	Building Value	Outbuildings	Total Value	Total Assessed
201	281,500	0	310,600	57,900	650,000	455,000
TOTAL	**281,500**	**0**	**310,600**	**57,900**	**650,000**	**455,000**

Previous Value Information

Tax Yr	Land Value	Bldg Value	Outbuildings	Total Value	Total Assessmen
2018	388,400	310,600	57,900	756,900	529,830
2017	388,400	310,600	57,900	756,900	529,830
2016	158,200	393,390	26,730	578,320	404,830
2015	158,200	393,390	26,730	578,320	404,830
2014	158,200	393,390	26,730	578,320	404,830
2013	158,200	393,390	26,730	578,320	404,830

Property Factors

Census 5703
Flood: YES
Topo:
Street: Paved
Dev. Map
Dev. Map

Zoning Data

Desc.	%
IND	100.00

Utilities

5 Private Well
6 Septic

BAA

17G;06G;05G

General Notes

(3)24X12 OHD & (1)24X14) OHD; CELL BLDG
& PLATFORM ON EXISTING TOWER;
COMMERCIAL DIESEL
NEW ENGLAND ASPHALT
120` POLE TOWER (38 RECEIVERS) ON
ACCOUNT #00015810
Daniels Propane

Sales Information

Grantee	Vol-Page	Type	SaleDate	SalePrice	Sale Verif	GeneralNotes
S S PARTNERS INC	412-142		05/24/1989	0	Other	

Activity Information

Date	Results	Visited By
12/26/2017	Informal Review No Change	John Valente
09/08/2017	Change - Value Change Company	John Valente
05/19/2017	No Change - Field Review	Dave Stannard
09/28/2015	Permit- Miscellaneous	AO
09/28/2015	Permit- Drive By	MM
11/26/2014	Permit- Miscellaneous	AO
11/26/2014	Permit- Miscellaneous	AO
11/19/2014	Permit- Miscellaneous	AO
09/12/2012	Permit- Miscellaneous	AO
09/12/2012	Permit- Miscellaneous	

Building Permit Information

Date	Permit #	Description	Amount	% Comp	Visit Date	CO Date	GeneralNotes
08/23/2017	24953	Roofing	34,800	100			Partial Reroof
01/20/2017	24542	Other		0		10/27/2017	Three Antennas Replace
08/31/2015	23606	Other	20,000	100	09/28/2015		Structural Upgrade on Mon
11/26/2014	23051	Plumbing	4,000	100	11/26/2014		Install gas line to Hangi
11/26/2014	23040	HVAC	4,000	100	11/26/2014		250,000 Hanging Furnace -
11/19/2014	23033	Propane Tank	1,300	100	11/19/2014		2 - 120 Gal LP Tanks
08/23/2011	20102	Propane Tank	100,000	100	09/12/2012	05/08/2012	30,000 gal tank
08/02/2010	19218	Air Condition	3,500	100	03/16/2012		Ductless

Land Data

Use	Description	Units	Unit Type	Neigh	Land Adjustments	Special Land Calc	Appraised Value	PA 490 Asmt	Neigh Order	Notes
201	Commercial	87,120	SF	CH			357,400	0	5000	
201	Commercial	1.240	AC	CH			31,000	0	5000	

Total Area: 3.24 **PA 490 Use Asmt: 0** **Total Appraised: 388,400** **Assessed Value: 271,880**

ParcelID: 00015800 **Location:** 201 MAIN STREET **Printed By:** Shawna 04/06/2018 3:25:00PM

Bldg Seq 1 **Of** 1

Exterior Information

Building Type:	Garage/Offic
Story Ht:	1 Story
Living Units:	0
Foundation:	
Prim. Ext. Wall:	Concrete
Sec. Ext. Wall:	
Roof Type:	Irregular
Roof Cover:	Rolled Compo
Avg. Wall Ht:	16.00
Color:	

Interior Information

Prime Wall:	Minimum
Sec. Wall:	
Floor Type:	Concrete
Sec. Floor:	
Heat Fuel:	Oil
Heat Type:	Forced Air
Sec. Ht Type:	
% A/C:	0
% Sprinkled:	0
Bsmt. Gar:	0
Kitchens:	0
Add. Kit:	0
Fireplaces:	0
Gas:	0
Int. Condition:	Typical

Room Count

Total Rooms:	
Bedrooms:	

Bath Features

Full Baths:	0
Addl. Full Baths:	0
Half Baths:	0
Addl. Half Baths:	0
Full Bths Below:	0
Half Bths Below:	0
Other Fixtures:	0
Total Baths:	0 0

Condo Information

Name:	
Style:	
Location:	
Tot Units:	

General Information

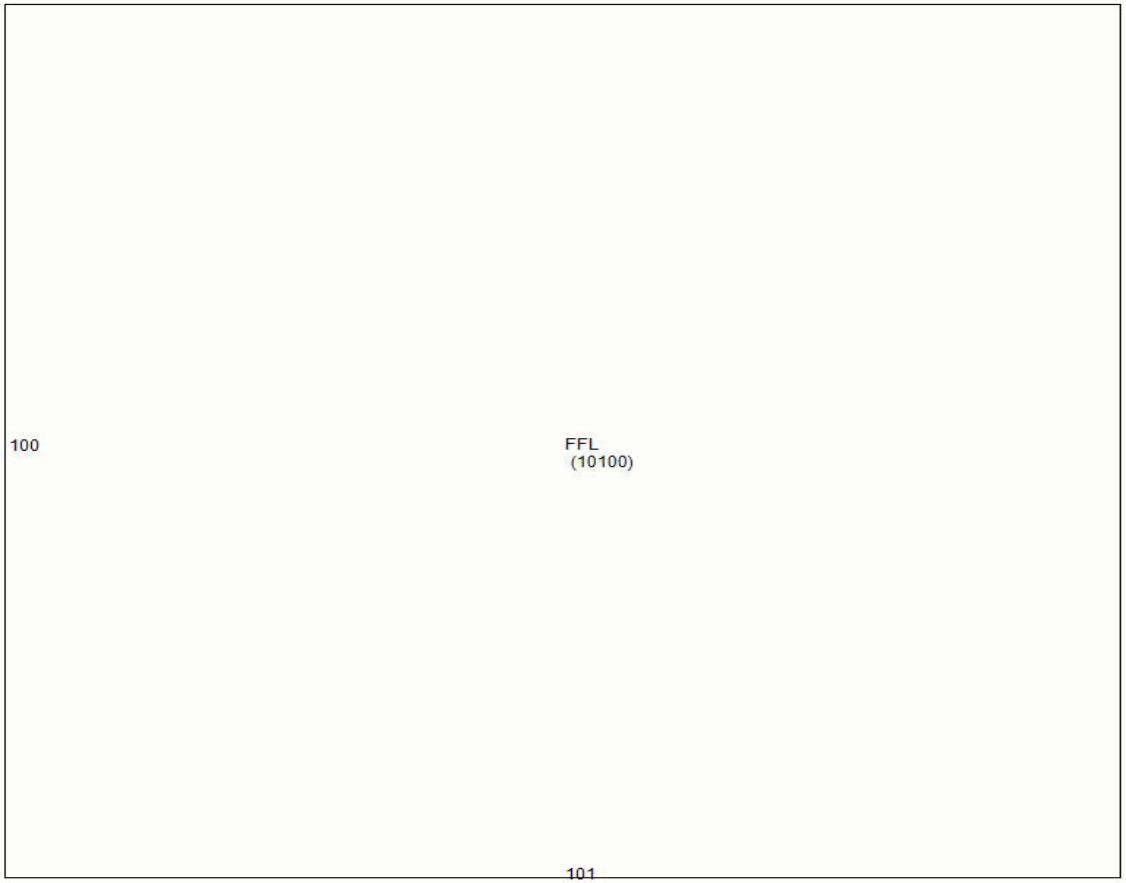
Year Blt:	1953
Grade:	C+
Remodeled Yr:	
Rem. Kitchen Yr:	
Rem. Bath Yr:	

Depreciation %

Phys Cond	Good	30.60
Func		0.00
Econ		0.00
Spec		0.00
OV		0.00
Total %Dep:		**30.60**

Calculation

Basic $/SQ	57.00
Replacement Cost	435,229
Depreciation	133,180
Depreciated Value	302,049
Final Total (Rounded)	**302,000**



Extra Features / Yard Items (1st 10 Lines Displayed)

Code	Description	Qty	Size	Cond.	Year	Unit Price	Dep%	UndepValue	Appraised Value	Assessment
FN6	Fence 6'	1	2,520	AV	2002	17.00	13	51,408	44,700	31,290
LT2	Light 2	1	2	VG	2011	1,500.00	2	3,600	3,500	2,450
LT3	Light 3	1	3	VG	2011	2,100.00	2	7,560	7,400	5,180
PAV1	Paving Asph.	1	1,000	AV	1953	3.00	35	3,600	2,300	1,610

Total Sp. Features: **Total Yard Items** **57,900** **Total Appraised:** **57,900** **Total Assessed Value** **40,530**

Sub Area Detail

Code	Desc.	Living	Gross Area
FFL	First Floor	10,100	10,100
Total		**10,100**	**10,100**

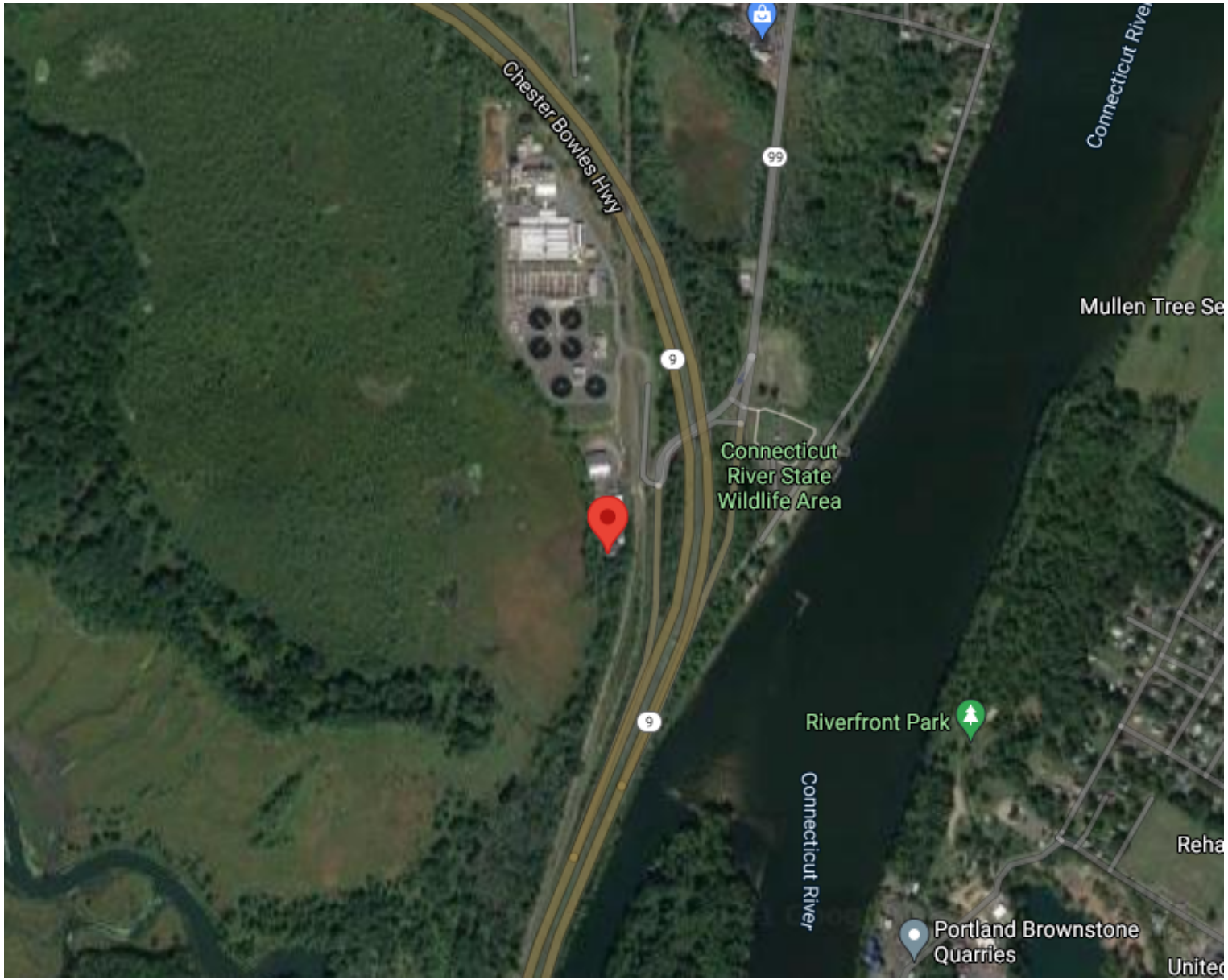

Chester Bowles Hwy
99
9
9
Connecticut River
Mullen Tree Se
Connecticut River State Wildlife Area
Riverfront Park
Connecticut River
Reha
Portland Brownstone Quarries
United

Exhibit C

Construction Drawings

DISH WIRELESS, LLC. SITE ID:

BOBDL00094A

DISH WIRELESS, LLC. SITE ADDRESS:

201 MAIN ST.
CROMWELL, CT 06416

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

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

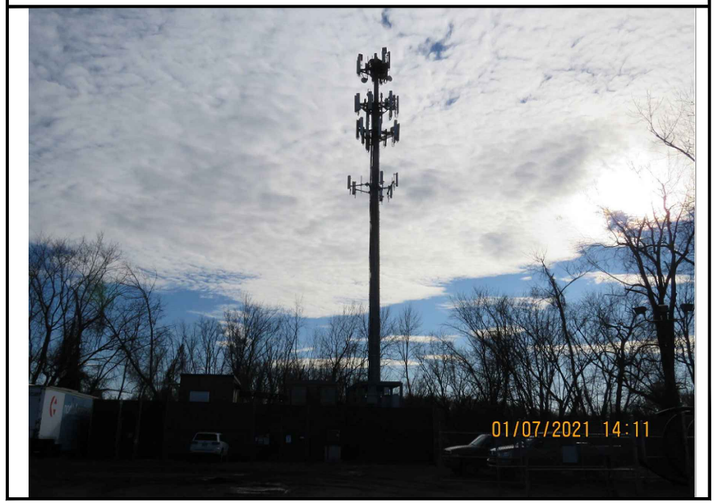
SCOPE OF WORK

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

TOWER SCOPE OF WORK:
- INSTALL (3) PROPOSED PANEL ANTENNAS (1 PER SECTOR)
- INSTALL PROPOSED T-ARM MOUNT (1 PER SECTOR)
- 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:	GLOBAL SIGNAL ACQUISITION
ADDRESS:	PO BOX 277455 ATLANTA, GA 30384-7455
TOWER TYPE:	MONOPOLE
TOWER CO SITE ID:	876364
TOWER APP NUMBER:	553293
COUNTY:	MIDDLESEX
LATITUDE (NAD 83):	41° 35' 0.11" N 41.583364 N
LONGITUDE (NAD 83):	-72° 38' 59.14" W -72.64976 W
ZONING JURISDICTION:	CONNECTICUT SITING COUNCIL
ZONING DISTRICT:	INDUSTRIAL
PARCEL NUMBER:	51-47-36
OCCUPANCY GROUP:	U
CONSTRUCTION TYPE:	V-B
POWER COMPANY:	CONNECTICUT LIGHT & POWER
TELEPHONE COMPANY:	AT&T

PROJECT DIRECTORY

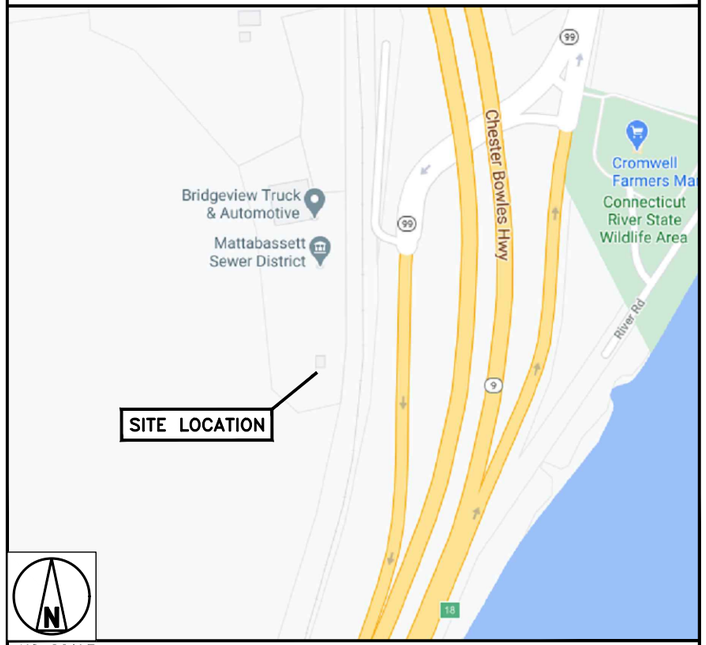
APPLICANT:	DISH WIRELESS, LLC. 5701 SOUTH SANTA FE DRIVE LITTLETON, CO 80120
TOWER OWNER:	CROWN CASTLE 2000 CORPORATE DRIVE CANONSBURG, PA 15317 (877) 486-9377
SITE DESIGNER:	INFINIGY 2500 W. HIGGINS RD. STE. 500 HOFFMAN ESTATES, IL 60169 (847) 648-4068
SITE ACQUISITION:	NICHOLAS CURRY TBD
CONSTRUCTION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

DIRECTIONS

DIRECTIONS FROM ORLANDO SANFORD INTERNATIONAL AIRPORT:

DEPART AND HEAD TOWARD MAXIM RD, TURN LEFT ONTO MAXIM RD, BEAR RIGHT ONTO BRAINARD RD, TURN RIGHT ONTO AIRPORT RD, TAKE THE RAMP ON THE LEFT FOR I-91 SOUTH AND HEAD TOWARD NY CITY / NEW HAVEN, HEAD LEFT ON THE RAMP FOR CT-9 SOUTH TOWARD MIDDLETOWN / OLD SAYBROOK, HEAD RIGHT ON THE RAMP FOR CT-372 TOWARD CROMWELL / HOLY APOSTLES COLLEGE, TURN LEFT ONTO CT-372 / WEST ST TOWARD CROMWELL / HOLY APOSTLES COLLEGE, TURN RIGHT ONTO CT-99 / MAIN ST, TURN RIGHT ONTO MAIN ST, BEAR LEFT ONTO ROAD, ARRIVE AT 201 MAIN ST., CROMWELL, CT 06416

VICINITY MAP



NO SCALE

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

CROWN CASTLE
2000 CORPORATE DRIVE
CANONSBURG, PA 15317

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

STATE OF CONNECTICUT
MATTHEW SAKAN
34916
LICENSED PROFESSIONAL ENGINEER
5/21/21

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

A&E PROJECT NUMBER
2039-Z5555C

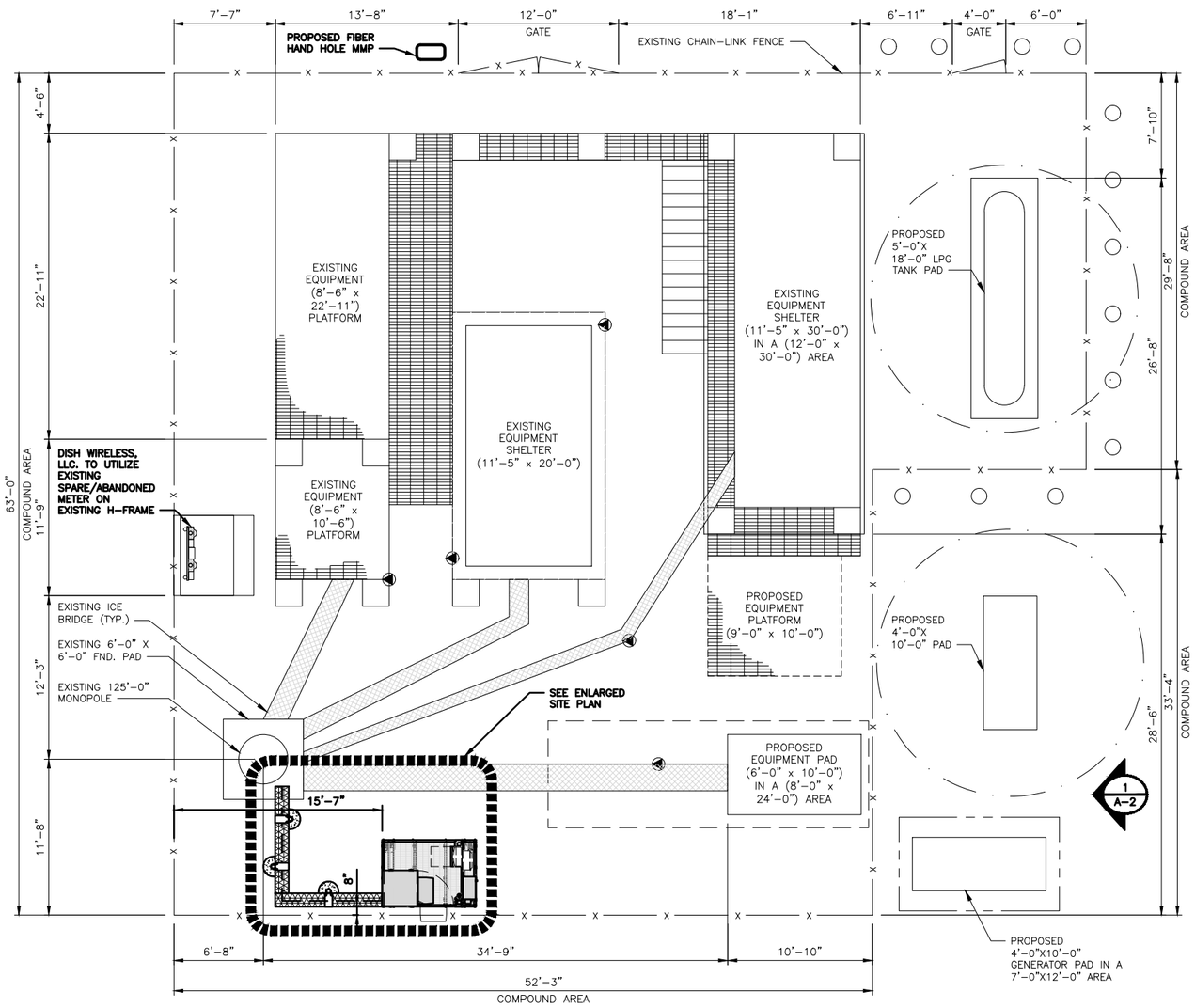
DISH WIRELESS, LLC.
PROJECT INFORMATION
BOBDL00094A
201 MAIN ST.
CROMWELL, CT 06416

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

NOTES

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



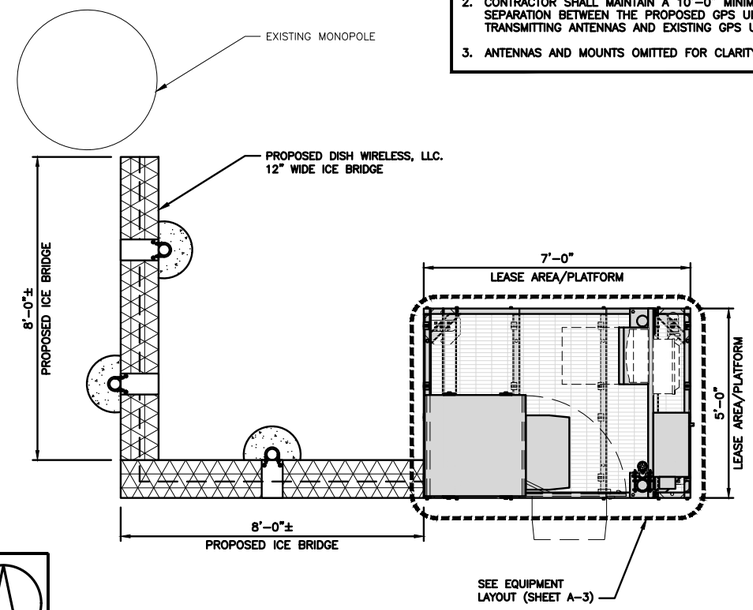
COMPOUND PLAN

3/16"=1'-0"

1

NOTES

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

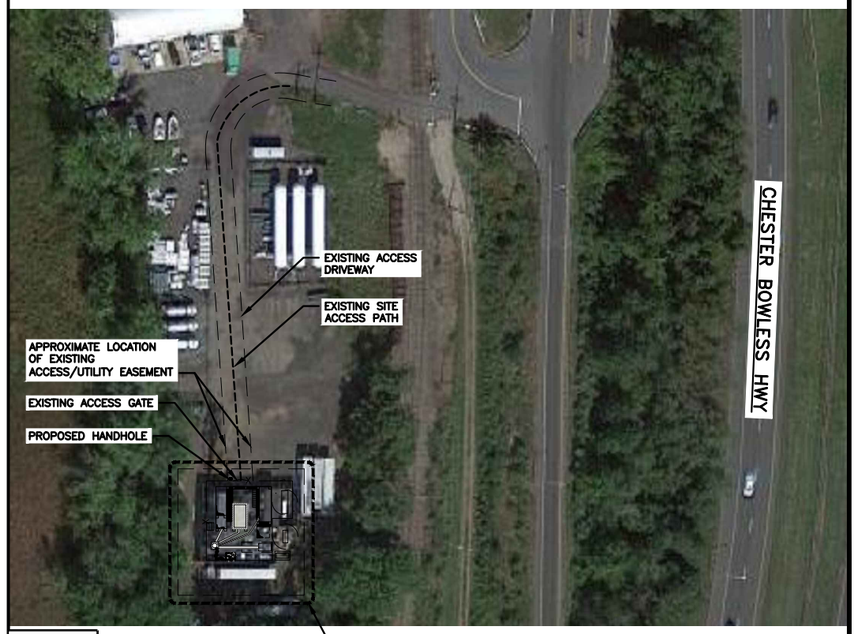


ENLARGED SITE PLAN

12" 6" 0 1' 2' 3' 4' 5'

1/2"=1'-0"

2



SITE PLAN

60' 30' 0 60' 120'

1"=60'

3

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

CROWN CASTLE

2000 CORPORATE DRIVE
CANONSBURG, PA 15317

INFINIGY

FROM ZERO TO INFINIGY

the solutions are endless

2500 W. HIGGINS RD. SUITE 500 |
HOFFMAN ESTATES, IL 60169
PHONE: 847-648-4068 | FAX: 518-690-0793
WWW.INFINIGY.COM

STATE OF CONNECTICUT
SHUHEI SAKANOUE
34916
LICENSED PROFESSIONAL ENGINEER
5/21/21

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

A&E PROJECT NUMBER

2039-Z5555C

DISH WIRELESS, LLC.
PROJECT INFORMATION

BOBDL00094A
201 MAIN ST.
CROMWELL, CT 06416

SHEET TITLE

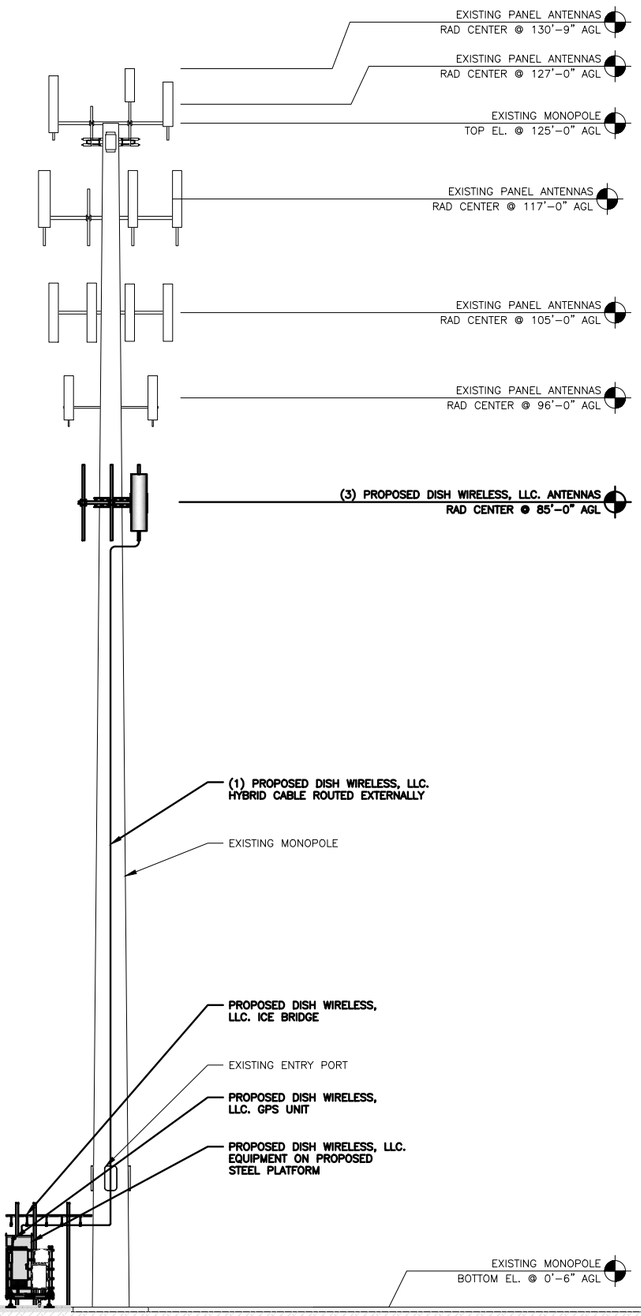
OVERALL AND ENLARGED SITE PLAN

SHEET NUMBER

A-1

NOTES

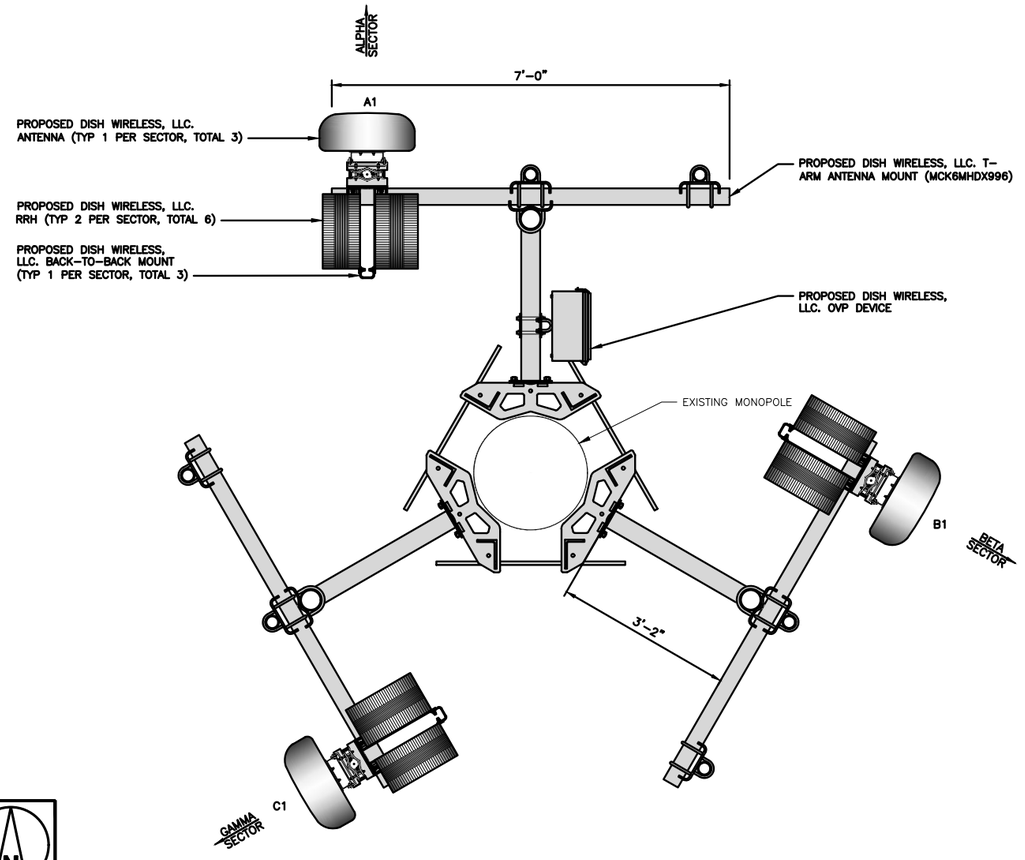
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNA AND MW DISH SPECIFICATIONS REFER TO ANTENNA SCHEDULE AND TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS
3. EXISTING EQUIPMENT AND FENCE OMITTED FOR CLARITY.
4. INFINIGY HAS NOT EVALUATED THE TOWER OR MOUNT STRUCTURE AND ASSUMES NO RESPONSIBILITY FOR THEIR STRUCTURAL INTEGRITY REGARDING PROPOSED LOADINGS. FINAL INSTALLATION SHALL COMPLY WITH RESULTS OF PASSING STRUCTURAL ANALYSES PERFORMED BY OTHERS.



PROPOSED EAST ELEVATION

8' 4' 0 8' 16'
1/8"=1'-0"

1



ANTENNA LAYOUT

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

2

SECTOR	POSITION	ANTENNA						TRANSMISSION CABLE
		EXISTING OR PROPOSED	MANUFACTURER – MODEL NUMBER	TECHNOLOGY	SIZE (HxW)	AZIMUTH	RAD CENTER	FEED LINE TYPE AND LENGTH
ALPHA	A1	PROPOSED	JMA WIRELESS – MX08FRO665-20	5G	72.0" x 20.0"	0°	85'-0"	(1) HIGH-CAPACITY HYBRID CABLE (135' LONG)
BETA	B1	PROPOSED	JMA WIRELESS – MX08FRO665-20	5G	72.0" x 20.0"	120°	85'-0"	
GAMMA	C1	PROPOSED	JMA WIRELESS – MX08FRO665-20	5G	72.0" x 20.0"	240°	85'-0"	

NOTES

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

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

NOTES

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

ANTENNA SCHEDULE

NO SCALE

3

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

CROWN CASTLE
2000 CORPORATE DRIVE
CANONSBURG, PA 15317

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

STATE OF CONNECTICUT
MICHAEL I. SAKANOVSKY
34916
LICENSED PROFESSIONAL ENGINEER
5/21/21

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

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

SUBMITTALS

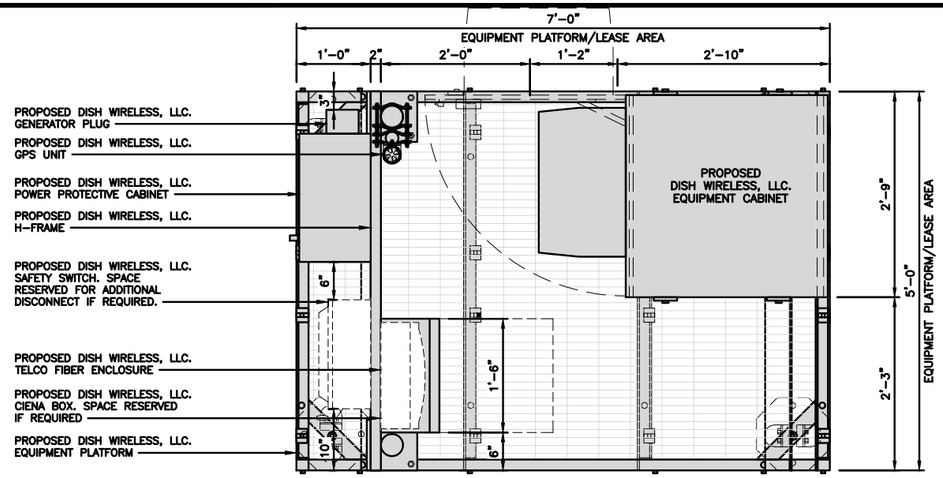
REV	DATE	DESCRIPTION
0	05/20/2021	ISSUED FOR PERMIT

A&E PROJECT NUMBER
2039-Z5555C

DISH WIRELESS, LLC.
PROJECT INFORMATION
BOBDL00094A
201 MAIN ST.
CROMWELL, CT 06416

SHEET TITLE
ELEVATION, ANTENNA LAYOUT AND SCHEDULE

SHEET NUMBER
A-2

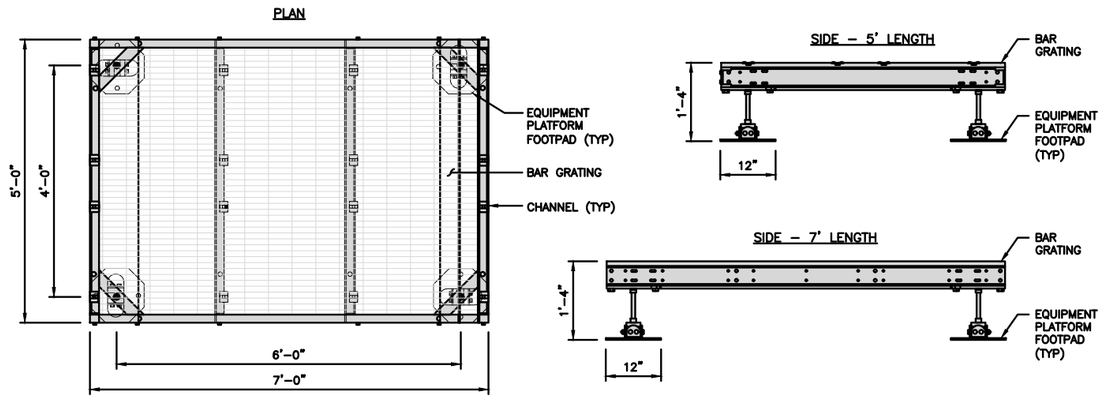


PLATFORM EQUIPMENT PLAN

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

1

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

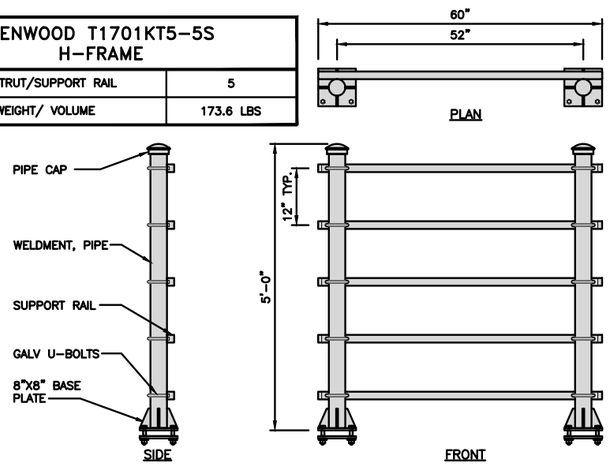


PLATFORM DETAIL

NO SCALE

2

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



H-FRAME DETAIL

NO SCALE

3

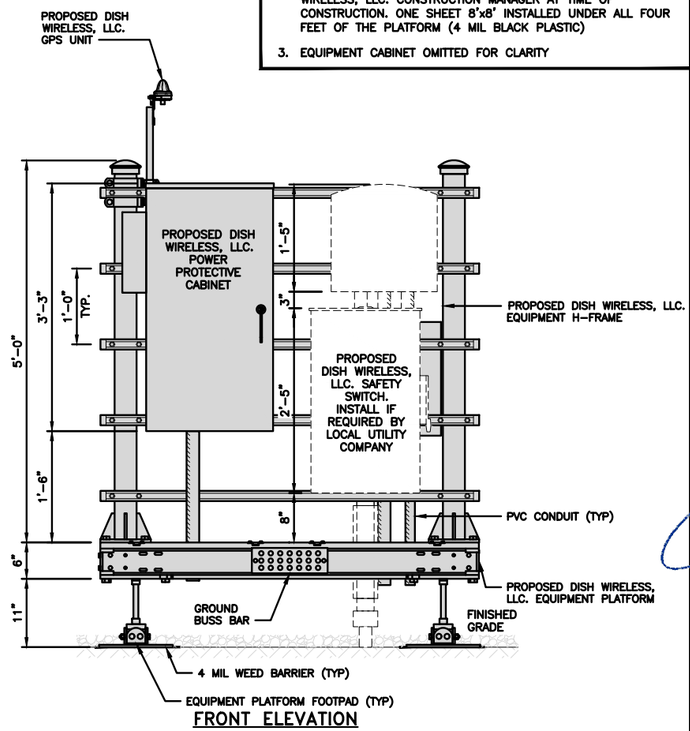
NOT USED

NO SCALE

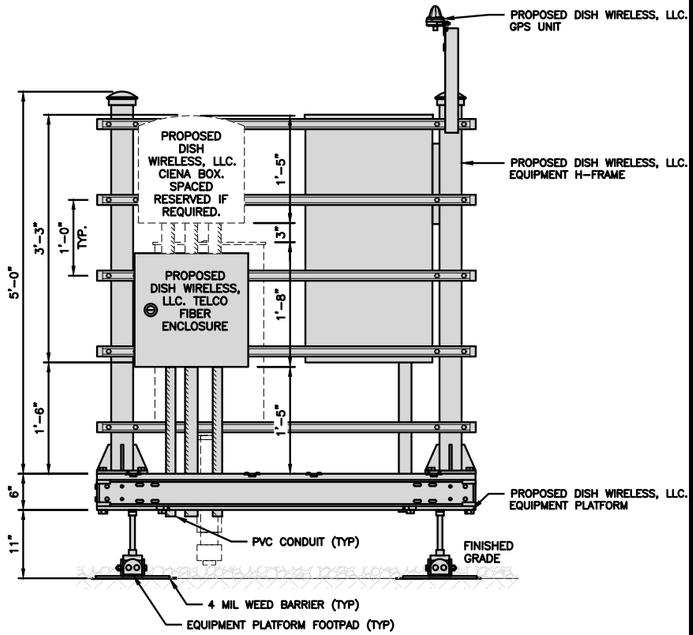
4

NOTES

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



FRONT ELEVATION



BACK ELEVATION

H-FRAME EQUIPMENT ELEVATION

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

5

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

CROWN CASTLE
2000 CORPORATE DRIVE
CANONSBURG, PA 15317

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

STATE OF CONNECTICUT
TSUHEI SAKANO
34916
LICENSED PROFESSIONAL ENGINEER
5/27/21

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

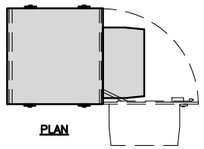
A&E PROJECT NUMBER
2039-Z5555C

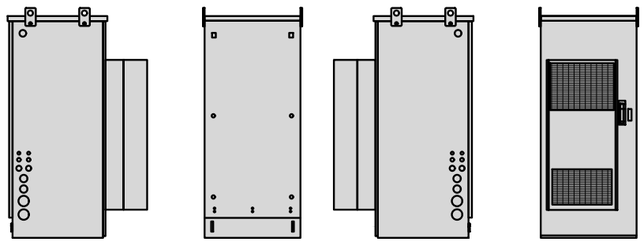
DISH WIRELESS, LLC.
PROJECT INFORMATION
BOBDL00094A
201 MAIN ST.
CROMWELL, CT 06416

SHEET TITLE
EQUIPMENT PLATFORM AND H-FRAME DETAILS

SHEET NUMBER
A-3

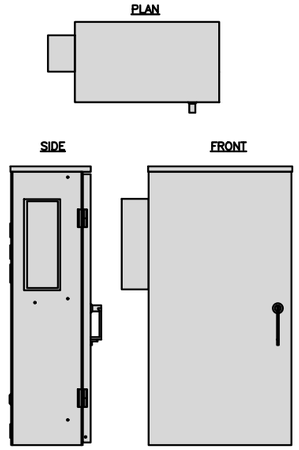
CHARLES INDUSTRY HEX CUBE–PM369155N4	
DIMENSIONS (HxWxD):	74"x32"x32"
POWER PLANT:	–48VDC ABB
TOTAL WEIGHT (EMPTY)	394 LBS





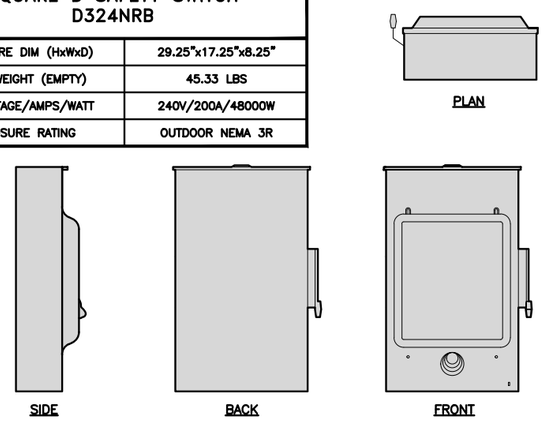
CABINET DETAIL | NO SCALE | 1

RAYCAP RDIAC–6512–P–240–MTS POWER & TELCO PROTECTION CABINET	
DIMENSIONS (HxWxD)	40"x20"x10"
WEIGHT/ VOLUME	124 LBS
MANUAL TRANSFER SWITCH	200A
LOAD CENTER	30 POSITION
MAIN BREAKER	200A, 65kA AIC
GENERATOR RECEPTACLE	CAMLOCK
NEMA RATING	3R POWDER COATED ALUMINUM
SURGE PROTECTION DEVICE	UL 1449 4TH EDITION LISTED



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

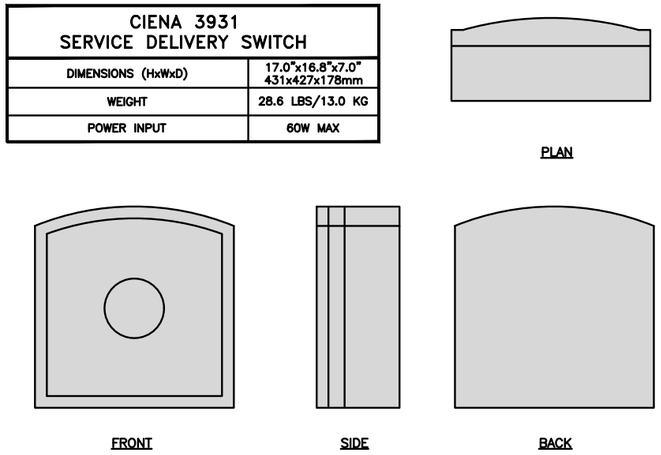
SQUARE D SAFETY SWITCH D324NRB	
ENCLOSURE DIM (HxWxD)	29.25"x17.25"x8.25"
TOTAL WEIGHT (EMPTY)	45.33 LBS
MAX VOLTAGE/AMPS/WATT	240V/200A/48000W
ENCLOSURE RATING	OUTDOOR NEMA 3R



SAFETY SWITCH | NO SCALE | 3

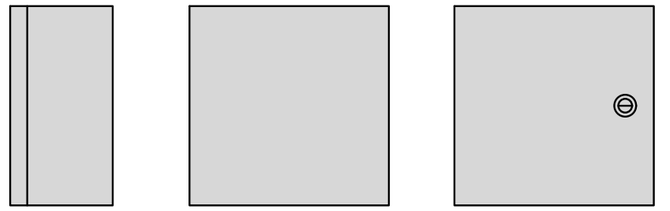
NOT USED | NO SCALE | 4

CIENA 3931 SERVICE DELIVERY SWITCH	
DIMENSIONS (HxWxD)	17.0"x16.8"x7.0" 431x427x178mm
WEIGHT	28.6 LBS/13.0 KG
POWER INPUT	60W MAX



CIENA DETAIL | NO SCALE | 5

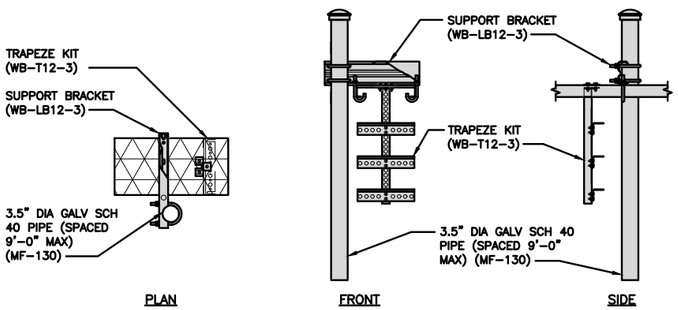
CHARLES FIBER TELCO ENCLOSURE CUBE–MP1818WB–A	
ENCLOSURE DIM (HxWxD)	18.0"x18.0"x9.25"
NEMA RATING	4X
THERMAL	SEALED
MOUNTING BACKBOARD	WOOD



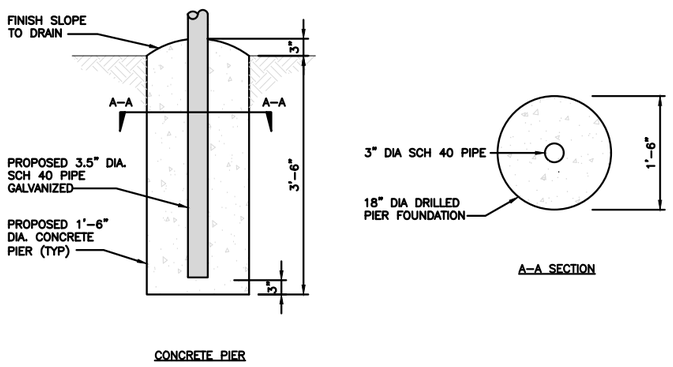
FIBER TELCO ENCLOSURE DETAIL | NO SCALE | 6

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

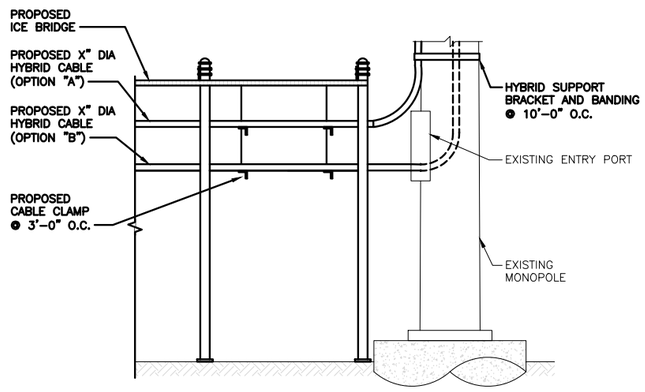
INCLUDED PRODUCTS:	
	WB–T12–3 TRAPEZE KIT, 3 RUNGS
	WB–LB12–3 SUPPORT BRACKET
	MF–130 DIRECT BURIAL PIPE COLUMN, 13'–4"



ICE BRIDGE DETAIL | NO SCALE | 7



TYPICAL ICE BRIDGE CONCRETE PIER DETAIL | NO SCALE | 8



HYBRID CABLE RUN | NO SCALE | 9

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

CROWN CASTLE
2000 CORPORATE DRIVE
CANONSBURG, PA 15317

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

STATE OF CONNECTICUT
SUTHEI SAKANO
34916
LICENSED PROFESSIONAL ENGINEER
5/21/21

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

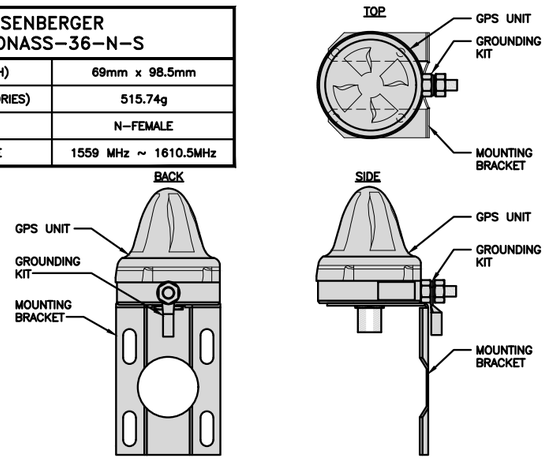
A&E PROJECT NUMBER
2039–Z5555C

DISH WIRELESS, LLC.
PROJECT INFORMATION
BOBDL00094A
201 MAIN ST.
CROMWELL, CT 06416

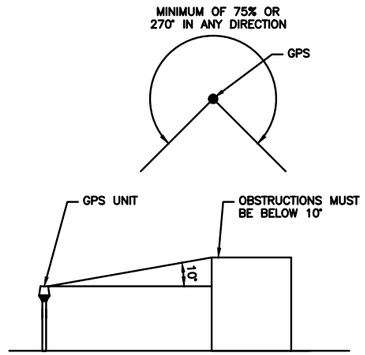
SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-4

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



GPS ANTENNA DETAIL | NO SCALE | 1



GPS MINIMUM SKY VIEW REQUIREMENTS | NO SCALE | 2

NOT USED | NO SCALE | 3

NOT USED | NO SCALE | 4

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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

CROWN CASTLE
2000 CORPORATE DRIVE
CANONSBURG, PA 15317

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

STATE OF CONNECTICUT
SHUHEI SAKANOUE
34916
LICENSED PROFESSIONAL ENGINEER
5/21/21

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

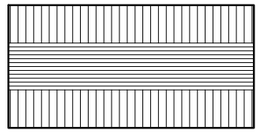
A&E PROJECT NUMBER
2039-Z5555C

DISH WIRELESS, LLC.
PROJECT INFORMATION
BOBDL00094A
201 MAIN ST.
CROMWELL, CT 06416

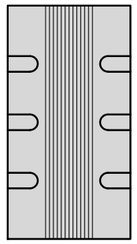
SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-5

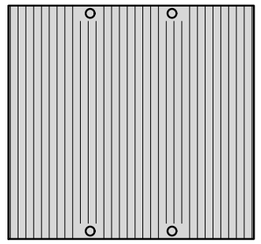
FUJITSU TA08025-B604 RRH	
DIMENSIONS (HxWxD) (KG/IN)	380x400x200/14.9"x15.7"x7.8"
WEIGHT(KG,LB)/ VOLUME	29kg,63.9lb/ 30L
POWER SUPPLY	DC-58~-36V



PLAN



SIDE



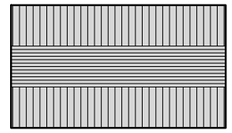
FRONT

NOTES

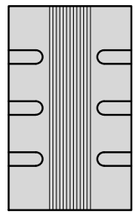
FINAL RRH SPECIFICATIONS TO BE CONFIRMED BY GC

REMOTE RADIO HEAD DETAIL | NO SCALE | 1

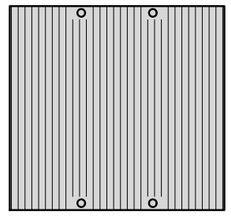
FUJITSU TA08025-B605 RRH	
DIMENSIONS (HxWxD) (KG/IN)	380x400x230/14.9"x15.7"x9.0"
WEIGHT(KG,LB)/ VOLUME	34kg,74.9lb/ 35L
POWER SUPPLY	DC-58~-36V



PLAN



SIDE



FRONT

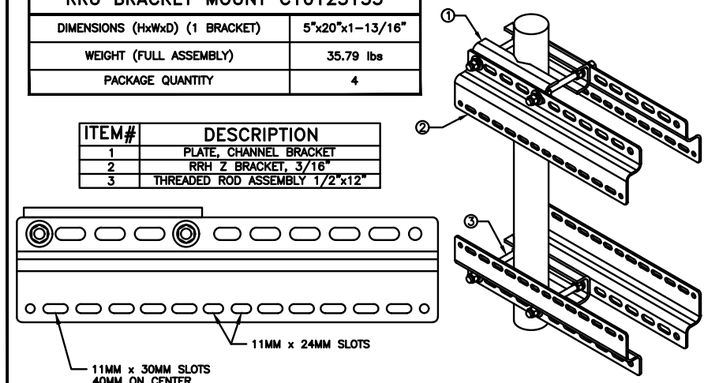
NOTES

FINAL RRH SPECIFICATIONS TO BE CONFIRMED BY GC

REMOTE RADIO HEAD DETAIL | NO SCALE | 2

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

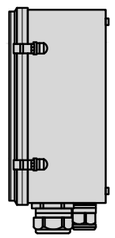
ITEM#	DESCRIPTION
1	PLATE, CHANNEL BRACKET
2	RRH Z BRACKET, 3/16"
3	THREADED ROD ASSEMBLY 1/2"x12"



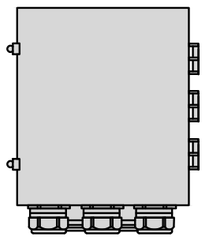
REMOTE RADIO MOUNT DETAIL | NO SCALE | 3

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

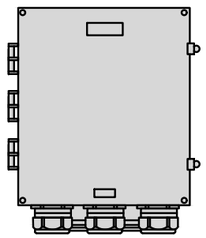
PLAN



SIDE



BACK

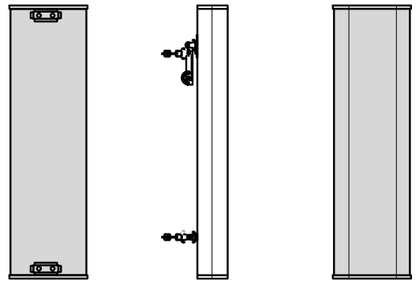


FRONT

SURGE SUPPRESSION DETAIL | NO SCALE | 4

JMA WIRELESS MX08FRO665-20 ANTENNA	
DIMENSIONS (HxWxD)	72.0"x20.0"x8.0"
TOTAL WEIGHT	54 LB
RF PORTS, CONNECTOR TYPE	8 x 4.3-10 FEMALE

PLAN

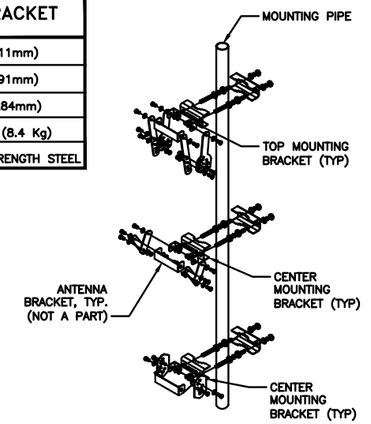


NOTES

FINAL ANTENNA SPECIFICATIONS TO BE CONFIRMED BY GC

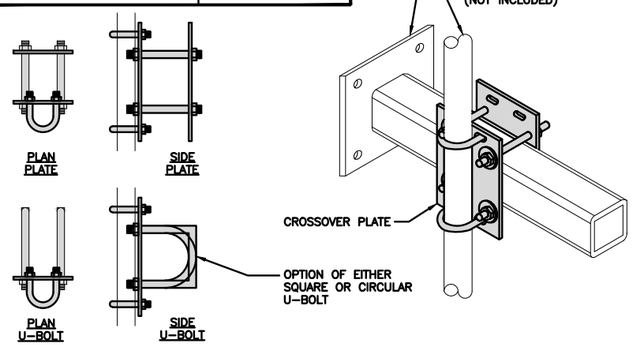
ANTENNA DETAIL | NO SCALE | 5

JMA 91900318 MOUNTING BRACKET	
WIDTH	8.3" (211mm)
DEPTH	7.5" (191mm)
HEIGHT	11.2" (284mm)
TOTAL WEIGHT (WITH BRACKETS)	18.5 LBS (8.4 Kg)
HOUSING MATERIAL	GALV. HIGH STRENGTH STEEL



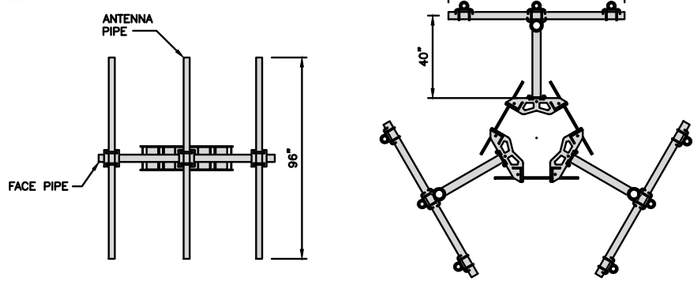
ANTENNA MOUNTING DETAIL | NO SCALE | 6

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



RRH/OVP MOUNT DETAIL | NO SCALE | 7

COMMSCOPE MC-K6MHDX-9-96	
FACE WIDTH	7'-0"
WEIGHT	1203.31 lbs
NOTE: 15" TO 50" O.D.	



T-ARM MOUNT DETAIL | NO SCALE | 8

NOT USED | NO SCALE | 9

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

CROWN CASTLE
2000 CORPORATE DRIVE
CANONSBURG, PA 15317

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

STATE OF CONNECTICUT
MICHAEL SAKANOWSKI
34916
LICENSED PROFESSIONAL ENGINEER
5/21/21

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

A&E PROJECT NUMBER
2039-Z5555C

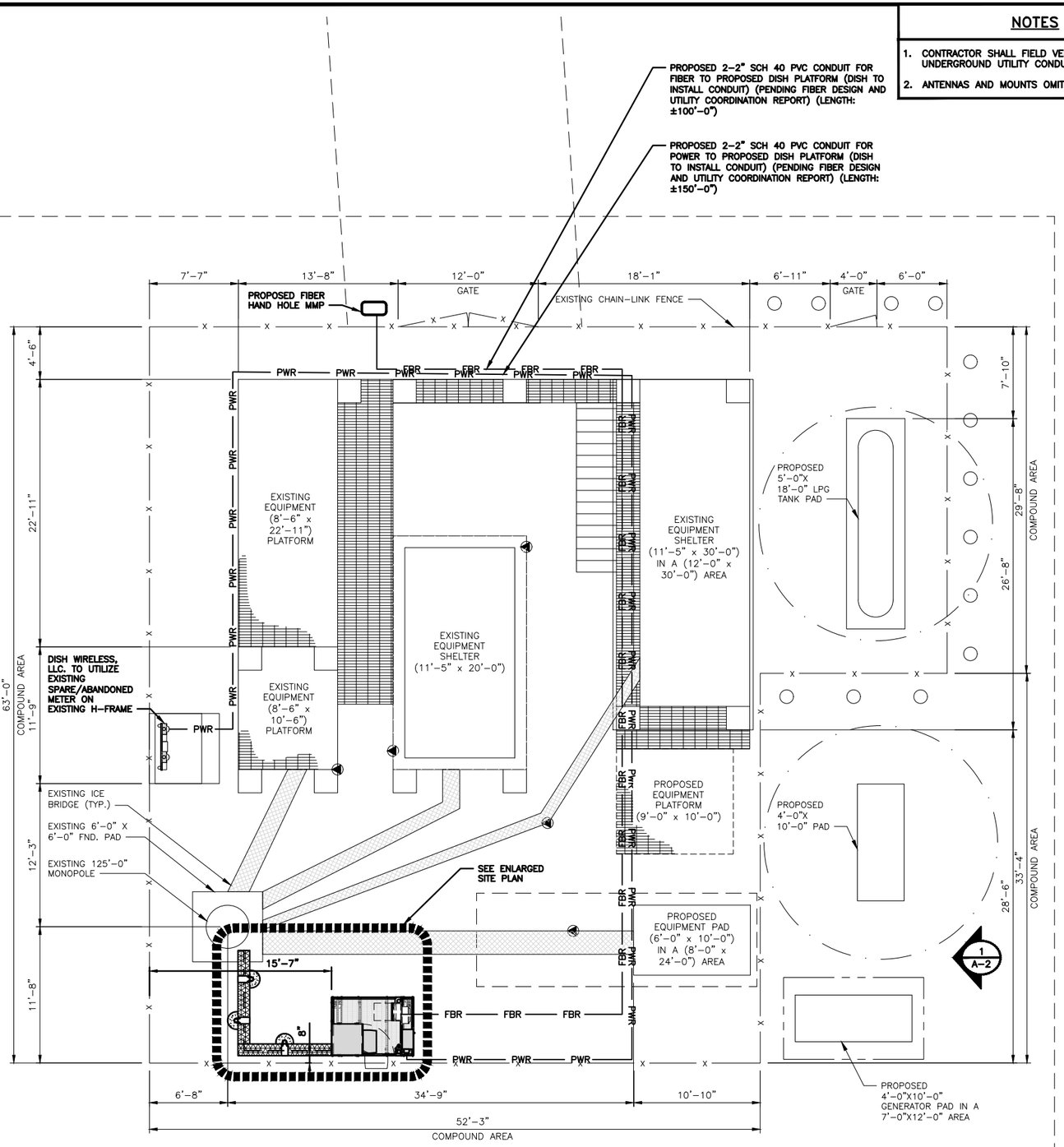
DISH WIRELESS, LLC.
PROJECT INFORMATION
BOBDL00094A
201 MAIN ST.
CROMWELL, CT 06416

SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-6

NOTES

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



UTILITY ROUTE PLAN

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

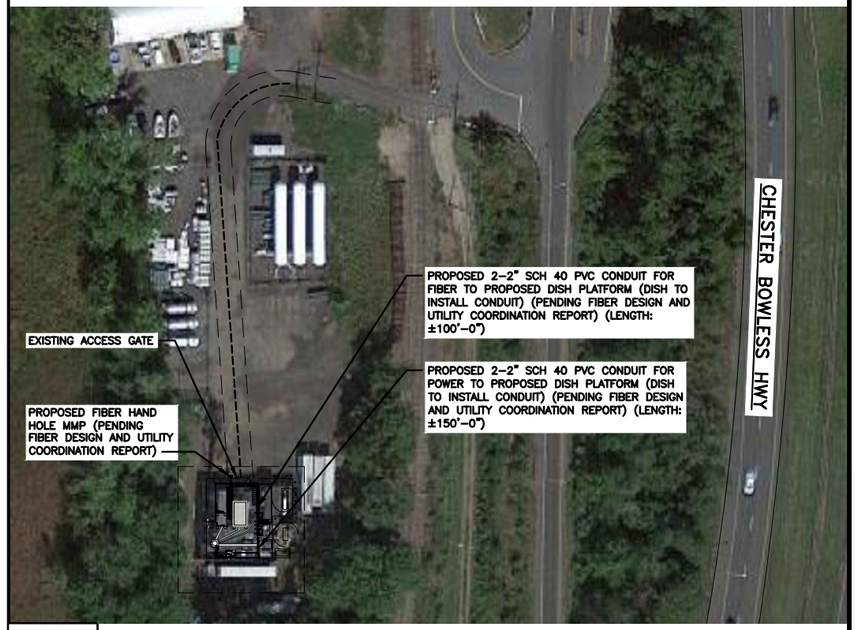
1

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

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

ELECTRICAL NOTES

2



OVERALL UTILITY ROUTE PLAN

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

3

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

CROWN CASTLE
2000 CORPORATE DRIVE
CANONSBURG, PA 15317

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

STATE OF CONNECTICUT
SHUHEI SAKANOUE
34916
LICENSED PROFESSIONAL ENGINEER
5/21/21

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

A&E PROJECT NUMBER
2039-Z5555C

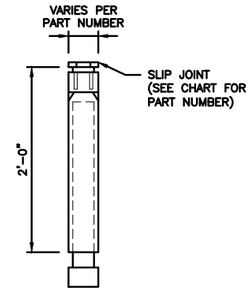
DISH WIRELESS, LLC.
PROJECT INFORMATION
BOBDL00094A
201 MAIN ST.
CROMWELL, CT 06416

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"

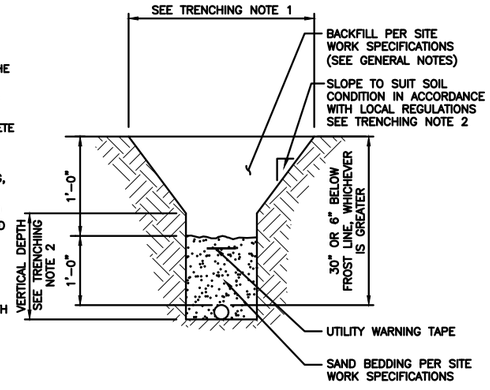


NOTE:
CONTRACTOR TO INSTALL EXPANSION FITTING SLIP JOINT AT METER CENTER CONDUIT TERMINATION, AS PER LOCAL UTILITY POLICY, ORDINANCE AND/OR SPECIFIED REQUIREMENT.

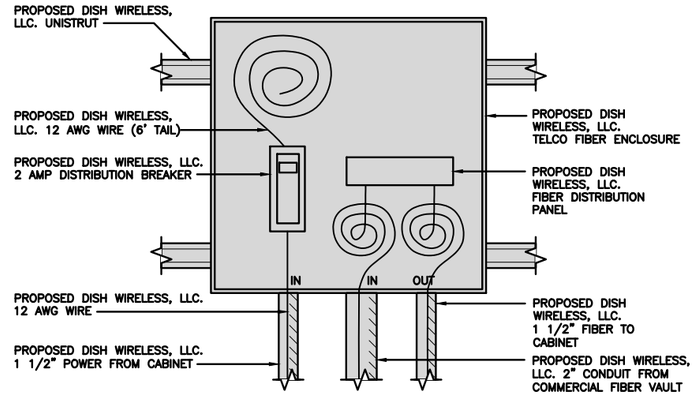
EXPANSION JOINT DETAIL | NO SCALE | 1

TRENCHING NOTES

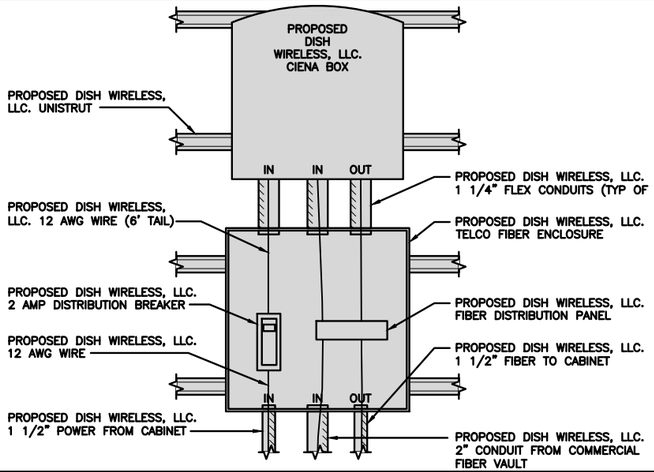
1. CONTRACTOR SHALL RESTORE THE TRENCH TO ITS ORIGINAL CONDITIONS BY EITHER SEEDING OR SODDING GRASS AREAS, OR REPLACING ASPHALT OR CONCRETE AREAS TO ITS ORIGINAL CROSS SECTION.
2. TRENCHING SAFETY; INCLUDING, BUT NOT LIMITED TO SOIL CLASSIFICATION, SLOPING, AND SHORING, SHALL BE GOVERNED BY THE CURRENT 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 | NO SCALE | 4

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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

CROWN CASTLE
2000 CORPORATE DRIVE
CANONSBURG, PA 15317

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

STATE OF CONNECTICUT
MATTHEW SAKANOWSKI
34916
LICENSED PROFESSIONAL ENGINEER
5/21/21

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

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

SUBMITTALS

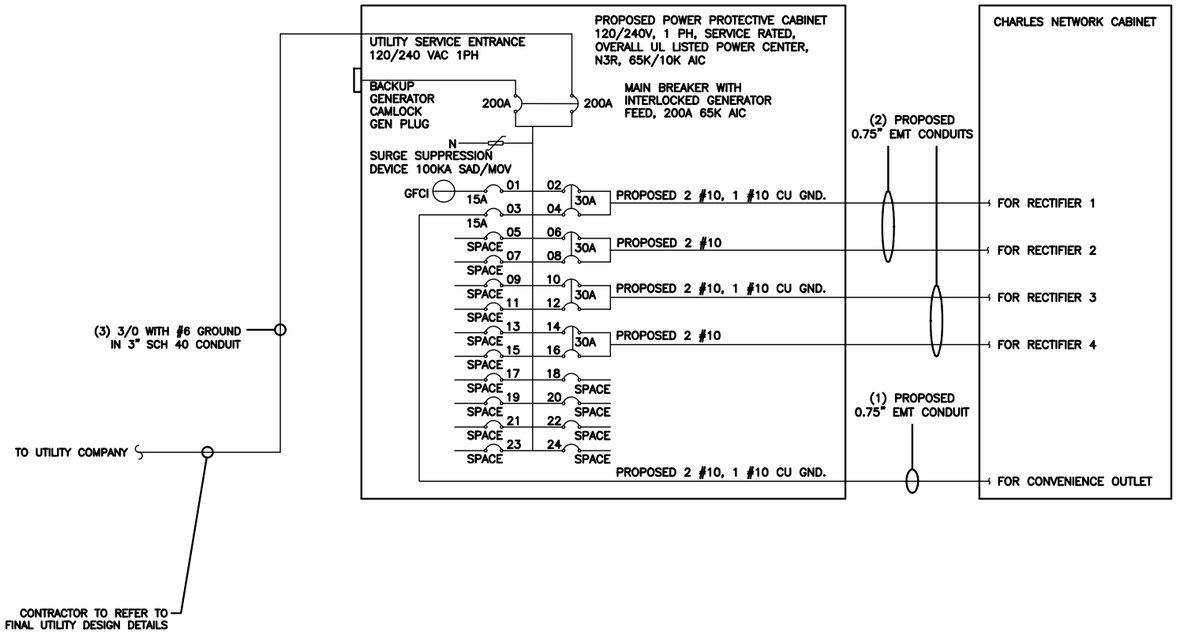
REV	DATE	DESCRIPTION
0	05/20/2021	ISSUED FOR PERMIT

A&E PROJECT NUMBER
2039-Z5555C

DISH WIRELESS, LLC.
PROJECT INFORMATION
BOBDL00094A
201 MAIN ST.
CROMWELL, CT 06416

SHEET TITLE
ELECTRICAL DETAILS

SHEET NUMBER
E-2



PPC ONE-LINE DIAGRAM

NO SCALE | 1

NOTES

THE ENGINEER OF RECORD HAS PERFORMED ALL REQUIRED SHORT CIRCUIT CALCULATIONS AND THE AIC RATINGS FOR EACH DEVICE IS ADEQUATE TO PROTECT THE EQUIPMENT AND THE ELECTRICAL SYSTEM.

THE ENGINEER OF RECORD HAS PERFORMED ALL REQUIRED VOLTAGE DROP CALCULATIONS AND ALL BRANCH CIRCUIT AND FEEDERS COMPLY WITH THE NEC (LISTED ON T-1) ARTICLE 210.19(A)(1) FPN NO. 4.

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).

#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.
0.75" 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

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

RECTIFIER CONDUCTORS (2 CONDUITS): USING THWN-2, CU.

#10 - 0.0211 SQ. IN X 4 = 0.0844 SQ. IN
#10 - 0.0211 SQ. IN X 1 = 0.0211 SQ. IN <GROUND
TOTAL = 0.1055 SQ. IN

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

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

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

CROWN CASTLE
2000 CORPORATE DRIVE
CANONSBURG, PA 15317

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

STATE OF CONNECTICUT
SUHEL SAKANO
34916
LICENSED PROFESSIONAL ENGINEER
5/21/21

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

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

SUBMITTALS

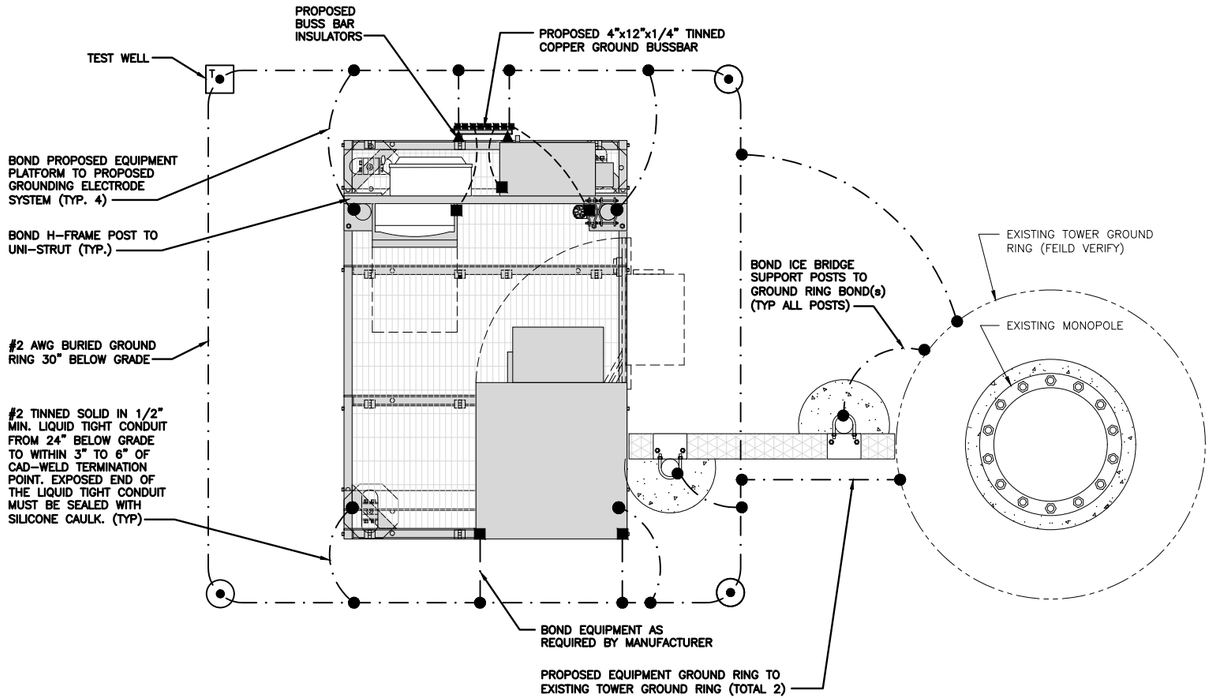
REV	DATE	DESCRIPTION
0	05/20/2021	ISSUED FOR PERMIT

A&E PROJECT NUMBER
2039-Z5555C

DISH WIRELESS, LLC.
PROJECT INFORMATION
BOBDL00094A
201 MAIN ST.
CROMWELL, CT 06416

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

SHEET NUMBER
E-3

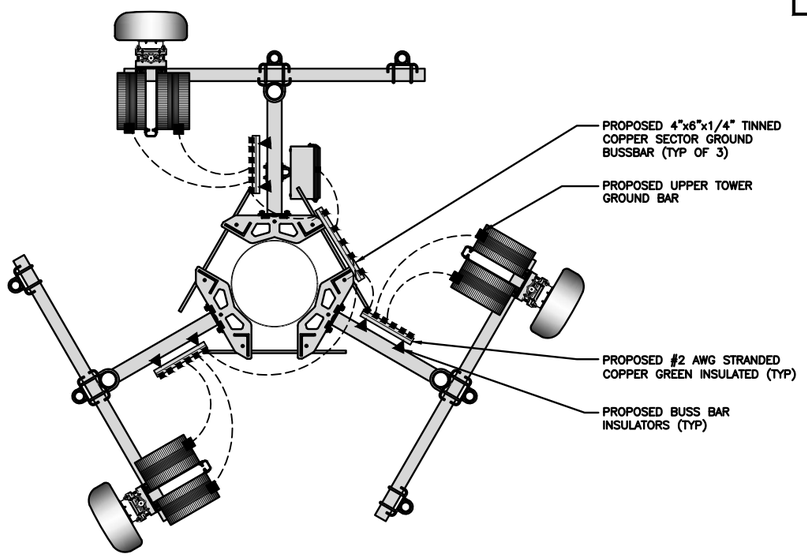


TYPICAL EQUIPMENT GROUNDING PLAN

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
- #2 AWG STRANDED & INSULATED
- #2 AWG SOLID COPPER TINNED

GROUNDING LEGEND

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

GROUNDING KEY NOTES

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

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

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

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

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

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

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

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

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

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

(L) 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.

(M) 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.

(N) 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

(P) 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.

(Q) 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

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

REFER TO DISH WIRELESS, LLC. GROUNDING NOTES.

GROUNDING KEY NOTES

NO SCALE | 3

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

CROWN CASTLE
2000 CORPORATE DRIVE
CANONSBURG, PA 15317

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

STATE OF CONNECTICUT
MUHEI SAKAMOTO
34916
LICENSED PROFESSIONAL ENGINEER
5/21/21

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

A&E PROJECT NUMBER
2039-Z5555C

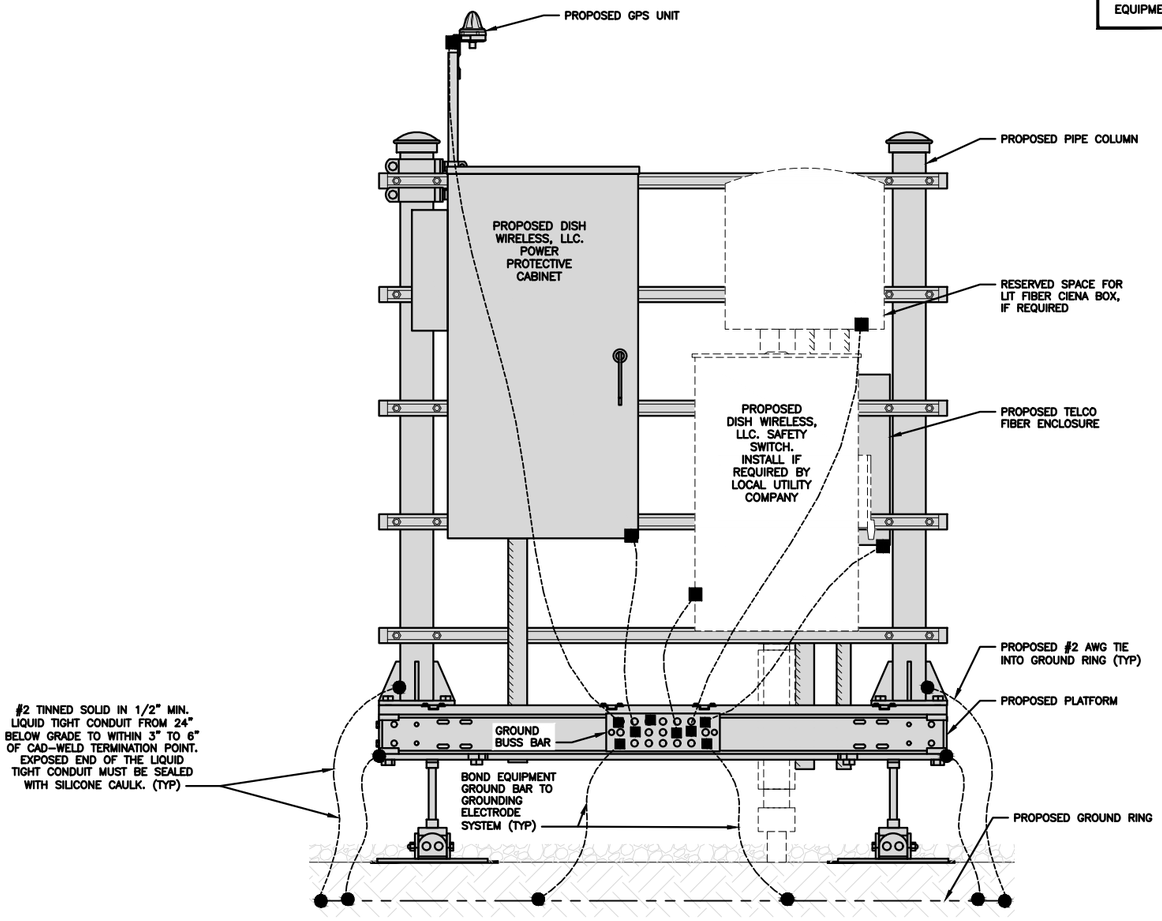
DISH WIRELESS, LLC.
PROJECT INFORMATION
BOBDL00094A
201 MAIN ST.
CROMWELL, CT 06416

SHEET TITLE
GROUNDING PLANS AND NOTES

SHEET NUMBER
G-1

NOTES

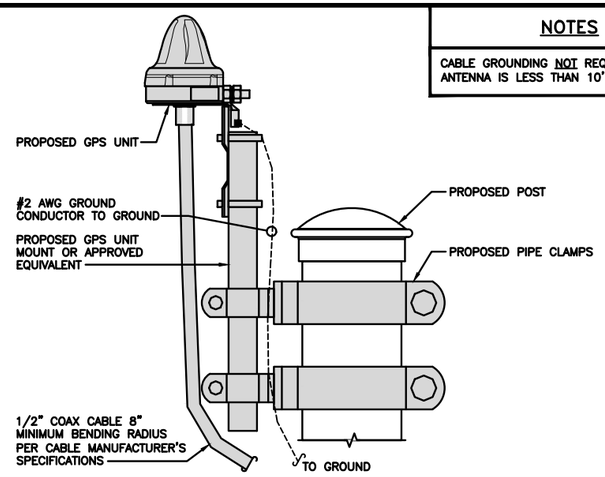
EQUIPMENT CABINET OMITTED FOR CLARITY



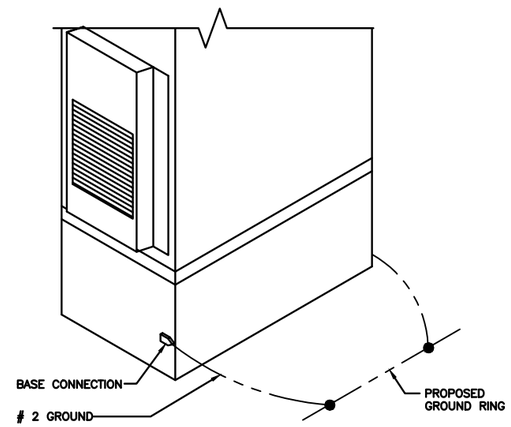
H-FRAME GROUNDING DETAIL | NO SCALE | 1

NOTES

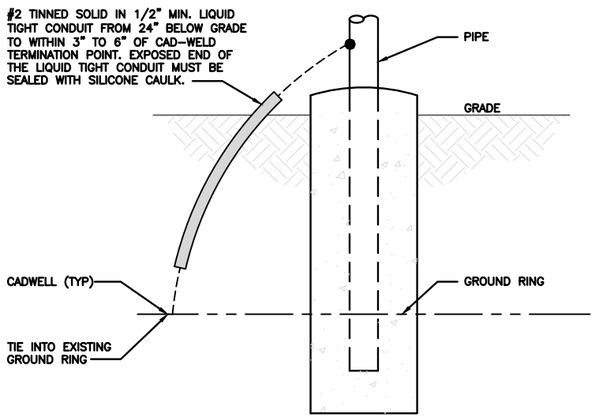
CABLE GROUNDING NOT REQUIRED WHEN ANTENNA IS LESS THAN 10' FROM CABINET



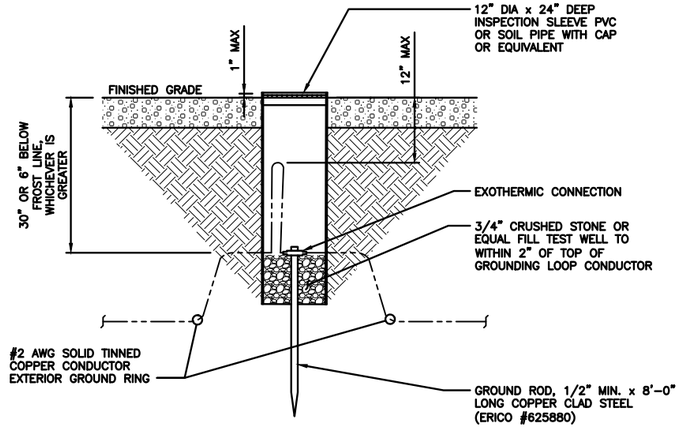
TYPICAL GPS UNIT GROUNDING | NO SCALE | 2



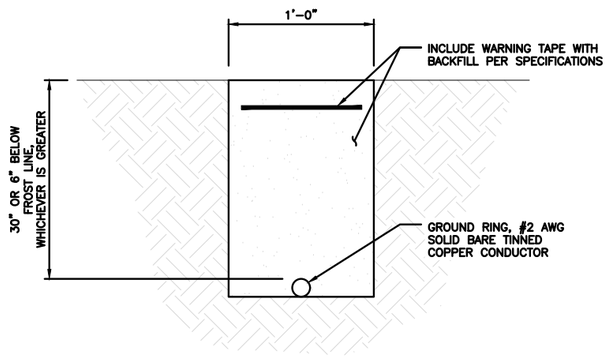
OUTDOOR CABINET GROUNDING | NO SCALE | 3



TRANSITIONING GROUND DETAIL | NO SCALE | 4



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



TYPICAL GROUND RING TRENCH | NO SCALE | 6

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

CROWN CASTLE
2000 CORPORATE DRIVE
CANONSBURG, PA 15317

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

STATE OF CONNECTICUT
MATTHEI SAKANO
34916
LICENSED PROFESSIONAL ENGINEER
5/21/21

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

A&E PROJECT NUMBER

2039-Z5555C

DISH WIRELESS, LLC.
PROJECT INFORMATION
BOBDL00094A
201 MAIN ST.
CROMWELL, CT 06416

SHEET TITLE

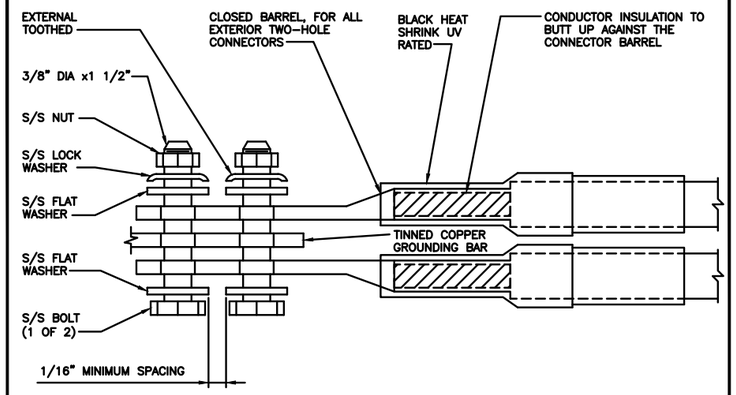
GROUNDING DETAILS

SHEET NUMBER

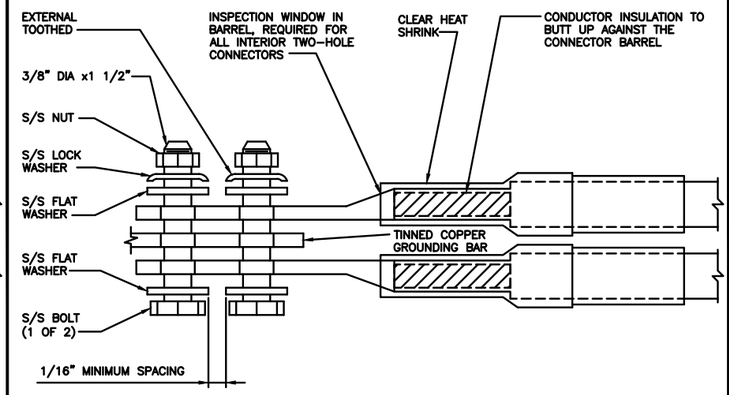
G-2

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

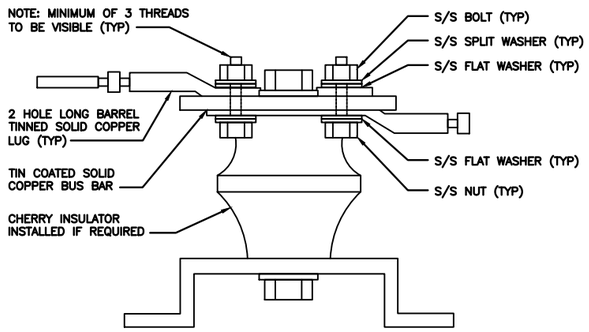
TYPICAL GROUNDING NOTES | NO SCALE | 1



TYPICAL EXTERIOR TWO HOLE LUG | NO SCALE | 2



TYPICAL INTERIOR TWO HOLE LUG | NO SCALE | 3



LUG DETAIL | NO SCALE | 4

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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

CROWN CASTLE
2000 CORPORATE DRIVE
CANONSBURG, PA 15317

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

STATE OF CONNECTICUT
MATTHEI SAKANOVSKY
34916
LICENSED PROFESSIONAL ENGINEER
05/21/21

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

A&E PROJECT NUMBER
2039-Z5555C

DISH WIRELESS, LLC.
PROJECT INFORMATION
BOBDL00094A
201 MAIN ST.
CROMWELL, CT 06416

SHEET TITLE
GROUNDING DETAILS

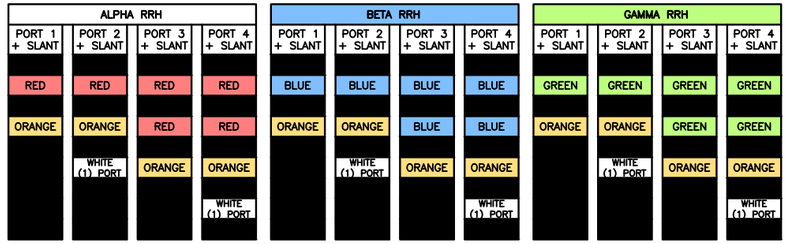
SHEET NUMBER
G-3

RF JUMPER COLOR CODING

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

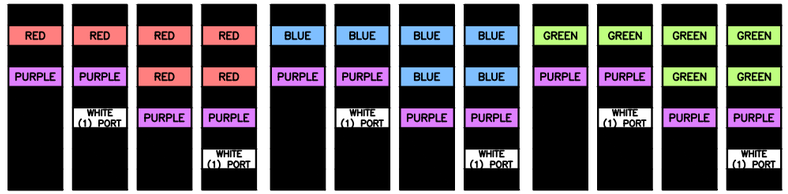
LOW-BAND RRH –
(600MHz N71 BASEBAND) +
(850MHz N26 BAND) +
(700MHz N29 BAND) – OPTIONAL PER MARKET

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)

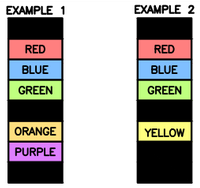


HYBRID/DISCREET CABLES

INCLUDE SECTOR BANDS BEING SUPPORTED AM LONG WITH FREQUENCY BANDS

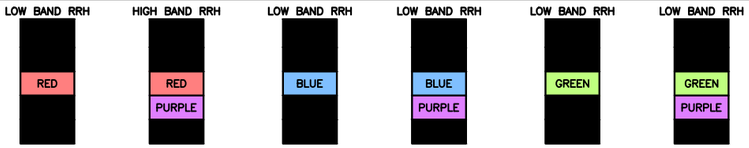
EXAMPLE 1 – HYBRID, OR DISCREET, SUPPORTS ALL SECTORS, BOTH LOW-BANDS AND MID-BANDS

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



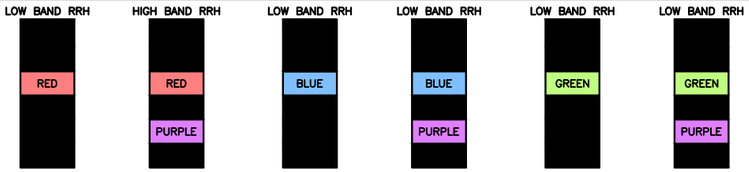
HYBRID/DISCREET CABLES

LOW-BAND RRH FIBER CABLES HAVE SECTOR STRIPE ONLY

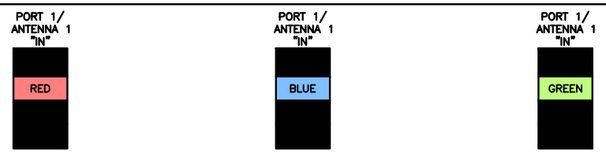


POWER CABLES TO RRHs

LOW-BAND RRH POWER CABLES HAVE SECTOR STRIPE ONLY



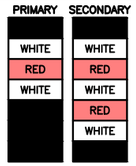
RET MOTORS AT ANTENNAS



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 CABINETS 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–N28)
OPTIONAL – (N29)
ORANGE

AWS
(N65+N70+H-BLOCK)
PURPLE

CBRS TECH
(3 GHz)
YELLOW

NEGATIVE SLANT PORT
ON ANTRRH
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

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

CROWN CASTLE
2000 CORPORATE DRIVE
CANONSBURG, PA 15317

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

STATE OF CONNECTICUT
MATTHEW SAKAI O'NEIL
34916
LICENSED PROFESSIONAL ENGINEER
5/21/21

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

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

SUBMITTALS

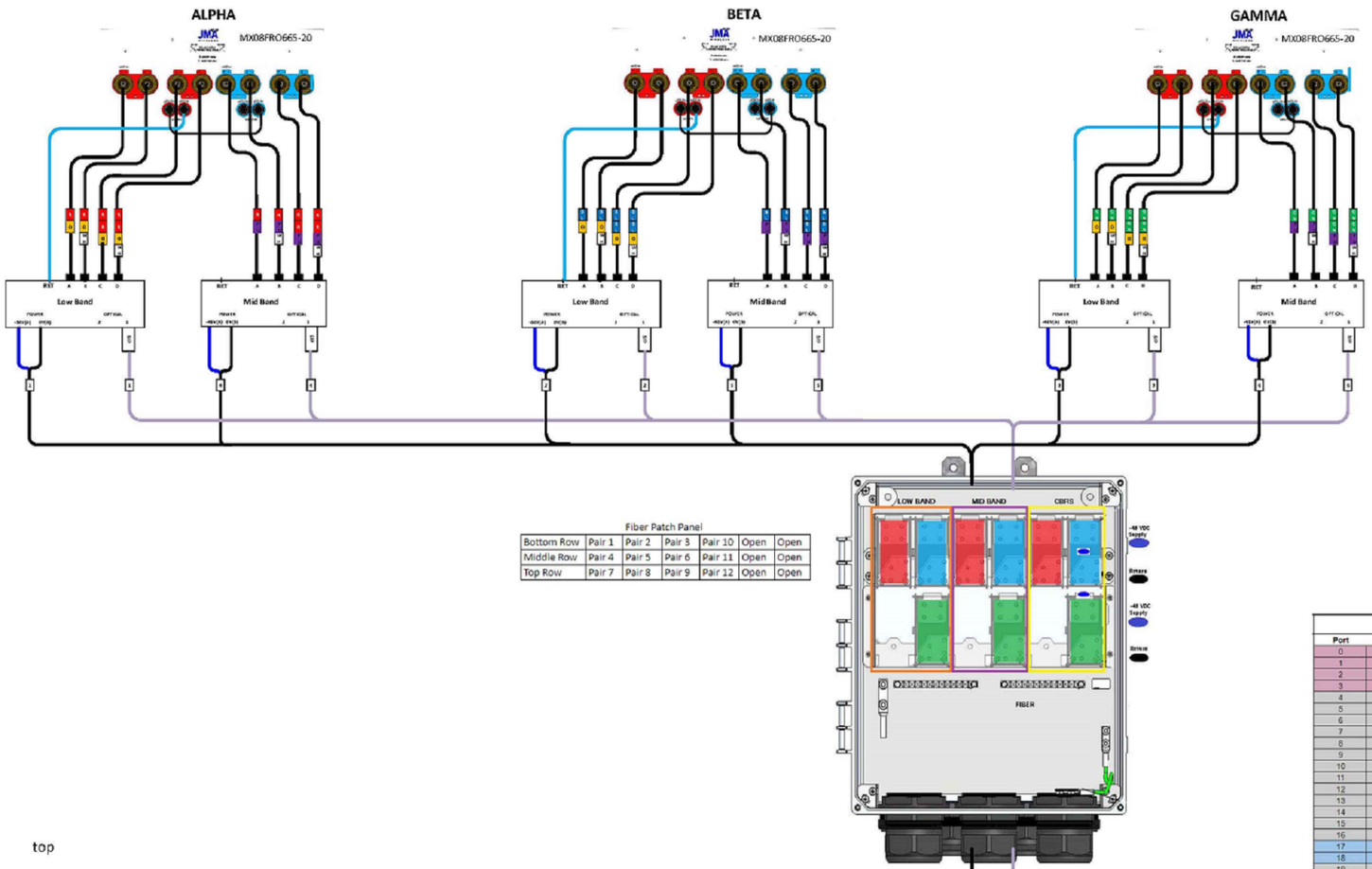
REV	DATE	DESCRIPTION
0	05/20/2021	ISSUED FOR PERMIT

A&E PROJECT NUMBER
2039-Z5555C

DISH WIRELESS, LLC.
PROJECT INFORMATION
BOBDL00094A
201 MAIN ST.
CROMWELL, CT 06416

SHEET TITLE
RF
CABLE COLOR CODES

SHEET NUMBER
RF-1



Fiber Patch Panel

Bottom Row	Pair 1	Pair 2	Pair 3	Pair 10	Open	Open
Middle Row	Pair 4	Pair 5	Pair 6	Pair 11	Open	Open
Top Row	Pair 7	Pair 8	Pair 9	Pair 12	Open	Open

CSR NCS540

Port	Interface	Description
0	Gi0/0/0/0	SiteBoss
1	Gi0/0/0/1	CBRS - Alpha
2	Gi0/0/0/2	CBRS - Beta
3	Gi0/0/0/3	CBRS - Gamma
4	Te0/0/0/4	Fujitsu Low-Band RU - Alpha
5	Te0/0/0/5	Fujitsu Mid-Band RU - Alpha
6	Te0/0/0/6	Fujitsu Low-Band RU - Beta
7	Te0/0/0/7	Fujitsu Mid-Band RU - Beta
8	Te0/0/0/8	Fujitsu Low-Band RU - Gamma
9	Te0/0/0/9	Fujitsu Mid-Band RU - Gamma
10	Te0/0/0/10	Fixed WAN
11	Te0/0/0/11	Fixed WAN
12	Te0/0/0/12	Fixed WAN
13	Te0/0/0/13	Fixed WAN
14	Te0/0/0/14	CBRS1
15	Te0/0/0/15	CBRS2
16	Te0/0/0/16	CBRS3
17	Gi0/0/0/17	SM1 - BMC
18	Gi0/0/0/18	SM2 - BMC
19	Te0/0/0/19	SM1 - Data 1
20	Te0/0/0/20	SM1 - Data 2
21	Te0/0/0/21	SM2 - Data 1
22	Te0/0/0/22	SM2 - Data 2
23	Te0/0/0/23	Reserved Uplink (EDC, LDC)
24	Te0/0/0/24	Blank/Future
25	Te0/0/0/25	Blank/Future
26	Te0/0/0/26	Fiber NIU
27	Te0/0/0/27	Fiber NIU
28	Te0/0/0/28	Blank/Future
29	Te0/0/0/29	Blank/Future

Bottom OVP Layout

Circuit 1	Alpha Low Band
Circuit 2	Beta Low Band
Circuit 3	Gamma Low Band
Circuit 4	Alpha Mid Band
Circuit 5	Beta Mid Band
Circuit 6	Gamma Mid Band
Circuit 7	Alpha CBRS
Circuit 8	Beta CBRS
Circuit 9	Gamma CBRS
Circuit 10	Open
Circuit 11	Open
Circuit 12	Open

Bottom OVP
Specific OVP model number detailed in RFDS

Quantity	5G plumbing diagram JMA MX08FRO665-20 2-2-2(LB+MB)
5-Jan-2021	

PLUMBING DIAGRAM | NO SCALE | 1

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

CROWN CASTLE
2000 CORPORATE DRIVE
CANONSBURG, PA 15317

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

STATE OF CONNECTICUT
TSUHEI SAKANO
34916
LICENSED PROFESSIONAL ENGINEER
5/21/21

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

A&E PROJECT NUMBER
2039-Z5555C

DISH WIRELESS, LLC.
PROJECT INFORMATION
BOBDL00094A
201 MAIN ST.
CROMWELL, CT 06416

SHEET TITLE
RF
PLUMBING DIAGRAM

SHEET NUMBER
RF-2

EXOTHERMIC CONNECTION

MECHANICAL CONNECTION

CHEMICAL ELECTROLYTIC GROUNDING SYSTEM

TEST CHEMICAL ELECTROLYTIC GROUNDING SYSTEM

EXOTHERMIC WITH INSPECTION SLEEVE

GROUNDING BAR

GROUND ROD

TEST GROUND ROD WITH INSPECTION SLEEVE

SINGLE POLE SWITCH

DUPLEX RECEPTACLE

DUPLEX GFCI RECEPTACLE

FLUORESCENT LIGHTING FIXTURE
(2) TWO LAMPS 48–T8

SMOKE DETECTION (DC)

EMERGENCY LIGHTING (DC)

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

CHAIN LINK FENCE

WOOD/WROUGHT IRON FENCE

WALL STRUCTURE

LEASE AREA

PROPERTY LINE (PL)

SETBACKS

ICE BRIDGE

CABLE TRAY

WATER LINE

UNDERGROUND POWER

UNDERGROUND TELCO

OVERHEAD POWER

OVERHEAD TELCO

UNDERGROUND TELCO/POWER

ABOVE GROUND POWER

ABOVE GROUND TELCO

ABOVE GROUND TELCO/POWER

WORKPOINT

SECTION REFERENCE

DETAIL REFERENCE

LEGEND

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

ABBREVIATIONS

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

CROWN CASTLE
2000 CORPORATE DRIVE
CANONSBURG, PA 15317

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

STATE OF CONNECTICUT
SHEI SAKAN CUI
34916
LICENSED
PROFESSIONAL ENGINEER
5/27/21

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

A&E PROJECT NUMBER

2039–Z5555C

DISH WIRELESS, LLC.
PROJECT INFORMATION

BOBDL00094A
201 MAIN ST.
CROMWELL, CT 06416

SHEET TITLE

LEGEND AND ABBREVIATIONS

SHEET NUMBER

GN-1

SITE ACTIVITY REQUIREMENTS:

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

2. "LOOK UP" – DISH WIRELESS, LLC. AND TOWER OWNER SAFETY CLIMB REQUIREMENT:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

GENERAL NOTES:

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

CONTRACTOR:GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION

CARRIER:DISH WIRELESS, LLC.

TOWER OWNER:TOWER OWNER

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

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

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

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

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

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

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

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

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

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

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

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

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

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

CROWN CASTLE

2000 CORPORATE DRIVE
CANONSBURG, PA 15317

INFINIGY

FROM ZERO TO INFINIGY

the solutions are endless

2500 W. HIGGINS RD. SUITE 500 |
HOFFMAN ESTATES, IL 60169
PHONE: 847-648-4068 | FAX: 518-690-0793
WWW.INFINIGY.COM

STATE OF CONNECTICUT
MICHAEL SAKANO
34916
LICENSED PROFESSIONAL ENGINEER
5/21/21

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

A&E PROJECT NUMBER

2039–Z5555C

DISH WIRELESS, LLC.
PROJECT INFORMATION

BOBDL00094A
201 MAIN ST.
CROMWELL, CT 06416

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-2

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

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

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

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

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

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

#4 BARS AND SMALLER 40 ksi

#5 BARS AND LARGER 60 ksi

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

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

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

ELECTRICAL INSTALLATION NOTES:

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

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

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

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

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

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

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

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

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

8. TIE WRAPS ARE NOT ALLOWED.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

CROWN CASTLE
2000 CORPORATE DRIVE
CANONSBURG, PA 15317

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

STATE OF CONNECTICUT
MICHAEL SAKANICH JR.
34916
LICENSED PROFESSIONAL ENGINEER
5/21/21

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

A&E PROJECT NUMBER

2039-Z5555C

DISH WIRELESS, LLC.
PROJECT INFORMATION
BOBDL00094A
201 MAIN ST.
CROMWELL, CT 06416

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-3

GROUNDING NOTES:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

CROWN CASTLE

2000 CORPORATE DRIVE
CANONSBURG, PA 15317

INFINIGY

FROM ZERO TO INFINIGY

the solutions are endless

2500 W. HIGGINS RD. SUITE 500 |
HOFFMAN ESTATES, IL 60169
PHONE: 847-648-4068 | FAX: 518-690-0793
WWW.INFINIGY.COM

STATE OF CONNECTICUT
TUHEI SAKAMOTO
34916
LICENSED PROFESSIONAL ENGINEER
5/21/21

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

A&E PROJECT NUMBER

2039-Z5555C

DISH WIRELESS, LLC.
PROJECT INFORMATION

BOBDL00094A
201 MAIN ST.
CROMWELL, CT 06416

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-4

Exhibit D

Structural Analysis Report

Date: **April 19, 2021**

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

Subject:	**Structural Analysis Report**	
Carrier Designation:	***DISH Network* Co-Locate**	
	Site Number:	BOBDL00094A
	Site Name:	CT-CCI-T-876364
Crown Castle Designation:	**BU Number:**	876364
	Site Name:	CROMWELL / FIRST LINE EMERGENC
	JDE Job Number:	645188
	Work Order Number:	1945897
	Order Number:	553293 Rev. 0
Engineering Firm Designation:	**Crown Castle Project Number:**	1945897
Site Data:	**201 Main St., CROMWELL, Middlesex County, CT**	
	Latitude *41° 35' 0.11"*, Longitude *-72° 38' 59.14"*	
	125 Foot - Monopole Tower	

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

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

LC7: Proposed Equipment Configuration **Sufficient Capacity-99.2%**

This analysis utilizes an ultimate 3-second gust wind speed of 125 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: Kibreab Gebremariam

Respectfully submitted by:

STATE OF CONNECTICUT
TERRY P. STYRAN
31522
LICENSED
PROFESSIONAL ENGINEER

Terry P Styran
2021.04.20
17:18:45 -04'00'

Terry P. Styran, P.E.
Senior Project Engineer

TABLE OF CONTENTS

1) INTRODUCTION

2) ANALYSIS CRITERIA
Table 1 - Proposed Equipment Configuration
Table 2 - Other Considered Equipment

3) ANALYSIS PROCEDURE
Table 3 - Documents Provided
3.1) Analysis Method
3.2) Assumptions

4) ANALYSIS RESULTS
Table 4 - Section Capacity (Summary)
Table 5 - Tower Component Stresses vs. Capacity - LC7
4.1) Recommendations

5) APPENDIX A
tnxTower Output

6) APPENDIX B
Base Level Drawing

7) APPENDIX C
Additional Calculations

1) INTRODUCTION

This tower is a 125 ft Monopole tower designed by ENGINEERED ENDEAVORS, INC.. The tower has been modified multiple times to accommodate additional loading.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	125 mph
Exposure Category:	C
Topographic Factor:	1
Ice Thickness:	1.5 in
Wind Speed with Ice:	50 mph
Service Wind Speed:	60 mph

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
85.0	85.0	3	fujitsu	TA08025-B604	1	1-3/8
		3	fujitsu	TA08025-B605		
		3	jma wireless	MX08FRO665-20 w/ Mount Pipe		
		1	raycap	RDIDC-9181-PF-48		
		1	tower mounts	Commscope MC-K6MHDX-9-96 (3)		

Table 2 - 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)
125.0	129.0	3	argus technologies	LLPX310R-V1 w/ Mount Pipe	3 3 2 1 3	1/4 5/16 1/2 3/4 1-1/4
	127.0	3	alcatel lucent	TD-RRH8x20-25		
		3	rfs celwave	APXVSPP18-C-A20 w/ Mount Pipe		
		3	rfs celwave	APXVTM14-C-120 w/ Mount Pipe		
	125.0	2	dragonwave	HORIZON COMPACT		
		3	samsung telecommunications	WIMAX DAP HEAD		
		1	tower mounts	Platform Mount [LP 714-1]		
	124.0	1	andrew	VHLP2-11		
		1	andrew	VHLP2-18		
123.0	123.0	3	alcatel lucent	800MHZ 2X50W RRH W/FILTER	-	-
		3	alcatel lucent	PCS 1900MHz 4x45W-65MHz		
		1	tower mounts	Side Arm Mount [SO 102-3]		
115.0	117.0	3	cci antennas	HPA-65R-BUU-H6 w/ Mount Pipe	3 4 12	3/8 3/4 1-1/4
		3	ericsson	RRUS 11 B12		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
		3	ericsson	RRUS 32		
		3	ericsson	RRUS 32 B2		
		3	ericsson	RRUS 32 B66		
		6	kaelus	DBC0061F1V51-2		
		3	kathrein	80010798 w/ Mount Pipe		
		3	kmw communications	AM-X-CD-16-65-00T-RET w/ Mount Pipe		
		6	powerwave technologies	TT19-08BP111-001		
		2	raycap	DC6-48-60-18-8F		
105.0	107.0	3	alcatel lucent	RRH2X60-AWS	14	1-5/8
		3	alcatel lucent	RRH2X60-PCS		
		3	alcatel lucent	RRH2x60-700		
		6	andrew	LNX-6514DS-A1M w/ Mount Pipe		
		6	commscope	HBXX-6517DS-A2M w/ Mount Pipe		
		2	rfs celwave	DB-T1-6Z-8AB-0Z		
	105.0	1	tower mounts	Platform Mount [LP 1201-1]		
95.0	96.0	6	ericsson	ERICSSON AIR 21 B4A B2P w/ Mount Pipe	1 1	1-1/4 1-5/8
		3	ericsson	RADIO 4449 B12/B71		
		3	rfs celwave	APXVAARR24_43-U-NA20		
	95.0	1	tower mounts	T-Arm Mount [TA 602-3]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Reference	Source
4-GEOTECHNICAL REPORTS	1532312	CCISITES
4-POST-MODIFICATION INSPECTION	1956332	CCISITES
4-POST-MODIFICATION INSPECTION	2182292	CCISITES
4-POST-MODIFICATION INSPECTION	3394680	CCISITES
4-POST-MODIFICATION INSPECTION	4009982	CCISITES
4-POST-MODIFICATION INSPECTION	5947318	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	1613909	CCISITES
4-TOWER MANUFACTURER DRAWINGS	2068958	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	2055765	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	2296089	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	3373019	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	3669962	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	5685167	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.

tnxTower was used to determine the loads on the modified structure. Additional calculations were performed to determine the stresses in the pole and in the reinforcing elements. These calculations are included in Appendix C.

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 4 - Section Capacity (Summary)

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
125 - 121	Pole	TP19.36x18.5x0.1875	Pole	9.4%	Pass
121 - 117	Pole	TP20.22x19.36x0.1875	Pole	16.5%	Pass
117 - 113	Pole	TP21.08x20.22x0.1875	Pole	27.9%	Pass
113 - 109	Pole	TP21.939x21.08x0.1875	Pole	38.3%	Pass
109 - 105	Pole	TP22.799x21.939x0.1875	Pole	47.8%	Pass
105 - 101	Pole	TP23.659x22.799x0.1875	Pole	63.4%	Pass
101 - 99.38	Pole	TP24.008x23.659x0.1875	Pole	68.4%	Pass
99.38 - 99.13	Pole + Reinf.	TP24.062x24.008x0.425	Reinf. 8 Tension Rupture	61.9%	Pass
99.13 - 95.13	Pole + Reinf.	TP24.922x24.062x0.4125	Reinf. 8 Tension Rupture	72.9%	Pass
95.13 - 94.46	Pole + Reinf.	TP25.065x24.922x0.4125	Reinf. 8 Tension Rupture	75.7%	Pass
94.46 - 94.21	Pole + Reinf.	TP25.119x25.065x0.6	Reinf. 8 Tension Rupture	53.7%	Pass
94.21 - 90.21	Pole + Reinf.	TP25.979x25.119x0.575	Reinf. 8 Tension Rupture	63.4%	Pass
90.21 - 89	Pole + Reinf.	TP26.239x25.979x0.575	Reinf. 8 Tension Rupture	66.2%	Pass
89 - 88.96	Pole + Reinf.	TP27.09x26.239x0.6625	Reinf. 8 Tension Rupture	57.6%	Pass
88.96 - 84.04	Pole + Reinf.	TP26.918x25.873x0.5	Reinf. 4 Tension Rupture	66.9%	Pass
84.04 - 80.04	Pole + Reinf.	TP27.768x26.918x0.4875	Reinf. 4 Tension Rupture	74.6%	Pass
80.04 - 76.04	Pole + Reinf.	TP28.618x27.768x0.4813	Reinf. 4 Tension Rupture	81.7%	Pass
76.04 - 73.58	Pole + Reinf.	TP29.14x28.618x0.475	Reinf. 4 Tension Rupture	85.9%	Pass
73.58 - 73.33	Pole + Reinf.	TP29.193x29.14x0.6125	Reinf. 4 Tension Rupture	68.0%	Pass
73.33 - 73	Pole + Reinf.	TP29.264x29.193x0.6125	Reinf. 4 Tension Rupture	68.4%	Pass
73 - 72.75	Pole + Reinf.	TP29.317x29.264x0.375	Reinf. 3 Tension Rupture	84.1%	Pass

72.75 - 68.75	Pole + Reinf.	TP30.167x29.317x0.375	Reinf. 3 Tension Rupture	89.7%	Pass
68.75 - 64.75	Pole + Reinf.	TP31.017x30.167x0.3688	Reinf. 3 Tension Rupture	94.7%	Pass
64.75 - 63	Pole + Reinf.	TP31.389x31.017x0.3688	Reinf. 3 Tension Rupture	96.8%	Pass
63 - 62.75	Pole + Reinf.	TP31.442x31.389x0.575	Reinf. 7 Tension Rupture	80.4%	Pass
62.75 - 58.75	Pole + Reinf.	TP32.292x31.442x0.575	Reinf. 7 Tension Rupture	84.6%	Pass
58.75 - 57.23	Pole + Reinf.	TP32.615x32.292x0.45	Reinf. 2 Tension Rupture	84.0%	Pass
57.23 - 56.98	Pole + Reinf.	TP32.668x32.615x0.45	Reinf. 2 Tension Rupture	84.3%	Pass
56.98 - 52.98	Pole + Reinf.	TP33.518x32.668x0.45	Reinf. 2 Tension Rupture	87.8%	Pass
52.98 - 48.98	Pole + Reinf.	TP34.368x33.518x0.4375	Reinf. 2 Tension Rupture	91.1%	Pass
48.98 - 45.54	Pole + Reinf.	TP36.18x34.368x0.4375	Reinf. 2 Tension Rupture	93.7%	Pass
45.54 - 39.46	Pole + Reinf.	TP35.889x34.6x0.5	Reinf. 2 Tension Rupture	87.7%	Pass
39.46 - 37.83	Pole + Reinf.	TP36.233x35.889x0.4938	Reinf. 2 Tension Rupture	88.6%	Pass
37.83 - 37.58	Pole + Reinf.	TP36.286x36.233x0.4938	Reinf. 1 Tension Rupture	88.7%	Pass
37.58 - 33.58	Pole + Reinf.	TP37.134x36.286x0.4875	Reinf. 1 Tension Rupture	90.8%	Pass
33.58 - 29.58	Pole + Reinf.	TP37.981x37.134x0.4875	Reinf. 1 Tension Rupture	92.7%	Pass
29.58 - 25.58	Pole + Reinf.	TP38.829x37.981x0.475	Reinf. 1 Tension Rupture	94.4%	Pass
25.58 - 21.58	Pole + Reinf.	TP39.676x38.829x0.475	Reinf. 1 Tension Rupture	96.0%	Pass
21.58 - 17.58	Pole + Reinf.	TP40.524x39.676x0.475	Reinf. 1 Tension Rupture	97.4%	Pass
17.58 - 13.58	Pole + Reinf.	TP41.372x40.524x0.4688	Reinf. 1 Tension Rupture	98.8%	Pass
13.58 - 12.25	Pole + Reinf.	TP41.654x41.372x0.4625	Reinf. 1 Tension Rupture	99.2%	Pass
12.25 - 12	Pole + Reinf.	TP41.707x41.654x0.6	Reinf. 6 Tension Rupture	84.5%	Pass
12 - 8	Pole + Reinf.	TP42.555x41.707x0.5875	Reinf. 6 Tension Rupture	85.9%	Pass
8 - 4	Pole + Reinf.	TP43.402x42.555x0.5875	Reinf. 6 Tension Rupture	87.1%	Pass
4 - 0	Pole + Reinf.	TP44.25x43.402x0.575	Reinf. 6 Tension Rupture	88.3%	Pass
				Summary	
			Pole	87.1%	Pass
			Reinforcement	99.2%	Pass
			Overall	99.2%	Pass

Table 5 - Tower Component Stresses vs. Capacity - LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	88.9	Pass
1	Base Plate	0	86.7	Pass
1	Base Foundation (Structure)	0	50.9	Pass
1	Base Foundation (Soil Interaction)	0	84.6	Pass

Structure Rating (max from all components) =	**99.2%**

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

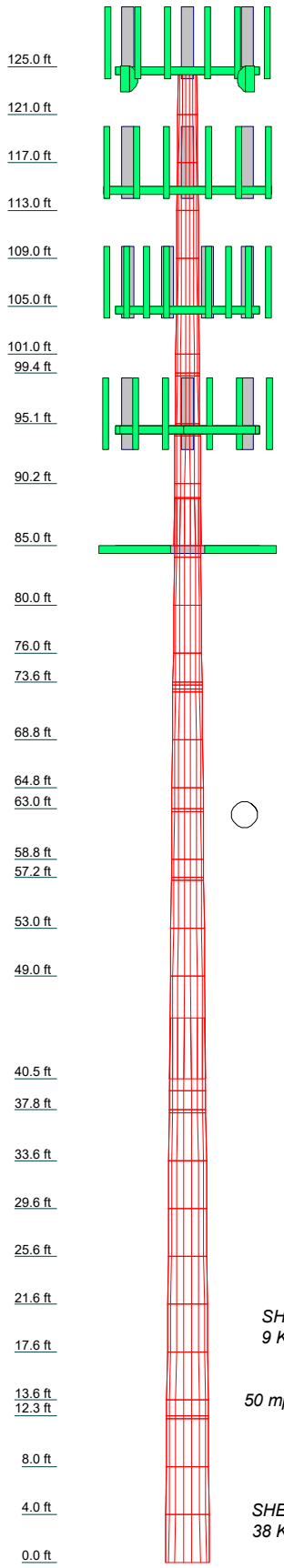
4.1) Recommendations

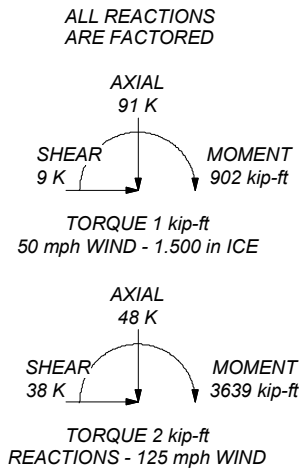
The tower and its foundation have sufficient capacity to carry the proposed load configuration. No modifications are required at this time.

APPENDIX A

TNXTOWER OUTPUT

Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	4.000	18	0.188		18.500	19.360		0.2
2	4.000	18	0.188		19.360	20.220		0.2
3	4.000	18	0.188		20.220	21.080		0.2
4	4.000	18	0.188		21.080	21.939		0.2
5	4.000	18	0.188		21.939	22.799		0.2
6	4.000	18	0.188		22.799	23.659		0.2
7	2.500	18	0.188		23.659	24.079		0.1
8	2.500	18	0.188		24.079	24.499		0.1
9	4.000	18	0.188		24.499	25.129		0.4
10	2.500	18	0.188		25.129	25.549		0.1
11	2.500	18	0.188		25.549	25.969		0.1
12	4.000	18	0.188		25.969	26.599		0.6
13	2.000	18	0.188		26.599	26.915		0.2
14	4.000	18	0.188		26.915	27.545		0.7
15	1.500	18	0.188		27.545	27.797		0.3
16	4.000	18	0.188		27.797	28.427		0.7
17	4.000	18	0.188		28.427	29.057		0.7
18	2.500	18	0.188		29.057	29.477		0.4
19	2.500	18	0.188		29.477	29.897		0.4
20	2.500	18	0.188		29.897	30.317		0.4
21	2.500	18	0.188		30.317	30.737		0.4
22	4.000	18	0.188		30.737	31.367		0.7
23	4.000	18	0.188		31.367	31.997		0.7
24	2.500	18	0.188		31.997	32.417		0.4
25	2.500	18	0.188		32.417	32.837		0.4
26	4.000	18	0.188		32.837	33.467		0.7
27	2.500	18	0.188		33.467	33.887		0.4
28	2.500	18	0.188		33.887	34.307		0.4
29	4.000	18	0.188		34.307	34.937		0.7
30	4.000	18	0.188		34.937	35.567		0.7
31	6.083	18	0.188	5.083	35.567	36.577		1.3
32	2.500	18	0.188		36.577	36.997		0.4
33	2.500	18	0.188		36.997	37.417		0.4
34	4.000	18	0.188		37.417	38.047		0.7
35	4.000	18	0.188		38.047	38.677		0.7
36	4.000	18	0.188		38.677	39.307		0.7
37	4.000	18	0.188		39.307	39.937		0.8
38	4.000	18	0.188		39.937	40.567		0.8
39	4.000	18	0.188		40.567	41.197		0.8
40	4.000	18	0.188		41.197	41.827		0.8
41	2.500	18	0.188		41.827	42.247		0.3
42	2.500	18	0.188		42.247	42.667		0.3
43	4.000	18	0.188		42.667	43.297		1.1
44	4.000	18	0.588		42.555	43.402		1.2
45	4.000	18	0.575	3.917	43.402	44.250	A572-65	1.2
								19.8





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 C to the TIA-222-H Standard.
3. Tower designed for a 125 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 0.000 ft
8. TOWER RATING: 99.2%

CROWN CASTLE
The pathway to Possible

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

Job: ***BU# 876364***			
Project:			
Client: Crown Castle	Drawn by: KGebremariam		App'd:
Code: TIA-222-H	Date: 04/19/21		Scale: NTS
Path: C:\Users\KGebremariam\Desktop\Work Area\876364\WO 1945897 - SA\Prod\876364-R.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: 8.000 ft.
- Basic wind speed of 125 mph.
- Risk Category II.
- Exposure Category C.
- Simplified Topographic Factor Procedure for wind speed-up calculations is used.
- Topographic Category: 1.
- Crest Height: 0.000 ft.
- Nominal ice thickness of 1.500 in.
- Ice thickness is considered to increase with height.
- Ice density of 56.000 pcf.
- A wind speed of 50 mph is used in combination with ice.
- Temperature drop of 50.000 °F.
- Deflections calculated using a wind speed of 60 mph.
- TOWER RATING: 99.2%.
- A non-linear (P-delta) analysis was used.
- Pressures are calculated at each section.
- Stress ratio used in pole design is 1.05.
- Tower analysis based on target reliabilities in accordance with Annex S.
- Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
- Maximum demand-capacity ratio is: 1.
- Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

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

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	125.000-121.000	4.000	0.000	18	18.500	19.360	0.188	0.750	A572-65 (65 ksi)
L2	121.000-117.000	4.000	0.000	18	19.360	20.220	0.188	0.750	A572-65 (65 ksi)
L3	117.000-113.000	4.000	0.000	18	20.220	21.080	0.188	0.750	A572-65 (65 ksi)
L4	113.000-109.000	4.000	0.000	18	21.080	21.939	0.188	0.750	A572-65 (65 ksi)
L5	109.000-105.000	4.000	0.000	18	21.939	22.799	0.188	0.750	A572-65 (65 ksi)
L6	105.000-101.000	4.000	0.000	18	22.799	23.659	0.188	0.750	A572-65 (65 ksi)
L7	101.000-99.375	1.625	0.000	18	23.659	24.008	0.188	0.750	A572-65 (65 ksi)
L8	99.375-99.125	0.250	0.000	18	24.008	24.062	0.425	1.700	A572-65 (65 ksi)
L9	99.125-95.125	4.000	0.000	18	24.062	24.922	0.412	1.650	A572-65 (65 ksi)
L10	95.125-94.458	0.667	0.000	18	24.922	25.065	0.412	1.650	A572-65 (65 ksi)
L11	94.458-94.208	0.250	0.000	18	25.065	25.119	0.600	2.400	A572-65 (65 ksi)
L12	94.208-90.208	4.000	0.000	18	25.119	25.979	0.575	2.300	A572-65 (65 ksi)
L13	90.208-89.000	1.208	0.000	18	25.979	26.239	0.575	2.300	A572-65 (65 ksi)
L14	89.000-85.040	3.960	3.917	18	26.239	27.090	0.662	2.650	A572-65 (65 ksi)
L15	85.040-84.040	4.917	0.000	18	25.873	26.918	0.500	2.000	A572-65 (65 ksi)
L16	84.040-80.040	4.000	0.000	18	26.918	27.768	0.487	1.950	A572-65 (65 ksi)
L17	80.040-76.040	4.000	0.000	18	27.768	28.618	0.481	1.925	A572-65 (65 ksi)
L18	76.040-73.583	2.457	0.000	18	28.618	29.140	0.475	1.900	A572-65 (65 ksi)
L19	73.583-73.333	0.250	0.000	18	29.140	29.193	0.613	2.450	A572-65 (65 ksi)
L20	73.333-73.000	0.333	0.000	18	29.193	29.264	0.613	2.450	A572-65 (65 ksi)
L21	73.000-72.750	0.250	0.000	18	29.264	29.317	0.375	1.500	A572-65 (65 ksi)
L22	72.750-68.750	4.000	0.000	18	29.317	30.167	0.375	1.500	A572-65 (65 ksi)
L23	68.750-64.750	4.000	0.000	18	30.167	31.017	0.369	1.475	A572-65 (65 ksi)
L24	64.750-63.000	1.750	0.000	18	31.017	31.389	0.369	1.475	A572-65 (65 ksi)
L25	63.000-62.750	0.250	0.000	18	31.389	31.442	0.575	2.300	A572-65 (65 ksi)
L26	62.750-58.750	4.000	0.000	18	31.442	32.292	0.575	2.300	A572-65 (65 ksi)
L27	58.750-57.233	1.517	0.000	18	32.292	32.615	0.450	1.800	A572-65 (65 ksi)
L28	57.233-56.983	0.250	0.000	18	32.615	32.668	0.450	1.800	A572-65 (65 ksi)
L29	56.983-52.983	4.000	0.000	18	32.668	33.518	0.450	1.800	A572-65 (65 ksi)
L30	52.983-48.983	4.000	0.000	18	33.518	34.368	0.438	1.750	A572-65 (65 ksi)
L31	48.983-40.457	8.526	5.083	18	34.368	36.180	0.438	1.750	A572-65 (65 ksi)
L32	40.457-39.457	6.083	0.000	18	34.600	35.889	0.500	2.000	A572-65 (65 ksi)
L33	39.457-37.833	1.624	0.000	18	35.889	36.233	0.494	1.975	A572-65 (65 ksi)
L34	37.833-37.583	0.250	0.000	18	36.233	36.286	0.494	1.975	A572-65 (65 ksi)
L35	37.583-33.583	4.000	0.000	18	36.286	37.134	0.487	1.950	A572-65

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
									(65 ksi)
L36	33.583-29.583	4.000	0.000	18	37.134	37.981	0.487	1.950	A572-65 (65 ksi)
L37	29.583-25.583	4.000	0.000	18	37.981	38.829	0.475	1.900	A572-65 (65 ksi)
L38	25.583-21.583	4.000	0.000	18	38.829	39.676	0.475	1.900	A572-65 (65 ksi)
L39	21.583-17.583	4.000	0.000	18	39.676	40.524	0.475	1.900	A572-65 (65 ksi)
L40	17.583-13.583	4.000	0.000	18	40.524	41.372	0.469	1.875	A572-65 (65 ksi)
L41	13.583-12.250	1.333	0.000	18	41.372	41.654	0.463	1.850	A572-65 (65 ksi)
L42	12.250-12.000	0.250	0.000	18	41.654	41.707	0.600	2.400	A572-65 (65 ksi)
L43	12.000-8.000	4.000	0.000	18	41.707	42.555	0.588	2.350	A572-65 (65 ksi)
L44	8.000-4.000	4.000	0.000	18	42.555	43.402	0.588	2.350	A572-65 (65 ksi)
L45	4.000-0.000	4.000		18	43.402	44.250	0.575	2.300	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	18.756	10.898	461.730	6.501	9.398	49.131	924.069	5.450	2.926	15.605
	19.630	11.410	529.874	6.806	9.835	53.877	1060.445	5.706	3.077	16.412
L2	19.630	11.410	529.874	6.806	9.835	53.877	1060.445	5.706	3.077	16.412
	20.503	11.922	604.412	7.111	10.272	58.843	1209.619	5.962	3.229	17.22
L3	20.503	11.922	604.412	7.111	10.272	58.843	1209.619	5.962	3.229	17.22
	21.376	12.433	685.631	7.417	10.708	64.027	1372.165	6.218	3.380	18.027
L4	21.376	12.433	685.631	7.417	10.708	64.027	1372.165	6.218	3.380	18.027
	22.249	12.945	773.819	7.722	11.145	69.431	1548.657	6.474	3.531	18.834
L5	22.249	12.945	773.819	7.722	11.145	69.431	1548.657	6.474	3.531	18.834
	23.122	13.457	869.263	8.027	11.582	75.053	1739.669	6.730	3.683	19.641
L6	23.122	13.457	869.263	8.027	11.582	75.053	1739.669	6.730	3.683	19.641
	23.995	13.969	972.248	8.332	12.019	80.894	1945.775	6.986	3.834	20.448
L7	23.995	13.969	972.248	8.332	12.019	80.894	1945.775	6.986	3.834	20.448
	24.350	14.176	1016.306	8.456	12.196	83.329	2033.949	7.090	3.895	20.776
L8	24.313	31.813	2235.408	8.372	12.196	183.286	4473.758	15.909	3.477	8.182
	24.368	31.885	2250.725	8.391	12.224	184.129	4504.411	15.946	3.487	8.205
L9	24.370	30.964	2187.995	8.396	12.224	178.997	4378.868	15.485	3.509	8.507
	25.243	32.090	2435.431	8.701	12.660	192.366	4874.067	16.048	3.660	8.873
L10	25.243	32.090	2435.431	8.701	12.660	192.366	4874.067	16.048	3.660	8.873
	25.389	32.278	2478.424	8.752	12.733	194.642	4960.108	16.142	3.686	8.935
L11	25.360	46.592	3523.350	8.685	12.733	276.705	7051.336	23.300	3.356	5.593
	25.414	46.694	3546.619	8.704	12.761	277.936	7097.905	23.352	3.365	5.608
L12	25.418	44.794	3409.251	8.713	12.761	267.171	6822.987	22.401	3.409	5.929
	26.291	46.364	3780.260	9.018	13.197	286.441	7565.494	23.186	3.560	6.192
L13	26.291	46.364	3780.260	9.018	13.197	286.441	7565.494	23.186	3.560	6.192
	26.555	46.838	3897.373	9.111	13.329	292.392	7799.875	23.423	3.606	6.271
L14	26.541	53.781	4444.678	9.080	13.329	333.452	8895.204	26.896	3.452	5.211
	27.406	55.571	4903.413	9.382	13.762	356.308	9813.279	27.791	3.602	5.437
L15	27.040	40.267	3275.133	9.007	13.143	249.183	6554.575	20.137	3.674	7.347
	27.256	41.925	3696.667	9.378	13.674	270.337	7398.199	20.967	3.858	7.715
L16	27.258	40.896	3609.369	9.383	13.674	263.953	7223.488	20.452	3.880	7.958
	28.121	42.212	3968.947	9.685	14.106	281.363	7943.116	21.110	4.029	8.265
L17	28.122	41.680	3920.757	9.687	14.106	277.947	7846.672	20.844	4.040	8.395
	28.985	42.979	4298.720	9.989	14.538	295.689	8603.097	21.493	4.190	8.706
L18	28.986	42.430	4245.721	9.991	14.538	292.044	8497.028	21.219	4.201	8.844
	29.516	43.217	4486.451	10.176	14.803	303.073	8978.806	21.613	4.293	9.037
L19	29.495	55.460	5702.309	10.127	14.803	385.207	11412.122	27.735	4.051	6.613
	29.549	55.563	5734.228	10.146	14.830	386.659	11476.001	27.787	4.060	6.629
L20	29.549	55.563	5734.228	10.146	14.830	386.659	11476.001	27.787	4.060	6.629

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
	29.621	55.701	5776.928	10.171	14.866	388.596	11561.458	27.856	4.072	6.649
L21	29.658	34.385	3625.581	10.256	14.866	243.881	7255.932	17.196	4.490	11.975
	29.712	34.448	3645.620	10.274	14.893	244.785	7296.038	17.228	4.500	12
L22	29.712	34.448	3645.620	10.274	14.893	244.785	7296.038	17.228	4.500	12
	30.575	35.460	3976.375	10.576	15.325	259.470	7957.981	17.734	4.649	12.399
L23	30.576	34.877	3912.563	10.578	15.325	255.306	7830.274	17.442	4.660	12.638
	31.439	35.872	4257.047	10.880	15.757	270.172	8519.696	17.939	4.810	13.044
L24	31.439	35.872	4257.047	10.880	15.757	270.172	8519.696	17.939	4.810	13.044
	31.817	36.307	4413.905	11.012	15.946	276.808	8833.619	18.157	4.876	13.222
L25	31.785	56.238	6746.325	10.939	15.946	423.080	13501.527	28.124	4.513	7.848
	31.839	56.335	6781.281	10.958	15.973	424.554	13571.484	28.173	4.522	7.864
L26	31.839	56.335	6781.281	10.958	15.973	424.554	13571.484	28.173	4.522	7.864
	32.702	57.886	7357.104	11.260	16.405	448.479	14723.890	28.948	4.671	8.124
L27	32.721	45.481	5826.077	11.304	16.405	355.150	11659.820	22.745	4.891	10.87
	33.049	45.941	6004.832	11.419	16.568	362.428	12017.565	22.975	4.948	10.996
L28	33.049	45.941	6004.832	11.419	16.568	362.428	12017.565	22.975	4.948	10.996
	33.102	46.017	6034.637	11.437	16.595	363.635	12077.214	23.013	4.958	11.017
L29	33.102	46.017	6034.637	11.437	16.595	363.635	12077.214	23.013	4.958	11.017
	33.966	47.231	6525.018	11.739	17.027	383.212	13058.622	23.620	5.107	11.349
L30	33.968	45.936	6350.964	11.744	17.027	372.990	12710.286	22.973	5.129	11.724
	34.831	47.117	6853.251	12.045	17.459	392.534	13715.521	23.563	5.279	12.066
L31	34.831	47.117	6853.251	12.045	17.459	392.534	13715.521	23.563	5.279	12.066
	36.671	49.633	8010.824	12.689	18.379	435.858	16032.189	24.821	5.598	12.795
L32	36.150	54.116	7950.038	12.105	17.577	452.306	15910.536	27.063	5.210	10.419
	36.365	56.162	8886.121	12.563	18.232	487.404	17783.934	28.086	5.436	10.873
L33	36.366	55.470	8779.694	12.565	18.232	481.567	17570.941	27.740	5.447	11.033
	36.716	56.009	9038.280	12.687	18.406	491.042	18088.452	28.010	5.508	11.155
L34	36.716	56.009	9038.280	12.687	18.406	491.042	18088.452	28.010	5.508	11.155
	36.770	56.092	9078.532	12.706	18.433	492.509	18169.009	28.051	5.517	11.174
L35	36.770	55.392	8968.310	12.708	18.433	486.529	17948.421	27.701	5.528	11.34
	37.631	56.703	9620.561	13.009	18.864	510.000	19253.781	28.357	5.678	11.646
L36	37.631	56.703	9620.561	13.009	18.864	510.000	19253.781	28.357	5.678	11.646
	38.492	58.015	10303.694	13.310	19.294	534.024	20620.945	29.013	5.827	11.952
L37	38.494	56.546	10049.541	13.315	19.294	520.852	20112.305	28.278	5.849	12.313
	39.355	57.824	10746.403	13.616	19.725	544.810	21506.946	28.918	5.998	12.627
L38	39.355	57.824	10746.403	13.616	19.725	544.810	21506.946	28.918	5.998	12.627
	40.215	59.102	11474.757	13.917	20.156	569.308	22964.613	29.557	6.147	12.941
L39	40.215	59.102	11474.757	13.917	20.156	569.308	22964.613	29.557	6.147	12.941
	41.076	60.380	12235.300	14.217	20.586	594.344	24486.700	30.196	6.296	13.255
L40	41.077	59.595	12079.963	14.220	20.586	586.799	24175.821	29.803	6.307	13.455
	41.938	60.856	12863.192	14.521	21.017	612.043	25743.310	30.434	6.456	13.774
L41	41.939	60.054	12697.502	14.523	21.017	604.159	25411.711	30.033	6.467	13.984
	42.225	60.468	12962.345	14.623	21.160	612.578	25941.745	30.240	6.517	14.091
L42	42.204	78.184	16648.178	14.574	21.160	786.764	33318.262	39.099	6.275	10.459
	42.258	78.284	16712.710	14.593	21.187	788.811	33447.411	39.150	6.284	10.474
L43	42.260	76.677	16379.461	14.597	21.187	773.082	32780.475	38.346	6.306	10.734
	43.121	78.257	17413.407	14.898	21.618	805.512	34849.726	39.136	6.456	10.988
L44	43.121	78.257	17413.407	14.898	21.618	805.512	34849.726	39.136	6.456	10.988
	43.981	79.838	18489.972	15.199	22.048	838.608	37004.275	39.927	6.605	11.242
L45	43.983	78.162	18112.424	15.204	22.048	821.484	36248.680	39.088	6.627	11.525
	44.844	79.709	19209.274	15.505	22.479	854.543	38443.825	39.862	6.776	11.784

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 125.000-121.000				1	1	1			
L2 121.000-117.000				1	1	1			
L3 117.000-113.000				1	1	1			
L4 113.000-109.000				1	1	1			
L5 109.000-105.000				1	1	1			
L6 105.000-101.000				1	1	1			

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L7 101.000-99.375				1	1	1			
L8 99.375-99.125				1	1	0.955265			
L9 99.125-95.125				1	1	0.965128			
L10 95.125-94.458				1	1	0.962159			
L11 94.458-94.208				1	1	0.922777			
L12 94.208-90.208				1	1	0.940396			
L13 90.208-89.000				1	1	0.93418			
L14 89.000-85.040				1	1	0.924907			
L15 85.040-84.040				1	1	0.934083			
L16 84.040-80.040				1	1	0.943722			
L17 80.040-76.040				1	1	0.942578			
L18 76.040-73.583				1	1	0.946964			
L19 73.583-73.333				1	1	0.929662			
L20 73.333-73.000				1	1	0.928374			
L21 73.000-72.750				1	1	0.979803			
L22 72.750-68.750				1	1	0.970868			
L23 68.750-64.750				1	1	0.978542			
L24 64.750-63.000				1	1	0.974938			
L25 63.000-62.750				1	1	0.948614			
L26 62.750-58.750				1	1	0.934842			
L27 58.750-57.233				1	1	0.956953			
L28 57.233-56.983				1	1	0.956291			
L29 56.983-52.983				1	1	0.945989			
L30 52.983-48.983				1	1	0.962598			
L31 48.983-40.457				1	1	0.954341			
L32 40.457-39.457				1	1	0.953832			
L33 39.457-37.833				1	1	0.962531			
L34 37.833-37.583				1	1	0.962043			
L35 37.583-33.583				1	1	0.9665			
L36 33.583-29.583				1	1	0.959142			
L37 29.583-25.583				1	1	0.976846			
L38 25.583-21.583				1	1	0.96995			
L39 21.583-17.583				1	1	0.963345			
L40 17.583-				1	1	0.969627			

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
13.583									
L41 13.583-12.250				1	1	0.980475			
L42 12.250-12.000				1	1	1.06938			
L43 12.000-8.000				1	1	1.0805			
L44 8.000-4.000				1	1	1.06964			
L45 4.000-0.000				1	1	1.08191			

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 klf
2" Rigid Conduit (E)	B	No	Surface Ar (CaAa)	125.000 - 0.000	2	2	0.000 0.050	2.000		0.003
LDF6-50A(1-1/4") (E)	C	No	Surface Ar (CaAa)	115.000 - 0.000	8	8	-0.420 -0.200	1.550		0.001
2" Rigid Conduit (E)	C	No	Surface Ar (CaAa)	115.000 - 0.000	1	1	-0.450 -0.420	2.000		0.003
2" Rigid Conduit (R) *$$*	C	No	Surface Ar (CaAa)	115.000 - 0.000	1	1	-0.490 -0.460	2.000		0.003
LDF7-50A(1-5/8") (E-per photo inside) *$$*	C	No	Surface Ar (CaAa)	105.000 - 0.000	13	7	0.200 0.250	1.980		0.001
MP4-06 (E)	A	No	Surface Af (CaAa)	60.500 - 0.500	1	1	0.000 0.050	4.875	12.250	0.000
MP4-06 (E)	B	No	Surface Af (CaAa)	60.500 - 0.500	1	1	0.000 0.050	4.875	12.250	0.000
MP4-06 (E) *$$*	C	No	Surface Af (CaAa)	60.500 - 0.500	1	1	0.000 0.050	4.875	12.250	0.000
MP4-04 (E)	A	No	Surface Af (CaAa)	75.500 - 90.500	1	1	0.000 0.050	4.750	11.000	0.000
MP4-04 (E)	B	No	Surface Af (CaAa)	75.500 - 90.500	1	1	0.000 0.050	4.750	11.000	0.000
MP4-04 (E) *$$*	C	No	Surface Af (CaAa)	75.500 - 90.500	1	1	0.000 0.050	4.750	11.000	0.000
CCI(6"x1") (E-Size Per PMI4)	A	No	Surface Af (CaAa)	96.500 - 71.000	1	1	0.200 0.250	6.000	14.000	0.000
CCI(6"x1") (E-Size Per PMI4)	B	No	Surface Af (CaAa)	96.500 - 71.000	1	1	0.200 0.250	6.000	14.000	0.000
CCI(6"x1") (E-Size Per PMI4) *$$*	C	No	Surface Af (CaAa)	96.500 - 71.000	1	1	0.200 0.250	6.000	14.000	0.000
CCI(6.5"x1.25") (E)	A	No	Surface Af (CaAa)	15.000 - 0.000	1	1	0.100 0.150	6.500	15.500	0.000
CCI(6.5"x1.25") (E)	B	No	Surface Af (CaAa)	15.000 - 0.000	1	1	0.100 0.150	6.500	15.500	0.000
CCI(6.5"x1.25") (E) *$$*	C	No	Surface Af (CaAa)	15.000 - 0.000	1	1	0.100 0.150	6.500	15.500	0.000
CCI(6"x1") (E)	A	No	Surface Af (CaAa)	65.000 - 55.000	1	1	0.100 0.150	6.000	14.000	0.000
CCI(6"x1") (E)	B	No	Surface Af (CaAa)	65.000 - 55.000	1	1	0.100 0.150	6.000	14.000	0.000
CCI(6"x1")	C	No	Surface Af	65.000 -	1	1	0.100	6.000	14.000	0.000

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 klf
(E) *$$*			(CaAa)	55.000			0.150			
CCI (3.25"x1.25") (E)	A	No	Surface Af (CaAa)	102.500 - 87.500	1	1	0.100 0.150	3.250	9.000	0.000
CCI (3.25"x1.25") (E)	B	No	Surface Af (CaAa)	102.500 - 87.500	1	1	0.100 0.150	3.250	9.000	0.000
CCI (3.25"x1.25") (E) *$$*	C	No	Surface Af (CaAa)	102.500 - 87.500	1	1	0.100 0.150	3.250	9.000	0.000
Safety Line 3/8 (E) *$$*	C	No	Surface Ar (CaAa)	125.000 - 0.000	1	1	0.000 0.010	0.375		0.000
CU12PSM9P8XXX(1-3/8) (Proposed) ***	C	No	Surface Ar (CaAa)	85.000 - 0.000	1	1	0.000 0.010	1.411		0.002

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 klf
ATCB-B01-005(5/16") (E-Inside Conduit)	B	No	No	Inside Pole	125.000 - 0.000	3	No Ice	0.000	0.000
							1/2" Ice	0.000	0.000
							1" Ice	0.000	0.000
							2" Ice	0.000	0.000
FSJ4-50B(1/2") (E-Inside Conduit)	B	No	No	Inside Pole	125.000 - 0.000	2	No Ice	0.000	0.000
							1/2" Ice	0.000	0.000
							1" Ice	0.000	0.000
							2" Ice	0.000	0.000
LDF1-50A(1/4") (E-Inside Conduit)	B	No	No	Inside Pole	125.000 - 0.000	3	No Ice	0.000	0.000
							1/2" Ice	0.000	0.000
							1" Ice	0.000	0.000
							2" Ice	0.000	0.000
HB114-1-08U4-M5J(1-1/4") (E)	C	No	No	Inside Pole	125.000 - 0.000	2	No Ice	0.000	0.001
							1/2" Ice	0.000	0.001
							1" Ice	0.000	0.001
							2" Ice	0.000	0.001
HB114-21U3M12-XXXF(1-1/4) (E)	C	No	No	Inside Pole	125.000 - 0.000	1	No Ice	0.000	0.001
							1/2" Ice	0.000	0.001
							1" Ice	0.000	0.001
							2" Ice	0.000	0.001
RLSS 8AWG DC(3/4") (E)	C	No	No	Inside Pole	125.000 - 0.000	1	No Ice	0.000	0.000
							1/2" Ice	0.000	0.000
							1" Ice	0.000	0.000
							2" Ice	0.000	0.000
$$									
LDF6-50A(1-1/4") (E)	C	No	No	Inside Pole	115.000 - 0.000	4	No Ice	0.000	0.001
							1/2" Ice	0.000	0.001
							1" Ice	0.000	0.001
							2" Ice	0.000	0.001
FB-L98B-002-75000(3/8") (E-Inside Conduit)	C	No	No	Inside Pole	115.000 - 0.000	1	No Ice	0.000	0.000
							1/2" Ice	0.000	0.000
							1" Ice	0.000	0.000
							2" Ice	0.000	0.000
WR-VG86ST-BRD(3/4") (E-Inside Conduit)	C	No	No	Inside Pole	115.000 - 0.000	2	No Ice	0.000	0.001
							1/2" Ice	0.000	0.001
							1" Ice	0.000	0.001
							2" Ice	0.000	0.001
FB-L98B-002-75000(3/8") (R-Inside Conduit)	C	No	No	Inside Pole	115.000 - 0.000	1	No Ice	0.000	0.000
							1/2" Ice	0.000	0.000
							1" Ice	0.000	0.000
							2" Ice	0.000	0.000
WR-VG86ST-	C	No	No	Inside Pole	115.000 -	2	No Ice	0.000	0.001

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight klf
BRD(3/4") (R-Inside Conduit)					0.000		1/2" Ice	0.000	0.001
							1" Ice	0.000	0.001
							2" Ice	0.000	0.001
HB158-1-08U8-S8J18(1-5/8") (E-per photo inside) *$$*	C	No	No	Inside Pole	105.000 - 0.000	1	No Ice	0.000	0.001
							1/2" Ice	0.000	0.001
							1" Ice	0.000	0.001
							2" Ice	0.000	0.001
LDF7-50A(1-5/8") (1P(1-5/8)+1P(1-1/4)) ***	B	No	No	Inside Pole	95.000 - 0.000	2	No Ice	0.000	0.001
							1/2" Ice	0.000	0.001
							1" Ice	0.000	0.001
							2" Ice	0.000	0.001

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	125.000-121.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	1.600	0.000	0.025
		C	0.000	0.000	0.150	0.000	0.016
L2	121.000-117.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	1.600	0.000	0.025
		C	0.000	0.000	0.150	0.000	0.016
L3	117.000-113.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	1.600	0.000	0.025
		C	0.000	0.000	3.430	0.000	0.048
L4	113.000-109.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	1.600	0.000	0.025
		C	0.000	0.000	6.710	0.000	0.080
L5	109.000-105.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	1.600	0.000	0.025
		C	0.000	0.000	6.710	0.000	0.080
L6	105.000-101.000	A	0.000	0.000	0.813	0.000	0.000
		B	0.000	0.000	2.413	0.000	0.025
		C	0.000	0.000	13.067	0.000	0.128
L7	101.000-99.375	A	0.000	0.000	0.880	0.000	0.000
		B	0.000	0.000	1.530	0.000	0.010
		C	0.000	0.000	5.858	0.000	0.052
L8	99.375-99.125	A	0.000	0.000	0.135	0.000	0.000
		B	0.000	0.000	0.235	0.000	0.002
		C	0.000	0.000	0.901	0.000	0.008
L9	99.125-95.125	A	0.000	0.000	3.542	0.000	0.000
		B	0.000	0.000	5.142	0.000	0.025
		C	0.000	0.000	15.796	0.000	0.128
L10	95.125-94.458	A	0.000	0.000	1.028	0.000	0.000
		B	0.000	0.000	1.295	0.000	0.005
		C	0.000	0.000	3.072	0.000	0.021
L11	94.458-94.208	A	0.000	0.000	0.385	0.000	0.000
		B	0.000	0.000	0.485	0.000	0.002
		C	0.000	0.000	1.151	0.000	0.008
L12	94.208-90.208	A	0.000	0.000	6.398	0.000	0.000
		B	0.000	0.000	7.998	0.000	0.032
		C	0.000	0.000	18.652	0.000	0.128
L13	90.208-89.000	A	0.000	0.000	2.819	0.000	0.000
		B	0.000	0.000	3.302	0.000	0.010
		C	0.000	0.000	6.519	0.000	0.039
L14	89.000-85.040	A	0.000	0.000	7.907	0.000	0.000
		B	0.000	0.000	9.492	0.000	0.031
		C	0.000	0.000	20.039	0.000	0.127
L15	85.040-84.040	A	0.000	0.000	1.792	0.000	0.000

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
		B	0.000	0.000	2.192	0.000	0.008
		C	0.000	0.000	4.991	0.000	0.034
L16	84.040-80.040	A	0.000	0.000	7.167	0.000	0.000
		B	0.000	0.000	8.767	0.000	0.032
		C	0.000	0.000	19.985	0.000	0.135
L17	80.040-76.040	A	0.000	0.000	7.167	0.000	0.000
		B	0.000	0.000	8.767	0.000	0.032
		C	0.000	0.000	19.985	0.000	0.135
L18	76.040-73.583	A	0.000	0.000	2.885	0.000	0.000
		B	0.000	0.000	3.867	0.000	0.019
		C	0.000	0.000	10.758	0.000	0.083
L19	73.583-73.333	A	0.000	0.000	0.250	0.000	0.000
		B	0.000	0.000	0.350	0.000	0.002
		C	0.000	0.000	1.051	0.000	0.008
L20	73.333-73.000	A	0.000	0.000	0.333	0.000	0.000
		B	0.000	0.000	0.466	0.000	0.003
		C	0.000	0.000	1.400	0.000	0.011
L21	73.000-72.750	A	0.000	0.000	0.250	0.000	0.000
		B	0.000	0.000	0.350	0.000	0.002
		C	0.000	0.000	1.051	0.000	0.008
L22	72.750-68.750	A	0.000	0.000	1.750	0.000	0.000
		B	0.000	0.000	3.350	0.000	0.032
		C	0.000	0.000	14.568	0.000	0.135
L23	68.750-64.750	A	0.000	0.000	0.228	0.000	0.000
		B	0.000	0.000	1.828	0.000	0.032
		C	0.000	0.000	13.046	0.000	0.135
L24	64.750-63.000	A	0.000	0.000	1.596	0.000	0.000
		B	0.000	0.000	2.296	0.000	0.014
		C	0.000	0.000	7.204	0.000	0.059
L25	63.000-62.750	A	0.000	0.000	0.228	0.000	0.000
		B	0.000	0.000	0.328	0.000	0.002
		C	0.000	0.000	1.029	0.000	0.008
L26	62.750-58.750	A	0.000	0.000	5.070	0.000	0.000
		B	0.000	0.000	6.670	0.000	0.032
		C	0.000	0.000	17.889	0.000	0.135
L27	58.750-57.233	A	0.000	0.000	2.616	0.000	0.000
		B	0.000	0.000	3.223	0.000	0.012
		C	0.000	0.000	7.478	0.000	0.051
L28	57.233-56.983	A	0.000	0.000	0.431	0.000	0.000
		B	0.000	0.000	0.531	0.000	0.002
		C	0.000	0.000	1.232	0.000	0.008
L29	56.983-52.983	A	0.000	0.000	5.059	0.000	0.000
		B	0.000	0.000	6.659	0.000	0.032
		C	0.000	0.000	17.877	0.000	0.135
L30	52.983-48.983	A	0.000	0.000	3.250	0.000	0.000
		B	0.000	0.000	4.850	0.000	0.032
		C	0.000	0.000	16.068	0.000	0.135
L31	48.983-40.457	A	0.000	0.000	6.927	0.000	0.000
		B	0.000	0.000	10.338	0.000	0.068
		C	0.000	0.000	34.250	0.000	0.287
L32	40.457-39.457	A	0.000	0.000	0.813	0.000	0.000
		B	0.000	0.000	1.212	0.000	0.008
		C	0.000	0.000	4.017	0.000	0.034
L33	39.457-37.833	A	0.000	0.000	1.319	0.000	0.000
		B	0.000	0.000	1.969	0.000	0.013
		C	0.000	0.000	6.524	0.000	0.055
L34	37.833-37.583	A	0.000	0.000	0.203	0.000	0.000
		B	0.000	0.000	0.303	0.000	0.002
		C	0.000	0.000	1.004	0.000	0.008
L35	37.583-33.583	A	0.000	0.000	3.250	0.000	0.000
		B	0.000	0.000	4.850	0.000	0.032
		C	0.000	0.000	16.068	0.000	0.135
L36	33.583-29.583	A	0.000	0.000	3.250	0.000	0.000
		B	0.000	0.000	4.850	0.000	0.032
		C	0.000	0.000	16.068	0.000	0.135
L37	29.583-25.583	A	0.000	0.000	3.250	0.000	0.000
		B	0.000	0.000	4.850	0.000	0.032
		C	0.000	0.000	16.068	0.000	0.135
L38	25.583-21.583	A	0.000	0.000	3.250	0.000	0.000

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
		B	0.000	0.000	4.850	0.000	0.032
		C	0.000	0.000	16.068	0.000	0.135
L39	21.583-17.583	A	0.000	0.000	3.250	0.000	0.000
		B	0.000	0.000	4.850	0.000	0.032
		C	0.000	0.000	16.068	0.000	0.135
L40	17.583-13.583	A	0.000	0.000	4.785	0.000	0.000
		B	0.000	0.000	6.385	0.000	0.032
		C	0.000	0.000	17.603	0.000	0.135
L41	13.583-12.250	A	0.000	0.000	2.527	0.000	0.000
		B	0.000	0.000	3.060	0.000	0.011
		C	0.000	0.000	6.799	0.000	0.045
L42	12.250-12.000	A	0.000	0.000	0.474	0.000	0.000
		B	0.000	0.000	0.574	0.000	0.002
		C	0.000	0.000	1.275	0.000	0.008
L43	12.000-8.000	A	0.000	0.000	7.583	0.000	0.000
		B	0.000	0.000	9.183	0.000	0.032
		C	0.000	0.000	20.402	0.000	0.135
L44	8.000-4.000	A	0.000	0.000	7.583	0.000	0.000
		B	0.000	0.000	9.183	0.000	0.032
		C	0.000	0.000	20.402	0.000	0.135
L45	4.000-0.000	A	0.000	0.000	7.177	0.000	0.000
		B	0.000	0.000	8.777	0.000	0.032
		C	0.000	0.000	19.995	0.000	0.135

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	125.000-121.000	A	1.454	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	3.454	0.000	0.060
		C		0.000	0.000	1.313	0.000	0.029
L2	121.000-117.000	A	1.449	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	3.449	0.000	0.060
		C		0.000	0.000	1.310	0.000	0.029
L3	117.000-113.000	A	1.445	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	3.445	0.000	0.060
		C		0.000	0.000	7.083	0.000	0.123
L4	113.000-109.000	A	1.439	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	3.439	0.000	0.060
		C		0.000	0.000	12.844	0.000	0.217
L5	109.000-105.000	A	1.434	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	3.434	0.000	0.059
		C		0.000	0.000	12.826	0.000	0.216
L6	105.000-101.000	A	1.429	0.000	0.000	1.241	0.000	0.012
		B		0.000	0.000	4.670	0.000	0.071
		C		0.000	0.000	22.407	0.000	0.374
L7	101.000-99.375	A	1.425	0.000	0.000	1.343	0.000	0.013
		B		0.000	0.000	2.735	0.000	0.037
		C		0.000	0.000	9.935	0.000	0.160
L8	99.375-99.125	A	1.423	0.000	0.000	0.207	0.000	0.002
		B		0.000	0.000	0.421	0.000	0.006
		C		0.000	0.000	1.528	0.000	0.025
L9	99.125-95.125	A	1.420	0.000	0.000	5.069	0.000	0.046
		B		0.000	0.000	8.489	0.000	0.106
		C		0.000	0.000	26.198	0.000	0.407
L10	95.125-94.458	A	1.417	0.000	0.000	1.406	0.000	0.012
		B		0.000	0.000	1.976	0.000	0.023
		C		0.000	0.000	4.927	0.000	0.072
L11	94.458-94.208	A	1.416	0.000	0.000	0.527	0.000	0.005
		B		0.000	0.000	0.741	0.000	0.009
		C		0.000	0.000	1.846	0.000	0.027
L12	94.208-90.208	A	1.413	0.000	0.000	8.739	0.000	0.077
		B		0.000	0.000	12.152	0.000	0.142
		C		0.000	0.000	29.837	0.000	0.436
L13	90.208-89.000	A	1.409	0.000	0.000	3.833	0.000	0.033

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
		B		0.000	0.000	4.863	0.000	0.053
		C		0.000	0.000	10.199	0.000	0.141
L14	89.000-85.040	A	1.405	0.000	0.000	10.533	0.000	0.089
		B		0.000	0.000	13.904	0.000	0.153
		C		0.000	0.000	31.384	0.000	0.443
L15	85.040-84.040	A	1.401	0.000	0.000	2.348	0.000	0.019
		B		0.000	0.000	3.200	0.000	0.036
		C		0.000	0.000	8.019	0.000	0.115
L16	84.040-80.040	A	1.397	0.000	0.000	9.381	0.000	0.077
		B		0.000	0.000	12.778	0.000	0.142
		C		0.000	0.000	32.088	0.000	0.460
L17	80.040-76.040	A	1.390	0.000	0.000	9.371	0.000	0.077
		B		0.000	0.000	12.761	0.000	0.141
		C		0.000	0.000	32.041	0.000	0.458
L18	76.040-73.583	A	1.384	0.000	0.000	3.711	0.000	0.030
		B		0.000	0.000	5.790	0.000	0.070
		C		0.000	0.000	17.618	0.000	0.263
L19	73.583-73.333	A	1.381	0.000	0.000	0.319	0.000	0.003
		B		0.000	0.000	0.530	0.000	0.007
		C		0.000	0.000	1.733	0.000	0.026
L20	73.333-73.000	A	1.381	0.000	0.000	0.425	0.000	0.003
		B		0.000	0.000	0.706	0.000	0.009
		C		0.000	0.000	2.308	0.000	0.035
L21	73.000-72.750	A	1.380	0.000	0.000	0.319	0.000	0.003
		B		0.000	0.000	0.530	0.000	0.007
		C		0.000	0.000	1.733	0.000	0.026
L22	72.750-68.750	A	1.376	0.000	0.000	2.232	0.000	0.018
		B		0.000	0.000	5.608	0.000	0.082
		C		0.000	0.000	24.831	0.000	0.396
L23	68.750-64.750	A	1.368	0.000	0.000	0.264	0.000	0.003
		B		0.000	0.000	3.632	0.000	0.067
		C		0.000	0.000	22.823	0.000	0.379
L24	64.750-63.000	A	1.362	0.000	0.000	1.850	0.000	0.018
		B		0.000	0.000	3.321	0.000	0.046
		C		0.000	0.000	11.705	0.000	0.182
L25	63.000-62.750	A	1.360	0.000	0.000	0.264	0.000	0.003
		B		0.000	0.000	0.474	0.000	0.007
		C		0.000	0.000	1.671	0.000	0.026
L26	62.750-58.750	A	1.355	0.000	0.000	6.121	0.000	0.056
		B		0.000	0.000	9.476	0.000	0.120
		C		0.000	0.000	28.613	0.000	0.430
L27	58.750-57.233	A	1.349	0.000	0.000	3.243	0.000	0.029
		B		0.000	0.000	4.513	0.000	0.053
		C		0.000	0.000	11.761	0.000	0.170
L28	57.233-56.983	A	1.347	0.000	0.000	0.534	0.000	0.005
		B		0.000	0.000	0.743	0.000	0.009
		C		0.000	0.000	1.937	0.000	0.028
L29	56.983-52.983	A	1.342	0.000	0.000	6.415	0.000	0.056
		B		0.000	0.000	9.757	0.000	0.119
		C		0.000	0.000	28.837	0.000	0.427
L30	52.983-48.983	A	1.332	0.000	0.000	4.315	0.000	0.036
		B		0.000	0.000	7.647	0.000	0.099
		C		0.000	0.000	26.684	0.000	0.405
L31	48.983-40.457	A	1.314	0.000	0.000	9.168	0.000	0.075
		B		0.000	0.000	16.233	0.000	0.208
		C		0.000	0.000	56.655	0.000	0.855
L32	40.457-39.457	A	1.300	0.000	0.000	1.075	0.000	0.009
		B		0.000	0.000	1.904	0.000	0.024
		C		0.000	0.000	6.645	0.000	0.100
L33	39.457-37.833	A	1.295	0.000	0.000	1.740	0.000	0.014
		B		0.000	0.000	3.078	0.000	0.039
		C		0.000	0.000	10.745	0.000	0.161
L34	37.833-37.583	A	1.292	0.000	0.000	0.268	0.000	0.002
		B		0.000	0.000	0.473	0.000	0.006
		C		0.000	0.000	1.653	0.000	0.025
L35	37.583-33.583	A	1.285	0.000	0.000	4.278	0.000	0.034
		B		0.000	0.000	7.562	0.000	0.096
		C		0.000	0.000	26.402	0.000	0.394
L36	33.583-29.583	A	1.269	0.000	0.000	4.266	0.000	0.034

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
		B		0.000	0.000	7.535	0.000	0.095
		C		0.000	0.000	26.311	0.000	0.391
L37	29.583-25.583	A	1.252	0.000	0.000	4.252	0.000	0.033
		B		0.000	0.000	7.504	0.000	0.094
		C		0.000	0.000	26.208	0.000	0.387
L38	25.583-21.583	A	1.233	0.000	0.000	4.236	0.000	0.032
		B		0.000	0.000	7.469	0.000	0.093
		C		0.000	0.000	26.091	0.000	0.382
L39	21.583-17.583	A	1.210	0.000	0.000	4.218	0.000	0.032
		B		0.000	0.000	7.428	0.000	0.091
		C		0.000	0.000	25.955	0.000	0.377
L40	17.583-13.583	A	1.183	0.000	0.000	5.965	0.000	0.044
		B		0.000	0.000	9.147	0.000	0.103
		C		0.000	0.000	27.559	0.000	0.384
L41	13.583-12.250	A	1.161	0.000	0.000	3.053	0.000	0.022
		B		0.000	0.000	4.106	0.000	0.041
		C		0.000	0.000	10.211	0.000	0.134
L42	12.250-12.000	A	1.154	0.000	0.000	0.572	0.000	0.004
		B		0.000	0.000	0.769	0.000	0.008
		C		0.000	0.000	1.912	0.000	0.025
L43	12.000-8.000	A	1.131	0.000	0.000	9.126	0.000	0.064
		B		0.000	0.000	12.257	0.000	0.121
		C		0.000	0.000	30.454	0.000	0.394
L44	8.000-4.000	A	1.075	0.000	0.000	9.058	0.000	0.060
		B		0.000	0.000	12.133	0.000	0.116
		C		0.000	0.000	30.092	0.000	0.380
L45	4.000-0.000	A	0.963	0.000	0.000	8.420	0.000	0.050
		B		0.000	0.000	11.383	0.000	0.102
		C		0.000	0.000	28.872	0.000	0.349

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	125.000-121.000	2.321	-0.958	1.997	-0.232
L2	121.000-117.000	2.339	-0.965	2.034	-0.235
L3	117.000-113.000	3.988	2.053	3.334	1.824
L4	113.000-109.000	4.893	3.638	4.105	3.005
L5	109.000-105.000	4.996	3.716	4.208	3.083
L6	105.000-101.000	1.695	5.466	1.826	4.365
L7	101.000-99.375	1.460	4.695	1.640	3.918
L8	99.375-99.125	1.470	4.723	1.652	3.943
L9	99.125-95.125	1.290	4.136	1.522	3.631
L10	95.125-94.458	1.043	3.338	1.317	3.138
L11	94.458-94.208	1.047	3.348	1.321	3.148
L12	94.208-90.208	1.044	3.333	1.322	3.148
L13	90.208-89.000	0.869	2.769	1.149	2.733
L14	89.000-85.040	0.966	3.070	1.264	3.004
L15	85.040-84.040	1.012	3.402	1.303	3.416
L16	84.040-80.040	1.028	3.458	1.321	3.477
L17	80.040-76.040	1.055	3.538	1.353	3.559
L18	76.040-73.583	1.300	4.352	1.594	4.189
L19	73.583-73.333	1.392	4.656	1.680	4.414
L20	73.333-73.000	1.394	4.663	1.683	4.421
L21	73.000-72.750	1.396	4.669	1.685	4.427
L22	72.750-68.750	1.766	5.898	1.983	5.206
L23	68.750-64.750	2.166	7.217	2.276	5.973
L24	64.750-63.000	1.514	5.034	1.843	4.835
L25	63.000-62.750	1.522	5.059	1.852	4.859
L26	62.750-58.750	1.363	4.527	1.707	4.479
L27	58.750-57.233	1.207	4.002	1.556	4.080
L28	57.233-56.983	1.213	4.019	1.562	4.097
L29	56.983-52.983	1.406	4.654	1.730	4.537
L30	52.983-48.983	1.673	5.528	1.945	5.101

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
L31	48.983-40.457	1.721	5.671	1.997	5.239
L32	40.457-39.457	1.739	5.725	2.019	5.293
L33	39.457-37.833	1.749	5.755	2.024	5.319
L34	37.833-37.583	1.756	5.776	2.032	5.339
L35	37.583-33.583	1.772	5.823	2.048	5.384
L36	33.583-29.583	1.801	5.910	2.078	5.467
L37	29.583-25.583	1.830	5.997	2.106	5.549
L38	25.583-21.583	1.859	6.083	2.133	5.630
L39	21.583-17.583	1.888	6.167	2.158	5.709
L40	17.583-13.583	1.689	5.510	2.007	5.325
L41	13.583-12.250	1.404	4.577	1.764	4.690
L42	12.250-12.000	1.408	4.591	1.767	4.703
L43	12.000-8.000	1.420	4.626	1.774	4.734
L44	8.000-4.000	1.442	4.693	1.780	4.788
L45	4.000-0.000	1.503	4.883	1.801	4.925

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	7	2" Rigid Conduit	121.00 - 125.00	1.0000	1.0000
L1	49	Safety Line 3/8	121.00 - 125.00	1.0000	1.0000
L2	7	2" Rigid Conduit	117.00 - 121.00	1.0000	1.0000
L2	49	Safety Line 3/8	117.00 - 121.00	1.0000	1.0000
L3	7	2" Rigid Conduit	113.00 - 117.00	1.0000	1.0000
L3	10	LDF6-50A(1-1/4")	113.00 - 115.00	1.0000	1.0000
L3	13	2" Rigid Conduit	113.00 - 115.00	1.0000	1.0000
L3	16	2" Rigid Conduit	113.00 - 115.00	1.0000	1.0000
L3	49	Safety Line 3/8	113.00 - 117.00	1.0000	1.0000
L4	7	2" Rigid Conduit	109.00 - 113.00	1.0000	1.0000
L4	10	LDF6-50A(1-1/4")	109.00 - 113.00	1.0000	1.0000
L4	13	2" Rigid Conduit	109.00 - 113.00	1.0000	1.0000
L4	16	2" Rigid Conduit	109.00 - 113.00	1.0000	1.0000
L4	49	Safety Line 3/8	109.00 - 113.00	1.0000	1.0000
L5	7	2" Rigid Conduit	105.00 - 109.00	1.0000	1.0000
L5	10	LDF6-50A(1-1/4")	105.00 - 109.00	1.0000	1.0000
L5	13	2" Rigid Conduit	105.00 - 109.00	1.0000	1.0000
L5	16	2" Rigid Conduit	105.00 - 109.00	1.0000	1.0000
L5	49	Safety Line 3/8	105.00 - 109.00	1.0000	1.0000
L6	7	2" Rigid Conduit	101.00 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L6	10	LDF6-50A(1-1/4")	105.00 101.00 - 105.00	1.0000	1.0000
L6	13	2" Rigid Conduit	101.00 - 105.00	1.0000	1.0000
L6	16	2" Rigid Conduit	101.00 - 105.00	1.0000	1.0000
L6	18	LDF7-50A(1-5/8")	101.00 - 105.00	1.0000	1.0000
L6	45	CCI (3.25"x1.25")	101.00 - 102.50	1.0000	1.0000
L6	46	CCI (3.25"x1.25")	101.00 - 102.50	1.0000	1.0000
L6	47	CCI (3.25"x1.25")	101.00 - 102.50	1.0000	1.0000
L6	49	Safety Line 3/8	101.00 - 105.00	1.0000	1.0000
L7	7	2" Rigid Conduit	99.38 - 101.00	1.0000	1.0000
L7	10	LDF6-50A(1-1/4")	99.38 - 101.00	1.0000	1.0000
L7	13	2" Rigid Conduit	99.38 - 101.00	1.0000	1.0000
L7	16	2" Rigid Conduit	99.38 - 101.00	1.0000	1.0000
L7	18	LDF7-50A(1-5/8")	99.38 - 101.00	1.0000	1.0000
L7	45	CCI (3.25"x1.25")	99.38 - 101.00	1.0000	1.0000
L7	46	CCI (3.25"x1.25")	99.38 - 101.00	1.0000	1.0000
L7	47	CCI (3.25"x1.25")	99.38 - 101.00	1.0000	1.0000
L7	49	Safety Line 3/8	99.38 - 101.00	1.0000	1.0000
L8	7	2" Rigid Conduit	99.13 - 99.38	1.0000	1.0000
L8	10	LDF6-50A(1-1/4")	99.13 - 99.38	1.0000	1.0000
L8	13	2" Rigid Conduit	99.13 - 99.38	1.0000	1.0000
L8	16	2" Rigid Conduit	99.13 - 99.38	1.0000	1.0000
L8	18	LDF7-50A(1-5/8")	99.13 - 99.38	1.0000	1.0000
L8	45	CCI (3.25"x1.25")	99.13 - 99.38	1.0000	1.0000
L8	46	CCI (3.25"x1.25")	99.13 - 99.38	1.0000	1.0000
L8	47	CCI (3.25"x1.25")	99.13 - 99.38	1.0000	1.0000
L8	49	Safety Line 3/8	99.13 - 99.38	1.0000	1.0000
L9	7	2" Rigid Conduit	95.13 - 99.13	1.0000	1.0000
L9	10	LDF6-50A(1-1/4")	95.13 - 99.13	1.0000	1.0000
L9	13	2" Rigid Conduit	95.13 - 99.13	1.0000	1.0000
L9	16	2" Rigid Conduit	95.13 - 99.13	1.0000	1.0000
L9	18	LDF7-50A(1-5/8")	95.13 - 99.13	1.0000	1.0000
L9	33	CCI(6"x1")	95.13 - 96.50	1.0000	1.0000
L9	34	CCI(6"x1")	95.13 - 96.50	1.0000	1.0000
L9	35	CCI(6"x1")	95.13 - 96.50	1.0000	1.0000

Tower Section	*Feed Line Record No.*	*Description*	*Feed Line Segment Elev.*	*K_a No Ice*	*K_a Ice*
L9	45	CCI (3.25"x1.25")	95.13 - 99.13	1.0000	1.0000
L9	46	CCI (3.25"x1.25")	95.13 - 99.13	1.0000	1.0000
L9	47	CCI (3.25"x1.25")	95.13 - 99.13	1.0000	1.0000
L9	49	Safety Line 3/8	95.13 - 99.13	1.0000	1.0000
L10	7	2" Rigid Conduit	94.46 - 95.13	1.0000	1.0000
L10	10	LDF6-50A(1-1/4")	94.46 - 95.13	1.0000	1.0000
L10	13	2" Rigid Conduit	94.46 - 95.13	1.0000	1.0000
L10	16	2" Rigid Conduit	94.46 - 95.13	1.0000	1.0000
L10	18	LDF7-50A(1-5/8")	94.46 - 95.13	1.0000	1.0000
L10	33	CCI(6"x1")	94.46 - 95.13	1.0000	1.0000
L10	34	CCI(6"x1")	94.46 - 95.13	1.0000	1.0000
L10	35	CCI(6"x1")	94.46 - 95.13	1.0000	1.0000
L10	45	CCI (3.25"x1.25")	94.46 - 95.13	1.0000	1.0000
L10	46	CCI (3.25"x1.25")	94.46 - 95.13	1.0000	1.0000
L10	47	CCI (3.25"x1.25")	94.46 - 95.13	1.0000	1.0000
L10	49	Safety Line 3/8	94.46 - 95.13	1.0000	1.0000
L11	7	2" Rigid Conduit	94.21 - 94.46	1.0000	1.0000
L11	10	LDF6-50A(1-1/4")	94.21 - 94.46	1.0000	1.0000
L11	13	2" Rigid Conduit	94.21 - 94.46	1.0000	1.0000
L11	16	2" Rigid Conduit	94.21 - 94.46	1.0000	1.0000
L11	18	LDF7-50A(1-5/8")	94.21 - 94.46	1.0000	1.0000
L11	33	CCI(6"x1")	94.21 - 94.46	1.0000	1.0000
L11	34	CCI(6"x1")	94.21 - 94.46	1.0000	1.0000
L11	35	CCI(6"x1")	94.21 - 94.46	1.0000	1.0000
L11	45	CCI (3.25"x1.25")	94.21 - 94.46	1.0000	1.0000
L11	46	CCI (3.25"x1.25")	94.21 - 94.46	1.0000	1.0000
L11	47	CCI (3.25"x1.25")	94.21 - 94.46	1.0000	1.0000
L11	49	Safety Line 3/8	94.21 - 94.46	1.0000	1.0000
L12	7	2" Rigid Conduit	90.21 - 94.21	1.0000	1.0000
L12	10	LDF6-50A(1-1/4")	90.21 - 94.21	1.0000	1.0000
L12	13	2" Rigid Conduit	90.21 - 94.21	1.0000	1.0000
L12	16	2" Rigid Conduit	90.21 - 94.21	1.0000	1.0000
L12	18	LDF7-50A(1-5/8")	90.21 - 94.21	1.0000	1.0000
L12	29	MP4-04	90.21 - 90.50	1.0000	1.0000
L12	30	MP4-04	90.21 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L12	31	MP4-04	90.50 - 90.21	1.0000	1.0000
L12	33	CCI(6"x1")	90.50 - 90.21	1.0000	1.0000
L12	34	CCI(6"x1")	94.21 - 90.21	1.0000	1.0000
L12	35	CCI(6"x1")	94.21 - 90.21	1.0000	1.0000
L12	45	CCI (3.25"x1.25")	94.21 - 90.21	1.0000	1.0000
L12	46	CCI (3.25"x1.25")	94.21 - 90.21	1.0000	1.0000
L12	47	CCI (3.25"x1.25")	94.21 - 90.21	1.0000	1.0000
L12	49	Safety Line 3/8	94.21 - 90.21	1.0000	1.0000
L13	7	2" Rigid Conduit	89.00 - 90.21	1.0000	1.0000
L13	10	LDF6-50A(1-1/4")	89.00 - 90.21	1.0000	1.0000
L13	13	2" Rigid Conduit	89.00 - 90.21	1.0000	1.0000
L13	16	2" Rigid Conduit	89.00 - 90.21	1.0000	1.0000
L13	18	LDF7-50A(1-5/8")	89.00 - 90.21	1.0000	1.0000
L13	29	MP4-04	89.00 - 90.21	1.0000	1.0000
L13	30	MP4-04	89.00 - 90.21	1.0000	1.0000
L13	31	MP4-04	89.00 - 90.21	1.0000	1.0000
L13	33	CCI(6"x1")	89.00 - 90.21	1.0000	1.0000
L13	34	CCI(6"x1")	89.00 - 90.21	1.0000	1.0000
L13	35	CCI(6"x1")	89.00 - 90.21	1.0000	1.0000
L13	45	CCI (3.25"x1.25")	89.00 - 90.21	1.0000	1.0000
L13	46	CCI (3.25"x1.25")	89.00 - 90.21	1.0000	1.0000
L13	47	CCI (3.25"x1.25")	89.00 - 90.21	1.0000	1.0000
L13	49	Safety Line 3/8	89.00 - 90.21	1.0000	1.0000
L14	7	2" Rigid Conduit	85.04 - 89.00	1.0000	1.0000
L14	10	LDF6-50A(1-1/4")	85.04 - 89.00	1.0000	1.0000
L14	13	2" Rigid Conduit	85.04 - 89.00	1.0000	1.0000
L14	16	2" Rigid Conduit	85.04 - 89.00	1.0000	1.0000
L14	18	LDF7-50A(1-5/8")	85.04 - 89.00	1.0000	1.0000
L14	29	MP4-04	85.04 - 89.00	1.0000	1.0000
L14	30	MP4-04	85.04 - 89.00	1.0000	1.0000
L14	31	MP4-04	85.04 - 89.00	1.0000	1.0000
L14	33	CCI(6"x1")	85.04 - 89.00	1.0000	1.0000
L14	34	CCI(6"x1")	85.04 - 89.00	1.0000	1.0000
L14	35	CCI(6"x1")	85.04 - 89.00	1.0000	1.0000

Tower Section	*Feed Line Record No.*	*Description*	*Feed Line Segment Elev.*	*K_a No Ice*	*K_a Ice*
L14	45	CCI (3.25"x1.25")	87.50 - 89.00	1.0000	1.0000
L14	46	CCI (3.25"x1.25")	87.50 - 89.00	1.0000	1.0000
L14	47	CCI (3.25"x1.25")	87.50 - 89.00	1.0000	1.0000
L14	49	Safety Line 3/8	85.04 - 89.00	1.0000	1.0000
L15	7	2" Rigid Conduit	84.04 - 85.04	1.0000	1.0000
L15	10	LDF6-50A(1-1/4")	84.04 - 85.04	1.0000	1.0000
L15	13	2" Rigid Conduit	84.04 - 85.04	1.0000	1.0000
L15	16	2" Rigid Conduit	84.04 - 85.04	1.0000	1.0000
L15	18	LDF7-50A(1-5/8")	84.04 - 85.04	1.0000	1.0000
L15	29	MP4-04	84.04 - 85.04	1.0000	1.0000
L15	30	MP4-04	84.04 - 85.04	1.0000	1.0000
L15	31	MP4-04	84.04 - 85.04	1.0000	1.0000
L15	33	CCI(6"x1")	84.04 - 85.04	1.0000	1.0000
L15	34	CCI(6"x1")	84.04 - 85.04	1.0000	1.0000
L15	35	CCI(6"x1")	84.04 - 85.04	1.0000	1.0000
L15	49	Safety Line 3/8	84.04 - 85.04	1.0000	1.0000
L15	51	CU12PSM9P8XXX(1-3/8)	84.04 - 85.00	1.0000	1.0000
L16	7	2" Rigid Conduit	80.04 - 84.04	1.0000	1.0000
L16	10	LDF6-50A(1-1/4")	80.04 - 84.04	1.0000	1.0000
L16	13	2" Rigid Conduit	80.04 - 84.04	1.0000	1.0000
L16	16	2" Rigid Conduit	80.04 - 84.04	1.0000	1.0000
L16	18	LDF7-50A(1-5/8")	80.04 - 84.04	1.0000	1.0000
L16	29	MP4-04	80.04 - 84.04	1.0000	1.0000
L16	30	MP4-04	80.04 - 84.04	1.0000	1.0000
L16	31	MP4-04	80.04 - 84.04	1.0000	1.0000
L16	33	CCI(6"x1")	80.04 - 84.04	1.0000	1.0000
L16	34	CCI(6"x1")	80.04 - 84.04	1.0000	1.0000
L16	35	CCI(6"x1")	80.04 - 84.04	1.0000	1.0000
L16	49	Safety Line 3/8	80.04 - 84.04	1.0000	1.0000
L16	51	CU12PSM9P8XXX(1-3/8)	80.04 - 84.04	1.0000	1.0000
L17	7	2" Rigid Conduit	76.04 - 80.04	1.0000	1.0000
L17	10	LDF6-50A(1-1/4")	76.04 - 80.04	1.0000	1.0000
L17	13	2" Rigid Conduit	76.04 - 80.04	1.0000	1.0000
L17	16	2" Rigid Conduit	76.04 - 80.04	1.0000	1.0000
L17	18	LDF7-50A(1-5/8")	76.04 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			80.04		
L17	29	MP4-04	76.04 - 80.04	1.0000	1.0000
L17	30	MP4-04	76.04 - 80.04	1.0000	1.0000
L17	31	MP4-04	76.04 - 80.04	1.0000	1.0000
L17	33	CCI(6"x1")	76.04 - 80.04	1.0000	1.0000
L17	34	CCI(6"x1")	76.04 - 80.04	1.0000	1.0000
L17	35	CCI(6"x1")	76.04 - 80.04	1.0000	1.0000
L17	49	Safety Line 3/8	76.04 - 80.04	1.0000	1.0000
L17	51	CU12PSM9P8XXX(1-3/8)	76.04 - 80.04	1.0000	1.0000
L18	7	2" Rigid Conduit	73.58 - 76.04	1.0000	1.0000
L18	10	LDF6-50A(1-1/4")	73.58 - 76.04	1.0000	1.0000
L18	13	2" Rigid Conduit	73.58 - 76.04	1.0000	1.0000
L18	16	2" Rigid Conduit	73.58 - 76.04	1.0000	1.0000
L18	18	LDF7-50A(1-5/8")	73.58 - 76.04	1.0000	1.0000
L18	29	MP4-04	75.50 - 76.04	1.0000	1.0000
L18	30	MP4-04	75.50 - 76.04	1.0000	1.0000
L18	31	MP4-04	75.50 - 76.04	1.0000	1.0000
L18	33	CCI(6"x1")	73.58 - 76.04	1.0000	1.0000
L18	34	CCI(6"x1")	73.58 - 76.04	1.0000	1.0000
L18	35	CCI(6"x1")	73.58 - 76.04	1.0000	1.0000
L18	49	Safety Line 3/8	73.58 - 76.04	1.0000	1.0000
L18	51	CU12PSM9P8XXX(1-3/8)	73.58 - 76.04	1.0000	1.0000
L19	7	2" Rigid Conduit	73.33 - 73.58	1.0000	1.0000
L19	10	LDF6-50A(1-1/4")	73.33 - 73.58	1.0000	1.0000
L19	13	2" Rigid Conduit	73.33 - 73.58	1.0000	1.0000
L19	16	2" Rigid Conduit	73.33 - 73.58	1.0000	1.0000
L19	18	LDF7-50A(1-5/8")	73.33 - 73.58	1.0000	1.0000
L19	33	CCI(6"x1")	73.33 - 73.58	1.0000	1.0000
L19	34	CCI(6"x1")	73.33 - 73.58	1.0000	1.0000
L19	35	CCI(6"x1")	73.33 - 73.58	1.0000	1.0000
L19	49	Safety Line 3/8	73.33 - 73.58	1.0000	1.0000
L19	51	CU12PSM9P8XXX(1-3/8)	73.33 - 73.58	1.0000	1.0000
L20	7	2" Rigid Conduit	73.00 - 73.33	1.0000	1.0000
L20	10	LDF6-50A(1-1/4")	73.00 - 73.33	1.0000	1.0000
L20	13	2" Rigid Conduit	73.00 - 73.33	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L20	16	2" Rigid Conduit	73.00 - 73.33	1.0000	1.0000
L20	18	LDF7-50A(1-5/8")	73.00 - 73.33	1.0000	1.0000
L20	33	CCI(6"x1")	73.00 - 73.33	1.0000	1.0000
L20	34	CCI(6"x1")	73.00 - 73.33	1.0000	1.0000
L20	35	CCI(6"x1")	73.00 - 73.33	1.0000	1.0000
L20	49	Safety Line 3/8	73.00 - 73.33	1.0000	1.0000
L20	51	CU12PSM9P8XXX(1-3/8)	73.00 - 73.33	1.0000	1.0000
L21	7	2" Rigid Conduit	72.75 - 73.00	1.0000	1.0000
L21	10	LDF6-50A(1-1/4")	72.75 - 73.00	1.0000	1.0000
L21	13	2" Rigid Conduit	72.75 - 73.00	1.0000	1.0000
L21	16	2" Rigid Conduit	72.75 - 73.00	1.0000	1.0000
L21	18	LDF7-50A(1-5/8")	72.75 - 73.00	1.0000	1.0000
L21	33	CCI(6"x1")	72.75 - 73.00	1.0000	1.0000
L21	34	CCI(6"x1")	72.75 - 73.00	1.0000	1.0000
L21	35	CCI(6"x1")	72.75 - 73.00	1.0000	1.0000
L21	49	Safety Line 3/8	72.75 - 73.00	1.0000	1.0000
L21	51	CU12PSM9P8XXX(1-3/8)	72.75 - 73.00	1.0000	1.0000
L22	7	2" Rigid Conduit	68.75 - 72.75	1.0000	1.0000
L22	10	LDF6-50A(1-1/4")	68.75 - 72.75	1.0000	1.0000
L22	13	2" Rigid Conduit	68.75 - 72.75	1.0000	1.0000
L22	16	2" Rigid Conduit	68.75 - 72.75	1.0000	1.0000
L22	18	LDF7-50A(1-5/8")	68.75 - 72.75	1.0000	1.0000
L22	33	CCI(6"x1")	71.00 - 72.75	1.0000	1.0000
L22	34	CCI(6"x1")	71.00 - 72.75	1.0000	1.0000
L22	35	CCI(6"x1")	71.00 - 72.75	1.0000	1.0000
L22	49	Safety Line 3/8	68.75 - 72.75	1.0000	1.0000
L22	51	CU12PSM9P8XXX(1-3/8)	68.75 - 72.75	1.0000	1.0000
L23	7	2" Rigid Conduit	64.75 - 68.75	1.0000	1.0000
L23	10	LDF6-50A(1-1/4")	64.75 - 68.75	1.0000	1.0000
L23	13	2" Rigid Conduit	64.75 - 68.75	1.0000	1.0000
L23	16	2" Rigid Conduit	64.75 - 68.75	1.0000	1.0000
L23	18	LDF7-50A(1-5/8")	64.75 - 68.75	1.0000	1.0000
L23	41	CCI(6"x1")	64.75 - 65.00	1.0000	1.0000
L23	42	CCI(6"x1")	64.75 - 65.00	1.0000	1.0000
L23	43	CCI(6"x1")	64.75 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			65.00		
L23	49	Safety Line 3/8	64.75 - 68.75	1.0000	1.0000
L23	51	CU12PSM9P8XXX(1-3/8)	64.75 - 68.75	1.0000	1.0000
L24	7	2" Rigid Conduit	63.00 - 64.75	1.0000	1.0000
L24	10	LDF6-50A(1-1/4")	63.00 - 64.75	1.0000	1.0000
L24	13	2" Rigid Conduit	63.00 - 64.75	1.0000	1.0000
L24	16	2" Rigid Conduit	63.00 - 64.75	1.0000	1.0000
L24	18	LDF7-50A(1-5/8")	63.00 - 64.75	1.0000	1.0000
L24	41	CCI(6"x1")	63.00 - 64.75	1.0000	1.0000
L24	42	CCI(6"x1")	63.00 - 64.75	1.0000	1.0000
L24	43	CCI(6"x1")	63.00 - 64.75	1.0000	1.0000
L24	49	Safety Line 3/8	63.00 - 64.75	1.0000	1.0000
L24	51	CU12PSM9P8XXX(1-3/8)	63.00 - 64.75	1.0000	1.0000
L25	7	2" Rigid Conduit	62.75 - 63.00	1.0000	1.0000
L25	10	LDF6-50A(1-1/4")	62.75 - 63.00	1.0000	1.0000
L25	13	2" Rigid Conduit	62.75 - 63.00	1.0000	1.0000
L25	16	2" Rigid Conduit	62.75 - 63.00	1.0000	1.0000
L25	18	LDF7-50A(1-5/8")	62.75 - 63.00	1.0000	1.0000
L25	41	CCI(6"x1")	62.75 - 63.00	1.0000	1.0000
L25	42	CCI(6"x1")	62.75 - 63.00	1.0000	1.0000
L25	43	CCI(6"x1")	62.75 - 63.00	1.0000	1.0000
L25	49	Safety Line 3/8	62.75 - 63.00	1.0000	1.0000
L25	51	CU12PSM9P8XXX(1-3/8)	62.75 - 63.00	1.0000	1.0000
L26	7	2" Rigid Conduit	58.75 - 62.75	1.0000	1.0000
L26	10	LDF6-50A(1-1/4")	58.75 - 62.75	1.0000	1.0000
L26	13	2" Rigid Conduit	58.75 - 62.75	1.0000	1.0000
L26	16	2" Rigid Conduit	58.75 - 62.75	1.0000	1.0000
L26	18	LDF7-50A(1-5/8")	58.75 - 62.75	1.0000	1.0000
L26	25	MP4-06	58.75 - 60.50	1.0000	1.0000
L26	26	MP4-06	58.75 - 60.50	1.0000	1.0000
L26	27	MP4-06	58.75 - 60.50	1.0000	1.0000
L26	41	CCI(6"x1")	58.75 - 62.75	1.0000	1.0000
L26	42	CCI(6"x1")	58.75 - 62.75	1.0000	1.0000
L26	43	CCI(6"x1")	58.75 - 62.75	1.0000	1.0000
L26	49	Safety Line 3/8	58.75 - 62.75	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L26	51	CU12PSM9P8XXX(1-3/8)	58.75 - 62.75	1.0000	1.0000
L27	7	2" Rigid Conduit	57.23 - 58.75	1.0000	1.0000
L27	10	LDF6-50A(1-1/4")	57.23 - 58.75	1.0000	1.0000
L27	13	2" Rigid Conduit	57.23 - 58.75	1.0000	1.0000
L27	16	2" Rigid Conduit	57.23 - 58.75	1.0000	1.0000
L27	18	LDF7-50A(1-5/8")	57.23 - 58.75	1.0000	1.0000
L27	25	MP4-06	57.23 - 58.75	1.0000	1.0000
L27	26	MP4-06	57.23 - 58.75	1.0000	1.0000
L27	27	MP4-06	57.23 - 58.75	1.0000	1.0000
L27	41	CCI(6"x1")	57.23 - 58.75	1.0000	1.0000
L27	42	CCI(6"x1")	57.23 - 58.75	1.0000	1.0000
L27	43	CCI(6"x1")	57.23 - 58.75	1.0000	1.0000
L27	49	Safety Line 3/8	57.23 - 58.75	1.0000	1.0000
L27	51	CU12PSM9P8XXX(1-3/8)	57.23 - 58.75	1.0000	1.0000
L28	7	2" Rigid Conduit	56.98 - 57.23	1.0000	1.0000
L28	10	LDF6-50A(1-1/4")	56.98 - 57.23	1.0000	1.0000
L28	13	2" Rigid Conduit	56.98 - 57.23	1.0000	1.0000
L28	16	2" Rigid Conduit	56.98 - 57.23	1.0000	1.0000
L28	18	LDF7-50A(1-5/8")	56.98 - 57.23	1.0000	1.0000
L28	25	MP4-06	56.98 - 57.23	1.0000	1.0000
L28	26	MP4-06	56.98 - 57.23	1.0000	1.0000
L28	27	MP4-06	56.98 - 57.23	1.0000	1.0000
L28	41	CCI(6"x1")	56.98 - 57.23	1.0000	1.0000
L28	42	CCI(6"x1")	56.98 - 57.23	1.0000	1.0000
L28	43	CCI(6"x1")	56.98 - 57.23	1.0000	1.0000
L28	49	Safety Line 3/8	56.98 - 57.23	1.0000	1.0000
L28	51	CU12PSM9P8XXX(1-3/8)	56.98 - 57.23	1.0000	1.0000
L29	7	2" Rigid Conduit	52.98 - 56.98	1.0000	1.0000
L29	10	LDF6-50A(1-1/4")	52.98 - 56.98	1.0000	1.0000
L29	13	2" Rigid Conduit	52.98 - 56.98	1.0000	1.0000
L29	16	2" Rigid Conduit	52.98 - 56.98	1.0000	1.0000
L29	18	LDF7-50A(1-5/8")	52.98 - 56.98	1.0000	1.0000
L29	25	MP4-06	52.98 - 56.98	1.0000	1.0000
L29	26	MP4-06	52.98 - 56.98	1.0000	1.0000
L29	27	MP4-06	52.98 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			56.98		
L29	41	CCI(6"x1")	55.00 - 56.98	1.0000	1.0000
L29	42	CCI(6"x1")	55.00 - 56.98	1.0000	1.0000
L29	43	CCI(6"x1")	55.00 - 56.98	1.0000	1.0000
L29	49	Safety Line 3/8	52.98 - 56.98	1.0000	1.0000
L29	51	CU12PSM9P8XXX(1-3/8)	52.98 - 56.98	1.0000	1.0000
L30	7	2" Rigid Conduit	48.98 - 52.98	1.0000	1.0000
L30	10	LDF6-50A(1-1/4")	48.98 - 52.98	1.0000	1.0000
L30	13	2" Rigid Conduit	48.98 - 52.98	1.0000	1.0000
L30	16	2" Rigid Conduit	48.98 - 52.98	1.0000	1.0000
L30	18	LDF7-50A(1-5/8")	48.98 - 52.98	1.0000	1.0000
L30	25	MP4-06	48.98 - 52.98	1.0000	1.0000
L30	26	MP4-06	48.98 - 52.98	1.0000	1.0000
L30	27	MP4-06	48.98 - 52.98	1.0000	1.0000
L30	49	Safety Line 3/8	48.98 - 52.98	1.0000	1.0000
L30	51	CU12PSM9P8XXX(1-3/8)	48.98 - 52.98	1.0000	1.0000
L31	7	2" Rigid Conduit	40.46 - 48.98	1.0000	1.0000
L31	10	LDF6-50A(1-1/4")	40.46 - 48.98	1.0000	1.0000
L31	13	2" Rigid Conduit	40.46 - 48.98	1.0000	1.0000
L31	16	2" Rigid Conduit	40.46 - 48.98	1.0000	1.0000
L31	18	LDF7-50A(1-5/8")	40.46 - 48.98	1.0000	1.0000
L31	25	MP4-06	40.46 - 48.98	1.0000	1.0000
L31	26	MP4-06	40.46 - 48.98	1.0000	1.0000
L31	27	MP4-06	40.46 - 48.98	1.0000	1.0000
L31	49	Safety Line 3/8	40.46 - 48.98	1.0000	1.0000
L31	51	CU12PSM9P8XXX(1-3/8)	40.46 - 48.98	1.0000	1.0000
L32	7	2" Rigid Conduit	39.46 - 40.46	1.0000	1.0000
L32	10	LDF6-50A(1-1/4")	39.46 - 40.46	1.0000	1.0000
L32	13	2" Rigid Conduit	39.46 - 40.46	1.0000	1.0000
L32	16	2" Rigid Conduit	39.46 - 40.46	1.0000	1.0000
L32	18	LDF7-50A(1-5/8")	39.46 - 40.46	1.0000	1.0000
L32	25	MP4-06	39.46 - 40.46	1.0000	1.0000
L32	26	MP4-06	39.46 - 40.46	1.0000	1.0000
L32	27	MP4-06	39.46 - 40.46	1.0000	1.0000
L32	49	Safety Line 3/8	39.46 - 40.46	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L32	51	CU12PSM9P8XXX(1-3/8)	39.46 - 40.46	1.0000	1.0000
L33	7	2" Rigid Conduit	37.83 - 39.46	1.0000	1.0000
L33	10	LDF6-50A(1-1/4")	37.83 - 39.46	1.0000	1.0000
L33	13	2" Rigid Conduit	37.83 - 39.46	1.0000	1.0000
L33	16	2" Rigid Conduit	37.83 - 39.46	1.0000	1.0000
L33	18	LDF7-50A(1-5/8")	37.83 - 39.46	1.0000	1.0000
L33	25	MP4-06	37.83 - 39.46	1.0000	1.0000
L33	26	MP4-06	37.83 - 39.46	1.0000	1.0000
L33	27	MP4-06	37.83 - 39.46	1.0000	1.0000
L33	49	Safety Line 3/8	37.83 - 39.46	1.0000	1.0000
L33	51	CU12PSM9P8XXX(1-3/8)	37.83 - 39.46	1.0000	1.0000
L34	7	2" Rigid Conduit	37.58 - 37.83	1.0000	1.0000
L34	10	LDF6-50A(1-1/4")	37.58 - 37.83	1.0000	1.0000
L34	13	2" Rigid Conduit	37.58 - 37.83	1.0000	1.0000
L34	16	2" Rigid Conduit	37.58 - 37.83	1.0000	1.0000
L34	18	LDF7-50A(1-5/8")	37.58 - 37.83	1.0000	1.0000
L34	25	MP4-06	37.58 - 37.83	1.0000	1.0000
L34	26	MP4-06	37.58 - 37.83	1.0000	1.0000
L34	27	MP4-06	37.58 - 37.83	1.0000	1.0000
L34	49	Safety Line 3/8	37.58 - 37.83	1.0000	1.0000
L34	51	CU12PSM9P8XXX(1-3/8)	37.58 - 37.83	1.0000	1.0000
L35	7	2" Rigid Conduit	33.58 - 37.58	1.0000	1.0000
L35	10	LDF6-50A(1-1/4")	33.58 - 37.58	1.0000	1.0000
L35	13	2" Rigid Conduit	33.58 - 37.58	1.0000	1.0000
L35	16	2" Rigid Conduit	33.58 - 37.58	1.0000	1.0000
L35	18	LDF7-50A(1-5/8")	33.58 - 37.58	1.0000	1.0000
L35	25	MP4-06	33.58 - 37.58	1.0000	1.0000
L35	26	MP4-06	33.58 - 37.58	1.0000	1.0000
L35	27	MP4-06	33.58 - 37.58	1.0000	1.0000
L35	49	Safety Line 3/8	33.58 - 37.58	1.0000	1.0000
L35	51	CU12PSM9P8XXX(1-3/8)	33.58 - 37.58	1.0000	1.0000
L36	7	2" Rigid Conduit	29.58 - 33.58	1.0000	1.0000
L36	10	LDF6-50A(1-1/4")	29.58 - 33.58	1.0000	1.0000
L36	13	2" Rigid Conduit	29.58 - 33.58	1.0000	1.0000
L36	16	2" Rigid Conduit	29.58 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			33.58		
L36	18	LDF7-50A(1-5/8")	29.58 - 33.58	1.0000	1.0000
L36	25	MP4-06	29.58 - 33.58	1.0000	1.0000
L36	26	MP4-06	29.58 - 33.58	1.0000	1.0000
L36	27	MP4-06	29.58 - 33.58	1.0000	1.0000
L36	49	Safety Line 3/8	29.58 - 33.58	1.0000	1.0000
L36	51	CU12PSM9P8XXX(1-3/8)	29.58 - 33.58	1.0000	1.0000
L37	7	2" Rigid Conduit	25.58 - 29.58	1.0000	1.0000
L37	10	LDF6-50A(1-1/4")	25.58 - 29.58	1.0000	1.0000
L37	13	2" Rigid Conduit	25.58 - 29.58	1.0000	1.0000
L37	16	2" Rigid Conduit	25.58 - 29.58	1.0000	1.0000
L37	18	LDF7-50A(1-5/8")	25.58 - 29.58	1.0000	1.0000
L37	25	MP4-06	25.58 - 29.58	1.0000	1.0000
L37	26	MP4-06	25.58 - 29.58	1.0000	1.0000
L37	27	MP4-06	25.58 - 29.58	1.0000	1.0000
L37	49	Safety Line 3/8	25.58 - 29.58	1.0000	1.0000
L37	51	CU12PSM9P8XXX(1-3/8)	25.58 - 29.58	1.0000	1.0000
L38	7	2" Rigid Conduit	21.58 - 25.58	1.0000	1.0000
L38	10	LDF6-50A(1-1/4")	21.58 - 25.58	1.0000	1.0000
L38	13	2" Rigid Conduit	21.58 - 25.58	1.0000	1.0000
L38	16	2" Rigid Conduit	21.58 - 25.58	1.0000	1.0000
L38	18	LDF7-50A(1-5/8")	21.58 - 25.58	1.0000	1.0000
L38	25	MP4-06	21.58 - 25.58	1.0000	1.0000
L38	26	MP4-06	21.58 - 25.58	1.0000	1.0000
L38	27	MP4-06	21.58 - 25.58	1.0000	1.0000
L38	49	Safety Line 3/8	21.58 - 25.58	1.0000	1.0000
L38	51	CU12PSM9P8XXX(1-3/8)	21.58 - 25.58	1.0000	1.0000
L39	7	2" Rigid Conduit	17.58 - 21.58	1.0000	1.0000
L39	10	LDF6-50A(1-1/4")	17.58 - 21.58	1.0000	1.0000
L39	13	2" Rigid Conduit	17.58 - 21.58	1.0000	1.0000
L39	16	2" Rigid Conduit	17.58 - 21.58	1.0000	1.0000
L39	18	LDF7-50A(1-5/8")	17.58 - 21.58	1.0000	1.0000
L39	25	MP4-06	17.58 - 21.58	1.0000	1.0000
L39	26	MP4-06	17.58 - 21.58	1.0000	1.0000
L39	27	MP4-06	17.58 - 21.58	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L39	49	Safety Line 3/8	17.58 - 21.58	1.0000	1.0000
L39	51	CU12PSM9P8XXX(1-3/8)	17.58 - 21.58	1.0000	1.0000
L40	7	2" Rigid Conduit	13.58 - 17.58	1.0000	1.0000
L40	10	LDF6-50A(1-1/4")	13.58 - 17.58	1.0000	1.0000
L40	13	2" Rigid Conduit	13.58 - 17.58	1.0000	1.0000
L40	16	2" Rigid Conduit	13.58 - 17.58	1.0000	1.0000
L40	18	LDF7-50A(1-5/8")	13.58 - 17.58	1.0000	1.0000
L40	25	MP4-06	13.58 - 17.58	1.0000	1.0000
L40	26	MP4-06	13.58 - 17.58	1.0000	1.0000
L40	27	MP4-06	13.58 - 17.58	1.0000	1.0000
L40	37	CCI(6.5"x1.25")	13.58 - 15.00	1.0000	1.0000
L40	38	CCI(6.5"x1.25")	13.58 - 15.00	1.0000	1.0000
L40	39	CCI(6.5"x1.25")	13.58 - 15.00	1.0000	1.0000
L40	49	Safety Line 3/8	13.58 - 17.58	1.0000	1.0000
L40	51	CU12PSM9P8XXX(1-3/8)	13.58 - 17.58	1.0000	1.0000
L41	7	2" Rigid Conduit	12.25 - 13.58	1.0000	1.0000
L41	10	LDF6-50A(1-1/4")	12.25 - 13.58	1.0000	1.0000
L41	13	2" Rigid Conduit	12.25 - 13.58	1.0000	1.0000
L41	16	2" Rigid Conduit	12.25 - 13.58	1.0000	1.0000
L41	18	LDF7-50A(1-5/8")	12.25 - 13.58	1.0000	1.0000
L41	25	MP4-06	12.25 - 13.58	1.0000	1.0000
L41	26	MP4-06	12.25 - 13.58	1.0000	1.0000
L41	27	MP4-06	12.25 - 13.58	1.0000	1.0000
L41	37	CCI(6.5"x1.25")	12.25 - 13.58	1.0000	1.0000
L41	38	CCI(6.5"x1.25")	12.25 - 13.58	1.0000	1.0000
L41	39	CCI(6.5"x1.25")	12.25 - 13.58	1.0000	1.0000
L41	49	Safety Line 3/8	12.25 - 13.58	1.0000	1.0000
L41	51	CU12PSM9P8XXX(1-3/8)	12.25 - 13.58	1.0000	1.0000
L42	7	2" Rigid Conduit	12.00 - 12.25	1.0000	1.0000
L42	10	LDF6-50A(1-1/4")	12.00 - 12.25	1.0000	1.0000
L42	13	2" Rigid Conduit	12.00 - 12.25	1.0000	1.0000
L42	16	2" Rigid Conduit	12.00 - 12.25	1.0000	1.0000
L42	18	LDF7-50A(1-5/8")	12.00 - 12.25	1.0000	1.0000
L42	25	MP4-06	12.00 - 12.25	1.0000	1.0000
L42	26	MP4-06	12.00 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L42	27	MP4-06	12.25 12.00 - 12.25	1.0000	1.0000
L42	37	CCI(6.5"x1.25")	12.00 - 12.25	1.0000	1.0000
L42	38	CCI(6.5"x1.25")	12.00 - 12.25	1.0000	1.0000
L42	39	CCI(6.5"x1.25")	12.00 - 12.25	1.0000	1.0000
L42	49	Safety Line 3/8	12.00 - 12.25	1.0000	1.0000
L42	51	CU12PSM9P8XXX(1-3/8)	12.00 - 12.25	1.0000	1.0000
L43	7	2" Rigid Conduit	8.00 - 12.00	1.0000	1.0000
L43	10	LDF6-50A(1-1/4")	8.00 - 12.00	1.0000	1.0000
L43	13	2" Rigid Conduit	8.00 - 12.00	1.0000	1.0000
L43	16	2" Rigid Conduit	8.00 - 12.00	1.0000	1.0000
L43	18	LDF7-50A(1-5/8")	8.00 - 12.00	1.0000	1.0000
L43	25	MP4-06	8.00 - 12.00	1.0000	1.0000
L43	26	MP4-06	8.00 - 12.00	1.0000	1.0000
L43	27	MP4-06	8.00 - 12.00	1.0000	1.0000
L43	37	CCI(6.5"x1.25")	8.00 - 12.00	1.0000	1.0000
L43	38	CCI(6.5"x1.25")	8.00 - 12.00	1.0000	1.0000
L43	39	CCI(6.5"x1.25")	8.00 - 12.00	1.0000	1.0000
L43	49	Safety Line 3/8	8.00 - 12.00	1.0000	1.0000
L43	51	CU12PSM9P8XXX(1-3/8)	8.00 - 12.00	1.0000	1.0000
L44	7	2" Rigid Conduit	4.00 - 8.00	1.0000	1.0000
L44	10	LDF6-50A(1-1/4")	4.00 - 8.00	1.0000	1.0000
L44	13	2" Rigid Conduit	4.00 - 8.00	1.0000	1.0000
L44	16	2" Rigid Conduit	4.00 - 8.00	1.0000	1.0000
L44	18	LDF7-50A(1-5/8")	4.00 - 8.00	1.0000	1.0000
L44	25	MP4-06	4.00 - 8.00	1.0000	1.0000
L44	26	MP4-06	4.00 - 8.00	1.0000	1.0000
L44	27	MP4-06	4.00 - 8.00	1.0000	1.0000
L44	37	CCI(6.5"x1.25")	4.00 - 8.00	1.0000	1.0000
L44	38	CCI(6.5"x1.25")	4.00 - 8.00	1.0000	1.0000
L44	39	CCI(6.5"x1.25")	4.00 - 8.00	1.0000	1.0000
L44	49	Safety Line 3/8	4.00 - 8.00	1.0000	1.0000
L44	51	CU12PSM9P8XXX(1-3/8)	4.00 - 8.00	1.0000	1.0000
L45	7	2" Rigid Conduit	0.00 - 4.00	1.0000	1.0000
L45	10	LDF6-50A(1-1/4")	0.00 - 4.00	1.0000	1.0000
L45	13	2" Rigid Conduit	0.00 - 4.00	1.0000	1.0000
L45	16	2" Rigid Conduit	0.00 - 4.00	1.0000	1.0000
L45	18	LDF7-50A(1-5/8")	0.00 - 4.00	1.0000	1.0000
L45	25	MP4-06	0.50 - 4.00	1.0000	1.0000
L45	26	MP4-06	0.50 - 4.00	1.0000	1.0000
L45	27	MP4-06	0.50 - 4.00	1.0000	1.0000
L45	37	CCI(6.5"x1.25")	0.00 - 4.00	1.0000	1.0000
L45	38	CCI(6.5"x1.25")	0.00 - 4.00	1.0000	1.0000
L45	39	CCI(6.5"x1.25")	0.00 - 4.00	1.0000	1.0000
L45	49	Safety Line 3/8	0.00 - 4.00	1.0000	1.0000
L45	51	CU12PSM9P8XXX(1-3/8)	0.00 - 4.00	1.0000	1.0000

Effective Width of Flat Linear Attachments / Feed Lines

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L6	45	CCI (3.25"x1.25")	101.00 - 102.50	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L6	46	CCI (3.25"x1.25")	101.00 - 102.50	Auto	0.0000
L6	47	CCI (3.25"x1.25")	101.00 - 102.50	Auto	0.0000
L7	45	CCI (3.25"x1.25")	99.38 - 101.00	Auto	0.0000
L7	46	CCI (3.25"x1.25")	99.38 - 101.00	Auto	0.0000
L7	47	CCI (3.25"x1.25")	99.38 - 101.00	Auto	0.0000
L8	45	CCI (3.25"x1.25")	99.13 - 99.38	Auto	0.0000
L8	46	CCI (3.25"x1.25")	99.13 - 99.38	Auto	0.0000
L8	47	CCI (3.25"x1.25")	99.13 - 99.38	Auto	0.0000
L9	33	CCI(6"x1")	95.13 - 96.50	Auto	0.3943
L9	34	CCI(6"x1")	95.13 - 96.50	Auto	0.3943
L9	35	CCI(6"x1")	95.13 - 96.50	Auto	0.3943
L9	45	CCI (3.25"x1.25")	95.13 - 99.13	Auto	0.0000
L9	46	CCI (3.25"x1.25")	95.13 - 99.13	Auto	0.0000
L9	47	CCI (3.25"x1.25")	95.13 - 99.13	Auto	0.0000
L10	33	CCI(6"x1")	94.46 - 95.13	Auto	0.3878
L10	34	CCI(6"x1")	94.46 - 95.13	Auto	0.3878
L10	35	CCI(6"x1")	94.46 - 95.13	Auto	0.3878
L10	45	CCI (3.25"x1.25")	94.46 - 95.13	Auto	0.0000
L10	46	CCI (3.25"x1.25")	94.46 - 95.13	Auto	0.0000
L10	47	CCI (3.25"x1.25")	94.46 - 95.13	Auto	0.0000
L11	33	CCI(6"x1")	94.21 - 94.46	Auto	0.4400
L11	34	CCI(6"x1")	94.21 - 94.46	Auto	0.4400
L11	35	CCI(6"x1")	94.21 - 94.46	Auto	0.4400
L11	45	CCI (3.25"x1.25")	94.21 - 94.46	Auto	0.0000
L11	46	CCI (3.25"x1.25")	94.21 - 94.46	Auto	0.0000
L11	47	CCI (3.25"x1.25")	94.21 - 94.46	Auto	0.0000
L12	29	MP4-04	90.21 - 90.50	Auto	0.2516
L12	30	MP4-04	90.21 - 90.50	Auto	0.2516
L12	31	MP4-04	90.21 - 90.50	Auto	0.2516
L12	33	CCI(6"x1")	90.21 - 94.21	Auto	0.4192
L12	34	CCI(6"x1")	90.21 - 94.21	Auto	0.4192
L12	35	CCI(6"x1")	90.21 - 94.21	Auto	0.4192
L12	45	CCI (3.25"x1.25")	90.21 - 94.21	Auto	0.0000
L12	46	CCI (3.25"x1.25")	90.21 - 94.21	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L12	47	CCI (3.25"x1.25")	90.21 - 94.21	Auto	0.0000
L13	29	MP4-04	89.00 - 90.21	Auto	0.2456
L13	30	MP4-04	89.00 - 90.21	Auto	0.2456
L13	31	MP4-04	89.00 - 90.21	Auto	0.2456
L13	33	CCI(6"x1")	89.00 - 90.21	Auto	0.4028
L13	34	CCI(6"x1")	89.00 - 90.21	Auto	0.4028
L13	35	CCI(6"x1")	89.00 - 90.21	Auto	0.4028
L13	45	CCI (3.25"x1.25")	89.00 - 90.21	Auto	0.0000
L13	46	CCI (3.25"x1.25")	89.00 - 90.21	Auto	0.0000
L13	47	CCI (3.25"x1.25")	89.00 - 90.21	Auto	0.0000
L14	29	MP4-04	85.04 - 89.00	Auto	0.2575
L14	30	MP4-04	85.04 - 89.00	Auto	0.2575
L14	31	MP4-04	85.04 - 89.00	Auto	0.2575
L14	33	CCI(6"x1")	85.04 - 89.00	Auto	0.4122
L14	34	CCI(6"x1")	85.04 - 89.00	Auto	0.4122
L14	35	CCI(6"x1")	85.04 - 89.00	Auto	0.4122
L14	45	CCI (3.25"x1.25")	87.50 - 89.00	Auto	0.0000
L14	46	CCI (3.25"x1.25")	87.50 - 89.00	Auto	0.0000
L14	47	CCI (3.25"x1.25")	87.50 - 89.00	Auto	0.0000
L15	29	MP4-04	84.04 - 85.04	Auto	0.1918
L15	30	MP4-04	84.04 - 85.04	Auto	0.1918
L15	31	MP4-04	84.04 - 85.04	Auto	0.1918
L15	33	CCI(6"x1")	84.04 - 85.04	Auto	0.3602
L15	34	CCI(6"x1")	84.04 - 85.04	Auto	0.3602
L15	35	CCI(6"x1")	84.04 - 85.04	Auto	0.3602
L16	29	MP4-04	80.04 - 84.04	Auto	0.1675
L16	30	MP4-04	80.04 - 84.04	Auto	0.1675
L16	31	MP4-04	80.04 - 84.04	Auto	0.1675
L16	33	CCI(6"x1")	80.04 - 84.04	Auto	0.3409
L16	34	CCI(6"x1")	80.04 - 84.04	Auto	0.3409
L16	35	CCI(6"x1")	80.04 - 84.04	Auto	0.3409
L17	29	MP4-04	76.04 - 80.04	Auto	0.1337
L17	30	MP4-04	76.04 - 80.04	Auto	0.1337
L17	31	MP4-04	76.04 - 80.04	Auto	0.1337

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L17	33	CCI(6"x1")	76.04 - 80.04	Auto	0.3142
L17	34	CCI(6"x1")	76.04 - 80.04	Auto	0.3142
L17	35	CCI(6"x1")	76.04 - 80.04	Auto	0.3142
L18	29	MP4-04	75.50 - 76.04	Auto	0.1135
L18	30	MP4-04	75.50 - 76.04	Auto	0.1135
L18	31	MP4-04	75.50 - 76.04	Auto	0.1135
L18	33	CCI(6"x1")	73.58 - 76.04	Auto	0.2922
L18	34	CCI(6"x1")	73.58 - 76.04	Auto	0.2922
L18	35	CCI(6"x1")	73.58 - 76.04	Auto	0.2922
L19	33	CCI(6"x1")	73.33 - 73.58	Auto	0.3241
L19	34	CCI(6"x1")	73.33 - 73.58	Auto	0.3241
L19	35	CCI(6"x1")	73.33 - 73.58	Auto	0.3241
L20	33	CCI(6"x1")	73.00 - 73.33	Auto	0.3223
L20	34	CCI(6"x1")	73.00 - 73.33	Auto	0.3223
L20	35	CCI(6"x1")	73.00 - 73.33	Auto	0.3223
L21	33	CCI(6"x1")	72.75 - 73.00	Auto	0.2508
L21	34	CCI(6"x1")	72.75 - 73.00	Auto	0.2508
L21	35	CCI(6"x1")	72.75 - 73.00	Auto	0.2508
L22	33	CCI(6"x1")	71.00 - 72.75	Auto	0.2446
L22	34	CCI(6"x1")	71.00 - 72.75	Auto	0.2446
L22	35	CCI(6"x1")	71.00 - 72.75	Auto	0.2446
L23	41	CCI(6"x1")	64.75 - 65.00	Auto	0.1991
L23	42	CCI(6"x1")	64.75 - 65.00	Auto	0.1991
L23	43	CCI(6"x1")	64.75 - 65.00	Auto	0.1991
L24	41	CCI(6"x1")	63.00 - 64.75	Auto	0.1929
L24	42	CCI(6"x1")	63.00 - 64.75	Auto	0.1929
L24	43	CCI(6"x1")	63.00 - 64.75	Auto	0.1929
L25	41	CCI(6"x1")	62.75 - 63.00	Auto	0.2471
L25	42	CCI(6"x1")	62.75 - 63.00	Auto	0.2471
L25	43	CCI(6"x1")	62.75 - 63.00	Auto	0.2471
L26	25	MP4-06	58.75 - 60.50	Auto	0.0485
L26	26	MP4-06	58.75 - 60.50	Auto	0.0485
L26	27	MP4-06	58.75 - 60.50	Auto	0.0485
L26	41	CCI(6"x1")	58.75 - 62.75	Auto	0.2339

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L26	42	CCI(6"x1")	58.75 - 62.75	Auto	0.2339
L26	43	CCI(6"x1")	58.75 - 62.75	Auto	0.2339
L27	25	MP4-06	57.23 - 58.75	Auto	0.0000
L27	26	MP4-06	57.23 - 58.75	Auto	0.0000
L27	27	MP4-06	57.23 - 58.75	Auto	0.0000
L27	41	CCI(6"x1")	57.23 - 58.75	Auto	0.1800
L27	42	CCI(6"x1")	57.23 - 58.75	Auto	0.1800
L27	43	CCI(6"x1")	57.23 - 58.75	Auto	0.1800
L28	25	MP4-06	56.98 - 57.23	Auto	0.0000
L28	26	MP4-06	56.98 - 57.23	Auto	0.0000
L28	27	MP4-06	56.98 - 57.23	Auto	0.0000
L28	41	CCI(6"x1")	56.98 - 57.23	Auto	0.1745
L28	42	CCI(6"x1")	56.98 - 57.23	Auto	0.1745
L28	43	CCI(6"x1")	56.98 - 57.23	Auto	0.1745
L29	25	MP4-06	52.98 - 56.98	Auto	0.0000
L29	26	MP4-06	52.98 - 56.98	Auto	0.0000
L29	27	MP4-06	52.98 - 56.98	Auto	0.0000
L29	41	CCI(6"x1")	55.00 - 56.98	Auto	0.1676
L29	42	CCI(6"x1")	55.00 - 56.98	Auto	0.1676
L29	43	CCI(6"x1")	55.00 - 56.98	Auto	0.1676
L30	25	MP4-06	48.98 - 52.98	Auto	0.0000
L30	26	MP4-06	48.98 - 52.98	Auto	0.0000
L30	27	MP4-06	48.98 - 52.98	Auto	0.0000
L31	25	MP4-06	40.46 - 48.98	Auto	0.0000
L31	26	MP4-06	40.46 - 48.98	Auto	0.0000
L31	27	MP4-06	40.46 - 48.98	Auto	0.0000
L32	25	MP4-06	39.46 - 40.46	Auto	0.0000
L32	26	MP4-06	39.46 - 40.46	Auto	0.0000
L32	27	MP4-06	39.46 - 40.46	Auto	0.0000
L33	25	MP4-06	37.83 - 39.46	Auto	0.0000
L33	26	MP4-06	37.83 - 39.46	Auto	0.0000
L33	27	MP4-06	37.83 - 39.46	Auto	0.0000
L34	25	MP4-06	37.58 - 37.83	Auto	0.0000
L34	26	MP4-06	37.58 - 37.83	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L34	27	MP4-06	37.58 - 37.83	Auto	0.0000
L35	25	MP4-06	33.58 - 37.58	Auto	0.0000
L35	26	MP4-06	33.58 - 37.58	Auto	0.0000
L35	27	MP4-06	33.58 - 37.58	Auto	0.0000
L36	25	MP4-06	29.58 - 33.58	Auto	0.0000
L36	26	MP4-06	29.58 - 33.58	Auto	0.0000
L36	27	MP4-06	29.58 - 33.58	Auto	0.0000
L37	25	MP4-06	25.58 - 29.58	Auto	0.0000
L37	26	MP4-06	25.58 - 29.58	Auto	0.0000
L37	27	MP4-06	25.58 - 29.58	Auto	0.0000
L38	25	MP4-06	21.58 - 25.58	Auto	0.0000
L38	26	MP4-06	21.58 - 25.58	Auto	0.0000
L38	27	MP4-06	21.58 - 25.58	Auto	0.0000
L39	25	MP4-06	17.58 - 21.58	Auto	0.0000
L39	26	MP4-06	17.58 - 21.58	Auto	0.0000
L39	27	MP4-06	17.58 - 21.58	Auto	0.0000
L40	25	MP4-06	13.58 - 17.58	Auto	0.0000
L40	26	MP4-06	13.58 - 17.58	Auto	0.0000
L40	27	MP4-06	13.58 - 17.58	Auto	0.0000
L40	37	CCI(6.5"x1.25")	13.58 - 15.00	Auto	0.0108
L40	38	CCI(6.5"x1.25")	13.58 - 15.00	Auto	0.0108
L40	39	CCI(6.5"x1.25")	13.58 - 15.00	Auto	0.0108
L41	25	MP4-06	12.25 - 13.58	Auto	0.0000
L41	26	MP4-06	12.25 - 13.58	Auto	0.0000
L41	27	MP4-06	12.25 - 13.58	Auto	0.0000
L41	37	CCI(6.5"x1.25")	12.25 - 13.58	Auto	0.0016
L41	38	CCI(6.5"x1.25")	12.25 - 13.58	Auto	0.0016
L41	39	CCI(6.5"x1.25")	12.25 - 13.58	Auto	0.0016
L42	25	MP4-06	12.00 - 12.25	Auto	0.0000
L42	26	MP4-06	12.00 - 12.25	Auto	0.0000
L42	27	MP4-06	12.00 - 12.25	Auto	0.0000
L42	37	CCI(6.5"x1.25")	12.00 - 12.25	Auto	0.0339
L42	38	CCI(6.5"x1.25")	12.00 - 12.25	Auto	0.0339
L42	39	CCI(6.5"x1.25")	12.00 - 12.25	Auto	0.0339

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L43	25	MP4-06	8.00 - 12.00	Auto	0.0000
L43	26	MP4-06	8.00 - 12.00	Auto	0.0000
L43	27	MP4-06	8.00 - 12.00	Auto	0.0000
L43	37	CCI(6.5"x1.25")	8.00 - 12.00	Auto	0.0183
L43	38	CCI(6.5"x1.25")	8.00 - 12.00	Auto	0.0183
L43	39	CCI(6.5"x1.25")	8.00 - 12.00	Auto	0.0183
L44	25	MP4-06	4.00 - 8.00	Auto	0.0000
L44	26	MP4-06	4.00 - 8.00	Auto	0.0000
L44	27	MP4-06	4.00 - 8.00	Auto	0.0000
L44	37	CCI(6.5"x1.25")	4.00 - 8.00	Auto	0.0010
L44	38	CCI(6.5"x1.25")	4.00 - 8.00	Auto	0.0010
L44	39	CCI(6.5"x1.25")	4.00 - 8.00	Auto	0.0010
L45	25	MP4-06	0.50 - 4.00	Auto	0.0000
L45	26	MP4-06	0.50 - 4.00	Auto	0.0000
L45	27	MP4-06	0.50 - 4.00	Auto	0.0000
L45	37	CCI(6.5"x1.25")	0.00 - 4.00	Auto	0.0000
L45	38	CCI(6.5"x1.25")	0.00 - 4.00	Auto	0.0000
L45	39	CCI(6.5"x1.25")	0.00 - 4.00	Auto	0.0000

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
APXVTM14-C-120 w/ Mount Pipe (E)	A	From Leg	4.000 0.000 2.000	0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice	4.090 4.480 4.880 5.710	2.860 3.230 3.610 4.400	0.077 0.127 0.185 0.331
APXVTM14-C-120 w/ Mount Pipe (E)	B	From Leg	4.000 0.000 2.000	0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice	4.090 4.480 4.880 5.710	2.860 3.230 3.610 4.400	0.077 0.127 0.185 0.331
APXVTM14-C-120 w/ Mount Pipe (E)	C	From Leg	4.000 0.000 2.000	0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice	4.090 4.480 4.880 5.710	2.860 3.230 3.610 4.400	0.077 0.127 0.185 0.331
LLPX310R-V1 w/ Mount Pipe (E)	A	From Leg	4.000 0.000 4.000	0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.880 4.290 4.720 5.610	2.360 2.730 3.120 3.940	0.057 0.091 0.133 0.238
LLPX310R-V1 w/ Mount Pipe (E)	B	From Leg	4.000 0.000 4.000	0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.880 4.290 4.720 5.610	2.360 2.730 3.120 3.940	0.057 0.091 0.133 0.238
LLPX310R-V1 w/ Mount Pipe (E)	C	From Leg	4.000 0.000 4.000	0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.880 4.290 4.720 5.610	2.360 2.730 3.120 3.940	0.057 0.091 0.133 0.238
APXVSPP18-C-A20 w/ Mount Pipe (E)	A	From Leg	4.000 0.000 2.000	0.000	125.000	No Ice 1/2" Ice Ice	4.600 5.050 5.500	4.010 4.450 4.890	0.095 0.160 0.235

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
						1" Ice	6.440	5.820	0.419
						2" Ice			
APXVSPP18-C-A20w/ Mount Pipe (E)	B	From Leg	4.000 0.000 2.000	0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice	4.600 5.050 5.500 6.440	4.010 4.450 4.890 5.820	0.095 0.160 0.235 0.419
APXVSPP18-C-A20w/ Mount Pipe (E)	C	From Leg	4.000 0.000 2.000	0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice	4.600 5.050 5.500 6.440	4.010 4.450 4.890 5.820	0.095 0.160 0.235 0.419
TD-RRH8x20-25 (E)	A	From Leg	4.000 0.000 2.000	0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice	4.045 4.298 4.557 5.098	1.535 1.714 1.901 2.295	0.070 0.097 0.128 0.201
TD-RRH8x20-25 (E)	B	From Leg	4.000 0.000 2.000	0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice	4.045 4.298 4.557 5.098	1.535 1.714 1.901 2.295	0.070 0.097 0.128 0.201
TD-RRH8x20-25 (E)	C	From Leg	4.000 0.000 2.000	0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice	4.045 4.298 4.557 5.098	1.535 1.714 1.901 2.295	0.070 0.097 0.128 0.201
WIMAX DAP HEAD (E)	A	From Leg	4.000 0.000 0.000	0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.547 1.704 1.868 2.219	0.684 0.800 0.923 1.193	0.033 0.045 0.058 0.094
WIMAX DAP HEAD (E)	B	From Leg	4.000 0.000 0.000	0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.547 1.704 1.868 2.219	0.684 0.800 0.923 1.193	0.033 0.045 0.058 0.094
WIMAX DAP HEAD (E)	C	From Leg	4.000 0.000 0.000	0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.547 1.704 1.868 2.219	0.684 0.800 0.923 1.193	0.033 0.045 0.058 0.094
HORIZON COMPACT (E)	B	From Leg	4.000 0.000 0.000	0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice	0.721 0.828 0.942 1.193	0.368 0.450 0.539 0.740	0.012 0.018 0.026 0.048
HORIZON COMPACT (E)	C	From Leg	4.000 0.000 0.000	0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice	0.721 0.828 0.942 1.193	0.368 0.450 0.539 0.740	0.012 0.018 0.026 0.048
(2) 5' x 2" Pipe Mount (E)	A	From Leg	4.000 0.000 0.000	0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.188 1.496 1.807 2.458	1.188 1.496 1.807 2.458	0.018 0.027 0.040 0.076
(2) 5' x 2" Pipe Mount (E)	B	From Leg	4.000 0.000 0.000	0.000	125.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.188 1.496 1.807 2.458	1.188 1.496 1.807 2.458	0.018 0.027 0.040 0.076
(2) 5' x 2" Pipe Mount (E)	C	From Leg	4.000 0.000 0.000	0.000	125.000	No Ice 1/2" Ice Ice	1.188 1.496 1.807	1.188 1.496 1.807	0.018 0.027 0.040

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
							1" Ice	2.458	2.458	0.076
							2" Ice			
Platform Mount [LP 714-1]	C	None			0.000	125.000	No Ice	37.510	37.510	1.600
(E)							1/2" Ice	41.700	41.700	2.496
							1" Ice	45.890	45.890	3.458
							2" Ice	54.290	54.290	5.583
Climbing Ladder (Flat)	A	From Leg	3.000		0.000	123.000	No Ice	5.844	5.844	0.048
(E)			0.000				1/2" Ice	10.300	10.300	0.071
			0.000				1" Ice	14.756	14.756	0.094
							2" Ice	23.668	23.668	0.140
$$										
PCS 1900MHz 4x45W-65MHz	A	From Leg	2.000		0.000	123.000	No Ice	2.322	2.238	0.060
(E)			0.000				1/2" Ice	2.527	2.441	0.083
			0.000				1" Ice	2.739	2.651	0.110
							2" Ice	3.185	3.093	0.173
PCS 1900MHz 4x45W-65MHz	B	From Leg	2.000		0.000	123.000	No Ice	2.322	2.238	0.060
(E)			0.000				1/2" Ice	2.527	2.441	0.083
			0.000				1" Ice	2.739	2.651	0.110
							2" Ice	3.185	3.093	0.173
PCS 1900MHz 4x45W-65MHz	C	From Leg	2.000		0.000	123.000	No Ice	2.322	2.238	0.060
(E)			0.000				1/2" Ice	2.527	2.441	0.083
			0.000				1" Ice	2.739	2.651	0.110
							2" Ice	3.185	3.093	0.173
800MHZ 2X50W RRH W/FILTER	A	From Leg	2.000		0.000	123.000	No Ice	2.058	1.932	0.064
(E)			0.000				1/2" Ice	2.240	2.109	0.086
			0.000				1" Ice	2.429	2.293	0.111
							2" Ice	2.829	2.684	0.172
800MHZ 2X50W RRH W/FILTER	B	From Leg	2.000		0.000	123.000	No Ice	2.058	1.932	0.064
(E)			0.000				1/2" Ice	2.240	2.109	0.086
			0.000				1" Ice	2.429	2.293	0.111
							2" Ice	2.829	2.684	0.172
800MHZ 2X50W RRH W/FILTER	C	From Leg	2.000		0.000	123.000	No Ice	2.058	1.932	0.064
(E)			0.000				1/2" Ice	2.240	2.109	0.086
			0.000				1" Ice	2.429	2.293	0.111
							2" Ice	2.829	2.684	0.172
6' x 2" Mount Pipe	A	From Leg	2.000		0.000	125.000	No Ice	1.425	1.425	0.022
(E-per photo)			0.000				1/2" Ice	1.925	1.925	0.033
			0.000				1" Ice	2.294	2.294	0.048
							2" Ice	3.060	3.060	0.090
6' x 2" Mount Pipe	B	From Leg	2.000		0.000	125.000	No Ice	1.425	1.425	0.022
(E-per photo)			0.000				1/2" Ice	1.925	1.925	0.033
			0.000				1" Ice	2.294	2.294	0.048
							2" Ice	3.060	3.060	0.090
6' x 2" Mount Pipe	C	From Leg	2.000		0.000	125.000	No Ice	1.425	1.425	0.022
(E-per photo)			0.000				1/2" Ice	1.925	1.925	0.033
			0.000				1" Ice	2.294	2.294	0.048
							2" Ice	3.060	3.060	0.090
Side Arm Mount [SO 102-3]	C	None			0.000	123.000	No Ice	3.600	3.600	0.075
(E)							1/2" Ice	4.180	4.180	0.105
							1" Ice	4.750	4.750	0.135
							2" Ice	5.900	5.900	0.195
$$										
AM-X-CD-16-65-00T-RET	A	From Leg	4.000		0.000	115.000	No Ice	4.630	3.270	0.074

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
w/ Mount Pipe			0.000			1/2"	5.060	3.690	0.133
(E)			2.000			Ice	5.510	4.120	0.203
						1" Ice	6.430	5.000	0.376
						2" Ice			
AM-X-CD-16-65-00T-RET	B	From Leg	4.000	0.000	115.000	No Ice	4.630	3.270	0.074
w/ Mount Pipe			0.000			1/2"	5.060	3.690	0.133
(E)			2.000			Ice	5.510	4.120	0.203
						1" Ice	6.430	5.000	0.376
						2" Ice			
AM-X-CD-16-65-00T-RET	C	From Leg	4.000	0.000	115.000	No Ice	4.630	3.270	0.074
w/ Mount Pipe			0.000			1/2"	5.060	3.690	0.133
(E)			2.000			Ice	5.510	4.120	0.203
						1" Ice	6.430	5.000	0.376
						2" Ice			
80010798 w/ Mount Pipe	A	From Leg	4.000	0.000	115.000	No Ice	7.790	4.900	0.114
(R)			0.000			1/2"	8.400	5.470	0.188
			2.000			Ice	9.020	6.060	0.275
						1" Ice	10.300	7.260	0.484
						2" Ice			
80010798 w/ Mount Pipe	B	From Leg	4.000	0.000	115.000	No Ice	7.790	4.900	0.114
(R)			0.000			1/2"	8.400	5.470	0.188
			2.000			Ice	9.020	6.060	0.275
						1" Ice	10.300	7.260	0.484
						2" Ice			
80010798 w/ Mount Pipe	C	From Leg	4.000	0.000	115.000	No Ice	7.790	4.900	0.114
(R)			0.000			1/2"	8.400	5.470	0.188
			2.000			Ice	9.020	6.060	0.275
						1" Ice	10.300	7.260	0.484
						2" Ice			
HPA-65R-BUU-H6 w/	A	From Leg	4.000	0.000	115.000	No Ice	9.220	6.250	0.074
Mount Pipe			0.000			1/2"	9.980	6.960	0.143
(R)			2.000			Ice	10.760	7.700	0.224
						1" Ice	12.360	9.220	0.420
						2" Ice			
HPA-65R-BUU-H6 w/	B	From Leg	4.000	0.000	115.000	No Ice	9.220	6.250	0.074
Mount Pipe			0.000			1/2"	9.980	6.960	0.143
(R)			2.000			Ice	10.760	7.700	0.224
						1" Ice	12.360	9.220	0.420
						2" Ice			
HPA-65R-BUU-H6 w/	C	From Leg	4.000	0.000	115.000	No Ice	9.220	6.250	0.074
Mount Pipe			0.000			1/2"	9.980	6.960	0.143
(R)			2.000			Ice	10.760	7.700	0.224
						1" Ice	12.360	9.220	0.420
						2" Ice			
(2) TT19-08BP111-001	A	From Leg	4.000	0.000	115.000	No Ice	0.545	0.442	0.016
(R)			0.000			1/2"	0.641	0.530	0.022
			2.000			Ice	0.743	0.626	0.029
						1" Ice	0.971	0.840	0.049
						2" Ice			
(2) TT19-08BP111-001	B	From Leg	4.000	0.000	115.000	No Ice	0.545	0.442	0.016
(R)			0.000			1/2"	0.641	0.530	0.022
			2.000			Ice	0.743	0.626	0.029
						1" Ice	0.971	0.840	0.049
						2" Ice			
(2) TT19-08BP111-001	C	From Leg	4.000	0.000	115.000	No Ice	0.545	0.442	0.016
(R)			0.000			1/2"	0.641	0.530	0.022
			2.000			Ice	0.743	0.626	0.029
						1" Ice	0.971	0.840	0.049
						2" Ice			
RRUS 32 B66	A	From Leg	4.000	0.000	115.000	No Ice	2.743	1.668	0.053
(R)			0.000			1/2"	2.965	1.855	0.074
			2.000			Ice	3.194	2.049	0.098
						1" Ice	3.675	2.458	0.157
						2" Ice			
RRUS 32 B66	B	From Leg	4.000	0.000	115.000	No Ice	2.743	1.668	0.053

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
(R)			0.000			1/2"	2.965	1.855	0.074
			2.000			Ice	3.194	2.049	0.098
						1" Ice	3.675	2.458	0.157
						2" Ice			
RRUS 32 B66	C	From Leg	4.000	0.000	115.000	No Ice	2.743	1.668	0.053
(R)			0.000			1/2"	2.965	1.855	0.074
			2.000			Ice	3.194	2.049	0.098
						1" Ice	3.675	2.458	0.157
						2" Ice			
RRUS 32	A	From Leg	4.000	0.000	115.000	No Ice	2.857	1.777	0.055
(R)			0.000			1/2"	3.083	1.968	0.077
			2.000			Ice	3.316	2.166	0.103
						1" Ice	3.805	2.583	0.165
						2" Ice			
RRUS 32	B	From Leg	4.000	0.000	115.000	No Ice	2.857	1.777	0.055
(R)			0.000			1/2"	3.083	1.968	0.077
			2.000			Ice	3.316	2.166	0.103
						1" Ice	3.805	2.583	0.165
						2" Ice			
RRUS 32	C	From Leg	4.000	0.000	115.000	No Ice	2.857	1.777	0.055
(R)			0.000			1/2"	3.083	1.968	0.077
			2.000			Ice	3.316	2.166	0.103
						1" Ice	3.805	2.583	0.165
						2" Ice			
RRUS 11 B12	A	From Leg	4.000	0.000	115.000	No Ice	2.833	1.182	0.051
(E)			0.000			1/2"	3.043	1.330	0.072
			2.000			Ice	3.259	1.485	0.095
						1" Ice	3.715	1.826	0.153
						2" Ice			
RRUS 11 B12	B	From Leg	4.000	0.000	115.000	No Ice	2.833	1.182	0.051
(E)			0.000			1/2"	3.043	1.330	0.072
			2.000			Ice	3.259	1.485	0.095
						1" Ice	3.715	1.826	0.153
						2" Ice			
RRUS 11 B12	C	From Leg	4.000	0.000	115.000	No Ice	2.833	1.182	0.051
(E)			0.000			1/2"	3.043	1.330	0.072
			2.000			Ice	3.259	1.485	0.095
						1" Ice	3.715	1.826	0.153
						2" Ice			
(2) DBC0061F1V51-2	A	From Leg	4.000	0.000	115.000	No Ice	0.413	0.433	0.025
(R)			0.000			1/2"	0.496	0.518	0.031
			2.000			Ice	0.586	0.609	0.038
						1" Ice	0.788	0.815	0.057
						2" Ice			
(2) DBC0061F1V51-2	B	From Leg	4.000	0.000	115.000	No Ice	0.413	0.433	0.025
(R)			0.000			1/2"	0.496	0.518	0.031
			2.000			Ice	0.586	0.609	0.038
						1" Ice	0.788	0.815	0.057
						2" Ice			
(2) DBC0061F1V51-2	C	From Leg	4.000	0.000	115.000	No Ice	0.413	0.433	0.025
(R)			0.000			1/2"	0.496	0.518	0.031
			2.000			Ice	0.586	0.609	0.038
						1" Ice	0.788	0.815	0.057
						2" Ice			
DC6-48-60-18-8F	A	From Leg	4.000	0.000	115.000	No Ice	1.212	1.212	0.020
(E)			0.000			1/2"	1.892	1.892	0.042
			2.000			Ice	2.105	2.105	0.067
						1" Ice	2.570	2.570	0.126
						2" Ice			
DC6-48-60-18-8F	A	From Leg	4.000	0.000	115.000	No Ice	1.212	1.212	0.020
(R)			0.000			1/2"	1.892	1.892	0.042
			2.000			Ice	2.105	2.105	0.067
						1" Ice	2.570	2.570	0.126
						2" Ice			
RRUS 32 B2	A	From Leg	4.000	0.000	115.000	No Ice	2.731	1.668	0.053

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
(R)			0.000 2.000			1/2" Ice 1" Ice 2" Ice	2.953 3.182 3.663	1.855 2.049 2.458	0.074 0.098 0.157
RRUS 32 B2 (R)	B	From Leg	4.000 0.000 2.000	0.000	115.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.731 2.953 3.182 3.663	1.668 1.855 2.049 2.458	0.053 0.074 0.098 0.157
RRUS 32 B2 (R)	C	From Leg	4.000 0.000 2.000	0.000	115.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.731 2.953 3.182 3.663	1.668 1.855 2.049 2.458	0.053 0.074 0.098 0.157
4' x 2" Pipe Mount (E)	A	From Leg	4.000 0.000 0.000	0.000	115.000	No Ice 1/2" Ice 1" Ice 2" Ice	0.785 1.028 1.281 1.814	0.785 1.028 1.281 1.814	0.029 0.035 0.044 0.072
4' x 2" Pipe Mount (E)	B	From Leg	4.000 0.000 0.000	0.000	115.000	No Ice 1/2" Ice 1" Ice 2" Ice	0.785 1.028 1.281 1.814	0.785 1.028 1.281 1.814	0.029 0.035 0.044 0.072
4' x 2" Pipe Mount (E)	C	From Leg	4.000 0.000 0.000	0.000	115.000	No Ice 1/2" Ice 1" Ice 2" Ice	0.785 1.028 1.281 1.814	0.785 1.028 1.281 1.814	0.029 0.035 0.044 0.072
Platform Mount [LP 304-1] (E-14')	C	None		0.000	115.000	No Ice 1/2" Ice 1" Ice 2" Ice	17.490 21.370 25.280 33.170	17.490 21.370 25.280 33.170	1.349 1.709 2.131 3.164
$$									
(2) LNX-6514DS-A1M w/ Mount Pipe (E-CL per photo)	A	From Leg	4.000 0.000 2.000	0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice	4.090 4.490 4.890 5.710	3.300 3.680 4.060 4.870	0.065 0.128 0.202 0.383
(2) LNX-6514DS-A1M w/ Mount Pipe (E-CL per photo)	B	From Leg	4.000 0.000 2.000	0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice	4.090 4.490 4.890 5.710	3.300 3.680 4.060 4.870	0.065 0.128 0.202 0.383
(2) LNX-6514DS-A1M w/ Mount Pipe (E-CL per photo)	C	From Leg	4.000 0.000 2.000	0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice	4.090 4.490 4.890 5.710	3.300 3.680 4.060 4.870	0.065 0.128 0.202 0.383
(2) HBXX-6517DS-A2M w/ Mount Pipe (E-CL per photo)	A	From Leg	4.000 0.000 2.000	0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice	7.970 8.730 9.500 11.110	5.990 6.720 7.470 9.020	0.078 0.141 0.216 0.399
(2) HBXX-6517DS-A2M w/ Mount Pipe (E-CL per photo)	B	From Leg	4.000 0.000 2.000	0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice	7.970 8.730 9.500 11.110	5.990 6.720 7.470 9.020	0.078 0.141 0.216 0.399
(2) HBXX-6517DS-A2M w/ Mount Pipe (E-CL per photo)	C	From Leg	4.000 0.000 2.000	0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice	7.970 8.730 9.500 11.110	5.990 6.720 7.470 9.020	0.078 0.141 0.216 0.399

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
RRH2X60-AWS (E-CL per photo)	A	From Leg	4.000 0.000 2.000	0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.500 3.761 4.029 4.585	1.816 2.052 2.289 2.785	0.060 0.083 0.109 0.173
RRH2X60-AWS (E-CL per photo)	B	From Leg	4.000 0.000 2.000	0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.500 3.761 4.029 4.585	1.816 2.052 2.289 2.785	0.060 0.083 0.109 0.173
RRH2X60-AWS (E-CL per photo)	C	From Leg	4.000 0.000 2.000	0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.500 3.761 4.029 4.585	1.816 2.052 2.289 2.785	0.060 0.083 0.109 0.173
RRH2X60-PCS (E-CL per photo)	A	From Leg	4.000 0.000 2.000	0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.200 2.393 2.593 3.015	1.723 1.901 2.087 2.480	0.055 0.075 0.099 0.155
RRH2X60-PCS (E-CL per photo)	B	From Leg	4.000 0.000 2.000	0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.200 2.393 2.593 3.015	1.723 1.901 2.087 2.480	0.055 0.075 0.099 0.155
RRH2X60-PCS (E-CL per photo)	C	From Leg	4.000 0.000 2.000	0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.200 2.393 2.593 3.015	1.723 1.901 2.087 2.480	0.055 0.075 0.099 0.155
RRH2x60-700 (E-CL per photo)	A	From Leg	4.000 0.000 2.000	0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.500 3.761 4.029 4.585	1.816 2.052 2.289 2.785	0.060 0.083 0.109 0.173
RRH2x60-700 (E-CL per photo)	B	From Leg	4.000 0.000 2.000	0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.500 3.761 4.029 4.585	1.816 2.052 2.289 2.785	0.060 0.083 0.109 0.173
RRH2x60-700 (E-CL per photo)	C	From Leg	4.000 0.000 2.000	0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.500 3.761 4.029 4.585	1.816 2.052 2.289 2.785	0.060 0.083 0.109 0.173
(2) DB-T1-6Z-8AB-0Z (E-CL per photo)	A	From Leg	4.000 0.000 2.000	0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice	4.800 5.070 5.348 5.926	2.000 2.193 2.393 2.815	0.044 0.080 0.120 0.213
Platform Mount [LP 1201-1] (E) *$$*	C	None		0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice	18.380 22.110 25.870 33.470	18.380 22.110 25.870 33.470	2.100 2.652 3.263 4.662
(2) ERICSSON AIR 21 B4A B2P w/ Mount Pipe (E-Relocated from 82')	A	From Leg	4.000 0.000 1.000	0.000	95.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.140 3.450 3.770 4.430	2.590 2.880 3.190 3.840	0.111 0.163 0.224 0.374
(2) ERICSSON AIR 21 B4A B2P w/ Mount Pipe (E-Relocated from 82')	B	From Leg	4.000 0.000 1.000	0.000	95.000	No Ice 1/2" Ice 1" Ice	3.140 3.450 3.770 4.430	2.590 2.880 3.190 3.840	0.111 0.163 0.224 0.374

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" Ice			
(2) ERICSSON AIR 21 B4A B2P w/ Mount Pipe (E-Relocated from 82')	C	From Leg	4.000 0.000 1.000	0.000	95.000	No Ice 1/2" Ice 1" Ice 2" Ice	3.140 3.450 3.770 4.430	2.590 2.880 3.190 3.840	0.111 0.163 0.224 0.374
APXVAARR24_43-U-NA20 (P-Relocated from 82')	A	From Leg	4.000 0.000 1.000	0.000	95.000	No Ice 1/2" Ice 1" Ice 2" Ice	14.670 15.430 16.210 17.810	5.320 5.990 6.680 8.080	0.153 0.266 0.387 0.656
APXVAARR24_43-U-NA20 (P-Relocated from 82')	B	From Leg	4.000 0.000 1.000	0.000	95.000	No Ice 1/2" Ice 1" Ice 2" Ice	14.670 15.430 16.210 17.810	5.320 5.990 6.680 8.080	0.153 0.266 0.387 0.656
APXVAARR24_43-U-NA20 (P-Relocated from 82')	C	From Leg	4.000 0.000 1.000	0.000	95.000	No Ice 1/2" Ice 1" Ice 2" Ice	14.670 15.430 16.210 17.810	5.320 5.990 6.680 8.080	0.153 0.266 0.387 0.656
RADIO 4449 B12/B71 (P-Relocated from 82')	A	From Leg	4.000 0.000 1.000	0.000	95.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.650 1.810 1.978 2.336	1.163 1.301 1.447 1.762	0.074 0.090 0.109 0.155
RADIO 4449 B12/B71 (P-Relocated from 82')	B	From Leg	4.000 0.000 1.000	0.000	95.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.650 1.810 1.978 2.336	1.163 1.301 1.447 1.762	0.074 0.090 0.109 0.155
RADIO 4449 B12/B71 (P-Relocated from 82')	C	From Leg	4.000 0.000 1.000	0.000	95.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.650 1.810 1.978 2.336	1.163 1.301 1.447 1.762	0.074 0.090 0.109 0.155
10' x 2" Mount Pipe (P-Relocated from 82')	A	From Leg	4.000 0.000 0.000	0.000	95.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.375 3.403 4.448 5.911	2.375 3.403 4.448 5.911	0.037 0.054 0.079 0.148
10' x 2" Mount Pipe (P-Relocated from 82')	B	From Leg	4.000 0.000 0.000	0.000	95.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.375 3.403 4.448 5.911	2.375 3.403 4.448 5.911	0.037 0.054 0.079 0.148
10' x 2" Mount Pipe (P-Relocated from 82')	C	From Leg	4.000 0.000 0.000	0.000	95.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.375 3.403 4.448 5.911	2.375 3.403 4.448 5.911	0.037 0.054 0.079 0.148
T-Arm Mount [TA 602-3] (E-Relocated from 82')	C	None		0.000	95.000	No Ice 1/2" Ice 1" Ice 2" Ice	13.400 16.440 19.700 25.860	13.400 16.440 19.700 25.860	0.774 1.004 1.292 2.053
$$									
Site Pro 1 PRK-SFS	A	From Leg	2.000 0.000 0.000	0.000	95.000	No Ice 1/2" Ice 1" Ice 2" Ice	6.320 7.790 9.360 12.810	4.850 6.360 7.940 11.320	0.092 0.139 0.199 0.361
Site Pro 1 PRK-SFS	B	From Leg	2.000 0.000 0.000	0.000	95.000	No Ice 1/2" Ice Ice	6.320 7.790 9.360	4.850 6.360 7.940	0.092 0.139 0.199

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
						1" Ice	12.810	11.320	0.361
						2" Ice			
Site Pro 1 PRK-SFS	C	From Leg	2.000	0.000	95.000	No Ice	6.320	4.850	0.092
			0.000			1/2" Ice	7.790	6.360	0.139
			0.000				9.360	7.940	0.199
						1" Ice	12.810	11.320	0.361
						2" Ice			
***									
Site Pro 1 P2150 Pipe	A	From Leg	4.000	0.000	95.000	No Ice	2.980	0.010	0.046
			0.000			1/2" Ice	4.250	0.050	0.068
			0.000				5.550	0.100	0.981
						1" Ice	8.060	0.240	0.183
						2" Ice			
Site Pro 1 P2150 Pipe	B	From Leg	4.000	0.000	95.000	No Ice	2.980	0.010	0.046
			0.000			1/2" Ice	4.250	0.050	0.068
			0.000				5.550	0.100	0.981
						1" Ice	8.060	0.240	0.183
						2" Ice			
Site Pro 1 P2150 Pipe	C	From Leg	4.000	0.000	95.000	No Ice	2.980	0.010	0.046
			0.000			1/2" Ice	4.250	0.050	0.068
			0.000				5.550	0.100	0.981
						1" Ice	8.060	0.240	0.183
						2" Ice			
****									
Site Pro 1 HRK 14 (NA 510-1)	C	None		0.000	95.000	No Ice	6.360	6.360	0.256
						1/2" Ice	8.520	8.520	0.344
							10.620	10.620	0.459
						1" Ice	14.640	14.640	0.769
						2" Ice			
***									
Site Pro 1 PRK-1245	A	From Leg	2.000	0.000	95.000	No Ice	6.320	4.850	0.092
			0.000			1/2" Ice	7.790	6.360	0.139
			0.000				9.360	7.940	0.199
						1" Ice	12.810	11.320	0.361
						2" Ice			
Site Pro 1 PRK-1245	B	From Leg	2.000	0.000	95.000	No Ice	6.320	4.850	0.092
			0.000			1/2" Ice	7.790	6.360	0.139
			0.000				9.360	7.940	0.199
						1" Ice	12.810	11.320	0.361
						2" Ice			
Site Pro 1 PRK-1245	C	From Leg	2.000	0.000	95.000	No Ice	6.320	4.850	0.092
			0.000			1/2" Ice	7.790	6.360	0.139
			0.000				9.360	7.940	0.199
						1" Ice	12.810	11.320	0.361
						2" Ice			
*****									
Commscope MC-K6MHDX-9-96 (3)	C	None		0.000	85.000	No Ice	15.300	15.300	1.192
						1/2" Ice	20.480	20.480	1.705
							25.660	25.660	2.219
						1" Ice	36.020	36.020	3.245
						2" Ice			
(2) 8' x 2" Mount Pipe (T-Mobile_E)	A	From Leg	4.000	0.000	85.000	No Ice	1.900	1.900	0.029
			0.000			1/2" Ice	2.728	2.728	0.044
			0.000				3.401	3.401	0.063
						1" Ice	4.396	4.396	0.119
						2" Ice			
(2) 8' x 2" Mount Pipe (T-Mobile_E)	B	From Leg	4.000	0.000	85.000	No Ice	1.900	1.900	0.029
			0.000			1/2" Ice	2.728	2.728	0.044
			0.000				3.401	3.401	0.063
						1" Ice	4.396	4.396	0.119
						2" Ice			
(2) 8' x 2" Mount Pipe (T-Mobile_E)	C	From Leg	4.000	0.000	85.000	No Ice	1.900	1.900	0.029
			0.000			1/2" Ice	2.728	2.728	0.044
			0.000				3.401	3.401	0.063
						1" Ice	4.396	4.396	0.119

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			
MX08FRO665-20 w/ Mount Pipe (Proposed)	A	From Leg	4.000 0.000 0.000	0.000	85.000	No Ice 1/2" Ice 1" Ice 2" Ice	8.010 8.520 9.040 10.110	4.230 4.690 5.160 6.120	0.098 0.184 0.281 0.512
MX08FRO665-20 w/ Mount Pipe (Proposed)	B	From Leg	4.000 0.000 0.000	0.000	85.000	No Ice 1/2" Ice 1" Ice 2" Ice	8.010 8.520 9.040 10.110	4.230 4.690 5.160 6.120	0.098 0.184 0.281 0.512
MX08FRO665-20 w/ Mount Pipe (Proposed)	C	From Leg	4.000 0.000 0.000	0.000	85.000	No Ice 1/2" Ice 1" Ice 2" Ice	8.010 8.520 9.040 10.110	4.230 4.690 5.160 6.120	0.098 0.184 0.281 0.512
RDIDC-9181-PF-48 (Proposed)	A	From Leg	4.000 0.000 0.000	0.000	85.000	No Ice 1/2" Ice 1" Ice 2" Ice	2.312 2.502 2.700 3.118	1.293 1.448 1.610 1.957	0.022 0.041 0.063 0.117
TA08025-B604 (Proposed)	B	From Leg	4.000 0.000 0.000	0.000	85.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.964 2.138 2.320 2.705	0.981 1.112 1.250 1.548	0.064 0.081 0.100 0.148
TA08025-B604 (Proposed)	A	From Leg	4.000 0.000 0.000	0.000	85.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.964 2.138 2.320 2.705	0.981 1.112 1.250 1.548	0.064 0.081 0.100 0.148
TA08025-B604 (Proposed)	C	From Leg	4.000 0.000 0.000	0.000	85.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.964 2.138 2.320 2.705	0.981 1.112 1.250 1.548	0.064 0.081 0.100 0.148
TA08025-B605 (Proposed)	A	From Leg	4.000 0.000 0.000	0.000	85.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.964 2.138 2.320 2.705	1.129 1.267 1.411 1.723	0.075 0.093 0.114 0.164
TA08025-B605 (Proposed)	B	From Leg	4.000 0.000 0.000	0.000	85.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.964 2.138 2.320 2.705	1.129 1.267 1.411 1.723	0.075 0.093 0.114 0.164
TA08025-B605 (Proposed)	C	From Leg	4.000 0.000 0.000	0.000	85.000	No Ice 1/2" Ice 1" Ice 2" Ice	1.964 2.138 2.320 2.705	1.129 1.267 1.411 1.723	0.075 0.093 0.114 0.164
*****									

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight K
Andrew VHLP2-18 (E)	B	Paraboloid w/Shroud (HP)	From Leg	4.000 0.000 -1.000	62.000		125.000	2.175	No Ice 1/2" Ice 1" Ice 2" Ice	3.720 4.010 4.300 4.880	0.031 0.050 0.070 0.110
Andrew VHLP2-11 (E)	C	Paraboloid w/Shroud (HP)	From Leg	4.000 0.000 -1.000	90.000		125.000	2.175	No Ice 1/2" Ice 1" Ice 2" Ice	3.720 4.010 4.300 4.880	0.027 0.050 0.070 0.110
$$											

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
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	125 - 121	Pole	Max Tension	26	0.000	0.000	0.000
			Max. Compression	26	-10.385	-0.054	-0.148
			Max. Mx	8	-3.454	-29.944	-0.406
			Max. My	14	-3.433	-0.306	-30.302
			Max. Vy	8	6.897	-29.944	-0.406
			Max. Vx	2	-7.033	0.155	30.291
			Max. Torque	8			-1.267
L2	121 - 117	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-10.825	-0.108	-0.135
			Max. Mx	8	-3.673	-58.099	-0.942
			Max. My	2	-3.652	0.374	58.980
			Max. Vy	8	7.173	-58.099	-0.942
			Max. Vx	2	-7.309	0.374	58.980
			Max. Torque	23			-0.618
L3	117 - 113	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-19.844	-0.164	0.738
			Max. Mx	8	-7.152	-104.850	-1.331
			Max. My	2	-7.129	0.595	106.479
			Max. Vy	8	12.530	-104.850	-1.331
			Max. Vx	14	12.668	-0.972	-106.026
			Max. Torque	22			-1.051
L4	113 - 109	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-20.512	-0.225	0.578
			Max. Mx	8	-7.496	-155.545	-1.926
			Max. My	2	-7.473	0.818	157.666
			Max. Vy	8	12.813	-155.545	-1.926
			Max. Vx	14	12.952	-1.311	-157.291
			Max. Torque	22			-1.051
L5	109 - 105	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-21.193	-0.287	0.412
			Max. Mx	8	-7.861	-207.373	-2.524
			Max. My	2	-7.839	1.039	209.983
			Max. Vy	8	13.098	-207.373	-2.524
			Max. Vx	14	13.236	-1.651	-209.688
			Max. Torque	22			-1.050
L6	105 - 101	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-31.627	-0.354	1.738
			Max. Mx	8	-12.093	-287.789	-2.756
			Max. My	2	-12.049	1.264	292.684
			Max. Vy	8	18.418	-287.789	-2.756
			Max. Vx	14	18.765	-1.999	-291.543
			Max. Torque	22			-1.806
L7	101 - 99.375	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-32.015	-0.381	1.592
			Max. Mx	8	-12.282	-317.814	-3.028
			Max. My	2	-12.241	1.355	323.207
			Max. Vy	8	18.547	-317.814	-3.028
			Max. Vx	14	18.878	-2.140	-322.149
			Max. Torque	22			-1.805
L8	99.375 - 99.125	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-32.092	-0.386	1.569
			Max. Mx	8	-12.347	-322.452	-3.071
			Max. My	2	-12.307	1.369	327.918
			Max. Vy	8	18.556	-322.452	-3.071
			Max. Vx	14	18.884	-2.162	-326.874
			Max. Torque	22			-1.786
L9	99.125 - 95.125	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-33.360	-0.454	1.199
			Max. Mx	8	-13.043	-397.423	-3.744
			Max. My	2	-13.008	1.593	403.997
			Max. Vy	8	18.924	-397.423	-3.744
			Max. Vx	14	19.216	-2.510	-403.163

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Torque	22			-1.784
L10	95.125 - 94.458	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-43.894	-0.467	1.135
			Max. Mx	8	-16.520	-414.788	-3.857
			Max. My	2	-16.485	1.630	421.532
			Max. Vy	8	23.934	-414.788	-3.857
			Max. Vx	14	24.222	-2.569	-420.735
			Max. Torque	22			-1.743
L11	94.458 - 94.208	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-43.992	-0.471	1.111
			Max. Mx	8	-16.582	-420.775	-3.900
			Max. My	2	-16.547	1.644	427.582
			Max. Vy	8	23.955	-420.775	-3.900
			Max. Vx	14	24.240	-2.591	-426.799
			Max. Torque	22			-1.738
L12	94.208 - 90.208	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-45.567	-0.545	0.719
			Max. Mx	8	-17.494	-517.384	-4.585
			Max. My	2	-17.463	1.870	525.121
			Max. Vy	8	24.344	-517.384	-4.585
			Max. Vx	14	24.594	-2.946	-524.559
			Max. Torque	22			-1.735
L13	90.208 - 89	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-46.076	-0.568	0.598
			Max. Mx	8	-17.773	-546.866	-4.793
			Max. My	2	-17.744	1.938	554.852
			Max. Vy	8	24.468	-546.866	-4.793
			Max. Vx	14	24.701	-3.053	-554.358
			Max. Torque	22			-1.701
L14	89 - 85.04	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-46.095	-0.569	0.593
			Max. Mx	8	-17.794	-547.919	-4.800
			Max. My	2	-17.765	1.940	555.912
			Max. Vy	8	24.470	-547.919	-4.800
			Max. Vx	14	24.702	-3.057	-555.421
			Max. Torque	22			-1.692
L15	85.04 - 84.04	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-54.524	-0.664	0.540
			Max. Mx	8	-21.910	-672.089	-5.544
			Max. My	2	-21.883	2.218	681.110
			Max. Vy	8	27.556	-672.089	-5.544
			Max. Vx	14	27.778	-3.497	-680.637
			Max. Torque	22			-1.922
L16	84.04 - 80.04	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-56.075	-0.743	0.087
			Max. Mx	8	-22.817	-783.059	-6.256
			Max. My	2	-22.798	2.445	792.672
			Max. Vy	8	27.937	-783.059	-6.256
			Max. Vx	14	28.090	-3.859	-792.456
			Max. Torque	22			-1.922
L17	80.04 - 76.04	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-57.639	-0.824	-0.378
			Max. Mx	8	-23.745	-895.532	-6.972
			Max. My	14	-23.730	-4.221	-905.512
			Max. Vy	8	28.309	-895.532	-6.972
			Max. Vx	14	28.398	-4.221	-905.512
			Max. Torque	22			-1.921
L18	76.04 - 73.583	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-58.556	-0.874	-0.668
			Max. Mx	8	-24.324	-965.335	-7.413
			Max. My	14	-24.312	-4.444	-975.562
			Max. Vy	8	28.524	-965.335	-7.413

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	14	28.587	-4.444	-975.562
			Max. Torque	22			-1.919
L19	73.583 - 73.333	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-58.660	-0.880	-0.698
			Max. Mx	8	-24.409	-972.467	-7.459
			Max. My	14	-24.398	-4.466	-982.716
			Max. Vy	8	28.534	-972.467	-7.459
			Max. Vx	14	28.595	-4.466	-982.716
			Max. Torque	22			-1.919
L20	73.333 - 73	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-58.797	-0.886	-0.738
			Max. Mx	8	-24.500	-981.975	-7.519
			Max. My	14	-24.489	-4.497	-992.253
			Max. Vy	8	28.566	-981.975	-7.519
			Max. Vx	14	28.623	-4.497	-992.253
			Max. Torque	22			-1.919
L21	73 - 72.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-58.882	-0.892	-0.767
			Max. Mx	8	-24.554	-989.120	-7.564
			Max. My	14	-24.543	-4.519	-999.418
			Max. Vy	8	28.585	-989.120	-7.564
			Max. Vx	14	28.641	-4.519	-999.418
			Max. Torque	22			-1.919
L22	72.75 - 68.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-60.178	-0.974	-1.250
			Max. Mx	8	-25.419	-1104.063	-8.285
			Max. My	14	-25.412	-4.881	-1114.620
			Max. Vy	8	28.893	-1104.063	-8.285
			Max. Vx	14	28.915	-4.881	-1114.620
			Max. Torque	22			-1.919
L23	68.75 - 64.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-61.440	-1.058	-1.742
			Max. Mx	8	-26.319	-1220.166	-9.009
			Max. My	14	-26.316	-5.243	-1230.855
			Max. Vy	8	29.179	-1220.166	-9.009
			Max. Vx	14	29.170	-5.243	-1230.855
			Max. Torque	22			-1.917
L24	64.75 - 63	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-62.048	-1.094	-1.960
			Max. Mx	8	-26.702	-1271.325	-9.325
			Max. My	14	-26.700	-5.401	-1282.027
			Max. Vy	8	29.325	-1271.325	-9.325
			Max. Vx	14	29.294	-5.401	-1282.027
			Max. Torque	22			-1.916
L25	63 - 62.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-62.153	-1.099	-1.991
			Max. Mx	8	-26.806	-1278.653	-9.371
			Max. My	14	-26.806	-5.424	-1289.354
			Max. Vy	8	29.318	-1278.653	-9.371
			Max. Vx	14	29.285	-5.424	-1289.354
			Max. Torque	22			-1.915
L26	62.75 - 58.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-63.887	-1.184	-2.496
			Max. Mx	8	-27.950	-1396.706	-10.097
			Max. My	14	-27.954	-5.784	-1407.257
			Max. Vy	8	29.709	-1396.706	-10.097
			Max. Vx	14	29.612	-5.784	-1407.257
			Max. Torque	22			-1.915
L27	58.75 - 57.233	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-64.509	-1.216	-2.689
			Max. Mx	8	-28.327	-1441.872	-10.373
			Max. My	14	-28.332	-5.921	-1452.294
			Max. Vy	8	29.859	-1441.872	-10.373
			Max. Vx	14	29.731	-5.921	-1452.294

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Torque	22			-1.914
L28	57.233 - 56.983	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-64.611	-1.221	-2.721
			Max. Mx	8	-28.413	-1449.336	-10.418
			Max. My	14	-28.419	-5.944	-1459.732
			Max. Vy	8	29.861	-1449.336	-10.418
			Max. Vx	14	29.727	-5.944	-1459.732
			Max. Torque	22			-1.914
L29	56.983 - 52.983	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-66.195	-1.307	-3.237
			Max. Mx	8	-29.437	-1569.484	-11.147
			Max. My	14	-29.448	-6.304	-1579.317
			Max. Vy	8	30.219	-1569.484	-11.147
			Max. Vx	14	30.014	-6.304	-1579.317
			Max. Torque	22			-1.914
L30	52.983 - 48.983	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-67.732	-1.393	-3.760
			Max. Mx	8	-30.494	-1690.965	-11.878
			Max. My	14	-30.507	-6.664	-1699.981
			Max. Vy	8	30.541	-1690.965	-11.878
			Max. Vx	14	30.279	-6.664	-1699.981
			Max. Torque	22			-1.913
L31	48.983 - 40.457	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-69.063	-1.469	-4.218
			Max. Mx	8	-31.414	-1796.537	-12.509
			Max. My	14	-31.428	-6.974	-1804.680
			Max. Vy	8	30.807	-1796.537	-12.509
			Max. Vx	14	30.502	-6.974	-1804.680
			Max. Torque	22			-1.912
L32	40.457 - 39.457	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-72.864	-1.601	-5.029
			Max. Mx	8	-34.093	-1985.819	-13.623
			Max. My	14	-34.110	-7.520	-1992.051
			Max. Vy	8	31.422	-1985.819	-13.623
			Max. Vx	14	31.039	-7.520	-1992.051
			Max. Torque	22			-1.911
L33	39.457 - 37.833	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-73.545	-1.637	-5.247
			Max. Mx	8	-34.568	-2036.933	-13.921
			Max. My	14	-34.585	-7.665	-2042.578
			Max. Vy	8	31.558	-2036.933	-13.921
			Max. Vx	14	31.155	-7.665	-2042.578
			Max. Torque	22			-1.910
L34	37.833 - 37.583	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-73.650	-1.642	-5.280
			Max. Mx	8	-34.668	-2044.820	-13.967
			Max. My	14	-34.684	-7.688	-2050.371
			Max. Vy	8	31.550	-2044.820	-13.967
			Max. Vx	14	31.145	-7.688	-2050.371
			Max. Torque	22			-1.910
L35	37.583 - 33.583	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-75.333	-1.730	-5.819
			Max. Mx	8	-35.866	-2171.617	-14.703
			Max. My	14	-35.883	-8.046	-2175.585
			Max. Vy	8	31.855	-2171.617	-14.703
			Max. Vx	14	31.406	-8.046	-2175.585
			Max. Torque	22			-1.910
L36	33.583 - 29.583	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-77.027	-1.813	-6.340
			Max. Mx	8	-37.093	-2299.551	-15.438

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. My	14	-37.110	-8.403	-2301.768
			Max. Vy	8	32.133	-2299.551	-15.438
			Max. Vx	14	31.643	-8.403	-2301.768
			Max. Torque	22			-1.909
L37	29.583 - 25.583	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-78.732	-1.894	-6.859
			Max. Mx	8	-38.339	-2428.560	-16.175
			Max. My	14	-38.354	-8.760	-2428.874
			Max. Vy	8	32.394	-2428.560	-16.175
			Max. Vx	14	31.867	-8.760	-2428.874
			Max. Torque	22			-1.909
L38	25.583 - 21.583	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-80.445	-1.976	-7.382
			Max. Mx	8	-39.601	-2558.577	-16.911
			Max. My	14	-39.614	-9.115	-2556.849
			Max. Vy	8	32.638	-2558.577	-16.911
			Max. Vx	14	32.078	-9.115	-2556.849
			Max. Torque	22			-1.908
L39	21.583 - 17.583	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-82.165	-2.060	-7.910
			Max. Mx	8	-40.877	-2689.536	-17.647
			Max. My	14	-40.889	-9.469	-2685.643
			Max. Vy	8	32.865	-2689.536	-17.647
			Max. Vx	14	32.275	-9.469	-2685.643
			Max. Torque	22			-1.908
L40	17.583 - 13.583	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-83.929	-2.143	-8.438
			Max. Mx	8	-42.170	-2821.368	-18.383
			Max. My	14	-42.179	-9.821	-2815.188
			Max. Vy	8	33.076	-2821.368	-18.383
			Max. Vx	14	32.453	-9.821	-2815.188
			Max. Torque	22			-1.907
L41	13.583 - 12.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-84.540	-2.171	-8.614
			Max. Mx	8	-42.599	-2865.490	-18.628
			Max. My	14	-42.607	-9.938	-2858.516
			Max. Vy	8	33.156	-2865.490	-18.628
			Max. Vx	14	32.519	-9.938	-2858.516
			Max. Torque	22			-1.907
L42	12.25 - 12	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-84.680	-2.176	-8.648
			Max. Mx	8	-42.724	-2873.776	-18.674
			Max. My	14	-42.732	-9.960	-2866.651
			Max. Vy	8	33.146	-2873.776	-18.674
			Max. Vx	14	32.506	-9.960	-2866.651
			Max. Torque	22			-1.907
L43	12 - 8	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-86.902	-2.260	-9.174
			Max. Mx	8	-44.391	-3006.893	-19.409
			Max. My	14	-44.397	-10.311	-2997.270
			Max. Vy	8	33.415	-3006.893	-19.409
			Max. Vx	14	32.734	-10.311	-2997.270
			Max. Torque	22			-1.907
L44	8 - 4	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-89.106	-2.343	-9.692
			Max. Mx	8	-46.084	-3141.025	-20.145
			Max. My	14	-46.088	-10.660	-3128.743
			Max. Vy	8	33.667	-3141.025	-20.145
			Max. Vx	14	32.947	-10.660	-3128.743
			Max. Torque	22			-1.907
L45	4 - 0	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-91.248	-2.423	-10.183
			Max. Mx	8	-47.793	-3276.142	-20.880
			Max. My	14	-47.794	-11.008	-3261.060

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	8	33.909	-3276.142	-20.880
			Max. Vx	4	-33.157	-1794.584	3166.193
			Max. Torque	22			-1.907

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	34	91.248	4.333	-7.614
	Max. H_x	21	35.856	33.879	0.051
	Max. H_z	5	35.856	-18.832	33.137
	Max. M_x	2	3254.731	0.059	33.135
	Max. M_z	8	3276.142	-33.888	-0.135
	Max. Torsion	8	1.546	-33.888	-0.135
	Min. Vert	7	35.856	-28.615	16.815
	Min. H_x	8	47.808	-33.888	-0.135
	Min. H_z	14	47.808	-0.076	-33.135
	Min. M_x	14	-3261.060	-0.076	-33.135
	Min. M_z	20	-3272.809	33.879	0.051
	Min. Torsion	22	-1.907	29.762	17.519

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	39.840	0.000	0.000	2.569	-0.861	0.000
1.2 Dead+1.0 Wind 0 deg - No Ice	47.808	-0.059	-33.135	-3254.731	6.653	0.121
0.9 Dead+1.0 Wind 0 deg - No Ice	35.856	-0.059	-33.135	-3213.497	6.820	0.121
1.2 Dead+1.0 Wind 30 deg - No Ice	47.808	18.832	-33.137	-3166.193	-1794.584	-0.354
0.9 Dead+1.0 Wind 30 deg - No Ice	35.856	18.832	-33.137	-3126.851	-1771.626	-0.342
1.2 Dead+1.0 Wind 60 deg - No Ice	47.808	28.615	-16.815	-1651.346	-2805.177	-1.520
0.9 Dead+1.0 Wind 60 deg - No Ice	35.856	28.615	-16.815	-1630.820	-2768.787	-1.501
1.2 Dead+1.0 Wind 90 deg - No Ice	47.808	33.888	0.135	20.880	-3276.142	-1.546
0.9 Dead+1.0 Wind 90 deg - No Ice	35.856	33.888	0.135	19.796	-3233.891	-1.523
1.2 Dead+1.0 Wind 120 deg - No Ice	47.808	29.811	17.515	1720.717	-2912.258	-1.390
0.9 Dead+1.0 Wind 120 deg - No Ice	35.856	29.811	17.515	1697.835	-2874.662	-1.370
1.2 Dead+1.0 Wind 150 deg - No Ice	47.808	16.769	29.398	2874.025	-1634.813	-0.841
0.9 Dead+1.0 Wind 150 deg - No Ice	35.856	16.769	29.398	2836.285	-1613.541	-0.829
1.2 Dead+1.0 Wind 180 deg - No Ice	47.808	0.076	33.135	3261.060	-11.008	0.288
0.9 Dead+1.0 Wind 180 deg - No Ice	35.856	0.076	33.135	3218.200	-10.577	0.288
1.2 Dead+1.0 Wind 210 deg - No Ice	47.808	-18.785	33.120	3170.302	1786.267	0.717
0.9 Dead+1.0 Wind 210 deg - No Ice	35.856	-18.785	33.120	3129.363	1763.971	0.705
1.2 Dead+1.0 Wind 240 deg	47.808	-28.646	16.732	1646.871	2807.070	1.433

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 0.9 Dead+1.0 Wind 240 deg - No Ice	35.856	-28.646	16.732	1624.866	2771.190	1.413
1.2 Dead+1.0 Wind 270 deg - No Ice	47.808	-33.879	-0.051	-3.528	3272.809	1.628
0.9 Dead+1.0 Wind 270 deg - No Ice	35.856	-33.879	-0.051	-4.249	3231.138	1.605
1.2 Dead+1.0 Wind 300 deg - No Ice	47.808	-29.762	-17.519	-1714.878	2903.677	1.907
0.9 Dead+1.0 Wind 300 deg - No Ice	35.856	-29.762	-17.519	-1693.625	2866.730	1.887
1.2 Dead+1.0 Wind 330 deg - No Ice	47.808	-16.755	-29.405	-2868.598	1630.758	1.301
0.9 Dead+1.0 Wind 330 deg - No Ice	35.856	-16.755	-29.405	-2832.475	1610.070	1.290
1.2 Dead+1.0 Ice+1.0 Temp	91.248	0.000	0.000	10.183	-2.423	-0.000
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	91.248	-0.012	-8.286	-838.585	-0.810	0.022
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	91.248	4.342	-7.617	-768.500	-444.770	-0.259
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	91.248	7.099	-4.153	-415.650	-727.828	-0.729
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	91.248	8.213	0.026	14.073	-842.192	-0.797
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	91.248	7.218	4.224	444.068	-740.888	-0.697
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	91.248	4.110	7.182	746.368	-422.762	-0.414
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	91.248	0.015	8.286	859.196	-4.562	0.056
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	91.248	-4.333	7.614	788.636	438.550	0.329
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	91.248	-7.105	4.137	433.969	723.779	0.711
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	91.248	-8.211	-0.010	8.887	837.036	0.816
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	91.248	-7.209	-4.225	-423.553	734.615	0.801
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	91.248	-4.107	-7.183	-725.947	417.456	0.503
Dead+Wind 0 deg - Service	39.840	-0.013	-7.193	-699.850	0.767	0.025
Dead+Wind 30 deg - Service	39.840	4.088	-7.193	-681.047	-387.794	-0.083
Dead+Wind 60 deg - Service	39.840	6.211	-3.650	-354.116	-605.536	-0.343
Dead+Wind 90 deg - Service	39.840	7.356	0.029	6.449	-707.107	-0.346
Dead+Wind 120 deg - Service	39.840	6.471	3.802	373.028	-628.713	-0.313
Dead+Wind 150 deg - Service	39.840	3.640	6.381	621.702	-353.198	-0.190
Dead+Wind 180 deg - Service	39.840	0.016	7.193	705.128	-3.036	0.062
Dead+Wind 210 deg - Service	39.840	-4.077	7.189	685.839	384.671	0.162
Dead+Wind 240 deg - Service	39.840	-6.218	3.632	357.057	604.614	0.324
Dead+Wind 270 deg - Service	39.840	-7.354	-0.011	1.192	705.054	0.368
Dead+Wind 300 deg - Service	39.840	-6.460	-3.803	-367.861	625.522	0.429
Dead+Wind 330 deg - Service	39.840	-3.637	-6.383	-616.621	350.987	0.290

Solution Summary

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
1	0.000	-39.840	0.000	0.000	39.840	0.000	0.000%
2	-0.059	-47.808	-33.135	0.059	47.808	33.135	0.000%
3	-0.059	-35.856	-33.135	0.059	35.856	33.135	0.000%
4	18.832	-47.808	-33.137	-18.832	47.808	33.137	0.000%
5	18.832	-35.856	-33.137	-18.832	35.856	33.137	0.000%
6	28.615	-47.808	-16.815	-28.615	47.808	16.815	0.000%
7	28.615	-35.856	-16.815	-28.615	35.856	16.815	0.000%
8	33.888	-47.808	0.135	-33.888	47.808	-0.135	0.000%
9	33.888	-35.856	0.135	-33.888	35.856	-0.135	0.000%
10	29.811	-47.808	17.515	-29.811	47.808	-17.515	0.000%
11	29.811	-35.856	17.515	-29.811	35.856	-17.515	0.000%
12	16.769	-47.808	29.398	-16.769	47.808	-29.398	0.000%
13	16.769	-35.856	29.398	-16.769	35.856	-29.398	0.000%
14	0.076	-47.808	33.135	-0.076	47.808	-33.135	0.000%
15	0.076	-35.856	33.135	-0.076	35.856	-33.135	0.000%
16	-18.785	-47.808	33.120	18.785	47.808	-33.120	0.000%
17	-18.785	-35.856	33.120	18.785	35.856	-33.120	0.000%
18	-28.646	-47.808	16.732	28.646	47.808	-16.732	0.000%
19	-28.646	-35.856	16.732	28.646	35.856	-16.732	0.000%
20	-33.879	-47.808	-0.051	33.879	47.808	0.051	0.000%
21	-33.879	-35.856	-0.051	33.879	35.856	0.051	0.000%
22	-29.762	-47.808	-17.519	29.762	47.808	17.519	0.000%
23	-29.762	-35.856	-17.519	29.762	35.856	17.519	0.000%
24	-16.755	-47.808	-29.405	16.755	47.808	29.405	0.000%
25	-16.755	-35.856	-29.405	16.755	35.856	29.405	0.000%
26	0.000	-91.248	0.000	-0.000	91.248	-0.000	0.000%
27	-0.012	-91.248	-8.286	0.012	91.248	8.286	0.000%
28	4.342	-91.248	-7.617	-4.342	91.248	7.617	0.000%
29	7.099	-91.248	-4.153	-7.099	91.248	4.153	0.000%
30	8.213	-91.248	0.026	-8.213	91.248	-0.026	0.000%
31	7.218	-91.248	4.224	-7.218	91.248	-4.224	0.000%
32	4.110	-91.248	7.182	-4.110	91.248	-7.182	0.000%
33	0.015	-91.248	8.286	-0.015	91.248	-8.286	0.000%
34	-4.333	-91.248	7.614	4.333	91.248	-7.614	0.000%
35	-7.105	-91.248	4.137	7.105	91.248	-4.137	0.000%
36	-8.211	-91.248	-0.010	8.211	91.248	0.010	0.000%
37	-7.209	-91.248	-4.225	7.209	91.248	4.225	0.000%
38	-4.107	-91.248	-7.183	4.107	91.248	7.183	0.000%
39	-0.013	-39.840	-7.193	0.013	39.840	7.193	0.000%
40	4.088	-39.840	-7.193	-4.088	39.840	7.193	0.000%
41	6.211	-39.840	-3.650	-6.211	39.840	3.650	0.000%
42	7.356	-39.840	0.029	-7.356	39.840	-0.029	0.000%
43	6.471	-39.840	3.802	-6.471	39.840	-3.802	0.000%
44	3.640	-39.840	6.381	-3.640	39.840	-6.381	0.000%
45	0.016	-39.840	7.193	-0.016	39.840	-7.193	0.000%
46	-4.077	-39.840	7.189	4.077	39.840	-7.189	0.000%
47	-6.218	-39.840	3.632	6.218	39.840	-3.632	0.000%
48	-7.354	-39.840	-0.011	7.354	39.840	0.011	0.000%
49	-6.460	-39.840	-3.803	6.460	39.840	3.803	0.000%
50	-3.637	-39.840	-6.383	3.637	39.840	6.383	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	6	0.00000001	0.00021566
3	Yes	6	0.00000001	0.00006159
4	Yes	8	0.00000001	0.00015108
5	Yes	7	0.00000001	0.00057911
6	Yes	8	0.00000001	0.00014455
7	Yes	7	0.00000001	0.00057271
8	Yes	6	0.00000001	0.00091167
9	Yes	6	0.00000001	0.00031019
10	Yes	8	0.00000001	0.00014313

11	Yes	7	0.00000001	0.00055681
12	Yes	8	0.00000001	0.00014422
13	Yes	7	0.00000001	0.00056780
14	Yes	6	0.00000001	0.00020927
15	Yes	6	0.00000001	0.00005260
16	Yes	8	0.00000001	0.00015354
17	Yes	7	0.00000001	0.00059069
18	Yes	8	0.00000001	0.00013796
19	Yes	7	0.00000001	0.00054274
20	Yes	7	0.00000001	0.00011516
21	Yes	6	0.00000001	0.00065723
22	Yes	8	0.00000001	0.00015088
23	Yes	7	0.00000001	0.00058861
24	Yes	8	0.00000001	0.00013940
25	Yes	7	0.00000001	0.00054513
26	Yes	6	0.00000001	0.00019250
27	Yes	8	0.00000001	0.00049375
28	Yes	8	0.00000001	0.00087816
29	Yes	8	0.00000001	0.00082604
30	Yes	8	0.00000001	0.00049926
31	Yes	8	0.00000001	0.00083829
32	Yes	8	0.00000001	0.00083902
33	Yes	8	0.00000001	0.00050101
34	Yes	8	0.00000001	0.00089820
35	Yes	8	0.00000001	0.00080412
36	Yes	8	0.00000001	0.00049694
37	Yes	8	0.00000001	0.00084602
38	Yes	8	0.00000001	0.00079568
39	Yes	5	0.00000001	0.00062745
40	Yes	6	0.00000001	0.00069815
41	Yes	6	0.00000001	0.00060447
42	Yes	6	0.00000001	0.00008107
43	Yes	6	0.00000001	0.00058870
44	Yes	6	0.00000001	0.00060011
45	Yes	5	0.00000001	0.00065006
46	Yes	6	0.00000001	0.00073059
47	Yes	6	0.00000001	0.00052894
48	Yes	6	0.00000001	0.00009510
49	Yes	6	0.00000001	0.00066484
50	Yes	6	0.00000001	0.00053571

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	125 - 121 (1)	TP19.36x18.5x0.188	4.000	0.000	0.0	11.410	-3.426	667.482	0.005
L2	121 - 117 (2)	TP20.22x19.36x0.188	4.000	0.000	0.0	11.922	-3.645	697.418	0.005
L3	117 - 113 (3)	TP21.08x20.22x0.188	4.000	0.000	0.0	12.433	-7.117	727.354	0.010
L4	113 - 109 (4)	TP21.939x21.08x0.188	4.000	0.000	0.0	12.945	-7.324	757.290	0.010
L5	109 - 105 (5)	TP22.799x21.939x0.188	4.000	0.000	0.0	13.457	-7.652	787.226	0.010
L6	105 - 101 (6)	TP23.659x22.799x0.188	4.000	0.000	0.0	13.969	-11.788	817.161	0.014
L7	101 - 99.375 (7)	TP24.008x23.659x0.188	1.625	0.000	0.0	14.177	-11.966	829.323	0.014
L8	99.375 - 99.125 (8)	TP24.062x24.008x0.425	0.250	0.000	0.0	31.885	-12.031	1865.300	0.006
L9	99.125 - 95.125 (9)	TP24.922x24.062x0.413	4.000	0.000	0.0	32.090	-12.698	1877.250	0.007
L10	95.125 - 94.458 (10)	TP25.065x24.922x0.413	0.667	0.000	0.0	32.278	-16.126	1888.230	0.009
L11	94.458 - 94.208 (11)	TP25.119x25.065x0.6	0.250	0.000	0.0	46.694	-16.187	2731.620	0.006
L12	94.208 -	TP25.979x25.119x0.575	4.000	0.000	0.0	46.364	-17.070	2712.280	0.006

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
	90.208 (12)								
L13	90.208 - 89 (13)	TP26.239x25.979x0.575	1.208	0.000	0.0	46.838	-17.341	2740.000	0.006
L14	89 - 85.04 (14)	TP27.09x26.239x0.663	3.960	0.000	0.0	53.800	-17.363	3147.330	0.006
L15	85.04 - 84.04 (15)	TP26.918x25.873x0.5	4.917	0.000	0.0	41.925	-21.418	2452.630	0.009
L16	84.04 - 80.04 (16)	TP27.768x26.918x0.488	4.000	0.000	0.0	42.212	-22.312	2469.390	0.009
L17	80.04 - 76.04 (17)	TP28.618x27.768x0.481	4.000	0.000	0.0	42.979	-23.232	2514.250	0.009
L18	76.04 - 73.583 (18)	TP29.14x28.618x0.475	2.457	0.000	0.0	43.217	-23.821	2528.200	0.009
L19	73.583 - 73.333 (19)	TP29.193x29.14x0.613	0.250	0.000	0.0	55.563	-23.910	3250.450	0.007
L20	73.333 - 73 (20)	TP29.264x29.193x0.613	0.333	0.000	0.0	55.701	-24.001	3258.500	0.007
L21	73 - 72.75 (21)	TP29.317x29.264x0.375	0.250	0.000	0.0	34.449	-24.057	2015.240	0.012
L22	72.75 - 68.75 (22)	TP30.167x29.317x0.375	4.000	0.000	0.0	35.460	-24.944	2074.430	0.012
L23	68.75 - 64.75 (23)	TP31.017x30.167x0.369	4.000	0.000	0.0	35.871	-25.873	2098.480	0.012
L24	64.75 - 63 (24)	TP31.389x31.017x0.369	1.750	0.000	0.0	36.307	-26.265	2123.950	0.012
L25	63 - 62.75 (25)	TP31.442x31.389x0.575	0.250	0.000	0.0	56.334	-26.378	3295.570	0.008
L26	62.75 - 58.75 (26)	TP32.292x31.442x0.575	4.000	0.000	0.0	57.886	-27.538	3386.330	0.008
L27	58.75 - 57.233 (27)	TP32.615x32.292x0.45	1.517	0.000	0.0	45.941	-27.914	2687.550	0.010
L28	57.233 - 56.983 (28)	TP32.668x32.615x0.45	0.250	0.000	0.0	46.017	-28.006	2691.990	0.010
L29	56.983 - 52.983 (29)	TP33.518x32.668x0.45	4.000	0.000	0.0	47.231	-29.038	2763.020	0.011
L30	52.983 - 48.983 (30)	TP34.368x33.518x0.438	4.000	0.000	0.0	47.117	-30.125	2756.340	0.011
L31	48.983 - 40.457 (31)	TP36.18x34.368x0.438	8.526	0.000	0.0	48.133	-31.071	2815.780	0.011
L32	40.457 - 39.457 (32)	TP35.889x34.6x0.5	6.083	0.000	0.0	56.162	-33.776	3285.480	0.010
L33	39.457 - 37.833 (33)	TP36.233x35.889x0.494	1.624	0.000	0.0	56.009	-34.261	3276.530	0.010
L34	37.833 - 37.583 (34)	TP36.286x36.233x0.494	0.250	0.000	0.0	56.092	-34.368	3281.390	0.010
L35	37.583 - 33.583 (35)	TP37.134x36.286x0.488	4.000	0.000	0.0	56.703	-35.594	3317.150	0.011
L36	33.583 - 29.583 (36)	TP37.981x37.134x0.488	4.000	0.000	0.0	58.015	-36.854	3393.870	0.011
L37	29.583 - 25.583 (37)	TP38.829x37.981x0.475	4.000	0.000	0.0	57.824	-38.133	3382.710	0.011
L38	25.583 - 21.583 (38)	TP39.676x38.829x0.475	4.000	0.000	0.0	59.102	-39.429	3457.470	0.011
L39	21.583 - 17.583 (39)	TP40.524x39.676x0.475	4.000	0.000	0.0	60.380	-40.740	3532.230	0.012
L40	17.583 - 13.583 (40)	TP41.372x40.524x0.469	4.000	0.000	0.0	60.856	-42.067	3560.070	0.012
L41	13.583 - 12.25 (41)	TP41.654x41.372x0.463	1.333	0.000	0.0	60.468	-42.506	3537.400	0.012
L42	12.25 - 12 (42)	TP41.707x41.654x0.6	0.250	0.000	0.0	78.284	-42.638	4579.640	0.009
L43	12 - 8 (43)	TP42.555x41.707x0.588	4.000	0.000	0.0	78.257	-44.331	4578.060	0.010
L44	8 - 4 (44)	TP43.402x42.555x0.588	4.000	0.000	0.0	79.838	-46.052	4670.520	0.010
L45	4 - 0 (45)	TP44.25x43.402x0.575	4.000	0.000	0.0	79.709	-47.790	4662.980	0.010

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	125 - 121 (1)	TP19.36x18.5x0.188	30.350	327.553	0.093	0.000	327.553	0.000
L2	121 - 117 (2)	TP20.22x19.36x0.188	59.064	353.553	0.167	0.000	353.553	0.000
L3	117 - 113 (3)	TP21.08x20.22x0.188	106.499	380.144	0.280	0.000	380.144	0.000
L4	113 - 109 (4)	TP21.939x21.08x0.188	158.412	407.281	0.389	0.000	407.281	0.000
L5	109 - 105 (5)	TP22.799x21.939x0.188	212.752	434.917	0.489	0.000	434.917	0.000
L6	105 - 101 (6)	TP23.659x22.799x0.188	298.498	463.005	0.645	0.000	463.005	0.000
L7	101 - 99.375 (7)	TP24.008x23.659x0.188	330.713	474.534	0.697	0.000	474.534	0.000
L8	99.375 - 99.125 (8)	TP24.062x24.008x0.425	335.706	1139.992	0.294	0.000	1139.992	0.000
L9	99.125 - 95.125 (9)	TP24.922x24.062x0.413	417.017	1190.983	0.350	0.000	1190.983	0.000
L10	95.125 - 94.458 (10)	TP25.065x24.922x0.413	435.577	1205.075	0.361	0.000	1205.075	0.000
L11	94.458 - 94.208 (11)	TP25.119x25.065x0.6	442.022	1720.775	0.257	0.000	1720.775	0.000
L12	94.208 - 90.208 (12)	TP25.979x25.119x0.575	546.651	1773.425	0.308	0.000	1773.425	0.000
L13	90.208 - 89 (13)	TP26.239x25.979x0.575	578.809	1810.275	0.320	0.000	1810.275	0.000
L14	89 - 85.04 (14)	TP27.09x26.239x0.663	579.959	2066.000	0.281	0.000	2066.000	0.000
L15	85.04 - 84.04 (15)	TP26.918x25.873x0.5	716.444	1673.725	0.428	0.000	1673.725	0.000
L16	84.04 - 80.04 (16)	TP27.768x26.918x0.488	838.842	1741.992	0.482	0.000	1741.992	0.000
L17	80.04 - 76.04 (17)	TP28.618x27.768x0.481	963.892	1830.683	0.527	0.000	1830.683	0.000
L18	76.04 - 73.583 (18)	TP29.14x28.618x0.475	1041.808	1876.400	0.555	0.000	1876.400	0.000
L19	73.583 - 73.333 (19)	TP29.193x29.14x0.613	1049.767	2393.900	0.439	0.000	2393.900	0.000
L20	73.333 - 73 (20)	TP29.264x29.193x0.613	1060.383	2405.892	0.441	0.000	2405.892	0.000
L21	73 - 72.75 (21)	TP29.317x29.264x0.375	1068.358	1515.525	0.705	0.000	1515.525	0.000
L22	72.75 - 68.75 (22)	TP30.167x29.317x0.375	1196.675	1606.442	0.745	0.000	1606.442	0.000
L23	68.75 - 64.75 (23)	TP31.017x30.167x0.369	1326.308	1672.700	0.793	0.000	1672.700	0.000
L24	64.75 - 63 (24)	TP31.389x31.017x0.369	1383.425	1713.783	0.807	0.000	1713.783	0.000
L25	63 - 62.75 (25)	TP31.442x31.389x0.575	1391.608	2628.517	0.529	0.000	2628.517	0.000
L26	62.75 - 58.75 (26)	TP32.292x31.442x0.575	1523.408	2776.650	0.549	0.000	2776.650	0.000
L27	58.75 - 57.233 (27)	TP32.615x32.292x0.45	1573.900	2243.883	0.701	0.000	2243.883	0.000
L28	57.233 - 56.983 (28)	TP32.668x32.615x0.45	1582.258	2251.350	0.703	0.000	2251.350	0.000
L29	56.983 - 52.983 (29)	TP33.518x32.668x0.45	1717.375	2372.567	0.724	0.000	2372.567	0.000
L30	52.983 - 48.983 (30)	TP34.368x33.518x0.438	1854.492	2430.275	0.763	0.000	2430.275	0.000
L31	48.983 - 40.457 (31)	TP36.18x34.368x0.438	1973.617	2536.908	0.778	0.000	2536.908	0.000
L32	40.457 - 39.457 (32)	TP35.889x34.6x0.5	2187.108	3017.642	0.725	0.000	3017.642	0.000
L33	39.457 - 37.833 (33)	TP36.233x35.889x0.494	2244.742	3040.158	0.738	0.000	3040.158	0.000
L34	37.833 - 37.583 (34)	TP36.286x36.233x0.494	2253.633	3049.242	0.739	0.000	3049.242	0.000
L35	37.583 - 33.583 (35)	TP37.134x36.286x0.488	2396.558	3157.542	0.759	0.000	3157.542	0.000
L36	33.583 - 29.583 (36)	TP37.981x37.134x0.488	2540.717	3306.275	0.768	0.000	3306.275	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 $\frac{M_{uy}}{\phi M_{ny}}$
L37	29.583 - 25.583 (37)	TP38.829x37.981x0.475	2686.033	3373.058	0.796	0.000	3373.058	0.000
L38	25.583 - 21.583 (38)	TP39.676x38.829x0.475	2832.433	3524.725	0.804	0.000	3524.725	0.000
L39	21.583 - 17.583 (39)	TP40.524x39.676x0.475	2979.850	3679.733	0.810	0.000	3679.733	0.000
L40	17.583 - 13.583 (40)	TP41.372x40.524x0.469	3128.183	3789.308	0.826	0.000	3789.308	0.000
L41	13.583 - 12.25 (41)	TP41.654x41.372x0.463	3177.817	3792.625	0.838	0.000	3792.625	0.000
L42	12.25 - 12 (42)	TP41.707x41.654x0.6	3187.142	4883.725	0.653	0.000	4883.725	0.000
L43	12 - 8 (43)	TP42.555x41.707x0.588	3336.833	4987.125	0.669	0.000	4987.125	0.000
L44	8 - 4 (44)	TP43.402x42.555x0.588	3487.608	5192.033	0.672	0.000	5192.033	0.000
L45	4 - 0 (45)	TP44.25x43.402x0.575	3639.408	5290.692	0.688	0.000	5290.692	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	125 - 121 (1)	TP19.36x18.5x0.188	7.041	200.245	0.035	0.042	336.214	0.000
L2	121 - 117 (2)	TP20.22x19.36x0.188	7.318	209.225	0.035	0.042	367.048	0.000
L3	117 - 113 (3)	TP21.08x20.22x0.188	12.678	218.206	0.058	0.737	399.235	0.002
L4	113 - 109 (4)	TP21.939x21.08x0.188	13.297	227.187	0.059	0.320	432.774	0.001
L5	109 - 105 (5)	TP22.799x21.939x0.188	13.895	236.168	0.059	0.208	467.666	0.000
L6	105 - 101 (6)	TP23.659x22.799x0.188	19.729	245.148	0.080	0.575	503.910	0.001
L7	101 - 99.375 (7)	TP24.008x23.659x0.188	19.983	248.797	0.080	0.558	519.021	0.001
L8	99.375 - 99.125 (8)	TP24.062x24.008x0.425	20.011	559.589	0.036	0.534	1158.367	0.000
L9	99.125 - 95.125 (9)	TP24.922x24.062x0.413	20.693	563.176	0.037	0.492	1208.817	0.000
L10	95.125 - 94.458 (10)	TP25.065x24.922x0.413	25.786	566.470	0.046	0.479	1223.000	0.000
L11	94.458 - 94.208 (11)	TP25.119x25.065x0.6	25.827	819.486	0.032	0.473	1759.658	0.000
L12	94.208 - 90.208 (12)	TP25.979x25.119x0.575	26.538	813.683	0.033	0.441	1810.250	0.000
L13	90.208 - 89 (13)	TP26.239x25.979x0.575	26.759	822.000	0.033	0.432	1847.450	0.000
L14	89 - 85.04 (14)	TP27.09x26.239x0.663	26.762	944.199	0.028	0.421	2115.617	0.000
L15	85.04 - 84.04 (15)	TP26.918x25.873x0.5	30.301	735.788	0.041	0.510	1702.283	0.000
L16	84.04 - 80.04 (16)	TP27.768x26.918x0.488	30.968	740.817	0.042	0.482	1769.875	0.000
L17	80.04 - 76.04 (17)	TP28.618x27.768x0.481	31.631	754.275	0.042	0.444	1858.592	0.000
L18	76.04 - 73.583 (18)	TP29.14x28.618x0.475	31.873	758.460	0.042	0.435	1904.000	0.000
L19	73.583 - 73.333 (19)	TP29.193x29.14x0.613	31.885	975.136	0.033	0.435	2440.733	0.000
L20	73.333 - 73 (20)	TP29.264x29.193x0.613	31.921	977.550	0.033	0.435	2452.833	0.000
L21	73 - 72.75 (21)	TP29.317x29.264x0.375	31.943	604.571	0.053	0.434	1532.358	0.000
L22	72.75 - 68.75 (22)	TP30.167x29.317x0.375	32.291	622.328	0.052	0.434	1623.692	0.000
L23	68.75 - 64.75 (23)	TP31.017x30.167x0.369	32.614	629.545	0.052	0.434	1689.733	0.000
L24	64.75 - 63 (24)	TP31.389x31.017x0.369	32.776	637.184	0.051	0.434	1730.983	0.000
L25	63 - 62.75 (25)	TP31.442x31.389x0.575	32.770	988.671	0.033	0.434	2672.583	0.000

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L26	62.75 - 58.75 (26)	TP32.292x31.442x0.575	33.202	1015.900	0.033	0.434	2821.817	0.000
L27	58.75 - 57.233 (27)	TP32.615x32.292x0.45	33.467	806.265	0.042	0.434	2271.117	0.000
L28	57.233 - 56.983 (28)	TP32.668x32.615x0.45	33.486	807.597	0.041	0.415	2278.625	0.000
L29	56.983 - 52.983 (29)	TP33.518x32.668x0.45	34.151	828.905	0.041	0.370	2400.450	0.000
L30	52.983 - 48.983 (30)	TP34.368x33.518x0.438	34.506	826.901	0.042	0.355	2457.108	0.000
L31	48.983 - 40.457 (31)	TP36.18x34.368x0.438	34.798	844.733	0.041	0.355	2564.225	0.000
L32	40.457 - 39.457 (32)	TP35.889x34.6x0.5	35.471	985.644	0.036	0.355	3054.683	0.000
L33	39.457 - 37.833 (33)	TP36.233x35.889x0.494	35.618	982.960	0.036	0.355	3076.525	0.000
L34	37.833 - 37.583 (34)	TP36.286x36.233x0.494	35.610	984.417	0.036	0.355	3085.658	0.000
L35	37.583 - 33.583 (35)	TP37.134x36.286x0.488	35.942	995.144	0.036	0.355	3193.692	0.000
L36	33.583 - 29.583 (36)	TP37.981x37.134x0.488	36.244	1018.160	0.036	0.355	3343.142	0.000
L37	29.583 - 25.583 (37)	TP38.829x37.981x0.475	36.526	1014.810	0.036	0.354	3408.583	0.000
L38	25.583 - 21.583 (38)	TP39.676x38.829x0.475	36.789	1037.240	0.035	0.354	3560.917	0.000
L39	21.583 - 17.583 (39)	TP40.524x39.676x0.475	37.032	1059.670	0.035	0.354	3716.567	0.000
L40	17.583 - 13.583 (40)	TP41.372x40.524x0.469	37.256	1068.020	0.035	0.354	3825.725	0.000
L41	13.583 - 12.25 (41)	TP41.654x41.372x0.463	37.341	1061.220	0.035	0.354	3828.192	0.000
L42	12.25 - 12 (42)	TP41.707x41.654x0.6	37.329	1373.890	0.027	0.354	4945.950	0.000
L43	12 - 8 (43)	TP42.555x41.707x0.588	37.616	1373.420	0.027	0.354	5047.692	0.000
L44	8 - 4 (44)	TP43.402x42.555x0.588	37.882	1401.160	0.027	0.354	5253.650	0.000
L45	4 - 0 (45)	TP44.25x43.402x0.575	38.137	1398.890	0.027	0.354	5350.542	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	125 - 121 (1)	0.005	0.093	0.000	0.035	0.000	0.099	1.050	4.8.2
L2	121 - 117 (2)	0.005	0.167	0.000	0.035	0.000	0.174	1.050	4.8.2
L3	117 - 113 (3)	0.010	0.280	0.000	0.058	0.002	0.294	1.050	4.8.2
L4	113 - 109 (4)	0.010	0.389	0.000	0.059	0.001	0.402	1.050	4.8.2
L5	109 - 105 (5)	0.010	0.489	0.000	0.059	0.000	0.502	1.050	4.8.2
L6	105 - 101 (6)	0.014	0.645	0.000	0.080	0.001	0.666	1.050	4.8.2
L7	101 - 99.375 (7)	0.014	0.697	0.000	0.080	0.001	0.718	1.050	4.8.2
L8	99.375 - 99.125 (8)	0.006	0.294	0.000	0.036	0.000	0.302	1.050	4.8.2
L9	99.125 - 95.125 (9)	0.007	0.350	0.000	0.037	0.000	0.358	1.050	4.8.2
L10	95.125 - 94.458 (10)	0.009	0.361	0.000	0.046	0.000	0.372	1.050	4.8.2
L11	94.458 - 94.208 (11)	0.006	0.257	0.000	0.032	0.000	0.264	1.050	4.8.2
L12	94.208 - 90.208 (12)	0.006	0.308	0.000	0.033	0.000	0.316	1.050	4.8.2
L13	90.208 - 89 (13)	0.006	0.320	0.000	0.033	0.000	0.327	1.050	4.8.2

Section No.	Elevation ft	Ratio P_u / ϕP_n	Ratio M_{ux} / ϕM_{nx}	Ratio M_{uy} / ϕM_{ny}	Ratio V_u / ϕV_n	Ratio T_u / ϕT_n	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L14	89 - 85.04 (14)	0.006	0.281	0.000	0.028	0.000	0.287	1.050	4.8.2
L15	85.04 - 84.04 (15)	0.009	0.428	0.000	0.041	0.000	0.439	1.050	4.8.2
L16	84.04 - 80.04 (16)	0.009	0.482	0.000	0.042	0.000	0.492	1.050	4.8.2
L17	80.04 - 76.04 (17)	0.009	0.527	0.000	0.042	0.000	0.538	1.050	4.8.2
L18	76.04 - 73.583 (18)	0.009	0.555	0.000	0.042	0.000	0.566	1.050	4.8.2
L19	73.583 - 73.333 (19)	0.007	0.439	0.000	0.033	0.000	0.447	1.050	4.8.2
L20	73.333 - 73 (20)	0.007	0.441	0.000	0.033	0.000	0.449	1.050	4.8.2
L21	73 - 72.75 (21)	0.012	0.705	0.000	0.053	0.000	0.720	1.050	4.8.2
L22	72.75 - 68.75 (22)	0.012	0.745	0.000	0.052	0.000	0.760	1.050	4.8.2
L23	68.75 - 64.75 (23)	0.012	0.793	0.000	0.052	0.000	0.808	1.050	4.8.2
L24	64.75 - 63 (24)	0.012	0.807	0.000	0.051	0.000	0.822	1.050	4.8.2
L25	63 - 62.75 (25)	0.008	0.529	0.000	0.033	0.000	0.539	1.050	4.8.2
L26	62.75 - 58.75 (26)	0.008	0.549	0.000	0.033	0.000	0.558	1.050	4.8.2
L27	58.75 - 57.233 (27)	0.010	0.701	0.000	0.042	0.000	0.714	1.050	4.8.2
L28	57.233 - 56.983 (28)	0.010	0.703	0.000	0.041	0.000	0.715	1.050	4.8.2
L29	56.983 - 52.983 (29)	0.011	0.724	0.000	0.041	0.000	0.736	1.050	4.8.2
L30	52.983 - 48.983 (30)	0.011	0.763	0.000	0.042	0.000	0.776	1.050	4.8.2
L31	48.983 - 40.457 (31)	0.011	0.778	0.000	0.041	0.000	0.791	1.050	4.8.2
L32	40.457 - 39.457 (32)	0.010	0.725	0.000	0.036	0.000	0.736	1.050	4.8.2
L33	39.457 - 37.833 (33)	0.010	0.738	0.000	0.036	0.000	0.750	1.050	4.8.2
L34	37.833 - 37.583 (34)	0.010	0.739	0.000	0.036	0.000	0.751	1.050	4.8.2
L35	37.583 - 33.583 (35)	0.011	0.759	0.000	0.036	0.000	0.771	1.050	4.8.2
L36	33.583 - 29.583 (36)	0.011	0.768	0.000	0.036	0.000	0.781	1.050	4.8.2
L37	29.583 - 25.583 (37)	0.011	0.796	0.000	0.036	0.000	0.809	1.050	4.8.2
L38	25.583 - 21.583 (38)	0.011	0.804	0.000	0.035	0.000	0.816	1.050	4.8.2
L39	21.583 - 17.583 (39)	0.012	0.810	0.000	0.035	0.000	0.823	1.050	4.8.2
L40	17.583 - 13.583 (40)	0.012	0.826	0.000	0.035	0.000	0.839	1.050	4.8.2
L41	13.583 - 12.25 (41)	0.012	0.838	0.000	0.035	0.000	0.851	1.050	4.8.2
L42	12.25 - 12 (42)	0.009	0.653	0.000	0.027	0.000	0.663	1.050	4.8.2
L43	12 - 8 (43)	0.010	0.669	0.000	0.027	0.000	0.680	1.050	4.8.2
L44	8 - 4 (44)	0.010	0.672	0.000	0.027	0.000	0.682	1.050	4.8.2
L45	4 - 0 (45)	0.010	0.688	0.000	0.027	0.000	0.699	1.050	4.8.2

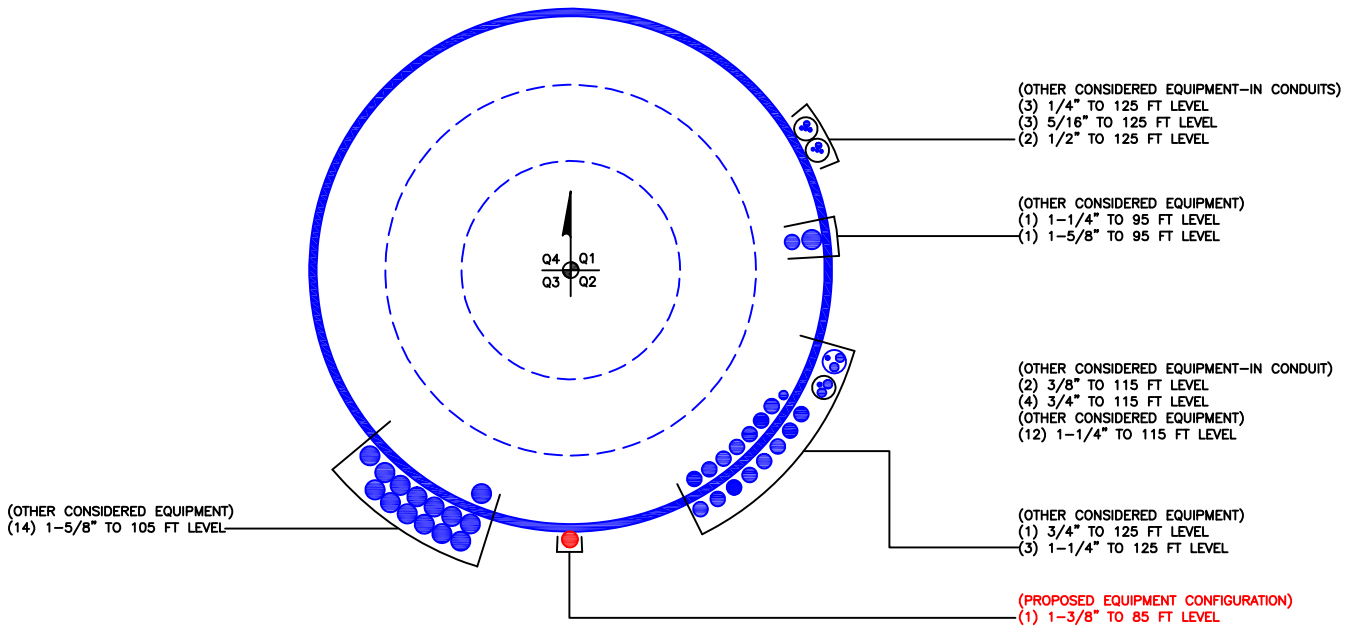
Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	125 - 121	Pole	TP19.36x18.5x0.188	1	-3.426	700.856	9.4	Pass
L2	121 - 117	Pole	TP20.22x19.36x0.188	2	-3.645	732.289	16.5	Pass
L3	117 - 113	Pole	TP21.08x20.22x0.188	3	-7.117	763.722	28.0	Pass
L4	113 - 109	Pole	TP21.939x21.08x0.188	4	-7.324	795.154	38.3	Pass
L5	109 - 105	Pole	TP22.799x21.939x0.188	5	-7.652	826.587	47.8	Pass
L6	105 - 101	Pole	TP23.659x22.799x0.188	6	-11.788	858.019	63.4	Pass
L7	101 - 99.375	Pole	TP24.008x23.659x0.188	7	-11.966	870.789	68.4	Pass
L8	99.375 - 99.125	Pole	TP24.062x24.008x0.425	8	-12.031	1958.565	28.8	Pass
L9	99.125 - 95.125	Pole	TP24.922x24.062x0.413	9	-12.698	1971.112	34.1	Pass
L10	95.125 - 94.458	Pole	TP25.065x24.922x0.413	10	-16.126	1982.641	35.4	Pass
L11	94.458 - 94.208	Pole	TP25.119x25.065x0.6	11	-16.187	2868.201	25.1	Pass
L12	94.208 - 90.208	Pole	TP25.979x25.119x0.575	12	-17.070	2847.894	30.1	Pass
L13	90.208 - 89	Pole	TP26.239x25.979x0.575	13	-17.341	2877.000	31.2	Pass
L14	89 - 85.04	Pole	TP27.09x26.239x0.663	14	-17.363	3304.696	27.3	Pass
L15	85.04 - 84.04	Pole	TP26.918x25.873x0.5	15	-21.418	2575.261	41.8	Pass
L16	84.04 - 80.04	Pole	TP27.768x26.918x0.488	16	-22.312	2592.859	46.9	Pass
L17	80.04 - 76.04	Pole	TP28.618x27.768x0.481	17	-23.232	2639.962	51.2	Pass
L18	76.04 - 73.583	Pole	TP29.14x28.618x0.475	18	-23.821	2654.610	53.9	Pass
L19	73.583 - 73.333	Pole	TP29.193x29.14x0.613	19	-23.910	3412.972	42.6	Pass
L20	73.333 - 73	Pole	TP29.264x29.193x0.613	20	-24.001	3421.425	42.8	Pass
L21	73 - 72.75	Pole	TP29.317x29.264x0.375	21	-24.057	2116.002	68.5	Pass
L22	72.75 - 68.75	Pole	TP30.167x29.317x0.375	22	-24.944	2178.151	72.3	Pass
L23	68.75 - 64.75	Pole	TP31.017x30.167x0.369	23	-25.873	2203.404	76.9	Pass
L24	64.75 - 63	Pole	TP31.389x31.017x0.369	24	-26.265	2230.147	78.3	Pass
L25	63 - 62.75	Pole	TP31.442x31.389x0.575	25	-26.378	3460.348	51.3	Pass
L26	62.75 - 58.75	Pole	TP32.292x31.442x0.575	26	-27.538	3555.646	53.1	Pass
L27	58.75 - 57.233	Pole	TP32.615x32.292x0.45	27	-27.914	2821.927	68.0	Pass
L28	57.233 - 56.983	Pole	TP32.668x32.615x0.45	28	-28.006	2826.589	68.1	Pass
L29	56.983 - 52.983	Pole	TP33.518x32.668x0.45	29	-29.038	2901.171	70.1	Pass
L30	52.983 - 48.983	Pole	TP34.368x33.518x0.438	30	-30.125	2894.157	73.9	Pass
L31	48.983 - 40.457	Pole	TP36.18x34.368x0.438	31	-31.071	2956.569	75.3	Pass
L32	40.457 - 39.457	Pole	TP35.889x34.6x0.5	32	-33.776	3449.754	70.1	Pass
L33	39.457 - 37.833	Pole	TP36.233x35.889x0.494	33	-34.261	3440.356	71.4	Pass
L34	37.833 - 37.583	Pole	TP36.286x36.233x0.494	34	-34.368	3445.459	71.5	Pass
L35	37.583 - 33.583	Pole	TP37.134x36.286x0.488	35	-35.594	3483.007	73.4	Pass
L36	33.583 - 29.583	Pole	TP37.981x37.134x0.488	36	-36.854	3563.563	74.3	Pass
L37	29.583 - 25.583	Pole	TP38.829x37.981x0.475	37	-38.133	3551.845	77.0	Pass
L38	25.583 - 21.583	Pole	TP39.676x38.829x0.475	38	-39.429	3630.343	77.7	Pass
L39	21.583 - 17.583	Pole	TP40.524x39.676x0.475	39	-40.740	3708.841	78.3	Pass
L40	17.583 - 13.583	Pole	TP41.372x40.524x0.469	40	-42.067	3738.073	79.9	Pass
L41	13.583 - 12.25	Pole	TP41.654x41.372x0.463	41	-42.506	3714.270	81.1	Pass
L42	12.25 - 12	Pole	TP41.707x41.654x0.6	42	-42.638	4808.622	63.1	Pass
L43	12 - 8	Pole	TP42.555x41.707x0.588	43	-44.331	4806.963	64.7	Pass
L44	8 - 4	Pole	TP43.402x42.555x0.588	44	-46.052	4904.046	65.0	Pass
L45	4 - 0	Pole	TP44.25x43.402x0.575	45	-47.790	4896.129	66.6	Pass
							Summary	
						Pole (L41)	81.1	Pass
						RATING =	**81.1**	**Pass**

***NOTE: Above stress ratios for reinforced sections are approximate. More exact calculations are presented in Appendix C.**

APPENDIX B

BASE LEVEL DRAWING


Q4
Q1
Q3
Q2
(OTHER CONSIDERED EQUIPMENT–IN CONDUITS)
(3) 1/4" TO 125 FT LEVEL
(3) 5/16" TO 125 FT LEVEL
(2) 1/2" TO 125 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(1) 1–1/4" TO 95 FT LEVEL
(1) 1–5/8" TO 95 FT LEVEL
(OTHER CONSIDERED EQUIPMENT–IN CONDUIT)
(2) 3/8" TO 115 FT LEVEL
(4) 3/4" TO 115 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(12) 1–1/4" TO 115 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(14) 1–5/8" TO 105 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(1) 3/4" TO 125 FT LEVEL
(3) 1–1/4" TO 125 FT LEVEL
(PROPOSED EQUIPMENT CONFIGURATION)
(1) 1–3/8" TO 85 FT LEVEL

APPENDIX C

ADDITIONAL CALCULATIONS

CCIpole

per TIA-222- H

Site BU: 876364

Work Order: 1945897

CROWN CASTLE

Pole Geometry

	Pole Height Above Base (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Bend Radius (in)	Pole Material
1	125	39.96	3.917	18	18.5	27.09	0.1875	Auto	A572-65
2	88.957	48.5	5.083	18	25.87	36.18	0.25	Auto	A572-65
3	45.54	45.54	0	18	34.60	44.25	0.3125	Auto	A572-65

Reinforcement Configuration

	Bottom Effective Elevation (ft)	Top Effective Elevation (ft)	Type	Model	Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	0	37.833	plate	MS-406	3					■						■						■	
2	37.833	57.333	plate	MS-406	3				■						■						■		
3	57.33	73.583	plate	MS-404	3					■						■						■	
4	73	89	plate	MS-600 K	3	■						■						■					
5	89	94.458	plate	MS-600 Notched 2"	3		■						■						■				
6	0	12.25	plate	CCI-WSFP-065125	3	■						■			■								
7	57.33	63	plate	CCI-SFP-060100	3	■						■						■					
8	86.875	99.375	plate	CCI 3.25X1.25	4					■					■					■			■
9																							
10																							

Reinforcement Details

	B (in)	H (in)	Gross Area (in^2)	Pole Face to Centroid (in)	Bottom Termination Type	Bottom Termination Length (in)	Top Termination Type	Top Termination Length (in)	Lu (in)	Net Area (in2)	Bolt Hole Size (in)	Reinforcement Material
1	4.875	1.25	6.09375	0.625	PC 8.8 - M20 (100)	33	PC 8.8 - M20 (100)	33.000	23.000	4.492	1.2188	A514-GR100
2	4.875	1.25	6.09375	0.625	PC 8.8 - M20 (100)	33	PC 8.8 - M20 (100)	33.000	23.000	4.492	1.2188	A514-GR100
3	4.75	0.75	3.5625	0.375	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	24.000	14.000	2.602	1.2188	A514-GR100
4	6	1	6	0.5	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	24.000	16.375	4.719	1.2188	A572-65
5	4	1	4	0.5	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	24.000	16.375	2.719	1.2188	A572-65
6	6.5	1.25	8.125	0.625	Welded	n/a	PC 8.8 - M20 (100)	33.000	19.000	6.563	1.1875	A572-65
7	6	1	6	0.5	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	24.000	16.000	4.750	1.1875	A572-65
8	3.25	1.25	4.0625	0.625	PC 8.8 - M20 (100)	15	PC 8.8 - M20 (100)	15.000	24.000	2.461	1.2188	A572-65

Connection Details for Custom Reinforcements

Reinforcement	End	# Bolts	N or X	Bolt Spacing (in)	Edge Dist (in)	Weld Grade (ksi)	Transverse (Horiz.) Weld Type	Horiz. Weld Length (in)	Horiz. Groove Depth (in)	Horiz. Groove Angle (deg)	Horiz. Fillet Size (in)	Vertical Weld Length (in)	Vertical Fillet Size (in)	Rev H Connection Capacity (kip)
MS-406	Top	11	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	11	N	3	3	-	-	-	-	-	-	-	-	-
MS-404	Top	8	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	8	N	3	3	-	-	-	-	-	-	-	-	-
MS-600 K	Top	8	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	8	N	3	3	-	-	-	-	-	-	-	-	-
MS-600 Notched 2"	Top	8	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	8	N	3	3	-	-	-	-	-	-	-	-	-
CCI 3.25X1.25	Top	5	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	5	N	3	3	-	-	-	-	-	-	-	-	-

TNX Geometry Input

Increment (ft): 4 Export to TNX

	Section Height (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Tapered Pole Grade	Weight Multiplier
1	125 - 121	4		18	18.500	19.360	0.1875	A572-65	1.000
2	121 - 117	4		18	19.360	20.220	0.1875	A572-65	1.000
3	117 - 113	4		18	20.220	21.080	0.1875	A572-65	1.000
4	113 - 109	4		18	21.080	21.939	0.1875	A572-65	1.000
5	109 - 105	4		18	21.939	22.799	0.1875	A572-65	1.000
6	105 - 101	4		18	22.799	23.659	0.1875	A572-65	1.000
7	101 - 99.375	1.625		18	23.659	24.008	0.1875	A572-65	1.000
8	99.375 - 99.125	0.25		18	24.008	24.062	0.425	A572-65	0.955
9	99.125 - 95.125	4		18	24.062	24.922	0.4125	A572-65	0.965
10	95.125 - 94.458	0.667		18	24.922	25.065	0.4125	A572-65	0.962
11	94.458 - 94.208	0.25		18	25.065	25.119	0.6	A572-65	0.923
12	94.208 - 90.208	4		18	25.119	25.979	0.575	A572-65	0.940
13	90.208 - 89	1.208		18	25.979	26.239	0.575	A572-65	0.934
14	89 - 88.957	3.96	3.917	18	26.239	27.090	0.6625	A572-65	0.925
15	88.957 - 84.04	4.917		18	25.873	26.918	0.5	A572-65	0.934
16	84.04 - 80.04	4		18	26.918	27.768	0.4875	A572-65	0.944
17	80.04 - 76.04	4		18	27.768	28.618	0.48125	A572-65	0.943
18	76.04 - 73.583	2.457		18	28.618	29.140	0.475	A572-65	0.947
19	73.583 - 73.333	0.25		18	29.140	29.193	0.6125	A572-65	0.930
20	73.333 - 73	0.333		18	29.193	29.264	0.6125	A572-65	0.928
21	73 - 72.75	0.25		18	29.264	29.317	0.375	A572-65	0.980
22	72.75 - 68.75	4		18	29.317	30.167	0.375	A572-65	0.971
23	68.75 - 64.75	4		18	30.167	31.017	0.36875	A572-65	0.979
24	64.75 - 63	1.75		18	31.017	31.389	0.36875	A572-65	0.975
25	63 - 62.75	0.25		18	31.389	31.442	0.575	A572-65	0.949
26	62.75 - 58.75	4		18	31.442	32.292	0.575	A572-65	0.935
27	58.75 - 57.233	1.517		18	32.292	32.615	0.45	A572-65	0.957
28	57.233 - 56.983	0.25		18	32.615	32.668	0.45	A572-65	0.956
29	56.983 - 52.983	4		18	32.668	33.518	0.45	A572-65	0.946
30	52.983 - 48.983	4		18	33.518	34.368	0.4375	A572-65	0.963
31	48.983 - 45.54	8.526	5.083	18	34.368	36.180	0.4375	A572-65	0.954
32	45.54 - 39.457	6.083		18	34.600	35.889	0.5	A572-65	0.954
33	39.457 - 37.833	1.624		18	35.889	36.233	0.49375	A572-65	0.963
34	37.833 - 37.583	0.25		18	36.233	36.286	0.49375	A572-65	0.962
35	37.583 - 33.583	4		18	36.286	37.134	0.4875	A572-65	0.967
36	33.583 - 29.583	4		18	37.134	37.981	0.4875	A572-65	0.959
37	29.583 - 25.583	4		18	37.981	38.829	0.475	A572-65	0.977
38	25.583 - 21.583	4		18	38.829	39.676	0.475	A572-65	0.970
39	21.583 - 17.583	4		18	39.676	40.524	0.475	A572-65	0.963
40	17.583 - 13.583	4		18	40.524	41.372	0.46875	A572-65	0.970
41	13.583 - 12.25	1.333		18	41.372	41.654	0.4625	A572-65	0.980
42	12.25 - 12	0.25		18	41.654	41.707	0.6	A572-65	1.069
43	12 - 8	4		18	41.707	42.555	0.5875	A572-65	1.080
44	8 - 4	4		18	42.555	43.402	0.5875	A572-65	1.070
45	4 - 0	4		18	43.402	44.250	0.575	A572-65	1.082

TNX Section Forces

Increment (ft):	4	TNX Output		
	Section Height (ft)	P_u (K)	M_{ux} (kip-ft)	V_u (K)
1	125 - 121	3.43	30.35	7.04
2	121 - 117	3.65	59.06	7.32
3	117 - 113	7.12	106.50	12.68
4	113 - 109	7.32	158.41	13.30
5	109 - 105	7.65	212.75	13.90
6	105 - 101	11.79	298.50	19.73
7	101 - 99.375	11.97	330.71	19.98
8	99.375 - 99.125	12.03	335.71	20.01
9	99.125 - 95.125	12.70	417.02	20.69
10	95.125 - 94.458	16.13	435.58	25.79
11	94.458 - 94.208	16.19	442.02	25.83
12	94.208 - 90.208	17.07	546.65	26.54
13	90.208 - 89	17.34	578.81	26.76
14	89 - 88.957	17.36	579.96	26.76
15	88.957 - 84.04	21.42	716.44	30.30
16	84.04 - 80.04	22.31	838.84	30.97
17	80.04 - 76.04	23.23	963.89	31.63
18	76.04 - 73.583	23.82	1041.81	31.87
19	73.583 - 73.333	23.91	1049.77	31.89
20	73.333 - 73	24.00	1060.38	31.92
21	73 - 72.75	24.06	1068.36	31.94
22	72.75 - 68.75	24.94	1196.68	32.29
23	68.75 - 64.75	25.87	1326.30	32.61
24	64.75 - 63	26.27	1383.43	32.78
25	63 - 62.75	26.38	1391.61	32.77
26	62.75 - 58.75	27.54	1523.41	33.20
27	58.75 - 57.233	27.91	1573.90	33.47
28	57.233 - 56.983	28.01	1582.26	33.49
29	56.983 - 52.983	29.04	1717.37	34.15
30	52.983 - 48.983	30.12	1854.49	34.51
31	48.983 - 45.54	31.07	1973.62	34.80
32	45.54 - 39.457	33.78	2187.11	35.47
33	39.457 - 37.833	34.26	2244.74	35.62
34	37.833 - 37.583	34.37	2253.63	35.61
35	37.583 - 33.583	35.59	2396.56	35.94
36	33.583 - 29.583	36.85	2540.72	36.24
37	29.583 - 25.583	38.13	2686.04	36.53
38	25.583 - 21.583	39.43	2832.44	36.79
39	21.583 - 17.583	40.74	2979.85	37.03
40	17.583 - 13.583	42.07	3128.19	37.26
41	13.583 - 12.25	42.51	3177.82	37.34
42	12.25 - 12	42.64	3187.14	37.33
43	12 - 8	44.33	3336.84	37.62
44	8 - 4	46.05	3487.60	37.88
45	4 - 0	47.79	3639.41	38.14

Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
125 - 121	Pole	TP19.36x18.5x0.1875	Pole	9.4%	Pass
121 - 117	Pole	TP20.22x19.36x0.1875	Pole	16.5%	Pass
117 - 113	Pole	TP21.08x20.22x0.1875	Pole	27.9%	Pass
113 - 109	Pole	TP21.939x21.08x0.1875	Pole	38.3%	Pass
109 - 105	Pole	TP22.799x21.939x0.1875	Pole	47.8%	Pass
105 - 101	Pole	TP23.659x22.799x0.1875	Pole	63.4%	Pass
101 - 99.38	Pole	TP24.008x23.659x0.1875	Pole	68.4%	Pass
99.38 - 99.13	Pole + Reinf.	TP24.062x24.008x0.425	Reinf. 8 Tension Rupture	61.9%	Pass
99.13 - 95.13	Pole + Reinf.	TP24.922x24.062x0.4125	Reinf. 8 Tension Rupture	72.9%	Pass
95.13 - 94.46	Pole + Reinf.	TP25.065x24.922x0.4125	Reinf. 8 Tension Rupture	75.7%	Pass
94.46 - 94.21	Pole + Reinf.	TP25.119x25.065x0.6	Reinf. 8 Tension Rupture	53.7%	Pass
94.21 - 90.21	Pole + Reinf.	TP25.979x25.119x0.575	Reinf. 8 Tension Rupture	63.4%	Pass
90.21 - 89	Pole + Reinf.	TP26.239x25.979x0.575	Reinf. 8 Tension Rupture	66.2%	Pass
89 - 88.96	Pole + Reinf.	TP27.09x26.239x0.6625	Reinf. 8 Tension Rupture	57.6%	Pass
88.96 - 84.04	Pole + Reinf.	TP26.918x25.873x0.5	Reinf. 4 Tension Rupture	66.9%	Pass
84.04 - 80.04	Pole + Reinf.	TP27.768x26.918x0.4875	Reinf. 4 Tension Rupture	74.6%	Pass
80.04 - 76.04	Pole + Reinf.	TP28.618x27.768x0.4813	Reinf. 4 Tension Rupture	81.7%	Pass
76.04 - 73.58	Pole + Reinf.	TP29.14x28.618x0.475	Reinf. 4 Tension Rupture	85.9%	Pass
73.58 - 73.33	Pole + Reinf.	TP29.193x29.14x0.6125	Reinf. 4 Tension Rupture	68.0%	Pass
73.33 - 73	Pole + Reinf.	TP29.264x29.193x0.6125	Reinf. 4 Tension Rupture	68.4%	Pass
73 - 72.75	Pole + Reinf.	TP29.317x29.264x0.375	Reinf. 3 Tension Rupture	84.1%	Pass
72.75 - 68.75	Pole + Reinf.	TP30.167x29.317x0.375	Reinf. 3 Tension Rupture	89.7%	Pass
68.75 - 64.75	Pole + Reinf.	TP31.017x30.167x0.3688	Reinf. 3 Tension Rupture	94.7%	Pass
64.75 - 63	Pole + Reinf.	TP31.389x31.017x0.3688	Reinf. 3 Tension Rupture	96.8%	Pass
63 - 62.75	Pole + Reinf.	TP31.442x31.389x0.575	Reinf. 7 Tension Rupture	80.4%	Pass
62.75 - 58.75	Pole + Reinf.	TP32.292x31.442x0.575	Reinf. 7 Tension Rupture	84.6%	Pass
58.75 - 57.23	Pole + Reinf.	TP32.615x32.292x0.45	Reinf. 2 Tension Rupture	84.0%	Pass
57.23 - 56.98	Pole + Reinf.	TP32.668x32.615x0.45	Reinf. 2 Tension Rupture	84.3%	Pass
56.98 - 52.98	Pole + Reinf.	TP33.518x32.668x0.45	Reinf. 2 Tension Rupture	87.8%	Pass
52.98 - 48.98	Pole + Reinf.	TP34.368x33.518x0.4375	Reinf. 2 Tension Rupture	91.1%	Pass
48.98 - 45.54	Pole + Reinf.	TP36.18x34.368x0.4375	Reinf. 2 Tension Rupture	93.7%	Pass
45.54 - 39.46	Pole + Reinf.	TP35.889x34.6x0.5	Reinf. 2 Tension Rupture	87.7%	Pass
39.46 - 37.83	Pole + Reinf.	TP36.233x35.889x0.4938	Reinf. 2 Tension Rupture	88.6%	Pass
37.83 - 37.58	Pole + Reinf.	TP36.286x36.233x0.4938	Reinf. 1 Tension Rupture	88.7%	Pass
37.58 - 33.58	Pole + Reinf.	TP37.134x36.286x0.4875	Reinf. 1 Tension Rupture	90.8%	Pass
33.58 - 29.58	Pole + Reinf.	TP37.981x37.134x0.4875	Reinf. 1 Tension Rupture	92.7%	Pass
29.58 - 25.58	Pole + Reinf.	TP38.829x37.981x0.475	Reinf. 1 Tension Rupture	94.4%	Pass
25.58 - 21.58	Pole + Reinf.	TP39.676x38.829x0.475	Reinf. 1 Tension Rupture	96.0%	Pass
21.58 - 17.58	Pole + Reinf.	TP40.524x39.676x0.475	Reinf. 1 Tension Rupture	97.4%	Pass
17.58 - 13.58	Pole + Reinf.	TP41.372x40.524x0.4688	Reinf. 1 Tension Rupture	98.8%	Pass
13.58 - 12.25	Pole + Reinf.	TP41.654x41.372x0.4625	Reinf. 1 Tension Rupture	99.2%	Pass
12.25 - 12	Pole + Reinf.	TP41.707x41.654x0.6	Reinf. 6 Tension Rupture	84.5%	Pass
12 - 8	Pole + Reinf.	TP42.555x41.707x0.5875	Reinf. 6 Tension Rupture	85.9%	Pass
8 - 4	Pole + Reinf.	TP43.402x42.555x0.5875	Reinf. 6 Tension Rupture	87.1%	Pass
4 - 0	Pole + Reinf.	TP44.25x43.402x0.575	Reinf. 6 Tension Rupture	88.3%	Pass
				Summary	
			Pole	87.1%	Pass
			Reinforcement	99.2%	Pass
			Overall	99.2%	Pass

Additional Calculations

Section Elevation (ft)	Moment of Inertia (in^4)			Area (in^2)			% Capacity*								
	Pole	Reinf.	Total	Pole	Reinf.	Total	Pole	R1	R2	R3	R4	R5	R6	R7	R8
125 - 121	530	n/a	530	11.41	n/a	11.41	9.4%								
121 - 117	604	n/a	604	11.92	n/a	11.92	16.5%								
117 - 113	685	n/a	685	12.43	n/a	12.43	27.9%								
113 - 109	774	n/a	774	12.94	n/a	12.94	38.3%								
109 - 105	869	n/a	869	13.46	n/a	13.46	47.8%								
105 - 101	972	n/a	972	13.97	n/a	13.97	63.4%								
101 - 99.38	1016	n/a	1016	14.18	n/a	14.18	68.4%								
99.38 - 99.13	1025	1229	2254	14.21	16.25	30.46	32.2%								61.9%
99.13 - 95.13	1140	1313	2454	14.72	16.25	30.97	38.4%								72.9%
95.13 - 94.46	1160	1328	2488	14.80	16.25	31.05	40.1%								75.7%
94.46 - 94.21	1166	2368	3534	14.84	28.25	43.09	28.5%					47.4%			53.7%
94.21 - 90.21	1291	2525	3816	15.35	28.25	43.60	34.0%					56.0%			63.4%
90.21 - 89	1330	2573	3903	15.50	28.25	43.75	35.7%					58.4%			66.2%
89 - 88.96	1332	3152	4483	15.51	34.25	49.76	31.1%				53.0%				57.6%
88.96 - 84.04	1901	1781	3682	21.16	18.00	39.16	42.6%				66.9%				
84.04 - 80.04	2088	1890	3978	21.83	18.00	39.83	47.9%				74.6%				
80.04 - 76.04	2288	2002	4289	22.51	18.00	40.51	53.0%				81.7%				
76.04 - 73.58	2416	2072	4488	22.92	18.00	40.92	56.0%				85.9%				
73.58 - 73.33	2430	3287	5717	22.97	28.69	51.65	44.4%			53.0%	68.0%				
73.33 - 73	2448	3302	5750	23.02	28.69	51.71	44.7%			53.3%	68.4%				
73 - 72.75	2461	1218	3679	23.06	10.69	33.75	70.5%			84.1%					
72.75 - 68.75	2683	1287	3971	23.74	10.69	34.43	75.9%			89.7%					
68.75 - 64.75	2919	1358	4277	24.41	10.69	35.10	80.9%			94.7%					
64.75 - 63	3026	1390	4416	24.71	10.69	35.40	83.0%			96.8%					
63 - 62.75	3041	3791	6832	24.75	28.69	53.44	54.2%			63.1%				80.4%	
62.75 - 58.75	3297	3990	7287	25.42	28.69	54.11	57.6%			66.4%				84.6%	
58.75 - 57.23	3397	2640	6037	25.68	18.28	43.96	72.7%		84.0%						
57.23 - 56.98	3414	2648	6062	25.72	18.28	44.00	72.9%		84.3%						
56.98 - 52.98	3690	2782	6471	26.40	18.28	44.68	76.8%		87.8%						
52.98 - 48.98	3980	2918	6898	27.07	18.28	45.35	80.5%		91.1%						
48.98 - 45.54	4242	3039	7280	27.65	18.28	45.93	83.5%		93.7%						
45.54 - 39.46	5641	3171	8812	35.29	18.28	53.57	73.0%		87.7%						
39.46 - 37.83	5806	3230	9036	35.63	18.28	53.91	74.0%		88.6%						
37.83 - 37.58	5832	3239	9071	35.68	18.28	53.96	74.1%	88.7%							
37.58 - 33.58	6254	3386	9640	36.52	18.28	54.80	76.4%	90.8%							
33.58 - 29.58	6695	3536	10232	37.36	18.28	55.64	78.7%	92.7%							
29.58 - 25.58	7158	3690	10848	38.20	18.28	56.48	80.8%	94.4%							
25.58 - 21.58	7641	3847	11488	39.04	18.28	57.32	82.8%	96.0%							
21.58 - 17.58	8145	4007	12152	39.88	18.28	58.16	84.7%	97.4%							
17.58 - 13.58	8671	4171	12842	40.72	18.28	59.01	86.5%	98.8%							
13.58 - 12.25	8851	4226	13077	41.00	18.28	59.29	87.1%	99.2%							
12.25 - 12	9052	7786	16838	41.06	42.66	83.71	75.2%	78.4%					84.5%		
12 - 8	9615	8097	17712	41.90	42.66	84.55	76.9%	79.6%					85.9%		
8 - 4	10202	8414	18616	42.74	42.66	85.39	78.5%	80.7%					87.1%		
4 - 0	10812	8737	19549	43.58	42.66	86.24	80.1%	81.7%					88.3%		

Note: Section capacity checked using 5 degree increments.
Rating per TIA-222-H Section 15.5.

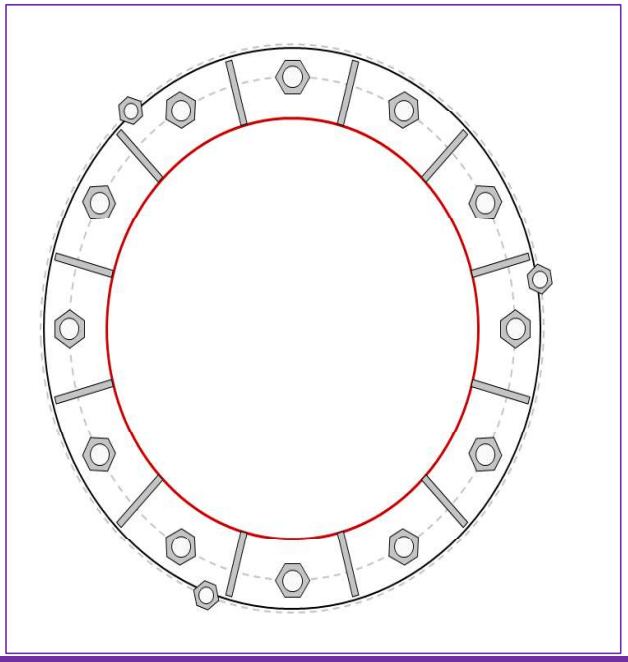
Monopole Base Plate Connection

Site Info	
BU #	876364
Site Name	mwell/First Line Emerg
Order #	553293 #0

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	See Custom Sheet
l_{ar} (in)	See Custom Sheet

Applied Loads	
Moment (kip-ft)	3639.00
Axial Force (kips)	48.00
Shear Force (kips)	38.00

**TIA-222-H Section 15.5 Applied*



Connection Properties

Anchor Rod Data

GROUP 1: (12) 2-1/4" ø bolts (A615-75 N; Fy=75 ksi, Fu=100 ksi) on 53" BC
GROUP 2: (3) 1-3/4" ø bolts (A193 Gr. B7 N; Fy=105 ksi, Fu=125 ksi) on 59.75" BC

Base Plate Data

59" OD x 1.75" Plate (A572-60; Fy=60 ksi, Fu=75 ksi)

Stiffener Data

(12) 22"H x 7"W x 0.75"T, Notch: 0.75"
plate: Fy= 50 ksi ; weld: Fy= 70 ksi
horiz. weld: 0.625" fillet
vert. weld: 0.375" fillet

Pole Data

44.25" x 0.3125" 18-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Analysis Results

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

GROUP 1:		
Pu_t = 227.46	ϕPn_t = 243.75	**Stress Rating**
Vu = 3.17	ϕVn = 149.1	**88.9%**
Mu = n/a	ϕMn = n/a	**Pass**
GROUP 2:		
Pu_t = 152.55	ϕPn_t = 178.13	**Stress Rating**
Vu = 0	ϕVn = 112.75	**81.6%**
Mu = n/a	ϕMn = n/a	**Pass**

Base Plate Summary

Max Stress (ksi):	46.18	(Roark's Flexural)
Allowable Stress (ksi):	54	
Stress Rating:	**81.4%**	**Pass**

Stiffener Summary

Horizontal Weld:	**86.7%**	**Pass**
Vertical Weld:	**46.2%**	**Pass**
Plate Flexure+Shear:	**20.2%**	**Pass**
Plate Tension+Shear:	**77.1%**	**Pass**
Plate Compression:	**76.2%**	**Pass**

Pole Summary

Punching Shear:	**14.4%**	**Pass**

Pier and Pad Foundation

BU # :	876364
Site Name:	Cromwell/First Line
App. Number:	553293 rev# 0

TIA-222 Revision:	H
Tower Type:	Monopole

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

Superstructure Analysis Reactions

Compression, P_{comp}:	48	kips
Base Shear, Vu_comp:	38	kips
Moment, M_u:	3639	ft-kips
Tower Height, **H**:	125	ft
BP Dist. Above Fdn, bp_{dist}:	2.75	in

Pier Properties

Pier Shape:	Square	
Pier Diameter, **dpier**:	14	ft
Ext. Above Grade, **E**:	0.5	ft
Pier Rebar Size, **Sc**:	8	
Pier Rebar Quantity, **mc**:	24	
Pier Tie/Spiral Size, **St**:	4	
Pier Tie/Spiral Quantity, **mt**:	7	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier}:	53	in

Pad Properties

Depth, **D**:	5	ft
Pad Width, W_1:	24	ft
Pad Thickness, **T**:	3	ft
Pad Rebar Size (Top dir.2), Sp_{top2}:	8	
Pad Rebar Quantity (Top dir. 2), mp_{top2}:	24	
Pad Rebar Size (Bottom dir. 2), Sp_2:	8	
Pad Rebar Quantity (Bottom dir. 2), mp_2:	30	
Pad Clear Cover, cc_{pad}:	3	in

Material Properties

Rebar Grade, **Fy**:	60	ksi
Concrete Compressive Strength, **F'c**:	3	ksi
Dry Concrete Density, δ**c**:	150	pcf

Soil Properties

Total Soil Unit Weight, γ:	125	pcf
Ultimate Gross Bearing, Qult:	8.000	ksf
Cohesion, **Cu**:	0.000	ksf
Friction Angle, φ:	30	degrees
SPT Blow Count, N_{blows}:		
Base Friction, μ:	0.6	
Neglected Depth, **N**:	3.33	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, **gw**:	N/A	ft

<--Toggle between Gross and Net

Foundation Analysis Checks

	Capacity	Demand	Rating*	Check
Lateral (Sliding) (kips)	236.37	38.00	**15.3%**	**Pass**
Bearing Pressure (ksf)	6.00	3.26	**54.3%**	**Pass**
*Overturning (kip*ft)*	4558.46	3856.71	**84.6%**	**Pass**
*Pier Flexure (Comp.) (kip*ft)*	6986.50	3734.00	**50.9%**	**Pass**
Pier Compression (kip)	80196.48	136.20	**0.2%**	**Pass**
*Pad Flexure (kip*ft)*	3256.22	805.13	**23.5%**	**Pass**
Pad Shear - 1-way (kips)	745.34	166.20	**21.2%**	**Pass**
Pad Shear - 2-way (Comp) (ksi)	0.164	0.000	**0.0%**	**Pass**
*Flexural 2-way (Comp) (kip*ft)*	5561.26	2240.40	**38.4%**	**Pass**

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

Soil Rating*:	**84.6%**
Structural Rating*:	**50.9%**

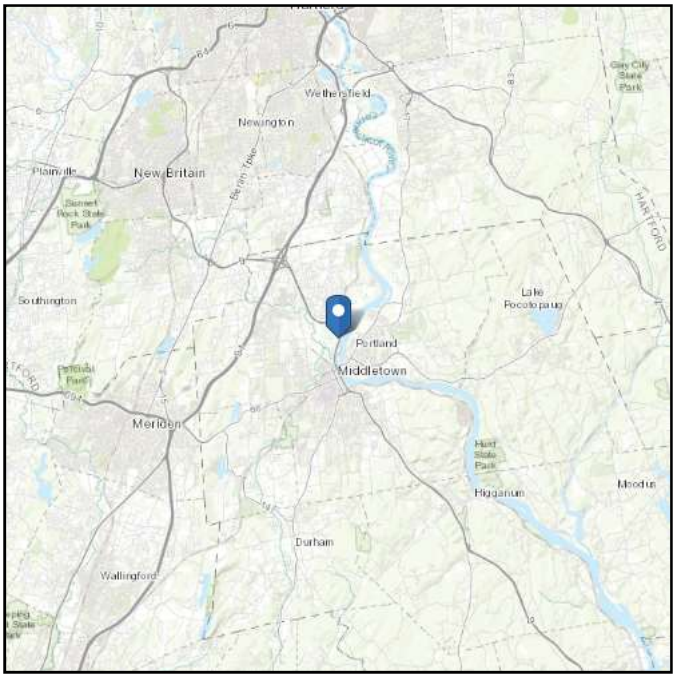
Version 4.0.1

ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 8.26 ft (NAVD 88)
Latitude: 41.583364
Longitude: -72.649761



Wind

Results:

Wind Speed:	125 Vmph
10-year MRI	77 Vmph
25-year MRI	87 Vmph
50-year MRI	94 Vmph
100-year MRI	102 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: Fri Nov 20 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.

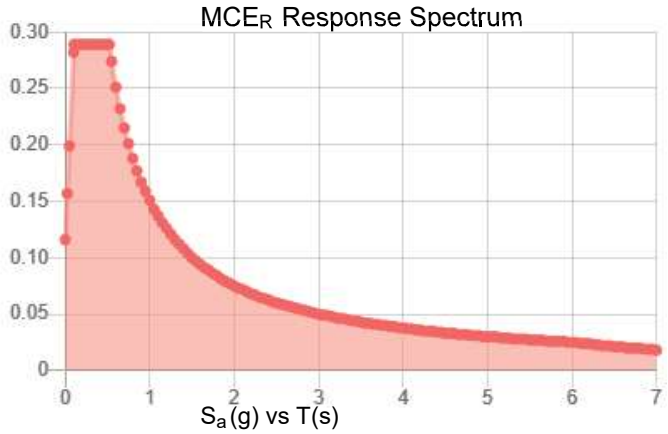
Seismic

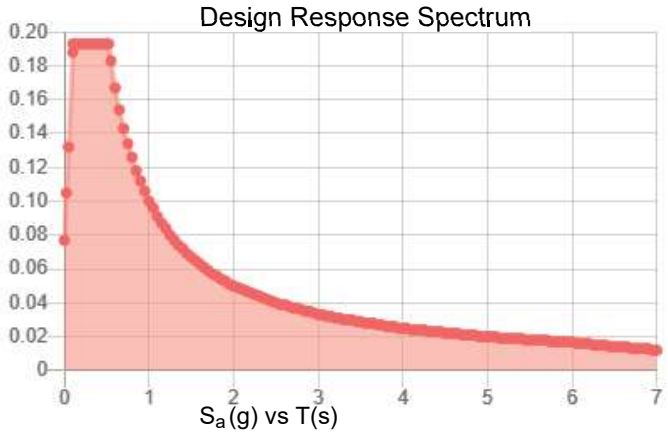
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.181	S_{DS} :	0.193
S_1 :	0.063	S_{D1} :	0.1
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.092
S_{MS} :	0.289	PGA_M :	0.147
S_{M1} :	0.151	F_{PGA} :	1.6
		I_e :	1

Seismic Design Category B





Data Accessed: Fri Nov 20 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:	Fri Nov 20 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

Power Density/RF Emissions Report

RF EMISSIONS COMPLIANCE REPORT

Crown Castle on behalf of Dish Wireless

Crown Castle Site Name: CROMWELL / FIRST LINE EMERGENC
Crown Castle Site BU Number: 876364
Dish Wireless Site ID: BOBDL00094A
201 Main Street
Cromwell, CT
6/11/2021

Report Status:

Dish Wireless Is Compliant

Michael Fischer, P.E.
Registered Professional Engineer (Electrical)
Connecticut License Number 33928
Expires January 31, 2022

Signed 11 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
CROMWELL, 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 (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 "CROMWELL / FIRST LINE EMERGENC" ("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 in addition to the emitters specified in the worksheet, there are additional collocated point-to-point microwave facilities on this structure, and the antennas used are highly directional and oriented at angles at or just below the horizontal, and that the energy present at ground level is typically so low as to be considered insignificant and has not been included in this analysis (a list of microwave antennas is included); 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 Dish Wireless operation is no more than 3.772% 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 18.548% 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
CROMWELL / FIRST LINE EMERGENC
Site Summary

Carrier	Area Maximum Percentage MPE
AT&T Mobility, LLC	0.863 %
AT&T Mobility, LLC	0.218 %
AT&T Mobility, LLC	0.282 %
AT&T Mobility, LLC	0.367 %
AT&T Mobility, LLC	0.583 %
AT&T Mobility, LLC	0.154 %
Dish Wireless (Proposed)	1.548 %
Dish Wireless (Proposed)	1.642 %
Dish Wireless (Proposed)	0.582 %
Sprint (T-Mobile)	0.232 %
Sprint (T-Mobile)	0.232 %
Sprint (T-Mobile)	0.175 %
Sprint (T-Mobile)	0.445 %
T-Mobile	0.381 %
T-Mobile	0.668 %
T-Mobile	0.544 %
T-Mobile	0.444 %
Verizon Wireless	6.399 %
Verizon Wireless	0.659 %
Verizon Wireless	0.562 %
Verizon Wireless	0.654 %
Verizon Wireless	0.914 %

Composite Site MPE: 18.548 %

AT&T Mobility, LLC
CROMWELL / FIRST LINE EMERGENC
Carrier Summary

Frequency:	1900	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	8.63122	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.86312	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
CCI Antennas	HPA-65R-BUU-H6	117	20	4530	6.871659	0.687166	8.502617	0.850262
CCI Antennas	HPA-65R-BUU-H6	117	150	4530	6.871659	0.687166	8.502617	0.850262
CCI Antennas	HPA-65R-BUU-H6	117	270	4530	6.871659	0.687166	8.502617	0.850262

AT&T Mobility, LLC
CROMWELL / FIRST LINE EMERGENC
Carrier Summary

Frequency:	737	MHz
Maximum Permissible Exposure (MPE):	491.33	µW/cm^2
Maximum power density at ground level:	1.07243	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.21827	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
CCI Antennas	HPA-65R-BUU-H6	117	20	881	0.645526	0.131383	1.000872	0.203705
CCI Antennas	HPA-65R-BUU-H6	117	150	881	0.645526	0.131383	1.000872	0.203705
CCI Antennas	HPA-65R-BUU-H6	117	270	881	0.645526	0.131383	1.000872	0.203705

AT&T Mobility, LLC
CROMWELL / FIRST LINE EMERGENC
Carrier Summary

Frequency:	2300	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	2.82101	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.2821	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
Kathrein-Scala	800-10798	117	20	2099	1.342521	0.134252	2.611794	0.261179
Kathrein-Scala	800-10798	117	150	2099	1.342521	0.134252	2.611794	0.261179
Kathrein-Scala	800-10798	117	270	2099	1.342521	0.134252	2.611794	0.261179

AT&T Mobility, LLC
CROMWELL / FIRST LINE EMERGENC
Carrier Summary

Frequency:	2100	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	3.67404	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.3674	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
Kathrein-Scala	800-10798	117	20	4056	1.843951	0.184395	3.162648	0.316265
Kathrein-Scala	800-10798	117	150	4056	1.843951	0.184395	3.162648	0.316265
Kathrein-Scala	800-10798	117	270	4056	1.843951	0.184395	3.162648	0.316265

AT&T Mobility, LLC
CROMWELL / FIRST LINE EMERGENC
Carrier Summary

Frequency:	763	MHz
Maximum Permissible Exposure (MPE):	508.67	µW/cm^2
Maximum power density at ground level:	2.96299	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.5825	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
Kathrein-Scala	800-10798	117	20	2905	1.50748	0.296359	2.38918	0.469695
Kathrein-Scala	800-10798	117	150	2905	1.50748	0.296359	2.38918	0.469695
Kathrein-Scala	800-10798	117	270	2905	1.50748	0.296359	2.38918	0.469695

AT&T Mobility, LLC
CROMWELL / FIRST LINE EMERGENC
Carrier Summary

Frequency:	850	MHz
Maximum Permissible Exposure (MPE):	566.67	µW/cm^2
Maximum power density at ground level:	0.87368	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.15418	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
KMW	AM-X-CD-16-65-00T	117	20	971	0.732485	0.129262	0.821928	0.145046
KMW	AM-X-CD-16-65-00T	117	150	971	0.732485	0.129262	0.821928	0.145046
KMW	AM-X-CD-16-65-00T	117	270	971	0.732485	0.129262	0.821928	0.145046

Dish Wireless (Proposed)
CROMWELL / FIRST LINE EMERGENC
Carrier Summary

Frequency:	2100	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	15.47751	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	1.54775	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
JMA Wireless	MX08FRO665-20	85	0	11861	10.424939	1.042494	15.402358	1.540236
JMA Wireless	MX08FRO665-20	85	120	11861	10.424939	1.042494	15.402358	1.540236
JMA Wireless	MX08FRO665-20	85	240	11861	10.424939	1.042494	15.402358	1.540236

Dish Wireless (Proposed)
CROMWELL / FIRST LINE EMERGENC
Carrier Summary

Frequency:	1900	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	16.42469	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	1.64247	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
JMA Wireless	MX08FRO665-20	85	0	9866	9.244511	0.924451	16.294098	1.62941
JMA Wireless	MX08FRO665-20	85	120	9866	9.244511	0.924451	16.294098	1.62941
JMA Wireless	MX08FRO665-20	85	240	9866	9.244511	0.924451	16.294098	1.62941

Dish Wireless (Proposed)
CROMWELL / FIRST LINE EMERGENC
Carrier Summary

Frequency:	600	MHz
Maximum Permissible Exposure (MPE):	400	µW/cm^2
Maximum power density at ground level:	2.32967	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.58242	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
JMA Wireless	MX08FRO665-20	85	0	1304	1.75673	0.439182	2.203345	0.550836
JMA Wireless	MX08FRO665-20	85	120	1304	1.75673	0.439182	2.203345	0.550836
JMA Wireless	MX08FRO665-20	85	240	1304	1.75673	0.439182	2.203345	0.550836

Sprint (T-Mobile)
CROMWELL / FIRST LINE EMERGENC
Carrier Summary

Frequency:	1990	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	2.32439	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.23244	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
RFS	APXVSPP18-C-A20	127	30	3804	1.089531	0.108953	2.149203	0.21492
RFS	APXVSPP18-C-A20	127	150	3804	1.089531	0.108953	2.149203	0.21492
RFS	APXVSPP18-C-A20	127	270	3804	1.089531	0.108953	2.149203	0.21492

Sprint (T-Mobile)
CROMWELL / FIRST LINE EMERGENC
Carrier Summary

Frequency:	1900	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	2.32439	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.23244	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
RFS	APXVSPP18-C-A20	127	30	3804	1.089531	0.108953	2.149203	0.21492
RFS	APXVSPP18-C-A20	127	150	3804	1.089531	0.108953	2.149203	0.21492
RFS	APXVSPP18-C-A20	127	270	3804	1.089531	0.108953	2.149203	0.21492

Sprint (T-Mobile)
CROMWELL / FIRST LINE EMERGENC
Carrier Summary

Frequency:	862	MHz
Maximum Permissible Exposure (MPE):	574.67	µW/cm^2
Maximum power density at ground level:	1.00785	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.17538	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
RFS	APXVSPP18-C-A20	127	30	2168	0.975417	0.169736	1.004229	0.17475
RFS	APXVSPP18-C-A20	127	150	2168	0.975417	0.169736	1.004229	0.17475
RFS	APXVSPP18-C-A20	127	270	2168	0.975417	0.169736	1.004229	0.17475

Sprint (T-Mobile)
CROMWELL / FIRST LINE EMERGENC
Carrier Summary

Frequency:	2500	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	4.45099	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.4451	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
RFS	APXVTM14-C-I20	127	30	6168	1.399281	0.139928	2.668526	0.266853
ARGUS	LLPX310R	129	30	1542	0.74048	0.074048	1.333789	0.133379
RFS	APXVTM14-C-I20	127	150	6168	1.399281	0.139928	2.668526	0.266853
ARGUS	LLPX310R	129	150	1542	0.74048	0.074048	1.333789	0.133379
RFS	APXVTM14-C-I20	127	270	6168	1.399281	0.139928	2.668526	0.266853
ARGUS	LLPX310R	129	270	1542	0.74048	0.074048	1.333789	0.133379

T-Mobile
CROMWELL / FIRST LINE EMERGENC
Carrier Summary

Frequency:	2100	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	3.81059	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.38106	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
Ericsson	AIR 21 B4A B2P	96	30	4123	2.261724	0.226172	2.601537	0.260154
Ericsson	AIR 21 B4A B2P	96	150	4123	2.261724	0.226172	2.601537	0.260154
Ericsson	AIR 21 B4A B2P	96	270	4123	2.261724	0.226172	2.601537	0.260154

T-Mobile
CROMWELL / FIRST LINE EMERGENC
Carrier Summary

Frequency:	700	MHz
Maximum Permissible Exposure (MPE):	466.67	µW/cm^2
Maximum power density at ground level:	3.11812	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.66817	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
RFS	APXVAARR24_43-U-NA20	96	30	3484	2.362306	0.506208	2.67784	0.573823
RFS	APXVAARR24_43-U-NA20	96	150	3484	2.362306	0.506208	2.67784	0.573823
RFS	APXVAARR24_43-U-NA20	96	270	3484	2.362306	0.506208	2.67784	0.573823

T-Mobile
CROMWELL / FIRST LINE EMERGENC
Carrier Summary

Frequency:	600	MHz
Maximum Permissible Exposure (MPE):	400	µW/cm^2
Maximum power density at ground level:	2.17557	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.54389	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
RFS	APXVAARR24_43-U-NA20	96	30	1251	0.964644	0.241161	0.996653	0.249163
RFS	APXVAARR24_43-U-NA20	96	30	1251	0.964644	0.241161	0.996653	0.249163
RFS	APXVAARR24_43-U-NA20	96	150	1251	0.964644	0.241161	0.996653	0.249163
RFS	APXVAARR24_43-U-NA20	96	150	1251	0.964644	0.241161	0.996653	0.249163
RFS	APXVAARR24_43-U-NA20	96	270	1251	0.964644	0.241161	0.996653	0.249163
RFS	APXVAARR24_43-U-NA20	96	270	1251	0.964644	0.241161	0.996653	0.249163

T-Mobile
CROMWELL / FIRST LINE EMERGENC
Carrier Summary

Frequency:	1900	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	4.43714	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.44371	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
Ericsson	AIR 21 B4A B2P	96	30	4123	2.261724	0.226172	2.601537	0.260154
RFS	APXVAARR24_43-U-NA20	96	30	1236	1.023641	0.102364	1.822748	0.182275
Ericsson	AIR 21 B4A B2P	96	150	4123	2.261724	0.226172	2.601537	0.260154
RFS	APXVAARR24_43-U-NA20	96	150	1236	1.023641	0.102364	1.822748	0.182275
Ericsson	AIR 21 B4A B2P	96	270	4123	2.261724	0.226172	2.601537	0.260154
RFS	APXVAARR24_43-U-NA20	96	270	1236	1.023641	0.102364	1.822748	0.182275

Verizon Wireless
CROMWELL / FIRST LINE EMERGENC
Carrier Summary

Frequency:	3700	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	63.99137	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	6.39914	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
Samsung	MT6407-77A	105	10	69048	17.840212	1.784021	46.008022	4.600802
Samsung	MT6407-77A	105	190	69048	17.840212	1.784021	46.008022	4.600802
Samsung	MT6407-77A	105	290	69048	17.840212	1.784021	46.008022	4.600802

Verizon Wireless
CROMWELL / FIRST LINE EMERGENC
Carrier Summary

Frequency:	2100	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	6.59313	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.65931	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
Commscope	JAHH-45B-R3B	105	10	10968	4.900343	0.490034	5.92967	0.592967
Commscope	JAHH-45B-R3B	105	190	10968	4.900343	0.490034	5.92967	0.592967
Commscope	JAHH-45B-R3B	105	290	10968	4.900343	0.490034	5.92967	0.592967

Verizon Wireless
CROMWELL / FIRST LINE EMERGENC
Carrier Summary

Frequency:	1900	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	5.61935	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.56193	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
Commscope	JAHH-45B-R3B	105	10	10236	3.350452	0.335045	4.216425	0.421643
Commscope	JAHH-45B-R3B	105	190	10236	3.350452	0.335045	4.216425	0.421643
Commscope	JAHH-45B-R3B	105	290	10236	3.350452	0.335045	4.216425	0.421643

Verizon Wireless
CROMWELL / FIRST LINE EMERGENC
Carrier Summary

Frequency:	751	MHz
Maximum Permissible Exposure (MPE):	500.67	µW/cm^2
Maximum power density at ground level:	3.2754	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.65421	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
Commscope	JAHH-45B-R3B	105	10	4366	3.131362	0.625438	3.256804	0.650494
Commscope	JAHH-45B-R3B	105	190	4366	3.131362	0.625438	3.256804	0.650494
Commscope	JAHH-45B-R3B	105	290	4366	3.131362	0.625438	3.256804	0.650494

Verizon Wireless
CROMWELL / FIRST LINE EMERGENC
Carrier Summary

Frequency:	850	MHz
Maximum Permissible Exposure (MPE):	566.67	µW/cm^2
Maximum power density at ground level:	5.17732	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.91365	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
ANDREW	LNX-6514DS-VTM	105	0	1892	1.38184	0.243854	2.077713	0.366655
Commscope	JAHH-45B-R3B	105	10	5130	3.045722	0.53748	3.272187	0.577445
ANDREW	LNX-6514DS-VTM	105	120	1892	1.38184	0.243854	2.077713	0.366655
Commscope	JAHH-45B-R3B	105	190	5130	3.045722	0.53748	3.272187	0.577445
ANDREW	LNX-6514DS-VTM	105	250	1892	1.38184	0.243854	2.077713	0.366655
Commscope	JAHH-45B-R3B	105	290	5130	3.045722	0.53748	3.272187	0.577445

CROMWELL / FIRST LINE EMERGENC
Composite Microwave Antenna Summary

Carrier	Antenna Make/Model	Height (feet)
Sprint (T-Mobile)	Andrew VHLP2-18	124
Sprint (T-Mobile)	Andrew VHLP2-11	124