NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

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

October 12, 2021

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

RE: Tower Share Application
755 Amity Road, Bethany CT 06524
Latitude: 41.442758
Longitude: -72.992461
Site# 841295_Crown_Dish

Dear Ms. Bachman:

This letter and attachments are submitted on behalf of Dish Wireless LLC. Dish Wireless LLC plans to install antennas and related equipment to the tower site located at 755 Amity Road in Bethany, Connecticut.

Dish Wireless LLC proposes to install three (3) 600/1900 5G MHz antenna and six (6) RRUs, at the 103-foot level of the existing 151-foot monopole tower, one (1) Fiber cables will also be installed. Dish Wireless LLC equipment cabinets will be placed within 7x5 lease area. Included are plans by Infinigy, dated August 12, 2021 Exhibit C. Also included is a structural analysis prepared by Crown Castle, dated June 10, 2021, confirming that the existing tower is structurally capable of supporting the proposed equipment. Attached as Exhibit D. The facility was approved by the CT Siting Council, Docket No. 168 on July 6, 1995. Please see attached Exhibit A.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies 16-50aa, of Dish Wireless LLC intent to share a telecommunications facility pursuant to R.C.S.A. 16-50j-88. In accordance with R.C.S.A., a copy of this letter is being sent to Ms. Paula Cofrancesco, First Selectwoman and Mr. Robert Walsh, Building Official for the Town of Bethany, as well as the tower owner (Crown Castle) and property owner (Town of Bethany)

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

1. The proposed modification will not result in an increase in the height of the existing structure. The top of the tower is 151-feet; Dish Wireless LLC proposed antennas will be located at a center line height of 103-feet.

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

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

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4. The operation of the proposed antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard. As indicated in the attached power density calculations, the combined site operations will result in a total power density of 26.21% as evidenced by Exhibit F.

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

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

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

C. Environmental Feasibility. The proposed shared use of this facility would have a minimal environmental impact. The installation of Dish Wireless LLC equipment at the 103-foot level of the existing 151-foot tower would have an insignificant visual impact on the area around the tower. Dish Wireless LLC ground equipment would be installed within the existing facility compound. Dish Wireless LLC shared use would therefore not cause any significant alteration in the physical or environmental characteristics of the existing site. Additionally, as evidenced by Exhibit F, the proposed antennas would not increase radio frequency emissions to a level at or above the Federal Communications Commission safety standard.

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

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

Sincerely,

Denise Sabo

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

NORTHEAST
SITE SOLUTIONS
Turnkey Wireless Development

Attachments cc:

Ms. Paula Cofrancesco, First Selectwoman (Property Owner)
Bethany Town Hall
40 Peck Road, Bethany CT 06524

Mr. Robert Walsh, Building Official
Bethany Town Hall
40 Peck Road, Bethany CT 06524

Crown Castle, Tower Owner

Exhibit A

Original Facility Approval

DOCKET NO. 168 - An application of Springwich Cellular Limited Partnership for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of a cellular telecommunications facility located on the former site of the Bethany Airport, 719 Amity Road (Route 63) in Bethany, Connecticut.	}	Connecticut
	}	Siting
	}	Council
	}	July 6, 1995

DECISION AND ORDER

Pursuant to the foregoing Findings of Fact, and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, operation, and maintenance of a cellular telecommunications tower and equipment building at the proposed site in Bethany, Connecticut, including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate either alone or cumulatively with other effects when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes § 16-50k, be issued to Springwich Cellular Limited Partnership (Springwich), for the construction, operation, and maintenance of a cellular telecommunications tower, associated equipment, and building at the proposed site located at the Bethany Airport, 719 Amity Road, Bethany, Connecticut.

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

1. The self-supporting monopole tower shall be no taller than necessary to provide the proposed communications service and the tower shall not exceed a total height of 150 feet above ground level (AGL).

2. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be submitted to and approved by the Council prior to the commencement of facility construction and shall include detailed plans for the tower location and tower foundation; the placement of all antennas to be attached to this tower; equipment building, access road, utility line, and security fence; site clearing and tree trimming; and water drainage and erosion and sedimentation controls consistent with the Connecticut Guidelines for Soil Erosion and Sedimentation Control, as amended.

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

4. The Certificate Holder shall provide the Council a recalculated report of electromagnetic radio frequency power density if and when circumstances in operation cause a change in power density above the levels originally calculated and provided in the application.

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

6. If the facility does not initially provide, or permanently ceases to provide cellular services following completion of construction, this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapplication for any continued or new use shall be made to the Council before any such use is made.

7. Unless otherwise approved by the Council, this Decision and Order shall be void if all construction authorized herein is not completed within three years of the effective date of this Decision and Order or within three years after all appeals to this Decision and Order have been resolved.

8. The Certificate Holder shall notify the Council upon completion of construction and provide the final cost to construct the facility.

Pursuant to General Statutes § 16-50p, we hereby direct that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed below, and notice of issuance shall be published in The New Haven Register and Beth-Wood News.

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

The parties and intervenors to this proceeding are:

APPLICANT	ITS REPRESENTATIVES
Springwich Cellular Limited Partnership	Peter J. Tyrrell, Esq. Springwich Cellular Limited Partnership 227 Church Street New Haven, CT 06510
INTERVENOR	**ITS REPRESENTATIVES**
Metro Mobile CTS of Hartford, Inc.	Metro Mobile CTS of Hartford, Inc. 20 Alexander Drive Wallingford, CT 06492 Attn: David S. Malko, P.E., Manager Engineering & Regulatory Services Robinson & Cole One Commercial Plaza Hartford, CT 06103-3597 Attn: Brian C.S. Freeman, Esq.

CERTIFICATION

The Undersigned members of the Connecticut Siting Council (Council) hereby certify that they have heard this case, or read the record thereof, in Docket No. 168 - An application of Springwich Cellular Limited Partnership for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of a cellular telecommunications facility located on the former site of the Bethany Airport, 719 Amity Road (Route 63) in Bethany, Connecticut, and voted as follows:

Council Members	Vote Cast
Mortimer A. Gelston Chairman	YES
Commissioner Reginald J. Smith Designee: Gerald J. Heffernan	YES
Commissioner Sidney J. Holbrook Designee: Fred Riese	YES
William J. Huber	YES
Gloria Dibble Pond	ABSENT
William H. Smith	YES
Colin C. Tait	ABSTAIN
Edward S. Wilensky	ABSENT
Dana J. Wright	YES

Dated at New Britain, Connecticut, July 6, 1995.

STATE OF CONNECTICUT }

ss. New Britain, Connecticut }
COUNTY OF HARTFORD
STATE OF CONNECTICUT } July 7, 1995

I hereby certify that the foregoing is a true and correct copy of the Findings of Fact, Opinion, and Decision and Order issued by the Connecticut Siting Council, State of Connecticut.

ATTEST:

Joel M. Rinebold
Executive Director
Connecticut Siting Council

I certify that a copy of the Findings of Fact, Opinion, and Decision and Order in Docket No. 168 have been forwarded by Certified First Class Return Receipt Requested mail on July 7, 1995, to all parties and intervenors of record as listed on the attached service list, dated April 10, 1995.

ATTEST:

Gloria B. Owens
Administrative Assistant
Connecticut Siting Council

Exhibit B

Property Card

The Assessor's office is responsible for the maintenance of records on the ownership of properties. Assessments are computed at 70% of the estimated market value of real property at the time of the last revaluation which was 2018.

Information on the Property Records for the Municipality of Bethany was last updated on 2/27/2021.

Parcel Information

Location:	755 AMITY RD	Property Use:	Public Use	Primary Use:	Fire Station - Volunteer
Unique ID:	00016500	Map Block Lot:	117/1	Acres:	138.50
490 Acres:	0.00	Zone:	B&I	Volume / Page:	0044/0306
Developers Map / Lot:		Census:			

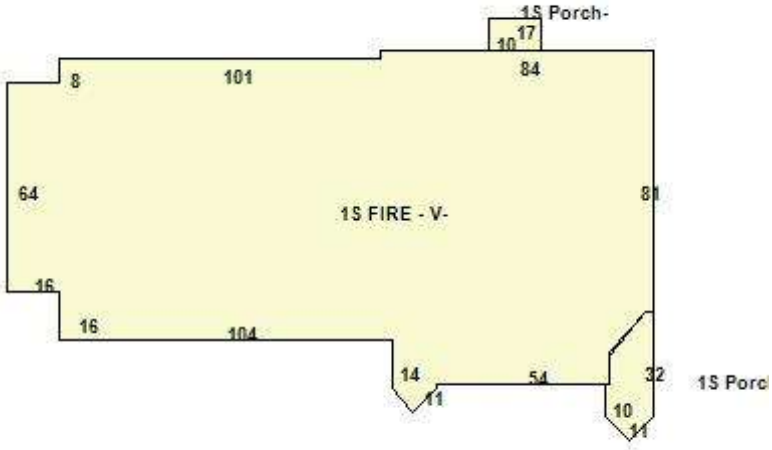
Value Information

	Appraised Value	Assessed Value
Land	1,421,200	994,840
Buildings	1,878,616	1,315,030
Detached Outbuildings	150,924	105,650
Total	3,450,740	2,415,520

Owner's Information

Owner's Data
BETHANY TOWN OF 40 PECK RD BETHANY CT 06524

Building 1



Category:	Public Use	Use:	Fire Station - Volunteer	Stories:	1.00
Above Grade:	18,387	Below Grade:	0	Below Grade Finish:	0
Construction:	Average	Year Built:	1996	Heating:	FHA

Fuel:	Oil	Cooling Percent:	100%	Siding:	Vinyl
Roof Material:	Asphalt	Beds/Units:	0		

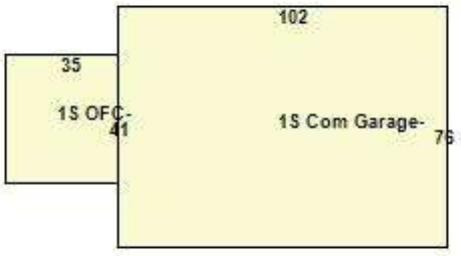
Special Features

Extra Plumbing Fixtures	6

Attached Components

Type:	Year Built:	Area:
Open Porch	2008	170
Open Porch	2008	460

Building 2



Category:	Automotive	Use:	Commercial Garage	Stories:	1.00
Above Grade:	9,187	Below Grade:	0	Below Grade Finish:	0
Construction:	Low Cost	Year Built:	2008	Heating:	
Fuel:		Cooling Percent:	20%	Siding:	
Roof Material:		Beds/Units:	0		

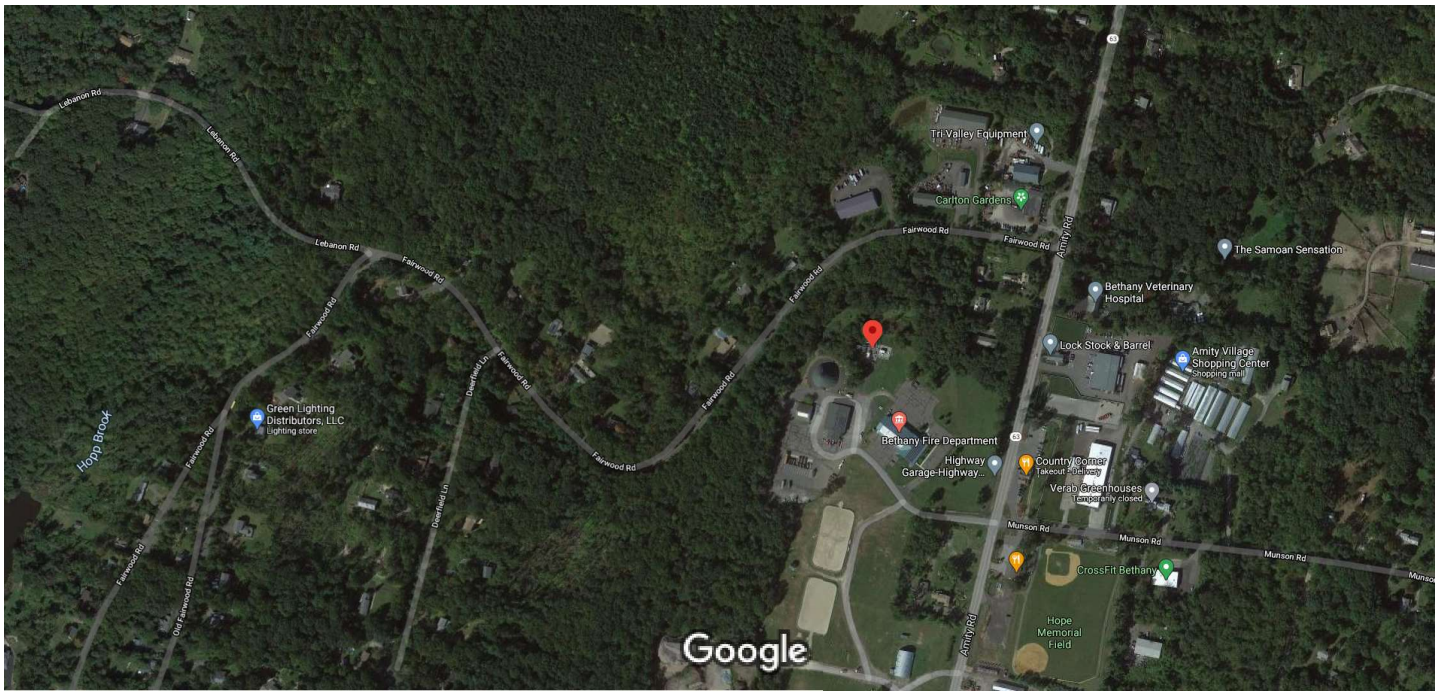
Special Features

Attached Components

Detached Outbuildings

Type:	Year Built:	Length:	Width:	Area:
Paving	1996			40,000
Average Shed	2003			6,320
Average Shed	1996			3,000
Average Shed	1979			600
Frame Shed	2003			310

Google Maps 41°26'33.9"N 72°59'32.9"W



Imagery ©2021 Maxar Technologies, U.S. Geological Survey, USDA Farm Service Agency, Map data ©2021 200 ft

41°26'33.9"N 72°59'32.9"W

41.442758, -72.992461

Directions Save Nearby Send to your phone Share

Bethany, CT 06524

C2V5+42 Bethany, Connecticut

Photos

Exhibit C

Construction Drawings

DISH Wireless L.L.C. SITE ID:

BOHVN00015A

DISH Wireless L.L.C. SITE ADDRESS:

755 AMITY RD
BETHANY, CT 06524

CONNECTICUT CODE COMPLIANCE

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

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

SHEET INDEX

SCOPE OF WORK

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

TOWER SCOPE OF WORK:
- INSTALL (3) PROPOSED PANEL ANTENNAS (1 PER SECTOR)
- INSTALL (1) PROPOSED PLATFORM
- 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:	BETHANY TOWN OF
ADDRESS:	40 PECK RD BETHANY, CT 06524
TOWER TYPE:	MONOPOLE
TOWER CO SITE ID:	841295
TOWER APP NUMBER:	553359
COUNTY:	NEW HAVEN
LATITUDE (NAD 83):	41° 26' 33.93" N 41.442758 N
LONGITUDE (NAD 83):	72° 59' 32.86" W 72.992461 W
ZONING JURISDICTION:	TOWN OF BETHANY
ZONING DISTRICT:	B&I
PARCEL NUMBER:	117/1
OCCUPANCY GROUP:	U
CONSTRUCTION TYPE:	II-B
POWER COMPANY:	NORTHEAST UTILITIES
TELEPHONE COMPANY:	AT&T

PROJECT DIRECTORY

APPLICANT:	DISH Wireless L.L.C. 5701 SOUTH SANTA FE DRIVE LITTLETON, CO 80120
TOWER OWNER:	CROWN CASTLE 2000 CORPORATE DRIVE CANONSBURG, PA 15317 (877) 486-9377
SITE DESIGNER:	INFINIGY 2500 W. HIGGINS RD. STE. 500 HOFFMAN ESTATES, IL 60169 (847) 648-4068
SITE ACQUISITION:	NICHOLAS CURRY NICHOLAS.CURRY@CROWNCASTLE.COM
CONSTRUCTION MANAGER:	JAVIER SOTO JAVIER.SOTO@DISH.COM (617) 839-6514
RF ENGINEER:	SYED ZAIDI SYED.ZAIDI@DISH.COM

DIRECTIONS

DIRECTIONS FROM TWEED NEW HAVEN AIRPORT:
DEPART AND HEAD (NORTHEAST), TURN LEFT, AVIS RENT A CAR ON THE CORNER, TURN RIGHT, TURN RIGHT TOWARD FORT HALE RD, BUDGET CAR RENTAL ON THE CORNER, KEEP STRAIGHT TO GET ONTO FORT HALE RD TURN RIGHT ONTO CT-337 / TOWNSEND AVE, TURN LEFT ONTO MAIN STREET ANNEX, TAKE THE RAMP ON THE RIGHT FOR I-95 S / GOVERNOR JOHN DAVIS LODGE TPKE S, TAKE THE RAMP ON THE RIGHT FOR I-91 NORTH AND HEAD TOWARD DOWNTOWN NEW HAVEN / HARTFORD, AT EXIT 10, HEAD RIGHT ON THE RAMP FOR CT-40 TOWARD CHESHIRE / HAMDEN, TAKE THE RAMP ON THE RIGHT FOR CT-10 NORTH AND HEAD TOWARD CHESHIRE / MT CARMEL, BEAR RIGHT ONTO CT-10 / WHITNEY AVE, TURN LEFT ONTO TODD ST, TURN RIGHT ONTO SHEPARD AVE, TURN LEFT ONTO W TODD ST, BEAR RIGHT ONTO GAYLORD MOUNTAIN RD, TURN LEFT TO STAY ON GAYLORD MOUNTAIN RD, TURN LEFT ONTO CT-69 / CARRINGTON RD, TURN RIGHT ONTO RAINBOW RD, ROAD NAME CHANGES TO MUNSON RD, KEEP STRAIGHT TO GET ONTO ROAD, ARRIVE AT, 755 AMITY RD, BETHANY, CT 06524.

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
SHUHEI SAKAMOTO
34916
LICENSED PROFESSIONAL ENGINEER
8/12/2021

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

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	06/21/2020	ISSUED FOR REVIEW
0	08/09/2021	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
2039-Z5555C

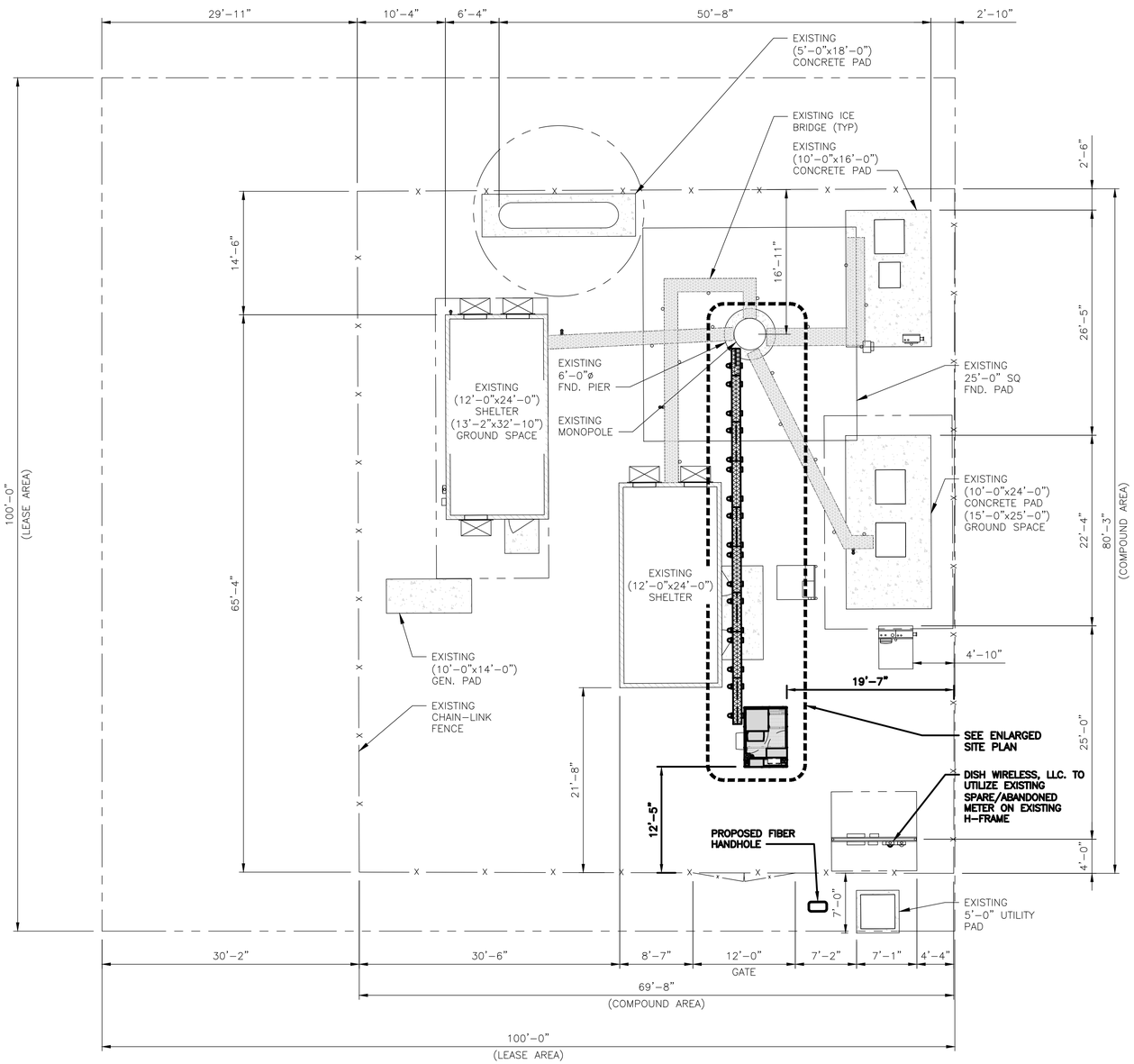
DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00015A
BETHANY
755 AMITY RD
BETHANY, CT 06524

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

NOTES

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



1 A-2

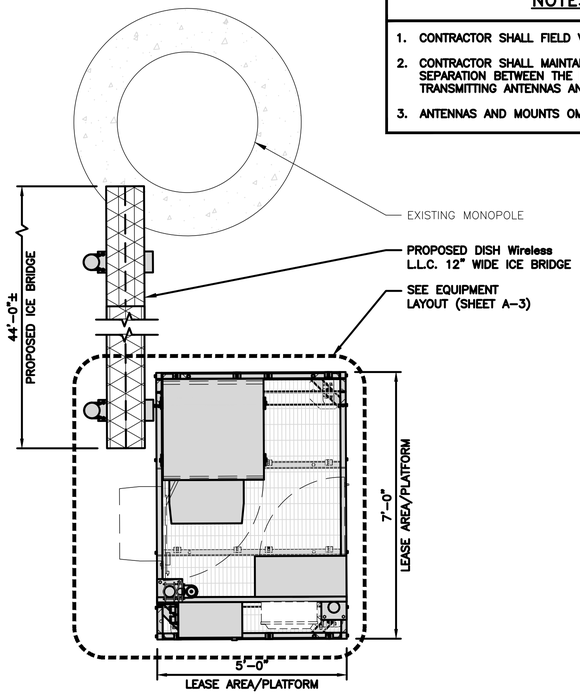
OVERALL SITE PLAN

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

1

NOTES

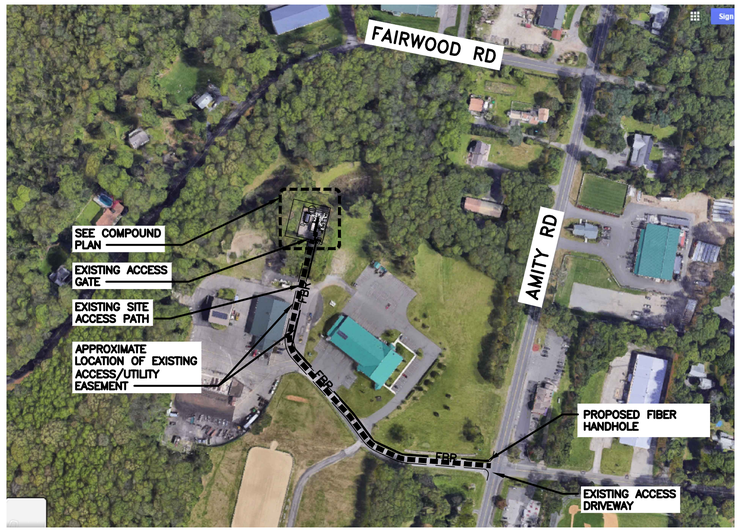
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. CONTRACTOR SHALL MAINTAIN A 10'-0" MINIMUM SEPARATION BETWEEN THE PROPOSED GPS UNIT, TRANSMITTING ANTENNAS AND EXISTING GPS UNITS.
3. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.



ENLARGED SITE PLAN

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

2



SITE PLAN

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

3

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

CROWN CASTLE
2000 CORPORATE DRIVE
CANONSBURG, PA 15317

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WWW.INFINIGY.COM

STATE OF CONNECTICUT
SHUHEI SAKAMOTO
34916
LICENSED PROFESSIONAL ENGINEER
8/12/2021

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

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	06/21/2020	ISSUED FOR REVIEW
0	08/09/2021	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
2039-Z5555C

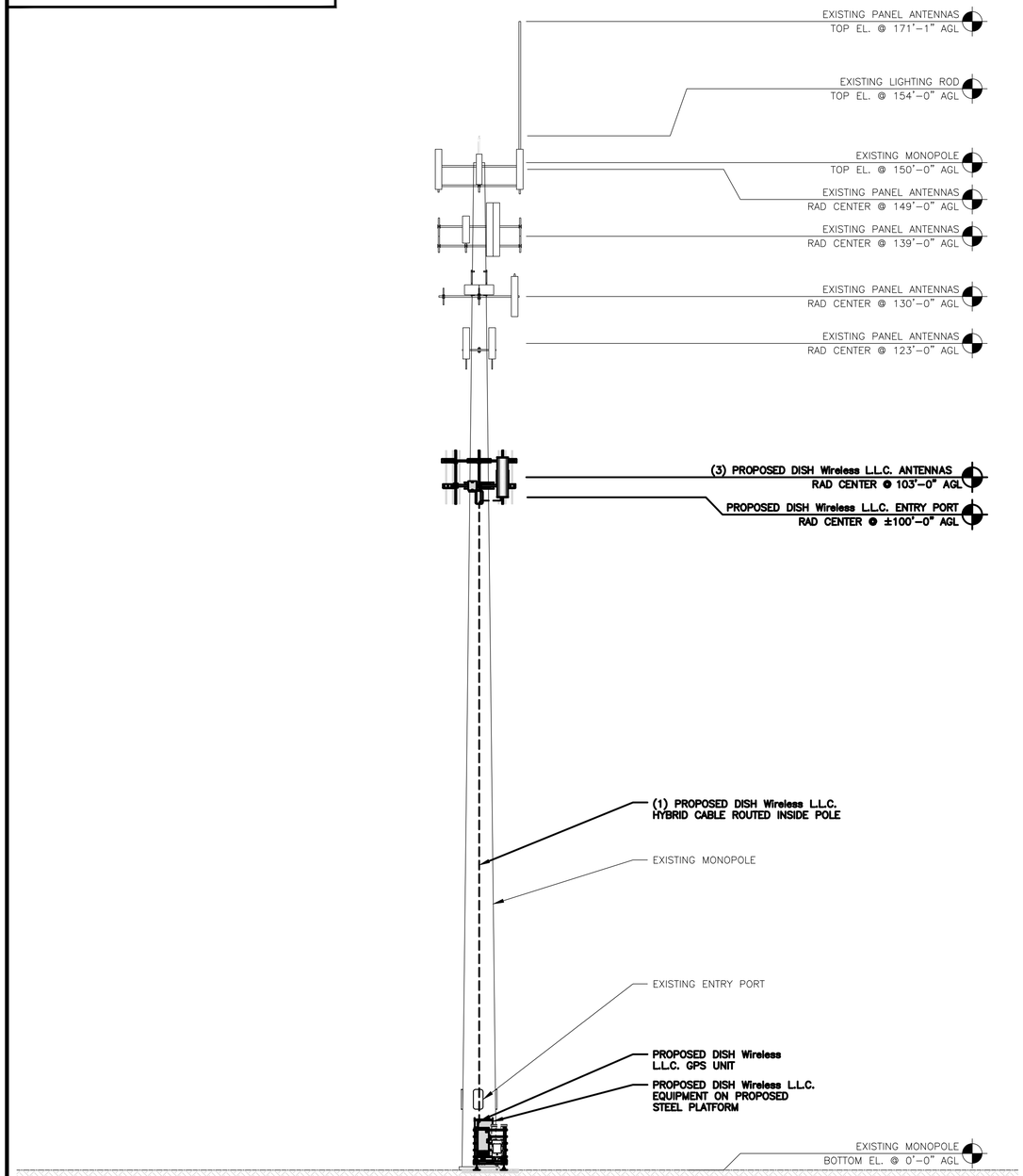
DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00015A
BETHANY
755 AMITY RD
BETHANY, CT 06524

SHEET TITLE
OVERALL AND ENLARGED SITE PLAN

SHEET NUMBER
A-1

NOTES

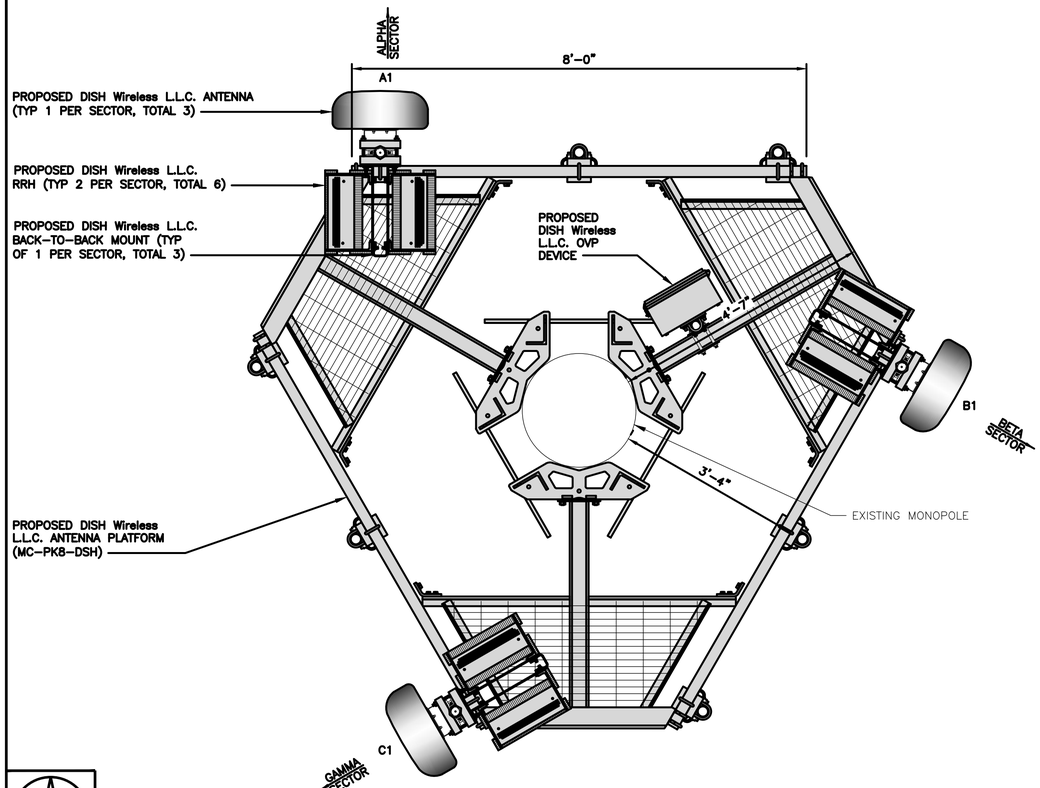
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNA AND MW DISH SPECIFICATIONS REFER TO ANTENNA SCHEDULE AND TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS
3. EXISTING EQUIPMENT AND FENCE OMITTED FOR CLARITY.



PROPOSED SOUTH ELEVATION

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

1



ANTENNA LAYOUT

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

2

SECTOR	POSITION	ANTENNA						TRANSMISSION CABLE
		EXISTING OR PROPOSED	MANUFACTURER – MODEL NUMBER	TECHNOLOGY	SIZE (HxW)	AZMUITH	RAD CENTER	FEED LINE TYPE AND LENGTH
ALPHA	A1	PROPOSED	JMA WIRELESS – MX08FR0665-21	5G	72.0" x 20.0"	0°	103'-0"	(1) HIGH-CAPACITY HYBRID CABLE (180' LONG)
BETA	B1	PROPOSED	JMA WIRELESS – MX08FR0665-21	5G	72.0" x 20.0"	120°	103'-0"	
GAMMA	C1	PROPOSED	JMA WIRELESS – MX08FR0665-21	5G	72.0" x 20.0"	240°	103'-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

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STATE OF CONNECTICUT
SHUHEI SAKAMOTO
34916
LICENSED PROFESSIONAL ENGINEER
8/12/2021

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

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

SUBMITTALS

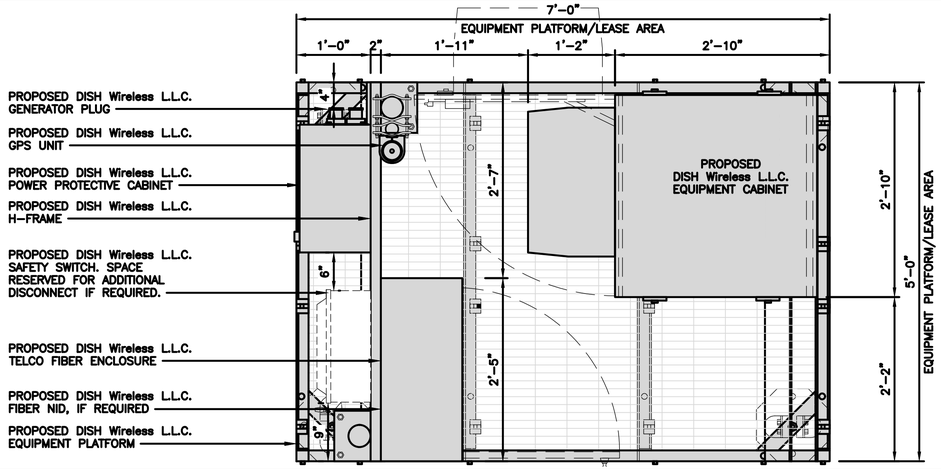
REV	DATE	DESCRIPTION
A	06/21/2020	ISSUED FOR REVIEW
0	08/09/2021	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
2039-Z5555C

DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00015A
BETHANY
755 AMITY RD
BETHANY, CT 06524

SHEET TITLE
ELEVATION, ANTENNA LAYOUT AND SCHEDULE

SHEET NUMBER
A-2



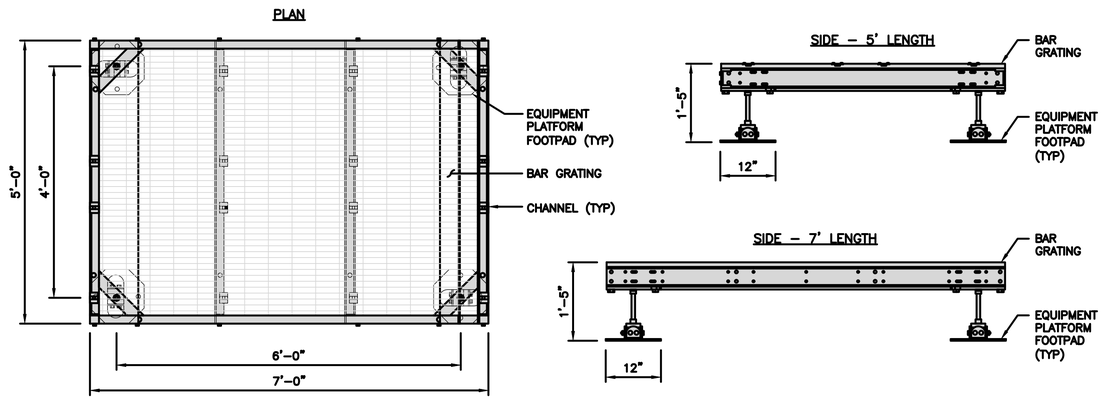
PLATFORM EQUIPMENT PLAN

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

1

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

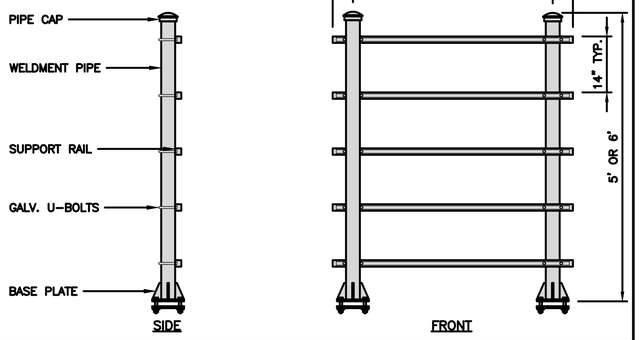
NOTE:
GC TO PROVIDE EXTENDED THREAD FOR PLATFORM IF REQUIRED HEIGHT EXCEEDS 17"



PLATFORM DETAIL | NO SCALE | 2

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

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

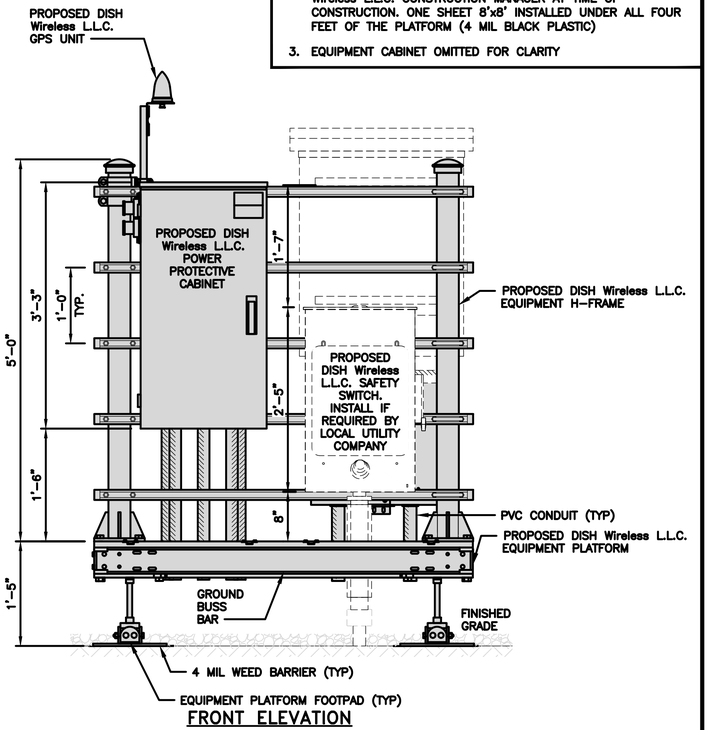


H-FRAME DETAIL | NO SCALE | 3

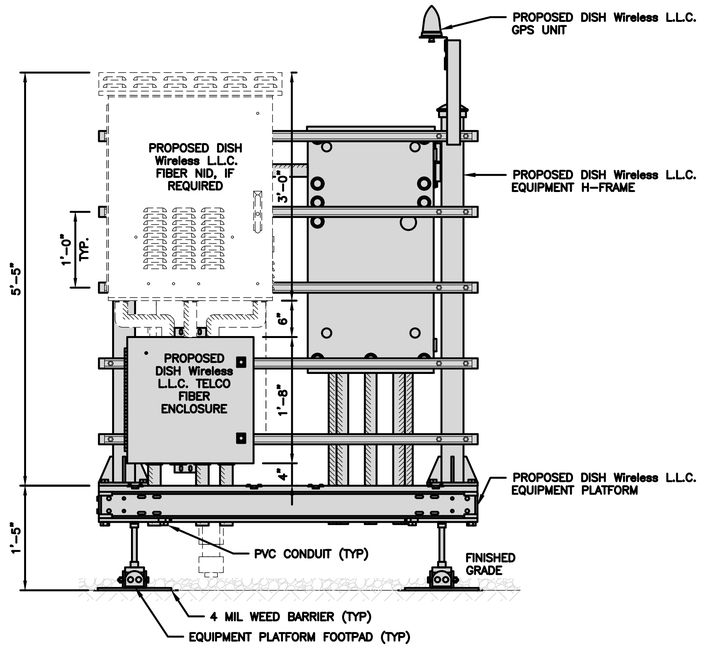
NOT USED | NO SCALE | 4

NOTES

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



FRONT ELEVATION



BACK ELEVATION

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

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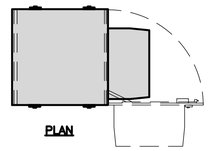
DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00015A
BETHANY
755 AMITY RD
BETHANY, CT 06524

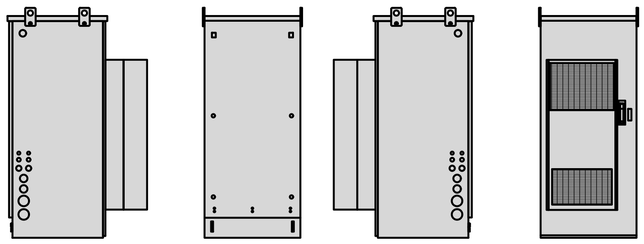
SHEET TITLE
EQUIPMENT PLATFORM AND H-FRAME DETAILS

SHEET NUMBER
A-3

CHARLES INDUSTRY HEX CUBE–PM639155N4

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

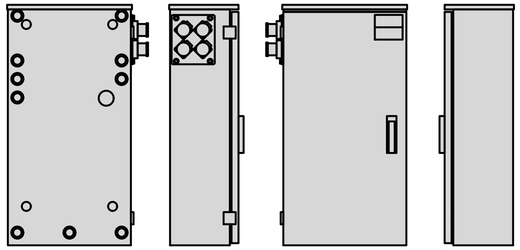




CABINET DETAIL | NO SCALE | 1

RAYCAP PPC RDIAC–2465–P–240–MTS

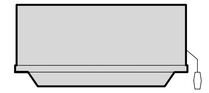
ENCLOSURE DIMENSIONS (HxWxD):	39"x22.855"x12.593
WEIGHT:	80 lbs
OPERATING AC VOLTAGE	240/120 1 PHASE 3W+G

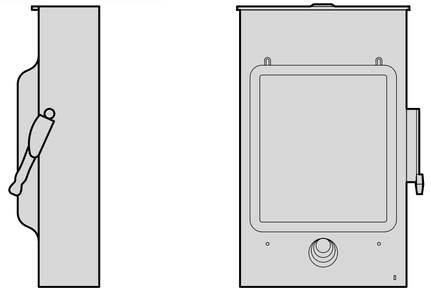


POWER PROTECTION CABINET (PPC) DETAIL | NO SCALE | 2

SQUARE D SAFETY SWITCHES D224NRB

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



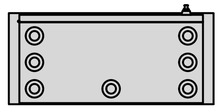


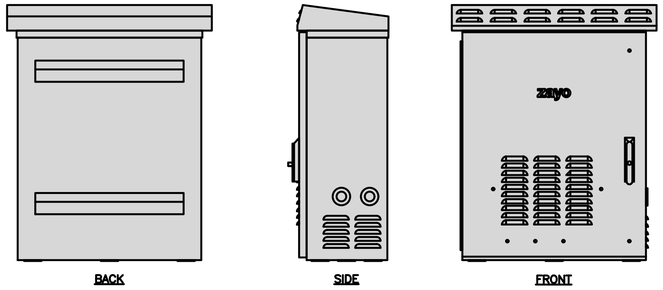
SAFETY SWITCH DETAIL | NO SCALE | 3

NOT USED | NO SCALE | 4

ZAYO 5RU (LEFT SWING DOOR) FIBER NID ENCLOSURE

DIMENSIONS (HxWxD)	36.1"x29"x12.9"
WEIGHT	85 lbs

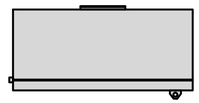




FIBER NID ENCLOSURE DETAIL | NO SCALE | 5

CHARLES CFIT–PF2020DSH1 FIBER TELCO ENCLOSURE

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

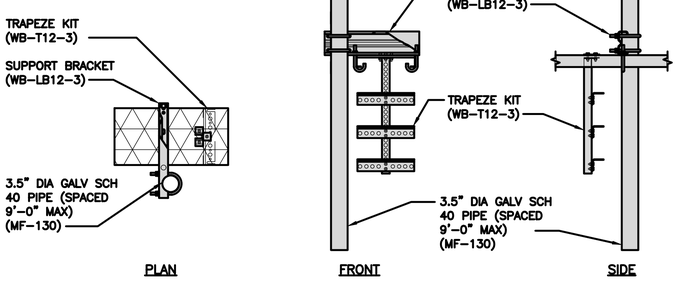


FIBER TELCO ENCLOSURE DETAIL | NO SCALE | 6

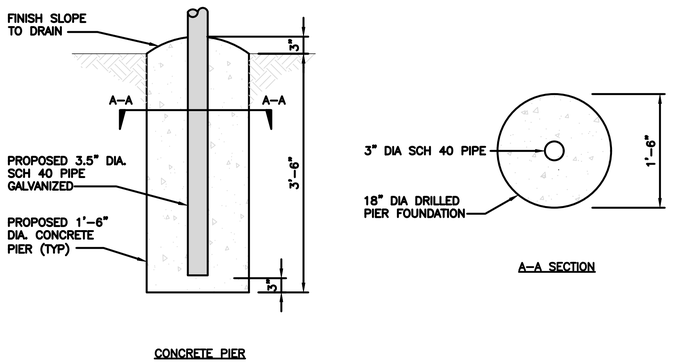
COMMSCOPE WB–K110–B WAVEGUIDE BRIDGE KIT

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

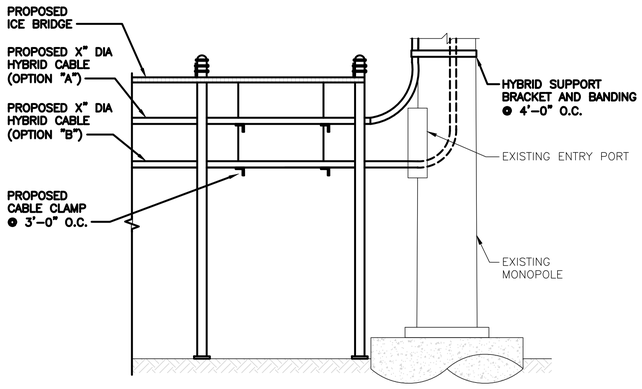
INCLUDED PRODUCTS:	WB–T12–3 TRAPEZE KIT, 3 RUNGS
	WB–LB12–3 SUPPORT BRACKET
	MF–130 DIRECT BURIAL PIPE COLUMN, 13'–4"



ICE BRIDGE DETAIL | NO SCALE | 7



TYPICAL ICE BRIDGE CONCRETE PIER DETAIL | NO SCALE | 8



HYBRID CABLE RUN | NO SCALE | 9

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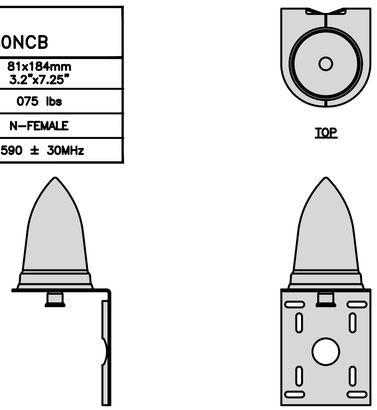
BOHVN00015A
BETHANY
755 AMITY RD
BETHANY, CT 06524

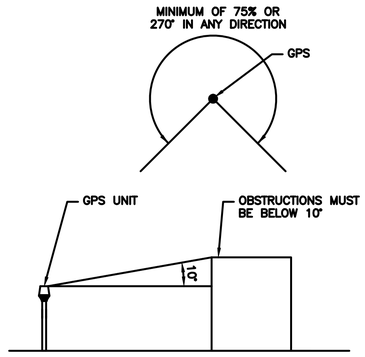
SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-4

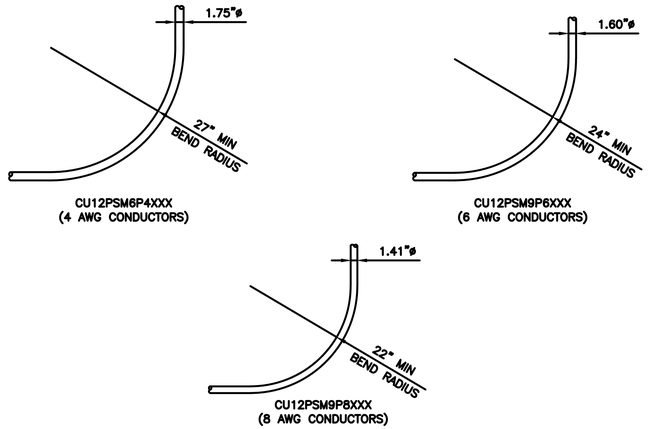
PCTEL GPSGL-TMG-SPI-40NCB	
DIMENSIONS (DIAxH) MM/INCH	81x184mm 3.2"x7.25"
WEIGHT W/ACCESSORIES	075 lbs
CONNECTOR	N-FEMALE
FREQUENCY RANGE	1590 ± 30MHz



GPS DETAIL | NO SCALE | 1



GPS MINIMUM SKY VIEW REQUIREMENTS | NO SCALE | 2



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

NOT USED | NO SCALE | 4

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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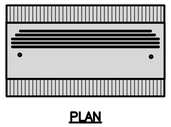
BETHANY
755 AMITY RD
BETHANY, CT 06524

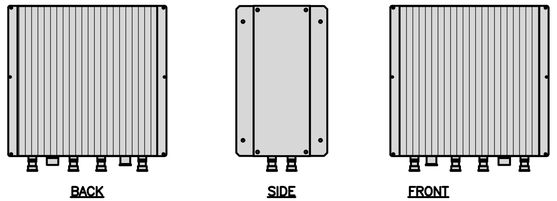
SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-5

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



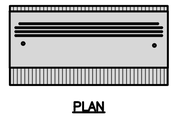
PLAN



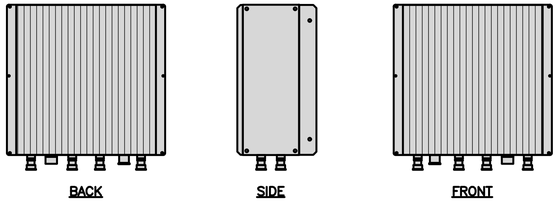
BACK SIDE FRONT

RRH DETAIL | NO SCALE | 1

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



PLAN

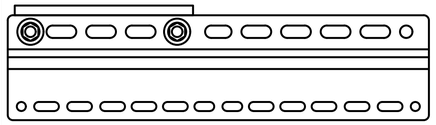


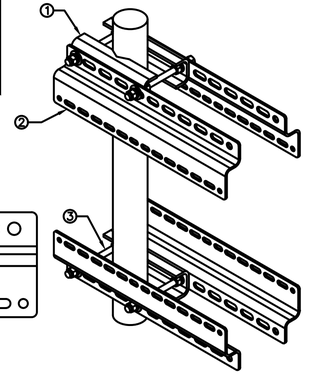
BACK SIDE FRONT

RRH DETAIL | NO SCALE | 2

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

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



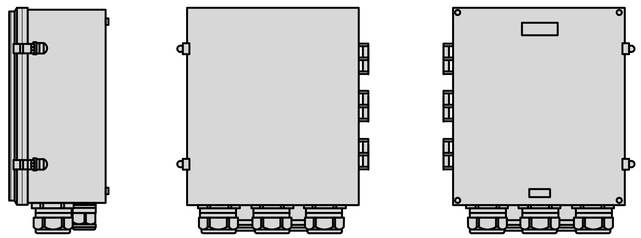


NOTE:
OR DISH Wireless L.L.C.
APPROVED EQUIVALENT

RRH MOUNT DETAIL | NO SCALE | 3

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

PLAN

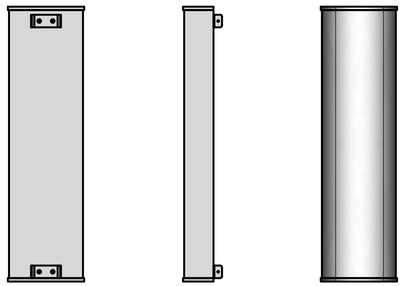


SIDE BACK FRONT

SURGE SUPPRESSION DETAIL (OVP) | NO SCALE | 4

JMA WIRELESS MX08FRO665-21 ANTENNA	
DIMENSIONS (HxWxD)	72.0"x20.0"x8.0"
TOTAL WEIGHT	64.5 LB
RF PORTS, CONNECTOR TYPE	8 x 4.3-10 FEMALE

PLAN



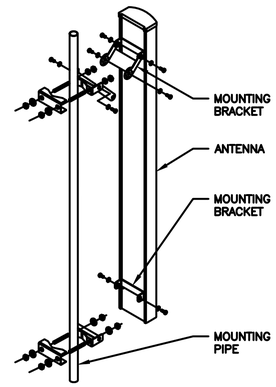
BACK SIDE FRONT

ANTENNA DETAIL | NO SCALE | 5

NOTES

FINAL ANTENNA SPECIFICATIONS TO BE CONFIRMED BY GC

M04 MOUNTING BRACKET HPA-33R-BUU-H4-K	
WIDTH	5"
DEPTH	2"
HEIGHT	8"
TOTAL WEIGHT	1.5 lbs
HOUSING MATERIAL	ASA/ABS/ALUMINUM
RADOME COLOR	LIGHT GRAY
CONNECTOR	1x8-PIN DAISY CHAIN



NOTE:
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ANTENNA MOUNTING DETAIL | NO SCALE | 6

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

NOTE:
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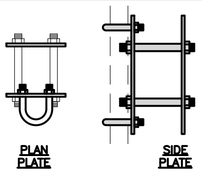
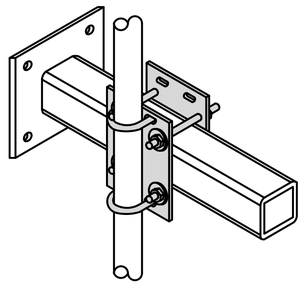


PLAN PLATE SIDE PLATE

PLAN U-BOLT SIDE U-BOLT



RRH/OVP MOUNT DETAIL | NO SCALE | 7

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

NOTE:
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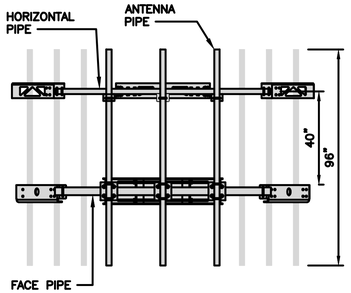
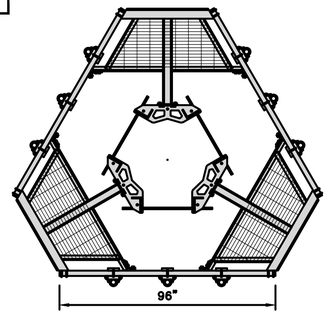
APPROVED EQUIVALENT





ANTENNA PLATFORM DETAIL | NO SCALE | 8

NOT USED | NO SCALE | 9

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LICENSED PROFESSIONAL ENGINEER
8/12/2021

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

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	06/21/2020	ISSUED FOR REVIEW
0	08/09/2021	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
2039-Z5555C

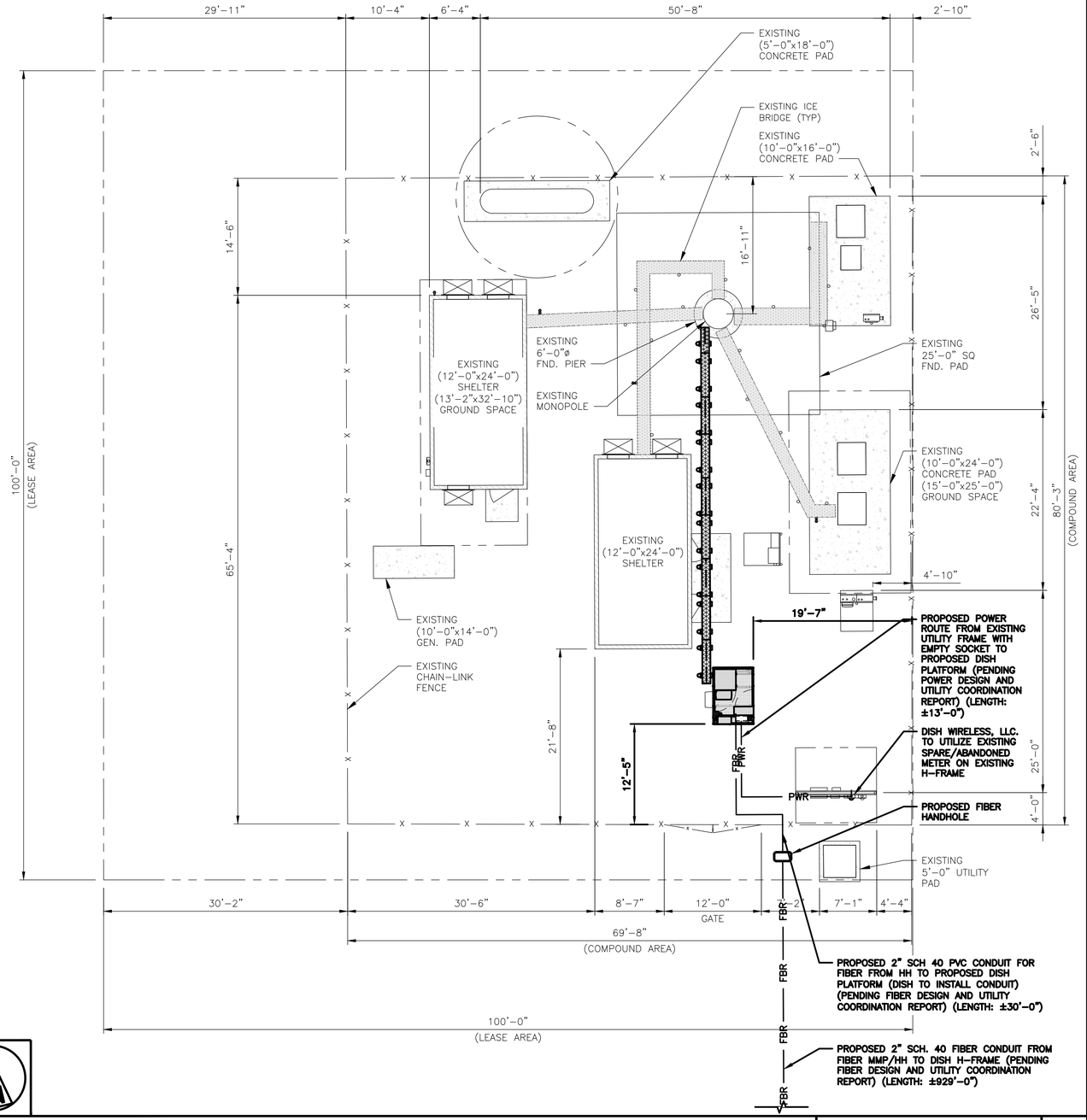
DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00015A
BETHANY
755 AMITY RD
BETHANY, CT 06524

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

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

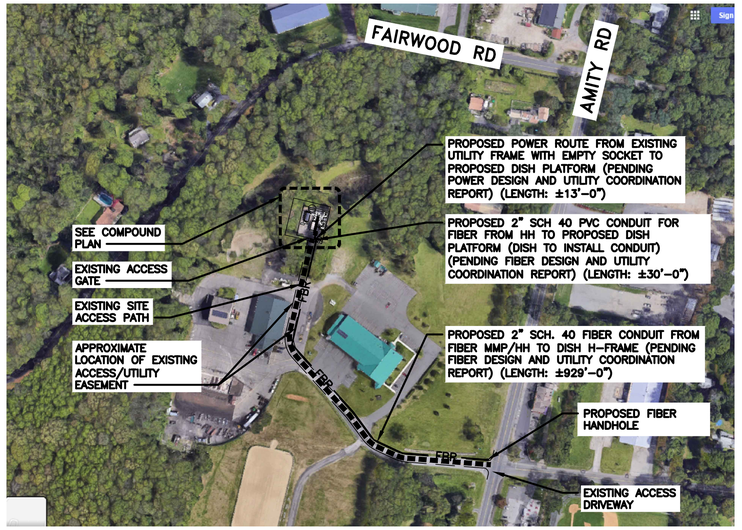
1

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

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

ELECTRICAL NOTES

2



OVERALL UTILITY ROUTE PLAN

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

3

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SHUHEI SAKAMOTO
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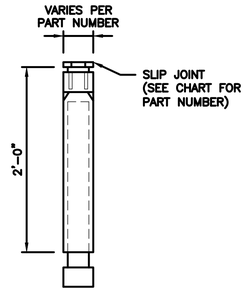
BETHANY
755 AMITY RD
BETHANY, CT 06524

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"

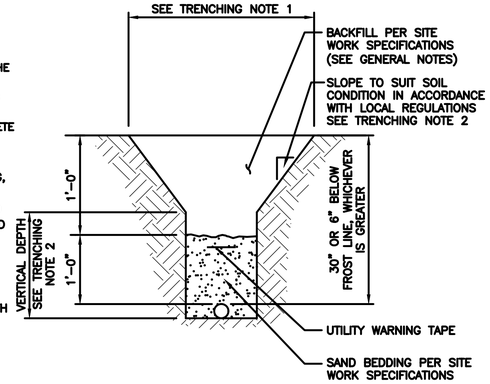


NOTE:
CONTRACTOR TO INSTALL EXPANSION FITTING SLIP JOINT AT METER CENTER CONDUIT TERMINATION, AS PER LOCAL UTILITY POLICY, ORDINANCE AND/OR SPECIFIED REQUIREMENT.

EXPANSION JOINT DETAIL | NO SCALE | 1

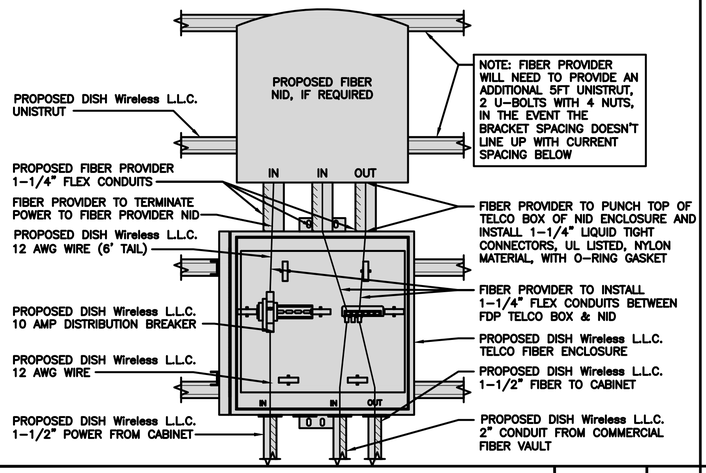
TRENCHING NOTES

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

NOT USED | NO SCALE | 3



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

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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BETHANY
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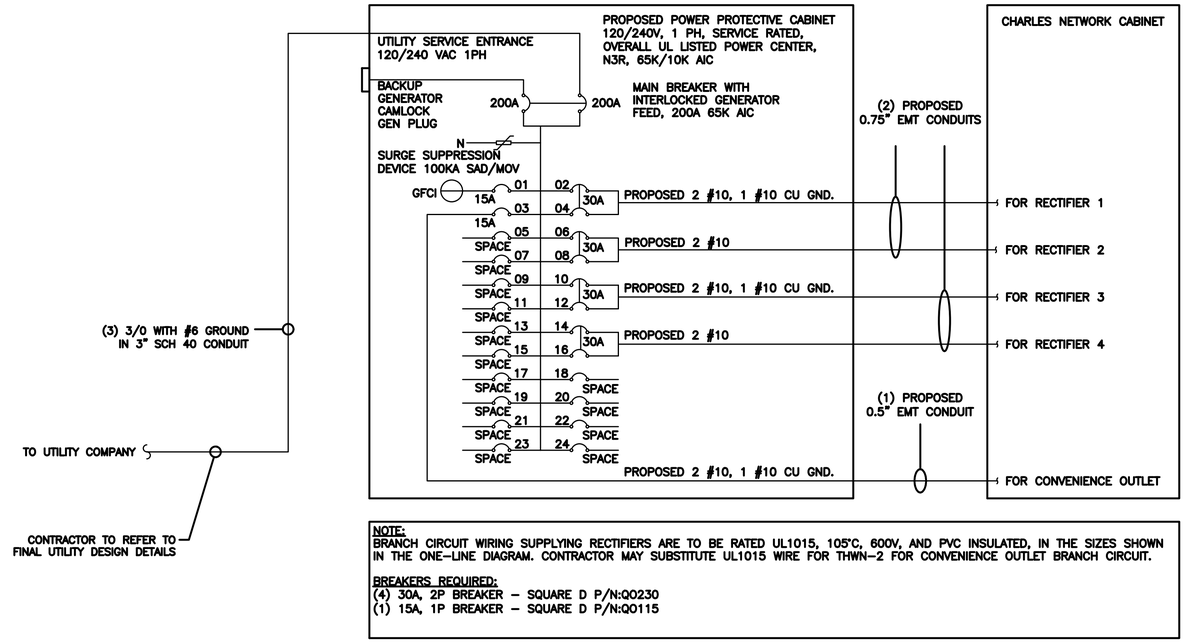
BETHANY, CT 06524

SHEET TITLE
ELECTRICAL DETAILS

SHEET NUMBER
E-2



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

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

NOTES

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

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

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

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

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

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

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

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

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

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

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

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

PPC ONE–LINE DIAGRAM

NO SCALE | 1

PROPOSED CHARLES PANEL SCHEDULE

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

PANEL SCHEDULE

NO SCALE | 2

NOT USED

NO SCALE | 3

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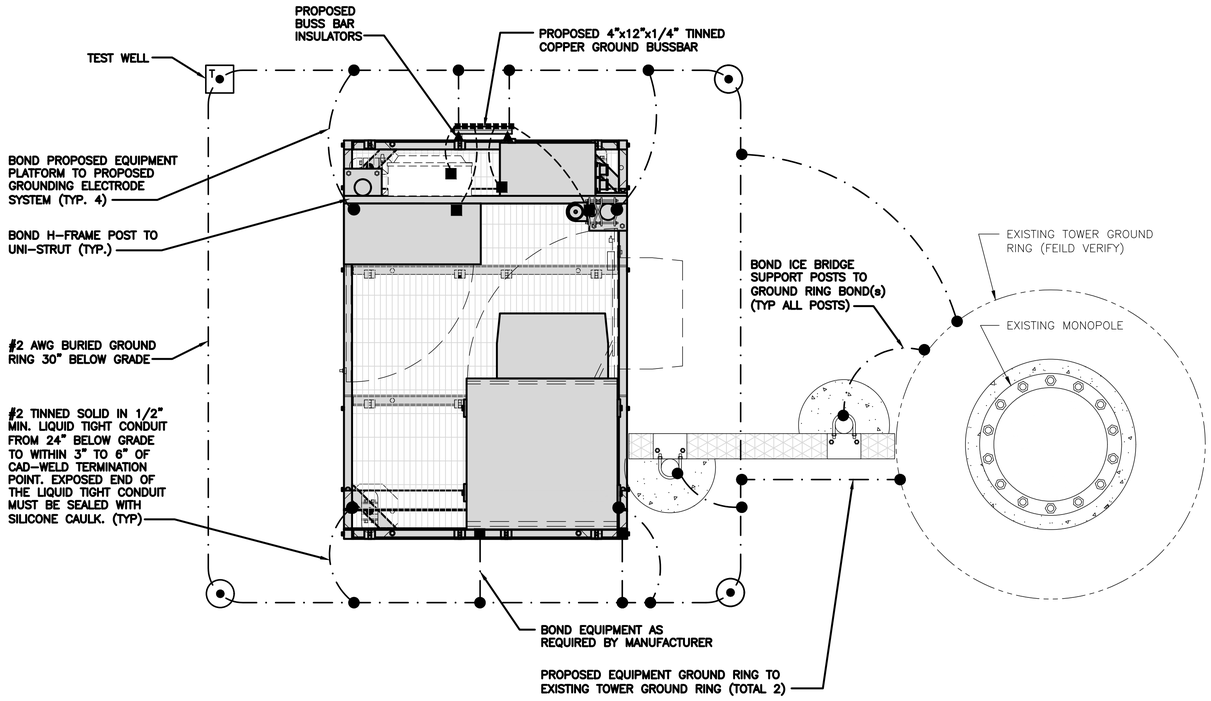
PROJECT INFORMATION
BOHVN00015A
BETHANY
755 AMITY RD
BETHANY, CT 06524

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

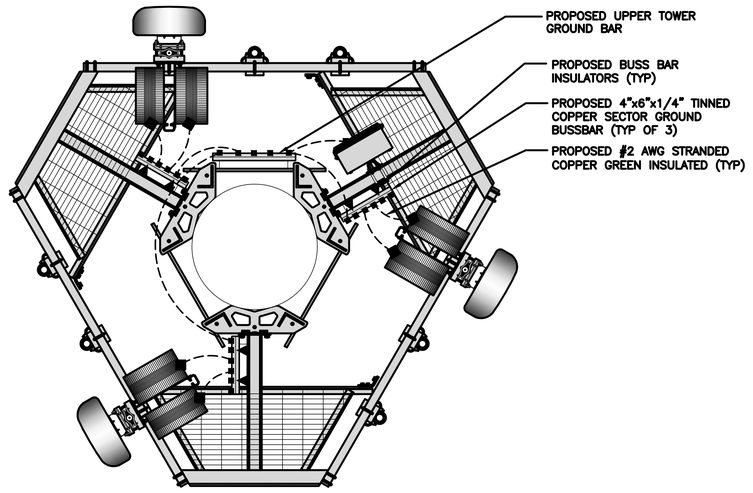
SHEET NUMBER
E-3



TYPICAL EQUIPMENT GROUNDING PLAN | NO SCALE | 1

NOTES

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



TYPICAL ANTENNA GROUNDING PLAN | NO SCALE | 2

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

GROUNDING LEGEND

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

GROUNDING KEY NOTES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

GROUNDING KEY NOTES | NO SCALE | 3

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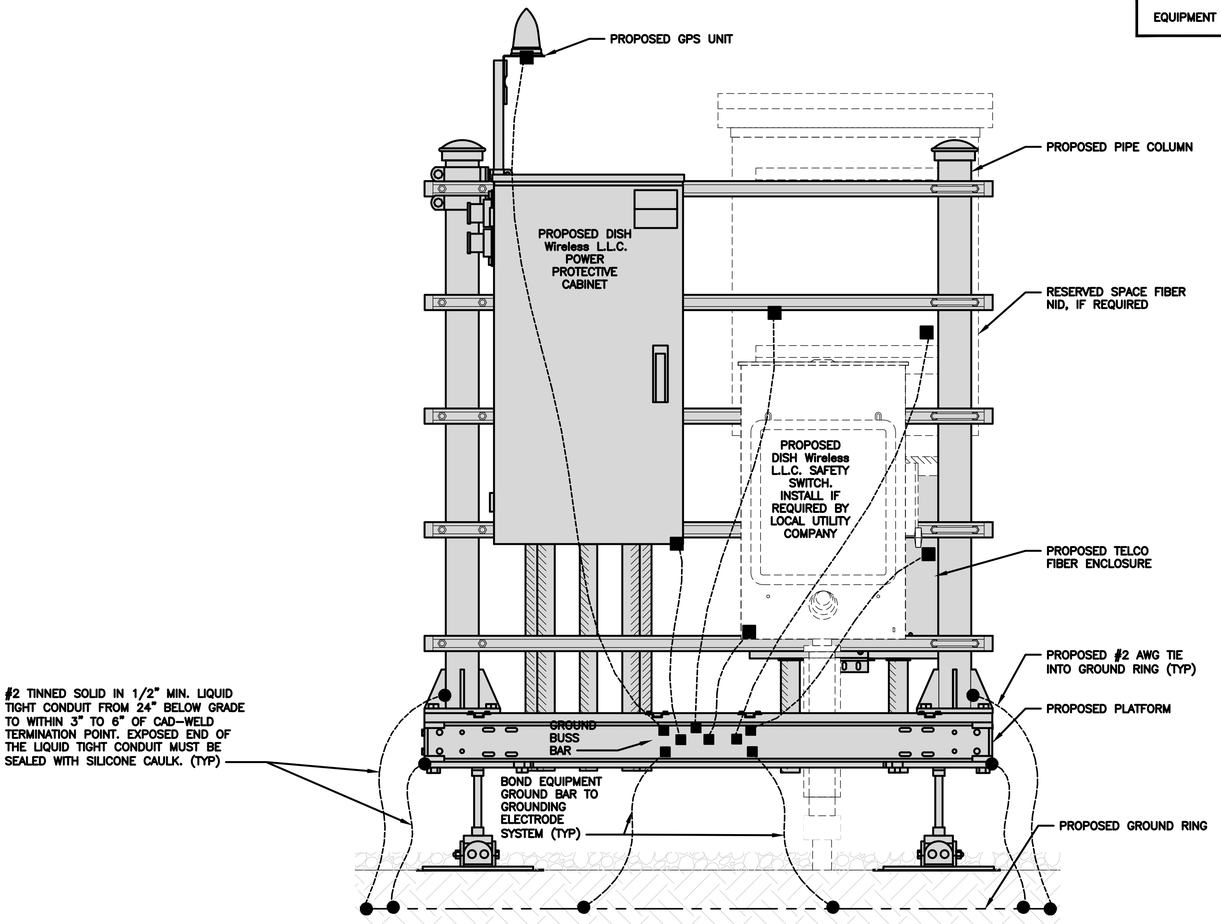
SHEET TITLE
GROUNDING PLANS AND NOTES

SHEET NUMBER
G-1

NOTES

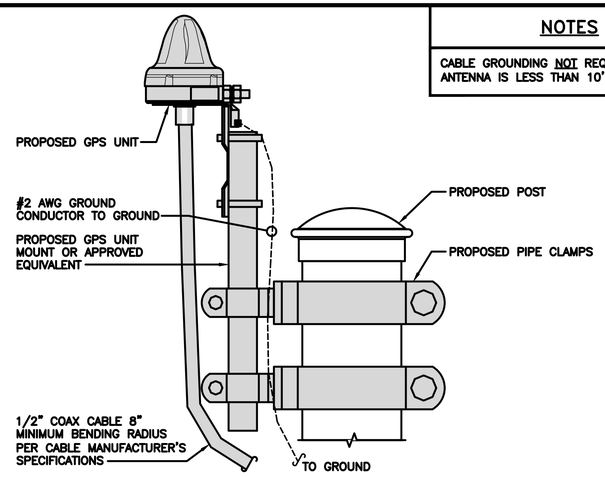
EQUIPMENT CABINET OMITTED FOR CLARITY



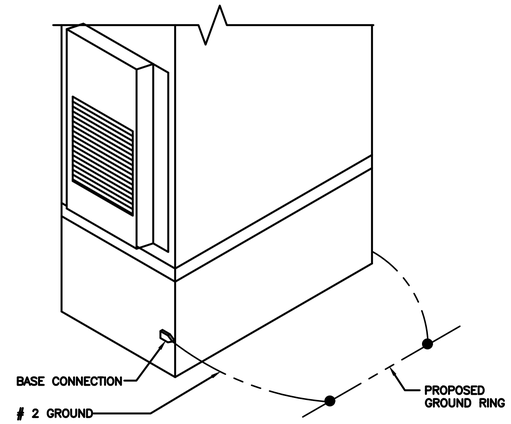
H-FRAME GROUNDING DETAIL | NO SCALE | 1

NOTES

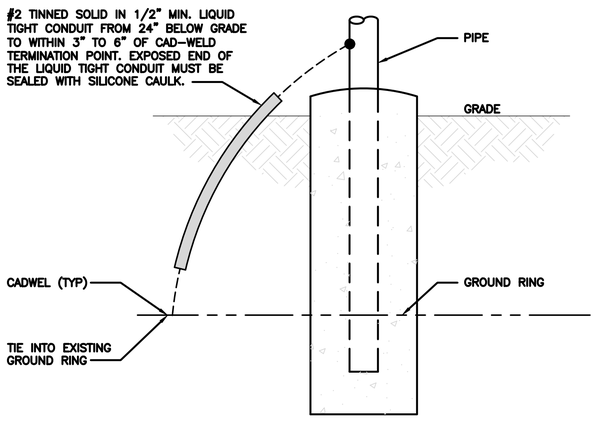
CABLE GROUNDING NOT REQUIRED WHEN ANTENNA IS LESS THAN 10' FROM CABINET



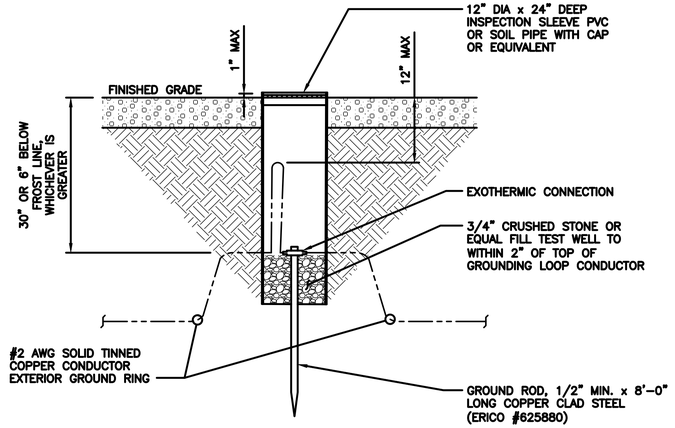
TYPICAL GPS UNIT GROUNDING | NO SCALE | 2



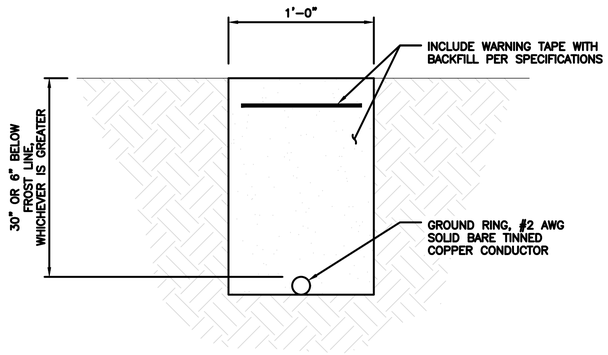
OUTDOOR CABINET GROUNDING | NO SCALE | 3



TRANSITIONING GROUND DETAIL | NO SCALE | 4



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



TYPICAL GROUND RING TRENCH | NO SCALE | 6

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STATE OF CONNECTICUT
SHUHEI SAKAMOTO
34916
LICENSED PROFESSIONAL ENGINEER
8/12/2021

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

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	06/21/2020	ISSUED FOR REVIEW
0	08/09/2021	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
2039-Z5555C

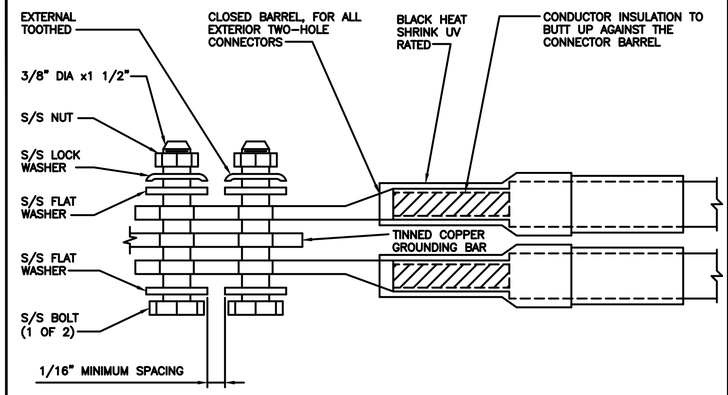
DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00015A
BETHANY
755 AMITY RD
BETHANY, CT 06524

SHEET TITLE
GROUNDING DETAILS

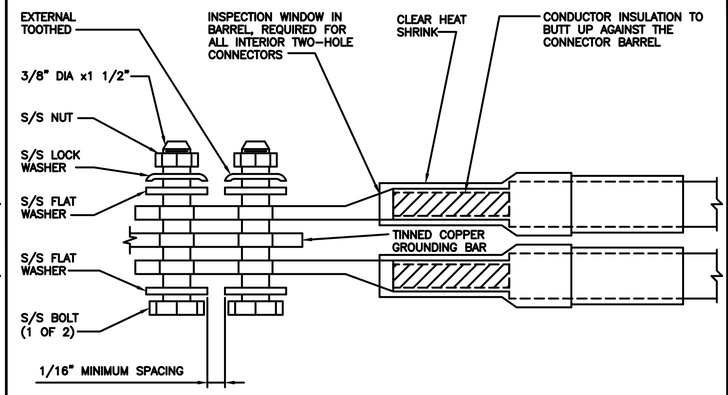
SHEET NUMBER
G-2

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

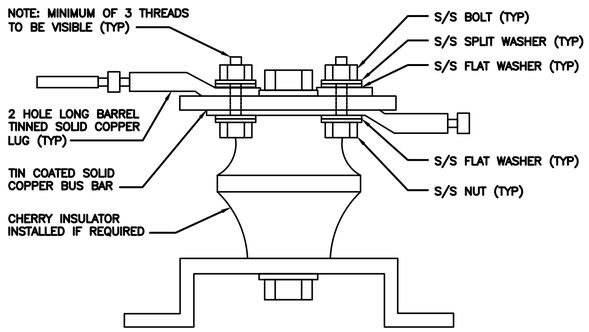
TYPICAL GROUNDING NOTES | NO SCALE | 1



TYPICAL EXTERIOR TWO HOLE LUG | NO SCALE | 2



TYPICAL INTERIOR TWO HOLE LUG | NO SCALE | 3



LUG DETAIL | NO SCALE | 4

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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SHEET TITLE
GROUNDING DETAILS

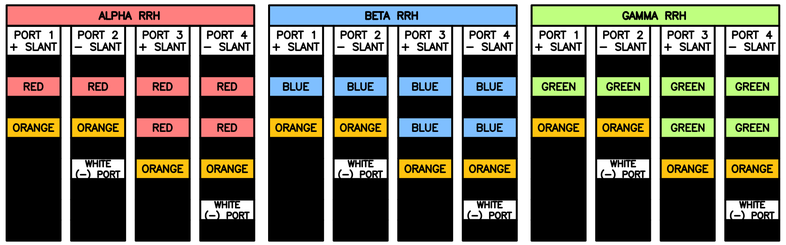
SHEET NUMBER
G-3

RF JUMPER COLOR CODING

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

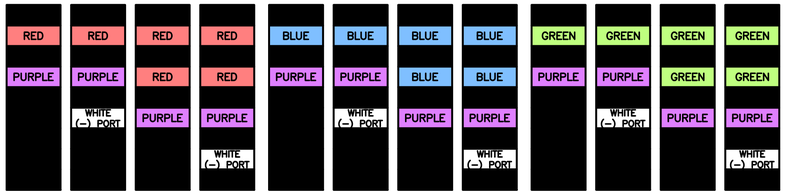
LOW-BAND RRH –
(600MHz N71 BASEBAND) +
(850MHz N26 BAND) +
(700MHz N29 BAND) – OPTIONAL PER MARKET

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



MID-BAND RRH –
(AWS BANDS N66+N70)

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

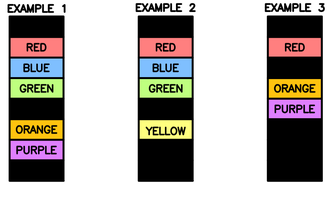


HYBRID/DISCREET CABLES

INCLUDE SECTOR BANDS BEING SUPPORTED
ALONG WITH FREQUENCY BANDS

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

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

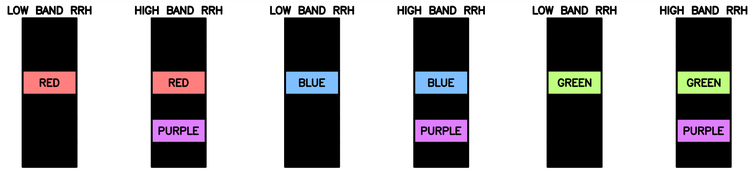


FIBER JUMPERS TO RRHs

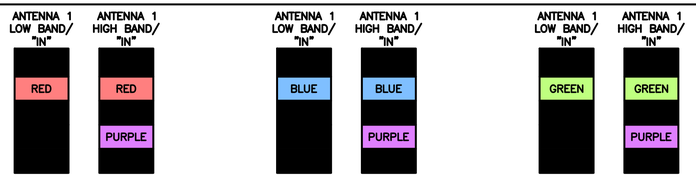
LOW-BAND RRH FIBER CABLES HAVE SECTOR
STRIPE ONLY

POWER CABLES TO RRHs

LOW-BAND RRH POWER CABLES HAVE SECTOR
STRIPE ONLY



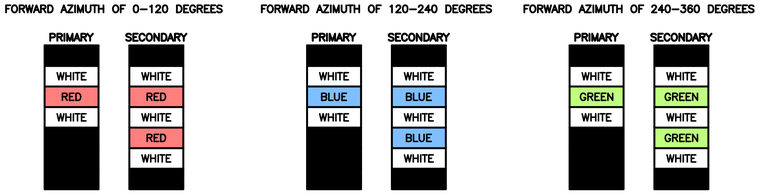
RET MOTORS AT ANTENNAS



MICROWAVE RADIO LINKS

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

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



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

AWS
(N66+N70+H-BLOCK)
PURPLE

CBRS TECH
(3 GHz)
YELLOW

NEGATIVE SLANT PORT
ON ANT/RRH
WHITE

ALPHA SECTOR
RED

BETA SECTOR
BLUE

GAMMA SECTOR
GREEN

COLOR IDENTIFIER | NO SCALE | 2

NOT USED | NO SCALE | 3

RF CABLE COLOR CODES | NO SCALE | 1

NOT USED | NO SCALE | 4

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DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00015A
BETHANY
755 AMITY RD
BETHANY, CT 06524

SHEET TITLE
RF
CABLE COLOR CODES

SHEET NUMBER
RF-1

SITE ACTIVITY REQUIREMENTS:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

GENERAL NOTES:

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

CONTRACTOR:GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION

CARRIER:DISH Wireless L.L.C.

TOWER OWNER:TOWER OWNER

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

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

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

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

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

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

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

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

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

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

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

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

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SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-2

EXOTHERMIC CONNECTION

MECHANICAL CONNECTION

BUSS BAR INSULATOR

CHEMICAL ELECTROLYTIC GROUNDING SYSTEM

TEST CHEMICAL ELECTROLYTIC GROUNDING SYSTEM

EXOTHERMIC WITH INSPECTION SLEEVE

GROUNDING BAR

GROUND ROD

TEST GROUND ROD WITH INSPECTION SLEEVE

SINGLE POLE SWITCH

DUPLEX RECEPTACLE

DUPLEX GFCI RECEPTACLE

FLUORESCENT LIGHTING FIXTURE (2) TWO LAMPS 48–T8

SMOKE DETECTION (DC)

EMERGENCY LIGHTING (DC)

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

CHAIN LINK FENCE

WOOD/WROUGHT IRON FENCE

WALL STRUCTURE

LEASE AREA

PROPERTY LINE (PL)

SETBACKS

ICE BRIDGE

CABLE TRAY

WATER LINE

UNDERGROUND POWER

UNDERGROUND TELCO

OVERHEAD POWER

OVERHEAD TELCO

UNDERGROUND TELCO/POWER

ABOVE GROUND POWER

ABOVE GROUND TELCO

ABOVE GROUND TELCO/POWER

WORKPOINT

SECTION REFERENCE

DETAIL REFERENCE

LEGEND

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

ABBREVIATIONS

dish wireless.

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8/12/2021

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

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A&E PROJECT NUMBER

2039–Z5555C

DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00015A
BETHANY
755 AMITY RD
BETHANY, CT 06524

SHEET TITLE

LEGEND AND ABBREVIATIONS

SHEET NUMBER

GN-1

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

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

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

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

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

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

#4 BARS AND SMALLER 40 ksi

#5 BARS AND LARGER 60 ksi

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

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

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

ELECTRICAL INSTALLATION NOTES:

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

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

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

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

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

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

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

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

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

8. TIE WRAPS ARE NOT ALLOWED.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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34916
LICENSED PROFESSIONAL ENGINEER
8/12/2021

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

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	06/21/2020	ISSUED FOR REVIEW
0	08/09/2021	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
2039-Z5555C

DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00015A
BETHANY
755 AMITY RD
BETHANY, CT 06524

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-3

GROUNDING NOTES:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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BOHVN00015A
BETHANY
755 AMITY RD
BETHANY, CT 06524

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-4

Exhibit D

Structural Analysis Report

Date: **June 10, 2021**

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

Subject:	**Structural Analysis Report**	
Carrier Designation:	***DISH Network* Co-Locate**	
	Site Number:	BOHVN00015A
	Site Name:	CT-CCI-T-841295
Crown Castle Designation:	**BU Number:**	841295
	Site Name:	BETHANY
	JDE Job Number:	645141
	Work Order Number:	1964051
	Order Number:	553359 Rev. 1
Engineering Firm Designation:	**Crown Castle Project Number:**	1964051
Site Data:	**755 AMITY RD, BETHANY, New Haven County, CT** **Latitude *41° 26' 33.93"*, Longitude *-72° 59' 32.86"*** **151 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 - 99.8%**

This analysis utilizes an ultimate 3-second gust wind speed of 125 mph as required by the 2015 International Building Code. Applicable Standard references and design criteria are listed in Section 2 - "Analysis Criteria".

Structural analysis prepared by: Kayla Weimert

Respectfully submitted by:

Terry P Styran
2021.06.10
16:03:10 -04'00'

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

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 151 ft Monopole tower designed by VALMONT.

The tower has been modified per reinforcement drawings prepared by B+T Engineering in February 2012. Reinforcement includes the addition of flat plate shaft modifications from 0 ft. to 120.5 ft. as well as post-installed anchor rods and foundation modifications at 0 ft.

2) ANALYSIS CRITERIA

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

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
103.0	103.0	3	fujitsu	TA08025-B604	1	1-1/2
		3	fujitsu	TA08025-B605		
		3	jma wireless	MX08FRO665-21 w/ Mount Pipe		
		1	raycap	RDIDC-9181-PF-48		
		1	tower mounts	Commscope MC-PK8-DSH		

Table 2 - Other Considered Equipment

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
148.0	160.0	1	dbspectra	DS1F03F36D-N	2	7/8
	154.3	1	generic	Mount Pipe [12.5 ft. P2.5XS STD]	2 3 2	3/4 3/8 conduit
	152.0	3	sabre	Tiebacks [C10179001]		
	151.0	3	ericsson	RRUS 4449 B5/B12		
		3	ericsson	RRUS 4478 B14_CCIV2		
		3	ericsson	RRUS 8843 B2/B66A_CCIV2		
		6	powerwave technologies	LGP21401		
		2	raycap	DC6-48-60-18-8C-EV		
		1	raycap	DC6-48-60-18-8F		
	149.0	3	cci antennas	DMP65R-BU6D w/ Mount Pipe		
		3	cci antennas	OPA65R-BU6D w/ Mount Pipe		
		3	kathrein	800 10121 w/ Mount Pipe		
	148.0	1	tower mounts	Platform Mount [LP 715-1_KCKR]		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
138.0	139.0	6	commscope	NHH-65C-R2B	13	1-5/8
		3	decibel	DB854DG65ESX w/ Mount Pipe		
		1	rfs celwave	DB-T1-6Z-8AB-0Z		
		3	samsung telecommunications	RFV01U-D1A		
		3	samsung telecommunications	RFV01U-D2A		
	138.0	1	tower mounts	Platform Mount [LP 303-1_HR-1]		
		1	tower mounts	Side Arm Mount [SO 102-3]		
132.0	132.0	1	tower mounts	Side Arm Mount [SO 104-3]		
	131.0	2	alcatel lucent	1900MHZ RRH		
		1	alcatel lucent	1900MHz RRH		
		3	alcatel lucent	800 EXTERNAL NOTCH FILTER		
		3	alcatel lucent	800MHZ RRH		
130.0	133.0	1	pctel	GPS-TMG-HR-26NCM	3 1 1	1-5/8 1-1/4 1/2
	130.0	3	alcatel lucent	TD-RRH8X20-25		
		3	rfs celwave	APXVSPP18-C-A20 w/ Mount Pipe		
		3	rfs celwave	APXVTM14-C-120 w/ Mount Pipe		
		1	tower mounts	T-Arm Mount [TA 602-3]		
122.0	123.5	3	tower mounts	6' x 2" Horizontal Mount Pipe	7	1-5/8
	123.0	3	ericsson	ERICSSON AIR 21 B4A B2P w/ Mount Pipe		
		3	ericsson	RADIO 4449 B71 B85A_T-MOBILE		
		3	tower mounts	6' x 2" Horizontal Mount Pipe		
	122.0	3	rfs celwave	APXVAALL24_43-U-NA20_TMO w/ Mount Pipe		
		2	tower mounts	T-Arm Mount [TA 601-1]		
	121.0	3	tower mounts	6' x 2" Horizontal Mount Pipe		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Reference	Source
4-TOWER MANUFACTURER DRAWINGS	6133951	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	5135917	CCISITES
4-GEOTECHNICAL REPORTS	5135898	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	5135907	CCISITES
4-POST-MODIFICATION INSPECTION	5135928	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
151 - 146	Pole	TP18.526x17.59x0.219	1	8.0	Pass
151 - 146	Pole	TP18.526x17.59x0.2188	Pole	8.0%	Pass
146 - 141	Pole	TP19.461x18.526x0.2188	Pole	17.1%	Pass
141 - 136	Pole	TP20.397x19.461x0.2188	Pole	27.9%	Pass
136 - 131	Pole	TP21.332x20.397x0.2188	Pole	39.1%	Pass
131 - 126	Pole	TP22.268x21.332x0.2188	Pole	51.4%	Pass
126 - 121	Pole	TP23.203x22.268x0.2188	Pole	63.4%	Pass
121 - 118.5	Pole	TP23.671x23.203x0.2188	Pole	69.7%	Pass
118.5 - 118.25	Pole + Reinf.	TP23.718x23.671x0.4938	Reinf. 9 Bolt-Shaft Bearing	46.2%	Pass
118.25 - 113.25	Pole + Reinf.	TP24.653x23.718x0.4813	Reinf. 9 Tension Rupture	52.9%	Pass
113.25 - 108.25	Pole + Reinf.	TP25.589x24.653x0.4688	Reinf. 9 Tension Rupture	60.2%	Pass
108.25 - 103.25	Pole + Reinf.	TP26.524x25.589x0.4625	Reinf. 9 Tension Rupture	66.9%	Pass
103.25 - 100.95	Pole + Reinf.	TP27.6x26.524x0.4563	Reinf. 9 Tension Rupture	70.4%	Pass
100.95 - 95.95	Pole + Reinf.	TP27.442x26.517x0.55	Reinf. 9 Tension Rupture	65.9%	Pass
95.95 - 95	Pole + Reinf.	TP27.617x27.442x0.55	Reinf. 9 Tension Rupture	67.0%	Pass
95 - 94.75	Pole + Reinf.	TP27.663x27.617x0.8	Reinf. 9 Tension Rupture	47.5%	Pass
94.75 - 92.5	Pole + Reinf.	TP28.079x27.663x0.7875	Reinf. 9 Tension Rupture	49.3%	Pass
92.5 - 92.25	Pole + Reinf.	TP28.126x28.079x0.55	Reinf. 8 Tension Rupture	69.9%	Pass
92.25 - 87.75	Pole + Reinf.	TP28.958x28.126x0.5375	Reinf. 8 Tension Rupture	74.5%	Pass
87.75 - 87.5	Pole + Reinf.	TP29.004x28.958x0.8625	Reinf. 8 Tension Rupture	48.0%	Pass
87.5 - 84	Pole + Reinf.	TP29.651x29.004x0.85	Reinf. 8 Tension Rupture	50.4%	Pass
84 - 83.75	Pole + Reinf.	TP29.697x29.651x0.6125	Reinf. 7 Tension Rupture	67.2%	Pass
83.75 - 78.75	Pole + Reinf.	TP30.622x29.697x0.6	Reinf. 7 Tension Rupture	71.2%	Pass
78.75 - 73.75	Pole + Reinf.	TP31.546x30.622x0.5875	Reinf. 7 Tension Rupture	74.8%	Pass

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
73.75 - 68.75	Pole + Reinf.	TP32.471x31.546x0.5875	Reinf. 7 Tension Rupture	78.2%	Pass
68.75 - 64.75	Pole + Reinf.	TP33.21x32.471x0.575	Reinf. 7 Tension Rupture	80.7%	Pass
64.75 - 64.5	Pole + Reinf.	TP33.257x33.21x0.85	Reinf. 7 Tension Rupture	56.0%	Pass
64.5 - 63.25	Pole + Reinf.	TP33.488x33.257x0.85	Reinf. 7 Tension Rupture	56.6%	Pass
63.25 - 63	Pole + Reinf.	TP33.534x33.488x0.575	Reinf. 6 Tension Rupture	81.8%	Pass
63 - 58	Pole + Reinf.	TP34.459x33.534x0.5625	Reinf. 6 Tension Rupture	84.7%	Pass
58 - 56.75	Pole + Reinf.	TP34.69x34.459x0.5625	Reinf. 6 Tension Rupture	85.3%	Pass
56.75 - 56.5	Pole + Reinf.	TP34.736x34.69x0.9125	Reinf. 6 Tension Rupture	54.5%	Pass
56.5 - 55.25	Pole + Reinf.	TP34.967x34.736x0.9125	Reinf. 6 Tension Rupture	55.0%	Pass
55.25 - 55	Pole + Reinf.	TP35.013x34.967x0.6375	Reinf. 5 Compression	72.3%	Pass
55 - 52.05	Pole + Reinf.	TP36.4x35.013x0.6375	Reinf. 5 Compression	73.7%	Pass
52.05 - 47.05	Pole + Reinf.	TP35.88x34.934x0.7	Reinf. 5 Compression	70.9%	Pass
47.05 - 42.05	Pole + Reinf.	TP36.825x35.88x0.6875	Reinf. 5 Compression	72.7%	Pass
42.05 - 37.05	Pole + Reinf.	TP37.771x36.825x0.675	Reinf. 5 Compression	74.3%	Pass
37.05 - 34.95	Pole + Reinf.	TP38.169x37.771x0.675	Reinf. 5 Compression	75.0%	Pass
34.95 - 34.7	Pole + Reinf.	TP38.216x38.169x0.9875	Reinf. 4 Bolt Shear	54.4%	Pass
34.7 - 34.25	Pole + Reinf.	TP38.301x38.216x0.975	Reinf. 5 Bolt Shear	54.5%	Pass
34.25 - 34	Pole + Reinf.	TP38.348x38.301x0.675	Reinf. 4 Compression	75.3%	Pass
34 - 29	Pole + Reinf.	TP39.294x38.348x0.6625	Reinf. 4 Compression	76.7%	Pass
29 - 26.75	Pole + Reinf.	TP39.72x39.294x0.6625	Reinf. 4 Compression	77.3%	Pass
26.75 - 26.5	Pole + Reinf.	TP39.767x39.72x0.95	Reinf. 2 Bolt Shear	56.5%	Pass
26.5 - 25.25	Pole + Reinf.	TP40.003x39.767x0.95	Reinf. 4 Bolt Shear	56.8%	Pass
25.25 - 25	Pole + Reinf.	TP40.051x40.003x0.6625	Reinf. 2 Compression	77.8%	Pass
25 - 20	Pole + Reinf.	TP40.997x40.051x0.65	Reinf. 2 Compression	79.0%	Pass
20 - 16.75	Pole + Reinf.	TP41.611x40.997x0.65	Reinf. 2 Compression	79.8%	Pass
16.75 - 16.5	Pole + Reinf.	TP41.659x41.611x0.7625	Reinf. 3 Compression	73.3%	Pass
16.5 - 14.25	Pole + Reinf.	TP42.084x41.659x0.7625	Reinf. 3 Compression	73.8%	Pass
14.25 - 14	Pole + Reinf.	TP42.132x42.084x0.725	Reinf. 3 Compression	74.3%	Pass
14 - 9	Pole + Reinf.	TP43.077x42.132x0.7125	Reinf. 3 Compression	75.4%	Pass
9 - 4	Pole + Reinf.	TP44.023x43.077x0.7125	Reinf. 3 Compression	76.3%	Pass
4 - 0	Pole + Reinf.	TP44.78x44.023x0.7	Reinf. 3 Bolt Shear	79.8%	Pass
				Summary	
			Pole	69.7%	Pass
			Reinforcement	85.3%	Pass
			Overall	85.3%	Pass

Table 5 - Tower Component Stresses vs. Capacity - LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	61.7	Pass
1	Base Plate	0	28.1	Pass
1	Base Foundation (Structure)	0	99.8	Pass
1	Base Foundation (Soil Interaction)	0	75.8	Pass

Structure Rating (max from all components) =	99.8%

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

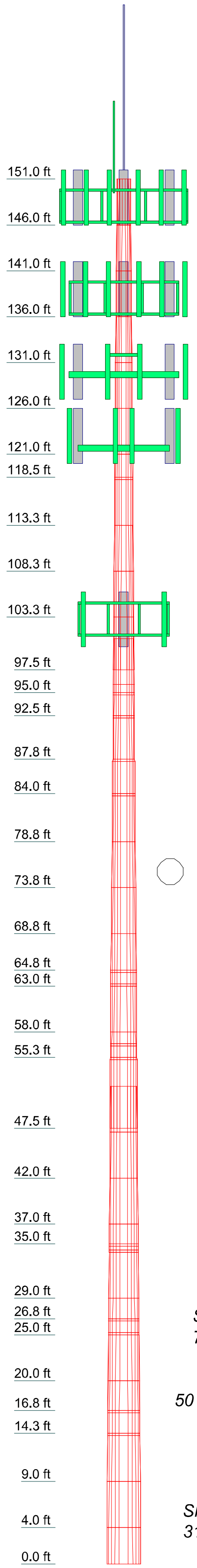
4.1) Recommendations

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	5.000	12	0.219		17.590	18.526	A572-65	0.2
2	5.000	12	0.219		18.526	19.461		0.2
3	5.000	12	0.219		19.461	20.397		0.2
4	5.000	12	0.219		20.397	21.332		0.2
5	5.000	12	0.219		21.332	22.268		0.3
6	5.000	12	0.219		22.268	23.203		0.3
7, 8	[illegible]	12	[illegible]		[illegible]	[illegible]		[illegible]
9	5.000	12	0.481		[illegible]	[illegible]		0.6
10	5.000	12	0.469		24.653	25.589		0.6
11	5.000	12	0.463		25.589	26.524		0.6
12	[illegible]	12	0.456	3.450	26.524	27.600		0.7
13–21	[illegible]	12	[illegible]		[illegible]	[illegible]		[illegible]
22	5.000	12	0.600		[illegible]	[illegible]		0.9
23	5.000	12	0.588		30.622	31.546		0.9
24	5.000	12	0.588		31.546	32.471		1.0
25–33	[illegible]	12	[illegible]		[illegible]	[illegible]		[illegible]
34	[illegible]	12	0.637	4.550	[illegible]	[illegible]		1.7
35	[illegible]	12	0.700		[illegible]	[illegible]		1.3
36	5.000	12	[illegible]		[illegible]	[illegible]		1.3
37	5.000	12	0.675		36.825	37.771		1.3
38–41	[illegible]	12	[illegible]		[illegible]	[illegible]		[illegible]
42	5.000	12	[illegible]		[illegible]	[illegible]		1.3
43–46	[illegible]	12	[illegible]		[illegible]	[illegible]		[illegible]
47	5.000	12	0.650		[illegible]	[illegible]		1.4
48	[illegible]	12	0.650		[illegible]	[illegible]		0.9
49–51	[illegible]	12	[illegible]		[illegible]	[illegible]		[illegible]
52	5.000	12	0.713		[illegible]	[illegible]		1.6
53	5.000	12	0.713		43.077	44.023		1.6
54	4.000	12	0.700		44.023	44.780		1.3
								29.8



MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower is located in New Haven County, Connecticut.
2. Tower designed for Exposure B 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: 85.3%

ALL REACTIONS ARE FACTORED

AXIAL 98 K
SHEAR 7 K
MOMENT 909 kip-ft
TORQUE 1 kip-ft
50 mph WIND - 1.500 in ICE

AXIAL 59 K
SHEAR 31 K
MOMENT 3496 kip-ft
TORQUE 4 kip-ft
REACTIONS - 125 mph WIND

CROWN CASTLE — The Pathway to Possible	**Crown Castle** 2000 Corporate Drive, Canonsburg, PA 15317, Phone: (724) 416-2000, FAX:
Job: **BU 841295**	Project:
Client: Crown Castle	Drawn by: Kayla Weimert
App'd:	
Code: TIA-222-H	Date: 06/10/21
Scale: NTS	
Path: C:\Users\KWeimert\Desktop\SAPI WORK\841295\WO 1964051 - SA\Prod\841295.eri	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 New Haven County, Connecticut.
- Tower base elevation above sea level: 742.000 ft.
- Basic wind speed of 125 mph.
- Risk Category II.
- Exposure Category B.
- 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: 85.3%.
- A non-linear (P-delta) analysis was used.
- Pressures are calculated at each section.
- Stress ratio used in pole design is 1.
- Tower analysis based on target reliabilities in accordance with Annex S.
- Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
- Maximum demand-capacity ratio is: 1.05.
- Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

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

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	151.000-146.000	5.000	0.000	12	17.590	18.526	0.219	0.875	A572-65 (65 ksi)
L2	146.000-141.000	5.000	0.000	12	18.526	19.461	0.219	0.875	A572-65 (65 ksi)
L3	141.000-136.000	5.000	0.000	12	19.461	20.397	0.219	0.875	A572-65 (65 ksi)
L4	136.000-131.000	5.000	0.000	12	20.397	21.332	0.219	0.875	A572-65 (65 ksi)
L5	131.000-126.000	5.000	0.000	12	21.332	22.268	0.219	0.875	A572-65 (65 ksi)
L6	126.000-121.000	5.000	0.000	12	22.268	23.203	0.219	0.875	A572-65 (65 ksi)
L7	121.000-118.500	2.500	0.000	12	23.203	23.671	0.219	0.875	A572-65 (65 ksi)
L8	118.500-118.250	0.250	0.000	12	23.671	23.718	0.494	1.975	A572-65 (65 ksi)
L9	118.250-113.250	5.000	0.000	12	23.718	24.653	0.481	1.925	A572-65 (65 ksi)
L10	113.250-108.250	5.000	0.000	12	24.653	25.589	0.469	1.875	A572-65 (65 ksi)
L11	108.250-103.250	5.000	0.000	12	25.589	26.524	0.463	1.850	A572-65 (65 ksi)
L12	103.250-97.500	5.750	3.450	12	26.524	27.600	0.456	1.825	A572-65 (65 ksi)
L13	97.500-95.950	5.000	0.000	12	26.517	27.442	0.550	2.200	A572-65 (65 ksi)
L14	95.950-95.000	0.950	0.000	12	27.442	27.617	0.550	2.200	A572-65 (65 ksi)
L15	95.000-94.750	0.250	0.000	12	27.617	27.663	0.800	3.200	A572-65 (65 ksi)
L16	94.750-92.500	2.250	0.000	12	27.663	28.079	0.787	3.150	A572-65 (65 ksi)
L17	92.500-92.250	0.250	0.000	12	28.079	28.126	0.550	2.200	A572-65 (65 ksi)
L18	92.250-87.750	4.500	0.000	12	28.126	28.958	0.537	2.150	A572-65 (65 ksi)
L19	87.750-87.500	0.250	0.000	12	28.958	29.004	0.863	3.450	A572-65 (65 ksi)
L20	87.500-84.000	3.500	0.000	12	29.004	29.651	0.850	3.400	A572-65 (65 ksi)
L21	84.000-83.750	0.250	0.000	12	29.651	29.697	0.613	2.450	A572-65 (65 ksi)
L22	83.750-78.750	5.000	0.000	12	29.697	30.622	0.600	2.400	A572-65 (65 ksi)
L23	78.750-73.750	5.000	0.000	12	30.622	31.546	0.588	2.350	A572-65 (65 ksi)
L24	73.750-68.750	5.000	0.000	12	31.546	32.471	0.588	2.350	A572-65 (65 ksi)
L25	68.750-64.750	4.000	0.000	12	32.471	33.210	0.575	2.300	A572-65 (65 ksi)
L26	64.750-64.500	0.250	0.000	12	33.210	33.257	0.850	3.400	A572-65 (65 ksi)
L27	64.500-63.250	1.250	0.000	12	33.257	33.488	0.850	3.400	A572-65 (65 ksi)
L28	63.250-63.000	0.250	0.000	12	33.488	33.534	0.575	2.300	A572-65 (65 ksi)
L29	63.000-58.000	5.000	0.000	12	33.534	34.459	0.563	2.250	A572-65 (65 ksi)
L30	58.000-56.750	1.250	0.000	12	34.459	34.690	0.563	2.250	A572-65 (65 ksi)
L31	56.750-56.500	0.250	0.000	12	34.690	34.736	0.912	3.650	A572-65 (65 ksi)
L32	56.500-55.250	1.250	0.000	12	34.736	34.967	0.912	3.650	A572-65 (65 ksi)
L33	55.250-55.000	0.250	0.000	12	34.967	35.013	0.637	2.550	A572-65 (65 ksi)
L34	55.000-47.500	7.500	4.550	12	35.013	36.400	0.637	2.550	A572-65 (65 ksi)
L35	47.500-47.050	5.000	0.000	12	34.934	35.880	0.700	2.800	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
L36	47.050-42.050	5.000	0.000	12	35.880	36.825	0.688	2.750	(65 ksi) A572-65 (65 ksi)
L37	42.050-37.050	5.000	0.000	12	36.825	37.771	0.675	2.700	A572-65 (65 ksi)
L38	37.050-34.950	2.100	0.000	12	37.771	38.169	0.675	2.700	A572-65 (65 ksi)
L39	34.950-34.700	0.250	0.000	12	38.169	38.216	0.988	3.950	A572-65 (65 ksi)
L40	34.700-34.250	0.450	0.000	12	38.216	38.301	0.975	3.900	A572-65 (65 ksi)
L41	34.250-34.000	0.250	0.000	12	38.301	38.348	0.675	2.700	A572-65 (65 ksi)
L42	34.000-29.000	5.000	0.000	12	38.348	39.294	0.662	2.650	A572-65 (65 ksi)
L43	29.000-26.750	2.250	0.000	12	39.294	39.720	0.662	2.650	A572-65 (65 ksi)
L44	26.750-26.500	0.250	0.000	12	39.720	39.767	0.950	3.800	A572-65 (65 ksi)
L45	26.500-25.250	1.250	0.000	12	39.767	40.003	0.950	3.800	A572-65 (65 ksi)
L46	25.250-25.000	0.250	0.000	12	40.003	40.051	0.662	2.650	A572-65 (65 ksi)
L47	25.000-20.000	5.000	0.000	12	40.051	40.997	0.650	2.600	A572-65 (65 ksi)
L48	20.000-16.750	3.250	0.000	12	40.997	41.611	0.650	2.600	A572-65 (65 ksi)
L49	16.750-16.500	0.250	0.000	12	41.611	41.659	0.762	3.050	A572-65 (65 ksi)
L50	16.500-14.250	2.250	0.000	12	41.659	42.084	0.762	3.050	A572-65 (65 ksi)
L51	14.250-14.000	0.250	0.000	12	42.084	42.132	0.725	2.900	A572-65 (65 ksi)
L52	14.000-9.000	5.000	0.000	12	42.132	43.077	0.713	2.850	A572-65 (65 ksi)
L53	9.000-4.000	5.000	0.000	12	43.077	44.023	0.713	2.850	A572-65 (65 ksi)
L54	4.000-0.000	4.000		12	44.023	44.780	0.700	2.800	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	18.133	12.236	471.284	6.219	9.112	51.723	954.950	6.022	4.128	18.87
	19.102	12.895	551.600	6.554	9.596	57.481	1117.692	6.346	4.379	20.016
L2	19.102	12.895	551.600	6.554	9.596	57.481	1117.692	6.346	4.379	20.016
	20.070	13.554	640.559	6.889	10.081	63.542	1297.947	6.671	4.629	21.163
L3	20.070	13.554	640.559	6.889	10.081	63.542	1297.947	6.671	4.629	21.163
	21.039	14.213	738.603	7.224	10.565	69.908	1496.609	6.995	4.880	22.309
L4	21.039	14.213	738.603	7.224	10.565	69.908	1496.609	6.995	4.880	22.309
	22.007	14.872	846.172	7.559	11.050	76.577	1714.574	7.319	5.131	23.455
L5	22.007	14.872	846.172	7.559	11.050	76.577	1714.574	7.319	5.131	23.455
	22.976	15.531	963.709	7.893	11.535	83.549	1952.736	7.644	5.381	24.601
L6	22.976	15.531	963.709	7.893	11.535	83.549	1952.736	7.644	5.381	24.601
	23.944	16.190	1091.656	8.228	12.019	90.826	2211.990	7.968	5.632	25.747
L7	23.944	16.190	1091.656	8.228	12.019	90.826	2211.990	7.968	5.632	25.747
	24.429	16.519	1159.670	8.396	12.261	94.578	2349.807	8.130	5.758	26.32
L8	24.332	36.849	2526.537	8.297	12.261	206.055	5119.449	18.136	5.021	10.168
	24.380	36.923	2541.865	8.314	12.286	206.896	5150.508	18.172	5.033	10.194
L9	24.385	36.008	2481.517	8.319	12.286	201.984	5028.226	17.722	5.067	10.528
	25.353	37.457	2793.469	8.654	12.770	218.747	5660.326	18.435	5.317	11.049
L10	25.357	36.503	2725.135	8.658	12.770	213.396	5521.862	17.966	5.351	11.415
	26.326	37.915	3053.772	8.993	13.255	230.388	6187.769	18.661	5.602	11.95
L11	26.328	37.419	3015.304	8.995	13.255	227.486	6109.824	18.417	5.618	12.148

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
	27.297	38.812	3364.804	9.330	13.740	244.900	6818.005	19.102	5.869	12.69
L12	27.299	38.297	3321.722	9.332	13.740	241.764	6730.709	18.849	5.886	12.9
	28.413	39.878	3750.198	9.717	14.297	262.310	7598.919	19.627	6.174	13.532
L13	27.919	45.988	3957.944	9.296	13.736	288.148	8019.867	22.634	5.633	10.241
	28.216	47.625	4395.921	9.627	14.215	309.252	8907.327	23.440	5.880	10.691
L14	28.216	47.625	4395.921	9.627	14.215	309.252	8907.327	23.440	5.880	10.691
	28.397	47.936	4482.627	9.690	14.306	313.346	9083.018	23.593	5.927	10.777
L15	28.309	69.081	6341.182	9.601	14.306	443.263	12848.954	34.000	5.257	6.572
	28.357	69.200	6374.030	9.617	14.330	444.815	12915.513	34.058	5.270	6.587
L16	28.361	68.151	6283.199	9.622	14.330	438.476	12731.464	33.542	5.303	6.734
	28.792	69.205	6579.524	9.771	14.545	452.352	13331.899	34.061	5.415	6.876
L17	28.876	48.755	4716.236	9.856	14.545	324.248	9556.372	23.996	6.051	11.002
	28.924	48.836	4740.033	9.872	14.569	325.349	9604.593	24.036	6.064	11.025
L18	28.928	47.748	4638.608	9.877	14.569	318.387	9399.077	23.500	6.097	11.344
	29.790	49.188	5071.094	10.174	15.000	338.071	10275.412	24.209	6.320	11.758
L19	29.675	78.027	7861.353	10.058	15.000	524.087	15929.233	38.403	5.449	6.318
	29.723	78.156	7900.220	10.075	15.024	525.839	16007.987	38.466	5.462	6.332
L20	29.727	77.057	7796.103	10.079	15.024	518.909	15797.019	37.925	5.495	6.465
	30.397	78.829	8346.169	10.311	15.359	543.397	16911.601	38.797	5.668	6.669
L21	30.481	57.271	6164.163	10.396	15.359	401.332	12490.266	28.187	6.305	10.294
	30.529	57.363	6193.647	10.412	15.383	402.624	12550.009	28.232	6.317	10.314
L22	30.533	56.216	6075.072	10.417	15.383	394.916	12309.744	27.668	6.351	10.585
	31.490	58.002	6672.737	10.748	15.862	420.672	13520.774	28.547	6.599	10.998
L23	31.495	56.817	6541.886	10.752	15.862	412.422	13255.635	27.964	6.632	11.289
	32.452	58.566	7164.785	11.083	16.341	438.455	14517.796	28.825	6.880	11.71
L24	32.452	58.566	7164.785	11.083	16.341	438.455	14517.796	28.825	6.880	11.71
	33.409	60.315	7826.019	11.414	16.820	465.284	15857.637	29.685	7.128	12.132
L25	33.413	59.055	7668.521	11.419	16.820	455.920	15538.502	29.065	7.161	12.454
	34.179	60.425	8214.445	11.683	17.203	477.500	16644.692	29.739	7.359	12.799
L26	34.082	88.571	11838.703	11.585	17.203	688.176	23988.422	43.592	6.622	7.791
	34.130	88.697	11889.508	11.602	17.227	690.169	24091.367	43.654	6.635	7.806
L27	34.130	88.697	11889.508	11.602	17.227	690.169	24091.367	43.654	6.635	7.806
	34.369	89.330	12145.719	11.684	17.347	700.175	24610.519	43.965	6.697	7.879
L28	34.466	60.938	8425.661	11.783	17.347	485.722	17072.674	29.992	7.434	12.928
	34.514	61.024	8461.212	11.799	17.371	487.099	17144.709	30.034	7.446	12.95
L29	34.519	59.720	8286.694	11.804	17.371	477.052	16791.088	29.392	7.480	13.297
	35.476	61.394	9003.489	12.135	17.850	504.411	18243.510	30.216	7.727	13.738
L30	35.476	61.394	9003.489	12.135	17.850	504.411	18243.510	30.216	7.727	13.738
	35.715	61.813	9188.925	12.218	17.969	511.370	18619.254	30.422	7.789	13.848
L31	35.591	99.246	14452.534	12.092	17.969	804.293	29284.753	48.846	6.851	7.508
	35.639	99.382	14511.952	12.109	17.993	806.525	29405.149	48.913	6.864	7.522
L32	35.639	99.382	14511.952	12.109	17.993	806.525	29405.149	48.913	6.864	7.522
	35.879	100.061	14811.486	12.192	18.113	817.731	30012.087	49.247	6.926	7.59
L33	35.976	70.470	10600.464	12.290	18.113	585.243	21479.413	34.683	7.663	12.02
	36.023	70.565	10643.342	12.307	18.137	586.835	21566.297	34.730	7.675	12.039
L34	36.023	70.565	10643.342	12.307	18.137	586.835	21566.297	34.730	7.675	12.039
	37.459	73.411	11984.105	12.803	18.855	635.586	24283.047	36.131	8.047	12.622
L35	36.810	77.163	11542.537	12.256	18.096	637.862	23388.309	37.977	7.486	10.695
	36.898	79.295	12525.948	12.594	18.586	673.960	25380.966	39.026	7.740	11.057
L36	36.903	77.906	12315.388	12.599	18.586	662.630	24954.316	38.343	7.773	11.306
	37.882	80.000	13335.312	12.937	19.076	699.079	27020.958	39.374	8.027	11.675
L37	37.886	78.573	13106.443	12.942	19.076	687.081	26557.207	38.671	8.060	11.941
	38.866	80.629	14162.358	13.280	19.566	723.843	28696.776	39.683	8.314	12.317
L38	38.866	80.629	14162.358	13.280	19.566	723.843	28696.776	39.683	8.314	12.317
	39.277	81.492	14622.234	13.423	19.771	739.569	29628.610	40.108	8.420	12.474
L39	39.167	118.226	20861.345	13.311	19.771	1055.133	42270.740	58.187	7.583	7.679
	39.216	118.377	20941.051	13.328	19.796	1057.854	42432.246	58.261	7.595	7.691
L40	39.220	116.917	20696.808	13.332	19.796	1045.516	41937.344	57.543	7.629	7.824
	39.308	117.185	20839.061	13.363	19.840	1050.362	42225.587	57.675	7.652	7.848
L41	39.414	81.780	14777.709	13.470	19.840	744.849	29943.645	40.250	8.456	12.527
	39.463	81.883	14833.503	13.487	19.864	746.739	30056.698	40.300	8.468	12.546
L42	39.467	80.393	14573.305	13.491	19.864	733.640	29529.467	39.567	8.502	12.833
	40.447	82.411	15698.374	13.830	20.354	771.255	31809.162	40.560	8.755	13.216
L43	40.447	82.411	15698.374	13.830	20.354	771.255	31809.162	40.560	8.755	13.216
	40.887	83.319	16222.995	13.982	20.575	788.488	32872.185	41.007	8.869	13.388
L44	40.786	118.597	22753.214	13.880	20.575	1105.878	46104.180	58.370	8.099	8.525
	40.835	118.741	22836.582	13.896	20.599	1108.609	46273.106	58.441	8.112	8.538
L45	40.835	118.741	22836.582	13.896	20.599	1108.609	46273.106	58.441	8.112	8.538
	41.080	119.465	23256.471	13.981	20.722	1122.320	47123.915	58.797	8.175	8.605
L46	41.181	83.924	16579.155	14.084	20.722	800.083	33593.863	41.305	8.945	13.503

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
	41.230	84.025	16639.018	14.101	20.746	802.024	33715.162	41.355	8.958	13.522
L47	41.234	82.466	16340.622	14.105	20.746	787.641	33110.530	40.587	8.992	13.833
	42.214	84.445	17545.912	14.444	21.236	826.225	35552.774	41.561	9.245	14.223
L48	42.214	84.445	17545.912	14.444	21.236	826.225	35552.774	41.561	9.245	14.223
	42.850	85.732	18360.292	14.664	21.555	851.800	37202.929	42.195	9.410	14.477
L49	42.810	100.294	21361.060	14.624	21.555	991.016	43283.299	49.362	9.108	11.945
	42.859	100.410	21435.337	14.641	21.579	993.333	43433.804	49.419	9.121	11.962
L50	42.859	100.410	21435.337	14.641	21.579	993.333	43433.804	49.419	9.121	11.962
	43.300	101.455	22111.601	14.793	21.800	1014.308	44804.098	49.933	9.235	12.112
L51	43.313	96.553	21081.436	14.807	21.800	967.052	42716.704	47.521	9.336	12.877
	43.362	96.664	21153.836	14.824	21.824	969.284	42863.407	47.575	9.348	12.894
L52	43.367	95.026	20807.948	14.828	21.824	953.436	42162.545	46.769	9.382	13.167
	44.346	97.196	22266.265	15.167	22.314	997.855	45117.489	47.837	9.635	13.523
L53	44.346	97.196	22266.265	15.167	22.314	997.855	45117.489	47.837	9.635	13.523
	45.325	99.366	23791.176	15.505	22.804	1043.286	48207.373	48.905	9.889	13.879
L54	45.329	97.651	23394.031	15.510	22.804	1025.870	47402.648	48.061	9.922	14.175
	46.113	99.356	24641.357	15.781	23.196	1062.309	49930.070	48.900	10.125	14.464

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 151.000-146.000				1	1	1			
L2 146.000-141.000				1	1	1			
L3 141.000-136.000				1	1	1			
L4 136.000-131.000				1	1	1			
L5 131.000-126.000				1	1	1			
L6 126.000-121.000				1	1	1			
L7 121.000-118.500				1	1	1			
L8 118.500-118.250				1	1	0.936483			
L9 118.250-113.250				1	1	0.940717			
L10 113.250-108.250				1	1	0.946734			
L11 108.250-103.250				1	1	0.941832			
L12 103.250-97.500				1	1	0.94679			
L13 97.500-95.950				1	1	0.951696			
L14 95.950-95.000				1	1	0.949207			
L15 95.000-94.750				1	1	0.91869			
L16 94.750-92.500				1	1	0.924668			
L17 92.500-92.250				1	1	0.942181			
L18 92.250-87.750				1	1	0.952464			
L19 87.750-87.500				1	1	0.912364			
L20 87.500-84.000				1	1	0.912838			
L21 84.000-83.750				1	1	0.941005			
L22 83.750-78.750				1	1	0.946667			
L23 78.750-73.750				1	1	0.953431			

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
L24 73.750-68.750				1	1	0.941208			
L25 68.750-64.750				1	1	0.951824			
L26 64.750-64.500				1	1	0.924157			
L27 64.500-63.250				1	1	0.920216			
L28 63.250-63.000				1	1	0.947815			
L29 63.000-58.000				1	1	0.957247			
L30 58.000-56.750				1	1	0.954526			
L31 56.750-56.500				1	1	0.915353			
L32 56.500-55.250				1	1	0.911464			
L33 55.250-55.000				1	1	0.947191			
L34 55.000-47.500				1	1	0.940053			
L35 47.500-47.050				1	1	0.943221			
L36 47.050-42.050				1	1	0.949179			
L37 42.050-37.050				1	1	0.955946			
L38 37.050-34.950				1	1	0.951704			
L39 34.950-34.700				1	1	0.925302			
L40 34.700-34.250				1	1	0.935591			
L41 34.250-34.000				1	1	0.949814			
L42 34.000-29.000				1	1	0.957587			
L43 29.000-26.750				1	1	0.95332			
L44 26.750-26.500				1	1	0.938236			
L45 26.500-25.250				1	1	0.934945			
L46 25.250-25.000				1	1	0.950065			
L47 25.000-20.000				1	1	0.958859			
L48 20.000-16.750				1	1	0.953127			
L49 16.750-16.500				1	1	1.0263			
L50 16.500-14.250				1	1	1.02079			
L51 14.250-14.000				1	1	0.961912			
L52 14.000-9.000				1	1	0.968397			
L53 9.000-4.000				1	1	0.958743			
L54 4.000-0.000				1	1	0.968031			

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
***										
***										
Sabre MS-850 (8.5" x 1.25" Plate)	C	No	Surface Af (CaAa)	20.500 - 0.500	1	1	0.150 0.150	8.500	19.500	0.000
Sabre MS-850 (8.5" x 1.25" Plate)	C	No	Surface Af (CaAa)	20.500 - 0.500	1	1	-0.150 -0.150	8.500	19.500	0.000
*										
Sabre MS-850 (8.5" x 1.25" Plate)	A	No	Surface Af (CaAa)	30.500 - 0.500	1	1	0.100 0.100	8.500	19.500	0.000
Sabre MS-850 (8.5" x 1.25" Plate)	B	No	Surface Af (CaAa)	30.500 - 0.500	1	1	0.100 0.100	8.500	19.500	0.000
Sabre MS-850 (8.5" x 1.25" Plate)	C	No	Surface Af (CaAa)	30.500 - 10.500	1	1	0.100 0.100	8.500	19.500	0.000
*										
Sabre MS-850 (8.5" x 1.25" Plate)	A	No	Surface Af (CaAa)	38.700 - 21.500	1	1	0.150 0.150	8.500	19.500	0.000
Sabre MS-850 (8.5" x 1.25" Plate)	B	No	Surface Af (CaAa)	38.700 - 21.500	1	1	0.150 0.150	8.500	19.500	0.000
Sabre MS-850 (8.5" x 1.25" Plate)	C	No	Surface Af (CaAa)	38.700 - 21.500	1	1	0.150 0.150	8.500	19.500	0.000
*										
Sabre MS-850 (8.5" x 1.25" Plate)	A	No	Surface Af (CaAa)	60.500 - 30.500	1	1	0.100 0.100	8.500	19.500	0.000
Sabre MS-850 (8.5" x 1.25" Plate)	B	No	Surface Af (CaAa)	60.500 - 30.500	1	1	0.100 0.100	8.500	19.500	0.000
Sabre MS-850 (8.5" x 1.25" Plate)	C	No	Surface Af (CaAa)	60.500 - 30.500	1	1	0.100 0.100	8.500	19.500	0.000
*										
Sabre MS-650 (6.5" x 1.25" Plate)	A	No	Surface Af (CaAa)	67.500 - 52.500	1	1	0.150 0.150	6.500	15.500	0.000
Sabre MS-650 (6.5" x 1.25" Plate)	B	No	Surface Af (CaAa)	67.500 - 52.500	1	1	0.150 0.150	6.500	15.500	0.000
Sabre MS-650 (6.5" x 1.25" Plate)	C	No	Surface Af (CaAa)	67.500 - 52.500	1	1	0.150 0.150	6.500	15.500	0.000
*										
Sabre MS-650 (6.5" x 1.25" Plate)	A	No	Surface Af (CaAa)	90.500 - 60.500	1	1	0.100 0.100	6.500	15.500	0.000
Sabre MS-650 (6.5" x 1.25" Plate)	B	No	Surface Af (CaAa)	90.500 - 60.500	1	1	0.100 0.100	6.500	15.500	0.000
Sabre MS-650 (6.5" x 1.25" Plate)	C	No	Surface Af (CaAa)	90.500 - 60.500	1	1	0.100 0.100	6.500	15.500	0.000
*										
Sabre MS-600 (6" x 1" Plate)	A	No	Surface Af (CaAa)	97.000 - 82.000	1	1	0.150 0.150	6.000	14.000	0.000
Sabre MS-600 (6" x 1" Plate)	B	No	Surface Af (CaAa)	97.000 - 82.000	1	1	0.150 0.150	6.000	14.000	0.000
Sabre MS-600 (6" x 1" Plate)	C	No	Surface Af (CaAa)	97.000 - 82.000	1	1	0.150 0.150	6.000	14.000	0.000
*										
Sabre MS-600 (6" x 1" Plate)	A	No	Surface Af (CaAa)	120.500 - 90.500	1	1	0.100 0.100	6.000	14.000	0.000
Sabre MS-600 (6" x 1" Plate)	B	No	Surface Af (CaAa)	120.500 - 90.500	1	1	0.100 0.100	6.000	14.000	0.000
Sabre MS-600 (6" x 1" Plate)	C	No	Surface Af (CaAa)	120.500 - 90.500	1	1	0.100 0.100	6.000	14.000	0.000
*										
MP3-03 (Surface Af)	A	No	Surface Af (CaAa)	126.500 - 116.500	1	1	0.200 0.200	4.060	11.260	0.010
MP3-03 (Surface Af)	B	No	Surface Af (CaAa)	126.500 - 116.500	1	1	0.200 0.200	4.060	11.260	0.010
MP3-03 (Surface Af)	C	No	Surface Af (CaAa)	126.500 - 116.500	1	1	0.200 0.200	4.060	11.260	0.010
***										
***										
AL7-50(1-5/8)	B	No	Surface Ar (CaAa)	122.000 - 0.000	7	4	0.000 0.250	1.960		0.001
***										

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
CU12PSM9P6XXX(1-1/2)	B	No	Surface Ar (CaAa)	103.000 - 0.000	1	1	0.470 0.500	1.600		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
***									
***									
Safety Line 3/8	A	No	No	CaAa (Out Of Face)	151.000 - 0.000	1	No Ice 1/2" Ice 1" Ice 2" Ice	0.037 0.137 0.238 0.437	0.000 0.001 0.001 0.002
***									
***									
LDF7-50A(1-5/8)	A	No	No	Inside Pole	148.000 - 0.000	6	No Ice 1/2" Ice 1" Ice 2" Ice	0.000 0.000 0.000 0.000	0.001 0.001 0.001 0.001
810921-001(7/8)	A	No	No	Inside Pole	148.000 - 0.000	2	No Ice 1/2" Ice 1" Ice 2" Ice	0.000 0.000 0.000 0.000	0.000 0.000 0.000 0.000
FB-L98B-034-XXX(3/8)	A	No	No	Inside Pole	148.000 - 0.000	3	No Ice 1/2" Ice 1" Ice 2" Ice	0.000 0.000 0.000 0.000	0.000 0.000 0.000 0.000
WR-VG66ST-BRD_CCIV2(7/8)	A	No	No	Inside Pole	148.000 - 0.000	4	No Ice 1/2" Ice 1" Ice 2" Ice	0.000 0.000 0.000 0.000	0.001 0.001 0.001 0.001
WR-VG86ST-BRD(3/4)	A	No	No	Inside Pole	148.000 - 0.000	2	No Ice 1/2" Ice 1" Ice 2" Ice	0.000 0.000 0.000 0.000	0.001 0.001 0.001 0.001
2" Rigid Conduit	A	No	No	Inside Pole	148.000 - 0.000	2	No Ice 1/2" Ice 1" Ice 2" Ice	0.000 0.000 0.000 0.000	0.003 0.003 0.003 0.003
***									
LDF7-50A(1-5/8)	B	No	No	Inside Pole	138.000 - 0.000	12	No Ice 1/2" Ice 1" Ice 2" Ice	0.000 0.000 0.000 0.000	0.001 0.001 0.001 0.001
HB158-1-08U8-S8J18(1-5/8)	B	No	No	Inside Pole	138.000 - 0.000	1	No Ice 1/2" Ice 1" Ice 2" Ice	0.000 0.000 0.000 0.000	0.001 0.001 0.001 0.001
***									
LDF4-50A(1/2)	C	No	No	Inside Pole	130.000 - 0.000	1	No Ice 1/2" Ice 1" Ice 2" Ice	0.000 0.000 0.000 0.000	0.000 0.000 0.000 0.000
LDF7-50A(1-5/8)	C	No	No	Inside Pole	130.000 - 0.000	3	No Ice 1/2" Ice 1" Ice 2" Ice	0.000 0.000 0.000 0.000	0.001 0.001 0.001 0.001
HB114-21U3M12-XXXF(1-1/4)	C	No	No	Inside Pole	130.000 - 0.000	1	No Ice 1/2" Ice 1" Ice 2" Ice	0.000 0.000 0.000 0.000	0.001 0.001 0.001 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
***								
***								

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	151.000-146.000	A	0.000	0.000	0.000	0.188	0.033
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.000
L2	146.000-141.000	A	0.000	0.000	0.000	0.188	0.082
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.000
L3	141.000-136.000	A	0.000	0.000	0.000	0.188	0.082
		B	0.000	0.000	0.000	0.000	0.022
		C	0.000	0.000	0.000	0.000	0.000
L4	136.000-131.000	A	0.000	0.000	0.000	0.188	0.082
		B	0.000	0.000	0.000	0.000	0.056
		C	0.000	0.000	0.000	0.000	0.000
L5	131.000-126.000	A	0.000	0.000	0.338	0.188	0.087
		B	0.000	0.000	0.338	0.000	0.061
		C	0.000	0.000	0.338	0.000	0.020
L6	126.000-121.000	A	0.000	0.000	3.383	0.188	0.131
		B	0.000	0.000	4.167	0.000	0.109
		C	0.000	0.000	3.383	0.000	0.069
L7	121.000-118.500	A	0.000	0.000	3.692	0.094	0.066
		B	0.000	0.000	5.652	0.000	0.062
		C	0.000	0.000	3.692	0.000	0.034
L8	118.500-118.250	A	0.000	0.000	0.419	0.009	0.007
		B	0.000	0.000	0.615	0.000	0.006
		C	0.000	0.000	0.419	0.000	0.003
L9	118.250-113.250	A	0.000	0.000	6.184	0.188	0.099
		B	0.000	0.000	10.104	0.000	0.091
		C	0.000	0.000	6.184	0.000	0.036
L10	113.250-108.250	A	0.000	0.000	5.000	0.188	0.082
		B	0.000	0.000	8.920	0.000	0.074
		C	0.000	0.000	5.000	0.000	0.019
L11	108.250-103.250	A	0.000	0.000	5.000	0.188	0.082
		B	0.000	0.000	8.920	0.000	0.074
		C	0.000	0.000	5.000	0.000	0.019
L12	103.250-97.500	A	0.000	0.000	5.750	0.216	0.094
		B	0.000	0.000	11.138	0.000	0.098
		C	0.000	0.000	5.750	0.000	0.022
L13	97.500-95.950	A	0.000	0.000	2.600	0.058	0.025
		B	0.000	0.000	4.063	0.000	0.027
		C	0.000	0.000	2.600	0.000	0.006
L14	95.950-95.000	A	0.000	0.000	1.900	0.036	0.016
		B	0.000	0.000	2.797	0.000	0.016
		C	0.000	0.000	1.900	0.000	0.004
L15	95.000-94.750	A	0.000	0.000	0.500	0.009	0.004
		B	0.000	0.000	0.736	0.000	0.004
		C	0.000	0.000	0.500	0.000	0.001
L16	94.750-92.500	A	0.000	0.000	4.500	0.084	0.037
		B	0.000	0.000	6.624	0.000	0.039
		C	0.000	0.000	4.500	0.000	0.009
L17	92.500-92.250	A	0.000	0.000	0.500	0.009	0.004
		B	0.000	0.000	0.736	0.000	0.004
		C	0.000	0.000	0.500	0.000	0.001
L18	92.250-87.750	A	0.000	0.000	9.229	0.169	0.074
		B	0.000	0.000	13.477	0.000	0.077
		C	0.000	0.000	9.229	0.000	0.017

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
L19	87.750-87.500	A	0.000	0.000	0.521	0.009	0.004
		B	0.000	0.000	0.757	0.000	0.004
		C	0.000	0.000	0.521	0.000	0.001
L20	87.500-84.000	A	0.000	0.000	7.292	0.131	0.057
		B	0.000	0.000	10.596	0.000	0.060
		C	0.000	0.000	7.292	0.000	0.013
L21	84.000-83.750	A	0.000	0.000	0.521	0.009	0.004
		B	0.000	0.000	0.757	0.000	0.004
		C	0.000	0.000	0.521	0.000	0.001
L22	83.750-78.750	A	0.000	0.000	7.167	0.188	0.082
		B	0.000	0.000	11.887	0.000	0.086
		C	0.000	0.000	7.167	0.000	0.019
L23	78.750-73.750	A	0.000	0.000	5.417	0.188	0.082
		B	0.000	0.000	10.137	0.000	0.086
		C	0.000	0.000	5.417	0.000	0.019
L24	73.750-68.750	A	0.000	0.000	5.417	0.188	0.082
		B	0.000	0.000	10.137	0.000	0.086
		C	0.000	0.000	5.417	0.000	0.019
L25	68.750-64.750	A	0.000	0.000	7.313	0.150	0.066
		B	0.000	0.000	11.089	0.000	0.069
		C	0.000	0.000	7.313	0.000	0.015
L26	64.750-64.500	A	0.000	0.000	0.542	0.009	0.004
		B	0.000	0.000	0.778	0.000	0.004
		C	0.000	0.000	0.542	0.000	0.001
L27	64.500-63.250	A	0.000	0.000	2.708	0.047	0.020
		B	0.000	0.000	3.888	0.000	0.021
		C	0.000	0.000	2.708	0.000	0.005
L28	63.250-63.000	A	0.000	0.000	0.542	0.009	0.004
		B	0.000	0.000	0.778	0.000	0.004
		C	0.000	0.000	0.542	0.000	0.001
L29	63.000-58.000	A	0.000	0.000	11.667	0.188	0.082
		B	0.000	0.000	16.387	0.000	0.086
		C	0.000	0.000	11.667	0.000	0.019
L30	58.000-56.750	A	0.000	0.000	3.125	0.047	0.020
		B	0.000	0.000	4.305	0.000	0.021
		C	0.000	0.000	3.125	0.000	0.005
L31	56.750-56.500	A	0.000	0.000	0.625	0.009	0.004
		B	0.000	0.000	0.861	0.000	0.004
		C	0.000	0.000	0.625	0.000	0.001
L32	56.500-55.250	A	0.000	0.000	3.125	0.047	0.020
		B	0.000	0.000	4.305	0.000	0.021
		C	0.000	0.000	3.125	0.000	0.005
L33	55.250-55.000	A	0.000	0.000	0.625	0.009	0.004
		B	0.000	0.000	0.861	0.000	0.004
		C	0.000	0.000	0.625	0.000	0.001
L34	55.000-47.500	A	0.000	0.000	13.333	0.281	0.123
		B	0.000	0.000	20.413	0.000	0.128
		C	0.000	0.000	13.333	0.000	0.029
L35	47.500-47.050	A	0.000	0.000	0.637	0.017	0.007
		B	0.000	0.000	1.062	0.000	0.008
		C	0.000	0.000	0.637	0.000	0.002
L36	47.050-42.050	A	0.000	0.000	7.083	0.188	0.082
		B	0.000	0.000	11.803	0.000	0.086
		C	0.000	0.000	7.083	0.000	0.019
L37	42.050-37.050	A	0.000	0.000	9.383	0.188	0.082
		B	0.000	0.000	14.103	0.000	0.086
		C	0.000	0.000	9.383	0.000	0.019
L38	37.050-34.950	A	0.000	0.000	5.902	0.079	0.034
		B	0.000	0.000	7.884	0.000	0.036
		C	0.000	0.000	5.902	0.000	0.008
L39	34.950-34.700	A	0.000	0.000	0.703	0.009	0.004
		B	0.000	0.000	0.939	0.000	0.004
		C	0.000	0.000	0.703	0.000	0.001
L40	34.700-34.250	A	0.000	0.000	1.265	0.017	0.007
		B	0.000	0.000	1.689	0.000	0.008
		C	0.000	0.000	1.265	0.000	0.002
L41	34.250-34.000	A	0.000	0.000	0.703	0.009	0.004
		B	0.000	0.000	0.939	0.000	0.004
		C	0.000	0.000	0.703	0.000	0.001

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
L42	34.000-29.000	A	0.000	0.000	14.051	0.188	0.082
		B	0.000	0.000	18.771	0.000	0.086
		C	0.000	0.000	14.051	0.000	0.019
L43	29.000-26.750	A	0.000	0.000	6.323	0.084	0.037
		B	0.000	0.000	8.447	0.000	0.039
		C	0.000	0.000	6.323	0.000	0.009
L44	26.750-26.500	A	0.000	0.000	0.703	0.009	0.004
		B	0.000	0.000	0.939	0.000	0.004
		C	0.000	0.000	0.703	0.000	0.001
L45	26.500-25.250	A	0.000	0.000	3.513	0.047	0.020
		B	0.000	0.000	4.693	0.000	0.021
		C	0.000	0.000	3.513	0.000	0.005
L46	25.250-25.000	A	0.000	0.000	0.703	0.009	0.004
		B	0.000	0.000	0.939	0.000	0.004
		C	0.000	0.000	0.703	0.000	0.001
L47	25.000-20.000	A	0.000	0.000	11.961	0.188	0.082
		B	0.000	0.000	16.681	0.000	0.086
		C	0.000	0.000	13.378	0.000	0.019
L48	20.000-16.750	A	0.000	0.000	4.604	0.122	0.053
		B	0.000	0.000	7.672	0.000	0.056
		C	0.000	0.000	13.813	0.000	0.012
L49	16.750-16.500	A	0.000	0.000	0.354	0.009	0.004
		B	0.000	0.000	0.590	0.000	0.004
		C	0.000	0.000	1.063	0.000	0.001
L50	16.500-14.250	A	0.000	0.000	3.188	0.084	0.037
		B	0.000	0.000	5.311	0.000	0.039
		C	0.000	0.000	9.563	0.000	0.009
L51	14.250-14.000	A	0.000	0.000	0.354	0.009	0.004
		B	0.000	0.000	0.590	0.000	0.004
		C	0.000	0.000	1.063	0.000	0.001
L52	14.000-9.000	A	0.000	0.000	7.083	0.188	0.082
		B	0.000	0.000	11.803	0.000	0.086
		C	0.000	0.000	19.125	0.000	0.019
L53	9.000-4.000	A	0.000	0.000	7.083	0.188	0.082
		B	0.000	0.000	11.803	0.000	0.086
		C	0.000	0.000	14.167	0.000	0.019
L54	4.000-0.000	A	0.000	0.000	4.958	0.150	0.066
		B	0.000	0.000	8.734	0.000	0.069
		C	0.000	0.000	9.917	0.000	0.015

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	151.000-146.000	A	1.482	0.000	0.000	0.000	1.669	0.041
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	0.000	0.000	0.000
L2	146.000-141.000	A	1.477	0.000	0.000	0.000	1.664	0.090
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	0.000	0.000	0.000
L3	141.000-136.000	A	1.472	0.000	0.000	0.000	1.659	0.090
		B		0.000	0.000	0.000	0.000	0.022
		C		0.000	0.000	0.000	0.000	0.000
L4	136.000-131.000	A	1.466	0.000	0.000	0.000	1.654	0.090
		B		0.000	0.000	0.000	0.000	0.056
		C		0.000	0.000	0.000	0.000	0.000
L5	131.000-126.000	A	1.461	0.000	0.000	0.431	1.648	0.099
		B		0.000	0.000	0.431	0.000	0.065
		C		0.000	0.000	0.431	0.000	0.025
L6	126.000-121.000	A	1.455	0.000	0.000	4.304	1.642	0.187
		B		0.000	0.000	5.647	0.000	0.173
		C		0.000	0.000	4.304	0.000	0.116
L7	121.000-118.500	A	1.450	0.000	0.000	4.731	0.819	0.115
		B		0.000	0.000	8.087	0.000	0.148
		C		0.000	0.000	4.731	0.000	0.080

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
L8	118.500-118.250	A	1.449	0.000	0.000	0.537	0.082	0.012
		B		0.000	0.000	0.873	0.000	0.015
		C		0.000	0.000	0.537	0.000	0.009
L9	118.250-113.250	A	1.445	0.000	0.000	7.950	1.633	0.178
		B		0.000	0.000	14.657	0.000	0.244
		C		0.000	0.000	7.950	0.000	0.108
L10	113.250-108.250	A	1.439	0.000	0.000	6.439	1.627	0.144
		B		0.000	0.000	13.138	0.000	0.209
		C		0.000	0.000	6.439	0.000	0.074
L11	108.250-103.250	A	1.432	0.000	0.000	6.432	1.620	0.144
		B		0.000	0.000	13.123	0.000	0.209
		C		0.000	0.000	6.432	0.000	0.073
L12	103.250-97.500	A	1.425	0.000	0.000	7.389	1.854	0.165
		B		0.000	0.000	17.520	0.000	0.281
		C		0.000	0.000	7.389	0.000	0.084
L13	97.500-95.950	A	1.420	0.000	0.000	3.278	0.500	0.056
		B		0.000	0.000	6.039	0.000	0.087
		C		0.000	0.000	3.278	0.000	0.034
L14	95.950-95.000	A	1.418	0.000	0.000	2.382	0.305	0.037
		B		0.000	0.000	4.071	0.000	0.057
		C		0.000	0.000	2.382	0.000	0.024
L15	95.000-94.750	A	1.417	0.000	0.000	0.627	0.080	0.010
		B		0.000	0.000	1.071	0.000	0.015
		C		0.000	0.000	0.627	0.000	0.006
L16	94.750-92.500	A	1.415	0.000	0.000	5.639	0.721	0.088
		B		0.000	0.000	9.637	0.000	0.134
		C		0.000	0.000	5.639	0.000	0.057
L17	92.500-92.250	A	1.413	0.000	0.000	0.626	0.080	0.010
		B		0.000	0.000	1.070	0.000	0.015
		C		0.000	0.000	0.626	0.000	0.006
L18	92.250-87.750	A	1.410	0.000	0.000	11.500	1.437	0.178
		B		0.000	0.000	19.484	0.000	0.269
		C		0.000	0.000	11.500	0.000	0.115
L19	87.750-87.500	A	1.406	0.000	0.000	0.647	0.080	0.010
		B		0.000	0.000	1.090	0.000	0.015
		C		0.000	0.000	0.647	0.000	0.006
L20	87.500-84.000	A	1.403	0.000	0.000	9.051	1.113	0.139
		B		0.000	0.000	15.250	0.000	0.210
		C		0.000	0.000	9.051	0.000	0.090
L21	84.000-83.750	A	1.400	0.000	0.000	0.646	0.079	0.010
		B		0.000	0.000	1.089	0.000	0.015
		C		0.000	0.000	0.646	0.000	0.006
L22	83.750-78.750	A	1.395	0.000	0.000	8.949	1.583	0.164
		B		0.000	0.000	17.788	0.000	0.264
		C		0.000	0.000	8.949	0.000	0.094
L23	78.750-73.750	A	1.386	0.000	0.000	6.803	1.574	0.145
		B		0.000	0.000	15.622	0.000	0.245
		C		0.000	0.000	6.803	0.000	0.075
L24	73.750-68.750	A	1.377	0.000	0.000	6.794	1.564	0.145
		B		0.000	0.000	15.592	0.000	0.244
		C		0.000	0.000	6.794	0.000	0.075
L25	68.750-64.750	A	1.368	0.000	0.000	8.911	1.244	0.146
		B		0.000	0.000	15.934	0.000	0.224
		C		0.000	0.000	8.911	0.000	0.090
L26	64.750-64.500	A	1.364	0.000	0.000	0.656	0.078	0.010
		B		0.000	0.000	1.094	0.000	0.015
		C		0.000	0.000	0.656	0.000	0.006
L27	64.500-63.250	A	1.362	0.000	0.000	3.277	0.387	0.050
		B		0.000	0.000	5.468	0.000	0.074
		C		0.000	0.000	3.277	0.000	0.032
L28	63.250-63.000	A	1.360	0.000	0.000	0.655	0.077	0.010
		B		0.000	0.000	1.093	0.000	0.015
		C		0.000	0.000	0.655	0.000	0.006
L29	63.000-58.000	A	1.355	0.000	0.000	13.931	1.542	0.203
		B		0.000	0.000	22.679	0.000	0.300
		C		0.000	0.000	13.931	0.000	0.133
L30	58.000-56.750	A	1.348	0.000	0.000	3.688	0.384	0.052
		B		0.000	0.000	5.871	0.000	0.076
		C		0.000	0.000	3.688	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
L31	56.750-56.500	A	1.346	0.000	0.000	0.738	0.077	0.010
		B		0.000	0.000	1.174	0.000	0.015
		C		0.000	0.000	0.738	0.000	0.007
L32	56.500-55.250	A	1.344	0.000	0.000	3.687	0.383	0.052
		B		0.000	0.000	5.868	0.000	0.076
		C		0.000	0.000	3.687	0.000	0.034
L33	55.250-55.000	A	1.342	0.000	0.000	0.737	0.076	0.010
		B		0.000	0.000	1.173	0.000	0.015
		C		0.000	0.000	0.737	0.000	0.007
L34	55.000-47.500	A	1.332	0.000	0.000	15.781	2.280	0.256
		B		0.000	0.000	28.828	0.000	0.398
		C		0.000	0.000	15.781	0.000	0.151
L35	47.500-47.050	A	1.322	0.000	0.000	0.757	0.137	0.014
		B		0.000	0.000	1.540	0.000	0.022
		C		0.000	0.000	0.757	0.000	0.007
L36	47.050-42.050	A	1.314	0.000	0.000	8.397	1.501	0.151
		B		0.000	0.000	17.053	0.000	0.245
		C		0.000	0.000	8.397	0.000	0.082
L37	42.050-37.050	A	1.298	0.000	0.000	10.909	1.486	0.171
		B		0.000	0.000	19.530	0.000	0.263
		C		0.000	0.000	10.909	0.000	0.101
L38	37.050-34.950	A	1.286	0.000	0.000	6.729	0.619	0.088
		B		0.000	0.000	10.339	0.000	0.127
		C		0.000	0.000	6.729	0.000	0.059
L39	34.950-34.700	A	1.282	0.000	0.000	0.801	0.073	0.011
		B		0.000	0.000	1.230	0.000	0.015
		C		0.000	0.000	0.801	0.000	0.007
L40	34.700-34.250	A	1.281	0.000	0.000	1.441	0.132	0.019
		B		0.000	0.000	2.214	0.000	0.027
		C		0.000	0.000	1.441	0.000	0.013
L41	34.250-34.000	A	1.279	0.000	0.000	0.801	0.073	0.010
		B		0.000	0.000	1.229	0.000	0.015
		C		0.000	0.000	0.801	0.000	0.007
L42	34.000-29.000	A	1.269	0.000	0.000	15.996	1.457	0.209
		B		0.000	0.000	24.551	0.000	0.299
		C		0.000	0.000	15.920	0.000	0.139
L43	29.000-26.750	A	1.254	0.000	0.000	7.188	0.649	0.093
		B		0.000	0.000	11.022	0.000	0.133
		C		0.000	0.000	7.078	0.000	0.062
L44	26.750-26.500	A	1.248	0.000	0.000	0.798	0.072	0.010
		B		0.000	0.000	1.224	0.000	0.015
		C		0.000	0.000	0.786	0.000	0.007
L45	26.500-25.250	A	1.244	0.000	0.000	3.990	0.358	0.051
		B		0.000	0.000	6.115	0.000	0.074
		C		0.000	0.000	3.930	0.000	0.034
L46	25.250-25.000	A	1.241	0.000	0.000	0.798	0.071	0.010
		B		0.000	0.000	1.222	0.000	0.015
		C		0.000	0.000	0.786	0.000	0.007
L47	25.000-20.000	A	1.227	0.000	0.000	13.646	1.415	0.186
		B		0.000	0.000	22.107	0.000	0.274
		C		0.000	0.000	15.030	0.000	0.129
L48	20.000-16.750	A	1.202	0.000	0.000	5.386	0.903	0.094
		B		0.000	0.000	10.849	0.000	0.149
		C		0.000	0.000	15.729	0.000	0.122
L49	16.750-16.500	A	1.191	0.000	0.000	0.414	0.069	0.007
		B		0.000	0.000	0.833	0.000	0.011
		C		0.000	0.000	1.209	0.000	0.009
L50	16.500-14.250	A	1.181	0.000	0.000	3.719	0.616	0.064
		B		0.000	0.000	7.480	0.000	0.102
		C		0.000	0.000	10.875	0.000	0.083
L51	14.250-14.000	A	1.171	0.000	0.000	0.413	0.068	0.007
		B		0.000	0.000	0.829	0.000	0.011
		C		0.000	0.000	1.208	0.000	0.009
L52	14.000-9.000	A	1.147	0.000	0.000	8.231	1.335	0.141
		B		0.000	0.000	16.512	0.000	0.223
		C		0.000	0.000	21.703	0.000	0.163
L53	9.000-4.000	A	1.084	0.000	0.000	8.167	1.271	0.137
		B		0.000	0.000	16.305	0.000	0.214
		C		0.000	0.000	16.011	0.000	0.119

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
L54	4.000-0.000	A	0.963	0.000	0.000	5.632	0.920	0.100
		B		0.000	0.000	11.926	0.000	0.155
		C		0.000	0.000	11.121	0.000	0.076

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	151.000-146.000	0.000	-0.224	0.000	-1.210
L2	146.000-141.000	0.000	-0.224	0.000	-1.222
L3	141.000-136.000	0.000	-0.224	0.000	-1.233
L4	136.000-131.000	0.000	-0.225	0.000	-1.243
L5	131.000-126.000	0.000	-0.202	0.000	-1.148
L6	126.000-121.000	0.502	-0.239	0.591	-0.787
L7	121.000-118.500	1.350	-0.419	1.664	-0.806
L8	118.500-118.250	1.262	-0.392	1.563	-0.757
L9	118.250-113.250	1.516	-0.471	1.854	-0.899
L10	113.250-108.250	1.757	-0.546	2.087	-1.013
L11	108.250-103.250	1.798	-0.559	2.131	-1.035
L12	103.250-97.500	2.095	-0.401	2.640	-0.711
L13	97.500-95.950	1.596	-0.298	2.126	-0.557
L14	95.950-95.000	1.437	-0.268	1.947	-0.510
L15	95.000-94.750	1.442	-0.269	1.954	-0.512
L16	94.750-92.500	1.451	-0.271	1.964	-0.514
L17	92.500-92.250	1.459	-0.272	1.974	-0.517
L18	92.250-87.750	1.450	-0.271	1.971	-0.516
L19	87.750-87.500	1.452	-0.271	1.978	-0.518
L20	87.500-84.000	1.464	-0.273	1.994	-0.522
L21	84.000-83.750	1.476	-0.275	2.008	-0.526
L22	83.750-78.750	1.872	-0.349	2.451	-0.642
L23	78.750-73.750	2.211	-0.412	2.809	-0.736
L24	73.750-68.750	2.254	-0.420	2.855	-0.748
L25	68.750-64.750	1.719	-0.320	2.313	-0.606
L26	64.750-64.500	1.558	-0.290	2.137	-0.559
L27	64.500-63.250	1.563	-0.291	2.142	-0.561
L28	63.250-63.000	1.567	-0.292	2.147	-0.562
L29	63.000-58.000	1.514	-0.282	2.092	-0.548
L30	58.000-56.750	1.469	-0.273	2.045	-0.535
L31	56.750-56.500	1.474	-0.274	2.052	-0.537
L32	56.500-55.250	1.478	-0.275	2.057	-0.538
L33	55.250-55.000	1.482	-0.276	2.061	-0.539
L34	55.000-47.500	1.872	-0.348	2.496	-0.653
L35	47.500-47.050	2.138	-0.398	2.775	-0.725
L36	47.050-42.050	2.158	-0.401	2.793	-0.729
L37	42.050-37.050	1.872	-0.348	2.506	-0.653
L38	37.050-34.950	1.461	-0.271	2.055	-0.535
L39	34.950-34.700	1.468	-0.273	2.063	-0.537
L40	34.700-34.250	1.470	-0.273	2.065	-0.537
L41	34.250-34.000	1.471	-0.273	2.066	-0.537
L42	34.000-29.000	1.486	-0.276	2.090	-0.559
L43	29.000-26.750	1.508	-0.280	2.132	-0.604
L44	26.750-26.500	1.515	-0.281	2.139	-0.605
L45	26.500-25.250	1.519	-0.282	2.143	-0.606
L46	25.250-25.000	1.523	-0.283	2.146	-0.606
L47	25.000-20.000	1.670	0.124	2.306	-0.268
L48	20.000-16.750	1.762	4.214	2.370	3.238
L49	16.750-16.500	1.772	4.237	2.378	3.263
L50	16.500-14.250	1.778	4.254	2.383	3.280
L51	14.250-14.000	1.784	4.269	2.388	3.298
L52	14.000-9.000	2.202	3.675	2.763	2.766
L53	9.000-4.000	3.314	2.055	3.740	1.345
L54	4.000-0.000	3.431	1.900	3.828	1.230

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
L5	36	MP3-03 (Surface Af)	126.00 - 126.50	1.0000	1.0000
L5	37	MP3-03 (Surface Af)	126.00 - 126.50	1.0000	1.0000
L5	38	MP3-03 (Surface Af)	126.00 - 126.50	1.0000	1.0000
L6	36	MP3-03 (Surface Af)	121.00 - 126.00	1.0000	1.0000
L6	37	MP3-03 (Surface Af)	121.00 - 126.00	1.0000	1.0000
L6	38	MP3-03 (Surface Af)	121.00 - 126.00	1.0000	1.0000
L6	59	AL7-50(1-5/8)	121.00 - 122.00	1.0000	1.0000
L7	32	Sabre MS-600 (6" x 1" Plate)	118.50 - 120.50	1.0000	1.0000
L7	33	Sabre MS-600 (6" x 1" Plate)	118.50 - 120.50	1.0000	1.0000
L7	34	Sabre MS-600 (6" x 1" Plate)	118.50 - 120.50	1.0000	1.0000
L7	36	MP3-03 (Surface Af)	118.50 - 121.00	1.0000	1.0000
L7	37	MP3-03 (Surface Af)	118.50 - 121.00	1.0000	1.0000
L7	38	MP3-03 (Surface Af)	118.50 - 121.00	1.0000	1.0000
L7	59	AL7-50(1-5/8)	118.50 - 121.00	1.0000	1.0000
L8	32	Sabre MS-600 (6" x 1" Plate)	118.25 - 118.50	1.0000	1.0000
L8	33	Sabre MS-600 (6" x 1" Plate)	118.25 - 118.50	1.0000	1.0000
L8	34	Sabre MS-600 (6" x 1" Plate)	118.25 - 118.50	1.0000	1.0000
L8	36	MP3-03 (Surface Af)	118.25 - 118.50	1.0000	1.0000
L8	37	MP3-03 (Surface Af)	118.25 - 118.50	1.0000	1.0000
L8	38	MP3-03 (Surface Af)	118.25 - 118.50	1.0000	1.0000
L8	59	AL7-50(1-5/8)	118.25 - 118.50	1.0000	1.0000
L9	32	Sabre MS-600 (6" x 1" Plate)	113.25 - 118.25	1.0000	1.0000
L9	33	Sabre MS-600 (6" x 1" Plate)	113.25 - 118.25	1.0000	1.0000
L9	34	Sabre MS-600 (6" x 1" Plate)	113.25 - 118.25	1.0000	1.0000
L9	36	MP3-03 (Surface Af)	116.50 - 118.25	1.0000	1.0000
L9	37	MP3-03 (Surface Af)	116.50 - 118.25	1.0000	1.0000
L9	38	MP3-03 (Surface Af)	116.50 - 118.25	1.0000	1.0000
L9	59	AL7-50(1-5/8)	113.25 - 118.25	1.0000	1.0000
L10	32	Sabre MS-600 (6" x 1" Plate)	108.25 - 113.25	1.0000	1.0000
L10	33	Sabre MS-600 (6" x 1"	108.25 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
		Plate)	113.25		
L10	34	Sabre MS-600 (6" x 1" Plate)	108.25 - 113.25	1.0000	1.0000
L10	59	AL7-50(1-5/8)	108.25 - 113.25	1.0000	1.0000
L11	32	Sabre MS-600 (6" x 1" Plate)	103.25 - 108.25	1.0000	1.0000
L11	33	Sabre MS-600 (6" x 1" Plate)	103.25 - 108.25	1.0000	1.0000
L11	34	Sabre MS-600 (6" x 1" Plate)	103.25 - 108.25	1.0000	1.0000
L11	59	AL7-50(1-5/8)	103.25 - 108.25	1.0000	1.0000
L12	32	Sabre MS-600 (6" x 1" Plate)	97.50 - 103.25	1.0000	1.0000
L12	33	Sabre MS-600 (6" x 1" Plate)	97.50 - 103.25	1.0000	1.0000
L12	34	Sabre MS-600 (6" x 1" Plate)	97.50 - 103.25	1.0000	1.0000
L12	59	AL7-50(1-5/8)	97.50 - 103.25	1.0000	1.0000
L12	64	CU12PSM9P6XXX(1-1/2)	97.50 - 103.00	1.0000	1.0000
L13	28	Sabre MS-600 (6" x 1" Plate)	95.95 - 97.00	1.0000	1.0000
L13	29	Sabre MS-600 (6" x 1" Plate)	95.95 - 97.00	1.0000	1.0000
L13	30	Sabre MS-600 (6" x 1" Plate)	95.95 - 97.00	1.0000	1.0000
L13	32	Sabre MS-600 (6" x 1" Plate)	95.95 - 97.50	1.0000	1.0000
L13	33	Sabre MS-600 (6" x 1" Plate)	95.95 - 97.50	1.0000	1.0000
L13	34	Sabre MS-600 (6" x 1" Plate)	95.95 - 97.50	1.0000	1.0000
L13	59	AL7-50(1-5/8)	95.95 - 97.50	1.0000	1.0000
L13	64	CU12PSM9P6XXX(1-1/2)	95.95 - 97.50	1.0000	1.0000
L14	28	Sabre MS-600 (6" x 1" Plate)	95.00 - 95.95	1.0000	1.0000
L14	29	Sabre MS-600 (6" x 1" Plate)	95.00 - 95.95	1.0000	1.0000
L14	30	Sabre MS-600 (6" x 1" Plate)	95.00 - 95.95	1.0000	1.0000
L14	32	Sabre MS-600 (6" x 1" Plate)	95.00 - 95.95	1.0000	1.0000
L14	33	Sabre MS-600 (6" x 1" Plate)	95.00 - 95.95	1.0000	1.0000
L14	34	Sabre MS-600 (6" x 1" Plate)	95.00 - 95.95	1.0000	1.0000
L14	59	AL7-50(1-5/8)	95.00 - 95.95	1.0000	1.0000
L14	64	CU12PSM9P6XXX(1-1/2)	95.00 - 95.95	1.0000	1.0000
L15	28	Sabre MS-600 (6" x 1" Plate)	94.75 - 95.00	1.0000	1.0000
L15	29	Sabre MS-600 (6" x 1" Plate)	94.75 - 95.00	1.0000	1.0000
L15	30	Sabre MS-600 (6" x 1" Plate)	94.75 - 95.00	1.0000	1.0000
L15	32	Sabre MS-600 (6" x 1" Plate)	94.75 - 95.00	1.0000	1.0000
L15	33	Sabre MS-600 (6" x 1" Plate)	94.75 - 95.00	1.0000	1.0000
L15	34	Sabre MS-600 (6" x 1" Plate)	94.75 - 95.00	1.0000	1.0000
L15	59	AL7-50(1-5/8)	94.75 - 95.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L15	64	CU12PSM9P6XXX(1-1/2)	94.75 - 95.00	1.0000	1.0000
L16	28	Sabre MS-600 (6" x 1" Plate)	92.50 - 94.75	1.0000	1.0000
L16	29	Sabre MS-600 (6" x 1" Plate)	92.50 - 94.75	1.0000	1.0000
L16	30	Sabre MS-600 (6" x 1" Plate)	92.50 - 94.75	1.0000	1.0000
L16	32	Sabre MS-600 (6" x 1" Plate)	92.50 - 94.75	1.0000	1.0000
L16	33	Sabre MS-600 (6" x 1" Plate)	92.50 - 94.75	1.0000	1.0000
L16	34	Sabre MS-600 (6" x 1" Plate)	92.50 - 94.75	1.0000	1.0000
L16	59	AL7-50(1-5/8)	92.50 - 94.75	1.0000	1.0000
L16	64	CU12PSM9P6XXX(1-1/2)	92.50 - 94.75	1.0000	1.0000
L17	28	Sabre MS-600 (6" x 1" Plate)	92.25 - 92.50	1.0000	1.0000
L17	29	Sabre MS-600 (6" x 1" Plate)	92.25 - 92.50	1.0000	1.0000
L17	30	Sabre MS-600 (6" x 1" Plate)	92.25 - 92.50	1.0000	1.0000
L17	32	Sabre MS-600 (6" x 1" Plate)	92.25 - 92.50	1.0000	1.0000
L17	33	Sabre MS-600 (6" x 1" Plate)	92.25 - 92.50	1.0000	1.0000
L17	34	Sabre MS-600 (6" x 1" Plate)	92.25 - 92.50	1.0000	1.0000
L17	59	AL7-50(1-5/8)	92.25 - 92.50	1.0000	1.0000
L17	64	CU12PSM9P6XXX(1-1/2)	92.25 - 92.50	1.0000	1.0000
L18	24	Sabre MS-650 (6.5" x 1.25" Plate)	87.75 - 90.50	1.0000	1.0000
L18	25	Sabre MS-650 (6.5" x 1.25" Plate)	87.75 - 90.50	1.0000	1.0000
L18	26	Sabre MS-650 (6.5" x 1.25" Plate)	87.75 - 90.50	1.0000	1.0000
L18	28	Sabre MS-600 (6" x 1" Plate)	87.75 - 92.25	1.0000	1.0000
L18	29	Sabre MS-600 (6" x 1" Plate)	87.75 - 92.25	1.0000	1.0000
L18	30	Sabre MS-600 (6" x 1" Plate)	87.75 - 92.25	1.0000	1.0000
L18	32	Sabre MS-600 (6" x 1" Plate)	90.50 - 92.25	1.0000	1.0000
L18	33	Sabre MS-600 (6" x 1" Plate)	90.50 - 92.25	1.0000	1.0000
L18	34	Sabre MS-600 (6" x 1" Plate)	90.50 - 92.25	1.0000	1.0000
L18	59	AL7-50(1-5/8)	87.75 - 92.25	1.0000	1.0000
L18	64	CU12PSM9P6XXX(1-1/2)	87.75 - 92.25	1.0000	1.0000
L19	24	Sabre MS-650 (6.5" x 1.25" Plate)	87.50 - 87.75	1.0000	1.0000
L19	25	Sabre MS-650 (6.5" x 1.25" Plate)	87.50 - 87.75	1.0000	1.0000
L19	26	Sabre MS-650 (6.5" x 1.25" Plate)	87.50 - 87.75	1.0000	1.0000
L19	28	Sabre MS-600 (6" x 1" Plate)	87.50 - 87.75	1.0000	1.0000
L19	29	Sabre MS-600 (6" x 1" Plate)	87.50 - 87.75	1.0000	1.0000
L19	30	Sabre MS-600 (6" x 1" Plate)	87.50 - 87.75	1.0000	1.0000
L19	59	AL7-50(1-5/8)	87.50 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			87.75		
L19	64	CU12PSM9P6XXX(1-1/2)	87.50 - 87.75	1.0000	1.0000
L20	24	Sabre MS-650 (6.5" x 1.25" Plate)	84.00 - 87.50	1.0000	1.0000
L20	25	Sabre MS-650 (6.5" x 1.25" Plate)	84.00 - 87.50	1.0000	1.0000
L20	26	Sabre MS-650 (6.5" x 1.25" Plate)	84.00 - 87.50	1.0000	1.0000
L20	28	Sabre MS-600 (6" x 1" Plate)	84.00 - 87.50	1.0000	1.0000
L20	29	Sabre MS-600 (6" x 1" Plate)	84.00 - 87.50	1.0000	1.0000
L20	30	Sabre MS-600 (6" x 1" Plate)	84.00 - 87.50	1.0000	1.0000
L20	59	AL7-50(1-5/8)	84.00 - 87.50	1.0000	1.0000
L20	64	CU12PSM9P6XXX(1-1/2)	84.00 - 87.50	1.0000	1.0000
L21	24	Sabre MS-650 (6.5" x 1.25" Plate)	83.75 - 84.00	1.0000	1.0000
L21	25	Sabre MS-650 (6.5" x 1.25" Plate)	83.75 - 84.00	1.0000	1.0000
L21	26	Sabre MS-650 (6.5" x 1.25" Plate)	83.75 - 84.00	1.0000	1.0000
L21	28	Sabre MS-600 (6" x 1" Plate)	83.75 - 84.00	1.0000	1.0000
L21	29	Sabre MS-600 (6" x 1" Plate)	83.75 - 84.00	1.0000	1.0000
L21	30	Sabre MS-600 (6" x 1" Plate)	83.75 - 84.00	1.0000	1.0000
L21	59	AL7-50(1-5/8)	83.75 - 84.00	1.0000	1.0000
L21	64	CU12PSM9P6XXX(1-1/2)	83.75 - 84.00	1.0000	1.0000
L22	24	Sabre MS-650 (6.5" x 1.25" Plate)	78.75 - 83.75	1.0000	1.0000
L22	25	Sabre MS-650 (6.5" x 1.25" Plate)	78.75 - 83.75	1.0000	1.0000
L22	26	Sabre MS-650 (6.5" x 1.25" Plate)	78.75 - 83.75	1.0000	1.0000
L22	28	Sabre MS-600 (6" x 1" Plate)	82.00 - 83.75	1.0000	1.0000
L22	29	Sabre MS-600 (6" x 1" Plate)	82.00 - 83.75	1.0000	1.0000
L22	30	Sabre MS-600 (6" x 1" Plate)	82.00 - 83.75	1.0000	1.0000
L22	59	AL7-50(1-5/8)	78.75 - 83.75	1.0000	1.0000
L22	64	CU12PSM9P6XXX(1-1/2)	78.75 - 83.75	1.0000	1.0000
L23	24	Sabre MS-650 (6.5" x 1.25" Plate)	73.75 - 78.75	1.0000	1.0000
L23	25	Sabre MS-650 (6.5" x 1.25" Plate)	73.75 - 78.75	1.0000	1.0000
L23	26	Sabre MS-650 (6.5" x 1.25" Plate)	73.75 - 78.75	1.0000	1.0000
L23	59	AL7-50(1-5/8)	73.75 - 78.75	1.0000	1.0000
L23	64	CU12PSM9P6XXX(1-1/2)	73.75 - 78.75	1.0000	1.0000
L24	24	Sabre MS-650 (6.5" x 1.25" Plate)	68.75 - 73.75	1.0000	1.0000
L24	25	Sabre MS-650 (6.5" x 1.25" Plate)	68.75 - 73.75	1.0000	1.0000
L24	26	Sabre MS-650 (6.5" x 1.25" Plate)	68.75 - 73.75	1.0000	1.0000
L24	59	AL7-50(1-5/8)	68.75 - 73.75	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L24	64	CU12PSM9P6XXX(1-1/2)	68.75 - 73.75	1.0000	1.0000
L25	20	Sabre MS-650 (6.5" x 1.25" Plate)	64.75 - 67.50	1.0000	1.0000
L25	21	Sabre MS-650 (6.5" x 1.25" Plate)	64.75 - 67.50	1.0000	1.0000
L25	22	Sabre MS-650 (6.5" x 1.25" Plate)	64.75 - 67.50	1.0000	1.0000
L25	24	Sabre MS-650 (6.5" x 1.25" Plate)	64.75 - 68.75	1.0000	1.0000
L25	25	Sabre MS-650 (6.5" x 1.25" Plate)	64.75 - 68.75	1.0000	1.0000
L25	26	Sabre MS-650 (6.5" x 1.25" Plate)	64.75 - 68.75	1.0000	1.0000
L25	59	AL7-50(1-5/8)	64.75 - 68.75	1.0000	1.0000
L25	64	CU12PSM9P6XXX(1-1/2)	64.75 - 68.75	1.0000	1.0000
L26	20	Sabre MS-650 (6.5" x 1.25" Plate)	64.50 - 64.75	1.0000	1.0000
L26	21	Sabre MS-650 (6.5" x 1.25" Plate)	64.50 - 64.75	1.0000	1.0000
L26	22	Sabre MS-650 (6.5" x 1.25" Plate)	64.50 - 64.75	1.0000	1.0000
L26	24	Sabre MS-650 (6.5" x 1.25" Plate)	64.50 - 64.75	1.0000	1.0000
L26	25	Sabre MS-650 (6.5" x 1.25" Plate)	64.50 - 64.75	1.0000	1.0000
L26	26	Sabre MS-650 (6.5" x 1.25" Plate)	64.50 - 64.75	1.0000	1.0000
L26	59	AL7-50(1-5/8)	64.50 - 64.75	1.0000	1.0000
L26	64	CU12PSM9P6XXX(1-1/2)	64.50 - 64.75	1.0000	1.0000
L27	20	Sabre MS-650 (6.5" x 1.25" Plate)	63.25 - 64.50	1.0000	1.0000
L27	21	Sabre MS-650 (6.5" x 1.25" Plate)	63.25 - 64.50	1.0000	1.0000
L27	22	Sabre MS-650 (6.5" x 1.25" Plate)	63.25 - 64.50	1.0000	1.0000
L27	24	Sabre MS-650 (6.5" x 1.25" Plate)	63.25 - 64.50	1.0000	1.0000
L27	25	Sabre MS-650 (6.5" x 1.25" Plate)	63.25 - 64.50	1.0000	1.0000
L27	26	Sabre MS-650 (6.5" x 1.25" Plate)	63.25 - 64.50	1.0000	1.0000
L27	59	AL7-50(1-5/8)	63.25 - 64.50	1.0000	1.0000
L27	64	CU12PSM9P6XXX(1-1/2)	63.25 - 64.50	1.0000	1.0000
L28	20	Sabre MS-650 (6.5" x 1.25" Plate)	63.00 - 63.25	1.0000	1.0000
L28	21	Sabre MS-650 (6.5" x 1.25" Plate)	63.00 - 63.25	1.0000	1.0000
L28	22	Sabre MS-650 (6.5" x 1.25" Plate)	63.00 - 63.25	1.0000	1.0000
L28	24	Sabre MS-650 (6.5" x 1.25" Plate)	63.00 - 63.25	1.0000	1.0000
L28	25	Sabre MS-650 (6.5" x 1.25" Plate)	63.00 - 63.25	1.0000	1.0000
L28	26	Sabre MS-650 (6.5" x 1.25" Plate)	63.00 - 63.25	1.0000	1.0000
L28	59	AL7-50(1-5/8)	63.00 - 63.25	1.0000	1.0000
L28	64	CU12PSM9P6XXX(1-1/2)	63.00 - 63.25	1.0000	1.0000
L29	16	Sabre MS-850 (8.5" x 1.25" Plate)	58.00 - 60.50	1.0000	1.0000
L29	17	Sabre MS-850 (8.5" x	58.00 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
		1.25" Plate)	60.50		
L29	18	Sabre MS-850 (8.5" x 1.25" Plate)	58.00 - 60.50	1.0000	1.0000
L29	20	Sabre MS-650 (6.5" x 1.25" Plate)	58.00 - 63.00	1.0000	1.0000
L29	21	Sabre MS-650 (6.5" x 1.25" Plate)	58.00 - 63.00	1.0000	1.0000
L29	22	Sabre MS-650 (6.5" x 1.25" Plate)	58.00 - 63.00	1.0000	1.0000
L29	24	Sabre MS-650 (6.5" x 1.25" Plate)	60.50 - 63.00	1.0000	1.0000
L29	25	Sabre MS-650 (6.5" x 1.25" Plate)	60.50 - 63.00	1.0000	1.0000
L29	26	Sabre MS-650 (6.5" x 1.25" Plate)	60.50 - 63.00	1.0000	1.0000
L29	59	AL7-50(1-5/8)	58.00 - 63.00	1.0000	1.0000
L29	64	CU12PSM9P6XXX(1-1/2)	58.00 - 63.00	1.0000	1.0000
L30	16	Sabre MS-850 (8.5" x 1.25" Plate)	56.75 - 58.00	1.0000	1.0000
L30	17	Sabre MS-850 (8.5" x 1.25" Plate)	56.75 - 58.00	1.0000	1.0000
L30	18	Sabre MS-850 (8.5" x 1.25" Plate)	56.75 - 58.00	1.0000	1.0000
L30	20	Sabre MS-650 (6.5" x 1.25" Plate)	56.75 - 58.00	1.0000	1.0000
L30	21	Sabre MS-650 (6.5" x 1.25" Plate)	56.75 - 58.00	1.0000	1.0000
L30	22	Sabre MS-650 (6.5" x 1.25" Plate)	56.75 - 58.00	1.0000	1.0000
L30	59	AL7-50(1-5/8)	56.75 - 58.00	1.0000	1.0000
L30	64	CU12PSM9P6XXX(1-1/2)	56.75 - 58.00	1.0000	1.0000
L31	16	Sabre MS-850 (8.5" x 1.25" Plate)	56.50 - 56.75	1.0000	1.0000
L31	17	Sabre MS-850 (8.5" x 1.25" Plate)	56.50 - 56.75	1.0000	1.0000
L31	18	Sabre MS-850 (8.5" x 1.25" Plate)	56.50 - 56.75	1.0000	1.0000
L31	20	Sabre MS-650 (6.5" x 1.25" Plate)	56.50 - 56.75	1.0000	1.0000
L31	21	Sabre MS-650 (6.5" x 1.25" Plate)	56.50 - 56.75	1.0000	1.0000
L31	22	Sabre MS-650 (6.5" x 1.25" Plate)	56.50 - 56.75	1.0000	1.0000
L31	59	AL7-50(1-5/8)	56.50 - 56.75	1.0000	1.0000
L31	64	CU12PSM9P6XXX(1-1/2)	56.50 - 56.75	1.0000	1.0000
L32	16	Sabre MS-850 (8.5" x 1.25" Plate)	55.25 - 56.50	1.0000	1.0000
L32	17	Sabre MS-850 (8.5" x 1.25" Plate)	55.25 - 56.50	1.0000	1.0000
L32	18	Sabre MS-850 (8.5" x 1.25" Plate)	55.25 - 56.50	1.0000	1.0000
L32	20	Sabre MS-650 (6.5" x 1.25" Plate)	55.25 - 56.50	1.0000	1.0000
L32	21	Sabre MS-650 (6.5" x 1.25" Plate)	55.25 - 56.50	1.0000	1.0000
L32	22	Sabre MS-650 (6.5" x 1.25" Plate)	55.25 - 56.50	1.0000	1.0000
L32	59	AL7-50(1-5/8)	55.25 - 56.50	1.0000	1.0000
L32	64	CU12PSM9P6XXX(1-1/2)	55.25 - 56.50	1.0000	1.0000
L33	16	Sabre MS-850 (8.5" x 1.25" Plate)	55.00 - 55.25	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L33	17	Sabre MS-850 (8.5" x 1.25" Plate)	55.00 - 55.25	1.0000	1.0000
L33	18	Sabre MS-850 (8.5" x 1.25" Plate)	55.00 - 55.25	1.0000	1.0000
L33	20	Sabre MS-650 (6.5" x 1.25" Plate)	55.00 - 55.25	1.0000	1.0000
L33	21	Sabre MS-650 (6.5" x 1.25" Plate)	55.00 - 55.25	1.0000	1.0000
L33	22	Sabre MS-650 (6.5" x 1.25" Plate)	55.00 - 55.25	1.0000	1.0000
L33	59	AL7-50(1-5/8)	55.00 - 55.25	1.0000	1.0000
L33	64	CU12PSM9P6XXX(1-1/2)	55.00 - 55.25	1.0000	1.0000
L34	16	Sabre MS-850 (8.5" x 1.25" Plate)	47.50 - 55.00	1.0000	1.0000
L34	17	Sabre MS-850 (8.5" x 1.25" Plate)	47.50 - 55.00	1.0000	1.0000
L34	18	Sabre MS-850 (8.5" x 1.25" Plate)	47.50 - 55.00	1.0000	1.0000
L34	20	Sabre MS-650 (6.5" x 1.25" Plate)	52.50 - 55.00	1.0000	1.0000
L34	21	Sabre MS-650 (6.5" x 1.25" Plate)	52.50 - 55.00	1.0000	1.0000
L34	22	Sabre MS-650 (6.5" x 1.25" Plate)	52.50 - 55.00	1.0000	1.0000
L34	59	AL7-50(1-5/8)	47.50 - 55.00	1.0000	1.0000
L34	64	CU12PSM9P6XXX(1-1/2)	47.50 - 55.00	1.0000	1.0000
L35	16	Sabre MS-850 (8.5" x 1.25" Plate)	47.05 - 47.50	1.0000	1.0000
L35	17	Sabre MS-850 (8.5" x 1.25" Plate)	47.05 - 47.50	1.0000	1.0000
L35	18	Sabre MS-850 (8.5" x 1.25" Plate)	47.05 - 47.50	1.0000	1.0000
L35	59	AL7-50(1-5/8)	47.05 - 47.50	1.0000	1.0000
L35	64	CU12PSM9P6XXX(1-1/2)	47.05 - 47.50	1.0000	1.0000
L36	16	Sabre MS-850 (8.5" x 1.25" Plate)	42.05 - 47.05	1.0000	1.0000
L36	17	Sabre MS-850 (8.5" x 1.25" Plate)	42.05 - 47.05	1.0000	1.0000
L36	18	Sabre MS-850 (8.5" x 1.25" Plate)	42.05 - 47.05	1.0000	1.0000
L36	59	AL7-50(1-5/8)	42.05 - 47.05	1.0000	1.0000
L36	64	CU12PSM9P6XXX(1-1/2)	42.05 - 47.05	1.0000	1.0000
L37	12	Sabre MS-850 (8.5" x 1.25" Plate)	37.05 - 38.70	1.0000	1.0000
L37	13	Sabre MS-850 (8.5" x 1.25" Plate)	37.05 - 38.70	1.0000	1.0000
L37	14	Sabre MS-850 (8.5" x 1.25" Plate)	37.05 - 38.70	1.0000	1.0000
L37	16	Sabre MS-850 (8.5" x 1.25" Plate)	37.05 - 42.05	1.0000	1.0000
L37	17	Sabre MS-850 (8.5" x 1.25" Plate)	37.05 - 42.05	1.0000	1.0000
L37	18	Sabre MS-850 (8.5" x 1.25" Plate)	37.05 - 42.05	1.0000	1.0000
L37	59	AL7-50(1-5/8)	37.05 - 42.05	1.0000	1.0000
L37	64	CU12PSM9P6XXX(1-1/2)	37.05 - 42.05	1.0000	1.0000
L38	12	Sabre MS-850 (8.5" x 1.25" Plate)	34.95 - 37.05	1.0000	1.0000
L38	13	Sabre MS-850 (8.5" x	34.95 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
		1.25" Plate)	37.05		
L38	14	Sabre MS-850 (8.5" x 1.25" Plate)	34.95 - 37.05	1.0000	1.0000
L38	16	Sabre MS-850 (8.5" x 1.25" Plate)	34.95 - 37.05	1.0000	1.0000
L38	17	Sabre MS-850 (8.5" x 1.25" Plate)	34.95 - 37.05	1.0000	1.0000
L38	18	Sabre MS-850 (8.5" x 1.25" Plate)	34.95 - 37.05	1.0000	1.0000
L38	59	AL7-50(1-5/8)	34.95 - 37.05	1.0000	1.0000
L38	64	CU12PSM9P6XXX(1-1/2)	34.95 - 37.05	1.0000	1.0000
L39	12	Sabre MS-850 (8.5" x 1.25" Plate)	34.70 - 34.95	1.0000	1.0000
L39	13	Sabre MS-850 (8.5" x 1.25" Plate)	34.70 - 34.95	1.0000	1.0000
L39	14	Sabre MS-850 (8.5" x 1.25" Plate)	34.70 - 34.95	1.0000	1.0000
L39	16	Sabre MS-850 (8.5" x 1.25" Plate)	34.70 - 34.95	1.0000	1.0000
L39	17	Sabre MS-850 (8.5" x 1.25" Plate)	34.70 - 34.95	1.0000	1.0000
L39	18	Sabre MS-850 (8.5" x 1.25" Plate)	34.70 - 34.95	1.0000	1.0000
L39	59	AL7-50(1-5/8)	34.70 - 34.95	1.0000	1.0000
L39	64	CU12PSM9P6XXX(1-1/2)	34.70 - 34.95	1.0000	1.0000
L40	12	Sabre MS-850 (8.5" x 1.25" Plate)	34.25 - 34.70	1.0000	1.0000
L40	13	Sabre MS-850 (8.5" x 1.25" Plate)	34.25 - 34.70	1.0000	1.0000
L40	14	Sabre MS-850 (8.5" x 1.25" Plate)	34.25 - 34.70	1.0000	1.0000
L40	16	Sabre MS-850 (8.5" x 1.25" Plate)	34.25 - 34.70	1.0000	1.0000
L40	17	Sabre MS-850 (8.5" x 1.25" Plate)	34.25 - 34.70	1.0000	1.0000
L40	18	Sabre MS-850 (8.5" x 1.25" Plate)	34.25 - 34.70	1.0000	1.0000
L40	59	AL7-50(1-5/8)	34.25 - 34.70	1.0000	1.0000
L40	64	CU12PSM9P6XXX(1-1/2)	34.25 - 34.70	1.0000	1.0000
L41	12	Sabre MS-850 (8.5" x 1.25" Plate)	34.00 - 34.25	1.0000	1.0000
L41	13	Sabre MS-850 (8.5" x 1.25" Plate)	34.00 - 34.25	1.0000	1.0000
L41	14	Sabre MS-850 (8.5" x 1.25" Plate)	34.00 - 34.25	1.0000	1.0000
L41	16	Sabre MS-850 (8.5" x 1.25" Plate)	34.00 - 34.25	1.0000	1.0000
L41	17	Sabre MS-850 (8.5" x 1.25" Plate)	34.00 - 34.25	1.0000	1.0000
L41	18	Sabre MS-850 (8.5" x 1.25" Plate)	34.00 - 34.25	1.0000	1.0000
L41	59	AL7-50(1-5/8)	34.00 - 34.25	1.0000	1.0000
L41	64	CU12PSM9P6XXX(1-1/2)	34.00 - 34.25	1.0000	1.0000
L42	8	Sabre MS-850 (8.5" x 1.25" Plate)	29.00 - 30.50	1.0000	1.0000
L42	9	Sabre MS-850 (8.5" x 1.25" Plate)	29.00 - 30.50	1.0000	1.0000
L42	10	Sabre MS-850 (8.5" x 1.25" Plate)	29.00 - 30.50	1.0000	1.0000
L42	12	Sabre MS-850 (8.5" x 1.25" Plate)	29.00 - 34.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L42	13	Sabre MS-850 (8.5" x 1.25" Plate)	29.00 - 34.00	1.0000	1.0000
L42	14	Sabre MS-850 (8.5" x 1.25" Plate)	29.00 - 34.00	1.0000	1.0000
L42	16	Sabre MS-850 (8.5" x 1.25" Plate)	30.50 - 34.00	1.0000	1.0000
L42	17	Sabre MS-850 (8.5" x 1.25" Plate)	30.50 - 34.00	1.0000	1.0000
L42	18	Sabre MS-850 (8.5" x 1.25" Plate)	30.50 - 34.00	1.0000	1.0000
L42	59	AL7-50(1-5/8)	29.00 - 34.00	1.0000	1.0000
L42	64	CU12PSM9P6XXX(1-1/2)	29.00 - 34.00	1.0000	1.0000
L43	8	Sabre MS-850 (8.5" x 1.25" Plate)	26.75 - 29.00	1.0000	1.0000
L43	9	Sabre MS-850 (8.5" x 1.25" Plate)	26.75 - 29.00	1.0000	1.0000
L43	10	Sabre MS-850 (8.5" x 1.25" Plate)	26.75 - 29.00	1.0000	1.0000
L43	12	Sabre MS-850 (8.5" x 1.25" Plate)	26.75 - 29.00	1.0000	1.0000
L43	13	Sabre MS-850 (8.5" x 1.25" Plate)	26.75 - 29.00	1.0000	1.0000
L43	14	Sabre MS-850 (8.5" x 1.25" Plate)	26.75 - 29.00	1.0000	1.0000
L43	59	AL7-50(1-5/8)	26.75 - 29.00	1.0000	1.0000
L43	64	CU12PSM9P6XXX(1-1/2)	26.75 - 29.00	1.0000	1.0000
L44	8	Sabre MS-850 (8.5" x 1.25" Plate)	26.50 - 26.75	1.0000	1.0000
L44	9	Sabre MS-850 (8.5" x 1.25" Plate)	26.50 - 26.75	1.0000	1.0000
L44	10	Sabre MS-850 (8.5" x 1.25" Plate)	26.50 - 26.75	1.0000	1.0000
L44	12	Sabre MS-850 (8.5" x 1.25" Plate)	26.50 - 26.75	1.0000	1.0000
L44	13	Sabre MS-850 (8.5" x 1.25" Plate)	26.50 - 26.75	1.0000	1.0000
L44	14	Sabre MS-850 (8.5" x 1.25" Plate)	26.50 - 26.75	1.0000	1.0000
L44	59	AL7-50(1-5/8)	26.50 - 26.75	1.0000	1.0000
L44	64	CU12PSM9P6XXX(1-1/2)	26.50 - 26.75	1.0000	1.0000
L45	8	Sabre MS-850 (8.5" x 1.25" Plate)	25.25 - 26.50	1.0000	1.0000
L45	9	Sabre MS-850 (8.5" x 1.25" Plate)	25.25 - 26.50	1.0000	1.0000
L45	10	Sabre MS-850 (8.5" x 1.25" Plate)	25.25 - 26.50	1.0000	1.0000
L45	12	Sabre MS-850 (8.5" x 1.25" Plate)	25.25 - 26.50	1.0000	1.0000
L45	13	Sabre MS-850 (8.5" x 1.25" Plate)	25.25 - 26.50	1.0000	1.0000
L45	14	Sabre MS-850 (8.5" x 1.25" Plate)	25.25 - 26.50	1.0000	1.0000
L45	59	AL7-50(1-5/8)	25.25 - 26.50	1.0000	1.0000
L45	64	CU12PSM9P6XXX(1-1/2)	25.25 - 26.50	1.0000	1.0000
L46	8	Sabre MS-850 (8.5" x 1.25" Plate)	25.00 - 25.25	1.0000	1.0000
L46	9	Sabre MS-850 (8.5" x 1.25" Plate)	25.00 - 25.25	1.0000	1.0000
L46	10	Sabre MS-850 (8.5" x 1.25" Plate)	25.00 - 25.25	1.0000	1.0000
L46	12	Sabre MS-850 (8.5" x	25.00 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
		1.25" Plate)	25.25		
L46	13	Sabre MS-850 (8.5" x 1.25" Plate)	25.00 - 25.25	1.0000	1.0000
L46	14	Sabre MS-850 (8.5" x 1.25" Plate)	25.00 - 25.25	1.0000	1.0000
L46	59	AL7-50(1-5/8)	25.00 - 25.25	1.0000	1.0000
L46	64	CU12PSM9P6XXX(1-1/2)	25.00 - 25.25	1.0000	1.0000
L47	5	Sabre MS-850 (8.5" x 1.25" Plate)	20.00 - 20.50	1.0000	1.0000
L47	6	Sabre MS-850 (8.5" x 1.25" Plate)	20.00 - 20.50	1.0000	1.0000
L47	8	Sabre MS-850 (8.5" x 1.25" Plate)	20.00 - 25.00	1.0000	1.0000
L47	9	Sabre MS-850 (8.5" x 1.25" Plate)	20.00 - 25.00	1.0000	1.0000
L47	10	Sabre MS-850 (8.5" x 1.25" Plate)	20.00 - 25.00	1.0000	1.0000
L47	12	Sabre MS-850 (8.5" x 1.25" Plate)	21.50 - 25.00	1.0000	1.0000
L47	13	Sabre MS-850 (8.5" x 1.25" Plate)	21.50 - 25.00	1.0000	1.0000
L47	14	Sabre MS-850 (8.5" x 1.25" Plate)	21.50 - 25.00	1.0000	1.0000
L47	59	AL7-50(1-5/8)	20.00 - 25.00	1.0000	1.0000
L47	64	CU12PSM9P6XXX(1-1/2)	20.00 - 25.00	1.0000	1.0000
L48	5	Sabre MS-850 (8.5" x 1.25" Plate)	16.75 - 20.00	1.0000	1.0000
L48	6	Sabre MS-850 (8.5" x 1.25" Plate)	16.75 - 20.00	1.0000	1.0000
L48	8	Sabre MS-850 (8.5" x 1.25" Plate)	16.75 - 20.00	1.0000	1.0000
L48	9	Sabre MS-850 (8.5" x 1.25" Plate)	16.75 - 20.00	1.0000	1.0000
L48	10	Sabre MS-850 (8.5" x 1.25" Plate)	16.75 - 20.00	1.0000	1.0000
L48	59	AL7-50(1-5/8)	16.75 - 20.00	1.0000	1.0000
L48	64	CU12PSM9P6XXX(1-1/2)	16.75 - 20.00	1.0000	1.0000
L49	5	Sabre MS-850 (8.5" x 1.25" Plate)	16.50 - 16.75	1.0000	1.0000
L49	6	Sabre MS-850 (8.5" x 1.25" Plate)	16.50 - 16.75	1.0000	1.0000
L49	8	Sabre MS-850 (8.5" x 1.25" Plate)	16.50 - 16.75	1.0000	1.0000
L49	9	Sabre MS-850 (8.5" x 1.25" Plate)	16.50 - 16.75	1.0000	1.0000
L49	10	Sabre MS-850 (8.5" x 1.25" Plate)	16.50 - 16.75	1.0000	1.0000
L49	59	AL7-50(1-5/8)	16.50 - 16.75	1.0000	1.0000
L49	64	CU12PSM9P6XXX(1-1/2)	16.50 - 16.75	1.0000	1.0000
L50	5	Sabre MS-850 (8.5" x 1.25" Plate)	14.25 - 16.50	1.0000	1.0000
L50	6	Sabre MS-850 (8.5" x 1.25" Plate)	14.25 - 16.50	1.0000	1.0000
L50	8	Sabre MS-850 (8.5" x 1.25" Plate)	14.25 - 16.50	1.0000	1.0000
L50	9	Sabre MS-850 (8.5" x 1.25" Plate)	14.25 - 16.50	1.0000	1.0000
L50	10	Sabre MS-850 (8.5" x 1.25" Plate)	14.25 - 16.50	1.0000	1.0000
L50	59	AL7-50(1-5/8)	14.25 - 16.50	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L50	64	CU12PSM9P6XXX(1-1/2)	14.25 - 16.50	1.0000	1.0000
L51	5	Sabre MS-850 (8.5" x 1.25" Plate)	14.00 - 14.25	1.0000	1.0000
L51	6	Sabre MS-850 (8.5" x 1.25" Plate)	14.00 - 14.25	1.0000	1.0000
L51	8	Sabre MS-850 (8.5" x 1.25" Plate)	14.00 - 14.25	1.0000	1.0000
L51	9	Sabre MS-850 (8.5" x 1.25" Plate)	14.00 - 14.25	1.0000	1.0000
L51	10	Sabre MS-850 (8.5" x 1.25" Plate)	14.00 - 14.25	1.0000	1.0000
L51	59	AL7-50(1-5/8)	14.00 - 14.25	1.0000	1.0000
L51	64	CU12PSM9P6XXX(1-1/2)	14.00 - 14.25	1.0000	1.0000
L52	5	Sabre MS-850 (8.5" x 1.25" Plate)	9.00 - 14.00	1.0000	1.0000
L52	6	Sabre MS-850 (8.5" x 1.25" Plate)	9.00 - 14.00	1.0000	1.0000
L52	8	Sabre MS-850 (8.5" x 1.25" Plate)	9.00 - 14.00	1.0000	1.0000
L52	9	Sabre MS-850 (8.5" x 1.25" Plate)	9.00 - 14.00	1.0000	1.0000
L52	10	Sabre MS-850 (8.5" x 1.25" Plate)	10.50 - 14.00	1.0000	1.0000
L52	59	AL7-50(1-5/8)	9.00 - 14.00	1.0000	1.0000
L52	64	CU12PSM9P6XXX(1-1/2)	9.00 - 14.00	1.0000	1.0000
L53	5	Sabre MS-850 (8.5" x 1.25" Plate)	4.00 - 9.00	1.0000	1.0000
L53	6	Sabre MS-850 (8.5" x 1.25" Plate)	4.00 - 9.00	1.0000	1.0000
L53	8	Sabre MS-850 (8.5" x 1.25" Plate)	4.00 - 9.00	1.0000	1.0000
L53	9	Sabre MS-850 (8.5" x 1.25" Plate)	4.00 - 9.00	1.0000	1.0000
L53	59	AL7-50(1-5/8)	4.00 - 9.00	1.0000	1.0000
L53	64	CU12PSM9P6XXX(1-1/2)	4.00 - 9.00	1.0000	1.0000
L54	5	Sabre MS-850 (8.5" x 1.25" Plate)	0.50 - 4.00	1.0000	1.0000
L54	6	Sabre MS-850 (8.5" x 1.25" Plate)	0.50 - 4.00	1.0000	1.0000
L54	8	Sabre MS-850 (8.5" x 1.25" Plate)	0.50 - 4.00	1.0000	1.0000
L54	9	Sabre MS-850 (8.5" x 1.25" Plate)	0.50 - 4.00	1.0000	1.0000
L54	59	AL7-50(1-5/8)	0.00 - 4.00	1.0000	1.0000
L54	64	CU12PSM9P6XXX(1-1/2)	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
L5	36	MP3-03 (Surface Af)	126.00 - 126.50	Auto	0.0000
L5	37	MP3-03 (Surface Af)	126.00 - 126.50	Auto	0.0000
L5	38	MP3-03 (Surface Af)	126.00 - 126.50	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L6	36	MP3-03 (Surface Af)	121.00 - 126.00	Auto	0.0000
L6	37	MP3-03 (Surface Af)	121.00 - 126.00	Auto	0.0000
L6	38	MP3-03 (Surface Af)	121.00 - 126.00	Auto	0.0000
L7	32	Sabre MS-600 (6" x 1" Plate)	118.50 - 120.50	Auto	0.0488
L7	33	Sabre MS-600 (6" x 1" Plate)	118.50 - 120.50	Auto	0.0488
L7	34	Sabre MS-600 (6" x 1" Plate)	118.50 - 120.50	Auto	0.0488
L7	36	MP3-03 (Surface Af)	118.50 - 121.00	Auto	0.0000
L7	37	MP3-03 (Surface Af)	118.50 - 121.00	Auto	0.0000
L7	38	MP3-03 (Surface Af)	118.50 - 121.00	Auto	0.0000
L8	32	Sabre MS-600 (6" x 1" Plate)	118.25 - 118.50	Auto	0.1622
L8	33	Sabre MS-600 (6" x 1" Plate)	118.25 - 118.50	Auto	0.1622
L8	34	Sabre MS-600 (6" x 1" Plate)	118.25 - 118.50	Auto	0.1622
L8	36	MP3-03 (Surface Af)	118.25 - 118.50	Auto	0.0000
L8	37	MP3-03 (Surface Af)	118.25 - 118.50	Auto	0.0000
L8	38	MP3-03 (Surface Af)	118.25 - 118.50	Auto	0.0000
L9	32	Sabre MS-600 (6" x 1" Plate)	113.25 - 118.25	Auto	0.1347
L9	33	Sabre MS-600 (6" x 1" Plate)	113.25 - 118.25	Auto	0.1347
L9	34	Sabre MS-600 (6" x 1" Plate)	113.25 - 118.25	Auto	0.1347
L9	36	MP3-03 (Surface Af)	116.50 - 118.25	Auto	0.0000
L9	37	MP3-03 (Surface Af)	116.50 - 118.25	Auto	0.0000
L9	38	MP3-03 (Surface Af)	116.50 - 118.25	Auto	0.0000
L10	32	Sabre MS-600 (6" x 1" Plate)	108.25 - 113.25	Auto	0.0873
L10	33	Sabre MS-600 (6" x 1" Plate)	108.25 - 113.25	Auto	0.0873
L10	34	Sabre MS-600 (6" x 1" Plate)	108.25 - 113.25	Auto	0.0873
L11	32	Sabre MS-600 (6" x 1" Plate)	103.25 - 108.25	Auto	0.0427
L11	33	Sabre MS-600 (6" x 1" Plate)	103.25 - 108.25	Auto	0.0427
L11	34	Sabre MS-600 (6" x 1" Plate)	103.25 - 108.25	Auto	0.0427
L12	32	Sabre MS-600 (6" x 1" Plate)	97.50 - 103.25	Auto	0.0038
L12	33	Sabre MS-600 (6" x 1" Plate)	97.50 - 103.25	Auto	0.0038
L12	34	Sabre MS-600 (6" x 1" Plate)	97.50 - 103.25	Auto	0.0038
L13	28	Sabre MS-600 (6" x 1" Plate)	95.95 - 97.00	Auto	0.0243
L13	29	Sabre MS-600 (6" x 1" Plate)	95.95 - 97.00	Auto	0.0243
L13	30	Sabre MS-600 (6" x 1" Plate)	95.95 - 97.00	Auto	0.0243
L13	32	Sabre MS-600 (6" x 1" Plate)	95.95 - 97.50	Auto	0.0263

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L13	33	Sabre MS-600 (6" x 1" Plate)	95.95 - 97.50	Auto	0.0263
L13	34	Sabre MS-600 (6" x 1" Plate)	95.95 - 97.50	Auto	0.0263
L14	28	Sabre MS-600 (6" x 1" Plate)	95.00 - 95.95	Auto	0.0160
L14	29	Sabre MS-600 (6" x 1" Plate)	95.00 - 95.95	Auto	0.0160
L14	30	Sabre MS-600 (6" x 1" Plate)	95.00 - 95.95	Auto	0.0160
L14	32	Sabre MS-600 (6" x 1" Plate)	95.00 - 95.95	Auto	0.0160
L14	33	Sabre MS-600 (6" x 1" Plate)	95.00 - 95.95	Auto	0.0160
L14	34	Sabre MS-600 (6" x 1" Plate)	95.00 - 95.95	Auto	0.0160
L15	28	Sabre MS-600 (6" x 1" Plate)	94.75 - 95.00	Auto	0.1227
L15	29	Sabre MS-600 (6" x 1" Plate)	94.75 - 95.00	Auto	0.1227
L15	30	Sabre MS-600 (6" x 1" Plate)	94.75 - 95.00	Auto	0.1227
L15	32	Sabre MS-600 (6" x 1" Plate)	94.75 - 95.00	Auto	0.1227
L15	33	Sabre MS-600 (6" x 1" Plate)	94.75 - 95.00	Auto	0.1227
L15	34	Sabre MS-600 (6" x 1" Plate)	94.75 - 95.00	Auto	0.1227
L16	28	Sabre MS-600 (6" x 1" Plate)	92.50 - 94.75	Auto	0.1068
L16	29	Sabre MS-600 (6" x 1" Plate)	92.50 - 94.75	Auto	0.1068
L16	30	Sabre MS-600 (6" x 1" Plate)	92.50 - 94.75	Auto	0.1068
L16	32	Sabre MS-600 (6" x 1" Plate)	92.50 - 94.75	Auto	0.1068
L16	33	Sabre MS-600 (6" x 1" Plate)	92.50 - 94.75	Auto	0.1068
L16	34	Sabre MS-600 (6" x 1" Plate)	92.50 - 94.75	Auto	0.1068
L17	28	Sabre MS-600 (6" x 1" Plate)	92.25 - 92.50	Auto	0.0000
L17	29	Sabre MS-600 (6" x 1" Plate)	92.25 - 92.50	Auto	0.0000
L17	30	Sabre MS-600 (6" x 1" Plate)	92.25 - 92.50	Auto	0.0000
L17	32	Sabre MS-600 (6" x 1" Plate)	92.25 - 92.50	Auto	0.0000
L17	33	Sabre MS-600 (6" x 1" Plate)	92.25 - 92.50	Auto	0.0000
L17	34	Sabre MS-600 (6" x 1" Plate)	92.25 - 92.50	Auto	0.0000
L18	24	Sabre MS-650 (6.5" x 1.25" Plate)	87.75 - 90.50	Auto	0.0381
L18	25	Sabre MS-650 (6.5" x 1.25" Plate)	87.75 - 90.50	Auto	0.0381
L18	26	Sabre MS-650 (6.5" x 1.25" Plate)	87.75 - 90.50	Auto	0.0381
L18	28	Sabre MS-600 (6" x 1" Plate)	87.75 - 92.25	Auto	0.0000
L18	29	Sabre MS-600 (6" x 1" Plate)	87.75 - 92.25	Auto	0.0000
L18	30	Sabre MS-600 (6" x 1" Plate)	87.75 - 92.25	Auto	0.0000
L18	32	Sabre MS-600 (6" x 1" Plate)	90.50 - 92.25	Auto	0.0000
L18	33	Sabre MS-600 (6" x 1" Plate)	90.50 - 92.25	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L18	34	Sabre MS-600 (6" x 1" Plate)	90.50 - 92.25	Auto	0.0000
L19	24	Sabre MS-650 (6.5" x 1.25" Plate)	87.50 - 87.75	Auto	0.1607
L19	25	Sabre MS-650 (6.5" x 1.25" Plate)	87.50 - 87.75	Auto	0.1607
L19	26	Sabre MS-650 (6.5" x 1.25" Plate)	87.50 - 87.75	Auto	0.1607
L19	28	Sabre MS-600 (6" x 1" Plate)	87.50 - 87.75	Auto	0.0908
L19	29	Sabre MS-600 (6" x 1" Plate)	87.50 - 87.75	Auto	0.0908
L19	30	Sabre MS-600 (6" x 1" Plate)	87.50 - 87.75	Auto	0.0908
L20	24	Sabre MS-650 (6.5" x 1.25" Plate)	84.00 - 87.50	Auto	0.1413
L20	25	Sabre MS-650 (6.5" x 1.25" Plate)	84.00 - 87.50	Auto	0.1413
L20	26	Sabre MS-650 (6.5" x 1.25" Plate)	84.00 - 87.50	Auto	0.1413
L20	28	Sabre MS-600 (6" x 1" Plate)	84.00 - 87.50	Auto	0.0697
L20	29	Sabre MS-600 (6" x 1" Plate)	84.00 - 87.50	Auto	0.0697
L20	30	Sabre MS-600 (6" x 1" Plate)	84.00 - 87.50	Auto	0.0697
L21	24	Sabre MS-650 (6.5" x 1.25" Plate)	83.75 - 84.00	Auto	0.0290
L21	25	Sabre MS-650 (6.5" x 1.25" Plate)	83.75 - 84.00	Auto	0.0290
L21	26	Sabre MS-650 (6.5" x 1.25" Plate)	83.75 - 84.00	Auto	0.0290
L21	28	Sabre MS-600 (6" x 1" Plate)	83.75 - 84.00	Auto	0.0000
L21	29	Sabre MS-600 (6" x 1" Plate)	83.75 - 84.00	Auto	0.0000
L21	30	Sabre MS-600 (6" x 1" Plate)	83.75 - 84.00	Auto	0.0000
L22	24	Sabre MS-650 (6.5" x 1.25" Plate)	78.75 - 83.75	Auto	0.0069
L22	25	Sabre MS-650 (6.5" x 1.25" Plate)	78.75 - 83.75	Auto	0.0069
L22	26	Sabre MS-650 (6.5" x 1.25" Plate)	78.75 - 83.75	Auto	0.0069
L22	28	Sabre MS-600 (6" x 1" Plate)	82.00 - 83.75	Auto	0.0000
L22	29	Sabre MS-600 (6" x 1" Plate)	82.00 - 83.75	Auto	0.0000
L22	30	Sabre MS-600 (6" x 1" Plate)	82.00 - 83.75	Auto	0.0000
L23	24	Sabre MS-650 (6.5" x 1.25" Plate)	73.75 - 78.75	Auto	0.0000
L23	25	Sabre MS-650 (6.5" x 1.25" Plate)	73.75 - 78.75	Auto	0.0000
L23	26	Sabre MS-650 (6.5" x 1.25" Plate)	73.75 - 78.75	Auto	0.0000
L24	24	Sabre MS-650 (6.5" x 1.25" Plate)	68.75 - 73.75	Auto	0.0000
L24	25	Sabre MS-650 (6.5" x 1.25" Plate)	68.75 - 73.75	Auto	0.0000
L24	26	Sabre MS-650 (6.5" x 1.25" Plate)	68.75 - 73.75	Auto	0.0000
L25	20	Sabre MS-650 (6.5" x 1.25" Plate)	64.75 - 67.50	Auto	0.0000
L25	21	Sabre MS-650 (6.5" x 1.25" Plate)	64.75 - 67.50	Auto	0.0000
L25	22	Sabre MS-650 (6.5" x 1.25" Plate)	64.75 - 67.50	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L25	24	Sabre MS-650 (6.5" x 1.25" Plate)	64.75 - 68.75	Auto	0.0000
L25	25	Sabre MS-650 (6.5" x 1.25" Plate)	64.75 - 68.75	Auto	0.0000
L25	26	Sabre MS-650 (6.5" x 1.25" Plate)	64.75 - 68.75	Auto	0.0000
L26	20	Sabre MS-650 (6.5" x 1.25" Plate)	64.50 - 64.75	Auto	0.0000
L26	21	Sabre MS-650 (6.5" x 1.25" Plate)	64.50 - 64.75	Auto	0.0000
L26	22	Sabre MS-650 (6.5" x 1.25" Plate)	64.50 - 64.75	Auto	0.0000
L26	24	Sabre MS-650 (6.5" x 1.25" Plate)	64.50 - 64.75	Auto	0.0000
L26	25	Sabre MS-650 (6.5" x 1.25" Plate)	64.50 - 64.75	Auto	0.0000
L26	26	Sabre MS-650 (6.5" x 1.25" Plate)	64.50 - 64.75	Auto	0.0000
L27	20	Sabre MS-650 (6.5" x 1.25" Plate)	63.25 - 64.50	Auto	0.0000
L27	21	Sabre MS-650 (6.5" x 1.25" Plate)	63.25 - 64.50	Auto	0.0000
L27	22	Sabre MS-650 (6.5" x 1.25" Plate)	63.25 - 64.50	Auto	0.0000
L27	24	Sabre MS-650 (6.5" x 1.25" Plate)	63.25 - 64.50	Auto	0.0000
L27	25	Sabre MS-650 (6.5" x 1.25" Plate)	63.25 - 64.50	Auto	0.0000
L27	26	Sabre MS-650 (6.5" x 1.25" Plate)	63.25 - 64.50	Auto	0.0000
L28	20	Sabre MS-650 (6.5" x 1.25" Plate)	63.00 - 63.25	Auto	0.0000
L28	21	Sabre MS-650 (6.5" x 1.25" Plate)	63.00 - 63.25	Auto	0.0000
L28	22	Sabre MS-650 (6.5" x 1.25" Plate)	63.00 - 63.25	Auto	0.0000
L28	24	Sabre MS-650 (6.5" x 1.25" Plate)	63.00 - 63.25	Auto	0.0000
L28	25	Sabre MS-650 (6.5" x 1.25" Plate)	63.00 - 63.25	Auto	0.0000
L28	26	Sabre MS-650 (6.5" x 1.25" Plate)	63.00 - 63.25	Auto	0.0000
L29	16	Sabre MS-850 (8.5" x 1.25" Plate)	58.00 - 60.50	Auto	0.0982
L29	17	Sabre MS-850 (8.5" x 1.25" Plate)	58.00 - 60.50	Auto	0.0982
L29	18	Sabre MS-850 (8.5" x 1.25" Plate)	58.00 - 60.50	Auto	0.0982
L29	20	Sabre MS-650 (6.5" x 1.25" Plate)	58.00 - 63.00	Auto	0.0000
L29	21	Sabre MS-650 (6.5" x 1.25" Plate)	58.00 - 63.00	Auto	0.0000
L29	22	Sabre MS-650 (6.5" x 1.25" Plate)	58.00 - 63.00	Auto	0.0000
L29	24	Sabre MS-650 (6.5" x 1.25" Plate)	60.50 - 63.00	Auto	0.0000
L29	25	Sabre MS-650 (6.5" x 1.25" Plate)	60.50 - 63.00	Auto	0.0000
L29	26	Sabre MS-650 (6.5" x 1.25" Plate)	60.50 - 63.00	Auto	0.0000
L30	16	Sabre MS-850 (8.5" x 1.25" Plate)	56.75 - 58.00	Auto	0.0873
L30	17	Sabre MS-850 (8.5" x 1.25" Plate)	56.75 - 58.00	Auto	0.0873
L30	18	Sabre MS-850 (8.5" x 1.25" Plate)	56.75 - 58.00	Auto	0.0873
L30	20	Sabre MS-650 (6.5" x 1.25" Plate)	56.75 - 58.00	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L30	21	Sabre MS-650 (6.5" x 1.25" Plate)	56.75 - 58.00	Auto	0.0000
L30	22	Sabre MS-650 (6.5" x 1.25" Plate)	56.75 - 58.00	Auto	0.0000
L31	16	Sabre MS-850 (8.5" x 1.25" Plate)	56.50 - 56.75	Auto	0.1932
L31	17	Sabre MS-850 (8.5" x 1.25" Plate)	56.50 - 56.75	Auto	0.1932
L31	18	Sabre MS-850 (8.5" x 1.25" Plate)	56.50 - 56.75	Auto	0.1932
L31	20	Sabre MS-650 (6.5" x 1.25" Plate)	56.50 - 56.75	Auto	0.0000
L31	21	Sabre MS-650 (6.5" x 1.25" Plate)	56.50 - 56.75	Auto	0.0000
L31	22	Sabre MS-650 (6.5" x 1.25" Plate)	56.50 - 56.75	Auto	0.0000
L32	16	Sabre MS-850 (8.5" x 1.25" Plate)	55.25 - 56.50	Auto	0.1889
L32	17	Sabre MS-850 (8.5" x 1.25" Plate)	55.25 - 56.50	Auto	0.1889
L32	18	Sabre MS-850 (8.5" x 1.25" Plate)	55.25 - 56.50	Auto	0.1889
L32	20	Sabre MS-650 (6.5" x 1.25" Plate)	55.25 - 56.50	Auto	0.0000
L32	21	Sabre MS-650 (6.5" x 1.25" Plate)	55.25 - 56.50	Auto	0.0000
L32	22	Sabre MS-650 (6.5" x 1.25" Plate)	55.25 - 56.50	Auto	0.0000
L33	16	Sabre MS-850 (8.5" x 1.25" Plate)	55.00 - 55.25	Auto	0.0978
L33	17	Sabre MS-850 (8.5" x 1.25" Plate)	55.00 - 55.25	Auto	0.0978
L33	18	Sabre MS-850 (8.5" x 1.25" Plate)	55.00 - 55.25	Auto	0.0978
L33	20	Sabre MS-650 (6.5" x 1.25" Plate)	55.00 - 55.25	Auto	0.0000
L33	21	Sabre MS-650 (6.5" x 1.25" Plate)	55.00 - 55.25	Auto	0.0000
L33	22	Sabre MS-650 (6.5" x 1.25" Plate)	55.00 - 55.25	Auto	0.0000
L34	16	Sabre MS-850 (8.5" x 1.25" Plate)	47.50 - 55.00	Auto	0.0752
L34	17	Sabre MS-850 (8.5" x 1.25" Plate)	47.50 - 55.00	Auto	0.0752
L34	18	Sabre MS-850 (8.5" x 1.25" Plate)	47.50 - 55.00	Auto	0.0752
L34	20	Sabre MS-650 (6.5" x 1.25" Plate)	52.50 - 55.00	Auto	0.0000
L34	21	Sabre MS-650 (6.5" x 1.25" Plate)	52.50 - 55.00	Auto	0.0000
L34	22	Sabre MS-650 (6.5" x 1.25" Plate)	52.50 - 55.00	Auto	0.0000
L35	16	Sabre MS-850 (8.5" x 1.25" Plate)	47.05 - 47.50	Auto	0.0908
L35	17	Sabre MS-850 (8.5" x 1.25" Plate)	47.05 - 47.50	Auto	0.0908
L35	18	Sabre MS-850 (8.5" x 1.25" Plate)	47.05 - 47.50	Auto	0.0908
L36	16	Sabre MS-850 (8.5" x 1.25" Plate)	42.05 - 47.05	Auto	0.0706
L36	17	Sabre MS-850 (8.5" x 1.25" Plate)	42.05 - 47.05	Auto	0.0706
L36	18	Sabre MS-850 (8.5" x 1.25" Plate)	42.05 - 47.05	Auto	0.0706
L37	12	Sabre MS-850 (8.5" x 1.25" Plate)	37.05 - 38.70	Auto	0.0268
L37	13	Sabre MS-850 (8.5" x 1.25" Plate)	37.05 - 38.70	Auto	0.0268

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L37	14	Sabre MS-850 (8.5" x 1.25" Plate)	37.05 - 38.70	Auto	0.0268
L37	16	Sabre MS-850 (8.5" x 1.25" Plate)	37.05 - 42.05	Auto	0.0368
L37	17	Sabre MS-850 (8.5" x 1.25" Plate)	37.05 - 42.05	Auto	0.0368
L37	18	Sabre MS-850 (8.5" x 1.25" Plate)	37.05 - 42.05	Auto	0.0368
L38	12	Sabre MS-850 (8.5" x 1.25" Plate)	34.95 - 37.05	Auto	0.0157
L38	13	Sabre MS-850 (8.5" x 1.25" Plate)	34.95 - 37.05	Auto	0.0157
L38	14	Sabre MS-850 (8.5" x 1.25" Plate)	34.95 - 37.05	Auto	0.0157
L38	16	Sabre MS-850 (8.5" x 1.25" Plate)	34.95 - 37.05	Auto	0.0157
L38	17	Sabre MS-850 (8.5" x 1.25" Plate)	34.95 - 37.05	Auto	0.0157
L38	18	Sabre MS-850 (8.5" x 1.25" Plate)	34.95 - 37.05	Auto	0.0157
L39	12	Sabre MS-850 (8.5" x 1.25" Plate)	34.70 - 34.95	Auto	0.1072
L39	13	Sabre MS-850 (8.5" x 1.25" Plate)	34.70 - 34.95	Auto	0.1072
L39	14	Sabre MS-850 (8.5" x 1.25" Plate)	34.70 - 34.95	Auto	0.1072
L39	16	Sabre MS-850 (8.5" x 1.25" Plate)	34.70 - 34.95	Auto	0.1072
L39	17	Sabre MS-850 (8.5" x 1.25" Plate)	34.70 - 34.95	Auto	0.1072
L39	18	Sabre MS-850 (8.5" x 1.25" Plate)	34.70 - 34.95	Auto	0.1072
L40	12	Sabre MS-850 (8.5" x 1.25" Plate)	34.25 - 34.70	Auto	0.1011
L40	13	Sabre MS-850 (8.5" x 1.25" Plate)	34.25 - 34.70	Auto	0.1011
L40	14	Sabre MS-850 (8.5" x 1.25" Plate)	34.25 - 34.70	Auto	0.1011
L40	16	Sabre MS-850 (8.5" x 1.25" Plate)	34.25 - 34.70	Auto	0.1011
L40	17	Sabre MS-850 (8.5" x 1.25" Plate)	34.25 - 34.70	Auto	0.1011
L40	18	Sabre MS-850 (8.5" x 1.25" Plate)	34.25 - 34.70	Auto	0.1011
L41	12	Sabre MS-850 (8.5" x 1.25" Plate)	34.00 - 34.25	Auto	0.0045
L41	13	Sabre MS-850 (8.5" x 1.25" Plate)	34.00 - 34.25	Auto	0.0045
L41	14	Sabre MS-850 (8.5" x 1.25" Plate)	34.00 - 34.25	Auto	0.0045
L41	16	Sabre MS-850 (8.5" x 1.25" Plate)	34.00 - 34.25	Auto	0.0045
L41	17	Sabre MS-850 (8.5" x 1.25" Plate)	34.00 - 34.25	Auto	0.0045
L41	18	Sabre MS-850 (8.5" x 1.25" Plate)	34.00 - 34.25	Auto	0.0045
L42	8	Sabre MS-850 (8.5" x 1.25" Plate)	29.00 - 30.50	Auto	0.0000
L42	9	Sabre MS-850 (8.5" x 1.25" Plate)	29.00 - 30.50	Auto	0.0000
L42	10	Sabre MS-850 (8.5" x 1.25" Plate)	29.00 - 30.50	Auto	0.0000
L42	12	Sabre MS-850 (8.5" x 1.25" Plate)	29.00 - 34.00	Auto	0.0000
L42	13	Sabre MS-850 (8.5" x 1.25" Plate)	29.00 - 34.00	Auto	0.0000
L42	14	Sabre MS-850 (8.5" x 1.25" Plate)	29.00 - 34.00	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L42	16	Sabre MS-850 (8.5" x 1.25" Plate)	30.50 - 34.00	Auto	0.0000
L42	17	Sabre MS-850 (8.5" x 1.25" Plate)	30.50 - 34.00	Auto	0.0000
L42	18	Sabre MS-850 (8.5" x 1.25" Plate)	30.50 - 34.00	Auto	0.0000
L43	8	Sabre MS-850 (8.5" x 1.25" Plate)	26.75 - 29.00	Auto	0.0000
L43	9	Sabre MS-850 (8.5" x 1.25" Plate)	26.75 - 29.00	Auto	0.0000
L43	10	Sabre MS-850 (8.5" x 1.25" Plate)	26.75 - 29.00	Auto	0.0000
L43	12	Sabre MS-850 (8.5" x 1.25" Plate)	26.75 - 29.00	Auto	0.0000
L43	13	Sabre MS-850 (8.5" x 1.25" Plate)	26.75 - 29.00	Auto	0.0000
L43	14	Sabre MS-850 (8.5" x 1.25" Plate)	26.75 - 29.00	Auto	0.0000
L44	8	Sabre MS-850 (8.5" x 1.25" Plate)	26.50 - 26.75	Auto	0.0464
L44	9	Sabre MS-850 (8.5" x 1.25" Plate)	26.50 - 26.75	Auto	0.0464
L44	10	Sabre MS-850 (8.5" x 1.25" Plate)	26.50 - 26.75	Auto	0.0464
L44	12	Sabre MS-850 (8.5" x 1.25" Plate)	26.50 - 26.75	Auto	0.0464
L44	13	Sabre MS-850 (8.5" x 1.25" Plate)	26.50 - 26.75	Auto	0.0464
L44	14	Sabre MS-850 (8.5" x 1.25" Plate)	26.50 - 26.75	Auto	0.0464
L45	8	Sabre MS-850 (8.5" x 1.25" Plate)	25.25 - 26.50	Auto	0.0420
L45	9	Sabre MS-850 (8.5" x 1.25" Plate)	25.25 - 26.50	Auto	0.0420
L45	10	Sabre MS-850 (8.5" x 1.25" Plate)	25.25 - 26.50	Auto	0.0420
L45	12	Sabre MS-850 (8.5" x 1.25" Plate)	25.25 - 26.50	Auto	0.0420
L45	13	Sabre MS-850 (8.5" x 1.25" Plate)	25.25 - 26.50	Auto	0.0420
L45	14	Sabre MS-850 (8.5" x 1.25" Plate)	25.25 - 26.50	Auto	0.0420
L46	8	Sabre MS-850 (8.5" x 1.25" Plate)	25.00 - 25.25	Auto	0.0000
L46	9	Sabre MS-850 (8.5" x 1.25" Plate)	25.00 - 25.25	Auto	0.0000
L46	10	Sabre MS-850 (8.5" x 1.25" Plate)	25.00 - 25.25	Auto	0.0000
L46	12	Sabre MS-850 (8.5" x 1.25" Plate)	25.00 - 25.25	Auto	0.0000
L46	13	Sabre MS-850 (8.5" x 1.25" Plate)	25.00 - 25.25	Auto	0.0000
L46	14	Sabre MS-850 (8.5" x 1.25" Plate)	25.00 - 25.25	Auto	0.0000
L47	5	Sabre MS-850 (8.5" x 1.25" Plate)	20.00 - 20.50	Auto	0.0000
L47	6	Sabre MS-850 (8.5" x 1.25" Plate)	20.00 - 20.50	Auto	0.0000
L47	8	Sabre MS-850 (8.5" x 1.25" Plate)	20.00 - 25.00	Auto	0.0000
L47	9	Sabre MS-850 (8.5" x 1.25" Plate)	20.00 - 25.00	Auto	0.0000
L47	10	Sabre MS-850 (8.5" x 1.25" Plate)	20.00 - 25.00	Auto	0.0000
L47	12	Sabre MS-850 (8.5" x 1.25" Plate)	21.50 - 25.00	Auto	0.0000
L47	13	Sabre MS-850 (8.5" x 1.25" Plate)	21.50 - 25.00	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L47	14	Sabre MS-850 (8.5" x 1.25" Plate)	21.50 - 25.00	Auto	0.0000
L48	5	Sabre MS-850 (8.5" x 1.25" Plate)	16.75 - 20.00	Auto	0.0000
L48	6	Sabre MS-850 (8.5" x 1.25" Plate)	16.75 - 20.00	Auto	0.0000
L48	8	Sabre MS-850 (8.5" x 1.25" Plate)	16.75 - 20.00	Auto	0.0000
L48	9	Sabre MS-850 (8.5" x 1.25" Plate)	16.75 - 20.00	Auto	0.0000
L48	10	Sabre MS-850 (8.5" x 1.25" Plate)	16.75 - 20.00	Auto	0.0000
L49	5	Sabre MS-850 (8.5" x 1.25" Plate)	16.50 - 16.75	Auto	0.0000
L49	6	Sabre MS-850 (8.5" x 1.25" Plate)	16.50 - 16.75	Auto	0.0000
L49	8	Sabre MS-850 (8.5" x 1.25" Plate)	16.50 - 16.75	Auto	0.0000
L49	9	Sabre MS-850 (8.5" x 1.25" Plate)	16.50 - 16.75	Auto	0.0000
L49	10	Sabre MS-850 (8.5" x 1.25" Plate)	16.50 - 16.75	Auto	0.0000
L50	5	Sabre MS-850 (8.5" x 1.25" Plate)	14.25 - 16.50	Auto	0.0000
L50	6	Sabre MS-850 (8.5" x 1.25" Plate)	14.25 - 16.50	Auto	0.0000
L50	8	Sabre MS-850 (8.5" x 1.25" Plate)	14.25 - 16.50	Auto	0.0000
L50	9	Sabre MS-850 (8.5" x 1.25" Plate)	14.25 - 16.50	Auto	0.0000
L50	10	Sabre MS-850 (8.5" x 1.25" Plate)	14.25 - 16.50	Auto	0.0000
L51	5	Sabre MS-850 (8.5" x 1.25" Plate)	14.00 - 14.25	Auto	0.0000
L51	6	Sabre MS-850 (8.5" x 1.25" Plate)	14.00 - 14.25	Auto	0.0000
L51	8	Sabre MS-850 (8.5" x 1.25" Plate)	14.00 - 14.25	Auto	0.0000
L51	9	Sabre MS-850 (8.5" x 1.25" Plate)	14.00 - 14.25	Auto	0.0000
L51	10	Sabre MS-850 (8.5" x 1.25" Plate)	14.00 - 14.25	Auto	0.0000
L52	5	Sabre MS-850 (8.5" x 1.25" Plate)	9.00 - 14.00	Auto	0.0000
L52	6	Sabre MS-850 (8.5" x 1.25" Plate)	9.00 - 14.00	Auto	0.0000
L52	8	Sabre MS-850 (8.5" x 1.25" Plate)	9.00 - 14.00	Auto	0.0000
L52	9	Sabre MS-850 (8.5" x 1.25" Plate)	9.00 - 14.00	Auto	0.0000
L52	10	Sabre MS-850 (8.5" x 1.25" Plate)	10.50 - 14.00	Auto	0.0000
L53	5	Sabre MS-850 (8.5" x 1.25" Plate)	4.00 - 9.00	Auto	0.0000
L53	6	Sabre MS-850 (8.5" x 1.25" Plate)	4.00 - 9.00	Auto	0.0000
L53	8	Sabre MS-850 (8.5" x 1.25" Plate)	4.00 - 9.00	Auto	0.0000
L53	9	Sabre MS-850 (8.5" x 1.25" Plate)	4.00 - 9.00	Auto	0.0000
L54	5	Sabre MS-850 (8.5" x 1.25" Plate)	0.50 - 4.00	Auto	0.0000
L54	6	Sabre MS-850 (8.5" x 1.25" Plate)	0.50 - 4.00	Auto	0.0000
L54	8	Sabre MS-850 (8.5" x 1.25" Plate)	0.50 - 4.00	Auto	0.0000
L54	9	Sabre MS-850 (8.5" x 1.25" Plate)	0.50 - 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
***					
***					
Lighting Rod 5/8" x 4' on 4' Pole	C	From Leg	0.500 0.000 3.500	0.000	151.000
***					
***					
DS1F03F36D-N	A	From Leg	4.000 0.000 12.000	0.000	148.000
5' x 2" Pipe Mount	A	From Leg	4.000 0.000 1.000	0.000	148.000
***					
800 10121 w/ Mount Pipe	A	From Leg	4.000 0.000 1.000	0.000	148.000
800 10121 w/ Mount Pipe	B	From Leg	4.000 0.000 1.000	0.000	148.000
800 10121 w/ Mount Pipe	C	From Leg	4.000 0.000 1.000	0.000	148.000
DC6-48-60-18-8F	A	From Leg	2.000 0.000 3.000	0.000	148.000
OPA65R-BU6D w/ Mount Pipe	A	From Leg	4.000 0.000 1.000	0.000	148.000
OPA65R-BU6D w/ Mount Pipe	B	From Leg	4.000 0.000 1.000	0.000	148.000
OPA65R-BU6D w/ Mount Pipe	C	From Leg	4.000 0.000 1.000	0.000	148.000
DMP65R-BU6D w/ Mount Pipe	A	From Leg	4.000 0.000 1.000	0.000	148.000
DMP65R-BU6D w/ Mount Pipe	B	From Leg	4.000 0.000 1.000	0.000	148.000
DMP65R-BU6D w/ Mount Pipe	C	From Leg	4.000 0.000 1.000	0.000	148.000
(2) LGP21401	A	From Leg	4.000 0.000 3.000	0.000	148.000
(2) LGP21401	B	From Leg	4.000 0.000 3.000	0.000	148.000
(2) LGP21401	C	From Leg	4.000 0.000 3.000	0.000	148.000
RRUS 4478 B14_CCIV2	A	From Leg	4.000 0.000 3.000	0.000	148.000

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft
RRUS 4478 B14_CCIV2	B	From Leg	4.000 0.000 3.000	0.000	148.000
RRUS 4478 B14_CCIV2	C	From Leg	4.000 0.000 3.000	0.000	148.000
RRUS 4449 B5/B12	A	From Leg	4.000 0.000 3.000	0.000	148.000
RRUS 4449 B5/B12	B	From Leg	4.000 0.000 3.000	0.000	148.000
RRUS 4449 B5/B12	C	From Leg	4.000 0.000 3.000	0.000	148.000
RRUS 8843 B2/B66A_CCIV2	A	From Leg	4.000 0.000 3.000	0.000	148.000
RRUS 8843 B2/B66A_CCIV2	B	From Leg	4.000 0.000 3.000	0.000	148.000
RRUS 8843 B2/B66A_CCIV2	C	From Leg	4.000 0.000 3.000	0.000	148.000
DC6-48-60-18-8C-EV	B	From Leg	2.000 0.000 3.000	0.000	148.000
DC6-48-60-18-8C-EV	C	From Leg	2.000 0.000 3.000	0.000	148.000
Platform Mount [LP 715-1_KCKR]	C	None		0.000	148.000
(2) L 2.5x2.5x3/16x4.75'	A	From Leg	4.000 0.000 0.000	0.000	148.000
(2) L 2.5x2.5x3/16x4.75'	B	From Leg	4.000 0.000 0.000	0.000	148.000
(2) L 2.5x2.5x3/16x4.75'	C	From Leg	4.000 0.000 0.000	0.000	148.000
generic Mount Pipe [12.5 ft. P2.5XS STD]	A	From Leg	4.000 0.000 6.250	0.000	148.000
(2) sabre Tiebacks [C10179001]	A	From Leg	4.000 0.000 4.000	0.000	148.000
sabre Tiebacks [C10179001]	B	From Leg	2.000 0.000 4.000	0.000	148.000
***					
(2) NHH-65C-R2B	A	From Leg	4.000 0.000 1.000	0.000	138.000
(2) NHH-65C-R2B	B	From Leg	4.000 0.000 1.000	0.000	138.000
(2) NHH-65C-R2B	C	From Leg	4.000 0.000 1.000	0.000	138.000
DB854DG65ESX w/ Mount Pipe	A	From Leg	4.000 0.000 1.000	0.000	138.000
DB854DG65ESX w/ Mount Pipe	B	From Leg	4.000 0.000 1.000	0.000	138.000

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft
DB854DG65ESX w/ Mount Pipe	C	From Leg	4.000 0.000 1.000	0.000	138.000
RFV01U-D1A	A	From Leg	4.000 0.000 1.000	0.000	138.000
RFV01U-D1A	B	From Leg	4.000 0.000 1.000	0.000	138.000
RFV01U-D1A	C	From Leg	4.000 0.000 1.000	0.000	138.000
RFV01U-D2A	A	From Leg	4.000 0.000 1.000	0.000	138.000
RFV01U-D2A	B	From Leg	4.000 0.000 1.000	0.000	138.000
RFV01U-D2A	C	From Leg	4.000 0.000 1.000	0.000	138.000
DB-T1-6Z-8AB-0Z	A	From Leg	4.000 0.000 1.000	0.000	138.000
(2) 6' x 2" Mount Pipe	A	From Leg	4.000 0.000 1.000	0.000	138.000
(2) 6' x 2" Mount Pipe	B	From Leg	4.000 0.000 1.000	0.000	138.000
(2) 6' x 2" Mount Pipe	C	From Leg	4.000 0.000 1.000	0.000	138.000
(2) L 2.5x2.5x3/16x4.75'	A	From Leg	4.000 0.000 0.000	0.000	138.000
(2) L 2.5x2.5x3/16x4.75'	B	From Leg	4.000 0.000 0.000	0.000	138.000
(2) L 2.5x2.5x3/16x4.75'	C	From Leg	4.000 0.000 0.000	0.000	138.000
6' x 2" Horizontal Mount Pipe	A	From Leg	3.000 0.000 4.000	0.000	138.000
6' x 2" Horizontal Mount Pipe	B	From Leg	3.000 0.000 4.000	0.000	138.000
6' x 2" Horizontal Mount Pipe	C	From Leg	3.000 0.000 4.000	0.000	138.000
8' x 3" Mount Pipe	A	From Leg	4.000 0.000 1.000	0.000	138.000
8' x 3" Mount Pipe	B	From Leg	4.000 0.000 1.000	0.000	138.000
8' x 3" Mount Pipe	C	From Leg	4.000 0.000 1.000	0.000	138.000
Platform Mount [LP 303-1_HR-1]	C	None		0.000	138.000
Side Arm Mount [SO 102-3]	C	None		0.000	138.000
***					
1900MHz RRH	A	From Leg	1.000 0.000	0.000	132.000

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft
1900MHZ RRH	B	From Leg	-1.000 1.000 0.000	0.000	132.000
1900MHZ RRH	C	From Leg	-1.000 1.000 0.000	0.000	132.000
800 EXTERNAL NOTCH FILTER	A	From Leg	-1.000 1.000 0.000	0.000	132.000
800 EXTERNAL NOTCH FILTER	B	From Leg	-1.000 1.000 0.000	0.000	132.000
800 EXTERNAL NOTCH FILTER	C	From Leg	-1.000 1.000 0.000	0.000	132.000
800MHZ RRH	A	From Leg	-1.000 1.000 0.000	0.000	132.000
800MHZ RRH	B	From Leg	-1.000 1.000 0.000	0.000	132.000
800MHZ RRH	C	From Leg	-1.000 1.000 0.000	0.000	132.000
4' x 2" Pipe Mount	A	From Leg	-1.000 1.000 0.000	0.000	132.000
4' x 2" Pipe Mount	B	From Leg	0.000 1.000 0.000	0.000	132.000
4' x 2" Pipe Mount	C	From Leg	0.000 1.000 0.000	0.000	132.000
Side Arm Mount [SO 104-3]	C	None	0.000	0.000	132.000
***					
GPS-TMG-HR-26NCM	A	From Leg	4.000 0.000	0.000	130.000
APXVSPP18-C-A20 w/ Mount Pipe	A	From Leg	3.000 4.000 0.000	0.000	130.000
APXVSPP18-C-A20 w/ Mount Pipe	B	From Leg	0.000 4.000 0.000	0.000	130.000
APXVSPP18-C-A20 w/ Mount Pipe	C	From Leg	0.000 4.000 0.000	0.000	130.000
APXVTM14-C-120 w/ Mount Pipe	A	From Leg	0.000 4.000 0.000	0.000	130.000
APXVTM14-C-120 w/ Mount Pipe	B	From Leg	0.000 4.000 0.000	0.000	130.000
APXVTM14-C-120 w/ Mount Pipe	C	From Leg	0.000 4.000 0.000	0.000	130.000
TD-RRH8X20-25	A	From Leg	0.000 4.000 0.000	0.000	130.000
TD-RRH8X20-25	B	From Leg	0.000 4.000 0.000	0.000	130.000
TD-RRH8X20-25	C	From Leg	0.000 4.000 0.000	0.000	130.000

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft
6' x 2" Mount Pipe	A	From Leg	0.000 4.000 0.000	0.000	130.000
6' x 2" Mount Pipe	B	From Leg	0.000 4.000 0.000	0.000	130.000
6' x 2" Mount Pipe	C	From Leg	0.000 4.000 0.000	0.000	130.000
T-Arm Mount [TA 602-3]	C	None	0.000	0.000	130.000
***					
ERICSSON AIR 21 B4A B2P w/ Mount Pipe	A	From Leg	3.000 0.000 1.000	0.000	122.000
ERICSSON AIR 21 B4A B2P w/ Mount Pipe	B	From Leg	3.000 0.000 1.000	0.000	122.000
ERICSSON AIR 21 B4A B2P w/ Mount Pipe	C	From Leg	3.000 0.000 1.000	0.000	122.000
APXVAALL24_43-U-NA20_TMO w/ Mount Pipe	A	From Leg	3.000 0.000 0.000	0.000	122.000
APXVAALL24_43-U-NA20_TMO w/ Mount Pipe	B	From Leg	3.000 0.000 0.000	0.000	122.000
APXVAALL24_43-U-NA20_TMO w/ Mount Pipe	C	From Leg	3.000 0.000 0.000	0.000	122.000
RADIO 4449 B71 B85A_T-MOBILE	A	From Leg	3.000 0.000 1.000	0.000	122.000
RADIO 4449 B71 B85A_T-MOBILE	B	From Leg	3.000 0.000 1.000	0.000	122.000
RADIO 4449 B71 B85A_T-MOBILE	C	From Leg	3.000 0.000 1.000	0.000	122.000
6' x 2" Horizontal Mount Pipe	A	From Leg	3.000 0.000 1.500	0.000	122.000
6' x 2" Horizontal Mount Pipe	B	From Leg	3.000 0.000 1.500	0.000	122.000
6' x 2" Horizontal Mount Pipe	C	From Leg	3.000 0.000 1.500	0.000	122.000
6' x 2" Horizontal Mount Pipe	A	From Face	3.000 0.000 1.000	0.000	122.000
6' x 2" Horizontal Mount Pipe	B	From Face	3.000 0.000 1.000	0.000	122.000
6' x 2" Horizontal Mount Pipe	C	From Face	3.000 0.000 1.000	0.000	122.000
6' x 2" Horizontal Mount Pipe	A	From Face	3.000 0.000 -1.000	0.000	122.000
6' x 2" Horizontal Mount Pipe	B	From Face	3.000 0.000 -1.000	0.000	122.000
6' x 2" Horizontal Mount Pipe	C	From Face	3.000 0.000	0.000	122.000

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft
			-1.000		
(2) T-Arm Mount [TA 601-1]	C	None		0.000	122.000
***					
MX08FRO665-21 w/ Mount Pipe	A	From Leg	4.000 0.000 0.000	0.000	103.000
MX08FRO665-21 w/ Mount Pipe	B	From Leg	4.000 0.000 0.000	0.000	103.000
MX08FRO665-21 w/ Mount Pipe	C	From Leg	4.000 0.000 0.000	0.000	103.000
TA08025-B604	A	From Leg	4.000 0.000 0.000	0.000	103.000
TA08025-B604	B	From Leg	4.000 0.000 0.000	0.000	103.000
TA08025-B604	C	From Leg	4.000 0.000 0.000	0.000	103.000
TA08025-B605	A	From Leg	4.000 0.000 0.000	0.000	103.000
TA08025-B605	B	From Leg	4.000 0.000 0.000	0.000	103.000
TA08025-B605	C	From Leg	4.000 0.000 0.000	0.000	103.000
RDIDC-9181-PF-48	C	From Leg	4.000 0.000 0.000	0.000	103.000
(2) 8' x 2" Mount Pipe	A	From Leg	4.000 0.000 0.000	0.000	103.000
(2) 8' x 2" Mount Pipe	B	From Leg	4.000 0.000 0.000	0.000	103.000
(2) 8' x 2" Mount Pipe	C	From Leg	4.000 0.000 0.000	0.000	103.000
Commscope MC-PK8-DSH	C	None		0.000	103.000
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***					

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

Comb. No.	Description
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	151 - 146	Pole	Max Tension	2	0.000	0.000	-0.000
			Max. Compression	26	-13.677	-0.122	3.208
			Max. Mx	8	-4.331	-26.127	0.668
			Max. My	2	-4.310	-0.004	27.138
			Max. Vy	8	7.575	-26.127	0.668
			Max. Vx	2	-7.587	-0.004	27.138
			Max. Torque	20			-3.091
L2	146 - 141	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-14.243	-0.131	3.288
			Max. Mx	8	-4.670	-64.918	0.709
			Max. My	2	-4.648	-0.006	65.990
			Max. Vy	8	7.945	-64.918	0.709
			Max. Vx	2	-7.958	-0.006	65.990
			Max. Torque	20			-3.097
L3	141 - 136	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-22.991	-0.141	4.213
			Max. Mx	8	-8.211	-114.955	0.969
			Max. My	2	-8.169	-0.009	116.645
			Max. Vy	8	11.854	-114.955	0.969
			Max. Vx	2	-11.969	-0.009	116.645

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Torque	20			-3.454
L4	136 - 131	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-25.538	-0.154	4.314
			Max. Mx	8	-9.437	-175.403	1.013
			Max. My	2	-9.393	-0.013	177.674
			Max. Vy	8	13.018	-175.403	1.013
			Max. Vx	2	-13.136	-0.013	177.674
			Max. Torque	20			-3.459
L5	131 - 126	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-30.655	-0.170	4.466
			Max. Mx	8	-11.678	-248.658	1.058
			Max. My	2	-11.630	-0.016	251.542
			Max. Vy	8	15.199	-248.658	1.058
			Max. Vx	2	-15.322	-0.016	251.542
			Max. Torque	20			-3.486
L6	126 - 121	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-36.709	-0.207	4.573
			Max. Mx	8	-14.276	-328.547	1.098
			Max. My	2	-14.222	-0.024	332.050
			Max. Vy	8	18.048	-328.547	1.098
			Max. Vx	2	-18.177	-0.024	332.050
			Max. Torque	20			-3.490
L7	121 - 118.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-37.365	-0.267	4.650
			Max. Mx	8	-14.681	-373.870	1.122
			Max. My	2	-14.616	-0.036	377.842
			Max. Vy	8	18.226	-373.870	1.122
			Max. Vx	2	-18.477	-0.036	377.842
			Max. Torque	20			-3.492
L8	118.5 - 118.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-37.450	-0.273	4.659
			Max. Mx	8	-14.754	-378.427	1.124
			Max. My	2	-14.688	-0.037	382.463
			Max. Vy	8	18.235	-378.427	1.124
			Max. Vx	2	-18.500	-0.037	382.463
			Max. Torque	20			-3.492
L9	118.25 - 113.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-38.963	-0.396	4.807
			Max. Mx	8	-15.758	-470.685	1.171
			Max. My	2	-15.683	-0.063	476.284
			Max. Vy	8	18.668	-470.685	1.171
			Max. Vx	2	-19.035	-0.063	476.284
			Max. Torque	20			-3.498
L10	113.25 - 108.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-40.383	-0.522	4.953
			Max. Mx	8	-16.731	-565.058	1.215
			Max. My	2	-16.650	-0.090	572.677
			Max. Vy	8	19.087	-565.058	1.215
			Max. Vx	2	-19.532	-0.090	572.677
			Max. Torque	20			-3.504
L11	108.25 - 103.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-41.823	-0.651	5.095
			Max. Mx	8	-17.726	-661.512	1.256
			Max. My	2	-17.642	-0.118	671.528
			Max. Vy	8	19.502	-661.512	1.256
			Max. Vx	2	-20.020	-0.118	671.528
			Max. Torque	20			-3.510
L12	103.25 - 97.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-48.349	-0.330	4.942
			Max. Mx	8	-21.225	-711.777	1.249
			Max. My	2	-21.136	-0.063	723.042
			Max. Vy	8	22.283	-711.777	1.249
			Max. Vx	2	-22.822	-0.063	723.042
			Max. Torque	20			-3.510

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L13	97.5 - 95.95	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-50.747	-0.506	5.112
			Max. Mx	8	-22.912	-824.455	1.370
			Max. My	2	-22.818	-0.175	838.576
			Max. Vy	8	22.777	-824.455	1.370
			Max. Vx	2	-23.390	-0.175	838.576
			Max. Torque	20			-3.418
L14	95.95 - 95	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-51.097	-0.540	5.145
			Max. Mx	8	-23.150	-846.121	1.392
			Max. My	2	-23.056	-0.197	860.830
			Max. Vy	8	22.848	-846.121	1.392
			Max. Vx	2	-23.479	-0.197	860.830
			Max. Torque	20			-3.420
L15	95 - 94.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-51.207	-0.549	5.155
			Max. Mx	8	-23.236	-851.835	1.398
			Max. My	2	-23.143	-0.203	866.703
			Max. Vy	8	22.863	-851.835	1.398
			Max. Vx	2	-23.503	-0.203	866.703
			Max. Torque	20			-3.420
L16	94.75 - 92.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-52.203	-0.630	5.230
			Max. Mx	8	-23.932	-903.525	1.452
			Max. My	2	-23.836	-0.253	919.861
			Max. Vy	8	23.078	-903.525	1.452
			Max. Vx	2	-23.756	-0.253	919.861
			Max. Torque	20			-3.423
L17	92.5 - 92.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-52.296	-0.639	5.240
			Max. Mx	8	-24.000	-909.297	1.458
			Max. My	2	-23.904	-0.259	925.802
			Max. Vy	8	23.093	-909.297	1.458
			Max. Vx	2	-23.779	-0.259	925.802
			Max. Torque	20			-3.423
L18	92.25 - 87.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-53.978	-0.804	5.392
			Max. Mx	8	-25.112	-1014.043	1.564
			Max. My	2	-25.014	-0.362	1033.782
			Max. Vy	8	23.462	-1014.043	1.564
			Max. Vx	2	-24.225	-0.362	1033.782
			Max. Torque	20			-3.429
L19	87.75 - 87.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-54.097	-0.813	5.402
			Max. Mx	8	-25.210	-1019.910	1.570
			Max. My	2	-25.112	-0.368	1039.840
			Max. Vy	8	23.474	-1019.910	1.570
			Max. Vx	2	-24.246	-0.368	1039.840
			Max. Torque	20			-3.429
L20	87.5 - 84	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-55.768	-0.943	5.518
			Max. Mx	8	-26.407	-1102.666	1.652
			Max. My	2	-26.306	-0.449	1125.376
			Max. Vy	8	23.811	-1102.666	1.652
			Max. Vx	2	-24.640	-0.449	1125.376
			Max. Torque	20			-3.434
L21	84 - 83.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-55.870	-0.953	5.528
			Max. Mx	8	-26.483	-1108.621	1.658
			Max. My	2	-26.383	-0.455	1131.538
			Max. Vy	8	23.825	-1108.621	1.658
			Max. Vx	2	-24.663	-0.455	1131.538
			Max. Torque	20			-3.434
L22	83.75 - 78.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-57.809	-1.142	5.695
			Max. Mx	8	-27.881	-1228.793	1.774
			Max. My	2	-27.781	-0.571	1256.016

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	24.243	-1228.793	1.774
			Max. Vx	2	-25.140	-0.571	1256.016
			Max. Torque	20			-3.441
L23	78.75 - 73.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-59.716	-1.335	5.861
			Max. Mx	8	-29.312	-1350.986	1.889
			Max. My	2	-29.216	-0.689	1382.794
			Max. Vy	8	24.643	-1350.986	1.889
			Max. Vx	2	-25.588	-0.689	1382.794
			Max. Torque	20			-3.448
L24	73.75 - 68.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-61.647	-1.531	6.026
			Max. Mx	8	-30.768	-1475.159	2.003
			Max. My	2	-30.675	-0.808	1511.776
			Max. Vy	8	25.036	-1475.159	2.003
			Max. Vx	2	-26.023	-0.808	1511.776
			Max. Torque	20			-3.455
L25	68.75 - 64.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-63.299	-1.689	6.156
			Max. Mx	8	-31.951	-1575.891	2.093
			Max. My	2	-31.862	-0.904	1616.539
			Max. Vy	8	25.342	-1575.891	2.093
			Max. Vx	2	-26.378	-0.904	1616.539
			Max. Torque	20			-3.461
L26	64.75 - 64.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-63.431	-1.700	6.165
			Max. Mx	8	-32.059	-1582.228	2.098
			Max. My	2	-31.971	-0.910	1623.135
			Max. Vy	8	25.352	-1582.228	2.098
			Max. Vx	2	-26.396	-0.910	1623.135
			Max. Torque	20			-3.461
L27	64.5 - 63.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-64.088	-1.749	6.204
			Max. Mx	8	-32.540	-1613.995	2.127
			Max. My	2	-32.451	-0.940	1656.208
			Max. Vy	8	25.474	-1613.995	2.127
			Max. Vx	2	-26.531	-0.940	1656.208
			Max. Torque	20			-3.463
L28	63.25 - 63	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-64.195	-1.760	6.213
			Max. Mx	8	-32.622	-1620.365	2.132
			Max. My	2	-32.534	-0.946	1662.842
			Max. Vy	8	25.483	-1620.365	2.132
			Max. Vx	2	-26.549	-0.946	1662.842
			Max. Torque	20			-3.463
L29	63 - 58	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-66.352	-1.960	6.373
			Max. Mx	8	-34.122	-1748.723	2.243
			Max. My	2	-34.039	-1.067	1796.639
			Max. Vy	8	25.861	-1748.723	2.243
			Max. Vx	2	-26.985	-1.067	1796.639
			Max. Torque	20			-3.471
L30	58 - 56.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-66.899	-2.011	6.412
			Max. Mx	8	-34.501	-1781.098	2.271
			Max. My	2	-34.419	-1.098	1830.421
			Max. Vy	8	25.956	-1781.098	2.271
			Max. Vx	2	-27.093	-1.098	1830.421
			Max. Torque	20			-3.473
L31	56.75 - 56.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-67.042	-2.022	6.422
			Max. Mx	8	-34.622	-1787.587	2.277
			Max. My	2	-34.540	-1.104	1837.194
			Max. Vy	8	25.960	-1787.587	2.277
			Max. Vx	2	-27.105	-1.104	1837.194
			Max. Torque	20			-3.473

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L32	56.5 - 55.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-67.753	-2.072	6.460
			Max. Mx	8	-35.148	-1820.115	2.305
			Max. My	2	-35.067	-1.134	1871.151
			Max. Vy	8	26.081	-1820.115	2.305
			Max. Vx	2	-27.236	-1.134	1871.151
			Max. Torque	20			-3.475
L33	55.25 - 55	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-67.871	-2.083	6.469
			Max. Mx	8	-35.239	-1826.636	2.310
			Max. My	2	-35.159	-1.141	1877.961
			Max. Vy	8	26.091	-1826.636	2.310
			Max. Vx	2	-27.253	-1.141	1877.961
			Max. Torque	20			-3.475
L34	55 - 47.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-69.197	-2.204	6.561
			Max. Mx	8	-36.218	-1903.943	2.376
			Max. My	2	-36.140	-1.213	1958.694
			Max. Vy	8	26.327	-1903.943	2.376
			Max. Vx	2	-27.502	-1.213	1958.694
			Max. Torque	20			-3.480
L35	47.5 - 47.05	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-73.128	-2.409	6.720
			Max. Mx	8	-39.268	-2036.777	2.488
			Max. My	2	-39.193	-1.336	2097.462
			Max. Vy	8	26.803	-2036.777	2.488
			Max. Vx	2	-28.011	-1.336	2097.462
			Max. Torque	20			-3.488
L36	47.05 - 42.05	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-75.484	-2.605	6.855
			Max. Mx	8	-41.109	-2171.679	2.598
			Max. My	2	-41.042	-1.460	2238.409
			Max. Vy	8	27.161	-2171.679	2.598
			Max. Vx	2	-28.383	-1.460	2238.409
			Max. Torque	20			-3.495
L37	42.05 - 37.05	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-77.924	-2.798	6.979
			Max. Mx	8	-42.985	-2308.282	2.707
			Max. My	2	-42.925	-1.585	2381.141
			Max. Vy	8	27.493	-2308.282	2.707
			Max. Vx	2	-28.733	-1.585	2381.141
			Max. Torque	20			-3.503
L38	37.05 - 34.95	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-79.009	-2.880	7.032
			Max. Mx	8	-43.781	-2366.144	2.752
			Max. My	2	-43.724	-1.637	2441.612
			Max. Vy	8	27.628	-2366.144	2.752
			Max. Vx	2	-28.883	-1.637	2441.612
			Max. Torque	20			-3.506
L39	34.95 - 34.7	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-79.171	-2.890	7.040
			Max. Mx	8	-43.917	-2373.051	2.757
			Max. My	2	-43.861	-1.644	2448.833
			Max. Vy	8	27.632	-2373.051	2.757
			Max. Vx	2	-28.892	-1.644	2448.833
			Max. Torque	20			-3.507
L40	34.7 - 34.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-79.463	-2.908	7.050
			Max. Mx	8	-44.143	-2385.497	2.767
			Max. My	2	-44.087	-1.655	2461.842
			Max. Vy	8	27.669	-2385.497	2.767
			Max. Vx	2	-28.929	-1.655	2461.842
			Max. Torque	20			-3.507
L41	34.25 - 34	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-79.592	-2.918	7.057
			Max. Mx	8	-44.239	-2392.417	2.773

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. My	2	-44.184	-1.661	2469.076
			Max. Vy	8	27.683	-2392.417	2.773
			Max. Vx	2	-28.948	-1.661	2469.076
			Max. Torque	20			-3.508
L42	34 - 29	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-82.186	-3.114	7.182
			Max. Mx	8	-46.148	-2531.609	2.881
			Max. My	2	-46.100	-1.787	2614.618
			Max. Vy	8	27.995	-2531.609	2.881
			Max. Vx	2	-29.284	-1.787	2614.618
			Max. Torque	20			-3.515
L43	29 - 26.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-83.361	-3.203	7.240
			Max. Mx	8	-47.020	-2594.729	2.929
			Max. My	2	-46.975	-1.844	2680.637
			Max. Vy	8	28.129	-2594.729	2.929
			Max. Vx	2	-29.427	-1.844	2680.637
			Max. Torque	20			-3.519
L44	26.75 - 26.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-83.525	-3.213	7.247
			Max. Mx	8	-47.159	-2601.761	2.934
			Max. My	2	-47.115	-1.851	2687.993
			Max. Vy	8	28.129	-2601.761	2.934
			Max. Vx	2	-29.432	-1.851	2687.993
			Max. Torque	20			-3.519
L45	26.5 - 25.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-84.341	-3.262	7.278
			Max. Mx	8	-47.793	-2636.988	2.961
			Max. My	2	-47.750	-1.882	2724.842
			Max. Vy	8	28.232	-2636.988	2.961
			Max. Vx	2	-29.537	-1.882	2724.842
			Max. Torque	20			-3.521
L46	25.25 - 25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-84.473	-3.272	7.285
			Max. Mx	8	-47.898	-2644.047	2.966
			Max. My	2	-47.856	-1.889	2732.225
			Max. Vy	8	28.235	-2644.047	2.966
			Max. Vx	2	-29.544	-1.889	2732.225
			Max. Torque	20			-3.522
L47	25 - 20	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-87.053	-3.471	7.392
			Max. Mx	8	-49.853	-2785.969	3.073
			Max. My	2	-49.819	-2.016	2880.678
			Max. Vy	8	28.536	-2785.969	3.073
			Max. Vx	2	-29.852	-2.016	2880.678
			Max. Torque	20			-3.530
L48	20 - 16.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-88.727	-3.601	7.346
			Max. Mx	8	-51.143	-2878.989	3.141
			Max. My	2	-51.115	-2.099	2977.952
			Max. Vy	8	28.725	-2878.989	3.141
			Max. Vx	2	-30.037	-2.099	2977.952
			Max. Torque	20			-3.535
L49	16.75 - 16.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-88.878	-3.611	7.343
			Max. Mx	8	-51.273	-2886.170	3.146
			Max. My	2	-51.246	-2.105	2985.459
			Max. Vy	8	28.724	-2886.170	3.146
			Max. Vx	2	-30.038	-2.105	2985.459
			Max. Torque	20			-3.535
L50	16.5 - 14.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-90.235	-3.701	7.311
			Max. Mx	8	-52.353	-2950.976	3.194
			Max. My	2	-52.329	-2.163	3053.202
			Max. Vy	8	28.882	-2950.976	3.194
			Max. Vx	2	-30.192	-2.163	3053.202
			Max. Torque	20			-3.539
L51	14.25 - 14	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-90.375	-3.711	7.308

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Mx	8	-52.472	-2958.196	3.199
			Max. My	2	-52.449	-2.170	3060.749
			Max. Vy	8	28.883	-2958.196	3.199
			Max. Vx	2	-30.194	-2.170	3060.749
			Max. Torque	20			-3.540
L52	14 - 9	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-93.153	-3.915	7.270
			Max. Mx	8	-54.687	-3103.406	3.304
			Max. My	2	-54.671	-2.298	3212.465
			Max. Vy	8	29.201	-3103.406	3.304
			Max. Vx	2	-30.505	-2.298	3212.465
			Max. Torque	20			-3.548
L53	9 - 4	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-95.888	-4.126	7.302
			Max. Mx	8	-56.933	-3250.137	3.408
			Max. My	2	-56.926	-2.428	3365.671
			Max. Vy	8	29.505	-3250.137	3.408
			Max. Vx	2	-30.802	-2.428	3365.671
			Max. Torque	20			-3.557
L54	4 - 0	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-98.024	-4.283	7.338
			Max. Mx	8	-58.750	-3368.610	3.491
			Max. My	2	-58.749	-2.531	3489.299
			Max. Vy	8	29.746	-3368.610	3.491
			Max. Vx	2	-31.037	-2.531	3489.299
			Max. Torque	20			-3.565

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	26	98.024	-0.000	0.000
	Max. H_x	20	58.760	29.726	-0.014
	Max. H_z	2	58.760	-0.014	31.017
	Max. M_x	2	3489.299	-0.014	31.017
	Max. M_z	8	3368.610	-29.726	0.014
	Max. Torsion	8	3.564	-29.726	0.014
	Min. Vert	23	44.070	25.747	14.896
	Min. H_x	8	58.760	-29.726	0.014
	Min. H_z	14	58.760	0.014	-31.017
	Min. M_x	14	-3485.165	0.014	-31.017
	Min. M_z	20	-3366.486	29.726	-0.014
	Min. Torsion	20	-3.565	29.726	-0.014

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	48.967	0.000	0.000	-1.615	-0.852	-0.000
1.2 Dead+1.0 Wind 0 deg - No Ice	58.760	0.014	-31.017	-3489.299	-2.531	-0.007
0.9 Dead+1.0 Wind 0 deg - No Ice	44.070	0.014	-31.017	-3437.815	-2.238	-0.008
1.2 Dead+1.0 Wind 30 deg - No Ice	58.760	14.991	-26.019	-2947.059	-1696.127	-1.801
0.9 Dead+1.0 Wind 30 deg - No Ice	44.070	14.991	-26.019	-2903.251	-1670.964	-1.783
1.2 Dead+1.0 Wind 60 deg - No Ice	58.760	25.750	-14.914	-1693.173	-2918.184	-3.098

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
0.9 Dead+1.0 Wind 60 deg - No Ice	44.070	25.750	-14.914	-1667.745	-2875.000	-3.067
1.2 Dead+1.0 Wind 90 deg - No Ice	58.760	29.726	-0.014	-3.490	-3368.610	-3.564
0.9 Dead+1.0 Wind 90 deg - No Ice	44.070	29.726	-0.014	-2.931	-3318.804	-3.527
1.2 Dead+1.0 Wind 120 deg - No Ice	58.760	25.747	14.896	1687.321	-2917.991	-3.075
0.9 Dead+1.0 Wind 120 deg - No Ice	44.070	25.747	14.896	1663.003	-2874.817	-3.043
1.2 Dead+1.0 Wind 150 deg - No Ice	58.760	15.554	27.021	3027.891	-1743.435	-1.775
0.9 Dead+1.0 Wind 150 deg - No Ice	44.070	15.554	27.021	2984.243	-1717.760	-1.756
1.2 Dead+1.0 Wind 180 deg - No Ice	58.760	-0.014	31.017	3485.165	0.404	0.006
0.9 Dead+1.0 Wind 180 deg - No Ice	44.070	-0.014	31.017	3434.790	0.661	0.006
1.2 Dead+1.0 Wind 210 deg - No Ice	58.760	-14.991	26.019	2942.948	1693.960	1.796
0.9 Dead+1.0 Wind 210 deg - No Ice	44.070	-14.991	26.019	2900.242	1669.359	1.779
1.2 Dead+1.0 Wind 240 deg - No Ice	58.760	-25.750	14.914	1689.107	2916.020	3.095
0.9 Dead+1.0 Wind 240 deg - No Ice	44.070	-25.750	14.914	1664.768	2873.396	3.063
1.2 Dead+1.0 Wind 270 deg - No Ice	58.760	-29.726	0.014	-0.554	3366.486	3.565
0.9 Dead+1.0 Wind 270 deg - No Ice	44.070	-29.726	0.014	-0.031	3317.229	3.528
1.2 Dead+1.0 Wind 300 deg - No Ice	58.760	-25.747	-14.896	-1691.390	2915.905	3.079
0.9 Dead+1.0 Wind 300 deg - No Ice	44.070	-25.747	-14.896	-1665.982	2873.270	3.047
1.2 Dead+1.0 Wind 330 deg - No Ice	58.760	-15.554	-27.021	-3032.004	1741.349	1.779
0.9 Dead+1.0 Wind 330 deg - No Ice	44.070	-15.554	-27.021	-2987.253	1716.212	1.759
1.2 Dead+1.0 Ice+1.0 Temp	98.024	0.000	-0.000	-7.338	-4.283	-0.000
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	98.024	0.002	-7.406	-909.282	-4.635	0.021
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	98.024	3.688	-6.396	-786.099	-452.914	-0.725
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	98.024	6.385	-3.694	-457.173	-781.001	-1.273
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	98.024	7.371	-0.002	-7.755	-900.984	-1.480
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	98.024	6.382	3.690	441.730	-780.718	-1.291
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	98.024	3.694	6.411	773.190	-453.785	-0.760
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	98.024	-0.002	7.406	894.295	-4.089	-0.022
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	98.024	-3.688	6.396	771.119	444.181	0.724
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	98.024	-6.385	3.694	442.203	772.268	1.272
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	98.024	-7.371	0.002	-7.209	892.262	1.480
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	98.024	-6.382	-3.690	-456.700	772.005	1.290
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	98.024	-3.694	-6.411	-788.171	445.072	0.759
Dead+Wind 0 deg - Service	48.967	0.003	-6.737	-753.323	-1.197	-0.002
Dead+Wind 30 deg - Service	48.967	3.256	-5.652	-636.411	-366.198	-0.394
Dead+Wind 60 deg - Service	48.967	5.593	-3.239	-366.170	-629.562	-0.677
Dead+Wind 90 deg - Service	48.967	6.457	-0.003	-2.022	-726.637	-0.779
Dead+Wind 120 deg - Service	48.967	5.592	3.236	362.372	-629.527	-0.672

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
Dead+Wind 150 deg - Service	48.967	3.378	5.869	651.351	-376.429	-0.388
Dead+Wind 180 deg - Service	48.967	-0.003	6.737	749.907	-0.565	0.002
Dead+Wind 210 deg - Service	48.967	-3.256	5.652	632.996	364.435	0.394
Dead+Wind 240 deg - Service	48.967	-5.593	3.239	362.757	627.799	0.677
Dead+Wind 270 deg - Service	48.967	-6.457	0.003	-1.390	724.875	0.779
Dead+Wind 300 deg - Service	48.967	-5.592	-3.236	-365.786	627.767	0.672
Dead+Wind 330 deg - Service	48.967	-3.378	-5.869	-654.766	374.669	0.388

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX	PY	PZ	PX	PY	PZ	% Error
	K	K	K	K	K	K	
1	0.000	-48.967	0.000	0.000	48.967	0.000	0.000%
2	0.014	-58.760	-31.017	-0.014	58.760	31.017	0.000%
3	0.014	-44.070	-31.017	-0.014	44.070	31.017	0.000%
4	14.991	-58.760	-26.019	-14.991	58.760	26.019	0.000%
5	14.991	-44.070	-26.019	-14.991	44.070	26.019	0.000%
6	25.750	-58.760	-14.914	-25.750	58.760	14.914	0.000%
7	25.750	-44.070	-14.914	-25.750	44.070	14.914	0.000%
8	29.726	-58.760	-0.014	-29.726	58.760	0.014	0.000%
9	29.726	-44.070	-0.014	-29.726	44.070	0.014	0.000%
10	25.747	-58.760	14.896	-25.747	58.760	-14.896	0.000%
11	25.747	-44.070	14.896	-25.747	44.070	-14.896	0.000%
12	15.554	-58.760	27.021	-15.554	58.760	-27.021	0.000%
13	15.554	-44.070	27.021	-15.554	44.070	-27.021	0.000%
14	-0.014	-58.760	31.017	0.014	58.760	-31.017	0.000%
15	-0.014	-44.070	31.017	0.014	44.070	-31.017	0.000%
16	-14.991	-58.760	26.019	14.991	58.760	-26.019	0.000%
17	-14.991	-44.070	26.019	14.991	44.070	-26.019	0.000%
18	-25.750	-58.760	14.914	25.750	58.760	-14.914	0.000%
19	-25.750	-44.070	14.914	25.750	44.070	-14.914	0.000%
20	-29.726	-58.760	0.014	29.726	58.760	-0.014	0.000%
21	-29.726	-44.070	0.014	29.726	44.070	-0.014	0.000%
22	-25.747	-58.760	-14.896	25.747	58.760	14.896	0.000%
23	-25.747	-44.070	-14.896	25.747	44.070	14.896	0.000%
24	-15.554	-58.760	-27.021	15.554	58.760	27.021	0.000%
25	-15.554	-44.070	-27.021	15.554	44.070	27.021	0.000%
26	0.000	-98.024	0.000	-0.000	98.024	0.000	0.000%
27	0.002	-98.024	-7.406	-0.002	98.024	7.406	0.000%
28	3.688	-98.024	-6.396	-3.688	98.024	6.396	0.000%
29	6.385	-98.024	-3.694	-6.385	98.024	3.694	0.000%
30	7.371	-98.024	-0.002	-7.371	98.024	0.002	0.000%
31	6.382	-98.024	3.690	-6.382	98.024	-3.690	0.000%
32	3.694	-98.024	6.411	-3.694	98.024	-6.411	0.000%
33	-0.002	-98.024	7.406	0.002	98.024	-7.406	0.000%
34	-3.688	-98.024	6.396	3.688	98.024	-6.396	0.000%
35	-6.385	-98.024	3.694	6.385	98.024	-3.694	0.000%
36	-7.371	-98.024	0.002	7.371	98.024	-0.002	0.000%
37	-6.382	-98.024	-3.690	6.382	98.024	3.690	0.000%
38	-3.694	-98.024	-6.411	3.694	98.024	6.411	0.000%
39	0.003	-48.967	-6.737	-0.003	48.967	6.737	0.000%
40	3.256	-48.967	-5.652	-3.256	48.967	5.652	0.000%
41	5.593	-48.967	-3.239	-5.593	48.967	3.239	0.000%
42	6.457	-48.967	-0.003	-6.457	48.967	0.003	0.000%
43	5.592	-48.967	3.236	-5.592	48.967	-3.236	0.000%
44	3.378	-48.967	5.869	-3.378	48.967	-5.869	0.000%
45	-0.003	-48.967	6.737	0.003	48.967	-6.737	0.000%
46	-3.256	-48.967	5.652	3.256	48.967	-5.652	0.000%

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
47	-5.593	-48.967	3.239	5.593	48.967	-3.239	0.000%
48	-6.457	-48.967	0.003	6.457	48.967	-0.003	0.000%
49	-5.592	-48.967	-3.236	5.592	48.967	3.236	0.000%
50	-3.378	-48.967	-5.869	3.378	48.967	5.869	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	5	0.00000001	0.00050172
3	Yes	5	0.00000001	0.00018276
4	Yes	7	0.00000001	0.00021087
5	Yes	7	0.00000001	0.00005035
6	Yes	7	0.00000001	0.00022570
7	Yes	7	0.00000001	0.00005460
8	Yes	6	0.00000001	0.00031221
9	Yes	6	0.00000001	0.00010963
10	Yes	7	0.00000001	0.00020469
11	Yes	7	0.00000001	0.00004893
12	Yes	7	0.00000001	0.00022997
13	Yes	7	0.00000001	0.00005491
14	Yes	5	0.00000001	0.00049273
15	Yes	5	0.00000001	0.00017879
16	Yes	7	0.00000001	0.00022183
17	Yes	7	0.00000001	0.00005346
18	Yes	7	0.00000001	0.00020469
19	Yes	7	0.00000001	0.00004893
20	Yes	6	0.00000001	0.00030563
21	Yes	6	0.00000001	0.00010737
22	Yes	7	0.00000001	0.00022539
23	Yes	7	0.00000001	0.00005454
24	Yes	7	0.00000001	0.00021849
25	Yes	7	0.00000001	0.00005172
26	Yes	5	0.00000001	0.00040019
27	Yes	7	0.00000001	0.00051364
28	Yes	7	0.00000001	0.00063933
29	Yes	7	0.00000001	0.00065348
30	Yes	7	0.00000001	0.00051042
31	Yes	7	0.00000001	0.00061593
32	Yes	7	0.00000001	0.00063012
33	Yes	7	0.00000001	0.00049647
34	Yes	7	0.00000001	0.00062220
35	Yes	7	0.00000001	0.00061150
36	Yes	7	0.00000001	0.00050637
37	Yes	7	0.00000001	0.00064783
38	Yes	7	0.00000001	0.00063565
39	Yes	5	0.00000001	0.00009076
40	Yes	5	0.00000001	0.00055242
41	Yes	5	0.00000001	0.00068126
42	Yes	5	0.00000001	0.00022646
43	Yes	5	0.00000001	0.00051951
44	Yes	5	0.00000001	0.00066879
45	Yes	5	0.00000001	0.00008994
46	Yes	5	0.00000001	0.00063222
47	Yes	5	0.00000001	0.00051852
48	Yes	5	0.00000001	0.00022518
49	Yes	5	0.00000001	0.00067824
50	Yes	5	0.00000001	0.00058198

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	151 - 146	24.157	39	1.543	0.014
L2	146 - 141	22.542	39	1.538	0.013
L3	141 - 136	20.943	39	1.513	0.011
L4	136 - 131	19.379	39	1.472	0.009
L5	131 - 126	17.867	39	1.414	0.008
L6	126 - 121	16.423	39	1.340	0.006
L7	121 - 118.5	15.065	50	1.252	0.005
L8	118.5 - 118.25	14.423	50	1.204	0.004
L9	118.25 - 113.25	14.360	50	1.201	0.004
L10	113.25 - 108.25	13.129	50	1.151	0.004
L11	108.25 - 103.25	11.953	50	1.095	0.003
L12	103.25 - 97.5	10.838	50	1.035	0.003
L13	100.95 - 95.95	10.347	50	1.006	0.003
L14	95.95 - 95	9.311	50	0.967	0.002
L15	95 - 94.75	9.120	50	0.956	0.002
L16	94.75 - 92.5	9.070	50	0.954	0.002
L17	92.5 - 92.25	8.625	50	0.934	0.002
L18	92.25 - 87.75	8.576	50	0.931	0.002
L19	87.75 - 87.5	7.725	50	0.876	0.002
L20	87.5 - 84	7.679	50	0.874	0.002
L21	84 - 83.75	7.049	50	0.845	0.002
L22	83.75 - 78.75	7.005	50	0.842	0.002
L23	78.75 - 73.75	6.154	50	0.785	0.002
L24	73.75 - 68.75	5.363	50	0.726	0.001
L25	68.75 - 64.75	4.634	50	0.666	0.001
L26	64.75 - 64.5	4.096	50	0.618	0.001
L27	64.5 - 63.25	4.064	50	0.616	0.001
L28	63.25 - 63	3.904	50	0.606	0.001
L29	63 - 58	3.872	50	0.603	0.001
L30	58 - 56.75	3.273	50	0.541	0.001
L31	56.75 - 56.5	3.134	50	0.526	0.001
L32	56.5 - 55.25	3.106	50	0.524	0.001
L33	55.25 - 55	2.970	50	0.515	0.001
L34	55 - 47.5	2.943	50	0.512	0.001
L35	52.05 - 47.05	2.637	50	0.480	0.001
L36	47.05 - 42.05	2.148	50	0.451	0.001
L37	42.05 - 37.05	1.702	50	0.400	0.001
L38	37.05 - 34.95	1.311	50	0.348	0.001
L39	34.95 - 34.7	1.163	50	0.326	0.001
L40	34.7 - 34.25	1.146	50	0.324	0.001
L41	34.25 - 34	1.116	50	0.321	0.001
L42	34 - 29	1.099	50	0.318	0.000
L43	29 - 26.75	0.792	50	0.267	0.000
L44	26.75 - 26.5	0.672	50	0.244	0.000
L45	26.5 - 25.25	0.659	50	0.242	0.000
L46	25.25 - 25	0.597	50	0.233	0.000
L47	25 - 20	0.585	50	0.231	0.000
L48	20 - 16.75	0.370	50	0.180	0.000
L49	16.75 - 16.5	0.259	50	0.147	0.000
L50	16.5 - 14.25	0.251	50	0.145	0.000
L51	14.25 - 14	0.187	50	0.126	0.000
L52	14 - 9	0.181	50	0.124	0.000
L53	9 - 4	0.074	50	0.079	0.000
L54	4 - 0	0.015	50	0.035	0.000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
151.000	Lighting Rod 5/8" x 4' on 4' Pole	39	24.157	1.543	0.014	18389
148.000	DS1F03F36D-N	39	23.187	1.542	0.014	18389
138.000	(2) NHH-65C-R2B	39	19.999	1.490	0.010	6651
132.000	1900MHz RRH	39	18.164	1.427	0.008	4570

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
130.000	GPS-TMG-HR-26NCM	39	17.572	1.400	0.007	4154
122.000	ERICSSON AIR 21 B4A B2P w/ Mount Pipe	39	15.329	1.273	0.005	3210
103.000	MX08FRO665-21 w/ Mount Pipe	50	10.784	1.031	0.003	5201

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	151 - 146	111.672	2	7.112	0.065
L2	146 - 141	104.247	2	7.091	0.061
L3	141 - 136	96.891	2	6.981	0.051
L4	136 - 131	89.687	2	6.799	0.043
L5	131 - 126	82.714	2	6.536	0.035
L6	126 - 121	76.053	2	6.200	0.028
L7	121 - 118.5	69.784	24	5.798	0.022
L8	118.5 - 118.25	66.815	24	5.574	0.020
L9	118.25 - 113.25	66.524	24	5.564	0.020
L10	113.25 - 108.25	60.832	24	5.333	0.017
L11	108.25 - 103.25	55.394	24	5.075	0.015
L12	103.25 - 97.5	50.234	24	4.798	0.013
L13	100.95 - 95.95	47.960	24	4.664	0.012
L14	95.95 - 95	43.163	24	4.484	0.011
L15	95 - 94.75	42.278	24	4.433	0.011
L16	94.75 - 92.5	42.046	24	4.423	0.011
L17	92.5 - 92.25	39.986	24	4.334	0.011
L18	92.25 - 87.75	39.760	24	4.321	0.010
L19	87.75 - 87.5	35.815	24	4.062	0.009
L20	87.5 - 84	35.603	24	4.053	0.009
L21	84 - 83.75	32.685	24	3.920	0.009
L22	83.75 - 78.75	32.481	24	3.907	0.009
L23	78.75 - 73.75	28.534	24	3.640	0.008
L24	73.75 - 68.75	24.869	24	3.367	0.007
L25	68.75 - 64.75	21.490	24	3.092	0.006
L26	64.75 - 64.5	18.996	24	2.868	0.005
L27	64.5 - 63.25	18.846	24	2.858	0.005
L28	63.25 - 63	18.104	24	2.810	0.005
L29	63 - 58	17.958	24	2.796	0.005
L30	58 - 56.75	15.181	24	2.511	0.004
L31	56.75 - 56.5	14.533	24	2.441	0.004
L32	56.5 - 55.25	14.405	24	2.432	0.004
L33	55.25 - 55	13.775	24	2.388	0.004
L34	55 - 47.5	13.650	24	2.375	0.004
L35	52.05 - 47.05	12.229	24	2.227	0.004
L36	47.05 - 42.05	9.961	24	2.095	0.003
L37	42.05 - 37.05	7.895	24	1.854	0.003
L38	37.05 - 34.95	6.080	24	1.613	0.003
L39	34.95 - 34.7	5.393	24	1.513	0.002
L40	34.7 - 34.25	5.314	24	1.504	0.002
L41	34.25 - 34	5.173	24	1.489	0.002
L42	34 - 29	5.095	24	1.477	0.002
L43	29 - 26.75	3.674	24	1.238	0.002
L44	26.75 - 26.5	3.116	24	1.132	0.002
L45	26.5 - 25.25	3.057	24	1.123	0.002
L46	25.25 - 25	2.768	24	1.082	0.002
L47	25 - 20	2.712	24	1.070	0.002
L48	20 - 16.75	1.715	24	0.834	0.001
L49	16.75 - 16.5	1.199	24	0.683	0.001
L50	16.5 - 14.25	1.163	24	0.673	0.001
L51	14.25 - 14	0.867	24	0.584	0.001
L52	14 - 9	0.837	24	0.574	0.001
L53	9 - 4	0.345	24	0.366	0.000
L54	4 - 0	0.068	24	0.163	0.000

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
151.000	Lighting Rod 5/8" x 4' on 4' Pole	2	111.672	7.112	0.065	4475
148.000	DS1F03F36D-N	2	107.213	7.107	0.063	4475
138.000	(2) NHH-65C-R2B	2	92.545	6.880	0.046	1530
132.000	1900MHz RRH	2	84.086	6.595	0.037	1034
130.000	GPS-TMG-HR-26NCM	2	81.355	6.473	0.034	936
122.000	ERICSSON AIR 21 B4A B2P w/ Mount Pipe	24	71.004	5.894	0.024	714
103.000	MX08FRO665-21 w/ Mount Pipe	24	49.984	4.783	0.013	1141

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	151 - 146 (1)	TP18.526x17.59x0.219	5.000	0.000	0.0	12.895	-4.310	754.347	0.006
L2	146 - 141 (2)	TP19.461x18.526x0.219	5.000	0.000	0.0	13.554	-4.648	792.896	0.006
L3	141 - 136 (3)	TP20.397x19.461x0.219	5.000	0.000	0.0	14.213	-8.169	831.445	0.010
L4	136 - 131 (4)	TP21.332x20.397x0.219	5.000	0.000	0.0	14.872	-9.393	869.994	0.011
L5	131 - 126 (5)	TP22.268x21.332x0.219	5.000	0.000	0.0	15.531	-11.630	908.542	0.013
L6	126 - 121 (6)	TP23.203x22.268x0.219	5.000	0.000	0.0	16.190	-14.222	947.091	0.015
L7	121 - 118.5 (7)	TP23.671x23.203x0.219	2.500	0.000	0.0	16.519	-14.616	966.365	0.015
L8	118.5 - 118.25 (8)	TP23.718x23.671x0.494	0.250	0.000	0.0	36.923	-14.688	2160.000	0.007
L9	118.25 - 113.25 (9)	TP24.653x23.718x0.481	5.000	0.000	0.0	37.457	-15.683	2191.260	0.007
L10	113.25 - 108.25 (10)	TP25.589x24.653x0.469	5.000	0.000	0.0	37.915	-16.650	2218.050	0.008
L11	108.25 - 103.25 (11)	TP26.524x25.589x0.463	5.000	0.000	0.0	38.812	-17.642	2270.520	0.008
L12	103.25 - 97.5 (12)	TP27.6x26.524x0.456	5.750	0.000	0.0	38.929	-21.136	2277.360	0.009
L13	97.5 - 95.95 (13)	TP27.442x26.517x0.55	5.000	0.000	0.0	47.625	-22.818	2786.050	0.008
L14	95.95 - 95 (14)	TP27.617x27.442x0.55	0.950	0.000	0.0	47.936	-23.056	2804.250	0.008
L15	95 - 94.75 (15)	TP27.663x27.617x0.8	0.250	0.000	0.0	69.200	-23.142	4048.210	0.006
L16	94.75 - 92.5 (16)	TP28.079x27.663x0.788	2.250	0.000	0.0	69.205	-23.836	4048.520	0.006
L17	92.5 - 92.25 (17)	TP28.126x28.079x0.55	0.250	0.000	0.0	48.836	-23.904	2856.930	0.008
L18	92.25 - 87.75 (18)	TP28.958x28.126x0.538	4.500	0.000	0.0	49.188	-25.014	2877.510	0.009
L19	87.75 - 87.5 (19)	TP29.004x28.958x0.863	0.250	0.000	0.0	78.156	-25.112	4572.110	0.005
L20	87.5 - 84 (20)	TP29.651x29.004x0.85	3.500	0.000	0.0	78.829	-26.306	4611.470	0.006
L21	84 - 83.75 (21)	TP29.697x29.651x0.613	0.250	0.000	0.0	57.362	-26.383	3355.710	0.008
L22	83.75 - 78.75 (22)	TP30.622x29.697x0.6	5.000	0.000	0.0	58.002	-27.781	3393.130	0.008
L23	78.75 - 73.75 (23)	TP31.546x30.622x0.588	5.000	0.000	0.0	58.566	-29.216	3426.130	0.009
L24	73.75 - 68.75 (24)	TP32.471x31.546x0.588	5.000	0.000	0.0	60.315	-30.675	3528.450	0.009

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L25	68.75 - 64.75 (25)	TP33.21x32.471x0.575	4.000	0.000	0.0	60.424	-31.857	3534.830	0.009
L26	64.75 - 64.5 (26)	TP33.257x33.21x0.85	0.250	0.000	0.0	88.697	-31.966	5188.780	0.006
L27	64.5 - 63.25 (27)	TP33.488x33.257x0.85	1.250	0.000	0.0	89.330	-32.446	5225.780	0.006
L28	63.25 - 63 (28)	TP33.534x33.488x0.575	0.250	0.000	0.0	61.024	-32.529	3569.880	0.009
L29	63 - 58 (29)	TP34.459x33.534x0.563	5.000	0.000	0.0	61.394	-34.034	3591.560	0.009
L30	58 - 56.75 (30)	TP34.69x34.459x0.563	1.250	0.000	0.0	61.813	-34.414	3616.050	0.010
L31	56.75 - 56.5 (31)	TP34.736x34.69x0.913	0.250	0.000	0.0	99.382	-34.536	5813.820	0.006
L32	56.5 - 55.25 (32)	TP34.967x34.736x0.913	1.250	0.000	0.0	100.061	-35.063	5853.550	0.006
L33	55.25 - 55 (33)	TP35.013x34.967x0.638	0.250	0.000	0.0	70.565	-35.154	4128.040	0.009
L34	55 - 47.5 (34)	TP36.4x35.013x0.638	7.500	0.000	0.0	71.685	-36.135	4193.540	0.009
L35	47.5 - 47.05 (35)	TP35.88x34.934x0.7	5.000	0.000	0.0	79.295	-39.189	4638.740	0.008
L36	47.05 - 42.05 (36)	TP36.825x35.88x0.688	5.000	0.000	0.0	80.000	-41.037	4680.020	0.009
L37	42.05 - 37.05 (37)	TP37.771x36.825x0.675	5.000	0.000	0.0	80.629	-42.920	4716.780	0.009
L38	37.05 - 34.95 (38)	TP38.169x37.771x0.675	2.100	0.000	0.0	81.492	-43.720	4767.290	0.009
L39	34.95 - 34.7 (39)	TP38.216x38.169x0.988	0.250	0.000	0.0	118.377	-43.857	6925.040	0.006
L40	34.7 - 34.25 (40)	TP38.301x38.216x0.975	0.450	0.000	0.0	117.185	-44.083	6855.310	0.006
L41	34.25 - 34 (41)	TP38.348x38.301x0.675	0.250	0.000	0.0	81.883	-44.180	4790.140	0.009
L42	34 - 29 (42)	TP39.294x38.348x0.663	5.000	0.000	0.0	82.411	-46.096	4821.030	0.010
L43	29 - 26.75 (43)	TP39.72x39.294x0.663	2.250	0.000	0.0	83.319	-46.972	4874.150	0.010
L44	26.75 - 26.5 (44)	TP39.767x39.72x0.95	0.250	0.000	0.0	118.741	-47.112	6946.360	0.007
L45	26.5 - 25.25 (45)	TP40.003x39.767x0.95	1.250	0.000	0.0	119.465	-47.747	6988.670	0.007
L46	25.25 - 25 (46)	TP40.051x40.003x0.663	0.250	0.000	0.0	84.025	-47.853	4915.460	0.010
L47	25 - 20 (47)	TP40.997x40.051x0.65	5.000	0.000	0.0	84.445	-49.816	4940.060	0.010
L48	20 - 16.75 (48)	TP41.611x40.997x0.65	3.250	0.000	0.0	85.732	-51.112	5015.330	0.010
L49	16.75 - 16.5 (49)	TP41.659x41.611x0.763	0.250	0.000	0.0	100.410	-51.244	5874.010	0.009
L50	16.5 - 14.25 (50)	TP42.084x41.659x0.763	2.250	0.000	0.0	101.455	-52.327	5935.140	0.009
L51	14.25 - 14 (51)	TP42.132x42.084x0.725	0.250	0.000	0.0	96.664	-52.447	5654.830	0.009
L52	14 - 9 (52)	TP43.077x42.132x0.713	5.000	0.000	0.0	97.196	-54.670	5685.960	0.010
L53	9 - 4 (53)	TP44.023x43.077x0.713	5.000	0.000	0.0	99.366	-56.925	5812.900	0.010
L54	4 - 0 (54)	TP44.78x44.023x0.7	4.000	0.000	0.0	99.356	-58.749	5812.340	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	151 - 146 (1)	TP18.526x17.59x0.219	27.138	351.018	0.077	0.000	351.018	0.000
L2	146 - 141 (2)	TP19.461x18.526x0.219	65.990	382.076	0.173	0.000	382.076	0.000
L3	141 - 136 (3)	TP20.397x19.461x0.219	116.646	413.796	0.282	0.000	413.796	0.000
L4	136 - 131 (4)	TP21.332x20.397x0.219	177.674	446.091	0.398	0.000	446.091	0.000
L5	131 - 126 (5)	TP22.268x21.332x0.219	251.542	478.878	0.525	0.000	478.878	0.000
L6	126 - 121 (6)	TP23.203x22.268x0.219	332.050	512.069	0.648	0.000	512.069	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 $\frac{M_{uy}}{\phi M_{ny}}$
L7	121 - 118.5 (7)	TP23.671x23.203x0.219	377.842	528.791	0.715	0.000	528.791	0.000
L8	118.5 - 118.25 (8)	TP23.718x23.671x0.494	382.462	1270.858	0.301	0.000	1270.858	0.000
L9	118.25 - 113.25 (9)	TP24.653x23.718x0.481	476.284	1343.650	0.354	0.000	1343.650	0.000
L10	113.25 - 108.25 (10)	TP25.589x24.653x0.469	572.678	1415.158	0.405	0.000	1415.158	0.000
L11	108.25 - 103.25 (11)	TP26.524x25.589x0.463	671.528	1504.300	0.446	0.000	1504.300	0.000
L12	103.25 - 97.5 (12)	TP27.6x26.524x0.456	723.043	1534.900	0.471	0.000	1534.900	0.000
L13	97.5 - 95.95 (13)	TP27.442x26.517x0.55	838.575	1899.575	0.441	0.000	1899.575	0.000
L14	95.95 - 95 (14)	TP27.617x27.442x0.55	860.833	1924.725	0.447	0.000	1924.725	0.000
L15	95 - 94.75 (15)	TP27.663x27.617x0.8	866.700	2732.275	0.317	0.000	2732.275	0.000
L16	94.75 - 92.5 (16)	TP28.079x27.663x0.788	919.858	2778.575	0.331	0.000	2778.575	0.000
L17	92.5 - 92.25 (17)	TP28.126x28.079x0.55	925.800	1998.458	0.463	0.000	1998.458	0.000
L18	92.25 - 87.75 (18)	TP28.958x28.126x0.538	1033.783	2076.600	0.498	0.000	2076.600	0.000
L19	87.75 - 87.5 (19)	TP29.004x28.958x0.863	1039.842	3229.967	0.322	0.000	3229.967	0.000
L20	87.5 - 84 (20)	TP29.651x29.004x0.85	1125.375	3337.817	0.337	0.000	3337.817	0.000
L21	84 - 83.75 (21)	TP29.697x29.651x0.613	1131.542	2473.117	0.458	0.000	2473.117	0.000
L22	83.75 - 78.75 (22)	TP30.622x29.697x0.6	1256.017	2583.975	0.486	0.000	2583.975	0.000
L23	78.75 - 73.75 (23)	TP31.546x30.622x0.588	1382.792	2693.208	0.513	0.000	2693.208	0.000
L24	73.75 - 68.75 (24)	TP32.471x31.546x0.588	1511.775	2858.008	0.529	0.000	2858.008	0.000
L25	68.75 - 64.75 (25)	TP33.21x32.471x0.575	1616.492	2933.050	0.551	0.000	2933.050	0.000
L26	64.75 - 64.5 (26)	TP33.257x33.21x0.85	1623.108	4239.367	0.383	0.000	4239.367	0.000
L27	64.5 - 63.25 (27)	TP33.488x33.257x0.85	1656.258	4300.825	0.385	0.000	4300.825	0.000
L28	63.25 - 63 (28)	TP33.534x33.488x0.575	1662.908	2992.008	0.556	0.000	2992.008	0.000
L29	63 - 58 (29)	TP34.459x33.534x0.563	1797.042	3098.342	0.580	0.000	3098.342	0.000
L30	58 - 56.75 (30)	TP34.69x34.459x0.563	1830.908	3141.092	0.583	0.000	3141.092	0.000
L31	56.75 - 56.5 (31)	TP34.736x34.69x0.913	1837.692	4954.075	0.371	0.000	4954.075	0.000
L32	56.5 - 55.25 (32)	TP34.967x34.736x0.913	1871.733	5022.908	0.373	0.000	5022.908	0.000
L33	55.25 - 55 (33)	TP35.013x34.967x0.638	1878.558	3604.633	0.521	0.000	3604.633	0.000
L34	55 - 47.5 (34)	TP36.4x35.013x0.638	1959.500	3720.992	0.527	0.000	3720.992	0.000
L35	47.5 - 47.05 (35)	TP35.88x34.934x0.7	2098.675	4139.800	0.507	0.000	4139.800	0.000
L36	47.05 - 42.05 (36)	TP36.825x35.88x0.688	2240.108	4294.092	0.522	0.000	4294.092	0.000
L37	42.05 - 37.05 (37)	TP37.771x36.825x0.675	2383.408	4446.208	0.536	0.000	4446.208	0.000
L38	37.05 - 34.95 (38)	TP38.169x37.771x0.675	2444.133	4542.800	0.538	0.000	4542.800	0.000
L39	34.95 - 34.7 (39)	TP38.216x38.169x0.988	2451.375	6497.867	0.377	0.000	6497.867	0.000
L40	34.7 - 34.25 (40)	TP38.301x38.216x0.975	2464.442	6451.850	0.382	0.000	6451.850	0.000
L41	34.25 - 34 (41)	TP38.348x38.301x0.675	2471.708	4586.842	0.539	0.000	4586.842	0.000
L42	34 - 29 (42)	TP39.294x38.348x0.663	2617.833	4737.433	0.553	0.000	4737.433	0.000
L43	29 - 26.75	TP39.72x39.294x0.663	2684.117	4843.292	0.554	0.000	4843.292	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 $\frac{M_{uy}}{\phi M_{ny}}$
L44	26.75 - 26.5 (44)	TP39.767x39.72x0.95	2691.500	6809.633	0.395	0.000	6809.633	0.000
L45	26.5 - 25.25 (45)	TP40.003x39.767x0.95	2728.500	6893.850	0.396	0.000	6893.850	0.000
L46	25.25 - 25 (46)	TP40.051x40.003x0.663	2735.908	4926.433	0.555	0.000	4926.433	0.000
L47	25 - 20 (47)	TP40.997x40.051x0.65	2884.967	5075.083	0.568	0.000	5075.083	0.000
L48	20 - 16.75 (48)	TP41.611x40.997x0.65	2982.658	5232.183	0.570	0.000	5232.183	0.000
L49	16.75 - 16.5 (49)	TP41.659x41.611x0.763	2990.200	6101.550	0.490	0.000	6101.550	0.000
L50	16.5 - 14.25 (50)	TP42.084x41.659x0.763	3058.250	6230.391	0.491	0.000	6230.391	0.000
L51	14.25 - 14 (51)	TP42.132x42.084x0.725	3065.833	5953.833	0.515	0.000	5953.833	0.000
L52	14 - 9 (52)	TP43.077x42.132x0.713	3218.267	6129.325	0.525	0.000	6129.325	0.000
L53	9 - 4 (53)	TP44.023x43.077x0.713	3372.233	6408.383	0.526	0.000	6408.383	0.000
L54	4 - 0 (54)	TP44.78x44.023x0.7	3496.475	6525.233	0.536	0.000	6525.233	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	151 - 146 (1)	TP18.526x17.59x0.219	7.587	226.304	0.034	0.157	364.422	0.000
L2	146 - 141 (2)	TP19.461x18.526x0.219	7.958	237.869	0.033	0.157	402.618	0.000
L3	141 - 136 (3)	TP20.397x19.461x0.219	11.969	249.433	0.048	0.156	442.719	0.000
L4	136 - 131 (4)	TP21.332x20.397x0.219	13.136	260.998	0.050	0.156	484.723	0.000
L5	131 - 126 (5)	TP22.268x21.332x0.219	15.322	272.563	0.056	0.156	528.630	0.000
L6	126 - 121 (6)	TP23.203x22.268x0.219	18.177	284.127	0.064	0.156	574.440	0.000
L7	121 - 118.5 (7)	TP23.671x23.203x0.219	18.477	289.910	0.064	0.168	598.059	0.000
L8	118.5 - 118.25 (8)	TP23.718x23.671x0.494	18.500	647.999	0.029	0.169	1323.758	0.000
L9	118.25 - 113.25 (9)	TP24.653x23.718x0.481	19.035	657.377	0.029	0.169	1397.733	0.000
L10	113.25 - 108.25 (10)	TP25.589x24.653x0.469	19.532	665.414	0.029	0.169	1470.317	0.000
L11	108.25 - 103.25 (11)	TP26.524x25.589x0.463	20.020	681.156	0.029	0.169	1561.525	0.000
L12	103.25 - 97.5 (12)	TP27.6x26.524x0.456	22.822	683.208	0.033	0.007	1592.467	0.000
L13	97.5 - 95.95 (13)	TP27.442x26.517x0.55	23.390	835.816	0.028	0.007	1977.083	0.000
L14	95.95 - 95 (14)	TP27.617x27.442x0.55	23.479	841.276	0.028	0.007	2003.000	0.000
L15	95 - 94.75 (15)	TP27.663x27.617x0.8	23.503	1214.460	0.019	0.007	2869.750	0.000
L16	94.75 - 92.5 (16)	TP28.079x27.663x0.788	23.756	1214.560	0.020	0.007	2915.758	0.000
L17	92.5 - 92.25 (17)	TP28.126x28.079x0.55	23.779	857.080	0.028	0.007	2078.967	0.000
L18	92.25 - 87.75 (18)	TP28.958x28.126x0.538	24.225	863.254	0.028	0.007	2158.067	0.000
L19	87.75 - 87.5 (19)	TP29.004x28.958x0.863	24.246	1371.630	0.018	0.007	3395.350	0.000
L20	87.5 - 84 (20)	TP29.651x29.004x0.85	24.640	1383.440	0.018	0.007	3504.850	0.000
L21	84 - 83.75 (21)	TP29.697x29.651x0.613	24.663	1006.710	0.024	0.007	2575.558	0.000
L22	83.75 - 78.75 (22)	TP30.622x29.697x0.6	25.140	1017.940	0.025	0.007	2688.175	0.000
L23	78.75 - 73.75 (23)	TP31.546x30.622x0.588	25.588	1027.840	0.025	0.007	2799.042	0.000
L24	73.75 - 68.75	TP32.471x31.546x0.588	26.023	1058.530	0.025	0.007	2968.717	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 $\frac{T_u}{\phi T_n}$
	(24)							
L25	68.75 - 64.75 (25)	TP33.21x32.471x0.575	26.450	1060.450	0.025	1.727	3044.242	0.001
L26	64.75 - 64.5 (26)	TP33.257x33.21x0.85	26.465	1556.630	0.017	1.727	4437.317	0.000
L27	64.5 - 63.25 (27)	TP33.488x33.257x0.85	26.603	1567.740	0.017	1.728	4500.842	0.000
L28	63.25 - 63 (28)	TP33.534x33.488x0.575	26.617	1070.960	0.025	1.728	3104.908	0.001
L29	63 - 58 (29)	TP34.459x33.534x0.563	27.056	1077.470	0.025	1.732	3212.575	0.001
L30	58 - 56.75 (30)	TP34.69x34.459x0.563	27.165	1084.810	0.025	1.733	3256.533	0.001
L31	56.75 - 56.5 (31)	TP34.736x34.69x0.913	27.173	1744.150	0.016	1.733	5189.192	0.000
L32	56.5 - 55.25 (32)	TP34.967x34.736x0.913	27.308	1756.060	0.016	1.734	5260.358	0.000
L33	55.25 - 55 (33)	TP35.013x34.967x0.638	27.321	1238.410	0.022	1.734	3744.700	0.000
L34	55 - 47.5 (34)	TP36.4x35.013x0.638	27.582	1258.060	0.022	1.736	3864.483	0.000
L35	47.5 - 47.05 (35)	TP35.88x34.934x0.7	28.103	1391.620	0.020	1.740	4306.367	0.000
L36	47.05 - 42.05 (36)	TP36.825x35.88x0.688	28.496	1404.000	0.020	1.744	4463.042	0.000
L37	42.05 - 37.05 (37)	TP37.771x36.825x0.675	28.858	1415.030	0.020	1.748	4617.392	0.000
L38	37.05 - 34.95 (38)	TP38.169x37.771x0.675	29.007	1430.190	0.020	1.749	4716.817	0.000
L39	34.95 - 34.7 (39)	TP38.216x38.169x0.988	29.012	2077.510	0.014	1.749	6803.250	0.000
L40	34.7 - 34.25 (40)	TP38.301x38.216x0.975	29.052	2056.590	0.014	1.750	6752.408	0.000
L41	34.25 - 34 (41)	TP38.348x38.301x0.675	29.068	1437.040	0.020	1.750	4762.142	0.000
L42	34 - 29 (42)	TP39.294x38.348x0.663	29.407	1446.310	0.020	1.754	4914.775	0.000
L43	29 - 26.75 (43)	TP39.72x39.294x0.663	29.551	1462.240	0.020	1.755	5023.667	0.000
L44	26.75 - 26.5 (44)	TP39.767x39.72x0.95	29.552	2083.910	0.014	1.756	7115.417	0.000
L45	26.5 - 25.25 (45)	TP40.003x39.767x0.95	29.661	2096.600	0.014	1.757	7202.367	0.000
L46	25.25 - 25 (46)	TP40.051x40.003x0.663	29.664	1474.640	0.020	1.757	5109.192	0.000
L47	25 - 20 (47)	TP40.997x40.051x0.65	29.983	1482.020	0.020	1.761	5259.692	0.000
L48	20 - 16.75 (48)	TP41.611x40.997x0.65	30.177	1504.600	0.020	1.764	5421.208	0.000
L49	16.75 - 16.5 (49)	TP41.659x41.611x0.763	30.175	1762.200	0.017	1.764	6339.258	0.000
L50	16.5 - 14.25 (50)	TP42.084x41.659x0.763	30.337	1780.540	0.017	1.766	6471.900	0.000
L51	14.25 - 14 (51)	TP42.132x42.084x0.725	30.337	1696.450	0.018	1.766	6178.891	0.000
L52	14 - 9 (52)	TP43.077x42.132x0.713	30.660	1705.790	0.018	1.770	6356.700	0.000
L53	9 - 4 (53)	TP44.023x43.077x0.713	30.964	1743.870	0.018	1.775	6643.708	0.000
L54	4 - 0 (54)	TP44.78x44.023x0.7	31.199	1743.700	0.018	1.779	6761.050	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	151 - 146 (1)	0.006	0.077	0.000	0.034	0.000	0.084	1.050	4.8.2
L2	146 - 141 (2)	0.006	0.173	0.000	0.033	0.000	0.180	1.050	4.8.2
L3	141 - 136 (3)	0.010	0.282	0.000	0.048	0.000	0.294	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
L4	136 - 131 (4)	0.011	0.398	0.000	0.050	0.000	0.412	1.050	4.8.2
L5	131 - 126 (5)	0.013	0.525	0.000	0.056	0.000	0.541	1.050	4.8.2
L6	126 - 121 (6)	0.015	0.648	0.000	0.064	0.000	0.668	1.050	4.8.2
L7	121 - 118.5 (7)	0.015	0.715	0.000	0.064	0.000	0.734	1.050	4.8.2
L8	118.5 - 118.25 (8)	0.007	0.301	0.000	0.029	0.000	0.309	1.050	4.8.2
L9	118.25 - 113.25 (9)	0.007	0.354	0.000	0.029	0.000	0.362	1.050	4.8.2
L10	113.25 - 108.25 (10)	0.008	0.405	0.000	0.029	0.000	0.413	1.050	4.8.2
L11	108.25 - 103.25 (11)	0.008	0.446	0.000	0.029	0.000	0.455	1.050	4.8.2
L12	103.25 - 97.5 (12)	0.009	0.471	0.000	0.033	0.000	0.481	1.050	4.8.2
L13	97.5 - 95.95 (13)	0.008	0.441	0.000	0.028	0.000	0.450	1.050	4.8.2
L14	95.95 - 95 (14)	0.008	0.447	0.000	0.028	0.000	0.456	1.050	4.8.2
L15	95 - 94.75 (15)	0.006	0.317	0.000	0.019	0.000	0.323	1.050	4.8.2
L16	94.75 - 92.5 (16)	0.006	0.331	0.000	0.020	0.000	0.337	1.050	4.8.2
L17	92.5 - 92.25 (17)	0.008	0.463	0.000	0.028	0.000	0.472	1.050	4.8.2
L18	92.25 - 87.75 (18)	0.009	0.498	0.000	0.028	0.000	0.507	1.050	4.8.2
L19	87.75 - 87.5 (19)	0.005	0.322	0.000	0.018	0.000	0.328	1.050	4.8.2
L20	87.5 - 84 (20)	0.006	0.337	0.000	0.018	0.000	0.343	1.050	4.8.2
L21	84 - 83.75 (21)	0.008	0.458	0.000	0.024	0.000	0.466	1.050	4.8.2
L22	83.75 - 78.75 (22)	0.008	0.486	0.000	0.025	0.000	0.495	1.050	4.8.2
L23	78.75 - 73.75 (23)	0.009	0.513	0.000	0.025	0.000	0.523	1.050	4.8.2
L24	73.75 - 68.75 (24)	0.009	0.529	0.000	0.025	0.000	0.538	1.050	4.8.2
L25	68.75 - 64.75 (25)	0.009	0.551	0.000	0.025	0.001	0.561	1.050	4.8.2
L26	64.75 - 64.5 (26)	0.006	0.383	0.000	0.017	0.000	0.389	1.050	4.8.2
L27	64.5 - 63.25 (27)	0.006	0.385	0.000	0.017	0.000	0.392	1.050	4.8.2
L28	63.25 - 63 (28)	0.009	0.556	0.000	0.025	0.001	0.566	1.050	4.8.2
L29	63 - 58 (29)	0.009	0.580	0.000	0.025	0.001	0.590	1.050	4.8.2
L30	58 - 56.75 (30)	0.010	0.583	0.000	0.025	0.001	0.593	1.050	4.8.2
L31	56.75 - 56.5 (31)	0.006	0.371	0.000	0.016	0.000	0.377	1.050	4.8.2
L32	56.5 - 55.25 (32)	0.006	0.373	0.000	0.016	0.000	0.379	1.050	4.8.2
L33	55.25 - 55 (33)	0.009	0.521	0.000	0.022	0.000	0.530	1.050	4.8.2
L34	55 - 47.5 (34)	0.009	0.527	0.000	0.022	0.000	0.536	1.050	4.8.2
L35	47.5 - 47.05 (35)	0.008	0.507	0.000	0.020	0.000	0.516	1.050	4.8.2
L36	47.05 - 42.05 (36)	0.009	0.522	0.000	0.020	0.000	0.531	1.050	4.8.2
L37	42.05 - 37.05 (37)	0.009	0.536	0.000	0.020	0.000	0.546	1.050	4.8.2
L38	37.05 - 34.95 (38)	0.009	0.538	0.000	0.020	0.000	0.548	1.050	4.8.2
L39	34.95 - 34.7 (39)	0.006	0.377	0.000	0.014	0.000	0.384	1.050	4.8.2
L40	34.7 - 34.25 (40)	0.006	0.382	0.000	0.014	0.000	0.389	1.050	4.8.2
L41	34.25 - 34	0.009	0.539	0.000	0.020	0.000	0.549	1.050	4.8.2

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
	(41)								
L42	34 - 29 (42)	0.010	0.553	0.000	0.020	0.000	0.563	1.050	4.8.2
L43	29 - 26.75 (43)	0.010	0.554	0.000	0.020	0.000	0.564	1.050	4.8.2
L44	26.75 - 26.5 (44)	0.007	0.395	0.000	0.014	0.000	0.402	1.050	4.8.2
L45	26.5 - 25.25 (45)	0.007	0.396	0.000	0.014	0.000	0.403	1.050	4.8.2
L46	25.25 - 25 (46)	0.010	0.555	0.000	0.020	0.000	0.566	1.050	4.8.2
L47	25 - 20 (47)	0.010	0.568	0.000	0.020	0.000	0.579	1.050	4.8.2
L48	20 - 16.75 (48)	0.010	0.570	0.000	0.020	0.000	0.581	1.050	4.8.2
L49	16.75 - 16.5 (49)	0.009	0.490	0.000	0.017	0.000	0.499	1.050	4.8.2
L50	16.5 - 14.25 (50)	0.009	0.491	0.000	0.017	0.000	0.500	1.050	4.8.2
L51	14.25 - 14 (51)	0.009	0.515	0.000	0.018	0.000	0.525	1.050	4.8.2
L52	14 - 9 (52)	0.010	0.525	0.000	0.018	0.000	0.535	1.050	4.8.2
L53	9 - 4 (53)	0.010	0.526	0.000	0.018	0.000	0.536	1.050	4.8.2
L54	4 - 0 (54)	0.010	0.536	0.000	0.018	0.000	0.546	1.050	4.8.2

Section Capacity Table

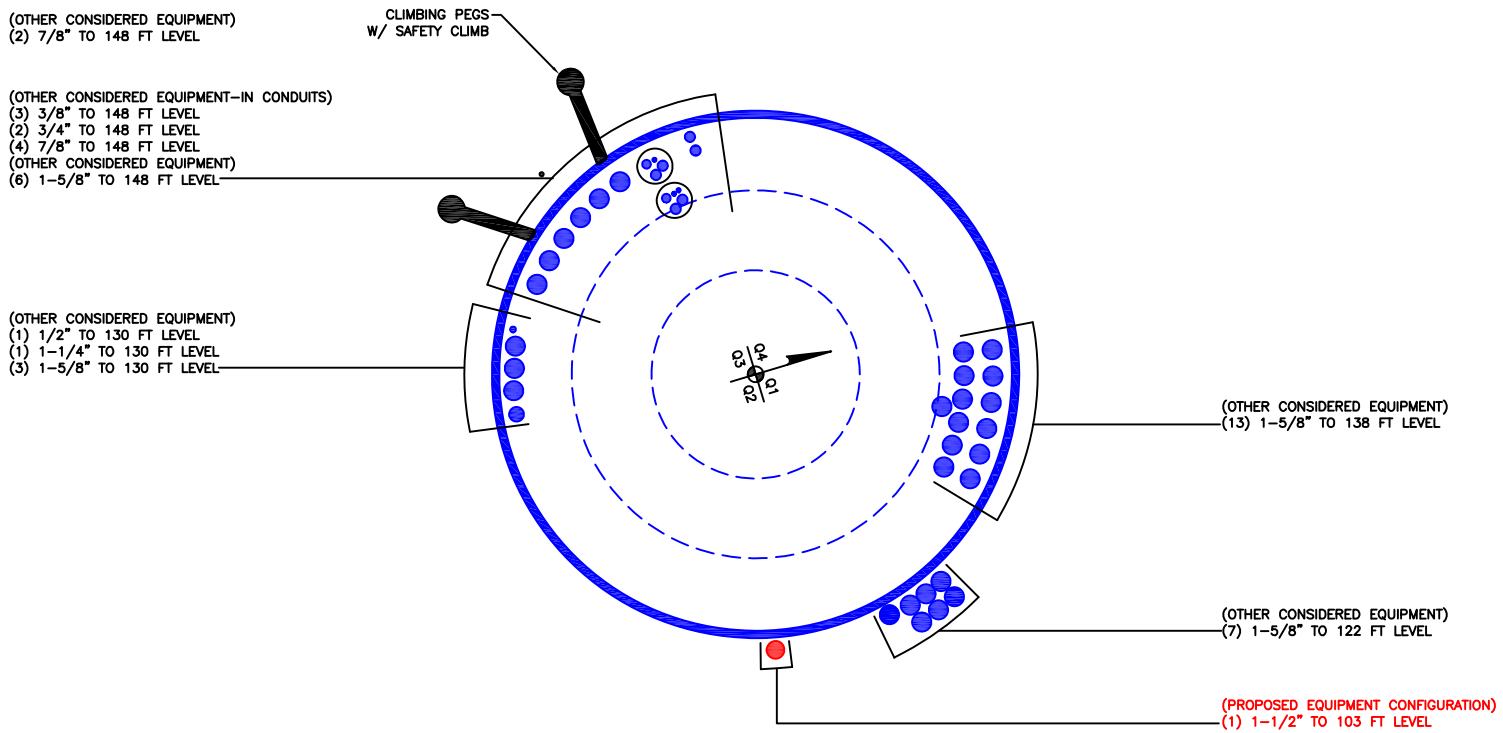
Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	151 - 146	Pole	TP18.526x17.59x0.219	1	-4.310	792.064	8.0	Pass
L2	146 - 141	Pole	TP19.461x18.526x0.219	2	-4.648	832.541	17.1	Pass
L3	141 - 136	Pole	TP20.397x19.461x0.219	3	-8.169	873.017	28.0	Pass
L4	136 - 131	Pole	TP21.332x20.397x0.219	4	-9.393	913.494	39.2	Pass
L5	131 - 126	Pole	TP22.268x21.332x0.219	5	-11.630	953.969	51.5	Pass
L6	126 - 121	Pole	TP23.203x22.268x0.219	6	-14.222	994.446	63.6	Pass
L7	121 - 118.5	Pole	TP23.671x23.203x0.219	7	-14.616	1014.683	69.9	Pass
L8	118.5 - 118.25	Pole	TP23.718x23.671x0.494	8	-14.688	2268.000	29.4	Pass
L9	118.25 - 113.25	Pole	TP24.653x23.718x0.481	9	-15.683	2300.823	34.5	Pass
L10	113.25 - 108.25	Pole	TP25.589x24.653x0.469	10	-16.650	2328.952	39.3	Pass
L11	108.25 - 103.25	Pole	TP26.524x25.589x0.463	11	-17.642	2384.046	43.3	Pass
L12	103.25 - 97.5	Pole	TP27.6x26.524x0.456	12	-21.136	2391.228	45.9	Pass
L13	97.5 - 95.95	Pole	TP27.442x26.517x0.55	13	-22.818	2925.352	42.9	Pass
L14	95.95 - 95	Pole	TP27.617x27.442x0.55	14	-23.056	2944.462	43.5	Pass
L15	95 - 94.75	Pole	TP27.663x27.617x0.8	15	-23.142	4250.620	30.8	Pass
L16	94.75 - 92.5	Pole	TP28.079x27.663x0.788	16	-23.836	4250.946	32.1	Pass
L17	92.5 - 92.25	Pole	TP28.126x28.079x0.55	17	-23.904	2999.776	45.0	Pass
L18	92.25 - 87.75	Pole	TP28.958x28.126x0.538	18	-25.014	3021.385	48.3	Pass
L19	87.75 - 87.5	Pole	TP29.004x28.958x0.863	19	-25.112	4800.715	31.2	Pass
L20	87.5 - 84	Pole	TP29.651x29.004x0.85	20	-26.306	4842.043	32.7	Pass
L21	84 - 83.75	Pole	TP29.697x29.651x0.613	21	-26.383	3523.495	44.4	Pass
L22	83.75 - 78.75	Pole	TP30.622x29.697x0.6	22	-27.781	3562.786	47.1	Pass
L23	78.75 - 73.75	Pole	TP31.546x30.622x0.588	23	-29.216	3597.436	49.8	Pass
L24	73.75 - 68.75	Pole	TP32.471x31.546x0.588	24	-30.675	3704.872	51.3	Pass
L25	68.75 - 64.75	Pole	TP33.21x32.471x0.575	25	-31.857	3711.571	53.4	Pass
L26	64.75 - 64.5	Pole	TP33.257x33.21x0.85	26	-31.966	5448.219	37.1	Pass
L27	64.5 - 63.25	Pole	TP33.488x33.257x0.85	27	-32.446	5487.069	37.3	Pass
L28	63.25 - 63	Pole	TP33.534x33.488x0.575	28	-32.529	3748.374	53.9	Pass
L29	63 - 58	Pole	TP34.459x33.534x0.563	29	-34.034	3771.138	56.2	Pass
L30	58 - 56.75	Pole	TP34.69x34.459x0.563	30	-34.414	3796.852	56.5	Pass
L31	56.75 - 56.5	Pole	TP34.736x34.69x0.913	31	-34.536	6104.511	35.9	Pass
L32	56.5 - 55.25	Pole	TP34.967x34.736x0.913	32	-35.063	6146.227	36.1	Pass
L33	55.25 - 55	Pole	TP35.013x34.967x0.638	33	-35.154	4334.442	50.5	Pass
L34	55 - 47.5	Pole	TP36.4x35.013x0.638	34	-36.135	4403.217	51.0	Pass
L35	47.5 - 47.05	Pole	TP35.88x34.934x0.7	35	-39.189	4870.677	49.1	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L36	47.05 - 42.05	Pole	TP36.825x35.88x0.688	36	-41.037	4914.021	50.6	Pass
L37	42.05 - 37.05	Pole	TP37.771x36.825x0.675	37	-42.920	4952.619	52.0	Pass
L38	37.05 - 34.95	Pole	TP38.169x37.771x0.675	38	-43.720	5005.654	52.2	Pass
L39	34.95 - 34.7	Pole	TP38.216x38.169x0.988	39	-43.857	7271.292	36.6	Pass
L40	34.7 - 34.25	Pole	TP38.301x38.216x0.975	40	-44.083	7198.075	37.0	Pass
L41	34.25 - 34	Pole	TP38.348x38.301x0.675	41	-44.180	5029.647	52.2	Pass
L42	34 - 29	Pole	TP39.294x38.348x0.663	42	-46.096	5062.081	53.6	Pass
L43	29 - 26.75	Pole	TP39.72x39.294x0.663	43	-46.972	5117.857	53.7	Pass
L44	26.75 - 26.5	Pole	TP39.767x39.72x0.95	44	-47.112	7293.678	38.3	Pass
L45	26.5 - 25.25	Pole	TP40.003x39.767x0.95	45	-47.747	7338.103	38.4	Pass
L46	25.25 - 25	Pole	TP40.051x40.003x0.663	46	-47.853	5161.233	53.9	Pass
L47	25 - 20	Pole	TP40.997x40.051x0.65	47	-49.816	5187.063	55.1	Pass
L48	20 - 16.75	Pole	TP41.611x40.997x0.65	48	-51.112	5266.096	55.3	Pass
L49	16.75 - 16.5	Pole	TP41.659x41.611x0.763	49	-51.244	6167.710	47.5	Pass
L50	16.5 - 14.25	Pole	TP42.084x41.659x0.763	50	-52.327	6231.897	47.6	Pass
L51	14.25 - 14	Pole	TP42.132x42.084x0.725	51	-52.447	5937.571	50.0	Pass
L52	14 - 9	Pole	TP43.077x42.132x0.713	52	-54.670	5970.258	51.0	Pass
L53	9 - 4	Pole	TP44.023x43.077x0.713	53	-56.925	6103.545	51.1	Pass
L54	4 - 0	Pole	TP44.78x44.023x0.7	54	-58.749	6102.957	52.0	Pass
							Summary	
						Pole (L7)	69.9	Pass
						RATING =	**69.9**	**Pass**

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

APPENDIX B

BASE LEVEL DRAWING


(OTHER CONSIDERED EQUIPMENT)
(2) 7/8" TO 148 FT LEVEL
CLIMBING PEGS
W/ SAFETY CLIMB
(OTHER CONSIDERED EQUIPMENT-IN CONDUITS)
(3) 3/8" TO 148 FT LEVEL
(2) 3/4" TO 148 FT LEVEL
(4) 7/8" TO 148 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(6) 1-5/8" TO 148 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(1) 1/2" TO 130 FT LEVEL
(1) 1-1/4" TO 130 FT LEVEL
(3) 1-5/8" TO 130 FT LEVEL
Q4
Q3
Q1
Q2
(OTHER CONSIDERED EQUIPMENT)
(13) 1-5/8" TO 138 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(7) 1-5/8" TO 122 FT LEVEL
(PROPOSED EQUIPMENT CONFIGURATION)
(1) 1-1/2" TO 103 FT LEVEL

APPENDIX C

ADDITIONAL CALCULATIONS

CCIpole

per TIA-222- H

Site BU: 841295

Work Order: 1964051

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	151	53.5	3.45	12	17.59	27.6	0.21875	Auto	A572-65
2	100.95	53.45	4.55	12	26.52	36.4	0.3125	Auto	A572-65
3	52.05	52.05	0	12	34.93	44.78	0.375	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
1	0	16.75	plate	MS-850 (1.1875")	2									0		0	
2	14.25	26.75	plate	MS-850 (1.1875")	1										0		
3	0	26.75	plate	MS-850 (1.1875")	2		0				0						
4	25.25	34.95	plate	MS-850 (1.1875")	3			0				0				0	
5	34.25	56.75	plate	MS-850 (1.1875")	3		0				0				0		
6	55.25	64.75	plate	MS-650 (1.1875")	3			0				0				0	
7	63.25	87.75	plate	MS-650 (1.1875")	3		0				0				0		
8	84	95	plate	MS-600 (1.1875")	3			0				0				0	
9	92.5	118.5	plate	MS-600 (1.1875")	3		0				0				0		
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	8.5	1.25	10.625	0.625	PC 8.8 - M20 (100)	45	PC 8.8 - M20 (100)	45.000	17.250	9.063	1.1875	A572-65
2	8.5	1.25	10.625	0.625	PC 8.8 - M20 (100)	45	PC 8.8 - M20 (100)	45.000	17.250	9.063	1.1875	A572-65
3	8.5	1.25	10.625	0.625	PC 8.8 - M20 (100)	45	PC 8.8 - M20 (100)	45.000	17.250	9.063	1.1875	A572-65
4	8.5	1.25	10.625	0.625	PC 8.8 - M20 (100)	45	PC 8.8 - M20 (100)	45.000	17.250	9.063	1.1875	A572-65
5	8.5	1.25	10.625	0.625	PC 8.8 - M20 (100)	45	PC 8.8 - M20 (100)	45.000	17.250	9.063	1.1875	A572-65
6	6.5	1.25	8.125	0.625	PC 8.8 - M20 (100)	33	PC 8.8 - M20 (100)	33.000	19.250	6.563	1.1875	A572-65
7	6.5	1.25	8.125	0.625	PC 8.8 - M20 (100)	33	PC 8.8 - M20 (100)	33.000	19.250	6.563	1.1875	A572-65
8	6	1	6	0.5	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	24.000	16.375	4.750	1.1875	A572-65
9	6	1	6	0.5	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	24.000	16.375	4.750	1.1875	A572-65

TNX Geometry Input

Increment (ft): 5 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	151 - 146	5		12	17.590	18.526	0.21875	A572-65	1.000
2	146 - 141	5		12	18.526	19.461	0.21875	A572-65	1.000
3	141 - 136	5		12	19.461	20.397	0.21875	A572-65	1.000
4	136 - 131	5		12	20.397	21.332	0.21875	A572-65	1.000
5	131 - 126	5		12	21.332	22.268	0.21875	A572-65	1.000
6	126 - 121	5		12	22.268	23.203	0.21875	A572-65	1.000
7	121 - 118.5	2.5		12	23.203	23.671	0.21875	A572-65	1.000
8	118.5 - 118.25	0.25		12	23.671	23.718	0.49375	A572-65	0.936
9	118.25 - 113.25	5		12	23.718	24.653	0.48125	A572-65	0.941
10	113.25 - 108.25	5		12	24.653	25.589	0.46875	A572-65	0.947
11	108.25 - 103.25	5		12	25.589	26.524	0.4625	A572-65	0.942
12	103.25 - 100.95	5.75	3.45	12	26.524	27.600	0.45625	A572-65	0.947
13	100.95 - 95.95	5		12	26.517	27.442	0.55	A572-65	0.952
14	95.95 - 95	0.95		12	27.442	27.617	0.55	A572-65	0.949
15	95 - 94.75	0.25		12	27.617	27.663	0.8	A572-65	0.919
16	94.75 - 92.5	2.25		12	27.663	28.079	0.7875	A572-65	0.925
17	92.5 - 92.25	0.25		12	28.079	28.126	0.55	A572-65	0.942
18	92.25 - 87.75	4.5		12	28.126	28.958	0.5375	A572-65	0.952
19	87.75 - 87.5	0.25		12	28.958	29.004	0.8625	A572-65	0.912
20	87.5 - 84	3.5		12	29.004	29.651	0.85	A572-65	0.913
21	84 - 83.75	0.25		12	29.651	29.697	0.6125	A572-65	0.941
22	83.75 - 78.75	5		12	29.697	30.622	0.6	A572-65	0.947
23	78.75 - 73.75	5		12	30.622	31.546	0.5875	A572-65	0.953
24	73.75 - 68.75	5		12	31.546	32.471	0.5875	A572-65	0.941
25	68.75 - 64.75	4		12	32.471	33.210	0.575	A572-65	0.952
26	64.75 - 64.5	0.25		12	33.210	33.257	0.85	A572-65	0.924
27	64.5 - 63.25	1.25		12	33.257	33.488	0.85	A572-65	0.920
28	63.25 - 63	0.25		12	33.488	33.534	0.575	A572-65	0.948
29	63 - 58	5		12	33.534	34.459	0.5625	A572-65	0.957
30	58 - 56.75	1.25		12	34.459	34.690	0.5625	A572-65	0.955
31	56.75 - 56.5	0.25		12	34.690	34.736	0.9125	A572-65	0.915
32	56.5 - 55.25	1.25		12	34.736	34.967	0.9125	A572-65	0.911
33	55.25 - 55	0.25		12	34.967	35.013	0.6375	A572-65	0.947
34	55 - 52.05	7.5	4.55	12	35.013	36.400	0.6375	A572-65	0.940
35	52.05 - 47.05	5		12	34.934	35.880	0.7	A572-65	0.943
36	47.05 - 42.05	5		12	35.880	36.825	0.6875	A572-65	0.949
37	42.05 - 37.05	5		12	36.825	37.771	0.675	A572-65	0.956
38	37.05 - 34.95	2.1		12	37.771	38.169	0.675	A572-65	0.952
39	34.95 - 34.7	0.25		12	38.169	38.216	0.9875	A572-65	0.925
40	34.7 - 34.25	0.45		12	38.216	38.301	0.975	A572-65	0.936
41	34.25 - 34	0.25		12	38.301	38.348	0.675	A572-65	0.950
42	34 - 29	5		12	38.348	39.294	0.6625	A572-65	0.958
43	29 - 26.75	2.25		12	39.294	39.720	0.6625	A572-65	0.953
44	26.75 - 26.5	0.25		12	39.720	39.767	0.95	A572-65	0.938
45	26.5 - 25.25	1.25		12	39.767	40.003	0.95	A572-65	0.935
46	25.25 - 25	0.25		12	40.003	40.051	0.6625	A572-65	0.950
47	25 - 20	5		12	40.051	40.997	0.65	A572-65	0.959
48	20 - 16.75	3.25		12	40.997	41.611	0.65	A572-65	0.953
49	16.75 - 16.5	0.25		12	41.611	41.659	0.7625	A572-65	1.026
50	16.5 - 14.25	2.25		12	41.659	42.084	0.7625	A572-65	1.021
51	14.25 - 14	0.25		12	42.084	42.132	0.725	A572-65	0.962
52	14 - 9	5		12	42.132	43.077	0.7125	A572-65	0.968
53	9 - 4	5		12	43.077	44.023	0.7125	A572-65	0.959
54	4 - 0	4		12	44.023	44.780	0.7	A572-65	0.968

TNX Section Forces

Increment (ft): 5		TNX Output		
	Section Height (ft)	P_u (K)	M_{ux} (kip-ft)	V_u (K)
1	151 - 146	4.31	27.14	7.59
2	146 - 141	4.65	65.99	7.96
3	141 - 136	8.17	116.65	11.97
4	136 - 131	9.39	177.67	13.14
5	131 - 126	11.63	251.54	15.32
6	126 - 121	14.22	332.05	18.18
7	121 - 118.5	14.62	377.84	18.48
8	118.5 - 118.25	14.69	382.46	18.50
9	118.25 - 113.25	15.68	476.28	19.03
10	113.25 - 108.25	16.65	572.68	19.53
11	108.25 - 103.25	17.64	671.53	20.02
12	103.25 - 100.95	21.14	723.04	22.82
13	100.95 - 95.95	22.82	838.58	23.39
14	95.95 - 95	23.06	860.83	23.48
15	95 - 94.75	23.14	866.70	23.50
16	94.75 - 92.5	23.84	919.86	23.76
17	92.5 - 92.25	23.90	925.80	23.78
18	92.25 - 87.75	25.01	1033.78	24.23
19	87.75 - 87.5	25.11	1039.84	24.25
20	87.5 - 84	26.31	1125.38	24.64
21	84 - 83.75	26.38	1131.54	24.66
22	83.75 - 78.75	27.78	1256.02	25.14
23	78.75 - 73.75	29.22	1382.79	25.59
24	73.75 - 68.75	30.68	1511.78	26.02
25	68.75 - 64.75	31.86	1616.54	26.38
26	64.75 - 64.5	31.97	1623.14	26.40
27	64.5 - 63.25	32.45	1656.26	26.60
28	63.25 - 63	32.53	1662.91	26.62
29	63 - 58	34.03	1797.04	27.06
30	58 - 56.75	34.41	1830.90	27.17
31	56.75 - 56.5	34.54	1837.69	27.17
32	56.5 - 55.25	35.06	1871.73	27.31
33	55.25 - 55	35.15	1878.56	27.32
34	55 - 52.05	36.14	1959.50	27.58
35	52.05 - 47.05	39.19	2098.68	28.10
36	47.05 - 42.05	41.04	2240.11	28.50
37	42.05 - 37.05	42.92	2383.41	28.86
38	37.05 - 34.95	43.72	2444.13	29.01
39	34.95 - 34.7	43.86	2451.38	29.01
40	34.7 - 34.25	44.08	2464.44	29.05
41	34.25 - 34	44.18	2471.70	29.07
42	34 - 29	46.10	2617.83	29.41
43	29 - 26.75	46.97	2684.12	29.55
44	26.75 - 26.5	47.11	2691.50	29.55
45	26.5 - 25.25	47.75	2728.50	29.66
46	25.25 - 25	47.85	2735.91	29.66
47	25 - 20	49.82	2884.97	29.98
48	20 - 16.75	51.11	2982.66	30.18
49	16.75 - 16.5	51.24	2990.20	30.17
50	16.5 - 14.25	52.33	3058.25	30.34
51	14.25 - 14	52.45	3065.83	30.34
52	14 - 9	54.67	3218.27	30.66
53	9 - 4	56.92	3372.23	30.96
54	4 - 0	58.75	3496.48	31.20

Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
151 - 146	Pole	TP18.526x17.59x0.2188	Pole	8.0%	Pass
146 - 141	Pole	TP19.461x18.526x0.2188	Pole	17.1%	Pass
141 - 136	Pole	TP20.397x19.461x0.2188	Pole	27.9%	Pass
136 - 131	Pole	TP21.332x20.397x0.2188	Pole	39.1%	Pass
131 - 126	Pole	TP22.268x21.332x0.2188	Pole	51.4%	Pass
126 - 121	Pole	TP23.203x22.268x0.2188	Pole	63.4%	Pass
121 - 118.5	Pole	TP23.671x23.203x0.2188	Pole	69.7%	Pass
118.5 - 118.25	Pole + Reinf.	TP23.718x23.671x0.4938	Reinf. 9 Bolt-Shaft Bearing	46.2%	Pass
118.25 - 113.25	Pole + Reinf.	TP24.653x23.718x0.4813	Reinf. 9 Tension Rupture	52.9%	Pass
113.25 - 108.25	Pole + Reinf.	TP25.589x24.653x0.4688	Reinf. 9 Tension Rupture	60.2%	Pass
108.25 - 103.25	Pole + Reinf.	TP26.524x25.589x0.4625	Reinf. 9 Tension Rupture	66.9%	Pass
103.25 - 100.95	Pole + Reinf.	TP27.6x26.524x0.4563	Reinf. 9 Tension Rupture	70.4%	Pass
100.95 - 95.95	Pole + Reinf.	TP27.442x26.517x0.55	Reinf. 9 Tension Rupture	65.9%	Pass
95.95 - 95	Pole + Reinf.	TP27.617x27.442x0.55	Reinf. 9 Tension Rupture	67.0%	Pass
95 - 94.75	Pole + Reinf.	TP27.663x27.617x0.8	Reinf. 9 Tension Rupture	47.5%	Pass
94.75 - 92.5	Pole + Reinf.	TP28.079x27.663x0.7875	Reinf. 9 Tension Rupture	49.3%	Pass
92.5 - 92.25	Pole + Reinf.	TP28.126x28.079x0.55	Reinf. 8 Tension Rupture	69.9%	Pass
92.25 - 87.75	Pole + Reinf.	TP28.958x28.126x0.5375	Reinf. 8 Tension Rupture	74.5%	Pass
87.75 - 87.5	Pole + Reinf.	TP29.004x28.958x0.8625	Reinf. 8 Tension Rupture	48.0%	Pass
87.5 - 84	Pole + Reinf.	TP29.651x29.004x0.85	Reinf. 8 Tension Rupture	50.4%	Pass
84 - 83.75	Pole + Reinf.	TP29.697x29.651x0.6125	Reinf. 7 Tension Rupture	67.2%	Pass
83.75 - 78.75	Pole + Reinf.	TP30.622x29.697x0.6	Reinf. 7 Tension Rupture	71.2%	Pass
78.75 - 73.75	Pole + Reinf.	TP31.546x30.622x0.5875	Reinf. 7 Tension Rupture	74.8%	Pass
73.75 - 68.75	Pole + Reinf.	TP32.471x31.546x0.5875	Reinf. 7 Tension Rupture	78.2%	Pass
68.75 - 64.75	Pole + Reinf.	TP33.21x32.471x0.575	Reinf. 7 Tension Rupture	80.7%	Pass
64.75 - 64.5	Pole + Reinf.	TP33.257x33.21x0.85	Reinf. 7 Tension Rupture	56.0%	Pass
64.5 - 63.25	Pole + Reinf.	TP33.488x33.257x0.85	Reinf. 7 Tension Rupture	56.6%	Pass
63.25 - 63	Pole + Reinf.	TP33.534x33.488x0.575	Reinf. 6 Tension Rupture	81.8%	Pass
63 - 58	Pole + Reinf.	TP34.459x33.534x0.5625	Reinf. 6 Tension Rupture	84.7%	Pass
58 - 56.75	Pole + Reinf.	TP34.69x34.459x0.5625	Reinf. 6 Tension Rupture	85.3%	Pass
56.75 - 56.5	Pole + Reinf.	TP34.736x34.69x0.9125	Reinf. 6 Tension Rupture	54.5%	Pass
56.5 - 55.25	Pole + Reinf.	TP34.967x34.736x0.9125	Reinf. 6 Tension Rupture	55.0%	Pass
55.25 - 55	Pole + Reinf.	TP35.013x34.967x0.6375	Reinf. 5 Compression	72.3%	Pass
55 - 52.05	Pole + Reinf.	TP36.4x35.013x0.6375	Reinf. 5 Compression	73.7%	Pass
52.05 - 47.05	Pole + Reinf.	TP35.88x34.934x0.7	Reinf. 5 Compression	70.9%	Pass
47.05 - 42.05	Pole + Reinf.	TP36.825x35.88x0.6875	Reinf. 5 Compression	72.7%	Pass
42.05 - 37.05	Pole + Reinf.	TP37.771x36.825x0.675	Reinf. 5 Compression	74.3%	Pass
37.05 - 34.95	Pole + Reinf.	TP38.169x37.771x0.675	Reinf. 5 Compression	75.0%	Pass
34.95 - 34.7	Pole + Reinf.	TP38.216x38.169x0.9875	Reinf. 4 Bolt Shear	54.4%	Pass
34.7 - 34.25	Pole + Reinf.	TP38.301x38.216x0.975	Reinf. 5 Bolt Shear	54.5%	Pass
34.25 - 34	Pole + Reinf.	TP38.348x38.301x0.675	Reinf. 4 Compression	75.3%	Pass
34 - 29	Pole + Reinf.	TP39.294x38.348x0.6625	Reinf. 4 Compression	76.7%	Pass
29 - 26.75	Pole + Reinf.	TP39.72x39.294x0.6625	Reinf. 4 Compression	77.3%	Pass
26.75 - 26.5	Pole + Reinf.	TP39.767x39.72x0.95	Reinf. 2 Bolt Shear	56.5%	Pass
26.5 - 25.25	Pole + Reinf.	TP40.003x39.767x0.95	Reinf. 4 Bolt Shear	56.8%	Pass
25.25 - 25	Pole + Reinf.	TP40.051x40.003x0.6625	Reinf. 2 Compression	77.8%	Pass
25 - 20	Pole + Reinf.	TP40.997x40.051x0.65	Reinf. 2 Compression	79.0%	Pass
20 - 16.75	Pole + Reinf.	TP41.611x40.997x0.65	Reinf. 2 Compression	79.8%	Pass
16.75 - 16.5	Pole + Reinf.	TP41.659x41.611x0.7625	Reinf. 3 Compression	73.3%	Pass
16.5 - 14.25	Pole + Reinf.	TP42.084x41.659x0.7625	Reinf. 3 Compression	73.8%	Pass
14.25 - 14	Pole + Reinf.	TP42.132x42.084x0.725	Reinf. 3 Compression	74.3%	Pass
14 - 9	Pole + Reinf.	TP43.077x42.132x0.7125	Reinf. 3 Compression	75.4%	Pass
9 - 4	Pole + Reinf.	TP44.023x43.077x0.7125	Reinf. 3 Compression	76.3%	Pass
4 - 0	Pole + Reinf.	TP44.78x44.023x0.7	Reinf. 3 Bolt Shear	79.8%	Pass
				Summary	
			Pole	69.7%	Pass
			Reinforcement	85.3%	Pass
			Overall	85.3%	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	R9
151 - 146	552	n/a	552	12.88	n/a	12.88	8.0%									
146 - 141	641	n/a	641	13.53	n/a	13.53	17.1%									
141 - 136	740	n/a	740	14.19	n/a	14.19	27.9%									
136 - 131	847	n/a	847	14.85	n/a	14.85	39.1%									
131 - 126	965	n/a	965	15.51	n/a	15.51	51.4%									
126 - 121	1093	n/a	1093	16.17	n/a	16.17	63.4%									
121 - 118.5	1161	n/a	1161	16.50	n/a	16.50	69.7%									
118.5 - 118.25	1168	1402	2571	16.53	18.00	34.53	30.9%									46.2%
118.25 - 113.25	1313	1508	2822	17.19	18.00	35.19	36.9%									52.9%
113.25 - 108.25	1470	1618	3088	17.84	18.00	35.84	42.7%									60.2%
108.25 - 103.25	1639	1732	3371	18.50	18.00	36.50	48.3%									66.9%
103.25 - 100.95	1720	1786	3506	18.81	18.00	36.81	51.4%									70.4%
100.95 - 95.95	2568	1848	4416	27.26	18.00	45.26	42.0%									65.9%
95.95 - 95	2618	1870	4489	27.44	18.00	45.44	42.8%									67.0%
95 - 94.75	2631	3753	6384	27.48	36.00	63.48	30.4%								47.5%	47.5%
94.75 - 92.5	2753	3861	6614	27.90	36.00	63.90	31.7%								49.3%	49.3%
92.5 - 92.25	2767	1936	4704	27.95	18.00	45.95	45.0%								69.9%	
92.25 - 87.75	3023	2047	5070	28.78	18.00	46.78	48.4%								74.5%	
87.75 - 87.5	3038	4887	7924	28.83	42.38	71.20	31.2%							47.5%	48.0%	
87.5 - 84	3248	5095	8343	29.48	42.38	71.85	33.0%							49.8%	50.4%	
84 - 83.75	3263	2963	6226	29.53	24.38	53.90	44.6%							67.2%		
83.75 - 78.75	3581	3140	6721	30.46	24.38	54.83	47.8%							71.2%		
78.75 - 73.75	3919	3322	7241	31.38	24.38	55.76	50.8%							74.8%		
73.75 - 68.75	4277	3509	7786	32.31	24.38	56.69	53.8%							78.2%		
68.75 - 64.75	4579	3663	8242	33.06	24.38	57.43	56.1%							80.7%		
64.75 - 64.5	4598	7345	11943	33.10	48.75	81.85	38.9%						56.0%	56.0%		
64.5 - 63.25	4696	7442	12138	33.33	48.75	82.08	39.5%						56.6%	56.6%		
63.25 - 63	4716	3731	8447	33.38	24.38	57.76	57.0%						81.8%			
63 - 58	5120	3930	9050	34.31	24.38	58.69	59.8%						84.7%			
58 - 56.75	5225	3980	9205	34.54	24.38	58.92	60.5%						85.3%			
56.75 - 56.5	5246	9248	14494	34.59	56.25	90.84	38.6%					53.8%	54.5%			
56.5 - 55.25	5352	9365	14718	34.82	56.25	91.07	39.1%					52.4%	55.0%			
55.25 - 55	5374	5338	10712	34.87	31.88	66.74	54.0%					72.3%				
55 - 52.05	5631	5496	11128	35.42	31.88	67.29	55.5%					73.7%				
52.05 - 47.05	6907	5591	12498	42.81	31.88	74.69	49.8%					70.9%				
47.05 - 42.05	7474	5874	13349	43.95	31.88	75.83	51.6%					72.7%				
42.05 - 37.05	8071	6165	14236	45.09	31.88	76.97	53.3%					74.3%				
37.05 - 34.95	8331	6289	14620	45.57	31.88	77.45	54.0%					75.0%				
34.95 - 34.7	8363	12608	20970	45.63	63.75	109.38	37.8%				54.4%	52.5%				
34.7 - 34.25	8419	12661	21081	45.73	63.75	109.48	38.0%				52.6%	54.5%				
34.25 - 34	8451	6346	14796	45.79	31.88	77.66	54.3%				75.3%					
34 - 29	9098	6648	15746	46.93	31.88	78.80	55.9%				76.7%					
29 - 26.75	9400	6786	16186	47.44	31.88	79.32	56.6%				77.3%					
26.75 - 26.5	9434	13603	23036	47.50	63.75	111.25	40.0%		56.5%	56.5%	54.5%					
26.5 - 25.25	9605	13758	23362	47.78	63.75	111.53	40.3%		54.8%	54.8%	56.8%					
25.25 - 25	9639	6894	16533	47.84	31.88	79.71	57.2%		77.8%	77.8%						
25 - 20	10345	7209	17554	48.98	31.88	80.86	58.7%		79.0%	79.0%						
20 - 16.75	10822	7418	18240	49.72	31.88	81.60	59.7%		79.8%	79.8%						
16.75 - 16.5	11042	10621	21663	49.78	53.13	102.90	55.0%	56.6%	49.9%	73.3%						
16.5 - 14.25	11385	10831	22216	50.29	53.13	103.42	55.6%	55.1%	52.1%	73.8%						
14.25 - 14	11291	9973	21264	50.35	42.50	92.85	57.2%	66.5%		74.3%						
14 - 9	12075	10408	22483	51.49	42.50	93.99	58.6%	67.5%		75.4%						
9 - 4	12893	10853	23746	52.63	42.50	95.13	60.0%	68.5%		76.3%						
4 - 0	13574	11216	24790	53.54	42.50	96.04	61.1%	71.7%		79.8%						

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

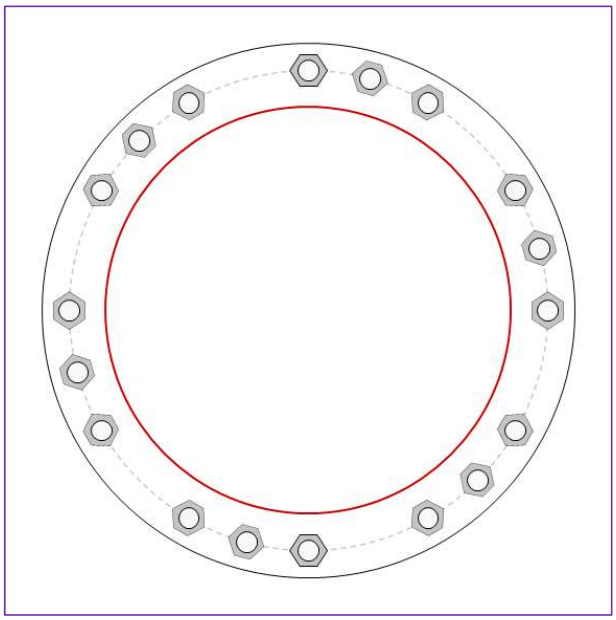
Monopole Base Plate Connection

Site Info	
BU #	841295
Site Name	BETHANY
Order #	553359 Rev. 1

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

Applied Loads	
Moment (kip-ft)	3496.48
Axial Force (kips)	58.75
Shear Force (kips)	31.20

**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 52.75" BC

GROUP 2: (6) 2-1/4" ø bolts (Williams All-Thread Bar N; Fy=127.7 ksi, Fu=125 ksi) on 52

Base Plate Data

58.75" OD x 3" Plate (A572-60; Fy=60 ksi, Fu=75 ksi)

Stiffener Data

N/A

Pole Data

44.78" x 0.375" 12-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Analysis Results

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

GROUP 1:			
	Pu_t = 157.86	ϕPn_t = 243.75	**Stress Rating**
	Vu = 2.6	ϕVn = 149.1	**61.7%**
	Mu = n/a	ϕMn = n/a	**Pass**
GROUP 2:			
	Pu_t = 204.32	ϕPn_t = 382.5	**Stress Rating**
	Vu = 0	ϕVn = 191.25	**50.9%**
	Mu = n/a	ϕMn = n/a	**Pass**

Base Plate Summary

Max Stress (ksi):	15.95	(Flexural)
Allowable Stress (ksi):	54	
Stress Rating:	**28.1%**	**Pass**

CCIplate

Elevation (ft)	0	*(Base)*

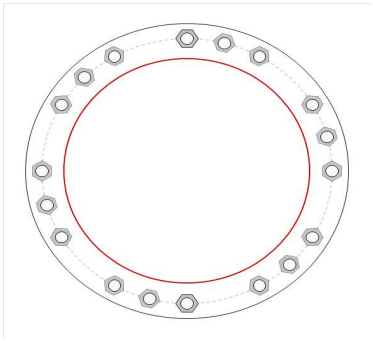
note: Bending interaction not considered when Grout Considered = "Yes"

Bolt Group	Resist Axial	Resist Shear	Induce Plate Bending	Grout Considered	Apply at BARB Elevation	BARB CL Elevation (ft)
1	Yes	Yes	Yes	No	No	
2	No	No	No	No	No	

Custom Bolt Connection

Bolt	Bolt Group ID	Location (deg.)	Diameter (in)	Material	Bolt Circle (in)	Eta Factor, η:	l_{er} (in):	Thread Type	Area Override, in^2	Tension Only
1	1	0	2.25	A615-75	52.75	0.5	1.75	N-Included		No
2	1	30	2.25	A615-75	52.75	0.5	1.75	N-Included		No
3	1	60	2.25	A615-75	52.75	0.5	1.75	N-Included		No
4	1	90	2.25	A615-75	52.75	0.5	1.75	N-Included		No
5	1	120	2.25	A615-75	52.75	0.5	1.75	N-Included		No
6	1	150	2.25	A615-75	52.75	0.5	1.75	N-Included		No
7	1	180	2.25	A615-75	52.75	0.5	1.75	N-Included		No
8	1	210	2.25	A615-75	52.75	0.5	1.75	N-Included		No
9	1	240	2.25	A615-75	52.75	0.5	1.75	N-Included		No
10	1	270	2.25	A615-75	52.75	0.5	1.75	N-Included		No
11	1	300	2.25	A615-75	52.75	0.5	1.75	N-Included		No
12	1	330	2.25	A615-75	52.75	0.5	1.75	N-Included		No
13	2	15	2.25	liams All-Thread	52.75	0.5	0	N-Included	4.08	No
14	2	75	2.25	liams All-Thread	52.75	0.5	0	N-Included	4.08	No
15	2	135	2.25	liams All-Thread	52.75	0.5	0	N-Included	4.08	No
16	2	195	2.25	liams All-Thread	52.75	0.5	0	N-Included	4.08	No
17	2	255	2.25	liams All-Thread	52.75	0.5	0	N-Included	4.08	No
18	2	315	2.25	liams All-Thread	52.75	0.5	0	N-Included	4.08	No

Plot Graphic



Pier and Pad Foundation

BU # :	841295
Site Name:	BETHANY
App. Number:	553359 Rev. 1

TIA-222 Revision:	H
Tower Type:	Monopole

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

Superstructure Analysis Reactions		
Compression, P_{comp}:	58.76	kips
Base Shear, Vu_comp:	31.18	kips
Moment, M_u:	3496.48	ft-kips
Tower Height, **H**:	151	ft
BP Dist. Above Fdn, bp_{dist}:	4	in

Pier Properties		
Pier Shape:	Square	
Pier Diameter, **dpier**:	6	ft
Ext. Above Grade, **E**:	0.5	ft
Pier Rebar Size, **Sc**:	11	
Pier Rebar Quantity, **mc**:	36	
Pier Tie/Spiral Size, **St**:	4	
Pier Tie/Spiral Quantity, **mt**:	9	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier}:	3	in

Pad Properties		
Depth, **D**:	7.5	ft
Pad Width, W_1:	22	ft
Pad Thickness, **T**:	3	ft
Pad Rebar Size (Top dir.2), Sp_{top2}:	7	
Pad Rebar Quantity (Top dir. 2), mp_{top2}:	24	
Pad Rebar Size (Bottom dir. 2), Sp_2:	7	
Pad Rebar Quantity (Bottom dir. 2), mp_2:	24	
Pad Clear Cover, cc_{pad}:	3	in

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

Soil Properties		
Total Soil Unit Weight, γ:	130	pcf
Ultimate Gross Bearing, Qult:	30.000	ksf
Cohesion, **Cu**:	0.000	ksf
Friction Angle, φ:	40	degrees
SPT Blow Count, N_{blows}:	69	
Base Friction, μ:	0.5	
Neglected Depth, **N**:	3.00	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, **gw**:	3.3	ft

<--Toggle between Gross and Net

Foundation Analysis Checks				
	Capacity	**Demand**	**Rating***	**Check**
Lateral (Sliding) (kips)	298.20	31.18	**10.0%**	**Pass**
Bearing Pressure (ksf)	22.50	3.91	**17.4%**	**Pass**
*Overturning (kip*ft)*	4956.91	3756.31	**75.8%**	**Pass**
*Pier Flexure (Comp.) (kip*ft)*	6897.24	3652.38	**50.4%**	**Pass**
Pier Compression (kip)	17184.96	87.93	**0.5%**	**Pass**
*Pad Flexure (kip*ft)*	2011.77	2108.29	**99.8%**	**Pass**
Pad Shear - 1-way (kips)	687.30	304.08	**42.1%**	**Pass**
Pad Shear - 2-way (Comp) (ksi)	0.164	0.000	**0.0%**	**Pass**
*Flexural 2-way (Comp) (kip*ft)*	2700.20	2191.43	**77.3%**	**Pass**

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

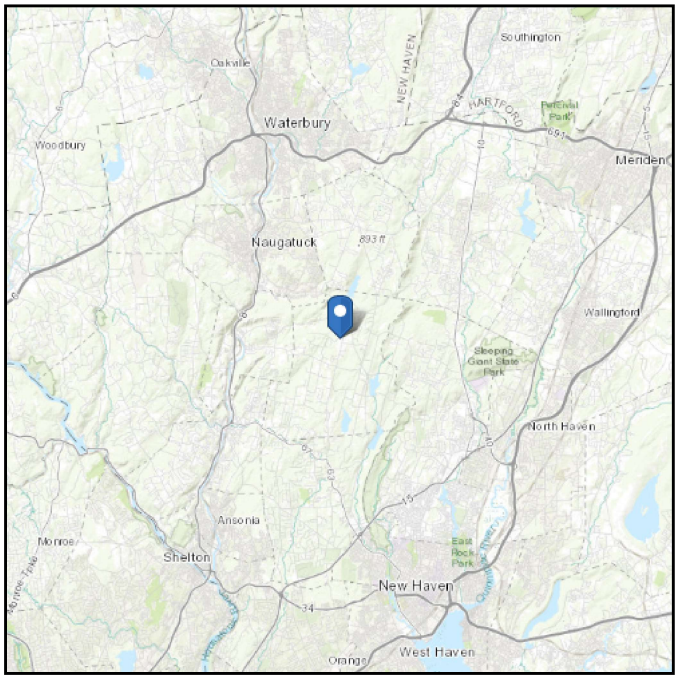
Structural Rating*:	**99.8%**
Soil Rating*:	**75.8%**

ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 741.6 ft (NAVD 88)
Latitude: 41.442758
Longitude: -72.992461



Wind

Results:

Wind Speed:	125 Vmph *wind speed per jurisdiction specific requirements
10-year MRI	76 Vmph
25-year MRI	86 Vmph
50-year MRI	93 Vmph
100-year MRI	99 Vmph
Data Source:	ASCE/SEI 7-10, Fig. 26.5-1A and Figs. CC-1–CC-4, incorporating errata of March 12, 2014
Date Accessed:	Wed Nov 04 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.

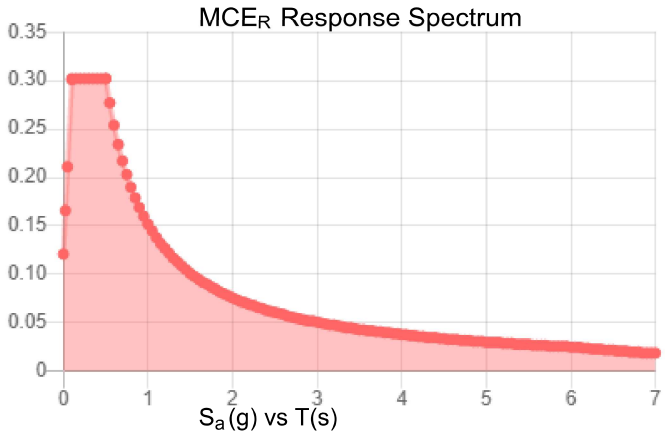
Seismic

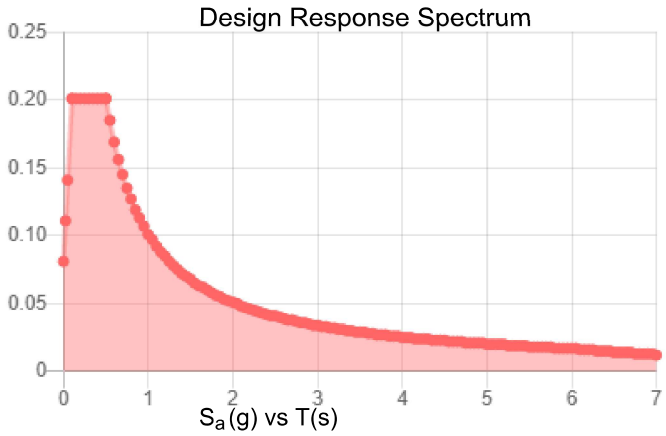
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.189	S_{DS} :	0.201
S_1 :	0.063	S_{D1} :	0.101
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.098
S_{MS} :	0.302	PGA_M :	0.158
S_{M1} :	0.152	F_{PGA} :	1.6
		I_e :	1

Seismic Design Category B





Data Accessed: Wed Nov 04 2020

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

Ice

Results:

Ice Thickness:	0.75 in.
Concurrent Temperature:	15 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Wed Nov 04 2020

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

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

Exhibit E

Mount Analysis

Date: **July 29, 2021**

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

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

Subject:	**Mount Replacement Analysis Report**	
Carrier Designation:	**Dish Network Dish 5G**	
	Carrier Site Number:	BOHVN00015A
	Carrier Site Name:	CT-CCI-T-841295
Crown Castle Designation:	**Crown Castle BU Number:**	841295
	Crown Castle Site Name:	Bethany
	Crown Castle JDE Job Number:	645141
	Crown Castle Order Number:	553359 Rev. 1
Engineering Firm Designation:	**Trylon Report Designation:**	189033
Site Data:	**755 Amity Rd., Bethany, New Haven County, CT, 06524**	
	Latitude 41°26'33.93" Longitude -72°59'32.86"	
Structure Information:	**Tower Height & Type:**	**151.0 ft Monopole**
	Mount Elevation:	**103.0 ft**
	Mount Type:	**8.0 ft Platform**

Dear Darcy Tarr,

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

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

Platform **Sufficient***

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

This analysis utilizes an ultimate 3-second gust wind speed of 125 mph as required by the 2018 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Mount analysis prepared by: Aura Baltoiu

Respectfully Submitted by:
Cliff Abernathy, P.E.

Cliff Abernathy

Digitally signed by Cliff Abernathy
Date: 2021.07.29 14:44:14 -04'00'

TABLE OF CONTENTS

1) INTRODUCTION

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

2) ANALYSIS CRITERIA

Building Code:	2015 IBC
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Ultimate Wind Speed:	125 mph
Exposure Category:	B
Topographic Factor at Base:	1.00
Topographic Factor at Mount:	1.00
Ice Thickness:	1.5 in
Wind Speed with Ice:	50 mph
Seismic S_s:	0.189
Seismic S_1:	0.063
Live Loading Wind Speed:	30 mph
Man Live Load at Mid/End-Points:	250 lb
Man Live Load at Mount Pipes:	500 lb

Table 1 - Proposed Equipment Configuration

Mount Centerline (ft)	Antenna Centerline (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Mount / Modification Details
103.0	103.0	3	JMA WIRELESS	MX08FRO665-21	8.0 ft Platform **[Commscope, MC-PK8-C]**
		3	FUJITSU	TA08025-B604	
		3	FUJITSU	TA08025-B605	
		1	RAYCAP	RDIDC-9181-PF-48	

3) ANALYSIS PROCEDURE

Table 2 - Documents Provided

Document	Remarks	Reference	Source
Crown Application	Dish Network Application	553359, Rev.1	CCI Sites
Mount Manufacturer Drawings	Commscope	MC-PR8-C	Trylon

3.1) Analysis Method

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

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

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

3.2) Assumptions

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

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

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

4) ANALYSIS RESULTS

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

Notes	Component	Critical Member	Centerline (ft)	% Capacity	Pass / Fail
1,2	Mount Pipe(s)	MP1	103.0	27.9	Pass
	Horizontal(s)	H1		10.1	Pass
	Standoff(s)	SA2		46.0	Pass
	Bracing(s)	PB2		35.0	Pass
	Handrail(s)	M19		11.8	Pass
	Corner Angle(s)	CP2		4.2	Pass
	Plate(s)	CP5		19.8	Pass
	Mount Connection(s)	-		18.5	Pass

Structure Rating (max from all components) =	**46.0%**

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

4.1) Recommendations

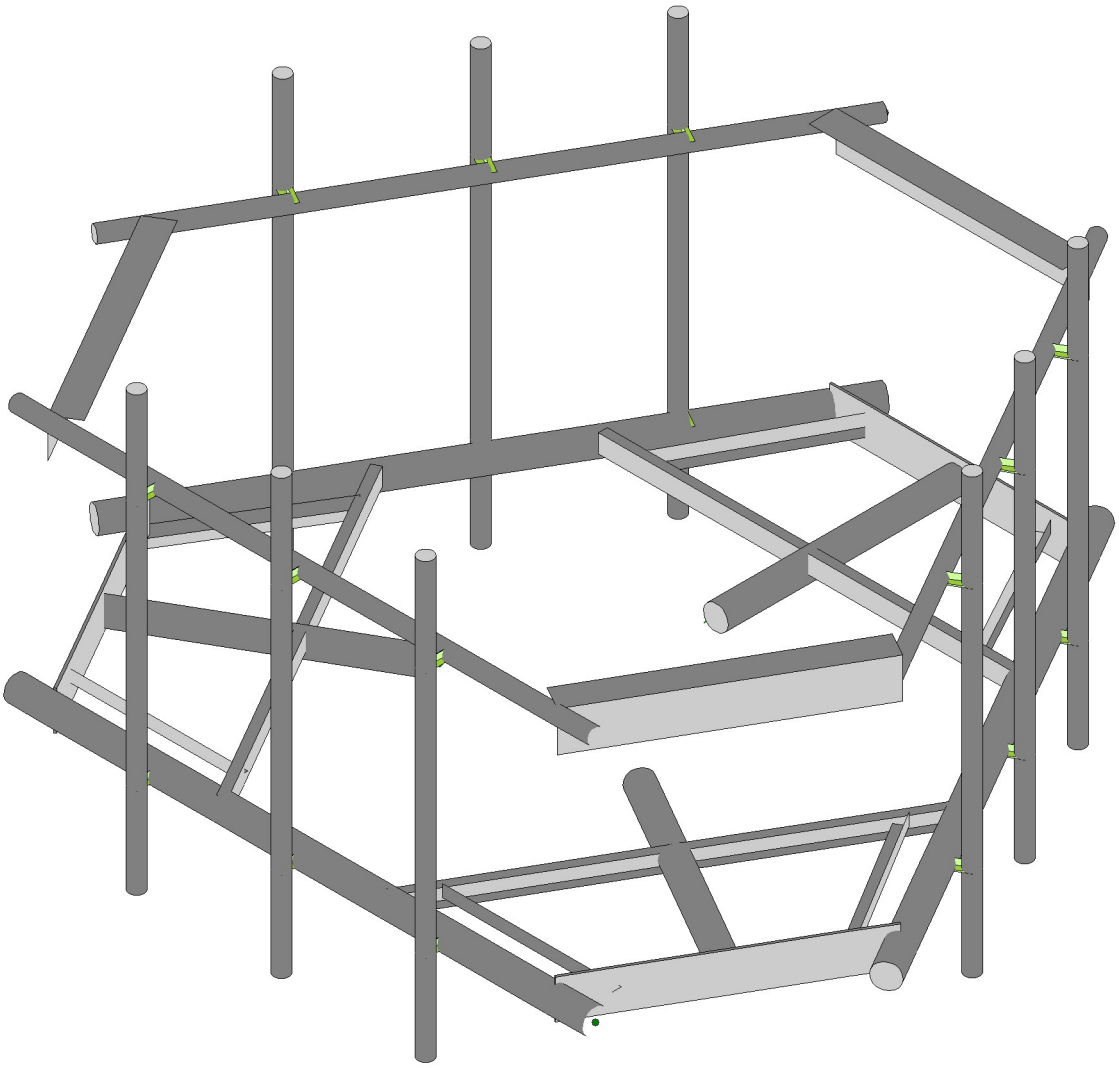
The mount has sufficient capacity to carry the proposed loading configuration. In order for the results of the analysis to be considered valid, the proposed mount listed below must be installed.

1. Commscope, MC-PK8-C.

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

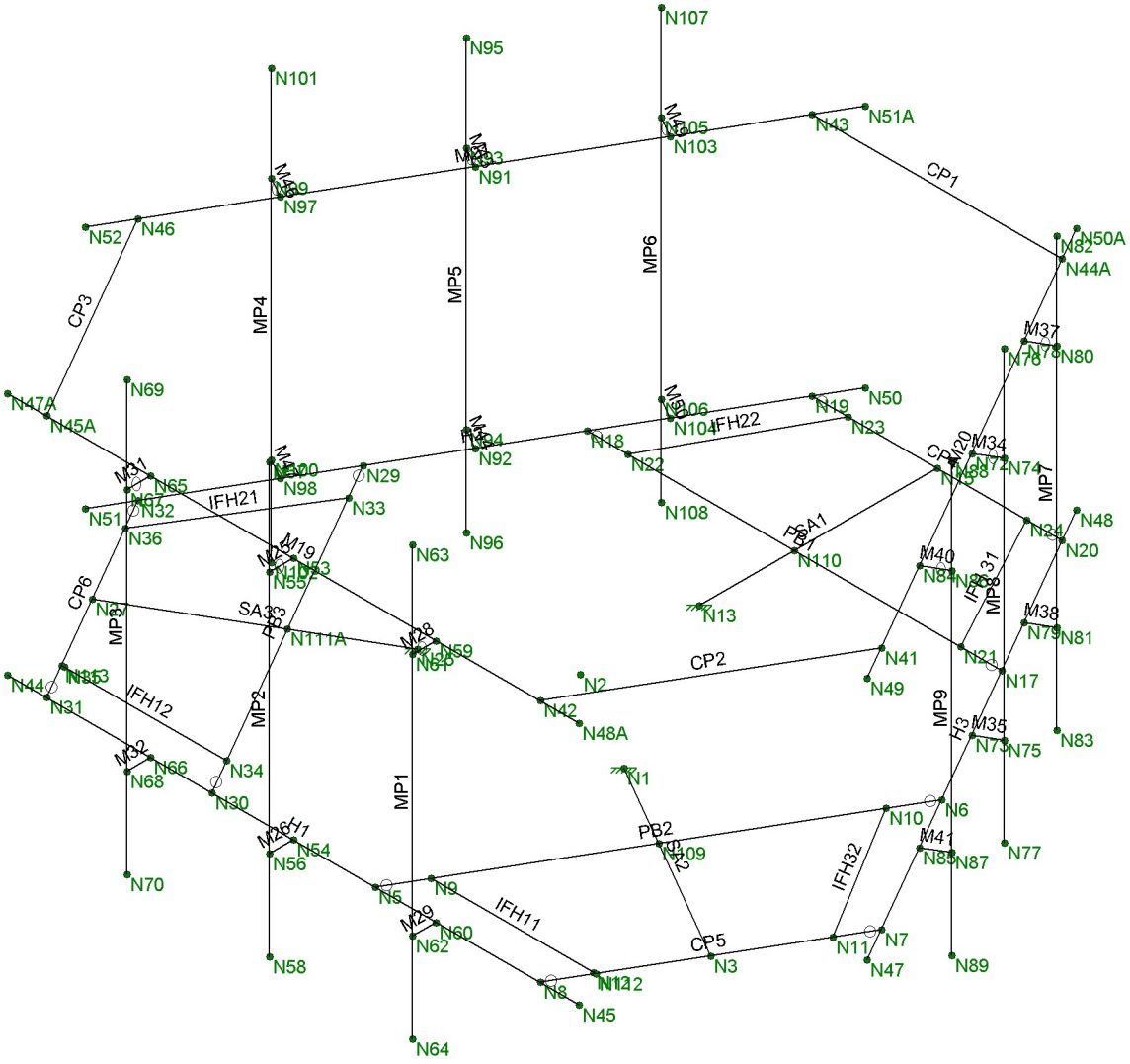
APPENDIX A

WIRE FRAME AND RENDERED MODELS



Envelope Only Solution

Trylon	841295	SK - 1
AB		July 28, 2021 at 6:12 AM
189033		841295.r3d



Envelope Only Solution

Trylon	841295	SK - 2
AB		July 28, 2021 at 6:12 AM
189033		841295.r3d

APPENDIX B

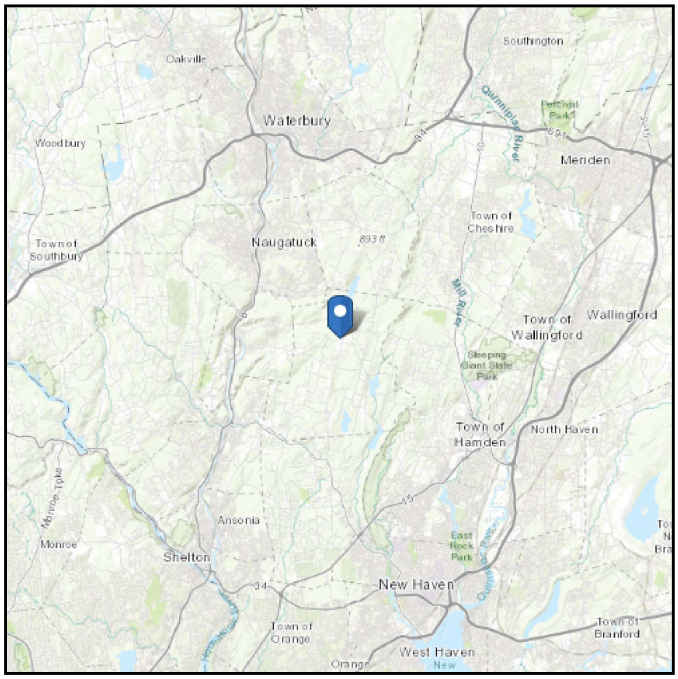
SOFTWARE INPUT CALCULATIONS

ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 741.6 ft (NAVD 88)
Latitude: 41.442758
Longitude: -72.992461



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: Tue Jul 27 2021

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

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

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

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

TIA LOAD CALCULATOR 2.0

PROJECT DATA	
Job Code:	189033
Carrier Site ID:	BOHVN00015A
Carrier Site Name:	CT-CCI-T-841295

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

STRUCTURE DETAILS		
Mount Type:	Platform	--
Mount Elevation:	103.0	ft.
Number of Sectors:	3	--
Structure Type:	Self Support Tower	--
Structure Height:	151.0	ft.

ANALYSIS CRITERIA		
Structure Risk Category:	II	--
Exposure Category:	B	--
Site Class:	D - Stiff Soil	--
Ground Elevation:	741.6	ft.

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

WIND PARAMETERS		
Design Wind Speed:	125	mph
Wind Escalation Factor (K_s):	1.00	--
Velocity Coefficient (K_z):	1.00	--
Directionality Factor (K_d):	0.95	--
Gust Effect Factor (Gh):	1.00	--
Shielding Factor (K_a):	0.90	--
Velocity Pressure (q_z):	36.87	psf

ICE PARAMETERS		
Design Ice Wind Speed:	50	mph
Design Ice Thickness (t_i):	1.50	in
Importance Factor (I_i):	1.00	--
Ice Velocity Pressure (q_{zi}):	36.87	psf
Mount Ice Thickness (t_{iz}):	1.68	in

WIND STRUCTURE CALCULATIONS		
Flat Member Pressure:	66.36	psf
Round Member Pressure:	39.82	psf
Ice Wind Pressure:	7.16	psf

SEISMIC PARAMETERS		
Importance Factor (I_e):	1.00	--
Short Period Accel .(S_s):	0.189	g
1 Second Accel (S_1):	0.063	g
Short Period Des. (S_{DS}):	0.20	g
1 Second Des. (S_{D1}):	0.10	g
Short Period Coeff. (F_a):	1.60	--
1 Second Coeff. (F_v):	2.40	--
Response Coefficient (Cs):	0.10	--
Amplification Factor (A_S):	1.20	--

LOAD COMBINATIONS [LRFD]

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

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

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

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

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

EQUIPMENT LOADING

Appurtenance Name/Location	Qty.	Elevation [ft]	--	EPA_N (ft2)	EPA_T (ft2)	Weight (lbs)
MX08FRO665-21	3	103	No Ice	8.01	3.21	82.50
MP2/MP5/MP8, 0/120/240	--	--	w/ Ice	9.62	4.62	274.91
TA08025-B604	3	103	No Ice	1.96	0.98	63.90
MP2/MP5/MP8, 0/120/240	--	--	w/ Ice	2.37	1.30	67.36
TA08025-B605	3	103	No Ice	1.96	1.13	75.00
MP2/MP5/MP8, 0/120/240	--	--	w/ Ice	2.37	1.46	71.78
RDIDC-9181-PF-48	1	103	No Ice	2.01	1.17	21.85
MP2, 0	--	--	w/ Ice	2.43	1.51	70.74
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
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			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			

EQUIPMENT LOADING [CONT.]

Appurtenance Name/Location	Qty.	Elevation [ft]	--	EPA $_N$ (ft2)	EPA $_T$ (ft2)	Weight (lbs)
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			

EQUIPMENT WIND CALCULATIONS

Appurtenance Name	Qty.	Elevation [ft]	K_{zt}	K_z	K_d	t_d	q_z [psf]	q_{zi} [psf]
MX08FRO665-21	3	103	1.00	1.00	0.95	1.68	36.87	5.90
TA08025-B604	3	103	1.00	1.00	0.95	1.68	36.87	5.90
TA08025-B605	3	103	1.00	1.00	0.95	1.68	36.87	5.90
RDIDC-9181-PF-48	1	103	1.00	1.00	0.95	1.68	36.87	5.90

EQUIPMENT LATERAL WIND FORCE CALCULATIONS

Appurtenance Name	Qty.	--	0° 180°	30° 210°	60° 240°	90° 270°	120° 300°	150° 330°
MX08FRO665-21	3	No Ice	265.78	146.33	225.96	106.51	225.96	146.33
MP2/MP5/MP8, 0/120/240	--	w/ Ice	51.08	31.18	44.45	24.54	44.45	31.18
TA08025-B604	3	No Ice	65.15	40.70	57.00	32.56	57.00	40.70
MP2/MP5/MP8, 0/120/240	--	w/ Ice	12.60	8.33	11.18	6.90	11.18	8.33
TA08025-B605	3	No Ice	65.15	44.40	58.23	37.48	58.23	44.40
MP2/MP5/MP8, 0/120/240	--	w/ Ice	12.60	8.97	11.39	7.76	11.39	8.97
RDIDC-9181-PF-48	1	No Ice	66.76	45.76	59.76	38.76	59.76	45.76
MP2, 0	--	w/ Ice	12.89	9.25	11.68	8.04	11.68	9.25
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
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		No Ice						
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		No Ice						
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		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						

EQUIPMENT LATERAL WIND FORCE CALCULATIONS [CONT.]

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

EQUIPMENT SEISMIC FORCE CALCULATIONS

Appurtenance Name	Qty.	Elevation [ft]	Weight [lbs]	F_p [lbs]
MX08FRO665-21	3	103	82.5	9.98
TA08025-B604	3	103	63.9	7.73
TA08025-B605	3	103	75	9.07
RDIDC-9181-PF-48	1	103	21.85	2.64

APPENDIX C

SOFTWARE ANALYSIS OUTPUT

(Global) Model Settings

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

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

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

(Global) Model Settings, Continued

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

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (/1E5 F)	Density[k/ft^3]	Yield[psi]	Ry	Fu[psi]	Rt
1	A992	29000	11154	.3	.65	.49	50000	1.1	65000	1.1
2	A36 Gr.36	29000	11154	.3	.65	.49	36000	1.5	58000	1.2
3	A572 Gr.50	29000	11154	.3	.65	.49	50000	1.1	65000	1.1
4	A500 Gr.B RND	29000	11154	.3	.65	.527	42000	1.4	58000	1.3
5	A500 Gr.B Rect	29000	11154	.3	.65	.527	46000	1.4	58000	1.3
6	A53 Gr.B	29000	11154	.3	.65	.49	35000	1.6	60000	1.2
7	A1085	29000	11154	.3	.65	.49	50000	1.4	65000	1.3

Cold Formed Steel Properties

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

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design ...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Plates	6.5"x0.37" Plate	Beam	RECT	A53 Gr.B	Typical	2.405	.027	8.468	.106
2	Grating Bracing	L2x2x3	Beam	Single Angle	A36 Gr.36	Typical	.722	.271	.271	.009
3	Standoffs	PIPE 3.5	Beam	Pipe	A53 Gr.B	Typical	2.5	4.52	4.52	9.04
4	Standoff Bracing	C3X5	Beam	Channel	A36 Gr.36	Typical	1.47	.241	1.85	.043
5	Handrails	PIPE 2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
6	Handrail Corners	6.6x4.46x0.25	Beam	Single Angle	A36 Gr.36	Typical	2.702	4.759	12.473	.055
7	Horizontals	PIPE_3.5	Beam	Pipe	A53 Gr.B	Typical	2.5	4.52	4.52	9.04

Hot Rolled Steel Section Sets (Continued)

	Label	Shape	Type	Design List	Material	Design ...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
8	Mount Pipes	PIPE 2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25

Cold Formed Steel Section Sets

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

Joint Boundary Conditions

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

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribu...	Area (M...	Surface...
1	Self Weight	DL			-1		13		3	
2	Structure Wind X	WLX						33		
3	Structure Wind Y	WLY						33		
4	Wind Load 0 AZI	WLX					13			
5	Wind Load 30 AZI	None					26			
6	Wind Load 45 AZI	None					26			
7	Wind Load 60 AZI	None					26			
8	Wind Load 90 AZI	WLY					13			
9	Wind Load 120 AZI	None					26			
10	Wind Load 135 AZI	None					26			
11	Wind Load 150 AZI	None					26			
12	Ice Weight	OL1					13	33	3	
13	Structure Ice Wind X	OL2						33		
14	Structure Ice Wind Y	OL3						33		
15	Ice Wind Load 0 AZI	OL2					13			
16	Ice Wind Load 30 AZI	None					26			
17	Ice Wind Load 45 AZI	None					26			
18	Ice Wind Load 60 AZI	None					26			
19	Ice Wind Load 90 AZI	OL3					13			
20	Ice Wind Load 120 AZI	None					26			
21	Ice Wind Load 135 AZI	None					26			
22	Ice Wind Load 150 AZI	None					26			
23	Seismic Load X	ELX	-.121				13			
24	Seismic Load Y	ELY		-.121			13			
25	Live Load 1 (Lv)	LL					1			
26	Live Load 2 (Lv)	LL					1			
27	Live Load 3 (Lv)	LL					1			
28	Live Load 4 (Lv)	LL					1			
29	Live Load 5 (Lv)	LL					1			
30	Live Load 6 (Lv)	LL					1			
31	Maintenance Load 1 (Lm)	None					1			
32	Maintenance Load 2 (Lm)	None					1			
33	Maintenance Load 3 (Lm)	None					1			

Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribu...	Area (M...	Surface...
34	Maintenance Load 4 (Lm)	None					1			
35	Maintenance Load 5 (Lm)	None					1			
36	Maintenance Load 6 (Lm)	None					1			
37	Maintenance Load 7 (Lm)	None					1			
38	Maintenance Load 8 (Lm)	None					1			
39	Maintenance Load 9 (Lm)	None					1			
40	BLC 1 Transient Area Loads	None						9		
41	BLC 12 Transient Area Loads	None						9		

Load Combinations

	Description	Solve	PD...	SR...	B...	Factor	BLC	Factor	B...	Fa...	B...	Fa...	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
1	1.4DL	Yes	Y		DL	1.4																		
2	1.2DL + 1WL 0 AZI	Yes	Y		DL	1.2	2	1	3		4	1												
3	1.2DL + 1WL 30 AZI	Yes	Y		DL	1.2	2	.866	3	.5	5	1												
4	1.2DL + 1WL 45 AZI	Yes	Y		DL	1.2	2	.707	3	.707	6	1												
5	1.2DL + 1WL 60 AZI	Yes	Y		DL	1.2	2	.5	3	.866	7	1												
6	1.2DL + 1WL 90 AZI	Yes	Y		DL	1.2	2		3	1	8	1												
7	1.2DL + 1WL 120 AZI	Yes	Y		DL	1.2	2	-.5	3	.866	9	1												
8	1.2DL + 1WL 135 AZI	Yes	Y		DL	1.2	2	-.707	3	.707	10	1												
9	1.2DL + 1WL 150 AZI	Yes	Y		DL	1.2	2	-.866	3	.5	11	1												
10	1.2DL + 1WL 180 AZI	Yes	Y		DL	1.2	2	-1	3		4	-1												
11	1.2DL + 1WL 210 AZI	Yes	Y		DL	1.2	2	-.866	3	-.5	5	-1												
12	1.2DL + 1WL 225 AZI	Yes	Y		DL	1.2	2	-.707	3	-.7...	6	-1												
13	1.2DL + 1WL 240 AZI	Yes	Y		DL	1.2	2	-.5	3	-.8...	7	-1												
14	1.2DL + 1WL 270 AZI	Yes	Y		DL	1.2	2		3	-1	8	-1												
15	1.2DL + 1WL 300 AZI	Yes	Y		DL	1.2	2	.5	3	-.8...	9	-1												
16	1.2DL + 1WL 315 AZI	Yes	Y		DL	1.2	2	.707	3	-.7...	10	-1												
17	1.2DL + 1WL 330 AZI	Yes	Y		DL	1.2	2	.866	3	-.5	11	-1												
18	0.9DL + 1WL 0 AZI	Yes	Y		DL	.9	2	1	3		4	1												
19	0.9DL + 1WL 30 AZI	Yes	Y		DL	.9	2	.866	3	.5	5	1												
20	0.9DL + 1WL 45 AZI	Yes	Y		DL	.9	2	.707	3	.707	6	1												
21	0.9DL + 1WL 60 AZI	Yes	Y		DL	.9	2	.5	3	.866	7	1												
22	0.9DL + 1WL 90 AZI	Yes	Y		DL	.9	2		3	1	8	1												
23	0.9DL + 1WL 120 AZI	Yes	Y		DL	.9	2	-.5	3	.866	9	1												
24	0.9DL + 1WL 135 AZI	Yes	Y		DL	.9	2	-.707	3	.707	10	1												
25	0.9DL + 1WL 150 AZI	Yes	Y		DL	.9	2	-.866	3	.5	11	1												
26	0.9DL + 1WL 180 AZI	Yes	Y		DL	.9	2	-1	3		4	-1												
27	0.9DL + 1WL 210 AZI	Yes	Y		DL	.9	2	-.866	3	-.5	5	-1												
28	0.9DL + 1WL 225 AZI	Yes	Y		DL	.9	2	-.707	3	-.7...	6	-1												
29	0.9DL + 1WL 240 AZI	Yes	Y		DL	.9	2	-.5	3	-.8...	7	-1												
30	0.9DL + 1WL 270 AZI	Yes	Y		DL	.9	2		3	-1	8	-1												
31	0.9DL + 1WL 300 AZI	Yes	Y		DL	.9	2	.5	3	-.8...	9	-1												
32	0.9DL + 1WL 315 AZI	Yes	Y		DL	.9	2	.707	3	-.7...	10	-1												
33	0.9DL + 1WL 330 AZI	Yes	Y		DL	.9	2	.866	3	-.5	11	-1												
34	1.2DL + 1DLi + 1WL...	Yes	Y		DL	1.2	OL1	1	13	1	14		15	1										
35	1.2DL + 1DLi + 1WL...	Yes	Y		DL	1.2	OL1	1	13	.866	14	.5	16	1										
36	1.2DL + 1DLi + 1WL...	Yes	Y		DL	1.2	OL1	1	13	.707	14	.707	17	1										
37	1.2DL + 1DLi + 1WL...	Yes	Y		DL	1.2	OL1	1	13	.5	14	.866	18	1										
38	1.2DL + 1DLi + 1WL...	Yes	Y		DL	1.2	OL1	1	13		14	1	19	1										
39	1.2DL + 1DLi + 1WL...	Yes	Y		DL	1.2	OL1	1	13	-.5	14	.866	20	1										

Load Combinations (Continued)

	Description	Solve	PD...	SR...	B...	Factor	BLC	Factor	B...	Fa...	B...	Fa...	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
40	1.2DL + 1DLi + 1W L...	Yes	Y		DL	1.2	OL1	1	13	-.7...	14	.707	21	1												
41	1.2DL + 1DLi + 1W L...	Yes	Y		DL	1.2	OL1	1	13	-.8...	14	.5	22	1												
42	1.2DL + 1DLi + 1W L...	Yes	Y		DL	1.2	OL1	1	13	-1	14		15	-1												
43	1.2DL + 1DLi + 1W L...	Yes	Y		DL	1.2	OL1	1	13	-.8...	14	-.5	16	-1												
44	1.2DL + 1DLi + 1W L...	Yes	Y		DL	1.2	OL1	1	13	-.7...	14	-.7...	17	-1												
45	1.2DL + 1DLi + 1W L...	Yes	Y		DL	1.2	OL1	1	13	-.5	14	-.8...	18	-1												
46	1.2DL + 1DLi + 1W L...	Yes	Y		DL	1.2	OL1	1	13		14	-1	19	-1												
47	1.2DL + 1DLi + 1W L...	Yes	Y		DL	1.2	OL1	1	13	.5	14	-.8...	20	-1												
48	1.2DL + 1DLi + 1W L...	Yes	Y		DL	1.2	OL1	1	13	.707	14	-.7...	21	-1												
49	1.2DL + 1DLi + 1W L...	Yes	Y		DL	1.2	OL1	1	13	.866	14	-.5	22	-1												
50	(1.2+0.2Sds) + 1.0E ...	Yes	Y		DL	1.24	ELX	1	E...																	
51	(1.2+0.2Sds) + 1.0E ...	Yes	Y		DL	1.24	ELX	.866	E...	.5																
52	(1.2+0.2Sds) + 1.0E ...	Yes	Y		DL	1.24	ELX	.707	E...	.707																
53	(1.2+0.2Sds) + 1.0E ...	Yes	Y		DL	1.24	ELX	.5	E...	.866																
54	(1.2+0.2Sds) + 1.0E ...	Yes	Y		DL	1.24	ELX		E...	1																
55	(1.2+0.2Sds) + 1.0E ...	Yes	Y		DL	1.24	ELX	-.5	E...	.866																
56	(1.2+0.2Sds) + 1.0E ...	Yes	Y		DL	1.24	ELX	-.707	E...	.707																
57	(1.2+0.2Sds) + 1.0E ...	Yes	Y		DL	1.24	ELX	-.866	E...	.5																
58	(1.2+0.2Sds) + 1.0E ...	Yes	Y		DL	1.24	ELX	-1	E...																	
59	(1.2+0.2Sds) + 1.0E ...	Yes	Y		DL	1.24	ELX	-.866	E...	-.5																
60	(1.2+0.2Sds) + 1.0E ...	Yes	Y		DL	1.24	ELX	-.707	E...	-.7...																
61	(1.2+0.2Sds) + 1.0E ...	Yes	Y		DL	1.24	ELX	-.5	E...	-.8...																
62	(1.2+0.2Sds) + 1.0E ...	Yes	Y		DL	1.24	ELX		E...	-1																
63	(1.2+0.2Sds) + 1.0E ...	Yes	Y		DL	1.24	ELX	.5	E...	-.8...																
64	(1.2+0.2Sds) + 1.0E ...	Yes	Y		DL	1.24	ELX	.707	E...	-.7...																
65	(1.2+0.2Sds) + 1.0E ...	Yes	Y		DL	1.24	ELX	.866	E...	-.5																
66	(0.9-0.2Sds) + 1.0E ...	Yes	Y		DL	.86	ELX	1	E...																	
67	(0.9-0.2Sds) + 1.0E ...	Yes	Y		DL	.86	ELX	.866	E...	.5																
68	(0.9-0.2Sds) + 1.0E ...	Yes	Y		DL	.86	ELX	.707	E...	.707																
69	(0.9-0.2Sds) + 1.0E ...	Yes	Y		DL	.86	ELX	.5	E...	.866																
70	(0.9-0.2Sds) + 1.0E ...	Yes	Y		DL	.86	ELX		E...	1																
71	(0.9-0.2Sds) + 1.0E ...	Yes	Y		DL	.86	ELX	-.5	E...	.866																
72	(0.9-0.2Sds) + 1.0E ...	Yes	Y		DL	.86	ELX	-.707	E...	.707																
73	(0.9-0.2Sds) + 1.0E ...	Yes	Y		DL	.86	ELX	-.866	E...	.5																
74	(0.9-0.2Sds) + 1.0E ...	Yes	Y		DL	.86	ELX	-1	E...																	
75	(0.9-0.2Sds) + 1.0E ...	Yes	Y		DL	.86	ELX	-.866	E...	-.5																
76	(0.9-0.2Sds) + 1.0E ...	Yes	Y		DL	.86	ELX	-.707	E...	-.7...																
77	(0.9-0.2Sds) + 1.0E ...	Yes	Y		DL	.86	ELX	-.5	E...	-.8...																
78	(0.9-0.2Sds) + 1.0E ...	Yes	Y		DL	.86	ELX		E...	-1																
79	(0.9-0.2Sds) + 1.0E ...	Yes	Y		DL	.86	ELX	.5	E...	-.8...																
80	(0.9-0.2Sds) + 1.0E ...	Yes	Y		DL	.86	ELX	.707	E...	-.7...																
81	(0.9-0.2Sds) + 1.0E ...	Yes	Y		DL	.86	ELX	.866	E...	-.5																
82	1.2D + 1.5 Lv1	Yes	Y		DL	1.2	25	1.5																		
83	1.2D + 1.5 Lv2	Yes	Y		DL	1.2	26	1.5																		
84	1.2D + 1.5 Lv3	Yes	Y		DL	1.2	27	1.5																		
85	1.2D + 1.5 Lv4	Yes	Y		DL	1.2	28	1.5																		
86	1.2D + 1.5 Lv5	Yes	Y		DL	1.2	29	1.5																		
87	1.2D + 1.5 Lv6	Yes	Y		DL	1.2	30	1.5																		
88	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	31	1.5	4	.058	2	.058	3													
89	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	31	1.5	5	.058	2	.05	3	.029												
90	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	31	1.5	6	.058	2	.041	3	.041												
91	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	31	1.5	7	.058	2	.029	3	.05												

Load Combinations (Continued)

	Description	Solve	PD...	SR...	B...	Factor	BLC	Factor	B...	Fa...	B...	Fa...	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
92	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	31	1.5	8	.058	2		3	.058												
93	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	31	1.5	9	.058	2	-.0...	3	.05												
94	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	31	1.5	10	.058	2	-.0...	3	.041												
95	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	31	1.5	11	.058	2	-.05	3	.029												
96	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	31	1.5	4	.058	2	-.0...	3													
97	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	31	1.5	5	.058	2	-.05	3	-.0...												
98	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	31	1.5	6	.058	2	-.0...	3	-.0...												
99	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	31	1.5	7	.058	2	-.0...	3	-.05												
100	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	31	1.5	8	.058	2		3	-.0...												
101	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	31	1.5	9	.058	2	.029	3	-.05												
102	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	31	1.5	10	.058	2	.041	3	-.0...												
103	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	31	1.5	11	.058	2	.05	3	-.0...												
104	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	32	1.5	4	.058	2	.058	3													
105	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	32	1.5	5	.058	2	.05	3	.029												
106	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	32	1.5	6	.058	2	.041	3	.041												
107	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	32	1.5	7	.058	2	.029	3	.05												
108	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	32	1.5	8	.058	2		3	.058												
109	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	32	1.5	9	.058	2	-.0...	3	.05												
110	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	32	1.5	10	.058	2	-.0...	3	.041												
111	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	32	1.5	11	.058	2	-.05	3	.029												
112	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	32	1.5	4	.058	2	-.0...	3													
113	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	32	1.5	5	.058	2	-.05	3	-.0...												
114	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	32	1.5	6	.058	2	-.0...	3	-.0...												
115	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	32	1.5	7	.058	2	-.0...	3	-.05												
116	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	32	1.5	8	.058	2		3	-.0...												
117	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	32	1.5	9	.058	2	.029	3	-.05												
118	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	32	1.5	10	.058	2	.041	3	-.0...												
119	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	32	1.5	11	.058	2	.05	3	-.0...												
120	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	33	1.5	4	.058	2	.058	3													
121	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	33	1.5	5	.058	2	.05	3	.029												
122	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	33	1.5	6	.058	2	.041	3	.041												
123	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	33	1.5	7	.058	2	.029	3	.05												
124	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	33	1.5	8	.058	2		3	.058												
125	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	33	1.5	9	.058	2	-.0...	3	.05												
126	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	33	1.5	10	.058	2	-.0...	3	.041												
127	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	33	1.5	11	.058	2	-.05	3	.029												
128	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	33	1.5	4	.058	2	-.0...	3													
129	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	33	1.5	5	.058	2	-.05	3	-.0...												
130	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	33	1.5	6	.058	2	-.0...	3	-.0...												
131	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	33	1.5	7	.058	2	-.0...	3	-.05												
132	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	33	1.5	8	.058	2		3	-.0...												
133	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	33	1.5	9	.058	2	.029	3	-.05												
134	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	33	1.5	10	.058	2	.041	3	-.0...												
135	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	33	1.5	11	.058	2	.05	3	-.0...												
136	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	34	1.5	4	.058	2	.058	3													
137	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	34	1.5	5	.058	2	.05	3	.029												
138	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	34	1.5	6	.058	2	.041	3	.041												
139	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	34	1.5	7	.058	2	.029	3	.05												
140	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	34	1.5	8	.058	2		3	.058												
141	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	34	1.5	9	.058	2	-.0...	3	.05												
142	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	34	1.5	10	.058	2	-.0...	3	.041												
143	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	34	1.5	11	.058	2	-.05	3	.029												

Load Combinations (Continued)

	Description	Solve	PD...	SR...	B...	Factor	BLC	Factor	B...	Fa...	B...	Fa...	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
144	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	34	1.5	4	.058	2	-.0...	3													
145	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	34	1.5	5	.058	2	-.05	3	-.0...												
146	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	34	1.5	6	.058	2	-.0...	3	-.0...												
147	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	34	1.5	7	.058	2	-.0...	3	-.05												
148	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	34	1.5	8	.058	2		3	-.0...												
149	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	34	1.5	9	.058	2	.029	3	-.05												
150	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	34	1.5	10	.058	2	.041	3	-.0...												
151	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	34	1.5	11	.058	2	.05	3	-.0...												
152	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	35	1.5	4	.058	2	.058	3													
153	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	35	1.5	5	.058	2	.05	3	.029												
154	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	35	1.5	6	.058	2	.041	3	.041												
155	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	35	1.5	7	.058	2	.029	3	.05												
156	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	35	1.5	8	.058	2		3	.058												
157	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	35	1.5	9	.058	2	-.0...	3	.05												
158	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	35	1.5	10	.058	2	-.0...	3	.041												
159	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	35	1.5	11	.058	2	-.05	3	.029												
160	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	35	1.5	4	.058	2	-.0...	3													
161	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	35	1.5	5	.058	2	-.05	3	-.0...												
162	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	35	1.5	6	.058	2	-.0...	3	-.0...												
163	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	35	1.5	7	.058	2	-.0...	3	-.05												
164	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	35	1.5	8	.058	2		3	-.0...												
165	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	35	1.5	9	.058	2	.029	3	-.05												
166	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	35	1.5	10	.058	2	.041	3	-.0...												
167	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	35	1.5	11	.058	2	.05	3	-.0...												
168	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	36	1.5	4	.058	2	.058	3													
169	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	36	1.5	5	.058	2	.05	3	.029												
170	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	36	1.5	6	.058	2	.041	3	.041												
171	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	36	1.5	7	.058	2	.029	3	.05												
172	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	36	1.5	8	.058	2		3	.058												
173	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	36	1.5	9	.058	2	-.0...	3	.05												
174	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	36	1.5	10	.058	2	-.0...	3	.041												
175	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	36	1.5	11	.058	2	-.05	3	.029												
176	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	36	1.5	4	.058	2	-.0...	3													
177	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	36	1.5	5	.058	2	-.05	3	-.0...												
178	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	36	1.5	6	.058	2	-.0...	3	-.0...												
179	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	36	1.5	7	.058	2	-.0...	3	-.05												
180	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	36	1.5	8	.058	2		3	-.0...												
181	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	36	1.5	9	.058	2	.029	3	-.05												
182	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	36	1.5	10	.058	2	.041	3	-.0...												
183	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	36	1.5	11	.058	2	.05	3	-.0...												
184	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	37	1.5	4	.058	2	.058	3													
185	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	37	1.5	5	.058	2	.05	3	.029												
186	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	37	1.5	6	.058	2	.041	3	.041												
187	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	37	1.5	7	.058	2	.029	3	.05												
188	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	37	1.5	8	.058	2		3	.058												
189	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	37	1.5	9	.058	2	-.0...	3	.05												
190	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	37	1.5	10	.058	2	-.0...	3	.041												
191	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	37	1.5	11	.058	2	-.05	3	.029												
192	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	37	1.5	4	.058	2	-.0...	3													
193	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	37	1.5	5	.058	2	-.05	3	-.0...												
194	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	37	1.5	6	.058	2	-.0...	3	-.0...												
195	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	37	1.5	7	.058	2	-.0...	3	-.05												

Load Combinations (Continued)

	Description	Solve	PD...	SR...	B...	Factor	BLC	Factor	B...	Fa...	B...	Fa...	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
196	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	37	1.5	8	.058	2		3	-.0...										
197	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	37	1.5	9	.058	2	.029	3	-.05										
198	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	37	1.5	10	.058	2	.041	3	-.0...										
199	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	37	1.5	11	.058	2	.05	3	-.0...										
200	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	38	1.5	4	.058	2	.058	3											
201	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	38	1.5	5	.058	2	.05	3	.029										
202	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	38	1.5	6	.058	2	.041	3	.041										
203	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	38	1.5	7	.058	2	.029	3	.05										
204	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	38	1.5	8	.058	2		3	.058										
205	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	38	1.5	9	.058	2	-.0...	3	.05										
206	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	38	1.5	10	.058	2	-.0...	3	.041										
207	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	38	1.5	11	.058	2	-.05	3	.029										
208	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	38	1.5	4	.058	2	-.0...	3											
209	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	38	1.5	5	.058	2	-.05	3	-.0...										
210	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	38	1.5	6	.058	2	-.0...	3	-.0...										
211	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	38	1.5	7	.058	2	-.0...	3	-.05										
212	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	38	1.5	8	.058	2		3	-.0...										
213	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	38	1.5	9	.058	2	.029	3	-.05										
214	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	38	1.5	10	.058	2	.041	3	-.0...										
215	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	38	1.5	11	.058	2	.05	3	-.0...										
216	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	39	1.5	4	.058	2	.058	3											
217	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	39	1.5	5	.058	2	.05	3	.029										
218	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	39	1.5	6	.058	2	.041	3	.041										
219	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	39	1.5	7	.058	2	.029	3	.05										
220	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	39	1.5	8	.058	2		3	.058										
221	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	39	1.5	9	.058	2	-.0...	3	.05										
222	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	39	1.5	10	.058	2	-.0...	3	.041										
223	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	39	1.5	11	.058	2	-.05	3	.029										
224	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	39	1.5	4	.058	2	-.0...	3											
225	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	39	1.5	5	.058	2	-.05	3	-.0...										
226	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	39	1.5	6	.058	2	-.0...	3	-.0...										
227	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	39	1.5	7	.058	2	-.0...	3	-.05										
228	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	39	1.5	8	.058	2		3	-.0...										
229	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	39	1.5	9	.058	2	.029	3	-.05										
230	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	39	1.5	10	.058	2	.041	3	-.0...										
231	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	39	1.5	11	.058	2	.05	3	-.0...										

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	N25	max	1323.94	3	794.59	20	1868.43	39	221.92	30	323.03	33	1528.58	3
2		min	-1320.35	27	-800.49	12	18.72	31	-3296.84	38	-2025.69	41	-1528.14	27
3	N1	max	1323.94	17	800.5	8	1868.43	45	3296.85	46	323.02	19	1528.15	25
4		min	-1320.36	25	-794.59	32	18.72	21	-221.94	22	-2025.69	43	-1528.59	17
5	N13	max	283.51	18	1323.4	22	1797.19	34	614.99	192	3693.59	34	1273.76	14
6		min	-290.85	10	-1323.4	30	-12.8	26	-648.86	172	-331.17	26	-1273.76	6
7	Totals:	max	2567.61	18	2398.09	22	5288.41	42						
8		min	-2567.61	10	-2398.09	14	1364.49	66						

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

	Member	Shape	Code Check	Loc[in]	LC	She...	Lo...	...	...	phi*P ...	phi*P ...	phi*M...	phi*M.....		Eqn
1	SA2	PIPE_3.5	.484	40	45	.159	40		9	64491...	78750	7953....	7953.....	....	H1-1b
2	SA3	PIPE_3.5	.484	40	39	.159	40		11	64491...	78750	7953....	7953.....	....	H1-1b
3	SA1	PIPE_3.5	.465	40	34	.145	40		...	64491...	78750	7953....	7953.....	....	H1-1b
4	PB2	C3X5	.368	34.86	45	.136	6.54	y	49	32858...	47628	981.26	4104	...	H1-1b
5	PB3	C3X5	.368	34.86	39	.136	63....	y	35	32858...	47628	981.26	4104	...	H1-1b
6	PB1	C3X5	.349	34.86	35	.127	63....	y	46	32858...	47628	981.26	4104	...	H1-1b
7	MP1	PIPE_2.0	.293	57	15	.040	57		10	20866...	32130	1871....	1871.....	....	H1-1b
8	MP3	PIPE_2.0	.293	57	5	.040	57		10	20866...	32130	1871....	1871.....	1	H1-1b
9	MP9	PIPE_2.0	.291	57	10	.035	57		15	20866...	32130	1871....	1871.....	....	H1-1b
10	MP4	PIPE_2.0	.291	57	10	.035	57		5	20866...	32130	1871....	1871.....	1	H1-1b
11	MP2	PIPE_2.0	.274	57	14	.040	57		5	20866...	32130	1871....	1871.....	....	H1-1b
12	MP7	PIPE_2.0	.270	57	5	.039	57		16	20866...	32130	1871....	1871.....	1	H1-1b
13	MP6	PIPE_2.0	.270	57	15	.039	57		4	20866...	32130	1871....	1871.....	....	H1-1b
14	MP8	PIPE_2.0	.261	57	10	.035	57		10	20866...	32130	1871....	1871.....	....	H1-1b
15	MP5	PIPE_2.0	.261	57	10	.035	57		10	20866...	32130	1871....	1871.....	1	H1-1b
16	CP5	6.5"x0.37" Plate	.208	21	13	.087	21	y	47	27548...	75757...	583.96	6239.....	....	H1-1b
17	CP6	6.5"x0.37" Plate	.208	21	7	.087	21	y	37	27548...	75757...	583.96	6239.....	....	H1-1b
18	CP4	6.5"x0.37" Plate	.205	21	2	.081	21	y	47	27548...	75757...	583.96	6202.....	....	H1-1b
19	M19	PIPE_2.0	.119	72	10	.124	72		2	14916...	32130	1871....	1871.....	....	H1-1b
20	M21	PIPE_2.0	.118	72	5	.120	24		12	14916...	32130	1871....	1871.....	....	H1-1b
21	M20	PIPE_2.0	.117	24	15	.120	72		8	14916...	32130	1871....	1871.....	....	H1-1b
22	H1	PIPE_3.5	.107	48	105	.083	72		10	60666...	78750	7953....	7953.....	1	H1-1b
23	H3	PIPE_3.5	.104	48	207	.079	24		15	60666...	78750	7953....	7953.....	1	H1-1b
24	H2	PIPE_3.5	.102	48	159	.079	72		5	60666...	78750	7953....	7953.....	1	H1-1b
25	IFH32	L2x2x3	.099	0	14	.028	0	y	41	18084...	23392...	557.72	1182.....	1	H2-1
26	IFH21	L2x2x3	.099	0	30	.028	0	z	43	18084...	23392...	557.72	1182.....	1	H2-1
27	IFH11	L2x2x3	.091	0	3	.028	0	z	49	18084...	23392...	557.72	1179.....	1	H2-1
28	IFH12	L2x2x3	.091	0	25	.028	0	y	35	18084...	23392...	557.72	1179.....	1	H2-1
29	IFH22	L2x2x3	.083	0	2	.027	0	y	46	18084...	23392...	557.72	1182.....	1	H2-1
30	IFH 31	L2x2x3	.082	0	26	.027	0	z	38	18084...	23392...	557.72	1182.....	1	H2-1
31	CP2	6.6x4.46x0.25	.045	42	31	.035	42	y	17	51170...	87561	2464....	7125.....	1	H2-1
32	CP3	6.6x4.46x0.25	.045	0	21	.035	0	y	3	51170...	87561	2464....	7125.....	1	H2-1
33	CP1	6.6x4.46x0.25	.041	21	18	.033	0	y	14	51170...	87561	2464....	7125.....	1	H2-1

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

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

APPENDIX D

ADDITIONAL CALCUATIONS

Trylon

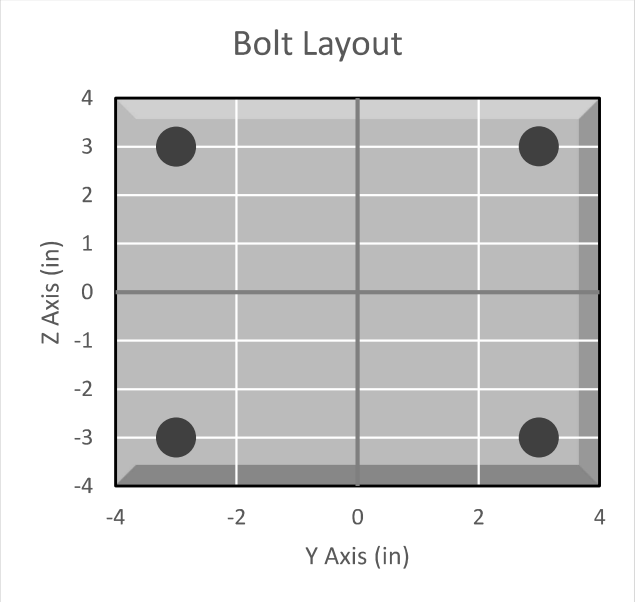
Analysis date: 07/29/21

BOLT TOOL 1.5.2

Project Data	
Job Code:	189033
Carrier Site ID:	BOHVN00015A
Carrier Site Name:	CT-CCI-T-841295

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

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



Connection Description
Standoff to Monopole

Bolt Check*		
Tensile Capacity (ϕT_n):	20340.1	lbs
Shear Capacity (ϕV_n):	17257.3	lbs
Tension Force (T_u):	3950.5	lbs
Shear Force (V_u):	560.6	lbs
Tension Usage:	18.5%	--
Shear Usage:	3.1%	--
Interaction:	18.5%	Pass
Controlling Member:	SA2	--
Controlling LC:	42	--

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

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

APPENDIX E

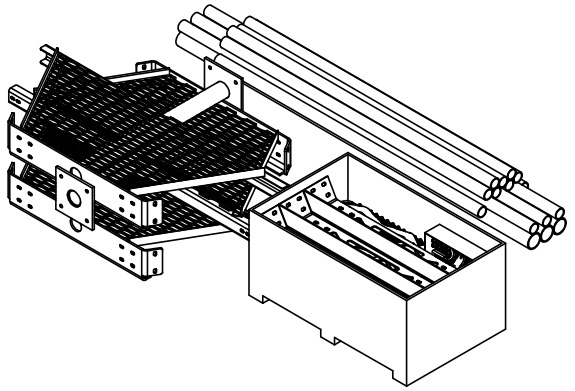
SUPPLEMENTAL DRAWINGS

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

C

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

FOR BOM ENTRY ONLY

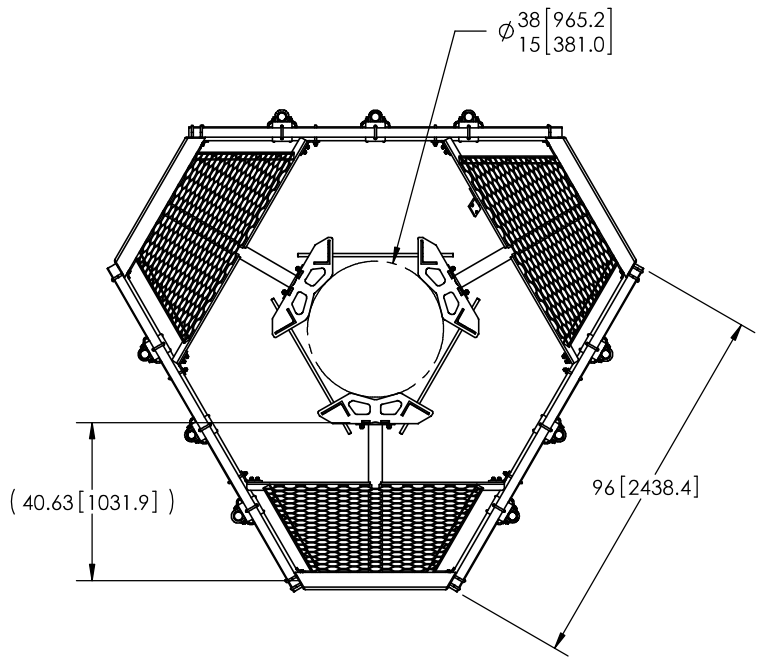


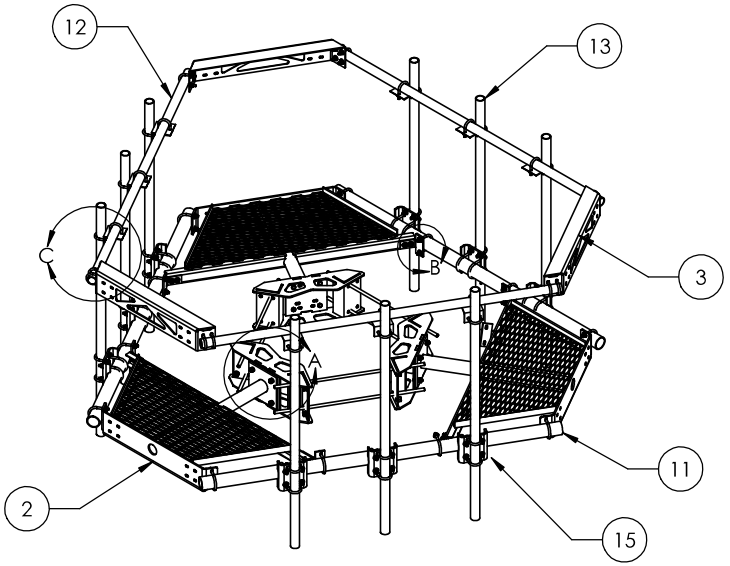
NOTES:
1. CUSTOMER ASSEMBLY SHEETS 2–3.

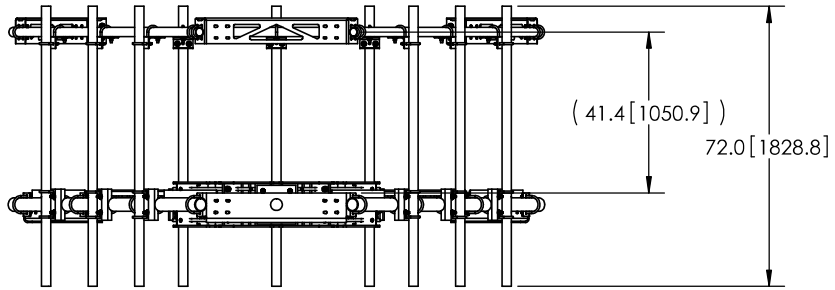
ALL DIMENSIONS ARE IN INCHES U.O.S.
TOLERANCES UNLESS OTHERWISE SPECIFIED:
.X = ± .12 ANGLES ±2°
.XX = ± .06 FRACTIONS ±1/32
.XXX= ± .03
REMOVE BURRS AND BREAK EDGES .005

DO NOT SCALE THIS PRINT

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





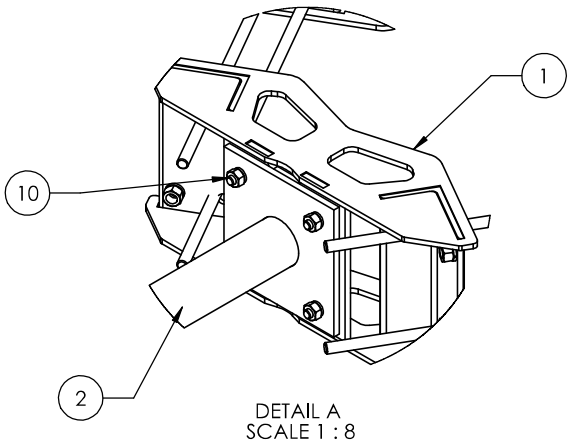


ITEM	PART NO.	DESCRIPTION	QTY.	WEIGHT
C				
1	MC-RM1550-3	12" - 50" OD RINGMOUNT	1	230.42 LBS
2	MTC300601	Low Profile Co-Location Platform Snub Nose	3	134.21 LBS
3	MT195801	Corner Weldment Snub Nose Handrail	3	27.10 LBS
4	XA2020.01	CROSS OVER ANGLE	9	2.65 LBS
5	GUB-4356	1/2" X 3-5/8" X 6" GALV U-BOLT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

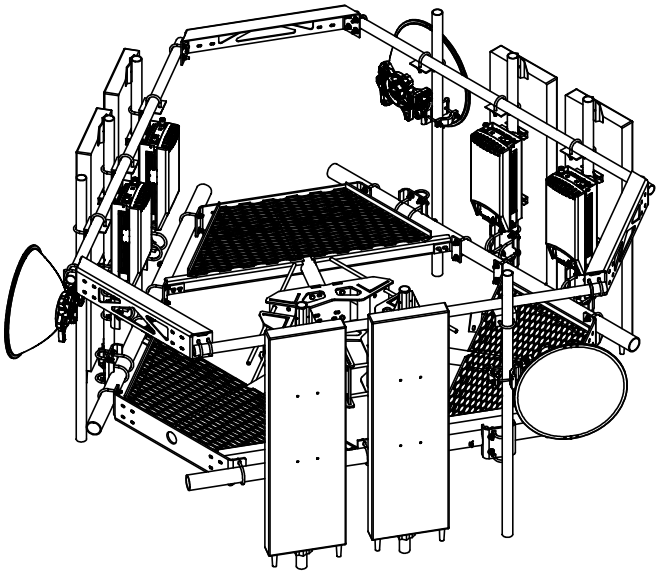
NOTES:
1. ALL METRIC DIMENSIONS ARE IN BRACKETS.
2. WILL FIT MONOPOLES 15"–38" OD.

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

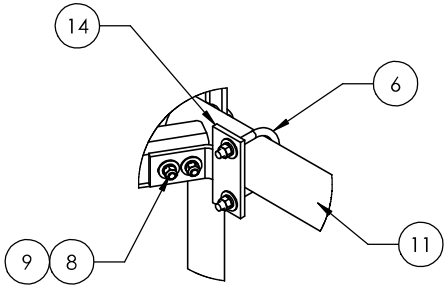
DRAWN BY: MSM	SHEET: 2 of 3	PART NUMBER: MC-PK8-C	
CHECKED BY: TP	SCALE: NTS	DESCRIPTION: 25" OD Snub Nose MT-196	
DATE: 10/18/11	MATERIAL: A36, A53	DRAWING TYPE: ASSEMBLY DRAWING	
REVISION: C	FINISH: GALV A123	WEIGHT: 1361.27 LBS	ANDREW® WESTCHESTER, IL. 60154 U.S.A.



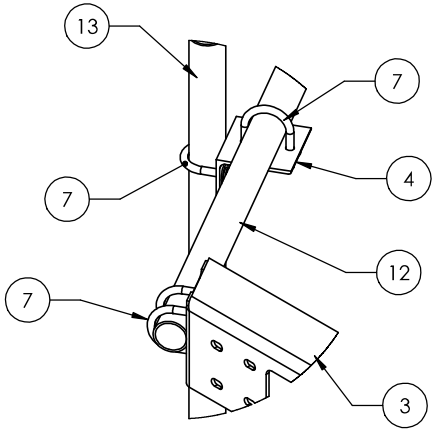
DETAIL A
SCALE 1 : 8



WITH ANTENNAS



DETAIL B
SCALE 1 : 8



DETAIL C
SCALE 1 : 8

NOTES:
1. ALL METRIC DIMENSIONS ARE IN BRACKETS.

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

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

Exhibit F

Power Density/RF Emissions Report

EBI Consulting

environmental | engineering | due diligence

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

Dish Wireless Existing Facility

Site ID: BOHVN00015A

841295
755 Amity Road
Bethany, Connecticut 06524

October 6, 2021

EBI Project Number: 6221005720

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**26.21%**

October 6, 2021

Dish Wireless

Emissions Analysis for Site: BOHVN00015A - 841295

EBI Consulting was directed to analyze the proposed Dish Wireless facility located at **755 Amity Road** in **Bethany, Connecticut** for the purpose of determining whether the emissions from the Proposed Dish Wireless Antenna Installation located on this property are within specified federal limits.

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

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

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

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

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

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed Dish Wireless Wireless antenna facility located at 755 Amity Road in Bethany, Connecticut using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since Dish Wireless is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 20 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report, the sample point is the top of a 6-foot person standing at the base of the tower.

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

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

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

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

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

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

6) The antenna mounting height centerline of the proposed antennas is 103 feet above ground level (AGL).

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

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

Dish Wireless Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	JMA MX08FRO665-20	Make / Model:	JMA MX08FRO665-20	Make / Model:	JMA MX08FRO665-20
Frequency Bands:	600 MHz / 1900 MHz	Frequency Bands:	600 MHz / 1900 MHz	Frequency Bands:	600 MHz / 1900 MHz
Gain:	17.45 dBd / 22.65 dBd	Gain:	17.45 dBd / 22.65 dBd	Gain:	17.45 dBd / 22.65 dBd
Height (AGL):	103 feet	Height (AGL):	103 feet	Height (AGL):	103 feet
Channel Count:	8	Channel Count:	8	Channel Count:	8
Total TX Power (W):	280 Watts	Total TX Power (W):	280 Watts	Total TX Power (W):	280 Watts
ERP (W):	3,065.51	ERP (W):	3,065.51	ERP (W):	3,065.51
Antenna A1 MPE %:	**1.68%**	Antenna B1 MPE %:	**1.68%**	Antenna C1 MPE %:	**1.68%**

Site Composite MPE %	
Carrier	**MPE %**
Dish Wireless (Max at Sector A):	1.68%
Sprint	3.45%
Beth Fire Dept	0.04%
Beth Hwy Dept	0.07%
AT&T	7.38%
Verizon	13.56%
T-Mobile	0.03%
Site Total MPE % :	26.21%

Dish Wireless MPE % Per Sector	
Dish Wireless Sector A Total:	1.68%
Dish Wireless Sector B Total:	1.68%
Dish Wireless Sector C Total:	1.68%
Site Total MPE % :	26.21%

Dish Wireless Maximum MPE Power Values (Sector A)

Dish Wireless Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density (μW/cm²)	Frequency (MHz)	Allowable MPE (μW/cm²)	Calculated % MPE
Dish Wireless 600 MHz n71	4	223.68	103.0	3.42	600 MHz n71	400	0.85%
Dish Wireless 1900 MHz n70	4	542.70	103.0	8.29	1900 MHz n70	1000	0.83%
						Total:	**1.68%**

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

Summary

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

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

Dish Wireless Sector	Power Density Value (%)
Sector A:	1.68%
Sector B:	1.68%
Sector C:	1.68%
Dish Wireless Maximum MPE % (Sector A):	1.68%
Site Total:	26.21%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **26.21%** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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

Exhibit G

Letter of Authorization

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

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

Crown Castle Letter of Authorization

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

Re: Tower Share Application
Crown Castle telecommunications site at:
755 AMITY RD, BETHANY, CT 06524

CCATT 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: 841295/BETHANY
Customer Site ID: BOHVN00015A/CT-CCI-T-841295
Site Address: 755 AMITY RD, BETHANY, CT 06524

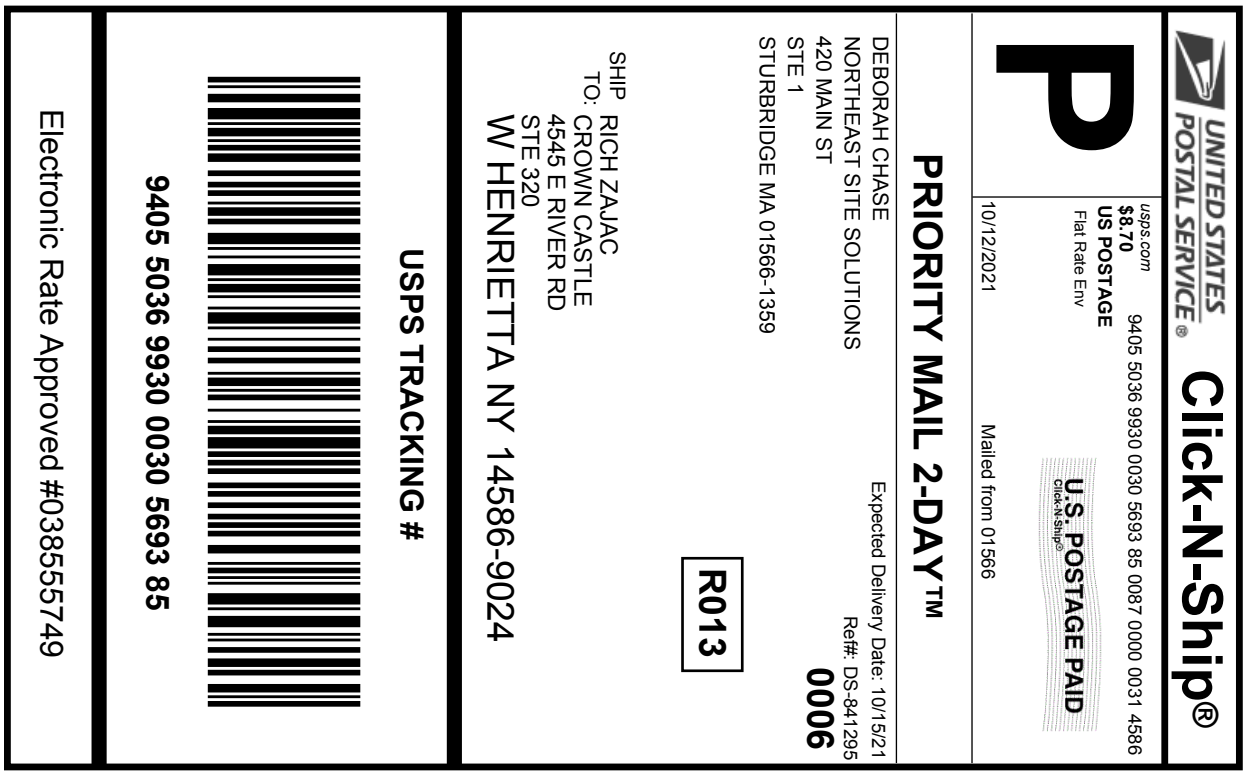
Crown Castle

By: _____ Date: 10/11/2021

Richard Zajac
Site Acquisition Specialist

Exhibit H

Recipient Mailings



Cut on dotted line.

Instructions

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

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0030 5693 85

Trans. #:	545786066
Print Date:	10/12/2021
Ship Date:	10/12/2021
Expected Delivery Date:	10/15/2021

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

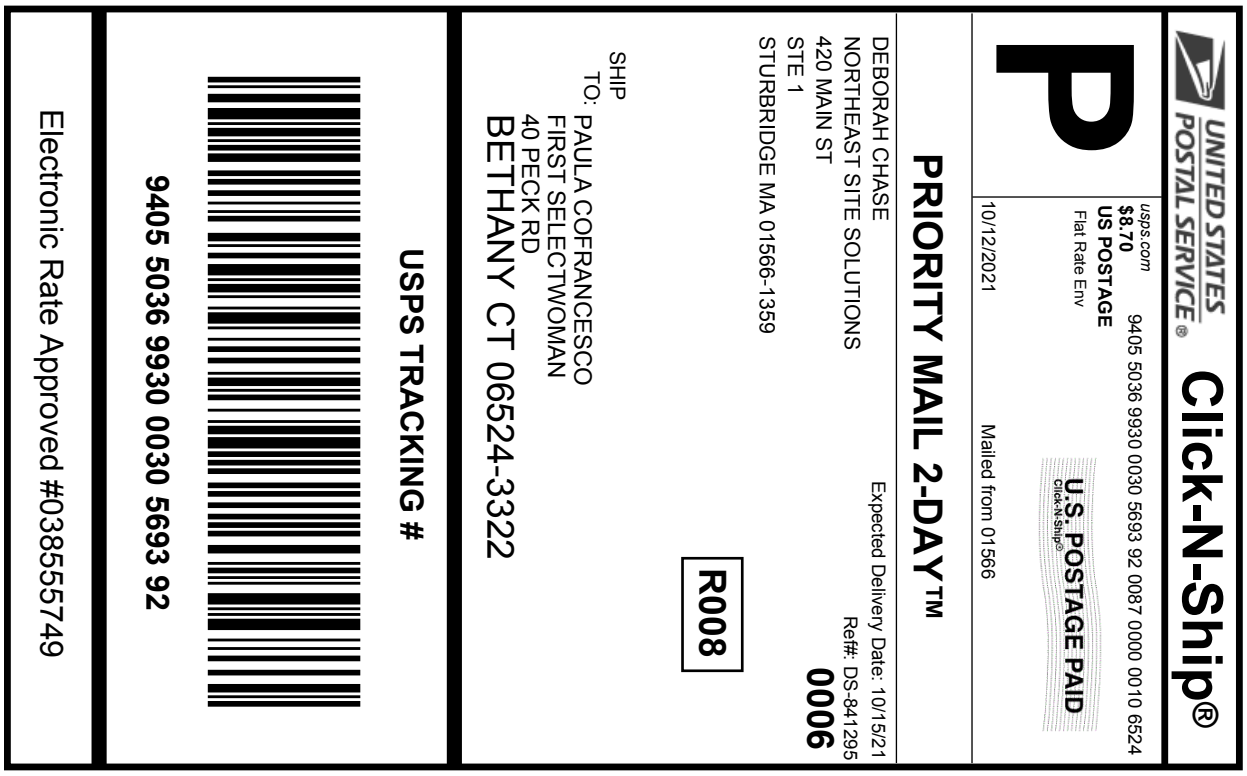
From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
420 MAIN ST
STE 1
STURBRIDGE MA 01566-1359

Ref#: DS-841295

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

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

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



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Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0030 5693 92

Trans. #:	545786066
Print Date:	10/12/2021
Ship Date:	10/12/2021
Expected Delivery Date:	10/15/2021

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

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

Ref#: DS-841295

To: PAULA COFRANCESCO
FIRST SELECTWOMAN
40 PECK RD
BETHANY CT 06524-3322

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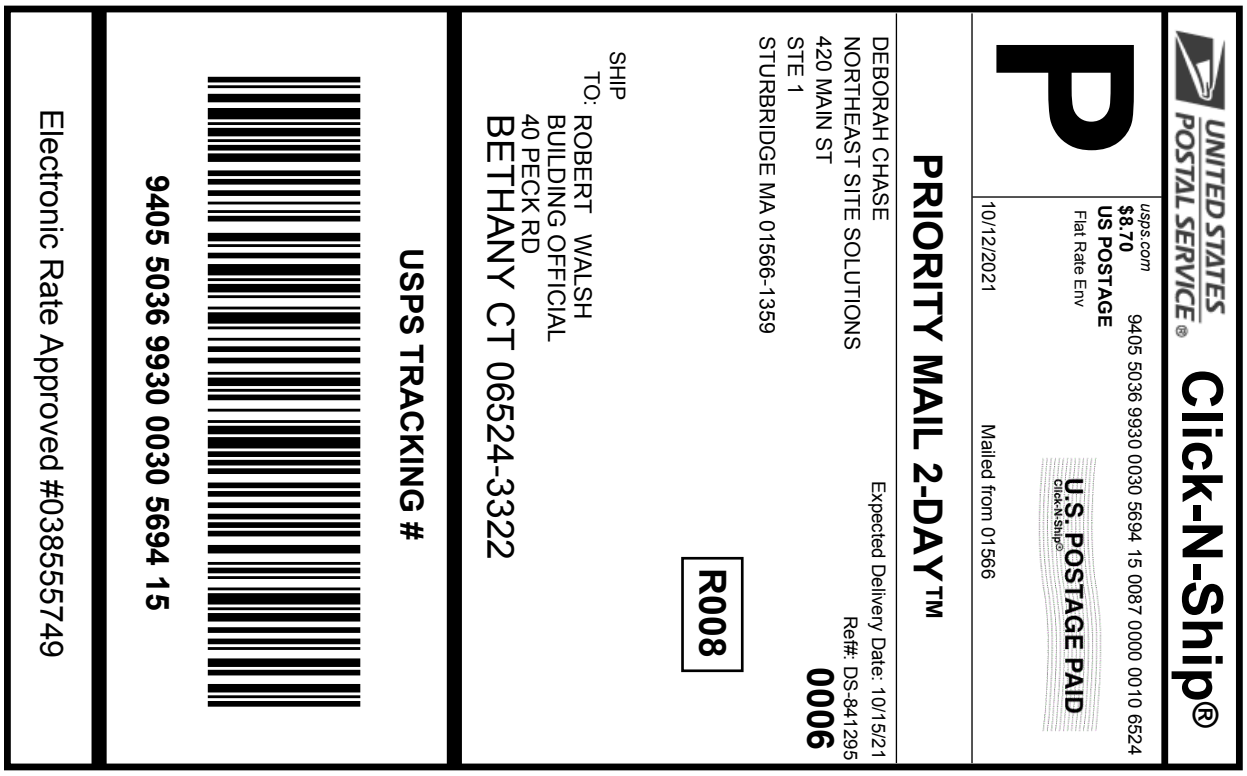
Check the status of your shipment on the USPS Tracking® page at usps.com



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

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0030 5694 15

Trans. #:	545786066
Print Date:	10/12/2021
Ship Date:	10/12/2021
Expected Delivery Date:	10/15/2021

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

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

Ref#: DS-841295

To: ROBERT WALSH
BUILDING OFFICIAL
40 PECK RD
BETHANY CT 06524-3322

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

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841295

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

10/27/2021 02:00 PM

Product	Qty	Unit Price	Price
Prepaid Mail West Henrietta, NY 14586 Weight: 0 lb 2.00 oz Acceptance Date: Wed 10/27/2021 Tracking #: 9405 5036 9930 0030 5693 85	1		$0.00
Prepaid Mail Bethany, CT 06524 Weight: 0 lb 15.50 oz Acceptance Date: Wed 10/27/2021 Tracking #: 9405 5036 9930 0030 5693 92	1		$0.00
Prepaid Mail Bethany, CT 06524 Weight: 0 lb 15.50 oz Acceptance Date: Wed 10/27/2021 Tracking #: 9405 5036 9930 0030 5694 15	1		$0.00
Grand Total:			$0.00

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increases and limited employee
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