NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

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

May 26, 2022

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

RE: Tower Share Application
389 Route 2, Preston, CT 06265
Latitude: 41.490347
Longitude: -71.991519
Site #: 876360_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 389 Route 2, Preston, Connecticut.

Dish Wireless LLC proposes to install three (3) 600/1900 MHz 5G antennas and six (6) RRUs, at the 105-foot level of the existing 147-foot monopole tower, one (1) Fiber cable will also be installed. Dish Wireless LLC equipment cabinets will be placed within a 7' x 5' lease area within the existing fenced compound. Included are plans by NB+C, dated March 8, 2022, Exhibit C. Also included is a structural analysis prepared by Morrison Hershfield, dated September 23, 2021, confirming that the existing tower is structurally capable of supporting the proposed equipment. Attached as Exhibit D. The facility was originally approved by the Town of Preston although a copy of the decision is not available, see attached.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies 16-50aa, of Dish Wireless LLC intent to share a telecommunications facility pursuant to R.C.S.A. 16-50j-88. In accordance with R.C.S.A., a copy of this letter is being sent to Sandra Allyn-Gauthier, First Selectwoman and Kathy Warzecha, Town Planner for the Town of Preston, as well as the tower owner (Crown Castle) and property owner (Town of Preston).

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

1. The proposed modification will not result in an increase in the height of the existing structure. The top of the existing tower is 147-feet and the Dish Wireless LLC antennas will be located at a centerline height of 105-feet.

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

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

4. The operation of the proposed antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard. The combined site operations will result in a total power density of 23.35% as evidenced by Exhibit F.

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

A. Technical Feasibility. The existing tower 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 tower in Preston. 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 105-foot level of the existing 147-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 Preston.

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: Sandra Allyn-Gauthier, First Selectwoman & Property Owner
Preston Town Hall
389 Route 2
Preston, CT 06365

Kathy Warzecha, Town Planner
Preston Town Hall
389 Route 2
Preston, CT 06365

Crown Castle - Tower Owner

Exhibit A

Original Facility Approval

CTH-441A
31C

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@po.state.ct.us
Web Site: www.state.ct.us/csc/index.htm

September 11, 2002

Stephen J. Humes, Esq.
LeBoeuf, Lamb, Greene & MacRae
Goodwin Square
225 Asylum Street
Hartford, CT 06103

RE: **TS-OMNI-114-020809** - Omnipoint Communications, Inc. d/b/a T-Mobile request for an order to approve tower sharing at an existing telecommunications facility located at the Preston Town Hall, 389 Route 2, Preston, Connecticut.

Dear Attorney Humes:

At a public meeting held on September 5, 2002, the Connecticut Siting Council (Council) ruled that the shared use of this existing tower site is technically, legally, environmentally, and economically feasible and meets public safety concerns, and therefore, in compliance with General Statutes § 16-50aa, the Council has ordered the shared use of this facility to avoid the unnecessary proliferation of tower structures. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on this tower.

This decision is under the exclusive jurisdiction of the Council. Any additional change to this facility may require an explicit request to this agency pursuant to General Statutes § 16-50aa or notice pursuant to Regulations of Connecticut State Agencies Section 16-50j-73, as applicable. Such request or notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Any deviation from this format may result in the Council implementing enforcement proceedings pursuant to General Statutes § 16-50u including, without limitation, imposition of expenses resulting from such failure and of civil penalties in an amount not less than one thousand dollars per day for each day of construction or operation in material violation.

This decision applies only to this request for tower sharing and is not applicable to any other request or construction.

The proposed shared use is to be implemented as specified in your letter dated August 9, 2002.

Thank you for your attention and cooperation.

Very truly yours,

Mortimer A. Gelston
Chairman

MAG/laf

c: Honorable Robert M. Congdon, First Selectman, Town of Preston
Kathy Warzecha, Town Planner, Town of Preston
Julie M. Donaldson, Esq., Hurwitz & Sagarin LLC
Sandy M. Carter, Verizon Wireless

At this location

Connecticut Department of Public Safety
Department of Public Safety · 389 CT-2

Preston Public Library
4.5 (4)
Public library · 389 CT-2
Open until 7:00 PM

Preston Riverwalk
1.0 (2)
Association or organization · 389 CT-2

Preston Town Hall
5.0 (3)
City Hall · 389 CT-2
Open until 6:30 PM

Exhibit B

Property Card

389 ROUTE 2

Location	389 ROUTE 2	**Mblu**	24-0/ 2/ 389/ /
Acct#	00173000	**Owner**	PRESTON TOWN OF
Assessment	$664,300	**Appraisal**	$948,950
PID	1758	**Building Count**	1

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$500,600	$448,350	$948,950
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$350,500	$313,800	$664,300

Owner of Record

Owner	PRESTON TOWN OF
Co-Owner	389 ROUTE 2
Address	389 ROUTE 2 PRESTON, CT 06365

Sale Price	$17,500
Certificate	
Book & Page	0056/0174
Sale Date	09/26/1973
Instrument	00

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**
PRESTON TOWN OF	$17,500		0056/0174	00	09/26/1973
PRESTON TOWN OF	$0		0056/0171		09/26/1973

Building Information

Building 1 : Section 1

Year Built:	1974
Living Area:	5,292
Replacement Cost:	$669,068
Building Percent Good:	71

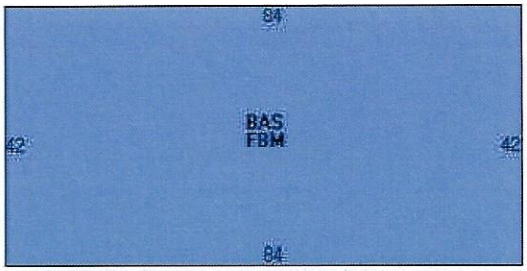
Replacement Cost
Less Depreciation: $475,000

Building Attributes	
Field	**Description**
STYLE	City/Town Hall
MODEL	Comm/Ind
Grade	Average
Stories:	1
Occupancy	1.00
Exterior Wall 1	Brick/Masonry
Exterior Wall 2	
Roof Structure	Gable/Hip
Roof Cover	Asph/F Gls/Cmp
Interior Wall 1	Drywall/Sheet
Interior Wall 2	
Interior Floor 1	Inlaid Sht Gds
Interior Floor 2	
Heating Fuel	Electric
Heating Type	Electr Basebrd
AC Type	None
Struct Class	
Bldg Use	MUN TOWN MDL-94
Total Rooms	
Total Bedrms	00
Total Baths	3
Usrfld 218	
Usrfld 219	
1st Floor Use:	903C
Heat/AC	HEAT/AC SPLIT
Frame Type	MASONRY
Baths/Plumbing	AVERAGE
Ceiling/Wall	CEIL & WALLS
Rooms/Prtns	AVERAGE
Wall Height	10.00
% Comn Wall	0.00

Building Photo

(http://images.vgsi.com/photos/PrestonCTPhotos//\00\00\15\27.jpg)

Building Layout



(http://images.vgsi.com/photos/PrestonCTPhotos//Sketches/1758_1758.jpg

Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	3,528	3,528
FBM	Basement, Finished	3,528	1,764
		7,056	5,292

Extra Features

Extra Features				Legend
Code	**Description**	**Size**	**Value**	**Bldg #**
A/C	AIR CONDITION	3528.00 S.F.	$8,800	1

GEN	GENERATOR	1.00 UNITS	$3,900	1

Land

Land Use

Use Code	9035
Description	MUN TOWN MDL-96
Zone	RC
Neighborhood	8000
Alt Land Appr	No
Category	

Land Line Valuation

Size (Acres)	25.86
Frontage	0
Depth	0
Assessed Value	$313,800
Appraised Value	$448,350

Outbuildings

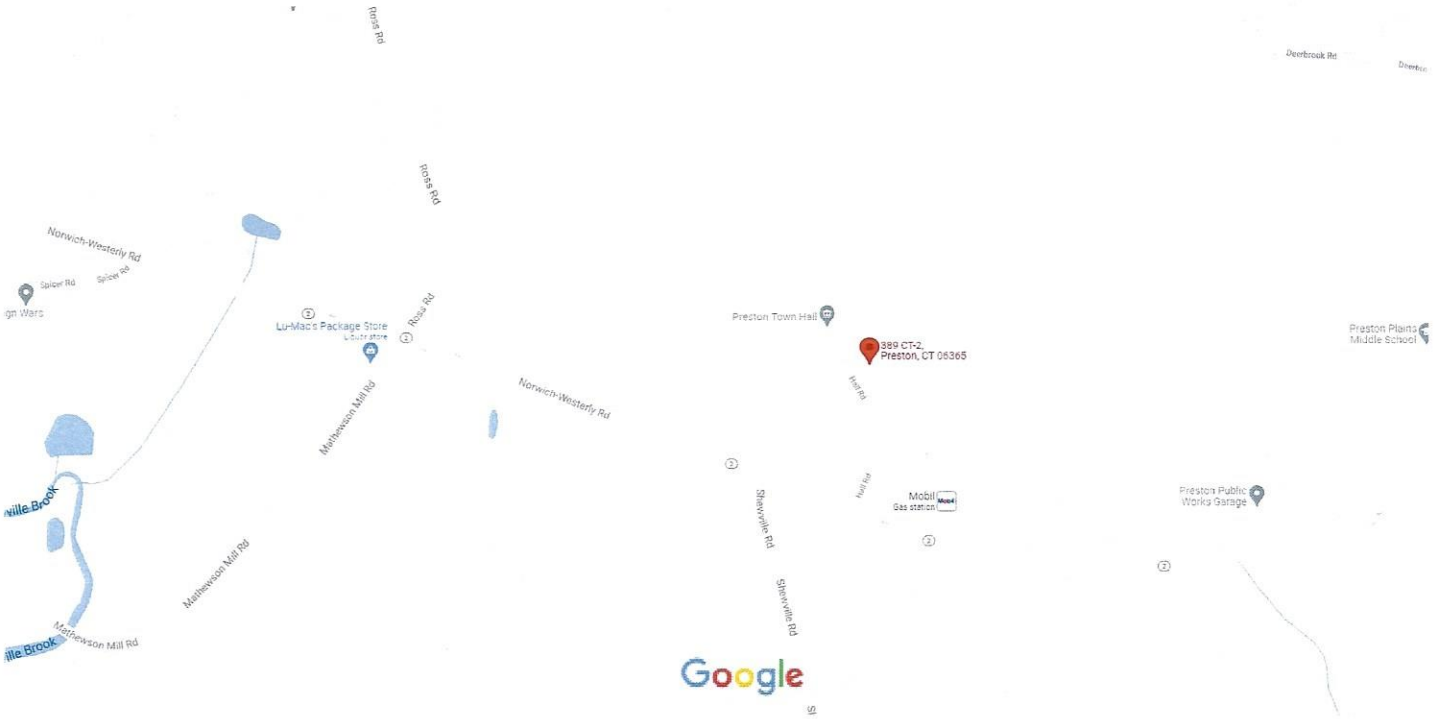
Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
LT1	LIGHTS-IN W/PL			6.00 UNITS	$1,200	1
PAV1	PAVING-ASPHALT			20000.00 S.F.	$10,800	1
IMP	IMPLEMENT SHED			120.00 S.F.	$500	1
IMP	IMPLEMENT SHED			100.00 S.F.	$400	1

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2011	$459,600	$503,400	$963,000
2006	$325,800	$253,400	$579,200
2001	$245,200	$39,700	$284,900

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2011	$321,800	$352,400	$674,200
2006	$228,100	$177,400	$405,500
2001	$171,600	$27,800	$199,400

Google Maps 389 CT-2



389 CT-2

Preston, CT 06365
Building

Directions Save Nearby Send to your phone Share

Photos

Exhibit C

Construction Drawings

DISH Wireless L.L.C. SITE ID:

BOBOS00885A

DISH Wireless L.L.C. SITE ADDRESS:

389 ROUTE 2
PRESTON, CT 06365

CONNECTICUT CODE OF COMPLIANCE

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

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

SHEET INDEX

SCOPE OF WORK

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

TOWER SCOPE OF WORK:
- INSTALL (3) PROPOSED PANEL ANTENNAS (1 PER SECTOR)
- INSTALL (1) PROPOSED ANTENNA PLATFORM MOUNT
- INSTALL PROPOSED JUMPERS
- INSTALL (6) PROPOSED RRUs (2 PER SECTOR)
- INSTALL (1) PROPOSED OVER VOLTAGE PROTECTION DEVICE (OVP)
- INSTALL (1) PROPOSED HYBRID CABLE
- INSTALL (3) DOUBLE Z-BRACKETS (1 PER SECTOR)

GROUND SCOPE OF WORK:
- INSTALL (1) PROPOSED METAL PLATFORM
- 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 FIBER NID (IF REQUIRED)
- INSTALL (1) NEW METER IN EXISTING OPEN METER SLOT F
- REMOVE EXISTING ABANDONED EQUIPMENT CABINETS

SITE PHOTO

UNDERGROUND SERVICE ALERT CBYD 811
UTILITY NOTIFICATION CENTER OF CONNECTICUT
(800) 922-4455
WWW.CBYD.COM

CALL 2 WORKING DAYS UTILITY NOTIFICATION PRIOR TO CONSTRUCTION

GENERAL NOTES

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

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

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

SITE INFORMATION

PROPERTY OWNER:	TOWN OF PRESTON TOWN HALL
ADDRESS:	389 RTE 2 PRESTON, CT 06365-8830
TOWER TYPE:	MONOPOLE
TOWER CO SITE ID:	876360
TOWER APP NUMBER:	572908
COUNTY:	NEW LONDON
LATITUDE (NAD 83):	41° 29' 25.25" N 41.490347 N
LONGITUDE (NAD 83):	71° 59' 29.55" W --71.991541 W
ZONING JURISDICTION:	CT SITING COUNCIL
ZONING DISTRICT:	R-60
PARCEL NUMBER:	PRES-000017-0030000
OCCUPANCY GROUP:	U
CONSTRUCTION TYPE:	II-B
POWER COMPANY:	EVERSOURCE
TELEPHONE COMPANY:	TBD

PROJECT DIRECTORY

APPLICANT:	DISH Wireless L.L.C. 5701 SOUTH SANTA FE DRIVE LITTLETON, CO 80120
TOWER OWNER:	CROWN CASTLE USA INC. 2000 CORPORATE DR. CANONSBURG, PA 15317 (877) 486-9377
SITE DESIGNER:	NB+C ENGINEERING SERVICES, LLC 6095 MARSHALEE DRIVE, SUITE 300 ELKRIDGE, MD 21075 (410) 712-7092
SITE ACQUISITION:	CORWIN DIXON CORWIN.DIXON@CROWNCASTLE.COM
CONSTRUCTION MANAGER:	JAVIER SOTO JAVIER.SOTO@DISH.COM
RF ENGINEER:	ARVIN SEBASTIAN ARVIN.SEBASTIAN@DISH.COM

DIRECTIONS

DIRECTIONS FROM BRADLEY INTERNATIONAL AIRPORT:
START OUT GOING WEST ON SCHOEPHOESTER RD TOWARD BRADLEY INTERNATIONAL AIRPORT. SCHOEPHOESTER RD BECOMES BRADLEY INTERNATIONAL AIRPORT CONNECTOR. TURN LEFT TO STAY ON BRADLEY INTERNATIONAL AIRPORT CONNECTOR. TAKE BRADLEY FIELD CONNECTOR TOWARD CT-20 E/I-91. BRADLEY FIELD CONNECTOR BECOMES CT-20 E. MERGE ONTO I-91 S TOWARD HARTFORD. MERGE ONTO I-84 E/US-6 E VIA EXIT 30 ON THE LEFT TOWARD E HARTFORD/NEW LONDON/CT-2. MERGE ONTO CT-2 E VIA EXIT 55 TOWARD NORWICH/NEW LONDON. TAKE THE CT-2 E/CT-32 S EXIT TOWARD NORWICH. TURN SLIGHT RIGHT ONTO WASHINGTON ST/CT-32/CT-2. TURN SLIGHT LEFT ONTO BROADWAY. TURN SLIGHT RIGHT ONTO UNION ST. TURN SLIGHT RIGHT ONTO BROADWAY. TURN LEFT ONTO MAIN ST/CT-2. CONTINUE TO FOLLOW CT-2. ARRIVE AT 389 CT HIGHWAY 2.

VICINITY MAP

NO SCALE

dish wireless™

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

NB+C™ TOTALLY COMMITTED.
NB+C ENGINEERING SERVICES, LLC.
6095 MARSHALEE DRIVE, SUITE 300
ELKRIDGE, MD 21075
(410) 712-7092

STATE OF CONNECTICUT — KRUPAKARAN KOLANDAIVELU — PEN.0028997 — LICENSED PROFESSIONAL ENGINEER

03/08/2022

KRUPAKARAN KOLANDAIVELU, P.E.
STATE OF CONNECTICUT
PROFESSIONAL ENGINEER
LICENSE #PEN.0028997

DRAWN BY:	CHECKED BY:	APPROVED BY:
CT	BRN	TA

RFDS REV #: ---

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
0	11/04/2021	ISSUED FOR CONSTRUCTION
1	03/08/2022	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

876360

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS00885A
389 ROUTE 2
PRESTON, CT 06365

SHEET TITLE

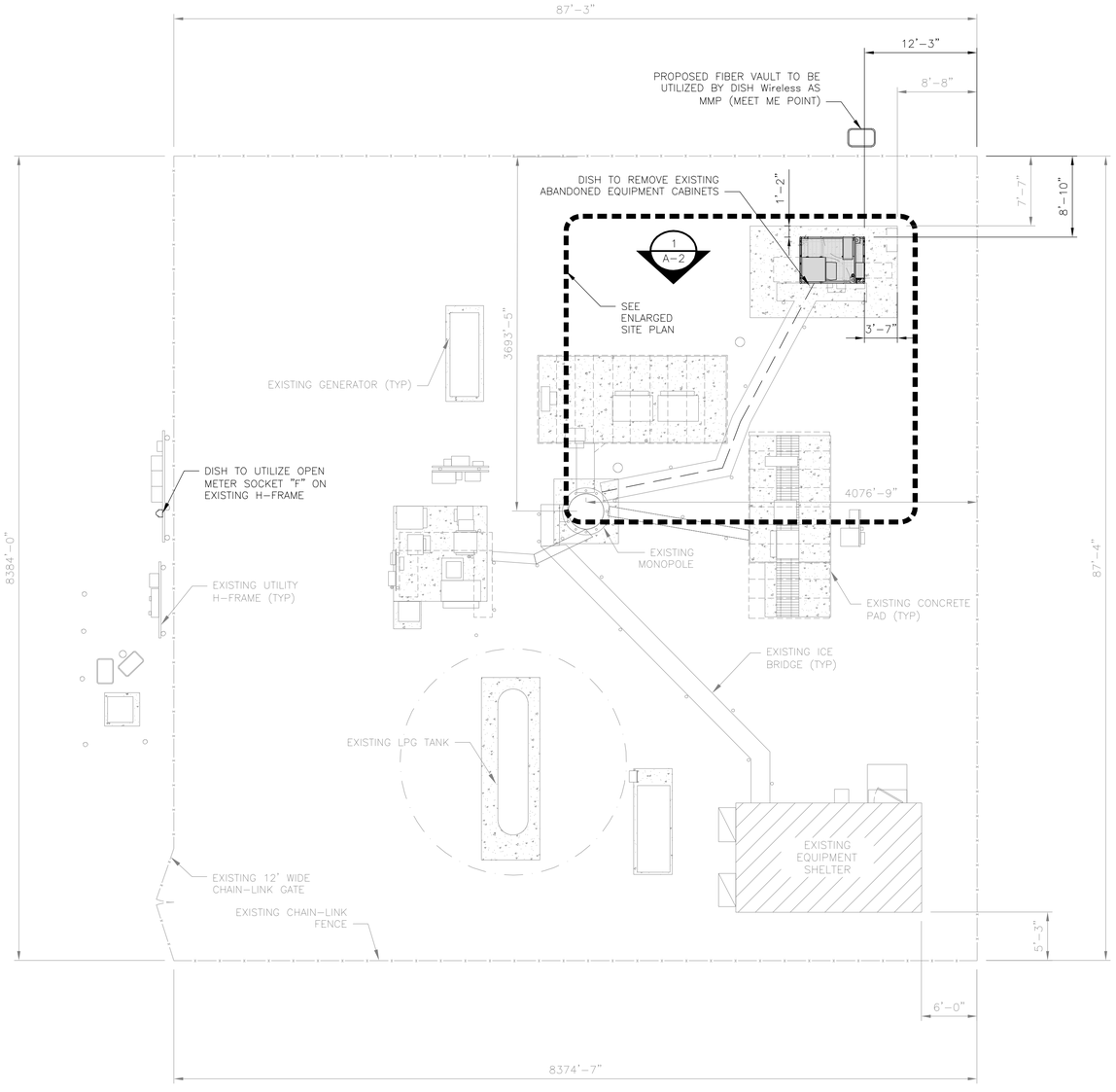
TITLE SHEET

SHEET NUMBER

T-1

NOTES

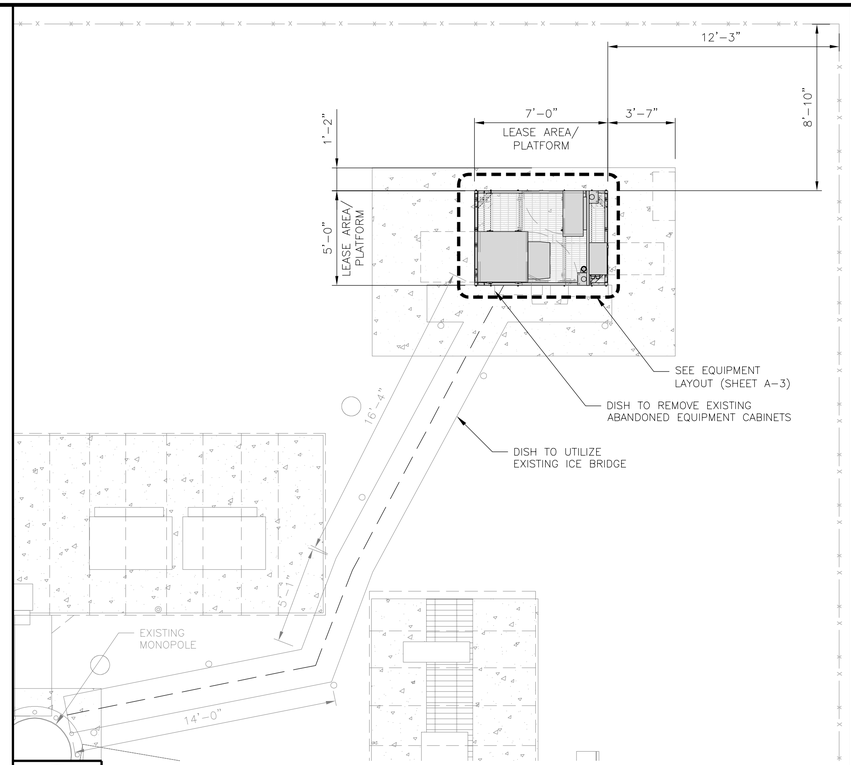
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. CONTRACTOR SHALL MAINTAIN A 10'-0" MINIMUM SEPARATION BETWEEN THE PROPOSED GPS UNIT, TRANSMITTING ANTENNAS AND EXISTING GPS UNITS.
3. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.



OVERALL SITE PLAN

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

1



ENLARGED SITE PLAN

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

2

AERIAL VIEW

3

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

NB+C TOTALLY COMMITTED.
NB+C ENGINEERING SERVICES, LLC.
6095 MARSHALEE DRIVE, SUITE 300
ELKRIDGE, MD 21075
(410) 712-7092

STATE OF CONNECTICUT
PEN.0028997
LICENSED PROFESSIONAL ENGINEER

03/08/2022

KRUPAKARAN KOLANDAIVELU, P.E.
STATE OF CONNECTICUT
PROFESSIONAL ENGINEER
LICENSE #PEN.0028997

DRAWN BY:	CHECKED BY:	APPROVED BY:
CT	BRN	TA

RFDS REV #: ---

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
0	11/04/2021	ISSUED FOR CONSTRUCTION
1	03/08/2022	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

876360

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS00885A
389 ROUTE 2
PRESTON, CT 06365

SHEET TITLE

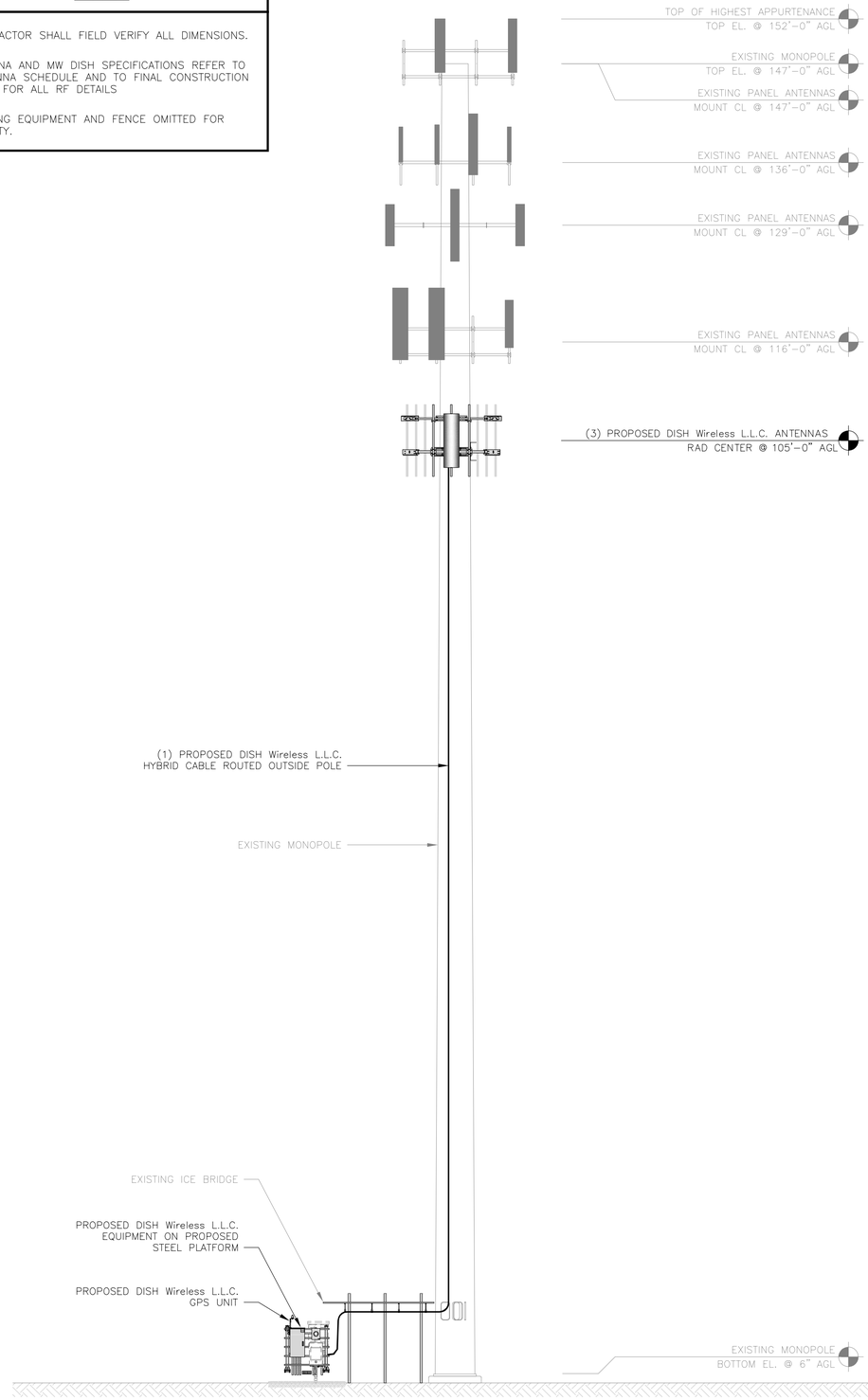
OVERALL AND ENLARGED SITE PLAN

SHEET NUMBER

A-1

NOTES

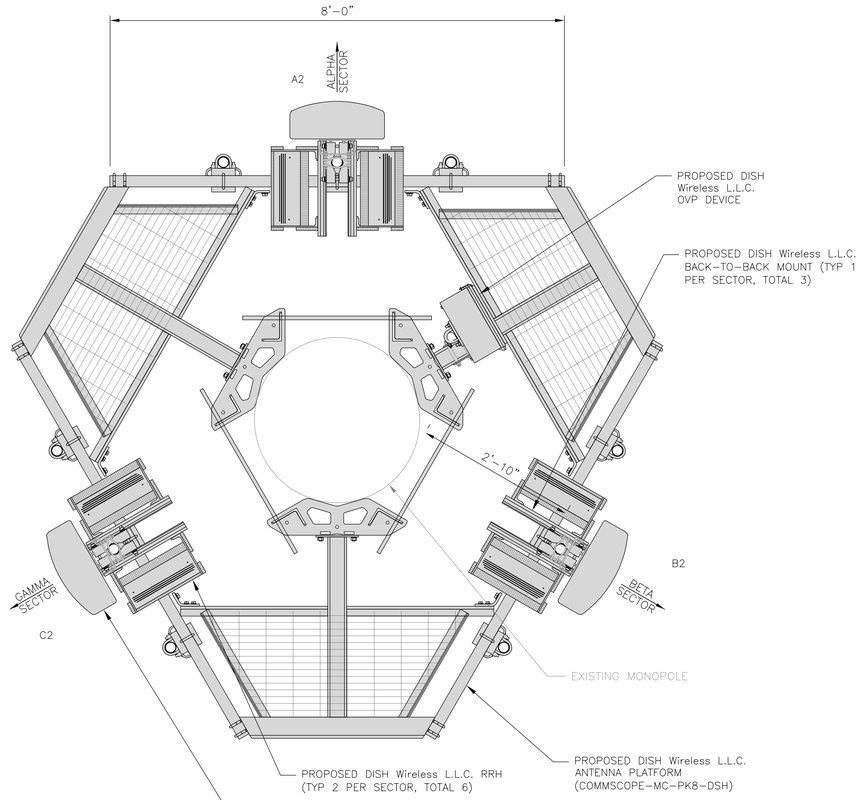
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNA AND MW DISH SPECIFICATIONS REFER TO ANTENNA SCHEDULE AND TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS
3. EXISTING EQUIPMENT AND FENCE OMITTED FOR CLARITY.



PROPOSED NORTH ELEVATION

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

1



ANTENNA LAYOUT

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

2

SECTOR POS.	ANTENNA					TRANSMISSION CABLE	RRH			OVP
	EXISTING OR PROPOSED	MANUFACTURER – MODEL NUMBER	TECH	AZIMUTH	RAD CENTER	FEED LINE TYPE AND LENGTH	MANUFACTURER – MODEL NUMBER	TECH	POS.	MANUFACTURER MODEL
A1	--	--	--	--	--	(1) HIGH-CAPACITY 1.5" DIA. HYBRID CABLE (159' LONG)	FUJITSU – TA08025-B604	5G	A2	RAYCAP – RDIDC-9181 -PF-48
A2	PROPOSED	COMMSCOPE – FFVV-65B-R2	5G	0°	105'-0"		FUJITSU – TA08025-B605	5G	A2	
A3	--	--	--	--	--		--	--	--	
B1	--	--	--	--	--	SHARED W/ALPHA	FUJITSU – TA08025-B604	5G	B2	SHARED W/ALPHA
B2	PROPOSED	COMMSCOPE – FFVV-65B-R2	5G	120°	105'-0"		FUJITSU – TA08025-B605	5G	B2	
B3	--	--	--	--	--		--	--	--	
C1	--	--	--	--	--	SHARED W/ALPHA	FUJITSU – TA08025-B604	5G	C2	SHARED W/ALPHA
C2	PROPOSED	COMMSCOPE – FFVV-65B-R2	5G	240°	105'-0"		FUJITSU – TA08025-B605	5G	C2	
C3	--	--	--	--	--		--	--	--	

NOTES

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

ANTENNA SCHEDULE

NO SCALE

3

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

NB+C TOTALLY COMMITTED.
NB+C ENGINEERING SERVICES, LLC.
6095 MARSHALEE DRIVE, SUITE 300
ELKRIDGE, MD 21075
(410) 712-7092

STATE OF CONNECTICUT
KRUPAKARAN KOLANDAIVELU
PEN.0028997
LICENSED PROFESSIONAL ENGINEER

03/08/2022

KRUPAKARAN KOLANDAIVELU, P.E.
STATE OF CONNECTICUT
PROFESSIONAL ENGINEER
LICENSE #PEN.0028997

DRAWN BY:	CHECKED BY:	APPROVED BY:
CT	BRN	TA

RFDS REV #: ---

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
0	11/04/2021	ISSUED FOR CONSTRUCTION
1	03/08/2022	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

876360

DISH Wireless L.L.C.
PROJECT INFORMATION

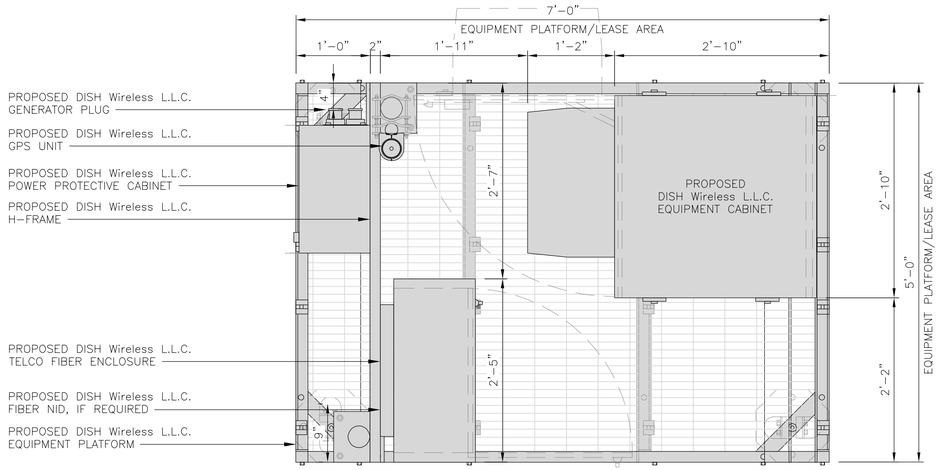
BOBOS00885A
389 ROUTE 2
PRESTON, CT 06365

SHEET TITLE

ELEVATION, ANTENNA LAYOUT AND SCHEDULE

SHEET NUMBER

A-2



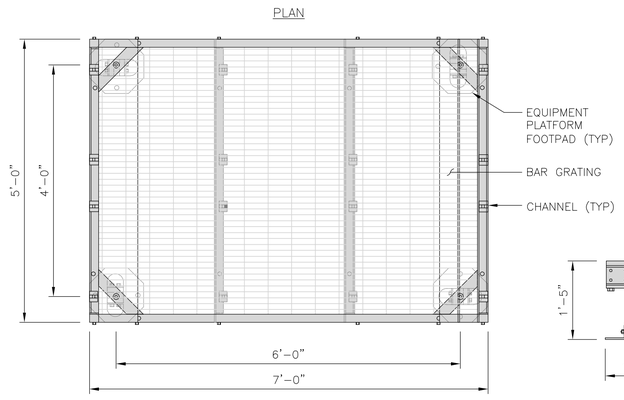
PLATFORM EQUIPMENT PLAN

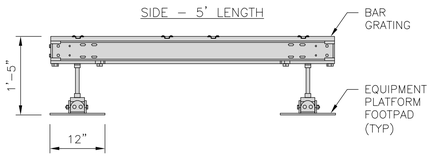
12" 9" 6" 3" 0 1' 2'
1"=1'-0"

1

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

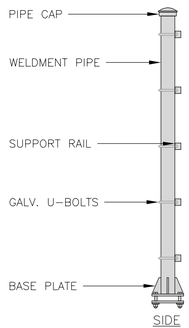
NOTE:
GC TO PROVIDE EXTENDED THREAD FOR PLATFORM IF REQUIRED HEIGHT EXCEEDS 17"





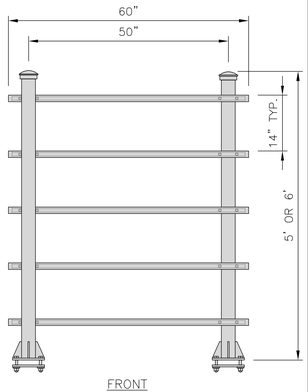
PLATFORM DETAIL | NO SCALE | 2

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



SIDE

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



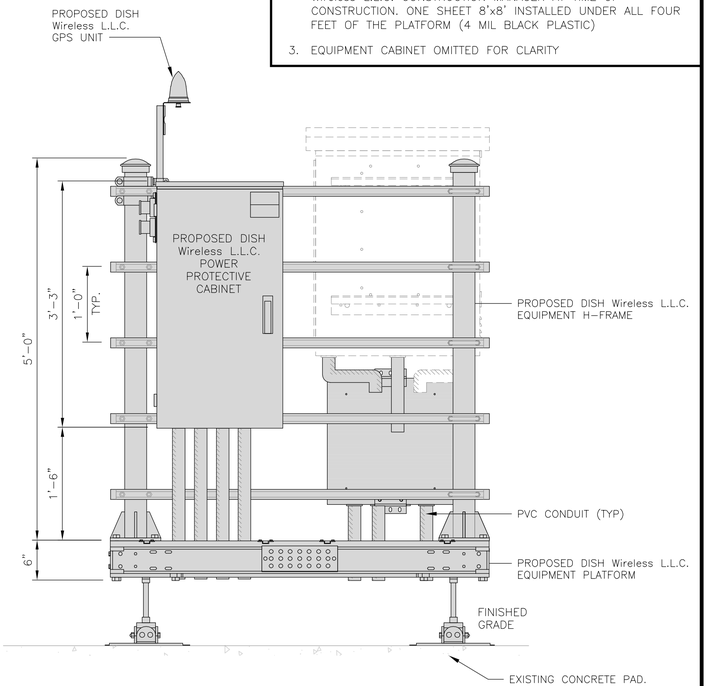
FRONT

H-FRAME DETAIL | NO SCALE | 3

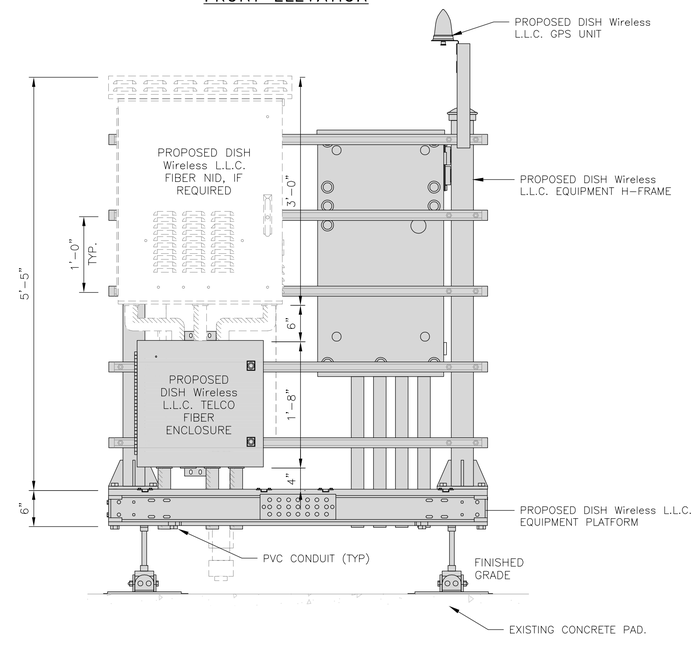
NOT USED | NO SCALE | 4

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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ELKRIDGE, MD 21075
(410) 712-7092

STATE OF CONNECTICUT
KRUPAKARAN KOLANDAIVELU
PEN.0028997
LICENSED PROFESSIONAL ENGINEER

03/08/2022

KRUPAKARAN KOLANDAIVELU, P.E.
STATE OF CONNECTICUT
PROFESSIONAL ENGINEER
LICENSE #PEN.0028997

DRAWN BY:	CHECKED BY:	APPROVED BY:
CT	BRN	TA

RFDS REV #: ---

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
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1	03/08/2022	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

876360

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS00885A
389 ROUTE 2
PRESTON, CT 06365

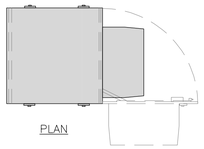
SHEET TITLE

EQUIPMENT PLATFORM AND H-FRAME DETAILS

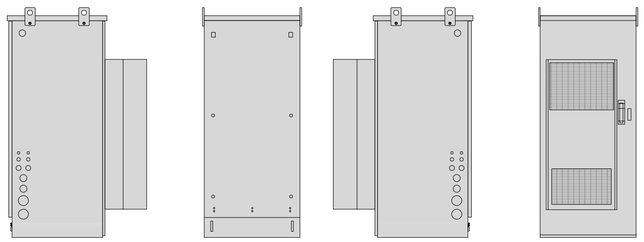
SHEET NUMBER

A-3

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



PLAN

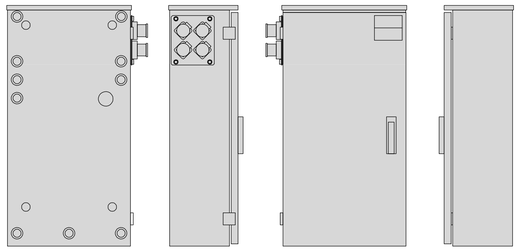


SIDE BACK SIDE FRONT

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

TOP

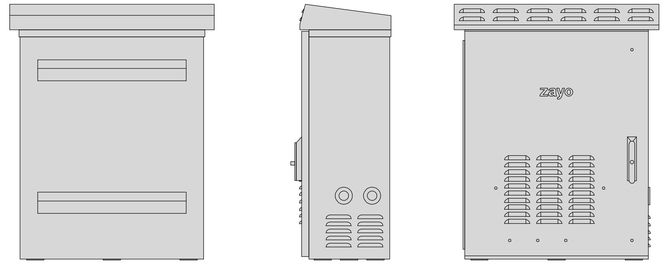


BACK SIDE FRONT SIDE

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

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

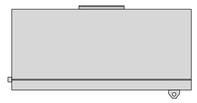
BOTTOM



BACK SIDE FRONT

FIBER NID ENCLOSURE DETAIL — NO SCALE — 3

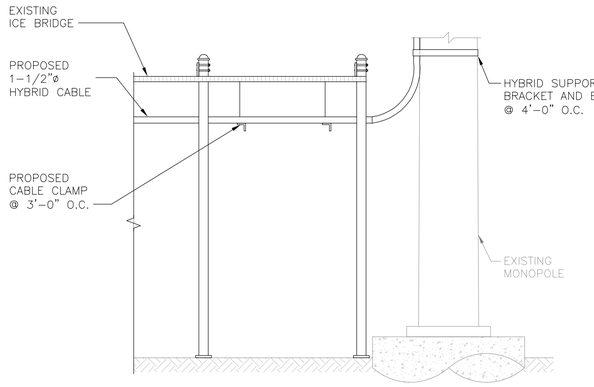
CHARLES CFIT–PF2020DSH1 FIBER TELCO ENCLOSURE	
ENCLOSURE DIMS (HxWxD)	20"x20"x9"
ENCLOSURE WEIGHT	20 lbs
MOUNTING	WALL
COMPLIANCE	TYPE 4



FRONT

SIDE BACK FRONT

FIBER TELCO ENCLOSURE DETAIL — NO SCALE — 4



HYBRID CABLE RUN — NO SCALE — 5

NOT USED — NO SCALE — 6

NOT USED — NO SCALE — 7

NOT USED — NO SCALE — 8

NOT USED — NO SCALE — 9

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STATE OF CONNECTICUT — KRUPAKARAN KOLANDAIVELU — PEN.0028997 — LICENSED PROFESSIONAL ENGINEER

03/08/2022

KRUPAKARAN KOLANDAIVELU, P.E.
STATE OF CONNECTICUT
PROFESSIONAL ENGINEER
LICENSE #PEN.0028997

DRAWN BY:	CHECKED BY:	APPROVED BY:
CT	BRN	TA

RFDS REV #: ---

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A&E PROJECT NUMBER

876360

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS00885A
389 ROUTE 2
PRESTON, CT 06365

SHEET TITLE

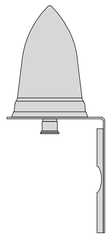
EQUIPMENT DETAILS

SHEET NUMBER

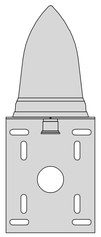
A-4

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

TOP

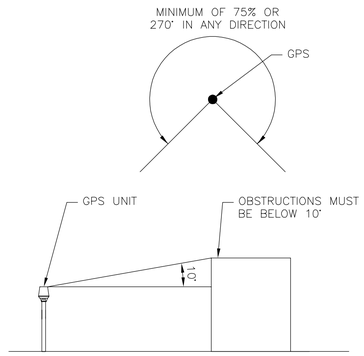


BACK

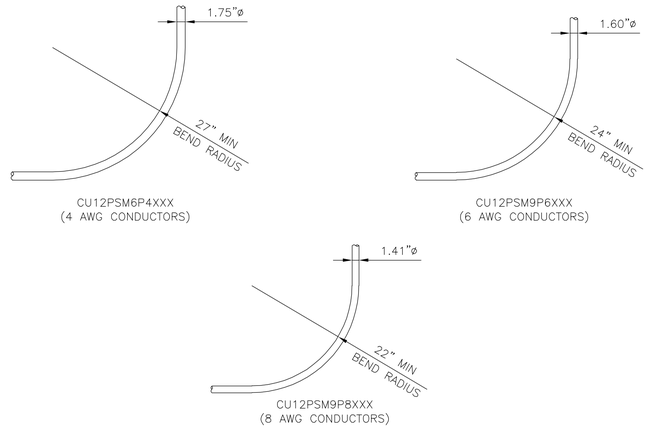


SIDE

GPS DETAIL | NO SCALE | 1



GPS MINIMUM SKY VIEW REQUIREMENTS | NO SCALE | 2



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

DESC	QTY	
SITE ID #:	BOBOS00885A	
TWR TYPE:	MONOPOLE	
HYBRID BEND RADIUS	30"	The preparer must determine the lengths below.
RAD CENTER (ft)	105.0	This is the RAD center for the antennas on towers. For a rooftop, this is the total length of all vertical sections of the hybrid.
ICE BRIDGE HEIGHT (ft)	10.0	This is the height of the bridge coverings.
ICE BRIDGE LENGTH (ft)	35.0	This is the length of the total ice bridge coverings, if more than one ice bridge is used or total horizontal lengths of hybrid if this is inside a building.
LENGTH ACROSS PLATFORM (ft)	1.0	This is the length from the cabinet to the first bend up the ice bridge or inside a radio room.
LENGTH FROM TOWER TOP TO OVP (ft)	1.0	This is the horizontal length from the tower to the OVP at the antenna level or the total horizontal lengths of hybrid on a building or large self supporting tower.
VERTICAL LENGTH OF HYBRID INTO TOWER TOP OVP (ft)	1.0	This is the vertical length of hybrid that comes out to the tower top OVP to the beginning of the first bend that is going into the monopole port.
	LENGTH (ft)	
Additional Excess Hybrid to be added (To be determined by preparer)	0	
Total Hybrid Length to Order (Rounded up to nearest whole number)	159	

HYBRID CABLE CALCULATOR | NO SCALE | 4

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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STATE OF CONNECTICUT · KRUPAKARAN KOLANDAIVELU · REG. NO. PEN.0028997 · LICENSED PROFESSIONAL ENGINEER

03/08/2022

KRUPAKARAN KOLANDAIVELU, P.E.
STATE OF CONNECTICUT
PROFESSIONAL ENGINEER
LICENSE #PEN.0028997

DRAWN BY:	CHECKED BY:	APPROVED BY:
CT	BRN	TA

RFDS REV #: ---

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A&E PROJECT NUMBER

876360

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS00885A
389 ROUTE 2
PRESTON, CT 06365

SHEET TITLE

EQUIPMENT DETAILS

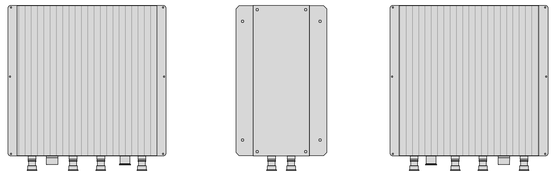
SHEET NUMBER

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

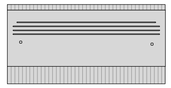


BACK SIDE FRONT

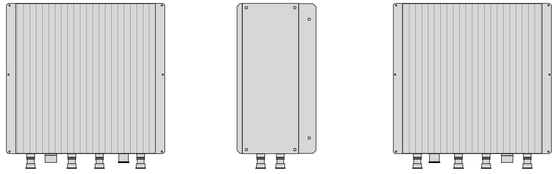
RRH DETAIL | NO SCALE | 1

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



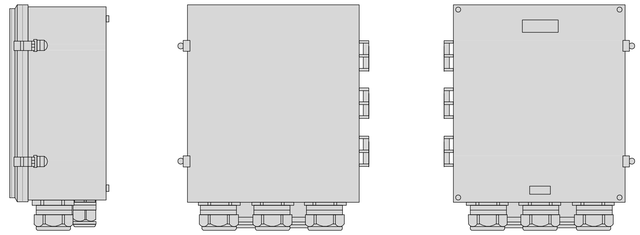
BACK SIDE FRONT

RRH DETAIL | NO SCALE | 2

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

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

PLAN



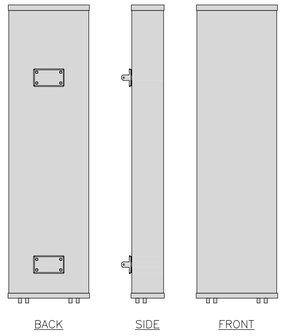
SIDE BACK FRONT

SURGE SUPPRESSION DETAIL (OVP) | NO SCALE | 3

COMMSCOPE FFVV-65B-R2

DIMENSIONS (HxWxD)(MM/IN)	1828x498x197 72"x19.6"x7.8"
RF CONNECTOR INTERFACE	4.3-10 FEMALE
WEIGHT	70.8 lbs
WEIGHT WITH BRACKETS	98.1 lbs

PLAN



BACK SIDE FRONT

ANTENNA DETAIL | NO SCALE | 4

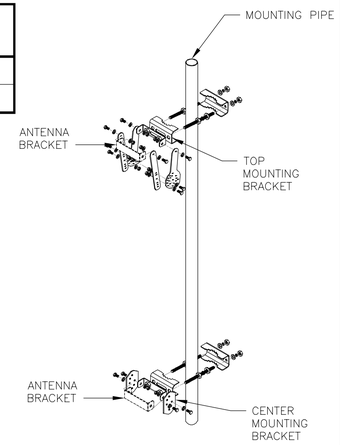
JMA ANTENNA MOUNT BRACKET #91900318

TOTAL WEIGHT (WITH BRACKETS)	18 lbs (8.18 Kg)
POLE DIAMETER RANGE	2.5" TO 4.5"

NOTE:
KIT #91900318: TOP AND BOTTOM BRACKETS FOR 4-,6-, AND 8-FOOT ANTENNAS

ANTENNA BRACKET NOT PART OF KIT

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

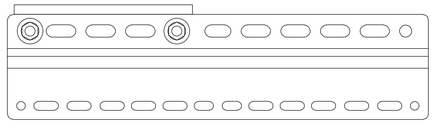


ANTENNA BRACKET DETAIL | NO SCALE | 5

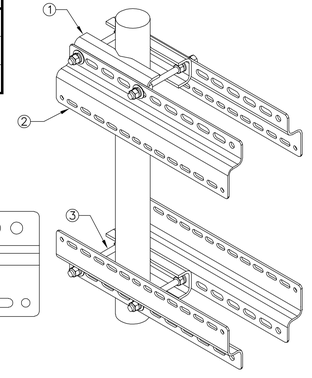
SABRE DOUBLE Z-BRACKET C10123155

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"



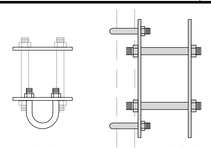
NOTE:
OR DISH Wireless L.L.C. APPROVED EQUIVALENT



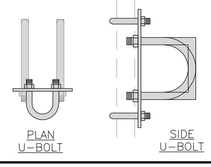
RRH MOUNT DETAIL | NO SCALE | 6

COMMSCOPE XP-2040 CROSSOVER PLATE

DIMENSIONS (HxW)	10"x12"
WEIGHT	11 lbs

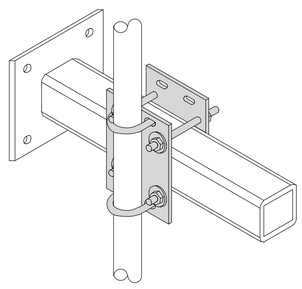


PLAN PLATE SIDE PLATE



PLAN U-BOLT SIDE U-BOLT

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

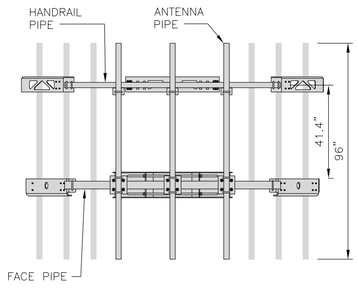


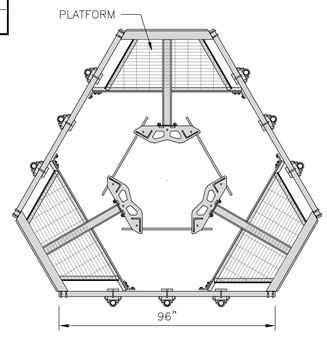
RRH/OVP MOUNT DETAIL | NO SCALE | 7

COMMSCOPE MC-PK8-DSH

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

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





ANTENNA PLATFORM DETAIL | NO SCALE | 8

NOT USED | NO SCALE | 9

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PROJECT INFORMATION

BOBOS00885A
389 ROUTE 2
PRESTON, CT 06365

SHEET TITLE

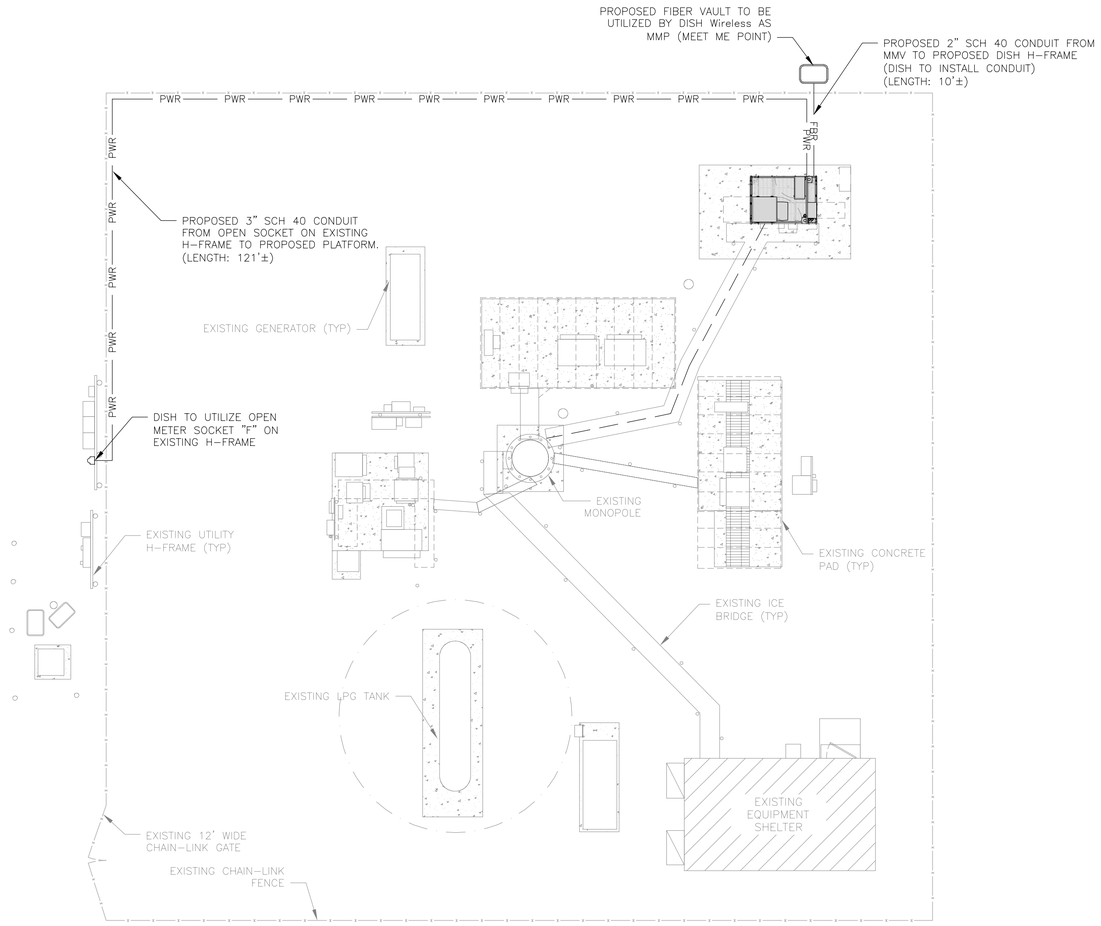
EQUIPMENT DETAILS

SHEET NUMBER

A-6

EASEMENT RIGHTS

1. CONTRACTOR SHALL FIELD VERIFY ALL PROPOSED UNDERGROUND UTILITY CONDUIT ROUTE.
2. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.
3. DUE TO UTILITY EASEMENT RIGHTS SPECIFIED IN THE GROUND LEASE, CUSTOMER MAY INSTALL EQUIPMENT WITHIN SPECIFIED UTILITY EASEMENT AREA. "PWR" AND "FBR" PATH DEPICTED ON A-1 AND E-1 REPRESENT PLANNED ROUTING BASED ON BEST AVAILABLE INFORMATION INCLUDING BUT NOT LIMITED TO A SURVEY, EXHIBITS, METES AND BOUNDS OF THE UTILITY EASEMENT, FIELD VERIFICATION, PRIOR PROJECT DOCUMENTATION AND OTHER REAL PROPERTY RIGHTS DOCUMENTS. WHEN INSTALLING THE UTILITIES PLEASE LOCATE AND FOLLOW EXISTING PATH. IF EXISTING PATH IS MATERIALLY INCONSISTENT WITH THE "PWR" AND "FBR" PATH DEPICTED ON A-1 AND E-1 AND SAID VARIANCE IS NOT NOTED ON CDS, PLEASE NOTIFY CROWN CASTLE REAL ESTATE AS FURTHER COORDINATION MAY BE NEEDED.



N

UTILITY ROUTE PLAN

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

1

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

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

ELECTRICAL NOTES

NO SCALE

2

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STATE OF CONNECTICUT
KRUPAKARAN KOLANDAIVELU
PEN.0028997
LICENSED PROFESSIONAL ENGINEER

03/08/2022

KRUPAKARAN KOLANDAIVELU, P.E.
STATE OF CONNECTICUT
PROFESSIONAL ENGINEER
LICENSE #PEN.0028997

DRAWN BY:	CHECKED BY:	APPROVED BY:
CT	BRN	TA

RFDS REV #: ---

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
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1	03/08/2022	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

876360

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS00885A
389 ROUTE 2
PRESTON, CT 06365

SHEET TITLE

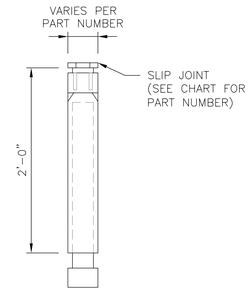
ELECTRICAL/FIBER ROUTE PLAN AND NOTES

SHEET NUMBER

E-1

CARLON EXPANSION FITTINGS

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

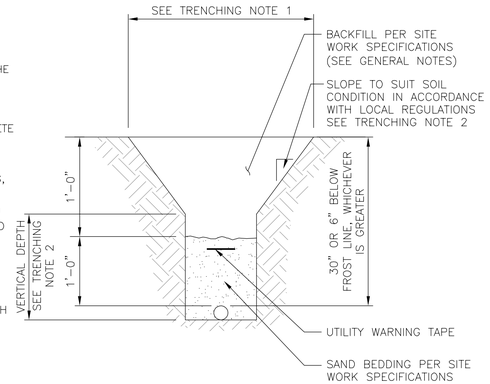


NOTE:
CONTRACTOR TO INSTALL EXPANSION FITTING SLIP JOINT AT METER CENTER CONDUIT TERMINATION, AS PER LOCAL UTILITY POLICY, ORDINANCE AND/OR SPECIFIED REQUIREMENT.

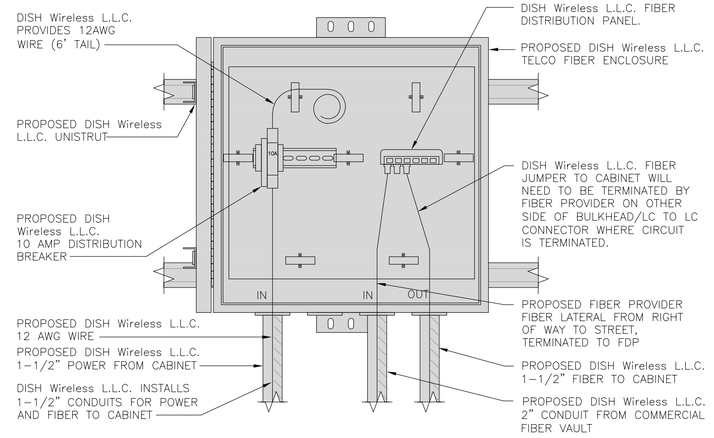
EXPANSION JOINT DETAIL | NO SCALE | 1

TRENCHING NOTES

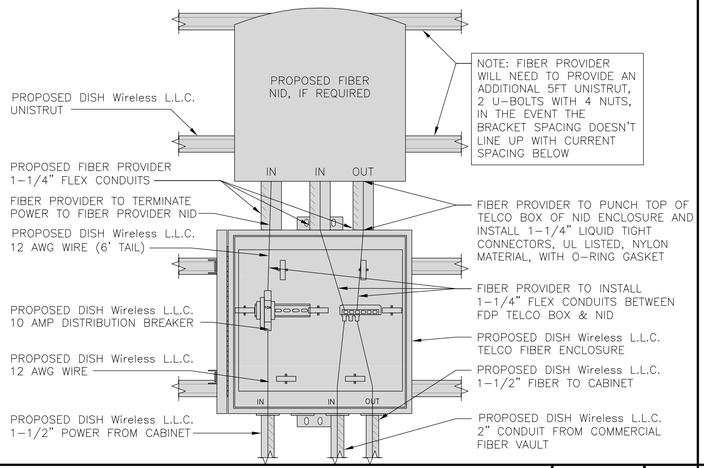
1. CONTRACTOR SHALL RESTORE THE TRENCH TO ITS ORIGINAL CONDITIONS BY EITHER SEEDING OR SODDING GRASS AREAS, OR REPLACING ASPHALT OR CONCRETE AREAS TO ITS ORIGINAL CROSS SECTION.
2. TRENCHING SAFETY; INCLUDING, BUT NOT LIMITED TO SOIL CLASSIFICATION, SLOPING, AND SHORING, SHALL BE GOVERNED BY THE CURRENT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



TYPICAL UNDERGROUND TRENCH DETAIL | NO SCALE | 2



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



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

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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STATE OF CONNECTICUT — KRUPAKARAN KOLANDAIVELU — PEN.0028997 — LICENSED PROFESSIONAL ENGINEER

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DISH Wireless L.L.C.
PROJECT INFORMATION

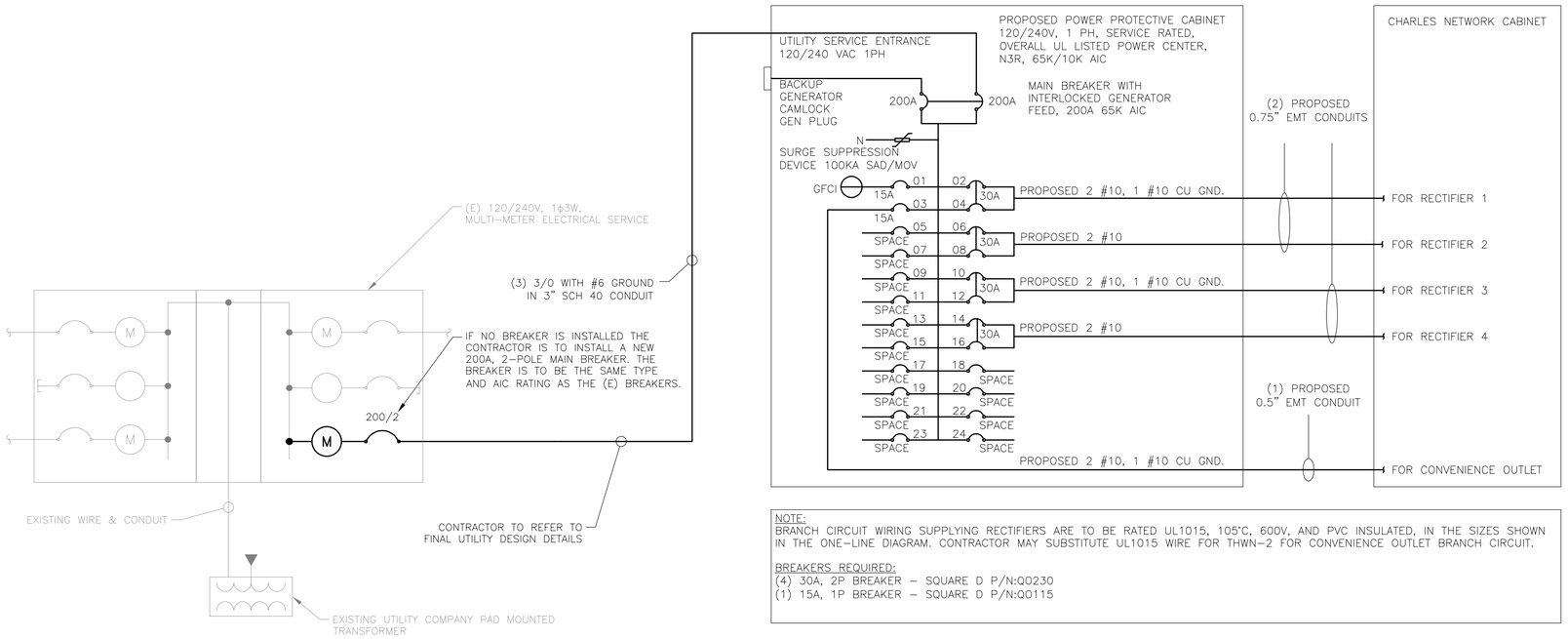
BOBOS00885A
389 ROUTE 2
PRESTON, CT 06365

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

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

THE (2) CONDUITS WITH (4) CURRENT CARRYING CONDUCTORS EACH, SHALL APPLY THE ADJUSTMENT FACTOR OF 80% PER 2014/17 NEC TABLE 310.15(B)(3)(a) OR 2020 NEC TABLE 310.15(C)(1) 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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03/08/2022

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A&E PROJECT NUMBER

876360

DISH Wireless L.L.C.
PROJECT INFORMATION

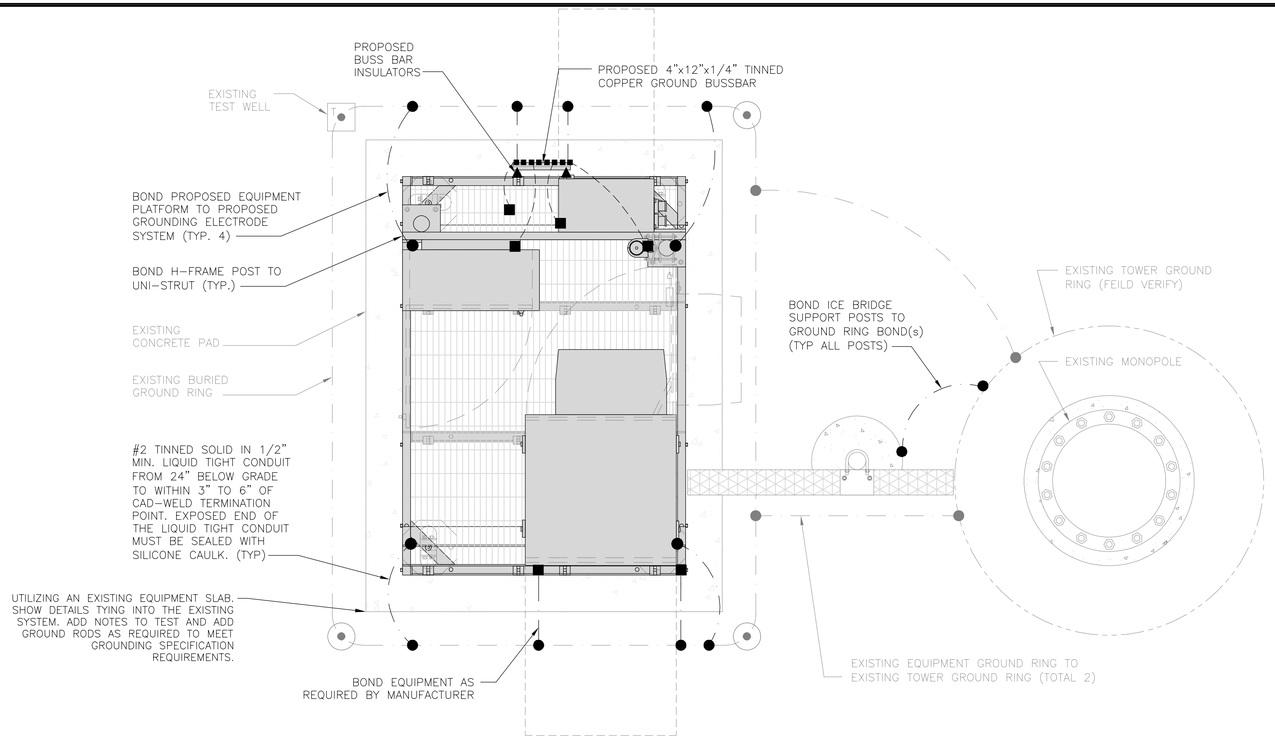
BOBOS00885A
389 ROUTE 2
PRESTON, CT 06365

SHEET TITLE

ELECTRICAL ONE-LINE, FAULT CALCS & PANEL SCHEDULE

SHEET NUMBER

E-3

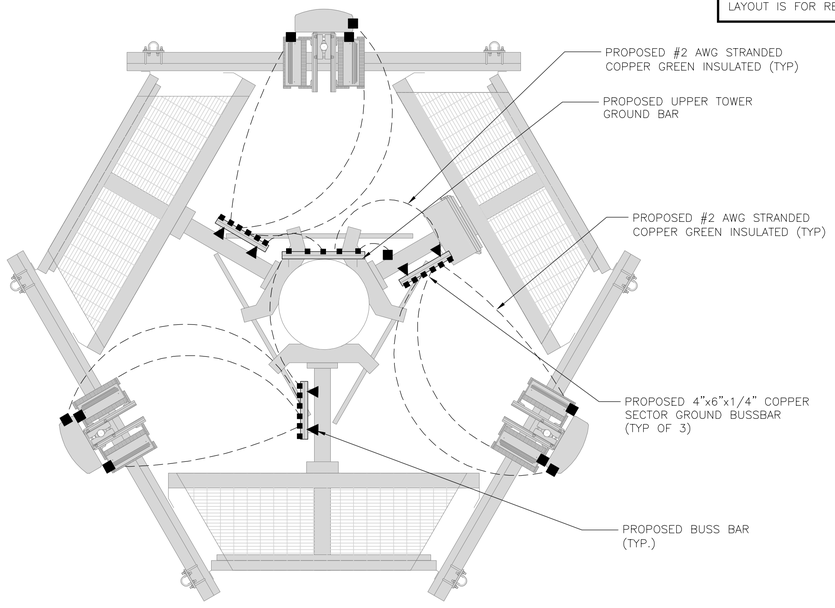


TYPICAL EQUIPMENT GROUNDING PLAN

NO SCALE | 1

NOTES

ANTENNAS AND OVP SHOWN ARE GENERIC AND NOT REFERENCING TO A SPECIFIC MANUFACTURER. THIS LAYOUT IS FOR REFERENCE PURPOSES 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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PROJECT INFORMATION

BOBOS00885A
389 ROUTE 2
PRESTON, CT 06365

SHEET TITLE

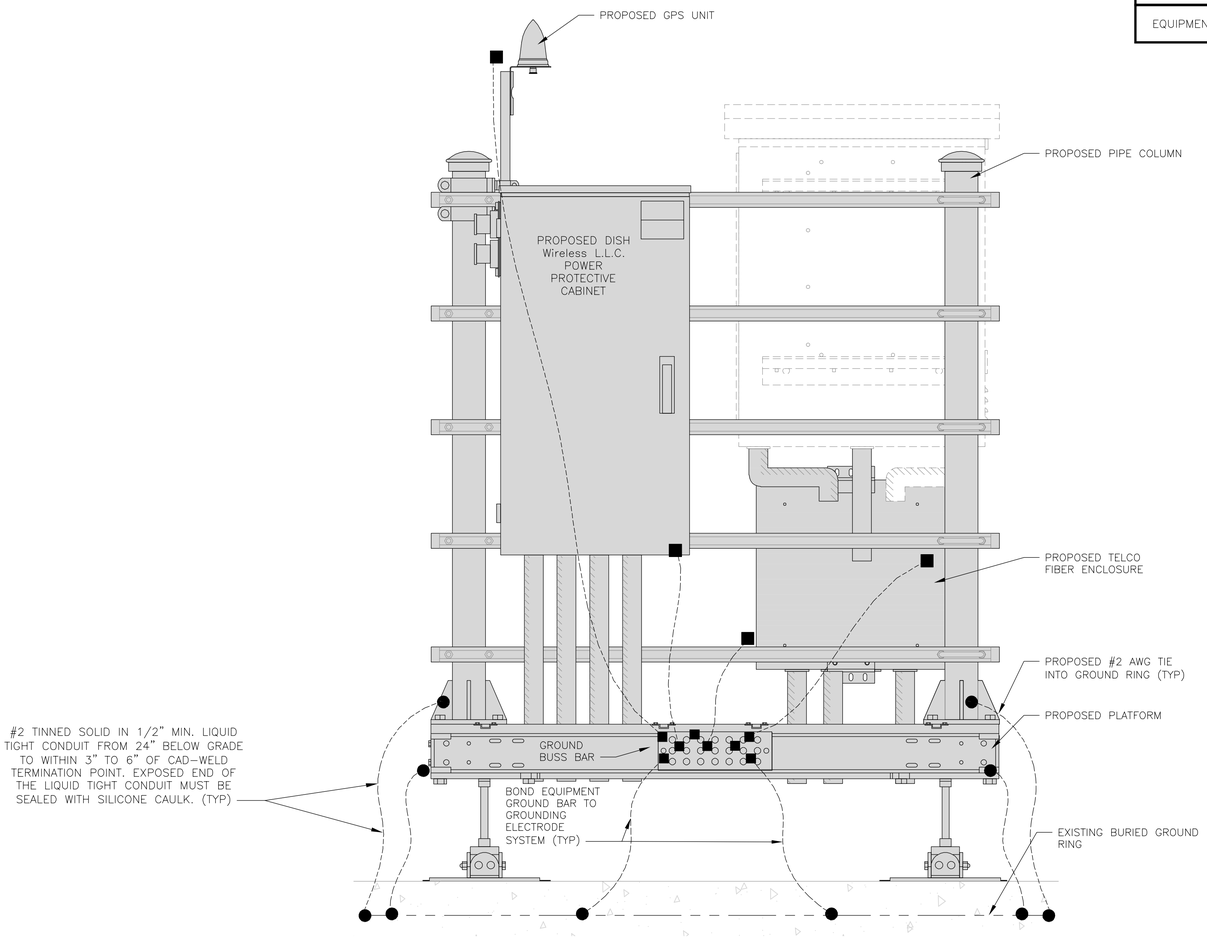
GROUNDING PLANS AND NOTES

SHEET NUMBER

G-1

NOTES

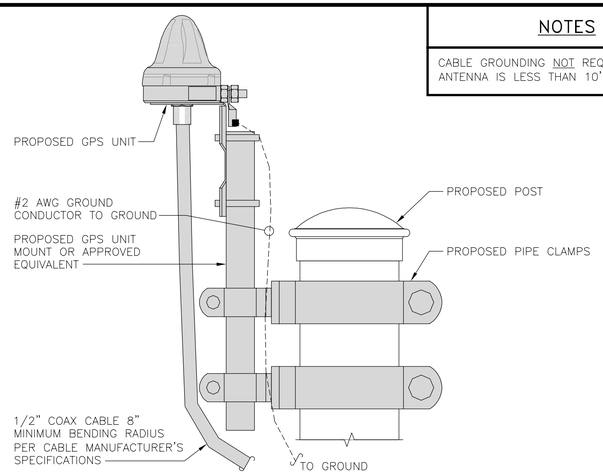
EQUIPMENT CABINET OMITTED FOR CLARITY



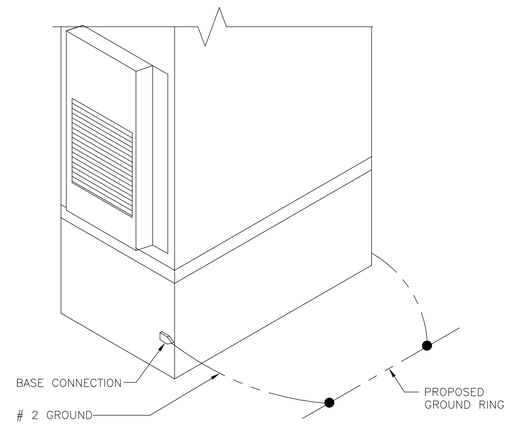
H-FRAME GROUNDING DETAIL | NO SCALE | 1

NOTES

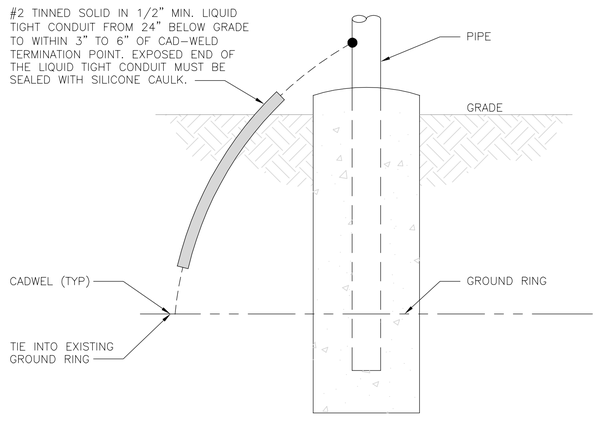
CABLE GROUNDING NOT REQUIRED WHEN ANTENNA IS LESS THAN 10' FROM CABINET



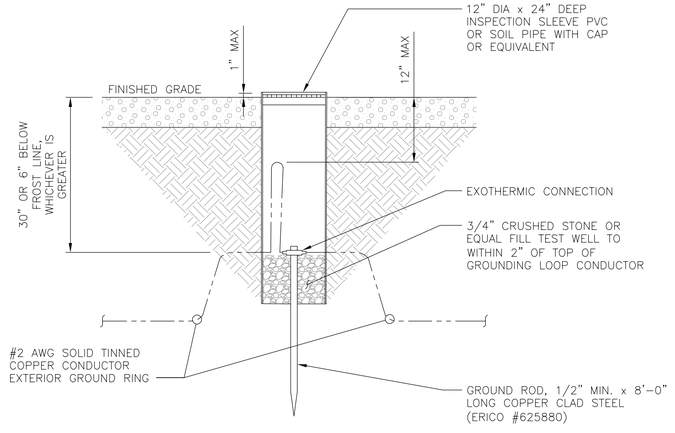
TYPICAL GPS UNIT GROUNDING | NO SCALE | 2



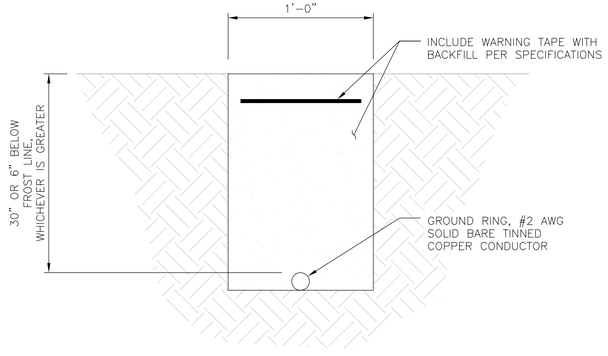
OUTDOOR CABINET GROUNDING | NO SCALE | 3



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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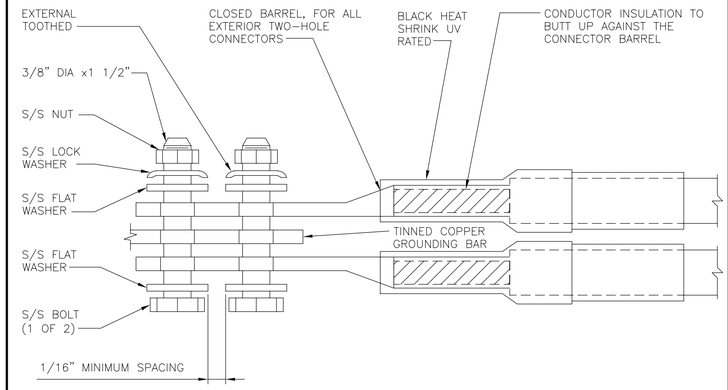
SHEET NUMBER

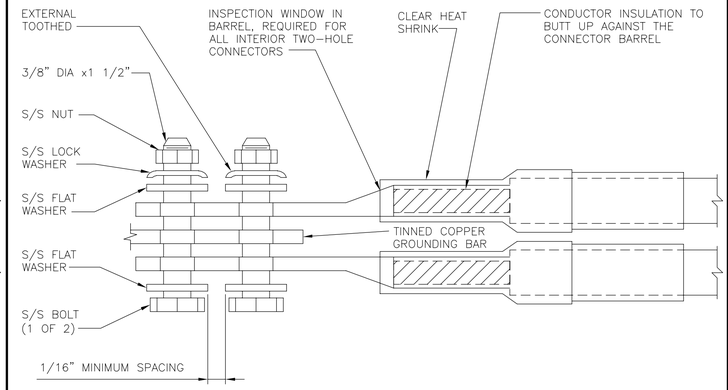
G-2

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).

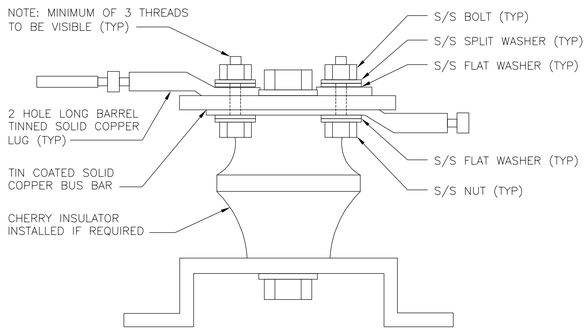
TYPICAL GROUNDING NOTES | NO SCALE | 1



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

dish wireless.

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STATE OF CONNECTICUT
PEN.0028997
LICENSED PROFESSIONAL ENGINEER

03/08/2022

KRUPAKARAN KOLANDAIVELU, P.E.
STATE OF CONNECTICUT
PROFESSIONAL ENGINEER
LICENSE #PEN.0028997

DRAWN BY:	CHECKED BY:	APPROVED BY:
CT	BRN	TA

RFDS REV #: ---

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
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1	03/08/2022	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

876360

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS00885A
389 ROUTE 2
PRESTON, CT 06365

SHEET TITLE

GROUNDING DETAILS

SHEET NUMBER

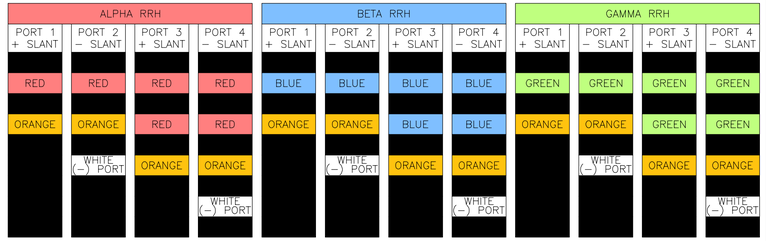
G-3

HYBRID/DISCREET CABLES

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

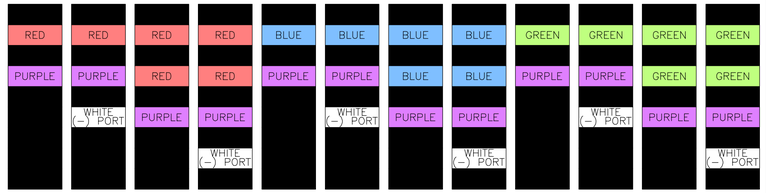
LOW-BAND RRH
(600 MHz N71 BASEBAND) +
(850 MHz N26 BAND) +
(700 MHz N29 BAND) - OPTIONAL PER MARKET

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



MID-BAND RRH
(AWS BANDS N66+N70)

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



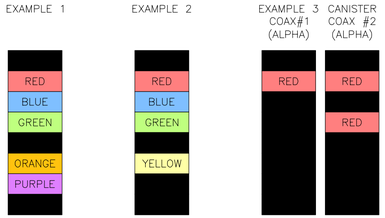
HYBRID/DISCREET CABLES

INCLUDE SECTOR BANDS BEING SUPPORTED ALONG WITH FREQUENCY BANDS.

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

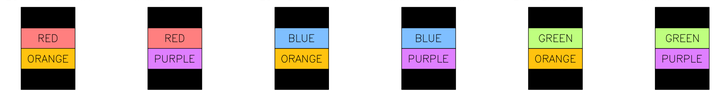
EXAMPLE 2 - HYBRID, OR DISCREET, SUPPORTS CBRS ONLY, ALL SECTORS.

EXAMPLE 3 - MAIN COAX WITH GROUND MOUNTED RRHs.



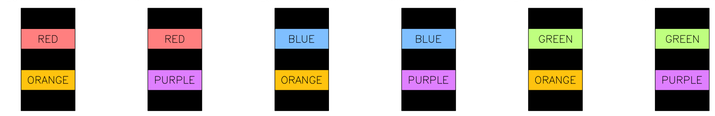
FIBER JUMPERS TO RRHs

LOW-BAND HHR FIBER CABLES HAVE SECTOR STRIPE ONLY.



POWER CABLES TO RRHs

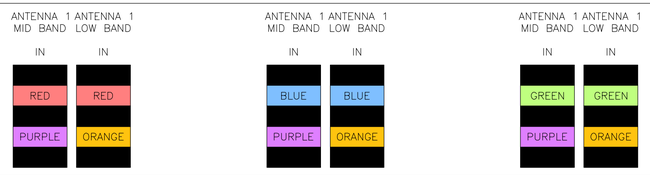
LOW-BAND RRH POWER CABLES HAVE SECTOR STRIPE ONLY



RET MOTORS AT ANTENNAS

RET CONTROL IS HANDLED BY THE MID-BAND RRH WHEN ONE SET OF RET PORTS EXIST ON ANTENNA.

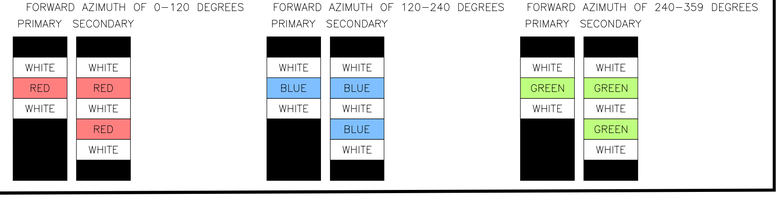
SEPARATE RET CABLES ARE USED WHEN ANTENNA PORTS PROVIDE INPUTS FOR BOTH LOW AND MID BANDS.



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 | | 2

NOT USED | | 3

RF CABLE COLOR CODES | | 1

NOT USED | | 4

dish wireless.

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STATE OF CONNECTICUT - KRUPAKARAN KOLANDAIVELU - PEN.0028997 - LICENSED PROFESSIONAL ENGINEER

03/08/2022

KRUPAKARAN KOLANDAIVELU, P.E.
STATE OF CONNECTICUT
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PROJECT INFORMATION

BOBOS00885A
389 ROUTE 2
PRESTON, CT 06365

SHEET TITLE

RF
CABLE COLOR CODES

SHEET NUMBER

RF-1

LEGEND

EXOTHERMIC CONNECTION

MECHANICAL CONNECTION

BUSS BAR INSULATOR

CHEMICAL ELECTROLYTIC GROUNDING SYSTEM

TEST CHEMICAL ELECTROLYTIC GROUNDING SYSTEM

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

W.P.

SECTION REFERENCE

DETAIL REFERENCE

ABBREVIATIONS

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

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PEN.0028997
LICENSED PROFESSIONAL ENGINEER

03/08/2022

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A&E PROJECT NUMBER

876360

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS00885A
389 ROUTE 2
PRESTON, CT 06365

SHEET TITLE

LEGEND AND ABBREVIATIONS

SHEET NUMBER

GN-1

SITE ACTIVITY REQUIREMENTS:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

GENERAL NOTES:

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

CONTRACTOR:GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION

CARRIER:DISH Wireless L.L.C.

TOWER OWNER:TOWER OWNER

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

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

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

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

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

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

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

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

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

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

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

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

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

dish wireless.

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STATE OF CONNECTICUT · KRUPAKARAN KOLANDAIVELU · PEN.0028997 · LICENSED PROFESSIONAL ENGINEER

03/08/2022

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RFDS REV #: ---

CONSTRUCTION DOCUMENTS

SUBMITTALS

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A&E PROJECT NUMBER

876360

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS00885A
389 ROUTE 2
PRESTON, CT 06365

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-2

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

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

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

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

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

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

#4 BARS AND SMALLER 40 ksi

#5 BARS AND LARGER 60 ksi

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

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

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

ELECTRICAL INSTALLATION NOTES:

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

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

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

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

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

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

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

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

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

8. TIE WRAPS ARE NOT ALLOWED.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

dish wireless.

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PEN.0028997
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03/08/2022

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DRAWN BY:	CHECKED BY:	APPROVED BY:
CT	BRN	TA

RFDS REV #: ---

CONSTRUCTION DOCUMENTS

SUBMITTALS

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0	11/04/2021	ISSUED FOR CONSTRUCTION
1	03/08/2022	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

876360

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS00885A
389 ROUTE 2
PRESTON, CT 06365

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-3

GROUNDING NOTES:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

dish wireless.

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DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS00885A
389 ROUTE 2
PRESTON, CT 06365

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-4

Exhibit D

Structural Analysis Report

Date: **September 23, 2021**

MORRISON HERSHFIELD

Morrison Hershfield
1455 Lincoln Parkway, Suite 500
Atlanta, GA 30346
(770) 397-8500

Subject:	**Structural Analysis Report**	
Carrier Designation:	***DISH Network* Co-Locate Site Number:**	BOBOS00885A
Crown Castle Designation:	**BU Number:**	876360
	Site Name:	Preston / Town Hall
	JDE Job Number:	671532
	Work Order Number:	2013127
	Order Number:	572908 Rev. 0
Engineering Firm Designation:	**Morrison Hershfield Project Number:** CN9-414R1 / 2101398	
Site Data:	**389 Rt. 2, Preston, New London County, CT 06365** **Latitude *41° 29' 25.25"*, Longitude *-71° 59' 29.55"*** **147 Foot – EEI Monopole Tower**	

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

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

LC7: Proposed Equipment Configuration **Sufficient Capacity**

This analysis utilizes an ultimate 3-second gust wind speed of 126 mph as required by the 2018 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Respectfully submitted by:

STATE OF CONNECTICUT
G. LANCE COOKE
No. 28133
LICENSED PROFESSIONAL ENGINEER

G. Lance Cooke, P.E. (CT License No. PEN.0028133)
Senior Engineer

Digitally signed by G. Lance Cooke
Date: 2021.09.23 10:44:39-07'00'

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 147 ft monopole tower designed by Engineered Endeavors, Inc.

The tower was modified multiple times in the past to accommodate additional loading. Modifications are incorporated in this analysis per the post modification inspection reports.

2) ANALYSIS CRITERIA

TIA-222 Revision: TIA-222-H
Risk Category: II
Wind Speed: 126 mph
Exposure Category: C
Topographic Factor: 1
Ice Thickness: 1 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)
105.0	105.0	3	jma wireless	MX08FRO665-21 w/ Mount Pipe	1	1-1/2
		3	fujitsu	TA08025-B604		
		3	fujitsu	TA08025-B605		
		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)
147.0	149.0	3	ericsson	AIR6449 B41_T-MOBILE w/ Mount Pipe	3	1-5/8
		3	rfs/celwave	APX16DWV-16DWV-S-E-A20 w/ Mount Pipe		
		3	rfs/celwave	APXVAALL24_43-U-NA20_TMO w/ Mount Pipe		
		3	ericsson	RADIO 4460 B2/B25 B66_TMO		
		3	ericsson	RADIO 4480 B71_TMO		
	147.0	1	-	Platform Mount [LP 303-1_HR-1]		
136.0	138.0	6	antel	LPA-80080/4CF w/ Mount Pipe	13	1-5/8
		2	commscope	NHH-45B-R2B w/ Mount Pipe		
		4	commscope	NHH-65B-R2B w/ Mount Pipe		
		3	samsung telecommunications	MT6407-77A w/ Mount Pipe		
		3	samsung telecommunications	RF4439D-25A		
		3	samsung telecommunications	RF4440D-13A		
		1	raycap	RVZDC-6627-PF-48		
	136.0	1	-	Platform Mount [LP 712-1]		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
129.0	129.0	3	ericsson	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	10	1-5/8
		3	ericsson	ERICSSON AIR 21 B4A B2P w/ Mount Pipe		
		3	rfs/celwave	APXVAALL24_43-U-NA20_TMO w/ Mount Pipe		
		3	ericsson	KRY 112 144/1		
		3	ericsson	RADIO 4449 B71 B85A_T-MOBILE		
		1	-	Platform Mount [LP 1201-1]		
116.0	118.0	3	cci antennas	DMP65R-BU8D w/ Mount Pipe	6 4 2 2 1	1-1/4 3/4 2C 3/8 5/16
		3	cci antennas	OPA65R-BU8D w/ Mount Pipe		
		3	powerwave technologies	RA21.7770.00 w/ Mount Pipe		
		6	powerwave technologies	LGP21401		
		3	ericsson	RRUS 4449 B5/B12		
		3	ericsson	RRUS 4478 B14		
		3	ericsson	RRUS 8843 B2/B66A		
		2	raycap	DC6-48-60-18-8F		
	116.0	1	-	Platform Mount [LP 303-1_HR-1]		
50.0	51.0	1	lucent	KS24019-L112A	1	1/2
	50.0	1	-	Side Arm Mount [SO 701-1]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Reference	Source
4-GEOTECHNICAL REPORTS	2192501	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	1615411	CCISITES
4-TOWER MANUFACTURER DRAWINGS	1615372	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	2331612	CCISITES
4-POST-MODIFICATION INSPECTION	2331610	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	3846963	CCISITES
4-POST-MODIFICATION INSPECTION	3846952	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	5573224	CCISITES
4-POST-MODIFICATION INSPECTION	5995667	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	5959061	CCISITES
4-POST-MODIFICATION INSPECTION	6072770	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	7474716	CCISITES
4-POST-MODIFICATION INSPECTION	8088961	CCISITES

3.1) Analysis Method

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

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 presented 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. Morrison Hershfield should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
L1	147 - 142	Pole	TP17.326x16.25x0.1875	Pole	13.5	Pass
L2	142 - 137	Pole	TP18.402x17.326x0.1875	Pole	21.6	Pass
L3	137 - 132	Pole	TP19.478x18.402x0.1875	Pole	39.3	Pass
L4	132 - 127	Pole	TP20.553x19.478x0.1875	Pole	56.2	Pass
L5	127 - 120.37	Pole	TP21.98x20.553x0.1875	Pole	67.6	Pass
L6	120.37 - 118.62	Pole	TP21.965x20.906x0.25	Pole	60.9	Pass
L7	118.62 - 113.62	Pole	TP23.025x21.965x0.25	Pole	73.4	Pass
L8	113.62 - 113.08	Pole	TP23.14x23.025x0.25	Pole	74.7	Pass
L9	113.08 - 112.83	Pole	TP23.193x23.14x0.25	Pole	75.2	Pass
L10	112.83 - 112.16	Pole	TP23.335x23.193x0.25	Pole	76.7	Pass
L11	112.16 - 111.91	Pole + Reinf.	TP23.388x23.335x0.525	Reinf. 18 Tension Rupture	66.5	Pass
L12	111.91 - 110.5	Pole + Reinf.	TP23.686x23.388x0.525	Reinf. 18 Tension Rupture	69.6	Pass
L13	110.5 - 110.25	Pole + Reinf.	TP23.739x23.686x0.75	Reinf. 18 Tension Rupture	50.2	Pass
L14	110.25 - 105.25	Pole + Reinf.	TP24.799x23.739x0.725	Reinf. 18 Tension Rupture	58.0	Pass
L15	105.25 - 105	Pole + Reinf.	TP24.852x24.799x0.725	Reinf. 18 Tension Rupture	58.3	Pass
L16	105 - 104.75	Pole + Reinf.	TP24.905x24.852x1	Reinf. 6 Tension Rupture	45.1	Pass
L17	104.75 - 103.5	Pole + Reinf.	TP25.17x24.905x1	Reinf. 6 Tension Rupture	46.9	Pass
L18	103.5 - 103.25	Pole + Reinf.	TP25.223x25.17x0.7625	Reinf. 6 Tension Rupture	59.6	Pass
L19	103.25 - 98.25	Pole + Reinf.	TP26.283x25.223x0.7375	Reinf. 6 Tension Rupture	67.7	Pass
L20	98.25 - 94.167	Pole + Reinf.	TP27.148x26.283x0.7125	Reinf. 6 Tension Rupture	73.9	Pass
L21	94.167 - 93.917	Pole + Reinf.	TP27.201x27.148x0.85	Reinf. 12 Tension Rupture	64.2	Pass
L22	93.917 - 91.5	Pole + Reinf.	TP27.713x27.201x0.825	Reinf. 12 Tension Rupture	67.3	Pass
L23	91.5 - 91.25	Pole + Reinf.	TP27.766x27.713x0.8	Reinf. 6 Tension Rupture	69.6	Pass
L24	91.25 - 90.58	Pole + Reinf.	TP27.908x27.766x0.8	Reinf. 6 Tension Rupture	70.4	Pass
L25	90.58 - 90.33	Pole + Reinf.	TP27.961x27.908x0.775	Reinf. 12 Tension Rupture	73.0	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
L26	90.33 - 84.91	Pole + Reinf.	TP29.11x27.961x0.7625	Reinf. 12 Tension Rupture	74.6	Pass
L27	84.91 - 83.91	Pole + Reinf.	TP28.822x27.726x0.85	Reinf. 12 Tension Rupture	74.0	Pass
L28	83.91 - 78.91	Pole + Reinf.	TP29.881x28.822x0.825	Reinf. 12 Tension Rupture	79.0	Pass
L29	78.91 - 73.91	Pole + Reinf.	TP30.94x29.881x0.8	Reinf. 12 Tension Rupture	83.5	Pass
L30	73.91 - 68.91	Pole + Reinf.	TP31.999x30.94x0.7875	Reinf. 12 Tension Rupture	87.6	Pass
L31	68.91 - 65.5	Pole + Reinf.	TP32.722x31.999x0.7625	Reinf. 12 Tension Rupture	90.3	Pass
L32	65.5 - 65.25	Pole + Reinf.	TP32.775x32.722x0.9	Reinf. 12 Tension Rupture	84.8	Pass
L33	65.25 - 64.5	Pole + Reinf.	TP32.934x32.775x0.8875	Reinf. 12 Tension Rupture	85.4	Pass
L34	64.5 - 64.25	Pole + Reinf.	TP32.987x32.934x0.8125	Reinf. 12 Tension Rupture	89.9	Pass
L35	64.25 - 59.25	Pole + Reinf.	TP34.046x32.987x0.7875	Reinf. 12 Tension Rupture	93.4	Pass
L36	59.25 - 58.583	Pole + Reinf.	TP34.187x34.046x0.7875	Reinf. 12 Tension Rupture	93.8	Pass
L37	58.583 - 58.333	Pole + Reinf.	TP34.24x34.187x0.8375	Reinf. 10 Tension Rupture	84.7	Pass
L38	58.333 - 57.25	Pole + Reinf.	TP34.47x34.24x0.8375	Reinf. 10 Tension Rupture	85.4	Pass
L39	57.25 - 57	Pole + Reinf.	TP34.523x34.47x0.8375	Reinf. 10 Tension Rupture	84.5	Pass
L40	57 - 52	Pole + Reinf.	TP35.582x34.523x0.825	Reinf. 10 Tension Rupture	87.4	Pass
L41	52 - 44.41	Pole + Reinf.	TP37.19x35.582x0.8125	Reinf. 10 Tension Rupture	88.7	Pass
L42	44.41 - 43.41	Pole + Reinf.	TP36.78x35.47x0.875	Reinf. 10 Tension Rupture	86.9	Pass
L43	43.41 - 38.41	Pole + Reinf.	TP37.842x36.78x0.85	Reinf. 10 Tension Rupture	89.0	Pass
L44	38.41 - 34.5	Pole + Reinf.	TP38.673x37.842x0.85	Reinf. 10 Tension Rupture	90.5	Pass
L45	34.5 - 34.25	Pole + Reinf.	TP38.726x38.673x1	Reinf. 15 Tension Rupture	78.3	Pass
L46	34.25 - 33.5	Pole + Reinf.	TP38.885x38.726x1	Reinf. 15 Tension Rupture	78.5	Pass
L47	33.5 - 33.25	Pole + Reinf.	TP38.938x38.885x0.8	Reinf. 4 Tension Rupture	91.8	Pass
L48	33.25 - 28.483	Pole + Reinf.	TP39.95x38.938x0.8875	Reinf. 4 Tension Rupture	85.8	Pass
L49	28.483 - 28.233	Pole + Reinf.	TP40.004x39.95x0.8875	Reinf. 4 Tension Rupture	85.9	Pass
L50	28.233 - 27.483	Pole + Reinf.	TP40.163x40.004x0.875	Reinf. 3 Tension Rupture	86.1	Pass
L51	27.483 - 27.233	Pole + Reinf.	TP40.216x40.163x0.875	Reinf. 3 Tension Rupture	86.2	Pass
L52	27.233 - 22.233	Pole + Reinf.	TP41.278x40.216x0.875	Reinf. 3 Tension Rupture	87.8	Pass
L53	22.233 - 17.233	Pole + Reinf.	TP42.34x41.278x0.85	Reinf. 3 Tension Rupture	89.3	Pass
L54	17.233 - 12.233	Pole + Reinf.	TP43.402x42.34x0.8375	Reinf. 3 Tension Rupture	90.7	Pass
L55	12.233 - 7.233	Pole + Reinf.	TP44.464x43.402x0.825	Reinf. 3 Tension Rupture	92.1	Pass
L56	7.233 - 6.917	Pole + Reinf.	TP44.531x44.464x0.825	Reinf. 3 Tension Rupture	92.1	Pass
L57	6.917 - 6.667	Pole + Reinf.	TP44.584x44.531x0.775	Reinf. 1 Tension Rupture	94.9	Pass
L58	6.667 - 3	Pole + Reinf.	TP45.363x44.584x0.775	Reinf. 1 Tension Rupture	95.9	Pass
L59	3 - 2.75	Pole + Reinf.	TP45.416x45.363x0.775	Reinf. 1 Tension Rupture	95.9	Pass
L60	2.75 - 0	Pole + Reinf.	TP46x45.416x0.775	Reinf. 1 Tension Rupture	96.6	Pass
					Summary	
				Pole	76.7	Pass
				Reinforcement	96.6	Pass
				Overall	96.6	Pass

Table 5 - Tower Component Stresses vs. Capacity – LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	96.6	Pass
1	Base Plate		90.2	Pass
1	Base Foundation (Structure)	0	98.2	Pass
1	Base Foundation (Soil Interaction)		65.7	Pass

Structure Rating (max from all components) =	98.2%*

Notes:
1) See additional documentation in “Appendix C – Additional Calculations” for calculations supporting the % capacity consumed.
2) *Rating per TIA-222-H, Section 15.5.

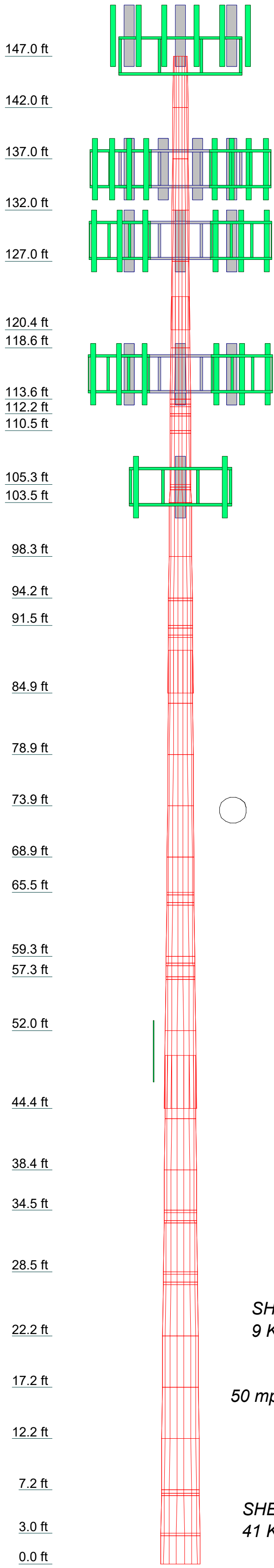
4.1) Recommendations

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	5.00	18	0.1875		16.2500	17.3259	A572-65	0.2
2	5.00	18	0.1875		17.3259	18.4017		0.2
3	5.00	18	0.1875		18.4017	19.4776		0.2
4	5.00	18	0.1875		19.4776	20.5534		0.2
5	5.00	18	0.1875	3.25	20.5534	21.9800		0.3
6	6.63	18	0.2500		[illegible]	[illegible]		0.3
7	5.00	18	[illegible]		[illegible]	[illegible]		0.3
8–13	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
14	5.00	18	[illegible]		[illegible]	[illegible]		0.8
15–18	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
19	5.00	18	0.7375		[illegible]	[illegible]		0.9
20	4.08	18	0.7125		[illegible]	[illegible]		0.7
21–25	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
26	5.74	18	0.7625	4.17	27.9627	29.1		1.1
27	[illegible]	18	0.8500		[illegible]	[illegible]		1.2
28	5.00	18	0.8250		28.8227	29.8808		1.2
29	5.00	18	0.8000		29.8808	30.9401		1.2
30	5.00	18	0.7875		30.9401	31.9994		1.2
31	5.41	18	[illegible]		[illegible]	[illegible]		0.8
32–34	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
35	5.00	18	[illegible]		[illegible]	[illegible]		1.3
36–39	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
40	5.00	18	[illegible]		[illegible]	[illegible]		1.4
41	7.59	18	0.8125	5.17	35.5820	37.1900		2.2
42	6.1	18	0.8750		[illegible]	[illegible]		1.9
43	5.00	18	0.8500		[illegible]	[illegible]		1.6
44	3.91	18	[illegible]		[illegible]	[illegible]		1.3
45–47	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
48	4.77	18	[illegible]		[illegible]	[illegible]		1.7
49–51	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
52	5.00	18	0.8750		[illegible]	41.2779		1.8
53	5.00	18	0.8500		41.2779	42.3399		1.9
54	5.00	18	0.8375		42.3399	43.4018		1.9
55	5.00	18	[illegible]		43.4018	44.4638		1.9
56–57	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
58	[illegible]	18	[illegible]		[illegible]	[illegible]		1.4
59	[illegible]	18	[illegible]		[illegible]	[illegible]		1.1
60	2.75	18	[illegible]		[illegible]	[illegible]		1.1
								36.0



MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower is located in New London County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-H Standard.
3. Tower designed for a 126 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. CCIPOLE RATING: 96.6%

ALL REACTIONS ARE FACTORED

AXIAL 97 K
SHEAR 9 K
MOMENT 982 kip-ft
TORQUE 0 kip-ft
50 mph WIND - 1.0000 in ICE

AXIAL 70 K
SHEAR 41 K
MOMENT 4397 kip-ft
TORQUE 1 kip-ft
REACTIONS - 126 mph WIND

Morrison Hershfield 1455 Lincoln Parkway, Suite 500 Atlanta, GA 30346 Phone: (770) 397-8500 FAX: (770) 397-8501 Consulting Engineers	Job: **CN9-414R1 / 2101398**		
	Project: **876360 / Preston / Town Hall**		
	Client: Crown Castle USA	Drawn by: NN	App'd:
	Code: TIA-222-H	Date: 09/23/21	Scale: NTS
	Path: C:\Users\NNaidu\Desktop\Daily Jobs\MP\CN9-414R1\CN9-414R1 BU 876360 WO 2013127.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 London County, Connecticut.
- Tower base elevation above sea level: 135.00 ft.
- Basic wind speed of 126 mph.
- Risk Category II.
- Exposure Category C.
- Simplified Topographic Factor Procedure for wind speed-up calculations is used.
- Topographic Category: 1.
- Crest Height: 0.00 ft.
- Nominal ice thickness of 1.0000 in.
- Ice thickness is considered to increase with height.
- Ice density of 56 pcf.
- A wind speed of 50 mph is used in combination with ice.
- Temperature drop of 50 °F.
- Deflections calculated using a wind speed of 60 mph.
- A non-linear (P-delta) analysis was used.
- Pressures are calculated at each section.
- Stress ratio used in pole design is 1.
- Tower analysis based on target reliabilities in accordance with Annex S.
- Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
- Maximum demand-capacity ratio is: 1.05.
- Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

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

Tapered Pole Section Geometry

Section	*Elevation*	*Section Length*	*Splice Length*	*Number of Sides*	*Top Diameter*	*Bottom Diameter*	*Wall Thickness*	*Bend Radius*	*Pole Grade*
	ft	*ft*	*ft*		*in*	*in*	*in*	*in*	
L1	147.00-142.00	5.00	0.00	18	16.2500	17.3259	0.1875	0.7500	A572-65 (65 ksi)
L2	142.00-137.00	5.00	0.00	18	17.3259	18.4017	0.1875	0.7500	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
L3	137.00-132.00	5.00	0.00	18	18.4017	19.4776	0.1875	0.7500	(65 ksi) A572-65 (65 ksi)
L4	132.00-127.00	5.00	0.00	18	19.4776	20.5534	0.1875	0.7500	A572-65 (65 ksi)
L5	127.00-120.37	6.63	3.25	18	20.5534	21.9800	0.1875	0.7500	A572-65 (65 ksi)
L6	120.37-118.62	5.00	0.00	18	20.9057	21.9654	0.2500	1.0000	A572-65 (65 ksi)
L7	118.62-113.62	5.00	0.00	18	21.9654	23.0251	0.2500	1.0000	A572-65 (65 ksi)
L8	113.62-113.08	0.54	0.00	18	23.0251	23.1396	0.2500	1.0000	A572-65 (65 ksi)
L9	113.08-112.83	0.25	0.00	18	23.1396	23.1926	0.2500	1.0000	A572-65 (65 ksi)
L10	112.83-112.16	0.67	0.00	18	23.1926	23.3346	0.2500	1.0000	A572-65 (65 ksi)
L11	112.16-111.91	0.25	0.00	18	23.3346	23.3875	0.5250	2.1000	A572-65 (65 ksi)
L12	111.91-110.50	1.41	0.00	18	23.3875	23.6864	0.5250	2.1000	A572-65 (65 ksi)
L13	110.50-110.25	0.25	0.00	18	23.6864	23.7394	0.7500	3.0000	A572-65 (65 ksi)
L14	110.25-105.25	5.00	0.00	18	23.7394	24.7991	0.7250	2.9000	A572-65 (65 ksi)
L15	105.25-105.00	0.25	0.00	18	24.7991	24.8521	0.7250	2.9000	A572-65 (65 ksi)
L16	105.00-104.75	0.25	0.00	18	24.8521	24.9051	1.0000	4.0000	A572-65 (65 ksi)
L17	104.75-103.50	1.25	0.00	18	24.9051	25.1700	1.0000	4.0000	A572-65 (65 ksi)
L18	103.50-103.25	0.25	0.00	18	25.1700	25.2230	0.7625	3.0500	A572-65 (65 ksi)
L19	103.25-98.25	5.00	0.00	18	25.2230	26.2827	0.7375	2.9500	A572-65 (65 ksi)
L20	98.25-94.17	4.08	0.00	18	26.2827	27.1480	0.7125	2.8500	A572-65 (65 ksi)
L21	94.17-93.92	0.25	0.00	18	27.1480	27.2010	0.8500	3.4000	A572-65 (65 ksi)
L22	93.92-91.50	2.42	0.00	18	27.2010	27.7133	0.8250	3.3000	A572-65 (65 ksi)
L23	91.50-91.25	0.25	0.00	18	27.7133	27.7663	0.8000	3.2000	A572-65 (65 ksi)
L24	91.25-90.58	0.67	0.00	18	27.7663	27.9083	0.8000	3.2000	A572-65 (65 ksi)
L25	90.58-90.33	0.25	0.00	18	27.9083	27.9613	0.7750	3.1000	A572-65 (65 ksi)
L26	90.33-84.91	5.42	4.17	18	27.9613	29.1100	0.7625	3.0500	A572-65 (65 ksi)
L27	84.91-83.91	5.17	0.00	18	27.7262	28.8215	0.8500	3.4000	A572-65 (65 ksi)
L28	83.91-78.91	5.00	0.00	18	28.8215	29.8808	0.8250	3.3000	A572-65 (65 ksi)
L29	78.91-73.91	5.00	0.00	18	29.8808	30.9401	0.8000	3.2000	A572-65 (65 ksi)
L30	73.91-68.91	5.00	0.00	18	30.9401	31.9994	0.7875	3.1500	A572-65 (65 ksi)
L31	68.91-65.50	3.41	0.00	18	31.9994	32.7219	0.7625	3.0500	A572-65 (65 ksi)
L32	65.50-65.25	0.25	0.00	18	32.7219	32.7748	0.9000	3.6000	A572-65 (65 ksi)
L33	65.25-64.50	0.75	0.00	18	32.7748	32.9337	0.8875	3.5500	A572-65 (65 ksi)
L34	64.50-64.25	0.25	0.00	18	32.9337	32.9867	0.8125	3.2500	A572-65 (65 ksi)
L35	64.25-59.25	5.00	0.00	18	32.9867	34.0460	0.7875	3.1500	A572-65 (65 ksi)
L36	59.25-58.58	0.67	0.00	18	34.0460	34.1873	0.7875	3.1500	A572-65 (65 ksi)

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
L37	58.58-58.33	0.25	0.00	18	34.1873	34.2403	0.8375	3.3500	A572-65 (65 ksi)
L38	58.33-57.25	1.08	0.00	18	34.2403	34.4697	0.8375	3.3500	A572-65 (65 ksi)
L39	57.25-57.00	0.25	0.00	18	34.4697	34.5227	0.8375	3.3500	A572-65 (65 ksi)
L40	57.00-52.00	5.00	0.00	18	34.5227	35.5820	0.8250	3.3000	A572-65 (65 ksi)
L41	52.00-44.41	7.59	5.17	18	35.5820	37.1900	0.8125	3.2500	A572-65 (65 ksi)
L42	44.41-43.41	6.17	0.00	18	35.4697	36.7801	0.8750	3.5000	A572-65 (65 ksi)
L43	43.41-38.41	5.00	0.00	18	36.7801	37.8421	0.8500	3.4000	A572-65 (65 ksi)
L44	38.41-34.50	3.91	0.00	18	37.8421	38.6725	0.8500	3.4000	A572-65 (65 ksi)
L45	34.50-34.25	0.25	0.00	18	38.6725	38.7256	1.0000	4.0000	A572-65 (65 ksi)
L46	34.25-33.50	0.75	0.00	18	38.7256	38.8849	1.0000	4.0000	A572-65 (65 ksi)
L47	33.50-33.25	0.25	0.00	18	38.8849	38.9380	0.8000	3.2000	A572-65 (65 ksi)
L48	33.25-28.48	4.77	0.00	18	38.9380	39.9505	0.8875	3.5500	A572-65 (65 ksi)
L49	28.48-28.23	0.25	0.00	18	39.9505	40.0036	0.8875	3.5500	A572-65 (65 ksi)
L50	28.23-27.48	0.75	0.00	18	40.0036	40.1629	0.8750	3.5000	A572-65 (65 ksi)
L51	27.48-27.23	0.25	0.00	18	40.1629	40.2160	0.8750	3.5000	A572-65 (65 ksi)
L52	27.23-22.23	5.00	0.00	18	40.2160	41.2779	0.8750	3.5000	A572-65 (65 ksi)
L53	22.23-17.23	5.00	0.00	18	41.2779	42.3399	0.8500	3.4000	A572-65 (65 ksi)
L54	17.23-12.23	5.00	0.00	18	42.3399	43.4018	0.8375	3.3500	A572-65 (65 ksi)
L55	12.23-7.23	5.00	0.00	18	43.4018	44.4638	0.8250	3.3000	A572-65 (65 ksi)
L56	7.23-6.92	0.32	0.00	18	44.4638	44.5309	0.8250	3.3000	A572-65 (65 ksi)
L57	6.92-6.67	0.25	0.00	18	44.5309	44.5840	0.7750	3.1000	A572-65 (65 ksi)
L58	6.67-3.00	3.67	0.00	18	44.5840	45.3628	0.7750	3.1000	A572-65 (65 ksi)
L59	3.00-2.75	0.25	0.00	18	45.3628	45.4159	0.7750	3.1000	A572-65 (65 ksi)
L60	2.75-0.00	2.75		18	45.4159	46.0000	0.7750	3.1000	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	16.4718	9.5592	311.5911	5.7022	8.2550	37.7457	623.5922	4.7805	2.5300	13.493
	17.5642	10.1995	378.4888	6.0841	8.8015	43.0026	757.4756	5.1007	2.7194	14.503
L2	17.5642	10.1995	378.4888	6.0841	8.8015	43.0026	757.4756	5.1007	2.7194	14.503
	18.6567	10.8397	454.3354	6.4660	9.3481	48.6021	909.2686	5.4209	2.9087	15.513
L3	18.6567	10.8397	454.3354	6.4660	9.3481	48.6021	909.2686	5.4209	2.9087	15.513
	19.7491	11.4800	539.6927	6.8480	9.8946	54.5442	1080.0956	5.7411	3.0981	16.523
L4	19.7491	11.4800	539.6927	6.8480	9.8946	54.5442	1080.0956	5.7411	3.0981	16.523
	20.8416	12.1203	635.1226	7.2299	10.4411	60.8289	1271.0809	6.0613	3.2874	17.533
L5	20.8416	12.1203	635.1226	7.2299	10.4411	60.8289	1271.0809	6.0613	3.2874	17.533
	22.2902	12.9693	778.1562	7.7363	11.1658	69.6908	1557.3364	6.4859	3.5385	18.872
L6	21.8891	16.3903	883.4944	7.3328	10.6201	83.1908	1768.1513	8.1967	3.2394	12.958
	22.2657	17.2312	1026.5696	7.7090	11.1584	91.9995	2054.4900	8.6172	3.4259	13.704
L7	22.2657	17.2312	1026.5696	7.7090	11.1584	91.9995	2054.4900	8.6172	3.4259	13.704

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
	23.3418	18.0721	1184.3131	8.0852	11.6968	101.2514	2370.1846	9.0377	3.6124	14.45
L8	23.3418	18.0721	1184.3131	8.0852	11.6968	101.2514	2370.1846	9.0377	3.6124	14.45
	23.4580	18.1629	1202.2572	8.1258	11.7549	102.2771	2406.0963	9.0832	3.6326	14.53
L9	23.4580	18.1629	1202.2572	8.1258	11.7549	102.2771	2406.0963	9.0832	3.6326	14.53
	23.5118	18.2049	1210.6256	8.1446	11.7818	102.7537	2422.8442	9.1042	3.6419	14.568
L10	23.5118	18.2049	1210.6256	8.1446	11.7818	102.7537	2422.8442	9.1042	3.6419	14.568
	23.6560	18.3176	1233.2443	8.1950	11.8540	104.0365	2468.1114	9.1605	3.6669	14.668
L11	23.6135	38.0087	2498.3561	8.0974	11.8540	210.7614	4999.9997	19.0080	3.1829	6.063
	23.6673	38.0970	2515.8073	8.1162	11.8809	211.7527	5034.9251	19.0521	3.1922	6.08
L12	23.6673	38.0970	2515.8073	8.1162	11.8809	211.7527	5034.9251	19.0521	3.1922	6.08
	23.9708	38.5950	2615.7558	8.2223	12.0327	217.3876	5234.9535	19.3012	3.2448	6.181
L13	23.9361	54.6001	3628.9459	8.1424	12.0327	301.5907	7262.6668	27.3052	2.8488	3.798
	23.9899	54.7262	3654.1539	8.1612	12.0596	303.0079	7313.1160	27.3683	2.8581	3.811
L14	23.9937	52.9595	3543.8852	8.1701	12.0596	293.8642	7092.4334	26.4848	2.9021	4.003
	25.0698	55.3981	4056.3150	8.5463	12.5979	321.9825	8117.9675	27.7043	3.0886	4.26
L15	25.0698	55.3981	4056.3150	8.5463	12.5979	321.9825	8117.9675	27.7043	3.0886	4.26
	25.1236	55.5200	4083.1572	8.5651	12.6249	323.4222	8171.6871	27.7653	3.0980	4.273
L16	25.0812	75.7065	5441.5493	8.4675	12.6249	431.0189	10890.2587	37.8604	2.6140	2.614
	25.1350	75.8746	5477.8939	8.4863	12.6518	432.9746	10962.9958	37.9445	2.6233	2.623
L17	25.1350	75.8746	5477.8939	8.4863	12.6518	432.9746	10962.9958	37.9445	2.6233	2.623
	25.4040	76.7155	5662.0466	8.5803	12.7864	442.8196	11331.5435	38.3651	2.6699	2.67
L18	25.4406	59.0704	4445.8340	8.6647	12.7864	347.7015	8897.5179	29.5408	3.0879	4.05
	25.4944	59.1986	4474.8510	8.6835	12.8133	349.2357	8955.5900	29.6049	3.0972	4.062
L19	25.4983	57.3162	4341.4189	8.6923	12.8133	338.8221	8688.5504	28.6635	3.1412	4.259
	26.5744	59.7968	4929.8473	9.0685	13.3516	369.2326	9866.1813	29.9041	3.3278	4.512
L20	26.5782	57.8263	4776.7307	9.0774	13.3516	357.7646	9559.7468	28.9187	3.3718	4.732
	27.4569	59.7833	5278.3001	9.3846	13.7912	382.7294	10563.5455	29.8973	3.5241	4.946
L21	27.4357	70.9495	6199.1725	9.3358	13.7912	449.5018	12406.5020	35.4815	3.2821	3.861
	27.4895	71.0924	6236.7186	9.3546	13.8181	451.3434	12481.6436	35.5530	3.2914	3.872
L22	27.4934	69.0670	6070.5308	9.3635	13.8181	439.3166	12149.0495	34.5400	3.3354	4.043
	28.0135	70.4084	6431.1437	9.5453	14.0784	456.8107	12870.7496	35.2109	3.4255	4.152
L23	28.0174	68.3382	6253.6716	9.5542	14.0784	444.2047	12515.5720	34.1756	3.4695	4.337
	28.0712	68.4728	6290.6802	9.5730	14.1053	445.9808	12589.6379	34.2429	3.4789	4.349
L24	28.0712	68.4728	6290.6802	9.5730	14.1053	445.9808	12589.6379	34.2429	3.4789	4.349
	28.2154	68.8334	6390.5827	9.6234	14.1774	450.7582	12789.5743	34.4232	3.5039	4.38
L25	28.2193	66.7438	6208.0210	9.6323	14.1774	437.8812	12424.2106	33.3782	3.5479	4.578
	28.2731	66.8741	6244.4610	9.6511	14.2043	439.6169	12497.1386	33.4434	3.5572	4.59
L26	28.2750	65.8258	6152.2223	9.6556	14.2043	433.1232	12312.5398	32.9191	3.5792	4.694
	29.4414	68.6059	6965.1185	10.0634	14.7879	471.0018	13939.4020	34.3095	3.7814	4.959
L27	28.9199	72.5093	6617.0867	9.5411	14.0849	469.7997	13242.8802	36.2615	3.3838	3.981
	29.1350	75.4644	7459.5278	9.9299	14.6413	509.4843	14928.8711	37.7393	3.5766	4.208
L28	29.1389	73.3103	7259.5603	9.9388	14.6413	495.8265	14528.6728	36.6621	3.6206	4.389
	30.2145	76.0841	8115.1706	10.3148	15.1795	534.6154	16241.0193	38.0493	3.8070	4.615
L29	30.2184	73.8420	7889.5862	10.3237	15.1795	519.7542	15789.5537	36.9280	3.8510	4.814
	31.2940	76.5318	8783.5340	10.6997	15.7176	558.8350	17578.6257	38.2732	4.0375	5.047
L30	31.2959	75.3672	8657.0534	10.7042	15.7176	550.7879	17325.4980	37.6908	4.0595	5.155

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
	32.3716	78.0150	9601.8841	11.0802	16.2557	590.6778	19216.4026	39.0149	4.2459	5.392
L31	32.3754	75.5988	9319.4204	11.0891	16.2557	573.3015	18651.1036	37.8066	4.2899	5.626
	33.1090	77.3473	9981.1059	11.3456	16.6227	600.4501	19975.3452	38.6810	4.4170	5.793
L32	33.0878	90.9023	11629.5734	11.2968	16.6227	699.6197	23274.4494	45.4598	4.1750	4.639
	33.1416	91.0536	11687.7398	11.3156	16.6496	701.9826	23390.8586	45.5355	4.1844	4.649
L33	33.1435	89.8242	11538.9748	11.3200	16.6496	693.0476	23093.1328	44.9206	4.2064	4.74
	33.3049	90.2718	11712.3326	11.3764	16.7303	700.0657	23440.0766	45.1445	4.2343	4.771
L34	33.3164	82.8366	10798.0186	11.4030	16.7303	645.4157	21610.2455	41.4262	4.3663	5.374
	33.3702	82.9732	10851.5217	11.4218	16.7572	647.5722	21717.3221	41.4945	4.3757	5.385
L35	33.3741	80.4827	10542.1650	11.4307	16.7572	629.1111	21098.2017	40.2490	4.4197	5.612
	34.4497	83.1304	11617.2308	11.8068	17.2954	671.6962	23249.7478	41.5731	4.6061	5.849
L36	34.4497	83.1304	11617.2308	11.8068	17.2954	671.6962	23249.7478	41.5731	4.6061	5.849
	34.5932	83.4836	11765.9410	11.8569	17.3672	677.4825	23547.3639	41.7498	4.6310	5.881
L37	34.5855	88.6513	12456.8726	11.8392	17.3672	717.2664	24930.1362	44.3341	4.5430	5.424
	34.6393	88.7921	12516.3177	11.8580	17.3941	719.5744	25049.1047	44.4045	4.5523	5.436
L38	34.6393	88.7921	12516.3177	11.8580	17.3941	719.5744	25049.1047	44.4045	4.5523	5.436
	34.8723	89.4020	12776.0185	11.9394	17.5106	729.6157	25568.8480	44.7095	4.5927	5.484
L39	34.8723	89.4020	12776.0185	11.9394	17.5106	729.6157	25568.8480	44.7095	4.5927	5.484
	34.9260	89.5428	12836.4738	11.9582	17.5375	731.9435	25689.8382	44.7799	4.6020	5.495
L40	34.9280	88.2391	12658.9668	11.9627	17.5375	721.8219	25334.5906	44.1279	4.6240	5.605
	36.0036	91.0129	13890.7093	12.3387	18.0756	768.4765	27799.6964	45.5151	4.8104	5.831
L41	36.0055	89.6661	13695.0092	12.3432	18.0756	757.6498	27408.0387	44.8416	4.8324	5.948
	37.6384	93.8130	15684.3415	12.9140	18.8925	830.1879	31389.3209	46.9154	5.1154	6.296
L42	36.9969	96.0781	14527.1512	12.2811	18.0186	806.2309	29073.4175	48.0482	4.7027	5.374
	37.2125	99.7175	16241.3443	12.7463	18.6843	869.2506	32504.0595	49.8682	4.9333	5.638
L43	37.2164	96.9359	15810.2851	12.7552	18.6843	846.1799	31641.3738	48.4772	4.9773	5.856
	38.2947	99.8009	17253.9950	13.1322	19.2238	897.5340	34530.6932	49.9100	5.1642	6.076
L44	38.2947	99.8009	17253.9950	13.1322	19.2238	897.5340	34530.6932	49.9100	5.1642	6.076
	39.1380	102.0414	18442.2974	13.4270	19.6456	938.7474	36908.8617	51.0304	5.3104	6.247
L45	39.1148	119.5726	21439.7013	13.3737	19.6456	1091.3208	42907.6135	59.7977	5.0464	5.046
	39.1688	119.7411	21530.4838	13.3926	19.6726	1094.4391	43089.2979	59.8819	5.0557	5.056
L46	39.1688	119.7411	21530.4838	13.3926	19.6726	1094.4391	43089.2979	59.8819	5.0557	5.056
	39.3305	120.2467	21804.3682	13.4491	19.7535	1103.8208	43637.4271	60.1348	5.0837	5.084
L47	39.3614	96.7052	17721.2157	13.5201	19.7535	897.1160	35465.7495	48.3618	5.4357	6.795
	39.4153	96.8401	17795.4393	13.5390	19.7805	899.6450	35614.2944	48.4292	5.4451	6.806

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
L48	39.4018	107.1855	19606.2462	13.5079	19.7805	991.1900	39238.2908	53.6029	5.2911	5.962
	40.4299	110.0375	21213.3351	13.8674	20.2948	1045.2573	42454.5833	55.0292	5.4693	6.163
L49	40.4299	110.0375	21213.3351	13.8674	20.2948	1045.2573	42454.5833	55.0292	5.4693	6.163
	40.4838	110.1871	21299.9575	13.8862	20.3218	1048.1324	42627.9419	55.1040	5.4786	6.173
L50	40.4857	108.6699	21020.0968	13.8906	20.3218	1034.3610	42067.8524	54.3453	5.5006	6.286
	40.6475	109.1122	21277.8624	13.9472	20.4027	1042.8924	42583.7228	54.5665	5.5287	6.318
L51	40.6475	109.1122	21277.8624	13.9472	20.4027	1042.8924	42583.7228	54.5665	5.5287	6.318
	40.7014	109.2597	21364.2502	13.9660	20.4297	1045.7440	42756.6121	54.6402	5.5380	6.329
L52	40.7014	109.2597	21364.2502	13.9660	20.4297	1045.7440	42756.6121	54.6402	5.5380	6.329
	41.7797	112.2090	23141.4621	14.3430	20.9692	1103.5938	46313.3744	56.1152	5.7249	6.543
L53	41.7836	109.0705	22522.0335	14.3519	20.9692	1074.0538	45073.7020	54.5456	5.7689	6.787
	42.8619	111.9355	24343.8742	14.7289	21.5087	1131.8175	48719.7807	55.9784	5.9558	7.007
L54	42.8638	110.3227	24007.5619	14.7333	21.5087	1116.1814	48046.7135	55.1718	5.9778	7.138
	43.9422	113.1456	25898.0178	15.1103	22.0481	1174.6130	51830.1128	56.5835	6.1647	7.361
L55	43.9441	111.4896	25533.9629	15.1148	22.0481	1158.1011	51101.5241	55.7554	6.1867	7.499
	45.0224	114.2703	27492.6195	15.4918	22.5876	1217.1554	55021.4145	57.1460	6.3736	7.726
L56	45.0224	114.2703	27492.6195	15.4918	22.5876	1217.1554	55021.4145	57.1460	6.3736	7.726
	45.0906	114.4461	27619.6636	15.5156	22.6217	1220.9370	55275.6699	57.2339	6.3854	7.74
L57	45.0983	107.6329	26034.8931	15.5333	22.6217	1150.8816	52104.0437	53.8267	6.4734	8.353
	45.1522	107.7636	26129.7879	15.5522	22.6487	1153.7008	52293.9581	53.8920	6.4828	8.365
L58	45.1522	107.7636	26129.7879	15.5522	22.6487	1153.7008	52293.9581	53.8920	6.4828	8.365
	45.9431	109.6794	27548.3154	15.8287	23.0443	1195.4494	55132.8796	54.8501	6.6199	8.542
L59	45.9431	109.6794	27548.3154	15.8287	23.0443	1195.4494	55132.8796	54.8501	6.6199	8.542
	45.9970	109.8100	27646.8507	15.8475	23.0713	1198.3227	55330.0799	54.9154	6.6292	8.554
L60	45.9970	109.8100	27646.8507	15.8475	23.0713	1198.3227	55330.0799	54.9154	6.6292	8.554
	46.5901	111.2467	28746.2899	16.0549	23.3680	1230.1562	57530.4050	55.6339	6.7320	8.686

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 147.00-142.00				1	1	1			
L2 142.00-137.00				1	1	1			
L3 137.00-132.00				1	1	1			
L4 132.00-127.00				1	1	1			
L5 127.00-120.37				1	1	1			
L6 120.37-				1	1	1			

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals	Double Angle Stitch Bolt Spacing Horizontals	Double Angle Stitch Bolt Spacing Redundants
ft	ft^2	in					in	in	in
118.62									
L7 118.62-113.62				1	1	1			
L8 113.62-113.08				1	1	1			
L9 113.08-112.83				1	1	1			
L10 112.83-112.16				1	1	1			
L11 112.16-111.91				1	1	0.924882			
L12 111.91-110.50				1	1	0.919093			
L13 110.50-110.25				1	1	0.895639			
L14 110.25-105.25				1	1	0.899955			
L15 105.25-105.00				1	1	0.898736			
L16 105.00-104.75				1	1	0.868247			
L17 104.75-103.50				1	1	0.861471			
L18 103.50-103.25				1	1	0.889037			
L19 103.25-98.25				1	1	0.894205			
L20 98.25-94.17				1	1	0.905893			
L21 94.17-93.92				1	1	0.888978			
L22 93.92-91.50				1	1	0.903389			
L23 91.50-91.25				1	1	0.913109			
L24 91.25-90.58				1	1	0.909963			
L25 90.58-90.33				1	1	0.903604			
L26 90.33-84.91				1	1	0.912303			
L27 84.91-83.91				1	1	0.908924			
L28 83.91-78.91				1	1	0.915329			
L29 78.91-73.91				1	1	0.923704			
L30 73.91-68.91				1	1	0.919611			
L31 68.91-65.50				1	1	0.936814			
L32 65.50-65.25				1	1	0.895218			
L33 65.25-64.50				1	1	0.904717			
L34 64.50-64.25				1	1	0.930696			
L35 64.25-59.25				1	1	0.941575			
L36 59.25-58.58				1	1	0.93927			
L37 58.58-58.33				1	1	0.93439			
L38 58.33-57.25				1	1	0.930561			
L39 57.25-57.00				1	1	0.940154			

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
L40 57.00-52.00				1	1	0.936513			
L41 52.00-44.41				1	1	0.942354			
L42 44.41-43.41				1	1	0.938481			
L43 43.41-38.41				1	1	0.950362			
L44 38.41-34.50				1	1	0.939182			
L45 34.50-34.25				1	1	0.988795			
L46 34.25-33.50				1	1	0.986214			
L47 33.50-33.25				1	1	1.03936			
L48 33.25-28.48				1	1	0.978729			
L49 28.48-28.23				1	1	0.977974			
L50 28.23-27.48				1	1	0.989345			
L51 27.48-27.23				1	1	0.988589			
L52 27.23-22.23				1	1	0.973869			
L53 22.23-17.23				1	1	0.987541			
L54 17.23-12.23				1	1	0.988151			
L55 12.23-7.23				1	1	0.989486			
L56 7.23-6.92				1	1	0.988664			
L57 6.92-6.67				1	1	1.05436			
L58 6.67-3.00				1	1	1.0444			
L59 3.00-2.75				1	1	1.04373			
L60 2.75-0.00				1	1	1.0365			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
****										
Safety Line 3/8	B	No	Surface Ar (CaAa)	147.00 - 8.00	1	1	0.450 0.450	0.3750		0.22
Climbing Pegs	B	No	Surface Ar (CaAa)	147.00 - 8.00	1	1	0.400 0.500	0.7050		1.80
MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	A	No	Surface Ar (CaAa)	129.00 - 3.00	1	1	0.000 0.000	1.6250		1.07
**										
HCS 6X12 4AWG(1-5/8)	A	No	Surface Ar (CaAa)	129.00 - 3.00	3	3	-0.130 -0.010	1.6600		2.40
*****										
LDF4-50A(1/2)	C	No	Surface Ar (CaAa)	50.00 - 6.00	1	1	0.000 0.000	0.6250		0.15
**										
CU12PSM9P6XXX(1-1/2)	B	No	Surface Ar (CaAa)	105.00 - 0.00	1	1	-0.200 -0.200	1.6000		2.35
*****										
******										
Flat 5x1.25	A	No	Surface Af	29.75 -	1	1	0.050	5.0000	12.5000	0.00

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
			(CaAa)	0.00			0.100			
Flat 5x1.25	C	No	Surface Af (CaAa)	9.17 - 0.00	1	1	0.400 0.450	5.0000	12.5000	0.00
Flat 5x1.25	C	No	Surface Af (CaAa)	9.17 - 0.00	1	1	-0.300 -0.250	5.0000	12.5000	0.00
Flat 5x1.25	B	No	Surface Af (CaAa)	29.75 - 0.00	1	1	0.050 0.100	5.0000	12.5000	0.00
Flat 5x1.25	C	No	Surface Af (CaAa)	29.75 - 4.33	1	1	0.050 0.100	5.0000	12.5000	0.00
Flat 5x1.25	A	No	Surface Af (CaAa)	59.50 - 29.75	1	1	0.050 0.100	5.0000	12.5000	0.00
Flat 5x1.25	B	No	Surface Af (CaAa)	59.50 - 29.75	1	1	0.050 0.100	5.0000	12.5000	0.00
Flat 5x1.25	C	No	Surface Af (CaAa)	59.50 - 29.75	1	1	0.050 0.100	5.0000	12.5000	0.00
Flat 4.75x1.25	A	No	Surface Af (CaAa)	89.25 - 59.50	1	1	0.050 0.100	4.7500	12.0000	0.00
Flat 4.75x1.25	B	No	Surface Af (CaAa)	89.25 - 59.50	1	1	0.050 0.100	4.7500	12.0000	0.00
Flat 4.75x1.25	C	No	Surface Af (CaAa)	89.25 - 59.50	1	1	0.050 0.100	4.7500	12.0000	0.00
Flat 4.75x1.25	A	No	Surface Af (CaAa)	106.50 - 89.25	1	1	0.050 0.100	4.7500	12.0000	0.00
Flat 4.75x1.25	B	No	Surface Af (CaAa)	106.50 - 89.25	1	1	0.050 0.100	4.7500	12.0000	0.00
Flat 4.75x1.25	C	No	Surface Af (CaAa)	106.50 - 89.25	1	1	0.050 0.100	4.7500	12.0000	0.00
*										
MP3-03	B	No	Surface Af (CaAa)	30.75 - 5.75	1	1	-0.450 -0.400	4.0600	11.2600	0.00
MP3-03	C	No	Surface Af (CaAa)	30.75 - 5.75	1	1	-0.450 -0.400	4.0600	11.2600	0.00
*										
Flat 4.5x1	A	No	Surface Af (CaAa)	30.50 - 0.50	1	1	0.250 0.300	4.5000	11.0000	0.00
Flat 4.5x1	C	No	Surface Af (CaAa)	30.50 - 0.50	1	1	0.250 0.300	4.5000	11.0000	0.00
Flat 4.5x1	B	No	Surface Af (CaAa)	30.50 - 0.50	1	1	-0.100 -0.050	4.5000	11.0000	0.00
Flat 4.5x1	A	No	Surface Af (CaAa)	60.58 - 30.58	1	1	0.250 0.300	4.5000	11.0000	0.00
Flat 4.5x1	B	No	Surface Af (CaAa)	60.58 - 25.58	1	1	0.250 0.300	4.5000	11.0000	0.00
Flat 4.5x1	C	No	Surface Af (CaAa)	60.58 - 30.58	1	1	0.250 0.300	4.5000	11.0000	0.00
Flat 4x0.75	A	No	Surface Af (CaAa)	95.67 - 60.67	1	1	0.250 0.300	4.0000	9.5000	0.00
Flat 4x0.75	B	No	Surface Af (CaAa)	95.67 - 60.67	1	1	0.250 0.300	4.0000	9.5000	0.00
Flat 4x0.75	C	No	Surface Af (CaAa)	95.67 - 60.67	1	1	0.250 0.300	4.0000	9.5000	0.00
**										
Flat 4.5x1	A	No	Surface Af (CaAa)	112.00 - 102.00	1	1	0.250 0.300	4.5000	11.0000	0.00
Flat 4.5x1	B	No	Surface Af (CaAa)	112.00 - 102.00	1	1	0.250 0.300	4.5000	11.0000	0.00
Flat 4.5x1	C	No	Surface Af (CaAa)	112.00 - 102.00	1	1	0.250 0.300	4.5000	11.0000	0.00
**										
Flat 4.5x1.25	A	No	Surface Af (CaAa)	36.25 - 1.25	1	1	-0.100 -0.050	4.5000	11.5000	0.00
Flat 4.5x1.25	A	No	Surface Af (CaAa)	36.25 - 1.25	1	1	-0.450 -0.400	4.5000	11.5000	0.00
Flat 4.5x1.25	B	No	Surface Af (CaAa)	36.25 - 1.25	1	1	0.400 0.450	4.5000	11.5000	0.00
Flat 4.5x1.25	B	No	Surface Af (CaAa)	36.25 - 1.25	1	1	-0.300 -0.250	4.5000	11.5000	0.00
Flat 4.5x1	A	No	Surface Af	67.00 -	1	1	-0.300	4.5000	11.0000	0.00

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
			(CaAa)	32.00			-0.250			
Flat 4.5x1	C	No	Surface Af (CaAa)	67.00 - 32.00	1	1	-0.300 -0.250	4.5000	11.0000	0.00
Flat 4.5x1	B	No	Surface Af (CaAa)	67.00 - 32.00	1	1	-0.100 -0.050	4.5000	11.0000	0.00
Flat 4.5x1	A	No	Surface Af (CaAa)	67.00 - 32.00	1	1	0.400 0.450	4.5000	11.0000	0.00
Flat 4.5x1	A	No	Surface Af (CaAa)	92.08 - 67.08	1	1	-0.300 -0.250	4.5000	11.0000	0.00
Flat 4.5x1	B	No	Surface Af (CaAa)	92.08 - 67.08	1	1	-0.300 -0.250	4.5000	11.0000	0.00
Flat 4.5x1	B	No	Surface Af (CaAa)	93.00 - 63.00	1	1	-0.300 -0.250	4.5000	11.0000	0.00
Flat 4.5x1.25	A	No	Surface Af (CaAa)	114.16 - 92.16	1	1	-0.300 -0.250	4.5000	11.5000	0.00
Flat 4.5x1.25	C	No	Surface Af (CaAa)	114.16 - 92.16	1	1	-0.300 -0.250	4.5000	11.5000	0.00
Flat 4.5x1.25	B	No	Surface Af (CaAa)	115.08 - 93.08	1	1	-0.300 -0.250	4.5000	11.5000	0.00
**										

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
****									
**									
HB158-21U6S24-xxM_TMO(1-5/8)	B	No	No	Inside Pole	147.00 - 3.00	3	No Ice	0.00	2.50
							1/2" Ice	0.00	2.50
							1" Ice	0.00	2.50
*****									
LDF7-50A(1-5/8)	C	No	No	Inside Pole	136.00 - 6.00	11	No Ice	0.00	0.82
							1/2" Ice	0.00	0.82
							1" Ice	0.00	0.82
**									
HB158-U12S24-XXX-LI(1-5/8)	C	No	No	Inside Pole	136.00 - 6.00	2	No Ice	0.00	3.20
							1/2" Ice	0.00	3.20
							1" Ice	0.00	3.20
****									
LDF7-50A(1-5/8)	A	No	No	Inside Pole	129.00 - 3.00	6	No Ice	0.00	0.82
							1/2" Ice	0.00	0.82
							1" Ice	0.00	0.82
****									
AVA6-50(1-1/4)	B	No	No	Inside Pole	116.00 - 3.00	6	No Ice	0.00	0.46
							1/2" Ice	0.00	0.46
							1" Ice	0.00	0.46
WR-VG86ST-BRD(3/4)	B	No	No	Inside Pole	116.00 - 3.00	4	No Ice	0.00	0.58
							1/2" Ice	0.00	0.58
							1" Ice	0.00	0.58
FB-L98B-002-75000(3/8)	B	No	No	Inside Pole	116.00 - 3.00	2	No Ice	0.00	0.06
							1/2" Ice	0.00	0.06
							1" Ice	0.00	0.06
ATCB-B01(5/16)	B	No	No	Inside Pole	116.00 - 3.00	1	No Ice	0.00	0.07
							1/2" Ice	0.00	0.07
							1" Ice	0.00	0.07
CONDUIT (2)	B	No	No	Inside Pole	116.00 - 3.00	2	No Ice	0.00	2.80
							1/2" Ice	0.00	2.80
							1" Ice	0.00	2.80
*****									
**									

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	147.00-142.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.540	0.000	0.05
		C	0.000	0.000	0.000	0.000	0.00
L2	142.00-137.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.540	0.000	0.05
		C	0.000	0.000	0.000	0.000	0.00
L3	137.00-132.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.540	0.000	0.05
		C	0.000	0.000	0.000	0.000	0.06
L4	132.00-127.00	A	0.000	0.000	1.321	0.000	0.03
		B	0.000	0.000	0.540	0.000	0.05
		C	0.000	0.000	0.000	0.000	0.08
L5	127.00-120.37	A	0.000	0.000	4.379	0.000	0.09
		B	0.000	0.000	0.716	0.000	0.06
		C	0.000	0.000	0.000	0.000	0.10
L6	120.37-118.62	A	0.000	0.000	1.156	0.000	0.02
		B	0.000	0.000	0.189	0.000	0.02
		C	0.000	0.000	0.000	0.000	0.03
L7	118.62-113.62	A	0.000	0.000	3.708	0.000	0.07
		B	0.000	0.000	1.635	0.000	0.07
		C	0.000	0.000	0.405	0.000	0.08
L8	113.62-113.08	A	0.000	0.000	0.762	0.000	0.01
		B	0.000	0.000	0.463	0.000	0.01
		C	0.000	0.000	0.405	0.000	0.01
L9	113.08-112.83	A	0.000	0.000	0.353	0.000	0.00
		B	0.000	0.000	0.215	0.000	0.01
		C	0.000	0.000	0.188	0.000	0.00
L10	112.83-112.16	A	0.000	0.000	0.945	0.000	0.01
		B	0.000	0.000	0.575	0.000	0.01
		C	0.000	0.000	0.502	0.000	0.01
L11	112.16-111.91	A	0.000	0.000	0.420	0.000	0.00
		B	0.000	0.000	0.282	0.000	0.01
		C	0.000	0.000	0.255	0.000	0.00
L12	111.91-110.50	A	0.000	0.000	3.046	0.000	0.02
		B	0.000	0.000	2.267	0.000	0.03
		C	0.000	0.000	2.115	0.000	0.02
L13	110.50-110.25	A	0.000	0.000	0.540	0.000	0.00
		B	0.000	0.000	0.402	0.000	0.01
		C	0.000	0.000	0.375	0.000	0.00
L14	110.25-105.25	A	0.000	0.000	11.792	0.000	0.07
		B	0.000	0.000	9.030	0.000	0.10
		C	0.000	0.000	8.490	0.000	0.08
L15	105.25-105.00	A	0.000	0.000	0.738	0.000	0.00
		B	0.000	0.000	0.600	0.000	0.01
		C	0.000	0.000	0.573	0.000	0.00
L16	105.00-104.75	A	0.000	0.000	0.738	0.000	0.00
		B	0.000	0.000	0.640	0.000	0.01
		C	0.000	0.000	0.573	0.000	0.00
L17	104.75-103.50	A	0.000	0.000	3.690	0.000	0.02
		B	0.000	0.000	3.200	0.000	0.03
		C	0.000	0.000	2.865	0.000	0.02
L18	103.50-103.25	A	0.000	0.000	0.738	0.000	0.00
		B	0.000	0.000	0.640	0.000	0.01
		C	0.000	0.000	0.573	0.000	0.00
L19	103.25-98.25	A	0.000	0.000	11.948	0.000	0.07
		B	0.000	0.000	9.986	0.000	0.11
		C	0.000	0.000	8.646	0.000	0.08
L20	98.25-94.17	A	0.000	0.000	9.991	0.000	0.05
		B	0.000	0.000	8.389	0.000	0.09
		C	0.000	0.000	7.295	0.000	0.06
L21	94.17-93.92	A	0.000	0.000	0.717	0.000	0.00
		B	0.000	0.000	0.619	0.000	0.01
		C	0.000	0.000	0.552	0.000	0.00
L22	93.92-91.50	A	0.000	0.000	6.874	0.000	0.03
		B	0.000	0.000	6.360	0.000	0.06
		C	0.000	0.000	4.843	0.000	0.04

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
L23	91.50-91.25	A	0.000	0.000	0.717	0.000	0.00
		B	0.000	0.000	0.807	0.000	0.01
		C	0.000	0.000	0.365	0.000	0.00
L24	91.25-90.58	A	0.000	0.000	1.922	0.000	0.01
		B	0.000	0.000	2.162	0.000	0.02
		C	0.000	0.000	0.977	0.000	0.01
L25	90.58-90.33	A	0.000	0.000	0.717	0.000	0.00
		B	0.000	0.000	0.807	0.000	0.01
		C	0.000	0.000	0.365	0.000	0.00
L26	90.33-84.91	A	0.000	0.000	15.549	0.000	0.07
		B	0.000	0.000	17.487	0.000	0.12
		C	0.000	0.000	7.904	0.000	0.08
L27	84.91-83.91	A	0.000	0.000	2.869	0.000	0.01
		B	0.000	0.000	3.226	0.000	0.02
		C	0.000	0.000	1.458	0.000	0.02
L28	83.91-78.91	A	0.000	0.000	14.344	0.000	0.07
		B	0.000	0.000	16.132	0.000	0.11
		C	0.000	0.000	7.292	0.000	0.08
L29	78.91-73.91	A	0.000	0.000	14.344	0.000	0.07
		B	0.000	0.000	16.132	0.000	0.11
		C	0.000	0.000	7.292	0.000	0.08
L30	73.91-68.91	A	0.000	0.000	14.344	0.000	0.07
		B	0.000	0.000	16.132	0.000	0.11
		C	0.000	0.000	7.292	0.000	0.08
L31	68.91-65.50	A	0.000	0.000	10.848	0.000	0.04
		B	0.000	0.000	10.942	0.000	0.08
		C	0.000	0.000	6.098	0.000	0.05
L32	65.50-65.25	A	0.000	0.000	0.905	0.000	0.00
		B	0.000	0.000	0.807	0.000	0.01
		C	0.000	0.000	0.552	0.000	0.00
L33	65.25-64.50	A	0.000	0.000	2.714	0.000	0.01
		B	0.000	0.000	2.420	0.000	0.02
		C	0.000	0.000	1.656	0.000	0.01
L34	64.50-64.25	A	0.000	0.000	0.905	0.000	0.00
		B	0.000	0.000	0.807	0.000	0.01
		C	0.000	0.000	0.552	0.000	0.00
L35	64.25-59.25	A	0.000	0.000	18.157	0.000	0.07
		B	0.000	0.000	13.382	0.000	0.11
		C	0.000	0.000	11.105	0.000	0.08
L36	59.25-58.58	A	0.000	0.000	2.497	0.000	0.01
		B	0.000	0.000	1.735	0.000	0.02
		C	0.000	0.000	1.556	0.000	0.01
L37	58.58-58.33	A	0.000	0.000	0.936	0.000	0.00
		B	0.000	0.000	0.650	0.000	0.01
		C	0.000	0.000	0.583	0.000	0.00
L38	58.33-57.25	A	0.000	0.000	4.055	0.000	0.01
		B	0.000	0.000	2.817	0.000	0.02
		C	0.000	0.000	2.527	0.000	0.02
L39	57.25-57.00	A	0.000	0.000	0.936	0.000	0.00
		B	0.000	0.000	0.650	0.000	0.01
		C	0.000	0.000	0.583	0.000	0.00
L40	57.00-52.00	A	0.000	0.000	18.719	0.000	0.07
		B	0.000	0.000	13.007	0.000	0.11
		C	0.000	0.000	11.667	0.000	0.08
L41	52.00-44.41	A	0.000	0.000	28.416	0.000	0.10
		B	0.000	0.000	19.744	0.000	0.17
		C	0.000	0.000	18.059	0.000	0.12
L42	44.41-43.41	A	0.000	0.000	3.744	0.000	0.01
		B	0.000	0.000	2.601	0.000	0.02
		C	0.000	0.000	2.396	0.000	0.02
L43	43.41-38.41	A	0.000	0.000	18.719	0.000	0.07
		B	0.000	0.000	13.007	0.000	0.11
		C	0.000	0.000	11.979	0.000	0.08
L44	38.41-34.50	A	0.000	0.000	17.263	0.000	0.05
		B	0.000	0.000	12.796	0.000	0.09
		C	0.000	0.000	9.368	0.000	0.06
L45	34.50-34.25	A	0.000	0.000	1.311	0.000	0.00
		B	0.000	0.000	1.025	0.000	0.01
		C	0.000	0.000	0.599	0.000	0.00

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
L46	34.25-33.50	A	0.000	0.000	3.933	0.000	0.01
		B	0.000	0.000	3.076	0.000	0.02
		C	0.000	0.000	1.797	0.000	0.01
L47	33.50-33.25	A	0.000	0.000	1.311	0.000	0.00
		B	0.000	0.000	1.025	0.000	0.01
		C	0.000	0.000	0.599	0.000	0.00
L48	33.25-28.48	A	0.000	0.000	19.660	0.000	0.06
		B	0.000	0.000	19.960	0.000	0.11
		C	0.000	0.000	10.255	0.000	0.07
L49	28.48-28.23	A	0.000	0.000	0.936	0.000	0.00
		B	0.000	0.000	1.194	0.000	0.01
		C	0.000	0.000	0.581	0.000	0.00
L50	28.23-27.48	A	0.000	0.000	2.808	0.000	0.01
		B	0.000	0.000	3.583	0.000	0.02
		C	0.000	0.000	1.742	0.000	0.01
L51	27.48-27.23	A	0.000	0.000	0.936	0.000	0.00
		B	0.000	0.000	1.194	0.000	0.01
		C	0.000	0.000	0.581	0.000	0.00
L52	27.23-22.23	A	0.000	0.000	18.719	0.000	0.07
		B	0.000	0.000	21.378	0.000	0.11
		C	0.000	0.000	11.613	0.000	0.08
L53	22.23-17.23	A	0.000	0.000	18.719	0.000	0.07
		B	0.000	0.000	20.140	0.000	0.11
		C	0.000	0.000	11.613	0.000	0.08
L54	17.23-12.23	A	0.000	0.000	18.719	0.000	0.07
		B	0.000	0.000	20.140	0.000	0.11
		C	0.000	0.000	11.613	0.000	0.08
L55	12.23-7.23	A	0.000	0.000	18.719	0.000	0.07
		B	0.000	0.000	20.057	0.000	0.11
		C	0.000	0.000	14.639	0.000	0.08
L56	7.23-6.92	A	0.000	0.000	1.183	0.000	0.00
		B	0.000	0.000	1.239	0.000	0.01
		C	0.000	0.000	1.228	0.000	0.00
L57	6.92-6.67	A	0.000	0.000	0.936	0.000	0.00
		B	0.000	0.000	0.980	0.000	0.01
		C	0.000	0.000	0.972	0.000	0.00
L58	6.67-3.00	A	0.000	0.000	13.729	0.000	0.05
		B	0.000	0.000	12.514	0.000	0.08
		C	0.000	0.000	11.099	0.000	0.01
L59	3.00-2.75	A	0.000	0.000	0.771	0.000	0.00
		B	0.000	0.000	0.811	0.000	0.00
		C	0.000	0.000	0.579	0.000	0.00
L60	2.75-0.00	A	0.000	0.000	6.229	0.000	0.00
		B	0.000	0.000	6.669	0.000	0.01
		C	0.000	0.000	5.992	0.000	0.00

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	147.00-142.00	A	0.985	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	2.510	0.000	0.07
		C		0.000	0.000	0.000	0.000	0.00
L2	142.00-137.00	A	0.982	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	2.504	0.000	0.07
		C		0.000	0.000	0.000	0.000	0.00
L3	137.00-132.00	A	0.978	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	2.496	0.000	0.07
		C		0.000	0.000	0.000	0.000	0.06
L4	132.00-127.00	A	0.975	0.000	0.000	2.447	0.000	0.04
		B		0.000	0.000	2.489	0.000	0.07
		C		0.000	0.000	0.000	0.000	0.08
L5	127.00-120.37	A	0.970	0.000	0.000	8.099	0.000	0.15
		B		0.000	0.000	3.289	0.000	0.09
		C		0.000	0.000	0.000	0.000	0.10

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
L6	120.37-118.62	A	0.967	0.000	0.000	2.138	0.000	0.04
		B		0.000	0.000	0.868	0.000	0.02
		C		0.000	0.000	0.000	0.000	0.03
L7	118.62-113.62	A	0.964	0.000	0.000	6.603	0.000	0.11
		B		0.000	0.000	3.844	0.000	0.10
		C		0.000	0.000	0.509	0.000	0.08
L8	113.62-113.08	A	0.962	0.000	0.000	1.166	0.000	0.02
		B		0.000	0.000	0.775	0.000	0.02
		C		0.000	0.000	0.509	0.000	0.01
L9	113.08-112.83	A	0.961	0.000	0.000	0.540	0.000	0.01
		B		0.000	0.000	0.359	0.000	0.01
		C		0.000	0.000	0.236	0.000	0.01
L10	112.83-112.16	A	0.961	0.000	0.000	1.447	0.000	0.02
		B		0.000	0.000	0.961	0.000	0.02
		C		0.000	0.000	0.631	0.000	0.01
L11	112.16-111.91	A	0.961	0.000	0.000	0.618	0.000	0.01
		B		0.000	0.000	0.436	0.000	0.01
		C		0.000	0.000	0.313	0.000	0.01
L12	111.91-110.50	A	0.960	0.000	0.000	4.263	0.000	0.05
		B		0.000	0.000	3.241	0.000	0.05
		C		0.000	0.000	2.547	0.000	0.04
L13	110.50-110.25	A	0.959	0.000	0.000	0.756	0.000	0.01
		B		0.000	0.000	0.574	0.000	0.01
		C		0.000	0.000	0.452	0.000	0.01
L14	110.25-105.25	A	0.957	0.000	0.000	16.334	0.000	0.17
		B		0.000	0.000	12.709	0.000	0.18
		C		0.000	0.000	10.256	0.000	0.14
L15	105.25-105.00	A	0.954	0.000	0.000	1.000	0.000	0.01
		B		0.000	0.000	0.819	0.000	0.01
		C		0.000	0.000	0.697	0.000	0.01
L16	105.00-104.75	A	0.954	0.000	0.000	1.000	0.000	0.01
		B		0.000	0.000	0.907	0.000	0.01
		C		0.000	0.000	0.697	0.000	0.01
L17	104.75-103.50	A	0.954	0.000	0.000	5.001	0.000	0.05
		B		0.000	0.000	4.534	0.000	0.06
		C		0.000	0.000	3.484	0.000	0.04
L18	103.50-103.25	A	0.953	0.000	0.000	1.000	0.000	0.01
		B		0.000	0.000	0.907	0.000	0.01
		C		0.000	0.000	0.697	0.000	0.01
L19	103.25-98.25	A	0.950	0.000	0.000	16.752	0.000	0.17
		B		0.000	0.000	14.879	0.000	0.21
		C		0.000	0.000	10.688	0.000	0.14
L20	98.25-94.17	A	0.946	0.000	0.000	14.067	0.000	0.14
		B		0.000	0.000	12.535	0.000	0.17
		C		0.000	0.000	9.123	0.000	0.12
L21	94.17-93.92	A	0.944	0.000	0.000	0.996	0.000	0.01
		B		0.000	0.000	0.902	0.000	0.01
		C		0.000	0.000	0.694	0.000	0.01
L22	93.92-91.50	A	0.942	0.000	0.000	9.552	0.000	0.09
		B		0.000	0.000	9.188	0.000	0.11
		C		0.000	0.000	6.085	0.000	0.07
L23	91.50-91.25	A	0.941	0.000	0.000	0.995	0.000	0.01
		B		0.000	0.000	1.136	0.000	0.01
		C		0.000	0.000	0.459	0.000	0.01
L24	91.25-90.58	A	0.941	0.000	0.000	2.667	0.000	0.03
		B		0.000	0.000	3.044	0.000	0.03
		C		0.000	0.000	1.229	0.000	0.02
L25	90.58-90.33	A	0.940	0.000	0.000	0.995	0.000	0.01
		B		0.000	0.000	1.136	0.000	0.01
		C		0.000	0.000	0.459	0.000	0.01
L26	90.33-84.91	A	0.937	0.000	0.000	21.557	0.000	0.20
		B		0.000	0.000	24.598	0.000	0.27
		C		0.000	0.000	9.936	0.000	0.14
L27	84.91-83.91	A	0.934	0.000	0.000	3.977	0.000	0.04
		B		0.000	0.000	4.538	0.000	0.05
		C		0.000	0.000	1.833	0.000	0.03
L28	83.91-78.91	A	0.930	0.000	0.000	19.851	0.000	0.19
		B		0.000	0.000	22.644	0.000	0.25
		C		0.000	0.000	9.152	0.000	0.13

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
L29	78.91-73.91	A	0.924	0.000	0.000	19.820	0.000	0.19
		B		0.000	0.000	22.603	0.000	0.25
		C		0.000	0.000	9.141	0.000	0.13
L30	73.91-68.91	A	0.918	0.000	0.000	19.787	0.000	0.19
		B		0.000	0.000	22.559	0.000	0.25
		C		0.000	0.000	9.128	0.000	0.13
L31	68.91-65.50	A	0.913	0.000	0.000	14.799	0.000	0.13
		B		0.000	0.000	15.284	0.000	0.17
		C		0.000	0.000	7.617	0.000	0.09
L32	65.50-65.25	A	0.910	0.000	0.000	1.220	0.000	0.01
		B		0.000	0.000	1.125	0.000	0.01
		C		0.000	0.000	0.689	0.000	0.01
L33	65.25-64.50	A	0.909	0.000	0.000	3.660	0.000	0.03
		B		0.000	0.000	3.375	0.000	0.04
		C		0.000	0.000	2.065	0.000	0.02
L34	64.50-64.25	A	0.909	0.000	0.000	1.220	0.000	0.01
		B		0.000	0.000	1.125	0.000	0.01
		C		0.000	0.000	0.688	0.000	0.01
L35	64.25-59.25	A	0.905	0.000	0.000	24.420	0.000	0.21
		B		0.000	0.000	19.023	0.000	0.23
		C		0.000	0.000	13.804	0.000	0.15
L36	59.25-58.58	A	0.901	0.000	0.000	3.331	0.000	0.03
		B		0.000	0.000	2.456	0.000	0.03
		C		0.000	0.000	1.917	0.000	0.02
L37	58.58-58.33	A	0.900	0.000	0.000	1.248	0.000	0.01
		B		0.000	0.000	0.920	0.000	0.01
		C		0.000	0.000	0.718	0.000	0.01
L38	58.33-57.25	A	0.899	0.000	0.000	5.406	0.000	0.05
		B		0.000	0.000	3.986	0.000	0.05
		C		0.000	0.000	3.111	0.000	0.03
L39	57.25-57.00	A	0.898	0.000	0.000	1.248	0.000	0.01
		B		0.000	0.000	0.920	0.000	0.01
		C		0.000	0.000	0.718	0.000	0.01
L40	57.00-52.00	A	0.894	0.000	0.000	24.927	0.000	0.21
		B		0.000	0.000	18.369	0.000	0.22
		C		0.000	0.000	14.348	0.000	0.15
L41	52.00-44.41	A	0.883	0.000	0.000	37.736	0.000	0.32
		B		0.000	0.000	27.784	0.000	0.33
		C		0.000	0.000	23.066	0.000	0.24
L42	44.41-43.41	A	0.875	0.000	0.000	4.972	0.000	0.04
		B		0.000	0.000	3.661	0.000	0.04
		C		0.000	0.000	3.102	0.000	0.03
L43	43.41-38.41	A	0.868	0.000	0.000	24.769	0.000	0.21
		B		0.000	0.000	18.217	0.000	0.22
		C		0.000	0.000	15.453	0.000	0.16
L44	38.41-34.50	A	0.858	0.000	0.000	22.547	0.000	0.18
		B		0.000	0.000	17.425	0.000	0.19
		C		0.000	0.000	12.053	0.000	0.12
L45	34.50-34.25	A	0.853	0.000	0.000	1.694	0.000	0.01
		B		0.000	0.000	1.367	0.000	0.01
		C		0.000	0.000	0.770	0.000	0.01
L46	34.25-33.50	A	0.852	0.000	0.000	5.081	0.000	0.04
		B		0.000	0.000	4.099	0.000	0.04
		C		0.000	0.000	2.308	0.000	0.02
L47	33.50-33.25	A	0.851	0.000	0.000	1.693	0.000	0.01
		B		0.000	0.000	1.366	0.000	0.01
		C		0.000	0.000	0.769	0.000	0.01
L48	33.25-28.48	A	0.844	0.000	0.000	25.692	0.000	0.20
		B		0.000	0.000	26.529	0.000	0.25
		C		0.000	0.000	13.250	0.000	0.14
L49	28.48-28.23	A	0.837	0.000	0.000	1.229	0.000	0.01
		B		0.000	0.000	1.571	0.000	0.01
		C		0.000	0.000	0.748	0.000	0.01
L50	28.23-27.48	A	0.836	0.000	0.000	3.685	0.000	0.03
		B		0.000	0.000	4.712	0.000	0.04
		C		0.000	0.000	2.243	0.000	0.02
L51	27.48-27.23	A	0.834	0.000	0.000	1.228	0.000	0.01
		B		0.000	0.000	1.570	0.000	0.01
		C		0.000	0.000	0.747	0.000	0.01

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
L52	27.23-22.23	A	0.826	0.000	0.000	24.503	0.000	0.20
		B		0.000	0.000	28.256	0.000	0.27
		C		0.000	0.000	14.916	0.000	0.16
L53	22.23-17.23	A	0.807	0.000	0.000	24.388	0.000	0.20
		B		0.000	0.000	26.599	0.000	0.25
		C		0.000	0.000	14.842	0.000	0.15
L54	17.23-12.23	A	0.784	0.000	0.000	24.242	0.000	0.19
		B		0.000	0.000	26.413	0.000	0.25
		C		0.000	0.000	14.749	0.000	0.15
L55	12.23-7.23	A	0.752	0.000	0.000	24.043	0.000	0.18
		B		0.000	0.000	25.844	0.000	0.24
		C		0.000	0.000	17.963	0.000	0.16
L56	7.23-6.92	A	0.729	0.000	0.000	1.510	0.000	0.01
		B		0.000	0.000	1.515	0.000	0.01
		C		0.000	0.000	1.463	0.000	0.01
L57	6.92-6.67	A	0.726	0.000	0.000	1.194	0.000	0.01
		B		0.000	0.000	1.198	0.000	0.01
		C		0.000	0.000	1.156	0.000	0.01
L58	6.67-3.00	A	0.701	0.000	0.000	17.400	0.000	0.13
		B		0.000	0.000	15.214	0.000	0.14
		C		0.000	0.000	12.722	0.000	0.07
L59	3.00-2.75	A	0.666	0.000	0.000	0.904	0.000	0.00
		B		0.000	0.000	0.977	0.000	0.00
		C		0.000	0.000	0.648	0.000	0.00
L60	2.75-0.00	A	0.618	0.000	0.000	7.219	0.000	0.03
		B		0.000	0.000	7.999	0.000	0.04
		C		0.000	0.000	6.640	0.000	0.03

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	147.00-142.00	0.7499	0.3339	1.6562	0.7374
L2	142.00-137.00	0.7525	0.3351	1.6792	0.7476
L3	137.00-132.00	0.7549	0.3361	1.6997	0.7567
L4	132.00-127.00	-1.0199	-0.4424	-0.0667	-0.0312
L5	127.00-120.37	-2.8073	-1.2264	-1.7287	-0.7724
L6	120.37-118.62	-2.8273	-1.2351	-1.7466	-0.7804
L7	118.62-113.62	-2.4316	-1.7974	-1.6103	-1.1778
L8	113.62-113.08	-1.4177	-0.6193	-1.1178	-0.4993
L9	113.08-112.83	-1.4211	-0.6208	-1.1203	-0.5004
L10	112.83-112.16	-1.4248	-0.6224	-1.1232	-0.5017
L11	112.16-111.91	-1.1952	-0.5221	-1.0025	-0.4478
L12	111.91-110.50	-0.9304	-0.4065	-0.8426	-0.3764
L13	110.50-110.25	-0.9360	-0.4089	-0.8472	-0.3784
L14	110.25-105.25	-0.8749	-0.3822	-0.8028	-0.3585
L15	105.25-105.00	-0.6628	-0.2896	-0.6783	-0.3029
L16	105.00-104.75	-0.5304	-0.4491	-0.4590	-0.5699
L17	104.75-103.50	-0.5329	-0.4513	-0.4614	-0.5727
L18	103.50-103.25	-0.5378	-0.4554	-0.4654	-0.5776
L19	103.25-98.25	-0.7293	-0.6177	-0.5521	-0.6849
L20	98.25-94.17	-0.7341	-0.6219	-0.5531	-0.6852
L21	94.17-93.92	-0.6370	-0.5396	-0.4939	-0.6116
L22	93.92-91.50	-0.9300	-1.0124	-0.7406	-1.0143
L23	91.50-91.25	-1.8117	-2.4863	-1.4876	-2.2640
L24	91.25-90.58	-1.8171	-2.4936	-1.4917	-2.2699
L25	90.58-90.33	-1.8224	-2.5008	-1.4957	-2.2758
L26	90.33-84.91	-1.8586	-2.5496	-1.5208	-2.3123
L27	84.91-83.91	-1.8694	-2.5642	-1.5283	-2.3236
L28	83.91-78.91	-1.9042	-2.6110	-1.5552	-2.3614
L29	78.91-73.91	-1.9617	-2.6884	-1.5985	-2.4241
L30	73.91-68.91	-2.0187	-2.7651	-1.6414	-2.4858
L31	68.91-65.50	-0.6275	-2.7365	-0.4800	-2.4735
L32	65.50-65.25	0.8928	-2.6717	0.8118	-2.4364
L33	65.25-64.50	0.8952	-2.6784	0.8138	-2.4423

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
L34	64.50-64.25	0.8975	-2.6850	0.8158	-2.4480
L35	64.25-59.25	0.9753	-1.8123	0.8793	-1.6993
L36	59.25-58.58	0.9827	-1.4695	0.8905	-1.4160
L37	58.58-58.33	0.9851	-1.4728	0.8925	-1.4190
L38	58.33-57.25	0.9885	-1.4775	0.8953	-1.4232
L39	57.25-57.00	0.9919	-1.4821	0.8981	-1.4274
L40	57.00-52.00	1.0051	-1.5003	0.9091	-1.4440
L41	52.00-44.41	1.0323	-1.4590	0.9244	-1.2614
L42	44.41-43.41	1.0375	-1.4382	0.9268	-1.1918
L43	43.41-38.41	1.0523	-1.4570	0.9368	-1.2081
L44	38.41-34.50	0.4186	-0.8429	0.4011	-0.7025
L45	34.50-34.25	-0.2136	-0.2265	-0.1505	-0.1779
L46	34.25-33.50	-0.2140	-0.2269	-0.1509	-0.1782
L47	33.50-33.25	-0.2144	-0.2272	-0.1513	-0.1785
L48	33.25-28.48	-0.7387	-0.5580	-0.5929	-0.4696
L49	28.48-28.23	-0.3493	-1.4515	-0.2539	-1.2546
L50	28.23-27.48	-0.3501	-1.4544	-0.2547	-1.2572
L51	27.48-27.23	-0.3509	-1.4573	-0.2556	-1.2597
L52	27.23-22.23	-1.1644	-2.0127	-0.9528	-1.7305
L53	22.23-17.23	-1.6141	-2.3368	-1.3368	-2.0034
L54	17.23-12.23	-1.6461	-2.3818	-1.3676	-2.0421
L55	12.23-7.23	-1.7859	-2.0562	-1.5485	-1.8252
L56	7.23-6.92	-2.0583	-1.6005	-2.0603	-1.6009
L57	6.92-6.67	-2.0605	-1.6021	-2.0620	-1.6019
L58	6.67-3.00	-2.7160	-1.3698	-2.6630	-1.5192
L59	3.00-2.75	-1.7584	-1.6972	-1.4728	-1.7071
L60	2.75-0.00	-1.1600	-2.3285	-0.8968	-2.2513

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

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L1	2	Safety Line 3/8	142.00 - 147.00	1.0000	1.0000
L1	3	Climbing Pegs	142.00 - 147.00	1.0000	1.0000
L2	2	Safety Line 3/8	137.00 - 142.00	1.0000	1.0000
L2	3	Climbing Pegs	137.00 - 142.00	1.0000	1.0000
L3	2	Safety Line 3/8	132.00 - 137.00	1.0000	1.0000
L3	3	Climbing Pegs	132.00 - 137.00	1.0000	1.0000
L4	2	Safety Line 3/8	127.00 - 132.00	1.0000	1.0000
L4	3	Climbing Pegs	127.00 - 132.00	1.0000	1.0000
L4	16	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	127.00 - 129.00	1.0000	1.0000
L4	18	HCS 6X12 4AWG(1-5/8)	127.00 - 129.00	1.0000	1.0000
L5	2	Safety Line 3/8	120.37 - 127.00	1.0000	1.0000
L5	3	Climbing Pegs	120.37 - 127.00	1.0000	1.0000
L5	16	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	120.37 - 127.00	1.0000	1.0000
L5	18	HCS 6X12 4AWG(1-5/8)	120.37 - 127.00	1.0000	1.0000
L6	2	Safety Line 3/8	118.62 - 120.37	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L6	3	Climbing Pegs	118.62 - 120.37	1.0000	1.0000
L6	16	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	118.62 - 120.37	1.0000	1.0000
L6	18	HCS 6X12 4AWG(1-5/8)	118.62 - 120.37	1.0000	1.0000
L7	2	Safety Line 3/8	113.62 - 118.62	1.0000	1.0000
L7	3	Climbing Pegs	113.62 - 118.62	1.0000	1.0000
L7	16	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	113.62 - 118.62	1.0000	1.0000
L7	18	HCS 6X12 4AWG(1-5/8)	113.62 - 118.62	1.0000	1.0000
L7	74	Flat 4.5x1.25	113.62 - 114.16	1.0000	1.0000
L7	75	Flat 4.5x1.25	113.62 - 114.16	1.0000	1.0000
L7	76	Flat 4.5x1.25	113.62 - 115.08	1.0000	1.0000
L8	2	Safety Line 3/8	113.08 - 113.62	1.0000	1.0000
L8	3	Climbing Pegs	113.08 - 113.62	1.0000	1.0000
L8	16	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	113.08 - 113.62	1.0000	1.0000
L8	18	HCS 6X12 4AWG(1-5/8)	113.08 - 113.62	1.0000	1.0000
L8	74	Flat 4.5x1.25	113.08 - 113.62	1.0000	1.0000
L8	75	Flat 4.5x1.25	113.08 - 113.62	1.0000	1.0000
L8	76	Flat 4.5x1.25	113.08 - 113.62	1.0000	1.0000
L9	2	Safety Line 3/8	112.83 - 113.08	1.0000	1.0000
L9	3	Climbing Pegs	112.83 - 113.08	1.0000	1.0000
L9	16	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	112.83 - 113.08	1.0000	1.0000
L9	18	HCS 6X12 4AWG(1-5/8)	112.83 - 113.08	1.0000	1.0000
L9	74	Flat 4.5x1.25	112.83 - 113.08	1.0000	1.0000
L9	75	Flat 4.5x1.25	112.83 - 113.08	1.0000	1.0000
L9	76	Flat 4.5x1.25	112.83 - 113.08	1.0000	1.0000
L10	2	Safety Line 3/8	112.16 - 112.83	1.0000	1.0000
L10	3	Climbing Pegs	112.16 - 112.83	1.0000	1.0000
L10	16	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	112.16 - 112.83	1.0000	1.0000
L10	18	HCS 6X12 4AWG(1-5/8)	112.16 - 112.83	1.0000	1.0000
L10	74	Flat 4.5x1.25	112.16 - 112.83	1.0000	1.0000
L10	75	Flat 4.5x1.25	112.16 - 112.83	1.0000	1.0000
L10	76	Flat 4.5x1.25	112.16 - 112.83	1.0000	1.0000
L11	2	Safety Line 3/8	111.91 - 112.16	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L11	3	Climbing Pegs	111.91 - 112.16	1.0000	1.0000
L11	16	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	111.91 - 112.16	1.0000	1.0000
L11	18	HCS 6X12 4AWG(1-5/8)	111.91 - 112.16	1.0000	1.0000
L11	59	Flat 4.5x1	111.91 - 112.00	1.0000	1.0000
L11	60	Flat 4.5x1	111.91 - 112.00	1.0000	1.0000
L11	61	Flat 4.5x1	111.91 - 112.00	1.0000	1.0000
L11	74	Flat 4.5x1.25	111.91 - 112.16	1.0000	1.0000
L11	75	Flat 4.5x1.25	111.91 - 112.16	1.0000	1.0000
L11	76	Flat 4.5x1.25	111.91 - 112.16	1.0000	1.0000
L12	2	Safety Line 3/8	110.50 - 111.91	1.0000	1.0000
L12	3	Climbing Pegs	110.50 - 111.91	1.0000	1.0000
L12	16	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	110.50 - 111.91	1.0000	1.0000
L12	18	HCS 6X12 4AWG(1-5/8)	110.50 - 111.91	1.0000	1.0000
L12	59	Flat 4.5x1	110.50 - 111.91	1.0000	1.0000
L12	60	Flat 4.5x1	110.50 - 111.91	1.0000	1.0000
L12	61	Flat 4.5x1	110.50 - 111.91	1.0000	1.0000
L12	74	Flat 4.5x1.25	110.50 - 111.91	1.0000	1.0000
L12	75	Flat 4.5x1.25	110.50 - 111.91	1.0000	1.0000
L12	76	Flat 4.5x1.25	110.50 - 111.91	1.0000	1.0000
L13	2	Safety Line 3/8	110.25 - 110.50	1.0000	1.0000
L13	3	Climbing Pegs	110.25 - 110.50	1.0000	1.0000
L13	16	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	110.25 - 110.50	1.0000	1.0000
L13	18	HCS 6X12 4AWG(1-5/8)	110.25 - 110.50	1.0000	1.0000
L13	59	Flat 4.5x1	110.25 - 110.50	1.0000	1.0000
L13	60	Flat 4.5x1	110.25 - 110.50	1.0000	1.0000
L13	61	Flat 4.5x1	110.25 - 110.50	1.0000	1.0000
L13	74	Flat 4.5x1.25	110.25 - 110.50	1.0000	1.0000
L13	75	Flat 4.5x1.25	110.25 - 110.50	1.0000	1.0000
L13	76	Flat 4.5x1.25	110.25 - 110.50	1.0000	1.0000
L14	2	Safety Line 3/8	105.25 - 110.25	1.0000	1.0000
L14	3	Climbing Pegs	105.25 - 110.25	1.0000	1.0000
L14	16	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	105.25 - 110.25	1.0000	1.0000
L14	18	HCS 6X12 4AWG(1-5/8)	105.25 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			110.25		
L14	42	Flat 4.75x1.25	105.25 - 106.50	1.0000	1.0000
L14	43	Flat 4.75x1.25	105.25 - 106.50	1.0000	1.0000
L14	44	Flat 4.75x1.25	105.25 - 106.50	1.0000	1.0000
L14	59	Flat 4.5x1	105.25 - 110.25	1.0000	1.0000
L14	60	Flat 4.5x1	105.25 - 110.25	1.0000	1.0000
L14	61	Flat 4.5x1	105.25 - 110.25	1.0000	1.0000
L14	74	Flat 4.5x1.25	105.25 - 110.25	1.0000	1.0000
L14	75	Flat 4.5x1.25	105.25 - 110.25	1.0000	1.0000
L14	76	Flat 4.5x1.25	105.25 - 110.25	1.0000	1.0000
L15	2	Safety Line 3/8	105.00 - 105.25	1.0000	1.0000
L15	3	Climbing Pegs	105.00 - 105.25	1.0000	1.0000
L15	16	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	105.00 - 105.25	1.0000	1.0000
L15	18	HCS 6X12 4AWG(1-5/8)	105.00 - 105.25	1.0000	1.0000
L15	42	Flat 4.75x1.25	105.00 - 105.25	1.0000	1.0000
L15	43	Flat 4.75x1.25	105.00 - 105.25	1.0000	1.0000
L15	44	Flat 4.75x1.25	105.00 - 105.25	1.0000	1.0000
L15	59	Flat 4.5x1	105.00 - 105.25	1.0000	1.0000
L15	60	Flat 4.5x1	105.00 - 105.25	1.0000	1.0000
L15	61	Flat 4.5x1	105.00 - 105.25	1.0000	1.0000
L15	74	Flat 4.5x1.25	105.00 - 105.25	1.0000	1.0000
L15	75	Flat 4.5x1.25	105.00 - 105.25	1.0000	1.0000
L15	76	Flat 4.5x1.25	105.00 - 105.25	1.0000	1.0000
L16	2	Safety Line 3/8	104.75 - 105.00	1.0000	1.0000
L16	3	Climbing Pegs	104.75 - 105.00	1.0000	1.0000
L16	16	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	104.75 - 105.00	1.0000	1.0000
L16	18	HCS 6X12 4AWG(1-5/8)	104.75 - 105.00	1.0000	1.0000
L16	28	CU12PSM9P6XXX(1-1/2)	104.75 - 105.00	1.0000	1.0000
L16	42	Flat 4.75x1.25	104.75 - 105.00	1.0000	1.0000
L16	43	Flat 4.75x1.25	104.75 - 105.00	1.0000	1.0000
L16	44	Flat 4.75x1.25	104.75 - 105.00	1.0000	1.0000
L16	59	Flat 4.5x1	104.75 - 105.00	1.0000	1.0000
L16	60	Flat 4.5x1	104.75 - 105.00	1.0000	1.0000
L16	61	Flat 4.5x1	104.75 - 105.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L16	74	Flat 4.5x1.25	104.75 - 105.00	1.0000	1.0000
L16	75	Flat 4.5x1.25	104.75 - 105.00	1.0000	1.0000
L16	76	Flat 4.5x1.25	104.75 - 105.00	1.0000	1.0000
L17	2	Safety Line 3/8	103.50 - 104.75	1.0000	1.0000
L17	3	Climbing Pegs	103.50 - 104.75	1.0000	1.0000
L17	16	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	103.50 - 104.75	1.0000	1.0000
L17	18	HCS 6X12 4AWG(1-5/8)	103.50 - 104.75	1.0000	1.0000
L17	28	CU12PSM9P6XXX(1-1/2)	103.50 - 104.75	1.0000	1.0000
L17	42	Flat 4.75x1.25	103.50 - 104.75	1.0000	1.0000
L17	43	Flat 4.75x1.25	103.50 - 104.75	1.0000	1.0000
L17	44	Flat 4.75x1.25	103.50 - 104.75	1.0000	1.0000
L17	59	Flat 4.5x1	103.50 - 104.75	1.0000	1.0000
L17	60	Flat 4.5x1	103.50 - 104.75	1.0000	1.0000
L17	61	Flat 4.5x1	103.50 - 104.75	1.0000	1.0000
L17	74	Flat 4.5x1.25	103.50 - 104.75	1.0000	1.0000
L17	75	Flat 4.5x1.25	103.50 - 104.75	1.0000	1.0000
L17	76	Flat 4.5x1.25	103.50 - 104.75	1.0000	1.0000
L18	2	Safety Line 3/8	103.25 - 103.50	1.0000	1.0000
L18	3	Climbing Pegs	103.25 - 103.50	1.0000	1.0000
L18	16	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	103.25 - 103.50	1.0000	1.0000
L18	18	HCS 6X12 4AWG(1-5/8)	103.25 - 103.50	1.0000	1.0000
L18	28	CU12PSM9P6XXX(1-1/2)	103.25 - 103.50	1.0000	1.0000
L18	42	Flat 4.75x1.25	103.25 - 103.50	1.0000	1.0000
L18	43	Flat 4.75x1.25	103.25 - 103.50	1.0000	1.0000
L18	44	Flat 4.75x1.25	103.25 - 103.50	1.0000	1.0000
L18	59	Flat 4.5x1	103.25 - 103.50	1.0000	1.0000
L18	60	Flat 4.5x1	103.25 - 103.50	1.0000	1.0000
L18	61	Flat 4.5x1	103.25 - 103.50	1.0000	1.0000
L18	74	Flat 4.5x1.25	103.25 - 103.50	1.0000	1.0000
L18	75	Flat 4.5x1.25	103.25 - 103.50	1.0000	1.0000
L18	76	Flat 4.5x1.25	103.25 - 103.50	1.0000	1.0000
L19	2	Safety Line 3/8	98.25 - 103.25	1.0000	1.0000
L19	3	Climbing Pegs	98.25 - 103.25	1.0000	1.0000
L19	16	MLE HYBRID	98.25 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
		9POWER/18FIBER RL 2(1-5/8)	103.25		
L19	18	HCS 6X12 4AWG(1-5/8)	98.25 - 103.25	1.0000	1.0000
L19	28	CU12PSM9P6XXX(1-1/2)	98.25 - 103.25	1.0000	1.0000
L19	42	Flat 4.75x1.25	98.25 - 103.25	1.0000	1.0000
L19	43	Flat 4.75x1.25	98.25 - 103.25	1.0000	1.0000
L19	44	Flat 4.75x1.25	98.25 - 103.25	1.0000	1.0000
L19	59	Flat 4.5x1	102.00 - 103.25	1.0000	1.0000
L19	60	Flat 4.5x1	102.00 - 103.25	1.0000	1.0000
L19	61	Flat 4.5x1	102.00 - 103.25	1.0000	1.0000
L19	74	Flat 4.5x1.25	98.25 - 103.25	1.0000	1.0000
L19	75	Flat 4.5x1.25	98.25 - 103.25	1.0000	1.0000
L19	76	Flat 4.5x1.25	98.25 - 103.25	1.0000	1.0000
L20	2	Safety Line 3/8	94.17 - 98.25	1.0000	1.0000
L20	3	Climbing Pegs	94.17 - 98.25	1.0000	1.0000
L20	16	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	94.17 - 98.25	1.0000	1.0000
L20	18	HCS 6X12 4AWG(1-5/8)	94.17 - 98.25	1.0000	1.0000
L20	28	CU12PSM9P6XXX(1-1/2)	94.17 - 98.25	1.0000	1.0000
L20	42	Flat 4.75x1.25	94.17 - 98.25	1.0000	1.0000
L20	43	Flat 4.75x1.25	94.17 - 98.25	1.0000	1.0000
L20	44	Flat 4.75x1.25	94.17 - 98.25	1.0000	1.0000
L20	55	Flat 4x0.75	94.17 - 95.67	1.0000	1.0000
L20	56	Flat 4x0.75	94.17 - 95.67	1.0000	1.0000
L20	57	Flat 4x0.75	94.17 - 95.67	1.0000	1.0000
L20	74	Flat 4.5x1.25	94.17 - 98.25	1.0000	1.0000
L20	75	Flat 4.5x1.25	94.17 - 98.25	1.0000	1.0000
L20	76	Flat 4.5x1.25	94.17 - 98.25	1.0000	1.0000
L21	2	Safety Line 3/8	93.92 - 94.17	1.0000	1.0000
L21	3	Climbing Pegs	93.92 - 94.17	1.0000	1.0000
L21	16	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	93.92 - 94.17	1.0000	1.0000
L21	18	HCS 6X12 4AWG(1-5/8)	93.92 - 94.17	1.0000	1.0000
L21	28	CU12PSM9P6XXX(1-1/2)	93.92 - 94.17	1.0000	1.0000
L21	42	Flat 4.75x1.25	93.92 - 94.17	1.0000	1.0000
L21	43	Flat 4.75x1.25	93.92 - 94.17	1.0000	1.0000
L21	44	Flat 4.75x1.25	93.92 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			94.17		
L21	55	Flat 4x0.75	93.92 - 94.17	1.0000	1.0000
L21	56	Flat 4x0.75	93.92 - 94.17	1.0000	1.0000
L21	57	Flat 4x0.75	93.92 - 94.17	1.0000	1.0000
L21	74	Flat 4.5x1.25	93.92 - 94.17	1.0000	1.0000
L21	75	Flat 4.5x1.25	93.92 - 94.17	1.0000	1.0000
L21	76	Flat 4.5x1.25	93.92 - 94.17	1.0000	1.0000
L22	2	Safety Line 3/8	91.50 - 93.92	1.0000	1.0000
L22	3	Climbing Pegs	91.50 - 93.92	1.0000	1.0000
L22	16	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	91.50 - 93.92	1.0000	1.0000
L22	18	HCS 6X12 4AWG(1-5/8)	91.50 - 93.92	1.0000	1.0000
L22	28	CU12PSM9P6XXX(1-1/2)	91.50 - 93.92	1.0000	1.0000
L22	42	Flat 4.75x1.25	91.50 - 93.92	1.0000	1.0000
L22	43	Flat 4.75x1.25	91.50 - 93.92	1.0000	1.0000
L22	44	Flat 4.75x1.25	91.50 - 93.92	1.0000	1.0000
L22	55	Flat 4x0.75	91.50 - 93.92	1.0000	1.0000
L22	56	Flat 4x0.75	91.50 - 93.92	1.0000	1.0000
L22	57	Flat 4x0.75	91.50 - 93.92	1.0000	1.0000
L22	71	Flat 4.5x1	91.50 - 92.08	1.0000	1.0000
L22	72	Flat 4.5x1	91.50 - 92.08	1.0000	1.0000
L22	73	Flat 4.5x1	91.50 - 93.00	1.0000	1.0000
L22	74	Flat 4.5x1.25	92.16 - 93.92	1.0000	1.0000
L22	75	Flat 4.5x1.25	92.16 - 93.92	1.0000	1.0000
L22	76	Flat 4.5x1.25	93.08 - 93.92	1.0000	1.0000
L23	2	Safety Line 3/8	91.25 - 91.50	1.0000	1.0000
L23	3	Climbing Pegs	91.25 - 91.50	1.0000	1.0000
L23	16	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	91.25 - 91.50	1.0000	1.0000
L23	18	HCS 6X12 4AWG(1-5/8)	91.25 - 91.50	1.0000	1.0000
L23	28	CU12PSM9P6XXX(1-1/2)	91.25 - 91.50	1.0000	1.0000
L23	42	Flat 4.75x1.25	91.25 - 91.50	1.0000	1.0000
L23	43	Flat 4.75x1.25	91.25 - 91.50	1.0000	1.0000
L23	44	Flat 4.75x1.25	91.25 - 91.50	1.0000	1.0000
L23	55	Flat 4x0.75	91.25 - 91.50	1.0000	1.0000
L23	56	Flat 4x0.75	91.25 - 91.50	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L23	57	Flat 4x0.75	91.25 - 91.50	1.0000	1.0000
L23	71	Flat 4.5x1	91.25 - 91.50	1.0000	1.0000
L23	72	Flat 4.5x1	91.25 - 91.50	1.0000	1.0000
L23	73	Flat 4.5x1	91.25 - 91.50	1.0000	1.0000
L24	2	Safety Line 3/8	90.58 - 91.25	1.0000	1.0000
L24	3	Climbing Pegs	90.58 - 91.25	1.0000	1.0000
L24	16	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	90.58 - 91.25	1.0000	1.0000
L24	18	HCS 6X12 4AWG(1-5/8)	90.58 - 91.25	1.0000	1.0000
L24	28	CU12PSM9P6XXX(1-1/2)	90.58 - 91.25	1.0000	1.0000
L24	42	Flat 4.75x1.25	90.58 - 91.25	1.0000	1.0000
L24	43	Flat 4.75x1.25	90.58 - 91.25	1.0000	1.0000
L24	44	Flat 4.75x1.25	90.58 - 91.25	1.0000	1.0000
L24	55	Flat 4x0.75	90.58 - 91.25	1.0000	1.0000
L24	56	Flat 4x0.75	90.58 - 91.25	1.0000	1.0000
L24	57	Flat 4x0.75	90.58 - 91.25	1.0000	1.0000
L24	71	Flat 4.5x1	90.58 - 91.25	1.0000	1.0000
L24	72	Flat 4.5x1	90.58 - 91.25	1.0000	1.0000
L24	73	Flat 4.5x1	90.58 - 91.25	1.0000	1.0000
L25	2	Safety Line 3/8	90.33 - 90.58	1.0000	1.0000
L25	3	Climbing Pegs	90.33 - 90.58	1.0000	1.0000
L25	16	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	90.33 - 90.58	1.0000	1.0000
L25	18	HCS 6X12 4AWG(1-5/8)	90.33 - 90.58	1.0000	1.0000
L25	28	CU12PSM9P6XXX(1-1/2)	90.33 - 90.58	1.0000	1.0000
L25	42	Flat 4.75x1.25	90.33 - 90.58	1.0000	1.0000
L25	43	Flat 4.75x1.25	90.33 - 90.58	1.0000	1.0000
L25	44	Flat 4.75x1.25	90.33 - 90.58	1.0000	1.0000
L25	55	Flat 4x0.75	90.33 - 90.58	1.0000	1.0000
L25	56	Flat 4x0.75	90.33 - 90.58	1.0000	1.0000
L25	57	Flat 4x0.75	90.33 - 90.58	1.0000	1.0000
L25	71	Flat 4.5x1	90.33 - 90.58	1.0000	1.0000
L25	72	Flat 4.5x1	90.33 - 90.58	1.0000	1.0000
L25	73	Flat 4.5x1	90.33 - 90.58	1.0000	1.0000
L26	2	Safety Line 3/8	84.91 - 90.33	1.0000	1.0000
L26	3	Climbing Pegs	84.91 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L26	16	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	90.33 84.91 - 90.33	1.0000	1.0000
L26	18	HCS 6X12 4AWG(1-5/8)	84.91 - 90.33	1.0000	1.0000
L26	28	CU12PSM9P6XXX(1-1/2)	84.91 - 90.33	1.0000	1.0000
L26	39	Flat 4.75x1.25	84.91 - 89.25	1.0000	1.0000
L26	40	Flat 4.75x1.25	84.91 - 89.25	1.0000	1.0000
L26	41	Flat 4.75x1.25	84.91 - 89.25	1.0000	1.0000
L26	42	Flat 4.75x1.25	89.25 - 90.33	1.0000	1.0000
L26	43	Flat 4.75x1.25	89.25 - 90.33	1.0000	1.0000
L26	44	Flat 4.75x1.25	89.25 - 90.33	1.0000	1.0000
L26	55	Flat 4x0.75	84.91 - 90.33	1.0000	1.0000
L26	56	Flat 4x0.75	84.91 - 90.33	1.0000	1.0000
L26	57	Flat 4x0.75	84.91 - 90.33	1.0000	1.0000
L26	71	Flat 4.5x1	84.91 - 90.33	1.0000	1.0000
L26	72	Flat 4.5x1	84.91 - 90.33	1.0000	1.0000
L26	73	Flat 4.5x1	84.91 - 90.33	1.0000	1.0000
L27	2	Safety Line 3/8	83.91 - 84.91	1.0000	1.0000
L27	3	Climbing Pegs	83.91 - 84.91	1.0000	1.0000
L27	16	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	83.91 - 84.91	1.0000	1.0000
L27	18	HCS 6X12 4AWG(1-5/8)	83.91 - 84.91	1.0000	1.0000
L27	28	CU12PSM9P6XXX(1-1/2)	83.91 - 84.91	1.0000	1.0000
L27	39	Flat 4.75x1.25	83.91 - 84.91	1.0000	1.0000
L27	40	Flat 4.75x1.25	83.91 - 84.91	1.0000	1.0000
L27	41	Flat 4.75x1.25	83.91 - 84.91	1.0000	1.0000
L27	55	Flat 4x0.75	83.91 - 84.91	1.0000	1.0000
L27	56	Flat 4x0.75	83.91 - 84.91	1.0000	1.0000
L27	57	Flat 4x0.75	83.91 - 84.91	1.0000	1.0000
L27	71	Flat 4.5x1	83.91 - 84.91	1.0000	1.0000
L27	72	Flat 4.5x1	83.91 - 84.91	1.0000	1.0000
L27	73	Flat 4.5x1	83.91 - 84.91	1.0000	1.0000
L28	2	Safety Line 3/8	78.91 - 83.91	1.0000	1.0000
L28	3	Climbing Pegs	78.91 - 83.91	1.0000	1.0000
L28	16	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	78.91 - 83.91	1.0000	1.0000
L28	18	HCS 6X12 4AWG(1-5/8)	78.91 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L28	28	CU12PSM9P6XXX(1-1/2)	83.91 78.91 - 83.91	1.0000	1.0000
L28	39	Flat 4.75x1.25	78.91 - 83.91	1.0000	1.0000
L28	40	Flat 4.75x1.25	78.91 - 83.91	1.0000	1.0000
L28	41	Flat 4.75x1.25	78.91 - 83.91	1.0000	1.0000
L28	55	Flat 4x0.75	78.91 - 83.91	1.0000	1.0000
L28	56	Flat 4x0.75	78.91 - 83.91	1.0000	1.0000
L28	57	Flat 4x0.75	78.91 - 83.91	1.0000	1.0000
L28	71	Flat 4.5x1	78.91 - 83.91	1.0000	1.0000
L28	72	Flat 4.5x1	78.91 - 83.91	1.0000	1.0000
L28	73	Flat 4.5x1	78.91 - 83.91	1.0000	1.0000
L29	2	Safety Line 3/8	73.91 - 78.91	1.0000	1.0000
L29	3	Climbing Pegs	73.91 - 78.91	1.0000	1.0000
L29	16	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	73.91 - 78.91	1.0000	1.0000
L29	18	HCS 6X12 4AWG(1-5/8)	73.91 - 78.91	1.0000	1.0000
L29	28	CU12PSM9P6XXX(1-1/2)	73.91 - 78.91	1.0000	1.0000
L29	39	Flat 4.75x1.25	73.91 - 78.91	1.0000	1.0000
L29	40	Flat 4.75x1.25	73.91 - 78.91	1.0000	1.0000
L29	41	Flat 4.75x1.25	73.91 - 78.91	1.0000	1.0000
L29	55	Flat 4x0.75	73.91 - 78.91	1.0000	1.0000
L29	56	Flat 4x0.75	73.91 - 78.91	1.0000	1.0000
L29	57	Flat 4x0.75	73.91 - 78.91	1.0000	1.0000
L29	71	Flat 4.5x1	73.91 - 78.91	1.0000	1.0000
L29	72	Flat 4.5x1	73.91 - 78.91	1.0000	1.0000
L29	73	Flat 4.5x1	73.91 - 78.91	1.0000	1.0000
L30	2	Safety Line 3/8	68.91 - 73.91	1.0000	1.0000
L30	3	Climbing Pegs	68.91 - 73.91	1.0000	1.0000
L30	16	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	68.91 - 73.91	1.0000	1.0000
L30	18	HCS 6X12 4AWG(1-5/8)	68.91 - 73.91	1.0000	1.0000
L30	28	CU12PSM9P6XXX(1-1/2)	68.91 - 73.91	1.0000	1.0000
L30	39	Flat 4.75x1.25	68.91 - 73.91	1.0000	1.0000
L30	40	Flat 4.75x1.25	68.91 - 73.91	1.0000	1.0000
L30	41	Flat 4.75x1.25	68.91 - 73.91	1.0000	1.0000
L30	55	Flat 4x0.75	68.91 - 73.91	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L30	56	Flat 4x0.75	68.91 - 73.91	1.0000	1.0000
L30	57	Flat 4x0.75	68.91 - 73.91	1.0000	1.0000
L30	71	Flat 4.5x1	68.91 - 73.91	1.0000	1.0000
L30	72	Flat 4.5x1	68.91 - 73.91	1.0000	1.0000
L30	73	Flat 4.5x1	68.91 - 73.91	1.0000	1.0000
L31	2	Safety Line 3/8	65.50 - 68.91	1.0000	1.0000
L31	3	Climbing Pegs	65.50 - 68.91	1.0000	1.0000
L31	16	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	65.50 - 68.91	1.0000	1.0000
L31	18	HCS 6X12 4AWG(1-5/8)	65.50 - 68.91	1.0000	1.0000
L31	28	CU12PSM9P6XXX(1-1/2)	65.50 - 68.91	1.0000	1.0000
L31	39	Flat 4.75x1.25	65.50 - 68.91	1.0000	1.0000
L31	40	Flat 4.75x1.25	65.50 - 68.91	1.0000	1.0000
L31	41	Flat 4.75x1.25	65.50 - 68.91	1.0000	1.0000
L31	55	Flat 4x0.75	65.50 - 68.91	1.0000	1.0000
L31	56	Flat 4x0.75	65.50 - 68.91	1.0000	1.0000
L31	57	Flat 4x0.75	65.50 - 68.91	1.0000	1.0000
L31	67	Flat 4.5x1	65.50 - 67.00	1.0000	1.0000
L31	68	Flat 4.5x1	65.50 - 67.00	1.0000	1.0000
L31	69	Flat 4.5x1	65.50 - 67.00	1.0000	1.0000
L31	70	Flat 4.5x1	65.50 - 67.00	1.0000	1.0000
L31	71	Flat 4.5x1	67.08 - 68.91	1.0000	1.0000
L31	72	Flat 4.5x1	67.08 - 68.91	1.0000	1.0000
L31	73	Flat 4.5x1	65.50 - 68.91	1.0000	1.0000
L32	2	Safety Line 3/8	65.25 - 65.50	1.0000	1.0000
L32	3	Climbing Pegs	65.25 - 65.50	1.0000	1.0000
L32	16	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	65.25 - 65.50	1.0000	1.0000
L32	18	HCS 6X12 4AWG(1-5/8)	65.25 - 65.50	1.0000	1.0000
L32	28	CU12PSM9P6XXX(1-1/2)	65.25 - 65.50	1.0000	1.0000
L32	39	Flat 4.75x1.25	65.25 - 65.50	1.0000	1.0000
L32	40	Flat 4.75x1.25	65.25 - 65.50	1.0000	1.0000
L32	41	Flat 4.75x1.25	65.25 - 65.50	1.0000	1.0000
L32	55	Flat 4x0.75	65.25 - 65.50	1.0000	1.0000
L32	56	Flat 4x0.75	65.25 - 65.50	1.0000	1.0000
L32	57	Flat 4x0.75	65.25 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			65.50		
L32	67	Flat 4.5x1	65.25 - 65.50	1.0000	1.0000
L32	68	Flat 4.5x1	65.25 - 65.50	1.0000	1.0000
L32	69	Flat 4.5x1	65.25 - 65.50	1.0000	1.0000
L32	70	Flat 4.5x1	65.25 - 65.50	1.0000	1.0000
L32	73	Flat 4.5x1	65.25 - 65.50	1.0000	1.0000
L33	2	Safety Line 3/8	64.50 - 65.25	1.0000	1.0000
L33	3	Climbing Pegs	64.50 - 65.25	1.0000	1.0000
L33	16	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	64.50 - 65.25	1.0000	1.0000
L33	18	HCS 6X12 4AWG(1-5/8)	64.50 - 65.25	1.0000	1.0000
L33	28	CU12PSM9P6XXX(1-1/2)	64.50 - 65.25	1.0000	1.0000
L33	39	Flat 4.75x1.25	64.50 - 65.25	1.0000	1.0000
L33	40	Flat 4.75x1.25	64.50 - 65.25	1.0000	1.0000
L33	41	Flat 4.75x1.25	64.50 - 65.25	1.0000	1.0000
L33	55	Flat 4x0.75	64.50 - 65.25	1.0000	1.0000
L33	56	Flat 4x0.75	64.50 - 65.25	1.0000	1.0000
L33	57	Flat 4x0.75	64.50 - 65.25	1.0000	1.0000
L33	67	Flat 4.5x1	64.50 - 65.25	1.0000	1.0000
L33	68	Flat 4.5x1	64.50 - 65.25	1.0000	1.0000
L33	69	Flat 4.5x1	64.50 - 65.25	1.0000	1.0000
L33	70	Flat 4.5x1	64.50 - 65.25	1.0000	1.0000
L33	73	Flat 4.5x1	64.50 - 65.25	1.0000	1.0000
L34	2	Safety Line 3/8	64.25 - 64.50	1.0000	1.0000
L34	3	Climbing Pegs	64.25 - 64.50	1.0000	1.0000
L34	16	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	64.25 - 64.50	1.0000	1.0000
L34	18	HCS 6X12 4AWG(1-5/8)	64.25 - 64.50	1.0000	1.0000
L34	28	CU12PSM9P6XXX(1-1/2)	64.25 - 64.50	1.0000	1.0000
L34	39	Flat 4.75x1.25	64.25 - 64.50	1.0000	1.0000
L34	40	Flat 4.75x1.25	64.25 - 64.50	1.0000	1.0000
L34	41	Flat 4.75x1.25	64.25 - 64.50	1.0000	1.0000
L34	55	Flat 4x0.75	64.25 - 64.50	1.0000	1.0000
L34	56	Flat 4x0.75	64.25 - 64.50	1.0000	1.0000
L34	57	Flat 4x0.75	64.25 - 64.50	1.0000	1.0000
L34	67	Flat 4.5x1	64.25 - 64.50	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L34	68	Flat 4.5x1	64.25 - 64.50	1.0000	1.0000
L34	69	Flat 4.5x1	64.25 - 64.50	1.0000	1.0000
L34	70	Flat 4.5x1	64.25 - 64.50	1.0000	1.0000
L34	73	Flat 4.5x1	64.25 - 64.50	1.0000	1.0000
L35	2	Safety Line 3/8	59.25 - 64.25	1.0000	1.0000
L35	3	Climbing Pegs	59.25 - 64.25	1.0000	1.0000
L35	16	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	59.25 - 64.25	1.0000	1.0000
L35	18	HCS 6X12 4AWG(1-5/8)	59.25 - 64.25	1.0000	1.0000
L35	28	CU12PSM9P6XXX(1-1/2)	59.25 - 64.25	1.0000	1.0000
L35	36	Flat 5x1.25	59.25 - 59.50	1.0000	1.0000
L35	37	Flat 5x1.25	59.25 - 59.50	1.0000	1.0000
L35	38	Flat 5x1.25	59.25 - 59.50	1.0000	1.0000
L35	39	Flat 4.75x1.25	59.50 - 64.25	1.0000	1.0000
L35	40	Flat 4.75x1.25	59.50 - 64.25	1.0000	1.0000
L35	41	Flat 4.75x1.25	59.50 - 64.25	1.0000	1.0000
L35	52	Flat 4.5x1	59.25 - 60.58	1.0000	1.0000
L35	53	Flat 4.5x1	59.25 - 60.58	1.0000	1.0000
L35	54	Flat 4.5x1	59.25 - 60.58	1.0000	1.0000
L35	55	Flat 4x0.75	60.67 - 64.25	1.0000	1.0000
L35	56	Flat 4x0.75	60.67 - 64.25	1.0000	1.0000
L35	57	Flat 4x0.75	60.67 - 64.25	1.0000	1.0000
L35	67	Flat 4.5x1	59.25 - 64.25	1.0000	1.0000
L35	68	Flat 4.5x1	59.25 - 64.25	1.0000	1.0000
L35	69	Flat 4.5x1	59.25 - 64.25	1.0000	1.0000
L35	70	Flat 4.5x1	59.25 - 64.25	1.0000	1.0000
L35	73	Flat 4.5x1	63.00 - 64.25	1.0000	1.0000
L36	2	Safety Line 3/8	58.58 - 59.25	1.0000	1.0000
L36	3	Climbing Pegs	58.58 - 59.25	1.0000	1.0000
L36	16	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	58.58 - 59.25	1.0000	1.0000
L36	18	HCS 6X12 4AWG(1-5/8)	58.58 - 59.25	1.0000	1.0000
L36	28	CU12PSM9P6XXX(1-1/2)	58.58 - 59.25	1.0000	1.0000
L36	36	Flat 5x1.25	58.58 - 59.25	1.0000	1.0000
L36	37	Flat 5x1.25	58.58 - 59.25	1.0000	1.0000
L36	38	Flat 5x1.25	58.58 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			59.25		
L36	52	Flat 4.5x1	58.58 - 59.25	1.0000	1.0000
L36	53	Flat 4.5x1	58.58 - 59.25	1.0000	1.0000
L36	54	Flat 4.5x1	58.58 - 59.25	1.0000	1.0000
L36	67	Flat 4.5x1	58.58 - 59.25	1.0000	1.0000
L36	68	Flat 4.5x1	58.58 - 59.25	1.0000	1.0000
L36	69	Flat 4.5x1	58.58 - 59.25	1.0000	1.0000
L36	70	Flat 4.5x1	58.58 - 59.25	1.0000	1.0000
L37	2	Safety Line 3/8	58.33 - 58.58	1.0000	1.0000
L37	3	Climbing Pegs	58.33 - 58.58	1.0000	1.0000
L37	16	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	58.33 - 58.58	1.0000	1.0000
L37	18	HCS 6X12 4AWG(1-5/8)	58.33 - 58.58	1.0000	1.0000
L37	28	CU12PSM9P6XXX(1-1/2)	58.33 - 58.58	1.0000	1.0000
L37	36	Flat 5x1.25	58.33 - 58.58	1.0000	1.0000
L37	37	Flat 5x1.25	58.33 - 58.58	1.0000	1.0000
L37	38	Flat 5x1.25	58.33 - 58.58	1.0000	1.0000
L37	52	Flat 4.5x1	58.33 - 58.58	1.0000	1.0000
L37	53	Flat 4.5x1	58.33 - 58.58	1.0000	1.0000
L37	54	Flat 4.5x1	58.33 - 58.58	1.0000	1.0000
L37	67	Flat 4.5x1	58.33 - 58.58	1.0000	1.0000
L37	68	Flat 4.5x1	58.33 - 58.58	1.0000	1.0000
L37	69	Flat 4.5x1	58.33 - 58.58	1.0000	1.0000
L37	70	Flat 4.5x1	58.33 - 58.58	1.0000	1.0000
L38	2	Safety Line 3/8	57.25 - 58.33	1.0000	1.0000
L38	3	Climbing Pegs	57.25 - 58.33	1.0000	1.0000
L38	16	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	57.25 - 58.33	1.0000	1.0000
L38	18	HCS 6X12 4AWG(1-5/8)	57.25 - 58.33	1.0000	1.0000
L38	28	CU12PSM9P6XXX(1-1/2)	57.25 - 58.33	1.0000	1.0000
L38	36	Flat 5x1.25	57.25 - 58.33	1.0000	1.0000
L38	37	Flat 5x1.25	57.25 - 58.33	1.0000	1.0000
L38	38	Flat 5x1.25	57.25 - 58.33	1.0000	1.0000
L38	52	Flat 4.5x1	57.25 - 58.33	1.0000	1.0000
L38	53	Flat 4.5x1	57.25 - 58.33	1.0000	1.0000
L38	54	Flat 4.5x1	57.25 - 58.33	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L38	67	Flat 4.5x1	57.25 - 58.33	1.0000	1.0000
L38	68	Flat 4.5x1	57.25 - 58.33	1.0000	1.0000
L38	69	Flat 4.5x1	57.25 - 58.33	1.0000	1.0000
L38	70	Flat 4.5x1	57.25 - 58.33	1.0000	1.0000
L39	2	Safety Line 3/8	57.00 - 57.25	1.0000	1.0000
L39	3	Climbing Pegs	57.00 - 57.25	1.0000	1.0000
L39	16	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	57.00 - 57.25	1.0000	1.0000
L39	18	HCS 6X12 4AWG(1-5/8)	57.00 - 57.25	1.0000	1.0000
L39	28	CU12PSM9P6XXX(1-1/2)	57.00 - 57.25	1.0000	1.0000
L39	36	Flat 5x1.25	57.00 - 57.25	1.0000	1.0000
L39	37	Flat 5x1.25	57.00 - 57.25	1.0000	1.0000
L39	38	Flat 5x1.25	57.00 - 57.25	1.0000	1.0000
L39	52	Flat 4.5x1	57.00 - 57.25	1.0000	1.0000
L39	53	Flat 4.5x1	57.00 - 57.25	1.0000	1.0000
L39	54	Flat 4.5x1	57.00 - 57.25	1.0000	1.0000
L39	67	Flat 4.5x1	57.00 - 57.25	1.0000	1.0000
L39	68	Flat 4.5x1	57.00 - 57.25	1.0000	1.0000
L39	69	Flat 4.5x1	57.00 - 57.25	1.0000	1.0000
L39	70	Flat 4.5x1	57.00 - 57.25	1.0000	1.0000
L40	2	Safety Line 3/8	52.00 - 57.00	1.0000	1.0000
L40	3	Climbing Pegs	52.00 - 57.00	1.0000	1.0000
L40	16	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	52.00 - 57.00	1.0000	1.0000
L40	18	HCS 6X12 4AWG(1-5/8)	52.00 - 57.00	1.0000	1.0000
L40	28	CU12PSM9P6XXX(1-1/2)	52.00 - 57.00	1.0000	1.0000
L40	36	Flat 5x1.25	52.00 - 57.00	1.0000	1.0000
L40	37	Flat 5x1.25	52.00 - 57.00	1.0000	1.0000
L40	38	Flat 5x1.25	52.00 - 57.00	1.0000	1.0000
L40	52	Flat 4.5x1	52.00 - 57.00	1.0000	1.0000
L40	53	Flat 4.5x1	52.00 - 57.00	1.0000	1.0000
L40	54	Flat 4.5x1	52.00 - 57.00	1.0000	1.0000
L40	67	Flat 4.5x1	52.00 - 57.00	1.0000	1.0000
L40	68	Flat 4.5x1	52.00 - 57.00	1.0000	1.0000
L40	69	Flat 4.5x1	52.00 - 57.00	1.0000	1.0000
L40	70	Flat 4.5x1	52.00 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			57.00		
L41	2	Safety Line 3/8	44.41 - 52.00	1.0000	1.0000
L41	3	Climbing Pegs	44.41 - 52.00	1.0000	1.0000
L41	16	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	44.41 - 52.00	1.0000	1.0000
L41	18	HCS 6X12 4AWG(1-5/8)	44.41 - 52.00	1.0000	1.0000
L41	26	LDF4-50A(1/2)	44.41 - 50.00	1.0000	1.0000
L41	28	CU12PSM9P6XXX(1-1/2)	44.41 - 52.00	1.0000	1.0000
L41	36	Flat 5x1.25	44.41 - 52.00	1.0000	1.0000
L41	37	Flat 5x1.25	44.41 - 52.00	1.0000	1.0000
L41	38	Flat 5x1.25	44.41 - 52.00	1.0000	1.0000
L41	52	Flat 4.5x1	44.41 - 52.00	1.0000	1.0000
L41	53	Flat 4.5x1	44.41 - 52.00	1.0000	1.0000
L41	54	Flat 4.5x1	44.41 - 52.00	1.0000	1.0000
L41	67	Flat 4.5x1	44.41 - 52.00	1.0000	1.0000
L41	68	Flat 4.5x1	44.41 - 52.00	1.0000	1.0000
L41	69	Flat 4.5x1	44.41 - 52.00	1.0000	1.0000
L41	70	Flat 4.5x1	44.41 - 52.00	1.0000	1.0000
L42	2	Safety Line 3/8	43.41 - 44.41	1.0000	1.0000
L42	3	Climbing Pegs	43.41 - 44.41	1.0000	1.0000
L42	16	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	43.41 - 44.41	1.0000	1.0000
L42	18	HCS 6X12 4AWG(1-5/8)	43.41 - 44.41	1.0000	1.0000
L42	26	LDF4-50A(1/2)	43.41 - 44.41	1.0000	1.0000
L42	28	CU12PSM9P6XXX(1-1/2)	43.41 - 44.41	1.0000	1.0000
L42	36	Flat 5x1.25	43.41 - 44.41	1.0000	1.0000
L42	37	Flat 5x1.25	43.41 - 44.41	1.0000	1.0000
L42	38	Flat 5x1.25	43.41 - 44.41	1.0000	1.0000
L42	52	Flat 4.5x1	43.41 - 44.41	1.0000	1.0000
L42	53	Flat 4.5x1	43.41 - 44.41	1.0000	1.0000
L42	54	Flat 4.5x1	43.41 - 44.41	1.0000	1.0000
L42	67	Flat 4.5x1	43.41 - 44.41	1.0000	1.0000
L42	68	Flat 4.5x1	43.41 - 44.41	1.0000	1.0000
L42	69	Flat 4.5x1	43.41 - 44.41	1.0000	1.0000
L42	70	Flat 4.5x1	43.41 - 44.41	1.0000	1.0000
L43	2	Safety Line 3/8	38.41 - 43.41	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L43	3	Climbing Pegs	38.41 - 43.41	1.0000	1.0000
L43	16	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	38.41 - 43.41	1.0000	1.0000
L43	18	HCS 6X12 4AWG(1-5/8)	38.41 - 43.41	1.0000	1.0000
L43	26	LDF4-50A(1/2)	38.41 - 43.41	1.0000	1.0000
L43	28	CU12PSM9P6XXX(1-1/2)	38.41 - 43.41	1.0000	1.0000
L43	36	Flat 5x1.25	38.41 - 43.41	1.0000	1.0000
L43	37	Flat 5x1.25	38.41 - 43.41	1.0000	1.0000
L43	38	Flat 5x1.25	38.41 - 43.41	1.0000	1.0000
L43	52	Flat 4.5x1	38.41 - 43.41	1.0000	1.0000
L43	53	Flat 4.5x1	38.41 - 43.41	1.0000	1.0000
L43	54	Flat 4.5x1	38.41 - 43.41	1.0000	1.0000
L43	67	Flat 4.5x1	38.41 - 43.41	1.0000	1.0000
L43	68	Flat 4.5x1	38.41 - 43.41	1.0000	1.0000
L43	69	Flat 4.5x1	38.41 - 43.41	1.0000	1.0000
L43	70	Flat 4.5x1	38.41 - 43.41	1.0000	1.0000
L44	2	Safety Line 3/8	34.50 - 38.41	1.0000	1.0000
L44	3	Climbing Pegs	34.50 - 38.41	1.0000	1.0000
L44	16	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	34.50 - 38.41	1.0000	1.0000
L44	18	HCS 6X12 4AWG(1-5/8)	34.50 - 38.41	1.0000	1.0000
L44	26	LDF4-50A(1/2)	34.50 - 38.41	1.0000	1.0000
L44	28	CU12PSM9P6XXX(1-1/2)	34.50 - 38.41	1.0000	1.0000
L44	36	Flat 5x1.25	34.50 - 38.41	1.0000	1.0000
L44	37	Flat 5x1.25	34.50 - 38.41	1.0000	1.0000
L44	38	Flat 5x1.25	34.50 - 38.41	1.0000	1.0000
L44	52	Flat 4.5x1	34.50 - 38.41	1.0000	1.0000
L44	53	Flat 4.5x1	34.50 - 38.41	1.0000	1.0000
L44	54	Flat 4.5x1	34.50 - 38.41	1.0000	1.0000
L44	63	Flat 4.5x1.25	34.50 - 36.25	1.0000	1.0000
L44	64	Flat 4.5x1.25	34.50 - 36.25	1.0000	1.0000
L44	65	Flat 4.5x1.25	34.50 - 36.25	1.0000	1.0000
L44	66	Flat 4.5x1.25	34.50 - 36.25	1.0000	1.0000
L44	67	Flat 4.5x1	34.50 - 38.41	1.0000	1.0000
L44	68	Flat 4.5x1	34.50 - 38.41	1.0000	1.0000
L44	69	Flat 4.5x1	34.50 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L44	70	Flat 4.5x1	38.41 34.50 -	1.0000	1.0000
L45	2	Safety Line 3/8	38.41 34.25 -	1.0000	1.0000
L45	3	Climbing Pegs	34.50 34.25 -	1.0000	1.0000
L45	16	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	34.50 34.25 -	1.0000	1.0000
L45	18	HCS 6X12 4AWG(1-5/8)	34.50 34.25 -	1.0000	1.0000
L45	26	LDF4-50A(1/2)	34.50 34.25 -	1.0000	1.0000
L45	28	CU12PSM9P6XXX(1-1/2)	34.50 34.25 -	1.0000	1.0000
L45	36	Flat 5x1.25	34.50 34.25 -	1.0000	1.0000
L45	37	Flat 5x1.25	34.50 34.25 -	1.0000	1.0000
L45	38	Flat 5x1.25	34.50 34.25 -	1.0000	1.0000
L45	52	Flat 4.5x1	34.50 34.25 -	1.0000	1.0000
L45	53	Flat 4.5x1	34.50 34.25 -	1.0000	1.0000
L45	54	Flat 4.5x1	34.50 34.25 -	1.0000	1.0000
L45	63	Flat 4.5x1.25	34.50 34.25 -	1.0000	1.0000
L45	64	Flat 4.5x1.25	34.50 34.25 -	1.0000	1.0000
L45	65	Flat 4.5x1.25	34.50 34.25 -	1.0000	1.0000
L45	66	Flat 4.5x1.25	34.50 34.25 -	1.0000	1.0000
L45	67	Flat 4.5x1	34.50 34.25 -	1.0000	1.0000
L45	68	Flat 4.5x1	34.50 34.25 -	1.0000	1.0000
L45	69	Flat 4.5x1	34.50 34.25 -	1.0000	1.0000
L45	70	Flat 4.5x1	34.50 34.25 -	1.0000	1.0000
L46	2	Safety Line 3/8	34.50 33.50 -	1.0000	1.0000
L46	3	Climbing Pegs	34.25 33.50 -	1.0000	1.0000
L46	16	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	34.25 33.50 -	1.0000	1.0000
L46	18	HCS 6X12 4AWG(1-5/8)	34.25 33.50 -	1.0000	1.0000
L46	26	LDF4-50A(1/2)	34.25 33.50 -	1.0000	1.0000
L46	28	CU12PSM9P6XXX(1-1/2)	34.25 33.50 -	1.0000	1.0000
L46	36	Flat 5x1.25	34.25 33.50 -	1.0000	1.0000
L46	37	Flat 5x1.25	34.25 33.50 -	1.0000	1.0000
L46	38	Flat 5x1.25	34.25 33.50 -	1.0000	1.0000
L46	52	Flat 4.5x1	34.25 33.50 -	1.0000	1.0000
L46	53	Flat 4.5x1	34.25 33.50 -	1.0000	1.0000
L46	54	Flat 4.5x1	34.25 33.50 -	1.0000	1.0000
			34.25		

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L46	63	Flat 4.5x1.25	33.50 - 34.25	1.0000	1.0000
L46	64	Flat 4.5x1.25	33.50 - 34.25	1.0000	1.0000
L46	65	Flat 4.5x1.25	33.50 - 34.25	1.0000	1.0000
L46	66	Flat 4.5x1.25	33.50 - 34.25	1.0000	1.0000
L46	67	Flat 4.5x1	33.50 - 34.25	1.0000	1.0000
L46	68	Flat 4.5x1	33.50 - 34.25	1.0000	1.0000
L46	69	Flat 4.5x1	33.50 - 34.25	1.0000	1.0000
L46	70	Flat 4.5x1	33.50 - 34.25	1.0000	1.0000
L47	2	Safety Line 3/8	33.25 - 33.50	1.0000	1.0000
L47	3	Climbing Pegs	33.25 - 33.50	1.0000	1.0000
L47	16	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	33.25 - 33.50	1.0000	1.0000
L47	18	HCS 6X12 4AWG(1-5/8)	33.25 - 33.50	1.0000	1.0000
L47	26	LDF4-50A(1/2)	33.25 - 33.50	1.0000	1.0000
L47	28	CU12PSM9P6XXX(1-1/2)	33.25 - 33.50	1.0000	1.0000
L47	36	Flat 5x1.25	33.25 - 33.50	1.0000	1.0000
L47	37	Flat 5x1.25	33.25 - 33.50	1.0000	1.0000
L47	38	Flat 5x1.25	33.25 - 33.50	1.0000	1.0000
L47	52	Flat 4.5x1	33.25 - 33.50	1.0000	1.0000
L47	53	Flat 4.5x1	33.25 - 33.50	1.0000	1.0000
L47	54	Flat 4.5x1	33.25 - 33.50	1.0000	1.0000
L47	63	Flat 4.5x1.25	33.25 - 33.50	1.0000	1.0000
L47	64	Flat 4.5x1.25	33.25 - 33.50	1.0000	1.0000
L47	65	Flat 4.5x1.25	33.25 - 33.50	1.0000	1.0000
L47	66	Flat 4.5x1.25	33.25 - 33.50	1.0000	1.0000
L47	67	Flat 4.5x1	33.25 - 33.50	1.0000	1.0000
L47	68	Flat 4.5x1	33.25 - 33.50	1.0000	1.0000
L47	69	Flat 4.5x1	33.25 - 33.50	1.0000	1.0000
L47	70	Flat 4.5x1	33.25 - 33.50	1.0000	1.0000
L48	2	Safety Line 3/8	28.48 - 33.25	1.0000	1.0000
L48	3	Climbing Pegs	28.48 - 33.25	1.0000	1.0000
L48	16	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	28.48 - 33.25	1.0000	1.0000
L48	18	HCS 6X12 4AWG(1-5/8)	28.48 - 33.25	1.0000	1.0000
L48	26	LDF4-50A(1/2)	28.48 - 33.25	1.0000	1.0000
L48	28	CU12PSM9P6XXX(1-1/2)	28.48 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L48	31	Flat 5x1.25	33.25 28.48 - 29.75	1.0000	1.0000
L48	34	Flat 5x1.25	28.48 - 29.75	1.0000	1.0000
L48	35	Flat 5x1.25	28.48 - 29.75	1.0000	1.0000
L48	36	Flat 5x1.25	29.75 - 33.25	1.0000	1.0000
L48	37	Flat 5x1.25	29.75 - 33.25	1.0000	1.0000
L48	38	Flat 5x1.25	29.75 - 33.25	1.0000	1.0000
L48	46	MP3-03	28.48 - 30.75	1.0000	1.0000
L48	47	MP3-03	28.48 - 30.75	1.0000	1.0000
L48	49	Flat 4.5x1	28.48 - 30.50	1.0000	1.0000
L48	50	Flat 4.5x1	28.48 - 30.50	1.0000	1.0000
L48	51	Flat 4.5x1	28.48 - 30.50	1.0000	1.0000
L48	52	Flat 4.5x1	30.58 - 33.25	1.0000	1.0000
L48	53	Flat 4.5x1	28.48 - 33.25	1.0000	1.0000
L48	54	Flat 4.5x1	30.58 - 33.25	1.0000	1.0000
L48	63	Flat 4.5x1.25	28.48 - 33.25	1.0000	1.0000
L48	64	Flat 4.5x1.25	28.48 - 33.25	1.0000	1.0000
L48	65	Flat 4.5x1.25	28.48 - 33.25	1.0000	1.0000
L48	66	Flat 4.5x1.25	28.48 - 33.25	1.0000	1.0000
L48	67	Flat 4.5x1	32.00 - 33.25	1.0000	1.0000
L48	68	Flat 4.5x1	32.00 - 33.25	1.0000	1.0000
L48	69	Flat 4.5x1	32.00 - 33.25	1.0000	1.0000
L48	70	Flat 4.5x1	32.00 - 33.25	1.0000	1.0000
L49	2	Safety Line 3/8	28.23 - 28.48	1.0000	1.0000
L49	3	Climbing Pegs	28.23 - 28.48	1.0000	1.0000
L49	16	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	28.23 - 28.48	1.0000	1.0000
L49	18	HCS 6X12 4AWG(1-5/8)	28.23 - 28.48	1.0000	1.0000
L49	26	LDF4-50A(1/2)	28.23 - 28.48	1.0000	1.0000
L49	28	CU12PSM9P6XXX(1-1/2)	28.23 - 28.48	1.0000	1.0000
L49	31	Flat 5x1.25	28.23 - 28.48	1.0000	1.0000
L49	34	Flat 5x1.25	28.23 - 28.48	1.0000	1.0000
L49	35	Flat 5x1.25	28.23 - 28.48	1.0000	1.0000
L49	46	MP3-03	28.23 - 28.48	1.0000	1.0000
L49	47	MP3-03	28.23 - 28.48	1.0000	1.0000
L49	49	Flat 4.5x1	28.23 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			28.48		
L49	50	Flat 4.5x1	28.23 - 28.48	1.0000	1.0000
L49	51	Flat 4.5x1	28.23 - 28.48	1.0000	1.0000
L49	53	Flat 4.5x1	28.23 - 28.48	1.0000	1.0000
L49	63	Flat 4.5x1.25	28.23 - 28.48	1.0000	1.0000
L49	64	Flat 4.5x1.25	28.23 - 28.48	1.0000	1.0000
L49	65	Flat 4.5x1.25	28.23 - 28.48	1.0000	1.0000
L49	66	Flat 4.5x1.25	28.23 - 28.48	1.0000	1.0000
L50	2	Safety Line 3/8	27.48 - 28.23	1.0000	1.0000
L50	3	Climbing Pegs	27.48 - 28.23	1.0000	1.0000
L50	16	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	27.48 - 28.23	1.0000	1.0000
L50	18	HCS 6X12 4AWG(1-5/8)	27.48 - 28.23	1.0000	1.0000
L50	26	LDF4-50A(1/2)	27.48 - 28.23	1.0000	1.0000
L50	28	CU12PSM9P6XXX(1-1/2)	27.48 - 28.23	1.0000	1.0000
L50	31	Flat 5x1.25	27.48 - 28.23	1.0000	1.0000
L50	34	Flat 5x1.25	27.48 - 28.23	1.0000	1.0000
L50	35	Flat 5x1.25	27.48 - 28.23	1.0000	1.0000
L50	46	MP3-03	27.48 - 28.23	1.0000	1.0000
L50	47	MP3-03	27.48 - 28.23	1.0000	1.0000
L50	49	Flat 4.5x1	27.48 - 28.23	1.0000	1.0000
L50	50	Flat 4.5x1	27.48 - 28.23	1.0000	1.0000
L50	51	Flat 4.5x1	27.48 - 28.23	1.0000	1.0000
L50	53	Flat 4.5x1	27.48 - 28.23	1.0000	1.0000
L50	63	Flat 4.5x1.25	27.48 - 28.23	1.0000	1.0000
L50	64	Flat 4.5x1.25	27.48 - 28.23	1.0000	1.0000
L50	65	Flat 4.5x1.25	27.48 - 28.23	1.0000	1.0000
L50	66	Flat 4.5x1.25	27.48 - 28.23	1.0000	1.0000
L51	2	Safety Line 3/8	27.23 - 27.48	1.0000	1.0000
L51	3	Climbing Pegs	27.23 - 27.48	1.0000	1.0000
L51	16	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	27.23 - 27.48	1.0000	1.0000
L51	18	HCS 6X12 4AWG(1-5/8)	27.23 - 27.48	1.0000	1.0000
L51	26	LDF4-50A(1/2)	27.23 - 27.48	1.0000	1.0000
L51	28	CU12PSM9P6XXX(1-1/2)	27.23 - 27.48	1.0000	1.0000
L51	31	Flat 5x1.25	27.23 - 27.48	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L51	34	Flat 5x1.25	27.23 - 27.48	1.0000	1.0000
L51	35	Flat 5x1.25	27.23 - 27.48	1.0000	1.0000
L51	46	MP3-03	27.23 - 27.48	1.0000	1.0000
L51	47	MP3-03	27.23 - 27.48	1.0000	1.0000
L51	49	Flat 4.5x1	27.23 - 27.48	1.0000	1.0000
L51	50	Flat 4.5x1	27.23 - 27.48	1.0000	1.0000
L51	51	Flat 4.5x1	27.23 - 27.48	1.0000	1.0000
L51	53	Flat 4.5x1	27.23 - 27.48	1.0000	1.0000
L51	63	Flat 4.5x1.25	27.23 - 27.48	1.0000	1.0000
L51	64	Flat 4.5x1.25	27.23 - 27.48	1.0000	1.0000
L51	65	Flat 4.5x1.25	27.23 - 27.48	1.0000	1.0000
L51	66	Flat 4.5x1.25	27.23 - 27.48	1.0000	1.0000
L52	2	Safety Line 3/8	22.23 - 27.23	1.0000	1.0000
L52	3	Climbing Pegs	22.23 - 27.23	1.0000	1.0000
L52	16	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	22.23 - 27.23	1.0000	1.0000
L52	18	HCS 6X12 4AWG(1-5/8)	22.23 - 27.23	1.0000	1.0000
L52	26	LDF4-50A(1/2)	22.23 - 27.23	1.0000	1.0000
L52	28	CU12PSM9P6XXX(1-1/2)	22.23 - 27.23	1.0000	1.0000
L52	31	Flat 5x1.25	22.23 - 27.23	1.0000	1.0000
L52	34	Flat 5x1.25	22.23 - 27.23	1.0000	1.0000
L52	35	Flat 5x1.25	22.23 - 27.23	1.0000	1.0000
L52	46	MP3-03	22.23 - 27.23	1.0000	1.0000
L52	47	MP3-03	22.23 - 27.23	1.0000	1.0000
L52	49	Flat 4.5x1	22.23 - 27.23	1.0000	1.0000
L52	50	Flat 4.5x1	22.23 - 27.23	1.0000	1.0000
L52	51	Flat 4.5x1	22.23 - 27.23	1.0000	1.0000
L52	53	Flat 4.5x1	25.58 - 27.23	1.0000	1.0000
L52	63	Flat 4.5x1.25	22.23 - 27.23	1.0000	1.0000
L52	64	Flat 4.5x1.25	22.23 - 27.23	1.0000	1.0000
L52	65	Flat 4.5x1.25	22.23 - 27.23	1.0000	1.0000
L52	66	Flat 4.5x1.25	22.23 - 27.23	1.0000	1.0000
L53	2	Safety Line 3/8	17.23 - 22.23	1.0000	1.0000
L53	3	Climbing Pegs	17.23 - 22.23	1.0000	1.0000
L53	16	MLE HYBRID 9POWER/18FIBER RL	17.23 - 22.23	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L53	18	2(1-5/8) HCS 6X12 4AWG(1-5/8)	17.23 - 22.23	1.0000	1.0000
L53	26	LDF4-50A(1/2)	17.23 - 22.23	1.0000	1.0000
L53	28	CU12PSM9P6XXX(1-1/2)	17.23 - 22.23	1.0000	1.0000
L53	31	Flat 5x1.25	17.23 - 22.23	1.0000	1.0000
L53	34	Flat 5x1.25	17.23 - 22.23	1.0000	1.0000
L53	35	Flat 5x1.25	17.23 - 22.23	1.0000	1.0000
L53	46	MP3-03	17.23 - 22.23	1.0000	1.0000
L53	47	MP3-03	17.23 - 22.23	1.0000	1.0000
L53	49	Flat 4.5x1	17.23 - 22.23	1.0000	1.0000
L53	50	Flat 4.5x1	17.23 - 22.23	1.0000	1.0000
L53	51	Flat 4.5x1	17.23 - 22.23	1.0000	1.0000
L53	63	Flat 4.5x1.25	17.23 - 22.23	1.0000	1.0000
L53	64	Flat 4.5x1.25	17.23 - 22.23	1.0000	1.0000
L53	65	Flat 4.5x1.25	17.23 - 22.23	1.0000	1.0000
L53	66	Flat 4.5x1.25	17.23 - 22.23	1.0000	1.0000
L54	2	Safety Line 3/8	12.23 - 17.23	1.0000	1.0000
L54	3	Climbing Pegs	12.23 - 17.23	1.0000	1.0000
L54	16	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	12.23 - 17.23	1.0000	1.0000
L54	18	HCS 6X12 4AWG(1-5/8)	12.23 - 17.23	1.0000	1.0000
L54	26	LDF4-50A(1/2)	12.23 - 17.23	1.0000	1.0000
L54	28	CU12PSM9P6XXX(1-1/2)	12.23 - 17.23	1.0000	1.0000
L54	31	Flat 5x1.25	12.23 - 17.23	1.0000	1.0000
L54	34	Flat 5x1.25	12.23 - 17.23	1.0000	1.0000
L54	35	Flat 5x1.25	12.23 - 17.23	1.0000	1.0000
L54	46	MP3-03	12.23 - 17.23	1.0000	1.0000
L54	47	MP3-03	12.23 - 17.23	1.0000	1.0000
L54	49	Flat 4.5x1	12.23 - 17.23	1.0000	1.0000
L54	50	Flat 4.5x1	12.23 - 17.23	1.0000	1.0000
L54	51	Flat 4.5x1	12.23 - 17.23	1.0000	1.0000
L54	63	Flat 4.5x1.25	12.23 - 17.23	1.0000	1.0000
L54	64	Flat 4.5x1.25	12.23 - 17.23	1.0000	1.0000
L54	65	Flat 4.5x1.25	12.23 - 17.23	1.0000	1.0000
L54	66	Flat 4.5x1.25	12.23 - 17.23	1.0000	1.0000
L55	2	Safety Line 3/8	8.00 - 12.23	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L55	3	Climbing Pegs	8.00 - 12.23	1.0000	1.0000
L55	16	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	7.23 - 12.23	1.0000	1.0000
L55	18	HCS 6X12 4AWG(1-5/8)	7.23 - 12.23	1.0000	1.0000
L55	26	LDF4-50A(1/2)	7.23 - 12.23	1.0000	1.0000
L55	28	CU12PSM9P6XXX(1-1/2)	7.23 - 12.23	1.0000	1.0000
L55	31	Flat 5x1.25	7.23 - 12.23	1.0000	1.0000
L55	32	Flat 5x1.25	7.23 - 9.17	1.0000	1.0000
L55	33	Flat 5x1.25	7.23 - 9.17	1.0000	1.0000
L55	34	Flat 5x1.25	7.23 - 12.23	1.0000	1.0000
L55	35	Flat 5x1.25	7.23 - 12.23	1.0000	1.0000
L55	46	MP3-03	7.23 - 12.23	1.0000	1.0000
L55	47	MP3-03	7.23 - 12.23	1.0000	1.0000
L55	49	Flat 4.5x1	7.23 - 12.23	1.0000	1.0000
L55	50	Flat 4.5x1	7.23 - 12.23	1.0000	1.0000
L55	51	Flat 4.5x1	7.23 - 12.23	1.0000	1.0000
L55	63	Flat 4.5x1.25	7.23 - 12.23	1.0000	1.0000
L55	64	Flat 4.5x1.25	7.23 - 12.23	1.0000	1.0000
L55	65	Flat 4.5x1.25	7.23 - 12.23	1.0000	1.0000
L55	66	Flat 4.5x1.25	7.23 - 12.23	1.0000	1.0000
L56	16	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	6.92 - 7.23	1.0000	1.0000
L56	18	HCS 6X12 4AWG(1-5/8)	6.92 - 7.23	1.0000	1.0000
L56	26	LDF4-50A(1/2)	6.92 - 7.23	1.0000	1.0000
L56	28	CU12PSM9P6XXX(1-1/2)	6.92 - 7.23	1.0000	1.0000
L56	31	Flat 5x1.25	6.92 - 7.23	1.0000	1.0000
L56	32	Flat 5x1.25	6.92 - 7.23	1.0000	1.0000
L56	33	Flat 5x1.25	6.92 - 7.23	1.0000	1.0000
L56	34	Flat 5x1.25	6.92 - 7.23	1.0000	1.0000
L56	35	Flat 5x1.25	6.92 - 7.23	1.0000	1.0000
L56	46	MP3-03	6.92 - 7.23	1.0000	1.0000
L56	47	MP3-03	6.92 - 7.23	1.0000	1.0000
L56	49	Flat 4.5x1	6.92 - 7.23	1.0000	1.0000
L56	50	Flat 4.5x1	6.92 - 7.23	1.0000	1.0000
L56	51	Flat 4.5x1	6.92 - 7.23	1.0000	1.0000
L56	63	Flat 4.5x1.25	6.92 - 7.23	1.0000	1.0000
L56	64	Flat 4.5x1.25	6.92 - 7.23	1.0000	1.0000
L56	65	Flat 4.5x1.25	6.92 - 7.23	1.0000	1.0000
L56	66	Flat 4.5x1.25	6.92 - 7.23	1.0000	1.0000
L57	16	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	6.67 - 6.92	1.0000	1.0000
L57	18	HCS 6X12 4AWG(1-5/8)	6.67 - 6.92	1.0000	1.0000
L57	26	LDF4-50A(1/2)	6.67 - 6.92	1.0000	1.0000
L57	28	CU12PSM9P6XXX(1-1/2)	6.67 - 6.92	1.0000	1.0000
L57	31	Flat 5x1.25	6.67 - 6.92	1.0000	1.0000
L57	32	Flat 5x1.25	6.67 - 6.92	1.0000	1.0000
L57	33	Flat 5x1.25	6.67 - 6.92	1.0000	1.0000
L57	34	Flat 5x1.25	6.67 - 6.92	1.0000	1.0000
L57	35	Flat 5x1.25	6.67 - 6.92	1.0000	1.0000
L57	46	MP3-03	6.67 - 6.92	1.0000	1.0000
L57	47	MP3-03	6.67 - 6.92	1.0000	1.0000
L57	49	Flat 4.5x1	6.67 - 6.92	1.0000	1.0000
L57	50	Flat 4.5x1	6.67 - 6.92	1.0000	1.0000
L57	51	Flat 4.5x1	6.67 - 6.92	1.0000	1.0000
L57	63	Flat 4.5x1.25	6.67 - 6.92	1.0000	1.0000
L57	64	Flat 4.5x1.25	6.67 - 6.92	1.0000	1.0000
L57	65	Flat 4.5x1.25	6.67 - 6.92	1.0000	1.0000
L57	66	Flat 4.5x1.25	6.67 - 6.92	1.0000	1.0000
L58	16	MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	3.00 - 6.67	1.0000	1.0000
L58	18	HCS 6X12 4AWG(1-5/8)	3.00 - 6.67	1.0000	1.0000
L58	26	LDF4-50A(1/2)	6.00 - 6.67	1.0000	1.0000
L58	28	CU12PSM9P6XXX(1-1/2)	3.00 - 6.67	1.0000	1.0000
L58	31	Flat 5x1.25	3.00 - 6.67	1.0000	1.0000
L58	32	Flat 5x1.25	3.00 - 6.67	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L58	33	Flat 5x1.25	3.00 - 6.67	1.0000	1.0000
L58	34	Flat 5x1.25	3.00 - 6.67	1.0000	1.0000
L58	35	Flat 5x1.25	4.33 - 6.67	1.0000	1.0000
L58	46	MP3-03	5.75 - 6.67	1.0000	1.0000
L58	47	MP3-03	5.75 - 6.67	1.0000	1.0000
L58	49	Flat 4.5x1	3.00 - 6.67	1.0000	1.0000
L58	50	Flat 4.5x1	3.00 - 6.67	1.0000	1.0000
L58	51	Flat 4.5x1	3.00 - 6.67	1.0000	1.0000
L58	63	Flat 4.5x1.25	3.00 - 6.67	1.0000	1.0000
L58	64	Flat 4.5x1.25	3.00 - 6.67	1.0000	1.0000
L58	65	Flat 4.5x1.25	3.00 - 6.67	1.0000	1.0000
L58	66	Flat 4.5x1.25	3.00 - 6.67	1.0000	1.0000
L59	28	CU12PSM9P6XXX(1-1/2)	2.75 - 3.00	1.0000	1.0000
L59	31	Flat 5x1.25	2.75 - 3.00	1.0000	1.0000
L59	32	Flat 5x1.25	2.75 - 3.00	1.0000	1.0000
L59	33	Flat 5x1.25	2.75 - 3.00	1.0000	1.0000
L59	34	Flat 5x1.25	2.75 - 3.00	1.0000	1.0000
L59	49	Flat 4.5x1	2.75 - 3.00	1.0000	1.0000
L59	50	Flat 4.5x1	2.75 - 3.00	1.0000	1.0000
L59	51	Flat 4.5x1	2.75 - 3.00	1.0000	1.0000
L59	63	Flat 4.5x1.25	2.75 - 3.00	1.0000	1.0000
L59	64	Flat 4.5x1.25	2.75 - 3.00	1.0000	1.0000
L59	65	Flat 4.5x1.25	2.75 - 3.00	1.0000	1.0000
L59	66	Flat 4.5x1.25	2.75 - 3.00	1.0000	1.0000
L60	28	CU12PSM9P6XXX(1-1/2)	0.00 - 2.75	1.0000	1.0000
L60	31	Flat 5x1.25	0.00 - 2.75	1.0000	1.0000
L60	32	Flat 5x1.25	0.00 - 2.75	1.0000	1.0000
L60	33	Flat 5x1.25	0.00 - 2.75	1.0000	1.0000
L60	34	Flat 5x1.25	0.00 - 2.75	1.0000	1.0000
L60	49	Flat 4.5x1	0.50 - 2.75	1.0000	1.0000
L60	50	Flat 4.5x1	0.50 - 2.75	1.0000	1.0000
L60	51	Flat 4.5x1	0.50 - 2.75	1.0000	1.0000
L60	63	Flat 4.5x1.25	1.25 - 2.75	1.0000	1.0000
L60	64	Flat 4.5x1.25	1.25 - 2.75	1.0000	1.0000
L60	65	Flat 4.5x1.25	1.25 - 2.75	1.0000	1.0000
L60	66	Flat 4.5x1.25	1.25 - 2.75	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
L7	74	Flat 4.5x1.25	113.62 - 114.16	Auto	0.1995
L7	75	Flat 4.5x1.25	113.62 - 114.16	Auto	0.1995
L7	76	Flat 4.5x1.25	113.62 - 115.08	Auto	0.2033
L8	74	Flat 4.5x1.25	113.08 - 113.62	Auto	0.1950
L8	75	Flat 4.5x1.25	113.08 - 113.62	Auto	0.1950
L8	76	Flat 4.5x1.25	113.08 - 113.62	Auto	0.1950
L9	74	Flat 4.5x1.25	112.83 - 113.08	Auto	0.1917
L9	75	Flat 4.5x1.25	112.83 - 113.08	Auto	0.1917
L9	76	Flat 4.5x1.25	112.83 - 113.08	Auto	0.1917
L10	74	Flat 4.5x1.25	112.16 - 112.83	Auto	0.1879
L10	75	Flat 4.5x1.25	112.16 - 112.83	Auto	0.1879
L10	76	Flat 4.5x1.25	112.16 -	Auto	0.1879

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L11	59	Flat 4.5x1	112.83 111.91 - 112.00	Auto	0.2910
L11	60	Flat 4.5x1	111.91 - 112.00	Auto	0.2910
L11	61	Flat 4.5x1	111.91 - 112.00	Auto	0.2910
L11	74	Flat 4.5x1.25	111.91 - 112.16	Auto	0.2917
L11	75	Flat 4.5x1.25	111.91 - 112.16	Auto	0.2917
L11	76	Flat 4.5x1.25	111.91 - 112.16	Auto	0.2917
L12	59	Flat 4.5x1	110.50 - 111.91	Auto	0.2848
L12	60	Flat 4.5x1	110.50 - 111.91	Auto	0.2848
L12	61	Flat 4.5x1	110.50 - 111.91	Auto	0.2848
L12	74	Flat 4.5x1.25	110.50 - 111.91	Auto	0.2848
L12	75	Flat 4.5x1.25	110.50 - 111.91	Auto	0.2848
L12	76	Flat 4.5x1.25	110.50 - 111.91	Auto	0.2848
L13	59	Flat 4.5x1	110.25 - 110.50	Auto	0.3659
L13	60	Flat 4.5x1	110.25 - 110.50	Auto	0.3659
L13	61	Flat 4.5x1	110.25 - 110.50	Auto	0.3659
L13	74	Flat 4.5x1.25	110.25 - 110.50	Auto	0.3659
L13	75	Flat 4.5x1.25	110.25 - 110.50	Auto	0.3659
L13	76	Flat 4.5x1.25	110.25 - 110.50	Auto	0.3659
L14	42	Flat 4.75x1.25	105.25 - 106.50	Auto	0.3547
L14	43	Flat 4.75x1.25	105.25 - 106.50	Auto	0.3547
L14	44	Flat 4.75x1.25	105.25 - 106.50	Auto	0.3547
L14	59	Flat 4.5x1	105.25 - 110.25	Auto	0.3344
L14	60	Flat 4.5x1	105.25 - 110.25	Auto	0.3344
L14	61	Flat 4.5x1	105.25 - 110.25	Auto	0.3344
L14	74	Flat 4.5x1.25	105.25 - 110.25	Auto	0.3344
L14	75	Flat 4.5x1.25	105.25 - 110.25	Auto	0.3344
L14	76	Flat 4.5x1.25	105.25 - 110.25	Auto	0.3344
L15	42	Flat 4.75x1.25	105.00 - 105.25	Auto	0.3488
L15	43	Flat 4.75x1.25	105.00 - 105.25	Auto	0.3488
L15	44	Flat 4.75x1.25	105.00 - 105.25	Auto	0.3488
L15	59	Flat 4.5x1	105.00 - 105.25	Auto	0.3126
L15	60	Flat 4.5x1	105.00 - 105.25	Auto	0.3126
L15	61	Flat 4.5x1	105.00 - 105.25	Auto	0.3126
L15	74	Flat 4.5x1.25	105.00 -	Auto	0.3126

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L15	75	Flat 4.5x1.25	105.25 105.00 - 105.25	Auto	0.3126
L15	76	Flat 4.5x1.25	105.00 - 105.25	Auto	0.3126
L16	42	Flat 4.75x1.25	104.75 - 105.00	Auto	0.4487
L16	43	Flat 4.75x1.25	104.75 - 105.00	Auto	0.4487
L16	44	Flat 4.75x1.25	104.75 - 105.00	Auto	0.4487
L16	59	Flat 4.5x1	104.75 - 105.00	Auto	0.4181
L16	60	Flat 4.5x1	104.75 - 105.00	Auto	0.4181
L16	61	Flat 4.5x1	104.75 - 105.00	Auto	0.4181
L16	74	Flat 4.5x1.25	104.75 - 105.00	Auto	0.4181
L16	75	Flat 4.5x1.25	104.75 - 105.00	Auto	0.4181
L16	76	Flat 4.5x1.25	104.75 - 105.00	Auto	0.4181
L17	42	Flat 4.75x1.25	103.50 - 104.75	Auto	0.4428
L17	43	Flat 4.75x1.25	103.50 - 104.75	Auto	0.4428
L17	44	Flat 4.75x1.25	103.50 - 104.75	Auto	0.4428
L17	59	Flat 4.5x1	103.50 - 104.75	Auto	0.4119
L17	60	Flat 4.5x1	103.50 - 104.75	Auto	0.4119
L17	61	Flat 4.5x1	103.50 - 104.75	Auto	0.4119
L17	74	Flat 4.5x1.25	103.50 - 104.75	Auto	0.4119
L17	75	Flat 4.5x1.25	103.50 - 104.75	Auto	0.4119
L17	76	Flat 4.5x1.25	103.50 - 104.75	Auto	0.4119
L18	42	Flat 4.75x1.25	103.25 - 103.50	Auto	0.3489
L18	43	Flat 4.75x1.25	103.25 - 103.50	Auto	0.3489
L18	44	Flat 4.75x1.25	103.25 - 103.50	Auto	0.3489
L18	59	Flat 4.5x1	103.25 - 103.50	Auto	0.3128
L18	60	Flat 4.5x1	103.25 - 103.50	Auto	0.3128
L18	61	Flat 4.5x1	103.25 - 103.50	Auto	0.3128
L18	74	Flat 4.5x1.25	103.25 - 103.50	Auto	0.3128
L18	75	Flat 4.5x1.25	103.25 - 103.50	Auto	0.3128
L18	76	Flat 4.5x1.25	103.25 - 103.50	Auto	0.3128
L19	42	Flat 4.75x1.25	98.25 - 103.25	Auto	0.3191
L19	43	Flat 4.75x1.25	98.25 - 103.25	Auto	0.3191
L19	44	Flat 4.75x1.25	98.25 - 103.25	Auto	0.3191
L19	59	Flat 4.5x1	102.00 - 103.25	Auto	0.2968
L19	60	Flat 4.5x1	102.00 -	Auto	0.2968

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L19	61	Flat 4.5x1	103.25 102.00 - 103.25	Auto	0.2968
L19	74	Flat 4.5x1.25	98.25 - 103.25	Auto	0.2812
L19	75	Flat 4.5x1.25	98.25 - 103.25	Auto	0.2812
L19	76	Flat 4.5x1.25	98.25 - 103.25	Auto	0.2812
L20	42	Flat 4.75x1.25	94.17 - 98.25	Auto	0.2741
L20	43	Flat 4.75x1.25	94.17 - 98.25	Auto	0.2741
L20	44	Flat 4.75x1.25	94.17 - 98.25	Auto	0.2741
L20	55	Flat 4x0.75	94.17 - 95.67	Auto	0.1260
L20	56	Flat 4x0.75	94.17 - 95.67	Auto	0.1260
L20	57	Flat 4x0.75	94.17 - 95.67	Auto	0.1260
L20	74	Flat 4.5x1.25	94.17 - 98.25	Auto	0.2338
L20	75	Flat 4.5x1.25	94.17 - 98.25	Auto	0.2338
L20	76	Flat 4.5x1.25	94.17 - 98.25	Auto	0.2338
L21	42	Flat 4.75x1.25	93.92 - 94.17	Auto	0.3081
L21	43	Flat 4.75x1.25	93.92 - 94.17	Auto	0.3081
L21	44	Flat 4.75x1.25	93.92 - 94.17	Auto	0.3081
L21	55	Flat 4x0.75	93.92 - 94.17	Auto	0.1783
L21	56	Flat 4x0.75	93.92 - 94.17	Auto	0.1783
L21	57	Flat 4x0.75	93.92 - 94.17	Auto	0.1783
L21	74	Flat 4.5x1.25	93.92 - 94.17	Auto	0.2696
L21	75	Flat 4.5x1.25	93.92 - 94.17	Auto	0.2696
L21	76	Flat 4.5x1.25	93.92 - 94.17	Auto	0.2696
L22	42	Flat 4.75x1.25	91.50 - 93.92	Auto	0.2883
L22	43	Flat 4.75x1.25	91.50 - 93.92	Auto	0.2883
L22	44	Flat 4.75x1.25	91.50 - 93.92	Auto	0.2883
L22	55	Flat 4x0.75	91.50 - 93.92	Auto	0.1549
L22	56	Flat 4x0.75	91.50 - 93.92	Auto	0.1549
L22	57	Flat 4x0.75	91.50 - 93.92	Auto	0.1549
L22	71	Flat 4.5x1	91.50 - 92.08	Auto	0.2412
L22	72	Flat 4.5x1	91.50 - 92.08	Auto	0.2412
L22	73	Flat 4.5x1	91.50 - 93.00	Auto	0.2450
L22	74	Flat 4.5x1.25	92.16 - 93.92	Auto	0.2515
L22	75	Flat 4.5x1.25	92.16 - 93.92	Auto	0.2515
L22	76	Flat 4.5x1.25	93.08 -	Auto	0.2553

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L23	42	Flat 4.75x1.25	93.92 91.25 - 91.50	Auto	0.2686
L23	43	Flat 4.75x1.25	91.25 - 91.50	Auto	0.2686
L23	44	Flat 4.75x1.25	91.25 - 91.50	Auto	0.2686
L23	55	Flat 4x0.75	91.25 - 91.50	Auto	0.1314
L23	56	Flat 4x0.75	91.25 - 91.50	Auto	0.1314
L23	57	Flat 4x0.75	91.25 - 91.50	Auto	0.1314
L23	71	Flat 4.5x1	91.25 - 91.50	Auto	0.2280
L23	72	Flat 4.5x1	91.25 - 91.50	Auto	0.2280
L23	73	Flat 4.5x1	91.25 - 91.50	Auto	0.2280
L24	42	Flat 4.75x1.25	90.58 - 91.25	Auto	0.2650
L24	43	Flat 4.75x1.25	90.58 - 91.25	Auto	0.2650
L24	44	Flat 4.75x1.25	90.58 - 91.25	Auto	0.2650
L24	55	Flat 4x0.75	90.58 - 91.25	Auto	0.1272
L24	56	Flat 4x0.75	90.58 - 91.25	Auto	0.1272
L24	57	Flat 4x0.75	90.58 - 91.25	Auto	0.1272
L24	71	Flat 4.5x1	90.58 - 91.25	Auto	0.2241
L24	72	Flat 4.5x1	90.58 - 91.25	Auto	0.2241
L24	73	Flat 4.5x1	90.58 - 91.25	Auto	0.2241
L25	42	Flat 4.75x1.25	90.33 - 90.58	Auto	0.2521
L25	43	Flat 4.75x1.25	90.33 - 90.58	Auto	0.2521
L25	44	Flat 4.75x1.25	90.33 - 90.58	Auto	0.2521
L25	55	Flat 4x0.75	90.33 - 90.58	Auto	0.1119
L25	56	Flat 4x0.75	90.33 - 90.58	Auto	0.1119
L25	57	Flat 4x0.75	90.33 - 90.58	Auto	0.1119
L25	71	Flat 4.5x1	90.33 - 90.58	Auto	0.2106
L25	72	Flat 4.5x1	90.33 - 90.58	Auto	0.2106
L25	73	Flat 4.5x1	90.33 - 90.58	Auto	0.2106
L26	39	Flat 4.75x1.25	84.91 - 89.25	Auto	0.2210
L26	40	Flat 4.75x1.25	84.91 - 89.25	Auto	0.2210
L26	41	Flat 4.75x1.25	84.91 - 89.25	Auto	0.2210
L26	42	Flat 4.75x1.25	89.25 - 90.33	Auto	0.2422
L26	43	Flat 4.75x1.25	89.25 - 90.33	Auto	0.2422
L26	44	Flat 4.75x1.25	89.25 - 90.33	Auto	0.2422
L26	55	Flat 4x0.75	84.91 -	Auto	0.0799

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L26	56	Flat 4x0.75	90.33 84.91 - 90.33	Auto	0.0799
L26	57	Flat 4x0.75	84.91 - 90.33	Auto	0.0799
L26	71	Flat 4.5x1	84.91 - 90.33	Auto	0.1822
L26	72	Flat 4.5x1	84.91 - 90.33	Auto	0.1822
L26	73	Flat 4.5x1	84.91 - 90.33	Auto	0.1822
L27	39	Flat 4.75x1.25	83.91 - 84.91	Auto	0.2510
L27	40	Flat 4.75x1.25	83.91 - 84.91	Auto	0.2510
L27	41	Flat 4.75x1.25	83.91 - 84.91	Auto	0.2510
L27	55	Flat 4x0.75	83.91 - 84.91	Auto	0.1105
L27	56	Flat 4x0.75	83.91 - 84.91	Auto	0.1105
L27	57	Flat 4x0.75	83.91 - 84.91	Auto	0.1105
L27	71	Flat 4.5x1	83.91 - 84.91	Auto	0.2093
L27	72	Flat 4.5x1	83.91 - 84.91	Auto	0.2093
L27	73	Flat 4.5x1	83.91 - 84.91	Auto	0.2093
L28	39	Flat 4.75x1.25	78.91 - 83.91	Auto	0.2181
L28	40	Flat 4.75x1.25	78.91 - 83.91	Auto	0.2181
L28	41	Flat 4.75x1.25	78.91 - 83.91	Auto	0.2181
L28	55	Flat 4x0.75	78.91 - 83.91	Auto	0.0715
L28	56	Flat 4x0.75	78.91 - 83.91	Auto	0.0715
L28	57	Flat 4x0.75	78.91 - 83.91	Auto	0.0715
L28	71	Flat 4.5x1	78.91 - 83.91	Auto	0.1747
L28	72	Flat 4.5x1	78.91 - 83.91	Auto	0.1747
L28	73	Flat 4.5x1	78.91 - 83.91	Auto	0.1747
L29	39	Flat 4.75x1.25	73.91 - 78.91	Auto	0.1696
L29	40	Flat 4.75x1.25	73.91 - 78.91	Auto	0.1696
L29	41	Flat 4.75x1.25	73.91 - 78.91	Auto	0.1696
L29	55	Flat 4x0.75	73.91 - 78.91	Auto	0.0149
L29	56	Flat 4x0.75	73.91 - 78.91	Auto	0.0149
L29	57	Flat 4x0.75	73.91 - 78.91	Auto	0.0149
L29	71	Flat 4.5x1	73.91 - 78.91	Auto	0.1235
L29	72	Flat 4.5x1	73.91 - 78.91	Auto	0.1235
L29	73	Flat 4.5x1	73.91 - 78.91	Auto	0.1235
L30	39	Flat 4.75x1.25	68.91 - 73.91	Auto	0.1258
L30	40	Flat 4.75x1.25	68.91 -	Auto	0.1258

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L30	41	Flat 4.75x1.25	73.91 68.91 - 73.91	Auto	0.1258
L30	55	Flat 4x0.75	68.91 - 73.91	Auto	0.0000
L30	56	Flat 4x0.75	68.91 - 73.91	Auto	0.0000
L30	57	Flat 4x0.75	68.91 - 73.91	Auto	0.0000
L30	71	Flat 4.5x1	68.91 - 73.91	Auto	0.0772
L30	72	Flat 4.5x1	68.91 - 73.91	Auto	0.0772
L30	73	Flat 4.5x1	68.91 - 73.91	Auto	0.0772
L31	39	Flat 4.75x1.25	65.50 - 68.91	Auto	0.0835
L31	40	Flat 4.75x1.25	65.50 - 68.91	Auto	0.0835
L31	41	Flat 4.75x1.25	65.50 - 68.91	Auto	0.0835
L31	55	Flat 4x0.75	65.50 - 68.91	Auto	0.0000
L31	56	Flat 4x0.75	65.50 - 68.91	Auto	0.0000
L31	57	Flat 4x0.75	65.50 - 68.91	Auto	0.0000
L31	67	Flat 4.5x1	65.50 - 67.00	Auto	0.0246
L31	68	Flat 4.5x1	65.50 - 67.00	Auto	0.0246
L31	69	Flat 4.5x1	65.50 - 67.00	Auto	0.0246
L31	70	Flat 4.5x1	65.50 - 67.00	Auto	0.0246
L31	71	Flat 4.5x1	67.08 - 68.91	Auto	0.0391
L31	72	Flat 4.5x1	67.08 - 68.91	Auto	0.0391
L31	73	Flat 4.5x1	65.50 - 68.91	Auto	0.0326
L32	39	Flat 4.75x1.25	65.25 - 65.50	Auto	0.1201
L32	40	Flat 4.75x1.25	65.25 - 65.50	Auto	0.1201
L32	41	Flat 4.75x1.25	65.25 - 65.50	Auto	0.1201
L32	55	Flat 4x0.75	65.25 - 65.50	Auto	0.0000
L32	56	Flat 4x0.75	65.25 - 65.50	Auto	0.0000
L32	57	Flat 4x0.75	65.25 - 65.50	Auto	0.0000
L32	67	Flat 4.5x1	65.25 - 65.50	Auto	0.0712
L32	68	Flat 4.5x1	65.25 - 65.50	Auto	0.0712
L32	69	Flat 4.5x1	65.25 - 65.50	Auto	0.0712
L32	70	Flat 4.5x1	65.25 - 65.50	Auto	0.0712
L32	73	Flat 4.5x1	65.25 - 65.50	Auto	0.0712
L33	39	Flat 4.75x1.25	64.50 - 65.25	Auto	0.1115
L33	40	Flat 4.75x1.25	64.50 - 65.25	Auto	0.1115
L33	41	Flat 4.75x1.25	64.50 -	Auto	0.1115

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L33	55	Flat 4x0.75	65.25 64.50 - 65.25	Auto	0.0000
L33	56	Flat 4x0.75	64.50 - 65.25	Auto	0.0000
L33	57	Flat 4x0.75	64.50 - 65.25	Auto	0.0000
L33	67	Flat 4.5x1	64.50 - 65.25	Auto	0.0621
L33	68	Flat 4.5x1	64.50 - 65.25	Auto	0.0621
L33	69	Flat 4.5x1	64.50 - 65.25	Auto	0.0621
L33	70	Flat 4.5x1	64.50 - 65.25	Auto	0.0621
L33	73	Flat 4.5x1	64.50 - 65.25	Auto	0.0621
L34	39	Flat 4.75x1.25	64.25 - 64.50	Auto	0.0798
L34	40	Flat 4.75x1.25	64.25 - 64.50	Auto	0.0798
L34	41	Flat 4.75x1.25	64.25 - 64.50	Auto	0.0798
L34	55	Flat 4x0.75	64.25 - 64.50	Auto	0.0000
L34	56	Flat 4x0.75	64.25 - 64.50	Auto	0.0000
L34	57	Flat 4x0.75	64.25 - 64.50	Auto	0.0000
L34	67	Flat 4.5x1	64.25 - 64.50	Auto	0.0287
L34	68	Flat 4.5x1	64.25 - 64.50	Auto	0.0287
L34	69	Flat 4.5x1	64.25 - 64.50	Auto	0.0287
L34	70	Flat 4.5x1	64.25 - 64.50	Auto	0.0287
L34	73	Flat 4.5x1	64.25 - 64.50	Auto	0.0287
L35	36	Flat 5x1.25	59.25 - 59.50	Auto	0.0797
L35	37	Flat 5x1.25	59.25 - 59.50	Auto	0.0797
L35	38	Flat 5x1.25	59.25 - 59.50	Auto	0.0797
L35	39	Flat 4.75x1.25	59.50 - 64.25	Auto	0.0509
L35	40	Flat 4.75x1.25	59.50 - 64.25	Auto	0.0509
L35	41	Flat 4.75x1.25	59.50 - 64.25	Auto	0.0509
L35	52	Flat 4.5x1	59.25 - 60.58	Auto	0.0000
L35	53	Flat 4.5x1	59.25 - 60.58	Auto	0.0000
L35	54	Flat 4.5x1	59.25 - 60.58	Auto	0.0000
L35	55	Flat 4x0.75	60.67 - 64.25	Auto	0.0000
L35	56	Flat 4x0.75	60.67 - 64.25	Auto	0.0000
L35	57	Flat 4x0.75	60.67 - 64.25	Auto	0.0000
L35	67	Flat 4.5x1	59.25 - 64.25	Auto	0.0038
L35	68	Flat 4.5x1	59.25 - 64.25	Auto	0.0038
L35	69	Flat 4.5x1	59.25 -	Auto	0.0038

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L35	70	Flat 4.5x1	64.25 59.25 - 64.25	Auto	0.0038
L35	73	Flat 4.5x1	63.00 - 64.25	Auto	0.0127
L36	36	Flat 5x1.25	58.58 - 59.25	Auto	0.0763
L36	37	Flat 5x1.25	58.58 - 59.25	Auto	0.0763
L36	38	Flat 5x1.25	58.58 - 59.25	Auto	0.0763
L36	52	Flat 4.5x1	58.58 - 59.25	Auto	0.0000
L36	53	Flat 4.5x1	58.58 - 59.25	Auto	0.0000
L36	54	Flat 4.5x1	58.58 - 59.25	Auto	0.0000
L36	67	Flat 4.5x1	58.58 - 59.25	Auto	0.0000
L36	68	Flat 4.5x1	58.58 - 59.25	Auto	0.0000
L36	69	Flat 4.5x1	58.58 - 59.25	Auto	0.0000
L36	70	Flat 4.5x1	58.58 - 59.25	Auto	0.0000
L37	36	Flat 5x1.25	58.33 - 58.58	Auto	0.0905
L37	37	Flat 5x1.25	58.33 - 58.58	Auto	0.0905
L37	38	Flat 5x1.25	58.33 - 58.58	Auto	0.0905
L37	52	Flat 4.5x1	58.33 - 58.58	Auto	0.0000
L37	53	Flat 4.5x1	58.33 - 58.58	Auto	0.0000
L37	54	Flat 4.5x1	58.33 - 58.58	Auto	0.0000
L37	67	Flat 4.5x1	58.33 - 58.58	Auto	0.0000
L37	68	Flat 4.5x1	58.33 - 58.58	Auto	0.0000
L37	69	Flat 4.5x1	58.33 - 58.58	Auto	0.0000
L37	70	Flat 4.5x1	58.33 - 58.58	Auto	0.0000
L38	36	Flat 5x1.25	57.25 - 58.33	Auto	0.0855
L38	37	Flat 5x1.25	57.25 - 58.33	Auto	0.0855
L38	38	Flat 5x1.25	57.25 - 58.33	Auto	0.0855
L38	52	Flat 4.5x1	57.25 - 58.33	Auto	0.0000
L38	53	Flat 4.5x1	57.25 - 58.33	Auto	0.0000
L38	54	Flat 4.5x1	57.25 - 58.33	Auto	0.0000
L38	67	Flat 4.5x1	57.25 - 58.33	Auto	0.0000
L38	68	Flat 4.5x1	57.25 - 58.33	Auto	0.0000
L38	69	Flat 4.5x1	57.25 - 58.33	Auto	0.0000
L38	70	Flat 4.5x1	57.25 - 58.33	Auto	0.0000
L39	36	Flat 5x1.25	57.00 - 57.25	Auto	0.0805
L39	37	Flat 5x1.25	57.00 -	Auto	0.0805

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L39	38	Flat 5x1.25	57.25 - 57.00	Auto	0.0805
L39	52	Flat 4.5x1	57.25 - 57.00	Auto	0.0000
L39	53	Flat 4.5x1	57.25 - 57.00	Auto	0.0000
L39	54	Flat 4.5x1	57.25 - 57.00	Auto	0.0000
L39	67	Flat 4.5x1	57.25 - 57.00	Auto	0.0000
L39	68	Flat 4.5x1	57.25 - 57.00	Auto	0.0000
L39	69	Flat 4.5x1	57.25 - 57.00	Auto	0.0000
L39	70	Flat 4.5x1	57.25 - 57.00	Auto	0.0000
L40	36	Flat 5x1.25	52.00 - 57.00	Auto	0.0566
L40	37	Flat 5x1.25	52.00 - 57.00	Auto	0.0566
L40	38	Flat 5x1.25	52.00 - 57.00	Auto	0.0566
L40	52	Flat 4.5x1	52.00 - 57.00	Auto	0.0000
L40	53	Flat 4.5x1	52.00 - 57.00	Auto	0.0000
L40	54	Flat 4.5x1	52.00 - 57.00	Auto	0.0000
L40	67	Flat 4.5x1	52.00 - 57.00	Auto	0.0000
L40	68	Flat 4.5x1	52.00 - 57.00	Auto	0.0000
L40	69	Flat 4.5x1	52.00 - 57.00	Auto	0.0000
L40	70	Flat 4.5x1	52.00 - 57.00	Auto	0.0000
L41	36	Flat 5x1.25	44.41 - 52.00	Auto	0.0099
L41	37	Flat 5x1.25	44.41 - 52.00	Auto	0.0099
L41	38	Flat 5x1.25	44.41 - 52.00	Auto	0.0099
L41	52	Flat 4.5x1	44.41 - 52.00	Auto	0.0000
L41	53	Flat 4.5x1	44.41 - 52.00	Auto	0.0000
L41	54	Flat 4.5x1	44.41 - 52.00	Auto	0.0000
L41	67	Flat 4.5x1	44.41 - 52.00	Auto	0.0000
L41	68	Flat 4.5x1	44.41 - 52.00	Auto	0.0000
L41	69	Flat 4.5x1	44.41 - 52.00	Auto	0.0000
L41	70	Flat 4.5x1	44.41 - 52.00	Auto	0.0000
L42	36	Flat 5x1.25	43.41 - 44.41	Auto	0.0171
L42	37	Flat 5x1.25	43.41 - 44.41	Auto	0.0171
L42	38	Flat 5x1.25	43.41 - 44.41	Auto	0.0171
L42	52	Flat 4.5x1	43.41 - 44.41	Auto	0.0000
L42	53	Flat 4.5x1	43.41 - 44.41	Auto	0.0000
L42	54	Flat 4.5x1	43.41 -	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L42	67	Flat 4.5x1	44.41 43.41 - 44.41	Auto	0.0000
L42	68	Flat 4.5x1	43.41 - 44.41	Auto	0.0000
L42	69	Flat 4.5x1	43.41 - 44.41	Auto	0.0000
L42	70	Flat 4.5x1	43.41 - 44.41	Auto	0.0000
L43	36	Flat 5x1.25	38.41 - 43.41	Auto	0.0003
L43	37	Flat 5x1.25	38.41 - 43.41	Auto	0.0003
L43	38	Flat 5x1.25	38.41 - 43.41	Auto	0.0003
L43	52	Flat 4.5x1	38.41 - 43.41	Auto	0.0000
L43	53	Flat 4.5x1	38.41 - 43.41	Auto	0.0000
L43	54	Flat 4.5x1	38.41 - 43.41	Auto	0.0000
L43	67	Flat 4.5x1	38.41 - 43.41	Auto	0.0000
L43	68	Flat 4.5x1	38.41 - 43.41	Auto	0.0000
L43	69	Flat 4.5x1	38.41 - 43.41	Auto	0.0000
L43	70	Flat 4.5x1	38.41 - 43.41	Auto	0.0000
L44	36	Flat 5x1.25	34.50 - 38.41	Auto	0.0000
L44	37	Flat 5x1.25	34.50 - 38.41	Auto	0.0000
L44	38	Flat 5x1.25	34.50 - 38.41	Auto	0.0000
L44	52	Flat 4.5x1	34.50 - 38.41	Auto	0.0000
L44	53	Flat 4.5x1	34.50 - 38.41	Auto	0.0000
L44	54	Flat 4.5x1	34.50 - 38.41	Auto	0.0000
L44	63	Flat 4.5x1.25	34.50 - 36.25	Auto	0.0000
L44	64	Flat 4.5x1.25	34.50 - 36.25	Auto	0.0000
L44	65	Flat 4.5x1.25	34.50 - 36.25	Auto	0.0000
L44	66	Flat 4.5x1.25	34.50 - 36.25	Auto	0.0000
L44	67	Flat 4.5x1	34.50 - 38.41	Auto	0.0000
L44	68	Flat 4.5x1	34.50 - 38.41	Auto	0.0000
L44	69	Flat 4.5x1	34.50 - 38.41	Auto	0.0000
L44	70	Flat 4.5x1	34.50 - 38.41	Auto	0.0000
L45	36	Flat 5x1.25	34.25 - 34.50	Auto	0.0000
L45	37	Flat 5x1.25	34.25 - 34.50	Auto	0.0000
L45	38	Flat 5x1.25	34.25 - 34.50	Auto	0.0000
L45	52	Flat 4.5x1	34.25 - 34.50	Auto	0.0000
L45	53	Flat 4.5x1	34.25 - 34.50	Auto	0.0000
L45	54	Flat 4.5x1	34.25 -	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L45	63	Flat 4.5x1.25	34.50 34.25 - 34.50	Auto	0.0000
L45	64	Flat 4.5x1.25	34.25 - 34.50	Auto	0.0000
L45	65	Flat 4.5x1.25	34.25 - 34.50	Auto	0.0000
L45	66	Flat 4.5x1.25	34.25 - 34.50	Auto	0.0000
L45	67	Flat 4.5x1	34.25 - 34.50	Auto	0.0000
L45	68	Flat 4.5x1	34.25 - 34.50	Auto	0.0000
L45	69	Flat 4.5x1	34.25 - 34.50	Auto	0.0000
L45	70	Flat 4.5x1	34.25 - 34.50	Auto	0.0000
L46	36	Flat 5x1.25	33.50 - 34.25	Auto	0.0000
L46	37	Flat 5x1.25	33.50 - 34.25	Auto	0.0000
L46	38	Flat 5x1.25	33.50 - 34.25	Auto	0.0000
L46	52	Flat 4.5x1	33.50 - 34.25	Auto	0.0000
L46	53	Flat 4.5x1	33.50 - 34.25	Auto	0.0000
L46	54	Flat 4.5x1	33.50 - 34.25	Auto	0.0000
L46	63	Flat 4.5x1.25	33.50 - 34.25	Auto	0.0000
L46	64	Flat 4.5x1.25	33.50 - 34.25	Auto	0.0000
L46	65	Flat 4.5x1.25	33.50 - 34.25	Auto	0.0000
L46	66	Flat 4.5x1.25	33.50 - 34.25	Auto	0.0000
L46	67	Flat 4.5x1	33.50 - 34.25	Auto	0.0000
L46	68	Flat 4.5x1	33.50 - 34.25	Auto	0.0000
L46	69	Flat 4.5x1	33.50 - 34.25	Auto	0.0000
L46	70	Flat 4.5x1	33.50 - 34.25	Auto	0.0000
L47	36	Flat 5x1.25	33.25 - 33.50	Auto	0.0000
L47	37	Flat 5x1.25	33.25 - 33.50	Auto	0.0000
L47	38	Flat 5x1.25	33.25 - 33.50	Auto	0.0000
L47	52	Flat 4.5x1	33.25 - 33.50	Auto	0.0000
L47	53	Flat 4.5x1	33.25 - 33.50	Auto	0.0000
L47	54	Flat 4.5x1	33.25 - 33.50	Auto	0.0000
L47	63	Flat 4.5x1.25	33.25 - 33.50	Auto	0.0000
L47	64	Flat 4.5x1.25	33.25 - 33.50	Auto	0.0000
L47	65	Flat 4.5x1.25	33.25 - 33.50	Auto	0.0000
L47	66	Flat 4.5x1.25	33.25 - 33.50	Auto	0.0000
L47	67	Flat 4.5x1	33.25 - 33.50	Auto	0.0000
L47	68	Flat 4.5x1	33.25 -	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L47	69	Flat 4.5x1	33.50 33.25 - 33.50	Auto	0.0000
L47	70	Flat 4.5x1	33.25 - 33.50	Auto	0.0000
L48	31	Flat 5x1.25	28.48 - 29.75	Auto	0.0000
L48	34	Flat 5x1.25	28.48 - 29.75	Auto	0.0000
L48	35	Flat 5x1.25	28.48 - 29.75	Auto	0.0000
L48	36	Flat 5x1.25	29.75 - 33.25	Auto	0.0000
L48	37	Flat 5x1.25	29.75 - 33.25	Auto	0.0000
L48	38	Flat 5x1.25	29.75 - 33.25	Auto	0.0000
L48	46	MP3-03	28.48 - 30.75	Auto	0.0000
L48	47	MP3-03	28.48 - 30.75	Auto	0.0000
L48	49	Flat 4.5x1	28.48 - 30.50	Auto	0.0000
L48	50	Flat 4.5x1	28.48 - 30.50	Auto	0.0000
L48	51	Flat 4.5x1	28.48 - 30.50	Auto	0.0000
L48	52	Flat 4.5x1	30.58 - 33.25	Auto	0.0000
L48	53	Flat 4.5x1	28.48 - 33.25	Auto	0.0000
L48	54	Flat 4.5x1	30.58 - 33.25	Auto	0.0000
L48	63	Flat 4.5x1.25	28.48 - 33.25	Auto	0.0000
L48	64	Flat 4.5x1.25	28.48 - 33.25	Auto	0.0000
L48	65	Flat 4.5x1.25	28.48 - 33.25	Auto	0.0000
L48	66	Flat 4.5x1.25	28.48 - 33.25	Auto	0.0000
L48	67	Flat 4.5x1	32.00 - 33.25	Auto	0.0000
L48	68	Flat 4.5x1	32.00 - 33.25	Auto	0.0000
L48	69	Flat 4.5x1	32.00 - 33.25	Auto	0.0000
L48	70	Flat 4.5x1	32.00 - 33.25	Auto	0.0000
L49	31	Flat 5x1.25	28.23 - 28.48	Auto	0.0000
L49	34	Flat 5x1.25	28.23 - 28.48	Auto	0.0000
L49	35	Flat 5x1.25	28.23 - 28.48	Auto	0.0000
L49	46	MP3-03	28.23 - 28.48	Auto	0.0000
L49	47	MP3-03	28.23 - 28.48	Auto	0.0000
L49	49	Flat 4.5x1	28.23 - 28.48	Auto	0.0000
L49	50	Flat 4.5x1	28.23 - 28.48	Auto	0.0000
L49	51	Flat 4.5x1	28.23 - 28.48	Auto	0.0000
L49	53	Flat 4.5x1	28.23 - 28.48	Auto	0.0000
L49	63	Flat 4.5x1.25	28.23 -	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L49	64	Flat 4.5x1.25	28.48 28.23 - 28.48	Auto	0.0000
L49	65	Flat 4.5x1.25	28.23 - 28.48	Auto	0.0000
L49	66	Flat 4.5x1.25	28.23 - 28.48	Auto	0.0000
L50	31	Flat 5x1.25	27.48 - 28.23	Auto	0.0000
L50	34	Flat 5x1.25	27.48 - 28.23	Auto	0.0000
L50	35	Flat 5x1.25	27.48 - 28.23	Auto	0.0000
L50	46	MP3-03	27.48 - 28.23	Auto	0.0000
L50	47	MP3-03	27.48 - 28.23	Auto	0.0000
L50	49	Flat 4.5x1	27.48 - 28.23	Auto	0.0000
L50	50	Flat 4.5x1	27.48 - 28.23	Auto	0.0000
L50	51	Flat 4.5x1	27.48 - 28.23	Auto	0.0000
L50	53	Flat 4.5x1	27.48 - 28.23	Auto	0.0000
L50	63	Flat 4.5x1.25	27.48 - 28.23	Auto	0.0000
L50	64	Flat 4.5x1.25	27.48 - 28.23	Auto	0.0000
L50	65	Flat 4.5x1.25	27.48 - 28.23	Auto	0.0000
L50	66	Flat 4.5x1.25	27.48 - 28.23	Auto	0.0000
L51	31	Flat 5x1.25	27.23 - 27.48	Auto	0.0000
L51	34	Flat 5x1.25	27.23 - 27.48	Auto	0.0000
L51	35	Flat 5x1.25	27.23 - 27.48	Auto	0.0000
L51	46	MP3-03	27.23 - 27.48	Auto	0.0000
L51	47	MP3-03	27.23 - 27.48	Auto	0.0000
L51	49	Flat 4.5x1	27.23 - 27.48	Auto	0.0000
L51	50	Flat 4.5x1	27.23 - 27.48	Auto	0.0000
L51	51	Flat 4.5x1	27.23 - 27.48	Auto	0.0000
L51	53	Flat 4.5x1	27.23 - 27.48	Auto	0.0000
L51	63	Flat 4.5x1.25	27.23 - 27.48	Auto	0.0000
L51	64	Flat 4.5x1.25	27.23 - 27.48	Auto	0.0000
L51	65	Flat 4.5x1.25	27.23 - 27.48	Auto	0.0000
L51	66	Flat 4.5x1.25	27.23 - 27.48	Auto	0.0000
L52	31	Flat 5x1.25	22.23 - 27.23	Auto	0.0000
L52	34	Flat 5x1.25	22.23 - 27.23	Auto	0.0000
L52	35	Flat 5x1.25	22.23 - 27.23	Auto	0.0000
L52	46	MP3-03	22.23 - 27.23	Auto	0.0000
L52	47	MP3-03	22.23 -	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L52	49	Flat 4.5x1	27.23 - 27.23	Auto	0.0000
L52	50	Flat 4.5x1	22.23 - 27.23	Auto	0.0000
L52	51	Flat 4.5x1	22.23 - 27.23	Auto	0.0000
L52	53	Flat 4.5x1	25.58 - 27.23	Auto	0.0000
L52	63	Flat 4.5x1.25	22.23 - 27.23	Auto	0.0000
L52	64	Flat 4.5x1.25	22.23 - 27.23	Auto	0.0000
L52	65	Flat 4.5x1.25	22.23 - 27.23	Auto	0.0000
L52	66	Flat 4.5x1.25	22.23 - 27.23	Auto	0.0000
L53	31	Flat 5x1.25	17.23 - 22.23	Auto	0.0000
L53	34	Flat 5x1.25	17.23 - 22.23	Auto	0.0000
L53	35	Flat 5x1.25	17.23 - 22.23	Auto	0.0000
L53	46	MP3-03	17.23 - 22.23	Auto	0.0000
L53	47	MP3-03	17.23 - 22.23	Auto	0.0000
L53	49	Flat 4.5x1	17.23 - 22.23	Auto	0.0000
L53	50	Flat 4.5x1	17.23 - 22.23	Auto	0.0000
L53	51	Flat 4.5x1	17.23 - 22.23	Auto	0.0000
L53	63	Flat 4.5x1.25	17.23 - 22.23	Auto	0.0000
L53	64	Flat 4.5x1.25	17.23 - 22.23	Auto	0.0000
L53	65	Flat 4.5x1.25	17.23 - 22.23	Auto	0.0000
L53	66	Flat 4.5x1.25	17.23 - 22.23	Auto	0.0000
L54	31	Flat 5x1.25	12.23 - 17.23	Auto	0.0000
L54	34	Flat 5x1.25	12.23 - 17.23	Auto	0.0000
L54	35	Flat 5x1.25	12.23 - 17.23	Auto	0.0000
L54	46	MP3-03	12.23 - 17.23	Auto	0.0000
L54	47	MP3-03	12.23 - 17.23	Auto	0.0000
L54	49	Flat 4.5x1	12.23 - 17.23	Auto	0.0000
L54	50	Flat 4.5x1	12.23 - 17.23	Auto	0.0000
L54	51	Flat 4.5x1	12.23 - 17.23	Auto	0.0000
L54	63	Flat 4.5x1.25	12.23 - 17.23	Auto	0.0000
L54	64	Flat 4.5x1.25	12.23 - 17.23	Auto	0.0000
L54	65	Flat 4.5x1.25	12.23 - 17.23	Auto	0.0000
L54	66	Flat 4.5x1.25	12.23 - 17.23	Auto	0.0000
L55	31	Flat 5x1.25	7.23 - 12.23	Auto	0.0000
L55	32	Flat 5x1.25	7.23 - 9.17	Auto	0.0000
L55	33	Flat 5x1.25	7.23 - 9.17	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L55	34	Flat 5x1.25	7.23 - 12.23	Auto	0.0000
L55	35	Flat 5x1.25	7.23 - 12.23	Auto	0.0000
L55	46	MP3-03	7.23 - 12.23	Auto	0.0000
L55	47	MP3-03	7.23 - 12.23	Auto	0.0000
L55	49	Flat 4.5x1	7.23 - 12.23	Auto	0.0000
L55	50	Flat 4.5x1	7.23 - 12.23	Auto	0.0000
L55	51	Flat 4.5x1	7.23 - 12.23	Auto	0.0000
L55	63	Flat 4.5x1.25	7.23 - 12.23	Auto	0.0000
L55	64	Flat 4.5x1.25	7.23 - 12.23	Auto	0.0000
L55	65	Flat 4.5x1.25	7.23 - 12.23	Auto	0.0000
L55	66	Flat 4.5x1.25	7.23 - 12.23	Auto	0.0000
L56	31	Flat 5x1.25	6.92 - 7.23	Auto	0.0000
L56	32	Flat 5x1.25	6.92 - 7.23	Auto	0.0000
L56	33	Flat 5x1.25	6.92 - 7.23	Auto	0.0000
L56	34	Flat 5x1.25	6.92 - 7.23	Auto	0.0000
L56	35	Flat 5x1.25	6.92 - 7.23	Auto	0.0000
L56	46	MP3-03	6.92 - 7.23	Auto	0.0000
L56	47	MP3-03	6.92 - 7.23	Auto	0.0000
L56	49	Flat 4.5x1	6.92 - 7.23	Auto	0.0000
L56	50	Flat 4.5x1	6.92 - 7.23	Auto	0.0000
L56	51	Flat 4.5x1	6.92 - 7.23	Auto	0.0000
L56	63	Flat 4.5x1.25	6.92 - 7.23	Auto	0.0000
L56	64	Flat 4.5x1.25	6.92 - 7.23	Auto	0.0000
L56	65	Flat 4.5x1.25	6.92 - 7.23	Auto	0.0000
L56	66	Flat 4.5x1.25	6.92 - 7.23	Auto	0.0000
L57	31	Flat 5x1.25	6.67 - 6.92	Auto	0.0000
L57	32	Flat 5x1.25	6.67 - 6.92	Auto	0.0000
L57	33	Flat 5x1.25	6.67 - 6.92	Auto	0.0000
L57	34	Flat 5x1.25	6.67 - 6.92	Auto	0.0000
L57	35	Flat 5x1.25	6.67 - 6.92	Auto	0.0000
L57	46	MP3-03	6.67 - 6.92	Auto	0.0000
L57	47	MP3-03	6.67 - 6.92	Auto	0.0000
L57	49	Flat 4.5x1	6.67 - 6.92	Auto	0.0000
L57	50	Flat 4.5x1	6.67 - 6.92	Auto	0.0000
L57	51	Flat 4.5x1	6.67 - 6.92	Auto	0.0000
L57	63	Flat 4.5x1.25	6.67 - 6.92	Auto	0.0000
L57	64	Flat 4.5x1.25	6.67 - 6.92	Auto	0.0000
L57	65	Flat 4.5x1.25	6.67 - 6.92	Auto	0.0000
L57	66	Flat 4.5x1.25	6.67 - 6.92	Auto	0.0000
L58	31	Flat 5x1.25	3.00 - 6.67	Auto	0.0000
L58	32	Flat 5x1.25	3.00 - 6.67	Auto	0.0000
L58	33	Flat 5x1.25	3.00 - 6.67	Auto	0.0000
L58	34	Flat 5x1.25	3.00 - 6.67	Auto	0.0000
L58	35	Flat 5x1.25	4.33 - 6.67	Auto	0.0000
L58	46	MP3-03	5.75 - 6.67	Auto	0.0000
L58	47	MP3-03	5.75 - 6.67	Auto	0.0000
L58	49	Flat 4.5x1	3.00 - 6.67	Auto	0.0000
L58	50	Flat 4.5x1	3.00 - 6.67	Auto	0.0000
L58	51	Flat 4.5x1	3.00 - 6.67	Auto	0.0000
L58	63	Flat 4.5x1.25	3.00 - 6.67	Auto	0.0000
L58	64	Flat 4.5x1.25	3.00 - 6.67	Auto	0.0000
L58	65	Flat 4.5x1.25	3.00 - 6.67	Auto	0.0000
L58	66	Flat 4.5x1.25	3.00 - 6.67	Auto	0.0000
L59	31	Flat 5x1.25	2.75 - 3.00	Auto	0.0000
L59	32	Flat 5x1.25	2.75 - 3.00	Auto	0.0000
L59	33	Flat 5x1.25	2.75 - 3.00	Auto	0.0000
L59	34	Flat 5x1.25	2.75 - 3.00	Auto	0.0000
L59	49	Flat 4.5x1	2.75 - 3.00	Auto	0.0000
L59	50	Flat 4.5x1	2.75 - 3.00	Auto	0.0000
L59	51	Flat 4.5x1	2.75 - 3.00	Auto	0.0000
L59	63	Flat 4.5x1.25	2.75 - 3.00	Auto	0.0000
L59	64	Flat 4.5x1.25	2.75 - 3.00	Auto	0.0000
L59	65	Flat 4.5x1.25	2.75 - 3.00	Auto	0.0000
L59	66	Flat 4.5x1.25	2.75 - 3.00	Auto	0.0000
L60	31	Flat 5x1.25	0.00 - 2.75	Auto	0.0000
L60	32	Flat 5x1.25	0.00 - 2.75	Auto	0.0000
L60	33	Flat 5x1.25	0.00 - 2.75	Auto	0.0000
L60	34	Flat 5x1.25	0.00 - 2.75	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L60	49	Flat 4.5x1	0.50 - 2.75	Auto	0.0000
L60	50	Flat 4.5x1	0.50 - 2.75	Auto	0.0000
L60	51	Flat 4.5x1	0.50 - 2.75	Auto	0.0000
L60	63	Flat 4.5x1.25	1.25 - 2.75	Auto	0.0000
L60	64	Flat 4.5x1.25	1.25 - 2.75	Auto	0.0000
L60	65	Flat 4.5x1.25	1.25 - 2.75	Auto	0.0000
L60	66	Flat 4.5x1.25	1.25 - 2.75	Auto	0.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
*******									
6' x 2" Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice	1.43 1.92 2.29	1.43 1.92 2.29	0.02 0.03 0.05
6' x 2" Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice	1.43 1.92 2.29	1.43 1.92 2.29	0.02 0.03 0.05
6' x 2" Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice	1.43 1.92 2.29	1.43 1.92 2.29	0.02 0.03 0.05
Platform Mount [LP 303-1_HR-1]	C	None		0.0000	147.00	No Ice 1/2" Ice 1" Ice	17.09 21.47 25.72	17.09 21.47 25.72	1.50 1.88 2.35
***									
APX16DWV-16DWV-S-E-A20 w/ Mount Pipe	A	From Leg	4.00 0.00 2.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice	6.29 6.86 7.45	2.76 3.27 3.79	0.06 0.11 0.16
APX16DWV-16DWV-S-E-A20 w/ Mount Pipe	B	From Leg	4.00 0.00 2.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice	6.29 6.86 7.45	2.76 3.27 3.79	0.06 0.11 0.16
APX16DWV-16DWV-S-E-A20 w/ Mount Pipe	C	From Leg	4.00 0.00 2.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice	6.29 6.86 7.45	2.76 3.27 3.79	0.06 0.11 0.16
AIR6449 B41_T-MOBILE w/ Mount Pipe	A	From Leg	4.00 0.00 2.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice	5.19 5.59 6.02	2.71 3.04 3.38	0.13 0.17 0.23
AIR6449 B41_T-MOBILE w/ Mount Pipe	B	From Leg	4.00 0.00 2.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice	5.19 5.59 6.02	2.71 3.04 3.38	0.13 0.17 0.23
AIR6449 B41_T-MOBILE w/ Mount Pipe	C	From Leg	4.00 0.00 2.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice	5.19 5.59 6.02	2.71 3.04 3.38	0.13 0.17 0.23
APXVAALL24_43-U-NA20_TMO w/ Mount Pipe	A	From Leg	4.00 0.00 2.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice	14.69 15.46 16.23	6.87 7.55 8.25	0.18 0.31 0.45
APXVAALL24_43-U-NA20_TMO w/ Mount Pipe	B	From Leg	4.00 0.00	0.0000	147.00	No Ice 1/2"	14.69 15.46	6.87 7.55	0.18 0.31

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			2.00			Ice 1" Ice	16.23	8.25	0.45
APXVAALL24_43-U-NA20_TMO w/ Mount Pipe	C	From Leg	4.00 0.00 2.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice	14.69 15.46 16.23	6.87 7.55 8.25	0.18 0.31 0.45
RADIO 4460 B2/B25 B66_TMO	A	From Leg	4.00 0.00 2.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice	2.14 2.32 2.51	1.69 1.85 2.02	0.11 0.13 0.16
RADIO 4460 B2/B25 B66_TMO	B	From Leg	4.00 0.00 2.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice	2.14 2.32 2.51	1.69 1.85 2.02	0.11 0.13 0.16
RADIO 4460 B2/B25 B66_TMO	C	From Leg	4.00 0.00 2.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice	2.14 2.32 2.51	1.69 1.85 2.02	0.11 0.13 0.16
RADIO 4480 B71_TMO	A	From Leg	4.00 0.00 2.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice	2.85 3.06 3.28	1.38 1.54 1.71	0.09 0.11 0.14
RADIO 4480 B71_TMO	B	From Leg	4.00 0.00 2.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice	2.85 3.06 3.28	1.38 1.54 1.71	0.09 0.11 0.14
RADIO 4480 B71_TMO	C	From Leg	4.00 0.00 2.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice	2.85 3.06 3.28	1.38 1.54 1.71	0.09 0.11 0.14
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(2) LPA-80080/4CF w/ Mount Pipe	A	From Leg	4.00 0.00 2.00	0.0000	136.00	No Ice 1/2" Ice 1" Ice	2.86 3.22 3.59	6.57 7.19 7.84	0.03 0.08 0.13
(2) LPA-80080/4CF w/ Mount Pipe	B	From Leg	4.00 0.00 2.00	0.0000	136.00	No Ice 1/2" Ice 1" Ice	2.86 3.22 3.59	6.57 7.19 7.84	0.03 0.08 0.13
(2) LPA-80080/4CF w/ Mount Pipe	C	From Leg	4.00 0.00 2.00	0.0000	136.00	No Ice 1/2" Ice 1" Ice	2.86 3.22 3.59	6.57 7.19 7.84	0.03 0.08 0.13
Platform Mount [LP 712-1]	C	None		0.0000	136.00	No Ice 1/2" Ice 1" Ice	24.56 27.92 31.27	24.56 27.92 31.27	1.34 1.91 2.55
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(2) NHH-65B-R2B w/ Mount Pipe	A	From Leg	4.00 0.00 2.00	0.0000	136.00	No Ice 1/2" Ice 1" Ice	4.09 4.48 4.88	3.29 3.67 4.06	0.07 0.13 0.21
(2) NHH-65B-R2B w/ Mount Pipe	B	From Leg	4.00 0.00 2.00	0.0000	136.00	No Ice 1/2" Ice 1" Ice	4.09 4.48 4.88	3.29 3.67 4.06	0.07 0.13 0.21
(2) NHH-45B-R2B w/ Mount Pipe	C	From Leg	4.00 0.00 2.00	0.0000	136.00	No Ice 1/2" Ice 1" Ice	8.26 8.83 9.41	4.39 4.91 5.43	0.10 0.18 0.27
MT6407-77A w/ Mount Pipe	A	From Leg	4.00 0.00 2.00	0.0000	136.00	No Ice 1/2" Ice 1" Ice	4.91 5.26 5.61	2.68 3.14 3.62	0.10 0.14 0.18
MT6407-77A w/ Mount	B	From Leg	4.00	0.0000	136.00	No Ice	4.91	2.68	0.10

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
Pipe			0.00			1/2"	5.26	3.14	0.14
			2.00			Ice	5.61	3.62	0.18
						1" Ice			
MT6407-77A w/ Mount Pipe	C	From Leg	4.00	0.0000	136.00	No Ice	4.91	2.68	0.10
			0.00			1/2"	5.26	3.14	0.14
			2.00			Ice	5.61	3.62	0.18
						1" Ice			
RF4439D-25A	A	From Leg	4.00	0.0000	136.00	No Ice	1.87	1.25	0.07
			0.00			1/2"	2.03	1.39	0.09
			2.00			Ice	2.21	1.54	0.11
						1" Ice			
RF4439D-25A	B	From Leg	4.00	0.0000	136.00	No Ice	1.87	1.25	0.07
			0.00			1/2"	2.03	1.39	0.09
			2.00			Ice	2.21	1.54	0.11
						1" Ice			
RF4439D-25A	C	From Leg	4.00	0.0000	136.00	No Ice	1.87	1.25	0.07
			0.00			1/2"	2.03	1.39	0.09
			2.00			Ice	2.21	1.54	0.11
						1" Ice			
RF4440D-13A	A	From Leg	4.00	0.0000	136.00	No Ice	1.87	1.13	0.07
			0.00			1/2"	2.03	1.27	0.09
			2.00			Ice	2.21	1.41	0.11
						1" Ice			
RF4440D-13A	B	From Leg	4.00	0.0000	136.00	No Ice	1.87	1.13	0.07
			0.00			1/2"	2.03	1.27	0.09
			2.00			Ice	2.21	1.41	0.11
						1" Ice			
RF4440D-13A	C	From Leg	4.00	0.0000	136.00	No Ice	1.87	1.13	0.07
			0.00			1/2"	2.03	1.27	0.09
			2.00			Ice	2.21	1.41	0.11
						1" Ice			
RVZDC-6627-PF-48	A	From Leg	4.00	0.0000	136.00	No Ice	3.79	2.51	0.03
			0.00			1/2"	4.04	2.73	0.06
			2.00			Ice	4.30	2.95	0.10
						1" Ice			
Mount Reinforcement Specifications	C	None		0.0000	136.00	No Ice	28.63	28.63	0.28
						1/2"	37.31	37.31	0.67
						Ice	45.80	45.80	0.94
						1" Ice			
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ERICSSON AIR 21 B2A B4P w/ Mount Pipe	A	From Leg	4.00	0.0000	129.00	No Ice	3.14	2.59	0.11
			0.00			1/2"	3.45	2.88	0.16
			0.00			Ice	3.77	3.19	0.23
						1" Ice			
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	B	From Leg	4.00	0.0000	129.00	No Ice	3.14	2.59	0.11
			0.00			1/2"	3.45	2.88	0.16
			0.00			Ice	3.77	3.19	0.23
						1" Ice			
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	C	From Leg	4.00	0.0000	129.00	No Ice	3.14	2.59	0.11
			0.00			1/2"	3.45	2.88	0.16
			0.00			Ice	3.77	3.19	0.23
						1" Ice			
ERICSSON AIR 21 B4A B2P w/ Mount Pipe	A	From Leg	4.00	0.0000	129.00	No Ice	3.14	2.59	0.11
			0.00			1/2"	3.45	2.88	0.16
			0.00			Ice	3.77	3.19	0.22
						1" Ice			
ERICSSON AIR 21 B4A B2P w/ Mount Pipe	B	From Leg	4.00	0.0000	129.00	No Ice	3.14	2.59	0.11
			0.00			1/2"	3.45	2.88	0.16
			0.00			Ice	3.77	3.19	0.22
						1" Ice			
ERICSSON AIR 21 B4A B2P w/ Mount Pipe	C	From Leg	4.00	0.0000	129.00	No Ice	3.14	2.59	0.11
			0.00			1/2"	3.45	2.88	0.16
			0.00			Ice	3.77	3.19	0.22
						1" Ice			
KRY 112 144/1	A	From Leg	4.00	0.0000	129.00	No Ice	0.35	0.17	0.01

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00 0.00			1/2" Ice 1" Ice	0.43 0.51	0.23 0.30	0.01 0.02
KRY 112 144/1	B	From Leg	4.00 0.00 0.00	0.0000	129.00	No Ice 1/2" Ice 1" Ice	0.35 0.43 0.51	0.17 0.23 0.30	0.01 0.01 0.02
KRY 112 144/1	C	From Leg	4.00 0.00 0.00	0.0000	129.00	No Ice 1/2" Ice 1" Ice	0.35 0.43 0.51	0.17 0.23 0.30	0.01 0.01 0.02
Platform Mount [LP 1201-1]	C	None		0.0000	129.00	No Ice 1/2" Ice 1" Ice	18.38 22.11 25.87	18.38 22.11 25.87	2.10 2.65 3.26
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APXVAALL24_43-U-NA20_TMO w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	129.00	No Ice 1/2" Ice 1" Ice	14.69 15.46 16.23	6.87 7.55 8.25	0.18 0.31 0.45
APXVAALL24_43-U-NA20_TMO w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	129.00	No Ice 1/2" Ice 1" Ice	14.69 15.46 16.23	6.87 7.55 8.25	0.18 0.31 0.45
APXVAALL24_43-U-NA20_TMO w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	129.00	No Ice 1/2" Ice 1" Ice	14.69 15.46 16.23	6.87 7.55 8.25	0.18 0.31 0.45
RADIO 4449 B71 B85A_T-MOBILE	A	From Leg	4.00 0.00 0.00	0.0000	129.00	No Ice 1/2" Ice 1" Ice	1.97 2.15 2.33	1.59 1.75 1.92	0.07 0.09 0.12
RADIO 4449 B71 B85A_T-MOBILE	B	From Leg	4.00 0.00 0.00	0.0000	129.00	No Ice 1/2" Ice 1" Ice	1.97 2.15 2.33	1.59 1.75 1.92	0.07 0.09 0.12
RADIO 4449 B71 B85A_T-MOBILE	C	From Leg	4.00 0.00 0.00	0.0000	129.00	No Ice 1/2" Ice 1" Ice	1.97 2.15 2.33	1.59 1.75 1.92	0.07 0.09 0.12
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RA21.7770.00 w/ Mount Pipe	A	From Leg	4.00 0.00 2.00	0.0000	116.00	No Ice 1/2" Ice 1" Ice	4.14 4.57 5.01	2.46 2.87 3.29	0.06 0.11 0.17
RA21.7770.00 w/ Mount Pipe	B	From Leg	4.00 0.00 2.00	0.0000	116.00	No Ice 1/2" Ice 1" Ice	4.14 4.57 5.01	2.46 2.87 3.29	0.06 0.11 0.17
RA21.7770.00 w/ Mount Pipe	C	From Leg	4.00 0.00 2.00	0.0000	116.00	No Ice 1/2" Ice 1" Ice	4.14 4.57 5.01	2.46 2.87 3.29	0.06 0.11 0.17
DMP65R-BU8D w/ Mount Pipe	A	From Leg	4.00 0.00 2.00	0.0000	116.00	No Ice 1/2" Ice 1" Ice	15.89 16.81 17.76	7.89 8.74 9.60	0.14 0.25 0.38
DMP65R-BU8D w/ Mount Pipe	B	From Leg	4.00 0.00 2.00	0.0000	116.00	No Ice 1/2" Ice 1" Ice	15.89 16.81 17.76	7.89 8.74 9.60	0.14 0.25 0.38
DMP65R-BU8D w/ Mount Pipe	C	From Leg	4.00 0.00 2.00	0.0000	116.00	No Ice 1/2" Ice 1" Ice	15.89 16.81 17.76	7.89 8.74 9.60	0.14 0.25 0.38

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
OPA65R-BU8D w/ Mount Pipe	A	From Leg	4.00 0.00 2.00	0.0000	116.00	No Ice 1/2" Ice 1" Ice	17.46 18.46 19.48	8.58 9.49 10.42	0.11 0.22 0.35
OPA65R-BU8D w/ Mount Pipe	B	From Leg	4.00 0.00 2.00	0.0000	116.00	No Ice 1/2" Ice 1" Ice	17.46 18.46 19.48	8.58 9.49 10.42	0.11 0.22 0.35
OPA65R-BU8D w/ Mount Pipe	C	From Leg	4.00 0.00 2.00	0.0000	116.00	No Ice 1/2" Ice 1" Ice	17.46 18.46 19.48	8.58 9.49 10.42	0.11 0.22 0.35
RRUS 4449 B5/B12	A	From Leg	4.00 0.00 2.00	0.0000	116.00	No Ice 1/2" Ice 1" Ice	1.97 2.14 2.33	1.41 1.56 1.73	0.07 0.09 0.11
RRUS 4449 B5/B12	B	From Leg	4.00 0.00 2.00	0.0000	116.00	No Ice 1/2" Ice 1" Ice	1.97 2.14 2.33	1.41 1.56 1.73	0.07 0.09 0.11
RRUS 4449 B5/B12	C	From Leg	4.00 0.00 2.00	0.0000	116.00	No Ice 1/2" Ice 1" Ice	1.97 2.14 2.33	1.41 1.56 1.73	0.07 0.09 0.11
RRUS 4478 B14	A	From Leg	4.00 0.00 2.00	0.0000	116.00	No Ice 1/2" Ice 1" Ice	1.84 2.01 2.19	1.06 1.20 1.34	0.06 0.08 0.09
RRUS 4478 B14	B	From Leg	4.00 0.00 2.00	0.0000	116.00	No Ice 1/2" Ice 1" Ice	1.84 2.01 2.19	1.06 1.20 1.34	0.06 0.08 0.09
RRUS 4478 B14	C	From Leg	4.00 0.00 2.00	0.0000	116.00	No Ice 1/2" Ice 1" Ice	1.84 2.01 2.19	1.06 1.20 1.34	0.06 0.08 0.09
RRUS 8843 B2/B66A	A	From Leg	4.00 0.00 2.00	0.0000	116.00	No Ice 1/2" Ice 1" Ice	1.64 1.80 1.97	1.35 1.50 1.65	0.07 0.09 0.11
RRUS 8843 B2/B66A	B	From Leg	4.00 0.00 2.00	0.0000	116.00	No Ice 1/2" Ice 1" Ice	1.64 1.80 1.97	1.35 1.50 1.65	0.07 0.09 0.11
RRUS 8843 B2/B66A	C	From Leg	4.00 0.00 2.00	0.0000	116.00	No Ice 1/2" Ice 1" Ice	1.64 1.80 1.97	1.35 1.50 1.65	0.07 0.09 0.11
(2) LGP21401	A	From Leg	4.00 0.00 2.00	0.0000	116.00	No Ice 1/2" Ice 1" Ice	1.10 1.24 1.38	0.21 0.27 0.35	0.01 0.02 0.03
(2) LGP21401	B	From Leg	4.00 0.00 2.00	0.0000	116.00	No Ice 1/2" Ice 1" Ice	1.10 1.24 1.38	0.21 0.27 0.35	0.01 0.02 0.03
(2) LGP21401	C	From Leg	4.00 0.00 2.00	0.0000	116.00	No Ice 1/2" Ice 1" Ice	1.10 1.24 1.38	0.21 0.27 0.35	0.01 0.02 0.03
DC6-48-60-18-8F	A	From Leg	4.00 0.00 2.00	0.0000	116.00	No Ice 1/2" Ice 1" Ice	0.92 1.46 1.64	0.92 1.46 1.64	0.02 0.04 0.06
DC6-48-60-18-8F	B	From Leg	4.00	0.0000	116.00	No Ice	0.92	0.92	0.02

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00			1/2"	1.46	1.46	0.04
			2.00			Ice	1.64	1.64	0.06
						1" Ice			
6' x 2" Mount Pipe	A	From Leg	4.00	0.0000	116.00	No Ice	1.43	1.43	0.02
			0.00			1/2"	1.92	1.92	0.03
			0.00			Ice	2.29	2.29	0.05
						1" Ice			
6' x 2" Mount Pipe	B	From Leg	4.00	0.0000	116.00	No Ice	1.43	1.43	0.02
			0.00			1/2"	1.92	1.92	0.03
			0.00			Ice	2.29	2.29	0.05
						1" Ice			
6' x 2" Mount Pipe	C	From Leg	4.00	0.0000	116.00	No Ice	1.43	1.43	0.02
			0.00			1/2"	1.92	1.92	0.03
			0.00			Ice	2.29	2.29	0.05
						1" Ice			
Platform Mount [LP 303-1_HR-1]	C	None		0.0000	116.00	No Ice	17.09	17.09	1.50
						1/2"	21.47	21.47	1.88
						Ice	25.72	25.72	2.35
						1" Ice			
******									
MX08FRO665-21 w/ Mount Pipe	A	From Leg	4.00	0.0000	105.00	No Ice	8.01	4.23	0.11
			0.00			1/2"	8.52	4.69	0.19
			0.00			Ice	9.04	5.16	0.29
						1" Ice			
MX08FRO665-21 w/ Mount Pipe	B	From Leg	4.00	0.0000	105.00	No Ice	8.01	4.23	0.11
			0.00			1/2"	8.52	4.69	0.19
			0.00			Ice	9.04	5.16	0.29
						1" Ice			
MX08FRO665-21 w/ Mount Pipe	C	From Leg	4.00	0.0000	105.00	No Ice	8.01	4.23	0.11
			0.00			1/2"	8.52	4.69	0.19
			0.00			Ice	9.04	5.16	0.29
						1" Ice			
TA08025-B604	A	From Leg	4.00	0.0000	105.00	No Ice	1.96	0.98	0.06
			0.00			1/2"	2.14	1.11	0.08
			0.00			Ice	2.32	1.25	0.10
						1" Ice			
TA08025-B604	B	From Leg	4.00	0.0000	105.00	No Ice	1.96	0.98	0.06
			0.00			1/2"	2.14	1.11	0.08
			0.00			Ice	2.32	1.25	0.10
						1" Ice			
TA08025-B604	C	From Leg	4.00	0.0000	105.00	No Ice	1.96	0.98	0.06
			0.00			1/2"	2.14	1.11	0.08
			0.00			Ice	2.32	1.25	0.10
						1" Ice			
TA08025-B605	A	From Leg	4.00	0.0000	105.00	No Ice	1.96	1.13	0.08
			0.00			1/2"	2.14	1.27	0.09
			0.00			Ice	2.32	1.41	0.11
						1" Ice			
TA08025-B605	B	From Leg	4.00	0.0000	105.00	No Ice	1.96	1.13	0.08
			0.00			1/2"	2.14	1.27	0.09
			0.00			Ice	2.32	1.41	0.11
						1" Ice			
TA08025-B605	C	From Leg	4.00	0.0000	105.00	No Ice	1.96	1.13	0.08
			0.00			1/2"	2.14	1.27	0.09
			0.00			Ice	2.32	1.41	0.11
						1" Ice			
RDIDC-9181-PF-48	A	From Leg	4.00	0.0000	105.00	No Ice	2.01	1.17	0.02
			0.00			1/2"	2.19	1.31	0.04
			0.00			Ice	2.37	1.46	0.06
						1" Ice			
(2) 8' x 2" Mount Pipe	A	From Leg	4.00	0.0000	105.00	No Ice	1.90	1.90	0.03
			0.00			1/2"	2.73	2.73	0.04
			0.00			Ice	3.40	3.40	0.06
						1" Ice			
(2) 8' x 2" Mount Pipe	B	From Leg	4.00	0.0000	105.00	No Ice	1.90	1.90	0.03

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00			1/2" Ice	2.73	2.73	0.04
			0.00			1" Ice	3.40	3.40	0.06
(2) 8' x 2" Mount Pipe	C	From Leg	4.00	0.0000	105.00	No Ice	1.90	1.90	0.03
			0.00			1/2" Ice	2.73	2.73	0.04
			0.00			1" Ice	3.40	3.40	0.06
Commscope MC-PK8-DSH	C	None		0.0000	105.00	No Ice	34.24	34.24	1.75
						1/2" Ice	62.95	62.95	2.10
						1" Ice	91.66	91.66	2.45
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KS24019-L112A	C	From Leg	3.00	0.0000	50.00	No Ice	0.14	0.14	0.01
			0.00			1/2" Ice	0.20	0.20	0.01
			1.00			1" Ice	0.26	0.26	0.01
Side Arm Mount [SO 701-1]	C	From Leg	1.50	0.0000	50.00	No Ice	0.85	1.67	0.07
			0.00			1/2" Ice	1.14	2.34	0.08
			0.00			1" Ice	1.43	3.01	0.09
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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
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

Comb. No.	Description
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	147 - 142	Pole	Max Tension	26	0.00	-0.00	-0.00
			Max. Compression	26	-6.89	-0.01	0.02
			Max. Mx	8	-3.49	-35.86	0.02
			Max. My	2	-3.49	-0.02	35.85
			Max. Vy	20	-5.78	35.84	-0.00
			Max. Vx	2	-5.78	-0.02	35.85
			Max. Torque	14			0.01
L2	142 - 137	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-7.30	-0.03	0.03
			Max. Mx	8	-3.74	-65.56	0.04
			Max. My	2	-3.74	-0.03	65.56
			Max. Vy	20	-6.10	65.54	-0.01
			Max. Vx	2	-6.10	-0.03	65.56
			Max. Torque	14			0.01
L3	137 - 132	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-15.24	0.51	0.23
			Max. Mx	20	-6.93	131.22	-0.75
			Max. My	2	-6.94	-0.50	130.49
			Max. Vy	20	-13.20	131.22	-0.75
			Max. Vx	2	-13.12	-0.50	130.49
			Max. Torque	16			-0.53
L4	132 - 127	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-22.83	0.53	0.27
			Max. Mx	20	-11.27	205.70	-1.33
			Max. My	2	-11.28	-1.09	204.58
			Max. Vy	20	-17.36	205.70	-1.33
			Max. Vx	2	-17.28	-1.09	204.58
			Max. Torque	16			-0.53
L5	127 - 120.37	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-23.29	0.57	0.32
			Max. Mx	20	-11.67	264.70	-1.72
			Max. My	2	-11.68	-1.48	263.32
			Max. Vy	20	-17.56	264.70	-1.72
			Max. Vx	2	-17.48	-1.48	263.32
			Max. Torque	16			-0.53
L6	120.37 - 118.62	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-24.32	0.63	0.40
			Max. Mx	20	-12.46	353.41	-2.30
			Max. My	2	-12.47	-2.06	351.63
			Max. Vy	20	-17.92	353.41	-2.30
			Max. Vx	2	-17.85	-2.06	351.63
			Max. Torque	16			-0.53
L7	118.62 - 113.62	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-32.11	0.44	0.63
			Max. Mx	20	-16.53	466.15	-2.82

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	-16.54	-2.72	464.15
			Max. Vy	20	-24.01	466.15	-2.82
			Max. Vx	2	-23.94	-2.72	464.15
			Max. Torque	16			-0.53
L8	113.62 - 113.08	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-32.21	0.45	0.63
			Max. Mx	20	-16.63	479.12	-2.89
			Max. My	2	-16.64	-2.78	477.08
			Max. Vy	20	-24.03	479.12	-2.89
			Max. Vx	2	-23.96	-2.78	477.08
			Max. Torque	6			0.47
L9	113.08 - 112.83	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-32.26	0.45	0.64
			Max. Mx	20	-16.69	485.13	-2.91
			Max. My	2	-16.69	-2.81	483.07
			Max. Vy	20	-24.04	485.13	-2.91
			Max. Vx	2	-23.97	-2.81	483.07
			Max. Torque	6			0.47
L10	112.83 - 112.16	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-32.39	0.46	0.65
			Max. Mx	20	-16.79	501.25	-2.99
			Max. My	2	-16.80	-2.89	499.14
			Max. Vy	20	-24.09	501.25	-2.99
			Max. Vx	2	-24.01	-2.89	499.14
			Max. Torque	6			0.47
L11	112.16 - 111.91	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-32.45	0.46	0.65
			Max. Mx	20	-16.86	507.27	-3.02
			Max. My	2	-16.86	-2.92	505.14
			Max. Vy	20	-24.10	507.27	-3.02
			Max. Vx	2	-24.02	-2.92	505.14
			Max. Torque	6			0.47
L12	111.91 - 110.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-32.84	0.48	0.68
			Max. Mx	20	-17.15	541.33	-3.18
			Max. My	2	-17.16	-3.08	539.10
			Max. Vy	20	-24.21	541.33	-3.18
			Max. Vx	2	-24.15	-3.08	539.10
			Max. Torque	6			0.47
L13	110.5 - 110.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-32.93	0.49	0.68
			Max. Mx	20	-17.24	547.38	-3.21
			Max. My	2	-17.24	-3.11	545.14
			Max. Vy	20	-24.22	547.38	-3.21
			Max. Vx	2	-24.16	-3.11	545.14
			Max. Torque	6			0.47
L14	110.25 - 105.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-34.62	0.56	0.76
			Max. Mx	20	-18.58	669.57	-3.79
			Max. My	2	-18.58	-3.68	667.14
			Max. Vy	20	-24.65	669.57	-3.79
			Max. Vx	2	-24.64	-3.68	667.14
			Max. Torque	6			0.47
L15	105.25 - 105	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-34.70	0.56	0.77
			Max. Mx	20	-18.65	675.73	-3.82
			Max. My	2	-18.65	-3.71	673.30
			Max. Vy	20	-24.68	675.73	-3.82
			Max. Vx	2	-24.67	-3.71	673.30
			Max. Torque	6			0.47
L16	105 - 104.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-39.67	0.56	1.08

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Mx	20	-21.68	682.82	-3.74
			Max. My	2	-21.68	-3.74	680.51
			Max. Vy	20	-28.37	682.82	-3.74
			Max. Vx	2	-28.39	-3.74	680.51
			Max. Torque	6			0.68
L17	104.75 - 103.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-40.21	0.57	1.10
			Max. Mx	20	-22.10	718.39	-3.89
			Max. My	2	-22.09	-3.89	716.12
			Max. Vy	8	28.55	-717.69	4.58
			Max. Vx	2	-28.57	-3.89	716.12
			Max. Torque	6			0.68
L18	103.5 - 103.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-40.30	0.57	1.11
			Max. Mx	20	-22.18	725.53	-3.92
			Max. My	2	-22.17	-3.92	723.27
			Max. Vy	8	28.58	-724.83	4.61
			Max. Vx	2	-28.60	-3.92	723.27
			Max. Torque	6			0.68
L19	103.25 - 98.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-42.10	0.61	1.20
			Max. Mx	20	-23.63	869.46	-4.49
			Max. My	2	-23.62	-4.51	867.40
			Max. Vy	8	29.00	-868.72	5.29
			Max. Vx	2	-29.05	-4.51	867.40
			Max. Torque	6			0.68
L20	98.25 - 94.167	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-43.60	0.64	1.27
			Max. Mx	20	-24.85	988.51	-4.95
			Max. My	2	-24.84	-5.00	986.70
			Max. Vy	8	29.33	-987.73	5.83
			Max. Vx	2	-29.40	-5.00	986.70
			Max. Torque	6			0.68
L21	94.167 - 93.917	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-43.70	0.64	1.27
			Max. Mx	20	-24.95	995.85	-4.98
			Max. My	2	-24.94	-5.03	994.05
			Max. Vy	8	29.34	-995.06	5.87
			Max. Vx	2	-29.41	-5.03	994.05
			Max. Torque	6			0.68
L22	93.917 - 91.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-44.70	0.66	1.32
			Max. Mx	20	-25.75	1067.02	-5.26
			Max. My	2	-25.74	-5.31	1065.43
			Max. Vy	8	29.56	-1066.21	6.19
			Max. Vx	2	-29.65	-5.31	1065.43
			Max. Torque	6			0.68
L23	91.5 - 91.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-44.80	0.66	1.33
			Max. Mx	20	-25.84	1074.41	-5.28
			Max. My	2	-25.83	-5.34	1072.84
			Max. Vy	8	29.57	-1073.60	6.23
			Max. Vx	2	-29.66	-5.34	1072.84
			Max. Torque	6			0.68
L24	91.25 - 90.58	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-45.08	0.67	1.35
			Max. Mx	20	-26.06	1094.25	-5.36
			Max. My	2	-26.05	-5.42	1092.74
			Max. Vy	8	29.63	-1093.43	6.32
			Max. Vx	2	-29.72	-5.42	1092.74
			Max. Torque	6			0.68
L25	90.58 -	Pole	Max Tension	1	0.00	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
	90.33						
			Max. Compression	26	-45.18	0.67	1.36
			Max. Mx	20	-26.15	1101.66	-5.39
			Max. My	2	-26.14	-5.45	1100.17
			Max. Vy	8	29.65	-1100.84	6.35
			Max. Vx	2	-29.74	-5.45	1100.17
			Max. Torque	6			0.68
L26	90.33 - 84.91	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-45.69	0.68	1.40
			Max. Mx	20	-26.54	1138.79	-5.53
			Max. My	2	-26.53	-5.60	1137.42
			Max. Vy	8	29.77	-1137.95	6.52
			Max. Vx	2	-29.86	-5.60	1137.42
			Max. Torque	6			0.68
L27	84.91 - 83.91	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-49.12	0.72	1.56
			Max. Mx	20	-29.38	1294.13	-6.12
			Max. My	2	-29.37	-6.21	1293.34
			Max. Vy	8	30.32	-1293.25	7.22
			Max. Vx	2	-30.44	-6.21	1293.34
			Max. Torque	6			0.68
L28	83.91 - 78.91	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-51.30	0.76	1.73
			Max. Mx	20	-31.19	1446.73	-6.69
			Max. My	2	-31.18	-6.80	1446.58
			Max. Vy	8	30.73	-1445.79	7.90
			Max. Vx	2	-30.86	-6.80	1446.58
			Max. Torque	6			0.68
L29	78.91 - 73.91	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-53.51	0.80	1.89
			Max. Mx	20	-33.03	1601.36	-7.25
			Max. My	2	-33.01	-7.39	1601.91
			Max. Vy	8	31.14	-1600.37	8.57
			Max. Vx	2	-31.28	-7.39	1601.91
			Max. Torque	6			0.68
L30	73.91 - 68.91	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-55.75	0.84	2.06
			Max. Mx	20	-34.89	1758.00	-7.81
			Max. My	2	-34.88	-7.98	1759.27
			Max. Vy	8	31.54	-1756.95	9.25
			Max. Vx	2	-31.68	-7.98	1759.27
			Max. Torque	6			0.68
L31	68.91 - 65.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-57.30	0.86	2.18
			Max. Mx	20	-36.18	1865.95	-8.20
			Max. My	2	-36.17	-8.38	1867.73
			Max. Vy	8	31.80	-1864.87	9.71
			Max. Vx	2	-31.95	-8.38	1867.73
			Max. Torque	6			0.68
L32	65.5 - 65.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-57.43	0.87	2.19
			Max. Mx	20	-36.29	1873.90	-8.22
			Max. My	2	-36.28	-8.41	1875.72
			Max. Vy	8	31.81	-1872.81	9.74
			Max. Vx	2	-31.96	-8.41	1875.72
			Max. Torque	6			0.68
L33	65.25 - 64.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-57.81	0.87	2.21
			Max. Mx	20	-36.60	1897.78	-8.31
			Max. My	2	-36.59	-8.49	1899.71
			Max. Vy	8	31.88	-1896.69	9.84
			Max. Vx	2	-32.02	-8.49	1899.71
			Max. Torque	6			0.68
L34	64.5 - 64.25	Pole	Max Tension	1	0.00	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Compression	26	-57.93	0.87	2.22
			Max. Mx	20	-36.71	1905.75	-8.34
			Max. My	2	-36.70	-8.52	1907.72
			Max. Vy	8	31.89	-1904.66	9.88
			Max. Vx	2	-32.04	-8.52	1907.72
			Max. Torque	6			0.68
L35	64.25 - 59.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-60.33	0.92	2.37
			Max. Mx	20	-38.70	2066.19	-8.89
			Max. My	2	-38.69	-9.10	2068.91
			Max. Vy	8	32.29	-2065.04	10.55
			Max. Vx	2	-32.44	-9.10	2068.91
			Max. Torque	6			0.68
L36	59.25 - 58.583	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-60.65	0.93	2.39
			Max. Mx	20	-38.97	2087.74	-8.97
			Max. My	2	-38.96	-9.18	2090.56
			Max. Vy	8	32.34	-2086.58	10.64
			Max. Vx	2	-32.48	-9.18	2090.56
			Max. Torque	6			0.68
L37	58.583 - 58.333	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-60.78	0.93	2.40
			Max. Mx	20	-39.08	2095.83	-8.99
			Max. My	2	-39.07	-9.21	2098.68
			Max. Vy	8	32.36	-2094.66	10.68
			Max. Vx	2	-32.50	-9.21	2098.68
			Max. Torque	6			0.68
L38	58.333 - 57.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-61.33	0.95	2.43
			Max. Mx	20	-39.53	2130.92	-9.11
			Max. My	2	-39.52	-9.34	2133.93
			Max. Vy	8	32.45	-2129.74	10.82
			Max. Vx	2	-32.60	-9.34	2133.93
			Max. Torque	6			0.68
L39	57.25 - 57	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-61.46	0.95	2.44
			Max. Mx	20	-39.65	2139.03	-9.14
			Max. My	2	-39.64	-9.36	2142.08
			Max. Vy	8	32.46	-2137.85	10.86
			Max. Vx	2	-32.61	-9.36	2142.08
			Max. Torque	6			0.68
L40	57 - 52	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-64.00	1.01	2.58
			Max. Mx	20	-41.77	2302.32	-9.69
			Max. My	2	-41.77	-9.94	2306.11
			Max. Vy	8	32.86	-2301.07	11.53
			Max. Vx	2	-33.01	-9.94	2306.11
			Max. Torque	6			0.68
L41	52 - 44.41	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-65.37	1.34	2.47
			Max. Mx	20	-42.90	2382.30	-10.08
			Max. My	2	-42.89	-10.00	2386.10
			Max. Vy	8	33.11	-2380.57	11.72
			Max. Vx	2	-33.27	-10.00	2386.10
			Max. Torque	16			-0.72
L42	44.41 - 43.41	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-70.77	1.41	2.64
			Max. Mx	20	-47.51	2588.50	-10.66
			Max. My	2	-47.50	-10.61	2593.33
			Max. Vy	8	33.73	-2586.69	12.46
			Max. Vx	2	-33.89	-10.61	2593.33
			Max. Torque	16			-0.72
L43	43.41 - 38.41	Pole	Max Tension	1	0.00	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Compression	26	-73.51	1.48	2.78
			Max. Mx	20	-49.85	2757.96	-11.13
			Max. My	2	-49.84	-11.10	2763.63
			Max. Vy	8	34.08	-2756.10	13.05
			Max. Vx	2	-34.25	-11.10	2763.63
			Max. Torque	16			-0.72
L44	38.41 - 34.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-75.72	1.53	2.90
			Max. Mx	20	-51.70	2891.71	-11.49
			Max. My	2	-51.69	-11.49	2898.03
			Max. Vy	8	34.36	-2889.79	13.51
			Max. Vx	2	-34.52	-11.49	2898.03
			Max. Torque	16			-0.72
L45	34.5 - 34.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-75.88	1.53	2.91
			Max. Mx	20	-51.85	2900.29	-11.51
			Max. My	2	-51.85	-11.51	2906.66
			Max. Vy	8	34.36	-2898.37	13.54
			Max. Vx	2	-34.52	-11.51	2906.66
			Max. Torque	16			-0.72
L46	34.25 - 33.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-76.39	1.54	2.93
			Max. Mx	20	-52.27	2926.08	-11.58
			Max. My	2	-52.26	-11.59	2932.57
			Max. Vy	8	34.42	-2924.15	13.63
			Max. Vx	2	-34.58	-11.59	2932.57
			Max. Torque	16			-0.72
L47	33.5 - 33.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-76.54	1.55	2.94
			Max. Mx	20	-52.40	2934.69	-11.60
			Max. My	2	-52.39	-11.61	2941.22
			Max. Vy	8	34.43	-2932.75	13.66
			Max. Vx	2	-34.59	-11.61	2941.22
			Max. Torque	16			-0.72
L48	33.25 - 28.483	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-79.46	1.58	3.10
			Max. Mx	20	-54.86	3099.59	-12.04
			Max. My	2	-54.86	-12.07	3106.92
			Max. Vy	8	34.77	-3097.59	14.22
			Max. Vx	2	-34.93	-12.07	3106.92
			Max. Torque	16			-0.74
L49	28.483 - 28.233	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-79.61	1.58	3.11
			Max. Mx	20	-55.01	3108.28	-12.07
			Max. My	2	-55.00	-12.10	3115.65
			Max. Vy	8	34.77	-3106.28	14.25
			Max. Vx	2	-34.93	-12.10	3115.65
			Max. Torque	16			-0.74
L50	28.233 - 27.483	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-80.08	1.57	3.14
			Max. Mx	20	-55.39	3134.38	-12.13
			Max. My	2	-55.39	-12.17	3141.87
			Max. Vy	8	34.83	-3132.37	14.34
			Max. Vx	2	-34.99	-12.17	3141.87
			Max. Torque	16			-0.74
L51	27.483 - 27.233	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-80.23	1.57	3.15
			Max. Mx	20	-55.53	3143.09	-12.16
			Max. My	2	-55.53	-12.20	3150.62
			Max. Vy	8	34.84	-3141.07	14.37
			Max. Vx	2	-35.00	-12.20	3150.62
			Max. Torque	16			-0.75
L52	27.233 - 22.233	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-83.32	1.59	3.33

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Mx	20	-58.15	3318.06	-12.61
			Max. My	2	-58.15	-12.68	3326.43
			Max. Vy	8	35.17	-3315.98	14.96
			Max. Vx	2	-35.33	-12.68	3326.43
			Max. Torque	16			-0.79
L53	22.233 - 17.233	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-86.41	1.62	3.50
			Max. Mx	20	-60.81	3494.53	-13.06
			Max. My	2	-60.80	-13.16	3503.73
			Max. Vy	8	35.45	-3492.38	15.54
			Max. Vx	2	-35.61	-13.16	3503.73
			Max. Torque	16			-0.85
L54	17.233 - 12.233	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-89.52	1.65	3.68
			Max. Mx	20	-63.49	3672.36	-13.50
			Max. My	2	-63.49	-13.63	3682.39
			Max. Vy	8	35.71	-3670.14	16.13
			Max. Vx	2	-35.87	-13.63	3682.39
			Max. Torque	16			-0.90
L55	12.233 - 7.233	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-92.64	1.70	3.83
			Max. Mx	20	-66.20	3851.46	-13.94
			Max. My	2	-66.20	-14.10	3862.32
			Max. Vy	8	35.96	-3849.16	16.71
			Max. Vx	2	-36.12	-14.10	3862.32
			Max. Torque	16			-0.95
L56	7.233 - 6.917	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-92.84	1.70	3.83
			Max. Mx	20	-66.38	3862.83	-13.97
			Max. My	2	-66.38	-14.13	3873.73
			Max. Vy	8	35.96	-3860.52	16.74
			Max. Vx	2	-36.12	-14.13	3873.73
			Max. Torque	16			-0.95
L57	6.917 - 6.667	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-93.00	1.71	3.83
			Max. Mx	20	-66.52	3871.82	-13.99
			Max. My	2	-66.52	-14.15	3882.76
			Max. Vy	8	35.97	-3869.50	16.77
			Max. Vx	2	-36.13	-14.15	3882.76
			Max. Torque	16			-0.95
L58	6.667 - 3	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-95.21	1.80	3.90
			Max. Mx	20	-68.47	4004.06	-14.32
			Max. My	2	-68.47	-14.48	4015.59
			Max. Vy	8	36.17	-4001.66	17.18
			Max. Vx	2	-36.33	-14.48	4015.59
			Max. Torque	16			-0.95
L59	3 - 2.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-95.35	1.80	3.90
			Max. Mx	20	-68.60	4013.10	-14.34
			Max. My	2	-68.60	-14.50	4024.67
			Max. Vy	8	36.16	-4010.70	17.21
			Max. Vx	2	-36.31	-14.50	4024.67
			Max. Torque	16			-0.95
L60	2.75 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-96.83	1.79	3.91
			Max. Mx	20	-69.95	4112.67	-14.61
			Max. My	2	-69.95	-14.79	4124.70
			Max. Vy	8	36.31	-4110.31	17.49
			Max. Vx	2	-36.47	-14.79	4124.70
			Max. Torque	16			-0.95

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	28	96.83	-4.49	7.76
	Max. H_x	20	69.97	36.28	-0.10
	Max. H_z	2	69.97	-0.10	36.44
	Max. M_x	2	4124.70	-0.10	36.44
	Max. M_z	8	4110.31	-36.28	0.10
	Max. Torsion	4	0.92	-20.80	35.90
	Min. Vert	13	52.48	-18.05	-31.35
	Min. H_x	8	69.97	-36.28	0.10
	Min. H_z	14	69.97	0.10	-36.44
	Min. M_x	14	-4121.68	0.10	-36.44
	Min. M_z	20	-4112.67	36.28	-0.10
	Min. Torsion	16	-0.95	20.80	-35.90

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	58.31	0.00	0.00	-1.15	1.00	0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	69.97	0.10	-36.44	-4124.70	-14.79	-0.46
0.9 Dead+1.0 Wind 0 deg - No Ice	52.48	0.10	-36.44	-4071.93	-14.89	-0.45
1.2 Dead+1.0 Wind 30 deg - No Ice	69.97	20.80	-35.90	-3803.26	-2206.31	-0.92
0.9 Dead+1.0 Wind 30 deg - No Ice	52.48	20.80	-35.90	-3755.55	-2179.11	-0.91
1.2 Dead+1.0 Wind 60 deg - No Ice	69.97	31.47	-18.21	-2067.70	-3567.31	-0.68
0.9 Dead+1.0 Wind 60 deg - No Ice	52.48	31.47	-18.21	-2041.02	-3522.21	-0.67
1.2 Dead+1.0 Wind 90 deg - No Ice	69.97	36.28	-0.10	-17.49	-4110.31	-0.53
0.9 Dead+1.0 Wind 90 deg - No Ice	52.48	36.28	-0.10	-16.88	-4058.31	-0.53
1.2 Dead+1.0 Wind 120 deg - No Ice	69.97	31.80	18.29	2058.03	-3587.65	-0.22
0.9 Dead+1.0 Wind 120 deg - No Ice	52.48	31.80	18.29	2032.32	-3542.46	-0.22
1.2 Dead+1.0 Wind 150 deg - No Ice	69.97	18.05	31.35	3545.44	-2040.58	0.16
0.9 Dead+1.0 Wind 150 deg - No Ice	52.48	18.05	31.35	3500.72	-2014.95	0.16
1.2 Dead+1.0 Wind 180 deg - No Ice	69.97	-0.10	36.44	4121.68	17.31	0.50
0.9 Dead+1.0 Wind 180 deg - No Ice	52.48	-0.10	36.44	4069.66	16.75	0.49
1.2 Dead+1.0 Wind 210 deg - No Ice	69.97	-20.80	35.90	3800.52	2208.91	0.95
0.9 Dead+1.0 Wind 210 deg - No Ice	52.48	-20.80	35.90	3753.55	2181.05	0.94
1.2 Dead+1.0 Wind 240 deg - No Ice	69.97	-31.47	18.21	2064.89	3569.94	0.67
0.9 Dead+1.0 Wind 240 deg - No Ice	52.48	-31.47	18.21	2038.96	3524.18	0.67
1.2 Dead+1.0 Wind 270 deg - No Ice	69.97	-36.28	0.10	14.61	4112.67	0.49
0.9 Dead+1.0 Wind 270 deg - No Ice	52.48	-36.28	0.10	14.75	4060.02	0.48
1.2 Dead+1.0 Wind 300 deg - No Ice	69.97	-31.80	-18.29	-2060.85	3590.06	0.18
0.9 Dead+1.0 Wind 300 deg - No Ice	52.48	-31.80	-18.29	-2034.38	3544.21	0.19
1.2 Dead+1.0 Wind 330 deg - No Ice	69.97	-18.05	-31.35	-3548.46	2043.19	-0.15
0.9 Dead+1.0 Wind 330 deg - No Ice	52.48	-18.05	-31.35	-3502.99	2016.90	-0.15
1.2 Dead+1.0 Ice+1.0 Temp	96.83	-0.00	-0.00	-3.91	1.79	-0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	96.83	0.01	-8.53	-961.36	-0.69	-0.10
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	96.83	4.49	-7.76	-851.68	-489.37	-0.21
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	96.83	7.40	-4.28	-485.01	-829.13	-0.14
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	96.83	8.53	-0.01	-6.77	-956.23	-0.10
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	96.83	7.38	4.25	472.17	-826.56	-0.04
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	96.83	4.25	7.38	823.46	-474.89	0.04
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	96.83	-0.01	8.53	952.99	4.51	0.11
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	96.83	-4.49	7.76	843.36	493.20	0.21
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	96.83	-7.40	4.28	476.67	832.97	0.14

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	96.83	-8.53	0.01	-1.57	960.01	0.10
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	96.83	-7.38	-4.25	-480.50	830.35	0.03
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	96.83	-4.25	-7.38	-831.83	478.72	-0.04
Dead+Wind 0 deg - Service	58.31	0.02	-7.78	-875.90	-2.36	-0.10
Dead+Wind 30 deg - Service	58.31	4.44	-7.67	-807.89	-467.37	-0.20
Dead+Wind 60 deg - Service	58.31	6.72	-3.89	-439.53	-755.98	-0.15
Dead+Wind 90 deg - Service	58.31	7.75	-0.02	-4.60	-871.17	-0.11
Dead+Wind 120 deg - Service	58.31	6.79	3.91	435.70	-760.31	-0.05
Dead+Wind 150 deg - Service	58.31	3.86	6.70	751.22	-432.10	0.03
Dead+Wind 180 deg - Service	58.31	-0.02	7.78	873.48	4.45	0.10
Dead+Wind 210 deg - Service	58.31	-4.44	7.67	805.53	469.48	0.20
Dead+Wind 240 deg - Service	58.31	-6.72	3.89	437.15	758.10	0.15
Dead+Wind 270 deg - Service	58.31	-7.75	0.02	2.20	873.23	0.11
Dead+Wind 300 deg - Service	58.31	-6.79	-3.91	-438.08	762.37	0.05
Dead+Wind 330 deg - Service	58.31	-3.86	-6.70	-753.64	434.21	-0.03

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX	PY	PZ	PX	PY	PZ	% Error
	K	K	K	K	K	K	
1	0.00	-58.31	0.00	0.00	58.31	0.00	0.000%
2	0.10	-69.97	-36.44	-0.10	69.97	36.44	0.000%
3	0.10	-52.48	-36.44	-0.10	52.48	36.44	0.000%
4	20.80	-69.97	-35.90	-20.80	69.97	35.90	0.000%
5	20.80	-52.48	-35.90	-20.80	52.48	35.90	0.000%
6	31.47	-69.97	-18.21	-31.47	69.97	18.21	0.000%
7	31.47	-52.48	-18.21	-31.47	52.48	18.21	0.000%
8	36.28	-69.97	-0.10	-36.28	69.97	0.10	0.000%
9	36.28	-52.48	-0.10	-36.28	52.48	0.10	0.000%
10	31.80	-69.97	18.29	-31.80	69.97	-18.29	0.000%
11	31.80	-52.48	18.29	-31.80	52.48	-18.29	0.000%
12	18.05	-69.97	31.35	-18.05	69.97	-31.35	0.000%
13	18.05	-52.48	31.35	-18.05	52.48	-31.35	0.000%
14	-0.10	-69.97	36.44	0.10	69.97	-36.44	0.000%
15	-0.10	-52.48	36.44	0.10	52.48	-36.44	0.000%
16	-20.80	-69.97	35.90	20.80	69.97	-35.90	0.000%
17	-20.80	-52.48	35.90	20.80	52.48	-35.90	0.000%
18	-31.47	-69.97	18.21	31.47	69.97	-18.21	0.000%
19	-31.47	-52.48	18.21	31.47	52.48	-18.21	0.000%
20	-36.28	-69.97	0.10	36.28	69.97	-0.10	0.000%
21	-36.28	-52.48	0.10	36.28	52.48	-0.10	0.000%
22	-31.80	-69.97	-18.29	31.80	69.97	18.29	0.000%
23	-31.80	-52.48	-18.29	31.80	52.48	18.29	0.000%
24	-18.05	-69.97	-31.35	18.05	69.97	31.35	0.000%
25	-18.05	-52.48	-31.35	18.05	52.48	31.35	0.000%
26	0.00	-96.83	0.00	0.00	96.83	0.00	0.000%
27	0.01	-96.83	-8.53	-0.01	96.83	8.53	0.000%
28	4.49	-96.83	-7.76	-4.49	96.83	7.76	0.000%
29	7.40	-96.83	-4.28	-7.40	96.83	4.28	0.000%
30	8.53	-96.83	-0.01	-8.53	96.83	0.01	0.000%
31	7.38	-96.83	4.25	-7.38	96.83	-4.25	0.000%
32	4.25	-96.83	7.38	-4.25	96.83	-7.38	0.000%
33	-0.01	-96.83	8.53	0.01	96.83	-8.53	0.000%
34	-4.49	-96.83	7.76	4.49	96.83	-7.76	0.000%
35	-7.40	-96.83	4.28	7.40	96.83	-4.28	0.000%
36	-8.53	-96.83	0.01	8.53	96.83	-0.01	0.000%
37	-7.38	-96.83	-4.25	7.38	96.83	4.25	0.000%
38	-4.25	-96.83	-7.38	4.25	96.83	7.38	0.000%
39	0.02	-58.31	-7.78	-0.02	58.31	7.78	0.000%
40	4.44	-58.31	-7.67	-4.44	58.31	7.67	0.000%
41	6.72	-58.31	-3.89	-6.72	58.31	3.89	0.000%
42	7.75	-58.31	-0.02	-7.75	58.31	0.02	0.000%

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
43	6.79	-58.31	3.91	-6.79	58.31	-3.91	0.000%
44	3.86	-58.31	6.70	-3.86	58.31	-6.70	0.000%
45	-0.02	-58.31	7.78	0.02	58.31	-7.78	0.000%
46	-4.44	-58.31	7.67	4.44	58.31	-7.67	0.000%
47	-6.72	-58.31	3.89	6.72	58.31	-3.89	0.000%
48	-7.75	-58.31	0.02	7.75	58.31	-0.02	0.000%
49	-6.79	-58.31	-3.91	6.79	58.31	3.91	0.000%
50	-3.86	-58.31	-6.70	3.86	58.31	6.70	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	0.00031086
3	Yes	5	0.00000001	0.00011666
4	Yes	7	0.00000001	0.00010616
5	Yes	6	0.00000001	0.00061309
6	Yes	7	0.00000001	0.00010207
7	Yes	6	0.00000001	0.00059612
8	Yes	5	0.00000001	0.00087850
9	Yes	5	0.00000001	0.00040030
10	Yes	7	0.00000001	0.00009995
11	Yes	6	0.00000001	0.00058325
12	Yes	7	0.00000001	0.00009938
13	Yes	6	0.00000001	0.00058107
14	Yes	5	0.00000001	0.00070470
15	Yes	5	0.00000001	0.00031226
16	Yes	7	0.00000001	0.00010802
17	Yes	6	0.00000001	0.00062419
18	Yes	7	0.00000001	0.00010012
19	Yes	6	0.00000001	0.00058435
20	Yes	5	0.00000001	0.00030476
21	Yes	5	0.00000001	0.00011300
22	Yes	7	0.00000001	0.00010117
23	Yes	6	0.00000001	0.00059031
24	Yes	7	0.00000001	0.00009960
25	Yes	6	0.00000001	0.00058190
26	Yes	4	0.00000001	0.00024966
27	Yes	6	0.00000001	0.00064086
28	Yes	6	0.00000001	0.00078766
29	Yes	6	0.00000001	0.00077749
30	Yes	6	0.00000001	0.00063708
31	Yes	6	0.00000001	0.00076108
32	Yes	6	0.00000001	0.00076121
33	Yes	6	0.00000001	0.00063447
34	Yes	6	0.00000001	0.00078601
35	Yes	6	0.00000001	0.00077176
36	Yes	6	0.00000001	0.00064050
37	Yes	6	0.00000001	0.00077402
38	Yes	6	0.00000001	0.00077292
39	Yes	5	0.00000001	0.00005449
40	Yes	5	0.00000001	0.00041660
41	Yes	5	0.00000001	0.00039455
42	Yes	5	0.00000001	0.00005928
43	Yes	5	0.00000001	0.00037164
44	Yes	5	0.00000001	0.00037091
45	Yes	5	0.00000001	0.00005587
46	Yes	5	0.00000001	0.00043691
47	Yes	5	0.00000001	0.00037317
48	Yes	5	0.00000001	0.00005675
49	Yes	5	0.00000001	0.00038762
50	Yes	5	0.00000001	0.00037451

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	147 - 142	22.845	40	1.5869	0.0017
L2	142 - 137	21.192	40	1.5682	0.0017
L3	137 - 132	19.568	40	1.5317	0.0017
L4	132 - 127	17.992	40	1.4727	0.0014
L5	127 - 120.37	16.493	40	1.3877	0.0011
L6	123.62 - 118.62	15.535	40	1.3161	0.0009
L7	118.62 - 113.62	14.188	40	1.2459	0.0008
L8	113.62 - 113.08	12.940	40	1.1346	0.0006
L9	113.08 - 112.83	12.812	40	1.1217	0.0006
L10	112.83 - 112.16	12.754	40	1.1156	0.0006
L11	112.16 - 111.91	12.598	40	1.0993	0.0006
L12	111.91 - 110.5	12.541	40	1.0963	0.0006
L13	110.5 - 110.25	12.220	40	1.0791	0.0005
L14	110.25 - 105.25	12.163	40	1.0768	0.0005
L15	105.25 - 105	11.061	40	1.0280	0.0005
L16	105 - 104.75	11.007	40	1.0255	0.0005
L17	104.75 - 103.5	10.954	40	1.0236	0.0005
L18	103.5 - 103.25	10.687	40	1.0142	0.0005
L19	103.25 - 98.25	10.634	40	1.0117	0.0005
L20	98.25 - 94.167	9.602	40	0.9591	0.0004
L21	94.167 - 93.917	8.801	40	0.9129	0.0004
L22	93.917 - 91.5	8.753	40	0.9104	0.0004
L23	91.5 - 91.25	8.299	40	0.8859	0.0003
L24	91.25 - 90.58	8.252	40	0.8833	0.0003
L25	90.58 - 90.33	8.129	40	0.8763	0.0003
L26	90.33 - 84.91	8.083	40	0.8736	0.0003
L27	89.08 - 83.91	7.856	40	0.8597	0.0003
L28	83.91 - 78.91	6.941	40	0.8263	0.0003
L29	78.91 - 73.91	6.105	40	0.7710	0.0003
L30	73.91 - 68.91	5.327	40	0.7141	0.0002
L31	68.91 - 65.5	4.610	40	0.6567	0.0002
L32	65.5 - 65.25	4.155	40	0.6166	0.0002
L33	65.25 - 64.5	4.123	40	0.6141	0.0002
L34	64.5 - 64.25	4.027	40	0.6066	0.0002
L35	64.25 - 59.25	3.995	40	0.6038	0.0002
L36	59.25 - 58.583	3.392	40	0.5477	0.0002
L37	58.583 - 58.333	3.316	40	0.5403	0.0002
L38	58.333 - 57.25	3.288	40	0.5377	0.0002
L39	57.25 - 57	3.167	40	0.5264	0.0002
L40	57 - 52	3.140	40	0.5238	0.0002
L41	52 - 44.41	2.619	40	0.4712	0.0001
L42	49.58 - 43.41	2.387	40	0.4457	0.0001
L43	43.41 - 38.41	1.832	40	0.4091	0.0001
L44	38.41 - 34.5	1.430	40	0.3580	0.0001
L45	34.5 - 34.25	1.153	40	0.3189	0.0001
L46	34.25 - 33.5	1.136	40	0.3168	0.0001
L47	33.5 - 33.25	1.087	40	0.3104	0.0001
L48	33.25 - 28.483	1.071	40	0.3078	0.0001
L49	28.483 - 28.233	0.786	40	0.2632	0.0001
L50	28.233 - 27.483	0.772	40	0.2609	0.0001
L51	27.483 - 27.233	0.732	40	0.2539	0.0001
L52	27.233 - 22.233	0.718	40	0.2516	0.0001
L53	22.233 - 17.233	0.479	40	0.2054	0.0001
L54	17.233 - 12.233	0.288	40	0.1591	0.0000
L55	12.233 - 7.233	0.146	40	0.1132	0.0000
L56	7.233 - 6.917	0.051	40	0.0677	0.0000
L57	6.917 - 6.667	0.047	40	0.0649	0.0000
L58	6.667 - 3	0.043	40	0.0625	0.0000
L59	3 - 2.75	0.009	40	0.0279	0.0000
L60	2.75 - 0	0.007	40	0.0256	0.0000

Critical Deflections and Radius of Curvature - Service Wind

Elevation	Appurtenance	Gov. Load Comb.	Deflection	Tilt	Twist	Radius of Curvature
ft			in	°	°	ft
147.00	6' x 2" Mount Pipe	40	22.845	1.5869	0.0017	10197
136.00	(2) LPA-80080/4CF w/ Mount Pipe	40	19.248	1.5216	0.0017	5642
129.00	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	40	17.081	1.4262	0.0012	3179
116.00	RA21.7770.00 w/ Mount Pipe	40	13.519	1.1920	0.0007	2669
105.00	MX08FRO665-21 w/ Mount Pipe	40	11.007	1.0255	0.0005	6110
50.00	KS24019-L112A	40	2.426	0.4496	0.0001	7265

Maximum Tower Deflections - Design Wind

Section No.	Elevation	Horz. Deflection	Gov. Load Comb.	Tilt	Twist
	ft	in		°	°
L1	147 - 142	107.526	4	7.4886	0.0079
L2	142 - 137	99.760	4	7.4006	0.0079
L3	137 - 132	92.131	4	7.2283	0.0078
L4	132 - 127	84.727	4	6.9499	0.0065
L5	127 - 120.37	77.678	4	6.5481	0.0050
L6	123.62 - 118.62	73.176	4	6.2101	0.0042
L7	118.62 - 113.62	66.837	4	5.8782	0.0036
L8	113.62 - 113.08	60.967	4	5.3526	0.0028
L9	113.08 - 112.83	60.366	4	5.2918	0.0027
L10	112.83 - 112.16	60.091	4	5.2632	0.0027
L11	112.16 - 111.91	59.359	4	5.1863	0.0026
L12	111.91 - 110.5	59.089	4	5.1719	0.0026
L13	110.5 - 110.25	57.577	4	5.0908	0.0025
L14	110.25 - 105.25	57.311	4	5.0801	0.0025
L15	105.25 - 105	52.122	4	4.8500	0.0023
L16	105 - 104.75	51.869	4	4.8382	0.0023
L17	104.75 - 103.5	51.616	4	4.8292	0.0022
L18	103.5 - 103.25	50.360	4	4.7847	0.0022
L19	103.25 - 98.25	50.110	4	4.7731	0.0022
L20	98.25 - 94.167	45.250	4	4.5250	0.0019
L21	94.167 - 93.917	41.480	4	4.3067	0.0017
L22	93.917 - 91.5	41.255	4	4.2952	0.0017
L23	91.5 - 91.25	39.113	4	4.1794	0.0016
L24	91.25 - 90.58	38.895	4	4.1671	0.0016
L25	90.58 - 90.33	38.314	4	4.1340	0.0016
L26	90.33 - 84.91	38.098	4	4.1213	0.0016
L27	89.08 - 83.91	37.029	4	4.0560	0.0015
L28	83.91 - 78.91	32.717	4	3.8980	0.0014
L29	78.91 - 73.91	28.777	4	3.6370	0.0012
L30	73.91 - 68.91	25.113	4	3.3686	0.0011
L31	68.91 - 65.5	21.730	4	3.0977	0.0010
L32	65.5 - 65.25	19.587	4	2.9088	0.0009
L33	65.25 - 64.5	19.435	4	2.8970	0.0009
L34	64.5 - 64.25	18.983	4	2.8613	0.0009
L35	64.25 - 59.25	18.834	4	2.8484	0.0009
L36	59.25 - 58.583	15.992	4	2.5833	0.0008
L37	58.583 - 58.333	15.634	4	2.5484	0.0008
L38	58.333 - 57.25	15.501	4	2.5360	0.0008
L39	57.25 - 57	14.932	4	2.4830	0.0008
L40	57 - 52	14.802	4	2.4707	0.0008
L41	52 - 44.41	12.346	4	2.2225	0.0007
L42	49.58 - 43.41	11.251	4	2.1023	0.0006
L43	43.41 - 38.41	8.633	4	1.9293	0.0006
L44	38.41 - 34.5	6.740	4	1.6883	0.0005
L45	34.5 - 34.25	5.434	4	1.5036	0.0004
L46	34.25 - 33.5	5.355	4	1.4936	0.0004
L47	33.5 - 33.25	5.123	4	1.4637	0.0004
L48	33.25 - 28.483	5.047	4	1.4514	0.0004
L49	28.483 - 28.233	3.703	4	1.2408	0.0004

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L50	28.233 - 27.483	3.639	4	1.2299	0.0004
L51	27.483 - 27.233	3.448	4	1.1970	0.0004
L52	27.233 - 22.233	3.386	4	1.1860	0.0003
L53	22.233 - 17.233	2.258	4	0.9684	0.0003
L54	17.233 - 12.233	1.359	4	0.7500	0.0002
L55	12.233 - 7.233	0.687	4	0.5337	0.0002
L56	7.233 - 6.917	0.241	4	0.3192	0.0001
L57	6.917 - 6.667	0.220	4	0.3058	0.0001
L58	6.667 - 3	0.205	4	0.2946	0.0001
L59	3 - 2.75	0.041	4	0.1314	0.0000
L60	2.75 - 0	0.035	4	0.1204	0.0000

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
147.00	6' x 2" Mount Pipe	4	107.526	7.4886	0.0081	2233
136.00	(2) LPA-80080/4CF w/ Mount Pipe	4	90.629	7.1810	0.0080	1236
129.00	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	4	80.445	6.7299	0.0058	696
116.00	RA21.7770.00 w/ Mount Pipe	4	63.694	5.6240	0.0032	578
105.00	MX08FRO665-21 w/ Mount Pipe	4	51.869	4.8382	0.0023	1316
50.00	KS24019-L112A	4	11.438	2.1207	0.0006	1544

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	147 - 142 (1)	TP17.3259x16.25x0.1875	5.00	0.00	0.0	10.1995	-3.47	596.67	0.006
L2	142 - 137 (2)	TP18.4017x17.3259x0.1875	5.00	0.00	0.0	10.8397	-3.72	634.12	0.006
L3	137 - 132 (3)	TP19.4776x18.4017x0.1875	5.00	0.00	0.0	11.4800	-6.92	671.58	0.010
L4	132 - 127 (4)	TP20.5534x19.4776x0.1875	5.00	0.00	0.0	12.1203	-11.26	709.04	0.016
L5	127 - 120.37 (5)	TP21.98x20.5534x0.1875	6.63	0.00	0.0	12.5531	-11.65	734.36	0.016
L6	120.37 - 118.62 (6)	TP21.9654x20.9057x0.25	5.00	0.00	0.0	17.2312	-12.38	1008.02	0.012
L7	118.62 - 113.62 (7)	TP23.0251x21.9654x0.25	5.00	0.00	0.0	18.0721	-16.42	1057.22	0.016
L8	113.62 - 113.08 (8)	TP23.1396x23.0251x0.25	0.54	0.00	0.0	18.1629	-16.52	1062.53	0.016
L9	113.08 - 112.83 (9)	TP23.1926x23.1396x0.25	0.25	0.00	0.0	18.2049	-16.57	1064.99	0.016
L10	112.83 - 112.16 (10)	TP23.3346x23.1926x0.25	0.67	0.00	0.0	18.3176	-16.68	1071.58	0.016
L11	112.16 - 111.91 (11)	TP23.3875x23.3346x0.525	0.25	0.00	0.0	38.0970	-16.75	2228.67	0.008
L12	111.91 - 110.5 (12)	TP23.6864x23.3875x0.525	1.41	0.00	0.0	38.5950	-17.04	2257.81	0.008
L13	110.5 - 110.25 (13)	TP23.7394x23.6864x0.75	0.25	0.00	0.0	54.7262	-17.12	3201.48	0.005
L14	110.25 -	TP24.7991x23.7394x0.72	5.00	0.00	0.0	55.398	-18.46	3240.79	0.006

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
	105.25 (14)	5				1			
L15	105.25 - 105 (15)	TP24.8521x24.7991x0.725	0.25	0.00	0.0	55.5200	-18.53	3247.92	0.006
L16	105 - 104.75 (16)	TP24.9051x24.8521x1	0.25	0.00	0.0	75.8746	-21.55	4438.67	0.005
L17	104.75 - 103.5 (17)	TP25.17x24.9051x1	1.25	0.00	0.0	76.7155	-21.95	4487.86	0.005
L18	103.5 - 103.25 (18)	TP25.223x25.17x0.7625	0.25	0.00	0.0	59.1986	-22.03	3463.12	0.006
L19	103.25 - 98.25 (19)	TP26.2827x25.223x0.7375	5.00	0.00	0.0	59.7968	-23.46	3498.11	0.007
L20	98.25 - 94.167 (20)	TP27.148x26.2827x0.7125	4.08	0.00	0.0	59.7833	-24.65	3497.32	0.007
L21	94.167 - 93.917 (21)	TP27.201x27.148x0.85	0.25	0.00	0.0	71.0924	-24.75	4158.91	0.006
L22	93.917 - 91.5 (22)	TP27.7133x27.201x0.825	2.42	0.00	0.0	70.4083	-25.55	4118.89	0.006
L23	91.5 - 91.25 (23)	TP27.7663x27.7133x0.8	0.25	0.00	0.0	68.4728	-25.64	4005.66	0.006
L24	91.25 - 90.58 (24)	TP27.9083x27.7663x0.8	0.67	0.00	0.0	68.8334	-25.86	4026.75	0.006
L25	90.58 - 90.33 (25)	TP27.9613x27.9083x0.775	0.25	0.00	0.0	66.8741	-25.95	3912.14	0.007
L26	90.33 - 84.91 (26)	TP29.11x27.9613x0.7625	5.42	0.00	0.0	66.4670	-26.34	3888.32	0.007
L27	84.91 - 83.91 (27)	TP28.8215x27.7262x0.85	5.17	0.00	0.0	75.4644	-29.18	4414.66	0.007
L28	83.91 - 78.91 (28)	TP29.8808x28.8215x0.825	5.00	0.00	0.0	76.0841	-30.99	4450.92	0.007
L29	78.91 - 73.91 (29)	TP30.9401x29.8808x0.8	5.00	0.00	0.0	76.5318	-32.83	4477.11	0.007
L30	73.91 - 68.91 (30)	TP31.9994x30.9401x0.7875	5.00	0.00	0.0	78.0150	-34.70	4563.88	0.008
L31	68.91 - 65.5 (31)	TP32.7219x31.9994x0.7625	3.41	0.00	0.0	77.3473	-36.00	4524.81	0.008
L32	65.5 - 65.25 (32)	TP32.7748x32.7219x0.9	0.25	0.00	0.0	91.0536	-36.11	5326.64	0.007
L33	65.25 - 64.5 (33)	TP32.9337x32.7748x0.8875	0.75	0.00	0.0	90.2718	-36.42	5280.90	0.007
L34	64.5 - 64.25 (34)	TP32.9867x32.9337x0.8125	0.25	0.00	0.0	82.9732	-36.53	4853.93	0.008
L35	64.25 - 59.25 (35)	TP34.046x32.9867x0.7875	5.00	0.00	0.0	83.1304	-38.53	4863.13	0.008
L36	59.25 - 58.583 (36)	TP34.1873x34.046x0.7875	0.67	0.00	0.0	83.4836	-38.80	4883.79	0.008
L37	58.583 - 58.333 (37)	TP34.2403x34.1873x0.8375	0.25	0.00	0.0	88.7921	-38.92	5194.34	0.007
L38	58.333 - 57.25 (38)	TP34.4697x34.2403x0.8375	1.08	0.00	0.0	89.4020	-39.36	5230.02	0.008
L39	57.25 - 57 (39)	TP34.5227x34.4697x0.8375	0.25	0.00	0.0	89.5428	-39.48	5238.25	0.008
L40	57 - 52 (40)	TP35.582x34.5227x0.825	5.00	0.00	0.0	91.0129	-41.62	5324.25	0.008
L41	52 - 44.41 (41)	TP37.19x35.582x0.8125	7.59	0.00	0.0	90.9883	-42.75	5322.82	0.008
L42	44.41 - 43.41 (42)	TP36.7801x35.4697x0.875	6.17	0.00	0.0	99.7175	-47.37	5833.48	0.008
L43	43.41 - 38.41 (43)	TP37.8421x36.7801x0.85	5.00	0.00	0.0	99.8009	-49.72	5838.36	0.009
L44	38.41 - 34.5 (44)	TP38.6725x37.8421x0.85	3.91	0.00	0.0	102.0410	-51.58	5969.42	0.009
L45	34.5 - 34.25 (45)	TP38.7256x38.6725x1	0.25	0.00	0.0	119.7410	-51.74	7004.86	0.007
L46	34.25 - 33.5 (46)	TP38.8849x38.7256x1	0.75	0.00	0.0	120.2470	-52.16	7034.43	0.007
L47	33.5 - 33.25 (47)	TP38.938x38.8849x0.8	0.25	0.00	0.0	96.8401	-52.29	5665.14	0.009
L48	33.25 - 28.483 (48)	TP39.9505x38.938x0.8875	4.77	0.00	0.0	110.0370	-54.75	6437.19	0.009

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L49	28.483 - 28.233 (49)	TP40.0036x39.9505x0.8875	0.25	0.00	0.0	110.1870	-54.90	6445.94	0.009
L50	28.233 - 27.483 (50)	TP40.1629x40.0036x0.875	0.75	0.00	0.0	109.1120	-55.29	6383.07	0.009
L51	27.483 - 27.233 (51)	TP40.216x40.1629x0.875	0.25	0.00	0.0	109.2600	-55.42	6391.69	0.009
L52	27.233 - 22.233 (52)	TP41.2779x40.216x0.875	5.00	0.00	0.0	112.2090	-58.05	6564.23	0.009
L53	22.233 - 17.233 (53)	TP42.3399x41.2779x0.85	5.00	0.00	0.0	111.9360	-60.72	6548.23	0.009
L54	17.233 - 12.233 (54)	TP43.4018x42.3399x0.8375	5.00	0.00	0.0	113.1460	-63.43	6619.02	0.010
L55	12.233 - 7.233 (55)	TP44.4638x43.4018x0.825	5.00	0.00	0.0	114.2700	-66.16	6684.81	0.010
L56	7.233 - 6.917 (56)	TP44.5309x44.4638x0.825	0.32	0.00	0.0	114.4460	-66.34	6695.10	0.010
L57	6.917 - 6.667 (57)	TP44.584x44.5309x0.775	0.25	0.00	0.0	107.7640	-66.48	6304.17	0.011
L58	6.667 - 3 (58)	TP45.3628x44.584x0.775	3.67	0.00	0.0	109.6790	-68.45	6416.24	0.011
L59	3 - 2.75 (59)	TP45.4159x45.3628x0.775	0.25	0.00	0.0	109.8100	-68.59	6423.88	0.011
L60	2.75 - 0 (60)	TP46x45.4159x0.775	2.75	0.00	0.0	111.2470	-69.95	6507.93	0.011

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	147 - 142 (1)	TP17.3259x16.25x0.1875	35.92	266.24	0.135	0.00	266.24	0.000
L2	142 - 137 (2)	TP18.4017x17.3259x0.1875	65.69	299.34	0.219	0.00	299.34	0.000
L3	137 - 132 (3)	TP19.4776x18.4017x0.1875	131.69	331.08	0.398	0.00	331.08	0.000
L4	132 - 127 (4)	TP20.5534x19.4776x0.1875	206.58	363.81	0.568	0.00	363.81	0.000
L5	127 - 120.37 (5)	TP21.98x20.5534x0.1875	265.85	386.44	0.688	0.00	386.44	0.000
L6	120.37 - 118.62 (6)	TP21.9654x20.9057x0.25	355.56	569.59	0.624	0.00	569.59	0.000
L7	118.62 - 113.62 (7)	TP23.0251x21.9654x0.25	469.89	626.87	0.750	0.00	626.87	0.000
L8	113.62 - 113.08 (8)	TP23.1396x23.0251x0.25	483.07	633.22	0.763	0.00	633.22	0.000
L9	113.08 - 112.83 (9)	TP23.1926x23.1396x0.25	489.17	636.17	0.769	0.00	636.17	0.000
L10	112.83 - 112.16 (10)	TP23.3346x23.1926x0.25	505.56	644.12	0.785	0.00	644.12	0.000
L11	112.16 - 111.91 (11)	TP23.3875x23.3346x0.525	511.68	1311.02	0.390	0.00	1311.02	0.000
L12	111.91 - 110.5 (12)	TP23.6864x23.3875x0.525	546.33	1345.90	0.406	0.00	1345.90	0.000
L13	110.5 - 110.25 (13)	TP23.7394x23.6864x0.75	552.49	1876.00	0.295	0.00	1876.00	0.000
L14	110.25 - 105.25 (14)	TP24.7991x23.7394x0.725	677.12	1993.47	0.340	0.00	1993.47	0.000
L15	105.25 - 105 (15)	TP24.8521x24.7991x0.725	683.42	2002.39	0.341	0.00	2002.39	0.000
L16	105 - 104.75 (16)	TP24.9051x24.8521x1	690.76	2680.65	0.258	0.00	2680.65	0.000
L17	104.75 - 103.5 (17)	TP25.17x24.9051x1	727.11	2741.61	0.265	0.00	2741.61	0.000
L18	103.5 - 103.25 (18)	TP25.223x25.17x0.7625	734.42	2162.21	0.340	0.00	2162.21	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 $\frac{M_{uy}}{\phi M_{ny}}$
L19	103.25 - 98.25 (19)	TP26.2827x25.223x0.7375	882.70	2286.01	0.386	0.00	2286.01	0.000
L20	98.25 - 94.167 (20)	TP27.148x26.2827x0.7125	1006.94	2369.57	0.425	0.00	2369.57	0.000
L21	94.167 - 93.917 (21)	TP27.201x27.148x0.85	1014.64	2794.38	0.363	0.00	2794.38	0.000
L22	93.917 - 91.5 (22)	TP27.7133x27.201x0.825	1089.46	2828.23	0.385	0.00	2828.23	0.000
L23	91.5 - 91.25 (23)	TP27.7663x27.7133x0.8	1097.23	2761.18	0.397	0.00	2761.18	0.000
L24	91.25 - 90.58 (24)	TP27.9083x27.7663x0.8	1118.10	2790.76	0.401	0.00	2790.76	0.000
L25	90.58 - 90.33 (25)	TP27.9613x27.9083x0.775	1125.90	2721.78	0.414	0.00	2721.78	0.000
L26	90.33 - 84.91 (26)	TP29.11x27.9613x0.7625	1165.01	2734.78	0.426	0.00	2734.78	0.000
L27	84.91 - 83.91 (27)	TP28.8215x27.7262x0.85	1328.92	3154.34	0.421	0.00	3154.34	0.000
L28	83.91 - 78.91 (28)	TP29.8808x28.8215x0.825	1490.38	3309.94	0.450	0.00	3309.94	0.000
L29	78.91 - 73.91 (29)	TP30.9401x29.8808x0.8	1654.43	3459.88	0.478	0.00	3459.88	0.000
L30	73.91 - 68.91 (30)	TP31.9994x30.9401x0.7875	1820.98	3657.03	0.498	0.00	3657.03	0.000
L31	68.91 - 65.5 (31)	TP32.7219x31.9994x0.7625	1935.97	3717.53	0.521	0.00	3717.53	0.000
L32	65.5 - 65.25 (32)	TP32.7748x32.7219x0.9	1944.44	4346.15	0.447	0.00	4346.15	0.000
L33	65.25 - 64.5 (33)	TP32.9337x32.7748x0.8875	1969.91	4334.28	0.454	0.00	4334.28	0.000
L34	64.5 - 64.25 (34)	TP32.9867x32.9337x0.8125	1978.41	4009.28	0.493	0.00	4009.28	0.000
L35	64.25 - 59.25 (35)	TP34.046x32.9867x0.7875	2149.63	4158.64	0.517	0.00	4158.64	0.000
L36	59.25 - 58.583 (36)	TP34.1873x34.046x0.7875	2172.66	4194.47	0.518	0.00	4194.47	0.000
L37	58.583 - 58.333 (37)	TP34.2403x34.1873x0.8375	2181.30	4455.07	0.490	0.00	4455.07	0.000
L38	58.333 - 57.25 (38)	TP34.4697x34.2403x0.8375	2218.79	4517.23	0.491	0.00	4517.23	0.000
L39	57.25 - 57 (39)	TP34.5227x34.4697x0.8375	2227.47	4531.64	0.492	0.00	4531.64	0.000
L40	57 - 52 (40)	TP35.582x34.5227x0.825	2402.12	4757.83	0.505	0.00	4757.83	0.000
L41	52 - 44.41 (41)	TP37.19x35.582x0.8125	2487.28	4831.76	0.515	0.00	4831.76	0.000
L42	44.41 - 43.41 (42)	TP36.7801x35.4697x0.875	2708.19	5381.75	0.503	0.00	5381.75	0.000
L43	43.41 - 38.41 (43)	TP37.8421x36.7801x0.85	2889.95	5556.86	0.520	0.00	5556.86	0.000
L44	38.41 - 34.5 (44)	TP38.6725x37.8421x0.85	3033.56	5812.02	0.522	0.00	5812.02	0.000
L45	34.5 - 34.25 (45)	TP38.7256x38.6725x1	3042.78	6775.95	0.449	0.00	6775.95	0.000
L46	34.25 - 33.5 (46)	TP38.8849x38.7256x1	3070.51	6834.03	0.449	0.00	6834.03	0.000
L47	33.5 - 33.25 (47)	TP38.938x38.8849x0.8	3079.76	5569.93	0.553	0.00	5569.93	0.000
L48	33.25 - 28.483 (48)	TP39.9505x38.938x0.8875	3258.17	6471.45	0.503	0.00	6471.45	0.000
L49	28.483 - 28.233 (49)	TP40.0036x39.9505x0.8875	3267.63	6489.25	0.504	0.00	6489.25	0.000
L50	28.233 - 27.483 (50)	TP40.1629x40.0036x0.875	3296.09	6456.81	0.510	0.00	6456.81	0.000
L51	27.483 - 27.233 (51)	TP40.216x40.1629x0.875	3305.59	6474.47	0.511	0.00	6474.47	0.000
L52	27.233 - 22.233 (52)	TP41.2779x40.216x0.875	3497.89	6832.62	0.512	0.00	6832.62	0.000
L53	22.233 - 17.233 (53)	TP42.3399x41.2779x0.85	3694.21	7007.37	0.527	0.00	7007.37	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 $\frac{M_{uy}}{\phi M_{ny}}$
L54	17.233 - 12.233 (54)	TP43.4018x42.3399x0.8375	3894.30	7272.32	0.535	0.00	7272.32	0.000
L55	12.233 - 7.233 (55)	TP44.4638x43.4018x0.825	4098.03	7535.72	0.544	0.00	7535.72	0.000
L56	7.233 - 6.917 (56)	TP44.5309x44.4638x0.825	4111.02	7559.12	0.544	0.00	7559.12	0.000
L57	6.917 - 6.667 (57)	TP44.584x44.5309x0.775	4121.31	7142.85	0.577	0.00	7142.85	0.000
L58	6.667 - 3 (58)	TP45.3628x44.584x0.775	4272.60	7401.32	0.577	0.00	7401.32	0.000
L59	3 - 2.75 (59)	TP45.4159x45.3628x0.775	4282.94	7419.12	0.577	0.00	7419.12	0.000
L60	2.75 - 0 (60)	TP46x45.4159x0.775	4396.88	7616.21	0.577	0.00	7616.21	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	147 - 142 (1)	TP17.3259x16.25x0.1875	5.79	179.00	0.032	0.00	268.66	0.000
L2	142 - 137 (2)	TP18.4017x17.3259x0.1875	6.12	190.24	0.032	0.00	303.45	0.000
L3	137 - 132 (3)	TP19.4776x18.4017x0.1875	13.29	201.47	0.066	0.46	340.36	0.001
L4	132 - 127 (4)	TP20.5534x19.4776x0.1875	17.44	212.71	0.082	0.46	379.38	0.001
L5	127 - 120.37 (5)	TP21.98x20.5534x0.1875	17.64	220.31	0.080	0.46	406.96	0.001
L6	120.37 - 118.62 (6)	TP21.9654x20.9057x0.25	18.19	302.41	0.060	0.53	575.10	0.001
L7	118.62 - 113.62 (7)	TP23.0251x21.9654x0.25	24.39	317.17	0.077	0.41	632.60	0.001
L8	113.62 - 113.08 (8)	TP23.1396x23.0251x0.25	24.42	318.76	0.077	0.41	638.97	0.001
L9	113.08 - 112.83 (9)	TP23.1926x23.1396x0.25	24.44	319.50	0.076	0.41	641.93	0.001
L10	112.83 - 112.16 (10)	TP23.3346x23.1926x0.25	24.49	321.47	0.076	0.41	649.90	0.001
L11	112.16 - 111.91 (11)	TP23.3875x23.3346x0.525	24.51	668.60	0.037	0.41	1338.67	0.000
L12	111.91 - 110.5 (12)	TP23.6864x23.3875x0.525	24.65	677.34	0.036	0.41	1373.89	0.000
L13	110.5 - 110.25 (13)	TP23.7394x23.6864x0.75	24.66	960.45	0.026	0.41	1933.66	0.000
L14	110.25 - 105.25 (14)	TP24.7991x23.7394x0.725	25.19	972.24	0.026	0.41	2049.75	0.000
L15	105.25 - 105 (15)	TP24.8521x24.7991x0.725	25.23	974.38	0.026	0.41	2058.78	0.000
L16	105 - 104.75 (16)	TP24.9051x24.8521x1	28.96	1331.60	0.022	0.53	2787.68	0.000
L17	104.75 - 103.5 (17)	TP25.17x24.9051x1	29.20	1346.36	0.022	0.54	2849.82	0.000
L18	103.5 - 103.25 (18)	TP25.223x25.17x0.7625	29.23	1038.94	0.028	0.54	2225.53	0.000
L19	103.25 - 98.25 (19)	TP26.2827x25.223x0.7375	30.09	1049.43	0.029	0.55	2347.71	0.000
L20	98.25 - 94.167 (20)	TP27.148x26.2827x0.7125	30.78	1049.20	0.029	0.57	2428.99	0.000
L21	94.167 - 93.917 (21)	TP27.201x27.148x0.85	30.82	1247.67	0.025	0.57	2879.24	0.000
L22	93.917 - 91.5 (22)	TP27.7133x27.201x0.825	31.10	1235.67	0.025	0.57	2909.68	0.000
L23	91.5 - 91.25 (23)	TP27.7663x27.7133x0.8	31.11	1201.70	0.026	0.57	2837.89	0.000
L24	91.25 - 90.58 (24)	TP27.9083x27.7663x0.8	31.19	1208.03	0.026	0.57	2867.86	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 $\frac{T_u}{\phi T_n}$
L25	90.58 - 90.33 (25)	TP27.9613x27.9083x0.775	31.21	1173.64	0.027	0.57	2794.25	0.000
L26	90.33 - 84.91 (26)	TP29.11x27.9613x0.7625	31.36	1166.50	0.027	0.57	2805.57	0.000
L27	84.91 - 83.91 (27)	TP28.8215x27.7262x0.85	32.04	1324.40	0.024	0.57	3244.26	0.000
L28	83.91 - 78.91 (28)	TP29.8808x28.8215x0.825	32.56	1335.28	0.024	0.57	3397.69	0.000
L29	78.91 - 73.91 (29)	TP30.9401x29.8808x0.8	33.07	1343.13	0.025	0.57	3545.22	0.000
L30	73.91 - 68.91 (30)	TP31.9994x30.9401x0.7875	33.57	1369.16	0.025	0.57	3742.45	0.000
L31	68.91 - 65.5 (31)	TP32.7219x31.9994x0.7625	33.90	1357.44	0.025	0.57	3799.27	0.000
L32	65.5 - 65.25 (32)	TP32.7748x32.7219x0.9	33.91	1597.99	0.021	0.57	4460.69	0.000
L33	65.25 - 64.5 (33)	TP32.9337x32.7748x0.8875	33.99	1584.27	0.021	0.57	4446.18	0.000
L34	64.5 - 64.25 (34)	TP32.9867x32.9337x0.8125	34.01	1456.18	0.023	0.57	4103.01	0.000
L35	64.25 - 59.25 (35)	TP34.046x32.9867x0.7875	34.49	1458.94	0.024	0.57	4249.32	0.000
L36	59.25 - 58.583 (36)	TP34.1873x34.046x0.7875	34.55	1465.14	0.024	0.57	4285.51	0.000
L37	58.583 - 58.333 (37)	TP34.2403x34.1873x0.8375	34.57	1558.30	0.022	0.57	4558.42	0.000
L38	58.333 - 57.25 (38)	TP34.4697x34.2403x0.8375	34.69	1569.00	0.022	0.57	4621.25	0.000
L39	57.25 - 57 (39)	TP34.5227x34.4697x0.8375	34.70	1571.48	0.022	0.57	4635.82	0.000
L40	57 - 52 (40)	TP35.582x34.5227x0.825	35.17	1597.28	0.022	0.57	4861.86	0.000
L41	52 - 44.41 (41)	TP37.19x35.582x0.8125	35.45	1596.85	0.022	0.69	4933.99	0.000
L42	44.41 - 43.41 (42)	TP36.7801x35.4697x0.875	36.16	1750.04	0.021	0.69	5502.82	0.000
L43	43.41 - 38.41 (43)	TP37.8421x36.7801x0.85	36.57	1751.51	0.021	0.69	5674.15	0.000
L44	38.41 - 34.5 (44)	TP38.6725x37.8421x0.85	36.92	1790.83	0.021	0.69	5931.77	0.000
L45	34.5 - 34.25 (45)	TP38.7256x38.6725x1	36.92	2101.46	0.018	0.69	6942.83	0.000
L46	34.25 - 33.5 (46)	TP38.8849x38.7256x1	37.01	2110.33	0.018	0.69	7001.59	0.000
L47	33.5 - 33.25 (47)	TP38.938x38.8849x0.8	37.02	1699.54	0.022	0.69	5676.37	0.000
L48	33.25 - 28.483 (48)	TP39.9505x38.938x0.8875	37.85	1931.16	0.020	0.70	6606.37	0.000
L49	28.483 - 28.233 (49)	TP40.0036x39.9505x0.8875	37.87	1933.78	0.020	0.71	6624.35	0.000
L50	28.233 - 27.483 (50)	TP40.1629x40.0036x0.875	38.01	1914.92	0.020	0.71	6588.54	0.000
L51	27.483 - 27.233 (51)	TP40.216x40.1629x0.875	38.04	1917.51	0.020	0.71	6606.36	0.000
L52	27.233 - 22.233 (52)	TP41.2779x40.216x0.875	38.89	1969.27	0.020	0.76	6967.83	0.000
L53	22.233 - 17.233 (53)	TP42.3399x41.2779x0.85	39.67	1964.47	0.020	0.81	7137.85	0.000
L54	17.233 - 12.233 (54)	TP43.4018x42.3399x0.8375	40.40	1985.70	0.020	0.86	7401.85	0.000
L55	12.233 - 7.233 (55)	TP44.4638x43.4018x0.825	41.13	2005.44	0.021	0.92	7664.13	0.000
L56	7.233 - 6.917 (56)	TP44.5309x44.4638x0.825	41.13	2008.53	0.020	0.92	7687.72	0.000
L57	6.917 - 6.667 (57)	TP44.584x44.5309x0.775	41.15	1891.25	0.022	0.92	7255.92	0.000
L58	6.667 - 3 (58)	TP45.3628x44.584x0.775	41.39	1924.87	0.022	0.92	7516.20	0.000
L59	3 - 2.75 (59)	TP45.4159x45.3628x0.775	41.38	1927.17	0.021	0.92	7534.12	0.000
L60	2.75 - 0 (60)	TP46x45.4159x0.775	41.53	1952.38	0.021	0.92	7732.55	0.000

Section No.	Elevation	Size	Actual V_u	ϕV_n	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u	ϕT_n	Ratio $\frac{T_u}{\phi T_n}$
	ft		K	K		kip-ft	kip-ft	

Pole Interaction Design Data

Section No.	Elevation	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
	ft								
L1	147 - 142 (1)	0.006	0.135	0.000	0.032	0.000	0.142	1.050	4.8.2
L2	142 - 137 (2)	0.006	0.219	0.000	0.032	0.000	0.226	1.050	4.8.2
L3	137 - 132 (3)	0.010	0.398	0.000	0.066	0.001	0.413	1.050	4.8.2
L4	132 - 127 (4)	0.016	0.568	0.000	0.082	0.001	0.591	1.050	4.8.2
L5	127 - 120.37 (5)	0.016	0.688	0.000	0.080	0.001	0.710	1.050	4.8.2
L6	120.37 - 118.62 (6)	0.012	0.624	0.000	0.060	0.001	0.640	1.050	4.8.2
L7	118.62 - 113.62 (7)	0.016	0.750	0.000	0.077	0.001	0.771	1.050	4.8.2
L8	113.62 - 113.08 (8)	0.016	0.763	0.000	0.077	0.001	0.784	1.050	4.8.2
L9	113.08 - 112.83 (9)	0.016	0.769	0.000	0.076	0.001	0.790	1.050	4.8.2
L10	112.83 - 112.16 (10)	0.016	0.785	0.000	0.076	0.001	0.806	1.050	4.8.2
L11	112.16 - 111.91 (11)	0.008	0.390	0.000	0.037	0.000	0.399	1.050	4.8.2
L12	111.91 - 110.5 (12)	0.008	0.406	0.000	0.036	0.000	0.415	1.050	4.8.2
L13	110.5 - 110.25 (13)	0.005	0.295	0.000	0.026	0.000	0.301	1.050	4.8.2
L14	110.25 - 105.25 (14)	0.006	0.340	0.000	0.026	0.000	0.346	1.050	4.8.2
L15	105.25 - 105 (15)	0.006	0.341	0.000	0.026	0.000	0.348	1.050	4.8.2
L16	105 - 104.75 (16)	0.005	0.258	0.000	0.022	0.000	0.263	1.050	4.8.2
L17	104.75 - 103.5 (17)	0.005	0.265	0.000	0.022	0.000	0.271	1.050	4.8.2
L18	103.5 - 103.25 (18)	0.006	0.340	0.000	0.028	0.000	0.347	1.050	4.8.2
L19	103.25 - 98.25 (19)	0.007	0.386	0.000	0.029	0.000	0.394	1.050	4.8.2
L20	98.25 - 94.167 (20)	0.007	0.425	0.000	0.029	0.000	0.433	1.050	4.8.2
L21	94.167 - 93.917 (21)	0.006	0.363	0.000	0.025	0.000	0.370	1.050	4.8.2
L22	93.917 - 91.5 (22)	0.006	0.385	0.000	0.025	0.000	0.392	1.050	4.8.2
L23	91.5 - 91.25 (23)	0.006	0.397	0.000	0.026	0.000	0.404	1.050	4.8.2
L24	91.25 - 90.58 (24)	0.006	0.401	0.000	0.026	0.000	0.408	1.050	4.8.2
L25	90.58 - 90.33 (25)	0.007	0.414	0.000	0.027	0.000	0.421	1.050	4.8.2
L26	90.33 - 84.91 (26)	0.007	0.426	0.000	0.027	0.000	0.434	1.050	4.8.2
L27	84.91 - 83.91 (27)	0.007	0.421	0.000	0.024	0.000	0.428	1.050	4.8.2
L28	83.91 - 78.91 (28)	0.007	0.450	0.000	0.024	0.000	0.458	1.050	4.8.2
L29	78.91 - 73.91 (29)	0.007	0.478	0.000	0.025	0.000	0.486	1.050	4.8.2
L30	73.91 - 68.91 (30)	0.008	0.498	0.000	0.025	0.000	0.506	1.050	4.8.2
L31	68.91 - 65.5 (31)	0.008	0.521	0.000	0.025	0.000	0.529	1.050	4.8.2
L32	65.5 - 65.25	0.007	0.447	0.000	0.021	0.000	0.455	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
	(32)								
L33	65.25 - 64.5 (33)	0.007	0.454	0.000	0.021	0.000	0.462	1.050	4.8.2
L34	64.5 - 64.25 (34)	0.008	0.493	0.000	0.023	0.000	0.502	1.050	4.8.2
L35	64.25 - 59.25 (35)	0.008	0.517	0.000	0.024	0.000	0.525	1.050	4.8.2
L36	59.25 - 58.583 (36)	0.008	0.518	0.000	0.024	0.000	0.526	1.050	4.8.2
L37	58.583 - 58.333 (37)	0.007	0.490	0.000	0.022	0.000	0.498	1.050	4.8.2
L38	58.333 - 57.25 (38)	0.008	0.491	0.000	0.022	0.000	0.499	1.050	4.8.2
L39	57.25 - 57 (39)	0.008	0.492	0.000	0.022	0.000	0.500	1.050	4.8.2
L40	57 - 52 (40)	0.008	0.505	0.000	0.022	0.000	0.513	1.050	4.8.2
L41	52 - 44.41 (41)	0.008	0.515	0.000	0.022	0.000	0.523	1.050	4.8.2
L42	44.41 - 43.41 (42)	0.008	0.503	0.000	0.021	0.000	0.512	1.050	4.8.2
L43	43.41 - 38.41 (43)	0.009	0.520	0.000	0.021	0.000	0.529	1.050	4.8.2
L44	38.41 - 34.5 (44)	0.009	0.522	0.000	0.021	0.000	0.531	1.050	4.8.2
L45	34.5 - 34.25 (45)	0.007	0.449	0.000	0.018	0.000	0.457	1.050	4.8.2
L46	34.25 - 33.5 (46)	0.007	0.449	0.000	0.018	0.000	0.457	1.050	4.8.2
L47	33.5 - 33.25 (47)	0.009	0.553	0.000	0.022	0.000	0.563	1.050	4.8.2
L48	33.25 - 28.483 (48)	0.009	0.503	0.000	0.020	0.000	0.512	1.050	4.8.2
L49	28.483 - 28.233 (49)	0.009	0.504	0.000	0.020	0.000	0.512	1.050	4.8.2
L50	28.233 - 27.483 (50)	0.009	0.510	0.000	0.020	0.000	0.520	1.050	4.8.2
L51	27.483 - 27.233 (51)	0.009	0.511	0.000	0.020	0.000	0.520	1.050	4.8.2
L52	27.233 - 22.233 (52)	0.009	0.512	0.000	0.020	0.000	0.521	1.050	4.8.2
L53	22.233 - 17.233 (53)	0.009	0.527	0.000	0.020	0.000	0.537	1.050	4.8.2
L54	17.233 - 12.233 (54)	0.010	0.535	0.000	0.020	0.000	0.545	1.050	4.8.2
L55	12.233 - 7.233 (55)	0.010	0.544	0.000	0.021	0.000	0.554	1.050	4.8.2
L56	7.233 - 6.917 (56)	0.010	0.544	0.000	0.020	0.000	0.554	1.050	4.8.2
L57	6.917 - 6.667 (57)	0.011	0.577	0.000	0.022	0.000	0.588	1.050	4.8.2
L58	6.667 - 3 (58)	0.011	0.577	0.000	0.022	0.000	0.588	1.050	4.8.2
L59	3 - 2.75 (59)	0.011	0.577	0.000	0.021	0.000	0.588	1.050	4.8.2
L60	2.75 - 0 (60)	0.011	0.577	0.000	0.021	0.000	0.589	1.050	4.8.2

Section Capacity Table

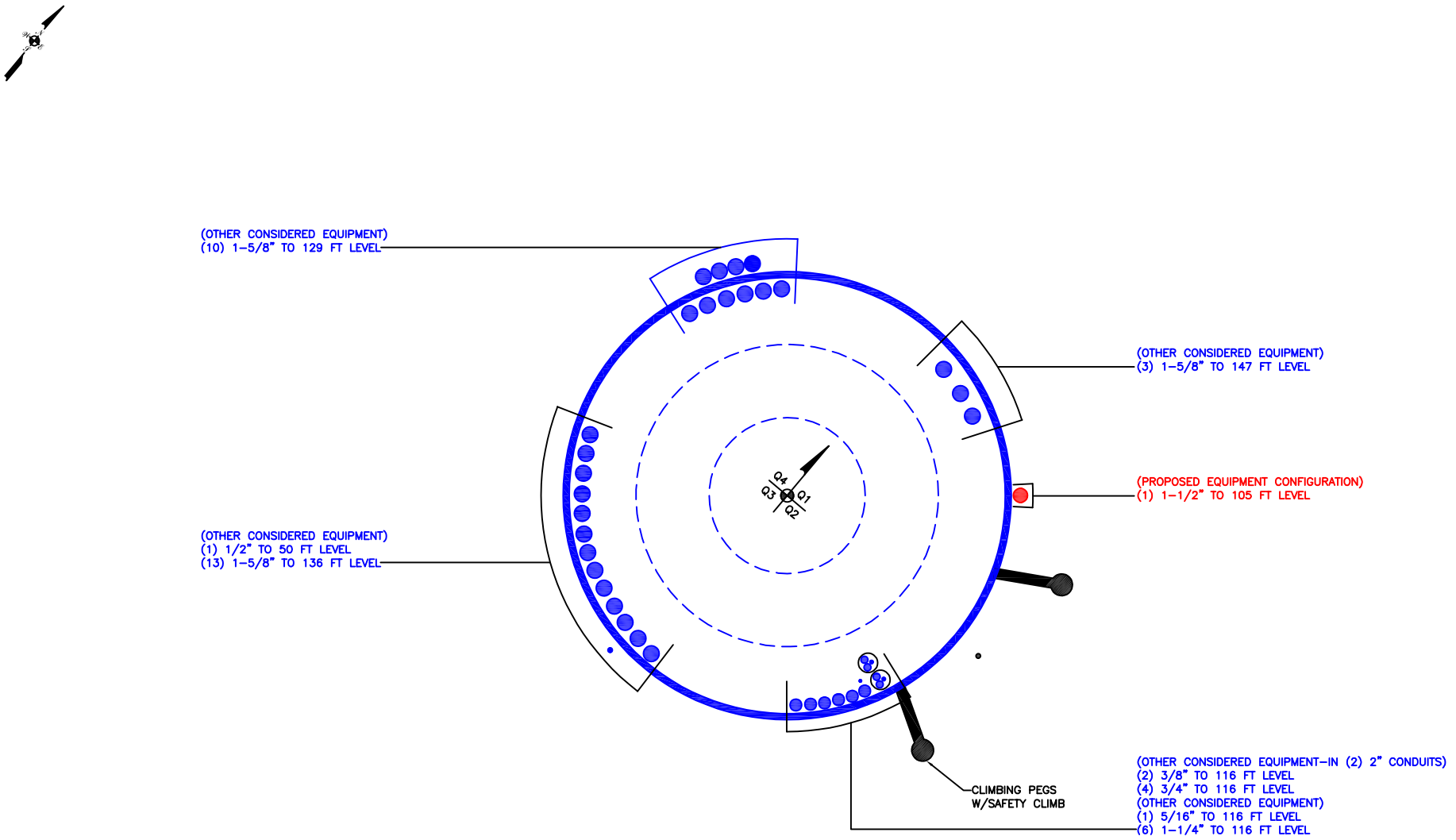
Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	147 - 142	Pole	TP17.3259x16.25x0.1875	1	-3.47	626.50	13.5	Pass
L2	142 - 137	Pole	TP18.4017x17.3259x0.1875	2	-3.72	665.83	21.6	Pass
L3	137 - 132	Pole	TP19.4776x18.4017x0.1875	3	-6.92	705.16	39.3	Pass
L4	132 - 127	Pole	TP20.5534x19.4776x0.1875	4	-11.26	744.49	56.2	Pass
L5	127 - 120.37	Pole	TP21.98x20.5534x0.1875	5	-11.65	771.07	67.7	Pass
L6	120.37 - 118.62	Pole	TP21.9654x20.9057x0.25	6	-12.38	1058.42	61.0	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L7	118.62 - 113.62	Pole	TP23.0251x21.9654x0.25	7	-16.42	1110.08	73.4	Pass
L8	113.62 - 113.08	Pole	TP23.1396x23.0251x0.25	8	-16.52	1115.66	74.7	Pass
L9	113.08 - 112.83	Pole	TP23.1926x23.1396x0.25	9	-16.57	1118.24	75.3	Pass
L10	112.83 - 112.16	Pole	TP23.3346x23.1926x0.25	10	-16.68	1125.16	76.8	Pass
L11	112.16 - 111.91	Pole	TP23.3875x23.3346x0.525	11	-16.75	2340.10	38.0	Pass
L12	111.91 - 110.5	Pole	TP23.6864x23.3875x0.525	12	-17.04	2370.70	39.5	Pass
L13	110.5 - 110.25	Pole	TP23.7394x23.6864x0.75	13	-17.12	3361.55	28.6	Pass
L14	110.25 - 105.25	Pole	TP24.7991x23.7394x0.725	14	-18.46	3402.83	33.0	Pass
L15	105.25 - 105	Pole	TP24.8521x24.7991x0.725	15	-18.53	3410.32	33.1	Pass
L16	105 - 104.75	Pole	TP24.9051x24.8521x1	16	-21.55	4660.60	25.0	Pass
L17	104.75 - 103.5	Pole	TP25.17x24.9051x1	17	-21.95	4712.25	25.8	Pass
L18	103.5 - 103.25	Pole	TP25.223x25.17x0.7625	18	-22.03	3636.28	33.0	Pass
L19	103.25 - 98.25	Pole	TP26.2827x25.223x0.7375	19	-23.46	3673.02	37.5	Pass
L20	98.25 - 94.167	Pole	TP27.148x26.2827x0.7125	20	-24.65	3672.19	41.2	Pass
L21	94.167 - 93.917	Pole	TP27.201x27.148x0.85	21	-24.75	4366.86	35.2	Pass
L22	93.917 - 91.5	Pole	TP27.7133x27.201x0.825	22	-25.55	4324.83	37.3	Pass
L23	91.5 - 91.25	Pole	TP27.7663x27.7133x0.8	23	-25.64	4205.94	38.5	Pass
L24	91.25 - 90.58	Pole	TP27.9083x27.7663x0.8	24	-25.86	4228.09	38.8	Pass
L25	90.58 - 90.33	Pole	TP27.9613x27.9083x0.775	25	-25.95	4107.75	40.1	Pass
L26	90.33 - 84.91	Pole	TP29.11x27.9613x0.7625	26	-26.34	4082.74	41.3	Pass
L27	84.91 - 83.91	Pole	TP28.8215x27.7262x0.85	27	-29.18	4635.39	40.8	Pass
L28	83.91 - 78.91	Pole	TP29.8808x28.8215x0.825	28	-30.99	4673.47	43.6	Pass
L29	78.91 - 73.91	Pole	TP30.9401x29.8808x0.8	29	-32.83	4700.97	46.3	Pass
L30	73.91 - 68.91	Pole	TP31.9994x30.9401x0.7875	30	-34.70	4792.07	48.2	Pass
L31	68.91 - 65.5	Pole	TP32.7219x31.9994x0.7625	31	-36.00	4751.05	50.4	Pass
L32	65.5 - 65.25	Pole	TP32.7748x32.7219x0.9	32	-36.11	5592.97	43.3	Pass
L33	65.25 - 64.5	Pole	TP32.9337x32.7748x0.8875	33	-36.42	5544.94	44.0	Pass
L34	64.5 - 64.25	Pole	TP32.9867x32.9337x0.8125	34	-36.53	5096.63	47.8	Pass
L35	64.25 - 59.25	Pole	TP34.046x32.9867x0.7875	35	-38.53	5106.29	50.0	Pass
L36	59.25 - 58.583	Pole	TP34.1873x34.046x0.7875	36	-38.80	5127.98	50.1	Pass
L37	58.583 - 58.333	Pole	TP34.2403x34.1873x0.8375	37	-38.92	5454.06	47.4	Pass
L38	58.333 - 57.25	Pole	TP34.4697x34.2403x0.8375	38	-39.36	5491.52	47.5	Pass
L39	57.25 - 57	Pole	TP34.5227x34.4697x0.8375	39	-39.48	5500.16	47.6	Pass
L40	57 - 52	Pole	TP35.582x34.5227x0.825	40	-41.62	5590.46	48.9	Pass
L41	52 - 44.41	Pole	TP37.19x35.582x0.8125	41	-42.75	5588.96	49.8	Pass
L42	44.41 - 43.41	Pole	TP36.7801x35.4697x0.875	42	-47.37	6125.15	48.7	Pass
L43	43.41 - 38.41	Pole	TP37.8421x36.7801x0.85	43	-49.72	6130.28	50.4	Pass
L44	38.41 - 34.5	Pole	TP38.6725x37.8421x0.85	44	-51.58	6267.89	50.6	Pass
L45	34.5 - 34.25	Pole	TP38.7256x38.6725x1	45	-51.74	7355.10	43.5	Pass
L46	34.25 - 33.5	Pole	TP38.8849x38.7256x1	46	-52.16	7386.15	43.5	Pass
L47	33.5 - 33.25	Pole	TP38.938x38.8849x0.8	47	-52.29	5948.40	53.6	Pass
L48	33.25 - 28.483	Pole	TP39.9505x38.938x0.8875	48	-54.75	6759.05	48.8	Pass
L49	28.483 - 28.233	Pole	TP40.0036x39.9505x0.8875	49	-54.90	6768.24	48.8	Pass
L50	28.233 - 27.483	Pole	TP40.1629x40.0036x0.875	50	-55.29	6702.22	49.5	Pass
L51	27.483 - 27.233	Pole	TP40.216x40.1629x0.875	51	-55.42	6711.27	49.5	Pass
L52	27.233 - 22.233	Pole	TP41.2779x40.216x0.875	52	-58.05	6892.44	49.6	Pass
L53	22.233 - 17.233	Pole	TP42.3399x41.2779x0.85	53	-60.72	6875.64	51.1	Pass
L54	17.233 - 12.233	Pole	TP43.4018x42.3399x0.8375	54	-63.43	6949.97	52.0	Pass
L55	12.233 - 7.233	Pole	TP44.4638x43.4018x0.825	55	-66.16	7019.05	52.8	Pass
L56	7.233 - 6.917	Pole	TP44.5309x44.4638x0.825	56	-66.34	7029.85	52.8	Pass
L57	6.917 - 6.667	Pole	TP44.584x44.5309x0.775	57	-66.48	6619.38	56.0	Pass
L58	6.667 - 3	Pole	TP45.3628x44.584x0.775	58	-68.45	6737.05	56.0	Pass
L59	3 - 2.75	Pole	TP45.4159x45.3628x0.775	59	-68.59	6745.07	56.0	Pass
L60	2.75 - 0	Pole	TP46x45.4159x0.775	60	-69.95	6833.33	56.0	Pass
							Summary	
						Pole (L10)	76.8	Pass
						RATING =	**76.8**	**Pass**

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

APPENDIX B

BASE LEVEL DRAWING



BUSINESS UNIT: 876360 TOWER ID:C_BASELEVEL

APPENDIX C

ADDITIONAL CALCULATIONS

CCIpole

per TIA-222- H

Site BU: 876360

Work Order: 2013127

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	147	26.63	3.25	18	16.25	21.98	0.1875	Auto	A572-65
2	123.62	38.71	4.17	18	20.91	29.11	0.25	Auto	A572-65
3	89.08	44.67	5.17	18	27.73	37.19	0.3125	Auto	A572-65
4	49.58	49.58	0	18	35.47	46	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	13	14	15	16	17	18
1	0	6.917	plate	PL5x1.25	2						E1				E1								
2	0	27.5	plate	PL5x1.25	2		E1												E1				
3	6.917	27.5	plate	PL5x1.25_2	1								E1										
4	27.5	57.25	plate	PL5x1.25	3		E1						E1						E1				
5	57.25	87.25	plate	PL4.75x1.25	3		E1						E1						E1				
6	87.25	105	plate	PL4.25x1.25	3		E1						E1						E1				
7	6.917	28.583	channel	MP3-03 (1.1875in)	2											E2						E2	
8	0	28.5	plate	CCI-AFP-045100	2	E3						E3											
9	0	28.5	plate	PL4.5x1	1															E3			
10	28.5	58.583	plate	CCI-AFP-045100	2	E3						E3											
11	27.583	58.583	plate	CCI-AFP-045100	1													E3					
12	58.583	94.167	plate	CCI-AFP-040075	3	E3						E3						E3					
13	103.5	110.5	plate	CCI-SFP-045100	3	E4						E4						E4					
14	0	34.5	plate	PL4.5x1.25	4			E5		E5							E5				E5		
15	33.5	65.5	plate	CCI-SFP-045100	4				E5						E5					E5			E5
16	65.5	90.58	plate	CCI-SFP-045100	2				E5						E5								
17	64.5	91.5	plate	CCI-SFP-045100	1																E5		
18	90.58	112.16	plate	PL4.5x1.25 (8 T.B)	2				E5						E5								
19	91.5	113.08	plate	PL4.5x1.25 (8 T.B)	1																E5		
20																							

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	5	1.25	6.25	0.625	None	n/a	PC 8.8 - M20 (100)	27.000	18.000	4.688	1.1875	A572-65
2	5	1.25	6.25	0.625	None	n/a	PC 8.8 - M20 (100)	27.000	18.000	4.688	1.1875	A572-65
3	5	1.25	6.25	0.625	PC 8.8 - M20 (100)	27	PC 8.8 - M20 (100)	27.000	18.000	4.688	1.1875	A572-65
4	5	1.25	6.25	0.625	None	n/a	PC 8.8 - M20 (100)	27.000	18.000	4.688	1.1875	A572-65
5	4.75	1.25	5.9375	0.625	None	n/a	PC 8.8 - M20 (100)	24.000	18.000	4.375	1.1875	A572-65
6	4.25	1.25	5.3125	0.625	None	n/a	PC 8.8 - M20 (100)	18.000	21.000	3.750	1.1875	A572-65
7	4.06	1.57	2.92	0.59	PC 8.8 - M20 (100)	14	PC 8.8 - M20 (100)	14.000	18.000	2.545	1.1875	A572-65
8	4.5	1	4.5	0.5	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	24.000	20.000	3.250	1.1875	A572-65
9	4.5	1	4.5	0.5	None	n/a	PC 8.8 - M20 (100)	24.000	20.000	3.250	1.1875	A572-65
10	4.5	1	4.5	0.5	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	24.000	20.000	3.250	1.1875	A572-65
11	4.5	1	4.5	0.5	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	24.000	20.000	3.250	1.1875	A572-65
12	4	0.75	3	0.375	PC 8.8 - M20 (100)	18	PC 8.8 - M20 (100)	18.000	16.000	2.063	1.1875	A572-65
13	4.5	1	4.5	0.5	PC 8.8 - M20 (100)	18	PC 8.8 - M20 (100)	18.000	20.000	3.250	1.1875	A572-65
14	4.5	1.25	5.625	0.625	PC 8.8 - M20 (100)	21	PC 8.8 - M20 (100)	21.000	24.000	4.063	1.1875	A572-65
15	4.5	1	4.5	0.5	PC 8.8 - M20 (100)	18	PC 8.8 - M20 (100)	18.000	20.000	3.250	1.1875	A572-65
16	4.5	1	4.5	0.5	PC 8.8 - M20 (100)	18	PC 8.8 - M20 (100)	18.000	20.000	3.250	1.1875	A572-65
17	4.5	1	4.5	0.5	PC 8.8 - M20 (100)	18	PC 8.8 - M20 (100)	18.000	20.000	3.250	1.1875	A572-65
18	4.5	1.25	5.625	0.625	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	24.000	24.000	4.063	1.1875	A572-65
19	4.5	1.25	5.625	0.625	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	24.000	24.000	4.063	1.1875	A572-65

Connection Details for Custom Reinforcements

Reinforcement	End	# Bolts	N or X	Bolt Spacing (in)	Edge Dist (in)	Weld Grade (ksi)	Transverse (Horiz.) Weld Type	Horiz. Weld Length (in)	Horiz. Groove Depth (in)	Horiz. Groove Angle (deg)	Horiz. Fillet Size (in)	Vertical Weld Length (in)	Vertical Fillet Size (in)	Rev H Connection Capacity (kip)
PL5x1.25	Top	9	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	-	-	-	-	70	None	-	-	-	-	-	-	-
PL5x1.25_2	Top	9	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	9	N	3	3	-	-	-	-	-	-	-	-	-
PL4.75x1.25	Top	8	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	-	-	-	-		None	-	-	-	-	-	-	-
PL4.25x1.25	Top	6	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	-	-	-	-		None	-	-	-	-	-	-	-
PL4.5x1	Top	8	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	-	-	-	-	70	None	-	-	-	-	-	-	-
PL4.5x1.25	Top	7	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	7	N	3	3	-	-	-	-	-	-	-	-	-
PL4.5x1.25 (8 T.B)	Top	8	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	8	N	3	3	-	-	-	-	-	-	-	-	-

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	147 - 142	5		18	16.250	17.326	0.1875	A572-65	1.000
2	142 - 137	5		18	17.326	18.402	0.1875	A572-65	1.000
3	137 - 132	5		18	18.402	19.478	0.1875	A572-65	1.000
4	132 - 127	5		18	19.478	20.553	0.1875	A572-65	1.000
5	127 - 123.62	6.63	3.25	18	20.553	21.980	0.1875	A572-65	1.000
6	123.62 - 118.62	5		18	20.906	21.965	0.25	A572-65	1.000
7	118.62 - 113.62	5		18	21.965	23.025	0.25	A572-65	1.000
8	113.62 - 113.08	0.54		18	23.025	23.140	0.25	A572-65	1.000
9	113.08 - 112.83	0.25		18	23.140	23.193	0.25	A572-65	1.000
10	112.83 - 112.16	0.67		18	23.193	23.335	0.25	A572-65	1.000
11	112.16 - 111.91	0.25		18	23.335	23.388	0.525	A572-65	0.925
12	111.91 - 110.5	1.41		18	23.388	23.686	0.525	A572-65	0.919
13	110.5 - 110.25	0.25		18	23.686	23.739	0.75	A572-65	0.896
14	110.25 - 105.25	5		18	23.739	24.799	0.725	A572-65	0.900
15	105.25 - 105	0.25		18	24.799	24.852	0.725	A572-65	0.899
16	105 - 104.75	0.25		18	24.852	24.905	1	A572-65	0.868
17	104.75 - 103.5	1.25		18	24.905	25.170	1	A572-65	0.861
18	103.5 - 103.25	0.25		18	25.170	25.223	0.7625	A572-65	0.889
19	103.25 - 98.25	5		18	25.223	26.283	0.7375	A572-65	0.894
20	98.25 - 94.167	4.083		18	26.283	27.148	0.7125	A572-65	0.906
21	94.167 - 93.917	0.25		18	27.148	27.201	0.85	A572-65	0.889
22	93.917 - 91.5	2.417		18	27.201	27.713	0.825	A572-65	0.903
23	91.5 - 91.25	0.25		18	27.713	27.766	0.8	A572-65	0.913
24	91.25 - 90.58	0.67		18	27.766	27.908	0.8	A572-65	0.910
25	90.58 - 90.33	0.25		18	27.908	27.961	0.775	A572-65	0.904
26	90.33 - 89.08	5.42	4.17	18	27.961	29.110	0.7625	A572-65	0.912
27	89.08 - 83.91	5.17		18	27.726	28.822	0.85	A572-65	0.909
28	83.91 - 78.91	5		18	28.822	29.881	0.825	A572-65	0.915
29	78.91 - 73.91	5		18	29.881	30.940	0.8	A572-65	0.924
30	73.91 - 68.91	5		18	30.940	31.999	0.7875	A572-65	0.920
31	68.91 - 65.5	3.41		18	31.999	32.722	0.7625	A572-65	0.937
32	65.5 - 65.25	0.25		18	32.722	32.775	0.9	A572-65	0.895
33	65.25 - 64.5	0.75		18	32.775	32.934	0.8875	A572-65	0.905
34	64.5 - 64.25	0.25		18	32.934	32.987	0.8125	A572-65	0.931
35	64.25 - 59.25	5		18	32.987	34.046	0.7875	A572-65	0.942
36	59.25 - 58.583	0.667		18	34.046	34.187	0.7875	A572-65	0.939
37	58.583 - 58.333	0.25		18	34.187	34.240	0.8375	A572-65	0.934
38	58.333 - 57.25	1.083		18	34.240	34.470	0.8375	A572-65	0.931
39	57.25 - 57	0.25		18	34.470	34.523	0.8375	A572-65	0.940
40	57 - 52	5		18	34.523	35.582	0.825	A572-65	0.937
41	52 - 49.58	7.59	5.17	18	35.582	37.190	0.8125	A572-65	0.942
42	49.58 - 43.41	6.17		18	35.470	36.780	0.875	A572-65	0.938
43	43.41 - 38.41	5		18	36.780	37.842	0.85	A572-65	0.950
44	38.41 - 34.5	3.91		18	37.842	38.673	0.85	A572-65	0.939
45	34.5 - 34.25	0.25		18	38.673	38.726	1	A572-65	0.989
46	34.25 - 33.5	0.75		18	38.726	38.885	1	A572-65	0.986
47	33.5 - 33.25	0.25		18	38.885	38.938	0.8	A572-65	1.039
48	33.25 - 28.483	4.767		18	38.938	39.950	0.8875	A572-65	0.979
49	28.483 - 28.233	0.25		18	39.950	40.004	0.8875	A572-65	0.978
50	28.233 - 27.483	0.75		18	40.004	40.163	0.875	A572-65	0.989
51	27.483 - 27.233	0.25		18	40.163	40.216	0.875	A572-65	0.989
52	27.233 - 22.233	5		18	40.216	41.278	0.875	A572-65	0.974
53	22.233 - 17.233	5		18	41.278	42.340	0.85	A572-65	0.988
54	17.233 - 12.233	5		18	42.340	43.402	0.8375	A572-65	0.988
55	12.233 - 7.233	5		18	43.402	44.464	0.825	A572-65	0.989
56	7.233 - 6.917	0.316		18	44.464	44.531	0.825	A572-65	0.989
57	6.917 - 6.667	0.25		18	44.531	44.584	0.775	A572-65	1.054
58	6.667 - 3	3.667		18	44.584	45.363	0.775	A572-65	1.044
59	3 - 2.75	0.25		18	45.363	45.416	0.775	A572-65	1.044
60	2.75 - 0	2.75		18	45.416	46.000	0.775	A572-65	1.037

TNX Section Forces

Increment (ft):	5	TNX Output		
	Section Height (ft)	P_u (K)	M_{ux} (kip-ft)	V_u (K)
1	147 - 142	3.47	35.92	5.79
2	142 - 137	3.72	65.69	6.12
3	137 - 132	6.92	131.69	13.29
4	132 - 127	11.26	206.58	17.44
5	127 - 123.62	11.65	265.85	17.64
6	123.62 - 118.62	12.38	355.56	18.19
7	118.62 - 113.62	16.42	469.89	24.39
8	113.62 - 113.08	16.52	483.07	24.42
9	113.08 - 112.83	16.57	489.17	24.44
10	112.83 - 112.16	16.68	505.56	24.49
11	112.16 - 111.91	16.75	511.68	24.51
12	111.91 - 110.5	17.04	546.33	24.65
13	110.5 - 110.25	17.12	552.49	24.66
14	110.25 - 105.25	18.46	677.12	25.19
15	105.25 - 105	18.53	683.42	25.23
16	105 - 104.75	21.55	690.76	28.96
17	104.75 - 103.5	21.95	727.11	29.20
18	103.5 - 103.25	22.03	734.42	29.23
19	103.25 - 98.25	23.46	882.70	30.09
20	98.25 - 94.167	24.65	1006.94	30.78
21	94.167 - 93.917	24.75	1014.64	30.82
22	93.917 - 91.5	25.55	1089.45	31.10
23	91.5 - 91.25	25.64	1097.23	31.11
24	91.25 - 90.58	25.86	1118.10	31.19
25	90.58 - 90.33	25.95	1125.90	31.21
26	90.33 - 89.08	26.34	1165.01	31.36
27	89.08 - 83.91	29.18	1328.92	32.04
28	83.91 - 78.91	30.99	1490.39	32.56
29	78.91 - 73.91	32.83	1654.43	33.07
30	73.91 - 68.91	34.70	1820.98	33.57
31	68.91 - 65.5	36.00	1935.97	33.90
32	65.5 - 65.25	36.11	1944.44	33.91
33	65.25 - 64.5	36.42	1969.91	33.99
34	64.5 - 64.25	36.53	1978.40	34.01
35	64.25 - 59.25	38.53	2149.64	34.50
36	59.25 - 58.583	38.80	2172.66	34.55
37	58.583 - 58.333	38.92	2181.30	34.57
38	58.333 - 57.25	39.36	2218.79	34.69
39	57.25 - 57	39.48	2227.47	34.70
40	57 - 52	41.62	2402.12	35.17
41	52 - 49.58	42.75	2487.27	35.45
42	49.58 - 43.41	47.37	2708.19	36.16
43	43.41 - 38.41	49.72	2889.95	36.57
44	38.41 - 34.5	51.58	3033.56	36.92
45	34.5 - 34.25	51.74	3042.78	36.92
46	34.25 - 33.5	52.16	3070.50	37.01
47	33.5 - 33.25	52.29	3079.76	37.02
48	33.25 - 28.483	54.75	3258.17	37.85
49	28.483 - 28.233	54.90	3267.63	37.87
50	28.233 - 27.483	55.29	3296.09	38.01
51	27.483 - 27.233	55.42	3305.59	38.04
52	27.233 - 22.233	58.05	3497.89	38.89
53	22.233 - 17.233	60.72	3694.21	39.67
54	17.233 - 12.233	63.43	3894.30	40.40
55	12.233 - 7.233	66.16	4098.03	41.13
56	7.233 - 6.917	66.34	4111.03	41.13
57	6.917 - 6.667	66.48	4121.31	41.15
58	6.667 - 3	68.45	4272.60	41.39
59	3 - 2.75	68.59	4282.94	41.38
60	2.75 - 0	69.95	4396.89	41.53

Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
147 - 142	Pole	TP17.326x16.25x0.1875	Pole	13.5%	Pass
142 - 137	Pole	TP18.402x17.326x0.1875	Pole	21.6%	Pass
137 - 132	Pole	TP19.478x18.402x0.1875	Pole	39.3%	Pass
132 - 127	Pole	TP20.553x19.478x0.1875	Pole	56.2%	Pass
127 - 123.62	Pole	TP21.98x20.553x0.1875	Pole	67.6%	Pass
123.62 - 118.62	Pole	TP21.965x20.906x0.25	Pole	60.9%	Pass
118.62 - 113.62	Pole	TP23.025x21.965x0.25	Pole	73.4%	Pass
113.62 - 113.08	Pole	TP23.14x23.025x0.25	Pole	74.7%	Pass
113.08 - 112.83	Pole	TP23.193x23.14x0.25	Pole	75.2%	Pass
112.83 - 112.16	Pole	TP23.335x23.193x0.25	Pole	76.7%	Pass
112.16 - 111.91	Pole + Reinf.	TP23.388x23.335x0.525	Reinf. 18 Tension Rupture	66.5%	Pass
111.91 - 110.5	Pole + Reinf.	TP23.686x23.388x0.525	Reinf. 18 Tension Rupture	69.6%	Pass
110.5 - 110.25	Pole + Reinf.	TP23.739x23.686x0.75	Reinf. 18 Tension Rupture	50.2%	Pass
110.25 - 105.25	Pole + Reinf.	TP24.799x23.739x0.725	Reinf. 18 Tension Rupture	58.0%	Pass
105.25 - 105	Pole + Reinf.	TP24.852x24.799x0.725	Reinf. 18 Tension Rupture	58.3%	Pass
105 - 104.75	Pole + Reinf.	TP24.905x24.852x1	Reinf. 6 Tension Rupture	45.1%	Pass
104.75 - 103.5	Pole + Reinf.	TP25.17x24.905x1	Reinf. 6 Tension Rupture	46.9%	Pass
103.5 - 103.25	Pole + Reinf.	TP25.223x25.17x0.7625	Reinf. 6 Tension Rupture	59.6%	Pass
103.25 - 98.25	Pole + Reinf.	TP26.283x25.223x0.7375	Reinf. 6 Tension Rupture	67.7%	Pass
98.25 - 94.17	Pole + Reinf.	TP27.148x26.283x0.7125	Reinf. 6 Tension Rupture	73.9%	Pass
94.17 - 93.92	Pole + Reinf.	TP27.201x27.148x0.85	Reinf. 12 Tension Rupture	64.2%	Pass
93.92 - 91.5	Pole + Reinf.	TP27.713x27.201x0.825	Reinf. 12 Tension Rupture	67.3%	Pass
91.5 - 91.25	Pole + Reinf.	TP27.766x27.713x0.8	Reinf. 6 Tension Rupture	69.6%	Pass
91.25 - 90.58	Pole + Reinf.	TP27.908x27.766x0.8	Reinf. 6 Tension Rupture	70.4%	Pass
90.58 - 90.33	Pole + Reinf.	TP27.961x27.908x0.775	Reinf. 12 Tension Rupture	73.0%	Pass
90.33 - 89.08	Pole + Reinf.	TP29.11x27.961x0.7625	Reinf. 12 Tension Rupture	74.6%	Pass
89.08 - 83.91	Pole + Reinf.	TP28.822x27.726x0.85	Reinf. 12 Tension Rupture	74.0%	Pass
83.91 - 78.91	Pole + Reinf.	TP29.881x28.822x0.825	Reinf. 12 Tension Rupture	79.0%	Pass
78.91 - 73.91	Pole + Reinf.	TP30.94x29.881x0.8	Reinf. 12 Tension Rupture	83.5%	Pass
73.91 - 68.91	Pole + Reinf.	TP31.999x30.94x0.7875	Reinf. 12 Tension Rupture	87.6%	Pass
68.91 - 65.5	Pole + Reinf.	TP32.722x31.999x0.7625	Reinf. 12 Tension Rupture	90.3%	Pass
65.5 - 65.25	Pole + Reinf.	TP32.775x32.722x0.9	Reinf. 12 Tension Rupture	84.8%	Pass
65.25 - 64.5	Pole + Reinf.	TP32.934x32.775x0.8875	Reinf. 12 Tension Rupture	85.4%	Pass
64.5 - 64.25	Pole + Reinf.	TP32.987x32.934x0.8125	Reinf. 12 Tension Rupture	89.9%	Pass
64.25 - 59.25	Pole + Reinf.	TP34.046x32.987x0.7875	Reinf. 12 Tension Rupture	93.4%	Pass
59.25 - 58.58	Pole + Reinf.	TP34.187x34.046x0.7875	Reinf. 12 Tension Rupture	93.8%	Pass
58.58 - 58.33	Pole + Reinf.	TP34.24x34.187x0.8375	Reinf. 10 Tension Rupture	84.7%	Pass
58.33 - 57.25	Pole + Reinf.	TP34.47x34.24x0.8375	Reinf. 10 Tension Rupture	85.4%	Pass
57.25 - 57	Pole + Reinf.	TP34.523x34.47x0.8375	Reinf. 10 Tension Rupture	84.5%	Pass
57 - 52	Pole + Reinf.	TP35.582x34.523x0.825	Reinf. 10 Tension Rupture	87.4%	Pass
52 - 49.58	Pole + Reinf.	TP37.19x35.582x0.8125	Reinf. 10 Tension Rupture	88.7%	Pass
49.58 - 43.41	Pole + Reinf.	TP36.78x35.47x0.875	Reinf. 10 Tension Rupture	86.9%	Pass
43.41 - 38.41	Pole + Reinf.	TP37.842x36.78x0.85	Reinf. 10 Tension Rupture	89.0%	Pass
38.41 - 34.5	Pole + Reinf.	TP38.673x37.842x0.85	Reinf. 10 Tension Rupture	90.5%	Pass
34.5 - 34.25	Pole + Reinf.	TP38.726x38.673x1	Reinf. 15 Tension Rupture	78.3%	Pass
34.25 - 33.5	Pole + Reinf.	TP38.885x38.726x1	Reinf. 15 Tension Rupture	78.5%	Pass
33.5 - 33.25	Pole + Reinf.	TP38.938x38.885x0.8	Reinf. 4 Tension Rupture	91.8%	Pass
33.25 - 28.48	Pole + Reinf.	TP39.95x38.938x0.8875	Reinf. 4 Tension Rupture	85.8%	Pass
28.48 - 28.23	Pole + Reinf.	TP40.004x39.95x0.8875	Reinf. 4 Tension Rupture	85.9%	Pass
28.23 - 27.48	Pole + Reinf.	TP40.163x40.004x0.875	Reinf. 3 Tension Rupture	86.1%	Pass
27.48 - 27.23	Pole + Reinf.	TP40.216x40.163x0.875	Reinf. 3 Tension Rupture	86.2%	Pass
27.23 - 22.23	Pole + Reinf.	TP41.278x40.216x0.875	Reinf. 3 Tension Rupture	87.8%	Pass
22.23 - 17.23	Pole + Reinf.	TP42.34x41.278x0.85	Reinf. 3 Tension Rupture	89.3%	Pass
17.23 - 12.23	Pole + Reinf.	TP43.402x42.34x0.8375	Reinf. 3 Tension Rupture	90.7%	Pass
12.23 - 7.23	Pole + Reinf.	TP44.464x43.402x0.825	Reinf. 3 Tension Rupture	92.1%	Pass
7.23 - 6.92	Pole + Reinf.	TP44.531x44.464x0.825	Reinf. 3 Tension Rupture	92.1%	Pass
6.92 - 6.67	Pole + Reinf.	TP44.584x44.531x0.775	Reinf. 1 Tension Rupture	94.9%	Pass
6.67 - 3	Pole + Reinf.	TP45.363x44.584x0.775	Reinf. 1 Tension Rupture	95.9%	Pass
3 - 2.75	Pole + Reinf.	TP45.416x45.363x0.775	Reinf. 1 Tension Rupture	95.9%	Pass
2.75 - 0	Pole + Reinf.	TP46x45.416x0.775	Reinf. 1 Tension Rupture	96.6%	Pass
				Summary	
			Pole	76.7%	Pass
			Reinforcement	96.6%	Pass
			Overall	96.6%	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	R10	R11	R12	R13	R14	R15	R16	R17	R18	R19
147 - 142	378	n/a	378	10.20	n/a	10.20	13.5%																			
142 - 137	454	n/a	454	10.84	n/a	10.84	21.6%																			
137 - 132	540	n/a	540	11.48	n/a	11.48	39.3%																			
132 - 127	635	n/a	635	12.12	n/a	12.12	56.2%																			
127 - 123.62	705	n/a	705	12.55	n/a	12.55	67.6%																			
123.62 - 118.62	1026	n/a	1026	17.23	n/a	17.23	60.9%																			
118.62 - 113.62	1184	n/a	1184	18.07	n/a	18.07	73.4%																			
113.62 - 113.08	1202	n/a	1202	18.16	n/a	18.16	74.7%																			
113.08 - 112.83	1210	n/a	1210	18.20	n/a	18.20	75.2%																			
112.83 - 112.16	1233	n/a	1233	18.32	n/a	18.32	76.7%																			
112.16 - 111.91	1241	1296	2537	18.36	16.88	35.23	37.2%																		66.5%	66.5%
111.91 - 110.5	1290	1327	2617	18.60	16.88	35.47	39.0%																		69.6%	69.6%
110.5 - 110.25	1299	2377	3676	18.64	30.38	49.01	28.2%													49.7%					50.2%	50.2%
110.25 - 105.25	1483	2582	4064	19.48	30.38	49.85	32.8%													57.4%					58.0%	58.0%
105.25 - 105	1492	2592	4085	19.52	30.38	49.90	33.0%													57.8%					58.3%	58.3%
105 - 104.75	1502	3979	5481	19.56	46.31	65.88	25.0%						45.1%							43.7%					44.1%	44.1%
104.75 - 103.5	1551	4059	5610	19.77	46.31	66.09	26.1%						46.9%							45.4%					45.8%	45.8%
103.5 - 103.25	1561	2903	4464	19.82	32.81	52.63	33.2%						59.6%												58.3%	58.3%
103.25 - 98.25	1768	3138	4906	20.66	32.81	53.47	38.1%						67.7%												66.2%	66.2%
98.25 - 94.17	1950	3336	5286	21.34	32.81	54.16	42.0%						73.9%												72.2%	72.2%
94.17 - 93.92	1962	4234	6195	21.38	41.81	63.20	36.2%						63.7%						64.2%						62.2%	62.2%
93.92 - 91.5	2076	4387	6463	21.79	41.81	63.60	38.1%						66.7%						67.3%						65.2%	65.2%
91.5 - 91.25	2089	4228	6317	21.83	40.69	62.52	40.4%						69.6%						69.0%					68.9%	65.6%	
91.25 - 90.58	2121	4269	6391	21.95	40.69	62.63	41.0%						70.4%						69.9%					69.7%	66.4%	
90.58 - 90.33	2133	4074	6206	21.99	38.44	60.43	41.5%						72.4%						73.0%				70.1%	70.1%		
90.33 - 89.08	2194	4148	6342	22.20	38.44	60.64	42.5%						73.9%						74.6%				71.7%	71.7%		
89.08 - 83.91	2903	4534	7437	28.28	40.31	68.59	40.4%					70.3%							74.0%				71.1%	71.1%		
83.91 - 78.91	3238	4859	8097	29.33	40.31	69.64	43.2%					74.9%							79.0%				75.8%	75.8%		
78.91 - 73.91	3599	5195	8794	30.38	40.31	70.69	46.0%					79.2%							83.5%				80.1%	80.1%		
73.91 - 68.91	3986	5542	9527	31.43	40.31	71.74	48.8%					83.1%							87.6%				84.1%	84.1%		
68.91 - 65.5	4264	5785	10049	32.14	40.31	72.46	50.5%					85.5%							90.3%				86.6%	86.6%		
65.5 - 65.25	4367	7406	11773	32.20	49.31	81.51	47.6%					80.3%							84.8%			83.2%		67.6%		
65.25 - 64.5	4431	7476	11907	32.36	49.31	81.67	48.0%					80.8%							85.4%			83.7%		68.0%		
64.5 - 64.25	4386	6437	10822	32.41	44.81	77.22	50.5%					84.3%							89.9%			84.2%				
64.25 - 59.25	4826	6842	11667	33.46	44.81	78.27	52.9%					87.5%							93.4%			87.5%				
59.25 - 58.58	4886	6897	11783	33.60	44.81	78.41	53.2%					87.9%							93.8%			87.9%				
58.58 - 58.33	4908	7645	12553	33.65	49.31	82.96	50.2%					82.9%					84.7%	81.9%				82.9%				
58.33 - 57.25	5008	7744	12752	33.88	49.31	83.19	50.7%					83.5%					85.4%	82.6%				83.5%				
57.25 - 57	5031	7921	12952	33.93	50.25	84.18	50.1%				81.2%						84.5%	81.7%				82.7%				
57 - 52	5512	8396	13909	34.98	50.25	85.23	52.3%				84.0%						87.4%	84.5%				85.5%				
52 - 49.58	5756	8632	14387	35.49	50.25	85.74	53.4%				85.2%						88.7%	85.8%				86.8%				
49.58 - 43.41	7271	8954	16225	43.33	50.25	93.58	50.1%				83.6%						86.9%	84.4%				85.2%				
43.41 - 38.41	7925	9461	17386	44.59	50.25	94.84	51.7%				85.6%						89.0%	86.4%				87.3%				
38.41 - 34.5	8463	9867	18331	45.58	50.25	95.83	52.9%				87.0%						90.5%	87.9%				88.7%				
34.5 - 34.25	8536	13135	21671	45.65	72.75	118.40	46.4%				77.4%						76.9%	66.5%			71.0%	78.3%				
34.25 - 33.5	8643	13240	21882	45.83	72.75	118.58	46.6%				77.7%						77.1%	66.7%			71.3%	78.5%				
33.5 - 33.25	8634	9070	17704	45.90	54.75	100.65	56.2%				91.8%						90.1%	77.7%			87.2%					
33.25 - 28.48	9396	11878	21274	47.10	60.59	107.69	53.0%				85.8%			76.7%	84.8%	74.5%					83.7%					
28.48 - 28.23	9433	11909	21342	47.17	60.59	107.76	53.0%				85.9%			76.7%	84.9%	74.6%					83.8%					
28.23 - 27.48	9547	12001	21548	47.36	60.59	107.95	53.3%		77.1%	86.1%				77.0%	85.1%	74.8%					84.0%					
27.48 - 27.23	9585	12032	21617	47.42	60.59	108.01	53.3%		77.1%	86.2%				77.0%	85.2%	74.9%					84.1%					
27.23 - 22.23	10370	12656	23027	48.68	60.59	109.27	54.7%		78.7%	87.8%				78.5%	86.8%	76.5%					85.7%					
22.23 - 17.23	11197	13297	24494	49.95	60.59	110.54	56.1%		80.1%	89.3%				79.8%	88.4%	77.9%					87.2%					
17.23 - 12.23	12066	13953	26020	51.21	60.59	111.80	57.5%		81.5%	90.7%				81.1%	89.8%	79.4%					88.7%					
12.23 - 7.23	12980	14625	27605	52.47	60.59	113.06	58.8%		82.8%	92.1%				82.4%	91.2%	80.7%					90.1%					
7.23 - 6.92	13039	14668	27707	52.55	60.59	113.14	58.9%		82.9%	92.1%				82.4%	91.3%	80.8%					90.2%					
6.92 - 6.67	13023	13350	26373	52.62	61.00	113.62	60.7%	94.9%	83.9%						91.3%	83.9%					88.9%					
6.67 - 3	13723	13806	27530	53.54	61.00	114.54	61.7%	95.9%	84.8%						92.3%	84.8%					89.9%					
3 - 2.75	13772	13838	27610	53.61	61.00	114.61	61.7%	95.9%	84.8%						92.3%	84.9%					89.9%					
2.75 - 0	14314	14186	28500	54.30	61.00	115.30	62.4%	96.6%	85.5%						93.0%	85.5%					90.6%					

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

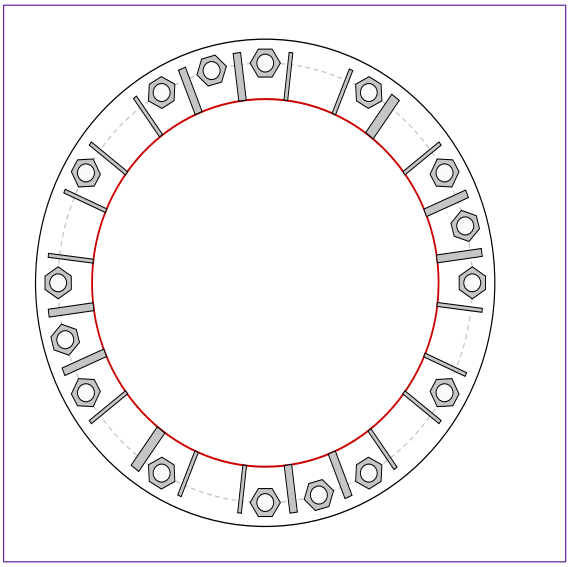
Monopole Base Plate Connection

Site Info	
BU #	876360
Site Name	Preston / Town Hall
Order #	572908 Rev. 0

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	No
l_{ar} (in)	2.375

Applied Loads	
Moment (kip-ft)	4396.89
Axial Force (kips)	69.95
Shear Force (kips)	41.53

**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 55" BC
GROUP 2: (4) 2-1/4" ø bolts (A615-75 N; Fy=75 ksi, Fu=100 ksi) on 55" BC

Base Plate Data

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

Stiffener Data

Group 1: (14) 14"H x 6"W x 0.5"T, Notch: 0.75"
plate: Fy= 50 ksi ; weld: Fy= 80 ksi
horiz. weld: 0.25" groove, 45° dbl bevelFALSE
vert. weld: 0.4375" fillet

Group 2: (8) 60"H x 6"W x 1"T, Notch: 0.75"
plate: Fy= 65 ksi ; weld: Fy= 80 ksi
horiz. weld: 0.5" groove, 45° dbl bevel, 0.5" fillet
vert. weld: 0.375" fillet

Group 3: (2) 66"H x 6"W x 1.25"T, Notch: 0.75"
plate: Fy= 65 ksi ; weld: Fy= 80 ksi
horiz. weld: 0.625" groove, 45° dbl bevel, 0.3125" fillet
vert. weld: 0.3125" fillet

Pole Data

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

Analysis Results

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

GROUP 1:		
Pu_t = 235.29	ϕPn_t = 243.75	**Stress Rating**
Vu = 3.46	ϕVn = 149.1	**96.6%**
Mu = 5.34	ϕMn = 128.14	Pass
GROUP 2:		
Pu_t = 235.29	ϕPn_t = 243.75	**Stress Rating**
Vu = 0	ϕVn = 149.1	**91.9%**
Mu = 0	ϕMn = 128.14	Pass

Base Plate Summary

Max Stress (ksi):	51.14	(Roark's Flexural)
Allowable Stress (ksi):	54	
Stress Rating:	**90.2%**	Pass

Stiffener Summary

Horizontal Weld:	**57.3%**	Pass
Vertical Weld:	**25.1%**	Pass
Plate Flexure+Shear:	**23.9%**	Pass
Plate Tension+Shear:	**59.8%**	Pass
Plate Compression:	**68.4%**	Pass

Pole Summary

Punching Shear:	**10.8%**	Pass

Pier and Pad Foundation

BU # :	876360
Site Name:	Preston / Town Hal
App. Number:	572908 Rev. 0

TIA-222 Revision:	H
Tower Type:	Monopole

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

Superstructure Analysis Reactions

Compression, P_{comp}:	69.97	kips
Base Shear, Vu_comp:	41.49	kips
Moment, M_u:	4396.88	ft-kips
Tower Height, **H**:	147	ft
BP Dist. Above Fdn, bp_{dist}:	4.625	in

Pier Properties

Pier Shape:	Square	
Pier Diameter, **dpier**:	7	ft
Ext. Above Grade, **E**:	1	ft
Pier Rebar Size, **Sc**:	8	
Pier Rebar Quantity, **mc**:	33	
Pier Tie/Spiral Size, **St**:	4	
Pier Tie/Spiral Quantity, **mt**:	5	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier}:	3	in

Pad Properties

Depth, **D**:	6	ft
Pad Width, W_1:	26	ft
Pad Thickness, **T**:	3	ft
Pad Rebar Size (Bottom dir. 2), Sp_2:	8	
Pad Rebar Quantity (Bottom dir. 2), mp_2:	26	
Pad Clear Cover, cc_{pad}:	3	in

Material Properties

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

Soil Properties

Total Soil Unit Weight, γ:	120	pcf
Ultimate Gross Bearing, Qult:	15.000	ksf
Cohesion, **Cu**:	0.000	ksf
Friction Angle, φ:	40	degrees
SPT Blow Count, N_{blows}:	64	
Base Friction, μ:	0.3	
Neglected Depth, **N**:	2.00	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, **gw**:	N/A	ft

<--Toggle between Gross and Net

Foundation Analysis Checks

	Capacity	Demand	Rating*	Check
Lateral (Sliding) (kips)	277.59	41.49	**14.2%**	**Pass**
Bearing Pressure (ksf)	11.25	2.56	**22.7%**	**Pass**
*Overturning (kip*ft)*	7159.03	4703.30	**65.7%**	**Pass**
*Pier Flexure (Comp.) (kip*ft)*	4424.50	4562.84	**98.2%**	**Pass**
Pier Compression (kip)	31187.52	105.25	**0.3%**	**Pass**
*Pad Flexure (kip*ft)*	2857.85	1972.18	**65.7%**	**Pass**
Pad Shear - 1-way (kips)	932.37	289.31	**29.6%**	**Pass**
Pad Shear - 2-way (Comp) (ksi)	0.190	0.045	**22.3%**	**Pass**
*Flexural 2-way (Comp) (kip*ft)*	3460.76	2737.70	**75.3%**	**Pass**

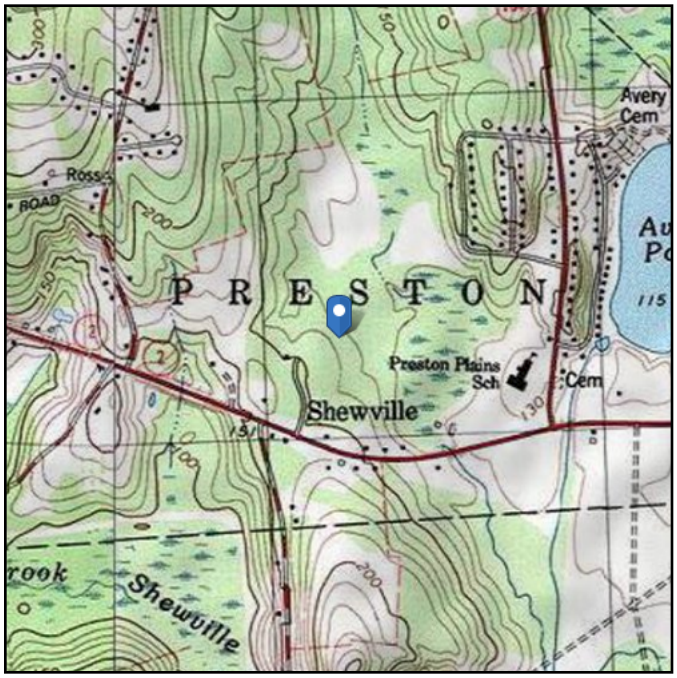
**Rating per TIA-222-H Section 15.5*

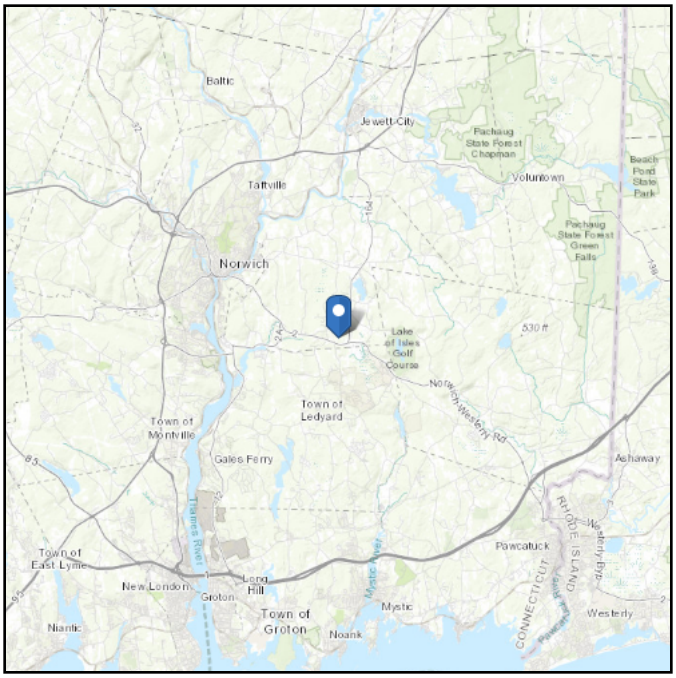
Structural Rating*:	**98.2%**
Soil Rating*:	**65.7%**

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard:	ASCE/SEI 7-16	**Elevation:**	134.57 ft (NAVD 88)
Risk Category:	II	**Latitude:**	41.490347
Soil Class:	D - Stiff Soil	**Longitude:**	-71.991542





Wind

Results:

Wind Speed:	126 Vmph
10-year MRI	76 Vmph
25-year MRI	86 Vmph
50-year MRI	98 Vmph
100-year MRI	103 Vmph

Data Source:	ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed:	Thu Sep 23 2021

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

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

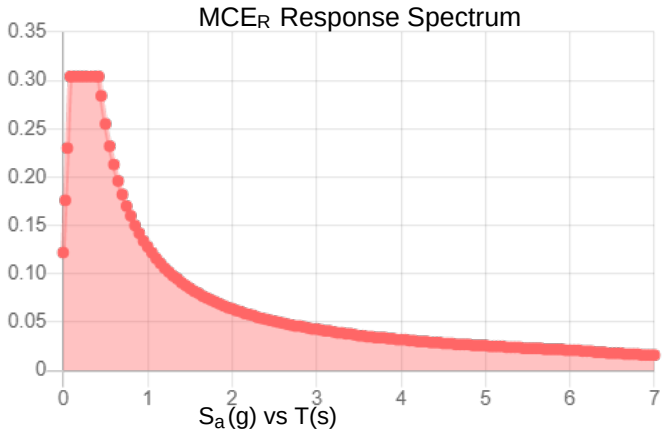
Seismic

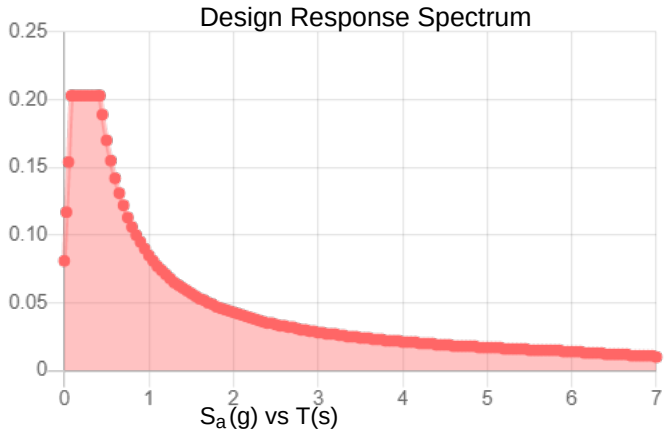
Site Soil Class: D - Stiff Soil

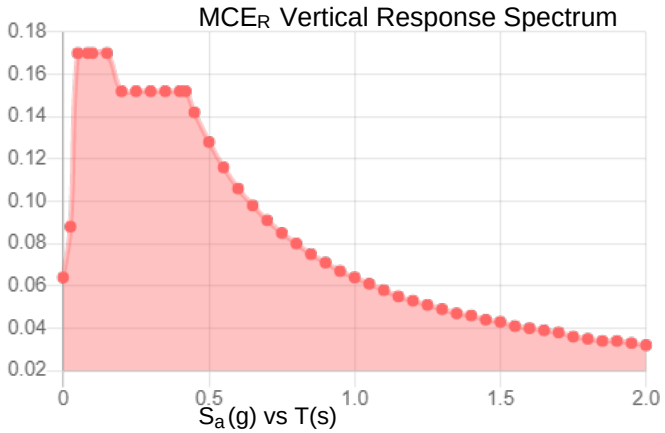
Results:

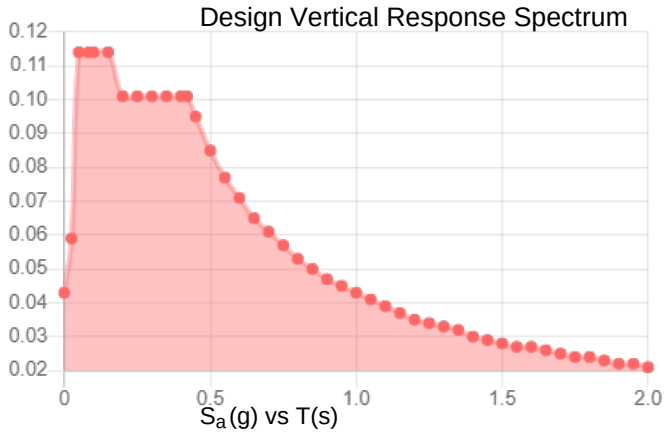
S_S :	0.19	S_{D1} :	0.085
S_1 :	0.053	T_L :	6
F_a :	1.6	PGA :	0.104
F_v :	2.4	PGA_M :	0.166
S_{MS} :	0.304	F_{PGA} :	1.591
S_{M1} :	0.128	I_e :	1
S_{DS} :	0.203	C_v :	0.7

Seismic Design Category B









Data Accessed: Thu Sep 23 2021

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

Ice

Results:

Ice Thickness:	1.00 in.
Concurrent Temperature:	15 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8
Date Accessed:	Thu Sep 23 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 500-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Exhibit E

Mount Analysis

Date: **November 3, 2021**

Michael McWilliams
Crown Castle
8000 Avalon Blvd, Suite 700,
Alpharetta, GA 30009
770-375-4936

INFINIGY
FROM ZERO TO INFINIGY
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Infinigy Engineering, PLLC
1033 Watervliet Shaker Road
Albany, NY 12205
518-690-0790
structural@infinigy.com

Subject:	**Mount Analysis Report**	
Carrier Designation:	**Dish Network 5G**	
	Carrier Site Number:	BOBOS00885A
	Carrier Site Name:	--
Crown Castle Designation:	**Crown Castle BU Number:**	876360
	Crown Castle Site Name:	PRESTON / TOWN HALL
	Crown Castle JDE Job Number:	671532
	Crown Castle Order Number:	572908 Rev. 2
Engineering Firm Designation:	**Infinigy Engineering, PLLC Report Designation:** 1039-Z0001-B	
Site Data:	**389 Rt. 2, Preston, New London County, CT, 06365** **Latitude 41°29'25.25" Longitude -71°59'29.55"**	
Structure Information:	**Tower Height & Type:**	**147.0 ft Monopole**
	Mount Elevation:	**105.0 ft**
	Mount Type:	**8.0 ft Platform**

Dear Michael McWilliams,

Infinigy Engineering, PLLC is pleased to submit this **"Mount 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.

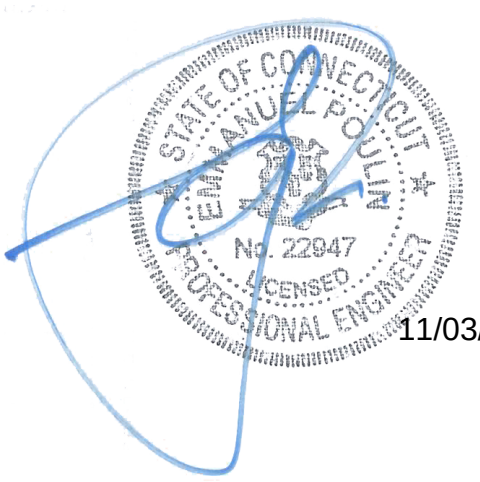
The purpose of the analysis is to determine acceptability of the mount stress level. Based on our analysis we have determined the mount stress level to be:

Platform **Sufficient**

This analysis has been performed in accordance with the 2015 International Building Code based upon an ultimate 3-second gust wind speed of 126 mph. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Mount analysis prepared by: Farhad Ahmadyar

Respectfully Submitted by:
Emmanuel Poulin, P.E.
518-690-0790
structural@infinigy.com
CT PE License No. 22947



11/03/21

TABLE OF CONTENTS

1) INTRODUCTION

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

2) ANALYSIS CRITERIA

Building Code:	2015 IBC
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Ultimate Wind Speed:	126 mph
Exposure Category:	C
Topographic Factor at Base:	1.0
Topographic Factor at Mount:	1.0
Ice Thickness:	1.5 in
Wind Speed with Ice:	50 mph
Seismic S_s:	0.165
Seismic S_1:	0.059
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
105.0	105.0	3	JMA WIRELESS	MX08FRO665-21	8.0 ft Platform (Commscope MC-PK8-DSH)
		3	FUJITSU	TA08025-B604	
		3	FUJITSU	TA08025-B605	
		1	RAYCAP	RDIDC-9181-PF-48	

3) ANALYSIS PROCEDURE

Table 2 - Documents Provided

Document	Remarks	Reference	Source
Crown Application	Dish Network Application	572908 Rev. 2	CCI Sites
Mount Manufacturer Drawings	Commscope, Inc	Part No. MC-PK8-DSH	Infinigy

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.

Infinigy Mount Analysis Tool V2.1.7, a tool internally developed by Infinigy, was used to calculate wind loading on all appurtenances, dishes and mount members for various loading cases. Selected output from the analysis is included in Appendix B “Software Input Calculations”.

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. Infinigy Engineering, PLLC 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)	MP4	105.0	16.5	Pass
	Horizontal(s)	HOR1		12.3	Pass
	Standoff(s)	S1		31.5	Pass
	Bracing(s)	M1		35.9	Pass
	Mount Connection(s)	--		25.1	Pass

Structure Rating (max from all components) =	35.9%

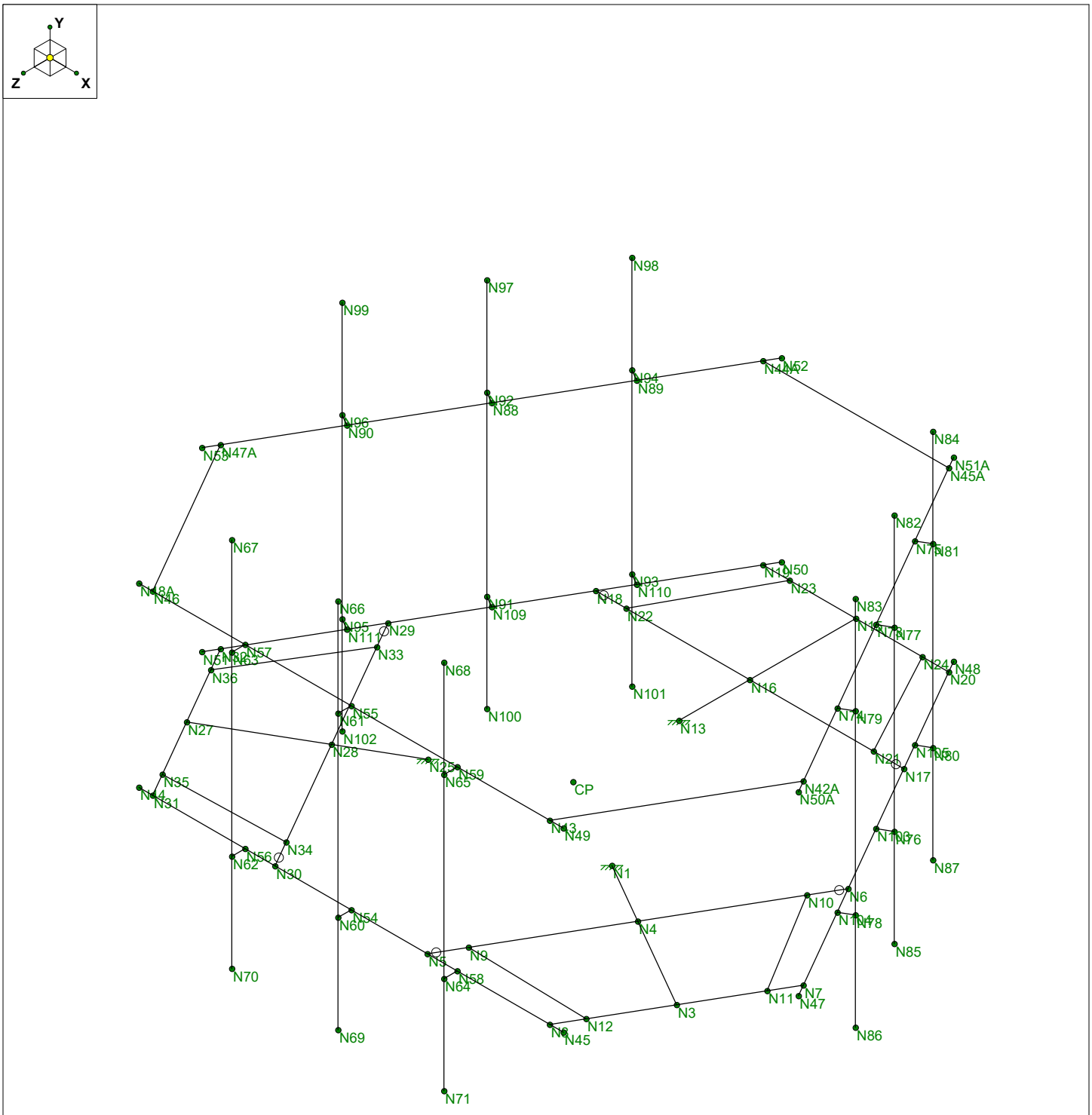
Notes:
1) See additional documentation in "Appendix C - Software Analysis Output" for calculations supporting the % capacity consumed.
2) See additional documentation in “Appendix D – Additional Calculations” for detailed mount connection calculations.

4.1) Recommendations

The mount has sufficient capacity to carry the proposed loading configuration. No modifications are required at this time.

APPENDIX A

WIRE FRAME AND RENDERED MODELS



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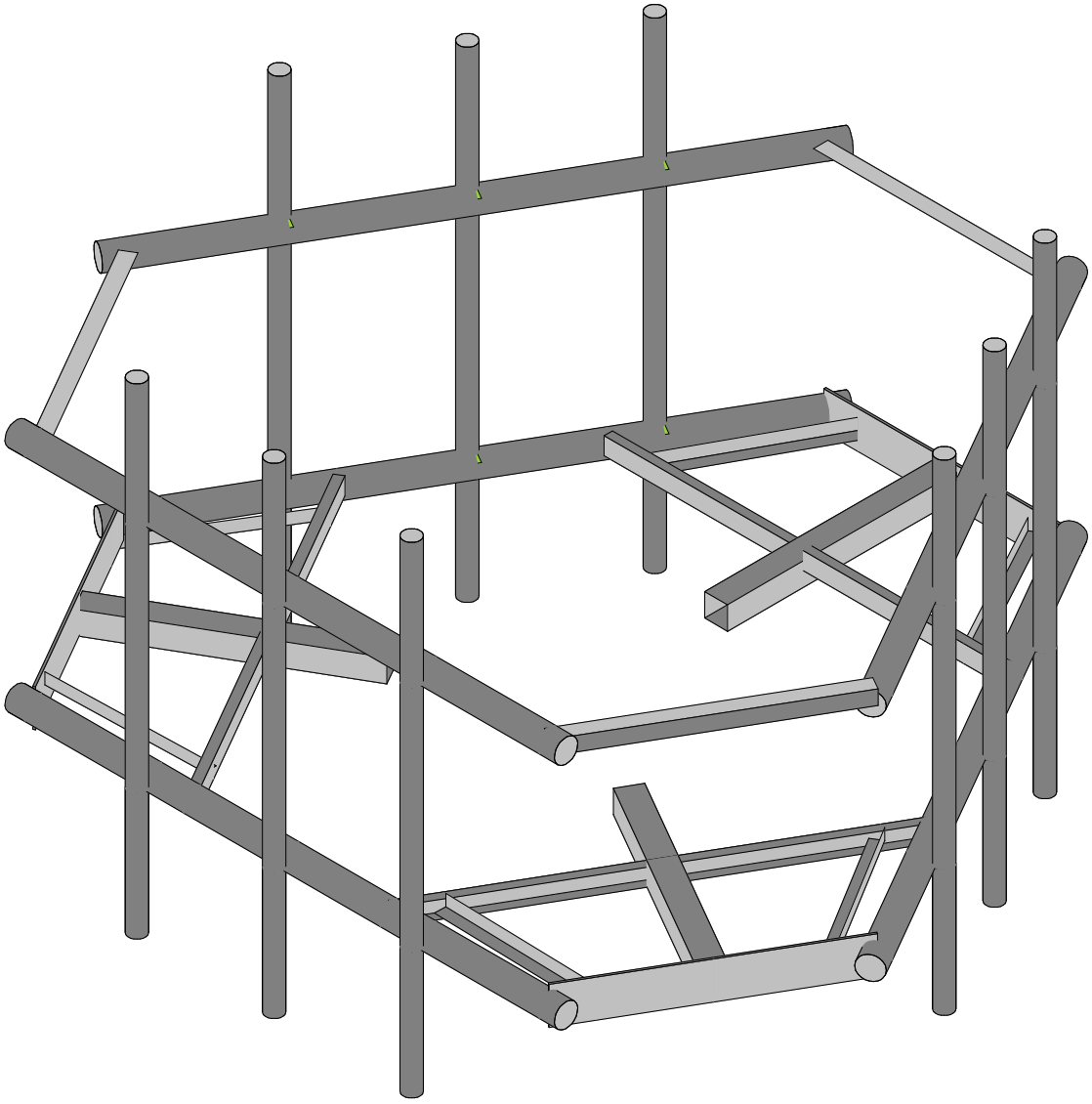

Infinigy Engineering	876360	RENDERED
FA		Nov 3, 2021 at 3:00 PM
1039-Z0001-B		MC-PK8-B_loaded.r3d

APPENDIX B

SOFTWARE INPUT CALCULATIONS

Program Inputs

PROJECT INFORMATION	
Client:	Crown Castle
Carrier:	Dish Network
Engineer:	Farhad Ahmadyar

SITE INFORMATION		
Risk Category:	II	
Exposure Category:	C	
Topo Factor Procedure:	Method 1, Category 1	
Site Class:	D - Stiff Soil (Assumed)	
Ground Elevation:	134.57	ft *Rev H

MOUNT INFORMATION		
Mount Type:	Platform	
Num Sectors:	3	
Centerline AGL:	105.00	ft
Tower Height AGL:	147.00	ft

TOPOGRAPHIC DATA		
Topo Feature:	N/A	
Slope Distance:	N/A	ft
Crest Distance:	N/A	ft
Crest Height:	N/A	ft

FACTORS		
Directionality Fact. (K_d):	0.950	
Ground Ele. Factor (K_e):	0.995	*Rev H Only
Rooftop Speed-Up (K_s):	1.000	*Rev H Only
Topographic Factor (K_{zt}):	1.000	
Gust Effect Factor (G_h):	1.000	

CODE STANDARDS		
Building Code:	2015 IBC	
TIA Standard:	TIA-222-H	
ASCE Standard:	ASCE 7-10	

WIND AND ICE DATA		
Ultimate Wind (V_{ult}):	126	mph
Design Wind (V):	N/A	mph
Ice Wind (V_{ice}):	50	mph
Base Ice Thickness (t_i):	1.5	in
Flat Pressure:	98.261	psf
Round Pressure:	58.957	psf
Ice Wind Pressure:	9.284	psf

SEISMIC DATA		
Short-Period Accel. (S_s):	0.165	g
1-Second Accel. (S_1):	0.059	g
Short-Period Design (S_{DS}):	0.176	
1-Second Design (S_{D1}):	0.094	
Short-Period Coeff. (F_a):	1.600	
1-Second Coeff. (F_v):	2.400	
Amplification Factor (A_s):	3.000	
Response Mod. Coeff. (R):	2.000	

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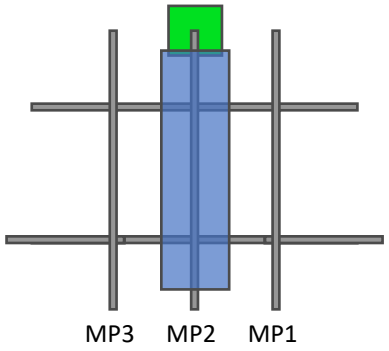
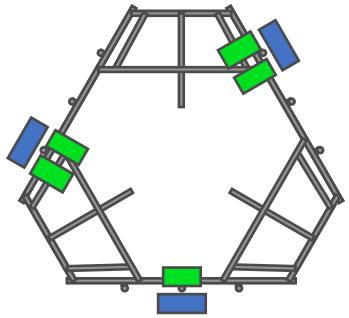
Infinigy Load Calculator V2.1.7

Program Inputs

ELEVATION VIEW



PLAN VIEW



INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless

Infinigy Load Calculator V2.1.7

APPURTENANCE INFORMATION

Appurtenance Name	Elevation	Qty.	K_a	q_z (psf)	EPA_N (ft^2)	EPA_T (ft^2)	Wind F_z (lbs)	Wind F_x (lbs)	Weight (lbs)	Seismic F (lbs)	Member (α sector)
JMA WIRELESS MX08FRO665-21	105.0	3	0.90	49.13	8.01	3.21	354.18	141.94	82.50	21.78	MP2
FUJITSU TA08025-B604	105.0	3	0.90	49.13	1.96	0.98	86.82	43.38	63.90	16.87	MP2
FUJITSU TA08025-B605	105.0	3	0.90	49.13	1.96	1.13	86.82	49.94	75.00	19.80	MP2
RAYCAP RDIDC-9181-PF-48	105.0	1	0.90	49.13	2.01	1.17	88.96	51.65	21.85	5.77	MP2

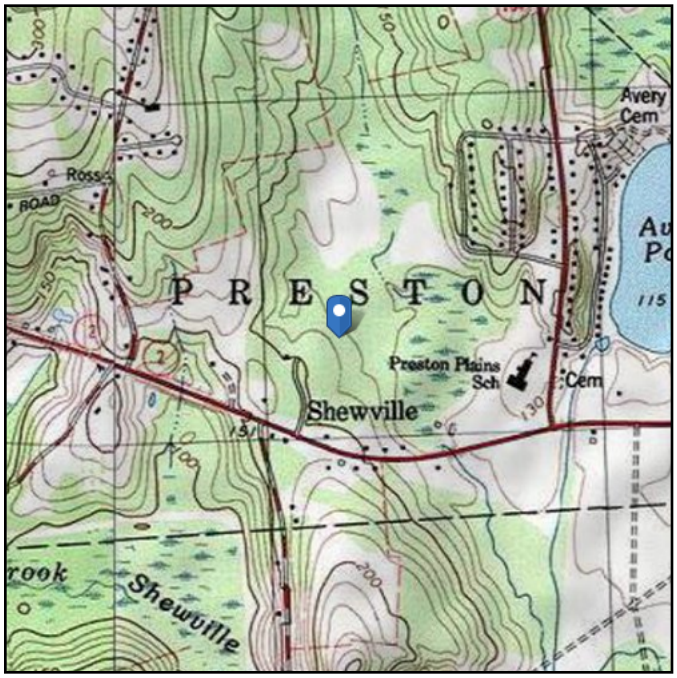
Program Inputs

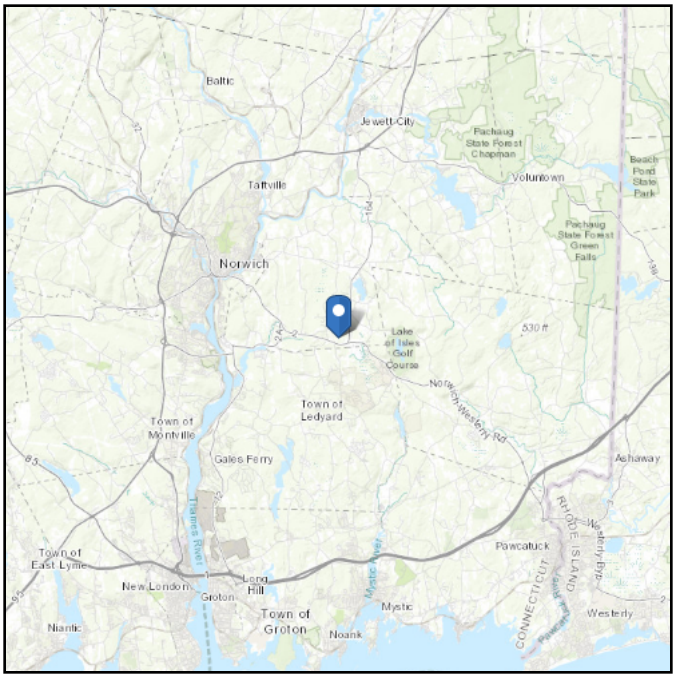
ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 134.57 ft (NAVD 88)
Latitude: 41.490347
Longitude: -71.991542





Wind

Results:

Wind Speed:	126 Vmph per the State of Connecticut allowing ASCE 7-16 wind speed values.
10-year MRI	79 Vmph
25-year MRI	89 Vmph
50-year MRI	99 Vmph
100-year MRI	108 Vmph

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

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

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

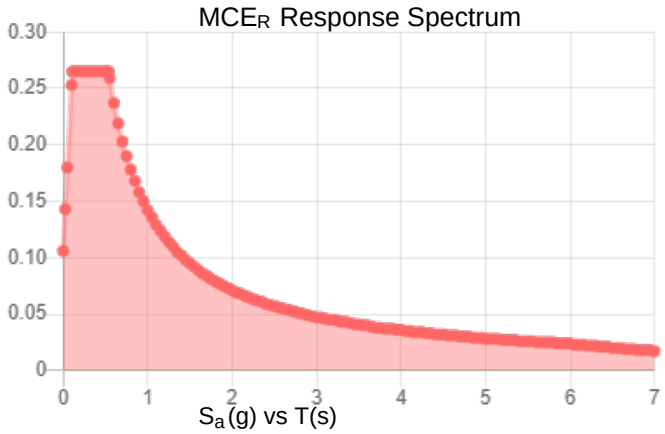
Seismic

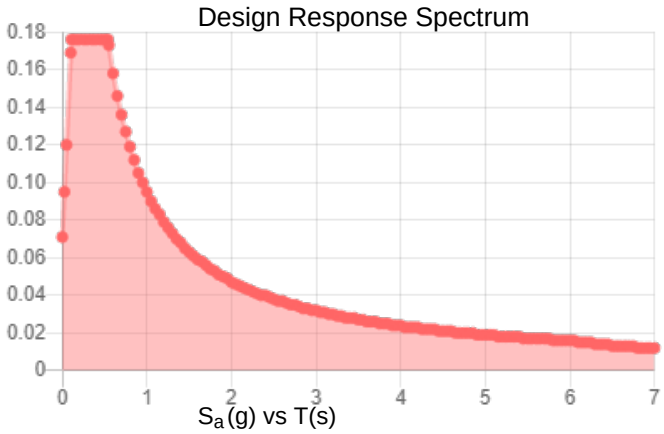
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.165	S_{DS} :	0.176
S_1 :	0.059	S_{D1} :	0.095
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.083
S_{MS} :	0.265	PGA_M :	0.132
S_{M1} :	0.142	F_{PGA} :	1.6
		I_e :	1

Seismic Design Category B





Data Accessed: Tue Nov 02 2021

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

Ice

Results:

Ice Thickness:	0.75 in.
Concurrent Temperature:	15 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Tue Nov 02 2021

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

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

APPENDIX C

SOFTWARE ANALYSIS OUTPUT

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N5	N6			Channel 3" x 1...	Beam	Channel	A36 Gr.36	Typical
2	S3	N3	N1			Standoff	Beam	Tube	A500 Gr.B...	Typical
3	M3	N9	N12			L 2"x2"x3/16"	Beam	Single Angle	A36 Gr.36	Typical
4	M4	N10	N11			L 2"x2"x3/16"	Beam	Single Angle	A36 Gr.36	Typical
5	M5	N8	N7			6.5"x0.37" Plate	Beam	RECT	A36 Gr.36	Typical
6	M6	N17	N18			Channel 3" x 1...	Beam	Channel	A36 Gr.36	Typical
7	S2	N15	N13			Standoff	Beam	Tube	A500 Gr.B...	Typical
8	M8	N21	N24			L 2"x2"x3/16"	Beam	Single Angle	A36 Gr.36	Typical
9	M9	N22	N23			L 2"x2"x3/16"	Beam	Single Angle	A36 Gr.36	Typical
10	M10	N20	N19			6.5"x0.37" Plate	Beam	RECT	A36 Gr.36	Typical
11	M11	N29	N30			Channel 3" x 1...	Beam	Channel	A36 Gr.36	Typical
12	S1	N27	N25			Standoff	Beam	Tube	A500 Gr.B...	Typical
13	M13	N33	N36			L 2"x2"x3/16"	Beam	Single Angle	A36 Gr.36	Typical
14	M14	N34	N35			L 2"x2"x3/16"	Beam	Single Angle	A36 Gr.36	Typical
15	M15	N32	N31			6.5"x0.37" Plate	Beam	RECT	A36 Gr.36	Typical
16	HOR1	N44	N45			Horizontal	Beam	Pipe	A53 Gr.B	Typical
17	HOR3	N47	N48			Horizontal	Beam	Pipe	A53 Gr.B	Typical
18	HOR2	N50	N51			Horizontal	Beam	Pipe	A53 Gr.B	Typical
19	HR1	N48A	N49			Horizontal	Beam	Pipe	A53 Gr.B	Typical
20	HR3	N50A	N51A			Horizontal	Beam	Pipe	A53 Gr.B	Typical
21	HR2	N52	N53			Horizontal	Beam	Pipe	A53 Gr.B	Typical
22	M22	N57	N63			RIGID	None	None	RIGID	Typical
23	M23	N55	N61			RIGID	None	None	RIGID	Typical
24	M24	N56	N62			RIGID	None	None	RIGID	Typical
25	M25	N59	N65			RIGID	None	None	RIGID	Typical
26	M26	N54	N60			RIGID	None	None	RIGID	Typical
27	M27	N58	N64			RIGID	None	None	RIGID	Typical
28	MP3	N67	N70			Mount Pipes	Column	Pipe	A53 Gr.B	Typical
29	MP2	N66	N69			Mount Pipes	Column	Pipe	A53 Gr.B	Typical
30	MP1	N68	N71			Mount Pipes	Column	Pipe	A53 Gr.B	Typical
31	M31	N74	N79			RIGID	None	None	RIGID	Typical
32	M32	N73	N77			RIGID	None	None	RIGID	Typical
33	M33	N75	N81			RIGID	None	None	RIGID	Typical
34	MP9	N83	N86			Mount Pipes	Column	Pipe	A53 Gr.B	Typical
35	MP8	N82	N85			Mount Pipes	Column	Pipe	A53 Gr.B	Typical
36	MP7	N84	N87			Mount Pipes	Column	Pipe	A53 Gr.B	Typical
37	M37	N89	N94			RIGID	None	None	RIGID	Typical
38	M38	N88	N92			RIGID	None	None	RIGID	Typical
39	M39	N90	N96			RIGID	None	None	RIGID	Typical
40	MP6	N98	N101			Mount Pipes	Column	Pipe	A53 Gr.B	Typical
41	MP5	N97	N100			Mount Pipes	Column	Pipe	A53 Gr.B	Typical
42	MP4	N99	N102			Mount Pipes	Column	Pipe	A53 Gr.B	Typical
43	M43	N104	N78			RIGID	None	None	RIGID	Typical
44	M44	N103	N76			RIGID	None	None	RIGID	Typical
45	M45	N105	N80			RIGID	None	None	RIGID	Typical
46	M46	N110	N93			RIGID	None	None	RIGID	Typical
47	M47	N109	N91			RIGID	None	None	RIGID	Typical
48	M48	N111	N95			RIGID	None	None	RIGID	Typical
49	M49	N46	N47A		90	Handrail Plate	Beam	Single Angle	A36 Gr.36	Typical
50	M50	N44A	N45A		90	Handrail Plate	Beam	Single Angle	A36 Gr.36	Typical
51	M51	N42A	N43		90	Handrail Plate	Beam	Single Angle	A36 Gr.36	Typical

Hot Rolled Steel Properties

	Label	E [psi]	G [psi]	Nu	Therm (/1...	Density[k/f...	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A992	2.9e+7	1.115e+7	.3	.65	.49	50	1.1	65	1.1
2	A36 Gr.36	2.9e+7	1.115e+7	.3	.65	.49	36	1.5	58	1.2
3	A572 Gr.50	2.9e+7	1.115e+7	.3	.65	.49	50	1.1	65	1.1
4	A500 Gr.B RND	2.9e+7	1.115e+7	.3	.65	.527	42	1.4	58	1.3
5	A500 Gr.B Rect	2.9e+7	1.115e+7	.3	.65	.527	46	1.4	58	1.3
6	A53 Gr.B	2.9e+7	1.115e+7	.3	.65	.49	35	1.6	60	1.2
7	A1085	2.9e+7	1.115e+7	.3	.65	.49	50	1.4	65	1.3

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design R...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	6.5"x0.37" Pl...	6.5"x0.37...	Beam	RECT	A36 Gr.36	Typical	2.405	.027	8.468	.106
2	L 2"x2"x3/16"	L2x2x3	Beam	Single Angle	A36 Gr.36	Typical	.722	.271	.271	.009
3	Handrail Plate	L2.5x2.5x3	Beam	Single Angle	A36 Gr.36	Typical	.901	.535	.535	.011
4	Horizontal	PIPE_3.5	Beam	Pipe	A53 Gr.B	Typical	2.5	4.52	4.52	9.04
5	Handrail	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
6	Mount Pipes	PIPE_2.5	Column	Pipe	A53 Gr.B	Typical	1.61	1.45	1.45	2.89
7	Standoff	HSS4X4X4	Beam	Tube	A500 Gr.B Rect	Typical	3.37	7.8	7.8	12.8
8	Channel 3" x ...	C3X5	Beam	Channel	A36 Gr.36	Typical	1.47	.241	1.85	.043

Joint Coordinates and Temperatures

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
1	N1	20.78461	0	-12	0	
2	CP	0	0	-24	0	
3	N3	55.425626	0	8	0	
4	N4	34.641016	0	-4	0	
5	N5	17.212813	0	26.186533	0	
6	N6	52.069219	0	-34.186533	0	
7	N7	65.925626	0	-10.186533	0	
8	N8	44.925626	0	26.186533	0	
9	N9	20.641016	0	20.248711	0	
10	N10	48.641016	0	-28.248711	0	
11	N11	62.925626	0	-4.990381	0	
12	N12	47.925626	0	20.990381	0	
13	N13	-0.	0	-48	0	
14	N15	-0.	0	-88	0	
15	N16	-0.	0	-64	0	
16	N17	34.856406	0	-64	0	
17	N18	-34.856406	0	-64	0	
18	N19	-21	0	-88	0	
19	N20	21	0	-88	0	
20	N21	28	0	-64	0	
21	N22	-28	0	-64	0	
22	N23	-15	0	-88	0	
23	N24	15	0	-88	0	
24	N25	-20.78461	0	-12	0	
25	N27	-55.425626	0	8	0	
26	N28	-34.641016	0	-4	0	
27	N29	-52.069219	0	-34.186533	0	
28	N30	-17.212813	0	26.186533	0	
29	N31	-44.925626	0	26.186533	0	
30	N32	-65.925626	0	-10.186533	0	
31	N33	-48.641016	0	-28.248711	0	
32	N34	-20.641016	0	20.248711	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
33	N35	-47.925626	0	20.990381	0	
34	N36	-62.925626	0	-4.990381	0	
35	N44	-48.000126	0	26.186533	0	
36	N45	48.000126	0	26.186533	0	
37	N47	67.462876	0	-7.523938	0	
38	N48	19.46275	0	-90.662595	0	
39	N50	-19.46275	0	-90.662595	0	
40	N51	-67.462876	0	-7.523938	0	
41	N42A	65.925626	40	-10.186533	0	
42	N43	44.925626	40	26.186533	0	
43	N44A	-21	40	-88	0	
44	N45A	21	40	-88	0	
45	N46	-44.925626	40	26.186533	0	
46	N47A	-65.925626	40	-10.186533	0	
47	N48A	-48.000126	40	26.186533	0	
48	N49	48.000126	40	26.186533	0	
49	N50A	67.462876	40	-7.523938	0	
50	N51A	19.46275	40	-90.662595	0	
51	N52	-19.46275	40	-90.662595	0	
52	N53	-67.462876	40	-7.523938	0	
53	N54	-0.000126	0	26.186533	0	
54	N55	-0.000126	40	26.186533	0	
55	N56	-24.000126	0	26.186533	0	
56	N57	-24.000126	40	26.186533	0	
57	N58	23.999874	0	26.186533	0	
58	N59	23.999874	40	26.186533	0	
59	N60	-0.000126	0	29.186533	0	
60	N61	-0.000126	40	29.186533	0	
61	N62	-24.000126	0	29.186533	0	
62	N63	-24.000126	40	29.186533	0	
63	N64	23.999874	0	29.186533	0	
64	N65	23.999874	40	29.186533	0	
65	N66	-0.000126	62	29.186533	0	
66	N67	-24.000126	62	29.186533	0	
67	N68	23.999874	62	29.186533	0	
68	N69	-0.000126	-22	29.186533	0	
69	N70	-24.000126	-22	29.186533	0	
70	N71	23.999874	-22	29.186533	0	
71	N73	43.462876	40	-49.093158	0	
72	N74	55.462876	40	-28.308548	0	
73	N75	31.462876	40	-69.877767	0	
74	N76	46.060952	0	-50.593158	0	
75	N77	46.060952	40	-50.593158	0	
76	N78	58.060952	0	-29.808548	0	
77	N79	58.060952	40	-29.808548	0	
78	N80	34.060952	0	-71.377767	0	
79	N81	34.060952	40	-71.377767	0	
80	N82	46.060952	62	-50.593158	0	
81	N83	58.060952	62	-29.808548	0	
82	N84	34.060952	62	-71.377767	0	
83	N85	46.060952	-22	-50.593158	0	
84	N86	58.060952	-22	-29.808548	0	
85	N87	34.060952	-22	-71.377767	0	
86	N88	-43.46275	40	-49.093376	0	
87	N89	-31.46275	40	-69.877985	0	
88	N90	-55.46275	40	-28.308766	0	
89	N91	-46.060826	0	-50.593376	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
90	N92	-46.060826	40	-50.593376	0	
91	N93	-34.060826	0	-71.377985	0	
92	N94	-34.060826	40	-71.377985	0	
93	N95	-58.060826	0	-29.808766	0	
94	N96	-58.060826	40	-29.808766	0	
95	N97	-46.060826	62	-50.593376	0	
96	N98	-34.060826	62	-71.377985	0	
97	N99	-58.060826	62	-29.808766	0	
98	N100	-46.060826	-22	-50.593376	0	
99	N101	-34.060826	-22	-71.377985	0	
100	N102	-58.060826	-22	-29.808766	0	
101	N103	43.462876	0	-49.093158	0	
102	N104	55.462876	0	-28.308548	0	
103	N105	31.462876	0	-69.877767	0	
104	N109	-43.46275	0	-49.093376	0	
105	N110	-31.46275	0	-69.877985	0	
106	N111	-55.46275	0	-28.308766	0	

Hot Rolled Steel Design Parameters

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torqu...	Kyy	Kzz	Cb	Function
1	M1	Channel 3" ...	69.713	28	28	28	28	28				Lateral
2	S3	Standoff	40	24	24	24	24	24				Lateral
3	M3	L 2"x2"x3/16"	27.295			Lbyy						Lateral
4	M4	L 2"x2"x3/16"	27.295			Lbyy						Lateral
5	M5	6.5"x0.37" P...	42			Lbyy						Lateral
6	M6	Channel 3" ...	69.713	28	28	28	28	28				Lateral
7	S2	Standoff	40	24	24	24	24	24				Lateral
8	M8	L 2"x2"x3/16"	27.295			Lbyy						Lateral
9	M9	L 2"x2"x3/16"	27.295			Lbyy						Lateral
10	M10	6.5"x0.37" P...	42			Lbyy						Lateral
11	M11	Channel 3" ...	69.713	28	28	28	28	28				Lateral
12	S1	Standoff	40	24	24	24	24	24				Lateral
13	M13	L 2"x2"x3/16"	27.295			Lbyy						Lateral
14	M14	L 2"x2"x3/16"	27.295			Lbyy						Lateral
15	M15	6.5"x0.37" P...	42			Lbyy						Lateral
16	HOR1	Horizontal	96	34.5	34.5	34.5	34.5	34.5				Lateral
17	HOR3	Horizontal	96	34.5	34.5	34.5	34.5	34.5				Lateral
18	HOR2	Horizontal	96	34.5	34.5	34.5	34.5	34.5				Lateral
19	HR1	Horizontal	96	34.5	34.5	34.5	34.5	34.5				Lateral
20	HR3	Horizontal	96	34.5	34.5	34.5	34.5	34.5				Lateral
21	HR2	Horizontal	96	34.5	34.5	34.5	34.5	34.5				Lateral
22	MP3	Mount Pipes	84									Lateral
23	MP2	Mount Pipes	84									Lateral
24	MP1	Mount Pipes	84									Lateral
25	MP9	Mount Pipes	84									Lateral
26	MP8	Mount Pipes	84									Lateral
27	MP7	Mount Pipes	84									Lateral
28	MP6	Mount Pipes	84									Lateral
29	MP5	Mount Pipes	84									Lateral
30	MP4	Mount Pipes	84									Lateral
31	M49	Handrail Pla...	42			Lbyy						Lateral
32	M50	Handrail Pla...	42			Lbyy						Lateral
33	M51	Handrail Pla...	42			Lbyy						Lateral

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(P...
1	Self Weight	DL		-1			13		3	
2	Wind Load AZI 0	WLZ					26			
3	Wind Load AZI 30	None					26			
4	Wind Load AZI 60	None					26			
5	Wind Load AZI 90	WLX					26			
6	Wind Load AZI 120	None					26			
7	Wind Load AZI 150	None					26			
8	Wind Load AZI 180	None					26			
9	Wind Load AZI 210	None					26			
10	Wind Load AZI 240	None					26			
11	Wind Load AZI 270	None					26			
12	Wind Load AZI 300	None					26			
13	Wind Load AZI 330	None					26			
14	Distr. Wind Load Z	WLZ						51		
15	Distr. Wind Load X	WLX						51		
16	Ice Weight	OL1					13	51	3	
17	Ice Wind Load AZI 0	OL2					26			
18	Ice Wind Load AZI 30	None					26			
19	Ice Wind Load AZI 60	None					26			
20	Ice Wind Load AZI 90	OL3					26			
21	Ice Wind Load AZI 120	None					26			
22	Ice Wind Load AZI 150	None					26			
23	Ice Wind Load AZI 180	None					26			
24	Ice Wind Load AZI 210	None					26			
25	Ice Wind Load AZI 240	None					26			
26	Ice Wind Load AZI 270	None					26			
27	Ice Wind Load AZI 300	None					26			
28	Ice Wind Load AZI 330	None					26			
29	Distr. Ice Wind Load Z	OL2						51		
30	Distr. Ice Wind Load X	OL3						51		
31	Seismic Load Z	ELZ			-.309		13			
32	Seismic Load X	ELX	-.309				13			
33	Service Live Loads	LL				1				
34	Maintenance Load 1	LL				1				
35	Maintenance Load 2	LL				1				
36	Maintenance Load 3	LL				1				
37	Maintenance Load 4	LL				1				
38	Maintenance Load 5	LL				1				
39	Maintenance Load 6	LL				1				
40	Maintenance Load 7	LL				1				
41	Maintenance Load 8	LL				1				
42	Maintenance Load 9	LL				1				
43	BLC 1 Transient Area...	None						9		
44	BLC 16 Transient Are...	None						9		

Joint Loads and Enforced Displacements (BLC 33 : Service Live Loads)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2...
1	N45	L	Y	-250

Joint Loads and Enforced Displacements (BLC 34 : Maintenance Load 1)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2...
1	N56	L	Y	-500

Joint Loads and Enforced Displacements (BLC 35 : Maintenance Load 2)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2...
1	N54	L	Y	-500

Joint Loads and Enforced Displacements (BLC 36 : Maintenance Load 3)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2...
1	N58	L	Y	-500

Joint Loads and Enforced Displacements (BLC 37 : Maintenance Load 4)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2...
1	N104	L	Y	-500

Joint Loads and Enforced Displacements (BLC 38 : Maintenance Load 5)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2...
1	N103	L	Y	-500

Joint Loads and Enforced Displacements (BLC 39 : Maintenance Load 6)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2...
1	N105	L	Y	-500

Joint Loads and Enforced Displacements (BLC 40 : Maintenance Load 7)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2...
1	N110	L	Y	-500

Joint Loads and Enforced Displacements (BLC 41 : Maintenance Load 8)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2...
1	N109	L	Y	-500

Joint Loads and Enforced Displacements (BLC 42 : Maintenance Load 9)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2...
1	N111	L	Y	-500

Member Point Loads (BLC 1 : Self Weight)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	Y	-41.25	6
2	MP1	Y	-41.25	66
3	MP1	Y	-63.9	20
4	MP1	Y	-75	40
5	MP1	Y	-21.85	60
6	MP4	Y	-41.25	6
7	MP4	Y	-41.25	66
8	MP4	Y	-63.9	20
9	MP4	Y	-75	40
10	MP7	Y	-41.25	6
11	MP7	Y	-41.25	66
12	MP7	Y	-63.9	20
13	MP7	Y	-75	40

Member Point Loads (BLC 2 : Wind Load AZI 0)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	0	6
2	MP2	Z	-155.9	6
3	MP1	X	0	66

Member Point Loads (BLC 2 : Wind Load AZI 0) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
4	MP1	Z	-155.9	66
5	MP1	X	0	20
6	MP1	Z	-76.43	20
7	MP1	X	0	40
8	MP1	Z	-76.43	40
9	MP1	X	0	60
10	MP1	Z	-78.32	60
11	MP4	X	0	6
12	MP4	Z	-85.83	6
13	MP4	X	0	66
14	MP4	Z	-85.83	66
15	MP4	X	0	20
16	MP4	Z	-47.75	20
17	MP4	X	0	40
18	MP4	Z	-52.08	40
19	MP7	X	0	6
20	MP7	Z	-85.83	6
21	MP7	X	0	66
22	MP7	Z	-85.83	66
23	MP7	X	0	20
24	MP7	Z	-47.75	20
25	MP7	X	0	40
26	MP7	Z	-52.08	40

Member Point Loads (BLC 3 : Wind Load AZI 30)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	-66.27	6
2	MP2	Z	-114.79	6
3	MP1	X	-66.27	66
4	MP1	Z	-114.79	66
5	MP1	X	-33.44	20
6	MP1	Z	-57.91	20
7	MP1	X	-34.16	40
8	MP1	Z	-59.16	40
9	MP1	X	-35.05	60
10	MP1	Z	-60.71	60
11	MP4	X	-66.27	6
12	MP4	Z	-114.79	6
13	MP4	X	-66.27	66
14	MP4	Z	-114.79	66
15	MP4	X	-33.44	20
16	MP4	Z	-57.91	20
17	MP4	X	-34.16	40
18	MP4	Z	-59.16	40
19	MP7	X	-31.24	6
20	MP7	Z	-54.11	6
21	MP7	X	-31.24	66
22	MP7	Z	-54.11	66
23	MP7	X	-19.1	20
24	MP7	Z	-33.08	20
25	MP7	X	-21.98	40
26	MP7	Z	-38.08	40

Member Point Loads (BLC 4 : Wind Load AZI 60)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	-74.34	6

Member Point Loads (BLC 4 : Wind Load AZI 60) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
2	MP2	Z	-42.92	6
3	MP1	X	-74.34	66
4	MP1	Z	-42.92	66
5	MP1	X	-41.36	20
6	MP1	Z	-23.88	20
7	MP1	X	-45.11	40
8	MP1	Z	-26.04	40
9	MP1	X	-46.49	60
10	MP1	Z	-26.84	60
11	MP4	X	-135.02	6
12	MP4	Z	-77.95	6
13	MP4	X	-135.02	66
14	MP4	Z	-77.95	66
15	MP4	X	-66.19	20
16	MP4	Z	-38.22	20
17	MP4	X	-66.19	40
18	MP4	Z	-38.22	40
19	MP7	X	-74.34	6
20	MP7	Z	-42.92	6
21	MP7	X	-74.34	66
22	MP7	Z	-42.92	66
23	MP7	X	-41.36	20
24	MP7	Z	-23.88	20
25	MP7	X	-45.11	40
26	MP7	Z	-26.04	40

Member Point Loads (BLC 5 : Wind Load AZI 90)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	-62.48	6
2	MP2	Z	0	6
3	MP1	X	-62.48	66
4	MP1	Z	0	66
5	MP1	X	-38.19	20
6	MP1	Z	0	20
7	MP1	X	-43.97	40
8	MP1	Z	0	40
9	MP1	X	-45.47	60
10	MP1	Z	0	60
11	MP4	X	-132.55	6
12	MP4	Z	0	6
13	MP4	X	-132.55	66
14	MP4	Z	0	66
15	MP4	X	-66.87	20
16	MP4	Z	0	20
17	MP4	X	-68.32	40
18	MP4	Z	0	40
19	MP7	X	-132.55	6
20	MP7	Z	0	6
21	MP7	X	-132.55	66
22	MP7	Z	0	66
23	MP7	X	-66.87	20
24	MP7	Z	0	20
25	MP7	X	-68.32	40
26	MP7	Z	0	40

Member Point Loads (BLC 6 : Wind Load AZI 120)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	-74.34	6
2	MP2	Z	42.92	6
3	MP1	X	-74.34	66
4	MP1	Z	42.92	66
5	MP1	X	-41.36	20
6	MP1	Z	23.88	20
7	MP1	X	-45.11	40
8	MP1	Z	26.04	40
9	MP1	X	-46.49	60
10	MP1	Z	26.84	60
11	MP4	X	-74.34	6
12	MP4	Z	42.92	6
13	MP4	X	-74.34	66
14	MP4	Z	42.92	66
15	MP4	X	-41.36	20
16	MP4	Z	23.88	20
17	MP4	X	-45.11	40
18	MP4	Z	26.04	40
19	MP7	X	-135.02	6
20	MP7	Z	77.95	6
21	MP7	X	-135.02	66
22	MP7	Z	77.95	66
23	MP7	X	-66.19	20
24	MP7	Z	38.22	20
25	MP7	X	-66.19	40
26	MP7	Z	38.22	40

Member Point Loads (BLC 7 : Wind Load AZI 150)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	-66.27	6
2	MP2	Z	114.79	6
3	MP1	X	-66.27	66
4	MP1	Z	114.79	66
5	MP1	X	-33.44	20
6	MP1	Z	57.91	20
7	MP1	X	-34.16	40
8	MP1	Z	59.16	40
9	MP1	X	-35.05	60
10	MP1	Z	60.71	60
11	MP4	X	-31.24	6
12	MP4	Z	54.11	6
13	MP4	X	-31.24	66
14	MP4	Z	54.11	66
15	MP4	X	-19.1	20
16	MP4	Z	33.08	20
17	MP4	X	-21.98	40
18	MP4	Z	38.08	40
19	MP7	X	-66.27	6
20	MP7	Z	114.79	6
21	MP7	X	-66.27	66
22	MP7	Z	114.79	66
23	MP7	X	-33.44	20
24	MP7	Z	57.91	20
25	MP7	X	-34.16	40
26	MP7	Z	59.16	40

Member Point Loads (BLC 8 : Wind Load AZI 180)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	0	6
2	MP2	Z	155.9	6
3	MP1	X	0	66
4	MP1	Z	155.9	66
5	MP1	X	0	20
6	MP1	Z	76.43	20
7	MP1	X	0	40
8	MP1	Z	76.43	40
9	MP1	X	0	60
10	MP1	Z	78.32	60
11	MP4	X	0	6
12	MP4	Z	85.83	6
13	MP4	X	0	66
14	MP4	Z	85.83	66
15	MP4	X	0	20
16	MP4	Z	47.75	20
17	MP4	X	0	40
18	MP4	Z	52.08	40
19	MP7	X	0	6
20	MP7	Z	85.83	6
21	MP7	X	0	66
22	MP7	Z	85.83	66
23	MP7	X	0	20
24	MP7	Z	47.75	20
25	MP7	X	0	40
26	MP7	Z	52.08	40

Member Point Loads (BLC 9 : Wind Load AZI 210)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	66.27	6
2	MP2	Z	114.79	6
3	MP1	X	66.27	66
4	MP1	Z	114.79	66
5	MP1	X	33.44	20
6	MP1	Z	57.91	20
7	MP1	X	34.16	40
8	MP1	Z	59.16	40
9	MP1	X	35.05	60
10	MP1	Z	60.71	60
11	MP4	X	66.27	6
12	MP4	Z	114.79	6
13	MP4	X	66.27	66
14	MP4	Z	114.79	66
15	MP4	X	33.44	20
16	MP4	Z	57.91	20
17	MP4	X	34.16	40
18	MP4	Z	59.16	40
19	MP7	X	31.24	6
20	MP7	Z	54.11	6
21	MP7	X	31.24	66
22	MP7	Z	54.11	66
23	MP7	X	19.1	20
24	MP7	Z	33.08	20
25	MP7	X	21.98	40
26	MP7	Z	38.08	40

Member Point Loads (BLC 10 : Wind Load AZI 240)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	74.34	6
2	MP2	Z	42.92	6
3	MP1	X	74.34	66
4	MP1	Z	42.92	66
5	MP1	X	41.36	20
6	MP1	Z	23.88	20
7	MP1	X	45.11	40
8	MP1	Z	26.04	40
9	MP1	X	46.49	60
10	MP1	Z	26.84	60
11	MP4	X	135.02	6
12	MP4	Z	77.95	6
13	MP4	X	135.02	66
14	MP4	Z	77.95	66
15	MP4	X	66.19	20
16	MP4	Z	38.22	20
17	MP4	X	66.19	40
18	MP4	Z	38.22	40
19	MP7	X	74.34	6
20	MP7	Z	42.92	6
21	MP7	X	74.34	66
22	MP7	Z	42.92	66
23	MP7	X	41.36	20
24	MP7	Z	23.88	20
25	MP7	X	45.11	40
26	MP7	Z	26.04	40

Member Point Loads (BLC 11 : Wind Load AZI 270)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	62.48	6
2	MP2	Z	0	6
3	MP1	X	62.48	66
4	MP1	Z	0	66
5	MP1	X	38.19	20
6	MP1	Z	0	20
7	MP1	X	43.97	40
8	MP1	Z	0	40
9	MP1	X	45.47	60
10	MP1	Z	0	60
11	MP4	X	132.55	6
12	MP4	Z	0	6
13	MP4	X	132.55	66
14	MP4	Z	0	66
15	MP4	X	66.87	20
16	MP4	Z	0	20
17	MP4	X	68.32	40
18	MP4	Z	0	40
19	MP7	X	132.55	6
20	MP7	Z	0	6
21	MP7	X	132.55	66
22	MP7	Z	0	66
23	MP7	X	66.87	20
24	MP7	Z	0	20
25	MP7	X	68.32	40
26	MP7	Z	0	40

Member Point Loads (BLC 12 : Wind Load AZI 300)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	74.34	6
2	MP2	Z	-42.92	6
3	MP1	X	74.34	66
4	MP1	Z	-42.92	66
5	MP1	X	41.36	20
6	MP1	Z	-23.88	20
7	MP1	X	45.11	40
8	MP1	Z	-26.04	40
9	MP1	X	46.49	60
10	MP1	Z	-26.84	60
11	MP4	X	74.34	6
12	MP4	Z	-42.92	6
13	MP4	X	74.34	66
14	MP4	Z	-42.92	66
15	MP4	X	41.36	20
16	MP4	Z	-23.88	20
17	MP4	X	45.11	40
18	MP4	Z	-26.04	40
19	MP7	X	135.02	6
20	MP7	Z	-77.95	6
21	MP7	X	135.02	66
22	MP7	Z	-77.95	66
23	MP7	X	66.19	20
24	MP7	Z	-38.22	20
25	MP7	X	66.19	40
26	MP7	Z	-38.22	40

Member Point Loads (BLC 13 : Wind Load AZI 330)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	66.27	6
2	MP2	Z	-114.79	6
3	MP1	X	66.27	66
4	MP1	Z	-114.79	66
5	MP1	X	33.44	20
6	MP1	Z	-57.91	20
7	MP1	X	34.16	40
8	MP1	Z	-59.16	40
9	MP1	X	35.05	60
10	MP1	Z	-60.71	60
11	MP4	X	31.24	6
12	MP4	Z	-54.11	6
13	MP4	X	31.24	66
14	MP4	Z	-54.11	66
15	MP4	X	19.1	20
16	MP4	Z	-33.08	20
17	MP4	X	21.98	40
18	MP4	Z	-38.08	40
19	MP7	X	66.27	6
20	MP7	Z	-114.79	6
21	MP7	X	66.27	66
22	MP7	Z	-114.79	66
23	MP7	X	33.44	20
24	MP7	Z	-57.91	20
25	MP7	X	34.16	40
26	MP7	Z	-59.16	40

Member Point Loads (BLC 16 : Ice Weight)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	Y	-136.993	6
2	MP1	Y	-136.993	66
3	MP1	Y	-67.112	20
4	MP1	Y	-71.515	40
5	MP1	Y	-70.477	60
6	MP4	Y	-136.993	6
7	MP4	Y	-136.993	66
8	MP4	Y	-67.112	20
9	MP4	Y	-71.515	40
10	MP7	Y	-136.993	6
11	MP7	Y	-136.993	66
12	MP7	Y	-67.112	20
13	MP7	Y	-71.515	40

Member Point Loads (BLC 17 : Ice Wind Load AZI 0)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	0	6
2	MP2	Z	-21.67	6
3	MP1	X	0	66
4	MP1	Z	-21.67	66
5	MP1	X	0	20
6	MP1	Z	-8.35	20
7	MP1	X	0	40
8	MP1	Z	-8.35	40
9	MP1	X	0	60
10	MP1	Z	-8.52	60
11	MP4	X	0	6
12	MP4	Z	-16.08	6
13	MP4	X	0	66
14	MP4	Z	-16.08	66
15	MP4	X	0	20
16	MP4	Z	-6.55	20
17	MP4	X	0	40
18	MP4	Z	-6.79	40
19	MP7	X	0	6
20	MP7	Z	-16.08	6
21	MP7	X	0	66
22	MP7	Z	-16.08	66
23	MP7	X	0	20
24	MP7	Z	-6.55	20
25	MP7	X	0	40
26	MP7	Z	-6.79	40

Member Point Loads (BLC 18 : Ice Wind Load AZI 30)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	-9.9	6
2	MP2	Z	-17.15	6
3	MP1	X	-9.9	66
4	MP1	Z	-17.15	66
5	MP1	X	-3.87	20
6	MP1	Z	-6.71	20
7	MP1	X	-3.91	40
8	MP1	Z	-6.78	40
9	MP1	X	-4.03	60
10	MP1	Z	-6.97	60
11	MP4	X	-9.9	6

Member Point Loads (BLC 18 : Ice Wind Load AZI 30) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
12	MP4	Z	-17.15	6
13	MP4	X	-9.9	66
14	MP4	Z	-17.15	66
15	MP4	X	-3.87	20
16	MP4	Z	-6.71	20
17	MP4	X	-3.91	40
18	MP4	Z	-6.78	40
19	MP7	X	-7.11	6
20	MP7	Z	-12.31	6
21	MP7	X	-7.11	66
22	MP7	Z	-12.31	66
23	MP7	X	-2.98	20
24	MP7	Z	-5.15	20
25	MP7	X	-3.13	40
26	MP7	Z	-5.43	40

Member Point Loads (BLC 19 : Ice Wind Load AZI 60)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	-13.92	6
2	MP2	Z	-8.04	6
3	MP1	X	-13.92	66
4	MP1	Z	-8.04	66
5	MP1	X	-5.67	20
6	MP1	Z	-3.28	20
7	MP1	X	-5.88	40
8	MP1	Z	-3.39	40
9	MP1	X	-6.16	60
10	MP1	Z	-3.56	60
11	MP4	X	-18.77	6
12	MP4	Z	-10.84	6
13	MP4	X	-18.77	66
14	MP4	Z	-10.84	66
15	MP4	X	-7.23	20
16	MP4	Z	-4.17	20
17	MP4	X	-7.23	40
18	MP4	Z	-4.17	40
19	MP7	X	-13.92	6
20	MP7	Z	-8.04	6
21	MP7	X	-13.92	66
22	MP7	Z	-8.04	66
23	MP7	X	-5.67	20
24	MP7	Z	-3.28	20
25	MP7	X	-5.88	40
26	MP7	Z	-3.39	40

Member Point Loads (BLC 20 : Ice Wind Load AZI 90)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	-14.21	6
2	MP2	Z	0	6
3	MP1	X	-14.21	66
4	MP1	Z	0	66
5	MP1	X	-5.95	20
6	MP1	Z	0	20
7	MP1	X	-6.27	40
8	MP1	Z	0	40
9	MP1	X	-6.65	60

Member Point Loads (BLC 20 : Ice Wind Load AZI 90) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
10	MP1	Z	0	60
11	MP4	X	-19.81	6
12	MP4	Z	0	6
13	MP4	X	-19.81	66
14	MP4	Z	0	66
15	MP4	X	-7.75	20
16	MP4	Z	0	20
17	MP4	X	-7.83	40
18	MP4	Z	0	40
19	MP7	X	-19.81	6
20	MP7	Z	0	6
21	MP7	X	-19.81	66
22	MP7	Z	0	66
23	MP7	X	-7.75	20
24	MP7	Z	0	20
25	MP7	X	-7.83	40
26	MP7	Z	0	40

Member Point Loads (BLC 21 : Ice Wind Load AZI 120)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	-13.92	6
2	MP2	Z	8.04	6
3	MP1	X	-13.92	66
4	MP1	Z	8.04	66
5	MP1	X	-5.67	20
6	MP1	Z	3.28	20
7	MP1	X	-5.88	40
8	MP1	Z	3.39	40
9	MP1	X	-6.16	60
10	MP1	Z	3.56	60
11	MP4	X	-13.92	6
12	MP4	Z	8.04	6
13	MP4	X	-13.92	66
14	MP4	Z	8.04	66
15	MP4	X	-5.67	20
16	MP4	Z	3.28	20
17	MP4	X	-5.88	40
18	MP4	Z	3.39	40
19	MP7	X	-18.77	6
20	MP7	Z	10.84	6
21	MP7	X	-18.77	66
22	MP7	Z	10.84	66
23	MP7	X	-7.23	20
24	MP7	Z	4.17	20
25	MP7	X	-7.23	40
26	MP7	Z	4.17	40

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	-9.9	6
2	MP2	Z	17.15	6
3	MP1	X	-9.9	66
4	MP1	Z	17.15	66
5	MP1	X	-3.87	20
6	MP1	Z	6.71	20
7	MP1	X	-3.91	40

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
8	MP1	Z	6.78	40
9	MP1	X	-4.03	60
10	MP1	Z	6.97	60
11	MP4	X	-7.11	6
12	MP4	Z	12.31	6
13	MP4	X	-7.11	66
14	MP4	Z	12.31	66
15	MP4	X	-2.98	20
16	MP4	Z	5.15	20
17	MP4	X	-3.13	40
18	MP4	Z	5.43	40
19	MP7	X	-9.9	6
20	MP7	Z	17.15	6
21	MP7	X	-9.9	66
22	MP7	Z	17.15	66
23	MP7	X	-3.87	20
24	MP7	Z	6.71	20
25	MP7	X	-3.91	40
26	MP7	Z	6.78	40

Member Point Loads (BLC 23 : Ice Wind Load AZI 180)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	0	6
2	MP2	Z	21.67	6
3	MP1	X	0	66
4	MP1	Z	21.67	66
5	MP1	X	0	20
6	MP1	Z	8.35	20
7	MP1	X	0	40
8	MP1	Z	8.35	40
9	MP1	X	0	60
10	MP1	Z	8.52	60
11	MP4	X	0	6
12	MP4	Z	16.08	6
13	MP4	X	0	66
14	MP4	Z	16.08	66
15	MP4	X	0	20
16	MP4	Z	6.55	20
17	MP4	X	0	40
18	MP4	Z	6.79	40
19	MP7	X	0	6
20	MP7	Z	16.08	6
21	MP7	X	0	66
22	MP7	Z	16.08	66
23	MP7	X	0	20
24	MP7	Z	6.55	20
25	MP7	X	0	40
26	MP7	Z	6.79	40

Member Point Loads (BLC 24 : Ice Wind Load AZI 210)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	9.9	6
2	MP2	Z	17.15	6
3	MP1	X	9.9	66
4	MP1	Z	17.15	66
5	MP1	X	3.87	20

Member Point Loads (BLC 24 : Ice Wind Load AZI 210) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
6	MP1	Z	6.71	20
7	MP1	X	3.91	40
8	MP1	Z	6.78	40
9	MP1	X	4.03	60
10	MP1	Z	6.97	60
11	MP4	X	9.9	6
12	MP4	Z	17.15	6
13	MP4	X	9.9	66
14	MP4	Z	17.15	66
15	MP4	X	3.87	20
16	MP4	Z	6.71	20
17	MP4	X	3.91	40
18	MP4	Z	6.78	40
19	MP7	X	7.11	6
20	MP7	Z	12.31	6
21	MP7	X	7.11	66
22	MP7	Z	12.31	66
23	MP7	X	2.98	20
24	MP7	Z	5.15	20
25	MP7	X	3.13	40
26	MP7	Z	5.43	40

Member Point Loads (BLC 25 : Ice Wind Load AZI 240)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	13.92	6
2	MP2	Z	8.04	6
3	MP1	X	13.92	66
4	MP1	Z	8.04	66
5	MP1	X	5.67	20
6	MP1	Z	3.28	20
7	MP1	X	5.88	40
8	MP1	Z	3.39	40
9	MP1	X	6.16	60
10	MP1	Z	3.56	60
11	MP4	X	18.77	6
12	MP4	Z	10.84	6
13	MP4	X	18.77	66
14	MP4	Z	10.84	66
15	MP4	X	7.23	20
16	MP4	Z	4.17	20
17	MP4	X	7.23	40
18	MP4	Z	4.17	40
19	MP7	X	13.92	6
20	MP7	Z	8.04	6
21	MP7	X	13.92	66
22	MP7	Z	8.04	66
23	MP7	X	5.67	20
24	MP7	Z	3.28	20
25	MP7	X	5.88	40
26	MP7	Z	3.39	40

Member Point Loads (BLC 26 : Ice Wind Load AZI 270)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	14.21	6
2	MP2	Z	0	6
3	MP1	X	14.21	66

Member Point Loads (BLC 26 : Ice Wind Load AZI 270) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
4	MP1	Z	0	66
5	MP1	X	5.95	20
6	MP1	Z	0	20
7	MP1	X	6.27	40
8	MP1	Z	0	40
9	MP1	X	6.65	60
10	MP1	Z	0	60
11	MP4	X	19.81	6
12	MP4	Z	0	6
13	MP4	X	19.81	66
14	MP4	Z	0	66
15	MP4	X	7.75	20
16	MP4	Z	0	20
17	MP4	X	7.83	40
18	MP4	Z	0	40
19	MP7	X	19.81	6
20	MP7	Z	0	6
21	MP7	X	19.81	66
22	MP7	Z	0	66
23	MP7	X	7.75	20
24	MP7	Z	0	20
25	MP7	X	7.83	40
26	MP7	Z	0	40

Member Point Loads (BLC 27 : Ice Wind Load AZI 300)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	13.92	6
2	MP2	Z	-8.04	6
3	MP1	X	13.92	66
4	MP1	Z	-8.04	66
5	MP1	X	5.67	20
6	MP1	Z	-3.28	20
7	MP1	X	5.88	40
8	MP1	Z	-3.39	40
9	MP1	X	6.16	60
10	MP1	Z	-3.56	60
11	MP4	X	13.92	6
12	MP4	Z	-8.04	6
13	MP4	X	13.92	66
14	MP4	Z	-8.04	66
15	MP4	X	5.67	20
16	MP4	Z	-3.28	20
17	MP4	X	5.88	40
18	MP4	Z	-3.39	40
19	MP7	X	18.77	6
20	MP7	Z	-10.84	6
21	MP7	X	18.77	66
22	MP7	Z	-10.84	66
23	MP7	X	7.23	20
24	MP7	Z	-4.17	20
25	MP7	X	7.23	40
26	MP7	Z	-4.17	40

Member Point Loads (BLC 28 : Ice Wind Load AZI 330)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	9.9	6

Member Point Loads (BLC 28 : Ice Wind Load AZI 330) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
2	MP2	Z	-17.15	6
3	MP1	X	9.9	66
4	MP1	Z	-17.15	66
5	MP1	X	3.87	20
6	MP1	Z	-6.71	20
7	MP1	X	3.91	40
8	MP1	Z	-6.78	40
9	MP1	X	4.03	60
10	MP1	Z	-6.97	60
11	MP4	X	7.11	6
12	MP4	Z	-12.31	6
13	MP4	X	7.11	66
14	MP4	Z	-12.31	66
15	MP4	X	2.98	20
16	MP4	Z	-5.15	20
17	MP4	X	3.13	40
18	MP4	Z	-5.43	40
19	MP7	X	9.9	6
20	MP7	Z	-17.15	6
21	MP7	X	9.9	66
22	MP7	Z	-17.15	66
23	MP7	X	3.87	20
24	MP7	Z	-6.71	20
25	MP7	X	3.91	40
26	MP7	Z	-6.78	40

Member Point Loads (BLC 31 : Seismic Load Z)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	Z	-12.738	6
2	MP1	Z	-12.738	66
3	MP1	Z	-19.732	20
4	MP1	Z	-23.16	40
5	MP1	Z	-6.747	60
6	MP4	Z	-12.738	6
7	MP4	Z	-12.738	66
8	MP4	Z	-19.732	20
9	MP4	Z	-23.16	40
10	MP7	Z	-12.738	6
11	MP7	Z	-12.738	66
12	MP7	Z	-19.732	20
13	MP7	Z	-23.16	40

Member Point Loads (BLC 32 : Seismic Load X)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	X	-12.738	6
2	MP1	X	-12.738	66
3	MP1	X	-19.732	20
4	MP1	X	-23.16	40
5	MP1	X	-6.747	60
6	MP4	X	-12.738	6
7	MP4	X	-12.738	66
8	MP4	X	-19.732	20
9	MP4	X	-23.16	40
10	MP7	X	-12.738	6
11	MP7	X	-12.738	66
12	MP7	X	-19.732	20

Member Point Loads (BLC 32 : Seismic Load X) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
13	MP7	X	-23.16	40

Member Distributed Loads (BLC 14 : Distr. Wind Load Z)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
1	M1	SZ	-86.505	-86.505	0	%100
2	S3	SZ	-86.505	-86.505	0	%100
3	M3	SZ	-86.505	-86.505	0	%100
4	M4	SZ	-86.505	-86.505	0	%100
5	M5	SZ	-86.505	-86.505	0	%100
6	M6	SZ	-86.505	-86.505	0	%100
7	S2	SZ	-86.505	-86.505	0	%100
8	M8	SZ	-86.505	-86.505	0	%100
9	M9	SZ	-86.505	-86.505	0	%100
10	M10	SZ	-86.505	-86.505	0	%100
11	M11	SZ	-86.505	-86.505	0	%100
12	S1	SZ	-86.505	-86.505	0	%100
13	M13	SZ	-86.505	-86.505	0	%100
14	M14	SZ	-86.505	-86.505	0	%100
15	M15	SZ	-86.505	-86.505	0	%100
16	HOR1	SZ	-51.903	-51.903	0	%100
17	HOR3	SZ	-51.903	-51.903	0	%100
18	HOR2	SZ	-51.903	-51.903	0	%100
19	HR1	SZ	-51.903	-51.903	0	%100
20	HR3	SZ	-51.903	-51.903	0	%100
21	HR2	SZ	-51.903	-51.903	0	%100
22	M22	SZ	0	0	0	%100
23	M23	SZ	0	0	0	%100
24	M24	SZ	0	0	0	%100
25	M25	SZ	0	0	0	%100
26	M26	SZ	0	0	0	%100
27	M27	SZ	0	0	0	%100
28	MP3	SZ	-51.903	-51.903	0	%100
29	MP2	SZ	-51.903	-51.903	0	%100
30	MP1	SZ	-51.903	-51.903	0	%100
31	M31	SZ	0	0	0	%100
32	M32	SZ	0	0	0	%100
33	M33	SZ	0	0	0	%100
34	MP9	SZ	-51.903	-51.903	0	%100
35	MP8	SZ	-51.903	-51.903	0	%100
36	MP7	SZ	-51.903	-51.903	0	%100
37	M37	SZ	0	0	0	%100
38	M38	SZ	0	0	0	%100
39	M39	SZ	0	0	0	%100
40	MP6	SZ	-51.903	-51.903	0	%100
41	MP5	SZ	-51.903	-51.903	0	%100
42	MP4	SZ	-51.903	-51.903	0	%100
43	M43	SZ	0	0	0	%100
44	M44	SZ	0	0	0	%100
45	M45	SZ	0	0	0	%100
46	M46	SZ	0	0	0	%100
47	M47	SZ	0	0	0	%100
48	M48	SZ	0	0	0	%100
49	M49	SZ	-86.505	-86.505	0	%100
50	M50	SZ	-86.505	-86.505	0	%100
51	M51	SZ	-86.505	-86.505	0	%100

Member Distributed Loads (BLC 15 : Distr. Wind Load X)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
1	M1	SX	-86.505	-86.505	0	%100
2	S3	SX	-86.505	-86.505	0	%100
3	M3	SX	-86.505	-86.505	0	%100
4	M4	SX	-86.505	-86.505	0	%100
5	M5	SX	-86.505	-86.505	0	%100
6	M6	SX	-86.505	-86.505	0	%100
7	S2	SX	-86.505	-86.505	0	%100
8	M8	SX	-86.505	-86.505	0	%100
9	M9	SX	-86.505	-86.505	0	%100
10	M10	SX	-86.505	-86.505	0	%100
11	M11	SX	-86.505	-86.505	0	%100
12	S1	SX	-86.505	-86.505	0	%100
13	M13	SX	-86.505	-86.505	0	%100
14	M14	SX	-86.505	-86.505	0	%100
15	M15	SX	-86.505	-86.505	0	%100
16	HOR1	SX	-51.903	-51.903	0	%100
17	HOR3	SX	-51.903	-51.903	0	%100
18	HOR2	SX	-51.903	-51.903	0	%100
19	HR1	SX	-51.903	-51.903	0	%100
20	HR3	SX	-51.903	-51.903	0	%100
21	HR2	SX	-51.903	-51.903	0	%100
22	M22	SX	0	0	0	%100
23	M23	SX	0	0	0	%100
24	M24	SX	0	0	0	%100
25	M25	SX	0	0	0	%100
26	M26	SX	0	0	0	%100
27	M27	SX	0	0	0	%100
28	MP3	SX	-51.903	-51.903	0	%100
29	MP2	SX	-51.903	-51.903	0	%100
30	MP1	SX	-51.903	-51.903	0	%100
31	M31	SX	0	0	0	%100
32	M32	SX	0	0	0	%100
33	M33	SX	0	0	0	%100
34	MP9	SX	-51.903	-51.903	0	%100
35	MP8	SX	-51.903	-51.903	0	%100
36	MP7	SX	-51.903	-51.903	0	%100
37	M37	SX	0	0	0	%100
38	M38	SX	0	0	0	%100
39	M39	SX	0	0	0	%100
40	MP6	SX	-51.903	-51.903	0	%100
41	MP5	SX	-51.903	-51.903	0	%100
42	MP4	SX	-51.903	-51.903	0	%100
43	M43	SX	0	0	0	%100
44	M44	SX	0	0	0	%100
45	M45	SX	0	0	0	%100
46	M46	SX	0	0	0	%100
47	M47	SX	0	0	0	%100
48	M48	SX	0	0	0	%100
49	M49	SX	-86.505	-86.505	0	%100
50	M50	SX	-86.505	-86.505	0	%100
51	M51	SX	-86.505	-86.505	0	%100

Member Distributed Loads (BLC 16 : Ice Weight)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
1	M1	Y	-10.299	-10.299	0	%100
2	S3	Y	-15.013	-15.013	0	%100

Member Distributed Loads (BLC 16 : Ice Weight) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
3	M3	Y	-9.222	-9.222	0	%100
4	M4	Y	-9.222	-9.222	0	%100
5	M5	Y	-16.761	-16.761	0	%100
6	M6	Y	-10.299	-10.299	0	%100
7	S2	Y	-15.013	-15.013	0	%100
8	M8	Y	-9.222	-9.222	0	%100
9	M9	Y	-9.222	-9.222	0	%100
10	M10	Y	-16.761	-16.761	0	%100
11	M11	Y	-10.299	-10.299	0	%100
12	S1	Y	-15.013	-15.013	0	%100
13	M13	Y	-9.222	-9.222	0	%100
14	M14	Y	-9.222	-9.222	0	%100
15	M15	Y	-16.761	-16.761	0	%100
16	HOR1	Y	-11.621	-11.621	0	%100
17	HOR3	Y	-11.621	-11.621	0	%100
18	HOR2	Y	-11.621	-11.621	0	%100
19	HR1	Y	-11.621	-11.621	0	%100
20	HR3	Y	-11.621	-11.621	0	%100
21	HR2	Y	-11.621	-11.621	0	%100
22	M22	Y	-3.431	-3.431	0	%100
23	M23	Y	-3.431	-3.431	0	%100
24	M24	Y	-3.431	-3.431	0	%100
25	M25	Y	-3.431	-3.431	0	%100
26	M26	Y	-3.431	-3.431	0	%100
27	M27	Y	-3.431	-3.431	0	%100
28	MP3	Y	-9.318	-9.318	0	%100
29	MP2	Y	-9.318	-9.318	0	%100
30	MP1	Y	-9.318	-9.318	0	%100
31	M31	Y	-3.431	-3.431	0	%100
32	M32	Y	-3.431	-3.431	0	%100
33	M33	Y	-3.431	-3.431	0	%100
34	MP9	Y	-9.318	-9.318	0	%100
35	MP8	Y	-9.318	-9.318	0	%100
36	MP7	Y	-9.318	-9.318	0	%100
37	M37	Y	-3.431	-3.431	0	%100
38	M38	Y	-3.431	-3.431	0	%100
39	M39	Y	-3.431	-3.431	0	%100
40	MP6	Y	-9.318	-9.318	0	%100
41	MP5	Y	-9.318	-9.318	0	%100
42	MP4	Y	-9.318	-9.318	0	%100
43	M43	Y	-3.431	-3.431	0	%100
44	M44	Y	-3.431	-3.431	0	%100
45	M45	Y	-3.431	-3.431	0	%100
46	M46	Y	-3.431	-3.431	0	%100
47	M47	Y	-3.431	-3.431	0	%100
48	M48	Y	-3.431	-3.431	0	%100
49	M49	Y	-10.67	-10.67	0	%100
50	M50	Y	-10.67	-10.67	0	%100
51	M51	Y	-10.67	-10.67	0	%100

Member Distributed Loads (BLC 29 : Distr. Ice Wind Load Z)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
1	M1	SZ	-18.32	-18.32	0	%100
2	S3	SZ	-14.592	-14.592	0	%100
3	M3	SZ	-20.021	-20.021	0	%100
4	M4	SZ	-20.021	-20.021	0	%100

Member Distributed Loads (BLC 29 : Distr. Ice Wind Load Z) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
5	M5	SZ	-13.88	-13.88	0	%100
6	M6	SZ	-18.32	-18.32	0	%100
7	S2	SZ	-14.592	-14.592	0	%100
8	M8	SZ	-20.021	-20.021	0	%100
9	M9	SZ	-20.021	-20.021	0	%100
10	M10	SZ	-13.88	-13.88	0	%100
11	M11	SZ	-18.32	-18.32	0	%100
12	S1	SZ	-14.592	-14.592	0	%100
13	M13	SZ	-20.021	-20.021	0	%100
14	M14	SZ	-20.021	-20.021	0	%100
15	M15	SZ	-13.88	-13.88	0	%100
16	HOR1	SZ	-16.841	-16.841	0	%100
17	HOR3	SZ	-16.841	-16.841	0	%100
18	HOR2	SZ	-16.841	-16.841	0	%100
19	HR1	SZ	-16.841	-16.841	0	%100
20	HR3	SZ	-16.841	-16.841	0	%100
21	HR2	SZ	-16.841	-16.841	0	%100
22	M22	SZ	0	0	0	%100
23	M23	SZ	0	0	0	%100
24	M24	SZ	0	0	0	%100
25	M25	SZ	0	0	0	%100
26	M26	SZ	0	0	0	%100
27	M27	SZ	0	0	0	%100
28	MP3	SZ	-19.846	-19.846	0	%100
29	MP2	SZ	-19.846	-19.846	0	%100
30	MP1	SZ	-19.846	-19.846	0	%100
31	M31	SZ	0	0	0	%100
32	M32	SZ	0	0	0	%100
33	M33	SZ	0	0	0	%100
34	MP9	SZ	-19.846	-19.846	0	%100
35	MP8	SZ	-19.846	-19.846	0	%100
36	MP7	SZ	-19.846	-19.846	0	%100
37	M37	SZ	0	0	0	%100
38	M38	SZ	0	0	0	%100
39	M39	SZ	0	0	0	%100
40	MP6	SZ	-19.846	-19.846	0	%100
41	MP5	SZ	-19.846	-19.846	0	%100
42	MP4	SZ	-19.846	-19.846	0	%100
43	M43	SZ	0	0	0	%100
44	M44	SZ	0	0	0	%100
45	M45	SZ	0	0	0	%100
46	M46	SZ	0	0	0	%100
47	M47	SZ	0	0	0	%100
48	M48	SZ	0	0	0	%100
49	M49	SZ	-17.85	-17.85	0	%100
50	M50	SZ	-17.85	-17.85	0	%100
51	M51	SZ	-17.85	-17.85	0	%100

Member Distributed Loads (BLC 30 : Distr. Ice Wind Load X)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
1	M1	SX	-18.32	-18.32	0	%100
2	S3	SX	-14.592	-14.592	0	%100
3	M3	SX	-20.021	-20.021	0	%100
4	M4	SX	-20.021	-20.021	0	%100
5	M5	SX	-13.88	-13.88	0	%100
6	M6	SX	-18.32	-18.32	0	%100

Member Distributed Loads (BLC 30 : Distr. Ice Wind Load X) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
7	S2	SX	-14.592	-14.592	0	%100
8	M8	SX	-20.021	-20.021	0	%100
9	M9	SX	-20.021	-20.021	0	%100
10	M10	SX	-13.88	-13.88	0	%100
11	M11	SX	-18.32	-18.32	0	%100
12	S1	SX	-14.592	-14.592	0	%100
13	M13	SX	-20.021	-20.021	0	%100
14	M14	SX	-20.021	-20.021	0	%100
15	M15	SX	-13.88	-13.88	0	%100
16	HOR1	SX	-16.841	-16.841	0	%100
17	HOR3	SX	-16.841	-16.841	0	%100
18	HOR2	SX	-16.841	-16.841	0	%100
19	HR1	SX	-16.841	-16.841	0	%100
20	HR3	SX	-16.841	-16.841	0	%100
21	HR2	SX	-16.841	-16.841	0	%100
22	M22	SX	0	0	0	%100
23	M23	SX	0	0	0	%100
24	M24	SX	0	0	0	%100
25	M25	SX	0	0	0	%100
26	M26	SX	0	0	0	%100
27	M27	SX	0	0	0	%100
28	MP3	SX	-19.846	-19.846	0	%100
29	MP2	SX	-19.846	-19.846	0	%100
30	MP1	SX	-19.846	-19.846	0	%100
31	M31	SX	0	0	0	%100
32	M32	SX	0	0	0	%100
33	M33	SX	0	0	0	%100
34	MP9	SX	-19.846	-19.846	0	%100
35	MP8	SX	-19.846	-19.846	0	%100
36	MP7	SX	-19.846	-19.846	0	%100
37	M37	SX	0	0	0	%100
38	M38	SX	0	0	0	%100
39	M39	SX	0	0	0	%100
40	MP6	SX	-19.846	-19.846	0	%100
41	MP5	SX	-19.846	-19.846	0	%100
42	MP4	SX	-19.846	-19.846	0	%100
43	M43	SX	0	0	0	%100
44	M44	SX	0	0	0	%100
45	M45	SX	0	0	0	%100
46	M46	SX	0	0	0	%100
47	M47	SX	0	0	0	%100
48	M48	SX	0	0	0	%100
49	M49	SX	-17.85	-17.85	0	%100
50	M50	SX	-17.85	-17.85	0	%100
51	M51	SX	-17.85	-17.85	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
1	S3	Y	-3.185	-3.185	0	23.596
2	M3	Y	-1.406	-1.406	.498	27.295
3	M4	Y	-1.406	-1.406	.498	27.295
4	S2	Y	-3.185	-3.185	0	23.596
5	M8	Y	-1.406	-1.406	.498	27.295
6	M9	Y	-1.406	-1.406	.498	27.295
7	S1	Y	-3.185	-3.185	0	23.596
8	M13	Y	-1.406	-1.406	.498	27.295

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
9	M14	Y	-1.406	-1.406	.498	27.295

Member Distributed Loads (BLC 44 : BLC 16 Transient Area Loads)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
1	S3	Y	-28.395	-28.395	0	23.596
2	M3	Y	-12.531	-12.531	.498	27.295
3	M4	Y	-12.531	-12.531	.498	27.295
4	S2	Y	-28.395	-28.395	0	23.596
5	M8	Y	-12.531	-12.531	.498	27.295
6	M9	Y	-12.531	-12.531	.498	27.295
7	S1	Y	-28.395	-28.395	0	23.596
8	M13	Y	-12.531	-12.531	.498	27.295
9	M14	Y	-12.531	-12.531	.498	27.295

Load Combinations

	Description	S...	P...	SRSS	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
1	1.4DL	Yes	Y		1	1.4																		
2	1.2DL + 1WL AZI 0	Yes	Y		1	1.2	2	1	14	1	15													
3	1.2DL + 1WL AZI 30	Yes	Y		1	1.2	3	1	14	.866	15	.5												
4	1.2DL + 1WL AZI 60	Yes	Y		1	1.2	4	1	14	.5	15	.866												
5	1.2DL + 1WL AZI 90	Yes	Y		1	1.2	5	1	14		15	1												
6	1.2DL + 1WL AZI 120	Yes	Y		1	1.2	6	1	14	-.5	15	.866												
7	1.2DL + 1WL AZI 150	Yes	Y		1	1.2	7	1	14	-.8...	15	.5												
8	1.2DL + 1WL AZI 180	Yes	Y		1	1.2	8	1	14	-1	15													
9	1.2DL + 1WL AZI 210	Yes	Y		1	1.2	9	1	14	-.8...	15	-.5												
10	1.2DL + 1WL AZI 240	Yes	Y		1	1.2	10	1	14	-.5	15	-.8...												
11	1.2DL + 1WL AZI 270	Yes	Y		1	1.2	11	1	14		15	-1												
12	1.2DL + 1WL AZI 300	Yes	Y		1	1.2	12	1	14	.5	15	-.8...												
13	1.2DL + 1WL AZI 330	Yes	Y		1	1.2	13	1	14	.866	15	-.5												
14	0.9DL + 1WL AZI 0	Yes	Y		1	.9	2	1	14	1	15													
15	0.9DL + 1WL AZI 30	Yes	Y		1	.9	3	1	14	.866	15	.5												
16	0.9DL + 1WL AZI 60	Yes	Y		1	.9	4	1	14	.5	15	.866												
17	0.9DL + 1WL AZI 90	Yes	Y		1	.9	5	1	14		15	1												
18	0.9DL + 1WL AZI 120	Yes	Y		1	.9	6	1	14	-.5	15	.866												
19	0.9DL + 1WL AZI 150	Yes	Y		1	.9	7	1	14	-.8...	15	.5												
20	0.9DL + 1WL AZI 180	Yes	Y		1	.9	8	1	14	-1	15													
21	0.9DL + 1WL AZI 210	Yes	Y		1	.9	9	1	14	-.8...	15	-.5												
22	0.9DL + 1WL AZI 240	Yes	Y		1	.9	10	1	14	-.5	15	-.8...												
23	0.9DL + 1WL AZI 270	Yes	Y		1	.9	11	1	14		15	-1												
24	0.9DL + 1WL AZI 300	Yes	Y		1	.9	12	1	14	.5	15	-.8...												
25	0.9DL + 1WL AZI 330	Yes	Y		1	.9	13	1	14	.866	15	-.5												
26	1.2D + 1.0Di	Yes	Y		1	1.2	16	1																
27	1.2D + 1.0Di +1.0Wi AZI 0	Yes	Y		1	1.2	16	1	17	1	29	1	30											
28	1.2D + 1.0Di +1.0Wi AZI ...	Yes	Y		1	1.2	16	1	18	1	29	.866	30	.5										
29	1.2D + 1.0Di +1.0Wi AZI ...	Yes	Y		1	1.2	16	1	19	1	29	.5	30	.866										
30	1.2D + 1.0Di +1.0Wi AZI ...	Yes	Y		1	1.2	16	1	20	1	29		30	1										
31	1.2D + 1.0Di +1.0Wi AZI ...	Yes	Y		1	1.2	16	1	21	1	29	-.5	30	.866										
32	1.2D + 1.0Di +1.0Wi AZI ...	Yes	Y		1	1.2	16	1	22	1	29	-.8...	30	.5										
33	1.2D + 1.0Di +1.0Wi AZI ...	Yes	Y		1	1.2	16	1	23	1	29	-1	30											
34	1.2D + 1.0Di +1.0Wi AZI ...	Yes	Y		1	1.2	16	1	24	1	29	-.8...	30	-.5										
35	1.2D + 1.0Di +1.0Wi AZI ...	Yes	Y		1	1.2	16	1	25	1	29	-.5	30	-.8...										
36	1.2D + 1.0Di +1.0Wi AZI ...	Yes	Y		1	1.2	16	1	26	1	29		30	-1										
37	1.2D + 1.0Di +1.0Wi AZI ...	Yes	Y		1	1.2	16	1	27	1	29	.5	30	-.8...										
38	1.2D + 1.0Di +1.0Wi AZI ...	Yes	Y		1	1.2	16	1	28	1	29	.866	30	-.5										
39	(1.2 + 0.2Sds)DL + 1.0E ...	Yes	Y		1	1.2...	31	1	32															

Load Combinations (Continued)

	Description	S...	P...	SRSS	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
40	(1.2 + 0.2Sds)DL + 1.0E ...	Yes	Y		1	1.2...	31	.866	32	.5																
41	(1.2 + 0.2Sds)DL + 1.0E ...	Yes	Y		1	1.2...	31	.5	32	.866																
42	(1.2 + 0.2Sds)DL + 1.0E ...	Yes	Y		1	1.2...	31		32	1																
43	(1.2 + 0.2Sds)DL + 1.0E ...	Yes	Y		1	1.2...	31	-.5	32	.866																
44	(1.2 + 0.2Sds)DL + 1.0E ...	Yes	Y		1	1.2...	31	-.8...	32	.5																
45	(1.2 + 0.2Sds)DL + 1.0E ...	Yes	Y		1	1.2...	31	-1	32																	
46	(1.2 + 0.2Sds)DL + 1.0E ...	Yes	Y		1	1.2...	31	-.8...	32	-.5																
47	(1.2 + 0.2Sds)DL + 1.0E ...	Yes	Y		1	1.2...	31	-.5	32	-.8...																
48	(1.2 + 0.2Sds)DL + 1.0E ...	Yes	Y		1	1.2...	31		32	-1																
49	(1.2 + 0.2Sds)DL + 1.0E ...	Yes	Y		1	1.2...	31	.5	32	-.8...																
50	(1.2 + 0.2Sds)DL + 1.0E ...	Yes	Y		1	1.2...	31	.866	32	-.5																
51	(0.9 - 0.2Sds)DL + 1.0E ...	Yes	Y		1	.859	31	1	32																	
52	(0.9 - 0.2Sds)DL + 1.0E ...	Yes	Y		1	.859	31	.866	32	.5																
53	(0.9 - 0.2Sds)DL + 1.0E ...	Yes	Y		1	.859	31	.5	32	.866																
54	(0.9 - 0.2Sds)DL + 1.0E ...	Yes	Y		1	.859	31		32	1																
55	(0.9 - 0.2Sds)DL + 1.0E ...	Yes	Y		1	.859	31	-.5	32	.866																
56	(0.9 - 0.2Sds)DL + 1.0E ...	Yes	Y		1	.859	31	-.8...	32	.5																
57	(0.9 - 0.2Sds)DL + 1.0E ...	Yes	Y		1	.859	31	-1	32																	
58	(0.9 - 0.2Sds)DL + 1.0E ...	Yes	Y		1	.859	31	-.8...	32	-.5																
59	(0.9 - 0.2Sds)DL + 1.0E ...	Yes	Y		1	.859	31	-.5	32	-.8...																
60	(0.9 - 0.2Sds)DL + 1.0E ...	Yes	Y		1	.859	31		32	-1																
61	(0.9 - 0.2Sds)DL + 1.0E ...	Yes	Y		1	.859	31	.5	32	-.8...																
62	(0.9 - 0.2Sds)DL + 1.0E ...	Yes	Y		1	.859	31	.866	32	-.5																
63	1.0DL + 1.5LL + 1.0SWL...	Yes	Y		1	1	2	.254	14	.254	15		33	1.5												
64	1.0DL + 1.5LL + 1.0SWL...	Yes	Y		1	1	3	.254	14	.22	15	.127	33	1.5												
65	1.0DL + 1.5LL + 1.0SWL...	Yes	Y		1	1	4	.254	14	.127	15	.22	33	1.5												
66	1.0DL + 1.5LL + 1.0SWL...	Yes	Y		1	1	5	.254	14		15	.254	33	1.5												
67	1.0DL + 1.5LL + 1.0SWL...	Yes	Y		1	1	6	.254	14	-.1...	15	.22	33	1.5												
68	1.0DL + 1.5LL + 1.0SWL...	Yes	Y		1	1	7	.254	14	-.22	15	.127	33	1.5												
69	1.0DL + 1.5LL + 1.0SWL...	Yes	Y		1	1	8	.254	14	-.2...	15		33	1.5												
70	1.0DL + 1.5LL + 1.0SWL...	Yes	Y		1	1	9	.254	14	-.22	15	-.1...	33	1.5												
71	1.0DL + 1.5LL + 1.0SWL...	Yes	Y		1	1	10	.254	14	-.1...	15	-.22	33	1.5												
72	1.0DL + 1.5LL + 1.0SWL...	Yes	Y		1	1	11	.254	14		15	-.2...	33	1.5												
73	1.0DL + 1.5LL + 1.0SWL...	Yes	Y		1	1	12	.254	14	.127	15	-.22	33	1.5												
74	1.0DL + 1.5LL + 1.0SWL...	Yes	Y		1	1	13	.254	14	.22	15	-.1...	33	1.5												
75	1.2DL + 1.5LL	Yes	Y		1	1.2	33	1.5																		
76	1.2DL + 1.5LM-MP1 + 1...	Yes	Y		1	1.2	34	1.5	2	.064	14	.064	15													
77	1.2DL + 1.5LM-MP1 + 1...	Yes	Y		1	1.2	34	1.5	3	.064	14	.055	15	.032												
78	1.2DL + 1.5LM-MP1 + 1...	Yes	Y		1	1.2	34	1.5	4	.064	14	.032	15	.055												
79	1.2DL + 1.5LM-MP1 + 1...	Yes	Y		1	1.2	34	1.5	5	.064	14		15	.064												
80	1.2DL + 1.5LM-MP1 + 1...	Yes	Y		1	1.2	34	1.5	6	.064	14	-.0...	15	.055												
81	1.2DL + 1.5LM-MP1 + 1...	Yes	Y		1	1.2	34	1.5	7	.064	14	-.0...	15	.032												
82	1.2DL + 1.5LM-MP1 + 1...	Yes	Y		1	1.2	34	1.5	8	.064	14	-.0...	15													
83	1.2DL + 1.5LM-MP1 + 1...	Yes	Y		1	1.2	34	1.5	9	.064	14	-.0...	15	-.0...												
84	1.2DL + 1.5LM-MP1 + 1...	Yes	Y		1	1.2	34	1.5	10	.064	14	-.0...	15	-.0...												
85	1.2DL + 1.5LM-MP1 + 1...	Yes	Y		1	1.2	34	1.5	11	.064	14		15	-.0...												
86	1.2DL + 1.5LM-MP1 + 1...	Yes	Y		1	1.2	34	1.5	12	.064	14	.032	15	-.0...												
87	1.2DL + 1.5LM-MP1 + 1...	Yes	Y		1	1.2	34	1.5	13	.064	14	.055	15	-.0...												
88	1.2DL + 1.5LM-MP2 + 1...	Yes	Y		1	1.2	35	1.5	2	.064	14	.064	15													
89	1.2DL + 1.5LM-MP2 + 1...	Yes	Y		1	1.2	35	1.5	3	.064	14	.055	15	.032												
90	1.2DL + 1.5LM-MP2 + 1...	Yes	Y		1	1.2	35	1.5	4	.064	14	.032	15	.055												
91	1.2DL + 1.5LM-MP2 + 1...	Yes	Y		1	1.2	35	1.5	5	.064	14		15	.064												
92	1.2DL + 1.5LM-MP2 + 1...	Yes	Y		1	1.2	35	1.5	6	.064	14	-.0...	15	.055												
93	1.2DL + 1.5LM-MP2 + 1...	Yes	Y		1	1.2	35	1.5	7	.064	14	-.0...	15	.032												
94	1.2DL + 1.5LM-MP2 + 1...	Yes	Y		1	1.2	35	1.5	8	.064	14	-.0...	15													
95	1.2DL + 1.5LM-MP2 + 1...	Yes	Y		1	1.2	35	1.5	9	.064	14	-.0...	15	-.0...												
96	1.2DL + 1.5LM-MP2 + 1...	Yes	Y		1	1.2	35	1.5	10	.064	14	-.0...	15	-.0...												

Load Combinations (Continued)

	Description	S...	P...	SRSS	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
97	1.2DL + 1.5LM-MP2 + 1...	Yes	Y		1	1.2	35	1.5	11	.064	14		15	-.0...										
98	1.2DL + 1.5LM-MP2 + 1...	Yes	Y		1	1.2	35	1.5	12	.064	14	.032	15	-.0...										
99	1.2DL + 1.5LM-MP2 + 1...	Yes	Y		1	1.2	35	1.5	13	.064	14	.055	15	-.0...										
100	1.2DL + 1.5LM-MP3 + 1...	Yes	Y		1	1.2	36	1.5	2	.064	14	.064	15											
101	1.2DL + 1.5LM-MP3 + 1...	Yes	Y		1	1.2	36	1.5	3	.064	14	.055	15	.032										
102	1.2DL + 1.5LM-MP3 + 1...	Yes	Y		1	1.2	36	1.5	4	.064	14	.032	15	.055										
103	1.2DL + 1.5LM-MP3 + 1...	Yes	Y		1	1.2	36	1.5	5	.064	14		15	.064										
104	1.2DL + 1.5LM-MP3 + 1...	Yes	Y		1	1.2	36	1.5	6	.064	14	-.0...	15	.055										
105	1.2DL + 1.5LM-MP3 + 1...	Yes	Y		1	1.2	36	1.5	7	.064	14	-.0...	15	.032										
106	1.2DL + 1.5LM-MP3 + 1...	Yes	Y		1	1.2	36	1.5	8	.064	14	-.0...	15											
107	1.2DL + 1.5LM-MP3 + 1...	Yes	Y		1	1.2	36	1.5	9	.064	14	-.0...	15	-.0...										
108	1.2DL + 1.5LM-MP3 + 1...	Yes	Y		1	1.2	36	1.5	10	.064	14	-.0...	15	-.0...										
109	1.2DL + 1.5LM-MP3 + 1...	Yes	Y		1	1.2	36	1.5	11	.064	14		15	-.0...										
110	1.2DL + 1.5LM-MP3 + 1...	Yes	Y		1	1.2	36	1.5	12	.064	14	.032	15	-.0...										
111	1.2DL + 1.5LM-MP3 + 1...	Yes	Y		1	1.2	36	1.5	13	.064	14	.055	15	-.0...										
112	1.2DL + 1.5LM-MP4 + 1...	Yes	Y		1	1.2	37	1.5	2	.064	14	.064	15											
113	1.2DL + 1.5LM-MP4 + 1...	Yes	Y		1	1.2	37	1.5	3	.064	14	.055	15	.032										
114	1.2DL + 1.5LM-MP4 + 1...	Yes	Y		1	1.2	37	1.5	4	.064	14	.032	15	.055										
115	1.2DL + 1.5LM-MP4 + 1...	Yes	Y		1	1.2	37	1.5	5	.064	14		15	.064										
116	1.2DL + 1.5LM-MP4 + 1...	Yes	Y		1	1.2	37	1.5	6	.064	14	-.0...	15	.055										
117	1.2DL + 1.5LM-MP4 + 1...	Yes	Y		1	1.2	37	1.5	7	.064	14	-.0...	15	.032										
118	1.2DL + 1.5LM-MP4 + 1...	Yes	Y		1	1.2	37	1.5	8	.064	14	-.0...	15											
119	1.2DL + 1.5LM-MP4 + 1...	Yes	Y		1	1.2	37	1.5	9	.064	14	-.0...	15	-.0...										
120	1.2DL + 1.5LM-MP4 + 1...	Yes	Y		1	1.2	37	1.5	10	.064	14	-.0...	15	-.0...										
121	1.2DL + 1.5LM-MP4 + 1...	Yes	Y		1	1.2	37	1.5	11	.064	14		15	-.0...										
122	1.2DL + 1.5LM-MP4 + 1...	Yes	Y		1	1.2	37	1.5	12	.064	14	.032	15	-.0...										
123	1.2DL + 1.5LM-MP4 + 1...	Yes	Y		1	1.2	37	1.5	13	.064	14	.055	15	-.0...										
124	1.2DL + 1.5LM-MP5 + 1...	Yes	Y		1	1.2	38	1.5	2	.064	14	.064	15											
125	1.2DL + 1.5LM-MP5 + 1...	Yes	Y		1	1.2	38	1.5	3	.064	14	.055	15	.032										
126	1.2DL + 1.5LM-MP5 + 1...	Yes	Y		1	1.2	38	1.5	4	.064	14	.032	15	.055										
127	1.2DL + 1.5LM-MP5 + 1...	Yes	Y		1	1.2	38	1.5	5	.064	14		15	.064										
128	1.2DL + 1.5LM-MP5 + 1...	Yes	Y		1	1.2	38	1.5	6	.064	14	-.0...	15	.055										
129	1.2DL + 1.5LM-MP5 + 1...	Yes	Y		1	1.2	38	1.5	7	.064	14	-.0...	15	.032										
130	1.2DL + 1.5LM-MP5 + 1...	Yes	Y		1	1.2	38	1.5	8	.064	14	-.0...	15											
131	1.2DL + 1.5LM-MP5 + 1...	Yes	Y		1	1.2	38	1.5	9	.064	14	-.0...	15	-.0...										
132	1.2DL + 1.5LM-MP5 + 1...	Yes	Y		1	1.2	38	1.5	10	.064	14	-.0...	15	-.0...										
133	1.2DL + 1.5LM-MP5 + 1...	Yes	Y		1	1.2	38	1.5	11	.064	14		15	-.0...										
134	1.2DL + 1.5LM-MP5 + 1...	Yes	Y		1	1.2	38	1.5	12	.064	14	.032	15	-.0...										
135	1.2DL + 1.5LM-MP5 + 1...	Yes	Y		1	1.2	38	1.5	13	.064	14	.055	15	-.0...										
136	1.2DL + 1.5LM-MP6 + 1...	Yes	Y		1	1.2	39	1.5	2	.064	14	.064	15											
137	1.2DL + 1.5LM-MP6 + 1...	Yes	Y		1	1.2	39	1.5	3	.064	14	.055	15	.032										
138	1.2DL + 1.5LM-MP6 + 1...	Yes	Y		1	1.2	39	1.5	4	.064	14	.032	15	.055										
139	1.2DL + 1.5LM-MP6 + 1...	Yes	Y		1	1.2	39	1.5	5	.064	14		15	.064										
140	1.2DL + 1.5LM-MP6 + 1...	Yes	Y		1	1.2	39	1.5	6	.064	14	-.0...	15	.055										
141	1.2DL + 1.5LM-MP6 + 1...	Yes	Y		1	1.2	39	1.5	7	.064	14	-.0...	15	.032										
142	1.2DL + 1.5LM-MP6 + 1...	Yes	Y		1	1.2	39	1.5	8	.064	14	-.0...	15											
143	1.2DL + 1.5LM-MP6 + 1...	Yes	Y		1	1.2	39	1.5	9	.064	14	-.0...	15	-.0...										
144	1.2DL + 1.5LM-MP6 + 1...	Yes	Y		1	1.2	39	1.5	10	.064	14	-.0...	15	-.0...										
145	1.2DL + 1.5LM-MP6 + 1...	Yes	Y		1	1.2	39	1.5	11	.064	14		15	-.0...										
146	1.2DL + 1.5LM-MP6 + 1...	Yes	Y		1	1.2	39	1.5	12	.064	14	.032	15	-.0...										
147	1.2DL + 1.5LM-MP6 + 1...	Yes	Y		1	1.2	39	1.5	13	.064	14	.055	15	-.0...										
148	1.2DL + 1.5LM-MP7 + 1...	Yes	Y		1	1.2	40	1.5	2	.064	14	.064	15											
149	1.2DL + 1.5LM-MP7 + 1...	Yes	Y		1	1.2	40	1.5	3	.064	14	.055	15	.032										
150	1.2DL + 1.5LM-MP7 + 1...	Yes	Y		1	1.2	40	1.5	4	.064	14	.032	15	.055										
151	1.2DL + 1.5LM-MP7 + 1...	Yes	Y		1	1.2	40	1.5	5	.064	14		15	.064										
152	1.2DL + 1.5LM-MP7 + 1...	Yes	Y		1	1.2	40	1.5	6	.064	14	-.0...	15	.055										
153	1.2DL + 1.5LM-MP7 + 1...	Yes	Y		1	1.2	40	1.5	7	.064	14	-.0...	15	.032										

Load Combinations (Continued)

	Description	S...	P...	SRSS	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
154	1.2DL + 1.5LM-MP7 + 1...	Yes	Y		1	1.2	40	1.5	8	.064	14	-.0...	15											
155	1.2DL + 1.5LM-MP7 + 1...	Yes	Y		1	1.2	40	1.5	9	.064	14	-.0...	15	-.0...										
156	1.2DL + 1.5LM-MP7 + 1...	Yes	Y		1	1.2	40	1.5	10	.064	14	-.0...	15	-.0...										
157	1.2DL + 1.5LM-MP7 + 1...	Yes	Y		1	1.2	40	1.5	11	.064	14		15	-.0...										
158	1.2DL + 1.5LM-MP7 + 1...	Yes	Y		1	1.2	40	1.5	12	.064	14	.032	15	-.0...										
159	1.2DL + 1.5LM-MP7 + 1...	Yes	Y		1	1.2	40	1.5	13	.064	14	.055	15	-.0...										
160	1.2DL + 1.5LM-MP8 + 1...	Yes	Y		1	1.2	41	1.5	2	.064	14	.064	15											
161	1.2DL + 1.5LM-MP8 + 1...	Yes	Y		1	1.2	41	1.5	3	.064	14	.055	15	.032										
162	1.2DL + 1.5LM-MP8 + 1...	Yes	Y		1	1.2	41	1.5	4	.064	14	.032	15	.055										
163	1.2DL + 1.5LM-MP8 + 1...	Yes	Y		1	1.2	41	1.5	5	.064	14		15	.064										
164	1.2DL + 1.5LM-MP8 + 1...	Yes	Y		1	1.2	41	1.5	6	.064	14	-.0...	15	.055										
165	1.2DL + 1.5LM-MP8 + 1...	Yes	Y		1	1.2	41	1.5	7	.064	14	-.0...	15	.032										
166	1.2DL + 1.5LM-MP8 + 1...	Yes	Y		1	1.2	41	1.5	8	.064	14	-.0...	15											
167	1.2DL + 1.5LM-MP8 + 1...	Yes	Y		1	1.2	41	1.5	9	.064	14	-.0...	15	-.0...										
168	1.2DL + 1.5LM-MP8 + 1...	Yes	Y		1	1.2	41	1.5	10	.064	14	-.0...	15	-.0...										
169	1.2DL + 1.5LM-MP8 + 1...	Yes	Y		1	1.2	41	1.5	11	.064	14		15	-.0...										
170	1.2DL + 1.5LM-MP8 + 1...	Yes	Y		1	1.2	41	1.5	12	.064	14	.032	15	-.0...										
171	1.2DL + 1.5LM-MP8 + 1...	Yes	Y		1	1.2	41	1.5	13	.064	14	.055	15	-.0...										
172	1.2DL + 1.5LM-MP9 + 1...	Yes	Y		1	1.2	42	1.5	2	.064	14	.064	15											
173	1.2DL + 1.5LM-MP9 + 1...	Yes	Y		1	1.2	42	1.5	3	.064	14	.055	15	.032										
174	1.2DL + 1.5LM-MP9 + 1...	Yes	Y		1	1.2	42	1.5	4	.064	14	.032	15	.055										
175	1.2DL + 1.5LM-MP9 + 1...	Yes	Y		1	1.2	42	1.5	5	.064	14		15	.064										
176	1.2DL + 1.5LM-MP9 + 1...	Yes	Y		1	1.2	42	1.5	6	.064	14	-.0...	15	.055										
177	1.2DL + 1.5LM-MP9 + 1...	Yes	Y		1	1.2	42	1.5	7	.064	14	-.0...	15	.032										
178	1.2DL + 1.5LM-MP9 + 1...	Yes	Y		1	1.2	42	1.5	8	.064	14	-.0...	15											
179	1.2DL + 1.5LM-MP9 + 1...	Yes	Y		1	1.2	42	1.5	9	.064	14	-.0...	15	-.0...										
180	1.2DL + 1.5LM-MP9 + 1...	Yes	Y		1	1.2	42	1.5	10	.064	14	-.0...	15	-.0...										
181	1.2DL + 1.5LM-MP9 + 1...	Yes	Y		1	1.2	42	1.5	11	.064	14		15	-.0...										
182	1.2DL + 1.5LM-MP9 + 1...	Yes	Y		1	1.2	42	1.5	12	.064	14	.032	15	-.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	1029.087	4	2102.834	31	1658.18	3	304.797	25	2077.923	15	255.299	24
2		min	-1026.14	22	-6.862	24	-1650.829	21	-2398.69	32	-2088.445	9	-4249.4	31
3	N1	max	927.641	7	2058.725	35	1671.87	25	293.318	15	2059.163	19	3994.011	35
4		min	-924.593	25	-12.822	16	-1677.583	7	-2587.03	34	-2072.839	13	-264.659	16
5	N13	max	1789.986	17	2014.419	27	423.185	2	4638.262	27	1867.962	23	605.14	11
6		min	-1796.441	11	-40.63	20	-426.159	8	-376.038	20	-1881.391	5	-505.955	17
7	Totals:	max	3234.543	17	5754.63	36	3426.077	2						
8		min	-3234.545	11	1579.638	54	-3426.077	8						

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

	Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc.....		LC	phi*Pn...	phi*Pn...	phi*M...	phi*M...	...	Eqn
1	M1	C3X5	.359	34.856	35	.105	63....	y	31	37027...	47628	981.263	4020.2...	1	H1-1b
2	M11	C3X5	.352	34.856	31	.108	63....	y	28	37027...	47628	981.263	4020.2...	1	H1-1b
3	M6	C3X5	.343	34.856	27	.104	63....	y	36	37027...	47628	981.263	4020.2...	1	H1-1b
4	S1	HSS4X4X4	.315	40	33	.095	40	z	3	13720...	139518	16180.5	16180.5	1	H1-1b
5	S3	HSS4X4X4	.306	40	33	.095	40	z	7	13720...	139518	16180.5	16180.5	1	H1-1b
6	S2	HSS4X4X4	.300	40	29	.091	40	z	11	13720...	139518	16180.5	16180.5	1	H1-1b
7	M49	L2.5x2.5x3	.291	0	9	.023	0	z	9	19573...	29192.4	872.574	1971.83	2...	H2-1
8	M50	L2.5x2.5x3	.277	42	6	.023	0	z	5	19573...	29192.4	872.574	1920.4...	1...	H2-1
9	M51	L2.5x2.5x3	.271	42	2	.022	0	z	13	19573...	29192.4	872.574	1894.0...	1...	H2-1
10	M15	6.5"x0.37...	.240	21	6	.083	21	y	30	3513.8...	77922	600.647	6637.6...	1...	H1-1b
11	M5	6.5"x0.37...	.237	21	10	.083	21	y	34	3513.8...	77922	600.647	6658.7...	1...	H1-1b

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

	Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc...	...	LC	phi*Pn...	phi*Pn...	phi*M...	phi*M...	...	Eqn
12	M10	6.5"x0.37...	.236	21	2	.081	21	y	38	3513.8...	77922	600.647	6637.4...	1...	H1-1b
13	MP4	PIPE_2.5	.165	61.25	8	.045	61.25		7	33961....	50715	3596.25	3596.25	2...	H1-1b
14	MP1	PIPE_2.5	.159	61.25	12	.047	61.25		10	33961....	50715	3596.25	3596.25	4...	H1-1b
15	MP7	PIPE_2.5	.158	61.25	4	.041	61.25		3	33961....	50715	3596.25	3596.25	3...	H1-1b
16	MP6	PIPE_2.5	.157	61.25	12	.038	61.25		2	33961....	50715	3596.25	3596.25	3...	H1-1b
17	MP3	PIPE_2.5	.156	61.25	4	.037	61.25		6	33961....	50715	3596.25	3596.25	4...	H1-1b
18	M13	L2x2x3	.152	0	11	.024	0	y	32	18051...	23392.8	557.717	1239.29	2...	H2-1
19	MP9	PIPE_2.5	.152	61.25	8	.038	61.25		10	33961....	50715	3596.25	3596.25	1...	H1-1b
20	M3	L2x2x3	.149	0	3	.024	0	y	36	18051...	23392.8	557.717	1239.29	2...	H2-1
21	M8	L2x2x3	.133	0	7	.023	0	y	28	18051...	23392.8	557.717	1239.29	2...	H2-1
22	M4	L2x2x3	.124	0	10	.024	0	y	33	18051...	23392.8	557.717	1239.29	2...	H2-1
23	HOR1	PIPE_3.5	.123	72	110	.084	24		9	76140....	78750	7953.75	7953.75	1	H1-1b
24	HOR2	PIPE_3.5	.123	72	178	.081	24		5	76140....	78750	7953.75	7953.75	1	H1-1b
25	HOR3	PIPE_3.5	.123	72	138	.079	24		13	76140....	78750	7953.75	7953.75	1	H1-1b
26	M9	L2x2x3	.111	0	2	.024	0	y	37	18051...	23392.8	557.717	1239.29	2...	H2-1
27	M14	L2x2x3	.105	0	6	.025	0	y	29	18051...	23392.8	557.717	1239.29	2...	H2-1
28	MP5	PIPE_2.5	.105	61.25	12	.059	61.25		13	33961....	50715	3596.25	3596.25	3...	H1-1b
29	MP8	PIPE_2.5	.103	61.25	8	.057	61.25		9	33961....	50715	3596.25	3596.25	3...	H1-1b
30	MP2	PIPE_2.5	.099	61.25	4	.055	61.25		5	33961....	50715	3596.25	3596.25	3...	H1-1b
31	HR1	PIPE_3.5	.057	48	98	.052	24		6	76140....	78750	7953.75	7953.75	1	H1-1b
32	HR2	PIPE_3.5	.057	71	5	.051	24		2	76140....	78750	7953.75	7953.75	1	H1-1b
33	HR3	PIPE_3.5	.054	71	13	.050	24		10	76140....	78750	7953.75	7953.75	1	H1-1b

Material Takeoff

	Material	Size	Pieces	Length[in]	Weight[K]
1	General				
2	RIGID		18	54	0
3	Total General		18	54	0
4					
5	Hot Rolled Steel				
6	A36 Gr.36	6.5"x0.37" Plate	3	126	.086
7	A36 Gr.36	C3X5	3	209.1	.087
8	A36 Gr.36	L2x2x3	6	163.8	.034
9	A36 Gr.36	L2.5x2.5x3	3	126	.032
10	A500 Gr.B Rect	HSS4X4X4	3	120	.123
11	A53 Gr.B	PIPE_2.5	9	756	.345
12	A53 Gr.B	PIPE_3.5	6	576	.408
13	Total HR Steel		33	2076.9	1.116

APPENDIX D

ADDITIONAL CALCUATIONS

INFINIGY

FROM ZERO TO INFINIGY

the solutions are endless

Bolt Calculation Tool, V1.5.1

PROJECT DATA	
Site Name:	PRESTON / TOWN HALL
Site Number:	876360
Connection Description:	Mount to Tower

MAXIMUM BOLT LOADS		
Bolt Tension:	5111.43	lbs
Bolt Shear:	933.20	lbs

WORST CASE BOLT LOADS[1]		
Bolt Tension:	5111.43	lbs
Bolt Shear:	535.30	lbs

BOLT PROPERTIES		
Bolt Type:	Bolt	-
Bolt Diameter:	0.625	in
Bolt Grade:	A325	-
# of Bolts:	4	-
Threads Excluded?	No	-

[1] *Worst case bolt loads correspond to Load combination #33 on member S1 in RISA-3D, which causes the maximum demand on the bolts.*

Member Information
J nodes of S3, S2, S1

BOLT CHECK		
Tensile Strength	20340.15	
Shear Strength	13805.83	
Max Tensile Usage	25.1%	
Max Shear Usage	6.8%	
Interaction Check (Worst Case)	0.06	***≤1.05***
Result	Pass	

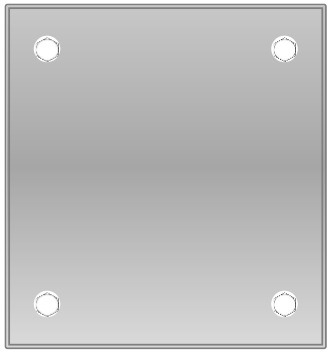


Exhibit F

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: 876360

BOBOS00885A
389 Route 2
Preston, Connecticut 06365

May 22, 2022

EBI Project Number: 6222003238

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**23.35%**

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

May 22, 2022

Attn: Dish Wireless

Emissions Analysis for Site: 876360 - BOBOS00885A

EBI Consulting was directed to analyze the proposed Dish Wireless facility located at **389 Route 2** in **Preston, 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 389 Route 2 in Preston, 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 MX08FRO665-21 for the 600 MHz / 1900 MHz channel(s) in Sector A, the JMA MX08FRO665-21 for the 600 MHz / 1900 MHz channel(s) in Sector B, the JMA MX08FRO665-21 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 105 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 MX08FRO665-21	Make / Model:	JMA MX08FRO665-21	Make / Model:	JMA MX08FRO665-21
Frequency Bands:	600 MHz / 1900 MHz	Frequency Bands:	600 MHz / 1900 MHz	Frequency Bands:	600 MHz / 1900 MHz
Gain:	11.35 dBd / 15.75 dBd	Gain:	11.35 dBd / 15.75 dBd	Gain:	11.35 dBd / 15.75 dBd
Height (AGL):	105 feet	Height (AGL):	105 feet	Height (AGL):	105 feet
Channel Count:	8	Channel Count:	8	Channel Count:	8
Total TX Power (W):	280.00 Watts	Total TX Power (W):	280.00 Watts	Total TX Power (W):	280.00 Watts
ERP (W):	1,424.17	ERP (W):	1,424.17	ERP (W):	1,424.17
Antenna A1 MPE %:	**0.77%**	Antenna B1 MPE %:	**0.77%**	Antenna C1 MPE %:	**0.77%**

Site Composite MPE %	
Carrier	**MPE %**
Dish Wireless (Max at Sector A):	0.77%
AT&T	5.8%
Metro PCS	0.44%
Verizon	3.09%
T-Mobile	13.25%
Site Total MPE % :	23.35%

Dish Wireless MPE % Per Sector	
Dish Wireless Sector A Total:	0.77%
Dish Wireless Sector B Total:	0.77%
Dish Wireless Sector C Total:	0.77%
Site Total MPE % :	23.35%

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	110.82	105.0	1.63	600 MHz n71	400	0.41%
Dish Wireless 1900 MHz n70	4	245.22	105.0	3.60	1900 MHz n70	1000	0.36%
						Total:	**0.77%**

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

Summary

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

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

Dish Wireless Sector	Power Density Value (%)
Sector A:	0.77%
Sector B:	0.77%
Sector C:	0.77%
Dish Wireless Maximum MPE % (Sector A):	0.77%
Site Total:	23.35%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **23.35%** 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:
389 RT. 2, PRESTON, CT 06365

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

Crown Site ID/Name: **876360/PRESTON / TOWN HALL**
Customer Site ID: **BOBOS00885A/**
Site Address: **389 Rt. 2, PRESTON, CT 06365**

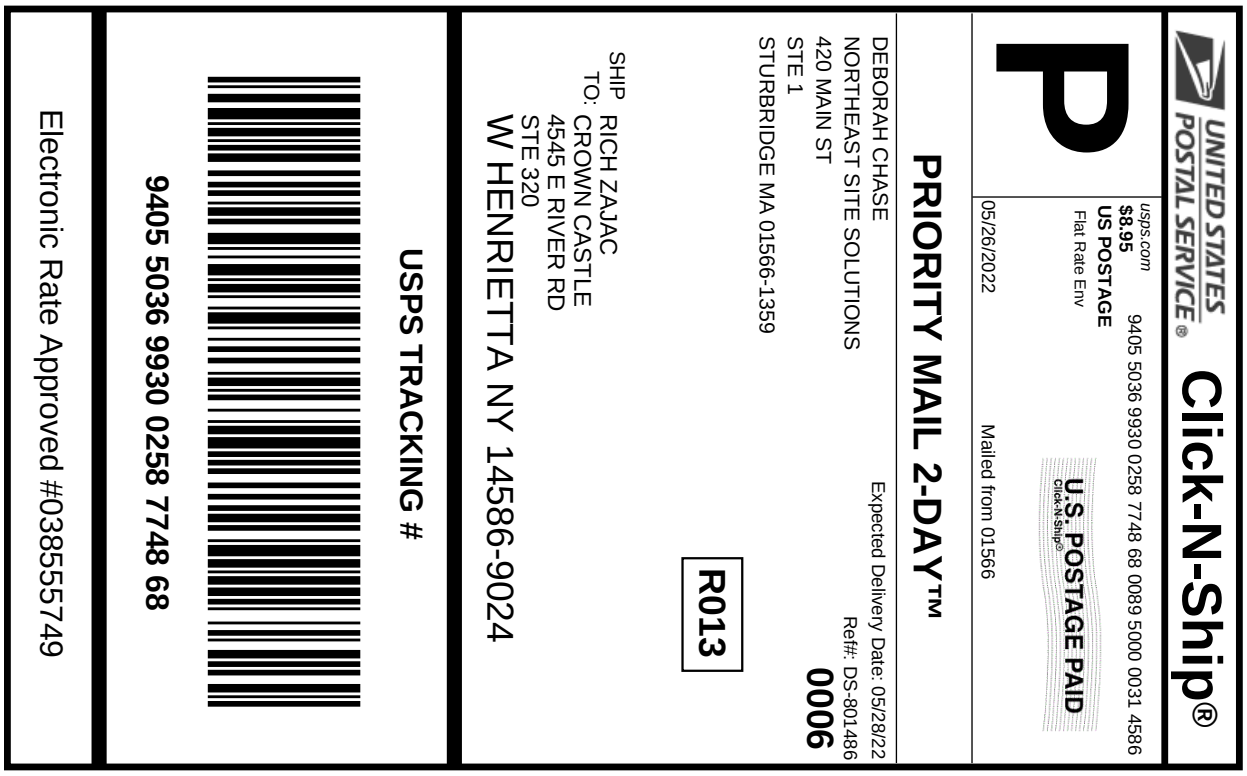
Crown Castle

By: _____ Date: 5/24/2022

Richard Zajac
Site Acquisition Specialist

Exhibit H

Recipient Mailings



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2. **Place your label so it does not wrap around the edge of the package.**
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9405 5036 9930 0258 7748 68

Trans. #:	564350638
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Ship Date:	05/26/2022
Expected Delivery Date:	05/28/2022

Priority Mail® Postage:	**$8.95**
Total:	**$8.95**

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

Ref#: DS-801486

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

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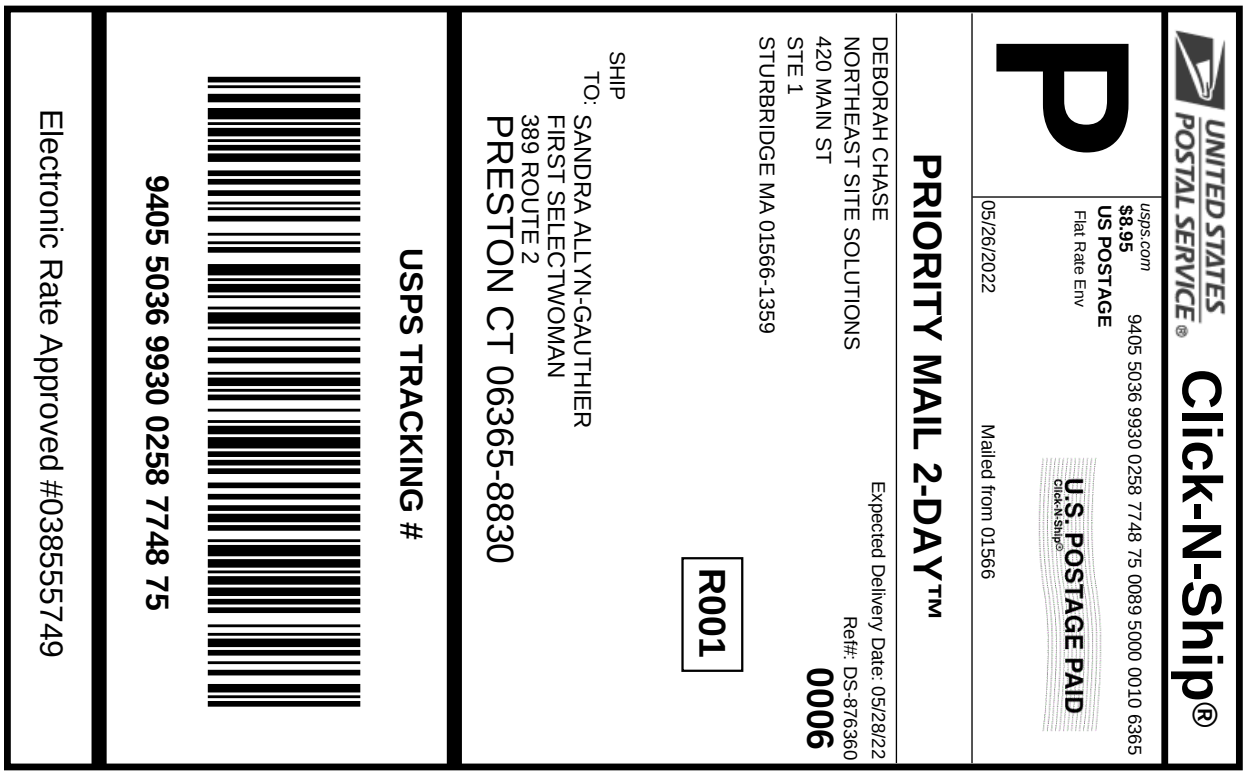

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Click-N-Ship® Label Record

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9405 5036 9930 0258 7748 75

Trans. #:	564350638
Print Date:	05/26/2022
Ship Date:	05/26/2022
Expected Delivery Date:	05/28/2022

Priority Mail® Postage:	**$8.95**
Total:	**$8.95**

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

Ref#: DS-876360

To: SANDRA ALLYN-GAUTHIER
FIRST SELECTWOMAN
389 ROUTE 2
PRESTON CT 06365-8830

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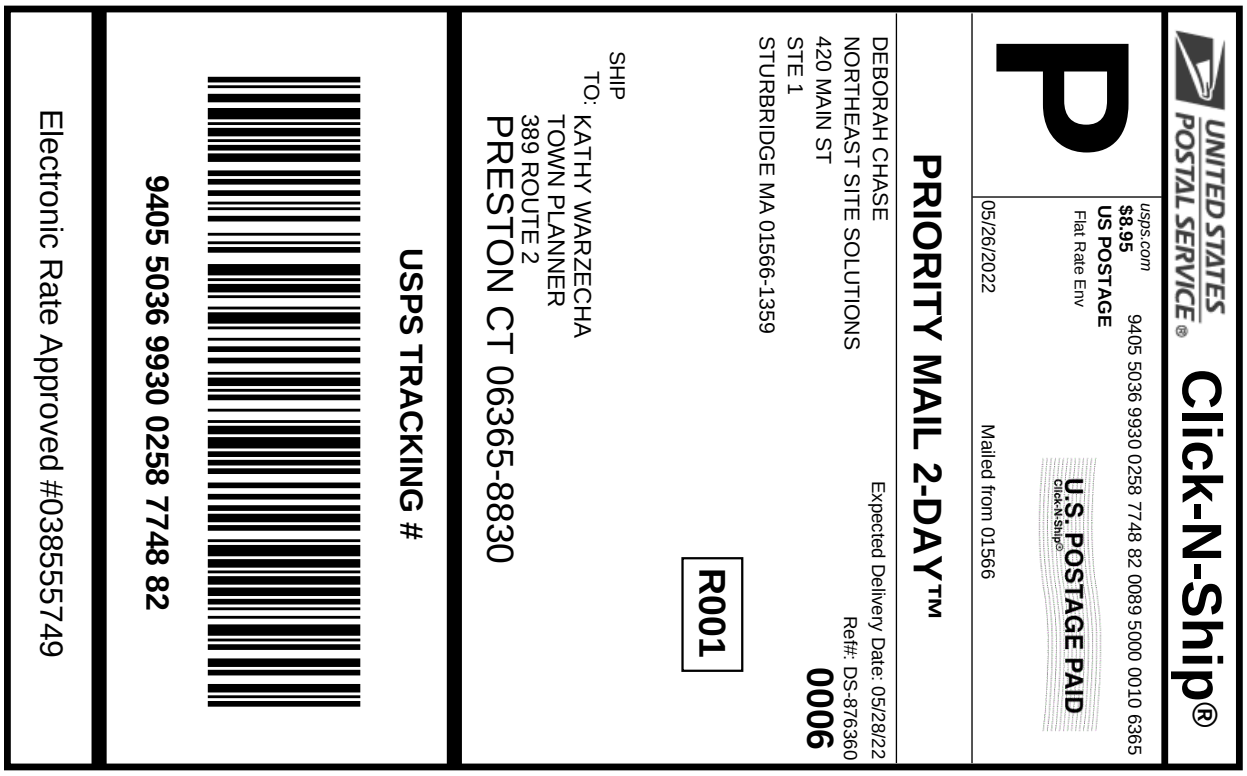

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Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0258 7748 82

Trans. #:	564350638
Print Date:	05/26/2022
Ship Date:	05/26/2022
Expected Delivery Date:	05/28/2022

Priority Mail® Postage:	**$8.95**
Total:	**$8.95**

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

Ref#: DS-876360

To: KATHY WARZECHA
TOWN PLANNER
389 ROUTE 2
PRESTON CT 06365-8830

* 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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876360
Crown Dish

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

05/27/2022 03:31 PM

Product	Qty	Unit Price	Price
Prepaid Mail West Henrietta, NY 14586 Weight: 0 lb 2.00 oz Acceptance Date: Fri 05/27/2022 Tracking #: 9405 5036 9930 0258 7748 68	1		$0.00
Prepaid Mail Preston, CT 06365 Weight: 0 lb 8.50 oz Acceptance Date: Fri 05/27/2022 Tracking #: 9405 5036 9930 0258 7748 75	1		$0.00
Prepaid Mail Preston, CT 06365 Weight: 0 lb 8.50 oz Acceptance Date: Fri 05/27/2022 Tracking #: 9405 5036 9930 0258 7748 82	1		$0.00
Grand Total:			$0.00

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