NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

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

October 7, 2021

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

RE: Tower Share Application
371 Terryville Avenue, Bristol CT 06010
Latitude: 41.679919
Longitude: -72.96255
Site# 842859_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 371 Terryville Avenue in Bristol, Connecticut.

Dish Wireless LLC proposes to install three (3) 600/1900 5G MHz antenna and six (6) RRUs, at the 169-foot level of the existing 148-foot monopole tower, one (1) Fiber cables will also be installed. Dish Wireless LLC equipment cabinets will be placed within 7x5 lease area. Included are plans by B+T Group, dated October 7, 2021 Exhibit C. Also included is a structural analysis prepared by Crown Castle, dated June 14, 2021, confirming that the existing tower is structurally capable of supporting the proposed equipment. Attached as Exhibit D. The facility was approved by the City of Bristol Planning and Zoning on December 9, 2003. Please see attached Exhibit A.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies 16-50aa, of Dish Wireless LLC intent to share a telecommunications facility pursuant to R.C.S.A. 16-50j-88. In accordance with R.C.S.A., a copy of this letter is being sent to Mayor Ellen Zoppo- Sassu and Peter R Carey, Building Official for the City of Bristol, as well as the tower owner (Crown Castle) and property owner (Bristol Hospital)

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

1. The proposed modification will not result in an increase in the height of the existing structure. The top of the tower is 169-feet; Dish Wireless LLC proposed antennas will be located at a center line height of 148-feet.

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

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

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4. The operation of the proposed antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard. As indicated in the attached power density calculations, the combined site operations will result in a total power density of 17.78% as evidenced by Exhibit F.

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

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

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

C. Environmental Feasibility. The proposed shared use of this facility would have a minimal environmental impact. The installation of Dish Wireless LLC equipment at the 148-foot level of the existing 169-foot tower would have an insignificant visual impact on the area around the tower. Dish Wireless LLC ground equipment would be installed within the existing facility compound. Dish Wireless LLC shared use would therefore not cause any significant alteration in the physical or environmental characteristics of the existing site. Additionally, as evidenced by Exhibit F, the proposed antennas would not increase radio frequency emissions to a level at or above the Federal Communications Commission safety standard.

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

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

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:

Ellen Zoppo- Sassu, Mayor
City of Bristol
111 North Main Street Bristol, CT 06010

Edward Spyros, ZEO
City of Bristol
111 North Main Street Bristol, CT 06010

Bristol Hospital Administration
41 Brewster Rd. Bristol, CT 06010

Crown Castle, Tower Owner

Exhibit A

Original Facility Approval

Fee Received $15.00

CT-833 17647

ZONING PERMIT
CITY OF BRISTOL ZONING COMMISSION

THIS IS TO CERTIFY that in accordance with Section XII.D of the Zoning Regulations, This Permit is hereby granted.

PROPERTY INFORMATION

Location: 371 Terryville Avenue,

Zoning District: I, Property Use: Telecommunications.

TYPE OF PERMIT

- ☐ New Construction ☐ Addition ☐ Accessory Structure
- ☐ Fence ☐ Deck ☐ Swimming Pool
- ☐ Home Business/Office ☐ Change of Use ☒ Other: See Below

SIGNS

Classification: ☐ Permanent ☐ Temporary (30-day) ☐ Portable (1-Year)

Type: ☐ Wall ☐ Freestanding ☐ A-Frame ☐ Sandwich ☐ Other: _____

DESCRIPTION OF ACTIVITY

construct telecommunications facility, 171' high tower, retaining walls & associated equipment per submitted plans

OTHER APPROVALS

Description: CT Siting Council approval 4/3/02

APPLICANT INFORMATION

Applicant Name(s): Peter Maxwell

Business Name: UBS Corp.

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

Approved by: _____ 12/9/03

Zoning Enforcement Officer Date Issued

Exhibit B

Property Card

371 TERRYVILLE AVE

Location	371 TERRYVILLE AVE	**Mblu**	61/ / 67-1/ /
Acct#	0136999	**Owner**	BRISTOL HOSPITAL INC
Assessment	$363,370	**Appraisal**	$519,100
PID	2194	**Building Count**	2

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$280,000	$239,100	$519,100
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$196,000	$167,370	$363,370

Owner of Record

Owner	BRISTOL HOSPITAL INC	**Sale Price**	$400,000
Co-Owner		**Certificate**	1
Address	BREWSTER RD BRISTOL, CT 06010	**Book & Page**	1564/0795
		Sale Date	06/08/2004
		Instrument	00

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**
BRISTOL HOSPITAL INC	$400,000	1	1564/0795	00	06/08/2004
LAVIERO REALTY LLC	$0		1564/0792		06/08/2004
LAVIERO REALTY LLC	$0		1352/0030		02/08/2001
LAVIERO MORRIS + RICHARD	$0		1139/0447		09/23/1994
GTT CORP TRUSTEE OF OREGON	$0		1103/0330		09/30/1993

Building Information

Building 1 : Section 1

Year Built: 1996

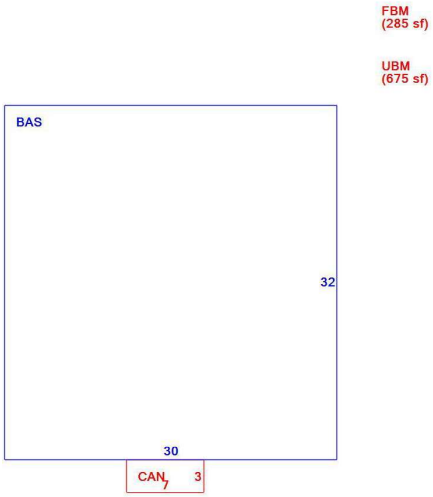
Building Photo

Living Area: 960
Replacement Cost: $117,937
Building Percent Good: 91
Replacement Cost Less Depreciation: $107,300

Building Attributes	
Field	**Description**
STYLE	Office Bldg
MODEL	Comm/Ind
Stories:	1
Occupancy	1.00
Exterior Wall 1	Vinyl Siding
Exterior Wall 2	
Roof Structure	Gable
Roof Cover	Asphalt Shingl
Interior Wall 1	Drywall/Sheetr
Interior Wall 2	
Interior Floor 1	Carpet
Interior Floor 2	
Heating Fuel	Electric
Heating Type	Electr Basebrd
AC Type	Central
Struct Class	
Bldg Use	Hospital 94
Bedrooms	
Full Baths	
Half Baths	
Usrfld 218	
Usrfld 219	
1st Floor Use:	
Heat/AC	Heat/AC Split
Frame Type	Wood Frame
Baths/Plumbing	Average
Ceiling/Wall	Ceil & Walls
Rooms/Prtns	Average
Wall Height	10.00
% Comn Wall	

0136999 03/20/2016
(http://images.vgsi.com/photos2/BristolCTPhotos//\00\03\34\29.JPG)

Building Layout



(ParcelSketch.ashx?pid=2194&bid=2194)

Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	960	960
CAN	Canopy	21	0
FBM	Basement, Finshed	285	0
UBM	Basement, Unfinished	675	0
		1,941	960

Building 2 : Section 1

Year Built: 1996
Living Area: 3,900
Replacement Cost: $185,406
Building Percent Good: 78

Replacement Cost
Less Depreciation: $144,600

Building Attributes : Bldg 2 of 2	
Field	**Description**
STYLE	Pre-Eng Garage
MODEL	Ind/Comm
Stories:	1
Occupancy	1.00
Exterior Wall 1	Pre-finsh Metl
Exterior Wall 2	
Roof Structure	Gable
Roof Cover	Metal/Tin
Interior Wall 1	Minim/Masonry
Interior Wall 2	
Interior Floor 1	Concr-Finished
Interior Floor 2	
Heating Fuel	Oil
Heating Type	Hot Air-no Duc
AC Type	None
Struct Class	
Bldg Use	Hospital 96
Bedrooms	
Full Baths	
Half Baths	
Usrfld 218	
Usrfld 219	
1st Floor Use:	
Heat/AC	None
Frame Type	Steel
Baths/Plumbing	Average
Ceiling/Wall	None
Rooms/Prtns	Average
Wall Height	18.00
% Comn Wall	

Building Photo

(http://images.vgsi.com/photos2/BristolCTPhotos//default.jpg)

Building Layout

(ParcelSketch.ashx?pid=2194&bid=40200)

Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	3,900	3,900
		3,900	3,900

Extra Features

Extra Features				Legend
Code	**Description**	**Size**	**Value**	**Bldg #**
OHD	Overhead Door	2.00 Units	$0	2
MEZ2	Mezzanine Fin.	600.00 S.F.	$12,900	2

Land

Land

Land Use

Use Code	928
Description	Hospital 94
Zone	I
Neighborhood	
Alt Land Appr	No
Category	

Land Line Valuation

Size (Acres)	1.8
Frontage	412
Depth	
Assessed Value	$167,370
Appraised Value	$239,100

Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
PAV1	Paving Asph.			8285.00 S.F.	$8,700	1
LT1	Light (1fixt)			2.00 UNITS	$1,900	1
FN3	Fence 6'			470.00 L.F.	$3,600	1
SHD1	Shed	MT	Metal	160.00 S.F.	$1,000	1

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2019	$280,000	$239,100	$519,100
19	$280,000	$239,100	$519,100
2018	$280,000	$239,100	$519,100

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2019	$196,000	$167,370	$363,370
19	$196,000	$167,370	$363,370
2018	$196,000	$167,370	$363,370

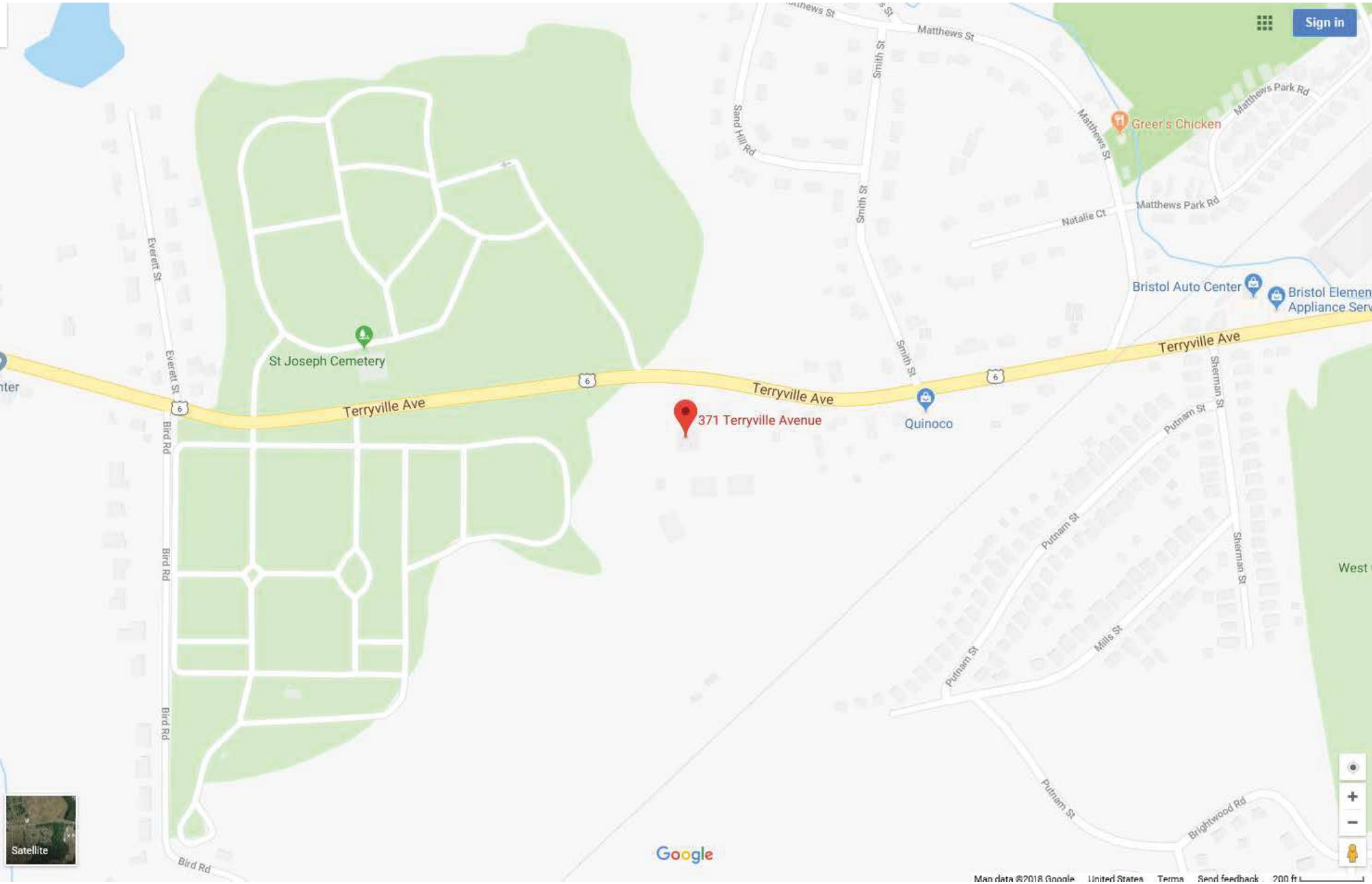

Sign in
Matthews St
Smith St
Sand Hill Rd
Greer's Chicken
Matthews Park Rd
Natalie Ct
Bristol Auto Center
Bristol Elemen
Appliance Serv
Everett St
St Joseph Cemetery
Terryville Ave
6
371 Terryville Avenue
Quinoco
Bird Rd
Sherman St
Putnam St
Mills St
Brightwood Rd
West
Satellite
Google
Map data ©2018 Google
United States
Terms
Send feedback
200 ft

Exhibit C

Construction Drawings

DISH Wireless L.L.C. SITE ID:

BOBDL00065A

DISH Wireless L.L.C. SITE ADDRESS:

371 TERRYVILLE AVENUE
BRISTOL, CT 06010

CONNECTICUT CODE COMPLIANCE

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

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

SHEET INDEX

SCOPE OF WORK

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

TOWER SCOPE OF WORK:
- INSTALL (3) PROPOSED PANEL ANTENNAS (1 PER SECTOR)
- INSTALL (1) PROPOSED TOWER 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

GROUND SCOPE OF WORK:
- INSTALL (1) PROPOSED METAL PLATFORM
- INSTALL (1) PROPOSED ICE BRIDGE
- INSTALL (1) PROPOSED PPC CABINET
- INSTALL (1) PROPOSED EQUIPMENT CABINET
- INSTALL (1) PROPOSED POWER CONDUIT
- INSTALL (1) PROPOSED TELCO CONDUIT
- INSTALL (1) PROPOSED TELCO-FIBER BOX
- INSTALL (1) PROPOSED GPS UNIT
- INSTALL (1) PROPOSED FIBER NID (IF REQUIRED)

SITE PHOTO

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

811

GENERAL NOTES

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

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

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

SITE INFORMATION

PROPERTY OWNER:	LAVIERO REALTY LLC
ADDRESS:	70 MAUREEN DR BRISTOL, CT 06010
TOWER TYPE:	MONOPOLE
TOWER CO SITE ID:	842859
TOWER APP NUMBER:	556627
COUNTY:	HARTFORD
LATITUDE (NAD 83):	41° 40' 47.71" N 41.679919 N
LONGITUDE (NAD 83):	72° 57' 45.18" W 72.96255 W
ZONING JURISDICTION:	CONNECTICUT SITING COUNCIL
ZONING DISTRICT:	I
PARCEL NUMBER:	61-67-3
OCCUPANCY GROUP:	U
CONSTRUCTION TYPE:	II-B
POWER COMPANY:	EVERSOURCE
TELEPHONE COMPANY:	T.B.D

PROJECT DIRECTORY

APPLICANT:	DISH Wireless L.L.C. 5701 SOUTH SANTA FE DRIVE LITTLETON, CO 80120
TOWER OWNER:	CROWN CASTLE 2000 CORPORATE DRIVE CANONSBURG, PA 15317 (877) 486-9377
SITE DESIGNER:	B+T GROUP 1717 S. BOULDER AVE. SUITE 300 TULSA, OK 74119 (918) 587-4630
SITE ACQUISITION:	NICHOLAS CURRY NICHOLAS.CURRY@DISH.COM
CONSTRUCTION MANAGER:	JAVIER SOTO JAVIER.SOTO@DISH.COM
RF ENGINEER:	BOSSENER CHARLES BOSSENER.CHARLES@DISH.COM

DIRECTIONS

DIRECTIONS FROM WATERBURY AIRPORT (N41):
HEAD NORTH ON CT-262 TOWARD WATCH TOWER RD, TURN RIGHT ONTO US-6 E, PASS BY DUNKIN' (ON THE RIGHT IN 2.6 MI), TURN RIGHT, TURN LEFT, DESTINATION WILL BE ON THE LEFT.

VICINITY MAP

NO SCALE

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

B+T GRP
1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
www.btgrp.com

10/7/21

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/22

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

DRAWN BY:	CHECKED BY:	APPROVED BY:
JJR	JJR	MDW

RFDS REV #: 0

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	6/15/21	ISSUED FOR REVIEW
0	10/7/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
96712.011.01

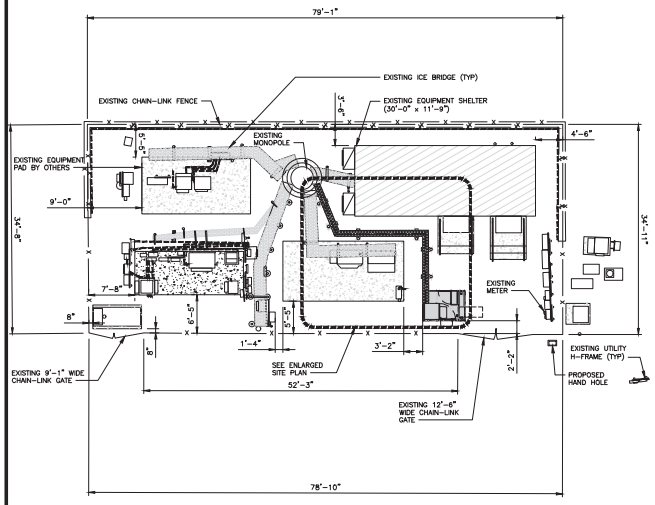
DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00065A
371 TERRYVILLE AVENUE
BRISTOL, CT 06010

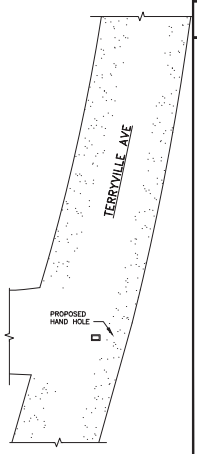
SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

NOTES

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





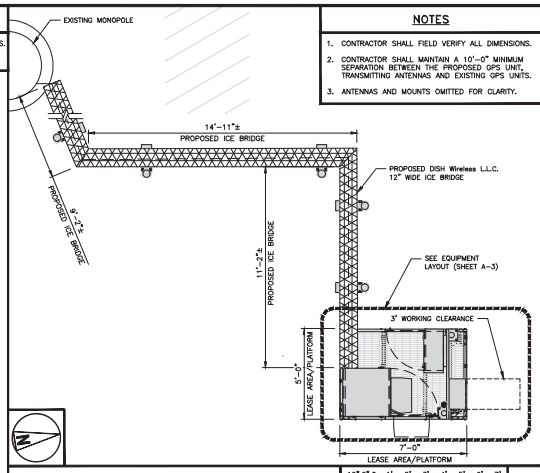
OVERALL SITE PLAN

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

1

NOTES

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



ENLARGED SITE PLAN

12" 6" 0 1' 2' 3' 4' 5' 6' 7'
3/8"=1'-0"

2

UTILITY PLAN

NO SCALE

3

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

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1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
www.btgrp.com

10/7/21

B&T ENGINEERING, INC.
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JJR	JJR	MDW

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CONSTRUCTION DOCUMENTS

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96712.011.01

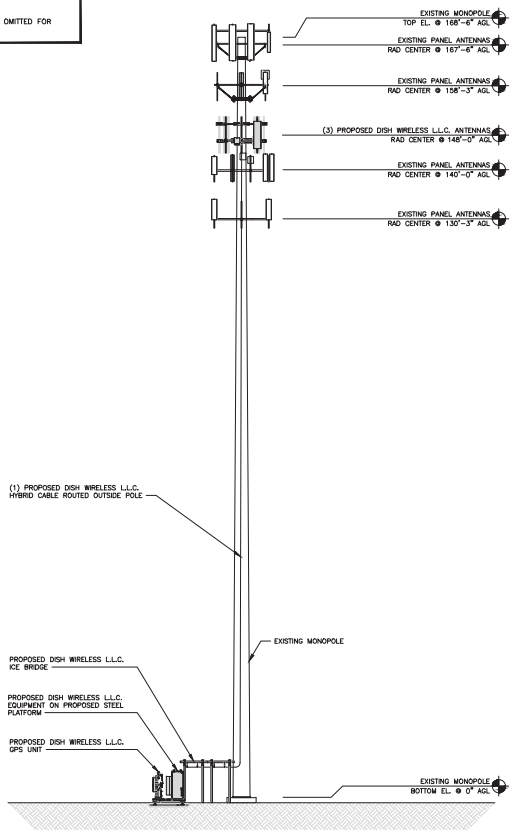
DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00065A
371 TERRYVILLE AVENUE
BRISTOL, CT 06010

SHEET TITLE
OVERALL AND ENLARGED SITE PLAN

SHEET NUMBER
A-1

NOTES

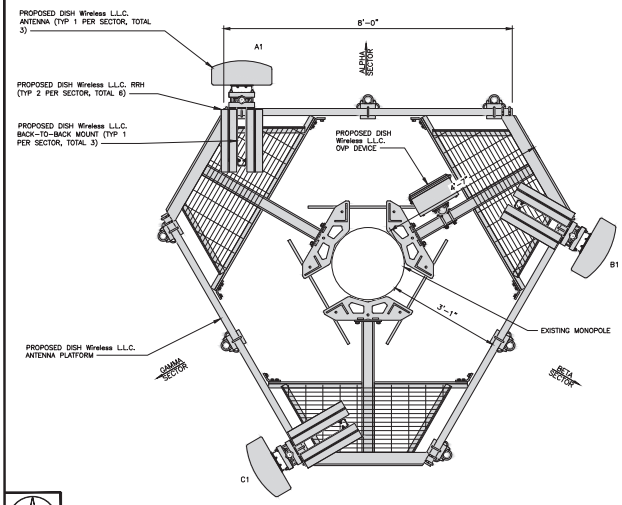
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNA AND MW DISH SPECIFICATIONS REFER TO ANTENNA SCHEDULE AND TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS
3. EXISTING EQUIPMENT AND FENCE OMITTED FOR CLARITY.



PROPOSED NORTH-WEST ELEVATION

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

1



ANTENNA LAYOUT

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

2

SECTOR	POSITION	ANTENNA						TRANSMISSION CABLE
		EXISTING OR PROPOSED	MANUFACTURER – MODEL NUMBER	TECHNOLOGY	SIZE (HxW)	AZIMUTH	RAD CENTER	FEED LINE TYPE AND LENGTH
ALPHA	A1	PROPOSED	JMA – MX08FRO665-21	5G	72.0" x 20.0"	0°	148'-0"	(1) HIGH-CAPACITY HYBRID CABLE (210' LONG)
BETA	B1	PROPOSED	JMA – MX08FRO665-21	5G	72.0" x 20.0"	120°	148'-0"	
GAMMA	C1	PROPOSED	JMA – MX08FRO665-21	5G	72.0" x 20.0"	240°	148'-0"	

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

NOTES

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

ANTENNA SCHEDULE

NO SCALE

3

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

B+T GRP
1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
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10/7/21

B&T ENGINEERING, INC.
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Expires 2/10/22

DRAWN BY:	CHECKED BY:	APPROVED BY:
JJR	JJR	MDW

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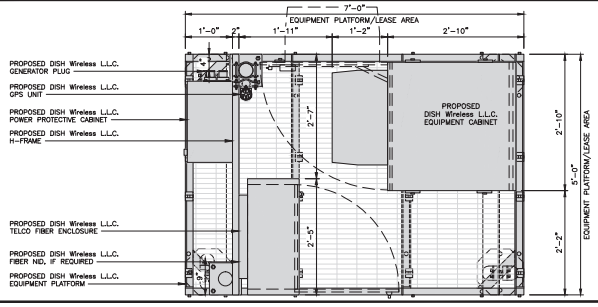
DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00065A
371 TERRYVILLE AVENUE
BRISTOL, CT 06010

SHEET TITLE
ELEVATION, ANTENNA LAYOUT AND SCHEDULE

SHEET NUMBER
A-2



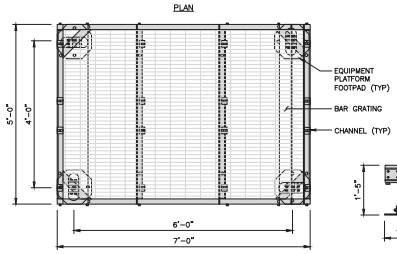
PLATFORM EQUIPMENT PLAN

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"

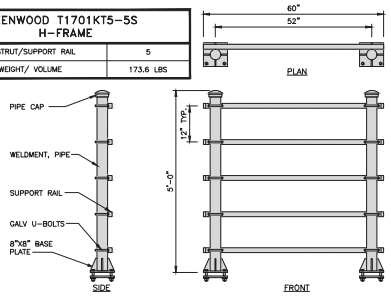


PLATFORM DETAIL

NO SCALE

2

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



H-FRAME DETAIL

NO SCALE

3

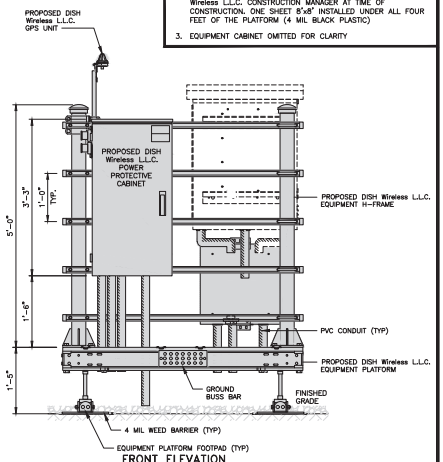
NOT USED

NO SCALE

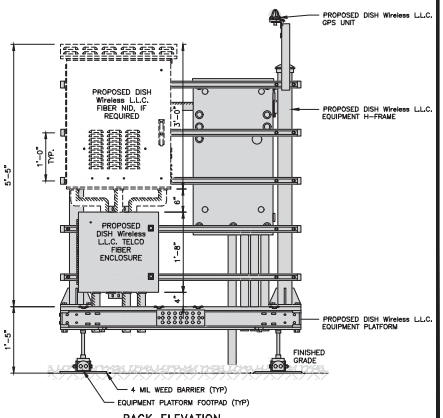
4

NOTES

1. CONTRACTOR TO BURY PLATFORM FEET WITH A MINIMUM OF 2" OF FILL PER EXISTING SITE SURFACE
2. WEED BARRIER FABRIC TO BE ADDED AT DISCRETION OF DISH Wireless 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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Expires 2/10/22

DRAWN BY:	CHECKED BY:	APPROVED BY:
JJR	JJR	MDW

RFDS REV #: 0

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	6/15/21	ISSUED FOR REVIEW
0	10/7/21	ISSUED FOR CONSTRUCTION

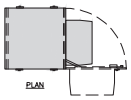
A&E PROJECT NUMBER
96712.011.01

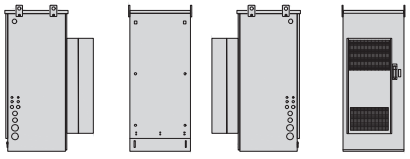
DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00065A
371 TERRYVILLE AVENUE
BRISTOL, CT 06010

SHEET TITLE
EQUIPMENT PLATFORM AND H-FRAME DETAILS

SHEET NUMBER
A-3

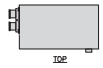
CHARLES INDUSTRY HEX CUBE-PM639155N4	
DIMENSIONS (HxWxD):	74"x32"x32"
POWER PLANT:	-48VDC ABB/600W
TOTAL WEIGHT (EMPTY)	408 LBS

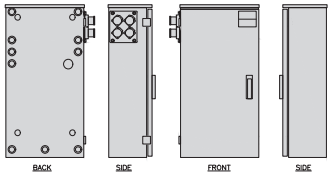




CABINET DETAIL | NO SCALE | 1

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



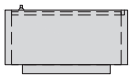


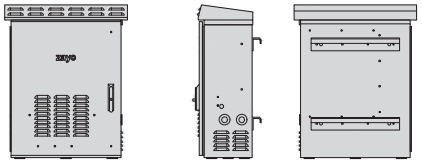
POWER PROTECTION CABINET (PPC) DETAIL | NO SCALE | 2

NOT USED | NO SCALE | 3

NOT USED | NO SCALE | 4

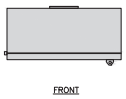
ZAYO 5RU CABINET LEFT SWING DOOR ("LIT" SITES)	
DIMENSIONS (HxWxD)	36.115"x29"x12.9"
WEIGHT	85 LBS
POWER INPUT	20A, -48VDC

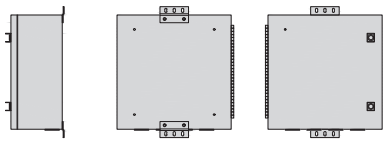




NETWORK INTERFACE UNIT DETAIL | NO SCALE | 5

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

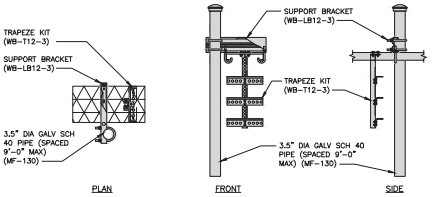




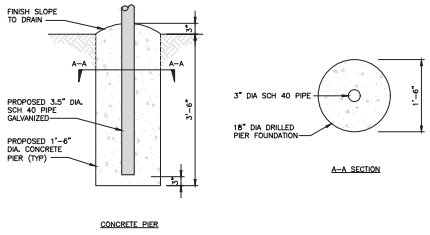
FIBER TELCO ENCLOSURE DETAIL | NO SCALE | 6

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

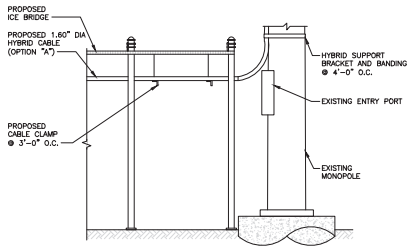
INCLUDED PRODUCTS:	WB-T12-3 TRAPEZE KIT, 3 RUNGS
	WB-LB12-3 SUPPORT BRACKET
	MF-130 DIRECT BURIAL PIPE COLUMN, 13'-4"



ICE BRIDGE DETAIL | NO SCALE | 7



TYPICAL ICE BRIDGE CONCRETE PIER DETAIL | NO SCALE | 8



HYBRID CABLE RUN | NO SCALE | 9

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PROJECT INFORMATION
BOBDL00065A
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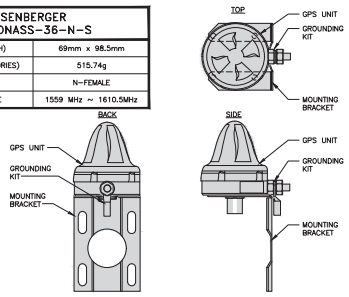
BRISTOL, CT 06010

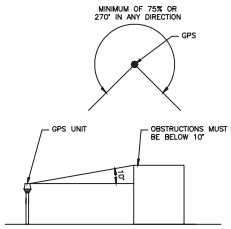
SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-4

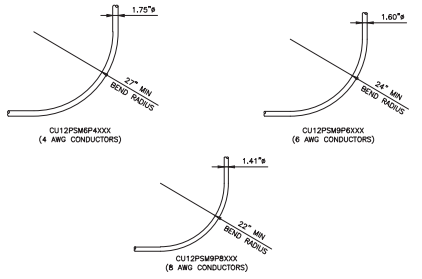
ROSENBERGER GPSGLONASS-36-N-S	
DIMENSION (DIA x H)	69mm x 98.5mm
WEIGHT (WITH ACCESSORIES)	515.74g
CONNECTOR	N-FEMALE
FREQUENCY RANGE	1559 MHz ~ 1610.5MHz



GPS ANTENNA DETAIL | NO SCALE | 1



GPS MINIMUM SKY VIEW REQUIREMENTS | NO SCALE | 2



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

NOT USED | NO SCALE | 4

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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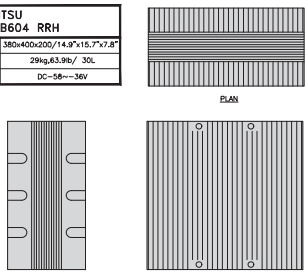
SHEET TITLE
EQUIPMENT DETAILS

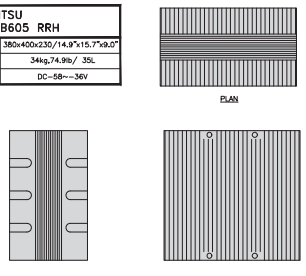
SHEET NUMBER
A-5

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



REMOTE RADIO HEAD DETAIL | NO SCALE | 1

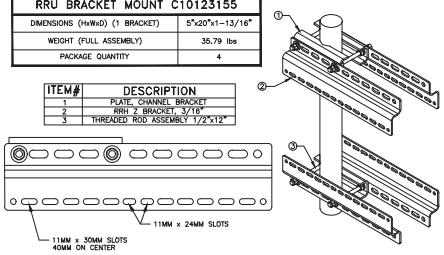
FUJITSU TA08025-B605 RRH	
DIMENSIONS (HxWxD) (KG/IN)	380x400x230/14.9"x15.7"x9.0"
WEIGHT(KG,LB)/ VOLUME	34kg,74.9lb/ 35L
POWER SUPPLY	DC-58~-36V



REMOTE RADIO HEAD DETAIL | NO SCALE | 2

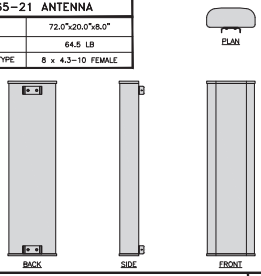
SABRE INDUSTRIES RRU BRACKET MOUNT C10123155	
DIMENSIONS (HxWxD) (1 BRACKET)	5"x20"x1-13/16"
WEIGHT (FULL ASSEMBLY)	35.79 lbs
PACKAGE QUANTITY	4

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



REMOTE RADIO MOUNT DETAIL | NO SCALE | 3

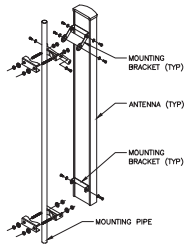
JMA WIRELESS MX08FRO665-21 ANTENNA	
DIMENSIONS (HxWxD)	72.0"x20.0"x8.0"
TOTAL WEIGHT	64.5 LB
RF PORTS, CONNECTOR TYPE	8 x 4.3-10 FEMALE



ANTENNA DETAIL | NO SCALE | 4

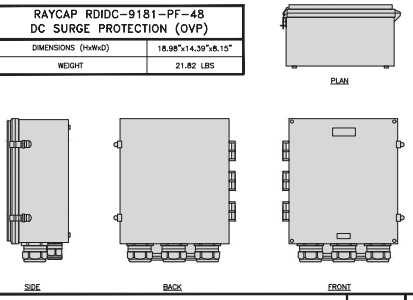
NOT USED | NO SCALE | 5

M04 MOUNTING BRACKET HPA-33R-BUU-H4-K	
WIDTH	5" (135mm)
DEPTH	2" (51mm)
HEIGHT	8" (213mm)
TOTAL WEIGHT (WITH BRACKETS)	1.5 LBS (15.50 Kg)
HOUSING MATERIAL	ASA/ABS/ALUMINUM
RADOME COLOR	LIGHT GRAY
CONNECTOR	1XB-PIN DAISY CHAIN



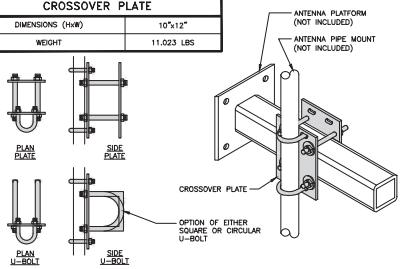
ANTENNA MOUNTING DETAIL | NO SCALE | 6

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



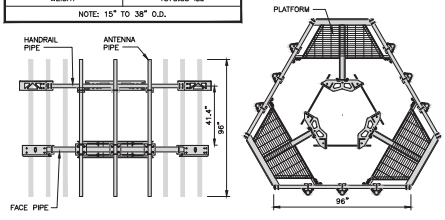
SURGE SUPPRESSION DETAIL (OVP) | NO SCALE | 7

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



RRH/OVP MOUNT DETAIL | NO SCALE | 8

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



ANTENNA PLATFORM DETAIL | NO SCALE | 9

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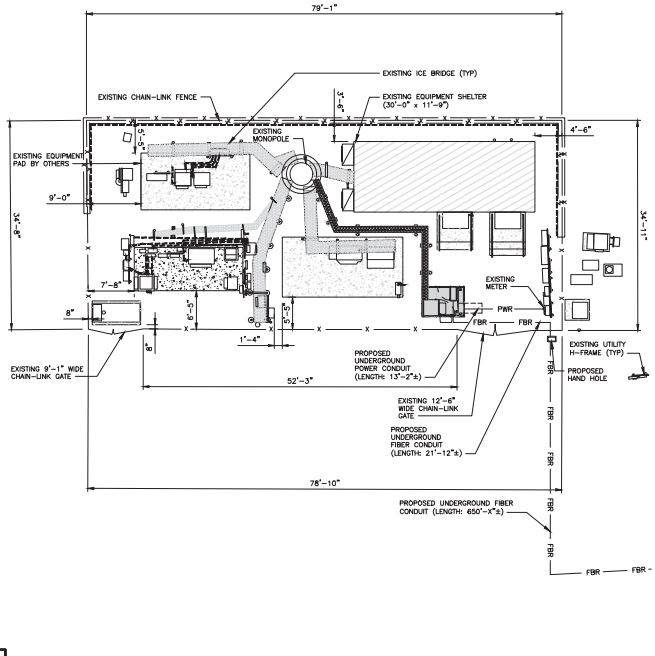
BRISTOL, CT 06010

SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-6

NOTES

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



UTILITY ROUTE PLAN

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

1

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

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

ELECTRICAL NOTES

NO SCALE

2

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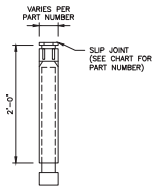
BRISTOL, CT 06010

SHEET TITLE
ELECTRICAL/FIBER ROUTE PLAN AND NOTES

SHEET NUMBER
E-1

CARLON EXPANSION FITTINGS

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

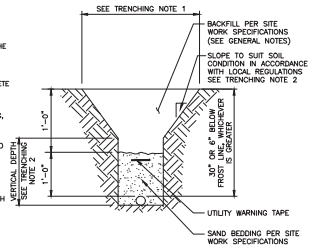


NOTE:
CONTRACTOR TO INSTALL EXPANSION FITTING SLIP JOINT AT METER CENTER CONDUIT TERMINATION, AS PER LOCAL UTILITY POLICY, ORDINANCE AND/OR SPECIFIED REQUIREMENT.

EXPANSION JOINT DETAIL | NO SCALE | 1

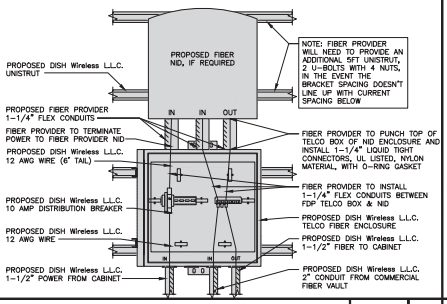
TRENCHING NOTES

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



TYPICAL UNDERGROUND TRENCH DETAIL | NO SCALE | 2

NOT USED | NO SCALE | 3



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

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/22

DRAWN BY:	CHECKED BY:	APPROVED BY:
JJR	JJR	MDW

RFDS REV #: 0

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
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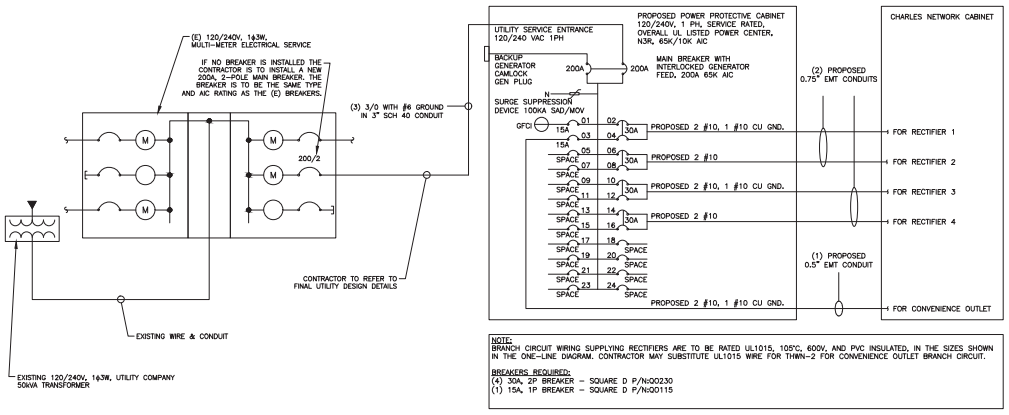
A&E PROJECT NUMBER
96712.011.01

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00065A
371 TERRYVILLE AVENUE
BRISTOL, CT 06010

SHEET TITLE
ELECTRICAL DETAILS

SHEET NUMBER
E-2



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

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

NOTES

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

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

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

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

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

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

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

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

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

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

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

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

PPC ONE-LINE DIAGRAM

NO SCALE | 1

PROPOSED CHARLES PANEL SCHEDULE

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

PANEL SCHEDULE

NO SCALE | 2

NOT USED

NO SCALE | 3

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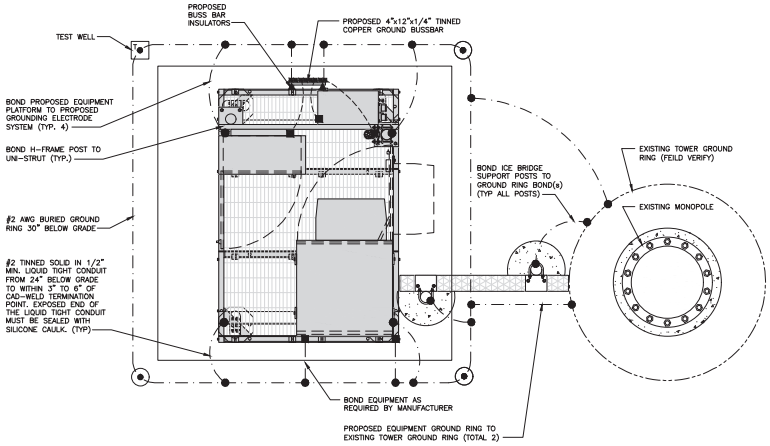
PROJECT INFORMATION
BOBDL00065A
371 TERRYVILLE AVENUE
BRISTOL, CT 06010

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

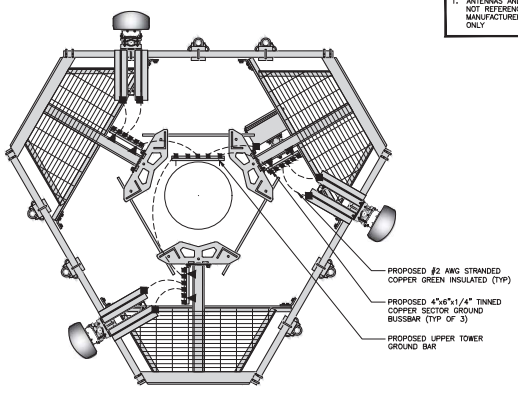
SHEET NUMBER
E-3



TYPICAL EQUIPMENT GROUNDING PLAN | NO SCALE | 1

NOTES

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



TYPICAL ANTENNA GROUNDING PLAN | NO SCALE | 2

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

GROUNDING LEGEND

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

GROUNDING KEY NOTES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

GROUNDING KEY NOTES | NO SCALE | 3

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DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00065A
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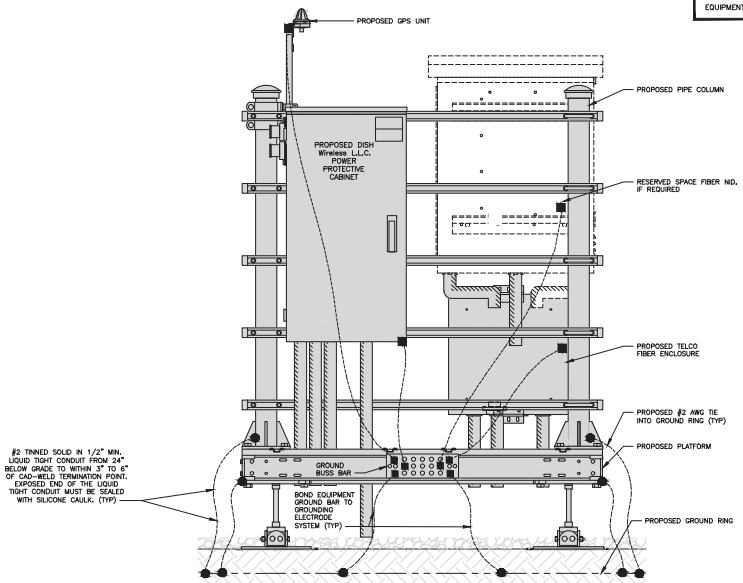
BRISTOL, CT 06010

SHEET TITLE
GROUNDING PLANS AND NOTES

SHEET NUMBER
G-1

NOTES

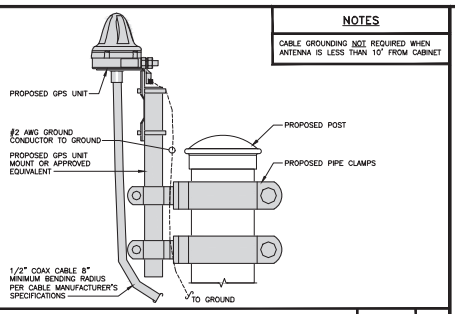
EQUIPMENT CABINET OMITTED FOR CLARITY



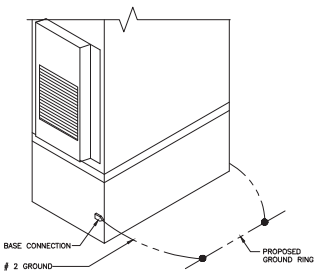
H-FRAME GROUNDING DETAIL | NO SCALE | 1

NOTES

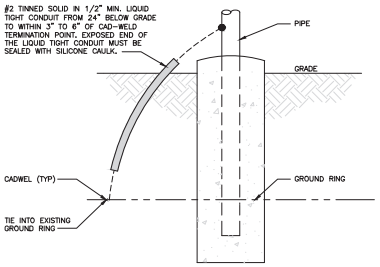
CABLE GROUNDING NOT REQUIRED WHEN ANTENNA IS LESS THAN 10' FROM CABINET



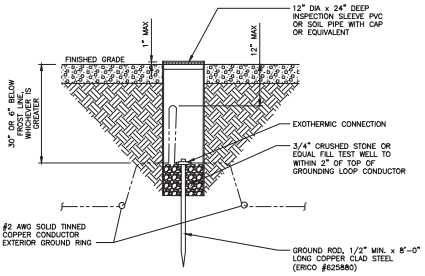
TYPICAL GPS UNIT GROUNDING | NO SCALE | 2



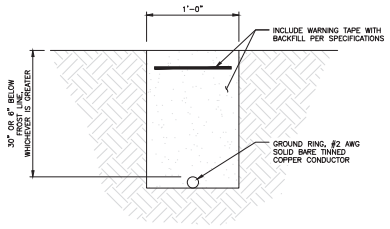
OUTDOOR CABINET GROUNDING | NO SCALE | 3



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 TITLE

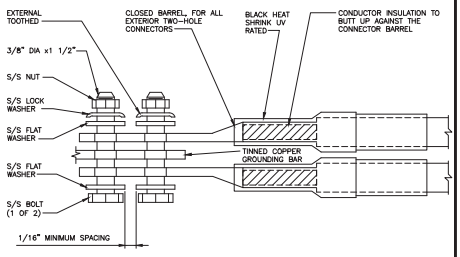
GROUNDING DETAILS

SHEET NUMBER

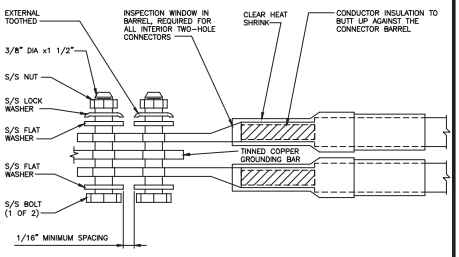
G-2

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

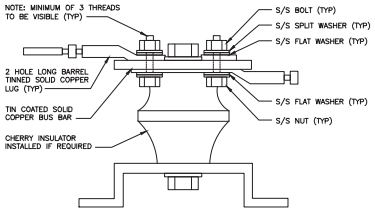
TYPICAL GROUNDING NOTES | NO SCALE | 1



TYPICAL EXTERIOR TWO HOLE LUG | NO SCALE | 2



TYPICAL INTERIOR TWO HOLE LUG | NO SCALE | 3



LUG DETAIL | NO SCALE | 4

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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BRISTOL, CT 06010

SHEET TITLE

GROUNDING DETAILS

SHEET NUMBER

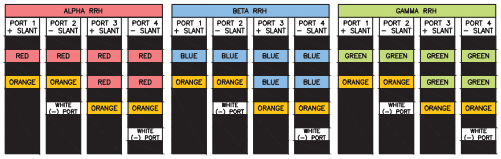
G-3

RF JUMPER COLOR CODING

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

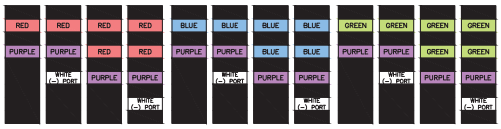
LOW-BAND RRH –
(600MHz N71 BASEBAND) +
(850MHz N26 BAND) +
(700MHz N29 BAND) – OPTIONAL PER MARKET

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



MID-BAND RRH –
(AWS BANDS N66+N70)

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

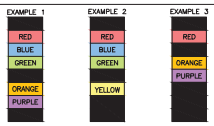


HYBRID/DISCREET CABLES

INCLUDE SECTOR BANDS BEING SUPPORTED ALONG WITH FREQUENCY BANDS

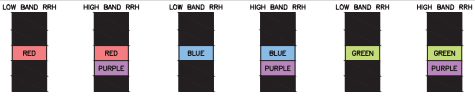
EXAMPLE 1 – HYBRID, OR DISCREET, SUPPORTS ALL SECTORS, BOTH LOW-BANDS AND MID-BANDS

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



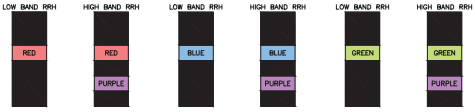
FIBER JUMPERS TO RRHs

LOW-BAND RRH FIBER CABLES HAVE SECTOR STRIPE ONLY



POWER CABLES TO RRHs

LOW-BAND RRH POWER CABLES HAVE SECTOR STRIPE ONLY

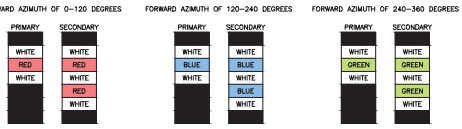


RET MOTORS AT ANTENNAS

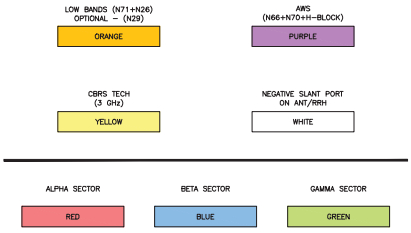
MICROWAVE RADIO LINKS

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

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



RF CABLE COLOR CODES | NO SCALE | 1



COLOR IDENTIFIER | NO SCALE | 2

NOT USED | NO SCALE | 3

NOT USED | NO SCALE | 4

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

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B&T ENGINEERING, INC.
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DRAWN BY:	CHECKED BY:	APPROVED BY:
JJR	JJR	MDW

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CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	6/15/21	ISSUED FOR REVIEW
0	10/7/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
96712.011.01

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00065A
371 TERRYVILLE AVENUE
BRISTOL, CT 06010

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 — F
SMOKE DETECTION (DC) — SD
EMERGENCY LIGHTING (DC)
SECURITY LIGHT W/PHOTOCELL LITHONIA ALXW LED-1-25A400/51K-SR4-120-PE-DDBTXD
CHAIN LINK FENCE — x — x — x — x —
WOOD/WROUGHT IRON FENCE
WALL STRUCTURE
LEASE AREA
PROPERTY LINE (PL)
SETBACKS
ICE BRIDGE
CABLE TRAY
WATER LINE — W — W — W — W — W —
UNDERGROUND POWER — UGP — UGP — UGP — UGP — UGP —
UNDERGROUND TELCO — UGT — UGT — UGT — UGT — UGT —
OVERHEAD POWER — OHP — OHP — OHP — OHP —
OVERHEAD TELCO — OHT — OHT — OHT — OHT —
UNDERGROUND TELCO/POWER — UGT/P — UGT/P — UGT/P — UGT/P —
ABOVE GROUND POWER — AGP — AGP — AGP — AGP — AGP —
ABOVE GROUND TELCO — AGT — AGT — AGT — AGT — AGT —
ABOVE GROUND TELCO/POWER — AGT/P — AGT/P — AGT/P — AGT/P —
WORKPOINT
SECTION REFERENCE — W.P. — XX X-X
DETAIL REFERENCE — XX X-X

ABBREVIATIONS

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

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SHEET TITLE
LEGEND AND ABBREVIATIONS

SHEET NUMBER
GN-1

SITE ACTIVITY REQUIREMENTS:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

GENERAL NOTES:

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

CONTRACTOR:GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION

CARRIER:DISH Wireless L.L.C.

TOWER OWNER:TOWER OWNER

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

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

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

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

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

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

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

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

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

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

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

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

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SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-2

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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B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/22

DRAWN BY:	CHECKED BY:	APPROVED BY:
JJR	JJR	MDW

RFDS REV #: 0

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	6/15/21	ISSUED FOR REVIEW
0	10/7/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
96712.011.01

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00065A
371 TERRYVILLE AVENUE
BRISTOL, CT 06010

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

BOBDL00065A
371 TERRYVILLE AVENUE
BRISTOL, CT 06010

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-4

Exhibit D

Structural Analysis Report

Date: **June 14, 2021**

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

Subject:	**Structural Analysis Report**	
Carrier Designation:	***DISH Network* Co-Locate**	
	Site Number:	BOBDL00065A
	Site Name:	CT-CCI-T-842859
Crown Castle Designation:	**BU Number:**	842859
	Site Name:	BRISTOL CENTER
	JDE Job Number:	650054
	Work Order Number:	1963258
	Order Number:	556627 Rev. 1
Engineering Firm Designation:	**Crown Castle Project Number:**	1963258
Site Data:	**371 Terryville Avenue, Bristol, Hartford County, CT** **Latitude *41° 40' 47.71"*, Longitude *-72° 57' 45.18"*** **168.333 Foot - Monopole Tower**	

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

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

LC7: Proposed Equipment Configuration **Sufficient Capacity – 99.6%**

This analysis utilizes an ultimate 3-second gust wind speed of 120 mph as required by the 2018 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Section 2 - "Analysis Criteria".

Structural analysis prepared by: Steven Hu

Respectfully submitted by:

Digitally signed by Maham Barimani
Date: 2021.06.14 17:21:46 -04'00'

STATE OF CONNECTICUT
MAHAM BARIMANI
30501
LICENSED
PROFESSIONAL ENGINEER

Maham Barimani, P.E.
Senior Project Engineer

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 168.333 ft Monopole tower designed by Engineered Endeavors, Inc. The tower has been modified multiple times in the past to accommodate additional loading.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	120 mph
Exposure Category:	C
Topographic Factor:	1
Ice Thickness:	2 in
Wind Speed with Ice:	50 mph
Service Wind Speed:	60 mph

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
148.0	148.0	3	fujitsu	TA08025-B604	1	1-1/2
		3	fujitsu	TA08025-B605		
		3	jma wireless	MX08FRO665-21 w/ Mount Pipe		
		1	raycap	RDIDC-9181-PF-48		
		1	tower mounts	Commscope MC-PK8-DSH		

Table 2 - Other Considered Equipment

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
168.0	169.0	3	ericsson	RRUS 32 B2	3 6 2 6	3/8 7/8 1 1-5/8
		3	ericsson	RRUS 32 B30		
		3	ericsson	RRUS 4415 B25		
		3	ericsson	RRUS 4449 B5/B12		
		3	ericsson	RRUS E2 B29		
		1	raycap	DC6-48-60-18-8C		
		3	raycap	DC6-48-60-18-8F		
	168.0	1	cci antennas	DMP65R-BU6D w/ Mount Pipe		
		2	cci antennas	DMP65R-BU8D w/ Mount Pipe		
		2	cci antennas	TPA-65R-LCUUUU-H8 w/ Mount Pipe		
		1	kathrein	80010798 w/ Mount Pipe		
		1	kathrein	80010965 w/ Mount Pipe		
		2	kathrein	80010966 w/ Mount Pipe		
		1	tower mounts	Platform Mount [LP 304-1_KCKR-HR-1]		
	167.0	3	kathrein	800 10121 w/ Mount Pipe		
		6	powerwave	LGP21401		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
			technologies			
158.0	158.0	3	alcatel lucent	1900MHZ RRH (65MHZ)	4	1-1/4
		3	alcatel lucent	800 EXTERNAL NOTCH FILTER		
		3	alcatel lucent	800MHZ RRH		
		3	alcatel lucent	TD-RRH8X20-25		
		3	rfs celwave	APXVSPP18-C-A20 w/ Mount Pipe		
		3	rfs celwave	APXVTM14-C-120 w/ Mount Pipe		
		1	tower mounts	T-Arm Mount [TA 602-3_KCKR]		
138.0	140.0	3	antel	BXA-70063/4CF w/ Mount Pipe	1 7	1-1/4 1-5/8
		3	commscope	NHH-65B-R2B w/ Mount Pipe		
		3	commscope	NHHSS-65B-R2B w/ Mount Pipe		
		1	raycap	RVZDC-6627-PF-48		
		3	samsung telecommunications	CBRS RT4401-48A		
		3	samsung telecommunications	MT6407-77A w/ Mount Pipe		
		3	samsung telecommunications	RFV01U-D1A		
		3	samsung telecommunications	RFV01U-D2A		
	138.0	1	tower mounts	Platform Mount [LP 303-1]		
128.0	130.0	3	rfs celwave	APXVAARR24_43-U-NA20 w/ Mount Pipe	3 12	1-1/4 1-5/8
		3	ericsson	AIR 32 B2A/B66AA w/ Mount Pipe		
		3	ericsson	RADIO 4449 B12/B71		
		3	ericsson	KRY 112 144/1		
	128.0	1	tower mounts	Platform Mount [LP 303-1]		
70.0	70.0	1	cci tower mounts	Side Arm Mount [SO 701-1]	1	1/2
		1	gps	GPS_A		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Reference	Source
4-GEOTECHNICAL REPORTS	5452600	CCISITES
4-POST-MODIFICATION INSPECTION	9239992	CCISITES
4-POST-MODIFICATION INSPECTION	6121087	CCISITES
4-POST-MODIFICATION INSPECTION	5595874	CCISITES
4-POST-MODIFICATION INSPECTION	5114340	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	4529295	CCISITES

Document	Reference	Source
4-TOWER MANUFACTURER DRAWINGS	5135435	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	8800798	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	6024140	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	5907572	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	5111173	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	4964264	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 included in Appendix C.

3.2) Assumptions

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

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

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
168.33 - 163.33	Pole	TP19.834x19x0.1875	Pole	12.3%	Pass
163.33 - 158.33	Pole	TP20.669x19.834x0.1875	Pole	23.2%	Pass
158.33 - 153.33	Pole	TP21.503x20.669x0.1875	Pole	37.4%	Pass
153.33 - 148.33	Pole	TP22.337x21.503x0.1875	Pole	50.1%	Pass
148.33 - 143.33	Pole	TP23.172x22.337x0.1875	Pole	65.5%	Pass
143.33 - 138.33	Pole	TP24.006x23.172x0.1875	Pole	79.3%	Pass
138.33 - 134.16	Pole	TP25.313x24.006x0.1875	Pole	93.7%	Pass
134.16 - 129.16	Pole	TP25.15x24.327x0.25	Pole	76.7%	Pass
129.16 - 125.75	Pole	TP25.712x25.15x0.25	Pole	84.6%	Pass
125.75 - 125.5	Pole	TP25.753x25.712x0.25	Pole	85.1%	Pass
125.5 - 120.5	Pole	TP26.576x25.753x0.25	Pole	95.1%	Pass
120.5 - 120.25	Pole + Reinf.	TP26.617x26.576x0.4813	Reinf. 10 Tension Rupture	88.1%	Pass
120.25 - 115.25	Pole + Reinf.	TP27.44x26.617x0.475	Reinf. 10 Tension Rupture	97.1%	Pass

115.25 - 113.83	Pole + Reinf.	TP27.673x27.44x0.475	Reinf. 10 Tension Rupture	99.6%	Pass
113.83 - 113.48	Pole + Reinf.	TP27.731x27.673x0.65	Reinf. 10 Tension Rupture	69.5%	Pass
113.48 - 113.25	Pole + Reinf.	TP27.769x27.731x0.65	Reinf. 10 Tension Rupture	69.7%	Pass
113.25 - 108.25	Pole + Reinf.	TP28.592x27.769x0.6375	Reinf. 10 Tension Rupture	75.8%	Pass
108.25 - 103.25	Pole + Reinf.	TP29.415x28.592x0.625	Reinf. 10 Tension Rupture	81.5%	Pass
103.25 - 98.25	Pole + Reinf.	TP30.239x29.415x0.6125	Reinf. 10 Tension Rupture	86.8%	Pass
98.25 - 93.25	Pole + Reinf.	TP31.062x30.239x0.6	Reinf. 10 Tension Rupture	91.9%	Pass
93.25 - 89.11	Pole + Reinf.	TP32.493x31.062x0.6	Reinf. 10 Tension Rupture	95.8%	Pass
89.11 - 83.55	Pole + Reinf.	TP32.155x31.243x0.6625	Reinf. 2 Tension Rupture	91.5%	Pass
83.55 - 82.92	Pole + Reinf.	TP32.26x32.155x0.6625	Reinf. 2 Tension Rupture	91.9%	Pass
82.92 - 82.67	Pole + Reinf.	TP32.301x32.26x0.95	Reinf. 2 Tension Rupture	67.8%	Pass
82.67 - 82.5	Pole + Reinf.	TP32.328x32.301x0.95	Reinf. 2 Tension Rupture	67.9%	Pass
82.5 - 82.25	Pole + Reinf.	TP32.369x32.328x0.6875	Reinf. 2 Tension Rupture	90.1%	Pass
82.25 - 77.25	Pole + Reinf.	TP33.19x32.369x0.675	Reinf. 2 Tension Rupture	93.7%	Pass
77.25 - 73.42	Pole + Reinf.	TP33.819x33.19x0.6625	Reinf. 2 Tension Rupture	96.4%	Pass
73.42 - 73.17	Pole + Reinf.	TP33.86x33.819x0.9375	Reinf. 9 Tension Rupture	73.1%	Pass
73.17 - 68.17	Pole + Reinf.	TP34.68x33.86x0.9125	Reinf. 9 Tension Rupture	75.9%	Pass
68.17 - 64.25	Pole + Reinf.	TP35.323x34.68x0.8875	Reinf. 9 Tension Rupture	78.0%	Pass
64.25 - 64	Pole + Reinf.	TP35.364x35.323x0.7375	Reinf. 3 Tension Rupture	89.6%	Pass
64 - 59	Pole + Reinf.	TP36.185x35.364x0.7375	Reinf. 3 Tension Rupture	92.4%	Pass
59 - 54	Pole + Reinf.	TP37.006x36.185x0.7125	Reinf. 3 Tension Rupture	95.0%	Pass
54 - 53.5	Pole + Reinf.	TP37.088x37.006x0.7125	Reinf. 3 Tension Rupture	95.2%	Pass
53.5 - 53.25	Pole + Reinf.	TP37.129x37.088x0.825	Reinf. 7 Tension Rupture	89.9%	Pass
53.25 - 49	Pole + Reinf.	TP38.702x37.129x0.8125	Reinf. 7 Tension Rupture	91.9%	Pass
49 - 42.66	Pole + Reinf.	TP38.242x37.201x0.725	Reinf. 4 Tension Rupture	94.7%	Pass
42.66 - 41.75	Pole + Reinf.	TP38.392x38.242x0.725	Reinf. 4 Tension Rupture	95.0%	Pass
41.75 - 41.5	Pole + Reinf.	TP38.433x38.392x0.7625	Reinf. 4 Tension Rupture	91.2%	Pass
41.5 - 36.5	Pole + Reinf.	TP39.254x38.433x0.75	Reinf. 4 Tension Rupture	93.0%	Pass
36.5 - 32.75	Pole + Reinf.	TP39.87x39.254x0.75	Reinf. 4 Tension Rupture	94.3%	Pass
32.75 - 32.5	Pole + Reinf.	TP39.912x39.87x1	Reinf. 4 Tension Rupture	72.3%	Pass
32.5 - 29.83	Pole + Reinf.	TP40.35x39.912x1	Reinf. 4 Tension Rupture	73.1%	Pass
29.83 - 29.58	Pole + Reinf.	TP40.391x40.35x0.9	Reinf. 8 Tension Rupture	88.7%	Pass
29.58 - 28.25	Pole + Reinf.	TP40.61x40.391x0.8875	Reinf. 8 Tension Rupture	89.1%	Pass
28.25 - 28	Pole + Reinf.	TP40.651x40.61x0.95	Reinf. 8 Tension Rupture	81.4%	Pass
28 - 23	Pole + Reinf.	TP41.472x40.651x0.95	Reinf. 8 Tension Rupture	82.9%	Pass
23 - 19.25	Pole + Reinf.	TP42.088x41.472x0.9375	Reinf. 8 Tension Rupture	84.0%	Pass
19.25 - 19	Pole + Reinf.	TP42.129x42.088x0.825	Reinf. 5 Tension Rupture	87.0%	Pass
19 - 14	Pole + Reinf.	TP42.95x42.129x0.8	Reinf. 5 Tension Rupture	88.3%	Pass
14 - 9	Pole + Reinf.	TP43.772x42.95x0.8	Reinf. 5 Tension Rupture	89.6%	Pass

9 - 4	Pole + Reinf.	TP44.593x43.772x0.7875	Reinf. 5 Tension Rupture	90.8%	Pass
4 - 0	Pole + Reinf.	TP45.25x44.593x0.775	Reinf. 5 Tension Rupture	91.7%	Pass
				Summary	
			Pole	95.1%	Pass
			Reinforcement	99.6%	Pass
			Overall	99.6%	Pass

Table 5 - Tower Component Stresses vs. Capacity - LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	63.5	Pass
1	Base Plate	0	66.4	Pass
1	Base Foundation (Structure)	0	88.3	Pass
1	Base Foundation (Soil Interaction)	0	58.5	Pass

Structure Rating (max from all components) =	99.6%

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

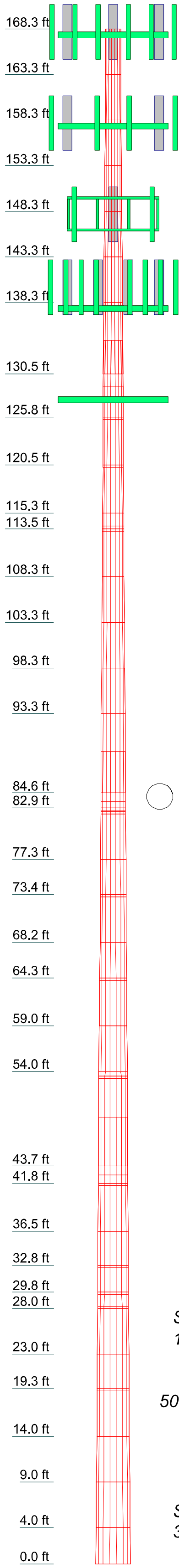
4.1) Recommendations

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

APPENDIX A

TNXTOWER OUTPUT

Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	5.00	18	0.1875		19.0000	19.8343	A572-65	0.2
2	5.00	18	0.1875		19.8343	20.6686		0.2
3	5.00	18	0.1875		20.6686	21.5030		0.2
4	5.00	18	0.1875		21.5030	22.3373		0.2
5	5.00	18	0.1875		22.3373	23.1716		0.2
6	5.00	18	0.1875		23.1716	24.0059		0.2
7	5.00 / 7.83	18	0.1875	3.66	24.0059	25.3125		0.4
8	[illegible]	18	[illegible]		[illegible]	[illegible]		0.3
9	[illegible]	18	[illegible]		[illegible]	[illegible]		[illegible]
10	[illegible]	18	[illegible]		[illegible]	[illegible]		[illegible]
11	[illegible]	18	[illegible]		[illegible]	[illegible]		0.3
12	[illegible]	18	[illegible]		[illegible]	[illegible]		[illegible]
13	5.00	18	[illegible]		[illegible]	[illegible]		0.7
14	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
15	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
16	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
17	5.00	18	[illegible]		[illegible]	[illegible]		0.9
18	5.00	18	0.6250		28.5924	29.4155		0.9
19	5.00	18	0.6125		29.4155	30.2386		0.9
20	5.00	18	0.6000		30.2386	31.0616		1.0
21	5.56 / 8.70	18	0.6000	4.56	31.0616	32.4932		1.7
22	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
23	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
24	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
25	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
26	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
27	5.00	18	[illegible]		[illegible]	[illegible]		1.3
28	[illegible]	18	[illegible]		[illegible]	[illegible]		1.0
29	[illegible]	18	[illegible]		[illegible]	[illegible]		[illegible]
30	5.00	18	[illegible]		[illegible]	[illegible]		1.6
31	[illegible]	18	[illegible]		[illegible]	[illegible]		1.3
32	[illegible]	18	[illegible]		[illegible]	[illegible]		[illegible]
33	5.00	18	[illegible]		[illegible]	[illegible]		1.3
34	5.00	18	[illegible]		[illegible]	[illegible]		1.3
35	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
36	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
37	6.34 / 9.59	18	0.8125	5.34	37.1287	38.7021		3.0
38	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
39	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
40	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
41	5.00	18	[illegible]		[illegible]	[illegible]		1.7
42	[illegible]	18	[illegible]		[illegible]	[illegible]		1.3
43	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
44	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
45	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
46	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
47	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
48	5.00	18	[illegible]		[illegible]	[illegible]		2.0
49	[illegible]	18	[illegible]		[illegible]	[illegible]		1.5
50	[illegible]	18	[illegible]		[illegible]	[illegible]		[illegible]
51	5.00	18	[illegible]		[illegible]	[illegible]		1.8
52	5.00	18	0.8000		42.9503	43.7717		1.8
53	5.00	18	0.7875		43.7717	44.5930		1.8
54	4.00	18	0.7750		44.5930	45.2500		1.5
								39.5



MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower is located in Hartford County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-H Standard.
3. Tower designed for a 120 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 2.00 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. TOWER RATING: 99.6%

ALL REACTIONS ARE FACTORED

AXIAL 138 K
SHEAR 11 K
MOMENT 1617 kip-ft
TORQUE 0 kip-ft
50 mph WIND - 2.0000 in ICE

AXIAL 74 K
SHEAR 35 K
MOMENT 4476 kip-ft
TORQUE 2 kip-ft
REACTIONS - 120 mph WIND

Crown Castle 2000 Corporate Drive Canonsburg, PA 15317 Phone: (724) 416-2000 FAX: (724) 416-4623 — The Pathway to Possible	Job: **842859**			
	Project:			
	Client: Crown Castle	Drawn by: Steven Hu	App'd:	
	Code: TIA-222-H	Date: 06/14/21	Scale: NTS	
	Path: C:\Users\SHu\Documents\WFH\842859\WO 1963258 - SA\Prod\842859R.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:

1) Tower is located in Hartford County, Connecticut.
2) Tower base elevation above sea level: 565.00 ft.
3) Basic wind speed of 120 mph.
4) Risk Category II.
5) Exposure Category C.
6) Simplified Topographic Factor Procedure for wind speed-up calculations is used.
7) Topographic Category: 1.
8) Crest Height: 0.00 ft.
9) Nominal ice thickness of 2.0000 in.
10) Ice thickness is considered to increase with height.
11) Ice density of 56 pcf.
12) A wind speed of 50 mph is used in combination with ice.
13) Temperature drop of 50 °F.
14) Deflections calculated using a wind speed of 60 mph.
15) TOWER RATING: 99.6%.
16) A non-linear (P-delta) analysis was used.
17) Pressures are calculated at each section.
18) Stress ratio used in pole design is 1.
19) Tower analysis based on target reliabilities in accordance with Annex S.
20) Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
21) Maximum demand-capacity ratio is: 1.05.
22) Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

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

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	168.33-163.33	5.00	0.00	18	19.0000	19.8343	0.1875	0.7500	A572-65 (65 ksi)
L2	163.33-158.33	5.00	0.00	18	19.8343	20.6686	0.1875	0.7500	A572-65 (65 ksi)
L3	158.33-153.33	5.00	0.00	18	20.6686	21.5030	0.1875	0.7500	A572-65 (65 ksi)
L4	153.33-148.33	5.00	0.00	18	21.5030	22.3373	0.1875	0.7500	A572-65 (65 ksi)
L5	148.33-143.33	5.00	0.00	18	22.3373	23.1716	0.1875	0.7500	A572-65 (65 ksi)
L6	143.33-138.33	5.00	0.00	18	23.1716	24.0059	0.1875	0.7500	A572-65 (65 ksi)
L7	138.33-130.50	7.83	3.66	18	24.0059	25.3125	0.1875	0.7500	A572-65 (65 ksi)
L8	130.50-129.16	5.00	0.00	18	24.3268	25.1498	0.2500	1.0000	A572-65 (65 ksi)
L9	129.16-125.75	3.41	0.00	18	25.1498	25.7117	0.2500	1.0000	A572-65 (65 ksi)
L10	125.75-125.50	0.25	0.00	18	25.7117	25.7529	0.2500	1.0000	A572-65 (65 ksi)
L11	125.50-120.50	5.00	0.00	18	25.7529	26.5759	0.2500	1.0000	A572-65 (65 ksi)
L12	120.50-120.25	0.25	0.00	18	26.5759	26.6171	0.4813	1.9250	A572-65 (65 ksi)
L13	120.25-115.25	5.00	0.00	18	26.6171	27.4401	0.4750	1.9000	A572-65 (65 ksi)
L14	115.25-113.83	1.42	0.00	18	27.4401	27.6734	0.4750	1.9000	A572-65 (65 ksi)
L15	113.83-113.48	0.35	0.00	18	27.6734	27.7310	0.6500	2.6000	A572-65 (65 ksi)
L16	113.48-113.25	0.23	0.00	18	27.7310	27.7694	0.6500	2.6000	A572-65 (65 ksi)
L17	113.25-108.25	5.00	0.00	18	27.7694	28.5924	0.6375	2.5500	A572-65 (65 ksi)
L18	108.25-103.25	5.00	0.00	18	28.5924	29.4155	0.6250	2.5000	A572-65 (65 ksi)
L19	103.25-98.25	5.00	0.00	18	29.4155	30.2386	0.6125	2.4500	A572-65 (65 ksi)
L20	98.25-93.25	5.00	0.00	18	30.2386	31.0616	0.6000	2.4000	A572-65 (65 ksi)
L21	93.25-84.55	8.70	4.56	18	31.0616	32.4932	0.6000	2.4000	A572-65 (65 ksi)
L22	84.55-83.55	5.56	0.00	18	31.2426	32.1551	0.6625	2.6500	A572-65 (65 ksi)
L23	83.55-82.92	0.64	0.00	18	32.1551	32.2595	0.6625	2.6500	A572-65 (65 ksi)
L24	82.92-82.67	0.25	0.00	18	32.2595	32.3006	0.9500	3.8000	A572-65 (65 ksi)
L25	82.67-82.50	0.17	0.00	18	32.3006	32.3280	0.9500	3.8000	A572-65 (65 ksi)
L26	82.50-82.25	0.25	0.00	18	32.3280	32.3690	0.6875	2.7500	A572-65 (65 ksi)
L27	82.25-77.25	5.00	0.00	18	32.3690	33.1896	0.6750	2.7000	A572-65 (65 ksi)
L28	77.25-73.42	3.83	0.00	18	33.1896	33.8187	0.6625	2.6500	A572-65 (65 ksi)
L29	73.42-73.17	0.25	0.00	18	33.8187	33.8598	0.9375	3.7500	A572-65 (65 ksi)
L30	73.17-68.17	5.00	0.00	18	33.8598	34.6804	0.9125	3.6500	A572-65 (65 ksi)
L31	68.17-64.25	3.92	0.00	18	34.6804	35.3233	0.8875	3.5500	A572-65 (65 ksi)
L32	64.25-64.00	0.25	0.00	18	35.3233	35.3643	0.7375	2.9500	A572-65 (65 ksi)
L33	64.00-59.00	5.00	0.00	18	35.3643	36.1849	0.7375	2.9500	A572-65 (65 ksi)
L34	59.00-54.00	5.00	0.00	18	36.1849	37.0056	0.7125	2.8500	A572-65 (65 ksi)
L35	54.00-53.50	0.50	0.00	18	37.0056	37.0876	0.7125	2.8500	A572-65

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L36	53.50-53.25	0.25	0.00	18	37.0876	37.1287	0.8250	3.3000	(65 ksi) A572-65 (65 ksi)
L37	53.25-43.66	9.59	5.34	18	37.1287	38.7021	0.8125	3.2500	A572-65 (65 ksi)
L38	43.66-42.66	6.34	0.00	18	37.2007	38.2421	0.7250	2.9000	A572-65 (65 ksi)
L39	42.66-41.75	0.91	0.00	18	38.2421	38.3921	0.7250	2.9000	A572-65 (65 ksi)
L40	41.75-41.50	0.25	0.00	18	38.3921	38.4332	0.7625	3.0500	A572-65 (65 ksi)
L41	41.50-36.50	5.00	0.00	18	38.4332	39.2545	0.7500	3.0000	A572-65 (65 ksi)
L42	36.50-32.75	3.75	0.00	18	39.2545	39.8705	0.7500	3.0000	A572-65 (65 ksi)
L43	32.75-32.50	0.25	0.00	18	39.8705	39.9115	1.0000	4.0000	A572-65 (65 ksi)
L44	32.50-29.83	2.67	0.00	18	39.9115	40.3501	1.0000	4.0000	A572-65 (65 ksi)
L45	29.83-29.58	0.25	0.00	18	40.3501	40.3912	0.9000	3.6000	A572-65 (65 ksi)
L46	29.58-28.25	1.33	0.00	18	40.3912	40.6096	0.8875	3.5500	A572-65 (65 ksi)
L47	28.25-28.00	0.25	0.00	18	40.6096	40.6507	0.9500	3.8000	A572-65 (65 ksi)
L48	28.00-23.00	5.00	0.00	18	40.6507	41.4720	0.9500	3.8000	A572-65 (65 ksi)
L49	23.00-19.25	3.75	0.00	18	41.4720	42.0880	0.9375	3.7500	A572-65 (65 ksi)
L50	19.25-19.00	0.25	0.00	18	42.0880	42.1290	0.8250	3.3000	A572-65 (65 ksi)
L51	19.00-14.00	5.00	0.00	18	42.1290	42.9503	0.8000	3.2000	A572-65 (65 ksi)
L52	14.00-9.00	5.00	0.00	18	42.9503	43.7717	0.8000	3.2000	A572-65 (65 ksi)
L53	9.00-4.00	5.00	0.00	18	43.7717	44.5930	0.7875	3.1500	A572-65 (65 ksi)
L54	4.00-0.00	4.00		18	44.5930	45.2500	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	19.2642	11.1958	500.5935	6.6784	9.6520	51.8642	1001.8456	5.5990	3.0140	16.075
	20.1114	11.6923	570.1942	6.9746	10.0758	56.5903	1141.1386	5.8473	3.1608	16.858
L2	20.1114	11.6923	570.1942	6.9746	10.0758	56.5903	1141.1386	5.8473	3.1608	16.858
	20.9586	12.1888	645.9644	7.2708	10.4997	61.5223	1292.7788	6.0956	3.3077	17.641
L3	20.9586	12.1888	645.9644	7.2708	10.4997	61.5223	1292.7788	6.0956	3.3077	17.641
	21.8058	12.6854	728.1664	7.5670	10.9235	66.6605	1457.2909	6.3439	3.4545	18.424
L4	21.8058	12.6854	728.1664	7.5670	10.9235	66.6605	1457.2909	6.3439	3.4545	18.424
	22.6530	13.1819	817.0619	7.8632	11.3473	72.0047	1635.1989	6.5922	3.6014	19.207
L5	22.6530	13.1819	817.0619	7.8632	11.3473	72.0047	1635.1989	6.5922	3.6014	19.207
	23.5002	13.6784	912.9131	8.1594	11.7712	77.5549	1827.0275	6.8405	3.7482	19.99
L6	23.5002	13.6784	912.9131	8.1594	11.7712	77.5549	1827.0275	6.8405	3.7482	19.99
	24.3474	14.1750	1015.9820	8.4555	12.1950	83.3112	2033.3009	7.0888	3.8950	20.774
L7	24.3474	14.1750	1015.9820	8.4555	12.1950	83.3112	2033.3009	7.0888	3.8950	20.774
	25.6741	14.9525	1192.5150	8.9194	12.8588	92.7396	2386.5992	7.4777	4.1250	22
L8	25.2753	19.1049	1399.1983	8.5473	12.3580	113.2221	2800.2377	9.5543	3.8415	15.366
	25.4992	19.7580	1547.6541	8.8394	12.7761	121.1365	3097.3446	9.8809	3.9864	15.945
L9	25.4992	19.7580	1547.6541	8.8394	12.7761	121.1365	3097.3446	9.8809	3.9864	15.945
	26.0698	20.2039	1654.8058	9.0389	13.0615	126.6929	3311.7890	10.1039	4.0853	16.341
L10	26.0698	20.2039	1654.8058	9.0389	13.0615	126.6929	3311.7890	10.1039	4.0853	16.341
	26.1116	20.2365	1662.8426	9.0535	13.0825	127.1048	3327.8732	10.1202	4.0925	16.37
L11	26.1116	20.2365	1662.8426	9.0535	13.0825	127.1048	3327.8732	10.1202	4.0925	16.37

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
	26.9473	20.8896	1829.0907	9.3457	13.5006	135.4825	3660.5882	10.4468	4.2374	16.949
L12	26.9117	39.8593	3429.0257	9.2636	13.5006	253.9912	6862.5634	19.9334	3.8304	7.959
	26.9534	39.9221	3445.2747	9.2782	13.5215	254.8002	6895.0828	19.9649	3.8376	7.974
L13	26.9544	39.4131	3402.9710	9.2804	13.5215	251.6716	6810.4198	19.7103	3.8486	8.102
	27.7902	40.6540	3734.6166	9.5726	13.9396	267.9144	7474.1473	20.3309	3.9935	8.407
L14	27.7902	40.6540	3734.6166	9.5726	13.9396	267.9144	7474.1473	20.3309	3.9935	8.407
	28.0270	41.0057	3832.3738	9.6554	14.0581	272.6099	7669.7903	20.5067	4.0345	8.494
L15	28.0000	55.7520	5143.7222	9.5933	14.0581	365.8907	10294.2126	27.8813	3.7265	5.733
	28.0585	55.8708	5176.6917	9.6138	14.0874	367.4709	10360.1950	27.9407	3.7367	5.749
L16	28.0585	55.8708	5176.6917	9.6138	14.0874	367.4709	10360.1950	27.9407	3.7367	5.749
	28.0975	55.9500	5198.7182	9.6274	14.1068	368.5247	10404.2770	27.9803	3.7434	5.759
L17	28.0994	54.8993	5105.7965	9.6318	14.1068	361.9377	10218.3114	27.4549	3.7654	5.907
	28.9352	56.5647	5584.6974	9.9240	14.5250	384.4899	11176.7434	28.2877	3.9103	6.134
L18	28.9371	55.4804	5482.5415	9.9284	14.5250	377.4568	10972.2971	27.7455	3.9323	6.292
	29.7729	57.1131	5980.9691	10.2206	14.9431	400.2504	11969.8081	28.5620	4.0771	6.523
L19	29.7748	55.9952	5868.9875	10.2251	14.9431	392.7565	11745.6976	28.0029	4.0991	6.692
	30.6105	57.5953	6386.6308	10.5172	15.3612	415.7642	12781.6652	28.8031	4.2440	6.929
L20	30.6125	56.4437	6264.2138	10.5217	15.3612	407.7950	12536.6702	28.2272	4.2660	7.11
	31.4482	58.0111	6800.7122	10.8139	15.7793	430.9895	13610.3730	29.0111	4.4108	7.351
L21	31.4482	58.0111	6800.7122	10.8139	15.7793	430.9895	13610.3730	29.0111	4.4108	7.351
	32.9019	60.7374	7805.3056	11.3221	16.5065	472.8612	15620.8816	30.3745	4.6628	7.771
L22	32.3823	64.3030	7597.0599	10.8559	15.8712	478.6688	15204.1163	32.1576	4.3327	6.54
	32.5490	66.2219	8297.6696	11.1799	16.3348	507.9751	16606.2575	33.1172	4.4933	6.782
L23	32.5490	66.2219	8297.6696	11.1799	16.3348	507.9751	16606.2575	33.1172	4.4933	6.782
	32.6550	66.4415	8380.4924	11.2169	16.3878	511.3846	16772.0121	33.2270	4.5117	6.81
L24	32.6106	94.4077	11692.2508	11.1149	16.3878	713.4708	23399.8865	47.2128	4.0057	4.217
	32.6523	94.5314	11738.2790	11.1295	16.4087	715.3696	23492.0035	47.2747	4.0129	4.224
L25	32.6523	94.5314	11738.2790	11.1295	16.4087	715.3696	23492.0035	47.2747	4.0129	4.224
	32.6801	94.6140	11769.0933	11.1392	16.4226	716.6394	23553.6727	47.3160	4.0177	4.229
L26	32.7206	69.0435	8732.6559	11.2324	16.4226	531.7458	17476.8024	34.5283	4.4797	6.516
	32.7623	69.1330	8766.6740	11.2469	16.4435	533.1405	17544.8834	34.5731	4.4869	6.526
L27	32.7642	67.9028	8617.4720	11.2514	16.4435	524.0669	17246.2831	33.9579	4.5089	6.68
	33.5975	69.6610	9304.3319	11.5427	16.8603	551.8472	18620.9067	34.8371	4.6534	6.894
L28	33.5994	68.3973	9142.5657	11.5471	16.8603	542.2528	18297.1615	34.2051	4.6754	7.057
	34.2382	69.7201	9683.3600	11.7705	17.1799	563.6441	19379.4617	34.8667	4.7861	7.224
L29	34.1958	97.8422	13364.7306	11.6728	17.1799	777.9274	26747.0469	48.9304	4.3021	4.589
	34.2375	97.9643	13414.8260	11.6874	17.2008	779.8971	26847.3036	48.9915	4.3093	4.597
L30	34.2413	95.4244	13086.8652	11.6963	17.2008	760.8305	26190.9505	47.7212	4.3533	4.771
	35.0746	97.8011	14089.302	11.9876	17.6176	799.7268	28197.143	48.9099	4.4978	4.929

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
			1				3			
L31	35.0785	95.1921	13733.752	11.9965	17.6176	779.5453	27485.575	47.6051	4.5418	5.117
			0				2			
	35.7313	97.0030	14532.577	12.2247	17.9442	809.8748	29084.278	48.5107	4.6549	5.245
			9				1			
L32	35.7544	80.9593	12234.867	12.2780	17.9442	681.8275	24485.834	40.4873	4.9189	6.67
			5				0			
	35.7961	81.0553	12278.465	12.2925	17.9651	683.4631	24573.086	40.5354	4.9261	6.679
			0				2			
L33	35.7961	81.0553	12278.465	12.2925	17.9651	683.4631	24573.086	40.5354	4.9261	6.679
			0				2			
	36.6294	82.9763	13172.290	12.5838	18.3820	716.5882	26361.912	41.4960	5.0706	6.875
			0				4			
L34	36.6332	80.2201	12752.716	12.5927	18.3820	693.7628	25522.212	40.1176	5.1146	7.178
			0				3			
	37.4665	82.0759	13658.424	12.8840	18.7988	726.5570	27334.821	41.0457	5.2590	7.381
			7				4			
L35	37.4665	82.0759	13658.424	12.8840	18.7988	726.5570	27334.821	41.0457	5.2590	7.381
			7				4			
	37.5499	82.2615	13751.284	12.9132	18.8405	729.8781	27520.662	41.1386	5.2734	7.401
			3				9			
L36	37.5325	94.9555	15775.261	12.8732	18.8405	837.3050	31571.281	47.4868	5.0754	6.152
			8				2			
	37.5742	95.0630	15828.872	12.8878	18.8614	839.2220	31678.573	47.5405	5.0826	6.161
			7				4			
L37	37.5761	93.6549	15605.149	12.8922	18.8614	827.3605	31230.832	46.8363	5.1046	6.283
			6				8			
	39.1738	97.7125	17722.615	13.4508	19.6607	901.4249	35468.549	48.8656	5.3816	6.623
			0				9			
L38	38.5534	83.9360	14108.864	12.9489	18.8979	746.5822	28236.294	41.9760	5.2713	7.271
			7				3			
	38.7202	86.3324	15352.160	13.3186	19.4270	790.2496	30724.521	43.1744	5.4546	7.524
			5				8			
L39	38.7202	86.3324	15352.160	13.3186	19.4270	790.2496	30724.521	43.1744	5.4546	7.524
			5				8			
	38.8725	86.6776	15537.064	13.3718	19.5032	796.6423	31094.573	43.3471	5.4810	7.56
			5				1			
L40	38.8667	91.0702	16291.949	13.3585	19.5032	835.3481	32605.336	45.5438	5.4150	7.102
			7				8			
	38.9084	91.1696	16345.345	13.3731	19.5240	837.1904	32712.199	45.5935	5.4222	7.111
			9				4			
L41	38.9104	89.7048	16093.399	13.3775	19.5240	824.2860	32207.974	44.8609	5.4442	7.259
			3				7			
	39.7443	91.6599	17168.768	13.6691	19.9413	860.9666	34360.128	45.8387	5.5888	7.452
			8				8			
L42	39.7443	91.6599	17168.768	13.6691	19.9413	860.9666	34360.128	45.8387	5.5888	7.452
			8				8			
	40.3698	93.1262	18005.997	13.8878	20.2542	889.0012	36035.688	46.5720	5.6972	7.596
			9				5			
L43	40.3313	123.3748	23550.661	13.7990	20.2542	1162.7551	47132.311	61.6991	5.2572	5.257
			6				7			
	40.3729	123.5052	23625.381	13.8136	20.2751	1165.2440	47281.849	61.7643	5.2644	5.264
			3				5			
L44	40.3729	123.5052	23625.381	13.8136	20.2751	1165.2440	47281.849	61.7643	5.2644	5.264
			3				5			
	40.8183	124.8972	24433.273	13.9693	20.4978	1191.9922	48898.697	62.4605	5.3416	5.342
			8				6			
L45	40.8337	112.6931	22158.021	14.0048	20.4978	1080.9926	44345.198	56.3573	5.5176	6.131
			3				8			
	40.8754	112.8104	22227.288	14.0194	20.5187	1083.2694	44483.824	56.4159	5.5248	6.139
			6				4			
L46	40.8773	111.2788	21939.396	14.0238	20.5187	1069.2387	43907.661	55.6500	5.5468	6.25
			3				0			
	41.0992	111.8942	22305.407	14.1014	20.6297	1081.2284	44640.164	55.9578	5.5853	6.293
			2				4			
L47	41.0895	119.5857	23763.685	14.0792	20.6297	1151.9168	47558.639	59.8042	5.4753	5.763
			1				0			
	41.1312	119.7095	23837.580	14.0937	20.6506	1154.3315	47706.527	59.8661	5.4825	5.771
			6				4			
L48	41.1312	119.7095	23837.580	14.0937	20.6506	1154.3315	47706.527	59.8661	5.4825	5.771

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
			6				4			
	41.9652	122.1860	25347.811	14.3853	21.0678	1203.1557	50728.976	61.1046	5.6271	5.923
			3				0			
L49	41.9671	120.6155	25037.443	14.3897	21.0678	1188.4238	50107.831	60.3192	5.6491	6.026
			4				8			
	42.5926	122.4484	26196.315	14.6084	21.3807	1225.2324	52427.100	61.2358	5.7575	6.141
			2				1			
L50	42.6100	108.0492	23242.344	14.6484	21.3807	1087.0717	46515.271	54.0348	5.9555	7.219
			4				6			
	42.6517	108.1567	23311.805	14.6629	21.4016	1089.2577	46654.286	54.0886	5.9627	7.228
			9				1			
L51	42.6555	104.9427	22646.459	14.6718	21.4016	1058.1690	45322.717	52.4813	6.0067	7.508
			4				5			
	43.4895	107.0282	24023.581	14.9634	21.8188	1101.0509	48078.774	53.5242	6.1513	7.689
			9				6			
L52	43.4895	107.0282	24023.581	14.9634	21.8188	1101.0509	48078.774	53.5242	6.1513	7.689
			9				6			
	44.3235	109.1136	25455.432	15.2549	22.2360	1144.7848	50944.359	54.5672	6.2958	7.87
			4				8			
L53	44.3254	107.4400	25079.564	15.2594	22.2360	1127.8812	50192.129	53.7302	6.3178	8.023
			7				8			
	45.1594	109.4928	26544.805	15.5509	22.6532	1171.7894	53124.539	54.7568	6.4624	8.206
			8				9			
L54	45.1613	107.7856	26145.829	15.5554	22.6532	1154.1771	52326.061	53.9030	6.4844	8.367
			2				8			
	45.8285	109.4018	27339.712	15.7886	22.9870	1189.3554	54715.399	54.7113	6.6000	8.516
			6				6			

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 168.33-163.33				1	1	1			
L2 163.33-158.33				1	1	1			
L3 158.33-153.33				1	1	1			
L4 153.33-148.33				1	1	1			
L5 148.33-143.33				1	1	1			
L6 143.33-138.33				1	1	1			
L7 138.33-130.50				1	1	1			
L8 130.50-129.16				1	1	1			
L9 129.16-125.75				1	1	1			
L10 125.75-125.50				1	1	1			
L11 125.50-120.50				1	1	1			
L12 120.50-120.25				1	1	1.08535			
L13 120.25-115.25				1	1	1.08187			
L14 115.25-113.83				1	1	1.07711			
L15 113.83-113.48				1	1	0.967541			
L16 113.48-113.25				1	1	0.966717			
L17 113.25-108.25				1	1	0.967757			
L18 108.25-103.25				1	1	0.969899			

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
L19 103.25-98.25				1	1	0.97312			
L20 98.25-93.25				1	1	0.977402			
L21 93.25-84.55				1	1	0.965141			
L22 84.55-83.55				1	1	1.04324			
L23 83.55-82.92				1	1	1.04135			
L24 82.92-82.67				1	1	0.922764			
L25 82.67-82.50				1	1	0.922245			
L26 82.50-82.25				1	1	1.08194			
L27 82.25-77.25				1	1	1.08542			
L28 77.25-73.42				1	1	1.09345			
L29 73.42-73.17				1	1	0.962359			
L30 73.17-68.17				1	1	0.972288			
L31 68.17-64.25				1	1	0.986861			
L32 64.25-64.00				1	1	0.959451			
L33 64.00-59.00				1	1	0.947048			
L34 59.00-54.00				1	1	0.967355			
L35 54.00-53.50				1	1	0.966162			
L36 53.50-53.25				1	1	0.96798			
L37 53.25-43.66				1	1	0.971274			
L38 43.66-42.66				1	1	1.07808			
L39 42.66-41.75				1	1	1.07584			
L40 41.75-41.50				1	1	1.08919			
L41 41.50-36.50				1	1	1.09403			
L42 36.50-32.75				1	1	1.08467			
L43 32.75-32.50				1	1	0.949846			
L44 32.50-29.83				1	1	0.943439			
L45 29.83-29.58				1	1	0.938577			
L46 29.58-28.25				1	1	0.948586			
L47 28.25-28.00				1	1	1.00193			
L48 28.00-23.00				1	1	0.989625			
L49 23.00-19.25				1	1	0.993492			
L50 19.25-19.00				1	1	0.958791			
L51 19.00-14.00				1	1	0.978035			
L52 14.00-				1	1	0.968301			

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
9.00									
L53 9.00-4.00				1	1	0.973875			
L54 4.00-0.00				1	1	0.981834			

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
**										
CU12PSM9P6XXX(1-1/2)	C	No	Surface Ar (CaAa)	148.00 - 0.00	1	1	0.100 0.100	1.6000		2.35
LDF4-50A(1/2)	C	No	Surface Ar (CaAa)	70.00 - 8.00	1	1	-0.400 -0.385	0.6300		0.15
***										
HB158-1-08U8-S8J18(1-5/8)	A	No	Surface Ar (CaAa)	138.00 - 8.00	2	2	-0.365 -0.247	1.9800		1.30
MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	A	No	Surface Ar (CaAa)	128.00 - 8.00	3	3	-0.050 0.000	1.2500		0.68
***										
PL0.625x5 Reinforcement - Wind Area/Weight	B	No	Surface Af (CaAa)	84.67 - 0.00	1	1	0.000 0.000	5.0000	11.2500	10.63
PL0.625x5 Reinforcement - Wind Area/Weight	C	No	Surface Af (CaAa)	84.67 - 0.00	1	1	0.000 0.000	5.0000	11.2500	10.63
PL0.625x5 Reinforcement - Wind Area/Weight	A	No	Surface Af (CaAa)	120.00 - 84.67	1	1	0.000 0.000	5.0000	11.2500	10.63
PL0.625x5 Reinforcement - Wind Area/Weight	B	No	Surface Af (CaAa)	120.00 - 84.67	1	1	0.000 0.000	5.0000	11.2500	10.63
PL0.625x5 Reinforcement - Wind Area/Weight	C	No	Surface Af (CaAa)	120.00 - 84.67	1	1	0.000 0.000	5.0000	11.2500	10.63
***										
PL1.25x6 Reinforcement - Wind Area	A	No	Surface Af (CaAa)	30.75 - 0.00	1	1	0.000 0.000	6.0000	14.5000	0.00
PL1.25x6 Reinforcement - Wind Area	B	No	Surface Af (CaAa)	30.75 - 0.00	1	1	0.000 0.000	6.0000	14.5000	0.00
PL1.25x6 Reinforcement - Wind Area	C	No	Surface Af (CaAa)	30.75 - 0.00	2	2	0.000 0.000	6.0000	14.5000	0.00
PL1.25x6 Reinforcement - Wind Area	A	No	Surface Af (CaAa)	47.92 - 27.75	2	2	0.000 0.000	6.0000	14.5000	0.00
PL1.25x6 Reinforcement - Wind Area	B	No	Surface Af (CaAa)	47.92 - 27.75	1	1	0.000 0.000	6.0000	14.5000	0.00
PL1.25x6 Reinforcement - Wind Area	C	No	Surface Af (CaAa)	47.92 - 27.75	1	1	0.000 0.000	6.0000	14.5000	0.00
PL1.25x5 Reinforcement - Wind Area	A	No	Surface Af (CaAa)	75.42 - 45.38	2	2	0.000 0.000	5.0000	12.5000	0.00
PL1.25x5 Reinforcement - Wind Area	B	No	Surface Af (CaAa)	75.42 - 45.38	1	1	0.000 0.000	5.0000	12.5000	0.00
PL1.25x5	C	No	Surface Af	75.42 -	1	1	0.000	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
Reinforcement - Wind Area			(CaAa)	45.38			0.000			
PL1.25x5	A	No	Surface Af	87.92 -	1	1	0.000	5.0000	12.5000	0.00
Reinforcement - Wind Area			(CaAa)	72.75			0.000			
PL1.25x5	B	No	Surface Af	87.92 -	1	1	0.000	5.0000	12.5000	0.00
Reinforcement - Wind Area			(CaAa)	72.75			0.000			
PL1.25x5	C	No	Surface Af	87.92 -	2	2	0.000	5.0000	12.5000	0.00
Reinforcement - Wind Area			(CaAa)	72.75			0.000			
PL1.25x5	A	No	Surface Af	115.83 -	1	1	0.000	5.0000	12.5000	0.00
Reinforcement - Wind Area			(CaAa)	85.83			0.000			
PL1.25x5	B	No	Surface Af	115.83 -	1	1	0.000	5.0000	12.5000	0.00
Reinforcement - Wind Area			(CaAa)	85.83			0.000			
PL1.25x5	C	No	Surface Af	115.83 -	1	1	0.000	5.0000	12.5000	0.00
Reinforcement - Wind Area			(CaAa)	85.83			0.000			
***										
CCI-SFP-060100	A	No	Surface Af	43.75 -	1	1	0.000	6.0000	14.0000	0.00
			(CaAa)	0.00			0.000			
CCI-SFP-060100	B	No	Surface Af	43.75 -	2	2	0.000	6.0000	14.0000	0.00
			(CaAa)	0.00			0.000			
CCI-SFP-060100	C	No	Surface Af	43.75 -	1	1	0.000	6.0000	14.0000	0.00
			(CaAa)	0.00			0.000			
CCI-SFP-045100	A	No	Surface Af	84.33 -	1	1	0.000	4.5000	11.0000	0.00
			(CaAa)	43.75			0.000			
CCI-SFP-045100	B	No	Surface Af	84.33 -	2	2	0.000	4.5000	11.0000	0.00
			(CaAa)	43.75			0.000			
CCI-SFP-045100	C	No	Surface Af	84.33 -	1	1	0.000	4.5000	11.0000	0.00
			(CaAa)	43.75			0.000			
CCI-SFP-045100	A	No	Surface Af	27.75 -	1	1	0.000	4.5000	11.0000	0.00
			(CaAa)	17.75			0.000			
CCI-SFP-045100	B	No	Surface Af	27.75 -	1	1	0.000	4.5000	11.0000	0.00
			(CaAa)	17.75			0.000			
CCI-SFP-045100	C	No	Surface Af	27.75 -	2	2	0.000	4.5000	11.0000	0.00
			(CaAa)	17.75			0.000			
CCI-SFP-045100	A	No	Surface Af	72.75 -	1	1	0.000	4.5000	11.0000	0.00
			(CaAa)	62.75			0.000			
CCI-SFP-045100	B	No	Surface Af	72.75 -	1	1	0.000	4.5000	11.0000	0.00
			(CaAa)	62.75			0.000			
CCI-SFP-045100	C	No	Surface Af	72.75 -	2	2	0.000	4.5000	11.0000	0.00
			(CaAa)	62.75			0.000			
CCI-SFP-045100	A	No	Surface Af	127.33 -	1	1	0.000	4.5000	11.0000	0.00
			(CaAa)	87.92			0.000			
CCI-SFP-045100	B	No	Surface Af	127.33 -	1	1	0.000	4.5000	11.0000	0.00
			(CaAa)	87.92			0.000			
CCI-SFP-045100	C	No	Surface Af	127.33 -	1	1	0.000	4.5000	11.0000	0.00
			(CaAa)	87.92			0.000			
**										
PL1.25x4	A	No	Surface Af	122.00 -	1	1	0.000	4.0000	10.5000	0.00
Reinforcement - Wind Area			(CaAa)	112.00			0.000			
PL1.25x4	B	No	Surface Af	122.00 -	1	1	0.000	4.0000	10.5000	0.00
Reinforcement - Wind Area			(CaAa)	112.00			0.000			
***										
PL1.25x5	B	No	Surface Af	90.50 -	1	1	0.000	5.0000	12.5000	0.00
Reinforcement - Wind Area			(CaAa)	80.50			0.000			
PL1.25x5	C	No	Surface Af	90.50 -	1	1	0.000	5.0000	12.5000	0.00
Reinforcement - Wind Area			(CaAa)	80.50			0.000			
***										
PL1.25x5	B	No	Surface Af	55.50 -	1	1	0.000	5.0000	12.5000	0.00
Reinforcement - Wind			(CaAa)	45.50			0.000			

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
Area PL1.25x5 Reinforcement - Wind Area ****	C	No	Surface Af (CaAa)	55.50 - 45.50	1	1	0.000 0.000	5.0000	12.5000	0.00
PL1.25x6.5 Reinforcement - Wind Area	B	No	Surface Af (CaAa)	35.50 - 25.50	1	1	0.000 0.000	6.5000	15.5000	0.00
PL1.25x6.5 Reinforcement - Wind Area **	C	No	Surface Af (CaAa)	35.50 - 25.50	1	1	0.000 0.000	6.5000	15.5000	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
*** 3/8" Ground Wire	A	No	No	Inside Pole	168.33 - 0.00	2	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.08 0.08 0.08 0.08
*** 2" innerduct conduit	C	No	No	Inside Pole	168.00 - 8.00	3	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.20 0.20 0.20 0.20
LDF2-50(3/8)	C	No	No	Inside Pole	168.00 - 0.00	1	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.08 0.08 0.08 0.08
LDF7-50A(1-5/8)	C	No	No	Inside Pole	168.00 - 0.00	6	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.82 0.82 0.82 0.82
FB-L98B-034-XXXXXX(3/8)	C	No	No	Inside Pole	168.00 - 0.00	2	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.05 0.05 0.05 0.05
WR-CAT5E10P(1)	C	No	No	Inside Pole	168.00 - 0.00	2	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.41 0.41 0.41 0.41
WR-VG86ST-BRDA(7/8)	C	No	No	Inside Pole	168.00 - 0.00	6	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.68 0.68 0.68 0.68
LDF6-50A(1-1/4)	C	No	No	Inside Pole	158.00 - 8.00	3	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.60 0.60 0.60 0.60
HB114-21U3M12-XXXF(1-1/4)	C	No	No	Inside Pole	158.00 - 8.00	1	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	1.22 1.22 1.22 1.22
*** LDF7-50A(1-5/8)	A	No	No	Inside Pole	138.00 - 8.00	6	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00	0.82 0.82 0.82 0.82
*** LDF7-50A(1-5/8)	A	No	No	Inside Pole	128.00 - 8.00	12	No Ice 1/2" Ice	0.00 0.00	0.82 0.82

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
							1" Ice	0.00	0.82
							2" Ice	0.00	0.82
**									

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	168.33-163.33	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.05
L2	163.33-158.33	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.05
L3	158.33-153.33	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.07
L4	153.33-148.33	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.07
L5	148.33-143.33	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.747	0.000	0.08
L6	143.33-138.33	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.800	0.000	0.08
L7	138.33-130.50	A	0.000	0.000	2.969	0.000	0.06
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	1.253	0.000	0.12
L8	130.50-129.16	A	0.000	0.000	0.531	0.000	0.01
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.214	0.000	0.02
L9	129.16-125.75	A	0.000	0.000	3.380	0.000	0.05
		B	0.000	0.000	1.185	0.000	0.00
		C	0.000	0.000	1.731	0.000	0.05
L10	125.75-125.50	A	0.000	0.000	0.380	0.000	0.00
		B	0.000	0.000	0.188	0.000	0.00
		C	0.000	0.000	0.227	0.000	0.00
L11	125.50-120.50	A	0.000	0.000	8.605	0.000	0.10
		B	0.000	0.000	4.750	0.000	0.00
		C	0.000	0.000	4.550	0.000	0.08
L12	120.50-120.25	A	0.000	0.000	0.547	0.000	0.00
		B	0.000	0.000	0.354	0.000	0.00
		C	0.000	0.000	0.227	0.000	0.00
L13	120.25-115.25	A	0.000	0.000	15.380	0.000	0.15
		B	0.000	0.000	11.525	0.000	0.05
		C	0.000	0.000	8.992	0.000	0.13
L14	115.25-113.83	A	0.000	0.000	5.462	0.000	0.04
		B	0.000	0.000	4.369	0.000	0.02
		C	0.000	0.000	3.651	0.000	0.04
L15	113.83-113.48	A	0.000	0.000	1.349	0.000	0.01
		B	0.000	0.000	1.079	0.000	0.00
		C	0.000	0.000	0.902	0.000	0.01
L16	113.48-113.25	A	0.000	0.000	0.898	0.000	0.01
		B	0.000	0.000	0.718	0.000	0.00
		C	0.000	0.000	0.600	0.000	0.01
L17	113.25-108.25	A	0.000	0.000	16.772	0.000	0.15
		B	0.000	0.000	12.917	0.000	0.05
		C	0.000	0.000	12.883	0.000	0.13
L18	108.25-103.25	A	0.000	0.000	15.938	0.000	0.15
		B	0.000	0.000	12.083	0.000	0.05

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
		C	0.000	0.000	12.883	0.000	0.13
L19	103.25-98.25	A	0.000	0.000	15.938	0.000	0.15
		B	0.000	0.000	12.083	0.000	0.05
		C	0.000	0.000	12.883	0.000	0.13
L20	98.25-93.25	A	0.000	0.000	15.938	0.000	0.15
		B	0.000	0.000	12.083	0.000	0.05
		C	0.000	0.000	12.883	0.000	0.13
L21	93.25-84.55	A	0.000	0.000	26.842	0.000	0.26
		B	0.000	0.000	25.047	0.000	0.09
		C	0.000	0.000	29.245	0.000	0.23
L22	84.55-83.55	A	0.000	0.000	2.187	0.000	0.02
		B	0.000	0.000	3.641	0.000	0.01
		C	0.000	0.000	4.052	0.000	0.03
L23	83.55-82.92	A	0.000	0.000	1.498	0.000	0.01
		B	0.000	0.000	2.530	0.000	0.01
		C	0.000	0.000	2.685	0.000	0.02
L24	82.92-82.67	A	0.000	0.000	0.589	0.000	0.00
		B	0.000	0.000	0.994	0.000	0.00
		C	0.000	0.000	1.055	0.000	0.01
L25	82.67-82.50	A	0.000	0.000	0.393	0.000	0.00
		B	0.000	0.000	0.664	0.000	0.00
		C	0.000	0.000	0.705	0.000	0.00
L26	82.50-82.25	A	0.000	0.000	0.589	0.000	0.00
		B	0.000	0.000	0.994	0.000	0.00
		C	0.000	0.000	1.055	0.000	0.01
L27	82.25-77.25	A	0.000	0.000	11.772	0.000	0.10
		B	0.000	0.000	17.250	0.000	0.05
		C	0.000	0.000	18.467	0.000	0.13
L28	77.25-73.42	A	0.000	0.000	12.362	0.000	0.07
		B	0.000	0.000	13.807	0.000	0.04
		C	0.000	0.000	14.740	0.000	0.10
L29	73.42-73.17	A	0.000	0.000	1.005	0.000	0.00
		B	0.000	0.000	1.000	0.000	0.00
		C	0.000	0.000	1.061	0.000	0.01
L30	73.17-68.17	A	0.000	0.000	19.723	0.000	0.10
		B	0.000	0.000	19.618	0.000	0.05
		C	0.000	0.000	20.568	0.000	0.13
L31	68.17-64.25	A	0.000	0.000	15.424	0.000	0.08
		B	0.000	0.000	15.342	0.000	0.04
		C	0.000	0.000	16.215	0.000	0.10
L32	64.25-64.00	A	0.000	0.000	0.984	0.000	0.00
		B	0.000	0.000	0.979	0.000	0.00
		C	0.000	0.000	1.035	0.000	0.01
L33	64.00-59.00	A	0.000	0.000	16.876	0.000	0.10
		B	0.000	0.000	16.771	0.000	0.05
		C	0.000	0.000	15.073	0.000	0.13
L34	59.00-54.00	A	0.000	0.000	15.938	0.000	0.10
		B	0.000	0.000	17.048	0.000	0.05
		C	0.000	0.000	14.413	0.000	0.13
L35	54.00-53.50	A	0.000	0.000	1.594	0.000	0.01
		B	0.000	0.000	1.988	0.000	0.01
		C	0.000	0.000	1.725	0.000	0.01
L36	53.50-53.25	A	0.000	0.000	0.797	0.000	0.00
		B	0.000	0.000	0.994	0.000	0.00
		C	0.000	0.000	0.862	0.000	0.01
L37	53.25-43.66	A	0.000	0.000	36.241	0.000	0.19
		B	0.000	0.000	39.505	0.000	0.10
		C	0.000	0.000	34.431	0.000	0.26
L38	43.66-42.66	A	0.000	0.000	3.771	0.000	0.02
		B	0.000	0.000	3.833	0.000	0.01
		C	0.000	0.000	3.056	0.000	0.03
L39	42.66-41.75	A	0.000	0.000	3.444	0.000	0.02
		B	0.000	0.000	3.501	0.000	0.01
		C	0.000	0.000	2.791	0.000	0.02
L40	41.75-41.50	A	0.000	0.000	0.943	0.000	0.00
		B	0.000	0.000	0.958	0.000	0.00
		C	0.000	0.000	0.764	0.000	0.01
L41	41.50-36.50	A	0.000	0.000	18.855	0.000	0.10
		B	0.000	0.000	19.167	0.000	0.05

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
		C	0.000	0.000	15.282	0.000	0.13
L42	36.50-32.75	A	0.000	0.000	14.141	0.000	0.07
		B	0.000	0.000	17.013	0.000	0.04
		C	0.000	0.000	14.099	0.000	0.10
L43	32.75-32.50	A	0.000	0.000	0.943	0.000	0.00
		B	0.000	0.000	1.198	0.000	0.00
		C	0.000	0.000	1.004	0.000	0.01
L44	32.50-29.83	A	0.000	0.000	10.989	0.000	0.05
		B	0.000	0.000	13.716	0.000	0.03
		C	0.000	0.000	12.562	0.000	0.07
L45	29.83-29.58	A	0.000	0.000	1.193	0.000	0.00
		B	0.000	0.000	1.448	0.000	0.00
		C	0.000	0.000	1.504	0.000	0.01
L46	29.58-28.25	A	0.000	0.000	6.345	0.000	0.03
		B	0.000	0.000	7.704	0.000	0.01
		C	0.000	0.000	8.001	0.000	0.04
L47	28.25-28.00	A	0.000	0.000	1.193	0.000	0.00
		B	0.000	0.000	1.448	0.000	0.00
		C	0.000	0.000	1.504	0.000	0.01
L48	28.00-23.00	A	0.000	0.000	17.918	0.000	0.10
		B	0.000	0.000	25.377	0.000	0.05
		C	0.000	0.000	30.055	0.000	0.13
L49	23.00-19.25	A	0.000	0.000	13.204	0.000	0.07
		B	0.000	0.000	17.188	0.000	0.04
		C	0.000	0.000	20.836	0.000	0.10
L50	19.25-19.00	A	0.000	0.000	0.880	0.000	0.00
		B	0.000	0.000	1.146	0.000	0.00
		C	0.000	0.000	1.389	0.000	0.01
L51	19.00-14.00	A	0.000	0.000	14.792	0.000	0.10
		B	0.000	0.000	20.104	0.000	0.05
		C	0.000	0.000	22.157	0.000	0.13
L52	14.00-9.00	A	0.000	0.000	13.855	0.000	0.10
		B	0.000	0.000	19.167	0.000	0.05
		C	0.000	0.000	20.282	0.000	0.13
L53	9.00-4.00	A	0.000	0.000	10.771	0.000	0.02
		B	0.000	0.000	19.167	0.000	0.05
		C	0.000	0.000	20.030	0.000	0.12
L54	4.00-0.00	A	0.000	0.000	8.000	0.000	0.00
		B	0.000	0.000	15.333	0.000	0.04
		C	0.000	0.000	15.973	0.000	0.09

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	168.33-163.33	A	1.998	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.05
L2	163.33-158.33	A	1.992	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.05
L3	158.33-153.33	A	1.985	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.07
L4	153.33-148.33	A	1.979	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.07
L5	148.33-143.33	A	1.972	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	2.588	0.000	0.12
L6	143.33-138.33	A	1.965	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	2.765	0.000	0.12
L7	138.33-130.50	A	1.956	0.000	0.000	7.377	0.000	0.15
		B		0.000	0.000	0.000	0.000	0.00

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
		C		0.000	0.000	4.316	0.000	0.19
L8	130.50-129.16	A	1.950	0.000	0.000	1.319	0.000	0.03
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.739	0.000	0.03
L9	129.16-125.75	A	1.946	0.000	0.000	7.299	0.000	0.14
		B		0.000	0.000	1.800	0.000	0.02
		C		0.000	0.000	3.674	0.000	0.11
L10	125.75-125.50	A	1.943	0.000	0.000	0.768	0.000	0.01
		B		0.000	0.000	0.285	0.000	0.00
		C		0.000	0.000	0.422	0.000	0.01
L11	125.50-120.50	A	1.939	0.000	0.000	16.718	0.000	0.31
		B		0.000	0.000	7.052	0.000	0.09
		C		0.000	0.000	8.428	0.000	0.19
L12	120.50-120.25	A	1.935	0.000	0.000	0.994	0.000	0.02
		B		0.000	0.000	0.511	0.000	0.01
		C		0.000	0.000	0.421	0.000	0.01
L13	120.25-115.25	A	1.931	0.000	0.000	26.363	0.000	0.48
		B		0.000	0.000	16.718	0.000	0.26
		C		0.000	0.000	14.911	0.000	0.32
L14	115.25-113.83	A	1.925	0.000	0.000	9.076	0.000	0.16
		B		0.000	0.000	6.347	0.000	0.09
		C		0.000	0.000	5.834	0.000	0.11
L15	113.83-113.48	A	1.924	0.000	0.000	2.241	0.000	0.04
		B		0.000	0.000	1.567	0.000	0.02
		C		0.000	0.000	1.440	0.000	0.03
L16	113.48-113.25	A	1.923	0.000	0.000	1.492	0.000	0.03
		B		0.000	0.000	1.043	0.000	0.02
		C		0.000	0.000	0.959	0.000	0.02
L17	113.25-108.25	A	1.919	0.000	0.000	28.588	0.000	0.50
		B		0.000	0.000	18.973	0.000	0.28
		C		0.000	0.000	20.558	0.000	0.39
L18	108.25-103.25	A	1.910	0.000	0.000	27.407	0.000	0.48
		B		0.000	0.000	17.813	0.000	0.26
		C		0.000	0.000	20.523	0.000	0.38
L19	103.25-98.25	A	1.901	0.000	0.000	27.356	0.000	0.48
		B		0.000	0.000	17.785	0.000	0.26
		C		0.000	0.000	20.486	0.000	0.38
L20	98.25-93.25	A	1.891	0.000	0.000	27.303	0.000	0.47
		B		0.000	0.000	17.757	0.000	0.26
		C		0.000	0.000	20.448	0.000	0.38
L21	93.25-84.55	A	1.877	0.000	0.000	45.812	0.000	0.80
		B		0.000	0.000	35.395	0.000	0.52
		C		0.000	0.000	36.121	0.000	0.75
L22	84.55-83.55	A	1.867	0.000	0.000	3.945	0.000	0.07
		B		0.000	0.000	3.384	0.000	0.07
		C		0.000	0.000	3.625	0.000	0.09
L23	83.55-82.92	A	1.865	0.000	0.000	2.663	0.000	0.04
		B		0.000	0.000	2.149	0.000	0.05
		C		0.000	0.000	2.461	0.000	0.06
L24	82.92-82.67	A	1.864	0.000	0.000	1.046	0.000	0.02
		B		0.000	0.000	0.844	0.000	0.02
		C		0.000	0.000	0.967	0.000	0.02
L25	82.67-82.50	A	1.863	0.000	0.000	0.699	0.000	0.01
		B		0.000	0.000	0.564	0.000	0.01
		C		0.000	0.000	0.646	0.000	0.02
L26	82.50-82.25	A	1.863	0.000	0.000	1.046	0.000	0.02
		B		0.000	0.000	0.844	0.000	0.02
		C		0.000	0.000	0.967	0.000	0.02
L27	82.25-77.25	A	1.857	0.000	0.000	20.895	0.000	0.35
		B		0.000	0.000	13.609	0.000	0.31
		C		0.000	0.000	16.045	0.000	0.43
L28	77.25-73.42	A	1.846	0.000	0.000	15.986	0.000	0.31
		B		0.000	0.000	11.482	0.000	0.25
		C		0.000	0.000	13.337	0.000	0.34
L29	73.42-73.17	A	1.841	0.000	0.000	1.042	0.000	0.02
		B		0.000	0.000	0.892	0.000	0.02
		C		0.000	0.000	1.012	0.000	0.02
L30	73.17-68.17	A	1.834	0.000	0.000	19.842	0.000	0.44
		B		0.000	0.000	16.855	0.000	0.35

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
		C		0.000	0.000	21.009	0.000	0.48
L31	68.17-64.25	A	1.823	0.000	0.000	15.438	0.000	0.34
		B		0.000	0.000	13.112	0.000	0.27
		C		0.000	0.000	17.479	0.000	0.38
L32	64.25-64.00	A	1.817	0.000	0.000	0.984	0.000	0.02
		B		0.000	0.000	0.836	0.000	0.02
		C		0.000	0.000	1.114	0.000	0.02
L33	64.00-59.00	A	1.809	0.000	0.000	16.089	0.000	0.39
		B		0.000	0.000	13.140	0.000	0.30
		C		0.000	0.000	22.244	0.000	0.42
L34	59.00-54.00	A	1.794	0.000	0.000	14.847	0.000	0.37
		B		0.000	0.000	13.418	0.000	0.30
		C		0.000	0.000	23.665	0.000	0.41
L35	54.00-53.50	A	1.785	0.000	0.000	1.482	0.000	0.04
		B		0.000	0.000	1.689	0.000	0.03
		C		0.000	0.000	2.711	0.000	0.05
L36	53.50-53.25	A	1.784	0.000	0.000	0.741	0.000	0.02
		B		0.000	0.000	0.844	0.000	0.02
		C		0.000	0.000	1.355	0.000	0.02
L37	53.25-43.66	A	1.766	0.000	0.000	28.305	0.000	0.76
		B		0.000	0.000	34.194	0.000	0.66
		C		0.000	0.000	53.704	0.000	0.88
L38	43.66-42.66	A	1.746	0.000	0.000	3.200	0.000	0.08
		B		0.000	0.000	2.540	0.000	0.06
		C		0.000	0.000	4.823	0.000	0.08
L39	42.66-41.75	A	1.742	0.000	0.000	2.907	0.000	0.07
		B		0.000	0.000	2.311	0.000	0.05
		C		0.000	0.000	4.383	0.000	0.07
L40	41.75-41.50	A	1.740	0.000	0.000	0.795	0.000	0.02
		B		0.000	0.000	0.632	0.000	0.01
		C		0.000	0.000	1.199	0.000	0.02
L41	41.50-36.50	A	1.729	0.000	0.000	15.869	0.000	0.38
		B		0.000	0.000	12.624	0.000	0.29
		C		0.000	0.000	23.925	0.000	0.39
L42	36.50-32.75	A	1.708	0.000	0.000	11.848	0.000	0.28
		B		0.000	0.000	12.576	0.000	0.26
		C		0.000	0.000	21.006	0.000	0.33
L43	32.75-32.50	A	1.698	0.000	0.000	0.788	0.000	0.02
		B		0.000	0.000	0.913	0.000	0.02
		C		0.000	0.000	1.474	0.000	0.02
L44	32.50-29.83	A	1.690	0.000	0.000	9.633	0.000	0.21
		B		0.000	0.000	10.974	0.000	0.20
		C		0.000	0.000	15.716	0.000	0.26
L45	29.83-29.58	A	1.682	0.000	0.000	1.119	0.000	0.02
		B		0.000	0.000	1.245	0.000	0.02
		C		0.000	0.000	1.469	0.000	0.03
L46	29.58-28.25	A	1.678	0.000	0.000	5.950	0.000	0.12
		B		0.000	0.000	6.621	0.000	0.11
		C		0.000	0.000	7.810	0.000	0.15
L47	28.25-28.00	A	1.673	0.000	0.000	1.117	0.000	0.02
		B		0.000	0.000	1.244	0.000	0.02
		C		0.000	0.000	1.467	0.000	0.03
L48	28.00-23.00	A	1.657	0.000	0.000	26.715	0.000	0.39
		B		0.000	0.000	20.094	0.000	0.37
		C		0.000	0.000	20.081	0.000	0.54
L49	23.00-19.25	A	1.626	0.000	0.000	20.096	0.000	0.28
		B		0.000	0.000	12.808	0.000	0.25
		C		0.000	0.000	12.589	0.000	0.37
L50	19.25-19.00	A	1.610	0.000	0.000	1.336	0.000	0.02
		B		0.000	0.000	0.852	0.000	0.02
		C		0.000	0.000	0.836	0.000	0.02
L51	19.00-14.00	A	1.586	0.000	0.000	23.116	0.000	0.33
		B		0.000	0.000	13.499	0.000	0.28
		C		0.000	0.000	16.626	0.000	0.42
L52	14.00-9.00	A	1.530	0.000	0.000	21.703	0.000	0.31
		B		0.000	0.000	12.226	0.000	0.26
		C		0.000	0.000	16.401	0.000	0.39
L53	9.00-4.00	A	1.445	0.000	0.000	14.576	0.000	0.15
		B		0.000	0.000	12.056	0.000	0.24

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
		C		0.000	0.000	14.653	0.000	0.34
L54	4.00-0.00	A	1.284	0.000	0.000	10.055	0.000	0.08
		B		0.000	0.000	9.388	0.000	0.18
		C		0.000	0.000	11.055	0.000	0.24

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	168.33-163.33	0.0000	0.0000	0.0000	0.0000
L2	163.33-158.33	0.0000	0.0000	0.0000	0.0000
L3	158.33-153.33	0.0000	0.0000	0.0000	0.0000
L4	153.33-148.33	0.0000	0.0000	0.0000	0.0000
L5	148.33-143.33	-0.2437	1.1465	-0.4074	1.9167
L6	143.33-138.33	-0.2594	1.2202	-0.4338	2.0409
L7	138.33-130.50	-2.6483	1.2854	-2.7461	1.6805
L8	130.50-129.16	-2.7404	1.2917	-2.8322	1.6814
L9	129.16-125.75	-2.5747	0.3663	-2.8488	0.6372
L10	125.75-125.50	-2.1835	0.1021	-2.5824	0.3002
L11	125.50-120.50	-2.0358	-0.4382	-2.4801	-0.0599
L12	120.50-120.25	-1.7456	-1.4272	-2.2463	-0.7796
L13	120.25-115.25	-1.2329	-1.0083	-1.7210	-0.5983
L14	115.25-113.83	-0.9905	-0.8103	-1.4411	-0.5020
L15	113.83-113.48	-0.9948	-0.8139	-1.4472	-0.5044
L16	113.48-113.25	-0.9961	-0.8151	-1.4491	-0.5052
L17	113.25-108.25	-1.1067	-0.1854	-1.5759	0.0006
L18	108.25-103.25	-1.1695	0.0542	-1.6516	0.1898
L19	103.25-98.25	-1.1948	0.0553	-1.6866	0.1933
L20	98.25-93.25	-1.2198	0.0563	-1.7212	0.1967
L21	93.25-84.55	-0.4058	0.9461	-1.1355	0.1002
L22	84.55-83.55	1.6030	1.9580	-0.6879	0.5132
L23	83.55-82.92	1.7143	1.7488	-0.8403	0.5969
L24	82.92-82.67	1.7178	1.7523	-0.8417	0.5980
L25	82.67-82.50	1.7193	1.7538	-0.8422	0.5985
L26	82.50-82.25	1.7205	1.7550	-0.8426	0.5988
L27	82.25-77.25	1.2221	1.5455	-1.4340	0.3446
L28	77.25-73.42	0.2804	0.9371	-1.1363	0.4469
L29	73.42-73.17	-0.1677	0.5979	-0.6456	0.6381
L30	73.17-68.17	-0.1513	0.5334	-0.5670	0.9052
L31	68.17-64.25	-0.1165	0.5671	-0.4073	1.0741
L32	64.25-64.00	-0.1171	0.5716	-0.4096	1.0814
L33	64.00-59.00	-0.1401	-0.1820	-0.4683	1.9206
L34	59.00-54.00	0.1969	-0.2899	-0.2209	2.3625
L35	54.00-53.50	0.9081	0.1525	0.3583	2.5469
L36	53.50-53.25	0.9094	0.1527	0.3591	2.5503
L37	53.25-43.66	0.3111	-0.1785	0.5075	2.5666
L38	43.66-42.66	-0.0273	-0.7717	-0.5406	2.3879
L39	42.66-41.75	-0.0273	-0.7742	-0.5394	2.3916
L40	41.75-41.50	-0.0272	-0.7757	-0.5401	2.3959
L41	41.50-36.50	-0.0271	-0.7825	-0.5432	2.4151
L42	36.50-32.75	0.8347	-0.2209	0.1816	2.6533
L43	32.75-32.50	1.1134	-0.0408	0.4225	2.7368
L44	32.50-29.83	1.0251	0.3980	0.3975	2.1626
L45	29.83-29.58	0.8886	1.0591	0.3558	1.2477
L46	29.58-28.25	0.8911	1.0619	0.3574	1.2504
L47	28.25-28.00	0.8936	1.0648	0.3591	1.2532
L48	28.00-23.00	1.5010	2.3535	-0.9758	-0.1787
L49	23.00-19.25	1.1267	2.3013	-1.5400	-0.5302
L50	19.25-19.00	1.1341	2.3159	-1.5477	-0.5369
L51	19.00-14.00	1.3272	1.8348	-1.7485	0.1220
L52	14.00-9.00	1.4237	1.6575	-1.8425	0.3742
L53	9.00-4.00	2.5062	1.8855	-0.6875	0.4557
L54	4.00-0.00	2.8224	1.9640	-0.3426	0.4549

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

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L5	12	CU12PSM9P6XXX(1-1/2)	143.33 - 148.00	1.0000	1.0000
L6	12	CU12PSM9P6XXX(1-1/2)	138.33 - 143.33	1.0000	1.0000
L7	12	CU12PSM9P6XXX(1-1/2)	130.50 - 138.33	1.0000	1.0000
L7	21	HB158-1-08U8-S8J18(1-5/8)	130.50 - 138.00	1.0000	1.0000
L8	12	CU12PSM9P6XXX(1-1/2)	129.16 - 130.50	1.0000	1.0000
L8	21	HB158-1-08U8-S8J18(1-5/8)	129.16 - 130.50	1.0000	1.0000
L9	12	CU12PSM9P6XXX(1-1/2)	125.75 - 129.16	1.0000	1.0000
L9	21	HB158-1-08U8-S8J18(1-5/8)	125.75 - 129.16	1.0000	1.0000
L9	26	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	125.75 - 128.00	1.0000	1.0000
L9	62	CCI-SFP-045100	125.75 - 127.33	1.0000	1.0000
L9	63	CCI-SFP-045100	125.75 - 127.33	1.0000	1.0000
L9	64	CCI-SFP-045100	125.75 - 127.33	1.0000	1.0000
L10	12	CU12PSM9P6XXX(1-1/2)	125.50 - 125.75	1.0000	1.0000
L10	21	HB158-1-08U8-S8J18(1-5/8)	125.50 - 125.75	1.0000	1.0000
L10	26	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	125.50 - 125.75	1.0000	1.0000
L10	62	CCI-SFP-045100	125.50 - 125.75	1.0000	1.0000
L10	63	CCI-SFP-045100	125.50 - 125.75	1.0000	1.0000
L10	64	CCI-SFP-045100	125.50 - 125.75	1.0000	1.0000
L11	12	CU12PSM9P6XXX(1-1/2)	120.50 - 125.50	1.0000	1.0000
L11	21	HB158-1-08U8-S8J18(1-5/8)	120.50 - 125.50	1.0000	1.0000
L11	26	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	120.50 - 125.50	1.0000	1.0000
L11	62	CCI-SFP-045100	120.50 - 125.50	1.0000	1.0000
L11	63	CCI-SFP-045100	120.50 - 125.50	1.0000	1.0000
L11	64	CCI-SFP-045100	120.50 - 125.50	1.0000	1.0000
L11	66	PL1.25x4 Reinforcement - Wind Area	120.50 - 122.00	1.0000	1.0000
L11	67	PL1.25x4 Reinforcement - Wind Area	120.50 - 122.00	1.0000	1.0000
L12	12	CU12PSM9P6XXX(1-1/2)	120.25 - 120.50	1.0000	1.0000
L12	21	HB158-1-08U8-S8J18(1-5/8)	120.25 - 120.50	1.0000	1.0000
L12	26	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	120.25 - 120.50	1.0000	1.0000
L12	62	CCI-SFP-045100	120.25 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			120.50		
L12	63	CCI-SFP-045100	120.25 - 120.50	1.0000	1.0000
L12	64	CCI-SFP-045100	120.25 - 120.50	1.0000	1.0000
L12	66	PL1.25x4 Reinforcement - Wind Area	120.25 - 120.50	1.0000	1.0000
L12	67	PL1.25x4 Reinforcement - Wind Area	120.25 - 120.50	1.0000	1.0000
L13	12	CU12PSM9P6XXX(1-1/2)	115.25 - 120.25	1.0000	1.0000
L13	21	HB158-1-08U8-S8J18(1-5/8)	115.25 - 120.25	1.0000	1.0000
L13	26	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	115.25 - 120.25	1.0000	1.0000
L13	30	PL0.625x5 Reinforcement - Wind Area/Weight	115.25 - 120.00	1.0000	1.0000
L13	31	PL0.625x5 Reinforcement - Wind Area/Weight	115.25 - 120.00	1.0000	1.0000
L13	32	PL0.625x5 Reinforcement - Wind Area/Weight	115.25 - 120.00	1.0000	1.0000
L13	46	PL1.25x5 Reinforcement - Wind Area	115.25 - 115.83	1.0000	1.0000
L13	47	PL1.25x5 Reinforcement - Wind Area	115.25 - 115.83	1.0000	1.0000
L13	48	PL1.25x5 Reinforcement - Wind Area	115.25 - 115.83	1.0000	1.0000
L13	62	CCI-SFP-045100	115.25 - 120.25	1.0000	1.0000
L13	63	CCI-SFP-045100	115.25 - 120.25	1.0000	1.0000
L13	64	CCI-SFP-045100	115.25 - 120.25	1.0000	1.0000
L13	66	PL1.25x4 Reinforcement - Wind Area	115.25 - 120.25	1.0000	1.0000
L13	67	PL1.25x4 Reinforcement - Wind Area	115.25 - 120.25	1.0000	1.0000
L14	12	CU12PSM9P6XXX(1-1/2)	113.83 - 115.25	1.0000	1.0000
L14	21	HB158-1-08U8-S8J18(1-5/8)	113.83 - 115.25	1.0000	1.0000
L14	26	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	113.83 - 115.25	1.0000	1.0000
L14	30	PL0.625x5 Reinforcement - Wind Area/Weight	113.83 - 115.25	1.0000	1.0000
L14	31	PL0.625x5 Reinforcement - Wind Area/Weight	113.83 - 115.25	1.0000	1.0000
L14	32	PL0.625x5 Reinforcement - Wind Area/Weight	113.83 - 115.25	1.0000	1.0000
L14	46	PL1.25x5 Reinforcement - Wind Area	113.83 - 115.25	1.0000	1.0000
L14	47	PL1.25x5 Reinforcement - Wind Area	113.83 - 115.25	1.0000	1.0000
L14	48	PL1.25x5 Reinforcement - Wind Area	113.83 - 115.25	1.0000	1.0000
L14	62	CCI-SFP-045100	113.83 - 115.25	1.0000	1.0000
L14	63	CCI-SFP-045100	113.83 - 115.25	1.0000	1.0000
L14	64	CCI-SFP-045100	113.83 - 115.25	1.0000	1.0000
L14	66	PL1.25x4 Reinforcement - Wind Area	113.83 - 115.25	1.0000	1.0000
L14	67	PL1.25x4 Reinforcement - Wind Area	113.83 - 115.25	1.0000	1.0000
L15	12	CU12PSM9P6XXX(1-1/2)	113.48 - 113.83	1.0000	1.0000
L15	21	HB158-1-08U8-S8J18(1-5/8)	113.48 - 113.83	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L15	26	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	113.48 - 113.83	1.0000	1.0000
L15	30	PL0.625x5 Reinforcement - Wind Area/Weight	113.48 - 113.83	1.0000	1.0000
L15	31	PL0.625x5 Reinforcement - Wind Area/Weight	113.48 - 113.83	1.0000	1.0000
L15	32	PL0.625x5 Reinforcement - Wind Area/Weight	113.48 - 113.83	1.0000	1.0000
L15	46	PL1.25x5 Reinforcement - Wind Area	113.48 - 113.83	1.0000	1.0000
L15	47	PL1.25x5 Reinforcement - Wind Area	113.48 - 113.83	1.0000	1.0000
L15	48	PL1.25x5 Reinforcement - Wind Area	113.48 - 113.83	1.0000	1.0000
L15	62	CCI-SFP-045100	113.48 - 113.83	1.0000	1.0000
L15	63	CCI-SFP-045100	113.48 - 113.83	1.0000	1.0000
L15	64	CCI-SFP-045100	113.48 - 113.83	1.0000	1.0000
L15	66	PL1.25x4 Reinforcement - Wind Area	113.48 - 113.83	1.0000	1.0000
L15	67	PL1.25x4 Reinforcement - Wind Area	113.48 - 113.83	1.0000	1.0000
L16	12	CU12PSM9P6XXX(1-1/2)	113.25 - 113.48	1.0000	1.0000
L16	21	HB158-1-08U8-S8J18(1-5/8)	113.25 - 113.48	1.0000	1.0000
L16	26	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	113.25 - 113.48	1.0000	1.0000
L16	30	PL0.625x5 Reinforcement - Wind Area/Weight	113.25 - 113.48	1.0000	1.0000
L16	31	PL0.625x5 Reinforcement - Wind Area/Weight	113.25 - 113.48	1.0000	1.0000
L16	32	PL0.625x5 Reinforcement - Wind Area/Weight	113.25 - 113.48	1.0000	1.0000
L16	46	PL1.25x5 Reinforcement - Wind Area	113.25 - 113.48	1.0000	1.0000
L16	47	PL1.25x5 Reinforcement - Wind Area	113.25 - 113.48	1.0000	1.0000
L16	48	PL1.25x5 Reinforcement - Wind Area	113.25 - 113.48	1.0000	1.0000
L16	62	CCI-SFP-045100	113.25 - 113.48	1.0000	1.0000
L16	63	CCI-SFP-045100	113.25 - 113.48	1.0000	1.0000
L16	64	CCI-SFP-045100	113.25 - 113.48	1.0000	1.0000
L16	66	PL1.25x4 Reinforcement - Wind Area	113.25 - 113.48	1.0000	1.0000
L16	67	PL1.25x4 Reinforcement - Wind Area	113.25 - 113.48	1.0000	1.0000
L17	12	CU12PSM9P6XXX(1-1/2)	108.25 - 113.25	1.0000	1.0000
L17	21	HB158-1-08U8-S8J18(1-5/8)	108.25 - 113.25	1.0000	1.0000
L17	26	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	108.25 - 113.25	1.0000	1.0000
L17	30	PL0.625x5 Reinforcement - Wind Area/Weight	108.25 - 113.25	1.0000	1.0000
L17	31	PL0.625x5 Reinforcement - Wind Area/Weight	108.25 - 113.25	1.0000	1.0000
L17	32	PL0.625x5 Reinforcement - Wind Area/Weight	108.25 - 113.25	1.0000	1.0000
L17	46	PL1.25x5 Reinforcement - Wind Area	108.25 - 113.25	1.0000	1.0000
L17	47	PL1.25x5 Reinforcement - Wind Area	108.25 - 113.25	1.0000	1.0000
L17	48	PL1.25x5 Reinforcement -	108.25 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
		Wind Area	113.25		
L17	62	CCI-SFP-045100	108.25 - 113.25	1.0000	1.0000
L17	63	CCI-SFP-045100	108.25 - 113.25	1.0000	1.0000
L17	64	CCI-SFP-045100	108.25 - 113.25	1.0000	1.0000
L17	66	PL1.25x4 Reinforcement - Wind Area	112.00 - 113.25	1.0000	1.0000
L17	67	PL1.25x4 Reinforcement - Wind Area	112.00 - 113.25	1.0000	1.0000
L18	12	CU12PSM9P6XXX(1-1/2)	103.25 - 108.25	1.0000	1.0000
L18	21	HB158-1-08U8-S8J18(1-5/8)	103.25 - 108.25	1.0000	1.0000
L18	26	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	103.25 - 108.25	1.0000	1.0000
L18	30	PL0.625x5 Reinforcement - Wind Area/Weight	103.25 - 108.25	1.0000	1.0000
L18	31	PL0.625x5 Reinforcement - Wind Area/Weight	103.25 - 108.25	1.0000	1.0000
L18	32	PL0.625x5 Reinforcement - Wind Area/Weight	103.25 - 108.25	1.0000	1.0000
L18	46	PL1.25x5 Reinforcement - Wind Area	103.25 - 108.25	1.0000	1.0000
L18	47	PL1.25x5 Reinforcement - Wind Area	103.25 - 108.25	1.0000	1.0000
L18	48	PL1.25x5 Reinforcement - Wind Area	103.25 - 108.25	1.0000	1.0000
L18	62	CCI-SFP-045100	103.25 - 108.25	1.0000	1.0000
L18	63	CCI-SFP-045100	103.25 - 108.25	1.0000	1.0000
L18	64	CCI-SFP-045100	103.25 - 108.25	1.0000	1.0000
L19	12	CU12PSM9P6XXX(1-1/2)	98.25 - 103.25	1.0000	1.0000
L19	21	HB158-1-08U8-S8J18(1-5/8)	98.25 - 103.25	1.0000	1.0000
L19	26	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	98.25 - 103.25	1.0000	1.0000
L19	30	PL0.625x5 Reinforcement - Wind Area/Weight	98.25 - 103.25	1.0000	1.0000
L19	31	PL0.625x5 Reinforcement - Wind Area/Weight	98.25 - 103.25	1.0000	1.0000
L19	32	PL0.625x5 Reinforcement - Wind Area/Weight	98.25 - 103.25	1.0000	1.0000
L19	46	PL1.25x5 Reinforcement - Wind Area	98.25 - 103.25	1.0000	1.0000
L19	47	PL1.25x5 Reinforcement - Wind Area	98.25 - 103.25	1.0000	1.0000
L19	48	PL1.25x5 Reinforcement - Wind Area	98.25 - 103.25	1.0000	1.0000
L19	62	CCI-SFP-045100	98.25 - 103.25	1.0000	1.0000
L19	63	CCI-SFP-045100	98.25 - 103.25	1.0000	1.0000
L19	64	CCI-SFP-045100	98.25 - 103.25	1.0000	1.0000
L20	12	CU12PSM9P6XXX(1-1/2)	93.25 - 98.25	1.0000	1.0000
L20	21	HB158-1-08U8-S8J18(1-5/8)	93.25 - 98.25	1.0000	1.0000
L20	26	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	93.25 - 98.25	1.0000	1.0000
L20	30	PL0.625x5 Reinforcement - Wind Area/Weight	93.25 - 98.25	1.0000	1.0000
L20	31	PL0.625x5 Reinforcement - Wind Area/Weight	93.25 - 98.25	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L20	32	PL0.625x5 Reinforcement - Wind Area/Weight	93.25 - 98.25	1.0000	1.0000
L20	46	PL1.25x5 Reinforcement - Wind Area	93.25 - 98.25	1.0000	1.0000
L20	47	PL1.25x5 Reinforcement - Wind Area	93.25 - 98.25	1.0000	1.0000
L20	48	PL1.25x5 Reinforcement - Wind Area	93.25 - 98.25	1.0000	1.0000
L20	62	CCI-SFP-045100	93.25 - 98.25	1.0000	1.0000
L20	63	CCI-SFP-045100	93.25 - 98.25	1.0000	1.0000
L20	64	CCI-SFP-045100	93.25 - 98.25	1.0000	1.0000
L21	12	CU12PSM9P6XXX(1-1/2)	84.55 - 93.25	1.0000	1.0000
L21	21	HB158-1-08U8-S8J18(1-5/8)	84.55 - 93.25	1.0000	1.0000
L21	26	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	84.55 - 93.25	1.0000	1.0000
L21	28	PL0.625x5 Reinforcement - Wind Area/Weight	84.55 - 84.67	1.0000	1.0000
L21	29	PL0.625x5 Reinforcement - Wind Area/Weight	84.55 - 84.67	1.0000	1.0000
L21	30	PL0.625x5 Reinforcement - Wind Area/Weight	84.67 - 93.25	1.0000	1.0000
L21	31	PL0.625x5 Reinforcement - Wind Area/Weight	84.67 - 93.25	1.0000	1.0000
L21	32	PL0.625x5 Reinforcement - Wind Area/Weight	84.67 - 93.25	1.0000	1.0000
L21	43	PL1.25x5 Reinforcement - Wind Area	84.55 - 87.92	1.0000	1.0000
L21	44	PL1.25x5 Reinforcement - Wind Area	84.55 - 87.92	1.0000	1.0000
L21	45	PL1.25x5 Reinforcement - Wind Area	84.55 - 87.92	1.0000	1.0000
L21	46	PL1.25x5 Reinforcement - Wind Area	85.83 - 93.25	1.0000	1.0000
L21	47	PL1.25x5 Reinforcement - Wind Area	85.83 - 93.25	1.0000	1.0000
L21	48	PL1.25x5 Reinforcement - Wind Area	85.83 - 93.25	1.0000	1.0000
L21	62	CCI-SFP-045100	87.92 - 93.25	1.0000	1.0000
L21	63	CCI-SFP-045100	87.92 - 93.25	1.0000	1.0000
L21	64	CCI-SFP-045100	87.92 - 93.25	1.0000	1.0000
L21	69	PL1.25x5 Reinforcement - Wind Area	84.55 - 90.50	1.0000	1.0000
L21	70	PL1.25x5 Reinforcement - Wind Area	84.55 - 90.50	1.0000	1.0000
L22	12	CU12PSM9P6XXX(1-1/2)	83.55 - 84.55	1.0000	1.0000
L22	21	HB158-1-08U8-S8J18(1-5/8)	83.55 - 84.55	1.0000	1.0000
L22	26	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	83.55 - 84.55	1.0000	1.0000
L22	28	PL0.625x5 Reinforcement - Wind Area/Weight	83.55 - 84.55	1.0000	1.0000
L22	29	PL0.625x5 Reinforcement - Wind Area/Weight	83.55 - 84.55	1.0000	1.0000
L22	43	PL1.25x5 Reinforcement - Wind Area	83.55 - 84.55	1.0000	1.0000
L22	44	PL1.25x5 Reinforcement - Wind Area	83.55 - 84.55	1.0000	1.0000
L22	45	PL1.25x5 Reinforcement - Wind Area	83.55 - 84.55	1.0000	1.0000
L22	53	CCI-SFP-045100	83.55 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			84.33		
L22	54	CCI-SFP-045100	83.55 - 84.33	1.0000	1.0000
L22	55	CCI-SFP-045100	83.55 - 84.33	1.0000	1.0000
L22	69	PL1.25x5 Reinforcement - Wind Area	83.55 - 84.55	1.0000	1.0000
L22	70	PL1.25x5 Reinforcement - Wind Area	83.55 - 84.55	1.0000	1.0000
L23	12	CU12PSM9P6XXX(1-1/2)	82.92 - 83.55	1.0000	1.0000
L23	21	HB158-1-08U8-S8J18(1-5/8)	82.92 - 83.55	1.0000	1.0000
L23	26	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	82.92 - 83.55	1.0000	1.0000
L23	28	PL0.625x5 Reinforcement - Wind Area/Weight	82.92 - 83.55	1.0000	1.0000
L23	29	PL0.625x5 Reinforcement - Wind Area/Weight	82.92 - 83.55	1.0000	1.0000
L23	43	PL1.25x5 Reinforcement - Wind Area	82.92 - 83.55	1.0000	1.0000
L23	44	PL1.25x5 Reinforcement - Wind Area	82.92 - 83.55	1.0000	1.0000
L23	45	PL1.25x5 Reinforcement - Wind Area	82.92 - 83.55	1.0000	1.0000
L23	53	CCI-SFP-045100	82.92 - 83.55	1.0000	1.0000
L23	54	CCI-SFP-045100	82.92 - 83.55	1.0000	1.0000
L23	55	CCI-SFP-045100	82.92 - 83.55	1.0000	1.0000
L23	69	PL1.25x5 Reinforcement - Wind Area	82.92 - 83.55	1.0000	1.0000
L23	70	PL1.25x5 Reinforcement - Wind Area	82.92 - 83.55	1.0000	1.0000
L24	12	CU12PSM9P6XXX(1-1/2)	82.67 - 82.92	1.0000	1.0000
L24	21	HB158-1-08U8-S8J18(1-5/8)	82.67 - 82.92	1.0000	1.0000
L24	26	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	82.67 - 82.92	1.0000	1.0000
L24	28	PL0.625x5 Reinforcement - Wind Area/Weight	82.67 - 82.92	1.0000	1.0000
L24	29	PL0.625x5 Reinforcement - Wind Area/Weight	82.67 - 82.92	1.0000	1.0000
L24	43	PL1.25x5 Reinforcement - Wind Area	82.67 - 82.92	1.0000	1.0000
L24	44	PL1.25x5 Reinforcement - Wind Area	82.67 - 82.92	1.0000	1.0000
L24	45	PL1.25x5 Reinforcement - Wind Area	82.67 - 82.92	1.0000	1.0000
L24	53	CCI-SFP-045100	82.67 - 82.92	1.0000	1.0000
L24	54	CCI-SFP-045100	82.67 - 82.92	1.0000	1.0000
L24	55	CCI-SFP-045100	82.67 - 82.92	1.0000	1.0000
L24	69	PL1.25x5 Reinforcement - Wind Area	82.67 - 82.92	1.0000	1.0000
L24	70	PL1.25x5 Reinforcement - Wind Area	82.67 - 82.92	1.0000	1.0000
L25	12	CU12PSM9P6XXX(1-1/2)	82.50 - 82.67	1.0000	1.0000
L25	21	HB158-1-08U8-S8J18(1-5/8)	82.50 - 82.67	1.0000	1.0000
L25	26	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	82.50 - 82.67	1.0000	1.0000
L25	28	PL0.625x5 Reinforcement - Wind Area/Weight	82.50 - 82.67	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L25	29	PL0.625x5 Reinforcement - Wind Area/Weight	82.50 - 82.67	1.0000	1.0000
L25	43	PL1.25x5 Reinforcement - Wind Area	82.50 - 82.67	1.0000	1.0000
L25	44	PL1.25x5 Reinforcement - Wind Area	82.50 - 82.67	1.0000	1.0000
L25	45	PL1.25x5 Reinforcement - Wind Area	82.50 - 82.67	1.0000	1.0000
L25	53	CCI-SFP-045100	82.50 - 82.67	1.0000	1.0000
L25	54	CCI-SFP-045100	82.50 - 82.67	1.0000	1.0000
L25	55	CCI-SFP-045100	82.50 - 82.67	1.0000	1.0000
L25	69	PL1.25x5 Reinforcement - Wind Area	82.50 - 82.67	1.0000	1.0000
L25	70	PL1.25x5 Reinforcement - Wind Area	82.50 - 82.67	1.0000	1.0000
L26	12	CU12PSM9P6XXX(1-1/2)	82.25 - 82.50	1.0000	1.0000
L26	21	HB158-1-08U8-S8J18(1-5/8)	82.25 - 82.50	1.0000	1.0000
L26	26	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	82.25 - 82.50	1.0000	1.0000
L26	28	PL0.625x5 Reinforcement - Wind Area/Weight	82.25 - 82.50	1.0000	1.0000
L26	29	PL0.625x5 Reinforcement - Wind Area/Weight	82.25 - 82.50	1.0000	1.0000
L26	43	PL1.25x5 Reinforcement - Wind Area	82.25 - 82.50	1.0000	1.0000
L26	44	PL1.25x5 Reinforcement - Wind Area	82.25 - 82.50	1.0000	1.0000
L26	45	PL1.25x5 Reinforcement - Wind Area	82.25 - 82.50	1.0000	1.0000
L26	53	CCI-SFP-045100	82.25 - 82.50	1.0000	1.0000
L26	54	CCI-SFP-045100	82.25 - 82.50	1.0000	1.0000
L26	55	CCI-SFP-045100	82.25 - 82.50	1.0000	1.0000
L26	69	PL1.25x5 Reinforcement - Wind Area	82.25 - 82.50	1.0000	1.0000
L26	70	PL1.25x5 Reinforcement - Wind Area	82.25 - 82.50	1.0000	1.0000
L27	12	CU12PSM9P6XXX(1-1/2)	77.25 - 82.25	1.0000	1.0000
L27	21	HB158-1-08U8-S8J18(1-5/8)	77.25 - 82.25	1.0000	1.0000
L27	26	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	77.25 - 82.25	1.0000	1.0000
L27	28	PL0.625x5 Reinforcement - Wind Area/Weight	77.25 - 82.25	1.0000	1.0000
L27	29	PL0.625x5 Reinforcement - Wind Area/Weight	77.25 - 82.25	1.0000	1.0000
L27	43	PL1.25x5 Reinforcement - Wind Area	77.25 - 82.25	1.0000	1.0000
L27	44	PL1.25x5 Reinforcement - Wind Area	77.25 - 82.25	1.0000	1.0000
L27	45	PL1.25x5 Reinforcement - Wind Area	77.25 - 82.25	1.0000	1.0000
L27	53	CCI-SFP-045100	77.25 - 82.25	1.0000	1.0000
L27	54	CCI-SFP-045100	77.25 - 82.25	1.0000	1.0000
L27	55	CCI-SFP-045100	77.25 - 82.25	1.0000	1.0000
L27	69	PL1.25x5 Reinforcement - Wind Area	80.50 - 82.25	1.0000	1.0000
L27	70	PL1.25x5 Reinforcement -	80.50 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
		Wind Area	82.25		
L28	12	CU12PSM9P6XXX(1-1/2)	73.42 - 77.25	1.0000	1.0000
L28	21	HB158-1-08U8-S8J18(1-5/8)	73.42 - 77.25	1.0000	1.0000
L28	26	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	73.42 - 77.25	1.0000	1.0000
L28	28	PL0.625x5 Reinforcement - Wind Area/Weight	73.42 - 77.25	1.0000	1.0000
L28	29	PL0.625x5 Reinforcement - Wind Area/Weight	73.42 - 77.25	1.0000	1.0000
L28	40	PL1.25x5 Reinforcement - Wind Area	73.42 - 75.42	1.0000	1.0000
L28	41	PL1.25x5 Reinforcement - Wind Area	73.42 - 75.42	1.0000	1.0000
L28	42	PL1.25x5 Reinforcement - Wind Area	73.42 - 75.42	1.0000	1.0000
L28	43	PL1.25x5 Reinforcement - Wind Area	73.42 - 77.25	1.0000	1.0000
L28	44	PL1.25x5 Reinforcement - Wind Area	73.42 - 77.25	1.0000	1.0000
L28	45	PL1.25x5 Reinforcement - Wind Area	73.42 - 77.25	1.0000	1.0000
L28	53	CCI-SFP-045100	73.42 - 77.25	1.0000	1.0000
L28	54	CCI-SFP-045100	73.42 - 77.25	1.0000	1.0000
L28	55	CCI-SFP-045100	73.42 - 77.25	1.0000	1.0000
L29	12	CU12PSM9P6XXX(1-1/2)	73.17 - 73.42	1.0000	1.0000
L29	21	HB158-1-08U8-S8J18(1-5/8)	73.17 - 73.42	1.0000	1.0000
L29	26	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	73.17 - 73.42	1.0000	1.0000
L29	28	PL0.625x5 Reinforcement - Wind Area/Weight	73.17 - 73.42	1.0000	1.0000
L29	29	PL0.625x5 Reinforcement - Wind Area/Weight	73.17 - 73.42	1.0000	1.0000
L29	40	PL1.25x5 Reinforcement - Wind Area	73.17 - 73.42	1.0000	1.0000
L29	41	PL1.25x5 Reinforcement - Wind Area	73.17 - 73.42	1.0000	1.0000
L29	42	PL1.25x5 Reinforcement - Wind Area	73.17 - 73.42	1.0000	1.0000
L29	43	PL1.25x5 Reinforcement - Wind Area	73.17 - 73.42	1.0000	1.0000
L29	44	PL1.25x5 Reinforcement - Wind Area	73.17 - 73.42	1.0000	1.0000
L29	45	PL1.25x5 Reinforcement - Wind Area	73.17 - 73.42	1.0000	1.0000
L29	53	CCI-SFP-045100	73.17 - 73.42	1.0000	1.0000
L29	54	CCI-SFP-045100	73.17 - 73.42	1.0000	1.0000
L29	55	CCI-SFP-045100	73.17 - 73.42	1.0000	1.0000
L30	12	CU12PSM9P6XXX(1-1/2)	68.17 - 73.17	1.0000	1.0000
L30	13	LDF4-50A(1/2)	68.17 - 70.00	1.0000	1.0000
L30	21	HB158-1-08U8-S8J18(1-5/8)	68.17 - 73.17	1.0000	1.0000
L30	26	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	68.17 - 73.17	1.0000	1.0000
L30	28	PL0.625x5 Reinforcement - Wind Area/Weight	68.17 - 73.17	1.0000	1.0000
L30	29	PL0.625x5 Reinforcement - Wind Area/Weight	68.17 - 73.17	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L30	40	PL1.25x5 Reinforcement - Wind Area	68.17 - 73.17	1.0000	1.0000
L30	41	PL1.25x5 Reinforcement - Wind Area	68.17 - 73.17	1.0000	1.0000
L30	42	PL1.25x5 Reinforcement - Wind Area	68.17 - 73.17	1.0000	1.0000
L30	43	PL1.25x5 Reinforcement - Wind Area	72.75 - 73.17	1.0000	1.0000
L30	44	PL1.25x5 Reinforcement - Wind Area	72.75 - 73.17	1.0000	1.0000
L30	45	PL1.25x5 Reinforcement - Wind Area	72.75 - 73.17	1.0000	1.0000
L30	53	CCI-SFP-045100	68.17 - 73.17	1.0000	1.0000
L30	54	CCI-SFP-045100	68.17 - 73.17	1.0000	1.0000
L30	55	CCI-SFP-045100	68.17 - 73.17	1.0000	1.0000
L30	59	CCI-SFP-045100	68.17 - 72.75	1.0000	1.0000
L30	60	CCI-SFP-045100	68.17 - 72.75	1.0000	1.0000
L30	61	CCI-SFP-045100	68.17 - 72.75	1.0000	1.0000
L31	12	CU12PSM9P6XXX(1-1/2)	64.25 - 68.17	1.0000	1.0000
L31	13	LDF4-50A(1/2)	64.25 - 68.17	1.0000	1.0000
L31	21	HB158-1-08U8-S8J18(1-5/8)	64.25 - 68.17	1.0000	1.0000
L31	26	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	64.25 - 68.17	1.0000	1.0000
L31	28	PL0.625x5 Reinforcement - Wind Area/Weight	64.25 - 68.17	1.0000	1.0000
L31	29	PL0.625x5 Reinforcement - Wind Area/Weight	64.25 - 68.17	1.0000	1.0000
L31	40	PL1.25x5 Reinforcement - Wind Area	64.25 - 68.17	1.0000	1.0000
L31	41	PL1.25x5 Reinforcement - Wind Area	64.25 - 68.17	1.0000	1.0000
L31	42	PL1.25x5 Reinforcement - Wind Area	64.25 - 68.17	1.0000	1.0000
L31	53	CCI-SFP-045100	64.25 - 68.17	1.0000	1.0000
L31	54	CCI-SFP-045100	64.25 - 68.17	1.0000	1.0000
L31	55	CCI-SFP-045100	64.25 - 68.17	1.0000	1.0000
L31	59	CCI-SFP-045100	64.25 - 68.17	1.0000	1.0000
L31	60	CCI-SFP-045100	64.25 - 68.17	1.0000	1.0000
L31	61	CCI-SFP-045100	64.25 - 68.17	1.0000	1.0000
L32	12	CU12PSM9P6XXX(1-1/2)	64.00 - 64.25	1.0000	1.0000
L32	13	LDF4-50A(1/2)	64.00 - 64.25	1.0000	1.0000
L32	21	HB158-1-08U8-S8J18(1-5/8)	64.00 - 64.25	1.0000	1.0000
L32	26	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	64.00 - 64.25	1.0000	1.0000
L32	28	PL0.625x5 Reinforcement - Wind Area/Weight	64.00 - 64.25	1.0000	1.0000
L32	29	PL0.625x5 Reinforcement - Wind Area/Weight	64.00 - 64.25	1.0000	1.0000
L32	40	PL1.25x5 Reinforcement - Wind Area	64.00 - 64.25	1.0000	1.0000
L32	41	PL1.25x5 Reinforcement -	64.00 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
		Wind Area	64.25		
L32	42	PL1.25x5 Reinforcement - Wind Area	64.00 - 64.25	1.0000	1.0000
L32	53	CCI-SFP-045100	64.00 - 64.25	1.0000	1.0000
L32	54	CCI-SFP-045100	64.00 - 64.25	1.0000	1.0000
L32	55	CCI-SFP-045100	64.00 - 64.25	1.0000	1.0000
L32	59	CCI-SFP-045100	64.00 - 64.25	1.0000	1.0000
L32	60	CCI-SFP-045100	64.00 - 64.25	1.0000	1.0000
L32	61	CCI-SFP-045100	64.00 - 64.25	1.0000	1.0000
L33	12	CU12PSM9P6XXX(1-1/2)	59.00 - 64.00	1.0000	1.0000
L33	13	LDF4-50A(1/2)	59.00 - 64.00	1.0000	1.0000
L33	21	HB158-1-08U8-S8J18(1-5/8)	59.00 - 64.00	1.0000	1.0000
L33	26	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	59.00 - 64.00	1.0000	1.0000
L33	28	PL0.625x5 Reinforcement - Wind Area/Weight	59.00 - 64.00	1.0000	1.0000
L33	29	PL0.625x5 Reinforcement - Wind Area/Weight	59.00 - 64.00	1.0000	1.0000
L33	40	PL1.25x5 Reinforcement - Wind Area	59.00 - 64.00	1.0000	1.0000
L33	41	PL1.25x5 Reinforcement - Wind Area	59.00 - 64.00	1.0000	1.0000
L33	42	PL1.25x5 Reinforcement - Wind Area	59.00 - 64.00	1.0000	1.0000
L33	53	CCI-SFP-045100	59.00 - 64.00	1.0000	1.0000
L33	54	CCI-SFP-045100	59.00 - 64.00	1.0000	1.0000
L33	55	CCI-SFP-045100	59.00 - 64.00	1.0000	1.0000
L33	59	CCI-SFP-045100	62.75 - 64.00	1.0000	1.0000
L33	60	CCI-SFP-045100	62.75 - 64.00	1.0000	1.0000
L33	61	CCI-SFP-045100	62.75 - 64.00	1.0000	1.0000
L34	12	CU12PSM9P6XXX(1-1/2)	54.00 - 59.00	1.0000	1.0000
L34	13	LDF4-50A(1/2)	54.00 - 59.00	1.0000	1.0000
L34	21	HB158-1-08U8-S8J18(1-5/8)	54.00 - 59.00	1.0000	1.0000
L34	26	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	54.00 - 59.00	1.0000	1.0000
L34	28	PL0.625x5 Reinforcement - Wind Area/Weight	54.00 - 59.00	1.0000	1.0000
L34	29	PL0.625x5 Reinforcement - Wind Area/Weight	54.00 - 59.00	1.0000	1.0000
L34	40	PL1.25x5 Reinforcement - Wind Area	54.00 - 59.00	1.0000	1.0000
L34	41	PL1.25x5 Reinforcement - Wind Area	54.00 - 59.00	1.0000	1.0000
L34	42	PL1.25x5 Reinforcement - Wind Area	54.00 - 59.00	1.0000	1.0000
L34	53	CCI-SFP-045100	54.00 - 59.00	1.0000	1.0000
L34	54	CCI-SFP-045100	54.00 - 59.00	1.0000	1.0000
L34	55	CCI-SFP-045100	54.00 - 59.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L34	72	PL1.25x5 Reinforcement - Wind Area	54.00 - 55.50	1.0000	1.0000
L34	73	PL1.25x5 Reinforcement - Wind Area	54.00 - 55.50	1.0000	1.0000
L35	12	CU12PSM9P6XXX(1-1/2)	53.50 - 54.00	1.0000	1.0000
L35	13	LDF4-50A(1/2)	53.50 - 54.00	1.0000	1.0000
L35	21	HB158-1-08U8-S8J18(1-5/8)	53.50 - 54.00	1.0000	1.0000
L35	26	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	53.50 - 54.00	1.0000	1.0000
L35	28	PL0.625x5 Reinforcement - Wind Area/Weight	53.50 - 54.00	1.0000	1.0000
L35	29	PL0.625x5 Reinforcement - Wind Area/Weight	53.50 - 54.00	1.0000	1.0000
L35	40	PL1.25x5 Reinforcement - Wind Area	53.50 - 54.00	1.0000	1.0000
L35	41	PL1.25x5 Reinforcement - Wind Area	53.50 - 54.00	1.0000	1.0000
L35	42	PL1.25x5 Reinforcement - Wind Area	53.50 - 54.00	1.0000	1.0000
L35	53	CCI-SFP-045100	53.50 - 54.00	1.0000	1.0000
L35	54	CCI-SFP-045100	53.50 - 54.00	1.0000	1.0000
L35	55	CCI-SFP-045100	53.50 - 54.00	1.0000	1.0000
L35	72	PL1.25x5 Reinforcement - Wind Area	53.50 - 54.00	1.0000	1.0000
L35	73	PL1.25x5 Reinforcement - Wind Area	53.50 - 54.00	1.0000	1.0000
L36	12	CU12PSM9P6XXX(1-1/2)	53.25 - 53.50	1.0000	1.0000
L36	13	LDF4-50A(1/2)	53.25 - 53.50	1.0000	1.0000
L36	21	HB158-1-08U8-S8J18(1-5/8)	53.25 - 53.50	1.0000	1.0000
L36	26	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	53.25 - 53.50	1.0000	1.0000
L36	28	PL0.625x5 Reinforcement - Wind Area/Weight	53.25 - 53.50	1.0000	1.0000
L36	29	PL0.625x5 Reinforcement - Wind Area/Weight	53.25 - 53.50	1.0000	1.0000
L36	40	PL1.25x5 Reinforcement - Wind Area	53.25 - 53.50	1.0000	1.0000
L36	41	PL1.25x5 Reinforcement - Wind Area	53.25 - 53.50	1.0000	1.0000
L36	42	PL1.25x5 Reinforcement - Wind Area	53.25 - 53.50	1.0000	1.0000
L36	53	CCI-SFP-045100	53.25 - 53.50	1.0000	1.0000
L36	54	CCI-SFP-045100	53.25 - 53.50	1.0000	1.0000
L36	55	CCI-SFP-045100	53.25 - 53.50	1.0000	1.0000
L36	72	PL1.25x5 Reinforcement - Wind Area	53.25 - 53.50	1.0000	1.0000
L36	73	PL1.25x5 Reinforcement - Wind Area	53.25 - 53.50	1.0000	1.0000
L37	12	CU12PSM9P6XXX(1-1/2)	43.66 - 53.25	1.0000	1.0000
L37	13	LDF4-50A(1/2)	43.66 - 53.25	1.0000	1.0000
L37	21	HB158-1-08U8-S8J18(1-5/8)	43.66 - 53.25	1.0000	1.0000
L37	26	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	43.66 - 53.25	1.0000	1.0000
L37	28	PL0.625x5 Reinforcement	43.66 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
		- Wind Area/Weight	53.25		
L37	29	PL0.625x5 Reinforcement - Wind Area/Weight	43.66 - 53.25	1.0000	1.0000
L37	37	PL1.25x6 Reinforcement - Wind Area	43.66 - 47.92	1.0000	1.0000
L37	38	PL1.25x6 Reinforcement - Wind Area	43.66 - 47.92	1.0000	1.0000
L37	39	PL1.25x6 Reinforcement - Wind Area	43.66 - 47.92	1.0000	1.0000
L37	40	PL1.25x5 Reinforcement - Wind Area	45.38 - 53.25	1.0000	1.0000
L37	41	PL1.25x5 Reinforcement - Wind Area	45.38 - 53.25	1.0000	1.0000
L37	42	PL1.25x5 Reinforcement - Wind Area	45.38 - 53.25	1.0000	1.0000
L37	50	CCI-SFP-060100	43.66 - 43.75	1.0000	1.0000
L37	51	CCI-SFP-060100	43.66 - 43.75	1.0000	1.0000
L37	52	CCI-SFP-060100	43.66 - 43.75	1.0000	1.0000
L37	53	CCI-SFP-045100	43.75 - 53.25	1.0000	1.0000
L37	54	CCI-SFP-045100	43.75 - 53.25	1.0000	1.0000
L37	55	CCI-SFP-045100	43.75 - 53.25	1.0000	1.0000
L37	72	PL1.25x5 Reinforcement - Wind Area	45.50 - 53.25	1.0000	1.0000
L37	73	PL1.25x5 Reinforcement - Wind Area	45.50 - 53.25	1.0000	1.0000
L38	12	CU12PSM9P6XXX(1-1/2)	42.66 - 43.66	1.0000	1.0000
L38	13	LDF4-50A(1/2)	42.66 - 43.66	1.0000	1.0000
L38	21	HB158-1-08U8-S8J18(1-5/8)	42.66 - 43.66	1.0000	1.0000
L38	26	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	42.66 - 43.66	1.0000	1.0000
L38	28	PL0.625x5 Reinforcement - Wind Area/Weight	42.66 - 43.66	1.0000	1.0000
L38	29	PL0.625x5 Reinforcement - Wind Area/Weight	42.66 - 43.66	1.0000	1.0000
L38	37	PL1.25x6 Reinforcement - Wind Area	42.66 - 43.66	1.0000	1.0000
L38	38	PL1.25x6 Reinforcement - Wind Area	42.66 - 43.66	1.0000	1.0000
L38	39	PL1.25x6 Reinforcement - Wind Area	42.66 - 43.66	1.0000	1.0000
L38	50	CCI-SFP-060100	42.66 - 43.66	1.0000	1.0000
L38	51	CCI-SFP-060100	42.66 - 43.66	1.0000	1.0000
L38	52	CCI-SFP-060100	42.66 - 43.66	1.0000	1.0000
L39	12	CU12PSM9P6XXX(1-1/2)	41.75 - 42.66	1.0000	1.0000
L39	13	LDF4-50A(1/2)	41.75 - 42.66	1.0000	1.0000
L39	21	HB158-1-08U8-S8J18(1-5/8)	41.75 - 42.66	1.0000	1.0000
L39	26	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	41.75 - 42.66	1.0000	1.0000
L39	28	PL0.625x5 Reinforcement - Wind Area/Weight	41.75 - 42.66	1.0000	1.0000
L39	29	PL0.625x5 Reinforcement - Wind Area/Weight	41.75 - 42.66	1.0000	1.0000
L39	37	PL1.25x6 Reinforcement - Wind Area	41.75 - 42.66	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L39	38	PL1.25x6 Reinforcement - Wind Area	41.75 - 42.66	1.0000	1.0000
L39	39	PL1.25x6 Reinforcement - Wind Area	41.75 - 42.66	1.0000	1.0000
L39	50	CCI-SFP-060100	41.75 - 42.66	1.0000	1.0000
L39	51	CCI-SFP-060100	41.75 - 42.66	1.0000	1.0000
L39	52	CCI-SFP-060100	41.75 - 42.66	1.0000	1.0000
L40	12	CU12PSM9P6XXX(1-1/2)	41.50 - 41.75	1.0000	1.0000
L40	13	LDF4-50A(1/2)	41.50 - 41.75	1.0000	1.0000
L40	21	HB158-1-08U8-S8J18(1-5/8)	41.50 - 41.75	1.0000	1.0000
L40	26	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	41.50 - 41.75	1.0000	1.0000
L40	28	PL0.625x5 Reinforcement - Wind Area/Weight	41.50 - 41.75	1.0000	1.0000
L40	29	PL0.625x5 Reinforcement - Wind Area/Weight	41.50 - 41.75	1.0000	1.0000
L40	37	PL1.25x6 Reinforcement - Wind Area	41.50 - 41.75	1.0000	1.0000
L40	38	PL1.25x6 Reinforcement - Wind Area	41.50 - 41.75	1.0000	1.0000
L40	39	PL1.25x6 Reinforcement - Wind Area	41.50 - 41.75	1.0000	1.0000
L40	50	CCI-SFP-060100	41.50 - 41.75	1.0000	1.0000
L40	51	CCI-SFP-060100	41.50 - 41.75	1.0000	1.0000
L40	52	CCI-SFP-060100	41.50 - 41.75	1.0000	1.0000
L41	12	CU12PSM9P6XXX(1-1/2)	36.50 - 41.50	1.0000	1.0000
L41	13	LDF4-50A(1/2)	36.50 - 41.50	1.0000	1.0000
L41	21	HB158-1-08U8-S8J18(1-5/8)	36.50 - 41.50	1.0000	1.0000
L41	26	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	36.50 - 41.50	1.0000	1.0000
L41	28	PL0.625x5 Reinforcement - Wind Area/Weight	36.50 - 41.50	1.0000	1.0000
L41	29	PL0.625x5 Reinforcement - Wind Area/Weight	36.50 - 41.50	1.0000	1.0000
L41	37	PL1.25x6 Reinforcement - Wind Area	36.50 - 41.50	1.0000	1.0000
L41	38	PL1.25x6 Reinforcement - Wind Area	36.50 - 41.50	1.0000	1.0000
L41	39	PL1.25x6 Reinforcement - Wind Area	36.50 - 41.50	1.0000	1.0000
L41	50	CCI-SFP-060100	36.50 - 41.50	1.0000	1.0000
L41	51	CCI-SFP-060100	36.50 - 41.50	1.0000	1.0000
L41	52	CCI-SFP-060100	36.50 - 41.50	1.0000	1.0000
L42	12	CU12PSM9P6XXX(1-1/2)	32.75 - 36.50	1.0000	1.0000
L42	13	LDF4-50A(1/2)	32.75 - 36.50	1.0000	1.0000
L42	21	HB158-1-08U8-S8J18(1-5/8)	32.75 - 36.50	1.0000	1.0000
L42	26	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	32.75 - 36.50	1.0000	1.0000
L42	28	PL0.625x5 Reinforcement - Wind Area/Weight	32.75 - 36.50	1.0000	1.0000
L42	29	PL0.625x5 Reinforcement	32.75 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
		- Wind Area/Weight	36.50		
L42	37	PL1.25x6 Reinforcement - Wind Area	32.75 - 36.50	1.0000	1.0000
L42	38	PL1.25x6 Reinforcement - Wind Area	32.75 - 36.50	1.0000	1.0000
L42	39	PL1.25x6 Reinforcement - Wind Area	32.75 - 36.50	1.0000	1.0000
L42	50	CCI-SFP-060100	32.75 - 36.50	1.0000	1.0000
L42	51	CCI-SFP-060100	32.75 - 36.50	1.0000	1.0000
L42	52	CCI-SFP-060100	32.75 - 36.50	1.0000	1.0000
L42	75	PL1.25x6.5 Reinforcement - Wind Area	32.75 - 35.50	1.0000	1.0000
L42	76	PL1.25x6.5 Reinforcement - Wind Area	32.75 - 35.50	1.0000	1.0000
L43	12	CU12PSM9P6XXX(1-1/2)	32.50 - 32.75	1.0000	1.0000
L43	13	LDF4-50A(1/2)	32.50 - 32.75	1.0000	1.0000
L43	21	HB158-1-08U8-S8J18(1-5/8)	32.50 - 32.75	1.0000	1.0000
L43	26	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	32.50 - 32.75	1.0000	1.0000
L43	28	PL0.625x5 Reinforcement - Wind Area/Weight	32.50 - 32.75	1.0000	1.0000
L43	29	PL0.625x5 Reinforcement - Wind Area/Weight	32.50 - 32.75	1.0000	1.0000
L43	37	PL1.25x6 Reinforcement - Wind Area	32.50 - 32.75	1.0000	1.0000
L43	38	PL1.25x6 Reinforcement - Wind Area	32.50 - 32.75	1.0000	1.0000
L43	39	PL1.25x6 Reinforcement - Wind Area	32.50 - 32.75	1.0000	1.0000
L43	50	CCI-SFP-060100	32.50 - 32.75	1.0000	1.0000
L43	51	CCI-SFP-060100	32.50 - 32.75	1.0000	1.0000
L43	52	CCI-SFP-060100	32.50 - 32.75	1.0000	1.0000
L43	75	PL1.25x6.5 Reinforcement - Wind Area	32.50 - 32.75	1.0000	1.0000
L43	76	PL1.25x6.5 Reinforcement - Wind Area	32.50 - 32.75	1.0000	1.0000
L44	12	CU12PSM9P6XXX(1-1/2)	29.83 - 32.50	1.0000	1.0000
L44	13	LDF4-50A(1/2)	29.83 - 32.50	1.0000	1.0000
L44	21	HB158-1-08U8-S8J18(1-5/8)	29.83 - 32.50	1.0000	1.0000
L44	26	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	29.83 - 32.50	1.0000	1.0000
L44	28	PL0.625x5 Reinforcement - Wind Area/Weight	29.83 - 32.50	1.0000	1.0000
L44	29	PL0.625x5 Reinforcement - Wind Area/Weight	29.83 - 32.50	1.0000	1.0000
L44	34	PL1.25x6 Reinforcement - Wind Area	29.83 - 30.75	1.0000	1.0000
L44	35	PL1.25x6 Reinforcement - Wind Area	29.83 - 30.75	1.0000	1.0000
L44	36	PL1.25x6 Reinforcement - Wind Area	29.83 - 30.75	1.0000	1.0000
L44	37	PL1.25x6 Reinforcement - Wind Area	29.83 - 32.50	1.0000	1.0000
L44	38	PL1.25x6 Reinforcement - Wind Area	29.83 - 32.50	1.0000	1.0000
L44	39	PL1.25x6 Reinforcement - Wind Area	29.83 - 32.50	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L44	50	CCI-SFP-060100	29.83 - 32.50	1.0000	1.0000
L44	51	CCI-SFP-060100	29.83 - 32.50	1.0000	1.0000
L44	52	CCI-SFP-060100	29.83 - 32.50	1.0000	1.0000
L44	75	PL1.25x6.5 Reinforcement - Wind Area	29.83 - 32.50	1.0000	1.0000
L44	76	PL1.25x6.5 Reinforcement - Wind Area	29.83 - 32.50	1.0000	1.0000
L45	12	CU12PSM9P6XXX(1-1/2)	29.58 - 29.83	1.0000	1.0000
L45	13	LDF4-50A(1/2)	29.58 - 29.83	1.0000	1.0000
L45	21	HB158-1-08U8-S8J18(1-5/8)	29.58 - 29.83	1.0000	1.0000
L45	26	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	29.58 - 29.83	1.0000	1.0000
L45	28	PL0.625x5 Reinforcement - Wind Area/Weight	29.58 - 29.83	1.0000	1.0000
L45	29	PL0.625x5 Reinforcement - Wind Area/Weight	29.58 - 29.83	1.0000	1.0000
L45	34	PL1.25x6 Reinforcement - Wind Area	29.58 - 29.83	1.0000	1.0000
L45	35	PL1.25x6 Reinforcement - Wind Area	29.58 - 29.83	1.0000	1.0000
L45	36	PL1.25x6 Reinforcement - Wind Area	29.58 - 29.83	1.0000	1.0000
L45	37	PL1.25x6 Reinforcement - Wind Area	29.58 - 29.83	1.0000	1.0000
L45	38	PL1.25x6 Reinforcement - Wind Area	29.58 - 29.83	1.0000	1.0000
L45	39	PL1.25x6 Reinforcement - Wind Area	29.58 - 29.83	1.0000	1.0000
L45	50	CCI-SFP-060100	29.58 - 29.83	1.0000	1.0000
L45	51	CCI-SFP-060100	29.58 - 29.83	1.0000	1.0000
L45	52	CCI-SFP-060100	29.58 - 29.83	1.0000	1.0000
L45	75	PL1.25x6.5 Reinforcement - Wind Area	29.58 - 29.83	1.0000	1.0000
L45	76	PL1.25x6.5 Reinforcement - Wind Area	29.58 - 29.83	1.0000	1.0000
L46	12	CU12PSM9P6XXX(1-1/2)	28.25 - 29.58	1.0000	1.0000
L46	13	LDF4-50A(1/2)	28.25 - 29.58	1.0000	1.0000
L46	21	HB158-1-08U8-S8J18(1-5/8)	28.25 - 29.58	1.0000	1.0000
L46	26	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	28.25 - 29.58	1.0000	1.0000
L46	28	PL0.625x5 Reinforcement - Wind Area/Weight	28.25 - 29.58	1.0000	1.0000
L46	29	PL0.625x5 Reinforcement - Wind Area/Weight	28.25 - 29.58	1.0000	1.0000
L46	34	PL1.25x6 Reinforcement - Wind Area	28.25 - 29.58	1.0000	1.0000
L46	35	PL1.25x6 Reinforcement - Wind Area	28.25 - 29.58	1.0000	1.0000
L46	36	PL1.25x6 Reinforcement - Wind Area	28.25 - 29.58	1.0000	1.0000
L46	37	PL1.25x6 Reinforcement - Wind Area	28.25 - 29.58	1.0000	1.0000
L46	38	PL1.25x6 Reinforcement - Wind Area	28.25 - 29.58	1.0000	1.0000
L46	39	PL1.25x6 Reinforcement - Wind Area	28.25 - 29.58	1.0000	1.0000
L46	50	CCI-SFP-060100	28.25 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			29.58		
L46	51	CCI-SFP-060100	28.25 - 29.58	1.0000	1.0000
L46	52	CCI-SFP-060100	28.25 - 29.58	1.0000	1.0000
L46	75	PL1.25x6.5 Reinforcement - Wind Area	28.25 - 29.58	1.0000	1.0000
L46	76	PL1.25x6.5 Reinforcement - Wind Area	28.25 - 29.58	1.0000	1.0000
L47	12	CU12PSM9P6XXX(1-1/2)	28.00 - 28.25	1.0000	1.0000
L47	13	LDF4-50A(1/2)	28.00 - 28.25	1.0000	1.0000
L47	21	HB158-1-08U8-S8J18(1-5/8)	28.00 - 28.25	1.0000	1.0000
L47	26	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	28.00 - 28.25	1.0000	1.0000
L47	28	PL0.625x5 Reinforcement - Wind Area/Weight	28.00 - 28.25	1.0000	1.0000
L47	29	PL0.625x5 Reinforcement - Wind Area/Weight	28.00 - 28.25	1.0000	1.0000
L47	34	PL1.25x6 Reinforcement - Wind Area	28.00 - 28.25	1.0000	1.0000
L47	35	PL1.25x6 Reinforcement - Wind Area	28.00 - 28.25	1.0000	1.0000
L47	36	PL1.25x6 Reinforcement - Wind Area	28.00 - 28.25	1.0000	1.0000
L47	37	PL1.25x6 Reinforcement - Wind Area	28.00 - 28.25	1.0000	1.0000
L47	38	PL1.25x6 Reinforcement - Wind Area	28.00 - 28.25	1.0000	1.0000
L47	39	PL1.25x6 Reinforcement - Wind Area	28.00 - 28.25	1.0000	1.0000
L47	50	CCI-SFP-060100	28.00 - 28.25	1.0000	1.0000
L47	51	CCI-SFP-060100	28.00 - 28.25	1.0000	1.0000
L47	52	CCI-SFP-060100	28.00 - 28.25	1.0000	1.0000
L47	75	PL1.25x6.5 Reinforcement - Wind Area	28.00 - 28.25	1.0000	1.0000
L47	76	PL1.25x6.5 Reinforcement - Wind Area	28.00 - 28.25	1.0000	1.0000
L48	12	CU12PSM9P6XXX(1-1/2)	23.00 - 28.00	1.0000	1.0000
L48	13	LDF4-50A(1/2)	23.00 - 28.00	1.0000	1.0000
L48	21	HB158-1-08U8-S8J18(1-5/8)	23.00 - 28.00	1.0000	1.0000
L48	26	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	23.00 - 28.00	1.0000	1.0000
L48	28	PL0.625x5 Reinforcement - Wind Area/Weight	23.00 - 28.00	1.0000	1.0000
L48	29	PL0.625x5 Reinforcement - Wind Area/Weight	23.00 - 28.00	1.0000	1.0000
L48	34	PL1.25x6 Reinforcement - Wind Area	23.00 - 28.00	1.0000	1.0000
L48	35	PL1.25x6 Reinforcement - Wind Area	23.00 - 28.00	1.0000	1.0000
L48	36	PL1.25x6 Reinforcement - Wind Area	23.00 - 28.00	1.0000	1.0000
L48	37	PL1.25x6 Reinforcement - Wind Area	27.75 - 28.00	1.0000	1.0000
L48	38	PL1.25x6 Reinforcement - Wind Area	27.75 - 28.00	1.0000	1.0000
L48	39	PL1.25x6 Reinforcement - Wind Area	27.75 - 28.00	1.0000	1.0000
L48	50	CCI-SFP-060100	23.00 - 28.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L48	51	CCI-SFP-060100	23.00 - 28.00	1.0000	1.0000
L48	52	CCI-SFP-060100	23.00 - 28.00	1.0000	1.0000
L48	56	CCI-SFP-045100	23.00 - 27.75	1.0000	1.0000
L48	57	CCI-SFP-045100	23.00 - 27.75	1.0000	1.0000
L48	58	CCI-SFP-045100	23.00 - 27.75	1.0000	1.0000
L48	75	PL1.25x6.5 Reinforcement - Wind Area	25.50 - 28.00	1.0000	1.0000
L48	76	PL1.25x6.5 Reinforcement - Wind Area	25.50 - 28.00	1.0000	1.0000
L49	12	CU12PSM9P6XXX(1-1/2)	19.25 - 23.00	1.0000	1.0000
L49	13	LDF4-50A(1/2)	19.25 - 23.00	1.0000	1.0000
L49	21	HB158-1-08U8-S8J18(1-5/8)	19.25 - 23.00	1.0000	1.0000
L49	26	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	19.25 - 23.00	1.0000	1.0000
L49	28	PL0.625x5 Reinforcement - Wind Area/Weight	19.25 - 23.00	1.0000	1.0000
L49	29	PL0.625x5 Reinforcement - Wind Area/Weight	19.25 - 23.00	1.0000	1.0000
L49	34	PL1.25x6 Reinforcement - Wind Area	19.25 - 23.00	1.0000	1.0000
L49	35	PL1.25x6 Reinforcement - Wind Area	19.25 - 23.00	1.0000	1.0000
L49	36	PL1.25x6 Reinforcement - Wind Area	19.25 - 23.00	1.0000	1.0000
L49	50	CCI-SFP-060100	19.25 - 23.00	1.0000	1.0000
L49	51	CCI-SFP-060100	19.25 - 23.00	1.0000	1.0000
L49	52	CCI-SFP-060100	19.25 - 23.00	1.0000	1.0000
L49	56	CCI-SFP-045100	19.25 - 23.00	1.0000	1.0000
L49	57	CCI-SFP-045100	19.25 - 23.00	1.0000	1.0000
L49	58	CCI-SFP-045100	19.25 - 23.00	1.0000	1.0000
L50	12	CU12PSM9P6XXX(1-1/2)	19.00 - 19.25	1.0000	1.0000
L50	13	LDF4-50A(1/2)	19.00 - 19.25	1.0000	1.0000
L50	21	HB158-1-08U8-S8J18(1-5/8)	19.00 - 19.25	1.0000	1.0000
L50	26	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	19.00 - 19.25	1.0000	1.0000
L50	28	PL0.625x5 Reinforcement - Wind Area/Weight	19.00 - 19.25	1.0000	1.0000
L50	29	PL0.625x5 Reinforcement - Wind Area/Weight	19.00 - 19.25	1.0000	1.0000
L50	34	PL1.25x6 Reinforcement - Wind Area	19.00 - 19.25	1.0000	1.0000
L50	35	PL1.25x6 Reinforcement - Wind Area	19.00 - 19.25	1.0000	1.0000
L50	36	PL1.25x6 Reinforcement - Wind Area	19.00 - 19.25	1.0000	1.0000
L50	50	CCI-SFP-060100	19.00 - 19.25	1.0000	1.0000
L50	51	CCI-SFP-060100	19.00 - 19.25	1.0000	1.0000
L50	52	CCI-SFP-060100	19.00 - 19.25	1.0000	1.0000
L50	56	CCI-SFP-045100	19.00 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			19.25		
L50	57	CCI-SFP-045100	19.00 - 19.25	1.0000	1.0000
L50	58	CCI-SFP-045100	19.00 - 19.25	1.0000	1.0000
L51	12	CU12PSM9P6XXX(1-1/2)	14.00 - 19.00	1.0000	1.0000
L51	13	LDF4-50A(1/2)	14.00 - 19.00	1.0000	1.0000
L51	21	HB158-1-08U8-S8J18(1-5/8)	14.00 - 19.00	1.0000	1.0000
L51	26	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	14.00 - 19.00	1.0000	1.0000
L51	28	PL0.625x5 Reinforcement - Wind Area/Weight	14.00 - 19.00	1.0000	1.0000
L51	29	PL0.625x5 Reinforcement - Wind Area/Weight	14.00 - 19.00	1.0000	1.0000
L51	34	PL1.25x6 Reinforcement - Wind Area	14.00 - 19.00	1.0000	1.0000
L51	35	PL1.25x6 Reinforcement - Wind Area	14.00 - 19.00	1.0000	1.0000
L51	36	PL1.25x6 Reinforcement - Wind Area	14.00 - 19.00	1.0000	1.0000
L51	50	CCI-SFP-060100	14.00 - 19.00	1.0000	1.0000
L51	51	CCI-SFP-060100	14.00 - 19.00	1.0000	1.0000
L51	52	CCI-SFP-060100	14.00 - 19.00	1.0000	1.0000
L51	56	CCI-SFP-045100	17.75 - 19.00	1.0000	1.0000
L51	57	CCI-SFP-045100	17.75 - 19.00	1.0000	1.0000
L51	58	CCI-SFP-045100	17.75 - 19.00	1.0000	1.0000
L52	12	CU12PSM9P6XXX(1-1/2)	9.00 - 14.00	1.0000	1.0000
L52	13	LDF4-50A(1/2)	9.00 - 14.00	1.0000	1.0000
L52	21	HB158-1-08U8-S8J18(1-5/8)	9.00 - 14.00	1.0000	1.0000
L52	26	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	9.00 - 14.00	1.0000	1.0000
L52	28	PL0.625x5 Reinforcement - Wind Area/Weight	9.00 - 14.00	1.0000	1.0000
L52	29	PL0.625x5 Reinforcement - Wind Area/Weight	9.00 - 14.00	1.0000	1.0000
L52	34	PL1.25x6 Reinforcement - Wind Area	9.00 - 14.00	1.0000	1.0000
L52	35	PL1.25x6 Reinforcement - Wind Area	9.00 - 14.00	1.0000	1.0000
L52	36	PL1.25x6 Reinforcement - Wind Area	9.00 - 14.00	1.0000	1.0000
L52	50	CCI-SFP-060100	9.00 - 14.00	1.0000	1.0000
L52	51	CCI-SFP-060100	9.00 - 14.00	1.0000	1.0000
L52	52	CCI-SFP-060100	9.00 - 14.00	1.0000	1.0000
L53	12	CU12PSM9P6XXX(1-1/2)	4.00 - 9.00	1.0000	1.0000
L53	13	LDF4-50A(1/2)	8.00 - 9.00	1.0000	1.0000
L53	21	HB158-1-08U8-S8J18(1-5/8)	8.00 - 9.00	1.0000	1.0000
L53	26	MLE Hybrid 3Power/6Fiber RL 2(1-1/4)	8.00 - 9.00	1.0000	1.0000
L53	28	PL0.625x5 Reinforcement - Wind Area/Weight	4.00 - 9.00	1.0000	1.0000
L53	29	PL0.625x5 Reinforcement - Wind Area/Weight	4.00 - 9.00	1.0000	1.0000
L53	34	PL1.25x6 Reinforcement - Wind Area	4.00 - 9.00	1.0000	1.0000
L53	35	PL1.25x6 Reinforcement - Wind Area	4.00 - 9.00	1.0000	1.0000
L53	36	PL1.25x6 Reinforcement -	4.00 - 9.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
		Wind Area			
L53	50	CCI-SFP-060100	4.00 - 9.00	1.0000	1.0000
L53	51	CCI-SFP-060100	4.00 - 9.00	1.0000	1.0000
L53	52	CCI-SFP-060100	4.00 - 9.00	1.0000	1.0000
L54	12	CU12PSM9P6XXX(1-1/2)	0.00 - 4.00	1.0000	1.0000
L54	28	PL0.625x5 Reinforcement - Wind Area/Weight	0.00 - 4.00	1.0000	1.0000
L54	29	PL0.625x5 Reinforcement - Wind Area/Weight	0.00 - 4.00	1.0000	1.0000
L54	34	PL1.25x6 Reinforcement - Wind Area	0.00 - 4.00	1.0000	1.0000
L54	35	PL1.25x6 Reinforcement - Wind Area	0.00 - 4.00	1.0000	1.0000
L54	36	PL1.25x6 Reinforcement - Wind Area	0.00 - 4.00	1.0000	1.0000
L54	50	CCI-SFP-060100	0.00 - 4.00	1.0000	1.0000
L54	51	CCI-SFP-060100	0.00 - 4.00	1.0000	1.0000
L54	52	CCI-SFP-060100	0.00 - 4.00	1.0000	1.0000

Effective Width of Flat Linear Attachments / Feed Lines

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L9	62	CCI-SFP-045100	125.75 - 127.33	Auto	0.0973
L9	63	CCI-SFP-045100	125.75 - 127.33	Auto	0.0973
L9	64	CCI-SFP-045100	125.75 - 127.33	Auto	0.0973
L10	62	CCI-SFP-045100	125.50 - 125.75	Auto	0.0914
L10	63	CCI-SFP-045100	125.50 - 125.75	Auto	0.0914
L10	64	CCI-SFP-045100	125.50 - 125.75	Auto	0.0914
L11	62	CCI-SFP-045100	120.50 - 125.50	Auto	0.0745
L11	63	CCI-SFP-045100	120.50 - 125.50	Auto	0.0745
L11	64	CCI-SFP-045100	120.50 - 125.50	Auto	0.0745
L11	66	PL1.25x4 Reinforcement - Wind Area	120.50 - 122.00	Auto	0.0000
L11	67	PL1.25x4 Reinforcement - Wind Area	120.50 - 122.00	Auto	0.0000
L12	62	CCI-SFP-045100	120.25 - 120.50	Auto	0.1480
L12	63	CCI-SFP-045100	120.25 - 120.50	Auto	0.1480
L12	64	CCI-SFP-045100	120.25 - 120.50	Auto	0.1480
L12	66	PL1.25x4 Reinforcement - Wind Area	120.25 - 120.50	Auto	0.0415
L12	67	PL1.25x4 Reinforcement - Wind Area	120.25 - 120.50	Auto	0.0415
L13	30	PL0.625x5 Reinforcement - Wind Area/Weight	115.25 - 120.00	Auto	0.2151
L13	31	PL0.625x5 Reinforcement - Wind Area/Weight	115.25 - 120.00	Auto	0.2151

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L13	32	PL0.625x5 Reinforcement - Wind Area/Weight	115.25 - 120.00	Auto	0.2151
L13	46	PL1.25x5 Reinforcement - Wind Area	115.25 - 115.83	Auto	0.2030
L13	47	PL1.25x5 Reinforcement - Wind Area	115.25 - 115.83	Auto	0.2030
L13	48	PL1.25x5 Reinforcement - Wind Area	115.25 - 115.83	Auto	0.2030
L13	62	CCI-SFP-045100	115.25 - 120.25	Auto	0.1287
L13	63	CCI-SFP-045100	115.25 - 120.25	Auto	0.1287
L13	64	CCI-SFP-045100	115.25 - 120.25	Auto	0.1287
L13	66	PL1.25x4 Reinforcement - Wind Area	115.25 - 120.25	Auto	0.0197
L13	67	PL1.25x4 Reinforcement - Wind Area	115.25 - 120.25	Auto	0.0197
L14	30	PL0.625x5 Reinforcement - Wind Area/Weight	113.83 - 115.25	Auto	0.1972
L14	31	PL0.625x5 Reinforcement - Wind Area/Weight	113.83 - 115.25	Auto	0.1972
L14	32	PL0.625x5 Reinforcement - Wind Area/Weight	113.83 - 115.25	Auto	0.1972
L14	46	PL1.25x5 Reinforcement - Wind Area	113.83 - 115.25	Auto	0.1972
L14	47	PL1.25x5 Reinforcement - Wind Area	113.83 - 115.25	Auto	0.1972
L14	48	PL1.25x5 Reinforcement - Wind Area	113.83 - 115.25	Auto	0.1972
L14	62	CCI-SFP-045100	113.83 - 115.25	Auto	0.1080
L14	63	CCI-SFP-045100	113.83 - 115.25	Auto	0.1080
L14	64	CCI-SFP-045100	113.83 - 115.25	Auto	0.1080
L14	66	PL1.25x4 Reinforcement - Wind Area	113.83 - 115.25	Auto	0.0001
L14	67	PL1.25x4 Reinforcement - Wind Area	113.83 - 115.25	Auto	0.0001
L15	30	PL0.625x5 Reinforcement - Wind Area/Weight	113.48 - 113.83	Auto	0.2537
L15	31	PL0.625x5 Reinforcement - Wind Area/Weight	113.48 - 113.83	Auto	0.2537
L15	32	PL0.625x5 Reinforcement - Wind Area/Weight	113.48 - 113.83	Auto	0.2537
L15	46	PL1.25x5 Reinforcement - Wind Area	113.48 - 113.83	Auto	0.2537
L15	47	PL1.25x5 Reinforcement - Wind Area	113.48 - 113.83	Auto	0.2537
L15	48	PL1.25x5 Reinforcement - Wind Area	113.48 - 113.83	Auto	0.2537
L15	62	CCI-SFP-045100	113.48 - 113.83	Auto	0.1708
L15	63	CCI-SFP-045100	113.48 - 113.83	Auto	0.1708
L15	64	CCI-SFP-045100	113.48 - 113.83	Auto	0.1708
L15	66	PL1.25x4 Reinforcement - Wind Area	113.48 - 113.83	Auto	0.0671
L15	67	PL1.25x4 Reinforcement - Wind Area	113.48 - 113.83	Auto	0.0671
L16	30	PL0.625x5 Reinforcement - Wind Area/Weight	113.25 - 113.48	Auto	0.2520
L16	31	PL0.625x5 Reinforcement - Wind Area/Weight	113.25 - 113.48	Auto	0.2520
L16	32	PL0.625x5 Reinforcement - Wind Area/Weight	113.25 - 113.48	Auto	0.2520

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L16	46	PL1.25x5 Reinforcement - Wind Area	113.25 - 113.48	Auto	0.2520
L16	47	PL1.25x5 Reinforcement - Wind Area	113.25 - 113.48	Auto	0.2520
L16	48	PL1.25x5 Reinforcement - Wind Area	113.25 - 113.48	Auto	0.2520
L16	62	CCI-SFP-045100	113.25 - 113.48	Auto	0.1689
L16	63	CCI-SFP-045100	113.25 - 113.48	Auto	0.1689
L16	64	CCI-SFP-045100	113.25 - 113.48	Auto	0.1689
L16	66	PL1.25x4 Reinforcement - Wind Area	113.25 - 113.48	Auto	0.0650
L16	67	PL1.25x4 Reinforcement - Wind Area	113.25 - 113.48	Auto	0.0650
L17	30	PL0.625x5 Reinforcement - Wind Area/Weight	108.25 - 113.25	Auto	0.2324
L17	31	PL0.625x5 Reinforcement - Wind Area/Weight	108.25 - 113.25	Auto	0.2324
L17	32	PL0.625x5 Reinforcement - Wind Area/Weight	108.25 - 113.25	Auto	0.2324
L17	46	PL1.25x5 Reinforcement - Wind Area	108.25 - 113.25	Auto	0.2324
L17	47	PL1.25x5 Reinforcement - Wind Area	108.25 - 113.25	Auto	0.2324
L17	48	PL1.25x5 Reinforcement - Wind Area	108.25 - 113.25	Auto	0.2324
L17	62	CCI-SFP-045100	108.25 - 113.25	Auto	0.1471
L17	63	CCI-SFP-045100	108.25 - 113.25	Auto	0.1471
L17	64	CCI-SFP-045100	108.25 - 113.25	Auto	0.1471
L17	66	PL1.25x4 Reinforcement - Wind Area	112.00 - 113.25	Auto	0.0541
L17	67	PL1.25x4 Reinforcement - Wind Area	112.00 - 113.25	Auto	0.0541
L18	30	PL0.625x5 Reinforcement - Wind Area/Weight	103.25 - 108.25	Auto	0.1991
L18	31	PL0.625x5 Reinforcement - Wind Area/Weight	103.25 - 108.25	Auto	0.1991
L18	32	PL0.625x5 Reinforcement - Wind Area/Weight	103.25 - 108.25	Auto	0.1991
L18	46	PL1.25x5 Reinforcement - Wind Area	103.25 - 108.25	Auto	0.1991
L18	47	PL1.25x5 Reinforcement - Wind Area	103.25 - 108.25	Auto	0.1991
L18	48	PL1.25x5 Reinforcement - Wind Area	103.25 - 108.25	Auto	0.1991
L18	62	CCI-SFP-045100	103.25 - 108.25	Auto	0.1101
L18	63	CCI-SFP-045100	103.25 - 108.25	Auto	0.1101
L18	64	CCI-SFP-045100	103.25 - 108.25	Auto	0.1101
L19	30	PL0.625x5 Reinforcement - Wind Area/Weight	98.25 - 103.25	Auto	0.1657
L19	31	PL0.625x5 Reinforcement - Wind Area/Weight	98.25 - 103.25	Auto	0.1657
L19	32	PL0.625x5 Reinforcement - Wind Area/Weight	98.25 - 103.25	Auto	0.1657
L19	46	PL1.25x5 Reinforcement - Wind Area	98.25 - 103.25	Auto	0.1657
L19	47	PL1.25x5 Reinforcement - Wind Area	98.25 - 103.25	Auto	0.1657
L19	48	PL1.25x5 Reinforcement - Wind Area	98.25 - 103.25	Auto	0.1657

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L19	62	CCI-SFP-045100	98.25 - 103.25	Auto	0.0730
L19	63	CCI-SFP-045100	98.25 - 103.25	Auto	0.0730
L19	64	CCI-SFP-045100	98.25 - 103.25	Auto	0.0730
L20	30	PL0.625x5 Reinforcement - Wind Area/Weight	93.25 - 98.25	Auto	0.1323
L20	31	PL0.625x5 Reinforcement - Wind Area/Weight	93.25 - 98.25	Auto	0.1323
L20	32	PL0.625x5 Reinforcement - Wind Area/Weight	93.25 - 98.25	Auto	0.1323
L20	46	PL1.25x5 Reinforcement - Wind Area	93.25 - 98.25	Auto	0.1323
L20	47	PL1.25x5 Reinforcement - Wind Area	93.25 - 98.25	Auto	0.1323
L20	48	PL1.25x5 Reinforcement - Wind Area	93.25 - 98.25	Auto	0.1323
L20	62	CCI-SFP-045100	93.25 - 98.25	Auto	0.0359
L20	63	CCI-SFP-045100	93.25 - 98.25	Auto	0.0359
L20	64	CCI-SFP-045100	93.25 - 98.25	Auto	0.0359
L21	28	PL0.625x5 Reinforcement - Wind Area/Weight	84.55 - 84.67	Auto	0.0678
L21	29	PL0.625x5 Reinforcement - Wind Area/Weight	84.55 - 84.67	Auto	0.0678
L21	30	PL0.625x5 Reinforcement - Wind Area/Weight	84.67 - 93.25	Auto	0.0930
L21	31	PL0.625x5 Reinforcement - Wind Area/Weight	84.67 - 93.25	Auto	0.0930
L21	32	PL0.625x5 Reinforcement - Wind Area/Weight	84.67 - 93.25	Auto	0.0930
L21	43	PL1.25x5 Reinforcement - Wind Area	84.55 - 87.92	Auto	0.0772
L21	44	PL1.25x5 Reinforcement - Wind Area	84.55 - 87.92	Auto	0.0772
L21	45	PL1.25x5 Reinforcement - Wind Area	84.55 - 87.92	Auto	0.0772
L21	46	PL1.25x5 Reinforcement - Wind Area	85.83 - 93.25	Auto	0.0963
L21	47	PL1.25x5 Reinforcement - Wind Area	85.83 - 93.25	Auto	0.0963
L21	48	PL1.25x5 Reinforcement - Wind Area	85.83 - 93.25	Auto	0.0963
L21	62	CCI-SFP-045100	87.92 - 93.25	Auto	0.0057
L21	63	CCI-SFP-045100	87.92 - 93.25	Auto	0.0057
L21	64	CCI-SFP-045100	87.92 - 93.25	Auto	0.0057
L21	69	PL1.25x5 Reinforcement - Wind Area	84.55 - 90.50	Auto	0.0847
L21	70	PL1.25x5 Reinforcement - Wind Area	84.55 - 90.50	Auto	0.0847
L22	28	PL0.625x5 Reinforcement - Wind Area/Weight	83.55 - 84.55	Auto	0.1042
L22	29	PL0.625x5 Reinforcement - Wind Area/Weight	83.55 - 84.55	Auto	0.1042
L22	43	PL1.25x5 Reinforcement - Wind Area	83.55 - 84.55	Auto	0.1042
L22	44	PL1.25x5 Reinforcement - Wind Area	83.55 - 84.55	Auto	0.1042
L22	45	PL1.25x5 Reinforcement - Wind Area	83.55 - 84.55	Auto	0.1042
L22	53	CCI-SFP-045100	83.55 - 84.33	Auto	0.0040

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L22	54	CCI-SFP-045100	83.55 - 84.33	Auto	0.0040
L22	55	CCI-SFP-045100	83.55 - 84.33	Auto	0.0040
L22	69	PL1.25x5 Reinforcement - Wind Area	83.55 - 84.55	Auto	0.1042
L22	70	PL1.25x5 Reinforcement - Wind Area	83.55 - 84.55	Auto	0.1042
L23	28	PL0.625x5 Reinforcement - Wind Area/Weight	82.92 - 83.55	Auto	0.0995
L23	29	PL0.625x5 Reinforcement - Wind Area/Weight	82.92 - 83.55	Auto	0.0995
L23	43	PL1.25x5 Reinforcement - Wind Area	82.92 - 83.55	Auto	0.0995
L23	44	PL1.25x5 Reinforcement - Wind Area	82.92 - 83.55	Auto	0.0995
L23	45	PL1.25x5 Reinforcement - Wind Area	82.92 - 83.55	Auto	0.0995
L23	53	CCI-SFP-045100	82.92 - 83.55	Auto	0.0003
L23	54	CCI-SFP-045100	82.92 - 83.55	Auto	0.0003
L23	55	CCI-SFP-045100	82.92 - 83.55	Auto	0.0003
L23	69	PL1.25x5 Reinforcement - Wind Area	82.92 - 83.55	Auto	0.0995
L23	70	PL1.25x5 Reinforcement - Wind Area	82.92 - 83.55	Auto	0.0995
L24	28	PL0.625x5 Reinforcement - Wind Area/Weight	82.67 - 82.92	Auto	0.1981
L24	29	PL0.625x5 Reinforcement - Wind Area/Weight	82.67 - 82.92	Auto	0.1981
L24	43	PL1.25x5 Reinforcement - Wind Area	82.67 - 82.92	Auto	0.1981
L24	44	PL1.25x5 Reinforcement - Wind Area	82.67 - 82.92	Auto	0.1981
L24	45	PL1.25x5 Reinforcement - Wind Area	82.67 - 82.92	Auto	0.1981
L24	53	CCI-SFP-045100	82.67 - 82.92	Auto	0.1090
L24	54	CCI-SFP-045100	82.67 - 82.92	Auto	0.1090
L24	55	CCI-SFP-045100	82.67 - 82.92	Auto	0.1090
L24	69	PL1.25x5 Reinforcement - Wind Area	82.67 - 82.92	Auto	0.1981
L24	70	PL1.25x5 Reinforcement - Wind Area	82.67 - 82.92	Auto	0.1981
L25	28	PL0.625x5 Reinforcement - Wind Area/Weight	82.50 - 82.67	Auto	0.1969
L25	29	PL0.625x5 Reinforcement - Wind Area/Weight	82.50 - 82.67	Auto	0.1969
L25	43	PL1.25x5 Reinforcement - Wind Area	82.50 - 82.67	Auto	0.1969
L25	44	PL1.25x5 Reinforcement - Wind Area	82.50 - 82.67	Auto	0.1969
L25	45	PL1.25x5 Reinforcement - Wind Area	82.50 - 82.67	Auto	0.1969
L25	53	CCI-SFP-045100	82.50 - 82.67	Auto	0.1077
L25	54	CCI-SFP-045100	82.50 - 82.67	Auto	0.1077
L25	55	CCI-SFP-045100	82.50 - 82.67	Auto	0.1077
L25	69	PL1.25x5 Reinforcement - Wind Area	82.50 - 82.67	Auto	0.1969
L25	70	PL1.25x5 Reinforcement - Wind Area	82.50 - 82.67	Auto	0.1969

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L26	28	PL0.625x5 Reinforcement - Wind Area/Weight	82.25 - 82.50	Auto	0.1033
L26	29	PL0.625x5 Reinforcement - Wind Area/Weight	82.25 - 82.50	Auto	0.1033
L26	43	PL1.25x5 Reinforcement - Wind Area	82.25 - 82.50	Auto	0.1033
L26	44	PL1.25x5 Reinforcement - Wind Area	82.25 - 82.50	Auto	0.1033
L26	45	PL1.25x5 Reinforcement - Wind Area	82.25 - 82.50	Auto	0.1033
L26	53	CCI-SFP-045100	82.25 - 82.50	Auto	0.0037
L26	54	CCI-SFP-045100	82.25 - 82.50	Auto	0.0037
L26	55	CCI-SFP-045100	82.25 - 82.50	Auto	0.0037
L26	69	PL1.25x5 Reinforcement - Wind Area	82.25 - 82.50	Auto	0.1033
L26	70	PL1.25x5 Reinforcement - Wind Area	82.25 - 82.50	Auto	0.1033
L27	28	PL0.625x5 Reinforcement - Wind Area/Weight	77.25 - 82.25	Auto	0.0838
L27	29	PL0.625x5 Reinforcement - Wind Area/Weight	77.25 - 82.25	Auto	0.0838
L27	43	PL1.25x5 Reinforcement - Wind Area	77.25 - 82.25	Auto	0.0838
L27	44	PL1.25x5 Reinforcement - Wind Area	77.25 - 82.25	Auto	0.0838
L27	45	PL1.25x5 Reinforcement - Wind Area	77.25 - 82.25	Auto	0.0838
L27	53	CCI-SFP-045100	77.25 - 82.25	Auto	0.0000
L27	54	CCI-SFP-045100	77.25 - 82.25	Auto	0.0000
L27	55	CCI-SFP-045100	77.25 - 82.25	Auto	0.0000
L27	69	PL1.25x5 Reinforcement - Wind Area	80.50 - 82.25	Auto	0.0932
L27	70	PL1.25x5 Reinforcement - Wind Area	80.50 - 82.25	Auto	0.0932
L28	28	PL0.625x5 Reinforcement - Wind Area/Weight	73.42 - 77.25	Auto	0.0539
L28	29	PL0.625x5 Reinforcement - Wind Area/Weight	73.42 - 77.25	Auto	0.0539
L28	40	PL1.25x5 Reinforcement - Wind Area	73.42 - 75.42	Auto	0.0486
L28	41	PL1.25x5 Reinforcement - Wind Area	73.42 - 75.42	Auto	0.0486
L28	42	PL1.25x5 Reinforcement - Wind Area	73.42 - 75.42	Auto	0.0486
L28	43	PL1.25x5 Reinforcement - Wind Area	73.42 - 77.25	Auto	0.0539
L28	44	PL1.25x5 Reinforcement - Wind Area	73.42 - 77.25	Auto	0.0539
L28	45	PL1.25x5 Reinforcement - Wind Area	73.42 - 77.25	Auto	0.0539
L28	53	CCI-SFP-045100	73.42 - 77.25	Auto	0.0000
L28	54	CCI-SFP-045100	73.42 - 77.25	Auto	0.0000
L28	55	CCI-SFP-045100	73.42 - 77.25	Auto	0.0000
L29	28	PL0.625x5 Reinforcement - Wind Area/Weight	73.17 - 73.42	Auto	0.1389
L29	29	PL0.625x5 Reinforcement - Wind Area/Weight	73.17 - 73.42	Auto	0.1389
L29	40	PL1.25x5 Reinforcement - Wind Area	73.17 - 73.42	Auto	0.1389

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L29	41	PL1.25x5 Reinforcement - Wind Area	73.17 - 73.42	Auto	0.1389
L29	42	PL1.25x5 Reinforcement - Wind Area	73.17 - 73.42	Auto	0.1389
L29	43	PL1.25x5 Reinforcement - Wind Area	73.17 - 73.42	Auto	0.1389
L29	44	PL1.25x5 Reinforcement - Wind Area	73.17 - 73.42	Auto	0.1389
L29	45	PL1.25x5 Reinforcement - Wind Area	73.17 - 73.42	Auto	0.1389
L29	53	CCI-SFP-045100	73.17 - 73.42	Auto	0.0432
L29	54	CCI-SFP-045100	73.17 - 73.42	Auto	0.0432
L29	55	CCI-SFP-045100	73.17 - 73.42	Auto	0.0432
L30	28	PL0.625x5 Reinforcement - Wind Area/Weight	68.17 - 73.17	Auto	0.1149
L30	29	PL0.625x5 Reinforcement - Wind Area/Weight	68.17 - 73.17	Auto	0.1149
L30	40	PL1.25x5 Reinforcement - Wind Area	68.17 - 73.17	Auto	0.1149
L30	41	PL1.25x5 Reinforcement - Wind Area	68.17 - 73.17	Auto	0.1149
L30	42	PL1.25x5 Reinforcement - Wind Area	68.17 - 73.17	Auto	0.1149
L30	43	PL1.25x5 Reinforcement - Wind Area	72.75 - 73.17	Auto	0.1281
L30	44	PL1.25x5 Reinforcement - Wind Area	72.75 - 73.17	Auto	0.1281
L30	45	PL1.25x5 Reinforcement - Wind Area	72.75 - 73.17	Auto	0.1281
L30	53	CCI-SFP-045100	68.17 - 73.17	Auto	0.0165
L30	54	CCI-SFP-045100	68.17 - 73.17	Auto	0.0165
L30	55	CCI-SFP-045100	68.17 - 73.17	Auto	0.0165
L30	59	CCI-SFP-045100	68.17 - 72.75	Auto	0.0152
L30	60	CCI-SFP-045100	68.17 - 72.75	Auto	0.0152
L30	61	CCI-SFP-045100	68.17 - 72.75	Auto	0.0152
L31	28	PL0.625x5 Reinforcement - Wind Area/Weight	64.25 - 68.17	Auto	0.0803
L31	29	PL0.625x5 Reinforcement - Wind Area/Weight	64.25 - 68.17	Auto	0.0803
L31	40	PL1.25x5 Reinforcement - Wind Area	64.25 - 68.17	Auto	0.0803
L31	41	PL1.25x5 Reinforcement - Wind Area	64.25 - 68.17	Auto	0.0803
L31	42	PL1.25x5 Reinforcement - Wind Area	64.25 - 68.17	Auto	0.0803
L31	53	CCI-SFP-045100	64.25 - 68.17	Auto	0.0000
L31	54	CCI-SFP-045100	64.25 - 68.17	Auto	0.0000
L31	55	CCI-SFP-045100	64.25 - 68.17	Auto	0.0000
L31	59	CCI-SFP-045100	64.25 - 68.17	Auto	0.0000
L31	60	CCI-SFP-045100	64.25 - 68.17	Auto	0.0000
L31	61	CCI-SFP-045100	64.25 - 68.17	Auto	0.0000
L32	28	PL0.625x5 Reinforcement - Wind Area/Weight	64.00 - 64.25	Auto	0.0155

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L32	29	PL0.625x5 Reinforcement - Wind Area/Weight	64.00 - 64.25	Auto	0.0155
L32	40	PL1.25x5 Reinforcement - Wind Area	64.00 - 64.25	Auto	0.0155
L32	41	PL1.25x5 Reinforcement - Wind Area	64.00 - 64.25	Auto	0.0155
L32	42	PL1.25x5 Reinforcement - Wind Area	64.00 - 64.25	Auto	0.0155
L32	53	CCI-SFP-045100	64.00 - 64.25	Auto	0.0000
L32	54	CCI-SFP-045100	64.00 - 64.25	Auto	0.0000
L32	55	CCI-SFP-045100	64.00 - 64.25	Auto	0.0000
L32	59	CCI-SFP-045100	64.00 - 64.25	Auto	0.0000
L32	60	CCI-SFP-045100	64.00 - 64.25	Auto	0.0000
L32	61	CCI-SFP-045100	64.00 - 64.25	Auto	0.0000
L33	28	PL0.625x5 Reinforcement - Wind Area/Weight	59.00 - 64.00	Auto	0.0038
L33	29	PL0.625x5 Reinforcement - Wind Area/Weight	59.00 - 64.00	Auto	0.0038
L33	40	PL1.25x5 Reinforcement - Wind Area	59.00 - 64.00	Auto	0.0038
L33	41	PL1.25x5 Reinforcement - Wind Area	59.00 - 64.00	Auto	0.0038
L33	42	PL1.25x5 Reinforcement - Wind Area	59.00 - 64.00	Auto	0.0038
L33	53	CCI-SFP-045100	59.00 - 64.00	Auto	0.0000
L33	54	CCI-SFP-045100	59.00 - 64.00	Auto	0.0000
L33	55	CCI-SFP-045100	59.00 - 64.00	Auto	0.0000
L33	59	CCI-SFP-045100	62.75 - 64.00	Auto	0.0000
L33	60	CCI-SFP-045100	62.75 - 64.00	Auto	0.0000
L33	61	CCI-SFP-045100	62.75 - 64.00	Auto	0.0000
L34	28	PL0.625x5 Reinforcement - Wind Area/Weight	54.00 - 59.00	Auto	0.0000
L34	29	PL0.625x5 Reinforcement - Wind Area/Weight	54.00 - 59.00	Auto	0.0000
L34	40	PL1.25x5 Reinforcement - Wind Area	54.00 - 59.00	Auto	0.0000
L34	41	PL1.25x5 Reinforcement - Wind Area	54.00 - 59.00	Auto	0.0000
L34	42	PL1.25x5 Reinforcement - Wind Area	54.00 - 59.00	Auto	0.0000
L34	53	CCI-SFP-045100	54.00 - 59.00	Auto	0.0000
L34	54	CCI-SFP-045100	54.00 - 59.00	Auto	0.0000
L34	55	CCI-SFP-045100	54.00 - 59.00	Auto	0.0000
L34	72	PL1.25x5 Reinforcement - Wind Area	54.00 - 55.50	Auto	0.0000
L34	73	PL1.25x5 Reinforcement - Wind Area	54.00 - 55.50	Auto	0.0000
L35	28	PL0.625x5 Reinforcement - Wind Area/Weight	53.50 - 54.00	Auto	0.0000
L35	29	PL0.625x5 Reinforcement - Wind Area/Weight	53.50 - 54.00	Auto	0.0000
L35	40	PL1.25x5 Reinforcement - Wind Area	53.50 - 54.00	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L35	41	PL1.25x5 Reinforcement - Wind Area	53.50 - 54.00	Auto	0.0000
L35	42	PL1.25x5 Reinforcement - Wind Area	53.50 - 54.00	Auto	0.0000
L35	53	CCI-SFP-045100	53.50 - 54.00	Auto	0.0000
L35	54	CCI-SFP-045100	53.50 - 54.00	Auto	0.0000
L35	55	CCI-SFP-045100	53.50 - 54.00	Auto	0.0000
L35	72	PL1.25x5 Reinforcement - Wind Area	53.50 - 54.00	Auto	0.0000
L35	73	PL1.25x5 Reinforcement - Wind Area	53.50 - 54.00	Auto	0.0000
L36	28	PL0.625x5 Reinforcement - Wind Area/Weight	53.25 - 53.50	Auto	0.0000
L36	29	PL0.625x5 Reinforcement - Wind Area/Weight	53.25 - 53.50	Auto	0.0000
L36	40	PL1.25x5 Reinforcement - Wind Area	53.25 - 53.50	Auto	0.0000
L36	41	PL1.25x5 Reinforcement - Wind Area	53.25 - 53.50	Auto	0.0000
L36	42	PL1.25x5 Reinforcement - Wind Area	53.25 - 53.50	Auto	0.0000
L36	53	CCI-SFP-045100	53.25 - 53.50	Auto	0.0000
L36	54	CCI-SFP-045100	53.25 - 53.50	Auto	0.0000
L36	55	CCI-SFP-045100	53.25 - 53.50	Auto	0.0000
L36	72	PL1.25x5 Reinforcement - Wind Area	53.25 - 53.50	Auto	0.0000
L36	73	PL1.25x5 Reinforcement - Wind Area	53.25 - 53.50	Auto	0.0000
L37	28	PL0.625x5 Reinforcement - Wind Area/Weight	43.66 - 53.25	Auto	0.0000
L37	29	PL0.625x5 Reinforcement - Wind Area/Weight	43.66 - 53.25	Auto	0.0000
L37	37	PL1.25x6 Reinforcement - Wind Area	43.66 - 47.92	Auto	0.1133
L37	38	PL1.25x6 Reinforcement - Wind Area	43.66 - 47.92	Auto	0.1133
L37	39	PL1.25x6 Reinforcement - Wind Area	43.66 - 47.92	Auto	0.1133
L37	40	PL1.25x5 Reinforcement - Wind Area	45.38 - 53.25	Auto	0.0000
L37	41	PL1.25x5 Reinforcement - Wind Area	45.38 - 53.25	Auto	0.0000
L37	42	PL1.25x5 Reinforcement - Wind Area	45.38 - 53.25	Auto	0.0000
L37	50	CCI-SFP-060100	43.66 - 43.75	Auto	0.1033
L37	51	CCI-SFP-060100	43.66 - 43.75	Auto	0.1033
L37	52	CCI-SFP-060100	43.66 - 43.75	Auto	0.1033
L37	53	CCI-SFP-045100	43.75 - 53.25	Auto	0.0000
L37	54	CCI-SFP-045100	43.75 - 53.25	Auto	0.0000
L37	55	CCI-SFP-045100	43.75 - 53.25	Auto	0.0000
L37	72	PL1.25x5 Reinforcement - Wind Area	45.50 - 53.25	Auto	0.0000
L37	73	PL1.25x5 Reinforcement - Wind Area	45.50 - 53.25	Auto	0.0000
L38	28	PL0.625x5 Reinforcement - Wind Area/Weight	42.66 - 43.66	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L38	29	PL0.625x5 Reinforcement - Wind Area/Weight	42.66 - 43.66	Auto	0.0000
L38	37	PL1.25x6 Reinforcement - Wind Area	42.66 - 43.66	Auto	0.0933
L38	38	PL1.25x6 Reinforcement - Wind Area	42.66 - 43.66	Auto	0.0933
L38	39	PL1.25x6 Reinforcement - Wind Area	42.66 - 43.66	Auto	0.0933
L38	50	CCI-SFP-060100	42.66 - 43.66	Auto	0.0933
L38	51	CCI-SFP-060100	42.66 - 43.66	Auto	0.0933
L38	52	CCI-SFP-060100	42.66 - 43.66	Auto	0.0933
L39	28	PL0.625x5 Reinforcement - Wind Area/Weight	41.75 - 42.66	Auto	0.0000
L39	29	PL0.625x5 Reinforcement - Wind Area/Weight	41.75 - 42.66	Auto	0.0000
L39	37	PL1.25x6 Reinforcement - Wind Area	41.75 - 42.66	Auto	0.0887
L39	38	PL1.25x6 Reinforcement - Wind Area	41.75 - 42.66	Auto	0.0887
L39	39	PL1.25x6 Reinforcement - Wind Area	41.75 - 42.66	Auto	0.0887
L39	50	CCI-SFP-060100	41.75 - 42.66	Auto	0.0887
L39	51	CCI-SFP-060100	41.75 - 42.66	Auto	0.0887
L39	52	CCI-SFP-060100	41.75 - 42.66	Auto	0.0887
L40	28	PL0.625x5 Reinforcement - Wind Area/Weight	41.50 - 41.75	Auto	0.0000
L40	29	PL0.625x5 Reinforcement - Wind Area/Weight	41.50 - 41.75	Auto	0.0000
L40	37	PL1.25x6 Reinforcement - Wind Area	41.50 - 41.75	Auto	0.0969
L40	38	PL1.25x6 Reinforcement - Wind Area	41.50 - 41.75	Auto	0.0969
L40	39	PL1.25x6 Reinforcement - Wind Area	41.50 - 41.75	Auto	0.0969
L40	50	CCI-SFP-060100	41.50 - 41.75	Auto	0.0969
L40	51	CCI-SFP-060100	41.50 - 41.75	Auto	0.0969
L40	52	CCI-SFP-060100	41.50 - 41.75	Auto	0.0969
L41	28	PL0.625x5 Reinforcement - Wind Area/Weight	36.50 - 41.50	Auto	0.0000
L41	29	PL0.625x5 Reinforcement - Wind Area/Weight	36.50 - 41.50	Auto	0.0000
L41	37	PL1.25x6 Reinforcement - Wind Area	36.50 - 41.50	Auto	0.0806
L41	38	PL1.25x6 Reinforcement - Wind Area	36.50 - 41.50	Auto	0.0806
L41	39	PL1.25x6 Reinforcement - Wind Area	36.50 - 41.50	Auto	0.0806
L41	50	CCI-SFP-060100	36.50 - 41.50	Auto	0.0806
L41	51	CCI-SFP-060100	36.50 - 41.50	Auto	0.0806
L41	52	CCI-SFP-060100	36.50 - 41.50	Auto	0.0806
L42	28	PL0.625x5 Reinforcement - Wind Area/Weight	32.75 - 36.50	Auto	0.0000
L42	29	PL0.625x5 Reinforcement - Wind Area/Weight	32.75 - 36.50	Auto	0.0000
L42	37	PL1.25x6 Reinforcement - Wind Area	32.75 - 36.50	Auto	0.0595

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L42	38	PL1.25x6 Reinforcement - Wind Area	32.75 - 36.50	Auto	0.0595
L42	39	PL1.25x6 Reinforcement - Wind Area	32.75 - 36.50	Auto	0.0595
L42	50	CCI-SFP-060100	32.75 - 36.50	Auto	0.0595
L42	51	CCI-SFP-060100	32.75 - 36.50	Auto	0.0595
L42	52	CCI-SFP-060100	32.75 - 36.50	Auto	0.0595
L42	75	PL1.25x6.5 Reinforcement - Wind Area	32.75 - 35.50	Auto	0.1296
L42	76	PL1.25x6.5 Reinforcement - Wind Area	32.75 - 35.50	Auto	0.1296
L43	28	PL0.625x5 Reinforcement - Wind Area/Weight	32.50 - 32.75	Auto	0.0000
L43	29	PL0.625x5 Reinforcement - Wind Area/Weight	32.50 - 32.75	Auto	0.0000
L43	37	PL1.25x6 Reinforcement - Wind Area	32.50 - 32.75	Auto	0.1232
L43	38	PL1.25x6 Reinforcement - Wind Area	32.50 - 32.75	Auto	0.1232
L43	39	PL1.25x6 Reinforcement - Wind Area	32.50 - 32.75	Auto	0.1232
L43	50	CCI-SFP-060100	32.50 - 32.75	Auto	0.1232
L43	51	CCI-SFP-060100	32.50 - 32.75	Auto	0.1232
L43	52	CCI-SFP-060100	32.50 - 32.75	Auto	0.1232
L43	75	PL1.25x6.5 Reinforcement - Wind Area	32.50 - 32.75	Auto	0.1906
L43	76	PL1.25x6.5 Reinforcement - Wind Area	32.50 - 32.75	Auto	0.1906
L44	28	PL0.625x5 Reinforcement - Wind Area/Weight	29.83 - 32.50	Auto	0.0000
L44	29	PL0.625x5 Reinforcement - Wind Area/Weight	29.83 - 32.50	Auto	0.0000
L44	34	PL1.25x6 Reinforcement - Wind Area	29.83 - 30.75	Auto	0.1119
L44	35	PL1.25x6 Reinforcement - Wind Area	29.83 - 30.75	Auto	0.1119
L44	36	PL1.25x6 Reinforcement - Wind Area	29.83 - 30.75	Auto	0.1119
L44	37	PL1.25x6 Reinforcement - Wind Area	29.83 - 32.50	Auto	0.1162
L44	38	PL1.25x6 Reinforcement - Wind Area	29.83 - 32.50	Auto	0.1162
L44	39	PL1.25x6 Reinforcement - Wind Area	29.83 - 32.50	Auto	0.1162
L44	50	CCI-SFP-060100	29.83 - 32.50	Auto	0.1162
L44	51	CCI-SFP-060100	29.83 - 32.50	Auto	0.1162
L44	52	CCI-SFP-060100	29.83 - 32.50	Auto	0.1162
L44	75	PL1.25x6.5 Reinforcement - Wind Area	29.83 - 32.50	Auto	0.1842
L44	76	PL1.25x6.5 Reinforcement - Wind Area	29.83 - 32.50	Auto	0.1842
L45	28	PL0.625x5 Reinforcement - Wind Area/Weight	29.58 - 29.83	Auto	0.0000
L45	29	PL0.625x5 Reinforcement - Wind Area/Weight	29.58 - 29.83	Auto	0.0000
L45	34	PL1.25x6 Reinforcement - Wind Area	29.58 - 29.83	Auto	0.0798
L45	35	PL1.25x6 Reinforcement - Wind Area	29.58 - 29.83	Auto	0.0798

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L45	36	PL1.25x6 Reinforcement - Wind Area	29.58 - 29.83	Auto	0.0798
L45	37	PL1.25x6 Reinforcement - Wind Area	29.58 - 29.83	Auto	0.0798
L45	38	PL1.25x6 Reinforcement - Wind Area	29.58 - 29.83	Auto	0.0798
L45	39	PL1.25x6 Reinforcement - Wind Area	29.58 - 29.83	Auto	0.0798
L45	50	CCI-SFP-060100	29.58 - 29.83	Auto	0.0798
L45	51	CCI-SFP-060100	29.58 - 29.83	Auto	0.0798
L45	52	CCI-SFP-060100	29.58 - 29.83	Auto	0.0798
L45	75	PL1.25x6.5 Reinforcement - Wind Area	29.58 - 29.83	Auto	0.1506
L45	76	PL1.25x6.5 Reinforcement - Wind Area	29.58 - 29.83	Auto	0.1506
L46	28	PL0.625x5 Reinforcement - Wind Area/Weight	28.25 - 29.58	Auto	0.0000
L46	29	PL0.625x5 Reinforcement - Wind Area/Weight	28.25 - 29.58	Auto	0.0000
L46	34	PL1.25x6 Reinforcement - Wind Area	28.25 - 29.58	Auto	0.0723
L46	35	PL1.25x6 Reinforcement - Wind Area	28.25 - 29.58	Auto	0.0723
L46	36	PL1.25x6 Reinforcement - Wind Area	28.25 - 29.58	Auto	0.0723
L46	37	PL1.25x6 Reinforcement - Wind Area	28.25 - 29.58	Auto	0.0723
L46	38	PL1.25x6 Reinforcement - Wind Area	28.25 - 29.58	Auto	0.0723
L46	39	PL1.25x6 Reinforcement - Wind Area	28.25 - 29.58	Auto	0.0723
L46	50	CCI-SFP-060100	28.25 - 29.58	Auto	0.0723
L46	51	CCI-SFP-060100	28.25 - 29.58	Auto	0.0723
L46	52	CCI-SFP-060100	28.25 - 29.58	Auto	0.0723
L46	75	PL1.25x6.5 Reinforcement - Wind Area	28.25 - 29.58	Auto	0.1437
L46	76	PL1.25x6.5 Reinforcement - Wind Area	28.25 - 29.58	Auto	0.1437
L47	28	PL0.625x5 Reinforcement - Wind Area/Weight	28.00 - 28.25	Auto	0.0000
L47	29	PL0.625x5 Reinforcement - Wind Area/Weight	28.00 - 28.25	Auto	0.0000
L47	34	PL1.25x6 Reinforcement - Wind Area	28.00 - 28.25	Auto	0.0868
L47	35	PL1.25x6 Reinforcement - Wind Area	28.00 - 28.25	Auto	0.0868
L47	36	PL1.25x6 Reinforcement - Wind Area	28.00 - 28.25	Auto	0.0868
L47	37	PL1.25x6 Reinforcement - Wind Area	28.00 - 28.25	Auto	0.0868
L47	38	PL1.25x6 Reinforcement - Wind Area	28.00 - 28.25	Auto	0.0868
L47	39	PL1.25x6 Reinforcement - Wind Area	28.00 - 28.25	Auto	0.0868
L47	50	CCI-SFP-060100	28.00 - 28.25	Auto	0.0868
L47	51	CCI-SFP-060100	28.00 - 28.25	Auto	0.0868
L47	52	CCI-SFP-060100	28.00 - 28.25	Auto	0.0868
L47	75	PL1.25x6.5 Reinforcement - Wind Area	28.00 - 28.25	Auto	0.1571

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L47	76	PL1.25x6.5 Reinforcement - Wind Area	28.00 - 28.25	Auto	0.1571
L48	28	PL0.625x5 Reinforcement - Wind Area/Weight	23.00 - 28.00	Auto	0.0000
L48	29	PL0.625x5 Reinforcement - Wind Area/Weight	23.00 - 28.00	Auto	0.0000
L48	34	PL1.25x6 Reinforcement - Wind Area	23.00 - 28.00	Auto	0.0742
L48	35	PL1.25x6 Reinforcement - Wind Area	23.00 - 28.00	Auto	0.0742
L48	36	PL1.25x6 Reinforcement - Wind Area	23.00 - 28.00	Auto	0.0742
L48	37	PL1.25x6 Reinforcement - Wind Area	27.75 - 28.00	Auto	0.0856
L48	38	PL1.25x6 Reinforcement - Wind Area	27.75 - 28.00	Auto	0.0856
L48	39	PL1.25x6 Reinforcement - Wind Area	27.75 - 28.00	Auto	0.0856
L48	50	CCI-SFP-060100	23.00 - 28.00	Auto	0.0742
L48	51	CCI-SFP-060100	23.00 - 28.00	Auto	0.0742
L48	52	CCI-SFP-060100	23.00 - 28.00	Auto	0.0742
L48	56	CCI-SFP-045100	23.00 - 27.75	Auto	0.0000
L48	57	CCI-SFP-045100	23.00 - 27.75	Auto	0.0000
L48	58	CCI-SFP-045100	23.00 - 27.75	Auto	0.0000
L48	75	PL1.25x6.5 Reinforcement - Wind Area	25.50 - 28.00	Auto	0.1510
L48	76	PL1.25x6.5 Reinforcement - Wind Area	25.50 - 28.00	Auto	0.1510
L49	28	PL0.625x5 Reinforcement - Wind Area/Weight	19.25 - 23.00	Auto	0.0000
L49	29	PL0.625x5 Reinforcement - Wind Area/Weight	19.25 - 23.00	Auto	0.0000
L49	34	PL1.25x6 Reinforcement - Wind Area	19.25 - 23.00	Auto	0.0495
L49	35	PL1.25x6 Reinforcement - Wind Area	19.25 - 23.00	Auto	0.0495
L49	36	PL1.25x6 Reinforcement - Wind Area	19.25 - 23.00	Auto	0.0495
L49	50	CCI-SFP-060100	19.25 - 23.00	Auto	0.0495
L49	51	CCI-SFP-060100	19.25 - 23.00	Auto	0.0495
L49	52	CCI-SFP-060100	19.25 - 23.00	Auto	0.0495
L49	56	CCI-SFP-045100	19.25 - 23.00	Auto	0.0000
L49	57	CCI-SFP-045100	19.25 - 23.00	Auto	0.0000
L49	58	CCI-SFP-045100	19.25 - 23.00	Auto	0.0000
L50	28	PL0.625x5 Reinforcement - Wind Area/Weight	19.00 - 19.25	Auto	0.0000
L50	29	PL0.625x5 Reinforcement - Wind Area/Weight	19.00 - 19.25	Auto	0.0000
L50	34	PL1.25x6 Reinforcement - Wind Area	19.00 - 19.25	Auto	0.0068
L50	35	PL1.25x6 Reinforcement - Wind Area	19.00 - 19.25	Auto	0.0068
L50	36	PL1.25x6 Reinforcement - Wind Area	19.00 - 19.25	Auto	0.0068
L50	50	CCI-SFP-060100	19.00 - 19.25	Auto	0.0068

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L50	51	CCI-SFP-060100	19.00 - 19.25	Auto	0.0068
L50	52	CCI-SFP-060100	19.00 - 19.25	Auto	0.0068
L50	56	CCI-SFP-045100	19.00 - 19.25	Auto	0.0000
L50	57	CCI-SFP-045100	19.00 - 19.25	Auto	0.0000
L50	58	CCI-SFP-045100	19.00 - 19.25	Auto	0.0000
L51	28	PL0.625x5 Reinforcement - Wind Area/Weight	14.00 - 19.00	Auto	0.0000
L51	29	PL0.625x5 Reinforcement - Wind Area/Weight	14.00 - 19.00	Auto	0.0000
L51	34	PL1.25x6 Reinforcement - Wind Area	14.00 - 19.00	Auto	0.0000
L51	35	PL1.25x6 Reinforcement - Wind Area	14.00 - 19.00	Auto	0.0000
L51	36	PL1.25x6 Reinforcement - Wind Area	14.00 - 19.00	Auto	0.0000
L51	50	CCI-SFP-060100	14.00 - 19.00	Auto	0.0000
L51	51	CCI-SFP-060100	14.00 - 19.00	Auto	0.0000
L51	52	CCI-SFP-060100	14.00 - 19.00	Auto	0.0000
L51	56	CCI-SFP-045100	17.75 - 19.00	Auto	0.0000
L51	57	CCI-SFP-045100	17.75 - 19.00	Auto	0.0000
L51	58	CCI-SFP-045100	17.75 - 19.00	Auto	0.0000
L52	28	PL0.625x5 Reinforcement - Wind Area/Weight	9.00 - 14.00	Auto	0.0000
L52	29	PL0.625x5 Reinforcement - Wind Area/Weight	9.00 - 14.00	Auto	0.0000
L52	34	PL1.25x6 Reinforcement - Wind Area	9.00 - 14.00	Auto	0.0000
L52	35	PL1.25x6 Reinforcement - Wind Area	9.00 - 14.00	Auto	0.0000
L52	36	PL1.25x6 Reinforcement - Wind Area	9.00 - 14.00	Auto	0.0000
L52	50	CCI-SFP-060100	9.00 - 14.00	Auto	0.0000
L52	51	CCI-SFP-060100	9.00 - 14.00	Auto	0.0000
L52	52	CCI-SFP-060100	9.00 - 14.00	Auto	0.0000
L53	28	PL0.625x5 Reinforcement - Wind Area/Weight	4.00 - 9.00	Auto	0.0000
L53	29	PL0.625x5 Reinforcement - Wind Area/Weight	4.00 - 9.00	Auto	0.0000
L53	34	PL1.25x6 Reinforcement - Wind Area	4.00 - 9.00	Auto	0.0000
L53	35	PL1.25x6 Reinforcement - Wind Area	4.00 - 9.00	Auto	0.0000
L53	36	PL1.25x6 Reinforcement - Wind Area	4.00 - 9.00	Auto	0.0000
L53	50	CCI-SFP-060100	4.00 - 9.00	Auto	0.0000
L53	51	CCI-SFP-060100	4.00 - 9.00	Auto	0.0000
L53	52	CCI-SFP-060100	4.00 - 9.00	Auto	0.0000
L54	28	PL0.625x5 Reinforcement - Wind Area/Weight	0.00 - 4.00	Auto	0.0000
L54	29	PL0.625x5 Reinforcement - Wind Area/Weight	0.00 - 4.00	Auto	0.0000
L54	34	PL1.25x6 Reinforcement - Wind Area	0.00 - 4.00	Auto	0.0000
L54	35	PL1.25x6 Reinforcement - Wind Area	0.00 - 4.00	Auto	0.0000
L54	36	PL1.25x6 Reinforcement - Wind Area	0.00 - 4.00	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L54	50	CCI-SFP-060100	0.00 - 4.00	Auto	0.0000
L54	51	CCI-SFP-060100	0.00 - 4.00	Auto	0.0000
L54	52	CCI-SFP-060100	0.00 - 4.00	Auto	0.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft ft	Azimuth Adjustment ° ft	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
DMP65R-BU6D w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	168.00	No Ice 1/2" Ice 1" Ice 2" Ice	11.96 12.70 13.46 15.02	5.97 6.63 7.30 8.69	0.11 0.20 0.30 0.53
DMP65R-BU8D w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	168.00	No Ice 1/2" Ice 1" Ice 2" Ice	15.89 16.81 17.76 19.70	7.89 8.74 9.60 11.37	0.14 0.25 0.38 0.68
DMP65R-BU8D w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	168.00	No Ice 1/2" Ice 1" Ice 2" Ice	15.89 16.81 17.76 19.70	7.89 8.74 9.60 11.37	0.14 0.25 0.38 0.68
TPA-65R-LCUUUU-H8 w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	168.00	No Ice 1/2" Ice Ice 1" Ice 2" Ice	11.85 12.77 13.71 15.64	8.99 9.88 10.79 12.66	0.11 0.21 0.32 0.58
TPA-65R-LCUUUU-H8 w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	168.00	No Ice 1/2" Ice Ice 1" Ice 2" Ice	11.85 12.77 13.71 15.64	8.99 9.88 10.79 12.66	0.11 0.21 0.32 0.58
800 10121 w/ Mount Pipe	A	From Leg	4.00 0.00 -1.00	0.0000	168.00	No Ice 1/2" Ice Ice 1" Ice 2" Ice	3.60 4.00 4.42 5.29	2.95 3.34 3.74 4.59	0.07 0.11 0.17 0.30
800 10121 w/ Mount Pipe	B	From Leg	4.00 0.00 -1.00	0.0000	168.00	No Ice 1/2" Ice Ice 1" Ice 2" Ice	3.60 4.00 4.42 5.29	2.95 3.34 3.74 4.59	0.07 0.11 0.17 0.30
800 10121 w/ Mount Pipe	C	From Leg	4.00 0.00 -1.00	0.0000	168.00	No Ice 1/2" Ice Ice 1" Ice 2" Ice	3.60 4.00 4.42 5.29	2.95 3.34 3.74 4.59	0.07 0.11 0.17 0.30
80010798 w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	168.00	No Ice 1/2" Ice Ice 1" Ice 2" Ice	7.79 8.40 9.02 10.30	4.90 5.47 6.06 7.26	0.11 0.19 0.27 0.48
80010965 w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	168.00	No Ice 1/2" Ice Ice	12.26 13.03 13.80	5.79 6.47 7.17	0.14 0.23 0.33

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						1" Ice	15.41	8.60	0.57
						2" Ice			
80010966 w/ Mount Pipe	B	From Leg	4.00	0.0000	168.00	No Ice	14.61	6.84	0.16
			0.00			1/2"	15.47	7.63	0.27
			0.00			Ice	16.35	8.42	0.39
						1" Ice	18.14	10.06	0.68
						2" Ice			
80010966 w/ Mount Pipe	C	From Leg	4.00	0.0000	168.00	No Ice	14.61	6.84	0.16
			0.00			1/2"	15.47	7.63	0.27
			0.00			Ice	16.35	8.42	0.39
						1" Ice	18.14	10.06	0.68
						2" Ice			
RRUS 32 B2	A	From Leg	4.00	0.0000	168.00	No Ice	2.73	1.67	0.05
			0.00			1/2"	2.95	1.86	0.07
			1.00			Ice	3.18	2.05	0.10
						1" Ice	3.66	2.46	0.16
						2" Ice			
RRUS 32 B2	B	From Leg	4.00	0.0000	168.00	No Ice	2.73	1.67	0.05
			0.00			1/2"	2.95	1.86	0.07
			1.00			Ice	3.18	2.05	0.10
						1" Ice	3.66	2.46	0.16
						2" Ice			
RRUS 32 B2	C	From Leg	4.00	0.0000	168.00	No Ice	2.73	1.67	0.05
			0.00			1/2"	2.95	1.86	0.07
			1.00			Ice	3.18	2.05	0.10
						1" Ice	3.66	2.46	0.16
						2" Ice			
RRUS 32 B30	A	From Leg	4.00	0.0000	168.00	No Ice	0.00	1.57	0.06
			0.00			1/2"	0.00	1.76	0.08
			1.00			Ice	0.00	1.95	0.10
						1" Ice	0.00	2.35	0.16
						2" Ice			
RRUS 32 B30	B	From Leg	4.00	0.0000	168.00	No Ice	0.00	1.57	0.06
			0.00			1/2"	0.00	1.76	0.08
			1.00			Ice	0.00	1.95	0.10
						1" Ice	0.00	2.35	0.16
						2" Ice			
RRUS 32 B30	C	From Leg	4.00	0.0000	168.00	No Ice	0.00	1.57	0.06
			0.00			1/2"	0.00	1.76	0.08
			1.00			Ice	0.00	1.95	0.10
						1" Ice	0.00	2.35	0.16
						2" Ice			
RRUS 4415 B25	A	From Leg	4.00	0.0000	168.00	No Ice	0.00	0.00	0.04
			0.00			1/2"	1.80	0.79	0.06
			1.00			Ice	1.97	0.91	0.07
						1" Ice	2.33	1.18	0.11
						2" Ice			
RRUS 4415 B25	B	From Leg	4.00	0.0000	168.00	No Ice	0.00	0.00	0.04
			0.00			1/2"	1.80	0.79	0.06
			1.00			Ice	1.97	0.91	0.07
						1" Ice	2.33	1.18	0.11
						2" Ice			
RRUS 4415 B25	C	From Leg	4.00	0.0000	168.00	No Ice	0.00	0.00	0.04
			0.00			1/2"	1.80	0.79	0.06
			1.00			Ice	1.97	0.91	0.07
						1" Ice	2.33	1.18	0.11
						2" Ice			
RRUS 4449 B5/B12	A	From Leg	4.00	0.0000	168.00	No Ice	1.41	1.97	0.07
			0.00			1/2"	1.56	2.14	0.09
			1.00			Ice	1.73	2.33	0.11
						1" Ice	2.07	2.72	0.16
						2" Ice			
RRUS 4449 B5/B12	B	From Leg	4.00	0.0000	168.00	No Ice	1.41	1.97	0.07
			0.00			1/2"	1.56	2.14	0.09
			1.00			Ice	1.73	2.33	0.11

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						1" Ice	2.07	2.72	0.16
						2" Ice			
RRUS 4449 B5/B12	C	From Leg	4.00	0.0000	168.00	No Ice	1.41	1.97	0.07
			0.00			1/2"	1.56	2.14	0.09
			1.00			Ice	1.73	2.33	0.11
						1" Ice	2.07	2.72	0.16
						2" Ice			
RRUS E2 B29	A	From Leg	4.00	0.0000	168.00	No Ice	3.15	1.29	0.06
			0.00			1/2"	3.36	1.44	0.08
			1.00			Ice	3.59	1.60	0.11
						1" Ice	4.07	1.95	0.17
						2" Ice			
RRUS E2 B29	B	From Leg	4.00	0.0000	168.00	No Ice	3.15	1.29	0.06
			0.00			1/2"	3.36	1.44	0.08
			1.00			Ice	3.59	1.60	0.11
						1" Ice	4.07	1.95	0.17
						2" Ice			
RRUS E2 B29	C	From Leg	4.00	0.0000	168.00	No Ice	3.15	1.29	0.06
			0.00			1/2"	3.36	1.44	0.08
			1.00			Ice	3.59	1.60	0.11
						1" Ice	4.07	1.95	0.17
						2" Ice			
(2) LGP21401	A	From Leg	4.00	0.0000	168.00	No Ice	1.10	0.21	0.01
			0.00			1/2"	1.24	0.27	0.02
			-1.00			Ice	1.38	0.35	0.03
						1" Ice	1.69	0.52	0.05
						2" Ice			
(2) LGP21401	B	From Leg	4.00	0.0000	168.00	No Ice	1.10	0.21	0.01
			0.00			1/2"	1.24	0.27	0.02
			-1.00			Ice	1.38	0.35	0.03
						1" Ice	1.69	0.52	0.05
						2" Ice			
(2) LGP21401	C	From Leg	4.00	0.0000	168.00	No Ice	1.10	0.21	0.01
			0.00			1/2"	1.24	0.27	0.02
			-1.00			Ice	1.38	0.35	0.03
						1" Ice	1.69	0.52	0.05
						2" Ice			
DC6-48-60-18-8C	B	From Leg	4.00	0.0000	168.00	No Ice	1.14	1.14	0.03
			0.00			1/2"	1.79	1.79	0.05
			1.00			Ice	2.00	2.00	0.07
						1" Ice	2.45	2.45	0.13
						2" Ice			
DC6-48-60-18-8F	A	From Leg	4.00	0.0000	168.00	No Ice	1.21	1.21	0.02
			0.00			1/2"	1.89	1.89	0.04
			1.00			Ice	2.11	2.11	0.07
						1" Ice	2.57	2.57	0.13
						2" Ice			
DC6-48-60-18-8F	B	From Leg	4.00	0.0000	168.00	No Ice	1.21	1.21	0.02
			0.00			1/2"	1.89	1.89	0.04
			1.00			Ice	2.11	2.11	0.07
						1" Ice	2.57	2.57	0.13
						2" Ice			
DC6-48-60-18-8F	C	From Leg	4.00	0.0000	168.00	No Ice	1.21	1.21	0.02
			0.00			1/2"	1.89	1.89	0.04
			1.00			Ice	2.11	2.11	0.07
						1" Ice	2.57	2.57	0.13
						2" Ice			
Platform Mount [LP 304-1_KCKR-HR-1]	C	None		0.0000	168.00	No Ice	32.63	32.63	1.88
						1/2"	40.84	40.84	2.47
						Ice	49.05	49.05	3.20
						1" Ice	65.62	65.62	5.04
						2" Ice			
***									
APXVSPP18-C-A20 w/ Mount Pipe	A	From Leg	4.00	0.0000	158.00	No Ice	4.60	4.01	0.10
			0.00			1/2"	5.05	4.45	0.16

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			Ice	5.50	4.89	0.23
						1" Ice	6.44	5.82	0.42
						2" Ice			
APXVSPP18-C-A20 w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	158.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.60 5.05 5.50 6.44	4.01 4.45 4.89 5.82	0.10 0.16 0.23 0.42
APXVSPP18-C-A20 w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	158.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.60 5.05 5.50 6.44	4.01 4.45 4.89 5.82	0.10 0.16 0.23 0.42
APXVTM14-C-120 w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	158.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.09 4.48 4.88 5.71	2.86 3.23 3.61 4.40	0.08 0.13 0.19 0.33
APXVTM14-C-120 w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	158.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.09 4.48 4.88 5.71	2.86 3.23 3.61 4.40	0.08 0.13 0.19 0.33
APXVTM14-C-120 w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	158.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.09 4.48 4.88 5.71	2.86 3.23 3.61 4.40	0.08 0.13 0.19 0.33
1900MHZ RRH (65MHZ)	A	From Leg	4.00 0.00 0.00	0.0000	158.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.31 2.52 2.73 3.17	2.38 2.58 2.79 3.24	0.06 0.08 0.11 0.18
1900MHZ RRH (65MHZ)	B	From Leg	4.00 0.00 0.00	0.0000	158.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.31 2.52 2.73 3.17	2.38 2.58 2.79 3.24	0.06 0.08 0.11 0.18
1900MHZ RRH (65MHZ)	C	From Leg	4.00 0.00 0.00	0.0000	158.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.31 2.52 2.73 3.17	2.38 2.58 2.79 3.24	0.06 0.08 0.11 0.18
800 EXTERNAL NOTCH FILTER	A	From Leg	4.00 0.00 0.00	0.0000	158.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.66 0.76 0.87 1.11	0.32 0.40 0.48 0.67	0.01 0.02 0.02 0.04
800 EXTERNAL NOTCH FILTER	B	From Leg	4.00 0.00 0.00	0.0000	158.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.66 0.76 0.87 1.11	0.32 0.40 0.48 0.67	0.01 0.02 0.02 0.04
800 EXTERNAL NOTCH FILTER	C	From Leg	4.00 0.00 0.00	0.0000	158.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.66 0.76 0.87 1.11	0.32 0.40 0.48 0.67	0.01 0.02 0.02 0.04
800MHZ RRH	A	From Leg	4.00 0.00 0.00	0.0000	158.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.13 2.32 2.51 2.92	1.77 1.95 2.13 2.51	0.05 0.07 0.10 0.16
800MHZ RRH	B	From Leg	4.00 0.00	0.0000	158.00	No Ice 1/2"	2.13 2.32	1.77 1.95	0.05 0.07

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			Ice	2.51	2.13	0.10
						1" Ice	2.92	2.51	0.16
						2" Ice			
800MHZ RRH	C	From Leg	4.00	0.0000	158.00	No Ice	2.13	1.77	0.05
			0.00			1/2"	2.32	1.95	0.07
			0.00			Ice	2.51	2.13	0.10
						1" Ice	2.92	2.51	0.16
						2" Ice			
TD-RRH8X20-25	A	From Leg	4.00	0.0000	158.00	No Ice	2.02	1.53	0.07
			0.00			1/2"	4.30	1.71	0.10
			0.00			Ice	4.56	1.90	0.13
						1" Ice	5.10	2.30	0.20
						2" Ice			
TD-RRH8X20-25	B	From Leg	4.00	0.0000	158.00	No Ice	2.02	1.53	0.07
			0.00			1/2"	4.30	1.71	0.10
			0.00			Ice	4.56	1.90	0.13
						1" Ice	5.10	2.30	0.20
						2" Ice			
TD-RRH8X20-25	C	From Leg	4.00	0.0000	158.00	No Ice	2.02	1.53	0.07
			0.00			1/2"	4.30	1.71	0.10
			0.00			Ice	4.56	1.90	0.13
						1" Ice	5.10	2.30	0.20
						2" Ice			
T-Arm Mount [TA 602-3_KCKR]	C	None		0.0000	158.00	No Ice	23.41	23.41	1.05
						1/2"	28.72	28.72	1.42
						Ice	34.48	34.48	1.90
						1" Ice	46.49	46.49	3.21
						2" Ice			
6' x 2" Mount Pipe	A	From Leg	3.00	0.0000	158.00	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	3.06	3.06	0.09
						2" Ice			
6' x 2" Mount Pipe	B	From Leg	3.00	0.0000	158.00	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	3.06	3.06	0.09
						2" Ice			
6' x 2" Mount Pipe	C	From Leg	3.00	0.0000	158.00	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	3.06	3.06	0.09
						2" Ice			
12' horizontal x 2" Pipe Mount	C	From Face	3.00	0.0000	158.00	No Ice	2.28	0.01	0.03
			0.00			1/2"	3.50	0.04	0.05
			0.00			Ice	4.75	0.09	0.08
						1" Ice	7.28	0.21	0.15
						2" Ice			
***									
MX08FRO665-21 w/ Mount Pipe	A	From Leg	4.00	0.0000	148.00	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	10.11	6.12	0.52
						2" Ice			
MX08FRO665-21 w/ Mount Pipe	B	From Leg	4.00	0.0000	148.00	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	10.11	6.12	0.52
						2" Ice			
MX08FRO665-21 w/ Mount Pipe	C	From Leg	4.00	0.0000	148.00	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	10.11	6.12	0.52
						2" Ice			
TA08025-B604	A	From Leg	4.00	0.0000	148.00	No Ice	0.00	0.98	0.06

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00			1/2"	2.14	1.11	0.08
			0.00			Ice	2.32	1.25	0.10
						1" Ice	2.71	1.55	0.15
						2" Ice			
TA08025-B604	B	From Leg	4.00	0.0000	148.00	No Ice	0.00	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	2.71	1.55	0.15
						2" Ice			
TA08025-B604	C	From Leg	4.00	0.0000	148.00	No Ice	0.00	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	2.71	1.55	0.15
						2" Ice			
TA08025-B605	A	From Leg	4.00	0.0000	148.00	No Ice	0.00	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	2.71	1.72	0.16
						2" Ice			
TA08025-B605	B	From Leg	4.00	0.0000	148.00	No Ice	0.00	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	2.71	1.72	0.16
						2" Ice			
TA08025-B605	C	From Leg	4.00	0.0000	148.00	No Ice	0.00	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	2.71	1.72	0.16
						2" Ice			
RDIDC-9181-PF-48	A	From Leg	4.00	0.0000	148.00	No Ice	2.31	1.29	0.02
			0.00			1/2"	2.50	1.45	0.04
			0.00			Ice	2.70	1.61	0.06
						1" Ice	3.12	1.96	0.12
						2" Ice			
Commscope MC-PK8-DSH	C	None		0.0000	148.00	No Ice	34.24	34.24	1.75
						1/2"	62.95	62.95	2.10
						Ice	91.66	91.66	2.45
						1" Ice	149.08	149.08	3.15
						2" Ice			
(2) 8' x 2" Mount Pipe	A	From Leg	4.00	0.0000	148.00	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	4.40	4.40	0.12
						2" Ice			
(2) 8' x 2" Mount Pipe	B	From Leg	4.00	0.0000	148.00	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	4.40	4.40	0.12
						2" Ice			
(2) 8' x 2" Mount Pipe	C	From Leg	4.00	0.0000	148.00	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	4.40	4.40	0.12
						2" Ice			
***									
NHH-65B-R2B w/ Mount Pipe	A	From Leg	4.00	0.0000	138.00	No Ice	4.09	3.29	0.07
			0.00			1/2"	4.48	3.67	0.13
			2.00			Ice	4.88	4.06	0.21
						1" Ice	5.70	4.86	0.39
						2" Ice			
NHH-65B-R2B w/ Mount Pipe	B	From Leg	4.00	0.0000	138.00	No Ice	4.09	3.29	0.07
			0.00			1/2"	4.48	3.67	0.13
			2.00			Ice	4.88	4.06	0.21
						1" Ice	5.70	4.86	0.39
						2" Ice			

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
NHH-65B-R2B w/ Mount Pipe	C	From Leg	4.00 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.09 4.48 4.88 5.70	3.29 3.67 4.06 4.86	0.07 0.13 0.21 0.39
NHHSS-65B-R2B w/ Mount Pipe	A	From Leg	4.00 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.89 4.27 4.65 5.43	3.14 3.50 3.87 4.63	0.09 0.15 0.23 0.41
NHHSS-65B-R2B w/ Mount Pipe	B	From Leg	4.00 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.89 4.27 4.65 5.43	3.14 3.50 3.87 4.63	0.09 0.15 0.23 0.41
NHHSS-65B-R2B w/ Mount Pipe	C	From Leg	4.00 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.89 4.27 4.65 5.43	3.14 3.50 3.87 4.63	0.09 0.15 0.23 0.41
MT6407-77A w/ Mount Pipe	A	From Leg	4.00 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.91 5.26 5.61 6.36	2.68 3.14 3.62 4.63	0.10 0.14 0.18 0.29
MT6407-77A w/ Mount Pipe	B	From Leg	4.00 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.91 5.26 5.61 6.36	2.68 3.14 3.62 4.63	0.10 0.14 0.18 0.29
MT6407-77A w/ Mount Pipe	C	From Leg	4.00 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.91 5.26 5.61 6.36	2.68 3.14 3.62 4.63	0.10 0.14 0.18 0.29
BXA-70063/4CF w/ Mount Pipe	A	From Leg	4.00 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.84 5.35 5.88 6.99	3.54 4.03 4.53 5.59	0.04 0.08 0.12 0.24
BXA-70063/4CF w/ Mount Pipe	B	From Leg	4.00 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.84 5.35 5.88 6.99	3.54 4.03 4.53 5.59	0.04 0.08 0.12 0.24
BXA-70063/4CF w/ Mount Pipe	C	From Leg	4.00 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.84 5.35 5.88 6.99	3.54 4.03 4.53 5.59	0.04 0.08 0.12 0.24
RVZDC-6627-PF-48	B	From Leg	4.00 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.79 4.04 4.30 4.84	2.51 2.73 2.95 3.42	0.03 0.06 0.10 0.18
CBRS RT4401-48A	A	From Leg	4.00 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.99 1.12 1.26 1.55	0.50 0.60 0.70 0.94	0.02 0.03 0.04 0.06
CBRS RT4401-48A	B	From Leg	4.00 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.99 1.12 1.26 1.55	0.50 0.60 0.70 0.94	0.02 0.03 0.04 0.06

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
CBRS RT4401-48A	C	From Leg	4.00 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.99 1.12 1.26 1.55	0.50 0.60 0.70 0.94	0.02 0.03 0.04 0.06
RFV01U-D1A	A	From Leg	4.00 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.88 2.05 2.22 2.60	1.25 1.39 1.54 1.86	0.08 0.10 0.12 0.18
RFV01U-D1A	B	From Leg	4.00 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.88 2.05 2.22 2.60	1.25 1.39 1.54 1.86	0.08 0.10 0.12 0.18
RFV01U-D1A	C	From Leg	4.00 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.88 2.05 2.22 2.60	1.25 1.39 1.54 1.86	0.08 0.10 0.12 0.18
RFV01U-D2A	A	From Leg	4.00 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.88 2.05 2.22 2.60	1.01 1.14 1.28 1.59	0.07 0.09 0.11 0.15
RFV01U-D2A	B	From Leg	4.00 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.88 2.05 2.22 2.60	1.01 1.14 1.28 1.59	0.07 0.09 0.11 0.15
RFV01U-D2A	C	From Leg	4.00 0.00 2.00	0.0000	138.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.88 2.05 2.22 2.60	1.01 1.14 1.28 1.59	0.07 0.09 0.11 0.15
Platform Mount [LP 303-1]	C	None		0.0000	138.00	No Ice 1/2" Ice 1" Ice 2" Ice	14.69 18.01 21.34 28.08	14.69 18.01 21.34 28.08	1.25 1.57 1.94 2.85
***									
AIR 32 B2A/B66AA w/ Mount Pipe	A	From Leg	4.00 0.00 2.00	0.0000	128.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.76 4.12 4.48 5.24	3.15 3.49 3.84 4.58	0.19 0.25 0.32 0.48
AIR 32 B2A/B66AA w/ Mount Pipe	B	From Leg	4.00 0.00 2.00	0.0000	128.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.76 4.12 4.48 5.24	3.15 3.49 3.84 4.58	0.19 0.25 0.32 0.48
AIR 32 B2A/B66AA w/ Mount Pipe	C	From Leg	4.00 0.00 2.00	0.0000	128.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.76 4.12 4.48 5.24	3.15 3.49 3.84 4.58	0.19 0.25 0.32 0.48
APXVAARR24_43-U-NA20 w/ Mount Pipe	A	From Leg	4.00 0.00 2.00	0.0000	128.00	No Ice 1/2" Ice 1" Ice 2" Ice	14.69 15.46 16.23 17.82	6.87 7.55 8.25 9.67	0.19 0.31 0.46 0.79
APXVAARR24_43-U-NA20 w/ Mount Pipe	B	From Leg	4.00 0.00 2.00	0.0000	128.00	No Ice 1/2" Ice 1" Ice	14.69 15.46 16.23 17.82	6.87 7.55 8.25 9.67	0.19 0.31 0.46 0.79

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						2" Ice			
APXVAARR24_43-U-NA20 w/ Mount Pipe	C	From Leg	4.00 0.00 2.00	0.0000	128.00	No Ice 1/2" Ice 1" Ice 2" Ice	14.69 15.46 16.23 17.82	6.87 7.55 8.25 9.67	0.19 0.31 0.46 0.79
KRY 112 144/1	A	From Leg	4.00 0.00 2.00	0.0000	128.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.35 0.43 0.51 0.70	0.17 0.23 0.30 0.46	0.01 0.01 0.02 0.03
KRY 112 144/1	B	From Leg	4.00 0.00 2.00	0.0000	128.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.35 0.43 0.51 0.70	0.17 0.23 0.30 0.46	0.01 0.01 0.02 0.03
KRY 112 144/1	C	From Leg	4.00 0.00 2.00	0.0000	128.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.35 0.43 0.51 0.70	0.17 0.23 0.30 0.46	0.01 0.01 0.02 0.03
RADIO 4449 B12/B71	A	From Leg	4.00 0.00 2.00	0.0000	128.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 1.81 1.98 2.34	1.16 1.30 1.45 1.76	0.07 0.09 0.11 0.16
RADIO 4449 B12/B71	B	From Leg	4.00 0.00 2.00	0.0000	128.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 1.81 1.98 2.34	1.16 1.30 1.45 1.76	0.07 0.09 0.11 0.16
RADIO 4449 B12/B71	C	From Leg	4.00 0.00 2.00	0.0000	128.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 1.81 1.98 2.34	1.16 1.30 1.45 1.76	0.07 0.09 0.11 0.16
Platform Mount [LP 303-1]	C	None		0.0000	128.00	No Ice 1/2" Ice 1" Ice 2" Ice	14.69 18.01 21.34 28.08	14.69 18.01 21.34 28.08	1.25 1.57 1.94 2.85
6' x 2" Mount Pipe	A	From Leg	3.00 0.00 0.00	0.0000	128.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.43 1.92 2.29 3.06	1.43 1.92 2.29 3.06	0.02 0.03 0.05 0.09
6' x 2" Mount Pipe	B	From Leg	3.00 0.00 0.00	0.0000	128.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.43 1.92 2.29 3.06	1.43 1.92 2.29 3.06	0.02 0.03 0.05 0.09

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

Comb. No.	Description
4	1.2 Dead+1.0 Wind 30 deg - No Ice
5	0.9 Dead+1.0 Wind 30 deg - No Ice
6	1.2 Dead+1.0 Wind 60 deg - No Ice
7	0.9 Dead+1.0 Wind 60 deg - No Ice
8	1.2 Dead+1.0 Wind 90 deg - No Ice
9	0.9 Dead+1.0 Wind 90 deg - No Ice
10	1.2 Dead+1.0 Wind 120 deg - No Ice
11	0.9 Dead+1.0 Wind 120 deg - No Ice
12	1.2 Dead+1.0 Wind 150 deg - No Ice
13	0.9 Dead+1.0 Wind 150 deg - No Ice
14	1.2 Dead+1.0 Wind 180 deg - No Ice
15	0.9 Dead+1.0 Wind 180 deg - No Ice
16	1.2 Dead+1.0 Wind 210 deg - No Ice
17	0.9 Dead+1.0 Wind 210 deg - No Ice
18	1.2 Dead+1.0 Wind 240 deg - No Ice
19	0.9 Dead+1.0 Wind 240 deg - No Ice
20	1.2 Dead+1.0 Wind 270 deg - No Ice
21	0.9 Dead+1.0 Wind 270 deg - No Ice
22	1.2 Dead+1.0 Wind 300 deg - No Ice
23	0.9 Dead+1.0 Wind 300 deg - No Ice
24	1.2 Dead+1.0 Wind 330 deg - No Ice
25	0.9 Dead+1.0 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	168.333 - 163.333	Pole	Max Tension	27	0.00	0.00	-0.00
			Max. Compression	26	-15.92	-0.56	-2.12
			Max. Mx	8	-3.99	-41.39	-0.10
			Max. My	14	-4.03	-0.12	-40.87
			Max. Vy	8	8.86	-41.39	-0.10
			Max. Vx	14	8.71	-0.12	-40.87
			Max. Torque	9			-1.64
L2	163.333 - 158.333	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-16.51	-0.58	-2.18
			Max. Mx	8	-4.26	-86.56	-0.12
			Max. My	14	-4.30	-0.13	-85.27
			Max. Vy	8	9.21	-86.56	-0.12

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	14	9.06	-0.13	-85.27
			Max. Torque	9			-1.64
L3	158.333 - 153.333	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-25.15	-0.60	-2.86
			Max. Mx	8	-6.72	-149.62	-0.31
			Max. My	14	-6.75	-0.14	-148.12
			Max. Vy	8	13.02	-149.62	-0.31
			Max. Vx	14	12.95	-0.14	-148.12
			Max. Torque	9			-1.64
L4	153.333 - 148.333	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-25.79	-0.63	-2.93
			Max. Mx	8	-7.08	-215.58	-0.33
			Max. My	14	-7.11	-0.15	-213.73
			Max. Vy	8	13.37	-215.58	-0.33
			Max. Vx	14	13.30	-0.15	-213.73
			Max. Torque	9			-1.64
L5	148.333 - 143.333	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-33.47	-0.65	-2.47
			Max. Mx	8	-10.23	-299.55	-0.29
			Max. My	14	-10.26	-0.17	-297.42
			Max. Vy	8	17.20	-299.55	-0.29
			Max. Vx	14	17.16	-0.17	-297.42
			Max. Torque	9			-1.64
L6	143.333 - 138.333	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-34.21	-0.68	-2.60
			Max. Mx	8	-10.71	-386.28	-0.33
			Max. My	14	-10.74	-0.19	-384.00
			Max. Vy	8	17.51	-386.28	-0.33
			Max. Vx	14	17.48	-0.19	-384.00
			Max. Torque	9			-1.39
L7	138.333 - 130.503	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-43.50	-1.44	-3.13
			Max. Mx	8	-13.96	-477.90	-0.54
			Max. My	14	-13.99	-0.41	-475.27
			Max. Vy	8	21.23	-477.90	-0.54
			Max. Vx	14	21.17	-0.41	-475.27
			Max. Torque	19			1.73
L8	130.503 - 129.163	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-44.92	-1.38	-3.22
			Max. Mx	8	-14.79	-584.98	-0.68
			Max. My	14	-14.82	-0.52	-582.06
			Max. Vy	8	21.62	-584.98	-0.68
			Max. Vx	14	21.55	-0.52	-582.06
			Max. Torque	19			1.73
L9	129.163 - 125.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-53.53	-1.64	-3.07
			Max. Mx	8	-18.18	-669.14	-0.74
			Max. My	14	-18.22	-0.65	-665.88
			Max. Vy	8	24.73	-669.14	-0.74
			Max. Vx	14	24.66	-0.65	-665.88
			Max. Torque	19			1.73
L10	125.75 - 125.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-53.59	-1.63	-3.07
			Max. Mx	8	-18.25	-675.32	-0.74
			Max. My	14	-18.28	-0.66	-672.04
			Max. Vy	8	24.73	-675.32	-0.74
			Max. Vx	14	24.66	-0.66	-672.04
			Max. Torque	19			1.73
L11	125.5 - 120.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-54.97	-1.50	-3.08

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Mx	8	-19.07	-799.55	-0.87
			Max. My	14	-19.11	-0.75	-795.96
			Max. Vy	8	25.00	-799.55	-0.87
			Max. Vx	14	24.93	-0.75	-795.96
			Max. Torque	19			1.73
L12	120.5 - 120.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-55.07	-1.49	-3.09
			Max. Mx	8	-19.16	-805.80	-0.88
			Max. My	14	-19.19	-0.76	-802.19
			Max. Vy	8	25.00	-805.80	-0.88
			Max. Vx	14	24.93	-0.76	-802.19
			Max. Torque	19			1.73
L13	120.25 - 115.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-57.42	-1.35	-3.03
			Max. Mx	8	-20.53	-931.79	-1.01
			Max. My	14	-20.56	-0.85	-927.85
			Max. Vy	8	25.42	-931.79	-1.01
			Max. Vx	14	25.34	-0.85	-927.85
			Max. Torque	19			1.73
L14	115.25 - 113.833	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-58.15	-1.31	-3.02
			Max. Mx	8	-20.92	-967.88	-1.04
			Max. My	14	-20.96	-0.88	-963.83
			Max. Vy	8	25.56	-967.88	-1.04
			Max. Vx	14	25.46	-0.88	-963.83
			Max. Torque	19			1.72
L15	113.833 - 113.483	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-58.35	-1.30	-3.02
			Max. Mx	8	-21.05	-976.82	-1.05
			Max. My	14	-21.09	-0.88	-972.74
			Max. Vy	8	25.58	-976.82	-1.05
			Max. Vx	14	25.48	-0.88	-972.74
			Max. Torque	19			1.72
L16	113.483 - 113.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-58.48	-1.29	-3.02
			Max. Mx	8	-21.12	-982.78	-1.06
			Max. My	14	-21.16	-0.89	-978.68
			Max. Vy	8	25.60	-982.78	-1.06
			Max. Vx	14	25.50	-0.89	-978.68
			Max. Torque	19			1.72
L17	113.25 - 108.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-61.17	-1.14	-3.02
			Max. Mx	8	-22.69	-1111.95	-1.19
			Max. My	14	-22.74	-0.98	-1107.26
			Max. Vy	8	26.10	-1111.95	-1.19
			Max. Vx	14	25.95	-0.98	-1107.26
			Max. Torque	19			1.72
L18	108.25 - 103.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-63.84	-0.99	-3.04
			Max. Mx	8	-24.30	-1243.54	-1.31
			Max. My	14	-24.34	-1.07	-1238.00
			Max. Vy	8	26.57	-1243.54	-1.31
			Max. Vx	14	26.37	-1.07	-1238.00
			Max. Torque	19			1.72
L19	103.25 - 98.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-66.53	-0.83	-3.06
			Max. Mx	8	-25.92	-1377.47	-1.44
			Max. My	14	-25.97	-1.16	-1370.84
			Max. Vy	8	27.03	-1377.47	-1.44
			Max. Vx	14	26.79	-1.16	-1370.84
			Max. Torque	19			1.72

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L20	98.25 - 93.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-69.23	-0.67	-3.07
			Max. Mx	8	-27.58	-1513.64	-1.57
			Max. My	14	-27.63	-1.25	-1505.72
			Max. Vy	8	27.48	-1513.64	-1.57
			Max. Vx	14	27.19	-1.25	-1505.72
			Max. Torque	19			1.72
L21	93.25 - 84.5533	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-71.55	-0.58	-3.13
			Max. Mx	8	-28.96	-1628.03	-1.67
			Max. My	14	-29.01	-1.32	-1618.80
			Max. Vy	8	27.87	-1628.03	-1.67
			Max. Vx	14	27.51	-1.32	-1618.80
			Max. Torque	19			1.72
L22	84.5533 - 83.5533	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-76.35	-0.51	-3.22
			Max. Mx	8	-32.07	-1784.88	-1.82
			Max. My	14	-32.13	-1.44	-1773.42
			Max. Vy	8	28.57	-1784.88	-1.82
			Max. Vx	14	28.11	-1.44	-1773.42
			Max. Torque	19			1.72
L23	83.5533 - 82.917	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-76.74	-0.52	-3.24
			Max. Mx	8	-32.31	-1803.09	-1.84
			Max. My	14	-32.37	-1.46	-1791.32
			Max. Vy	8	28.68	-1803.09	-1.84
			Max. Vx	14	28.15	-1.46	-1791.32
			Max. Torque	19			1.72
L24	82.917 - 82.667	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-76.91	-0.52	-3.25
			Max. Mx	8	-32.42	-1810.27	-1.85
			Max. My	14	-32.49	-1.46	-1798.36
			Max. Vy	8	28.72	-1810.27	-1.85
			Max. Vx	14	28.17	-1.46	-1798.36
			Max. Torque	19			1.72
L25	82.667 - 82.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-77.03	-0.53	-3.26
			Max. Mx	8	-32.50	-1815.06	-1.85
			Max. My	14	-32.56	-1.47	-1803.06
			Max. Vy	8	28.75	-1815.06	-1.85
			Max. Vx	14	28.18	-1.47	-1803.06
			Max. Torque	19			1.72
L26	82.5 - 82.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-77.19	-0.53	-3.26
			Max. Mx	8	-32.59	-1822.26	-1.86
			Max. My	14	-32.66	-1.48	-1810.11
			Max. Vy	8	28.79	-1822.26	-1.86
			Max. Vx	14	28.20	-1.48	-1810.11
			Max. Torque	19			1.72
L27	82.25 - 77.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-80.26	-0.58	-3.37
			Max. Mx	8	-34.56	-1967.44	-2.03
			Max. My	14	-34.63	-1.64	-1952.10
			Max. Vy	8	29.29	-1967.44	-2.03
			Max. Vx	14	28.60	-1.64	-1952.10
			Max. Torque	19			1.72
L28	77.25 - 73.417	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-82.69	-0.58	-3.43
			Max. Mx	8	-36.09	-2080.35	-2.16
			Max. My	14	-36.16	-1.76	-2062.22
			Max. Vy	8	29.65	-2080.35	-2.16

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	14	28.88	-1.76	-2062.22
			Max. Torque	19			1.71
L29	73.417 - 73.167	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-82.87	-0.58	-3.44
			Max. Mx	8	-36.22	-2087.76	-2.17
			Max. My	14	-36.30	-1.77	-2069.44
			Max. Vy	8	29.66	-2087.76	-2.17
			Max. Vx	14	28.89	-1.77	-2069.44
			Max. Torque	19			1.71
L30	73.167 - 68.167	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-86.52	-0.55	-3.51
			Max. Mx	8	-38.55	-2237.40	-2.33
			Max. My	14	-38.63	-1.94	-2214.96
			Max. Vy	8	30.20	-2237.40	-2.33
			Max. Vx	14	29.32	-1.94	-2214.96
			Max. Torque	19			1.71
L31	68.167 - 64.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-89.41	-0.54	-3.60
			Max. Mx	8	-40.41	-2356.44	-2.47
			Max. My	14	-40.48	-2.07	-2330.43
			Max. Vy	8	30.60	-2356.44	-2.47
			Max. Vx	14	29.65	-2.07	-2330.43
			Max. Torque	19			1.71
L32	64.25 - 64	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-89.57	-0.54	-3.61
			Max. Mx	8	-40.52	-2364.09	-2.48
			Max. My	14	-40.60	-2.07	-2337.84
			Max. Vy	8	30.61	-2364.09	-2.48
			Max. Vx	14	29.65	-2.07	-2337.84
			Max. Torque	19			1.71
L33	64 - 59	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-92.74	-0.51	-3.67
			Max. Mx	8	-42.56	-2518.11	-2.65
			Max. My	14	-42.63	-2.24	-2487.00
			Max. Vy	8	31.01	-2518.11	-2.65
			Max. Vx	14	30.02	-2.24	-2487.00
			Max. Torque	19			1.71
L34	59 - 54	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-95.90	-0.51	-3.75
			Max. Mx	8	-44.63	-2673.99	-2.82
			Max. My	14	-44.70	-2.40	-2637.85
			Max. Vy	8	31.36	-2673.99	-2.82
			Max. Vx	14	30.35	-2.40	-2637.85
			Max. Torque	19			1.71
L35	54 - 53.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-96.23	-0.52	-3.76
			Max. Mx	8	-44.85	-2689.67	-2.84
			Max. My	14	-44.91	-2.42	-2653.03
			Max. Vy	8	31.39	-2689.67	-2.84
			Max. Vx	14	30.37	-2.42	-2653.03
			Max. Torque	19			1.71
L36	53.5 - 53.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-96.40	-0.53	-3.77
			Max. Mx	8	-44.97	-2697.52	-2.84
			Max. My	14	-45.03	-2.43	-2660.62
			Max. Vy	8	31.41	-2697.52	-2.84
			Max. Vx	14	30.38	-2.43	-2660.62
			Max. Torque	19			1.71
L37	53.25 - 43.6633	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-99.43	-0.55	-3.85
			Max. Mx	8	-46.93	-2831.63	-2.99
			Max. My	14	-47.00	-2.57	-2790.28
			Max. Vy	8	31.76	-2831.63	-2.99
			Max. Vx	14	30.69	-2.57	-2790.28
			Max. Torque	19			1.71

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L38	43.6633 - 42.6633	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-106.44	-0.59	-3.96
			Max. Mx	8	-51.87	-3035.13	-3.21
			Max. My	14	-51.93	-2.78	-2986.76
			Max. Vy	8	32.41	-3035.13	-3.21
			Max. Vx	14	31.28	-2.78	-2986.76
			Max. Torque	19			1.71
L39	42.6633 - 41.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-107.07	-0.59	-3.97
			Max. Mx	8	-52.31	-3064.75	-3.24
			Max. My	14	-52.37	-2.81	-3015.34
			Max. Vy	8	32.46	-3064.75	-3.24
			Max. Vx	14	31.33	-2.81	-3015.34
			Max. Torque	19			1.71
L40	41.75 - 41.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-107.25	-0.59	-3.98
			Max. Mx	8	-52.44	-3072.86	-3.25
			Max. My	14	-52.50	-2.82	-3023.17
			Max. Vy	8	32.46	-3072.86	-3.25
			Max. Vx	14	31.32	-2.82	-3023.17
			Max. Torque	19			1.71
L41	41.5 - 36.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-110.83	-0.57	-4.02
			Max. Mx	8	-54.94	-3235.86	-3.42
			Max. My	14	-54.99	-2.99	-3180.48
			Max. Vy	8	32.75	-3235.86	-3.42
			Max. Vx	14	31.61	-2.99	-3180.48
			Max. Torque	19			1.71
L42	36.5 - 32.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-113.61	-0.62	-4.09
			Max. Mx	8	-56.83	-3359.01	-3.55
			Max. My	14	-56.87	-3.11	-3299.32
			Max. Vy	8	32.97	-3359.01	-3.55
			Max. Vx	14	31.81	-3.11	-3299.32
			Max. Torque	19			1.71
L43	32.75 - 32.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-113.81	-0.62	-4.10
			Max. Mx	8	-56.99	-3367.25	-3.56
			Max. My	14	-57.03	-3.12	-3307.27
			Max. Vy	8	32.96	-3367.25	-3.56
			Max. Vx	14	31.79	-3.12	-3307.27
			Max. Torque	19			1.71
L44	32.5 - 29.83	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-116.03	-0.67	-4.17
			Max. Mx	8	-58.49	-3455.52	-3.65
			Max. My	14	-58.53	-3.21	-3392.40
			Max. Vy	8	33.18	-3455.52	-3.65
			Max. Vx	14	31.98	-3.21	-3392.40
			Max. Torque	19			1.71
L45	29.83 - 29.58	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-116.24	-0.67	-4.18
			Max. Mx	8	-58.63	-3463.81	-3.66
			Max. My	14	-58.67	-3.22	-3400.39
			Max. Vy	8	33.18	-3463.81	-3.66
			Max. Vx	14	31.97	-3.22	-3400.39
			Max. Torque	19			1.71
L46	29.58 - 28.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-117.32	-0.70	-4.23
			Max. Mx	8	-59.31	-3508.01	-3.70
			Max. My	14	-59.36	-3.26	-3442.96
			Max. Vy	8	33.30	-3508.01	-3.70
			Max. Vx	14	32.07	-3.26	-3442.96
			Max. Torque	19			1.71
L47	28.25 - 28	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-117.54	-0.70	-4.24

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Mx	8	-59.47	-3516.33	-3.71
			Max. My	14	-59.51	-3.27	-3450.98
			Max. Vy	8	33.30	-3516.33	-3.71
			Max. Vx	14	32.06	-3.27	-3450.98
			Max. Torque	19			1.71
L48	28 - 23	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-121.77	-0.80	-4.47
			Max. Mx	8	-62.36	-3683.79	-3.88
			Max. My	14	-62.40	-3.43	-3611.96
			Max. Vy	8	33.69	-3683.79	-3.88
			Max. Vx	14	32.34	-3.43	-3611.96
			Max. Torque	19			1.71
L49	23 - 19.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-124.89	-0.83	-4.62
			Max. Mx	8	-64.55	-3810.57	-4.01
			Max. My	14	-64.58	-3.56	-3733.54
			Max. Vy	8	33.95	-3810.57	-4.01
			Max. Vx	14	32.53	-3.56	-3733.54
			Max. Torque	19			1.71
L50	19.25 - 19	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-125.08	-0.84	-4.63
			Max. Mx	8	-64.69	-3819.05	-4.02
			Max. My	14	-64.72	-3.57	-3741.66
			Max. Vy	8	33.94	-3819.05	-4.02
			Max. Vx	14	32.52	-3.57	-3741.66
			Max. Torque	19			1.71
L51	19 - 14	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-128.72	-0.89	-4.79
			Max. Mx	8	-67.27	-3989.31	-4.19
			Max. My	14	-67.29	-3.73	-3904.70
			Max. Vy	8	34.17	-3989.31	-4.19
			Max. Vx	14	32.71	-3.73	-3904.70
			Max. Torque	19			1.71
L52	14 - 9	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-132.29	-0.94	-4.94
			Max. Mx	8	-69.88	-4160.52	-4.36
			Max. My	14	-69.90	-3.90	-4068.55
			Max. Vy	8	34.35	-4160.52	-4.36
			Max. Vx	14	32.86	-3.90	-4068.55
			Max. Torque	19			1.71
L53	9 - 4	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-135.62	-1.13	-5.14
			Max. Mx	8	-72.41	-4332.61	-4.55
			Max. My	14	-72.42	-4.10	-4233.17
			Max. Vy	8	34.51	-4332.61	-4.55
			Max. Vx	14	33.01	-4.10	-4233.17
			Max. Torque	19			1.71
L54	4 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-138.18	-1.31	-5.30
			Max. Mx	8	-74.42	-4470.85	-4.71
			Max. My	14	-74.43	-4.27	-4365.36
			Max. Vy	8	34.63	-4470.85	-4.71
			Max. Vx	14	33.11	-4.27	-4365.36
			Max. Torque	19			1.71

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	33	138.18	-0.00	-10.84
	Max. H_x	20	74.44	34.60	0.02
	Max. H_z	3	55.83	0.02	33.08
	Max. M_x	2	4362.33	0.02	33.08
	Max. M_z	8	4470.85	-34.60	-0.02

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
	Max. Torsion	19	1.71	28.68	-16.52
	Min. Vert	11	55.83	-28.70	-16.56
	Min. H_x	8	74.44	-34.60	-0.02
	Min. H_z	14	74.44	-0.02	-33.08
	Min. M_x	14	-4365.36	-0.02	-33.08
	Min. M_z	20	-4468.72	34.60	0.02
	Min. Torsion	7	-1.71	-28.68	16.52

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	62.03	0.00	0.00	1.19	-0.85	-0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	74.44	-0.02	-33.08	-4362.33	2.18	0.83
0.9 Dead+1.0 Wind 0 deg - No Ice	55.83	-0.02	-33.08	-4284.42	2.40	0.83
1.2 Dead+1.0 Wind 30 deg - No Ice	74.44	17.04	-29.49	-3841.36	-2222.38	1.46
0.9 Dead+1.0 Wind 30 deg - No Ice	55.83	17.04	-29.49	-3773.26	-2182.49	1.47
1.2 Dead+1.0 Wind 60 deg - No Ice	74.44	28.68	-16.52	-2177.62	-3786.43	1.70
0.9 Dead+1.0 Wind 60 deg - No Ice	55.83	28.68	-16.52	-2138.91	-3718.19	1.71
1.2 Dead+1.0 Wind 90 deg - No Ice	74.44	34.60	0.02	4.71	-4470.85	1.49
0.9 Dead+1.0 Wind 90 deg - No Ice	55.83	34.60	0.02	4.26	-4391.09	1.50
1.2 Dead+1.0 Wind 120 deg - No Ice	74.44	28.70	16.56	2186.17	-3789.66	0.87
0.9 Dead+1.0 Wind 120 deg - No Ice	55.83	28.70	16.56	2146.58	-3721.36	0.88
1.2 Dead+1.0 Wind 150 deg - No Ice	74.44	17.34	29.98	3873.29	-2242.83	0.03
0.9 Dead+1.0 Wind 150 deg - No Ice	55.83	17.34	29.98	3804.12	-2202.71	0.03
1.2 Dead+1.0 Wind 180 deg - No Ice	74.44	0.02	33.08	4365.36	-4.27	-0.83
0.9 Dead+1.0 Wind 180 deg - No Ice	55.83	0.02	33.08	4286.65	-3.94	-0.83
1.2 Dead+1.0 Wind 210 deg - No Ice	74.44	-17.04	29.49	3844.36	2220.31	-1.46
0.9 Dead+1.0 Wind 210 deg - No Ice	55.83	-17.04	29.49	3775.47	2180.96	-1.46
1.2 Dead+1.0 Wind 240 deg - No Ice	74.44	-28.68	16.52	2180.59	3784.34	-1.70
0.9 Dead+1.0 Wind 240 deg - No Ice	55.83	-28.68	16.52	2141.09	3716.65	-1.71
1.2 Dead+1.0 Wind 270 deg - No Ice	74.44	-34.60	-0.02	-1.74	4468.72	-1.49
0.9 Dead+1.0 Wind 270 deg - No Ice	55.83	-34.60	-0.02	-2.08	4389.52	-1.50
1.2 Dead+1.0 Wind 300 deg - No Ice	74.44	-28.70	-16.56	-2183.18	3787.51	-0.87
0.9 Dead+1.0 Wind 300 deg - No Ice	55.83	-28.70	-16.56	-2144.37	3719.77	-0.88
1.2 Dead+1.0 Wind 330 deg - No Ice	74.44	-17.34	-29.98	-3870.26	2240.70	-0.02
0.9 Dead+1.0 Wind 330 deg - No Ice	55.83	-17.34	-29.98	-3801.89	2201.13	-0.03
1.2 Dead+1.0 Ice+1.0 Temp	138.18	0.00	0.00	5.30	-1.31	-0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	138.18	-0.00	-10.84	-1605.38	-0.67	0.25

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 30 deg+1.0 Ice+1.0 Temp	138.18	5.40	-9.39	-1389.20	-803.92	0.37
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	138.18	9.37	-5.42	-799.25	-1392.13	0.39
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	138.18	10.86	0.00	6.38	-1611.25	0.31
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	138.18	9.37	5.43	811.82	-1392.82	0.14
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	138.18	5.41	9.39	1401.26	-805.13	-0.06
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	138.18	0.00	10.84	1616.74	-2.07	-0.25
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	138.18	-5.40	9.39	1400.56	801.18	-0.37
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	138.18	-9.37	5.42	810.61	1389.38	-0.39
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	138.18	-10.86	-0.00	4.99	1608.50	-0.31
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	138.18	-9.37	-5.43	-800.45	1390.08	-0.14
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	138.18	-5.41	-9.39	-1389.89	802.38	0.06
Dead+Wind 0 deg - Service	62.03	-0.01	-7.80	-1017.88	-0.13	0.21
Dead+Wind 30 deg - Service	62.03	4.01	-6.95	-896.28	-519.70	0.36
Dead+Wind 60 deg - Service	62.03	6.76	-3.89	-507.66	-884.95	0.42
Dead+Wind 90 deg - Service	62.03	8.15	0.01	2.02	-1044.89	0.37
Dead+Wind 120 deg - Service	62.03	6.76	3.90	511.49	-885.70	0.21
Dead+Wind 150 deg - Service	62.03	4.09	7.06	905.60	-524.49	0.00
Dead+Wind 180 deg - Service	62.03	0.01	7.80	1020.41	-1.64	-0.21
Dead+Wind 210 deg - Service	62.03	-4.01	6.95	898.81	517.94	-0.36
Dead+Wind 240 deg - Service	62.03	-6.76	3.89	510.19	883.18	-0.42
Dead+Wind 270 deg - Service	62.03	-8.15	-0.01	0.51	1043.12	-0.37
Dead+Wind 300 deg - Service	62.03	-6.76	-3.90	-508.96	883.93	-0.21
Dead+Wind 330 deg - Service	62.03	-4.09	-7.06	-903.07	522.72	-0.00

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	-62.03	0.00	0.00	62.03	0.00	0.000%
2	-0.02	-74.44	-33.08	0.02	74.44	33.08	0.000%
3	-0.02	-55.83	-33.08	0.02	55.83	33.08	0.000%
4	17.04	-74.44	-29.49	-17.04	74.44	29.49	0.000%
5	17.04	-55.83	-29.49	-17.04	55.83	29.49	0.000%
6	28.68	-74.44	-16.52	-28.68	74.44	16.52	0.000%
7	28.68	-55.83	-16.52	-28.68	55.83	16.52	0.000%
8	34.60	-74.44	0.02	-34.60	74.44	-0.02	0.000%
9	34.60	-55.83	0.02	-34.60	55.83	-0.02	0.000%
10	28.70	-74.44	16.56	-28.70	74.44	-16.56	0.000%
11	28.70	-55.83	16.56	-28.70	55.83	-16.56	0.000%
12	17.34	-74.44	29.98	-17.34	74.44	-29.98	0.000%
13	17.34	-55.83	29.98	-17.34	55.83	-29.98	0.000%
14	0.02	-74.44	33.08	-0.02	74.44	-33.08	0.000%
15	0.02	-55.83	33.08	-0.02	55.83	-33.08	0.000%
16	-17.04	-74.44	29.49	17.04	74.44	-29.49	0.000%
17	-17.04	-55.83	29.49	17.04	55.83	-29.49	0.000%
18	-28.68	-74.44	16.52	28.68	74.44	-16.52	0.000%

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
19	-28.68	-55.83	16.52	28.68	55.83	-16.52	0.000%
20	-34.60	-74.44	-0.02	34.60	74.44	0.02	0.000%
21	-34.60	-55.83	-0.02	34.60	55.83	0.02	0.000%
22	-28.70	-74.44	-16.56	28.70	74.44	16.56	0.000%
23	-28.70	-55.83	-16.56	28.70	55.83	16.56	0.000%
24	-17.34	-74.44	-29.98	17.34	74.44	29.98	0.000%
25	-17.34	-55.83	-29.98	17.34	55.83	29.98	0.000%
26	0.00	-138.18	0.00	-0.00	138.18	-0.00	0.000%
27	-0.00	-138.18	-10.84	0.00	138.18	10.84	0.000%
28	5.40	-138.18	-9.39	-5.40	138.18	9.39	0.000%
29	9.37	-138.18	-5.42	-9.37	138.18	5.42	0.000%
30	10.86	-138.18	0.00	-10.86	138.18	-0.00	0.000%
31	9.37	-138.18	5.43	-9.37	138.18	-5.43	0.000%
32	5.41	-138.18	9.39	-5.41	138.18	-9.39	0.000%
33	0.00	-138.18	10.84	-0.00	138.18	-10.84	0.000%
34	-5.40	-138.18	9.39	5.40	138.18	-9.39	0.000%
35	-9.37	-138.18	5.42	9.37	138.18	-5.42	0.000%
36	-10.86	-138.18	-0.00	10.86	138.18	0.00	0.000%
37	-9.37	-138.18	-5.43	9.37	138.18	5.43	0.000%
38	-5.41	-138.18	-9.39	5.41	138.18	9.39	0.000%
39	-0.01	-62.03	-7.80	0.01	62.03	7.80	0.000%
40	4.01	-62.03	-6.95	-4.01	62.03	6.95	0.000%
41	6.76	-62.03	-3.89	-6.76	62.03	3.89	0.000%
42	8.15	-62.03	0.01	-8.15	62.03	-0.01	0.000%
43	6.76	-62.03	3.90	-6.76	62.03	-3.90	0.000%
44	4.09	-62.03	7.06	-4.09	62.03	-7.06	0.000%
45	0.01	-62.03	7.80	-0.01	62.03	-7.80	0.000%
46	-4.01	-62.03	6.95	4.01	62.03	-6.95	0.000%
47	-6.76	-62.03	3.89	6.76	62.03	-3.89	0.000%
48	-8.15	-62.03	-0.01	8.15	62.03	0.01	0.000%
49	-6.76	-62.03	-3.90	6.76	62.03	3.90	0.000%
50	-4.09	-62.03	-7.06	4.09	62.03	7.06	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	6	0.00000001	0.00015426
3	Yes	5	0.00000001	0.00090755
4	Yes	7	0.00000001	0.00077466
5	Yes	7	0.00000001	0.00017367
6	Yes	7	0.00000001	0.00073544
7	Yes	7	0.00000001	0.00016431
8	Yes	6	0.00000001	0.00030606
9	Yes	6	0.00000001	0.00010316
10	Yes	7	0.00000001	0.00075981
11	Yes	7	0.00000001	0.00017071
12	Yes	7	0.00000001	0.00076612
13	Yes	7	0.00000001	0.00017059
14	Yes	6	0.00000001	0.00018942
15	Yes	6	0.00000001	0.00006243
16	Yes	7	0.00000001	0.00074902
17	Yes	7	0.00000001	0.00016666
18	Yes	7	0.00000001	0.00076552
19	Yes	7	0.00000001	0.00017251
20	Yes	6	0.00000001	0.00026780
21	Yes	6	0.00000001	0.00009041
22	Yes	7	0.00000001	0.00074403
23	Yes	7	0.00000001	0.00016645
24	Yes	7	0.00000001	0.00076666
25	Yes	7	0.00000001	0.00017089
26	Yes	5	0.00000001	0.00079395
27	Yes	8	0.00000001	0.00084179
28	Yes	9	0.00000001	0.00033008

29	Yes	9	0.00000001	0.00032592
30	Yes	8	0.00000001	0.00084668
31	Yes	9	0.00000001	0.00033375
32	Yes	9	0.00000001	0.00033322
33	Yes	8	0.00000001	0.00085113
34	Yes	9	0.00000001	0.00032963
35	Yes	9	0.00000001	0.00033333
36	Yes	8	0.00000001	0.00084401
37	Yes	9	0.00000001	0.00032654
38	Yes	9	0.00000001	0.00032755
39	Yes	5	0.00000001	0.00024105
40	Yes	6	0.00000001	0.00016910
41	Yes	6	0.00000001	0.00014986
42	Yes	5	0.00000001	0.00030840
43	Yes	6	0.00000001	0.00016334
44	Yes	6	0.00000001	0.00016416
45	Yes	5	0.00000001	0.00024520
46	Yes	6	0.00000001	0.00015524
47	Yes	6	0.00000001	0.00016685
48	Yes	5	0.00000001	0.00030291
49	Yes	6	0.00000001	0.00015363
50	Yes	6	0.00000001	0.00016300

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	168.333 - 163.333	36.752	44	2.2772	0.0088
L2	163.333 - 158.333	34.373	44	2.2649	0.0077
L3	158.333 - 153.333	32.019	44	2.2298	0.0066
L4	153.333 - 148.333	29.713	44	2.1727	0.0056
L5	148.333 - 143.333	27.479	44	2.0938	0.0047
L6	143.333 - 138.333	25.337	44	1.9948	0.0041
L7	138.333 - 130.503	23.309	44	1.8764	0.0035
L8	134.163 - 129.163	21.719	44	1.7631	0.0029
L9	129.163 - 125.75	19.910	44	1.6814	0.0025
L10	125.75 - 125.5	18.740	44	1.5925	0.0022
L11	125.5 - 120.5	18.656	44	1.5858	0.0022
L12	120.5 - 120.25	17.069	44	1.4454	0.0018
L13	120.25 - 115.25	16.993	44	1.4416	0.0017
L14	115.25 - 113.833	15.526	44	1.3607	0.0015
L15	113.833 - 113.483	15.126	44	1.3374	0.0015
L16	113.483 - 113.25	15.028	44	1.3330	0.0015
L17	113.25 - 108.25	14.963	44	1.3301	0.0015
L18	108.25 - 103.25	13.604	44	1.2650	0.0013
L19	103.25 - 98.25	12.315	44	1.1967	0.0012
L20	98.25 - 93.25	11.099	44	1.1256	0.0011
L21	93.25 - 84.5533	9.959	44	1.0521	0.0009
L22	89.1133 - 83.5533	9.074	44	0.9907	0.0008
L23	83.5533 - 82.917	7.944	44	0.9432	0.0008
L24	82.917 - 82.667	7.819	44	0.9341	0.0008
L25	82.667 - 82.5	7.771	44	0.9316	0.0008
L26	82.5 - 82.25	7.738	44	0.9299	0.0008
L27	82.25 - 77.25	7.689	44	0.9264	0.0008
L28	77.25 - 73.417	6.756	44	0.8562	0.0007
L29	73.417 - 73.167	6.091	44	0.8014	0.0006
L30	73.167 - 68.167	6.049	44	0.7989	0.0006

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L31	68.167 - 64.25	5.240	44	0.7460	0.0005
L32	64.25 - 64	4.645	44	0.7038	0.0005
L33	64 - 59	4.609	44	0.7006	0.0005
L34	59 - 54	3.908	44	0.6369	0.0004
L35	54 - 53.5	3.276	44	0.5716	0.0004
L36	53.5 - 53.25	3.216	44	0.5652	0.0004
L37	53.25 - 43.6633	3.187	44	0.5623	0.0004
L38	49.0033 - 42.6633	2.708	44	0.5138	0.0003
L39	42.6633 - 41.75	2.052	44	0.4681	0.0003
L40	41.75 - 41.5	1.964	44	0.4562	0.0003
L41	41.5 - 36.5	1.940	44	0.4531	0.0003
L42	36.5 - 32.75	1.499	44	0.3901	0.0002
L43	32.75 - 32.5	1.211	44	0.3434	0.0002
L44	32.5 - 29.83	1.193	44	0.3410	0.0002
L45	29.83 - 29.58	1.009	44	0.3158	0.0002
L46	29.58 - 28.25	0.993	44	0.3132	0.0002
L47	28.25 - 28	0.907	44	0.2994	0.0002
L48	28 - 23	0.892	44	0.2970	0.0002
L49	23 - 19.25	0.606	44	0.2483	0.0001
L50	19.25 - 19	0.426	44	0.2118	0.0001
L51	19 - 14	0.415	44	0.2091	0.0001
L52	14 - 9	0.225	44	0.1534	0.0001
L53	9 - 4	0.093	44	0.0986	0.0001
L54	4 - 0	0.018	44	0.0438	0.0000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
168.00	DMP65R-BU6D w/ Mount Pipe	44	36.593	2.2767	0.0089	11828
158.00	APXVSPP18-C-A20 w/ Mount Pipe	44	31.863	2.2266	0.0066	6061
148.00	MX08FRO665-21 w/ Mount Pipe	44	27.333	2.0878	0.0047	3191
138.00	NHH-65B-R2B w/ Mount Pipe	44	23.179	1.8670	0.0034	2314
128.00	AIR 32 B2A/B66AA w/ Mount Pipe	44	19.504	1.6539	0.0025	2398

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	168.333 - 163.333	156.949	8	9.7362	0.0367
L2	163.333 - 158.333	146.820	8	9.6852	0.0315
L3	158.333 - 153.333	136.795	8	9.5366	0.0266
L4	153.333 - 148.333	126.971	8	9.2943	0.0225
L5	148.333 - 143.333	117.446	8	8.9589	0.0190
L6	143.333 - 138.333	108.313	8	8.5370	0.0164
L7	138.333 - 130.503	99.662	8	8.0317	0.0140
L8	134.163 - 129.163	92.875	8	7.5476	0.0116
L9	129.163 - 125.75	85.148	8	7.1984	0.0102

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L10	125.75 - 125.5	80.149	8	6.8185	0.0089
L11	125.5 - 120.5	79.794	8	6.7898	0.0088
L12	120.5 - 120.25	73.009	8	6.1891	0.0071
L13	120.25 - 115.25	72.686	8	6.1725	0.0070
L14	115.25 - 113.833	66.413	8	5.8269	0.0062
L15	113.833 - 113.483	64.702	8	5.7272	0.0059
L16	113.483 - 113.25	64.283	8	5.7085	0.0059
L17	113.25 - 108.25	64.005	8	5.6960	0.0059
L18	108.25 - 103.25	58.196	8	5.4176	0.0053
L19	103.25 - 98.25	52.685	12	5.1256	0.0048
L20	98.25 - 93.25	47.488	12	4.8214	0.0042
L21	93.25 - 84.5533	42.613	12	4.5066	0.0038
L22	89.1133 - 83.5533	38.828	12	4.2437	0.0034
L23	83.5533 - 82.917	33.997	12	4.0401	0.0031
L24	82.917 - 82.667	33.462	12	4.0013	0.0031
L25	82.667 - 82.5	33.253	12	3.9904	0.0031
L26	82.5 - 82.25	33.114	12	3.9830	0.0031
L27	82.25 - 77.25	32.906	12	3.9683	0.0031
L28	77.25 - 73.417	28.914	12	3.6673	0.0027
L29	73.417 - 73.167	26.067	12	3.4328	0.0025
L30	73.167 - 68.167	25.888	12	3.4217	0.0024
L31	68.167 - 64.25	22.426	12	3.1952	0.0022
L32	64.25 - 64	19.882	12	3.0141	0.0020
L33	64 - 59	19.724	12	3.0004	0.0020
L34	59 - 54	16.727	12	2.7275	0.0018
L35	54 - 53.5	14.019	12	2.4479	0.0015
L36	53.5 - 53.25	13.765	12	2.4201	0.0015
L37	53.25 - 43.6633	13.638	12	2.4080	0.0015
L38	49.0033 - 42.6633	11.590	12	2.2001	0.0013
L39	42.6633 - 41.75	8.782	12	2.0042	0.0012
L40	41.75 - 41.5	8.404	12	1.9532	0.0012
L41	41.5 - 36.5	8.302	12	1.9398	0.0012
L42	36.5 - 32.75	6.413	12	1.6699	0.0010
L43	32.75 - 32.5	5.180	12	1.4698	0.0008
L44	32.5 - 29.83	5.104	12	1.4597	0.0008
L45	29.83 - 29.58	4.318	12	1.3518	0.0008
L46	29.58 - 28.25	4.247	12	1.3407	0.0007
L47	28.25 - 28	3.882	12	1.2815	0.0007
L48	28 - 23	3.815	12	1.2711	0.0007
L49	23 - 19.25	2.594	12	1.0626	0.0006
L50	19.25 - 19	1.821	12	0.9064	0.0005
L51	19 - 14	1.773	12	0.8948	0.0005
L52	14 - 9	0.962	12	0.6565	0.0003
L53	9 - 4	0.397	12	0.4219	0.0002
L54	4 - 0	0.078	12	0.1875	0.0001

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
168.00	DMP65R-BU6D w/ Mount Pipe	8	156.273	9.7342	0.0371	2986
158.00	APXVSPP18-C-A20 w/ Mount Pipe	8	136.133	9.5232	0.0275	1509
148.00	MX08FRO665-21 w/ Mount Pipe	8	116.825	8.9332	0.0197	784
138.00	NHH-65B-R2B w/ Mount Pipe	8	99.105	7.9916	0.0143	563
128.00	AIR 32 B2A/B66AA w/ Mount Pipe	8	83.416	7.0809	0.0101	578

Compression Checks

Pole Design Data

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	K	K	
L1	168.333 - 163.333 (1)	TP19.8343x19x0.1875	5.00	0.00	0.0	11.6923	-3.99	684.00	0.006
L2	163.333 - 158.333 (2)	TP20.6686x19.8343x0.1875	5.00	0.00	0.0	12.1888	-4.26	713.05	0.006
L3	158.333 - 153.333 (3)	TP21.503x20.6686x0.1875	5.00	0.00	0.0	12.6854	-6.72	742.09	0.009
L4	153.333 - 148.333 (4)	TP22.3373x21.503x0.1875	5.00	0.00	0.0	13.1819	-7.08	771.14	0.009
L5	148.333 - 143.333 (5)	TP23.1716x22.3373x0.1875	5.00	0.00	0.0	13.6784	-10.23	800.19	0.013
L6	143.333 - 138.333 (6)	TP24.0059x23.1716x0.1875	5.00	0.00	0.0	14.1750	-10.71	829.24	0.013
L7	138.333 - 130.503 (7)	TP25.3125x24.0059x0.1875	7.83	0.00	0.0	14.5891	-13.96	853.46	0.016
L8	130.503 - 129.163 (8)	TP25.1498x24.3268x0.25	5.00	0.00	0.0	19.7580	-14.79	1155.84	0.013
L9	129.163 - 125.75 (9)	TP25.7117x25.1498x0.25	3.41	0.00	0.0	20.2039	-18.18	1181.93	0.015
L10	125.75 - 125.5 (10)	TP25.7529x25.7117x0.25	0.25	0.00	0.0	20.2365	-18.25	1183.84	0.015
L11	125.5 - 120.5 (11)	TP26.5759x25.7529x0.25	5.00	0.00	0.0	20.8896	-19.07	1222.04	0.016
L12	120.5 - 120.25 (12)	TP26.6171x26.5759x0.4813	0.25	0.00	0.0	39.9221	-19.16	2335.45	0.008
L13	120.25 - 115.25 (13)	TP27.4401x26.6171x0.475	5.00	0.00	0.0	40.6540	-20.53	2378.26	0.009
L14	115.25 - 113.833 (14)	TP27.6734x27.4401x0.475	1.42	0.00	0.0	41.0057	-20.92	2398.83	0.009
L15	113.833 - 113.483 (15)	TP27.731x27.6734x0.65	0.35	0.00	0.0	55.8708	-21.05	3268.44	0.006
L16	113.483 - 113.25 (16)	TP27.7694x27.731x0.65	0.23	0.00	0.0	55.9500	-21.12	3273.07	0.006
L17	113.25 - 108.25 (17)	TP28.5924x27.7694x0.6375	5.00	0.00	0.0	56.5647	-22.69	3309.03	0.007
L18	108.25 - 103.25 (18)	TP29.4155x28.5924x0.625	5.00	0.00	0.0	57.1131	-24.30	3341.12	0.007
L19	103.25 - 98.25 (19)	TP30.2386x29.4155x0.6125	5.00	0.00	0.0	57.5953	-25.93	3369.32	0.008
L20	98.25 - 93.25 (20)	TP31.0616x30.2386x0.6	5.00	0.00	0.0	58.0111	-27.57	3393.65	0.008
L21	93.25 - 84.5533 (21)	TP32.4932x31.0616x0.6	8.70	0.00	0.0	59.3079	-28.95	3469.51	0.008
L22	84.5533 - 83.5533 (22)	TP32.1551x31.2426x0.6625	5.56	0.00	0.0	66.2219	-32.06	3873.98	0.008
L23	83.5533 - 82.917 (23)	TP32.2595x32.1551x0.6625	0.64	0.00	0.0	66.4415	-32.31	3886.83	0.008
L24	82.917 - 82.667 (24)	TP32.3006x32.2595x0.95	0.25	0.00	0.0	94.5314	-32.42	5530.09	0.006
L25	82.667 - 82.5 (25)	TP32.328x32.3006x0.95	0.17	0.00	0.0	94.6140	-32.50	5534.92	0.006
L26	82.5 - 82.25 (26)	TP32.369x32.328x0.6875	0.25	0.00	0.0	69.1330	-32.59	4044.28	0.008
L27	82.25 - 77.25 (27)	TP33.1896x32.369x0.675	5.00	0.00	0.0	69.6610	-34.56	4075.17	0.008
L28	77.25 - 73.417 (28)	TP33.8187x33.1896x0.6625	3.83	0.00	0.0	69.7201	-36.09	4078.63	0.009
L29	73.417 - 73.167 (29)	TP33.8598x33.8187x0.9375	0.25	0.00	0.0	97.9643	-36.23	5730.91	0.006
L30	73.167 - 68.167 (30)	TP34.6804x33.8598x0.9125	5.00	0.00	0.0	97.8011	-38.55	5721.37	0.007
L31	68.167 - 64.25 (31)	TP35.3233x34.6804x0.8875	3.92	0.00	0.0	97.0030	-40.41	5674.68	0.007

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L32	64.25 - 64 (32)	TP35.3643x35.3233x0.7375	0.25	0.00	0.0	81.0553	-40.52	4741.74	0.009
L33	64 - 59 (33)	TP36.1849x35.3643x0.7375	5.00	0.00	0.0	82.9763	-42.56	4854.11	0.009
L34	59 - 54 (34)	TP37.0056x36.1849x0.7125	5.00	0.00	0.0	82.0759	-44.63	4801.44	0.009
L35	54 - 53.5 (35)	TP37.0876x37.0056x0.7125	0.50	0.00	0.0	82.2615	-44.85	4812.30	0.009
L36	53.5 - 53.25 (36)	TP37.1287x37.0876x0.825	0.25	0.00	0.0	95.0630	-44.97	5561.18	0.008
L37	53.25 - 43.6633 (37)	TP38.7021x37.1287x0.8125	9.59	0.00	0.0	95.4523	-46.93	5583.96	0.008
L38	43.6633 - 42.6633 (38)	TP38.2421x37.2007x0.725	6.34	0.00	0.0	86.3324	-51.87	5050.45	0.010
L39	42.6633 - 41.75 (39)	TP38.3921x38.2421x0.725	0.91	0.00	0.0	86.6777	-52.30	5070.64	0.010
L40	41.75 - 41.5 (40)	TP38.4332x38.3921x0.7625	0.25	0.00	0.0	91.1696	-52.44	5333.42	0.010
L41	41.5 - 36.5 (41)	TP39.2545x38.4332x0.75	5.00	0.00	0.0	91.6599	-54.93	5362.10	0.010
L42	36.5 - 32.75 (42)	TP39.8705x39.2545x0.75	3.75	0.00	0.0	93.1262	-56.82	5447.88	0.010
L43	32.75 - 32.5 (43)	TP39.9115x39.8705x1	0.25	0.00	0.0	123.5050	-56.98	7225.05	0.008
L44	32.5 - 29.83 (44)	TP40.3501x39.9115x1	2.67	0.00	0.0	124.8970	-58.48	7306.49	0.008
L45	29.83 - 29.58 (45)	TP40.3912x40.3501x0.9	0.25	0.00	0.0	112.8100	-58.63	6599.41	0.009
L46	29.58 - 28.25 (46)	TP40.6096x40.3912x0.8875	1.33	0.00	0.0	111.8940	-59.31	6545.81	0.009
L47	28.25 - 28 (47)	TP40.6507x40.6096x0.95	0.25	0.00	0.0	119.7090	-59.47	7003.01	0.008
L48	28 - 23 (48)	TP41.472x40.6507x0.95	5.00	0.00	0.0	122.1860	-62.36	7147.88	0.009
L49	23 - 19.25 (49)	TP42.088x41.472x0.9375	3.75	0.00	0.0	122.4480	-64.54	7163.23	0.009
L50	19.25 - 19 (50)	TP42.129x42.088x0.825	0.25	0.00	0.0	108.1570	-64.68	6327.17	0.010
L51	19 - 14 (51)	TP42.9503x42.129x0.8	5.00	0.00	0.0	107.0280	-67.27	6261.15	0.011
L52	14 - 9 (52)	TP43.7717x42.9503x0.8	5.00	0.00	0.0	109.1140	-69.88	6383.15	0.011
L53	9 - 4 (53)	TP44.593x43.7717x0.7875	5.00	0.00	0.0	109.4930	-72.41	6405.33	0.011
L54	4 - 0 (54)	TP45.25x44.593x0.775	4.00	0.00	0.0	109.4020	-74.42	6400.01	0.012

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	168.333 - 163.333 (1)	TP19.8343x19x0.1875	41.39	341.82	0.121	0.00	341.82	0.000
L2	163.333 - 158.333 (2)	TP20.6686x19.8343x0.1875	86.56	367.37	0.236	0.00	367.37	0.000
L3	158.333 - 153.333 (3)	TP21.503x20.6686x0.1875	149.63	393.44	0.380	0.00	393.44	0.000
L4	153.333 - 148.333 (4)	TP22.3373x21.503x0.1875	215.58	420.01	0.513	0.00	420.01	0.000
L5	148.333 - 143.333 (5)	TP23.1716x22.3373x0.1875	299.55	447.03	0.670	0.00	447.03	0.000
L6	143.333 - 138.333 (6)	TP24.0059x23.1716x0.1875	386.29	474.45	0.814	0.00	474.45	0.000
L7	138.333 -	TP25.3125x24.0059x0.18	477.90	497.60	0.960	0.00	497.60	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 $\frac{M_{uy}}{\phi M_{ny}}$
	130.503 (7)	75						
L8	130.503 - 129.163 (8)	TP25.1498x24.3268x0.25	584.98	741.45	0.789	0.00	741.45	0.000
L9	129.163 - 125.75 (9)	TP25.7117x25.1498x0.25	669.14	771.04	0.868	0.00	771.04	0.000
L10	125.75 - 125.5 (10)	TP25.7529x25.7117x0.25	675.32	773.22	0.873	0.00	773.22	0.000
L11	125.5 - 120.5 (11)	TP26.5759x25.7529x0.25	799.55	817.26	0.978	0.00	817.26	0.000
L12	120.5 - 120.25 (12)	TP26.6171x26.5759x0.48 13	805.80	1577.53	0.511	0.00	1577.53	0.000
L13	120.25 - 115.25 (13)	TP27.4401x26.6171x0.47 5	931.79	1658.72	0.562	0.00	1658.72	0.000
L14	115.25 - 113.833 (14)	TP27.6734x27.4401x0.47 5	967.88	1687.80	0.573	0.00	1687.80	0.000
L15	113.833 - 113.483 (15)	TP27.731x27.6734x0.65	976.82	2275.10	0.429	0.00	2275.10	0.000
L16	113.483 - 113.25 (16)	TP27.7694x27.731x0.65	982.77	2281.63	0.431	0.00	2281.63	0.000
L17	113.25 - 108.25 (17)	TP28.5924x27.7694x0.63 75	1111.95	2380.47	0.467	0.00	2380.47	0.000
L18	108.25 - 103.25 (18)	TP29.4155x28.5924x0.62 5	1243.54	2478.05	0.502	0.00	2478.05	0.000
L19	103.25 - 98.25 (19)	TP30.2386x29.4155x0.61 25	1377.47	2574.10	0.535	0.00	2574.10	0.000
L20	98.25 - 93.25 (20)	TP31.0616x30.2386x0.6	1513.78	2668.37	0.567	0.00	2668.37	0.000
L21	93.25 - 84.5533 (21)	TP32.4932x31.0616x0.6	1628.48	2790.18	0.584	0.00	2790.18	0.000
L22	84.5533 - 83.5533 (22)	TP32.1551x31.2426x0.66 25	1785.69	3145.00	0.568	0.00	3145.00	0.000
L23	83.5533 - 82.917 (23)	TP32.2595x32.1551x0.66 25	1803.92	3166.11	0.570	0.00	3166.11	0.000
L24	82.917 - 82.667 (24)	TP32.3006x32.2595x0.95	1811.09	4429.03	0.409	0.00	4429.03	0.000
L25	82.667 - 82.5 (25)	TP32.328x32.3006x0.95	1815.88	4436.89	0.409	0.00	4436.89	0.000
L26	82.5 - 82.25 (26)	TP32.369x32.328x0.6875	1823.07	3300.81	0.552	0.00	3300.81	0.000
L27	82.25 - 77.25 (27)	TP33.1896x32.369x0.675	1968.01	3416.63	0.576	0.00	3416.63	0.000
L28	77.25 - 73.417 (28)	TP33.8187x33.1896x0.66 25	2080.69	3489.66	0.596	0.00	3489.66	0.000
L29	73.417 - 73.167 (29)	TP33.8598x33.8187x0.93 75	2088.09	4828.54	0.432	0.00	4828.54	0.000
L30	73.167 - 68.167 (30)	TP34.6804x33.8598x0.91 25	2237.40	4951.31	0.452	0.00	4951.31	0.000
L31	68.167 - 64.25 (31)	TP35.3233x34.6804x0.88 75	2356.44	5014.13	0.470	0.00	5014.13	0.000
L32	64.25 - 64 (32)	TP35.3643x35.3233x0.73 75	2364.09	4231.49	0.559	0.00	4231.49	0.000
L33	64 - 59 (33)	TP36.1849x35.3643x0.73 75	2518.12	4436.57	0.568	0.00	4436.57	0.000
L34	59 - 54 (34)	TP37.0056x36.1849x0.71 25	2673.99	4498.30	0.594	0.00	4498.30	0.000
L35	54 - 53.5 (35)	TP37.0876x37.0056x0.71 25	2689.68	4518.86	0.595	0.00	4518.86	0.000
L36	53.5 - 53.25 (36)	TP37.1287x37.0876x0.82 5	2697.53	5195.83	0.519	0.00	5195.83	0.000
L37	53.25 - 43.6633 (37)	TP38.7021x37.1287x0.81 25	2831.63	5323.10	0.532	0.00	5323.10	0.000
L38	43.6633 - 42.6633 (38)	TP38.2421x37.2007x0.72 5	3035.22	4892.63	0.620	0.00	4892.63	0.000
L39	42.6633 - 41.75 (39)	TP38.3921x38.2421x0.72 5	3064.93	4932.21	0.621	0.00	4932.21	0.000
L40	41.75 - 41.5 (40)	TP38.4332x38.3921x0.76 25	3073.07	5183.26	0.593	0.00	5183.26	0.000
L41	41.5 - 36.5 (41)	TP39.2545x38.4332x0.75	3236.66	5330.46	0.607	0.00	5330.46	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 $\frac{M_{uy}}{\phi M_{ny}}$
L42	36.5 - 32.75 (42)	TP39.8705x39.2545x0.75	3360.37	5504.02	0.611	0.00	5504.02	0.000
L43	32.75 - 32.5 (43)	TP39.9115x39.8705x1	3368.64	7214.32	0.467	0.00	7214.32	0.000
L44	32.5 - 29.83 (44)	TP40.3501x39.9115x1	3457.37	7379.92	0.468	0.00	7379.92	0.000
L45	29.83 - 29.58 (45)	TP40.3912x40.3501x0.9	3465.70	6706.79	0.517	0.00	6706.79	0.000
L46	29.58 - 28.25 (46)	TP40.6096x40.3912x0.8875	3510.13	6694.16	0.524	0.00	6694.16	0.000
L47	28.25 - 28 (47)	TP40.6507x40.6096x0.95	3518.49	7146.76	0.492	0.00	7146.76	0.000
L48	28 - 23 (48)	TP41.472x40.6507x0.95	3686.72	7449.03	0.495	0.00	7449.03	0.000
L49	23 - 19.25 (49)	TP42.088x41.472x0.9375	3813.95	7585.72	0.503	0.00	7585.72	0.000
L50	19.25 - 19 (50)	TP42.129x42.088x0.825	3822.47	6743.87	0.567	0.00	6743.87	0.000
L51	19 - 14 (51)	TP42.9503x42.129x0.8	3993.21	6816.88	0.586	0.00	6816.88	0.000
L52	14 - 9 (52)	TP43.7717x42.9503x0.8	4164.88	7087.65	0.588	0.00	7087.65	0.000
L53	9 - 4 (53)	TP44.593x43.7717x0.7875	4337.33	7254.84	0.598	0.00	7254.84	0.000
L54	4 - 0 (54)	TP45.25x44.593x0.775	4475.78	7363.60	0.608	0.00	7363.60	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	168.333 - 163.333 (1)	TP19.8343x19x0.1875	8.86	205.20	0.043	1.64	353.06	0.005
L2	163.333 - 158.333 (2)	TP20.6686x19.8343x0.1875	9.21	213.91	0.043	1.64	383.68	0.004
L3	158.333 - 153.333 (3)	TP21.503x20.6686x0.1875	13.02	222.63	0.058	1.63	415.58	0.004
L4	153.333 - 148.333 (4)	TP22.3373x21.503x0.1875	13.37	231.34	0.058	1.63	448.75	0.004
L5	148.333 - 143.333 (5)	TP23.1716x22.3373x0.1875	17.20	240.06	0.072	1.38	483.19	0.003
L6	143.333 - 138.333 (6)	TP24.0059x23.1716x0.1875	17.51	248.77	0.070	1.38	518.91	0.003
L7	138.333 - 130.503 (7)	TP25.3125x24.0059x0.1875	21.23	256.04	0.083	1.62	549.67	0.003
L8	130.503 - 129.163 (8)	TP25.1498x24.3268x0.25	21.62	346.75	0.062	1.61	756.13	0.002
L9	129.163 - 125.75 (9)	TP25.7117x25.1498x0.25	24.73	354.58	0.070	1.50	790.64	0.002
L10	125.75 - 125.5 (10)	TP25.7529x25.7117x0.25	24.73	355.15	0.070	1.50	793.20	0.002
L11	125.5 - 120.5 (11)	TP26.5759x25.7529x0.25	25.00	366.61	0.068	1.49	845.23	0.002
L12	120.5 - 120.25 (12)	TP26.6171x26.5759x0.4813	25.00	700.63	0.036	1.49	1603.64	0.001
L13	120.25 - 115.25 (13)	TP27.4401x26.6171x0.475	25.42	713.48	0.036	1.49	1684.86	0.001
L14	115.25 - 113.833 (14)	TP27.6734x27.4401x0.475	25.56	719.65	0.036	1.49	1714.13	0.001
L15	113.833 - 113.483 (15)	TP27.731x27.6734x0.65	25.58	980.53	0.026	1.49	2325.45	0.001
L16	113.483 - 113.25 (16)	TP27.7694x27.731x0.65	25.60	981.92	0.026	1.49	2332.04	0.001
L17	113.25 - 108.25 (17)	TP28.5924x27.7694x0.6375	26.10	992.71	0.026	1.49	2430.31	0.001
L18	108.25 - 103.25 (18)	TP29.4155x28.5924x0.625	26.57	1002.34	0.027	1.49	2527.22	0.001
L19	103.25 -	TP30.2386x29.4155x0.61	27.03	1010.80	0.027	1.49	2622.52	0.001

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 $\frac{T_u}{\phi T_n}$
	98.25 (19)	25						
L20	98.25 - 93.25 (20)	TP31.0616x30.2386x0.6	27.56	1018.09	0.027	0.03	2715.95	0.000
L21	93.25 - 84.5533 (21)	TP32.4932x31.0616x0.6	27.94	1040.85	0.027	0.03	2838.73	0.000
L22	84.5533 - 83.5533 (22)	TP32.1551x31.2426x0.6625	28.62	1162.19	0.025	0.03	3205.29	0.000
L23	83.5533 - 82.917 (23)	TP32.2595x32.1551x0.6625	28.68	1166.05	0.025	0.03	3226.58	0.000
L24	82.917 - 82.667 (24)	TP32.3006x32.2595x0.95	28.71	1659.03	0.017	0.03	4554.90	0.000
L25	82.667 - 82.5 (25)	TP32.328x32.3006x0.95	28.73	1660.48	0.017	0.03	4562.87	0.000
L26	82.5 - 82.25 (26)	TP32.369x32.328x0.6875	28.75	1213.28	0.024	0.03	3366.27	0.000
L27	82.25 - 77.25 (27)	TP33.1896x32.369x0.675	29.23	1222.55	0.024	0.03	3481.18	0.000
L28	77.25 - 73.417 (28)	TP33.8187x33.1896x0.6625	29.59	1223.59	0.024	0.03	3552.88	0.000
L29	73.417 - 73.167 (29)	TP33.8598x33.8187x0.9375	29.60	1719.27	0.017	0.03	4956.96	0.000
L30	73.167 - 68.167 (30)	TP34.6804x33.8598x0.9125	30.20	1716.41	0.018	1.49	5075.81	0.000
L31	68.167 - 64.25 (31)	TP35.3233x34.6804x0.8875	30.60	1702.40	0.018	1.49	5133.96	0.000
L32	64.25 - 64 (32)	TP35.3643x35.3233x0.7375	30.61	1422.52	0.022	1.49	4313.71	0.000
L33	64 - 59 (33)	TP36.1849x35.3643x0.7375	31.01	1456.23	0.021	1.49	4520.60	0.000
L34	59 - 54 (34)	TP37.0056x36.1849x0.7125	31.36	1440.43	0.022	1.49	4578.22	0.000
L35	54 - 53.5 (35)	TP37.0876x37.0056x0.7125	31.39	1443.69	0.022	1.49	4598.94	0.000
L36	53.5 - 53.25 (36)	TP37.1287x37.0876x0.825	31.41	1668.36	0.019	1.49	5304.19	0.000
L37	53.25 - 43.6633 (37)	TP38.7021x37.1287x0.8125	31.76	1675.19	0.019	1.49	5430.00	0.000
L38	43.6633 - 42.6633 (38)	TP38.2421x37.2007x0.725	32.50	1515.13	0.021	0.03	4978.06	0.000
L39	42.6633 - 41.75 (39)	TP38.3921x38.2421x0.725	32.56	1521.19	0.021	0.03	5017.95	0.000
L40	41.75 - 41.5 (40)	TP38.4332x38.3921x0.7625	32.56	1600.03	0.020	0.03	5278.50	0.000
L41	41.5 - 36.5 (41)	TP39.2545x38.4332x0.75	32.88	1608.63	0.020	0.03	5424.35	0.000
L42	36.5 - 32.75 (42)	TP39.8705x39.2545x0.75	33.12	1634.37	0.020	0.03	5599.29	0.000
L43	32.75 - 32.5 (43)	TP39.9115x39.8705x1	33.12	2167.52	0.015	0.03	7386.19	0.000
L44	32.5 - 29.83 (44)	TP40.3501x39.9115x1	33.35	2191.95	0.015	0.03	7553.62	0.000
L45	29.83 - 29.58 (45)	TP40.3912x40.3501x0.9	33.34	1979.82	0.017	0.03	6847.09	0.000
L46	29.58 - 28.25 (46)	TP40.6096x40.3912x0.8875	33.47	1963.74	0.017	0.03	6831.21	0.000
L47	28.25 - 28 (47)	TP40.6507x40.6096x0.95	33.46	2100.90	0.016	0.03	7304.38	0.000
L48	28 - 23 (48)	TP41.472x40.6507x0.95	33.83	2144.36	0.016	0.03	7609.73	0.000
L49	23 - 19.25 (49)	TP42.088x41.472x0.9375	34.05	2148.97	0.016	0.03	7744.35	0.000
L50	19.25 - 19 (50)	TP42.129x42.088x0.825	34.04	1898.15	0.018	0.03	6865.99	0.000
L51	19 - 14 (51)	TP42.9503x42.129x0.8	34.26	1878.34	0.018	0.03	6933.56	0.000
L52	14 - 9 (52)	TP43.7717x42.9503x0.8	34.43	1914.94	0.018	0.03	7206.40	0.000
L53	9 - 4 (53)	TP44.593x43.7717x0.7875	34.57	1921.60	0.018	0.03	7371.76	0.000
L54	4 - 0 (54)	TP45.25x44.593x0.775	34.67	1920.00	0.018	0.03	7478.21	0.000

Pole Interaction Design Data

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
L1	168.333 - 163.333 (1)	0.006	0.121	0.000	0.043	0.005	0.129	1.050	4.8.2
L2	163.333 - 158.333 (2)	0.006	0.236	0.000	0.043	0.004	0.244	1.050	4.8.2
L3	158.333 - 153.333 (3)	0.009	0.380	0.000	0.058	0.004	0.393	1.050	4.8.2
L4	153.333 - 148.333 (4)	0.009	0.513	0.000	0.058	0.004	0.526	1.050	4.8.2
L5	148.333 - 143.333 (5)	0.013	0.670	0.000	0.072	0.003	0.688	1.050	4.8.2
L6	143.333 - 138.333 (6)	0.013	0.814	0.000	0.070	0.003	0.832	1.050	4.8.2
L7	138.333 - 130.503 (7)	0.016	0.960	0.000	0.083	0.003	0.984	1.050	4.8.2
L8	130.503 - 129.163 (8)	0.013	0.789	0.000	0.062	0.002	0.806	1.050	4.8.2
L9	129.163 - 125.75 (9)	0.015	0.868	0.000	0.070	0.002	0.888	1.050	4.8.2
L10	125.75 - 125.5 (10)	0.015	0.873	0.000	0.070	0.002	0.894	1.050	4.8.2
L11	125.5 - 120.5 (11)	0.016	0.978	0.000	0.068	0.002	0.999	1.050	4.8.2
L12	120.5 - 120.25 (12)	0.008	0.511	0.000	0.036	0.001	0.520	1.050	4.8.2
L13	120.25 - 115.25 (13)	0.009	0.562	0.000	0.036	0.001	0.572	1.050	4.8.2
L14	115.25 - 113.833 (14)	0.009	0.573	0.000	0.036	0.001	0.583	1.050	4.8.2
L15	113.833 - 113.483 (15)	0.006	0.429	0.000	0.026	0.001	0.437	1.050	4.8.2
L16	113.483 - 113.25 (16)	0.006	0.431	0.000	0.026	0.001	0.438	1.050	4.8.2
L17	113.25 - 108.25 (17)	0.007	0.467	0.000	0.026	0.001	0.475	1.050	4.8.2
L18	108.25 - 103.25 (18)	0.007	0.502	0.000	0.027	0.001	0.510	1.050	4.8.2
L19	103.25 - 98.25 (19)	0.008	0.535	0.000	0.027	0.001	0.544	1.050	4.8.2
L20	98.25 - 93.25 (20)	0.008	0.567	0.000	0.027	0.000	0.576	1.050	4.8.2
L21	93.25 - 84.5533 (21)	0.008	0.584	0.000	0.027	0.000	0.593	1.050	4.8.2
L22	84.5533 - 83.5533 (22)	0.008	0.568	0.000	0.025	0.000	0.577	1.050	4.8.2
L23	83.5533 - 82.917 (23)	0.008	0.570	0.000	0.025	0.000	0.579	1.050	4.8.2
L24	82.917 - 82.667 (24)	0.006	0.409	0.000	0.017	0.000	0.415	1.050	4.8.2
L25	82.667 - 82.5 (25)	0.006	0.409	0.000	0.017	0.000	0.415	1.050	4.8.2
L26	82.5 - 82.25 (26)	0.008	0.552	0.000	0.024	0.000	0.561	1.050	4.8.2
L27	82.25 - 77.25 (27)	0.008	0.576	0.000	0.024	0.000	0.585	1.050	4.8.2
L28	77.25 - 73.417 (28)	0.009	0.596	0.000	0.024	0.000	0.606	1.050	4.8.2
L29	73.417 - 73.167 (29)	0.006	0.432	0.000	0.017	0.000	0.439	1.050	4.8.2
L30	73.167 - 68.167 (30)	0.007	0.452	0.000	0.018	0.000	0.459	1.050	4.8.2
L31	68.167 - 64.25 (31)	0.007	0.470	0.000	0.018	0.000	0.477	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
L32	64.25 - 64 (32)	0.009	0.559	0.000	0.022	0.000	0.568	1.050	4.8.2
L33	64 - 59 (33)	0.009	0.568	0.000	0.021	0.000	0.577	1.050	4.8.2
L34	59 - 54 (34)	0.009	0.594	0.000	0.022	0.000	0.604	1.050	4.8.2
L35	54 - 53.5 (35)	0.009	0.595	0.000	0.022	0.000	0.605	1.050	4.8.2
L36	53.5 - 53.25 (36)	0.008	0.519	0.000	0.019	0.000	0.528	1.050	4.8.2
L37	53.25 - 43.6633 (37)	0.008	0.532	0.000	0.019	0.000	0.541	1.050	4.8.2
L38	43.6633 - 42.6633 (38)	0.010	0.620	0.000	0.021	0.000	0.631	1.050	4.8.2
L39	42.6633 - 41.75 (39)	0.010	0.621	0.000	0.021	0.000	0.632	1.050	4.8.2
L40	41.75 - 41.5 (40)	0.010	0.593	0.000	0.020	0.000	0.603	1.050	4.8.2
L41	41.5 - 36.5 (41)	0.010	0.607	0.000	0.020	0.000	0.618	1.050	4.8.2
L42	36.5 - 32.75 (42)	0.010	0.611	0.000	0.020	0.000	0.621	1.050	4.8.2
L43	32.75 - 32.5 (43)	0.008	0.467	0.000	0.015	0.000	0.475	1.050	4.8.2
L44	32.5 - 29.83 (44)	0.008	0.468	0.000	0.015	0.000	0.477	1.050	4.8.2
L45	29.83 - 29.58 (45)	0.009	0.517	0.000	0.017	0.000	0.526	1.050	4.8.2
L46	29.58 - 28.25 (46)	0.009	0.524	0.000	0.017	0.000	0.534	1.050	4.8.2
L47	28.25 - 28 (47)	0.008	0.492	0.000	0.016	0.000	0.501	1.050	4.8.2
L48	28 - 23 (48)	0.009	0.495	0.000	0.016	0.000	0.504	1.050	4.8.2
L49	23 - 19.25 (49)	0.009	0.503	0.000	0.016	0.000	0.512	1.050	4.8.2
L50	19.25 - 19 (50)	0.010	0.567	0.000	0.018	0.000	0.577	1.050	4.8.2
L51	19 - 14 (51)	0.011	0.586	0.000	0.018	0.000	0.597	1.050	4.8.2
L52	14 - 9 (52)	0.011	0.588	0.000	0.018	0.000	0.599	1.050	4.8.2
L53	9 - 4 (53)	0.011	0.598	0.000	0.018	0.000	0.609	1.050	4.8.2
L54	4 - 0 (54)	0.012	0.608	0.000	0.018	0.000	0.620	1.050	4.8.2

Section Capacity Table

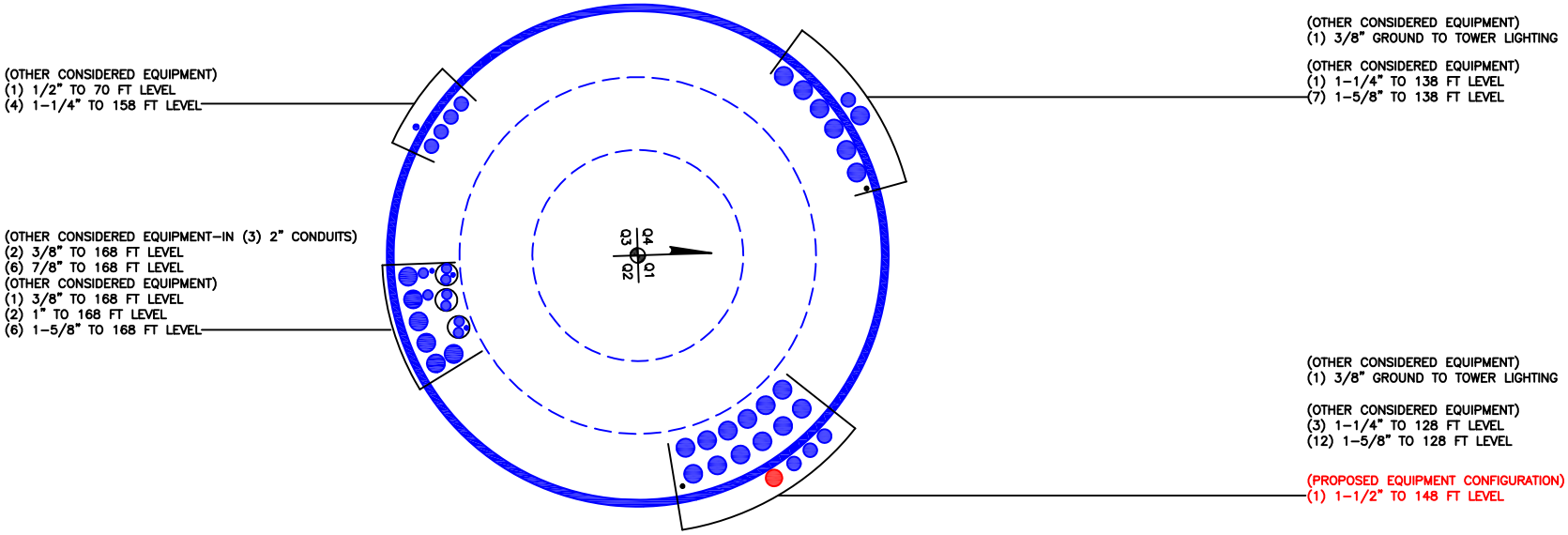
Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	168.333 - 163.333	Pole	TP19.8343x19x0.1875	1	-3.99	718.20	12.3	Pass
L2	163.333 - 158.333	Pole	TP20.6686x19.8343x0.1875	2	-4.26	748.70	23.2	Pass
L3	158.333 - 153.333	Pole	TP21.503x20.6686x0.1875	3	-6.72	779.20	37.5	Pass
L4	153.333 - 148.333	Pole	TP22.3373x21.503x0.1875	4	-7.08	809.70	50.1	Pass
L5	148.333 - 143.333	Pole	TP23.1716x22.3373x0.1875	5	-10.23	840.20	65.6	Pass
L6	143.333 - 138.333	Pole	TP24.0059x23.1716x0.1875	6	-10.71	870.70	79.3	Pass
L7	138.333 - 130.503	Pole	TP25.3125x24.0059x0.1875	7	-13.96	896.13	93.7	Pass
L8	130.503 - 129.163	Pole	TP25.1498x24.3268x0.25	8	-14.79	1213.63	76.8	Pass
L9	129.163 - 125.75	Pole	TP25.7117x25.1498x0.25	9	-18.18	1241.03	84.6	Pass
L10	125.75 - 125.5	Pole	TP25.7529x25.7117x0.25	10	-18.25	1243.03	85.1	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L11	125.5 - 120.5	Pole	TP26.5759x25.7529x0.25	11	-19.07	1283.14	95.1	Pass
L12	120.5 - 120.25	Pole	TP26.6171x26.5759x0.4813	12	-19.16	2452.22	49.6	Pass
L13	120.25 - 115.25	Pole	TP27.4401x26.6171x0.475	13	-20.53	2497.17	54.4	Pass
L14	115.25 - 113.833	Pole	TP27.6734x27.4401x0.475	14	-20.92	2518.77	55.6	Pass
L15	113.833 - 113.483	Pole	TP27.731x27.6734x0.65	15	-21.05	3431.86	41.6	Pass
L16	113.483 - 113.25	Pole	TP27.7694x27.731x0.65	16	-21.12	3436.72	41.7	Pass
L17	113.25 - 108.25	Pole	TP28.5924x27.7694x0.6375	17	-22.69	3474.48	45.2	Pass
L18	108.25 - 103.25	Pole	TP29.4155x28.5924x0.625	18	-24.30	3508.18	48.6	Pass
L19	103.25 - 98.25	Pole	TP30.2386x29.4155x0.6125	19	-25.93	3537.79	51.8	Pass
L20	98.25 - 93.25	Pole	TP31.0616x30.2386x0.6	20	-27.57	3563.33	54.9	Pass
L21	93.25 - 84.5533	Pole	TP32.4932x31.0616x0.6	21	-28.95	3642.99	56.4	Pass
L22	84.5533 - 83.5533	Pole	TP32.1551x31.2426x0.6625	22	-32.06	4067.68	54.9	Pass
L23	83.5533 - 82.917	Pole	TP32.2595x32.1551x0.6625	23	-32.31	4081.17	55.1	Pass
L24	82.917 - 82.667	Pole	TP32.3006x32.2595x0.95	24	-32.42	5806.59	39.5	Pass
L25	82.667 - 82.5	Pole	TP32.328x32.3006x0.95	25	-32.50	5811.67	39.6	Pass
L26	82.5 - 82.25	Pole	TP32.369x32.328x0.6875	26	-32.59	4246.49	53.4	Pass
L27	82.25 - 77.25	Pole	TP33.1896x32.369x0.675	27	-34.56	4278.93	55.7	Pass
L28	77.25 - 73.417	Pole	TP33.8187x33.1896x0.6625	28	-36.09	4282.56	57.7	Pass
L29	73.417 - 73.167	Pole	TP33.8598x33.8187x0.9375	29	-36.23	6017.46	41.8	Pass
L30	73.167 - 68.167	Pole	TP34.6804x33.8598x0.9125	30	-38.55	6007.44	43.7	Pass
L31	68.167 - 64.25	Pole	TP35.3233x34.6804x0.8875	31	-40.41	5958.41	45.5	Pass
L32	64.25 - 64	Pole	TP35.3643x35.3233x0.7375	32	-40.52	4978.83	54.1	Pass
L33	64 - 59	Pole	TP36.1849x35.3643x0.7375	33	-42.56	5096.82	54.9	Pass
L34	59 - 54	Pole	TP37.0056x36.1849x0.7125	34	-44.63	5041.51	57.5	Pass
L35	54 - 53.5	Pole	TP37.0876x37.0056x0.7125	35	-44.85	5052.91	57.6	Pass
L36	53.5 - 53.25	Pole	TP37.1287x37.0876x0.825	36	-44.97	5839.24	50.2	Pass
L37	53.25 - 43.6633	Pole	TP38.7021x37.1287x0.8125	37	-46.93	5863.16	51.5	Pass
L38	43.6633 - 42.6633	Pole	TP38.2421x37.2007x0.725	38	-51.87	5302.97	60.1	Pass
L39	42.6633 - 41.75	Pole	TP38.3921x38.2421x0.725	39	-52.30	5324.17	60.2	Pass
L40	41.75 - 41.5	Pole	TP38.4332x38.3921x0.7625	40	-52.44	5600.09	57.4	Pass
L41	41.5 - 36.5	Pole	TP39.2545x38.4332x0.75	41	-54.93	5630.20	58.8	Pass
L42	36.5 - 32.75	Pole	TP39.8705x39.2545x0.75	42	-56.82	5720.27	59.2	Pass
L43	32.75 - 32.5	Pole	TP39.9115x39.8705x1	43	-56.98	7586.30	45.2	Pass
L44	32.5 - 29.83	Pole	TP40.3501x39.9115x1	44	-58.48	7671.81	45.4	Pass
L45	29.83 - 29.58	Pole	TP40.3912x40.3501x0.9	45	-58.63	6929.38	50.1	Pass
L46	29.58 - 28.25	Pole	TP40.6096x40.3912x0.8875	46	-59.31	6873.10	50.8	Pass
L47	28.25 - 28	Pole	TP40.6507x40.6096x0.95	47	-59.47	7353.16	47.7	Pass
L48	28 - 23	Pole	TP41.472x40.6507x0.95	48	-62.36	7505.27	48.0	Pass
L49	23 - 19.25	Pole	TP42.088x41.472x0.9375	49	-64.54	7521.39	48.8	Pass
L50	19.25 - 19	Pole	TP42.129x42.088x0.825	50	-64.68	6643.53	55.0	Pass
L51	19 - 14	Pole	TP42.9503x42.129x0.8	51	-67.27	6574.21	56.8	Pass
L52	14 - 9	Pole	TP43.7717x42.9503x0.8	52	-69.88	6702.31	57.0	Pass
L53	9 - 4	Pole	TP44.593x43.7717x0.7875	53	-72.41	6725.60	58.0	Pass
L54	4 - 0	Pole	TP45.25x44.593x0.775	54	-74.42	6720.01	59.0	Pass
							Summary	
						Pole (L11)	95.1	Pass
						RATING =	**95.1**	**Pass**

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

APPENDIX B

BASE LEVEL DRAWING


(OTHER CONSIDERED EQUIPMENT)
(1) 1/2" TO 70 FT LEVEL
(4) 1-1/4" TO 158 FT LEVEL
(OTHER CONSIDERED EQUIPMENT-IN (3) 2" CONDUITS)
(2) 3/8" TO 168 FT LEVEL
(6) 7/8" TO 168 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(1) 3/8" TO 168 FT LEVEL
(2) 1" TO 168 FT LEVEL
(6) 1-5/8" TO 168 FT LEVEL
Q4
Q3
Q1
Q2
(OTHER CONSIDERED EQUIPMENT)
(1) 3/8" GROUND TO TOWER LIGHTING
(OTHER CONSIDERED EQUIPMENT)
(1) 1-1/4" TO 138 FT LEVEL
(7) 1-5/8" TO 138 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(1) 3/8" GROUND TO TOWER LIGHTING
(OTHER CONSIDERED EQUIPMENT)
(3) 1-1/4" TO 128 FT LEVEL
(12) 1-5/8" TO 128 FT LEVEL
(PROPOSED EQUIPMENT CONFIGURATION)
(1) 1-1/2" TO 148 FT LEVEL

APPENDIX C

ADDITIONAL CALCULATIONS

CCIpole

per TIA-222- H

Site BU: 842859

Work Order: 1963258

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	168.3333	37.83	3.66	18	19	25.3125	0.1875	Auto	A572-65
2	134.1633	49.61	4.56	18	24.33	32.4932	0.25	Auto	A572-65
3	89.1133	45.45	5.34	18	31.24	38.7021	0.3125	Auto	A572-65
4	49.0033	49.0033	0	18	37.20	45.25	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	87.833	113.833	plate	5"x1.25"	3				E3						E3						E3		
2	73.417	85.917	plate	5"x1.25"	4			E3					E3						E3				E3
3	47.354	73.417	plate	5"x1.25"	4		E3				E3					E3				E3			
4	29.83	45.417	plate	6"x1.25"	4			E3					E3						E3				E3
5	0	28.25	plate	6"x1.25" (Welded)	4		E3				E3					E3				E3			
6	0	41.75	plate	CFP-060100	4	E4						E4			E4						E4		
7	41.75	82.917	plate	CFP-045100	4	E4						E4			E4						E4		
8	19.25	29.83	plate	CCI-SFP-045100	4			E4					E4						E4				E4
9	64.25	73.417	plate	CCI-SFP-045100	4			E4					E4						E4				E4
10	87.9	125.75	plate	CI-SFP-045100 (Modifie	3			E4					E4						E4				
11	28.25	32.75	plate	CCI-SFP-065125	2					x							x						
12	47.5	53.5	plate	CCI-SFP-050125	2					x							x						
13	82.5	88.5	plate	CCI-SFP-050125	2					x							x						
14	113.5	120.5	plate	CCI-SFP-040125	1									x									
15	113.5	120.5	plate	PL 3.125x1.25	1																		x
16																							

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	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	24.000	18.000	4.688	1.1875	A572-65
2	5	1.25	6.25	0.625	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	24.000	18.000	4.688	1.1875	A572-65
3	5	1.25	6.25	0.625	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	24.000	18.000	4.688	1.1875	A572-65
4	6	1.25	7.5	0.625	PC 8.8 - M20 (100)	30	PC 8.8 - M20 (100)	30.000	18.000	5.938	1.1875	A572-65
5	6	1.25	7.5	0.625	Welded	0	PC 8.8 - M20 (100)	30.000	18.000	5.938	1.1875	A572-65
6	6	1	6	0.5	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	24.000	12.000	4.750	1.1875	A572-65
7	4.5	1	4.5	0.5	PC 8.8 - M20 (100)	18	PC 8.8 - M20 (100)	18.000	12.000	3.250	1.1875	A572-65
8	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
9	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
10	4.5	1	4.5	0.5	PC 8.8 - M20 (100)	18	PC 8.8 - M20 (100)	19.000	20.000	3.250	1.1875	A572-65
11	6.5	1.25	8.125	0.625	PC 8.8 - M20 (100)	33	PC 8.8 - M20 (100)	33.000	19.000	6.563	1.1875	A572-65
12	5	1.25	6.25	0.625	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	24.000	23.000	4.688	1.1875	A572-65
13	5	1.25	6.25	0.625	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	24.000	23.000	4.688	1.1875	A572-65
14	4	1.25	5	0.625	PC 8.8 - M20 (100)	18	PC 8.8 - M20 (100)	18.000	27.000	3.438	1.1875	A572-65
15	3.125	1.25	3.90625	0.625	PC 8.8 - M20 (100)	18	PC 8.8 - M20 (100)	18.000	15.000	2.344	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)
5"x1.25"	Top	8	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	8	N	3	3	-	-	-	-	-	-	-	-	-
6"x1.25"	Top	10	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	10	N	3	3	-	-	-	-	-	-	-	-	-
6"x1.25" (Welded)	Top	10	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	0	-	0	0	70	None	-	-	-	-	36	0.375	-
CCI-SFP-045100 (Modified)	Top	7	N	3	1	-	-	-	-	-	-	-	-	-
	Bottom	6	N	3	3	-	-	-	-	-	-	-	-	-
CFP-045100	Top	6	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	6	N	3	3	-	-	-	-	-	-	-	-	-
CFP-060100	Top	8	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	8	N	3	3	-	-	-	-	-	-	-	-	-
PL 3.125x1.25	Top	6	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	6	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	168.333 - 163.333	5		18	19.000	19.834	0.1875	A572-65	1.000
2	163.333 - 158.333	5		18	19.834	20.669	0.1875	A572-65	1.000
3	158.333 - 153.333	5		18	20.669	21.503	0.1875	A572-65	1.000
4	153.333 - 148.333	5		18	21.503	22.337	0.1875	A572-65	1.000
5	148.333 - 143.333	5		18	22.337	23.172	0.1875	A572-65	1.000
6	143.333 - 138.333	5		18	23.172	24.006	0.1875	A572-65	1.000
7	138.333 - 134.163	7.83	3.66	18	24.006	25.313	0.1875	A572-65	1.000
8	134.163 - 129.163	5		18	24.327	25.150	0.25	A572-65	1.000
9	129.163 - 125.75	3.4133		18	25.150	25.712	0.25	A572-65	1.000
10	125.75 - 125.5	0.25		18	25.712	25.753	0.25	A572-65	1.000
11	125.5 - 120.5	5		18	25.753	26.576	0.25	A572-65	1.000
12	120.5 - 120.25	0.25		18	26.576	26.617	0.48125	A572-65	1.085
13	120.25 - 115.25	5		18	26.617	27.440	0.475	A572-65	1.082
14	115.25 - 113.833	1.417		18	27.440	27.673	0.475	A572-65	1.077
15	113.833 - 113.483	0.35		18	27.673	27.731	0.65	A572-65	0.968
16	113.483 - 113.25	0.233		18	27.731	27.769	0.65	A572-65	0.967
17	113.25 - 108.25	5		18	27.769	28.592	0.6375	A572-65	0.968
18	108.25 - 103.25	5		18	28.592	29.415	0.625	A572-65	0.970
19	103.25 - 98.25	5		18	29.415	30.239	0.6125	A572-65	0.973
20	98.25 - 93.25	5		18	30.239	31.062	0.6	A572-65	0.977
21	93.25 - 89.1133	8.6967	4.56	18	31.062	32.493	0.6	A572-65	0.965
22	89.1133 - 83.5533	5.56		18	31.243	32.155	0.6625	A572-65	1.043
23	83.5533 - 82.917	0.6363		18	32.155	32.260	0.6625	A572-65	1.041
24	82.917 - 82.667	0.25		18	32.260	32.301	0.95	A572-65	0.923
25	82.667 - 82.5	0.167		18	32.301	32.328	0.95	A572-65	0.922
26	82.5 - 82.25	0.25		18	32.328	32.369	0.6875	A572-65	1.082
27	82.25 - 77.25	5		18	32.369	33.190	0.675	A572-65	1.085
28	77.25 - 73.417	3.833		18	33.190	33.819	0.6625	A572-65	1.093
29	73.417 - 73.167	0.25		18	33.819	33.860	0.9375	A572-65	0.962
30	73.167 - 68.167	5		18	33.860	34.680	0.9125	A572-65	0.972
31	68.167 - 64.25	3.917		18	34.680	35.323	0.8875	A572-65	0.987
32	64.25 - 64	0.25		18	35.323	35.364	0.7375	A572-65	0.959
33	64 - 59	5		18	35.364	36.185	0.7375	A572-65	0.947
34	59 - 54	5		18	36.185	37.006	0.7125	A572-65	0.967
35	54 - 53.5	0.5		18	37.006	37.088	0.7125	A572-65	0.966
36	53.5 - 53.25	0.25		18	37.088	37.129	0.825	A572-65	0.968
37	53.25 - 49.0033	9.5867	5.34	18	37.129	38.702	0.8125	A572-65	0.971
38	49.0033 - 42.6633	6.34		18	37.201	38.242	0.725	A572-65	1.078
39	42.6633 - 41.75	0.9133		18	38.242	38.392	0.725	A572-65	1.076
40	41.75 - 41.5	0.25		18	38.392	38.433	0.7625	A572-65	1.089
41	41.5 - 36.5	5		18	38.433	39.254	0.75	A572-65	1.094
42	36.5 - 32.75	3.75		18	39.254	39.870	0.75	A572-65	1.085
43	32.75 - 32.5	0.25		18	39.870	39.912	1	A572-65	0.950
44	32.5 - 29.83	2.67		18	39.912	40.350	1	A572-65	0.943
45	29.83 - 29.58	0.25		18	40.350	40.391	0.9	A572-65	0.939
46	29.58 - 28.25	1.33		18	40.391	40.610	0.8875	A572-65	0.949
47	28.25 - 28	0.25		18	40.610	40.651	0.95	A572-65	1.002
48	28 - 23	5		18	40.651	41.472	0.95	A572-65	0.990
49	23 - 19.25	3.75		18	41.472	42.088	0.9375	A572-65	0.993
50	19.25 - 19	0.25		18	42.088	42.129	0.825	A572-65	0.959
51	19 - 14	5		18	42.129	42.950	0.8	A572-65	0.978
52	14 - 9	5		18	42.950	43.772	0.8	A572-65	0.968
53	9 - 4	5		18	43.772	44.593	0.7875	A572-65	0.974
54	4 - 0	4		18	44.593	45.250	0.775	A572-65	0.982

TNX Section Forces

Increment (ft):	5	TNX Output		
	Section Height (ft)	P_u (K)	M_{ux} (kip-ft)	V_u (K)
1	168.3333 - 163.3333	3.99	41.39	8.86
2	163.3333 - 158.3333	4.26	86.56	9.21
3	158.3333 - 153.3333	6.72	149.62	13.02
4	153.3333 - 148.3333	7.08	215.58	13.37
5	148.3333 - 143.3333	10.23	299.55	17.20
6	143.3333 - 138.3333	10.71	386.29	17.51
7	138.3333 - 134.1633	13.96	477.90	21.23
8	134.1633 - 129.1633	14.79	584.98	21.62
9	129.1633 - 125.75	18.18	669.14	24.73
10	125.75 - 125.5	18.25	675.32	24.73
11	125.5 - 120.5	19.07	799.55	25.00
12	120.5 - 120.25	19.16	805.80	25.00
13	120.25 - 115.25	20.53	931.79	25.42
14	115.25 - 113.833	20.92	967.88	25.56
15	113.833 - 113.483	21.05	976.82	25.58
16	113.483 - 113.25	21.12	982.78	25.60
17	113.25 - 108.25	22.69	1111.95	26.10
18	108.25 - 103.25	24.30	1243.54	26.57
19	103.25 - 98.25	25.92	1377.47	27.03
20	98.25 - 93.25	27.57	1513.77	27.56
21	93.25 - 89.1133	28.95	1628.49	27.94
22	89.1133 - 83.5533	32.06	1785.69	28.62
23	83.5533 - 82.917	32.31	1803.91	28.68
24	82.917 - 82.667	32.42	1811.09	28.71
25	82.667 - 82.5	32.50	1815.88	28.73
26	82.5 - 82.25	32.59	1823.07	28.75
27	82.25 - 77.25	34.56	1968.01	29.23
28	77.25 - 73.417	36.09	2080.69	29.59
29	73.417 - 73.167	36.23	2088.09	29.60
30	73.167 - 68.167	38.56	2237.43	30.14
31	68.167 - 64.25	40.41	2356.44	30.60
32	64.25 - 64	40.52	2364.09	30.61
33	64 - 59	42.56	2518.12	31.01
34	59 - 54	44.63	2673.99	31.36
35	54 - 53.5	44.85	2689.68	31.39
36	53.5 - 53.25	44.97	2697.53	31.41
37	53.25 - 49.0033	46.93	2831.64	31.76
38	49.0033 - 42.6633	51.87	3035.23	32.50
39	42.6633 - 41.75	52.30	3064.93	32.56
40	41.75 - 41.5	52.44	3073.07	32.56
41	41.5 - 36.5	54.93	3236.66	32.88
42	36.5 - 32.75	56.82	3360.36	33.12
43	32.75 - 32.5	56.98	3368.64	33.12
44	32.5 - 29.83	58.48	3457.36	33.35
45	29.83 - 29.58	58.63	3465.70	33.34
46	29.58 - 28.25	59.31	3510.13	33.47
47	28.25 - 28	59.47	3518.49	33.46
48	28 - 23	62.36	3686.72	33.83
49	23 - 19.25	64.54	3813.95	34.05
50	19.25 - 19	64.68	3822.46	34.04
51	19 - 14	67.27	3993.21	34.26
52	14 - 9	69.88	4164.87	34.43
53	9 - 4	72.41	4337.33	34.57
54	4 - 0	74.42	4475.78	34.67

Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
168.33 - 163.33	Pole	TP19.834x19x0.1875	Pole	12.3%	Pass
163.33 - 158.33	Pole	TP20.669x19.834x0.1875	Pole	23.2%	Pass
158.33 - 153.33	Pole	TP21.503x20.669x0.1875	Pole	37.4%	Pass
153.33 - 148.33	Pole	TP22.337x21.503x0.1875	Pole	50.1%	Pass
148.33 - 143.33	Pole	TP23.172x22.337x0.1875	Pole	65.5%	Pass
143.33 - 138.33	Pole	TP24.006x23.172x0.1875	Pole	79.3%	Pass
138.33 - 134.16	Pole	TP25.313x24.006x0.1875	Pole	93.7%	Pass
134.16 - 129.16	Pole	TP25.15x24.327x0.25	Pole	76.7%	Pass
129.16 - 125.75	Pole	TP25.712x25.15x0.25	Pole	84.6%	Pass
125.75 - 125.5	Pole	TP25.753x25.712x0.25	Pole	85.1%	Pass
125.5 - 120.5	Pole	TP26.576x25.753x0.25	Pole	95.1%	Pass
120.5 - 120.25	Pole + Reinf.	TP26.617x26.576x0.4813	Reinf. 10 Tension Rupture	88.1%	Pass
120.25 - 115.25	Pole + Reinf.	TP27.44x26.617x0.475	Reinf. 10 Tension Rupture	97.1%	Pass
115.25 - 113.83	Pole + Reinf.	TP27.673x27.44x0.475	Reinf. 10 Tension Rupture	99.6%	Pass
113.83 - 113.48	Pole + Reinf.	TP27.731x27.673x0.65	Reinf. 10 Tension Rupture	69.5%	Pass
113.48 - 113.25	Pole + Reinf.	TP27.769x27.731x0.65	Reinf. 10 Tension Rupture	69.7%	Pass
113.25 - 108.25	Pole + Reinf.	TP28.592x27.769x0.6375	Reinf. 10 Tension Rupture	75.8%	Pass
108.25 - 103.25	Pole + Reinf.	TP29.415x28.592x0.625	Reinf. 10 Tension Rupture	81.5%	Pass
103.25 - 98.25	Pole + Reinf.	TP30.239x29.415x0.6125	Reinf. 10 Tension Rupture	86.8%	Pass
98.25 - 93.25	Pole + Reinf.	TP31.062x30.239x0.6	Reinf. 10 Tension Rupture	91.9%	Pass
93.25 - 89.11	Pole + Reinf.	TP32.493x31.062x0.6	Reinf. 10 Tension Rupture	95.8%	Pass
89.11 - 83.55	Pole + Reinf.	TP32.155x31.243x0.6625	Reinf. 2 Tension Rupture	91.5%	Pass
83.55 - 82.92	Pole + Reinf.	TP32.26x32.155x0.6625	Reinf. 2 Tension Rupture	91.9%	Pass
82.92 - 82.67	Pole + Reinf.	TP32.301x32.26x0.95	Reinf. 2 Tension Rupture	67.8%	Pass
82.67 - 82.5	Pole + Reinf.	TP32.328x32.301x0.95	Reinf. 2 Tension Rupture	67.9%	Pass
82.5 - 82.25	Pole + Reinf.	TP32.369x32.328x0.6875	Reinf. 2 Tension Rupture	90.1%	Pass
82.25 - 77.25	Pole + Reinf.	TP33.19x32.369x0.675	Reinf. 2 Tension Rupture	93.7%	Pass
77.25 - 73.42	Pole + Reinf.	TP33.819x33.19x0.6625	Reinf. 2 Tension Rupture	96.4%	Pass
73.42 - 73.17	Pole + Reinf.	TP33.86x33.819x0.9375	Reinf. 9 Tension Rupture	73.1%	Pass
73.17 - 68.17	Pole + Reinf.	TP34.68x33.86x0.9125	Reinf. 9 Tension Rupture	75.9%	Pass
68.17 - 64.25	Pole + Reinf.	TP35.323x34.68x0.8875	Reinf. 9 Tension Rupture	78.0%	Pass
64.25 - 64	Pole + Reinf.	TP35.364x35.323x0.7375	Reinf. 3 Tension Rupture	89.6%	Pass
64 - 59	Pole + Reinf.	TP36.185x35.364x0.7375	Reinf. 3 Tension Rupture	92.4%	Pass
59 - 54	Pole + Reinf.	TP37.006x36.185x0.7125	Reinf. 3 Tension Rupture	95.0%	Pass
54 - 53.5	Pole + Reinf.	TP37.088x37.006x0.7125	Reinf. 3 Tension Rupture	95.2%	Pass
53.5 - 53.25	Pole + Reinf.	TP37.129x37.088x0.825	Reinf. 7 Tension Rupture	89.9%	Pass
53.25 - 49	Pole + Reinf.	TP38.702x37.129x0.8125	Reinf. 7 Tension Rupture	91.9%	Pass
49 - 42.66	Pole + Reinf.	TP38.242x37.201x0.725	Reinf. 4 Tension Rupture	94.7%	Pass
42.66 - 41.75	Pole + Reinf.	TP38.392x38.242x0.725	Reinf. 4 Tension Rupture	95.0%	Pass
41.75 - 41.5	Pole + Reinf.	TP38.433x38.392x0.7625	Reinf. 4 Tension Rupture	91.2%	Pass
41.5 - 36.5	Pole + Reinf.	TP39.254x38.433x0.75	Reinf. 4 Tension Rupture	93.0%	Pass
36.5 - 32.75	Pole + Reinf.	TP39.87x39.254x0.75	Reinf. 4 Tension Rupture	94.3%	Pass
32.75 - 32.5	Pole + Reinf.	TP39.912x39.87x1	Reinf. 4 Tension Rupture	72.3%	Pass
32.5 - 29.83	Pole + Reinf.	TP40.35x39.912x1	Reinf. 4 Tension Rupture	73.1%	Pass
29.83 - 29.58	Pole + Reinf.	TP40.391x40.35x0.9	Reinf. 8 Tension Rupture	88.7%	Pass
29.58 - 28.25	Pole + Reinf.	TP40.61x40.391x0.8875	Reinf. 8 Tension Rupture	89.1%	Pass
28.25 - 28	Pole + Reinf.	TP40.651x40.61x0.95	Reinf. 8 Tension Rupture	81.4%	Pass
28 - 23	Pole + Reinf.	TP41.472x40.651x0.95	Reinf. 8 Tension Rupture	82.9%	Pass
23 - 19.25	Pole + Reinf.	TP42.088x41.472x0.9375	Reinf. 8 Tension Rupture	84.0%	Pass
19.25 - 19	Pole + Reinf.	TP42.129x42.088x0.825	Reinf. 5 Tension Rupture	87.0%	Pass
19 - 14	Pole + Reinf.	TP42.95x42.129x0.8	Reinf. 5 Tension Rupture	88.3%	Pass
14 - 9	Pole + Reinf.	TP43.772x42.95x0.8	Reinf. 5 Tension Rupture	89.6%	Pass
9 - 4	Pole + Reinf.	TP44.593x43.772x0.7875	Reinf. 5 Tension Rupture	90.8%	Pass
4 - 0	Pole + Reinf.	TP45.25x44.593x0.775	Reinf. 5 Tension Rupture	91.7%	Pass
				Summary	
			Pole	95.1%	Pass
			Reinforcement	99.6%	Pass
			Overall	99.6%	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
168.33 - 163.33	570	n/a	570	11.69	n/a	11.69	12.3%															
163.33 - 158.33	646	n/a	646	12.19	n/a	12.19	23.2%															
158.33 - 153.33	728	n/a	728	12.68	n/a	12.68	37.4%															
153.33 - 148.33	817	n/a	817	13.18	n/a	13.18	50.1%															
148.33 - 143.33	913	n/a	913	13.68	n/a	13.68	65.5%															
143.33 - 138.33	1016	n/a	1016	14.17	n/a	14.17	79.3%															
138.33 - 134.16	1107	n/a	1107	14.59	n/a	14.59	93.7%															
134.16 - 129.16	1547	n/a	1547	19.76	n/a	19.76	76.7%															
129.16 - 125.75	1654	n/a	1654	20.20	n/a	20.20	84.6%															
125.75 - 125.5	1662	n/a	1662	20.24	n/a	20.24	85.1%															
125.5 - 120.5	1828	n/a	1828	20.89	n/a	20.89	95.1%															
120.5 - 120.25	1840	1604	3444	20.92	22.41	43.33	52.1%										88.1%				65.7%	83.2%
120.25 - 115.25	2018	1699	3717	21.57	22.41	43.98	57.9%										97.1%				72.7%	92.1%
115.25 - 113.83	2070	1727	3797	21.76	22.41	44.17	59.5%										99.6%				74.7%	94.5%
113.83 - 113.48	2083	3142	5225	21.81	32.25	54.06	43.8%	68.9%									69.5%					
113.48 - 113.25	2092	3150	5242	21.84	32.25	54.09	44.0%	69.2%									69.7%					
113.25 - 108.25	2285	3330	5615	22.49	32.25	54.74	48.2%	75.1%									75.8%					
108.25 - 103.25	2490	3515	6005	23.14	32.25	55.39	52.3%	80.7%									81.5%					
103.25 - 98.25	2706	3705	6412	23.80	32.25	56.05	56.2%	86.0%									86.8%					
98.25 - 93.25	2935	3900	6836	24.45	32.25	56.70	60.0%	91.0%									91.9%					
93.25 - 89.11	3134	4065	7200	24.99	32.25	57.24	63.1%	94.9%									95.8%					
89.11 - 83.55	4045	4262	8307	31.58	37.50	69.08	55.7%		91.5%											79.0%		
83.55 - 82.92	4085	4288	8373	31.69	37.50	69.19	56.1%		91.9%											79.4%		
82.92 - 82.67	4105	7653	11758	31.73	55.50	87.23	40.6%		67.8%					67.7%						67.8%		
82.67 - 82.5	4116	7666	11781	31.75	55.50	87.25	40.7%		67.9%					67.8%						67.9%		
82.5 - 82.25	4130	4614	8744	31.79	43.00	74.79	55.5%		90.1%					82.1%								
82.25 - 77.25	4455	4840	9295	32.61	43.00	75.61	58.2%		93.7%					85.6%								
77.25 - 73.42	4716	5017	9732	33.23	43.00	76.23	60.2%		96.4%					88.0%								
73.42 - 73.17	4730	8571	13301	33.27	61.00	94.27	43.7%			70.3%				69.6%		73.1%						
73.17 - 68.17	5086	8975	14061	34.09	61.00	95.09	45.7%			72.9%				72.2%		75.9%						
68.17 - 64.25	5376	9298	14674	34.73	61.00	95.73	47.2%			74.9%				74.2%		78.0%						
64.25 - 64	5395	6949	12344	34.77	43.00	77.77	56.0%			89.6%				88.7%								
64 - 59	5783	7263	13046	35.58	43.00	78.58	58.2%			92.4%				91.5%								
59 - 54	6189	7584	13772	36.39	43.00	79.39	60.3%			95.0%				94.1%								
54 - 53.5	6230	7616	13846	36.48	43.00	79.48	60.5%			95.2%				94.4%								
53.5 - 53.25	6275	9557	15832	36.52	55.50	92.02	55.4%			83.3%				89.9%					76.2%			
53.25 - 49	6638	9907	16544	37.21	55.50	92.71	57.0%			85.2%				91.9%					78.0%			
49 - 42.66	8168	7264	15432	45.07	48.00	93.07	61.7%				94.7%			93.5%								
42.66 - 41.75	8265	7319	15584	45.25	48.00	93.25	62.0%				95.0%			93.8%								
41.75 - 41.5	8292	7984	16276	45.30	54.00	99.30	59.5%				91.2%		80.0%									
41.5 - 36.5	8840	8315	17155	46.27	54.00	100.27	61.1%				93.0%		81.7%									
36.5 - 32.75	9267	8567	17834	47.01	54.00	101.01	62.2%				94.3%		83.0%									
32.75 - 32.5	9300	14570	23869	47.06	70.25	117.31	46.4%				72.3%		69.8%					70.7%				
32.5 - 29.83	9613	14880	24492	47.58	70.25	117.83	47.0%				73.1%		70.5%					71.5%				
29.83 - 29.58	9642	12408	22050	47.63	58.25	105.88	52.5%						80.6%		88.7%			78.6%				
29.58 - 28.25	9801	12538	22339	47.89	58.25	106.14	52.8%						81.0%		89.1%			78.9%				
28.25 - 28	9822	14241	24063	47.94	72.00	119.94	48.9%					73.5%	69.9%		81.4%							
28 - 23	10435	14803	25237	48.91	72.00	120.91	50.2%					74.9%	71.3%		82.9%							
23 - 19.25	10911	15230	26141	49.65	72.00	121.65	51.1%					75.9%	72.2%		84.0%							
19.25 - 19	10943	12189	23132	49.70	54.00	103.70	57.6%					87.0%	82.8%									
19 - 14	11601	12653	24254	50.67	54.00	104.67	58.8%					88.3%	84.1%									
14 - 9	12285	13125	25410	51.65	54.00	105.65	60.1%					89.6%	85.3%									
9 - 4	12996	13606	26602	52.63	54.00	106.63	61.2%					90.8%	86.5%									
4 - 0	13584	13997	27581	53.41	54.00	107.41	62.1%					91.7%	87.3%									

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

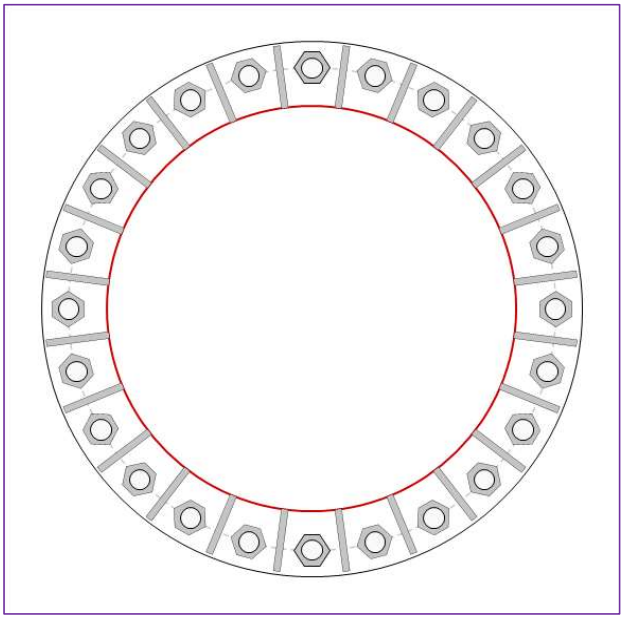
Monopole Base Plate Connection

Site Info	
BU #	842859
Site Name	BRISTOL CENTER
Order #	556627 Rev. 1

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

Applied Loads	
Moment (kip-ft)	4475.78
Axial Force (kips)	74.42
Shear Force (kips)	34.67

**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 54" BC
GROUP 2: (12) 2-1/4" ø bolts (A615-75 N; Fy=75 ksi, Fu=100 ksi) on 54" BC

Base Plate Data

60" OD x 2" Plate (A572-60; Fy=60 ksi, Fu=75 ksi)

Stiffener Data

(24) 15"H x 7"W x 0.75"T, Notch: 0.75"
plate: Fy= 65 ksi ; weld: Fy= 80 ksi
horiz. weld: 0.375" groove, 45° dbl bevel, 0.375" fillet
vert. weld: 0.3125" fillet

Pole Data

45.25" 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 = 162.55	ϕPn_t = 243.75	**Stress Rating**
Vu = 1.44	ϕVn = 149.1	**63.5%**
Mu = n/a	ϕMn = n/a	**Pass**
GROUP 2:		
Pu_t = 162.55	ϕPn_t = 243.75	**Stress Rating**
Vu = 1.44	ϕVn = 149.1	**63.5%**
Mu = n/a	ϕMn = n/a	**Pass**

Base Plate Summary

Max Stress (ksi):	27.45	(Roark's Flexural)
Allowable Stress (ksi):	54	
Stress Rating:	**48.4%**	**Pass**

Stiffener Summary

Horizontal Weld:	**52.3%**	**Pass**
Vertical Weld:	**66.4%**	**Pass**
Plate Flexure+Shear:	**23.2%**	**Pass**
Plate Tension+Shear:	**51.1%**	**Pass**
Plate Compression:	**64.3%**	**Pass**

Pole Summary

Punching Shear:	**21.4%**	**Pass**

CCIplate

Elevation (ft)	0	*(Base)*

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

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

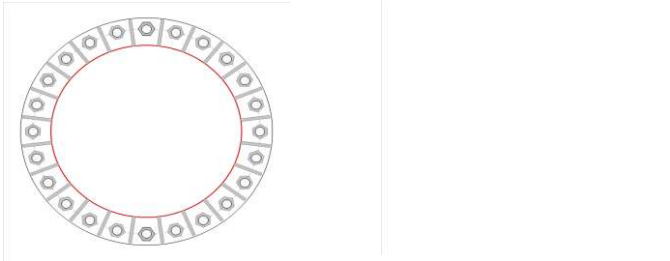
Custom Bolt Connection

Bolt	Bolt Group ID	Location (deg.)	Diameter (in)	Material	Bolt Circle (in)	Eta Factor, η:	I_{sr} (in):	Thread Type	Area Override, in^2	Tension Only
1	1	0	2,25	A615-75	54	0.5	0	N-Included		No
2	2	15	2,25	A615-75	54	0.5	0	N-Included		No
3	1	30	2,25	A615-75	54	0.5	0	N-Included		No
4	2	45	2,25	A615-75	54	0.5	0	N-Included		No
5	1	60	2,25	A615-75	54	0.5	0	N-Included		No
6	2	75	2,25	A615-75	54	0.5	0	N-Included		No
7	1	90	2,25	A615-75	54	0.5	0	N-Included		No
8	2	105	2,25	A615-75	54	0.5	0	N-Included		No
9	1	120	2,25	A615-75	54	0.5	0	N-Included		No
10	2	135	2,25	A615-75	54	0.5	0	N-Included		No
11	1	150	2,25	A615-75	54	0.5	0	N-Included		No
12	2	165	2,25	A615-75	54	0.5	0	N-Included		No
13	1	180	2,25	A615-75	54	0.5	0	N-Included		No
14	2	195	2,25	A615-75	54	0.5	0	N-Included		No
15	1	210	2,25	A615-75	54	0.5	0	N-Included		No
16	2	225	2,25	A615-75	54	0.5	0	N-Included		No
17	1	240	2,25	A615-75	54	0.5	0	N-Included		No
18	2	255	2,25	A615-75	54	0.5	0	N-Included		No
19	1	270	2,25	A615-75	54	0.5	0	N-Included		No
20	2	285	2,25	A615-75	54	0.5	0	N-Included		No
21	1	300	2,25	A615-75	54	0.5	0	N-Included		No
22	2	315	2,25	A615-75	54	0.5	0	N-Included		No
23	1	330	2,25	A615-75	54	0.5	0	N-Included		No
24	2	345	2,25	A615-75	54	0.5	0	N-Included		No

Custom Stiffener Connection

Stiffener	Stiffener Group ID	Location (deg.)	Width (in)	Height (in)	Thickness (in)	H. Notch (in)	V. Notch (in)	Grade (ksi)	Weld Type	Groove Depth (in)	Groove Angle (deg.)	H. Fillet Weld Size (in)	V. Fillet Weld Size (in)	Weld Strength (ksi)
1	1	7,5	7	15	0,75	0,75	0,75	65	Both	0,375	45	0,375	0,3125	80
2	1	22,5	7	15	0,75	0,75	0,75	65	Both	0,375	45	0,375	0,3125	80
3	1	37,5	7	15	0,75	0,75	0,75	65	Both	0,375	45	0,375	0,3125	80
4	1	52,5	7	15	0,75	0,75	0,75	65	Both	0,375	45	0,375	0,3125	80
5	1	67,5	7	15	0,75	0,75	0,75	65	Both	0,375	45	0,375	0,3125	80
6	1	82,5	7	15	0,75	0,75	0,75	65	Both	0,375	45	0,375	0,3125	80
7	1	97,5	7	15	0,75	0,75	0,75	65	Both	0,375	45	0,375	0,3125	80
8	1	112,5	7	15	0,75	0,75	0,75	65	Both	0,375	45	0,375	0,3125	80
9	1	127,5	7	15	0,75	0,75	0,75	65	Both	0,375	45	0,375	0,3125	80
10	1	142,5	7	15	0,75	0,75	0,75	65	Both	0,375	45	0,375	0,3125	80
11	1	157,5	7	15	0,75	0,75	0,75	65	Both	0,375	45	0,375	0,3125	80
12	1	172,5	7	15	0,75	0,75	0,75	65	Both	0,375	45	0,375	0,3125	80
13	1	187,5	7	15	0,75	0,75	0,75	65	Both	0,375	45	0,375	0,3125	80
14	1	202,5	7	15	0,75	0,75	0,75	65	Both	0,375	45	0,375	0,3125	80
15	1	217,5	7	15	0,75	0,75	0,75	65	Both	0,375	45	0,375	0,3125	80
16	1	232,5	7	15	0,75	0,75	0,75	65	Both	0,375	45	0,375	0,3125	80
17	1	247,5	7	15	0,75	0,75	0,75	65	Both	0,375	45	0,375	0,3125	80
18	1	262,5	7	15	0,75	0,75	0,75	65	Both	0,375	45	0,375	0,3125	80
19	1	277,5	7	15	0,75	0,75	0,75	65	Both	0,375	45	0,375	0,3125	80
20	1	292,5	7	15	0,75	0,75	0,75	65	Both	0,375	45	0,375	0,3125	80
21	1	307,5	7	15	0,75	0,75	0,75	65	Both	0,375	45	0,375	0,3125	80
22	1	322,5	7	15	0,75	0,75	0,75	65	Both	0,375	45	0,375	0,3125	80
23	1	337,5	7	15	0,75	0,75	0,75	65	Both	0,375	45	0,375	0,3125	80
24	1	352,5	7	15	0,75	0,75	0,75	65	Both	0,375	45	0,375	0,3125	80

Plot Graphic



Drilled Pier Foundation

BU # :	842859
Site Name:	BRISTOL CENTER
Order Number:	556627 Rev. 1
TIA-222 Revison:	H
Tower Type:	Monopole

Check Limitation	
Apply TIA-222-H Section 15.5:	☑
N/A	☐
Additional Longitudinal Rebar	
Input Effective Depths (else Actual):	☐
Shear Design Options	
Check Shear along Depth of Pier:	☑
Utilize Shear-Friction Methodology:	☐
Override Critical Depth:	☐

Go to Soil Calculations

Applied Loads	Comp.	Uplift
Moment (kip-ft)	4475.79	
Axial Force (kips)	74.44	
Shear Force (kips)	34.63	

Material Properties			Rebar 2, Fy Override (ksi)
Concrete Strength, f'c:	4	ksi	
Rebar Strength, Fy:	60	ksi	
Tie Yield Strength, Fyt:	60	ksi	

Pier Design Data		
Depth	26	ft
Ext. Above Grade	1	ft
Pier Section 1		
From 1' above grade to 19' below grade		
Pier Diameter	6.5	ft
Rebar Quantity	16	
Rebar Size	11	
Rebar Cage Diameter	67	in
Tie Size	5	
Tie Spacing	12	in
Rebar Quantity	8	
Rebar Size	11	
Rebar Cage Diameter	64	in
Pier Section 2		
From 19' below grade to 26' below grade		
Pier Diameter	6.5	ft
Rebar Quantity	16	
Rebar Size	11	
Rebar Cage Diameter	67	in
Tie Size	5	
Tie Spacing	12	in

Rebar & Pier Options

Embedded Pole Inputs

Belled Pier Inputs

Analysis Results		
Soil Lateral Check	*Compression*	*Uplift*
$D_{v=0}$ (ft from TOC)	7.97	-
Soil Safety Factor	2.16	-
Max Moment (kip-ft)	4830.19	-
Rating*	*58.5%*	-
Soil Vertical Check	*Compression*	*Uplift*
Skin Friction (kips)	529.45	-
End Bearing (kips)	412.76	-
Weight of Concrete (kips)	161.27	-
Total Capacity (kips)	942.20	-
Axial (kips)	235.71	-
Rating*	*23.8%*	-
Reinforced Concrete Flexure	*Compression*	*Uplift*
Critical Depth (ft from TOC)	16.66	-
Critical Moment (kip-ft)	3607.36	-
Critical Moment Capacity	3891.78	-
Rating*	*88.3%*	-
Reinforced Concrete Shear	*Compression*	*Uplift*
Critical Depth (ft from TOC)	20.76	-
Critical Shear (kip)	551.89	-
Critical Shear Capacity	597.98	-
Rating*	*87.9%*	-

Structural Foundation Rating*	**88.3%**
Soil Interaction Rating*	**58.5%**

*Rating per TIA-222-H Section 15.5

Soil Profile

Groundwater Depth	N/A	# of Layers	8

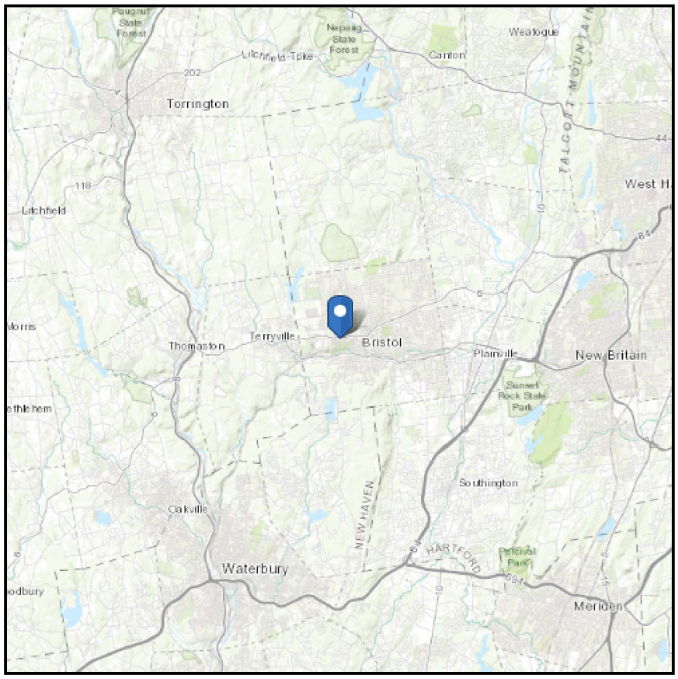
Layer	Top (ft)	Bottom (ft)	Thickness (ft)	γ_{soil} (pcf)	$\gamma_{concrete}$ (pcf)	Cohesion (ksf)	Angle of Friction (degrees)	Calculated Ultimate Skin Friction Comp (ksf)	Calculated Ultimate Skin Friction Uplift (ksf)	Ultimate Skin Friction Comp Override (ksf)	Ultimate Skin Friction Uplift Override (ksf)	Ult. Net Bearing Capacity (ksf)	SPT Blow Count	Soil Type
1	0	4	4	105	150	0	0	0.000	0.000	0.00	0.00			Cohesionless
2	4	5	1	110	150	0	0	0.000	0.000	0.00	0.00			Cohesionless
3	5	6	1	110	150	0	30	0.000	0.000	1.35	1.35			Cohesionless
4	6	8	2	115	150	0	31	0.000	0.000	0.57	0.57			Cohesionless
5	8	12	4	120	150	0	33	0.000	0.000	1.19	1.19			Cohesionless
6	12	20	8	115	150	0	31	0.000	0.000	1.73	1.73			Cohesionless
7	20	25	5	125	150	0	35	0.00	0.00	2.22	2.22			Cohesionless
8	25	26	1	130	150	0	37	0.00	0.00	2.38	2.38	13.56		Cohesionless

ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 564.8 ft (NAVD 88)
Latitude: 41.679919
Longitude: -72.96255



Wind

Results:

Wind Speed:	120 Vmph
10-year MRI	76 Vmph
25-year MRI	86 Vmph
50-year MRI	91 Vmph
100-year MRI	98 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

Date Accessed: Fri May 14 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 7-10 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.

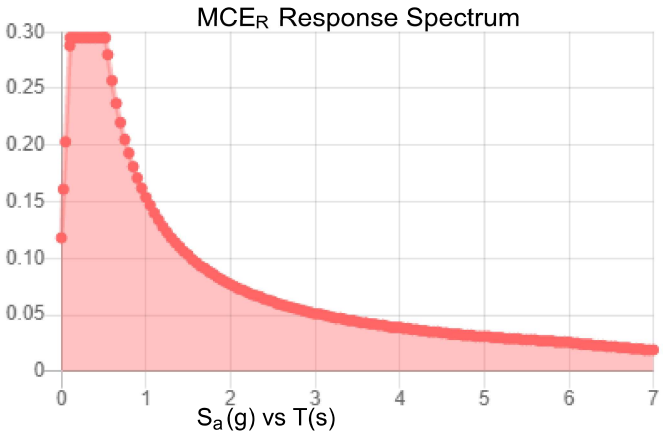
Seismic

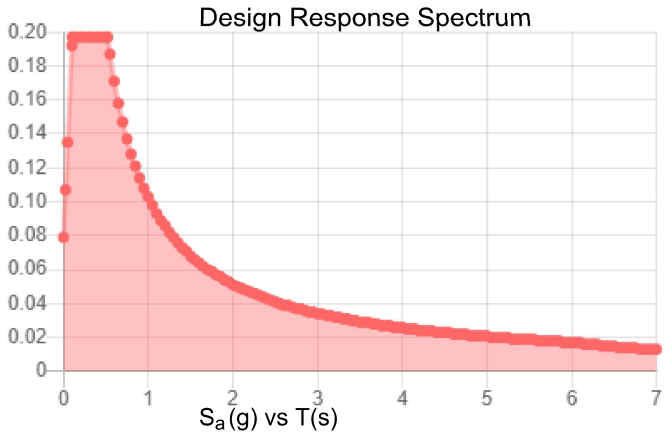
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.185	S_{DS} :	0.197
S_1 :	0.064	S_{D1} :	0.103
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.094
S_{MS} :	0.295	PGA_M :	0.151
S_{M1} :	0.154	F_{PGA} :	1.6
		I_e :	1

Seismic Design Category B





Data Accessed: Fri May 14 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:	1.00 in.
Concurrent Temperature:	5 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Fri May 14 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.

Exhibit E

Mount Analysis

Date: **August 2, 2021**

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

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

Subject:	**Mount Replacement Analysis Report**	
Carrier Designation:	**DISH Network Equipment Change-Out**	
	Carrier Site Number:	BOBDL00065A
	Carrier Site Name:	CT-CCI-T-842859
Crown Castle Designation:	**Crown Castle BU Number:**	842859
	Crown Castle Site Name:	Bristol Center
	Crown Castle JDE Job Number:	650054
	Crown Castle Order Number:	556627 Rev. *1*
Engineering Firm Designation:	**Trylon Report Designation:**	189334
Site Data:	**371 Terryville Avenue, Bristol, Hartford County, CT, 06010** **Latitude 41°40'47.71" Longitude -72°57'45.18"**	
Structure Information:	**Tower Height & Type:**	**168.5 ft Monopole**
	Mount Elevation:	**148.0 ft**
	Mount Type:	**8.0 ft Platform**

Dear Darcy Tarr,

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

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

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

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

Mount analysis prepared by: Trevor Leahy, E.I.T.

Respectfully Submitted by:
Cliff Abernathy, P.E.

Cliff Abernathy Digitally signed by Cliff Abernathy
Date: 2021.08.02 16:26:24 -04'00'

TABLE OF CONTENTS

1) INTRODUCTION

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

2) ANALYSIS CRITERIA

Building Code:	2015 IBC / 2018 CTSBC
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Ultimate Wind Speed:	120 mph
Exposure Category:	C
Topographic Factor at Base:	1.0
Topographic Factor at Mount:	1.0
Ice Thickness:	2.00 in
Wind Speed with Ice:	50 mph
Seismic S_s:	0.185
Seismic S_1:	0.064
Live Loading Wind Speed:	30 mph
Man Live Load at Mid/End-Points:	250 lb
Man Live Load at Mount Pipes:	500 lb

Table 1 - Proposed Equipment Configuration

Mount Centerline (ft)	Antenna Centerline (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Mount / Modification Details
148.0	148.0	3	JMA Wireless	MX08FRO665-21	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	556627 Rev. 1	CCI Sites
Mount Manufacturer Drawings	Commscope	MC-PK8-DSH	Trylon
Tower Analysis	Morrison Hershfield	9830417	CCI Sites

3.1) Analysis Method

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

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

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

3.2) Assumptions

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

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

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

4) ANALYSIS RESULTS

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

Notes	Component	Critical Member	Centerline (ft)	% Capacity	Pass / Fail
1, 2	Mount Pipe(s)	MP3	148.0	42.3	Pass
	Horizontal(s)	H1		12.6	Pass
	Standoff(s)	M2		63.0	Pass
	Bracing(s)	M1		48.5	Pass
	Handrail(s)	M23		23.4	Pass
	Plate(s)	M15		30.2	Pass
	Mount Connection(s)	-		32.3	Pass

Structure Rating (max from all components) =	63.0%

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

4.1) Recommendations

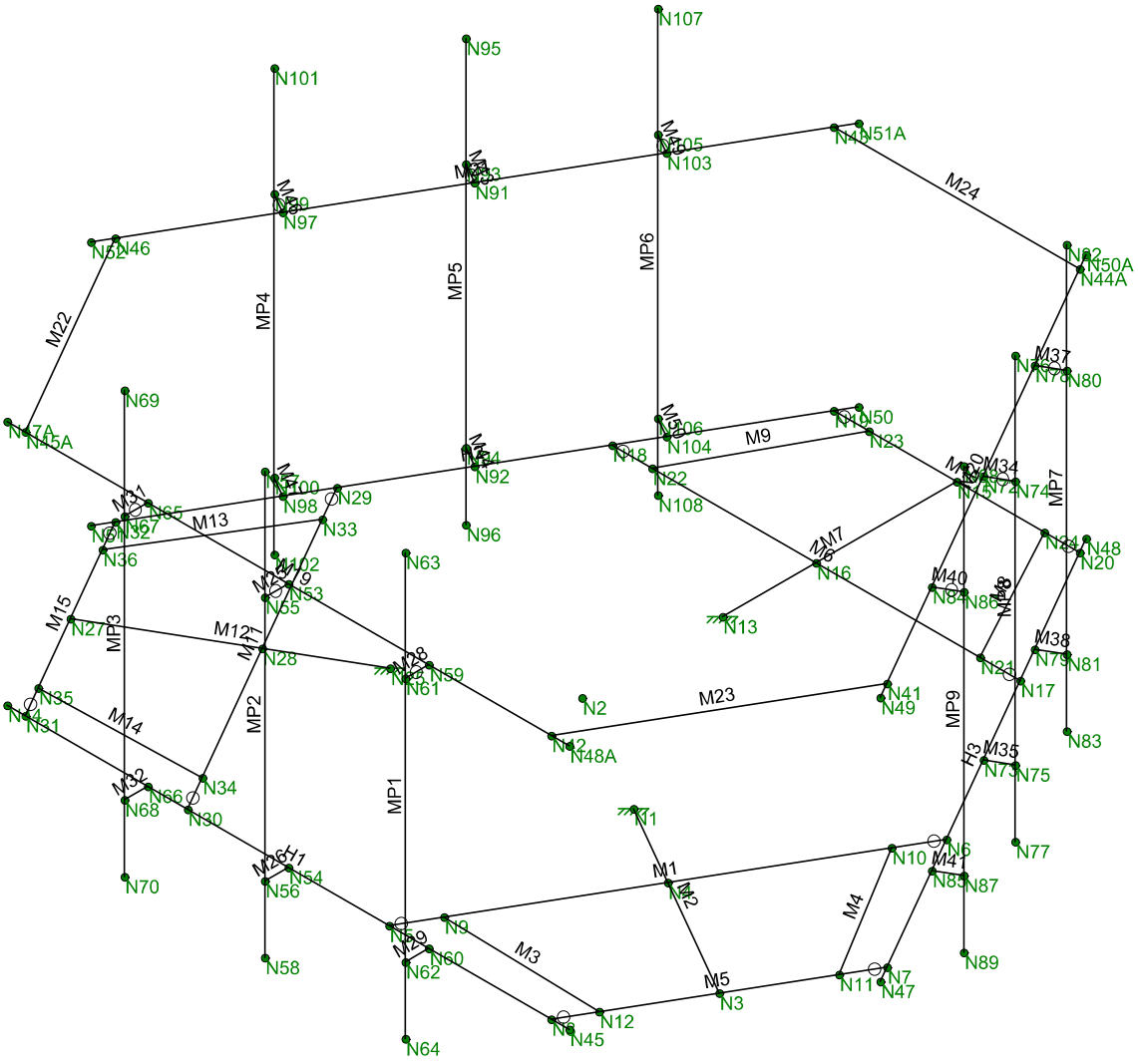
The mount has sufficient capacity to carry the proposed loading configuration. In order for the results of the analysis to be considered valid, the proposed mount listed below must be installed.

1. Commscope MC-PK8-DSH.

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

APPENDIX A

WIRE FRAME AND RENDERED MODELS



Trylon	Bristol Center (BU 842859 Order 556627)	SK - 1
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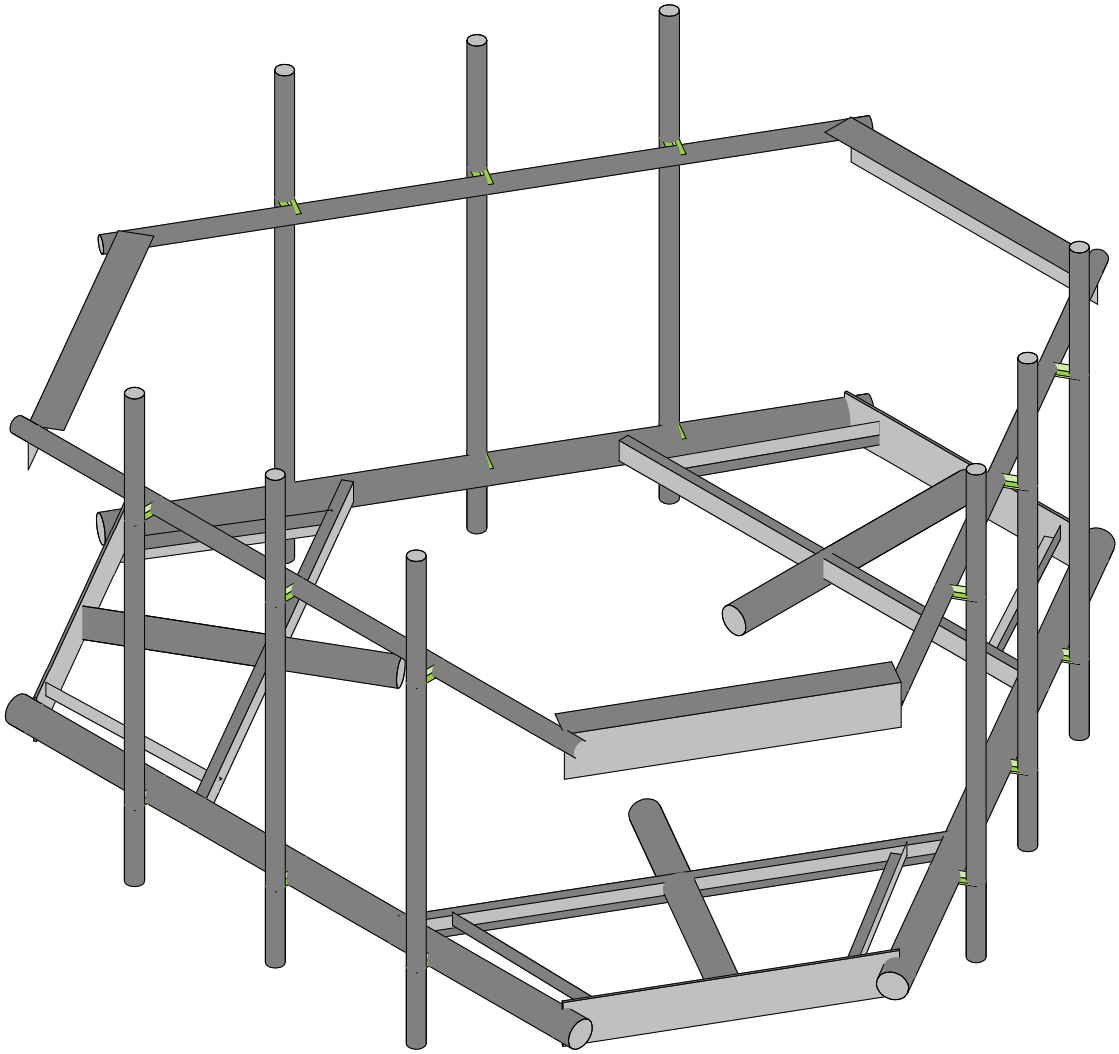

Trylon	Bristol Center (BU 842859 Order 556627)	SK - 2
TL		Aug 2, 2021 at 1:11 PM
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APPENDIX B

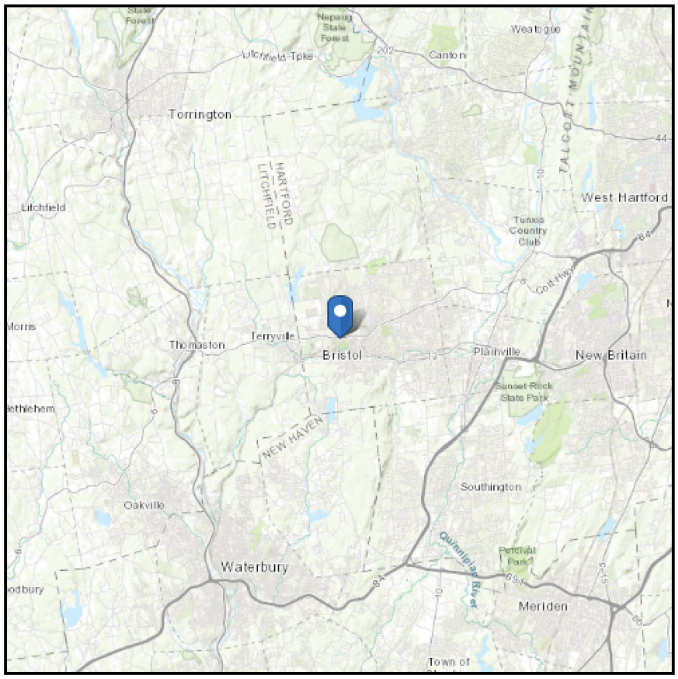
SOFTWARE INPUT CALCULATIONS

ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 564.8 ft (NAVD 88)
Latitude: 41.679919
Longitude: -72.96255



Ice

Results:

Ice Thickness:	1.00 in.
Concurrent Temperature:	5 F
Gust Speed:	50 mph

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

Date Accessed: Mon Aug 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.

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

TIA LOAD CALCULATOR 2.0

PROJECT DATA	
Job Code:	189334
Carrier Site ID:	BOBDL00065A
Carrier Site Name:	CT-CCI-T-842859

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

STRUCTURE DETAILS		
Mount Type:	Platform	--
Mount Elevation:	148.0	ft.
Number of Sectors:	3	--
Structure Type:	Monopole	--
Structure Height:	168.5	ft.

ANALYSIS CRITERIA		
Structure Risk Category:	II	--
Exposure Category:	C	--
Site Class:	D - Stiff Soil	--
Ground Elevation:	564.8	ft.

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

WIND PARAMETERS		
Design Wind Speed:	120	mph
Wind Escalation Factor (K_s):	1.00	--
Velocity Coefficient (K_z):	1.37	--
Directionality Factor (K_d):	0.95	--
Gust Effect Factor (Gh):	1.00	--
Shielding Factor (K_a):	0.90	--
Velocity Pressure (q_z):	47.16	psf

ICE PARAMETERS		
Design Ice Wind Speed:	50	mph
Design Ice Thickness (t_i):	2.00	in
Importance Factor (I_i):	1.00	--
Ice Velocity Pressure (q_{zi}):	47.16	psf
Mount Ice Thickness (t_{iz}):	2.32	in

WIND STRUCTURE CALCULATIONS		
Flat Member Pressure:	84.89	psf
Round Member Pressure:	50.94	psf
Ice Wind Pressure:	7.48	psf

SEISMIC PARAMETERS		
Importance Factor (I_e):	1.00	--
Short Period Accel .(S_s):	0.19	g
1 Second Accel (S_1):	0.06	g
Short Period Des. (S_{DS}):	0.20	g
1 Second Des. (S_{D1}):	0.10	g
Short Period Coeff. (F_a):	1.60	--
1 Second Coeff. (F_v):	2.40	--
Response Coefficient (Cs):	0.10	--
Amplification Factor (A_S):	1.20	--

LOAD COMBINATIONS [LRFD]

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

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

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

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

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

EQUIPMENT LOADING

Appurtenance Name/Location	Qty.	Elevation [ft]	--	EPA $_N$ (ft2)	EPA $_T$ (ft2)	Weight (lbs)
MX08FRO665-21	3	148	No Ice	12.49	5.87	82.50
MP1/MP4/MP7, 0/120/240	--	--	w/ Ice	14.15	7.39	401.00
TA08025-B604	3	148	No Ice	1.96	0.98	63.90
MP1/MP4/MP7, 0/120/240	--	--	w/ Ice	2.55	1.44	102.15
TA08025-B605	3	148	No Ice	1.96	1.13	75.00
MP1/MP4/MP7, 0/120/240	--	--	w/ Ice	2.55	1.61	108.49
RDIDC-9181-PF-48	1	148	No Ice	2.01	1.17	21.85
MP1, 0	--	--	w/ Ice	2.61	1.67	107.02
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
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			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			

EQUIPMENT LOADING [CONT.]

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

EQUIPMENT WIND CALCULATIONS

Appurtenance Name	Qty.	Elevation [ft]	K_{zt}	K_z	K_d	t_d	q_z [psf]	q_{zi} [psf]
MX08FRO665-21	3	148	1.00	1.37	0.95	2.32	47.16	8.19
TA08025-B604	3	148	1.00	1.37	0.95	2.32	47.16	8.19
TA08025-B605	3	148	1.00	1.37	0.95	2.32	47.16	8.19
RDIDC-9181-PF-48	1	148	1.00	1.37	0.95	2.32	47.16	8.19

EQUIPMENT LATERAL WIND FORCE CALCULATIONS

Appurtenance Name	Qty.	--	0° 180°	30° 210°	60° 240°	90° 270°	120° 300°	150° 330°
MX08FRO665-21	3	No Ice	530.10	319.29	459.83	249.02	459.83	319.29
MP1/MP4/MP7, 0/120/240	--	w/ Ice	104.29	66.91	91.83	54.44	91.83	66.91
TA08025-B604	3	No Ice	83.34	52.07	72.92	41.64	72.92	52.07
MP1/MP4/MP7, 0/120/240	--	w/ Ice	18.81	12.68	16.77	10.64	16.77	12.68
TA08025-B605	3	No Ice	83.34	56.79	74.49	47.94	74.49	56.79
MP1/MP4/MP7, 0/120/240	--	w/ Ice	18.81	13.60	17.08	11.87	17.08	13.60
RDIDC-9181-PF-48	1	No Ice	85.40	58.54	76.44	49.58	76.44	58.54
MP1, 0	--	w/ Ice	19.23	14.03	17.50	12.29	17.50	14.03
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
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		No Ice						
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		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						

EQUIPMENT LATERAL WIND FORCE CALCULATIONS [CONT.]

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

EQUIPMENT SEISMIC FORCE CALCULATIONS

Appurtenance Name	Qty.	Elevation [ft]	Weight [lbs]	F_p [lbs]
MX08FRO665-21	3	148	82.5	9.77
TA08025-B604	3	148	63.9	7.57
TA08025-B605	3	148	75	8.88
RDIDC-9181-PF-48	1	148	21.85	2.59

APPENDIX C

SOFTWARE ANALYSIS OUTPUT

(Global) Model Settings

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

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

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

(Global) Model Settings, Continued

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

Material Takeoff

	Material	Size	Pieces	Length[in]	Weight[K]
1	General				
2	RIGID		18	72	0
3	Total General		18	72	0
4					
5	Hot Rolled Steel				
6	A36 Gr.36	C3X5	3	209.1	.087
7	A36 Gr.36	L6 5/8x4 7/16x3/16	3	126	.073
8	A36 Gr.36	L2x2x3	6	163.8	.034
9	A53 Gr.B	6.5"x0.37" Plate	3	126	.086
10	A53 Gr.B	PIPE_2.0	12	936	.271
11	A53 Gr.B	PIPE_3.5	6	408	.289
12	Total HR Steel		33	1968.9	.839

Joint Coordinates and Temperatures

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diaphragm
1	N1	20.78461	0	-12	0	
2	N2	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	

Joint Coordinates and Temperatures (Continued)

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diaphragm
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	
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	N41	65.925626	42	-10.186533	0	
42	N42	44.925626	42	26.186533	0	
43	N43	-21	42	-88	0	
44	N44A	21	42	-88	0	
45	N45A	-44.925626	42	26.186533	0	
46	N46	-65.925626	42	-10.186533	0	
47	N47A	-48.000126	42	26.186533	0	
48	N48A	48.000126	42	26.186533	0	
49	N49	67.462876	42	-7.523938	0	
50	N50A	19.46275	42	-90.662595	0	
51	N51A	-19.46275	42	-90.662595	0	
52	N52	-67.462876	42	-7.523938	0	
53	N53	0	42	26.186533	0	
54	N54	0	0	26.186533	0	
55	N55	0	42	30.186533	0	
56	N56	0	0	30.186533	0	
57	N57	0	60.625	30.186533	0	
58	N58	0	-11.375	30.186533	0	
59	N59	24	42	26.186533	0	
60	N60	24	0	26.186533	0	
61	N61	24	42	30.186533	0	
62	N62	24	0	30.186533	0	
63	N63	24	60.625	30.186533	0	
64	N64	24	-11.375	30.186533	0	
65	N65	-24	42	26.186533	0	
66	N66	-24	0	26.186533	0	
67	N67	-24	42	30.186533	0	
68	N68	-24	0	30.186533	0	
69	N69	-24	60.625	30.186533	0	
70	N70	-24	-11.375	30.186533	0	
71	N72	43.462813	42	-49.093267	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diaphragm
72	N73	43.462813	0	-49.093267	0	
73	N74	46.926915	42	-51.093267	0	
74	N75	46.926915	0	-51.093267	0	
75	N76	46.926915	60.625	-51.093267	0	
76	N77	46.926915	-11.375	-51.093267	0	
77	N78	31.462813	42	-69.877876	0	
78	N79	31.462813	0	-69.877876	0	
79	N80	34.926915	42	-71.877876	0	
80	N81	34.926915	0	-71.877876	0	
81	N82	34.926915	60.625	-71.877876	0	
82	N83	34.926915	-11.375	-71.877876	0	
83	N84	55.462813	42	-28.308657	0	
84	N85	55.462813	0	-28.308657	0	
85	N86	58.926915	42	-30.308657	0	
86	N87	58.926915	0	-30.308657	0	
87	N88	58.926915	60.625	-30.308657	0	
88	N89	58.926915	-11.375	-30.308657	0	
89	N91	-43.462813	42	-49.093267	0	
90	N92	-43.462813	0	-49.093267	0	
91	N93	-46.926915	42	-51.093267	0	
92	N94	-46.926915	0	-51.093267	0	
93	N95	-46.926915	60.625	-51.093267	0	
94	N96	-46.926915	-11.375	-51.093267	0	
95	N97	-55.462813	42	-28.308657	0	
96	N98	-55.462813	0	-28.308657	0	
97	N99	-58.926915	42	-30.308657	0	
98	N100	-58.926915	0	-30.308657	0	
99	N101	-58.926915	60.625	-30.308657	0	
100	N102	-58.926915	-11.375	-30.308657	0	
101	N103	-31.462813	42	-69.877876	0	
102	N104	-31.462813	0	-69.877876	0	
103	N105	-34.926915	42	-71.877876	0	
104	N106	-34.926915	0	-71.877876	0	
105	N107	-34.926915	60.625	-71.877876	0	
106	N108	-34.926915	-11.375	-71.877876	0	

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(d...	Section/Shape	Type	Design List	Material	Design Rul...
1	M1	N5	N6			Standoff Bracing	Beam	Channel	A36 Gr.36	Typical
2	M2	N3	N1			Standoffs	Beam	Pipe	A53 Gr.B	Typical
3	M3	N9	N12		270	Grating Bracing	Beam	Single Angle	A36 Gr.36	Typical
4	M4	N10	N11			Grating Bracing	Beam	Single Angle	A36 Gr.36	Typical
5	M5	N8	N7			Plates	Beam	RECT	A53 Gr.B	Typical
6	M6	N17	N18			Standoff Bracing	Beam	Channel	A36 Gr.36	Typical
7	M7	N15	N13			Standoffs	Beam	Pipe	A53 Gr.B	Typical
8	M8	N21	N24		270	Grating Bracing	Beam	Single Angle	A36 Gr.36	Typical
9	M9	N22	N23			Grating Bracing	Beam	Single Angle	A36 Gr.36	Typical
10	M10	N20	N19			Plates	Beam	RECT	A53 Gr.B	Typical
11	M11	N29	N30			Standoff Bracing	Beam	Channel	A36 Gr.36	Typical
12	M12	N27	N25			Standoffs	Beam	Pipe	A53 Gr.B	Typical
13	M13	N33	N36		270	Grating Bracing	Beam	Single Angle	A36 Gr.36	Typical
14	M14	N34	N35			Grating Bracing	Beam	Single Angle	A36 Gr.36	Typical
15	M15	N32	N31			Plates	Beam	RECT	A53 Gr.B	Typical
16	H1	N44	N45			Horizontals	Beam	Pipe	A53 Gr.B	Typical
17	H3	N47	N48			Horizontals	Beam	Pipe	A53 Gr.B	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(d...	Section/Shape	Type	Design List	Material	Design Rul...
18	H2	N50	N51			Horizontals	Beam	Pipe	A53 Gr.B	Typical
19	M19	N47A	N48A			Handrails	Beam	Pipe	A53 Gr.B	Typical
20	M20	N49	N50A			Handrails	Beam	Pipe	A53 Gr.B	Typical
21	M21	N51A	N52			Handrails	Beam	Pipe	A53 Gr.B	Typical
22	M22	N46	N45A		180	Handrail Corners	Beam	Single Angle	A36 Gr.36	Typical
23	M23	N42	N41		180	Handrail Corners	Beam	Single Angle	A36 Gr.36	Typical
24	M24	N44A	N43		180	Handrail Corners	Beam	Single Angle	A36 Gr.36	Typical
25	M25	N55	N53			RIGID	None	None	RIGID	Typical
26	M26	N56	N54			RIGID	None	None	RIGID	Typical
27	MP2	N57	N58			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
28	M28	N61	N59			RIGID	None	None	RIGID	Typical
29	M29	N62	N60			RIGID	None	None	RIGID	Typical
30	MP1	N63	N64			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
31	M31	N67	N65			RIGID	None	None	RIGID	Typical
32	M32	N68	N66			RIGID	None	None	RIGID	Typical
33	MP3	N69	N70			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
34	M34	N74	N72			RIGID	None	None	RIGID	Typical
35	M35	N75	N73			RIGID	None	None	RIGID	Typical
36	MP8	N76	N77			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
37	M37	N80	N78			RIGID	None	None	RIGID	Typical
38	M38	N81	N79			RIGID	None	None	RIGID	Typical
39	MP7	N82	N83			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
40	M40	N86	N84			RIGID	None	None	RIGID	Typical
41	M41	N87	N85			RIGID	None	None	RIGID	Typical
42	MP9	N88	N89			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
43	M43	N93	N91			RIGID	None	None	RIGID	Typical
44	M44	N94	N92			RIGID	None	None	RIGID	Typical
45	MP5	N95	N96			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
46	M46	N99	N97			RIGID	None	None	RIGID	Typical
47	M47	N100	N98			RIGID	None	None	RIGID	Typical
48	MP4	N101	N102			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical
49	M49	N105	N103			RIGID	None	None	RIGID	Typical
50	M50	N106	N104			RIGID	None	None	RIGID	Typical
51	MP6	N107	N108			Mount Pipes	Beam	Pipe	A53 Gr.B	Typical

Member Advanced Data

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
1	M1	BenPIN	BenPIN				Yes				None
2	M2						Yes				None
3	M3						Yes				None
4	M4						Yes				None
5	M5	OOOOXO	OOOOXO				Yes	Default			None
6	M6	BenPIN	BenPIN				Yes				None
7	M7						Yes				None
8	M8						Yes				None
9	M9						Yes				None
10	M10	OOOOXO	OOOOXO				Yes	Default			None
11	M11	BenPIN	BenPIN				Yes				None
12	M12						Yes				None
13	M13						Yes				None
14	M14						Yes				None
15	M15	OOOOXO	OOOOXO				Yes	Default			None
16	H1						Yes	Default			None
17	H3						Yes				None
18	H2						Yes				None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
19	M19						Yes				None
20	M20						Yes				None
21	M21						Yes				None
22	M22						Yes				None
23	M23						Yes				None
24	M24						Yes				None
25	M25	OOOXOO					Yes	** NA **			None
26	M26						Yes	** NA **			None
27	MP2						Yes				None
28	M28	OOOXOO					Yes	** NA **			None
29	M29						Yes	** NA **			None
30	MP1						Yes				None
31	M31	OOOXOO					Yes	** NA **			None
32	M32						Yes	** NA **			None
33	MP3						Yes				None
34	M34	OOOXOO					Yes	** NA **			None
35	M35						Yes	** NA **			None
36	MP8						Yes				None
37	M37	OOOXOO					Yes	** NA **			None
38	M38						Yes	** NA **			None
39	MP7						Yes				None
40	M40	OOOXOO					Yes	** NA **			None
41	M41						Yes	** NA **			None
42	MP9						Yes				None
43	M43	OOOXOO					Yes	** NA **			None
44	M44						Yes	** NA **			None
45	MP5						Yes				None
46	M46	OOOXOO					Yes	** NA **			None
47	M47						Yes	** NA **			None
48	MP4						Yes				None
49	M49	OOOXOO					Yes	** NA **			None
50	M50						Yes	** NA **			None
51	MP6						Yes				None

Hot Rolled Steel Design Parameters

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torq...	Kyy	Kzz	Cb	Function
1	M1	Standoff Br...	69.713			Lbyy						Lateral
2	M2	Standoffs	40			Lbyy						Lateral
3	M3	Grating Bra...	27.295			Lbyy						Lateral
4	M4	Grating Bra...	27.295			Lbyy						Lateral
5	M5	Plates	42			Lbyy						Lateral
6	M6	Standoff Br...	69.713	28	28	28	28	28				Lateral
7	M7	Standoffs	40			Lbyy						Lateral
8	M8	Grating Bra...	27.295			Lbyy						Lateral
9	M9	Grating Bra...	27.295			Lbyy						Lateral
10	M10	Plates	42			Lbyy						Lateral
11	M11	Standoff Br...	69.713			Lbyy						Lateral
12	M12	Standoffs	40			Lbyy						Lateral
13	M13	Grating Bra...	27.295			Lbyy						Lateral
14	M14	Grating Bra...	27.295			Lbyy						Lateral
15	M15	Plates	42			Lbyy						Lateral
16	H1	Horizontals	96			Lbyy						Lateral
17	H3	Horizontals	96			Lbyy						Lateral
18	H2	Horizontals	96			Lbyy						Lateral
19	M19	Handrails	96			Lbyy						Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torq...	Kyy	Kzz	Cb	Function
20	M20	Handrails	96			Lbyy						Lateral
21	M21	Handrails	96			Lbyy						Lateral
22	M22	Handrail Co...	42			Lbyy						Lateral
23	M23	Handrail Co...	42			Lbyy						Lateral
24	M24	Handrail Co...	42			Lbyy						Lateral
25	MP2	Mount Pipes	72			Lbyy						Lateral
26	MP1	Mount Pipes	72			Lbyy						Lateral
27	MP3	Mount Pipes	72			Lbyy						Lateral
28	MP8	Mount Pipes	72			Lbyy						Lateral
29	MP7	Mount Pipes	72			Lbyy						Lateral
30	MP9	Mount Pipes	72			Lbyy						Lateral
31	MP5	Mount Pipes	72			Lbyy						Lateral
32	MP4	Mount Pipes	72			Lbyy						Lateral
33	MP6	Mount Pipes	72			Lbyy						Lateral

Hot Rolled Steel Section Sets

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

Hot Rolled Steel Properties

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

Member Point Loads (BLC 1 : Self Weight)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Y	-41.25	0
2	MP1	Y	-41.25	72
3	MP1	Y	-31.95	24
4	MP1	Y	-31.95	38.96
5	MP1	Y	-37.5	48
6	MP1	Y	-37.5	62.96
7	MP1	Y	-21.85	72
8	MP4	Y	-41.25	0
9	MP4	Y	-41.25	72
10	MP4	Y	-63.9	24
11	MP4	Y	-75	48
12	MP7	Y	-41.25	0
13	MP7	Y	-41.25	72
14	MP7	Y	-63.9	24

Member Point Loads (BLC 1 : Self Weight) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
15	MP7	Y	-75	48

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Z	-265.052	0
2	MP1	Z	-265.052	72
3	MP1	Z	-41.671	24
4	MP1	Z	-41.671	38.96
5	MP1	Z	-41.671	48
6	MP1	Z	-41.671	62.96
7	MP1	Z	-85.396	72
8	MP4	Z	-159.644	0
9	MP4	Z	-159.644	72
10	MP4	Z	-52.069	24
11	MP4	Z	-56.792	48
12	MP7	Z	-159.644	0
13	MP7	Z	-159.644	72
14	MP7	Z	-52.069	24
15	MP7	Z	-56.792	48
16	MP1	X	0	0
17	MP1	X	0	72
18	MP1	X	0	24
19	MP1	X	0	38.96
20	MP1	X	0	48
21	MP1	X	0	62.96
22	MP1	X	0	72
23	MP4	X	0	0
24	MP4	X	0	72
25	MP4	X	0	24
26	MP4	X	0	48
27	MP7	X	0	0
28	MP7	X	0	72
29	MP7	X	0	24
30	MP7	X	0	48

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Z	-199.113	0
2	MP1	Z	-199.113	72
3	MP1	Z	-31.575	24
4	MP1	Z	-31.575	38.96
5	MP1	Z	-32.256	48
6	MP1	Z	-32.256	62.96
7	MP1	Z	-66.202	72
8	MP4	Z	-199.113	0
9	MP4	Z	-199.113	72
10	MP4	Z	-63.149	24
11	MP4	Z	-64.512	48
12	MP7	Z	-107.827	0
13	MP7	Z	-107.827	72
14	MP7	Z	-36.066	24
15	MP7	Z	-41.519	48
16	MP1	X	-114.958	0
17	MP1	X	-114.958	72
18	MP1	X	-18.23	24
19	MP1	X	-18.23	38.96

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
20	MP1	X	-18.623	48
21	MP1	X	-18.623	62.96
22	MP1	X	-38.222	72
23	MP4	X	-114.958	0
24	MP4	X	-114.958	72
25	MP4	X	-36.459	24
26	MP4	X	-37.246	48
27	MP7	X	-62.254	0
28	MP7	X	-62.254	72
29	MP7	X	-20.822	24
30	MP7	X	-23.971	48

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Z	-137.73	0
2	MP1	Z	-137.73	72
3	MP1	Z	-22.095	24
4	MP1	Z	-22.095	38.96
5	MP1	Z	-23.208	48
6	MP1	Z	-23.208	62.96
7	MP1	Z	-47.723	72
8	MP4	Z	-180.763	0
9	MP4	Z	-180.763	72
10	MP4	Z	-56.957	24
11	MP4	Z	-57.255	48
12	MP7	Z	-94.698	0
13	MP7	Z	-94.698	72
14	MP7	Z	-31.422	24
15	MP7	Z	-35.577	48
16	MP1	X	-137.73	0
17	MP1	X	-137.73	72
18	MP1	X	-22.095	24
19	MP1	X	-22.095	38.96
20	MP1	X	-23.208	48
21	MP1	X	-23.208	62.96
22	MP1	X	-47.723	72
23	MP4	X	-180.763	0
24	MP4	X	-180.763	72
25	MP4	X	-56.957	24
26	MP4	X	-57.255	48
27	MP7	X	-94.698	0
28	MP7	X	-94.698	72
29	MP7	X	-31.422	24
30	MP7	X	-35.577	48

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Z	-79.822	0
2	MP1	Z	-79.822	72
3	MP1	Z	-13.017	24
4	MP1	Z	-13.017	38.96
5	MP1	Z	-14.198	48
6	MP1	Z	-14.198	62.96
7	MP1	Z	-29.269	72
8	MP4	Z	-132.526	0
9	MP4	Z	-132.526	72

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
10	MP4	Z	-41.671	24
11	MP4	Z	-41.671	48
12	MP7	Z	-79.822	0
13	MP7	Z	-79.822	72
14	MP7	Z	-26.035	24
15	MP7	Z	-28.396	48
16	MP1	X	-138.256	0
17	MP1	X	-138.256	72
18	MP1	X	-22.547	24
19	MP1	X	-22.547	38.96
20	MP1	X	-24.592	48
21	MP1	X	-24.592	62.96
22	MP1	X	-50.695	72
23	MP4	X	-229.541	0
24	MP4	X	-229.541	72
25	MP4	X	-72.177	24
26	MP4	X	-72.177	48
27	MP7	X	-138.256	0
28	MP7	X	-138.256	72
29	MP7	X	-45.093	24
30	MP7	X	-49.183	48

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Z	-7.624e-15	0
2	MP1	Z	-7.624e-15	72
3	MP1	Z	-1.275e-15	24
4	MP1	Z	-1.275e-15	38.96
5	MP1	Z	-1.468e-15	48
6	MP1	Z	-1.468e-15	62.96
7	MP1	Z	-3.036e-15	72
8	MP4	Z	-1.408e-14	0
9	MP4	Z	-1.408e-14	72
10	MP4	Z	-4.465e-15	24
11	MP4	Z	-4.561e-15	48
12	MP7	Z	-1.408e-14	0
13	MP7	Z	-1.408e-14	72
14	MP7	Z	-4.465e-15	24
15	MP7	Z	-4.561e-15	48
16	MP1	X	-124.508	0
17	MP1	X	-124.508	72
18	MP1	X	-20.822	24
19	MP1	X	-20.822	38.96
20	MP1	X	-23.971	48
21	MP1	X	-23.971	62.96
22	MP1	X	-49.585	72
23	MP4	X	-229.916	0
24	MP4	X	-229.916	72
25	MP4	X	-72.918	24
26	MP4	X	-74.492	48
27	MP7	X	-229.916	0
28	MP7	X	-229.916	72
29	MP7	X	-72.918	24
30	MP7	X	-74.492	48

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Z	79.822	0
2	MP1	Z	79.822	72
3	MP1	Z	13.017	24
4	MP1	Z	13.017	38.96
5	MP1	Z	14.198	48
6	MP1	Z	14.198	62.96
7	MP1	Z	29.269	72
8	MP4	Z	79.822	0
9	MP4	Z	79.822	72
10	MP4	Z	26.035	24
11	MP4	Z	28.396	48
12	MP7	Z	132.526	0
13	MP7	Z	132.526	72
14	MP7	Z	41.671	24
15	MP7	Z	41.671	48
16	MP1	X	-138.256	0
17	MP1	X	-138.256	72
18	MP1	X	-22.547	24
19	MP1	X	-22.547	38.96
20	MP1	X	-24.592	48
21	MP1	X	-24.592	62.96
22	MP1	X	-50.695	72
23	MP4	X	-138.256	0
24	MP4	X	-138.256	72
25	MP4	X	-45.093	24
26	MP4	X	-49.183	48
27	MP7	X	-229.541	0
28	MP7	X	-229.541	72
29	MP7	X	-72.177	24
30	MP7	X	-72.177	48

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Z	137.73	0
2	MP1	Z	137.73	72
3	MP1	Z	22.095	24
4	MP1	Z	22.095	38.96
5	MP1	Z	23.208	48
6	MP1	Z	23.208	62.96
7	MP1	Z	47.723	72
8	MP4	Z	94.698	0
9	MP4	Z	94.698	72
10	MP4	Z	31.422	24
11	MP4	Z	35.577	48
12	MP7	Z	180.763	0
13	MP7	Z	180.763	72
14	MP7	Z	56.957	24
15	MP7	Z	57.255	48
16	MP1	X	-137.73	0
17	MP1	X	-137.73	72
18	MP1	X	-22.095	24
19	MP1	X	-22.095	38.96
20	MP1	X	-23.208	48
21	MP1	X	-23.208	62.96
22	MP1	X	-47.723	72
23	MP4	X	-94.698	0

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
24	MP4	X	-94.698	72
25	MP4	X	-31.422	24
26	MP4	X	-35.577	48
27	MP7	X	-180.763	0
28	MP7	X	-180.763	72
29	MP7	X	-56.957	24
30	MP7	X	-57.255	48

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Z	199.113	0
2	MP1	Z	199.113	72
3	MP1	Z	31.575	24
4	MP1	Z	31.575	38.96
5	MP1	Z	32.256	48
6	MP1	Z	32.256	62.96
7	MP1	Z	66.202	72
8	MP4	Z	107.827	0
9	MP4	Z	107.827	72
10	MP4	Z	36.066	24
11	MP4	Z	41.519	48
12	MP7	Z	199.113	0
13	MP7	Z	199.113	72
14	MP7	Z	63.149	24
15	MP7	Z	64.512	48
16	MP1	X	-114.958	0
17	MP1	X	-114.958	72
18	MP1	X	-18.23	24
19	MP1	X	-18.23	38.96
20	MP1	X	-18.623	48
21	MP1	X	-18.623	62.96
22	MP1	X	-38.222	72
23	MP4	X	-62.254	0
24	MP4	X	-62.254	72
25	MP4	X	-20.822	24
26	MP4	X	-23.971	48
27	MP7	X	-114.958	0
28	MP7	X	-114.958	72
29	MP7	X	-36.459	24
30	MP7	X	-37.246	48

Member Point Loads (BLC 12 : Ice Weight)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Y	-200.501	0
2	MP1	Y	-200.501	72
3	MP1	Y	-51.076	24
4	MP1	Y	-51.076	38.96
5	MP1	Y	-54.245	48
6	MP1	Y	-54.245	62.96
7	MP1	Y	-107.017	72
8	MP4	Y	-200.501	0
9	MP4	Y	-200.501	72
10	MP4	Y	-102.152	24
11	MP4	Y	-108.489	48
12	MP7	Y	-200.501	0
13	MP7	Y	-200.501	72

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
14	MP7	Y	-102.152	24
15	MP7	Y	-108.489	48

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Z	-52.147	0
2	MP1	Z	-52.147	72
3	MP1	Z	-9.406	24
4	MP1	Z	-9.406	38.96
5	MP1	Z	-9.406	48
6	MP1	Z	-9.406	62.96
7	MP1	Z	-19.23	72
8	MP4	Z	-33.453	0
9	MP4	Z	-33.453	72
10	MP4	Z	-12.68	24
11	MP4	Z	-13.605	48
12	MP7	Z	-33.453	0
13	MP7	Z	-33.453	72
14	MP7	Z	-12.68	24
15	MP7	Z	-13.605	48
16	MP1	X	0	0
17	MP1	X	0	72
18	MP1	X	0	24
19	MP1	X	0	38.96
20	MP1	X	0	48
21	MP1	X	0	62.96
22	MP1	X	0	72
23	MP4	X	0	0
24	MP4	X	0	72
25	MP4	X	0	24
26	MP4	X	0	48
27	MP7	X	0	0
28	MP7	X	0	72
29	MP7	X	0	24
30	MP7	X	0	48

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Z	-39.764	0
2	MP1	Z	-39.764	72
3	MP1	Z	-7.261	24
4	MP1	Z	-7.261	38.96
5	MP1	Z	-7.394	48
6	MP1	Z	-7.394	62.96
7	MP1	Z	-15.151	72
8	MP4	Z	-39.764	0
9	MP4	Z	-39.764	72
10	MP4	Z	-14.521	24
11	MP4	Z	-14.788	48
12	MP7	Z	-23.574	0
13	MP7	Z	-23.574	72
14	MP7	Z	-9.211	24
15	MP7	Z	-10.279	48
16	MP1	X	-22.958	0
17	MP1	X	-22.958	72
18	MP1	X	-4.192	24

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
19	MP1	X	-4.192	38.96
20	MP1	X	-4.269	48
21	MP1	X	-4.269	62.96
22	MP1	X	-8.748	72
23	MP4	X	-22.958	0
24	MP4	X	-22.958	72
25	MP4	X	-8.384	24
26	MP4	X	-8.538	48
27	MP7	X	-13.611	0
28	MP7	X	-13.611	72
29	MP7	X	-5.318	24
30	MP7	X	-5.935	48

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Z	-28.061	0
2	MP1	Z	-28.061	72
3	MP1	Z	-5.206	24
4	MP1	Z	-5.206	38.96
5	MP1	Z	-5.424	48
6	MP1	Z	-5.424	62.96
7	MP1	Z	-11.144	72
8	MP4	Z	-35.693	0
9	MP4	Z	-35.693	72
10	MP4	Z	-12.915	24
11	MP4	Z	-12.973	48
12	MP7	Z	-20.429	0
13	MP7	Z	-20.429	72
14	MP7	Z	-7.908	24
15	MP7	Z	-8.722	48
16	MP1	X	-28.061	0
17	MP1	X	-28.061	72
18	MP1	X	-5.206	24
19	MP1	X	-5.206	38.96
20	MP1	X	-5.424	48
21	MP1	X	-5.424	62.96
22	MP1	X	-11.144	72
23	MP4	X	-35.693	0
24	MP4	X	-35.693	72
25	MP4	X	-12.915	24
26	MP4	X	-12.973	48
27	MP7	X	-20.429	0
28	MP7	X	-20.429	72
29	MP7	X	-7.908	24
30	MP7	X	-8.722	48

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Z	-16.726	0
2	MP1	Z	-16.726	72
3	MP1	Z	-3.17	24
4	MP1	Z	-3.17	38.96
5	MP1	Z	-3.401	48
6	MP1	Z	-3.401	62.96
7	MP1	Z	-7.013	72
8	MP4	Z	-26.073	0

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
9	MP4	Z	-26.073	72
10	MP4	Z	-9.406	24
11	MP4	Z	-9.406	48
12	MP7	Z	-16.726	0
13	MP7	Z	-16.726	72
14	MP7	Z	-6.34	24
15	MP7	Z	-6.802	48
16	MP1	X	-28.971	0
17	MP1	X	-28.971	72
18	MP1	X	-5.491	24
19	MP1	X	-5.491	38.96
20	MP1	X	-5.891	48
21	MP1	X	-5.891	62.96
22	MP1	X	-12.146	72
23	MP4	X	-45.16	0
24	MP4	X	-45.16	72
25	MP4	X	-16.291	24
26	MP4	X	-16.291	48
27	MP7	X	-28.971	0
28	MP7	X	-28.971	72
29	MP7	X	-10.981	24
30	MP7	X	-11.782	48

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Z	-1.667e-15	0
2	MP1	Z	-1.667e-15	72
3	MP1	Z	-3.256e-16	24
4	MP1	Z	-3.256e-16	38.96
5	MP1	Z	-3.634e-16	48
6	MP1	Z	-3.634e-16	62.96
7	MP1	Z	-7.525e-16	72
8	MP4	Z	-2.811e-15	0
9	MP4	Z	-2.811e-15	72
10	MP4	Z	-1.027e-15	24
11	MP4	Z	-1.046e-15	48
12	MP7	Z	-2.811e-15	0
13	MP7	Z	-2.811e-15	72
14	MP7	Z	-1.027e-15	24
15	MP7	Z	-1.046e-15	48
16	MP1	X	-27.221	0
17	MP1	X	-27.221	72
18	MP1	X	-5.318	24
19	MP1	X	-5.318	38.96
20	MP1	X	-5.935	48
21	MP1	X	-5.935	62.96
22	MP1	X	-12.29	72
23	MP4	X	-45.915	0
24	MP4	X	-45.915	72
25	MP4	X	-16.768	24
26	MP4	X	-17.076	48
27	MP7	X	-45.915	0
28	MP7	X	-45.915	72
29	MP7	X	-16.768	24
30	MP7	X	-17.076	48

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Z	16.726	0
2	MP1	Z	16.726	72
3	MP1	Z	3.17	24
4	MP1	Z	3.17	38.96
5	MP1	Z	3.401	48
6	MP1	Z	3.401	62.96
7	MP1	Z	7.013	72
8	MP4	Z	16.726	0
9	MP4	Z	16.726	72
10	MP4	Z	6.34	24
11	MP4	Z	6.802	48
12	MP7	Z	26.073	0
13	MP7	Z	26.073	72
14	MP7	Z	9.406	24
15	MP7	Z	9.406	48
16	MP1	X	-28.971	0
17	MP1	X	-28.971	72
18	MP1	X	-5.491	24
19	MP1	X	-5.491	38.96
20	MP1	X	-5.891	48
21	MP1	X	-5.891	62.96
22	MP1	X	-12.146	72
23	MP4	X	-28.971	0
24	MP4	X	-28.971	72
25	MP4	X	-10.981	24
26	MP4	X	-11.782	48
27	MP7	X	-45.16	0
28	MP7	X	-45.16	72
29	MP7	X	-16.291	24
30	MP7	X	-16.291	48

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Z	28.061	0
2	MP1	Z	28.061	72
3	MP1	Z	5.206	24
4	MP1	Z	5.206	38.96
5	MP1	Z	5.424	48
6	MP1	Z	5.424	62.96
7	MP1	Z	11.144	72
8	MP4	Z	20.429	0
9	MP4	Z	20.429	72
10	MP4	Z	7.908	24
11	MP4	Z	8.722	48
12	MP7	Z	35.693	0
13	MP7	Z	35.693	72
14	MP7	Z	12.915	24
15	MP7	Z	12.973	48
16	MP1	X	-28.061	0
17	MP1	X	-28.061	72
18	MP1	X	-5.206	24
19	MP1	X	-5.206	38.96
20	MP1	X	-5.424	48
21	MP1	X	-5.424	62.96
22	MP1	X	-11.144	72
23	MP4	X	-20.429	0

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
24	MP4	X	-20.429	72
25	MP4	X	-7.908	24
26	MP4	X	-8.722	48
27	MP7	X	-35.693	0
28	MP7	X	-35.693	72
29	MP7	X	-12.915	24
30	MP7	X	-12.973	48

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Z	39.764	0
2	MP1	Z	39.764	72
3	MP1	Z	7.261	24
4	MP1	Z	7.261	38.96
5	MP1	Z	7.394	48
6	MP1	Z	7.394	62.96
7	MP1	Z	15.151	72
8	MP4	Z	23.574	0
9	MP4	Z	23.574	72
10	MP4	Z	9.211	24
11	MP4	Z	10.279	48
12	MP7	Z	39.764	0
13	MP7	Z	39.764	72
14	MP7	Z	14.521	24
15	MP7	Z	14.788	48
16	MP1	X	-22.958	0
17	MP1	X	-22.958	72
18	MP1	X	-4.192	24
19	MP1	X	-4.192	38.96
20	MP1	X	-4.269	48
21	MP1	X	-4.269	62.96
22	MP1	X	-8.748	72
23	MP4	X	-13.611	0
24	MP4	X	-13.611	72
25	MP4	X	-5.318	24
26	MP4	X	-5.935	48
27	MP7	X	-22.958	0
28	MP7	X	-22.958	72
29	MP7	X	-8.384	24
30	MP7	X	-8.538	48

Member Point Loads (BLC 23 : Seismic Load Z)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Z	-4.884	0
2	MP1	Z	-4.884	72
3	MP1	Z	-3.783	24
4	MP1	Z	-3.783	38.96
5	MP1	Z	-4.44	48
6	MP1	Z	-4.44	62.96
7	MP1	Z	-2.587	72
8	MP4	Z	-4.884	0
9	MP4	Z	-4.884	72
10	MP4	Z	-7.566	24
11	MP4	Z	-8.88	48
12	MP7	Z	-4.884	0
13	MP7	Z	-4.884	72

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
14	MP7	Z	-7.566	24
15	MP7	Z	-8.88	48

Member Point Loads (BLC 24 : Seismic Load X)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-4.884	0
2	MP1	X	-4.884	72
3	MP1	X	-3.783	24
4	MP1	X	-3.783	38.96
5	MP1	X	-4.44	48
6	MP1	X	-4.44	62.96
7	MP1	X	-2.587	72
8	MP4	X	-4.884	0
9	MP4	X	-4.884	72
10	MP4	X	-7.566	24
11	MP4	X	-8.88	48
12	MP7	X	-4.884	0
13	MP7	X	-4.884	72
14	MP7	X	-7.566	24
15	MP7	X	-8.88	48

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Member Distributed Loads (BLC 2 : Structure Wind Z)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
1	M1	SZ	-84.892	-84.892	0	%100
2	M2	SZ	-50.935	-50.935	0	%100
3	M3	SZ	-84.892	-84.892	0	%100
4	M4	SZ	-84.892	-84.892	0	%100
5	M5	SZ	-84.892	-84.892	0	%100
6	M6	SZ	-84.892	-84.892	0	%100
7	M7	SZ	-50.935	-50.935	0	%100
8	M8	SZ	-84.892	-84.892	0	%100
9	M9	SZ	-84.892	-84.892	0	%100
10	M10	SZ	-84.892	-84.892	0	%100
11	M11	SZ	-84.892	-84.892	0	%100

Member Distributed Loads (BLC 2 : Structure Wind Z) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
12	M12	SZ	-50.935	-50.935	0	%100
13	M13	SZ	-84.892	-84.892	0	%100
14	M14	SZ	-84.892	-84.892	0	%100
15	M15	SZ	-84.892	-84.892	0	%100
16	H1	SZ	-50.935	-50.935	0	%100
17	H3	SZ	-50.935	-50.935	0	%100
18	H2	SZ	-50.935	-50.935	0	%100
19	M19	SZ	-50.935	-50.935	0	%100
20	M20	SZ	-50.935	-50.935	0	%100
21	M21	SZ	-50.935	-50.935	0	%100
22	M22	SZ	-84.892	-84.892	0	%100
23	M23	SZ	-84.892	-84.892	0	%100
24	M24	SZ	-84.892	-84.892	0	%100
25	M25	SZ	-84.892	-84.892	0	%100
26	M26	SZ	-84.892	-84.892	0	%100
27	MP2	SZ	-50.935	-50.935	0	%100
28	M28	SZ	-84.892	-84.892	0	%100
29	M29	SZ	-84.892	-84.892	0	%100
30	MP1	SZ	-50.935	-50.935	0	%100
31	M31	SZ	-84.892	-84.892	0	%100
32	M32	SZ	-84.892	-84.892	0	%100
33	MP3	SZ	-50.935	-50.935	0	%100
34	M34	SZ	-84.892	-84.892	0	%100
35	M35	SZ	-84.892	-84.892	0	%100
36	MP8	SZ	-50.935	-50.935	0	%100
37	M37	SZ	-84.892	-84.892	0	%100
38	M38	SZ	-84.892	-84.892	0	%100
39	MP7	SZ	-50.935	-50.935	0	%100
40	M40	SZ	-84.892	-84.892	0	%100
41	M41	SZ	-84.892	-84.892	0	%100
42	MP9	SZ	-50.935	-50.935	0	%100
43	M43	SZ	-84.892	-84.892	0	%100
44	M44	SZ	-84.892	-84.892	0	%100
45	MP5	SZ	-50.935	-50.935	0	%100
46	M46	SZ	-84.892	-84.892	0	%100
47	M47	SZ	-84.892	-84.892	0	%100
48	MP4	SZ	-50.935	-50.935	0	%100
49	M49	SZ	-84.892	-84.892	0	%100
50	M50	SZ	-84.892	-84.892	0	%100
51	MP6	SZ	-50.935	-50.935	0	%100

Member Distributed Loads (BLC 3 : Structure Wind X)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
1	M1	SX	-84.892	-84.892	0	%100
2	M2	SX	-50.935	-50.935	0	%100
3	M3	SX	-84.892	-84.892	0	%100
4	M4	SX	-84.892	-84.892	0	%100
5	M5	SX	-84.892	-84.892	0	%100
6	M6	SX	-84.892	-84.892	0	%100
7	M7	SX	-50.935	-50.935	0	%100
8	M8	SX	-84.892	-84.892	0	%100
9	M9	SX	-84.892	-84.892	0	%100
10	M10	SX	-84.892	-84.892	0	%100
11	M11	SX	-84.892	-84.892	0	%100
12	M12	SX	-50.935	-50.935	0	%100
13	M13	SX	-84.892	-84.892	0	%100

Member Distributed Loads (BLC 3 : Structure Wind X) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
14	M14	SX	-84.892	-84.892	0	%100
15	M15	SX	-84.892	-84.892	0	%100
16	H1	SX	-50.935	-50.935	0	%100
17	H3	SX	-50.935	-50.935	0	%100
18	H2	SX	-50.935	-50.935	0	%100
19	M19	SX	-50.935	-50.935	0	%100
20	M20	SX	-50.935	-50.935	0	%100
21	M21	SX	-50.935	-50.935	0	%100
22	M22	SX	-84.892	-84.892	0	%100
23	M23	SX	-84.892	-84.892	0	%100
24	M24	SX	-84.892	-84.892	0	%100
25	M25	SX	-84.892	-84.892	0	%100
26	M26	SX	-84.892	-84.892	0	%100
27	MP2	SX	-50.935	-50.935	0	%100
28	M28	SX	-84.892	-84.892	0	%100
29	M29	SX	-84.892	-84.892	0	%100
30	MP1	SX	-50.935	-50.935	0	%100
31	M31	SX	-84.892	-84.892	0	%100
32	M32	SX	-84.892	-84.892	0	%100
33	MP3	SX	-50.935	-50.935	0	%100
34	M34	SX	-84.892	-84.892	0	%100
35	M35	SX	-84.892	-84.892	0	%100
36	MP8	SX	-50.935	-50.935	0	%100
37	M37	SX	-84.892	-84.892	0	%100
38	M38	SX	-84.892	-84.892	0	%100
39	MP7	SX	-50.935	-50.935	0	%100
40	M40	SX	-84.892	-84.892	0	%100
41	M41	SX	-84.892	-84.892	0	%100
42	MP9	SX	-50.935	-50.935	0	%100
43	M43	SX	-84.892	-84.892	0	%100
44	M44	SX	-84.892	-84.892	0	%100
45	MP5	SX	-50.935	-50.935	0	%100
46	M46	SX	-84.892	-84.892	0	%100
47	M47	SX	-84.892	-84.892	0	%100
48	MP4	SX	-50.935	-50.935	0	%100
49	M49	SX	-84.892	-84.892	0	%100
50	M50	SX	-84.892	-84.892	0	%100
51	MP6	SX	-50.935	-50.935	0	%100

Member Distributed Loads (BLC 12 : Ice Weight)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
1	M1	Y	-16.12	-16.12	0	%100
2	M2	Y	-17.954	-17.954	0	%100
3	M3	Y	-14.628	-14.628	0	%100
4	M4	Y	-14.628	-14.628	0	%100
5	M5	Y	-25.082	-25.082	0	%100
6	M6	Y	-16.12	-16.12	0	%100
7	M7	Y	-17.954	-17.954	0	%100
8	M8	Y	-14.628	-14.628	0	%100
9	M9	Y	-14.628	-14.628	0	%100
10	M10	Y	-25.082	-25.082	0	%100
11	M11	Y	-16.12	-16.12	0	%100
12	M12	Y	-17.954	-17.954	0	%100
13	M13	Y	-14.628	-14.628	0	%100
14	M14	Y	-14.628	-14.628	0	%100
15	M15	Y	-25.082	-25.082	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
16	H1	Y	-17.954	-17.954	0	%100
17	H3	Y	-17.954	-17.954	0	%100
18	H2	Y	-17.954	-17.954	0	%100
19	M19	Y	-13.34	-13.34	0	%100
20	M20	Y	-13.34	-13.34	0	%100
21	M21	Y	-13.34	-13.34	0	%100
22	M22	Y	-29.236	-29.236	0	%100
23	M23	Y	-29.236	-29.236	0	%100
24	M24	Y	-29.236	-29.236	0	%100
25	M25	Y	0	0	0	%100
26	M26	Y	0	0	0	%100
27	MP2	Y	-13.34	-13.34	0	%100
28	M28	Y	0	0	0	%100
29	M29	Y	0	0	0	%100
30	MP1	Y	-13.34	-13.34	0	%100
31	M31	Y	0	0	0	%100
32	M32	Y	0	0	0	%100
33	MP3	Y	-13.34	-13.34	0	%100
34	M34	Y	0	0	0	%100
35	M35	Y	0	0	0	%100
36	MP8	Y	-13.34	-13.34	0	%100
37	M37	Y	0	0	0	%100
38	M38	Y	0	0	0	%100
39	MP7	Y	-13.34	-13.34	0	%100
40	M40	Y	0	0	0	%100
41	M41	Y	0	0	0	%100
42	MP9	Y	-13.34	-13.34	0	%100
43	M43	Y	0	0	0	%100
44	M44	Y	0	0	0	%100
45	MP5	Y	-13.34	-13.34	0	%100
46	M46	Y	0	0	0	%100
47	M47	Y	0	0	0	%100
48	MP4	Y	-13.34	-13.34	0	%100
49	M49	Y	0	0	0	%100
50	M50	Y	0	0	0	%100
51	MP6	Y	-13.34	-13.34	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
1	M1	SZ	-17.833	-17.833	0	%100
2	M2	SZ	-16.161	-16.161	0	%100
3	M3	SZ	-19.758	-19.758	0	%100
4	M4	SZ	-19.758	-19.758	0	%100
5	M5	SZ	-12.812	-12.812	0	%100
6	M6	SZ	-17.833	-17.833	0	%100
7	M7	SZ	-16.161	-16.161	0	%100
8	M8	SZ	-19.758	-19.758	0	%100
9	M9	SZ	-19.758	-19.758	0	%100
10	M10	SZ	-12.812	-12.812	0	%100
11	M11	SZ	-17.833	-17.833	0	%100
12	M12	SZ	-16.161	-16.161	0	%100
13	M13	SZ	-19.758	-19.758	0	%100
14	M14	SZ	-19.758	-19.758	0	%100
15	M15	SZ	-12.812	-12.812	0	%100
16	H1	SZ	-16.161	-16.161	0	%100
17	H3	SZ	-16.161	-16.161	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
18	H2	SZ	-16.161	-16.161	0	%100
19	M19	SZ	-22.103	-22.103	0	%100
20	M20	SZ	-22.103	-22.103	0	%100
21	M21	SZ	-22.103	-22.103	0	%100
22	M22	SZ	-11.832	-11.832	0	%100
23	M23	SZ	-11.832	-11.832	0	%100
24	M24	SZ	-11.832	-11.832	0	%100
25	M25	SZ	0	0	0	%100
26	M26	SZ	0	0	0	%100
27	MP2	SZ	-22.103	-22.103	0	%100
28	M28	SZ	0	0	0	%100
29	M29	SZ	0	0	0	%100
30	MP1	SZ	-22.103	-22.103	0	%100
31	M31	SZ	0	0	0	%100
32	M32	SZ	0	0	0	%100
33	MP3	SZ	-22.103	-22.103	0	%100
34	M34	SZ	0	0	0	%100
35	M35	SZ	0	0	0	%100
36	MP8	SZ	-22.103	-22.103	0	%100
37	M37	SZ	0	0	0	%100
38	M38	SZ	0	0	0	%100
39	MP7	SZ	-22.103	-22.103	0	%100
40	M40	SZ	0	0	0	%100
41	M41	SZ	0	0	0	%100
42	MP9	SZ	-22.103	-22.103	0	%100
43	M43	SZ	0	0	0	%100
44	M44	SZ	0	0	0	%100
45	MP5	SZ	-22.103	-22.103	0	%100
46	M46	SZ	0	0	0	%100
47	M47	SZ	0	0	0	%100
48	MP4	SZ	-22.103	-22.103	0	%100
49	M49	SZ	0	0	0	%100
50	M50	SZ	0	0	0	%100
51	MP6	SZ	-22.103	-22.103	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
1	M1	SX	-17.833	-17.833	0	%100
2	M2	SX	-16.161	-16.161	0	%100
3	M3	SX	-19.758	-19.758	0	%100
4	M4	SX	-19.758	-19.758	0	%100
5	M5	SX	-12.812	-12.812	0	%100
6	M6	SX	-17.833	-17.833	0	%100
7	M7	SX	-16.161	-16.161	0	%100
8	M8	SX	-19.758	-19.758	0	%100
9	M9	SX	-19.758	-19.758	0	%100
10	M10	SX	-12.812	-12.812	0	%100
11	M11	SX	-17.833	-17.833	0	%100
12	M12	SX	-16.161	-16.161	0	%100
13	M13	SX	-19.758	-19.758	0	%100
14	M14	SX	-19.758	-19.758	0	%100
15	M15	SX	-12.812	-12.812	0	%100
16	H1	SX	-16.161	-16.161	0	%100
17	H3	SX	-16.161	-16.161	0	%100
18	H2	SX	-16.161	-16.161	0	%100
19	M19	SX	-22.103	-22.103	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
20	M20	SX	-22.103	-22.103	0	%100
21	M21	SX	-22.103	-22.103	0	%100
22	M22	SX	-11.832	-11.832	0	%100
23	M23	SX	-11.832	-11.832	0	%100
24	M24	SX	-11.832	-11.832	0	%100
25	M25	SX	0	0	0	%100
26	M26	SX	0	0	0	%100
27	MP2	SX	-22.103	-22.103	0	%100
28	M28	SX	0	0	0	%100
29	M29	SX	0	0	0	%100
30	MP1	SX	-22.103	-22.103	0	%100
31	M31	SX	0	0	0	%100
32	M32	SX	0	0	0	%100
33	MP3	SX	-22.103	-22.103	0	%100
34	M34	SX	0	0	0	%100
35	M35	SX	0	0	0	%100
36	MP8	SX	-22.103	-22.103	0	%100
37	M37	SX	0	0	0	%100
38	M38	SX	0	0	0	%100
39	MP7	SX	-22.103	-22.103	0	%100
40	M40	SX	0	0	0	%100
41	M41	SX	0	0	0	%100
42	MP9	SX	-22.103	-22.103	0	%100
43	M43	SX	0	0	0	%100
44	M44	SX	0	0	0	%100
45	MP5	SX	-22.103	-22.103	0	%100
46	M46	SX	0	0	0	%100
47	M47	SX	0	0	0	%100
48	MP4	SX	-22.103	-22.103	0	%100
49	M49	SX	0	0	0	%100
50	M50	SX	0	0	0	%100
51	MP6	SX	-22.103	-22.103	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
1	M12	Y	-3.185	-3.185	0	23.596
2	M13	Y	-1.605	-1.605	3.828	27.295
3	M14	Y	-1.605	-1.605	3.828	27.295
4	M7	Y	-3.185	-3.185	0	23.596
5	M8	Y	-1.605	-1.605	3.828	27.295
6	M9	Y	-1.605	-1.605	3.828	27.295
7	M2	Y	-3.185	-3.185	0	23.596
8	M3	Y	-1.605	-1.605	3.828	27.295
9	M4	Y	-1.605	-1.605	3.828	27.295

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
1	M12	Y	-19.749	-19.749	0	23.596
2	M13	Y	-9.952	-9.952	3.828	27.295
3	M14	Y	-9.952	-9.952	3.828	27.295
4	M7	Y	-19.749	-19.749	0	23.596
5	M8	Y	-9.952	-9.952	3.828	27.295
6	M9	Y	-9.952	-9.952	3.828	27.295
7	M2	Y	-19.749	-19.749	0	23.596
8	M3	Y	-9.952	-9.952	3.828	27.295
9	M4	Y	-9.952	-9.952	3.828	27.295

Member Area Loads (BLC 1 : Self Weight)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[psf]
1	N33	N34	N35	N36	Y	Two Way	-1.75
2	N22	N23	N24	N21	Y	Two Way	-1.75
3	N10	N11	N12	N9	Y	Two Way	-1.75

Member Area Loads (BLC 12 : Ice Weight)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[psf]
1	N33	N34	N35	N36	Y	Two Way	-10.85
2	N22	N23	N24	N21	Y	Two Way	-10.85
3	N10	N11	N12	N9	Y	Two Way	-10.85

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(...
1	Self Weight	DL		-1			15		3	
2	Structure Wind Z	WLZ						51		
3	Structure Wind X	WLX						51		
4	Wind Load 0 AZI	WLZ					30			
5	Wind Load 30 AZI	None					30			
6	Wind Load 45 AZI	None					30			
7	Wind Load 60 AZI	None					30			
8	Wind Load 90 AZI	WLX					30			
9	Wind Load 120 AZI	None					30			
10	Wind Load 135 AZI	None					30			
11	Wind Load 150 AZI	None					30			
12	Ice Weight	OL1					15	51	3	
13	Ice Structure Wind Z	OL2						51		
14	Ice Structure Wind X	OL3						51		
15	Ice Wind Load 0 AZI	OL2					30			
16	Ice Wind Load 30 AZI	None					30			
17	Ice Wind Load 45 AZI	None					30			
18	Ice Wind Load 60 AZI	None					30			
19	Ice Wind Load 90 AZI	OL3					30			
20	Ice Wind Load 120 AZI	None					30			
21	Ice Wind Load 135 AZI	None					30			
22	Ice Wind Load 150 AZI	None					30			
23	Seismic Load Z	ELZ			-.118		15			
24	Seismic Load X	ELX	-.118				15			
25	Live Load 1 (Lv)	None					1			
26	Live Load 2 (Lv)	None					1			
27	Live Load 3 (Lv)	None					1			
28	Live Load 4 (Lv)	None					1			
29	Live Load 5 (Lv)	None					1			
30	Live Load 6 (Lv)	None					1			
31	Live Load 7 (Lv)	None					1			
32	Live Load 8 (Lv)	None					1			
33	Live Load 9 (Lv)	None					1			
34	Maintenance Load 1 (Lm)	None					1			
35	Maintenance Load 2 (Lm)	None					1			
36	Maintenance Load 3 (Lm)	None					1			
37	Maintenance Load 4 (Lm)	None					1			
38	Maintenance Load 5 (Lm)	None					1			
39	Maintenance Load 6 (Lm)	None					1			
40	Maintenance Load 7 (Lm)	None					1			
41	Maintenance Load 8 (Lm)	None					1			
42	Maintenance Load 9 (Lm)	None					1			

Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(...
43	BLC 1 Transient Area Loads	None						9		
44	BLC 12 Transient Area Loads	None						9		

Load Combinations

	Description	S...	P...	S...	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		DL	1.4																		
2	1.2DL + 1WL 0 AZI	Yes	Y		DL	1.2	2	1	3		4	1												
3	1.2DL + 1WL 30 AZI	Yes	Y		DL	1.2	2	.866	3	.5	5	1												
4	1.2DL + 1WL 45 AZI	Yes	Y		DL	1.2	2	.707	3	.707	6	1												
5	1.2DL + 1WL 60 AZI	Yes	Y		DL	1.2	2	.5	3	.866	7	1												
6	1.2DL + 1WL 90 AZI	Yes	Y		DL	1.2	2		3	1	8	1												
7	1.2DL + 1WL 120 AZI	Yes	Y		DL	1.2	2	-.5	3	.866	9	1												
8	1.2DL + 1WL 135 AZI	Yes	Y		DL	1.2	2	-.7...	3	.707	10	1												
9	1.2DL + 1WL 150 AZI	Yes	Y		DL	1.2	2	-.8...	3	.5	11	1												
10	1.2DL + 1WL 180 AZI	Yes	Y		DL	1.2	2	-1	3		4	-1												
11	1.2DL + 1WL 210 AZI	Yes	Y		DL	1.2	2	-.8...	3	-.5	5	-1												
12	1.2DL + 1WL 225 AZI	Yes	Y		DL	1.2	2	-.7...	3	-.7...	6	-1												
13	1.2DL + 1WL 240 AZI	Yes	Y		DL	1.2	2	-.5	3	-.8...	7	-1												
14	1.2DL + 1WL 270 AZI	Yes	Y		DL	1.2	2		3	-1	8	-1												
15	1.2DL + 1WL 300 AZI	Yes	Y		DL	1.2	2	.5	3	-.8...	9	-1												
16	1.2DL + 1WL 315 AZI	Yes	Y		DL	1.2	2	.707	3	-.7...	10	-1												
17	1.2DL + 1WL 330 AZI	Yes	Y		DL	1.2	2	.866	3	-.5	11	-1												
18	0.9DL + 1WL 0 AZI	Yes	Y		DL	.9	2	1	3		4	1												
19	0.9DL + 1WL 30 AZI	Yes	Y		DL	.9	2	.866	3	.5	5	1												
20	0.9DL + 1WL 45 AZI	Yes	Y		DL	.9	2	.707	3	.707	6	1												
21	0.9DL + 1WL 60 AZI	Yes	Y		DL	.9	2	.5	3	.866	7	1												
22	0.9DL + 1WL 90 AZI	Yes	Y		DL	.9	2		3	1	8	1												
23	0.9DL + 1WL 120 AZI	Yes	Y		DL	.9	2	-.5	3	.866	9	1												
24	0.9DL + 1WL 135 AZI	Yes	Y		DL	.9	2	-.7...	3	.707	10	1												
25	0.9DL + 1WL 150 AZI	Yes	Y		DL	.9	2	-.8...	3	.5	11	1												
26	0.9DL + 1WL 180 AZI	Yes	Y		DL	.9	2	-1	3		4	-1												
27	0.9DL + 1WL 210 AZI	Yes	Y		DL	.9	2	-.8...	3	-.5	5	-1												
28	0.9DL + 1WL 225 AZI	Yes	Y		DL	.9	2	-.7...	3	-.7...	6	-1												
29	0.9DL + 1WL 240 AZI	Yes	Y		DL	.9	2	-.5	3	-.8...	7	-1												
30	0.9DL + 1WL 270 AZI	Yes	Y		DL	.9	2		3	-1	8	-1												
31	0.9DL + 1WL 300 AZI	Yes	Y		DL	.9	2	.5	3	-.8...	9	-1												
32	0.9DL + 1WL 315 AZI	Yes	Y		DL	.9	2	.707	3	-.7...	10	-1												
33	0.9DL + 1WL 330 AZI	Yes	Y		DL	.9	2	.866	3	-.5	11	-1												
34	1.2DL + 1DLi + 1WLi 0 AZI	Yes	Y		DL	1.2	O...	1	13	1	14		15	1										
35	1.2DL + 1DLi + 1WLi 30 AZI	Yes	Y		DL	1.2	O...	1	13	.866	14	.5	16	1										
36	1.2DL + 1DLi + 1WLi 45 AZI	Yes	Y		DL	1.2	O...	1	13	.707	14	.707	17	1										
37	1.2DL + 1DLi + 1WLi 60 AZI	Yes	Y		DL	1.2	O...	1	13	.5	14	.866	18	1										
38	1.2DL + 1DLi + 1WLi 90 AZI	Yes	Y		DL	1.2	O...	1	13		14	1	19	1										
39	1.2DL + 1DLi + 1WLi 120 AZI	Yes	Y		DL	1.2	O...	1	13	-.5	14	.866	20	1										
40	1.2DL + 1DLi + 1WLi 135 AZI	Yes	Y		DL	1.2	O...	1	13	-.7...	14	.707	21	1										
41	1.2DL + 1DLi + 1WLi 150 AZI	Yes	Y		DL	1.2	O...	1	13	-.8...	14	.5	22	1										
42	1.2DL + 1DLi + 1WLi 180 AZI	Yes	Y		DL	1.2	O...	1	13	-1	14		15	-1										
43	1.2DL + 1DLi + 1WLi 210 AZI	Yes	Y		DL	1.2	O...	1	13	-.8...	14	-.5	16	-1										
44	1.2DL + 1DLi + 1WLi 225 AZI	Yes	Y		DL	1.2	O...	1	13	-.7...	14	-.7...	17	-1										
45	1.2DL + 1DLi + 1WLi 240 AZI	Yes	Y		DL	1.2	O...	1	13	-.5	14	-.8...	18	-1										
46	1.2DL + 1DLi + 1WLi 270 AZI	Yes	Y		DL	1.2	O...	1	13		14	-1	19	-1										
47	1.2DL + 1DLi + 1WLi 300 AZI	Yes	Y		DL	1.2	O...	1	13	.5	14	-.8...	20	-1										
48	1.2DL + 1DLi + 1WLi 315 AZI	Yes	Y		DL	1.2	O...	1	13	.707	14	-.7...	21	-1										
49	1.2DL + 1DLi + 1WLi 330 AZI	Yes	Y		DL	1.2	O...	1	13	.866	14	-.5	22	-1										
50	(1.2+0.2Sds)DL + 1E 0 AZI	Yes	Y		DL	1.2...	23	1	24															

Load Combinations (Continued)

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
51	(1.2+0.2Sds)DL + 1E 30 AZI	Yes	Y		DL	1.2...	23	.866	24	.5																
52	(1.2+0.2Sds)DL + 1E 45 AZI	Yes	Y		DL	1.2...	23	.707	24	.707																
53	(1.2+0.2Sds)DL + 1E 60 AZI	Yes	Y		DL	1.2...	23	.5	24	.866																
54	(1.2+0.2Sds)DL + 1E 90 AZI	Yes	Y		DL	1.2...	23		24	1																
55	(1.2+0.2Sds)DL + 1E 120 AZI	Yes	Y		DL	1.2...	23	-.5	24	.866																
56	(1.2+0.2Sds)DL + 1E 135 AZI	Yes	Y		DL	1.2...	23	-.7...	24	.707																
57	(1.2+0.2Sds)DL + 1E 150 AZI	Yes	Y		DL	1.2...	23	-.8...	24	.5																
58	(1.2+0.2Sds)DL + 1E 180 AZI	Yes	Y		DL	1.2...	23	-1	24																	
59	(1.2+0.2Sds)DL + 1E 210 AZI	Yes	Y		DL	1.2...	23	-.8...	24	-.5																
60	(1.2+0.2Sds)DL + 1E 225 AZI	Yes	Y		DL	1.2...	23	-.7...	24	-.7...																
61	(1.2+0.2Sds)DL + 1E 240 AZI	Yes	Y		DL	1.2...	23	-.5	24	-.8...																
62	(1.2+0.2Sds)DL + 1E 270 AZI	Yes	Y		DL	1.2...	23		24	-1																
63	(1.2+0.2Sds)DL + 1E 300 AZI	Yes	Y		DL	1.2...	23	.5	24	-.8...																
64	(1.2+0.2Sds)DL + 1E 315 AZI	Yes	Y		DL	1.2...	23	.707	24	-.7...																
65	(1.2+0.2Sds)DL + 1E 330 AZI	Yes	Y		DL	1.2...	23	.866	24	-.5																
66	(0.9-0.2Sds)DL + 1E 0 AZI	Yes	Y		DL	.861	23	1	24																	
67	(0.9-0.2Sds)DL + 1E 30 AZI	Yes	Y		DL	.861	23	.866	24	.5																
68	(0.9-0.2Sds)DL + 1E 45 AZI	Yes	Y		DL	.861	23	.707	24	.707																
69	(0.9-0.2Sds)DL + 1E 60 AZI	Yes	Y		DL	.861	23	.5	24	.866																
70	(0.9-0.2Sds)DL + 1E 90 AZI	Yes	Y		DL	.861	23		24	1																
71	(0.9-0.2Sds)DL + 1E 120 AZI	Yes	Y		DL	.861	23	-.5	24	.866																
72	(0.9-0.2Sds)DL + 1E 135 AZI	Yes	Y		DL	.861	23	-.7...	24	.707																
73	(0.9-0.2Sds)DL + 1E 150 AZI	Yes	Y		DL	.861	23	-.8...	24	.5																
74	(0.9-0.2Sds)DL + 1E 180 AZI	Yes	Y		DL	.861	23	-1	24																	
75	(0.9-0.2Sds)DL + 1E 210 AZI	Yes	Y		DL	.861	23	-.8...	24	-.5																
76	(0.9-0.2Sds)DL + 1E 225 AZI	Yes	Y		DL	.861	23	-.7...	24	-.7...																
77	(0.9-0.2Sds)DL + 1E 240 AZI	Yes	Y		DL	.861	23	-.5	24	-.8...																
78	(0.9-0.2Sds)DL + 1E 270 AZI	Yes	Y		DL	.861	23		24	-1																
79	(0.9-0.2Sds)DL + 1E 300 AZI	Yes	Y		DL	.861	23	.5	24	-.8...																
80	(0.9-0.2Sds)DL + 1E 315 AZI	Yes	Y		DL	.861	23	.707	24	-.7...																
81	(0.9-0.2Sds)DL + 1E 330 AZI	Yes	Y		DL	.861	23	.866	24	-.5																
82	1.2DL + 1Lv1	Yes	Y		DL	1.2	25	1.5																		
83	1.2DL + 1Lv2	Yes	Y		DL	1.2	26	1.5																		
84	1.2DL + 1Lv3	Yes	Y		DL	1.2	27	1.5																		
85	1.2DL + 1Lv4	Yes	Y		DL	1.2	28	1.5																		
86	1.2DL + 1Lv5	Yes	Y		DL	1.2	29	1.5																		
87	1.2DL + 1Lv6	Yes	Y		DL	1.2	30	1.5																		
88	1.2DL + 1Lv7	Yes	Y		DL	1.2	31	1.5																		
89	1.2DL + 1Lv8	Yes	Y		DL	1.2	32	1.5																		
90	1.2DL + 1Lv9	Yes	Y		DL	1.2	33	1.5																		
91	1.2DL + 1.5Lm + 1Wm 0 AZI -...	Yes	Y		DL	1.2	34	1.5	2	.063	3		4	.063												
92	1.2DL + 1.5Lm + 1Wm 30 AZI...	Yes	Y		DL	1.2	34	1.5	2	.054	3	.031	5	.063												
93	1.2DL + 1.5Lm + 1Wm 45 AZI...	Yes	Y		DL	1.2	34	1.5	2	.044	3	.044	6	.063												
94	1.2DL + 1.5Lm + 1Wm 60 AZI...	Yes	Y		DL	1.2	34	1.5	2	.031	3	.054	7	.063												
95	1.2DL + 1.5Lm + 1Wm 90 AZI...	Yes	Y		DL	1.2	34	1.5	2		3	.063	8	.063												
96	1.2DL + 1.5Lm + 1Wm 120 A...	Yes	Y		DL	1.2	34	1.5	2	-.0...	3	.054	9	.063												
97	1.2DL + 1.5Lm + 1Wm 135 A...	Yes	Y		DL	1.2	34	1.5	2	-.0...	3	.044	10	.063												
98	1.2DL + 1.5Lm + 1Wm 150 A...	Yes	Y		DL	1.2	34	1.5	2	-.0...	3	.031	11	.063												
99	1.2DL + 1.5Lm + 1Wm 180 A...	Yes	Y		DL	1.2	34	1.5	2	-.0...	3		4	-.0...												
100	1.2DL + 1.5Lm + 1Wm 210 A...	Yes	Y		DL	1.2	34	1.5	2	-.0...	3	-.0...	5	-.0...												
101	1.2DL + 1.5Lm + 1Wm 225 A...	Yes	Y		DL	1.2	34	1.5	2	-.0...	3	-.0...	6	-.0...												
102	1.2DL + 1.5Lm + 1Wm 240 A...	Yes	Y		DL	1.2	34	1.5	2	-.0...	3	-.0...	7	-.0...												
103	1.2DL + 1.5Lm + 1Wm 270 A...	Yes	Y		DL	1.2	34	1.5	2		3	-.0...	8	-.0...												
104	1.2DL + 1.5Lm + 1Wm 300 A...	Yes	Y		DL	1.2	34	1.5	2	.031	3	-.0...	9	-.0...												
105	1.2DL + 1.5Lm + 1Wm 315 A...	Yes	Y		DL	1.2	34	1.5	2	.044	3	-.0...	10	-.0...												
106	1.2DL + 1.5Lm + 1Wm 330 A...	Yes	Y		DL	1.2	34	1.5	2	.054	3	-.0...	11	-.0...												
107	1.2DL + 1.5Lm + 1Wm 0 AZI -...	Yes	Y		DL	1.2	35	1.5	2	.063	3		4	.063												

Load Combinations (Continued)

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
108	1.2DL + 1.5Lm + 1Wm 30 AZI...	Yes	Y		DL	1.2	35	1.5	2	.054	3	.031	5	.063										
109	1.2DL + 1.5Lm + 1Wm 45 AZI...	Yes	Y		DL	1.2	35	1.5	2	.044	3	.044	6	.063										
110	1.2DL + 1.5Lm + 1Wm 60 AZI...	Yes	Y		DL	1.2	35	1.5	2	.031	3	.054	7	.063										
111	1.2DL + 1.5Lm + 1Wm 90 AZI...	Yes	Y		DL	1.2	35	1.5	2		3	.063	8	.063										
112	1.2DL + 1.5Lm + 1Wm 120 A...	Yes	Y		DL	1.2	35	1.5	2	-.0...	3	.054	9	.063										
113	1.2DL + 1.5Lm + 1Wm 135 A...	Yes	Y		DL	1.2	35	1.5	2	-.0...	3	.044	10	.063										
114	1.2DL + 1.5Lm + 1Wm 150 A...	Yes	Y		DL	1.2	35	1.5	2	-.0...	3	.031	11	.063										
115	1.2DL + 1.5Lm + 1Wm 180 A...	Yes	Y		DL	1.2	35	1.5	2	-.0...	3		4	-.0...										
116	1.2DL + 1.5Lm + 1Wm 210 A...	Yes	Y		DL	1.2	35	1.5	2	-.0...	3	-.0...	5	-.0...										
117	1.2DL + 1.5Lm + 1Wm 225 A...	Yes	Y		DL	1.2	35	1.5	2	-.0...	3	-.0...	6	-.0...										
118	1.2DL + 1.5Lm + 1Wm 240 A...	Yes	Y		DL	1.2	35	1.5	2	-.0...	3	-.0...	7	-.0...										
119	1.2DL + 1.5Lm + 1Wm 270 A...	Yes	Y		DL	1.2	35	1.5	2		3	-.0...	8	-.0...										
120	1.2DL + 1.5Lm + 1Wm 300 A...	Yes	Y		DL	1.2	35	1.5	2	.031	3	-.0...	9	-.0...										
121	1.2DL + 1.5Lm + 1Wm 315 A...	Yes	Y		DL	1.2	35	1.5	2	.044	3	-.0...	10	-.0...										
122	1.2DL + 1.5Lm + 1Wm 330 A...	Yes	Y		DL	1.2	35	1.5	2	.054	3	-.0...	11	-.0...										
123	1.2DL + 1.5Lm + 1Wm 0 AZI -...	Yes	Y		DL	1.2	36	1.5	2	.063	3		4	.063										
124	1.2DL + 1.5Lm + 1Wm 30 AZI...	Yes	Y		DL	1.2	36	1.5	2	.054	3	.031	5	.063										
125	1.2DL + 1.5Lm + 1Wm 45 AZI...	Yes	Y		DL	1.2	36	1.5	2	.044	3	.044	6	.063										
126	1.2DL + 1.5Lm + 1Wm 60 AZI...	Yes	Y		DL	1.2	36	1.5	2	.031	3	.054	7	.063										
127	1.2DL + 1.5Lm + 1Wm 90 AZI...	Yes	Y		DL	1.2	36	1.5	2		3	.063	8	.063										
128	1.2DL + 1.5Lm + 1Wm 120 A...	Yes	Y		DL	1.2	36	1.5	2	-.0...	3	.054	9	.063										
129	1.2DL + 1.5Lm + 1Wm 135 A...	Yes	Y		DL	1.2	36	1.5	2	-.0...	3	.044	10	.063										
130	1.2DL + 1.5Lm + 1Wm 150 A...	Yes	Y		DL	1.2	36	1.5	2	-.0...	3	.031	11	.063										
131	1.2DL + 1.5Lm + 1Wm 180 A...	Yes	Y		DL	1.2	36	1.5	2	-.0...	3		4	-.0...										
132	1.2DL + 1.5Lm + 1Wm 210 A...	Yes	Y		DL	1.2	36	1.5	2	-.0...	3	-.0...	5	-.0...										
133	1.2DL + 1.5Lm + 1Wm 225 A...	Yes	Y		DL	1.2	36	1.5	2	-.0...	3	-.0...	6	-.0...										
134	1.2DL + 1.5Lm + 1Wm 240 A...	Yes	Y		DL	1.2	36	1.5	2	-.0...	3	-.0...	7	-.0...										
135	1.2DL + 1.5Lm + 1Wm 270 A...	Yes	Y		DL	1.2	36	1.5	2		3	-.0...	8	-.0...										
136	1.2DL + 1.5Lm + 1Wm 300 A...	Yes	Y		DL	1.2	36	1.5	2	.031	3	-.0...	9	-.0...										
137	1.2DL + 1.5Lm + 1Wm 315 A...	Yes	Y		DL	1.2	36	1.5	2	.044	3	-.0...	10	-.0...										
138	1.2DL + 1.5Lm + 1Wm 330 A...	Yes	Y		DL	1.2	36	1.5	2	.054	3	-.0...	11	-.0...										
139	1.2DL + 1.5Lm + 1Wm 0 AZI -...	Yes	Y		DL	1.2	37	1.5	2	.063	3		4	.063										
140	1.2DL + 1.5Lm + 1Wm 30 AZI...	Yes	Y		DL	1.2	37	1.5	2	.054	3	.031	5	.063										
141	1.2DL + 1.5Lm + 1Wm 45 AZI...	Yes	Y		DL	1.2	37	1.5	2	.044	3	.044	6	.063										
142	1.2DL + 1.5Lm + 1Wm 60 AZI...	Yes	Y		DL	1.2	37	1.5	2	.031	3	.054	7	.063										
143	1.2DL + 1.5Lm + 1Wm 90 AZI...	Yes	Y		DL	1.2	37	1.5	2		3	.063	8	.063										
144	1.2DL + 1.5Lm + 1Wm 120 A...	Yes	Y		DL	1.2	37	1.5	2	-.0...	3	.054	9	.063										
145	1.2DL + 1.5Lm + 1Wm 135 A...	Yes	Y		DL	1.2	37	1.5	2	-.0...	3	.044	10	.063										
146	1.2DL + 1.5Lm + 1Wm 150 A...	Yes	Y		DL	1.2	37	1.5	2	-.0...	3	.031	11	.063										
147	1.2DL + 1.5Lm + 1Wm 180 A...	Yes	Y		DL	1.2	37	1.5	2	-.0...	3		4	-.0...										
148	1.2DL + 1.5Lm + 1Wm 210 A...	Yes	Y		DL	1.2	37	1.5	2	-.0...	3	-.0...	5	-.0...										
149	1.2DL + 1.5Lm + 1Wm 225 A...	Yes	Y		DL	1.2	37	1.5	2	-.0...	3	-.0...	6	-.0...										
150	1.2DL + 1.5Lm + 1Wm 240 A...	Yes	Y		DL	1.2	37	1.5	2	-.0...	3	-.0...	7	-.0...										
151	1.2DL + 1.5Lm + 1Wm 270 A...	Yes	Y		DL	1.2	37	1.5	2		3	-.0...	8	-.0...										
152	1.2DL + 1.5Lm + 1Wm 300 A...	Yes	Y		DL	1.2	37	1.5	2	.031	3	-.0...	9	-.0...										
153	1.2DL + 1.5Lm + 1Wm 315 A...	Yes	Y		DL	1.2	37	1.5	2	.044	3	-.0...	10	-.0...										
154	1.2DL + 1.5Lm + 1Wm 330 A...	Yes	Y		DL	1.2	37	1.5	2	.054	3	-.0...	11	-.0...										
155	1.2DL + 1.5Lm + 1Wm 0 AZI -...	Yes	Y		DL	1.2	38	1.5	2	.063	3		4	.063										
156	1.2DL + 1.5Lm + 1Wm 30 AZI...	Yes	Y		DL	1.2	38	1.5	2	.054	3	.031	5	.063										
157	1.2DL + 1.5Lm + 1Wm 45 AZI...	Yes	Y		DL	1.2	38	1.5	2	.044	3	.044	6	.063										
158	1.2DL + 1.5Lm + 1Wm 60 AZI...	Yes	Y		DL	1.2	38	1.5	2	.031	3	.054	7	.063										
159	1.2DL + 1.5Lm + 1Wm 90 AZI...	Yes	Y		DL	1.2	38	1.5	2		3	.063	8	.063										
160	1.2DL + 1.5Lm + 1Wm 120 A...	Yes	Y		DL	1.2	38	1.5	2	-.0...	3	.054	9	.063										
161	1.2DL + 1.5Lm + 1Wm 135 A...	Yes	Y		DL	1.2	38	1.5	2	-.0...	3	.044	10	.063										
162	1.2DL + 1.5Lm + 1Wm 150 A...	Yes	Y		DL	1.2	38	1.5	2	-.0...	3	.031	11	.063										
163	1.2DL + 1.5Lm + 1Wm 180 A...	Yes	Y		DL	1.2	38	1.5	2	-.0...	3		4	-.0...										
164	1.2DL + 1.5Lm + 1Wm 210 A...	Yes	Y		DL	1.2	38	1.5	2	-.0...	3	-.0...	5	-.0...										

Load Combinations (Continued)

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
165	1.2DL + 1.5Lm + 1Wm 225 A...	Yes	Y		DL	1.2	38	1.5	2	-.0...	3	-.0...	6	-.0...										
166	1.2DL + 1.5Lm + 1Wm 240 A...	Yes	Y		DL	1.2	38	1.5	2	-.0...	3	-.0...	7	-.0...										
167	1.2DL + 1.5Lm + 1Wm 270 A...	Yes	Y		DL	1.2	38	1.5	2		3	-.0...	8	-.0...										
168	1.2DL + 1.5Lm + 1Wm 300 A...	Yes	Y		DL	1.2	38	1.5	2	.031	3	-.0...	9	-.0...										
169	1.2DL + 1.5Lm + 1Wm 315 A...	Yes	Y		DL	1.2	38	1.5	2	.044	3	-.0...	10	-.0...										
170	1.2DL + 1.5Lm + 1Wm 330 A...	Yes	Y		DL	1.2	38	1.5	2	.054	3	-.0...	11	-.0...										
171	1.2DL + 1.5Lm + 1Wm 0 AZI -...	Yes	Y		DL	1.2	39	1.5	2	.063	3		4	.063										
172	1.2DL + 1.5Lm + 1Wm 30 AZI...	Yes	Y		DL	1.2	39	1.5	2	.054	3	.031	5	.063										
173	1.2DL + 1.5Lm + 1Wm 45 AZI...	Yes	Y		DL	1.2	39	1.5	2	.044	3	.044	6	.063										
174	1.2DL + 1.5Lm + 1Wm 60 AZI...	Yes	Y		DL	1.2	39	1.5	2	.031	3	.054	7	.063										
175	1.2DL + 1.5Lm + 1Wm 90 AZI...	Yes	Y		DL	1.2	39	1.5	2		3	.063	8	.063										
176	1.2DL + 1.5Lm + 1Wm 120 A...	Yes	Y		DL	1.2	39	1.5	2	-.0...	3	.054	9	.063										
177	1.2DL + 1.5Lm + 1Wm 135 A...	Yes	Y		DL	1.2	39	1.5	2	-.0...	3	.044	10	.063										
178	1.2DL + 1.5Lm + 1Wm 150 A...	Yes	Y		DL	1.2	39	1.5	2	-.0...	3	.031	11	.063										
179	1.2DL + 1.5Lm + 1Wm 180 A...	Yes	Y		DL	1.2	39	1.5	2	-.0...	3		4	-.0...										
180	1.2DL + 1.5Lm + 1Wm 210 A...	Yes	Y		DL	1.2	39	1.5	2	-.0...	3	-.0...	5	-.0...										
181	1.2DL + 1.5Lm + 1Wm 225 A...	Yes	Y		DL	1.2	39	1.5	2	-.0...	3	-.0...	6	-.0...										
182	1.2DL + 1.5Lm + 1Wm 240 A...	Yes	Y		DL	1.2	39	1.5	2	-.0...	3	-.0...	7	-.0...										
183	1.2DL + 1.5Lm + 1Wm 270 A...	Yes	Y		DL	1.2	39	1.5	2		3	-.0...	8	-.0...										
184	1.2DL + 1.5Lm + 1Wm 300 A...	Yes	Y		DL	1.2	39	1.5	2	.031	3	-.0...	9	-.0...										
185	1.2DL + 1.5Lm + 1Wm 315 A...	Yes	Y		DL	1.2	39	1.5	2	.044	3	-.0...	10	-.0...										
186	1.2DL + 1.5Lm + 1Wm 330 A...	Yes	Y		DL	1.2	39	1.5	2	.054	3	-.0...	11	-.0...										
187	1.2DL + 1.5Lm + 1Wm 0 AZI -...	Yes	Y		DL	1.2	40	1.5	2	.063	3		4	.063										
188	1.2DL + 1.5Lm + 1Wm 30 AZI...	Yes	Y		DL	1.2	40	1.5	2	.054	3	.031	5	.063										
189	1.2DL + 1.5Lm + 1Wm 45 AZI...	Yes	Y		DL	1.2	40	1.5	2	.044	3	.044	6	.063										
190	1.2DL + 1.5Lm + 1Wm 60 AZI...	Yes	Y		DL	1.2	40	1.5	2	.031	3	.054	7	.063										
191	1.2DL + 1.5Lm + 1Wm 90 AZI...	Yes	Y		DL	1.2	40	1.5	2		3	.063	8	.063										
192	1.2DL + 1.5Lm + 1Wm 120 A...	Yes	Y		DL	1.2	40	1.5	2	-.0...	3	.054	9	.063										
193	1.2DL + 1.5Lm + 1Wm 135 A...	Yes	Y		DL	1.2	40	1.5	2	-.0...	3	.044	10	.063										
194	1.2DL + 1.5Lm + 1Wm 150 A...	Yes	Y		DL	1.2	40	1.5	2	-.0...	3	.031	11	.063										
195	1.2DL + 1.5Lm + 1Wm 180 A...	Yes	Y		DL	1.2	40	1.5	2	-.0...	3		4	-.0...										
196	1.2DL + 1.5Lm + 1Wm 210 A...	Yes	Y		DL	1.2	40	1.5	2	-.0...	3	-.0...	5	-.0...										
197	1.2DL + 1.5Lm + 1Wm 225 A...	Yes	Y		DL	1.2	40	1.5	2	-.0...	3	-.0...	6	-.0...										
198	1.2DL + 1.5Lm + 1Wm 240 A...	Yes	Y		DL	1.2	40	1.5	2	-.0...	3	-.0...	7	-.0...										
199	1.2DL + 1.5Lm + 1Wm 270 A...	Yes	Y		DL	1.2	40	1.5	2		3	-.0...	8	-.0...										
200	1.2DL + 1.5Lm + 1Wm 300 A...	Yes	Y		DL	1.2	40	1.5	2	.031	3	-.0...	9	-.0...										
201	1.2DL + 1.5Lm + 1Wm 315 A...	Yes	Y		DL	1.2	40	1.5	2	.044	3	-.0...	10	-.0...										
202	1.2DL + 1.5Lm + 1Wm 330 A...	Yes	Y		DL	1.2	40	1.5	2	.054	3	-.0...	11	-.0...										
203	1.2DL + 1.5Lm + 1Wm 0 AZI -...	Yes	Y		DL	1.2	41	1.5	2	.063	3		4	.063										
204	1.2DL + 1.5Lm + 1Wm 30 AZI...	Yes	Y		DL	1.2	41	1.5	2	.054	3	.031	5	.063										
205	1.2DL + 1.5Lm + 1Wm 45 AZI...	Yes	Y		DL	1.2	41	1.5	2	.044	3	.044	6	.063										
206	1.2DL + 1.5Lm + 1Wm 60 AZI...	Yes	Y		DL	1.2	41	1.5	2	.031	3	.054	7	.063										
207	1.2DL + 1.5Lm + 1Wm 90 AZI...	Yes	Y		DL	1.2	41	1.5	2		3	.063	8	.063										
208	1.2DL + 1.5Lm + 1Wm 120 A...	Yes	Y		DL	1.2	41	1.5	2	-.0...	3	.054	9	.063										
209	1.2DL + 1.5Lm + 1Wm 135 A...	Yes	Y		DL	1.2	41	1.5	2	-.0...	3	.044	10	.063										
210	1.2DL + 1.5Lm + 1Wm 150 A...	Yes	Y		DL	1.2	41	1.5	2	-.0...	3	.031	11	.063										
211	1.2DL + 1.5Lm + 1Wm 180 A...	Yes	Y		DL	1.2	41	1.5	2	-.0...	3		4	-.0...										
212	1.2DL + 1.5Lm + 1Wm 210 A...	Yes	Y		DL	1.2	41	1.5	2	-.0...	3	-.0...	5	-.0...										
213	1.2DL + 1.5Lm + 1Wm 225 A...	Yes	Y		DL	1.2	41	1.5	2	-.0...	3	-.0...	6	-.0...										
214	1.2DL + 1.5Lm + 1Wm 240 A...	Yes	Y		DL	1.2	41	1.5	2	-.0...	3	-.0...	7	-.0...										
215	1.2DL + 1.5Lm + 1Wm 270 A...	Yes	Y		DL	1.2	41	1.5	2		3	-.0...	8	-.0...										
216	1.2DL + 1.5Lm + 1Wm 300 A...	Yes	Y		DL	1.2	41	1.5	2	.031	3	-.0...	9	-.0...										
217	1.2DL + 1.5Lm + 1Wm 315 A...	Yes	Y		DL	1.2	41	1.5	2	.044	3	-.0...	10	-.0...										
218	1.2DL + 1.5Lm + 1Wm 330 A...	Yes	Y		DL	1.2	41	1.5	2	.054	3	-.0...	11	-.0...										
219	1.2DL + 1.5Lm + 1Wm 0 AZI -...	Yes	Y		DL	1.2	42	1.5	2	.063	3		4	.063										
220	1.2DL + 1.5Lm + 1Wm 30 AZI...	Yes	Y		DL	1.2	42	1.5	2	.054	3	.031	5	.063										
221	1.2DL + 1.5Lm + 1Wm 45 AZI...	Yes	Y		DL	1.2	42	1.5	2	.044	3	.044	6	.063										

Load Combinations (Continued)

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
222	1.2DL + 1.5Lm + 1Wm 60 AZI...	Yes	Y		DL	1.2	42	1.5	2	.031	3	.054	7	.063												
223	1.2DL + 1.5Lm + 1Wm 90 AZI...	Yes	Y		DL	1.2	42	1.5	2		3	.063	8	.063												
224	1.2DL + 1.5Lm + 1Wm 120 A...	Yes	Y		DL	1.2	42	1.5	2	-.0...	3	.054	9	.063												
225	1.2DL + 1.5Lm + 1Wm 135 A...	Yes	Y		DL	1.2	42	1.5	2	-.0...	3	.044	10	.063												
226	1.2DL + 1.5Lm + 1Wm 150 A...	Yes	Y		DL	1.2	42	1.5	2	-.0...	3	.031	11	.063												
227	1.2DL + 1.5Lm + 1Wm 180 A...	Yes	Y		DL	1.2	42	1.5	2	-.0...	3		4	-.0...												
228	1.2DL + 1.5Lm + 1Wm 210 A...	Yes	Y		DL	1.2	42	1.5	2	-.0...	3	-.0...	5	-.0...												
229	1.2DL + 1.5Lm + 1Wm 225 A...	Yes	Y		DL	1.2	42	1.5	2	-.0...	3	-.0...	6	-.0...												
230	1.2DL + 1.5Lm + 1Wm 240 A...	Yes	Y		DL	1.2	42	1.5	2	-.0...	3	-.0...	7	-.0...												
231	1.2DL + 1.5Lm + 1Wm 270 A...	Yes	Y		DL	1.2	42	1.5	2		3	-.0...	8	-.0...												
232	1.2DL + 1.5Lm + 1Wm 300 A...	Yes	Y		DL	1.2	42	1.5	2	.031	3	-.0...	9	-.0...												
233	1.2DL + 1.5Lm + 1Wm 315 A...	Yes	Y		DL	1.2	42	1.5	2	.044	3	-.0...	10	-.0...												
234	1.2DL + 1.5Lm + 1Wm 330 A...	Yes	Y		DL	1.2	42	1.5	2	.054	3	-.0...	11	-.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	1223.77	20	2419.143	39	1834.664	3	550.826	33	2172.55	19	716.568	30
2		min	-1228.768	12	-179.514	31	-1828.02	27	-2456.008	41	-2175.198	11	-4475.488	38
3	N1	max	1077.355	8	2487.872	45	1930.153	17	646.063	19	2223.321	25	4365.412	45
4		min	-1068.948	32	-168.236	21	-1928.307	25	-3005.247	43	-2227.409	17	-588.486	21
5	N13	max	1908.94	22	2357.066	34	468.542	18	4944.502	34	1872.946	30	877.569	14
6		min	-1912.258	14	-206.588	26	-477.403	10	-818.116	26	-1875.334	6	-760.174	22
7	Totals:	max	3524.74	22	6752.882	42	3739.095	18						
8		min	-3524.74	30	1345.122	66	-3739.097	10						

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

	Member	Shape	Code ...	Loc[in]	LC	Shear ...	Loc[in]	Dir	LC	phi*Pnc ...	phi*Pnt [...	phi*Mn ...	phi*Mn ...	Cb	Eqn
1	M2	PIPE_3.5	.661	40	45	.221	40		9	75262.68	78750	7953.75	7953.75	2.095	H1-1b
2	M12	PIPE_3.5	.638	40	39	.218	40		4	75262.68	78750	7953.75	7953.75	2.106	H1-1b
3	M7	PIPE_3.5	.622	40	34	.208	40		14	75262.68	78750	7953.75	7953.75	2.103	H1-1b
4	M1	C3X5	.509	34.8...	44	.177	63.1...	y	41	11202.9...	47628	981.263	4104	1.345	H1-1b
5	M11	C3X5	.495	34.8...	40	.174	63.1...	y	35	11202.9...	47628	981.263	4104	1.341	H1-1b
6	M6	C3X5	.483	34.8...	34	.168	63.1...	y	46	37027.8...	47628	981.263	4020.228	1	H1-1b
7	MP3	PIPE_2.0	.444	60	5	.042	60		10	20866.7...	32130	1871.625	1871.625	1.857	H1-1b
8	MP9	PIPE_2.0	.439	60	10	.044	60		15	20866.7...	32130	1871.625	1871.625	1.579	H1-1b
9	MP2	PIPE_2.0	.426	60	5	.062	60		8	20866.7...	32130	1871.625	1871.625	1.857	H1-1b
10	MP8	PIPE_2.0	.424	60	10	.057	60		14	20866.7...	32130	1871.625	1871.625	1.815	H1-1b
11	MP6	PIPE_2.0	.423	60	15	.046	60		5	20866.7...	32130	1871.625	1871.625	1.935	H1-1b
12	MP5	PIPE_2.0	.414	60	16	.063	60		3	20866.7...	32130	1871.625	1871.625	1.877	H1-1b
13	MP1	PIPE_2.0	.393	60	16	.051	60		16	20866.7...	32130	1871.625	1871.625	1.468	H1-1b
14	MP4	PIPE_2.0	.390	60	10	.052	60		11	20866.7...	32130	1871.625	1871.625	1.628	H1-1b
15	MP7	PIPE_2.0	.377	60	10	.045	60		6	20866.7...	32130	1871.625	1871.625	1.795	H1-1b
16	M15	6.5"x0.37" P...	.317	21	7	.124	21	y	37	3513.807	75757.5	583.963	6301.976	1.167	H1-1b
17	M10	6.5"x0.37" P...	.314	21	2	.121	21	y	47	3513.807	75757.5	583.963	6317.43	1.17	H1-1b
18	M5	6.5"x0.37" P...	.311	21	12	.129	21	y	42	3513.807	75757.5	583.963	6535.562	1.21	H1-1b
19	M23	L6 5/8x4 7/1...	.246	0	26	.045	42	y	17	15453.0...	66065.6...	1040.591	3031.076	1.635	H2-1
20	M22	L6 5/8x4 7/1...	.246	0	21	.046	42	y	12	15453.0...	66065.6...	1040.591	3031.076	1.657	H2-1
21	M3	L2x2x3	.228	0	3	.034	0	z	49	18051.7...	23392.8	557.717	1239.29	2.382	H2-1
22	M24	L6 5/8x4 7/1...	.227	0	32	.044	42	y	6	15453.0...	66065.6...	1040.591	3031.076	1.507	H2-1
23	M21	PIPE_2.0	.227	72	5	.207	72		13	14916.0...	32130	1871.625	1871.625	1.488	H1-1b
24	M13	L2x2x3	.222	0	14	.034	0	z	43	18051.7...	23392.8	557.717	1239.29	2.366	H2-1
25	M20	PIPE_2.0	.219	72	15	.205	72		8	14916.0...	32130	1871.625	1871.625	1.455	H1-1b
26	M19	PIPE_2.0	.219	72	10	.209	72		2	14916.0...	32130	1871.625	1871.625	1.461	H1-1b
27	M8	L2x2x3	.197	0	9	.033	0	z	38	18051.7...	23392.8	557.717	1239.29	2.359	H2-1

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

	Member	Shape	Code ...	Loc[in]	LC	Shear ...	Loc[in]	Dir	LC	phi*Pnc ...	phi*Pnt [...	phi*Mn ...	phi*Mn ...	Cb	Eqn
28	M4	L2x2x3	.165	0	13	.037	0	y	41	18051.7...	23392.8	557.717	1239.29	2.193	H2-1
29	M9	L2x2x3	.150	0	2	.035	0	y	46	18051.7...	23392.8	557.717	1239.29	2.242	H2-1
30	M14	L2x2x3	.143	0	7	.036	0	y	36	18051.7...	23392.8	557.717	1239.29	2.177	H2-1
31	H1	PIPE_3.5	.132	31	5	.128	24		10	60666.0...	78750	7953.75	7953.75	1.097	H1-1b
32	H3	PIPE_3.5	.131	31	10	.132	24		16	60666.0...	78750	7953.75	7953.75	1.09	H1-1b
33	H2	PIPE_3.5	.125	31	15	.125	24		5	60666.0...	78750	7953.75	7953.75	1.09	H1-1b

APPENDIX D

ADDITIONAL CALCULATIONS

Trylon

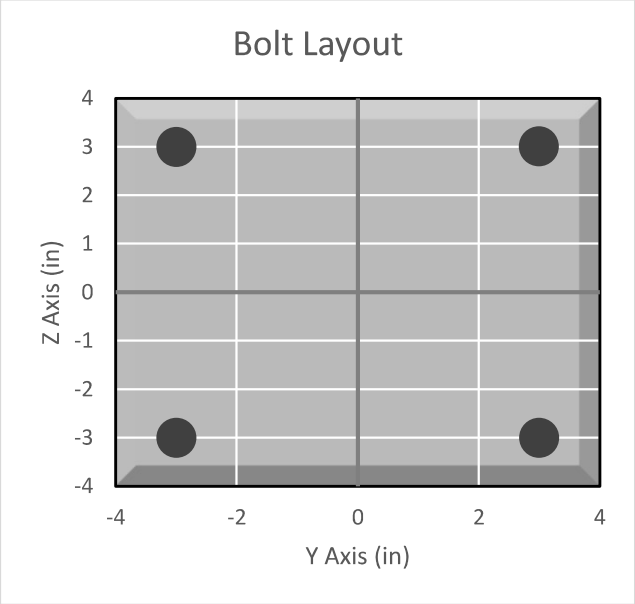
Analysis date: 8/2/2021

BOLT TOOL 1.5.2

Project Data	
Job Code:	189334
Carrier Site ID:	BOBDL00065A
Carrier Site Name:	CT-CCI-T-842859

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

Bolt Properties		
Connection Type:	Bolt	
Diameter:	0.75	in
Grade:	A529	--
Yield Strength (Fy):	50	ksi
Ultimate Strength (Fu):	65	ksi
Number of Bolts:	4	--
Threads Included:	Yes	--
Double Shear:	No	--
Connection Pipe Size:	-	in



Connection Description
Mount Standoff to Collar

Bolt Check*		
Tensile Capacity (ϕT_n):	16304.9	lbs
Shear Capacity (ϕV_n):	10768.5	lbs
Tension Force (T_u):	5528.3	lbs
Shear Force (V_u):	952.7	lbs
Tension Usage:	32.3%	--
Shear Usage:	8.4%	--
Interaction:	32.3%	Pass
Controlling Member:	M2	--
Controlling LC:	42	--

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

APPENDIX E

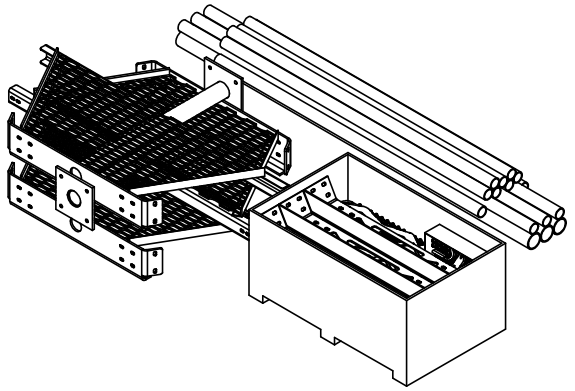
SUPPLEMENTAL DRAWINGS

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

C

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

FOR BOM ENTRY ONLY

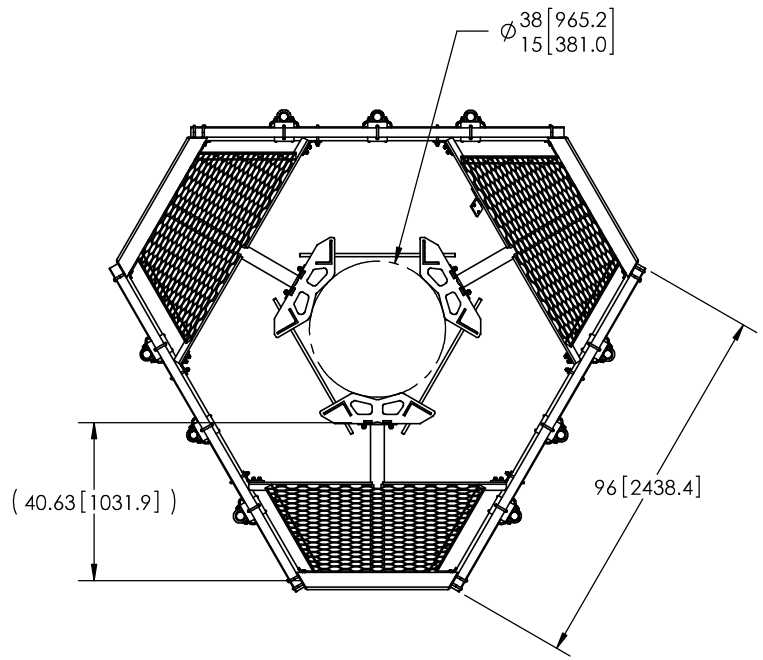


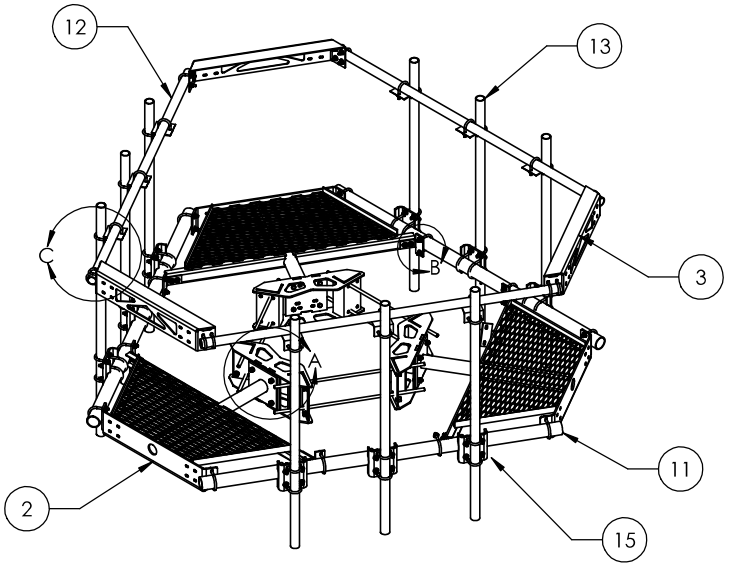
NOTES:
1. CUSTOMER ASSEMBLY SHEETS 2–3.

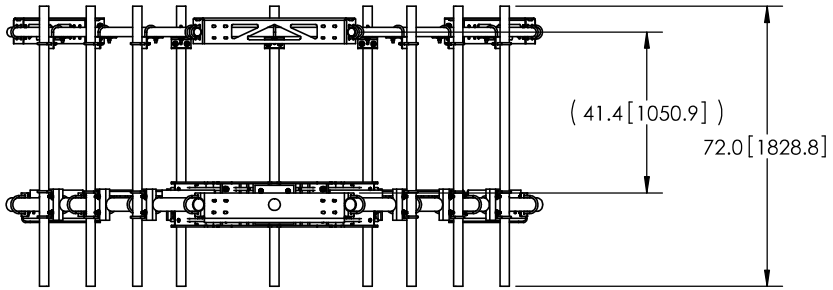
ALL DIMENSIONS ARE IN INCHES U.O.S.
TOLERANCES UNLESS OTHERWISE SPECIFIED:
.X = ± .12 ANGLES ±2°
.XX = ± .06 FRACTIONS ±1/32
.XXX= ± .03
REMOVE BURRS AND BREAK EDGES .005

DO NOT SCALE THIS PRINT

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







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

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

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

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

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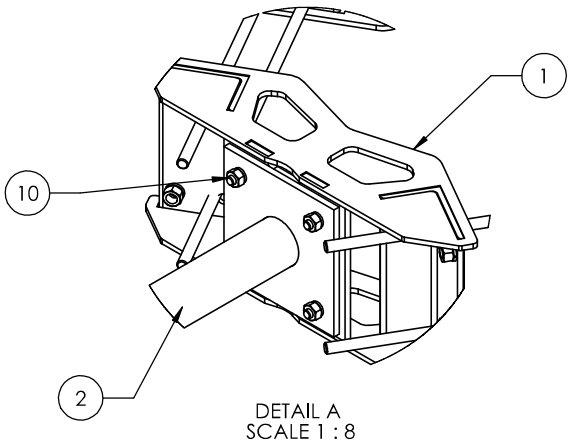
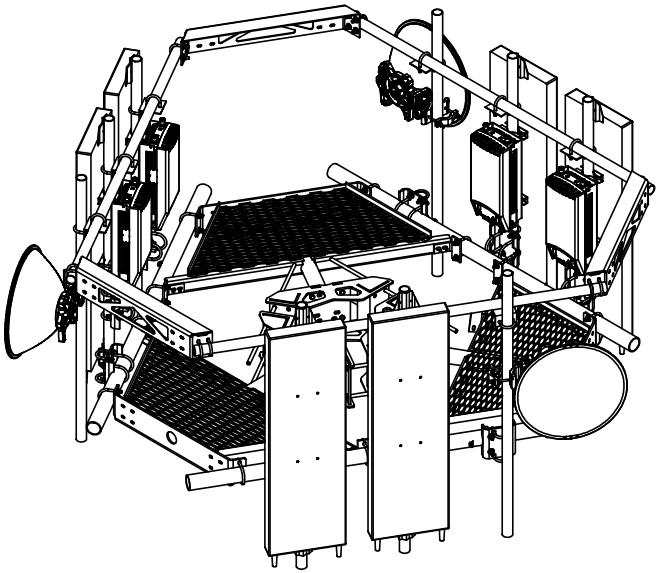
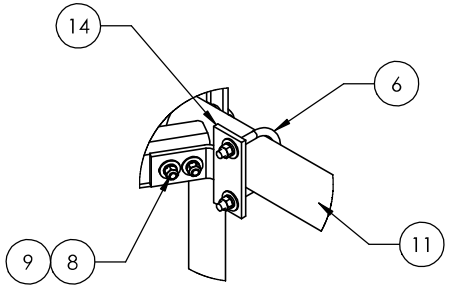
U.S.A.



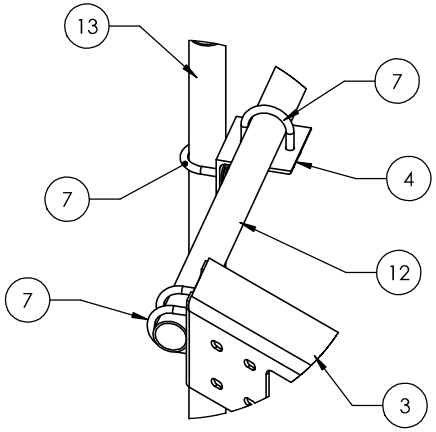
DETAIL A
SCALE 1 : 8



WITH ANTENNAS



DETAIL B
SCALE 1 : 8



DETAIL C
SCALE 1 : 8

NOTES:
1. ALL METRIC DIMENSIONS ARE IN BRACKETS.

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

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

ANDREW®
WESTCHESTER, IL. 60154
U.S.A.

Exhibit F

Power Density/RF Emissions Report

EBI Consulting

environmental | engineering | due diligence

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

Dish Wireless Existing Facility

Site ID: BOBDL00065A

842859
371 Terryville Avenue
Bristol, Connecticut 06010

September 28, 2021

EBI Project Number: 6221005710

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**17.78%**

September 28, 2021

Dish Wireless

Emissions Analysis for Site: BOBDL00065A - 842859

EBI Consulting was directed to analyze the proposed Dish Wireless facility located at **371 Terryville Avenue** in **Bristol, 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 371 Terryville Avenue in Bristol, 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 148 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:	17.45 dBd / 22.65 dBd	Gain:	17.45 dBd / 22.65 dBd	Gain:	17.45 dBd / 22.65 dBd
Height (AGL):	148 feet	Height (AGL):	148 feet	Height (AGL):	148 feet
Channel Count:	8	Channel Count:	8	Channel Count:	8
Total TX Power (W):	280 Watts	Total TX Power (W):	280 Watts	Total TX Power (W):	280 Watts
ERP (W):	3,065.51	ERP (W):	3,065.51	ERP (W):	3,065.51
Antenna A1 MPE %:	**0.79%**	Antenna B1 MPE %:	**0.79%**	Antenna C1 MPE %:	**0.79%**

Site Composite MPE %	
Carrier	**MPE %**
Dish Wireless (Max at Sector A):	0.79%
Sprint	2.37%
Metro PCS	0.54%
AT&T	7.88%
Verizon	6.18%
AT&T	0.02%
Site Total MPE % :	17.78%

Dish Wireless MPE % Per Sector	
Dish Wireless Sector A Total:	0.79%
Dish Wireless Sector B Total:	0.79%
Dish Wireless Sector C Total:	0.79%
Site Total MPE % :	17.78%

Dish Wireless Maximum MPE Power Values (Sector A)

Dish Wireless Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density (μW/cm²)	Frequency (MHz)	Allowable MPE (μW/cm²)	Calculated % MPE
Dish Wireless 600 MHz n71	4	223.68	148.0	1.60	600 MHz n71	400	0.40%
Dish Wireless 1900 MHz n70	4	542.70	148.0	3.87	1900 MHz n70	1000	0.39%
						Total:	**0.79%**

• 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:	0.79%
Sector B:	0.79%
Sector C:	0.79%
Dish Wireless Maximum MPE % (Sector A):	0.79%
Site Total:	17.78%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **17.78%** 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:
371 TERRYVILLE AVENUE, BRISTOL, CT 06010

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

Crown Site ID/Name: 842859/BRISTOL CENTER
Customer Site ID: BOBDL00065A/CT-CCI-T-842859
Site Address: 371 TERRYVILLE AVENUE, BRISTOL, CT 06010

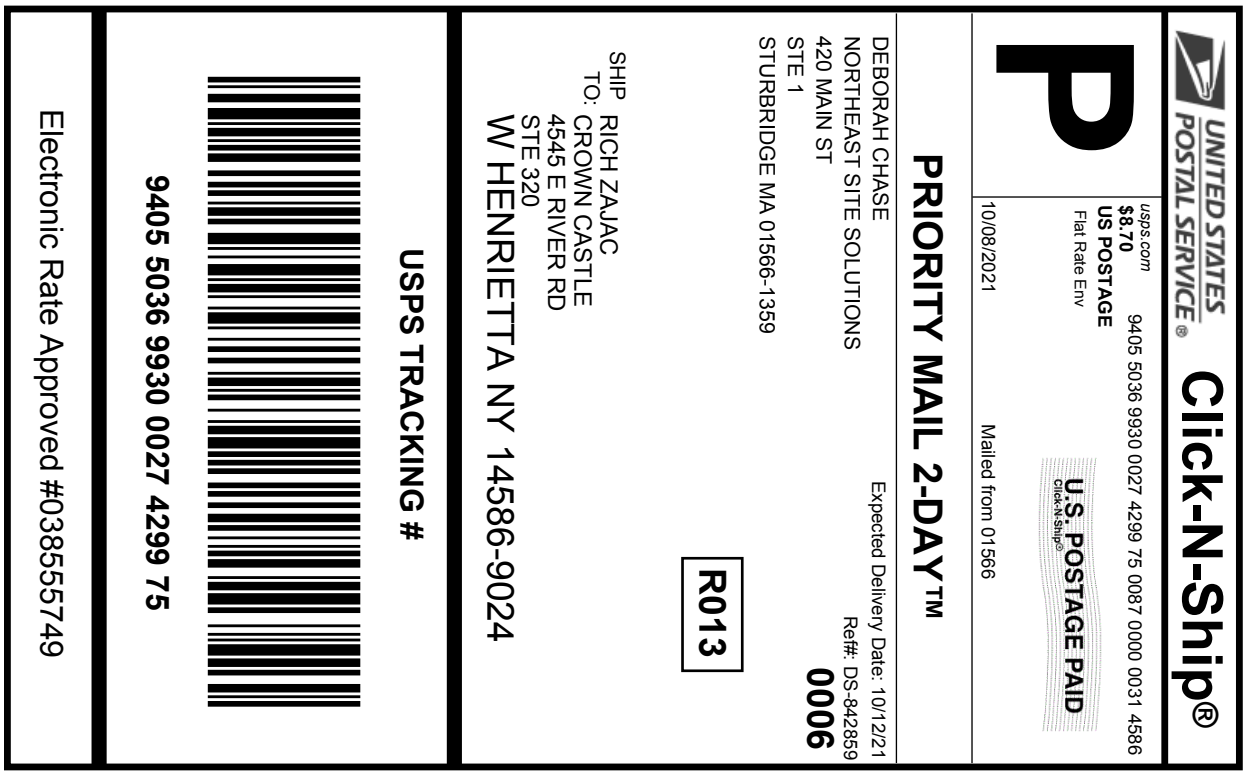
Crown Castle

By: _____ Date: 10/4/2021

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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USPS TRACKING # :
9405 5036 9930 0027 4299 75

Trans. #:	545528558
Print Date:	10/08/2021
Ship Date:	10/08/2021
Expected Delivery Date:	10/12/2021

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

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

Ref#: DS-842859

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

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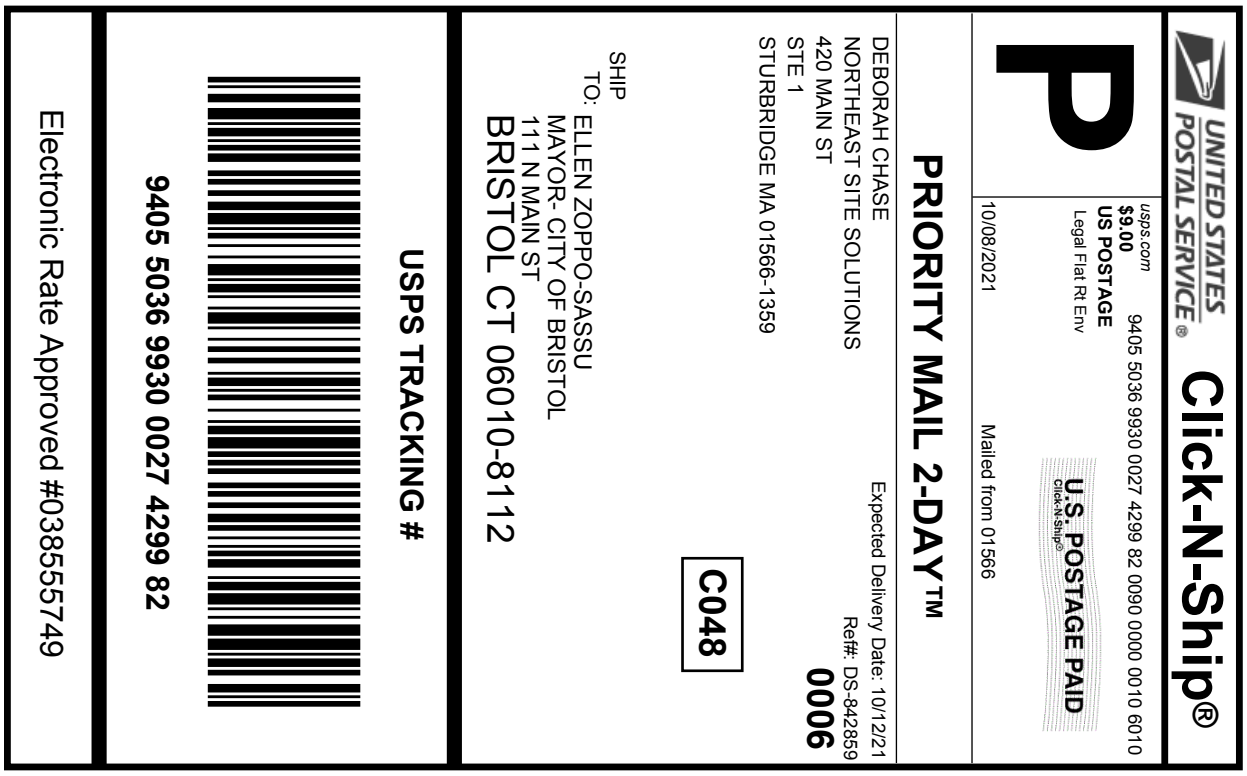

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Click-N-Ship® Label Record

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9405 5036 9930 0027 4299 82

Trans. #:	545528558
Print Date:	10/08/2021
Ship Date:	10/08/2021
Expected Delivery Date:	10/12/2021

Priority Mail® Postage:	**$9.00**
Total:	**$9.00**

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

Ref#: DS-842859

To: ELLEN ZOPPO-SASSU
MAYOR- CITY OF BRISTOL
111 N MAIN ST
BRISTOL CT 06010-8112

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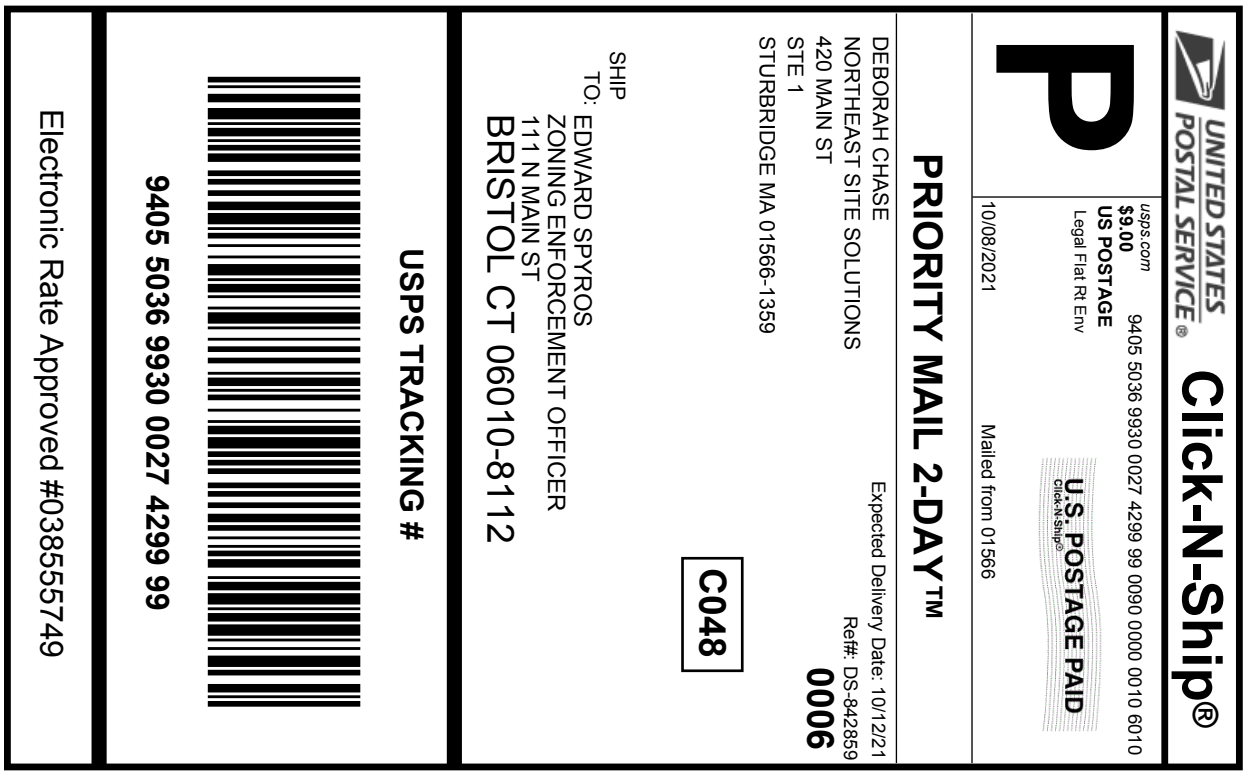

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9405 5036 9930 0027 4299 99

Trans. #:	545528558
Print Date:	10/08/2021
Ship Date:	10/08/2021
Expected Delivery Date:	10/12/2021

Priority Mail® Postage:	**$9.00**
Total:	**$9.00**

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

Ref#: DS-842859

To: EDWARD SPYROS
ZONING ENFORCEMENT OFFICER
111 N MAIN ST
BRISTOL CT 06010-8112

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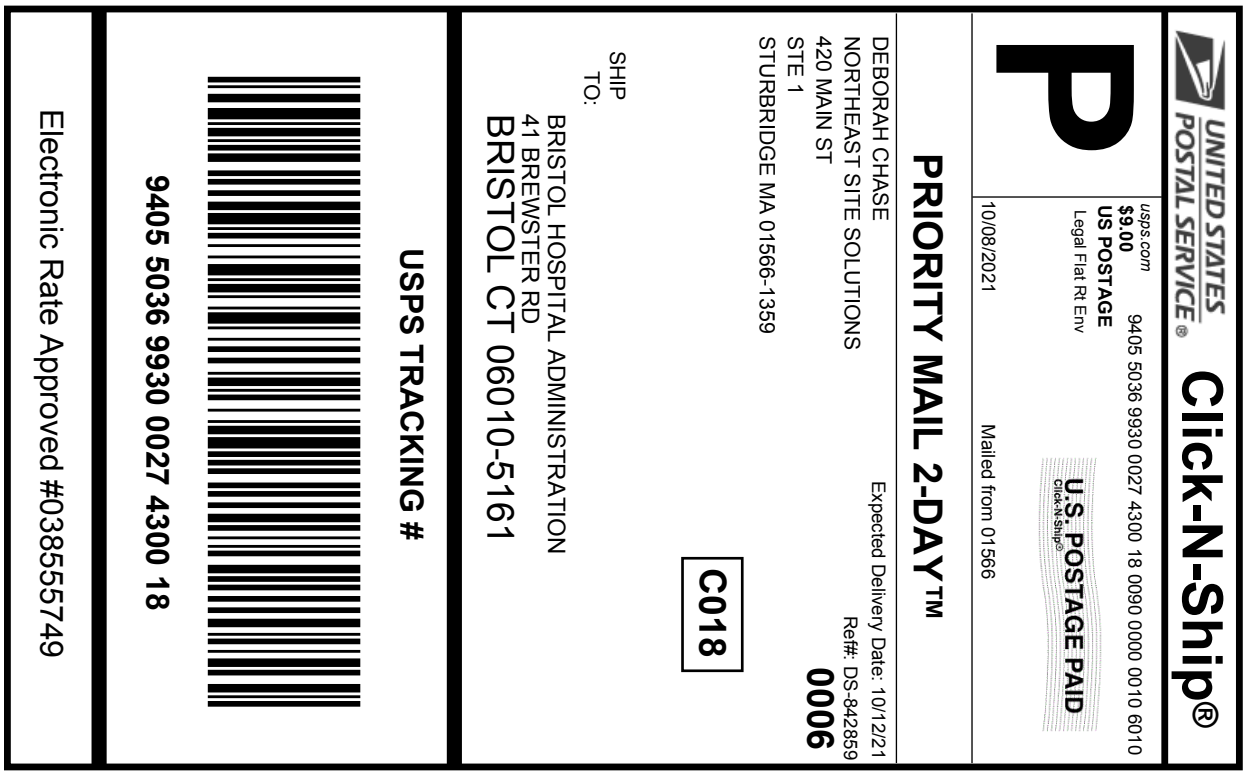

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USPS TRACKING # :
9405 5036 9930 0027 4300 18

Trans. #:	545528558
Print Date:	10/08/2021
Ship Date:	10/08/2021
Expected Delivery Date:	10/12/2021

Priority Mail® Postage:	**$9.00**
Total:	**$9.00**

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

Ref#: DS-842859

To: BRISTOL HOSPITAL ADMINISTRATION
41 BREWSTER RD
BRISTOL CT 06010-5161

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842859

UNITED STATES POSTAL SERVICE.

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

10/12/2021 01:24 PM

Product	Qty	Unit Price	Price
Prepaid Mail West Henrietta, NY 14586 Weight: 0 lb 2.00 oz Acceptance Date: Tue 10/12/2021 Tracking #: 9405 5036 9930 0027 4299 75	1		$0.00
Prepaid Mail Bristol, CT 06010 Weight: 1 lb 2.90 oz Acceptance Date: Tue 10/12/2021 Tracking #: 9405 5036 9930 0027 4300 18	1		$0.00
Prepaid Mail Bristol, CT 06010 Weight: 1 lb 2.80 oz Acceptance Date: Tue 10/12/2021 Tracking #: 9405 5036 9930 0027 4299 99	1		$0.00
Prepaid Mail Bristol, CT 06010 Weight: 1 lb 2.80 oz Acceptance Date: Tue 10/12/2021 Tracking #: 9405 5036 9930 0027 4299 82	1		$0.00
Grand Total:			$0.00

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