NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

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

June 2, 2022

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

RE: Tower Share Application
800 Booth Hill Road, Trumbull, CT 06611
Latitude: 41.278988
Longitude: -73.185111
Site #: 873128_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 800 Booth Hill Road, Trumbull, Connecticut.

Dish Wireless LLC proposes to install three (3) 600/1900 MHz 5G antennas and six (6) RRUs, at the 186-foot level of the existing 457-foot tower, one (1) Fiber cable will also be installed. Dish Wireless LLC equipment cabinets will be placed within a 7' x 5' lease area within the existing fenced compound. Included are plans by Kimley Horn, dated May 9, 2022, Exhibit C. Also included is a structural analysis prepared by Crown Castle, dated November 4, 2021, confirming that the existing tower is structurally capable of supporting the proposed equipment. Attached as Exhibit D. The facility was originally approved by the Town of Trumbull, however the original decision has not been retained by the Town, see attached.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies 16-50aa, of Dish Wireless LLC intent to share a telecommunications facility pursuant to R.C.S.A. 16-50j-88. In accordance with R.C.S.A., a copy of this letter is being sent to Vicki Tesoro, First Selectman and Rob Librandi, Land Use Planner for the Town of Trumbull, as well as the tower and property owner (Crown Castle).

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

1. The proposed modification will not result in an increase in the height of the existing structure. The top of the existing tower is 457-feet and the Dish Wireless LLC antennas will be located at a centerline height of 186-feet.

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

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

4. The operation of the proposed antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard. The combined site operations will result in a total power density of 34.01% as evidenced by Exhibit F.

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

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

B. Legal Feasibility. As referenced above, C.G.S. 16-50aa has been authorized to issue orders approving the shared use of an existing tower such as this tower in Trumbull. 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 186-foot level of the existing 457-foot tower would have an insignificant visual impact on the area around the tower. Dish Wireless LLC ground equipment would be installed within the existing facility compound. Dish Wireless LLC shared use would therefore not cause any significant alteration in the physical or environmental characteristics of the existing site. Additionally, as evidenced by Exhibit F, the proposed antennas would not increase radio frequency emissions to a level at or above the Federal Communications Commission safety standard.

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

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

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: Vicki Tesoro, First Selectman
Trumbull Town Hall
5866 Main Street
Trumbull, CT 06611

Rob Librandi, Land Use Planner
Trumbull Town Hall
5866 Main Street
Second Floor
Trumbull, CT 06611

Global Signal Acquisitions IV LLC, Property & Tower Owner
C/O Crown Castle USA Inc.
2000 Corporate Drive
Canonsburg, PA 15317

Exhibit A

Original Facility Approval

DOCKET NO. 77

AN APPLICATION OF METRO MOBILE CTS OF FAIRFIELD COUNTY, INC., FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED FOR CELLULAR TELEPHONE ANTENNAS AND ASSOCIATED EQUIPMENT IN THE TOWN OF TRUMBULL, CONNECTICUT.	:	CONNECTICUT SITING COUNCIL
	:	August 4, 1987

DECISION AND ORDER

Pursuant to the foregoing opinion, the Connecticut Siting Council (Council) hereby directs that a Certificate of Environmental Compatibility and Public Need, as provided by Section 16-50k of the General Statutes of Connecticut (CGS), be issued to Metro Mobile CTS of Fairfield County, Inc., for the construction, operation, and maintenance of cellular mobile telecommunications equipment in the Town of Trumbull, Connecticut.

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

1. The receive antennas shall be attached no higher on the existing tower than necessary to provide the proposed service, and in no event shall be greater than 250 feet above ground level (AGL).

2. The transmit antennas shall be attached to the tower no higher than necessary to provide the proposed service, and in no event shall be greater than 230 feet AGL.
3. The facility shall be constructed in accordance with all applicable federal, state, and municipal laws and regulations.
4. The certificate holder or its successor shall notify the Council if and when directional antennas or any equipment other than that listed in this application is added to these facilities.
5. At any time that this facility permanently ceases to provide cellular service, this Decision and Order shall be void, and all equipment described in this application shall be dismantled and removed, or reapplication for any new use shall be made to the Council before any such new use is made.
6. The certificate holder shall investigate any complaints regarding interference from cellular telephone equipment emanating from this tower, and, where necessary, eliminate any interference proven to be caused by such equipment.
7. Unless otherwise approved by the Council, this Decision and Order shall be void if all construction authorized herein is not completed within three years of the issuance of this Decision and Order, or within three years of the completion of any appeal taken in this Decision.

8. The certificate holder shall comply with any future radio frequency standards promulgated by state or federal regulatory agencies. Upon the establishment of any new governmental RF Standards, the facilities granted in this Decision shall be brought into compliance with such standards.

Pursuant to CGS Section 16-50p, we hereby direct that a copy of the Decision and Order be served on each person listed below. A notice of the issuance shall be published in the Bridgeport Post and the Trumbull Times.

The parties to the proceeding are:

Metro Mobile CTS of Fairfield (applicant)
50 Rockland Road
South Norwalk, CT 06854
ATTN: Peter Kelley, Vice Pres.

Howard L. Slater, Esq. (its representatives)
Jennifer Young Gaudet, Esq.
Byrne, Slater, Sandler,
Shulman & Rouse, P.C.
330 Main Street
Hartford, CT 06103

Fleischman and Walsh, P. C.
1725 N Street, N.W.
Washington, D.C. 20036
ATTN: Richard Rubin, Esq.
Jonathan V. Cohen, Esq.

C E R T I F I C A T I O N

The undersigned members of the Connecticut Siting Council hereby certify that they have heard this case or read the record thereof, and that we voted as follows:

Dated at New Britain, Connecticut the 4th day of August, 1987.

Council Members	Vote Cast
Gloria Dibble Pond Chairperson	Yes
Commissioner Peter Boucher Designee: Patricia J. Austin	Yes
Commissioner Leslie Carothers Designee: Brian Emerick	No
Owen L. Clark	Yes
Fred J. Doocy	Yes
Mortimer A. Gelston	Yes
James G. Horsfall	Absent
William H. Smith	Absent
Colin C. Tait	Yes

0147E-2

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

136 Main Street, Suite 401
New Britain, Connecticut 06051
Phone : 827-7682

July 11, 1989

Peter J. Tyrrell
Senior Attorney
SNET Cellular, Inc.
227 Church Street
Room 1021
New Haven, CT 06510

RE: SNET Cellular, Inc. - Notice pursuant to Regulations of State Agencies 16-50j-73 of intent to modify an exempt telecommunications tower and associated equipment located at Video Lane in the Town of Trumbull, Connecticut.

Dear Attorney Tyrrell:

At a meeting on July 6, 1989, the Connecticut Siting Council acknowledged your notice of intent to modify an exempt telecommunications tower and associated equipment located at Video Lane, in Trumbull, Connecticut, pursuant to Section 16-50j-73 of the Regulations of State Agencies (RSA).

As proposed in your notice dated June 28, 1989, the modification is in compliance with the exception criteria specified in RSA 16-50j-72 for changes to an existing facility site that do not increase the tower height, extend the boundaries of the tower site, increase noise levels at the tower site boundary by 6 decibels, and add radio frequency sending or receiving capability which increases the total radio frequency electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to Section 22a-162 of the Connecticut General Statutes.

The Council is pleased to note that the shared use of an existing tower meets the Council's long-term goal and the public interest to avoid proliferation of additional tower structures.

Please notify the Council upon completion of construction.

Very truly yours,

Gloria Dibble Pond/12

Gloria Dibble Pond
Chairperson

GDP/JMR/go

3249E

Exhibit B

Property Card

800 BOOTH HILL ROAD

Location	800 BOOTH HILL ROAD	**Mblu**	H/04 / 00072/ 000/
Acct#		**Owner**	GLOBAL SIGNAL ACQUISITIONS IV LLC
Assessment	$4,200,000	**Appraisal**	$6,000,000
PID	2543	**Building Count**	1
Fire District	N		

Current Value

Appraisal	
Valuation Year	**Total**
2015	$6,000,000

Assessment	
Valuation Year	**Total**
2015	$4,200,000

Owner of Record

Owner	GLOBAL SIGNAL ACQUISITIONS IV LLC	**Sale Price**	$575,000
Co-Owner	C/O CROWN CASTLE USA INC	**Book & Page**	1714/ 158
Address	2000 CORPORATE DRIVE CANONSBURG, PA 15317	**Sale Date**	05/17/2016
		Instrument	25

Ownership History

Ownership History				
Owner	**Sale Price**	**Book & Page**	**Instrument**	**Sale Date**
GLOBAL SIGNAL ACQUISITIONS IV LLC	$575,000	1714/ 158	25	05/17/2016
DADDARIO F FRANCIS	$0	434/ 371		12/31/1979

Building Information

Building 1 : Section 1

Year Built: 1952
Living Area: 4,470

Building Attributes

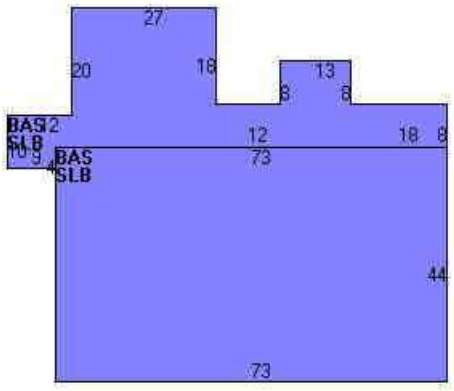
Field	Description
STYLE	Telephone Bldg
Stories:	1 Story
Occupancy	1
Exterior Wall 1	Concrete
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	Tar & Gravel
Interior Wall 1	Minimum
Interior Wall 2	
Interior Floor 1	Minimum/Plywd
Interior Floor 2	
Heating Fuel	Gas
Heating Type	Forced Air
AC Type	Central
Bldg Use	Rad/TV Tw
1st Floor Use:	
Heat/AC	Heat/AC Pkgs
Frame Type	Masonry
Baths/Plumbing	Average
Ceiling/Walls	Ceil & Walls
Rooms/Prtns	Average
Wall Height	10
% Comn Wall	

Building Photo

H04-72 05/04/2015

(http://images.vgsi.com/photos2/TrumbullCTPhotos//\00\02\46/15.JPG)

Building Layout



(http://images.vgsi.com/photos2/TrumbullCTPhotos//Sketches/2543_2543.

Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	4,470	4,470
SLB	Slab	4,470	0
		8,940	4,470

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code 433
Description Rad/TV Tw

Land Line Valuation

Size (Acres) 15.9
Frontage

Zone	AA	**Depth**	
Neighborhood	350		
Alt Land Appr	No		
Category			

Outbuildings

Outbuildings					Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Bldg #**
PAV1	Paving Asph.			22800 S.F.	1
FN5	Fence 10'			250 L.F.	1
ANTG	Guyed Tower			436 L.F.	1

Valuation History

Appraisal	
Valuation Year	**Total**
2018	$6,000,000
2017	$6,000,000
2016	$9,710,400

Assessment	
Valuation Year	**Total**
2018	$4,200,000
2017	$4,200,000
2016	$6,797,280


April Ln
Booth Hill Rd
Honeybee Ln
Booth Hill Rd
Gray Rock Rd
Booth Hill Rd
oneleigh Rd
Gray Rock Rd
Hidden Pond Ln
Strobel Rd
Strobel Rd

Exhibit C

Construction Drawings

DISH Wireless L.L.C. SITE ID:

NJJER01137A

DISH Wireless L.L.C. SITE ADDRESS:

800 BOOTH HILL RD.
TRUMBULL, CT 06611

CONNECTICUT CODE OF COMPLIANCE

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

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

SHEET INDEX

SCOPE OF WORK

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

TOWER SCOPE OF WORK:
- INSTALL (3) PROPOSED PANEL ANTENNAS (1 PER SECTOR)
- INSTALL (3) PROPOSED ANTENNA SECTOR FRAMES
- 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)
- DISH Wireless L.L.C. TO UTILIZE EXISTING EMPTY METER SOCKET
- DISH Wireless L.L.C. TO UTILIZE EXISTING DISCONNECT

SITE PHOTO

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

CALL 2 WORKING DAYS UTILITY NOTIFICATION PRIOR TO CONSTRUCTION

GENERAL NOTES

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

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

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

SITE INFORMATION

PROPERTY OWNER:	GLOBAL SIGNAL ACQUISITIONS
ADDRESS:	2000 CORPORATE DRIVE CANONSBURG, PA 15317
TOWER TYPE:	GUY
CROWN CASTLE SITE ID:	873128
CROWN CASTLE APP NUMBER:	548870
COUNTY:	FAIRFIELD
LATITUDE (NAD 83):	41° 16' 44.26" N 41.278961° N
LONGITUDE (NAD 83):	73° 11' 6.40" W 73.185111° W
ZONING JURISDICTION:	CONNECTICUT SITING COUNCIL
ZONING DISTRICT:	AA
PARCEL NUMBER:	2543
OCCUPANCY GROUP:	U
CONSTRUCTION TYPE:	II-B
POWER COMPANY:	CONNECTICUT LIGHT & POWER CO
TELEPHONE COMPANY:	LIGHTOWER

PROJECT DIRECTORY

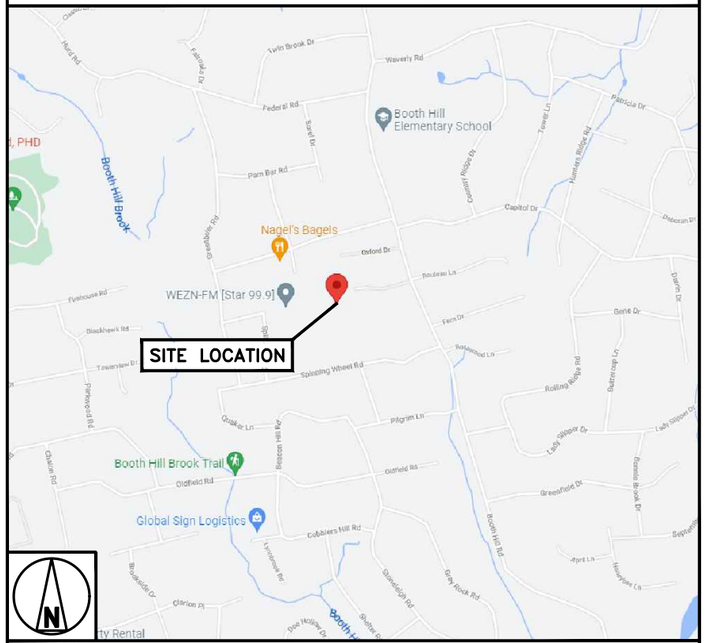
APPLICANT:	DISH Wireless L.L.C. 5701 SOUTH SANTA FE DRIVE LITTLETON, CO 80120
TOWER OWNER:	CROWN CASTLE 2000 CORPORATE DRIVE CANONSBURG, PA 15317 (877) 486-9377
SITE DESIGNER:	KIMLEY-HORN & ASSOCIATES 3875 EMBASSY PKWY, SUITE 280 AKRON, OH 44333 (216) 505-7771 COA #: PEC.0000738
SITE ACQUISITION:	VICTOR NUNEZ (917) 563-3682
CONSTRUCTION MANAGER:	MICHAEL NARDUCCI MICHAEL.NARDUCCI@DISH.COM
RF ENGINEER:	MURUGABIRAN JAYAPAL MURUGABIRAN.JAYAPAL@DISH.COM

DIRECTIONS

DIRECTIONS FROM 3 ADP BLVD, ROSELAND, NJ 07068:

x GET ON I-280 E FROM LIVINGSTON AVE
x CONTINUE ON I-280 E. TAKE GARDEN STATE PKWY, I-287 E AND CT-15 N TO CT-108 E/HUNTINGTON TURNPIKE IN TRUMBULL. TAKE EXIT 51 FROM CT-15 N
x CONTINUE ON HUNTINGTON TURNPIKE. TAKE BOOTH HILL RD TO VIDEO LN IN SHELTON

VICINITY MAP



NO SCALE

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

Kimley»Horn
COA #: PEC.0000738
421 FAYETTEVILLE ST, SUITE 600
RALEIGH, NC 27601

STATE OF CONNECTICUT
BRIAN L. BREWER
29510
LICENSED PROFESSIONAL ENGINEER

05/09/22

Exp. 01/31/23

DRAWN BY:	CHECKED BY:	APPROVED BY:
DRD	MCK	MCK

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	10/11/2021	ISSUED FOR REVIEW
0	12/13/2021	ISSUED FOR CONSTRUCTION
1	05/04/2022	REVISED PER CLIENT

A&E PROJECT NUMBER

KHCLE-16928

DISH Wireless L.L.C.
PROJECT INFORMATION

NJJER01137A
800 BOOTH HILL RD.
TRUMBULL, CT 06611

SHEET TITLE

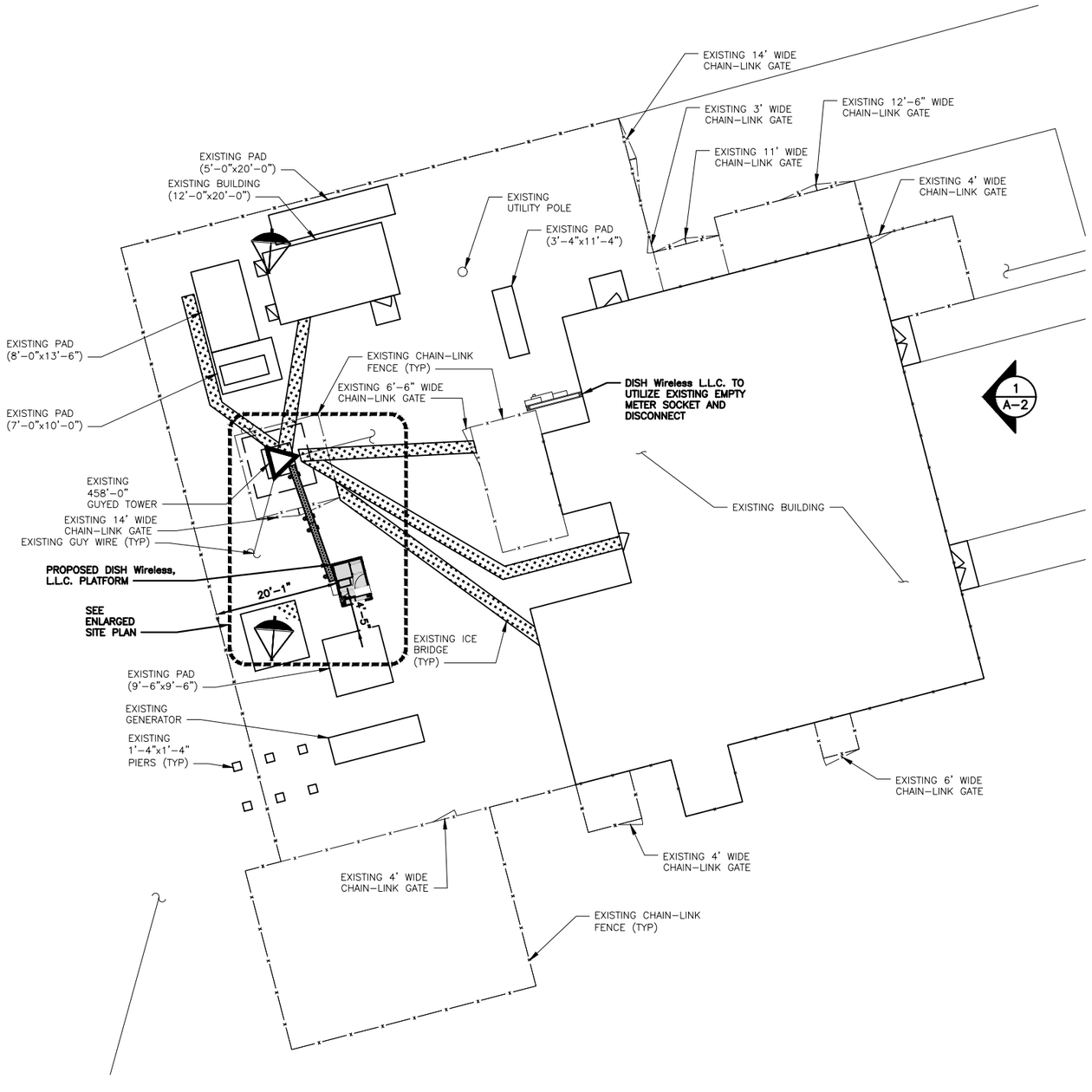
TITLE SHEET

SHEET NUMBER

T-1

NOTES

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



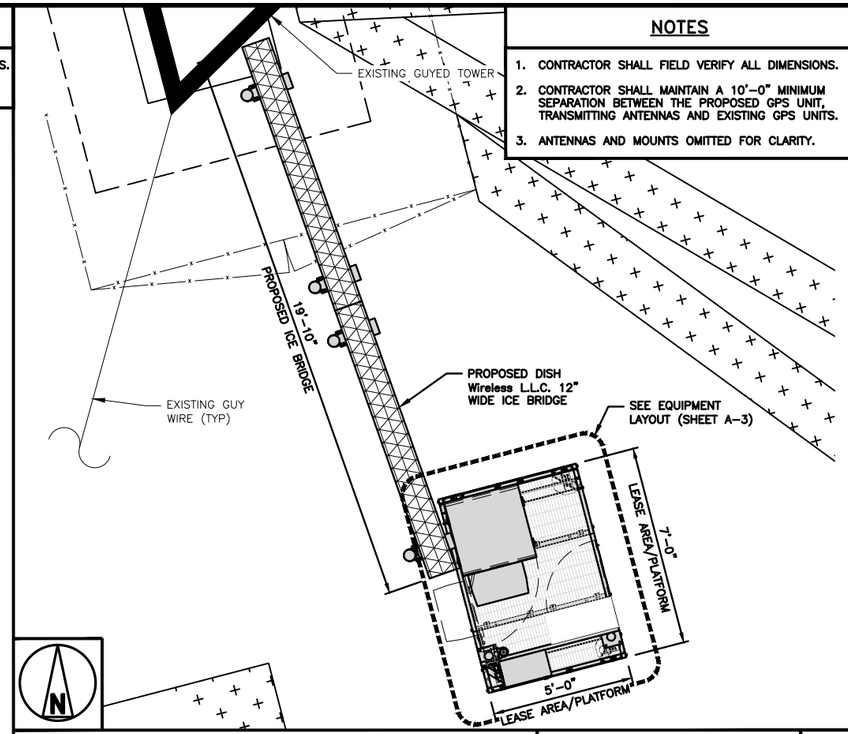
OVERALL SITE PLAN

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

OVERALL UTILITY ROUTE PLAN

NO SCALE

3

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

Kimley»Horn

COA #: PEC.0000738
421 FAYETTEVILLE ST, SUITE 600
RALEIGH, NC 27601

STATE OF CONNECTICUT
BRIAN J. BREWER
29510
LICENSED PROFESSIONAL ENGINEER

05/09/22

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DISH Wireless L.L.C.
PROJECT INFORMATION

NJJER01137A
800 BOOTH HILL RD.
TRUMBULL, CT 06611

SHEET TITLE

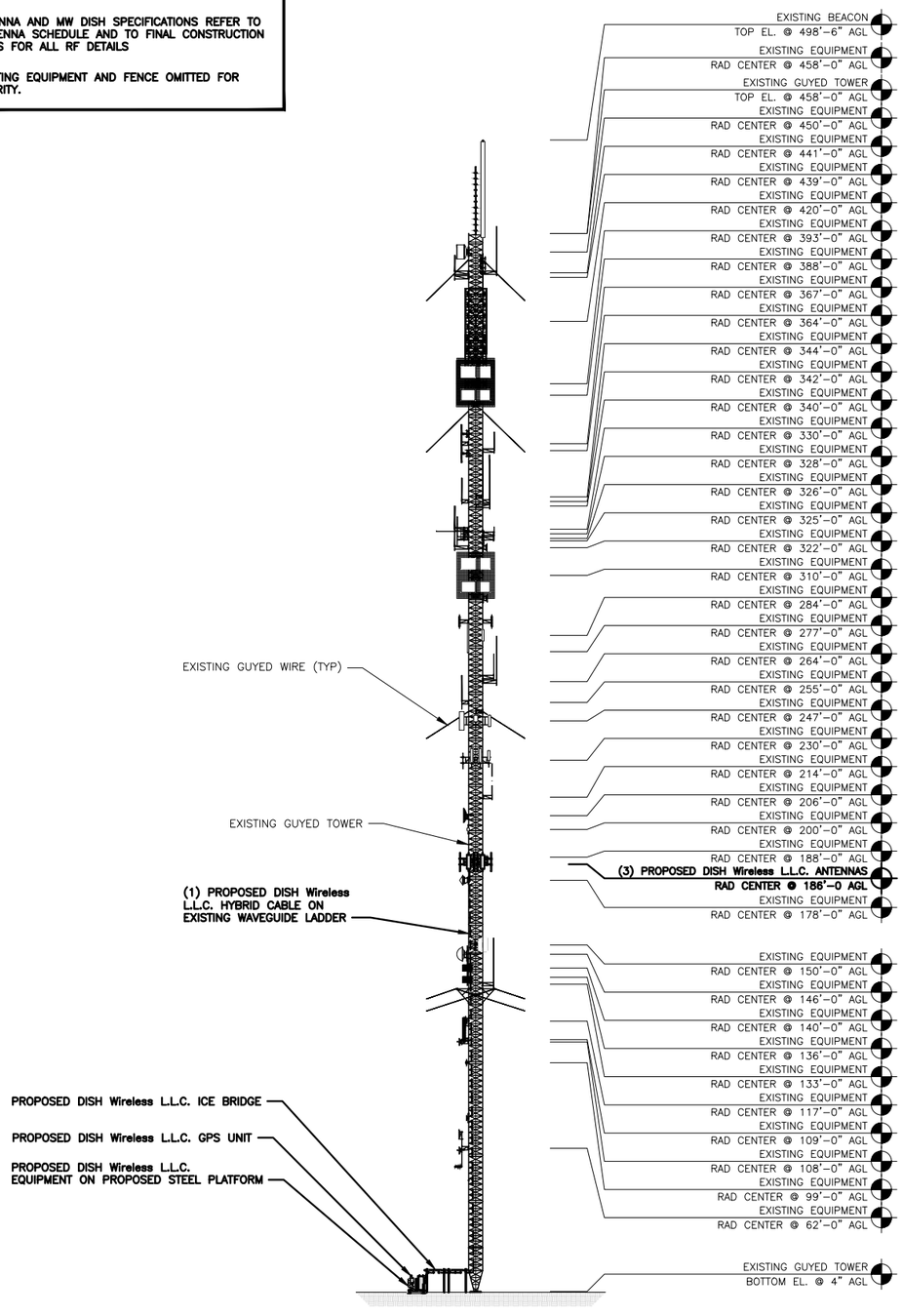
OVERALL AND ENLARGED SITE PLAN

SHEET NUMBER

A-1

NOTES

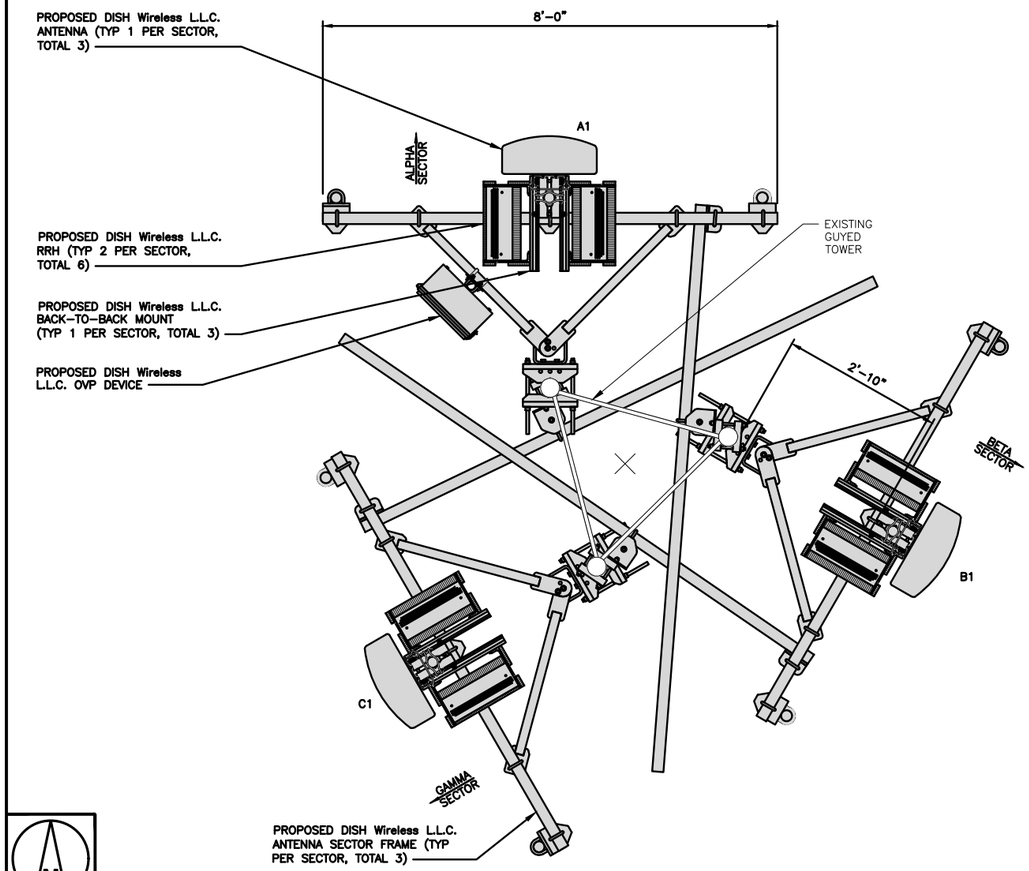
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNA AND MW DISH SPECIFICATIONS REFER TO ANTENNA SCHEDULE AND TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS
3. EXISTING EQUIPMENT AND FENCE OMITTED FOR CLARITY.



PROPOSED EAST ELEVATION

32' 24'16' 8' 0 32' 64'
1/32"=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°	186'-0	(1) HIGH-CAPACITY HYBRID CABLE (230'-0" LONG)
BETA	B1	PROPOSED	JMA – MX08FRO665-21	5G	72.0" x 20.0"	120°	186'-0	
GAMMA	C1	PROPOSED	JMA – MX08FRO665-21	5G	72.0" x 20.0"	240°	186'-0	

SECTOR	POSITION	OVP			
		EXISTING OR PROPOSED	MANUFACTURER – MODEL NUMBER	TECHNOLOGY	SIZE (HxW)
ALPHA	A1	PROPOSED	RAYCAP – RDIDC-9181-PF-48	5G	18.98" x 14.39" x 8.15"

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

Kimley»Horn

COA #: PEC.0000738
421 FAYETTEVILLE ST, SUITE 600
RALEIGH, NC 27601

STATE OF CONNECTICUT
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DISH Wireless L.L.C.
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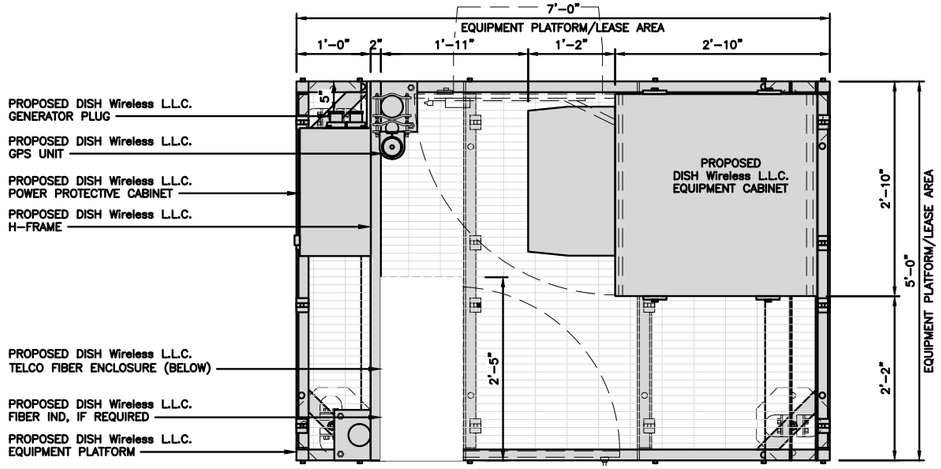
NJJER01137A
800 BOOTH HILL RD.
TRUMBULL, CT 06611

SHEET TITLE

ELEVATION, ANTENNA LAYOUT AND SCHEDULE

SHEET NUMBER

A-2



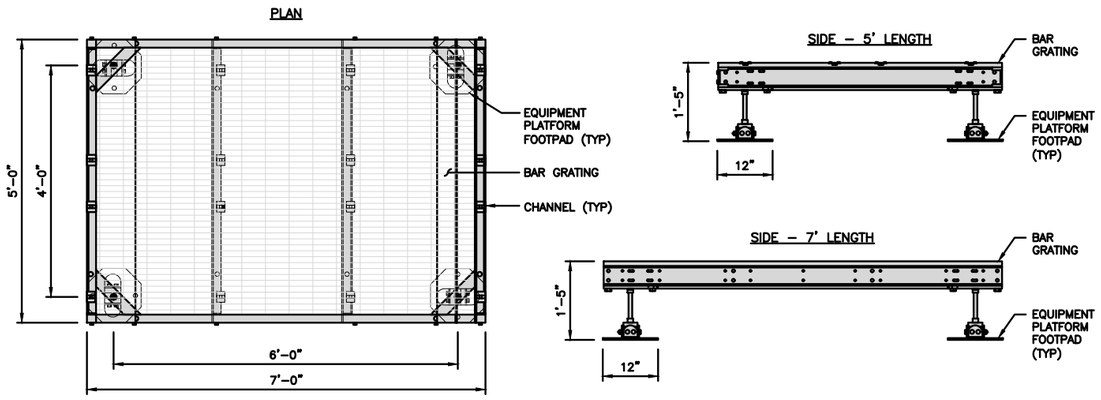
PLATFORM EQUIPMENT PLAN

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

1

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

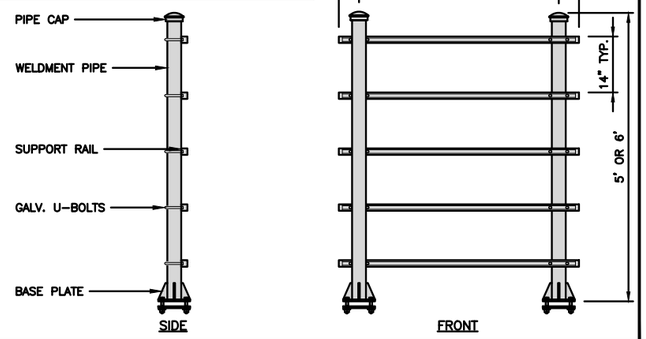
NOTE:
1. GC TO PROVIDE EXTENDED THREAD FOR PLATFORM IF REQUIRED HEIGHT EXCEEDS 17"
2. PLATFORM TO BE LEVEL WITHIN 1"



PLATFORM DETAIL | NO SCALE | 2

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

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

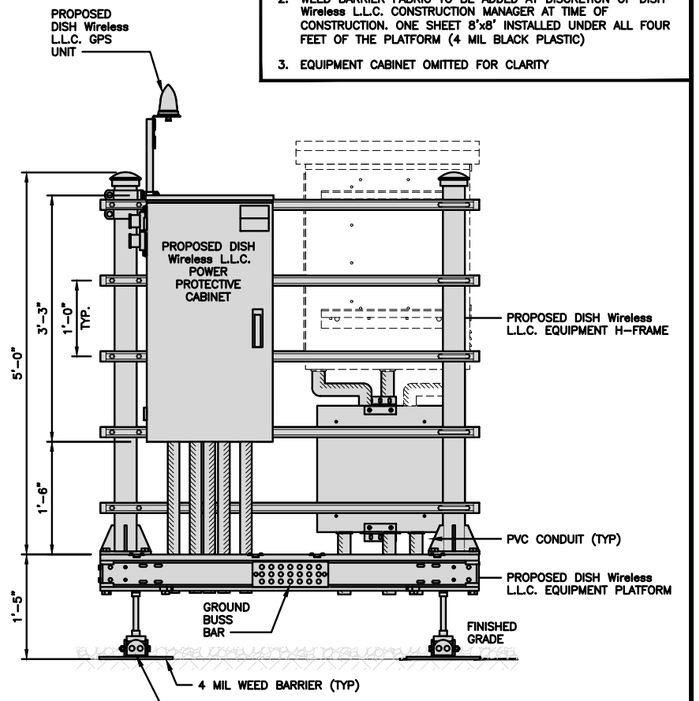


H-FRAME DETAIL | NO SCALE | 3

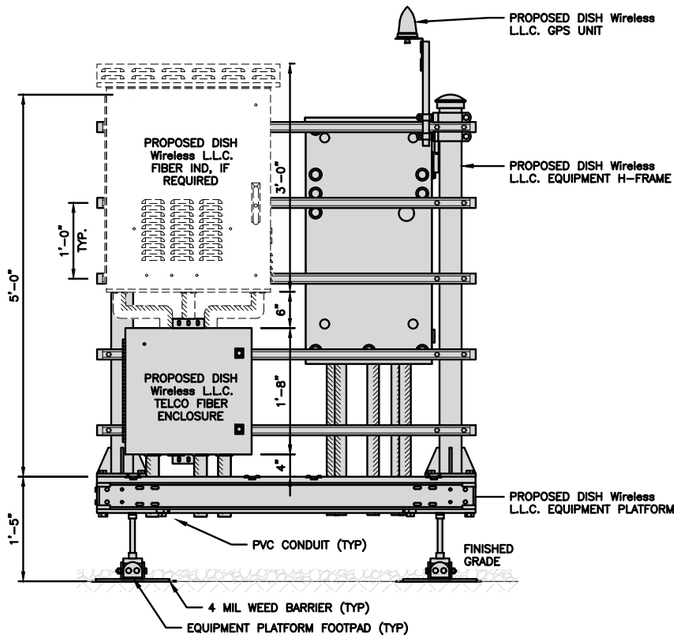
NOT USED | NO SCALE | 4

NOTES

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



FRONT ELEVATION



BACK ELEVATION

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

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

Kimley»Horn
COA #: PEC.0000738
421 FAYETTEVILLE ST, SUITE 600
RALEIGH, NC 27601

STATE OF CONNECTICUT BRIAN J. BREWER 29510 LICENSED PROFESSIONAL ENGINEER

05/09/22
Exp. 01/31/23

DRAWN BY:	CHECKED BY:	APPROVED BY:
DRD	MCK	MCK

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
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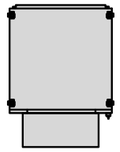
A&E PROJECT NUMBER
KHCLE-16928

DISH Wireless L.L.C.
PROJECT INFORMATION
NJJER01137A
800 BOOTH HILL RD.
TRUMBULL, CT 06611

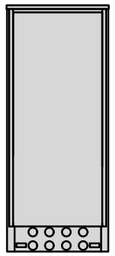
SHEET TITLE
EQUIPMENT PLATFORM AND H-FRAME DETAILS

SHEET NUMBER
A-3

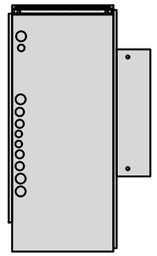
ENERSYS HEX 20000059996	
DIMENSIONS (HxWxD)	73"x30"x32"
POWER SYSTEM	-48V ALPHA/600A
HEATER	800W
TOTAL WEIGHT (EMPTY)	376 lbs



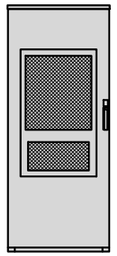
PLAN



BACK



SIDE

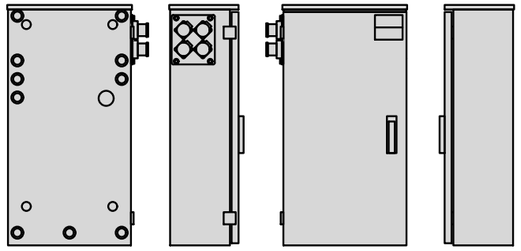


FRONT

CABINET DETAIL | NO SCALE | 1

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

TOP



BACK SIDE FRONT SIDE

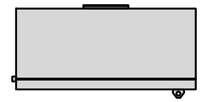
POWER PROTECTION CABINET (PPC) DETAIL | NO SCALE | 2

NOT USED | NO SCALE | 3

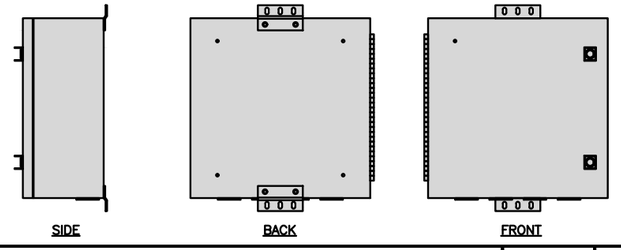
NOT USED | NO SCALE | 4

NOT USED | NO SCALE | 5

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



FRONT

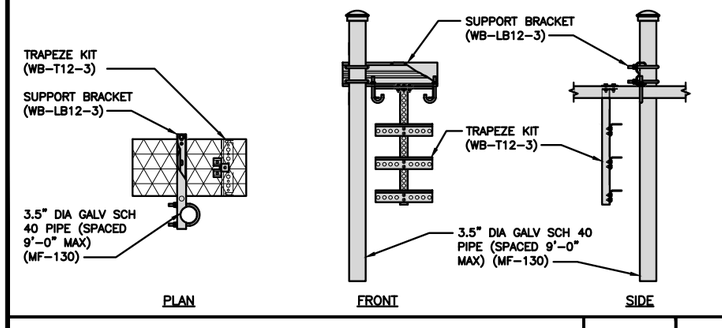


SIDE BACK FRONT

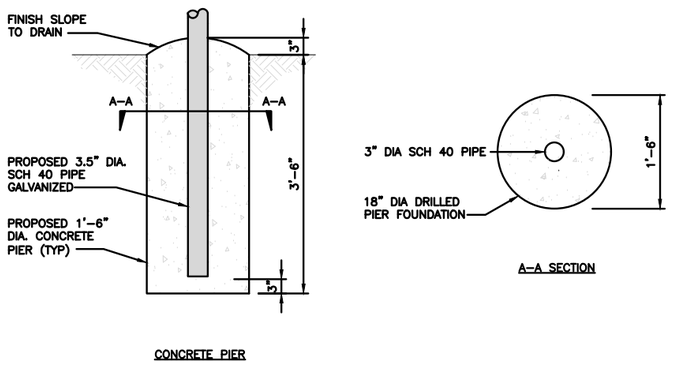
FIBER TELCO ENCLOSURE DETAIL | NO SCALE | 6

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

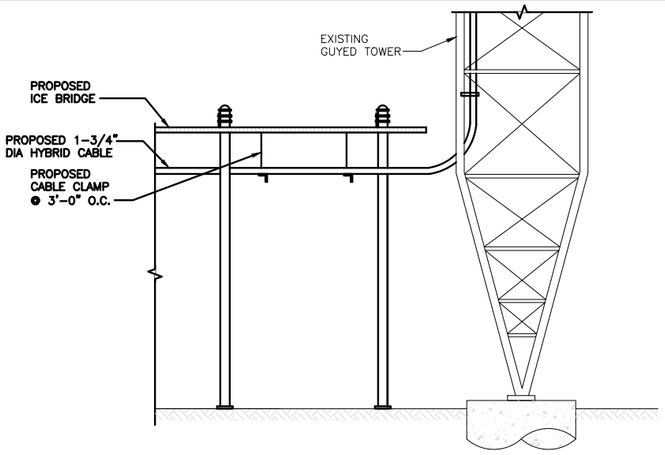
INCLUDED PRODUCTS:	WB-T12-3 TRAPEZE KIT, 3 RUNGS
	WB-LB12-3 SUPPORT BRACKET
	MF-130 DIRECT BURIAL PIPE COLUMN, 13'-4"



ICE BRIDGE DETAIL | NO SCALE | 7



TYPICAL ICE BRIDGE CONCRETE PIER DETAIL | NO SCALE | 8



HYBRID CABLE RUN | NO SCALE | 9

DISH Wireless L.L.C. TEMPLATE VERSION 44 - 10/01/2021

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5701 SOUTH SANTA FE DRIVE
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STATE OF CONNECTICUT BRIAN J. BREWER 29510 LICENSED PROFESSIONAL ENGINEER

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Exp. 01/31/23

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A&E PROJECT NUMBER

KHCLE-16928

DISH Wireless L.L.C.
PROJECT INFORMATION

NJJER01137A
800 BOOTH HILL RD.
TRUMBULL, CT 06611

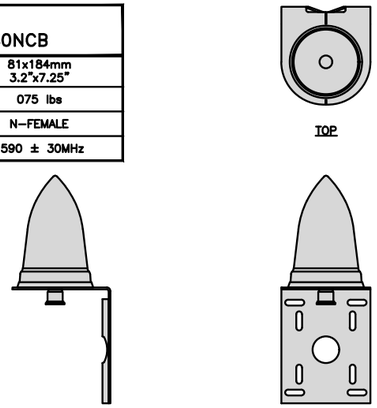
SHEET TITLE

EQUIPMENT DETAILS

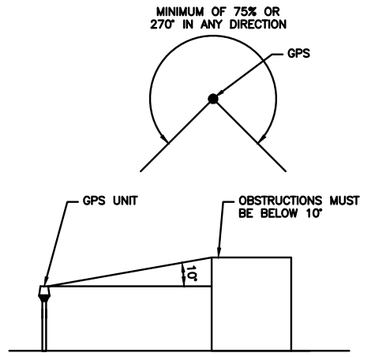
SHEET NUMBER

A-4

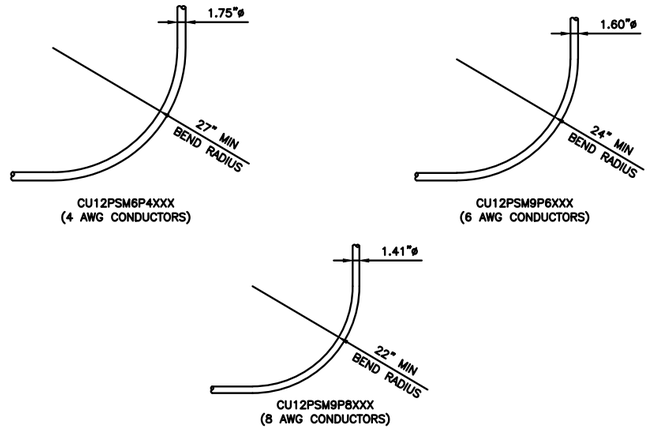
PCTEL GPSGL-TMG-SPI-40NCB	
DIMENSIONS (DIAxH) MM/INCH	81x184mm 3.2"x7.25"
WEIGHT W/ACCESSORIES	075 lbs
CONNECTOR	N-FEMALE
FREQUENCY RANGE	1590 ± 30MHz



GPS DETAIL | NO SCALE | 1



GPS MINIMUM SKY VIEW REQUIREMENTS | NO SCALE | 2



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

NOT USED | NO SCALE | 4

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

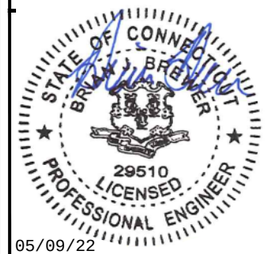
NOT USED | NO SCALE | 9

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

Kimley»Horn

COA #: PEC.0000738
421 FAYETTEVILLE ST, SUITE 600
RALEIGH, NC 27601



05/09/22

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DISH Wireless L.L.C.
PROJECT INFORMATION

NJJER01137A
800 BOOTH HILL RD.
TRUMBULL, CT 06611

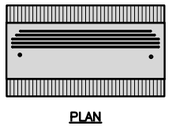
SHEET TITLE

EQUIPMENT DETAILS

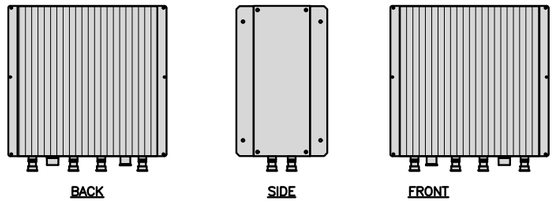
SHEET NUMBER

A-5

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



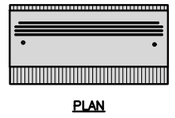
PLAN



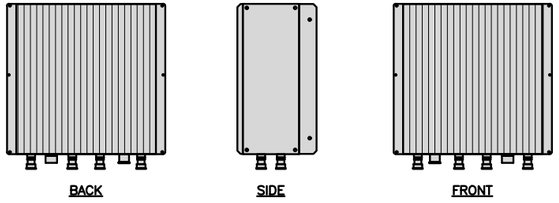
BACK SIDE FRONT

RRH DETAIL | NO SCALE | 1

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



PLAN

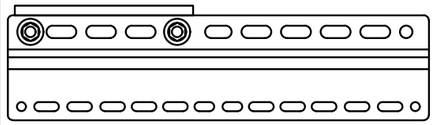


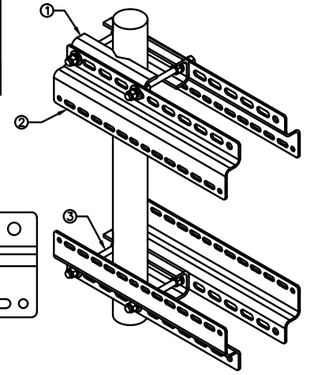
BACK SIDE FRONT

RRH DETAIL | NO SCALE | 2

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

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



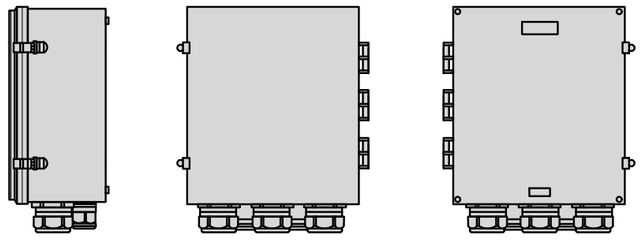


NOTE:
OR DISH Wireless L.L.C.
APPROVED EQUIVALENT

RRH MOUNT DETAIL | NO SCALE | 3

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

PLAN

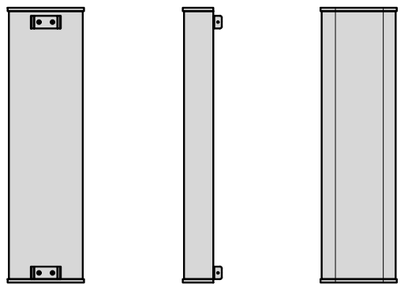


SIDE BACK FRONT

SURGE SUPPRESSION DETAIL (OVP) | NO SCALE | 4

JMA WIRELESS MX08FRO665-21 ANTENNA	
DIMENSIONS (HxWxD)	72.0"x20.0"x8.0"
TOTAL WEIGHT	82.5 LB
RF PORTS, CONNECTOR TYPE	8 x 4.3-10 FEMALE

PLAN

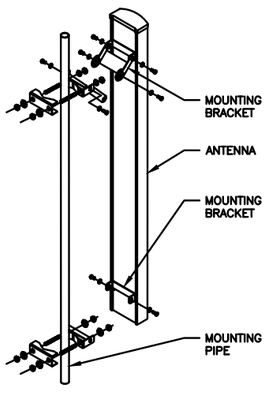


BACK SIDE FRONT

ANTENNA DETAIL | NO SCALE | 5

NOT USED | NO SCALE | 6

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

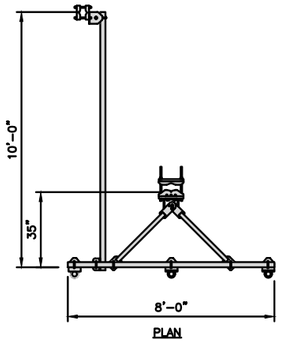


NOTE:
OR DISH Wireless L.L.C.
APPROVED EQUIVALENT

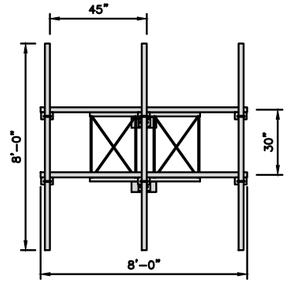
ANTENNA MOUNTING DETAIL | NO SCALE | 7

COMMSCOPE V-FRAME MTC3975083	
FACE SIZE	8'-0"
WEIGHT	352.136 lbs

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

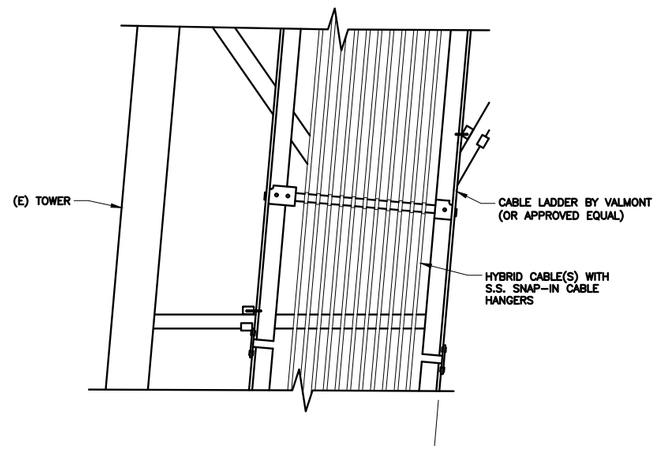


PLAN



FRONT

ANTENNA FRAME DETAIL | NO SCALE | 8



WAVEGUIDE LADDER DETAIL | NO SCALE | 9

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5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

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STATE OF CONNECTICUT
BRIAN J. BREWER
29510
LICENSED PROFESSIONAL ENGINEER

05/09/22

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DISH Wireless L.L.C.
PROJECT INFORMATION

NJJER01137A
800 BOOTH HILL RD.
TRUMBULL, CT 06611

SHEET TITLE

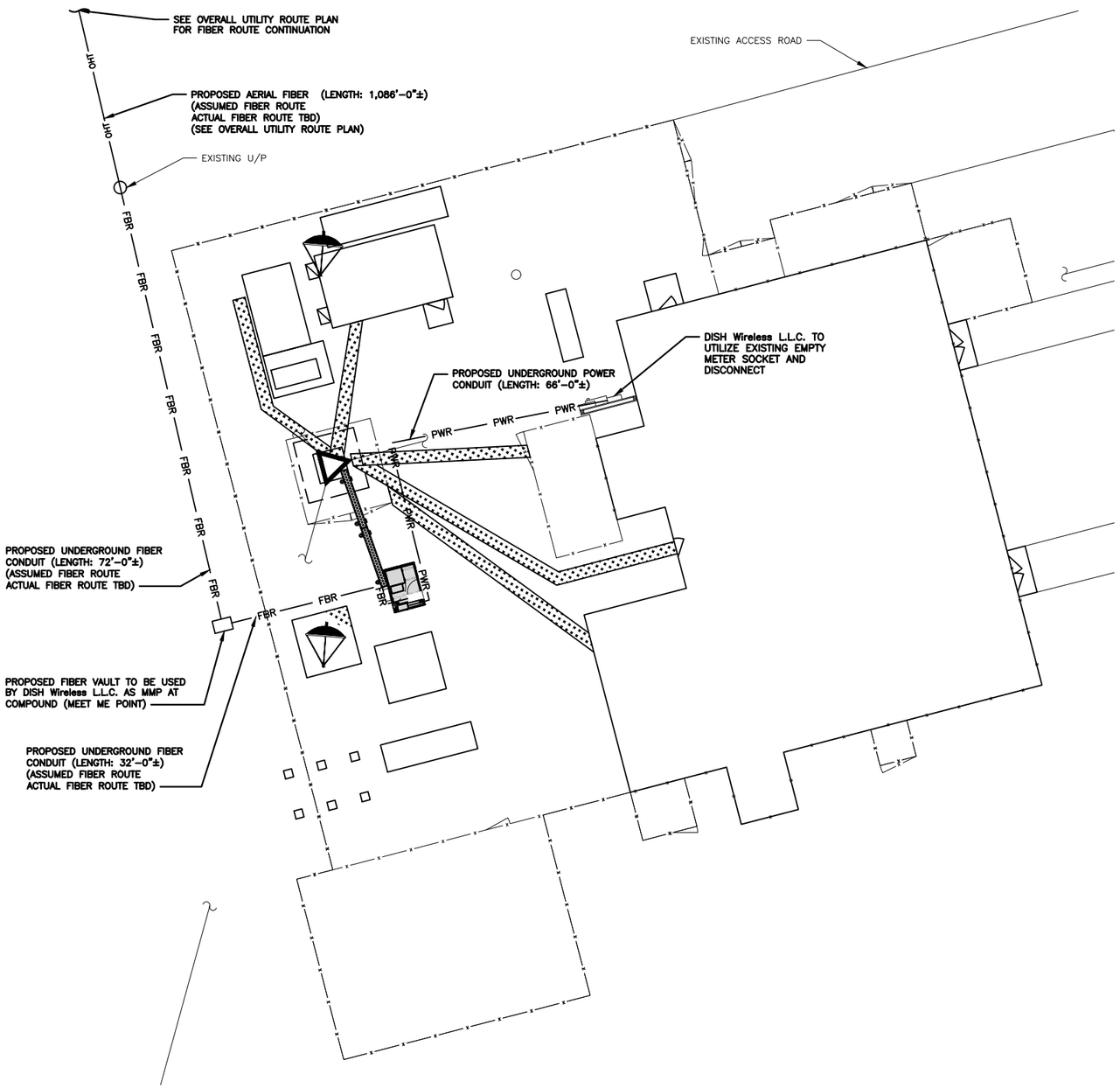
EQUIPMENT DETAILS

SHEET NUMBER

A-6

NOTES

1. CONTRACTOR SHALL FIELD VERIFY ALL PROPOSED UNDERGROUND UTILITY CONDUIT ROUTE.
2. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.
3. THE GROUND LEASE DOES NOT SPECIFY OUR UTILITY RIGHTS. "PWR" AND "FBR" PATH DEPICTED ON A-1 AND E-1 ARE BASED ON BEST AVAILABLE INFORMATION INCLUDING BUT NOT LIMITED TO FIELD VERIFICATION, PRIOR PROJECT DOCUMENTATION AND OTHER REAL PROPERTY RIGHTS DOCUMENTS. WHEN INSTALLING THE UTILITIES PLAEASE LOCATE AND FOLLOW EXSITING PATH. IF EXISTING PATH IS NOT AN OPTION PLEASE NOTIFY TOWER OWNER AS FURTHER COORINATION MAY BE NEEDED.



UTILITY ROUTE PLAN

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

1

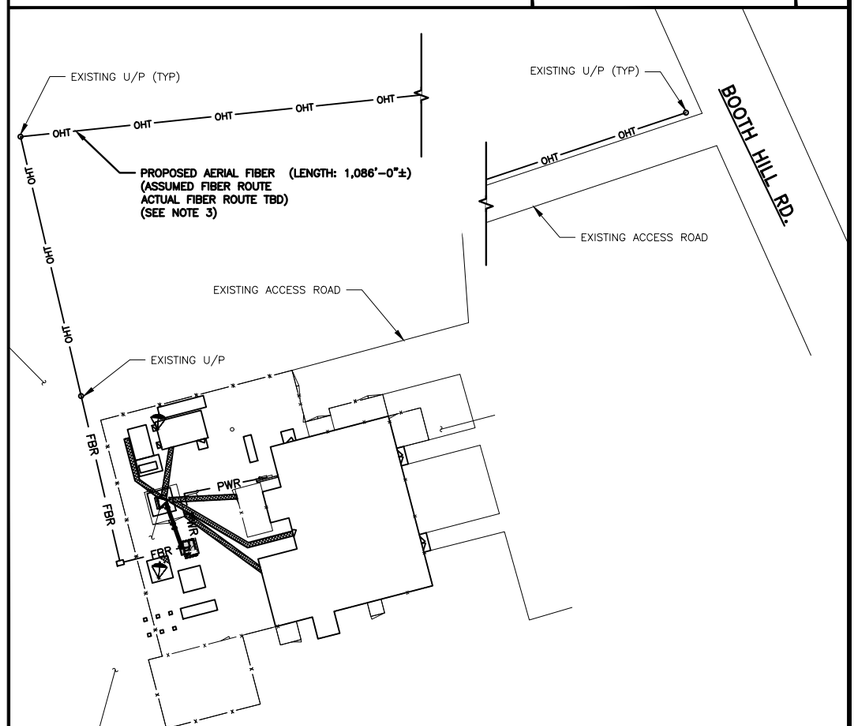
DC POWER WIRING SHALL BE COLOR CODED AT EACH END FOR IDENTIFYING +24V AND -48V CONDUCTORS. RED MARKINGS SHALL IDENTIFY +24V AND BLUE MARKINGS SHALL IDENTIFY -48V.

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

ELECTRICAL NOTES

NO SCALE

2



OVERALL UTILITY ROUTE PLAN

32' 24'16' 8' 0 32' 64'
1/32"=1'-0"

3

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LITTLETON, CO 80120

Kimley»Horn

COA #: PEC.0000738
421 FAYETTEVILLE ST, SUITE 600
RALEIGH, NC 27601

STATE OF CONNECTICUT
BRIAN J. BREWER
29510
LICENSED PROFESSIONAL ENGINEER

05/09/22

Exp. 01/31/23

DRAWN BY:	CHECKED BY:	APPROVED BY:
DRD	MCK	MCK

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

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A&E PROJECT NUMBER

KHCLE-16928

DISH Wireless L.L.C.
PROJECT INFORMATION

NJJER01137A
800 BOOTH HILL RD.
TRUMBULL, CT 06611

SHEET TITLE

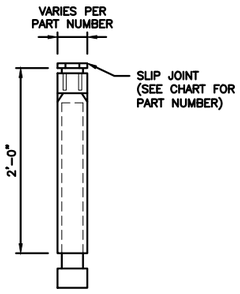
ELECTRICAL/FIBER ROUTE PLAN AND NOTES

SHEET NUMBER

E-1

CARLON EXPANSION FITTINGS

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

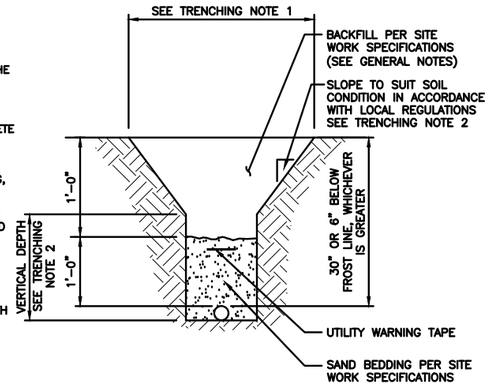


NOTE:
CONTRACTOR TO INSTALL EXPANSION FITTING SLIP JOINT AT METER CENTER CONDUIT TERMINATION, AS PER LOCAL UTILITY POLICY, ORDINANCE AND/OR SPECIFIED REQUIREMENT.

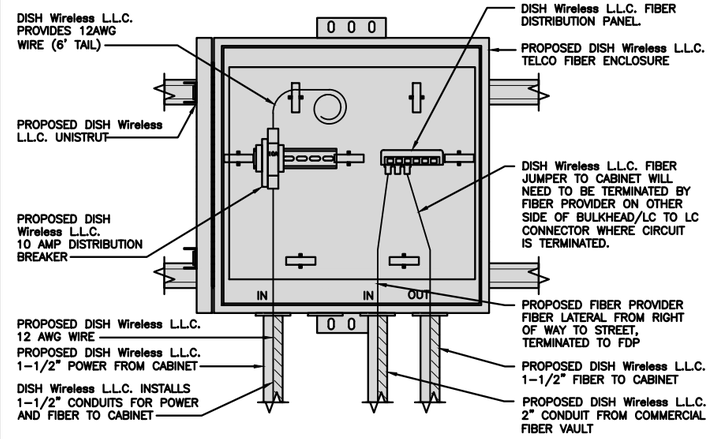
EXPANSION JOINT DETAIL | NO SCALE | 1

TRENCHING NOTES

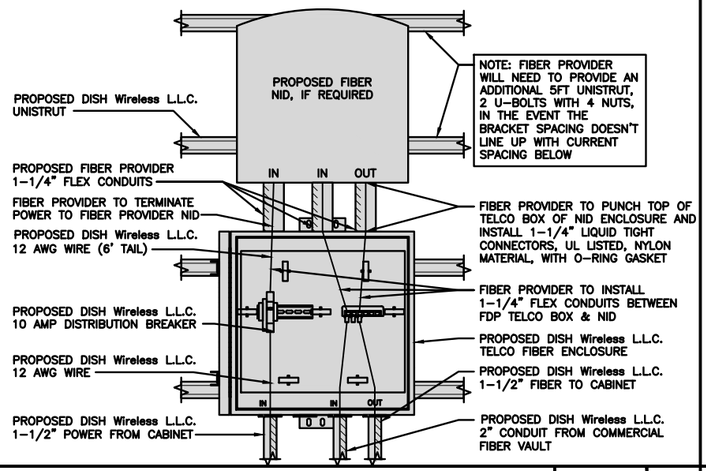
1. CONTRACTOR SHALL RESTORE THE TRENCH TO ITS ORIGINAL CONDITIONS BY EITHER SEEDING OR SODDING GRASS AREAS, OR REPLACING ASPHALT OR CONCRETE AREAS TO ITS ORIGINAL CROSS SECTION.
2. TRENCHING SAFETY; INCLUDING, BUT NOT LIMITED TO SOIL CLASSIFICATION, SLOPING, AND SHORING, SHALL BE GOVERNED BY THE CURRENT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



TYPICAL UNDERGROUND TRENCH DETAIL | NO SCALE | 2



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



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

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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LITTLETON, CO 80120

Kimley»Horn

COA #: PEC.0000738
421 FAYETTEVILLE ST, SUITE 600
RALEIGH, NC 27601

STATE OF CONNECTICUT
BRIAN J. BREWER
29510
LICENSED PROFESSIONAL ENGINEER

05/09/22

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DISH Wireless L.L.C.
PROJECT INFORMATION

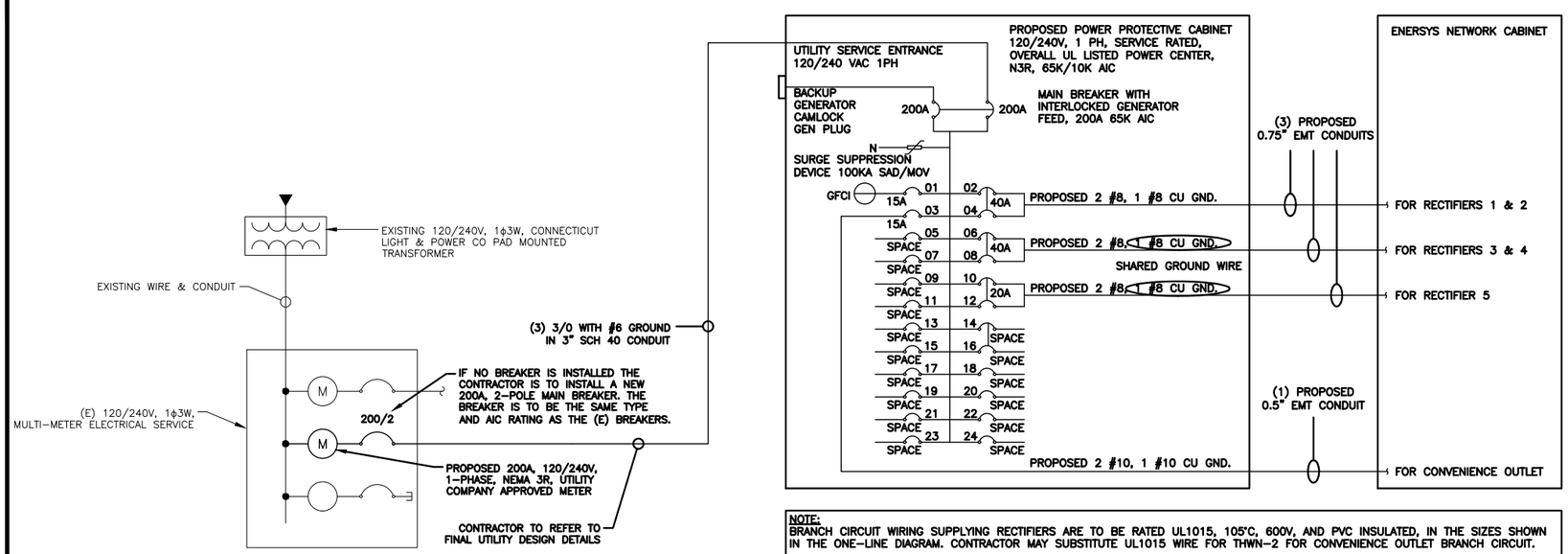
NJJER01137A
800 BOOTH HILL RD.
TRUMBULL, CT 06611

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:
(2) 40A, 2P BREAKER - SQUARE D P/N:QO240
(1) 20A, 2P BREAKER - SQUARE D P/N:QO220
(1) 20A, 1P BREAKER - SQUARE D P/N:QO120

NOTES

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

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

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 (3 CONDUITS): USING UL1015, CU.

#8 - 0.0552 SQ. IN X 2 =	0.1103 SQ. IN
#8 - 0.0131 SQ. IN X 1 =	0.0131 SQ. IN <BARE GROUND
TOTAL =	0.1234 SQ. IN

0.75" EMT CONDUIT IS ADEQUATE TO HANDLE THE TOTAL OF (3) 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 ENERSYS 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	40A	3840		ENERSYS ALPHA CORDEX
ENERSYS GFCI OUTLET		180	15A	3	B	4			3840	RECTIFIERS 1 & 2
-SPACE-				5	A	6	40A	3840		ENERSYS ALPHA CORDEX
-SPACE-				7	B	8			3840	RECTIFIER 3 & 4
-SPACE-				9	A	10	20A	1920		ENERSYS ALPHA CORDEX
-SPACE-				11	B	12			1920	RECTIFIER 5
-SPACE-				13	A	14				-SPACE-
-SPACE-				15	B	16				-SPACE-
-SPACE-				17	A	18				-SPACE-
-SPACE-				19	B	20				-SPACE-
-SPACE-				21	A	22				-SPACE-
-SPACE-				23	B	24				-SPACE-
VOLTAGE AMPS	180	180						9500	9500	
200A MCB, 1ϕ, 24 SPACE, 120/240V			L1		L2					
MB RATING: 65,000 AIC			9680		9680		VOLTAGE AMPS			
			81		81		AMPS			
			81				MAX AMPS			
			102				MAX 125%			

PANEL SCHEDULE — NO SCALE — 2

NOT USED — NO SCALE — 3

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5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

Kimley»Horn
COA #: PEC.0000738
421 FAYETTEVILLE ST, SUITE 600
RALEIGH, NC 27601

STATE OF CONNECTICUT — MICHAEL R. KNOPP — 29510 — LICENSED PROFESSIONAL ENGINEER
05/09/22
Exp. 01/31/23

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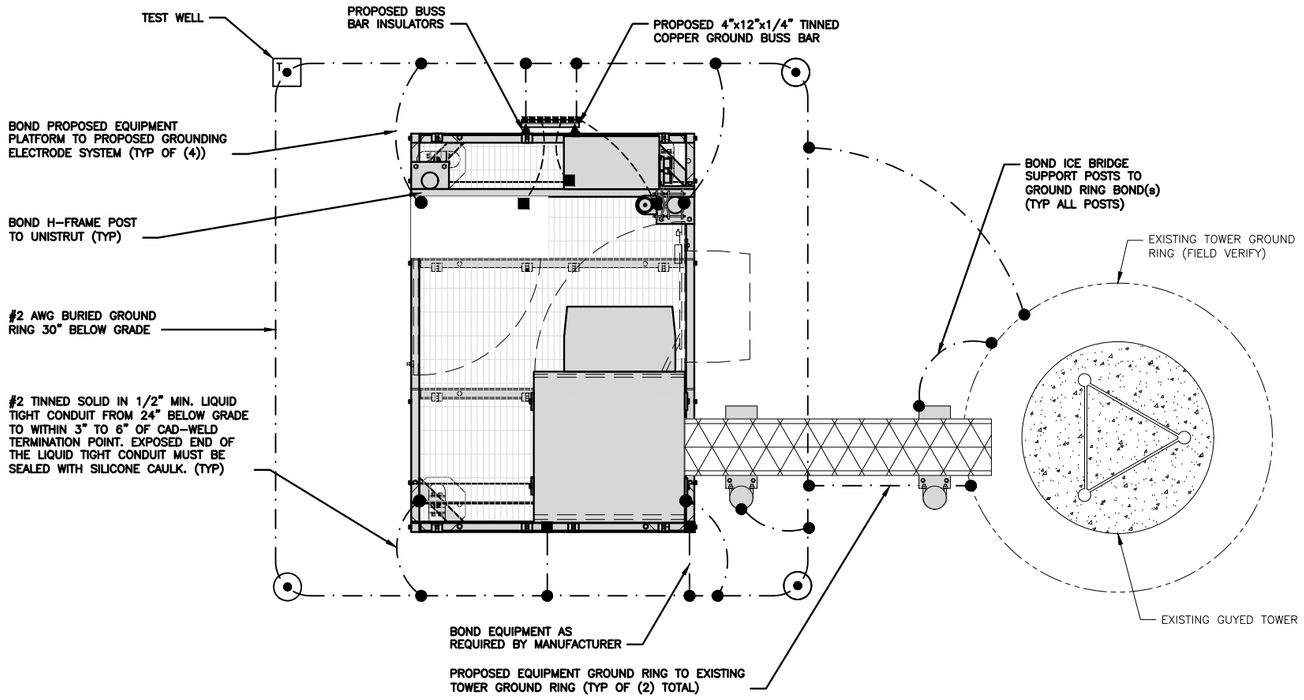
KHCLE-16928

DISH Wireless L.L.C.
PROJECT INFORMATION
NJJER01137A
800 BOOTH HILL RD.
TRUMBULL, CT 06611

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

SHEET NUMBER
E-3

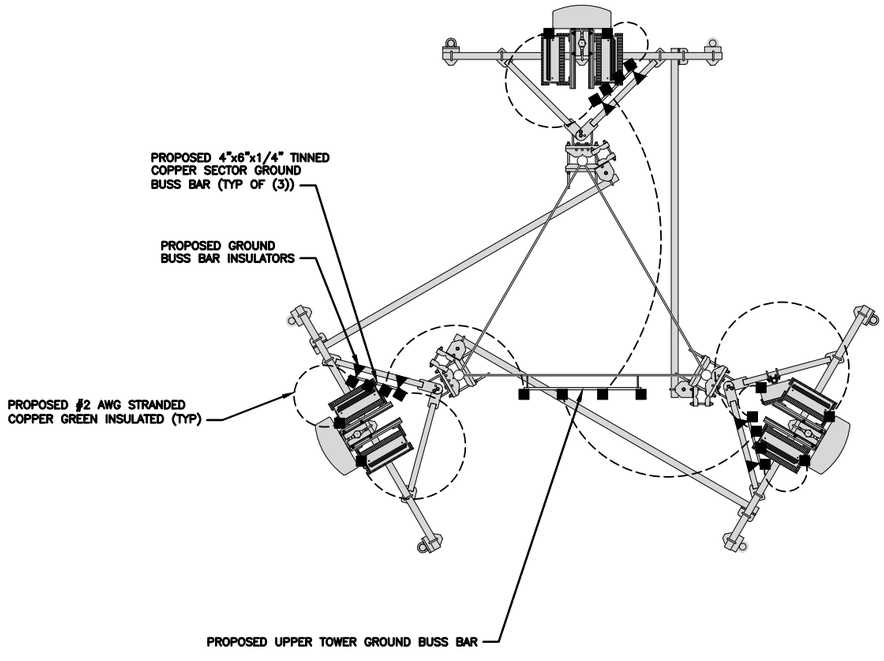


TYPICAL EQUIPMENT GROUNDING PLAN

NO SCALE | 1

NOTES

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



TYPICAL ANTENNA GROUNDING PLAN

NO SCALE | 2

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

GROUNDING LEGEND

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

GROUNDING KEY NOTES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(P) TOWER TOP COLLECTOR BUSS BAR IS TO BE MECHANICALLY BONDED TO TOWER STEEL.

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

GROUNDING KEY NOTES

NO SCALE | 3

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5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

Kimley»Horn
COA #: PEC.0000738
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PROJECT INFORMATION

NJJER01137A
800 BOOTH HILL RD.
TRUMBULL, CT 06611

SHEET TITLE

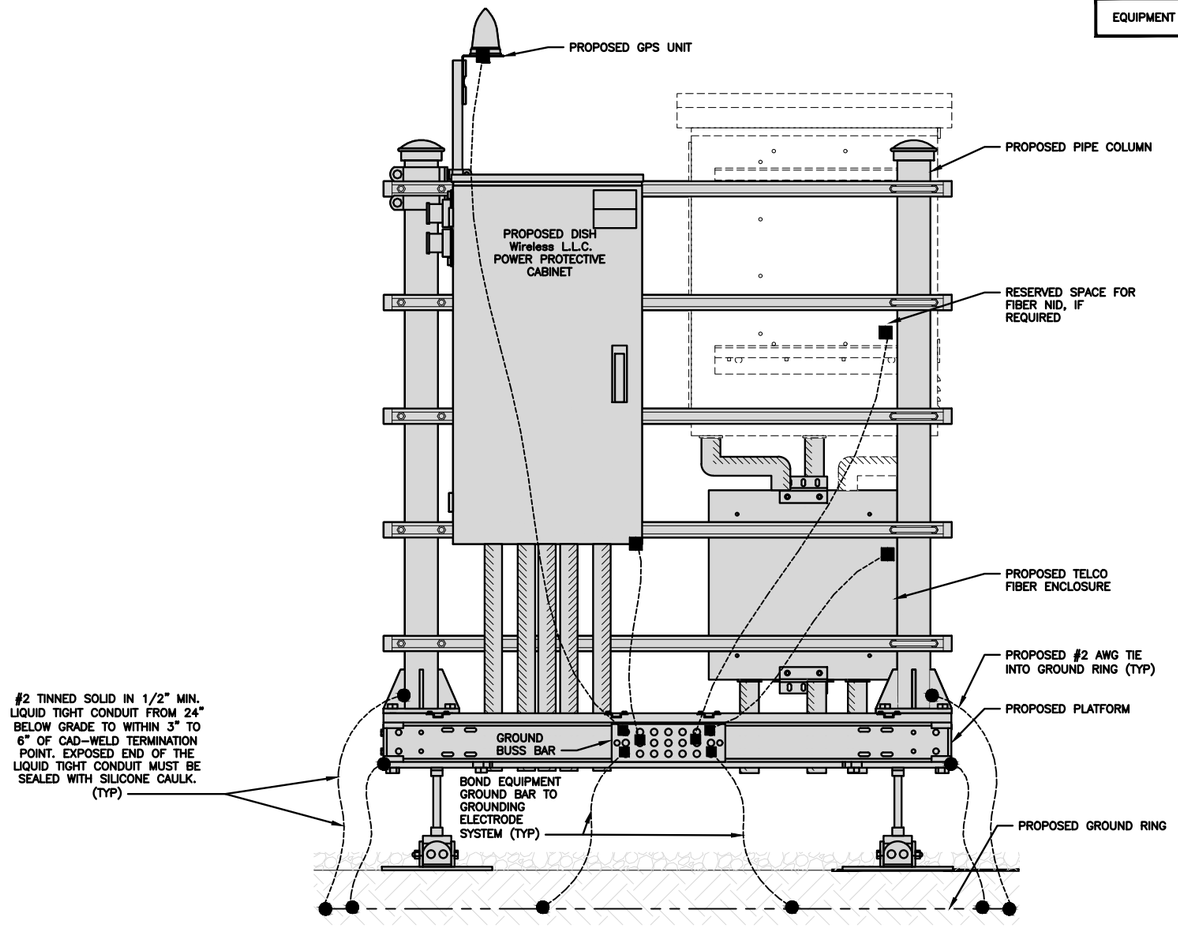
GROUNDING PLANS AND NOTES

SHEET NUMBER

G-1

NOTES

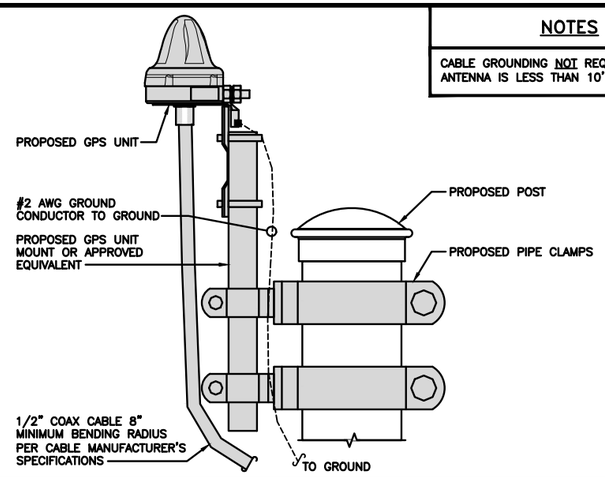
EQUIPMENT CABINET OMITTED FOR CLARITY



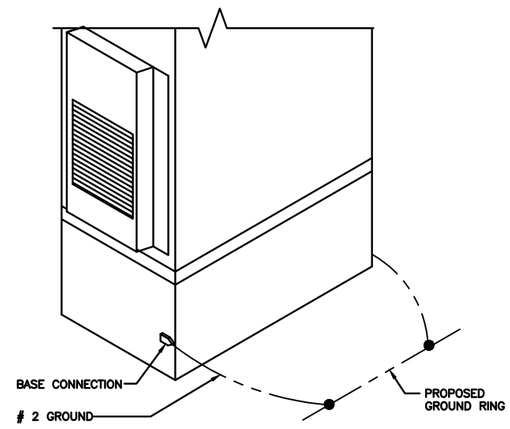
H-FRAME GROUNDING DETAIL | NO SCALE | 1

NOTES

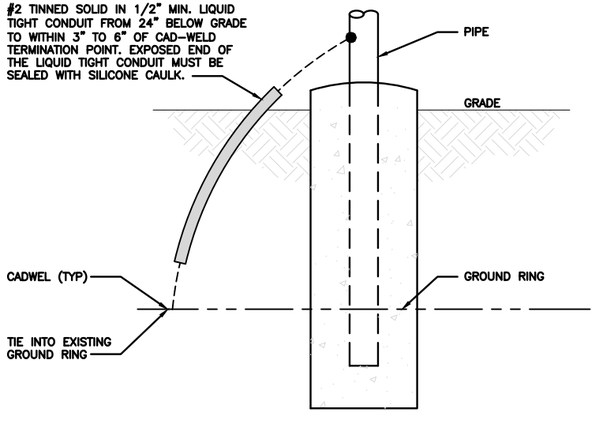
CABLE GROUNDING NOT REQUIRED WHEN ANTENNA IS LESS THAN 10' FROM CABINET



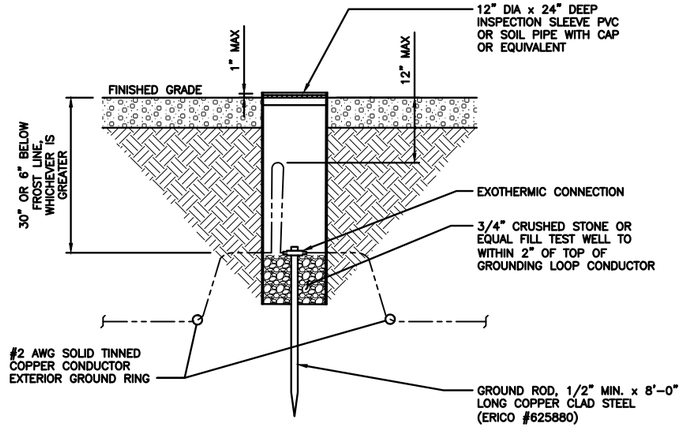
TYPICAL GPS UNIT GROUNDING | NO SCALE | 2



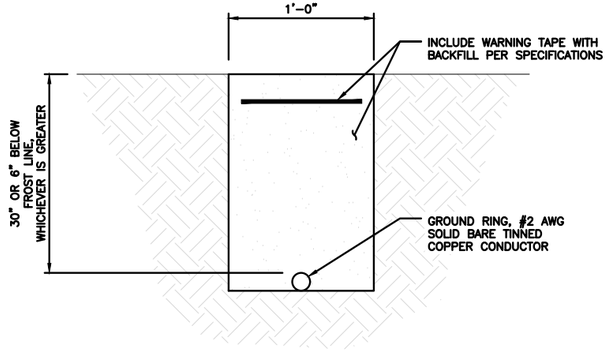
OUTDOOR CABINET GROUNDING | NO SCALE | 3



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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Kimley»Horn

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RALEIGH, NC 27601

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TRUMBULL, CT 06611

SHEET TITLE

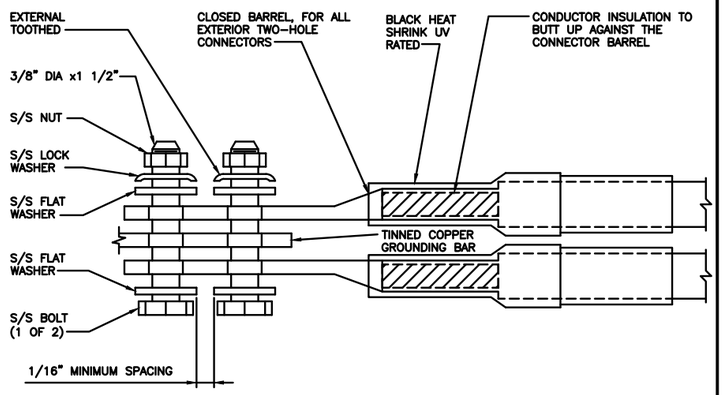
GROUNDING DETAILS

SHEET NUMBER

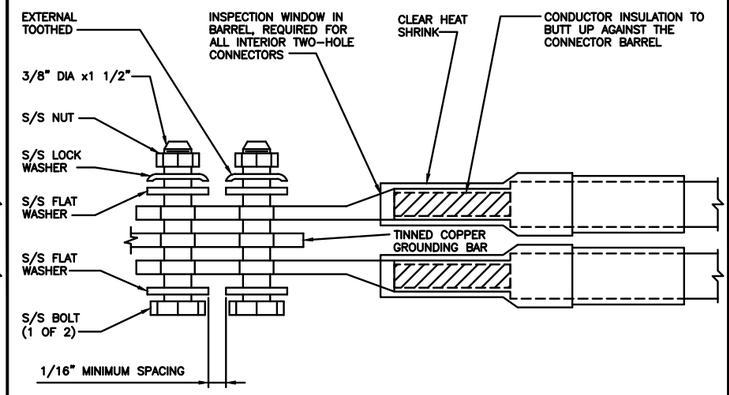
G-2

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).

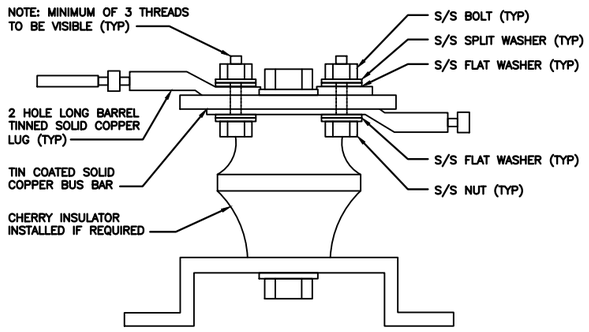
TYPICAL GROUNDING NOTES | NO SCALE | 1



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

dish wireless.

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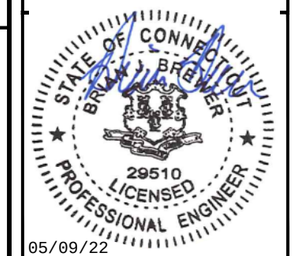
LITTLETON, CO 80120

Kimley»Horn

COA #: PEC.0000738
421 FAYETTEVILLE ST, SUITE 600
RALEIGH, NC 27601



05/09/22

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DRAWN BY:	CHECKED BY:	APPROVED BY:
DRD	MCK	MCK

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

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A&E PROJECT NUMBER

KHCLE–16928

DISH Wireless L.L.C.
PROJECT INFORMATION

NJJER01137A
800 BOOTH HILL RD.
TRUMBULL, CT 06611

SHEET TITLE

GROUNDING DETAILS

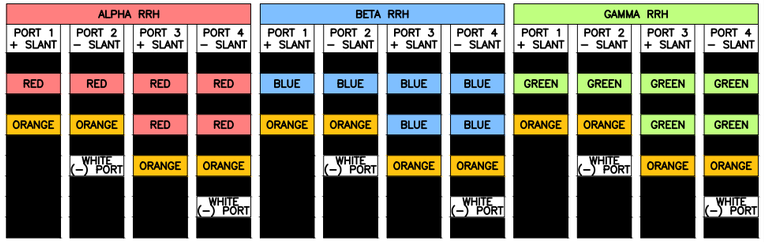
SHEET NUMBER

G-3

HYBRID/DISCREET CABLES — 3/4" TAPE WIDTHS WITH 3/4" SPACING

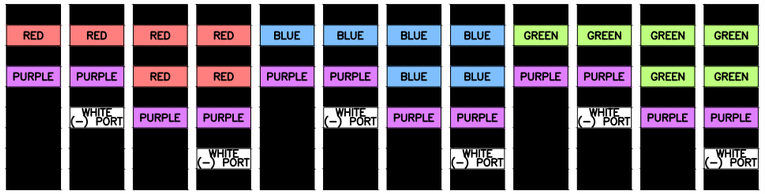
LOW–BAND RRH
(600 MHz N71 BASEBAND) +
(850 MHz N26 BAND) +
(700 MHz N29 BAND) – OPTIONAL PER MARKET

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



MID–BAND RRH
(AWS BANDS N66+N70)

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



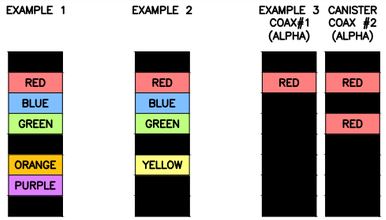
HYBRID/DISCREET CABLES

INCLUDE SECTOR BANDS BEING SUPPORTED ALONG WITH FREQUENCY BANDS.

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

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

EXAMPLE 3 – MAIN COAX WITH GROUND MOUNTED RRHs.

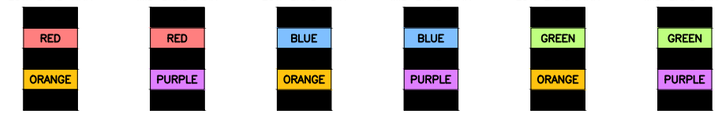


FIBER JUMPERS TO RRHs

LOW–BAND HHR FIBER CABLES HAVE SECTOR STRIPE ONLY.

POWER CABLES TO RRHs

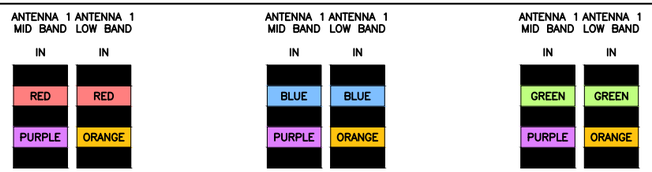
LOW–BAND RRH POWER CABLES HAVE SECTOR STRIPE ONLY



RET MOTORS AT ANTENNAS

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

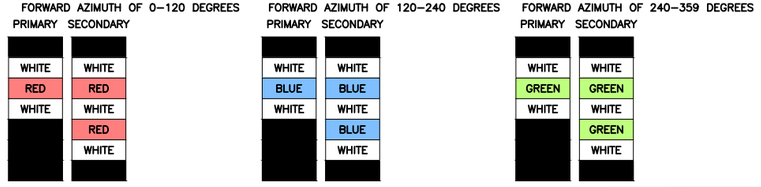
SEPARATE RET CABLES ARE USED WHEN ANTENNA PORTS PROVIDE INPUTS FOR BOTH LOW AND MID BANDS.



MICROWAVE RADIO LINKS

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

MICROWAVE CABLES WILL REQUIRE P–TOUCH LABELS INSIDE THE CABINET TO IDENTIFY THE LOCAL AND REMOTE SITE ID's.



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

AWS (N66+N70+H–BLOCK): PURPLE

CBRS TECH (3 GHz): YELLOW

NEGATIVE SLANT PORT ON ANT/RRH: WHITE

ALPHA SECTOR: RED

BETA SECTOR: BLUE

GAMMA SECTOR: GREEN

COLOR IDENTIFIER		2
NOT USED		3
RF CABLE COLOR CODES		1
NOT USED		4

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5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

Kimley»Horn
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RALEIGH, NC 27601

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TRUMBULL, CT 06611

SHEET TITLE
RF
CABLE COLOR CODE

SHEET NUMBER
RF-1

EXOTHERMIC CONNECTION

MECHANICAL CONNECTION

BUSS BAR INSULATOR

CHEMICAL ELECTROLYTIC GROUNDING SYSTEM

TEST CHEMICAL ELECTROLYTIC GROUNDING SYSTEM

EXOTHERMIC WITH INSPECTION SLEEVE

GROUNDING BAR

GROUND ROD

TEST GROUND ROD WITH INSPECTION SLEEVE

SINGLE POLE SWITCH

DUPLEX RECEPTACLE

DUPLEX GFCI RECEPTACLE

FLUORESCENT LIGHTING FIXTURE (2) TWO LAMPS 48–T8

SMOKE DETECTION (DC)

EMERGENCY LIGHTING (DC)

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

CHAIN LINK FENCE — X — X — X — X —

WOOD/WROUGHT IRON FENCE

WALL STRUCTURE

LEASE AREA

PROPERTY LINE (PL)

SETBACKS

ICE BRIDGE

CABLE TRAY

WATER LINE — W — W — W — W — W —

UNDERGROUND POWER — UGP — UGP — UGP — UGP — UGP —

UNDERGROUND TELCO — UGT — UGT — UGT — UGT — UGT —

OVERHEAD POWER — OHP — OHP — OHP — OHP —

OVERHEAD TELCO — OHT — OHT — OHT — OHT —

UNDERGROUND TELCO/POWER — UGT/P — UGT/P — UGT/P — UGT/P —

ABOVE GROUND POWER — AGP — AGP — AGP — AGP — AGP —

ABOVE GROUND TELCO — AGT — AGT — AGT — AGT — AGT —

ABOVE GROUND TELCO/POWER — AGT/P — AGT/P — AGT/P — AGT/P —

WORKPOINT W.P.

SECTION REFERENCE (XX / X–X)

DETAIL REFERENCE (XX / X–X)

LEGEND

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

ABBREVIATIONS

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

Kimley»Horn

COA #: PEC.0000738
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A&E PROJECT NUMBER

KHCLE–16928

DISH Wireless L.L.C.
PROJECT INFORMATION

NJJER01137A
800 BOOTH HILL RD.
TRUMBULL, CT 06611

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

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

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

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

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

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

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

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

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

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

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

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

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

GENERAL NOTES:

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

CONTRACTOR:GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION

CARRIER:DISH Wireless L.L.C.

TOWER OWNER:TOWER OWNER

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

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

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

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

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

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

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

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

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

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

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

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

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

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

Kimley»Horn

COA #: PEC.0000738
421 FAYETTEVILLE ST, SUITE 600
RALEIGH, NC 27601

STATE OF CONNECTICUT
BRIAN J. BREWER
29510
LICENSED PROFESSIONAL ENGINEER

05/09/22

Exp. 01/31/23

DRAWN BY:	CHECKED BY:	APPROVED BY:
DRD	MCK	MCK

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

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A&E PROJECT NUMBER

KHCLE–16928

DISH Wireless L.L.C.
PROJECT INFORMATION

NJJER01137A
800 BOOTH HILL RD.
TRUMBULL, CT 06611

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. VERYIFY 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.".

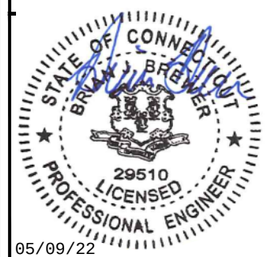
30. ALL EMPTY/SPARE CONDUITS THAT ARE INSTALLED ARE TO HAVE A METERED MULE TAPE PULL CORD INSTALLED.

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

Kimley»Horn

COA #: PEC.0000738
421 FAYETTEVILLE ST, SUITE 600
RALEIGH, NC 27601



05/09/22

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DRAWN BY:	CHECKED BY:	APPROVED BY:
DRD	MCK	MCK

RFDS REV #: 1

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A	10/11/2021	ISSUED FOR REVIEW
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A&E PROJECT NUMBER

KHCLE-16928

DISH Wireless L.L.C.
PROJECT INFORMATION

NJJER01137A
800 BOOTH HILL RD.
TRUMBULL, CT 06611

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

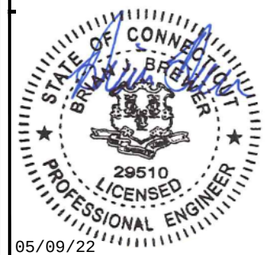
21. BUILDINGS WHERE THE MAIN GROUNDING CONDUCTORS ARE REQUIRED TO BE ROUTED TO GRADE, THE CONTRACTOR SHALL ROUTE TWO GROUNDING CONDUCTORS FROM THE ROOFTOP, TOWERS, AND WATER TOWERS GROUNDING RING, TO THE EXISTING GROUNDING SYSTEM, THE GROUNDING CONDUCTORS SHALL NOT BE SMALLER THAN 2/0 COPPER. ROOFTOP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

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

Kimley»Horn

COA #: PEC.0000738
421 FAYETTEVILLE ST, SUITE 600
RALEIGH, NC 27601



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DISH Wireless L.L.C.
PROJECT INFORMATION

NJJER01137A
800 BOOTH HILL RD.
TRUMBULL, CT 06611

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-4

Exhibit D

Structural Analysis Report

Date: **November 04, 2021**

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

Subject:	**Structural Analysis Report**	
Carrier Designation:	***DISH Network* Co-Locate**	
	Site Number:	NJJER01137A
	Site Name:	CT-CCI-T-873128
Crown Castle Designation:	**BU Number:**	873128
	Site Name:	Trumbull
	JDE Job Number:	640191
	Work Order Number:	2039762
	Order Number:	548870 Rev. 3
Engineering Firm Designation:	**Crown Castle Project Number:**	2039762
Site Data:	**800 Booth Hill Rd., Trumbull, FAIRFIELD County, CT** **Latitude *41° 16' 44.26"*, Longitude *-73° 11' 6.4"*** **457 Foot - Guyed Tower**	

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

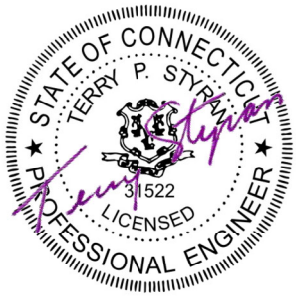
The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC7: Proposed Equipment Configuration **Sufficient Capacity - 96.7%**

This analysis utilizes an ultimate 3-second gust wind speed of 118 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: Michael Lopienski

Respectfully submitted by:



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

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 457 ft Guyed tower designed by CENTRAL TOWER, INC.. The tower has been modified multiple times to accommodate additional loading.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	118 mph
Exposure Category:	B
Topographic Factor:	1
Ice Thickness:	1 in
Wind Speed with Ice:	50 mph
Service Wind Speed:	60 mph

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
186.0	186.0	3	fujitsu	TA08025-B604	1	1-3/4
		3	fujitsu	TA08025-B605		
		3	jma wireless	MX08FRO665-21 w/ Mount Pipe		
		1	raycap	RDIDC-9181-PF-48		
		1	tower mounts	Commscope MTC3975083 (3)		

Table 2 - Other Considered Equipment

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
458.0	477.0	1	rfs celwave	SAA18-O4A-J480-ET5R-21 w/ Mount Pipe	1	4-1/16
450.0	450.0	2	commscope	USX6-6W-6GR	6 12	1/2 1/4
		4	saf	MXM REPEATER MK2		
		2	tower mounts	Pipe Mount [PM 601-1]		
441.0	451.0	1	sinclair	SRL-235-2	1	7/8
	441.0	1	tower mounts	Side Arm Mount [SO 308-1]		
439.0	445.0	1	antel	BCD-87077	1	2-1/4
	439.0	1	tower mounts	Side Arm Mount [SO 308-1]		
420.0	420.0	3	ERI	1183-3CP	3	3
393.0	393.0	1	shively labs	6014-2	1 1	4 1-5/8
388.0	388.0	1	shively labs	6014-2	1	2-1/4
367.0	367.0	1	shively labs	6828-2	1	1/2
364.0	368.0	1	andrew	DB806E-XT	-	-
	364.0	1	tower mounts	Side Arm Mount [SO 601-1]		
344.0	354.0	1	rfs celwave	455-6	1	1/2
	344.0	1	tower mounts	Side Arm Mount [SO 601-1]		
342.0	352.0	1	rfs celwave	455-6	1	1-1/4

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
	350.0	1	antel	BCD-87077	2	1/2
	347.0	1	rfs celwave	AO9009-3		
	342.0	1	tower mounts	Side Arm Mount [SO 303-1]		
		1	tower mounts	Side Arm Mount [SO 305-1]		
		1	tower mounts	Side Arm Mount [SO 601-1]		
340.0	350.0	1	rfs celwave	455-6	1	7/8
	340.0	1	tower mounts	Side Arm Mount [SO 308-1]		
330.0	335.0	2	andrew	PG1N0F-0090-310	1	1-5/8
	330.0	1	tower mounts	Side Arm Mount [SO 601-1]	1	1-1/4
328.0	328.0	3	tower mounts	Side Arm Mount [SO 701-1]	1	3-1/2
326.0	329.0	1	decibel	DB201-A	-	-
	326.0	1	tower mounts	Side Arm Mount [SO 602-1]		
325.0	325.0	1	decibel	DB408	1	1-1/4
		1	tower mounts	Side Arm Mount [SO 303-1]		
322.0	327.0	1	Sinclair	SRL310C-4HD	1	1-1/4
	322.0	1	Radiowaves	SPD3-5.8	1	1/2
		1	tower mounts	Pipe Mount [PM 601-1]		
		1	tower mounts	Side Arm Mount [SO 308-1]		
284.0	284.0	1	andrew	DB404-B w/ Mount Pipe	-	-
277.0	283.0	1	RFS Celwave	BMR10-A-B1	1	1-5/8
264.0	273.0	1	telewave	ANT150F6	1	1-5/8
	264.0	1	tower mounts	Side Arm Mount [SO 303-1]		
255.0	261.0	1	decibel	DB809KT3E-Y	1	1-5/8
	255.0	1	tower mounts	Side Arm Mount [SO 203-1]		
247.0	248.0	3	ericsson_cfd	AIR6449 B41_T-MOBILE w/ Mount Pipe	3	1-5/8
	247.0	3	commscope	SDX1926Q-43	6	7/8
		3	ericsson	KRY 112 144/2		
		3	ericsson	RADIO 4449 B12/B71		
		3	ericsson	RRUS 4415 B25_CCIV2		
		3	ericsson_cfd	AIR 32 B2A B66AA_T-MOBILE w/ Mount Pipe		
		3	rfs celwave_cfd	APXVAARR24_43-U-NA20 w/ Mount Pipe		
		1	tower mounts	Sector Mount [SM 503-3]		
230.0	238.0	1	raycap	RRFDC-3315-PF-48	2	1-5/8
	232.0	1	andrew	LNX-6514DS-VTM w/ Mount Pipe	6	7/8
		2	andrew	LNX-8513DS-VTM w/ Mount Pipe		
		3	commscope	CBC78T-DS-43-2X		
		6	commscope	JAHH-65B-R3B w/ Mount Pipe		
		1	raycap	RRFDC-3315-PF-48		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
		3	samsung telecommunications	RFV01U-D1A		
		3	samsung telecommunications	RFV01U-D2A		
		3	vzw	Sub6 Antenna - VZS01 w/ Mount Pipe		
	230.0	1	tower mounts	Sector Mount [SM 407-3]		
206.0	206.0	1	mark	P-9A72GN-U	1	7/8
200.0	200.0	1	gabriel electronics	DFPD1-52 w/ Mount Pipe	1	1/4
		1	tower mounts	Pipe Mount [PM 601-1]		
188.0	188.0	1		BMYD745K	-	-
		1	tower mounts	Pipe Mount [PM 601-1]		
186.0	186.0	1	decibel	ASP-960	-	-
178.0	178.0	1	Radiowaves	SPD4-5.2	1	1/2
		1	tower mounted amps	12"x12"x3" TMA		
		1	tower mounts	Pipe Mount [PM 601-1]		
150.0	150.0	1	andrew	HPX6-65-P3A	2	EW63
146.0	146.0	1	andrew	PL6-65-PXA	1	EW63
		1	tower mounts	Pipe Mount [PM 601-1]	1	EW52
140.0	140.0	1	Channel Master	CM 4228HD	1	3/8
136.0	138.0	1	rfs celwave	MGA2-16N	3	3/8
	136.0	1	CSI-Cellular Specialties	CSI-AY/809-960/11		
		1	mounts	2.4" Dia x 8-ft Mount Pipe		
	135.0	1	Channel Master	CM 4228HD		
	134.0	1	rfs celwave	MGAR3-23N		
133.0	143.0	1	rfs celwave	220-5	2	7/8
	142.0	1	decibel	DB264-A	1	1/2
	133.0	1	tower mounts	Side Arm Mount [SO 202-1]		
		1	tower mounts	Side Arm Mount [SO 601-1]		
117.0	117.0	1	mark	P-9A48GN-U	1	7/8
109.0	113.0	1	celwave	PD1132-D	1	7/8
	109.0	1	tower mounts	Side Arm Mount [SO 202-1]		
108.0	108.0	1	mark	SSH-9A72GN	1	7/8
		1	mounts	2.4" Dia x 4-ft Mount Pipe		
99.0	99.0	1	Radiowaves	SPD2-5.8	1	7/8
		1	ligowave_cfd	PTP 900-13 w/ Mount Pipe	1	1/4
75.0	75.0	-	-	-	1	1-5/8
62.0	68.0	1	mark	P-9A48GN-U	3	7/8
	62.0	2	tower mounts	Side Arm Mount [SO 601-1]		
	61.0	1	mark	SSH-9A72GN		
	54.0	1	CSI-Cellular	CSI-AY/809-960/11		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
			Specialties			

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Reference	Source
GEOTECHNICAL REPORTS	1418454	CCISites
POST-MODIFICATION INSPECTION	1956007	CCISites
POST-MODIFICATION INSPECTION	2438393	CCISites
POST-MODIFICATION INSPECTION	3417531	CCISites
POST-MODIFICATION INSPECTION	3442609	CCISites
TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	1520339	CCISites
TOWER MANUFACTURER DRAWINGS	1327906	CCISites
TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	2407618	CCISites
TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	2633757	CCISites
TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	2755396	CCISites
TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	3006419	CCISites
TOWER STRUCTURAL ANALYSIS REPORTS	3417285	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 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)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
T1	457 - 436	Leg	3	4	-50.82	156.82	32.4	Pass
T2	436 - 421	Leg	2 3/4	46	-70.56	128.26	55.0	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
T3	421 - 401	Leg	2 3/4	76	-107.59	128.26	83.9	Pass
T4	401 - 396	Leg	3" S.R. w/ 3 SCH 40 Half Pipe and 3.75 x 5/16 Half Pipe	109	-118.51	243.95	48.6	Pass
T5	396 - 391	Leg	3" S.R. w/ 3 SCH 40 Half Pipe and 3.75 x 5/16 Half Pipe	118	-130.78	243.95	53.6	Pass
T6	391 - 386	Leg	3" S.R. w/ 3 SCH 40 Half Pipe and 3.75 x 5/16 Half Pipe	127	-145.52	243.95	59.7	Pass
T7	386 - 381	Leg	SR 3in w/ 1/2HSS 3.5in x 0.22in	139	-162.70	203.71	79.9 82.7 (b)	Pass
T8	381 - 376	Leg	3.5" S.R. w/ 3.5 SCH40 Half Pipe	151	-169.75	280.61	60.5	Pass
T9	376 - 371	Leg	3.5" S.R. w/ 3.5 SCH40 Half Pipe	160	-159.92	280.61	57.0	Pass
T10	371 - 366	Leg	3.5" S.R. w/ 3.5 SCH40 Half Pipe	167	-151.94	280.61	54.1	Pass
T11	366 - 361	Leg	SR 3.5in w/ 1/2HSS 3.5in x 0.23in	179	-143.68	286.07	50.2	Pass
T12	361 - 341	Leg	3	191	-135.91	204.05	66.6	Pass
T13	341 - 321	Leg	3	236	-111.23	161.86	68.7	Pass
T14	321 - 301	Leg	3	269	-95.50	161.86	59.0	Pass
T15	301 - 281	Leg	3	302	-103.27	161.86	63.8	Pass
T16	281 - 276	Leg	3	335	-107.17	161.86	66.2	Pass
T17	276 - 271	Leg	3	344	-111.19	161.86	68.7	Pass
T18	271 - 266	Leg	3	353	-116.53	161.86	72.0	Pass
T19	266 - 261	Leg	3	365	-121.01	161.86	74.8	Pass
T20	261 - 256	Leg	3	377	-131.02	161.86	80.9	Pass
T21	256 - 251	Leg	3	386	-134.66	204.05	66.0	Pass
T22	251 - 246	Leg	3	398	-106.99	161.86	66.1	Pass
T23	246 - 241	Leg	3	412	-89.39	204.05	43.8	Pass
T24	241 - 221	Leg	3	425	-109.38	161.86	67.6	Pass
T25	221 - 201	Leg	3 1/4	458	-144.08	198.84	72.5	Pass
T26	201 - 181	Leg	3 1/4	491	-161.86	198.84	81.4	Pass
T27	181 - 161	Leg	3 1/4	524	-162.72	198.84	81.8	Pass
T28	161 - 141	Leg	3 1/2	557	-154.81	239.13	64.7	Pass
T29	141 - 121	Leg	3 1/2	590	-129.05	239.13	54.0	Pass
T30	121 - 101	Leg	3 1/2	624	-176.38	239.13	73.8	Pass
T31	101 - 81	Leg	3 1/2	657	-190.81	239.13	79.8	Pass
T32	81 - 61	Leg	3 1/2	690	-192.17	239.13	80.4	Pass
T33	61 - 41	Leg	3 1/2	723	-186.95	239.13	78.2	Pass
T34	41 - 20	Leg	3 1/2	756	-166.70	233.63	71.4	Pass
T35	20 - 6.70833	Leg	3 1/4	787	-150.33	209.10	71.9	Pass
T36	6.70833 - 0	Leg	3 1/4	811	-153.68	245.06	62.7	Pass
T1	457 - 436	Diagonal	L2 1/2x2x1/4	19	-4.49	24.60	18.3 45.8 (b)	Pass
T2	436 - 421	Diagonal	L2 1/2x2x3/16	52	-5.52	19.15	28.9 32.6 (b)	Pass
T3	421 - 401	Diagonal	L2 1/2x2x3/16	88	-5.95	19.15	31.1 39.8 (b)	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
T4	401 - 396	Diagonal	L2 1/2x2x3/16	115	-6.29	19.15	32.8 42.5 (b)	Pass
T5	396 - 391	Diagonal	L2 1/2x2x3/16	124	-7.01	19.15	36.6 47.6 (b)	Pass
T6	391 - 386	Diagonal	L2 1/2x2x3/16	133	-9.00	19.15	47.0 56.4 (b)	Pass
T7	386 - 381	Diagonal	L2 1/2x2x3/16	145	-8.66	19.15	45.2 65.9 (b)	Pass
T8	381 - 376	Diagonal	L2 1/2x2x3/16	152	-7.89	19.15	41.2 63.8 (b)	Pass
T9	376 - 371	Diagonal	L2 1/2x2x3/16	161	-8.97	19.15	46.9 55.9 (b)	Pass
T10	371 - 366	Diagonal	L2 1/2x2x3/16	173	-7.92	19.15	41.4 56.3 (b)	Pass
T11	366 - 361	Diagonal	L2 1/2x2x3/16	185	-7.55	19.15	39.4 52.2 (b)	Pass
T12	361 - 341	Diagonal	L2 1/2x2x3/16	227	-7.05	19.15	36.8 48.0 (b)	Pass
T13	341 - 321	Diagonal	L2 1/2x2x3/16	263	-5.05	19.15	26.4 35.6 (b)	Pass
T14	321 - 301	Diagonal	L2 1/2x2x3/16	280	-3.53	19.15	18.4 31.9 (b)	Pass
T15	301 - 281	Diagonal	L2 1/2x2x3/16	313	-5.35	19.15	28.0 48.5 (b)	Pass
T16	281 - 276	Diagonal	L2 1/2x2x3/16	340	-5.72	19.15	29.9 40.8 (b)	Pass
T17	276 - 271	Diagonal	L2 1/2x2x3/16	349	-6.47	19.15	33.8 44.7 (b)	Pass
T18	271 - 266	Diagonal	L2 1/2x2x3/16	361	-6.35	19.15	33.2 52.0 (b)	Pass
T19	266 - 261	Diagonal	L2 1/2x2x3/16	373	-7.71	19.15	40.2 49.3 (b)	Pass
T20	261 - 256	Diagonal	L3x3x1/4	383	12.37	43.98	28.1 70.0 (b)	Pass
T21	256 - 251	Diagonal	L3x3x1/4	389	17.09	43.98	38.9 96.7 (b)	Pass
T22	251 - 246	Diagonal	L3x3x1/4	405	-12.82	42.35	30.3 72.6 (b)	Pass
T23	246 - 241	Diagonal	L3x3x1/4	416	11.80	43.98	26.8 66.8 (b)	Pass
T24	241 - 221	Diagonal	L3x3x1/4	453	-10.80	42.35	25.5 61.1 (b)	Pass
T25	221 - 201	Diagonal	L2 1/2x2x3/16	486	-7.69	19.15	40.2 69.6 (b)	Pass
T26	201 - 181	Diagonal	L2 1/2x2x3/16	518	-5.28	19.15	27.6 47.8 (b)	Pass
T27	181 - 161	Diagonal	L2 1/2x2x3/16	536	-4.47	19.15	23.4 40.5 (b)	Pass
T28	161 - 141	Diagonal	L3x3x1/4	568	-7.14	42.42	16.8 32.1 (b)	Pass
T29	141 - 121	Diagonal	L3x3x1/4	614	9.13	42.91	21.3 42.2 (b)	Pass
T30	121 - 101	Diagonal	L2 1/2x2x3/16	652	-5.27	19.15	27.5 34.5 (b)	Pass
T31	101 - 81	Diagonal	L2 1/2x2x3/16	687	-2.92	19.15	15.3 26.5 (b)	Pass
T32	81 - 61	Diagonal	L2 1/2x2x3/16	698	-2.10	19.15	10.9 19.0 (b)	Pass
T33	61 - 41	Diagonal	L2 1/2x2x3/16	731	-3.91	19.15	20.4 35.4 (b)	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
T34	41 - 20	Diagonal	L2 1/2x2x3/16	767	-5.81	18.87	30.8 52.6 (b)	Pass
T35	20 - 6.70833	Diagonal	L2x2x3/16	795	-1.88	18.53	10.1 17.0 (b)	Pass
T36	6.70833 - 0	Diagonal	L2x2x3/16	815	-4.73	22.58	20.9 42.8 (b)	Pass
T1	457 - 436	Horizontal	L2 1/2x2x1/4	35	-1.33	16.40	8.1 12.0 (b)	Pass
T2	436 - 421	Horizontal	L2 1/2x2x1/4	57	-1.22	16.31	7.5 18.2 (b)	Pass
T12	361 - 341	Secondary Horizontal	L2x2x1/4	208	-2.35	23.78	9.9 24.4 (b)	Pass
T21	256 - 251	Secondary Horizontal	2L3 1/2x3 1/2x3/8x3/8	396	23.88	154.20	15.5 67.6 (b)	Pass
T23	246 - 241	Secondary Horizontal	2L3 1/2x3 1/2x3/8x3/8	423	1.55	154.20	1.0 4.4 (b)	Pass
T1	457 - 436	Top Girt	C8x13.75	5	-0.00	68.63	0.2	Pass
T2	436 - 421	Top Girt	L2 1/2x2x1/4	9	-1.22	16.31	7.5 13.6 (b)	Pass
T3	421 - 401	Top Girt	L2 1/2x2x1/4	48	-1.86	16.31	11.4 16.9 (b)	Pass
T4	401 - 396	Top Girt	L2 1/2x2x1/4	78	-2.05	16.65	12.3 18.6 (b)	Pass
T6	391 - 386	Top Girt	L2 1/2x2x1/4	129	-2.52	12.29	20.5	Pass
T10	371 - 366	Top Girt	L2 1/2x2x1/4	172	-2.63	12.39	21.2	Pass
T12	361 - 341	Top Girt	L2 1/2x2x1/4	184	-2.35	16.40	14.4 21.3 (b)	Pass
T13	341 - 321	Top Girt	L2 1/2x2x1/4	196	-1.93	16.40	11.8 17.4 (b)	Pass
T14	321 - 301	Top Girt	L2 1/2x2x1/4	241	-1.65	16.40	10.1 15.0 (b)	Pass
T15	301 - 281	Top Girt	L2 1/2x2x3/16	274	-1.79	12.63	14.2 16.2 (b)	Pass
T16	281 - 276	Top Girt	L2 1/2x2x1/4	307	-1.86	16.40	11.3 16.8 (b)	Pass
T18	271 - 266	Top Girt	L2 1/2x2x1/4	358	-2.02	16.40	12.3 18.3 (b)	Pass
T20	261 - 256	Top Girt	L2 1/2x2x3/16	369	-5.39	12.63	42.7 48.8 (b)	Pass
T22	251 - 246	Top Girt	L2 1/2x2x3/16	402	-5.78	12.63	45.8 52.4 (b)	Pass
T24	241 - 221	Top Girt	L2 1/2x2x3/16	415	-1.89	12.63	15.0 17.2 (b)	Pass
T25	221 - 201	Top Girt	L2 1/2x2x3/16	430	-2.50	12.70	19.7 22.6 (b)	Pass
T26	201 - 181	Top Girt	L2 1/2x2x3/16	463	-2.80	12.70	22.1 25.4 (b)	Pass
T27	181 - 161	Top Girt	2L3x2x1/4x3/8	496	-2.82	61.59	4.6 12.8 (b)	Pass
T28	161 - 141	Top Girt	L2 1/2x2x3/16	529	-2.68	12.76	21.0 24.3 (b)	Pass
T29	141 - 121	Top Girt	L2 1/2x2x3/16	562	-2.24	12.76	17.5 20.2 (b)	Pass
T30	121 - 101	Top Girt	L2 1/2x2x3/16	594	-6.75	12.76	52.9 61.1 (b)	Pass
T31	101 - 81	Top Girt	L2 1/2x2x3/16	626	-3.30	12.76	25.9 29.9 (b)	Pass
T32	81 - 61	Top Girt	L2 1/2x2x3/16	659	-3.33	12.76	26.1	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
							30.1 (b)	
T33	61 - 41	Top Girt	L2 1/2x2x3/16	692	-3.24	12.76	25.4 29.3 (b)	Pass
T34	41 - 20	Top Girt	L2 1/2x2x3/16	725	-2.89	12.76	22.6 26.1 (b)	Pass
T35	20 - 6.70833	Top Girt	2L2 1/2x2x3/16x1/4	789	13.89	49.00	28.3 49.0 (b)	Pass
T1	457 - 436	Mid Girt	L2 1/2x2x1/4	13	3.41	32.03	10.6 30.8 (b)	Pass
T3	421 - 401	Mid Girt	L2 1/2x2x1/4	80	-0.31	16.31	1.9 3.6 (b)	Pass
T12	361 - 341	Mid Girt	L2 1/2x2x1/4	199	0.39	32.03	1.2 3.5 (b)	Pass
T13	341 - 321	Mid Girt	L2 1/2x2x1/4	243	0.35	32.03	1.1 3.2 (b)	Pass
T14	321 - 301	Mid Girt	L2 1/2x2x1/4	277	0.49	32.03	1.5 4.5 (b)	Pass
T15	301 - 281	Mid Girt	L2 1/2x2x3/16	310	0.34	24.52	1.4 3.1 (b)	Pass
T24	241 - 221	Mid Girt	L2 1/2x2x3/16	433	0.63	24.52	2.6 5.7 (b)	Pass
T25	221 - 201	Mid Girt	L2 1/2x2x3/16	466	0.64	24.52	2.6 5.8 (b)	Pass
T26	201 - 181	Mid Girt	L2 1/2x2x3/16	499	0.60	24.52	2.5 5.5 (b)	Pass
T27	181 - 161	Mid Girt	L2 1/2x2x3/16	531	0.72	24.52	2.9 6.5 (b)	Pass
T28	161 - 141	Mid Girt	L2 1/2x2x3/16	565	0.83	24.52	3.4 7.5 (b)	Pass
T29	141 - 121	Mid Girt	L2 1/2x2x3/16	597	-7.89	12.76	61.8 79.4 (b)	Pass
T30	121 - 101	Mid Girt	L2 1/2x2x3/16	631	0.52	24.52	2.1 4.7 (b)	Pass
T31	101 - 81	Mid Girt	L2 1/2x2x3/16	663	0.95	24.52	3.9 8.6 (b)	Pass
T32	81 - 61	Mid Girt	L2 1/2x2x3/16	696	0.96	24.52	3.9 8.7 (b)	Pass
T33	61 - 41	Mid Girt	L2 1/2x2x3/16	729	0.89	24.52	3.6 8.0 (b)	Pass
T34	41 - 20	Mid Girt	L2 1/2x2x3/16	759	1.16	24.52	4.7 10.5 (b)	Pass
T1	457 - 436	Guy A@446.5	9/16	826	11.17	22.05	50.6	Pass
T8	381 - 376	Guy A@381	1 3/8	829	58.61	146.16	40.1	Pass
T21	256 - 251	Guy A@254.5	1 1/4	832	61.24	120.96	50.6	Pass
T29	141 - 121	Guy A@131	11/16	845	20.86	31.50	66.2	Pass
T1	457 - 436	Guy B@446.5	9/16	825	11.81	22.05	53.6	Pass
T8	381 - 376	Guy B@381	1 3/8	828	59.67	146.16	40.8	Pass
T21	256 - 251	Guy B@254.5	1 1/4	831	62.85	120.96	52.0	Pass
T29	141 - 121	Guy B@131	11/16	840	21.40	31.50	67.9	Pass
T1	457 - 436	Guy C@446.5	9/16	824	11.82	22.05	53.6	Pass
T8	381 - 376	Guy C@381	1 3/8	827	59.75	146.16	40.9	Pass
T21	256 - 251	Guy C@254.5	1 1/4	830	62.02	120.96	51.3	Pass
T29	141 - 121	Guy C@131	11/16	833	21.14	31.50	67.1	Pass
T8	381 - 376	Top Guy Pull-Off@381	2L3x2x1/4x3/8	141	18.35	73.27	25.1 83.1 (b)	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
T29	141 - 121	Torque Arm Top@131	L3x3x3/8 (TA - BU#873128)	848	19.41	61.04	31.8 57.3 (b)	Pass
T29	141 - 121	Torque Arm Bottom@131	2L3x3x3/16x3/4	844	-22.53	33.03	68.2	Pass
							Summary	
						Leg (T3)	83.9	Pass
						Diagonal (T21)	96.7	Pass
						Horizontal (T2)	18.2	Pass
						Secondary Horizontal (T21)	67.6	Pass
						Top Girt (T30)	61.1	Pass
						Mid Girt (T29)	79.4	Pass
						Guy A (T29)	66.2	Pass
						Guy B (T29)	67.9	Pass
						Guy C (T29)	67.1	Pass
						Top Guy Pull-Off (T8)	83.1	Pass
						Torque Arm Top (T29)	57.3	Pass
						Torque Arm Bottom (T29)	68.2	Pass
						Bolt Checks	92.1	Pass
						Rating =	96.7	Pass

Table 5 - Tower Component Stresses vs. Capacity - LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Base Foundation (Structure)	0	28.5	Pass
1	Base Foundation (Soil Interaction)	0	42.1	Pass
1	Guy Anchor Foundation Soil Interaction	0	87.4	Pass

Structure Rating (max from all components) =	96.7%

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

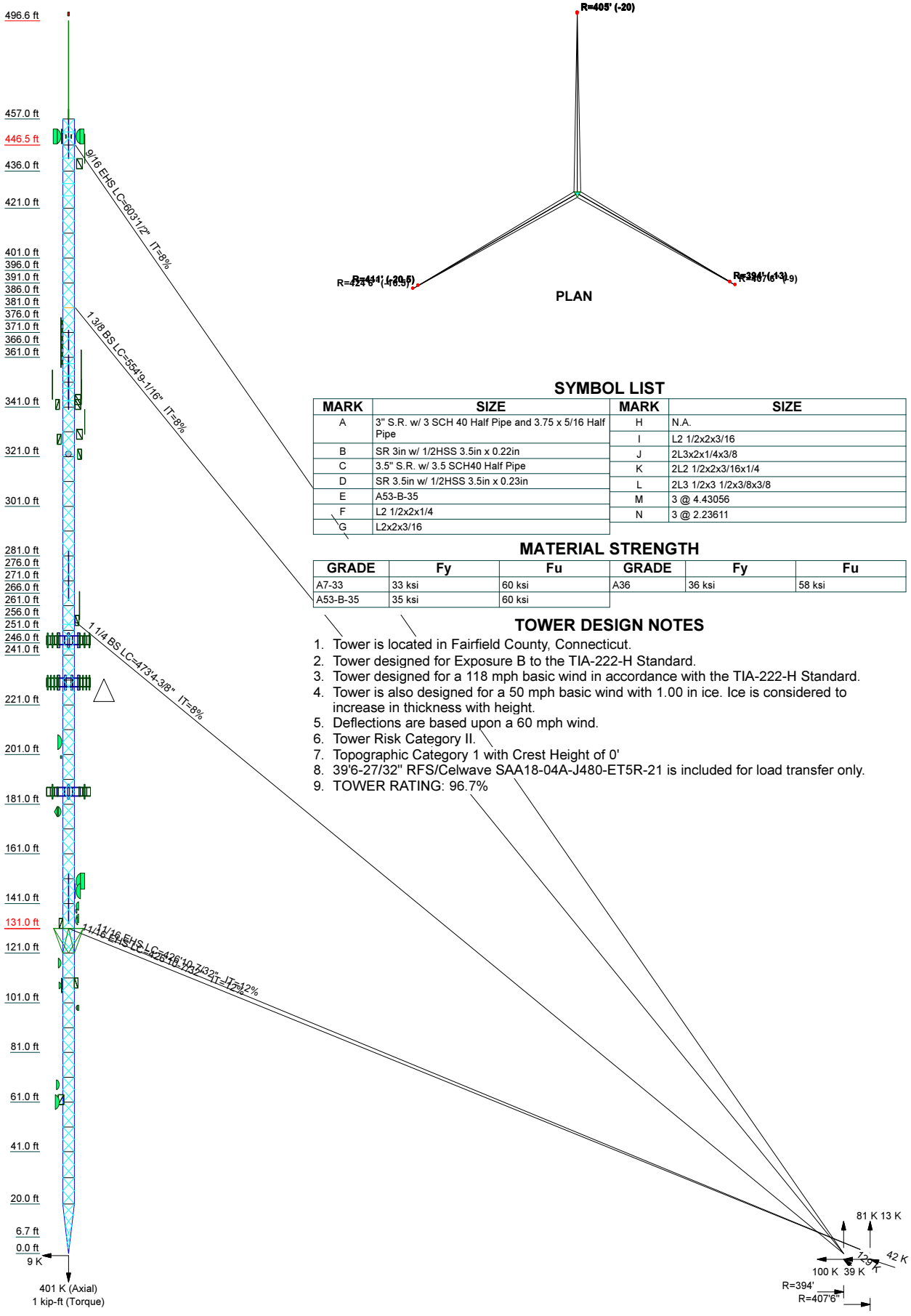
4.1) Recommendations

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	T36	T35	T34	T33	T32	T31	T30	T29	T28	T27	T26	T25	T24	T23	T22	T21	T20	T19	T18	T17	T16	T15	T14	T13	T12	T11	T10	T9	T8	T7	T6	T5	T4	T3	T2	T1
Legs	SR 3 1/4					SR 3 1/2				SR 3 1/4												SR 3														SR 2 3/4		SR 3
Leg Grade										A7-33																			D	C	B	A					
Diagonals	G			L2 1/2x2x3/16				L3x3x1/4		L2 1/2x2x3/16			L3x3x1/4											L2 1/2x2x3/16						E	A7-33	E			A7-33		F
Diagonal Grade				A7-33				A36		A7-33			A36											A7-33												
Top Girts	H	K		L2 1/2x2x3/16						J		L2 1/2x2x3/16			H	I	H	I	H	F	H	I		L2 1/2x2x1/4			H	F		N.A.	F	H		L2 1/2x2x1/4		C8x13.75
Mid Girts		N.A.						L2 1/2x2x3/16								N.A.								L2 1/2x2x1/4						N.A.				F		F
Horizontals												N.A.																								N.A.
Sec. Horizontals								N.A.						L	H	L						N.A.			L2x2x1/4								N.A.			L2 1/2x2x1/4
Top Guy Pull-Offs												N.A.																	J						N.A.	
Face Width (ft)		2											79 @ 5																							6
# Panels @ (ft)		N	M																														4 @ 5.25			4 @ 5.25
Weight (K)	59.0	0.7	1.6	2.8	2.7	2.7	2.7	4.0	3.1	2.5	2.4	2.4	2.5	0.9	0.7	0.9	0.5	0.7	0.6	0.5	0.6	2.1	2.2	2.2	2.4	0.7	0.8	0.7	0.9	0.6	0.7	0.7	2.8	1.9	1.5	2.8



SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	3" S.R. w/ 3 SCH 40 Half Pipe and 3.75 x 5/16 Half Pipe	H	N.A.
B	SR 3in w/ 1/2HSS 3.5in x 0.22in	I	L2 1/2x2x3/16
C	3.5" S.R. w/ 3.5 SCH40 Half Pipe	J	2L3x2x1/4x3/8
D	SR 3.5in w/ 1/2HSS 3.5in x 0.23in	K	2L2 1/2x2x3/16x1/4
E	A53-B-35	L	2L3 1/2x3 1/2x3/8x3/8
F	L2 1/2x2x1/4	M	3 @ 4.43056
G	L2x2x3/16	N	3 @ 2.23611

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A7-33	33 ksi	60 ksi	A36	36 ksi	58 ksi
A53-B-35	35 ksi	60 ksi			

TOWER DESIGN NOTES

1. Tower is located in Fairfield County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-H Standard.
3. Tower designed for a 118 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0'
8. 39'6-27/32" RFS/Celwave SAA18-04A-J480-ET5R-21 is included for load transfer only.
9. TOWER RATING: 96.7%

ALL REACTIONS ARE FACTORED

CROWN CASTLE
The Pathway to Possible

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

Job: *BU 873128*			
Project:			
Client: Crown Castle	Drawn by: MLopienski	App'd:	
Code: TIA-222-H	Date: 11/04/21	Scale: NTS	
Path: C:\Work Area\873128\WO 2039762 - SA\Prod\873128.eri		Dwg No. E-1	

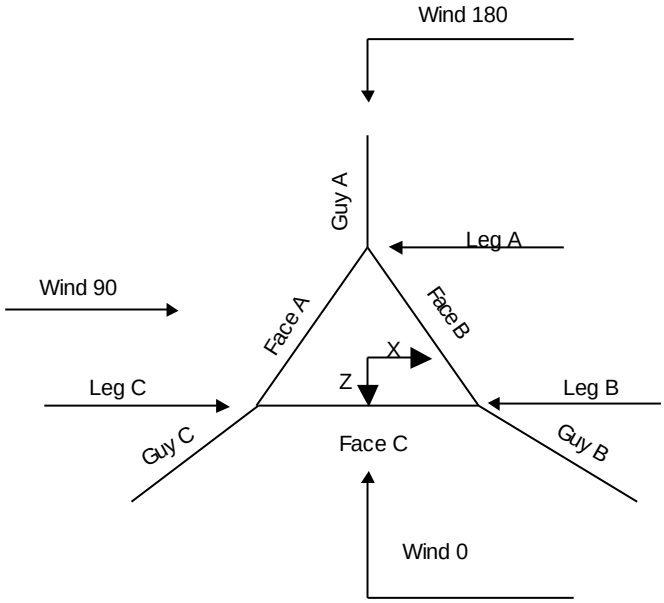
Tower Input Data

The main tower is a 3x guyed tower with an overall height of 457' above the ground line.
The base of the tower is set at an elevation of 0' above the ground line.
The face width of the tower is 6' at the top and tapered at the base.
This tower is designed using the TIA-222-H standard.
The following design criteria apply:

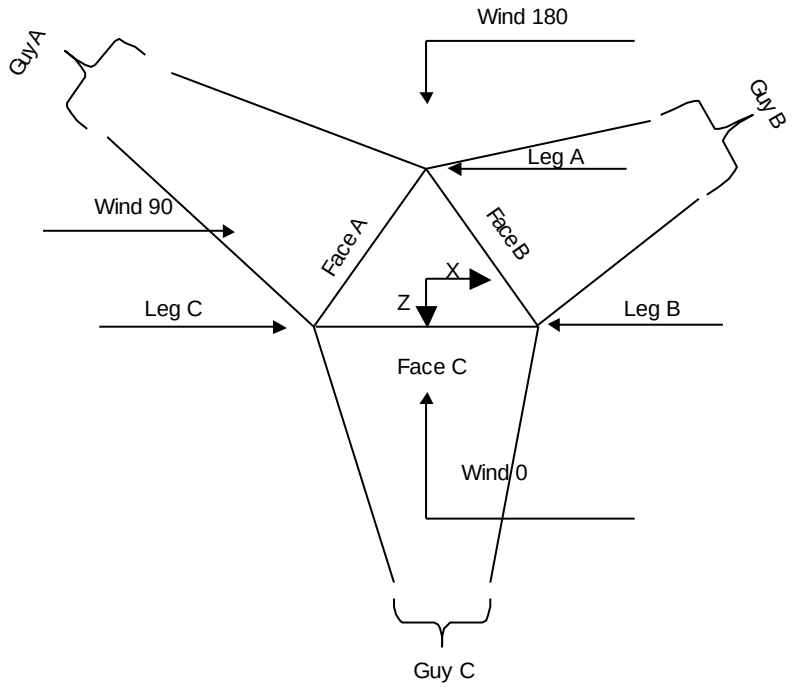
- Tower is located in Fairfield County, Connecticut.
- Tower base elevation above sea level: 520'.
- Basic wind speed of 118 mph.
- Risk Category II.
- Exposure Category B.
- Simplified Topographic Factor Procedure for wind speed-up calculations is used.
- Topographic Category: 1.
- Crest Height: 0'.
- Nominal ice thickness of 1.0000 in.
- Ice thickness is considered to increase with height.
- Ice density of 56 pcf.
- A wind speed of 50 mph is used in combination with ice.
- Temperature drop of 50 °F.
- Deflections calculated using a wind speed of 60 mph.
- Pressures are calculated at each section.
- Stress ratio used in tower member design is 1.
- Safety factor used in guy design is 1.
- Tower analysis based on target reliabilities in accordance with Annex S.
- Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
- Maximum demand-capacity ratio is: 1.05.
- Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

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



Corner & Starmount Guyed Tower



Face Guyed

Tower Section Geometry

Tower Section	Tower Elevation	Assembly Database	Description	Section Width	Number of Sections	Section Length
	ft			ft		ft
T1	457'-436'			6'	1	21'
T2	436'-421'			6'	1	15'
T3	421'-401'			6'	1	20'
T4	401'-396'			6'	1	5'
T5	396'-391'			6'	1	5'
T6	391'-386'			6'	1	5'
T7	386'-381'			6'	1	5'
T8	381'-376'			6'	1	5'
T9	376'-371'			6'	1	5'
T10	371'-366'			6'	1	5'
T11	366'-361'			6'	1	5'
T12	361'-341'			6'	1	20'
T13	341'-321'			6'	1	20'
T14	321'-301'			6'	1	20'
T15	301'-281'			6'	1	20'
T16	281'-276'			6'	1	5'
T17	276'-271'			6'	1	5'
T18	271'-266'			6'	1	5'
T19	266'-261'			6'	1	5'
T20	261'-256'			6'	1	5'
T21	256'-251'			6'	1	5'
T22	251'-246'			6'	1	5'
T23	246'-241'			6'	1	5'
T24	241'-221'			6'	1	20'

Tower Section	Tower Elevation ft	Assembly Database	Description	Section Width ft	Number of Sections	Section Length ft
T25	221'-201'			6'	1	20'
T26	201'-181'			6'	1	20'
T27	181'-161'			6'	1	20'
T28	161'-141'			6'	1	20'
T29	141'-121'			6'	1	20'
T30	121'-101'			6'	1	20'
T31	101'-81'			6'	1	20'
T32	81'-61'			6'	1	20'
T33	61'-41'			6'	1	20'
T34	41'-20'			6'	1	21'
T35	20'-6'8-17/32"			6'	1	13'3-15/32"
T36	6'8-17/32"-0'			2'	1	6'8-17/32"

Tower Section Geometry *(cont'd)*

Tower Section	Tower Elevation ft	Diagonal Spacing ft	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset in	Bottom Girt Offset in
T1	457'-436'	5'3"	X Brace	No	Yes	0.0000	0.0000
T2	436'-421'	5'	X Brace	No	Yes	0.0000	0.0000
T3	421'-401'	5'	X Brace	No	Yes	0.0000	0.0000
T4	401'-396'	5'	X Brace	No	Yes	0.0000	0.0000
T5	396'-391'	5'	X Brace	No	Yes	0.0000	0.0000
T6	391'-386'	5'	X Brace	No	Yes	0.0000	0.0000
T7	386'-381'	5'	X Brace	No	Yes	0.0000	0.0000
T8	381'-376'	5'	X Brace	No	Yes	0.0000	0.0000
T9	376'-371'	5'	X Brace	No	Yes	0.0000	0.0000
T10	371'-366'	5'	X Brace	No	Yes	0.0000	0.0000
T11	366'-361'	5'	X Brace	No	Yes	0.0000	0.0000
T12	361'-341'	5'	X Brace	No	Yes	0.0000	0.0000
T13	341'-321'	5'	X Brace	No	Yes	0.0000	0.0000
T14	321'-301'	5'	X Brace	No	Yes	0.0000	0.0000
T15	301'-281'	5'	X Brace	No	Yes	0.0000	0.0000
T16	281'-276'	5'	X Brace	No	Yes	0.0000	0.0000
T17	276'-271'	5'	X Brace	No	Yes	0.0000	0.0000
T18	271'-266'	5'	X Brace	No	Yes	0.0000	0.0000
T19	266'-261'	5'	X Brace	No	Yes	0.0000	0.0000
T20	261'-256'	5'	X Brace	No	Yes	0.0000	0.0000
T21	256'-251'	5'	X Brace	No	Yes	0.0000	0.0000
T22	251'-246'	5'	X Brace	No	Yes	0.0000	0.0000
T23	246'-241'	5'	X Brace	No	Yes	0.0000	0.0000
T24	241'-221'	5'	X Brace	No	Yes	0.0000	0.0000
T25	221'-201'	5'	X Brace	No	Yes	0.0000	0.0000
T26	201'-181'	5'	X Brace	No	Yes	0.0000	0.0000
T27	181'-161'	5'	X Brace	No	Yes	0.0000	0.0000
T28	161'-141'	5'	X Brace	No	Yes	0.0000	0.0000
T29	141'-121'	5'	X Brace	No	Yes	0.0000	0.0000
T30	121'-101'	5'	X Brace	No	Yes	0.0000	0.0000
T31	101'-81'	5'	X Brace	No	Yes	0.0000	0.0000
T32	81'-61'	5'	X Brace	No	Yes	0.0000	0.0000
T33	61'-41'	5'	X Brace	No	Yes	0.0000	0.0000
T34	41'-20'	5'3"	X Brace	No	Yes	0.0000	0.0000
T35	20'-6'8-17/32"	4'5-5/32"	X Brace	No	Yes	0.0000	0.0000
T36	6'8-17/32"-0'	2'2-7/8"	X Brace	No	Yes	0.0000	0.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 457'-436'	Solid Round	3	A7-33 (33 ksi)	Single Angle	L2 1/2x2x1/4	A7-33 (33 ksi)
T2 436'-421'	Solid Round	2 3/4	A7-33 (33 ksi)	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)
T3 421'-401'	Solid Round	2 3/4	A7-33 (33 ksi)	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)
T4 401'-396'	Arbitrary Shape	3" S.R. w/ 3 SCH 40 Half Pipe and 3.75 x 5/16 Half Pipe	A7-33 (33 ksi)	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)
T5 396'-391'	Arbitrary Shape	3" S.R. w/ 3 SCH 40 Half Pipe and 3.75 x 5/16 Half Pipe	A7-33 (33 ksi)	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)
T6 391'-386'	Arbitrary Shape	3" S.R. w/ 3 SCH 40 Half Pipe and 3.75 x 5/16 Half Pipe	A7-33 (33 ksi)	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)
T7 386'-381'	Arbitrary Shape	SR 3in w/ 1/2HSS 3.5in x 0.22in	A53-B-35 (35 ksi)	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)
T8 381'-376'	Arbitrary Shape	3.5" S.R. w/ 3.5 SCH40 Half Pipe	A7-33 (33 ksi)	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)
T9 376'-371'	Arbitrary Shape	3.5" S.R. w/ 3.5 SCH40 Half Pipe	A7-33 (33 ksi)	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)
T10 371'-366'	Arbitrary Shape	3.5" S.R. w/ 3.5 SCH40 Half Pipe	A7-33 (33 ksi)	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)
T11 366'-361'	Arbitrary Shape	SR 3.5in w/ 1/2HSS 3.5in x 0.23in	A53-B-35 (35 ksi)	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)
T12 361'-341'	Solid Round	3	A7-33 (33 ksi)	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)
T13 341'-321'	Solid Round	3	A7-33 (33 ksi)	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)
T14 321'-301'	Solid Round	3	A7-33 (33 ksi)	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)
T15 301'-281'	Solid Round	3	A7-33 (33 ksi)	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)
T16 281'-276'	Solid Round	3	A7-33 (33 ksi)	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)
T17 276'-271'	Solid Round	3	A7-33 (33 ksi)	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)
T18 271'-266'	Solid Round	3	A7-33 (33 ksi)	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)
T19 266'-261'	Solid Round	3	A7-33 (33 ksi)	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)
T20 261'-256'	Solid Round	3	A7-33 (33 ksi)	Single Angle	L3x3x1/4	A36 (36 ksi)
T21 256'-251'	Solid Round	3	A7-33 (33 ksi)	Single Angle	L3x3x1/4	A36 (36 ksi)
T22 251'-246'	Solid Round	3	A7-33 (33 ksi)	Single Angle	L3x3x1/4	A36 (36 ksi)
T23 246'-241'	Solid Round	3	A7-33 (33 ksi)	Single Angle	L3x3x1/4	A36 (36 ksi)
T24 241'-221'	Solid Round	3	A7-33 (33 ksi)	Single Angle	L3x3x1/4	A36 (36 ksi)
T25 221'-201'	Solid Round	3 1/4	A7-33 (33 ksi)	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)
T26 201'-181'	Solid Round	3 1/4	A7-33 (33 ksi)	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)
T27 181'-161'	Solid Round	3 1/4	A7-33 (33 ksi)	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)
T28 161'-141'	Solid Round	3 1/2	A7-33 (33 ksi)	Single Angle	L3x3x1/4	A36 (36 ksi)
T29 141'-121'	Solid Round	3 1/2	A7-33 (33 ksi)	Single Angle	L3x3x1/4	A36 (36 ksi)
T30 121'-101'	Solid Round	3 1/2	A7-33 (33 ksi)	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)
T31 101'-81'	Solid Round	3 1/2	A7-33 (33 ksi)	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)
T32 81'-61'	Solid Round	3 1/2	A7-33 (33 ksi)	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)
T33 61'-41'	Solid Round	3 1/2	A7-33 (33 ksi)	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T34 41'-20'	Solid Round	3 1/2	A7-33 (33 ksi)	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)
T35 20'-6'8-17/32"	Solid Round	3 1/4	A7-33 (33 ksi)	Single Angle	L2x2x3/16	A7-33 (33 ksi)
T36 6'8-17/32"-0'	Solid Round	3 1/4	A7-33 (33 ksi)	Single Angle	L2x2x3/16	A7-33 (33 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 457'-436'	Channel	C8x13.75	A7-33 (33 ksi)	Single Angle	L2 1/2x2x1/4	A7-33 (33 ksi)
T2 436'-421'	Single Angle	L2 1/2x2x1/4	A7-33 (33 ksi)	Single Angle	L2 1/2x2x1/4	A7-33 (33 ksi)
T3 421'-401'	Single Angle	L2 1/2x2x1/4	A7-33 (33 ksi)	Single Angle	L2 1/2x2x1/4	A7-33 (33 ksi)
T4 401'-396'	Single Angle	L2 1/2x2x1/4	A7-33 (33 ksi)	Single Angle		A7-33 (33 ksi)
T6 391'-386'	Single Angle	L2 1/2x2x1/4	A7-33 (33 ksi)	Single Angle		A7-33 (33 ksi)
T7 386'-381'	Single Angle		A7-33 (33 ksi)	Single Angle	L2 1/2x2x1/4	A7-33 (33 ksi)
T8 381'-376'	Single Angle	L2 1/2x2x1/4	A7-33 (33 ksi)	Single Angle		A7-33 (33 ksi)
T10 371'-366'	Single Angle	L2 1/2x2x1/4	A7-33 (33 ksi)	Single Angle		A7-33 (33 ksi)
T11 366'-361'	Single Angle		A7-33 (33 ksi)	Single Angle	L2 1/2x2x1/4	A7-33 (33 ksi)
T12 361'-341'	Single Angle	L2 1/2x2x1/4	A7-33 (33 ksi)	Single Angle	L2 1/2x2x1/4	A7-33 (33 ksi)
T13 341'-321'	Single Angle	L2 1/2x2x1/4	A7-33 (33 ksi)	Single Angle	L2 1/2x2x1/4	A7-33 (33 ksi)
T14 321'-301'	Single Angle	L2 1/2x2x1/4	A7-33 (33 ksi)	Single Angle	L2 1/2x2x1/4	A7-33 (33 ksi)
T15 301'-281'	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)
T16 281'-276'	Single Angle	L2 1/2x2x1/4	A7-33 (33 ksi)	Single Angle		A7-33 (33 ksi)
T18 271'-266'	Single Angle	L2 1/2x2x1/4	A7-33 (33 ksi)	Single Angle		A7-33 (33 ksi)
T19 266'-261'	Single Angle		A7-33 (33 ksi)	Single Angle	L2 1/2x2x1/4	A7-33 (33 ksi)
T20 261'-256'	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)	Single Angle		A7-33 (33 ksi)
T22 251'-246'	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)	Single Angle		A7-33 (33 ksi)
T23 246'-241'	Single Angle		A7-33 (33 ksi)	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)
T24 241'-221'	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)
T25 221'-201'	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)
T26 201'-181'	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)
T27 181'-161'	Double Angle	2L3x2x1/4x3/8	A7-33 (33 ksi)	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)
T28 161'-141'	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)
T29 141'-121'	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)
T30 121'-101'	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T31 101'-81'	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)
T32 81'-61'	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)
T33 61'-41'	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)
T34 41'-20'	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)	Single Angle		A7-33 (33 ksi)
T35 20'-6'8-17/32"	Double Angle	2L2 1/2x2x3/16x1/4	A7-33 (33 ksi)	Single Angle		A7-33 (33 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
T1 457'-436'	1	Single Angle	L2 1/2x2x1/4	A7-33 (33 ksi)	Single Angle	L2 1/2x2x1/4	A7-33 (33 ksi)
T2 436'-421'	None	Single Angle		A7-33 (33 ksi)	Single Angle	L2 1/2x2x1/4	A7-33 (33 ksi)
T3 421'-401'	1	Single Angle	L2 1/2x2x1/4	A7-33 (33 ksi)	Solid Round		A36 (36 ksi)
T12 361'-341'	1	Single Angle	L2 1/2x2x1/4	A7-33 (33 ksi)	Single Angle		A36 (36 ksi)
T13 341'-321'	1	Single Angle	L2 1/2x2x1/4	A7-33 (33 ksi)	Solid Round		A36 (36 ksi)
T14 321'-301'	1	Single Angle	L2 1/2x2x1/4	A7-33 (33 ksi)	Solid Round		A36 (36 ksi)
T15 301'-281'	1	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)	Solid Round		A36 (36 ksi)
T24 241'-221'	1	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)	Single Angle		A36 (36 ksi)
T25 221'-201'	1	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)	Single Angle		A36 (36 ksi)
T26 201'-181'	1	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)	Single Angle		A36 (36 ksi)
T27 181'-161'	1	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)	Single Angle		A36 (36 ksi)
T28 161'-141'	1	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)	Single Angle		A36 (36 ksi)
T29 141'-121'	1	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)	Single Angle		A36 (36 ksi)
T30 121'-101'	1	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)	Single Angle		A36 (36 ksi)
T31 101'-81'	1	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)	Single Angle		A36 (36 ksi)
T32 81'-61'	1	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)	Single Angle		A36 (36 ksi)
T33 61'-41'	1	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)	Single Angle		A36 (36 ksi)
T34 41'-20'	1	Single Angle	L2 1/2x2x3/16	A7-33 (33 ksi)	Single Angle		A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Secondary Horizontal Type	Secondary Horizontal Size	Secondary Horizontal Grade	Inner Bracing Type	Inner Bracing Size	Inner Bracing Grade

Tower Elevation ft	Secondary Horizontal Type	Secondary Horizontal Size	Secondary Horizontal Grade	Inner Bracing Type	Inner Bracing Size	Inner Bracing Grade
T12 361'-341'	Equal Angle	L2x2x1/4	A36 (36 ksi)	Solid Round		A36 (36 ksi)
T21 256'-251'	Double Equal Angle	2L3 1/2x3 1/2x3/8x3/8	A36 (36 ksi)	Solid Round		A36 (36 ksi)
T23 246'-241'	Double Equal Angle	2L3 1/2x3 1/2x3/8x3/8	A36 (36 ksi)	Solid Round		A36 (36 ksi)

Tower Section Geometry *(cont'd)*

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
T1 457'-436'	0.00	0.3750	A7-33 (33 ksi)	1.03	1	1.05	Third-Pt	Third-Pt	36.0000
T2 436'-421'	0.00	0.3750	A7-33 (33 ksi)	1.03	1	1.05	Third-Pt	Third-Pt	36.0000
T3 421'-401'	0.00	0.3750	A7-33 (33 ksi)	1.03	1	1.05	Third-Pt	Third-Pt	36.0000
T4 401'-396'	0.00	0.3750	A7-33 (33 ksi)	1.03	1	1.05	Third-Pt	Third-Pt	36.0000
T5 396'-391'	0.00	0.3750	A7-33 (33 ksi)	1.03	1	1.05	Third-Pt	Third-Pt	36.0000
T6 391'-386'	0.00	0.3750	A7-33 (33 ksi)	1.03	1	1.05	Third-Pt	Third-Pt	36.0000
T7 386'-381'	0.00	0.3750	A7-33 (33 ksi)	1.03	1	1.05	Third-Pt	Third-Pt	36.0000
T8 381'-376'	0.00	0.3750	A7-33 (33 ksi)	1.03	1	1.05	Third-Pt	Third-Pt	36.0000
T9 376'-371'	0.00	0.3750	A7-33 (33 ksi)	1.03	1	1.05	Third-Pt	Third-Pt	36.0000
T10 371'-366'	0.00	0.3750	A7-33 (33 ksi)	1.03	1	1.05	Third-Pt	Third-Pt	36.0000
T11 366'-361'	0.00	0.3750	A7-33 (33 ksi)	1.03	1	1.05	Third-Pt	Third-Pt	36.0000
T12 361'-341'	0.00	0.3750	A7-33 (33 ksi)	1.03	1	1.05	Third-Pt	Third-Pt	36.0000
T13 341'-321'	0.00	0.3750	A7-33 (33 ksi)	1.03	1	1.05	Third-Pt	Third-Pt	36.0000
T14 321'-301'	0.00	0.3750	A7-33 (33 ksi)	1.03	1	1.05	Third-Pt	Third-Pt	36.0000
T15 301'-281'	0.00	0.3750	A7-33 (33 ksi)	1.03	1	1.05	Third-Pt	Third-Pt	36.0000
T16 281'-276'	0.00	0.3750	A7-33 (33 ksi)	1.03	1	1.05	Third-Pt	Third-Pt	36.0000
T17 276'-271'	0.00	0.3750	A7-33 (33 ksi)	1.03	1	1.05	Third-Pt	Third-Pt	36.0000
T18 271'-266'	0.00	0.3750	A7-33 (33 ksi)	1.03	1	1.05	Third-Pt	Third-Pt	36.0000
T19 266'-261'	0.00	0.3750	A7-33 (33 ksi)	1.03	1	1.05	Third-Pt	Third-Pt	36.0000
T20 261'-256'	0.00	0.3750	A7-33 (33 ksi)	1.03	1	1.05	Third-Pt	Third-Pt	36.0000
T21 256'-251'	0.00	0.3750	A7-33 (33 ksi)	1.03	1	1.05	Third-Pt	Third-Pt	36.0000
T22 251'-246'	0.00	0.3750	A7-33 (33 ksi)	1.03	1	1.05	Third-Pt	Third-Pt	36.0000
T23 246'-241'	0.00	0.3750	A7-33 (33 ksi)	1.03	1	1.05	Third-Pt	Third-Pt	36.0000
T24 241'-221'	0.00	0.3750	A7-33 (33 ksi)	1.03	1	1.05	Third-Pt	Third-Pt	36.0000
T25 221'-201'	0.00	0.3750	A7-33 (33 ksi)	1.03	1	1.05	Third-Pt	Third-Pt	36.0000

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
T26 201'-181'	0.00	0.3750	A7-33 (33 ksi)	1.03	1	1.05	Third-Pt	Third-Pt	36.0000
T27 181'-161'	0.00	0.3750	A7-33 (33 ksi)	1.03	1	1.05	Third-Pt	Third-Pt	36.0000
T28 161'-141'	0.00	0.3750	A7-33 (33 ksi)	1.03	1	1.05	Third-Pt	Third-Pt	36.0000
T29 141'-121'	0.00	0.3750	A7-33 (33 ksi)	1.03	1	1.05	38.0000	38.0000	36.0000
T30 121'-101'	0.00	0.3750	A7-33 (33 ksi)	1.03	1	1.05	Third-Pt	Third-Pt	36.0000
T31 101'-81'	0.00	0.3750	A7-33 (33 ksi)	1.03	1	1.05	Third-Pt	Third-Pt	36.0000
T32 81'-61'	0.00	0.3750	A7-33 (33 ksi)	1.03	1	1.05	Third-Pt	Third-Pt	36.0000
T33 61'-41'	0.00	0.3750	A7-33 (33 ksi)	1.03	1	1.05	Third-Pt	Third-Pt	36.0000
T34 41'-20'	0.00	0.3750	A7-33 (33 ksi)	1.03	1	1.05	Third-Pt	Third-Pt	36.0000
T35 20'-6'8-17/32"	0.00	0.2500	A7-33 (33 ksi)	1.03	1	1.05	Third-Pt	Third-Pt	36.0000
T36 6'8-17/32"-0'	0.00	0.2500	A7-33 (33 ksi)	1.03	1	1.05	Third-Pt	Third-Pt	36.0000

Tower Section Geometry *(cont'd)*

Tower Elevation	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X	X Brace Diags Y	K Single Diags X	K Single Diags Y	Girts X	Girts Y	Horiz. X	Horiz. Y	Sec. Horiz. X	Sec. Horiz. Y	Inner Brace X	Inner Brace Y
ft															
T1 457'-436'	Yes	No	1	1	1	1	1	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1	1	1	1	1	1
T2 436'-421'	Yes	No	1	1	1	1	1	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1	1	1	1	1	1
T3 421'-401'	Yes	No	1	1	1	1	1	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1	1	1	1	1	1
T4 401'-396'	Yes	No	1	1	1	1	1	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1	1	1	1	1	1
T5 396'-391'	Yes	No	1	1	1	1	1	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1	1	1	1	1	1
T6 391'-386'	Yes	No	1	1	1	1	1	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1	1	1	1	1	1
T7 386'-381'	Yes	No	1	1	1	1	1	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1	1	1	1	1	1
T8 381'-376'	Yes	No	1	1	1	1	1	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1	1	1	1	1	1
T9 376'-371'	Yes	No	1	1	1	1	1	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1	1	1	1	1	1
T10 371'-366'	Yes	No	1	1	1	1	1	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1	1	1	1	1	1
T11 366'-361'	Yes	No	1	1	1	1	1	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1	1	1	1	1	1
T12 361'-341'	Yes	No	1	1	1	1	1	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1	1	0.5	1	1	1
T13 341'-321'	Yes	No	1	1	1	1	1	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1	1	1	1	1	1
T14 321'-301'	Yes	No	1	1	1	1	1	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1	1	1	1	1	1
T15 301'-281'	Yes	No	1	1	1	1	1	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1	1	1	1	1	1
T16 281'-276'	Yes	No	1	1	1	1	1	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1	1	1	1	1	1

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X Y	K Brace Diags X Y	Single Diags X Y	Girts X Y	Horiz. X Y	Sec. Horiz. X Y	Inner Brace X Y
T17 276'-271'	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T18 271'-266'	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T19 266'-261'	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T20 261'-256'	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T21 256'-251'	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 0.5	1 1
T22 251'-246'	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T23 246'-241'	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 0.5	1 1
T24 241'-221'	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T25 221'-201'	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T26 201'-181'	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T27 181'-161'	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T28 161'-141'	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T29 141'-121'	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T30 121'-101'	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T31 101'-81'	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T32 81'-61'	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T33 61'-41'	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T34 41'-20'	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T35 20'-6'8-17/32"	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T36 6'8-17/32"-0'	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1

[1]*Note: K factors are applied to member segment lengths. K-braces without inner supporting members will have the K factor in the out-of-plane direction applied to the overall length.*

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Net Width Deduct in	Leg U	Diagonal Net Width Deduct in	Diagonal U	Top Girt Net Width Deduct in	Top Girt U	Bottom Girt Net Width Deduct in	Bottom Girt U	Mid Girt Net Width Deduct in	Mid Girt U	Long Horizontal Net Width Deduct in	Long Horizontal U	Short Horizontal Net Width Deduct in	Short Horizontal U
T1 457'-436'	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	1
T2 436'-421'	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	0.75	0.0000	1
T3 421'-401'	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	1
T4 401'-396'	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	1	0.0000	1
T5 396'-391'	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	1	0.0000	1
T6 391'-386'	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	1	0.0000	0.75
T7 386'-381'	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	1	0.0000	0.75
T8 381'-376'	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	1	0.0000	1
T9 376'-371'	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	1	0.0000	1
T10 371'-366'	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	1	0.0000	1

Tower Elevation ft	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T11 366'-361'	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	1	0.0000	1
T12 361'-341'	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	0.75
T13 341'-321'	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	1
T14 321'-301'	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	1
T15 301'-281'	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	1
T16 281'-276'	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	1
T17 276'-271'	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	1
T18 271'-266'	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	1
T19 266'-261'	0.0000	1	0.0000	0.75	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	1
T20 261'-256'	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	0.75
T21 256'-251'	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	0.75
T22 251'-246'	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	0.75
T23 246'-241'	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	0.75
T24 241'-221'	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	1
T25 221'-201'	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	1
T26 201'-181'	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	1
T27 181'-161'	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	1
T28 161'-141'	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	1
T29 141'-121'	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	1
T30 121'-101'	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	1
T31 101'-81'	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	1
T32 81'-61'	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	1
T33 61'-41'	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	1
T34 41'-20'	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	0.75
T35 20'-6'8-17/32''	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	1	0.0000	1	0.0000	0.75
T36 6'8-17/32''-0'	0.0000	1	0.0000	0.75	0.0000	1	0.0000	1	0.0000	1	0.0000	1	0.0000	1

Tower Elevation ft	Redundant Horizontal		Redundant Diagonal		Redundant Sub-Diagonal		Redundant Sub-Horizontal		Redundant Vertical		Redundant Hip		Redundant Hip Diagonal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1 457'-436'	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T2 436'-421'	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T3 421'-401'	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T4 401'-396'	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T5 396'-391'	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T6 391'-386'	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T7 386'-381'	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T8 381'-376'	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T9 376'-371'	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T10 371'-366'	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T11 366'-361'	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T12 361'-341'	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T13 341'-321'	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T14 321'-301'	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T15 301'-281'	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T16 281'-276'	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T17 276'-271'	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T18 271'-266'	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T19 266'-261'	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T20 261'-256'	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T21 256'-251'	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T22 251'-246'	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T23 246'-241'	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T24 241'-221'	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T25 221'-201'	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T26 201'-181'	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T27 181'-161'	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

Tower Elevation ft	Redundant Horizontal		Redundant Diagonal		Redundant Sub-Diagonal		Redundant Sub-Horizontal		Redundant Vertical		Redundant Hip		Redundant Hip Diagonal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T28 161'-141'	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T29 141'-121'	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T30 121'-101'	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T31 101'-81'	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T32 81'-61'	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T33 61'-41'	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T34 41'-20'	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T35 20'-6'8-17/32"	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T36 6'8-17/32"-0'	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

Tower Section Geometry *(cont'd)*

Tower Elevation	Connection Offsets							
	Diagonal				K-Bracing			
	Vert. Top	Horiz. Top	Vert. Bot.	Horiz. Bot.	Vert. Top	Horiz. Top	Vert. Bot.	Horiz. Bot.
ft	in	in	in	in	in	in	in	in
T1 457'-436'	3.0000	0.0000	3.0000	0.0000	0.0000	0.0000	0.0000	0.0000
T2 436'-421'	3.0000	0.0000	3.0000	0.0000	0.0000	0.0000	0.0000	0.0000
T3 421'-401'	3.0000	0.0000	3.0000	0.0000	0.0000	0.0000	0.0000	0.0000
T4 401'-396'	3.0000	0.0000	3.0000	0.0000	0.0000	0.0000	0.0000	0.0000
T5 396'-391'	3.0000	0.0000	3.0000	0.0000	0.0000	0.0000	0.0000	0.0000
T6 391'-386'	3.0000	0.0000	3.0000	0.0000	0.0000	0.0000	0.0000	0.0000
T7 386'-381'	3.0000	0.0000	3.0000	0.0000	0.0000	0.0000	0.0000	0.0000
T8 381'-376'	3.0000	0.0000	3.0000	0.0000	0.0000	0.0000	0.0000	0.0000
T9 376'-371'	3.0000	0.0000	3.0000	0.0000	0.0000	0.0000	0.0000	0.0000
T10 371'-366'	3.0000	0.0000	3.0000	0.0000	0.0000	0.0000	0.0000	0.0000
T11 366'-361'	3.0000	0.0000	3.0000	0.0000	0.0000	0.0000	0.0000	0.0000
T12 361'-341'	3.0000	0.0000	3.0000	0.0000	0.0000	0.0000	0.0000	0.0000
T13 341'-321'	3.0000	0.0000	3.0000	0.0000	0.0000	0.0000	0.0000	0.0000
T14 321'-301'	3.0000	0.0000	3.0000	0.0000	0.0000	0.0000	0.0000	0.0000
T15 301'-281'	3.0000	0.0000	3.0000	0.0000	0.0000	0.0000	0.0000	0.0000
T16 281'-276'	3.0000	0.0000	3.0000	0.0000	0.0000	0.0000	0.0000	0.0000
T17 276'-271'	3.0000	0.0000	3.0000	0.0000	0.0000	0.0000	0.0000	0.0000
T18 271'-266'	3.0000	0.0000	3.0000	0.0000	0.0000	0.0000	0.0000	0.0000
T19 266'-261'	3.0000	0.0000	3.0000	0.0000	0.0000	0.0000	0.0000	0.0000
T20 261'-256'	3.0000	0.0000	3.0000	0.0000	0.0000	0.0000	0.0000	0.0000
T21 256'-251'	3.0000	0.0000	3.0000	0.0000	0.0000	0.0000	0.0000	0.0000
T22 251'-246'	3.0000	0.0000	3.0000	0.0000	0.0000	0.0000	0.0000	0.0000
T23 246'-241'	3.0000	0.0000	3.0000	0.0000	0.0000	0.0000	0.0000	0.0000
T24 241'-221'	3.0000	0.0000	3.0000	0.0000	0.0000	0.0000	0.0000	0.0000
T25 221'-201'	3.0000	0.0000	3.0000	0.0000	0.0000	0.0000	0.0000	0.0000
T26 201'-181'	3.0000	0.0000	3.0000	0.0000	0.0000	0.0000	0.0000	0.0000
T27 181'-161'	3.0000	0.0000	3.0000	0.0000	0.0000	0.0000	0.0000	0.0000
T28 161'-141'	3.0000	0.0000	3.0000	0.0000	0.0000	0.0000	0.0000	0.0000
T29 141'-121'	3.0000	0.0000	3.0000	0.0000	0.0000	0.0000	0.0000	0.0000
T30 121'-101'	3.0000	0.0000	3.0000	0.0000	0.0000	0.0000	0.0000	0.0000
T31 101'-81'	3.0000	0.0000	3.0000	0.0000	0.0000	0.0000	0.0000	0.0000
T32 81'-61'	3.0000	0.0000	3.0000	0.0000	0.0000	0.0000	0.0000	0.0000
T33 61'-41'	3.0000	0.0000	3.0000	0.0000	0.0000	0.0000	0.0000	0.0000
T34 41'-20'	3.0000	0.0000	3.0000	0.0000	0.0000	0.0000	0.0000	0.0000
T35 20'-6'8-17/32"	3.0000	0.0000	3.0000	0.0000	0.0000	0.0000	0.0000	0.0000
T36 6'8-17/32"-0'	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1 457'-436'	Flange	0.8750 A307	8	0.5000 A307	2	0.5000 A307	2	0.5000 A307	2	0.5000 A307	2	0.5000 A307	2	0.0000 A325X	0
T2 436'-421'	Flange	0.8750 A307	8	0.5000 A325X	2	0.5000 A307	2	0.5000 A307	2	0.5000 A307	0	0.5000 A307	2	0.0000 A325X	0
T3 421'-401'	Flange	0.8750 A307	8	0.5000 A325N	2	0.5000 A307	2	0.5000 A307	2	0.5000 A307	2	0.0000 A307	0	0.0000 A325X	0
T4 401'-396'	Flange	0.8750 A307	0	0.5000 A325N	2	0.5000 A307	2	0.0000 A307	0	0.5000 A307	0	0.0000 A307	0	0.0000 A325X	0
T5 396'-391'	Flange	0.8750 A307	0	0.5000 A325N	2	0.0000 A307	0	0.0000 A307	0	0.5000 A307	0	0.0000 A307	0	0.0000 A325X	0
T6 391'-386'	Flange	0.8750 A307	0	0.5000 A325X	2	0.0000 A307	2	0.0000 A307	0	0.5000 A307	0	0.0000 A307	0	0.5000 A325X	0
T7 386'-381'	Flange	0.8750 A307	8	0.5000 A325X	2	0.0000 A307	0	0.5000 A307	2	0.5000 A307	0	0.0000 A307	0	0.5000 A325X	0
T8 381'-376'	Flange	0.8750 A307	0	0.5000 A325N	2	0.5000 A307	2	0.0000 A307	0	0.5000 A307	0	0.0000 A307	0	0.0000 A325X	0
T9 376'-371'	Flange	0.8750 A307	0	0.5000 A325N	2	0.0000 A307	0	0.0000 A307	0	0.5000 A307	0	0.0000 A307	0	0.0000 A325X	0
T10 371'-366'	Flange	0.8750 A307	0	0.5000 A325N	2	0.0000 A307	2	0.0000 A307	0	0.5000 A307	0	0.0000 A307	0	0.0000 A325X	0
T11 366'-361'	Flange	0.8750 A307	8	0.5000 A325N	2	0.0000 A307	0	0.5000 A307	2	0.5000 A307	0	0.0000 A307	0	0.0000 A325X	0
T12 361'-341'	Flange	0.8750 A307	8	0.5000 A325N	2	0.5000 A307	2	0.5000 A307	2	0.5000 A307	2	0.0000 A307	0	0.5000 A325X	1
T13 341'-321'	Flange	0.8750 A307	8	0.5000 A325N	2	0.5000 A307	2	0.5000 A307	2	0.5000 A307	2	0.0000 A307	0	0.0000 A325X	0
T14 321'-301'	Flange	0.8750 A307	8	0.5000 A307	2	0.5000 A307	2	0.5000 A307	2	0.5000 A307	2	0.0000 A307	0	0.0000 A325X	0
T15 301'-281'	Flange	0.8750 A307	8	0.5000 A307	2	0.5000 A307	2	0.5000 A307	2	0.5000 A307	2	0.0000 A307	0	0.0000 A325X	0
T16 281'-276'	Flange	0.8750 A307	0	0.5000 A325N	2	0.5000 A307	2	0.0000 A307	0	0.5000 A307	2	0.0000 A307	0	0.0000 A325X	0
T17 276'-271'	Flange	0.8750 A307	0	0.5000 A325N	2	0.0000 A307	0	0.0000 A307	0	0.5000 A307	2	0.0000 A307	0	0.0000 A325X	0
T18 271'-266'	Flange	0.8750 A307	0	0.5000 A325N	2	0.5000 A307	2	0.0000 A307	0	0.5000 A307	2	0.0000 A307	0	0.0000 A325X	0
T19 266'-261'	Flange	0.8750 A307	8	0.5000 A325N	2	0.0000 A307	0	0.5000 A307	2	0.5000 A307	2	0.0000 A307	0	0.0000 A325X	0
T20 261'-256'	Flange	0.6250 A307	0	0.5000 A325N	2	0.5000 A307	2	0.0000 A307	0	0.5000 A307	0	0.0000 A307	0	0.5000 A325N	0
T21 256'-251'	Flange	0.6250 A307	0	0.5000 A325N	2	0.0000 A307	0	0.0000 A307	0	0.5000 A307	0	0.0000 A307	0	0.5000 A325N	2
T22 251'-246'	Flange	0.6250 A307	0	0.5000 A325N	2	0.5000 A307	2	0.0000 A307	0	0.5000 A307	0	0.0000 A307	0	0.5000 A325N	0
T23 246'-241'	Flange	0.6250 A307	8	0.5000 A325N	2	0.0000 A307	0	0.5000 A307	2	0.5000 A307	0	0.0000 A307	0	0.5000 A325N	2
T24 241'-221'	Flange	0.6250 A307	8	0.5000 A325N	2	0.5000 A307	2	0.5000 A307	2	0.5000 A307	2	0.0000 A307	0	0.0000 A325X	0
T25 221'-201'	Flange	0.8750 A307	8	0.5000 A307	2	0.5000 A307	2	0.5000 A307	2	0.5000 A307	2	0.0000 A307	0	0.0000 A325X	0
T26 201'-181'	Flange	0.8750 A307	8	0.5000 A307	2	0.5000 A307	2	0.5000 A307	2	0.5000 A307	2	0.0000 A307	0	0.0000 A325X	0
T27 181'-161'	Flange	0.8750 A307	8	0.5000 A307	2	0.5000 A307	2	0.5000 A307	2	0.5000 A307	2	0.0000 A307	0	0.0000 A325X	0
T28 161'-141'	Flange	0.6250 A307	8	0.6250 A325N	2	0.5000 A307	2	0.5000 A307	2	0.5000 A307	2	0.0000 A307	0	0.0000 A325X	0
T29 141'-121'	Flange	0.6250 A307	8	0.6250 A325N	2	0.5000 A307	2	0.5000 A307	2	0.5000 A325N	2	0.0000 A307	0	0.0000 A325X	0
T30 121'-101'	Flange	0.8750 A307	8	0.5000 A325N	2	0.5000 A307	2	0.5000 A307	2	0.5000 A307	2	0.0000 A307	0	0.0000 A325X	0
T31 101'-81'	Flange	0.8750 A307	8	0.5000 A307	2	0.5000 A307	2	0.5000 A307	2	0.5000 A307	2	0.0000 A307	0	0.0000 A325X	0

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T32 81'-61'	Flange	0.8750 A307	8	0.5000 A307	2	0.5000 A307	2	0.5000 A307	2	0.5000 A307	2	0.0000 A307	0	0.0000 A325X	0
T33 61'-41'	Flange	0.8750 A307	8	0.5000 A307	2	0.5000 A307	2	0.5000 A307	2	0.5000 A307	2	0.0000 A307	0	0.0000 A325X	0
T34 41'-20'	Flange	0.8750 A307	8	0.5000 A307	2	0.5000 A307	2	0.5000 A307	2	0.5000 A307	2	0.0000 A307	0	0.6250 A325X	0
T35 20'-6'8-17/32"	Flange	0.8750 A307	8	0.5000 A307	2	0.5000 A325N	2	0.5000 A307	0	0.5000 A307	0	0.0000 A307	0	0.6250 A325X	0
T36 6'8-17/32"-0'	Flange	0.8750 A307	0	0.5000 A307	2	0.5000 A307	0	0.5000 A307	0	0.5000 A307	0	0.0000 A307	0	0.0000 A325X	0

Guy Data

Guy Elevation ft	Guy Grade		Guy Size	Initial Tension K	%	Guy Modulus ksi	Guy Weight plf	L_u ft	Anchor Radius ft	Anchor Azimuth Adj. °	Anchor Elevation ft	End Fitting Efficiency %
446.5	EHS	A	9/16	2.80	8%	21000	0.671	615'3-3/8"	405'	0.0000	-20'	100%
		B	9/16	2.80	8%	21000	0.671	602'9-19/32"	394'	0.0000	-13'	100%
		C	9/16	2.80	8%	21000	0.671	619'7-3/32"	411'	0.0000	-20'6"	100%
381	BS	A	1 3/8	18.56	8%	24000	3.970	567'2-3/4"	405'	0.0000	-20'	100%
		B	1 3/8	18.56	8%	24000	3.970	554'6-1/8"	394'	0.0000	-13'	100%
		C	1 3/8	18.56	8%	24000	3.970	571'10-3/16"	411'	0.0000	-20'6"	100%
254.5	BS	A	1 1/4	15.36	8%	24000	3.280	486'2-13/32"	405'	0.0000	-20'	100%
		B	1 1/4	15.36	8%	24000	3.280	473'1-29/32"	394'	0.0000	-13'	100%
		C	1 1/4	15.36	8%	24000	3.280	491'5-9/32"	411'	0.0000	-20'6"	100%
131	EHS	A	11/16	6.00	12%	20000	0.976	425'11-7/8"	403'	0.0000	-20'	100%
		B	11/16	6.00	12%	20000	0.976	426'5-5/8"	407'6"	0.0000	-9'	100%
		C	11/16	6.00	12%	20000	0.976	444'11-3/4"	424'6"	0.0000	-16'6"	100%

Guy Data *(cont'd)*

Guy Elevation ft	Mount Type	Torque-Arm Spread ft	Torque-Arm Leg Angle °	Torque-Arm Style	Torque-Arm Grade	Torque-Arm Type	Torque-Arm Size
446.5	Corner						
381	Corner						
254.5	Corner						
131	Torque Arm	15'	53.0000	Bat Ear	A36 (36 ksi)	Double Equal Angle	L3x3x3/8 (TA - BU#873128) 2L3x3x3/16x3/4

Guy Data *(cont'd)*

Guy Elevation ft	Diagonal Grade	Diagonal Type	Upper Diagonal Size	Lower Diagonal Size	Is Strap.	Pull-Off Grade	Pull-Off Type	Pull-Off Size
446'6"	A572-50 (50 ksi)	Solid Round				A7-33 (33 ksi)	Double Angle	

Guy Elevation ft	Diagonal Grade	Diagonal Type	Upper Diagonal Size	Lower Diagonal Size	Is Strap.	Pull-Off Grade	Pull-Off Type	Pull-Off Size
381'	A572-50 (50 ksi)	Solid Round			No	A7-33 (33 ksi)	Double Angle	2L3x2x1/4x3/8
254'6"	A572-50 (50 ksi)	Solid Round				A36 (36 ksi)	Double Angle	
131'	A572-50 (50 ksi)	Solid Round				A7-33 (33 ksi)	Double Angle	

Guy Data *(cont'd)*

Guy Elevation ft	Cable Weight A K	Cable Weight B K	Cable Weight C K	Cable Weight D K	Tower Intercept A ft	Tower Intercept B ft	Tower Intercept C ft	Tower Intercept D ft
446.5	0.41	0.40	0.42		43'1/4" 11.3 sec/pulse	41'3-31/32" 11.1 sec/pulse	43'7-9/16" 11.4 sec/pulse	
381	2.25	2.20	2.27		33'15/32" 9.9 sec/pulse	31'7-3/16" 9.7 sec/pulse	33'6-31/32" 10.0 sec/pulse	
254.5	1.59	1.55	1.61		24'6-19/32" 8.6 sec/pulse	23'3-1/4" 8.3 sec/pulse	25'31/32" 8.6 sec/pulse	
131	0.42	0.42	0.43		14'7-3/32" 6.6 sec/pulse	14'7-11/16" 6.6 sec/pulse	15'11-5/32" 6.9 sec/pulse	

Guy Data *(cont'd)*

Guy Elevation ft	Calc K Single Angles	Calc K Solid Rounds	Torque Arm K_x	Torque Arm K_y	Pull Off K_x	Pull Off K_y	Diagonal K_x	Diagonal K_y
446.5	No	No			1	1	1	1
381	No	No			1	1	1	1
254.5	No	No			1	1	1	1
131	Yes	Yes	0.98	0.98	1	1	1	1

Guy Data *(cont'd)*

Guy Elevation ft	Torque-Arm Bolt Size in	Torque-Arm Number	Torque-Arm Net Width Deduct in	Torque-Arm U	Pull Off Bolt Size in	Pull Off Number	Pull Off Net Width Deduct in	Pull Off U	Diagonal Bolt Size in	Diagonal Number	Diagonal Net Width Deduct in	Diagonal U
446.5	0.0000 A325N	0	0.0000	1	0.0000 A325N	0	0.0000	1	0.6250 A325N	0	0.0000	0.75
381	0.6250 A325N	0	0.0000	0.75	0.5000 A307	2	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
254.5	0.6250 A325N	0	0.0000	0.75	0.0000 A325N	0	0.0000	1	0.6250 A325N	0	0.0000	0.75
131	0.7500 A325N	2	0.0000	0.75	0.0000 A325N	0	0.0000	1	0.6250 A325N	0	0.0000	0.75

Guy Pressures

Guy Elevation ft	Guy Location	z ft	q_z psf	q_z Ice psf	Ice Thickness in
446.5	A	213'3"	35	6	1.0244
	B	216'9"	35	6	1.0260
	C	213'	35	6	1.0242
381	A	180'6"	33	6	1.0074
	B	184'	33	6	1.0094
	C	180'3"	33	6	1.0073
254.5	A	117'3"	29	5	0.9649
	B	120'9"	29	5	0.9677
	C	117'	29	5	0.9647
131	A	55'6"	24	4	0.8954
	B	61'	24	4	0.9039
	C	57'3"	24	4	0.8981

Guy-Tensioning Information

				Temperature At Time Of Tensioning													
				0 F		20 F		40 F		60 F		80 F		100 F		120 F	
Guy Elevation ft		H ft	V ft	Initial Tension K	Intercept ft	Initial Tension K	Intercept ft	Initial Tension K	Intercept ft	Initial Tension K	Intercept ft	Initial Tension K	Intercept ft	Initial Tension K	Intercept ft	Initial Tension K	Intercept ft
446.5	A	401.54	466.50	3.176	38.15	3.044	39.73	2.919	41.36	2.800	43.02	2.682	44.83	2.578	46.55	2.480	48.29
	B	390.54	459.50	3.179	36.60	3.046	38.13	2.920	39.71	2.800	41.33	2.680	43.09	2.574	44.77	2.475	46.46
	C	407.54	467.00	3.177	38.67	3.044	40.28	2.919	41.93	2.800	43.63	2.682	45.46	2.578	47.20	2.480	48.96
381	A	401.54	401.00	21.808	28.28	20.660	29.79	19.577	31.38	18.560	33.04	17.610	34.75	16.726	36.52	15.906	38.32
	B	390.54	394.00	21.845	26.99	20.686	28.46	19.590	29.99	18.560	31.60	17.597	33.26	16.700	34.97	15.868	36.73
	C	407.54	401.50	21.815	28.73	20.663	30.28	19.578	31.89	18.560	33.58	17.610	35.32	16.727	37.11	15.909	38.93
254.5	A	401.54	274.50	19.088	19.85	17.746	21.32	16.502	22.89	15.360	24.55	14.320	26.29	13.381	28.08	12.536	29.92
	B	390.54	267.50	19.167	18.74	17.798	20.15	16.528	21.66	15.360	23.27	14.296	24.96	13.335	26.70	12.472	28.50
	C	407.54	275.00	19.076	20.30	17.737	21.80	16.497	23.40	15.360	25.08	14.326	26.85	13.393	28.66	12.554	30.52
131	A	398.74	151.00	7.593	11.56	7.039	12.46	6.507	13.47	6.000	14.59	5.523	15.84	5.080	17.21	4.675	18.68
	B	403.24	140.00	7.619	11.55	7.056	12.47	6.514	13.49	6.000	14.64	5.517	15.91	5.070	17.30	4.661	18.80
	C	420.24	147.50	7.587	12.62	7.033	13.61	6.503	14.71	6.000	15.93	5.529	17.27	5.093	18.74	4.695	20.31

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
HB158-1-08U8-S8J18(1-5/8)	C	No	No	Ar (CaAa)	230' - 10'	-5.0000	0.35	2	2	0.5000	1.9800		1.30
LCF78-50A(7/8")	A	No	No	Ar (CaAa)	230' - 10'	-4.0000	0.35	6	2	0.5000	1.0900		0.34
LDF5-50A(7/8")	A	No	No	Ar (CaAa)	247' - 10'	0.0000	0.42	6	6	0.5000	1.0900		0.33
HB158-1-08U8-S8J18(1-5/8)	A	No	No	Ar (CaAa)	247' - 10'	0.0000	0.29	3	3	0.5000	1.9800		1.30
LDF4-50A(1/2")	A	No	No	Ar (CaAa)	450' - 10'	0.0000	0.21	6	4	0.5000 0.2500	0.6300		0.15
CAT6(1/4)	A	No	No	Ar (CaAa)	450' - 10'	1.0000	0.223	6	2	0.2500	0.2400		0.05
760178129(1/4)	A	No	No	Ar (CaAa)	450' - 10'	0.0000	0.25	6	2	0.3300 0.2500	0.3300		0.04
EW63(ELLIPTICAL)	A	No	No	Ar (CaAa)	150' - 10'	0.0000	-0.28	2	1	0.5000	2.0100		0.51
LCF78-50A(7/8")	A	No	No	Ar (CaAa)	206' - 10'	-3.0000	-0.38	1	1	0.5000	1.0900		0.34
1" Rigid Conduit	A	No	No	Ar (CaAa)	457' - 10'	0.0000	-0.33	1	1	1.0000	1.0000		0.60
3/8" Cable (Lights)	C	No	No	Ar (CaAa)	457' - 10'	0.0000	0.49	1	1	0.3750	0.3750		0.22
1/4 Coax	B	No	No	Ar (CaAa)	99' - 10'	0.0000	-0.18	1	1	0.2500	0.2500		0.10
1/4 Coax	C	No	No	Ar (CaAa)	200' - 10'	0.0000	0.4	1	1	0.2500	0.2500		0.10

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
3/8" Coax	A	No	No	Ar (CaAa)	136' - 10'	0.0000	-0.15	3	2	0.3750	0.3750		0.07
3/8" Coax	A	No	No	Ar (CaAa)	140' - 10'	0.0000	-0.17	1	1	0.3750	0.3750		0.07
Banjo (6" dia, 36" step)	A	No	No	Af (CaAa)	230' - 10'	-2.0000	0.35	1	1	0.3330	0.3330		0.45
Banjo (6" dia, 36" step)	A	No	No	Af (CaAa)	230' - 10'	-2.0000	-0.38	1	1	0.3330	0.3330		0.45
LDF5-50A(7/8")	B	No	No	Ar (CaAa)	133' - 10'	0.0000	-0.4	2	2	0.7500	1.0900		0.33
LDF5-50A(7/8")	B	No	No	Ar (CaAa)	441' - 133'	0.0000	-0.4	1	1	1.0900	1.0900		0.33
LDF12-50A(2-1/4")	B	No	No	Ar (CaAa)	439' - 10'	0.0000	-0.31	1	1	2.3500	2.3500		1.22
HJ8-50B(3")	B	No	No	Ar (CaAa)	420' - 10'	0.0000	0.2	3	3	0.5000	3.0100		1.78
LDF6-50A(1 1/4")	B	No	No	Ar (CaAa)	330' - 10'	0.0000	-0.05	1	1	1.5500	1.5500		0.66
HJ11-50(4")	B	No	No	Ar (CaAa)	393' - 10'	-2.0000	0.12	1	1	4.0000	4.0000		2.50
LDF7-50A(1-5/8")	B	No	No	Ar (CaAa)	264' - 10'	-2.0000	0.2	1	1	1.9800	1.9800		0.82
LDF7-50A(1-5/8")	B	No	No	Ar (CaAa)	310' - 10'	0.0000	0	1	1	1.9800	1.9800		0.82
LDF7-50A(1-5/8")	B	No	No	Ar (CaAa)	277' - 10'	0.0000	0.35	1	1	1.9800	1.9800		0.82
LDF6-50A(1-1/4")	B	No	No	Ar (CaAa)	322' - 10'	-2.0000	-0.42	1	1	0.5000	1.5500		0.66
LDF6-50A(1-1/4")	B	No	No	Ar (CaAa)	325' - 10'	0.0000	-0.28	1	1	0.5000	1.5500		0.66
LDF7-50A(1-5/8")	B	No	No	Ar (CaAa)	330' - 10'	0.0000	-0.35	1	1	1.9800	1.9800		0.82
LDF4P-50A(1/2")	B	No	No	Ar (CaAa)	133' - 10'	0.0000	-0.14	3	2	0.3000	0.6300		0.15
LDF4P-50A(1/2")	B	No	No	Ar (CaAa)	178' - 133'	0.0000	-0.14	2	2	0.3000	0.6300		0.15
LDF4P-50A(1/2")	B	No	No	Ar (CaAa)	322' - 178'	0.0000	-0.14	1	1	0.3000	0.6300		0.15
LDF4-50A(1/2")	B	No	No	Ar (CaAa)	342' - 10'	1.0000	0.4	1	1	0.5000	0.6300		0.15
EW63(ELLIPTICAL)	B	No	No	Ar (CaAa)	146' - 10'	0.0000	-0.23	1	1	2.0100	2.0100		0.51
EW52(ELLIPTICAL) **	B	No	No	Ar (CaAa)	146' - 10'	2.0000	-0.23	1	1	0.5000	2.2500		0.59
475-000(4-1/16)	C	No	No	Ar (CaAa)	457' - 10'	-6.0000	-0.05	1	1	4.0620	4.0620		5.50
LDF12-50(2-1/4")	C	No	No	Ar (CaAa)	388' - 10'	0.0000	-0.35	1	1	2.3500	2.3500		1.22
LDF5-50A(7/8")	C	No	No	Ar (CaAa)	109' - 10'	0.0000	-0.4	1	1	1.0900	1.0900		0.33
HJ11-50(4)	C	No	No	Ar (CaAa)	367' - 10'	0.0000	0.5	1	1	0.5000	4.0000		2.50
LDF6-50A(1-1/4")	C	No	No	Ar (CaAa)	255' - 10'	0.0000	0.1	1	1	0.5000	1.5500		0.66
LDF5-50A(7/8")	C	No	No	Ar (CaAa)	133' - 117'	0.0000	0.475	1	1	1.0900	1.0900		0.33
LDF5-50A(7/8")	C	No	No	Ar (CaAa)	117' - 99'	0.0000	0.475	2	2	0.5000	1.0900		0.33
LDF5-50A(7/8")	C	No	No	Ar (CaAa)	99' - 62'	0.0000	0.475	3	2	0.5000	1.0900		0.33
LDF5-50A(7/8")	C	No	No	Ar (CaAa)	62' - 10'	0.0000	0.475	6	2	0.5000	1.0900		0.33
LDF5-50A(7/8")	C	No	No	Ar (CaAa)	108' - 10'	0.0000	0.45	1	1	1.0900	1.0900		0.33
LDF7-50A(1-5/8") **	C	No	No	Ar (CaAa)	393' - 10'	0.0000	0.2	1	1	1.9800	1.9800		0.82
Thin Flat Climbing Ladder	C	No	No	Af (CaAa)	457' - 10'	-9.0000	0	1	1	2.0000	2.0000		4.00
Safety Line	C	No	No	Ar (CaAa)	457' - 10'	-	0	1	1	0.3750	0.3750		0.22

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
3/8 ***						9.0000							
Abandoned lines													
LDF4-50A(1/2)	B	No	No	Ar (CaAa)	344' - 10'	1.0000	-0.135	1	1	0.6250	0.6300		0.15
LDF6-50A(1-1/4)	B	No	No	Ar (CaAa)	342' - 10'	2.0000	-0.28	1	1	1.5500	1.5500		0.60
LDF5-50A(7/8")	B	No	No	Ar (CaAa)	340' - 10'	0.0000	0.4	1	1	1.0900	1.0900		0.33
HCC312-50J(3-1/2")	B	No	No	Ar (CaAa)	328' - 10'	-2.0000	0.05	1	1	3.5300	3.5300		1.99
LDF7-50A(1-5/8") **	B	No	No	Ar (CaAa)	75' - 10'	2.0000	0.35	1	1	1.9800	1.9800		0.82
CU12PSM6P4XXX(1-3/4) **	B	No	No	Ar (CaAa)	186' - 0'	0.0000	-0.4	1	1	1.0000	1.7500		2.72

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
** *** **								

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
T1	457'-436'	A	0.000	0.000	12.180	0.000	0.03
		B	0.000	0.000	1.250	0.000	0.01
		C	0.000	0.000	15.405	0.000	0.21
T2	436'-421'	A	0.000	0.000	12.300	0.000	0.03
		B	0.000	0.000	5.160	0.000	0.02
		C	0.000	0.000	11.032	0.000	0.15
T3	421'-401'	A	0.000	0.000	16.400	0.000	0.04
		B	0.000	0.000	24.037	0.000	0.13
		C	0.000	0.000	14.749	0.000	0.20
T4	401'-396'	A	0.000	0.000	4.100	0.000	0.01
		B	0.000	0.000	6.235	0.000	0.03
		C	0.000	0.000	3.694	0.000	0.05
T5	396'-391'	A	0.000	0.000	4.100	0.000	0.01
		B	0.000	0.000	6.898	0.000	0.04
		C	0.000	0.000	4.093	0.000	0.05
T6	391'-386'	A	0.000	0.000	4.100	0.000	0.01
		B	0.000	0.000	7.894	0.000	0.05
		C	0.000	0.000	5.160	0.000	0.06
T7	386'-381'	A	0.000	0.000	4.100	0.000	0.01
		B	0.000	0.000	7.897	0.000	0.05
		C	0.000	0.000	5.869	0.000	0.06
T8	381'-376'	A	0.000	0.000	4.100	0.000	0.01
		B	0.000	0.000	7.900	0.000	0.05
		C	0.000	0.000	5.872	0.000	0.06

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
T9	376'-371'	A	0.000	0.000	4.100	0.000	0.01
		B	0.000	0.000	7.903	0.000	0.05
		C	0.000	0.000	5.875	0.000	0.06
T10	371'-366'	A	0.000	0.000	4.100	0.000	0.01
		B	0.000	0.000	7.906	0.000	0.05
		C	0.000	0.000	6.213	0.000	0.06
T11	366'-361'	A	0.000	0.000	4.100	0.000	0.01
		B	0.000	0.000	7.910	0.000	0.05
		C	0.000	0.000	7.556	0.000	0.07
T12	361'-341'	A	0.000	0.000	16.400	0.000	0.04
		B	0.000	0.000	32.079	0.000	0.19
		C	0.000	0.000	30.291	0.000	0.29
T13	341'-321'	A	0.000	0.000	16.400	0.000	0.04
		B	0.000	0.000	45.818	0.000	0.24
		C	0.000	0.000	30.404	0.000	0.29
T14	321'-301'	A	0.000	0.000	16.400	0.000	0.04
		B	0.000	0.000	62.741	0.000	0.32
		C	0.000	0.000	30.526	0.000	0.29
T15	301'-281'	A	0.000	0.000	16.400	0.000	0.04
		B	0.000	0.000	65.050	0.000	0.33
		C	0.000	0.000	30.656	0.000	0.29
T16	281'-276'	A	0.000	0.000	4.100	0.000	0.01
		B	0.000	0.000	16.482	0.000	0.08
		C	0.000	0.000	7.686	0.000	0.07
T17	276'-271'	A	0.000	0.000	4.100	0.000	0.01
		B	0.000	0.000	17.283	0.000	0.09
		C	0.000	0.000	7.695	0.000	0.07
T18	271'-266'	A	0.000	0.000	4.100	0.000	0.01
		B	0.000	0.000	17.292	0.000	0.09
		C	0.000	0.000	7.704	0.000	0.07
T19	266'-261'	A	0.000	0.000	4.100	0.000	0.01
		B	0.000	0.000	17.896	0.000	0.09
		C	0.000	0.000	7.713	0.000	0.07
T20	261'-256'	A	0.000	0.000	4.100	0.000	0.01
		B	0.000	0.000	18.301	0.000	0.09
		C	0.000	0.000	7.723	0.000	0.07
T21	256'-251'	A	0.000	0.000	4.100	0.000	0.01
		B	0.000	0.000	18.311	0.000	0.09
		C	0.000	0.000	8.353	0.000	0.08
T22	251'-246'	A	0.000	0.000	5.348	0.000	0.02
		B	0.000	0.000	18.318	0.000	0.09
		C	0.000	0.000	8.518	0.000	0.08
T23	246'-241'	A	0.000	0.000	10.340	0.000	0.04
		B	0.000	0.000	18.323	0.000	0.09
		C	0.000	0.000	8.528	0.000	0.08
T24	241'-221'	A	0.000	0.000	48.245	0.000	0.19
		B	0.000	0.000	73.347	0.000	0.36
		C	0.000	0.000	37.784	0.000	0.33
T25	221'-201'	A	0.000	0.000	57.205	0.000	0.22
		B	0.000	0.000	73.440	0.000	0.36
		C	0.000	0.000	42.326	0.000	0.35
T26	201'-181'	A	0.000	0.000	58.840	0.000	0.22
		B	0.000	0.000	74.419	0.000	0.37
		C	0.000	0.000	43.009	0.000	0.36
T27	181'-161'	A	0.000	0.000	58.840	0.000	0.22
		B	0.000	0.000	78.231	0.000	0.42
		C	0.000	0.000	43.268	0.000	0.36
T28	161'-141'	A	0.000	0.000	62.458	0.000	0.23
		B	0.000	0.000	80.684	0.000	0.42
		C	0.000	0.000	43.535	0.000	0.36
T29	141'-121'	A	0.000	0.000	69.280	0.000	0.25
		B	0.000	0.000	89.294	0.000	0.45
		C	0.000	0.000	45.155	0.000	0.36
T30	121'-101'	A	0.000	0.000	69.880	0.000	0.25
		B	0.000	0.000	90.856	0.000	0.45
		C	0.000	0.000	49.777	0.000	0.37
T31	101'-81'	A	0.000	0.000	69.880	0.000	0.25
		B	0.000	0.000	91.370	0.000	0.45
		C	0.000	0.000	55.153	0.000	0.39

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
T32	81'-61'	A	0.000	0.000	69.880	0.000	0.25
		B	0.000	0.000	94.192	0.000	0.46
		C	0.000	0.000	55.698	0.000	0.39
T33	61'-41'	A	0.000	0.000	69.880	0.000	0.25
		B	0.000	0.000	95.380	0.000	0.47
		C	0.000	0.000	61.911	0.000	0.41
T34	41'-20'	A	0.000	0.000	73.374	0.000	0.26
		B	0.000	0.000	100.149	0.000	0.49
		C	0.000	0.000	65.006	0.000	0.43
T35	20'-6'8-17/32"	A	0.000	0.000	34.940	0.000	0.13
		B	0.000	0.000	48.266	0.000	0.24
		C	0.000	0.000	30.955	0.000	0.20
T36	6'8-17/32"-0'	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	1.174	0.000	0.02
		C	0.000	0.000	0.000	0.000	0.00

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
T1	457'-436'	A	1.103	0.000	0.000	35.867	0.000	0.28
		B		0.000	0.000	3.015	0.000	0.03
		C		0.000	0.000	35.634	0.000	0.55
T2	436'-421'	A	1.098	0.000	0.000	35.939	0.000	0.28
		B		0.000	0.000	11.750	0.000	0.14
		C		0.000	0.000	25.399	0.000	0.39
T3	421'-401'	A	1.094	0.000	0.000	47.805	0.000	0.37
		B		0.000	0.000	47.164	0.000	0.55
		C		0.000	0.000	33.792	0.000	0.52
T4	401'-396'	A	1.090	0.000	0.000	11.930	0.000	0.09
		B		0.000	0.000	12.194	0.000	0.14
		C		0.000	0.000	8.435	0.000	0.13
T5	396'-391'	A	1.089	0.000	0.000	11.922	0.000	0.09
		B		0.000	0.000	13.424	0.000	0.16
		C		0.000	0.000	9.261	0.000	0.14
T6	391'-386'	A	1.088	0.000	0.000	11.913	0.000	0.09
		B		0.000	0.000	15.271	0.000	0.19
		C		0.000	0.000	11.406	0.000	0.17
T7	386'-381'	A	1.086	0.000	0.000	11.904	0.000	0.09
		B		0.000	0.000	15.265	0.000	0.19
		C		0.000	0.000	12.755	0.000	0.18
T8	381'-376'	A	1.085	0.000	0.000	11.895	0.000	0.09
		B		0.000	0.000	15.258	0.000	0.19
		C		0.000	0.000	12.747	0.000	0.18
T9	376'-371'	A	1.083	0.000	0.000	11.886	0.000	0.09
		B		0.000	0.000	15.252	0.000	0.19
		C		0.000	0.000	12.738	0.000	0.18
T10	371'-366'	A	1.082	0.000	0.000	11.877	0.000	0.09
		B		0.000	0.000	15.245	0.000	0.19
		C		0.000	0.000	13.346	0.000	0.19
T11	366'-361'	A	1.080	0.000	0.000	11.868	0.000	0.09
		B		0.000	0.000	15.238	0.000	0.19
		C		0.000	0.000	15.801	0.000	0.23
T12	361'-341'	A	1.077	0.000	0.000	47.378	0.000	0.36
		B		0.000	0.000	62.365	0.000	0.76
		C		0.000	0.000	63.099	0.000	0.91
T13	341'-321'	A	1.070	0.000	0.000	47.221	0.000	0.36
		B		0.000	0.000	98.491	0.000	1.14
		C		0.000	0.000	62.922	0.000	0.90
T14	321'-301'	A	1.064	0.000	0.000	47.055	0.000	0.36
		B		0.000	0.000	136.268	0.000	1.56
		C		0.000	0.000	62.736	0.000	0.90
T15	301'-281'	A	1.057	0.000	0.000	46.879	0.000	0.36
		B		0.000	0.000	140.346	0.000	1.61
		C		0.000	0.000	62.539	0.000	0.89

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
T16	281'-276'	A	1.052	0.000	0.000	11.691	0.000	0.09
		B		0.000	0.000	35.422	0.000	0.40
		C		0.000	0.000	15.602	0.000	0.22
T17	276'-271'	A	1.050	0.000	0.000	11.679	0.000	0.09
		B		0.000	0.000	37.024	0.000	0.42
		C		0.000	0.000	15.589	0.000	0.22
T18	271'-266'	A	1.048	0.000	0.000	11.667	0.000	0.09
		B		0.000	0.000	36.992	0.000	0.42
		C		0.000	0.000	15.575	0.000	0.22
T19	266'-261'	A	1.046	0.000	0.000	11.655	0.000	0.09
		B		0.000	0.000	38.181	0.000	0.44
		C		0.000	0.000	15.562	0.000	0.22
T20	261'-256'	A	1.044	0.000	0.000	11.642	0.000	0.09
		B		0.000	0.000	38.960	0.000	0.44
		C		0.000	0.000	15.548	0.000	0.22
T21	256'-251'	A	1.042	0.000	0.000	11.629	0.000	0.09
		B		0.000	0.000	38.925	0.000	0.44
		C		0.000	0.000	16.987	0.000	0.24
T22	251'-246'	A	1.040	0.000	0.000	14.298	0.000	0.11
		B		0.000	0.000	38.888	0.000	0.44
		C		0.000	0.000	17.334	0.000	0.24
T23	246'-241'	A	1.038	0.000	0.000	25.006	0.000	0.22
		B		0.000	0.000	38.851	0.000	0.44
		C		0.000	0.000	17.317	0.000	0.24
T24	241'-221'	A	1.033	0.000	0.000	113.440	0.000	1.00
		B		0.000	0.000	155.018	0.000	1.75
		C		0.000	0.000	77.731	0.000	1.03
T25	221'-201'	A	1.023	0.000	0.000	131.165	0.000	1.18
		B		0.000	0.000	154.361	0.000	1.74
		C		0.000	0.000	87.925	0.000	1.12
T26	201'-181'	A	1.013	0.000	0.000	135.295	0.000	1.22
		B		0.000	0.000	155.534	0.000	1.75
		C		0.000	0.000	91.856	0.000	1.15
T27	181'-161'	A	1.002	0.000	0.000	134.663	0.000	1.20
		B		0.000	0.000	165.307	0.000	1.84
		C		0.000	0.000	91.605	0.000	1.14
T28	161'-141'	A	0.990	0.000	0.000	142.540	0.000	1.26
		B		0.000	0.000	169.328	0.000	1.86
		C		0.000	0.000	91.074	0.000	1.12
T29	141'-121'	A	0.976	0.000	0.000	164.716	0.000	1.41
		B		0.000	0.000	186.351	0.000	2.00
		C		0.000	0.000	94.125	0.000	1.14
T30	121'-101'	A	0.960	0.000	0.000	166.471	0.000	1.41
		B		0.000	0.000	188.858	0.000	1.99
		C		0.000	0.000	106.498	0.000	1.22
T31	101'-81'	A	0.941	0.000	0.000	165.063	0.000	1.38
		B		0.000	0.000	191.024	0.000	1.98
		C		0.000	0.000	116.741	0.000	1.30
T32	81'-61'	A	0.918	0.000	0.000	163.344	0.000	1.35
		B		0.000	0.000	194.660	0.000	1.99
		C		0.000	0.000	115.807	0.000	1.28
T33	61'-41'	A	0.888	0.000	0.000	161.118	0.000	1.31
		B		0.000	0.000	194.068	0.000	1.96
		C		0.000	0.000	116.948	0.000	1.32
T34	41'-20'	A	0.843	0.000	0.000	165.694	0.000	1.31
		B		0.000	0.000	199.266	0.000	1.96
		C		0.000	0.000	120.093	0.000	1.32
T35	20'-6'8-17/32"	A	0.776	0.000	0.000	76.415	0.000	0.58
		B		0.000	0.000	92.753	0.000	0.88
		C		0.000	0.000	55.254	0.000	0.59
T36	6'8-17/32"-0'	A	0.676	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	2.081	0.000	0.03
		C		0.000	0.000	0.000	0.000	0.00

Feed Line Center of Pressure

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
T1	457'-436'	-0.9188	-0.0595	-2.5726	-0.4536
T2	436'-421'	-0.9240	-2.3143	-2.4711	-3.6048
T3	421'-401'	1.2599	-1.9668	-0.4181	-3.2043
T4	401'-396'	1.2549	-1.7869	-0.2877	-2.9642
T5	396'-391'	1.7754	-1.6678	-0.1024	-2.8165
T6	391'-386'	2.3068	-0.8890	0.5200	-1.7470
T7	386'-381'	2.9880	-0.5527	1.1188	-1.3775
T8	381'-376'	2.6280	-0.4921	0.9958	-1.2381
T9	376'-371'	2.9571	-0.5422	1.1085	-1.3608
T10	371'-366'	2.1858	-0.1931	0.6802	-1.0398
T11	366'-361'	0.3687	1.0357	-0.6598	-0.2294
T12	361'-341'	0.3607	0.9153	-0.5005	-0.2876
T13	341'-321'	1.7348	-0.0832	1.7863	-1.5392
T14	321'-301'	2.7194	-1.7607	2.8328	-3.6918
T15	301'-281'	2.8820	-1.8373	3.0438	-3.7813
T16	281'-276'	2.8737	-1.7189	3.0875	-3.6124
T17	276'-271'	3.5475	-1.6379	3.8227	-3.5294
T18	271'-266'	3.2765	-1.5262	3.6029	-3.3464
T19	266'-261'	3.7609	-1.5676	4.0902	-3.4267
T20	261'-256'	3.4842	-1.3832	3.9394	-3.1335
T21	256'-251'	3.2886	-1.1101	3.6794	-2.6972
T22	251'-246'	3.2210	-1.7382	3.5972	-3.3253
T23	246'-241'	2.7018	-4.0714	3.0392	-5.6084
T24	241'-221'	2.0353	-4.4282	2.3626	-5.9913
T25	221'-201'	1.3838	-4.7011	1.3587	-6.1474
T26	201'-181'	1.1377	-4.6025	0.7561	-5.7920
T27	181'-161'	1.1856	-4.9192	0.8324	-6.2198
T28	161'-141'	0.8148	-4.7949	0.4816	-6.1789
T29	141'-121'	0.2730	-5.1013	-0.4538	-6.3807
T30	121'-101'	-0.0492	-5.0163	-0.9761	-6.1185
T31	101'-81'	-0.0304	-5.0124	-0.9776	-5.6266
T32	81'-61'	0.1957	-5.1470	-0.6047	-5.4531
T33	61'-41'	0.3128	-4.6954	-0.4489	-5.1732
T34	41'-20'	0.3146	-4.7174	-0.4435	-5.2019
T35	20'-6'8-17/32"	0.2502	-3.6692	-0.2908	-4.0270
T36	6'8-17/32"-0'	0.1245	-0.4196	0.0623	-0.2060

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T1	6	LDF4-50A(1/2")	436.00 - 450.00	0.6000	0.5967
T1	7	CAT6(1/4)	436.00 - 450.00	0.6000	0.5967
T1	8	760178129(1/4)	436.00 - 450.00	0.6000	0.5967
T1	13	1" Rigid Conduit	436.00 - 457.00	0.6000	0.5967
T1	14	3/8" Cable (Lights)	436.00 - 457.00	0.6000	0.5967
T1	24	LDF5-50A(7/8")	436.00 - 441.00	0.6000	0.5967
T1	25	LDF12-50A(2-1/4")	436.00 - 439.00	0.6000	0.5967
T1	51	475-000(4-1/16)	436.00 - 457.00	1.0000	0.5967
T1	75	Thin Flat Climbing Ladder	436.00 - 457.00	0.6000	0.5967
T1	76	Safety Line 3/8	436.00 - 457.00	0.6000	0.5967

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T2	6	LDF4-50A(1/2")	421.00 - 436.00	0.6000	0.6000
T2	7	CAT6(1/4)	421.00 - 436.00	0.6000	0.6000
T2	8	760178129(1/4)	421.00 - 436.00	0.6000	0.6000
T2	13	1" Rigid Conduit	421.00 - 436.00	0.6000	0.6000
T2	14	3/8" Cable (Lights)	421.00 - 436.00	0.6000	0.6000
T2	24	LDF5-50A(7/8")	421.00 - 436.00	0.6000	0.6000
T2	25	LDF12-50A(2-1/4")	421.00 - 436.00	0.6000	0.6000
T2	51	475-000(4-1/16)	421.00 - 436.00	1.0000	0.6000
T2	75	Thin Flat Climbing Ladder	421.00 - 436.00	0.6000	0.6000
T2	76	Safety Line 3/8	421.00 - 436.00	0.6000	0.6000
T3	6	LDF4-50A(1/2")	401.00 - 421.00	0.6000	0.6000
T3	7	CAT6(1/4)	401.00 - 421.00	0.6000	0.6000
T3	8	760178129(1/4)	401.00 - 421.00	0.6000	0.6000
T3	13	1" Rigid Conduit	401.00 - 421.00	0.6000	0.6000
T3	14	3/8" Cable (Lights)	401.00 - 421.00	0.6000	0.6000
T3	24	LDF5-50A(7/8")	401.00 - 421.00	0.6000	0.6000
T3	25	LDF12-50A(2-1/4")	401.00 - 421.00	0.6000	0.6000
T3	26	HJ8-50B(3")	401.00 - 420.00	0.6000	0.6000
T3	51	475-000(4-1/16)	401.00 - 421.00	1.0000	0.6000
T3	75	Thin Flat Climbing Ladder	401.00 - 421.00	0.6000	0.6000
T3	76	Safety Line 3/8	401.00 - 421.00	0.6000	0.6000
T4	6	LDF4-50A(1/2")	396.00 - 401.00	0.6000	0.5943
T4	7	CAT6(1/4)	396.00 - 401.00	0.6000	0.5943
T4	8	760178129(1/4)	396.00 - 401.00	0.6000	0.5943
T4	13	1" Rigid Conduit	396.00 - 401.00	0.6000	0.5943
T4	14	3/8" Cable (Lights)	396.00 - 401.00	0.6000	0.5943
T4	24	LDF5-50A(7/8")	396.00 - 401.00	0.6000	0.5943
T4	25	LDF12-50A(2-1/4")	396.00 - 401.00	0.6000	0.5943
T4	26	HJ8-50B(3")	396.00 - 401.00	0.6000	0.5943
T4	51	475-000(4-1/16)	396.00 - 401.00	1.0000	0.5943
T4	75	Thin Flat Climbing Ladder	396.00 - 401.00	0.6000	0.5943
T4	76	Safety Line 3/8	396.00 - 401.00	0.6000	0.5943
T5	6	LDF4-50A(1/2")	391.00 - 396.00	0.6000	0.6000
T5	7	CAT6(1/4)	391.00 - 396.00	0.6000	0.6000
T5	8	760178129(1/4)	391.00 -	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T5	13	1" Rigid Conduit	396.00 391.00 - 396.00	0.6000	0.6000
T5	14	3/8" Cable (Lights)	391.00 - 396.00	0.6000	0.6000
T5	24	LDF5-50A(7/8")	391.00 - 396.00	0.6000	0.6000
T5	25	LDF12-50A(2-1/4")	391.00 - 396.00	0.6000	0.6000
T5	26	HJ8-50B(3")	391.00 - 396.00	0.6000	0.6000
T5	31	HJ11-50(4")	391.00 - 393.00	1.0000	0.6000
T5	51	475-000(4-1/16)	391.00 - 396.00	1.0000	0.6000
T5	73	LDF7-50A(1-5/8")	391.00 - 393.00	0.6000	0.6000
T5	75	Thin Flat Climbing Ladder	391.00 - 396.00	0.6000	0.6000
T5	76	Safety Line 3/8	391.00 - 396.00	0.6000	0.6000
T6	6	LDF4-50A(1/2")	386.00 - 391.00	0.6000	0.5947
T6	7	CAT6(1/4)	386.00 - 391.00	0.6000	0.5947
T6	8	760178129(1/4)	386.00 - 391.00	0.6000	0.5947
T6	13	1" Rigid Conduit	386.00 - 391.00	0.6000	0.5947
T6	14	3/8" Cable (Lights)	386.00 - 391.00	0.6000	0.5947
T6	24	LDF5-50A(7/8")	386.00 - 391.00	0.6000	0.5947
T6	25	LDF12-50A(2-1/4")	386.00 - 391.00	0.6000	0.5947
T6	26	HJ8-50B(3")	386.00 - 391.00	0.6000	0.5947
T6	31	HJ11-50(4")	386.00 - 391.00	1.0000	0.5947
T6	51	475-000(4-1/16)	386.00 - 391.00	1.0000	0.5947
T6	53	LDF12-50(2-1/4")	386.00 - 388.00	0.6000	0.5947
T6	73	LDF7-50A(1-5/8")	386.00 - 391.00	0.6000	0.5947
T6	75	Thin Flat Climbing Ladder	386.00 - 391.00	0.6000	0.5947
T6	76	Safety Line 3/8	386.00 - 391.00	0.6000	0.5947
T7	6	LDF4-50A(1/2")	381.00 - 386.00	0.6000	0.6000
T7	7	CAT6(1/4)	381.00 - 386.00	0.6000	0.6000
T7	8	760178129(1/4)	381.00 - 386.00	0.6000	0.6000
T7	13	1" Rigid Conduit	381.00 - 386.00	0.6000	0.6000
T7	14	3/8" Cable (Lights)	381.00 - 386.00	0.6000	0.6000
T7	24	LDF5-50A(7/8")	381.00 - 386.00	0.6000	0.6000
T7	25	LDF12-50A(2-1/4")	381.00 - 386.00	0.6000	0.6000
T7	26	HJ8-50B(3")	381.00 - 386.00	0.6000	0.6000
T7	31	HJ11-50(4")	381.00 - 386.00	1.0000	0.6000
T7	51	475-000(4-1/16)	381.00 - 386.00	1.0000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T7	53	LDF12-50(2-1/4")	381.00 - 386.00	0.6000	0.6000
T7	73	LDF7-50A(1-5/8")	381.00 - 386.00	0.6000	0.6000
T7	75	Thin Flat Climbing Ladder	381.00 - 386.00	0.6000	0.6000
T7	76	Safety Line 3/8	381.00 - 386.00	0.6000	0.6000
T8	6	LDF4-50A(1/2")	376.00 - 381.00	0.6000	0.5820
T8	7	CAT6(1/4)	376.00 - 381.00	0.6000	0.5820
T8	8	760178129(1/4)	376.00 - 381.00	0.6000	0.5820
T8	13	1" Rigid Conduit	376.00 - 381.00	0.6000	0.5820
T8	14	3/8" Cable (Lights)	376.00 - 381.00	0.6000	0.5820
T8	24	LDF5-50A(7/8")	376.00 - 381.00	0.6000	0.5820
T8	25	LDF12-50A(2-1/4")	376.00 - 381.00	0.6000	0.5820
T8	26	HJ8-50B(3")	376.00 - 381.00	0.6000	0.5820
T8	31	HJ11-50(4")	376.00 - 381.00	1.0000	0.5820
T8	51	475-000(4-1/16)	376.00 - 381.00	1.0000	0.5820
T8	53	LDF12-50(2-1/4")	376.00 - 381.00	0.6000	0.5820
T8	73	LDF7-50A(1-5/8")	376.00 - 381.00	0.6000	0.5820
T8	75	Thin Flat Climbing Ladder	376.00 - 381.00	0.6000	0.5820
T8	76	Safety Line 3/8	376.00 - 381.00	0.6000	0.5820
T9	6	LDF4-50A(1/2")	371.00 - 376.00	0.6000	0.6000
T9	7	CAT6(1/4)	371.00 - 376.00	0.6000	0.6000
T9	8	760178129(1/4)	371.00 - 376.00	0.6000	0.6000
T9	13	1" Rigid Conduit	371.00 - 376.00	0.6000	0.6000
T9	14	3/8" Cable (Lights)	371.00 - 376.00	0.6000	0.6000
T9	24	LDF5-50A(7/8")	371.00 - 376.00	0.6000	0.6000
T9	25	LDF12-50A(2-1/4")	371.00 - 376.00	0.6000	0.6000
T9	26	HJ8-50B(3")	371.00 - 376.00	0.6000	0.6000
T9	31	HJ11-50(4")	371.00 - 376.00	1.0000	0.6000
T9	51	475-000(4-1/16)	371.00 - 376.00	1.0000	0.6000
T9	53	LDF12-50(2-1/4")	371.00 - 376.00	0.6000	0.6000
T9	73	LDF7-50A(1-5/8")	371.00 - 376.00	0.6000	0.6000
T9	75	Thin Flat Climbing Ladder	371.00 - 376.00	0.6000	0.6000
T9	76	Safety Line 3/8	371.00 - 376.00	0.6000	0.6000
T10	6	LDF4-50A(1/2")	366.00 - 371.00	0.6000	0.5899
T10	7	CAT6(1/4)	366.00 - 371.00	0.6000	0.5899
T10	8	760178129(1/4)	366.00 -	0.6000	0.5899

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T10	13	1" Rigid Conduit	371.00 366.00 - 371.00	0.6000	0.5899
T10	14	3/8" Cable (Lights)	366.00 - 371.00	0.6000	0.5899
T10	24	LDF5-50A(7/8")	366.00 - 371.00	0.6000	0.5899
T10	25	LDF12-50A(2-1/4")	366.00 - 371.00	0.6000	0.5899
T10	26	HJ8-50B(3")	366.00 - 371.00	0.6000	0.5899
T10	31	HJ11-50(4")	366.00 - 371.00	1.0000	0.5899
T10	51	475-000(4-1/16)	366.00 - 371.00	1.0000	0.5899
T10	53	LDF12-50(2-1/4")	366.00 - 371.00	0.6000	0.5899
T10	57	HJ11-50(4)	366.00 - 367.00	1.0000	0.5899
T10	73	LDF7-50A(1-5/8")	366.00 - 371.00	0.6000	0.5899
T10	75	Thin Flat Climbing Ladder	366.00 - 371.00	0.6000	0.5899
T10	76	Safety Line 3/8	366.00 - 371.00	0.6000	0.5899
T11	6	LDF4-50A(1/2")	361.00 - 366.00	0.6000	0.6000
T11	7	CAT6(1/4)	361.00 - 366.00	0.6000	0.6000
T11	8	760178129(1/4)	361.00 - 366.00	0.6000	0.6000
T11	13	1" Rigid Conduit	361.00 - 366.00	0.6000	0.6000
T11	14	3/8" Cable (Lights)	361.00 - 366.00	0.6000	0.6000
T11	24	LDF5-50A(7/8")	361.00 - 366.00	0.6000	0.6000
T11	25	LDF12-50A(2-1/4")	361.00 - 366.00	0.6000	0.6000
T11	26	HJ8-50B(3")	361.00 - 366.00	0.6000	0.6000
T11	31	HJ11-50(4")	361.00 - 366.00	1.0000	0.6000
T11	51	475-000(4-1/16)	361.00 - 366.00	1.0000	0.6000
T11	53	LDF12-50(2-1/4")	361.00 - 366.00	0.6000	0.6000
T11	57	HJ11-50(4)	361.00 - 366.00	1.0000	0.6000
T11	73	LDF7-50A(1-5/8")	361.00 - 366.00	0.6000	0.6000
T11	75	Thin Flat Climbing Ladder	361.00 - 366.00	0.6000	0.6000
T11	76	Safety Line 3/8	361.00 - 366.00	0.6000	0.6000
T12	6	LDF4-50A(1/2")	341.00 - 361.00	0.6000	0.5845
T12	7	CAT6(1/4)	341.00 - 361.00	0.6000	0.5845
T12	8	760178129(1/4)	341.00 - 361.00	0.6000	0.5845
T12	13	1" Rigid Conduit	341.00 - 361.00	0.6000	0.5845
T12	14	3/8" Cable (Lights)	341.00 - 361.00	0.6000	0.5845
T12	24	LDF5-50A(7/8")	341.00 - 361.00	0.6000	0.5845
T12	25	LDF12-50A(2-1/4")	341.00 - 361.00	0.6000	0.5845

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T12	26	HJ8-50B(3")	341.00 - 361.00	0.6000	0.5845
T12	31	HJ11-50(4")	341.00 - 361.00	1.0000	0.5845
T12	43	LDF4-50A(1/2")	341.00 - 342.00	0.6000	0.5845
T12	51	475-000(4-1/16)	341.00 - 361.00	1.0000	0.5845
T12	53	LDF12-50(2-1/4")	341.00 - 361.00	0.6000	0.5845
T12	57	HJ11-50(4)	341.00 - 361.00	1.0000	0.5845
T12	73	LDF7-50A(1-5/8")	341.00 - 361.00	0.6000	0.5845
T12	75	Thin Flat Climbing Ladder	341.00 - 361.00	0.6000	0.5845
T12	76	Safety Line 3/8	341.00 - 361.00	0.6000	0.5845
T12	79	LDF4-50A(1/2)	341.00 - 344.00	0.6000	0.5845
T12	80	LDF6-50A(1-1/4)	341.00 - 342.00	0.6000	0.5845
T13	6	LDF4-50A(1/2")	321.00 - 341.00	0.6000	0.6000
T13	7	CAT6(1/4)	321.00 - 341.00	0.6000	0.6000
T13	8	760178129(1/4)	321.00 - 341.00	0.6000	0.6000
T13	13	1" Rigid Conduit	321.00 - 341.00	0.6000	0.6000
T13	14	3/8" Cable (Lights)	321.00 - 341.00	0.6000	0.6000
T13	24	LDF5-50A(7/8")	321.00 - 341.00	0.6000	0.6000
T13	25	LDF12-50A(2-1/4")	321.00 - 341.00	0.6000	0.6000
T13	26	HJ8-50B(3")	321.00 - 341.00	0.6000	0.6000
T13	28	LDF6-50A(1 1/4")	321.00 - 330.00	0.6000	0.6000
T13	31	HJ11-50(4")	321.00 - 341.00	1.0000	0.6000
T13	37	LDF6-50A(1-1/4")	321.00 - 322.00	0.6000	0.6000
T13	38	LDF6-50A(1-1/4")	321.00 - 325.00	0.6000	0.6000
T13	39	LDF7-50A(1-5/8")	321.00 - 330.00	0.6000	0.6000
T13	42	LDF4P-50A(1/2")	321.00 - 322.00	0.6000	0.6000
T13	43	LDF4-50A(1/2")	321.00 - 341.00	0.6000	0.6000
T13	51	475-000(4-1/16)	321.00 - 341.00	1.0000	0.6000
T13	53	LDF12-50(2-1/4")	321.00 - 341.00	0.6000	0.6000
T13	57	HJ11-50(4)	321.00 - 341.00	1.0000	0.6000
T13	73	LDF7-50A(1-5/8")	321.00 - 341.00	0.6000	0.6000
T13	75	Thin Flat Climbing Ladder	321.00 - 341.00	0.6000	0.6000
T13	76	Safety Line 3/8	321.00 - 341.00	0.6000	0.6000
T13	79	LDF4-50A(1/2)	321.00 - 341.00	0.6000	0.6000
T13	80	LDF6-50A(1-1/4)	321.00 - 341.00	0.6000	0.6000
T13	81	LDF5-50A(7/8")	321.00 -	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T13	82	HCC312-50J(3-1/2")	340.00 - 321.00	1.0000	0.6000
T14	6	LDF4-50A(1/2")	328.00 - 301.00	0.6000	0.6000
T14	7	CAT6(1/4)	321.00 - 301.00	0.6000	0.6000
T14	8	760178129(1/4)	321.00 - 301.00	0.6000	0.6000
T14	13	1" Rigid Conduit	321.00 - 301.00	0.6000	0.6000
T14	14	3/8" Cable (Lights)	321.00 - 301.00	0.6000	0.6000
T14	24	LDF5-50A(7/8")	321.00 - 301.00	0.6000	0.6000
T14	25	LDF12-50A(2-1/4")	321.00 - 301.00	0.6000	0.6000
T14	26	HJ8-50B(3")	321.00 - 301.00	0.6000	0.6000
T14	28	LDF6-50A(1 1/4")	321.00 - 301.00	0.6000	0.6000
T14	31	HJ11-50(4")	321.00 - 301.00	1.0000	0.6000
T14	33	LDF7-50A(1-5/8")	321.00 - 310.00	0.6000	0.6000
T14	37	LDF6-50A(1-1/4")	321.00 - 301.00	0.6000	0.6000
T14	38	LDF6-50A(1-1/4")	321.00 - 301.00	0.6000	0.6000
T14	39	LDF7-50A(1-5/8")	321.00 - 301.00	0.6000	0.6000
T14	42	LDF4P-50A(1/2")	321.00 - 301.00	0.6000	0.6000
T14	43	LDF4-50A(1/2")	321.00 - 301.00	0.6000	0.6000
T14	51	475-000(4-1/16)	321.00 - 301.00	1.0000	0.6000
T14	53	LDF12-50(2-1/4")	321.00 - 301.00	0.6000	0.6000
T14	57	HJ11-50(4)	321.00 - 301.00	1.0000	0.6000
T14	73	LDF7-50A(1-5/8")	321.00 - 301.00	0.6000	0.6000
T14	75	Thin Flat Climbing Ladder	321.00 - 301.00	0.6000	0.6000
T14	76	Safety Line 3/8	321.00 - 301.00	0.6000	0.6000
T14	79	LDF4-50A(1/2)	321.00 - 301.00	0.6000	0.6000
T14	80	LDF6-50A(1-1/4)	321.00 - 301.00	0.6000	0.6000
T14	81	LDF5-50A(7/8")	321.00 - 301.00	0.6000	0.6000
T14	82	HCC312-50J(3-1/2")	321.00 - 301.00	1.0000	0.6000
T15	6	LDF4-50A(1/2")	301.00 - 281.00	0.6000	0.6000
T15	7	CAT6(1/4)	301.00 - 281.00	0.6000	0.6000
T15	8	760178129(1/4)	301.00 - 281.00	0.6000	0.6000
T15	13	1" Rigid Conduit	301.00 - 281.00	0.6000	0.6000
T15	14	3/8" Cable (Lights)	301.00 - 281.00	0.6000	0.6000
T15	24	LDF5-50A(7/8")	301.00 - 281.00	0.6000	0.6000
T15	25	LDF12-50A(2-1/4")	301.00 - 281.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T15	26	HJ8-50B(3")	281.00 - 301.00	0.6000	0.6000
T15	28	LDF6-50A(1 1/4")	281.00 - 301.00	0.6000	0.6000
T15	31	HJ11-50(4")	281.00 - 301.00	1.0000	0.6000
T15	33	LDF7-50A(1-5/8")	281.00 - 301.00	0.6000	0.6000
T15	37	LDF6-50A(1-1/4")	281.00 - 301.00	0.6000	0.6000
T15	38	LDF6-50A(1-1/4")	281.00 - 301.00	0.6000	0.6000
T15	39	LDF7-50A(1-5/8")	281.00 - 301.00	0.6000	0.6000
T15	42	LDF4P-50A(1/2")	281.00 - 301.00	0.6000	0.6000
T15	43	LDF4-50A(1/2")	281.00 - 301.00	0.6000	0.6000
T15	51	475-000(4-1/16)	281.00 - 301.00	1.0000	0.6000
T15	53	LDF12-50(2-1/4")	281.00 - 301.00	0.6000	0.6000
T15	57	HJ11-50(4)	281.00 - 301.00	1.0000	0.6000
T15	73	LDF7-50A(1-5/8")	281.00 - 301.00	0.6000	0.6000
T15	75	Thin Flat Climbing Ladder	281.00 - 301.00	0.6000	0.6000
T15	76	Safety Line 3/8	281.00 - 301.00	0.6000	0.6000
T15	79	LDF4-50A(1/2)	281.00 - 301.00	0.6000	0.6000
T15	80	LDF6-50A(1-1/4)	281.00 - 301.00	0.6000	0.6000
T15	81	LDF5-50A(7/8")	281.00 - 301.00	0.6000	0.6000
T15	82	HCC312-50J(3-1/2")	281.00 - 301.00	1.0000	0.6000
T16	6	LDF4-50A(1/2")	276.00 - 281.00	0.6000	0.6000
T16	7	CAT6(1/4)	276.00 - 281.00	0.6000	0.6000
T16	8	760178129(1/4)	276.00 - 281.00	0.6000	0.6000
T16	13	1" Rigid Conduit	276.00 - 281.00	0.6000	0.6000
T16	14	3/8" Cable (Lights)	276.00 - 281.00	0.6000	0.6000
T16	24	LDF5-50A(7/8")	276.00 - 281.00	0.6000	0.6000
T16	25	LDF12-50A(2-1/4")	276.00 - 281.00	0.6000	0.6000
T16	26	HJ8-50B(3")	276.00 - 281.00	0.6000	0.6000
T16	28	LDF6-50A(1 1/4")	276.00 - 281.00	0.6000	0.6000
T16	31	HJ11-50(4")	276.00 - 281.00	1.0000	0.6000
T16	33	LDF7-50A(1-5/8")	276.00 - 281.00	0.6000	0.6000
T16	34	LDF7-50A(1-5/8")	276.00 - 277.00	0.6000	0.6000
T16	37	LDF6-50A(1-1/4")	276.00 - 281.00	0.6000	0.6000
T16	38	LDF6-50A(1-1/4")	276.00 - 281.00	0.6000	0.6000
T16	39	LDF7-50A(1-5/8")	276.00 - 281.00	0.6000	0.6000
T16	42	LDF4P-50A(1/2")	276.00 -	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			281.00		
T16	43	LDF4-50A(1/2")	276.00 - 281.00	0.6000	0.6000
T16	51	475-000(4-1/16)	276.00 - 281.00	1.0000	0.6000
T16	53	LDF12-50(2-1/4")	276.00 - 281.00	0.6000	0.6000
T16	57	HJ11-50(4)	276.00 - 281.00	1.0000	0.6000
T16	73	LDF7-50A(1-5/8")	276.00 - 281.00	0.6000	0.6000
T16	75	Thin Flat Climbing Ladder	276.00 - 281.00	0.6000	0.6000
T16	76	Safety Line 3/8	276.00 - 281.00	0.6000	0.6000
T16	79	LDF4-50A(1/2)	276.00 - 281.00	0.6000	0.6000
T16	80	LDF6-50A(1-1/4)	276.00 - 281.00	0.6000	0.6000
T16	81	LDF5-50A(7/8")	276.00 - 281.00	0.6000	0.6000
T16	82	HCC312-50J(3-1/2")	276.00 - 281.00	1.0000	0.6000
T17	6	LDF4-50A(1/2")	271.00 - 276.00	0.6000	0.6000
T17	7	CAT6(1/4)	271.00 - 276.00	0.6000	0.6000
T17	8	760178129(1/4)	271.00 - 276.00	0.6000	0.6000
T17	13	1" Rigid Conduit	271.00 - 276.00	0.6000	0.6000
T17	14	3/8" Cable (Lights)	271.00 - 276.00	0.6000	0.6000
T17	24	LDF5-50A(7/8")	271.00 - 276.00	0.6000	0.6000
T17	25	LDF12-50A(2-1/4")	271.00 - 276.00	0.6000	0.6000
T17	26	HJ8-50B(3")	271.00 - 276.00	0.6000	0.6000
T17	28	LDF6-50A(1 1/4")	271.00 - 276.00	0.6000	0.6000
T17	31	HJ11-50(4")	271.00 - 276.00	1.0000	0.6000
T17	33	LDF7-50A(1-5/8")	271.00 - 276.00	0.6000	0.6000
T17	34	LDF7-50A(1-5/8")	271.00 - 276.00	0.6000	0.6000
T17	37	LDF6-50A(1-1/4")	271.00 - 276.00	0.6000	0.6000
T17	38	LDF6-50A(1-1/4")	271.00 - 276.00	0.6000	0.6000
T17	39	LDF7-50A(1-5/8")	271.00 - 276.00	0.6000	0.6000
T17	42	LDF4P-50A(1/2")	271.00 - 276.00	0.6000	0.6000
T17	43	LDF4-50A(1/2")	271.00 - 276.00	0.6000	0.6000
T17	51	475-000(4-1/16)	271.00 - 276.00	1.0000	0.6000
T17	53	LDF12-50(2-1/4")	271.00 - 276.00	0.6000	0.6000
T17	57	HJ11-50(4)	271.00 - 276.00	1.0000	0.6000
T17	73	LDF7-50A(1-5/8")	271.00 - 276.00	0.6000	0.6000
T17	75	Thin Flat Climbing Ladder	271.00 - 276.00	0.6000	0.6000
T17	76	Safety Line 3/8	271.00 - 276.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T17	79	LDF4-50A(1/2)	271.00 - 276.00	0.6000	0.6000
T17	80	LDF6-50A(1-1/4)	271.00 - 276.00	0.6000	0.6000
T17	81	LDF5-50A(7/8")	271.00 - 276.00	0.6000	0.6000
T17	82	HCC312-50J(3-1/2")	271.00 - 276.00	1.0000	0.6000
T18	6	LDF4-50A(1/2")	266.00 - 271.00	0.6000	0.6000
T18	7	CAT6(1/4)	266.00 - 271.00	0.6000	0.6000
T18	8	760178129(1/4)	266.00 - 271.00	0.6000	0.6000
T18	13	1" Rigid Conduit	266.00 - 271.00	0.6000	0.6000
T18	14	3/8" Cable (Lights)	266.00 - 271.00	0.6000	0.6000
T18	24	LDF5-50A(7/8")	266.00 - 271.00	0.6000	0.6000
T18	25	LDF12-50A(2-1/4")	266.00 - 271.00	0.6000	0.6000
T18	26	HJ8-50B(3")	266.00 - 271.00	0.6000	0.6000
T18	28	LDF6-50A(1 1/4")	266.00 - 271.00	0.6000	0.6000
T18	31	HJ11-50(4")	266.00 - 271.00	1.0000	0.6000
T18	33	LDF7-50A(1-5/8")	266.00 - 271.00	0.6000	0.6000
T18	34	LDF7-50A(1-5/8")	266.00 - 271.00	0.6000	0.6000
T18	37	LDF6-50A(1-1/4")	266.00 - 271.00	0.6000	0.6000
T18	38	LDF6-50A(1-1/4")	266.00 - 271.00	0.6000	0.6000
T18	39	LDF7-50A(1-5/8")	266.00 - 271.00	0.6000	0.6000
T18	42	LDF4P-50A(1/2")	266.00 - 271.00	0.6000	0.6000
T18	43	LDF4-50A(1/2")	266.00 - 271.00	0.6000	0.6000
T18	51	475-000(4-1/16)	266.00 - 271.00	1.0000	0.6000
T18	53	LDF12-50(2-1/4")	266.00 - 271.00	0.6000	0.6000
T18	57	HJ11-50(4)	266.00 - 271.00	1.0000	0.6000
T18	73	LDF7-50A(1-5/8")	266.00 - 271.00	0.6000	0.6000
T18	75	Thin Flat Climbing Ladder	266.00 - 271.00	0.6000	0.6000
T18	76	Safety Line 3/8	266.00 - 271.00	0.6000	0.6000
T18	79	LDF4-50A(1/2)	266.00 - 271.00	0.6000	0.6000
T18	80	LDF6-50A(1-1/4)	266.00 - 271.00	0.6000	0.6000
T18	81	LDF5-50A(7/8")	266.00 - 271.00	0.6000	0.6000
T18	82	HCC312-50J(3-1/2")	266.00 - 271.00	1.0000	0.6000
T19	6	LDF4-50A(1/2")	261.00 - 266.00	0.6000	0.6000
T19	7	CAT6(1/4)	261.00 - 266.00	0.6000	0.6000
T19	8	760178129(1/4)	261.00 - 266.00	0.6000	0.6000
T19	13	1" Rigid Conduit	261.00 -	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T19	14	3/8" Cable (Lights)	266.00 261.00 - 266.00	0.6000	0.6000
T19	24	LDF5-50A(7/8")	261.00 - 266.00	0.6000	0.6000
T19	25	LDF12-50A(2-1/4")	261.00 - 266.00	0.6000	0.6000
T19	26	HJ8-50B(3")	261.00 - 266.00	0.6000	0.6000
T19	28	LDF6-50A(1 1/4")	261.00 - 266.00	0.6000	0.6000
T19	31	HJ11-50(4")	261.00 - 266.00	1.0000	0.6000
T19	32	LDF7-50A(1-5/8")	261.00 - 264.00	0.6000	0.6000
T19	33	LDF7-50A(1-5/8")	261.00 - 266.00	0.6000	0.6000
T19	34	LDF7-50A(1-5/8")	261.00 - 266.00	0.6000	0.6000
T19	37	LDF6-50A(1-1/4")	261.00 - 266.00	0.6000	0.6000
T19	38	LDF6-50A(1-1/4")	261.00 - 266.00	0.6000	0.6000
T19	39	LDF7-50A(1-5/8")	261.00 - 266.00	0.6000	0.6000
T19	42	LDF4P-50A(1/2")	261.00 - 266.00	0.6000	0.6000
T19	43	LDF4-50A(1/2")	261.00 - 266.00	0.6000	0.6000
T19	51	475-000(4-1/16)	261.00 - 266.00	1.0000	0.6000
T19	53	LDF12-50(2-1/4")	261.00 - 266.00	0.6000	0.6000
T19	57	HJ11-50(4)	261.00 - 266.00	1.0000	0.6000
T19	73	LDF7-50A(1-5/8")	261.00 - 266.00	0.6000	0.6000
T19	75	Thin Flat Climbing Ladder	261.00 - 266.00	0.6000	0.6000
T19	76	Safety Line 3/8	261.00 - 266.00	0.6000	0.6000
T19	79	LDF4-50A(1/2)	261.00 - 266.00	0.6000	0.6000
T19	80	LDF6-50A(1-1/4)	261.00 - 266.00	0.6000	0.6000
T19	81	LDF5-50A(7/8")	261.00 - 266.00	0.6000	0.6000
T19	82	HCC312-50J(3-1/2")	261.00 - 266.00	1.0000	0.6000
T20	6	LDF4-50A(1/2")	256.00 - 261.00	0.6000	0.5969
T20	7	CAT6(1/4)	256.00 - 261.00	0.6000	0.5969
T20	8	760178129(1/4)	256.00 - 261.00	0.6000	0.5969
T20	13	1" Rigid Conduit	256.00 - 261.00	0.6000	0.5969
T20	14	3/8" Cable (Lights)	256.00 - 261.00	0.6000	0.5969
T20	24	LDF5-50A(7/8")	256.00 - 261.00	0.6000	0.5969
T20	25	LDF12-50A(2-1/4")	256.00 - 261.00	0.6000	0.5969
T20	26	HJ8-50B(3")	256.00 - 261.00	0.6000	0.5969
T20	28	LDF6-50A(1 1/4")	256.00 - 261.00	0.6000	0.5969
T20	31	HJ11-50(4")	256.00 - 261.00	1.0000	0.5969

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T20	32	LDF7-50A(1-5/8")	256.00 - 261.00	0.6000	0.5969
T20	33	LDF7-50A(1-5/8")	256.00 - 261.00	0.6000	0.5969
T20	34	LDF7-50A(1-5/8")	256.00 - 261.00	0.6000	0.5969
T20	37	LDF6-50A(1-1/4")	256.00 - 261.00	0.6000	0.5969
T20	38	LDF6-50A(1-1/4")	256.00 - 261.00	0.6000	0.5969
T20	39	LDF7-50A(1-5/8")	256.00 - 261.00	0.6000	0.5969
T20	42	LDF4P-50A(1/2")	256.00 - 261.00	0.6000	0.5969
T20	43	LDF4-50A(1/2")	256.00 - 261.00	0.6000	0.5969
T20	51	475-000(4-1/16)	256.00 - 261.00	1.0000	0.5969
T20	53	LDF12-50(2-1/4")	256.00 - 261.00	0.6000	0.5969
T20	57	HJ11-50(4)	256.00 - 261.00	1.0000	0.5969
T20	73	LDF7-50A(1-5/8")	256.00 - 261.00	0.6000	0.5969
T20	75	Thin Flat Climbing Ladder	256.00 - 261.00	0.6000	0.5969
T20	76	Safety Line 3/8	256.00 - 261.00	0.6000	0.5969
T20	79	LDF4-50A(1/2)	256.00 - 261.00	0.6000	0.5969
T20	80	LDF6-50A(1-1/4)	256.00 - 261.00	0.6000	0.5969
T20	81	LDF5-50A(7/8")	256.00 - 261.00	0.6000	0.5969
T20	82	HCC312-50J(3-1/2")	256.00 - 261.00	1.0000	0.5969
T21	6	LDF4-50A(1/2")	251.00 - 256.00	0.6000	0.5818
T21	7	CAT6(1/4)	251.00 - 256.00	0.6000	0.5818
T21	8	760178129(1/4)	251.00 - 256.00	0.6000	0.5818
T21	13	1" Rigid Conduit	251.00 - 256.00	0.6000	0.5818
T21	14	3/8" Cable (Lights)	251.00 - 256.00	0.6000	0.5818
T21	24	LDF5-50A(7/8")	251.00 - 256.00	0.6000	0.5818
T21	25	LDF12-50A(2-1/4")	251.00 - 256.00	0.6000	0.5818
T21	26	HJ8-50B(3")	251.00 - 256.00	0.6000	0.5818
T21	28	LDF6-50A(1 1/4")	251.00 - 256.00	0.6000	0.5818
T21	31	HJ11-50(4")	251.00 - 256.00	1.0000	0.5818
T21	32	LDF7-50A(1-5/8")	251.00 - 256.00	0.6000	0.5818
T21	33	LDF7-50A(1-5/8")	251.00 - 256.00	0.6000	0.5818
T21	34	LDF7-50A(1-5/8")	251.00 - 256.00	0.6000	0.5818
T21	37	LDF6-50A(1-1/4")	251.00 - 256.00	0.6000	0.5818
T21	38	LDF6-50A(1-1/4")	251.00 - 256.00	0.6000	0.5818
T21	39	LDF7-50A(1-5/8")	251.00 - 256.00	0.6000	0.5818
T21	42	LDF4P-50A(1/2")	251.00 -	0.6000	0.5818

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			256.00		
T21	43	LDF4-50A(1/2")	251.00 - 256.00	0.6000	0.5818
T21	51	475-000(4-1/16)	251.00 - 256.00	1.0000	0.5818
T21	53	LDF12-50(2-1/4")	251.00 - 256.00	0.6000	0.5818
T21	57	HJ11-50(4)	251.00 - 256.00	1.0000	0.5818
T21	63	LDF6-50A(1-1/4")	251.00 - 255.00	0.6000	0.5818
T21	73	LDF7-50A(1-5/8")	251.00 - 256.00	0.6000	0.5818
T21	75	Thin Flat Climbing Ladder	251.00 - 256.00	0.6000	0.5818
T21	76	Safety Line 3/8	251.00 - 256.00	0.6000	0.5818
T21	79	LDF4-50A(1/2)	251.00 - 256.00	0.6000	0.5818
T21	80	LDF6-50A(1-1/4)	251.00 - 256.00	0.6000	0.5818
T21	81	LDF5-50A(7/8")	251.00 - 256.00	0.6000	0.5818
T21	82	HCC312-50J(3-1/2")	251.00 - 256.00	1.0000	0.5818
T22	3	LDF5-50A(7/8")	246.00 - 247.00	0.6000	0.5975
T22	5	HB158-1-08U8-S8J18(1-5/8)	246.00 - 247.00	0.6000	0.5975
T22	6	LDF4-50A(1/2")	246.00 - 251.00	0.6000	0.5975
T22	7	CAT6(1/4)	246.00 - 251.00	0.6000	0.5975
T22	8	760178129(1/4)	246.00 - 251.00	0.6000	0.5975
T22	13	1" Rigid Conduit	246.00 - 251.00	0.6000	0.5975
T22	14	3/8" Cable (Lights)	246.00 - 251.00	0.6000	0.5975
T22	24	LDF5-50A(7/8")	246.00 - 251.00	0.6000	0.5975
T22	25	LDF12-50A(2-1/4")	246.00 - 251.00	0.6000	0.5975
T22	26	HJ8-50B(3")	246.00 - 251.00	0.6000	0.5975
T22	28	LDF6-50A(1 1/4")	246.00 - 251.00	0.6000	0.5975
T22	31	HJ11-50(4")	246.00 - 251.00	1.0000	0.5975
T22	32	LDF7-50A(1-5/8")	246.00 - 251.00	0.6000	0.5975
T22	33	LDF7-50A(1-5/8")	246.00 - 251.00	0.6000	0.5975
T22	34	LDF7-50A(1-5/8")	246.00 - 251.00	0.6000	0.5975
T22	37	LDF6-50A(1-1/4")	246.00 - 251.00	0.6000	0.5975
T22	38	LDF6-50A(1-1/4")	246.00 - 251.00	0.6000	0.5975
T22	39	LDF7-50A(1-5/8")	246.00 - 251.00	0.6000	0.5975
T22	42	LDF4P-50A(1/2")	246.00 - 251.00	0.6000	0.5975
T22	43	LDF4-50A(1/2")	246.00 - 251.00	0.6000	0.5975
T22	51	475-000(4-1/16)	246.00 - 251.00	1.0000	0.5975
T22	53	LDF12-50(2-1/4")	246.00 - 251.00	0.6000	0.5975

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T22	57	HJ11-50(4)	246.00 - 251.00	1.0000	0.5975
T22	63	LDF6-50A(1-1/4")	246.00 - 251.00	0.6000	0.5975
T22	73	LDF7-50A(1-5/8")	246.00 - 251.00	0.6000	0.5975
T22	75	Thin Flat Climbing Ladder	246.00 - 251.00	0.6000	0.5975
T22	76	Safety Line 3/8	246.00 - 251.00	0.6000	0.5975
T22	79	LDF4-50A(1/2)	246.00 - 251.00	0.6000	0.5975
T22	80	LDF6-50A(1-1/4)	246.00 - 251.00	0.6000	0.5975
T22	81	LDF5-50A(7/8")	246.00 - 251.00	0.6000	0.5975
T22	82	HCC312-50J(3-1/2")	246.00 - 251.00	1.0000	0.5975
T23	3	LDF5-50A(7/8")	241.00 - 246.00	0.6000	0.5824
T23	5	HB158-1-08U8-S8J18(1-5/8)	241.00 - 246.00	0.6000	0.5824
T23	6	LDF4-50A(1/2")	241.00 - 246.00	0.6000	0.5824
T23	7	CAT6(1/4)	241.00 - 246.00	0.6000	0.5824
T23	8	760178129(1/4)	241.00 - 246.00	0.6000	0.5824
T23	13	1" Rigid Conduit	241.00 - 246.00	0.6000	0.5824
T23	14	3/8" Cable (Lights)	241.00 - 246.00	0.6000	0.5824
T23	24	LDF5-50A(7/8")	241.00 - 246.00	0.6000	0.5824
T23	25	LDF12-50A(2-1/4")	241.00 - 246.00	0.6000	0.5824
T23	26	HJ8-50B(3")	241.00 - 246.00	0.6000	0.5824
T23	28	LDF6-50A(1 1/4")	241.00 - 246.00	0.6000	0.5824
T23	31	HJ11-50(4")	241.00 - 246.00	1.0000	0.5824
T23	32	LDF7-50A(1-5/8")	241.00 - 246.00	0.6000	0.5824
T23	33	LDF7-50A(1-5/8")	241.00 - 246.00	0.6000	0.5824
T23	34	LDF7-50A(1-5/8")	241.00 - 246.00	0.6000	0.5824
T23	37	LDF6-50A(1-1/4")	241.00 - 246.00	0.6000	0.5824
T23	38	LDF6-50A(1-1/4")	241.00 - 246.00	0.6000	0.5824
T23	39	LDF7-50A(1-5/8")	241.00 - 246.00	0.6000	0.5824
T23	42	LDF4P-50A(1/2")	241.00 - 246.00	0.6000	0.5824
T23	43	LDF4-50A(1/2")	241.00 - 246.00	0.6000	0.5824
T23	51	475-000(4-1/16)	241.00 - 246.00	1.0000	0.5824
T23	53	LDF12-50(2-1/4")	241.00 - 246.00	0.6000	0.5824
T23	57	HJ11-50(4)	241.00 - 246.00	1.0000	0.5824
T23	63	LDF6-50A(1-1/4")	241.00 - 246.00	0.6000	0.5824
T23	73	LDF7-50A(1-5/8")	241.00 - 246.00	0.6000	0.5824
T23	75	Thin Flat Climbing Ladder	241.00 -	0.6000	0.5824

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T23	76	Safety Line 3/8	246.00 241.00 - 246.00	0.6000	0.5824
T23	79	LDF4-50A(1/2)	241.00 - 246.00	0.6000	0.5824
T23	80	LDF6-50A(1-1/4)	241.00 - 246.00	0.6000	0.5824
T23	81	LDF5-50A(7/8")	241.00 - 246.00	0.6000	0.5824
T23	82	HCC312-50J(3-1/2")	241.00 - 246.00	1.0000	0.5824
T24	1	HB158-1-08U8-S8J18(1-5/8)	221.00 - 230.00	0.6000	0.6000
T24	2	LCF78-50A(7/8")	221.00 - 230.00	0.6000	0.6000
T24	3	LDF5-50A(7/8")	221.00 - 241.00	0.6000	0.6000
T24	5	HB158-1-08U8-S8J18(1-5/8)	221.00 - 241.00	0.6000	0.6000
T24	6	LDF4-50A(1/2")	221.00 - 241.00	0.6000	0.6000
T24	7	CAT6(1/4)	221.00 - 241.00	0.6000	0.6000
T24	8	760178129(1/4)	221.00 - 241.00	0.6000	0.6000
T24	13	1" Rigid Conduit	221.00 - 241.00	0.6000	0.6000
T24	14	3/8" Cable (Lights)	221.00 - 241.00	0.6000	0.6000
T24	19	Banjo (6" dia, 36" step)	221.00 - 230.00	0.6000	0.6000
T24	20	Banjo (6" dia, 36" step)	221.00 - 230.00	0.6000	0.6000
T24	24	LDF5-50A(7/8")	221.00 - 241.00	0.6000	0.6000
T24	25	LDF12-50A(2-1/4")	221.00 - 241.00	0.6000	0.6000
T24	26	HJ8-50B(3")	221.00 - 241.00	0.6000	0.6000
T24	28	LDF6-50A(1 1/4")	221.00 - 241.00	0.6000	0.6000
T24	31	HJ11-50(4")	221.00 - 241.00	1.0000	0.6000
T24	32	LDF7-50A(1-5/8")	221.00 - 241.00	0.6000	0.6000
T24	33	LDF7-50A(1-5/8")	221.00 - 241.00	0.6000	0.6000
T24	34	LDF7-50A(1-5/8")	221.00 - 241.00	0.6000	0.6000
T24	37	LDF6-50A(1-1/4")	221.00 - 241.00	0.6000	0.6000
T24	38	LDF6-50A(1-1/4")	221.00 - 241.00	0.6000	0.6000
T24	39	LDF7-50A(1-5/8")	221.00 - 241.00	0.6000	0.6000
T24	42	LDF4P-50A(1/2")	221.00 - 241.00	0.6000	0.6000
T24	43	LDF4-50A(1/2")	221.00 - 241.00	0.6000	0.6000
T24	51	475-000(4-1/16)	221.00 - 241.00	1.0000	0.6000
T24	53	LDF12-50(2-1/4")	221.00 - 241.00	0.6000	0.6000
T24	57	HJ11-50(4)	221.00 - 241.00	1.0000	0.6000
T24	63	LDF6-50A(1-1/4")	221.00 - 241.00	0.6000	0.6000
T24	73	LDF7-50A(1-5/8")	221.00 - 241.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T24	75	Thin Flat Climbing Ladder	221.00 - 241.00	0.6000	0.6000
T24	76	Safety Line 3/8	221.00 - 241.00	0.6000	0.6000
T24	79	LDF4-50A(1/2)	221.00 - 241.00	0.6000	0.6000
T24	80	LDF6-50A(1-1/4)	221.00 - 241.00	0.6000	0.6000
T24	81	LDF5-50A(7/8")	221.00 - 241.00	0.6000	0.6000
T24	82	HCC312-50J(3-1/2")	221.00 - 241.00	0.6000	0.6000
T25	1	HB158-1-08U8-S8J18(1-5/8)	201.00 - 221.00	0.6000	0.6000
T25	2	LCF78-50A(7/8")	201.00 - 221.00	0.6000	0.6000
T25	3	LDF5-50A(7/8")	201.00 - 221.00	0.6000	0.6000
T25	5	HB158-1-08U8-S8J18(1-5/8)	201.00 - 221.00	0.6000	0.6000
T25	6	LDF4-50A(1/2")	201.00 - 221.00	0.6000	0.6000
T25	7	CAT6(1/4)	201.00 - 221.00	0.6000	0.6000
T25	8	760178129(1/4)	201.00 - 221.00	0.6000	0.6000
T25	12	LCF78-50A(7/8")	201.00 - 206.00	0.6000	0.6000
T25	13	1" Rigid Conduit	201.00 - 221.00	0.6000	0.6000
T25	14	3/8" Cable (Lights)	201.00 - 221.00	0.6000	0.6000
T25	19	Banjo (6" dia, 36" step)	201.00 - 221.00	0.6000	0.6000
T25	20	Banjo (6" dia, 36" step)	201.00 - 221.00	0.6000	0.6000
T25	24	LDF5-50A(7/8")	201.00 - 221.00	0.6000	0.6000
T25	25	LDF12-50A(2-1/4")	201.00 - 221.00	0.6000	0.6000
T25	26	HJ8-50B(3")	201.00 - 221.00	0.6000	0.6000
T25	28	LDF6-50A(1 1/4")	201.00 - 221.00	0.6000	0.6000
T25	31	HJ11-50(4")	201.00 - 221.00	1.0000	0.6000
T25	32	LDF7-50A(1-5/8")	201.00 - 221.00	0.6000	0.6000
T25	33	LDF7-50A(1-5/8")	201.00 - 221.00	0.6000	0.6000
T25	34	LDF7-50A(1-5/8")	201.00 - 221.00	0.6000	0.6000
T25	37	LDF6-50A(1-1/4")	201.00 - 221.00	0.6000	0.6000
T25	38	LDF6-50A(1-1/4")	201.00 - 221.00	0.6000	0.6000
T25	39	LDF7-50A(1-5/8")	201.00 - 221.00	0.6000	0.6000
T25	42	LDF4P-50A(1/2")	201.00 - 221.00	0.6000	0.6000
T25	43	LDF4-50A(1/2")	201.00 - 221.00	0.6000	0.6000
T25	51	475-000(4-1/16)	201.00 - 221.00	1.0000	0.6000
T25	53	LDF12-50(2-1/4")	201.00 - 221.00	0.6000	0.6000
T25	57	HJ11-50(4)	201.00 - 221.00	1.0000	0.6000
T25	63	LDF6-50A(1-1/4")	201.00 -	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T25	73	LDF7-50A(1-5/8")	221.00 201.00 - 221.00	0.6000	0.6000
T25	75	Thin Flat Climbing Ladder	201.00 - 221.00	0.6000	0.6000
T25	76	Safety Line 3/8	201.00 - 221.00	0.6000	0.6000
T25	79	LDF4-50A(1/2)	201.00 - 221.00	0.6000	0.6000
T25	80	LDF6-50A(1-1/4)	201.00 - 221.00	0.6000	0.6000
T25	81	LDF5-50A(7/8")	201.00 - 221.00	0.6000	0.6000
T25	82	HCC312-50J(3-1/2")	201.00 - 221.00	0.6000	0.6000
T26	1	HB158-1-08U8-S8J18(1-5/8)	181.00 - 201.00	0.6000	0.6000
T26	2	LCF78-50A(7/8")	181.00 - 201.00	0.6000	0.6000
T26	3	LDF5-50A(7/8")	181.00 - 201.00	0.6000	0.6000
T26	5	HB158-1-08U8-S8J18(1-5/8)	181.00 - 201.00	0.6000	0.6000
T26	6	LDF4-50A(1/2")	181.00 - 201.00	0.6000	0.6000
T26	7	CAT6(1/4)	181.00 - 201.00	0.6000	0.6000
T26	8	760178129(1/4)	181.00 - 201.00	0.6000	0.6000
T26	12	LCF78-50A(7/8")	181.00 - 201.00	0.6000	0.6000
T26	13	1" Rigid Conduit	181.00 - 201.00	0.6000	0.6000
T26	14	3/8" Cable (Lights)	181.00 - 201.00	0.6000	0.6000
T26	16	1/4 Coax	181.00 - 200.00	0.6000	0.6000
T26	19	Banjo (6" dia, 36" step)	181.00 - 201.00	0.6000	0.6000
T26	20	Banjo (6" dia, 36" step)	181.00 - 201.00	0.6000	0.6000
T26	24	LDF5-50A(7/8")	181.00 - 201.00	0.6000	0.6000
T26	25	LDF12-50A(2-1/4")	181.00 - 201.00	0.6000	0.6000
T26	26	HJ8-50B(3")	181.00 - 201.00	0.6000	0.6000
T26	28	LDF6-50A(1 1/4")	181.00 - 201.00	0.6000	0.6000
T26	31	HJ11-50(4")	181.00 - 201.00	1.0000	0.6000
T26	32	LDF7-50A(1-5/8")	181.00 - 201.00	0.6000	0.6000
T26	33	LDF7-50A(1-5/8")	181.00 - 201.00	0.6000	0.6000
T26	34	LDF7-50A(1-5/8")	181.00 - 201.00	0.6000	0.6000
T26	37	LDF6-50A(1-1/4")	181.00 - 201.00	0.6000	0.6000
T26	38	LDF6-50A(1-1/4")	181.00 - 201.00	0.6000	0.6000
T26	39	LDF7-50A(1-5/8")	181.00 - 201.00	0.6000	0.6000
T26	42	LDF4P-50A(1/2")	181.00 - 201.00	0.6000	0.6000
T26	43	LDF4-50A(1/2")	181.00 - 201.00	0.6000	0.6000
T26	51	475-000(4-1/16)	181.00 - 201.00	1.0000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T26	53	LDF12-50(2-1/4")	181.00 - 201.00	0.6000	0.6000
T26	57	HJ11-50(4)	181.00 - 201.00	1.0000	0.6000
T26	63	LDF6-50A(1-1/4")	181.00 - 201.00	0.6000	0.6000
T26	73	LDF7-50A(1-5/8")	181.00 - 201.00	0.6000	0.6000
T26	75	Thin Flat Climbing Ladder	181.00 - 201.00	0.6000	0.6000
T26	76	Safety Line 3/8	181.00 - 201.00	0.6000	0.6000
T26	79	LDF4-50A(1/2)	181.00 - 201.00	0.6000	0.6000
T26	80	LDF6-50A(1-1/4)	181.00 - 201.00	0.6000	0.6000
T26	81	LDF5-50A(7/8")	181.00 - 201.00	0.6000	0.6000
T26	82	HCC312-50J(3-1/2")	181.00 - 201.00	0.6000	0.6000
T26	85	CU12PSM6P4XXX(1-3/4)	181.00 - 186.00	0.6000	0.6000
T27	1	HB158-1-08U8-S8J18(1-5/8)	161.00 - 181.00	0.6000	0.6000
T27	2	LCF78-50A(7/8")	161.00 - 181.00	0.6000	0.6000
T27	3	LDF5-50A(7/8")	161.00 - 181.00	0.6000	0.6000
T27	5	HB158-1-08U8-S8J18(1-5/8)	161.00 - 181.00	0.6000	0.6000
T27	6	LDF4-50A(1/2")	161.00 - 181.00	0.6000	0.6000
T27	7	CAT6(1/4)	161.00 - 181.00	0.6000	0.6000
T27	8	760178129(1/4)	161.00 - 181.00	0.6000	0.6000
T27	12	LCF78-50A(7/8")	161.00 - 181.00	0.6000	0.6000
T27	13	1" Rigid Conduit	161.00 - 181.00	0.6000	0.6000
T27	14	3/8" Cable (Lights)	161.00 - 181.00	0.6000	0.6000
T27	16	1/4 Coax	161.00 - 181.00	0.6000	0.6000
T27	19	Banjo (6" dia, 36" step)	161.00 - 181.00	0.6000	0.6000
T27	20	Banjo (6" dia, 36" step)	161.00 - 181.00	0.6000	0.6000
T27	24	LDF5-50A(7/8")	161.00 - 181.00	0.6000	0.6000
T27	25	LDF12-50A(2-1/4")	161.00 - 181.00	0.6000	0.6000
T27	26	HJ8-50B(3")	161.00 - 181.00	0.6000	0.6000
T27	28	LDF6-50A(1 1/4")	161.00 - 181.00	0.6000	0.6000
T27	31	HJ11-50(4")	161.00 - 181.00	1.0000	0.6000
T27	32	LDF7-50A(1-5/8")	161.00 - 181.00	0.6000	0.6000
T27	33	LDF7-50A(1-5/8")	161.00 - 181.00	0.6000	0.6000
T27	34	LDF7-50A(1-5/8")	161.00 - 181.00	0.6000	0.6000
T27	37	LDF6-50A(1-1/4")	161.00 - 181.00	0.6000	0.6000
T27	38	LDF6-50A(1-1/4")	161.00 - 181.00	0.6000	0.6000
T27	39	LDF7-50A(1-5/8")	161.00 -	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			181.00		
T27	41	LDF4P-50A(1/2")	161.00 - 178.00	0.6000	0.6000
T27	42	LDF4P-50A(1/2")	178.00 - 181.00	0.6000	0.6000
T27	43	LDF4-50A(1/2")	161.00 - 181.00	0.6000	0.6000
T27	51	475-000(4-1/16)	161.00 - 181.00	1.0000	0.6000
T27	53	LDF12-50(2-1/4")	161.00 - 181.00	0.6000	0.6000
T27	57	HJ11-50(4)	161.00 - 181.00	1.0000	0.6000
T27	63	LDF6-50A(1-1/4")	161.00 - 181.00	0.6000	0.6000
T27	73	LDF7-50A(1-5/8")	161.00 - 181.00	0.6000	0.6000
T27	75	Thin Flat Climbing Ladder	161.00 - 181.00	0.6000	0.6000
T27	76	Safety Line 3/8	161.00 - 181.00	0.6000	0.6000
T27	79	LDF4-50A(1/2)	161.00 - 181.00	0.6000	0.6000
T27	80	LDF6-50A(1-1/4)	161.00 - 181.00	0.6000	0.6000
T27	81	LDF5-50A(7/8")	161.00 - 181.00	0.6000	0.6000
T27	82	HCC312-50J(3-1/2")	161.00 - 181.00	0.6000	0.6000
T27	85	CU12PSM6P4XXX(1-3/4)	161.00 - 181.00	0.6000	0.6000
T28	1	HB158-1-08U8-S8J18(1-5/8)	141.00 - 161.00	0.6000	0.6000
T28	2	LCF78-50A(7/8")	141.00 - 161.00	0.6000	0.6000
T28	3	LDF5-50A(7/8")	141.00 - 161.00	0.6000	0.6000
T28	5	HB158-1-08U8-S8J18(1-5/8)	141.00 - 161.00	0.6000	0.6000
T28	6	LDF4-50A(1/2")	141.00 - 161.00	0.6000	0.6000
T28	7	CAT6(1/4)	141.00 - 161.00	0.6000	0.6000
T28	8	760178129(1/4)	141.00 - 161.00	0.6000	0.6000
T28	9	EW63(ELLIPTICAL)	141.00 - 150.00	0.6000	0.6000
T28	12	LCF78-50A(7/8")	141.00 - 161.00	0.6000	0.6000
T28	13	1" Rigid Conduit	141.00 - 161.00	0.6000	0.6000
T28	14	3/8" Cable (Lights)	141.00 - 161.00	0.6000	0.6000
T28	16	1/4 Coax	141.00 - 161.00	0.6000	0.6000
T28	19	Banjo (6" dia, 36" step)	141.00 - 161.00	0.6000	0.6000
T28	20	Banjo (6" dia, 36" step)	141.00 - 161.00	0.6000	0.6000
T28	24	LDF5-50A(7/8")	141.00 - 161.00	0.6000	0.6000
T28	25	LDF12-50A(2-1/4")	141.00 - 161.00	0.6000	0.6000
T28	26	HJ8-50B(3")	141.00 - 161.00	0.6000	0.6000
T28	28	LDF6-50A(1 1/4")	141.00 - 161.00	0.6000	0.6000
T28	31	HJ11-50(4")	141.00 - 161.00	1.0000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T28	32	LDF7-50A(1-5/8")	141.00 - 161.00	0.6000	0.6000
T28	33	LDF7-50A(1-5/8")	141.00 - 161.00	0.6000	0.6000
T28	34	LDF7-50A(1-5/8")	141.00 - 161.00	0.6000	0.6000
T28	37	LDF6-50A(1-1/4")	141.00 - 161.00	0.6000	0.6000
T28	38	LDF6-50A(1-1/4")	141.00 - 161.00	0.6000	0.6000
T28	39	LDF7-50A(1-5/8")	141.00 - 161.00	0.6000	0.6000
T28	41	LDF4P-50A(1/2")	141.00 - 161.00	0.6000	0.6000
T28	43	LDF4-50A(1/2")	141.00 - 161.00	0.6000	0.6000
T28	44	EW63(ELLIPTICAL)	141.00 - 146.00	0.6000	0.6000
T28	45	EW52(ELLIPTICAL)	141.00 - 146.00	0.6000	0.6000
T28	51	475-000(4-1/16)	141.00 - 161.00	1.0000	0.6000
T28	53	LDF12-50(2-1/4")	141.00 - 161.00	0.6000	0.6000
T28	57	HJ11-50(4)	141.00 - 161.00	1.0000	0.6000
T28	63	LDF6-50A(1-1/4")	141.00 - 161.00	0.6000	0.6000
T28	73	LDF7-50A(1-5/8")	141.00 - 161.00	0.6000	0.6000
T28	75	Thin Flat Climbing Ladder	141.00 - 161.00	0.6000	0.6000
T28	76	Safety Line 3/8	141.00 - 161.00	0.6000	0.6000
T28	79	LDF4-50A(1/2)	141.00 - 161.00	0.6000	0.6000
T28	80	LDF6-50A(1-1/4)	141.00 - 161.00	0.6000	0.6000
T28	81	LDF5-50A(7/8")	141.00 - 161.00	0.6000	0.6000
T28	82	HCC312-50J(3-1/2")	141.00 - 161.00	0.6000	0.6000
T28	85	CU12PSM6P4XXX(1-3/4)	141.00 - 161.00	0.6000	0.6000
T29	1	HB158-1-08U8-S8J18(1-5/8)	121.00 - 141.00	0.6000	0.6000
T29	2	LCF78-50A(7/8")	121.00 - 141.00	0.6000	0.6000
T29	3	LDF5-50A(7/8")	121.00 - 141.00	0.6000	0.6000
T29	5	HB158-1-08U8-S8J18(1-5/8)	121.00 - 141.00	0.6000	0.6000
T29	6	LDF4-50A(1/2")	121.00 - 141.00	0.6000	0.6000
T29	7	CAT6(1/4)	121.00 - 141.00	0.6000	0.6000
T29	8	760178129(1/4)	121.00 - 141.00	0.6000	0.6000
T29	9	EW63(ELLIPTICAL)	121.00 - 141.00	0.6000	0.6000
T29	12	LCF78-50A(7/8")	121.00 - 141.00	0.6000	0.6000
T29	13	1" Rigid Conduit	121.00 - 141.00	0.6000	0.6000
T29	14	3/8" Cable (Lights)	121.00 - 141.00	0.6000	0.6000
T29	16	1/4 Coax	121.00 - 141.00	0.6000	0.6000
T29	17	3/8" Coax	121.00 -	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T29	18	3/8" Coax	136.00 121.00 - 140.00	0.6000	0.6000
T29	19	Banjo (6" dia, 36" step)	121.00 - 141.00	0.6000	0.6000
T29	20	Banjo (6" dia, 36" step)	121.00 - 141.00	0.6000	0.6000
T29	23	LDF5-50A(7/8")	121.00 - 133.00	0.6000	0.6000
T29	24	LDF5-50A(7/8")	133.00 - 141.00	0.6000	0.6000
T29	25	LDF12-50A(2-1/4")	121.00 - 141.00	0.6000	0.6000
T29	26	HJ8-50B(3")	121.00 - 141.00	0.6000	0.6000
T29	28	LDF6-50A(1 1/4")	121.00 - 141.00	0.6000	0.6000
T29	31	HJ11-50(4")	121.00 - 141.00	1.0000	0.6000
T29	32	LDF7-50A(1-5/8")	121.00 - 141.00	0.6000	0.6000
T29	33	LDF7-50A(1-5/8")	121.00 - 141.00	0.6000	0.6000
T29	34	LDF7-50A(1-5/8")	121.00 - 141.00	0.6000	0.6000
T29	37	LDF6-50A(1-1/4")	121.00 - 141.00	0.6000	0.6000
T29	38	LDF6-50A(1-1/4")	121.00 - 141.00	0.6000	0.6000
T29	39	LDF7-50A(1-5/8")	121.00 - 141.00	0.6000	0.6000
T29	40	LDF4P-50A(1/2")	121.00 - 133.00	0.6000	0.6000
T29	41	LDF4P-50A(1/2")	133.00 - 141.00	0.6000	0.6000
T29	43	LDF4-50A(1/2")	121.00 - 141.00	0.6000	0.6000
T29	44	EW63(ELLIPTICAL)	121.00 - 141.00	0.6000	0.6000
T29	45	EW52(ELLIPTICAL)	121.00 - 141.00	0.6000	0.6000
T29	51	475-000(4-1/16)	121.00 - 141.00	1.0000	0.6000
T29	53	LDF12-50(2-1/4")	121.00 - 141.00	0.6000	0.6000
T29	57	HJ11-50(4)	121.00 - 141.00	1.0000	0.6000
T29	63	LDF6-50A(1-1/4")	121.00 - 141.00	0.6000	0.6000
T29	68	LDF5-50A(7/8")	121.00 - 133.00	0.6000	0.6000
T29	73	LDF7-50A(1-5/8")	121.00 - 141.00	0.6000	0.6000
T29	75	Thin Flat Climbing Ladder	121.00 - 141.00	0.6000	0.6000
T29	76	Safety Line 3/8	121.00 - 141.00	0.6000	0.6000
T29	79	LDF4-50A(1/2)	121.00 - 141.00	0.6000	0.6000
T29	80	LDF6-50A(1-1/4)	121.00 - 141.00	0.6000	0.6000
T29	81	LDF5-50A(7/8")	121.00 - 141.00	0.6000	0.6000
T29	82	HCC312-50J(3-1/2")	121.00 - 141.00	0.6000	0.6000
T29	85	CU12PSM6P4XXX(1-3/4)	121.00 - 141.00	0.6000	0.6000
T30	1	HB158-1-08U8-S8J18(1-5/8)	101.00 - 121.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T30	2	LCF78-50A(7/8")	101.00 - 121.00	0.6000	0.6000
T30	3	LDF5-50A(7/8")	101.00 - 121.00	0.6000	0.6000
T30	5	HB158-1-08U8-S8J18(1-5/8)	101.00 - 121.00	0.6000	0.6000
T30	6	LDF4-50A(1/2")	101.00 - 121.00	0.6000	0.6000
T30	7	CAT6(1/4)	101.00 - 121.00	0.6000	0.6000
T30	8	760178129(1/4)	101.00 - 121.00	0.6000	0.6000
T30	9	EW63(ELLIPTICAL)	101.00 - 121.00	0.6000	0.6000
T30	12	LCF78-50A(7/8")	101.00 - 121.00	0.6000	0.6000
T30	13	1" Rigid Conduit	101.00 - 121.00	0.6000	0.6000
T30	14	3/8" Cable (Lights)	101.00 - 121.00	0.6000	0.6000
T30	16	1/4 Coax	101.00 - 121.00	0.6000	0.6000
T30	17	3/8" Coax	101.00 - 121.00	0.6000	0.6000
T30	18	3/8" Coax	101.00 - 121.00	0.6000	0.6000
T30	19	Banjo (6" dia, 36" step)	101.00 - 121.00	0.6000	0.6000
T30	20	Banjo (6" dia, 36" step)	101.00 - 121.00	0.6000	0.6000
T30	23	LDF5-50A(7/8")	101.00 - 121.00	0.6000	0.6000
T30	25	LDF12-50A(2-1/4")	101.00 - 121.00	0.6000	0.6000
T30	26	HJ8-50B(3")	101.00 - 121.00	0.6000	0.6000
T30	28	LDF6-50A(1 1/4")	101.00 - 121.00	0.6000	0.6000
T30	31	HJ11-50(4")	101.00 - 121.00	1.0000	0.6000
T30	32	LDF7-50A(1-5/8")	101.00 - 121.00	0.6000	0.6000
T30	33	LDF7-50A(1-5/8")	101.00 - 121.00	0.6000	0.6000
T30	34	LDF7-50A(1-5/8")	101.00 - 121.00	0.6000	0.6000
T30	37	LDF6-50A(1-1/4")	101.00 - 121.00	0.6000	0.6000
T30	38	LDF6-50A(1-1/4")	101.00 - 121.00	0.6000	0.6000
T30	39	LDF7-50A(1-5/8")	101.00 - 121.00	0.6000	0.6000
T30	40	LDF4P-50A(1/2")	101.00 - 121.00	0.6000	0.6000
T30	43	LDF4-50A(1/2")	101.00 - 121.00	0.6000	0.6000
T30	44	EW63(ELLIPTICAL)	101.00 - 121.00	0.6000	0.6000
T30	45	EW52(ELLIPTICAL)	101.00 - 121.00	0.6000	0.6000
T30	51	475-000(4-1/16)	101.00 - 121.00	1.0000	0.6000
T30	53	LDF12-50(2-1/4")	101.00 - 121.00	0.6000	0.6000
T30	55	LDF5-50A(7/8")	101.00 - 109.00	0.6000	0.6000
T30	57	HJ11-50(4)	101.00 - 121.00	1.0000	0.6000
T30	63	LDF6-50A(1-1/4")	101.00 -	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T30	68	LDF5-50A(7/8")	121.00 117.00 - 121.00	0.6000	0.6000
T30	69	LDF5-50A(7/8")	101.00 - 117.00	0.6000	0.6000
T30	72	LDF5-50A(7/8")	101.00 - 108.00	0.6000	0.6000
T30	73	LDF7-50A(1-5/8")	101.00 - 121.00	0.6000	0.6000
T30	75	Thin Flat Climbing Ladder	101.00 - 121.00	0.6000	0.6000
T30	76	Safety Line 3/8	101.00 - 121.00	0.6000	0.6000
T30	79	LDF4-50A(1/2)	101.00 - 121.00	0.6000	0.6000
T30	80	LDF6-50A(1-1/4)	101.00 - 121.00	0.6000	0.6000
T30	81	LDF5-50A(7/8")	101.00 - 121.00	0.6000	0.6000
T30	82	HCC312-50J(3-1/2")	101.00 - 121.00	0.6000	0.6000
T30	85	CU12PSM6P4XXX(1-3/4)	101.00 - 121.00	0.6000	0.6000
T31	1	HB158-1-08U8-S8J18(1-5/8)	81.00 - 101.00	0.6000	0.6000
T31	2	LCF78-50A(7/8")	81.00 - 101.00	0.6000	0.6000
T31	3	LDF5-50A(7/8")	81.00 - 101.00	0.6000	0.6000
T31	5	HB158-1-08U8-S8J18(1-5/8)	81.00 - 101.00	0.6000	0.6000
T31	6	LDF4-50A(1/2")	81.00 - 101.00	0.6000	0.6000
T31	7	CAT6(1/4)	81.00 - 101.00	0.6000	0.6000
T31	8	760178129(1/4)	81.00 - 101.00	0.6000	0.6000
T31	9	EW63(ELLIPTICAL)	81.00 - 101.00	0.6000	0.6000
T31	12	LCF78-50A(7/8")	81.00 - 101.00	0.6000	0.6000
T31	13	1" Rigid Conduit	81.00 - 101.00	0.6000	0.6000
T31	14	3/8" Cable (Lights)	81.00 - 101.00	0.6000	0.6000
T31	15	1/4 Coax	81.00 - 99.00	0.6000	0.6000
T31	16	1/4 Coax	81.00 - 101.00	0.6000	0.6000
T31	17	3/8" Coax	81.00 - 101.00	0.6000	0.6000
T31	18	3/8" Coax	81.00 - 101.00	0.6000	0.6000
T31	19	Banjo (6" dia, 36" step)	81.00 - 101.00	0.6000	0.6000
T31	20	Banjo (6" dia, 36" step)	81.00 - 101.00	0.6000	0.6000
T31	23	LDF5-50A(7/8")	81.00 - 101.00	0.6000	0.6000
T31	25	LDF12-50A(2-1/4")	81.00 - 101.00	0.6000	0.6000
T31	26	HJ8-50B(3")	81.00 - 101.00	0.6000	0.6000
T31	28	LDF6-50A(1 1/4")	81.00 - 101.00	0.6000	0.6000
T31	31	HJ11-50(4")	81.00 - 101.00	0.6000	0.6000
T31	32	LDF7-50A(1-5/8")	81.00 - 101.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T31	33	LDF7-50A(1-5/8")	81.00 - 101.00	0.6000	0.6000
T31	34	LDF7-50A(1-5/8")	81.00 - 101.00	0.6000	0.6000
T31	37	LDF6-50A(1-1/4")	81.00 - 101.00	0.6000	0.6000
T31	38	LDF6-50A(1-1/4")	81.00 - 101.00	0.6000	0.6000
T31	39	LDF7-50A(1-5/8")	81.00 - 101.00	0.6000	0.6000
T31	40	LDF4P-50A(1/2")	81.00 - 101.00	0.6000	0.6000
T31	43	LDF4-50A(1/2")	81.00 - 101.00	0.6000	0.6000
T31	44	EW63(ELLIPTICAL)	81.00 - 101.00	0.6000	0.6000
T31	45	EW52(ELLIPTICAL)	81.00 - 101.00	0.6000	0.6000
T31	51	475-000(4-1/16)	81.00 - 101.00	1.0000	0.6000
T31	53	LDF12-50(2-1/4")	81.00 - 101.00	0.6000	0.6000
T31	55	LDF5-50A(7/8")	81.00 - 101.00	0.6000	0.6000
T31	57	HJ11-50(4)	81.00 - 101.00	0.6000	0.6000
T31	63	LDF6-50A(1-1/4")	81.00 - 101.00	0.6000	0.6000
T31	69	LDF5-50A(7/8")	99.00 - 101.00	0.6000	0.6000
T31	70	LDF5-50A(7/8")	81.00 - 99.00	0.6000	0.6000
T31	72	LDF5-50A(7/8")	81.00 - 101.00	0.6000	0.6000
T31	73	LDF7-50A(1-5/8")	81.00 - 101.00	0.6000	0.6000
T31	75	Thin Flat Climbing Ladder	81.00 - 101.00	0.6000	0.6000
T31	76	Safety Line 3/8	81.00 - 101.00	0.6000	0.6000
T31	79	LDF4-50A(1/2)	81.00 - 101.00	0.6000	0.6000
T31	80	LDF6-50A(1-1/4)	81.00 - 101.00	0.6000	0.6000
T31	81	LDF5-50A(7/8")	81.00 - 101.00	0.6000	0.6000
T31	82	HCC312-50J(3-1/2")	81.00 - 101.00	0.6000	0.6000
T31	85	CU12PSM6P4XXX(1-3/4)	81.00 - 101.00	0.6000	0.6000
T32	1	HB158-1-08U8-S8J18(1-5/8)	61.00 - 81.00	0.6000	0.6000
T32	2	LCF78-50A(7/8")	61.00 - 81.00	0.6000	0.6000
T32	3	LDF5-50A(7/8")	61.00 - 81.00	0.6000	0.6000
T32	5	HB158-1-08U8-S8J18(1-5/8)	61.00 - 81.00	0.6000	0.6000
T32	6	LDF4-50A(1/2")	61.00 - 81.00	0.6000	0.6000
T32	7	CAT6(1/4)	61.00 - 81.00	0.6000	0.6000
T32	8	760178129(1/4)	61.00 - 81.00	0.6000	0.6000
T32	9	EW63(ELLIPTICAL)	61.00 - 81.00	0.6000	0.6000
T32	12	LCF78-50A(7/8")	61.00 - 81.00	0.6000	0.6000
T32	13	1" Rigid Conduit	61.00 -	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T32	14	3/8" Cable (Lights)	81.00 61.00 - 81.00	0.6000	0.6000
T32	15	1/4 Coax	61.00 - 81.00	0.6000	0.6000
T32	16	1/4 Coax	61.00 - 81.00	0.6000	0.6000
T32	17	3/8" Coax	61.00 - 81.00	0.6000	0.6000
T32	18	3/8" Coax	61.00 - 81.00	0.6000	0.6000
T32	19	Banjo (6" dia, 36" step)	61.00 - 81.00	0.6000	0.6000
T32	20	Banjo (6" dia, 36" step)	61.00 - 81.00	0.6000	0.6000
T32	23	LDF5-50A(7/8")	61.00 - 81.00	0.6000	0.6000
T32	25	LDF12-50A(2-1/4")	61.00 - 81.00	0.6000	0.6000
T32	26	HJ8-50B(3")	61.00 - 81.00	0.6000	0.6000
T32	28	LDF6-50A(1 1/4")	61.00 - 81.00	0.6000	0.6000
T32	31	HJ11-50(4")	61.00 - 81.00	0.6000	0.6000
T32	32	LDF7-50A(1-5/8")	61.00 - 81.00	0.6000	0.6000
T32	33	LDF7-50A(1-5/8")	61.00 - 81.00	0.6000	0.6000
T32	34	LDF7-50A(1-5/8")	61.00 - 81.00	0.6000	0.6000
T32	37	LDF6-50A(1-1/4")	61.00 - 81.00	0.6000	0.6000
T32	38	LDF6-50A(1-1/4")	61.00 - 81.00	0.6000	0.6000
T32	39	LDF7-50A(1-5/8")	61.00 - 81.00	0.6000	0.6000
T32	40	LDF4P-50A(1/2")	61.00 - 81.00	0.6000	0.6000
T32	43	LDF4-50A(1/2")	61.00 - 81.00	0.6000	0.6000
T32	44	EW63(ELLIPTICAL)	61.00 - 81.00	0.6000	0.6000
T32	45	EW52(ELLIPTICAL)	61.00 - 81.00	0.6000	0.6000
T32	51	475-000(4-1/16)	61.00 - 81.00	0.6000	0.6000
T32	53	LDF12-50(2-1/4")	61.00 - 81.00	0.6000	0.6000
T32	55	LDF5-50A(7/8")	61.00 - 81.00	0.6000	0.6000
T32	57	HJ11-50(4)	61.00 - 81.00	0.6000	0.6000
T32	63	LDF6-50A(1-1/4")	61.00 - 81.00	0.6000	0.6000
T32	70	LDF5-50A(7/8")	62.00 - 81.00	0.6000	0.6000
T32	71	LDF5-50A(7/8")	61.00 - 62.00	0.6000	0.6000
T32	72	LDF5-50A(7/8")	61.00 - 81.00	0.6000	0.6000
T32	73	LDF7-50A(1-5/8")	61.00 - 81.00	0.6000	0.6000
T32	75	Thin Flat Climbing Ladder	61.00 - 81.00	0.6000	0.6000
T32	76	Safety Line 3/8	61.00 - 81.00	0.6000	0.6000
T32	79	LDF4-50A(1/2)	61.00 - 81.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T32	80	LDF6-50A(1-1/4)	61.00 - 81.00	0.6000	0.6000
T32	81	LDF5-50A(7/8")	61.00 - 81.00	0.6000	0.6000
T32	82	HCC312-50J(3-1/2")	61.00 - 81.00	0.6000	0.6000
T32	83	LDF7-50A(1-5/8")	61.00 - 75.00	0.6000	0.6000
T32	85	CU12PSM6P4XXX(1-3/4)	61.00 - 81.00	0.6000	0.6000
T33	1	HB158-1-08U8-S8J18(1-5/8)	41.00 - 61.00	0.6000	0.6000
T33	2	LCF78-50A(7/8")	41.00 - 61.00	0.6000	0.6000
T33	3	LDF5-50A(7/8")	41.00 - 61.00	0.6000	0.6000
T33	5	HB158-1-08U8-S8J18(1-5/8)	41.00 - 61.00	0.6000	0.6000
T33	6	LDF4-50A(1/2")	41.00 - 61.00	0.6000	0.6000
T33	7	CAT6(1/4)	41.00 - 61.00	0.6000	0.6000
T33	8	760178129(1/4)	41.00 - 61.00	0.6000	0.6000
T33	9	EW63(ELLIPTICAL)	41.00 - 61.00	0.6000	0.6000
T33	12	LCF78-50A(7/8")	41.00 - 61.00	0.6000	0.6000
T33	13	1" Rigid Conduit	41.00 - 61.00	0.6000	0.6000
T33	14	3/8" Cable (Lights)	41.00 - 61.00	0.6000	0.6000
T33	15	1/4 Coax	41.00 - 61.00	0.6000	0.6000
T33	16	1/4 Coax	41.00 - 61.00	0.6000	0.6000
T33	17	3/8" Coax	41.00 - 61.00	0.6000	0.6000
T33	18	3/8" Coax	41.00 - 61.00	0.6000	0.6000
T33	19	Banjo (6" dia, 36" step)	41.00 - 61.00	0.6000	0.6000
T33	20	Banjo (6" dia, 36" step)	41.00 - 61.00	0.6000	0.6000
T33	23	LDF5-50A(7/8")	41.00 - 61.00	0.6000	0.6000
T33	25	LDF12-50A(2-1/4")	41.00 - 61.00	0.6000	0.6000
T33	26	HJ8-50B(3")	41.00 - 61.00	0.6000	0.6000
T33	28	LDF6-50A(1 1/4")	41.00 - 61.00	0.6000	0.6000
T33	31	HJ11-50(4")	41.00 - 61.00	0.6000	0.6000
T33	32	LDF7-50A(1-5/8")	41.00 - 61.00	0.6000	0.6000
T33	33	LDF7-50A(1-5/8")	41.00 - 61.00	0.6000	0.6000
T33	34	LDF7-50A(1-5/8")	41.00 - 61.00	0.6000	0.6000
T33	37	LDF6-50A(1-1/4")	41.00 - 61.00	0.6000	0.6000
T33	38	LDF6-50A(1-1/4")	41.00 - 61.00	0.6000	0.6000
T33	39	LDF7-50A(1-5/8")	41.00 - 61.00	0.6000	0.6000
T33	40	LDF4P-50A(1/2")	41.00 - 61.00	0.6000	0.6000
T33	43	LDF4-50A(1/2")	41.00 -	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T33	44	EW63(ELLIPTICAL)	61.00 41.00 - 61.00	0.6000	0.6000
T33	45	EW52(ELLIPTICAL)	41.00 - 61.00	0.6000	0.6000
T33	51	475-000(4-1/16)	41.00 - 61.00	0.6000	0.6000
T33	53	LDF12-50(2-1/4")	41.00 - 61.00	0.6000	0.6000
T33	55	LDF5-50A(7/8")	41.00 - 61.00	0.6000	0.6000
T33	57	HJ11-50(4)	41.00 - 61.00	0.6000	0.6000
T33	63	LDF6-50A(1-1/4")	41.00 - 61.00	0.6000	0.6000
T33	71	LDF5-50A(7/8")	41.00 - 61.00	0.6000	0.6000
T33	72	LDF5-50A(7/8")	41.00 - 61.00	0.6000	0.6000
T33	73	LDF7-50A(1-5/8")	41.00 - 61.00	0.6000	0.6000
T33	75	Thin Flat Climbing Ladder	41.00 - 61.00	0.6000	0.6000
T33	76	Safety Line 3/8	41.00 - 61.00	0.6000	0.6000
T33	79	LDF4-50A(1/2)	41.00 - 61.00	0.6000	0.6000
T33	80	LDF6-50A(1-1/4)	41.00 - 61.00	0.6000	0.6000
T33	81	LDF5-50A(7/8")	41.00 - 61.00	0.6000	0.6000
T33	82	HCC312-50J(3-1/2")	41.00 - 61.00	0.6000	0.6000
T33	83	LDF7-50A(1-5/8")	41.00 - 61.00	0.6000	0.6000
T33	85	CU12PSM6P4XXX(1-3/4)	41.00 - 61.00	0.6000	0.6000
T34	1	HB158-1-08U8-S8J18(1-5/8)	20.00 - 41.00	0.6000	0.6000
T34	2	LCF78-50A(7/8")	20.00 - 41.00	0.6000	0.6000
T34	3	LDF5-50A(7/8")	20.00 - 41.00	0.6000	0.6000
T34	5	HB158-1-08U8-S8J18(1-5/8)	20.00 - 41.00	0.6000	0.6000
T34	6	LDF4-50A(1/2")	20.00 - 41.00	0.6000	0.6000
T34	7	CAT6(1/4)	20.00 - 41.00	0.6000	0.6000
T34	8	760178129(1/4)	20.00 - 41.00	0.6000	0.6000
T34	9	EW63(ELLIPTICAL)	20.00 - 41.00	0.6000	0.6000
T34	12	LCF78-50A(7/8")	20.00 - 41.00	0.6000	0.6000
T34	13	1" Rigid Conduit	20.00 - 41.00	0.6000	0.6000
T34	14	3/8" Cable (Lights)	20.00 - 41.00	0.6000	0.6000
T34	15	1/4 Coax	20.00 - 41.00	0.6000	0.6000
T34	16	1/4 Coax	20.00 - 41.00	0.6000	0.6000
T34	17	3/8" Coax	20.00 - 41.00	0.6000	0.6000
T34	18	3/8" Coax	20.00 - 41.00	0.6000	0.6000
T34	19	Banjo (6" dia, 36" step)	20.00 - 41.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T34	20	Banjo (6" dia, 36" step)	20.00 - 41.00	0.6000	0.6000
T34	23	LDF5-50A(7/8")	20.00 - 41.00	0.6000	0.6000
T34	25	LDF12-50A(2-1/4")	20.00 - 41.00	0.6000	0.6000
T34	26	HJ8-50B(3")	20.00 - 41.00	0.6000	0.6000
T34	28	LDF6-50A(1 1/4")	20.00 - 41.00	0.6000	0.6000
T34	31	HJ11-50(4")	20.00 - 41.00	0.6000	0.6000
T34	32	LDF7-50A(1-5/8")	20.00 - 41.00	0.6000	0.6000
T34	33	LDF7-50A(1-5/8")	20.00 - 41.00	0.6000	0.6000
T34	34	LDF7-50A(1-5/8")	20.00 - 41.00	0.6000	0.6000
T34	37	LDF6-50A(1-1/4")	20.00 - 41.00	0.6000	0.6000
T34	38	LDF6-50A(1-1/4")	20.00 - 41.00	0.6000	0.6000
T34	39	LDF7-50A(1-5/8")	20.00 - 41.00	0.6000	0.6000
T34	40	LDF4P-50A(1/2")	20.00 - 41.00	0.6000	0.6000
T34	43	LDF4-50A(1/2")	20.00 - 41.00	0.6000	0.6000
T34	44	EW63(ELLIPTICAL)	20.00 - 41.00	0.6000	0.6000
T34	45	EW52(ELLIPTICAL)	20.00 - 41.00	0.6000	0.6000
T34	51	475-000(4-1/16)	20.00 - 41.00	0.6000	0.6000
T34	53	LDF12-50(2-1/4")	20.00 - 41.00	0.6000	0.6000
T34	55	LDF5-50A(7/8")	20.00 - 41.00	0.6000	0.6000
T34	57	HJ11-50(4)	20.00 - 41.00	0.6000	0.6000
T34	63	LDF6-50A(1-1/4")	20.00 - 41.00	0.6000	0.6000
T34	71	LDF5-50A(7/8")	20.00 - 41.00	0.6000	0.6000
T34	72	LDF5-50A(7/8")	20.00 - 41.00	0.6000	0.6000
T34	73	LDF7-50A(1-5/8")	20.00 - 41.00	0.6000	0.6000
T34	75	Thin Flat Climbing Ladder	20.00 - 41.00	0.6000	0.6000
T34	76	Safety Line 3/8	20.00 - 41.00	0.6000	0.6000
T34	79	LDF4-50A(1/2)	20.00 - 41.00	0.6000	0.6000
T34	80	LDF6-50A(1-1/4)	20.00 - 41.00	0.6000	0.6000
T34	81	LDF5-50A(7/8")	20.00 - 41.00	0.6000	0.6000
T34	82	HCC312-50J(3-1/2")	20.00 - 41.00	0.6000	0.6000
T34	83	LDF7-50A(1-5/8")	20.00 - 41.00	0.6000	0.6000
T34	85	CU12PSM6P4XXX(1-3/4)	20.00 - 41.00	0.6000	0.6000
T35	1	HB158-1-08U8-S8J18(1-5/8)	10.00 - 20.00	0.6000	0.6000
T35	2	LCF78-50A(7/8")	10.00 - 20.00	0.6000	0.6000
T35	3	LDF5-50A(7/8")	10.00 -	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			20.00		
T35	5	HB158-1-08U8-S8J18(1-5/8)	10.00 - 20.00	0.6000	0.6000
T35	6	LDF4-50A(1/2")	10.00 - 20.00	0.6000	0.6000
T35	7	CAT6(1/4)	10.00 - 20.00	0.6000	0.6000
T35	8	760178129(1/4)	10.00 - 20.00	0.6000	0.6000
T35	9	EW63(ELLIPTICAL)	10.00 - 20.00	0.6000	0.6000
T35	12	LCF78-50A(7/8")	10.00 - 20.00	0.6000	0.6000
T35	13	1" Rigid Conduit	10.00 - 20.00	0.6000	0.6000
T35	14	3/8" Cable (Lights)	10.00 - 20.00	0.6000	0.6000
T35	15	1/4 Coax	10.00 - 20.00	0.6000	0.6000
T35	16	1/4 Coax	10.00 - 20.00	0.6000	0.6000
T35	17	3/8" Coax	10.00 - 20.00	0.6000	0.6000
T35	18	3/8" Coax	10.00 - 20.00	0.6000	0.6000
T35	19	Banjo (6" dia, 36" step)	10.00 - 20.00	0.6000	0.6000
T35	20	Banjo (6" dia, 36" step)	10.00 - 20.00	0.6000	0.6000
T35	23	LDF5-50A(7/8")	10.00 - 20.00	0.6000	0.6000
T35	25	LDF12-50A(2-1/4")	10.00 - 20.00	0.6000	0.6000
T35	26	HJ8-50B(3")	10.00 - 20.00	0.6000	0.6000
T35	28	LDF6-50A(1 1/4")	10.00 - 20.00	0.6000	0.6000
T35	31	HJ11-50(4")	10.00 - 20.00	0.6000	0.6000
T35	32	LDF7-50A(1-5/8")	10.00 - 20.00	0.6000	0.6000
T35	33	LDF7-50A(1-5/8")	10.00 - 20.00	0.6000	0.6000
T35	34	LDF7-50A(1-5/8")	10.00 - 20.00	0.6000	0.6000
T35	37	LDF6-50A(1-1/4")	10.00 - 20.00	0.6000	0.6000
T35	38	LDF6-50A(1-1/4")	10.00 - 20.00	0.6000	0.6000
T35	39	LDF7-50A(1-5/8")	10.00 - 20.00	0.6000	0.6000
T35	40	LDF4P-50A(1/2")	10.00 - 20.00	0.6000	0.6000
T35	43	LDF4-50A(1/2")	10.00 - 20.00	0.6000	0.6000
T35	44	EW63(ELLIPTICAL)	10.00 - 20.00	0.6000	0.6000
T35	45	EW52(ELLIPTICAL)	10.00 - 20.00	0.6000	0.6000
T35	51	475-000(4-1/16)	10.00 - 20.00	0.6000	0.6000
T35	53	LDF12-50(2-1/4")	10.00 - 20.00	0.6000	0.6000
T35	55	LDF5-50A(7/8")	10.00 - 20.00	0.6000	0.6000
T35	57	HJ11-50(4)	10.00 - 20.00	0.6000	0.6000
T35	63	LDF6-50A(1-1/4")	10.00 - 20.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T35	71	LDF5-50A(7/8")	10.00 - 20.00	0.6000	0.6000
T35	72	LDF5-50A(7/8")	10.00 - 20.00	0.6000	0.6000
T35	73	LDF7-50A(1-5/8")	10.00 - 20.00	0.6000	0.6000
T35	75	Thin Flat Climbing Ladder	10.00 - 20.00	0.6000	0.6000
T35	76	Safety Line 3/8	10.00 - 20.00	0.6000	0.6000
T35	79	LDF4-50A(1/2)	10.00 - 20.00	0.6000	0.6000
T35	80	LDF6-50A(1-1/4)	10.00 - 20.00	0.6000	0.6000
T35	81	LDF5-50A(7/8")	10.00 - 20.00	0.6000	0.6000
T35	82	HCC312-50J(3-1/2")	10.00 - 20.00	0.6000	0.6000
T35	83	LDF7-50A(1-5/8")	10.00 - 20.00	0.6000	0.6000
T35	85	CU12PSM6P4XXX(1-3/4)	6.71 - 20.00	0.6000	0.6000
T36	85	CU12PSM6P4XXX(1-3/4)	0.00 - 6.71	0.4019	0.1857

Antenna Pole Forces *RFS/Celwave SAA18-04A-J480-ET5R-21*

Length of Pole	Ix	Iy	Modulus E		Antenna Pole C_AA_A	Antenna Pole Weight	Length of Beacon	Beacon C_AA_A	Beacon Weight
ft	in^4	in^4	ksi		ft^2/ft	plf	ft	ft^2	K
39'6-27/32"	9547.0000	9547.0000	29000	No Ice	1.05	116.25	0'	0.00	0.00
				With Ice	1.15	142.56		0.00	0.00

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
12" x 3' Beacon	A	From Centroid-Leg	0.00 0' 41'6"	0.0000	457'	No Ice 1/2" Ice 1" Ice	1.53 2.36 2.60	1.53 2.36 2.60	0.02 0.05 0.08
3" x 6" SideLight	A	From Leg	1.00 0' 0'	0.0000	333'	No Ice 1/2" Ice 1" Ice	0.09 0.14 0.19	0.09 0.14 0.19	0.00 0.00 0.00
3" x 6" SideLight	B	From Leg	1.00 0' 0'	0.0000	333'	No Ice 1/2" Ice 1" Ice	0.09 0.14 0.19	0.09 0.14 0.19	0.00 0.00 0.00
3" x 6" SideLight	C	From Leg	1.00 0' 0'	0.0000	333'	No Ice 1/2" Ice 1" Ice	0.09 0.14 0.19	0.09 0.14 0.19	0.00 0.00 0.00
3" x 6" SideLight	A	From Leg	1.00	0.0000	215'	No Ice	0.09	0.09	0.00

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' 0'			1/2" Ice 1" Ice	0.14 0.19	0.14 0.19	0.00 0.00
3" x 6" SideLight	B	From Leg	1.00 0' 0'	0.0000	215'	No Ice 1/2" Ice 1" Ice	0.09 0.14 0.19	0.09 0.14 0.19	0.00 0.00 0.00
3" x 6" SideLight	C	From Leg	1.00 0' 0'	0.0000	215'	No Ice 1/2" Ice 1" Ice	0.09 0.14 0.19	0.09 0.14 0.19	0.00 0.00 0.00
3" x 6" SideLight	A	From Leg	1.00 0' 0'	0.0000	112'	No Ice 1/2" Ice 1" Ice	0.09 0.14 0.19	0.09 0.14 0.19	0.00 0.00 0.00
3" x 6" SideLight	B	From Leg	1.00 0' 0'	0.0000	112'	No Ice 1/2" Ice 1" Ice	0.09 0.14 0.19	0.09 0.14 0.19	0.00 0.00 0.00
3" x 6" SideLight	C	From Leg	1.00 0' 0'	0.0000	112'	No Ice 1/2" Ice 1" Ice	0.09 0.14 0.19	0.09 0.14 0.19	0.00 0.00 0.00
458 SAA18-O4A-J480-ET5R-21 w/ Mount Pipe	A	From Leg	4.00 0' 19'	0.0000	458'	No Ice 1/2" Ice 1" Ice	53.76 102.16 108.96	53.76 102.16 108.96	4.76 5.42 6.13
*** **450** (2) MXM REPEATER MK2	B	From Leg	1.00 0' 0'	-44.0000	450'	No Ice 1/2" Ice 1" Ice	1.57 1.73 1.90	0.75 0.88 1.01	0.02 0.03 0.04
(2) MXM REPEATER MK2	C	From Leg	1.00 0' 0'	15.0000	450'	No Ice 1/2" Ice 1" Ice	1.57 1.73 1.90	0.75 0.88 1.01	0.02 0.03 0.04
(2) 1.9" x 8' Pipe (Horizontal)	A	From Face	1.00 0' 0'	0.0000	450'	No Ice 1/2" Ice 1" Ice	1.52 2.07 2.62	0.03 0.05 0.09	0.02 0.03 0.06
1.9" x 8' Pipe (Horizontal)	B	From Face	1.00 0' 0'	0.0000	450'	No Ice 1/2" Ice 1" Ice	1.52 2.07 2.62	0.03 0.05 0.09	0.02 0.03 0.06
1.9" x 8' Pipe (Horizontal)	C	From Face	1.00 0' 0'	0.0000	450'	No Ice 1/2" Ice 1" Ice	1.52 2.07 2.62	0.03 0.05 0.09	0.02 0.03 0.06
Pipe Mount [PM 601-1]	B	From Leg	0.50 0' 0'	0.0000	450'	No Ice 1/2" Ice 1" Ice	1.32 1.58 1.84	1.32 1.58 1.84	0.07 0.08 0.09
Pipe Mount [PM 601-1]	C	From Leg	0.50 0' 0'	0.0000	450'	No Ice 1/2" Ice 1" Ice	1.32 1.58 1.84	1.32 1.58 1.84	0.07 0.08 0.09
*** **441** SRL-235-2	A	From Leg	6.00 0' 10'	65.0000	441'	No Ice 1/2" Ice 1" Ice	6.52 9.04 11.09	6.52 9.04 11.09	0.08 0.13 0.19
Side Arm Mount [SO 308-	A	From Leg	3.00	65.0000	441'	No Ice	0.41	3.06	0.05

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]			0' 0'			1/2" Ice 1" Ice	0.81 1.23	5.10 7.20	0.08 0.12
439									
BCD-87077	B	From Leg	6.00 0' 6'	-65.0000	439'	No Ice 1/2" Ice 1" Ice	3.06 4.27 5.49	3.06 4.27 5.49	0.03 0.05 0.08
Side Arm Mount [SO 308-1]	B	From Leg	3.00 0' 0'	-65.0000	439'	No Ice 1/2" Ice 1" Ice	0.41 0.81 1.23	3.06 5.10 7.20	0.05 0.08 0.12
***									
***									
6014-2	A	None		0.0000	393'	No Ice 1/2" Ice 1" Ice	65.00 135.00 205.00	65.00 135.00 205.00	1.09 2.39 3.69
6014-2	C	None		0.0000	388'	No Ice 1/2" Ice 1" Ice	65.00 135.00 205.00	65.00 135.00 205.00	1.09 2.39 3.69
***367**									
6828-2	C	From Leg	1.00 0' 0'	-20.0000	367'	No Ice 1/2" Ice 1" Ice	12.50 14.98 17.46	11.70 14.02 16.34	0.24 0.37 0.50
364									
DB806E-XT	A	From Leg	4.00 0' 4'	-75.0000	364'	No Ice 1/2" Ice 1" Ice	2.00 2.83 3.46	2.00 2.83 3.46	0.02 0.03 0.05
Side Arm Mount [SO 601-1]	A	From Leg	2.00 0' 0'	-75.0000	364'	No Ice 1/2" Ice 1" Ice	1.04 1.41 1.78	5.32 6.43 7.67	0.16 0.20 0.24
***									
455-6	B	From Leg	4.00 0' 10'	-35.0000	344'	No Ice 1/2" Ice 1" Ice	2.80 4.82 6.86	2.80 4.82 6.86	0.03 0.05 0.08
Side Arm Mount [SO 601-1]	B	From Leg	2.00 0' 0'	-35.0000	344'	No Ice 1/2" Ice 1" Ice	1.04 1.41 1.78	5.32 6.43 7.67	0.16 0.20 0.24
***									
BCD-87077	C	From Leg	6.00 0' 8'	90.0000	342'	No Ice 1/2" Ice 1" Ice	3.06 4.27 5.49	3.06 4.27 5.49	0.03 0.05 0.08
Side Arm Mount [SO 303-1]	C	From Leg	3.00 0' 0'	90.0000	342'	No Ice 1/2" Ice 1" Ice	1.08 1.63 2.21	5.31 7.57 9.93	0.12 0.16 0.22
AO9009-3	B	From Leg	4.00 0' 5'	90.0000	342'	No Ice 1/2" Ice 1" Ice	2.55 3.60 4.67	2.55 3.60 4.67	0.01 0.03 0.06
Side Arm Mount [SO 305-1]	B	From Leg	2.00 0' 0'	90.0000	342'	No Ice 1/2" Ice 1" Ice	0.53 0.78 1.06	1.52 2.07 2.66	0.03 0.04 0.06
455-6	A	From Leg	4.00 0' 10'	-60.0000	342'	No Ice 1/2" Ice	2.80 4.82 6.86	2.80 4.82 6.86	0.03 0.05 0.08

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			
Side Arm Mount [SO 601-1]	A	From Leg	2.00 0' 0'	-60.0000	342'	No Ice 1/2" Ice 1" Ice	1.04 1.41 1.78	5.32 6.43 7.67	0.16 0.20 0.24
***									
455-6	A	From Leg	6.00 0' 10'	-50.0000	340'	No Ice 1/2" Ice 1" Ice	2.80 4.82 6.86	2.80 4.82 6.86	0.03 0.05 0.08
Side Arm Mount [SO 308-1]	A	From Leg	3.00 0' 0'	-50.0000	340'	No Ice 1/2" Ice 1" Ice	0.41 0.81 1.23	3.06 5.10 7.20	0.05 0.08 0.12
330									
PG1N0F-0090-310	B	From Leg	6.00 0' 5'	-60.0000	330'	No Ice 1/2" Ice 1" Ice	3.00 4.03 5.03	3.00 4.03 5.03	0.03 0.05 0.08
Side Arm Mount [SO 601-1]	B	From Leg	3.00 0' 0'	-60.0000	330'	No Ice 1/2" Ice 1" Ice	1.04 1.41 1.78	5.32 6.43 7.67	0.16 0.20 0.24
328									
(3) Side Arm Mount [SO 701-1]	C	From Leg	2.00 0' 0'	-75.0000	328'	No Ice 1/2" Ice 1" Ice	0.85 1.14 1.43	1.67 2.34 3.01	0.07 0.08 0.09
326									
DB201-A	A	From Leg	6.00 0' 3'	0.0000	326'	No Ice 1/2" Ice 1" Ice	1.10 1.98 2.86	1.10 1.98 2.86	0.03 0.03 0.04
Side Arm Mount [SO 602-1]	A	From Leg	3.00 0' 0'	0.0000	326'	No Ice 1/2" Ice 1" Ice	2.58 3.39 4.18	10.83 13.16 15.84	0.15 0.22 0.31
**325									
DB408	A	From Leg	6.00 0' 0'	0.0000	325'	No Ice 1/2" Ice 1" Ice	1.90 3.42 4.94	1.90 3.42 4.94	0.02 0.02 0.03
Side Arm Mount [SO 303-1]	A	From Leg	3.00 0' 0'	0.0000	325'	No Ice 1/2" Ice 1" Ice	1.08 1.63 2.21	5.31 7.57 9.93	0.12 0.16 0.22
322									
SRL310C-4HD	B	From Leg	6.00 0' 5'	0.0000	322'	No Ice 1/2" Ice 1" Ice	1.14 2.09 3.04	1.14 2.09 3.04	0.01 0.03 0.04
Side Arm Mount [SO 308-1]	B	From Leg	3.00 0' 0'	0.0000	322'	No Ice 1/2" Ice 1" Ice	0.41 0.81 1.23	3.06 5.10 7.20	0.05 0.08 0.12
Pipe Mount [PM 601-1]	A	From Leg	0.50 0' 0'	0.0000	322'	No Ice 1/2" Ice 1" Ice	1.32 1.58 1.84	1.32 1.58 1.84	0.07 0.08 0.09
***									
6014-2	A	None		0.0000	316'	No Ice 1/2" Ice 1" Ice	65.00 135.00 205.00	65.00 135.00 205.00	1.09 2.39 3.69
6014-2	A	None		0.0000	306'	No Ice	65.00	65.00	1.09

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
						1/2" Ice	135.00	135.00	2.39
						1" Ice	205.00	205.00	3.69
***									
284									
DB404-B w/ Mount Pipe	A	From Leg	0.50 0' 0'	-15.0000	284'	No Ice	4.13	4.13	0.05
						1/2" Ice	5.67	5.67	0.10
						1" Ice	6.38	6.38	0.16
277									
BMR10-A-B1	B	From Leg	1.00 0' 6'	-45.0000	277'	No Ice	8.60	8.60	0.06
						1/2" Ice	9.90	9.90	0.11
						1" Ice	11.20	11.20	0.18
264									
ANT150F6	A	From Leg	6.00 0' 9'	-15.0000	264'	No Ice	4.80	4.80	0.03
						1/2" Ice	6.83	6.83	0.07
						1" Ice	8.87	8.87	0.11
Side Arm Mount [SO 303-1]	A	From Leg	3.00 0' 0'	-15.0000	264'	No Ice	1.08	5.31	0.12
						1/2" Ice	1.63	7.57	0.16
						1" Ice	2.21	9.93	0.22
255									
DB809KT3E-Y	B	From Leg	3.00 0' 6'	-75.0000	255'	No Ice	3.39	3.39	0.03
						1/2" Ice	4.55	4.55	0.05
						1" Ice	5.73	5.73	0.09
Side Arm Mount [SO 203-1]	B	From Leg	1.50 0' 0'	-75.0000	255'	No Ice	1.78	3.79	0.13
						1/2" Ice	2.24	4.47	0.15
						1" Ice	2.75	5.21	0.19
247									
APXVAARR24_43-U-NA20 w/ Mount Pipe	A	From Leg	4.00 -5' 0'	75.0000	247'	No Ice	14.69	6.87	0.19
						1/2" Ice	15.46	7.55	0.31
						1" Ice	16.23	8.25	0.46
APXVAARR24_43-U-NA20 w/ Mount Pipe	B	From Leg	4.00 -5' 0'	55.0000	247'	No Ice	14.69	6.87	0.19
						1/2" Ice	15.46	7.55	0.31
						1" Ice	16.23	8.25	0.46
APXVAARR24_43-U-NA20 w/ Mount Pipe	C	From Leg	4.00 -5' 0'	90.0000	247'	No Ice	14.69	6.87	0.19
						1/2" Ice	15.46	7.55	0.31
						1" Ice	16.23	8.25	0.46
AIR6449 B41_T-MOBILE w/ Mount Pipe	A	From Leg	4.00 0' 1'	75.0000	247'	No Ice	5.19	2.71	0.13
						1/2" Ice	5.59	3.04	0.17
						1" Ice	6.02	3.38	0.23
AIR6449 B41_T-MOBILE w/ Mount Pipe	B	From Leg	4.00 0' 1'	55.0000	247'	No Ice	5.19	2.71	0.13
						1/2" Ice	5.59	3.04	0.17
						1" Ice	6.02	3.38	0.23
AIR6449 B41_T-MOBILE w/ Mount Pipe	C	From Leg	4.00 0' 1'	90.0000	247'	No Ice	5.19	2.71	0.13
						1/2" Ice	5.59	3.04	0.17
						1" Ice	6.02	3.38	0.23
AIR 32 B2A B66AA_T-MOBILE w/ Mount Pipe	A	From Leg	4.00 5' 0'	75.0000	247'	No Ice	3.76	3.15	0.19
						1/2" Ice	4.12	3.49	0.25
						1" Ice	4.48	3.84	0.32
AIR 32 B2A B66AA_T-MOBILE w/ Mount Pipe	B	From Leg	4.00 5' 0'	55.0000	247'	No Ice	3.76	3.15	0.19
						1/2" Ice	4.12	3.49	0.25
						1" Ice	4.48	3.84	0.32

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
AIR 32 B2A B66AA_T-MOBILE w/ Mount Pipe	C	From Leg	4.00 5' 0'	90.0000	247'	No Ice 1/2" Ice 1" Ice	3.76 4.12 4.48	3.15 3.49 3.84	0.19 0.25 0.32
RADIO 4449 B12/B71	A	From Leg	4.00 -5' 0'	75.0000	247'	No Ice 1/2" Ice 1" Ice	1.65 1.81 1.98	1.16 1.30 1.45	0.07 0.09 0.11
RADIO 4449 B12/B71	B	From Leg	4.00 -5' 0'	55.0000	247'	No Ice 1/2" Ice 1" Ice	1.65 1.81 1.98	1.16 1.30 1.45	0.07 0.09 0.11
RADIO 4449 B12/B71	C	From Leg	4.00 -5' 0'	90.0000	247'	No Ice 1/2" Ice 1" Ice	1.65 1.81 1.98	1.16 1.30 1.45	0.07 0.09 0.11
KRY 112 144/2	A	From Leg	4.00 -5' 0'	75.0000	247'	No Ice 1/2" Ice 1" Ice	0.48 0.57 0.66	0.23 0.30 0.38	0.01 0.01 0.02
KRY 112 144/2	B	From Leg	4.00 -5' 0'	55.0000	247'	No Ice 1/2" Ice 1" Ice	0.48 0.57 0.66	0.23 0.30 0.38	0.01 0.01 0.02
KRY 112 144/2	C	From Leg	4.00 -5' 0'	90.0000	247'	No Ice 1/2" Ice 1" Ice	0.48 0.57 0.66	0.23 0.30 0.38	0.01 0.01 0.02
RRUS 4415 B25_CCIV2	A	From Leg	4.00 0' 0'	75.0000	247'	No Ice 1/2" Ice 1" Ice	1.84 2.01 2.19	0.82 0.94 1.07	0.05 0.06 0.08
RRUS 4415 B25_CCIV2	B	From Leg	4.00 0' 0'	55.0000	247'	No Ice 1/2" Ice 1" Ice	1.84 2.01 2.19	0.82 0.94 1.07	0.05 0.06 0.08
RRUS 4415 B25_CCIV2	C	From Leg	4.00 0' 0'	90.0000	247'	No Ice 1/2" Ice 1" Ice	1.84 2.01 2.19	0.82 0.94 1.07	0.05 0.06 0.08
SDX1926Q-43	A	From Leg	4.00 5' 0'	75.0000	247'	No Ice 1/2" Ice 1" Ice	0.24 0.31 0.38	0.10 0.14 0.19	0.01 0.01 0.01
SDX1926Q-43	B	From Leg	4.00 5' 0'	55.0000	247'	No Ice 1/2" Ice 1" Ice	0.24 0.31 0.38	0.10 0.14 0.19	0.01 0.01 0.01
SDX1926Q-43	C	From Leg	4.00 5' 0'	90.0000	247'	No Ice 1/2" Ice 1" Ice	0.24 0.31 0.38	0.10 0.14 0.19	0.01 0.01 0.01
Sector Mount [SM 503-3]	C	None		0.0000	247'	No Ice 1/2" Ice 1" Ice	30.43 43.02 55.43	30.43 43.02 55.43	1.69 2.30 3.10
230									
(2) JAHH-65B-R3B w/ Mount Pipe	A	From Leg	4.00 0' 2'	-65.0000	230'	No Ice 1/2" Ice 1" Ice	5.50 5.97 6.45	4.38 4.84 5.30	0.10 0.17 0.25
(2) JAHH-65B-R3B w/ Mount Pipe	B	From Leg	4.00 0' 2'	-65.0000	230'	No Ice 1/2" Ice 1" Ice	5.50 5.97 6.45	4.38 4.84 5.30	0.10 0.17 0.25

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) JAHH-65B-R3B w/ Mount Pipe	C	From Leg	4.00 0' 2'	-65.0000	230'	No Ice 1/2" Ice 1" Ice	5.50 5.97 6.45	4.38 4.84 5.30	0.10 0.17 0.25
Sub6 Antenna - VZS01 w/ Mount Pipe	A	From Leg	4.00 -2' 2'	-65.0000	230'	No Ice 1/2" Ice 1" Ice	4.92 5.26 5.62	2.69 3.15 3.63	0.10 0.14 0.19
Sub6 Antenna - VZS01 w/ Mount Pipe	B	From Leg	4.00 -2' 2'	-65.0000	230'	No Ice 1/2" Ice 1" Ice	4.92 5.26 5.62	2.69 3.15 3.63	0.10 0.14 0.19
Sub6 Antenna - VZS01 w/ Mount Pipe	C	From Leg	4.00 -2' 2'	-65.0000	230'	No Ice 1/2" Ice 1" Ice	4.92 5.26 5.62	2.69 3.15 3.63	0.10 0.14 0.19
LNX-8513DS-VTM w/ Mount Pipe	A	From Leg	4.00 2' 2'	-65.0000	230'	No Ice 1/2" Ice 1" Ice	4.09 4.49 4.89	3.30 3.68 4.06	0.07 0.13 0.20
LNX-8513DS-VTM w/ Mount Pipe	B	From Leg	4.00 2' 2'	-65.0000	230'	No Ice 1/2" Ice 1" Ice	4.09 4.49 4.89	3.30 3.68 4.06	0.07 0.13 0.20
LNX-6514DS-VTM w/ Mount Pipe	C	From Leg	4.00 2' 2'	-65.0000	230'	No Ice 1/2" Ice 1" Ice	4.09 4.49 4.89	3.30 3.68 4.06	0.06 0.13 0.20
RRFDC-3315-PF-48	B	From Leg	4.00 2' 2'	-65.0000	230'	No Ice 1/2" Ice 1" Ice	3.36 3.60 3.84	2.19 2.39 2.61	0.03 0.06 0.09
RRFDC-3315-PF-48	B	From Leg	4.00 -6' 8'	-65.0000	230'	No Ice 1/2" Ice 1" Ice	3.36 3.60 3.84	2.19 2.39 2.61	0.03 0.06 0.09
CBC78T-DS-43-2X	A	From Leg	4.00 -6' 2'	-65.0000	230'	No Ice 1/2" Ice 1" Ice	0.37 0.45 0.53	0.51 0.60 0.70	0.02 0.03 0.04
CBC78T-DS-43-2X	B	From Leg	4.00 -6' 2'	-65.0000	230'	No Ice 1/2" Ice 1" Ice	0.37 0.45 0.53	0.51 0.60 0.70	0.02 0.03 0.04
CBC78T-DS-43-2X	C	From Leg	4.00 -6' 2'	-65.0000	230'	No Ice 1/2" Ice 1" Ice	0.37 0.45 0.53	0.51 0.60 0.70	0.02 0.03 0.04
RFV01U-D1A	A	From Leg	4.00 -2' 2'	-65.0000	230'	No Ice 1/2" Ice 1" Ice	1.88 2.05 2.22	1.25 1.39 1.54	0.08 0.10 0.12
RFV01U-D1A	B	From Leg	4.00 -2' 2'	-65.0000	230'	No Ice 1/2" Ice 1" Ice	1.88 2.05 2.22	1.25 1.39 1.54	0.08 0.10 0.12
RFV01U-D1A	C	From Leg	4.00 -2' 2'	-65.0000	230'	No Ice 1/2" Ice 1" Ice	1.88 2.05 2.22	1.25 1.39 1.54	0.08 0.10 0.12
RFV01U-D2A	A	From Leg	4.00 6' 2'	-65.0000	230'	No Ice 1/2" Ice 1" Ice	1.88 2.05 2.22	1.01 1.14 1.28	0.07 0.09 0.11
RFV01U-D2A	B	From Leg	4.00	-65.0000	230'	No Ice	1.88	1.01	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
			6' 2'			1/2" Ice 1" Ice	2.05 2.22	1.14 1.28	0.09 0.11
RFV01U-D2A	C	From Leg	4.00 6' 2'	-65.0000	230'	No Ice 1/2" Ice 1" Ice	1.88 2.05 2.22	1.01 1.14 1.28	0.07 0.09 0.11
Sector Mount [SM 407-3]	C	None		0.0000	230'	No Ice 1/2" Ice 1" Ice	20.42 30.23 40.13	20.42 30.23 40.13	0.96 1.36 1.91
*** *** **200**									
DFPD1-52 w/ Mount Pipe	C	From Leg	1.00 0' 0'	45.0000	200'	No Ice 1/2" Ice 1" Ice	1.63 1.84 2.07	0.93 1.17 1.43	0.02 0.04 0.06
188									
BMYD745K	A	From Leg	1.00 0' 0'	-90.0000	188'	No Ice 1/2" Ice 1" Ice	1.70 2.00 2.30	1.70 2.00 2.30	0.03 0.04 0.04
186									
ASP-960	A	From Leg	0.50 0' 0'	-90.0000	186'	No Ice 1/2" Ice 1" Ice	1.92 3.46 4.99	1.92 3.46 4.99	0.00 0.01 0.01
178									
12"x12"x3" TMA	C	From Leg	0.50 0' 0'	0.0000	178'	No Ice 1/2" Ice 1" Ice	1.20 1.34 1.48	0.32 0.40 0.49	0.02 0.02 0.03
1.9" x 5.5' Pipe (Horizontal)	B	From Leg	0.00 -2' 0'	0.0000	150'	No Ice 1/2" Ice 1" Ice	1.04 1.43 1.81	0.03 0.05 0.09	0.01 0.02 0.04
**									
MX08FRO665-21 w/ Mount Pipe	A	From Leg	4.00 0' 0'	0.0000	186'	No Ice 1/2" Ice 1" Ice	8.01 8.52 9.04	4.23 4.69 5.16	0.11 0.19 0.29
MX08FRO665-21 w/ Mount Pipe	B	From Leg	4.00 0' 0'	0.0000	186'	No Ice 1/2" Ice 1" Ice	8.01 8.52 9.04	4.23 4.69 5.16	0.11 0.19 0.29
MX08FRO665-21 w/ Mount Pipe	C	From Leg	4.00 0' 0'	0.0000	186'	No Ice 1/2" Ice 1" Ice	8.01 8.52 9.04	4.23 4.69 5.16	0.11 0.19 0.29
TA08025-B605	A	From Leg	4.00 0' 0'	0.0000	186'	No Ice 1/2" Ice 1" Ice	1.96 2.14 2.32	1.13 1.27 1.41	0.08 0.09 0.11
TA08025-B605	B	From Leg	4.00 0' 0'	0.0000	186'	No Ice 1/2" Ice 1" Ice	1.96 2.14 2.32	1.13 1.27 1.41	0.08 0.09 0.11
TA08025-B605	C	From Leg	4.00 0' 0'	0.0000	186'	No Ice 1/2" Ice 1" Ice	1.96 2.14 2.32	1.13 1.27 1.41	0.08 0.09 0.11
TA08025-B604	A	From Leg	4.00 0' 0'	0.0000	186'	No Ice 1/2" Ice	1.96 2.14 2.32	0.98 1.11 1.25	0.06 0.08 0.10

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						1" Ice			
TA08025-B604	B	From Leg	4.00 0' 0'	0.0000	186'	No Ice 1/2" Ice 1" Ice	1.96 2.14 2.32	0.98 1.11 1.25	0.06 0.08 0.10
TA08025-B604	C	From Leg	4.00 0' 0'	0.0000	186'	No Ice 1/2" Ice 1" Ice	1.96 2.14 2.32	0.98 1.11 1.25	0.06 0.08 0.10
RDIDC-9181-PF-48	B	From Leg	4.00 0' 0'	0.0000	186'	No Ice 1/2" Ice 1" Ice	2.31 2.50 2.70	1.29 1.45 1.61	0.02 0.04 0.06
(2) 8' x 2'' Mount Pipe	A	From Leg	4.00 0' 0'	0.0000	186'	No Ice 1/2" Ice 1" Ice	1.90 2.73 3.40	1.90 2.73 3.40	0.03 0.04 0.06
(2) 8' x 2'' Mount Pipe	B	From Leg	4.00 0' 0'	0.0000	186'	No Ice 1/2" Ice 1" Ice	1.90 2.73 3.40	1.90 2.73 3.40	0.03 0.04 0.06
(2) 8' x 2'' Mount Pipe	C	From Leg	4.00 0' 0'	0.0000	186'	No Ice 1/2" Ice 1" Ice	1.90 2.73 3.40	1.90 2.73 3.40	0.03 0.04 0.06
Commscope MTC3975083 (3)	C	None		0.0000	186'	No Ice 1/2" Ice 1" Ice	23.85 34.12 44.39	23.85 34.12 44.39	1.26 1.80 2.35
146									
Pipe Mount [PM 601-1]	B	From Leg	0.50 0' 0'	0.0000	146'	No Ice 1/2" Ice 1" Ice	1.32 1.58 1.84	1.32 1.58 1.84	0.07 0.08 0.09
136									
CSI-AY/809-960/11	B	From Leg	1.50 0' 0'	5.0000	136'	No Ice 1/2" Ice 1" Ice	0.16 0.50 0.84	0.21 0.69 1.17	0.01 0.01 0.02
2.4" Dia x 8-ft Mount Pipe	B	From Leg	0.67 0' 0'	0.0000	136'	No Ice 1/2" Ice 1" Ice	1.90 2.73 3.40	1.90 2.73 3.40	0.03 0.04 0.06
133									
220-5	A	From Leg	6.00 0' 10'	-75.0000	133'	No Ice 1/2" Ice 1" Ice	3.40 5.42 7.46	3.40 5.42 7.46	0.02 0.05 0.09
Side Arm Mount [SO 601-1]	A	From Leg	3.00 0' 0'	-75.0000	133'	No Ice 1/2" Ice 1" Ice	1.04 1.41 1.78	5.32 6.43 7.67	0.16 0.20 0.24
DB264-A	C	From Leg	2.00 0' 9'	-35.0000	133'	No Ice 1/2" Ice 1" Ice	3.16 5.69 8.22	3.16 5.69 8.22	0.04 0.05 0.06
Side Arm Mount [SO 202-1]	C	From Leg	1.00 0' 0'	-35.0000	133'	No Ice 1/2" Ice 1" Ice	1.78 2.24 2.75	2.97 3.57 4.19	0.11 0.13 0.16
***									
***109**									
PD1132-D	B	From Leg	2.00 0' 4'	65.0000	109'	No Ice 1/2" Ice	24.89 25.85 26.81	24.89 25.85 26.81	0.11 0.28 0.46

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			
Side Arm Mount [SO 202-1]	B	From Leg	1.00 0' 0'	65.0000	109'	No Ice 1/2" Ice 1" Ice	1.78 2.24 2.75	2.97 3.57 4.19	0.11 0.13 0.16
108									
2.4" Dia x 4-ft Mount Pipe	C	From Leg	0.50 0' 0'	0.0000	108'	No Ice 1/2" Ice 1" Ice	0.87 1.12 1.37	0.87 1.12 1.37	0.01 0.02 0.03
***									
***									
PTP 900-13 w/ Mount Pipe	C	From Leg	2.00 0' 0'	35.0000	99'	No Ice 1/2" Ice 1" Ice	2.09 2.36 2.64	0.77 0.95 1.14	0.02 0.03 0.05
***									
CSI-AY/809-960/11	C	From Leg	2.00 0' -8'	-35.0000	62'	No Ice 1/2" Ice 1" Ice	0.16 0.50 0.84	0.21 0.69 1.17	0.01 0.01 0.02
(2) Side Arm Mount [SO 601-1]	C	From Leg	1.00 0' 0'	0.0000	62'	No Ice 1/2" Ice 1" Ice	1.04 1.41 1.78	5.32 6.43 7.67	0.16 0.20 0.24
***									
(2) PL6" x 0.5"	A	From Face	0.00 0' 0'	0.0000	258'6"	No Ice 1/2" Ice 1" Ice	9.40 10.75 12.10	0.01 0.02 0.03	0.12 0.15 0.18
(2) PL6" x 0.5"	B	From Face	0.00 0' 0'	0.0000	258'6"	No Ice 1/2" Ice 1" Ice	9.40 10.75 12.10	0.01 0.02 0.03	0.12 0.15 0.18
(2) PL6" x 0.5"	C	From Face	0.00 0' 0'	0.0000	258'6"	No Ice 1/2" Ice 1" Ice	9.40 10.75 12.10	0.01 0.02 0.03	0.12 0.15 0.18
** * *									

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight K
USX6-6W-6GR	B	Paraboloid w/Shroud (HP)	From Leg	1.00 0' 0'	-44.0000		450'	6.00	No Ice 1/2" Ice 1" Ice	28.27 29.07 29.86	0.20 0.35 0.50
USX6-6W-6GR	C	Paraboloid w/Shroud (HP)	From Leg	1.00 0' 0'	15.0000		450'	6.00	No Ice 1/2" Ice 1" Ice	28.27 29.07 29.86	0.20 0.35 0.50
SPD3-5.8	A	Paraboloid w/Radome	From Leg	1.00 0' 0'	-15.0000		322'	3.00	No Ice 1/2" Ice 1" Ice	7.07 7.47 7.86	0.04 0.07 0.11
P-9A72GN-U	C	Grid	From	0.50	45.0000		206'	6.00	No Ice	28.27	0.11

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight K
			Leg	0'					1/2" Ice	29.05	0.26
				0'					1" Ice	35.50	0.41
SPD4-5.2	C	Paraboloid w/Radome	From Leg	1.00	35.0000		178'	4.00	No Ice	12.57	0.00
				0'					1/2" Ice	13.10	0.00
				0'					1" Ice	13.62	0.00
HPX6-65-P3A	B	Paraboloid w/Shroud (HP)	From Leg	1.00	-15.0000		150'	6.46	No Ice	32.76	0.36
				0'					1/2" Ice	33.61	0.53
				0'					1" Ice	34.46	0.70
PL6-65-PXA	B	Paraboloid w/o Radome	From Leg	1.00	-65.0000		146'	6.36	No Ice	31.75	0.16
				0'					1/2" Ice	32.59	0.30
				0'					1" Ice	33.43	0.50
CM 4228HD	B	Grid	From Leg	1.00	-35.0000		140'	3.55	No Ice	9.90	0.04
				0'					1/2" Ice	10.37	0.09
				0'					1" Ice	10.84	0.06
CM 4228HD	B	Grid	From Leg	1.00	-5.0000		136'	3.55	No Ice	9.90	0.04
				0'					1/2" Ice	10.37	0.09
				-1'					1" Ice	10.84	0.06
MGA2-16N	B	Grid	From Leg	0.67	-15.0000		136'	2.00	No Ice	3.14	0.02
				0'					1/2" Ice	3.41	0.04
				2'					1" Ice	3.68	0.06
MGAR3-23N	B	Grid	From Leg	0.67	5.0000		136'	3.38	No Ice	9.00	0.03
				0'					1/2" Ice	9.45	0.08
				-2'					1" Ice	9.90	0.13
P-9A48GN-U	C	Grid	From Leg	1.00	-75.0000		117'	4.00	No Ice	10.10	0.11
				0'					1/2" Ice	13.09	0.18
				0'					1" Ice	16.08	0.25
SSH-9A72GN	C	Grid	From Leg	1.00	0.0000		108'	2.84	No Ice	6.35	0.04
				0'					1/2" Ice	6.73	0.13
				0'					1" Ice	7.11	0.22
SPD2-5.8	B	Paraboloid w/Shroud (HP)	From Leg	1.00	-15.0000		99'	2.00	No Ice	3.14	0.02
				0'					1/2" Ice	3.41	0.04
				0'					1" Ice	3.68	0.06
P-9A48GN-U	C	Grid	From Leg	2.00	-35.0000		62'	4.00	No Ice	10.10	0.11
				0'					1/2" Ice	13.09	0.18
				6'					1" Ice	16.08	0.25
SSH-9A72GN	C	Grid	From Leg	2.00	-75.0000		62'	6.00	No Ice	28.27	0.11
				0'					1/2" Ice	29.07	0.26
				-1'					1" Ice	29.86	0.41

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2D+1.0W (pattern 1) 0 deg - No Ice+1.0 Guy
3	1.2D+1.0W (pattern 2) 0 deg - No Ice+1.0 Guy
4	1.2D+1.0W (pattern 3) 0 deg - No Ice+1.0 Guy
5	1.2D+1.0W (pattern 1) 30 deg - No Ice+1.0 Guy
6	1.2D+1.0W (pattern 2) 30 deg - No Ice+1.0 Guy
7	1.2D+1.0W (pattern 3) 30 deg - No Ice+1.0 Guy
8	1.2D+1.0W (pattern 1) 60 deg - No Ice+1.0 Guy
9	1.2D+1.0W (pattern 2) 60 deg - No Ice+1.0 Guy
10	1.2D+1.0W (pattern 3) 60 deg - No Ice+1.0 Guy
11	1.2D+1.0W (pattern 1) 90 deg - No Ice+1.0 Guy
12	1.2D+1.0W (pattern 2) 90 deg - No Ice+1.0 Guy
13	1.2D+1.0W (pattern 3) 90 deg - No Ice+1.0 Guy
14	1.2D+1.0W (pattern 1) 120 deg - No Ice+1.0 Guy
15	1.2D+1.0W (pattern 2) 120 deg - No Ice+1.0 Guy
16	1.2D+1.0W (pattern 3) 120 deg - No Ice+1.0 Guy
17	1.2D+1.0W (pattern 1) 150 deg - No Ice+1.0 Guy
18	1.2D+1.0W (pattern 2) 150 deg - No Ice+1.0 Guy
19	1.2D+1.0W (pattern 3) 150 deg - No Ice+1.0 Guy
20	1.2D+1.0W (pattern 1) 180 deg - No Ice+1.0 Guy
21	1.2D+1.0W (pattern 2) 180 deg - No Ice+1.0 Guy

Comb. No.	Description
22	1.2D+1.0W (pattern 3) 180 deg - No Ice+1.0 Guy
23	1.2D+1.0W (pattern 1) 210 deg - No Ice+1.0 Guy
24	1.2D+1.0W (pattern 2) 210 deg - No Ice+1.0 Guy
25	1.2D+1.0W (pattern 3) 210 deg - No Ice+1.0 Guy
26	1.2D+1.0W (pattern 1) 240 deg - No Ice+1.0 Guy
27	1.2D+1.0W (pattern 2) 240 deg - No Ice+1.0 Guy
28	1.2D+1.0W (pattern 3) 240 deg - No Ice+1.0 Guy
29	1.2D+1.0W (pattern 1) 270 deg - No Ice+1.0 Guy
30	1.2D+1.0W (pattern 2) 270 deg - No Ice+1.0 Guy
31	1.2D+1.0W (pattern 3) 270 deg - No Ice+1.0 Guy
32	1.2D+1.0W (pattern 1) 300 deg - No Ice+1.0 Guy
33	1.2D+1.0W (pattern 2) 300 deg - No Ice+1.0 Guy
34	1.2D+1.0W (pattern 3) 300 deg - No Ice+1.0 Guy
35	1.2D+1.0W (pattern 1) 330 deg - No Ice+1.0 Guy
36	1.2D+1.0W (pattern 2) 330 deg - No Ice+1.0 Guy
37	1.2D+1.0W (pattern 3) 330 deg - No Ice+1.0 Guy
38	1.2 Dead+1.0 Ice+1.0 Temp+Guy
39	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp+1.0 Guy
40	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp+1.0 Guy
41	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp+1.0 Guy
42	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp+1.0 Guy
43	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp+1.0 Guy
44	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp+1.0 Guy
45	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp+1.0 Guy
46	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp+1.0 Guy
47	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp+1.0 Guy
48	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp+1.0 Guy
49	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp+1.0 Guy
50	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp+1.0 Guy
51	Dead+Wind 0 deg - Service+Guy
52	Dead+Wind 30 deg - Service+Guy
53	Dead+Wind 60 deg - Service+Guy
54	Dead+Wind 90 deg - Service+Guy
55	Dead+Wind 120 deg - Service+Guy
56	Dead+Wind 150 deg - Service+Guy
57	Dead+Wind 180 deg - Service+Guy
58	Dead+Wind 210 deg - Service+Guy
59	Dead+Wind 240 deg - Service+Guy
60	Dead+Wind 270 deg - Service+Guy
61	Dead+Wind 300 deg - Service+Guy
62	Dead+Wind 330 deg - Service+Guy

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
T1	457 - 436	Leg	Max Tension	9	30.60	0.69	-0.68
			Max. Compression	2	-50.82	-0.01	-0.73
			Max. Mx	33	22.81	1.22	0.53
			Max. My	3	-38.11	-0.00	1.23
			Max. Vy	29	2.55	0.82	0.21
			Max. Vx	26	-1.70	0.74	-0.51
		Diagonal	Max Tension	8	5.05	0.00	0.00
			Max. Compression	27	-4.49	0.00	0.00
			Max. Mx	12	1.84	0.05	0.00
			Max. My	29	-3.15	0.01	-0.01
			Max. Vy	42	-0.03	0.04	0.00
			Max. Vx	29	0.00	0.01	-0.01
		Horizontal	Max Tension	9	1.20	0.00	0.00
			Max. Compression	39	-1.33	0.00	0.00
			Max. Mx	46	-0.81	-0.05	0.00
			Max. My	11	-0.41	0.00	0.00
			Max. Vy	46	0.03	0.00	0.00
			Max. Vx	11	-0.00	0.00	0.00
		Top Girt	Max Tension	5	0.00	0.00	0.00
			Max. Compression	5	-0.00	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Mx	46	-0.00	0.14	0.00
			Max. My	11	-0.00	0.00	-0.00
			Max. Vy	46	-0.09	0.00	0.00
			Max. Vx	11	0.00	0.00	0.00
		Mid Girt	Max Tension	43	3.41	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	46	3.32	-0.05	0.00
			Max. My	11	1.75	0.00	0.00
			Max. Vy	46	0.03	0.00	0.00
			Max. Vx	11	-0.00	0.00	0.00
		Guy A	Bottom Tension	20	10.86		
			Top Tension	20	11.17		
			Top Cable Vert	20	8.72		
			Top Cable Norm	20	6.97		
			Top Cable Tan	20	0.00		
			Bot Cable Vert	20	-7.93		
			Bot Cable Norm	20	7.42		
			Bot Cable Tan	20	0.00		
		Guy B	Bottom Tension	32	11.50		
			Top Tension	32	11.81		
			Top Cable Vert	32	9.25		
			Top Cable Norm	32	7.34		
			Top Cable Tan	32	0.00		
			Bot Cable Vert	32	-8.47		
			Bot Cable Norm	32	7.79		
			Bot Cable Tan	32	0.00		
		Guy C	Bottom Tension	8	11.50		
			Top Tension	8	11.82		
			Top Cable Vert	8	9.16		
			Top Cable Norm	8	7.46		
			Top Cable Tan	8	0.00		
			Bot Cable Vert	8	-8.36		
			Bot Cable Norm	8	7.90		
			Bot Cable Tan	8	0.00		
		Pole Antenna	Max Tension	35	0.00	0.02	0.01
			Max. Compression	43	-6.56	-8.34	-4.42
			Max. Mx	29	-5.48	50.14	1.53
			Max. My	2	-5.48	-0.63	50.09
			Max. Vy	29	-2.54	50.14	1.53
			Max. Vx	2	-2.53	-0.63	50.09
			Max. Torque	12			-0.00
T2	436 - 421	Leg	Max Tension	9	51.72	-0.89	0.79
			Max. Compression	2	-70.56	-0.05	-1.13
			Max. Mx	26	-62.76	0.96	-0.81
			Max. My	2	-70.44	0.04	1.13
			Max. Vy	26	0.41	0.96	-0.81
			Max. Vx	2	0.48	0.04	1.13
		Diagonal	Max Tension	8	4.61	0.00	0.00
			Max. Compression	14	-5.52	0.00	0.00
			Max. Mx	12	2.02	0.04	0.01
			Max. My	11	-3.17	0.00	0.01
			Max. Vy	49	-0.02	0.03	-0.00
			Max. Vx	11	-0.00	0.00	0.01
		Horizontal	Max Tension	9	2.01	0.00	0.00
			Max. Compression	2	-0.91	0.00	0.00
			Max. Mx	44	1.10	-0.05	0.00
			Max. My	11	0.15	0.00	0.00
			Max. Vy	44	-0.03	0.00	0.00
			Max. Vx	11	-0.00	0.00	0.00
		Top Girt	Max Tension	9	1.50	0.00	0.00
			Max. Compression	2	-0.50	0.00	0.00
			Max. Mx	44	1.10	-0.05	0.00
			Max. My	11	0.20	0.00	0.00
			Max. Vy	44	-0.03	0.00	0.00
			Max. Vx	11	-0.00	0.00	0.00
T3	421 - 401	Leg	Max Tension	8	86.37	-1.13	0.91
			Max. Compression	2	-107.59	-0.03	-0.86
			Max. Mx	26	-92.27	1.37	-1.09
			Max. My	2	-97.58	0.06	1.61

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	26	0.55	1.37	-1.09
			Max. Vx	2	0.65	0.06	1.61
		Diagonal	Max Tension	17	5.64	0.00	0.00
			Max. Compression	26	-5.95	0.00	0.00
			Max. Mx	12	3.20	0.07	0.00
			Max. My	11	-3.58	-0.01	0.01
			Max. Vy	49	-0.03	0.04	-0.00
			Max. Vx	11	-0.00	-0.01	0.01
		Top Girt	Max Tension	9	1.11	0.00	0.00
			Max. Compression	2	-0.55	0.00	0.00
			Max. Mx	44	0.58	-0.05	0.00
			Max. My	11	0.09	0.00	0.00
			Max. Vy	44	0.03	0.00	0.00
			Max. Vx	11	-0.00	0.00	0.00
		Mid Girt	Max Tension	9	0.39	0.00	0.00
			Max. Compression	2	-0.31	0.00	0.00
			Max. Mx	44	0.14	-0.05	0.00
			Max. My	11	0.02	0.00	0.00
			Max. Vy	44	0.03	0.00	0.00
			Max. Vx	11	-0.00	0.00	0.00
T4	401 - 396	Leg	Max Tension	8	97.16	-2.19	0.29
			Max. Compression	2	-118.51	-1.54	0.08
			Max. Mx	26	-114.75	2.37	-0.32
			Max. My	11	-25.32	0.15	0.94
			Max. Vy	26	0.85	2.37	-0.32
			Max. Vx	11	0.28	0.15	0.94
		Diagonal	Max Tension	17	6.02	0.00	0.00
			Max. Compression	26	-6.29	0.00	0.00
			Max. Mx	12	-3.77	-0.04	0.01
			Max. My	14	-6.25	0.00	0.01
			Max. Vy	49	-0.02	0.02	-0.00
			Max. Vx	14	-0.00	0.00	0.01
		Top Girt	Max Tension	8	0.54	0.00	0.00
			Max. Compression	2	-0.44	0.00	0.00
			Max. Mx	46	0.13	-0.05	0.00
			Max. My	11	0.04	0.00	0.00
			Max. Vy	46	-0.03	0.00	0.00
			Max. Vx	11	-0.00	0.00	0.00
T5	396 - 391	Leg	Max Tension	8	108.65	-1.93	0.24
			Max. Compression	2	-130.78	-0.76	0.05
			Max. Mx	26	-127.53	1.93	-0.17
			Max. My	11	-26.18	0.04	1.61
			Max. Vy	8	-0.92	-1.93	0.24
			Max. Vx	11	0.77	0.04	1.61
		Diagonal	Max Tension	17	6.74	0.00	0.00
			Max. Compression	26	-7.01	0.00	0.00
			Max. Mx	12	3.44	0.05	0.00
			Max. My	11	-4.57	-0.01	0.01
			Max. Vy	49	-0.02	0.03	-0.00
			Max. Vx	11	-0.00	-0.01	0.01
T6	391 - 386	Leg	Max Tension	8	123.36	-3.45	0.26
			Max. Compression	2	-145.52	-2.84	0.10
			Max. Mx	8	123.36	-3.45	0.26
			Max. My	11	-26.98	0.09	1.43
			Max. Vy	26	1.63	3.43	-0.27
			Max. Vx	11	0.77	0.09	1.43
		Diagonal	Max Tension	17	7.99	0.00	0.00
			Max. Compression	17	-9.00	0.00	0.00
			Max. Mx	5	3.37	0.05	-0.00
			Max. My	14	-8.61	-0.00	0.02
			Max. Vy	49	-0.02	0.03	-0.00
			Max. Vx	14	-0.00	-0.00	0.02
		Top Girt	Max Tension	28	0.72	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	50	0.27	-0.05	0.00
			Max. My	11	0.37	0.00	0.00
			Max. Vy	50	0.03	0.00	0.00
			Max. Vx	11	-0.00	0.00	0.00
T7	386 - 381	Leg	Max Tension	8	137.53	-1.54	0.19

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Compression	2	-162.70	-0.56	0.03
			Max. Mx	26	-161.88	2.17	-0.14
			Max. My	11	-29.49	0.35	1.81
			Max. Vy	26	0.60	2.17	-0.14
			Max. Vx	11	0.51	0.35	1.81
		Diagonal	Max Tension	17	9.33	0.00	0.00
			Max. Compression	14	-8.66	0.00	0.00
			Max. Mx	11	5.14	0.06	0.00
			Max. My	11	-6.25	-0.03	0.02
			Max. Vy	49	-0.02	0.03	-0.00
			Max. Vx	11	-0.01	-0.03	0.02
T8	381 - 376	Leg	Max Tension	8	99.44	-1.14	0.25
			Max. Compression	2	-169.75	1.08	0.07
			Max. Mx	27	-143.61	2.06	0.25
			Max. My	6	-50.51	0.21	-1.39
			Max. Vy	3	-0.54	2.06	0.05
			Max. Vx	9	0.41	1.00	-1.35
		Diagonal	Max Tension	12	9.04	0.00	0.00
			Max. Compression	12	-7.89	0.00	0.00
			Max. Mx	11	-4.83	0.06	-0.00
			Max. My	9	-4.57	0.04	0.01
			Max. Vy	42	-0.02	0.04	0.00
			Max. Vx	9	-0.00	0.04	0.01
		Guy A	Bottom Tension	22	57.02		
			Top Tension	22	58.61		
			Top Cable Vert	22	42.29		
			Top Cable Norm	22	40.58		
			Top Cable Tan	22	0.00		
			Bot Cable Vert	22	-39.26		
			Bot Cable Norm	22	41.35		
			Bot Cable Tan	22	0.00		
		Guy B	Bottom Tension	34	58.11		
			Top Tension	34	59.67		
			Top Cable Vert	34	43.23		
			Top Cable Norm	34	41.13		
			Top Cable Tan	34	0.00		
			Bot Cable Vert	34	-40.26		
			Bot Cable Norm	34	41.91		
			Bot Cable Tan	34	0.00		
		Guy C	Bottom Tension	10	58.16		
			Top Tension	10	59.75		
			Top Cable Vert	10	42.81		
			Top Cable Norm	10	41.67		
			Top Cable Tan	10	0.00		
			Bot Cable Vert	10	-39.77		
			Bot Cable Norm	10	42.44		
			Bot Cable Tan	10	0.00		
		Top Guy Pull-Off	Max Tension	28	18.35	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	46	12.25	0.09	0.00
			Max. My	11	10.94	0.00	-0.00
			Max. Vy	46	0.06	0.00	0.00
			Max. Vx	11	0.00	0.00	0.00
T9	376 - 371	Leg	Max Tension	8	91.86	1.59	0.14
			Max. Compression	2	-159.92	1.90	0.04
			Max. Mx	27	-126.80	-2.81	-0.11
			Max. My	27	13.59	-1.43	0.69
			Max. Vy	27	-1.16	2.79	0.17
			Max. Vx	27	-0.27	-1.43	0.69
		Diagonal	Max Tension	12	7.91	0.00	0.00
			Max. Compression	12	-8.97	0.00	0.00
			Max. Mx	11	-1.38	0.06	0.00
			Max. My	12	-8.96	0.04	0.01
			Max. Vy	49	-0.02	0.04	-0.00
			Max. Vx	12	-0.00	0.04	0.01
T10	371 - 366	Leg	Max Tension	8	81.77	1.02	0.14
			Max. Compression	26	-151.94	1.05	0.20
			Max. Mx	9	50.83	-2.02	-0.08
			Max. My	6	-50.80	-0.17	-1.11

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	9	0.92	-2.02	-0.08
			Max. Vx	36	-0.64	-0.26	1.09
		Diagonal	Max Tension	12	7.97	0.00	0.00
			Max. Compression	12	-7.92	0.00	0.00
			Max. Mx	14	2.47	-0.05	0.00
			Max. My	8	-2.76	0.03	0.01
			Max. Vy	49	-0.02	0.02	-0.00
			Max. Vx	14	-0.00	0.03	0.01
		Top Girt	Max Tension	8	0.84	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	39	0.55	-0.05	0.00
			Max. My	11	0.42	0.00	0.00
			Max. Vy	39	0.03	0.00	0.00
			Max. Vx	11	-0.00	0.00	0.00
T11	366 - 361	Leg	Max Tension	8	72.93	1.02	0.19
			Max. Compression	26	-143.68	1.70	0.21
			Max. Mx	27	-98.51	2.80	0.21
			Max. My	27	-3.36	-1.43	0.87
			Max. Vy	27	-1.09	2.80	0.21
			Max. Vx	24	-0.31	-0.12	0.86
		Diagonal	Max Tension	12	7.39	0.00	0.00
			Max. Compression	12	-7.55	0.00	0.00
			Max. Mx	14	-2.63	0.06	0.00
			Max. My	11	-5.06	0.05	0.01
			Max. Vy	48	-0.02	0.04	-0.00
			Max. Vx	11	-0.00	0.05	0.01
T12	361 - 341	Leg	Max Tension	8	64.83	0.61	-0.22
			Max. Compression	26	-135.91	0.40	0.04
			Max. Mx	27	-73.34	-2.06	1.02
			Max. My	3	-73.82	-0.03	-2.28
			Max. Vy	27	-1.00	0.41	-0.24
			Max. Vx	3	-1.12	0.00	0.47
		Diagonal	Max Tension	12	6.80	-0.05	-0.00
			Max. Compression	12	-7.05	0.00	0.00
			Max. Mx	11	-0.98	0.07	-0.00
			Max. My	11	-4.76	0.06	0.01
			Max. Vy	48	-0.03	0.05	-0.00
			Max. Vx	11	-0.00	0.06	0.01
		Secondary Horizontal	Max Tension	5	0.63	0.03	-0.01
			Max. Compression	5	-0.20	0.00	0.00
			Max. Mx	5	0.63	0.03	-0.01
			Max. My	14	0.31	-0.01	-0.01
			Max. Vy	39	0.02	0.03	-0.00
			Max. Vx	14	-0.00	0.00	0.00
		Top Girt	Max Tension	8	0.65	0.00	0.00
			Max. Compression	2	-0.31	0.00	0.00
			Max. Mx	39	0.29	-0.05	0.00
			Max. My	11	0.15	0.00	0.00
			Max. Vy	39	-0.03	0.00	0.00
			Max. Vx	11	-0.00	0.00	0.00
		Mid Girt	Max Tension	32	0.39	0.00	0.00
			Max. Compression	2	-0.16	0.00	0.00
			Max. Mx	46	0.20	-0.05	0.00
			Max. My	32	-0.00	0.00	0.00
			Max. Vy	46	-0.03	0.00	0.00
			Max. Vx	32	-0.00	0.00	0.00
T13	341 - 321	Leg	Max Tension	8	37.28	0.79	-0.27
			Max. Compression	26	-111.23	0.68	-0.17
			Max. Mx	12	-23.28	-1.19	0.30
			Max. My	3	-37.69	0.03	1.23
			Max. Vy	12	-0.63	-0.06	-0.16
			Max. Vx	3	-0.51	0.03	1.23
		Diagonal	Max Tension	12	5.04	0.00	0.00
			Max. Compression	12	-5.05	0.00	0.00
			Max. Mx	11	-0.07	0.07	0.00
			Max. My	11	-3.13	0.05	0.01
			Max. Vy	43	-0.03	0.06	0.00
			Max. Vx	11	-0.00	0.05	0.01

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
		Top Girt	Max Tension	32	0.39	0.00	0.00
			Max. Compression	2	-0.08	0.00	0.00
			Max. Mx	45	0.25	-0.05	0.00
			Max. My	32	0.04	0.00	0.00
			Max. Vy	45	-0.03	0.00	0.00
			Max. Vx	32	-0.00	0.00	0.00
		Mid Girt	Max Tension	8	0.35	0.00	0.00
			Max. Compression	26	-0.08	0.00	0.00
			Max. Mx	39	0.17	-0.05	0.00
			Max. My	32	0.04	0.00	0.00
			Max. Vy	39	-0.03	0.00	0.00
			Max. Vx	32	-0.00	0.00	0.00
T14	321 - 301	Leg	Max Tension	32	19.03	-0.52	-0.02
			Max. Compression	26	-95.50	0.28	0.11
			Max. Mx	10	-55.56	0.79	-0.61
			Max. My	22	-60.02	0.05	1.05
			Max. Vy	31	0.97	0.52	0.60
			Max. Vx	22	-1.12	-0.06	-0.90
		Diagonal	Max Tension	34	3.36	0.00	0.00
			Max. Compression	16	-3.53	0.00	0.00
			Max. Mx	43	0.54	0.06	0.00
			Max. My	12	-3.25	0.01	0.01
			Max. Vy	43	-0.03	0.06	0.00
			Max. Vx	12	-0.00	0.01	0.01
		Top Girt	Max Tension	32	0.43	0.00	0.00
			Max. Compression	26	-0.12	0.00	0.00
			Max. Mx	40	0.24	-0.05	0.00
			Max. My	16	0.16	0.00	0.00
			Max. Vy	40	-0.03	0.00	0.00
			Max. Vx	16	-0.00	0.00	0.00
		Mid Girt	Max Tension	32	0.49	0.00	0.00
			Max. Compression	2	-0.16	0.00	0.00
			Max. Mx	44	0.21	-0.05	0.00
			Max. My	12	0.36	0.00	0.00
			Max. Vy	44	-0.03	0.00	0.00
			Max. Vx	12	-0.00	0.00	0.00
T15	301 - 281	Leg	Max Tension	32	19.38	0.33	0.50
			Max. Compression	26	-103.27	-0.04	0.26
			Max. Mx	10	-26.65	-1.22	0.89
			Max. My	22	-29.82	-0.08	-1.54
			Max. Vy	10	-0.51	-1.22	0.89
			Max. Vx	22	-0.66	-0.08	-1.54
		Diagonal	Max Tension	19	5.13	0.00	0.00
			Max. Compression	16	-5.35	0.00	0.00
			Max. Mx	29	2.04	0.06	-0.00
			Max. My	12	-3.78	0.05	0.01
			Max. Vy	43	-0.03	0.06	0.00
			Max. Vx	12	-0.00	0.05	0.01
		Top Girt	Max Tension	32	0.41	0.00	0.00
			Max. Compression	26	-0.08	0.00	0.00
			Max. Mx	50	0.30	-0.04	0.00
			Max. My	12	0.25	0.00	0.00
			Max. Vy	38	0.03	0.00	0.00
			Max. Vx	12	-0.00	0.00	0.00
		Mid Girt	Max Tension	32	0.34	0.00	0.00
			Max. Compression	26	-0.03	0.00	0.00
			Max. Mx	38	0.22	-0.04	0.00
			Max. My	12	0.16	0.00	0.00
			Max. Vy	38	0.03	0.00	0.00
			Max. Vx	12	-0.00	0.00	0.00
T16	281 - 276	Leg	Max Tension	32	21.86	0.22	0.47
			Max. Compression	26	-107.16	-0.44	0.52
			Max. Mx	28	-46.29	1.47	-1.02
			Max. My	4	-45.98	0.15	1.67
			Max. Vy	28	0.62	1.47	-1.02
			Max. Vx	4	0.69	0.15	1.67
		Diagonal	Max Tension	19	5.78	0.00	0.00
			Max. Compression	16	-5.72	0.00	0.00
			Max. Mx	29	-2.47	-0.05	-0.01

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. My	12	-3.83	0.01	0.01
			Max. Vy	49	-0.02	0.00	0.00
			Max. Vx	12	-0.00	0.01	0.01
		Top Girt	Max Tension	32	0.35	0.00	0.00
			Max. Compression	26	-0.11	0.00	0.00
			Max. Mx	38	0.19	-0.05	0.00
			Max. My	14	0.20	0.00	-0.00
			Max. Vy	38	0.03	0.00	0.00
			Max. Vx	14	0.00	0.00	0.00
T17	276 - 271	Leg	Max Tension	32	25.16	0.45	0.58
			Max. Compression	26	-111.19	-0.28	0.39
			Max. Mx	10	-5.91	-1.52	0.98
			Max. My	22	-8.66	-0.16	-1.84
			Max. Vy	10	-0.59	-1.52	0.98
			Max. Vx	22	-0.71	-0.16	-1.84
		Diagonal	Max Tension	19	6.33	0.00	0.00
			Max. Compression	19	-6.47	0.00	0.00
			Max. Mx	29	2.29	0.07	-0.00
			Max. My	15	-6.17	0.04	0.01
			Max. Vy	49	-0.03	0.06	-0.00
			Max. Vx	15	-0.00	0.04	0.01
T18	271 - 266	Leg	Max Tension	32	28.18	0.34	0.54
			Max. Compression	26	-116.53	-0.48	0.47
			Max. Mx	28	-71.90	1.83	-1.18
			Max. My	22	2.61	0.14	2.15
			Max. Vy	28	0.70	1.83	-1.18
			Max. Vx	22	-0.81	-0.14	-1.76
		Diagonal	Max Tension	19	7.37	0.00	0.00
			Max. Compression	19	-6.35	0.00	0.00
			Max. Mx	14	-3.27	-0.06	0.01
			Max. My	33	-5.46	-0.01	-0.01
			Max. Vy	48	-0.02	0.00	0.00
			Max. Vx	33	0.00	-0.01	-0.01
		Top Girt	Max Tension	8	0.26	0.00	0.00
			Max. Compression	26	-0.73	0.00	0.00
			Max. Mx	38	-0.10	-0.04	0.00
			Max. My	11	-0.25	0.00	-0.00
			Max. Vy	38	-0.03	0.00	0.00
			Max. Vx	11	0.00	0.00	0.00
T19	266 - 261	Leg	Max Tension	8	33.28	-0.72	0.28
			Max. Compression	26	-121.01	-0.70	0.58
			Max. Mx	28	-85.00	-1.96	1.22
			Max. My	4	-82.64	-0.16	-2.17
			Max. Vy	28	0.71	1.47	-1.09
			Max. Vx	4	0.84	0.16	1.68
		Diagonal	Max Tension	19	6.98	0.00	0.00
			Max. Compression	19	-7.71	0.00	0.00
			Max. Mx	14	3.50	0.08	0.00
			Max. My	15	-7.36	0.05	0.01
			Max. Vy	48	-0.03	0.07	-0.00
			Max. Vx	15	-0.00	0.05	0.01
T20	261 - 256	Leg	Max Tension	8	33.82	-0.71	0.69
			Max. Compression	26	-131.02	-0.40	0.52
			Max. Mx	31	10.16	-5.15	-3.13
			Max. My	25	5.87	-0.20	5.96
			Max. Vy	31	1.55	1.88	0.90
			Max. Vx	22	-1.81	-0.16	-2.47
		Diagonal	Max Tension	19	12.37	-0.11	0.00
			Max. Compression	16	-5.09	-0.06	0.01
			Max. Mx	14	-1.92	-0.22	0.01
			Max. My	12	-0.87	-0.07	0.04
			Max. Vy	14	-0.07	0.00	0.00
			Max. Vx	12	-0.01	-0.07	0.04
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	28	-5.39	0.00	0.00
			Max. Mx	38	-1.99	-0.04	0.00
			Max. My	11	-2.47	0.00	-0.00
			Max. Vy	38	-0.03	0.00	0.00
			Max. Vx	11	0.00	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T21	256 - 251	Leg	Max Tension	34	38.65	-2.61	-1.21
			Max. Compression	26	-134.66	0.45	-0.23
			Max. Mx	31	-16.13	18.99	-6.34
			Max. My	25	-18.85	0.06	-21.67
			Max. Vy	31	29.57	-10.58	-6.34
			Max. Vx	25	-33.71	0.06	12.04
		Diagonal	Max Tension	30	17.09	-0.04	0.04
			Max. Compression	11	-12.73	0.00	0.00
			Max. Mx	15	5.33	0.25	-0.01
			Max. My	12	6.01	-0.01	0.11
			Max. Vy	47	-0.08	0.22	0.02
			Max. Vx	12	0.03	-0.01	0.11
		Secondary Horizontal	Max Tension	31	23.88	-0.81	-0.07
			Max. Compression	16	-0.59	-0.70	0.09
			Max. Mx	28	20.33	-0.91	-0.07
			Max. My	10	3.22	-0.47	0.13
			Max. Vy	28	-0.34	-0.91	-0.07
			Max. Vx	10	-0.04	-0.47	0.13
		Guy A	Bottom Tension	25	60.34		
			Top Tension	25	61.24		
			Top Cable Vert	25	35.23		
			Top Cable Norm	25	50.09		
			Top Cable Tan	25	0.10		
			Bot Cable Vert	25	-33.21		
			Bot Cable Norm	25	50.38		
			Bot Cable Tan	25	0.43		
		Guy B	Bottom Tension	31	61.98		
			Top Tension	31	62.85		
			Top Cable Vert	31	36.16		
			Top Cable Norm	31	51.40		
			Top Cable Tan	31	0.08		
			Bot Cable Vert	31	-34.19		
			Bot Cable Norm	31	51.69		
			Bot Cable Tan	31	0.44		
		Guy C	Bottom Tension	13	61.12		
			Top Tension	13	62.02		
			Top Cable Vert	13	35.37		
			Top Cable Norm	13	50.95		
			Top Cable Tan	13	0.09		
			Bot Cable Vert	13	-33.33		
			Bot Cable Norm	13	51.24		
			Bot Cable Tan	13	0.44		
T22	251 - 246	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-106.99	2.82	-1.48
			Max. Mx	14	-99.71	3.18	1.48
			Max. My	2	-99.88	0.14	-3.39
			Max. Vy	14	1.75	-2.89	-1.40
			Max. Vx	2	-2.02	-0.13	3.11
		Diagonal	Max Tension	29	11.72	0.00	0.00
			Max. Compression	29	-12.82	0.02	-0.03
			Max. Mx	13	3.66	-0.17	0.01
			Max. My	12	-12.51	0.01	0.03
			Max. Vy	48	-0.06	0.00	0.00
			Max. Vx	12	-0.01	0.01	0.03
		Top Girt	Max Tension	10	0.07	0.00	0.00
			Max. Compression	28	-5.78	0.00	0.00
			Max. Mx	38	-1.91	-0.04	0.00
			Max. My	11	-2.40	0.00	-0.00
			Max. Vy	38	0.03	0.00	0.00
			Max. Vx	11	0.00	0.00	0.00
T23	246 - 241	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	39	-89.39	-0.00	0.35
			Max. Mx	14	-81.25	-2.91	-1.34
			Max. My	2	-82.10	-0.13	3.08
			Max. Vy	12	1.10	0.05	-0.03
			Max. Vx	2	-1.15	-0.13	3.08
		Diagonal	Max Tension	29	11.80	0.00	0.00
			Max. Compression	11	-10.75	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Mx	49	1.08	0.17	0.02
			Max. My	12	2.85	0.16	0.05
			Max. Vy	49	-0.07	0.17	0.02
			Max. Vx	12	-0.01	0.16	0.05
		Secondary Horizontal	Max Tension	22	0.23	-0.32	0.04
			Max. Compression	28	-0.34	0.00	0.00
			Max. Mx	16	-0.31	-0.49	0.03
			Max. My	13	0.11	-0.35	0.05
			Max. Vy	47	-0.21	-0.47	0.04
			Max. Vx	13	-0.02	-0.35	0.05
T24	241 - 221	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	12	-109.38	-1.25	-0.12
			Max. Mx	14	-42.91	-2.80	-1.24
			Max. My	2	-45.19	-0.12	2.96
			Max. Vy	14	1.10	-2.80	-1.24
			Max. Vx	2	-1.17	-0.12	2.96
		Diagonal	Max Tension	29	10.49	0.00	0.00
			Max. Compression	29	-10.80	0.00	0.00
			Max. Mx	15	-1.90	0.18	0.02
			Max. My	15	-8.07	-0.01	0.04
			Max. Vy	43	-0.07	0.18	0.01
			Max. Vx	15	-0.01	-0.01	0.04
		Top Girt	Max Tension	22	0.34	0.00	0.00
			Max. Compression	28	-0.60	0.00	0.00
			Max. Mx	38	0.06	-0.04	0.00
			Max. My	11	-0.13	0.00	-0.00
			Max. Vy	38	0.03	0.00	0.00
			Max. Vx	11	0.00	0.00	0.00
		Mid Girt	Max Tension	15	0.63	0.00	0.00
			Max. Compression	8	-0.14	0.00	0.00
			Max. Mx	38	0.29	-0.04	0.00
			Max. My	11	0.17	0.00	-0.00
			Max. Vy	38	0.03	0.00	0.00
			Max. Vx	11	0.00	0.00	0.00
T25	221 - 201	Leg	Max Tension	15	33.09	1.41	0.30
			Max. Compression	12	-144.08	-0.69	-0.43
			Max. Mx	11	-115.20	2.02	-0.49
			Max. My	20	-107.94	-0.19	1.98
			Max. Vy	11	0.77	-1.75	0.47
			Max. Vx	20	0.77	0.19	-1.74
		Diagonal	Max Tension	29	7.52	0.00	0.00
			Max. Compression	29	-7.69	0.00	0.00
			Max. Mx	12	-0.52	0.08	0.01
			Max. My	12	-6.24	-0.01	0.02
			Max. Vy	42	-0.03	0.07	0.00
			Max. Vx	12	-0.01	-0.01	0.02
		Top Girt	Max Tension	16	0.66	0.00	0.00
			Max. Compression	32	-0.01	0.00	0.00
			Max. Mx	38	0.38	-0.04	0.00
			Max. My	11	0.24	0.00	-0.00
			Max. Vy	38	0.03	0.00	0.00
			Max. Vx	11	0.00	0.00	0.00
		Mid Girt	Max Tension	16	0.64	0.00	0.00
			Max. Compression	8	-0.03	0.00	0.00
			Max. Mx	38	0.36	-0.04	0.00
			Max. My	11	0.23	0.00	-0.00
			Max. Vy	38	0.03	0.00	0.00
			Max. Vx	11	0.00	0.00	0.00
T26	201 - 181	Leg	Max Tension	14	52.39	0.83	-0.05
			Max. Compression	11	-161.86	-0.05	-0.78
			Max. Mx	11	-148.42	1.35	-0.27
			Max. My	20	-141.09	-0.17	1.28
			Max. Vy	12	-0.63	0.09	-0.34
			Max. Vx	22	-0.72	-0.21	-0.24
		Diagonal	Max Tension	11	5.06	0.00	0.00
			Max. Compression	11	-5.28	0.00	0.00
			Max. Mx	12	-2.26	0.09	0.02
			Max. My	12	-3.78	-0.02	0.02

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	48	-0.03	0.08	-0.01
			Max. Vx	12	-0.01	-0.02	0.02
		Top Girt	Max Tension	15	0.68	0.00	0.00
			Max. Compression	8	-0.08	0.00	0.00
			Max. Mx	38	0.36	-0.04	0.00
			Max. My	11	0.23	0.00	-0.00
			Max. Vy	38	0.03	0.00	0.00
			Max. Vx	11	0.00	0.00	0.00
		Mid Girt	Max Tension	15	0.60	0.00	0.00
			Max. Compression	8	-0.06	0.00	0.00
			Max. Mx	38	0.33	-0.04	0.00
			Max. My	16	0.07	0.00	-0.00
			Max. Vy	38	0.03	0.00	0.00
			Max. Vx	16	0.00	0.00	0.00
T27	181 - 161	Leg	Max Tension	14	52.25	0.21	-0.34
			Max. Compression	11	-162.72	-0.37	0.01
			Max. Mx	12	-90.61	1.14	-0.32
			Max. My	21	-140.38	0.13	1.06
			Max. Vy	12	-0.45	-0.89	0.35
			Max. Vx	22	-0.42	-0.19	-0.91
		Diagonal	Max Tension	33	4.33	0.00	0.00
			Max. Compression	33	-4.47	0.00	0.00
			Max. Mx	11	-2.65	0.09	0.01
			Max. My	15	-4.41	0.06	0.02
			Max. Vy	48	-0.03	0.08	-0.01
			Max. Vx	15	-0.01	0.06	0.02
		Top Girt	Max Tension	15	0.80	0.00	0.00
			Max. Compression	8	-0.08	0.00	0.00
			Max. Mx	38	0.47	0.09	0.00
			Max. My	16	0.11	0.00	0.00
			Max. Vy	38	-0.06	0.00	0.00
			Max. Vx	16	-0.00	0.00	0.00
		Mid Girt	Max Tension	26	0.72	0.00	0.00
			Max. Compression	32	-0.12	0.00	0.00
			Max. Mx	38	0.37	-0.04	0.00
			Max. My	15	0.05	0.00	-0.00
			Max. Vy	38	0.03	0.00	0.00
			Max. Vx	15	0.00	0.00	0.00
T28	161 - 141	Leg	Max Tension	14	42.59	-0.40	-0.87
			Max. Compression	11	-154.81	0.27	-0.23
			Max. Mx	7	-121.34	-1.56	0.58
			Max. My	22	-110.44	-0.41	-1.81
			Max. Vy	34	1.24	1.46	1.33
			Max. Vx	22	-1.06	-0.13	-0.59
		Diagonal	Max Tension	18	6.95	0.00	0.00
			Max. Compression	18	-7.14	0.00	0.00
			Max. Mx	11	-4.04	0.16	0.03
			Max. My	15	-7.03	0.10	0.05
			Max. Vy	48	-0.06	0.16	-0.01
			Max. Vx	15	-0.01	0.10	0.05
		Top Girt	Max Tension	14	0.84	0.00	0.00
			Max. Compression	32	-0.12	0.00	0.00
			Max. Mx	38	0.44	-0.04	0.00
			Max. My	15	0.07	0.00	-0.00
			Max. Vy	38	0.03	0.00	0.00
			Max. Vx	15	0.00	0.00	0.00
		Mid Girt	Max Tension	14	0.83	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	38	0.51	-0.04	0.00
			Max. My	15	0.16	0.00	-0.00
			Max. Vy	38	0.03	0.00	0.00
			Max. Vx	15	0.00	0.00	0.00
T29	141 - 121	Leg	Max Tension	26	11.13	1.39	-0.83
			Max. Compression	11	-129.05	1.25	-0.51
			Max. Mx	28	-11.31	-2.29	1.30
			Max. My	22	-86.82	-0.36	-2.51
			Max. Vy	12	-0.92	-2.19	0.16
			Max. Vx	21	-0.89	-0.35	-2.50
		Diagonal	Max Tension	15	9.13	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Compression	15	-8.95	0.00	0.00
			Max. Mx	14	-0.51	0.21	0.00
			Max. My	18	-8.15	0.10	0.09
			Max. Vy	14	-0.07	0.21	0.00
			Max. Vx	18	-0.02	0.10	0.09
		Top Girt	Max Tension	34	1.48	0.00	0.00
			Max. Compression	28	-0.31	0.00	0.00
			Max. Mx	38	0.62	-0.04	0.00
			Max. My	12	0.33	0.00	0.00
			Max. Vy	38	0.03	0.00	0.00
			Max. Vx	12	-0.00	0.00	0.00
		Mid Girt	Max Tension	34	11.25	0.00	0.00
			Max. Compression	28	-7.89	0.00	0.00
			Max. Mx	38	1.21	-0.04	0.00
			Max. My	12	0.37	0.00	0.00
			Max. Vy	38	0.03	0.00	0.00
			Max. Vx	12	-0.00	0.00	0.00
		Guy A	Bottom Tension	19	20.71		
			Top Tension	19	20.86		
			Top Cable Vert	19	7.59		
			Top Cable Norm	19	19.43		
			Top Cable Tan	19	0.03		
			Bot Cable Vert	19	-7.08		
			Bot Cable Norm	19	19.46		
			Bot Cable Tan	19	0.14		
		Guy B	Bottom Tension	31	21.27		
			Top Tension	31	21.40		
			Top Cable Vert	31	7.23		
			Top Cable Norm	31	20.14		
			Top Cable Tan	31	0.03		
			Bot Cable Vert	31	-6.72		
			Bot Cable Norm	31	20.18		
			Bot Cable Tan	31	0.15		
		Guy C	Bottom Tension	13	20.99		
			Top Tension	13	21.14		
			Top Cable Vert	13	7.22		
			Top Cable Norm	13	19.86		
			Top Cable Tan	13	0.04		
			Bot Cable Vert	13	-6.69		
			Bot Cable Norm	13	19.90		
			Bot Cable Tan	13	0.15		
		Torque Arm Top	Max Tension	33	19.41	0.00	0.00
			Max. Compression	36	-1.53	0.00	0.00
			Max. Mx	47	10.46	0.13	0.00
			Max. My	15	14.59	0.00	0.00
			Max. Vy	47	-0.07	0.00	0.00
			Max. Vx	15	-0.00	0.00	0.00
		Torque Arm Bottom	Max Tension	16	12.86	0.00	0.00
			Max. Compression	31	-22.53	0.00	0.00
			Max. Mx	47	-9.19	0.22	0.00
			Max. My	15	12.34	0.00	0.00
			Max. Vy	47	-0.07	0.00	0.00
			Max. Vx	15	-0.00	0.00	0.00
T30	121 - 101	Leg	Max Tension	26	39.54	-0.92	0.73
			Max. Compression	29	-176.38	0.15	-0.07
			Max. Mx	37	-137.33	1.82	0.55
			Max. My	22	-130.22	0.02	-2.02
			Max. Vy	37	-0.74	1.82	0.55
			Max. Vx	22	0.81	0.02	-2.02
		Diagonal	Max Tension	16	4.89	0.00	0.00
			Max. Compression	34	-5.27	0.00	0.00
			Max. Mx	14	0.92	0.08	-0.00
			Max. My	16	-3.90	-0.03	-0.01
			Max. Vy	48	-0.03	0.08	-0.00
			Max. Vx	16	-0.00	0.00	0.00
		Top Girt	Max Tension	34	5.43	0.00	0.00
			Max. Compression	28	-6.75	0.00	0.00
			Max. Mx	38	0.33	-0.04	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. My	15	3.34	0.00	0.00
			Max. Vy	38	-0.03	0.00	0.00
			Max. Vx	15	-0.00	0.00	0.00
		Mid Girt	Max Tension	40	0.52	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	38	0.50	-0.04	0.00
			Max. My	12	0.35	0.00	0.00
			Max. Vy	38	-0.03	0.00	0.00
			Max. Vx	12	-0.00	0.00	0.00
T31	101 - 81	Leg	Max Tension	26	49.37	-0.43	0.33
			Max. Compression	29	-190.81	-0.41	-0.32
			Max. Mx	34	-165.89	-1.21	-0.78
			Max. My	22	-163.94	-0.06	1.44
			Max. Vy	34	-0.47	0.98	0.67
			Max. Vx	22	0.55	0.06	-1.17
		Diagonal	Max Tension	25	2.66	0.00	0.00
			Max. Compression	25	-2.92	0.00	0.00
			Max. Mx	48	0.09	0.08	-0.00
			Max. My	26	-2.24	-0.04	0.01
			Max. Vy	48	-0.03	0.08	-0.00
			Max. Vx	26	0.00	-0.04	0.01
		Top Girt	Max Tension	26	0.89	0.00	0.00
			Max. Compression	8	-0.08	0.00	0.00
			Max. Mx	38	0.52	-0.04	0.00
			Max. My	12	0.33	0.00	0.00
			Max. Vy	38	-0.02	0.00	0.00
			Max. Vx	12	-0.00	0.00	0.00
		Mid Girt	Max Tension	26	0.95	0.00	0.00
			Max. Compression	8	-0.15	0.00	0.00
			Max. Mx	38	0.53	-0.04	0.00
			Max. My	12	0.33	0.00	0.00
			Max. Vy	38	-0.02	0.00	0.00
			Max. Vx	12	-0.00	0.00	0.00
T32	81 - 61	Leg	Max Tension	26	48.86	0.17	-0.02
			Max. Compression	29	-192.17	-0.66	-0.43
			Max. Mx	5	-183.30	0.95	-0.44
			Max. My	20	-187.63	0.04	1.03
			Max. Vy	2	-0.38	0.84	-0.34
			Max. Vx	20	-0.38	-0.04	-0.72
		Diagonal	Max Tension	26	1.79	0.00	0.00
			Max. Compression	26	-2.10	0.00	0.00
			Max. Mx	48	-0.27	0.08	-0.00
			Max. My	2	-0.93	0.03	-0.01
			Max. Vy	48	-0.03	0.08	-0.00
			Max. Vx	2	0.00	0.00	0.00
		Top Girt	Max Tension	26	0.97	0.00	0.00
			Max. Compression	8	-0.17	0.00	0.00
			Max. Mx	38	0.53	-0.04	0.00
			Max. My	12	0.34	0.00	0.00
			Max. Vy	38	-0.02	0.00	0.00
			Max. Vx	12	-0.00	0.00	0.00
		Mid Girt	Max Tension	26	0.96	0.00	0.00
			Max. Compression	8	-0.17	0.00	0.00
			Max. Mx	38	0.54	-0.04	0.00
			Max. My	12	0.34	0.00	0.00
			Max. Vy	38	-0.02	0.00	0.00
			Max. Vx	12	-0.00	0.00	0.00
T33	61 - 41	Leg	Max Tension	14	35.58	-0.76	-0.42
			Max. Compression	29	-186.95	-0.38	0.39
			Max. Mx	11	-172.63	1.46	-0.67
			Max. My	20	-170.65	0.01	1.63
			Max. Vy	8	-0.53	-1.15	0.64
			Max. Vx	20	-0.61	-0.01	-1.31
		Diagonal	Max Tension	29	3.61	0.00	0.00
			Max. Compression	29	-3.91	0.00	0.00
			Max. Mx	48	-0.40	0.08	-0.00
			Max. My	29	-3.03	0.03	0.01
			Max. Vy	48	-0.03	0.08	-0.00
			Max. Vx	29	0.00	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
		Top Girt	Max Tension	14	0.98	0.00	0.00
			Max. Compression	20	-0.20	0.00	0.00
			Max. Mx	38	0.54	-0.04	0.00
			Max. My	12	0.33	0.00	0.00
			Max. Vy	38	0.02	0.00	0.00
			Max. Vx	12	-0.00	0.00	0.00
		Mid Girt	Max Tension	26	0.89	0.00	0.00
			Max. Compression	8	-0.10	0.00	0.00
			Max. Mx	38	0.55	-0.04	0.00
			Max. My	12	0.36	0.00	0.00
			Max. Vy	38	0.02	0.00	0.00
			Max. Vx	12	-0.00	0.00	0.00
T34	41 - 20	Leg	Max Tension	14	3.96	-1.26	-0.73
			Max. Compression	29	-166.70	-0.74	0.15
			Max. Mx	14	-18.30	2.03	1.08
			Max. My	2	-19.23	0.03	-2.25
			Max. Vy	26	0.69	1.55	-0.89
			Max. Vx	2	0.78	0.00	1.74
		Diagonal	Max Tension	17	5.66	0.00	0.00
			Max. Compression	29	-5.81	0.00	0.00
			Max. Mx	48	-0.66	0.08	-0.00
			Max. My	26	-4.12	0.02	0.00
			Max. Vy	48	-0.03	0.08	-0.00
			Max. Vx	26	-0.00	0.00	0.00
		Top Girt	Max Tension	26	0.85	0.00	0.00
			Max. Compression	8	-0.01	0.00	0.00
			Max. Mx	38	0.59	-0.03	0.00
			Max. My	12	0.39	0.00	0.00
			Max. Vy	38	-0.02	0.00	0.00
			Max. Vx	12	-0.00	0.00	0.00
		Mid Girt	Max Tension	47	1.16	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	38	1.04	-0.03	0.00
			Max. My	12	0.74	0.00	0.00
			Max. Vy	38	-0.02	0.00	0.00
			Max. Vx	12	-0.00	0.00	0.00
T35	20 - 6.70833	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	45	-150.33	-0.08	0.00
			Max. Mx	28	-42.06	2.32	-0.03
			Max. My	12	-98.91	-0.27	1.63
			Max. Vy	16	-0.52	0.12	-0.03
			Max. Vx	12	-0.33	0.33	0.27
		Diagonal	Max Tension	12	1.66	-0.01	-0.00
			Max. Compression	15	-1.88	0.04	-0.00
			Max. Mx	12	-1.52	-0.13	-0.02
			Max. My	12	-1.52	-0.13	-0.02
			Max. Vy	12	-0.07	0.00	0.00
			Max. Vx	12	-0.01	0.00	0.00
		Top Girt	Max Tension	47	13.89	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	43	13.81	0.06	0.00
			Max. My	43	12.69	0.00	0.00
			Max. Vy	43	-0.04	0.00	0.00
			Max. Vx	43	0.00	0.00	0.00
T36	6.70833 - 0	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	45	-153.68	-0.61	0.00
			Max. Mx	26	-32.52	2.18	-0.02
			Max. My	12	-100.93	-1.00	-2.10
			Max. Vy	28	1.42	-1.01	0.50
			Max. Vx	12	1.46	-1.00	-2.10
		Diagonal	Max Tension	12	2.87	-0.05	0.02
			Max. Compression	33	-4.73	0.09	-0.05
			Max. Mx	49	-2.76	-0.33	-0.01
			Max. My	12	-4.66	0.08	0.05
			Max. Vy	49	-0.41	0.00	0.00
			Max. Vx	12	0.06	0.00	0.00

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Mast	Max. Vert	47	401.14	1.48	-0.94
	Max. H_x	29	282.49	9.25	-0.09
	Max. H_z	2	288.80	-0.00	9.26
	Max. M_x	1	0.00	-0.01	0.00
	Max. M_z	1	0.00	-0.01	0.00
	Max. Torsion	12	1.36	-8.34	0.12
	Min. Vert	1	199.08	-0.01	0.00
	Min. H_x	11	279.04	-9.32	-0.11
	Min. H_z	20	262.97	0.03	-8.93
	Min. M_x	1	0.00	-0.01	0.00
	Min. M_z	1	0.00	-0.01	0.00
	Min. Torsion	33	-1.21	7.26	4.11
Guy C @ 411 ft Elev -20.5 ft Azimuth 240 deg	Max. Vert	27	-2.88	-3.57	2.06
	Max. H_x	27	-2.88	-3.57	2.06
	Max. H_z	7	-77.96	-83.98	49.87
	Min. Vert	13	-79.20	-86.73	48.68
	Min. H_x	13	-79.20	-86.73	48.68
	Min. H_z	27	-2.88	-3.57	2.06
Guy B @ 394 ft Elev -13 ft Azimuth 120 deg	Max. Vert	15	-2.76	3.29	1.90
	Max. H_x	31	-81.24	87.10	48.89
	Max. H_z	37	-78.28	82.72	49.14
	Min. Vert	31	-81.24	87.10	48.89
	Min. H_x	15	-2.76	3.29	1.90
	Min. H_z	15	-2.76	3.29	1.90
Guy A @ 405 ft Elev -20 ft Azimuth 0 deg	Max. Vert	4	-2.94	0.00	-4.06
	Max. H_x	31	-43.55	2.60	-53.77
	Max. H_z	4	-2.94	0.00	-4.06
	Min. Vert	25	-78.90	1.21	-97.79
	Min. H_x	13	-42.71	-2.59	-52.78
	Min. H_z	25	-78.90	1.21	-97.79
Guy C @ 424.5 ft Elev -16.5 ft Azimuth 240 deg	Max. Vert	28	-0.40	-1.84	1.06
	Max. H_x	28	-0.40	-1.84	1.06
	Max. H_z	13	-12.99	-33.63	19.11
	Min. Vert	13	-12.99	-33.63	19.11
	Min. H_x	13	-12.99	-33.63	19.11
	Min. H_z	28	-0.40	-1.84	1.06
Guy B @ 407.5 ft Elev -9 ft Azimuth 120 deg	Max. Vert	16	-0.36	1.74	1.00
	Max. H_x	31	-13.14	34.33	19.50
	Max. H_z	31	-13.14	34.33	19.50
	Min. Vert	31	-13.14	34.33	19.50
	Min. H_x	16	-0.36	1.74	1.00
	Min. H_z	16	-0.36	1.74	1.00
Guy A @ 403 ft Elev -20 ft Azimuth 0 deg	Max. Vert	4	-0.42	0.00	-1.96
	Max. H_x	30	-7.49	0.70	-20.90
	Max. H_z	4	-0.42	0.00	-1.96
	Min. Vert	19	-13.78	-0.30	-37.90
	Min. H_x	12	-7.33	-0.70	-20.46
	Min. H_z	19	-13.78	-0.30	-37.90

Tower Mast Reaction Summary

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
Dead Only	199.08	0.01	-0.00	0.00	0.00	-0.00
1.2D+1.0W (pattern 1) 0 deg - No Ice+1.0 Guy	288.80	0.00	-9.26	0.00	0.00	0.45
1.2D+1.0W (pattern 2) 0 deg - No Ice+1.0 Guy	299.93	-0.00	-8.11	0.00	0.00	0.45
1.2D+1.0W (pattern 3) 0 deg - No Ice+1.0 Guy	302.29	-0.01	-7.85	0.00	0.00	0.44
1.2D+1.0W (pattern 1) 30 deg - No Ice+1.0 Guy	275.59	4.43	-7.75	0.00	0.00	0.41
1.2D+1.0W (pattern 2) 30 deg - No Ice+1.0 Guy	284.68	4.15	-6.82	0.00	0.00	0.36
1.2D+1.0W (pattern 3) 30 deg - No Ice+1.0 Guy	286.58	4.08	-6.61	0.00	0.00	0.42
1.2D+1.0W (pattern 1) 60 deg - No Ice+1.0 Guy	262.28	7.90	-4.47	0.00	0.00	-0.54
1.2D+1.0W (pattern 2) 60 deg - No Ice+1.0 Guy	266.65	7.29	-4.13	0.00	0.00	-0.62
1.2D+1.0W (pattern 3) 60 deg - No Ice+1.0 Guy	267.14	7.17	-4.05	0.00	0.00	-0.45
1.2D+1.0W (pattern 1) 90 deg - No Ice+1.0 Guy	279.04	9.32	0.11	0.00	0.00	-1.30
1.2D+1.0W (pattern 2) 90 deg - No Ice+1.0 Guy	288.40	8.34	-0.12	0.00	0.00	-1.36
1.2D+1.0W (pattern 3) 90 deg - No Ice+1.0 Guy	289.70	8.13	-0.18	0.00	0.00	-1.18
1.2D+1.0W (pattern 1) 120 deg - No Ice+1.0 Guy	291.17	8.09	4.66	0.00	0.00	-1.15
1.2D+1.0W (pattern 2) 120 deg - No Ice+1.0 Guy	302.47	7.07	4.07	0.00	0.00	-1.21
1.2D+1.0W (pattern 3) 120 deg - No Ice+1.0 Guy	304.24	6.84	3.95	0.00	0.00	-1.07
1.2D+1.0W (pattern 1) 150 deg - No Ice+1.0 Guy	276.58	4.60	7.81	0.00	0.00	-0.75
1.2D+1.0W (pattern 2) 150 deg - No Ice+1.0 Guy	285.30	3.95	7.12	0.00	0.00	-0.79
1.2D+1.0W (pattern 3) 150 deg - No Ice+1.0 Guy	286.77	3.80	6.98	0.00	0.00	-0.72
1.2D+1.0W (pattern 1) 180 deg - No Ice+1.0 Guy	262.97	-0.03	8.93	0.00	0.00	-0.68
1.2D+1.0W (pattern 2) 180 deg - No Ice+1.0 Guy	267.23	-0.01	8.26	0.00	0.00	-0.70
1.2D+1.0W (pattern 3) 180 deg - No Ice+1.0 Guy	268.02	-0.02	8.12	0.00	0.00	-0.71
1.2D+1.0W (pattern 1) 210 deg - No Ice+1.0 Guy	280.24	-4.46	7.63	0.00	0.00	-0.37
1.2D+1.0W (pattern 2) 210 deg - No Ice+1.0 Guy	289.72	-3.78	6.91	0.00	0.00	-0.32
1.2D+1.0W (pattern 3) 210 deg - No Ice+1.0 Guy	290.67	-3.62	6.77	0.00	0.00	-0.40
1.2D+1.0W (pattern 1) 240 deg - No Ice+1.0 Guy	295.44	-8.06	4.65	0.00	0.00	0.42
1.2D+1.0W (pattern 2) 240 deg - No Ice+1.0 Guy	307.36	-7.01	4.04	0.00	0.00	0.47
1.2D+1.0W (pattern 3) 240 deg - No Ice+1.0 Guy	308.79	-6.78	3.91	0.00	0.00	0.34
1.2D+1.0W (pattern 1) 270 deg - No Ice+1.0 Guy	282.49	-9.25	0.09	0.00	0.00	1.08
1.2D+1.0W (pattern 2) 270 deg - No Ice+1.0 Guy	292.04	-8.28	-0.16	0.00	0.00	1.15
1.2D+1.0W (pattern 3) 270 deg - No Ice+1.0 Guy	293.01	-8.08	-0.22	0.00	0.00	0.99
1.2D+1.0W (pattern 1) 300 deg - No Ice+1.0 Guy	264.45	-7.85	-4.42	0.00	0.00	1.11
1.2D+1.0W (pattern 2) 300 deg - No Ice+1.0 Guy	268.68	-7.26	-4.11	0.00	0.00	1.21

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
1.2D+1.0W (pattern 3) 300 deg - No Ice+1.0 Guy	269.19	-7.15	-4.03	0.00	0.00	1.08
1.2D+1.0W (pattern 1) 330 deg - No Ice+1.0 Guy	275.49	-4.50	-7.88	0.00	0.00	0.67
1.2D+1.0W (pattern 2) 330 deg - No Ice+1.0 Guy	284.05	-4.24	-6.99	0.00	0.00	0.70
1.2D+1.0W (pattern 3) 330 deg - No Ice+1.0 Guy	286.00	-4.18	-6.78	0.00	0.00	0.65
1.2 Dead+1.0 Ice+1.0 Temp+Guy	391.87	0.02	0.08	0.00	0.00	-0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp+1.0 Guy	399.47	-0.00	-1.78	0.00	0.00	-0.00
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp+1.0 Guy	397.46	0.99	-1.59	0.00	0.00	-0.13
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp+1.0 Guy	396.00	1.69	-0.99	0.00	0.00	-0.40
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp+1.0 Guy	397.37	1.87	-0.03	0.00	0.00	-0.60
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp+1.0 Guy	399.13	1.54	0.96	0.00	0.00	-0.52
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp+1.0 Guy	397.58	0.88	1.78	0.00	0.00	-0.23
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp+1.0 Guy	396.72	0.02	2.09	0.00	0.00	-0.06
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp+1.0 Guy	398.78	-0.83	1.75	0.00	0.00	0.04
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp+1.0 Guy	401.14	-1.48	0.94	0.00	0.00	0.35
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp+1.0 Guy	399.27	-1.84	-0.09	0.00	0.00	0.52
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp+1.0 Guy	397.42	-1.69	-1.00	0.00	0.00	0.42
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp+1.0 Guy	398.16	-1.01	-1.60	0.00	0.00	0.16
Dead+Wind 0 deg - Service+Guy	205.86	0.00	-2.32	0.00	0.00	0.15
Dead+Wind 30 deg - Service+Guy	203.98	1.18	-1.94	0.00	0.00	0.11
Dead+Wind 60 deg - Service+Guy	202.70	2.04	-1.15	0.00	0.00	-0.16
Dead+Wind 90 deg - Service+Guy	204.01	2.38	-0.02	0.00	0.00	-0.40
Dead+Wind 120 deg - Service+Guy	205.60	2.05	1.18	0.00	0.00	-0.38
Dead+Wind 150 deg - Service+Guy	203.97	1.14	2.02	0.00	0.00	-0.23
Dead+Wind 180 deg - Service+Guy	203.26	0.00	2.30	0.00	0.00	-0.16
Dead+Wind 210 deg - Service+Guy	205.12	-1.09	1.97	0.00	0.00	-0.10
Dead+Wind 240 deg - Service+Guy	207.43	-2.05	1.18	0.00	0.00	0.15
Dead+Wind 270 deg - Service+Guy	205.61	-2.37	-0.03	0.00	0.00	0.35
Dead+Wind 300 deg - Service+Guy	203.77	-2.02	-1.15	0.00	0.00	0.30
Dead+Wind 330 deg -	204.41	-1.19	-1.98	0.00	0.00	0.21

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
Service+Guy						

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
1	0.00	-120.15	-0.00	0.00	120.15	-0.00	0.002%
2	0.20	-141.91	-113.45	-0.20	141.91	113.44	0.003%
3	0.31	-141.91	-122.12	-0.31	141.91	122.12	0.003%
4	0.00	-141.91	-123.85	-0.00	141.91	123.85	0.003%
5	56.46	-141.13	-95.23	-56.46	141.13	95.23	0.003%
6	60.90	-141.13	-102.69	-60.90	141.13	102.68	0.003%
7	61.11	-141.13	-104.15	-61.11	141.13	104.14	0.003%
8	97.30	-140.35	-55.11	-97.30	140.35	55.11	0.003%
9	104.81	-140.35	-59.43	-104.81	140.35	59.44	0.003%
10	105.68	-140.35	-60.14	-105.68	140.35	60.15	0.003%
11	114.47	-141.17	0.03	-114.47	141.17	-0.02	0.003%
12	123.22	-141.17	-0.07	-123.21	141.17	0.07	0.004%
13	124.40	-141.17	0.12	-124.39	141.17	-0.11	0.003%
14	100.73	-141.97	56.80	-100.72	141.97	-56.79	0.004%
15	108.32	-141.97	61.06	-108.31	141.97	-61.05	0.004%
16	109.30	-141.97	62.25	-109.29	141.97	-62.24	0.004%
17	56.04	-141.17	95.25	-56.04	141.17	-95.25	0.003%
18	60.14	-141.17	102.35	-60.14	141.17	-102.35	0.003%
19	60.64	-141.17	103.83	-60.64	141.17	-103.82	0.003%
20	-1.08	-140.36	109.24	1.08	140.36	-109.24	0.003%
21	-1.19	-140.36	117.53	1.19	140.36	-117.53	0.002%
22	-0.89	-140.36	119.07	0.88	140.36	-119.07	0.004%
23	-57.10	-141.13	95.30	57.10	141.13	-95.29	0.003%
24	-61.55	-141.13	102.79	61.54	141.13	-102.78	0.003%
25	-61.76	-141.13	104.25	61.76	141.13	-104.25	0.003%
26	-101.77	-141.91	57.78	101.76	141.91	-57.78	0.003%
27	-109.63	-141.91	62.34	109.62	141.91	-62.33	0.003%
28	-110.66	-141.91	63.14	110.66	141.91	-63.14	0.003%
29	-115.04	-141.10	0.73	115.04	141.10	-0.73	0.003%
30	-123.78	-141.10	0.85	123.77	141.10	-0.85	0.003%
31	-124.96	-141.10	0.67	124.95	141.10	-0.66	0.003%
32	-97.55	-140.30	-53.89	97.54	140.30	53.89	0.003%
33	-104.76	-140.30	-57.93	104.76	140.30	57.93	0.004%
34	-105.57	-140.30	-59.01	105.57	140.30	59.02	0.004%
35	-56.28	-141.10	-95.08	56.28	141.10	95.07	0.003%
36	-60.37	-141.10	-102.16	60.37	141.10	102.15	0.003%
37	-60.86	-141.10	-103.64	60.86	141.10	103.63	0.003%
38	0.00	-278.70	-0.00	-0.00	278.70	-0.00	0.001%
39	-0.13	-279.13	-42.04	0.13	279.13	42.04	0.001%
40	21.14	-278.71	-36.12	-21.14	278.71	36.12	0.001%
41	36.63	-278.28	-20.96	-36.63	278.28	20.96	0.001%
42	42.44	-278.72	0.03	-42.44	278.72	-0.03	0.001%
43	37.05	-279.16	20.99	-37.05	279.16	-20.99	0.001%
44	21.16	-278.72	35.89	-21.15	278.72	-35.89	0.001%
45	-0.05	-278.28	41.36	0.05	278.28	-41.36	0.001%
46	-21.32	-278.70	35.94	21.32	278.70	-35.94	0.001%
47	-37.21	-279.13	21.17	37.21	279.13	-21.16	0.001%
48	-42.53	-278.69	-0.08	42.52	278.69	0.08	0.001%
49	-36.64	-278.25	-20.87	36.64	278.25	20.87	0.001%
50	-21.08	-278.69	-36.05	21.08	278.69	36.05	0.001%
51	0.08	-120.36	-34.87	-0.08	120.36	34.87	0.002%
52	17.35	-120.15	-29.31	-17.35	120.15	29.31	0.001%
53	29.87	-119.94	-16.95	-29.87	119.94	16.95	0.001%
54	35.12	-120.16	-0.01	-35.12	120.16	0.01	0.001%
55	30.89	-120.38	17.44	-30.89	120.38	-17.44	0.002%
56	17.14	-120.16	29.20	-17.14	120.16	-29.20	0.001%
57	-0.31	-119.94	33.52	0.31	119.94	-33.52	0.001%
58	-17.53	-120.15	29.34	17.53	120.15	-29.34	0.001%
59	-31.26	-120.36	17.79	31.26	120.36	-17.79	0.001%

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
60	-35.27	-120.14	0.22	35.27	120.14	-0.22	0.001%
61	-29.84	-119.92	-16.54	29.84	119.92	16.55	0.003%
62	-17.21	-120.14	-29.15	17.21	120.14	29.14	0.001%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	11	0.00000001	0.00003335
2	Yes	20	0.00006160	0.00006132
3	Yes	20	0.00005496	0.00006028
4	Yes	20	0.00005377	0.00006092
5	Yes	20	0.00007006	0.00005559
6	Yes	20	0.00006249	0.00005537
7	Yes	20	0.00005788	0.00005283
8	Yes	16	0.00007326	0.00004770
9	Yes	17	0.00007273	0.00005451
10	Yes	17	0.00007440	0.00008296
11	Yes	20	0.00007649	0.00006065
12	Yes	20	0.00006817	0.00006051
13	Yes	20	0.00006443	0.00005770
14	Yes	20	0.00006652	0.00006590
15	Yes	20	0.00005943	0.00006478
16	Yes	20	0.00005787	0.00006410
17	Yes	20	0.00007191	0.00005248
18	Yes	20	0.00006419	0.00005231
19	Yes	20	0.00006320	0.00005253
20	Yes	17	0.00008073	0.00002922
21	Yes	18	0.00006122	0.00001404
22	Yes	17	0.00008251	0.00003109
23	Yes	20	0.00005889	0.00004999
24	Yes	20	0.00005253	0.00004944
25	Yes	20	0.00005222	0.00004952
26	Yes	20	0.00005912	0.00006232
27	Yes	20	0.00005296	0.00006145
28	Yes	20	0.00005170	0.00006071
29	Yes	20	0.00006631	0.00005548
30	Yes	20	0.00005864	0.00005471
31	Yes	20	0.00005691	0.00005329
32	Yes	18	0.00007385	0.00002040
33	Yes	18	0.00009934	0.00002265
34	Yes	18	0.00008088	0.00005153
35	Yes	20	0.00007379	0.00005356
36	Yes	20	0.00006551	0.00005304
37	Yes	20	0.00006198	0.00005201
38	Yes	11	0.00010000	0.00008846
39	Yes	17	0.00000001	0.00002071
40	Yes	16	0.00009566	0.00003002
41	Yes	14	0.00009340	0.00005084
42	Yes	16	0.00000001	0.00001777
43	Yes	17	0.00000001	0.00001296
44	Yes	16	0.00000001	0.00001731
45	Yes	14	0.00007574	0.00003636
46	Yes	16	0.00008815	0.00002419
47	Yes	17	0.00000001	0.00001729
48	Yes	16	0.00008401	0.00002208
49	Yes	14	0.00000001	0.00003795
50	Yes	16	0.00008949	0.00002634
51	Yes	16	0.00009897	0.00004472
52	Yes	16	0.00000001	0.00002606
53	Yes	12	0.00000001	0.00006210
54	Yes	16	0.00000001	0.00001973
55	Yes	16	0.00008849	0.00003323
56	Yes	16	0.00000001	0.00001705
57	Yes	13	0.00000001	0.00002065

58	Yes	16	0.00000001	0.00002559
59	Yes	17	0.00000001	0.00002164
60	Yes	16	0.00000001	0.00002460
61	Yes	12	0.00000001	0.00003100
62	Yes	16	0.00000001	0.00002258

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
Pole	496.57 - 457	8.536	53	0.2089	0.5041
Antenna					
T1	457 - 436	6.833	53	0.2037	0.5564
T2	436 - 421	6.074	51	0.1843	0.5383
T3	421 - 401	5.736	51	0.1615	0.5214
T4	401 - 396	5.551	59	0.1181	0.4981
T5	396 - 391	5.519	59	0.1098	0.4919
T6	391 - 386	5.494	59	0.1007	0.4859
T7	386 - 381	5.470	59	0.0906	0.4797
T8	381 - 376	5.458	59	0.0772	0.4737
T9	376 - 371	5.469	59	0.0689	0.4692
T10	371 - 366	5.487	59	0.0616	0.4648
T11	366 - 361	5.507	59	0.0553	0.4604
T12	361 - 341	5.531	59	0.0500	0.4562
T13	341 - 321	5.636	59	0.0372	0.4392
T14	321 - 301	5.717	59	0.0264	0.4193
T15	301 - 281	5.731	59	0.0233	0.3923
T16	281 - 276	5.687	59	0.0182	0.3641
T17	276 - 271	5.673	59	0.0163	0.3567
T18	271 - 266	5.659	59	0.0136	0.3495
T19	266 - 261	5.647	59	0.0098	0.3423
T20	261 - 256	5.638	59	0.0085	0.3342
T21	256 - 251	5.638	59	0.0142	0.3293
T22	251 - 246	5.651	59	0.0205	0.3251
T23	246 - 241	5.673	59	0.0247	0.3209
T24	241 - 221	5.694	59	0.0272	0.3162
T25	221 - 201	5.758	59	0.0212	0.2968
T26	201 - 181	5.742	59	0.0233	0.2596
T27	181 - 161	5.598	59	0.0565	0.2200
T28	161 - 141	5.313	59	0.0880	0.1779
T29	141 - 121	4.929	59	0.1068	0.1540
T30	121 - 101	4.506	59	0.1129	0.1418
T31	101 - 81	4.069	59	0.1337	0.1472
T32	81 - 61	3.522	59	0.1628	0.1522
T33	61 - 41	2.848	59	0.1945	0.1542
T34	41 - 20	2.049	59	0.2226	0.1563
T35	20 - 6.70833	1.098	59	0.2436	0.1554
T36	6.70833 - 0	0.446	59	0.2986	0.1703

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
458'	SAA18-O4A-J480-ET5R-21 w/ Mount Pipe	53	6.873	0.2043	0.5570	45583
457'	12" x 3' Beacon	53	6.833	0.2037	0.5564	45233
450'	USX6-6W-6GR	53	6.564	0.1987	0.5517	50061
446'6"	Guy	53	6.434	0.1956	0.5488	52244
441'	SRL-235-2	53	6.234	0.1901	0.5435	54713
439'	BCD-87077	53	6.163	0.1879	0.5415	55101
393'	6014-2	59	5.504	0.1044	0.4883	56681
388'	6014-2	59	5.479	0.0951	0.4822	34650

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
381'	Guy	59	5.458	0.0772	0.4737	11643
367'	6828-2	59	5.503	0.0565	0.4613	52707
364'	DB806E-XT	59	5.517	0.0531	0.4587	48983
344'	455-6	59	5.620	0.0390	0.4418	103956
342'	BCD-87077	59	5.631	0.0378	0.4401	115602
340'	455-6	59	5.641	0.0365	0.4383	131866
333'	3" x 6" SideLight	59	5.674	0.0325	0.4320	102826
330'	PG1N0F-0090-310	59	5.687	0.0309	0.4290	87802
328'	(3) Side Arm Mount [SO 701-1]	59	5.695	0.0299	0.4270	80009
326'	DB201-A	59	5.702	0.0288	0.4249	73486
325'	DB408	59	5.705	0.0283	0.4238	70630
322'	SPD3-5.8	59	5.714	0.0269	0.4204	64337
316'	6014-2	59	5.727	0.0240	0.4130	63168
306'	6014-2	59	5.734	0.0234	0.3994	67890
284'	DB404-B w/ Mount Pipe	59	5.696	0.0193	0.3685	202110
277'	BMR10-A-B1	59	5.676	0.0166	0.3582	81908
264'	ANT150F6	59	5.643	0.0077	0.3389	41945
258'6"	(2) PL6" x 0.5"	59	5.636	0.0111	0.3315	23255
255'	DB809KT3E-Y	59	5.639	0.0156	0.3285	20448
254'6"	Guy	59	5.640	0.0162	0.3281	20861
247'	APXVAARR24_43-U-NA20 w/ Mount Pipe	59	5.668	0.0239	0.3218	100678
230'	(2) JAHH-65B-R3B w/ Mount Pipe	59	5.735	0.0275	0.3069	87618
215'	3" x 6" SideLight	59	5.764	0.0137	0.2872	47661
206'	P-9A72GN-U	59	5.756	0.0161	0.2697	38722
200'	DFPD1-52 w/ Mount Pipe	59	5.738	0.0249	0.2576	35064
188'	BMYD745K	59	5.665	0.0445	0.2342	32635
186'	ASP-960	59	5.647	0.0480	0.2303	32291
178'	SPD4-5.2	59	5.564	0.0616	0.2135	33186
150'	HPX6-65-P3A	59	5.111	0.1005	0.1629	71280
146'	PL6-65-PXA	59	5.031	0.1038	0.1587	87804
140'	CM 4228HD	59	4.909	0.1072	0.1531	134341
138'	MGA2-16N	59	4.867	0.1079	0.1513	162842
136'	CSI-AY/809-960/11	59	4.825	0.1085	0.1496	206548
135'	CM 4228HD	59	4.804	0.1087	0.1488	238547
134'	MGAR3-23N	59	4.782	0.1090	0.1480	282278
133'	220-5	59	4.761	0.1092	0.1473	345641
131'	Guy	59	4.719	0.1096	0.1459	627232
117'	P-9A48GN-U	59	4.422	0.1156	0.1418	529609
112'	3" x 6" SideLight	59	4.316	0.1202	0.1429	96728
109'	PD1132-D	59	4.251	0.1235	0.1439	64860
108'	SSH-9A72GN	59	4.229	0.1247	0.1443	58442
99'	SPD2-5.8	59	4.020	0.1364	0.1480	35232
68'	P-9A48GN-U	59	3.098	0.1828	0.1521	40345
62'	CSI-AY/809-960/11	59	2.885	0.1927	0.1537	41166
61'	SSH-9A72GN	59	2.848	0.1945	0.1542	40949

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
Pole	496.57 - 457	41.294	26	0.9939	1.6196
Antenna					
T1	457 - 436	34.121	26	0.9741	1.7891
T2	436 - 421	30.763	26	0.9204	1.7242
T3	421 - 401	28.505	26	0.8438	1.6650
T4	401 - 396	25.857	26	0.6832	1.5826
T5	396 - 391	25.635	27	0.6514	1.5610
T6	391 - 386	25.513	27	0.6161	1.5397
T7	386 - 381	25.408	27	0.5764	1.5177
T8	381 - 376	25.352	27	0.5236	1.4967
T9	376 - 371	25.558	28	0.4886	1.4830
T10	371 - 366	25.785	28	0.4557	1.4699

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T11	366 - 361	26.015	28	0.4252	1.4573
T12	361 - 341	26.250	28	0.3964	1.4448
T13	341 - 321	27.166	28	0.2500	1.3957
T14	321 - 301	27.887	28	0.1742	1.3358
T15	301 - 281	28.278	28	0.1004	1.2502
T16	281 - 276	28.389	28	0.1017	1.1597
T17	276 - 271	28.397	28	0.1245	1.1357
T18	271 - 266	28.403	28	0.1489	1.1124
T19	266 - 261	28.414	28	0.1750	1.0892
T20	261 - 256	28.433	28	0.2030	1.0629
T21	256 - 251	28.486	28	0.2328	1.0468
T22	251 - 246	28.586	28	0.2584	1.0342
T23	246 - 241	28.719	28	0.2724	1.0223
T24	241 - 221	28.846	28	0.2776	1.0089
T25	221 - 201	29.232	28	0.2312	0.9520
T26	201 - 181	29.237	28	0.1452	0.8405
T27	181 - 161	28.639	28	0.2498	0.7203
T28	161 - 141	27.362	28	0.4134	0.5910
T29	141 - 121	25.539	28	0.5264	0.5159
T30	121 - 101	23.388	28	0.5937	0.4801
T31	101 - 81	21.018	28	0.7146	0.5004
T32	81 - 61	18.080	28	0.8618	0.5190
T33	61 - 41	14.531	28	1.0123	0.5264
T34	41 - 20	10.404	28	1.1436	0.5339
T35	20 - 6.70833	5.551	28	1.2399	0.5308
T36	6.70833 - 0	2.246	28	1.5102	0.5817

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
458'	SAA18-O4A-J480-ET5R-21 w/ Mount Pipe	26	34.289	0.9756	1.7910	10792
457'	12" x 3' Beacon	26	34.121	0.9741	1.7891	10770
450'	USX6-6W-6GR	26	32.968	0.9610	1.7721	12876
446'6"	Guy	26	32.407	0.9528	1.7615	14688
441'	SRL-235-2	26	31.540	0.9374	1.7427	18509
439'	BCD-87077	26	31.228	0.9310	1.7354	18966
393'	6014-2	27	25.559	0.6305	1.5482	13453
388'	6014-2	27	25.447	0.5940	1.5267	8475
381'	Guy	27	25.352	0.5236	1.4967	3415
367'	6828-2	28	25.968	0.4310	1.4598	9808
364'	DB806E-XT	28	26.108	0.4139	1.4523	8580
344'	455-6	28	27.036	0.2714	1.4033	9834
342'	BCD-87077	28	27.123	0.2570	1.3982	9936
340'	455-6	28	27.208	0.2433	1.3931	10140
333'	3" x 6" SideLight	28	27.488	0.2149	1.3744	11525
330'	PG1N0F-0090-310	28	27.598	0.2057	1.3657	12285
328'	(3) Side Arm Mount [SO 701-1]	28	27.668	0.1992	1.3596	12850
326'	DB201-A	28	27.735	0.1923	1.3532	13469
325'	DB408	28	27.767	0.1888	1.3499	13799
322'	SPD3-5.8	28	27.859	0.1779	1.3395	13525
316'	6014-2	28	28.017	0.1551	1.3163	13578
306'	6014-2	28	28.212	0.1173	1.2728	14686
284'	DB404-B w/ Mount Pipe	28	28.383	0.0872	1.1738	15340
277'	BMR10-A-B1	28	28.396	0.1199	1.1405	9774
264'	ANT150F6	28	28.420	0.1859	1.0783	9457
258'6"	(2) PL6" x 0.5"	28	28.454	0.2179	1.0537	5892
255'	DB809KT3E-Y	28	28.502	0.2385	1.0442	5269
254'6"	Guy	28	28.511	0.2413	1.0429	5377
247'	APXVAARR24_43-U-NA20 w/ Mount Pipe	28	28.692	0.2704	1.0248	24448
230'	(2) JAHH-65B-R3B w/ Mount Pipe	28	29.089	0.2613	0.9816	16977

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
215'	3" x 6" SideLight	28	29.285	0.2112	0.9233	10029
206'	P-9A72GN-U	28	29.285	0.1742	0.8710	8227
200'	DFPD1-52 w/ Mount Pipe	28	29.223	0.1385	0.8345	7433
188'	BMYD745K	28	28.926	0.1881	0.7638	6783
186'	ASP-960	28	28.853	0.2055	0.7517	6691
178'	SPD4-5.2	28	28.490	0.2765	0.7004	6656
150'	HPX6-65-P3A	28	26.414	0.4836	0.5434	9526
146'	PL6-65-PXA	28	26.035	0.5044	0.5304	10360
140'	CM 4228HD	28	25.437	0.5302	0.5132	11967
138'	MGA2-16N	28	25.231	0.5374	0.5078	12653
136'	CSI-AY/809-960/11	28	25.023	0.5440	0.5028	13435
135'	CM 4228HD	28	24.917	0.5472	0.5004	13863
134'	MGAR3-23N	28	24.811	0.5503	0.4981	14321
133'	220-5	28	24.704	0.5533	0.4959	14809
131'	Guy	28	24.489	0.5593	0.4918	15893
117'	P-9A48GN-U	28	22.939	0.6124	0.4806	15896
112'	3" x 6" SideLight	28	22.367	0.6403	0.4847	10922
109'	PD1132-D	28	22.014	0.6590	0.4885	9193
108'	SSH-9A72GN	28	21.894	0.6656	0.4899	8732
99'	SPD2-5.8	28	20.754	0.7294	0.5033	6574
68'	P-9A48GN-U	28	15.838	0.9482	0.5190	7934
62'	CSI-AY/809-960/11	28	14.722	1.0017	0.5247	8275
61'	SSH-9A72GN	28	14.531	1.0123	0.5264	8255

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load per Bolt K	Ratio Load / Allowable	Allowable Ratio	Criteria
T1	457	Leg	A307	0.8750	8	3.82	20.78	0.184	1.05	Bolt Tension
		Diagonal	A307	0.5000	2	2.53	5.52	0.458	1.05	Bolt Shear
		Horizontal	A307	0.5000	2	0.66	5.52	0.120	1.05	Bolt Shear
		Top Girt	A307	0.5000	2	0.00	5.52	0.000	1.05	Bolt Shear
		Mid Girt	A307	0.5000	2	1.70	5.52	0.308	1.05	Bolt Shear
T2	436	Leg	A307	0.8750	8	6.47	20.78	0.311	1.05	Bolt Tension
		Diagonal	A325X	0.5000	2	2.31	7.08	0.326	1.05	Member Block Shear
		Horizontal	A307	0.5000	2	1.01	5.52	0.182	1.05	Bolt Shear
		Top Girt	A307	0.5000	2	0.75	5.52	0.136	1.05	Bolt Shear
T3	421	Leg	A307	0.8750	8	10.80	20.78	0.520	1.05	Bolt Tension
		Diagonal	A325N	0.5000	2	2.82	7.08	0.398	1.05	Member Block Shear
		Top Girt	A307	0.5000	2	0.93	5.52	0.169	1.05	Bolt Shear
		Mid Girt	A307	0.5000	2	0.20	5.52	0.036	1.05	Bolt Shear
T4	401	Diagonal	A325N	0.5000	2	3.01	7.08	0.425	1.05	Member Block Shear
		Top Girt	A307	0.5000	2	1.03	5.52	0.186	1.05	Bolt Shear
T5	396	Diagonal	A325N	0.5000	2	3.37	7.08	0.476	1.05	Member Block Shear
T6	391	Diagonal	A325X	0.5000	2	4.00	7.08	0.564	1.05	Member Block Shear
T7	386	Leg	A307	0.8750	8	17.19	20.78	0.827	1.05	Bolt Tension
		Diagonal	A325X	0.5000	2	4.67	7.08	0.659	1.05	Member Block Shear
T8	381	Diagonal	A325N	0.5000	2	4.52	7.08	0.638	1.05	Member Block Shear
		Top Guy Pull-Off@381	A307	0.5000	2	9.18	11.04	0.831	1.05	Bolt Shear
T9	376	Diagonal	A325N	0.5000	2	3.96	7.08	0.559	1.05	Member Block Shear
T10	371	Diagonal	A325N	0.5000	2	3.98	7.08	0.563	1.05	Member Block Shear
T11	366	Leg	A307	0.8750	8	9.12	20.78	0.439	1.05	Bolt Tension
		Diagonal	A325N	0.5000	2	3.70	7.08	0.522	1.05	Member Block

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load per Bolt K	Ratio Load / Allowable	Allowable Ratio	Criteria
										Shear
T12	361	Leg	A307	0.8750	8	5.42	20.78	0.261	1.05	Bolt Tension
		Diagonal	A325N	0.5000	2	3.40	7.08	0.480	1.05	Member Block Shear
		Secondary Horizontal	A325X	0.5000	1	2.35	9.66	0.244	1.05	Member Block Shear
		Top Girt	A307	0.5000	2	1.18	5.52	0.213	1.05	Bolt Shear
		Mid Girt	A307	0.5000	2	0.20	5.52	0.035	1.05	Bolt Shear
T13	341	Leg	A307	0.8750	8	4.10	20.78	0.197	1.05	Bolt Tension
		Diagonal	A325N	0.5000	2	2.52	7.08	0.356	1.05	Member Block Shear
		Top Girt	A307	0.5000	2	0.96	5.52	0.174	1.05	Bolt Shear
		Mid Girt	A307	0.5000	2	0.18	5.52	0.032	1.05	Bolt Shear
T14	321	Leg	A307	0.8750	8	3.93	20.78	0.189	1.05	Bolt Tension
		Diagonal	A307	0.5000	2	1.76	5.52	0.319	1.05	Bolt Shear
		Top Girt	A307	0.5000	2	0.83	5.52	0.150	1.05	Bolt Shear
		Mid Girt	A307	0.5000	2	0.25	5.52	0.045	1.05	Bolt Shear
T15	301	Leg	A307	0.8750	8	4.30	20.78	0.207	1.05	Bolt Tension
		Diagonal	A307	0.5000	2	2.68	5.52	0.485	1.05	Bolt Shear
		Top Girt	A307	0.5000	2	0.89	5.52	0.162	1.05	Bolt Shear
		Mid Girt	A307	0.5000	2	0.17	5.52	0.031	1.05	Bolt Shear
T16	281	Diagonal	A325N	0.5000	2	2.89	7.08	0.408	1.05	Member Block Shear
		Top Girt	A307	0.5000	2	0.93	5.52	0.168	1.05	Bolt Shear
T17	276	Diagonal	A325N	0.5000	2	3.17	7.08	0.447	1.05	Member Block Shear
T18	271	Diagonal	A325N	0.5000	2	3.68	7.08	0.520	1.05	Member Block Shear
		Top Girt	A307	0.5000	2	1.01	5.52	0.183	1.05	Bolt Shear
T19	266	Leg	A307	0.8750	8	5.04	20.78	0.243	1.05	Bolt Tension
		Diagonal	A325N	0.5000	2	3.49	7.08	0.493	1.05	Member Block Shear
T20	261	Diagonal	A325N	0.5000	2	6.18	8.84	0.700	1.05	Bolt Shear
		Top Girt	A307	0.5000	2	2.69	5.52	0.488	1.05	Bolt Shear
T21	256	Diagonal	A325N	0.5000	2	8.54	8.84	0.967	1.05	Bolt Shear
		Secondary Horizontal	A325N	0.5000	2	11.94	17.67	0.676	1.05	Bolt Shear
T22	251	Diagonal	A325N	0.5000	2	6.41	8.84	0.726	1.05	Bolt Shear
		Top Girt	A307	0.5000	2	2.89	5.52	0.524	1.05	Bolt Shear
T23	246	Leg	A307	0.6250	8	3.72	10.17	0.366	1.05	Bolt Tension
		Diagonal	A325N	0.5000	2	5.90	8.84	0.668	1.05	Bolt Shear
		Secondary Horizontal	A325N	0.5000	2	0.77	17.67	0.044	1.05	Bolt Shear
T24	241	Leg	A307	0.6250	8	4.56	10.17	0.448	1.05	Bolt Tension
		Diagonal	A325N	0.5000	2	5.40	8.84	0.611	1.05	Bolt Shear
		Top Girt	A307	0.5000	2	0.95	5.52	0.172	1.05	Bolt Shear
		Mid Girt	A307	0.5000	2	0.31	5.52	0.057	1.05	Bolt Shear
T25	221	Leg	A307	0.8750	8	6.00	20.78	0.289	1.05	Bolt Tension
		Diagonal	A307	0.5000	2	3.85	5.52	0.696	1.05	Bolt Shear
		Top Girt	A307	0.5000	2	1.25	5.52	0.226	1.05	Bolt Shear
		Mid Girt	A307	0.5000	2	0.32	5.52	0.058	1.05	Bolt Shear
T26	201	Leg	A307	0.8750	8	6.74	20.78	0.325	1.05	Bolt Tension
		Diagonal	A307	0.5000	2	2.64	5.52	0.478	1.05	Bolt Shear
		Top Girt	A307	0.5000	2	1.40	5.52	0.254	1.05	Bolt Shear
		Mid Girt	A307	0.5000	2	0.30	5.52	0.055	1.05	Bolt Shear
T27	181	Leg	A307	0.8750	8	6.60	20.78	0.318	1.05	Bolt Tension
		Diagonal	A307	0.5000	2	2.24	5.52	0.405	1.05	Bolt Shear
		Top Girt	A307	0.5000	2	1.41	11.04	0.128	1.05	Bolt Shear
		Mid Girt	A307	0.5000	2	0.36	5.52	0.065	1.05	Bolt Shear
T28	161	Leg	A307	0.6250	8	5.71	10.17	0.562	1.05	Bolt Tension
		Diagonal	A325N	0.6250	2	3.47	10.83	0.321	1.05	Member Block Shear
		Top Girt	A307	0.5000	2	1.34	5.52	0.243	1.05	Bolt Shear
		Mid Girt	A307	0.5000	2	0.42	5.52	0.075	1.05	Bolt Shear
T29	141	Leg	A307	0.6250	8	5.01	10.17	0.492	1.05	Bolt Tension
		Diagonal	A325N	0.6250	2	4.57	10.83	0.422	1.05	Member Block Shear
		Top Girt	A307	0.5000	2	1.12	5.52	0.202	1.05	Bolt Shear

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load per Bolt K	Ratio Load / Allowable	Allowable Ratio	Criteria
		Mid Girt	A325N	0.5000	2	5.63	7.08	0.794	1.05	Member Block Shear
		Torque Arm Top@131	A325N	0.7500	2	9.70	16.92	0.573	1.05	Member Block Shear
		Torque Arm Bottom@131	A325N	0.7500	2	6.43	16.92	0.380	1.05	Member Block Shear
T30	121	Leg	A307	0.8750	8	7.35	20.78	0.354	1.05	Bolt Tension
		Diagonal	A325N	0.5000	2	2.45	7.08	0.345	1.05	Member Block Shear
		Top Girt	A307	0.5000	2	3.38	5.52	0.611	1.05	Bolt Shear
		Mid Girt	A307	0.5000	2	0.26	5.52	0.047	1.05	Bolt Shear
T31	101	Leg	A307	0.8750	8	7.95	20.78	0.383	1.05	Bolt Tension
		Diagonal	A307	0.5000	2	1.46	5.52	0.265	1.05	Bolt Shear
		Top Girt	A307	0.5000	2	1.65	5.52	0.299	1.05	Bolt Shear
		Mid Girt	A307	0.5000	2	0.48	5.52	0.086	1.05	Bolt Shear
T32	81	Leg	A307	0.8750	8	7.91	20.78	0.380	1.05	Bolt Tension
		Diagonal	A307	0.5000	2	1.05	5.52	0.190	1.05	Bolt Shear
		Top Girt	A307	0.5000	2	1.66	5.52	0.301	1.05	Bolt Shear
		Mid Girt	A307	0.5000	2	0.48	5.52	0.087	1.05	Bolt Shear
T33	61	Leg	A307	0.8750	8	7.22	20.78	0.347	1.05	Bolt Tension
		Diagonal	A307	0.5000	2	1.96	5.52	0.354	1.05	Bolt Shear
		Top Girt	A307	0.5000	2	1.62	5.52	0.293	1.05	Bolt Shear
		Mid Girt	A307	0.5000	2	0.44	5.52	0.080	1.05	Bolt Shear
T34	41	Leg	A307	0.8750	8	6.13	20.78	0.295	1.05	Bolt Tension
		Diagonal	A307	0.5000	2	2.91	5.52	0.526	1.05	Bolt Shear
		Top Girt	A307	0.5000	2	1.44	5.52	0.261	1.05	Bolt Shear
		Mid Girt	A307	0.5000	2	0.58	5.52	0.105	1.05	Bolt Shear
T35	20	Leg	A307	0.8750	8	6.15	20.78	0.296	1.05	Bolt Tension
		Diagonal	A307	0.5000	2	0.94	5.52	0.170	1.05	Bolt Shear
		Top Girt	A325N	0.5000	2	6.94	14.16	0.490	1.05	Member Block Shear
T36	6.70833	Diagonal	A307	0.5000	2	2.36	5.52	0.428	1.05	Bolt Shear

Guy Design Data

Section No.	Elevation ft	Size	Initial Tension K	Breaking Load K	Actual T_u K	Allowable ϕT_n K	Required S.F.	Actual S.F.
T1	446'6" (A) (826)	9/16 EHS	2.80	35.00	11.17	22.05	0.952	1.881
	446'6" (B) (825)	9/16 EHS	2.80	35.00	11.81	22.05	0.952	1.778
	446'6" (C) (824)	9/16 EHS	2.80	35.00	11.82	22.05	0.952	1.777
T8	381' (A) (829)	1 3/8 BS	18.56	232.00	58.61	146.16	0.952	2.375
	381' (B) (828)	1 3/8 BS	18.56	232.00	59.67	146.16	0.952	2.333
	381' (C) (827)	1 3/8 BS	18.56	232.00	59.75	146.16	0.952	2.330
T21	254'6" (A) (832)	1 1/4 BS	15.36	192.00	61.24	120.96	0.952	1.881
	254'6" (B) (831)	1 1/4 BS	15.36	192.00	62.85	120.96	0.952	1.833
	254'6" (C) (830)	1 1/4 BS	15.36	192.00	62.02	120.96	0.952	1.857
T29	131' (A) (845)	11/16 EHS	6.00	50.00	20.86	31.50	0.952	1.438
	131' (A) (846)	11/16 EHS	6.00	50.00	19.95	31.50	0.952	1.504
	131' (B) (839)	11/16 EHS	6.00	50.00	20.48	31.50	0.952	1.465
	131' (B) (840)	11/16 EHS	6.00	50.00	21.40	31.50	0.952	1.402
	131' (C) (833)	11/16 EHS	6.00	50.00	21.14	31.50	0.952	1.419
	131' (C) (834)	11/16 EHS	6.00	50.00	20.04	31.50	0.952	1.497

Compression Checks

Leg Design Data (Compression)

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	
T1	457 - 436	3	21'	5'3"	84.0 K=1.00	7.0686	-50.82	149.35	0.340 [1]
T2	436 - 421	2 3/4	15'	5'	87.3 K=1.00	5.9396	-70.56	122.15	0.578 [1]
T3	421 - 401	2 3/4	20'	5'	87.3 K=1.00	5.9396	-107.59	122.15	0.881 [1]
T4	401 - 396	3" S.R. w/ 3 SCH 40 Half Pipe and 3.75 x 5/16 Half Pipe	5'	5'	68.2 K=1.00	9.7900	-118.51	232.33	0.510 [1]
T5	396 - 391	3" S.R. w/ 3 SCH 40 Half Pipe and 3.75 x 5/16 Half Pipe	5'	5'	68.2 K=1.00	9.7900	-130.78	232.33	0.563 [1]
T6	391 - 386	3" S.R. w/ 3 SCH 40 Half Pipe and 3.75 x 5/16 Half Pipe	5'	5'	68.2 K=1.00	9.7900	-145.52	232.33	0.626 [1]
T7	386 - 381	SR 3in w/ 1/2HSS 3.5in x 0.22in	5'	5'	74.8 K=1.00	8.2021	-162.70	194.01	0.839 [1]
T8	381 - 376	3.5" S.R. w/ 3.5 SCH40 Half Pipe	5'	5'	64.5 K=1.00	11.0000	-169.75	267.25	0.635 [1]
T9	376 - 371	3.5" S.R. w/ 3.5 SCH40 Half Pipe	5'	5'	64.5 K=1.00	11.0000	-159.92	267.25	0.598 [1]
T10	371 - 366	3.5" S.R. w/ 3.5 SCH40 Half Pipe	5'	5'	64.5 K=1.00	11.0000	-151.94	267.25	0.569 [1]
T11	366 - 361	SR 3.5in w/ 1/2HSS 3.5in x 0.23in	5'	5'	65.9 K=1.00	10.8025	-143.68	272.45	0.527 [1]
T12	361 - 341	3	20'	2'6"	40.0 K=1.00	7.0686	-135.91	194.34	0.699 [1]
T13	341 - 321	3	20'	5'	80.0 K=1.00	7.0686	-111.23	154.16	0.722 [1]
T14	321 - 301	3	20'	5'	80.0 K=1.00	7.0686	-95.50	154.16	0.620 [1]
T15	301 - 281	3	20'	5'	80.0 K=1.00	7.0686	-103.27	154.16	0.670 [1]
T16	281 - 276	3	5'	5'	80.0 K=1.00	7.0686	-107.17	154.16	0.695 [1]
T17	276 - 271	3	5'	5'	80.0 K=1.00	7.0686	-111.19	154.16	0.721 [1]
T18	271 - 266	3	5'	5'	80.0 K=1.00	7.0686	-116.53	154.16	0.756 [1]
T19	266 - 261	3	5'	5'	80.0 K=1.00	7.0686	-121.01	154.16	0.785 [1]
T20	261 - 256	3	5'	5'	80.0 K=1.00	7.0686	-131.02	154.16	0.850 [1]
T21	256 - 251	3	5'	2'6"	40.0 K=1.00	7.0686	-134.66	194.34	0.693 [1]
T22	251 - 246	3	5'	5'	80.0 K=1.00	7.0686	-106.99	154.16	0.694 [1]
T23	246 - 241	3	5'	2'6"	40.0 K=1.00	7.0686	-89.39	194.34	0.460 [1]
T24	241 - 221	3	20'	5'	80.0 K=1.00	7.0686	-109.38	154.16	0.710 [1]
T25	221 - 201	3 1/4	20'	5'	73.8 K=1.00	8.2958	-144.08	189.38	0.761 [1]
T26	201 - 181	3 1/4	20'	5'	73.8 K=1.00	8.2958	-161.86	189.38	0.855 [1]
T27	181 - 161	3 1/4	20'	5'	73.8 K=1.00	8.2958	-162.72	189.38	0.859 [1]
T28	161 - 141	3 1/2	20'	5'	68.6 K=1.00	9.6211	-154.81	227.74	0.680 [1]
T29	141 - 121	3 1/2	20'	5'	68.6	9.6211	-129.05	227.74	0.567 [1]

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	
T30	121 - 101	3 1/2	20'	5'	K=1.00 68.6	9.6211	-176.38	227.74	0.774 [1]
T31	101 - 81	3 1/2	20'	5'	K=1.00 68.6	9.6211	-190.81	227.74	0.838 [1]
T32	81 - 61	3 1/2	20'	5'	K=1.00 68.6	9.6211	-192.17	227.74	0.844 [1]
T33	61 - 41	3 1/2	20'	5'	K=1.00 68.6	9.6211	-186.95	227.74	0.821 [1]
T34	41 - 20	3 1/2	21'	5'3"	K=1.00 72.0	9.6211	-166.70	222.50	0.749 [1]
T35	20 - 6.70833	3 1/4	13'5-7/8"	4'6"	K=1.00 66.4	8.2958	-150.33	199.14	0.755 [1]
T36	6.70833 - 0	3 1/4	6'9-23/32"	2'3-1/4"	K=1.00 33.5	8.2958	-153.68	233.39	0.658 [1]

[1] P_u / ϕP_n controls

Diagonal Design Data (Compression)

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	
T1	457 - 436	L2 1/2x2x1/4	7'7-13/16"	3'7-9/16"	107.0 K=1.04	1.0600	-4.49	23.43	0.192 [1]
T2	436 - 421	L2 1/2x2x3/16	7'6"	3'6-19/32"	104.9 K=1.05	0.8090	-5.52	18.23	0.303 [1]
T3	421 - 401	L2 1/2x2x3/16	7'6"	3'6-19/32"	104.9 K=1.05	0.8090	-5.95	18.23	0.326 [1]
T4	401 - 396	L2 1/2x2x3/16	7'6"	3'6-19/32"	104.9 K=1.05	0.8090	-6.29	18.23	0.345 [1]
T5	396 - 391	L2 1/2x2x3/16	7'6"	3'6-19/32"	104.9 K=1.05	0.8090	-7.01	18.23	0.385 [1]
T6	391 - 386	L2 1/2x2x3/16	7'6"	3'6-19/32"	104.9 K=1.05	0.8090	-9.00	18.23	0.493 [1]
T7	386 - 381	L2 1/2x2x3/16	7'6"	3'6-19/32"	104.9 K=1.05	0.8090	-8.66	18.23	0.475 [1]
T8	381 - 376	L2 1/2x2x3/16	7'6"	3'6-19/32"	104.9 K=1.05	0.8090	-7.89	18.23	0.432 [1]
T9	376 - 371	L2 1/2x2x3/16	7'6"	3'6-19/32"	104.9 K=1.05	0.8090	-8.97	18.23	0.492 [1]
T10	371 - 366	L2 1/2x2x3/16	7'6"	3'6-19/32"	104.9 K=1.05	0.8090	-7.92	18.23	0.434 [1]
T11	366 - 361	L2 1/2x2x3/16	7'6"	3'6-19/32"	104.9 K=1.05	0.8090	-7.55	18.23	0.414 [1]
T12	361 - 341	L2 1/2x2x3/16	7'6"	3'6-19/32"	104.9 K=1.05	0.8090	-7.05	18.23	0.387 [1]
T13	341 - 321	L2 1/2x2x3/16	7'6"	3'6-19/32"	104.9 K=1.05	0.8090	-5.05	18.23	0.277 [1]
T14	321 - 301	L2 1/2x2x3/16	7'6"	3'6-19/32"	104.9 K=1.05	0.8090	-3.53	18.23	0.193 [1]
T15	301 - 281	L2 1/2x2x3/16	7'6"	3'6-19/32"	104.9 K=1.05	0.8090	-5.35	18.23	0.294 [1]
T16	281 - 276	L2 1/2x2x3/16	7'6"	3'6-19/32"	104.9 K=1.05	0.8090	-5.72	18.23	0.314 [1]
T17	276 - 271	L2 1/2x2x3/16	7'6"	3'6-19/32"	104.9 K=1.05	0.8090	-6.47	18.23	0.355 [1]
T18	271 - 266	L2 1/2x2x3/16	7'6"	3'6-19/32"	104.9 K=1.05	0.8090	-6.35	18.23	0.348 [1]
T19	266 - 261	L2 1/2x2x3/16	7'6"	3'6-19/32"	104.9 K=1.05	0.8090	-7.71	18.23	0.423 [1]
T20	261 - 256	L3x3x1/4	7'6"	3'6-19/32"	84.0 K=1.17	1.4400	-5.09	40.34	0.126 [1]
T21	256 - 251	L3x3x1/4	7'6"	3'6-	84.0	1.4400	-12.73	40.34	0.315 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T22	251 - 246	L3x3x1/4	7'6"	19/32" 3'6-	K=1.17 84.0	1.4400	-12.82	40.34	0.318 [1]
T23	246 - 241	L3x3x1/4	7'6"	19/32" 3'6-	K=1.17 84.0	1.4400	-10.75	40.34	0.267 [1]
T24	241 - 221	L3x3x1/4	7'6"	19/32" 3'6-	K=1.17 84.0	1.4400	-10.80	40.34	0.268 [1]
T25	221 - 201	L2 1/2x2x3/16	7'6"	19/32" 3'6-	K=1.17 104.9	0.8090	-7.69	18.23	0.422 [1]
T26	201 - 181	L2 1/2x2x3/16	7'6"	19/32" 3'6-	K=1.05 104.9	0.8090	-5.28	18.23	0.289 [1]
T27	181 - 161	L2 1/2x2x3/16	7'6"	19/32" 3'6-	K=1.05 104.9	0.8090	-4.47	18.23	0.245 [1]
T28	161 - 141	L3x3x1/4	7'6"	19/32" 3'6-	K=1.05 83.8	1.4400	-7.14	40.40	0.177 [1]
T29	141 - 121	L3x3x1/4	7'6"	15/32" 3'6-	K=1.17 83.8	1.4400	-8.95	40.40	0.222 [1]
T30	121 - 101	L2 1/2x2x3/16	7'6"	15/32" 3'6-	K=1.17 104.9	0.8090	-5.27	18.23	0.289 [1]
T31	101 - 81	L2 1/2x2x3/16	7'6"	19/32" 3'6-	K=1.05 104.9	0.8090	-2.92	18.23	0.160 [1]
T32	81 - 61	L2 1/2x2x3/16	7'6"	19/32" 3'6-	K=1.05 104.9	0.8090	-2.10	18.23	0.115 [1]
T33	61 - 41	L2 1/2x2x3/16	7'6"	19/32" 3'6-	K=1.05 104.9	0.8090	-3.91	18.23	0.215 [1]
T34	41 - 20	L2 1/2x2x3/16	7'7-	19/32" 3'7-	K=1.05 106.5	0.8090	-5.81	17.97	0.323 [1]
T35	20 - 6.70833	L2x2x3/16	13/16" 4'9-1/8"	9/16" 2'9-3/8"	K=1.04 93.5	0.7150	-1.88	17.65	0.107 [1]
T36	6.70833 - 0	L2x2x3/16	2'5-	1'1-	K=1.10 55.4	0.7150	-4.73	21.51	0.220 [1]
			17/32"	5/16"	K=1.63				

[1] P_u / ϕP_n controls

Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	457 - 436	L2 1/2x2x1/4	6'	5'4-	139.4	1.0600	-1.33	15.61	0.085 [1]
T2	436 - 421	L2 1/2x2x1/4	6'	3/16" 5'4-	K=0.92 139.8	1.0600	-1.22	15.53	0.079 [1]
				9/16"	K=0.92				

[1] P_u / ϕP_n controls

Secondary Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T12	361 - 341	L2x2x1/4	6'	2'9-1/8"	102.4	0.9380	-2.35	22.64	0.104 [1]
T21	256 - 251	2L3 1/2x3 1/2x3/8x3/8	6'	2'8-	K=1.21 30.4	4.9700	-2.33	164.58	0.014 [1]
T23	246 - 241	2L3 1/2x3 1/2x3/8x3/8	6'	17/32" 2'8-	K=1.00 30.4	4.9700	-1.55	164.58	0.009 [1]
				17/32"	K=1.00				

[1] P_u / ϕP_n controls

Top Girt Design Data (Compression)

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	
T1	457 - 436	C8x13.75	6'	5'9"	112.2 K=1.00	4.0400	-0.00	65.36	0.000 [1]
T2	436 - 421	L2 1/2x2x1/4	6'	5'4-9/16"	139.8 K=0.92	1.0600	-1.22	15.53	0.079 [1]
T3	421 - 401	L2 1/2x2x1/4	6'	5'4-9/16"	139.8 K=0.92	1.0600	-1.86	15.53	0.120 [1]
T4	401 - 396	L2 1/2x2x1/4	6'	5'3-15/32"	138.3 K=0.92	1.0600	-2.05	15.86	0.129 [1]
T6	391 - 386	L2 1/2x2x1/4	6'	5'8-9/32"	161.0 K=1.00	1.0600	-2.52	11.71	0.215 [1]
T10	371 - 366	L2 1/2x2x1/4	6'	5'8-1/32"	160.4 K=1.00	1.0600	-2.63	11.80	0.223 [1]
T12	361 - 341	L2 1/2x2x1/4	6'	5'4-3/16"	139.4 K=0.92	1.0600	-2.35	15.61	0.151 [1]
T13	341 - 321	L2 1/2x2x1/4	6'	5'4-3/16"	139.4 K=0.92	1.0600	-1.93	15.61	0.123 [1]
T14	321 - 301	L2 1/2x2x1/4	6'	5'4-3/16"	139.4 K=0.92	1.0600	-1.65	15.61	0.106 [1]
T15	301 - 281	L2 1/2x2x3/16	6'	5'4-3/16"	138.7 K=0.92	0.8090	-1.79	12.03	0.149 [1]
T16	281 - 276	L2 1/2x2x1/4	6'	5'4-3/16"	139.4 K=0.92	1.0600	-1.86	15.61	0.119 [1]
T18	271 - 266	L2 1/2x2x1/4	6'	5'4-3/16"	139.4 K=0.92	1.0600	-2.02	15.61	0.129 [1]
T20	261 - 256	L2 1/2x2x3/16	6'	5'4-3/16"	138.7 K=0.92	0.8090	-5.39	12.03	0.448 [1]
T22	251 - 246	L2 1/2x2x3/16	6'	5'4-3/16"	138.7 K=0.92	0.8090	-5.78	12.03	0.481 [1]
T24	241 - 221	L2 1/2x2x3/16	6'	5'4-3/16"	138.7 K=0.92	0.8090	-1.89	12.03	0.157 [1]
T25	221 - 201	L2 1/2x2x3/16	6'	5'3-31/32"	138.4 K=0.92	0.8090	-2.50	12.09	0.206 [1]
T26	201 - 181	L2 1/2x2x3/16	6'	5'3-31/32"	138.4 K=0.92	0.8090	-2.80	12.09	0.232 [1]
T27	181 - 161	2L3x2x1/4x3/8	6'	5'3-31/32"	87.0 K=1.00	2.3800	-2.82	58.65	0.048 [1]
T28	161 - 141	L2 1/2x2x3/16	6'	5'3-23/32"	138.0 K=0.92	0.8090	-2.68	12.16	0.221 [1]
T29	141 - 121	L2 1/2x2x3/16	6'	5'3-23/32"	138.0 K=0.92	0.8090	-2.24	12.16	0.184 [1]
T30	121 - 101	L2 1/2x2x3/16	6'	5'3-23/32"	138.0 K=0.92	0.8090	-6.75	12.16	0.555 [1]
T31	101 - 81	L2 1/2x2x3/16	6'	5'3-23/32"	138.0 K=0.92	0.8090	-3.30	12.16	0.272 [1]
T32	81 - 61	L2 1/2x2x3/16	6'	5'3-23/32"	138.0 K=0.92	0.8090	-3.33	12.16	0.274 [1]
T33	61 - 41	L2 1/2x2x3/16	6'	5'3-23/32"	138.0 K=0.92	0.8090	-3.24	12.16	0.266 [1]
T34	41 - 20	L2 1/2x2x3/16	6'	5'3-23/32"	138.0 K=0.92	0.8090	-2.89	12.16	0.238 [1]
T35	20 - 6.70833	2L2 1/2x2x3/16x1/4	6'	5'3-31/32"	88.4 K=1.00	1.6172	-2.63	39.09	0.067 [1]

[1] P_u / ϕP_n controls

Mid Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T3	421 - 401	L2 1/2x2x1/4	6'	5'4-9/16"	139.8 K=0.92	1.0600	-0.31	15.53	0.020 [1]
T12	361 - 341	L2 1/2x2x1/4	6'	5'4-3/16"	139.4 K=0.92	1.0600	-0.16	15.61	0.010 [1]
T13	341 - 321	L2 1/2x2x1/4	6'	5'4-3/16"	139.4 K=0.92	1.0600	-0.08	15.61	0.005 [1]
T14	321 - 301	L2 1/2x2x1/4	6'	5'4-3/16"	139.4 K=0.92	1.0600	-0.16	15.61	0.010 [1]
T15	301 - 281	L2 1/2x2x3/16	6'	5'4-3/16"	138.7 K=0.92	0.8090	-0.03	12.03	0.003 [1]
T24	241 - 221	L2 1/2x2x3/16	6'	5'4-3/16"	138.7 K=0.92	0.8090	-0.14	12.03	0.012 [1]
T25	221 - 201	L2 1/2x2x3/16	6'	5'3-31/32"	138.4 K=0.92	0.8090	-0.03	12.09	0.002 [1]
T26	201 - 181	L2 1/2x2x3/16	6'	5'3-31/32"	138.4 K=0.92	0.8090	-0.06	12.09	0.005 [1]
T27	181 - 161	L2 1/2x2x3/16	6'	5'3-31/32"	138.4 K=0.92	0.8090	-0.12	12.09	0.010 [1]
T29	141 - 121	L2 1/2x2x3/16	6'	5'3-23/32"	138.0 K=0.92	0.8090	-7.89	12.16	0.649 [1]
T31	101 - 81	L2 1/2x2x3/16	6'	5'3-23/32"	138.0 K=0.92	0.8090	-0.15	12.16	0.012 [1]
T32	81 - 61	L2 1/2x2x3/16	6'	5'3-23/32"	138.0 K=0.92	0.8090	-0.17	12.16	0.014 [1]
T33	61 - 41	L2 1/2x2x3/16	6'	5'3-23/32"	138.0 K=0.92	0.8090	-0.10	12.16	0.008 [1]

[1] P_u / ϕP_n controls

Torque-Arm Top Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T29	141 - 121 (835)	L3x3x3/8 (TA - BU#873128)	7'6-19/32"	7'4-13/16"	138.4 K=0.90	2.1100	-0.54	31.54	0.017 [1]
T29	141 - 121 (836)	L3x3x3/8 (TA - BU#873128)	7'6-19/32"	7'4-13/16"	138.4 K=0.90	2.1100	-0.23	31.54	0.007 [1]
T29	141 - 121 (841)	L3x3x3/8 (TA - BU#873128)	7'6-19/32"	7'4-13/16"	138.4 K=0.90	2.1100	-0.26	31.54	0.008 [1]
T29	141 - 121 (842)	L3x3x3/8 (TA - BU#873128)	7'6-19/32"	7'4-13/16"	138.4 K=0.90	2.1100	-0.59	31.54	0.019 [1]
T29	141 - 121 (847)	L3x3x3/8 (TA - BU#873128)	7'6-19/32"	7'4-13/16"	138.4 K=0.90	2.1100	-1.53	31.54	0.048 [1]
T29	141 - 121 (848)	L3x3x3/8 (TA - BU#873128)	7'6-19/32"	7'4-13/16"	138.4 K=0.90	2.1100	-1.15	31.54	0.036 [1]

[1] P_u / ϕP_n controls

Torque-Arm Bottom Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T29	141 - 121 (837)	2L3x3x3/16x3/4	12'6-3/8"	12'3-15/32"	140.8 K=0.90	2.1800	-21.54	31.45	0.685 [1]
T29	141 - 121 (838)	2L3x3x3/16x3/4	12'6-3/8"	12'3-15/32"	140.8 K=0.90	2.1800	-22.25	31.45	0.707 [1]
T29	141 - 121 (843)	2L3x3x3/16x3/4	12'6-3/8"	12'3-15/32"	140.8 K=0.90	2.1800	-22.45	31.45	0.714 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T29	141 - 121 (844)	2L3x3x3/16x3/4	12'6-3/8"	12'3-15/32"	140.8 K=0.90	2.1800	-22.53	31.45	0.716 [1]
T29	141 - 121 (849)	2L3x3x3/16x3/4	12'6-3/8"	12'3-15/32"	140.8 K=0.90	2.1800	-21.78	31.45	0.692 [1]
T29	141 - 121 (850)	2L3x3x3/16x3/4	12'6-3/8"	12'3-15/32"	140.8 K=0.90	2.1800	-22.49	31.45	0.715 [1]

[1] P_u / ϕP_n controls

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	457 - 436	3	21'	5'3"	84.0	7.0686	30.60	209.94	0.146 [1]
T2	436 - 421	2 3/4	15'	5'	87.3	5.9396	51.72	176.41	0.293 [1]
T3	421 - 401	2 3/4	20'	5'	87.3	5.9396	86.37	176.41	0.490 [1]
T4	401 - 396	3" S.R. w/ 3 SCH 40 Half Pipe and 3.75 x 5/16 Half Pipe	5'	5'	68.2	9.7900	97.16	290.76	0.334 [1]
T5	396 - 391	3" S.R. w/ 3 SCH 40 Half Pipe and 3.75 x 5/16 Half Pipe	5'	5'	68.2	9.7900	108.65	290.76	0.374 [1]
T6	391 - 386	3" S.R. w/ 3 SCH 40 Half Pipe and 3.75 x 5/16 Half Pipe	5'	5'	68.2	9.7900	123.36	290.76	0.424 [1]
T7	386 - 381	SR 3in w/ 1/2HSS 3.5in x 0.22in	5'	5'	74.8	8.2021	137.53	258.37	0.532 [1]
T8	381 - 376	3.5" S.R. w/ 3.5 SCH40 Half Pipe	5'	5'	64.5	11.0000	99.44	326.70	0.304 [1]
T9	376 - 371	3.5" S.R. w/ 3.5 SCH40 Half Pipe	5'	5'	64.5	11.0000	91.86	326.70	0.281 [1]
T10	371 - 366	3.5" S.R. w/ 3.5 SCH40 Half Pipe	5'	5'	64.5	11.0000	81.77	326.70	0.250 [1]
T11	366 - 361	SR 3.5in w/ 1/2HSS 3.5in x 0.23in	5'	5'	65.9	10.8025	72.93	340.28	0.214 [1]
T12	361 - 341	3	20'	2'6"	40.0	7.0686	64.83	209.94	0.309 [1]
T13	341 - 321	3	20'	5'	80.0	7.0686	37.28	209.94	0.178 [1]
T14	321 - 301	3	20'	5'	80.0	7.0686	19.03	209.94	0.091 [1]
T15	301 - 281	3	20'	5'	80.0	7.0686	19.38	209.94	0.092 [1]
T16	281 - 276	3	5'	5'	80.0	7.0686	21.86	209.94	0.104 [1]
T17	276 - 271	3	5'	5'	80.0	7.0686	25.16	209.94	0.120 [1]
T18	271 - 266	3	5'	5'	80.0	7.0686	28.18	209.94	0.134 [1]
T19	266 - 261	3	5'	5'	80.0	7.0686	33.28	209.94	0.159 [1]
T20	261 - 256	3	5'	5'	80.0	7.0686	33.82	209.94	0.161 [1]
T21	256 - 251	3	5'	2'6"	40.0	7.0686	38.65	209.94	0.184 [1]
T25	221 - 201	3 1/4	20'	5'	73.8	8.2958	33.10	246.38	0.134 [1]
T26	201 - 181	3 1/4	20'	5'	73.8	8.2958	51.48	246.38	0.209 [1]
T27	181 - 161	3 1/4	20'	5'	73.8	8.2958	52.25	246.38	0.212 [1]
T28	161 - 141	3 1/2	20'	5'	68.6	9.6211	42.59	285.75	0.149 [1]
T29	141 - 121	3 1/2	20'	5'	68.6	9.6211	11.13	285.75	0.039 [1]
T30	121 - 101	3 1/2	20'	5'	68.6	9.6211	39.54	285.75	0.138 [1]
T31	101 - 81	3 1/2	20'	5'	68.6	9.6211	49.37	285.75	0.173 [1]
T32	81 - 61	3 1/2	20'	5'	68.6	9.6211	48.86	285.75	0.171 [1]
T33	61 - 41	3 1/2	20'	5'	68.6	9.6211	35.58	285.75	0.125 [1]
T34	41 - 20	3 1/2	21'	5'3"	72.0	9.6211	3.96	285.75	0.014 [1]

[1] P_u / ϕP_n controls

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	457 - 436	L2 1/2x2x1/4	7'7-13/16"	3'7-9/16"	77.5	0.6778	5.05	30.50	0.166 [1]
T2	436 - 421	L2 1/2x2x3/16	7'6"	3'6-19/32"	75.0	0.5189	4.61	23.35	0.198 [1]
T3	421 - 401	L2 1/2x2x3/16	7'6"	3'6-19/32"	75.0	0.5189	5.64	23.35	0.242 [1]
T4	401 - 396	L2 1/2x2x3/16	7'6"	3'6-19/32"	75.0	0.5189	6.02	23.35	0.258 [1]
T5	396 - 391	L2 1/2x2x3/16	7'6"	3'6-19/32"	75.0	0.5189	6.74	23.35	0.289 [1]
T6	391 - 386	L2 1/2x2x3/16	7'6"	3'6-19/32"	75.0	0.5189	7.99	23.35	0.342 [1]
T7	386 - 381	L2 1/2x2x3/16	7'6"	3'6-19/32"	75.0	0.5189	9.33	23.35	0.400 [1]
T8	381 - 376	L2 1/2x2x3/16	7'6"	3'6-19/32"	75.0	0.5189	9.04	23.35	0.387 [1]
T9	376 - 371	L2 1/2x2x3/16	7'6"	3'6-19/32"	75.0	0.5189	7.91	23.35	0.339 [1]
T10	371 - 366	L2 1/2x2x3/16	7'6"	3'6-19/32"	75.0	0.5189	7.97	23.35	0.341 [1]
T11	366 - 361	L2 1/2x2x3/16	7'6"	3'6-19/32"	75.0	0.5189	7.39	23.35	0.317 [1]
T12	361 - 341	L2 1/2x2x3/16	7'6"	3'6-19/32"	75.0	0.5189	6.80	23.35	0.291 [1]
T13	341 - 321	L2 1/2x2x3/16	7'6"	3'6-19/32"	75.0	0.5189	5.04	23.35	0.216 [1]
T14	321 - 301	L2 1/2x2x3/16	7'6"	3'6-19/32"	75.0	0.5189	3.36	23.35	0.144 [1]
T15	301 - 281	L2 1/2x2x3/16	7'6"	3'6-19/32"	75.0	0.5189	5.13	23.35	0.220 [1]
T16	281 - 276	L2 1/2x2x3/16	7'6"	3'6-19/32"	75.0	0.5189	5.78	23.35	0.248 [1]
T17	276 - 271	L2 1/2x2x3/16	7'6"	3'6-19/32"	75.0	0.5189	6.33	23.35	0.271 [1]
T18	271 - 266	L2 1/2x2x3/16	7'6"	3'6-19/32"	75.0	0.5189	7.37	23.35	0.316 [1]
T19	266 - 261	L2 1/2x2x3/16	7'6"	3'6-19/32"	75.0	0.5189	6.98	23.35	0.299 [1]
T20	261 - 256	L3x3x1/4	7'6"	3'6-19/32"	48.4	0.9628	12.37	41.88	0.295 [1]
T21	256 - 251	L3x3x1/4	7'6"	3'6-19/32"	48.4	0.9628	17.09	41.88	0.408 [1]
T22	251 - 246	L3x3x1/4	7'6"	3'6-19/32"	48.4	0.9628	11.72	41.88	0.280 [1]
T23	246 - 241	L3x3x1/4	7'6"	3'6-19/32"	48.4	0.9628	11.80	41.88	0.282 [1]
T24	241 - 221	L3x3x1/4	7'6"	3'6-19/32"	48.4	0.9628	10.49	41.88	0.250 [1]
T25	221 - 201	L2 1/2x2x3/16	7'6"	3'6-19/32"	75.0	0.5189	7.52	23.35	0.322 [1]
T26	201 - 181	L2 1/2x2x3/16	7'6"	3'6-19/32"	75.0	0.5189	5.06	23.35	0.217 [1]
T27	181 - 161	L2 1/2x2x3/16	7'6"	3'6-19/32"	75.0	0.5189	4.33	23.35	0.185 [1]
T28	161 - 141	L3x3x1/4	7'6"	3'6-15/32"	48.4	0.9394	6.95	40.86	0.170 [1]
T29	141 - 121	L3x3x1/4	7'6"	3'6-15/32"	48.4	0.9394	9.13	40.86	0.224 [1]
T30	121 - 101	L2 1/2x2x3/16	7'6"	3'6-19/32"	75.0	0.5189	4.89	23.35	0.209 [1]
T31	101 - 81	L2 1/2x2x3/16	7'6"	3'6-19/32"	75.0	0.5189	2.66	23.35	0.114 [1]
T32	81 - 61	L2 1/2x2x3/16	7'6"	3'6-	75.0	0.5189	1.79	23.35	0.077 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T33	61 - 41	L2 1/2x2x3/16	7'6"	3'6-19/32"	75.0	0.5189	3.61	23.35	0.155 [1]
T34	41 - 20	L2 1/2x2x3/16	7'7-13/16"	3'7-9/16"	76.6	0.5189	5.66	23.35	0.243 [1]
T35	20 - 6.70833	L2x2x3/16	5'7-7/16"	3'31/32' '	63.8	0.4484	1.66	20.18	0.082 [1]
T36	6.70833 - 0	L2x2x3/16	2'9-19/32"	1'1-13/16"	26.3	0.4484	2.87	20.18	0.142 [1]

[1] P_u / ϕP_n controls

Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	457 - 436	L2 1/2x2x1/4	6'	5'4-3/16"	116.5	0.6778	1.20	30.50	0.039 [1]
T2	436 - 421	L2 1/2x2x1/4	6'	5'4-9/16"	116.9	0.6778	2.01	30.50	0.066 [1]

[1] P_u / ϕP_n controls

Secondary Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T12	361 - 341	L2x2x1/4	6'	2'9-1/8"	113.3	0.5863	2.35	25.50	0.092 [1]
T21	256 - 251	2L3 1/2x3 1/2x3/8x3/8	6'	2'8-17/32"	42.9	3.3759	23.88	146.85	0.163 [1]
T23	246 - 241	2L3 1/2x3 1/2x3/8x3/8	6'	2'8-17/32"	42.9	3.3759	1.55	146.85	0.011 [1]

[1] P_u / ϕP_n controls

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	457 - 436	C8x13.75	6'	5'9"	112.2	4.0400	0.00	119.99	0.000 [1]
T2	436 - 421	L2 1/2x2x1/4	6'	5'4-9/16"	116.9	0.6778	1.50	30.50	0.049 [1]
T3	421 - 401	L2 1/2x2x1/4	6'	5'4-9/16"	116.9	0.6778	1.86	30.50	0.061 [1]
T4	401 - 396	L2 1/2x2x1/4	6'	5'3-15/32"	115.2	0.6778	2.05	30.50	0.067 [1]
T6	391 - 386	L2 1/2x2x1/4	6'	5'8-9/32"	115.2	1.0600	2.52	31.48	0.080 [1]
T10	371 - 366	L2 1/2x2x1/4	6'	5'8-1/32"	114.8	1.0600	2.63	31.48	0.084 [1]
T12	361 - 341	L2 1/2x2x1/4	6'	5'4-3/16"	116.5	0.6778	2.35	30.50	0.077 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T13	341 - 321	L2 1/2x2x1/4	6'	5'4-3/16"	116.5	0.6778	1.93	30.50	0.063 [1]
T14	321 - 301	L2 1/2x2x1/4	6'	5'4-3/16"	116.5	0.6778	1.65	30.50	0.054 [1]
T15	301 - 281	L2 1/2x2x3/16	6'	5'4-3/16"	115.0	0.5189	1.79	23.35	0.077 [1]
T16	281 - 276	L2 1/2x2x1/4	6'	5'4-3/16"	116.5	0.6778	1.86	30.50	0.061 [1]
T18	271 - 266	L2 1/2x2x1/4	6'	5'4-3/16"	116.5	0.6778	2.02	30.50	0.066 [1]
T20	261 - 256	L2 1/2x2x3/16	6'	5'4-3/16"	115.0	0.5189	2.27	23.35	0.097 [1]
T22	251 - 246	L2 1/2x2x3/16	6'	5'4-3/16"	115.0	0.5189	1.85	23.35	0.079 [1]
T24	241 - 221	L2 1/2x2x3/16	6'	5'4-3/16"	115.0	0.5189	1.89	23.35	0.081 [1]
T25	221 - 201	L2 1/2x2x3/16	6'	5'3-31/32"	114.6	0.5189	2.50	23.35	0.107 [1]
T26	201 - 181	L2 1/2x2x3/16	6'	5'3-31/32"	114.6	0.5189	2.80	23.35	0.120 [1]
T27	181 - 161	2L3x2x1/4x3/8	6'	5'3-31/32"	77.2	1.5506	2.82	69.78	0.040 [1]
T28	161 - 141	L2 1/2x2x3/16	6'	5'3-23/32"	114.2	0.5189	2.68	23.35	0.115 [1]
T29	141 - 121	L2 1/2x2x3/16	6'	5'3-23/32"	114.2	0.5189	2.24	23.35	0.096 [1]
T30	121 - 101	L2 1/2x2x3/16	6'	5'3-23/32"	114.2	0.5189	5.43	23.35	0.232 [1]
T31	101 - 81	L2 1/2x2x3/16	6'	5'3-23/32"	114.2	0.5189	3.30	23.35	0.142 [1]
T32	81 - 61	L2 1/2x2x3/16	6'	5'3-23/32"	114.2	0.5189	3.33	23.35	0.143 [1]
T33	61 - 41	L2 1/2x2x3/16	6'	5'3-23/32"	114.2	0.5189	3.24	23.35	0.139 [1]
T34	41 - 20	L2 1/2x2x3/16	6'	5'3-23/32"	114.2	0.5189	2.89	23.35	0.124 [1]
T35	20 - 6.70833	2L2 1/2x2x3/16x1/4	6'	5'3-31/32"	86.7	1.0371	13.89	46.67	0.298 [1]

[1] P_u / ϕP_n controls

Mid Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	457 - 436	L2 1/2x2x1/4	6'	5'4-3/16"	116.5	0.6778	3.41	30.50	0.112 [1]
T3	421 - 401	L2 1/2x2x1/4	6'	5'4-9/16"	116.9	0.6778	0.39	30.50	0.013 [1]
T12	361 - 341	L2 1/2x2x1/4	6'	5'4-3/16"	116.5	0.6778	0.39	30.50	0.013 [1]
T13	341 - 321	L2 1/2x2x1/4	6'	5'4-3/16"	116.5	0.6778	0.35	30.50	0.012 [1]
T14	321 - 301	L2 1/2x2x1/4	6'	5'4-3/16"	116.5	0.6778	0.49	30.50	0.016 [1]
T15	301 - 281	L2 1/2x2x3/16	6'	5'4-3/16"	115.0	0.5189	0.34	23.35	0.014 [1]
T24	241 - 221	L2 1/2x2x3/16	6'	5'4-3/16"	115.0	0.5189	0.63	23.35	0.027 [1]
T25	221 - 201	L2 1/2x2x3/16	6'	5'3-31/32"	114.6	0.5189	0.64	23.35	0.028 [1]
T26	201 - 181	L2 1/2x2x3/16	6'	5'3-31/32"	114.6	0.5189	0.60	23.35	0.026 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T27	181 - 161	L2 1/2x2x3/16	6'	5'3-31/32''	114.6	0.5189	0.72	23.35	0.031 [1]
T28	161 - 141	L2 1/2x2x3/16	6'	5'3-23/32''	114.2	0.5189	0.83	23.35	0.036 [1]
T29	141 - 121	L2 1/2x2x3/16	6'	5'3-23/32''	114.2	0.5189	11.25	23.35	0.482 [1]
T30	121 - 101	L2 1/2x2x3/16	6'	5'3-23/32''	114.2	0.5189	0.52	23.35	0.022 [1]
T31	101 - 81	L2 1/2x2x3/16	6'	5'3-23/32''	114.2	0.5189	0.95	23.35	0.041 [1]
T32	81 - 61	L2 1/2x2x3/16	6'	5'3-23/32''	114.2	0.5189	0.96	23.35	0.041 [1]
T33	61 - 41	L2 1/2x2x3/16	6'	5'3-23/32''	114.2	0.5189	0.89	23.35	0.038 [1]
T34	41 - 20	L2 1/2x2x3/16	6'	5'3-23/32''	114.2	0.5189	1.16	23.35	0.050 [1]

[1] P_u / ϕP_n controls

Top Guy Pull-Off Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T8	381 - 376	2L3x2x1/4x3/8	6'	5'8-1/32''	76.3	1.5506	18.35	69.78	0.263 [1]

[1] P_u / ϕP_n controls

Torque-Arm Top Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T29	141 - 121 (835)	L3x3x3/8 (TA - BU#873128)	7'6-19/32''	7'4-13/16''	152.9	1.3364	16.97	58.13	0.292 [1]
T29	141 - 121 (836)	L3x3x3/8 (TA - BU#873128)	7'6-19/32''	7'4-13/16''	152.9	1.3364	18.77	58.13	0.323 [1]
T29	141 - 121 (841)	L3x3x3/8 (TA - BU#873128)	7'6-19/32''	7'4-13/16''	152.9	1.3364	17.42	58.13	0.300 [1]
T29	141 - 121 (842)	L3x3x3/8 (TA - BU#873128)	7'6-19/32''	7'4-13/16''	152.9	1.3364	17.48	58.13	0.301 [1]
T29	141 - 121 (847)	L3x3x3/8 (TA - BU#873128)	7'6-19/32''	7'4-13/16''	152.9	1.3364	19.00	58.13	0.327 [1]
T29	141 - 121 (848)	L3x3x3/8 (TA - BU#873128)	7'6-19/32''	7'4-13/16''	152.9	1.3364	19.41	58.13	0.334 [1]

[1] P_u / ϕP_n controls

Torque-Arm Bottom Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T29	141 - 121	2L3x3x3/16x3/4	12'6-	12'3-	157.0	1.3889	12.75	60.42	0.211 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
	(837)		3/8"	15/32"					
T29	141 - 121	2L3x3x3/16x3/4	12'6-	12'3-	157.0	1.3889	12.43	60.42	0.206 [1]
	(838)		3/8"	15/32"					
T29	141 - 121	2L3x3x3/16x3/4	12'6-	12'3-	157.0	1.3889	12.83	60.42	0.212 [1]
	(843)		3/8"	15/32"					
T29	141 - 121	2L3x3x3/16x3/4	12'6-	12'3-	157.0	1.3889	12.86	60.42	0.213 [1]
	(844)		3/8"	15/32"					
T29	141 - 121	2L3x3x3/16x3/4	12'6-	12'3-	157.0	1.3889	12.58	60.42	0.208 [1]
	(849)		3/8"	15/32"					
T29	141 - 121	2L3x3x3/16x3/4	12'6-	12'3-	157.0	1.3889	12.15	60.42	0.201 [1]
	(850)		3/8"	15/32"					

[1] P_u / ϕP_n controls

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T1	457 - 436	Leg	3	4	-50.82	156.82	32.4	Pass
T2	436 - 421	Leg	2 3/4	46	-70.56	128.26	55.0	Pass
T3	421 - 401	Leg	2 3/4	76	-107.59	128.26	83.9	Pass
T4	401 - 396	Leg	3" S.R. w/ 3 SCH 40 Half Pipe and 3.75 x 5/16 Half Pipe	109	-118.51	243.95	48.6	Pass
T5	396 - 391	Leg	3" S.R. w/ 3 SCH 40 Half Pipe and 3.75 x 5/16 Half Pipe	118	-130.78	243.95	53.6	Pass
T6	391 - 386	Leg	3" S.R. w/ 3 SCH 40 Half Pipe and 3.75 x 5/16 Half Pipe	127	-145.52	243.95	59.7	Pass
T7	386 - 381	Leg	SR 3in w/ 1/2HSS 3.5in x 0.22in	139	-162.70	203.71	79.9 82.7 (b)	Pass
T8	381 - 376	Leg	3.5" S.R. w/ 3.5 SCH40 Half Pipe	151	-169.75	280.61	60.5	Pass
T9	376 - 371	Leg	3.5" S.R. w/ 3.5 SCH40 Half Pipe	160	-159.92	280.61	57.0	Pass
T10	371 - 366	Leg	3.5" S.R. w/ 3.5 SCH40 Half Pipe	167	-151.94	280.61	54.1	Pass
T11	366 - 361	Leg	SR 3.5in w/ 1/2HSS 3.5in x 0.23in	179	-143.68	286.07	50.2	Pass
T12	361 - 341	Leg	3	191	-135.91	204.05	66.6	Pass
T13	341 - 321	Leg	3	236	-111.23	161.86	68.7	Pass
T14	321 - 301	Leg	3	269	-95.50	161.86	59.0	Pass
T15	301 - 281	Leg	3	302	-103.27	161.86	63.8	Pass
T16	281 - 276	Leg	3	335	-107.17	161.86	66.2	Pass
T17	276 - 271	Leg	3	344	-111.19	161.86	68.7	Pass
T18	271 - 266	Leg	3	353	-116.53	161.86	72.0	Pass
T19	266 - 261	Leg	3	365	-121.01	161.86	74.8	Pass
T20	261 - 256	Leg	3	377	-131.02	161.86	80.9	Pass
T21	256 - 251	Leg	3	386	-134.66	204.05	66.0	Pass
T22	251 - 246	Leg	3	398	-106.99	161.86	66.1	Pass
T23	246 - 241	Leg	3	412	-89.39	204.05	43.8	Pass
T24	241 - 221	Leg	3	425	-109.38	161.86	67.6	Pass
T25	221 - 201	Leg	3 1/4	458	-144.08	198.84	72.5	Pass
T26	201 - 181	Leg	3 1/4	491	-161.86	198.84	81.4	Pass
T27	181 - 161	Leg	3 1/4	524	-162.72	198.84	81.8	Pass
T28	161 - 141	Leg	3 1/2	557	-154.81	239.13	64.7	Pass
T29	141 - 121	Leg	3 1/2	590	-129.05	239.13	54.0	Pass
T30	121 - 101	Leg	3 1/2	624	-176.38	239.13	73.8	Pass
T31	101 - 81	Leg	3 1/2	657	-190.81	239.13	79.8	Pass
T32	81 - 61	Leg	3 1/2	690	-192.17	239.13	80.4	Pass
T33	61 - 41	Leg	3 1/2	723	-186.95	239.13	78.2	Pass
T34	41 - 20	Leg	3 1/2	756	-166.70	233.63	71.4	Pass
T35	20 - 6.70833	Leg	3 1/4	787	-150.33	209.10	71.9	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T36	6.70833 - 0	Leg	3 1/4	811	-153.68	245.06	62.7	Pass
T1	457 - 436	Diagonal	L2 1/2x2x1/4	19	-4.49	24.60	18.3	Pass
							45.8 (b)	
T2	436 - 421	Diagonal	L2 1/2x2x3/16	52	-5.52	19.15	28.9	Pass
							32.6 (b)	
T3	421 - 401	Diagonal	L2 1/2x2x3/16	88	-5.95	19.15	31.1	Pass
							39.8 (b)	
T4	401 - 396	Diagonal	L2 1/2x2x3/16	115	-6.29	19.15	32.8	Pass
							42.5 (b)	
T5	396 - 391	Diagonal	L2 1/2x2x3/16	124	-7.01	19.15	36.6	Pass
							47.6 (b)	
T6	391 - 386	Diagonal	L2 1/2x2x3/16	133	-9.00	19.15	47.0	Pass
							56.4 (b)	
T7	386 - 381	Diagonal	L2 1/2x2x3/16	145	-8.66	19.15	45.2	Pass
							65.9 (b)	
T8	381 - 376	Diagonal	L2 1/2x2x3/16	152	-7.89	19.15	41.2	Pass
							63.8 (b)	
T9	376 - 371	Diagonal	L2 1/2x2x3/16	161	-8.97	19.15	46.9	Pass
							55.9 (b)	
T10	371 - 366	Diagonal	L2 1/2x2x3/16	173	-7.92	19.15	41.4	Pass
							56.3 (b)	
T11	366 - 361	Diagonal	L2 1/2x2x3/16	185	-7.55	19.15	39.4	Pass
							52.2 (b)	
T12	361 - 341	Diagonal	L2 1/2x2x3/16	227	-7.05	19.15	36.8	Pass
							48.0 (b)	
T13	341 - 321	Diagonal	L2 1/2x2x3/16	263	-5.05	19.15	26.4	Pass
							35.6 (b)	
T14	321 - 301	Diagonal	L2 1/2x2x3/16	280	-3.53	19.15	18.4	Pass
							31.9 (b)	
T15	301 - 281	Diagonal	L2 1/2x2x3/16	313	-5.35	19.15	28.0	Pass
							48.5 (b)	
T16	281 - 276	Diagonal	L2 1/2x2x3/16	340	-5.72	19.15	29.9	Pass
							40.8 (b)	
T17	276 - 271	Diagonal	L2 1/2x2x3/16	349	-6.47	19.15	33.8	Pass
							44.7 (b)	
T18	271 - 266	Diagonal	L2 1/2x2x3/16	361	-6.35	19.15	33.2	Pass
							52.0 (b)	
T19	266 - 261	Diagonal	L2 1/2x2x3/16	373	-7.71	19.15	40.2	Pass
							49.3 (b)	
T20	261 - 256	Diagonal	L3x3x1/4	383	12.37	43.98	28.1	Pass
							70.0 (b)	
T21	256 - 251	Diagonal	L3x3x1/4	389	17.09	43.98	38.9	Pass
							96.7 (b)	
T22	251 - 246	Diagonal	L3x3x1/4	405	-12.82	42.35	30.3	Pass
							72.6 (b)	
T23	246 - 241	Diagonal	L3x3x1/4	416	11.80	43.98	26.8	Pass
							66.8 (b)	
T24	241 - 221	Diagonal	L3x3x1/4	453	-10.80	42.35	25.5	Pass
							61.1 (b)	
T25	221 - 201	Diagonal	L2 1/2x2x3/16	486	-7.69	19.15	40.2	Pass
							69.6 (b)	
T26	201 - 181	Diagonal	L2 1/2x2x3/16	518	-5.28	19.15	27.6	Pass
							47.8 (b)	
T27	181 - 161	Diagonal	L2 1/2x2x3/16	536	-4.47	19.15	23.4	Pass
							40.5 (b)	
T28	161 - 141	Diagonal	L3x3x1/4	568	-7.14	42.42	16.8	Pass
							32.1 (b)	
T29	141 - 121	Diagonal	L3x3x1/4	614	9.13	42.91	21.3	Pass
							42.2 (b)	
T30	121 - 101	Diagonal	L2 1/2x2x3/16	652	-5.27	19.15	27.5	Pass
							34.5 (b)	
T31	101 - 81	Diagonal	L2 1/2x2x3/16	687	-2.92	19.15	15.3	Pass
							26.5 (b)	
T32	81 - 61	Diagonal	L2 1/2x2x3/16	698	-2.10	19.15	10.9	Pass
							19.0 (b)	
T33	61 - 41	Diagonal	L2 1/2x2x3/16	731	-3.91	19.15	20.4	Pass
							35.4 (b)	
T34	41 - 20	Diagonal	L2 1/2x2x3/16	767	-5.81	18.87	30.8	Pass
							52.6 (b)	
T35	20 - 6.70833	Diagonal	L2x2x3/16	795	-1.88	18.53	10.1	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
							17.0 (b)	
T36	6.70833 - 0	Diagonal	L2x2x3/16	815	-4.73	22.58	20.9	Pass
							42.8 (b)	
T1	457 - 436	Horizontal	L2 1/2x2x1/4	35	-1.33	16.40	8.1	Pass
							12.0 (b)	
T2	436 - 421	Horizontal	L2 1/2x2x1/4	57	-1.22	16.31	7.5	Pass
							18.2 (b)	
T12	361 - 341	Secondary Horizontal	L2x2x1/4	208	-2.35	23.78	9.9	Pass
							24.4 (b)	
T21	256 - 251	Secondary Horizontal	2L3 1/2x3 1/2x3/8x3/8	396	23.88	154.20	15.5	Pass
							67.6 (b)	
T23	246 - 241	Secondary Horizontal	2L3 1/2x3 1/2x3/8x3/8	423	1.55	154.20	1.0	Pass
							4.4 (b)	
T1	457 - 436	Top Girt	C8x13.75	5	-0.00	68.63	0.2	Pass
T2	436 - 421	Top Girt	L2 1/2x2x1/4	9	-1.22	16.31	7.5	Pass
							13.6 (b)	
T3	421 - 401	Top Girt	L2 1/2x2x1/4	48	-1.86	16.31	11.4	Pass
							16.9 (b)	
T4	401 - 396	Top Girt	L2 1/2x2x1/4	78	-2.05	16.65	12.3	Pass
							18.6 (b)	
T6	391 - 386	Top Girt	L2 1/2x2x1/4	129	-2.52	12.29	20.5	Pass
T10	371 - 366	Top Girt	L2 1/2x2x1/4	172	-2.63	12.39	21.2	Pass
T12	361 - 341	Top Girt	L2 1/2x2x1/4	184	-2.35	16.40	14.4	Pass
							21.3 (b)	
T13	341 - 321	Top Girt	L2 1/2x2x1/4	196	-1.93	16.40	11.8	Pass
							17.4 (b)	
T14	321 - 301	Top Girt	L2 1/2x2x1/4	241	-1.65	16.40	10.1	Pass
							15.0 (b)	
T15	301 - 281	Top Girt	L2 1/2x2x3/16	274	-1.79	12.63	14.2	Pass
							16.2 (b)	
T16	281 - 276	Top Girt	L2 1/2x2x1/4	307	-1.86	16.40	11.3	Pass
							16.8 (b)	
T18	271 - 266	Top Girt	L2 1/2x2x1/4	358	-2.02	16.40	12.3	Pass
							18.3 (b)	
T20	261 - 256	Top Girt	L2 1/2x2x3/16	369	-5.39	12.63	42.7	Pass
							48.8 (b)	
T22	251 - 246	Top Girt	L2 1/2x2x3/16	402	-5.78	12.63	45.8	Pass
							52.4 (b)	
T24	241 - 221	Top Girt	L2 1/2x2x3/16	415	-1.89	12.63	15.0	Pass
							17.2 (b)	
T25	221 - 201	Top Girt	L2 1/2x2x3/16	430	-2.50	12.70	19.7	Pass
							22.6 (b)	
T26	201 - 181	Top Girt	L2 1/2x2x3/16	463	-2.80	12.70	22.1	Pass
							25.4 (b)	
T27	181 - 161	Top Girt	2L3x2x1/4x3/8	496	-2.82	61.59	4.6	Pass
							12.8 (b)	
T28	161 - 141	Top Girt	L2 1/2x2x3/16	529	-2.68	12.76	21.0	Pass
							24.3 (b)	
T29	141 - 121	Top Girt	L2 1/2x2x3/16	562	-2.24	12.76	17.5	Pass
							20.2 (b)	
T30	121 - 101	Top Girt	L2 1/2x2x3/16	594	-6.75	12.76	52.9	Pass
							61.1 (b)	
T31	101 - 81	Top Girt	L2 1/2x2x3/16	626	-3.30	12.76	25.9	Pass
							29.9 (b)	
T32	81 - 61	Top Girt	L2 1/2x2x3/16	659	-3.33	12.76	26.1	Pass
							30.1 (b)	
T33	61 - 41	Top Girt	L2 1/2x2x3/16	692	-3.24	12.76	25.4	Pass
							29.3 (b)	
T34	41 - 20	Top Girt	L2 1/2x2x3/16	725	-2.89	12.76	22.6	Pass
							26.1 (b)	
T35	20 - 6.70833	Top Girt	2L2 1/2x2x3/16x1/4	789	13.89	49.00	28.3	Pass
							49.0 (b)	
T1	457 - 436	Mid Girt	L2 1/2x2x1/4	13	3.41	32.03	10.6	Pass
							30.8 (b)	
T3	421 - 401	Mid Girt	L2 1/2x2x1/4	80	-0.31	16.31	1.9	Pass
							3.6 (b)	
T12	361 - 341	Mid Girt	L2 1/2x2x1/4	199	0.39	32.03	1.2	Pass
							3.5 (b)	
T13	341 - 321	Mid Girt	L2 1/2x2x1/4	243	0.35	32.03	1.1	Pass
							3.2 (b)	

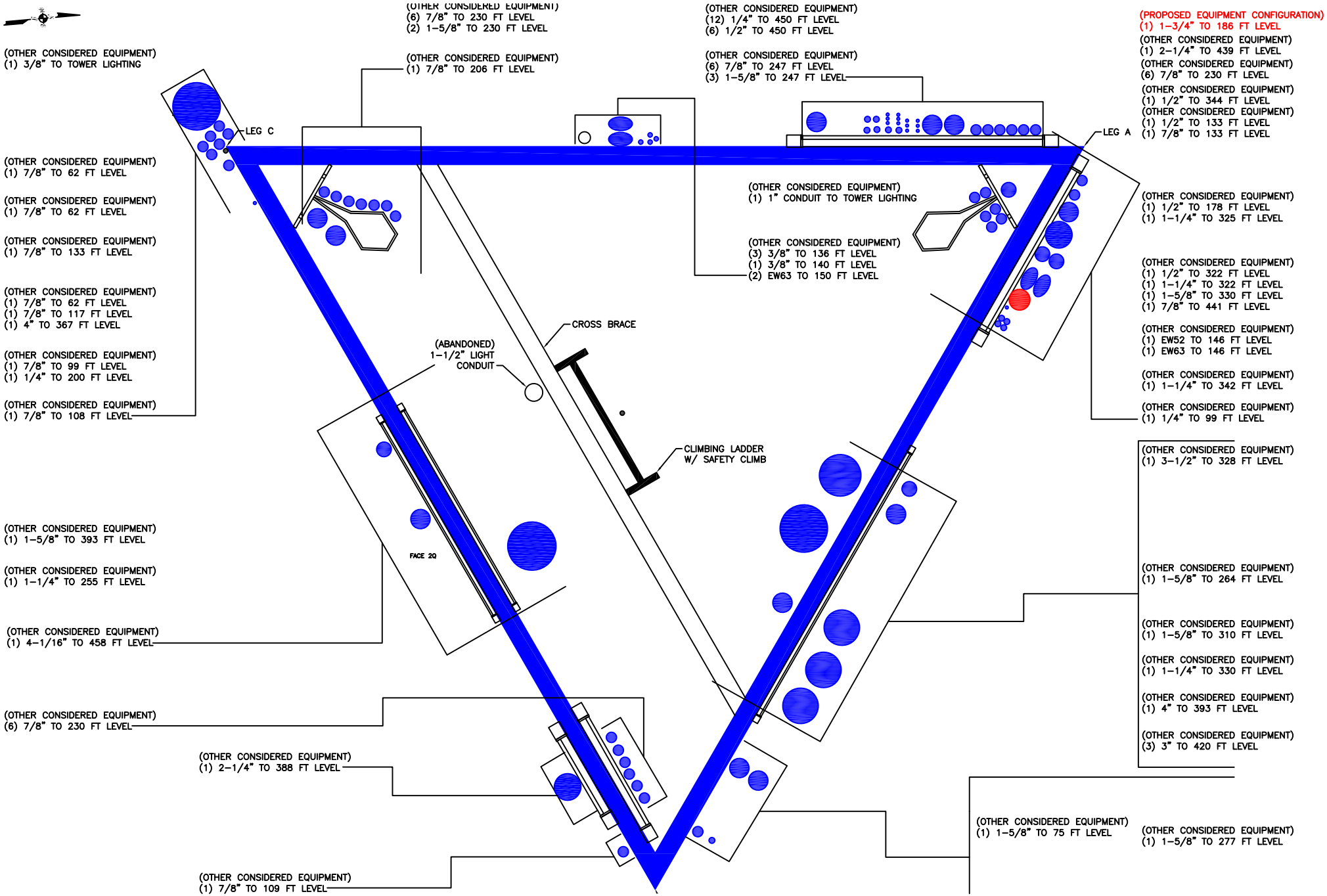
Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T14	321 - 301	Mid Girt	L2 1/2x2x1/4	277	0.49	32.03	1.5 4.5 (b)	Pass
T15	301 - 281	Mid Girt	L2 1/2x2x3/16	310	0.34	24.52	1.4 3.1 (b)	Pass
T24	241 - 221	Mid Girt	L2 1/2x2x3/16	433	0.63	24.52	2.6 5.7 (b)	Pass
T25	221 - 201	Mid Girt	L2 1/2x2x3/16	466	0.64	24.52	2.6 5.8 (b)	Pass
T26	201 - 181	Mid Girt	L2 1/2x2x3/16	499	0.60	24.52	2.5 5.5 (b)	Pass
T27	181 - 161	Mid Girt	L2 1/2x2x3/16	531	0.72	24.52	2.9 6.5 (b)	Pass
T28	161 - 141	Mid Girt	L2 1/2x2x3/16	565	0.83	24.52	3.4 7.5 (b)	Pass
T29	141 - 121	Mid Girt	L2 1/2x2x3/16	597	-7.89	12.76	61.8 79.4 (b)	Pass
T30	121 - 101	Mid Girt	L2 1/2x2x3/16	631	0.52	24.52	2.1 4.7 (b)	Pass
T31	101 - 81	Mid Girt	L2 1/2x2x3/16	663	0.95	24.52	3.9 8.6 (b)	Pass
T32	81 - 61	Mid Girt	L2 1/2x2x3/16	696	0.96	24.52	3.9 8.7 (b)	Pass
T33	61 - 41	Mid Girt	L2 1/2x2x3/16	729	0.89	24.52	3.6 8.0 (b)	Pass
T34	41 - 20	Mid Girt	L2 1/2x2x3/16	759	1.16	24.52	4.7 10.5 (b)	Pass
T1	457 - 436	Guy A@446.5	9/16	826	11.17	22.05	50.6	Pass
T8	381 - 376	Guy A@381	1 3/8	829	58.61	146.16	40.1	Pass
T21	256 - 251	Guy A@254.5	1 1/4	832	61.24	120.96	50.6	Pass
T29	141 - 121	Guy A@131	11/16	845	20.86	31.50	66.2	Pass
T1	457 - 436	Guy B@446.5	9/16	825	11.81	22.05	53.6	Pass
T8	381 - 376	Guy B@381	1 3/8	828	59.67	146.16	40.8	Pass
T21	256 - 251	Guy B@254.5	1 1/4	831	62.85	120.96	52.0	Pass
T29	141 - 121	Guy B@131	11/16	840	21.40	31.50	67.9	Pass
T1	457 - 436	Guy C@446.5	9/16	824	11.82	22.05	53.6	Pass
T8	381 - 376	Guy C@381	1 3/8	827	59.75	146.16	40.9	Pass
T21	256 - 251	Guy C@254.5	1 1/4	830	62.02	120.96	51.3	Pass
T29	141 - 121	Guy C@131	11/16	833	21.14	31.50	67.1	Pass
T8	381 - 376	Top Guy Pull-Off@381	2L3x2x1/4x3/8	141	18.35	73.27	25.1 83.1 (b)	Pass
T29	141 - 121	Torque Arm Top@131	L3x3x3/8 (TA - BU#873128)	848	19.41	61.04	31.8 57.3 (b)	Pass
T29	141 - 121	Torque Arm Bottom@131	2L3x3x3/16x3/4	844	-22.53	33.03	68.2	Pass

Summary		
Leg (T3)	83.9	Pass
Diagonal (T21)	96.7	Pass
Horizontal (T2)	18.2	Pass
Secondary Horizontal (T21)	67.6	Pass
Top Girt (T30)	61.1	Pass
Mid Girt (T29)	79.4	Pass
Guy A (T29)	66.2	Pass
Guy B (T29)	67.9	Pass
Guy C (T29)	67.1	Pass
Top Guy Pull-Off (T8)	83.1	Pass
Torque Arm Top (T29)	57.3	Pass
Torque	68.2	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$øP_{allow}$ K	% Capacity	Pass Fail
						Arm Bottom (T29) Bolt Checks	92.1	Pass
						RATING =	**96.7**	**Pass**

APPENDIX B

BASE LEVEL DRAWING


(OTHER CONSIDERED EQUIPMENT)
(1) 3/8" TO TOWER LIGHTING
(OTHER CONSIDERED EQUIPMENT)
(6) 7/8" TO 230 FT LEVEL
(2) 1-5/8" TO 230 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(1) 7/8" TO 206 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(12) 1/4" TO 450 FT LEVEL
(6) 1/2" TO 450 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(6) 7/8" TO 247 FT LEVEL
(3) 1-5/8" TO 247 FT LEVEL
(PROPOSED EQUIPMENT CONFIGURATION)
(1) 1-3/4" TO 186 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(1) 2-1/4" TO 439 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(6) 7/8" TO 230 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(1) 1/2" TO 344 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(1) 1/2" TO 133 FT LEVEL
(1) 7/8" TO 133 FT LEVEL
LEG C
LEG A
(OTHER CONSIDERED EQUIPMENT)
(1) 7/8" TO 62 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(1) 7/8" TO 62 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(1) 7/8" TO 133 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(1) 7/8" TO 62 FT LEVEL
(1) 7/8" TO 117 FT LEVEL
(1) 4" TO 367 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(1) 7/8" TO 99 FT LEVEL
(1) 1/4" TO 200 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(1) 7/8" TO 108 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(1) 1" CONDUIT TO TOWER LIGHTING
(OTHER CONSIDERED EQUIPMENT)
(3) 3/8" TO 136 FT LEVEL
(1) 3/8" TO 140 FT LEVEL
(2) EW63 TO 150 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(1) 1/2" TO 178 FT LEVEL
(1) 1-1/4" TO 325 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(1) 1/2" TO 322 FT LEVEL
(1) 1-1/4" TO 322 FT LEVEL
(1) 1-5/8" TO 330 FT LEVEL
(1) 7/8" TO 441 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(1) EW52 TO 146 FT LEVEL
(1) EW63 TO 146 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(1) 1-1/4" TO 342 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(1) 1/4" TO 99 FT LEVEL
CROSS BRACE
(ABANDONED)
1-1/2" LIGHT
CONDUIT
CLIMBING LADDER
W/ SAFETY CLIMB
FACE 2Q
(OTHER CONSIDERED EQUIPMENT)
(1) 3-1/2" TO 328 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(1) 1-5/8" TO 393 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(1) 1-1/4" TO 255 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(1) 4-1/16" TO 458 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(1) 1-5/8" TO 264 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(1) 1-5/8" TO 310 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(1) 1-1/4" TO 330 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(1) 4" TO 393 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(3) 3" TO 420 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(6) 7/8" TO 230 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(1) 2-1/4" TO 388 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(1) 1-5/8" TO 75 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(1) 1-5/8" TO 277 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(1) 7/8" TO 109 FT LEVEL

APPENDIX C

ADDITIONAL CALCULATIONS

Built-Up Leg Reinforcement Tool

Site Data	
BU#:	873128
Site Name:	Trumbull
Order #:	548870 Rev. 3
Section:	386ft - 381ft

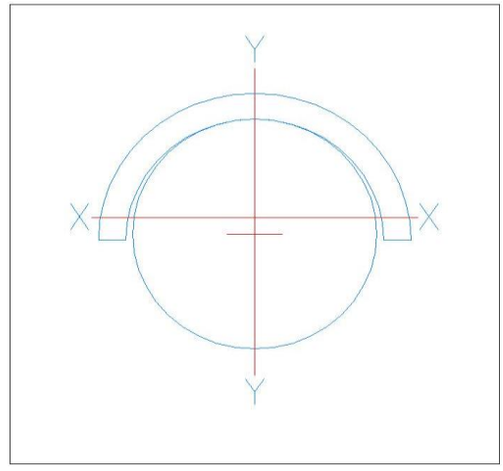
Leg Axial Load		
Compression, Pu:	162.7	kips
Dead Load, P_{dead}:		kips

Reinforcement Type
Split Pipe

Ratings (per TIA-222-H Section 15.5)		
Spacing Req.:	**O.K.**	
Reinforced Leg:	79.9%	**Pass**
Leg Crushing:	69.6%	**Pass**

Connection and Analysis Options		
TIA-222 Revision:	H	
Tower Type:	Guyed	
Consider Leg Load at Time of Modification:	No	
End Connections:	Fixed	
Leg Crushing Check:	Yes	
Applied Load:	Axial	
Slenderness Ratio:	KL/r Modified	
Intermediate Connection:	Welded	
Intermediate Spacing:	6	in
Split Pipe K_i Factor Override:		

Check Limitation	
Apply TIA-222-H Section 15.5:	☑
N/A	☐



Leg Data		
Diameter:	3	in
Thickness:	1.5	in
Yield (Fy):	35	ksi
Unbraced Length:	60	in

Split Pipe Data		
Outside Diameter:	3.5	in
Thickness:	0.22	in
Yield (Fy):	35	ksi

TNX K Factor Adjustment	1.000

Built-Up Section Properties					
Area:	8.2021	in^2	Polar Moment of Inertia, J:	7.9522	in^4
Moment of Intertia, I_{xx}:	5.2756	in^4	Moment of Intertia, I_{yy}:	5.5072	in^4
Eccentricty, e:	0.1404	in	Plastic Neutral Axis:	0.1404	in

Built-Up Leg Reinforcement Tool

Site Data	
BU#:	873128
Site Name:	Trumbull
Order #:	548870 Rev. 3
Section:	366ft - 361ft

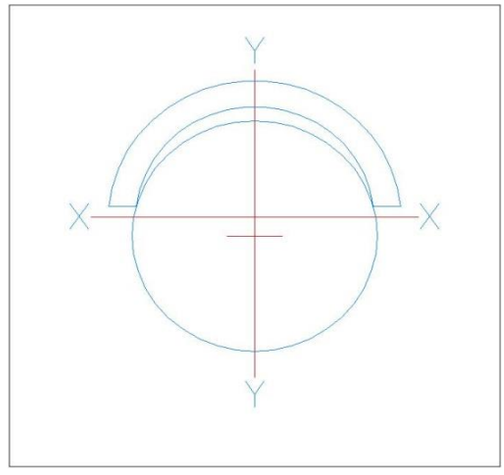
Leg Axial Load		
Compression, Pu:	143.68	kips
Dead Load, P_{dead}:		kips

Reinforcement Type
Split Pipe

Ratings (per TIA-222-H Section 15.5)		
Spacing Req.:	**O.K.**	
Reinforced Leg:	47.8%	**Pass**
Leg Crushing:	45.2%	**Pass**

Connection and Analysis Options		
TIA-222 Revision:	H	
Tower Type:	Guyed	
Consider Leg Load at Time of Modification:	No	
End Connections:	Fixed	
Leg Crushing Check:	Yes	
Applied Load:	Axial	
Slenderness Ratio:	KL/r Modified	
Intermediate Connection:	Welded	
Intermediate Spacing:	6	in
Split Pipe K_i Factor Override:		

Check Limitation	
Apply TIA-222-H Section 15.5:	☑
N/A	☐



Leg Data		
Diameter:	3.5	in
Thickness:	1.75	in
Yield (Fy):	35	ksi
Unbraced Length:	60	in

Split Pipe Data		
Outside Diameter:	3.5	in
Thickness:	0.23	in
Yield (Fy):	35	ksi

TNX K Factor Adjustment	1.000

Built-Up Section Properties					
Area:	10.8025	in^2	Polar Moment of Inertia, J:	14.7324	in^4
Moment of Intertia, I_{xx}:	11.5067	in^4	Moment of Intertia, I_{yy}:	8.9531	in^4
Eccentricty, e:	0.2089	in	Plastic Neutral Axis:	0.2089	in

Pier and Pad Foundation

BU # :	873128
Site Name:	Trumbull
App. Number:	548870 Rev. 3

TIA-222 Revision:	H
Tower Type:	Guyed

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

Superstructure Analysis Reactions

Compression, P_{comp}:	401.14	kips
Base Shear, Vu_comp:	1.75	kips
Moment, M_u:	0	ft-kips
Tower Height, **H**:	457	ft
BP Dist. Above Fdn, bp_{dist}:	3	in
Bolt Circle / Bearing Plate Width, **BC**:		in

Pier Properties

Pier Shape:	Circular	
Pier Diameter, **dpier**:	4.5	ft
Ext. Above Grade, **E**:	0.5	ft
Pier Rebar Size, **Sc**:	7	
Pier Rebar Quantity, **mc**:	7	
Pier Tie/Spiral Size, **St**:	3	
Pier Tie/Spiral Quantity, **mt**:	7	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier}:	3	in

Pad Properties

Depth, **D**:	4.5	ft
Pad Width, W_1:	10	ft
Pad Thickness, **T**:	2	ft
Pad Rebar Size (Bottom dir. 2), Sp_2:	7	
Pad Rebar Quantity (Bottom dir. 2), mp_2:	10	
Pad Clear Cover, cc_{pad}:	3	in

Material Properties

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

Soil Properties

Total Soil Unit Weight, γ:	115	pcf
Ultimate Gross Bearing, Qult:	18.000	ksf
Cohesion, **Cu**:		ksf
Friction Angle, φ:	34	degrees
SPT Blow Count, N_{blows}:		
Base Friction, μ:	0.4	
Neglected Depth, **N**:	0.00	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, **gw**:	N/A	ft

<--Toggle between Gross and Net

Foundation Analysis Checks

	Capacity	Demand	Rating*	Check
Lateral (Sliding) (kips)	105.97	1.75	**1.6%**	**Pass**
Bearing Pressure (ksf)	10.80	4.77	**42.1%**	**Pass**
*Overturning (kip*ft)*	1090.85	9.19	**0.8%**	**Pass**
*Pier Flexure (Comp.) (kip*ft)*	1069.39	5.25	**0.5%**	**Pass**
Pier Compression (kip)	7592.08	409.73	**5.1%**	**Pass**
*Pad Flexure (kip*ft)*	515.68	154.56	**28.5%**	**Pass**
Pad Shear - 1-way (kips)	194.10	45.39	**22.3%**	**Pass**
Pad Shear - 2-way (Comp) (ksi)	0.164	0.047	**27.1%**	**Pass**
*Flexural 2-way (Comp) (kip*ft)*	1031.36	3.15	**0.3%**	**Pass**

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

Structural Rating*:	**28.5%**
Soil Rating*:	**42.1%**

Guyed Anchor Block Foundation

Checks capacity of anchor blocks for a guyed tower.

BU#:	873128
Site Name:	Trumbull
Order Number:	548870 Rev. 3
Location:	A

TIA-222 Revision: H

Design Reactions		
Shear, **S**:	135.70	kips
Uplift, **Ua**:	92.68	kips
Resultant Force, **Rf**:	164.3	kips
Tower Height, **H**:	457.00	ft
Guy Anchor Radius, **R**:	405.00	ft
Resultant Angle to Horizontal, **θ**:	34.3	deg

Guy Anchor Properties		
Depth to Bottom of Deadman, **Da**:	6.8	ft
Anchor Width, **Wa**:	18.5	ft
Anchor Thickness, **Ta**:	3.3	ft
Anchor Length, **La**:	23	ft
Concrete Volume, **Vc**:	52.0	yd^3
Toe Width, **toe**:		ft

Material Properties		
Wt. Avg.Concrete Density, **δx**:	0.150	kcf

Design Checks				
	Capacity	**Demand**	**Rating***	**Check**
Lateral Capacity (kips):	444.22	135.70	**29.1%**	**Pass**
Uplift Capacity (kips):	478.26	92.68	**18.5%**	**Pass**

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

Soil Rating:	**29.1%**
Structural Rating:	**N/A**
Anchor Shaft Rating:	**N/A**

Neglect Depth, **Neg**:	0	ft
Groundwater Level, **gw**:	8.5	ft

Soil Properties:	**No. of Soil Layers?**			4		
Layer	**φ, deg**	**cu, ksf**	**δ, pcf**	**d, ft**	**Ultimate fs (ksf)**	**N (blows/ft)**
1	0		110	1.50		
2	0		115	4.83		
3	34		115	5.00		
4	0	5.000	135	6.80		

*key: φ = *Internal Angle of Friction*
cu = Cohesion / Undrained Shear Strength
δ = *Buoyant Soil Unit Weight*
d = Depth to Bottom of Layer
Ultimate fs = Geotechnical Report-provided skin friction / adhesion
N = SPT Blow Count

Version 3.4.0

Guyed Anchor Block Foundation

Checks capacity of anchor blocks for a guyed tower.

BU#:	873128
Site Name:	Trumbull
Order Number:	548870 Rev. 3
Location:	B

TIA-222 Revision:	H

Design Reactions		
Shear, **S**:	139.36	kips
Uplift, **Ua**:	94.38	kips
Resultant Force, **Rf**:	168.3	kips
Tower Height, **H**:	457.00	ft
Guy Anchor Radius, **R**:	394.00	ft
Resultant Angle to Horizontal, **θ**:	34.1	deg

Guy Anchor Properties		
Depth to Bottom of Deadman, **Da**:	9.8	ft
Anchor Width, **Wa**:	7	ft
Anchor Thickness, **Ta**:	5.5	ft
Anchor Length, **La**:	6	ft
Concrete Volume, **Vc**:	8.6	yd^3
Toe Width, **toe**:		ft

Material Properties		
Wt. Avg.Concrete Density, **δx**:	0.135	kcf

Design Checks				
	Capacity	**Demand**	**Rating***	**Check**
Lateral Capacity (kips):	425.40	139.36	**31.2%**	**Pass**
Uplift Capacity (kips):	224.84	94.38	**40.0%**	**Pass**

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

Soil Rating:	**40.0%**
Structural Rating:	**N/A**
Anchor Shaft Rating:	**N/A**

Neglect Depth, **Neg**:	0	ft
Groundwater Level, **gw**:	8.5	ft

Soil Properties:	**No. of Soil Layers?**			5		
Layer	**φ, deg**	**cu, ksf**	**δ, pcf**	**d, ft**	**Ultimate fs (ksf)**	**N (blows/ft)**
1	0	0.000	115	2.30		
2	34	0.000	115	3.50		
3	0	5.000	135	4.30	2.320	
4	0	5.000	135	8.50	2.320	
5	0	5.000	72.6	9.80	2.320	

*key: φ = *Internal Angle of Friction*
cu = Cohesion / Undrained Shear Strength
δ = *Buoyant Soil Unit Weight*
d = Depth to Bottom of Layer
Ultimate fs = Geotechnical Report-provided skin friction / adhesion
N = SPT Blow Count

Version 3.4.0

Guyed Anchor Block Foundation

Checks capacity of anchor blocks for a guyed tower.

BU#:	873128
Site Name:	Trumbull
Order Number:	548870 Rev. 3
Location:	C

TIA-222 Revision:	H

Design Reactions		
Shear, **S**:	138.14	kips
Uplift, **Ua**:	92.19	kips
Resultant Force, **Rf**:	166.1	kips
Tower Height, **H**:	457.00	ft
Guy Anchor Radius, **R**:	411.00	ft
Resultant Angle to Horizontal, **θ**:	33.7	deg

Guy Anchor Properties		
Depth to Bottom of Deadman, **Da**:	9.8	ft
Anchor Width, **Wa**:	7	ft
Anchor Thickness, **Ta**:	5.5	ft
Anchor Length, **La**:	6	ft
Concrete Volume, **Vc**:	8.6	yd^3
Toe Width, **toe**:		ft

Material Properties		
Wt. Avg.Concrete Density, **δx**:	0.135	kcf

Design Checks				
	Capacity	**Demand**	**Rating***	**Check**
Lateral Capacity (kips):	150.48	138.14	**87.4%**	**Pass**
Uplift Capacity (kips):	111.54	92.19	**78.7%**	**Pass**

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

Soil Rating:	**87.4%**
Structural Rating:	**N/A**
Anchor Shaft Rating:	**N/A**

Neglect Depth, **Neg**:	0	ft
Groundwater Level, **gw**:	8.5	ft

Soil Properties:	**No. of Soil Layers?**			5		
Layer	**φ, deg**	**cu, ksf**	**δ, pcf**	**d, ft**	**Ultimate fs (ksf)**	**N (blows/ft)**
1	0	0.000	115	2.30		
2	34	0.000	115	4.00		
3	39	0.000	120	8.50	0.840	
4	39	0.000	57.6	9.00	1.090	
5	43	0.000	62.6	9.80	1.240	

*key: φ = *Internal Angle of Friction*
cu = Cohesion / Undrained Shear Strength
δ = *Buoyant Soil Unit Weight*
d = Depth to Bottom of Layer
Ultimate fs = Geotechnical Report-provided skin friction / adhesion
N = SPT Blow Count

Version 3.4.0

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-16
Risk Category: II
Soil Class: D - Default (see Section 11.4.3)

Elevation: 519.67 ft (NAVD 88)
Latitude: 41.278961
Longitude: -73.185111

Wind

Results:

Wind Speed:	118 Vmph
10-year MRI	75 Vmph
25-year MRI	85 Vmph
50-year MRI	90 Vmph
100-year MRI	98 Vmph

Data Source:	ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed:	Fri Nov 05 2021

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

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

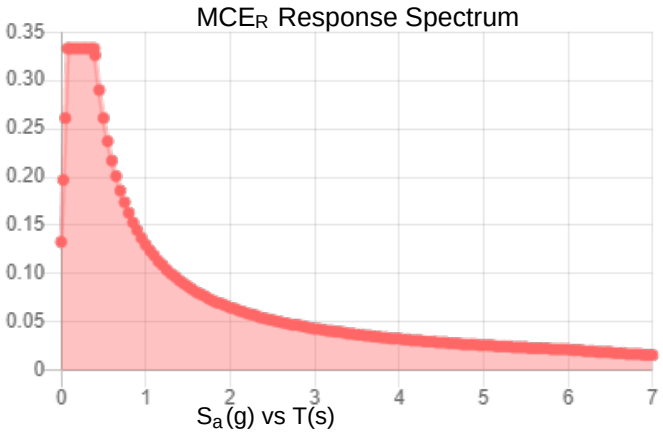
Seismic

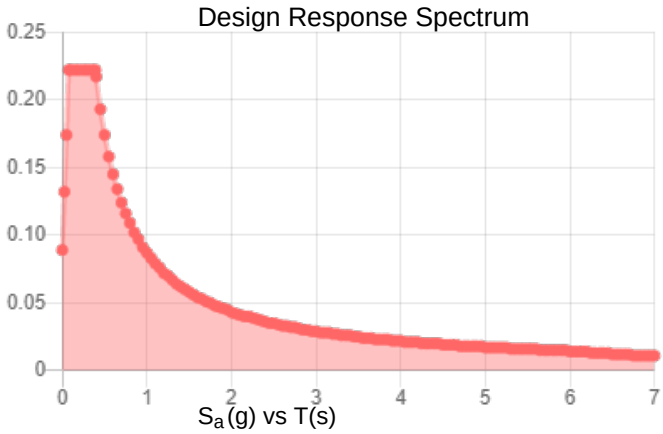
Site Soil Class: D - Default (see Section 11.4.3)

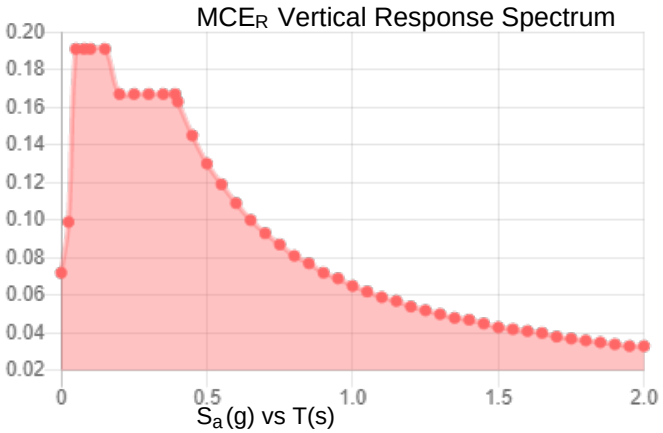
Results:

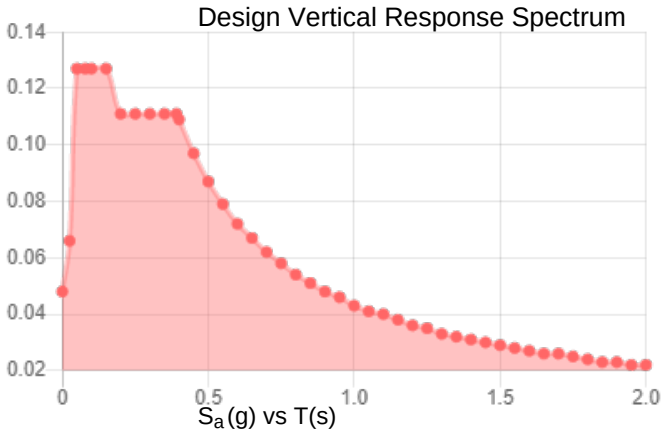
S_S :	0.208	S_{D1} :	0.087
S_1 :	0.054	T_L :	6
F_a :	1.6	PGA :	0.118
F_v :	2.4	PGA_M :	0.185
S_{MS} :	0.333	F_{PGA} :	1.564
S_{M1} :	0.13	I_e :	1
S_{DS} :	0.222	C_v :	0.717

Seismic Design Category B









Data Accessed: Fri Nov 05 2021

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

Ice

Results:

Ice Thickness:	1.00 in.
Concurrent Temperature:	15 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8
Date Accessed:	Fri Nov 05 2021

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

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 500-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Exhibit E

Mount Analysis

Date: **March 9, 2022**

Kimley-Horn and Associates, Inc.
421 Fayetteville Street, Suite 600
Raleigh, NC 27601
(919) 677-2000
CrownMounts@kimley-horn.com

Subject:	**Mount Analysis - Conditional Passing Report**	
Carrier Designation:	**DISH Network Equipment Change-Out**	
	Carrier Site Number:	NJJER01137A
	Carrier Site Name:	CT-CCI-T-873128
Crown Castle Designation:	**BU Number:**	873128
	Site Name:	Trumbull
	JDE Job Number:	640191
	Order Number:	548870, Rev. 3
Engineering Firm Designation:	**Kimley-Horn Project Number:**	019558058
Site Data:	**800 Booth Hill Rd., Trumbull, Faifield County, CT 06611**	
	Latitude 41° 16' 44.26" Longitude -73° 11' 6.40"	
Structure Information:	**Tower Height & Type:**	**458 ft Guyed Tower**
	Mount Elevation:	**186 ft**
	Mount Type:	**8 ft Sector Frames**

Kimley-Horn is pleased to submit this **"Mount Analysis - Conditional Passing 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.

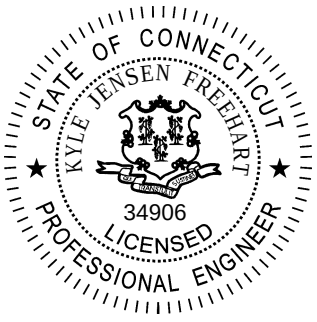
The purpose of the analysis is to determine acceptability of the mount stress level. Based on our analysis we have determined the mount stress level to be:

Sector Frames (Typical) **Sufficient**

*** See Section 4.1 for loading and structural modifications required for the mount to support the loading listed in Table 1.**

This analysis utilizes an ultimate 3-second gust wind speed of 118 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: Saja Alkhafaji, E.I.



Respectfully Submitted by:

Kyle Freehart, P.E.

Lic. #PEN.0034906, Exp. 1/31/2022
Kimley-Horn and Associates, Inc. COA #PEC.0000738

TABLE OF CONTENTS

1) INTRODUCTION

The mounting configuration consists of (3) proposed 8 ft Sector Frames designed by CommScope.

2) ANALYSIS CRITERIA

Building Code:	2018 Connecticut State Building Code
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Ultimate Wind Speed:	118 mph
Exposure Category:	B
Topographic Factor at Base:	1.0
Topographic Factor at Mount:	1.0
Ice Thickness:	1 in
Wind Speed with Ice:	50 mph
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

Elevation (ft)		Antennas			Mount / Modification Details
Mount	Centerline	#	Manufacturer	Model	
186	186	3	Fujitsu	TA08025-B604	(3) Proposed 8 ft Sector Frames designed by CommScope
		3	Fujitsu	TA08025-B605	
		3	JMA	MX08FRO665-21	
		1	Raycap	RDIDC-9181-PF-48	

3) ANALYSIS PROCEDURE

Table 2 – Documents Provided

Document	Remarks	Reference	Source
Mount Design Drawings	CommScope	MTC3975083	On File

3.1) Analysis Method

RISA-3D (v. 17.02.00), 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 proprietary tool internally developed by Kimley-Horn 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 *Mount Analysis* (Rev. E).

3.2) Assumptions

1) The antenna mounting system (including any considered modifications) was properly fabricated, installed and maintained in good condition in accordance with its original design and manufacturer specifications.
2) The configuration of antennas, mounts, and other appurtenances are as specified in Table 1 and the provided reference information.
3) All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected members 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 that could not be verified at this time.
5) Any referenced prior structural modifications to the tower mounting system are assumed to be installed as shown per available data unless noted otherwise.
6) Steel grades have been assumed as follows, unless noted otherwise:

Channel, Solid Round, Angle, Plate	ASTM A36 (Gr. 36)
HSS (Rectangular)	ASTM A36 (Gr. 36)
Pipe	ASTM A53 (Gr. 35)
Connection Bolts	ASTM A325
U-Bolts	ASTM A36 (Gr. 36)
Threaded Rods	ASTM A36 (Gr. 36)

If any assumptions are not valid or have been made in error, Kimley-Horn 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

Notes	Component	Critical Member	Centerline (ft)	% Capacity	Pass / Fail
1, 2	Stand Off Horizontals	M15	186	24%	Pass
1, 2	Connections	-		18%	Pass
1, 2	Mount Pipes	M45		9%	Pass
1, 2	Face Horizontals	M26		9%	Pass
1, 2	Stiff Arms	M48		6%	Pass

Structure Rating (max from all components) =	24%

Notes:
1) See additional documentation in Appendix C and Appendix D for calculations supporting the % capacity consumed.
2) Rating per TIA-222-H, Section 15.5.
3) All sectors are typical.

Table 4 – Tieback Connection Data Table

Tower Connection Node No.	Existing / Proposed	Resultant End Reaction (lb)	Connected Member Type	Connected Member Size	Member Compressive Capacity (lb)[3]	Notes
N84	Proposed	771	Leg	SR 3 1/4	9942	1

Notes:
1) Tieback connection point is within 25% of either end of the connected tower member.
2) Tieback connection point is NOT within 25% of either end of the connected tower member.
3) Reduced member compressive capacity according to CED-STD-10294 *Standard for Installation of Mounts and Appurtenances.*

4.1) Recommendations

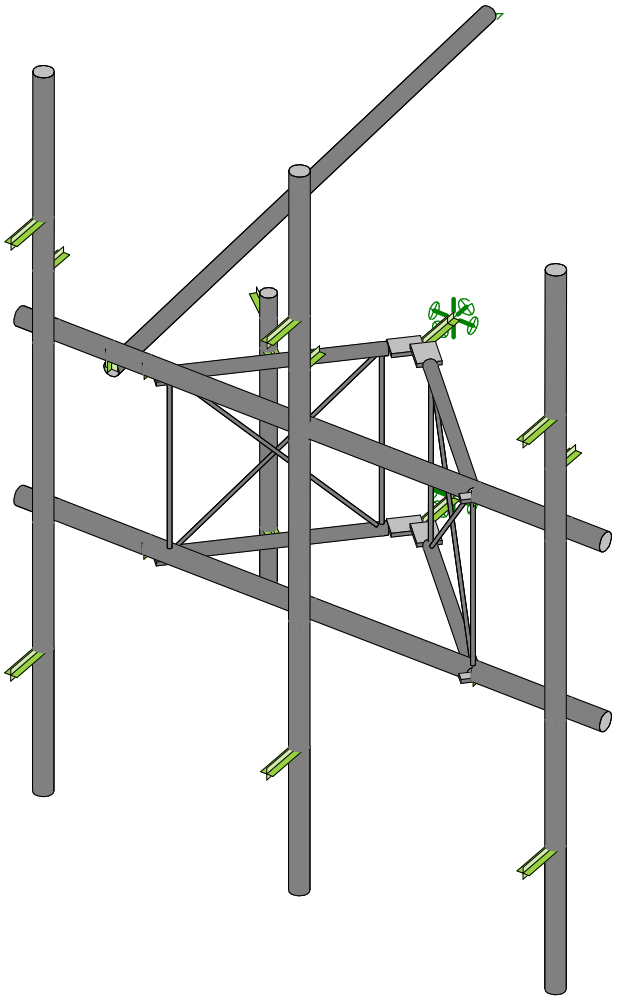
The mounting configuration will have sufficient capacity to carry the referenced loading once the following modifications are completed:

- **Install (3) CommScope MTC3975083 sector frame kits. Vertically center antennas and mount pipes on mount face. Attach included tie-back to right side of upper face horizontal pipe (looking at back of mount) and to adjacent tower leg within 15" of a tower bracing point.**

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

APPENDIX A

WIRE FRAME AND RENDERED MODELS



Envelope Only Solution

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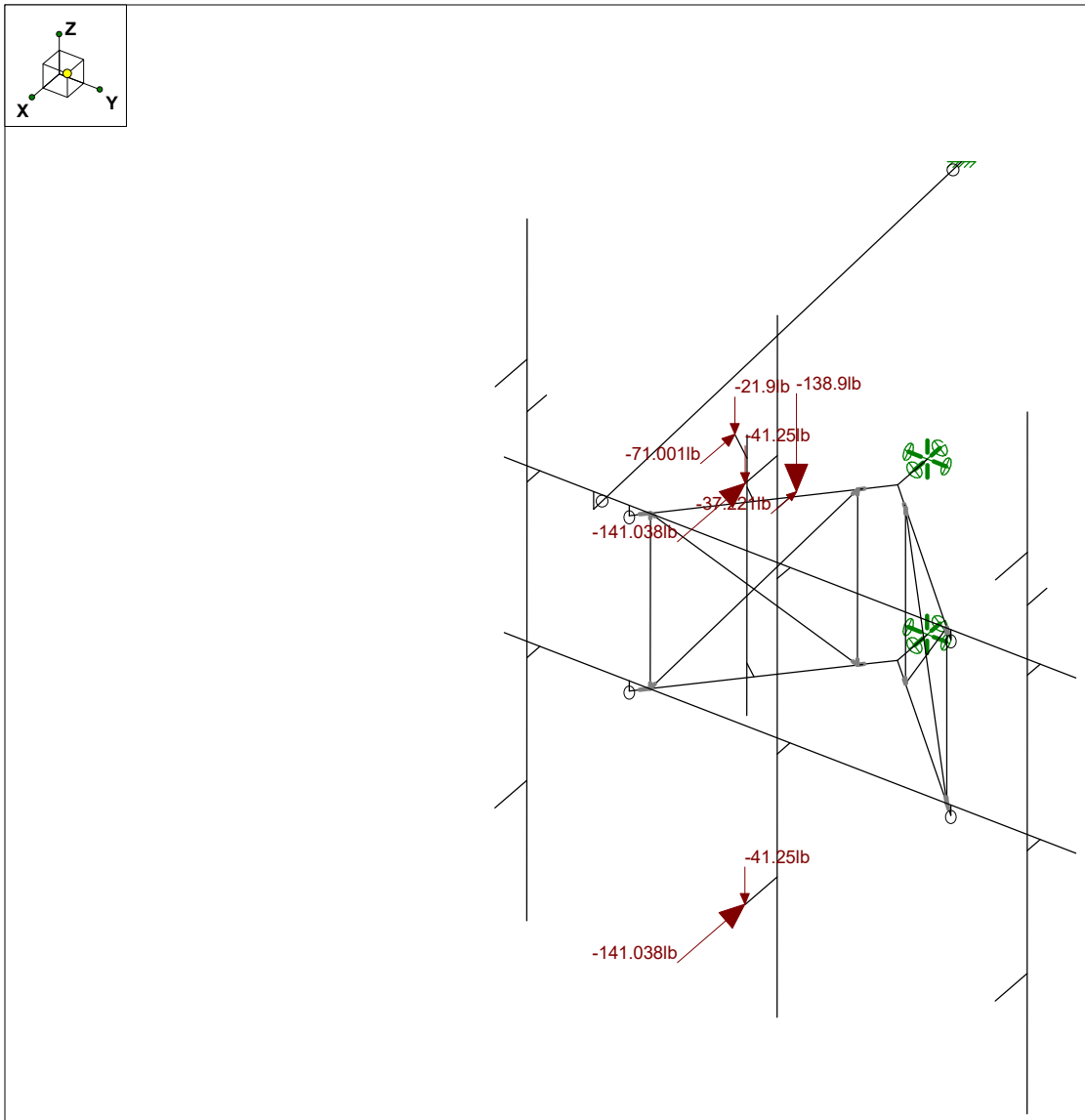

Loads: LC 1, Summary: 1.0D + 1.0W
Envelope Only Solution

Kimley-Horn and Associates, Inc.	873128	SK - 1
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APPENDIX B

SOFTWARE INPUT CALCULATIONS

General Criteria	
TIA Standard	H
IBC Edition	2015
Structure Class	-
Risk Category	II

Site-Specific Criteria	
Exposure Category	B
Topographic Factor, K_{zt}	1.00
Structure Base Elev. (AMSL), z_s (ft)	519.67
Ground Effect Factor, K_e	0.98

Mount & Structure Criteria	
Mount Elevation (AGL) (ft)	186.00
Structure Height (ft)	458.00
Structure Type	Guyed Tower

Constants	
Wind Direction Probability Factor, K_d	0.95
Gust Effect Factor, G_h	1
Shielding Factor, K_a **(antenna)**	0.9
Shielding Factor, K_a **(mount)**	0.9

Wind Summary	
Basic Wind Speed w/o Ice, **V** (mph)	118.00
Velocity Pressure Coeff., K_z	1.18
Velocity Pressure, q_z **(w/o Ice)** (psf)	39.21

Ice Load Summary	
Basic Wind Speed w/ Ice, V_i (mph)	50.00
Design Ice Thick. (ASCE 7-10) , t_i (in)	0.5
Velocity Pressure, q_z **(w/ Ice)** (psf)	7.04
Escalated Ice Thick. @ Mount, t_{iz} (in)	1.19

Seismic Load Summary	
Spectral Response (Short Periods), S_s	-
Spectral Response (1-Sec. Period), S_1	-
Site Class	-
Seismic Design Category	-
Seismic Risk Category	-

Snow Load Summary	
Ground Snow Load, p_g (psf)	-
Snow Load on Flat Roofs, p_f (psf)	-

Kimley»Horn

Date	March 09, 2022
Client	Crown Castle
Site #	873128
Site Name	Trumbull
Project #	19558058

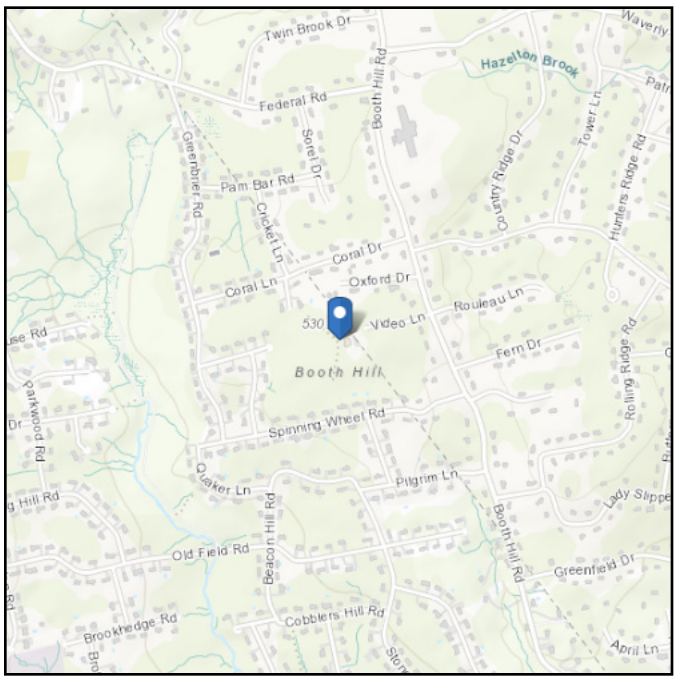
Antenna Name	Qty	Shape	Dimensions (in)			Weight (lb)	Joint Labels								EPA (ft²)		Wind Force, F_A (lb)			
																	No Ice		With Ice	
			H	W	D		Alpha		Beta		Gamma		Delta		Front	Side	Front	Side	Front	Side
MX08FRO665-21	3	Flat	72	20	8	82.5	A2B	A2T							7.99	3.23	282.08	113.87	57.96	26.26
TA08025-B604	3	Flat	15	15.8	7.9	63.9	A2R								0.49	1.96	17.31	69.29	4.69	16.6
TA08025-B605	3	Flat	15	15.8	9.1	75	A2R								0.56	1.96	19.91	69.29	5.23	16.6
RDIDC-9181-PF-48	1	Flat	16.6	14.6	8.5	21.9	RC								2.01	1.17	71	41.23	16.96	10.84

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-16
Risk Category: II
Soil Class: D - Stiff Soil

Elevation: 519.67 ft (NAVD 88)
Latitude: 41.278961
Longitude: -73.185111



Wind

Results:

Wind Speed	118 Vmph
10-year MRI	75 Vmph
25-year MRI	85 Vmph
50-year MRI	90 Vmph
100-year MRI	98 Vmph

Data Source:	ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed:	Mon Mar 07 2022

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

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

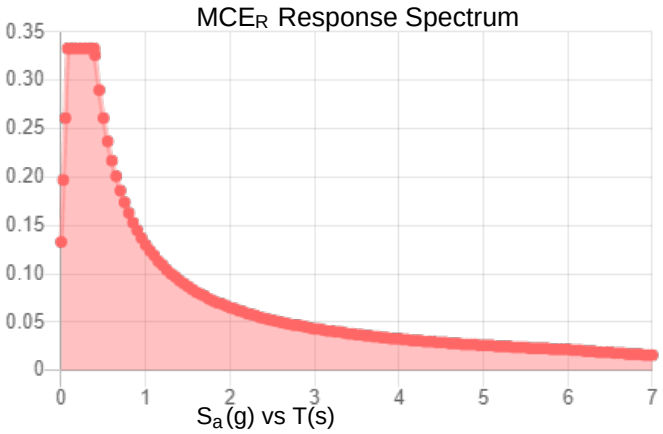
Seismic

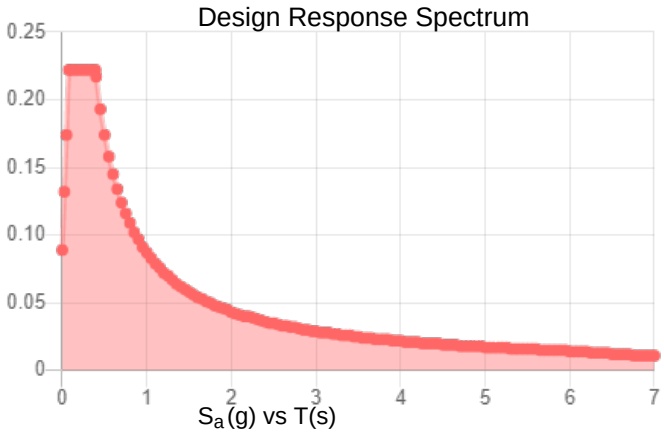
Site Soil Class: D - Stiff Soil

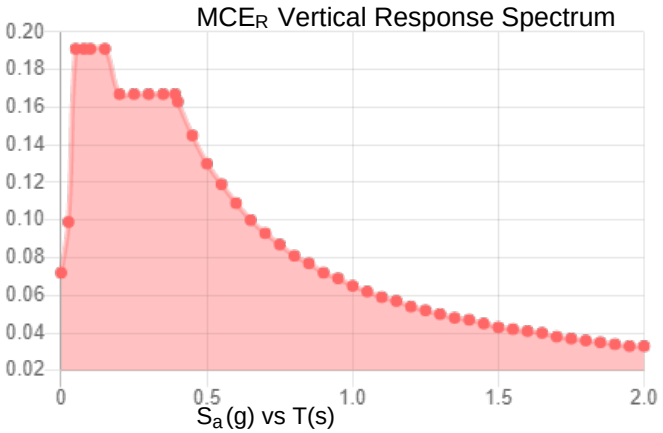
Results:

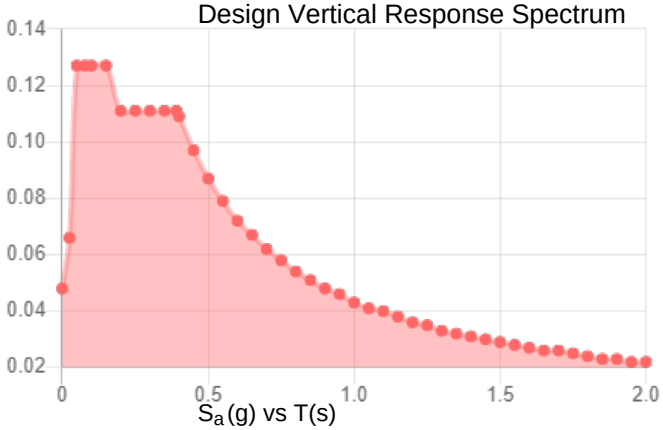
S_S :	0.208	S_{D1} :	0.087
S_1 :	0.054	T_L :	6
F_a :	1.6	PGA :	0.118
F_v :	2.4	PGA_M :	0.185
S_{MS} :	0.333	F_{PGA} :	1.564
S_{M1} :	0.13	I_e :	1
S_{DS} :	0.222	C_v :	0.717

Seismic Design Category B









Data Accessed: **Mon Mar 07 2022**

Date Source:

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

Ice

Results:

Ice Thickness:	1.00 in.
Concurrent Temperature:	15 F
Gust Speed	50 mph
Data Source:	Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8
Date Accessed:	Mon Mar 07 2022

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

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 500-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

APPENDIX C

SOFTWARE ANALYSIS OUTPUT

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (\1E...	Density[lb/f...	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A992	29000	11154	.3	.65	490	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	.3	.65	490	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	.3	.65	490	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	.3	.65	527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	.3	.65	527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	.3	.65	490	35	1.6	60	1.2
7	A1085	29000	11154	.3	.65	490	50	1.4	65	1.3
8	A913 Gr.65	29000	11154	.3	.65	490	65	1.1	80	1.1
9	A529 Gr. 50	29000	11154	.3	.65	490	50	1.5	65	1.2
10	A500 Gr. C RND	29000	11154	.3	.65	490	46	1.5	62	1.2
11	Q235	29000	11154	.3	.65	490	35	1.5	58	1.2

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Ru...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Stand-Off Rear Knife Pla...	PL3-1/2x5/8	Beam	None	A572 Gr.50	Typical	2.188	.071	2.233	.253
2	Stand-Off Horiz	HSS1.900X0....	Beam	None	A500 Gr.B RND	Typical	.624	.251	.251	.501
3	Stand-Off Front Knife Pl...	PL4-1/4x5/8	Beam	None	A572 Gr.50	Typical	2.656	.086	3.998	.314
4	Stand-Off Diag Bracing	SR1/2	Beam	None	A529 Gr. 50	Typical	.196	.003	.003	.006
5	Stand-Off Vert Bracing	SR5/8	Column	None	A529 Gr. 50	Typical	.307	.007	.007	.015
6	Face Horiz	HSS2.875X0....	Beam	None	A500 Gr. C R...	Typical	1.59	1.45	1.45	2.89
7	Mount Pipe	HSS2.875X0....	Column	None	A500 Gr. C R...	Typical	1.59	1.45	1.45	2.89
8	Stiff Arm	HSS2.375x0.1...	Beam	None	A500 Gr. C R...	Typical	.85	.542	.542	1.084
9	Raycap Pipe	PIPE_2.0	Column	None	A53 Gr.B	Typical	1.02	.627	.627	1.25

Hot Rolled Steel Design Parameters

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torqu...	Kyy	Kzz	Cb	Function
1	M11	Stand-Off R...	5.694			Lbyy						Lateral
2	M12	Stand-Off H...	31	28.5								Lateral
3	M13	Stand-Off F...	3			Lbyy						Lateral
4	M14	Stand-Off R...	5.694			Lbyy						Lateral
5	M15	Stand-Off H...	31	28.5								Lateral
6	M16	Stand-Off F...	3			Lbyy						Lateral
7	M17	Stand-Off D...	42.067	20.771	20.771				.65	.65		Lateral
8	M18	Stand-Off D...	42.067	20.771	20.771				.65	.65		Lateral
9	M19	Stand-Off V...	30			Lbyy			.65	.65		Lateral
10	M20	Stand-Off V...	30			Lbyy			.65	.65		Lateral
11	M38A	Stand-Off R...	5.694			Lbyy						Lateral
12	M39A	Stand-Off H...	31	28.5								Lateral
13	M40A	Stand-Off F...	3			Lbyy						Lateral
14	M41A	Stand-Off R...	5.694			Lbyy						Lateral
15	M42A	Stand-Off H...	31	28.5								Lateral
16	M43A	Stand-Off F...	3			Lbyy						Lateral
17	M44A	Stand-Off D...	42.067	20.771	20.771				.65	.65		Lateral
18	M45A	Stand-Off D...	42.067	20.771	20.771				.65	.65		Lateral
19	M46A	Stand-Off V...	30			Lbyy			.65	.65		Lateral
20	M47	Stand-Off V...	30			Lbyy			.65	.65		Lateral
21	M25	Face Horiz	96	54	Segment			Segme...				Lateral
22	M26	Face Horiz	96	54	Segment			Segme...				Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torqu...	Kyy	Kzz	Cb	Function
23	M44	Mount Pipe	120			Lbyy						Lateral
24	M45	Mount Pipe	120			Lbyy						Lateral
25	M46	Mount Pipe	120			Lbyy						Lateral
26	M48	Stiff Arm	96.954			Lbyy						Lateral
27	M53A	Raycap Pipe	48									Lateral

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(...
1	Dead	DL			-1	5				
2	Dead of Ice	RL				5		27		
4	Structure Wind (0)	None						54		
5	Structure Wind (30)	None						54		
6	Structure Wind (45)	None						54		
7	Structure Wind (60)	None						54		
8	Structure Wind (90)	None						54		
9	Structure Wind (120)	None						54		
10	Structure Wind (135)	None						54		
11	Structure Wind (150)	None						54		
12	Structure Wind w/ Ice (0)	None						54		
13	Structure Wind w/ Ice (30)	None						54		
14	Structure Wind w/ Ice (45)	None						54		
15	Structure Wind w/ Ice (60)	None						54		
16	Structure Wind w/ Ice (90)	None						54		
17	Structure Wind w/ Ice (120)	None						54		
18	Structure Wind w/ Ice (135)	None						54		
19	Structure Wind w/ Ice (150)	None						54		
20	Antenna Wind (0)	None				10				
21	Antenna Wind (30)	None				10				
22	Antenna Wind (45)	None				10				
23	Antenna Wind (60)	None				10				
24	Antenna Wind (90)	None				10				
25	Antenna Wind (120)	None				10				
26	Antenna Wind (135)	None				10				
27	Antenna Wind (150)	None				10				
28	Antenna Wind w/ Ice (0)	None				10				
29	Antenna Wind w/ Ice (30)	None				10				
30	Antenna Wind w/ Ice (45)	None				10				
31	Antenna Wind w/ Ice (60)	None				10				
32	Antenna Wind w/ Ice (90)	None				10				
33	Antenna Wind w/ Ice (120)	None				10				
34	Antenna Wind w/ Ice (135)	None				10				
35	Antenna Wind w/ Ice (150)	None				10				
36	Maintenance Live Lm (1)	OL1				1				
37	Maintenance Live Lm (2)	OL2				1				
38	Maintenance Live Lm (3)	OL3				1				
41	Maintenance Live Lv (1)	OL6					1			
42	Maintenance Live Lv (2)	OL7					1			

Load Combinations

	Description	So..	P...	SRSS	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac...
1	Summary: 1.0D + 1...	Yes	Y		DL	1	20	1																		
2	1.4D	Yes	Y		DL	1.4																				
3	1.2D + 1.0W(0)	Yes	Y		DL	1.2	4	1	20	1																
4	1.2D + 1.0W(30)	Yes	Y		DL	1.2	5	1	21	1																
5	1.2D + 1.0W(45)	Yes	Y		DL	1.2	6	1	22	1																
6	1.2D + 1.0W(60)	Yes	Y		DL	1.2	7	1	23	1																
7	1.2D + 1.0W(90)	Yes	Y		DL	1.2	8	1	24	1																
8	1.2D + 1.0W(120)	Yes	Y		DL	1.2	9	1	25	1																
9	1.2D + 1.0W(135)	Yes	Y		DL	1.2	10	1	26	1																
10	1.2D + 1.0W(150)	Yes	Y		DL	1.2	11	1	27	1																
11	1.2D + 1.0W(180)	Yes	Y		DL	1.2	4	-1	20	-1																
12	1.2D + 1.0W(210)	Yes	Y		DL	1.2	5	-1	21	-1																
13	1.2D + 1.0W(225)	Yes	Y		DL	1.2	6	-1	22	-1																
14	1.2D + 1.0W(240)	Yes	Y		DL	1.2	7	-1	23	-1																
15	1.2D + 1.0W(270)	Yes	Y		DL	1.2	8	-1	24	-1																
16	1.2D + 1.0W(300)	Yes	Y		DL	1.2	9	-1	25	-1																
17	1.2D + 1.0W(315)	Yes	Y		DL	1.2	10	-1	26	-1																
18	1.2D + 1.0W(330)	Yes	Y		DL	1.2	11	-1	27	-1																
19	1.2D + 1.0Di + 1.0...	Yes	Y		DL	1.2	RL	1	12	1	28	1														
20	1.2D + 1.0Di + 1.0...	Yes	Y		DL	1.2	RL	1	13	1	29	1														
21	1.2D + 1.0Di + 1.0...	Yes	Y		DL	1.2	RL	1	14	1	30	1														
22	1.2D + 1.0Di + 1.0...	Yes	Y		DL	1.2	RL	1	15	1	31	1														
23	1.2D + 1.0Di + 1.0...	Yes	Y		DL	1.2	RL	1	16	1	32	1														
24	1.2D + 1.0Di + 1.0...	Yes	Y		DL	1.2	RL	1	17	1	33	1														
25	1.2D + 1.0Di + 1.0...	Yes	Y		DL	1.2	RL	1	18	1	34	1														
26	1.2D + 1.0Di + 1.0...	Yes	Y		DL	1.2	RL	1	19	1	35	1														
27	1.2D + 1.0Di + 1.0...	Yes	Y		DL	1.2	RL	1	12	-1	28	-1														
28	1.2D + 1.0Di + 1.0...	Yes	Y		DL	1.2	RL	1	13	-1	39	-1														
29	1.2D + 1.0Di + 1.0...	Yes	Y		DL	1.2	RL	1	14	-1	30	-1														
30	1.2D + 1.0Di + 1.0...	Yes	Y		DL	1.2	RL	1	15	-1	31	-1														
31	1.2D + 1.0Di + 1.0...	Yes	Y		DL	1.2	RL	1	16	-1	32	-1														
32	1.2D + 1.0Di + 1.0...	Yes	Y		DL	1.2	RL	1	17	-1	33	-1														
33	1.2D + 1.0Di + 1.0...	Yes	Y		DL	1.2	RL	1	18	-1	34	-1														
34	1.2D + 1.0Di + 1.0...	Yes	Y		DL	1.2	RL	1	19	-1	35	-1														
35	1.2D + 1.5Lm(1) + ...	Yes	Y		DL	1.2	4	.065	20	.065	OL1	1.5														
36	1.2D + 1.5Lm(1) + ...	Yes	Y		DL	1.2	5	.065	21	.065	OL1	1.5														
37	1.2D + 1.5Lm(1) + ...	Yes	Y		DL	1.2	6	.065	22	.065	OL1	1.5														
38	1.2D + 1.5Lm(1) + ...	Yes	Y		DL	1.2	7	.065	23	.065	OL1	1.5														
39	1.2D + 1.5Lm(1) + ...	Yes	Y		DL	1.2	8	.065	24	.065	OL1	1.5														
40	1.2D + 1.5Lm(1) + ...	Yes	Y		DL	1.2	9	.065	25	.065	OL1	1.5														
41	1.2D + 1.5Lm(1) + ...	Yes	Y		DL	1.2	10	.065	26	.065	OL1	1.5														
42	1.2D + 1.5Lm(1) + ...	Yes	Y		DL	1.2	11	.065	27	.065	OL1	1.5														
43	1.2D + 1.5Lm(1) + ...	Yes	Y		DL	1.2	4	-.065	20	-.065	OL1	1.5														
44	1.2D + 1.5Lm(1) + ...	Yes	Y		DL	1.2	5	-.065	21	-.065	OL1	1.5														
45	1.2D + 1.5Lm(1) + ...	Yes	Y		DL	1.2	6	-.065	22	-.065	OL1	1.5														
46	1.2D + 1.5Lm(1) + ...	Yes	Y		DL	1.2	7	-.065	23	-.065	OL1	1.5														
47	1.2D + 1.5Lm(1) + ...	Yes	Y		DL	1.2	8	-.065	24	-.065	OL1	1.5														
48	1.2D + 1.5Lm(1) + ...	Yes	Y		DL	1.2	9	-.065	25	-.065	OL1	1.5														
49	1.2D + 1.5Lm(1) + ...	Yes	Y		DL	1.2	10	-.065	26	-.065	OL1	1.5														
50	1.2D + 1.5Lm(1) + ...	Yes	Y		DL	1.2	11	-.065	27	-.065	OL1	1.5														
51	1.2D + 1.5Lm(2) + ...	Yes	Y		DL	1.2	4	.065	20	.065	OL2	1.5														

Load Combinations (Continued)

	Description	So..	P...	SRSS	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac...
52	1.2D + 1.5Lm(2) + ...	Yes	Y		DL	1.2	5	.065	21	.065	OL2	1.5														
53	1.2D + 1.5Lm(2) + ...	Yes	Y		DL	1.2	6	.065	22	.065	OL2	1.5														
54	1.2D + 1.5Lm(2) + ...	Yes	Y		DL	1.2	7	.065	23	.065	OL2	1.5														
55	1.2D + 1.5Lm(2) + ...	Yes	Y		DL	1.2	8	.065	24	.065	OL2	1.5														
56	1.2D + 1.5Lm(2) + ...	Yes	Y		DL	1.2	9	.065	25	.065	OL2	1.5														
57	1.2D + 1.5Lm(2) + ...	Yes	Y		DL	1.2	10	.065	26	.065	OL2	1.5														
58	1.2D + 1.5Lm(2) + ...	Yes	Y		DL	1.2	11	.065	27	.065	OL2	1.5														
59	1.2D + 1.5Lm(2) + ...	Yes	Y		DL	1.2	4	-.065	20	-.065	OL2	1.5														
60	1.2D + 1.5Lm(2) + ...	Yes	Y		DL	1.2	5	-.065	21	-.065	OL2	1.5														
61	1.2D + 1.5Lm(2) + ...	Yes	Y		DL	1.2	6	-.065	22	-.065	OL2	1.5														
62	1.2D + 1.5Lm(2) + ...	Yes	Y		DL	1.2	7	-.065	23	-.065	OL2	1.5														
63	1.2D + 1.5Lm(2) + ...	Yes	Y		DL	1.2	8	-.065	24	-.065	OL2	1.5														
64	1.2D + 1.5Lm(2) + ...	Yes	Y		DL	1.2	9	-.065	25	-.065	OL2	1.5														
65	1.2D + 1.5Lm(2) + ...	Yes	Y		DL	1.2	10	-.065	26	-.065	OL2	1.5														
66	1.2D + 1.5Lm(2) + ...	Yes	Y		DL	1.2	11	-.065	27	-.065	OL2	1.5														
67	1.2D + 1.5Lm(3) + ...	Yes	Y		DL	1.2	4	.065	20	.065	OL3	1.5														
68	1.2D + 1.5Lm(3) + ...	Yes	Y		DL	1.2	5	.065	21	.065	OL3	1.5														
69	1.2D + 1.5Lm(3) + ...	Yes	Y		DL	1.2	6	.065	22	.065	OL3	1.5														
70	1.2D + 1.5Lm(3) + ...	Yes	Y		DL	1.2	7	.065	23	.065	OL3	1.5														
71	1.2D + 1.5Lm(3) + ...	Yes	Y		DL	1.2	8	.065	24	.065	OL3	1.5														
72	1.2D + 1.5Lm(3) + ...	Yes	Y		DL	1.2	9	.065	25	.065	OL3	1.5														
73	1.2D + 1.5Lm(3) + ...	Yes	Y		DL	1.2	10	.065	26	.065	OL3	1.5														
74	1.2D + 1.5Lm(3) + ...	Yes	Y		DL	1.2	11	.065	27	.065	OL3	1.5														
75	1.2D + 1.5Lm(3) + ...	Yes	Y		DL	1.2	4	-.065	20	-.065	OL3	1.5														
76	1.2D + 1.5Lm(3) + ...	Yes	Y		DL	1.2	5	-.065	21	-.065	OL3	1.5														
77	1.2D + 1.5Lm(3) + ...	Yes	Y		DL	1.2	6	-.065	22	-.065	OL3	1.5														
78	1.2D + 1.5Lm(3) + ...	Yes	Y		DL	1.2	7	-.065	23	-.065	OL3	1.5														
79	1.2D + 1.5Lm(3) + ...	Yes	Y		DL	1.2	8	-.065	24	-.065	OL3	1.5														
80	1.2D + 1.5Lm(3) + ...	Yes	Y		DL	1.2	9	-.065	25	-.065	OL3	1.5														
81	1.2D + 1.5Lm(3) + ...	Yes	Y		DL	1.2	10	-.065	26	-.065	OL3	1.5														
82	1.2D + 1.5Lm(3) + ...	Yes	Y		DL	1.2	11	-.065	27	-.065	OL3	1.5														
83	1.2D + 1.5Lv(1) + 1...	Yes	Y		DL	1.2	4	.065	20	.065	OL6	1.5														
84	1.2D + 1.5Lv(1) + 1...	Yes	Y		DL	1.2	5	.065	21	.065	OL6	1.5														
85	1.2D + 1.5Lv(1) + 1...	Yes	Y		DL	1.2	6	.065	22	.065	OL6	1.5														
86	1.2D + 1.5Lv(1) + 1...	Yes	Y		DL	1.2	7	.065	23	.065	OL6	1.5														
87	1.2D + 1.5Lv(1) + 1...	Yes	Y		DL	1.2	8	.065	24	.065	OL6	1.5														
88	1.2D + 1.5Lv(1) + 1...	Yes	Y		DL	1.2	9	.065	25	.065	OL6	1.5														
89	1.2D + 1.5Lv(1) + 1...	Yes	Y		DL	1.2	10	.065	26	.065	OL6	1.5														
90	1.2D + 1.5Lv(1) + 1...	Yes	Y		DL	1.2	11	.065	27	.065	OL6	1.5														
91	1.2D + 1.5Lv(1) + 1...	Yes	Y		DL	1.2	4	-.065	20	-.065	OL6	1.5														
92	1.2D + 1.5Lv(1) + 1...	Yes	Y		DL	1.2	5	-.065	21	-.065	OL6	1.5														
93	1.2D + 1.5Lv(1) + 1...	Yes	Y		DL	1.2	6	-.065	22	-.065	OL6	1.5														
94	1.2D + 1.5Lv(1) + 1...	Yes	Y		DL	1.2	7	-.065	23	-.065	OL6	1.5														
95	1.2D + 1.5Lv(1) + 1...	Yes	Y		DL	1.2	8	-.065	24	-.065	OL6	1.5														
96	1.2D + 1.5Lv(1) + 1...	Yes	Y		DL	1.2	9	-.065	25	-.065	OL6	1.5														
97	1.2D + 1.5Lv(1) + 1...	Yes	Y		DL	1.2	10	-.065	26	-.065	OL6	1.5														
98	1.2D + 1.5Lv(1) + 1...	Yes	Y		DL	1.2	11	-.065	27	-.065	OL6	1.5														
99	1.2D + 1.5Lv(2) + 1...	Yes	Y		DL	1.2	4	.065	20	.065	OL7	1.5														
100	1.2D + 1.5Lv(2) + 1...	Yes	Y		DL	1.2	5	.065	21	.065	OL7	1.5														
101	1.2D + 1.5Lv(2) + 1...	Yes	Y		DL	1.2	6	.065	22	.065	OL7	1.5														
102	1.2D + 1.5Lv(2) + 1...	Yes	Y		DL	1.2	7	.065	23	.065	OL7	1.5														
103	1.2D + 1.5Lv(2) + 1...	Yes	Y		DL	1.2	8	.065	24	.065	OL7	1.5														

Load Combinations (Continued)

	Description	So..	P...	SRSS	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac...
104	1.2D + 1.5Lv(2) + 1..	Yes	Y		DL	1.2	9	.065	25	.065	OL7	1.5												
105	1.2D + 1.5Lv(2) + 1..	Yes	Y		DL	1.2	10	.065	26	.065	OL7	1.5												
106	1.2D + 1.5Lv(2) + 1..	Yes	Y		DL	1.2	11	.065	27	.065	OL7	1.5												
107	1.2D + 1.5Lv(2) + 1..	Yes	Y		DL	1.2	4	-.065	20	-.065	OL7	1.5												
108	1.2D + 1.5Lv(2) + 1..	Yes	Y		DL	1.2	5	-.065	21	-.065	OL7	1.5												
109	1.2D + 1.5Lv(2) + 1..	Yes	Y		DL	1.2	6	-.065	22	-.065	OL7	1.5												
110	1.2D + 1.5Lv(2) + 1..	Yes	Y		DL	1.2	7	-.065	23	-.065	OL7	1.5												
111	1.2D + 1.5Lv(2) + 1..	Yes	Y		DL	1.2	8	-.065	24	-.065	OL7	1.5												
112	1.2D + 1.5Lv(2) + 1..	Yes	Y		DL	1.2	9	-.065	25	-.065	OL7	1.5												
113	1.2D + 1.5Lv(2) + 1..	Yes	Y		DL	1.2	10	-.065	26	-.065	OL7	1.5												
114	1.2D + 1.5Lv(2) + 1..	Yes	Y		DL	1.2	11	-.065	27	-.065	OL7	1.5												

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	LEG	max	454.359	5	912.518	79	735.875	29	223.043	44	-234.147	1	0	114
2		min	-1560.834	13	-852.319	39	285.377	1	-253.917	68	-633.237	44	0	1
3	N75B	max	1271.091	19	828.186	48	718.691	68	228.013	44	-245.973	1	0	114
4		min	188.508	11	-888.142	72	291.449	1	-254.014	68	-617.449	36	0	1
5	N83	max	0	114	0	114	0	114	0	114	0	114	0	114
6		min	0	1	0	1	0	1	0	1	0	1	0	1
7	N84A	max	769.699	16	56.85	15	38.029	23	23.604	39	.731	39	.475	79
8		min	-770.127	8	-57.529	7	4.104	16	-36.789	79	-1.139	79	-.304	39
9	Totals:	max	986.914	3	795.195	15	1469.778	23						
10		min	-986.915	11	-795.194	7	587.922	1						

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

	Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[..	Dir	LC	phi*Pn...	phi*Pnt...	phi*Mn...	phi*Mn...	Cb	Eqn
1	M15	HSS1.900...	.247	.816	79	.095	15.5		79	20368....	23587.2	1121.4	1121.4	1...	H1-1b
2	M12	HSS1.900...	.246	.816	69	.094	15.5		79	20368....	23587.2	1121.4	1121.4	1...	H1-1b
3	M14	PL3-1/2x5/8	.231	0	79	.092	4.694	y	79	93684....	98437.5	1281.7...	7177.7...	1...	H1-1b
4	M11	PL3-1/2x5/8	.230	0	69	.091	0	y	79	93684....	98437.5	1281.7...	7177.7...	1...	H1-1b
5	M41A	PL3-1/2x5/8	.207	0	39	.036	4.694	y	74	93684....	98437.5	1281.7...	7177.7...	1...	H1-1b
6	M38A	PL3-1/2x5/8	.206	0	49	.039	0	y	39	93684....	98437.5	1281.7...	7177.7...	1...	H1-1b
7	M39A	HSS1.900...	.202	.816	48	.038	30.1...		44	20368....	23587.2	1121.4	1121.4	2...	H1-1b
8	M42A	HSS1.900...	.201	.816	39	.033	30.1...		38	20368....	23587.2	1121.4	1121.4	2...	H1-1b
9	M17	SR1/2	.118	40.167	75	.009	0		16	3765.3...	8835.75	73.632	73.632	2...	H1-1b*
10	M44A	SR1/2	.114	40.167	44	.008	0		7	3765.3...	8835.75	73.632	73.632	2...	H1-1b*
11	M26	HSS2.875...	.093	48	57	.050	75.2...		45	53086....	65826	4726.5	4726.5	1...	H1-1b
12	M45	HSS2.875...	.087	75.158	3	.020	74.5...		72	22748....	65826	4726.5	4726.5	4...	H1-1b
13	M25	HSS2.875...	.086	48	64	.057	20.7...		14	53086....	65826	4726.5	4726.5	1...	H1-1b
14	M48	HSS2.375...	.064	48.477	15	.021	0		79	13023....	35194....	2107.1...	2107.1...	1...	H1-1b
15	M46	HSS2.875...	.062	74.526	42	.017	74.5...		41	22748....	65826	4726.5	4726.5	4...	H1-1b
16	M47	SR5/8	.062	28.1	40	.038	0		79	5072.1...	13805....	143.811	143.811	2...	H1-1b
17	M53A	PIPE_2.0	.061	9.095	35	.031	38.9...		79	26521....	32130	1871.6...	1871.6...	1...	H1-1b
18	M44	HSS2.875...	.061	74.526	75	.020	45.4...		72	22748....	65826	4726.5	4726.5	4...	H1-1b
19	M40A	PL4-1/4x5/8	.059	0	44	.022	1.5	z	44	118928...	119531...	1556.3...	10583....	1...	H1-1b
20	M13	PL4-1/4x5/8	.057	0	74	.035	1.5	y	40	118928...	119531...	1556.3...	10583....	1...	H1-1b
21	M20	SR5/8	.052	0	68	.038	28.1		79	5072.1...	13805....	143.811	143.811	2...	H1-1b
22	M16	PL4-1/4x5/8	.048	0	3	.042	0	y	78	118928...	119531...	1556.3...	10583....	1...	H1-1b

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

	Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[...	Dir	LC	phi*Pn...	phi*Pnt...	phi*Mn...	phi*Mn...	Cb	Eqn
23	M43A	PL4-1/4x5/8	.047	0	3	.017	1.5	z	35	118928...	119531...	1556.3...	10583....	1...	H1-1b
24	M46A	SR5/8	.031	28.1	43	.022	0		79	5072.1...	13805....	143.811	143.811	2...	H1-1b
25	M19	SR5/8	.026	0	17	.020	28.1		80	5072.1...	13805....	143.811	143.811	3...	H1-1b*
26	M18	SR1/2	.000	0	114	.010	0		8	3765.3...	8835.75	73.632	73.632	1...	H1-1a
27	M45A	SR1/2	.000	0	114	.008	40.1...		14	3765.3...	8835.75	73.632	73.632	1...	H1-1a

APPENDIX D

ADDITIONAL CALCULATIONS

CONNECTION SLIP RESISTANCE

Kimley»Horn

DESIGN LOADS	
Factored Axial, P_u (lb)	771
Factored Moment, M_u (lb-ft)	

☑ ***Normalize usages per TIA-222-H Sec. 15.5***

BOLT PROPERTIES	
Bolt Type	Thru Bolts
# of Bolts	2
Hole Type	Standard
Bolt Grade	A36
Bolt Diameter, d (in)	0.5
Leg Width, W_{leg} (in)	
Bolt Torque Override, T (lb-ft)	
Bolt Pretension Stress Override (ksi)	
Bolt Ultimate Strength, F_u (ksi)	58
Specified Torque, T (lb-ft)	49.82
Clamping Force per Bolt, P_u (lb)	5978.84
Bolt Pretension Stress (ksi)	30.45
Tensile Strength per Bolt, φP_n (lb)	6405.90
Axial Slip Resistance per Bolt, φP_n (lb)	2026.83
Total Axial Slip Resistance, φP_n (lb)	4053.66
Rotational Slip Resistance per Bolt, φM_n (lb-ft)	0.00
Total Rotational Slip Resistance, φM_n (lb-ft)	0.00
Axial Slip Usage, P_u / φPn	**18.1%**

Using Turn-of-Nut!

Normalized

FACTORS		
Nut Factor, K	0.20	**Rule-of-thumb estimate**
$\varphi_{(BOLT\ TENSION)}$	0.75	**AISC 15th, J3.6**
$\varphi_{(SLIP\text{-}CRITICAL)}$	1.00	**AISC 15th, J3.8**
Mean Slip Coefficient, μ	0.30	**AISC 15th, J3.8**
Installed Pretension Ratio, D_u	1.13	**AISC 15th, J3.8**
Turn-of-Nut Pretension Factor	0.70	**AISC 15th, Table J3.1[a]**

APPENDIX E

SUPPLEMENTAL DRAWINGS

NOTES:

1.0 GENERAL
- 1.1 ALL METRIC DIMENSIONS ARE IN BRACKETS
- 1.2 FOR PATENT INFO :https://www.cs-pat.com

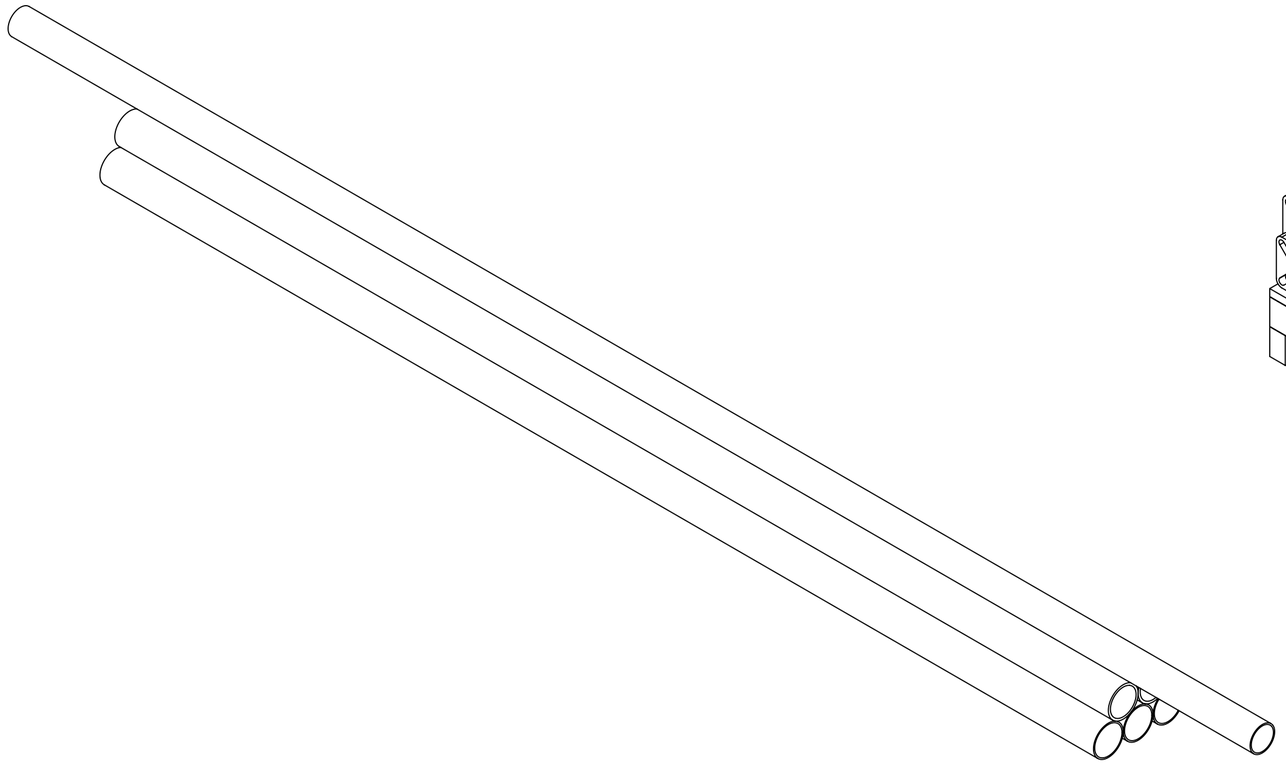
2.0 DESIGN NOTES
- 2.1 DESIGN SURVIAL WIND SPEED: 180 MPH, 3 SEC GUST WITH EQUIPMENT MOUNTED AS SHOWN

3.0 MANUFACTURING/SPECIAL REQUIREMENTS
- 3.1 TORQUE HARDWARE ACCORDING TO SIZE AS NOTED BELOW:
  ALL HARDWARE 1/4" DIAMETER: TORQUE 7 FT-LBS
  ALL HARDWARE 3/8" DIAMETER: TORQUE 12 FT-LBS
  ALL HARDWARE 1/2" DIAMETER OR LARGER SHALL BE TIGHTENED SNUG TIGHT, DEFINED AS THE CONDITION OBTAINED WITH A FEW IMPACTS OA AN IMPACT WRENCH OR THE FULL EFFORT OF AN IRONWORKER USING AN ORDINARY SPUD WRENCH TO BRING THE CONNECTED PLIES INTO FIRM CONTACT.

4.0 TEST

5.0 PACKAGING
- 5.1 PACKAGING SHALL MEET COMMSCOPE REQUIREMENTS PER DOCUMENT IS-PL-3005
- 5.2 PRINTED DOCUMENT TO BE PLACED INSIDE POLYBAG AND THEN IN SHIPPING CONTAINER
- 5.3 EXTRA HARDWARE MAY BE SUPPLIED, BAGGED AND SHIPPED.

REVISIONS				
REV.	IPS	DESCRIPTION	BY	DATE
A	10191PC	NEW RELEASED.	RJC	3/17/2021



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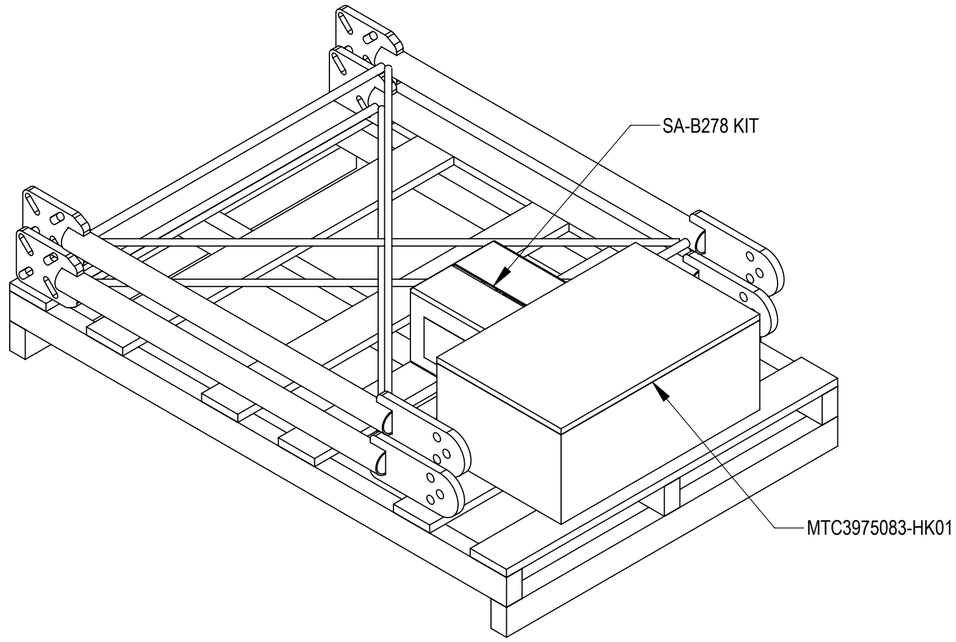


MTC3975083-PK01

ITEM	PART NO.	DESCRIPTION	QTY
1	MTC3975083-PK01	PACK KIT, MTC3975083, 1 SCTR, 3 ANT PIPE	1
2	PB01TEA0308B0208K	PIPE BUNDLE	1

DENSITY		lbs/in³
MASS	352.136	lbs
VOLUME	2431.173	in³
SURFACE AREA	19715.555	in²
HEIGHT		
LENGTH		
WIDTH		

COMMSCOPE, INC. OF NORTH CAROLINA

TOLERANCES
0 PLACE X ± .25 | 2 PLACE .XX ± 0.06
1 PLACE .X ± 0.12 | ANGLES ± 2°

SAP MATERIAL MASTER: MTC3975083

FINISH: GALV A123

MATERIAL: SEE BOM

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES INTERPRET PER ANSI Y 14.5M-1994

	NAME	DATE
CE	XZ1054	03/02/2021
RW	BCAMPBELLCON	03/17/2021
AD	MC1107	03/17/2021
RE	BCROSS	03/17/2021

ECN 10191PC

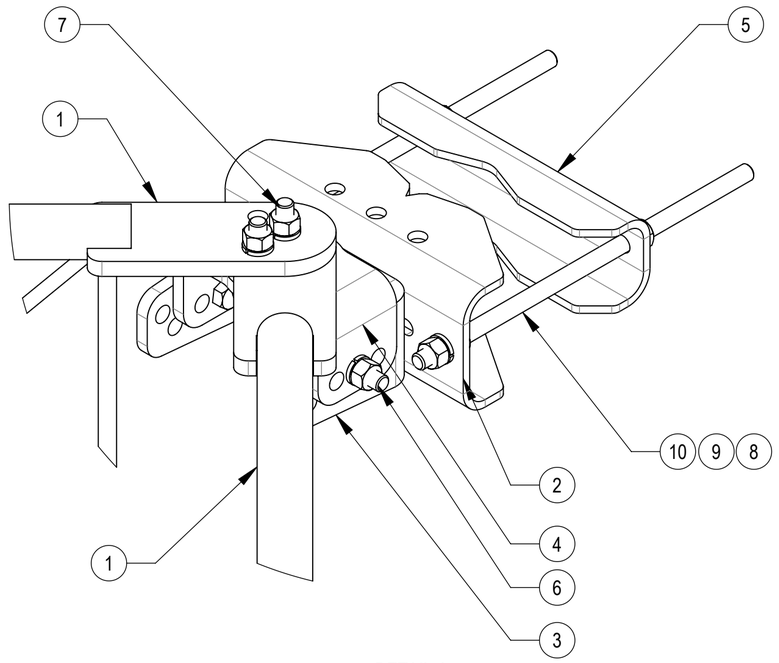
TITLE: SECTOR FRAME, TW, SFG21, 8FT, 3 ANT PIPE

SCALE: 1:8

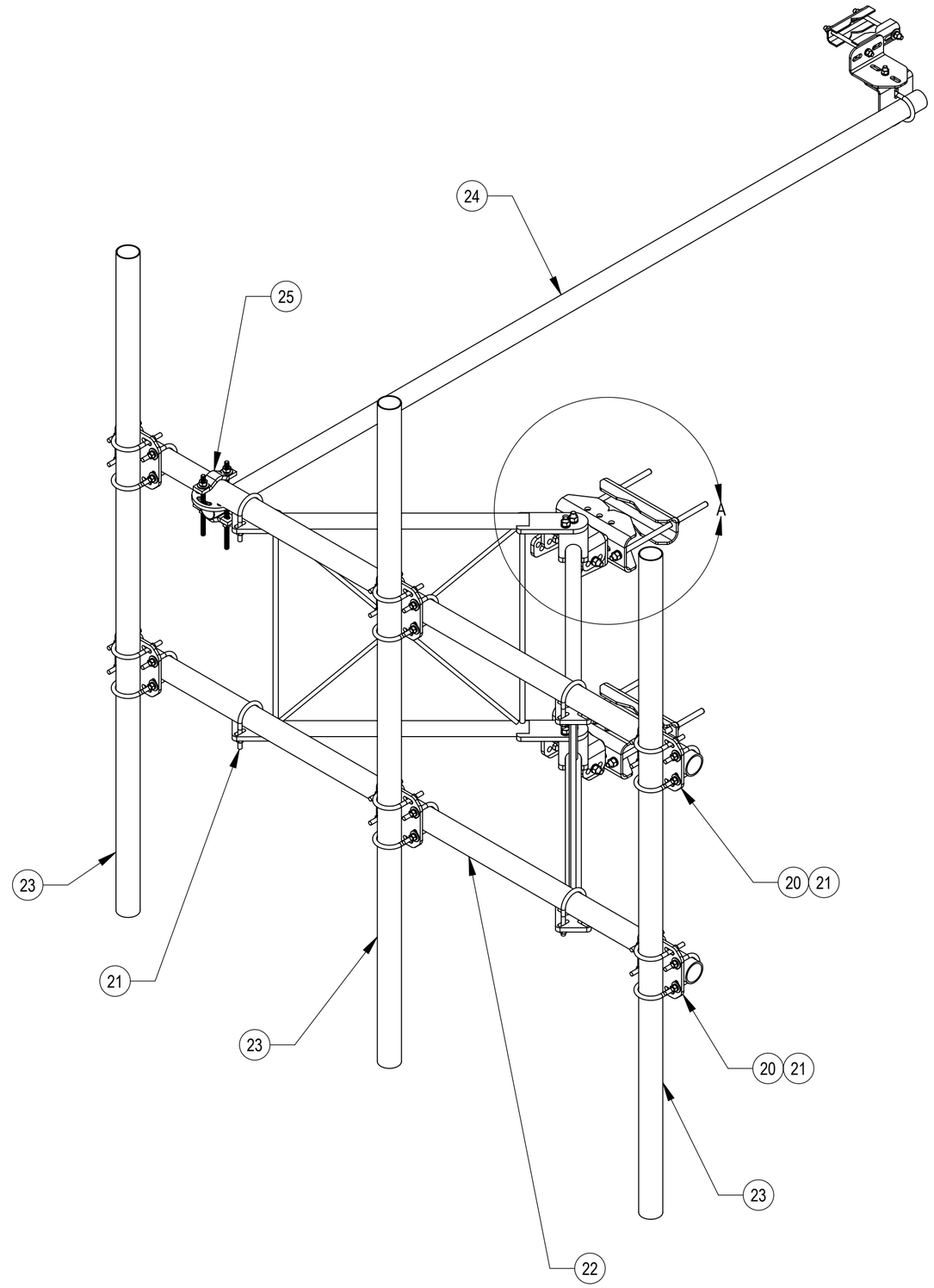
DOCUMENT NO.: MTC3975083

SIZE	Auth Group	MODEL			DRAWING			SHEET
	INSL	VERSION	STATUS	REVISION	VERSION	STATUS	REVISION	
C		00	RE	A	00	RE	A	1 OF 7

NOTES:



DETAIL A
SCALE 1 : 4



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.	NOTE NO.
1	SFV01	WELDMENT, SF-V STANDOFF ARM	2	
2	MTC397522	CLAMP, FRONT MOUNTING	2	
3	SFV03	SFV TAPER BRACKET	1	
4	SFV02	SFV AZIMUTH BRACKET	3	
5	MTC397521	CLAMP, BACK	2	
6	GB-05225	5/8" X 2-1/4" GALV BOLT KIT	8	
7	GB-05305	5/8" X 3" GALV BOLT KIT	4	
8	GWL-05	5/8" GALV LOCK WASHER	8	
9	GN-05	5/8" GALV HEX NUT	12	
10	MT-382-16	5/8" X 16" GALV THREADED ROD	4	
11	GWF-05	5/8" GALV FLAT WASHER, 1.7OD	6	
12	GUB-4240	1/2" X 2-1/2" X 4" GALV U-BOLT	1	
13	XAU01	ANGLE, CROSSOVER, 1.9-3.5" X 1.9-3.5" OD	2	
14	SAB01	FORMED CLAMP	2	
15	MT-379-8	1/2" X 8" GALV THREADED ROD	2	
16	GB-04145	1/2" X 1-1/2" GALV BOLT KIT	1	
17	GWF-04	1/2" GALV FLAT WASHER	52	
18	GWL-04	1/2" GALV LOCK WASHER	41	
19	GN-04	1/2" GALV HEX NUT	41	
20	XPU01	PLATE, CROSSOVER, 1.9-3.5" X 1.9-3.5" OD	6	
21	GUB-4352	1/2" X 3" X 5-1/4" GALV U-BOLT	28	
22	MT54696	∅2.875" O.D. X 96 PIPE	2	
23	MT54696120	∅2.88" X 96" GALV PIPE	3	
24	MT-651-120	2.375" OD X 120" PIPE	1	
25	XP-R	CROSSOVER PLATE, ROUND, UP TO 3.5" OD	1	

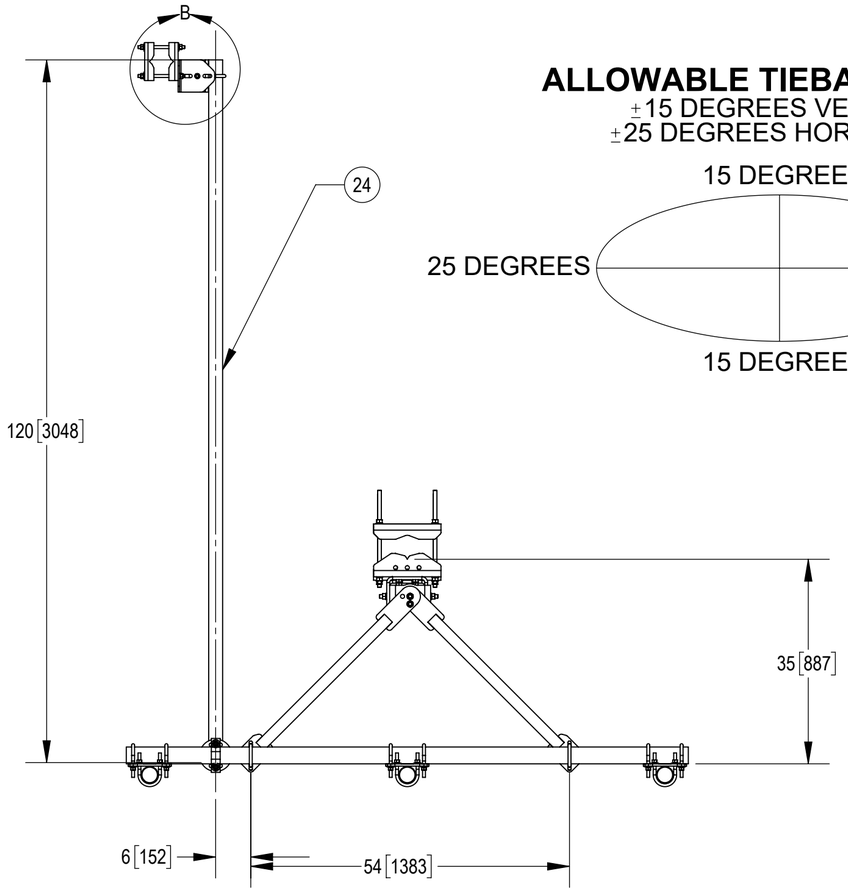
COMMSCOPE, INC. OF NORTH CAROLINA

TITLE

SECTOR FRAME, TW, SFG21, 8FT, 3 ANT PIPE

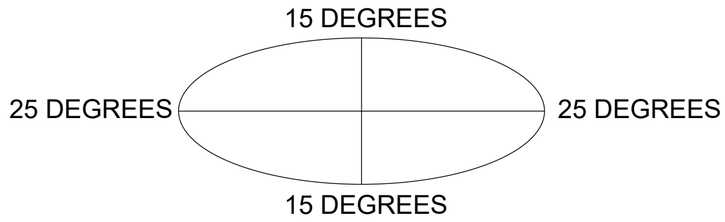
SIZE	SCALE	DOCUMENT NO.			
C	1:12	MTC3975083			
		DRAWING			SHEET
		VERSION	STATUS	REVISION	
		00	RE	A	2 OF 7

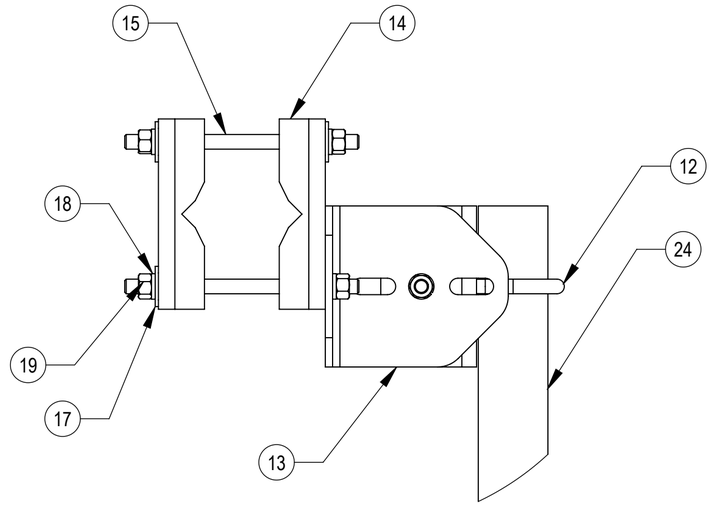
NOTES:



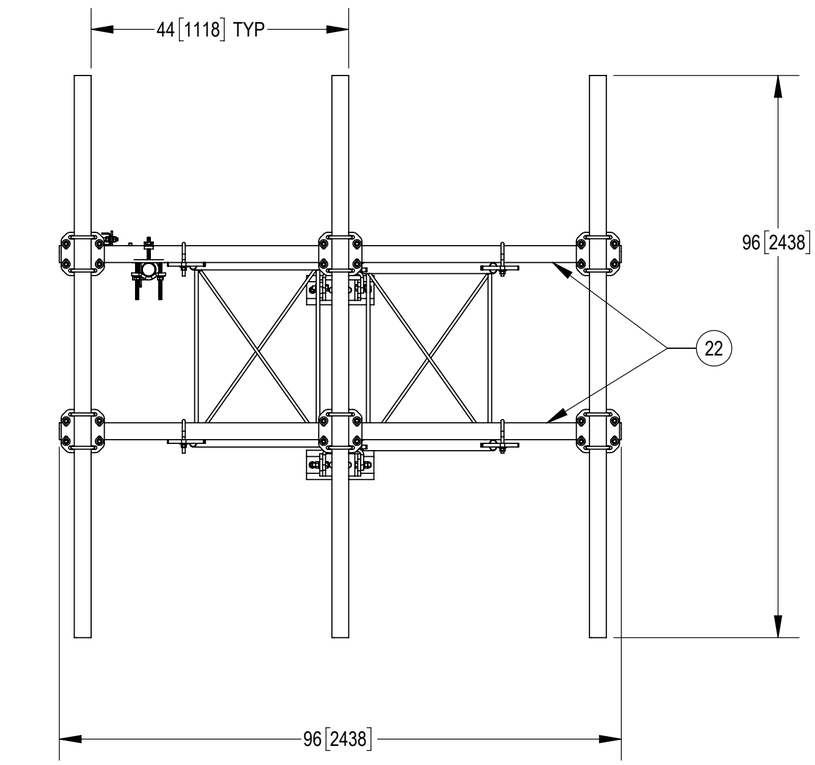
ALLOWABLE TIEBACK ANGLE

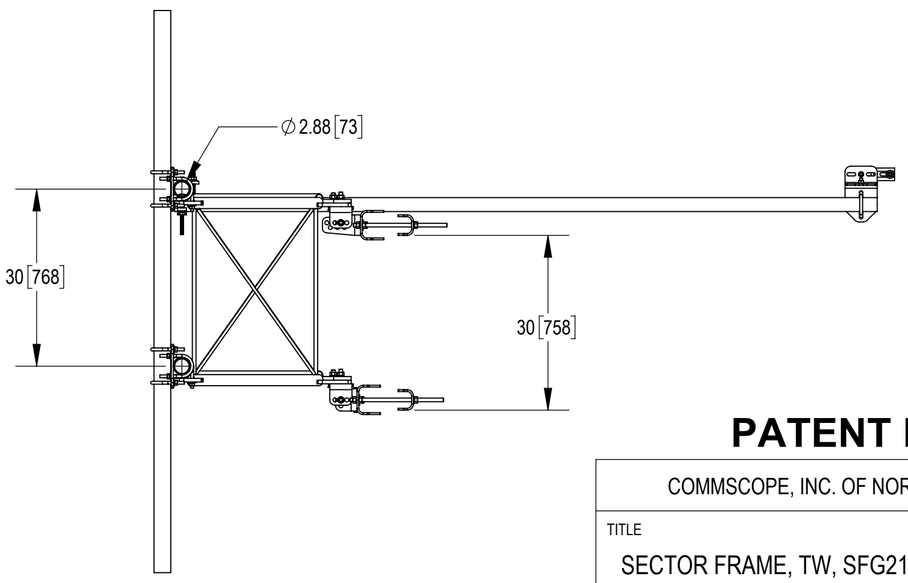
±15 DEGREES VERTICAL
±25 DEGREES HORIZONTAL





DETAIL B
SCALE 1 : 4



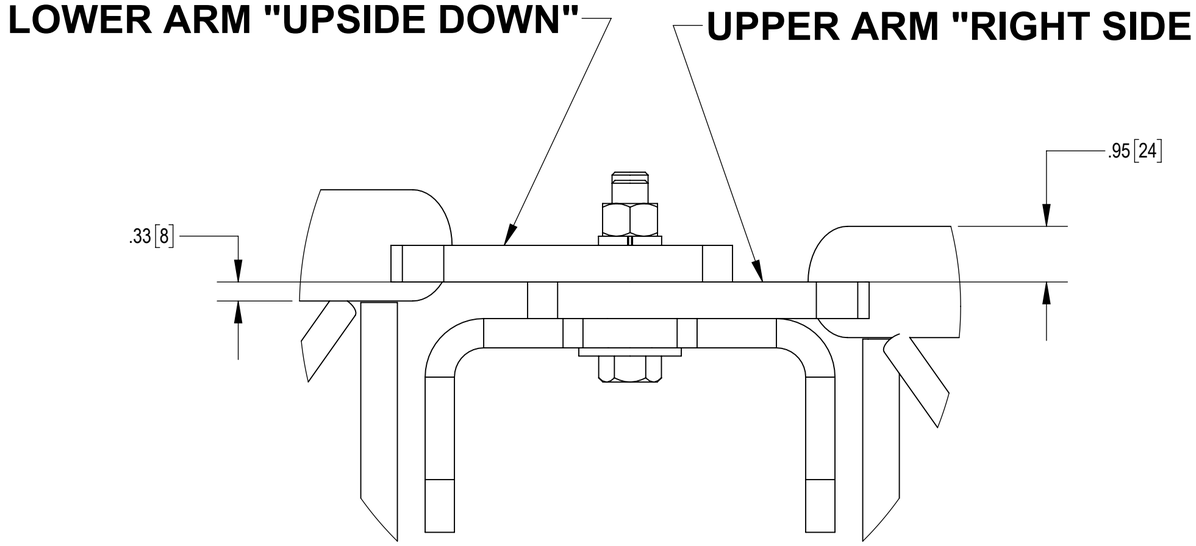


PATENT PENDING

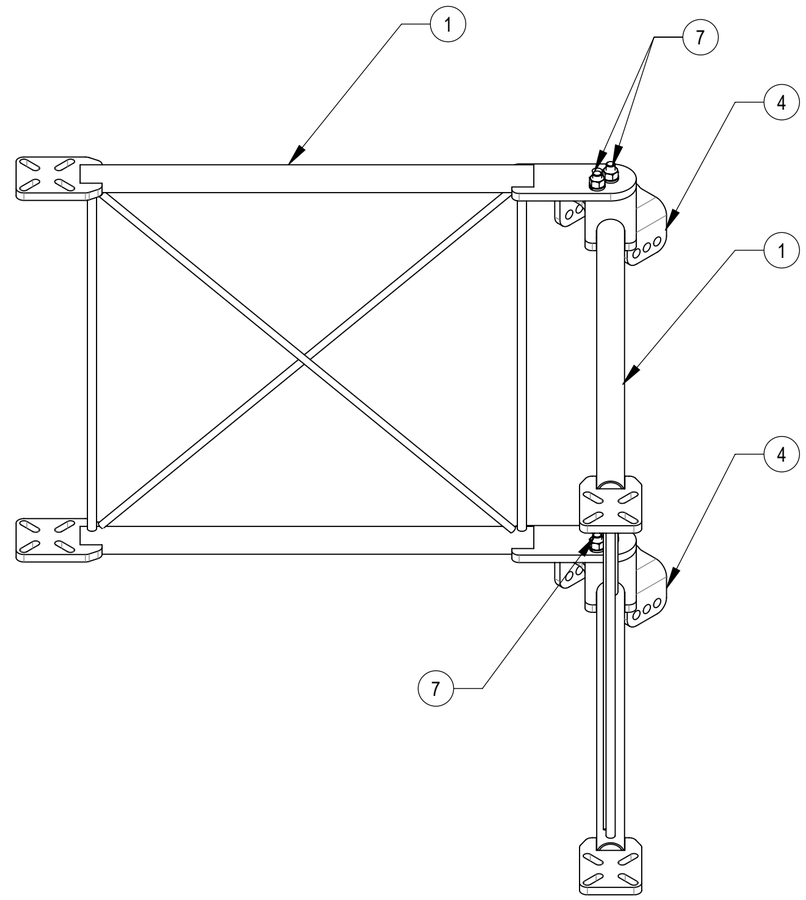
COMMSCOPE, INC. OF NORTH CAROLINA				
TITLE: SECTOR FRAME, TW, SFG21, 8FT, 3 ANT PIPE				
SIZE: C	SCALE: 1:20	DOCUMENT NO.: MTC3975083		
		DRAWING		SHEET
		VERSION: 00	STATUS: RE	REVISION: A
				3 OF 7

NOTES:

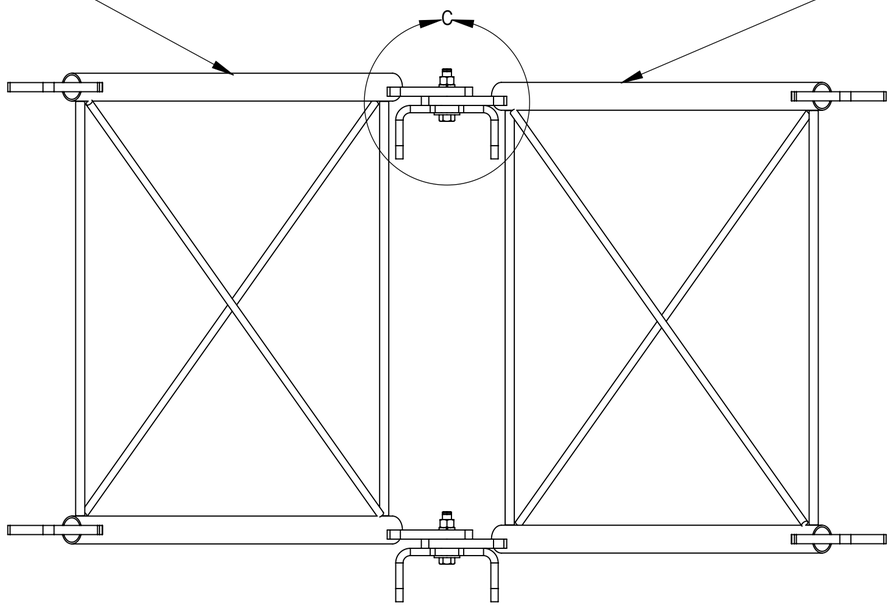
STEP1: ATTACH STANDOFF ARMS (SFV01) TO AZIMUTH BRACKETS (SFV02) USING BOLT KITS (GB-05305)

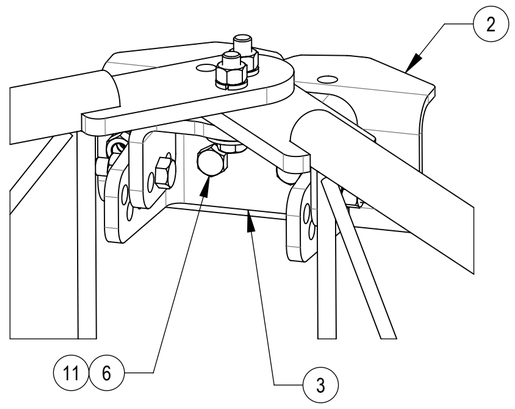


DETAIL C
SCALE 1 : 2



**STANDOFF ARM ORIENTATION IS CRITICAL!
WHEN ASSEMBLED, ARMS SHOULD BE LEVEL
WITH EACH OTHER. ALSO SEE DETAIL C ABOVE**





ISO ROTATED VIEW

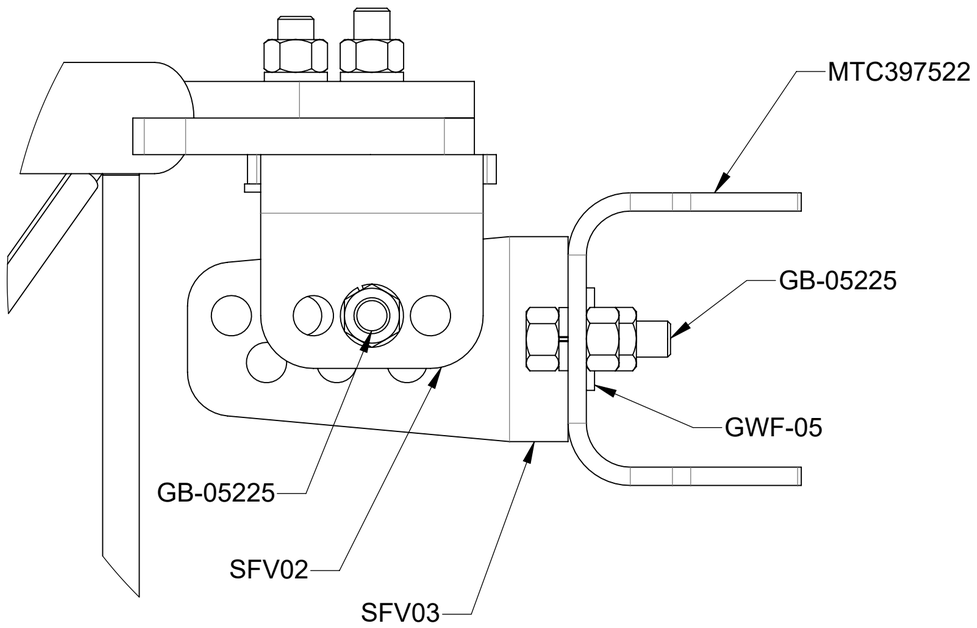
PATENT PENDING

COMMSCOPE, INC. OF NORTH CAROLINA				
TITLE: SECTOR FRAME, TW, SFG21, 8FT, 3 ANT PIPE				
SIZE: C	SCALE: 1:8	DOCUMENT NO.: MTC3975083		
		DRAWING		SHEET
		VERSION: 00	STATUS: RE	REVISION: A
				4 OF 7

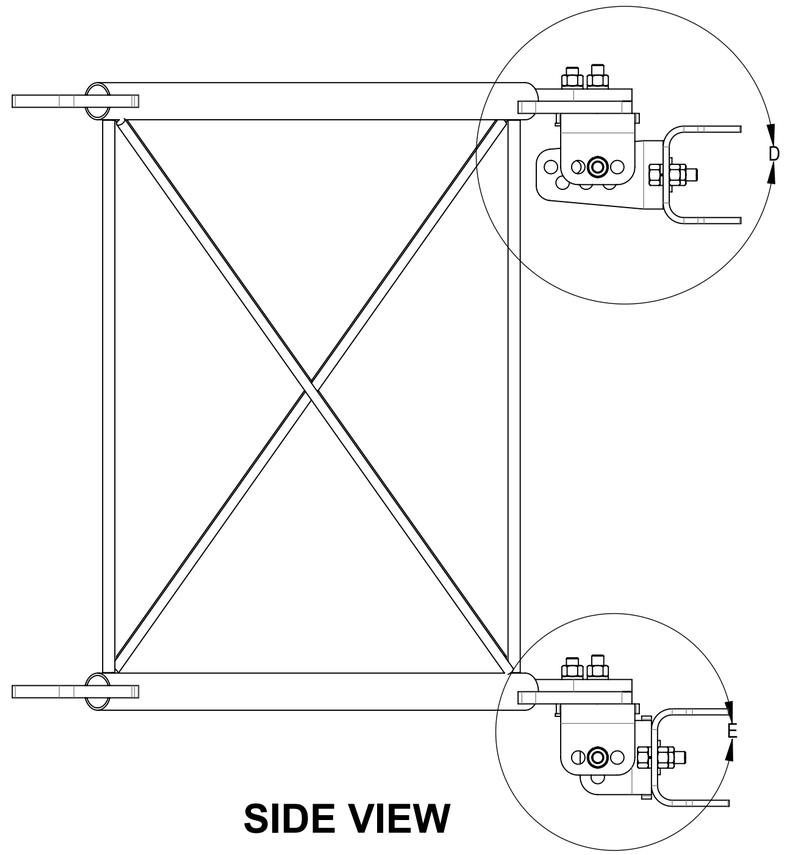
NOTES:

STEP 2A: ON TOP, ATTACH TAPER BRACKET (SFV03) TO AZIMUTH BRACKET (SFV02) USING BOLT KITS (GB-05225). SEE ISO ROTATED VIEW. ATTACH TAPER BRACKET (SFV03) TO CLAMP, FRONT MTG (MTC397522) USING BOLT KITS (GB-05225).

STEP 2B: ON BOTTOM, ATTACH AZIMUTH BRACKET (SFV02) TO AZIMUTH BRACKET (SFV02) USING BOLT KITS (GB-05225). ATTACH AZIMUTH BRACKET (SFV02) TO CLAMP, FRONT MTG (MTC397522) USING BOLT KITS(GB-05225).

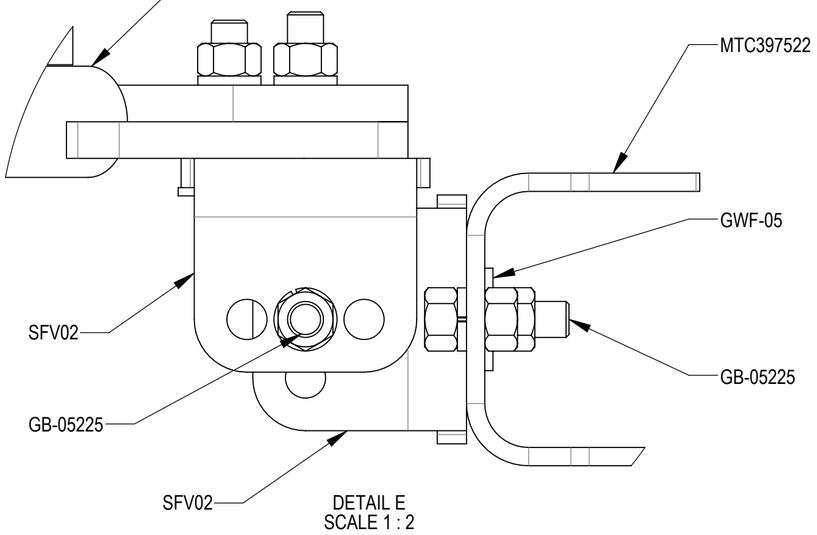


DETAIL D
SCALE 1 : 2

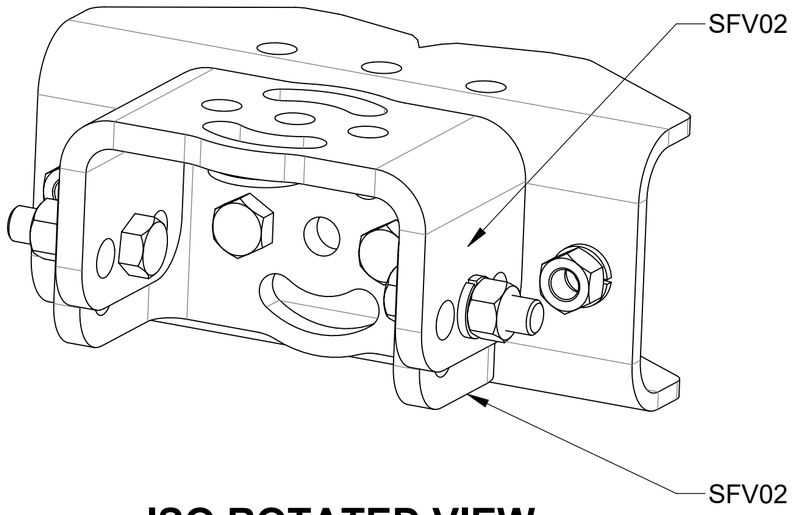


SIDE VIEW

STANDOFF ARM ORIENTATION IS CRITICAL! WHEN ASSEMBLED, PIPES SHOULD BE LEVEL



DETAIL E
SCALE 1 : 2



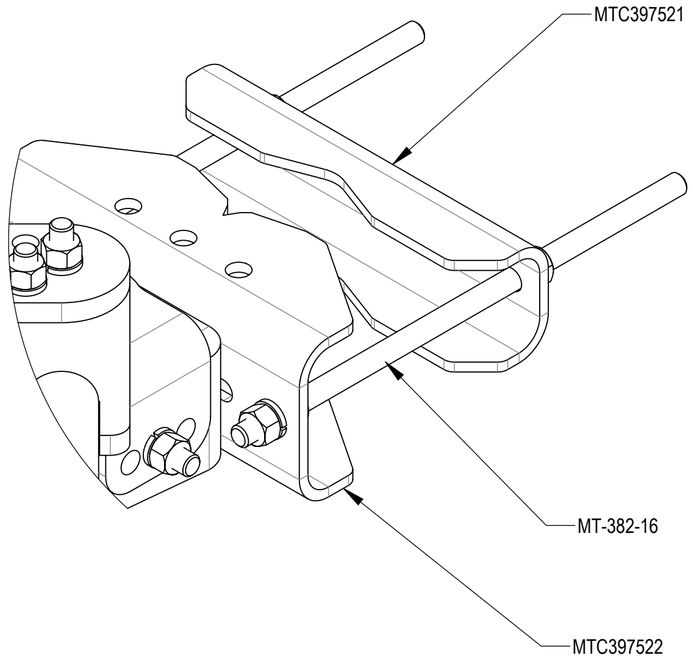
ISO ROTATED VIEW

PATENT PENDING

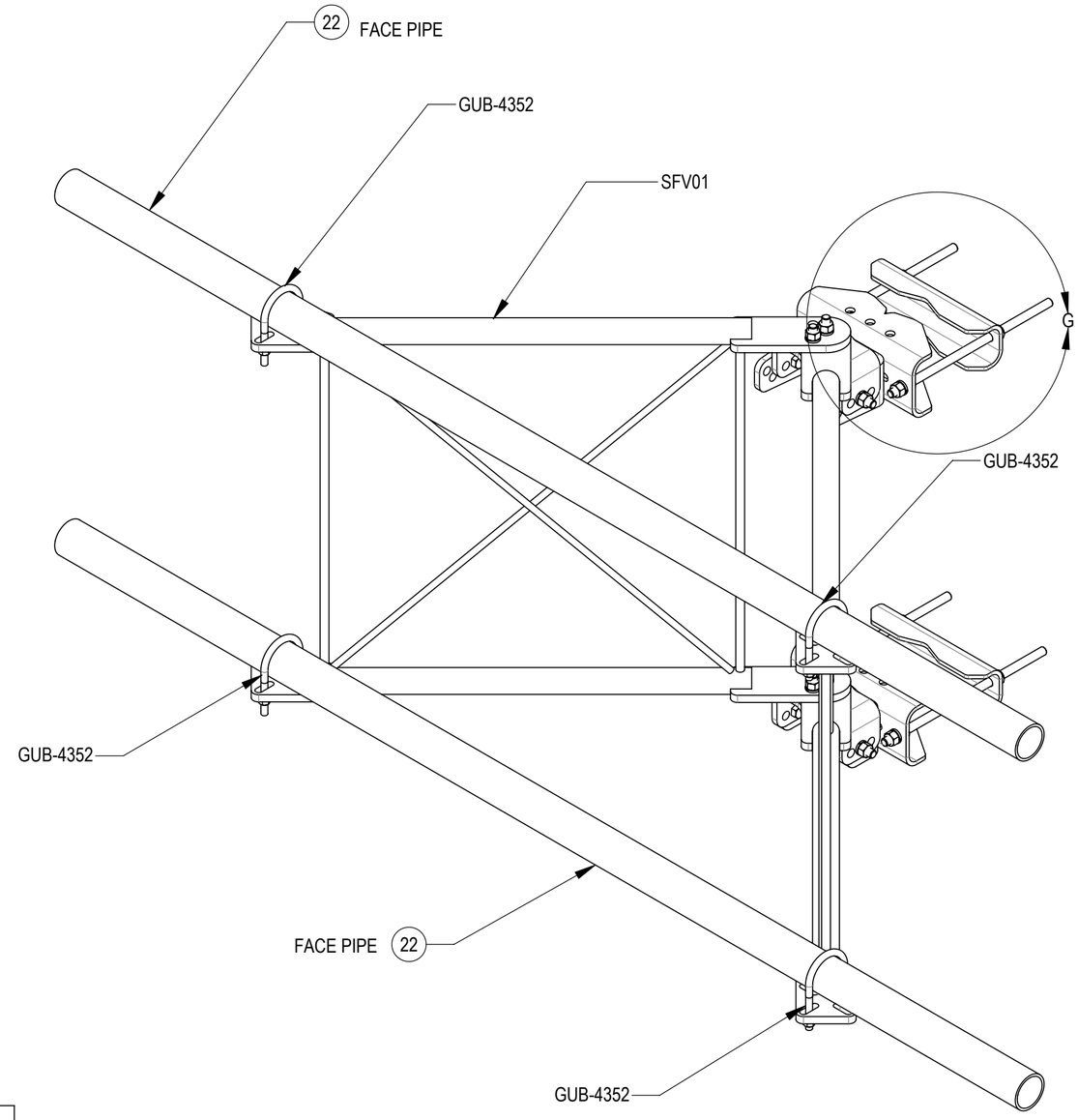
COMMSCOPE, INC. OF NORTH CAROLINA					
TITLE: SECTOR FRAME, TW, SFG21, 8FT, 3 ANT PIPE					
SIZE: C	SCALE: 1:4	DOCUMENT NO.: MTC3975083			
		DRAWING			SHEET
		VERSION	STATUS	REVISION	
		00	RE	A	5 OF 7

NOTES:

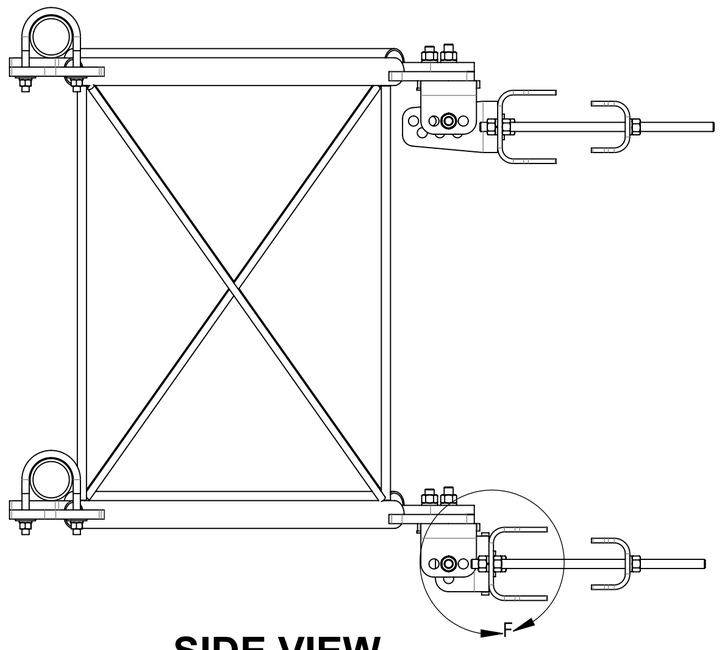
STEP 3: ATTACH FACE PIPES TO STANDOFF ARMS (SFV01) USING U-BOLTS (GUB-4240).



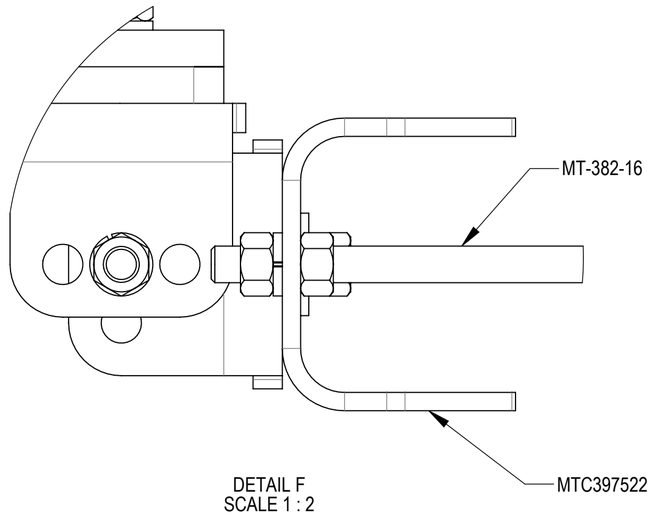
DETAIL G
SCALE 1 : 3



ISO VIEW



SIDE VIEW



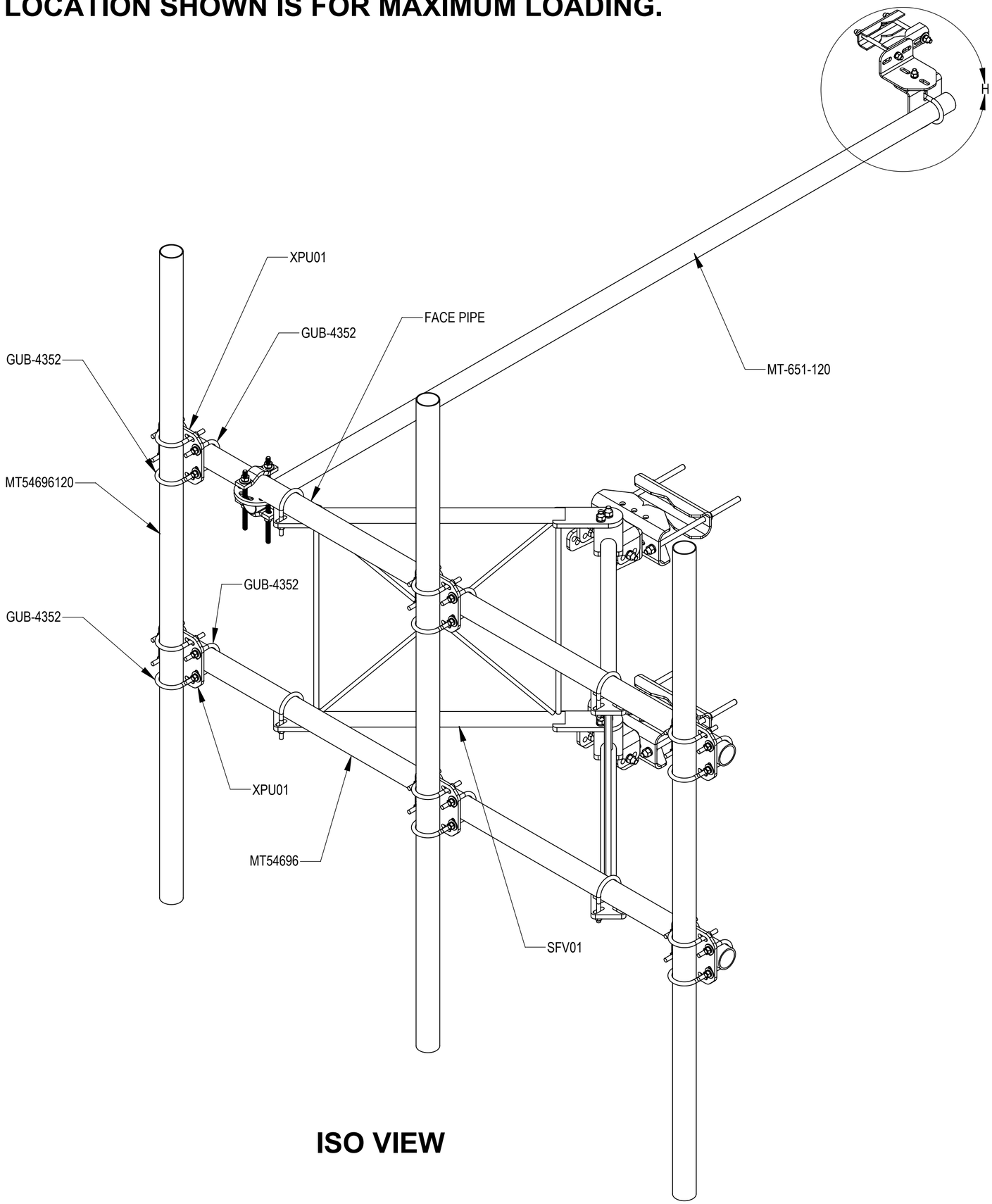
DETAIL F
SCALE 1 : 2

PATENT PENDING

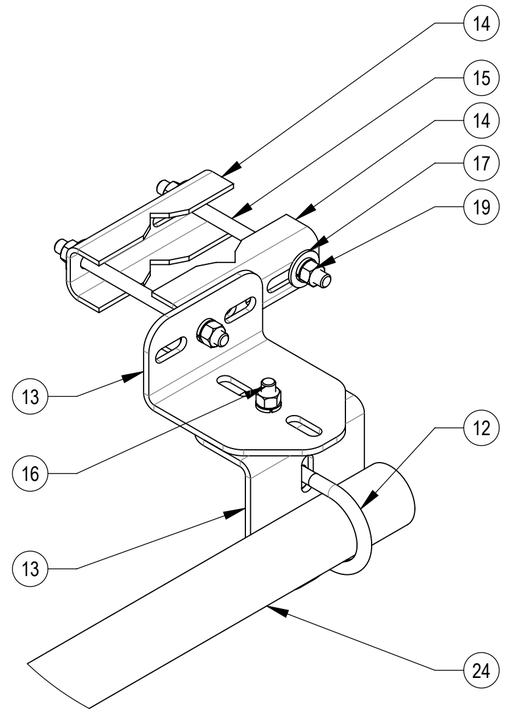
COMMSCOPE, INC. OF NORTH CAROLINA			
TITLE: SECTOR FRAME, TW, SFG21, 8FT, 3 ANT PIPE			
SIZE: C	SCALE: 1:8	DOCUMENT NO.: MTC3975083	
		DRAWING: VERSION 00 / STATUS RE / REVISION A	SHEET: 6 OF 7

NOTES:

STEP 4: ATTACH ANTENNA PIPES & TIE BACK PIPE (MT-651-120) TO FACE PIPES USING CROSSOVER BRACKETS (XAU01) AND U-BOLTS (GUB-4240). LOCATION SHOWN IS FOR MAXIMUM LOADING.



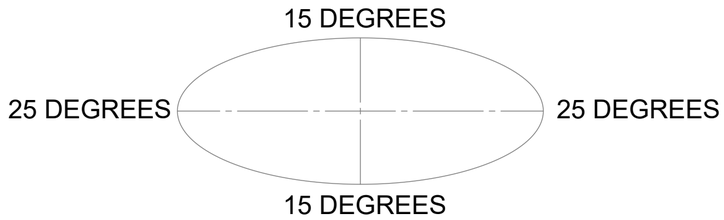
ISO VIEW



DETAIL H
SCALE 1 : 4

ALLOWABLE TIEBACK ANGLE

±15 DEGREES VERTICAL
±25 DEGREES HORIZONTAL



PATENT PENDING

COMMSCOPE, INC. OF NORTH CAROLINA			
TITLE: SECTOR FRAME, TW, SFG21, 8FT, 3 ANT PIPE			
SIZE: C	SCALE: 1:10	DOCUMENT NO.: MTC3975083	
		DRAWING: VERSION 00 / STATUS RE / REVISION A	SHEET: 7 OF 7

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: 873128

NJJER01137A
800 Booth Hill Road
Trumbull, Connecticut 06611

May 30, 2022

EBI Project Number: 6222003444

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**34.01%**

May 30, 2022

Attn: Dish Wireless

Emissions Analysis for Site: 873128 - NJJER01137A

EBI Consulting was directed to analyze the proposed Dish Wireless facility located at **800 Booth Hill Road** in **Trumbull, 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 800 Booth Hill Road in Trumbull, 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) 4 n66 channels (AWS Band - 2190 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

4) 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.

5) 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.

6) The antennas used in this modeling are the JMA MX08FRO665-21 for the 600 MHz / 1900 MHz / 2190 MHz channel(s) in Sector A, the JMA MX08FRO665-21 for the 600 MHz / 1900 MHz / 2190 MHz channel(s) in Sector B, the JMA MX08FRO665-21 for the 600 MHz / 1900 MHz / 2190 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.

7) The antenna mounting height centerline of the proposed antennas is 186 feet above ground level (AGL).

8) 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.

9) 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 / 2190 MHz	Frequency Bands:	600 MHz / 1900 MHz / 2190 MHz	Frequency Bands:	600 MHz / 1900 MHz / 2190 MHz
Gain:	11.35 dBd / 15.75 dBd / 16.75 dBd	Gain:	11.35 dBd / 15.75 dBd / 16.75 dBd	Gain:	11.35 dBd / 15.75 dBd / 16.75 dBd
Height (AGL):	186 feet	Height (AGL):	186 feet	Height (AGL):	186 feet
Channel Count:	12	Channel Count:	12	Channel Count:	12
Total TX Power (W):	440.00 Watts	Total TX Power (W):	440.00 Watts	Total TX Power (W):	440.00 Watts
ERP (W):	2,524.75	ERP (W):	2,524.75	ERP (W):	2,524.75
Antenna A1 MPE %:	**0.35%**	Antenna B1 MPE %:	**0.35%**	Antenna C1 MPE %:	**0.35%**

Site Composite MPE %	
Carrier	**MPE %**
Dish Wireless (Max at Sector A):	0.35%
Connecticut Broadcasting Corporation Inc.	2.56%
DRW NX	0.16%
Dish (Existing)	0.1%
Various	25.4%
T-Mobile	4.21%
Verizon	0.69%
Various Marcus	0.14%
Light Squared Inc.	0.4%
Site Total MPE % :	34.01%

Dish Wireless MPE % Per Sector	
Dish Wireless Sector A Total:	0.35%
Dish Wireless Sector B Total:	0.35%
Dish Wireless Sector C Total:	0.35%
Site Total MPE % :	34.01%

Dish Wireless Maximum MPE Power Values (Sector A)

Dish Wireless Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density (μW/cm²)	Frequency (MHz)	Allowable MPE (μW/cm²)	Calculated % MPE
Dish Wireless 600 MHz n71	4	110.82	186.0	0.49	600 MHz n71	400	0.12%
Dish Wireless 1900 MHz n70	4	245.22	186.0	1.09	1900 MHz n70	1000	0.11%
Dish Wireless 2190 MHz n66	4	275.14	186.0	1.22	2190 MHz n66	1000	0.12%
						Total:	**0.35%**

• 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:	0.35%
Sector B:	0.35%
Sector C:	0.35%
Dish Wireless Maximum MPE % (Sector A):	0.35%
Site Total:	34.01%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **34.01%** 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

1200 MacArthur Blvd, Suite 200
Mahwah, NJ 07430

Phone: (862) 226-6914
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:
800 BOOTH HILL RD., TRUMBULL, CT 06611

PINNACLE TOWERS LLC ("Crown Castle") hereby authorizes DISH NETWORK, 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: **873128/Trumbull**
Customer Site ID: **NJJER01137A/CT-CCI-T-873128**
Site Address: **800 Booth Hill Rd., Trumbull, CT 06611**

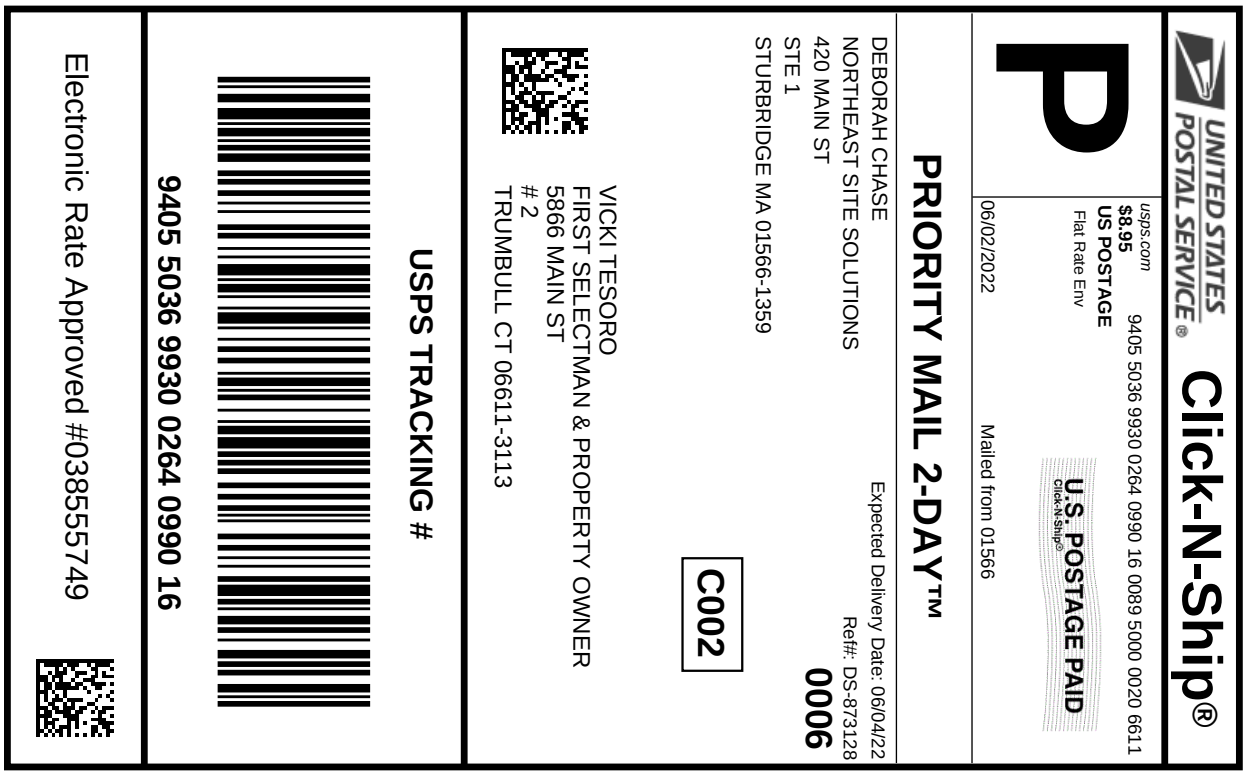
Crown Castle

By: _____ Date: 04/11/2022

Robin Cannizzaro
Real Estate Specialist

Exhibit H

Recipient Mailings



Cut on dotted line.

Instructions

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

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0264 0990 16

Trans. #:	564804557
Print Date:	06/02/2022
Ship Date:	06/02/2022
Expected Delivery Date:	06/04/2022

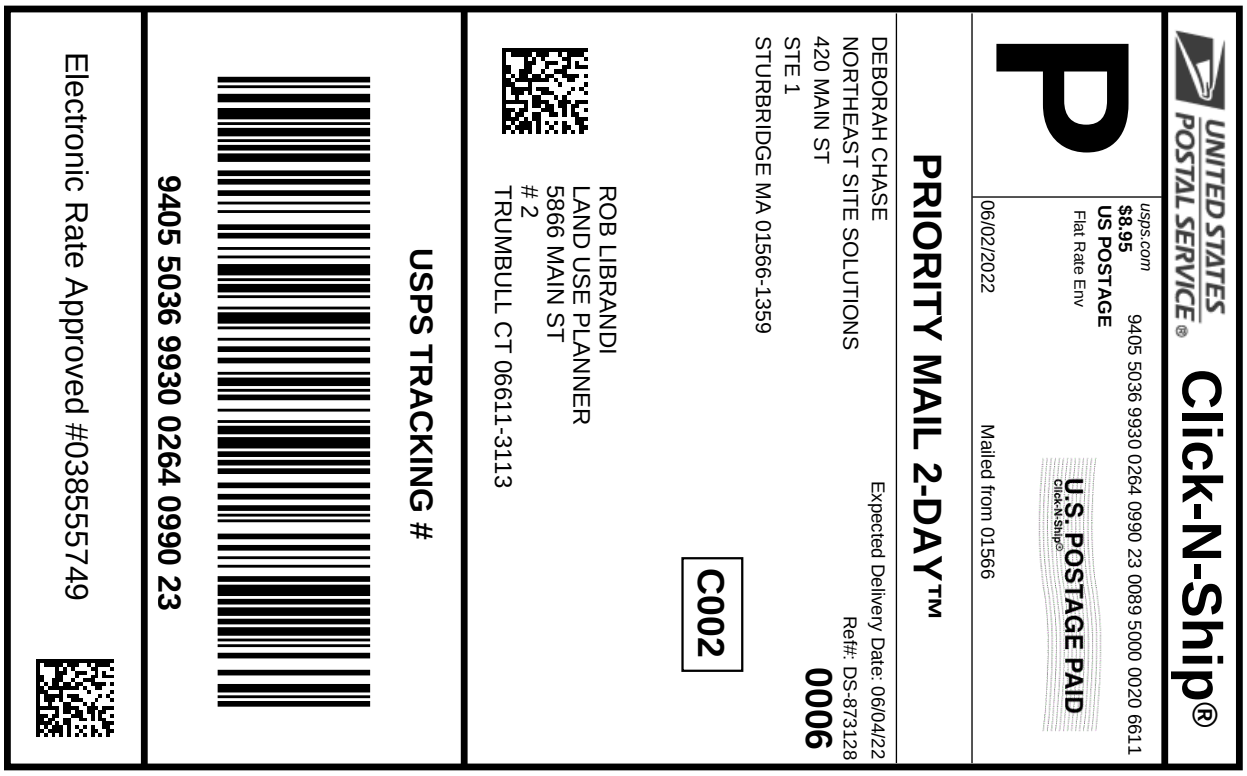
Priority Mail® Postage:	**$8.95**
Total:	**$8.95**

From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
420 MAIN ST
STE 1
STURBRIDGE MA 01566-1359
Ref#: DS-873128

To: VICKI TESORO
FIRST SELECTMAN & PROPERTY OWNER
5866 MAIN ST
2
TRUMBULL CT 06611-3113

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

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



Cut on dotted line.

Instructions

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5. **Mail your package on the "Ship Date" you selected when creating this label.**

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0264 0990 23

Trans. #:	564804557
Print Date:	06/02/2022
Ship Date:	06/02/2022
Expected Delivery Date:	06/04/2022

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

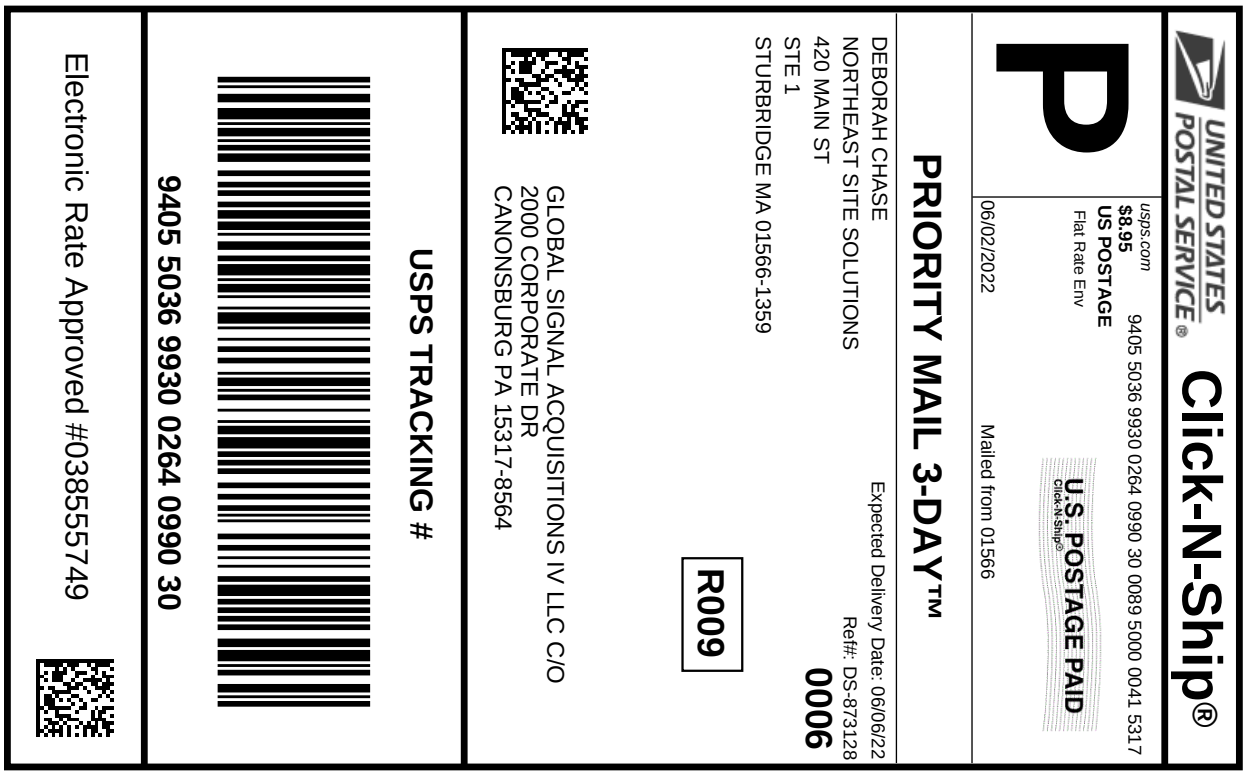
From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
420 MAIN ST
STE 1
STURBRIDGE MA 01566-1359

Ref#: DS-873128

To: ROB LIBRANDI
LAND USE PLANNER
5866 MAIN ST
2
TRUMBULL CT 06611-3113

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

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



Cut on dotted line.

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5. **Mail your package on the "Ship Date" you selected when creating this label.**

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0264 0990 30

Trans. #:	564804557
Print Date:	06/02/2022
Ship Date:	06/02/2022
Expected Delivery Date:	06/06/2022

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

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

Ref#: DS-873128

To: GLOBAL SIGNAL ACQUISITIONS IV LLC C/O CROWN CASTLE
2000 CORPORATE DR
CANONSBURG PA 15317-8564

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

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

873128 Crown Dish

UNITED STATES POSTAL SERVICE.

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

06/03/2022 04:23 PM

Product	Qty	Unit Price	Price
Prepaid Mail Trumbull, CT 06611 Weight: 0 lb 9.80 oz Acceptance Date: Fri 06/03/2022 Tracking #: 9405 5036 9930 0264 0990 16	1		$0.00
Prepaid Mail Canonsburg, PA 15317 Weight: 0 lb 9.80 oz Acceptance Date: Fri 06/03/2022 Tracking #: 9405 5036 9930 0264 0990 30	1		$0.00
Prepaid Mail Trumbull, CT 06611 Weight: 0 lb 9.80 oz Acceptance Date: Fri 06/03/2022 Tracking #: 9405 5036 9930 0264 0990 23	1		$0.00
Grand Total:			$0.00

****
Every household in the U.S. is now
eligible to receive a third set
of 8 free test kits.
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Track your Packages
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All sales final on stamps and postage.
Refunds for guaranteed services only.
Thank you for your business.

Tell us about your experience.
Go to: https://postalexperience.com/Pos
or scan this code with your mobile device,

or call 1-800-410-7420.

UFN: 082618-0132
Receipt #: 840-50600020-2-5550501-1
Clerk: 77