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 15, 2022

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

RE: Tower Share Application
47-51 Unity Street, Plainfield, CT 06374
Latitude: 41.715138
Longitude: -71.896305
Site #: 876401_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 47-51 Unity Street, Plainfield, Connecticut.

Dish Wireless LLC proposes to install three (3) 600/1900 MHz 5G antennas and six (6) RRUs, at the 83-foot level of the existing 160-foot monopole tower, one (1) Fiber cable will also be installed. Dish Wireless LLC equipment cabinets will be placed within a 7' x 5' lease area within the existing fenced compound. Included are plans by Hudson Design Group, dated June 9, 2022, Exhibit C. Also included is a structural analysis prepared by B+T, dated November 19, 2021, confirming that the existing tower is structurally capable of supporting the proposed equipment. Attached as Exhibit D. The facility was approved by the Connecticut Siting Council, Docket No. 234 on April 9, 2003. Please see attached Exhibit A.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies 16-50aa, of Dish Wireless LLC intent to share a telecommunications facility pursuant to R.C.S.A. 16-50j-88. In accordance with R.C.S.A., a copy of this letter is being sent to Kevin M. Cunningham, First Selectman, and Mary Ann Chinatti, Town Planner for the Town of Plainfield, as well as the tower owner (Crown Castle) and property owner (Town of Plainfield).

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 160-feet and the Dish Wireless LLC antennas will be located at a centerline height of 83-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 34.14% 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 Plainfield. 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 83-foot level of the existing 160-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 Plainfield.

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: Kevin M. Cunningham, First Selectman & Property Owner
Town of Plainfield
8 Community Avenue
Plainfield, CT 06374

Mary Ann Chinatti, Town Planner
Town of Plainfield
8 Community Avenue
Plainfield, CT 06374

Crown Castle, Tower Owner

Exhibit A

Original Facility Approval

Connecticut Siting Council (/CSC)

DOCKET NO. 234 – Sprint Spectrum, L.P. application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a telecommunications facility in Plainfield, Connecticut.	}	Connecticut
	}	Siting
	}	Council
		April 9, 2003

Decision and Order

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, operation, and maintenance of a telecommunications facility including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate either alone or cumulatively with other effects when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes § 16-50k, be issued to Sprint Spectrum L. P. (Sprint) for the construction, maintenance and operation of a wireless telecommunications facility at proposed Candidate B site located at 47-51 Unity Street, Plainfield, Connecticut. We deny certification of the proposed Candidate A site (Saad property) located at 180 Town Farm Road, Plainfield, Connecticut.

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

1. The tower shall be constructed as a monopole, no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of Sprint and other entities, both public and private, but such tower shall not exceed a height of 160 feet above ground level. The tower shall also be constructed in such a manner that, in the unlikely event of failure, it would collapse upon itself in a way that would effectively reduce the diameter of the fall zone.

2. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be submitted to and approved by the Council prior to the commencement of facility construction and shall include:

a. a detailed site development plan that depicts the location of the access road, compound, tower, and utility line;

b. specifications for the tower, tower foundation, antennas, equipment building, and security fence; and

c. construction plans for site clearing, water drainage, and erosion and sedimentation control consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended.

3. The Certificate Holder shall, prior to the commencement of operation, provide the Council worst-case modeling of electromagnetic radio frequency power densities of all proposed entities' antennas at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin No. 65, August 1997. The Certificate Holder shall provide a recalculated report of electromagnetic radio frequency power density if and when circumstances in operation cause a change in power density above the levels calculated and provided pursuant to this Decision and Order.

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

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

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

7. Any antenna that becomes obsolete and ceases to function shall be removed within 60 days after such antennas become obsolete and ceases to function.

8. Unless otherwise approved by the Council, this Decision and Order shall be void if the facility authorized herein is not operational within one year of the effective date of this Decision and Order or within one year after all appeals to this Decision and Order have been resolved.

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

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

The parties and intervenors to this proceeding are:

Applicant	**Its Representative**
Sprint Spectrum, L.P. d/b/a Sprint PCS	Thomas J. Regan, Esquire Brown Rudnick Berlack Israels LLP CityPlace I, 38th Floor 185 Asylum Street Hartford, CT 06103-3402 (860) 509-6522

Exhibit B

Property Card

47-51 UNITY ST

Location	47-51 UNITY ST	**Mblu**	015/ 0071/ 0009/ /
Acct#	00145200	**Owner**	PLAINFIELD TOWN OF
Assessment	$402,680	**Appraisal**	$575,250
PID	1571	**Building Count**	3

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2018	$386,850	$188,400	$575,250
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2018	$270,800	$131,880	$402,680

Owner of Record

Owner	PLAINFIELD TOWN OF	**Sale Price**	$0
Co-Owner		**Certificate**	
Address	651 NORWICH RD PLAINFIELD, CT 06374	**Book & Page**	0025/0002
		Sale Date	04/01/1878
		Instrument	

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**
PLAINFIELD TOWN OF	$0		0025/0002		04/01/1878

Building Information

Building 1 : Section 1

Year Built:	1973
Living Area:	12,000
Replacement Cost:	$345,480
Building Percent Good:	73
Replacement Cost Less Depreciation:	$252,200

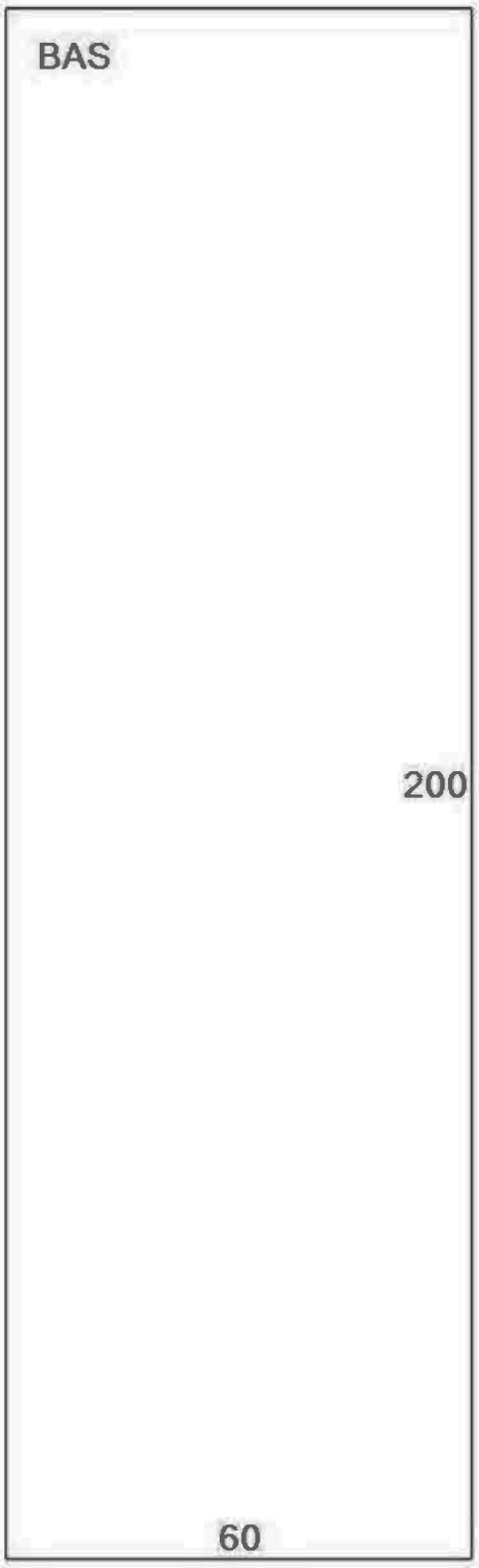
Building Attributes

Field	Description
STYLE	Warehouse
MODEL	Comm/Ind
Grade	C
Stories:	1
Occupancy	
Exterior Wall 1	Pre-finsh Metl
Exterior Wall 2	
Roof Structure	Gable/Hip
Roof Cover	Asph/F Gls/Cmp
Interior Wall 1	Minim/Masonry
Interior Wall 2	
Interior Floor 1	Concr-Finished
Interior Floor 2	
Heating Fuel	Oil
Heating Type	Forced Air-Duc
AC Type	None
Struct Class	
Bldg Use	MUNICIPAL MDL-94
Total Rooms	
Total Bedrms	00
Total Baths	0
Usrfld 218	0
Usrfld 219	
1st Floor Use:	9030
Heat/AC	HEAT ONLY
Frame Type	STEEL
Baths/Plumbing	AVERAGE
Ceiling/Wall	CEIL & WALLS
Rooms/Prtns	AVERAGE
Wall Height	16.00
% Comn Wall	

Building Photo

(http://images.vgsi.com/photos/PlainfieldCTPhotos/\00\00\13\21.JPG)

Building Layout



(ParcelSketch.ashx?pid=1571&bid=1571)

Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	12,000	12,000
		12,000	12,000

Building 2 : Section 1

Year Built: 1975
Living Area: 3,150
Replacement Cost: $108,581
Building Percent Good: 73
Replacement Cost Less Depreciation: $79,260

Building Attributes : Bldg 2 of 3	
Field	**Description**
STYLE	Warehouse
MODEL	Comm/Ind
Grade	C
Stories:	1
Occupancy	
Exterior Wall 1	Concr/Cinder
Exterior Wall 2	
Roof Structure	Gable/Hip
Roof Cover	Asph/F Gls/Cmp
Interior Wall 1	Typical
Interior Wall 2	
Interior Floor 1	Average
Interior Floor 2	
Heating Fuel	None
Heating Type	None
AC Type	None
Struct Class	
Bldg Use	MUNICIPAL MDL-94
Total Rooms	
Total Bedrms	00
Total Baths	0
Usrfld 218	0
Usrfld 219	
1st Floor Use:	9030
Heat/AC	NONE
Frame Type	NONE
Baths/Plumbing	AVERAGE
Ceiling/Wall	CEIL & WALLS
Rooms/Prtns	AVERAGE
Wall Height	10.00
% Comn Wall	

Building Photo

(http://images.vgsi.com/photos/PlainfieldCTPhotos//default.jpg)

Building Layout

(ParcelSketch.ashx?pid=1571&bid=20058)

Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	2,450	2,450
AOF	Office	700	700
		3,150	3,150

Building 3 : Section 1

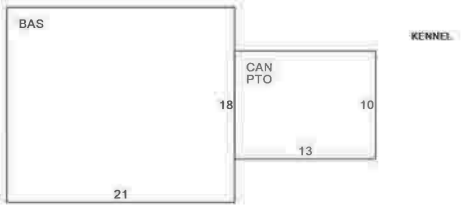
Year Built: 1975
Living Area: 378
Replacement Cost: $20,782
Building Percent Good: 73
Replacement Cost Less Depreciation: $15,170

Building Attributes : Bldg 3 of 3	
Field	**Description**
STYLE	Office/Warehs
MODEL	Comm/Ind
Grade	D
Stories:	1
Occupancy	
Exterior Wall 1	Concr/Cinder
Exterior Wall 2	
Roof Structure	Gable/Hip
Roof Cover	Asph/F Gls/Cmp
Interior Wall 1	Minim/Masonry
Interior Wall 2	
Interior Floor 1	Concr-Finished
Interior Floor 2	
Heating Fuel	Gas
Heating Type	Forced Air-Duc
AC Type	None
Struct Class	
Bldg Use	MUNICIPAL MDL-94
Total Rooms	
Total Bedrms	00
Total Baths	0
Usrfld 218	0
Usrfld 219	
1st Floor Use:	9030
Heat/AC	HEAT ONLY
Frame Type	REINF. CONCR
Baths/Plumbing	NONE
Ceiling/Wall	CEIL & WALLS
Rooms/Prtns	AVERAGE
Wall Height	10.00
% Comn Wall	

Building Photo

(http://images.vgsi.com/photos/PlainfieldCTPhotos//default.jpg)

Building Layout



(ParcelSketch.ashx?pid=1571&bid=20059)

Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	378	378
CAN	Canopy	130	0
PTO	Patio	130	0
		638	378

Extra Features

Extra Features				Legend
Code	Description	Size	Value	Bldg #
OD1	Overhead Dr-Wood/Mtl	1.00 UNITS	$730	1
OD1	Overhead Dr-Wood/Mtl	1.00 UNITS	$730	2
A/C	Air Conditioning	700.00 S.F.	$1,280	2
OD1	Overhead Dr-Wood/Mtl	3.00 UNITS	$2,190	1
MEZ1	Mezzanine-Unf	1200.00 S.F.	$7,010	1

Land

Land Use

Use Code	903C
Description	MUNICIPAL MDL-94
Zone	IND
Neighborhood	2000
Alt Land Appr	No
Category	

Land Line Valuation

Size (Acres)	11.85
Frontage	
Depth	
Assessed Value	$131,880
Appraised Value	$188,400

Outbuildings

Outbuildings						Legend
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
AQ1	Quonset Bldg			840.00 S.F.	$12,180	1
KEN2	Kennel-Good			468.00 S.F.	$5,970	3
CNP1	Canopy Avg			312.00 S.F.	$1,870	3
CNP1	Canopy Avg			800.00 S.F.	$3,200	2
SH1	Frame Shed			128.00 S.F.	$800	1
SH1	Frame Shed			170.00 S.F.	$1,060	1
CNP1	Canopy Avg			800.00 S.F.	$3,200	1

Valuation History

Appraisal			
Valuation Year	Improvements	Land	Total
2019	$386,850	$188,400	$575,250
3000	$386,850	$188,400	$575,250
2018	$386,850	$190,370	$577,220

Assessment			
Valuation Year	Improvements	Land	Total
2019	$270,800	$131,880	$402,680
3000	$270,800	$131,880	$402,680
2018	$270,800	$133,260	$404,060

Google Maps

41°42'54.5"N 71°53'46.7"W

Crown Castle - tower location

Imagery ©2020 CNES / Airbus, Maxar Technologies, RIGIS, USDA Farm Service Agency, Map data ©2020 1000 ft

41°42'54.5"N 71°53'46.7"W

41.715136, -71.896314

Directions | Save | Nearby | Send to your phone | Share

Plainfield, CT

P483+3F Plainfield, Connecticut

Photos

Exhibit C

Construction Drawings

DISH Wireless L.L.C. SITE ID:

BOBOS00897A

DISH Wireless L.L.C. SITE ADDRESS:

47-51 UNITY STREET
PLAINFIELD, CT, 06374

SCOPE OF WORK

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

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

GROUND SCOPE OF WORK:
- INSTALL (1) PROPOSED METAL PLATFORM
- INSTALL (1) PROPOSED ICE BRIDGE
- INSTALL (1) PROPOSED PPC CABINET
- INSTALL (1) PROPOSED EQUIPMENT CABINET
- INSTALL (1) PROPOSED POWER CONDUIT
- INSTALL (1) PROPOSED TELCO CONDUIT
- INSTALL (1) PROPOSED TELCO-FIBER BOX
- INSTALL (1) PROPOSED GPS UNIT
- INSTALL (1) PROPOSED SAFETY SWITCH (IF REQUIRED)
- INSTALL (1) PROPOSED FIBER NID (IF REQUIRED)
- INSTALL (1) PROPOSED NEW 200A METER IN EXISTING SOCKET

SITE INFORMATION

PROPERTY OWNER:	TOWN OF PLAINFIELD CT
PROPERTY OWNER ADDRESS:	8 COMMUNITY AVENUE PLAINFIELD, CT 06374
TOWER TYPE:	MONOPOLE
TOWER CO SITE ID:	876401
TOWER APP NUMBER:	572912
COUNTY:	WINDHAM
LATITUDE (NAD 83):	41° 42' 54.49" N 41.71514°
LONGITUDE (NAD 83):	71° 53' 46.73" W -71.89631°
ZONING JURISDICTION:	CONNECTICUT SITING COUNCIL -CT
ZONING DISTRICT:	INDUSTRIAL
PARCEL NUMBER:	015-0071-0009
OCCUPANCY GROUP:	U
CONSTRUCTION TYPE:	II-B
POWER COMPANY:	NORTHEAST UTILITIES
TELEPHONE COMPANY:	TBD

PROJECT DIRECTORY

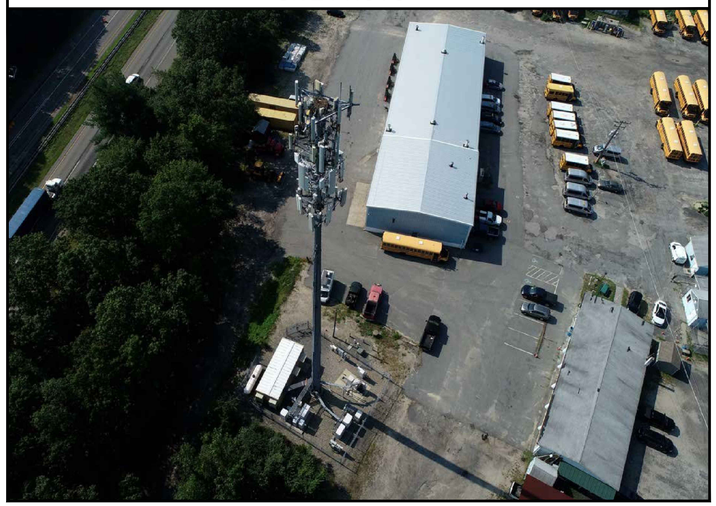
APPLICANT:	DISH Wireless L.L.C. 5701 SOUTH SANTA FE DRIVE LITTLETON, CO 80120
TOWER OWNER:	CROWN CASTLE 2000 CORPORATE DRIVE CANONSBURG, PA 15317 (877) 486-9377
SITE DESIGNER:	HUDSON DESIGN GROUP, LLC. 45 BEECHWOOD DRIVE NORTH ANDOVER, MA 01845 (978) 557-5553
SITE ACQUISITION:	COURTNEY PRESTON COURTNEY.PRESTON.CONTRACTOR@CROWNCASTLE.COM
CONSTRUCTION MANAGER:	JAVIER SOTO JAVIER.SOTO@DISH.COM
RF ENGINEER:	DIPESH PARIKH DIPESH.PARIKH@DISH.COM

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

SITE PHOTO



SHEET INDEX

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.

DIRECTIONS

DIRECTIONS FROM DANIELSON AIRPORT:

START OUT GOING NORTHEAST ON AIRPORT RD TOWARD UPPER MAPLE ST.TURN RIGHT ONTO MAPLE ST. TURN LEFT ONTO PROVIDENCE RD/US-6 E. CONTINUE TO FOLLOW US-6 E.MERGE ONTO I-395 S TOWARD NORWICH.TAKE THE CT-14 EXIT, EXIT 32, TOWARD CENTRAL VILLAGE/MOOSUP.MERGE ONTO E MAIN ST/CT-14 TOWARD CENTRAL VILLAGE/WAUREGAN/BROOKLYN/PLAINFIELD.TURN LEFT ONTO NORWICH RD/CT-12.TURN LEFT ONTO PLAINFIELD RD.TURN LEFT ONTO UNITY ST.47 UNITY ST, #51, MOOSUP, CT 06354-1624, 47 UNITY ST, #51 IS ON THE LEFT.

VICINITY MAP

NO SCALE

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

HDG HUDSON Design Group LLC

45 BEECHWOOD DRIVE
N. ANDOVER, MA 01845

TEL: (978) 557-5553
FAX: (978) 336-5586

STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED PROFESSIONAL ENGINEER

DRAWN BY:	CHECKED BY:	APPROVED BY:
VA	SMA	DPH

RFDS REV #: 2

PRELIMINARY DOCUMENT

SUBMITTALS

REV	DATE	DESCRIPTION
A	01/04/2022	ISSUED FOR REVIEW
B	04/04/2022	ISSUED FOR REVIEW
C	06/09/2022	ISSUED FOR REVIEW

A&E PROJECT NUMBER

BOBOS00897A

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS00897A
CROWN CASTLE BU#876401
47-51 UNITY STREET
PLAINFIELD, CT 06374

SHEET TITLE

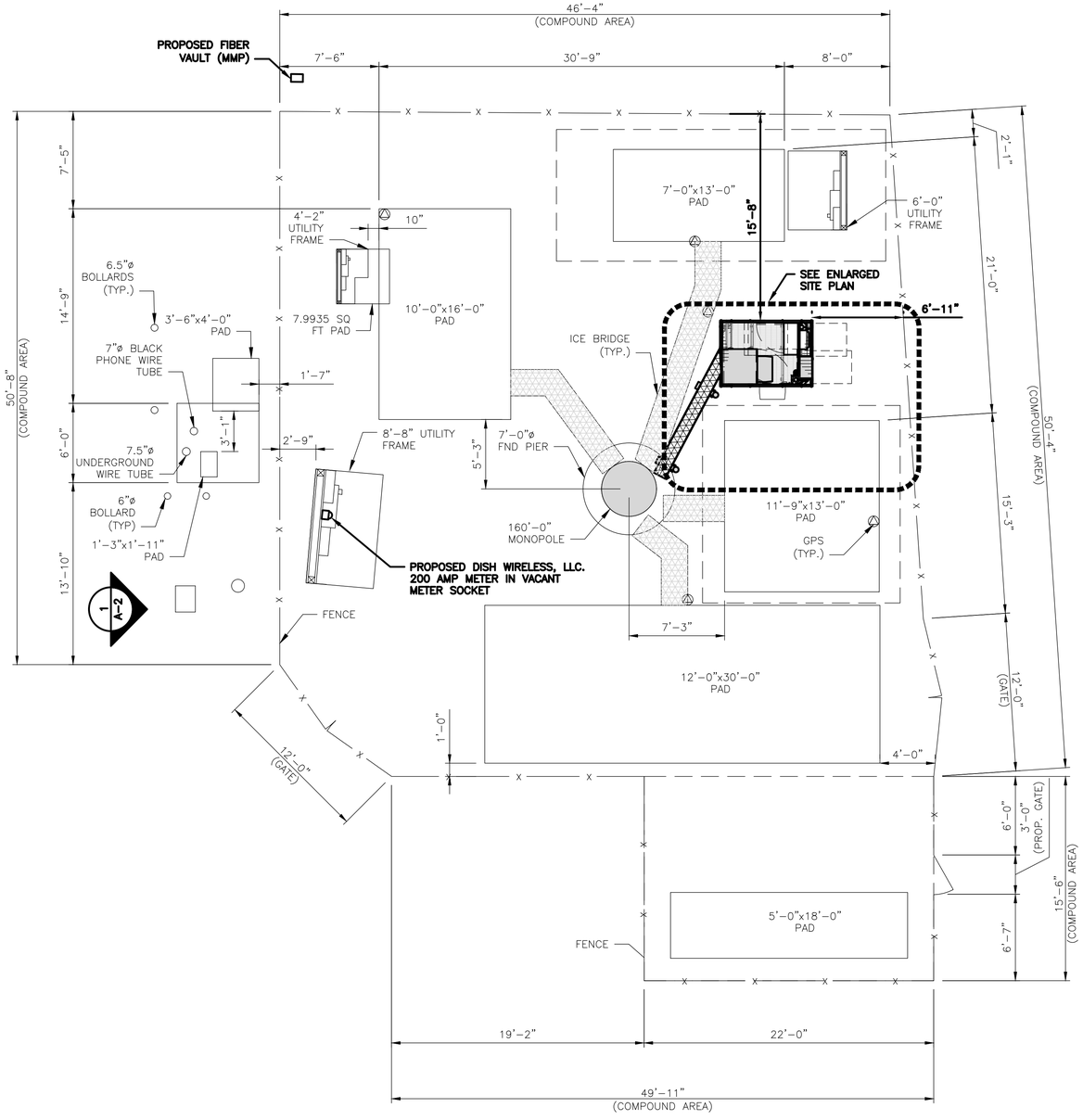
TITLE SHEET

SHEET NUMBER

T-1

NOTES

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



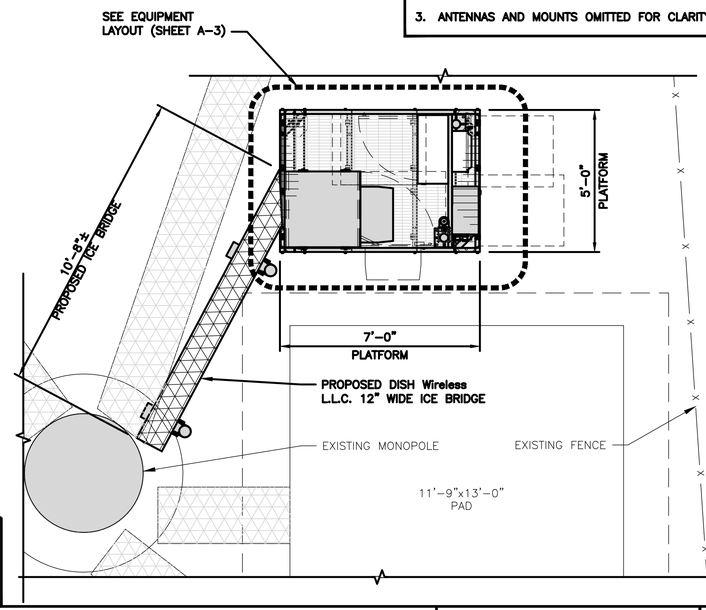
OVERALL SITE PLAN

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

1

NOTES

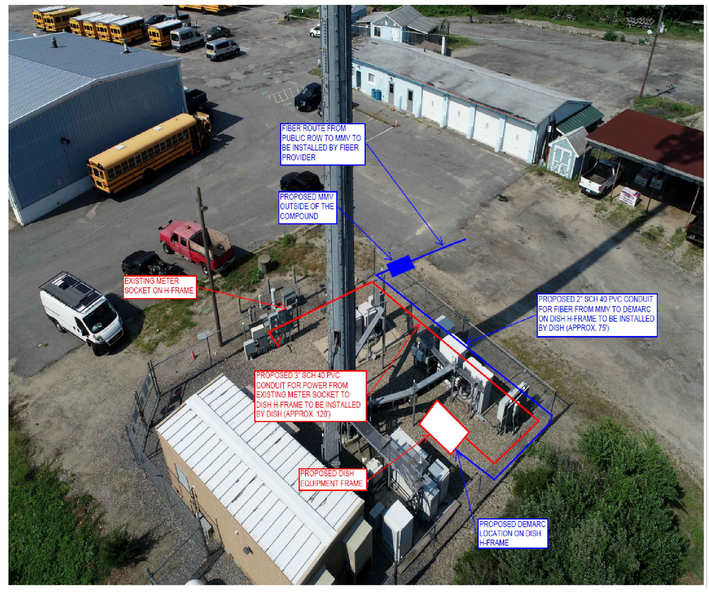
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. CONTRACTOR SHALL MAINTAIN A 10'-0" MINIMUM SEPARATION BETWEEN THE PROPOSED GPS UNIT, TRANSMITTING ANTENNAS AND EXISTING GPS UNITS.
3. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.



ENLARGED SITE PLAN

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

2



OVERALL UTILITY ROUTE PLAN

NO SCALE

3

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

HDG HUDSON Design Group LLC

45 BEECHWOOD DRIVE
N. ANDOVER, MA 01845

TEL: (978) 557-5553
FAX: (978) 336-5586

STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED PROFESSIONAL ENGINEER

DRAWN BY:	CHECKED BY:	APPROVED BY:
VA	SMA	DPH

RFDS REV #: 2

PRELIMINARY DOCUMENT

SUBMITTALS

REV	DATE	DESCRIPTION
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B	04/04/2022	ISSUED FOR REVIEW
C	06/09/2022	ISSUED FOR REVIEW

A&E PROJECT NUMBER

BOBOS00897A

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS00897A
CROWN CASTLE BU#876401
47-51 UNITY STREET
PLAINFIELD, CT 06374

SHEET TITLE

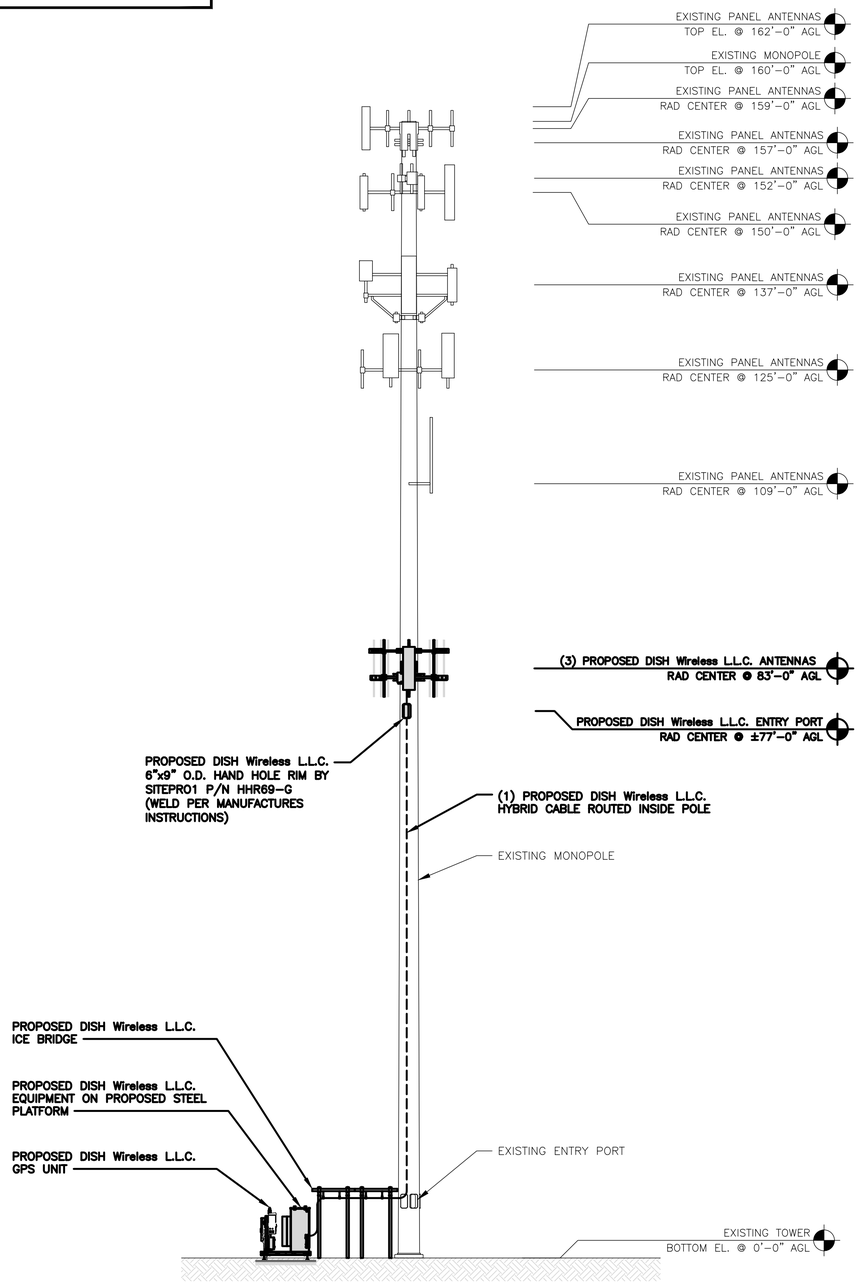
OVERALL AND ENLARGED SITE PLAN

SHEET NUMBER

A-1

NOTES

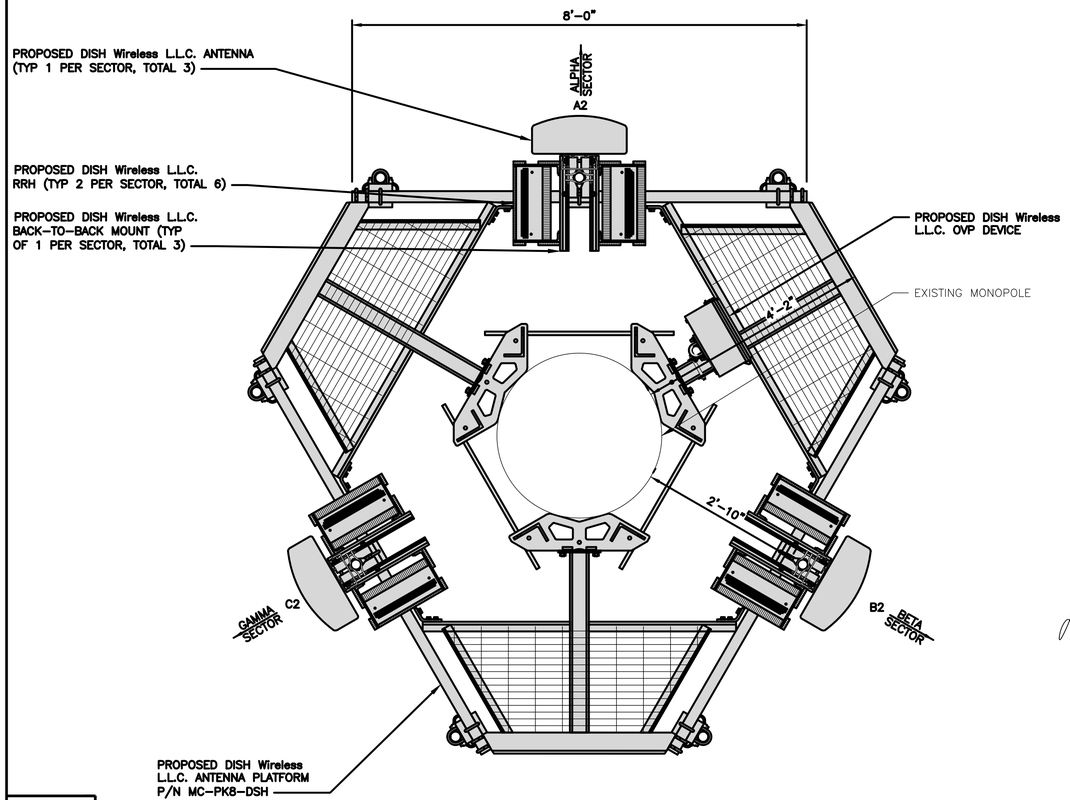
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNA AND MW DISH SPECIFICATIONS REFER TO ANTENNA SCHEDULE AND TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS
3. EXISTING EQUIPMENT AND FENCE OMITTED FOR CLARITY.



PROPOSED ELEVATION

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

1



ANTENNA LAYOUT

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

2

SECTOR POS.	ANTENNA					TRANSMISSION CABLE	RRH			OVP
	EXISTING OR PROPOSED	MANUFACTURER – MODEL NUMBER	TECH	AZIMUTH	RAD CENTER	FEED LINE TYPE AND LENGTH	MANUFACTURER – MODEL NUMBER	TECH	POS.	MANUFACTURER MODEL
A1	--	--	--	--	--	(1) HIGH-CAPACITY HYBRID CABLE (120' LONG)	FUJITSU-TA08025-B604	5G	A2	RAYCAP / RDIDC-9181-PF-48
A2	PROPOSED	JMA WIRELESS/MX08FRO665-21	5G	0°	83'-0"		FUJITSU-TA08025-B605	5G	A2	
A3	--	--	--	--	--		--	--	--	
B1	--	--	--	--	--	SHARED W/ALPHA	FUJITSU-TA08025-B604	5G	B2	SHARED W/ALPHA
B2	PROPOSED	JMA WIRELESS/MX08FRO665-21	5G	120°	83'-0"		FUJITSU-TA08025-B605	5G	B2	
B3	--	--	--	--	--		--	--	--	
C1	--	--	--	--	--	SHARED W/ALPHA	FUJITSU-TA08025-B604	5G	C2	SHARED W/ALPHA
C2	PROPOSED	JMA WIRELESS/MX08FRO665-21	5G	240°	83'-0"		FUJITSU-TA08025-B605	5G	C2	
C3	--	--	--	--	--		--	--	--	

NOTES

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

ANTENNA SCHEDULE

NO SCALE

3

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

HDG HUDSON Design Group LLC

45 BEECHWOOD DRIVE
N. ANDOVER, MA 01845

TEL: (978) 557-5553
FAX: (978) 336-5586

STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED PROFESSIONAL ENGINEER

DRAWN BY:	CHECKED BY:	APPROVED BY:
VA	SMA	DPH

RFDS REV #: 2

PRELIMINARY DOCUMENT

SUBMITTALS

REV	DATE	DESCRIPTION
A	01/04/2022	ISSUED FOR REVIEW
B	04/04/2022	ISSUED FOR REVIEW
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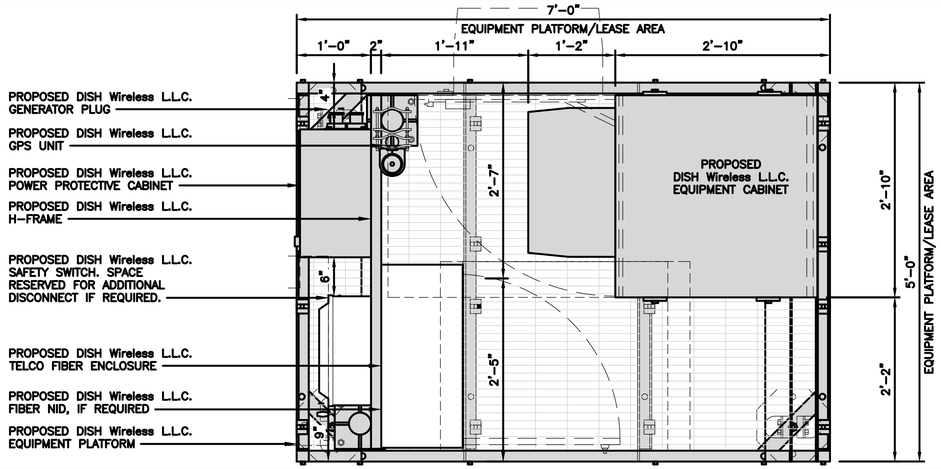
SHEET TITLE

ELEVATION, ANTENNA LAYOUT AND SCHEDULE

SHEET NUMBER

A-2



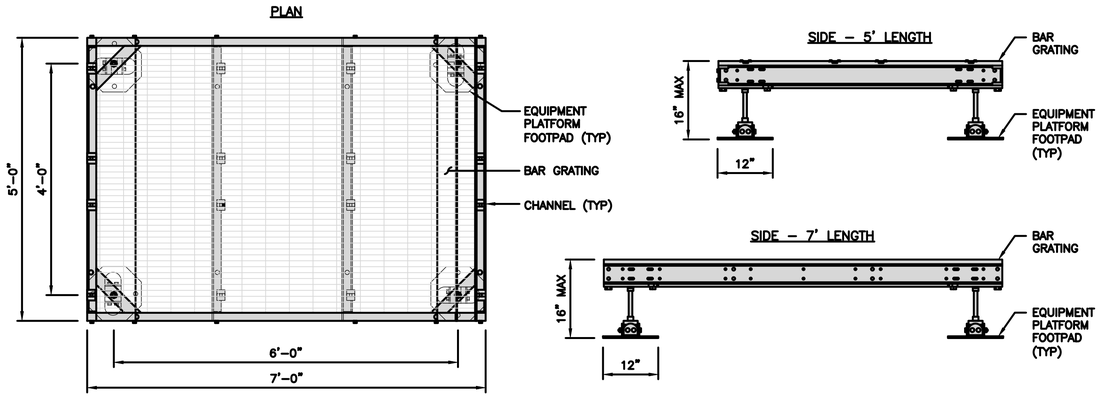
PLATFORM EQUIPMENT PLAN

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

1

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

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



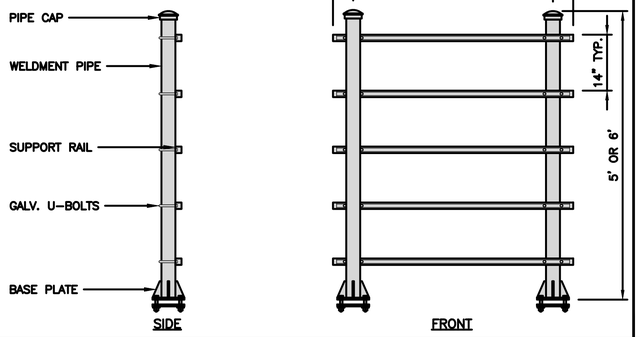
PLATFORM DETAIL

NO SCALE

2

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

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



H-FRAME DETAIL

NO SCALE

3

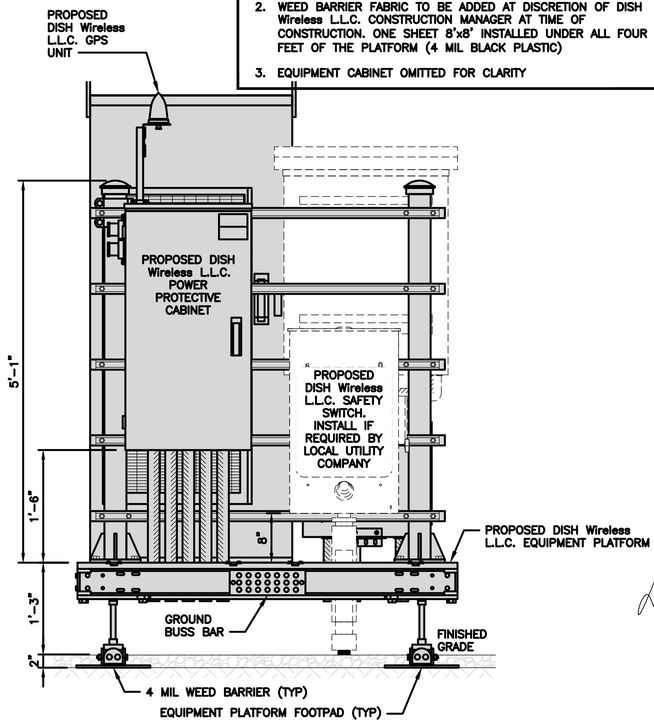
NOT USED

NO SCALE

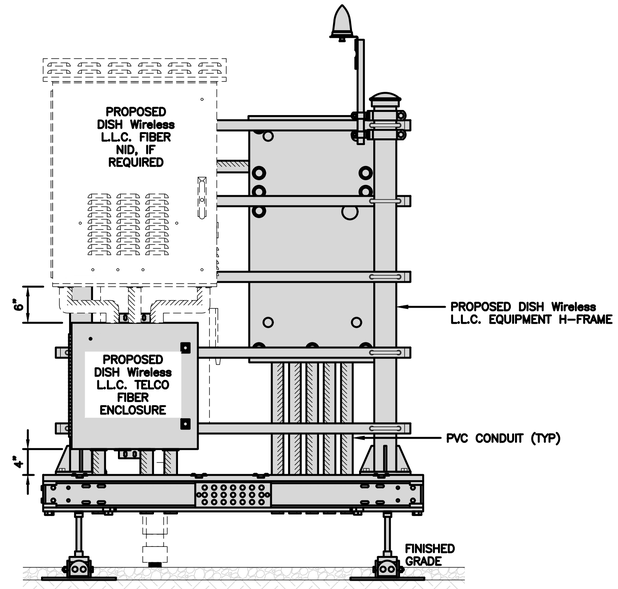
4

NOTES

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



FRONT ELEVATION



BACK ELEVATION

H-FRAME EQUIPMENT ELEVATION

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

5

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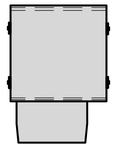
PLAINFIELD, CT 06374

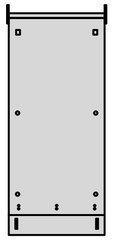
SHEET TITLE
EQUIPMENT PLATFORM AND H-FRAME DETAILS

SHEET NUMBER
A-3

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



PLAN



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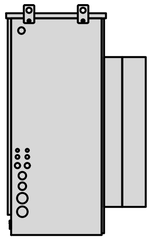
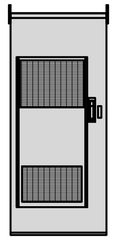


SIDE

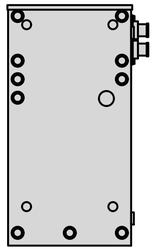


FRONT

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



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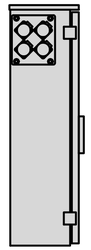

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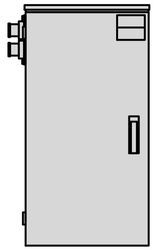

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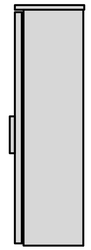
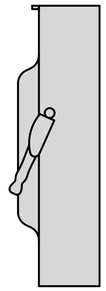


SIDE

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

SQUARE D SAFETY SWITCHES D224NRB	
ENCLOSURE DIM (HxWxD)	29.25"x19.00"x8.50"
ENCLOSURE TYPE	NEMA 3R RAINPROOF
UL LISTED	FILE E–2875

TOP



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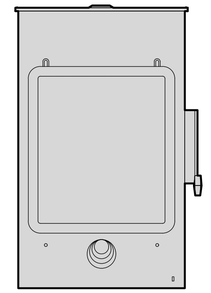
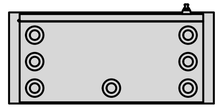


FRONT

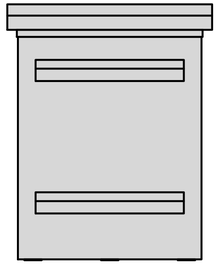
SAFETY SWITCH DETAIL | NO SCALE | 3

NOT USED | NO SCALE | 4

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



BOTTOM



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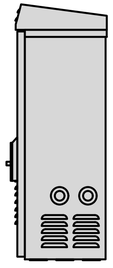
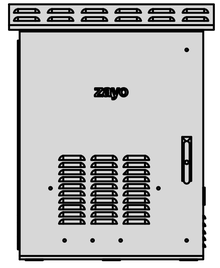


SIDE

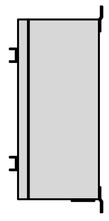


FRONT

FIBER NID ENCLOSURE DETAIL | NO SCALE | 5

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

FRONT



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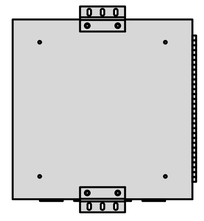

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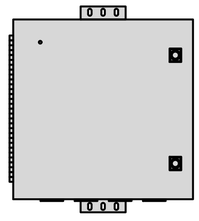
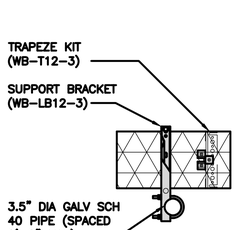


FRONT

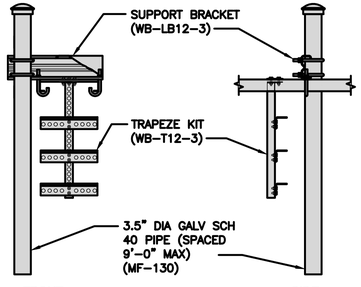
FIBER TELCO ENCLOSURE DETAIL | NO SCALE | 6

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"

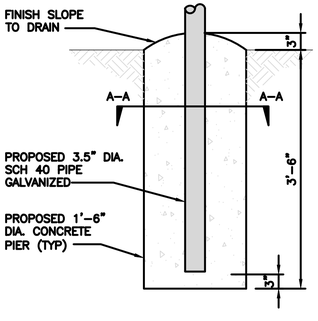


PLAN

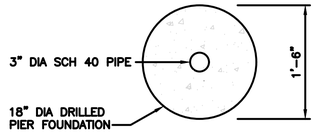


FRONT SIDE

ICE BRIDGE DETAIL | NO SCALE | 7

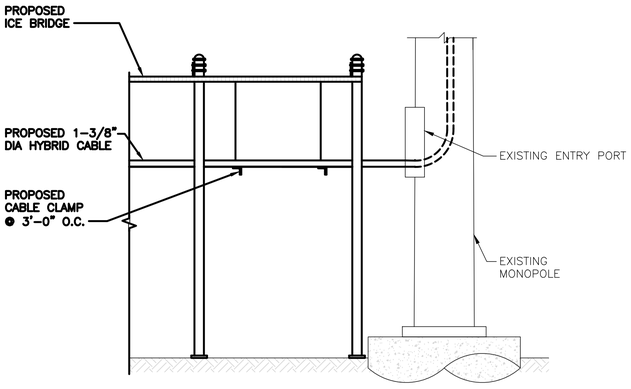


CONCRETE PIER



A–A SECTION

TYPICAL ICE BRIDGE CONCRETE PIER DETAIL | NO SCALE | 8



HYBRID CABLE RUN | NO SCALE | 9

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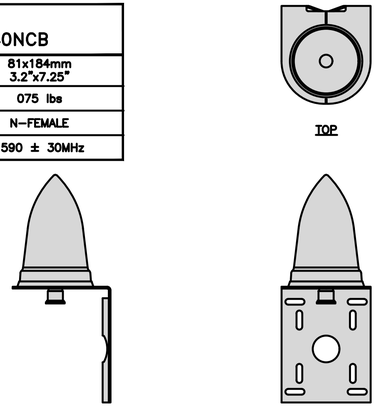
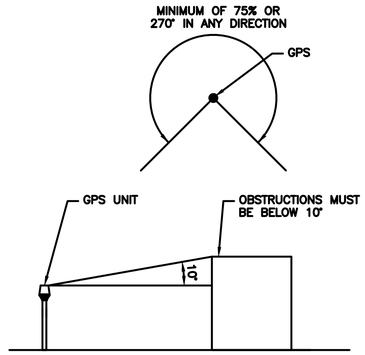
EQUIPMENT DETAILS

SHEET NUMBER
A-4

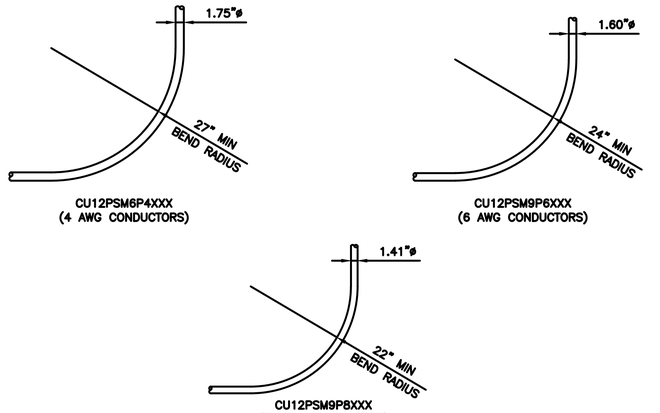
PCTEL GPSGL-TMG-SPI-40NCB	
DIMENSIONS (DIAxH) MM/INCH	81x184mm 3.2"x7.25"
WEIGHT W/ACCESSORIES	075 lbs
CONNECTOR	N-FEMALE
FREQUENCY RANGE	1590 ± 30MHz



GPS DETAIL — NO SCALE — 1



GPS MINIMUM SKY VIEW REQUIREMENTS — NO SCALE — 2



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

NOT USED — NO SCALE — 4

NOT USED — NO SCALE — 5

NOT USED — NO SCALE — 6

NOT USED — NO SCALE — 7

NOT USED — NO SCALE — 8

NOT USED — NO SCALE — 9

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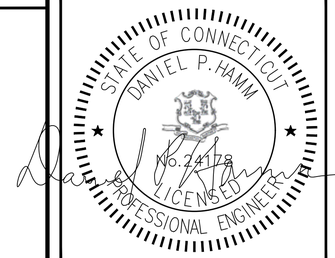

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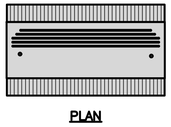
EQUIPMENT DETAILS

SHEET NUMBER

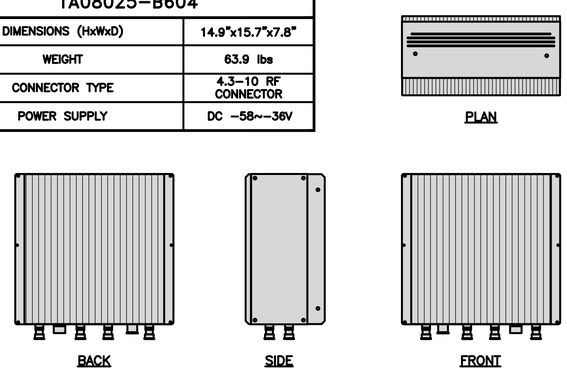
A-5

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



RRH DETAIL | NO SCALE | 1

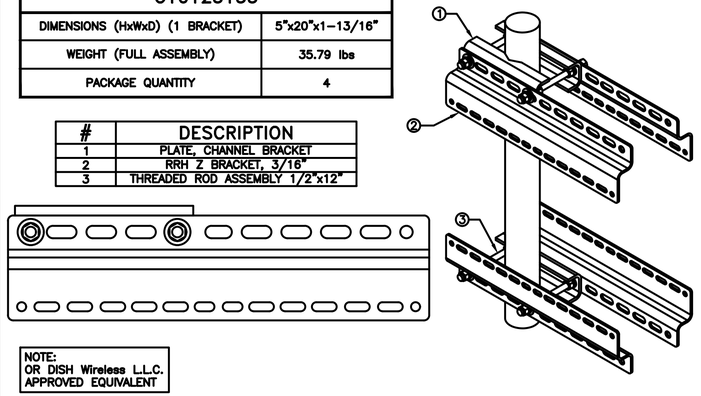
FUJITSU DUAL BAND TA08025-B604	
DIMENSIONS (HxWxD)	14.9"x15.7"x7.8"
WEIGHT	63.9 lbs
CONNECTOR TYPE	4.3-10 RF CONNECTOR
POWER SUPPLY	DC -58~-36V



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

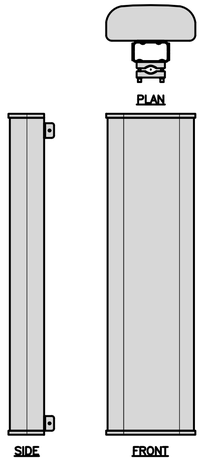
#	DESCRIPTION
1	PLATE, CHANNEL BRACKET
2	RRH Z BRACKET, 3/16"
3	THREADED ROD ASSEMBLY 1/2"x12"



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

RRH MOUNT DETAIL | NO SCALE | 3

JMA MX08FRO665-21	
DIMENSIONS (HxWxD)	72"x20.0"x8.0"
RF PORTS, CONNECTOR TYPE	8 x 4.3-10 FEMALE
WEIGHT	64.5 lbs
WEIGHT WITH BRACKETS	82.5 lbs



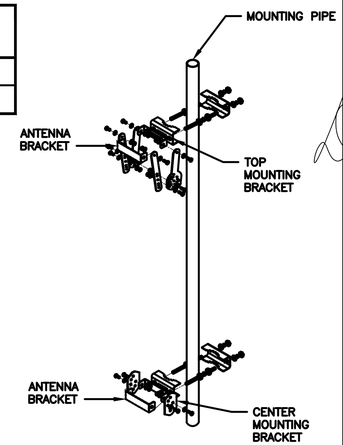
ANTENNA DETAIL | NO SCALE | 4

NOT USED | NO SCALE | 5

JMA ANTENNA MOUNT BRACKET #91900318	
TOTAL WEIGHT (WITH BRACKETS)	18 lbs (8.18 Kg)
POLE DIAMETER RANGE	2.5" TO 4.5"

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

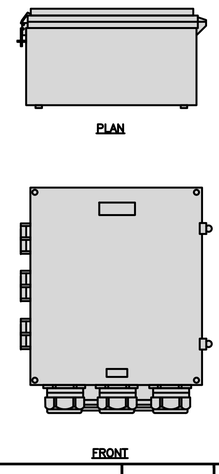
ANTENNA BRACKET NOT PART OF KIT



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

ANTENNA BRACKET DETAIL | NO SCALE | 6

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



SURGE SUPPRESSION DETAIL (OVP) | NO SCALE | 7

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

NOTE:
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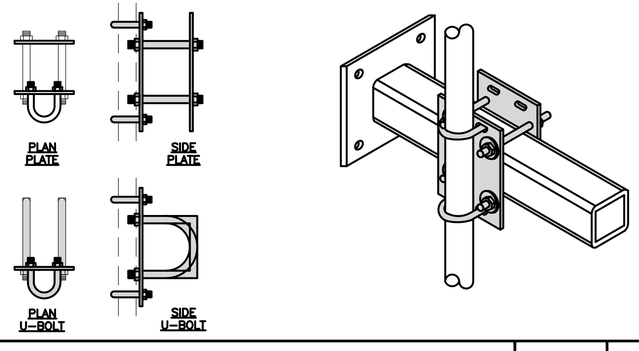
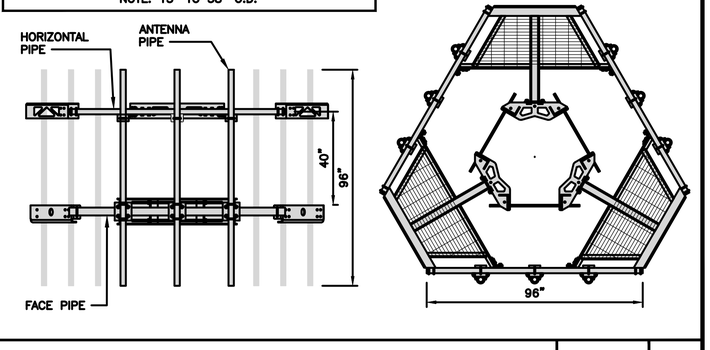
APPROVED EQUIVALENT



RRH/OVP MOUNT DETAIL | NO SCALE | 8

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

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



ANTENNA PLATFORM DETAIL | NO SCALE | 9

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DANIEL P. HAMM
No. 24178
LICENSED PROFESSIONAL ENGINEER

DRAWN BY:	CHECKED BY:	APPROVED BY:
VA	SMA	DPH

RFDS REV #: 2

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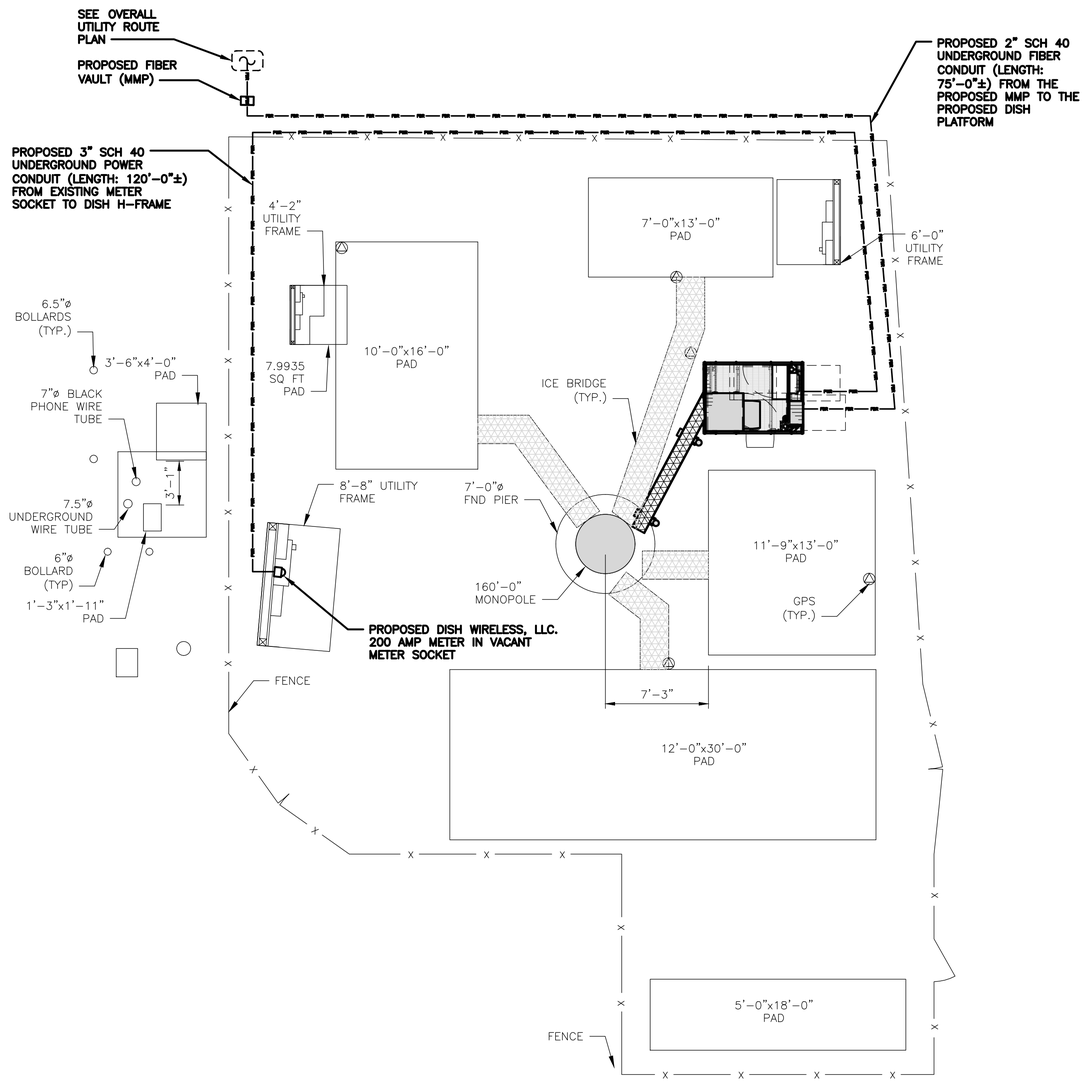
DISH Wireless L.L.C.
PROJECT INFORMATION
BOBOS00897A
CROWN CASTLE BU#876401
47-51 UNITY STREET
PLAINFIELD, CT 06374

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 PROVIDES BROAD/BLANKET 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 PLEASE LOCATE AND FOLLOW EXISTING PATH. IF EXISTING PATH IS NOT AN OPTION, PLEASE NOTIFY TOWER OWNER AS FURTHER COORDINATION MAY BE NEEDED.



UTILITY ROUTE PLAN

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

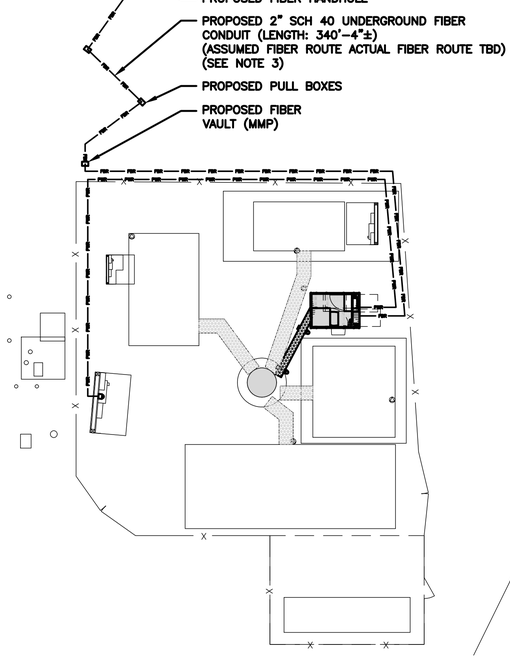
1

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

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

ELECTRICAL NOTES

2



OVERALL UTILITY ROUTE PLAN

3

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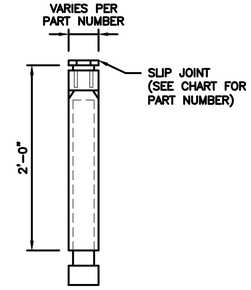
47-51 UNITY STREET
PLAINFIELD, CT 06374

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"

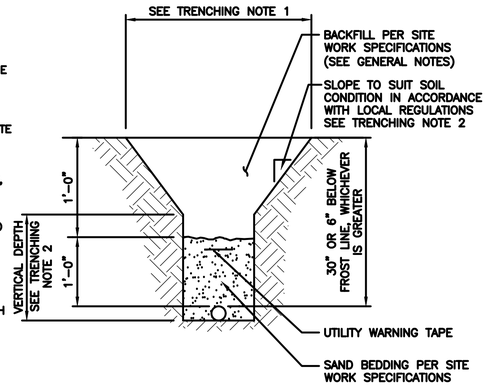


NOTE:
CONTRACTOR TO INSTALL EXPANSION FITTING SLIP JOINT AT METER CENTER CONDUIT TERMINATION, AS PER LOCAL UTILITY POLICY, ORDINANCE AND/OR SPECIFIED REQUIREMENT.

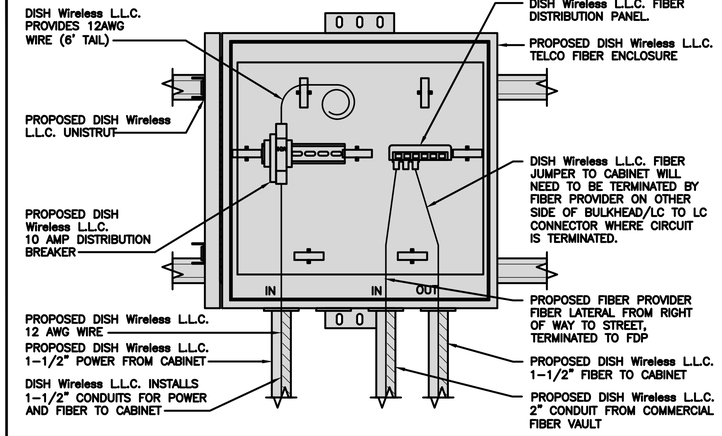
EXPANSION JOINT DETAIL | NO SCALE | 1

TRENCHING NOTES

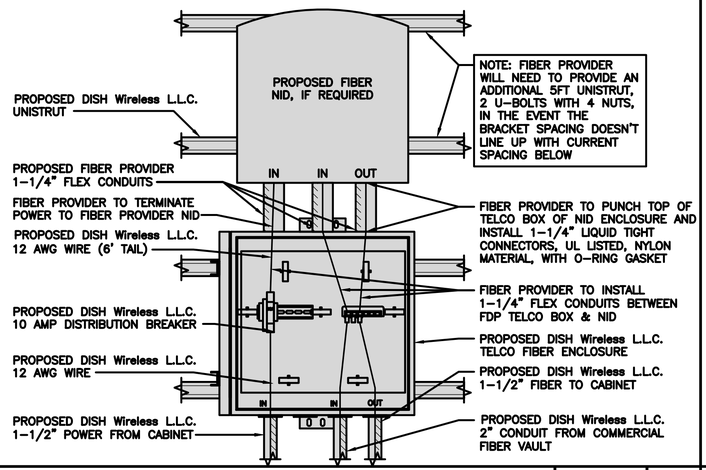
1. CONTRACTOR SHALL RESTORE THE TRENCH TO ITS ORIGINAL CONDITIONS BY EITHER SEEDING OR SODDING GRASS AREAS, OR REPLACING ASPHALT OR CONCRETE AREAS TO ITS ORIGINAL CROSS SECTION.
2. TRENCHING SAFETY; INCLUDING, BUT NOT LIMITED TO SOIL CLASSIFICATION, SLOPING, AND SHORING, SHALL BE GOVERNED BY THE CURRENT 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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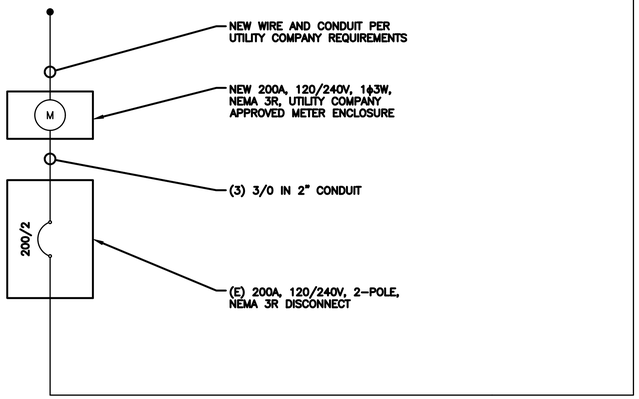
CROWN CASTLE BU#876401
47–51 UNITY STREET
PLAINFIELD, CT 06374

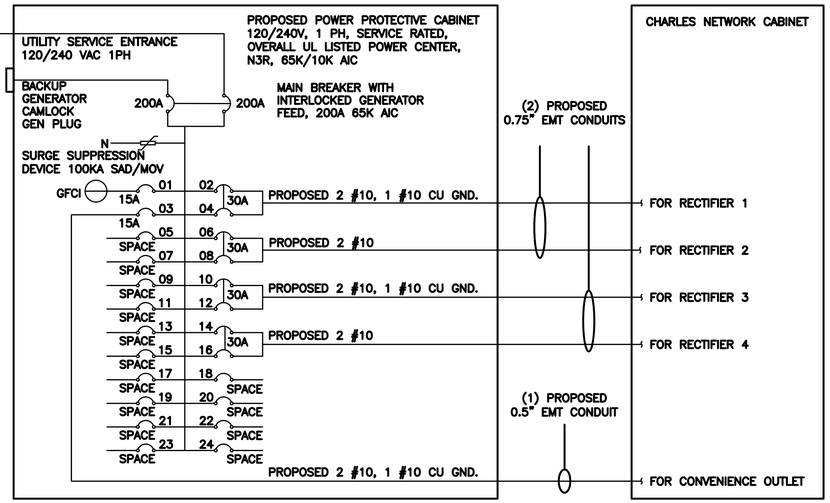
SHEET TITLE

ELECTRICAL DETAILS

SHEET NUMBER

E-2





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

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

NOTES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

PPC ONE-LINE DIAGRAM

NO SCALE | 1

PROPOSED CHARLES PANEL SCHEDULE

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

PANEL SCHEDULE | NO SCALE | 2

NOT USED | NO SCALE | 3

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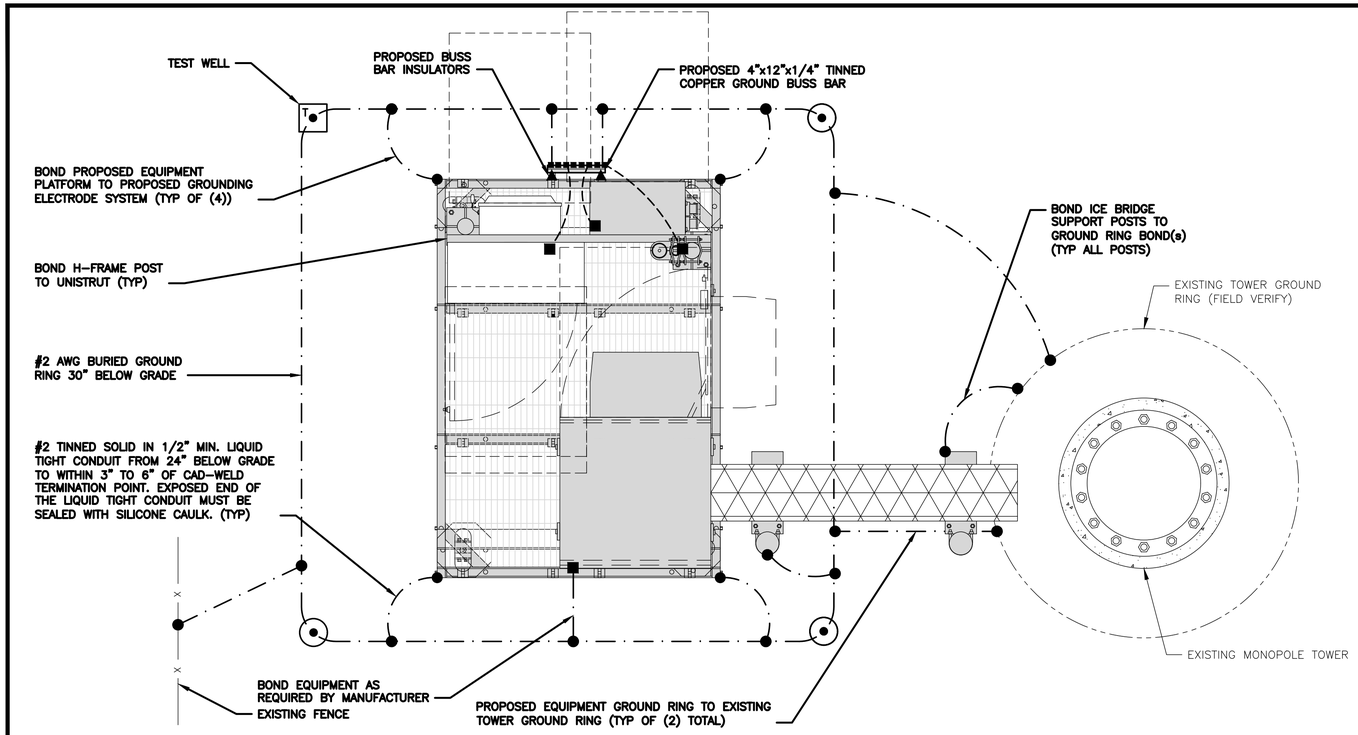
CROWN CASTLE BU#876401
47-51 UNITY STREET
PLAINFIELD, CT 06374

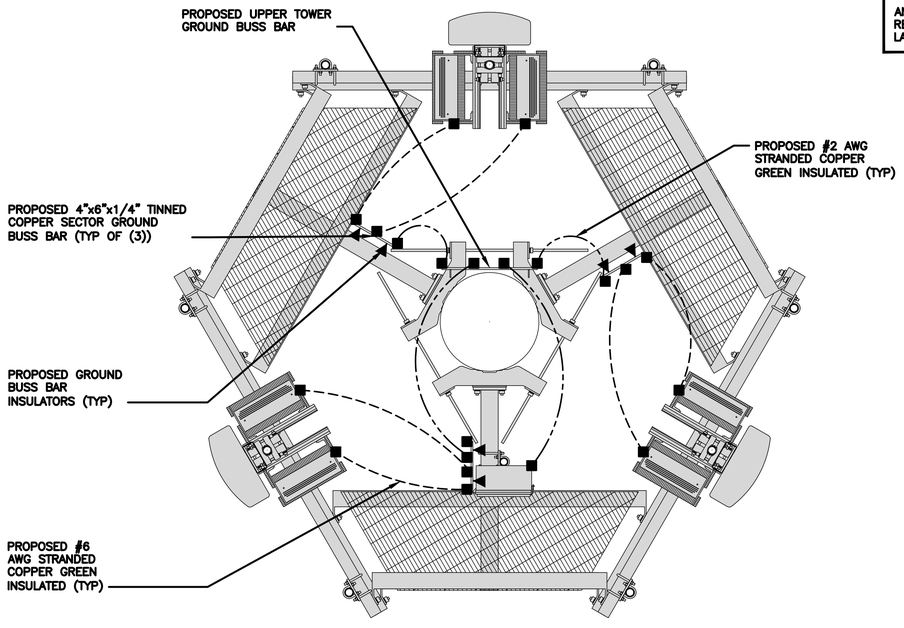
SHEET TITLE
ELECTRICAL ONE-LINE, FAULT CALCS & PANEL SCHEDULE

SHEET NUMBER
E-3



TYPICAL EQUIPMENT GROUNDING PLAN

NO SCALE | 1



TYPICAL ANTENNA GROUNDING PLAN

NO SCALE | 2

NOTES

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

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

GROUNDING LEGEND

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

GROUNDING KEY NOTES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

GROUNDING KEY NOTES

NO SCALE | 3

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DANIEL P. HAMM
No. 24178
LICENSED PROFESSIONAL ENGINEER

DRAWN BY:	CHECKED BY:	APPROVED BY:
VA	SMA	DPH

RFDS REV #: 2

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BOBOS00897A

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS00897A
CROWN CASTLE BU#876401
47-51 UNITY STREET
PLAINFIELD, CT 06374

SHEET TITLE

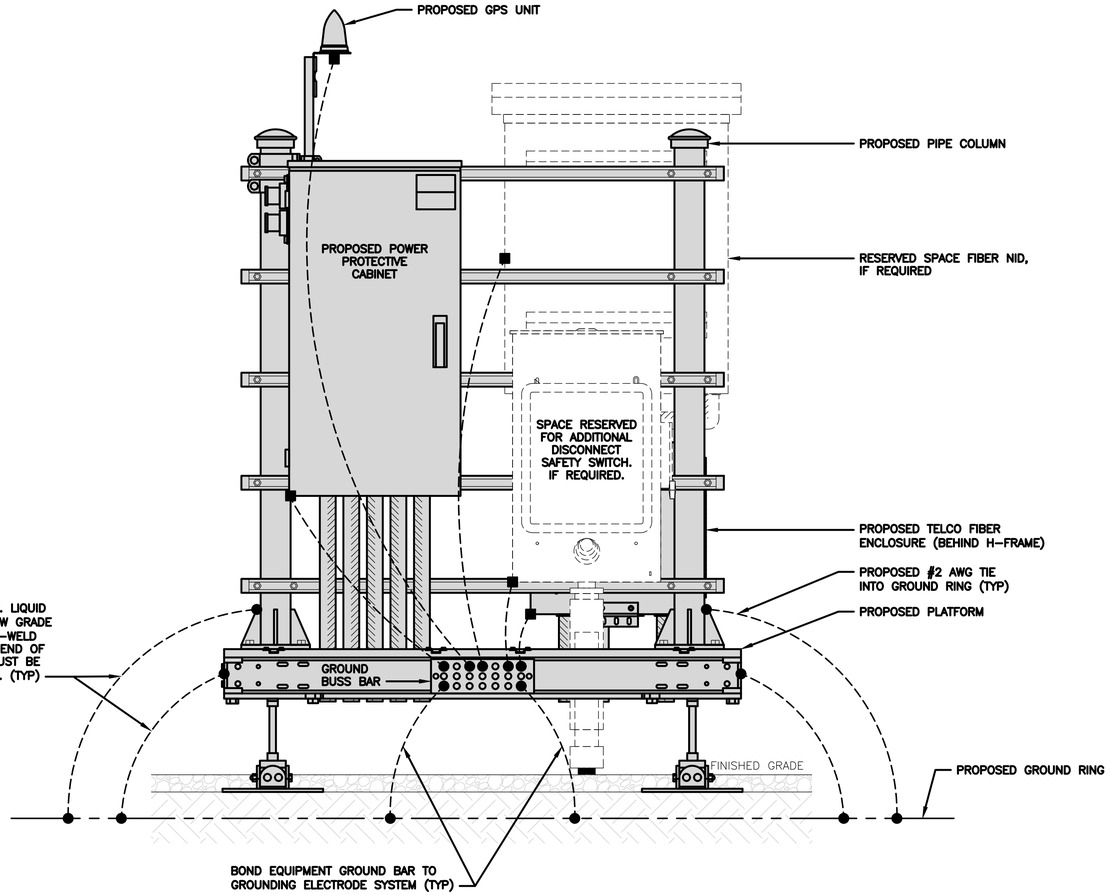
GROUNDING PLANS AND NOTES

SHEET NUMBER

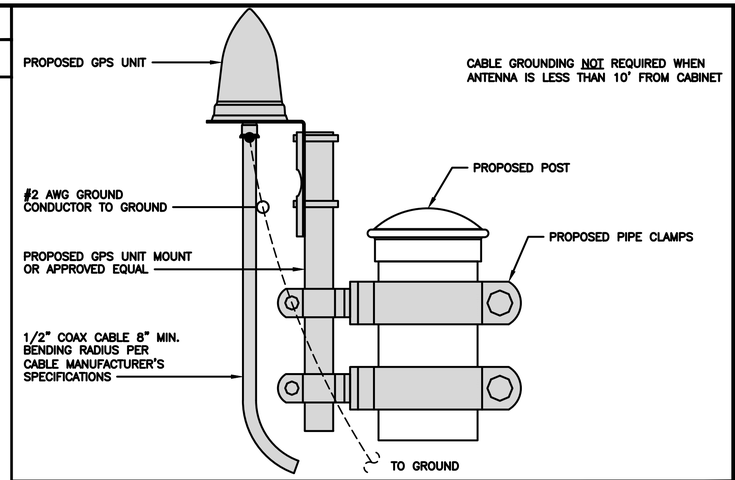
G-1

NOTES

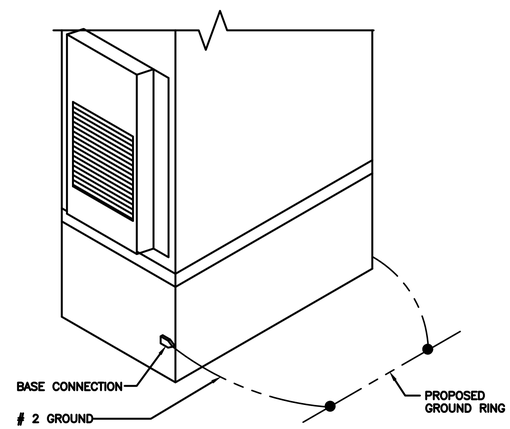
EQUIPMENT CABINET OMITTED FOR CLARITY



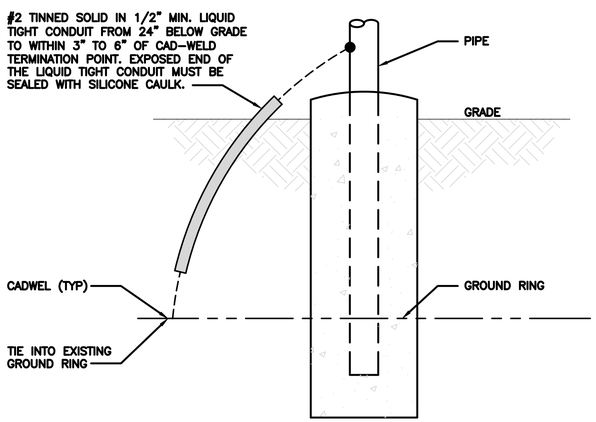
H-FRAME GROUNDING DETAIL | NO SCALE | 1



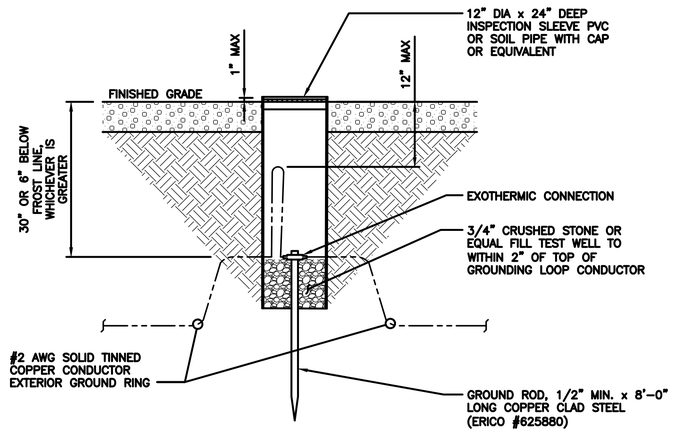
TYPICAL GPS UNIT GROUNDING | NO SCALE | 2



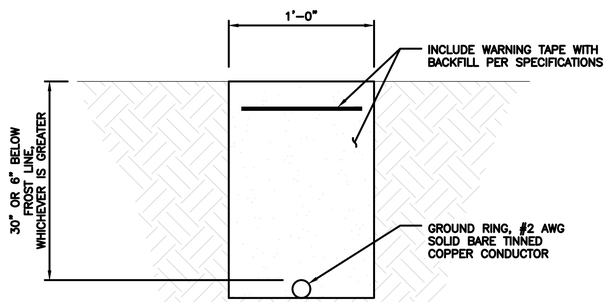
OUTDOOR CABINET GROUNDING | NO SCALE | 3



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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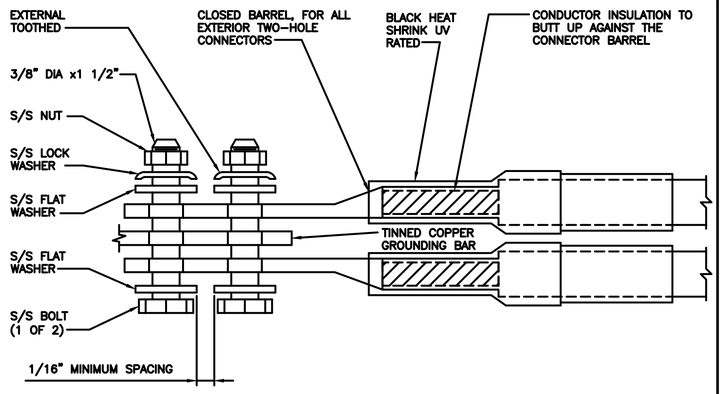
GROUNDING DETAILS

SHEET NUMBER

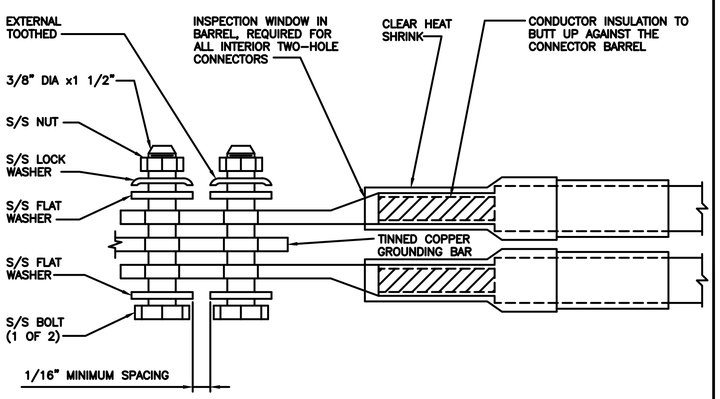
G-2

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).

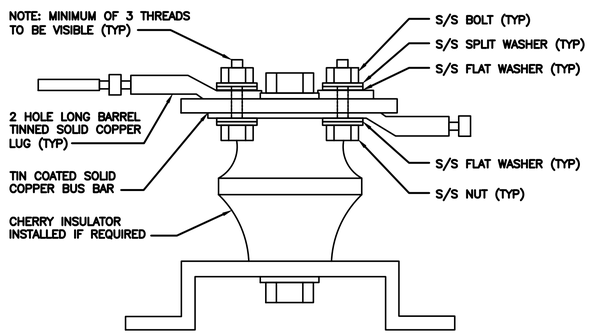
TYPICAL GROUNDING NOTES | NO SCALE | 1



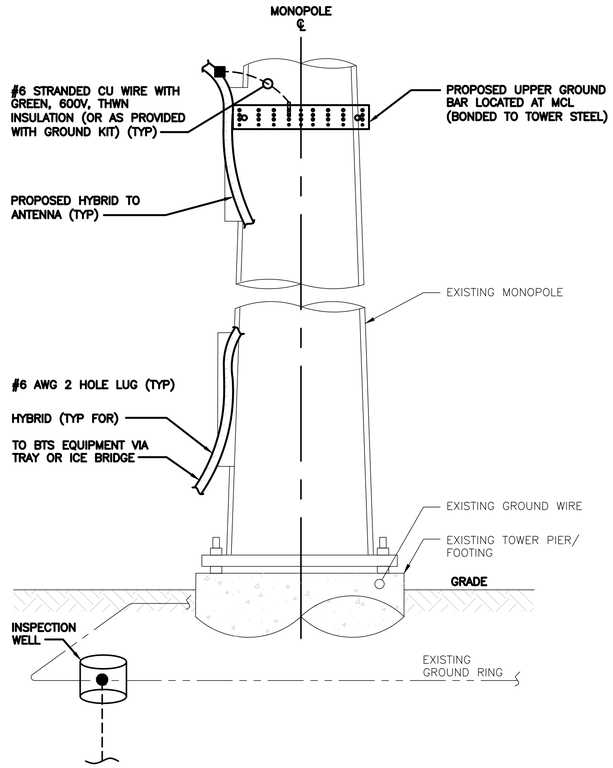
TYPICAL EXTERIOR TWO HOLE LUG | NO SCALE | 2



TYPICAL INTERIOR TWO HOLE LUG | NO SCALE | 3



LUG DETAIL | NO SCALE | 4



NOTES:

1. ONLY MECHANICAL CONNECTIONS ARE ALLOWED TO BE MADE TO TOWERS. ALL MECHANICAL CONNECTIONS SHALL BE TREATED WITH AN ANTI-OXIDANT COATING.
2. ALL TOWER GROUNDING SYSTEMS SHALL COMPLY WITH THE REQUIREMENTS OF THE RECOGNIZED EDITION OF ANSI/TIA 222 AND NFPA 780.

TYPICAL ANTENNA CABLE GROUNDING | NO SCALE | 5

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PLAINFIELD, CT 06374

SHEET TITLE

GROUNDING DETAILS

SHEET NUMBER

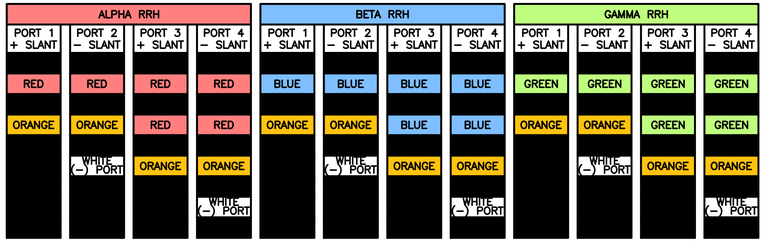
G-3

HYBRID/DISCREET CABLES

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

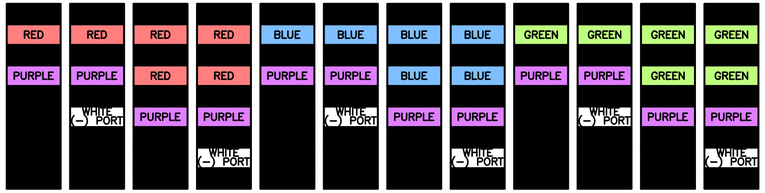
LOW-BAND RRH
(600 MHz N71 BASEBAND) +
(850 MHz N26 BAND) +
(700 MHz N29 BAND) – OPTIONAL PER MARKET

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)



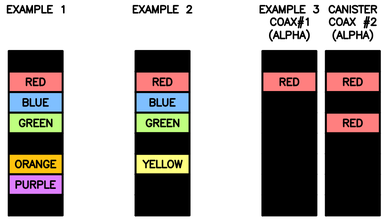
HYBRID/DISCREET CABLES

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.

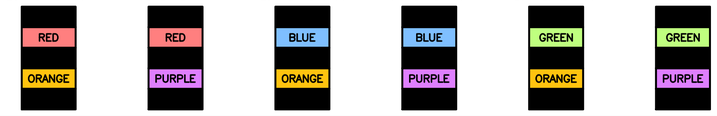


FIBER JUMPERS TO RRHs

LOW-BAND HHR FIBER CABLES HAVE SECTOR STRIPE ONLY.

POWER CABLES TO RRHs

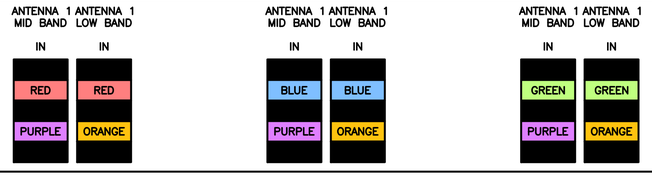
LOW-BAND RRH POWER CABLES HAVE SECTOR STRIPE ONLY



RET MOTORS AT ANTENNAS

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

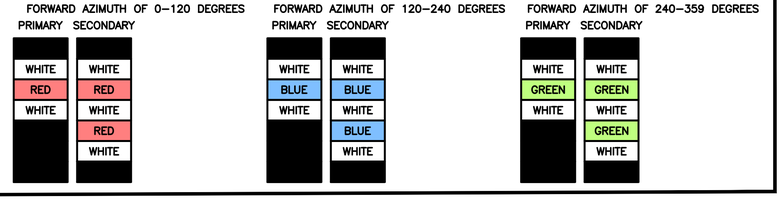
SEPARATE RET CABLES ARE USED WHEN ANTENNA PORTS PROVIDE INPUTS FOR BOTH LOW AND MID BANDS.



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.



RF CABLE COLOR CODES | NO SCALE | 1

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

AWS (N66+N70+H-BLOCK): PURPLE

CBRS TECH (3 GHz): YELLOW

NEGATIVE SLANT PORT ON ANT/RRH: WHITE

ALPHA SECTOR: RED

BETA SECTOR: BLUE

GAMMA SECTOR: GREEN

COLOR IDENTIFIER | NO SCALE | 2

NOT USED | NO SCALE | 3

NOT USED | NO SCALE | 4

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SHEET TITLE
RF
CABLE COLOR CODES

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

DETAIL REFERENCE

LEGEND

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

ABBREVIATIONS

dish wireless.

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LEGEND AND ABBREVIATIONS

SHEET NUMBER

GN-1

SIGN TYPES		
TYPE	COLOR	COLOR CODE PURPOSE
INFORMATION	GREEN	"INFORMATIONAL SIGN" TO NOTIFY OTHERS OF SITE OWNERSHIP & CONTACT NUMBER AND POTENTIAL RF EXPOSURE.
NOTICE	BLUE	"NOTICE BEYOND THIS POINT" RF FIELDS BEYOND THIS POINT MAY EXCEED THE FCC GENERAL PUBLIC EXPOSURE LIMIT. OBEY ALL POSTED SIGNS AND SITE GUIDELINES FOR WORKING IN RF ENVIRONMENTS. IN ACCORDANCE WITH FEDERAL COMMUNICATIONS COMMISSION RULES ON RADIO FREQUENCY EMISSIONS 47 CFR-1.1307(b)
CAUTION	YELLOW	"CAUTION BEYOND THIS POINT" RF FIELDS BEYOND THIS POINT MAY EXCEED THE FCC GENERAL PUBLIC EXPOSURE LIMIT. OBEY ALL POSTED SIGNS AND SITE GUIDELINES FOR WORKING IN RF ENVIRONMENTS. IN ACCORDANCE WITH FEDERAL COMMUNICATIONS COMMISSION RULES ON RADIO FREQUENCY EMISSIONS 47 CFR-1.1307(b)
WARNING	ORANGE/RED	"WARNING BEYOND THIS POINT" RF FIELDS AT THIS SITE EXCEED FCC RULES FOR HUMAN EXPOSURE. FAILURE TO OBEY ALL POSTED SIGNS AND SITE GUIDELINES FOR WORKING IN RF ENVIRONMENTS COULD RESULT IN SERIOUS INJURY. IN ACCORDANCE WITH FEDERAL COMMUNICATIONS COMMISSION RULES ON RADIO FREQUENCY EMISSIONS 47 CFR-1.1307(b)

SIGN PLACEMENT:

- RF SIGNAGE PLACEMENT SHALL FOLLOW THE RECOMMENDATIONS OF AN EXISTING EME REPORT, CREATED BY A THIRD PARTY PREVIOUSLY AUTHORIZED BY DISH Wireless L.L.C.
- INFORMATION SIGN (GREEN) SHALL BE LOCATED ON EXISTING DISH Wireless L.L.C EQUIPMENT.
  A) IF THE INFORMATION SIGN IS A STICKER, IT SHALL BE PLACED ON EXISTING DISH Wireless L.L.C EQUIPMENT CABINET.
  B) IF THE INFORMATION SIGH IS A METAL SIGN IT SHALL BE PLACED ON EXISTING DISH Wireless L.L.C H-FRAME WITH A SECURE ATTACH METHOD.
- IF EME REPORT IS NOT AVAILABLE AT THE TIME OF CREATION OF CONSTRUCTION DOCUMENTS; PLEASE CONTACT DISH Wireless L.L.C. CONSTRUCTION MANAGER FOR FURTHER INSTRUCTION ON HOW TO PROCEED.

NOTES:

1. FOR DISH Wireless L.L.C. LOGO, SEE DISH Wireless L.L.C. DESIGN SPECIFICATIONS (PROVIDED BY DISH Wireless L.L.C.)
2. SITE ID SHALL BE APPLIED TO SIGNS USING "LASER ENGRAVING" OR ANY OTHER WEATHER RESISTANT METHOD (DISH Wireless L.L.C. APPROVAL REQUIRED)
3. TEXT FOR SIGNAGE SHALL INDICATE CORRECT SITE NAME AND NUMBER AS PER DISH Wireless L.L.C. CONSTRUCTION MANAGER RECOMMENDATIONS.
4. CABINET/SHELTER MOUNTING APPLICATION REQUIRES ANOTHER PLATE APPLIED TO THE FACE OF THE CABINET WITH WATER PROOF POLYURETHANE ADHESIVE
5. ALL SIGNS WILL BE SECURED WITH EITHER STAINLESS STEEL ZIP TIES OR STAINLESS STEEL TECH SCREWS
6. ALL SIGNS TO BE 8.5"x11" AND MADE WITH 0.04" OF ALUMINUM MATERIAL

INFORMATION

This is an access point to an area with transmitting antennas.

Obey all signs and barriers beyond this point.
Call the DISH Wireless L.L.C. NOC at 1-866-624-6874

Site ID: _____

THIS SIGN IS FOR REFERENCE PURPOSES ONLY

NOTICE

Transmitting Antenna(s)

Radio frequency fields beyond this point MAY *EXCEED* the FCC Occupational exposure limit.

Obey all posted signs and site guidelines for working in radio frequency environments.

Call the DISH Wireless L.L.C. NOC at 1-866-624-6874 prior to working beyond this point.

Site ID: _____

dish

THIS SIGN IS FOR REFERENCE PURPOSES ONLY

⚠ CAUTION

Transmitting Antenna(s)

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Site ID: _____

dish

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⚠ WARNING

Transmitting Antenna(s)

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Call the DISH Wireless L.L.C. NOC at 1-866-624-6874 prior to working beyond this point.

Site ID: _____

dish

THIS SIGN IS FOR REFERENCE PURPOSES ONLY

RF SIGNAGE

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

HDG HUDSON Design Group LLC
45 BEECHWOOD DRIVE
N. ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED PROFESSIONAL ENGINEER

DRAWN BY:	CHECKED BY:	APPROVED BY:
VA	SMA	DPH

RFDS REV #: 2

PRELIMINARY DOCUMENT

SUBMITTALS

REV	DATE	DESCRIPTION
A	01/04/2022	ISSUED FOR REVIEW
B	04/04/2022	ISSUED FOR REVIEW
C	06/09/2022	ISSUED FOR REVIEW

A&E PROJECT NUMBER
BOBOS00897A

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBOS00897A
CROWN CASTLE BU#876401
47-51 UNITY STREET
PLAINFIELD, CT 06374

SHEET TITLE
RF SIGNAGE

SHEET NUMBER
GN-2

SITE ACTIVITY REQUIREMENTS:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

GENERAL NOTES:

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

CONTRACTOR:GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION

CARRIER:DISH Wireless L.L.C.

TOWER OWNER:TOWER OWNER

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

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

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

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

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

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

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

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

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

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

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

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

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

dish wireless.

5701 SOUTH SANTA FE DRIVE
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45 BEECHWOOD DRIVE
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STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED PROFESSIONAL ENGINEER

DRAWN BY:	CHECKED BY:	APPROVED BY:
VA	SMA	DPH

RFDS REV #: 2

PRELIMINARY DOCUMENT

SUBMITTALS

REV	DATE	DESCRIPTION
A	01/04/2022	ISSUED FOR REVIEW
B	04/04/2022	ISSUED FOR REVIEW
C	08/09/2022	ISSUED FOR REVIEW

A&E PROJECT NUMBER

BOBOS00897A

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS00897A
CROWN CASTLE BU#876401
47–51 UNITY STREET
PLAINFIELD, CT 06374

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-3

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

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

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

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

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

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

#4 BARS AND SMALLER 40 ksi

#5 BARS AND LARGER 60 ksi

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

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

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

ELECTRICAL INSTALLATION NOTES:

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

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

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

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

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

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

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

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

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

8. TIE WRAPS ARE NOT ALLOWED.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

dish wireless.

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STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED PROFESSIONAL ENGINEER

DRAWN BY:	CHECKED BY:	APPROVED BY:
VA	SMA	DPH

RFDS REV #: 2

PRELIMINARY DOCUMENT

SUBMITTALS

REV	DATE	DESCRIPTION
A	01/04/2022	ISSUED FOR REVIEW
B	04/04/2022	ISSUED FOR REVIEW
C	06/09/2022	ISSUED FOR REVIEW

A&E PROJECT NUMBER

BOBOS00897A

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS00897A
CROWN CASTLE BU#876401
47-51 UNITY STREET
PLAINFIELD, CT 06374

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-4

GROUNDING NOTES:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

dish wireless.

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CROWN CASTLE BU#876401
47-51 UNITY STREET
PLAINFIELD, CT 06374

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-5

Exhibit D

Structural Analysis Report

Date: **November 19, 2021**

B+T Group
1717 S. Boulder, Suite 300
Tulsa, OK 74119
(918) 587-4630

Subject:	**Structural Analysis Report**	
Carrier Designation:	***DISH Wireless* Co-Locate** **Site Number:**	 BOBOS00897A
Crown Castle Designation:	**BU Number:** **Site Name:** **JDE Job Number:** **Work Order Number:** **Order Number:**	876401 TOWN OF PLAINFIELD/SSUSA 671534 2044667 572912 Rev. 0
Engineering Firm Designation:	**B+T Group Project Number:**	136378.011.01
Site Data:	**47-51 Unity Street, Plainfield, Windham County, CT** **Latitude *41° 42' 54.49"*, Longitude *-71° 53' 46.73"*** **160 Foot - Monopole Tower**	

B+T Group is pleased to submit this **"Structural Analysis Report"** to determine the structural integrity of the above-mentioned tower.

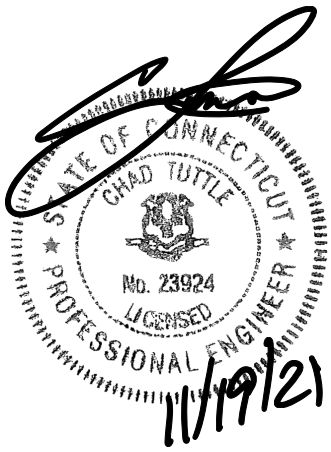
The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC7: Proposed Equipment Configuration **Sufficient Capacity - 75.4%**

This analysis utilizes an ultimate 3-second gust wind speed of 123 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: Mahsa Abdeveis

Respectfully submitted by: B+T Engineering, Inc.
COA: PEC.0001564; Expires: 02/10/2022



Chad E. Tuttle, P.E.

tnxTower Report - version 8.1.1.0

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 160 ft. Monopole tower designed by EEI, in May of 2003.

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:	123 mph
Exposure Category:	B
Topographic Factor:	1
Ice Thickness:	1.0 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)
83.0	83.0	3	JMA Wireless	MX08FRO665-21	1	1-3/8
		3	Fujitsu	TA08025-B604		
		3	Fujitsu.	TA08025-B605		
		1	Raycap	RDIDC-9181-PF-48		
		1	Commscope	MC-PK8-DSH Platform		

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)
159.0	159.0	3	Alcatel Lucent	TD-RRH8x20-25	4	1-1/4
		3	RFS Celwave	APXVSPP18-C-A20		
		3	RFS Celwave	APXVTM14-ALU-I20		
		1	--	Platform Mount [LP 714-1]		
157.0	159.0	3	Alcatel Lucent	800MHz 2X50W RRH W/FILTER	--	--
		3	Alcatel Lucent	PCS 1900MHz 4x45W-65MHz		
	157.0	1	--	Pipe Mount [PM 601-3]		
		1	--	Side Arm Mount [SO 102-3]		
152.0	152.0	3	Ericsson	RRUS-11	--	--
		1	--	Pipe Mount [PM 601-3]		
		1	--	Side Arm Mount [SO 101-3]		
150.0	152.0	3	CCI Antennas	HPA-65R-BUU-H8	12 2 1	1-5/8 7/16 3/8
		3	Ericsson	RRUS 32 B2		
		3	Powerwave Tech.	1001983		
		12	Powerwave Tech.	7020.00		
		6	Powerwave Tech.	7770.00		
		6	Powerwave Tech.	LGP21401		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
		6	Powerwave Tech.	LGP21901		
	151.0	1	Raycap	DC6-48-60-18-8F		
	150.0	1	--	Platform Mount [LP 303-1]		
137.0	139.0	3	Ericsson	AIR6449 B41_T-MOBILE	3	1-5/8
	137.0	3	Ericsson	RADIO 4415 B66A_CCIV3		
		3	Ericsson	RADIO 4424 B25_TMO		
		3	Ericsson	RADIO 4449 B71 B85A_T-MOBILE		
		3	RFS Celwave	APX16DWV-16DWV-S-E-A20		
		3	RFS Celwave	APXVAALL24_43-U-NA20_TMO		
		1	--	Platform Mount [LP 303-1_KCKR-HR-1]		
125.0	127.0	3	Commscope	CBC78T-DS-43-2X	2	1-5/8
		6	Commscope	JAHH-65B-R3B		
		1	Raycap	RVZDC-6627-PF-48		
		3	Samsung Telecom.	MT6407-77A		
		3	Samsung Telecom.	RF4439D-25A		
		3	Samsung Telecom.	RF4440D-13A		
	125.0	1	--	Platform Mount [LP 303-1]		
		3	Commscope	BSAMNT-SBS-2-2 Brackets		
109.0	114.0	1	Decibel	DB589	1	7/8
	109.0	1	--	Side Arm Mount [SO 201-1]		
		1	--	Side Arm Mount [SO 701-1]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Reference	Source
Tower Manufacturer Drawing	1615382	CCI Sites
Tower Modification Drawing	2266356	CCI Sites
Tower Modification Drawing	2819430	CCI Sites
Tower Modification Drawing	3667143	CCI Sites
Post Modification Inspection	3986355	CCI Sites
Tower Modification Drawing	5422409	CCI Sites
Post Modification Inspection	5666814	CCI Sites
Foundation Drawing	1615418	CCI Sites
Geotech Report	1610729	CCI Sites
Crown CAD Package	Date: 11/15/2021	CCI Sites

3.1) Analysis Method

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

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

3.2) Assumptions

1) The 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. B+T Group 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
L1	160 - 155	Pole	TP17.62x16.5x0.1875	1	-3.341	--	6.8	Pass
L2	155 - 150	Pole	TP18.741x17.62x0.1875	2	-4.178	--	14.1	Pass
L3	150 - 145	Pole	TP19.861x18.741x0.1875	3	-6.694	--	27.5	Pass
L4	145 - 140	Pole	TP20.981x19.861x0.1875	4	-7.051	--	37.1	Pass
L5	140 - 135	Pole	TP22.102x20.981x0.1875	5	-11.204	--	47.9	Pass
L6	135 - 130	Pole	TP23.222x22.102x0.1875	6	-11.677	--	59.1	Pass
L7	130 - 125.75	Pole	TP24.174x23.222x0.1875	7	-12.108	--	67.4	Pass
L8	125.75 - 125.5	Pole	TP24.23x24.174x0.1875	8	-12.148	--	67.8	Pass
L9	125.5 - 122.87	Pole	TP25.66x24.23x0.1875	9	-15.706	--	75.4	Pass
L10	122.87 - 117.87	Pole	TP25.544x24.445x0.25	10	-16.559	--	61.3	Pass
L11	117.87 - 117.75	Pole	TP25.57x25.544x0.25	11	-16.599	--	61.5	Pass
L12	117.75 - 117.5	Pole	TP25.625x25.57x0.25	12	-16.631	--	61.9	Pass
L13	117.5 - 112.5	Pole + Reinf.	TP26.725x25.625x0.475	13	-17.579	--	64.3	Pass
L14	112.5 - 107.5	Pole + Reinf.	TP27.824x26.725x0.4688	14	-18.747	--	70.4	Pass
L15	107.5 - 103	Pole + Reinf.	TP28.814x27.824x0.4625	15	-19.655	--	75.3	Pass
L16	103 - 102.75	Pole + Reinf.	TP28.869x28.814x0.55	16	-19.730	--	67.9	Pass
L17	102.75 - 100.21	Pole + Reinf.	TP29.427x28.869x0.5375	17	-20.356	--	70.3	Pass
L18	100.21 - 100.16	Pole + Reinf.	TP30.39x29.427x0.6875	18	-20.383	--	53.0	Pass
L19	100.16 - 94.83	Pole + Reinf.	TP30.119x28.937x0.7375	19	-22.937	--	53.1	Pass
L20	94.83 - 93.5	Pole + Reinf.	TP30.413x30.119x0.7375	20	-23.333	--	53.9	Pass
L21	93.5 - 93.25	Pole + Reinf.	TP30.469x30.413x0.9125	21	-23.431	--	44.5	Pass
L22	93.25 - 88.25	Pole + Reinf.	TP31.576x30.469x0.8875	22	-25.187	--	46.9	Pass
L23	88.25 - 87.25	Pole + Reinf.	TP31.798x31.576x0.8875	23	-25.545	--	47.4	Pass
L24	87.25 - 87	Pole + Reinf.	TP31.853x31.798x0.9375	24	-25.644	--	43.5	Pass
L25	87 - 86.5	Pole + Reinf.	TP31.964x31.853x0.925	25	-25.829	--	43.8	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L26	86.5 - 86.25	Pole + Reinf.	TP32.02x31.964x0.7625	26	-25.911	--	50.7	Pass
L27	86.25 - 81.25	Pole + Reinf.	TP33.127x32.02x0.7375	27	-27.520	--	53.2	Pass
L28	81.25 - 76.25	Pole + Reinf.	TP34.235x33.127x0.725	28	-29.162	--	55.7	Pass
L29	76.25 - 75.42	Pole + Reinf.	TP34.42x34.235x0.725	29	-29.441	--	56.1	Pass
L30	75.42 - 75.17	Pole + Reinf.	TP34.475x34.42x0.8125	30	-29.539	--	49.9	Pass
L31	75.17 - 70.17	Pole + Reinf.	TP35.583x34.475x0.8	31	-31.371	--	52.1	Pass
L32	70.17 - 65.17	Pole + Reinf.	TP36.69x35.583x0.7875	32	-33.235	--	54.0	Pass
L33	65.17 - 60.17	Pole + Reinf.	TP37.798x36.69x0.7625	33	-35.126	--	55.8	Pass
L34	60.17 - 57	Pole + Reinf.	TP38.5x37.798x0.75	34	-36.339	--	56.9	Pass
L35	57 - 56.75	Pole + Reinf.	TP38.555x38.5x0.75	35	-36.443	--	57.0	Pass
L36	56.75 - 53	Pole + Reinf.	TP39.386x38.555x0.7375	36	-37.885	--	58.2	Pass
L37	53 - 52.79	Pole + Reinf.	TP40.67x39.386x0.7375	37	-37.983	--	58.6	Pass
L38	52.79 - 46.2	Pole + Reinf.	TP40.266x38.808x0.7625	38	-42.809	--	58.4	Pass
L39	46.2 - 41.2	Pole + Reinf.	TP41.374x40.266x0.75	39	-44.944	--	59.6	Pass
L40	41.2 - 39.33	Pole + Reinf.	TP41.788x41.374x0.75	40	-45.745	--	60.0	Pass
L41	39.33 - 39.08	Pole + Reinf.	TP41.843x41.788x0.825	41	-45.877	--	54.8	Pass
L42	39.08 - 37.75	Pole + Reinf.	TP42.139x41.843x0.825	42	-46.493	--	55.0	Pass
L43	37.75 - 37.5	Pole + Reinf.	TP42.194x42.139x0.75	43	-46.611	--	60.4	Pass
L44	37.5 - 32.5	Pole + Reinf.	TP43.301x42.194x0.725	44	-48.790	--	61.4	Pass
L45	32.5 - 27.5	Pole + Reinf.	TP44.409x43.301x0.725	45	-50.576	--	62.4	Pass
L46	27.5 - 27.25	Pole + Reinf.	TP44.464x44.409x0.725	46	-51.016	--	62.4	Pass
L47	27.25 - 27	Pole + Reinf.	TP44.52x44.464x0.725	47	-51.128	--	62.4	Pass
L48	27 - 22	Pole + Reinf.	TP45.627x44.52x0.7125	48	-51.248	--	63.3	Pass
L49	22 - 21.25	Pole + Reinf.	TP45.793x45.627x0.7125	49	-53.491	--	63.4	Pass
L50	21.25 - 21	Pole + Reinf.	TP45.849x45.793x0.725	50	-53.827	--	59.7	Pass
L51	21 - 17	Pole + Reinf.	TP46.735x45.849x0.7125	51	-53.958	--	60.3	Pass
L52	17 - 16.75	Pole + Reinf.	TP46.79x46.735x0.7	52	-55.946	--	65.2	Pass
L53	16.75 - 16.25	Pole + Reinf.	TP46.901x46.79x0.7	53	-56.068	--	65.3	Pass
L54	16.25 - 16	Pole + Reinf.	TP46.956x46.901x0.775	54	-56.304	--	62.4	Pass
L55	16 - 11	Pole + Reinf.	TP48.064x46.956x0.75	55	-56.440	--	63.1	Pass
L56	11 - 6	Pole + Reinf.	TP49.171x48.064x0.75	56	-59.021	--	63.8	Pass
L57	6 - 1	Pole + Reinf.	TP50.279x49.171x0.7375	57	-61.629	--	64.4	Pass
L58	1 - 0	Pole + Reinf.	TP50.5x50.279x0.525	58	-64.269	--	70.1	Pass
							Summary	
						Pole (L9)	75.4	Pass
						Reinforcement	75.3	Pass
						Rating =	75.4	Pass

Table 5 - Tower Component Stresses vs. Capacity

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1,2	Anchor Rod Brackets	Base	34.5	Pass
1,2	Anchor Rods	Base	46.1	Pass
1,2	Base Plate	Base	54.0	Pass
1,2	Base Foundation (Structure)	Base	63.0	Pass
1,2	Base Foundation (Soil Interaction)	Base	28.3	Pass

Structure Rating (max from all components) =	75.4%

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

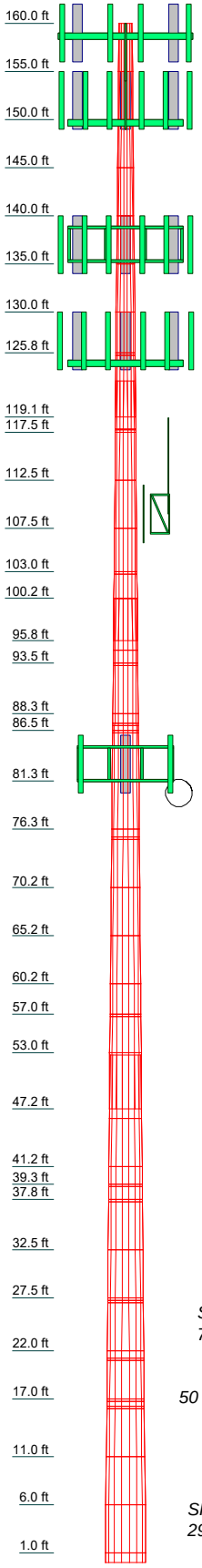
4.1) Recommendations

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

APPENDIX A

TNXTOWER OUTPUT

Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	5.000	18	0.188		16.500	17.620		0.2
2	5.000	18	0.188		17.620	18.741		0.2
3	5.000	18	0.188		18.741	19.861		0.2
4	5.000	18	0.188		19.861	20.981		0.2
5	5.000	18	0.188		20.981	22.102		0.2
6	5.000	18	0.188		22.102	23.222		0.2
7	5.000	18	0.188		23.222	24.343		0.2
8	2.500	18	0.188		24.343	25.463		0.1
9	3.750	18	0.188		25.463	26.725		0.3
10	0.000	18	0.188		26.725	26.725		0.0
11	1.250	18	0.188		26.725	27.824		0.1
12	3.750	18	0.188		27.824	29.044		0.3
13	5.000	18	0.470		29.044	30.144		0.6
14	5.000	18	0.469		30.144	31.263		0.6
15	5.000	18	0.463		31.263	32.383		0.6
16	1.250	18	0.450		32.383	32.803		0.1
17	3.750	18	0.450		32.803	33.923		0.4
18	4.333	18	0.688		33.923	35.583		0.9
19	0.000	18	0.688		35.583	35.583		0.0
20	1.250	18	0.688		35.583	36.003		0.1
21	3.750	18	0.688		36.003	37.123		0.3
22	5.000	18	0.880		37.123	38.243		1.3
23	0.000	18	0.880		38.243	38.243		0.0
24	1.250	18	0.880		38.243	38.663		0.1
25	3.750	18	0.880		38.663	39.783		0.3
26	5.000	18	0.736		39.783	40.903		1.2
27	0.000	18	0.736		40.903	40.903		0.0
28	5.000	18	0.725		40.903	42.023		1.2
29	1.250	18	0.725		42.023	42.443		0.3
30	3.750	18	0.725		42.443	43.563		0.9
31	5.000	18	0.800		43.563	44.683		1.4
32	5.000	18	0.787		44.683	45.803		1.4
33	5.000	18	0.762		45.803	46.923		1.4
34	2.500	18	0.750		46.923	47.763		0.7
35	1.250	18	0.750		47.763	48.183		0.4
36	3.750	18	0.750		48.183	49.303		1.1
37	5.583	18	0.738	5.583	49.303	50.423		1.8
38	0.000	18	0.738		50.423	50.423		0.0
39	5.000	18	0.725		50.423	51.543		1.6
40	1.250	18	0.725		51.543	51.963		0.4
41	3.750	18	0.725		51.963	53.083		1.2
42	5.000	18	0.725		53.083	54.203		1.7
43	0.000	18	0.725		54.203	54.203		0.0
44	5.000	18	0.725		54.203	55.323		1.6
45	5.000	18	0.725		55.323	56.443		1.7
46	0.000	18	0.725		56.443	56.443		0.0
47	1.250	18	0.725		56.443	56.863		0.4
48	5.000	18	0.710		56.863	57.983		1.7
49	0.000	18	0.710		57.983	57.983		0.0
50	1.250	18	0.710		57.983	58.403		0.4
51	3.750	18	0.710		58.403	59.523		1.3
52	5.000	18	0.750		59.523	60.643		2.0
53	0.000	18	0.750		60.643	60.643		0.0
54	1.250	18	0.750		60.643	61.063		0.5
55	5.000	18	0.750		61.063	62.183		2.0
56	5.000	18	0.750		62.183	63.303		2.0
57	5.000	18	0.738		63.303	64.423		2.0
58	1.000	18	0.525		64.423	64.703		0.3
							A572-65	38.0



ALL REACTIONS ARE FACTORED

AXIAL 94 K

SHEAR 7 K *MOMENT 841 kip-ft*

TORQUE 0 kip-ft
50 mph WIND - 1.000 in ICE

AXIAL 68 K

SHEAR 29 K *MOMENT 3376 kip-ft*

TORQUE 1 kip-ft
REACTIONS - 123 mph WIND

MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower is located in Windham County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-H Standard.
3. Tower designed for a 123 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 0.000 ft
8. TIA-222-H Annex S
9. TOWER RATING: 75.4%

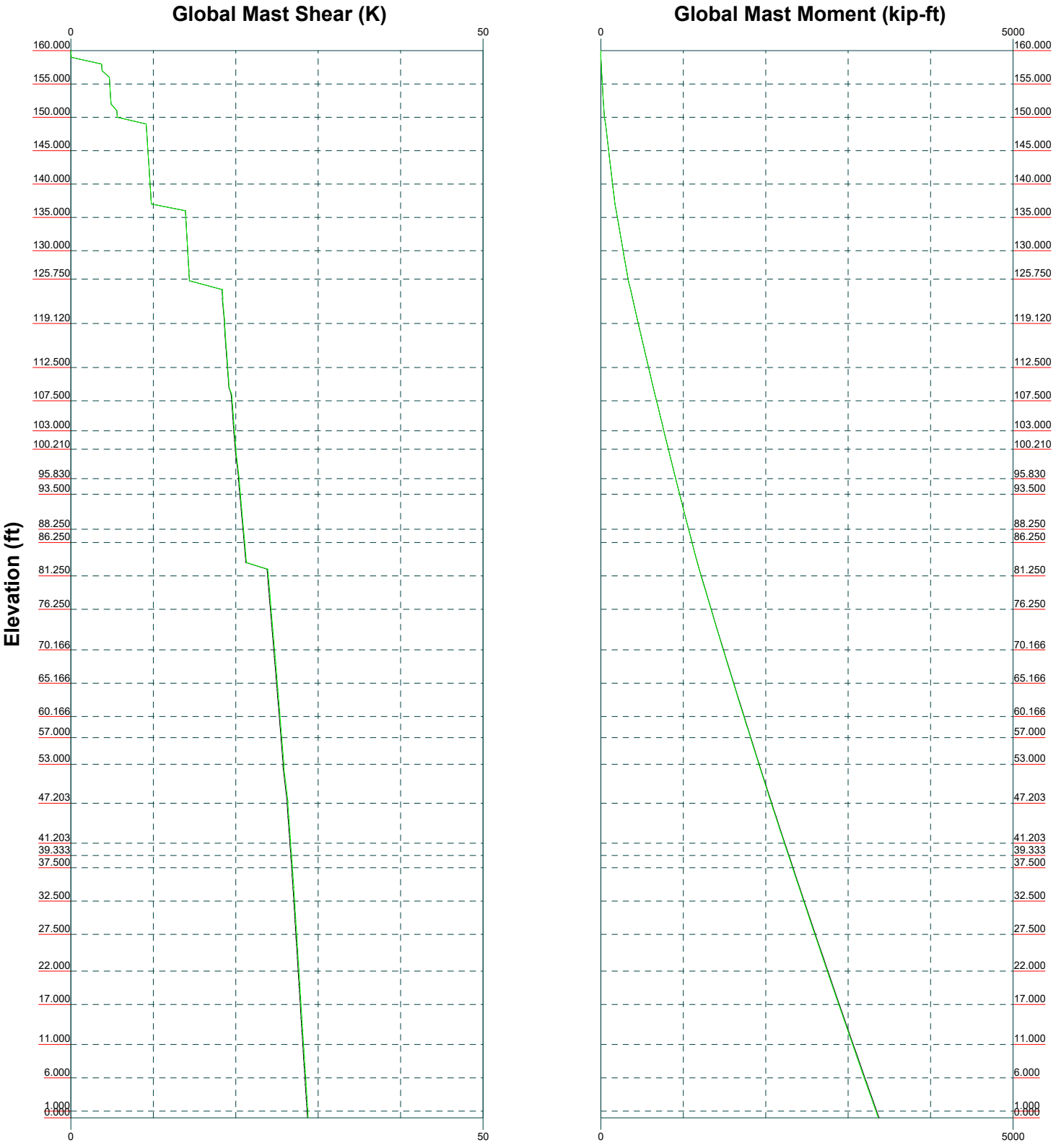
B+T Group
1717 S. Boulder, Suite 300
Tulsa, OK 74119
Phone: (918) 587-4630
FAX: (918) 295-0265

Job: 136378.011.01 - TOWN OF PLAINFIELD/SSUSA, CT (BU# 87640			
Project:			
Client: Crown Castle	Drawn by: V. RAO	App'd:	
Code: TIA-222-H	Date: 11/19/21	Scale: NTS	
Path:		Dwg No. E-1	

TIA-222-H - 123 mph/50 mph 1.000 in Ice Exposure B

Maximum Values

Vx Vz Mx Mz



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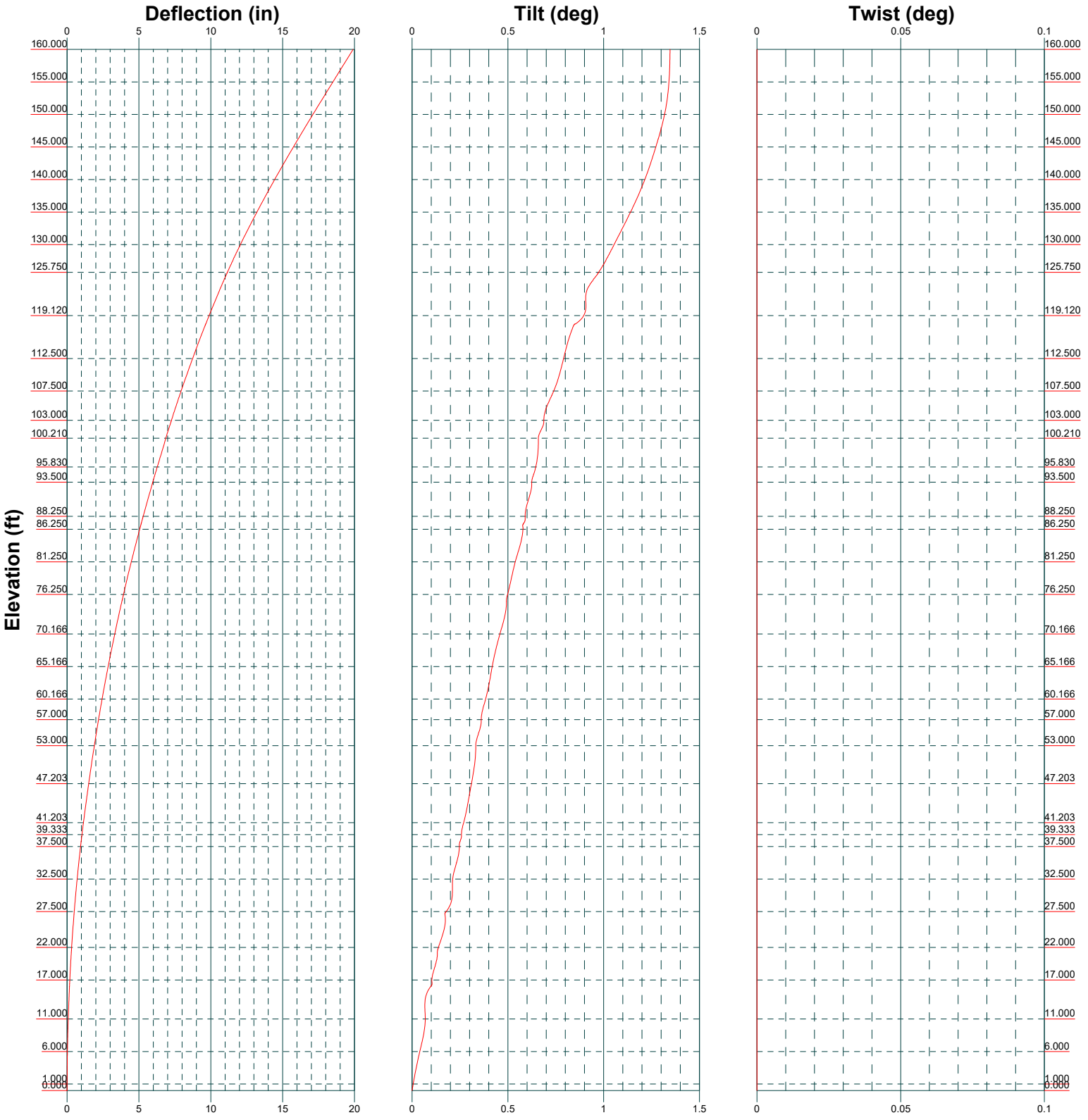
Job: 136378.011.01 - TOWN OF PLAINFIELD/SSUSA, CT (BU# 87640			
Project:			
Client: Crown Castle	Drawn by: V. RAO	App'd:	
Code: TIA-222-H	Date: 11/19/21	Scale: NTS	
Path:		Dwg No. E-4	

TIA-222-H - Service - 60 mph

Maximum Values



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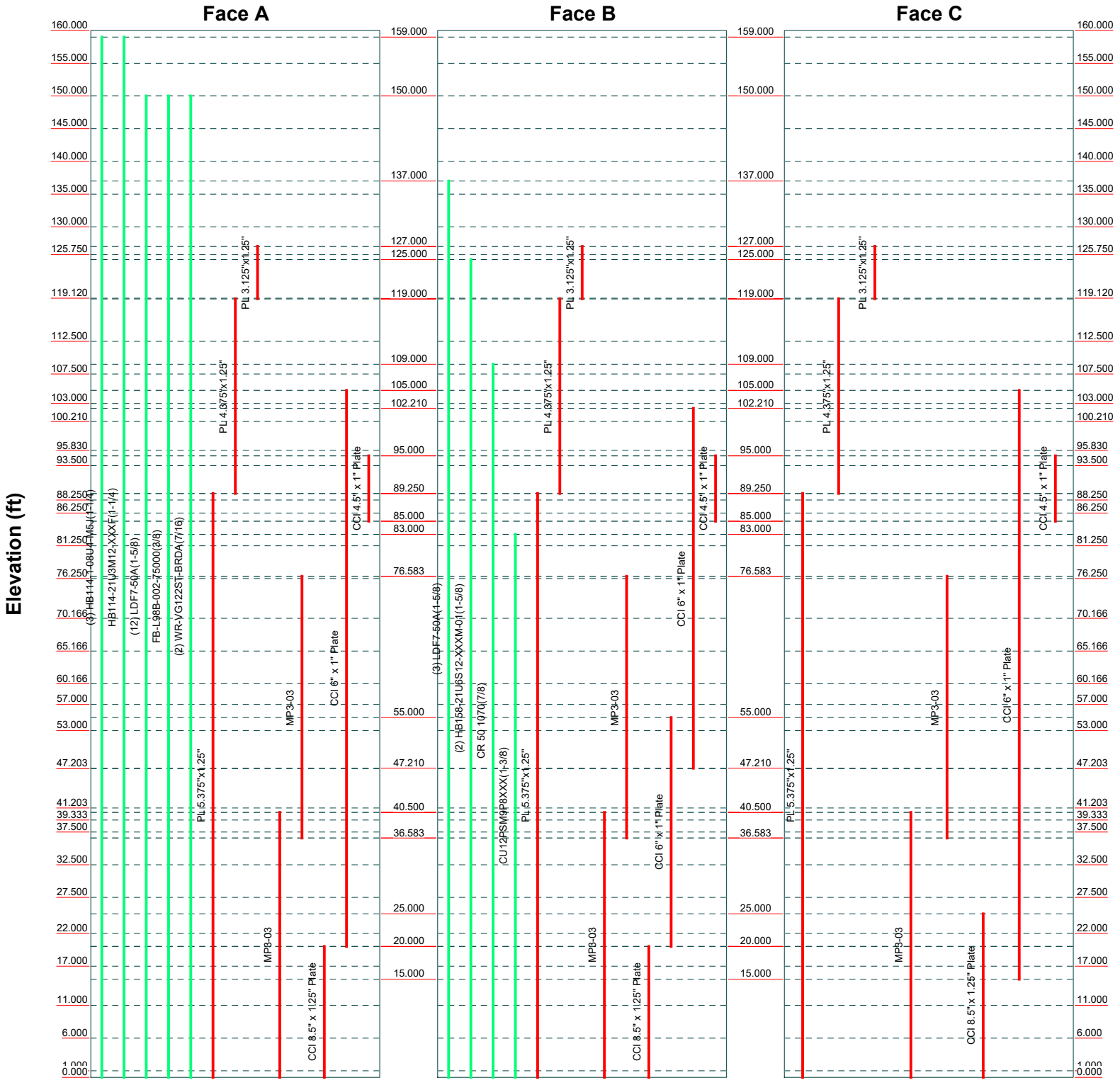
Job: *136378.011.01 - TOWN OF PLAINFIELD/SSUSA, CT (BU# 87640*			
Project:			
Client: Crown Castle	Drawn by: V. RAO	App'd:	
Code: TIA-222-H	Date: 11/19/21	Scale: NTS	
Path:		Dwg No. E-5	

Feed Line Distribution Chart
0' - 160'

Round | Flat | App In Face | App Out Face | Truss Leg



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FAX: (918) 295-0265

Job: 136378.011.01 - TOWN OF PLAINFIELD/SSUSA, CT (BU# 87640		
Project:		
Client: Crown Castle	Drawn by: V. RAO	App'd:
Code: TIA-222-H	Date: 11/19/21	Scale: NTS
Path:		Dwg No. E-7

Tower Input Data

The tower is a monopole.
This tower is designed using the TIA-222-H standard.
The following design criteria apply:

Tower is located in Windham County, Connecticut.
Tower base elevation above sea level: 219.000 ft.
Basic wind speed of 123 mph.
Risk Category II.
Exposure Category B.
Simplified Topographic Factor Procedure for wind speed-up calculations is used.
Topographic Category: 1.
Crest Height: 0.000 ft.
Nominal ice thickness of 1.000 in.
Ice thickness is considered to increase with height.
Ice density of 56.000 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50.000 °F.
Deflections calculated using a wind speed of 60 mph.
TIA-222-H Annex S.
TOWER RATING: 75.4%.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.
Tower analysis based on target reliabilities in accordance with Annex S.
Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
Maximum demand-capacity ratio is: 1.05.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

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

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	160.000-155.000	5.000	0.000	18	16.500	17.620	0.188	0.750	A572-65 (65 ksi)
L2	155.000-150.000	5.000	0.000	18	17.620	18.741	0.188	0.750	A572-65 (65 ksi)
L3	150.000-145.000	5.000	0.000	18	18.741	19.861	0.188	0.750	A572-65 (65 ksi)
L4	145.000-140.000	5.000	0.000	18	19.861	20.981	0.188	0.750	A572-65 (65 ksi)
L5	140.000-135.000	5.000	0.000	18	20.981	22.102	0.188	0.750	A572-65 (65 ksi)
L6	135.000-130.000	5.000	0.000	18	22.102	23.222	0.188	0.750	A572-65 (65 ksi)
L7	130.000-125.750	4.250	0.000	18	23.222	24.174	0.188	0.750	A572-65 (65 ksi)
L8	125.750-125.500	0.250	0.000	18	24.174	24.230	0.188	0.750	A572-65 (65 ksi)
L9	125.500-119.120	6.380	3.750	18	24.230	25.660	0.188	0.750	A572-65 (65 ksi)
L10	119.120-117.870	5.000	0.000	18	24.445	25.544	0.250	1.000	A572-65 (65 ksi)
L11	117.870-117.750	0.120	0.000	18	25.544	25.570	0.250	1.000	A572-65 (65 ksi)
L12	117.750-117.500	0.250	0.000	18	25.570	25.625	0.250	1.000	A572-65 (65 ksi)
L13	117.500-112.500	5.000	0.000	18	25.625	26.725	0.475	1.900	A572-65 (65 ksi)
L14	112.500-107.500	5.000	0.000	18	26.725	27.824	0.469	1.875	A572-65 (65 ksi)
L15	107.500-103.000	4.500	0.000	18	27.824	28.814	0.463	1.850	A572-65 (65 ksi)
L16	103.000-102.750	0.250	0.000	18	28.814	28.869	0.550	2.200	A572-65 (65 ksi)
L17	102.750-100.210	2.540	0.000	18	28.869	29.427	0.537	2.150	A572-65 (65 ksi)
L18	100.210-95.830	4.380	4.333	18	29.427	30.390	0.688	2.750	A572-65 (65 ksi)
L19	95.830-94.830	5.333	0.000	18	28.937	30.119	0.738	2.950	A572-65 (65 ksi)
L20	94.830-93.500	1.330	0.000	18	30.119	30.413	0.738	2.950	A572-65 (65 ksi)
L21	93.500-93.250	0.250	0.000	18	30.413	30.469	0.912	3.650	A572-65 (65 ksi)
L22	93.250-88.250	5.000	0.000	18	30.469	31.576	0.887	3.550	A572-65 (65 ksi)
L23	88.250-87.250	1.000	0.000	18	31.576	31.798	0.887	3.550	A572-65 (65 ksi)
L24	87.250-87.000	0.250	0.000	18	31.798	31.853	0.938	3.750	A572-65 (65 ksi)
L25	87.000-86.500	0.500	0.000	18	31.853	31.964	0.925	3.700	A572-65 (65 ksi)
L26	86.500-86.250	0.250	0.000	18	31.964	32.020	0.762	3.050	A572-65 (65 ksi)
L27	86.250-81.250	5.000	0.000	18	32.020	33.127	0.738	2.950	A572-65 (65 ksi)
L28	81.250-76.250	5.000	0.000	18	33.127	34.235	0.725	2.900	A572-65 (65 ksi)

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L29	76.250-75.416	0.834	0.000	18	34.235	34.420	0.725	2.900	A572-65 (65 ksi)
L30	75.416-75.166	0.250	0.000	18	34.420	34.475	0.813	3.250	A572-65 (65 ksi)
L31	75.166-70.166	5.000	0.000	18	34.475	35.583	0.800	3.200	A572-65 (65 ksi)
L32	70.166-65.166	5.000	0.000	18	35.583	36.690	0.787	3.150	A572-65 (65 ksi)
L33	65.166-60.166	5.000	0.000	18	36.690	37.798	0.762	3.050	A572-65 (65 ksi)
L34	60.166-57.000	3.166	0.000	18	37.798	38.500	0.750	3.000	A572-65 (65 ksi)
L35	57.000-56.750	0.250	0.000	18	38.500	38.555	0.750	3.000	A572-65 (65 ksi)
L36	56.750-53.000	3.750	0.000	18	38.555	39.386	0.738	2.950	A572-65 (65 ksi)
L37	53.000-47.203	5.797	5.583	18	39.386	40.670	0.738	2.950	A572-65 (65 ksi)
L38	47.203-46.203	6.583	0.000	18	38.808	40.266	0.762	3.050	A572-65 (65 ksi)
L39	46.203-41.203	5.000	0.000	18	40.266	41.374	0.750	3.000	A572-65 (65 ksi)
L40	41.203-39.333	1.870	0.000	18	41.374	41.788	0.750	3.000	A572-65 (65 ksi)
L41	39.333-39.083	0.250	0.000	18	41.788	41.843	0.825	3.300	A572-65 (65 ksi)
L42	39.083-37.750	1.333	0.000	18	41.843	42.139	0.825	3.300	A572-65 (65 ksi)
L43	37.750-37.500	0.250	0.000	18	42.139	42.194	0.750	3.000	A572-65 (65 ksi)
L44	37.500-32.500	5.000	0.000	18	42.194	43.301	0.725	2.900	A572-65 (65 ksi)
L45	32.500-27.500	5.000	0.000	18	43.301	44.409	0.725	2.900	A572-65 (65 ksi)
L46	27.500-27.250	0.250	0.000	18	44.409	44.464	0.725	2.900	A572-65 (65 ksi)
L47	27.250-27.000	0.250	0.000	18	44.464	44.520	0.725	2.900	A572-65 (65 ksi)
L48	27.000-22.000	5.000	0.000	18	44.520	45.627	0.713	2.850	A572-65 (65 ksi)
L49	22.000-21.250	0.750	0.000	18	45.627	45.793	0.713	2.850	A572-65 (65 ksi)
L50	21.250-21.000	0.250	0.000	18	45.793	45.849	0.725	2.900	A572-65 (65 ksi)
L51	21.000-17.000	4.000	0.000	18	45.849	46.735	0.713	2.850	A572-65 (65 ksi)
L52	17.000-16.750	0.250	0.000	18	46.735	46.790	0.700	2.800	A572-65 (65 ksi)
L53	16.750-16.250	0.500	0.000	18	46.790	46.901	0.700	2.800	A572-65 (65 ksi)
L54	16.250-16.000	0.250	0.000	18	46.901	46.956	0.775	3.100	A572-65 (65 ksi)
L55	16.000-11.000	5.000	0.000	18	46.956	48.064	0.750	3.000	A572-65 (65 ksi)
L56	11.000-6.000	5.000	0.000	18	48.064	49.171	0.750	3.000	A572-65 (65 ksi)
L57	6.000-1.000	5.000	0.000	18	49.171	50.279	0.738	2.950	A572-65 (65 ksi)
L58	1.000-0.000	1.000		18	50.279	50.500	0.525	2.100	A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L1	16.726	9.708	326.368	5.791	8.382	38.937	653.165	4.855	2.574	13.728
	17.863	10.375	398.337	6.189	8.951	44.501	797.199	5.188	2.771	14.78
L2	17.863	10.375	398.337	6.189	8.951	44.501	797.199	5.188	2.771	14.78
	19.001	11.041	480.178	6.586	9.520	50.437	960.988	5.522	2.968	15.831
L3	19.001	11.041	480.178	6.586	9.520	50.437	960.988	5.522	2.968	15.831
	20.139	11.708	572.525	6.984	10.089	56.745	1145.803	5.855	3.166	16.883
L4	20.139	11.708	572.525	6.984	10.089	56.745	1145.803	5.855	3.166	16.883
	21.276	12.375	676.011	7.382	10.659	63.424	1352.912	6.189	3.363	17.935
L5	21.276	12.375	676.011	7.382	10.659	63.424	1352.912	6.189	3.363	17.935
	22.414	13.042	791.273	7.780	11.228	70.475	1583.586	6.522	3.560	18.986
L6	22.414	13.042	791.273	7.780	11.228	70.475	1583.586	6.522	3.560	18.986
	23.551	13.708	918.943	8.177	11.797	77.897	1839.094	6.856	3.757	20.038
L7	23.551	13.708	918.943	8.177	11.797	77.897	1839.094	6.856	3.757	20.038
	24.518	14.275	1037.693	8.515	12.281	84.499	2076.751	7.139	3.925	20.932
L8	24.518	14.275	1037.693	8.515	12.281	84.499	2076.751	7.139	3.925	20.932
	24.575	14.309	1044.980	8.535	12.309	84.895	2091.335	7.156	3.935	20.984
L9	24.575	14.309	1044.980	8.535	12.309	84.895	2091.335	7.156	3.935	20.984
	26.027	15.159	1242.683	9.043	13.035	95.332	2487.001	7.581	4.186	22.326
L10	25.620	19.199	1419.865	8.589	12.418	114.340	2841.598	9.601	3.862	15.449
	25.900	20.071	1622.337	8.979	12.976	125.022	3246.809	10.037	4.056	16.223
L11	25.900	20.071	1622.337	8.979	12.976	125.022	3246.809	10.037	4.056	16.223
	25.926	20.092	1627.419	8.989	12.990	125.284	3256.980	10.048	4.060	16.242
L12	25.926	20.092	1627.419	8.989	12.990	125.284	3256.980	10.048	4.060	16.242
	25.982	20.135	1638.041	9.008	13.018	125.832	3278.238	10.070	4.070	16.28
L13	25.947	37.918	3030.222	8.928	13.018	232.777	6064.431	18.963	3.674	7.735
	27.064	39.575	3445.204	9.319	13.576	253.768	6894.942	19.792	3.868	8.142
L14	27.065	39.064	3402.302	9.321	13.576	250.608	6809.080	19.536	3.879	8.274
	28.181	40.700	3847.811	9.711	14.135	272.225	7700.685	20.354	4.072	8.687
L15	28.182	40.166	3799.110	9.713	14.135	268.780	7603.218	20.087	4.083	8.828
	29.187	41.619	4226.326	10.065	14.637	288.737	8458.213	20.813	4.257	9.205
L16	29.173	49.340	4979.510	10.034	14.637	340.194	9965.573	24.675	4.103	7.46
	29.229	49.436	5008.619	10.053	14.665	341.531	10023.829	24.723	4.113	7.478
L17	29.231	48.333	4901.272	10.058	14.665	334.211	9808.993	24.171	4.135	7.693
	29.798	49.286	5196.868	10.256	14.949	347.642	10400.575	24.648	4.233	7.876
L18	29.775	62.713	6544.153	10.203	14.949	437.768	13096.918	31.363	3.969	5.773
	30.753	64.815	7224.305	10.544	15.438	467.952	14458.116	32.413	4.139	6.02
L19	30.245	66.011	6632.004	10.011	14.700	451.152	13272.735	33.012	3.795	5.146
	30.470	68.776	7500.984	10.430	15.300	490.250	15011.837	34.395	4.003	5.428
L20	30.470	68.776	7500.984	10.430	15.300	490.250	15011.837	34.395	4.003	5.428
	30.769	69.466	7728.922	10.535	15.450	500.253	15468.014	34.740	4.055	5.498
L21	30.742	85.443	9394.721	10.473	15.450	608.072	18801.804	42.730	3.747	4.106
	30.798	85.603	9447.733	10.492	15.478	610.392	18907.898	42.810	3.757	4.117
L22	30.802	83.328	9212.228	10.501	15.478	595.176	18436.578	41.672	3.801	4.282
	31.927	86.449	10286.340	10.895	16.041	641.259	20586.214	43.233	3.995	4.502
L23	31.927	86.449	10286.340	10.895	16.041	641.259	20586.214	43.233	3.995	4.502
	32.152	87.073	10510.718	10.973	16.153	650.681	21035.266	43.545	4.034	4.546
L24	32.144	91.829	11049.079	10.955	16.153	684.009	22112.697	45.923	3.946	4.21
	32.200	91.994	11108.675	10.975	16.182	686.503	22231.967	46.006	3.956	4.22
L25	32.202	90.804	10973.859	10.980	16.182	678.172	21962.159	45.411	3.978	4.301
	32.315	91.130	11092.190	11.019	16.238	683.109	22198.975	45.573	3.998	4.322
L26	32.340	75.514	9287.923	11.077	16.238	571.994	18588.068	37.764	4.284	5.618
	32.396	75.648	9337.471	11.096	16.266	574.050	18687.229	37.831	4.293	5.631
L27	32.400	73.226	9053.012	11.105	16.266	556.562	18117.936	36.620	4.337	5.881
	33.525	75.819	10049.164	11.498	16.829	597.146	20111.552	37.917	4.532	6.146
L28	33.526	74.562	9890.281	11.503	16.829	587.705	19793.577	37.288	4.554	6.282

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
	34.651	77.111	10939.670	11.896	17.391	629.029	21893.735	38.563	4.749	6.551
L29	34.651	77.111	10939.670	11.896	17.391	629.029	21893.735	38.563	4.749	6.551
	34.839	77.537	11121.624	11.962	17.485	636.059	22257.882	38.776	4.782	6.596
L30	34.825	86.669	12367.040	11.931	17.485	707.285	24750.354	43.343	4.628	5.696
	34.882	86.812	12428.283	11.950	17.513	709.646	24872.920	43.414	4.638	5.708
L31	34.884	85.508	12250.716	11.955	17.513	699.507	24517.552	42.762	4.660	5.825
	36.008	88.320	13499.826	12.348	18.076	746.834	27017.415	44.169	4.855	6.068
L32	36.010	86.972	13303.223	12.352	18.076	735.958	26623.951	43.494	4.877	6.192
	37.135	89.740	14614.606	12.746	18.639	784.097	29248.443	44.879	5.072	6.44
L33	37.139	86.952	14180.231	12.754	18.639	760.792	28379.121	43.484	5.116	6.709
	38.264	89.633	15532.653	13.148	19.201	808.930	31085.745	44.825	5.310	6.965
L34	38.266	88.193	15293.494	13.152	19.201	796.475	30607.112	44.105	5.332	7.11
	38.978	89.863	16178.646	13.401	19.558	827.223	32378.581	44.940	5.456	7.275
L35	38.978	89.863	16178.646	13.401	19.558	827.223	32378.581	44.940	5.456	7.275
	39.034	89.995	16249.960	13.421	19.586	829.675	32521.302	45.006	5.466	7.288
L36	39.036	88.524	15994.983	13.425	19.586	816.657	32011.012	44.270	5.488	7.441
	39.880	90.469	17072.439	13.720	20.008	853.283	34167.342	45.243	5.634	7.639
L37	39.880	90.469	17072.439	13.720	20.008	853.283	34167.342	45.243	5.634	7.639
	41.184	93.475	18831.543	14.176	20.660	911.482	37687.864	46.746	5.860	7.946
L38	40.545	92.077	16838.338	13.506	19.715	854.108	33698.831	46.047	5.488	7.198
	40.770	95.606	18849.476	14.024	20.455	921.498	37723.756	47.812	5.745	7.534
L39	40.772	94.068	18558.074	14.028	20.455	907.252	37140.568	47.043	5.767	7.689
	41.896	96.705	20162.529	14.421	21.018	959.305	40351.587	48.362	5.962	7.949
L40	41.896	96.705	20162.529	14.421	21.018	959.305	40351.587	48.362	5.962	7.949
	42.317	97.691	20785.564	14.568	21.228	979.146	41598.478	48.855	6.035	8.046
L41	42.305	107.263	22738.992	14.542	21.228	1071.166	45507.904	53.642	5.903	7.155
	42.362	107.408	22831.333	14.561	21.256	1074.092	45692.707	53.714	5.912	7.167
L42	42.362	107.408	22831.333	14.561	21.256	1074.092	45692.707	53.714	5.912	7.167
	42.661	108.182	23327.915	14.666	21.406	1089.764	46686.526	54.101	5.964	7.23
L43	42.673	98.525	21322.903	14.693	21.406	996.100	42673.863	49.272	6.096	8.129
	42.729	98.657	21408.602	14.713	21.435	998.791	42845.374	49.338	6.106	8.142
L44	42.733	95.426	20732.456	14.721	21.435	967.246	41492.191	47.722	6.150	8.483
	43.858	97.975	22438.266	15.115	21.997	1020.055	44906.056	48.997	6.345	8.752
L45	43.858	97.975	22438.266	15.115	21.997	1020.055	44906.056	48.997	6.345	8.752
	44.982	100.523	24235.164	15.508	22.560	1074.268	48502.218	50.271	6.540	9.021
L46	44.982	100.523	24235.164	15.508	22.560	1074.268	48502.218	50.271	6.540	9.021
	45.038	100.651	24327.443	15.527	22.588	1077.015	48686.897	50.335	6.550	9.034
L47	45.038	100.651	24327.443	15.527	22.588	1077.015	48686.897	50.335	6.550	9.034
	45.095	100.778	24419.956	15.547	22.616	1079.766	48872.044	50.399	6.559	9.048
L48	45.096	99.069	24019.478	15.552	22.616	1062.058	48070.561	49.544	6.581	9.237
	46.221	101.573	25887.609	15.945	23.179	1116.877	51809.281	50.796	6.776	9.511
L49	46.221	101.573	25887.609	15.945	23.179	1116.877	51809.281	50.796	6.776	9.511
	46.390	101.949	26175.918	16.004	23.263	1125.219	52386.278	50.984	6.806	9.552
L50	46.388	103.709	26612.994	15.999	23.263	1144.007	53261.007	51.864	6.784	9.357
	46.444	103.836	26711.211	16.019	23.291	1146.843	53457.569	51.928	6.793	9.37
L51	46.446	102.074	26272.494	16.023	23.291	1128.006	52579.558	51.047	6.815	9.565
	47.346	104.078	27850.178	16.338	23.741	1173.075	55737.001	52.049	6.971	9.784
L52	47.348	102.280	27383.879	16.342	23.741	1153.434	54803.791	51.150	6.993	9.99
	47.404	102.403	27482.816	16.362	23.769	1156.232	55001.795	51.211	7.003	10.004
L53	47.404	102.403	27482.816	16.362	23.769	1156.232	55001.795	51.211	7.003	10.004
	47.516	102.649	27681.404	16.401	23.826	1161.837	55399.231	51.334	7.023	10.032
L54	47.505	113.462	30498.257	16.375	23.826	1280.065	61036.644	56.742	6.891	8.891
	47.561	113.599	30608.228	16.394	23.854	1283.166	61256.731	56.810	6.900	8.904
L55	47.565	109.994	29668.998	16.403	23.854	1243.791	59377.034	55.007	6.944	9.259
	48.689	112.630	31853.877	16.796	24.416	1304.616	63749.668	56.326	7.139	9.519
L56	48.689	112.630	31853.877	16.796	24.416	1304.616	63749.668	56.326	7.139	9.519
	49.814	115.266	34143.470	17.189	24.979	1366.893	68331.866	57.644	7.334	9.779
L57	49.816	113.374	33600.421	17.194	24.979	1345.153	67245.053	56.698	7.356	9.974
	50.940	115.967	35958.439	17.587	25.541	1407.845	71964.194	57.994	7.551	10.239
L58	50.973	82.907	25928.340	17.662	25.541	1015.146	51890.798	41.461	7.925	15.095
	51.198	83.276	26276.171	17.741	25.654	1024.252	52586.917	41.646	7.964	15.17

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L1 160.000-155.000				1	1	1			
L2 155.000-150.000				1	1	1			
L3 150.000-145.000				1	1	1			
L4 145.000-140.000				1	1	1			
L5 140.000-135.000				1	1	1			
L6 135.000-130.000				1	1	1			
L7 130.000-125.750				1	1	1			
L8 125.750-125.500				1	1	1			
L9 125.500-119.120				1	1	1			
L10 119.120-117.870				1	1	1			
L11 117.870-117.750				1	1	1			
L12 117.750-117.500				1	1	1			
L13 117.500-112.500				1	1	0.945398			
L14 112.500-107.500				1	1	0.940718			
L15 107.500-103.000				1	1	0.938811			
L16 103.000-102.750				1	1	1.03399			
L17 102.750-100.210				1	1	1.04612			
L18 100.210-95.830				1	1	0.917622			
L19 95.830-94.830				1	1	0.930138			
L20				1	1	0.92511			

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
94.830-93.500									
L21				1	1	0.90907			
93.500-93.250									
L22				1	1	0.912889			
93.250-88.250									
L23				1	1	0.90887			
88.250-87.250									
L24				1	1	0.901609			
87.250-87.000									
L25				1	1	0.911369			
87.000-86.500									
L26				1	1	0.920149			
86.500-86.250									
L27				1	1	0.932563			
86.250-81.250									
L28				1	1	0.931178			
81.250-76.250									
L29				1	1	0.928435			
76.250-75.416									
L30				1	1	0.930785			
75.416-75.166									
L31				1	1	0.927324			
75.166-70.166									
L32				1	1	0.924894			
70.166-65.166									
L33				1	1	0.938262			
65.166-60.166									
L34				1	1	0.943602			
60.166-57.000									
L35				1	1	0.94283			
57.000-56.750									
L36				1	1	0.946998			
56.750-53.000									
L37				1	1	1.0126			
53.000-47.203									
L38				1	1	0.98737			
47.203-46.203									
L39				1	1	0.989782			
46.203-41.203									
L40				1	1	0.984839			
41.203-39.333									
L41				1	1	0.977911			
39.333-39.083									
L42				1	1	0.97417			
39.083-37.750									
L43				1	1	0.980089			
37.750-37.500									
L44				1	1	1.00037			
37.500-32.500									
L45				1	1	0.988123			
32.500-27.500									
L46				1	1	0.987527			
27.500-27.250									
L47				1	1	0.986932			
27.250-27.000									
L48				1	1	0.992183			
27.000-22.000									
L49				1	1	0.990466			
22.000-21.250									

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
L50 21.250-21.000				1	1	1.07543			
L51 21.000-17.000				1	1	1.08306			
L52 17.000-16.750				1	1	1.04283			
L53 16.750-16.250				1	1	1.04161			
L54 16.250-16.000				1	1	1.02322			
L55 16.000-11.000				1	1	1.04373			
L56 11.000-6.000				1	1	1.03129			
L57 6.000-1.000				1	1	1.03643			
L58 1.000-0.000				1	1	1.09921			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight klf
*										
*										
PL 5.375"x1.25"	A	No	Surface Af (CaAa)	89.250 - 0.000	1	1	0.300 0.325	5.375	13.250	0.000
PL 5.375"x1.25"	B	No	Surface Af (CaAa)	89.250 - 0.000	1	1	0.300 0.325	5.375	13.250	0.000
PL 5.375"x1.25"	C	No	Surface Af (CaAa)	89.250 - 0.000	1	1	0.300 0.325	5.375	13.250	0.000
*										
PL 4.375"x1.25"	A	No	Surface Af (CaAa)	119.000 - 89.250	1	1	0.300 0.325	4.375	11.250	0.000
PL 4.375"x1.25"	B	No	Surface Af (CaAa)	119.000 - 89.250	1	1	0.300 0.325	4.375	11.250	0.000
PL 4.375"x1.25"	C	No	Surface Af (CaAa)	119.000 - 89.250	1	1	0.300 0.325	4.375	11.250	0.000
*										
PL 3.125"x1.25"	A	No	Surface Af (CaAa)	127.000 - 119.000	1	1	0.300 0.325	3.125	8.750	0.000
PL 3.125"x1.25"	B	No	Surface Af (CaAa)	127.000 - 119.000	1	1	0.300 0.325	3.125	8.750	0.000
PL 3.125"x1.25"	C	No	Surface Af (CaAa)	127.000 - 119.000	1	1	0.300 0.325	3.125	8.750	0.000
**										
MP3-03	A	No	Surface Af (CaAa)	40.500 - 0.000	1	1	0.350 0.375	4.060	11.260	0.000
MP3-03	B	No	Surface Af (CaAa)	40.500 - 0.000	1	1	0.350 0.375	4.060	11.260	0.000
MP3-03	C	No	Surface Af (CaAa)	40.500 - 0.000	1	1	0.350 0.375	4.060	11.260	0.000
*										

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight klf
MP3-03	A	No	Surface Af (CaAa)	76.583 - 36.583	1	1	0.400 0.425	4.060	11.260	0.000
MP3-03	B	No	Surface Af (CaAa)	76.583 - 36.583	1	1	0.400 0.425	4.060	11.260	0.000
MP3-03	C	No	Surface Af (CaAa)	76.583 - 36.583	1	1	0.400 0.425	4.060	11.260	0.000
*										
CCI 8.5" x 1.25" Plate	A	No	Surface Af (CaAa)	20.000 - 0.000	1	1	-0.325 -0.300	8.500	19.500	0.000
CCI 8.5" x 1.25" Plate	B	No	Surface Af (CaAa)	20.000 - 0.000	1	1	-0.425 -0.400	8.500	19.500	0.000
CCI 8.5" x 1.25" Plate	C	No	Surface Af (CaAa)	25.000 - 0.000	1	1	-0.175 -0.150	8.500	19.500	0.000
*										
CCI 6" x 1" Plate	B	No	Surface Af (CaAa)	55.000 - 20.000	1	1	-0.425 -0.400	6.000	14.000	0.000
CCI 6" x 1" Plate	A	No	Surface Af (CaAa)	105.000 - 20.000	1	1	-0.325 -0.300	6.000	14.000	0.000
CCI 6" x 1" Plate	C	No	Surface Af (CaAa)	105.000 - 15.000	1	1	-0.225 -0.200	6.000	14.000	0.000
CCI 6" x 1" Plate	B	No	Surface Af (CaAa)	102.210 - 47.210	1	1	-0.275 -0.250	6.000	14.000	0.000
*										
CCI 4.5" x 1" Plate	A	No	Surface Af (CaAa)	95.000 - 85.000	1	1	0.400 0.425	4.500	11.000	0.000
CCI 4.5" x 1" Plate	B	No	Surface Af (CaAa)	95.000 - 85.000	1	1	0.400 0.425	4.500	11.000	0.000
CCI 4.5" x 1" Plate	C	No	Surface Af (CaAa)	95.000 - 85.000	1	1	0.400 0.425	4.500	11.000	0.000
*										

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight klf
HB114-1-08U4-M5J (1-1/4)	A	No	No	Inside Pole	159.000 - 0.000	3	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.000	0.001 0.001 0.001
HB114-21U3M12-XXXF(1-1/4)	A	No	No	Inside Pole	159.000 - 0.000	1	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.000	0.001 0.001 0.001
*									
LDF7-50A(1-5/8)	A	No	No	Inside Pole	150.000 - 0.000	12	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.000	0.001 0.001 0.001
FB-L98B-002-75000 (3/8)	A	No	No	Inside Pole	150.000 - 0.000	1	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.000	0.000 0.000 0.000
WR-VG122ST-BRDA(7/16)	A	No	No	Inside Pole	150.000 - 0.000	2	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.000	0.000 0.000 0.000
*									
LDF7-50A(1-5/8)	B	No	No	Inside Pole	137.000 - 0.000	3	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.000	0.001 0.001 0.001

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight klf
*									
HB158-21U6S12-XXXM-01(1-5/8)	B	No	No	Inside Pole	125.000 - 0.000	2	No Ice	0.000	0.002
							1/2" Ice	0.000	0.002
							1" Ice	0.000	0.002
*									
CR 50 1070(7/8)	B	No	No	Inside Pole	109.000 - 0.000	1	No Ice	0.000	0.000
							1/2" Ice	0.000	0.000
							1" Ice	0.000	0.000
*									
CU12PSM9P8XXX(1-3/8)	B	No	No	Inside Pole	83.000 - 0.000	1	No Ice	0.000	0.002
							1/2" Ice	0.000	0.002
							1" Ice	0.000	0.002
*									

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	160.000-155.000	A	0.000	0.000	0.000	0.000	0.018
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.000
L2	155.000-150.000	A	0.000	0.000	0.000	0.000	0.022
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.000
L3	150.000-145.000	A	0.000	0.000	0.000	0.000	0.073
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.000
L4	145.000-140.000	A	0.000	0.000	0.000	0.000	0.073
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.000
L5	140.000-135.000	A	0.000	0.000	0.000	0.000	0.073
		B	0.000	0.000	0.000	0.000	0.005
		C	0.000	0.000	0.000	0.000	0.000
L6	135.000-130.000	A	0.000	0.000	0.000	0.000	0.073
		B	0.000	0.000	0.000	0.000	0.012
		C	0.000	0.000	0.000	0.000	0.000
L7	130.000-125.750	A	0.000	0.000	0.651	0.000	0.062
		B	0.000	0.000	0.651	0.000	0.010
		C	0.000	0.000	0.651	0.000	0.000
L8	125.750-125.500	A	0.000	0.000	0.130	0.000	0.004
		B	0.000	0.000	0.130	0.000	0.001
		C	0.000	0.000	0.130	0.000	0.000
L9	125.500-119.120	A	0.000	0.000	3.323	0.000	0.093
		B	0.000	0.000	3.323	0.000	0.038
		C	0.000	0.000	3.323	0.000	0.000
L10	119.120-117.870	A	0.000	0.000	0.886	0.000	0.018
		B	0.000	0.000	0.886	0.000	0.008
		C	0.000	0.000	0.886	0.000	0.000
L11	117.870-117.750	A	0.000	0.000	0.087	0.000	0.002
		B	0.000	0.000	0.087	0.000	0.001
		C	0.000	0.000	0.087	0.000	0.000
L12	117.750-117.500	A	0.000	0.000	0.182	0.000	0.004
		B	0.000	0.000	0.182	0.000	0.002

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		C	0.000	0.000	0.182	0.000	0.000
L13	117.500-112.500	A	0.000	0.000	3.646	0.000	0.073
		B	0.000	0.000	3.646	0.000	0.031
		C	0.000	0.000	3.646	0.000	0.000
L14	112.500-107.500	A	0.000	0.000	3.646	0.000	0.073
		B	0.000	0.000	3.646	0.000	0.032
		C	0.000	0.000	3.646	0.000	0.000
L15	107.500-103.000	A	0.000	0.000	5.281	0.000	0.066
		B	0.000	0.000	3.281	0.000	0.029
		C	0.000	0.000	5.281	0.000	0.000
L16	103.000-102.750	A	0.000	0.000	0.432	0.000	0.004
		B	0.000	0.000	0.182	0.000	0.002
		C	0.000	0.000	0.432	0.000	0.000
L17	102.750-100.210	A	0.000	0.000	4.392	0.000	0.037
		B	0.000	0.000	3.852	0.000	0.017
		C	0.000	0.000	4.392	0.000	0.000
L18	100.210-95.830	A	0.000	0.000	7.574	0.000	0.064
		B	0.000	0.000	7.574	0.000	0.029
		C	0.000	0.000	7.574	0.000	0.000
L19	95.830-94.830	A	0.000	0.000	1.857	0.000	0.015
		B	0.000	0.000	1.857	0.000	0.007
		C	0.000	0.000	1.857	0.000	0.000
L20	94.830-93.500	A	0.000	0.000	3.297	0.000	0.019
		B	0.000	0.000	3.297	0.000	0.009
		C	0.000	0.000	3.297	0.000	0.000
L21	93.500-93.250	A	0.000	0.000	0.620	0.000	0.004
		B	0.000	0.000	0.620	0.000	0.002
		C	0.000	0.000	0.620	0.000	0.000
L22	93.250-88.250	A	0.000	0.000	12.563	0.000	0.073
		B	0.000	0.000	12.563	0.000	0.033
		C	0.000	0.000	12.563	0.000	0.000
L23	88.250-87.250	A	0.000	0.000	2.646	0.000	0.015
		B	0.000	0.000	2.646	0.000	0.007
		C	0.000	0.000	2.646	0.000	0.000
L24	87.250-87.000	A	0.000	0.000	0.661	0.000	0.004
		B	0.000	0.000	0.661	0.000	0.002
		C	0.000	0.000	0.661	0.000	0.000
L25	87.000-86.500	A	0.000	0.000	1.323	0.000	0.007
		B	0.000	0.000	1.323	0.000	0.003
		C	0.000	0.000	1.323	0.000	0.000
L26	86.500-86.250	A	0.000	0.000	0.661	0.000	0.004
		B	0.000	0.000	0.661	0.000	0.002
		C	0.000	0.000	0.661	0.000	0.000
L27	86.250-81.250	A	0.000	0.000	10.417	0.000	0.073
		B	0.000	0.000	10.417	0.000	0.036
		C	0.000	0.000	10.417	0.000	0.000
L28	81.250-76.250	A	0.000	0.000	9.704	0.000	0.073
		B	0.000	0.000	9.704	0.000	0.041
		C	0.000	0.000	9.704	0.000	0.000
L29	76.250-75.416	A	0.000	0.000	2.145	0.000	0.012
		B	0.000	0.000	2.145	0.000	0.007
		C	0.000	0.000	2.145	0.000	0.000
L30	75.416-75.166	A	0.000	0.000	0.643	0.000	0.004
		B	0.000	0.000	0.643	0.000	0.002
		C	0.000	0.000	0.643	0.000	0.000
L31	75.166-70.166	A	0.000	0.000	12.863	0.000	0.073
		B	0.000	0.000	12.863	0.000	0.041
		C	0.000	0.000	12.863	0.000	0.000
L32	70.166-65.166	A	0.000	0.000	12.863	0.000	0.073
		B	0.000	0.000	12.863	0.000	0.041
		C	0.000	0.000	12.863	0.000	0.000

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L33	65.166-60.166	A	0.000	0.000	12.863	0.000	0.073
		B	0.000	0.000	12.863	0.000	0.041
		C	0.000	0.000	12.863	0.000	0.000
L34	60.166-57.000	A	0.000	0.000	8.145	0.000	0.046
		B	0.000	0.000	8.145	0.000	0.026
		C	0.000	0.000	8.145	0.000	0.000
L35	57.000-56.750	A	0.000	0.000	0.643	0.000	0.004
		B	0.000	0.000	0.643	0.000	0.002
		C	0.000	0.000	0.643	0.000	0.000
L36	56.750-53.000	A	0.000	0.000	9.647	0.000	0.055
		B	0.000	0.000	11.647	0.000	0.031
		C	0.000	0.000	9.647	0.000	0.000
L37	53.000-47.203	A	0.000	0.000	14.913	0.000	0.085
		B	0.000	0.000	20.703	0.000	0.048
		C	0.000	0.000	14.913	0.000	0.000
L38	47.203-46.203	A	0.000	0.000	2.572	0.000	0.015
		B	0.000	0.000	2.572	0.000	0.008
		C	0.000	0.000	2.572	0.000	0.000
L39	46.203-41.203	A	0.000	0.000	12.863	0.000	0.073
		B	0.000	0.000	12.863	0.000	0.041
		C	0.000	0.000	12.863	0.000	0.000
L40	41.203-39.333	A	0.000	0.000	5.600	0.000	0.027
		B	0.000	0.000	5.600	0.000	0.015
		C	0.000	0.000	5.600	0.000	0.000
L41	39.333-39.083	A	0.000	0.000	0.812	0.000	0.004
		B	0.000	0.000	0.812	0.000	0.002
		C	0.000	0.000	0.812	0.000	0.000
L42	39.083-37.750	A	0.000	0.000	4.331	0.000	0.020
		B	0.000	0.000	4.331	0.000	0.011
		C	0.000	0.000	4.331	0.000	0.000
L43	37.750-37.500	A	0.000	0.000	0.812	0.000	0.004
		B	0.000	0.000	0.812	0.000	0.002
		C	0.000	0.000	0.812	0.000	0.000
L44	37.500-32.500	A	0.000	0.000	13.483	0.000	0.073
		B	0.000	0.000	13.483	0.000	0.041
		C	0.000	0.000	13.483	0.000	0.000
L45	32.500-27.500	A	0.000	0.000	12.863	0.000	0.073
		B	0.000	0.000	12.863	0.000	0.041
		C	0.000	0.000	12.863	0.000	0.000
L46	27.500-27.250	A	0.000	0.000	0.643	0.000	0.004
		B	0.000	0.000	0.643	0.000	0.002
		C	0.000	0.000	0.643	0.000	0.000
L47	27.250-27.000	A	0.000	0.000	0.643	0.000	0.004
		B	0.000	0.000	0.643	0.000	0.002
		C	0.000	0.000	0.643	0.000	0.000
L48	27.000-22.000	A	0.000	0.000	12.863	0.000	0.073
		B	0.000	0.000	12.863	0.000	0.041
		C	0.000	0.000	17.113	0.000	0.000
L49	22.000-21.250	A	0.000	0.000	1.929	0.000	0.011
		B	0.000	0.000	1.929	0.000	0.006
		C	0.000	0.000	2.992	0.000	0.000
L50	21.250-21.000	A	0.000	0.000	0.643	0.000	0.004
		B	0.000	0.000	0.643	0.000	0.002
		C	0.000	0.000	0.997	0.000	0.000
L51	21.000-17.000	A	0.000	0.000	11.540	0.000	0.059
		B	0.000	0.000	11.540	0.000	0.033
		C	0.000	0.000	15.957	0.000	0.000
L52	17.000-16.750	A	0.000	0.000	0.747	0.000	0.004
		B	0.000	0.000	0.747	0.000	0.002
		C	0.000	0.000	0.997	0.000	0.000
L53	16.750-16.250	A	0.000	0.000	1.495	0.000	0.007

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		B	0.000	0.000	1.495	0.000	0.004
		C	0.000	0.000	1.995	0.000	0.000
L54	16.250-16.000	A	0.000	0.000	0.747	0.000	0.004
		B	0.000	0.000	0.747	0.000	0.002
		C	0.000	0.000	0.997	0.000	0.000
L55	16.000-11.000	A	0.000	0.000	14.946	0.000	0.073
		B	0.000	0.000	14.946	0.000	0.041
		C	0.000	0.000	15.946	0.000	0.000
L56	11.000-6.000	A	0.000	0.000	14.946	0.000	0.073
		B	0.000	0.000	14.946	0.000	0.041
		C	0.000	0.000	14.946	0.000	0.000
L57	6.000-1.000	A	0.000	0.000	14.946	0.000	0.073
		B	0.000	0.000	14.946	0.000	0.041
		C	0.000	0.000	14.946	0.000	0.000
L58	1.000-0.000	A	0.000	0.000	2.989	0.000	0.015
		B	0.000	0.000	2.989	0.000	0.008
		C	0.000	0.000	2.989	0.000	0.000

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	160.000-155.000	A	0.994	0.000	0.000	0.000	0.000	0.018
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	0.000	0.000	0.000
L2	155.000-150.000	A	0.991	0.000	0.000	0.000	0.000	0.022
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	0.000	0.000	0.000
L3	150.000-145.000	A	0.987	0.000	0.000	0.000	0.000	0.073
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	0.000	0.000	0.000
L4	145.000-140.000	A	0.984	0.000	0.000	0.000	0.000	0.073
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	0.000	0.000	0.000
L5	140.000-135.000	A	0.980	0.000	0.000	0.000	0.000	0.073
		B		0.000	0.000	0.000	0.000	0.005
		C		0.000	0.000	0.000	0.000	0.000
L6	135.000-130.000	A	0.977	0.000	0.000	0.000	0.000	0.073
		B		0.000	0.000	0.000	0.000	0.012
		C		0.000	0.000	0.000	0.000	0.000
L7	130.000-125.750	A	0.973	0.000	0.000	0.820	0.000	0.068
		B		0.000	0.000	0.820	0.000	0.016
		C		0.000	0.000	0.820	0.000	0.006
L8	125.750-125.500	A	0.972	0.000	0.000	0.164	0.000	0.005
		B		0.000	0.000	0.164	0.000	0.002
		C		0.000	0.000	0.164	0.000	0.001
L9	125.500-119.120	A	0.969	0.000	0.000	4.182	0.000	0.123
		B		0.000	0.000	4.182	0.000	0.068
		C		0.000	0.000	4.182	0.000	0.030
L10	119.120-117.870	A	0.966	0.000	0.000	1.122	0.000	0.025
		B		0.000	0.000	1.122	0.000	0.015
		C		0.000	0.000	1.122	0.000	0.007
L11	117.870-117.750	A	0.965	0.000	0.000	0.111	0.000	0.002
		B		0.000	0.000	0.111	0.000	0.001
		C		0.000	0.000	0.111	0.000	0.001
L12	117.750-117.500	A	0.965	0.000	0.000	0.231	0.000	0.005
		B		0.000	0.000	0.231	0.000	0.003

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		C		0.000	0.000	0.231	0.000	0.001
L13	117.500-112.500	A	0.963	0.000	0.000	4.609	0.000	0.101
		B		0.000	0.000	4.609	0.000	0.059
		C		0.000	0.000	4.609	0.000	0.028
L14	112.500-107.500	A	0.959	0.000	0.000	4.605	0.000	0.101
		B		0.000	0.000	4.605	0.000	0.059
		C		0.000	0.000	4.605	0.000	0.028
L15	107.500-103.000	A	0.955	0.000	0.000	6.522	0.000	0.104
		B		0.000	0.000	4.140	0.000	0.054
		C		0.000	0.000	6.522	0.000	0.038
L16	103.000-102.750	A	0.952	0.000	0.000	0.528	0.000	0.007
		B		0.000	0.000	0.230	0.000	0.003
		C		0.000	0.000	0.528	0.000	0.003
L17	102.750-100.210	A	0.951	0.000	0.000	5.358	0.000	0.068
		B		0.000	0.000	4.716	0.000	0.044
		C		0.000	0.000	5.358	0.000	0.030
L18	100.210-95.830	A	0.948	0.000	0.000	9.234	0.000	0.116
		B		0.000	0.000	9.234	0.000	0.081
		C		0.000	0.000	9.234	0.000	0.052
L19	95.830-94.830	A	0.945	0.000	0.000	2.255	0.000	0.028
		B		0.000	0.000	2.255	0.000	0.019
		C		0.000	0.000	2.255	0.000	0.013
L20	94.830-93.500	A	0.944	0.000	0.000	3.949	0.000	0.042
		B		0.000	0.000	3.949	0.000	0.032
		C		0.000	0.000	3.949	0.000	0.023
L21	93.500-93.250	A	0.943	0.000	0.000	0.742	0.000	0.008
		B		0.000	0.000	0.742	0.000	0.006
		C		0.000	0.000	0.742	0.000	0.004
L22	93.250-88.250	A	0.940	0.000	0.000	15.005	0.000	0.160
		B		0.000	0.000	15.005	0.000	0.119
		C		0.000	0.000	15.005	0.000	0.087
L23	88.250-87.250	A	0.937	0.000	0.000	3.133	0.000	0.032
		B		0.000	0.000	3.133	0.000	0.024
		C		0.000	0.000	3.133	0.000	0.018
L24	87.250-87.000	A	0.937	0.000	0.000	0.783	0.000	0.008
		B		0.000	0.000	0.783	0.000	0.006
		C		0.000	0.000	0.783	0.000	0.004
L25	87.000-86.500	A	0.936	0.000	0.000	1.566	0.000	0.016
		B		0.000	0.000	1.566	0.000	0.012
		C		0.000	0.000	1.566	0.000	0.009
L26	86.500-86.250	A	0.936	0.000	0.000	0.783	0.000	0.008
		B		0.000	0.000	0.783	0.000	0.006
		C		0.000	0.000	0.783	0.000	0.004
L27	86.250-81.250	A	0.933	0.000	0.000	12.422	0.000	0.142
		B		0.000	0.000	12.422	0.000	0.104
		C		0.000	0.000	12.422	0.000	0.069
L28	81.250-76.250	A	0.927	0.000	0.000	11.621	0.000	0.137
		B		0.000	0.000	11.621	0.000	0.105
		C		0.000	0.000	11.621	0.000	0.064
L29	76.250-75.416	A	0.924	0.000	0.000	2.608	0.000	0.027
		B		0.000	0.000	2.608	0.000	0.022
		C		0.000	0.000	2.608	0.000	0.015
L30	75.416-75.166	A	0.923	0.000	0.000	0.782	0.000	0.008
		B		0.000	0.000	0.782	0.000	0.006
		C		0.000	0.000	0.782	0.000	0.004
L31	75.166-70.166	A	0.920	0.000	0.000	15.622	0.000	0.161
		B		0.000	0.000	15.622	0.000	0.129
		C		0.000	0.000	15.622	0.000	0.088
L32	70.166-65.166	A	0.913	0.000	0.000	15.602	0.000	0.160
		B		0.000	0.000	15.602	0.000	0.128
		C		0.000	0.000	15.602	0.000	0.087

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
L33	65.166-60.166	A	0.906	0.000	0.000	15.581	0.000	0.159
		B		0.000	0.000	15.581	0.000	0.127
		C		0.000	0.000	15.581	0.000	0.086
L34	60.166-57.000	A	0.900	0.000	0.000	9.855	0.000	0.100
		B		0.000	0.000	9.855	0.000	0.080
		C		0.000	0.000	9.855	0.000	0.054
L35	57.000-56.750	A	0.898	0.000	0.000	0.778	0.000	0.008
		B		0.000	0.000	0.778	0.000	0.006
		C		0.000	0.000	0.778	0.000	0.004
L36	56.750-53.000	A	0.894	0.000	0.000	11.659	0.000	0.118
		B		0.000	0.000	14.017	0.000	0.106
		C		0.000	0.000	11.659	0.000	0.063
L37	53.000-47.203	A	0.886	0.000	0.000	17.995	0.000	0.182
		B		0.000	0.000	24.811	0.000	0.179
		C		0.000	0.000	17.995	0.000	0.097
L38	47.203-46.203	A	0.880	0.000	0.000	3.104	0.000	0.031
		B		0.000	0.000	3.104	0.000	0.025
		C		0.000	0.000	3.104	0.000	0.017
L39	46.203-41.203	A	0.874	0.000	0.000	15.485	0.000	0.156
		B		0.000	0.000	15.485	0.000	0.123
		C		0.000	0.000	15.485	0.000	0.082
L40	41.203-39.333	A	0.867	0.000	0.000	6.775	0.000	0.064
		B		0.000	0.000	6.775	0.000	0.052
		C		0.000	0.000	6.775	0.000	0.036
L41	39.333-39.083	A	0.865	0.000	0.000	0.985	0.000	0.009
		B		0.000	0.000	0.985	0.000	0.007
		C		0.000	0.000	0.985	0.000	0.005
L42	39.083-37.750	A	0.863	0.000	0.000	5.251	0.000	0.048
		B		0.000	0.000	5.251	0.000	0.039
		C		0.000	0.000	5.251	0.000	0.028
L43	37.750-37.500	A	0.861	0.000	0.000	0.985	0.000	0.009
		B		0.000	0.000	0.985	0.000	0.007
		C		0.000	0.000	0.985	0.000	0.005
L44	37.500-32.500	A	0.855	0.000	0.000	16.205	0.000	0.158
		B		0.000	0.000	16.205	0.000	0.126
		C		0.000	0.000	16.205	0.000	0.085
L45	32.500-27.500	A	0.842	0.000	0.000	15.388	0.000	0.152
		B		0.000	0.000	15.388	0.000	0.120
		C		0.000	0.000	15.388	0.000	0.079
L46	27.500-27.250	A	0.834	0.000	0.000	0.768	0.000	0.008
		B		0.000	0.000	0.768	0.000	0.006
		C		0.000	0.000	0.768	0.000	0.004
L47	27.250-27.000	A	0.833	0.000	0.000	0.768	0.000	0.008
		B		0.000	0.000	0.768	0.000	0.006
		C		0.000	0.000	0.768	0.000	0.004
L48	27.000-22.000	A	0.825	0.000	0.000	15.338	0.000	0.150
		B		0.000	0.000	15.338	0.000	0.118
		C		0.000	0.000	20.083	0.000	0.099
L49	22.000-21.250	A	0.815	0.000	0.000	2.296	0.000	0.022
		B		0.000	0.000	2.296	0.000	0.018
		C		0.000	0.000	3.481	0.000	0.017
L50	21.250-21.000	A	0.813	0.000	0.000	0.765	0.000	0.007
		B		0.000	0.000	0.765	0.000	0.006
		C		0.000	0.000	1.160	0.000	0.006
L51	21.000-17.000	A	0.804	0.000	0.000	13.455	0.000	0.123
		B		0.000	0.000	13.455	0.000	0.098
		C		0.000	0.000	18.530	0.000	0.088
L52	17.000-16.750	A	0.795	0.000	0.000	0.865	0.000	0.008
		B		0.000	0.000	0.865	0.000	0.006
		C		0.000	0.000	1.156	0.000	0.005
L53	16.750-16.250	A	0.793	0.000	0.000	1.730	0.000	0.015

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		B		0.000	0.000	1.730	0.000	0.012
		C		0.000	0.000	2.312	0.000	0.011
L54	16.250-16.000	A	0.791	0.000	0.000	0.865	0.000	0.008
		B		0.000	0.000	0.865	0.000	0.006
		C		0.000	0.000	1.156	0.000	0.005
L55	16.000-11.000	A	0.777	0.000	0.000	17.260	0.000	0.153
		B		0.000	0.000	17.260	0.000	0.121
		C		0.000	0.000	18.433	0.000	0.085
L56	11.000-6.000	A	0.742	0.000	0.000	17.158	0.000	0.149
		B		0.000	0.000	17.158	0.000	0.117
		C		0.000	0.000	17.172	0.000	0.076
L57	6.000-1.000	A	0.679	0.000	0.000	16.973	0.000	0.141
		B		0.000	0.000	16.973	0.000	0.109
		C		0.000	0.000	16.983	0.000	0.068
L58	1.000-0.000	A	0.559	0.000	0.000	3.324	0.000	0.026
		B		0.000	0.000	3.324	0.000	0.019
		C		0.000	0.000	3.325	0.000	0.011

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	160.000-155.000	0.000	0.000	0.000	0.000
L2	155.000-150.000	0.000	0.000	0.000	0.000
L3	150.000-145.000	0.000	0.000	0.000	0.000
L4	145.000-140.000	0.000	0.000	0.000	0.000
L5	140.000-135.000	0.000	0.000	0.000	0.000
L6	135.000-130.000	0.000	0.000	0.000	0.000
L7	130.000-125.750	0.000	0.000	0.000	0.000
L8	125.750-125.500	0.000	0.000	0.000	0.000
L9	125.500-119.120	0.000	0.000	0.000	0.000
L10	119.120-117.870	0.000	0.000	0.000	0.000
L11	117.870-117.750	0.000	0.000	0.000	0.000
L12	117.750-117.500	0.000	0.000	0.000	0.000
L13	117.500-112.500	0.000	0.000	0.000	0.000
L14	112.500-107.500	0.000	0.000	0.000	0.000
L15	107.500-103.000	-0.152	1.985	-0.127	1.657
L16	103.000-102.750	-0.279	3.641	-0.240	3.133
L17	102.750-100.210	-0.193	1.271	-0.169	1.111
L18	100.210-95.830	-0.176	0.735	-0.154	0.644
L19	95.830-94.830	-0.167	0.699	-0.148	0.617
L20	94.830-93.500	-0.135	0.562	-0.122	0.511
L21	93.500-93.250	-0.135	0.565	-0.123	0.514
L22	93.250-88.250	-0.136	0.567	-0.124	0.516
L23	88.250-87.250	-0.132	0.553	-0.122	0.508
L24	87.250-87.000	-0.133	0.555	-0.122	0.510
L25	87.000-86.500	-0.133	0.556	-0.122	0.511
L26	86.500-86.250	-0.133	0.558	-0.122	0.511
L27	86.250-81.250	-0.163	0.681	-0.146	0.610
L28	81.250-76.250	-0.176	0.736	-0.156	0.652
L29	76.250-75.416	-0.144	0.602	-0.129	0.538
L30	75.416-75.166	-0.144	0.604	-0.129	0.539
L31	75.166-70.166	-0.146	0.612	-0.130	0.546
L32	70.166-65.166	-0.150	0.627	-0.133	0.558
L33	65.166-60.166	-0.153	0.641	-0.136	0.570
L34	60.166-57.000	-0.156	0.653	-0.138	0.580

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
L35	57.000-56.750	-0.157	0.658	-0.139	0.584
L36	56.750-53.000	-0.762	-0.506	-0.680	-0.451
L37	53.000-47.203	-1.265	-1.454	-1.131	-1.300
L38	47.203-46.203	-1.446	0.665	-1.280	0.588
L39	46.203-41.203	-1.464	0.673	-1.294	0.595
L40	41.203-39.333	-1.321	0.608	-1.174	0.540
L41	39.333-39.083	-1.245	0.572	-1.109	0.510
L42	39.083-37.750	-1.249	0.574	-1.112	0.511
L43	37.750-37.500	-1.253	0.576	-1.115	0.513
L44	37.500-32.500	-1.462	0.672	-1.291	0.594
L45	32.500-27.500	-1.543	0.710	-1.357	0.624
L46	27.500-27.250	-1.558	0.717	-1.369	0.630
L47	27.250-27.000	-1.560	0.717	-1.370	0.630
L48	27.000-22.000	-0.354	2.130	-0.356	1.837
L49	22.000-21.250	0.357	2.975	0.254	2.572
L50	21.250-21.000	0.358	2.980	0.255	2.576
L51	21.000-17.000	-0.560	2.614	-0.447	2.310
L52	17.000-16.750	-0.851	2.513	-0.675	2.235
L53	16.750-16.250	-0.852	2.516	-0.677	2.238
L54	16.250-16.000	-0.854	2.520	-0.678	2.240
L55	16.000-11.000	-2.215	1.548	-1.891	1.348
L56	11.000-6.000	-2.622	1.304	-2.247	1.123
L57	6.000-1.000	-2.666	1.326	-2.284	1.140
L58	1.000-0.000	-2.691	1.339	-2.307	1.148

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

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L7	27	PL 3.125"x1.25"	125.75 - 127.00	1.0000	1.0000
L7	28	PL 3.125"x1.25"	125.75 - 127.00	1.0000	1.0000
L7	29	PL 3.125"x1.25"	125.75 - 127.00	1.0000	1.0000
L8	27	PL 3.125"x1.25"	125.50 - 125.75	1.0000	1.0000
L8	28	PL 3.125"x1.25"	125.50 - 125.75	1.0000	1.0000
L8	29	PL 3.125"x1.25"	125.50 - 125.75	1.0000	1.0000
L9	27	PL 3.125"x1.25"	119.12 - 125.50	1.0000	1.0000
L9	28	PL 3.125"x1.25"	119.12 - 125.50	1.0000	1.0000
L9	29	PL 3.125"x1.25"	119.12 - 125.50	1.0000	1.0000
L10	23	PL 4.375"x1.25"	117.87 - 119.00	1.0000	1.0000
L10	24	PL 4.375"x1.25"	117.87 - 119.00	1.0000	1.0000
L10	25	PL 4.375"x1.25"	117.87 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			119.00		
L10	27	PL 3.125"x1.25"	119.00 - 119.12	1.0000	1.0000
L10	28	PL 3.125"x1.25"	119.00 - 119.12	1.0000	1.0000
L10	29	PL 3.125"x1.25"	119.00 - 119.12	1.0000	1.0000
L11	23	PL 4.375"x1.25"	117.75 - 117.87	1.0000	1.0000
L11	24	PL 4.375"x1.25"	117.75 - 117.87	1.0000	1.0000
L11	25	PL 4.375"x1.25"	117.75 - 117.87	1.0000	1.0000
L12	23	PL 4.375"x1.25"	117.50 - 117.75	1.0000	1.0000
L12	24	PL 4.375"x1.25"	117.50 - 117.75	1.0000	1.0000
L12	25	PL 4.375"x1.25"	117.50 - 117.75	1.0000	1.0000
L13	23	PL 4.375"x1.25"	112.50 - 117.50	1.0000	1.0000
L13	24	PL 4.375"x1.25"	112.50 - 117.50	1.0000	1.0000
L13	25	PL 4.375"x1.25"	112.50 - 117.50	1.0000	1.0000
L14	23	PL 4.375"x1.25"	107.50 - 112.50	1.0000	1.0000
L14	24	PL 4.375"x1.25"	107.50 - 112.50	1.0000	1.0000
L14	25	PL 4.375"x1.25"	107.50 - 112.50	1.0000	1.0000
L15	23	PL 4.375"x1.25"	103.00 - 107.50	1.0000	1.0000
L15	24	PL 4.375"x1.25"	103.00 - 107.50	1.0000	1.0000
L15	25	PL 4.375"x1.25"	103.00 - 107.50	1.0000	1.0000
L15	44	CCI 6" x 1" Plate	103.00 - 105.00	1.0000	1.0000
L15	45	CCI 6" x 1" Plate	103.00 - 105.00	1.0000	1.0000
L16	23	PL 4.375"x1.25"	102.75 - 103.00	1.0000	1.0000
L16	24	PL 4.375"x1.25"	102.75 - 103.00	1.0000	1.0000
L16	25	PL 4.375"x1.25"	102.75 - 103.00	1.0000	1.0000
L16	44	CCI 6" x 1" Plate	102.75 - 103.00	1.0000	1.0000
L16	45	CCI 6" x 1" Plate	102.75 - 103.00	1.0000	1.0000
L17	23	PL 4.375"x1.25"	100.21 - 102.75	1.0000	1.0000
L17	24	PL 4.375"x1.25"	100.21 - 102.75	1.0000	1.0000
L17	25	PL 4.375"x1.25"	100.21 - 102.75	1.0000	1.0000
L17	44	CCI 6" x 1" Plate	100.21 - 102.75	1.0000	1.0000
L17	45	CCI 6" x 1" Plate	100.21 - 102.75	1.0000	1.0000
L17	46	CCI 6" x 1" Plate	100.21 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			102.21		
L18	23	PL 4.375"x1.25"	95.83 - 100.21	1.0000	1.0000
L18	24	PL 4.375"x1.25"	95.83 - 100.21	1.0000	1.0000
L18	25	PL 4.375"x1.25"	95.83 - 100.21	1.0000	1.0000
L18	44	CCI 6" x 1" Plate	95.83 - 100.21	1.0000	1.0000
L18	45	CCI 6" x 1" Plate	95.83 - 100.21	1.0000	1.0000
L18	46	CCI 6" x 1" Plate	95.83 - 100.21	1.0000	1.0000
L19	23	PL 4.375"x1.25"	94.83 - 95.83	1.0000	1.0000
L19	24	PL 4.375"x1.25"	94.83 - 95.83	1.0000	1.0000
L19	25	PL 4.375"x1.25"	94.83 - 95.83	1.0000	1.0000
L19	44	CCI 6" x 1" Plate	94.83 - 95.83	1.0000	1.0000
L19	45	CCI 6" x 1" Plate	94.83 - 95.83	1.0000	1.0000
L19	46	CCI 6" x 1" Plate	94.83 - 95.83	1.0000	1.0000
L19	48	CCI 4.5" x 1" Plate	94.83 - 95.00	1.0000	1.0000
L19	49	CCI 4.5" x 1" Plate	94.83 - 95.00	1.0000	1.0000
L19	50	CCI 4.5" x 1" Plate	94.83 - 95.00	1.0000	1.0000
L20	23	PL 4.375"x1.25"	93.50 - 94.83	1.0000	1.0000
L20	24	PL 4.375"x1.25"	93.50 - 94.83	1.0000	1.0000
L20	25	PL 4.375"x1.25"	93.50 - 94.83	1.0000	1.0000
L20	44	CCI 6" x 1" Plate	93.50 - 94.83	1.0000	1.0000
L20	45	CCI 6" x 1" Plate	93.50 - 94.83	1.0000	1.0000
L20	46	CCI 6" x 1" Plate	93.50 - 94.83	1.0000	1.0000
L20	48	CCI 4.5" x 1" Plate	93.50 - 94.83	1.0000	1.0000
L20	49	CCI 4.5" x 1" Plate	93.50 - 94.83	1.0000	1.0000
L20	50	CCI 4.5" x 1" Plate	93.50 - 94.83	1.0000	1.0000
L21	23	PL 4.375"x1.25"	93.25 - 93.50	1.0000	1.0000
L21	24	PL 4.375"x1.25"	93.25 - 93.50	1.0000	1.0000
L21	25	PL 4.375"x1.25"	93.25 - 93.50	1.0000	1.0000
L21	44	CCI 6" x 1" Plate	93.25 - 93.50	1.0000	1.0000
L21	45	CCI 6" x 1" Plate	93.25 - 93.50	1.0000	1.0000
L21	46	CCI 6" x 1" Plate	93.25 - 93.50	1.0000	1.0000
L21	48	CCI 4.5" x 1" Plate	93.25 - 93.50	1.0000	1.0000
L21	49	CCI 4.5" x 1" Plate	93.25 - 93.50	1.0000	1.0000
L21	50	CCI 4.5" x 1" Plate	93.25 - 93.50	1.0000	1.0000
L22	19	PL 5.375"x1.25"	88.25 - 89.25	1.0000	1.0000
L22	20	PL 5.375"x1.25"	88.25 - 89.25	1.0000	1.0000
L22	21	PL 5.375"x1.25"	88.25 - 89.25	1.0000	1.0000
L22	23	PL 4.375"x1.25"	89.25 - 93.25	1.0000	1.0000
L22	24	PL 4.375"x1.25"	89.25 - 93.25	1.0000	1.0000
L22	25	PL 4.375"x1.25"	89.25 - 93.25	1.0000	1.0000
L22	44	CCI 6" x 1" Plate	88.25 - 93.25	1.0000	1.0000
L22	45	CCI 6" x 1" Plate	88.25 - 93.25	1.0000	1.0000
L22	46	CCI 6" x 1" Plate	88.25 - 93.25	1.0000	1.0000
L22	48	CCI 4.5" x 1" Plate	88.25 - 93.25	1.0000	1.0000
L22	49	CCI 4.5" x 1" Plate	88.25 - 93.25	1.0000	1.0000
L22	50	CCI 4.5" x 1" Plate	88.25 - 93.25	1.0000	1.0000
L23	19	PL 5.375"x1.25"	87.25 - 88.25	1.0000	1.0000
L23	20	PL 5.375"x1.25"	87.25 - 88.25	1.0000	1.0000
L23	21	PL 5.375"x1.25"	87.25 - 88.25	1.0000	1.0000
L23	44	CCI 6" x 1" Plate	87.25 - 88.25	1.0000	1.0000
L23	45	CCI 6" x 1" Plate	87.25 - 88.25	1.0000	1.0000
L23	46	CCI 6" x 1" Plate	87.25 - 88.25	1.0000	1.0000
L23	48	CCI 4.5" x 1" Plate	87.25 - 88.25	1.0000	1.0000
L23	49	CCI 4.5" x 1" Plate	87.25 - 88.25	1.0000	1.0000
L23	50	CCI 4.5" x 1" Plate	87.25 - 88.25	1.0000	1.0000
L24	19	PL 5.375"x1.25"	87.00 - 87.25	1.0000	1.0000
L24	20	PL 5.375"x1.25"	87.00 - 87.25	1.0000	1.0000
L24	21	PL 5.375"x1.25"	87.00 - 87.25	1.0000	1.0000
L24	44	CCI 6" x 1" Plate	87.00 - 87.25	1.0000	1.0000
L24	45	CCI 6" x 1" Plate	87.00 - 87.25	1.0000	1.0000
L24	46	CCI 6" x 1" Plate	87.00 - 87.25	1.0000	1.0000
L24	48	CCI 4.5" x 1" Plate	87.00 - 87.25	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L24	49	CCI 4.5" x 1" Plate	87.00 - 87.25	1.0000	1.0000
L24	50	CCI 4.5" x 1" Plate	87.00 - 87.25	1.0000	1.0000
L25	19	PL 5.375"x1.25"	86.50 - 87.00	1.0000	1.0000
L25	20	PL 5.375"x1.25"	86.50 - 87.00	1.0000	1.0000
L25	21	PL 5.375"x1.25"	86.50 - 87.00	1.0000	1.0000
L25	44	CCI 6" x 1" Plate	86.50 - 87.00	1.0000	1.0000
L25	45	CCI 6" x 1" Plate	86.50 - 87.00	1.0000	1.0000
L25	46	CCI 6" x 1" Plate	86.50 - 87.00	1.0000	1.0000
L25	48	CCI 4.5" x 1" Plate	86.50 - 87.00	1.0000	1.0000
L25	49	CCI 4.5" x 1" Plate	86.50 - 87.00	1.0000	1.0000
L25	50	CCI 4.5" x 1" Plate	86.50 - 87.00	1.0000	1.0000
L26	19	PL 5.375"x1.25"	86.25 - 86.50	1.0000	1.0000
L26	20	PL 5.375"x1.25"	86.25 - 86.50	1.0000	1.0000
L26	21	PL 5.375"x1.25"	86.25 - 86.50	1.0000	1.0000
L26	44	CCI 6" x 1" Plate	86.25 - 86.50	1.0000	1.0000
L26	45	CCI 6" x 1" Plate	86.25 - 86.50	1.0000	1.0000
L26	46	CCI 6" x 1" Plate	86.25 - 86.50	1.0000	1.0000
L26	48	CCI 4.5" x 1" Plate	86.25 - 86.50	1.0000	1.0000
L26	49	CCI 4.5" x 1" Plate	86.25 - 86.50	1.0000	1.0000
L26	50	CCI 4.5" x 1" Plate	86.25 - 86.50	1.0000	1.0000
L27	19	PL 5.375"x1.25"	81.25 - 86.25	1.0000	1.0000
L27	20	PL 5.375"x1.25"	81.25 - 86.25	1.0000	1.0000
L27	21	PL 5.375"x1.25"	81.25 - 86.25	1.0000	1.0000
L27	44	CCI 6" x 1" Plate	81.25 - 86.25	1.0000	1.0000
L27	45	CCI 6" x 1" Plate	81.25 - 86.25	1.0000	1.0000
L27	46	CCI 6" x 1" Plate	81.25 - 86.25	1.0000	1.0000
L27	48	CCI 4.5" x 1" Plate	85.00 - 86.25	1.0000	1.0000
L27	49	CCI 4.5" x 1" Plate	85.00 - 86.25	1.0000	1.0000
L27	50	CCI 4.5" x 1" Plate	85.00 - 86.25	1.0000	1.0000
L28	19	PL 5.375"x1.25"	76.25 - 81.25	1.0000	1.0000
L28	20	PL 5.375"x1.25"	76.25 - 81.25	1.0000	1.0000
L28	21	PL 5.375"x1.25"	76.25 - 81.25	1.0000	1.0000
L28	35	MP3-03	76.25 - 76.58	1.0000	1.0000
L28	36	MP3-03	76.25 - 76.58	1.0000	1.0000
L28	37	MP3-03	76.25 - 76.58	1.0000	1.0000
L28	44	CCI 6" x 1" Plate	76.25 - 81.25	1.0000	1.0000
L28	45	CCI 6" x 1" Plate	76.25 - 81.25	1.0000	1.0000
L28	46	CCI 6" x 1" Plate	76.25 - 81.25	1.0000	1.0000
L29	19	PL 5.375"x1.25"	75.42 - 76.25	1.0000	1.0000
L29	20	PL 5.375"x1.25"	75.42 - 76.25	1.0000	1.0000
L29	21	PL 5.375"x1.25"	75.42 - 76.25	1.0000	1.0000
L29	35	MP3-03	75.42 - 76.25	1.0000	1.0000
L29	36	MP3-03	75.42 - 76.25	1.0000	1.0000
L29	37	MP3-03	75.42 - 76.25	1.0000	1.0000
L29	44	CCI 6" x 1" Plate	75.42 - 76.25	1.0000	1.0000
L29	45	CCI 6" x 1" Plate	75.42 - 76.25	1.0000	1.0000
L29	46	CCI 6" x 1" Plate	75.42 - 76.25	1.0000	1.0000
L30	19	PL 5.375"x1.25"	75.17 - 75.42	1.0000	1.0000
L30	20	PL 5.375"x1.25"	75.17 - 75.42	1.0000	1.0000
L30	21	PL 5.375"x1.25"	75.17 - 75.42	1.0000	1.0000
L30	35	MP3-03	75.17 - 75.42	1.0000	1.0000
L30	36	MP3-03	75.17 - 75.42	1.0000	1.0000
L30	37	MP3-03	75.17 - 75.42	1.0000	1.0000
L30	44	CCI 6" x 1" Plate	75.17 - 75.42	1.0000	1.0000
L30	45	CCI 6" x 1" Plate	75.17 - 75.42	1.0000	1.0000
L30	46	CCI 6" x 1" Plate	75.17 - 75.42	1.0000	1.0000
L31	19	PL 5.375"x1.25"	70.17 - 75.17	1.0000	1.0000
L31	20	PL 5.375"x1.25"	70.17 - 75.17	1.0000	1.0000
L31	21	PL 5.375"x1.25"	70.17 - 75.17	1.0000	1.0000
L31	35	MP3-03	70.17 - 75.17	1.0000	1.0000
L31	36	MP3-03	70.17 - 75.17	1.0000	1.0000
L31	37	MP3-03	70.17 - 75.17	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L31	44	CCI 6" x 1" Plate	70.17 - 75.17	1.0000	1.0000
L31	45	CCI 6" x 1" Plate	70.17 - 75.17	1.0000	1.0000
L31	46	CCI 6" x 1" Plate	70.17 - 75.17	1.0000	1.0000
L32	19	PL 5.375"x1.25"	65.17 - 70.17	1.0000	1.0000
L32	20	PL 5.375"x1.25"	65.17 - 70.17	1.0000	1.0000
L32	21	PL 5.375"x1.25"	65.17 - 70.17	1.0000	1.0000
L32	35	MP3-03	65.17 - 70.17	1.0000	1.0000
L32	36	MP3-03	65.17 - 70.17	1.0000	1.0000
L32	37	MP3-03	65.17 - 70.17	1.0000	1.0000
L32	44	CCI 6" x 1" Plate	65.17 - 70.17	1.0000	1.0000
L32	45	CCI 6" x 1" Plate	65.17 - 70.17	1.0000	1.0000
L32	46	CCI 6" x 1" Plate	65.17 - 70.17	1.0000	1.0000
L33	19	PL 5.375"x1.25"	60.17 - 65.17	1.0000	1.0000
L33	20	PL 5.375"x1.25"	60.17 - 65.17	1.0000	1.0000
L33	21	PL 5.375"x1.25"	60.17 - 65.17	1.0000	1.0000
L33	35	MP3-03	60.17 - 65.17	1.0000	1.0000
L33	36	MP3-03	60.17 - 65.17	1.0000	1.0000
L33	37	MP3-03	60.17 - 65.17	1.0000	1.0000
L33	44	CCI 6" x 1" Plate	60.17 - 65.17	1.0000	1.0000
L33	45	CCI 6" x 1" Plate	60.17 - 65.17	1.0000	1.0000
L33	46	CCI 6" x 1" Plate	60.17 - 65.17	1.0000	1.0000
L34	19	PL 5.375"x1.25"	57.00 - 60.17	1.0000	1.0000
L34	20	PL 5.375"x1.25"	57.00 - 60.17	1.0000	1.0000
L34	21	PL 5.375"x1.25"	57.00 - 60.17	1.0000	1.0000
L34	35	MP3-03	57.00 - 60.17	1.0000	1.0000
L34	36	MP3-03	57.00 - 60.17	1.0000	1.0000
L34	37	MP3-03	57.00 - 60.17	1.0000	1.0000
L34	44	CCI 6" x 1" Plate	57.00 - 60.17	1.0000	1.0000
L34	45	CCI 6" x 1" Plate	57.00 - 60.17	1.0000	1.0000
L34	46	CCI 6" x 1" Plate	57.00 - 60.17	1.0000	1.0000
L35	19	PL 5.375"x1.25"	56.75 - 57.00	1.0000	1.0000
L35	20	PL 5.375"x1.25"	56.75 - 57.00	1.0000	1.0000
L35	21	PL 5.375"x1.25"	56.75 - 57.00	1.0000	1.0000
L35	35	MP3-03	56.75 - 57.00	1.0000	1.0000
L35	36	MP3-03	56.75 - 57.00	1.0000	1.0000
L35	37	MP3-03	56.75 - 57.00	1.0000	1.0000
L35	44	CCI 6" x 1" Plate	56.75 - 57.00	1.0000	1.0000
L35	45	CCI 6" x 1" Plate	56.75 - 57.00	1.0000	1.0000
L35	46	CCI 6" x 1" Plate	56.75 - 57.00	1.0000	1.0000
L36	19	PL 5.375"x1.25"	53.00 - 56.75	1.0000	1.0000
L36	20	PL 5.375"x1.25"	53.00 - 56.75	1.0000	1.0000
L36	21	PL 5.375"x1.25"	53.00 - 56.75	1.0000	1.0000
L36	35	MP3-03	53.00 - 56.75	1.0000	1.0000
L36	36	MP3-03	53.00 - 56.75	1.0000	1.0000
L36	37	MP3-03	53.00 - 56.75	1.0000	1.0000
L36	43	CCI 6" x 1" Plate	53.00 - 55.00	1.0000	1.0000
L36	44	CCI 6" x 1" Plate	53.00 - 56.75	1.0000	1.0000
L36	45	CCI 6" x 1" Plate	53.00 - 56.75	1.0000	1.0000
L36	46	CCI 6" x 1" Plate	53.00 - 56.75	1.0000	1.0000
L37	19	PL 5.375"x1.25"	47.20 - 53.00	1.0000	1.0000
L37	20	PL 5.375"x1.25"	47.20 - 53.00	1.0000	1.0000
L37	21	PL 5.375"x1.25"	47.20 - 53.00	1.0000	1.0000
L37	35	MP3-03	47.20 - 53.00	1.0000	1.0000
L37	36	MP3-03	47.20 - 53.00	1.0000	1.0000
L37	37	MP3-03	47.20 - 53.00	1.0000	1.0000
L37	43	CCI 6" x 1" Plate	47.20 - 53.00	1.0000	1.0000
L37	44	CCI 6" x 1" Plate	47.20 - 53.00	1.0000	1.0000
L37	45	CCI 6" x 1" Plate	47.20 - 53.00	1.0000	1.0000
L37	46	CCI 6" x 1" Plate	47.21 - 53.00	1.0000	1.0000
L38	19	PL 5.375"x1.25"	46.20 - 47.20	1.0000	1.0000
L38	20	PL 5.375"x1.25"	46.20 - 47.20	1.0000	1.0000
L38	21	PL 5.375"x1.25"	46.20 - 47.20	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L38	35	MP3-03	46.20 - 47.20	1.0000	1.0000
L38	36	MP3-03	46.20 - 47.20	1.0000	1.0000
L38	37	MP3-03	46.20 - 47.20	1.0000	1.0000
L38	43	CCI 6" x 1" Plate	46.20 - 47.20	1.0000	1.0000
L38	44	CCI 6" x 1" Plate	46.20 - 47.20	1.0000	1.0000
L38	45	CCI 6" x 1" Plate	46.20 - 47.20	1.0000	1.0000
L39	19	PL 5.375"x1.25"	41.20 - 46.20	1.0000	1.0000
L39	20	PL 5.375"x1.25"	41.20 - 46.20	1.0000	1.0000
L39	21	PL 5.375"x1.25"	41.20 - 46.20	1.0000	1.0000
L39	35	MP3-03	41.20 - 46.20	1.0000	1.0000
L39	36	MP3-03	41.20 - 46.20	1.0000	1.0000
L39	37	MP3-03	41.20 - 46.20	1.0000	1.0000
L39	43	CCI 6" x 1" Plate	41.20 - 46.20	1.0000	1.0000
L39	44	CCI 6" x 1" Plate	41.20 - 46.20	1.0000	1.0000
L39	45	CCI 6" x 1" Plate	41.20 - 46.20	1.0000	1.0000
L40	19	PL 5.375"x1.25"	39.33 - 41.20	1.0000	1.0000
L40	20	PL 5.375"x1.25"	39.33 - 41.20	1.0000	1.0000
L40	21	PL 5.375"x1.25"	39.33 - 41.20	1.0000	1.0000
L40	31	MP3-03	39.33 - 40.50	1.0000	1.0000
L40	32	MP3-03	39.33 - 40.50	1.0000	1.0000
L40	33	MP3-03	39.33 - 40.50	1.0000	1.0000
L40	35	MP3-03	39.33 - 41.20	1.0000	1.0000
L40	36	MP3-03	39.33 - 41.20	1.0000	1.0000
L40	37	MP3-03	39.33 - 41.20	1.0000	1.0000
L40	43	CCI 6" x 1" Plate	39.33 - 41.20	1.0000	1.0000
L40	44	CCI 6" x 1" Plate	39.33 - 41.20	1.0000	1.0000
L40	45	CCI 6" x 1" Plate	39.33 - 41.20	1.0000	1.0000
L41	19	PL 5.375"x1.25"	39.08 - 39.33	1.0000	1.0000
L41	20	PL 5.375"x1.25"	39.08 - 39.33	1.0000	1.0000
L41	21	PL 5.375"x1.25"	39.08 - 39.33	1.0000	1.0000
L41	31	MP3-03	39.08 - 39.33	1.0000	1.0000
L41	32	MP3-03	39.08 - 39.33	1.0000	1.0000
L41	33	MP3-03	39.08 - 39.33	1.0000	1.0000
L41	35	MP3-03	39.08 - 39.33	1.0000	1.0000
L41	36	MP3-03	39.08 - 39.33	1.0000	1.0000
L41	37	MP3-03	39.08 - 39.33	1.0000	1.0000
L41	43	CCI 6" x 1" Plate	39.08 - 39.33	1.0000	1.0000
L41	44	CCI 6" x 1" Plate	39.08 - 39.33	1.0000	1.0000
L41	45	CCI 6" x 1" Plate	39.08 - 39.33	1.0000	1.0000
L42	19	PL 5.375"x1.25"	37.75 - 39.08	1.0000	1.0000
L42	20	PL 5.375"x1.25"	37.75 - 39.08	1.0000	1.0000
L42	21	PL 5.375"x1.25"	37.75 - 39.08	1.0000	1.0000
L42	31	MP3-03	37.75 - 39.08	1.0000	1.0000
L42	32	MP3-03	37.75 - 39.08	1.0000	1.0000
L42	33	MP3-03	37.75 - 39.08	1.0000	1.0000
L42	35	MP3-03	37.75 - 39.08	1.0000	1.0000
L42	36	MP3-03	37.75 - 39.08	1.0000	1.0000
L42	37	MP3-03	37.75 - 39.08	1.0000	1.0000
L42	43	CCI 6" x 1" Plate	37.75 - 39.08	1.0000	1.0000
L42	44	CCI 6" x 1" Plate	37.75 - 39.08	1.0000	1.0000
L42	45	CCI 6" x 1" Plate	37.75 - 39.08	1.0000	1.0000
L43	19	PL 5.375"x1.25"	37.50 - 37.75	1.0000	1.0000
L43	20	PL 5.375"x1.25"	37.50 - 37.75	1.0000	1.0000
L43	21	PL 5.375"x1.25"	37.50 - 37.75	1.0000	1.0000
L43	31	MP3-03	37.50 - 37.75	1.0000	1.0000
L43	32	MP3-03	37.50 - 37.75	1.0000	1.0000
L43	33	MP3-03	37.50 - 37.75	1.0000	1.0000
L43	35	MP3-03	37.50 - 37.75	1.0000	1.0000
L43	36	MP3-03	37.50 - 37.75	1.0000	1.0000
L43	37	MP3-03	37.50 - 37.75	1.0000	1.0000
L43	43	CCI 6" x 1" Plate	37.50 - 37.75	1.0000	1.0000
L43	44	CCI 6" x 1" Plate	37.50 - 37.75	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L43	45	CCI 6" x 1" Plate	37.50 - 37.75	1.0000	1.0000
L44	19	PL 5.375"x1.25"	32.50 - 37.50	1.0000	1.0000
L44	20	PL 5.375"x1.25"	32.50 - 37.50	1.0000	1.0000
L44	21	PL 5.375"x1.25"	32.50 - 37.50	1.0000	1.0000
L44	31	MP3-03	32.50 - 37.50	1.0000	1.0000
L44	32	MP3-03	32.50 - 37.50	1.0000	1.0000
L44	33	MP3-03	32.50 - 37.50	1.0000	1.0000
L44	35	MP3-03	36.58 - 37.50	1.0000	1.0000
L44	36	MP3-03	36.58 - 37.50	1.0000	1.0000
L44	37	MP3-03	36.58 - 37.50	1.0000	1.0000
L44	43	CCI 6" x 1" Plate	32.50 - 37.50	1.0000	1.0000
L44	44	CCI 6" x 1" Plate	32.50 - 37.50	1.0000	1.0000
L44	45	CCI 6" x 1" Plate	32.50 - 37.50	1.0000	1.0000
L45	19	PL 5.375"x1.25"	27.50 - 32.50	1.0000	1.0000
L45	20	PL 5.375"x1.25"	27.50 - 32.50	1.0000	1.0000
L45	21	PL 5.375"x1.25"	27.50 - 32.50	1.0000	1.0000
L45	31	MP3-03	27.50 - 32.50	1.0000	1.0000
L45	32	MP3-03	27.50 - 32.50	1.0000	1.0000
L45	33	MP3-03	27.50 - 32.50	1.0000	1.0000
L45	43	CCI 6" x 1" Plate	27.50 - 32.50	1.0000	1.0000
L45	44	CCI 6" x 1" Plate	27.50 - 32.50	1.0000	1.0000
L45	45	CCI 6" x 1" Plate	27.50 - 32.50	1.0000	1.0000
L46	19	PL 5.375"x1.25"	27.25 - 27.50	1.0000	1.0000
L46	20	PL 5.375"x1.25"	27.25 - 27.50	1.0000	1.0000
L46	21	PL 5.375"x1.25"	27.25 - 27.50	1.0000	1.0000
L46	31	MP3-03	27.25 - 27.50	1.0000	1.0000
L46	32	MP3-03	27.25 - 27.50	1.0000	1.0000
L46	33	MP3-03	27.25 - 27.50	1.0000	1.0000
L46	43	CCI 6" x 1" Plate	27.25 - 27.50	1.0000	1.0000
L46	44	CCI 6" x 1" Plate	27.25 - 27.50	1.0000	1.0000
L46	45	CCI 6" x 1" Plate	27.25 - 27.50	1.0000	1.0000
L47	19	PL 5.375"x1.25"	27.00 - 27.25	1.0000	1.0000
L47	20	PL 5.375"x1.25"	27.00 - 27.25	1.0000	1.0000
L47	21	PL 5.375"x1.25"	27.00 - 27.25	1.0000	1.0000
L47	31	MP3-03	27.00 - 27.25	1.0000	1.0000
L47	32	MP3-03	27.00 - 27.25	1.0000	1.0000
L47	33	MP3-03	27.00 - 27.25	1.0000	1.0000
L47	43	CCI 6" x 1" Plate	27.00 - 27.25	1.0000	1.0000
L47	44	CCI 6" x 1" Plate	27.00 - 27.25	1.0000	1.0000
L47	45	CCI 6" x 1" Plate	27.00 - 27.25	1.0000	1.0000
L48	19	PL 5.375"x1.25"	22.00 - 27.00	1.0000	1.0000
L48	20	PL 5.375"x1.25"	22.00 - 27.00	1.0000	1.0000
L48	21	PL 5.375"x1.25"	22.00 - 27.00	1.0000	1.0000
L48	31	MP3-03	22.00 - 27.00	1.0000	1.0000
L48	32	MP3-03	22.00 - 27.00	1.0000	1.0000
L48	33	MP3-03	22.00 - 27.00	1.0000	1.0000
L48	41	CCI 8.5" x 1.25" Plate	22.00 - 25.00	1.0000	1.0000
L48	43	CCI 6" x 1" Plate	22.00 - 27.00	1.0000	1.0000
L48	44	CCI 6" x 1" Plate	22.00 - 27.00	1.0000	1.0000
L48	45	CCI 6" x 1" Plate	22.00 - 27.00	1.0000	1.0000
L49	19	PL 5.375"x1.25"	21.25 - 22.00	1.0000	1.0000
L49	20	PL 5.375"x1.25"	21.25 - 22.00	1.0000	1.0000
L49	21	PL 5.375"x1.25"	21.25 - 22.00	1.0000	1.0000
L49	31	MP3-03	21.25 - 22.00	1.0000	1.0000
L49	32	MP3-03	21.25 - 22.00	1.0000	1.0000
L49	33	MP3-03	21.25 - 22.00	1.0000	1.0000
L49	41	CCI 8.5" x 1.25" Plate	21.25 - 22.00	1.0000	1.0000
L49	43	CCI 6" x 1" Plate	21.25 - 22.00	1.0000	1.0000
L49	44	CCI 6" x 1" Plate	21.25 - 22.00	1.0000	1.0000
L49	45	CCI 6" x 1" Plate	21.25 - 22.00	1.0000	1.0000
L50	19	PL 5.375"x1.25"	21.00 - 21.25	1.0000	1.0000
L50	20	PL 5.375"x1.25"	21.00 - 21.25	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L50	21	PL 5.375"x1.25"	21.00 - 21.25	1.0000	1.0000
L50	31	MP3-03	21.00 - 21.25	1.0000	1.0000
L50	32	MP3-03	21.00 - 21.25	1.0000	1.0000
L50	33	MP3-03	21.00 - 21.25	1.0000	1.0000
L50	41	CCI 8.5" x 1.25" Plate	21.00 - 21.25	1.0000	1.0000
L50	43	CCI 6" x 1" Plate	21.00 - 21.25	1.0000	1.0000
L50	44	CCI 6" x 1" Plate	21.00 - 21.25	1.0000	1.0000
L50	45	CCI 6" x 1" Plate	21.00 - 21.25	1.0000	1.0000
L51	19	PL 5.375"x1.25"	17.00 - 21.00	1.0000	1.0000
L51	20	PL 5.375"x1.25"	17.00 - 21.00	1.0000	1.0000
L51	21	PL 5.375"x1.25"	17.00 - 21.00	1.0000	1.0000
L51	31	MP3-03	17.00 - 21.00	1.0000	1.0000
L51	32	MP3-03	17.00 - 21.00	1.0000	1.0000
L51	33	MP3-03	17.00 - 21.00	1.0000	1.0000
L51	39	CCI 8.5" x 1.25" Plate	17.00 - 20.00	1.0000	1.0000
L51	40	CCI 8.5" x 1.25" Plate	17.00 - 20.00	1.0000	1.0000
L51	41	CCI 8.5" x 1.25" Plate	17.00 - 21.00	1.0000	1.0000
L51	43	CCI 6" x 1" Plate	20.00 - 21.00	1.0000	1.0000
L51	44	CCI 6" x 1" Plate	20.00 - 21.00	1.0000	1.0000
L51	45	CCI 6" x 1" Plate	17.00 - 21.00	1.0000	1.0000
L52	19	PL 5.375"x1.25"	16.75 - 17.00	1.0000	1.0000
L52	20	PL 5.375"x1.25"	16.75 - 17.00	1.0000	1.0000
L52	21	PL 5.375"x1.25"	16.75 - 17.00	1.0000	1.0000
L52	31	MP3-03	16.75 - 17.00	1.0000	1.0000
L52	32	MP3-03	16.75 - 17.00	1.0000	1.0000
L52	33	MP3-03	16.75 - 17.00	1.0000	1.0000
L52	39	CCI 8.5" x 1.25" Plate	16.75 - 17.00	1.0000	1.0000
L52	40	CCI 8.5" x 1.25" Plate	16.75 - 17.00	1.0000	1.0000
L52	41	CCI 8.5" x 1.25" Plate	16.75 - 17.00	1.0000	1.0000
L52	45	CCI 6" x 1" Plate	16.75 - 17.00	1.0000	1.0000
L53	19	PL 5.375"x1.25"	16.25 - 16.75	1.0000	1.0000
L53	20	PL 5.375"x1.25"	16.25 - 16.75	1.0000	1.0000
L53	21	PL 5.375"x1.25"	16.25 - 16.75	1.0000	1.0000
L53	31	MP3-03	16.25 - 16.75	1.0000	1.0000
L53	32	MP3-03	16.25 - 16.75	1.0000	1.0000
L53	33	MP3-03	16.25 - 16.75	1.0000	1.0000
L53	39	CCI 8.5" x 1.25" Plate	16.25 - 16.75	1.0000	1.0000
L53	40	CCI 8.5" x 1.25" Plate	16.25 - 16.75	1.0000	1.0000
L53	41	CCI 8.5" x 1.25" Plate	16.25 - 16.75	1.0000	1.0000
L53	45	CCI 6" x 1" Plate	16.25 - 16.75	1.0000	1.0000
L54	19	PL 5.375"x1.25"	16.00 - 16.25	1.0000	1.0000
L54	20	PL 5.375"x1.25"	16.00 - 16.25	1.0000	1.0000
L54	21	PL 5.375"x1.25"	16.00 - 16.25	1.0000	1.0000
L54	31	MP3-03	16.00 - 16.25	1.0000	1.0000
L54	32	MP3-03	16.00 - 16.25	1.0000	1.0000
L54	33	MP3-03	16.00 - 16.25	1.0000	1.0000
L54	39	CCI 8.5" x 1.25" Plate	16.00 - 16.25	1.0000	1.0000
L54	40	CCI 8.5" x 1.25" Plate	16.00 - 16.25	1.0000	1.0000
L54	41	CCI 8.5" x 1.25" Plate	16.00 - 16.25	1.0000	1.0000
L54	45	CCI 6" x 1" Plate	16.00 - 16.25	1.0000	1.0000
L55	19	PL 5.375"x1.25"	11.00 - 16.00	1.0000	1.0000
L55	20	PL 5.375"x1.25"	11.00 - 16.00	1.0000	1.0000
L55	21	PL 5.375"x1.25"	11.00 - 16.00	1.0000	1.0000
L55	31	MP3-03	11.00 - 16.00	1.0000	1.0000
L55	32	MP3-03	11.00 - 16.00	1.0000	1.0000
L55	33	MP3-03	11.00 - 16.00	1.0000	1.0000
L55	39	CCI 8.5" x 1.25" Plate	11.00 - 16.00	1.0000	1.0000
L55	40	CCI 8.5" x 1.25" Plate	11.00 - 16.00	1.0000	1.0000
L55	41	CCI 8.5" x 1.25" Plate	11.00 - 16.00	1.0000	1.0000
L55	45	CCI 6" x 1" Plate	15.00 - 16.00	1.0000	1.0000
L56	19	PL 5.375"x1.25"	6.00 - 11.00	1.0000	1.0000
L56	20	PL 5.375"x1.25"	6.00 - 11.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L56	21	PL 5.375"x1.25"	6.00 - 11.00	1.0000	1.0000
L56	31	MP3-03	6.00 - 11.00	1.0000	1.0000
L56	32	MP3-03	6.00 - 11.00	1.0000	1.0000
L56	33	MP3-03	6.00 - 11.00	1.0000	1.0000
L56	39	CCI 8.5" x 1.25" Plate	6.00 - 11.00	1.0000	1.0000
L56	40	CCI 8.5" x 1.25" Plate	6.00 - 11.00	1.0000	1.0000
L56	41	CCI 8.5" x 1.25" Plate	6.00 - 11.00	1.0000	1.0000
L57	19	PL 5.375"x1.25"	1.00 - 6.00	1.0000	1.0000
L57	20	PL 5.375"x1.25"	1.00 - 6.00	1.0000	1.0000
L57	21	PL 5.375"x1.25"	1.00 - 6.00	1.0000	1.0000
L57	31	MP3-03	1.00 - 6.00	1.0000	1.0000
L57	32	MP3-03	1.00 - 6.00	1.0000	1.0000
L57	33	MP3-03	1.00 - 6.00	1.0000	1.0000
L57	39	CCI 8.5" x 1.25" Plate	1.00 - 6.00	1.0000	1.0000
L57	40	CCI 8.5" x 1.25" Plate	1.00 - 6.00	1.0000	1.0000
L57	41	CCI 8.5" x 1.25" Plate	1.00 - 6.00	1.0000	1.0000
L58	19	PL 5.375"x1.25"	0.00 - 1.00	1.0000	1.0000
L58	20	PL 5.375"x1.25"	0.00 - 1.00	1.0000	1.0000
L58	21	PL 5.375"x1.25"	0.00 - 1.00	1.0000	1.0000
L58	31	MP3-03	0.00 - 1.00	1.0000	1.0000
L58	32	MP3-03	0.00 - 1.00	1.0000	1.0000
L58	33	MP3-03	0.00 - 1.00	1.0000	1.0000
L58	39	CCI 8.5" x 1.25" Plate	0.00 - 1.00	1.0000	1.0000
L58	40	CCI 8.5" x 1.25" Plate	0.00 - 1.00	1.0000	1.0000
L58	41	CCI 8.5" x 1.25" Plate	0.00 - 1.00	1.0000	1.0000

Effective Width of Flat Linear Attachments / Feed Lines

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L7	27	PL 3.125"x1.25"	125.75 - 127.00	Auto	0.0000
L7	28	PL 3.125"x1.25"	125.75 - 127.00	Auto	0.0000
L7	29	PL 3.125"x1.25"	125.75 - 127.00	Auto	0.0000
L8	27	PL 3.125"x1.25"	125.50 - 125.75	Auto	0.0000
L8	28	PL 3.125"x1.25"	125.50 - 125.75	Auto	0.0000
L8	29	PL 3.125"x1.25"	125.50 - 125.75	Auto	0.0000
L9	27	PL 3.125"x1.25"	119.12 - 125.50	Auto	0.0000
L9	28	PL 3.125"x1.25"	119.12 - 125.50	Auto	0.0000
L9	29	PL 3.125"x1.25"	119.12 - 125.50	Auto	0.0000
L10	23	PL 4.375"x1.25"	117.87 - 119.00	Auto	0.0780
L10	24	PL 4.375"x1.25"	117.87 - 119.00	Auto	0.0780
L10	25	PL 4.375"x1.25"	117.87 -	Auto	0.0780

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
			119.00		
L10	27	PL 3.125"x1.25"	119.00 - 119.12	Auto	0.0000
L10	28	PL 3.125"x1.25"	119.00 - 119.12	Auto	0.0000
L10	29	PL 3.125"x1.25"	119.00 - 119.12	Auto	0.0000
L11	23	PL 4.375"x1.25"	117.75 - 117.87	Auto	0.0724
L11	24	PL 4.375"x1.25"	117.75 - 117.87	Auto	0.0724
L11	25	PL 4.375"x1.25"	117.75 - 117.87	Auto	0.0724
L12	23	PL 4.375"x1.25"	117.50 - 117.75	Auto	0.0708
L12	24	PL 4.375"x1.25"	117.50 - 117.75	Auto	0.0708
L12	25	PL 4.375"x1.25"	117.50 - 117.75	Auto	0.0708
L13	23	PL 4.375"x1.25"	112.50 - 117.50	Auto	0.1381
L13	24	PL 4.375"x1.25"	112.50 - 117.50	Auto	0.1381
L13	25	PL 4.375"x1.25"	112.50 - 117.50	Auto	0.1381
L14	23	PL 4.375"x1.25"	107.50 - 112.50	Auto	0.0914
L14	24	PL 4.375"x1.25"	107.50 - 112.50	Auto	0.0914
L14	25	PL 4.375"x1.25"	107.50 - 112.50	Auto	0.0914
L15	23	PL 4.375"x1.25"	103.00 - 107.50	Auto	0.0468
L15	24	PL 4.375"x1.25"	103.00 - 107.50	Auto	0.0468
L15	25	PL 4.375"x1.25"	103.00 - 107.50	Auto	0.0468
L15	44	CCI 6" x 1" Plate	103.00 - 105.00	Auto	0.2969
L15	45	CCI 6" x 1" Plate	103.00 - 105.00	Auto	0.2969
L16	23	PL 4.375"x1.25"	102.75 - 103.00	Auto	0.0610
L16	24	PL 4.375"x1.25"	102.75 - 103.00	Auto	0.0610
L16	25	PL 4.375"x1.25"	102.75 - 103.00	Auto	0.0610
L16	44	CCI 6" x 1" Plate	102.75 - 103.00	Auto	0.3153
L16	45	CCI 6" x 1" Plate	102.75 - 103.00	Auto	0.3153
L17	23	PL 4.375"x1.25"	100.21 - 102.75	Auto	0.0437
L17	24	PL 4.375"x1.25"	100.21 - 102.75	Auto	0.0437
L17	25	PL 4.375"x1.25"	100.21 - 102.75	Auto	0.0437
L17	44	CCI 6" x 1" Plate	100.21 - 102.75	Auto	0.3027
L17	45	CCI 6" x 1" Plate	100.21 - 102.75	Auto	0.3027

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L17	46	CCI 6" x 1" Plate	100.21 - 102.21	Auto	0.3009
L18	23	PL 4.375"x1.25"	95.83 - 100.21	Auto	0.0734
L18	24	PL 4.375"x1.25"	95.83 - 100.21	Auto	0.0734
L18	25	PL 4.375"x1.25"	95.83 - 100.21	Auto	0.0734
L18	44	CCI 6" x 1" Plate	95.83 - 100.21	Auto	0.3244
L18	45	CCI 6" x 1" Plate	95.83 - 100.21	Auto	0.3244
L18	46	CCI 6" x 1" Plate	95.83 - 100.21	Auto	0.3244
L19	23	PL 4.375"x1.25"	94.83 - 95.83	Auto	0.0895
L19	24	PL 4.375"x1.25"	94.83 - 95.83	Auto	0.0895
L19	25	PL 4.375"x1.25"	94.83 - 95.83	Auto	0.0895
L19	44	CCI 6" x 1" Plate	94.83 - 95.83	Auto	0.3361
L19	45	CCI 6" x 1" Plate	94.83 - 95.83	Auto	0.3361
L19	46	CCI 6" x 1" Plate	94.83 - 95.83	Auto	0.3361
L19	48	CCI 4.5" x 1" Plate	94.83 - 95.00	Auto	0.1112
L19	49	CCI 4.5" x 1" Plate	94.83 - 95.00	Auto	0.1112
L19	50	CCI 4.5" x 1" Plate	94.83 - 95.00	Auto	0.1112
L20	23	PL 4.375"x1.25"	93.50 - 94.83	Auto	0.0791
L20	24	PL 4.375"x1.25"	93.50 - 94.83	Auto	0.0791
L20	25	PL 4.375"x1.25"	93.50 - 94.83	Auto	0.0791
L20	44	CCI 6" x 1" Plate	93.50 - 94.83	Auto	0.3285
L20	45	CCI 6" x 1" Plate	93.50 - 94.83	Auto	0.3285
L20	46	CCI 6" x 1" Plate	93.50 - 94.83	Auto	0.3285
L20	48	CCI 4.5" x 1" Plate	93.50 - 94.83	Auto	0.1047
L20	49	CCI 4.5" x 1" Plate	93.50 - 94.83	Auto	0.1047
L20	50	CCI 4.5" x 1" Plate	93.50 - 94.83	Auto	0.1047
L21	23	PL 4.375"x1.25"	93.25 - 93.50	Auto	0.1425
L21	24	PL 4.375"x1.25"	93.25 - 93.50	Auto	0.1425
L21	25	PL 4.375"x1.25"	93.25 - 93.50	Auto	0.1425
L21	44	CCI 6" x 1" Plate	93.25 - 93.50	Auto	0.3747
L21	45	CCI 6" x 1" Plate	93.25 - 93.50	Auto	0.3747
L21	46	CCI 6" x 1" Plate	93.25 - 93.50	Auto	0.3747
L21	48	CCI 4.5" x 1" Plate	93.25 - 93.50	Auto	0.1663
L21	49	CCI 4.5" x 1" Plate	93.25 - 93.50	Auto	0.1663
L21	50	CCI 4.5" x 1" Plate	93.25 - 93.50	Auto	0.1663
L22	19	PL 5.375"x1.25"	88.25 - 89.25	Auto	0.2603
L22	20	PL 5.375"x1.25"	88.25 - 89.25	Auto	0.2603
L22	21	PL 5.375"x1.25"	88.25 - 89.25	Auto	0.2603
L22	23	PL 4.375"x1.25"	89.25 - 93.25	Auto	0.1135
L22	24	PL 4.375"x1.25"	89.25 - 93.25	Auto	0.1135
L22	25	PL 4.375"x1.25"	89.25 - 93.25	Auto	0.1135
L22	44	CCI 6" x 1" Plate	88.25 - 93.25	Auto	0.3503
L22	45	CCI 6" x 1" Plate	88.25 - 93.25	Auto	0.3503
L22	46	CCI 6" x 1" Plate	88.25 - 93.25	Auto	0.3503
L22	48	CCI 4.5" x 1" Plate	88.25 - 93.25	Auto	0.1338
L22	49	CCI 4.5" x 1" Plate	88.25 - 93.25	Auto	0.1338
L22	50	CCI 4.5" x 1" Plate	88.25 - 93.25	Auto	0.1338
L23	19	PL 5.375"x1.25"	87.25 - 88.25	Auto	0.2530
L23	20	PL 5.375"x1.25"	87.25 - 88.25	Auto	0.2530
L23	21	PL 5.375"x1.25"	87.25 - 88.25	Auto	0.2530
L23	44	CCI 6" x 1" Plate	87.25 - 88.25	Auto	0.3308
L23	45	CCI 6" x 1" Plate	87.25 - 88.25	Auto	0.3308
L23	46	CCI 6" x 1" Plate	87.25 - 88.25	Auto	0.3308
L23	48	CCI 4.5" x 1" Plate	87.25 - 88.25	Auto	0.1078
L23	49	CCI 4.5" x 1" Plate	87.25 - 88.25	Auto	0.1078
L23	50	CCI 4.5" x 1" Plate	87.25 - 88.25	Auto	0.1078
L24	19	PL 5.375"x1.25"	87.00 - 87.25	Auto	0.2649
L24	20	PL 5.375"x1.25"	87.00 - 87.25	Auto	0.2649
L24	21	PL 5.375"x1.25"	87.00 - 87.25	Auto	0.2649
L24	44	CCI 6" x 1" Plate	87.00 - 87.25	Auto	0.3414
L24	45	CCI 6" x 1" Plate	87.00 - 87.25	Auto	0.3414

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L24	46	CCI 6" x 1" Plate	87.00 - 87.25	Auto	0.3414
L24	48	CCI 4.5" x 1" Plate	87.00 - 87.25	Auto	0.1219
L24	49	CCI 4.5" x 1" Plate	87.00 - 87.25	Auto	0.1219
L24	50	CCI 4.5" x 1" Plate	87.00 - 87.25	Auto	0.1219
L25	19	PL 5.375"x1.25"	86.50 - 87.00	Auto	0.2581
L25	20	PL 5.375"x1.25"	86.50 - 87.00	Auto	0.2581
L25	21	PL 5.375"x1.25"	86.50 - 87.00	Auto	0.2581
L25	44	CCI 6" x 1" Plate	86.50 - 87.00	Auto	0.3353
L25	45	CCI 6" x 1" Plate	86.50 - 87.00	Auto	0.3353
L25	46	CCI 6" x 1" Plate	86.50 - 87.00	Auto	0.3353
L25	48	CCI 4.5" x 1" Plate	86.50 - 87.00	Auto	0.1138
L25	49	CCI 4.5" x 1" Plate	86.50 - 87.00	Auto	0.1138
L25	50	CCI 4.5" x 1" Plate	86.50 - 87.00	Auto	0.1138
L26	19	PL 5.375"x1.25"	86.25 - 86.50	Auto	0.2021
L26	20	PL 5.375"x1.25"	86.25 - 86.50	Auto	0.2021
L26	21	PL 5.375"x1.25"	86.25 - 86.50	Auto	0.2021
L26	44	CCI 6" x 1" Plate	86.25 - 86.50	Auto	0.2852
L26	45	CCI 6" x 1" Plate	86.25 - 86.50	Auto	0.2852
L26	46	CCI 6" x 1" Plate	86.25 - 86.50	Auto	0.2852
L26	48	CCI 4.5" x 1" Plate	86.25 - 86.50	Auto	0.0470
L26	49	CCI 4.5" x 1" Plate	86.25 - 86.50	Auto	0.0470
L26	50	CCI 4.5" x 1" Plate	86.25 - 86.50	Auto	0.0470
L27	19	PL 5.375"x1.25"	81.25 - 86.25	Auto	0.1749
L27	20	PL 5.375"x1.25"	81.25 - 86.25	Auto	0.1749
L27	21	PL 5.375"x1.25"	81.25 - 86.25	Auto	0.1749
L27	44	CCI 6" x 1" Plate	81.25 - 86.25	Auto	0.2608
L27	45	CCI 6" x 1" Plate	81.25 - 86.25	Auto	0.2608
L27	46	CCI 6" x 1" Plate	81.25 - 86.25	Auto	0.2608
L27	48	CCI 4.5" x 1" Plate	85.00 - 86.25	Auto	0.0307
L27	49	CCI 4.5" x 1" Plate	85.00 - 86.25	Auto	0.0307
L27	50	CCI 4.5" x 1" Plate	85.00 - 86.25	Auto	0.0307
L28	19	PL 5.375"x1.25"	76.25 - 81.25	Auto	0.1345
L28	20	PL 5.375"x1.25"	76.25 - 81.25	Auto	0.1345
L28	21	PL 5.375"x1.25"	76.25 - 81.25	Auto	0.1345
L28	35	MP3-03	76.25 - 76.58	Auto	0.0000
L28	36	MP3-03	76.25 - 76.58	Auto	0.0000
L28	37	MP3-03	76.25 - 76.58	Auto	0.0000
L28	44	CCI 6" x 1" Plate	76.25 - 81.25	Auto	0.2247
L28	45	CCI 6" x 1" Plate	76.25 - 81.25	Auto	0.2247
L28	46	CCI 6" x 1" Plate	76.25 - 81.25	Auto	0.2247
L29	19	PL 5.375"x1.25"	75.42 - 76.25	Auto	0.1134
L29	20	PL 5.375"x1.25"	75.42 - 76.25	Auto	0.1134
L29	21	PL 5.375"x1.25"	75.42 - 76.25	Auto	0.1134
L29	35	MP3-03	75.42 - 76.25	Auto	0.0000
L29	36	MP3-03	75.42 - 76.25	Auto	0.0000
L29	37	MP3-03	75.42 - 76.25	Auto	0.0000
L29	44	CCI 6" x 1" Plate	75.42 - 76.25	Auto	0.2057
L29	45	CCI 6" x 1" Plate	75.42 - 76.25	Auto	0.2057
L29	46	CCI 6" x 1" Plate	75.42 - 76.25	Auto	0.2057
L30	19	PL 5.375"x1.25"	75.17 - 75.42	Auto	0.1381
L30	20	PL 5.375"x1.25"	75.17 - 75.42	Auto	0.1381
L30	21	PL 5.375"x1.25"	75.17 - 75.42	Auto	0.1381
L30	35	MP3-03	75.17 - 75.42	Auto	0.0000
L30	36	MP3-03	75.17 - 75.42	Auto	0.0000
L30	37	MP3-03	75.17 - 75.42	Auto	0.0000
L30	44	CCI 6" x 1" Plate	75.17 - 75.42	Auto	0.2279
L30	45	CCI 6" x 1" Plate	75.17 - 75.42	Auto	0.2279
L30	46	CCI 6" x 1" Plate	75.17 - 75.42	Auto	0.2279
L31	19	PL 5.375"x1.25"	70.17 - 75.17	Auto	0.1150
L31	20	PL 5.375"x1.25"	70.17 - 75.17	Auto	0.1150
L31	21	PL 5.375"x1.25"	70.17 - 75.17	Auto	0.1150

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L31	35	MP3-03	70.17 - 75.17	Auto	0.0000
L31	36	MP3-03	70.17 - 75.17	Auto	0.0000
L31	37	MP3-03	70.17 - 75.17	Auto	0.0000
L31	44	CCI 6" x 1" Plate	70.17 - 75.17	Auto	0.2072
L31	45	CCI 6" x 1" Plate	70.17 - 75.17	Auto	0.2072
L31	46	CCI 6" x 1" Plate	70.17 - 75.17	Auto	0.2072
L32	19	PL 5.375"x1.25"	65.17 - 70.17	Auto	0.0746
L32	20	PL 5.375"x1.25"	65.17 - 70.17	Auto	0.0746
L32	21	PL 5.375"x1.25"	65.17 - 70.17	Auto	0.0746
L32	35	MP3-03	65.17 - 70.17	Auto	0.0000
L32	36	MP3-03	65.17 - 70.17	Auto	0.0000
L32	37	MP3-03	65.17 - 70.17	Auto	0.0000
L32	44	CCI 6" x 1" Plate	65.17 - 70.17	Auto	0.1710
L32	45	CCI 6" x 1" Plate	65.17 - 70.17	Auto	0.1710
L32	46	CCI 6" x 1" Plate	65.17 - 70.17	Auto	0.1710
L33	19	PL 5.375"x1.25"	60.17 - 65.17	Auto	0.0301
L33	20	PL 5.375"x1.25"	60.17 - 65.17	Auto	0.0301
L33	21	PL 5.375"x1.25"	60.17 - 65.17	Auto	0.0301
L33	35	MP3-03	60.17 - 65.17	Auto	0.0000
L33	36	MP3-03	60.17 - 65.17	Auto	0.0000
L33	37	MP3-03	60.17 - 65.17	Auto	0.0000
L33	44	CCI 6" x 1" Plate	60.17 - 65.17	Auto	0.1312
L33	45	CCI 6" x 1" Plate	60.17 - 65.17	Auto	0.1312
L33	46	CCI 6" x 1" Plate	60.17 - 65.17	Auto	0.1312
L34	19	PL 5.375"x1.25"	57.00 - 60.17	Auto	0.0014
L34	20	PL 5.375"x1.25"	57.00 - 60.17	Auto	0.0014
L34	21	PL 5.375"x1.25"	57.00 - 60.17	Auto	0.0014
L34	35	MP3-03	57.00 - 60.17	Auto	0.0000
L34	36	MP3-03	57.00 - 60.17	Auto	0.0000
L34	37	MP3-03	57.00 - 60.17	Auto	0.0000
L34	44	CCI 6" x 1" Plate	57.00 - 60.17	Auto	0.1010
L34	45	CCI 6" x 1" Plate	57.00 - 60.17	Auto	0.1010
L34	46	CCI 6" x 1" Plate	57.00 - 60.17	Auto	0.1010
L35	19	PL 5.375"x1.25"	56.75 - 57.00	Auto	0.0000
L35	20	PL 5.375"x1.25"	56.75 - 57.00	Auto	0.0000
L35	21	PL 5.375"x1.25"	56.75 - 57.00	Auto	0.0000
L35	35	MP3-03	56.75 - 57.00	Auto	0.0000
L35	36	MP3-03	56.75 - 57.00	Auto	0.0000
L35	37	MP3-03	56.75 - 57.00	Auto	0.0000
L35	44	CCI 6" x 1" Plate	56.75 - 57.00	Auto	0.0899
L35	45	CCI 6" x 1" Plate	56.75 - 57.00	Auto	0.0899
L35	46	CCI 6" x 1" Plate	56.75 - 57.00	Auto	0.0899
L36	19	PL 5.375"x1.25"	53.00 - 56.75	Auto	0.0000
L36	20	PL 5.375"x1.25"	53.00 - 56.75	Auto	0.0000
L36	21	PL 5.375"x1.25"	53.00 - 56.75	Auto	0.0000
L36	35	MP3-03	53.00 - 56.75	Auto	0.0000
L36	36	MP3-03	53.00 - 56.75	Auto	0.0000
L36	37	MP3-03	53.00 - 56.75	Auto	0.0000
L36	43	CCI 6" x 1" Plate	53.00 - 55.00	Auto	0.0675
L36	44	CCI 6" x 1" Plate	53.00 - 56.75	Auto	0.0732
L36	45	CCI 6" x 1" Plate	53.00 - 56.75	Auto	0.0732
L36	46	CCI 6" x 1" Plate	53.00 - 56.75	Auto	0.0732
L37	19	PL 5.375"x1.25"	47.20 - 53.00	Auto	0.0000
L37	20	PL 5.375"x1.25"	47.20 - 53.00	Auto	0.0000
L37	21	PL 5.375"x1.25"	47.20 - 53.00	Auto	0.0000
L37	35	MP3-03	47.20 - 53.00	Auto	0.0000
L37	36	MP3-03	47.20 - 53.00	Auto	0.0000
L37	37	MP3-03	47.20 - 53.00	Auto	0.0000
L37	43	CCI 6" x 1" Plate	47.20 - 53.00	Auto	0.0422
L37	44	CCI 6" x 1" Plate	47.20 - 53.00	Auto	0.0422
L37	45	CCI 6" x 1" Plate	47.20 - 53.00	Auto	0.0422

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L37	46	CCI 6" x 1" Plate	47.21 - 53.00	Auto	0.0422
L38	19	PL 5.375"x1.25"	46.20 - 47.20	Auto	0.0000
L38	20	PL 5.375"x1.25"	46.20 - 47.20	Auto	0.0000
L38	21	PL 5.375"x1.25"	46.20 - 47.20	Auto	0.0000
L38	35	MP3-03	46.20 - 47.20	Auto	0.0000
L38	36	MP3-03	46.20 - 47.20	Auto	0.0000
L38	37	MP3-03	46.20 - 47.20	Auto	0.0000
L38	43	CCI 6" x 1" Plate	46.20 - 47.20	Auto	0.0458
L38	44	CCI 6" x 1" Plate	46.20 - 47.20	Auto	0.0458
L38	45	CCI 6" x 1" Plate	46.20 - 47.20	Auto	0.0458
L39	19	PL 5.375"x1.25"	41.20 - 46.20	Auto	0.0000
L39	20	PL 5.375"x1.25"	41.20 - 46.20	Auto	0.0000
L39	21	PL 5.375"x1.25"	41.20 - 46.20	Auto	0.0000
L39	35	MP3-03	41.20 - 46.20	Auto	0.0000
L39	36	MP3-03	41.20 - 46.20	Auto	0.0000
L39	37	MP3-03	41.20 - 46.20	Auto	0.0000
L39	43	CCI 6" x 1" Plate	41.20 - 46.20	Auto	0.0226
L39	44	CCI 6" x 1" Plate	41.20 - 46.20	Auto	0.0226
L39	45	CCI 6" x 1" Plate	41.20 - 46.20	Auto	0.0226
L40	19	PL 5.375"x1.25"	39.33 - 41.20	Auto	0.0000
L40	20	PL 5.375"x1.25"	39.33 - 41.20	Auto	0.0000
L40	21	PL 5.375"x1.25"	39.33 - 41.20	Auto	0.0000
L40	31	MP3-03	39.33 - 40.50	Auto	0.0000
L40	32	MP3-03	39.33 - 40.50	Auto	0.0000
L40	33	MP3-03	39.33 - 40.50	Auto	0.0000
L40	35	MP3-03	39.33 - 41.20	Auto	0.0000
L40	36	MP3-03	39.33 - 41.20	Auto	0.0000
L40	37	MP3-03	39.33 - 41.20	Auto	0.0000
L40	43	CCI 6" x 1" Plate	39.33 - 41.20	Auto	0.0017
L40	44	CCI 6" x 1" Plate	39.33 - 41.20	Auto	0.0017
L40	45	CCI 6" x 1" Plate	39.33 - 41.20	Auto	0.0017
L41	19	PL 5.375"x1.25"	39.08 - 39.33	Auto	0.0000
L41	20	PL 5.375"x1.25"	39.08 - 39.33	Auto	0.0000
L41	21	PL 5.375"x1.25"	39.08 - 39.33	Auto	0.0000
L41	31	MP3-03	39.08 - 39.33	Auto	0.0000
L41	32	MP3-03	39.08 - 39.33	Auto	0.0000
L41	33	MP3-03	39.08 - 39.33	Auto	0.0000
L41	35	MP3-03	39.08 - 39.33	Auto	0.0000
L41	36	MP3-03	39.08 - 39.33	Auto	0.0000
L41	37	MP3-03	39.08 - 39.33	Auto	0.0000
L41	43	CCI 6" x 1" Plate	39.08 - 39.33	Auto	0.0154
L41	44	CCI 6" x 1" Plate	39.08 - 39.33	Auto	0.0154
L41	45	CCI 6" x 1" Plate	39.08 - 39.33	Auto	0.0154
L42	19	PL 5.375"x1.25"	37.75 - 39.08	Auto	0.0000
L42	20	PL 5.375"x1.25"	37.75 - 39.08	Auto	0.0000
L42	21	PL 5.375"x1.25"	37.75 - 39.08	Auto	0.0000
L42	31	MP3-03	37.75 - 39.08	Auto	0.0000
L42	32	MP3-03	37.75 - 39.08	Auto	0.0000
L42	33	MP3-03	37.75 - 39.08	Auto	0.0000
L42	35	MP3-03	37.75 - 39.08	Auto	0.0000
L42	36	MP3-03	37.75 - 39.08	Auto	0.0000
L42	37	MP3-03	37.75 - 39.08	Auto	0.0000
L42	43	CCI 6" x 1" Plate	37.75 - 39.08	Auto	0.0103
L42	44	CCI 6" x 1" Plate	37.75 - 39.08	Auto	0.0103
L42	45	CCI 6" x 1" Plate	37.75 - 39.08	Auto	0.0103
L43	19	PL 5.375"x1.25"	37.50 - 37.75	Auto	0.0000
L43	20	PL 5.375"x1.25"	37.50 - 37.75	Auto	0.0000
L43	21	PL 5.375"x1.25"	37.50 - 37.75	Auto	0.0000
L43	31	MP3-03	37.50 - 37.75	Auto	0.0000
L43	32	MP3-03	37.50 - 37.75	Auto	0.0000
L43	33	MP3-03	37.50 - 37.75	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L43	35	MP3-03	37.50 - 37.75	Auto	0.0000
L43	36	MP3-03	37.50 - 37.75	Auto	0.0000
L43	37	MP3-03	37.50 - 37.75	Auto	0.0000
L43	43	CCI 6" x 1" Plate	37.50 - 37.75	Auto	0.0000
L43	44	CCI 6" x 1" Plate	37.50 - 37.75	Auto	0.0000
L43	45	CCI 6" x 1" Plate	37.50 - 37.75	Auto	0.0000
L44	19	PL 5.375"x1.25"	32.50 - 37.50	Auto	0.0000
L44	20	PL 5.375"x1.25"	32.50 - 37.50	Auto	0.0000
L44	21	PL 5.375"x1.25"	32.50 - 37.50	Auto	0.0000
L44	31	MP3-03	32.50 - 37.50	Auto	0.0000
L44	32	MP3-03	32.50 - 37.50	Auto	0.0000
L44	33	MP3-03	32.50 - 37.50	Auto	0.0000
L44	35	MP3-03	36.58 - 37.50	Auto	0.0000
L44	36	MP3-03	36.58 - 37.50	Auto	0.0000
L44	37	MP3-03	36.58 - 37.50	Auto	0.0000
L44	43	CCI 6" x 1" Plate	32.50 - 37.50	Auto	0.0000
L44	44	CCI 6" x 1" Plate	32.50 - 37.50	Auto	0.0000
L44	45	CCI 6" x 1" Plate	32.50 - 37.50	Auto	0.0000
L45	19	PL 5.375"x1.25"	27.50 - 32.50	Auto	0.0000
L45	20	PL 5.375"x1.25"	27.50 - 32.50	Auto	0.0000
L45	21	PL 5.375"x1.25"	27.50 - 32.50	Auto	0.0000
L45	31	MP3-03	27.50 - 32.50	Auto	0.0000
L45	32	MP3-03	27.50 - 32.50	Auto	0.0000
L45	33	MP3-03	27.50 - 32.50	Auto	0.0000
L45	43	CCI 6" x 1" Plate	27.50 - 32.50	Auto	0.0000
L45	44	CCI 6" x 1" Plate	27.50 - 32.50	Auto	0.0000
L45	45	CCI 6" x 1" Plate	27.50 - 32.50	Auto	0.0000
L46	19	PL 5.375"x1.25"	27.25 - 27.50	Auto	0.0000
L46	20	PL 5.375"x1.25"	27.25 - 27.50	Auto	0.0000
L46	21	PL 5.375"x1.25"	27.25 - 27.50	Auto	0.0000
L46	31	MP3-03	27.25 - 27.50	Auto	0.0000
L46	32	MP3-03	27.25 - 27.50	Auto	0.0000
L46	33	MP3-03	27.25 - 27.50	Auto	0.0000
L46	43	CCI 6" x 1" Plate	27.25 - 27.50	Auto	0.0000
L46	44	CCI 6" x 1" Plate	27.25 - 27.50	Auto	0.0000
L46	45	CCI 6" x 1" Plate	27.25 - 27.50	Auto	0.0000
L47	19	PL 5.375"x1.25"	27.00 - 27.25	Auto	0.0000
L47	20	PL 5.375"x1.25"	27.00 - 27.25	Auto	0.0000
L47	21	PL 5.375"x1.25"	27.00 - 27.25	Auto	0.0000
L47	31	MP3-03	27.00 - 27.25	Auto	0.0000
L47	32	MP3-03	27.00 - 27.25	Auto	0.0000
L47	33	MP3-03	27.00 - 27.25	Auto	0.0000
L47	43	CCI 6" x 1" Plate	27.00 - 27.25	Auto	0.0000
L47	44	CCI 6" x 1" Plate	27.00 - 27.25	Auto	0.0000
L47	45	CCI 6" x 1" Plate	27.00 - 27.25	Auto	0.0000
L48	19	PL 5.375"x1.25"	22.00 - 27.00	Auto	0.0000
L48	20	PL 5.375"x1.25"	22.00 - 27.00	Auto	0.0000
L48	21	PL 5.375"x1.25"	22.00 - 27.00	Auto	0.0000
L48	31	MP3-03	22.00 - 27.00	Auto	0.0000
L48	32	MP3-03	22.00 - 27.00	Auto	0.0000
L48	33	MP3-03	22.00 - 27.00	Auto	0.0000
L48	41	CCI 8.5" x 1.25" Plate	22.00 - 25.00	Auto	0.2097
L48	43	CCI 6" x 1" Plate	22.00 - 27.00	Auto	0.0000
L48	44	CCI 6" x 1" Plate	22.00 - 27.00	Auto	0.0000
L48	45	CCI 6" x 1" Plate	22.00 - 27.00	Auto	0.0000
L49	19	PL 5.375"x1.25"	21.25 - 22.00	Auto	0.0000
L49	20	PL 5.375"x1.25"	21.25 - 22.00	Auto	0.0000
L49	21	PL 5.375"x1.25"	21.25 - 22.00	Auto	0.0000
L49	31	MP3-03	21.25 - 22.00	Auto	0.0000
L49	32	MP3-03	21.25 - 22.00	Auto	0.0000
L49	33	MP3-03	21.25 - 22.00	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L49	41	CCI 8.5" x 1.25" Plate	21.25 - 22.00	Auto	0.2011
L49	43	CCI 6" x 1" Plate	21.25 - 22.00	Auto	0.0000
L49	44	CCI 6" x 1" Plate	21.25 - 22.00	Auto	0.0000
L49	45	CCI 6" x 1" Plate	21.25 - 22.00	Auto	0.0000
L50	19	PL 5.375"x1.25"	21.00 - 21.25	Auto	0.0000
L50	20	PL 5.375"x1.25"	21.00 - 21.25	Auto	0.0000
L50	21	PL 5.375"x1.25"	21.00 - 21.25	Auto	0.0000
L50	31	MP3-03	21.00 - 21.25	Auto	0.0000
L50	32	MP3-03	21.00 - 21.25	Auto	0.0000
L50	33	MP3-03	21.00 - 21.25	Auto	0.0000
L50	41	CCI 8.5" x 1.25" Plate	21.00 - 21.25	Auto	0.2014
L50	43	CCI 6" x 1" Plate	21.00 - 21.25	Auto	0.0000
L50	44	CCI 6" x 1" Plate	21.00 - 21.25	Auto	0.0000
L50	45	CCI 6" x 1" Plate	21.00 - 21.25	Auto	0.0000
L51	19	PL 5.375"x1.25"	17.00 - 21.00	Auto	0.0000
L51	20	PL 5.375"x1.25"	17.00 - 21.00	Auto	0.0000
L51	21	PL 5.375"x1.25"	17.00 - 21.00	Auto	0.0000
L51	31	MP3-03	17.00 - 21.00	Auto	0.0000
L51	32	MP3-03	17.00 - 21.00	Auto	0.0000
L51	33	MP3-03	17.00 - 21.00	Auto	0.0000
L51	39	CCI 8.5" x 1.25" Plate	17.00 - 20.00	Auto	0.1867
L51	40	CCI 8.5" x 1.25" Plate	17.00 - 20.00	Auto	0.1867
L51	41	CCI 8.5" x 1.25" Plate	17.00 - 21.00	Auto	0.1890
L51	43	CCI 6" x 1" Plate	20.00 - 21.00	Auto	0.0000
L51	44	CCI 6" x 1" Plate	20.00 - 21.00	Auto	0.0000
L51	45	CCI 6" x 1" Plate	17.00 - 21.00	Auto	0.0000
L52	19	PL 5.375"x1.25"	16.75 - 17.00	Auto	0.0000
L52	20	PL 5.375"x1.25"	16.75 - 17.00	Auto	0.0000
L52	21	PL 5.375"x1.25"	16.75 - 17.00	Auto	0.0000
L52	31	MP3-03	16.75 - 17.00	Auto	0.0000
L52	32	MP3-03	16.75 - 17.00	Auto	0.0000
L52	33	MP3-03	16.75 - 17.00	Auto	0.0000
L52	39	CCI 8.5" x 1.25" Plate	16.75 - 17.00	Auto	0.1767
L52	40	CCI 8.5" x 1.25" Plate	16.75 - 17.00	Auto	0.1767
L52	41	CCI 8.5" x 1.25" Plate	16.75 - 17.00	Auto	0.1767
L52	45	CCI 6" x 1" Plate	16.75 - 17.00	Auto	0.0000
L53	19	PL 5.375"x1.25"	16.25 - 16.75	Auto	0.0000
L53	20	PL 5.375"x1.25"	16.25 - 16.75	Auto	0.0000
L53	21	PL 5.375"x1.25"	16.25 - 16.75	Auto	0.0000
L53	31	MP3-03	16.25 - 16.75	Auto	0.0000
L53	32	MP3-03	16.25 - 16.75	Auto	0.0000
L53	33	MP3-03	16.25 - 16.75	Auto	0.0000
L53	39	CCI 8.5" x 1.25" Plate	16.25 - 16.75	Auto	0.1750
L53	40	CCI 8.5" x 1.25" Plate	16.25 - 16.75	Auto	0.1750
L53	41	CCI 8.5" x 1.25" Plate	16.25 - 16.75	Auto	0.1750
L53	45	CCI 6" x 1" Plate	16.25 - 16.75	Auto	0.0000
L54	19	PL 5.375"x1.25"	16.00 - 16.25	Auto	0.0000
L54	20	PL 5.375"x1.25"	16.00 - 16.25	Auto	0.0000
L54	21	PL 5.375"x1.25"	16.00 - 16.25	Auto	0.0000
L54	31	MP3-03	16.00 - 16.25	Auto	0.0000
L54	32	MP3-03	16.00 - 16.25	Auto	0.0000
L54	33	MP3-03	16.00 - 16.25	Auto	0.0000
L54	39	CCI 8.5" x 1.25" Plate	16.00 - 16.25	Auto	0.1888
L54	40	CCI 8.5" x 1.25" Plate	16.00 - 16.25	Auto	0.1888
L54	41	CCI 8.5" x 1.25" Plate	16.00 - 16.25	Auto	0.1888
L54	45	CCI 6" x 1" Plate	16.00 - 16.25	Auto	0.0000
L55	19	PL 5.375"x1.25"	11.00 - 16.00	Auto	0.0000
L55	20	PL 5.375"x1.25"	11.00 - 16.00	Auto	0.0000
L55	21	PL 5.375"x1.25"	11.00 - 16.00	Auto	0.0000
L55	31	MP3-03	11.00 - 16.00	Auto	0.0000
L55	32	MP3-03	11.00 - 16.00	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L55	33	MP3-03	11.00 - 16.00	Auto	0.0000
L55	39	CCI 8.5" x 1.25" Plate	11.00 - 16.00	Auto	0.1716
L55	40	CCI 8.5" x 1.25" Plate	11.00 - 16.00	Auto	0.1716
L55	41	CCI 8.5" x 1.25" Plate	11.00 - 16.00	Auto	0.1716
L55	45	CCI 6" x 1" Plate	15.00 - 16.00	Auto	0.0000
L56	19	PL 5.375"x1.25"	6.00 - 11.00	Auto	0.0000
L56	20	PL 5.375"x1.25"	6.00 - 11.00	Auto	0.0000
L56	21	PL 5.375"x1.25"	6.00 - 11.00	Auto	0.0000
L56	31	MP3-03	6.00 - 11.00	Auto	0.0000
L56	32	MP3-03	6.00 - 11.00	Auto	0.0000
L56	33	MP3-03	6.00 - 11.00	Auto	0.0000
L56	39	CCI 8.5" x 1.25" Plate	6.00 - 11.00	Auto	0.1486
L56	40	CCI 8.5" x 1.25" Plate	6.00 - 11.00	Auto	0.1486
L56	41	CCI 8.5" x 1.25" Plate	6.00 - 11.00	Auto	0.1486
L57	19	PL 5.375"x1.25"	1.00 - 6.00	Auto	0.0000
L57	20	PL 5.375"x1.25"	1.00 - 6.00	Auto	0.0000
L57	21	PL 5.375"x1.25"	1.00 - 6.00	Auto	0.0000
L57	31	MP3-03	1.00 - 6.00	Auto	0.0000
L57	32	MP3-03	1.00 - 6.00	Auto	0.0000
L57	33	MP3-03	1.00 - 6.00	Auto	0.0000
L57	39	CCI 8.5" x 1.25" Plate	1.00 - 6.00	Auto	0.1231
L57	40	CCI 8.5" x 1.25" Plate	1.00 - 6.00	Auto	0.1231
L57	41	CCI 8.5" x 1.25" Plate	1.00 - 6.00	Auto	0.1231
L58	19	PL 5.375"x1.25"	0.00 - 1.00	Auto	0.0000
L58	20	PL 5.375"x1.25"	0.00 - 1.00	Auto	0.0000
L58	21	PL 5.375"x1.25"	0.00 - 1.00	Auto	0.0000
L58	31	MP3-03	0.00 - 1.00	Auto	0.0000
L58	32	MP3-03	0.00 - 1.00	Auto	0.0000
L58	33	MP3-03	0.00 - 1.00	Auto	0.0000
L58	39	CCI 8.5" x 1.25" Plate	0.00 - 1.00	Auto	0.0654
L58	40	CCI 8.5" x 1.25" Plate	0.00 - 1.00	Auto	0.0654
L58	41	CCI 8.5" x 1.25" Plate	0.00 - 1.00	Auto	0.0654

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
APXVSPP18-C-A20 w/ Mount Pipe	A	From Leg	4.000 0.000 0.000	0.000	159.000	No Ice 1/2" Ice 1" Ice	4.600 5.050 5.500	4.010 4.450 4.890	0.095 0.160 0.235
APXVSPP18-C-A20 w/ Mount Pipe	B	From Leg	4.000 0.000 0.000	0.000	159.000	No Ice 1/2" Ice 1" Ice	4.600 5.050 5.500	4.010 4.450 4.890	0.095 0.160 0.235
APXVSPP18-C-A20 w/ Mount Pipe	C	From Leg	4.000 0.000 0.000	0.000	159.000	No Ice 1/2" Ice 1" Ice	4.600 5.050 5.500	4.010 4.450 4.890	0.095 0.160 0.235
APXVTM14-ALU-I20 w/ Mount Pipe	A	From Leg	4.000 0.000 0.000	0.000	159.000	No Ice 1/2" Ice 1" Ice	4.090 4.480 4.880	2.860 3.230 3.610	0.077 0.127 0.185

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
APXVTM14-ALU-I20 w/ Mount Pipe	B	From Leg	4.000 0.000 0.000	0.000	159.000	No Ice 1/2" Ice 1" Ice	4.090 4.480 4.880	2.860 3.230 3.610	0.077 0.127 0.185
APXVTM14-ALU-I20 w/ Mount Pipe	C	From Leg	4.000 0.000 0.000	0.000	159.000	No Ice 1/2" Ice 1" Ice	4.090 4.480 4.880	2.860 3.230 3.610	0.077 0.127 0.185
TD-RRH8x20-25	A	From Leg	4.000 0.000 0.000	0.000	159.000	No Ice 1/2" Ice 1" Ice	4.045 4.298 4.557	1.535 1.714 1.901	0.070 0.097 0.128
TD-RRH8x20-25	B	From Leg	4.000 0.000 0.000	0.000	159.000	No Ice 1/2" Ice 1" Ice	4.045 4.298 4.557	1.535 1.714 1.901	0.070 0.097 0.128
TD-RRH8x20-25	C	From Leg	4.000 0.000 0.000	0.000	159.000	No Ice 1/2" Ice 1" Ice	4.045 4.298 4.557	1.535 1.714 1.901	0.070 0.097 0.128
5' x 2" Pipe Mount	A	From Leg	2.000 0.000 2.000	0.000	159.000	No Ice 1/2" Ice 1" Ice	1.188 1.496 1.807	1.188 1.496 1.807	0.018 0.027 0.040
(2) 8' x 2" Mount Pipe	A	From Leg	4.000 0.000 0.000	0.000	159.000	No Ice 1/2" Ice 1" Ice	1.900 2.728 3.401	1.900 2.728 3.401	0.029 0.044 0.063
(2) 8' x 2" Mount Pipe	B	From Leg	4.000 0.000 0.000	0.000	159.000	No Ice 1/2" Ice 1" Ice	1.900 2.728 3.401	1.900 2.728 3.401	0.029 0.044 0.063
(2) 8' x 2" Mount Pipe	C	From Leg	4.000 0.000 0.000	0.000	159.000	No Ice 1/2" Ice 1" Ice	1.900 2.728 3.401	1.900 2.728 3.401	0.029 0.044 0.063
Platform Mount [LP 714-1]	C	None		0.000	159.000	No Ice 1/2" Ice 1" Ice	37.510 41.700 45.890	37.510 41.700 45.890	1.600 2.496 3.458
*									
800MHz 2X50W RRH W/FILTER	A	From Leg	2.000 0.000 2.000	0.000	157.000	No Ice 1/2" Ice 1" Ice	2.058 2.240 2.429	1.932 2.109 2.293	0.064 0.086 0.111
800MHz 2X50W RRH W/FILTER	B	From Leg	2.000 0.000 2.000	0.000	157.000	No Ice 1/2" Ice 1" Ice	2.058 2.240 2.429	1.932 2.109 2.293	0.064 0.086 0.111
800MHz 2X50W RRH W/FILTER	C	From Leg	2.000 0.000 2.000	0.000	157.000	No Ice 1/2" Ice 1" Ice	2.058 2.240 2.429	1.932 2.109 2.293	0.064 0.086 0.111
PCS 1900MHz 4x45W-65MHz	A	From Leg	2.000 0.000 2.000	0.000	157.000	No Ice 1/2" Ice 1" Ice	2.322 2.527 2.739	2.238 2.441 2.651	0.060 0.083 0.110
PCS 1900MHz 4x45W-65MHz	B	From Leg	2.000 0.000 2.000	0.000	157.000	No Ice 1/2" Ice 1" Ice	2.322 2.527 2.739	2.238 2.441 2.651	0.060 0.083 0.110
PCS 1900MHz 4x45W-65MHz	C	From Leg	2.000 0.000 2.000	0.000	157.000	No Ice 1/2" Ice 1" Ice	2.322 2.527 2.739	2.238 2.441 2.651	0.060 0.083 0.110
Pipe Mount [PM 601-3]	C	None		0.000	157.000	No Ice 1/2" Ice 1" Ice	3.170 3.790 4.420	3.170 3.790 4.420	0.195 0.232 0.279
Side Arm Mount [SO 102-3]	C	None		0.000	157.000	No Ice 1/2" Ice 1" Ice	3.600 4.180 4.750	3.600 4.180 4.750	0.075 0.105 0.135
*									
RRUS-11	A	From Leg	2.000	0.000	152.000	No Ice	2.784	1.187	0.048

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Offsets: Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.000				1/2" Ice	2.992	1.334	0.068
			0.000				1" Ice	3.207	1.490	0.092
RRUS-11	B	From Leg	2.000		0.000	152.000	No Ice	2.784	1.187	0.048
			0.000				1/2" Ice	2.992	1.334	0.068
			0.000				1" Ice	3.207	1.490	0.092
RRUS-11	C	From Leg	2.000		0.000	152.000	No Ice	2.784	1.187	0.048
			0.000				1/2" Ice	2.992	1.334	0.068
			0.000				1" Ice	3.207	1.490	0.092
Pipe Mount [PM 601-3]	C	None			0.000	152.000	No Ice	3.170	3.170	0.195
							1/2" Ice	3.790	3.790	0.232
							1" Ice	4.420	4.420	0.279
Side Arm Mount [SO 101-3]	C	None			0.000	152.000	No Ice	5.810	5.810	0.252
							1/2" Ice	6.950	6.950	0.341
							1" Ice	8.280	8.280	0.457
*										
HPA-65R-BUU-H8 w/ Mount Pipe	A	From Leg	4.000		0.000	150.000	No Ice	12.250	8.330	0.105
			0.000				1/2" Ice	13.190	9.230	0.194
			2.000				1" Ice	14.160	10.150	0.297
HPA-65R-BUU-H8 w/ Mount Pipe	B	From Leg	4.000		0.000	150.000	No Ice	12.250	8.330	0.105
			0.000				1/2" Ice	13.190	9.230	0.194
			2.000				1" Ice	14.160	10.150	0.297
HPA-65R-BUU-H8 w/ Mount Pipe	C	From Leg	4.000		0.000	150.000	No Ice	12.250	8.330	0.105
			0.000				1/2" Ice	13.190	9.230	0.194
			2.000				1" Ice	14.160	10.150	0.297
(2) 7770.00 w/ Mount Pipe	A	From Leg	4.000		0.000	150.000	No Ice	5.746	4.254	0.055
			0.000				1/2" Ice	6.179	5.014	0.103
			2.000				1" Ice	6.607	5.711	0.157
(2) 7770.00 w/ Mount Pipe	B	From Leg	4.000		0.000	150.000	No Ice	5.746	4.254	0.055
			0.000				1/2" Ice	6.179	5.014	0.103
			2.000				1" Ice	6.607	5.711	0.157
(2) 7770.00 w/ Mount Pipe	C	From Leg	4.000		0.000	150.000	No Ice	5.746	4.254	0.055
			0.000				1/2" Ice	6.179	5.014	0.103
			2.000				1" Ice	6.607	5.711	0.157
RRUS 32 B2	A	From Leg	4.000		0.000	150.000	No Ice	2.731	1.668	0.053
			0.000				1/2" Ice	2.953	1.855	0.074
			2.000				1" Ice	3.182	2.049	0.098
RRUS 32 B2	B	From Leg	4.000		0.000	150.000	No Ice	2.731	1.668	0.053
			0.000				1/2" Ice	2.953	1.855	0.074
			2.000				1" Ice	3.182	2.049	0.098
RRUS 32 B2	C	From Leg	4.000		0.000	150.000	No Ice	2.731	1.668	0.053
			0.000				1/2" Ice	2.953	1.855	0.074
			2.000				1" Ice	3.182	2.049	0.098
(4) 7020.00	A	From Leg	4.000		0.000	150.000	No Ice	0.102	0.175	0.002
			0.000				1/2" Ice	0.147	0.239	0.005
			2.000				1" Ice	0.199	0.311	0.009
(4) 7020.00	B	From Leg	4.000		0.000	150.000	No Ice	0.102	0.175	0.002
			0.000				1/2" Ice	0.147	0.239	0.005
			2.000				1" Ice	0.199	0.311	0.009
(4) 7020.00	C	From Leg	4.000		0.000	150.000	No Ice	0.102	0.175	0.002
			0.000				1/2" Ice	0.147	0.239	0.005
			2.000				1" Ice	0.199	0.311	0.009
(2) LGP21401	A	From Leg	4.000		0.000	150.000	No Ice	1.104	0.207	0.014
			0.000				1/2" Ice	1.239	0.274	0.021
			2.000				1" Ice	1.381	0.348	0.030
(2) LGP21401	B	From Leg	4.000		0.000	150.000	No Ice	1.104	0.207	0.014
			0.000				1/2" Ice	1.239	0.274	0.021
			2.000				1" Ice	1.381	0.348	0.030

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(2) LGP21401	C	From Leg	4.000 0.000 2.000	0.000	150.000	No Ice 1/2" Ice 1" Ice	1.104 1.239 1.381	0.207 0.274 0.348	0.014 0.021 0.030
(2) LGP21901	A	From Leg	4.000 0.000 2.000	0.000	150.000	No Ice 1/2" Ice 1" Ice	0.231 0.294 0.365	0.158 0.213 0.276	0.006 0.008 0.011
(2) LGP21901	B	From Leg	4.000 0.000 2.000	0.000	150.000	No Ice 1/2" Ice 1" Ice	0.231 0.294 0.365	0.158 0.213 0.276	0.006 0.008 0.011
(2) LGP21901	C	From Leg	4.000 0.000 2.000	0.000	150.000	No Ice 1/2" Ice 1" Ice	0.231 0.294 0.365	0.158 0.213 0.276	0.006 0.008 0.011
1001983	A	From Leg	4.000 0.000 2.000	0.000	150.000	No Ice 1/2" Ice 1" Ice	0.176 0.232 0.295	0.083 0.126 0.178	0.002 0.004 0.006
1001983	B	From Leg	4.000 0.000 2.000	0.000	150.000	No Ice 1/2" Ice 1" Ice	0.176 0.232 0.295	0.083 0.126 0.178	0.002 0.004 0.006
1001983	C	From Leg	4.000 0.000 2.000	0.000	150.000	No Ice 1/2" Ice 1" Ice	0.176 0.232 0.295	0.083 0.126 0.178	0.002 0.004 0.006
DC6-48-60-18-8F	A	From Leg	2.000 0.000 1.000	0.000	150.000	No Ice 1/2" Ice 1" Ice	1.212 1.892 2.105	1.212 1.892 2.105	0.033 0.055 0.080
Platform Mount [LP 303-1]	C	None		0.000	150.000	No Ice 1/2" Ice 1" Ice	14.690 18.010 21.340	14.690 18.010 21.340	1.250 1.569 1.942
*									
APX16DWV-16DWV-S-E-A 20 w/ Mount Pipe	A	From Leg	4.000 0.000 0.000	0.000	137.000	No Ice 1/2" Ice 1" Ice	6.290 6.860 7.450	2.760 3.270 3.790	0.061 0.105 0.157
APX16DWV-16DWV-S-E-A 20 w/ Mount Pipe	B	From Leg	4.000 0.000 0.000	0.000	137.000	No Ice 1/2" Ice 1" Ice	6.290 6.860 7.450	2.760 3.270 3.790	0.061 0.105 0.157
APX16DWV-16DWV-S-E-A 20 w/ Mount Pipe	C	From Leg	4.000 0.000 0.000	0.000	137.000	No Ice 1/2" Ice 1" Ice	6.290 6.860 7.450	2.760 3.270 3.790	0.061 0.105 0.157
APXVAALL24_43-U-NA20 _TMO w/ Mount Pipe	A	From Leg	4.000 0.000 0.000	0.000	137.000	No Ice 1/2" Ice 1" Ice	14.690 15.460 16.230	6.870 7.550 8.250	0.183 0.311 0.453
APXVAALL24_43-U-NA20 _TMO w/ Mount Pipe	B	From Leg	4.000 0.000 0.000	0.000	137.000	No Ice 1/2" Ice 1" Ice	14.690 15.460 16.230	6.870 7.550 8.250	0.183 0.311 0.453
APXVAALL24_43-U-NA20 _TMO w/ Mount Pipe	C	From Leg	4.000 0.000 0.000	0.000	137.000	No Ice 1/2" Ice 1" Ice	14.690 15.460 16.230	6.870 7.550 8.250	0.183 0.311 0.453
AIR6449 B41_T-MOBILE	A	From Leg	4.000 0.000 2.000	0.000	137.000	No Ice 1/2" Ice 1" Ice	5.270 5.700 6.140	2.030 2.360 2.700	0.115 0.154 0.197
AIR6449 B41_T-MOBILE	B	From Leg	4.000 0.000 2.000	0.000	137.000	No Ice 1/2" Ice 1" Ice	5.270 5.700 6.140	2.030 2.360 2.700	0.115 0.154 0.197
AIR6449 B41_T-MOBILE	C	From Leg	4.000 0.000 2.000	0.000	137.000	No Ice 1/2" Ice 1" Ice	5.270 5.700 6.140	2.030 2.360 2.700	0.115 0.154 0.197
RADIO 4415 B66A_CCIV3	A	From Leg	4.000 0.000	0.000	137.000	No Ice 1/2" Ice	1.639 1.799	0.677 0.789	0.046 0.059

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.000			1" Ice	1.966	0.911	0.073
RADIO 4415 B66A_CCIV3	B	From Leg	4.000	0.000	137.000	No Ice	1.639	0.677	0.046
			0.000			1/2" Ice	1.799	0.789	0.059
			0.000			1" Ice	1.966	0.911	0.073
RADIO 4415 B66A_CCIV3	C	From Leg	4.000	0.000	137.000	No Ice	1.639	0.677	0.046
			0.000			1/2" Ice	1.799	0.789	0.059
			0.000			1" Ice	1.966	0.911	0.073
RADIO 4424 B25_TMO	A	From Leg	4.000	0.000	137.000	No Ice	2.052	1.610	0.086
			0.000			1/2" Ice	2.231	1.772	0.107
			0.000			1" Ice	2.417	1.941	0.131
RADIO 4424 B25_TMO	B	From Leg	4.000	0.000	137.000	No Ice	2.052	1.610	0.086
			0.000			1/2" Ice	2.231	1.772	0.107
			0.000			1" Ice	2.417	1.941	0.131
RADIO 4424 B25_TMO	C	From Leg	4.000	0.000	137.000	No Ice	2.052	1.610	0.086
			0.000			1/2" Ice	2.231	1.772	0.107
			0.000			1" Ice	2.417	1.941	0.131
RADIO 4449 B71 B85A_T-MOBILE	A	From Leg	4.000	0.000	137.000	No Ice	1.970	1.587	0.073
			0.000			1/2" Ice	2.147	1.749	0.093
			0.000			1" Ice	2.331	1.918	0.116
RADIO 4449 B71 B85A_T-MOBILE	B	From Leg	4.000	0.000	137.000	No Ice	1.970	1.587	0.073
			0.000			1/2" Ice	2.147	1.749	0.093
			0.000			1" Ice	2.331	1.918	0.116
RADIO 4449 B71 B85A_T-MOBILE	C	From Leg	4.000	0.000	137.000	No Ice	1.970	1.587	0.073
			0.000			1/2" Ice	2.147	1.749	0.093
			0.000			1" Ice	2.331	1.918	0.116
8' x 2" Mount Pipe	A	From Leg	4.000	0.000	137.000	No Ice	1.900	1.900	0.029
			0.000			1/2" Ice	2.728	2.728	0.044
			0.000			1" Ice	3.401	3.401	0.063
8' x 2" Mount Pipe	B	From Leg	4.000	0.000	137.000	No Ice	1.900	1.900	0.029
			0.000			1/2" Ice	2.728	2.728	0.044
			0.000			1" Ice	3.401	3.401	0.063
8' x 2" Mount Pipe	C	From Leg	4.000	0.000	137.000	No Ice	1.900	1.900	0.029
			0.000			1/2" Ice	2.728	2.728	0.044
			0.000			1" Ice	3.401	3.401	0.063
Platform Mount [LP 303-1_KCKR-HR-1]	C	None		0.000	137.000	No Ice	28.310	28.310	1.770
						1/2" Ice	35.690	35.690	2.297
*						1" Ice	43.110	43.110	2.943
MT6407-77A w/ Mount Pipe	A	From Leg	4.000	0.000	125.000	No Ice	4.907	2.682	0.096
			0.000			1/2" Ice	5.256	3.145	0.136
			2.000			1" Ice	5.615	3.624	0.180
MT6407-77A w/ Mount Pipe	B	From Leg	4.000	0.000	125.000	No Ice	4.907	2.682	0.096
			0.000			1/2" Ice	5.256	3.145	0.136
			2.000			1" Ice	5.615	3.624	0.180
MT6407-77A w/ Mount Pipe	C	From Leg	4.000	0.000	125.000	No Ice	4.907	2.682	0.096
			0.000			1/2" Ice	5.256	3.145	0.136
			2.000			1" Ice	5.615	3.624	0.180
(2) JAHH-65B-R3B w/ Mount Pipe	A	From Leg	4.000	0.000	125.000	No Ice	5.500	4.380	0.096
			0.000			1/2" Ice	5.970	4.840	0.169
			2.000			1" Ice	6.450	5.300	0.254
(2) JAHH-65B-R3B w/ Mount Pipe	B	From Leg	4.000	0.000	125.000	No Ice	5.500	4.380	0.096
			0.000			1/2" Ice	5.970	4.840	0.169
			2.000			1" Ice	6.450	5.300	0.254
(2) JAHH-65B-R3B w/ Mount Pipe	C	From Leg	4.000	0.000	125.000	No Ice	5.500	4.380	0.096
			0.000			1/2" Ice	5.970	4.840	0.169
			2.000			1" Ice	6.450	5.300	0.254
RF4439D-25A	A	From Leg	4.000	0.000	125.000	No Ice	1.865	1.252	0.075

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.000			1/2" Ice	2.035	1.394	0.093
			2.000			1" Ice	2.212	1.544	0.114
RF4439D-25A	B	From Leg	4.000	0.000	125.000	No Ice	1.865	1.252	0.075
			0.000			1/2" Ice	2.035	1.394	0.093
			2.000			1" Ice	2.212	1.544	0.114
RF4439D-25A	C	From Leg	4.000	0.000	125.000	No Ice	1.865	1.252	0.075
			0.000			1/2" Ice	2.035	1.394	0.093
			2.000			1" Ice	2.212	1.544	0.114
RF4440D-13A	A	From Leg	4.000	0.000	125.000	No Ice	1.865	1.129	0.073
			0.000			1/2" Ice	2.035	1.267	0.090
			2.000			1" Ice	2.212	1.411	0.110
RF4440D-13A	B	From Leg	4.000	0.000	125.000	No Ice	1.865	1.129	0.073
			0.000			1/2" Ice	2.035	1.267	0.090
			2.000			1" Ice	2.212	1.411	0.110
RF4440D-13A	C	From Leg	4.000	0.000	125.000	No Ice	1.865	1.129	0.073
			0.000			1/2" Ice	2.035	1.267	0.090
			2.000			1" Ice	2.212	1.411	0.110
CBC78T-DS-43-2X	A	From Leg	4.000	0.000	125.000	No Ice	0.368	0.512	0.021
			0.000			1/2" Ice	0.446	0.605	0.027
			2.000			1" Ice	0.531	0.705	0.035
CBC78T-DS-43-2X	B	From Leg	4.000	0.000	125.000	No Ice	0.368	0.512	0.021
			0.000			1/2" Ice	0.446	0.605	0.027
			2.000			1" Ice	0.531	0.705	0.035
CBC78T-DS-43-2X	C	From Leg	4.000	0.000	125.000	No Ice	0.368	0.512	0.021
			0.000			1/2" Ice	0.446	0.605	0.027
			2.000			1" Ice	0.531	0.705	0.035
RVZDC-6627-PF-48	A	From Leg	4.000	0.000	125.000	No Ice	3.792	2.514	0.032
			0.000			1/2" Ice	4.044	2.727	0.063
			2.000			1" Ice	4.303	2.947	0.099
6' x 2" Mount Pipe	A	From Leg	4.000	0.000	125.000	No Ice	1.425	1.425	0.022
			0.000			1/2" Ice	1.925	1.925	0.033
			2.000			1" Ice	2.294	2.294	0.048
6' x 2" Mount Pipe	B	From Leg	4.000	0.000	125.000	No Ice	1.425	1.425	0.022
			0.000			1/2" Ice	1.925	1.925	0.033
			2.000			1" Ice	2.294	2.294	0.048
6' x 2" Mount Pipe	C	From Leg	4.000	0.000	125.000	No Ice	1.425	1.425	0.022
			0.000			1/2" Ice	1.925	1.925	0.033
			2.000			1" Ice	2.294	2.294	0.048
Platform Mount [LP 303-1]	C	None		0.000	125.000	No Ice	14.690	14.690	1.250
						1/2" Ice	18.010	18.010	1.569
						1" Ice	21.340	21.340	1.942
Mount Reinforcement Specifications	C	None		0.000	125.000	No Ice	28.630	28.630	0.280
						1/2" Ice	37.310	37.310	0.670
						1" Ice	45.800	45.800	0.940
BSAMNT-SBS-2-2 Brackets	A	From Leg	4.000	0.000	125.000	No Ice	0.000	0.000	0.067
			0.000			1/2" Ice	0.000	0.000	0.088
			0.000			1" Ice	0.000	0.000	0.108
BSAMNT-SBS-2-2 Brackets	B	From Leg	4.000	0.000	125.000	No Ice	0.000	0.000	0.067
			0.000			1/2" Ice	0.000	0.000	0.088
			0.000			1" Ice	0.000	0.000	0.108
BSAMNT-SBS-2-2 Brackets	C	From Leg	4.000	0.000	125.000	No Ice	0.000	0.000	0.067
			0.000			1/2" Ice	0.000	0.000	0.088
			0.000			1" Ice	0.000	0.000	0.108
*									
DB589	B	From Leg	4.000	0.000	109.000	No Ice	2.125	2.125	0.012
			0.000			1/2" Ice	3.004	3.004	0.027
			5.000			1" Ice	3.764	3.764	0.049

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
Side Arm Mount [SO 701-1]	B	From Leg	3.000 0.000 0.000	0.000	109.000	No Ice 1/2" Ice 1" Ice	0.850 1.140 1.430	1.670 2.340 3.010	0.065 0.079 0.093
Side Arm Mount [SO 201-1]	B	From Leg	1.000 0.000 0.000	0.000	109.000	No Ice 1/2" Ice 1" Ice	1.780 2.240 2.750	2.610 3.150 3.730	0.096 0.116 0.144
*									
MX08FRO665-21 w/ Mount Pipe	A	From Leg	4.000 0.000 0.000	0.000	83.000	No Ice 1/2" Ice 1" Ice	8.010 8.520 9.040	4.230 4.690 5.160	0.108 0.194 0.292
MX08FRO665-21 w/ Mount Pipe	B	From Leg	4.000 0.000 0.000	0.000	83.000	No Ice 1/2" Ice 1" Ice	8.010 8.520 9.040	4.230 4.690 5.160	0.108 0.194 0.292
MX08FRO665-21 w/ Mount Pipe	C	From Leg	4.000 0.000 0.000	0.000	83.000	No Ice 1/2" Ice 1" Ice	8.010 8.520 9.040	4.230 4.690 5.160	0.108 0.194 0.292
TA08025-B605	A	From Leg	4.000 0.000 0.000	0.000	83.000	No Ice 1/2" Ice 1" Ice	1.964 2.138 2.320	1.129 1.267 1.411	0.075 0.093 0.114
(2) TA08025-B605	B	From Leg	4.000 0.000 0.000	0.000	83.000	No Ice 1/2" Ice 1" Ice	1.964 2.138 2.320	1.129 1.267 1.411	0.075 0.093 0.114
TA08025-B604	A	From Leg	4.000 0.000 0.000	0.000	83.000	No Ice 1/2" Ice 1" Ice	1.964 2.138 2.320	0.981 1.112 1.250	0.064 0.081 0.100
(2) TA08025-B604	C	From Leg	4.000 0.000 0.000	0.000	83.000	No Ice 1/2" Ice 1" Ice	1.964 2.138 2.320	0.981 1.112 1.250	0.064 0.081 0.100
RDIDC-9181-PF-48	A	From Leg	4.000 0.000 0.000	0.000	83.000	No Ice 1/2" Ice 1" Ice	2.012 2.189 2.373	1.168 1.311 1.461	0.022 0.040 0.060
(2) 8' x 2" Mount Pipe	A	From Leg	4.000 0.000 0.000	0.000	83.000	No Ice 1/2" Ice 1" Ice	1.900 2.728 3.401	1.900 2.728 3.401	0.029 0.044 0.063
(2) 8' x 2" Mount Pipe	B	From Leg	4.000 0.000 0.000	0.000	83.000	No Ice 1/2" Ice 1" Ice	1.900 2.728 3.401	1.900 2.728 3.401	0.029 0.044 0.063
(2) 8' x 2" Mount Pipe	C	From Leg	4.000 0.000 0.000	0.000	83.000	No Ice 1/2" Ice 1" Ice	1.900 2.728 3.401	1.900 2.728 3.401	0.029 0.044 0.063
Commscope MC-PK8-DSH	C	None		0.000	83.000	No Ice 1/2" Ice 1" Ice	34.240 62.950 91.660	34.240 62.950 91.660	1.749 2.099 2.450
*									

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice

Comb. No.	Description
3	0.9 Dead+1.0 Wind 0 deg - No Ice
4	1.2 Dead+1.0 Wind 30 deg - No Ice
5	0.9 Dead+1.0 Wind 30 deg - No Ice
6	1.2 Dead+1.0 Wind 60 deg - No Ice
7	0.9 Dead+1.0 Wind 60 deg - No Ice
8	1.2 Dead+1.0 Wind 90 deg - No Ice
9	0.9 Dead+1.0 Wind 90 deg - No Ice
10	1.2 Dead+1.0 Wind 120 deg - No Ice
11	0.9 Dead+1.0 Wind 120 deg - No Ice
12	1.2 Dead+1.0 Wind 150 deg - No Ice
13	0.9 Dead+1.0 Wind 150 deg - No Ice
14	1.2 Dead+1.0 Wind 180 deg - No Ice
15	0.9 Dead+1.0 Wind 180 deg - No Ice
16	1.2 Dead+1.0 Wind 210 deg - No Ice
17	0.9 Dead+1.0 Wind 210 deg - No Ice
18	1.2 Dead+1.0 Wind 240 deg - No Ice
19	0.9 Dead+1.0 Wind 240 deg - No Ice
20	1.2 Dead+1.0 Wind 270 deg - No Ice
21	0.9 Dead+1.0 Wind 270 deg - No Ice
22	1.2 Dead+1.0 Wind 300 deg - No Ice
23	0.9 Dead+1.0 Wind 300 deg - No Ice
24	1.2 Dead+1.0 Wind 330 deg - No Ice
25	0.9 Dead+1.0 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	160 - 155	Pole	Max Tension	21	0.000	-0.000	-0.000
			Max. Compression	26	-7.548	-0.001	0.120
			Max. Mx	8	-3.544	-17.871	0.047
			Max. My	2	-3.543	-0.002	17.932
			Max. Vy	8	4.720	-17.871	0.047

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	2	-4.720	-0.002	17.932
			Max. Torque	20			-0.144
L2	155 - 150	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-9.037	-0.003	0.125
			Max. Mx	8	-4.416	-43.413	0.051
			Max. My	2	-4.415	-0.004	43.477
			Max. Vy	8	5.631	-43.413	0.051
			Max. Vx	2	-5.632	-0.004	43.477
			Max. Torque	20			-0.144
L3	150 - 145	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-14.429	-0.005	0.371
			Max. Mx	8	-7.077	-94.613	0.157
			Max. My	2	-7.076	-0.009	94.795
			Max. Vy	8	9.350	-94.613	0.157
			Max. Vx	2	-9.351	-0.009	94.795
			Max. Torque	20			-0.269
L4	145 - 140	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-14.893	-0.006	0.374
			Max. Mx	8	-7.427	-141.996	0.163
			Max. My	2	-7.425	-0.014	142.184
			Max. Vy	8	9.611	-141.996	0.163
			Max. Vx	2	-9.612	-0.014	142.184
			Max. Torque	20			-0.269
L5	140 - 135	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-22.542	-0.006	0.374
			Max. Mx	8	-11.716	-199.561	0.170
			Max. My	2	-11.713	-0.019	199.758
			Max. Vy	8	13.947	-199.561	0.170
			Max. Vx	2	-13.949	-0.019	199.758
			Max. Torque	20			-0.269
L6	135 - 130	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-23.060	-0.006	0.374
			Max. Mx	8	-12.159	-269.851	0.178
			Max. My	2	-12.157	-0.027	270.058
			Max. Vy	8	14.184	-269.851	0.178
			Max. Vx	2	-14.186	-0.027	270.058
			Max. Torque	20			-0.268
L7	130 - 125.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-23.534	-0.006	0.374
			Max. Mx	8	-12.559	-330.515	0.184
			Max. My	2	-12.557	-0.033	330.731
			Max. Vy	8	14.383	-330.515	0.184
			Max. Vx	2	-14.385	-0.033	330.731
			Max. Torque	20			-0.268
L8	125.75 - 125.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-23.564	-0.006	0.374
			Max. Mx	8	-12.593	-334.109	0.184
			Max. My	2	-12.590	-0.033	334.326
			Max. Vy	8	14.386	-334.109	0.184
			Max. Vx	2	-14.388	-0.033	334.326
			Max. Torque	20			-0.268
L9	125.5 - 119.12	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-30.743	-0.006	0.891
			Max. Mx	8	-16.420	-384.141	0.350
			Max. My	2	-16.414	-0.038	384.726
			Max. Vy	8	18.409	-384.141	0.350
			Max. Vx	2	-18.453	-0.038	384.726
			Max. Torque	20			-0.668
L10	119.12 - 117.87	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-31.843	-0.006	0.891

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Mx	8	-17.241	-476.842	0.357
			Max. My	2	-17.235	-0.048	477.647
			Max. Vy	8	18.689	-476.842	0.357
			Max. Vx	2	-18.733	-0.048	477.647
			Max. Torque	20			-0.667
L11	117.87 - 117.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-31.862	-0.006	0.891
			Max. Mx	8	-17.272	-479.083	0.357
			Max. My	2	-17.266	-0.048	479.893
			Max. Vy	8	18.681	-479.083	0.357
			Max. Vx	2	-18.724	-0.048	479.893
			Max. Torque	20			-0.667
L12	117.75 - 117.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-31.900	-0.006	0.891
			Max. Mx	8	-17.302	-483.754	0.358
			Max. My	2	-17.297	-0.049	484.575
			Max. Vy	8	18.693	-483.754	0.358
			Max. Vx	2	-18.737	-0.049	484.575
			Max. Torque	20			-0.667
L13	117.5 - 112.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-33.019	-0.006	0.891
			Max. Mx	8	-18.226	-577.949	0.364
			Max. My	2	-18.220	-0.059	578.989
			Max. Vy	8	18.997	-577.949	0.364
			Max. Vx	2	-19.040	-0.059	578.989
			Max. Torque	20			-0.667
L14	112.5 - 107.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-34.476	-0.902	0.374
			Max. Mx	8	-19.374	-674.927	0.116
			Max. My	2	-19.367	-0.623	675.356
			Max. Vy	8	19.508	-674.927	0.116
			Max. Vx	2	-19.584	-0.623	675.356
			Max. Torque	13			0.781
L15	107.5 - 103	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-35.552	-0.890	0.358
			Max. Mx	8	-20.253	-763.272	0.245
			Max. My	2	-20.246	-0.755	764.042
			Max. Vy	8	19.776	-763.272	0.245
			Max. Vx	2	-19.852	-0.755	764.042
			Max. Torque	13			0.781
L16	103 - 102.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-35.626	-0.889	0.356
			Max. Mx	8	-20.322	-768.215	0.252
			Max. My	2	-20.315	-0.762	769.005
			Max. Vy	8	19.784	-768.215	0.252
			Max. Vx	2	-19.860	-0.762	769.005
			Max. Torque	13			0.781
L17	102.75 - 100.21	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-36.398	-0.883	0.350
			Max. Mx	8	-20.937	-818.667	0.326
			Max. My	2	-20.931	-0.837	819.649
			Max. Vy	8	19.955	-818.667	0.326
			Max. Vx	2	-20.031	-0.837	819.649
			Max. Torque	13			0.781
L18	100.21 - 95.83	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-36.414	-0.883	0.350
			Max. Mx	8	-20.960	-819.605	0.327
			Max. My	2	-20.953	-0.839	820.591
			Max. Vy	8	19.951	-819.605	0.327

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	2	-20.026	-0.839	820.591
			Max. Torque	13			0.781
L19	95.83 - 94.83	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-39.493	-0.877	0.346
			Max. Mx	8	-23.507	-927.234	0.481
			Max. My	2	-23.501	-0.996	928.625
			Max. Vy	8	20.407	-927.234	0.481
			Max. Vx	2	-20.483	-0.996	928.625
			Max. Torque	13			0.780
L20	94.83 - 93.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-39.991	-0.875	0.345
			Max. Mx	8	-23.898	-954.427	0.520
			Max. My	2	-23.892	-1.035	955.919
			Max. Vy	8	20.501	-954.427	0.520
			Max. Vx	2	-20.577	-1.035	955.919
			Max. Torque	13			0.780
L21	93.5 - 93.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-40.099	-0.875	0.345
			Max. Mx	8	-23.992	-959.552	0.527
			Max. My	2	-23.986	-1.042	961.063
			Max. Vy	8	20.511	-959.552	0.527
			Max. Vx	2	-20.587	-1.042	961.063
			Max. Torque	13			0.780
L22	93.25 - 88.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-42.253	-0.868	0.341
			Max. Mx	8	-25.732	-1063.013	0.672
			Max. My	2	-25.726	-1.190	1064.905
			Max. Vy	8	20.883	-1063.013	0.672
			Max. Vx	2	-20.959	-1.190	1064.905
			Max. Torque	13			0.780
L23	88.25 - 87.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-42.692	-0.867	0.341
			Max. Mx	8	-26.087	-1083.925	0.701
			Max. My	2	-26.081	-1.219	1085.894
			Max. Vy	8	20.956	-1083.925	0.701
			Max. Vx	2	-21.032	-1.219	1085.894
			Max. Torque	13			0.780
L24	87.25 - 87	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-42.806	-0.867	0.340
			Max. Mx	8	-26.183	-1089.165	0.708
			Max. My	2	-26.177	-1.227	1091.153
			Max. Vy	8	20.970	-1089.165	0.708
			Max. Vx	2	-21.046	-1.227	1091.153
			Max. Torque	13			0.780
L25	87 - 86.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-43.033	-0.866	0.340
			Max. Mx	8	-26.367	-1099.658	0.723
			Max. My	2	-26.361	-1.242	1101.685
			Max. Vy	8	21.009	-1099.658	0.723
			Max. Vx	2	-21.085	-1.242	1101.685
			Max. Torque	13			0.780
L26	86.5 - 86.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-43.133	-0.866	0.340
			Max. Mx	8	-26.448	-1104.912	0.730
			Max. My	2	-26.442	-1.249	1106.957
			Max. Vy	8	21.025	-1104.912	0.730
			Max. Vx	2	-21.101	-1.249	1106.957
			Max. Torque	13			0.780
L27	86.25 - 81.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-49.903	-1.005	0.666
			Max. Mx	8	-31.160	-1215.386	1.015

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. My	2	-31.153	-1.524	1217.875
			Max. Vy	8	23.877	-1215.386	1.015
			Max. Vx	2	-23.978	-1.524	1217.875
			Max. Torque	13			0.903
L28	81.25 - 76.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-51.871	-0.998	0.663
			Max. Mx	8	-32.795	-1335.551	1.179
			Max. My	2	-32.789	-1.690	1338.545
			Max. Vy	8	24.209	-1335.551	1.179
			Max. Vx	2	-24.310	-1.690	1338.545
			Max. Torque	13			0.903
L29	76.25 - 75.416	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-52.216	-0.997	0.662
			Max. Mx	8	-33.073	-1355.757	1.207
			Max. My	2	-33.067	-1.718	1358.835
			Max. Vy	8	24.263	-1355.757	1.207
			Max. Vx	2	-24.364	-1.718	1358.835
			Max. Torque	13			0.903
L30	75.416 - 75.166	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-52.328	-0.997	0.662
			Max. Mx	8	-33.170	-1361.822	1.215
			Max. My	2	-33.163	-1.726	1364.926
			Max. Vy	8	24.274	-1361.822	1.215
			Max. Vx	2	-24.375	-1.726	1364.926
			Max. Torque	13			0.903
L31	75.166 - 70.166	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-54.578	-0.990	0.658
			Max. Mx	8	-34.999	-1484.038	1.379
			Max. My	2	-34.993	-1.892	1487.645
			Max. Vy	8	24.625	-1484.038	1.379
			Max. Vx	2	-24.725	-1.892	1487.645
			Max. Torque	13			0.903
L32	70.166 - 65.166	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-56.853	-0.983	0.654
			Max. Mx	8	-36.859	-1607.956	1.542
			Max. My	2	-36.853	-2.057	1612.067
			Max. Vy	8	24.963	-1607.956	1.542
			Max. Vx	2	-25.064	-2.057	1612.067
			Max. Torque	13			0.902
L33	65.166 - 60.166	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-59.152	-0.976	0.650
			Max. Mx	8	-38.744	-1733.543	1.705
			Max. My	2	-38.739	-2.222	1738.159
			Max. Vy	8	25.294	-1733.543	1.705
			Max. Vx	2	-25.394	-2.222	1738.159
			Max. Torque	13			0.902
L34	60.166 - 57	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-60.625	-0.971	0.647
			Max. Mx	8	-39.954	-1813.914	1.808
			Max. My	2	-39.949	-2.327	1818.848
			Max. Vy	8	25.500	-1813.914	1.808
			Max. Vx	2	-25.600	-2.327	1818.848
			Max. Torque	13			0.902
L35	57 - 56.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-60.742	-0.971	0.647
			Max. Mx	8	-40.056	-1820.288	1.816
			Max. My	2	-40.051	-2.335	1825.247

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	8	25.507	-1820.288	1.816
			Max. Vx	2	-25.608	-2.335	1825.247
			Max. Torque	13			0.902
L36	56.75 - 53	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-62.510	-0.975	0.668
			Max. Mx	8	-41.495	-1916.374	1.938
			Max. My	2	-41.491	-2.458	1921.710
			Max. Vy	8	25.757	-1916.374	1.938
			Max. Vx	2	-25.857	-2.458	1921.710
			Max. Torque	13			0.902
L37	53 - 47.203	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-62.617	-0.975	0.670
			Max. Mx	8	-41.591	-1921.884	1.945
			Max. My	2	-41.587	-2.465	1927.242
			Max. Vy	8	25.758	-1921.884	1.945
			Max. Vx	2	-25.859	-2.465	1927.242
			Max. Torque	13			0.902
L38	47.203 - 46.203	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-68.320	-0.990	0.735
			Max. Mx	8	-46.422	-2093.243	2.160
			Max. My	2	-46.418	-2.681	2099.263
			Max. Vy	8	26.296	-2093.243	2.160
			Max. Vx	2	-26.397	-2.681	2099.263
			Max. Torque	13			0.902
L39	46.203 - 41.203	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-70.857	-0.975	0.744
			Max. Mx	8	-48.551	-2225.381	2.322
			Max. My	2	-48.547	-2.845	2231.904
			Max. Vy	8	26.586	-2225.381	2.322
			Max. Vx	2	-26.686	-2.845	2231.904
			Max. Torque	13			0.902
L40	41.203 - 39.333	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-71.832	-0.970	0.747
			Max. Mx	8	-49.351	-2275.171	2.383
			Max. My	2	-49.347	-2.906	2281.882
			Max. Vy	8	26.703	-2275.171	2.383
			Max. Vx	2	-26.804	-2.906	2281.882
			Max. Torque	13			0.902
L41	39.333 - 39.083	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-71.974	-0.969	0.748
			Max. Mx	8	-49.479	-2281.842	2.391
			Max. My	2	-49.476	-2.914	2288.578
			Max. Vy	8	26.696	-2281.842	2.391
			Max. Vx	2	-26.797	-2.914	2288.578
			Max. Torque	13			0.902
L42	39.083 - 37.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-72.727	-0.965	0.750
			Max. Mx	8	-50.096	-2317.477	2.434
			Max. My	2	-50.092	-2.957	2324.346
			Max. Vy	8	26.788	-2317.477	2.434
			Max. Vx	2	-26.888	-2.957	2324.346
			Max. Torque	13			0.902
L43	37.75 - 37.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-72.860	-0.964	0.751
			Max. Mx	8	-50.211	-2324.171	2.442
			Max. My	2	-50.208	-2.966	2331.066
			Max. Vy	8	26.789	-2324.171	2.442

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	2	-26.889	-2.966	2331.066
			Max. Torque	13			0.902
L44	37.5 - 32.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-75.456	-0.949	0.759
			Max. Mx	8	-52.385	-2458.758	2.603
			Max. My	2	-52.382	-3.128	2466.153
			Max. Vy	8	27.064	-2458.758	2.603
			Max. Vx	2	-27.164	-3.128	2466.153
			Max. Torque	13			0.902
L45	32.5 - 27.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-78.063	-0.933	0.768
			Max. Mx	8	-54.592	-2594.628	2.764
			Max. My	2	-54.589	-3.290	2602.522
			Max. Vy	8	27.313	-2594.628	2.764
			Max. Vx	2	-27.413	-3.290	2602.522
			Max. Torque	13			0.902
L46	27.5 - 27.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-78.195	-0.933	0.769
			Max. Mx	8	-54.709	-2601.454	2.772
			Max. My	2	-54.706	-3.298	2609.373
			Max. Vy	8	27.315	-2601.454	2.772
			Max. Vx	2	-27.415	-3.298	2609.373
			Max. Torque	13			0.902
L47	27.25 - 27	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-78.326	-0.932	0.769
			Max. Mx	8	-54.821	-2608.284	2.780
			Max. My	2	-54.818	-3.306	2616.227
			Max. Vy	8	27.328	-2608.284	2.780
			Max. Vx	2	-27.427	-3.306	2616.227
			Max. Torque	13			0.901
L48	27 - 22	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-80.982	-0.930	0.736
			Max. Mx	8	-57.053	-2745.523	2.940
			Max. My	2	-57.051	-3.466	2753.964
			Max. Vy	8	27.587	-2745.523	2.940
			Max. Vx	2	-27.686	-3.466	2753.964
			Max. Torque	13			0.901
L49	22 - 21.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-81.385	-0.931	0.727
			Max. Mx	8	-57.394	-2766.216	2.964
			Max. My	2	-57.392	-3.490	2774.731
			Max. Vy	8	27.621	-2766.216	2.964
			Max. Vx	2	-27.720	-3.490	2774.731
			Max. Torque	13			0.901
L50	21.25 - 21	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-81.531	-0.931	0.724
			Max. Mx	8	-57.522	-2773.120	2.972
			Max. My	2	-57.520	-3.498	2781.660
			Max. Vy	8	27.626	-2773.120	2.972
			Max. Vx	2	-27.725	-3.498	2781.660
			Max. Torque	13			0.901
L51	21 - 17	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-83.868	-0.929	0.687
			Max. Mx	8	-59.504	-2884.012	3.099
			Max. My	2	-59.503	-3.626	2892.947
			Max. Vy	8	27.839	-2884.012	3.099
			Max. Vx	2	-27.938	-3.626	2892.947
			Max. Torque	13			0.901
L52	17 - 16.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-84.010	-0.929	0.685
			Max. Mx	8	-59.629	-2890.969	3.107

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. My	2	-59.627	-3.634	2899.929
			Max. Vy	8	27.840	-2890.969	3.107
			Max. Vx	2	-27.939	-3.634	2899.929
			Max. Torque	13			0.901
L53	16.75 - 16.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-84.292	-0.928	0.681
			Max. Mx	8	-59.866	-2904.893	3.123
			Max. My	2	-59.864	-3.650	2913.903
			Max. Vy	8	27.868	-2904.893	3.123
			Max. Vx	2	-27.967	-3.650	2913.903
			Max. Torque	13			0.901
L54	16.25 - 16	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-84.442	-0.928	0.679
			Max. Mx	8	-59.996	-2911.860	3.131
			Max. My	2	-59.995	-3.658	2920.894
			Max. Vy	8	27.877	-2911.860	3.131
			Max. Vx	2	-27.976	-3.658	2920.894
			Max. Torque	13			0.901
L55	16 - 11	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-87.428	-0.905	0.680
			Max. Mx	8	-62.565	-3051.878	3.290
			Max. My	2	-62.564	-3.816	3061.405
			Max. Vy	8	28.148	-3051.878	3.290
			Max. Vx	2	-28.247	-3.816	3061.405
			Max. Torque	13			0.901
L56	11 - 6	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-90.417	-0.879	0.692
			Max. Mx	8	-65.166	-3193.196	3.447
			Max. My	2	-65.166	-3.974	3203.214
			Max. Vy	8	28.409	-3193.196	3.447
			Max. Vx	2	-28.507	-3.974	3203.214
			Max. Torque	13			0.901
L57	6 - 1	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-93.397	-0.855	0.702
			Max. Mx	8	-67.796	-3335.813	3.604
			Max. My	2	-67.795	-4.131	3346.318
			Max. Vy	8	28.668	-3335.813	3.604
			Max. Vx	2	-28.766	-4.131	3346.318
			Max. Torque	13			0.901
L58	1 - 0	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-93.865	-0.851	0.704
			Max. Mx	8	-68.212	-3364.485	3.635
			Max. My	2	-68.211	-4.162	3375.088
			Max. Vy	8	28.714	-3364.485	3.635
			Max. Vx	2	-28.812	-4.162	3375.088
			Max. Torque	13			0.901

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	26	93.865	-0.000	0.000
	Max. H_x	21	51.165	28.693	-0.031
	Max. H_z	2	68.221	-0.031	28.790
	Max. M_x	2	3375.088	-0.031	28.790
	Max. M_z	8	3364.485	-28.693	0.031

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
	Max. Torsion	13	0.901	-14.319	-24.917
	Min. Vert	25	51.165	14.319	24.917
	Min. H_x	8	68.221	-28.693	0.031
	Min. H_z	14	68.221	0.031	-28.790
	Min. M_x	14	-3374.688	0.031	-28.790
	Min. M_z	20	-3363.033	28.693	-0.031
	Min. Torsion	25	-0.898	14.319	24.917

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	56.851	0.000	0.000	-0.150	-0.567	0.000
1.2 Dead+1.0 Wind 0 deg - No Ice	68.221	0.031	-28.790	-3375.088	-4.162	0.807
0.9 Dead+1.0 Wind 0 deg - No Ice	51.165	0.031	-28.790	-3335.292	-3.939	0.811
1.2 Dead+1.0 Wind 30 deg - No Ice	68.221	14.373	-24.949	-2924.659	-1685.574	0.501
0.9 Dead+1.0 Wind 30 deg - No Ice	51.165	14.373	-24.949	-2890.171	-1665.540	0.508
1.2 Dead+1.0 Wind 60 deg - No Ice	68.221	24.864	-14.422	-1690.625	-2915.540	0.060
0.9 Dead+1.0 Wind 60 deg - No Ice	51.165	24.864	-14.422	-1670.672	-2881.012	0.067
1.2 Dead+1.0 Wind 90 deg - No Ice	68.221	28.693	-0.031	-3.635	-3364.485	-0.398
0.9 Dead+1.0 Wind 90 deg - No Ice	51.165	28.693	-0.031	-3.549	-3324.664	-0.393
1.2 Dead+1.0 Wind 120 deg - No Ice	68.221	24.833	14.368	1684.279	-2912.105	-0.750
0.9 Dead+1.0 Wind 120 deg - No Ice	51.165	24.833	14.368	1664.489	-2877.610	-0.748
1.2 Dead+1.0 Wind 150 deg - No Ice	68.221	14.319	24.917	2920.829	-1679.620	-0.900
0.9 Dead+1.0 Wind 150 deg - No Ice	51.165	14.319	24.917	2886.481	-1659.643	-0.901
1.2 Dead+1.0 Wind 180 deg - No Ice	68.221	-0.031	28.790	3374.688	2.716	-0.807
0.9 Dead+1.0 Wind 180 deg - No Ice	51.165	-0.031	28.790	3335.000	2.873	-0.812
1.2 Dead+1.0 Wind 210 deg - No Ice	68.221	-14.373	24.949	2924.258	1684.124	-0.498
0.9 Dead+1.0 Wind 210 deg - No Ice	51.165	-14.373	24.949	2889.878	1664.471	-0.505
1.2 Dead+1.0 Wind 240 deg - No Ice	68.221	-24.864	14.422	1690.228	2914.086	-0.057
0.9 Dead+1.0 Wind 240 deg - No Ice	51.165	-24.864	14.422	1670.382	2879.940	-0.063
1.2 Dead+1.0 Wind 270 deg - No Ice	68.221	-28.693	0.031	3.242	3363.033	0.399
0.9 Dead+1.0 Wind 270 deg - No Ice	51.165	-28.693	0.031	3.262	3323.593	0.394
1.2 Dead+1.0 Wind 300 deg - No Ice	68.221	-24.833	-14.368	-1684.671	2910.657	0.747
0.9 Dead+1.0 Wind 300 deg -	51.165	-24.833	-14.368	-1664.775	2876.543	0.745

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
No Ice 1.2 Dead+1.0 Wind 330 deg - No Ice	68.221	-14.319	-24.917	-2921.225	1678.175	0.896
0.9 Dead+1.0 Wind 330 deg - No Ice	51.165	-14.319	-24.917	-2886.769	1658.578	0.898
1.2 Dead+1.0 Ice+1.0 Temp	93.865	0.000	-0.000	-0.704	-0.851	0.000
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	93.865	0.008	-7.278	-840.950	-1.828	0.218
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	93.865	3.636	-6.307	-728.825	-420.638	0.157
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	93.865	6.290	-3.646	-421.627	-726.997	0.053
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	93.865	7.259	-0.008	-1.670	-838.816	-0.065
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	93.865	6.283	3.633	418.519	-726.132	-0.165
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	93.865	3.623	6.299	726.350	-419.139	-0.222
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	93.865	-0.008	7.278	839.340	-0.097	-0.218
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	93.865	-3.636	6.307	727.215	418.714	-0.157
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	93.865	-6.290	3.646	420.017	725.072	-0.053
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	93.865	-7.259	0.008	0.061	836.891	0.065
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	93.865	-6.283	-3.633	-420.128	724.207	0.165
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	93.865	-3.623	-6.299	-727.959	417.215	0.221
Dead+Wind 0 deg - Service	56.851	0.007	-6.454	-751.492	-1.367	0.183
Dead+Wind 30 deg - Service	56.851	3.222	-5.592	-651.217	-375.687	0.111
Dead+Wind 60 deg - Service	56.851	5.574	-3.233	-376.492	-649.503	0.010
Dead+Wind 90 deg - Service	56.851	6.432	-0.007	-0.931	-749.446	-0.093
Dead+Wind 120 deg - Service	56.851	5.567	3.221	374.836	-648.737	-0.172
Dead+Wind 150 deg - Service	56.851	3.210	5.585	650.121	-374.360	-0.205
Dead+Wind 180 deg - Service	56.851	-0.007	6.454	751.163	0.165	-0.183
Dead+Wind 210 deg - Service	56.851	-3.222	5.592	650.887	374.485	-0.111
Dead+Wind 240 deg - Service	56.851	-5.574	3.233	376.163	648.301	-0.010
Dead+Wind 270 deg - Service	56.851	-6.432	0.007	0.601	748.244	0.093
Dead+Wind 300 deg - Service	56.851	-5.567	-3.221	-375.165	647.535	0.172
Dead+Wind 330 deg - Service	56.851	-3.210	-5.585	-650.451	373.158	0.205

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	0.000	-56.851	0.000	0.000	56.851	0.000	0.000%
2	0.031	-68.221	-28.790	-0.031	68.221	28.790	0.000%
3	0.031	-51.165	-28.790	-0.031	51.165	28.790	0.000%
4	14.373	-68.221	-24.949	-14.373	68.221	24.949	0.000%
5	14.373	-51.165	-24.949	-14.373	51.165	24.949	0.000%
6	24.864	-68.221	-14.422	-24.864	68.221	14.422	0.000%
7	24.864	-51.165	-14.422	-24.864	51.165	14.422	0.000%
8	28.693	-68.221	-0.031	-28.693	68.221	0.031	0.000%
9	28.693	-51.165	-0.031	-28.693	51.165	0.031	0.000%
10	24.833	-68.221	14.368	-24.833	68.221	-14.368	0.000%

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
11	24.833	-51.165	14.368	-24.833	51.165	-14.368	0.000%
12	14.319	-68.221	24.917	-14.319	68.221	-24.917	0.000%
13	14.319	-51.165	24.917	-14.319	51.165	-24.917	0.000%
14	-0.031	-68.221	28.790	0.031	68.221	-28.790	0.000%
15	-0.031	-51.165	28.790	0.031	51.165	-28.790	0.000%
16	-14.373	-68.221	24.949	14.373	68.221	-24.949	0.000%
17	-14.373	-51.165	24.949	14.373	51.165	-24.949	0.000%
18	-24.864	-68.221	14.422	24.864	68.221	-14.422	0.000%
19	-24.864	-51.165	14.422	24.864	51.165	-14.422	0.000%
20	-28.693	-68.221	0.031	28.693	68.221	-0.031	0.000%
21	-28.693	-51.165	0.031	28.693	51.165	-0.031	0.000%
22	-24.833	-68.221	-14.368	24.833	68.221	14.368	0.000%
23	-24.833	-51.165	-14.368	24.833	51.165	14.368	0.000%
24	-14.319	-68.221	-24.917	14.319	68.221	24.917	0.000%
25	-14.319	-51.165	-24.917	14.319	51.165	24.917	0.000%
26	0.000	-93.865	0.000	-0.000	93.865	0.000	0.000%
27	0.008	-93.865	-7.278	-0.008	93.865	7.278	0.000%
28	3.636	-93.865	-6.307	-3.636	93.865	6.307	0.000%
29	6.290	-93.865	-3.646	-6.290	93.865	3.646	0.000%
30	7.259	-93.865	-0.008	-7.259	93.865	0.008	0.000%
31	6.283	-93.865	3.633	-6.283	93.865	-3.633	0.000%
32	3.623	-93.865	6.299	-3.623	93.865	-6.299	0.000%
33	-0.008	-93.865	7.278	0.008	93.865	-7.278	0.000%
34	-3.636	-93.865	6.307	3.636	93.865	-6.307	0.000%
35	-6.290	-93.865	3.646	6.290	93.865	-3.646	0.000%
36	-7.259	-93.865	0.008	7.259	93.865	-0.008	0.000%
37	-6.283	-93.865	-3.633	6.283	93.865	3.633	0.000%
38	-3.623	-93.865	-6.299	3.623	93.865	6.299	0.000%
39	0.007	-56.851	-6.454	-0.007	56.851	6.454	0.000%
40	3.222	-56.851	-5.592	-3.222	56.851	5.592	0.000%
41	5.574	-56.851	-3.233	-5.574	56.851	3.233	0.000%
42	6.432	-56.851	-0.007	-6.432	56.851	0.007	0.000%
43	5.567	-56.851	3.221	-5.567	56.851	-3.221	0.000%
44	3.210	-56.851	5.585	-3.210	56.851	-5.585	0.000%
45	-0.007	-56.851	6.454	0.007	56.851	-6.454	0.000%
46	-3.222	-56.851	5.592	3.222	56.851	-5.592	0.000%
47	-5.574	-56.851	3.233	5.574	56.851	-3.233	0.000%
48	-6.432	-56.851	0.007	6.432	56.851	-0.007	0.000%
49	-5.567	-56.851	-3.221	5.567	56.851	3.221	0.000%
50	-3.210	-56.851	-5.585	3.210	56.851	5.585	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	6	0.00000001	0.00023789
3	Yes	6	0.00000001	0.00008544
4	Yes	7	0.00000001	0.00040457
5	Yes	7	0.00000001	0.00010283
6	Yes	7	0.00000001	0.00039975
7	Yes	7	0.00000001	0.00010140
8	Yes	6	0.00000001	0.00013191
9	Yes	6	0.00000001	0.00004432
10	Yes	7	0.00000001	0.00039326
11	Yes	7	0.00000001	0.00009986

12	Yes	7	0.00000001	0.00040617
13	Yes	7	0.00000001	0.00010330
14	Yes	6	0.00000001	0.00020696
15	Yes	6	0.00000001	0.00007398
16	Yes	7	0.00000001	0.00039570
17	Yes	7	0.00000001	0.00010054
18	Yes	7	0.00000001	0.00040059
19	Yes	7	0.00000001	0.00010153
20	Yes	6	0.00000001	0.00010723
21	Yes	5	0.00000001	0.00080943
22	Yes	7	0.00000001	0.00040423
23	Yes	7	0.00000001	0.00010259
24	Yes	7	0.00000001	0.00039181
25	Yes	7	0.00000001	0.00009932
26	Yes	4	0.00000001	0.00021411
27	Yes	7	0.00000001	0.00039953
28	Yes	7	0.00000001	0.00047003
29	Yes	7	0.00000001	0.00046877
30	Yes	7	0.00000001	0.00039830
31	Yes	7	0.00000001	0.00046552
32	Yes	7	0.00000001	0.00046706
33	Yes	7	0.00000001	0.00039737
34	Yes	7	0.00000001	0.00046474
35	Yes	7	0.00000001	0.00046532
36	Yes	7	0.00000001	0.00039662
37	Yes	7	0.00000001	0.00046665
38	Yes	7	0.00000001	0.00046601
39	Yes	5	0.00000001	0.00028867
40	Yes	6	0.00000001	0.00008055
41	Yes	6	0.00000001	0.00007771
42	Yes	5	0.00000001	0.00024739
43	Yes	6	0.00000001	0.00007458
44	Yes	6	0.00000001	0.00008189
45	Yes	5	0.00000001	0.00028497
46	Yes	6	0.00000001	0.00007536
47	Yes	6	0.00000001	0.00007790
48	Yes	5	0.00000001	0.00024505
49	Yes	6	0.00000001	0.00008068
50	Yes	6	0.00000001	0.00007383

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	160 - 155	19.905	40	1.345	0.002
L2	155 - 150	18.499	40	1.339	0.002
L3	150 - 145	17.107	40	1.317	0.001
L4	145 - 140	15.749	40	1.274	0.001
L5	140 - 135	14.445	40	1.214	0.001
L6	135 - 130	13.211	40	1.142	0.001
L7	130 - 125.75	12.059	40	1.055	0.001
L8	125.75 - 125.5	11.157	40	0.972	0.001
L9	125.5 - 119.12	11.106	40	0.967	0.001
L10	122.87 - 117.87	10.588	40	0.912	0.001
L11	117.87 - 117.75	9.660	40	0.852	0.001
L12	117.75 - 117.5	9.639	40	0.850	0.001
L13	117.5 - 112.5	9.594	40	0.845	0.001
L14	112.5 - 107.5	8.737	40	0.793	0.001
L15	107.5 - 103	7.935	40	0.738	0.001

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L16	103 - 102.75	7.263	40	0.687	0.000
L17	102.75 - 100.21	7.227	40	0.685	0.000
L18	100.21 - 95.83	6.869	40	0.660	0.000
L19	100.163 - 94.83	6.863	40	0.659	0.000
L20	94.83 - 93.5	6.139	40	0.634	0.000
L21	93.5 - 93.25	5.963	40	0.624	0.000
L22	93.25 - 88.25	5.931	40	0.622	0.000
L23	88.25 - 87.25	5.296	40	0.590	0.000
L24	87.25 - 87	5.173	40	0.583	0.000
L25	87 - 86.5	5.143	40	0.581	0.000
L26	86.5 - 86.25	5.082	40	0.578	0.000
L27	86.25 - 81.25	5.052	40	0.576	0.000
L28	81.25 - 76.25	4.468	40	0.538	0.000
L29	76.25 - 75.416	3.925	40	0.499	0.000
L30	75.416 - 75.166	3.839	40	0.493	0.000
L31	75.166 - 70.166	3.813	40	0.491	0.000
L32	70.166 - 65.166	3.317	40	0.456	0.000
L33	65.166 - 60.166	2.858	40	0.421	0.000
L34	60.166 - 57	2.436	40	0.385	0.000
L35	57 - 56.75	2.188	40	0.363	0.000
L36	56.75 - 53	2.169	40	0.361	0.000
L37	53 - 47.203	1.897	40	0.334	0.000
L38	52.786 - 46.203	1.882	40	0.332	0.000
L39	46.203 - 41.203	1.440	40	0.305	0.000
L40	41.203 - 39.333	1.139	40	0.270	0.000
L41	39.333 - 39.083	1.035	40	0.257	0.000
L42	39.083 - 37.75	1.022	40	0.256	0.000
L43	37.75 - 37.5	0.952	40	0.247	0.000
L44	37.5 - 32.5	0.939	40	0.246	0.000
L45	32.5 - 27.5	0.700	40	0.210	0.000
L46	27.5 - 27.25	0.498	40	0.176	0.000
L47	27.25 - 27	0.489	40	0.174	0.000
L48	27 - 22	0.480	40	0.173	0.000
L49	22 - 21.25	0.317	40	0.139	0.000
L50	21.25 - 21	0.295	40	0.134	0.000
L51	21 - 17	0.288	40	0.132	0.000
L52	17 - 16.75	0.189	40	0.105	0.000
L53	16.75 - 16.25	0.184	40	0.104	0.000
L54	16.25 - 16	0.173	40	0.100	0.000
L55	16 - 11	0.168	40	0.099	0.000
L56	11 - 6	0.080	40	0.068	0.000
L57	6 - 1	0.025	40	0.038	0.000
L58	1 - 0	0.001	40	0.008	0.000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
159.000	APXVSPP18-C-A20 w/ Mount Pipe	40	19.624	1.344	0.002	20622
157.000	800MHz 2X50W RRH W/FILTER	40	19.061	1.342	0.002	20622
152.000	RRUS-11	40	17.661	1.328	0.002	11899
150.000	HPA-65R-BUU-H8 w/ Mount Pipe	40	17.107	1.317	0.001	9003
137.000	APX16DWV-16DWV-S-E-A20 w/ Mount Pipe	40	13.695	1.172	0.001	3859
125.000	MT6407-77A w/ Mount Pipe	40	11.005	0.957	0.001	3140
109.000	DB589	40	8.169	0.756	0.001	5201

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
83.000	MX08FRO665-21 w/ Mount Pipe	40	4.668	0.551	0.000	7492

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	160 - 155	89.408	2	6.044	0.007
L2	155 - 150	83.097	2	6.019	0.007
L3	150 - 145	76.851	2	5.922	0.006
L4	145 - 140	70.754	2	5.729	0.006
L5	140 - 135	64.899	2	5.460	0.005
L6	135 - 130	59.355	2	5.134	0.004
L7	130 - 125.75	54.185	2	4.743	0.004
L8	125.75 - 125.5	50.131	2	4.372	0.004
L9	125.5 - 119.12	49.903	2	4.350	0.003
L10	122.87 - 117.87	47.577	2	4.101	0.003
L11	117.87 - 117.75	43.407	2	3.830	0.003
L12	117.75 - 117.5	43.310	2	3.820	0.003
L13	117.5 - 112.5	43.111	2	3.800	0.003
L14	112.5 - 107.5	39.257	2	3.566	0.003
L15	107.5 - 103	35.654	2	3.320	0.002
L16	103 - 102.75	32.635	4	3.090	0.002
L17	102.75 - 100.21	32.473	4	3.079	0.002
L18	100.21 - 95.83	30.867	4	2.965	0.002
L19	100.163 - 94.83	30.838	4	2.964	0.002
L20	94.83 - 93.5	27.584	4	2.852	0.002
L21	93.5 - 93.25	26.796	4	2.806	0.002
L22	93.25 - 88.25	26.650	4	2.798	0.002
L23	88.25 - 87.25	23.799	4	2.650	0.002
L24	87.25 - 87	23.247	4	2.621	0.002
L25	87 - 86.5	23.110	4	2.614	0.002
L26	86.5 - 86.25	22.837	4	2.600	0.002
L27	86.25 - 81.25	22.701	4	2.592	0.002
L28	81.25 - 76.25	20.079	4	2.419	0.001
L29	76.25 - 75.416	17.639	4	2.244	0.001
L30	75.416 - 75.166	17.249	4	2.215	0.001
L31	75.166 - 70.166	17.134	4	2.208	0.001
L32	70.166 - 65.166	14.906	4	2.050	0.001
L33	65.166 - 60.166	12.843	4	1.892	0.001
L34	60.166 - 57	10.946	4	1.731	0.001
L35	57 - 56.75	9.832	4	1.630	0.001
L36	56.75 - 53	9.747	4	1.622	0.001
L37	53 - 47.203	8.521	4	1.501	0.001
L38	52.786 - 46.203	8.454	4	1.494	0.001
L39	46.203 - 41.203	6.469	4	1.373	0.001
L40	41.203 - 39.333	5.115	4	1.214	0.001
L41	39.333 - 39.083	4.651	4	1.156	0.000
L42	39.083 - 37.75	4.591	4	1.149	0.000
L43	37.75 - 37.5	4.275	4	1.111	0.000
L44	37.5 - 32.5	4.217	4	1.104	0.000
L45	32.5 - 27.5	3.145	4	0.945	0.000
L46	27.5 - 27.25	2.236	4	0.791	0.000
L47	27.25 - 27	2.195	4	0.783	0.000
L48	27 - 22	2.154	4	0.776	0.000
L49	22 - 21.25	1.422	4	0.622	0.000

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L50	21.25 - 21	1.326	4	0.600	0.000
L51	21 - 17	1.295	4	0.592	0.000
L52	17 - 16.75	0.849	4	0.473	0.000
L53	16.75 - 16.25	0.824	4	0.466	0.000
L54	16.25 - 16	0.776	4	0.451	0.000
L55	16 - 11	0.753	4	0.444	0.000
L56	11 - 6	0.361	4	0.306	0.000
L57	6 - 1	0.112	4	0.170	0.000
L58	1 - 0	0.004	4	0.036	0.000

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
159.000	APXVSPP18-C-A20 w/ Mount Pipe	2	88.144	6.042	0.007	4714
157.000	800MHz 2X50W RRH W/FILTER	2	85.618	6.034	0.007	4714
152.000	RRUS-11	2	79.337	5.972	0.007	2714
150.000	HPA-65R-BUU-H8 w/ Mount Pipe	2	76.851	5.922	0.006	2052
137.000	APX16DWV-16DWV-S-E-A20 w/ Mount Pipe	2	61.532	5.271	0.005	873
125.000	MT6407-77A w/ Mount Pipe	2	49.451	4.302	0.003	706
109.000	DB589	2	36.707	3.401	0.003	1164
83.000	MX08FRO665-21 w/ Mount Pipe	4	20.976	2.479	0.001	1672

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L1	160 - 155 (1)	TP17.62x16.5x0.188	5.000	0.000	0.0	10.375	-3.543	606.922	0.006
L2	155 - 150 (2)	TP18.741x17.62x0.188	5.000	0.000	0.0	11.042	-4.415	645.926	0.007
L3	150 - 145 (3)	TP19.861x18.741x0.188	5.000	0.000	0.0	11.708	-7.076	684.931	0.010
L4	145 - 140 (4)	TP20.981x19.861x0.188	5.000	0.000	0.0	12.375	-7.426	723.936	0.010
L5	140 - 135 (5)	TP22.102x20.981x0.188	5.000	0.000	0.0	13.042	-11.713	762.941	0.015
L6	135 - 130 (6)	TP23.222x22.102x0.188	5.000	0.000	0.0	13.708	-12.157	801.946	0.015
L7	130 - 125.75 (7)	TP24.174x23.222x0.188	4.250	0.000	0.0	14.275	-12.557	835.100	0.015
L8	125.75 - 125.5 (8)	TP24.23x24.174x0.188	0.250	0.000	0.0	14.309	-12.590	837.050	0.015
L9	125.5 - 119.12 (9)	TP25.66x24.23x0.188	6.380	0.000	0.0	14.659	-16.414	857.567	0.019
L10	119.12 - 117.87 (10)	TP25.544x24.445x0.25	5.000	0.000	0.0	20.071	-17.235	1174.150	0.015
L11	117.87 - 117.75 (11)	TP25.57x25.544x0.25	0.120	0.000	0.0	20.092	-17.266	1175.370	0.015
L12	117.75 - 117.5 (12)	TP25.625x25.57x0.25	0.250	0.000	0.0	20.135	-17.297	1177.920	0.015

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L13	117.5 - 112.5 (13)	TP26.725x25.625x0.475	5.000	0.000	0.0	39.576	-18.220	2315.170	0.008
L14	112.5 - 107.5 (14)	TP27.824x26.725x0.469	5.000	0.000	0.0	40.700	-19.366	2380.930	0.008
L15	107.5 - 103 (15)	TP28.814x27.824x0.463	4.500	0.000	0.0	41.619	-20.245	2434.690	0.008
L16	103 - 102.75 (16)	TP28.869x28.814x0.55	0.250	0.000	0.0	49.436	-20.315	2891.980	0.007
L17	102.75 - 100.21 (17)	TP29.427x28.869x0.538	2.540	0.000	0.0	49.286	-20.930	2883.240	0.007
L18	100.21 - 95.83 (18)	TP30.39x29.427x0.688	4.380	0.000	0.0	62.736	-20.953	3670.040	0.006
L19	95.83 - 94.83 (19)	TP30.119x28.937x0.738	5.333	0.000	0.0	68.776	-23.501	4023.420	0.006
L20	94.83 - 93.5 (20)	TP30.413x30.119x0.738	1.330	0.000	0.0	69.466	-23.891	4063.770	0.006
L21	93.5 - 93.25 (21)	TP30.469x30.413x0.913	0.250	0.000	0.0	85.603	-23.986	5007.790	0.005
L22	93.25 - 88.25 (22)	TP31.576x30.469x0.888	5.000	0.000	0.0	86.449	-25.726	5057.240	0.005
L23	88.25 - 87.25 (23)	TP31.798x31.576x0.888	1.000	0.000	0.0	87.073	-26.080	5093.750	0.005
L24	87.25 - 87 (24)	TP31.853x31.798x0.938	0.250	0.000	0.0	91.994	-26.177	5381.660	0.005
L25	87 - 86.5 (25)	TP31.964x31.853x0.925	0.500	0.000	0.0	91.130	-26.361	5331.080	0.005
L26	86.5 - 86.25 (26)	TP32.02x31.964x0.763	0.250	0.000	0.0	75.648	-26.442	4425.380	0.006
L27	86.25 - 81.25 (27)	TP33.127x32.02x0.738	5.000	0.000	0.0	75.819	-31.152	4435.400	0.007
L28	81.25 - 76.25 (28)	TP34.235x33.127x0.725	5.000	0.000	0.0	77.112	-32.788	4511.020	0.007
L29	76.25 - 75.416 (29)	TP34.42x34.235x0.725	0.834	0.000	0.0	77.537	-33.067	4535.890	0.007
L30	75.416 - 75.166 (30)	TP34.475x34.42x0.813	0.250	0.000	0.0	86.812	-33.163	5078.480	0.007
L31	75.166 - 70.166 (31)	TP35.583x34.475x0.8	5.000	0.000	0.0	88.321	-34.993	5166.750	0.007
L32	70.166 - 65.166 (32)	TP36.69x35.583x0.788	5.000	0.000	0.0	89.740	-36.853	5249.820	0.007
L33	65.166 - 60.166 (33)	TP37.798x36.69x0.763	5.000	0.000	0.0	89.633	-38.739	5243.520	0.007
L34	60.166 - 57 (34)	TP38.5x37.798x0.75	3.166	0.000	0.0	89.863	-39.949	5256.980	0.008
L35	57 - 56.75 (35)	TP38.555x38.5x0.75	0.250	0.000	0.0	89.995	-40.051	5264.690	0.008
L36	56.75 - 53 (36)	TP39.386x38.555x0.738	3.750	0.000	0.0	90.469	-41.490	5292.420	0.008
L37	53 - 47.203 (37)	TP40.67x39.386x0.738	5.797	0.000	0.0	90.580	-41.587	5298.920	0.008
L38	47.203 - 46.203 (38)	TP40.266x38.808x0.763	6.583	0.000	0.0	95.606	-46.417	5592.950	0.008
L39	46.203 - 41.203 (39)	TP41.374x40.266x0.75	5.000	0.000	0.0	96.705	-48.547	5657.230	0.009
L40	41.203 - 39.333 (40)	TP41.788x41.374x0.75	1.870	0.000	0.0	97.691	-49.347	5714.910	0.009
L41	39.333 - 39.083 (41)	TP41.843x41.788x0.825	0.250	0.000	0.0	107.408	-49.475	6283.400	0.008
L42	39.083 - 37.75 (42)	TP42.139x41.843x0.825	1.333	0.000	0.0	108.182	-50.092	6328.620	0.008
L43	37.75 - 37.5 (43)	TP42.194x42.139x0.75	0.250	0.000	0.0	98.657	-50.208	5771.450	0.009
L44	37.5 - 32.5 (44)	TP43.301x42.194x0.725	5.000	0.000	0.0	97.975	-52.382	5731.520	0.009
L45	32.5 - 27.5 (45)	TP44.409x43.301x0.725	5.000	0.000	0.0	100.523	-54.589	5880.610	0.009

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L46	27.5 - 27.25 (46)	TP44.464x44.409x0.725	0.250	0.000	0.0	100.651	-54.706	5888.060	0.009
L47	27.25 - 27 (47)	TP44.52x44.464x0.725	0.250	0.000	0.0	100.778	-54.818	5895.510	0.009
L48	27 - 22 (48)	TP45.627x44.52x0.713	5.000	0.000	0.0	101.573	-57.051	5942.040	0.010
L49	22 - 21.25 (49)	TP45.793x45.627x0.713	0.750	0.000	0.0	101.949	-57.392	5964.010	0.010
L50	21.25 - 21 (50)	TP45.849x45.793x0.725	0.250	0.000	0.0	103.836	-57.520	6074.420	0.009
L51	21 - 17 (51)	TP46.735x45.849x0.713	4.000	0.000	0.0	104.078	-59.503	6088.550	0.010
L52	17 - 16.75 (52)	TP46.79x46.735x0.7	0.250	0.000	0.0	102.403	-59.627	5990.560	0.010
L53	16.75 - 16.25 (53)	TP46.901x46.79x0.7	0.500	0.000	0.0	102.649	-59.864	6004.950	0.010
L54	16.25 - 16 (54)	TP46.956x46.901x0.775	0.250	0.000	0.0	113.462	-59.870	6637.550	0.009
L55	16 - 11 (55)	TP48.064x46.956x0.75	5.000	0.000	0.0	109.994	-60.003	6434.620	0.009
L56	11 - 6 (56)	TP49.171x48.064x0.75	5.000	0.000	0.0	112.630	-62.578	6588.850	0.009
L57	6 - 1 (57)	TP50.279x49.171x0.738	5.000	0.000	0.0	113.374	-65.179	6632.400	0.010
L58	1 - 0 (58)	TP50.5x50.279x0.525	1.000	0.000	0.0	82.907	-67.811	4850.050	0.014

Pole Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L1	160 - 155 (1)	TP17.62x16.5x0.188	17.932	275.518	0.065	0.000	275.518	0.000
L2	155 - 150 (2)	TP18.741x17.62x0.188	43.477	309.226	0.141	0.000	309.226	0.000
L3	150 - 145 (3)	TP19.861x18.741x0.188	94.795	342.633	0.277	0.000	342.633	0.000
L4	145 - 140 (4)	TP20.981x19.861x0.188	142.184	377.080	0.377	0.000	377.080	0.000
L5	140 - 135 (5)	TP22.102x20.981x0.188	199.757	412.461	0.484	0.000	412.461	0.000
L6	135 - 130 (6)	TP23.222x22.102x0.188	270.058	448.675	0.602	0.000	448.675	0.000
L7	130 - 125.75 (7)	TP24.174x23.222x0.188	330.731	480.033	0.689	0.000	480.033	0.000
L8	125.75 - 125.5 (8)	TP24.23x24.174x0.188	334.326	481.892	0.694	0.000	481.892	0.000
L9	125.5 - 119.12 (9)	TP25.66x24.23x0.188	384.727	501.550	0.767	0.000	501.550	0.000
L10	119.12 - 117.87 (10)	TP25.544x24.445x0.25	477.647	762.176	0.627	0.000	762.176	0.000
L11	117.87 - 117.75 (11)	TP25.57x25.544x0.25	479.893	763.569	0.628	0.000	763.569	0.000
L12	117.75 - 117.5 (12)	TP25.625x25.57x0.25	484.575	766.475	0.632	0.000	766.475	0.000
L13	117.5 - 112.5 (13)	TP26.725x25.625x0.475	578.989	1571.142	0.369	0.000	1571.142	0.000
L14	112.5 - 107.5 (14)	TP27.824x26.725x0.469	675.457	1685.417	0.401	0.000	1685.417	0.000
L15	107.5 - 103 (15)	TP28.814x27.824x0.463	764.169	1787.642	0.427	0.000	1787.642	0.000
L16	103 - 102.75 (16)	TP28.869x28.814x0.55	769.133	2114.500	0.364	0.000	2114.500	0.000
L17	102.75 - 100.21 (17)	TP29.427x28.869x0.538	819.793	2152.342	0.381	0.000	2152.342	0.000
L18	100.21 - 95.83 (18)	TP30.39x29.427x0.688	820.734	2712.308	0.303	0.000	2712.308	0.000
L19	95.83 - 94.83 (19)	TP30.119x28.937x0.738	928.800	3035.258	0.306	0.000	3035.258	0.000
L20	94.83 - 93.5 (20)	TP30.413x30.119x0.738	956.100	3097.192	0.309	0.000	3097.192	0.000
L21	93.5 - 93.25	TP30.469x30.413x0.913	961.250	3779.083	0.254	0.000	3779.083	0.000

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L22	93.25 - 88.25 (21)	TP31.576x30.469x0.888	1065.117	3970.192	0.268	0.000	3970.192	0.000
L23	88.25 - 87.25 (22)	TP31.798x31.576x0.888	1086.117	4028.533	0.270	0.000	4028.533	0.000
L24	87.25 - 87 (23)	TP31.853x31.798x0.938	1091.375	4250.308	0.257	0.000	4250.308	0.000
L25	87 - 86.5 (24)	TP31.964x31.853x0.925	1101.908	4229.300	0.261	0.000	4229.300	0.000
L26	86.5 - 86.25 (25)	TP32.02x31.964x0.763	1107.183	3554.092	0.312	0.000	3554.092	0.000
L27	86.25 - 81.25 (26)	TP33.127x32.02x0.738	1218.167	3697.083	0.329	0.000	3697.083	0.000
L28	81.25 - 76.25 (27)	TP34.235x33.127x0.725	1338.850	3894.475	0.344	0.000	3894.475	0.000
L29	76.25 - 75.416 (28)	TP34.42x34.235x0.725	1359.142	3938.000	0.345	0.000	3938.000	0.000
L30	75.416 - 75.166 (29)	TP34.475x34.42x0.813	1365.233	4393.592	0.311	0.000	4393.592	0.000
L31	75.166 - 70.166 (30)	TP35.583x34.475x0.8	1487.967	4623.842	0.322	0.000	4623.842	0.000
L32	70.166 - 65.166 (31)	TP36.69x35.583x0.788	1612.408	4854.542	0.332	0.000	4854.542	0.000
L33	65.166 - 60.166 (32)	TP37.798x36.69x0.763	1738.517	5008.283	0.347	0.000	5008.283	0.000
L34	60.166 - 57 (33)	TP38.5x37.798x0.75	1819.208	5121.542	0.355	0.000	5121.542	0.000
L35	57 - 56.75 (34)	TP38.555x38.5x0.75	1825.608	5136.725	0.355	0.000	5136.725	0.000
L36	56.75 - 53 (35)	TP39.386x38.555x0.738	1922.083	5282.883	0.364	0.000	5282.883	0.000
L37	53 - 47.203 (36)	TP40.67x39.386x0.738	1927.617	5295.975	0.364	0.000	5295.975	0.000
L38	47.203 - 46.203 (37)	TP40.266x38.808x0.763	2099.658	5705.225	0.368	0.000	5705.225	0.000
L39	46.203 - 41.203 (38)	TP41.374x40.266x0.75	2232.317	5939.300	0.376	0.000	5939.300	0.000
L40	41.203 - 39.333 (39)	TP41.788x41.374x0.75	2282.300	6062.133	0.376	0.000	6062.133	0.000
L41	39.333 - 39.083 (40)	TP41.843x41.788x0.825	2288.992	6649.975	0.344	0.000	6649.975	0.000
L42	39.083 - 37.75 (41)	TP42.139x41.843x0.825	2324.767	6747.000	0.345	0.000	6747.000	0.000
L43	37.75 - 37.5 (42)	TP42.194x42.139x0.75	2331.483	6183.767	0.377	0.000	6183.767	0.000
L44	37.5 - 32.5 (43)	TP43.301x42.194x0.725	2466.592	6315.417	0.391	0.000	6315.417	0.000
L45	32.5 - 27.5 (44)	TP44.409x43.301x0.725	2602.975	6651.058	0.391	0.000	6651.058	0.000
L46	27.5 - 27.25 (45)	TP44.464x44.409x0.725	2609.825	6668.067	0.391	0.000	6668.067	0.000
L47	27.25 - 27 (46)	TP44.52x44.464x0.725	2616.683	6685.100	0.391	0.000	6685.100	0.000
L48	27 - 22 (47)	TP45.627x44.52x0.713	2754.433	6914.867	0.398	0.000	6914.867	0.000
L49	22 - 21.25 (48)	TP45.793x45.627x0.713	2775.200	6966.508	0.398	0.000	6966.508	0.000
L50	21.25 - 21 (49)	TP45.849x45.793x0.725	2782.133	7100.391	0.392	0.000	7100.391	0.000
L51	21 - 17 (50)	TP46.735x45.849x0.713	2893.425	7262.800	0.398	0.000	7262.800	0.000
L52	17 - 16.75 (51)	TP46.79x46.735x0.7	2900.408	7158.517	0.405	0.000	7158.517	0.000
L53	16.75 - 16.25 (52)	TP46.901x46.79x0.7	2914.383	7193.217	0.405	0.000	7193.217	0.000
L54	16.25 - 16 (53)	TP46.956x46.901x0.775	2914.383	7925.200	0.368	0.000	7925.200	0.000
L55	16 - 11 (54)	TP48.064x46.956x0.75	2921.375	7700.617	0.379	0.000	7700.617	0.000
L56	11 - 6 (55)	TP49.171x48.064x0.75	3061.900	8077.200	0.379	0.000	8077.200	0.000
L57	6 - 1 (56)	TP50.279x49.171x0.738	3203.725	8328.183	0.385	0.000	8328.183	0.000
L58	1 - 0 (57)	TP50.5x50.279x0.525	3346.842	6285.025	0.533	0.000	6285.025	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	160 - 155 (1)	TP17.62x16.5x0.188	4.720	182.076	0.026	0.000	277.973	0.000
L2	155 - 150 (2)	TP18.741x17.62x0.188	5.632	193.778	0.029	0.000	314.850	0.000
L3	150 - 145 (3)	TP19.861x18.741x0.188	9.351	205.479	0.046	0.000	354.022	0.000
L4	145 - 140 (4)	TP20.981x19.861x0.188	9.612	217.181	0.044	0.000	395.492	0.000
L5	140 - 135 (5)	TP22.102x20.981x0.188	13.949	228.882	0.061	0.001	439.257	0.000
L6	135 - 130 (6)	TP23.222x22.102x0.188	14.186	240.584	0.059	0.001	485.319	0.000
L7	130 - 125.75 (7)	TP24.174x23.222x0.188	14.385	250.530	0.057	0.001	526.277	0.000
L8	125.75 - 125.5 (8)	TP24.23x24.174x0.188	14.388	251.115	0.057	0.001	528.737	0.000
L9	125.5 - 119.12 (9)	TP25.66x24.23x0.188	18.453	257.270	0.072	0.001	554.974	0.000
L10	119.12 - 117.87 (10)	TP25.544x24.445x0.25	18.733	352.244	0.053	0.001	780.265	0.000
L11	117.87 - 117.75 (11)	TP25.57x25.544x0.25	18.724	352.611	0.053	0.001	781.893	0.000
L12	117.75 - 117.5 (12)	TP25.625x25.57x0.25	18.737	353.376	0.053	0.001	785.292	0.000
L13	117.5 - 112.5 (13)	TP26.725x25.625x0.475	19.040	694.550	0.027	0.001	1596.650	0.000
L14	112.5 - 107.5 (14)	TP27.824x26.725x0.469	19.589	714.279	0.027	0.558	1711.158	0.000
L15	107.5 - 103 (15)	TP28.814x27.824x0.463	19.858	730.407	0.027	0.558	1813.483	0.000
L16	103 - 102.75 (16)	TP28.869x28.814x0.55	19.866	867.595	0.023	0.558	2151.625	0.000
L17	102.75 - 100.21 (17)	TP29.427x28.869x0.538	20.037	864.972	0.023	0.558	2188.375	0.000
L18	100.21 - 95.83 (18)	TP30.39x29.427x0.688	20.041	1101.010	0.018	0.558	2772.083	0.000
L19	95.83 - 94.83 (19)	TP30.119x28.937x0.738	20.489	1207.030	0.017	0.558	3105.758	0.000
L20	94.83 - 93.5 (20)	TP30.413x30.119x0.738	20.583	1219.130	0.017	0.558	3168.358	0.000
L21	93.5 - 93.25 (21)	TP30.469x30.413x0.913	20.594	1502.340	0.014	0.558	3888.633	0.000
L22	93.25 - 88.25 (22)	TP31.576x30.469x0.888	20.965	1517.170	0.014	0.558	4077.533	0.000
L23	88.25 - 87.25 (23)	TP31.798x31.576x0.888	21.038	1528.130	0.014	0.558	4136.617	0.000
L24	87.25 - 87 (24)	TP31.853x31.798x0.938	21.052	1614.500	0.013	0.558	4371.192	0.000
L25	87 - 86.5 (25)	TP31.964x31.853x0.925	21.091	1599.320	0.013	0.558	4347.367	0.000
L26	86.5 - 86.25 (26)	TP32.02x31.964x0.763	21.107	1327.620	0.016	0.558	3634.133	0.000
L27	86.25 - 81.25 (27)	TP33.127x32.02x0.738	23.981	1330.620	0.018	0.502	3774.350	0.000
L28	81.25 - 76.25 (28)	TP34.235x33.127x0.725	24.313	1353.310	0.018	0.502	3971.458	0.000
L29	76.25 - 75.416 (29)	TP34.42x34.235x0.725	24.367	1360.770	0.018	0.502	4015.375	0.000
L30	75.416 - 75.166 (30)	TP34.475x34.42x0.813	24.378	1523.540	0.016	0.502	4491.417	0.000
L31	75.166 - 70.166 (31)	TP35.583x34.475x0.8	24.729	1550.020	0.016	0.502	4721.533	0.000
L32	70.166 - 65.166 (32)	TP36.69x35.583x0.788	25.067	1574.940	0.016	0.502	4951.950	0.000

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L33	65.166 - 60.166 (33)	TP37.798x36.69x0.763	25.397	1573.060	0.016	0.502	5102.050	0.000
L34	60.166 - 57 (34)	TP38.5x37.798x0.75	25.604	1577.090	0.016	0.502	5213.742	0.000
L35	57 - 56.75 (35)	TP38.555x38.5x0.75	25.611	1579.410	0.016	0.502	5229.050	0.000
L36	56.75 - 53 (36)	TP39.386x38.555x0.738	25.860	1587.730	0.016	0.502	5373.850	0.000
L37	53 - 47.203 (37)	TP40.67x39.386x0.738	25.862	1589.670	0.016	0.502	5387.042	0.000
L38	47.203 - 46.203 (38)	TP40.266x38.808x0.763	26.400	1677.890	0.016	0.502	5804.708	0.000
L39	46.203 - 41.203 (39)	TP41.374x40.266x0.75	26.689	1697.170	0.016	0.501	6037.883	0.000
L40	41.203 - 39.333 (40)	TP41.788x41.374x0.75	26.807	1714.470	0.016	0.501	6161.633	0.000
L41	39.333 - 39.083 (41)	TP41.843x41.788x0.825	26.800	1885.020	0.014	0.501	6771.317	0.000
L42	39.083 - 37.75 (42)	TP42.139x41.843x0.825	26.891	1898.590	0.014	0.501	6869.150	0.000
L43	37.75 - 37.5 (43)	TP42.194x42.139x0.75	26.892	1731.440	0.016	0.501	6284.158	0.000
L44	37.5 - 32.5 (44)	TP43.301x42.194x0.725	27.167	1719.460	0.016	0.501	6411.208	0.000
L45	32.5 - 27.5 (45)	TP44.409x43.301x0.725	27.416	1764.180	0.016	0.501	6749.075	0.000
L46	27.5 - 27.25 (46)	TP44.464x44.409x0.725	27.418	1766.420	0.016	0.501	6766.200	0.000
L47	27.25 - 27 (47)	TP44.52x44.464x0.725	27.430	1768.650	0.016	0.501	6783.341	0.000
L48	27 - 22 (48)	TP45.627x44.52x0.713	27.689	1782.610	0.016	0.501	7011.708	0.000
L49	22 - 21.25 (49)	TP45.793x45.627x0.713	27.723	1789.200	0.015	0.501	7063.675	0.000
L50	21.25 - 21 (50)	TP45.849x45.793x0.725	27.728	1822.320	0.015	0.501	7201.275	0.000
L51	21 - 17 (51)	TP46.735x45.849x0.713	27.940	1826.570	0.015	0.501	7361.758	0.000
L52	17 - 16.75 (52)	TP46.79x46.735x0.7	27.941	1797.170	0.016	0.501	7253.950	0.000
L53	16.75 - 16.25 (53)	TP46.901x46.79x0.7	27.970	1801.490	0.016	0.501	7288.850	0.000
L54	16.25 - 16 (54)	TP46.956x46.901x0.775	27.979	1993.650	0.014	0.501	8043.625	0.000
L55	16 - 11 (55)	TP48.064x46.956x0.75	28.042	1939.640	0.014	0.501	7811.300	0.000
L56	11 - 6 (56)	TP49.171x48.064x0.75	28.302	1985.910	0.014	0.501	8190.233	0.000
L57	6 - 1 (57)	TP50.279x49.171x0.738	28.562	1998.820	0.014	0.501	8439.500	0.000
L58	1 - 0 (58)	TP50.5x50.279x0.525	28.814	1461.490	0.020	0.501	6339.733	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	160 - 155 (1)	0.006	0.065	0.000	0.026	0.000	0.072 ✔	1.050	4.8.2 ✔
L2	155 - 150 (2)	0.007	0.141	0.000	0.029	0.000	0.148 ✔	1.050	4.8.2 ✔
L3	150 - 145 (3)	0.010	0.277	0.000	0.046	0.000	0.289 ✔	1.050	4.8.2 ✔
L4	145 - 140 (4)	0.010	0.377	0.000	0.044	0.000	0.389 ✔	1.050	4.8.2 ✔
L5	140 - 135 (5)	0.015	0.484	0.000	0.061	0.000	0.503 ✔	1.050	4.8.2 ✔

Section No.	Elevation ft	Ratio $P_u/\phi P_n$	Ratio $M_{ux}/\phi M_{nx}$	Ratio $M_{uy}/\phi M_{ny}$	Ratio $V_u/\phi V_n$	Ratio $T_u/\phi T_n$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L6	135 - 130 (6)	0.015	0.602	0.000	0.059	0.000	0.621 ✔	1.050	4.8.2 ✔
L7	130 - 125.75 (7)	0.015	0.689	0.000	0.057	0.000	0.707 ✔	1.050	4.8.2 ✔
L8	125.75 - 125.5 (8)	0.015	0.694	0.000	0.057	0.000	0.712 ✔	1.050	4.8.2 ✔
L9	125.5 - 119.12 (9)	0.019	0.767	0.000	0.072	0.000	0.791 ✔	1.050	4.8.2 ✔
L10	119.12 - 117.87 (10)	0.015	0.627	0.000	0.053	0.000	0.644 ✔	1.050	4.8.2 ✔
L11	117.87 - 117.75 (11)	0.015	0.628	0.000	0.053	0.000	0.646 ✔	1.050	4.8.2 ✔
L12	117.75 - 117.5 (12)	0.015	0.632	0.000	0.053	0.000	0.650 ✔	1.050	4.8.2 ✔
L13	117.5 - 112.5 (13)	0.008	0.369	0.000	0.027	0.000	0.377 ✔	1.050	4.8.2 ✔
L14	112.5 - 107.5 (14)	0.008	0.401	0.000	0.027	0.000	0.410 ✔	1.050	4.8.2 ✔
L15	107.5 - 103 (15)	0.008	0.427	0.000	0.027	0.000	0.437 ✔	1.050	4.8.2 ✔
L16	103 - 102.75 (16)	0.007	0.364	0.000	0.023	0.000	0.371 ✔	1.050	4.8.2 ✔
L17	102.75 - 100.21 (17)	0.007	0.381	0.000	0.023	0.000	0.389 ✔	1.050	4.8.2 ✔
L18	100.21 - 95.83 (18)	0.006	0.303	0.000	0.018	0.000	0.309 ✔	1.050	4.8.2 ✔
L19	95.83 - 94.83 (19)	0.006	0.306	0.000	0.017	0.000	0.312 ✔	1.050	4.8.2 ✔
L20	94.83 - 93.5 (20)	0.006	0.309	0.000	0.017	0.000	0.315 ✔	1.050	4.8.2 ✔
L21	93.5 - 93.25 (21)	0.005	0.254	0.000	0.014	0.000	0.259 ✔	1.050	4.8.2 ✔
L22	93.25 - 88.25 (22)	0.005	0.268	0.000	0.014	0.000	0.274 ✔	1.050	4.8.2 ✔
L23	88.25 - 87.25 (23)	0.005	0.270	0.000	0.014	0.000	0.275 ✔	1.050	4.8.2 ✔
L24	87.25 - 87 (24)	0.005	0.257	0.000	0.013	0.000	0.262 ✔	1.050	4.8.2 ✔
L25	87 - 86.5 (25)	0.005	0.261	0.000	0.013	0.000	0.266 ✔	1.050	4.8.2 ✔
L26	86.5 - 86.25 (26)	0.006	0.312	0.000	0.016	0.000	0.318 ✔	1.050	4.8.2 ✔
L27	86.25 - 81.25 (27)	0.007	0.329	0.000	0.018	0.000	0.337 ✔	1.050	4.8.2 ✔
L28	81.25 - 76.25 (28)	0.007	0.344	0.000	0.018	0.000	0.351 ✔	1.050	4.8.2 ✔
L29	76.25 - 75.416 (29)	0.007	0.345	0.000	0.018	0.000	0.353 ✔	1.050	4.8.2 ✔
L30	75.416 - 75.166 (30)	0.007	0.311	0.000	0.016	0.000	0.318 ✔	1.050	4.8.2 ✔
L31	75.166 - 70.166 (31)	0.007	0.322	0.000	0.016	0.000	0.329 ✔	1.050	4.8.2 ✔

Section No.	Elevation ft	Ratio $P_u/\phi P_n$	Ratio $M_{ux}/\phi M_{nx}$	Ratio $M_{uy}/\phi M_{ny}$	Ratio $V_u/\phi V_n$	Ratio $T_u/\phi T_n$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L32	70.166 - 65.166 (32)	0.007	0.332	0.000	0.016	0.000	0.339 ✔	1.050	4.8.2 ✔
L33	65.166 - 60.166 (33)	0.007	0.347	0.000	0.016	0.000	0.355 ✔	1.050	4.8.2 ✔
L34	60.166 - 57 (34)	0.008	0.355	0.000	0.016	0.000	0.363 ✔	1.050	4.8.2 ✔
L35	57 - 56.75 (35)	0.008	0.355	0.000	0.016	0.000	0.363 ✔	1.050	4.8.2 ✔
L36	56.75 - 53 (36)	0.008	0.364	0.000	0.016	0.000	0.372 ✔	1.050	4.8.2 ✔
L37	53 - 47.203 (37)	0.008	0.364	0.000	0.016	0.000	0.372 ✔	1.050	4.8.2 ✔
L38	47.203 - 46.203 (38)	0.008	0.368	0.000	0.016	0.000	0.377 ✔	1.050	4.8.2 ✔
L39	46.203 - 41.203 (39)	0.009	0.376	0.000	0.016	0.000	0.385 ✔	1.050	4.8.2 ✔
L40	41.203 - 39.333 (40)	0.009	0.376	0.000	0.016	0.000	0.385 ✔	1.050	4.8.2 ✔
L41	39.333 - 39.083 (41)	0.008	0.344	0.000	0.014	0.000	0.352 ✔	1.050	4.8.2 ✔
L42	39.083 - 37.75 (42)	0.008	0.345	0.000	0.014	0.000	0.353 ✔	1.050	4.8.2 ✔
L43	37.75 - 37.5 (43)	0.009	0.377	0.000	0.016	0.000	0.386 ✔	1.050	4.8.2 ✔
L44	37.5 - 32.5 (44)	0.009	0.391	0.000	0.016	0.000	0.400 ✔	1.050	4.8.2 ✔
L45	32.5 - 27.5 (45)	0.009	0.391	0.000	0.016	0.000	0.401 ✔	1.050	4.8.2 ✔
L46	27.5 - 27.25 (46)	0.009	0.391	0.000	0.016	0.000	0.401 ✔	1.050	4.8.2 ✔
L47	27.25 - 27 (47)	0.009	0.391	0.000	0.016	0.000	0.401 ✔	1.050	4.8.2 ✔
L48	27 - 22 (48)	0.010	0.398	0.000	0.016	0.000	0.408 ✔	1.050	4.8.2 ✔
L49	22 - 21.25 (49)	0.010	0.398	0.000	0.015	0.000	0.408 ✔	1.050	4.8.2 ✔
L50	21.25 - 21 (50)	0.009	0.392	0.000	0.015	0.000	0.402 ✔	1.050	4.8.2 ✔
L51	21 - 17 (51)	0.010	0.398	0.000	0.015	0.000	0.408 ✔	1.050	4.8.2 ✔
L52	17 - 16.75 (52)	0.010	0.405	0.000	0.016	0.000	0.415 ✔	1.050	4.8.2 ✔
L53	16.75 - 16.25 (53)	0.010	0.405	0.000	0.016	0.000	0.415 ✔	1.050	4.8.2 ✔
L54	16.25 - 16 (54)	0.009	0.368	0.000	0.014	0.000	0.377 ✔	1.050	4.8.2 ✔
L55	16 - 11 (55)	0.009	0.379	0.000	0.014	0.000	0.389 ✔	1.050	4.8.2 ✔
L56	11 - 6 (56)	0.009	0.379	0.000	0.014	0.000	0.389 ✔	1.050	4.8.2 ✔
L57	6 - 1 (57)	0.010	0.385	0.000	0.014	0.000	0.395 ✔	1.050	4.8.2 ✔

Section No.	Elevation ft	Ratio $P_u/\phi P_n$	Ratio $M_{ux}/\phi M_{nx}$	Ratio $M_{uy}/\phi M_{ny}$	Ratio $V_u/\phi V_n$	Ratio $T_u/\phi T_n$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L58	1 - 0 (58)	0.014	0.533	0.000	0.020	0.000	0.547 ✔	1.050	4.8.2 ✔

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	160 - 155	Pole	TP17.62x16.5x0.1875	1	-3.543	--	**	**
L2	155 - 150	Pole	TP18.741x17.62x0.1875	2	-4.415	--	**	**
L3	150 - 145	Pole	TP19.861x18.741x0.1875	3	-7.076	--	**	**
L4	145 - 140	Pole	TP20.981x19.861x0.1875	4	-7.426	--	**	**
L5	140 - 135	Pole	TP22.102x20.981x0.1875	5	-11.713	--	**	**
L6	135 - 130	Pole	TP23.222x22.102x0.1875	6	-12.157	--	**	**
L7	130 - 125.75	Pole	TP24.174x23.222x0.1875	7	-12.557	--	**	**
L8	125.75 - 125.5	Pole	TP24.23x24.174x0.1875	8	-12.590	--	**	**
L9	125.5 - 122.87	Pole	TP25.66x24.23x0.1875	9	-16.414	--	**	**
L10	122.87 - 117.87	Pole	TP25.544x24.445x0.25	10	-17.235	--	**	**
L11	117.87 - 117.75	Pole	TP25.57x25.544x0.25	11	-17.266	--	**	**
L12	117.75 - 117.5	Pole	TP25.625x25.57x0.25	12	-17.297	--	**	**
L13	117.5 - 112.5	Pole + Reinf.	TP26.725x25.625x0.475	13	-18.220	--	**	**
L14	112.5 - 107.5	Pole + Reinf.	TP27.824x26.725x0.4688	14	-19.366	--	**	**
L15	107.5 - 103	Pole + Reinf.	TP28.814x27.824x0.4625	15	-20.245	--	**	**
L16	103 - 102.75	Pole + Reinf.	TP28.869x28.814x0.55	16	-20.315	--	**	**
L17	102.75 - 100.21	Pole + Reinf.	TP29.427x28.869x0.5375	17	-20.930	--	**	**
L18	100.21 - 100.16	Pole + Reinf.	TP30.39x29.427x0.6875	18	-20.953	--	**	**
L19	100.16 - 94.83	Pole + Reinf.	TP30.119x28.937x0.7375	19	-23.501	--	**	**
L20	94.83 - 93.5	Pole + Reinf.	TP30.413x30.119x0.7375	20	-23.891	--	**	**
L21	93.5 - 93.25	Pole + Reinf.	TP30.469x30.413x0.9125	21	-23.986	--	**	**
L22	93.25 - 88.25	Pole + Reinf.	TP31.576x30.469x0.8875	22	-25.726	--	**	**
L23	88.25 - 87.25	Pole + Reinf.	TP31.798x31.576x0.8875	23	-26.080	--	**	**
L24	87.25 - 87	Pole + Reinf.	TP31.853x31.798x0.9375	24	-26.177	--	**	**
L25	87 - 86.5	Pole + Reinf.	TP31.964x31.853x0.925	25	-26.361	--	**	**
L26	86.5 - 86.25	Pole + Reinf.	TP32.02x31.964x0.7625	26	-26.442	--	**	**
L27	86.25 - 81.25	Pole + Reinf.	TP33.127x32.02x0.7375	27	-31.152	--	**	**
L28	81.25 - 76.25	Pole + Reinf.	TP34.235x33.127x0.725	28	-32.788	--	**	**
L29	76.25 - 75.42	Pole + Reinf.	TP34.42x34.235x0.725	29	-33.067	--	**	**
L30	75.42 - 75.17	Pole + Reinf.	TP34.475x34.42x0.8125	30	-33.163	--	**	**
L31	75.17 - 70.17	Pole + Reinf.	TP35.583x34.475x0.8	31	-34.993	--	**	**
L32	70.17 - 65.17	Pole + Reinf.	TP36.69x35.583x0.7875	32	-36.853	--	**	**
L33	65.17 - 60.17	Pole + Reinf.	TP37.798x36.69x0.7625	33	-38.739	--	**	**
L34	60.17 - 57	Pole + Reinf.	TP38.5x37.798x0.75	34	-39.949	--	**	**
L35	57 - 56.75	Pole + Reinf.	TP38.555x38.5x0.75	35	-40.051	--	**	**
L36	56.75 - 53	Pole + Reinf.	TP39.386x38.555x0.7375	36	-41.490	--	**	**
L37	53 - 52.79	Pole + Reinf.	TP40.67x39.386x0.7375	37	-41.587	--	**	**
L38	52.79 - 46.2	Pole + Reinf.	TP40.266x38.808x0.7625	38	-46.417	--	**	**
L39	46.2 - 41.2	Pole + Reinf.	TP41.374x40.266x0.75	39	-48.547	--	**	**
L40	41.2 - 39.33	Pole + Reinf.	TP41.788x41.374x0.75	40	-49.347	--	**	**
L41	39.33 - 39.08	Pole + Reinf.	TP41.843x41.788x0.825	41	-49.475	--	**	**
L42	39.08 - 37.75	Pole + Reinf.	TP42.139x41.843x0.825	42	-50.092	--	**	**
L43	37.75 - 37.5	Pole + Reinf.	TP42.194x42.139x0.75	43	-50.208	--	**	**
L44	37.5 - 32.5	Pole + Reinf.	TP43.301x42.194x0.725	44	-52.382	--	**	**
L45	32.5 - 27.5	Pole + Reinf.	TP44.409x43.301x0.725	45	-54.589	--	**	**
L46	27.5 - 27.25	Pole + Reinf.	TP44.464x44.409x0.725	46	-54.706	--	**	**

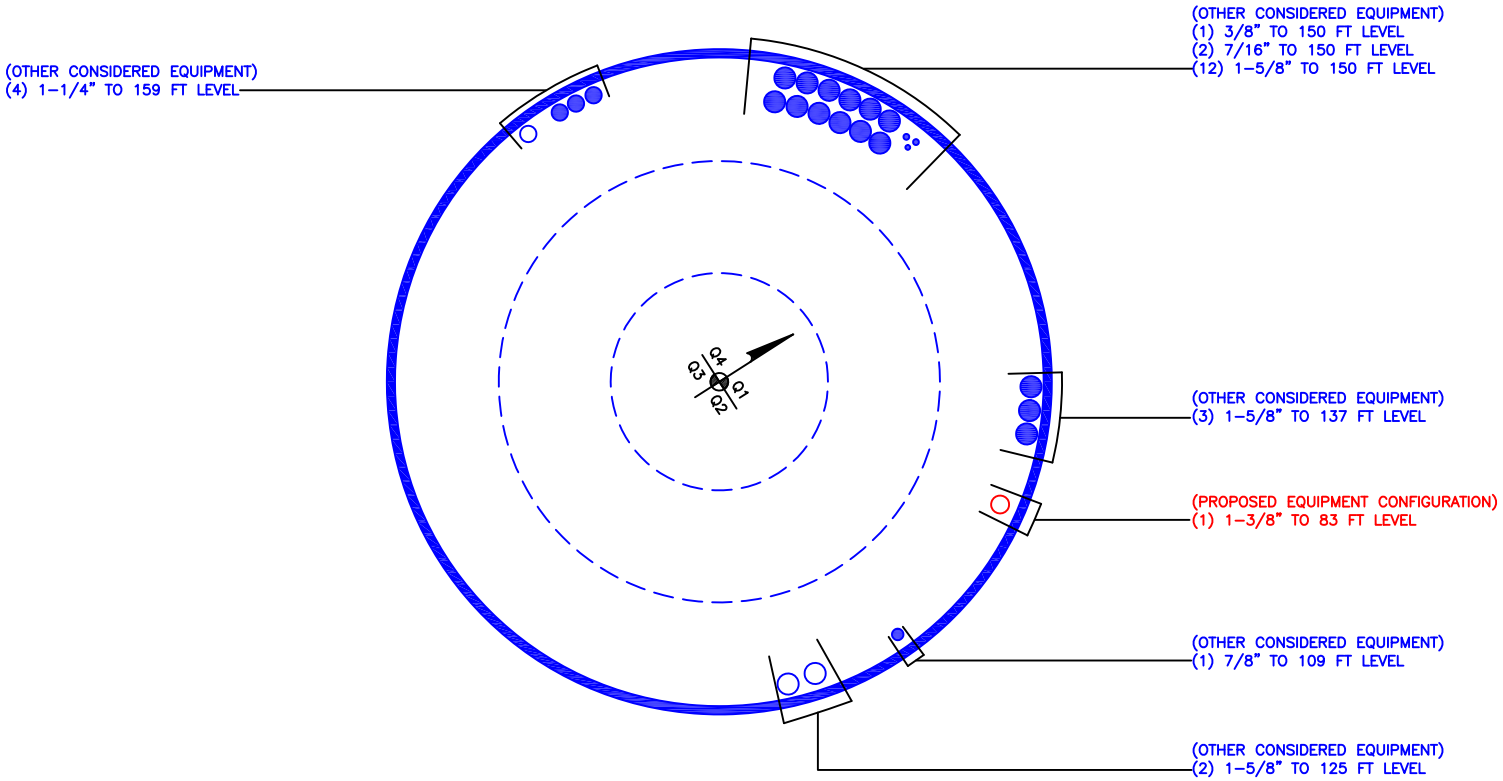
Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L47	27.25 - 27	Pole + Reinf.	TP44.52x44.464x0.725	47	-54.818	--	**	**
L48	27 - 22	Pole + Reinf.	TP45.627x44.52x0.7125	48	-57.051	--	**	**
L49	22 - 21.25	Pole + Reinf.	TP45.793x45.627x0.7125	49	-57.392	--	**	**
L50	21.25 - 21	Pole + Reinf.	TP45.849x45.793x0.725	50	-57.520	--	**	**
L51	21 - 17	Pole + Reinf.	TP46.735x45.849x0.7125	51	-59.503	--	**	**
L52	17 - 16.75	Pole + Reinf.	TP46.79x46.735x0.7	52	-59.627	--	**	**
L53	16.75 - 16.25	Pole + Reinf.	TP46.901x46.79x0.7	53	-59.864	--	**	**
L54	16.25 - 16	Pole + Reinf.	TP46.956x46.901x0.775	54	-59.870	--	**	**
L55	16 - 11	Pole + Reinf.	TP48.064x46.956x0.75	55	-60.003	--	**	**
L56	11 - 6	Pole + Reinf.	TP49.171x48.064x0.75	56	-62.578	--	**	**
L57	6 - 1	Pole + Reinf.	TP50.279x49.171x0.7375	57	-65.179	--	**	**
L58	1 - 0	Pole + Reinf.	TP50.5x50.279x0.525	58	-67.811	--	**	**
							Summary	
						Pole (--)	**	**
						RATING =	**	**

** - Check Additional Calculations

Program Version 8.1.1.0

APPENDIX B

BASE LEVEL DRAWING



BUSINESS UNIT: 876401

APPENDIX C

ADDITIONAL CALCULATIONS

CCIpole

per TIA-222- H

Site BU: 876401

Work Order: 2044667

Pole Geometry

	Pole Height Above Base (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Bend Radius (in)	Pole Material
1	160	40.88	3.75	18	16.5	25.66	0.1875	Auto	A572-65
2	122.87	27.04	4.333	18	24.44	30.39	0.25	Auto	A572-65
3	100.163	52.96	5.583	18	28.94	40.67	0.3125	Auto	A572-65
4	52.786	52.786	0	18	38.81	50.5	0.375	Auto	A572-65

Reinforcement Configuration

	Bottom Effective Elevation (ft)	Top Effective Elevation (ft)	Type	Model	Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	0	27.25	plate	5"x1.25" Plate (Base W	3					E2						E2						E2	
2	27.25	57	plate	.375"x1.25" Plate (10b	3					E2						E2						E2	
3	57	87.25	plate	5.375"x1.25" Plate (8b	3					E2						E2						E2	
4	87.25	117.75	plate	4.375"x1.25" Plate	3					E2						E2						E2	
5	117.75	125.75	plate	3.125"x1.25" Plate	3					E2						E2						E2	
6	0	39.333	channel	MP3-03 (1.1875in)	3						E3						E3						E3
7	37.75	75.416	channel	MP3-03 (1.1875in)	3	E3						E3						E3					
8	0	16.25	plate	CCI-WSFP-085125	2										E4					E4			
9	0	21.25	plate	CCI-WSFP-085125	1		E4																
10	16.25	53	plate	CCI-SFP-060100	2										E4					E4			
11	53	103	plate	CCI-SFP-060100	1															E4			
12	49.21	100.21	plate	CCI-SFP-060100	1									E4									
13	17	103	plate	CCI-SFP-060100	1			E4															
14	86.5	93.5	plate	CCI-SFP-045100	3	E4						E4						E4					
15																							

Reinforcement Details

	B (in)	H (in)	Gross Area (in^2)	Pole Face to Centroid (in)	Bottom Termination Type	Bottom Termination Length (in)	Top Termination Type	Top Termination Length (in)	Lu (in)	Net Area (in2)	Bolt Hole Size (in)	Reinforcement Material
1	5.375	1.25	6.71875	0.625	Welded	n/a	PC 8.8 - M20 (100)	30.000	15.000	5.078	1.2500	A572-65
2	5.375	1.25	6.71875	0.625	None	n/a	PC 8.8 - M20 (100)	30.000	15.000	5.078	1.2500	A572-65
3	5.375	1.25	6.71875	0.625	None	n/a	PC 8.8 - M20 (100)	24.000	15.000	5.078	1.2500	A572-65
4	4.375	1.25	5.46875	0.625	None	n/a	PC 8.8 - M20 (100)	15.000	21.000	3.828	1.2500	A572-65
5	3.125	1.25	3.90625	0.625	None	n/a	PC 8.8 - M20 (100)	15.000	24.000	2.266	1.2500	A572-65
6	4.06	1.57	2.92	0.59	PC 8.8 - M20 (100)	14	PC 8.8 - M20 (100)	14.000	18.000	2.545	1.1875	A572-65
7	4.06	1.57	2.92	0.59	PC 8.8 - M20 (100)	14	PC 8.8 - M20 (100)	14.000	18.000	2.545	1.1875	A572-65
8	8.5	1.25	10.625	0.625	Welded	n/a	PC 8.8 - M20 (100)	45.000	17.000	9.063	1.1875	A572-65
9	8.5	1.25	10.625	0.625	Welded	n/a	PC 8.8 - M20 (100)	45.000	17.000	9.063	1.1875	A572-65
10	6	1	6	0.5	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	24.000	16.000	4.750	1.1875	A572-65
11	6	1	6	0.5	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	24.000	16.000	4.750	1.1875	A572-65
12	6	1	6	0.5	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	24.000	16.000	4.750	1.1875	A572-65
13	6	1	6	0.5	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	24.000	16.000	4.750	1.1875	A572-65
14	4.5	1	4.5	0.5	PC 8.8 - M20 (100)	18	PC 8.8 - M20 (100)	18.000	20.000	3.250	1.1875	A572-65

Connection Details for Custom Reinforcements

Reinforcement	End	# Bolts	N or X	Bolt Spacing (in)	Edge Dist (in)	Weld Grade (ksi)	Transverse (Horiz.) Weld Type	Horiz. Weld Length (in)	Horiz. Groove Depth (in)	Horiz. Groove Angle (deg)	Horiz. Fillet Size (in)	Vertical Weld Length (in)	Vertical Fillet Size (in)	Rev H Connection Capacity (kip)
5.375"x1.25" Plate (Base Weld)	Top	10	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	-	-	-	-	70	CJP Groove	5.375	0.5625	45	0.25	-	-	-
5.375"x1.25" Plate (10b)	Top	10	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	-	-	-	-	-	None	-	-	-	-	-	-	-
5.375"x1.25" Plate (8b)	Top	8	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	-	-	-	-	-	None	-	-	-	-	-	-	-
4.375"x1.25" Plate	Top	5	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	-	-	-	-	-	None	-	-	-	-	-	-	-
3.125"x1.25" Plate	Top	5	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	-	-	-	-	-	None	-	-	-	-	-	-	-

TNX Geometry Input

Increment (ft): 5 Export to TNX

	Section Height (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Tapered Pole Grade	Weight Multiplier
1	160 - 155	5		18	16.500	17.620	0.1875	A572-65	1.000
2	155 - 150	5		18	17.620	18.741	0.1875	A572-65	1.000
3	150 - 145	5		18	18.741	19.861	0.1875	A572-65	1.000
4	145 - 140	5		18	19.861	20.981	0.1875	A572-65	1.000
5	140 - 135	5		18	20.981	22.102	0.1875	A572-65	1.000
6	135 - 130	5		18	22.102	23.222	0.1875	A572-65	1.000
7	130 - 125.75	4.25		18	23.222	24.174	0.1875	A572-65	1.000
8	125.75 - 125.5	0.25		18	24.174	24.230	0.1875	A572-65	1.000
9	125.5 - 122.87	6.38	3.75	18	24.230	25.660	0.1875	A572-65	1.000
10	122.87 - 117.87	5		18	24.445	25.544	0.25	A572-65	1.000
11	117.87 - 117.75	0.12		18	25.544	25.570	0.25	A572-65	1.000
12	117.75 - 117.5	0.25		18	25.570	25.625	0.25	A572-65	1.000
13	117.5 - 112.5	5		18	25.625	26.725	0.475	A572-65	0.945
14	112.5 - 107.5	5		18	26.725	27.824	0.46875	A572-65	0.941
15	107.5 - 103	4.5		18	27.824	28.814	0.4625	A572-65	0.939
16	103 - 102.75	0.25		18	28.814	28.869	0.55	A572-65	1.034
17	102.75 - 100.21	2.54		18	28.869	29.427	0.5375	A572-65	1.046
18	100.21 - 100.163	4.38	4.333	18	29.427	30.390	0.6875	A572-65	0.918
19	100.163 - 94.83	5.333		18	28.937	30.119	0.7375	A572-65	0.930
20	94.83 - 93.5	1.33		18	30.119	30.413	0.7375	A572-65	0.925
21	93.5 - 93.25	0.25		18	30.413	30.469	0.9125	A572-65	0.909
22	93.25 - 88.25	5		18	30.469	31.576	0.8875	A572-65	0.913
23	88.25 - 87.25	1		18	31.576	31.798	0.8875	A572-65	0.909
24	87.25 - 87	0.25		18	31.798	31.853	0.9375	A572-65	0.902
25	87 - 86.5	0.5		18	31.853	31.964	0.925	A572-65	0.911
26	86.5 - 86.25	0.25		18	31.964	32.020	0.7625	A572-65	0.920
27	86.25 - 81.25	5		18	32.020	33.127	0.7375	A572-65	0.933
28	81.25 - 76.25	5		18	33.127	34.235	0.725	A572-65	0.931
29	76.25 - 75.416	0.834		18	34.235	34.420	0.725	A572-65	0.928
30	75.416 - 75.166	0.25		18	34.420	34.475	0.8125	A572-65	0.931
31	75.166 - 70.166	5		18	34.475	35.583	0.8	A572-65	0.927
32	70.166 - 65.166	5		18	35.583	36.690	0.7875	A572-65	0.925
33	65.166 - 60.166	5		18	36.690	37.798	0.7625	A572-65	0.938
34	60.166 - 57	3.166		18	37.798	38.500	0.75	A572-65	0.944
35	57 - 56.75	0.25		18	38.500	38.555	0.75	A572-65	0.943
36	56.75 - 53	3.75		18	38.555	39.386	0.7375	A572-65	0.947
37	53 - 52.786	5.797	5.583	18	39.386	40.670	0.7375	A572-65	1.013
38	52.786 - 46.203	6.583		18	38.808	40.266	0.7625	A572-65	0.987
39	46.203 - 41.203	5		18	40.266	41.374	0.75	A572-65	0.990
40	41.203 - 39.333	1.87		18	41.374	41.788	0.75	A572-65	0.985
41	39.333 - 39.083	0.25		18	41.788	41.843	0.825	A572-65	0.978
42	39.083 - 37.75	1.333		18	41.843	42.139	0.825	A572-65	0.974
43	37.75 - 37.5	0.25		18	42.139	42.194	0.75	A572-65	0.980
44	37.5 - 32.5	5		18	42.194	43.301	0.725	A572-65	1.000
45	32.5 - 27.5	5		18	43.301	44.409	0.725	A572-65	0.988
46	27.5 - 27.25	0.25		18	44.409	44.464	0.725	A572-65	0.988
47	27.25 - 27	0.25		18	44.464	44.520	0.725	A572-65	0.987
48	27 - 22	5		18	44.520	45.627	0.7125	A572-65	0.992
49	22 - 21.25	0.75		18	45.627	45.793	0.7125	A572-65	0.990
50	21.25 - 21	0.25		18	45.793	45.849	0.725	A572-65	1.075
51	21 - 17	4		18	45.849	46.735	0.7125	A572-65	1.083
52	17 - 16.75	0.25		18	46.735	46.790	0.7	A572-65	1.043
53	16.75 - 16.25	0.5		18	46.790	46.901	0.7	A572-65	1.042
54	16.25 - 16	0.25		18	46.901	46.956	0.775	A572-65	1.023
55	16 - 11	5		18	46.956	48.064	0.75	A572-65	1.044
56	11 - 6	5		18	48.064	49.171	0.75	A572-65	1.031
57	6 - 1	5		18	49.171	50.279	0.7375	A572-65	1.036
58	1 - 0	1		18	50.279	50.500	0.525	A572-65	1.099

TNX Section Forces

	Increment (ft): 5	TNX Output		
	Section Height (ft)	P_u (K)	M_{ux} (kip-ft)	V_u (K)
1	160 - 155	3.54	17.93	4.72
2	155 - 150	4.41	43.48	5.63
3	150 - 145	7.08	94.79	9.35
4	145 - 140	7.43	142.18	9.61
5	140 - 135	11.71	199.76	13.95
6	135 - 130	12.16	270.06	14.19
7	130 - 125.75	12.56	330.73	14.38
8	125.75 - 125.5	12.59	334.33	14.39
9	125.5 - 122.87	16.41	384.73	18.45
10	122.87 - 117.87	17.23	477.65	18.73
11	117.87 - 117.75	17.27	479.89	18.72
12	117.75 - 117.5	17.30	484.57	18.74
13	117.5 - 112.5	18.22	578.99	19.04
14	112.5 - 107.5	19.37	675.46	19.59
15	107.5 - 103	20.25	764.17	19.86
16	103 - 102.75	20.31	769.13	19.87
17	102.75 - 100.21	20.93	819.79	20.04
18	100.21 - 100.163	20.95	820.73	20.04
19	100.163 - 94.83	23.50	928.80	20.49
20	94.83 - 93.5	23.89	956.10	20.58
21	93.5 - 93.25	23.99	961.25	20.59
22	93.25 - 88.25	25.73	1065.12	20.96
23	88.25 - 87.25	26.08	1086.11	21.04
24	87.25 - 87	26.18	1091.37	21.05
25	87 - 86.5	26.36	1101.91	21.09
26	86.5 - 86.25	26.44	1107.18	21.11
27	86.25 - 81.25	31.15	1218.17	23.98
28	81.25 - 76.25	32.79	1338.85	24.31
29	76.25 - 75.416	33.07	1359.14	24.37
30	75.416 - 75.166	33.16	1365.23	24.38
31	75.166 - 70.166	34.99	1487.97	24.73
32	70.166 - 65.166	36.85	1612.41	25.07
33	65.166 - 60.166	38.74	1738.51	25.40
34	60.166 - 57	39.95	1819.21	25.60
35	57 - 56.75	40.05	1825.61	25.61
36	56.75 - 53	41.49	1922.09	25.86
37	53 - 52.786	41.59	1927.62	25.86
38	52.786 - 46.203	46.42	2099.66	26.40
39	46.203 - 41.203	48.55	2232.31	26.69
40	41.203 - 39.333	49.35	2282.30	26.81
41	39.333 - 39.083	49.48	2289.00	26.80
42	39.083 - 37.75	50.09	2324.77	26.89
43	37.75 - 37.5	50.21	2331.49	26.89
44	37.5 - 32.5	52.38	2466.59	27.17
45	32.5 - 27.5	54.59	2602.97	27.42
46	27.5 - 27.25	54.71	2609.82	27.42
47	27.25 - 27	54.82	2616.68	27.43
48	27 - 22	57.05	2754.43	27.69
49	22 - 21.25	57.39	2775.20	27.72
50	21.25 - 21	57.52	2782.13	27.73
51	21 - 17	59.50	2893.43	27.94
52	17 - 16.75	59.63	2900.41	27.94
53	16.75 - 16.25	59.86	2914.39	27.97
54	16.25 - 16	59.99	2921.38	27.98
55	16 - 11	62.56	3061.90	28.25
56	11 - 6	65.17	3203.73	28.51
57	6 - 1	67.80	3346.84	28.77
58	1 - 0	68.21	3375.62	28.81

Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
160 - 155	Pole	TP17.62x16.5x0.1875	Pole	6.8%	Pass
155 - 150	Pole	TP18.741x17.62x0.1875	Pole	14.1%	Pass
150 - 145	Pole	TP19.861x18.741x0.1875	Pole	27.5%	Pass
145 - 140	Pole	TP20.981x19.861x0.1875	Pole	37.1%	Pass
140 - 135	Pole	TP22.102x20.981x0.1875	Pole	47.9%	Pass
135 - 130	Pole	TP23.222x22.102x0.1875	Pole	59.1%	Pass
130 - 125.75	Pole	TP24.174x23.222x0.1875	Pole	67.4%	Pass
125.75 - 125.5	Pole	TP24.23x24.174x0.1875	Pole	67.8%	Pass
125.5 - 122.87	Pole	TP25.66x24.23x0.1875	Pole	75.4%	Pass
122.87 - 117.87	Pole	TP25.544x24.445x0.25	Pole	61.3%	Pass
117.87 - 117.75	Pole	TP25.57x25.544x0.25	Pole	61.5%	Pass
117.75 - 117.5	Pole	TP25.625x25.57x0.25	Pole	61.9%	Pass
117.5 - 112.5	Pole + Reinf.	TP26.725x25.625x0.475	Reinf. 4 Tension Rupture	64.3%	Pass
112.5 - 107.5	Pole + Reinf.	TP27.824x26.725x0.4688	Reinf. 4 Tension Rupture	70.4%	Pass
107.5 - 103	Pole + Reinf.	TP28.814x27.824x0.4625	Reinf. 4 Tension Rupture	75.3%	Pass
103 - 102.75	Pole + Reinf.	TP28.869x28.814x0.55	Reinf. 4 Tension Rupture	67.9%	Pass
102.75 - 100.21	Pole + Reinf.	TP29.427x28.869x0.5375	Reinf. 4 Tension Rupture	70.3%	Pass
100.21 - 100.16	Pole + Reinf.	TP30.39x29.427x0.6875	Reinf. 4 Tension Rupture	53.0%	Pass
100.16 - 94.83	Pole + Reinf.	TP30.119x28.937x0.7375	Reinf. 4 Tension Rupture	53.1%	Pass
94.83 - 93.5	Pole + Reinf.	TP30.413x30.119x0.7375	Reinf. 4 Tension Rupture	53.9%	Pass
93.5 - 93.25	Pole + Reinf.	TP30.469x30.413x0.9125	Reinf. 4 Tension Rupture	44.5%	Pass
93.25 - 88.25	Pole + Reinf.	TP31.576x30.469x0.8875	Reinf. 4 Tension Rupture	46.9%	Pass
88.25 - 87.25	Pole + Reinf.	TP31.798x31.576x0.8875	Reinf. 4 Tension Rupture	47.4%	Pass
87.25 - 87	Pole + Reinf.	TP31.853x31.798x0.9375	Reinf. 14 Tension Rupture	43.5%	Pass
87 - 86.5	Pole + Reinf.	TP31.964x31.853x0.925	Reinf. 14 Tension Rupture	43.8%	Pass
86.5 - 86.25	Pole + Reinf.	TP32.02x31.964x0.7625	Reinf. 3 Tension Rupture	50.7%	Pass
86.25 - 81.25	Pole + Reinf.	TP33.127x32.02x0.7375	Reinf. 3 Tension Rupture	53.2%	Pass
81.25 - 76.25	Pole + Reinf.	TP34.235x33.127x0.725	Reinf. 3 Tension Rupture	55.7%	Pass
76.25 - 75.42	Pole + Reinf.	TP34.42x34.235x0.725	Reinf. 3 Tension Rupture	56.1%	Pass
75.42 - 75.17	Pole + Reinf.	TP34.475x34.42x0.8125	Reinf. 3 Tension Rupture	49.9%	Pass
75.17 - 70.17	Pole + Reinf.	TP35.583x34.475x0.8	Reinf. 3 Tension Rupture	52.1%	Pass
70.17 - 65.17	Pole + Reinf.	TP36.69x35.583x0.7875	Reinf. 3 Tension Rupture	54.0%	Pass
65.17 - 60.17	Pole + Reinf.	TP37.798x36.69x0.7625	Reinf. 3 Tension Rupture	55.8%	Pass
60.17 - 57	Pole + Reinf.	TP38.5x37.798x0.75	Reinf. 3 Tension Rupture	56.9%	Pass
57 - 56.75	Pole + Reinf.	TP38.555x38.5x0.75	Reinf. 2 Tension Rupture	57.0%	Pass
56.75 - 53	Pole + Reinf.	TP39.386x38.555x0.7375	Reinf. 2 Tension Rupture	58.2%	Pass
53 - 52.79	Pole + Reinf.	TP40.67x39.386x0.7375	Reinf. 2 Tension Rupture	58.6%	Pass
52.79 - 46.2	Pole + Reinf.	TP40.266x38.808x0.7625	Reinf. 2 Tension Rupture	58.4%	Pass
46.2 - 41.2	Pole + Reinf.	TP41.374x40.266x0.75	Reinf. 2 Tension Rupture	59.6%	Pass
41.2 - 39.33	Pole + Reinf.	TP41.788x41.374x0.75	Reinf. 2 Tension Rupture	60.0%	Pass
39.33 - 39.08	Pole + Reinf.	TP41.843x41.788x0.825	Reinf. 2 Tension Rupture	54.8%	Pass
39.08 - 37.75	Pole + Reinf.	TP42.139x41.843x0.825	Reinf. 2 Tension Rupture	55.0%	Pass
37.75 - 37.5	Pole + Reinf.	TP42.194x42.139x0.75	Reinf. 2 Tension Rupture	60.4%	Pass
37.5 - 32.5	Pole + Reinf.	TP43.301x42.194x0.725	Reinf. 2 Tension Rupture	61.4%	Pass
32.5 - 27.5	Pole + Reinf.	TP44.409x43.301x0.725	Reinf. 2 Tension Rupture	62.4%	Pass
27.5 - 27.25	Pole + Reinf.	TP44.464x44.409x0.725	Reinf. 2 Tension Rupture	62.4%	Pass
27.25 - 27	Pole + Reinf.	TP44.52x44.464x0.725	Reinf. 1 Tension Rupture	62.4%	Pass
27 - 22	Pole + Reinf.	TP45.627x44.52x0.7125	Reinf. 1 Tension Rupture	63.3%	Pass
22 - 21.25	Pole + Reinf.	TP45.793x45.627x0.7125	Reinf. 1 Tension Rupture	63.4%	Pass
21.25 - 21	Pole + Reinf.	TP45.849x45.793x0.725	Reinf. 10 Tension Rupture	59.7%	Pass
21 - 17	Pole + Reinf.	TP46.735x45.849x0.7125	Reinf. 10 Tension Rupture	60.3%	Pass
17 - 16.75	Pole + Reinf.	TP46.79x46.735x0.7	Reinf. 1 Tension Rupture	65.2%	Pass
16.75 - 16.25	Pole + Reinf.	TP46.901x46.79x0.7	Reinf. 1 Tension Rupture	65.3%	Pass
16.25 - 16	Pole + Reinf.	TP46.956x46.901x0.775	Reinf. 1 Tension Rupture	62.4%	Pass
16 - 11	Pole + Reinf.	TP48.064x46.956x0.75	Reinf. 1 Tension Rupture	63.1%	Pass
11 - 6	Pole + Reinf.	TP49.171x48.064x0.75	Reinf. 1 Tension Rupture	63.8%	Pass
6 - 1	Pole + Reinf.	TP50.279x49.171x0.7375	Reinf. 1 Tension Rupture	64.4%	Pass
1 - 0	Pole + Reinf.	TP50.5x50.279x0.525	Reinf. 8 Compression	70.1%	Pass
				Summary	
			Pole	75.4%	Pass
			Reinforcement	75.3%	Pass
			Overall	75.4%	Pass

Additional Calculations

Section Elevation (ft)	Moment of Inertia (in^4)			Area (in^2)			% Capacity*													
	Pole	Reinf.	Total	Pole	Reinf.	Total	Pole	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
160 - 155	398	n/a	398	10.37	n/a	10.37	6.8%														
155 - 150	480	n/a	480	11.04	n/a	11.04	14.1%														
150 - 145	572	n/a	572	11.71	n/a	11.71	27.5%														
145 - 140	676	n/a	676	12.37	n/a	12.37	37.1%														
140 - 135	791	n/a	791	13.04	n/a	13.04	47.9%														
135 - 130	919	n/a	919	13.71	n/a	13.71	59.1%														
130 - 125.75	1037	n/a	1037	14.27	n/a	14.27	67.4%														
125.75 - 125.5	1045	n/a	1045	14.31	n/a	14.31	67.8%														
125.5 - 122.87	1123	n/a	1123	14.66	n/a	14.66	75.4%														
122.87 - 117.87	1622	n/a	1622	20.07	n/a	20.07	61.3%														
117.87 - 117.75	1627	n/a	1627	20.09	n/a	20.09	61.5%														
117.75 - 117.5	1637	n/a	1637	20.13	n/a	20.13	61.9%														
117.5 - 112.5	1860	1619	3479	21.01	16.41	37.41	36.1%				64.3%										
112.5 - 107.5	2101	1748	3849	21.88	16.41	38.29	40.0%				70.4%										
107.5 - 103	2335	1868	4203	22.66	16.41	39.07	43.3%				75.3%										
103 - 102.75	2406	2620	5027	22.71	28.41	51.11	40.8%				67.9%							45.4%		45.4%	
102.75 - 100.21	2549	2718	5267	23.15	28.41	51.56	42.5%				70.3%							47.1%		47.1%	
100.21 - 100.16	2492	4058	6549	23.16	34.41	57.57	30.7%				53.0%							46.6%	46.6%	46.6%	
100.16 - 94.83	3317	4239	7556	29.56	34.41	63.97	29.2%				53.1%							46.7%	46.7%	46.7%	
94.83 - 93.5	3417	4318	7735	29.86	34.41	64.26	29.7%				53.9%							47.4%	47.4%	47.4%	
93.5 - 93.25	3435	6016	9452	29.91	47.91	77.82	24.5%				44.5%							39.1%	39.1%	39.1%	42.8%
93.25 - 88.25	3828	6442	10270	31.01	47.91	78.92	26.1%				46.9%							41.3%	41.3%	41.3%	45.2%
88.25 - 87.25	3910	6529	10439	31.23	47.91	79.13	26.4%				47.4%							41.7%	41.7%	41.7%	45.6%
87.25 - 87	3931	7076	11007	31.28	51.66	82.94	25.2%			41.9%								39.8%	39.8%	39.8%	43.5%
87 - 86.5	3972	7123	11096	31.39	51.66	83.05	25.4%			42.1%								40.0%	40.0%	40.0%	43.8%
86.5 - 86.25	3993	5295	9288	31.45	38.16	69.60	30.5%			50.7%								48.0%	48.0%	48.0%	
86.25 - 81.25	4426	5651	10078	32.55	38.16	70.70	32.4%			53.2%								50.4%	50.4%	50.4%	
81.25 - 76.25	4890	6019	10909	33.65	38.16	71.80	34.3%			55.7%								52.8%	52.8%	52.8%	
76.25 - 75.42	4970	6082	11052	33.83	38.16	71.99	34.6%			56.1%								53.2%	53.2%	53.2%	
75.42 - 75.17	4995	7495	12490	33.88	46.92	80.80	30.8%			49.9%				45.5%				47.4%	47.4%	47.4%	
75.17 - 70.17	5496	7965	13462	34.98	46.92	81.90	32.5%			52.1%				47.5%				49.4%	49.4%	49.4%	
70.17 - 65.17	6031	8450	14480	36.08	46.92	83.00	34.0%			54.0%				49.3%				51.3%	51.3%	51.3%	
65.17 - 60.17	6598	8948	15547	37.18	46.92	84.10	35.5%			55.8%				50.9%				53.0%	53.0%	53.0%	
60.17 - 57	6976	9272	16247	37.88	46.92	84.79	36.4%			56.9%				51.9%				54.1%	54.1%	54.1%	
57 - 56.75	7006	9297	16303	37.93	46.92	84.85	36.5%		57.0%					52.0%				54.1%	54.1%	54.1%	
56.75 - 53	7473	9688	17161	38.75	46.92	85.67	37.6%		58.2%					53.1%				55.3%	55.3%	55.3%	
53 - 52.79	7502	9795	17297	38.80	52.92	91.72	37.8%		58.6%					50.3%			55.6%		46.8%	54.0%	
52.79 - 46.2	9545	9352	18897	47.48	46.92	94.40	36.7%		58.4%					55.0%			54.5%			52.6%	
46.2 - 41.2	10362	9856	20218	48.80	46.92	95.71	37.8%		59.6%					56.1%			55.6%			53.7%	
41.2 - 39.33	10679	10048	20727	49.29	46.92	96.21	38.1%		60.0%					56.5%			56.0%			54.1%	
39.33 - 39.08	10722	12104	22826	49.36	55.68	105.03	34.8%		54.8%				50.9%	51.4%			51.2%			49.6%	
39.08 - 37.75	10952	12270	23222	49.71	55.68	105.38	35.0%		55.0%				51.2%	51.7%			51.5%			49.9%	
37.75 - 37.5	10996	10238	21234	49.77	46.92	96.69	38.5%		60.4%				56.3%				56.4%			54.5%	
37.5 - 32.5	11893	10764	22657	51.09	46.92	98.01	39.5%		61.4%				57.2%				57.4%			55.5%	
32.5 - 27.5	12838	11304	24142	52.41	46.92	99.33	40.4%		62.4%				58.1%				58.3%			56.4%	
27.5 - 27.25	12886	11332	24218	52.48	46.92	99.39	40.5%		62.4%				58.1%				58.3%			56.4%	
27.25 - 27	12935	11359	24294	52.54	46.92	99.46	40.5%	62.4%					58.2%				58.4%			56.5%	
27 - 22	13933	11914	25846	53.86	46.92	100.78	41.4%	63.3%					59.0%				59.2%			57.3%	
22 - 21.25	14087	11998	26085	54.06	46.92	100.97	41.5%	63.4%					59.1%				59.3%			57.4%	
21.25 - 21	14135	12525	26660	54.12	57.54	111.66	40.4%	59.5%					58.3%			42.4%	59.7%			45.6%	
21 - 17	14977	12997	27974	55.18	57.54	112.72	41.0%	60.1%					58.9%			41.4%	60.3%			46.2%	
17 - 16.75	15045	12437	27482	55.24	51.54	106.78	43.4%	65.2%					61.7%			47.1%	60.6%				
16.75 - 16.25	15153	12494	27647	55.38	51.54	106.92	43.5%	65.3%					61.8%			47.2%	60.7%				
16.25 - 16	15300	15120	30420	55.44	60.79	116.23	41.0%	62.4%					57.9%		52.2%	46.1%					
16 - 11	16415	15818	32233	56.76	60.79	117.55	41.8%	63.1%					58.6%		50.8%	46.8%					
11 - 6	17582	16532	34115	58.08	60.79	118.87	42.6%	63.8%					59.2%		51.4%	47.3%					
6 - 1	18804	17263	36067	59.40	60.79	120.19	43.4%	64.4%					59.7%		52.0%	47.9%					
1 - 0	19161	7087	26248	59.66	31.88	91.53	60.9%								70.1%	62.9%					

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

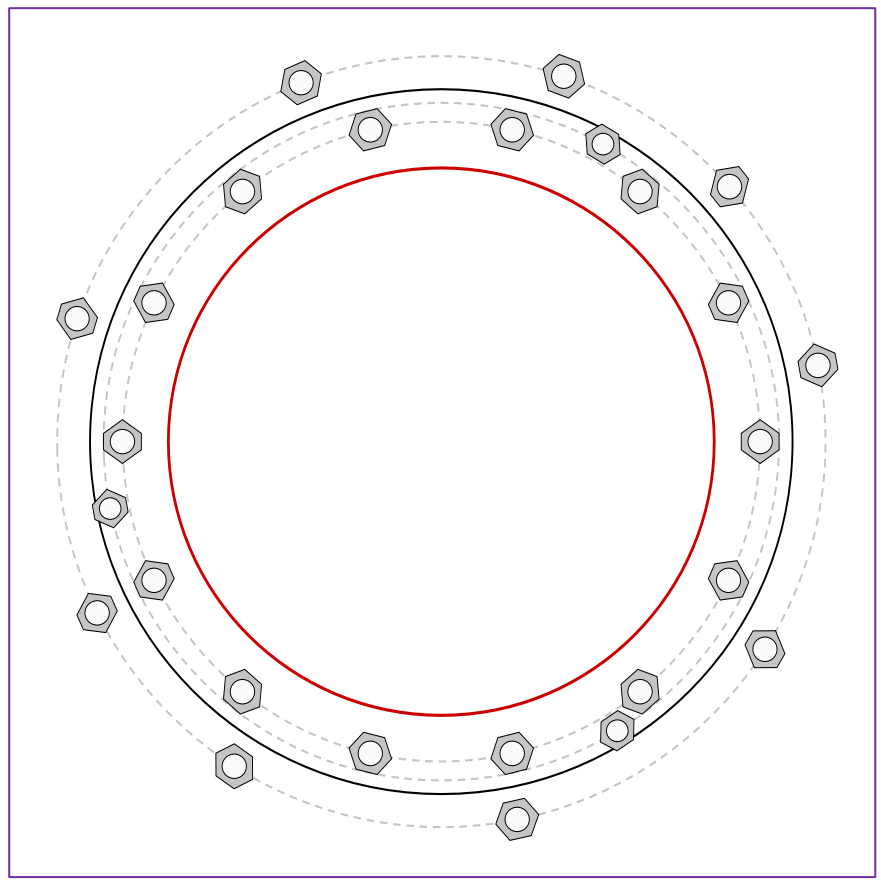
Monopole Base Plate Connection

Site Info	
BU #	876401
Site Name	N OF PLAINFIELD/SSUS
Order #	572912, Rev# 0

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

Applied Loads	
Moment (kip-ft)	3375.62
Axial Force (kips)	68.21
Shear Force (kips)	28.81

**TIA-222-H Section 15.5 Applied*



Connection Properties

Anchor Rod Data

GROUP 1: (14) 2-1/4" ø bolts (A615-75 N; Fy=75 ksi, Fu=100 ksi) on 59" BC

GROUP 2: (3) 2" ø bolts (A193 Gr. B7 N; Fy=105 ksi, Fu=125 ksi) on 62.5" BC

pos. (deg): 61.4, 191.4, 301.4

GROUP 3: (9) 2-1/4" ø bolts (A615-75 N; Fy=75 ksi, Fu=100 ksi) on 71.1" BC

pos. (deg): 11.4, 41.4, 71.4, 111.4, 161.4, 206.4, 237.4, 281.4, 327.4

Base Plate Data

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

Stiffener Data

N/A

Pole Data

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

Analysis Results

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

GROUP 1:		
Pu_c = 104.18	ϕPn_c = 268.39	**Stress Rating**
Vu = 2.06	ϕVn = 120.77	**37.0%**
Mu = n/a	ϕMn = n/a	**Pass**
GROUP 2:		
Pu_t = 79.68	ϕPn_t = 234.38	**Stress Rating**
Vu = 0	ϕVn = 147.26	**32.4%**
Mu = n/a	ϕMn = n/a	**Pass**
GROUP 3:		
Pu_t = 118.02	ϕPn_t = 243.75	**Stress Rating**
Vu = 0	ϕVn = 149.1	**46.1%**
Mu = 0	ϕMn = 128.14	**Pass**

Base Plate Summary

Max Stress (ksi):	30.61	(Flexural)
Allowable Stress (ksi):	54	
Stress Rating:	**54.0%**	**Pass**

CCIplate

Elevation (ft)	0	*(Base)*

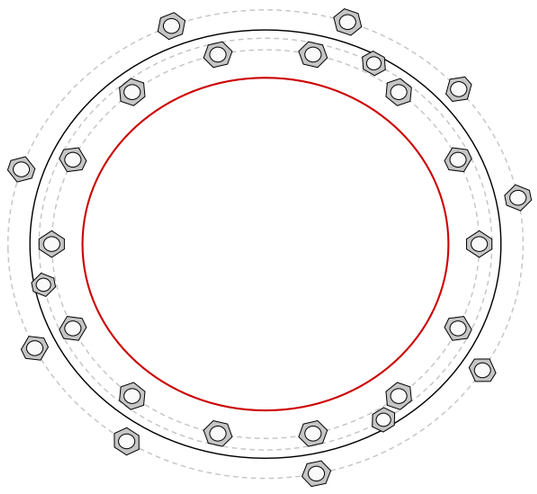
note: Bending interaction not considered when Grout Considered = "Yes"

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

Custom Bolt Connection

Bolt	Bolt Group ID	Location (deg.)	Diameter (in)	Material	Bolt Circle (in)	Eta Factor, η:	l_{ar} (in):	Thread Type	Area Override, in^2	Tension Only
1	1	0	2.25	A615-75	59	0.55	0	N-Included		No
2	1	25.714286	2.25	A615-75	59	0.55	0	N-Included		No
3	1	51.428571	2.25	A615-75	59	0.55	0	N-Included		No
4	1	77.142857	2.25	A615-75	59	0.55	0	N-Included		No
5	1	102.85714	2.25	A615-75	59	0.55	0	N-Included		No
6	1	128.57143	2.25	A615-75	59	0.55	0	N-Included		No
7	1	154.28571	2.25	A615-75	59	0.55	0	N-Included		No
8	1	180	2.25	A615-75	59	0.55	0	N-Included		No
9	1	205.71429	2.25	A615-75	59	0.55	0	N-Included		No
10	1	231.42857	2.25	A615-75	59	0.55	0	N-Included		No
11	1	257.14286	2.25	A615-75	59	0.55	0	N-Included		No
12	1	282.85714	2.25	A615-75	59	0.55	0	N-Included		No
13	1	308.57143	2.25	A615-75	59	0.55	0	N-Included		No
14	1	334.28571	2.25	A615-75	59	0.55	0	N-Included		No
15	2	61.4	2	A193 Gr. B7	62.5	0.55	0	N-Included		No
16	2	191.4	2	A193 Gr. B7	62.5	0.55	0	N-Included		No
17	2	301.4	2	A193 Gr. B7	62.5	0.55	0	N-Included		No
18	3	11.4	2.25	A615-75	71.1	0.5	3	N-Included		No
19	3	41.4	2.25	A615-75	71.1	0.5	3	N-Included		No
20	3	71.4	2.25	A615-75	71.1	0.5	3	N-Included		No
21	3	111.4	2.25	A615-75	71.1	0.5	3	N-Included		No
22	3	161.4	2.25	A615-75	71.1	0.5	3	N-Included		No
23	3	206.4	2.25	A615-75	71.1	0.5	3	N-Included		No
24	3	237.4	2.25	A615-75	71.1	0.5	3	N-Included		No
25	3	281.4	2.25	A615-75	71.1	0.5	3	N-Included		No
26	3	327.4	2.25	A615-75	71.1	0.5	3	N-Included		No

Plot Graphic



PROJECT	**136378.011.01 - TOWN OF PLAINFIELD/SSUSA, CT**
SUBJECT	**Anchor Rod Bracket Analysis**
DATE	**11-19-21**
v4.6.1	

TIA-222 Rev. H
Apply TIA-222-H Section 15.5? Yes

B+T GRP
1717 S. Boulder, Suite 300
Tulsa, OK 74119
(918) 587-4630

Analysis Criteria		
Design/Analysis	Analysis	
Load Type	Current Load	
Current load	79.68	kips
AR Capacity	296.9	kips

Tower Type	Monopole	

Manufacturers Tower Prop.		
Pole Thickness	0.375	in
Pole Grade	A572-65	
Fy	65	ksi
Fu	80	ksi
Base Plate Gr.	A572-60	
Fy	60	ksi
Fu	75	ksi

Post-Installed Adhesive AR Mod.		
ARB Type	Welded	
Size	2	in
Grade	A193 Gr B7	
Fy	105	ksi
Fu	125	ksi

Anchor Rod Bracket Analysis Checks		
Tube Bearing	20.3%	-
Tube Compression	30.4%	-
Gusset Shear	14.1%	-
Gusset Flexure	N/A	-
Welds: Gusset to Tower and BP	27.8%	-
Welds: Gusset to Tube	14.2%	-
Welds: Geometry	N/A	
Tower Punching	11.2%	-
Tube Punching	24.2%	-
Utilization	**30.4%**	

Bracket Properties

Gusset		
Thickness	1.25	in
Width at Tube	4	in
Height at Pole	30	in
Height at Tube	12	in
Grade	A572-65	
Fy	65	ksi
Fu	80	ksi

Pipe/Tube		
Size	HSS4x4x1/2	
Total Length	12	in
Length above Gusset	0	in
Length below Gusset	0	in
Grade	A500 Grade B (Square)	
Fy	46	ksi
Fu	58	ksi

Weld - Gusset to Pipe/Tube		
FEXX	70	ksi
Weld Type	CJP - Double Bevel	
Fillet Size	1/2	in
Bevel Depth	5/8	in

Weld - Gusset to Tower		
FEXX	70	ksi
Weld Type	Double Fillet	
Fillet Size	3/8	in

Weld - Gusset to Base Plate		
FEXX	70	ksi
Weld Type	CJP - Double Bevel	
Fillet Size	1/2	in
Bevel Depth	5/8	in
Gap	0	in
Notch (horiz)	0.75	in
Notch (vert)	0.75	in
Pipe/Tube Welded to Base/Footpad?	Yes	
Fillet Size	3/8	in

PROJECT	**136378.011.01 - TOWN OF PLAINFIELD/SSUSA, CT**
SUBJECT	**Anchor Rod Bracket Analysis**
DATE	**11-19-21**
v4.6.1	

TIA-222 Rev.	H	
Apply TIA-222-H Section 15.5?	Yes	

B+T GRP
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Tulsa, OK 74119
(918) 587-4630

Analysis Criteria		
Design/Analysis	Analysis	
Load Type	Current Load	
Current load	118.02	kips
AR Capacity	268.4	kips

Tower Type	Monopole	

Manufacturers Tower Prop.		
Pole Thickness	0.375	in
Pole Grade	A572-65	
Fy	65	ksi
Fu	80	ksi
Base Plate Gr.	A572-60	
Fy	60	ksi
Fu	75	ksi

Post-Installed Adhesive AR Mod.		
ARB Type	Welded	
Size	2.25	in
Grade	A615-75	
Fy	75	ksi
Fu	100	ksi

Anchor Rod Bracket Analysis Checks		
Tube Bearing	23.0%	-
Tube Compression	34.5%	-
Gusset Shear	6.9%	-
Gusset Flexure	5.1%	-
Welds: Gusset to Tower and BP	21.2%	-
Welds: Gusset to Tube	22.4%	-
Welds: Geometry	N/A	
Tower Punching	13.9%	-
Tube Punching	5.0%	-
Utilization	**34.5%**	

Bracket Properties

Gusset			Pipe/Tube			Weld - Gusset to Pipe/Tube		
Thickness	1.25	in	Size	HSS5x5x1/2		FEXX	70	ksi
Width at Tube	8.25	in	Total Length	45	in	Weld Type	Double Fillet	
Height at Pole	44	in	Length above Gusset	3	in	Fillet Size	5/16	in
Height at Tube	36	in	Length below Gusset	6	in			
Grade	A572-65		Grade	A500 Grade B (Square)				
Fy	65	ksi	Fy	46	ksi			
Fu	80	ksi	Fu	58	ksi			

Weld - Gusset to Tower			Weld - Gusset to Base Plate	
FEXX	70	ksi		
Weld Type	Double Fillet		Weld Type	Floating
Fillet Size	5/16	in		

PROJECT	**136378.011.01 - TOWN OF PLAINFIELD/SSUSA, CT**
SUBJECT	**Effective Embedment of Pier Reinforcement**
DATE	**11-19-21**

v2.0.1

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1717 S. Boulder, Suite 300
Tulsa, OK 74119
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Foundation Modification Properties		
Modification Type	Deep Anchor Rod	
Deep Anchor Rod size	2	
OD of Deep Anchor Rod	2	in
Embedment Length of Deep Anchor Rod	17.5	ft
Deep Anchor Rod Grade	105	ksi
f'c	3.00	ksi
Foundation Extension above grade	1.00	ft

Post Installed Rebar		
Capacity of single Rebar (Φ*A*Fy)	169.6	kips
Epoxy Manufacturer	Hilti RE 500 V3	
Uncracked Bond Strength	1.15	ksi
Development length	3.003	ft
Effective Embedment length	13.5	ft

Use this depth to define Pier Section in the Drilled Pier tool.
Model using an eq. rebar size.

PROJECT	**136378.011.01 - TOWN OF PLAINFIELD/SSUSA, CT**
SUBJECT	**Effective Embedment of Pier Reinforcement**
DATE	**11-19-21**

v2.0.1

B+T GRP
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Tulsa, OK 74119
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Foundation Modification Properties		
Modification Type	Deep Anchor Rod	
Deep Anchor Rod size	2.25	
OD of Deep Anchor Rod	2.25	in
Embedment Length of Deep Anchor Rod	18	ft
Deep Anchor Rod Grade	75	ksi
f'c	3.00	ksi
Foundation Extension above grade	1.00	ft

Post Installed Rebar		
Capacity of single Rebar (Φ*A*Fy)	214.7	kips
Epoxy Manufacturer	Hilti RE 500 V3	
Uncracked Bond Strength	1.12	ksi
Development length	3.468	ft
Effective Embedment length	13.5	ft

Use this depth to define Pier Section in the Drilled Pier tool.
Model using an eq. rebar size.

Drilled Pier Foundation

BU # :	876401
Site Name:	TOWN OF PLAINFIELD/SSU
Order Number:	572912, Rev# 0
TIA-222 Revison:	H
Tower Type:	Monopole

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

Go to Soil Calculations

Applied Loads	Comp.	Uplift
Moment (kip-ft)	3376	
Axial Force (kips)	68	
Shear Force (kips)	29	

Material Properties			Rebar 2, Fy Override (ksi)	Rebar 3, Fy Override (ksi)
Concrete Strength, f'c:	4	ksi		
Rebar Strength, Fy:	60	ksi	75	105
Tie Yield Strength, Fyt:	40	ksi		

Pier Design Data		
Depth	26	ft
Ext. Above Grade	1	ft
Pier Section 1		
From 1' above grade to 13.5' below grade		
Pier Diameter	7	ft
Rebar Quantity	18	
Rebar Size	11	
Rebar Cage Diameter	73	in
Tie Size	5	
Tie Spacing	12	in
Rebar Quantity	9	
Rebar Size	18	
Rebar Cage Diameter	71.1	in
Rebar Quantity	3	
Rebar Size	16	
Rebar Cage Diameter	62.5	in
Pier Section 2		
From 13.5' below grade to 26' below grade		
Pier Diameter	7	ft
Rebar Quantity	18	
Rebar Size	11	
Rebar Cage Diameter	73	in
Tie Size	5	
Tie Spacing	12	in

Rebar & Pier Options

Embedded Pole Inputs

Belled Pier Inputs

Analysis Results		
Soil Lateral Check	*Compression*	*Uplift*
$D_{v=0}$ (ft from TOC)	7.78	-
Soil Safety Factor	4.95	-
Max Moment (kip-ft)	3576.23	-
Rating*	*25.6%*	-
Soil Vertical Check	*Compression*	*Uplift*
Skin Friction (kips)	395.64	-
End Bearing (kips)	461.81	-
Weight of Concrete (kips)	187.03	-
Total Capacity (kips)	857.45	-
Axial (kips)	255.03	-
Rating*	*28.3%*	-
Reinforced Concrete Flexure	*Compression*	*Uplift*
Critical Depth (ft from TOC)	14.51	-
Critical Moment (kip-ft)	3111.50	-
Critical Moment Capacity	4706.76	-
Rating*	*63.0%*	-
Reinforced Concrete Shear	*Compression*	*Uplift*
Critical Depth (ft from TOC)	20.22	-
Critical Shear (kip)	417.82	-
Critical Shear Capacity	632.32	-
Rating*	*62.9%*	-

Structural Foundation Rating*	**63.0%**
Soil Interaction Rating*	**28.3%**

*Rating per TIA-222-H Section 15.5

Soil Profile

Groundwater Depth	N/A	# of Layers	4

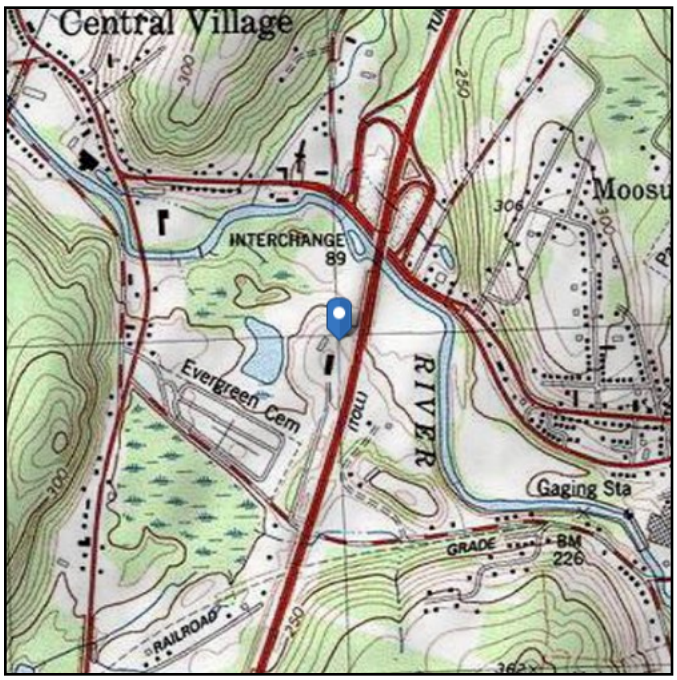
Layer	Top (ft)	Bottom (ft)	Thickness (ft)	γ_{soil} (pcf)	$\gamma_{concrete}$ (pcf)	Cohesion (ksf)	Angle of Friction (degrees)	Calculated Ultimate Skin Friction Comp (ksf)	Calculated Ultimate Skin Friction Uplift (ksf)	Ultimate Skin Friction Comp Override (ksf)	Ultimate Skin Friction Uplift Override (ksf)	Ult. Gross Bearing Capacity (ksf)	SPT Blow Count	Soil Type
1	0	3.5	3.5	115	150	0	0	0.000	0.000	0.00	0.00			Cohesionless
2	3.5	6	2.5	115	150	0	32	0.000	0.000	1.07	1.07			Cohesionless
3	6	10	4	120	150	0	38	0.000	0.000	1.07	1.07			Cohesionless
4	10	26	16	125	150	0	43	0.000	0.000	1.07	1.07	16		Cohesionless

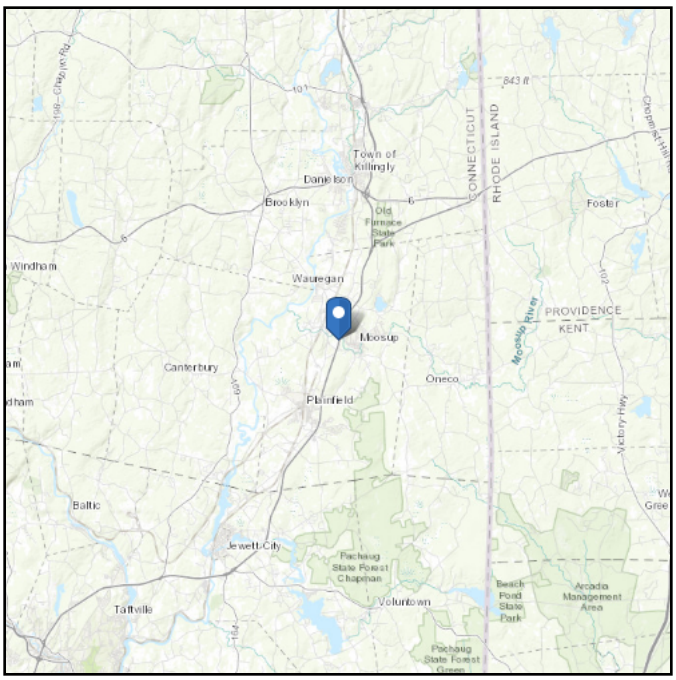
ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 219.35 ft (NAVD 88)
Latitude: 41.715136
Longitude: -71.896314





Wind

Results:

Wind Speed:	123 Vmph
10-year MRI	75 Vmph
25-year MRI	85 Vmph
50-year MRI	96 Vmph
100-year MRI	101 Vmph

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed: Thu Nov 18 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.

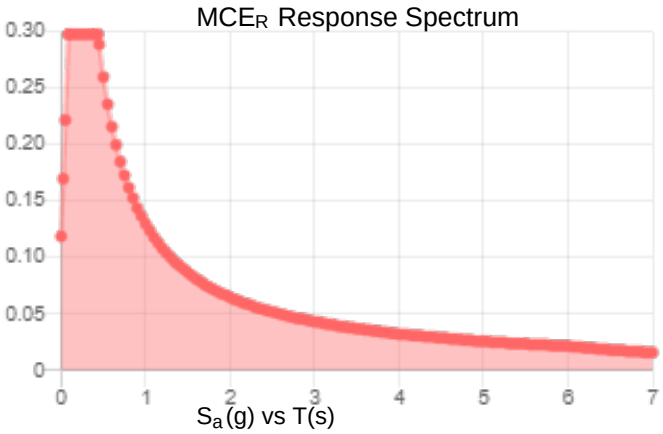
Seismic

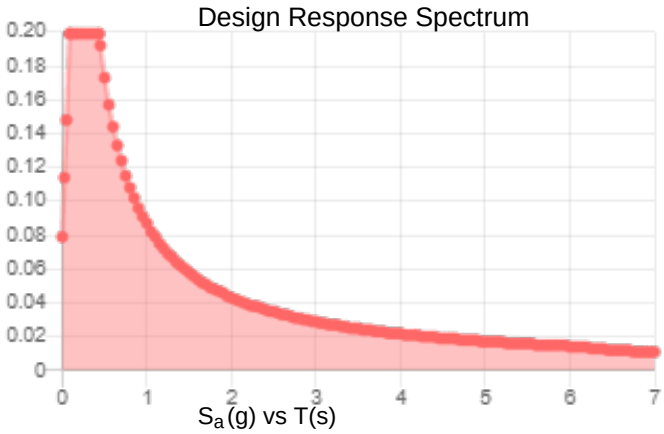
Site Soil Class: D - Default (see Section 11.4.3)

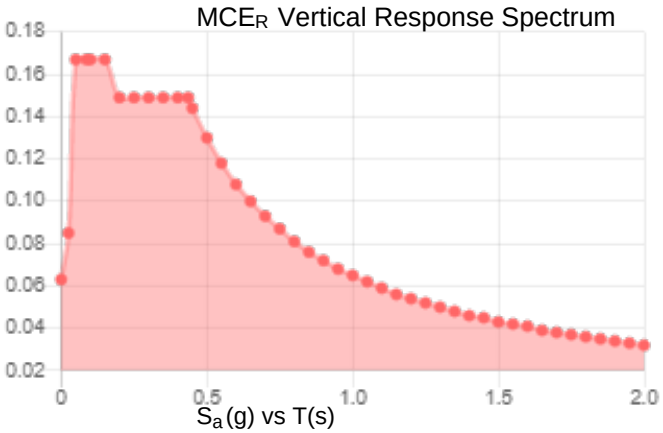
Results:

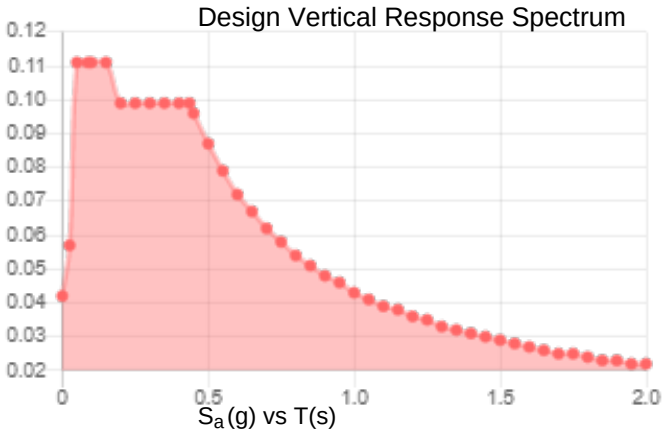
S_S :	0.186	S_{D1} :	0.087
S_1 :	0.054	T_L :	6
F_a :	1.6	PGA :	0.101
F_v :	2.4	PGA_M :	0.161
S_{MS} :	0.298	F_{PGA} :	1.598
S_{M1} :	0.13	I_e :	1
S_{DS} :	0.199	C_v :	0.7

Seismic Design Category B









Data Accessed: Thu Nov 18 2021

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

Ice

Results:

Ice Thickness:	1.00 in.
Concurrent Temperature:	15 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8
Date Accessed:	Thu Nov 18 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: April 4, 2022

B+T Group
1717 S. Boulder, Suite 300
Tulsa, OK 74119
(918) 587-4630
towersupport@btgrp.com

Subject:	**Mount Analysis - Conditional Passing Report**	
Carrier Designation:	**DISH Network Co-Locate**	
	Carrier Site Number:	BOBOS00897A
	Carrier Site Name:	N/A
Crown Castle Designation:	**BU Number:**	876401
	Site Name:	Town Of Plainfield/SSUSA
	JDE Job Number:	671534
	Order Number:	572912, Rev.2
Engineering Firm Designation:	**B+T Group Report Designation:**	136378.013.01
Site Data:	**47-51 Unity Street, Plainfield, CT, Windham County, 06374** **Latitude 41° 42' 54.49" Longitude -71° 53' 46.73"**	
Structure Information:	**Tower Height & Type:**	**160 ft. Monopole**
	Mount Elevation:	**83 ft.**
	Mount Type:	**8 ft. Platform Mount**

B+T Group 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 above-mentioned 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.

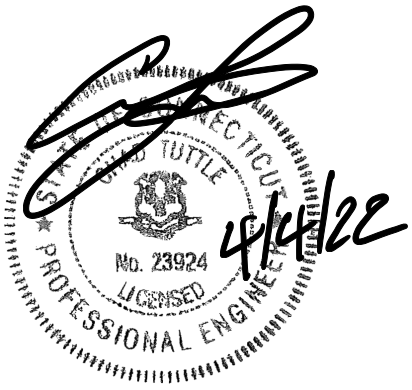
The purpose of the analysis is to determine acceptability of the mount's stress level. Based on our analysis we have determined the stress level to be:

Platform Mount **Sufficient**
*** See Section 4.1 of this report for the structural modifications required in order for the mount to support the loading listed in Table 1**

This analysis utilizes an ultimate 3-second gust wind speed of 123 mph as required by the 2018 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Mount structural analysis prepared by: Erik Perez

Respectfully submitted by: B&T Engineering, Inc.
COA: PEC.0001564 Expires: 02/01/2023



Chad E. Tuttle, P.E.

TABLE OF CONTENTS

1) INTRODUCTION

This is a proposed 3 - sector 8' Platform Mount, designed by Commscope (Part# MC-PK8-DSH).

2) ANALYSIS CRITERIA

Building Code:	2018 Connecticut State Building Code
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Ultimate Wind Speed:	123 mph
Exposure Category:	B
Topographic Factor at Base:	1
Topographic Factor at Mount:	1
Ice Thickness:	1.0 in
Wind Speed with Ice:	50 mph
Seismic S_s:	0.186
Seismic S_1:	0.054
Live Loading Wind Speed:	30 mph
Man Live Load at Mid/End-Points:	250 lb.
Man Live Load at Mount Pipes:	500 lb.

Table 1 - Proposed Equipment Configuration

Mount Centerline (ft.)	Antenna Centerline (ft.)	Number of Antennas	Manufacturer	Model / Type	Mount / Modification Details
83	83	3	JMA Wireless	MX08FRO665-21	8 ft. Platform Mount
		3	Fujitsu	TA08025-B604	
		3	Fujitsu	TA08025-B605	
		1	Raycap	RDIDC-9181-PF-48	

Table 2 - Documents Provided

Document	Remarks	Reference	Source
CCI Order	Existing Loading Proposed Loading	Date: 08/18/2021	Crown Castle
Mount Manufacturer Drawing	Commscope (Part# MC-PK8-DSH)	Date: 03/08/2021	Commscope

3) ANALYSIS PROCEDURE

3.1) Analysis Method

RISA-3D (Version 19.0.4), a commercially available analysis software package, was used to create a three-dimensional model of the antenna mounting system and calculate member stresses for various loading cases.

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

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

Manufacturers drawing were used to create the model.

3.2) Assumptions

1. The antenna mounting system was properly fabricated, installed and maintained in good condition in accordance with its original design, TIA Standards, and/or manufacturer's specifications.
2. The configuration of antennas, mounts, and other appurtenances are as specified in Table-1.
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. Mount areas and weights are determined from field measurements, standard material properties, and/or manufacturer product data.
5. Serviceability with respect to antenna twist, tilt, roll, or lateral translation is not checked and is left to the carrier or tower owner to ensure conformance.
6. All prior structural modifications if any are assumed to be correctly installed and fully effective.
7. 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.
8. The following material grades were assumed (Unless Noted Otherwise):
   (a) Connection Bolts : ASTM A325
   (b) Steel Pipe : ASTM A53 (GR. 35)
   (c) HSS (Round) : ASTM 500 (GR. B-42)
   (d) HSS (Rectangular) : ASTM 500 (GR. B-46)
   (e) Channel : ASTM A36 (GR. 36)
   (f) Steel Solid Rod : ASTM A36 (GR. 36)
   (g) Steel Plate : ASTM A36 (GR. 36)
   (h) Steel Angle : ASTM A36 (GR. 36)
   (i) UNISTRUT : ASTM A570 (GR. 33)

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

4) ANALYSIS RESULTS

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

Notes	Component	Centerline (ft.)	Critical Member	% Capacity	Pass / Fail
1,2	Main Horizontals	83	6	7.5	Pass
	Support Rails		22	10.2	Pass
	Support Tubes		1	44.2	Pass
	Support Channels		2	33.3	Pass
	Support Angles		11	26.4	Pass
	Mount Pipes		73	11.2	Pass
	Connection Plates		36	20.2	Pass
	Connection Angles		68	17.2	Pass
3	Mount to Tower Connection		-	23.3	Pass

Structure Rating with Recommendations (max from all components) =	44.2%

Notes:
1) Capacities listed are based on recommendations listed in Sec.4.1 being installed
2) See additional documentation in "Appendix C - Software Analysis Output" for calculations supporting the % capacity consumed.
3) See additional documentation in "Appendix D - Additional Calculations" for calculations supporting the % capacity reported.

4.1) Recommendations

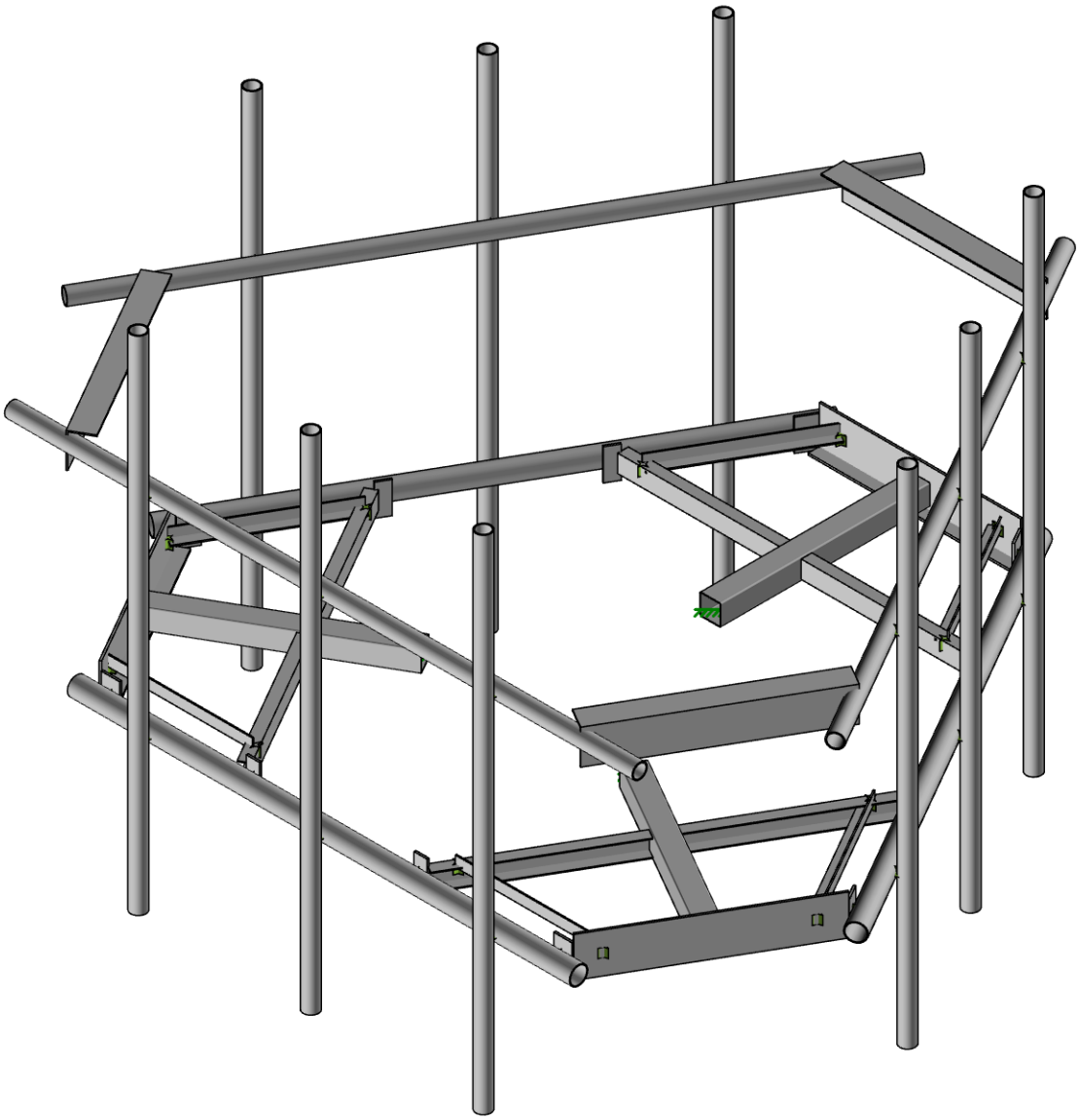
The mount has sufficient capacity to carry the proposed loading configuration. In order for the results of the analysis to be considered valid, the mount listed below must be installed.

1. Commscope (Part# MC-PK8- DSH)

No 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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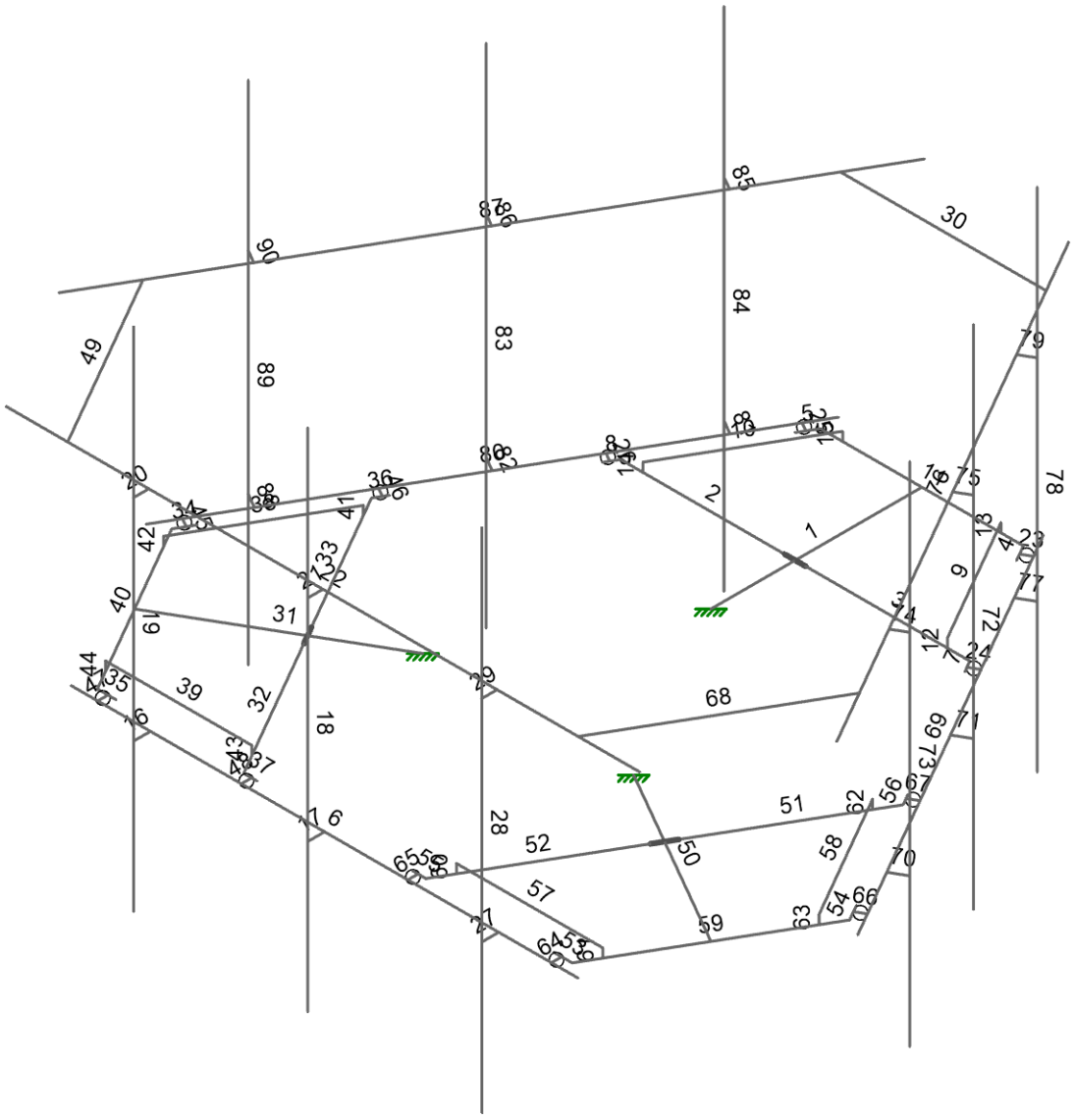

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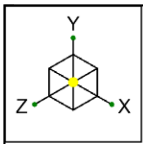

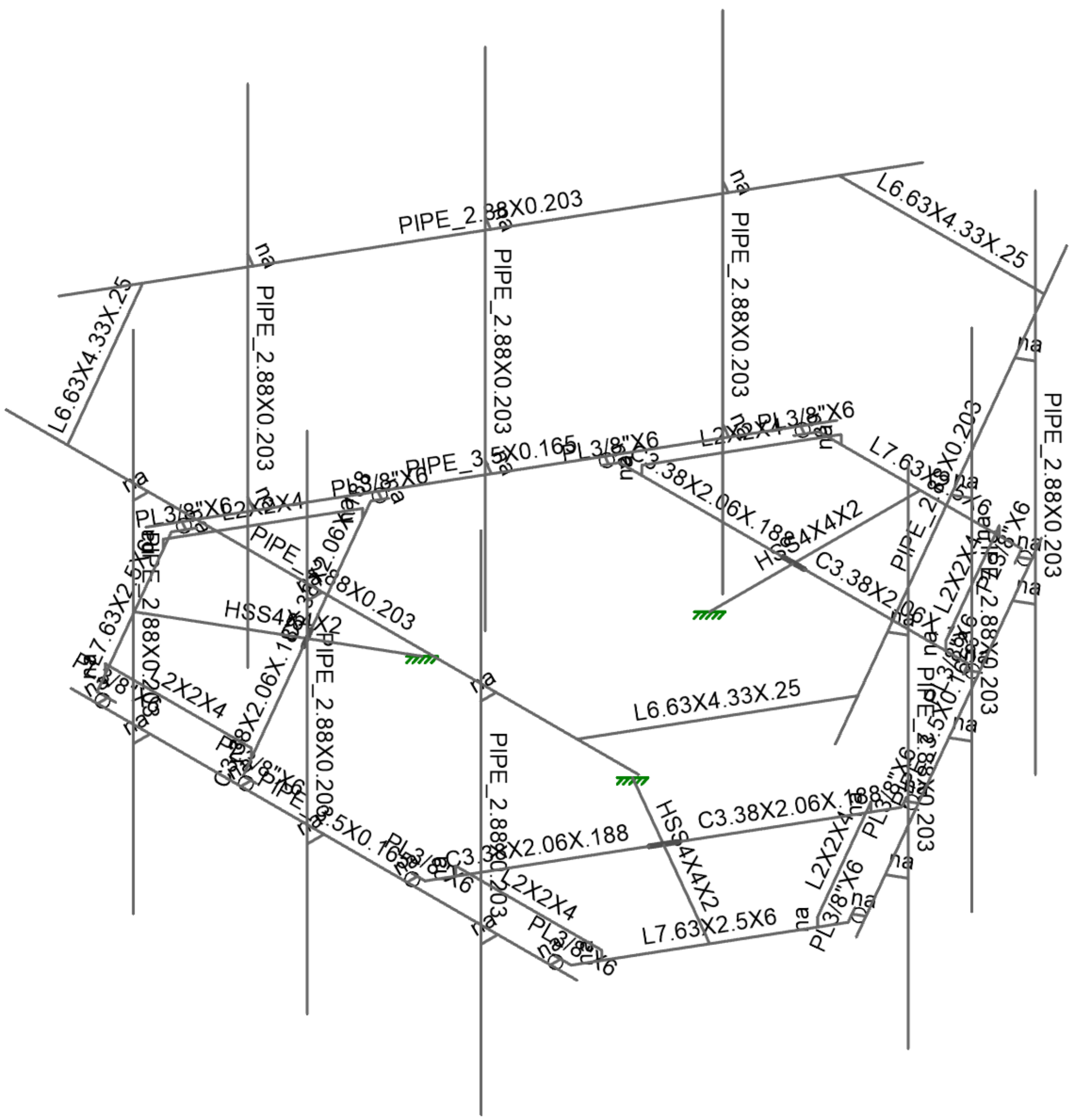

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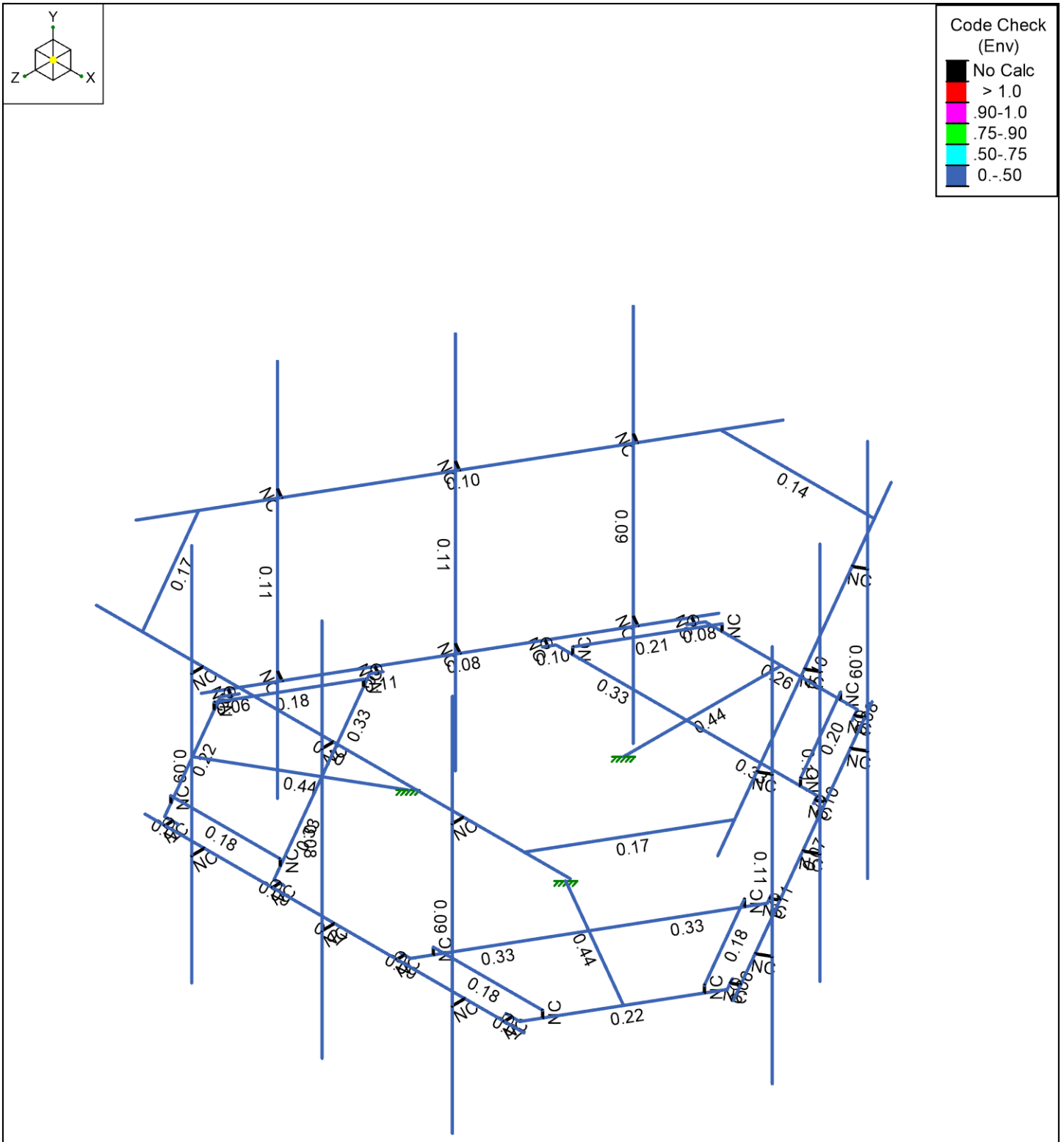

Member Code Checks Displayed (Enveloped)
Envelope Only Solution

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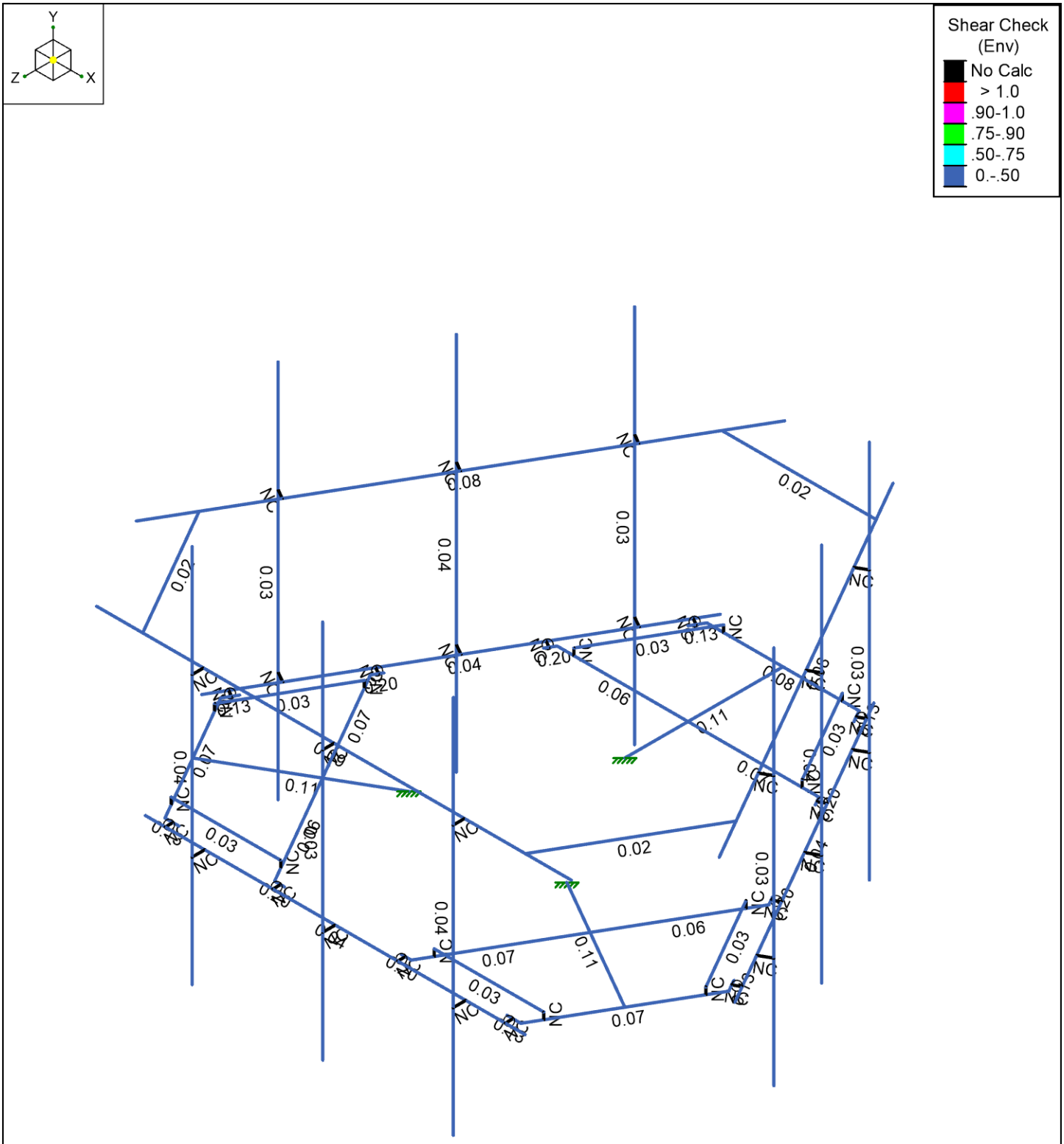

Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

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SP		Apr 04, 2022
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APPENDIX B

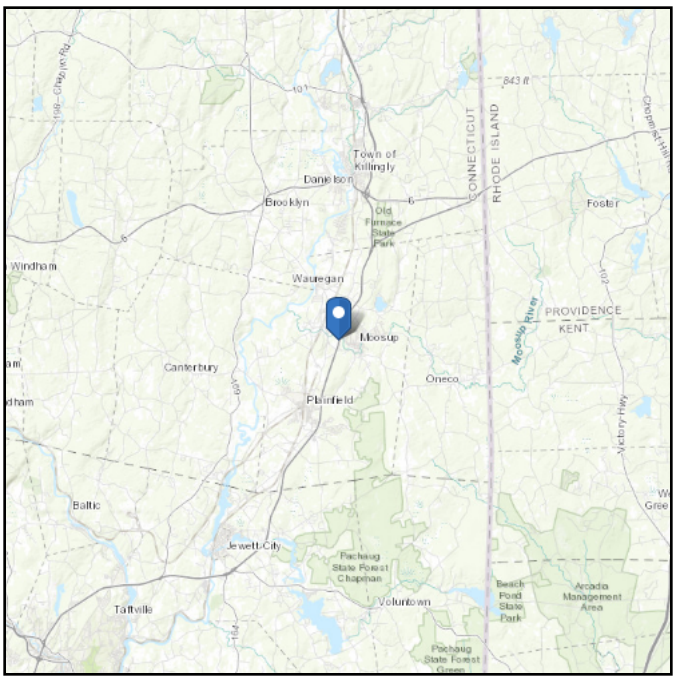
SOFTWARE INPUT CALCULATIONS

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: 219.35 ft (NAVD 88)
Latitude: 41.715136
Longitude: -71.896314



Wind

Results:

Wind Speed	123 Vmph
10-year MRI	75 Vmph
25-year MRI	85 Vmph
50-year MRI	96 Vmph
100-year MRI	101 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: Wed Mar 30 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.

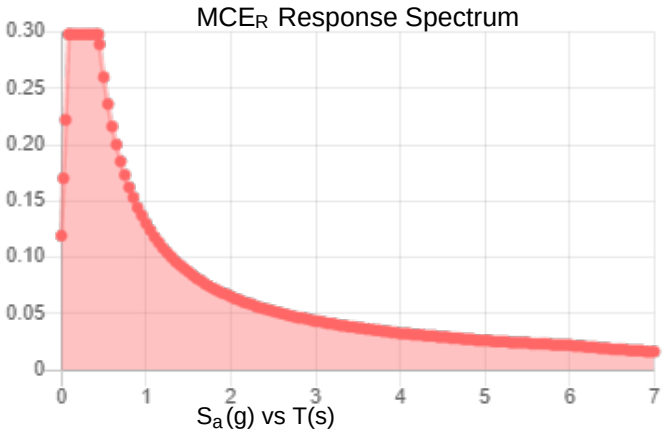
Seismic

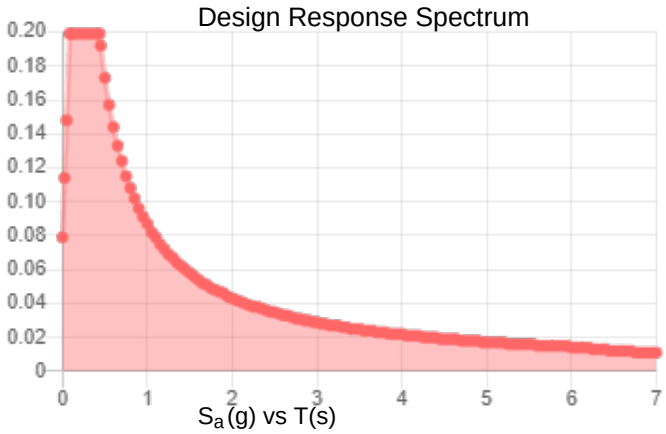
Site Soil Class: D - Default (see Section 11.4.3)

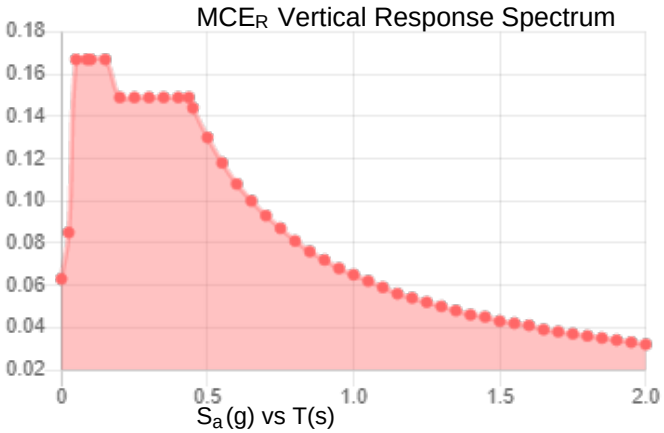
Results:

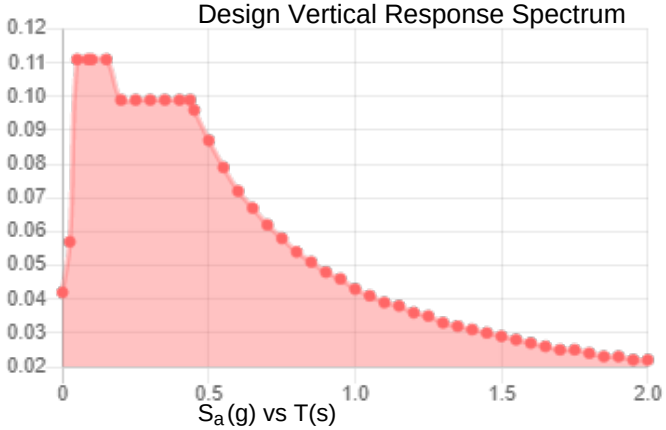
S_S :	0.186	S_{D1} :	0.087
S_1 :	0.054	T_L :	6
F_a :	1.6	PGA :	0.101
F_v :	2.4	PGA_M :	0.161
S_{MS} :	0.298	F_{PGA} :	1.598
S_{M1} :	0.13	I_e :	1
S_{DS} :	0.199	C_v :	0.7

Seismic Design Category B









Data Accessed: **Wed Mar 30 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:	Wed Mar 30 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.

PROJECT	**136378.013.01 - Town Of Plai**		**KSC**
SUBJECT	**Platform Mount Analysis**		
DATE	**04/02/22**	PAGE	OF

B+T GRP
1717 S. Boulder, Suite 300
Tulsa, OK 74119
(918) 587-4630

Tower Type		:	Monopole		
Ground Elevation	z_s	:	219	ft	[ASCE7 Hazard Tool]
Tower Height		:	160.00	ft	
Mount Elevation		:	83.00	ft	
Antenna Elevation		:	83.00	ft	
Crest Height		:	0	ft	
Risk Category		:	II		[Table 2-1]
Exposure Category		:	B		[Sec. 2.6.5.1.2]
Topography Category		:	1.00		[Sec. 2.6.6.2]
Wind Velocity	V	:	123	mph	[ASCE7 Hazard Tool]
Ice wind Velocity	V_i	:	50	mph	[ASCE7 Hazard Tool]
Service Velocity	V_s	:	30	mph	[ASCE7 Hazard Tool]
Base Ice thickness	t_i	:	1.00	in	[ASCE7 Hazard Tool]
Seismic Design Cat.		:	B		[ASCE7 Hazard Tool]
	S_S	:	0.19		
	S_1	:	0.05		
	S_{DS}	:	0.20		
	S_{D1}	:	0.09		

Gust Factor	G_h	:	1.00		[Sec. 16.6]
Pressure Coefficient	K_z	:	0.94		[Sec. 2.6.5.2]
Topography Factor	K_{zt}	:	1.00		[Sec. 2.6.6]
Elevation Factor	K_e	:	0.99		[Sec. 2.6.8]
Directionality Factor	K_d	:	0.95		[Sec. 16.6]
Shielding Factor	K_a	:	0.90		[Sec. 16.6]
Design Ice Thickness	t_{iz}	:	1.10	in	[Sec. 2.6.10]

Importance Factor	I_e	:	1		[Table 2-3]
Response Coefficient	C_s	:	0.100		[Sec. 2.7.7.1]
Amplification	A_s	:	1.075		[Sec. 16.7]

	q_z	:	34.20	psf

PROJECT	136378.013.01 - Town Of Plai	KSC
SUBJECT	Platform Mount Analysis	
DATE	04/02/22	PAGE OF

B+T GRP
1717 S. Boulder, Suite 300
Tulsa, OK 74119
(918) 587-4630

Manufacturer	Model	Qty	Aspect Ratio	C_a flat/round	EPA_N (ft^2)	EPA_T (ft^2)	$EPA_{N\text{-}Ice}$ (ft^2)	$EPA_{T\text{-}Ice}$ (ft^2)	$F_{A\ No\ Ice}$ (N)	$F_{A\ No\ Ice}$ (T)	$F_{A\ Ice}$ (N)	$F_{A\ Ice}$ (T)
JMA WIRELESS	MX08FRO665-21	0.5	3.60	1.25	4.01	1.61	4.53	2.06	0.14	0.05	0.03	0.01
JMA WIRELESS	MX08FRO665-21	0.5	3.60	1.25	4.01	1.61	4.53	2.06	0.14	0.05	0.03	0.01
Fujitsu	TA08025-B604	1	0.95	1.20	1.64	0.82	2.14	1.20	0.06	0.03	0.01	0.00
Fujitsu	TA08025-B605	1	0.95	1.20	1.64	0.94	2.14	1.34	0.06	0.03	0.01	0.01
JMA WIRELESS	MX08FRO665-21	0.5	3.60	1.25	4.01	1.61	4.53	2.06	0.14	0.05	0.03	0.01
JMA WIRELESS	MX08FRO665-21	0.5	3.60	1.25	4.01	1.61	4.53	2.06	0.14	0.05	0.03	0.01
Fujitsu	TA08025-B604	1	0.95	1.20	1.64	0.82	2.14	1.20	0.06	0.03	0.01	0.00
Fujitsu	TA08025-B605	1	0.95	1.20	1.64	0.94	2.14	1.34	0.06	0.03	0.01	0.01
JMA WIRELESS	MX08FRO665-21	0.5	3.60	1.25	4.01	1.61	4.53	2.06	0.14	0.05	0.03	0.01
JMA WIRELESS	MX08FRO665-21	0.5	3.60	1.25	4.01	1.61	4.53	2.06	0.14	0.05	0.03	0.01
Fujitsu	TA08025-B604	1	0.95	1.20	1.64	0.82	2.14	1.20	0.06	0.03	0.01	0.00
Fujitsu	TA08025-B605	1	0.95	1.20	1.64	0.94	2.14	1.34	0.06	0.03	0.01	0.01
RAYCAP	RDIDC-9181-PF-48	1	1.14	1.20	1.68	0.97	2.18	1.39	0.06	0.04	0.01	0.01

APPENDIX C

SOFTWARE ANALYSIS OUTPUT

Node Coordinates

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
1	1	0	0	-1.92191	
2	2	0	0	-5.255243	
3	3	0	0	-3.255243	
4	4	2.758333	0	-3.255243	
5	5	-2.758333	0	-3.255243	
6	6	-1.603633	0	-5.255243	
7	7	1.603633	0	-5.255243	
8	8	1.749466	0	-5.002652	
9	9	-1.749466	0	-5.002652	
10	10	1.686966	0	-5.110906	
11	11	1.826822	0	-5.191651	
12	12	-1.686966	0	-5.110906	
13	13	-1.826822	0	-5.191651	
14	14	-3.999998	0	4.1779	
15	15	3.999998	0	4.1779	
16	16	2.8625	0	-3.074821	
17	17	2.820833	0	-3.146991	
18	18	2.960688	0	-3.227737	
19	19	-2.8625	0	-3.074821	
20	20	-2.820833	0	-3.146991	
21	21	-2.960688	0	-3.227737	
22	22	-1.25	0.140833	-5.255243	
23	23	-2.404701	0.140833	-3.255243	
24	24	2.404701	0.140833	-3.255243	
25	25	1.25	0.140833	-5.255243	
26	26	-1.25	0	-5.255243	
27	27	-2.404701	0	-3.255243	
28	28	2.404701	0	-3.255243	
29	29	1.25	0	-5.255243	
30	30	-2.749998	0	4.1779	
31	31	0.000002	0	4.1779	
32	32	-2.749998	0	4.443525	
33	33	0.000002	0	4.443525	
34	34	-2.749998	-2.333667	4.443525	
35	35	0.000002	-2.333667	4.443525	
36	36	-2.749998	5.666335	4.443525	
37	37	0.000002	5.666335	4.443525	
38	38	-2.749998	3.333337	4.443525	
39	39	0.000002	3.333337	4.443525	
40	40	-2.749998	3.333337	4.203941	
41	41	0.000002	3.333337	4.203941	
42	42	-5	3.333337	4.203941	
43	43	5.	3.333337	4.203941	
44	44	2.749998	0	4.1779	
45	45	2.749998	0	4.443525	
46	46	2.749998	-2.333667	4.443525	
47	47	2.749998	5.666335	4.443525	
48	48	2.749998	3.333337	4.443525	
49	49	2.749998	3.333337	4.203941	
50	50	1.625039	3.333337	-5.593233	
51	51	-1.625039	3.333337	-5.593233	
52	52	-0.00001	0	0.000876	
53	53	-1.664423	0	0.960955	
54	54	-4.551174	0	2.627622	
55	55	-2.819123	0	1.627622	

Node Coordinates (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
56	56	-4.19829	0	-0.761165	
57	57	-1.439957	0	4.016408	
58	58	-3.749358	0	4.016408	
59	59	-5.352991	0	1.238835	
60	60	-5.207157	0	0.986244	
61	61	-3.457691	0	4.016408	
62	62	-5.269657	0	1.094497	
63	63	-5.409513	0	1.013752	
64	64	-3.582691	0	4.016408	
65	65	-3.582691	0	4.1779	
66	66	-4.094123	0	-0.941587	
67	67	-4.135791	0	-0.869417	
68	68	-4.275646	0	-0.950163	
69	69	-1.231623	0	4.016408	
70	70	-1.314958	0	4.016408	
71	71	-1.314958	0	4.1779	
72	72	-3.926174	0.140833	3.710153	
73	73	-1.616773	0.140833	3.710153	
74	74	-4.021474	0.140833	-0.45491	
75	75	-5.176174	0.140833	1.54509	
76	76	-3.926174	0	3.710153	
77	77	-1.616773	0	3.710153	
78	78	-4.021474	0	-0.45491	
79	79	-5.176174	0	1.54509	
80	80	-5.656401	3.333337	1.389291	
81	81	-4.031362	3.333337	4.203941	
82	82	1.664423	0	0.960955	
83	83	4.551174	0	2.627622	
84	84	2.819123	0	1.627622	
85	85	1.439957	0	4.016408	
86	86	4.19829	0	-0.761165	
87	87	5.352991	0	1.238835	
88	88	3.749358	0	4.016408	
89	89	3.457691	0	4.016408	
90	90	5.207157	0	0.986244	
91	91	3.582691	0	4.016408	
92	92	3.582691	0	4.1779	
93	93	5.269657	0	1.094497	
94	94	5.409513	0	1.013752	
95	95	1.231623	0	4.016408	
96	96	1.314958	0	4.016408	
97	97	1.314958	0	4.1779	
98	98	4.094123	0	-0.941587	
99	99	4.135791	0	-0.869417	
100	100	4.275646	0	-0.950163	
101	101	5.176174	0.140833	1.54509	
102	102	4.021474	0.140833	-0.45491	
103	103	1.616773	0.140833	3.710153	
104	104	3.926174	0.140833	3.710153	
105	105	5.176174	0	1.54509	
106	106	4.021474	0	-0.45491	
107	107	1.616773	0	3.710153	
108	108	3.926174	0	3.710153	
109	109	4.031362	3.333337	4.203941	
110	110	5.656401	3.333337	1.389291	

Node Coordinates (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
111	111	5.618166	0	1.37515	
112	112	1.618168	0	-5.55305	
113	113	4.993166	0	0.292618	
114	114	3.618166	0	-2.088952	
115	115	5.223204	0	0.159806	
116	116	3.848204	0	-2.221764	
117	117	5.223204	-2.333667	0.159806	
118	118	3.848204	-2.333667	-2.221764	
119	119	5.223204	5.666335	0.159806	
120	120	3.848204	5.666335	-2.221764	
121	121	5.223204	3.333337	0.159806	
122	122	3.848204	3.333337	-2.221764	
123	123	5.015719	3.333337	0.279597	
124	124	3.640719	3.333337	-2.101972	
125	125	6.14072	3.333337	2.228156	
126	126	1.14072	3.333337	-6.432098	
127	127	2.243168	0	-4.470518	
128	128	2.473206	0	-4.603331	
129	129	2.473206	-2.333667	-4.603331	
130	130	2.473206	5.666335	-4.603331	
131	131	2.473206	3.333337	-4.603331	
132	132	2.265721	3.333337	-4.483539	
133	133	-1.618168	0	-5.55305	
134	134	-5.618166	0	1.37515	
135	135	-2.243168	0	-4.470518	
136	136	-3.618168	0	-2.088948	
137	137	-2.473206	0	-4.603331	
138	138	-3.848206	0	-2.221761	
139	139	-2.473206	-2.333667	-4.603331	
140	140	-3.848206	-2.333667	-2.221761	
141	141	-2.473206	5.666335	-4.603331	
142	142	-3.848206	5.666335	-2.221761	
143	143	-2.473206	3.333337	-4.603331	
144	144	-3.848206	3.333337	-2.221761	
145	145	-2.265721	3.333337	-4.483539	
146	146	-3.640721	3.333337	-2.101969	
147	147	-1.14072	3.333337	-6.432098	
148	148	-6.14072	3.333337	2.228156	
149	149	-4.993166	0	0.292618	
150	150	-5.223204	0	0.159806	
151	151	-5.223204	-2.333667	0.159806	
152	152	-5.223204	5.666335	0.159806	
153	153	-5.223204	3.333337	0.159806	
154	154	-5.015719	3.333337	0.279597	

Node Boundary Conditions

	Node Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot [k-ft/rad]	Y Rot [k-ft/rad]	Z Rot [k-ft/rad]
1	1	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	2						
3	3						
4	4						
5	5						
6	16						
7	17						
8	19						

Node Boundary Conditions (Continued)

	Node Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot [k-ft/rad]	Y Rot [k-ft/rad]	Z Rot [k-ft/rad]
9	20						
10	22						
11	25						
12	26						
13	29						
14	53	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
15	54						
16	55						
17	56						
18	57						
19	66						
20	67						
21	69						
22	70						
23	72						
24	75						
25	76						
26	79						
27	82	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
28	83						
29	84						
30	85						
31	86						
32	95						
33	96						
34	98						
35	99						
36	101						
37	104						
38	105						
39	108						

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e⁵°F⁻¹]	Density [k/ft³]	Yield [ksi]	Ry	Fu [ksi]	Rt
1	A992	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	0.3	0.65	0.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	0.3	0.65	0.527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	0.3	0.65	0.527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	0.3	0.65	0.49	35	1.6	60	1.2
7	A1085	29000	11154	0.3	0.65	0.49	50	1.4	65	1.3
8	A500 Gr.C	29000	11154	0.3	0.65	0.49	46	1.4	62	1.3

Cold Formed Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e⁵°F⁻¹]	Density [k/ft³]	Yield [ksi]	Fu [ksi]
1	A653 SS Gr33	29500	11346	0.3	0.65	0.49	33	45
2	A653 SS Gr50/1	29500	11346	0.3	0.65	0.49	50	65

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in²]	Iyy [in⁴]	Izz [in⁴]	J [in⁴]
1	MF-H1	PIPE_3.5X0.165	Beam	Pipe	A500 Gr.C	Typical	1.729	2.409	2.409	4.819
2	MF-H2	PIPE_2.88X0.203	Beam	Pipe	A500 Gr.C	Typical	1.704	1.53	1.53	3.059

Hot Rolled Steel Section Sets (Continued)

	Label	Shape	Type	Design List	Material	Design Rule	Area [in²]	Iyy [in⁴]	Izz [in⁴]	J [in⁴]
3	SF-H1	HSS4X4X2	Beam	Tube	A500 Gr.B Rect	Typical	1.77	4.4	4.4	6.91
4	SF-H2	C3.38X2.06X.188	Beam	Channel	A36 Gr.36	Typical	1.339	0.562	2.4	0.015
5	SF-H3	L2X2X4	Beam	Single Angle	A36 Gr.36	Typical	0.944	0.346	0.346	0.021
6	SF-H4	L7.63X2.5X6	Beam	Single Angle	A36 Gr.36	Typical	3.658	1.307	22.092	0.163
7	MF-P1	PIPE_2.88X0.203	Column	Pipe	A500 Gr.C	Typical	1.704	1.53	1.53	3.059
8	MF-CP1	PL3/8"X6	Beam	RECT	A36 Gr.36	Typical	2.25	0.026	6.75	0.101
9	MF-H3	L6.63X4.33X.25	Beam	Single Angle	A36 Gr.36	Typical	2.678	4.383	12.502	0.054

Cold Formed Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in²]	Iyy [in⁴]	Izz [in⁴]	J [in⁴]
1	CF1	8CU1.25X057	Beam	None	A653 SS Gr33	Typical	0.581	0.057	4.41	0.00063

Member Primary Data

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	1	1	2		SF-H1	Beam	Tube	A500 Gr.B Rect	Typical
2	2	5	3	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
3	3	3	4	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
4	4	7	8		MF-CP1	Beam	RECT	A36 Gr.36	Typical
5	5	6	9		MF-CP1	Beam	RECT	A36 Gr.36	Typical
6	6	14	15		MF-H1	Beam	Pipe	A500 Gr.C	Typical
7	7	16	4		MF-CP1	Beam	RECT	A36 Gr.36	Typical
8	8	5	19		MF-CP1	Beam	RECT	A36 Gr.36	Typical
9	9	25	24		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
10	10	23	22		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
11	11	6	7		SF-H4	Beam	Single Angle	A36 Gr.36	Typical
12	12	28	24		RIGID	None	None	RIGID	Typical
13	13	29	25		RIGID	None	None	RIGID	Typical
14	14	27	23		RIGID	None	None	RIGID	Typical
15	15	26	22		RIGID	None	None	RIGID	Typical
16	16	32	30		RIGID	None	None	RIGID	Typical
17	17	33	31		RIGID	None	None	RIGID	Typical
18	18	37	35		MF-P1	Column	Pipe	A500 Gr.C	Typical
19	19	36	34		MF-P1	Column	Pipe	A500 Gr.C	Typical
20	20	38	40		RIGID	None	None	RIGID	Typical
21	21	39	41		RIGID	None	None	RIGID	Typical
22	22	42	43		MF-H2	Beam	Pipe	A500 Gr.C	Typical
23	23	11	10		RIGID	None	None	RIGID	Typical
24	24	18	17		RIGID	None	None	RIGID	Typical
25	25	13	12		RIGID	None	None	RIGID	Typical
26	26	21	20		RIGID	None	None	RIGID	Typical
27	27	45	44		RIGID	None	None	RIGID	Typical
28	28	47	46		MF-P1	Column	Pipe	A500 Gr.C	Typical
29	29	48	49		RIGID	None	None	RIGID	Typical
30	30	50	51	180	MF-H3	Beam	Single Angle	A36 Gr.36	Typical
31	31	53	54		SF-H1	Beam	Tube	A500 Gr.B Rect	Typical
32	32	57	55	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
33	33	55	56	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
34	34	59	60		MF-CP1	Beam	RECT	A36 Gr.36	Typical
35	35	58	61		MF-CP1	Beam	RECT	A36 Gr.36	Typical
36	36	66	56		MF-CP1	Beam	RECT	A36 Gr.36	Typical
37	37	57	69		MF-CP1	Beam	RECT	A36 Gr.36	Typical
38	38	75	74		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
39	39	73	72		SF-H3	Beam	Single Angle	A36 Gr.36	Typical

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
40	40	58	59		SF-H4	Beam	Single Angle	A36 Gr.36	Typical
41	41	78	74		RIGID	None	None	RIGID	Typical
42	42	79	75		RIGID	None	None	RIGID	Typical
43	43	77	73		RIGID	None	None	RIGID	Typical
44	44	76	72		RIGID	None	None	RIGID	Typical
45	45	63	62		RIGID	None	None	RIGID	Typical
46	46	68	67		RIGID	None	None	RIGID	Typical
47	47	65	64		RIGID	None	None	RIGID	Typical
48	48	71	70		RIGID	None	None	RIGID	Typical
49	49	80	81	180	MF-H3	Beam	Single Angle	A36 Gr.36	Typical
50	50	82	83		SF-H1	Beam	Tube	A500 Gr.B Rect	Typical
51	51	86	84	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
52	52	84	85	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
53	53	88	89		MF-CP1	Beam	RECT	A36 Gr.36	Typical
54	54	87	90		MF-CP1	Beam	RECT	A36 Gr.36	Typical
55	55	95	85		MF-CP1	Beam	RECT	A36 Gr.36	Typical
56	56	86	98		MF-CP1	Beam	RECT	A36 Gr.36	Typical
57	57	104	103		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
58	58	102	101		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
59	59	87	88		SF-H4	Beam	Single Angle	A36 Gr.36	Typical
60	60	107	103		RIGID	None	None	RIGID	Typical
61	61	108	104		RIGID	None	None	RIGID	Typical
62	62	106	102		RIGID	None	None	RIGID	Typical
63	63	105	101		RIGID	None	None	RIGID	Typical
64	64	92	91		RIGID	None	None	RIGID	Typical
65	65	97	96		RIGID	None	None	RIGID	Typical
66	66	94	93		RIGID	None	None	RIGID	Typical
67	67	100	99		RIGID	None	None	RIGID	Typical
68	68	109	110	180	MF-H3	Beam	Single Angle	A36 Gr.36	Typical
69	69	111	112		MF-H1	Beam	Pipe	A500 Gr.C	Typical
70	70	115	113		RIGID	None	None	RIGID	Typical
71	71	116	114		RIGID	None	None	RIGID	Typical
72	72	120	118		MF-P1	Column	Pipe	A500 Gr.C	Typical
73	73	119	117		MF-P1	Column	Pipe	A500 Gr.C	Typical
74	74	121	123		RIGID	None	None	RIGID	Typical
75	75	122	124		RIGID	None	None	RIGID	Typical
76	76	125	126		MF-H2	Beam	Pipe	A500 Gr.C	Typical
77	77	128	127		RIGID	None	None	RIGID	Typical
78	78	130	129		MF-P1	Column	Pipe	A500 Gr.C	Typical
79	79	131	132		RIGID	None	None	RIGID	Typical
80	80	133	134		MF-H1	Beam	Pipe	A500 Gr.C	Typical
81	81	137	135		RIGID	None	None	RIGID	Typical
82	82	138	136		RIGID	None	None	RIGID	Typical
83	83	142	140		MF-P1	Column	Pipe	A500 Gr.C	Typical
84	84	141	139		MF-P1	Column	Pipe	A500 Gr.C	Typical
85	85	143	145		RIGID	None	None	RIGID	Typical
86	86	144	146		RIGID	None	None	RIGID	Typical
87	87	147	148		MF-H2	Beam	Pipe	A500 Gr.C	Typical
88	88	150	149		RIGID	None	None	RIGID	Typical
89	89	152	151		MF-P1	Column	Pipe	A500 Gr.C	Typical
90	90	153	154		RIGID	None	None	RIGID	Typical

Member Advanced Data

	Label	I Release	I Offset [in]	J Offset [in]	Physical	Deflection Ratio Options	Seismic DR
1	1				Yes	N/A	None
2	2			2	Yes	N/A	None
3	3		2		Yes	N/A	None
4	4				Yes	N/A	None
5	5				Yes	N/A	None
6	6				Yes	Default	None
7	7				Yes	N/A	None
8	8				Yes	N/A	None
9	9				Yes	N/A	None
10	10				Yes	N/A	None
11	11				Yes	N/A	None
12	12				Yes	** NA **	None
13	13				Yes	** NA **	None
14	14				Yes	** NA **	None
15	15				Yes	** NA **	None
16	16				Yes	** NA **	None
17	17				Yes	** NA **	None
18	18				Yes	** NA **	None
19	19				Yes	** NA **	None
20	20				Yes	** NA **	None
21	21				Yes	** NA **	None
22	22				Yes	N/A	None
23	23	OOOOOX			Yes	** NA **	None
24	24	OOOOOX			Yes	** NA **	None
25	25	OOOOOX			Yes	** NA **	None
26	26	OOOOOX			Yes	** NA **	None
27	27				Yes	** NA **	None
28	28				Yes	** NA **	None
29	29				Yes	** NA **	None
30	30				Yes	N/A	None
31	31				Yes	N/A	None
32	32			2	Yes	N/A	None
33	33		2		Yes	N/A	None
34	34				Yes	N/A	None
35	35				Yes	N/A	None
36	36				Yes	N/A	None
37	37				Yes	N/A	None
38	38				Yes	N/A	None
39	39				Yes	N/A	None
40	40				Yes	N/A	None
41	41				Yes	** NA **	None
42	42				Yes	** NA **	None
43	43				Yes	** NA **	None
44	44				Yes	** NA **	None
45	45	OOOOOX			Yes	** NA **	None
46	46	OOOOOX			Yes	** NA **	None
47	47	OOOOOX			Yes	** NA **	None
48	48	OOOOOX			Yes	** NA **	None
49	49				Yes	N/A	None
50	50				Yes	N/A	None
51	51			2	Yes	N/A	None
52	52		2		Yes	N/A	None
53	53				Yes	N/A	None
54	54				Yes	N/A	None
55	55				Yes	N/A	None

Member Advanced Data (Continued)

	Label	I Release	I Offset [in]	J Offset [in]	Physical	Deflection Ratio Options	Seismic DR
56	56				Yes	N/A	None
57	57				Yes	N/A	None
58	58				Yes	N/A	None
59	59				Yes	N/A	None
60	60				Yes	** NA **	None
61	61				Yes	** NA **	None
62	62				Yes	** NA **	None
63	63				Yes	** NA **	None
64	64	OOOOOX			Yes	** NA **	None
65	65	OOOOOX			Yes	** NA **	None
66	66	OOOOOX			Yes	** NA **	None
67	67	OOOOOX			Yes	** NA **	None
68	68				Yes	N/A	None
69	69				Yes	Default	None
70	70				Yes	** NA **	None
71	71				Yes	** NA **	None
72	72				Yes	** NA **	None
73	73				Yes	** NA **	None
74	74				Yes	** NA **	None
75	75				Yes	** NA **	None
76	76				Yes	N/A	None
77	77				Yes	** NA **	None
78	78				Yes	** NA **	None
79	79				Yes	** NA **	None
80	80				Yes	Default	None
81	81				Yes	** NA **	None
82	82				Yes	** NA **	None
83	83				Yes	** NA **	None
84	84				Yes	** NA **	None
85	85				Yes	** NA **	None
86	86				Yes	** NA **	None
87	87				Yes	N/A	None
88	88				Yes	** NA **	None
89	89				Yes	** NA **	None
90	90				Yes	** NA **	None

Hot Rolled Steel Design Parameters

	Label	Shape	Length [ft]	Lcomp top [ft]	Channel Conn.	a [ft]	Function
1	1	SF-H1	3.333	Lbyy	N/A	N/A	Lateral
2	2	SF-H2	2.758	Lbyy	N/A	N/A	Lateral
3	3	SF-H2	2.758	Lbyy	N/A	N/A	Lateral
4	4	MF-CP1	0.292	Lbyy	N/A	N/A	Lateral
5	5	MF-CP1	0.292	Lbyy	N/A	N/A	Lateral
6	6	MF-H1	8	Lbyy	N/A	N/A	Lateral
7	7	MF-CP1	0.208	Lbyy	N/A	N/A	Lateral
8	8	MF-CP1	0.208	Lbyy	N/A	N/A	Lateral
9	9	SF-H3	2.309	Lbyy	N/A	N/A	Lateral
10	10	SF-H3	2.309	Lbyy	N/A	N/A	Lateral
11	11	SF-H4	3.207	Lbyy	N/A	N/A	Lateral
12	18	MF-P1	8	Lbyy	N/A	N/A	Lateral
13	19	MF-P1	8	Lbyy	N/A	N/A	Lateral
14	22	MF-H2	10	Lbyy	N/A	N/A	Lateral
15	28	MF-P1	8	Lbyy	N/A	N/A	Lateral
16	30	MF-H3	3.25	Lbyy	N/A	N/A	Lateral
17	31	SF-H1	3.333	Lbyy	N/A	N/A	Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length [ft]	Lcomp top [ft]	Channel Conn.	a [ft]	Function
18	32	SF-H2	2.758	Lbyy	N/A	N/A	Lateral
19	33	SF-H2	2.758	Lbyy	N/A	N/A	Lateral
20	34	MF-CP1	0.292	Lbyy	N/A	N/A	Lateral
21	35	MF-CP1	0.292	Lbyy	N/A	N/A	Lateral
22	36	MF-CP1	0.208	Lbyy	N/A	N/A	Lateral
23	37	MF-CP1	0.208	Lbyy	N/A	N/A	Lateral
24	38	SF-H3	2.309	Lbyy	N/A	N/A	Lateral
25	39	SF-H3	2.309	Lbyy	N/A	N/A	Lateral
26	40	SF-H4	3.207	Lbyy	N/A	N/A	Lateral
27	49	MF-H3	3.25	Lbyy	N/A	N/A	Lateral
28	50	SF-H1	3.333	Lbyy	N/A	N/A	Lateral
29	51	SF-H2	2.758	Lbyy	N/A	N/A	Lateral
30	52	SF-H2	2.758	Lbyy	N/A	N/A	Lateral
31	53	MF-CP1	0.292	Lbyy	N/A	N/A	Lateral
32	54	MF-CP1	0.292	Lbyy	N/A	N/A	Lateral
33	55	MF-CP1	0.208	Lbyy	N/A	N/A	Lateral
34	56	MF-CP1	0.208	Lbyy	N/A	N/A	Lateral
35	57	SF-H3	2.309	Lbyy	N/A	N/A	Lateral
36	58	SF-H3	2.309	Lbyy	N/A	N/A	Lateral
37	59	SF-H4	3.207	Lbyy	N/A	N/A	Lateral
38	68	MF-H3	3.25	Lbyy	N/A	N/A	Lateral
39	69	MF-H1	8	Lbyy	N/A	N/A	Lateral
40	72	MF-P1	8	Lbyy	N/A	N/A	Lateral
41	73	MF-P1	8	Lbyy	N/A	N/A	Lateral
42	76	MF-H2	10	Lbyy	N/A	N/A	Lateral
43	78	MF-P1	8	Lbyy	N/A	N/A	Lateral
44	80	MF-H1	8	Lbyy	N/A	N/A	Lateral
45	83	MF-P1	8	Lbyy	N/A	N/A	Lateral
46	84	MF-P1	8	Lbyy	N/A	N/A	Lateral
47	87	MF-H2	10	Lbyy	N/A	N/A	Lateral
48	89	MF-P1	8	Lbyy	N/A	N/A	Lateral

Cold Formed Steel Design Parameters

No Data to Print...

Member Point Loads (BLC 1 : Dead)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	18	Y	-0.041	%15
2	18	Y	-0.041	%85
3	18	Y	-0.064	%20
4	18	Y	-0.075	%50
5	18	Y	0	0
6	83	Y	-0.041	%15
7	83	Y	-0.041	%85
8	83	Y	-0.064	%20
9	83	Y	-0.075	%50
10	83	Y	0	0
11	72	Y	-0.041	%15
12	72	Y	-0.041	%85
13	72	Y	-0.064	%20
14	72	Y	-0.075	%50
15	72	Y	0	0
16	1	Y	-0.022	%20
17	1	Y	0	0

Member Point Loads (BLC 1 : Dead) (Continued)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
18	1	Y	0	0
19	1	Y	0	0
20	1	Y	0	0

Member Point Loads (BLC 2 : 0 Wind - No Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	18	Z	-0.137	%15
2	18	Z	-0.137	%85
3	18	Z	-0.06	%20
4	18	Z	-0.06	%50
5	18	Z	0	0
6	83	Z	-0.137	%15
7	83	Z	-0.137	%85
8	83	Z	-0.06	%20
9	83	Z	-0.06	%50
10	83	Z	0	0
11	72	Z	-0.137	%15
12	72	Z	-0.137	%85
13	72	Z	-0.06	%20
14	72	Z	-0.06	%50
15	72	Z	0	0
16	1	Z	-0.062	%20
17	1	Z	0	0
18	1	Z	0	0
19	1	Z	0	0
20	1	Z	0	0

Member Point Loads (BLC 3 : 90 Wind - No Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	18	X	-0.055	%15
2	18	X	-0.055	%85
3	18	X	-0.03	%20
4	18	X	-0.035	%50
5	18	X	0	0
6	83	X	-0.055	%15
7	83	X	-0.055	%85
8	83	X	-0.03	%20
9	83	X	-0.035	%50
10	83	X	0	0
11	72	X	-0.055	%15
12	72	X	-0.055	%85
13	72	X	-0.03	%20
14	72	X	-0.035	%50
15	72	X	0	0
16	1	X	-0.036	%20
17	1	X	0	0
18	1	X	0	0
19	1	X	0	0
20	1	X	0	0

Member Point Loads (BLC 4 : 0 Wind - Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	18	Z	-0.026	%15
2	18	Z	-0.026	%85
3	18	Z	-0.01	%20
4	18	Z	-0.01	%50
5	18	Z	0	0
6	83	Z	-0.026	%15
7	83	Z	-0.026	%85
8	83	Z	-0.01	%20
9	83	Z	-0.01	%50
10	83	Z	0	0
11	72	Z	-0.026	%15
12	72	Z	-0.026	%85
13	72	Z	-0.01	%20
14	72	Z	-0.01	%50
15	72	Z	0	0
16	1	Z	-0.01	%20
17	1	Z	0	0
18	1	Z	0	0
19	1	Z	0	0
20	1	Z	0	0

Member Point Loads (BLC 5 : 90 Wind - Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	18	X	-0.012	%15
2	18	X	-0.012	%85
3	18	X	-0.005	%20
4	18	X	-0.006	%50
5	18	X	0	0
6	83	X	-0.012	%15
7	83	X	-0.012	%85
8	83	X	-0.005	%20
9	83	X	-0.006	%50
10	83	X	0	0
11	72	X	-0.012	%15
12	72	X	-0.012	%85
13	72	X	-0.005	%20
14	72	X	-0.006	%50
15	72	X	0	0
16	1	X	-0.006	%20
17	1	X	0	0
18	1	X	0	0
19	1	X	0	0
20	1	X	0	0

Member Point Loads (BLC 6 : 0 Wind - Service)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	18	Z	-0.008	%15
2	18	Z	-0.008	%85
3	18	Z	-0.004	%20
4	18	Z	-0.004	%50
5	18	Z	0	0
6	83	Z	-0.008	%15

Member Point Loads (BLC 6 : 0 Wind - Service) (Continued)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
7	83	Z	-0.008	%85
8	83	Z	-0.004	%20
9	83	Z	-0.004	%50
10	83	Z	0	0
11	72	Z	-0.008	%15
12	72	Z	-0.008	%85
13	72	Z	-0.004	%20
14	72	Z	-0.004	%50
15	72	Z	0	0
16	1	Z	-0.004	%20
17	1	Z	0	0
18	1	Z	0	0
19	1	Z	0	0
20	1	Z	0	0

Member Point Loads (BLC 7 : 90 Wind - Service)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	18	X	-0.003	%15
2	18	X	-0.003	%85
3	18	X	-0.002	%20
4	18	X	-0.002	%50
5	18	X	0	0
6	83	X	-0.003	%15
7	83	X	-0.003	%85
8	83	X	-0.002	%20
9	83	X	-0.002	%50
10	83	X	0	0
11	72	X	-0.003	%15
12	72	X	-0.003	%85
13	72	X	-0.002	%20
14	72	X	-0.002	%50
15	72	X	0	0
16	1	X	-0.002	%20
17	1	X	0	0
18	1	X	0	0
19	1	X	0	0
20	1	X	0	0

Member Point Loads (BLC 8 : Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	18	Y	-0.118	%15
2	18	Y	-0.118	%85
3	18	Y	-0.031	%20
4	18	Y	-0.032	%50
5	18	Y	0	0
6	83	Y	-0.118	%15
7	83	Y	-0.118	%85
8	83	Y	-0.031	%20
9	83	Y	-0.032	%50
10	83	Y	0	0
11	72	Y	-0.118	%15
12	72	Y	-0.118	%85
13	72	Y	-0.031	%20

Member Point Loads (BLC 8 : Ice) (Continued)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
14	72	Y	-0.032	%50
15	72	Y	0	0
16	1	Y	-0.033	%20
17	1	Y	0	0
18	1	Y	0	0
19	1	Y	0	0
20	1	Y	0	0

Member Point Loads (BLC 9 : 0 Seismic)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	18	Z	-0.009	%15
2	18	Z	-0.009	%85
3	18	Z	-0.007	%20
4	18	Z	-0.008	%50
5	18	Z	0	0
6	83	Z	-0.009	%15
7	83	Z	-0.009	%85
8	83	Z	-0.007	%20
9	83	Z	-0.008	%50
10	83	Z	0	0
11	72	Z	-0.009	%15
12	72	Z	-0.009	%85
13	72	Z	-0.007	%20
14	72	Z	-0.008	%50
15	72	Z	0	0
16	1	Z	-0.002	%20
17	1	Z	0	0
18	1	Z	0	0
19	1	Z	0	0
20	1	Z	0	0

Member Point Loads (BLC 10 : 90 Seismic)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	18	X	-0.009	%15
2	18	X	-0.009	%85
3	18	X	-0.007	%20
4	18	X	-0.008	%50
5	18	X	0	0
6	83	X	-0.009	%15
7	83	X	-0.009	%85
8	83	X	-0.007	%20
9	83	X	-0.008	%50
10	83	X	0	0
11	72	X	-0.009	%15
12	72	X	-0.009	%85
13	72	X	-0.007	%20
14	72	X	-0.008	%50
15	72	X	0	0
16	1	X	-0.002	%20
17	1	X	0	0
18	1	X	0	0
19	1	X	0	0
20	1	X	0	0

Member Point Loads (BLC 15 : Maint LL 1)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	22	Y	-0.25	%5

Member Point Loads (BLC 16 : Maint LL 2)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	6	Y	-0.25	%5

Member Point Loads (BLC 17 : Maint LL 3)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	87	Y	-0.25	%5

Member Point Loads (BLC 18 : Maint LL 4)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	80	Y	-0.25	%5

Member Point Loads (BLC 19 : Maint LL 5)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	76	Y	-0.25	%5

Member Point Loads (BLC 20 : Maint LL 6)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	69	Y	-0.25	%5

Member Point Loads (BLC 21 : Maint LL 7)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	22	Y	-0.25	%95

Member Point Loads (BLC 22 : Maint LL 8)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	6	Y	-0.25	%95

Member Point Loads (BLC 23 : Maint LL 9)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	87	Y	-0.25	%95

Member Point Loads (BLC 24 : Maint LL 10)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	80	Y	-0.25	%95

Member Point Loads (BLC 25 : Maint LL 11)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	76	Y	-0.25	%95

Member Point Loads (BLC 26 : Maint LL 12)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	69	Y	-0.25	%95

Member Point Loads (BLC 27 : Maint LL 13)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	31	Y	-0.25	%95

Member Point Loads (BLC 28 : Maint LL 14)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	1	Y	-0.25	%95

Member Point Loads (BLC 29 : Maint LL 15)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	50	Y	-0.25	%95

Member Distributed Loads (BLC 2 : 0 Wind - No Ice)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.015	-0.015	0	%100
2	2	Z	-0.013	-0.013	0	%100
3	3	Z	-0.013	-0.013	0	%100
4	4	Z	-0.019	-0.019	0	%100
5	5	Z	-0.019	-0.019	0	%100
6	6	Z	-0.011	-0.011	0	%100
7	7	Z	-0.019	-0.019	0	%100
8	8	Z	-0.019	-0.019	0	%100
9	9	Z	-0.008	-0.008	0	%100
10	10	Z	-0.008	-0.008	0	%100
11	11	Z	-0.025	-0.025	0	%100
12	18	Z	-0.009	-0.009	0	%100
13	19	Z	-0.009	-0.009	0	%100
14	22	Z	-0.009	-0.009	0	%100
15	28	Z	-0.009	-0.009	0	%100
16	30	Z	-0.023	-0.023	0	%100
17	31	Z	-0.015	-0.015	0	%100
18	32	Z	-0.013	-0.013	0	%100
19	33	Z	-0.013	-0.013	0	%100
20	34	Z	-0.019	-0.019	0	%100
21	35	Z	-0.019	-0.019	0	%100
22	36	Z	-0.019	-0.019	0	%100
23	37	Z	-0.019	-0.019	0	%100
24	38	Z	-0.008	-0.008	0	%100
25	39	Z	-0.008	-0.008	0	%100
26	40	Z	-0.025	-0.025	0	%100
27	49	Z	-0.023	-0.023	0	%100
28	50	Z	-0.015	-0.015	0	%100

Member Distributed Loads (BLC 2 : 0 Wind - No Ice) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
29	51	Z	-0.013	-0.013	0	%100
30	52	Z	-0.013	-0.013	0	%100
31	53	Z	-0.019	-0.019	0	%100
32	54	Z	-0.019	-0.019	0	%100
33	55	Z	-0.019	-0.019	0	%100
34	56	Z	-0.019	-0.019	0	%100
35	57	Z	-0.008	-0.008	0	%100
36	58	Z	-0.008	-0.008	0	%100
37	59	Z	-0.025	-0.025	0	%100
38	68	Z	-0.023	-0.023	0	%100
39	69	Z	-0.011	-0.011	0	%100
40	72	Z	-0.009	-0.009	0	%100
41	73	Z	-0.009	-0.009	0	%100
42	76	Z	-0.009	-0.009	0	%100
43	78	Z	-0.009	-0.009	0	%100
44	80	Z	-0.011	-0.011	0	%100
45	83	Z	-0.009	-0.009	0	%100
46	84	Z	-0.009	-0.009	0	%100
47	87	Z	-0.009	-0.009	0	%100
48	89	Z	-0.009	-0.009	0	%100

Member Distributed Loads (BLC 3 : 90 Wind - No Ice)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.015	-0.015	0	%100
2	2	X	-0.013	-0.013	0	%100
3	3	X	-0.013	-0.013	0	%100
4	4	X	-0.019	-0.019	0	%100
5	5	X	-0.019	-0.019	0	%100
6	6	X	-0.011	-0.011	0	%100
7	7	X	-0.019	-0.019	0	%100
8	8	X	-0.019	-0.019	0	%100
9	9	X	-0.008	-0.008	0	%100
10	10	X	-0.008	-0.008	0	%100
11	11	X	-0.025	-0.025	0	%100
12	18	X	-0.009	-0.009	0	%100
13	19	X	-0.009	-0.009	0	%100
14	22	X	-0.009	-0.009	0	%100
15	28	X	-0.009	-0.009	0	%100
16	30	X	-0.023	-0.023	0	%100
17	31	X	-0.015	-0.015	0	%100
18	32	X	-0.013	-0.013	0	%100
19	33	X	-0.013	-0.013	0	%100
20	34	X	-0.019	-0.019	0	%100
21	35	X	-0.019	-0.019	0	%100
22	36	X	-0.019	-0.019	0	%100
23	37	X	-0.019	-0.019	0	%100
24	38	X	-0.008	-0.008	0	%100
25	39	X	-0.008	-0.008	0	%100
26	40	X	-0.025	-0.025	0	%100
27	49	X	-0.023	-0.023	0	%100
28	50	X	-0.015	-0.015	0	%100
29	51	X	-0.013	-0.013	0	%100
30	52	X	-0.013	-0.013	0	%100
31	53	X	-0.019	-0.019	0	%100
32	54	X	-0.019	-0.019	0	%100

Member Distributed Loads (BLC 3 : 90 Wind - No Ice) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
33	55	X	-0.019	-0.019	0	%100
34	56	X	-0.019	-0.019	0	%100
35	57	X	-0.008	-0.008	0	%100
36	58	X	-0.008	-0.008	0	%100
37	59	X	-0.025	-0.025	0	%100
38	68	X	-0.023	-0.023	0	%100
39	69	X	-0.011	-0.011	0	%100
40	72	X	-0.009	-0.009	0	%100
41	73	X	-0.009	-0.009	0	%100
42	76	X	-0.009	-0.009	0	%100
43	78	X	-0.009	-0.009	0	%100
44	80	X	-0.011	-0.011	0	%100
45	83	X	-0.009	-0.009	0	%100
46	84	X	-0.009	-0.009	0	%100
47	87	X	-0.009	-0.009	0	%100
48	89	X	-0.009	-0.009	0	%100

Member Distributed Loads (BLC 4 : 0 Wind - Ice)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.004	-0.004	0	%100
2	2	Z	-0.004	-0.004	0	%100
3	3	Z	-0.004	-0.004	0	%100
4	4	Z	-0.007	-0.007	0	%100
5	5	Z	-0.007	-0.007	0	%100
6	6	Z	-0.002	-0.002	0	%100
7	7	Z	-0.008	-0.008	0	%100
8	8	Z	-0.008	-0.008	0	%100
9	9	Z	-0.003	-0.003	0	%100
10	10	Z	-0.003	-0.003	0	%100
11	11	Z	-0.006	-0.006	0	%100
12	18	Z	-0.001	-0.001	0	%100
13	19	Z	-0.001	-0.001	0	%100
14	22	Z	-0.001	-0.001	0	%100
15	28	Z	-0.001	-0.001	0	%100
16	30	Z	-0.005	-0.005	0	%100
17	31	Z	-0.004	-0.004	0	%100
18	32	Z	-0.004	-0.004	0	%100
19	33	Z	-0.004	-0.004	0	%100
20	34	Z	-0.007	-0.007	0	%100
21	35	Z	-0.007	-0.007	0	%100
22	36	Z	-0.008	-0.008	0	%100
23	37	Z	-0.008	-0.008	0	%100
24	38	Z	-0.003	-0.003	0	%100
25	39	Z	-0.003	-0.003	0	%100
26	40	Z	-0.006	-0.006	0	%100
27	49	Z	-0.005	-0.005	0	%100
28	50	Z	-0.004	-0.004	0	%100
29	51	Z	-0.004	-0.004	0	%100
30	52	Z	-0.004	-0.004	0	%100
31	53	Z	-0.007	-0.007	0	%100
32	54	Z	-0.007	-0.007	0	%100
33	55	Z	-0.008	-0.008	0	%100
34	56	Z	-0.008	-0.008	0	%100
35	57	Z	-0.003	-0.003	0	%100
36	58	Z	-0.003	-0.003	0	%100

Member Distributed Loads (BLC 4 : 0 Wind - Ice) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
37	59	Z	-0.006	-0.006	0	%100
38	68	Z	-0.005	-0.005	0	%100
39	69	Z	-0.002	-0.002	0	%100
40	72	Z	-0.001	-0.001	0	%100
41	73	Z	-0.001	-0.001	0	%100
42	76	Z	-0.001	-0.001	0	%100
43	78	Z	-0.001	-0.001	0	%100
44	80	Z	-0.002	-0.002	0	%100
45	83	Z	-0.001	-0.001	0	%100
46	84	Z	-0.001	-0.001	0	%100
47	87	Z	-0.001	-0.001	0	%100
48	89	Z	-0.001	-0.001	0	%100

Member Distributed Loads (BLC 5 : 90 Wind - Ice)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.004	-0.004	0	%100
2	2	X	-0.004	-0.004	0	%100
3	3	X	-0.004	-0.004	0	%100
4	4	X	-0.007	-0.007	0	%100
5	5	X	-0.007	-0.007	0	%100
6	6	X	-0.002	-0.002	0	%100
7	7	X	-0.008	-0.008	0	%100
8	8	X	-0.008	-0.008	0	%100
9	9	X	-0.003	-0.003	0	%100
10	10	X	-0.003	-0.003	0	%100
11	11	X	-0.006	-0.006	0	%100
12	18	X	-0.001	-0.001	0	%100
13	19	X	-0.001	-0.001	0	%100
14	22	X	-0.001	-0.001	0	%100
15	28	X	-0.001	-0.001	0	%100
16	30	X	-0.005	-0.005	0	%100
17	31	X	-0.004	-0.004	0	%100
18	32	X	-0.004	-0.004	0	%100
19	33	X	-0.004	-0.004	0	%100
20	34	X	-0.007	-0.007	0	%100
21	35	X	-0.007	-0.007	0	%100
22	36	X	-0.008	-0.008	0	%100
23	37	X	-0.008	-0.008	0	%100
24	38	X	-0.003	-0.003	0	%100
25	39	X	-0.003	-0.003	0	%100
26	40	X	-0.006	-0.006	0	%100
27	49	X	-0.005	-0.005	0	%100
28	50	X	-0.004	-0.004	0	%100
29	51	X	-0.004	-0.004	0	%100
30	52	X	-0.004	-0.004	0	%100
31	53	X	-0.007	-0.007	0	%100
32	54	X	-0.007	-0.007	0	%100
33	55	X	-0.008	-0.008	0	%100
34	56	X	-0.008	-0.008	0	%100
35	57	X	-0.003	-0.003	0	%100
36	58	X	-0.003	-0.003	0	%100
37	59	X	-0.006	-0.006	0	%100
38	68	X	-0.005	-0.005	0	%100
39	69	X	-0.002	-0.002	0	%100
40	72	X	-0.001	-0.001	0	%100

Member Distributed Loads (BLC 5 : 90 Wind - Ice) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
41	73	X	-0.001	-0.001	0	%100
42	76	X	-0.001	-0.001	0	%100
43	78	X	-0.001	-0.001	0	%100
44	80	X	-0.002	-0.002	0	%100
45	83	X	-0.001	-0.001	0	%100
46	84	X	-0.001	-0.001	0	%100
47	87	X	-0.001	-0.001	0	%100
48	89	X	-0.001	-0.001	0	%100

Member Distributed Loads (BLC 6 : 0 Wind - Service)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.0009	-0.0009	0	%100
2	2	Z	-0.0008	-0.0008	0	%100
3	3	Z	-0.0008	-0.0008	0	%100
4	4	Z	-0.001	-0.001	0	%100
5	5	Z	-0.001	-0.001	0	%100
6	6	Z	-0.0003	-0.0003	0	%100
7	7	Z	-0.001	-0.001	0	%100
8	8	Z	-0.001	-0.001	0	%100
9	9	Z	-0.0005	-0.0005	0	%100
10	10	Z	-0.0005	-0.0005	0	%100
11	11	Z	-0.002	-0.002	0	%100
12	18	Z	-0.0003	-0.0003	0	%100
13	19	Z	-0.0003	-0.0003	0	%100
14	22	Z	-0.0003	-0.0003	0	%100
15	28	Z	-0.0003	-0.0003	0	%100
16	30	Z	-0.001	-0.001	0	%100
17	31	Z	-0.0009	-0.0009	0	%100
18	32	Z	-0.0008	-0.0008	0	%100
19	33	Z	-0.0008	-0.0008	0	%100
20	34	Z	-0.001	-0.001	0	%100
21	35	Z	-0.001	-0.001	0	%100
22	36	Z	-0.001	-0.001	0	%100
23	37	Z	-0.001	-0.001	0	%100
24	38	Z	-0.0005	-0.0005	0	%100
25	39	Z	-0.0005	-0.0005	0	%100
26	40	Z	-0.002	-0.002	0	%100
27	49	Z	-0.001	-0.001	0	%100
28	50	Z	-0.0009	-0.0009	0	%100
29	51	Z	-0.0008	-0.0008	0	%100
30	52	Z	-0.0008	-0.0008	0	%100
31	53	Z	-0.001	-0.001	0	%100
32	54	Z	-0.001	-0.001	0	%100
33	55	Z	-0.001	-0.001	0	%100
34	56	Z	-0.001	-0.001	0	%100
35	57	Z	-0.0005	-0.0005	0	%100
36	58	Z	-0.0005	-0.0005	0	%100
37	59	Z	-0.002	-0.002	0	%100
38	68	Z	-0.001	-0.001	0	%100
39	69	Z	-0.0003	-0.0003	0	%100
40	72	Z	-0.0003	-0.0003	0	%100
41	73	Z	-0.0003	-0.0003	0	%100
42	76	Z	-0.0003	-0.0003	0	%100
43	78	Z	-0.0003	-0.0003	0	%100
44	80	Z	-0.0003	-0.0003	0	%100

Member Distributed Loads (BLC 6 : 0 Wind - Service) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
45	83	Z	-0.0003	-0.0003	0	%100
46	84	Z	-0.0003	-0.0003	0	%100
47	87	Z	-0.0003	-0.0003	0	%100
48	89	Z	-0.0003	-0.0003	0	%100

Member Distributed Loads (BLC 7 : 90 Wind - Service)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.0009	-0.0009	0	%100
2	2	X	-0.0008	-0.0008	0	%100
3	3	X	-0.0008	-0.0008	0	%100
4	4	X	-0.001	-0.001	0	%100
5	5	X	-0.001	-0.001	0	%100
6	6	X	-0.0003	-0.0003	0	%100
7	7	X	-0.001	-0.001	0	%100
8	8	X	-0.001	-0.001	0	%100
9	9	X	-0.0005	-0.0005	0	%100
10	10	X	-0.0005	-0.0005	0	%100
11	11	X	-0.002	-0.002	0	%100
12	18	X	-0.0003	-0.0003	0	%100
13	19	X	-0.0003	-0.0003	0	%100
14	22	X	-0.0003	-0.0003	0	%100
15	28	X	-0.0003	-0.0003	0	%100
16	30	X	-0.001	-0.001	0	%100
17	31	X	-0.0009	-0.0009	0	%100
18	32	X	-0.0008	-0.0008	0	%100
19	33	X	-0.0008	-0.0008	0	%100
20	34	X	-0.001	-0.001	0	%100
21	35	X	-0.001	-0.001	0	%100
22	36	X	-0.001	-0.001	0	%100
23	37	X	-0.001	-0.001	0	%100
24	38	X	-0.0005	-0.0005	0	%100
25	39	X	-0.0005	-0.0005	0	%100
26	40	X	-0.002	-0.002	0	%100
27	49	X	-0.001	-0.001	0	%100
28	50	X	-0.0009	-0.0009	0	%100
29	51	X	-0.0008	-0.0008	0	%100
30	52	X	-0.0008	-0.0008	0	%100
31	53	X	-0.001	-0.001	0	%100
32	54	X	-0.001	-0.001	0	%100
33	55	X	-0.001	-0.001	0	%100
34	56	X	-0.001	-0.001	0	%100
35	57	X	-0.0005	-0.0005	0	%100
36	58	X	-0.0005	-0.0005	0	%100
37	59	X	-0.002	-0.002	0	%100
38	68	X	-0.001	-0.001	0	%100
39	69	X	-0.0003	-0.0003	0	%100
40	72	X	-0.0003	-0.0003	0	%100
41	73	X	-0.0003	-0.0003	0	%100
42	76	X	-0.0003	-0.0003	0	%100
43	78	X	-0.0003	-0.0003	0	%100
44	80	X	-0.0003	-0.0003	0	%100
45	83	X	-0.0003	-0.0003	0	%100
46	84	X	-0.0003	-0.0003	0	%100
47	87	X	-0.0003	-0.0003	0	%100
48	89	X	-0.0003	-0.0003	0	%100

Member Distributed Loads (BLC 8 : Ice)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Y	-0.009	-0.009	0	%100
2	2	Y	-0.007	-0.007	0	%100
3	3	Y	-0.007	-0.007	0	%100
4	4	Y	-0.01	-0.01	0	%100
5	5	Y	-0.01	-0.01	0	%100
6	6	Y	-0.006	-0.006	0	%100
7	7	Y	-0.01	-0.01	0	%100
8	8	Y	-0.01	-0.01	0	%100
9	9	Y	-0.005	-0.005	0	%100
10	10	Y	-0.005	-0.005	0	%100
11	11	Y	-0.012	-0.012	0	%100
12	18	Y	-0.005	-0.005	0	%100
13	19	Y	-0.005	-0.005	0	%100
14	22	Y	-0.005	-0.005	0	%100
15	28	Y	-0.005	-0.005	0	%100
16	30	Y	-0.012	-0.012	0	%100
17	31	Y	-0.009	-0.009	0	%100
18	32	Y	-0.007	-0.007	0	%100
19	33	Y	-0.007	-0.007	0	%100
20	34	Y	-0.01	-0.01	0	%100
21	35	Y	-0.01	-0.01	0	%100
22	36	Y	-0.01	-0.01	0	%100
23	37	Y	-0.01	-0.01	0	%100
24	38	Y	-0.005	-0.005	0	%100
25	39	Y	-0.005	-0.005	0	%100
26	40	Y	-0.012	-0.012	0	%100
27	49	Y	-0.012	-0.012	0	%100
28	50	Y	-0.009	-0.009	0	%100
29	51	Y	-0.007	-0.007	0	%100
30	52	Y	-0.007	-0.007	0	%100
31	53	Y	-0.01	-0.01	0	%100
32	54	Y	-0.01	-0.01	0	%100
33	55	Y	-0.01	-0.01	0	%100
34	56	Y	-0.01	-0.01	0	%100
35	57	Y	-0.005	-0.005	0	%100
36	58	Y	-0.005	-0.005	0	%100
37	59	Y	-0.012	-0.012	0	%100
38	68	Y	-0.012	-0.012	0	%100
39	69	Y	-0.006	-0.006	0	%100
40	72	Y	-0.005	-0.005	0	%100
41	73	Y	-0.005	-0.005	0	%100
42	76	Y	-0.005	-0.005	0	%100
43	78	Y	-0.005	-0.005	0	%100
44	80	Y	-0.006	-0.006	0	%100
45	83	Y	-0.005	-0.005	0	%100
46	84	Y	-0.005	-0.005	0	%100
47	87	Y	-0.005	-0.005	0	%100
48	89	Y	-0.005	-0.005	0	%100

Member Distributed Loads (BLC 9 : 0 Seismic)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.0007	-0.0007	0	%100
2	2	Z	-0.0005	-0.0005	0	%100
3	3	Z	-0.0005	-0.0005	0	%100

Member Distributed Loads (BLC 9 : 0 Seismic) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
4	4	Z	-0.0008	-0.0008	0	%100
5	5	Z	-0.0008	-0.0008	0	%100
6	6	Z	-0.0006	-0.0006	0	%100
7	7	Z	-0.0008	-0.0008	0	%100
8	8	Z	-0.0008	-0.0008	0	%100
9	9	Z	-0.0003	-0.0003	0	%100
10	10	Z	-0.0003	-0.0003	0	%100
11	11	Z	-0.001	-0.001	0	%100
12	18	Z	-0.0006	-0.0006	0	%100
13	19	Z	-0.0006	-0.0006	0	%100
14	22	Z	-0.0006	-0.0006	0	%100
15	28	Z	-0.0006	-0.0006	0	%100
16	30	Z	-0.0009	-0.0009	0	%100
17	31	Z	-0.0007	-0.0007	0	%100
18	32	Z	-0.0005	-0.0005	0	%100
19	33	Z	-0.0005	-0.0005	0	%100
20	34	Z	-0.0008	-0.0008	0	%100
21	35	Z	-0.0008	-0.0008	0	%100
22	36	Z	-0.0008	-0.0008	0	%100
23	37	Z	-0.0008	-0.0008	0	%100
24	38	Z	-0.0003	-0.0003	0	%100
25	39	Z	-0.0003	-0.0003	0	%100
26	40	Z	-0.001	-0.001	0	%100
27	49	Z	-0.0009	-0.0009	0	%100
28	50	Z	-0.0007	-0.0007	0	%100
29	51	Z	-0.0005	-0.0005	0	%100
30	52	Z	-0.0005	-0.0005	0	%100
31	53	Z	-0.0008	-0.0008	0	%100
32	54	Z	-0.0008	-0.0008	0	%100
33	55	Z	-0.0008	-0.0008	0	%100
34	56	Z	-0.0008	-0.0008	0	%100
35	57	Z	-0.0003	-0.0003	0	%100
36	58	Z	-0.0003	-0.0003	0	%100
37	59	Z	-0.001	-0.001	0	%100
38	68	Z	-0.0009	-0.0009	0	%100
39	69	Z	-0.0006	-0.0006	0	%100
40	72	Z	-0.0006	-0.0006	0	%100
41	73	Z	-0.0006	-0.0006	0	%100
42	76	Z	-0.0006	-0.0006	0	%100
43	78	Z	-0.0006	-0.0006	0	%100
44	80	Z	-0.0006	-0.0006	0	%100
45	83	Z	-0.0006	-0.0006	0	%100
46	84	Z	-0.0006	-0.0006	0	%100
47	87	Z	-0.0006	-0.0006	0	%100
48	89	Z	-0.0006	-0.0006	0	%100

Member Distributed Loads (BLC 10 : 90 Seismic)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.0007	-0.0007	0	%100
2	2	X	-0.0005	-0.0005	0	%100
3	3	X	-0.0005	-0.0005	0	%100
4	4	X	-0.0008	-0.0008	0	%100
5	5	X	-0.0008	-0.0008	0	%100
6	6	X	-0.0006	-0.0006	0	%100
7	7	X	-0.0008	-0.0008	0	%100

Member Distributed Loads (BLC 10 : 90 Seismic) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
8	8	X	-0.0008	-0.0008	0	%100
9	9	X	-0.0003	-0.0003	0	%100
10	10	X	-0.0003	-0.0003	0	%100
11	11	X	-0.001	-0.001	0	%100
12	18	X	-0.0006	-0.0006	0	%100
13	19	X	-0.0006	-0.0006	0	%100
14	22	X	-0.0006	-0.0006	0	%100
15	28	X	-0.0006	-0.0006	0	%100
16	30	X	-0.0009	-0.0009	0	%100
17	31	X	-0.0007	-0.0007	0	%100
18	32	X	-0.0005	-0.0005	0	%100
19	33	X	-0.0005	-0.0005	0	%100
20	34	X	-0.0008	-0.0008	0	%100
21	35	X	-0.0008	-0.0008	0	%100
22	36	X	-0.0008	-0.0008	0	%100
23	37	X	-0.0008	-0.0008	0	%100
24	38	X	-0.0003	-0.0003	0	%100
25	39	X	-0.0003	-0.0003	0	%100
26	40	X	-0.001	-0.001	0	%100
27	49	X	-0.0009	-0.0009	0	%100
28	50	X	-0.0007	-0.0007	0	%100
29	51	X	-0.0005	-0.0005	0	%100
30	52	X	-0.0005	-0.0005	0	%100
31	53	X	-0.0008	-0.0008	0	%100
32	54	X	-0.0008	-0.0008	0	%100
33	55	X	-0.0008	-0.0008	0	%100
34	56	X	-0.0008	-0.0008	0	%100
35	57	X	-0.0003	-0.0003	0	%100
36	58	X	-0.0003	-0.0003	0	%100
37	59	X	-0.001	-0.001	0	%100
38	68	X	-0.0009	-0.0009	0	%100
39	69	X	-0.0006	-0.0006	0	%100
40	72	X	-0.0006	-0.0006	0	%100
41	73	X	-0.0006	-0.0006	0	%100
42	76	X	-0.0006	-0.0006	0	%100
43	78	X	-0.0006	-0.0006	0	%100
44	80	X	-0.0006	-0.0006	0	%100
45	83	X	-0.0006	-0.0006	0	%100
46	84	X	-0.0006	-0.0006	0	%100
47	87	X	-0.0006	-0.0006	0	%100
48	89	X	-0.0006	-0.0006	0	%100

Member Distributed Loads (BLC 30 : BLC 1 Transient Area Loads)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	10	Y	-0.02	-0.026	1.27	2.309
2	38	Y	-0.035	-0.016	0	1.155
3	38	Y	-0.016	0.0006163	1.155	2.309
4	39	Y	-0.018	-0.016	0.231	2.309
5	57	Y	-0.018	-0.016	0	2.078
6	58	Y	0.0006164	-0.016	0	1.155
7	58	Y	-0.016	-0.035	1.155	2.309
8	9	Y	-0.015	-0.015	0	2.078
9	10	Y	-0.014	-0.02	0.231	1.27

Member Distributed Loads (BLC 31 : BLC 8 Transient Area Loads)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	9	Y	-0.008	-0.008	0	2.078
2	10	Y	-0.007	-0.01	0.231	1.27
3	10	Y	-0.01	-0.013	1.27	2.309
4	38	Y	-0.018	-0.008	0	1.155
5	38	Y	-0.008	0.0003173	1.155	2.309
6	39	Y	-0.009	-0.008	0.231	2.309
7	57	Y	-0.009	-0.008	0	2.078
8	58	Y	0.0003173	-0.008	0	1.155
9	58	Y	-0.008	-0.018	1.155	2.309

Basic Load Cases

	BLC Description	Category	Y Gravity	Nodal	Point	Distributed	Area(Member)
1	Dead	DL	-1		20		3
2	0 Wind - No Ice	WLZ			20	48	
3	90 Wind - No Ice	WLX			20	48	
4	0 Wind - Ice	WLZ			20	48	
5	90 Wind - Ice	WLX			20	48	
6	0 Wind - Service	WLZ			20	48	
7	90 Wind - Service	WLX			20	48	
8	Ice	OL1			20	48	3
9	0 Seismic	ELZ			20	48	
10	90 Seismic	ELX			20	48	
11	Live Load a	LL		3			
12	Live Load b	LL		3			
13	Live Load c	LL		3			
14	Live Load d	LL					
15	Maint LL 1	LL			1		
16	Maint LL 2	LL			1		
17	Maint LL 3	LL			1		
18	Maint LL 4	LL			1		
19	Maint LL 5	LL			1		
20	Maint LL 6	LL			1		
21	Maint LL 7	LL			1		
22	Maint LL 8	LL			1		
23	Maint LL 9	LL			1		
24	Maint LL 10	LL			1		
25	Maint LL 11	LL			1		
26	Maint LL 12	LL			1		
27	Maint LL 13	LL			1		
28	Maint LL 14	LL			1		
29	Maint LL 15	LL			1		
30	BLC 1 Transient Area Loads	None				9	
31	BLC 8 Transient Area Loads	None				9	

Load Combinations

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	1.4 Dead	Yes	Y	1	1.4						
2	1.2 D + 1.0 - 0 W	Yes	Y	1	1.2	2	1				
3	1.2 D + 1.0 - 30 W	Yes	Y	1	1.2	2	0.866	3	0.5		
4	1.2 D + 1.0 - 60 W	Yes	Y	1	1.2	3	0.866	2	0.5		
5	1.2 D + 1.0 - 90 W	Yes	Y	1	1.2	3	1				
6	1.2 D + 1.0 - 120 W	Yes	Y	1	1.2	3	0.866	2	-0.5		

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
7	1.2 D + 1.0 - 150 W	Yes	Y	1	1.2	2	-0.866	3	0.5		
8	1.2 D + 1.0 - 180 W	Yes	Y	1	1.2	2	-1				
9	1.2 D + 1.0 - 210 W	Yes	Y	1	1.2	2	-0.866	3	-0.5		
10	1.2 D + 1.0 - 240 W	Yes	Y	1	1.2	3	-0.866	2	-0.5		
11	1.2 D + 1.0 - 270 W	Yes	Y	1	1.2	3	-1				
12	1.2 D + 1.0 - 300 W	Yes	Y	1	1.2	3	-0.866	2	0.5		
13	1.2 D + 1.0 - 330 W	Yes	Y	1	1.2	2	0.866	3	-0.5		
14	1.2 D + 1.0 - 0 W/Ice	Yes	Y	1	1.2	4	1			8	1
15	1.2 D + 1.0 - 30 W/Ice	Yes	Y	1	1.2	4	0.866	5	0.5	8	1
16	1.2 D + 1.0 - 60 W/Ice	Yes	Y	1	1.2	5	0.866	4	0.5	8	1
17	1.2 D + 1.0 - 90 W/Ice	Yes	Y	1	1.2	5	1			8	1
18	1.2 D + 1.0 - 120 W/Ice	Yes	Y	1	1.2	5	0.866	4	-0.5	8	1
19	1.2 D + 1.0 - 150 W/Ice	Yes	Y	1	1.2	4	-0.866	5	0.5	8	1
20	1.2 D + 1.0 - 180 W/Ice	Yes	Y	1	1.2	4	-1			8	1
21	1.2 D + 1.0 - 210 W/Ice	Yes	Y	1	1.2	4	-0.866	5	-0.5	8	1
22	1.2 D + 1.0 - 240 W/Ice	Yes	Y	1	1.2	5	-0.866	4	-0.5	8	1
23	1.2 D + 1.0 - 270 W/Ice	Yes	Y	1	1.2	5	-1			8	1
24	1.2 D + 1.0 - 300 W/Ice	Yes	Y	1	1.2	5	-0.866	4	0.5	8	1
25	1.2 D + 1.0 - 330 W/Ice	Yes	Y	1	1.2	4	0.866	5	-0.5	8	1
26	1.2 D + 1.0 E - 0	Yes	Y	1	1.2	9	1				
27	1.2 D + 1.0 E - 30	Yes	Y	1	1.2	9	0.866	10	0.5		
28	1.2 D + 1.0 E - 60	Yes	Y	1	1.2	10	0.866	9	0.5		
29	1.2 D + 1.0 E - 90	Yes	Y	1	1.2	10	1				
30	1.2 D + 1.0 E - 120	Yes	Y	1	1.2	10	0.866	9	-0.5		
31	1.2 D + 1.0 E - 150	Yes	Y	1	1.2	9	-0.866	10	0.5		
32	1.2 D + 1.0 E - 180	Yes	Y	1	1.2	9	-1				
33	1.2 D + 1.0 E - 210	Yes	Y	1	1.2	9	-0.866	10	-0.5		
34	1.2 D + 1.0 E - 240	Yes	Y	1	1.2	10	-0.866	9	-0.5		
35	1.2 D + 1.0 E - 270	Yes	Y	1	1.2	10	-1				
36	1.2 D + 1.0 E - 300	Yes	Y	1	1.2	10	-0.866	9	0.5		
37	1.2 D + 1.0 E - 330	Yes	Y	1	1.2	9	0.866	10	-0.5		
38	1.2 D + 1.5 LL a + Service - 0 W	Yes	Y	1	1.2	6	1			11	1.5
39	1.2 D + 1.5 LL a + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	11	1.5
40	1.2 D + 1.5 LL a + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	11	1.5
41	1.2 D + 1.5 LL a + Service - 90 W	Yes	Y	1	1.2	7	1			11	1.5
42	1.2 D + 1.5 LL a + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	11	1.5
43	1.2 D + 1.5 LL a + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	11	1.5
44	1.2 D + 1.5 LL a + Service - 180 W	Yes	Y	1	1.2	6	-1			11	1.5
45	1.2 D + 1.5 LL a + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	11	1.5
46	1.2 D + 1.5 LL a + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	11	1.5
47	1.2 D + 1.5 LL a + Service - 270 W	Yes	Y	1	1.2	7	-1			11	1.5
48	1.2 D + 1.5 LL a + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	11	1.5
49	1.2 D + 1.5 LL a + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	11	1.5
50	1.2 D + 1.5 LL b + Service - 0 W	Yes	Y	1	1.2	6	1			12	1.5
51	1.2 D + 1.5 LL b + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	12	1.5
52	1.2 D + 1.5 LL b + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	12	1.5
53	1.2 D + 1.5 LL b + Service - 90 W	Yes	Y	1	1.2	7	1			12	1.5
54	1.2 D + 1.5 LL b + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	12	1.5
55	1.2 D + 1.5 LL b + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	12	1.5
56	1.2 D + 1.5 LL b + Service - 180 W	Yes	Y	1	1.2	6	-1			12	1.5
57	1.2 D + 1.5 LL b + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	12	1.5
58	1.2 D + 1.5 LL b + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	12	1.5
59	1.2 D + 1.5 LL b + Service - 270 W	Yes	Y	1	1.2	7	-1			12	1.5
60	1.2 D + 1.5 LL b + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	12	1.5
61	1.2 D + 1.5 LL b + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	12	1.5

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
62	1.2 D + 1.5 LL c + Service - 0 W	Yes	Y	1	1.2	6	1			13	1.5
63	1.2 D + 1.5 LL c + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	13	1.5
64	1.2 D + 1.5 LL c + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	13	1.5
65	1.2 D + 1.5 LL c + Service - 90 W	Yes	Y	1	1.2	7	1			13	1.5
66	1.2 D + 1.5 LL c + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	13	1.5
67	1.2 D + 1.5 LL c + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	13	1.5
68	1.2 D + 1.5 LL c + Service - 180 W	Yes	Y	1	1.2	6	-1			13	1.5
69	1.2 D + 1.5 LL c + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	13	1.5
70	1.2 D + 1.5 LL c + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	13	1.5
71	1.2 D + 1.5 LL c + Service - 270 W	Yes	Y	1	1.2	7	-1			13	1.5
72	1.2 D + 1.5 LL c + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	13	1.5
73	1.2 D + 1.5 LL c + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	13	1.5
74	1.2 D + 1.5 LL d + Service - 0 W	Yes	Y	1	1.2	6	1			14	1.5
75	1.2 D + 1.5 LL d + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	14	1.5
76	1.2 D + 1.5 LL d + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	14	1.5
77	1.2 D + 1.5 LL d + Service - 90 W	Yes	Y	1	1.2	7	1			14	1.5
78	1.2 D + 1.5 LL d + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	14	1.5
79	1.2 D + 1.5 LL d + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	14	1.5
80	1.2 D + 1.5 LL d + Service - 180 W	Yes	Y	1	1.2	6	-1			14	1.5
81	1.2 D + 1.5 LL d + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	14	1.5
82	1.2 D + 1.5 LL d + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	14	1.5
83	1.2 D + 1.5 LL d + Service - 270 W	Yes	Y	1	1.2	7	-1			14	1.5
84	1.2 D + 1.5 LL d + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	14	1.5
85	1.2 D + 1.5 LL d + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	14	1.5
86	1.2 D + 1.5 LL Maint (1)	Yes	Y	1	1.2					15	1.5
87	1.2 D + 1.5 LL Maint (2)	Yes	Y	1	1.2					16	1.5
88	1.2 D + 1.5 LL Maint (3)	Yes	Y	1	1.2					17	1.5
89	1.2 D + 1.5 LL Maint (4)	Yes	Y	1	1.2					18	1.5
90	1.2 D + 1.5 LL Maint (5)	Yes	Y	1	1.2					19	1.5
91	1.2 D + 1.5 LL Maint (6)	Yes	Y	1	1.2					20	1.5
92	1.2 D + 1.5 LL Maint (7)	Yes	Y	1	1.2					21	1.5
93	1.2 D + 1.5 LL Maint (8)	Yes	Y	1	1.2					22	1.5
94	1.2 D + 1.5 LL Maint (9)	Yes	Y	1	1.2					23	1.5
95	1.2 D + 1.5 LL Maint (10)	Yes	Y	1	1.2					24	1.5
96	1.2 D + 1.5 LL Maint (11)	Yes	Y	1	1.2					25	1.5
97	1.2 D + 1.5 LL Maint (12)	Yes	Y	1	1.2					26	1.5
98	1.2 D + 1.5 LL Maint (13)	Yes	Y	1	1.2					27	1.5
99	1.2 D + 1.5 LL Maint (14)	Yes	Y	1	1.2					28	1.5
100	1.2 D + 1.5 LL Maint (15)	Yes	Y	1	1.2					29	1.5

Envelope Node Reactions

	Node Label		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	1	max	0.942	5	1.724	14	1.059	2	3.372	2	0.92	11	0.272	97
2		min	-0.943	11	0.13	8	-1.182	8	-0.266	8	-0.919	5	-0.285	89
3	53	max	0.829	5	1.647	18	1.166	2	0.034	13	1.078	3	-0.081	12
4		min	-0.935	11	0.242	12	-1.105	8	-1.785	43	-1.078	9	-2.841	66
5	82	max	0.936	5	1.643	22	1.167	2	0.033	3	1.077	7	2.836	46
6		min	-0.829	11	0.238	4	-1.105	8	-1.786	69	-1.078	13	0.076	4
7	Totals:	max	2.707	5	4.71	44	3.393	2						
8		min	-2.707	11	2.46	2	-3.393	8						

Envelope NONE Member Cold Formed Steel Code Checks

No Data to Print...

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn
1	1	HSS4X4X2	0.442	0	13	0.113	0	y	39	70.173	73.278	8.24	8.24	2.05	H1-1b
2	2	C3.38X2.06X.188	0.333	2.592	61	0.06	0.351	y	64	35.676	43.394	1.703	4.483	1.619	H1-1b
3	3	C3.38X2.06X.188	0.332	0	51	0.069	2.241	y	45	35.676	43.394	1.703	4.483	1.618	H1-1b
4	4	PL3/8"X6	0.078	0	13	0.134	0	y	62	68.997	72.9	0.57	9.113	2.014	H1-1b
5	5	PL3/8"X6	0.078	0	3	0.132	0	y	38	68.997	72.9	0.57	9.113	2.03	H1-1b
6	6	PIPE_3.5X0.165	0.075	4	52	0.035	2.75		4	45.872	71.57	6.336	6.336	1	H1-1b
7	7	PL3/8"X6	0.102	0.208	3	0.201	0.208	y	61	70.882	72.9	0.57	9.113	2.959	H1-1b
8	8	PL3/8"X6	0.102	0	13	0.201	0	y	51	70.882	72.9	0.57	9.113	2.963	H1-1b
9	9	L2X2X4	0.203	0	8	0.033	2.309	y	48	23.349	30.586	0.691	1.577	1.5	H2-1
10	10	L2X2X4	0.205	2.309	8	0.034	0	y	64	23.349	30.586	0.691	1.577	1.5	H2-1
11	11	L7.63X2.5X6	0.264	1.604	8	0.075	3.207	z	38	75.414	118.523	1.798	13.388	1.168	H2-1
12	18	PIPE_2.88X0.203	0.083	5.583	5	0.032	5.583		5	35.361	70.548	5.01	5.01	1	H1-1b
13	19	PIPE_2.88X0.203	0.093	2.333	9	0.041	5.583		8	35.361	70.548	5.01	5.01	1	H1-1b
14	22	PIPE_2.88X0.203	0.102	2.187	9	0.086	8.958		2	23.996	70.548	5.01	5.01	1	H1-1b
15	28	PIPE_2.88X0.203	0.093	2.333	7	0.041	5.583		8	35.361	70.548	5.01	5.01	1	H1-1b
16	30	L6.63X4.33X.25	0.136	0	10	0.018	0	y	11	51.794	86.751	2.311	6.976	1.5	H2-1
17	31	HSS4X4X2	0.436	0	7	0.111	0	y	64	70.173	73.278	8.24	8.24	2.056	H1-1b
18	32	C3.38X2.06X.188	0.333	2.592	53	0.06	0.351	y	68	35.676	43.394	1.703	4.483	1.619	H1-1b
19	33	C3.38X2.06X.188	0.333	0	56	0.069	2.241	y	49	35.676	43.394	1.703	4.483	1.618	H1-1b
20	34	PL3/8"X6	0.063	0	5	0.131	0	y	67	68.997	72.9	0.57	9.113	1.927	H1-1b
21	35	PL3/8"X6	0.074	0	7	0.133	0	y	42	68.997	72.9	0.57	9.113	1.943	H1-1b
22	36	PL3/8"X6	0.107	0.208	7	0.202	0.208	y	53	70.882	72.9	0.57	9.113	2.981	H1-1b
23	37	PL3/8"X6	0.087	0	5	0.201	0	y	55	70.882	72.9	0.57	9.113	3	H1-1b
24	38	L2X2X4	0.177	0	12	0.033	2.309	y	39	23.349	30.586	0.691	1.577	1.5	H2-1
25	39	L2X2X4	0.178	2.309	13	0.034	0	y	68	23.349	30.586	0.691	1.577	1.5	H2-1
26	40	L7.63X2.5X6	0.221	1.604	12	0.075	0	z	66	75.414	118.523	1.798	12.953	1.086	H2-1
27	49	L6.63X4.33X.25	0.171	0	2	0.024	3.25	y	9	51.794	86.751	2.311	6.976	1.5	H2-1
28	50	HSS4X4X2	0.436	0	9	0.111	0	y	68	70.173	73.278	8.24	8.24	2.054	H1-1b
29	51	C3.38X2.06X.188	0.332	2.592	56	0.06	0.351	y	73	35.676	43.394	1.703	4.483	1.618	H1-1b
30	52	C3.38X2.06X.188	0.332	0	59	0.069	2.241	y	42	35.676	43.394	1.703	4.483	1.619	H1-1b
31	53	PL3/8"X6	0.074	0	9	0.132	0	y	70	68.997	72.9	0.57	9.113	1.944	H1-1b
32	54	PL3/8"X6	0.062	0	11	0.131	0	y	45	68.997	72.9	0.57	9.113	1.928	H1-1b
33	55	PL3/8"X6	0.087	0.208	11	0.201	0.208	y	57	70.882	72.9	0.57	9.113	3	H1-1b
34	56	PL3/8"X6	0.106	0	9	0.201	0	y	59	70.882	72.9	0.57	9.113	2.98	H1-1b
35	57	L2X2X4	0.178	0	3	0.034	2.309	y	44	23.349	30.586	0.691	1.577	1.5	H2-1
36	58	L2X2X4	0.177	2.309	4	0.033	0	y	73	23.349	30.586	0.691	1.577	1.5	H2-1
37	59	L7.63X2.5X6	0.221	1.604	4	0.075	3.207	z	46	75.414	118.523	1.798	12.967	1.088	H2-1
38	68	L6.63X4.33X.25	0.172	3.25	2	0.024	0	y	7	51.794	86.751	2.311	6.976	1.5	H2-1
39	69	PIPE_3.5X0.165	0.075	4	56	0.044	2.75		9	45.872	71.57	6.336	6.336	1	H1-1b
40	72	PIPE_2.88X0.203	0.105	5.583	9	0.042	5.583		3	35.361	70.548	5.01	5.01	1	H1-1b
41	73	PIPE_2.88X0.203	0.112	2.333	8	0.034	5.583		13	35.361	70.548	5.01	5.01	1	H1-1b
42	76	PIPE_2.88X0.203	0.1	2.188	13	0.079	1.042		7	23.996	70.548	5.01	5.01	1	H1-1b
43	78	PIPE_2.88X0.203	0.089	2.333	4	0.034	5.583		13	35.361	70.548	5.01	5.01	1	H1-1b
44	80	PIPE_3.5X0.165	0.075	4	56	0.044	5.25		7	45.872	71.57	6.336	6.336	1	H1-1b
45	83	PIPE_2.88X0.203	0.106	5.583	7	0.042	5.583		7	35.361	70.548	5.01	5.01	1	H1-1b
46	84	PIPE_2.88X0.203	0.09	2.333	12	0.034	5.583		3	35.361	70.548	5.01	5.01	1	H1-1b
47	87	PIPE_2.88X0.203	0.1	7.813	3	0.079	8.958		9	23.996	70.548	5.01	5.01	1	H1-1b
48	89	PIPE_2.88X0.203	0.112	2.333	8	0.034	5.583		3	35.361	70.548	5.01	5.01	1	H1-1b

APPENDIX D

ADDITIONAL CALCULATIONS

PROJECT	**136378.013.01 - Town Of Plainfield/S**				**KSC**
SUBJECT	**Platform Mount Analysis**				
DATE	**04/04/22**	PAGE	1	OF	1

B+T Group
1717 S. Boulder, Suite 300
Tulsa, OK 74119
(918) 587-4630

[REF: AISC 360-05]

Reactions at Bolted Connection

Tension	:	1.059	k
Vertical Shear	:	1.724	k
Horizontal Shear	:	0.942	k
Torsion	:	0.272	k.ft
Moment from Horizontal Forces	:	0.92	k.ft
Moment from Vertical Forces	:	3.372	k.ft

Bolt Parameters

Bolt Grade	:	A325	
Bolt Diameter	:	0.625	in
Nominal Bolt Area	:	0.307	in^2
Bolt spacing, Horizontal	:	6	in
Bolt spacing, Vertical	:	6	in
Bolt edge distance, plate height	:	1.5	in
Bolt edge distance, plate width	:	1.5	in
Total Number of Bolts	:	4	bolts

Summary of Forces

Shear Resultant Force	:	1.96	k
Force from Horz. Moment	:	1.67	k
Force from Vert. Moment	:	6.11	k
Shear Load / Bolt	:	0.49	k
Tension Load / Bolt	:	0.26	k
Resultant from Moments / Bolt	:	3.17	k

Bolt Checks

Nominal Tensile Stress, F_{nt}	:	90.00	ksi	[AISC Table J3.2]
Available Tensile Stress, ΦR_{nt}	:	20.72	k/bolt	[Eq. J3-1]
Unity Check, Bolt Tension	:	**16.55%**		**OKAY**
Nominal Shear Stress, F_{nv}	:	48.00	ksi	[AISC Table J3.2]
Available Shear Stress, ΦR_{nv}	:	11.05	k/bolt	[Eq. J3-1]
Unity Check, Bolt Shear	:	**6.84%**		**OKAY**
Unity Check, Combined	:	**23.39%**		**OKAY**
Available Bearing Strength, ΦR_n	:	34.66	k/bolt	
Unity Check, Bolt Bearing	:	**1.42%**		**OKAY**

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: 876401

BOBOS00897A
47-51 Unity Street
Plainfield, Connecticut 06374

May 24, 2022

EBI Project Number: 6222003242

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**34.14%**

May 24, 2022

Attn: Dish Wireless

Emissions Analysis for Site: 876401 - BOBOS00897A

EBI Consulting was directed to analyze the proposed Dish Wireless facility located at **47-51 Unity Street** in **Plainfield, 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 47-51 Unity Street in Plainfield, Connecticut using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since Dish Wireless is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 20 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report, the sample point is the top of a 6-foot person standing at the base of the tower.

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

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

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

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

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

5) The antennas used in this modeling are the JMA MX08FRO665-21 for the 600 MHz / 1900 MHz channel(s) in Sector A, the JMA MX08FRO665-21 for the 600 MHz / 1900 MHz channel(s) in Sector B, the JMA MX08FRO665-21 for the 600 MHz / 1900 MHz channel(s) in Sector C. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 20 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

6) The antenna mounting height centerline of the proposed antennas is 83 feet above ground level (AGL).

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

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

Dish Wireless Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	JMA MX08FRO665-21	Make / Model:	JMA MX08FRO665-21	Make / Model:	JMA MX08FRO665-21
Frequency Bands:	600 MHz / 1900 MHz	Frequency Bands:	600 MHz / 1900 MHz	Frequency Bands:	600 MHz / 1900 MHz
Gain:	11.35 dBd / 15.75 dBd	Gain:	11.35 dBd / 15.75 dBd	Gain:	11.35 dBd / 15.75 dBd
Height (AGL):	83 feet	Height (AGL):	83 feet	Height (AGL):	83 feet
Channel Count:	8	Channel Count:	8	Channel Count:	8
Total TX Power (W):	280.00 Watts	Total TX Power (W):	280.00 Watts	Total TX Power (W):	280.00 Watts
ERP (W):	1,424.17	ERP (W):	1,424.17	ERP (W):	1,424.17
Antenna A1 MPE %:	**1.27%**	Antenna B1 MPE %:	**1.27%**	Antenna C1 MPE %:	**1.27%**

Site Composite MPE %	
Carrier	**MPE %**
Dish Wireless (Max at Sector A):	1.27%
Sprint	2.27%
Metro PCS	0.49%
AT&T	2.05%
Town	0.28%
T-Mobile	9.28%
Verizon	18.5%
Site Total MPE % :	34.14%

Dish Wireless MPE % Per Sector	
Dish Wireless Sector A Total:	1.27%
Dish Wireless Sector B Total:	1.27%
Dish Wireless Sector C Total:	1.27%
Site Total MPE % :	34.14%

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	83.0	2.69	600 MHz n71	400	0.67%
Dish Wireless 1900 MHz n70	4	245.22	83.0	5.95	1900 MHz n70	1000	0.59%
						Total:	**1.27%**

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

Summary

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

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

Dish Wireless Sector	Power Density Value (%)
Sector A:	1.27%
Sector B:	1.27%
Sector C:	1.27%
Dish Wireless Maximum MPE % (Sector A):	1.27%
Site Total:	34.14%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **34.14%** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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

Exhibit G

Letter of Authorization

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

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

Crown Castle Letter of Authorization

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

Re: Tower Share Application
Crown Castle telecommunications site at:
47-51 UNITY STREET, PLAINFIELD, CT 06374

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

Crown Site ID/Name:	**876401/TOWN OF PLAINFIELD/SSUSA**
Customer Site ID:	**BOBOS00897A/**
Site Address:	**47-51 Unity Street, PLAINFIELD, CT 06374**

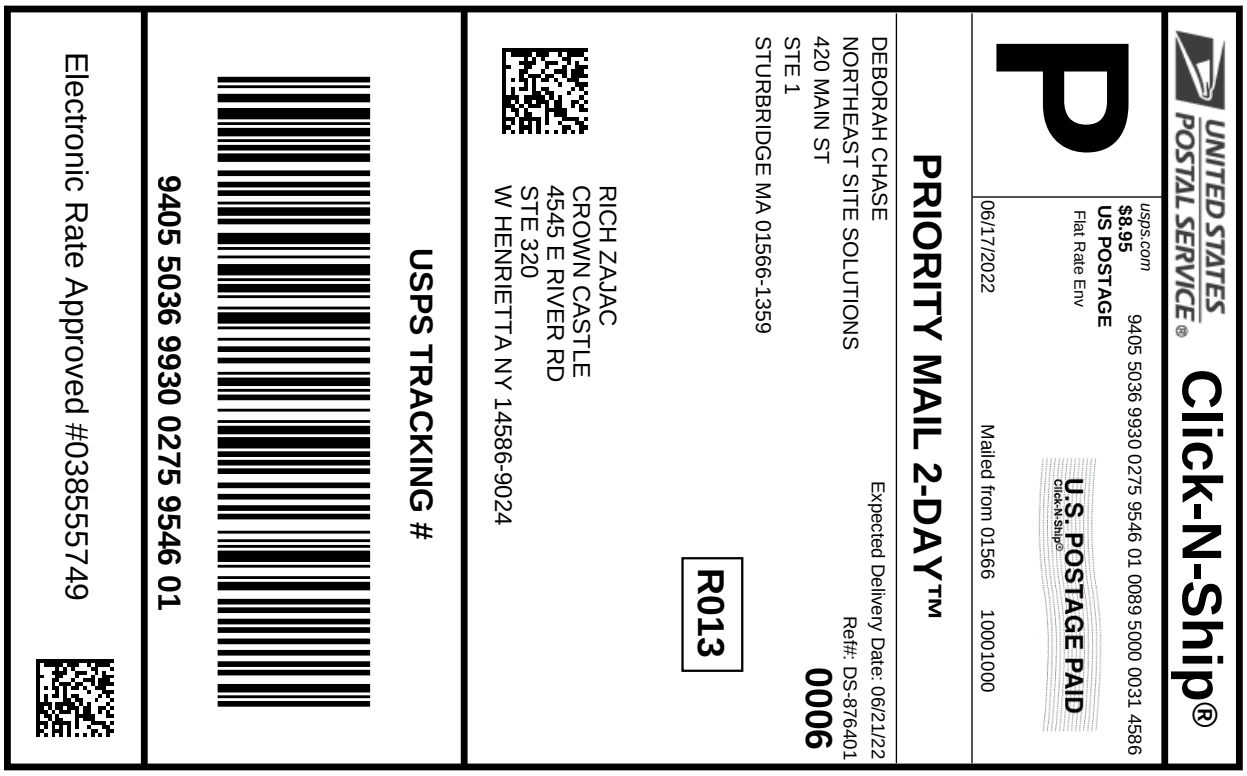
Crown Castle

By: _____ Date: 6/6/2020

Richard Zajac
Site Acquisition Specialist

Exhibit H

Recipient Mailings



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Priority Mail® Postage:	**$8.95**
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STURBRIDGE MA 01566-1359

Ref#: DS-876401

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CROWN CASTLE
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PRIORITY MAIL 2-DAY™

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0006

C001

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

KEVIN M CUNNINGHAM
FIRST SELECTMAN
8 COMMUNITY AVE
PLAINFIELD CT 06374-1238

USPS TRACKING #

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USPS TRACKING # :
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Trans. #:	565829350
Print Date:	06/17/2022
Ship Date:	06/17/2022
Expected Delivery Date:	06/21/2022

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-876401

To: KEVIN M CUNNINGHAM
FIRST SELECTMAN
8 COMMUNITY AVE
PLAINFIELD CT 06374-1238

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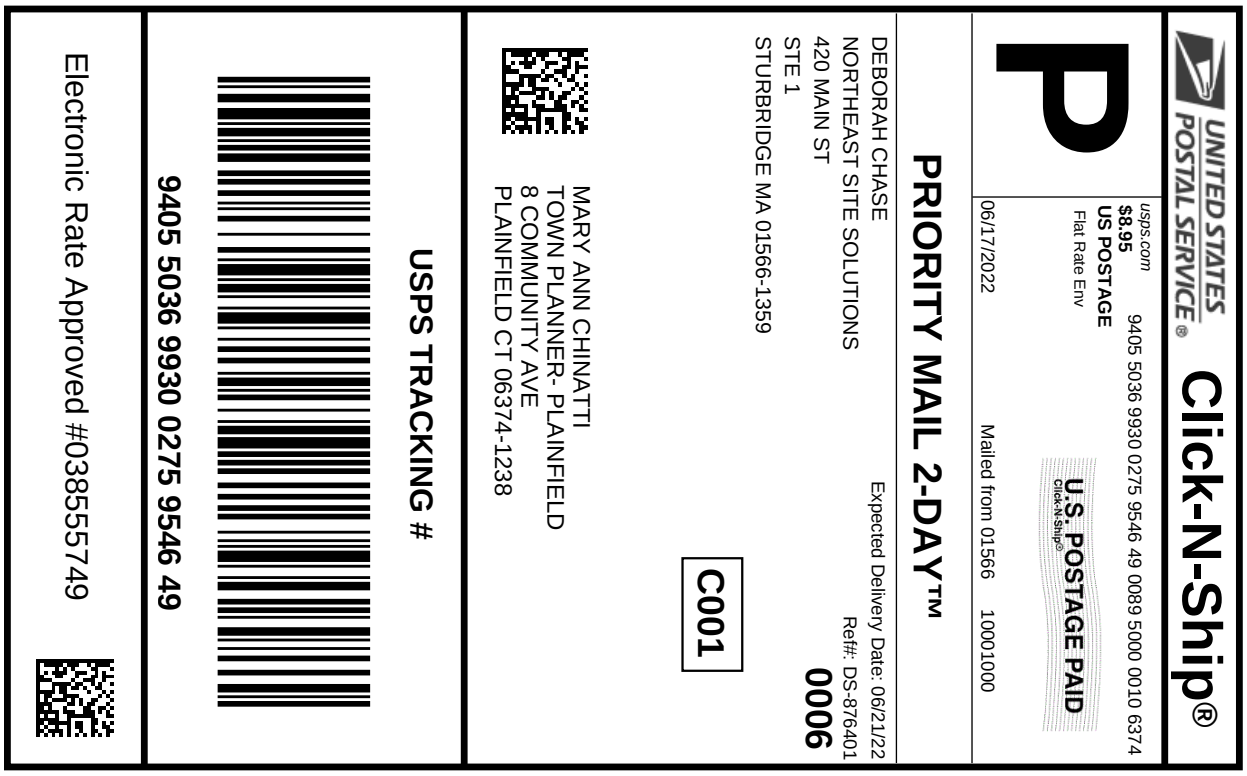

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Trans. #:	565829350
Print Date:	06/17/2022
Ship Date:	06/17/2022
Expected Delivery Date:	06/21/2022

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-876401

To: MARY ANN CHINATTI
TOWN PLANNER- PLAINFIELD
8 COMMUNITY AVE
PLAINFIELD CT 06374-1238

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Prepaid Mail Plainfield, CT 06374 Weight: 0 lb 9.60 oz Acceptance Date: Wed 06/22/2022 Tracking #: 9405 5036 9930 0275 9546 49	1		$0.00
Prepaid Mail Plainfield, CT 06374 Weight: 0 lb 9.60 oz Acceptance Date: Wed 06/22/2022 Tracking #: 9405 5036 9930 0275 9546 32	1		$0.00
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